ISTC CO.,LTD

CAT.SEP2007

Hydraulic
Pneumatic
Technology Products

KS A/ISO9001

(주)이스텍

www.istc.co.kr

미래를 개척하는 큰기술

이스텍은
공장자동화(FA)를 위한 전문기술기업으로서,
기술인력의 쉼 없는 연구 개발을 통하여
고객이 바라는 다양한 제품을 개발하고
제품 고급화를 실현하고 있습니다.

이스텍은
ISO9001의 체계화된 관리를 통하여,
지속적으로 기술을 축적함과 아울러
전 공정에 엄격한 품질관리를 실시함으로써
우수제품의 적기 공급에 만전을 기하고 있습니다.

이스텍은
밝고 희망찬 미래를 열어가기 위한
기술 고도화와 고객감동을 위하여
한결같은 모습으로 최선의 노력을 다하겠습니다.

Advanced technologies that open a bright future

ISTC is a company that specializes in Factory Automation (FA). Our company has realized various high quality manufacturing products that our customers have come to expect and that we have developed through continuous investigations of our well-qualified employees.

We have constantly acquired new techniques through systematic control of ISO9001 as well as our strict quality control to provide superior products at this opportune time.

We will do our best to continue our high standards and good customer relations in order to open a bright and hopeful future.

Global Company

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ISTC
AIR CYLINDER PRODUCTS

연 혁

1997. 2	(주)일신테크 설립(대구 달서 신당동 388)
1997. 4	공압실린더 개발 출시
1997. 7	우수중소기업 선정(대구광역시)
2000. 7	ISO9001 인증
2000.12	CE마크 획득(공압실린더)
2000.12	(주)이스텍으로 회사명 변경
2000.12	중국 가흥공장 설립
2001. 1	유망중소기업 선정(국민은행)
2002. 1	공장설립으로 회사이전(대구 달서구 파산동705-10)
2002.11	유망중소기업 선정(대구은행)
2002.12	기술부설연구소 등록
2002.12	실용신안 등록 (3건)
2002.12	유압실린더 개발 출시
2003. 1	실용신안 등록
2003. 3	서울지사 설립
2003. 4	에어유니트 개발 출시
2003. 4	벤처기업지정(대구경북 지방중소기업청)
2003. 5	부품소재전문기업 지정(산업자원부)
2003. 8	우량기술기업 선정(기술신보)
2004. 5	솔레노이드 밸브 개발 출시
2004. 5	CE마크 획득(솔레노이드 밸브)
2005. 4	실용신안 등록
2005. 5	실용신안 등록
2005. 7	공장증축
2006. 5	유압실린더 CE마크 획득
2007.10	중국공장 준공

HISTORY

1997. 2	Established ILSIN Tech (Inc.) (388 Shindang-dong Dalseo-gu, Daegu).
1997. 4	Launched the manufacture of Air Cylinders.
1997. 7	Selected as a superior Small and Medium Enterprise by Daegu City.
2000. 7	Achieved the ISO9001 Certification.
2000.12	Achieved the CE Mark. (Air Cylinders).
2000.12	Changed the company name to ISTC (Inc.).
2000.12	(by Ministry of Commerce, Industry and Energy). Established Jaxing factory in China.
2001. 1	Selected as a promising Small and Medium Enterprise by Kookmin bank.
2002. 1	Moved to the new factory.(#705-10, Pasan-dong Dalseo-gu, Daegu).
2002.11	Selected as a promising Small and Medium Enterprise by Daegu bank.
2002.12	Registered at technologies annex laboratory.
2002.12	Applied for practical new devices (3 cases).
2002.12	Launched the manufacture of Hydraulic Cylinder.
2003. 1	Applied for practical new device.
2003. 3	Established Seoul Branch.
2003. 4	Launched the manufacture of Air Units.
2003. 4	Certified as a Venture Enterprise (Small and Medium Business Administration No. 03132-4021-1-0090).
2003. 5	Certified as special enterprise for materials components technology
2003. 8	"Korea Technology Credit Guarantee Fund" certified as a "Excellent Company"
2004. 5	Launched the manufacture of Solenoid Valve.
2004. 5	Achieved the CE Mark (Solenoid Valve).
2005. 4	Applied for practical new device.
2005. 5	Applied for practical new device.
2005. 7	Extension on Factory.
2006. 5	Launched the manufacture of hydraulic cylinder
2007.10	Completion a factory in china

고객만족을 위해

항상 **다양한 제품**을 생산하고

신속하고 보다나은 **서비스**를

고객들에게 제공하기 위해 노력하고 있습니다.

We aim to give full satisfaction to all
our customers by making better productions and services.

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▲박형실린더 IF, IDF 시리즈 (20Page)
Thin Type Cylinder IF, IDF Series

▲미니실린더 ISP (38Page)
Mini Cylinder ISP Series

▲소형실린더 ISS_2 (45Page)
Small Size Cylinder ISS_2 Series

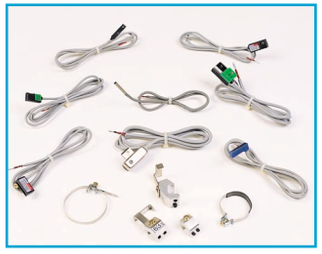
▲소형실린더 ISS_3 (62Page)
Small Size Cylinder ISS_3 Series

▲중형실린더 ISM (78Page)
Mid. Size Cylinder ISM Series

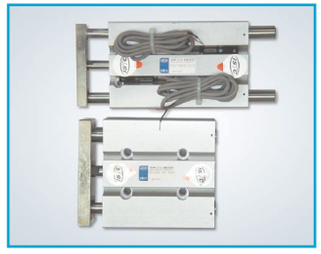
▲대형실린더 ISL (94Page)
Large Size Cylinder ISL Series

▲솔레노이드 밸브 ISV (113Page)
Directional Contrd Valve

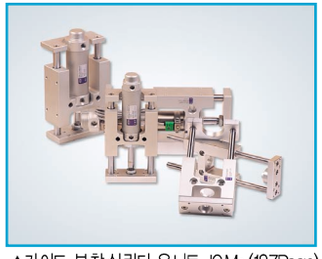
▲에어유니트 ISC (137Page)
Air Line Equipment



▲오토 스위치 (161Page)
Auto S/W



▲가이드 부착 박형 실린더 IGQ (173Page)
Guide Mounted Thin Type Cylinder IGQ Series



▲가이드 부착실린더 유니트 IGM3 (187Page)
Guide Mounted Cylinder IGM3 Series

▲편박형 실린더 ICUD 시리즈 (192Page)
Thin Type Cylinder ICUD Series

▲핸드밸브 ISHV 시리즈 (207Page)
Hand Valve ISHV Series

▲부스터 실린더 IBC 시리즈 (215Page)
Booster Cylinder IBC Series

▲하이드로 컨버터 유니트 ICT (219Page)
Hydro Converter Unit ICT Series

▲잔압 배기 밸브 ISO (223Page)
Remained Exhaust Valve ISO Series

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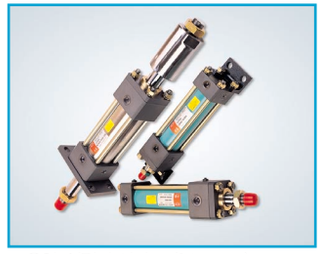
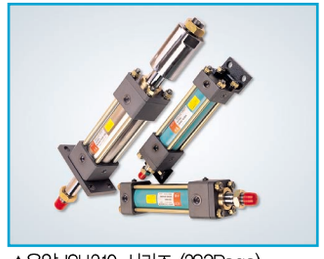
▲투웨이 밸브 IPA, IPW, IPS (229Page)
Two Way Valve IPA, IPW, IPS Series



▲유압 실린더 시리즈 (247Page)
Hydraulic Cylinder Series

▲유압 실린더 ISH 70/140 시리즈 (260Page)
Hydraulic Cylinder ISH 70/140 Series



▲유압 ISH210 시리즈 (283Page)
Hydraulic ISH 210 Series

▲유압 박형 실린더 (299Page)
Hydraulic Compact Cylinder

MEMO

CONTENTS

복동 실린더 Double-acting Type Cylinder

Out:전진시 Forward In:후진시 Backward

I-D(mm)	Rod diameter (mm)	working direction	hydraulic pressure size(cm)	working pressure(kgf/㎠)								
				2	3	4	5	6	7	8	9	10
6	3	OUT	0.283	0.57	0.85	1.13	1.41	1.70	1.98	-	-	-
		IN	0.212	0.42	0.64	0.85	1.06	1.27	1.48	-	-	-
10	5	OUT	0.785	1.57	2.36	3.14	3.93	4.71	5.50	-	-	-
		IN	0.589	1.18	1.77	2.36	2.95	3.53	4.12	-	-	-
15	6	OUT	1.767	3.53	5.30	7.07	8.84	10.60	12.37	-	-	-
		IN	1.484	2.97	4.45	5.94	7.42	8.91	10.39	-	-	-
20	10	OUT	3.14	6.28	9.42	12.57	15.71	18.85	22.0	15.1	28.3	31.4
		IN	2.36	4.71	7.07	9.42	1178	14.14	16.49	18.85	21.2	23.6
25	12	OUT	4.91	9.82	14.73	19.63	24.5	29.4	34.4	39.3	44.2	49.1
		IN	3.78	7.56	11.33	15.11	18.89	22.7	26.4	30.2	34.0	37.8
30	12	OUT	7.07	14.14	21.2	28.3	35.3	42.4	49.5	56.5	63.6	70.7
		IN	5.94	11.88	17.81	23.8	29.7	35.6	41.6	47.5	53.4	59.4
40	16	OUT	12.57	25.1	37.7	50.3	62.8	75.4	88.0	101	113.1	125.7
		IN	10.56	21.1	31.7	42.2	52.8	63.3	73.9	84.4	95.0	105.6
50	20	OUT	19.63	38.3	58.9	78.5	98.2	117.8	137.4	157.1	176.7	196.3
		IN	16.49	33.0	49.5	66.0	82.5	99.0	115.5	131.9	147.4	146.9
63	20	OUT	31.2	62.3	93.5	124.7	155.9	187.0	218	249	281	312
		IN	28.0	56.1	84.1	112.1	140.2	168.2	196.2	224	252	280
80	25	OUT	50.3	100.5	150.8	201	251	302	352	402	452	503
		IN	48.5	90.7	136.1	181.4	227	272	317	363	408	454
100	30	OUT	78.5	157.1	236	314	393	471	550	628	707	785
		IN	71.5	142.9	214	286	357	429	500	572	643	715
125	35	OUT	122.7	245	368	491	615	736	859	982	1104	1227
		IN	112.5	225	338	450	563	675	788	900	1013	1125
140	35	OUT	153.9	308	462	616	770	924	1078	1232	1385	1539
		IN	143.8	288	431	575	719	863	1006	1150	1294	1438
150	40	OUT	176.7	353	530	706	883	1060	1236	1413	1590	1767
		IN	167.1	334	501	668	835	1002	1169	1336	1503	1671
160	40	OUT	201	402	603	804	1005	1206	1407	1608	1810	2011
		IN	188.5	377	565	754	942	1131	1319	1508	1696	1885
180	45	OUT	254	509	736	1018	1272	1527	1781	2036	2290	2545
		IN	239	477	716	954	1193	1431	1670	1909	2147	2396
200	50	OUT	314	628	942	1257	1571	1885	2199	2513	2827	3142
		IN	295	589	884	1178	1473	1767	2062	2356	2651	2945
250	60	OUT	791	982	1473	1963	2454	2945	3436	3927	4418	4909
		IN	463	925	1388	1850	2313	2776	3238	3701	4163	4626
300	70	OUT	707	1414	2121	2827	3534	4241	4948	5655	6362	7069
		IN	668	1337	2005	2673	3342	4040	4679	5347	6015	6684

단동실린더 Single-acting cylinder

Out:전진시 Forward In:후진시 Backward

I-D(mm)	Rod diameter (mm)	working direction	hydraulic pressure size(cm)	working pressure(kgf/㎠)								
				2	3	4	5	6	7	8	9	10
2.5	1	OUT	0.049	-	0.03	0.08	0.13	0.174	0.223	-	-	-
		IN	-					0.06				
4	2	OUT	0.126	-	1.10	0.22	0.35	0.47	0.60	-	-	-
		IN	-					0.15				
6	3	OUT	0.283	0.17	0.45	0.73	1.0	1.3	1.6	-	-	-
		IN	-					0.15				
10	4	OUT	0.785	0.94	1.7	2.5	3.3	4.1	4.9	-	-	-
		IN	-					0.25				
15	5	OUT	1.767	2.1	3.9	5.7	7.4	9.2	11.0	-	-	-
		IN	-					0.45				
20	10	OUT	3.14	2.1	5.2	8.4	12	15	18	21	24	27
		IN	-					0.9				
25	12	OUT	4.91	4.5	9.4	14	19	24	29	34	39	44
		IN	-					1.0				
30	2	OUT	7.07	6.6	14	21	28	35	42	49	56	63
		IN	-					1.5				
40	18	OUT	12.57	16	29	42	54	67	79	92	104	117
		IN	-					2.0				

사용방법-1 Using Method-1

기기선정시(사용방법 -1)은 최적기종을 개략 선정하는데 이용합니다.
In case of choosing equipment, Using method -1 is used to choose right equipment.

■ 제어기기의 선정 Selection of control equipment

사용하는 실린더튜브내경과 실린더를 비교적 고속으로 작동시킬 것인지
비교적 저속으로 작동시킬 것인지가 결정되어야 합니다.
Should determine whether controlling the inside diameter of cylin der tube and cylinder as high speed or low speed relatively.

아래의 표를 참고로해서 실린더의 이론기준속도를 선택합니다.
Choose the theoretical standard speed of cylinder as follo wing table.

Speed of cylinder	Theoretical standard speed(mm/sec)
low speed	250
mid speed	500
high speed	750
superhigh speed	1,000

기기선정가이드-1의 표에 따라 실린더튜브내경,이론기준속도에 대한적절한
제어기기(전자밸브,스피드콘트롤러,소음기,배관)을 선택합니다.
Choose the right control equipment such as electron ic valve, speed controller, muffler and pi pe laying, which are about the inside diameter of cylinder tube and theoretical standard speed as 1st Selection Guide o f Air Pressure Equipment Table.

기술용어 설명 Technical terms

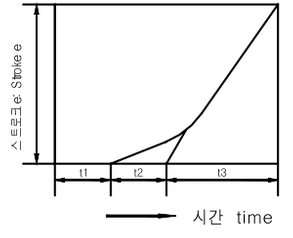
■ 이론기준속도 Theoretical standard speed

실린더 속도를 나타내며, 다음식으로 표시됩니다.(이값은 무부하시의 속도와거의 일치합니다. 부하가 가해지면 속도는 꽤 저하됩니다.
It means speed of cylinder, and indicated by fo llowin g formula. (This value almost agrees with speed of non l oad. In case of loading, the speed considerably is lowered.)

$$v_t = 1920 \times \frac{S}{A} = 2445 \times \frac{S}{D^2} \quad \text{---------- (1)}$$

U : 이론기준속도Theoretical standard speed (mm/sec)
A : 실린더 단면적Section size of Cylinder(㎠)
S : 회로의 합성유효단면적(배기측) Composed effective section size of circuits (exhaust si de)(㎟)
D : 실린더 내경 Inside Diameter of Cylinder

그래프로 나타내면, 이론기준속도 등속도로 동작하는 범위의 속도로
It means speed of cylinder, and indicated by fo llowin g formula. (This value almo st agrees with speed of non load. In case of loading, the speed considerably is lowered.)



$v_t = \frac{\ell}{13}$ (mm/sec)

t1 : 움직이기 시작할때 까지의 시간
The time to start moving
t2 : 1차 지체시간
The first delay time
ℓ : 스트로크 Stroke
주 : t1,t2는 부하에 따라 변합니다. 무부하는 거의 무시합니다.
note : t1 and t2 is charged as load. Ignore the no-load.

공기압 참고 자료 REFERENCE MATERIALS FOR AIR PRESSURE

공기압 기기 선정 가이드-1 1st Selection Guide of Air Pressure Equipment

■ 표준유량 standard flow

실린더를 v의 속도로 작동할 때에 흐를 수 있는 순간 유량으로 다음표와 같습니다.
The temporary flow which is working cylinder as v speed is alike as following table.
표는 P=5kgf/㎠ 일 때의 값입니다.
When it is P=5kgf/㎠, the value is in the table.
필요유량은 크린에어 시스템기기를 선정하는데 필요한 값입니다.
A necessary flow is the value to choose clean air system equipment.

$$Q \fallingdotseq \frac{Au.(P+1.03)X60}{1.03 \times 10^4} \quad \text{(2)}$$

Q: 필요유량 necessary flow(/min)(ANR)
SQ: 공급압력 supplied pressure(kgf/㎠)

■ 필요유효단면적 necessary effective section size

실린더를 v 의 속도로 작동시키는데 필요한 배기측 회로의 합성유효단면적입니다.(전자밸브 스피드콘트롤러, 소음기, 배관의 합성유효 단면적)
This is composed effective section size of circuits of exhaust side to operate cylinder as v speed.
(Electronic valve, Speed controller, muffler, and composed effective section size of pipe laying)

■ 적정표준시스템 Right standard system

실린더를 v 의 속도로 작동시키는데 가장 적절한 전자밸브,스피드콘트롤러 소음기,배관직경의 조합입니다.
This is the assembly of the most proper electronic valve, speed controller, muffler, and diameter of pipe laying to operate cylinder as v speed.
표의 조합은 배관길이 1m 정도 일 때의 조합입니다.
The assembly of table is when the length of pipe is about 1m.

Inside Diameter Cylinder (mm)	Theoretical standard speed(mm/sec)	necessary flow (ℓ /min)	effective section size (㎟)	system no.
Ø 6	(500)	-	(0.1)	A
Ø 10	(500)	-	(0.2)	A
Ø 16	(500)	-	(0.5)	A
Ø 20	250	29	0.5	B1
	400	46	1.6	B1
Ø 25	250	44	0.8	B1
	400	70	1.9	B1
Ø 30	250	64	1.1	B1
	400	100	2.8	B2
Ø 32	250	73	1.3	B1
	400	120	3.1	B3
Ø 40	250	110	2.0	B2
	400	180	4.9	B3
Ø 40	250	110	1.7	B1
	500	230	3.3	B3
	750	340	5.0	B4
	1,000	450	6.6	C1
Ø 50	250	180	2.6	B2
	500	350	5.2	B4
	750	530	7.7	C1
	1,000	710	10.4	C2
Ø 63	250	280	4.1	B3
	500	560	8.2	C1
	750	840	12.3	C2
	1,000	1,100	16.4	C3
Ø 80	250	450	6.6	C1
	500	910	13.2	C2
	750	1,400	19.8	C3
	1,000	1,800	26.4	C4
Ø 100	250	710	10.3	C2
	500	1,400	20.6	C3
	750	2,100	30.9	C4
	1,000	2,800	41.2	D1
Ø 125	250	1,100	16.1	C3
	500	2,200	32.2	C4
	750	3,300	48.2	D1
	1,000	4,400	64.4	D1
Ø 140	250	1,400	20.2	C3
	500	2,800	40.4	D4
	750	4,200	60.5	D1
	1,000	5,500	80.8	D3
Ø 150	250	1,600	23.1	C3
	500	3,200	46.2	D1
	750	4,800	69.4	D2
	1,000	6,400	92.4	D3
Ø 160	250	1,800	26.3	C4
	500	3,600	52.6	D1
	750	5,400	79.0	D2
Ø 180	250	2,300	33.3	C4
	500	4,600	66.6	D2
	750	6,900	100.0	D3
Ø 200	250	2,800	41.2	D1
	500	5,600	82.4	D3
Ø 250	250	4,400	64.3	D2
	400	7,000	103.0	D3

공기압 참고 자료 REFERENCE MATERIALS FOR AIR PRESSURE

공기압 기기 선정 가이드-2 2nd Selection Guide of Air Pressure Equipment

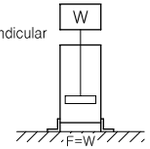
사용방법-2 Using Method-2

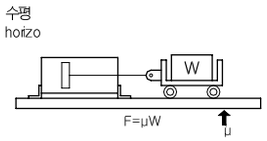
기기선정(사용방법-2)는 부하치 및 실린더 동작시간의 목표값이 구체적으로 표시되어 있는경우, 최적의기종을 선정하는데 이용됩니다. 우측의 단계를 따라선정하십시오.
Selection equipment(Using method-2) is used to choose best proper equipment, in case the load value and of cylinder working time is concretelyin dicated. Choose as the right steps.

조건확인 confirmation of condition ▶ 실린더 내경 선정 Selecton inside diameter of cylinder ▶ 이론기준속도의 선정 Selection theoretical standard speed ▶ 적정시스템 선정 Selection proper system ▶ 적정기기 선정 Selection proper equipment

1.조건확인 Confirmation of condition

1)부하 load F=□(kgf)
2)동작시간의 목표값 of working time t=□(sec)
3)스트로크 stroke L=□(mm)
4)압력 pressure P=□(kgf/㎠)
W:중량 weight(kgf)
μ 마찰계수 friction coefficient (통상 $\mu \fallingdotseq 0.3$)
F: 부하 load (kgf)

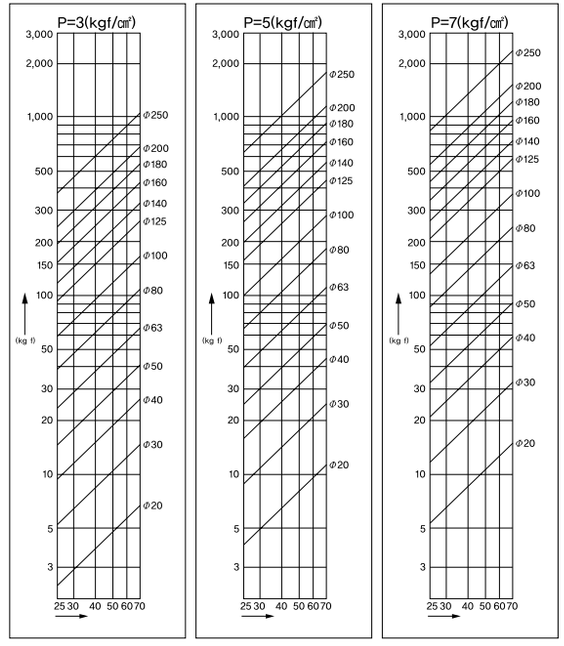




2.실린더내경의 선정 Selection inside diameter of cylinder

실린더내경을 구하는 모노그램에서 실린더 내경을 선정하고, 동시에 그때의 부하율을 읽습니다.
Choose the inside diameter of cylinder in the monogram which calculates the inside diameter of cylinder.
At the same time, read the load ratio.
(통상 ①의 F 값에 대해서 부하율이 50% 에 가까운 실린더 내경 D=Ø□)
Usually the inside diameter of cylinder D reached nearly 50% of load ratio about F value of ① is Ø□
(예) F=80 kgf, P=5kgf/㎠, 부하율 5%일때 실린더 내경은 Ø63 이 됩니다.)
(ex.) In case F is 80 kgf, P is 5kgf/㎠, load ratio is 5%, the inside diameter of cylinder is Ø63.

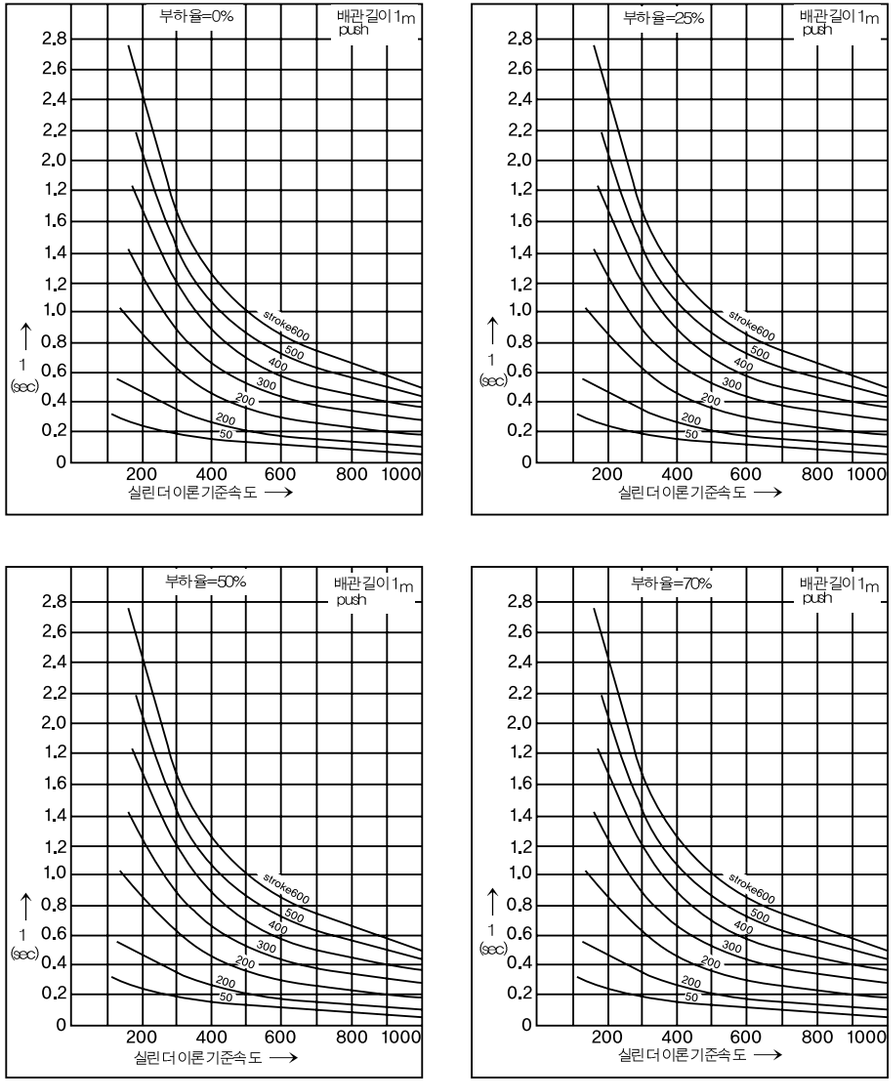
실린더 내경 구하는 모노그램



3.이론기준속도의 선정 Selection the theoretical standard speed

t-u 그래프에서 동작시간의 목표값(sec)을구하기 위해 필요한u 의값을 읽습니다.
Read u value to calculate g od value of working time in t-u graph.
u=□ (예)부하율 50%, 스트로크 200mm의실린더를 1.0sec로동작시킬때 이론기준속도는450 mm/sec 이 됩니다.
u=□ (ex)When working cylinder of stro le 200mm and load ratio of 50% as 1.0sec, the theoretical standard speed becomes 450 mm/sec.

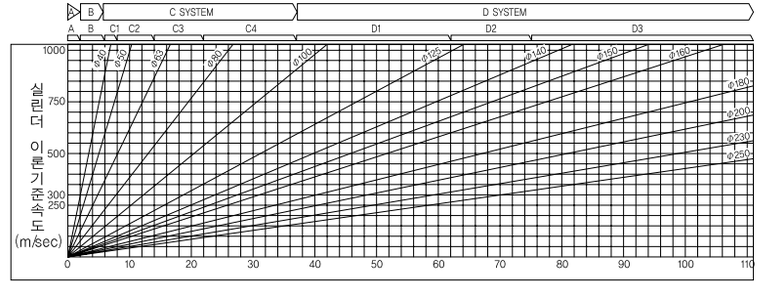
t-u 그래프 t-u graph



4.적정시스템 선정 Selection proper system

적정시스템 선정 조견표에 따라[3]에서 구한 u의 값과[2]에서 구한 ØD와의 접점 바로 위에 있는 시스템의 기호를 읽습니다.
Read notation of system on the point of contact of u value calculated [3] and ØD [2]calculated as the choosing table of proper system .
시스템기호□ notation of system
(예) Ø63실린더를이론기 준속도 450mm/sec으로 동작시키기 위해서는 C1시스템이최적입니다.
(ex) C1 is the best system to work Ø63 cylinder as 450mm/sec of theoretical standard speed.

적정시스템 선정 조건표 Selection table of proper system



5.적정기의 선정 Selection proper equipment

시스템 표에 따라[4]에서 구한 기호의 적정시 스템의 구성기기의 형식명을 확인합니다.
Confirm the formation name of construction equipment of proper system value calculated at [4] as system table.
(예)C1 시스템 일때 (ex) In case of C1 system
전자밸 브□ : 싱글 4KB210-08 또는 4F210-08 더블 4KB220-08 또는 4F220-08
Electronic valve□: single 4KB210-08 or 4F210-08, double 4KB220-08 or 4F220-08
스피드 콘트롤러□:speed controller : SCI-08
소음기□ :SLW-8A muffler
배관□:pipe laying Ø10×Ø7.2 나이론튜브 nylon tube 1m

표준시스템 standard system

Standard System No.	Ectronic Valve		Speed Controller	muffler	Pipe Laying	assembly effective size length of pip
	Single	Double				
A	B5142 4KA110-GS4	- 4KA120-GS4	SC3G-M5-4 (SC-M5)	SL-M5	Ø4 X Ø2.5 Pipe Laying	-
B1	4KA110-GS6 4KB110-06 A4F010-06	4KA120-GS6 4KB120-06 A4F020-06	SC3G-6-6	SL-M5 SLW-6A SL-M5	Ø6 X Ø4 Pipe Laying	1.9
B2	4KB110-06 A4F010-06	4KB120-06 A4F020-06	SC1-6	SLW-6A SL-M5	Ø8 X Ø5.7 Pipe Laying	2.7
B3	4KA210-GS8 4KB210-06 4L210-06 4F110-06	4KA220-GS8 4KB220-06 4L220-06 4F120-06	SC1-6	SLW-6A SLW-6A SLW-6A SLW-6A	Ø8 X Ø5.7 Pipe Laying	4.8
B4	4K210-08 4L210-08 4F110-08	4K220-08 4L220-08 4F120-08	SC1-8	SLW-8A SLW-8A SLW-6A	Ø10 X Ø7.2 Pipe Laying	6.2
C1	4KB210-08 4F210-08	4KB220-08 4F220-08	SC1-8	SLW- A	Ø10 X Ø7.2 Pipe Laying	8.1
C2	4KB310-10 4L310-10 4F310-10	4KB320-10 4L320-10 4F320-10	SC1-10	SLW-10A	Ø15 X Ø11.5 RC⅜ Pipe Laying	14.8
C3	4KB410-15 4F510-15	4KB420-15 4F520-15	SC1-15	SLW-15A	RC⅜ Pipe Laying	23
C4	4KB410-15 4F510-15	4KB420-15 4F520-15	SC-20A	SL-15A	RC⅜ Pipe Laying	37.4
D1	4F610-20	4F620-20	SC-20A	SL-20A	RC¾ Pipe Laying	61.7
D2	4F710-20	4F720-20	SC-20A	SL-20A	RC¾ Pipe Laying	74.8
D3	4F710-25	4F720-25	SC-25A	SL-25A	RC1 Pipe Laying	113.5

공기압 참고 자료 REFERENCE MATERIALS FOR AIR PRESSURE

공기 소비량 Air Consumption

공기 소비량 구하는 공식 Formula to calculate Air Consumption

실린더를 작동시키기 위한 공기소비량은 실린더적용과 실린더 밸브 사이의 배관 용적에서 구할 수 있다.
Air consumption to operate cylinder can calculate between cylinder application and pipe laying capacity of cylinder valve.

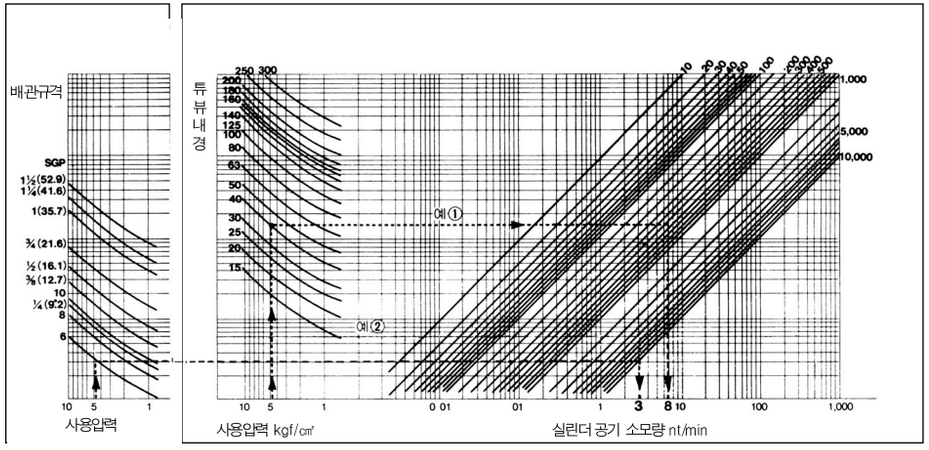
$$Q=\frac{(A_1+A_2)L \times (P+1.033)N}{1000}$$

Q : 공기소비량 Air Consumption(ℓ /min)
P : 사용압력 Working Pressure(kgf/㎠)
A1 : 헤드측 피스톤 단면적 Piston size of Head-side
$A_1 : \frac{\pi}{4} \times D^2$
D : 튜브경 Tube Diameter(cm)
L : 스트로크 Stroke(cm)
N : 분당 왕복횟수 Double number per min
A2 : 로드측 피스톤 단면적 Piston size of Rod-side
$A_2 : \frac{\pi}{4} \times (D^2 - d^2)$
d : 로드경 Rod diameter(cm)

단, 위에서 배관용적은 배관방법에 따라 다르므로 실린더 만의 공기소비량을 구한 것이다.
But, Pipe laying capacity is different as pipe laying method. So, it calculates the Air consumption capacity.

도표로 구하는 공식 Formula to calculate by table

■ 실린더 및 배관의 공기소비량 Cylinder and Air consumption of pipe laying



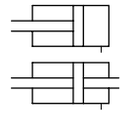
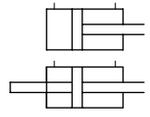
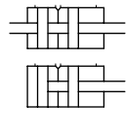
도해법
예)①튜브내경 40mm 행정 100mm 압력 5kgf/㎠, 1분당 5왕복할 때의 실린더 공기소비량은 실린더 행정 1분당 왕복수=100×5=500(mm/min)으로부터 8N ℓ/min이 된다.
예)②상기 조건에 있어서 내경6mm 나일론 튜브 2m로 배관되었을 경우 배관길이 1분당 실린더왕복수=2000×5=10000(mm/min) 으로부터 3N ℓ/min 이 된다.

Reading of Drawing
ex)① The air consumption , when inside diameter of tube is 40 mm, stroke 100mm, pressure 5kgf/㎠ and 5 double per min, is that cylinder stroke×double number per min is 100×5=500(mm/min) : 8N ℓ/min.
ex)② In case of above condition, if inside diameter is 6mm, nylon tube is 2mm, length of pipe laying×cylinder double number is 2000 × 5=10000(mm/min) : 3N ℓ/min.

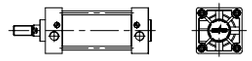
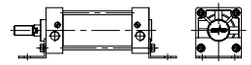
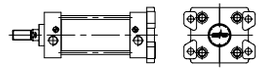
공기압 참고 자료 REFERENCE MATERIALS FOR AIR PRESSURE

도면표시기호, 실린더 종류 Notation and Cylinder

구조에 의한 분류 Sorting as structure

Single-acting Cylinder (Single ROD) Single-acting Cylinder (Double ROD)		한쪽방향만이 공기압에 의해운동하는 것을 단동 실린더라 하며 보통 자중 또는 Spring에 의해 복구합니다. Single-acting cylinder is that one direction is worked by air pressure. It is returned by spring or of itself.
Double-acting cylinder (Single ROD) Double-acting cylinder (Double ROD)		Piston의 왕복운동이 모두 공기압에 의해 행해지는 것으로서 가장 일반적인 공기압 실린더입니다. Double-acting cylinder is that double working is made by air pressure. It is common air pressure cylinder.
STROKE Variable Stroke Cylinder		STROKE를 조절하는 가변STOPPER를 가진실린더 Cylinder with variable Stopper to control Stroke
DUAL STROKE (ROD) DUAL STROKE Cylinder(Single ROD) DUAL STROKE (ROD) DUAL STROKE Cylinder(Double ROD)		2개의 STROKE를 가진 실린더로 다른 2개의 실린더를 조합한 것과 같은 기능을 가지고 있습니다. It is a cylinder with two strokes and have a function like assembly other two cylinders. It is a cylinder with two strokes and have a function like assembly other two cylinders.
TANDEM cylinder		복수의 PISTON을 가진 실린더이며 이것을 n개 연결시키면 n 개의 출력을 n배 얻을 수 있습니다 It is a cylinder to have double Pistons. If connect with n piece, can get output of n piece.

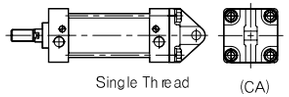
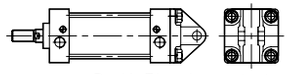
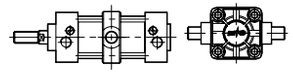
지지형식에 의한 분류 Specification as supporting type

Specification	Formation	Feature
Specification		지지물 없는 실린더로 취부는 지지물을 취부하는 SCREW를 이용하여 실시합니다. Working of Fitting surface is worked by using SCREW. It is a Cylinder without supporting reed.
FOOT Type (LB Type)		지지물 FOOT를 부착한 실린더로 부하가 수평으로 운동하는 경우 등에 사용합니다. Cylinder installed supporting FOOT is used to work load as horizontal direction.
FLANGE Type (FA,FB Type)	 ROD측 FLANGE (FA)  HEAD측 FLANGE (FB)	FLANGE 를 부착한 실린더로 부하가수직 방향으로 운동하는 경우 등에 사용됩니다. Cylinder installed FLANGE is used to work load as vertical direction.

공기압 참고 자료 REFERENCE MATERIALS FOR AIR PRESSURE

실린더종류, 구성 부품 Kinds of Cylinder, Parts

지지형식에 의한 분류 Specification as Supporting Type

CLEVIS Type CA, CB Type	 Single Thread (CA)  Double Thread (CB)	ROD 중심선에 대하여 직각방향의 PIN HOLE을 가진 실린더 1형(1 산 CLEVIS) 또는 U 자형2 산 CLEVIS)의 지지부를 가지고 있습니다. 부하가 요동하는 경우 등에 사용합니다. Single-Thread CLEVIS Type has a supporting pait of cylinder 1st type(Single thread CLEVIS) or U letter type(Double CLEVIS) with PIN HOLE be at right-angle to ROD center line. In case the load is shaking, it is used.
TRUNNION Type (TC Type)		ROD의 중심선에 대하여 직각방향의 PIN을 가진 실린더, 중간에 PIN 을가진 것을중간 TRUNION 형 ROD 측에 PIN을가진 것을축 TRUNNION 형이라 부릅니다. CLEVIS형과 같은경우에 사용됩니다. TRUNNION Type (TC Type) is a cylinder with a pin be at right-angle to ROD center line. Mid TRUNNION Type has a PIN at middle part. Shaft TRUNNION Type has a PIN at ROD side. It is used as CLEVIS Type.

(주) ( )내는 KS 규격 부품 (Note) Within ( ) is a standard KS part.

공기압 실린더의 구성부품 Structure parts of Air Pressure Cylinder

1) 피스톤 : 강도와 내마모성, SEISURE 방지가 필요하며, 재질로는 보통 회색주철이 습동성이 좋아서 사용되나 경하중의 경우는 플라스틱이나 Al 합금 외주에 웨어링을 장착하여 경량화하는 추세로 가고 있다.
2) 피스톤 로드 : S45C 이상의 합금강을 사용하며, 경질 Cr 도금을 하고 표면 조성도는 1.6S 이상으로 처리하여 내마모성, 녹방지 및 팩킹 마모를 줄여준다. 설계시는 좌굴이나 휨 등을 고려해야 한다.
3) 실린더 튜브: 튜브 내면의 마모방지를 위해 20㎛정도의 경질도금 또는 경질피막을 요하며 1.6S 정도의 표면조성도를 요한다.
4) 카바 : 로드부시와 SEAL 용 팩킹 장착부이며 AIR PORT 의 크기 조정부이기도 하다.
5) 타이로드 : 실린더의 헤드측과 로드측의 양 커버를 고정한다.
6) 로드부시: 피스톤 로드에 걸리는 횡하중은 로드부시로 지탱하며 횡하중은 최대실린더 출력의 1/20 이내가 되도록 한다.
7) SEAL : ① 고정형 : O-RING(NBR)
② 운동형 : 압축변형을 주어 그 반발력이 접촉압이 되어 SEALING을 하는 스퀴즈 팩킹 및 운동용 O-RING과 LIP 부분이 압력으로 열려 SEALING 을 하는 립팩킹 및 먼지 등을 막아주는 WIPER 링, 더스트 SEAL 등이 있다.

1) Piston : It needs intensity, wearing resistance and protection of SEISURE. The gray cast iron is usually used as materials by its good sliding. In case of light weight, plastic and wearing Al alloy is used.
2) Piston ROD : It needs an alloyed steel over S45C. Also, it needs wearing of hard Cr plating. In case surface intensity is 1.6S, the wearing resistance, protection of rust, packing abrasion will be lessened. When drawing it, consider buckling and bending.
3) Cylinder Tube : It needs hard plating and hard tunic about 20㎛ to protect abrasion of inside of tube . It needs about 1.6S of surface intensity.
4) Cover : It is a side of ROD bush, packing installation side for SEAL and size controlling side of AIR PORT.
5) Tie rod : It fixes both covers of head side and ROD side of cylinder.
6) ROD bush : The width load caught on Piston ROD is supported by ROD bush, the number should be 1/20 of max cylinder output.
7) SEAL : ① Fixed Type : O-RING(NBR)
② Moving Type : There are Squeeze packing which is that at first it has a pressure change and then the repulsive power is to be contact pressure and make a dealing, Lip packing which make a SEALING by opening O-RING and LIP part as pressure ,WIPER Ring, and Dust SEAL which protect dust and so on.

MEMO

박형실린더 IF, IDF 시리즈
THIN TYPE CYLINDER IF, IDF SERIES

박형실린더 IF, IDF 시리즈 THIN TYPE CYLINDER IF, IDF SERIES

Ø12, Ø16, Ø20, Ø25, Ø32, Ø40, Ø50, Ø63, Ø80, Ø100

개요 Outline

박형실린더는 입입, 클램프 및 단스트로크에 최적이며 축방향 길이가 짧아 좁은 공간에서도 무리없이 설치 할수 있고 부착시에도 부착 금구류가필요 없이 볼트만으로 체결할 수 있도록 설계되었으며 몸체의 외곽을 특수 아노다이징처리하여 외관이 미려하다.

The thin –type cylinder is best suitable for press fit, clamp and stroke. As the length in the shaft direction is shorter than the conventional one, it can be easily installed in a narrow space. It is also designed to be fastened only by bolts with no need of other fastening tools. The surface is coated by anodizing, so the outer part is elegant.

이론출력표 Table of theoretical outputs

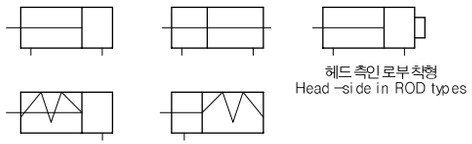
■ 단동형 Single acting type

specification	inside diameter of tube (mm)	set pressure (kgf/cm)			stroke start	stroke end	ROD end load (MAX)
		3	5	7			
forward type	20	7.8	14.1	20.3	1.6	0.6	0.67
	32	21.7	37.8	53.8	2.4	1.5	1.77
	40	34.5	59.7	84.8	3.1	1.3	1.77
	50	52.9	92.1	131.4	5.5	2.5	3.1
backward type	20	4.2	8.9	13.6	2.8	0.5	0.67
	32	15.0	27.1	39.2	3.0	2.0	1.77
	40	28.6	49.7	70.8	3.0	2.0	1.77
	50	40.9	73.9	106.0	8.5	2.5	3.1

■ 복동형 Double-acting type

inside diameter of tube	working direction	set pressure (kgf/cm)		
		3	5	7
12	IN	2.5	4.2	5.9
	OUT	3.3	5.6	7.9
16	IN	4.5	7.5	10.5
	OUT	6	10	14
20	IN	7	11.7	16.4
	OUT	9.4	15.7	21.9
25	IN	11.3	18.8	26.4
	OUT	14.7	24.5	34.3
32	IN	18	30	42
	OUT	24	40	56
40	IN	31	52	73
	OUT	37	62	87
50	IN	49	82	115
	OUT	58	98	137
63	IN	84	140	196
	OUT	93	155	218
80	IN	136	227	317
	OUT	150	251	352
100	IN	214	357	500
	OUT	236	393	550

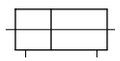
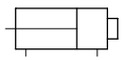
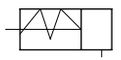
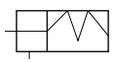
표시기호 Notation



헤드측인로부착형
Head –side in ROD types

표준행정표 Standard Stroke Table

단위 unit :mm

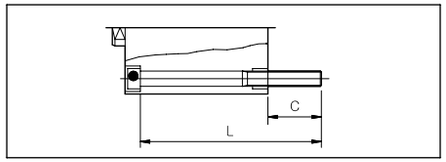
inside diameter of tube (mm)	Double-acting Type			Single-acting Type	
	Single-rod type	Double-rod type	Head-side in ROD types	forward type	backward type
					
12	5,10,15,20,25,30	5,10,15,20,25,30	5,10,15,20,25,30	5,10	5,10
16					
20	5,10,15,20,25,30 35,40,45,50	5,10,15,20,25,30 35,40,45,50	5,10,15,20,25,30 35,40,45,50	5,10	5,10
25					
32	5,10,15,20,25,30 35,40,45,50,75,100,125,150	5,10,15,20,25,30 35,40,45,50	5,10,15,20,25,30 35,40,45,50,75,100	5,10	5,10
40					
50	10,15,20,25,30,35 40,45,50,75,100,125,150	10,15,20,25,30,35 40,45,50	10,15,20,25,30,35 40,45,50,75,100	10,20	10,20
63					
80					
100					

박형실린더 IF, IDF 시리즈 THIN TYPE CYLINDER IF, IDF SERIES

취부용 볼트, 취급상 주의사항 Bolt for fitting surface, Caution to handle

취부용 볼트 Bolt for fitting surface

Moldel	C	L	Set Blet
IF 12B -S 5	6.5	25	M3 X 25ℓ
-S 10		30	X 30ℓ
-S 15		35	X 35ℓ
-S 20		40	X 40ℓ
-S 25		45	X 45ℓ
-S 30		50	X 50ℓ
IF 16B -S 5	5	25	M3 X 25ℓ
-S 10		30	X 30ℓ
-S 15		35	X 35ℓ
-S 20		40	X 40ℓ
-S 25		45	X 45ℓ
-S 30		50	X 50ℓ
IF 20B -S 5	7.5	25	M3 X 25ℓ
-S 10		30	X 30ℓ
-S 15		35	X 35ℓ
-S 20		40	X 40ℓ
-S 25		45	X 45ℓ
-S 30		50	X 50ℓ
-S 35		55	X 55ℓ
-S 40		60	X 60ℓ
-S 45		65	X 65ℓ
-S 50		70	X 70ℓ
IF 25B -S 5	9.5	30	M5 X 30ℓ
-S 10		35	X 35ℓ
-S 15		40	X 40ℓ
-S 20		45	X 45ℓ
-S 25		50	X 50ℓ
-S 30		55	X 55ℓ
-S 35		60	X 60ℓ
-S 40		65	X 65ℓ
-S 45		70	X 70ℓ
-S 50		75	X 75ℓ
IF 32B -S 5	9	30	M5 X 30ℓ
-S 10		35	X 35ℓ
-S 15		40	X 40ℓ
-S 20		45	X 45ℓ
-S 25		50	X 50ℓ
-S 30		55	X 55ℓ
-S 35		60	X 60ℓ
-S 40		65	X 65ℓ
-S 45		70	X 70ℓ
-S 50		75	X 75ℓ
-S 75		110	X 110ℓ
-S 100		135	X 135ℓ
IF 40B -S 5	7.5	35	M5 X 35ℓ
-S 10		40	X 40ℓ
-S 15		45	X 45ℓ
-S 20		50	X 50ℓ
-S 25		55	X 55ℓ
-S 30		60	X 60ℓ
-S 35		65	X 65ℓ
-S 40		70	X 70ℓ
-S 45		75	X 75ℓ
-S 50		80	X 80ℓ
-S 75		115	X 115ℓ
-S 100		140	X 140ℓ



Moldel	C	L	Set Blet
IF 50B -S 10	12.5	45	M6 X 45ℓ
-S 15		50	X 50ℓ
-S 20		55	X 55ℓ
-S 25		60	X 60ℓ
-S 30		65	X 65ℓ
-S 35		70	X 70ℓ
-S 40		75	X 75ℓ
-S 45		80	X 80ℓ
-S 50		85	X 85ℓ
-S 75		120	X 120ℓ
-S 100		145	X 145ℓ
IF 63B -S 10	14.5	55	M8 X 50ℓ
-S 15		60	X 55ℓ
-S 20		65	X 60ℓ
-S 25		70	X 65ℓ
-S 30		75	X 70ℓ
-S 35		80	X 75ℓ
-S 40		85	X 80ℓ
-S 45		90	X 85ℓ
-S 50		95	X 90ℓ
-S 75		120	X 125ℓ
-S 100		150	X 150ℓ
IF 80B -S 10	15	55	M10 X 55ℓ
-S 15		60	X 60ℓ
-S 20		65	X 65ℓ
-S 25		70	X 70ℓ
-S 30		75	X 75ℓ
-S 35		80	X 80ℓ
-S 40		85	X 85ℓ
-S 45		90	X 90ℓ
-S 50		95	X 95ℓ
-S 75		130	X 130ℓ
-S 100		155	X 155ℓ
IF 100B -S 10	15.5	65	M10 X 65ℓ
-S 15		70	X 70ℓ
-S 20		75	X 75ℓ
-S 25		80	X 80ℓ
-S 30		85	X 85ℓ
-S 35		90	X 90ℓ
-S 40		95	X 95ℓ
-S 45		100	X 100ℓ
-S 50		105	X 105ℓ
-S 75		140	X 140ℓ
-S 100		165	X 165ℓ

(주) IDF 취부볼트 (note) IDF Bolt for fitting surface

1) IDF시리즈는 IF시리즈보다 몸체(BODY)의 길이가10mm 길어지므로 취부용 볼트는 IF시리즈보다 10mm 추가하여 선택하십시오.

1) Body length of IDF series is 10mm longer than that of IF series. So, mounting bolt should be 10mm longer than that of IF series.

예) ex) IF40B-S20▶M5×50L IDF40B-S20▶M5 ×60L

취급상 주의사항 Cautions for using

1. 취부할 때는 접속배관 부위를 청결하게 하여야 하며 실린더 내부에는 분진이나 철분이 들어가지 않도록 주의하여 주십시오.
2. 피스톤로드의 하중을 항상 축방향에 가까운 상태에서 사용하여 주십시오.
3. 피스톤로드의 작동부에 찍힘이나 긁힘이 없도록 주의하여 주십시오.
   특히, 단동, 인입형, 복동형의 경우에는 로드패킹이 손상되는 원인이 됩니다.
4. 보수 및 분해시에는 로드측의 C형 스냅링은 C형 공구를 사용하여 분리하여 주십시오.

1. When mounting, clean the connected pipe and protect dust and iron-dust from entering cylinder.
2. The load of piston rod should always closer to shaft direction.
3. Don't make a scraping or scratching at the working part of piston rod. Expecially, it can result in a rod packing in single-acting, lead-in type and double acting type.
4. In case of Maintaining and disassembling it, use C type. In case of snap ring, use C type tools.

※주1)표준행정은 전후 5mm 단위로 준비됨
주2)중간행정 (55, 60,65,70)의 경우는 75 행정과 본체에 각각 20.15.10. 5mm폭의 스페이스를 가진 것이므로 차수 관계는 75행정과 동일 한 차수 로되어있고, 중간행정 (60, 85,90,95)의 경우는 100행정 본체에 각각 20.15.10. 5mm폭의 스페이스를 가진 것이므로 차수는 100행정과 같다.

note1) Standard stroke is prepared within 5mm unit sb efore and behind.

note2) In case of Mid stroke (55,60, 65,70), it puts space of 20.15.10. 5mm between 75 stroke and main body, so the dimension is same with 75 stroke. In case of Mid stroke (60, 85,90,95), it puts space of 20. 15.10.5mm between 100 stroke and main body, so the dimension is same with 100 stroke.

박형실린더 IF 시리즈 THIN TYPE CYLINDER IF SERIES

형식/사양 Model/Specification

표준사양 Standard specification

형식 Model	공기압(무급유형 Air pressure(no oil supply) type
사용유체 Working Oil	공기 Air
보증내압력 Bearing pressure	15.3kg/㎠
최고사용압력 Max. set pressure	10.2kg/㎠
주위온도 및 사용유체온도 Ambient temperature& disjoining temperature for Woking Oil	-10℃~+70℃ 동결이 없을 것(No freezing)
쿠션 Cushion	none
로드끝단나사 Rod-end screw	암나사 female screw, 수나사 male screw
로드끝단나사 공차 Rod-end screw tolerance	KS2급 2nd KS level
행정길이의 허용차 Allowance of stroke length	+1.0 0
부착 fastening	구멍 관통형, 양단탭형 Hole penetration type, Both-end tap type
사용피스톤속도 working piston speed	50~500mm/s

최저사용압력 Min. working pressure

형식 Model \ 내경 inside diameter	12	16	20	25	32	40	50	63	80	100
복동형 Double-acting type	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
단동형(전진형, 후진형) single-acting type(forward motion type, backward motion type	1.5	1.5	1.8	1.8	1.7	1.5	1.3	—	—	—

형식표시방법 Indication of Model

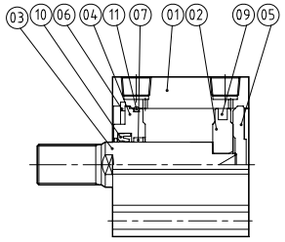
IF — W — 32 — A — S30 — N — S

- IF: 표준형 standard type
- W: 형식 무기호:편로드형 W:양로드형 None Single rod type Double rod type
- 32: 튜브내경 inside diameter of tube 12-12mm 16-16mm 20-20mm 25-25mm 32-32mm 40-40mm 50-50mm 63-63mm 80-80mm 100-100mm
- A: 취부형식 A: 양단탭형fitting(이스텍 기본사양) B: 구멍관통형 Surface type B:Hole penetration type A:Both-end tap type
- S30: 실린더행정 표참조 Cylinder Stroke Refer to table of standard stroke
- N: 몸체사양 무기호:표준형 N:수나사 F:헤측인 로드부착 Body specification None : standard N:male screw F:Fastening of Head-side in rod
- S: 작동방식 무기호:복동형 S: 전진형(단동) T: 후진형(단동)working type None : Double-action type S:forward motion type (single-acting) T:backward motion type (single-acting)

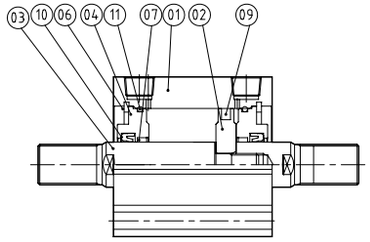
박형실린더 IF 시리즈 THIN TYPE CYLINDER IF SERIES

내부 구조도 Inside structure drawing

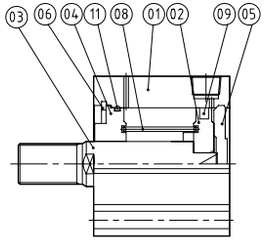
■ 복동 Single rod
편로드형 Single rod type



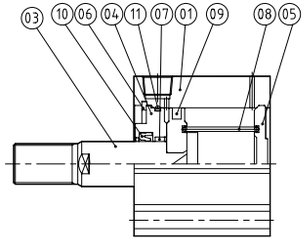
■ 복동 Double rod
양로드형 Double rod type



■ 단동 Single-acting
전진형 backward motion type



■ 단동 Single-acting
후진형 backward motion type



부품리스트 Parts List

Num	name	materials	remarks
1	TUBE	A6063	
2	PISTON	A2024	
3	ROD	S45C Ø32~Ø100	
4	ROD COVER	A2024	
5	HEAD COVER	A6063	
6	SNAP-RING	SUP	
7	OILLESS	CU+OIL	
8	SPRING	SWP	

페킹리스트 Packing List

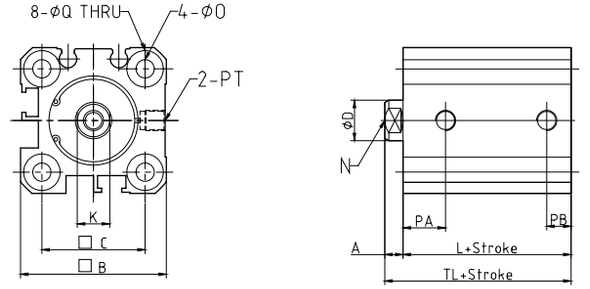
Num	name	materials	inside diameter of tube(mm)									
			Ø12	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
9	PISTON PACKING	NBR	OPA 12	OPA 16	OPA 20	OPA 25	OPA 32	OPA 40	OPA 50	OPA 63	OPA 80	OPA 100
10	ROD PACKING	NBR	DYR 6K	DYR 8K	DYR 10K	DYR 12	DYR 16	DYR 16	DRP 20	DRP 20	DRP 25	DRP 30
11	TUBE O-RING	NBR	S-10	S-14	S-18	S-22	S-29	S-35	S-45	S-60	S-75	S-95

박형실린더 IF 시리즈 THIN TYPE CYLINDER IF SERIES

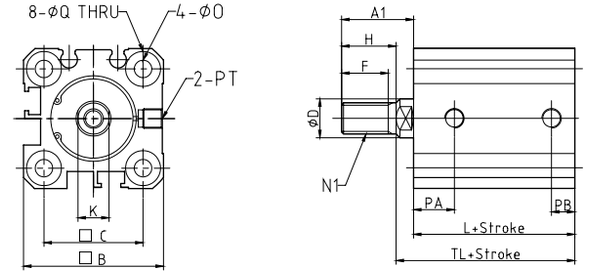
복동형 Double-Acting Type

표준/복동형 : 편로드 Standard/Double : Acting Type

■ 암나사: Female screw:Φ12~Φ25



■ 숫나사: Male screw:Φ12~Φ25

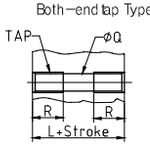


단위unit : mm

model	stroke(mm)	A	A1	□B	□C	ØD	F	H	K	L	N	N1	ØO	PA	PB
IF 12A	5~30	3.5	14	25	15.3	6	9	10.5	5	17	M3X0.5 DP6	M5X0.8	3.5	7.5	5
IF 16A	5~30	3.5	15.5	29	20	8	10	12	6	18.5	M4X0.7 DP8	M6X1.0	3.5	8	5.5
IF 20A	5~50	4.5	18.5	36	25.5	10	12	14	8	19.5	M5X0.8 DP8	M8X1.25	5.5	10.5	6
IF 25A	5~50	5	22.5	40	28	12	15	17.5	10	22.5	M6X1.0 DP12	M10X1.25	5.5	11	5.5

model	TL	PT	ØQ
IF 12A	20.5	M5X0.8	6.5 Dp3.5
IF 16A	22	M5X0.8	6.5 Dp 3.5
IF 20A	24	M5X0.8	9 Dp 7
IF 25A	27.5	M5X0.8	9 Dp 7

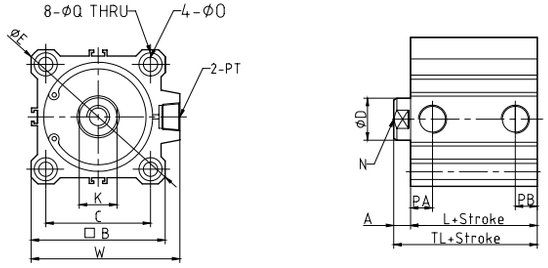
Both-end tap Type



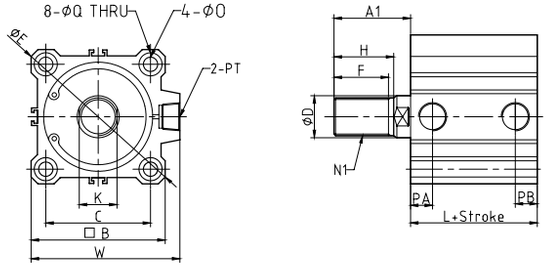
stroke(mm)	TAP	R
12	M4X0.7	7
16	M4X0.7	7
20	M6X1.0	10
25	M6X1.0	10

표준/복동형 : 편로드 Standard/Double : Acting Type

■ 암나사 Female screw:Φ32~Φ100



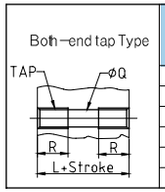
■ 숫나사 Male screw:Φ32~Φ100



단위 unit :mm

model	stroke(mm)	A	A1	□B	□C	ØD	ØE	F	H	K	L	N	N1	ØO	PA	PB
IF 32A	5	7	28.5	45	34	16	60	20.5	23.5	14	23	M8X1.25 DP13	M14X1.5	5.5	11.5	5.5
	10~100														10.5	7.5
IF 40A	5~100	7	28.5	52	40	16	69	20.5	23.5	14	29.5	M8X1.25 DP13	M14X1.5	5.5	12	8.5
IF 50A	10~100	8	33.5	64	50	20	86	26	28.5	18	30.5	M10X1.5 DP15	M18X1.5	6.8	10.5	10.5
IF 63A	10~100	8	33.5	77	60	20	103	26	28.5	18	36	M10X1.5 DP15	M18X1.5	9	15	11
IF 80A	10~100	10	43.5	98	77	25	132	32.5	35.5	22	43.5	M16X2.0 DP21	M22X1.5	11	18	12.5
IF 100A	10~100	12	43.5	117	94	30	156	32.5	35.5	27	53	M20X2.5 DP27	M26X1.5	11	23	13

model	TL	PT	ØQ	W
IF 32A	30	M5X0.8	9 Dp7	49.5
		PT 1/8		
IF 40A	36.5	PT 1/8	9 Dp7	57
IF 50A	38.5	PT 1/4	11 Dp8	71
IF 63A	44	PT 1/4	14 Dp10.5	84
IF 80A	53.5	PT 3/8	17.5 Dp13.5	104
IF 100A	65	PT 3/8	17.5 Dp13.5	123.5

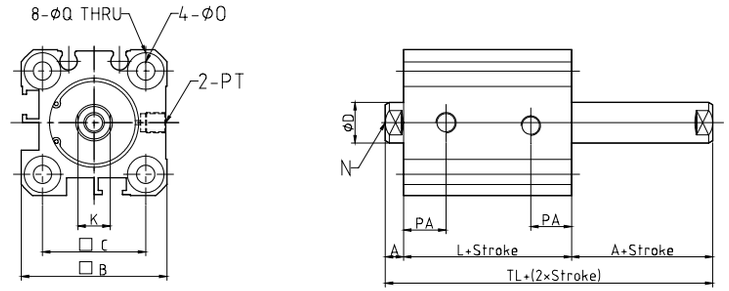


stroke(mm)	TAP	R
32	M6X1.0	10
40	M6X1.0	10
50	M8X1.25	14
63	M10X1.5	18
80	M12X1.75	22
100	M12X1.75	22

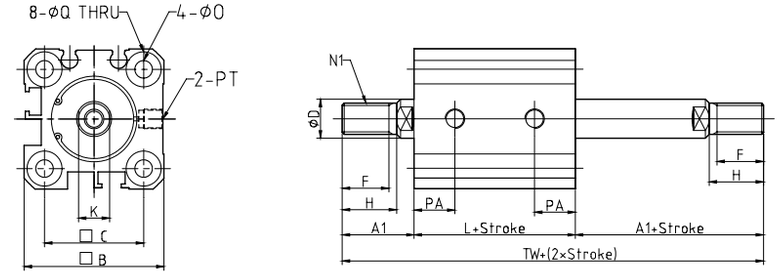
박형실린더 IF 시리즈 THIN TYPE CYLINDER IF SERIES
복동형 Double-Acting Type

표준/복동형 : 양로드 Standard/Double acting Type : Double Rod

■ 암나사 Female screw:Φ20~Φ25



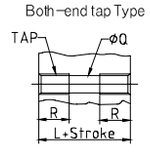
■ 숫나사 Male screw:Φ20~Φ25



단위 unit :mm

model	stroke(mm)	A	A1	□	□C	ØD	F	H	K	L	N	N1	ØO	PA	PT
IF W 20A	5~50	4.5	18.5	36	25.5	10	12	14	8	26	M5X0.8 DP7	M8X1.25	5.5	10.5	M5X0.8
IF W 25A	5~50	5	22.5	40	28	12	15	17.5	10	29	M6X1.0 DP12	M10X1.25	5.5	11	M5X0.8

model	ØQ	TL	TW
IF W 20A	9 Dp7	35	63
IF W 25A	9 Dp7	39	74



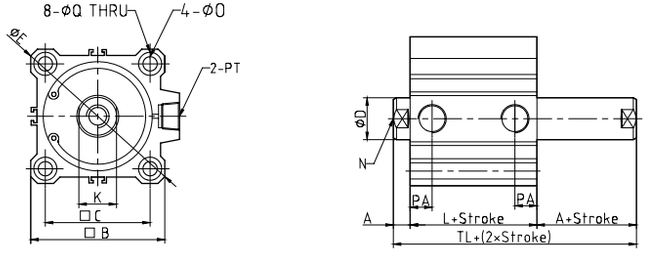
stroke(mm)	TAP	R
20	M6X1.0	10
25	M6X1.0	10

박형실린더 IF 시리즈 THIN TYPE CYLINDER IF SERIES

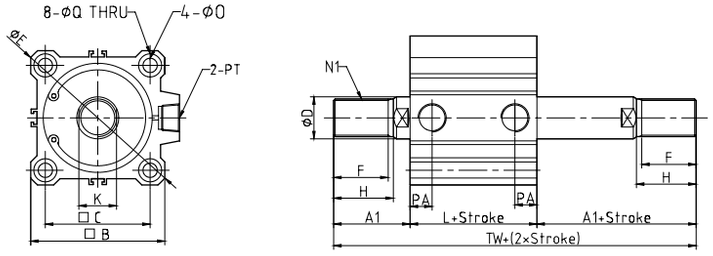
복동형 Double-Acting Type

표준/복동형 : 양로드 Standard/Double acting Type : Double Rod

■ 암나사 Female screw:Φ32~Φ100



■ 숫나사 Male screw:Φ32~Φ100

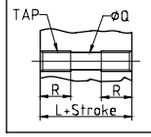


단위 unit : mm

model	stroke(mm)	A	A1	□B	□C	ØD	ØE	F	H	K	L	N	N1	ØO	PT
IF W 32A	5	7	28.5	45	34	16	60	20.5	23.5	14	30.5	M8X1.25 DP13	M14X1.5	5.5	M5X0.8
	10~100														PT1/8
IF W 40A	5~100	7	28.5	52	40	16	69	20.5	23.5	14	40	M8X1.25 DP13	M14X1.5	5.5	PT1/8
IF W 50A	10~100	8	33.5	64	50	20	86	26	28.5	18	40.5	M10X1.5 DP15	M18X1.5	6.8	PT1/4
IF W 63A	10~100	8	33.5	77	60	20	103	26	28.5	18	42	M10X1.5 DP15	M18X1.5	9	PT1/4
IF W 80A	10~100	10	43.5	98	77	25	132	32.5	35.5	22	51	M16X2.0 DP21	M22X1.5	11	PT3/8
IF W 100A	10~100	12	43.5	117	94	30	156	32.5	35.5	27	60.5	M20X2.5 DP27	M26X1.5	11	PT3/8

model	PA	ØQ	TL	TW
IF W 32A	11.5	9 Dp7	44.5	87.5
	10.5			
IF W 40A	12	9 Dp7	54	97
IF W 50A	10.5	11 Dp8	56.5	107.5
IF W 63A	15	14 Dp10.5	58	109
IF W 80A	18	17.5 Dp13.5	71	138
IF W 100A	23	17.5 Dp13.5	84.5	147.5

Both-end tap Type



stroke(mm)	TAP	R
32	M6X1.0	10
40	M6X1.0	10
50	M8X1.25	14
63	M10X1.50	18
80	M12X1.75	22
100	M12X1.75	22

박형실린더 IF 시리즈 THIN TYPE CYLINDER IF SERIES

가변행정 실린더, 전진시 조정형 Variable Stroke Cylinder, Control type of Forward Motion

형식 표시 기호 Notation for Model

IF — model — Type for fitting surface supporting — Inside diameter of tube — Stroke — Body Specification — Notation for stroke control — SJ

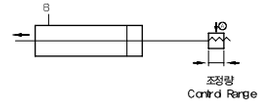
A: 행정조정범위 Range of stroke control 0~25 m/m
B: 행정조정범위 Range of stroke control 0~50 m/m

실린더 전진시 행정을 전 행정에서 0~50mm 까지 가변조정 가능합니다.
헤드측에 행정조정기구를 설치, 출력 즉 행정조정을 행합니다.
In case of forward motion of cylinder, can have a variable control to 0~50 mm from former stroke.
Install stroke controlling equipment to Head side and control stroke and output

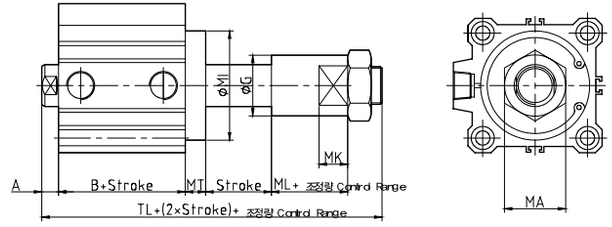
사양 Specification

형식 type	공기압(무급유)형 Air pressure (no oil supply) type
튜브 내경 Inside diameter of tube	Ø20,Ø25,Ø32,Ø40,Ø50,Ø63,Ø80,Ø100
작동방식 working type	복동 double-acting
사용유체 Working Oil	공기 air
행정조정방법 Stroke Control	STOPER 조정 control
행정조정범위 Range of stroke control	0~50mm
부착형식 mounted type	관통구멍형 Hole penetration type
최저사용압력 Min. set pressure	0.5kgf/cm²
쿠션 Cushion	없음 none

표시기호 Indication notation



■ Φ20~Φ100



단위 unit : mm

Inside diameter of tube	A	B	TL	MT	MI	MA	MK	ØG	ML
20	4.5	26	61	8	□36	17	10	20	12.5
25	5	29	64.5	8	□40	17	10	20	12.5
32	7	30.5	72.5	6	Ø38	24	14	27	16
40	7	40	82	6	Ø46	24	14	27	16
50	8	40.5	91.5	8	Ø57	30	16	35	20
63	8	42	95	10	Ø68	30	16	35	20
80	12	51	119	12	Ø90	41	20	48	28
100	12	60.5	134.5	14	Ø100	41	20	48	28

※기타 표기하지않는 치수는 IF 시리즈 일반형과 동일
※The other numbers is same as general IF series.

MEMO

박형실린더 IDF 시리즈 THIN TYPE CYLINDER IDF SERIES

사양, 형식표시방법 Specification, Method for model Indication

표준사양 Standard specification

형식 Model	공기압(무급유형 Air pressure(no oil supply) type
사용유체 Working Oil	공기 Air
보증내압력 Bearing pressure	15.3kg/cm²
최고사용압력 Max.set pressure	10.2kg/cm²
주위온도 및 사용유체온도 Ambient temperature & dsgorting temperature for Wokng Oil	-10℃~+70℃ 동결이 없을것 No freezing
쿠션 Cushion	none
로드끝단나사 Rod-end screw	암나사 female screw, 수나사 male screw
로드끝단나사 공차 Rod-end screw tolerance	KS2급 2nd KS level
행정길이의 허용차 Allowance of stroke length	$0\sim50\ ^{+1.0}_{0}$
부착 fastening	구멍 관통형, 양단탭형 Hole penetration type, Both-end tap type

오토스위치 부착 가능 최소 행정
Number to mount auto switch Min. stroke

Auto switch	Min.stroke
1EA	5mm
2EA	10mm

형식표시방법 Magnet built in type

IDF W 40 A S20 N 72 AS1

- IDF: 마그네트 내장형 오토스위치 부착형 Method for Model indication Magnet built in type
- W: 형식 무기호:편로드형 W: 양로드형 None: Single rod type Double rod type
- 40: 튜브내경 inside diameter of tube
  - 12-12mm
  - 16-16mm
  - 20-20mm
  - 25-25mm
  - 32-32mm
  - 40-40mm
  - 50-50mm
  - 63-63mm
  - 80-80mm
  - 100-100mm
- A: 취부형식 A: 양단탭형(이스텍 기본사양) B: 구멍관통형 fitting Surface type B:Hole penetration type A:Both-end tap type
- S20: 실린더행정 표참조 Cylinder Stroke Refer to table of standard stroke
- N: 몸체사양 무기호: 표준형 N:숫나사 Body specification None : standard N:male screw
- 72: 오토스위치 종류 Auto switch

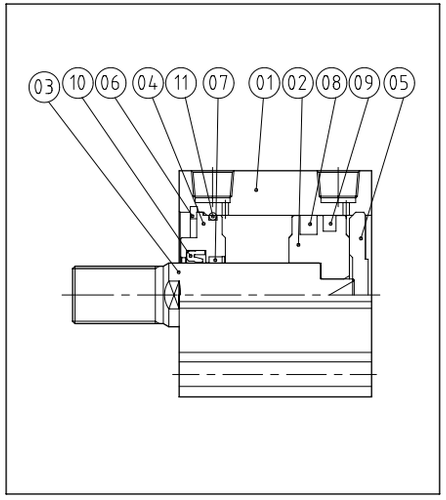
D-A72	AC 220V 용 for 220V
D-A73	AC 110V,DC24V 겸용 24V for Combineduse
D-A93K	AC 110V,DC24V 겸용 24V for Combineduse
D-50V	AC 220V, AC 110V,DC24V

- AS1: 오토스위치 부착 수량 Auto switch mounted type AS1 : 1EA AS2 : 2EA AS3 : 3EA

박형실린더 IDF 시리즈 THIN TYPE CYLINDER IDF SERIES

내부 구조도 Inside structure drawing

구조도 Drawing



부품 리스트 Part List

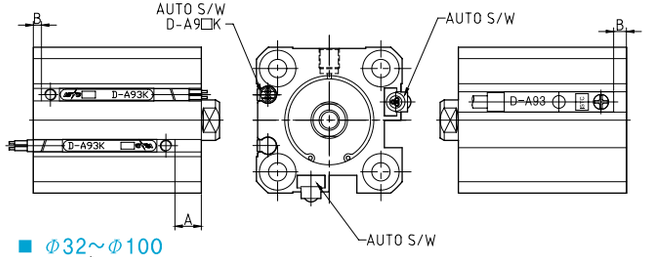
Num	name	materials	remarks
1	TUBE	A6063	
2	PISTON	A2024	
3	ROD	S45C	
4	ROD COVER	A2024	
5	HEAD COVER	A6063	
6	SNAP-RING	SWP	
7	OILLESS	CU+OIL	Ø50~Ø100

페킹 리스트 Packing List

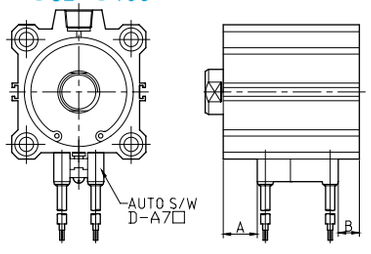
Num	name	materials	Inside diameter of tube(mm)									
			Ø12	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
8	MAGNET	NBR	Ø12	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
9	PISTON PACKING	NBR	OPA 12	OPA 16	OPA 20	OPA 25	OPA 32	OPA 40	OPA 50	OPA 63	OPA 80	OPA 100
10	ROD PACKING	NBR	DYR 6K	DYR 8K	DYR 10K	DYR 12	DYR 16	DRP 16	DRP 20	DRP 20	DRP 25	DRP 30
11	TUBE O-RING	NBR	S-10	S-14	S-18	S-22	S-29	S-35	S-45	S-60	S-75	S-95

오트 스위치의 설정위치 Setting position of Auto Switch

■ Φ12~Φ25



■ Φ32~Φ100



■ 설정위치
Setting position

Inside diameter of tube(mm)	A	B
12	7.5	3
16	7.5	3
20	8	6.5
25	8	6.5
32	9.5	7
40	13.5	9.5
50	13.5	12.5
63	14	15.5
80	17	20
100	21.5	25

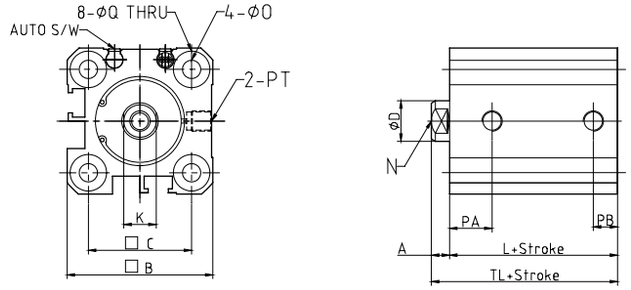
5st(1개 부착) 및 10st(2개 부착)의 경우 동작범위의 관계로 스위치가 OFF하지 않거나 2개의 스위치가 동시에 ON하는 경우가 있으므로 설정할 때는 상기표의 값보다 1-2mm 정도 바깥쪽으로 설치해 주십시오.
In case of mounting 5st(mounting 1) or 10st(mounting 2), there are two case that switch isn't turned Off d ue to working range or two switches turn On. So should set the value 1-2mm outside apart.
기입하지 않는 치수는 압출형과 동일
The other numbers are the same as press outputs.

박형실린더 IDF 시리즈 THIN TYPE CYLINDER IDF SERIES

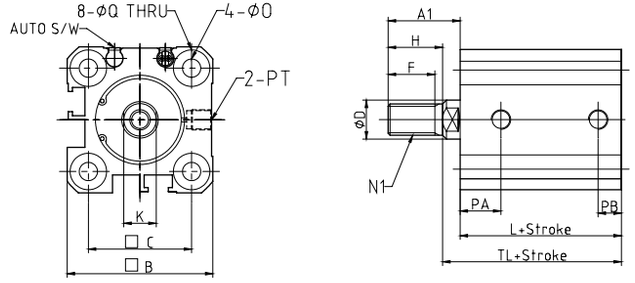
복동형 Double-Acting Type

표준/복동형:편로드 Standard/Double : Acting Type

■ 암나사 Female screw:Φ12~Φ25



■ 숫나사 Male screw:Φ12~Φ25

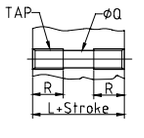


단위 unit :mm

model	stroke(mm)	A	A1	□B	□C	ØD	F	H	K	L	N	N1	ØO	PA	PT
IDF 12A	5~30	3.5	14	25	15.3	6	9	10.5	5	28.5	M3X0.5 DP6	M5X0.8	3.5	10	M5X0.8
IDF 16A	5~30	3.5	15.5	29	20	8	10	12	6	30.5	M4X0.7 DP8	M6X1.0	3.5	10	M5X0.8
IDF 20A	5~50	4.5	18.5	36	25.5	10	12	14	8	31.5	M5X0.8 DP8	M8X1.25	6	10.5	M5X0.8
IDF 25A	5~50	5	22.5	40	28	12	15	17.5	10	32.5	M6X1.0 DP12	M10X1.25	5.5	11	M5X0.8

model	PB	ØQ	TL
IDF 12A	5.5	6.5 Dp3.5	31.5
IDF 16A	5.5	6.5 Dp3.5	34
IDF 20A	5.5	9 Dp7	36
IDF 25A	5.5	9 Dp7	37.5

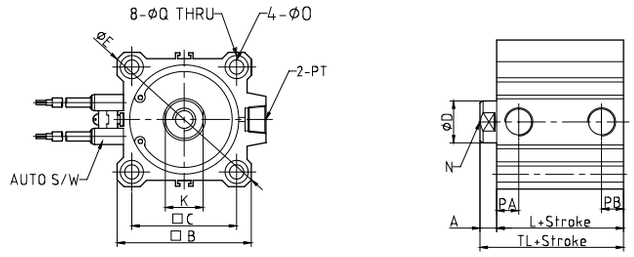
Both-end tap Type



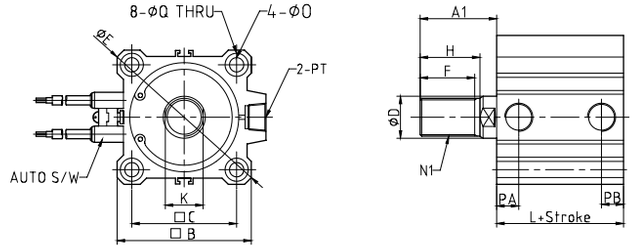
stroke(mm)	TAP	R
12	M4X0.7	7
16	M4X0.7	7
20	M6X1.0	10
25	M6X1.0	10

표준/복동형:편로드 Standard/Double-acting Type: Single Rod

■ 암나사 Female screw:Φ32~Φ100



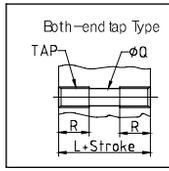
■ 숫나사 Male screw:Φ32~Φ100



단위 unit :mm

model	stroke(mm)	A	A1	□B	□C	ØD	ØE	F	H	K	L	N	N1	ØO	PA	PB
IDF 32A	5~100	7	28.5	45	34	16	60	20.5	23.5	14	33	M8X1.25 DP13	M14X1.5	5.5	10.5	7.5
IDF 40A	5~100	7	28.5	52	40	16	69	20.5	23.5	14	39.5	M8X1.25 DP13	M14X1.5	5.5	12	8.5
IDF 50A	10~100	8	33.5	64	50	20	86	26	28.5	18	40.5	M10X1.5 DP15	M18X1.5	6.8	10.5	10.5
IDF 63A	10~100	8	33.5	77	60	20	103	26	28.5	18	46	M10X1.5 DP15	M18X1.5	9	15	11
IDF 80A	10~100	10	43.5	98	77	25	132	32.5	35.5	22	53.5	M16X2.0 DP21	M22X1.5	11	18	12.5
IDF 100A	10~100	12	43.5	117	94	30	156	32.5	35.5	27	63	M20X2.5 DP27	M26X1.5	11	23	13

model	PT	ØQ	TL
IDF 32A	PT 1/8	9 Dp7	40
IDF 40A	PT 1/8	9 Dp7	46.5
IDF 50A	PT 1/4	11 Dp8	48.5
IDF 63A	PT 1/4	14 Dp10.5	54
IDF 80A	PT 3/8	17.5 Dp13.5	63.5
IDF 100A	PT 3/8	17.5 Dp13.5	75

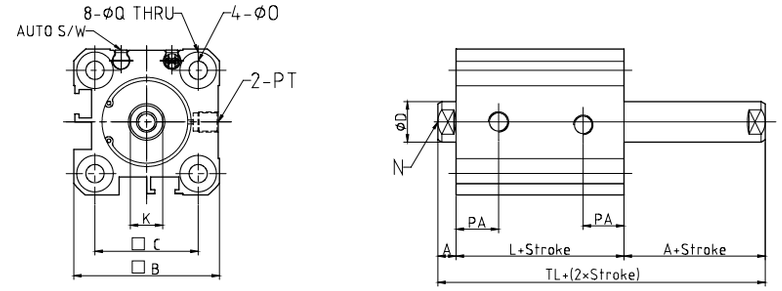


stroke(mm)	TAP	R
32	M6X1.0	10
40	M6X1.0	10
50	M8X1.25	14
63	M10X1.5	18
80	M12X1.75	22
100	M12X1.75	22

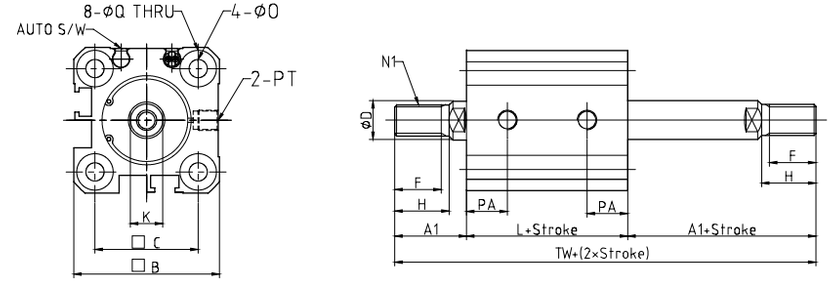
박형실린더 IDF 시리즈 THIN TYPE CYLINDER IDF SERIES
복동형 Double-Acting Type

표준/복동형:양로드 Standard/Double acting Type : Double Rod

■ 암나사 Female screw:Φ20~Φ25



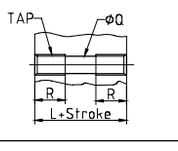
■ 숫나사 Male screw:Φ20~Φ25



단위 unit :mm

model	stroke(mm)	A	A1	□B	□C	ØD	F	H	K	L	N	N1	ØO	PA	PT
IDF W 20A	5~50	4.5	18.5	36	25.5	10	12	14	8	38	M5X0.8 DP7	M8X1.25	5.5	10.5	M5X0.8
IDF W 25A	5~50	5	22.5	40	28	12	15	17.5	10	39	M6X1.0 DP12	M10X1.25	5.5	11	M5X0.8

model	ØQ	TL	TW
IDF W 20A	9 Dp7	47	75
IDF W 25A	9 Dp7	49	84



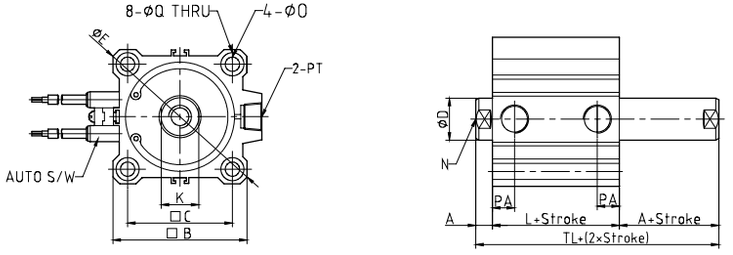
stroke(mm)	TAP	R
20	M6X1.0	10
25	M6X1.0	10

박형실린더 IDF 시리즈 THIN TYPE CYLINDER IDF SERIES

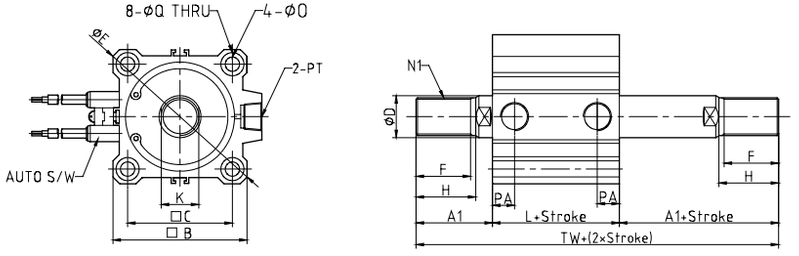
복동형 Double-Acting Type

표준/복동형:양로드 Standard/Double acting Type : Double Rod

■ 암나사 Female screw:Φ32~Φ100



■ 숫나사 Male screw:Φ32~Φ100

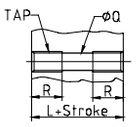


단위unit :mm

model	strcke(mm)	A	A1	□B	□C	ØD	ØE	F	H	K	L	N	N1	ØO	PT
IDF 32A	5~100	7	28.5	45	34	16	60	20.5	23.5	14	40.5	M8X1.25 DP13	M14X1.5	5.5	PT 1/8
IDF 40A	5~100	7	28.5	52	40	16	69	20.5	23.5	14	50	M8X1.25 DP13	M14X1.5	5.5	PT 1/8
IDF 50A	10~100	8	33.5	64	50	20	86	26	28.5	18	50.5	M10X1.5 DP15	M18X1.5	6.8	PT 1/4
IDF 63A	10~100	8	33.5	77	60	20	103	26	28.5	18	52	M10X1.5 DP15	M18X1.5	9	PT 1/4
IDF 80A	10~100	10	43.5	98	77	25	132	32.5	35.5	22	61	M16X2.0 DP21	M22X1.5	11	PT 3/8
IDF 100A	10~100	12	43.5	117	94	30	156	32.5	35.5	27	70.5	M20X2.5 DP27	M26X1.5	11	PT 3/8

model	PA	ØQ	TL	TW
IDF 32A	10.5	9 Dp7	54.5	97.5
IDF 40A	12	9 Dp7	64	107
IDF 50A	10.5	11 Dp8	66.5	117.5
IDF 63A	15	14 Dp10.5	68	119
IDF 80A	18	17.5 Dp13.5	81	148
IDF 100A	23	17.5 Dp13.5	94.5	157.5

Both-end tap Type



stroke(mm)	TAP	R
32	M6X1.0	10
40	M6X1.0	10
50	M8X1.25	14
63	M10X1.50	18
80	M12X1.75	22
100	M12X1.75	22

MEMO

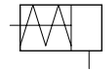
미니실린더 ISP 시리즈
MINI CYLINDER ISP SERIES

미니실린더 ISP 시리즈 MINI CYLINDER ISP SERIES

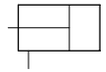
일반형:Ø6, Ø10, Ø16 STANDARD TYPE: Ø 6, Ø10, Ø16

표시기호 Notation

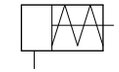
스프링복귀형 Spring Return Type



복동형 Double-acting Type

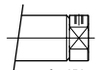


스프링 전진형 Spring forward-motion Type



헤드카바 포트 위치 Head cover port position

축방향 shaft direction



90° 방향 90° direction

기본형의 경우에는 헤드카바 포트 위치가 축에 대해 90° 방향과 축방향의 2종류가 있다
단 Ø6은 축방향에만 있음.
In case of standard type, there are two kinds of Head cover port positions which are 90° direction and shaft direction to shaft. But, Φ6 is only in shaft direction.

형식표시방법 Indication of Model

ISP — ①소형공기압 실린더 Small air pressure cylinder

LB — ②부착형식 Mounting type
B : 기본형 Basic type
F : 플렌지형 Flange Type
CB : 2산 클레비스형 Double Thread CLEVIS Type
LB : 푸트형 Foot type

16 — ③튜브내경 Inside-diameter of tube
6-6mm
10-10mm
16-16mm

S30 — ④실린더 행정 Cylinder Stroke 표준행정 참조 Refer to Standard Stroke

R — ⑤헤드카바포트위치 Head cover port position

Notation \ I-D	Ø6	Ø10,Ø16
무기호 None	—	축방향에90° 90° direction
R	축방 향 shaft direction	축방 향 shaft direction

S — ⑥추기호 Additional Notation
단동 single-acting
S:전진형 forward motion type
T:후진형 backward motion type

※Magnet Rubber쿠션기본내장 cushion built-in type

동계불가실린더 Cylinder for not accepting Copper-related

ISP — 부착형식 mounting type — 튜브 내경 I-D(mm) X 행정 Stroke — 헤드카바포트위치 Head cover port position — 추기호 Additional Notation — BX

동계 이온이나 불소 수지등에 의해 칼라 브라운관에 끼치는 영향을 제거하기 위해 동계 재질은 무전해 니켈도금처리 하여 동이온의 발생을 방지하는 실린더
This is a cylinder to remove the effect on color braun tube by copper-rdated pulsation and fluoric resin. So copper-related materials are plated with nickd. Also it protects the Copper Ion occurrence.

사양 Specification

작동방식 Working method		Double acting	Single-acting\ Spring Return Type	Single-acting Springforward-motion Type
사용유체 Working Oil		Air		
보증내압력 Bearing pressure		10.5kgf/㎠		
최고사용압력 Max.set pressure		7.0kgf/㎠		
최저사용압력 Min. set pressure	Ø6	1.2kgf/㎠	2.0kgf/㎠	2.5kgf/㎠
	Ø10,Ø16	0.6kgf/㎠	1.5kgf/㎠	
주위온도 및 사용유체온도 Ambient temperature &Working Air		-10°C~+70°C		
쿠션 Cushion		RUBBER Cushion		
급유 Oil supply		불필요(무급유) None(Oiless)		
나사공차 Screw tolerance		KS2급 2nd KS level		
행정길이허용치 Allowance of stroke length		$^{+1.0}_{0}$		
사용피스톤속도 Speed of working piston		50~750mm/s		

표준행정도 Standard stroke table

단위 unit : mm

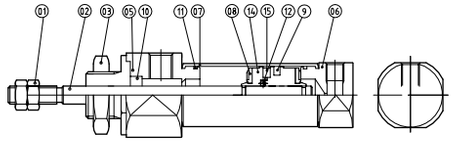
Working method \ I-D(mm)	복동 Double acting	단동 Single-acting
Ø6	15,30,45,60	
Ø10	15,30,45,60 75,100125,150	15,30,45,60
Ø16	15,30,45,60 75,100125,150 175,200	15,30,45,60

미니실린더 ISP 시리즈 MINI CYLINDER ISP SERIES

내부구조도, 일반형(B) Inside Structure Drawings, General Type(B)

복동형 Double-acting type

■ ISPΦ6,Φ10,Φ16

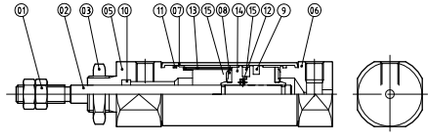


부품리스트 Parts List

No Num	name	materials	remarks
1	ROD NUT	S10C	
2	ROD	SUS304	
3	LOCK NUT	BC6	
4	PISTON	BC6	
5	ROD COVER	A2011	
6	HEAD COVER	A2011	
7	TUBE TUBE	SUS	
8	DAMPER	URETHANE	
13	SPRING	SWP	
14	MAGNET	STEEL	
15	SPRING GUIDE	BC6	

단동형 Single-acting type

■ ISP 스프링 복귀형 Spring Return Type

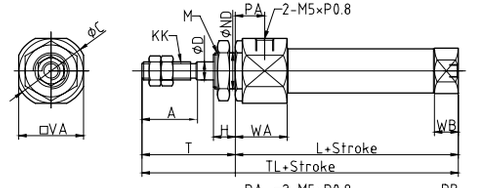


페킹리스트 Packing List

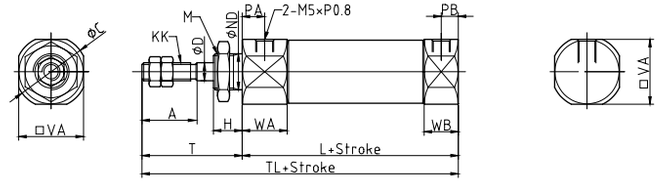
No Num	name	materials	Inside diameter of tube(mm)		
			Ø6	Ø10	Ø16
9	PISTON PACKING	NBR	DYP6	PSD10	PSD16
10	ROD PACKING	NBR	DYR 3K	DYR 4K	DYR 5K
11	TUBE O-RING	NBR	Ø4X1	Ø8X1	Ø14X1
12	ROD O-RING	NBR		Ø2.8X0.7	S5

복동형/기본(B) Double-acting type/Basic Type(B)

■ ISP 6



■ ISP 10, 16



단위 unit : mm

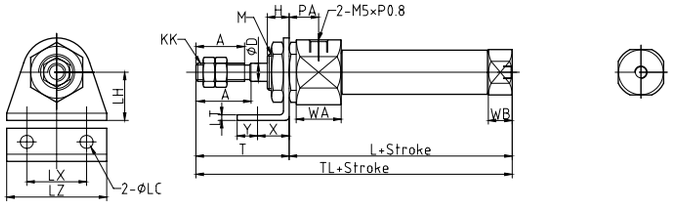
HD(mm)	A	ØC	ØD	H	KK	L	M	ØND h8	PA	PB	T	TL	□VA	WA	WB
6	15	14	3	8	M3X0.5	49	M6XP1.0	6 -0.018	14.5	-	28	77	12	16	7
10	15	14	4	8	M4X0.7	46	M8XP1.0	8 -0.022	8	5	28	74	12	12.5	9.5
16	15	20	5	8	M5X0.8	47	M10XP1.0	10 -0.022	8	5	28	75	18	12.5	9.5

미니실린더 ISP 시리즈 MINI CYLINDER ISP SERIES

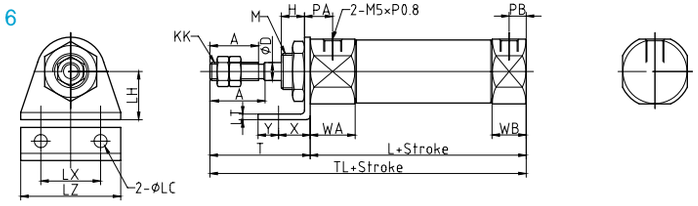
일반형(LB,CB) Inside Structure Drawings, General Type(LB, CB)

복동형 /푸트(LB) Double-acting type /Foot type(LB)

■ ISP 6



■ ISP 10, 16



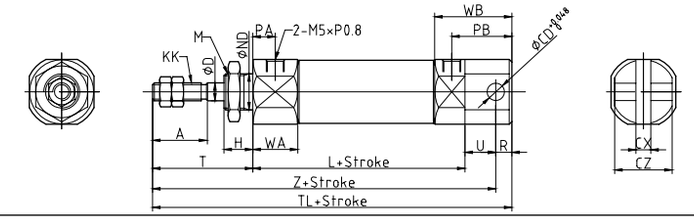
단위 unit : mm

HD(mm)	A	ØD	HA	H	KK	L	ØLC	LH	LT	LX	LZ	M	PA	PB	T	TL	WA	WB
6	15	3	4	8	M3XP0.5	46	4.5	9	1.6	24	32	M6XP1.0	14.5	-	28	77	16	7
10	15	4	-	8	M4XP0.7	46	4.5	9	1.6	24	32	M8XP1.0	8	5	28	74	12.5	9.5
16	15	5	-	8	M5XP0.8	47	5.5	14	2.3	33	42	M10XP1.0	8	5	28	75	12.5	9.5

HD(mm)	X	Y
6	7	5
10	7	5
16	9	5

복동형 /2산 클레비스(CB) Double-acting Type/ Double Thread CLEVIS Type(CB)

■ ISP 10, 16



단위 unit : mm

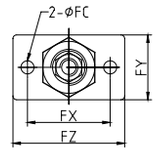
HD(mm)	A	ØCD	CX	CZ	ØD	H	KK	L	M	ØND h8	PA	PB	R	T	TL	U	WA	WB	Z
10	15	3.3	3.2	12	4	8	M4XP0.7	46	M8XP1.0	8 -0.022	8	17	5	28	86	8	12.5	22.5	81
16	15	5	6.5	18	5	8	M5XP0.8	47	M10XP1.0	10 -0.022	8	23	5	28	91	10	12.5	27.5	83

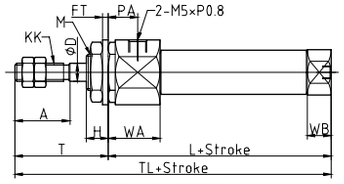
미니실린더 ISP 시리즈 MINI CYLINDER ISP SERIES

일반형(F, 단동/T) General Type(F, Single-acting type/T)

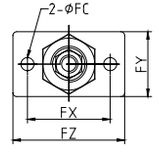
복동형/로드측 후렌지(F) Double-acting type/Rod-side Flange(F)

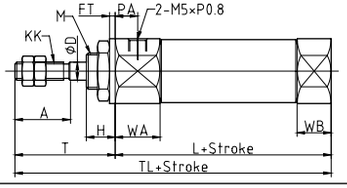
■ ISP 6





■ ISP 10, 16





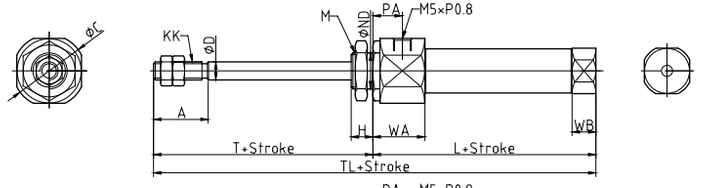
단위 unit : mm

I-D(mm)	A	ØD	ØFC	FT	FX	FY	FZ	H	KK	L	M	PA	T	TL	WA	WB
6	15	3	4.5	1.6	24	14	32	8	M3XP0.5	49	M6XP1.0	14.5	28	77	16	7
10	15	4	4.5	1.6	24	14	32	8	M4XP0.7	46	M8XP1.0	8	28	74	12.5	9.5
16	15	5	5.5	2.3	33	20	42	8	M5XP0.8	47	M10XP1.0	8	28	75	12.5	9.5

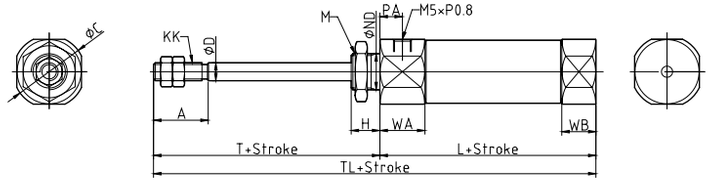
단동(후진 T형/기본(B) Single(Forward Motion T)Type/ Basic Type(B)

ISP — B — 튜브내경 I-D(mm) X 행정 Stroke — T

■ ISP 6



■ ISP 10, 16



단위 unit : mm

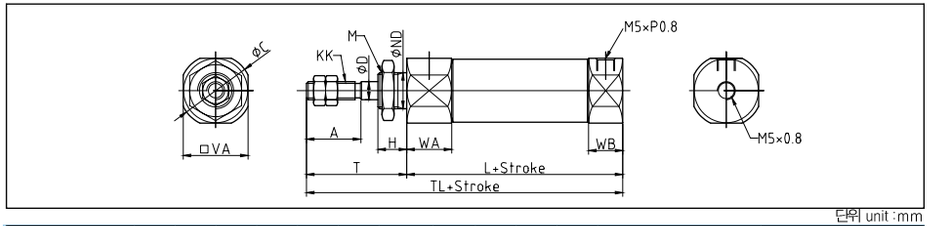
I-D(mm)	A	ØC	ØD	H	KK	M	ØND^{H8}	PA	T	WA	WB	※L 5 ~15st	※L 16 ~30st	※L 31 ~45st	※L 46 ~60st	※TL 5 ~15st	※TL 16 ~30st	※TL 31 ~45st	※TL 46 ~60st
6	15	14	3	8	M3XP0.5	M6XP1.0	6 $^{+0.018}_{0}$	14.5	28	19	7	55.5	64.5	68.5	82.5	83.5	92.5	96.5	110.5
10	15	14	4	8	M4XP0.7	M8XP1.0	8 $^{+0.022}_{0}$	8	28	12.5	9.5	53.5	61	73	85	81.5	89	101	105
16	15	20	5	8	M5XP0.8	M10XP1.0	10 $^{+0.022}_{0}$	8	28	12.5	9.5	53	61.5	73.5	85.5	81	89.5	101.5	113.5

미니실린더 ISP 시리즈 MINI CYLINDER ISP SERIES

일반형(단동/S, 부속금구) General Type(Single-acting type/S, Parts)

단동(전진 S형/기본(B) Single(Forward Motion T)Type/ Basic Type(B)

ISP — B — 튜브내경 I-D(mm) X 행정 Stroke — S

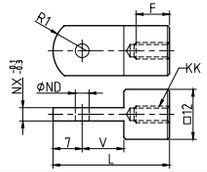


단위 unit : mm

I-D(mm)	A	ØC	ØD	H	KK	M	ØND^{H8}	T	VA	WA	WB	※L 5 ~15st	※L 16 ~30st	※L 31 ~45st	※L 46 ~60st	※TL 5 ~15st	※TL 16 ~30st	※TL 31 ~45st	※TL 46 ~60st
6	15	14	3	8	M3X P0.5	M6X P1.0	6 $^{+0.018}_{0}$	28	8	3	7	55.5	64.5	68.5	82.5	83.5	92.5	96.5	110.5
10	15	14	4	8	M4X P0.7	M8X P1.0	8 $^{+0.022}_{0}$	28	12	5.5	9.5	53.5	61	73	85	81.5	89	101	113
16	15	20	5	8	M5X P0.8	M10X P1.0	10 $^{+0.022}_{0}$	28	18	5.5	9.5	53	61.5	73.5	85.5	81	89.5	101.5	113.5

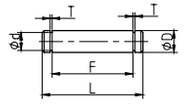
부속금구 Parts

■ 1산 너클조인트(I) Single Thread Knuckle Joint



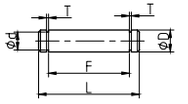
I-D(mm)	F	KK	L	ØND^{H10}	NX	R1	V
10	8	M4XP0.7	21	3.3 $^{+0.048}_{0}$	3.2	8	10
16	8	M5XP0.8	21	5 $^{+0.048}_{0}$	6.5	12	10

■ 클레비스용 핀 CLEVIS Pin



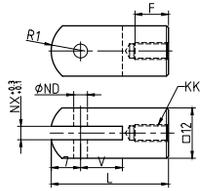
I-D(mm)	ØD^{d9}	Ød	L	F	T	사용하는 멈춤링
10	3.3 $^{-0.020}_{-0.060}$	3	15.2	12.2	0.3	C형3.2
16	5 $^{-0.030}_{-0.090}$	4.8	22.7	18.3	0.7	C형5

■ 너클용 핀 for Knuckle



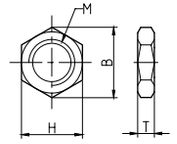
I-D(mm)	ØD^{d9}	Ød	L	F	T	사용하는 멈춤링
10	3.3 $^{-0.020}_{-0.060}$	3	16.2	12.2	0.3	C형3.2
16	5 $^{-0.030}_{-0.090}$	4.8	16.6	12.2	0.7	C형5

■ 2산 너클조인트(Y) Double Thread Knuckle Joint



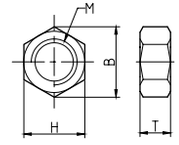
I-D(mm)	F	KK	L	ØND^{H10}	NX	R1	V
10	8	M4XP0.7	21	3.3 $^{+0.048}_{0}$	3.2	8	10
16	11	M5XP0.8	21	5 $^{+0.048}_{0}$	6.5	12	10

■ 취부용 너트 Mounting nut



I-D(mm)	B	H	M	T
6	9.2	8	M6XP1.0	4
10	12.7	11	M8XP1.0	4
16	16.2	14	M10XP1.0	4

■ 로드너트 Rod nut



I-D(mm)	B	H	M	T
6	6.4	5.5	M3XP0.5	2.4
10	8.1	7	M4XP0.7	3.2
16	9.2	8	M5XP0.8	4

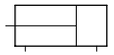
MEMO

소형실린더 ISS$_2$ 시리즈
SMALL SIZE CYLINDER ISS$_2$ SERIES

소형실린더 ISS_2 시리즈 SMALL SIZE CYLINDER ISS_2 SERIES

일반형:Ø20, Ø25, Ø30, Ø40 General Type : Ø20, Ø25, Ø30, Ø40

표시기호 Notation



Double-acting
Single-rod

형식표시방법 Method for model Indication

ISS_2 — L — LB — 30 — S100 — A — J — Y

①소형 공기압 실린더
튜브재질:알루미늄 합금
Small-size Air pressure Cylinder
Tube Material s : Alloy of Aluminum

②형식 Type
무기호:무급유형
None : No Oil Supply Type
L: 저유압형
Low-hydraulic type

③취부지지형식
B:기본형
LB:푸트형
FA:로드측 플랜지형
FB:헤드측 플랜지형
CA:1산 클레비스형
CB:2산 클레비스형
TR:로드측 트러니온형
TH:헤드측 트러니온형
Supporting type of fitting surface
B:Basic Type
LB:Foot Type
FA:Rod-side Flange Type
FB:Head-side Flange Type
CA:Single Thread CLEVIS Type
CB:Double Thread CLEVIS Type
TR: Rod-side Trunnion Type
TH:Head-side Trunnion Type

④튜브내경
Inside-diameter of tube
20-20mm
25-25mm
30-30mm
40-40mm

⑤실린더행정
Cylinder Stroke

표준행정(mm) Standard Stroke
25,50,75,100,150, 200,250,300

무기호:러버쿠션None :
Rubber Cushion
A:에어쿠션 Air Cushion

⑥실린더추가기호
Cylinder Additional Notation

기호 Notation	벨로우즈재질 Bellows Materials	최고주위온도 Max. Ambient Tempeature
J	나이론타폴린 Nylon Tarpaulin	+60°C
K	네오프렌크로스 Neoprene Cross	+110°C

벨로우즈의 최고주위온도임
Max. ambien t te mera ture of Bellows

⑦선단공구
I : 1산 너클조인트
Y : 2산 너클조인트
무기호 : 기본(선단너트 포함)
Lot-end tools
I: Single Thread K nuckle Joint
Y: D ouble Thread Knuckle Joint
None : Basic(induding lot-end nut)

소형실린더 ISS_2 시리즈 SMALL SIZE CYLINDER ISS_2 SERIES

형식 및 사양 기타 Type and Other Specifications

형식 Type

표시기호 Notation	형식 Type	작동방식 Working Met hod	피스톤패킹 Piston packing	비고 Remarks
ISS_2N	무급유형 No Oil Supply	복동형 Double-eding Type	특수패킹 Special Packing	자석기본내장형 Basic Built-in of Magnet Type
ISS_2L	저유압형 Low-Hydraulic Type	복동형 Double-ading Type	특수패킹 Special Packing	

사양 Specification

형식 Type	무급유형 No Oil Supply	저유압형 Low-Hydraulic Type
사용유체 Working Oil	공기 Air	유압작동유 Hydraulic Working Oil
보증내압력 Bearing pressure	15kgf/㎠	
최고사용압력 Max. set pressure	9.9kgf/㎠	
최저사용압력 Min. set pressure	0.5kgf/㎠	1.0kgf/㎠
주위온도 및 사용유체온도 Ambient temperature & disjointing tempeature for Waking Oil	-10~70°C	
사용속도 Working Speed	50~700mm/sec	0.5~300mm/sec
쿠션 Cushion	RUBBER Cushion	
나사 공차 Screw Tolerance	KS2급 2nd KS Level	
행정길이의 허용차 Alowance of stroke length	~250 $^{+1.0}_{0}$	251~500 $^{+1.4}_{0}$

부착형식 및 부속품 Mounted Type and Parts

부착형식 Mounted Type / 부속품 Parts	기본부착품 Basic Parts			주문품 Special Option		
	부착용너트 Mounted-nut	로드선단너트 Rod Lot-end Nut	클레비스용핀 Pin for CLEVIS	1산너클조인트 Single Knuckle Joint	2산너클조인트 Double Knuckle Joint	벨로우즈 Bellows
(B)기본형 Basic Type	● 1개(EA)	●	-	●	●	●
(LB)푸트형 Foot Type	● 2개(EA)	●	-	●	●	●
(FA)로드측 플랜지형 Rod-side Flange Type	● 1개(EA)	●	-	●	●	●
(FB)헤드측 플랜지형 Head-side Flange Type	● 1개(EA)	●	-	●	●	●
(CD)클레비스일체형 CLEVIS Single-body Type	-	●	-	●	●	●
(CA)1산클레비스형 Single Thread CLEVIS Type	-	●	-	●	●	●
(CB)2산클레비스형 Double Thread CLEVIS Type	-	●	●	●	●	●
(TH)헤드측 트러니온형 Head-side Trunnion Type	● 1개(EA)	●	-	●	●	●
(TR)로드측 트러니온형 Rod-side Trunnion Type	● 1개(EA)	●	-	●	●	●
(BC)(보스컷)기본형 (Both cut) Basic Type	● 1개(EA)	●	-	●	●	●
(FC)(보스컷)플랜지형 (Both cut) Flendge Type	● 1개(EA)	●	-	●	●	●

*부착용너트, 클레비스일체형, 1산클레비스형, 2산클레비스형에는 없음
*Nonein mounting nut, CLEVIS one body type, single thread CLEVIS type and double thread CLEVIS type

표준행정표 Standard Stroke Table

I-D(mm)	표준행정 Standard Stroke	최대행정범위 Max. Stroke Range
ø20	25,50,75,100, 125,150,200,250,300	500
ø25		
ø30		
ø40		

*500행정 이상의 경우 별도 문의 바람
*Ask us about over 500 stroke.

단위 unit : mm

선단 금구 부품 품번 Lot-end Parts No.

I-D(mm) / 선단금구 Lot-end	20	25,30	40
1산너클조인트 Single Knuckle Joint	ISS_2-20-I	ISS_2-25/30-I	ISS_2-40-I
2산너클조인트 Double Knuckle Joint	ISS_2-20-Y	ISS_2-25/30-Y	ISS_2-40-Y

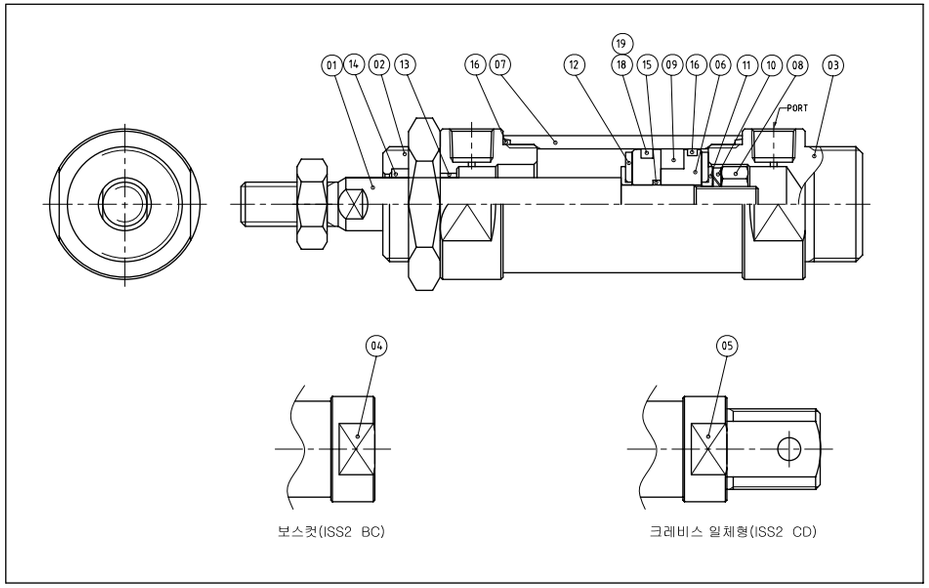
*SS_2,40용 선단금구는 중형 시리즈 ISM과 동일함
*Lot-end for ISS_2,40 is same with Mid Series ISM.

지지 금구 부품 품번 Supporting Parts No.

선단금구 Lot-end / I-D(mm)	20	25,30	40
푸트형 Foot Type	ISS_2-LB20	ISS_2-LB25/30	ISS_2-LB40
플랜지형 Flange Type	ISS_2-F 20	ISS_2-F 25/30	ISS_2-F 40
1산클레비스형 Single Thread CLEVIS Type	ISS_2-CA20	ISS_2-CA25/30	ISS_2-CA40
2산클레비스형 (핀포함) Double Thread CLEVIS Type(including Pin)	ISS_2-CB20	ISS_2-CB25/30	ISS_2-CB40
트라이온형 Trunnion Type	ISS_2-T 20	ISS_2-T 25/30	ISS_2-T 40

*푸트금구 주문시 1대분의경우 2개를 주문할 것
*Should order two Foot for one machine

내부 구조도 Inside Structure Drawings



보스컷(ISS2 BC) 크레비스 일체형(ISS2 CD)

부품리스트 Parts List

No.	Name	Materials	Remarks
1	ROD	S45C	
2	ROD COVER	A2024	
3	HEAD COVER	A2024	
4	HEAD COVER	A2024	
5	HEAD COVER	A2024	
6	PISTON	A2024	
7	TUBE	AN6N01	
8	PISTON LOCK NUT	S10C	
9	MAGNET	STEEL	
10	SPRING WASHER	SCM4	
11	SLEEVE	BSBM	
12	DEMPER	URETHANE	
13	DU-BUSH	SPCB	

No.	Name	Materials	Inside-diameter of Tube			
14	ROD PACKING	NBR	DRP10	DRP12	DRP12	DRP16
15	ROD O-RING	NBR	S6	S8	S8	S10
16	TUBE O-RING	NBR	S20	S22.4	S28	S40
17	WEARING	POM	20X17X2	25X22X2	30X27X2	40X37X3

무급유형 패킹 No Oil Supply type Packing

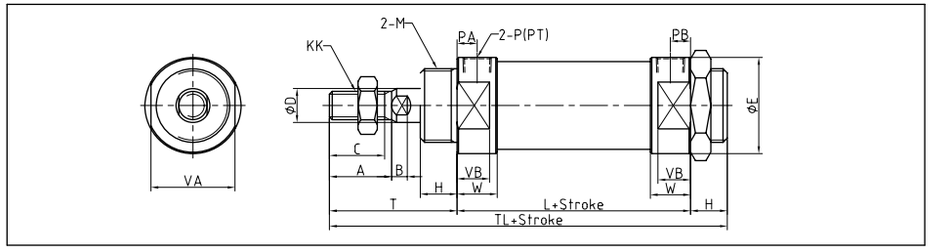
WEARING	POM	20X17X2	25X22X2	30X27X2	40X37X3
PISTON PACKING	NBR	OPA 20	OPA 25	OPA 30	OPA 40

저유압 패킹 Low Hydraulic Packing

WEARING	POM	20X17X2	25X22X2	30X27X2	40X37X3
PISTON PACKING	NBR	HSD 20	HSD 25	HSD 30	HSD 40

기본형(B) Basic Type(B)

■ 무급유형 Oiless type ISS$_2$-B ·저유압형 Low hydraulic type ISS$_2$ L-B



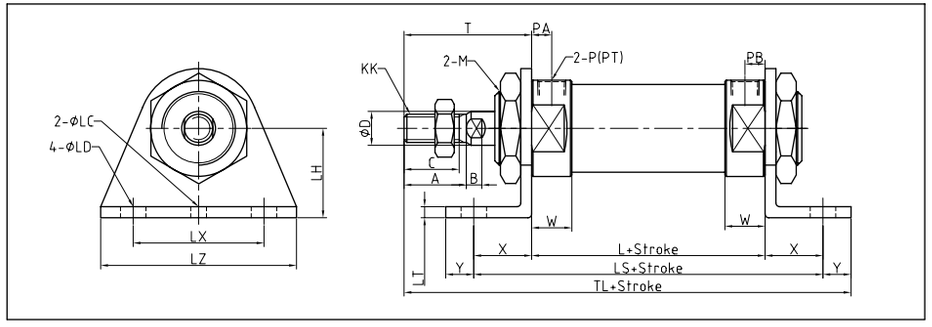
H-D(mm)	Stroke Range														
20	~300	15.5	18	10	13	8	8	28	5.0	M8X1.25	14.2	24	12	M20X1.5	1/8	62
25	~300	19.5	22	12	13	8	8	34	5.5	M10X1.25	14.2	30	12	M26X1.5	1/8	62
30	~300	19.5	22	12	13	8	8	38	5.5	M10X1.25	14.8	32	12	M26X1.5	1/8	64
40	~300	21.0	24	16	16	11	11	50	7.5	M14X1.50	21	46	18	M32X2.0	1/4	88

단위 unit : mm

H-D(mm)		
20	41	116
25	45	120
30	45	122
40	50	154

푸트형(LB) Foot Type(LB)

■ 무급유형 Oiless type ISS$_2$-LB ·저유압형 Low hydraulic type ISS$_2$ L-LB



H-D(mm)	Stroke Range																
20	~300	15.5	18	10	13	8	8	5.0	M8X1.25	14.2	M20X1.5	1/8	62	55	41	131
25	~300	19.5	22	12	13	8	8	5.5	M10X1.25	14.2	M26X1.5	1/8	62	55	45	135
30	~300	19.5	22	12	13	8	8	5.5	M10X1.25	14.8	M26X1.5	1/8	64	55	45	137
40	~300	21.0	24	16	16	11	11	7.5	M14X1.50	21	M32X2.0	1/4	88	75	50	173

단위 unit : mm

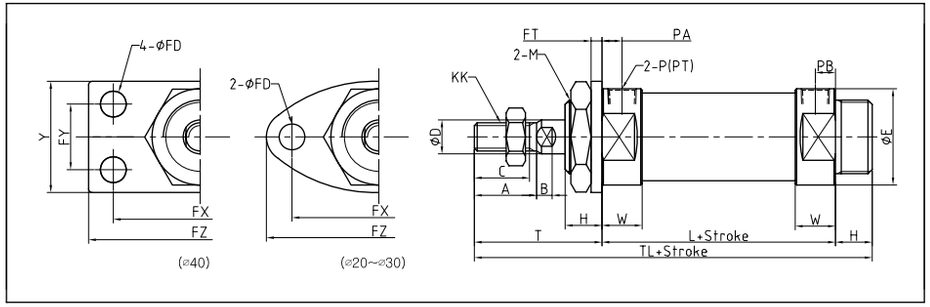
Effective Screw Length								
20	20	8	4	6.8	25	102	3	40
25	20	8	4	6.8	28	102	3	40
30	20	8	4	6.8	28	104	3	40
40	23	12	4	7.0	30	134	3	55

소형실린더 ISS$_2$ 시리즈 SMALL SIZE CYLINDER ISS$_2$ SERIES

일반형(FA, FB) General Type(FA, FB)

로드측 플랜지형(FA) Rod-side Flange Type(FA)

■ 무급유형 Oilless type ISS$_2$-FA ·저유압형 Low hydraulic type ISS$_2$ L-FA



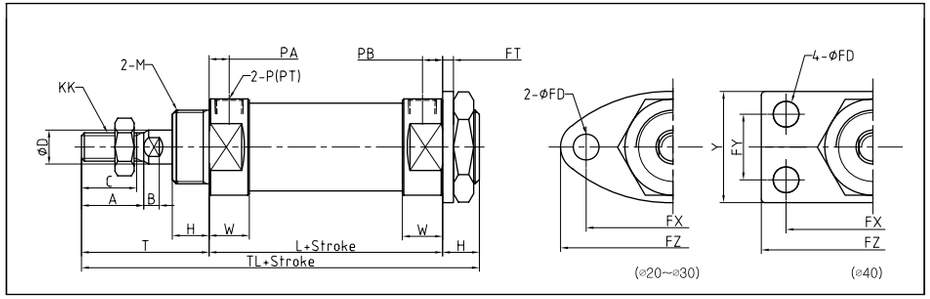
H-D(mm)	Stroke Range	C	A	Y	ØD	H	PA	PB	ØE	B	KK	W	T	TL	M	P(PT)
20	~300	15.5	18	40	10	13	8	8	28	5.0	M8X1.25	14.2	41	116	M20X1.5	1/8
25	~300	19.5	22	42	12	13	8	8	34	5.5	M10X1.25	14.2	45	120	M26X1.5	1/8
30	~300	19.5	22	42	12	13	8	8	38	5.5	M10X1.25	14.8	45	122	M26X1.5	1/8
40	~300	21.0	24	52	16	16	11	11	50	7.5	M14X1.50	21	50	154	M32X2.0	1/4

단위 unit : mm

H-D(mm)	L	ØFD	FT	FX	FY	FZ
20	62	7	3	60	-	75
25	62	7	4.5	60	-	75
30	64	7	4.5	60	-	75
40	88	7	4.5	66	36	82

헤드측플랜지형(FB) Head-side Flange Type(FB)

■ 무급유형 Oilless type ISS$_2$-FB ·저유압형Low hydraulic type ISS$_2$ L-FB



H-D(mm)	Stroke Range	C	A	Y	ØD	H	PA	PB	B	KK	W	T	TL	M	P(PT)
20	~300	15.5	18	40	10	13	8	8	5.0	M8X1.25	14.2	41	116	M20X1.5	1/8
25	~300	19.5	22	42	12	13	8	8	5.5	M10X1.25	14.2	45	120	M26X1.5	1/8
30	~300	19.5	22	42	12	13	8	8	5.5	M10X1.25	14.8	45	122	M26X1.5	1/8
40	~300	21.0	24	52	16	16	11	11	7.5	M14X1.50	21	50	154	M32X2.0	1/4

단위 unit : mm

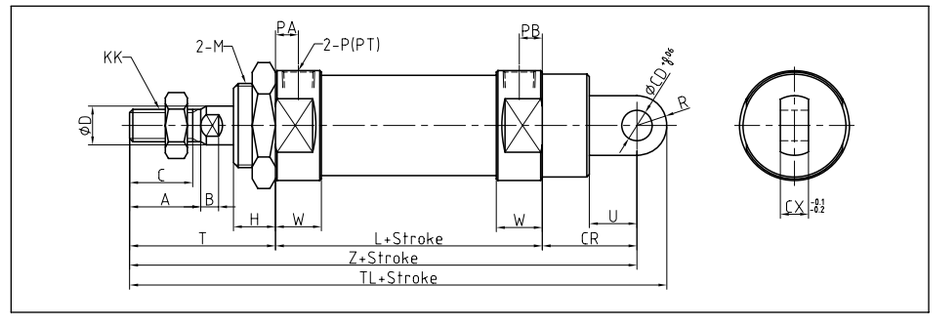
H-D(mm)	L	ØFD	FT	FX	FY	FZ
20	62	7	3	60	-	75
25	62	7	4.5	60	-	75
30	64	7	4.5	60	-	75
40	88	7	4.5	66	36	82

소형실린더 ISS$_2$ 시리즈 SMALL SIZE CYLINDER ISS$_2$ SERIES

일반형(CA, CB) General Type(CA, CB)

1산 클레비스형(CA) Single-thread CREVIS Type(CA)

■ 무급유형 Oilless type ISS$_2$-CA ·저유압형 Low hydraulic type ISS$_2$ L-CA



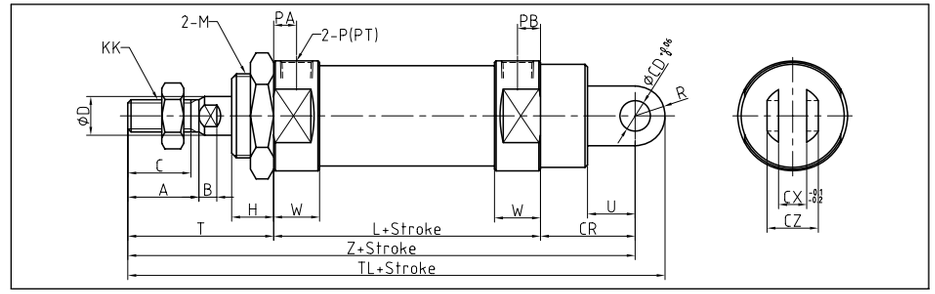
H-D(mm)	Stroke Range	C	A	ØD	H	PA	PB	T	B	KK	W	Z	TL	M	P(PT)	L
20	~300	15.5	18	10	13	8	8	41	5.0	M8X1.25	14.2	133	142	M20X1.5	1/8	62
25	~300	19.5	22	12	13	8	8	45	5.5	M10X1.25	14.2	137	146	M26X1.5	1/8	62
30	~300	19.5	22	12	13	8	8	45	5.5	M10X1.25	14.8	139	148	M26X1.5	1/8	64
40	~300	21.0	24	16	16	11	11	50	7.5	M14X1.50	21	177	188	M32X2.0	1/4	88

단위 unit : mm

H-D(mm)	CR	U	ØCD	CX	R
20	30	14	9	10	9
25	30	14	9	10	9
30	30	14	9	10	9
40	39	18	10	15	11

2산 클레비스형(CB) Single-thread CREVIS Type(CB)

■ 무급유형 Oilless type ISS$_2$-CB ·저유압형 Low hydraulic type ISS$_2$ L-CB



H-D(mm)	Stroke Range	C	A	ØD	H	PA	PB	T	B	KK	W	Z	TL	M	P(PT)	L
20	~300	15.5	18	10	13	8	8	41	5.0	M8X1.25	14.2	133	142	M20X1.5	1/8	62
25	~300	19.5	22	12	13	8	8	45	5.5	M10X1.25	14.2	137	146	M26X1.5	1/8	62
30	~300	19.5	22	12	13	8	8	45	5.5	M10X1.25	14.8	139	148	M26X1.5	1/8	64
40	~300	21.0	24	16	16	11	11	50	7.5	M14X1.50	21	177	188	M32X2.0	1/4	88

단위 unit : mm

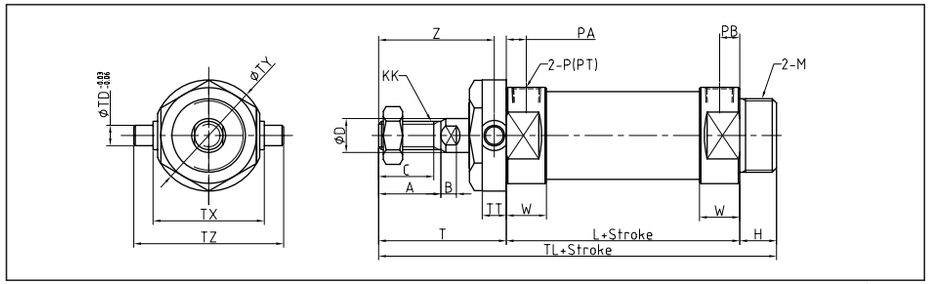
H-D(mm)	CR	U	ØCD	CX	CZ	R
20	30	14	9	10	19	9
25	30	14	9	10	19	9
30	30	14	9	10	19	9
40	39	18	10	15	30	11

소형실린더 ISS$_2$ 시리즈 SMALL SIZE CYLINDER ISS$_2$ SERIES

일반형(TR, TH) General Type(TR, TH)

로드측트러니온형 (TR)Rod-side Trunnion Type(TR)

■ 무급유형 Oilless type ISS$_2$-TR ·저유압형 Low hydraulic type ISS$_2$ L-TR



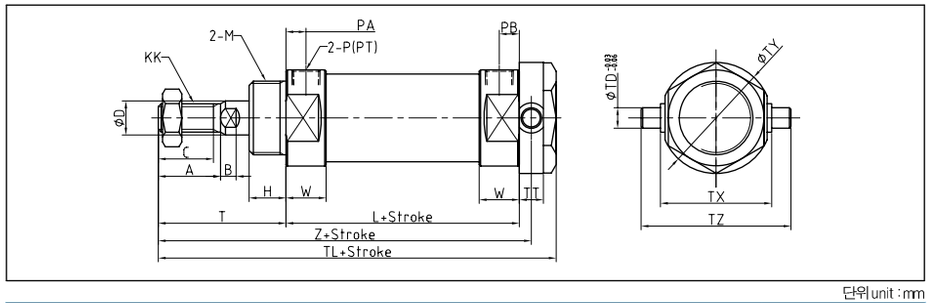
단위 unit : mm

I-D (mm)	Stroke Range	C	A	ØD	H	PA	PB	T	B	KK	W	Z	TL	M	P(PT)	L
20	~300	15.5	18	10	13	8	8	41	5.0	M8X1.25	15	36	116	M20X1.5	1/8	62
25	~300	19.5	22	12	13	8	8	45	5.5	M10X1.25	15	40	122	M26X1.5	1/8	62
30	~300	19.5	22	12	13	8	8	45	5.5	M10X1.25	15	40	124	M26X1.5	1/8	64
40	~300	21.0	24	16	16	11	11	50	7.5	M14X1.50	21	44.5	154	M32X2.0	1/4	88

I-D (mm)	ØTD	TT	TX	ØTY	TZ
20	8	10	32	32	52
25	9	10	40	40	60
30	9	10	40	40	60
40	10	11	53	53	77

헤드측트러니온형 (TH) Head-side Trunnion Type(TH)

■ 무급유형 Oilless type ISS$_2$-TH ·저유압형 Low hydraulic type ISS$_2$ L-TH



단위 unit : mm

I-D (mm)	Stroke Range	C	A	ØD	H	PA	PB	T	B	KK	W	Z	TL	M	P(PT)	L
20	~300	15.5	18	10	13	8	8	41	5.0	M8X1.25	15	108	116	M20X1.5	1/8	62
25	~300	19.5	22	12	13	8	8	45	5.5	M10X1.25	15	112	122	M26X1.5	1/8	62
30	~300	19.5	22	12	13	8	8	45	5.5	M10X1.25	15	114	124	M26X1.5	1/8	64
40	~300	21.0	24	16	16	11	11	50	7.5	M14X1.50	21	143.5	154	M32X2.0	1/4	88

I-D (mm)	ØTD	TT	TX	ØTY	TZ
20	8	10	32	32	52
25	9	10	40	40	60
30	9	10	40	40	60
40	10	11	53	53	77

소형실린더 ISS$_2$ 시리즈 SMALL SIZE CYLINDER ISS$_2$ SERIES

양로드형 Double-Rod Type

형식표시방법 Method for model Indication

ISS$_2$ W — 형식 Type — 부착형식 mounting type — 튜브내경 / I-D(mm) X 행정 / Stroke — 선단금구 / Lot-end

*ISS$_2$시리즈 일반형 표기 방법 참조

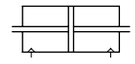
*Refer to method for indication of general type of ISS$_2$ series.

사양 Specification

형식 Type	무급유형 No Oil Supply	저유압형 Low-Hydraulic Type
사용유체 Working Oil	공기 Air	유압작동유 Hydraulic Working Oil
보증내압력 Bearing pressure	15kgf/㎠	
최고사용압력 Max. set pressure	9.9kgf/㎠	
최저사용압력 Mn. set pressure	0.5kgf/㎠	1.8kgf/㎠
주위온도 및 사용유체온도 Ambient temperature & disjointing temperature for Working Oil	-10~70°C	
사용속도 Working Speed	50~500mm/s	
쿠션 Cushion	RUBBER Cushion	
나사공차 Screw Tolerance	KS2급 2nd KS level	

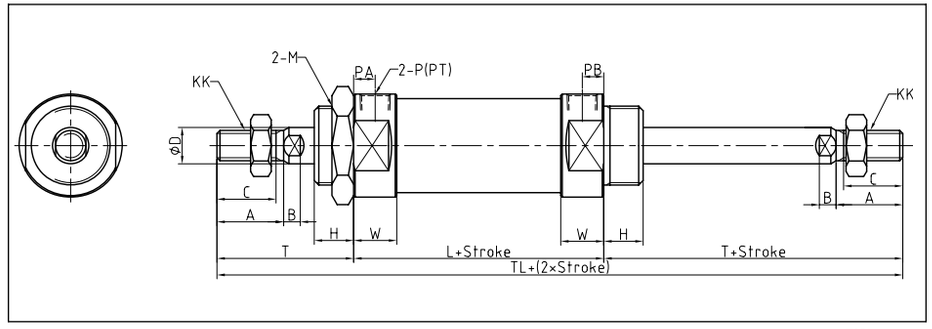
I-D(mm)	Standard Stroke
20,25,30,40	25,50,75,100,150,200,250,300

표시기호 Notation



외형치수도/기본형 Outside dimension Drawings/Basic type

■ 무급유형 Oilless type ISS$_2$ W-B ·저유압형 Low hydraulic type ISS$_2$ WL-B



단위 unit : mm

I-D(mm)	Stroke Range	C	A	ØD	H	PA	TL	B	KK	W	M	P(PT)	L	T
20	~300	15.5	18	10	13	8	144	5.0	M8X1.25	15	M20X1.5	1/8	62	41
25	~300	19.5	22	12	13	8	152	5.5	M10X1.25	15	M26X1.5	1/8	62	45
30	~300	19.5	22	12	13	8	154	5.5	M10X1.25	15	M26X1.5	1/8	64	45
40	~300	21.0	24	16	16	11	188	7.5	M14X1.50	21	M32X2.0	1/4	88	50

소형실린더 ISS$_2$ 시리즈 SMALL SIZE CYLINDER ISS$_2$ SERIES

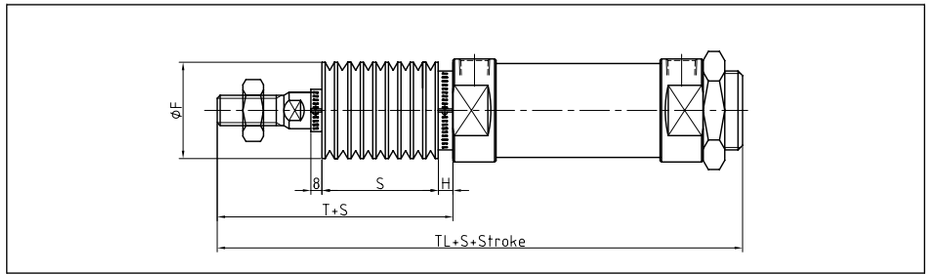
벨로우즈 부착형/일반형(BC) Bellows Mounted Type / General Type(BC)

■ 밸로우즈 부착형 / Bellows Mounted Type

형식 표시 방법 Method for model Indication

ISS$_2$ — 형식 Type — 부착형식 mounting type — 튜브내경 / ID(mm) X 형식 Type — J — 선단금구 / Lot-end

밸 로우즈 부착/ Bellow s Mounted
J:나이론테플론60 / Nylon Teflone
K:네오프렌크로스110 / Neoprene Cross



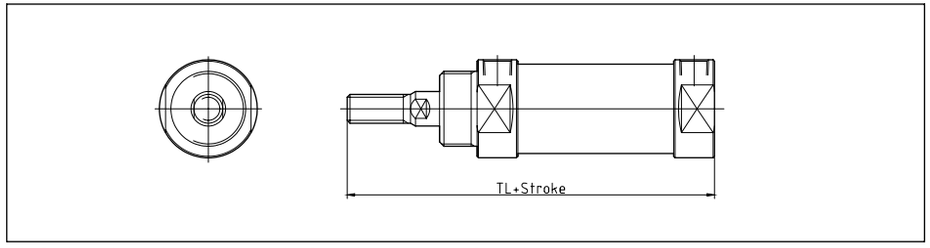
단위 unit :mm

I-D(mm)	øF	H	T	S	TL
20	36	14	56	0.3 stroke+3	131
25	36	14	60		135
30	36	14	60		137
40	40	16	67	0.25 stroke+3	171

※기타 표시하지않은 치수는 ISS2 일반형과동일
※Dimension which isn't indicated is same with general type of ISS$_2$ SERIES

■ 보스컷트형 / Both Cut Type

ISS$_2$ — BC — 튜브내경 / I-D(mm) X 행정 / Stroke



헤드측 커버의 나사부 분을 제거하여 전체길이를 축소시킨 타입으로 공간의 축소를 실현하였다
Dimension which isn't indicated is same with general type of ISS$_2$ SERIES

단위 unit :mm

COMPACT(보스컷트형) / Both Cut Type	
I-D(mm)	TL
20	103
25	107
30	109
40	138

※기타 표시하지 않은 치수는 ISS2 일반형과동일
※Dimension which isn't indicated is same with general type of ISS$_2$ SERIES

소형실린더 ISS$_2$ 시리즈 SMALL SIZE CYLINDER ISS$_2$ SERIES

클레비스 일체형(CD) One body type of CREVIS(CD)

형식 표시 방법 Method for model Indication

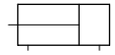
ISS$_2$ — 형식 Type — 튜브내경 / ID(mm) X 형식Type — 선단금구 / Lot-end

※ISS$_2$ 시리즈일반형 표기 방법 참조
※Refer to method for indicaton of general typeof ISS$_2$ series.

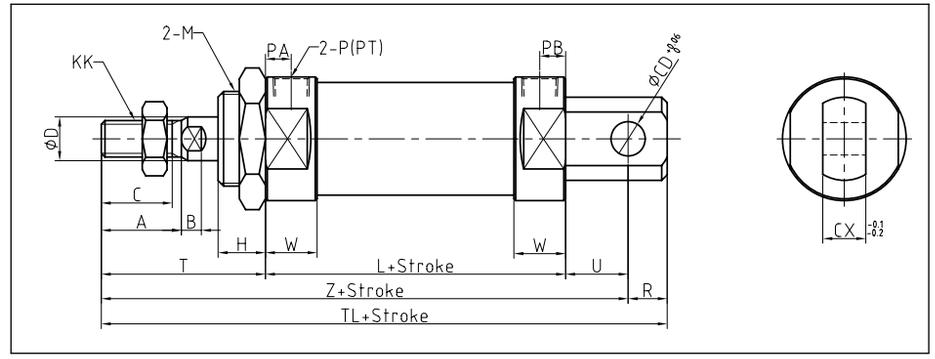
사양 Specification

형식Type	무급유형 Oiless Type
작동방식 Working Type	복동 Double-acting
사용유체 Fluid	공기 Air
보증내압력 Bearing Pressure	15kgf/㎠
최고사용압력 Max. working pressure	9.9kgf/㎠
최저사용압력 Min. working pressure	0.5kgf/㎠
주위온도 및 사용유체온도 Ambient temperature & dispinting temperature for Working Oil	-10°C ~ +70°C
급유 Oil Supply	불필요 None
나사공차 Screw tolerance	KS2급 2nd KS level
행정길이의 허용차 Alowance of stroke length	$^{+1.4}_{0}$

표시기호 Notation



클레비스 일체형(CD) One body type of CREVIS(CD) ■ 무급유형 Oilless Type ISS2 W-CD · 저유압형 Low hydraulic type ISS2 L-CD



단위 unit :mm

I-D(mm)	Stroke Range	C	A	B	øCD	CX	øD	H	KK	L	M	PA	PB	P(PT)	R
20	~300	15.5	18	5.0	8	12	10	13	M8X1.25	62	M20X1.5	8	8	1/8	9
25	~300	19.5	22	5.5	8	12	12	13	M10X1.25	62	M26X1.5	8	8	1/8	9
32	~300	19.5	22	5.5	10	20	12	13	M10X1.25	64	M26X1.5	8	8	1/8	12
40	~300	21.5	24	7.5	10	20	16	16	M14X1.50	88	M32X2.0	11	11	1/4	12

I-D(mm)	T	TL	U	W	Z
20	41	124	12	15	115
25	45	131	12	15	119
32	45	136	15	15	124
40	50	165	15	21	153

소형실린더 ISS_2 시리즈 SMALL SIZE CYLINDER ISS_2 SERIES

다단 행정 양로드형 Multiple-end Stroke Double-rod Type

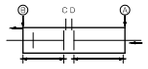
형식표시방법 Method for model Indication

ISS_2 — 부착형식 mounting type — 튜브내경 / I-D(mm) — A행정 / Stroke A + B행정 / Stroke B — TW

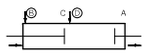
※ISS_2시리즈일반형 표기 방법 참조 ※/Refer to method for indication of general type of ISS_2 series.
헤드측을 조합, 2개의 실린더를 일체 화시켜 실린더행정을 왕복과더불어 3단계 로 제어할수 있다.
Assemble Head-side, make one body the Cylinder, conduct double Cylinder Stroke and control it by 3 steps.

표시기호 Notation

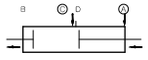
■ 기능 Function



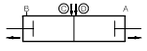
ⒶⒷ포트에 공기압을 공급하면 A,B 행정은 후진한다When supply Air pressure to ⒶⒷPort, A,B Stroke do backward motion.



ⒷⒹ포트에 공기압을 공급하면 A행정이 작동한다.
When supply Air pressure to ⒷⒹ Port, A Stroke works.



ⒶⒸ포트에 공기압을 공급하면 B행정이 작동한다When supply Air pressure to ⒶⒸPort, B Stroke works.

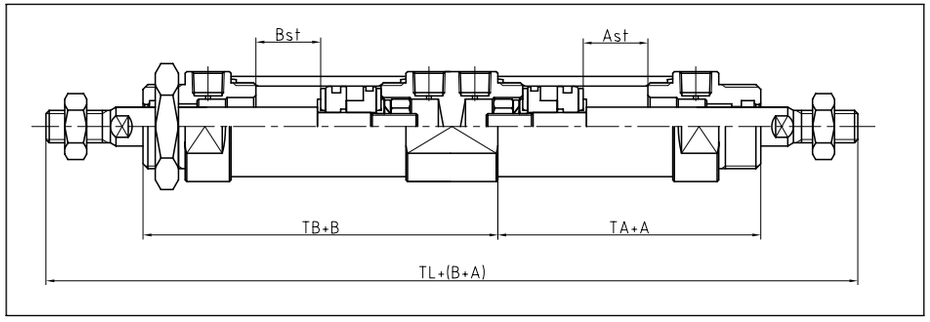


ⒸⒹ포트에 공기압을 공급하면 A,B 행정이 작동한다.When supply Air pressure to ⒸⒹPort, A,B Stroke works.

사양 Specification

형식 Type	무급유형 No Oil Supply
사용유체 Working Oil	공기 Air
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. set pressure	9.9kgf/㎠
최저사용압력 Min. set pressure	0.5kgf/㎠
사용속도 Working Speed	50~750mm/sec
작동방식 Working Type	복동 Double-acting
쿠션 Cushion	RUBBER Cushion
부착형식 Mounted Type	기본형, 푸트형, 플랜지형 Basic Type, Foot Type, Flange Type
적용튜브내경 Applied inside-diameter of tube	Ø20,Ø25,Ø30,Ø40
행정 A,B Stroke A,B	~300mm

외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit : mm

I-D(mm)	TA	TB	TL
20	61	78	208
25	61	78	216
30	63	80	220
40	83	109	276

※기타 표시하지 않은 치수는ISS2 일반형과 동일
※Dimension which isn't indicated is same with general type of ISS_2 SERIES

소형실린더 ISS_2 시리즈 SMALL SIZE CYLINDER ISS_2 SERIES

다단 행정 편로드형 Multiple-end Stroke Single-rod Type

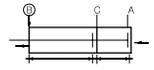
형식표시방법 Method for model Indication

ISS_2 — 부착형식 mounting type — 튜브내경 / I D(mm) — A행정 / Stroke A + B행정 / Stroke B — TS

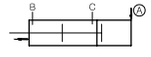
※SS2 시리즈일반형 형식 표기 방법 참조 Refer to method for indication of general type of ISS_2 series.
두개의 실린더를 직렬로 연결, 일체 화하여 실린더행정을 왕복과더불어 2단계로제어 가능하고, 2배의 실린더 출력 을얻을 수있다.
Connect two cylinder by series, make one body, then, can control cylinder stroke by two steps with round trip and get twice more outputs.

표시기호 Notation

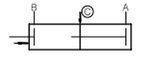
■ 기능 Function



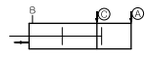
ⒷⒸⒶ포트에 공기압을 공급하면 A,B행정은 후진한다.
When supply Air pressure to ⒷPort, A,B Stroke do backward motion.



ⒶⒸⒷ포트에 공기압을 공급하면 로드와 A행정이 작동한다.
When supply Air pressure to Ⓐ Port, A Stroke works.



ⒸⒶⒷ포트에 공기압을 공급하면 B-A행정이 작동한다
When supply Air pressure to ⒸPort, B-A Stroke works.

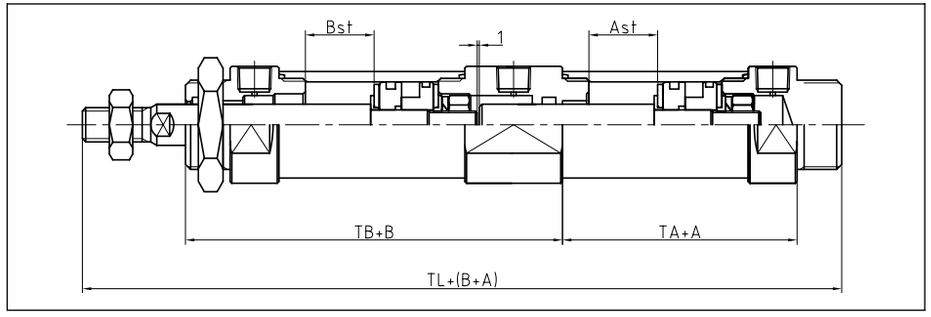


ⒶⒸⒷ양포트에 공기압을 공급하면 A행정의 범위 중에 2배의 출력이 얻어진다.
When supply Air pressure to ⒶⒸ Port, A Stroke works.

사양 Specification

형식 Type	무급유형 No Oil Supply
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. set pressure	9.9kgf/㎠
최저사용압력 Min. set pressure	0.5kgf/㎠
사용속도 Working Speed	50~75mm/sec
작동방식 Working Type	복동 Double-acting
쿠션 Cushion	RUBBER Cushion
부착형식 Mounted Type	기본형 축방향푸트형,로드측 플랜지형,헤드측 탭플레이트형, 2탭플레이트형 Basic Type,Foot Typed shaft direction ,Rod-side Flange Type, Head-side Flange Type single Thread CLEVIS Type,Double Thread CLEVIS Type
적용튜브내경 Applied inside-diameter of tube	Ø20,Ø25,Ø30,Ø40
행정 A,B Stroke A,B	~300mm

외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit : mm

I-D(mm)	TA	TB	TL
20	48	62	164
25	48	62	168
30	50	64	172
40	67	88	222

※기타 표시하지 않은 치수는ISS2 일반형과 동일
※Dimension which isn't indicated is same with general type of ISS_2 SERIES

소형실린더 ISS_2 시리즈 SMALL SIZE CYLINDER ISS_2 SERIES

가변 행정 실린더/전진시 조정형 Variable Stroke Cylinder Type/Control type of Forward Motion

형식표시방법 Method for model Indication

ISS_2 — 부착형식 mounting type — 튜브내경 / I D(mm) X 행정 / Stroke — 선단금구 / Lot-end — 행정조정기호 Stroke Control Notation — SJ

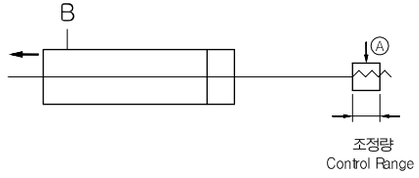
※SS2 시리즈일반형 형식 표기 방법 참조. Refer to method for indicaton of general type of ISS_2 series.
실린더 전진시 행정을 전체 행정에서 0~50mm까지 가변조정 가능, 헤드측에 행정조정 기구를 부착하여 전진시의 행정을 조정한다.
Can control variably Stroke at Cylinder Foward-motion from whole stroke to 0~50mm. Also, can control stroke at forward-motion by mounting stroke controller to Head-side.

A:0~25m/m Control Range
B:0~50m/m Control Range

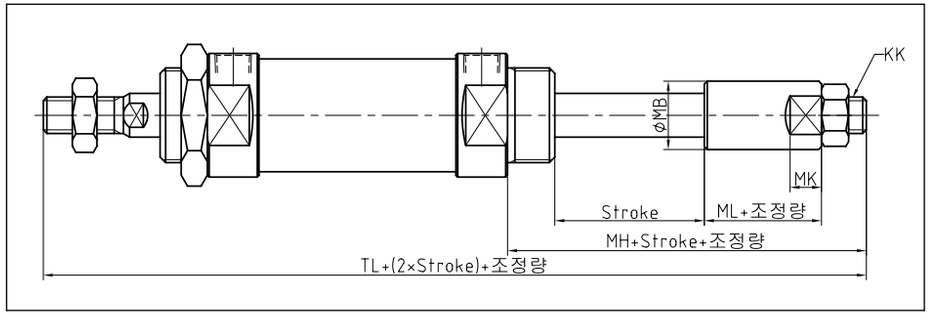
사양 Specification

형식 Type	무급유형 No Oil Supply
사용유체 Working Oil	공기 Air
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. set pressure	9.9kgf/㎠
최저사용압력 Min. set pressure	0.5kgf/㎠
사용속도 Working Speed	50~750mm/sec
쿠션 Cushion	RUBBER Cushion
부착형식 Mounted Type	기본형 축방향 푸트형 로드측플랜지형, 헤드측1샵플레시형 2샵플레시형 Basic Type, Foot Typed shaft direction, Rod-side Flange Type Head-side Flange Type single Thread CLEVIS Type, Double Thread CLEVIS Type
적용튜브내경 Applied inside-diameter of tube	Ø20,Ø25,Ø30,Ø40
행정 A,B Stroke A,B	A:0~25mm, B:0~50mm

표시기호 Notation



외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit : mm

I-D(mm)	MK	ØMB	KK	MH	ML	TL
20	8	20	M8X1.25	47	20	150
25	10	25	M10X1.25	49	22	156
30	10	25	M10X1.25	49	22	158
40	12	30	M14X1.50	60	22	198

※기타 표시하지 않은 치수는 ISS2 일반형과 동일
※Dimension which isn't indicated is same with general type of ISS_2 SERIES

소형실린더 ISS_2 시리즈 SMALL SIZE CYLINDER ISS_2 SERIES

텐덤 실린더/내열용 실린더 Tandem Cylinder/Cylinder for Heat-Resist

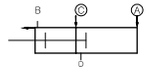
형식표시방법 Method for model Indication

ISS_2 — 부착형식 mounting type — 튜브내경 / I D(mm) X 행정 / Stroke — 선단금구 / Lot-end — TD

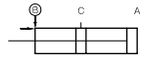
※SS2 시리즈일반형 형식 표기 방법 참조
Refer to method for indication of general type of ISS_2 series.
두 개의 실린더를 직렬로 연결한 실린더로 출력을 2배로 얻을 수 있다.
Connect two cylinder by series, then, can get twice more outputs.

표시기호 Notation

■ 기능 Function



ⒶⒸ포트에 공기압을 공급하면 전진작동 시2배의 출력이 얻어진다.
When supply Air pressure to Ⓐand ⒸPort, can get twice more outputs.

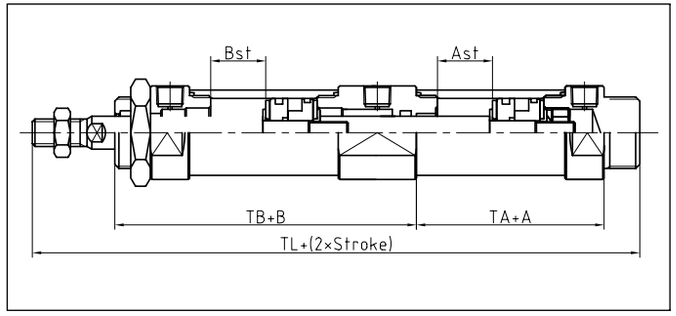


Ⓑ포트에 공기압을 공급하여 후진작동 시킨다.
When supply Air pressure to ⒷPort, Stroke works as backward motion.

사양 Specification

형식 Type	무급유형 No Oil Supply
사용유체 Working Oil	공기 Air
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. set pressure	9.9kgf/㎠
최저사용압력 Min. set pressure	0.8kgf/㎠
사용속도 Working Speed	50~750mm/sec
작동방식 Working Type	복동 Double-acting
쿠션 Cushion	RUBBER Cushion
부착형식 Mounted Type	기본형 푸트형 플랜지형 : 클레비스형 Basic Type, Rod Type d shaft direction Flange Type, CLEVIS Type
적용튜브내경 Applied inside-diameter of tube	Ø20,Ø25,Ø30,Ø40
행정 A,B Stroke A,B	~300mm

외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit : mm

I-D(mm)	TA	TB	TL
20	48	62	164
25	48	62	168
30	50	64	172
40	67	88	222

내열용 실린더 Cylinder for Heat-Resist

ISS_2 — 부착형식 mounting type — 튜브내경 / I-D(mm) X 행정 / Stroke — 선단금구 / Lot-end — SV

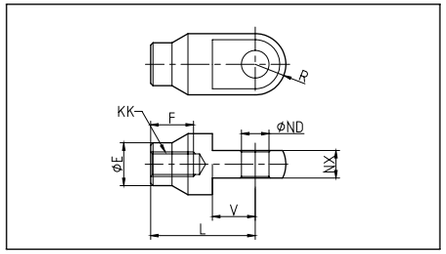
150 까지 고온의 주위 조건에서 사용가능하게 내열 용패킹 류를 장착한 실린더
It is a Cylinder with packing type for Heat-Resist. Can use in the high-temperature situation to 150℃

사양 Specification

형식 Type	무급유형 No Oil Supply Type
실린더 튜브내경 I-D of tube in cylinder(mm)	Ø20,Ø25,Ø30,Ø40
주위온도 Working Temperature	-20~+150℃
패킹재질 Packing Materials	VITON (Fluoric Rubber) 불소고무

※오토스위치 부착은 제작 불가능
※Can't make mounted Auto-Switch

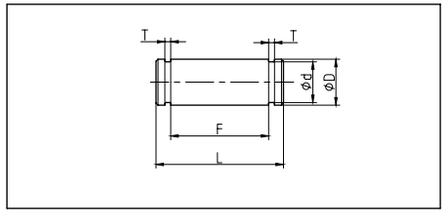
1산 너클 조인트 Single-Thread Knuckle Joint



단위unit :mm

I-D(mm)	F	ØE	L	KK	R	V	ØND	NX
20	16	20	36	M8X1.25	10	14	$9^{+0.05}_{0}$	$9^{-0.1}_{-0.2}$
25,30	18	20	38	M10X1.25	10	14	$9^{+0.05}_{0}$	$9^{-0.1}_{-0.2}$
40	22	24	55	M14X1.50	15.5	20	$12^{+0.07}_{0}$	$16^{-0.1}_{-0.3}$

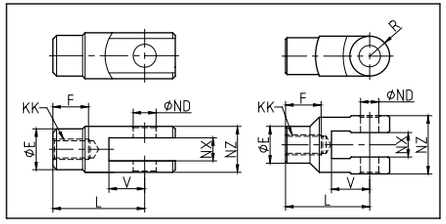
클레비스용 핀 Pin for CLEVIS



단위unit :mm

I-D(mm)	ØD	Ød	L	F	T	
2	$9^{-0.04}_{-0.08}$	8	25	19.2	1.15	
25,30	$9^{-0.04}_{-0.08}$	8	25	19.2	1.15	
40	$10^{-0.04}_{-0.09}$	9	36.5	30.2	1.3	YB용
40	$12^{-0.04}_{-0.09}$	11	44.5	38.2	1.3	Y용

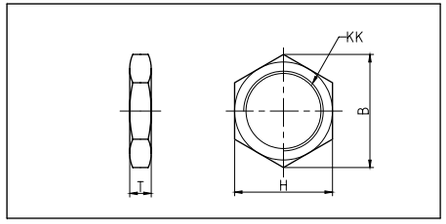
2산 너클조인트 Double-Thread Knuckle Joint



단위unit :mm

I-D(mm)	F	ØE	L	KK	R	V	ØND	NX	NZ
20	16	20	36	M8X1.25	12	14	$9^{+0.05}_{0}$	$9^{+0.7}_{+0.1}$	18
25,30	18	20	38	M10X1.25	12	14	$9^{+0.05}_{0}$	$9^{+0.7}_{+0.1}$	18
40	22	24	55	M14X1.50	13	25	$12^{+0.09}_{0}$	$16^{+0.3}_{+0.1}$	38

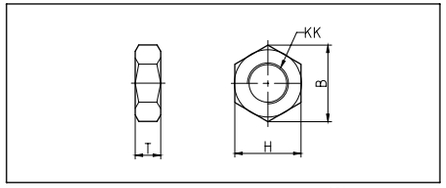
부착용 너트 Mounted Nut



단위unit :mm

I-D(mm)	KK	T	H	B
20	M20X1.5	7	26	30
25,30	M26X1.5	8	32	37
40	M32X2.0	8	41	47.3

로드너트 Rod nut



단위unit :mm

I-D(mm)	KK	T	H	B
20	M8X1.25	5	13	15.0
25,30	M10X1.25	6	17	19.6
40	M14X1.50	8	22	25.4

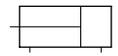
MEMO

소형실린더 ISS_3 시리즈
SMALL SIZE CYLINDER ISS_3 SERIES

소형실린더 ISS_3 시리즈 SMALL SIZE CYLINDER ISS_3 SERIES

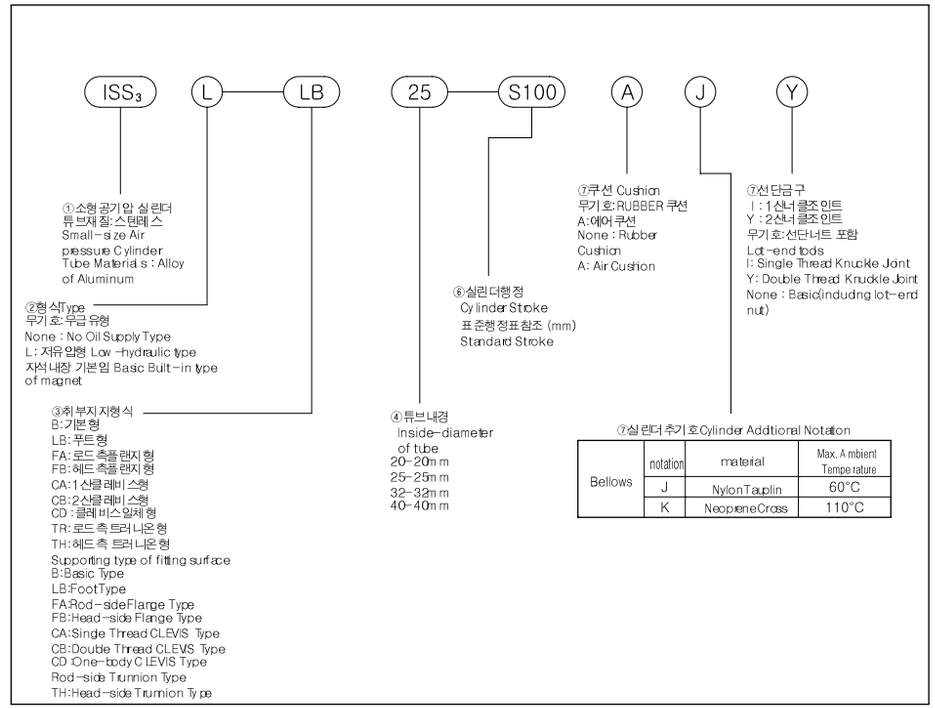
일반형:Ø20, Ø25, Ø32, Ø40 General Type : Ø20, Ø25, Ø32, Ø40

표시기호 Notation



Double-acting
Single-rod

형식표시 방법 Method for model Indication



⑦실린더 추기호 Cylinder Additional Notation

	notation	material	Max. Ambient Temperature
Bellows	J	Nylon Tauplin	60°C
	K	Neoprene Cross	110°C

소형실린더 ISS$_3$ 시리즈 SMALL SIZE CYLINDER ISS$_3$ SERIES

형식 및 사양 기타 Type and Other Specifications

ISS$_3$ 시리즈의 특징 Features of ISS$_3$ SERIES

■ 실린더 부품의 정도 및 패킹현상 재질을 개선하여 내마모성을 향상시키므로 ISS$_3$ 시리즈 전사양 무급유형으로 제작되었다.
■ 기존 ISS$_2$ 시리즈 보다 몸체의 중량 및 크기를 줄여 부착공간을 줄였다.
■ 로트카바와 헤트카바의 4면 폭이 넓어짐으로 부착이 편리한다.
■ This series improved the wearing resistance, materials of packing and cylinder parts. So, ISS$_3$ SERIES is made as oilless type.
■ The weight and size of body are smaller than those of Former ISS$_2$ series and the mounting space is also reduced.
■ 4 side breadth of Lot cover and head cover are widened, so mounting is easy.

형식 Type

Notation	Type	Working Method	Piston packing	Remarks
ISS$_3$	No Oil Supply	Double-acting Type	Special Packing	Basic Built-in of Magnet Type
ISS$_3$ L	Low-Hydraulic Type	Double-acting Type	Special Packing	I-D(mm)

표준행정표 Standard Stroke Table

단위unit : mm

I-D(mm)	Standard Stroke	Max. Stroke Range
ø20	25,50,75,100, 125,150,200,250,300	500
ø25		
ø32		
ø40		

※500행정이상의 경우별도 문의바람 ※Ask for over 500 stroke.

사양 Specification

형식 Type	무급유형 No Oil Supply	저유압형 Low-Hydraulic Type
사용유체 Working Oil	공기 Air	유압작동유 Hydraulic Working Oil
보증내압력 Bearing pressure	15kgf/㎠	
최고사용압력 Max. set pressure	9.9kgf/㎠	
최저사용압력 Min set pressure	0.5kgf/㎠	1.0kgf/㎠
주위온도 Ambient	-10~70°C	
사용속도 Working Speed	50~700mm/sec	0.5~300mm/sec
쿠션 Cushion	RUBBER Cushion	
나사공차 Screw Tolerance	KS2급 2nd KS level	
행정길이의 허용차 Allowance of stroke length	~250 $^{+1.0}_{0}$	251~500 $^{+1.4}_{0}$

선단 금구 품번 Lot-end No.

Lot-end \ I-D(mm)	20	25,32	40
1산너클조인트 Single Knuckle Joint	ISS$_3$-20 I	ISS$_3$-25/32 I	ISS$_3$-40 I
2산너클조인트 Double Knuckle Joint	ISS$_3$-20 Y	ISS$_3$-25/32 Y	ISS$_3$-40 Y

※ISS$_3$ 40용 선단금구는 중형시리즈 ISM과 동일함 ※Lot-end for ISS$_3$ 40 is same with Middle Series ISM.

지지 금구 부품 품번 Supporting Parts No.

Lot-end \ I-D(mm)	20	25,32	40
푸트형 Foot Type	ISS$_3$-LB20	ISS$_3$-LB25/32	ISS$_3$-LB40
플랜지형 Flange Type	ISS$_3$-F20	ISS$_3$-F25/32	ISS$_3$-F40
1산클레비스형 Single Thread CLEVIS Type	ISS$_3$-CA20	ISS$_3$-CA25/32	ISS$_3$-CA40
2산클레비스형(핀포함) Double Thread CLEVIS Type(including Pin)	ISS$_3$-CB20	ISS$_3$-CB25/32	ISS$_3$-CB40
트러니온형 Trunnion Type	ISS$_3$ -T20	ISS$_3$-T25/32	ISS$_3$-T40

※푸트금구 주문시 1대분의 경우2개를 주문할것.
※Should order two Foot for one machine

부착형식 및 부속품 Mounted Type and Parts

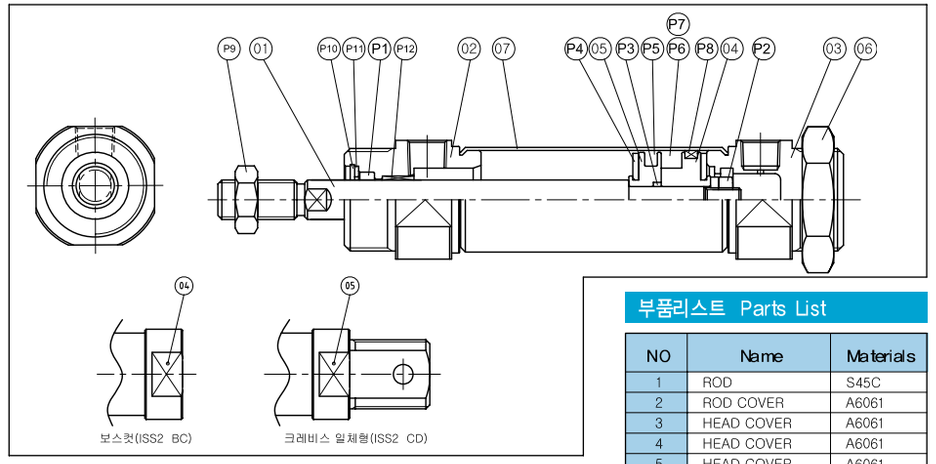
Mounted Type \ Parts	Basic Parts			Special Option		
	Mounted-nut	Rod Lot-end Nut	Pin for CLEVIS	Single Knuckle Joint	Double Knuckle Joint	Bellows
기본형 Basic Type(B)	● 1개(EA)	●	-	●	●	●
푸트형 Foot Type(LB)	● 2개(EA)	●	-	●	●	●
로드측 플랜지형 Rod-side Flange Type(FA)	● 1개(EA)	●	-	●	●	●
헤드측 플랜지형 Head-side Flange Type(FB)	● 1개(EA)	●	-	●	●	●
클레비스일체형 CLEVIS Single-body Type(CD)	-	●	-	●	●	●
1산클레비스형 Single Thread CLEVIS Type(CA)	-	●	-	●	●	●
2산클레비스형 Double Thread CLEVIS Type(CB)	-	●	●	●	●	●
헤드측 트러니온형 Head-side Trunnion Type(TH)	● 1개(EA)	●	-	●	●	●
로드측 트러니온형 Rod-side Trunnion Type(TR)	● 1개(EA)	●	-	●	●	●
COMPACT(보스컷)기본형 COMPACT(Both cut) Basic Type(BC)	● 1개(EA)	●	-	●	●	●
COMPACT(보스컷)플랜지형 COMPACT(Both cut) Flendge Type(FC)	● 1개(EA)	●	-	●	●	●

※부착시 트는 클레비스 일체형 1산 클레비스에는 없음
※No nein mounting nut, CLEVIS one bodytype, single thread CLEVISstype and double thread CLEVIS type

소형실린더 ISS$_3$ 시리즈 SMALL SIZE CYLINDER ISS$_3$ SERIES

내부 구조도,일반형(B) Inside Structure Drawings, General Type(B)

내부 구조도 Inside Structure Drawings



부품리스트 Parts List

NO	Name	Materials
1	ROD	S45C
2	ROD COVER	A6061
3	HEAD COVER	A6061
4	HEAD COVER	A6061
5	HEAD COVER	A6061
6	WEARING	ACETAL
7	TUBE	SUS304
8	PISTON LOCK NUT	S10C
9	PISTON	A2024
10	MAGNET	STEEL
11	SPRING WASHER	SCM4
12	SLEEVE	**BSBM**
13	DEMPER	URETHANE
14	OILLESS	CU+OIL

일반(무급유)형 General(Oiless) Type

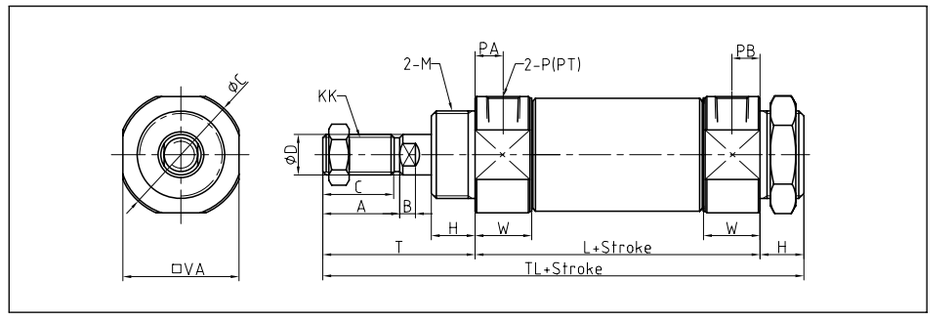
15	ROD PACKING	NBR	DRP10	DRP12	DRP12	DRP16
16	ROD O-RING	NBR	S6	S8	S8	S10
17	PISTON PACKING	NBR	PSD20	PSD25	PSD32	PSD40

저유압형 Low Hydraulic Type

18	PISTON PACKING	NBR	HSD 20	HSD 25	PSD 32	HSD 40

일반형(B) General Type(B)

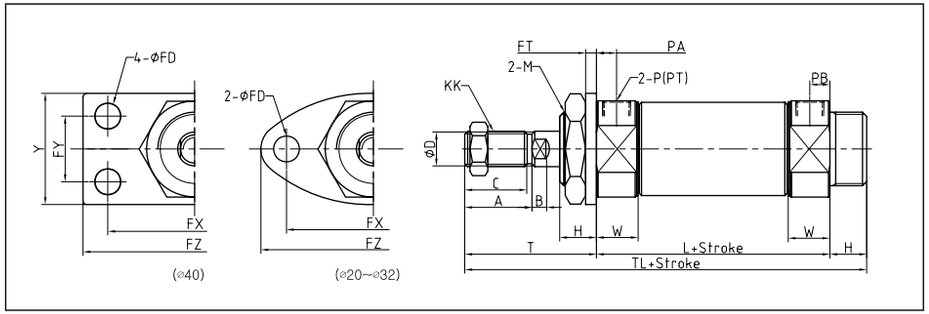
■ Oiless Type ISS$_3$-B / Low Hydraulic Type ISS$_3$ L-B



단위 unit : mm

I-D(mm)	Stroke Range	C	A	B	ØC	ØD	H	KK	L	M	PA	PB	P(PT)	T	TL	□VA	W
20	~300	16.5	18	5.0	27	10	13	M8X1.25	62	M20X1.5	8	8	1/8	41	116	24	14.2
25	~300	20.5	22	5.5	33	12	13	M10X1.25	62	M26X1.5	8	8	1/8	45	120	30	14.2
32	~300	20.5	22	5.5	37.5	12	13	M10X1.25	64	M26X1.5	8	8	1/8	45	122	34.5	14.8
40	~300	22.5	24	7.5	46.5	16	16	M14X1.50	88	M32X2.0	11	11	1/4	50	154	42.5	21

로드측 플랜지형(FA) Rod-side Flange Type(FA) ■ Oiless Type ISS3-FA / Low Hydraulic Type ISS3 L-FA

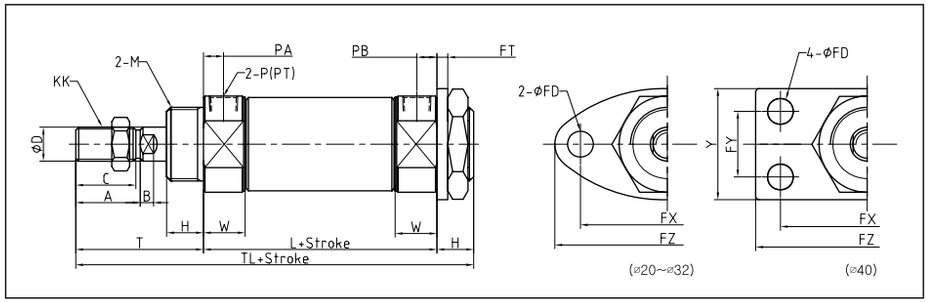


단위 unit : mm

I-D(mm)	Stroke Range	C	A	B	ØD	ØFD	FT	FX	FY	FZ	H	KK	L	M	PA	PB
20	~400	15.5	18	5.0	10	7	3.2	60	-	75	13	M8X1.25	62	M20X1.5	8	8
25	~450	19.5	22	5.5	12	7	4.5	60	-	75	13	M10X1.25	62	M26X1.5	8	8
32	~450	19.5	22	5.5	12	7	4.5	60	-	75	13	M10X1.25	64	M26X1.5	8	8
40	~500	21.0	24	7.5	16	7	4.5	66	36	82	16	M14X1.50	88	M32X2.0	11	11

I-D(mm)	P(PB)	T	TL	W	Y
20	1/8	41	116	14.2	40
25	1/8	45	120	14.2	42
32	1/8	45	122	14.8	42
40	1/4	50	154	21	52

헤드측 플랜지형(FB) Head-side Flange Type(FB) ■ Oiless Type ISS3-FB / Low Hydraulic Type ISS3 L-FB

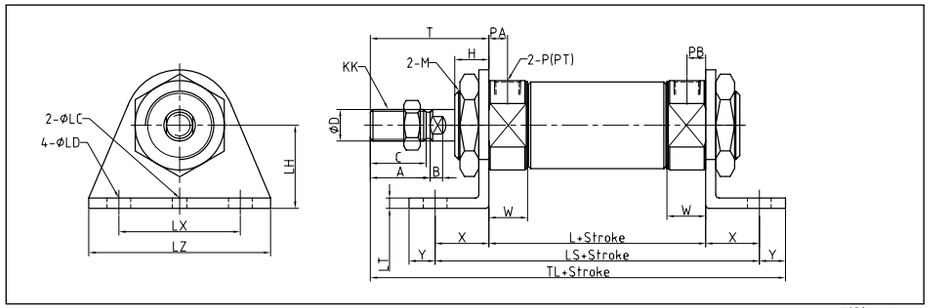


단위 unit : mm

I-D(mm)	Stroke Range	C	A	B	ØD	ØFD	FT	FX	FY	FZ	H	KK	L	M	PA	PB
20	~400	15.5	18	5.0	10	7	3.2	60	-	75	13	M8X1.25	62	M20X1.5	8	8
25	~450	19.5	22	5.5	12	7	4.5	60	-	75	13	M10X1.25	62	M26X1.5	8	8
32	~450	19.5	22	5.5	12	7	4.5	60	-	75	13	M10X1.25	64	M26X1.5	8	8
40	~500	21.0	24	7.5	16	7	4.5	66	36	82	16	M14X1.50	88	M32X2.0	11	11

I-D(mm)	P(PB)	T	TL	W	Y
20	1/8	41	116	14.2	40
25	1/8	45	120	14.2	42
32	1/8	45	122	14.8	42
40	1/4	50	154	21	52

푸트형(LB) Foot Type(LB) ■ Oiless Type ISS3-LB / Low Hydraulic Type ISS3 L-LB

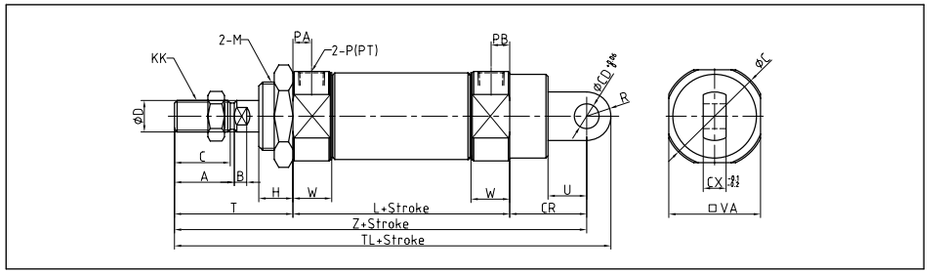


단위 unit : mm

I-D(mm)	Stroke Range	C	A	B	ØD	H	KK	L	ØLC	ØLD	LH	LS	LT	LX	LZ	M
20	~400	15.5	18	5.0	10	13	M8X1.25	62	4	6.8	25	102	3.2	40	55	M20X1.5
25	~450	19.5	22	5.5	12	13	M10X1.25	62	4	6.8	28	102	3.2	40	55	M26X1.5
32	~450	19.5	22	5.5	12	13	M10X1.25	64	4	6.8	28	104	3.2	40	55	M26X1.5
40	~500	21.0	24	7.5	16	16	M14X1.50	88	4	7.0	30	134	3.2	55	75	M32X2.0

I-D(mm)	PA	PB	P(PB)	T	TL	W	X	Y
20	8	8	1/8	41	131	14.2	20	8
25	8	8	1/8	45	135	14.2	20	8
32	8	8	1/8	45	137	14.8	20	8
40	11	11	1/4	50	173	21	23	12

1산 클레비스형(CA) Single-Thread CLEVIS Type ■ Oiless Type ISS3-CA / Low Hydraulic Type ISS3 L-CA



단위 unit : mm

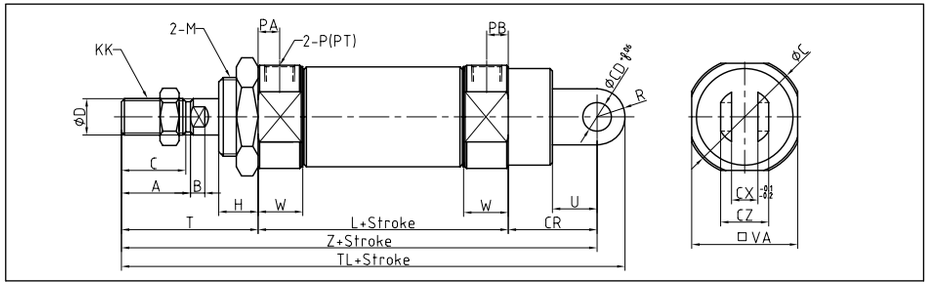
I-D(mm)	Stroke Range	C	A	B	ØC	ØCD	CR	CX	ØD	H	KK	L	M	PA	PB	P(PT)
20	~300	15.5	18	5.0	27	9	30	10	10	13	M8X1.25	62	M20X1.5	8	8	1/8
25	~300	19.5	22	5.5	33	9	30	10	12	13	M10X1.25	62	M26X1.5	8	8	1/8
32	~300	19.5	22	5.5	37.5	9	30	10	12	13	M10X1.25	64	M26X1.5	8	8	1/8
40	~300	21.0	24	7.5	46.5	10	90	15	16	16	M14X1.50	88	M32X2.0	11	11	1/4

I-D(mm)	R	T	TL	U	□VA	W	Z
20	9	41	142	14	24	14.2	133
25	9	45	146	14	30	14.2	137
32	9	45	148	14	34.5	14.8	139
40	11	50	188	18	42.5	21	177

소형실린더 ISS3 시리즈 SMALL SIZE CYLINDER ISS3 SERIES

일반형(CB, CD) General Type(CB, CD)

2산 클레비스형(CB) Double-Thread CLEVIS Type ■ Oiless Type ISS3-CB / Low Hydraulic Type ISS3 L-CB

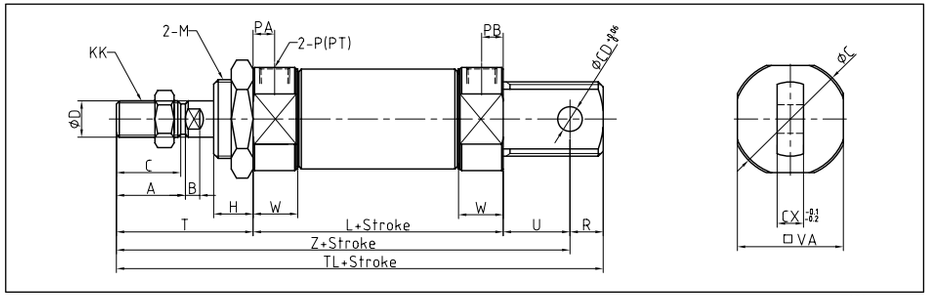


단위 unit : mm

I-D(mm)	Stroke Range	C	A	B	ØC	ØCD	CR	CX	CZ	ØD	H	KK	L	M	PA	PB
20	~300	15.5	18	5.0	27	9	30	10	19	10	13	M8X1.25	62	M20X1.5	8	8
25	~300	19.5	22	5.5	33	9	30	10	19	12	13	M10X1.25	62	M26X1.5	8	8
32	~300	19.5	22	5.5	37.5	9	30	10	19	12	13	M10X1.25	64	M26X1.5	8	8
40	~300	21.0	24	7.5	46.5	10	39	15	30	16	16	M14X1.50	88	M32X2.0	11	11

I-D(mm)	P(PT)	R	T	TL	U	□VA	W	Z
20	1/8	9	41	142	14	24	14.2	133
25	1/8	9	45	146	14	30	14.2	137
32	1/8	9	45	148	14	34.5	14.8	139
40	1/4	11	50	188	18	42.5	21	177

클레비스 일체형(CD) CLEVIS one-body type ■ Oiless Type ISS3-CD / Low Hydraulic Type ISS3 L-CD



단위 unit : mm

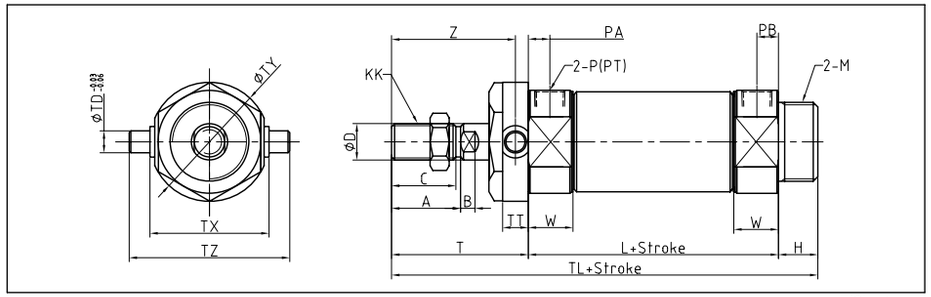
I-D(mm)	Stroke Range	C	A	B	ØC	ØCD	CX	ØD	H	KK	L	M	PA	PB	P(PT)	R
20	~300	15.5	18	5.0	27	8	12	10	13	M8X1.25	62	M20X1.5	8	8	1/8	9
25	~300	19.5	22	5.5	33	8	12	12	13	M10X1.25	62	M26X1.5	8	8	1/8	9
32	~300	19.5	22	5.5	37.5	10	20	12	13	M10X1.25	64	M26X1.5	8	8	1/8	12
40	~300	21.0	24	7.5	46.5	10	20	16	16	M14X1.50	88	M32X2.0	11	11	1/4	12

I-D(mm)	T	TU	U	□VA	W	Z
20	41	124	12	24	14.2	115
25	45	128	12	30	14.2	119
32	45	136	15	34.5	14.8	124
40	50	165	15	42.5	21	153

소형실린더 ISS3 시리즈 SMALL SIZE CYLINDER ISS3 SERIES

일반형(TR, TH) General Type(TR, TH)

로드측 트러니온형(TR) Rod-side Trinion Type ■ Oiless Type ISS3-TR / Low Hydraulic Type ISS3 L-TR

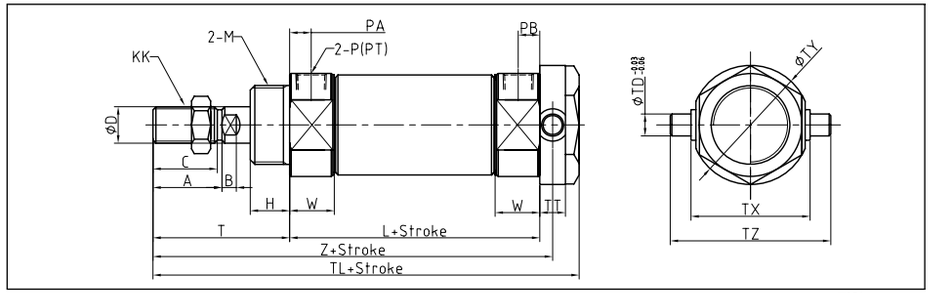


단위 unit : mm

I-D(mm)	Stroke Range	C	A	B	ØD	H	KK	L	M	P(PT)	PA	PB	T	ØTD	TL	TT
20	~300	15.5	18	5.0	10	13	M8X1.25	62	M20X1.5	1/8	8	8	41	8	116	10
25	~300	19.5	22	5.5	12	13	M10X1.25	62	M26X1.5	1/8	8	8	45	9	120	10
32	~300	19.5	22	5.5	12	13	M10X1.25	64	M26X1.5	1/8	8	8	45	9	122	10
40	~300	21.0	24	7.5	16	16	M14X1.50	88	M32X2.0	1/4	11	11	50	10	154	11

I-D(mm)	TX	ØTY	TZ	W	Z
20	32	32	52	14.2	36
25	40	40	60	14.2	40
32	40	40	60	14.8	40
40	53	53	77	21	44.5

헤드측 트러니온형(TH) Head-side Trinion Type ■ Oiless Type ISS3-TH / Low Hydraulic Type ISS3 L-TH



단위 unit : mm

I-D(mm)	Stroke Range	C	A	B	ØD	H	KK	L	M	P(PT)	PA	PB	T	ØTD	TL	TT
20	~300	15.5	18	5.0	10	13	M8X1.25	62	M20X1.5	1/8	8	8	41	8	118	10
25	~300	19.5	22	5.5	12	13	M10X1.25	62	M26X1.5	1/8	8	8	45	9	122	10
32	~300	19.5	22	5.5	12	13	M10X1.25	64	M26X1.5	1/8	8	8	45	9	124	10
40	~300	21.0	24	7.5	16	16	M14X1.50	88	M32X2.0	1/4	11	11	50	10	154	11

I-D(mm)	TX	ØTY	TZ	W	Z
20	32	32	52	14.2	108
25	40	40	60	14.2	112
32	40	40	60	14.8	114
40	53	53	77	21	143.5

소형실린더 ISS$_3$ 시리즈 SMALL SIZE CYLINDER ISS$_3$ SERIES

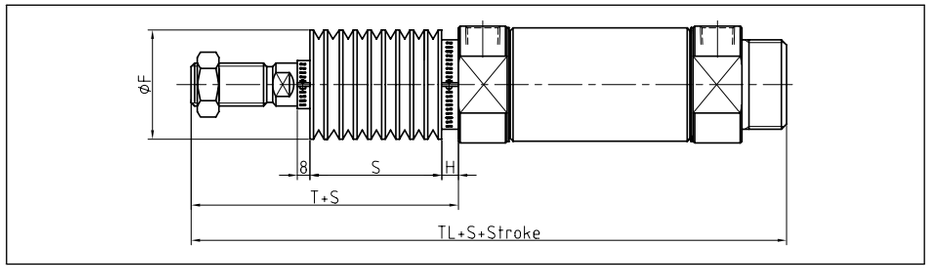
벨로우즈 부착형,일반형(BC) Bellows-Mounted Type, General Type(BC)

■ 벨로우즈 부착형 / Bellows-Mounted Type

형식 표시 방법 Indication of Model

ISS$_3$ — 형식 Type — 부착형식/ Mounted-type — 튜브내경/ I-D(mm) X 형식 Type — J — 선단금구 / Lot-end

벨로 우즈부 착 / Bellows-mounted type
J:나이 론 타폴 린60℃ / Nylon Tarpaulin
K:네오 프렌크 로스1 10℃ / Neoprene Cross



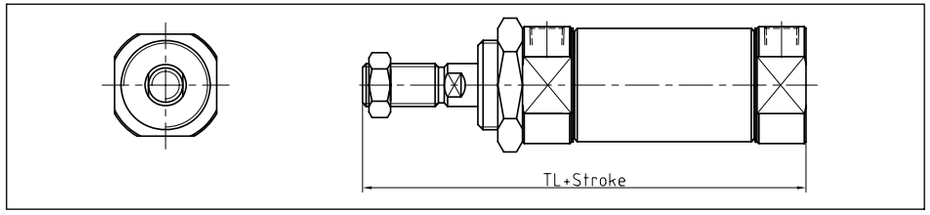
단위 unit : mm

I-D(mm)	øF	H	T	S	TL
20	36	14	56	0.3 Stroke+3	131
25	36	14	60		135
32	36	14	60		137
40	40	16	67	0.25 Stroke+3	171

※기타 표기하지않은 치수는 ISS3일반형과 동일
※ Dimension which isn't indicated is same with general type of ISS$_3$ SERIES

형식 표시 방법 Indication of Model

ISS$_3$ — BC — 튜브내경 I-D(mm) X 행정 / Stroke



※헤드 측 커버의 나사부 분을 제거하여 전체길 이를 축소시 킨 타입으 로 공간의 축소를 실현하였다.
※Reduced whole length by removing screw part of Head-side cover. So reduced the space.

단위 unit : mm

COMPACT(Both cuit Type)	
I-D(mm)	TL
20	103
25	107
32	109
40	138

단위 unit : mm

Comparison of Whole Dimensions(with General Type)			
Ø20	Ø25	Ø32	Ø40
-13	-13	-13	-16

부착형식 : 기본형, 로드측 플랜지형, 로드측 트러니온형
Mounted type : Basic type, Rod-side Flange type, Rod-side Trunnion type

※기타 표기하지 않은 치수는 ISS3일반형과 동일
Dimension which isn't indicated is same with general type of ISS$_3$ SERIES

소형실린더 ISS$_3$ 시리즈 SMALL SIZE CYLINDER ISS$_3$ SERIES

앙로드형 Double-rod Type

형식 표시 방법 Indication of Model

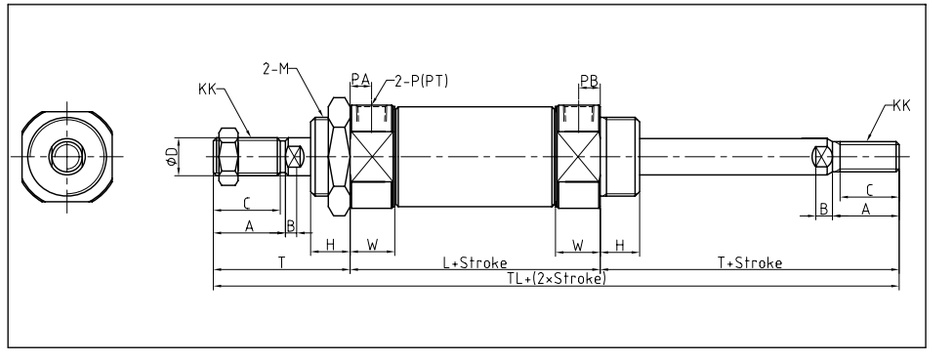
ISS$_3$ W — 부착형식 / Mounted-type — 튜브내경 / I-D(mm) X 행정 / Stroke — 추기호 / Additional Notation — 선단금구 / Lot-end

사양 Specification

형식 Type	Oilesstype
작동방식 Working Type	복동양로드 Double-Acting Double-rod type
사용유체 Fluid	공기Air
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. set pressure	9.9kgf/㎠
최저사용압력 Min. set pressure	0.5kgf/㎠
주위온도 Ambient	-10°C~+70°C
급유 Oil Supply	불필요 None
나사공차 Screw Tolerance	KS2급 2nd KS Level
행정길이의허용차 Allowance of Stroke Length	$^{+1.4}_{0}$

표시기호 Notation

외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit : mm

I-D(mm)	Stroke Range	C	A	B	ØD	H	KK	L	M	P(PD)	PA	PB	T	TL	W
20	~300	15.5	18	5.0	10	13	M8X1.25	62	M20X1.5	1/8	8	8	41	144	15
25	~300	19.5	22	5.5	12	13	M10X1.25	62	M26X1.5	1/8	8	8	45	152	15
32	~300	19.5	22	5.5	12	13	M10X1.25	6	M26X1.5	1/8	8	8	45	154	15
40	~300	21.0	24	7.5	16	16	M14 X1.5	88	M32X2.0	1/4	11	11	50	188	21

소형실린더 ISS₃ 시리즈 SMALL SIZE CYLINDER ISS₃ SERIES

다단 행정 양로드형 Multiple-end Stroke Double-rod Type

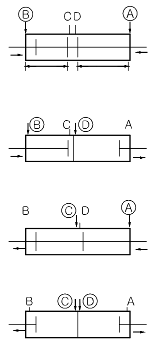
형식표시방법 Indication of Model

ISS₃ — 부착형식 mounting type — 튜브내경 I-D(mm) — A행정/ StrokeA + B행정 / StrokeB — TW

※ISS₃ 시리즈 일반형 형식 표기 방법 참조 ※Refer to method for indication of general type of ISS₂series.
헤드 측을 조합, 2개의 실린더를 일체 화시켜 실린더 행정을 왕복과 더불어 3단계로 제어 할 수 있다.
Assemble Head-side, make one body the Cylinder, conduct double Cylinder Stroke and control it by 3 steps.

표시기호 Notation

■ 기능 Function



ⒶⒷ포트에 공기압을 공급하면 A B행정은 후진한다.
When supply Air pressure to ⒶⒷPort, A,B Stroke do backward motion.

ⒷⒹ포트에 공기압을 공급하면 A행정이 작동한다.
When supply Air pressure to ⒷⒹPort, A Stroke works.

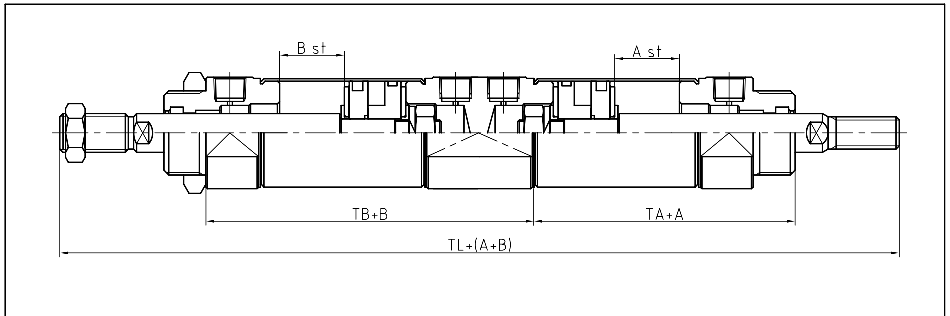
ⒶⒸ포트에 공기압을 공급하면 B행정이 작동한다
When supply Air pressure to ⒶⒸPort, B Stroke works.

ⒸⒹ포트에 공기압을 공급하면 A B행정이 작동한다.
When supply Air pressure to ⒸⒹPort, A,B Stroke works.

사양 Specification

형식 Type	무급유형 No Oil Supply
사용유체 Working Oil	공기 Air
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. set pressure	9.9kgf/㎠
최저사용압력 Min. set pressure	0.5kgf/㎠
사용피스톤 속도 Speed of Woring Piston	50~750mm/sec
작동방식 Working Type	복동 Double-acting
쿠션 Cushion	RUBBER Cushion
부착형식 Mounted Type	기본형, 푸트형, 플랜지형 Basic Type, Foot Type, Flange Type
적용튜브내경 Applied inside-dameter of tube	Ø20,Ø25,Ø32,Ø40
행정 A,B Stroke A,B	~300mm

외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit : mm

I-D(mm)	TA	TB	TL
20	47	78	207
25	47	78	215
32	49	80	219
40	66.5	110.5	277

※기타 표기하지 않은 치수는 ISS3일반형과 동일
Dimension which isn't indicated is same with general type of ISS₃ SERIES

소형실린더 ISS₃ 시리즈 SMALL SIZE CYLINDER ISS₃ SERIES

다단 행정 편로드형 Multiple-end Stroke Single-rod Type

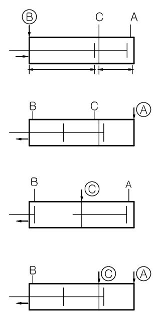
형식표시방법 Indication of Model

ISS₃ — 부착형식 mounting type — 튜브내경 I-D(mm) — A행정 / StrokeA + B행정 / StrokeB — TS

※ISS₃시리즈 일반형 형식 표기 방법 참조 ※Refer to method for indication of general type of ISS₂series.
두 개의 실린더를 직렬로 연결, 일체화하여 실린더 행정을 왕복과 더불어 2단계로 제어 가능하고, 2배의 실린더 출력을 얻을 수 있다.
Connect two cylinder by series, make one body, then, can control cylinder stroke by two steps with round trip and get twice more outputs.

표시기호 Notation

■ 기능 Function



Ⓑ포트에 공기압을 공급하면 A B행정은 후진한다.
When supply Air pressure to ⒶⒷPort, A,B Stroke do backward motion.

Ⓐ포트에 공기압을 공급하면 로드와 A행정이 작동한다.
When supply Air pressure to ⒶPort, A Stroke works.

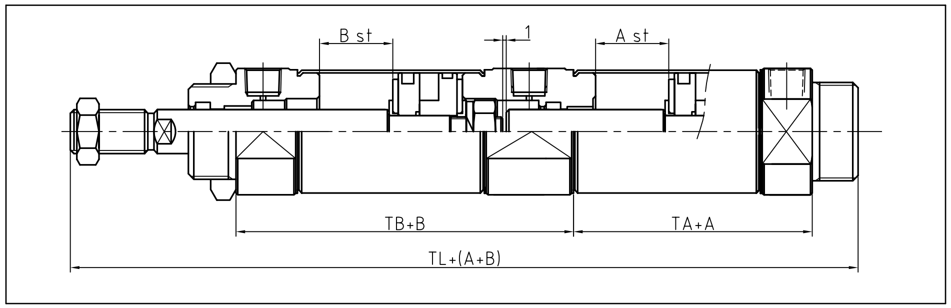
Ⓒ포트에 공기압을 공급하면 B-A행정이 작동한다
When supply Air pressure to ⒸPort, B-A Stroke works.

ⒶⒸ양포트에 공기압을 공급하면 A행정의 범위 중에 2배의 출력이 얻어진다.
When supply Air pressure to both Ⓐ and Ⓒports, can get twice more outputs at A stroke range.

사양 Specification

형식 Type	무급유형 No Oil Supply
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. set pressure	9.9kgf/㎠
최저사용압력 Min. set pressure	0.5kgf/㎠
사용피스톤 속도 Speed of Woring Piston	50~750mm/sec
작동방식 Working Type	복동 Double-acting
쿠션 Cushion	RUBBER Cushion
부착형식 Mounted Type	기본형,축방향 푸트형,로드측 플랜지형, 헤드측플랜지형: 1산클레비스형,2산클레비스형 Basic Type,Foot Type of shaft direction,Rod-side Flange Type,Head-side Flange Type: single Thread CLEVIS Type, Double Thread CLEVIS Type
적용튜브내경 Applied inside-dameter of tube	Ø20,Ø25,Ø32,Ø40
행정 A,B Stroke A,B	~300mm

외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit : mm

I-D(mm)	TA	TB	TL
20	48	62	164
25	48	62	168
32	50	64	172
40	67.5	88.5	222

※기타 표시하지 않은 치수는 ISS2일반형과 동일
Dimension which isn't indicated is same with general type of ISS₂ SERIES

소형실린더 ISS$_3$ 시리즈 SMALL SIZE CYLINDER ISS$_3$ SERIES

가변 행정 실린더형/전진시 조정형 Variable Stroke Cylinder Type/Control type of Forward Motion

형식표시방법 Indication of Model

ISS$_2$ — 부착형식 mounting type — 튜브내경 I-D(mm) X 행정/Stroke — 선단금구Lot-end — 행정조정기호 Stroke Control — SJ

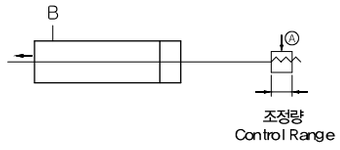
※실린더 전진시 행정을 전체 행정에서 0~50mm까지 가변조정 가능, 헤드측에 행정조정기구를 부착하여 전진시 의행정을 조정한다.
※Can control variably Stroke at CylinderForward-motion from wholestroke to 0~50mm. Also, can control stroke at forward-motion by mountingstrokecontrollertoHead-side.

A:0~25m/m조정범위 Control Range
B:0~50m/m조정범위 Control Range

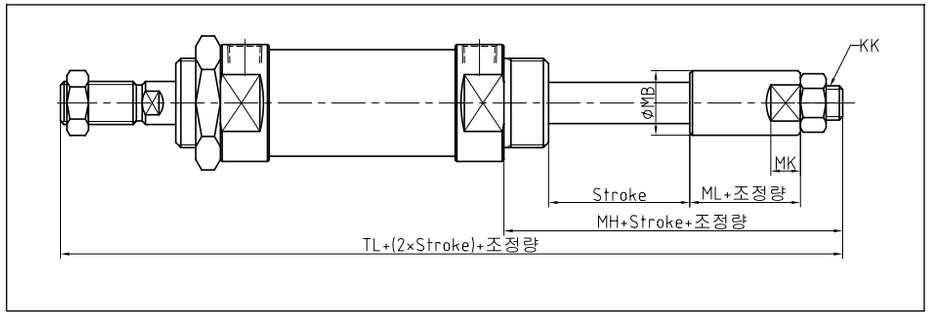
사양 Specification

형식 Type	무급유형 No Oil Supply
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. set pressure	9.9kgf/㎠
최저사용압력 Min. set pressure	0.5kgf/㎠
사용피스톤 속도 Speed of Woring Piston	50~750mm/sec
작동방식 Working Type	스토퍼조정 Control of Stopper
쿠션 Cushion	RUBBER Cushion
행정조정방법 Stroke Control	A:0~25mm, B:0~50mm
부착형식 Mounted Type	Basic Type, Foot Type, Rod-side Flange Type, Head-side Flange Type, Rod-side Trunnion Type
실린더튜 브내경 Applied Inside-dameterof Cylinder	Ø20,Ø25,Ø32,Ø40

표시기호 Notation



외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit:mm

I-D(mm)	MK	ØMB	KK	MH	ML	TL
20	8	20	M8X1.25	47	18	150
25	10	20	M10X1.25	49	18	156
32	10	20	M10X1.25	49	18	158
40	12	25	M14X1.50	60	22	198

※기타 표시하지 않은 치수는 ISS$_3$ 일반형 과 동일
Dimension whichisn'tindicated is same withgeneral typeof ISS$_2$ SERIES

소형실린더 ISS$_3$ 시리즈 SMALL SIZE CYLINDER ISS$_3$ SERIES

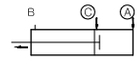
텐덤 실린더/내열용 실린더 Tandem Cylinder/Cylinder for Heat-Resist

형식표시방법 Indication of Model

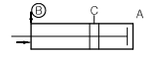
ISS$_3$ — 부착형식 mounting type — 튜브내경 I-D(mm) X 행정 Stroke — 선단금구 Lot-end — TD

※ISS$_3$ 시리즈 일반형 형식 표기 방법 참조
Correct two cylinderby series, then, canget twice moreoutputs.

표시기호 Notation



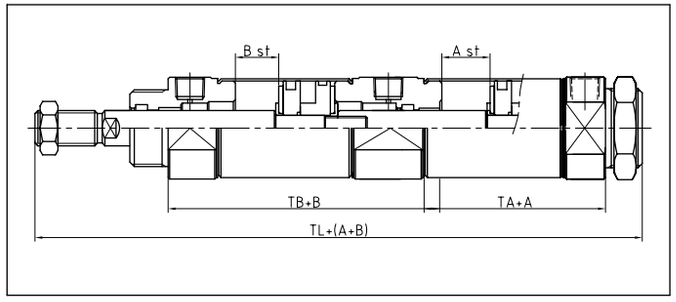
ⒶⒸ포트에 공기압을 공급하면 전진작동시 2배의 출력이 얻어진다.
When supply Air pressure to Ⓐand ⒸPort, can get twice more outputs.



ⒷⒸ포트에 공기압을 공급하여 후진작동시킨다.
When supply Air pressure to ⒷPort, Stroke works as backward motion.

사양 Specification

형식 Type	무급유형 No Oil Supply
사용유체 Working Oil	공기Air
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. set pressure	9.9kgf/㎠
최저사용압력 Min. set pressure	0.5kgf/㎠
사용피스톤 속도 Speed of Woring Piston	50~750mm/sec
작동방식 Working Type	복동 Double-acting
쿠션 Cushion	RUBBER Cushion
부착형식 Mounted Type	기본형, 푸트형, 플랜지형 : 클레비스형 Basic Type, Foot Type, Flange Type CLEVIS Type
실린더튜 브내경 Applied Inside-dameterof Cylinder	Ø20,Ø25,Ø32,Ø40
행정 A,B Stroke A,B	~300mm



단위 unit:mm

I-D(mm)	TA	TB	TL
20	48	62	164
25	48	62	168
32	50	64	172
40	67.5	88.5	222

※기타 표시하지 않은 치수는 ISS3 일반형과 동일
※Dimension whichisn'tindicated is same with general type of ISS$_3$ SERIES

내열용 실린더 Cylinder for Heat-Resist

ISS$_3$ — 부착형식 mounting type — 튜브내경 I-D(mm) X 행정 / Stroke — 선단금구 Lot-end — SV

※150까지 고온의 주위조건에서 사용가능하게 내열용 패킹류를 장착한 실린더
It is aCylinderwith packing type forH eat-Resist.Can use inthe high-temperature situation to 150℃.

사양 Specification

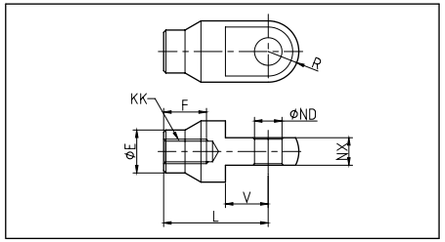
Type	Oil Supply Type
I-D(mm)	Ø20,Ø25,Ø32,Ø40
Working Temperature	-20~+150°C
Packing Materials	VITON (Fluoric Rubber)

※오토 스위치 부착은 제작불가능
Can'tmakemounted Auto-Switch

소형실린더 ISS$_3$ 시리즈 SMALL SIZE CYLINDER ISS$_3$ SERIES

부속 금구 Parts-end

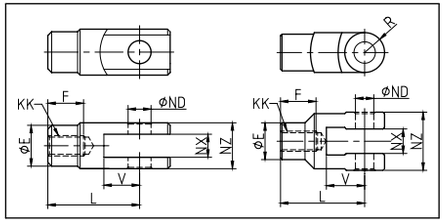
1산 너클 조인트 Single-Thread Knuckle Joint



단위 unit:mm

I-D(mm)	F	ØE	L	KK	R	V	ØND	NX
20	16	20	36	M8X1.25	10	14	$9^{+0.06}_{0}$	$9^{-0.1}_{-0.2}$
25,32	18	20	38	M10X1.25	10	14	$9^{+0.06}_{0}$	$9^{-0.1}_{-0.2}$
40	22	24	55	M14X1.50	15.5	20	$12^{+0.06}_{0}$	$16^{-0.1}_{-0.3}$

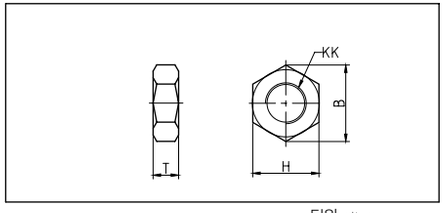
2산 너클조인트 Double-Thread Knuckle Joint



단위 unit:mm

I-D(mm)	F	ØE	L	KK	R	V	ØND	NX	NZ
20	16	20	36	M8X1.25	12	14	$9^{+0.06}_{0}$	$9^{+0.2}_{+0.1}$	18
25,32	18	20	38	M10X1.25	12	14	$9^{+0.06}_{0}$	$9^{+0.2}_{+0.1}$	18
40	22	24	55	M14X1.50	13	25	$12^{+0.09}_{0}$	$16^{+0.3}_{+0.1}$	38

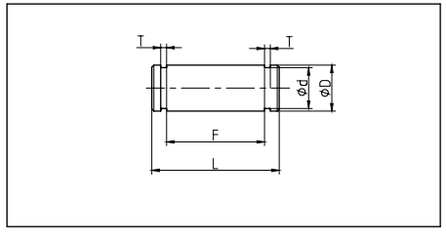
로드너트 Rod nut



단위 unit:mm

I-D(mm)	KK	T	H	B
20	M8X1.25	5	13	15.0
25,32	M10X1.25	6	17	19.6
40	M14X1.50	8	22	25.4

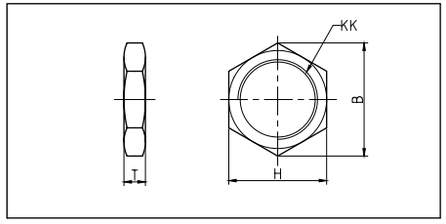
클레비스용 핀 Pin for CLEVIS



단위 unit:mm

I-D(mm)	ØD	Ød	L	F	M	T	Remarks
20	$9^{-0.04}_{-0.08}$	8	25	19.2	17.5	1.15	
32	$9^{-0.04}_{-0.08}$	8	25	19.2	17.5	1.15	
40	$10^{-0.04}_{-0.09}$	9	36.5	30.2	18.5	1.3	For CLEVIS
40	$12^{-0.04}_{-0.09}$	11	44.5	30.8	18.5	1.3	For Y Knuckle

부착용 너트 Mounted Nut

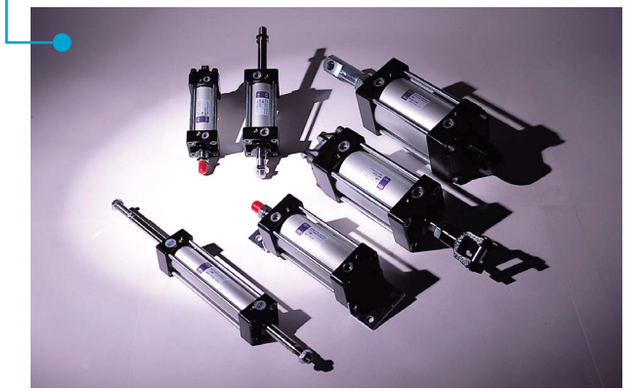


단위 unit:mm

I-D(mm)	KK	T	H	B
20	M20X1.5	7	26	30
25,32	M26X1.5	8	32	37
40	M32X2.0	8	41	47.3

MEMO

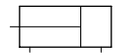
중형실린더 ISM 시리즈
MID CYLINDER ISM SERIES



중형실린더 ISM 시리즈 MID CYLINDER ISM SERIES

일반형:Ø40, Ø50, Ø63, Ø80, Ø100 General Type : Ø40, Ø50, Ø63, Ø80, Ø100

표시기호 Notation



Double-acting
Single-rod

형식표시방법 Method for model Indication

ISM — L — LB — 50 — S100 — J — Y — AS_2

①중형 공기압실린더
튜브재질:알루미늄합금
Small-size Air pressure Cylinder
Tube Materials : Alloy of Aluminum

②형식
무기호:무급유형
None : No Oil Supply Type
L: 저유압형
Low-hydraulic type

③취부 지지형식
B:기본형
LB:푸트형
FA:로드측 플랜지형
FB:헤드측 플랜지형
CA:1산 클레비스형
CB:2산 클레비스형
TC: 센터트러니온형
Supporting type of fitting surface
B:Basic Type
LB:Foot Type
FA:Rod-side Flange Type
FB:Head-side Flange Type
CA:Single Thread CLEVIS Type
CB:Double Thread CLEVIS Type
TC: Center-Trunnion Type

④튜브내경
Inside-diameter of tube
40-40mm
50-50mm
63-63mm
80-80mm
100-100mm

⑤실린더행정
Cylinder Stroke
표준행정표 참조(mm)
Standard Stroke

⑥실린더추기호
Cylinder Additional Notation

Bellows	J:Nylon Tarpaulin
	K:Neoprene Cross
Cushion	N:No cushion
	R:Rod-side cushion
	H:Head-side Cushion
	None : Both side cushion

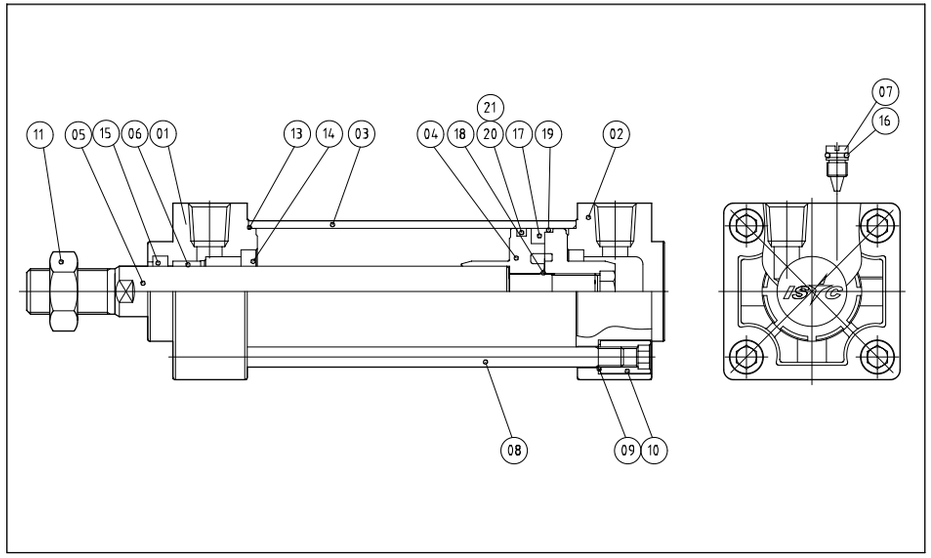
⑦선단금구
I : 1산너클조인트
Y : 2산 너클조인트
무기호:선단너트 포함
Lot-end tools
I: Single Thread Knuckle Joint
Y:Double Thread Knuckle Joint
None : Basic(including lot-end nut)

오토스위치부착수량
AS_1:1개
AS_2:2개
ASn 개
Mounted number of auto switch
AS_1:1
AS_2:2
ASn : n

중형실린더 ISM 시리즈 MID CYLINDER ISM SERIES

내부구조도 Inside Structure Drawings

내부구조도 Inside Structure Drawings



부품리스트 Parts List

No	Parts Name	Materials	Remarks
1	ROD COVER	ADC12	
2	HEAD COVER	ADC12	
3	TUBE	A6063	
4	PISTON	**DO1C**	
5	ROD	S45C	
6	OILLESS	CU+OIL	
7	CUSHION NIDDLE	**BSBM**	
8	TIE ROD	S10C	
9	SPRING WASHER	SCM4	
10	TIE ROD NUT	**S20C**	
11	ROD NUT	SS41	

패킹리스트 Packing List

No	Parts Name	Materials	I-D(mm)				
			Ø40	Ø50	Ø63	Ø80	Ø100

급유형 Oil Supply Type

■ POSTON PACKING

13	TUBE O-RING	N	Ø39.5*W1.5	Ø49.5*W1.5	Ø62.5*W1.5	Ø72.5*W1.5	Ø99.5*W1.5
14	CUSHION PACKING		PCS 20	PCS 24	PCS24	PCS30	PCS35
15	ROD PACKING	B	DRP16	DRP20	DRP20	DRP25	DRP30
16	NIDDLE O-RING		S6	S6	S6	S6	S9
17	MAGNET	R	Ø40	Ø50	Ø63	Ø80	Ø100
18	ROD O-RING		S10	S14	S14	S16	S20
19	WEARING	AC	SWB 40	SWB 50	SWB 63	SWB 80	SWB 100

무급유형 Oiless Type

■ Packing except 19 and 20 is same with Oil Supply Type.
19,20 이외의 패킹은 급유형과 동일

19	WEARING	AC	SBW 40	SBW 50	SBW 63	SBW 80	SWB 100
20	PISTON PACKING	NBR	OPA 40	OPA 50	OPA 63	OPA 80	OPA 100

저유압형 Low Hydraulic Type

■ Packing except 19 and 21 is same with Oil Supply Type.
19,21 이외의 패킹은 급유형과 동일

19	WEARING	AC	SBW 40	SBW 50	SBW 63	SBW 80	SWB 100
21	PISTON PACKING	NBR	HSD 40	HSD 50	HSD 63	HSD 80	HSD 100

중형실린더 ISM 시리즈 MID CYLINDER ISM SERIES

형식 및 사양 기타 Model & Specification and Others

사양 Specification

형식 Type	무급유형 No Oil Supply	저유압형 Low-Hydraulic Type
사용유체 Working Oil	공기 Air	유압작동유 Hydraulic Working Oil
보증내압력 Bearing pressure	15kgf/㎠	
최고사용압력 Max. set pressure	9.9kgf/㎠	
최저사용압력 Min. set pressure	0.5kgf/㎠	1.0kgf/㎠
주위온도 및 사용유체온도 Ambient & Woking Oil temperature	-10~70°C	
사용피스톤속도 Speed d WoingPiston	50~700mm/sec	0.5~300mm/sec
쿠션 Cushion	있음 Cushion	없음 None
나사공차 Screw Tolerance	KS2급 2nd KS Level	
행정길이의 허용차 Allowance of Stroke Length	~250 $^{+1.0}_{0}$	251~800 $^{+1.4}_{0}$
취부지지형식 Supporting Type of Fitting Surface	Basic, Fod, Rod-side Flange Head-side Flange, Single Thread CLEVIS, Double Thread CLEVIS Center-Trunnion Type	

표준행정표 Standard Stroke Table

I-D(mm)	Standard Stroke
ø40	25,50,75,100,125,150,175,200,250, 300,350,400,450,500
ø50	25,50,75,100,125,150,175,200,250, 300,350,400,450,500,600
ø63	25,50,75,100,125,150,175,200,250, 300,350,400,450,500,600
ø80	25,50,75,100,125,150,175,200,250, 300,350,400,450,500,600,700,800
ø100	25,50,75,100,125,150,175,200,250, 300,350,400,450,500,600,700,800

형식 Type

표시기호 Notation	형식 Type	작동방식 Working Type	피스톤패킹 Piston packing	비고 Remarks
ISM	No Oil Supply	Double-acting Type	Special packing	Basic Built-in type of Magnet
ISM L	Low Hydraulic Type		Special packing	

벨로우즈 재질 사용온도 Working Temperature of Bellows Materials

표시기호 Notation	벨로우즈 재질 Bellows Materials	최고주위온도 Max. Ambient Temperature
J	Nylon Tauplin	60°C
K	Neoprene Closs	110°C

부속품 Parts

취부지지형식 Supporting Type of Fitting Surface		Basic Type	Foot Type	Rod-side Flange Type	Head-side Flange Type	Single Thread CLEVIS Type	Double Thread CLEVIS Type	Center-side Trunnion Type
기본부착품 BasicMounted-parts	로드선단너트 Rod-end Nut	●	●	●	●	●	●	●
	크레비스용 핀 Pin for CLEVIS		-	-	-	-	●	-
주문품 Special Order	1산너클죠인트SingleKnuckle Joint	●	●	●	●	●	●	●
	2산너클조인트(핀포함) Double Knuckle Joint(hcluding Pin)	●	●	●	●	●	●	●
	벨로우즈 Bellows	●	●	●	●	●	●	●

지지 금구 부품 품번 Supporting Parts No.

Lot-end tools \ I-D(mm)	40	50	63	80	100
Foot Type	ISM-LB40	ISM-LB50	ISM-LB63	ISM-LB80	ISM-LB100
Flange Type	ISM-F40	ISM-F50	ISM-F63	ISM-F80	ISM-F100
Single Thread CLEVIS Type(Including Pin)	ISM-CA40	ISM-CA50	ISM-CA63	ISM-CA80	ISM-CA100
Double Thread CLEVIS Type(Including Pin)	ISM-CB40	ISM-CB50	ISM-CB63	ISM-CB80	ISM-CB100

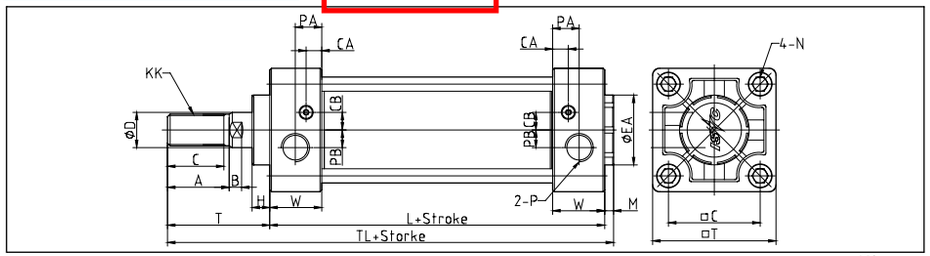
※푸트 금구 주문시 1대분의 경우2개를 주문할 것
Should order two Footfor onemachine

선단 금구 품번 Lot-end No.

Lot-end tools \ I-D(mm)	40	50,63	80	100
1산너클죠인트SingleKnuckle Joint	ISM-40 I	ISM-50,63 I	ISM-80 I	ISM-100 I
2산너클조인트(핀포함) Double Knuckle Joint(hcluding Pin)	ISM-40 Y	ISM-50,63 Y	ISM-80 Y	ISM-100 Y

기본형(B) Basic Type(B)

■ Oiless Type ISM -B, Low Hydraulic Type ISM L-B



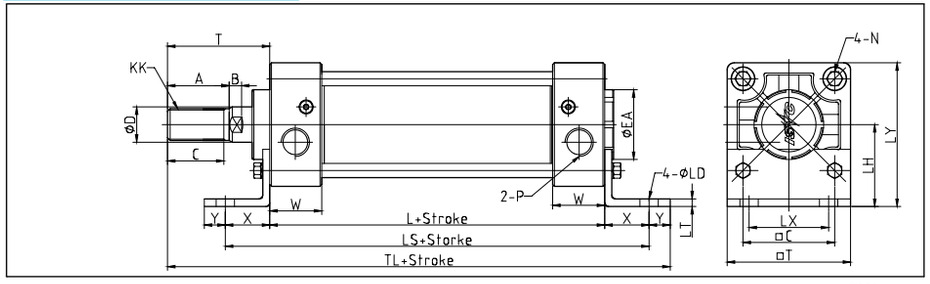
단위 unit:mm

I-D(mm)	Stroke Range	C	A	B	□C	□T	ØD	ØEA	H	KK	L	N	P(PT)	PA	PB
40	~500	27	30	8	44	61	16	31.5	10	M14XP1.5	84	M8XP1.25	1/4	11	7
50	~600	32	35	10	52	70	20	39.5	10	M18XP1.5	90	M8XP1.25	3/8	12	8
63	~600	32	35	10	64	83	20	39.5	10	M18XP1.5	98	M8XP1.25	3/8	13	11.5
80	~800	37	40	12	78	102	25	51.5	14	M22XP1.5	116	M12XP1.75	1/2	16	12
100	~800	37	40	12	92	116	30	51.5	14	M26XP1.5	126	M12XP1.75	1/2	16	12

I-D(mm)	W	T	TL	M	CA	CB
40	26	51	140.5	5.5	6	8
50	28	58	153.5	5.5	7.5	10
63	29	58	161	5.5	8	10
80	37	71	192	5.5	10	12
100	40	72	203	5.5	10	12

푸트형(LB) Foot Type

■ Oiless Type ISM -LB, Low Hydraulic Type ISM L-LB



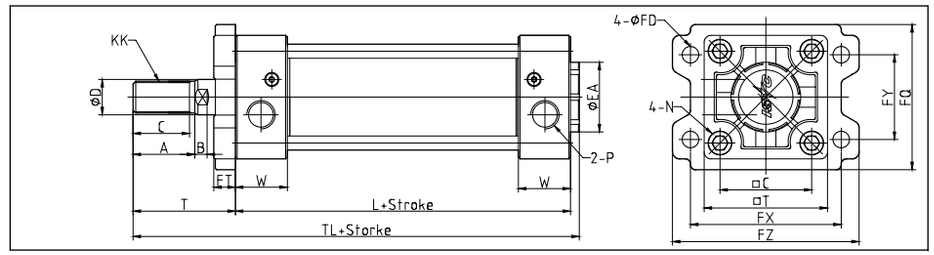
단위 unit:mm

I-D(mm)	Stroke Range	C	A	B	□C	□T	ØD	ØEA	H	KK	L	N	P(PT)	T	TL
40	~500	27	30	8	44	61	16	31.5	10	M14XP1.5	84	M8XP1.25	1/4	51	175
50	~600	32	35	10	52	70	20	39.5	10	M18XP1.5	90	M8XP1.25	3/8	58	188
63	~600	32	35	10	64	83	20	39.5	10	M18XP1.5	98	M8XP1.25	3/8	58	205.5
80	~800	37	40	12	78	102	25	51.5	14	M22XP1.5	116	M12XP1.75	1/2	71	246.5
100	~800	37	40	12	92	116	30	51.5	14	M26XP1.5	126	M12XP1.75	1/2	72	257.5

I-D(mm)	W	ØLD	LH	LS	LT	LX	LY	X	Y
40	26	9.0	40	138	3	42	70	27	13
50	27.5	9.0	45	144	3	50	80	27	13
63	29.5	11.5	50	165.5	3	59	93	34	16
80	36	13.5	65	203.5	5	76	116	44	16
100	39	13.5	75	211.5	5	92	133	43	17

로드측 플렌지형(FA) Rod-side Flenge Type(FA)

■ Oiless Type ISM -FA, Low Hydraulic Type ISM L-FA



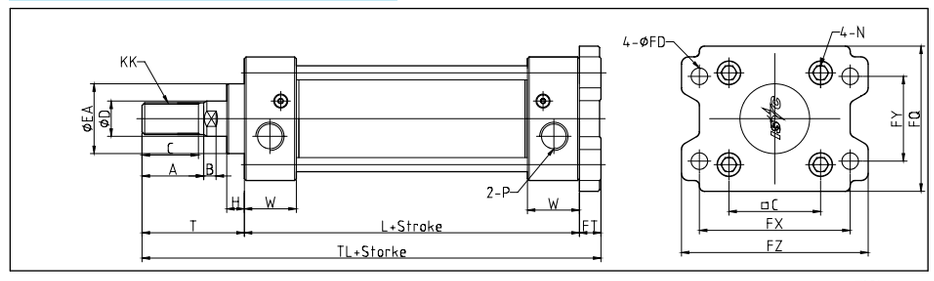
단위 unit:mm

I-D(mm)	Stroke Range	C	A	B	□C	□T	ØD	ØEA	KK	L	N	P(PT)	T	TL
40	~800	27	30	8	44	61	16	31.5	M14XP1.5	84	M8XP1.25	1/4	51	140.5
50	~1000	32	35	10	52	70	20	39.5	M18XP1.5	90	M8XP1.25	3/8	58	153.5
63	~1000	32	35	10	64	83	20	39.5	M18XP1.5	98	M8XP1.25	3/8	58	161
80	~1000	37	40	12	78	102	25	51.5	M22XP1.5	116	M12XP1.75	1/2	71	192
100	~1000	37	40	12	92	116	30	51.5	M26XP1.5	126	M12XP1.75	1/2	72	203

I-D(mm)	W	ØFD	FQ	FT	FX	FY	FZ
40	26	9	71	12	80	42	100
50	27.5	9	81	12	90	50	110
63	29.5	11.5	101	15	105	59	130
80	36	13.5	119	18	130	76	160
100	39	13.5	133	18	150	92	180

헤드측 플렌지형(FB) Head-side Flenge Type(FB)

■ Oiless Type ISM -FB, Low Hydraulic Type ISM L-FB



단위 unit:mm

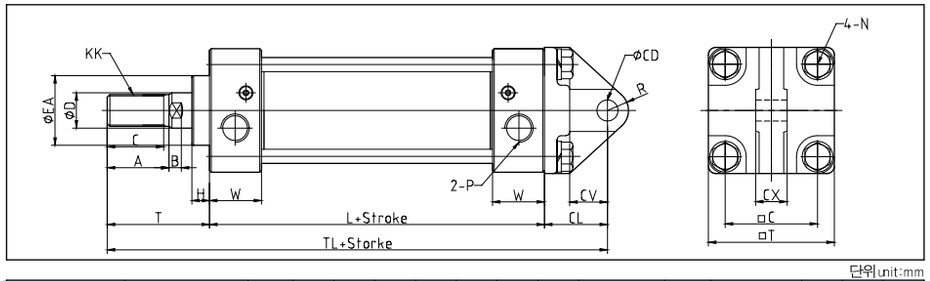
I-D(mm)	Stroke Range	C	A	B	□C	ØD	ØEA	H	KK	L	N	P(PT)	T	TL
40	~500	27	30	8	44	16	31.5	10	M14XP1.5	84	M8XP1.25	1/4	51	147
50	~600	32	35	10	52	20	39.5	10	M18XP1.5	90	M8XP1.25	3/8	58	160
63	~600	32	35	10	64	20	39.5	10	M18XP1.5	98	M8XP1.25	3/8	58	170.5
80	~800	37	40	12	78	25	51.5	14	M22XP1.5	116	M12XP1.75	1/2	71	204.5
100	~800	37	40	12	92	30	51.5	14	M26XP1.5	126	M12XP1.75	1/2	72	215.5

I-D(mm)	W	ØFD	FQ	FT	FV	FX	FY	FZ
40	26	9	71	12	60	80	42	100
50	27.5	9	81	12	70	90	50	110
63	29.5	11.5	101	15	86	105	59	130
80	36	13.5	119	18	102	130	76	160
100	39	13.5	133	18	116	150	92	180

중형실린더 ISM 시리즈 MID CYLINDER ISM SERIES

일반형(CA, CB) General Type(CA, CB)

1산 클레비스형(CA) Single-Thread CLEVIS Type(CA) ■ Oiless Type ISM -CA, Low Hydraulic Type ISM L-CA

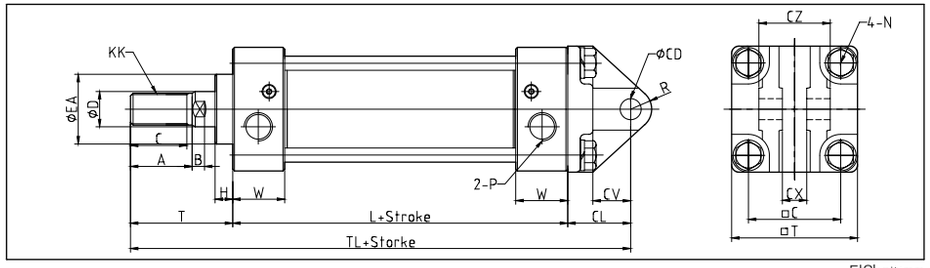


단위 unit:mm

I-D(mm)	Stroke Range	C	A	B	□C	□T	ØD	ØEA	H	KK	L	N	P(PT)	T	TL
40	~500	27	30	8	44	61	16	31.5	10	M14XP1.5	84	M8XP1.25	1/4	51	165
50	~600	32	35	10	52	70	20	39.5	10	M18XP1.5	90	M8XP1.25	3/8	58	183
63	~600	32	35	10	64	83	20	39.5	10	M18XP1.5	98	M8XP1.25	3/8	58	195.5
80	~800	37	40	12	78	102	25	51.5	14	M22XP1.5	116	M12XP1.75	1/2	71	234.5
100	~800	37	40	12	92	116	30	51.5	14	M26XP1.5	126	M12XP1.75	1/2	72	255.5

I-D(mm)	W	ØCD	CL	CV	CX	R
40	26	10 $^{+0.055}_{0}$	30	18	15 $^{-0.1}_{-0.3}$	10
50	27.5	12 $^{+0.070}_{0}$	35	23	18 $^{-0.1}_{-0.3}$	12
63	29.5	16 $^{+0.070}_{0}$	40	27	25 $^{-0.1}_{-0.3}$	16
80	36	20 $^{+0.085}_{0}$	48	34	31.5 $^{-0.1}_{-0.3}$	20
100	39	25 $^{+0.085}_{0}$	58	43	35.5 $^{-0.1}_{-0.3}$	25

2산 클레비스형(CB) Double-Thread CLEVIS Type(CB) ■ Oiless Type ISM -CB, Low Hydraulic Type ISM L-CB



단위 unit:mm

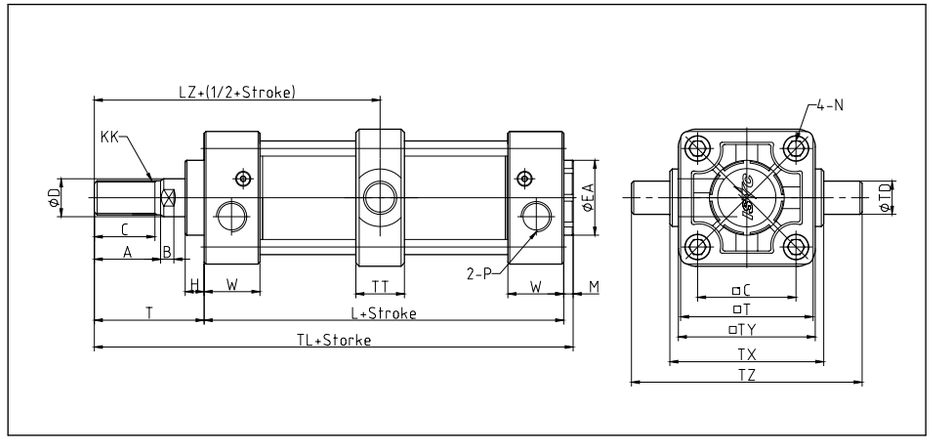
I-D(mm)	Stroke Range	C	A	B	□C	□T	ØD	ØEA	H	KK	L	N	P(PT)	T	TL
40	~500	27	30	8	44	61	16	31.5	10	M14XP1.5	84	M8XP1.25	1/4	51	165
50	~600	32	35	10	52	70	20	39.5	10	M18XP1.5	90	M8XP1.25	3/8	58	183
63	~600	32	35	10	64	83	20	39.5	10	M18XP1.5	98	M8XP1.25	3/8	58	196
80	~800	37	40	12	78	102	25	51.5	14	M22XP1.5	116	M12XP1.75	1/2	71	235
100	~800	37	40	12	92	116	30	51.5	14	M26XP1.5	126	M12XP1.75	1/2	72	256

I-D(mm)	W	ØCD	CL	CV	CX	CZ	R
40	26	10 $^{+0.055}_{0}$	30	18	15	29.5	10
50	27.5	12 $^{+0.070}_{0}$	35	23	18	38	12
63	29.5	16 $^{+0.070}_{0}$	40	27	25	49	16
80	36	20 $^{+0.085}_{0}$	48	34	31.5	61	20
100	39	25 $^{+0.085}_{0}$	58	43	35.5	64	25

중형실린더 ISM 시리즈 MID CYLINDER ISM SERIES

일반형(TC) General Type(TC)

센터트러니언형(TC) Center Trinion Type(TC) ■ Oiless Type ISM -TC, Low Hydraulic Type ISM L-TC

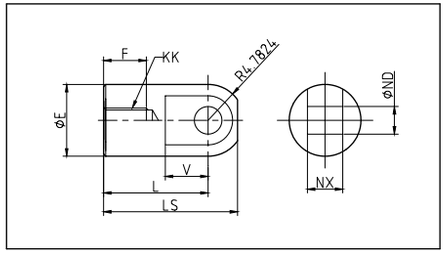


단위 unit:mm

I-D(mm)	Stroke Range	C	A	B	□C	□T	ØD	ØEA	H	KK	L	N	P(PT)	T	TL
40	~500	27	30	8	44	61	16	31.5	10	M14XP1.5	84	M8XP1.25	1/4	51	140.5
50	~600	32	35	10	52	70	20	39.5	10	M18XP1.5	90	M8XP1.25	3/8	58	153.5
63	~600	32	35	10	64	83	20	39.5	10	M18XP1.5	98	M8XP1.25	3/8	58	161
80	~800	37	40	12	78	102	25	51.5	14	M22XP1.5	116	M12XP1.75	1/2	71	192
100	~800	37	40	12	92	116	30	51.5	14	M26XP1.5	126	M12XP1.75	1/2	72	203

I-D(mm)	W	ØTD	TT	TX	□TY	TZ	LZ	M
40	26	15 $^{-0.032}_{-0.059}$	22	85	62	117	93	5.5
50	27.5	15 $^{-0.032}_{-0.059}$	22	95	74	127	103	5.5
63	29.5	18 $^{-0.032}_{-0.059}$	28	110	90	148	107	5.5
80	36	25 $^{-0.04}_{-0.073}$	34	140	110	192	129	5.5
100	39	25 $^{-0.04}_{-0.073}$	40	162	130	214	135	5.5

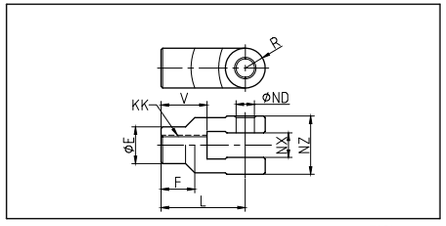
1산 너클 조인트 Single-Thread Knuckle Joint



단위 unit:mm

H-D(mm)	F	øE	L	KK	R	V	øND	LS	NX
40	22	24	55	M14×1.5	15.5	20	12 $^{+0.07}_{0}$	69	16 $^{-0.1}_{-0.3}$
50,63	27	28	60	M18×1.5	15.5	20	12 $^{+0.07}_{0}$	74	16 $^{-0.1}_{-0.3}$
80	37	36	71	M22×1.5	22.5	26	18 $^{+0.07}_{0}$	91	28 $^{-0.1}_{-0.3}$
100	37	40	83	M26×1.5	24.5	28	20 $^{+0.08}_{0}$	105	30 $^{-0.1}_{-0.3}$

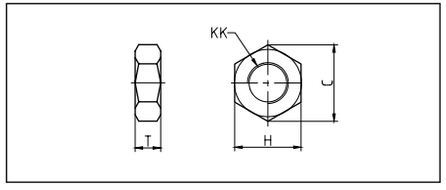
2산 너클조인트 Double-Thread Knuckle Joint



단위 unit:mm

H-D(mm)	F	øE	L	KK	R	V	øND	NX	NZ
40	22	24	55	M14×1.5	13	30	12 $^{+0.07}_{0}$	16 $^{+0.3}_{+0.1}$	38
50,63	27	28	60	M18×1.5	15	33	12 $^{+0.07}_{0}$	16 $^{+0.3}_{+0.1}$	38
80	37	36	71	M22×1.5	19	43	18 $^{+0.07}_{0}$	28 $^{+0.3}_{+0.1}$	55
100	37	40	83	M26×1.5	21	45	20 $^{+0.08}_{0}$	30 $^{+0.3}_{+0.1}$	61

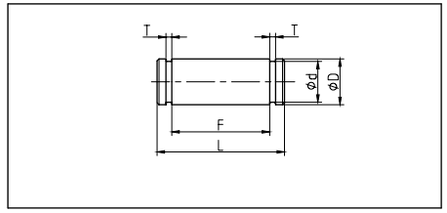
로드너트 Rod nut



단위 unit:mm

H-D(mm)	KK	T	H	C
40	M14×1.5	8	22	25.4
50,63	M18×1.5	11	27	31.4
80	M22×1.5	13	32	37
100	M26×1.5	16	41	47.3

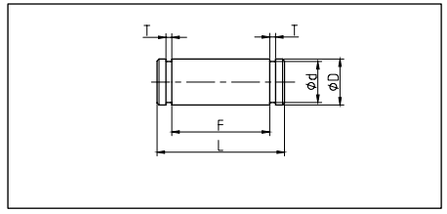
클레비스용 핀 Pin for CLEVIS



단위 unit:mm

H-D(mm)	øD	Ød	L	F	T
40	10 $^{-0.04}_{-0.08}$	9	35.8	29.7	1.15
50	12 $^{-0.04}_{-0.08}$	11	44.3	38.2	1.15
63	16 $^{-0.05}_{-0.09}$	14.5	55.3	49.2	1.15
80	20 $^{-0.06}_{-0.11}$	18.5	68.2	61.2	1.35
100	25 $^{-0.06}_{-0.11}$	23	71.2	64.2	1.35

너클 조인트 핀 Knuckle Joint Pin



단위 unit:mm

H-D(mm)	øD	Ød	L	F	T
40,50,63	12 $^{-0.05}_{-0.09}$	11	44.3	38.2	1.15
80	18 $^{-0.05}_{-0.09}$	16.5	62.2	55.2	1.35
100	20 $^{-0.06}_{-0.12}$	18.5	68.2	61.2	1.35

형식 표시 방법 Indication of Model

ISM W — 형식Type — 부착형식 mounting type — 튜브내경 H-D(mm) X 행정 / Stroke — 선단금구 / Lot-end

※ISM시리즈 일반형 형식 표기 방법 참조
Refer to General type of ISM SERIES

표준행정표 Standard Stroke Table

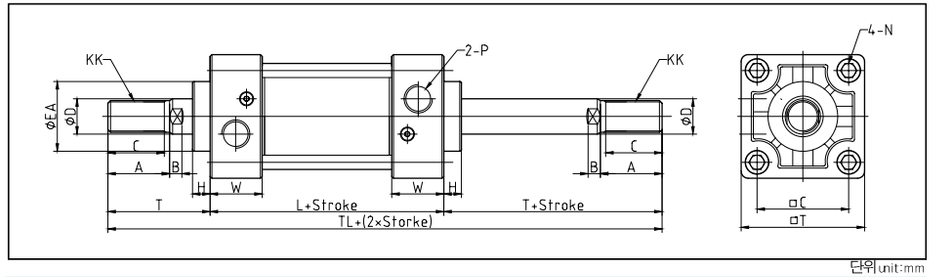
H-D(mm)	표준행정 Standard Stroke
40	25,50,75,100,125,150,175,200,250,300,350,400,450,500
50	25,50,75,100,125,150,175,200,250,300,350,400,450,500,600
63	25,50,75,100,125,150,175,200,250,300,350,400,450,500,600
80	25,50,75,100,125,150,175,200,250,300,350,400,450,500,600,700,800
100	25,50,75,100,125,150,175,200,250,300,350,400,450,500,600,700,800

사양 Specification

형식 Type	무급유형 Oiless type	저유압형 Low Hydraulic Type
사용유체 Fluid	공기 Air	유압작동유 Hydraulic Working Oil
보증내압력 Bearing pressure	15kgf/㎠	
최고사용압력 Max. Working Pressure	9.9kgf/㎠	
최저사용압력 Min. Working Pressure	0.5kgf/㎠	1.0kgf/㎠
사용피스톤 속도 Working Piston Speed	50~500mm/sec	0.5~300mm/sec
주변온도(사용제온) Ambient & Working Oil Temperature	-10~70°C	
쿠션 Cushion	양측 Both-sides	없음 None
나사공차 Screw Tolerance	KS2급 2nd KS Level	
행정길이허용차 Allowance of Stoke Length	~250 $^{+1.0}_{0}$	251~800 $^{+1.4}_{0}$
취부지지형식 Supporting Type of fitting Surface	Basic Type, Foot Type, Flange Type Center Trunnion Type	

외형 치수도/기본형 Outside Dimension Drawings/Basic Type

■ Oiless Type ISM W-B, Low Hydraulic Type ISM WL-B



단위 unit:mm

H-D(mm)	Stroke Range	C	A	B	ØD	H	KK	L	N	P(PT)	□C	□T	W	T
40	~500	27	30	8	16	10	M14XP1.5	84	M8XP1.25	1/4	44	61	26	51
50	~600	32	35	10	20	10	M18XP1.5	90	M8XP1.25	3/8	52	70	27.5	58
63	~600	32	35	10	20	10	M18XP1.5	98	M8XP1.25	3/8	64	83	29.5	58
80	~800	37	40	12	25	14	M22XP1.5	116	M12XP1.75	1/2	78	102	36	71
100	~800	37	40	12	30	14	M26XP1.5	126	M12XP1.75	1/2	92	116	39	72

H-D(mm)	TL	ØEA				
40	186	31.5				
50	206	39.5				
63	213.5	39.5				
80	257.5	51.5				
100	269.5	51.5				

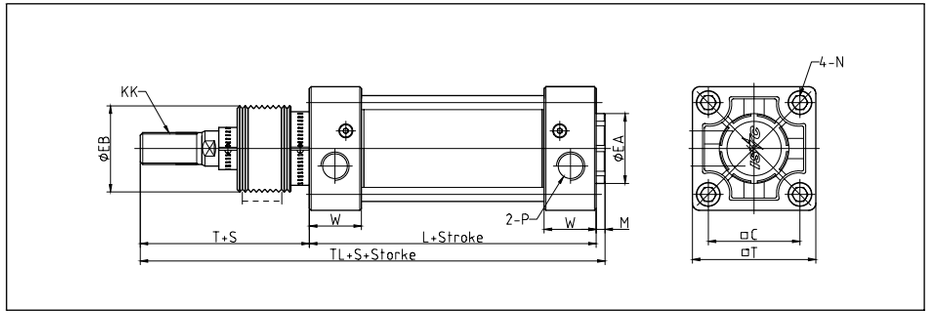
중형실린더 ISM 시리즈 MID CYLINDER ISM SERIES

벨로우즈 부착형 Bellows-Mounted Type

형식 표시 방법 Indication of Model

ISM — 형식 Type — 취부지지형식 Supporting Type of Fitting Surfac — 튜브내경 I-D(mm) X 형식Type — J

J: 나이론 타폴린60℃Nylon Tarpaulin
J: 네오프렌크로스60℃ Neoprene Cross



단위 unit:mm

I-D(mm)	Stroke Range	□C	□T	ØEA	KK	L	N	P(PT)	TL	M	W	ØEB	S	T
40	20~500	44	61	31.5	M14XP1.5	84	M8XP1.25	1/4	148.5	5.5	26	43	1/4	59
50	20~600	52	70	39.5	M18XP1.5	90	M8XP1.25	3/8	161.5	5.5	27.5	52		66
63	20~600	64	83	39.5	M18XP1.5	97.5	M8XP1.25	3/8	169	5.5	29.5	52		66
80	20~800	78	102	51.5	M22XP1.5	115.5	M12XP1.75	1/2	201	5.5	36	65		80
100	20~800	92	116	51.5	M26XP1.5	125.5	M12XP1.75	1/2	212	5.5	39	65		81

※기타 표기하지 않은 치수는 ISM 일반형 과 동일
※The other numbers is same as general ISM series.

중형실린더 ISM 시리즈 MID CYLINDER ISM SERIES

다단 행정 양로드형 Multiple-end Stroke Double-rod Type

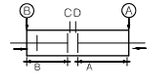
형식 표시 방법 Method for model Indication

ISM — 형식 Type — 취부지지형식 mounting type — 튜브내경 I-D(mm) X A행정 추기호 A Stroke Additional Notation + B행정 추기호 B Stroke Additional Notation — 선단금구 Lot-end — TW

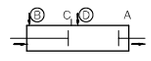
※SM시리즈 일반형 형식 표기 방법 참조
Refer to General type of ISM SERIES

표시기호 Notation

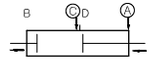
■ 기능 Function



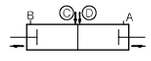
ⒶⒷ포트에 공기압을 공급하면 A,B행정은 후진한다.
When supply Air pressure to ⒶⒷPort, A,B Stroke do backward motion.



ⒷⒹ포트에 공기압을 공급하면 A행정이 작동한다.
When supply Air pressure to ⒷⒹPort, A Stroke works.



ⒶⒸ포트에 공기압을 공급하면 B행정이 작동한다
When supply Air pressure to ⒶⒸPort, B Stroke works.

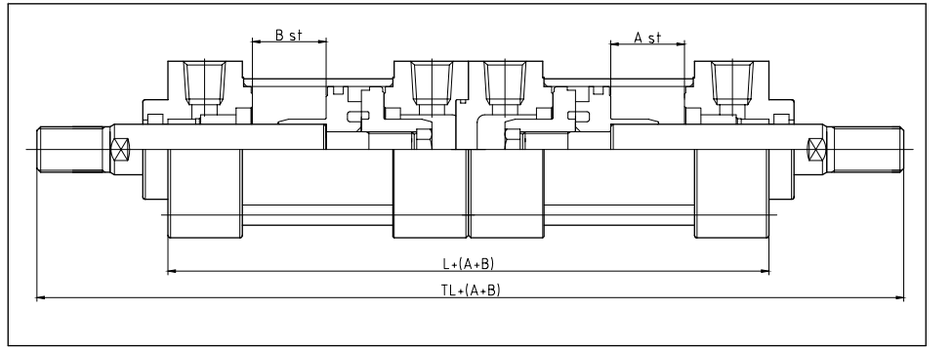


ⒸⒹ포트에 공기압을 공급하면 A,B행정이 작동한다.
When supply Air pressure to ⒸⒹPort, A,B Stroke works.

사양 Specification

형식 Type	무급유형 Oiless Type
사용유체 Fluid	공기 Air
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. Working Pressur	9.9kgf/㎠
최저사용압력 Min. Working Pressure	0.5kgf/㎠
사용피스톤 속도 Working Piston Speed	50~500mm/sec
작동방식 Working Type	복동 Double-acting
쿠션 Cushion	쿠션 Cushion
부착형식 Mounted Type	Basic Type, Foot Type of shaft direction, Flange Type
적용튜브내경 Applied inside-diameter of tube	Ø40,Ø50,Ø63,Ø80,Ø100

구조 외형 치수도 /기본형 Outside Structure Dimension Drawings/Basic Type



단위 unit:mm

I-D(mm)	L	TL
40	168	270
50	180	296
63	195	311
80	252	373
100	252	395

※기타 표기하지 않은 치수는 ISM 일반형 과 동일
※The other numbers is same as general ISM series.

중형실린더 ISM 시리즈 MID CYLINDER ISM SERIES

다단 행정 편로드형 Multiple-end Stroke Single-rod Type

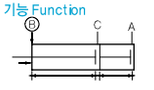
형식 표시 방법 Indication of Model

ISM — 형식 Type — 취부지지형식 mounting type — 튜브내경 I-D(mm) X B행정추기호 B Stroke Additional Notation + A행정추기호 A Stroke Additional Notation — 선단금구 Lot-end — TS

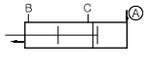
※ISM 시리즈 일반형 형식 표기 방법 참조 Refer to General type of ISM SERIES.
※두개의 실린더를 직렬로 연결, 일체화하여 실린더 행정을 왕복과 더불어 2단계로 제어 가능하고, 2배의 실린더 출력을 얻을 수 있다.
Connect two cylinder by series, make one body, then, can control cylinder stroke by two steps with round trip and get twice more outputs.

표시기호 Notation

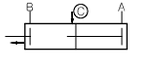
■ 기능 Function



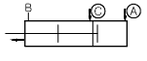
Ⓑ포트에 공기압을 공급하면 A,B행정은 후진한다.
When supply Air pressure to ⒷPort, A,B Stroke do backward motion.



Ⓐ포트에 공기압을 공급하면 로드와A행정이 작동한다.
When supply Air pressure to ⒶPort, A Stroke works.



Ⓒ포트에 공기압을 공급하면 B-A행정이 작동한다
When supply Air pressure to ⒸPort, B Stroke works.

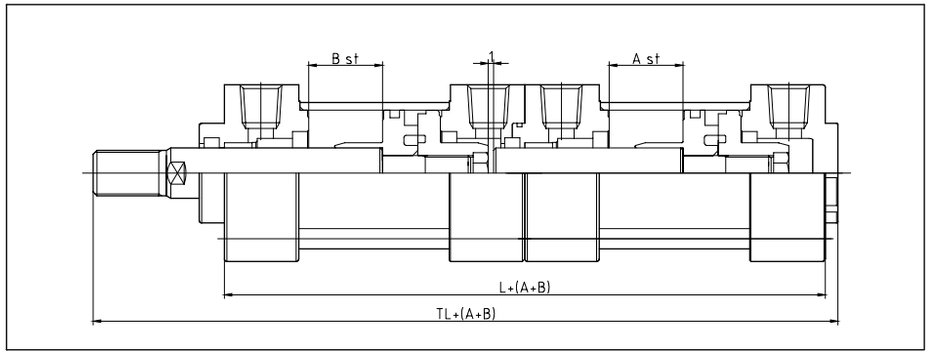


ⒶⒸ양포트에 공기압을 공급하면 A행정의 범위 중에 2배의 출력이 얻어진다.
When supply Air pressure to ⒶⒸPort, A,B Stroke works.

사양 Specification

형식 Type	무급유형 Oiless Type
사용유체 Fluid	공기 Air
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. Working Pressur	9.9kgf/㎠
최저사용압력 Min. Working Pressure	0.5kgf/㎠
사용피스톤 속도 Working Piston Speed	50~500mm/sec
작동방식 Working Type	복동 Double-acting
쿠션 Cushion	Cushion
부착형식 Mounted Type	Basic Type, Foot Type of shaft direction , Rod-side Flenge Type, Head-side Flange Type, single Thread CLEVIS Type, Double Thread CLEVIS Typ
적용튜브내경 Applied inside-diameter of tube	Ø40,Ø50,Ø63,Ø80,Ø100

구조 외형 치수도/기본형 Outside Structure Dimension Drawings/Basic Type



단위 unit:mm

I-D(mm)	L	TL
40	168	224.5
50	180	243.5
63	195	258.5
80	231	307.5
100	251	328.5

※기타 표시하지 않은 치수는 ISM일반형과 동일
Dimension which isn't indicated is same with general type of ISM SERIES

중형실린더 ISM 시리즈 MID CYLINDER ISM SERIES

가변 행정 실린더형 Variable Stroke Cylinder Type/Control type of Forward Motion

형식 표시 방법 Indication of Model

ISM — 형식 Type — 취부지지형식 mounting type — 튜브내경 I-D(mm) X 행정 Stroke + 추기호 Additional Notation — 행정조정기호 Stroke Control Notation — SJ

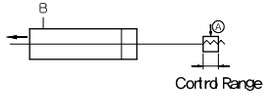
※ISM 시리즈 일반형 형식 표기 방법 참조 Refer to General type of ISM SERIES.
실린더 전진시 행정을 전체 행정에서 0~25, 0~50mm까지 가변조정 가능, 헤드측에 행정조정기구를 부착하여 전진시의 행정을 조정한다.
Can control variably Stroke at Cylinder Forward-motion from whole stroke to 0~25mm(A), 0~50mm(B).

A: 행정조정범위 Stroke Control Range 0~25m/m
B: 행정조정범위 Stroke Control Range 0~50m/m

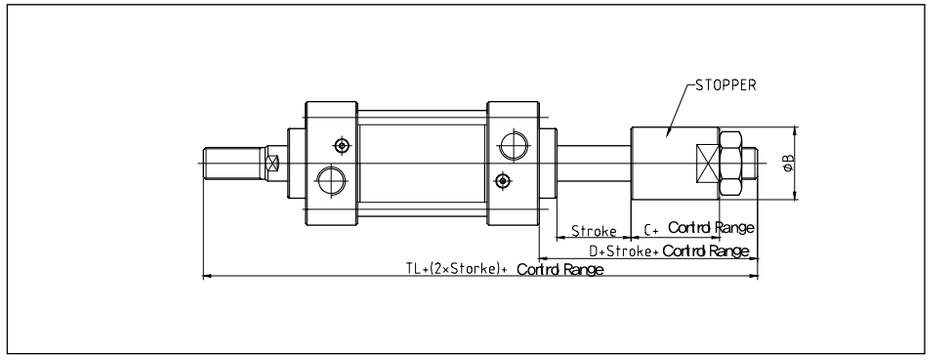
사양 Specification

형식 Type	무급유형(자석본내장형) Oiless Type (Basic Built-in of Magnet Type)	자유압형 Low-Hydraulic Type
작동방식 Working type	복동 Double-acting	
사용유체 Fluid	공기 Air	유압작동유 Hydraulic Woking Oil
보증내압력 Bearing Pressure	15kgf/㎠	
최고사용압력 Max. Working Pressur	9.9kgf/㎠	
최저사용압력 Min. Working Pressure	0.5kgf/㎠	1.0kgf/㎠
사용속도 Working Speed	50~500mm/s	0.5~300mm/s
행정조정범위 Stroke Control Range	A:0~25mm, B:0~50mm	
취부지지형식 Supporting Type of Fitting Surface	Basic Type, Foot Type , Rod-side Flange Type	

표시기호 Notation



외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit:mm

I-D(mm)	ØB	C	D	TL
40	Ø30	22	46	181
50	Ø40	28	58	206
63		28	58	213.5
80	Ø50	35	71	257.5
100		35	72	269.5

※기타 표시하지 않은 치수는 ISM 일반형과 동일
Dimension which isn't indicated is same with general type of ISM SERIES

중형실린더 ISM 시리즈 MID CYLINDER ISM SERIES

텐덤 실린더/내열용 실린더 Tandem Cylinder/Cylinder for Heat-Resist

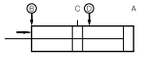
형식 표시 방법 Method for model Indication

ISM — 형식 Type — 취부지지형식 mounting type — 튜브내경 I-D(mm) X 행정 Stroke + 추가호 Additional Notation — 선단금구 Lot-end — TD

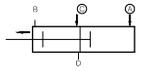
※SM 시리즈 일반형 형식 표기 방법 참조 Refer to method for indication of general type of ISM series.
두개의 실린더를 직렬로 연결한 실린더로 출력을 2배로 얻을 수 있다. Connect two cylinder by series, then, can get twice more outputs.

표시기호 Notation

■ 기능 Function



ⒷⒹ포트에 공기압을 공급하면 후진작동시 2배의 출력이 얻어진다. When supply Air pressure to Ⓑ and ⒹPort, can get twice more outputs at backward motion.

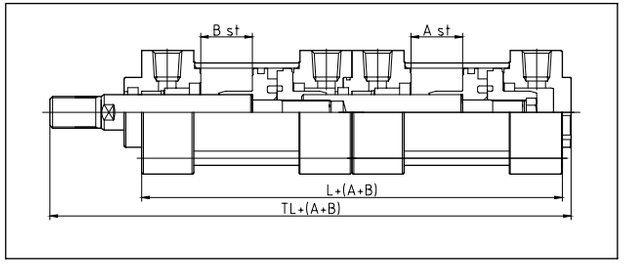


ⒶⒸ포트에 공기압을 공급하면, 후진작동시 2배의 출력이 얻어진다.
When supply Air pressure to Ⓐ and ⒸPort, can get twice more outputs at forward motion.

사양 Specification

형식 Type	무급유형 Oilless Type
실린더튜브내경 Applied I-D of Cylinder	Ø40,Ø50,Ø63,Ø80,Ø100
최고사용압력 Max. Working Pressur	9.9kgf/㎠
최저사용압력 Min. Working Pressure	1kgf/㎠
쿠션 Cushion	쿠션 Cushion
작동방식 Working Type	복동 Double-acting
사용유체 Fluid	공기 Air
사용피스톤 속도 Working Piston Speed	50~500mm/s
취부지지형식 Supporting Type of Fitting Surface	Basic Type, Foot Type, Rod-side Flange Type, Head-side Flange Type: single Thread CLEVIS Type, Double Thread CLEVIS Type

외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit:mm

I-D(mm)	L	TL
40	168	224.5
50	180	243.5
63	195	258.5
80	231	307.5
100	251	328.5

■ 내열용 실린더 / Cylinder for Heat-Resist

ISM — 형식 Type — 취부지지형식 mounting type — 튜브내경 I-D(mm)
X 행정 Stroke — 추가호 Additional Notation — 선단금구 Lot-end — SV

※50 까지 고온의 주위조건에서 사용가능하며 내열용 패킹류를 장착한 실린더
※It is a Cylinder with packing type for Heat-Resist. Can use in the high-temperature situation to 150℃.

사양 Specification

단위 unit:mm

Type	Oil Supply Type
I-D(mm)	Ø40,Ø50,Ø63,Ø80,Ø100
Working Temperature	-20~+150°C
Packing Materials	VITON (Fluoric Rubber)

※오토 스위치 부착은제작 불가능
Can't make mounted Auto-Switch

■ 피스톤 로드 스텐레스 / Piston-rod Stainless

ISM — 형식 Type — 취부지지형식 mounting type — 튜브내경 I-D(mm)
X 행정 Stroke — 추가호 Additional Notation — 선단금구 Lot-end — SS

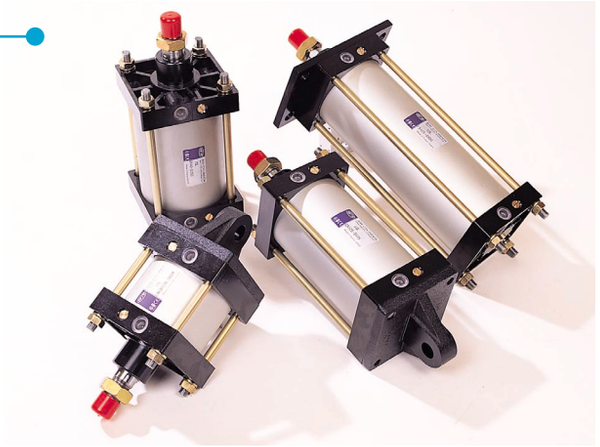
※피스톤 로드의 끝단이 전진시 물에침 수 등으로 이해서 부식의 우려가 있는 경우에 사용
※Use this when the Rod-end will be rusted by flooding at forward motion.

사양 Specification

Type	Oil Supply Type
I-D(mm)	Ø40,Ø50,Ø63,Ø80,Ø100
Materials of Piston Rod Nut	Stainless (SUS 304)

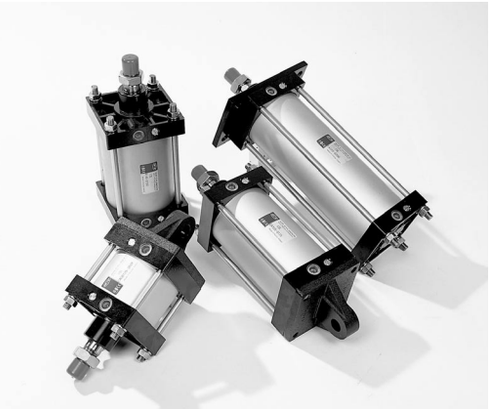
MEMO

대형실린더 ISL 시리즈
LARGE-SIZE ISL SERIES

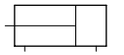


대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

자석 내장형:Ø125, Ø140, Ø150, Ø160 **Magnet Built-in Type:** Ø125, Ø140, Ø150, Ø160
일반형:Ø125, Ø140, Ø150, Ø160, Ø180, Ø200, Ø250, Ø300 **General Type:** Ø125, Ø140, Ø150, Ø160, Ø180, Ø200, Ø250, Ø300



표시기호 Notation



Double-acting
Single-rod

형식 표시 방법 Method for model Indication

ISL N H F B 125 S200 J Y

①대형 공기압 실린더
Large size Air Pressure Cylinder

②형식
무기호:급유형 Oil supply type
N:무급유형 No Oil supply type
L: 저유압형(Ø125~Ø160)
Low-hydraulic type (Ø125~ Ø160)

③자석 유무
무기호:없음
H:자석내장
Magnet
None
H: Built-in type of magnet

④튜브재질
Ø125~ Ø160 Ø180~Ø300
무기호:알루미늄 무기호:철
F:철
Tube Materials
None : Aluminum
None : Iron
F : Iron

⑤취부 지지형식
B:기본형
LB:푸트형
FA:로드측 플랜지형
FB:헤드측 플랜지형
CA:1산 클레비 스형
CB:2산 클레비 스형
TC:센터트러니온형
Supporting type of fitting surface
B:Basic Type
LB:Foot Type
FA:Rod-side Flange Type
FB:Head-side Flange Type
CA:Single Thread CLEVIS Type
CB:Double Thread CLEVIS Type
TC: Center-Trunnion Type

④튜브내경
Inside-diameter of tube
125~125mm
140~140mm
150~150mm
160~160mm
180~180mm
200~200mm
250~250mm
300~300mm

⑦실린더행정
Cylinder Stroke
표준행정표 참조
Standard Stroke

⑥실린더추기호 Cylinder Additional Notation

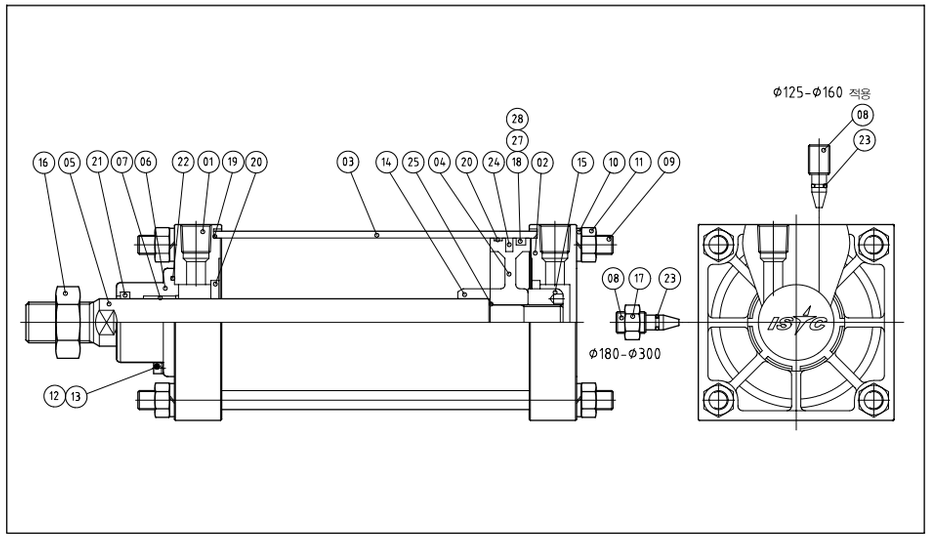
Bellows	J:Nylon Tarpaulin
	K:Neoprene Cross
Cushion	N:No cushion
	R:Rod-side cushion
	H:Head-side Cushion
	None : Both side cushion

⑦선단금구
I : 1산 너클조인트
Y : 2산 너클조인트
무기호:선단너트 포함
Lot-end tools
I: Single Thread Knuckle Joint
Y:Double Thread Knuckle Joint
None : Basic(including lot-end nut)

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

내부 구조도 Inside Structure Drawings

내부 구조도 Inside Structure Drawings



부품리스트 Parts List

No	Name	Materials	Remarks
1	ROD COVER	AC4C	Ø125~Ø160
		FCD	Ø180~Ø200
		SS41	Ø250~Ø300
2	HEAD COVER	AC4C	Ø125~Ø160
		SS41	Ø180~Ø300
3	TUBE	A6063	Ø125~Ø160
		STKM13C	Ø180~Ø300
4	PISTON	AC4C	Ø125~Ø160
		SS41	Ø180~Ø300
5	ROD	S45C	
6	SUB BLOCK	FC20	
7	BUSH	DU	
8	CUSHION NIDDLE	BSBM	
9	TIE ROD	SS41	
10	SPRING WASHER	SS41	
11	TIE ROD NUT	S20C	
12	SUB BLOCK BOLT	SCM4	
13	" WASHER	SCM4	
14	CUSHION RING(R)	SS41	
15	CUSHION RING(H)	SS41	
16	ROD NUT	SS41	
17	CUSHION NUT	S20C	

페킹 리스트 Packing List

No	Name	Materials	I-D(mm)							
			125	140	150	160	180	200	250	300

급유형 Oil Supply Type

18	PISTON PACKING	N	AP115	AP130	AP140	AP150	AP165	AP185	AP235	AP285
19	TUBE O-RING	N	Ø125+S125	Ø140+S140	Ø150+S150	Ø160+S160	Ø180+S180	Ø200+S200	Ø250+S250	Ø300+S300
20	CUSHION PACKING	B	PCS50	PCS50	PCS55	PCS55	PCS60	PCS60	PCS75	PCS80
21	ROD PACKING	B	DRP35	DRP35	DRP40	DRP40	DRP45	DRP50	DRP60	DRP70
22	BUSH O-RING	B	AP56	AP56	AP58	AP58	AP63	AP67	AP80	AP85
23	NIDDLE O-RING	B	P9	P9	P9	P9	P9	P9	P9	P9
24	MAGNET	R	Ø125	Ø140	Ø150	Ø160	-		-	-
25	ROD O-RING	R	S26	S26	S30	S30	S35	S40	S48	S50

무급유형 Oiless Type

26	WEARING	AC	SBW125	SBW140	SBW150	SBW160	SBW180	SBW200	SBW250	SBW300
27	PISTON PACKING	NBR	PSD 125	PSD 140	PSD 150	PSD 160	DXP 180	DXP 200	DXP 250	DXP 300

저유압형 Low Hydraulic Type

28	PISTON PACKING	NBR	DXP 125	DXP 140	DXP 150	DXP 160				

■ 26,27,28 이외의 패킹은 급유형과 동일단, 18은 제외)
Packing except 26,27,28 is same with Oil Supply Type (except 18).

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

형식 및 사양 기타 Model & Specification and Others

사양 Specification

형식 Type	무급유형 Oiless Type	저유압형 Low-Hydraulic Type
사용유체 Fluid	공기 Air	유압작동유 Hydraulic Working Oil
보증내압력 Bearing pressure	16kgf/㎠	
최고사용압력 Max. Working Pressur	9.9kgf/㎠	
최저사용압력 Min. Working Pressure	0.5kgf/㎠	1kgf/㎠
사용피스톤속도 Working Piston Speed	50~500mm/s	0.5~200mm/s
쿠션 Cushion	쿠션 Cushion	없음 None
주위온도 및 사용유체온도 Ambient & Waking Oil temperature	-10~70°C	
나사공차 Screw Tolerance	KS 2급 2nd KS Level	
행정길이의 허용차 Allowance of Stroke Length	~250 $^{+1.0}_{0}$	250~1,000 $^{+1.4}_{0}$ 1,001~1,500 $^{+1.8}_{0}$
취부지지형식 Supporting Type of Fitting Surface	Basic Type, Foot Type, Rod-side Flange Type, Head-side Flange Type Single Thread CLEVIS Type, Double Thread CLEVIS Type, Trumion Type	

부속품 Parts

취부지지형식 Supporting Type of Fitting Surface		Basic Type	Foot Type	Rod-side Flange Type	Head-side Flange Type	Single Thread CLEVIS Type	Double Thread CLEVIS Type	Center-side Trumion Type
기본부착품 Basic Mounted-parts	크레비스용 핀 Pin for CLEVIS	-	-	-	-	-	●	-
	로드 선단너트 Rod-end Nut	●	●	●	●	●	●	●
주문품 Special Order	1산너클조인트 Single Knuckle Joint	●	●	●	●	●	●	●
	2산너클조인트 Double Knuckle Joint	●	●	●	●	●	●	●
	벨로우즈 Bellows	●	●	●	●	●	●	●

표준행정표 Standard Stroke Table

I-D(mm)	표준 행정 Standard Stroke	최대행정범위 Max. Stroke Range
125	50,100,150,200,250,300	1000
140	50,100,150,200,250,300	1000
150	50,100,150,200,250,300	1000
160	50,100,150,200,250,300	1200
180	50,100,150,200,250,300	1400
200	50,100,150,200,250,300	1600
250	50,100,150,200,250,300,400	1800
300	50,100,150,200,250,300,400	2000

벨로우즈 재질 및 최고 주위 온도 Working Temperature of Bellows Materials

기호 notation	재질 materials	최고주위온도 Max. Ambient Temperature
J	Nylon Tauplin	60°C
K	Neoprene Cross	110°C

형식 Type

Type		Working	Packing	I-D(mm)
ISL	Oil Supply	Double-acting	O-Ring	Ø125,Ø140,Ø150,Ø160 Ø180,Ø200,Ø250,Ø300
ISL N	No Oil Supply	Double-acting	Special	
ISL L	Low-Hydraulic	Double-acting	Special	Ø125,Ø140,Ø150,Ø160

지지 금구 부품 품번 Supporting Parts No.

I-D(mm) / Lot-end	125	140	150	160	180	200	250	300
푸트형 Foot Type	ISL-LB 125	ISL-LB 140	ISL-LB 150	ISL-LB 160	ISL-LB 180	ISL-LB 200	ISL-LB 250	ISL-LB 300
플랜지형 Flange Type	ISL-F 125	ISL-F 140	ISL-F 150	ISL-F 160	ISL-F 180	ISL-F 200	ISL-F 250	ISL-F 300
1산클레비스형 1 Thread CLEVIS	ISL-CA 125	ISL-CA 140	ISL-CA 150	ISL-CA 160	ISL-CA 180	ISL-CA 200	ISL-CA 250	ISL-CA 300
2산클레비스형 2 Thread CLEVIS	ISL-CB 125	ISL-CB 140	ISL-CB 150	ISL-CB 160	ISL-CB 180	ISL-CB 200	ISL-CB 250	ISL-CB 300

선단 금구 품번 Lot-end No.

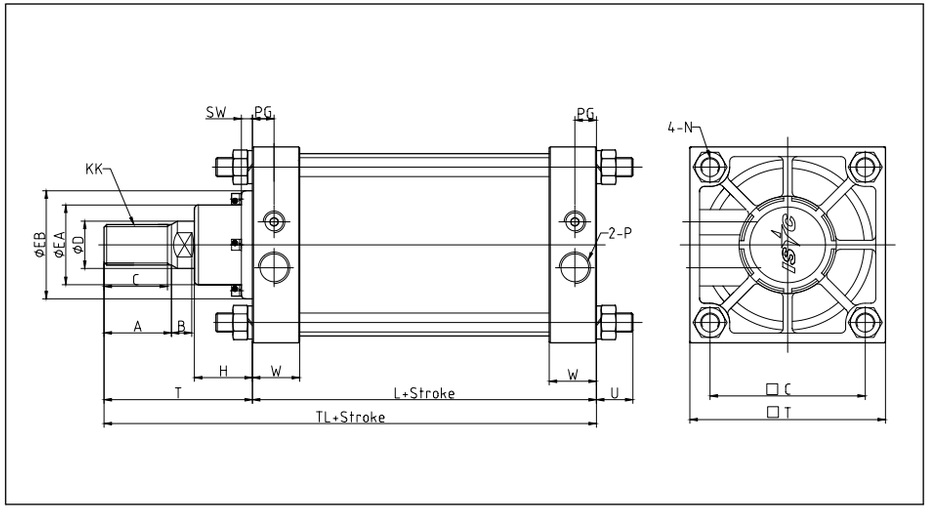
I-D(mm) / Lot-end	125	140	150,160	180	200	250	300
1산클레비스형 1 Thread CLEVIS	ISL-125 I	ISL-140 I	ISL-150,160 I	ISL-180 I	ISL-200 I	ISL-250 I	ISL-300 I
2산클레비스형 2 Thread CLEVIS	ISL-125 Y	ISL-140 Y	ISL-150,160 Y	ISL-180 Y	ISL-200 Y	ISL-250 Y	ISL-300 Y

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

일반형 General Type(B)

기본형(B) Basic Type(B)

■ Oil Supply Type ISL-B / Oiless Type ISL N-B / Low Hydraulic Type ISL L-B



단위 unit:mm

I-D(mm)	Stroke Range	C	A	B	□C	ØD	ØEB	ØEA	H	KK	L	N	PG	P(PT)	SW	□T
125	~1000	47	50	15	115	35	90	59	43	M30X1.5	98	M14X1.5	16	1/2	14	145
140	~1000	47	50	15	128	35	90	59	43	M30X1.5	98	M14X1.5	16	1/2	14	161
150	~1200	53	56	17	132	40	90	59	43	M36X1.5	106	M16X1.5	17	3/4	14	170
160	~1200	53	56	17	144	40	90	59	43	M36X1.5	106	M16X1.5	17	3/4	14	184
180	~1400	60	63	20	162	45	115	70	48	M40X1.5	111	M18X1.5	17	3/4	17	204
200	~1600	60	63	20	182	50	115	74	48	M45X1.5	111	M20X1.5	17	3/4	17	226
250	~1800	67	71	25	225	60	140	96	60	M56X2.0	141	M24X1.5	22	1	20	277
300	~2000	76	80	30	270	70	140	96	60	M64X2.0	146	M30X1.5	23	1	20	330

※Ø EB,SW 치수는 알미늄 블록에 는적용 안됨
Can't apply EB and SW numbers to Aluminum Block

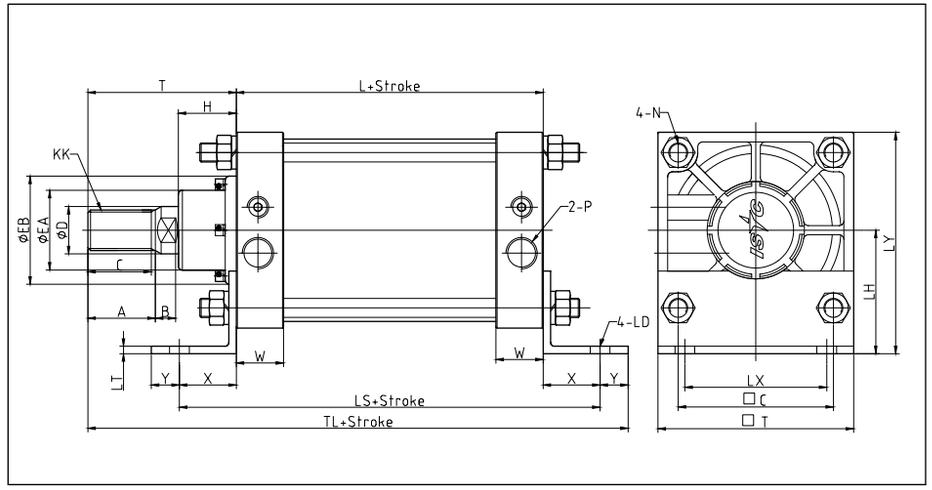
I-D(mm)	T	TL	U	W
125	110	208	27	35
140	110	208	27	35
150	120	226	30.5	39
160	120	226	30.5	39
180	135	246	35	39
200	135	246	35	39
250	160	301	41.5	49
300	175	321	51.5	49

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

일반형(LB) General Type(LB)

푸트형(LB) Foot Type(LB)

■ Oil Supply Type ISL-LB / Oiless Type ISL N-B / Low Hydraulic Type ISL L-B



단위 unit:mm

I-D(mm)	Stroke Range	C	A	B	□C	ØD	ØEA	ØEB	H	KK	L	ØLD	LH	LS	LT	LX	LY
125	~1000	47	50	15	115	35	59	90	43	M30X1.5	98	19	85	188	8	100	157.5
140	~1000	47	50	15	128	35	59	90	43	M30X1.5	98	19	100	188	9	112	180.5
150	~1200	53	56	17	132	40	59	90	43	M36X1.5	106	19	105	206	9	118	190
160	~1200	53	56	17	144	40	59	90	43	M36X1.5	106	19	106	206	9	118	197
180	~1400	60	63	20	162	45	70	115	48	M40X1.5	111	24	125	231	10	132	227
200	~1600	60	63	20	182	50	74	115	48	M45X1.5	111	24	132	231	10	150	245
250	~1800	67	71	25	225	60	96	140	60	M56X2.0	141	29	160	301	12	180	298.5
300	~2000	76	80	30	270	70	96	140	60	M64X2.0	146	33	200	326	15	212	365

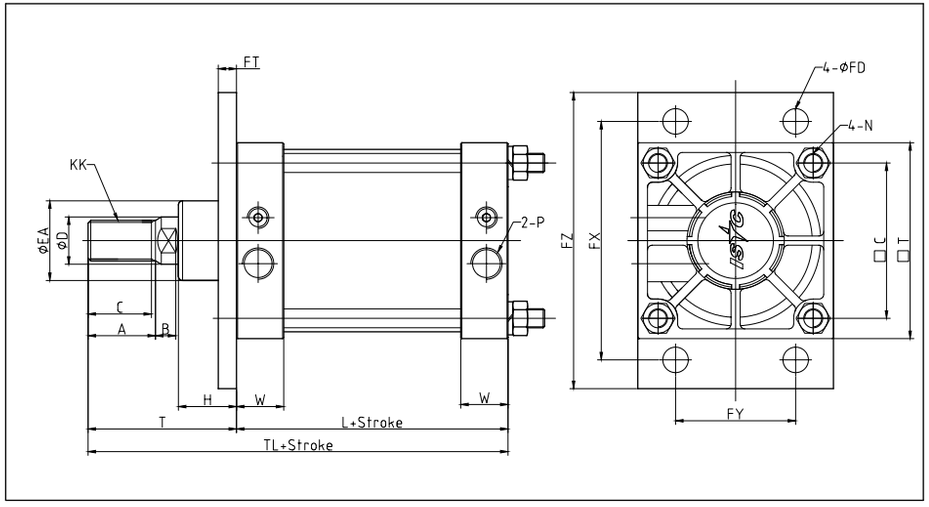
I-D(mm)	N	P(PT)	□T	T	TL	W	X	Y
125	M14X1.5	1/2	145	110	273	35	45	20
140	M14X1.5	1/2	161	110	273	35	45	20
150	M16X1.5	3/4	170	120	301	39	50	25
160	M16X1.5	3/4	184	120	301	39	50	25
180	M18X1.5	3/4	204	135	336	39	60	30
200	M20X1.5	3/4	226	135	336	39	60	30
250	M24X1.5	1	177	160	421	49	80	40
300	M30X1.5	1	330	175	451	49	90	40

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

일반형(FA) General Type(FA)

로드측 플랜지형 (FA) Rod-side Flange Type(FA)

■ Oil Supply Type ISL-FA / Oiless Type ISL N-FA / Low Hydraulic Type ISL L-FA



단위 unit:mm

I-D(mm)	Stroke Range	C	A	B	□C	ØD	ØEA	ØFD	FT	FX	FY	FZ	H	KK	L	P(PT)
125	~1000	47	50	15	115	35	59	19	14	190	100	230	43	M30X1.5	98	1/2
140	~1000	47	50	15	128	35	59	19	20	212	112	255	43	M30X1.5	98	1/2
150	~1200	53	56	17	132	40	59	19	20	228	115	265	43	M36X1.5	106	3/4
160	~1200	53	56	17	144	40	59	19	20	236	118	275	43	M36X1.5	106	3/4
180	~1400	60	63	20	162	45	70	24	25	265	132	320	48	M40X1.5	111	3/4
200	~1600	60	63	20	182	50	74	24	25	280	150	335	48	M45X1.5	111	3/4
250	~1800	67	71	25	225	60	96	29	30	355	180	420	60	M56X2.0	141	1
300	~2000	76	80	30	270	70	96	33	30	400	212	475	60	M64X2.0	146	1

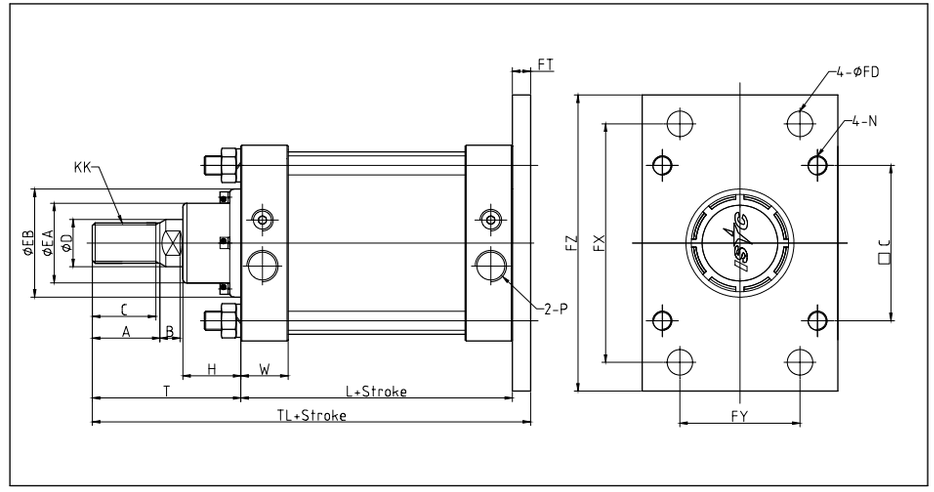
I-D(mm)	N	□T	T	TL	W
125	M14X1.5	145	110	235	35
140	M14X1.5	161	110	235	35
150	M16X1.5	170	120	256.5	39
160	M16X1.5	184	120	256.5	39
180	M18X1.5	204	135	281	39
200	M20X1.5	226	135	281	39
250	M24X1.5	277	160	342.5	49
300	M30X1.5	330	175	372.5	49

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

일반형(FB) General Type(FB)

헤드측 플랜지형 (FB) Head-side Flange Type(FB)

■ Oil Supply Type ISL-FB / Oiless Type ISL N-FB / Low Hydraulic Type ISL L-FB



단위 unit:mm

I-D(mm)	Stroke Range	C	A	B	□C	ØD	ØEA	ØEB	ØFD	FT	FX	FY	FZ	H	KK	L	P(PT)
125	~1000	47	50	15	115	35	59	90	19	14	190	100	230	43	M30X1.5	98	1/2
140	~1000	47	50	15	128	35	59	90	19	20	212	112	255	43	M30X1.5	98	1/2
150	~1200	53	56	17	132	40	59	90	19	20	228	115	265	43	M36X1.5	106	3/4
160	~1200	53	56	17	144	40	59	90	19	20	236	118	275	43	M36X1.5	106	3/4
180	~1400	60	63	20	162	45	70	115	24	25	265	132	320	48	M40X1.5	111	3/4
200	~1600	60	63	20	182	50	74	115	24	25	280	150	335	48	M45X1.5	111	3/4
250	~1800	67	71	25	225	60	96	140	29	30	355	180	420	60	M56X2.0	141	1
300	~2000	76	80	30	270	70	96	140	33	30	400	212	475	60	M64X2.0	146	1

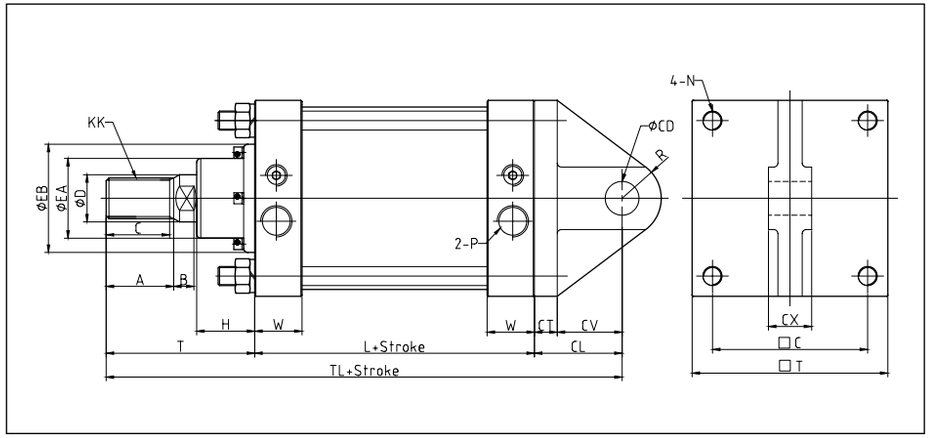
I-D(mm)	N	T	TL	W
125	M14X1.5	110	222	35
140	M14X1.5	110	228	35
150	M16X1.5	120	246	39
160	M16X1.5	120	246	39
180	M18X1.5	135	271	39
200	M20X1.5	135	271	39
250	M24X1.5	160	331	49
300	M30X1.5	175	351	49

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

일반형(CA) General Type(CA)

1산 클레비스(CA) Single-Thread CLEVIS Type(CA)

■ Oil Supply Type ISL-CA / Oiless Type ISL N-CA / Low Hydraulic Type ISL L-CA



단위unit:mm

I-D(mm)	Stroke Range	C	A	B	□C	ØCD	CL	CT	CV	CX	ØD	ØEA	ØEB	H	KK	L
125	~1000	47	50	15	115	$25^{+0.08}_{0}$	65	17	48	$32^{-0.1}_{-0.3}$	35	59	90	43	M30X1.5	98
140	~1000	47	50	15	128	$28^{+0.08}_{0}$	75	17	58	$36^{-0.1}_{-0.3}$	35	59	90	43	M30X1.5	98
150	~1200	53	56	17	132	$32^{+0.10}_{0}$	80	20	60	$40^{-0.1}_{-0.3}$	40	59	90	43	M36X1.5	106
160	~1200	53	56	17	144	$32^{+0.10}_{0}$	80	20	60	$40^{-0.1}_{-0.3}$	40	59	90	43	M36X1.5	106
180	~1400	60	63	20	162	$40^{+0.10}_{0}$	90	23	67	$50^{-0.1}_{-0.3}$	45	70	115	48	M40X1.5	111
200	~1600	60	63	20	182	$40^{+0.10}_{0}$	100	25	65	$50^{-0.1}_{-0.3}$	50	74	115	48	M45X1.5	111
250	~1800	67	71	25	225	$50^{+0.10}_{0}$	110	30	80	$63^{-0.1}_{-0.3}$	60	96	140	60	M56X2.0	141
300	~2000	76	80	30	270	$63^{+0.12}_{0}$	130	37	93	$80^{-0.1}_{-0.3}$	70	96	140	60	M64X2.0	146

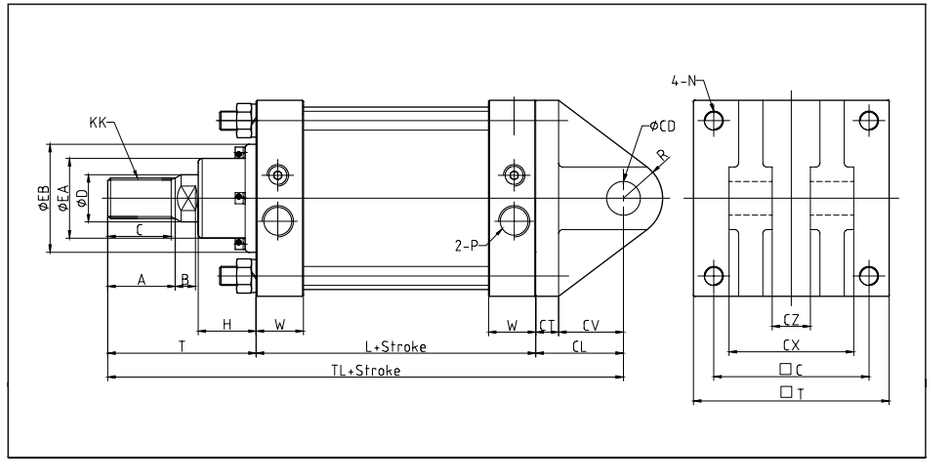
I-D(mm)	N	P(PT)	R	□T	T	TL	W
125	M14X1.5	1/2	29	145	110	273	35
140	M14X1.5	1/2	32	161	110	283	35
150	M16X1.5	3/4	36	170	120	306	39
160	M16X1.5	3/4	36	184	120	306	39
180	M18X1.5	3/4	44	204	135	336	39
200	M20X1.5	3/4	44	226	135	336	39
250	M24X1.5	1	55	277	160	411	49
300	M30X1.5	1	68	330	175	451	49

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

일반형(CB) General Type(CB)

2산 클레비스(CB) Double-Thread CLEVIS Type(CB)

■ Oil Supply Type ISL-CB / Oiless Type ISL N-CB / Low Hydraulic Type ISL L-CB



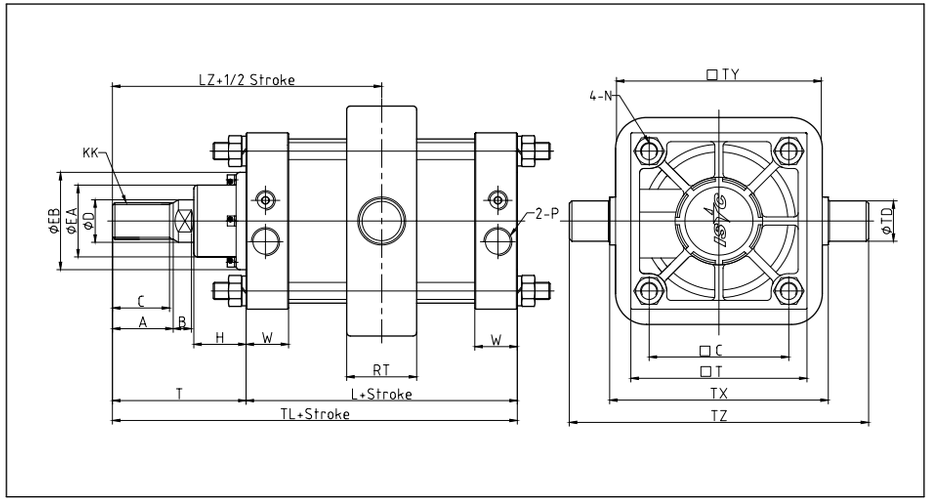
단위unit:mm

I-D(mm)	Stroke Range	C	A	B	□C	ØCD	CL	CT	CV	CX	CZ	ØD	H	KK	L
125	~1000	47	50	15	115	$25^{+0.08}_{0}$	65	17	48	$64^{-0.1}_{-0.3}$	$32^{+0.3}_{+0.1}$	35	43	M30X1.5	98
140	~1000	47	50	15	128	$28^{+0.08}_{0}$	75	17	58	$72^{-0.1}_{-0.3}$	$36^{+0.3}_{+0.1}$	35	43	M30X1.5	98
150	~1200	53	56	17	132	$32^{+0.10}_{0}$	80	20	60	$80^{-0.1}_{-0.3}$	$40^{+0.3}_{+0.1}$	40	43	M36X1.5	106
160	~1200	53	56	17	144	$32^{+0.10}_{0}$	80	20	60	$80^{-0.1}_{-0.3}$	$40^{+0.3}_{+0.1}$	40	43	M36X1.5	106
180	~1400	60	63	20	162	$40^{+0.10}_{0}$	90	23	67	$100^{-0.1}_{-0.3}$	$50^{+0.3}_{+0.1}$	45	48	M40X1.5	111
200	~1600	60	63	20	182	$40^{+0.10}_{0}$	100	25	65	$100^{-0.1}_{-0.3}$	$50^{+0.3}_{+0.1}$	50	48	M45X1.5	111
250	~1800	67	71	25	225	$50^{+0.10}_{0}$	110	30	80	$126^{-0.1}_{-0.3}$	$63^{+0.3}_{+0.1}$	60	60	M56X2.0	141
300	~2000	76	80	30	270	$63^{+0.12}_{0}$	130	37	93	$160^{-0.1}_{-0.3}$	$80^{+0.3}_{+0.1}$	70	60	M64X2.0	146

I-D(mm)	N	P(PT)	R	□T	T	TL	W	ØEA	ØEB
125	M14X1.5	1/2	29	145	110	273	35	59	90
140	M14X1.5	1/2	32	161	110	283	35	59	90
150	M16X1.5	3/4	36	170	120	306	39	59	90
160	M16X1.5	3/4	36	184	120	306	39	59	90
180	M18X1.5	3/4	44	204	135	336	39	70	115
200	M20X1.5	3/4	44	226	135	336	39	74	115
250	M24X1.5	1	55	277	160	411	49	96	140
300	M30X1.5	1	68	330	175	451	49	96	140

센터 트러니온형(TC) Center Trunnion Type(TC)

■ Oil Supply Type ISL-TC / Oiless Type ISL N-TC / Low Hydraulic Type ISL L-TC

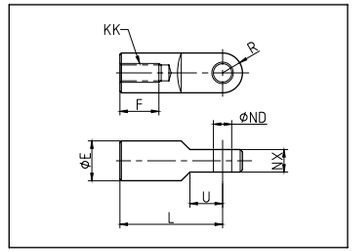


단위unit:mm

I-D(mm)	Stroke Range	C	A	B	□C	ØD	ØEA	ØEB	H	KK	L	LZ	N	P(PT)	□T	T
125	~1000	47	50	15	115	35	59	90	43	M30X1.5	98	159	M14X1.5	1/2	145	110
140	~1000	47	50	15	128	35	59	90	43	M30X1.5	98	159	M14X1.5	1/2	161	110
150	~1200	53	56	17	132	40	59	90	43	M36X1.5	106	173	M16X1.5	3/4	170	120
160	~1200	53	56	17	144	40	59	90	43	M36X1.5	106	173	M16X1.5	3/4	184	120
180	~1400	60	63	20	162	45	70	115	48	M40X1.5	111	190.5	M18X1.5	3/4	204	135
200	~1600	60	63	20	182	50	74	115	48	M45X1.5	111	190.5	M20X1.5	3/4	226	135
250	~1800	67	71	25	225	60	96	140	60	M56X2.0	141	230.5	M24X1.5	1	277	160
300	~2000	76	80	30	270	70	96	140	60	M64X2.0	146	248	M30X1.5	1	330	175

I-D(mm)	RT	ØTD	TL	TX	□TY	TZ	W
125	50	32 -0.05 -0.09	208	170	164	234	35
140	55	36 -0.05 -0.09	208	190	184	262	35
150	59	40 -0.05 -0.09	226	200	192	275	39
160	59	40 -0.05 -0.09	226	212	204	292	39
180	60	45 -0.05 -0.09	246	236	228	326	39
200	60	45 -0.05 -0.09	246	265	257	355	39
250	69	56 -0.06 -0.10	301	335	325	447	49
300	79	67 -0.06 -0.10	321	400	390	534	49

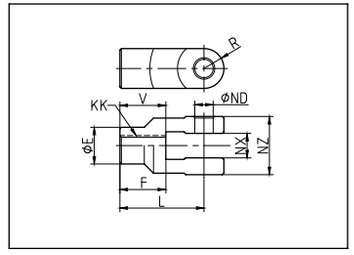
1산 너클 조인트 Single-Thread Knuckle Joint



단위unit:mm

I-D(mm)	ØE	F	KK	L	ØND	NX	R	U
125	46	54	M30X1.5	100	25 +0.08 0	32 -0.1 -0.3	27	33
140	48	54	M30X1.5	105	28 +0.08 0	36 -0.1 -0.3	30	39
150,160	55	60	M36X1.5	110	32 +0.10 0	40 -0.1 -0.3	34	39
180	70	67	M40X1.5	125	40 +0.10 0	50 -0.1 -0.3	42.5	44
200	70	67	M45X1.5	125	40 +0.10 0	50 -0.1 -0.3	42.5	44
250	86	75.5	M56X2	160	50 +0.10 0	63 -0.1 -0.3	53	66
300	105	84.5	M64X2	175	63 +0.12 0	80 -0.1 -0.3	66	71

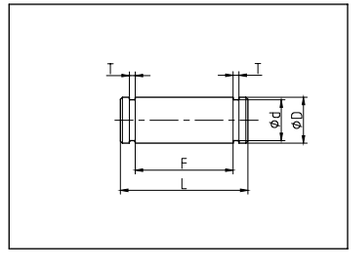
2산 너클조인트 Double-Thread Knuckle Joint



단위unit:mm

I-D(mm)	ØE	KK	L	ØND	NX	NZ	R	F	V
125	46	M30X1.5	100	25 +0.08 0	32 -0.3 -0.1	64 -0.1 -0.3	27	38	58
140	48	M30X1.5	105	28 +0.08 0	36 -0.3 -0.1	72 -0.1 -0.3	30	38	58
150,160	55	M36X1.5	110	32 +0.10 0	40 -0.3 -0.1	80 -0.1 -0.3	34	40	64
180	70	M40X1.5	125	40 +0.10 0	50 -0.3 -0.1	100 -0.1 -0.3	42.5	43	71
200	70	M45X1.5	125	40 +0.10 0	50 -0.3 -0.1	100 -0.1 -0.3	42.5	43	71
250	86	M56X2	160	50 +0.10 0	63 -0.3 -0.1	126 -0.1 -0.3	53	47	79
300	105	M64X2	175	63 +0.12 0	80 -0.3 -0.1	160 -0.1 -0.3	66	50	78

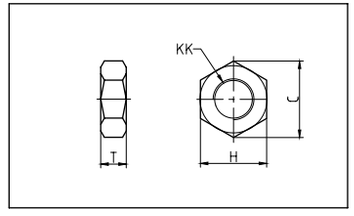
너클 클레비스형 핀 Knuckle CLEVIS Type Pin



단위unit:mm

I-D(mm)	ØD	Ød	L	F	T
125	25 -0.06 -0.17	23.5	72	64.3	1.35
140	28 -0.06 -0.17	26	80.6	72.3	1.65
150,160	32 -0.08 -0.14	29.5	89.6	80.3	1.65
180,200	40 -0.08 -0.14	37	110.1	100.3	1.9
250	50 -0.08 -0.14	46	138.9	126.5	2.2
300	63 -0.10 -0.17	59	172.9	160.5	2.2

로드너트 Rod nut



단위unit:mm

I-D(mm)	C	H	KK	T
125,140	53.1	46	M30X1.5	18
150,160	63.5	55	M36X1.5	21
180	69.3	60	M40X1.5	23
200	80.8	70	M45X1.5	27
250	98.1	85	M56X1.5	34
300	110	95	M64X1.5	38

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

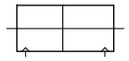
양로드형 Double-rod Type

형식 표시 방법 Indication of Model

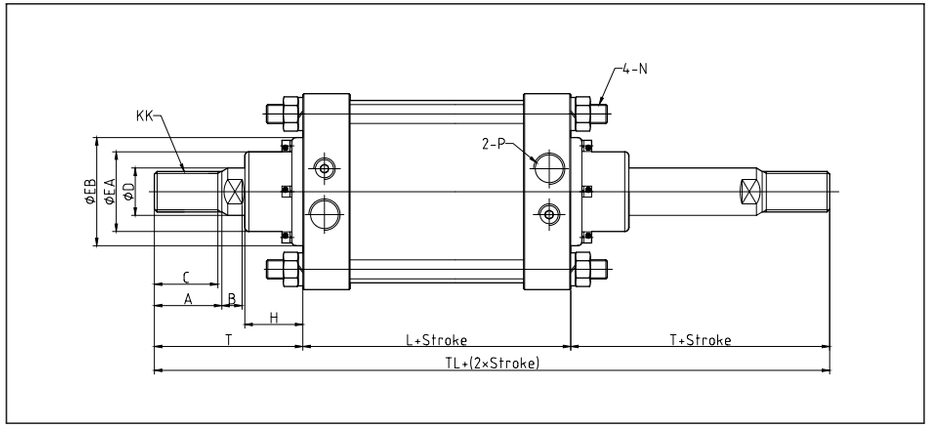
ISL W — 형식 Type — 튜브내경I-D(mm) — 취부지지형식 mounting type — 튜브내경I-D(mm) — 행정 / Stroke — 선단금구Lot-end

※ISL 시리즈 일반형 형식 표기 방법 참조
Refer to method for indication of general type of ISL series.

표시기호 Notation



외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit:mm

I-D(mm)	Stroke Range	C	A	B	T	ØD	ØEA	ØEB	H	KK	L	N	P(PT)	TL
125	~1000	47	50	15	110	35	59	90	43	M30X1.5	98	M14X1.5	1/2	318
140	~1000	47	50	15	110	35	59	90	43	M30X1.5	98	M14X1.5	1/2	318
150	~1200	53	56	17	120	40	59	90	43	M36X1.5	106	M16X1.5	3/4	346
160	~1200	53	56	17	120	40	59	90	43	M36X1.5	106	M16X1.5	3/4	346
180	~1400	60	63	20	135	45	70	115	48	M40X1.5	111	M18X1.5	3/4	381
200	~1600	60	63	20	135	50	74	115	48	M45X1.5	111	M20X1.5	3/4	381
250	~1800	67	71	25	160	60	96	140	60	M56X2.0	141	M24X1.5	1	461
300	~2000	76	80	30	175	70	96	140	60	M64X2.0	146	M30X1.5	1	496

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

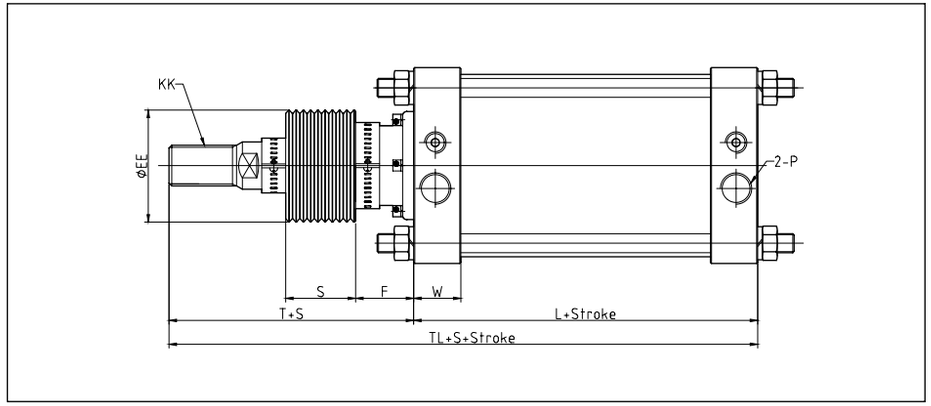
벨로우즈 부착형 Bellows-Mounted Type

형식 표시 방법 Indication of Model

ISL — 형식 Type — 튜브내경I-D(mm) — 취부지지형식 mounting type — 튜브내 I-D(mm) — 행정 / Stroke — J — 선단금구 Lot-end

※벨로우즈 부착Bellows-Mounted Type
J:나이론 타폴린60℃ Nylon Tarpaulin
K:네오프렌크로스110℃ Neoprene Cross

외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit:mm

I-D(mm)	ØEE	F	KK	N	L	P(PT)	T	TL	S	W
125	90	40	M30X1.5	M14X1.5	98	1/2	133	231	0.2× stroke(mm)	35
140	90	40	M30X1.5	M14X1.5	98	1/2	133	231		35
150	90	40	M36X1.5	M16X1.5	106	3/4	141	247		39
160	90	40	M36X1.5	M16X1.5	106	3/4	141	247		39
180	115	45	M40X1.5	M18X1.5	111	3/4	153	264		39
200	115	45	M45X1.5	M20X1.5	111	3/4	153	264		39
250	140	55	M56X2.0	M24X1.5	141	1	176	317	0.17× stroke(mm)	49
300	140	55	M64X2.0	M30X1.5	146	1	190	336		49

※기타 표시하지않은 치수는 ISL 기본형 참조
Dimension which isn't indicated is same with general type of ISL SERIES

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

다단 행정 양로드형 Multiple-end Stroke Double-rod Type

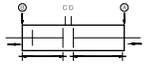
형식 표시 방법 Indication of Model

ISL — 형식 Type — 튜브재질 Tube Materials — 취부지지형식 Supporting Type of Fitting Surface — 튜브내경 I-D(mm) — 행정A+B/A+B Stroke — TW

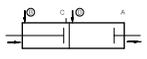
※ISL 시리즈 일반형 형식 표기 방법 참조 Refer to method for indication of general type of ISL series.
헤드측을 조합2개의 실린더 튜브재질 시커 실린더 행정을 왕복과 더블어 3단계로 제어할 수있다.
Assemble Head-side, make one body the Cylinder, conduct double Cylinder Stroke and control it by 3 steps.

표시기호 Notation

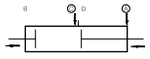
■ 기능 Function



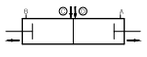
ⒶⒷ포트에 공기압을 공급하면 A,B행정은 후진한다.
When supply Air pressure to ⒶⒷPort, A,B Stroke do backward motion.



ⒷⒹ포트에 공기압을 공급하면 A행정이 작동한다.
When supply Air pressure to ⒷⒹPort, A Stroke works.



ⒶⒸ포트에 공기압을 공급하면 B행정이 작동한다
When supply Air pressure to ⒶⒸPort, B Stroke works.

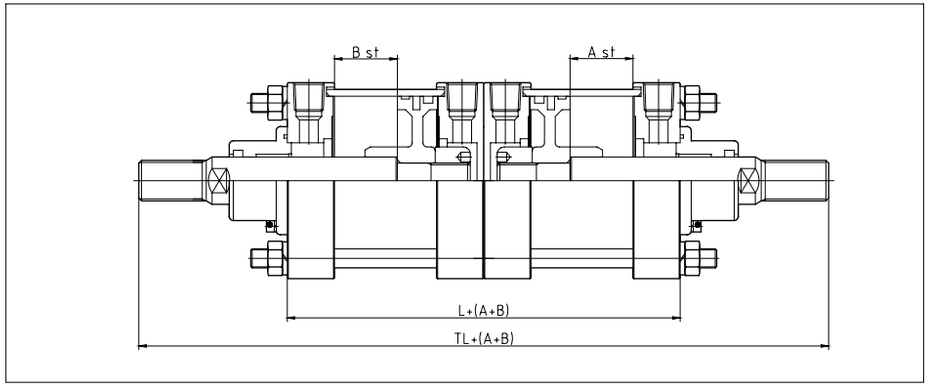


ⒸⒹ포트에 공기압을 공급하면 A,B행정이 작동한다.
When supply Air pressure to ⒸⒹPort, A,B Stroke works.

사양 Specification

형식 Type	무급유형 Oiless Type
사용유체 Fluid	공기 Air
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. Working Pressur	9.9kgf/㎠
최저사용압력 Min. Working Pressure	0.8kgf/㎠
사용피스톤속도 Working Piston Speed	50~750mm/s
작동방식 Working Type	복동 Double-acting
쿠션 Cushion	Cushion
부착형식 Mounted Type	Basic Type, Foot Type of shaft direction , Flange Type

외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit:mm

I-D(mm)	L	TL
125	196	416
140	196	416
150	212	452
160	212	452
180	222	492
200	222	492
250	282	602
300	292	642

※기타 표시하지 않은 치수는 ISL 기본형 참조
Dimension which isn't indicated is same with general type of ISL SERIES

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

다단 행정 편로드형 Multiple-end Stroke Single-rod Type

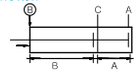
형식 표시 방법 Indication of Model

ISL — 형식 Type — 튜브재질 Tube Materials — 취부지지형식 Supporting Type of Fitting Surface — 튜브내경 I-D(mm) — 행정A+B/A+B Stroke — TS

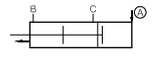
※ISL 시리즈 일반형 형식 표기 방법 참조 Refer to method for indication of general type of ISL series.
두 개의 실린더 튜브재질 연결, 일체화 하여 실린더 행정을 왕복과 더블어 2단계로 제어 가능하고, 2배의 실린더 출력을 얻을 수 있다.
Connect two cylinder by series, make one body, then, can control cylinder stroke by two steps with round trip and get twice more outputs.

표시기호 Notation

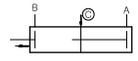
■ 기능 Function



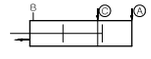
ⒷⒸ포트에 공기압을 공급하면 A,B행정은 후진한다.
When supply Air pressure to ⒷⒸPort, A,B Stroke do backward motion.



ⒶⒸ포트에 공기압을 공급하면 로드와 A행정이 작동한다.
When supply Air pressure to ⒶⒸPort, A Stroke works.



ⒸⒹ포트에 공기압을 공급하면 로드와 B-A행정이 작동한다
When supply Air pressure to ⒸⒹPort, B-A Stroke works.

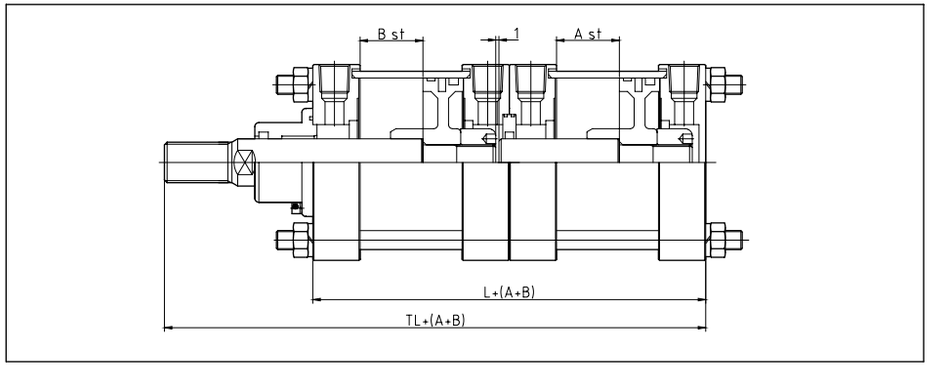


ⒶⒸ양포트에 공기압을 공급하면 A행정의 범위 중에 2배의 출력이 얻어진다.
When supply Air pressure to ⒶⒸPort, A Stroke works.

사양 Specification

형식 Type	무급유형 Oiless Type
사용유체 Fluid	공기 Air
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. Working Pressur	9.9kgf/㎠
최저사용압력 Min. Working Pressure	0.8kgf/㎠
사용피스톤 속도 Working Piston Speed	50~750mm/s
작동방식 Working Type	복동 Double-acting
쿠션 Cushion	Cushion
부착형식 Mounted Type	Basic Type, Foot Type of shaft direction , Rod-side Flange Type, Head-side Flange Type

외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit:mm

I-D(mm)	L	TL
125	196	306
140	196	306
150	212	332
160	212	332
180	222	357
200	222	357
250	282	442
300	292	467

※기타 표시하지 않은 치수는 ISL 기본형 참조
Dimension which isn't indicated is same with general type of ISL SERIES

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

가변 행정 실린더/전진시 조정형 Variable Stroke Cylinder Type/Control Type at Forward Motion

형식 표시 방법 Indication of Model

ISL — 형식 Type — 취부 지지형식 Supporting Type of Fitting Surface — 튜브내경 I-D(mm) — 행정 /Stroke — 추기호 / Additional Notation — 선단금구 Lot-end — SJ

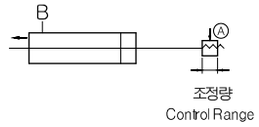
※SL 시리즈 일반형 형식 표기 방법 참조취 부지지형 식 ※Refer to method for indication of general type of ISL series.
실린더 전진시 행정을 전체 행정에 서 0~25mm (A), 0~50mm (B 까지 가변조정하여 전진축 의 행정을 조정할 수 있다.
Can control variably Stroke at Cylinder Forward-motion from whole stroke to 0~25mm and 0~50mm. Then, can control stroke at forward-motion.

A: 행정 조정 범위 Stroke Control Range 0~25m/m
B: 행정 조정 범위 Stroke Control Range 0 ~50m/m

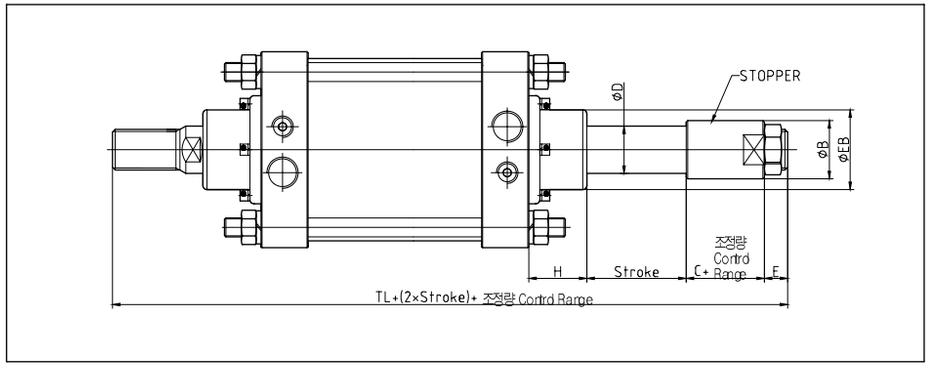
사양 Specification

형식 Type	무급유형 Oiless Type		저유압형 Low-Hydraulic Type
사용유체 Fluid	공기 Air		유압작동유 Hydaulic Working Oil
보증내압력 Bearing pressure	15kgf/㎠		
최고사용압력 Max. Working Pressu	9.9kgf/㎠		
최저사용압력 Min. Wo king Pressu e	0.8kgf/㎠	1kgf/㎠	
취부지지형식 Supporting type of Fitting Type	Basic Type, Foot Type , Rod-side Flange Type		

표시기호 Notation



외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit:mm

I-D(mm)	ØB	C	ØD	E	ØEB	H	KK	TL
125	60	37	35	30	90	43	M30XP1.5	318
140	60	37	35	30	90	43	M30XP1.5	318
150	60	46	40	26	90	43	M36XP1.5	341
160	60	46	40	26	90	43	M36XP1.5	341
180	70	52	45	30	115	48	M40XP1.5	376
200	70	52	50	30	115	48	M45XP1.5	376
250	86	60	60	35	140	60	M56XP1.5	456
300	86	60	70	55	140	60	M64XP1.5	496

기타 표시하지 않은 치수는 ISL 기본형 참조
Dimension which isn't indicated is same with general type of ISL SERIES

대형실린더 ISL 시리즈 LARGE-SIZE ISL SERIES

텐덤 실린더/내열용 실린더 Tandem Cylinder/Cylinder for Heat-Resist

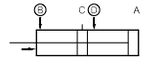
형식 표시 방법 Indication of Model

ISL — 형식Type — 취부지지형식 Supporting Type of Fitting Surface — 튜브내경I-D(mm) — 행정 / Stroke — 선단금구 Lot-end — TD

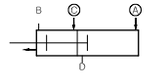
※SL 시리즈 일반형 형식 표기 방법 참조Refer to method for indication of general type of ISL series.
두개의 실린더 를 직렬로 연결한 실린더 로 출력을 2배로 얻을 수 있다.
Connect two cylinder by series, then, can get twice more outputs.

표시기호 Notation

■ 기능 Function



Ⓑ Ⓓ포트에 공기압을 공급하면 후진 작동시 2배의 출력을 낸다
When supply Air pressure to Ⓑ and Ⓓ Port, can get twice more outputs at backward motion.

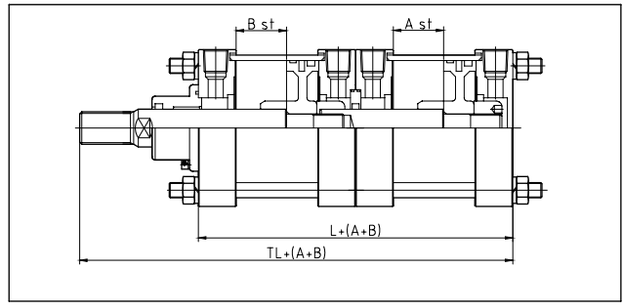


Ⓐ Ⓒ포트에 공기압을 공급하면, 후진 작동시 2배의 출력을 낸다.
When supply Air pressure to Ⓐ and Ⓒ Port, can get twice more outputs at forward motion.

사양 Specification

형식 Type	무급유형 Oiless Type	저유압형 Low-Hydraulic Type
사용유체 Fluid	공기 Air	Hydraulic Working Oil
보증내압력 Bearing pressure	15kgf/㎠	
최고사용압력 Max. Working Pressu	9.9kgf/㎠	
최저사용압력 Min. Wo king Pressu e	0.8kgf/㎠	1kgf/㎠
취부지지형식 Supporting type of Fitting Type	Basic Type, Foot Type , Rod-side Flange Type Head-side Flange Type single Thread CLEVIS Type, Double Thread CLEVIS Type	

외형 치수도/기본형 Outside Dimension Drawings/Basic Type



단위 unit:mm

I-D(mm)	L	TL
125	196	306
140	196	306
150	212	332
160	212	332
180	222	357
200	222	357
250	282	442
300	292	467

※기타 표시하지 않은 치수는 ISL 기본형 참조
Dimension which isn't indicated is same with general type of ISL SERIES

■ 내열용 실린더 / Cylinder for Heat-Resist

ISL — 형식 Type — 취부 지지형식 Supporting Type of Fitting Surface — 튜브내경 I-D(mm)

X — 행정 Stroke — 추기호 Tube Materials — 선단금구 Lot-end — SV

150 까지 고온의 주위조건에서 사용할 수 있는 실린더
It is a Cylinder with packing type for Heat-Resist. Can use in the high-temperature situation to 150℃.

사양 Specification

Type	Oil Supply Type
Inside-diameter	Ø125,Ø140,Ø150,Ø160,Ø180,Ø200
Working Temperature	-20~+150°C
Packing Materials	VITON (Fluoric Rubber)

■ 피스톤 로드 스텐레스/ Piston-rod Stainless

ISL — 형식 Type — 취부지지형식 Supporting Type of Fitting Surface — 튜브내경 I-D(mm)

X — 행정 Stroke — 추기호 Tube Materials — 선단금구 Lot-end — SS

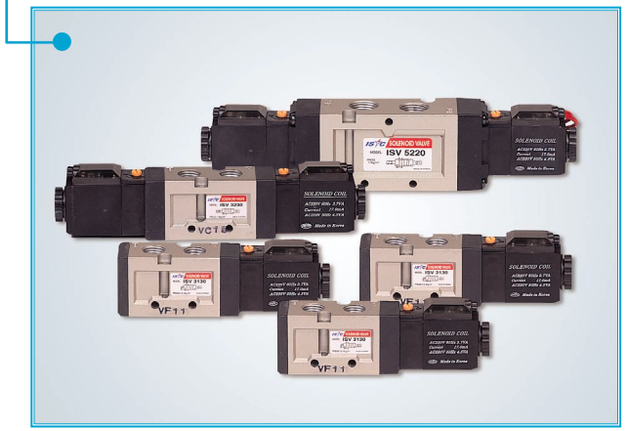
피스톤 로드의 끝단이 전진시 물에 침수 등으로 인해서 부식의 우려가 있는 경우에 사용
Use this when the Rod-end will be rusted by flooding at forward motion.

사양 Specification

Type	Oil Supply Type / Oiless Type
Inside-diameter of tube in cylinder	Ø125,Ø140,Ø150,Ø160,Ø180,Ø200 Ø250,Ø300
Materials of Piston Rod Nut	Stainless Steel

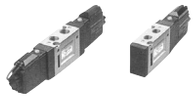
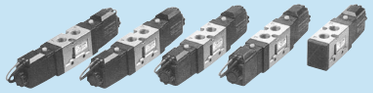
MEMO

솔레노이드 밸브 ISV 시리즈
Directional Control Valve



ISTC CO.,LTD

제품일람표 Products List

	기종 Type	유효단면적(CV값) Effective sectional area(CV value)	소비전력(W) Power consumption	Page
ISV2000 SERIES 	ISV2120	12.7㎟(0.7)	1.7	110
	ISV2220			111 112
ISV3000 SERIES 	ISV3130	19㎟(1.0)	2.3	113
	ISV3230			114
	ISV3330	14.4㎟(0.8)		115 116
	ISV3430			117 118
	ISV3530			
ISV5000 SERIES 	ISV5120	45㎟(2.5)	2.3	119
	ISV5220			120
	ISV5320	36㎟(2.0)		121 122
	ISV5420			123 124
	ISV5520			
ISV6000 SERIES 	ISV6120	58㎟(3.2)	2.3	125
	ISV6220			126
	ISV6320	45㎟(2.5)		127 128
	ISV6420			129 130
	ISV6520			

ISV2000 시리즈 ISV2000 SERIES

형식번호 Ordering Code

ISV 2120-2G
[1] [2] [3] [4] [5]

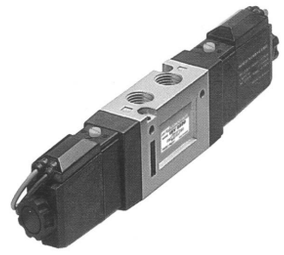
[1] 2000 Series
관절속구경
Pipe Fitting Diameter
Rc(PT)1/8

[2] 절환방식
Position/Solenoid
1:Single
2:Double

[3] 몸체형식
Port Size
20:직접 배관형
Direct Piping Type

[4] 전압
Voltage
1:AC110V, 50/60Hz
2:AC220V, 50/60Hz
3:DC24V

[5] 리드선램프타입
Electrical Entry
G:Grommet
(Lead wire 300mm)
D:DIN Terminal




특징 Feature

-작고 가볍다(폭 : 18mm)
-유량이 많으므로 힘이 세다(700ℓ/min)
-유효단면 적이커서 응답속도가빠르다(12.7㎟(Cv 0.7))
-힘이 세면서 소비전력은 적게 든다(DC 1.7W)
-풍부한 옵션을 자랑한다
-내구성이 뛰어나다

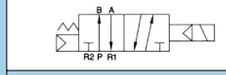
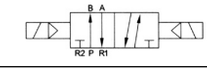
-Small and light(width : 18mm)
-Powerful force through plentiful flux(700ℓ/min)
-Rapid response due to extended effective sectional area(12.7㎟(Cv 0.7))
-Lower power consumption and superior power(DC 1.7W)
-Various options
-Superior durability

표준사양 Standard Specification

Model No.	SINGLE ISV2120	DOUBLE ISV2220
Port Size Rc(PT)	PT1/8	
Fluid	Air & inert gas	
Working Pressure kgf/㎠	1.5~9.0	1.0~9.0
Cv value	12.7㎟(Cv 0.7)	
Ambient and Fluid Temperature	5~60℃	
Response time(at 5kgf/㎠ condition)	Below 20ms	
Maximum frequency	10c/sec	
Oil supply	Unnecessary(In case of oil supply, use ISO VG32#)	
Manual override	Screwdriver-operated locking button	
Shock resistance/vibration resistance	30G-5G(8.3-200Hz)	
Safety construction	Protection against dust	
Rated voltage	AC220V, 110V(50/60Hz) / DC24V	
Permissible voltage fluctuation	±10% of rating voltage	
Indicator light	LED	
Power consumption DC	1.7W	

※상기 사양은 성능개선을 위하여 예고 없이 변경될 수 있습니다.
The above specifications can be changed to improve function without notification.
※유효 단면적, 통과유량은 6kgf/㎠일 때의 측정치임.
The effective sectional area and the passage flux are measured at 6kgf/㎠ condition.

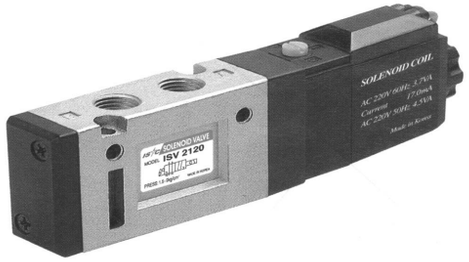
모델 Model

2위치	SINGLE ISV2120	
	DOUBLE ISV2220	

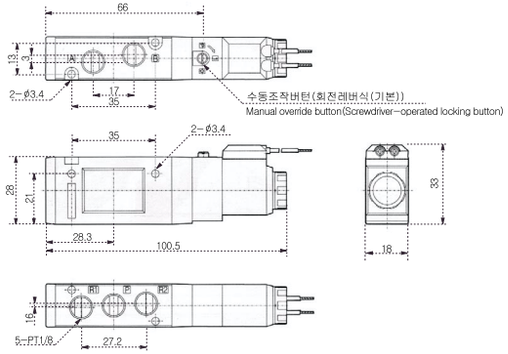
ISV2120

형식번호 Ordering Code

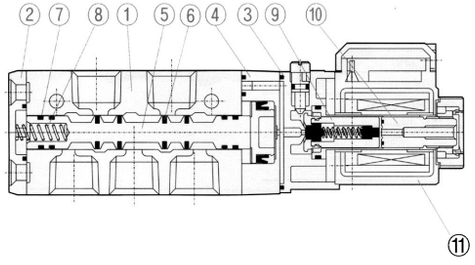
ISV 2120



외형치수도 Dimension



구조 Structure



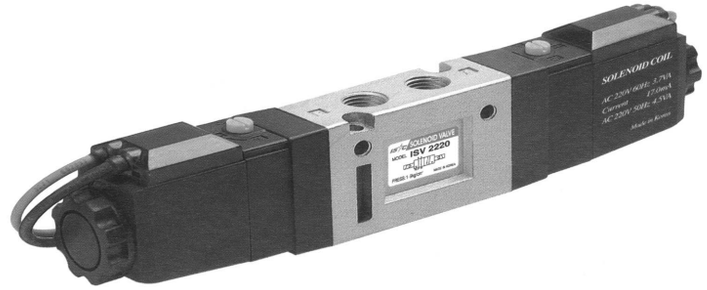
부품리스트 Part list

No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	COVER	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOLI-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	SPRING	SUS
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	

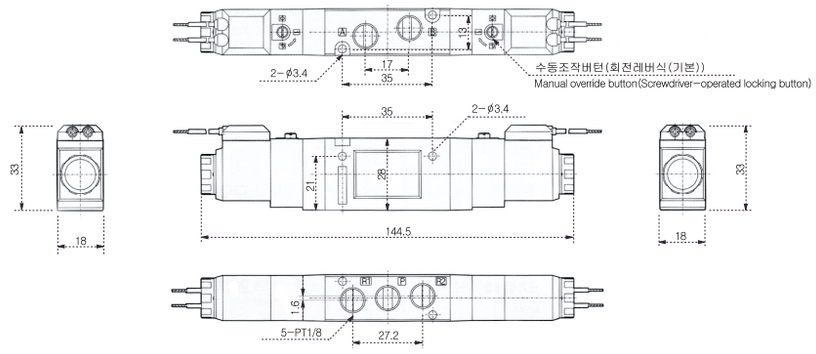
ISV2220

형식번호 Ordering Code

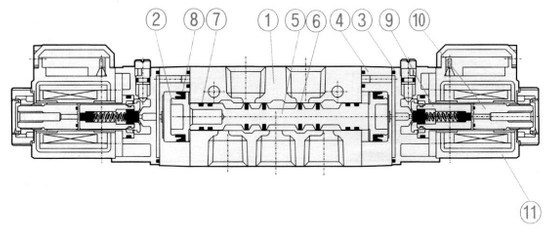
ISV 2220



외형치수도 Dimension



구조 Structure



부품리스트 Part list

No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	PISTON	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOLI-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	PISTON PACKING	KSZ-8000
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	

ISV3000 시리즈 ISV3000 SERIES

형식번호 Ordering Code

ISV 3130-2G

[1] [2] [3] [4] [5]

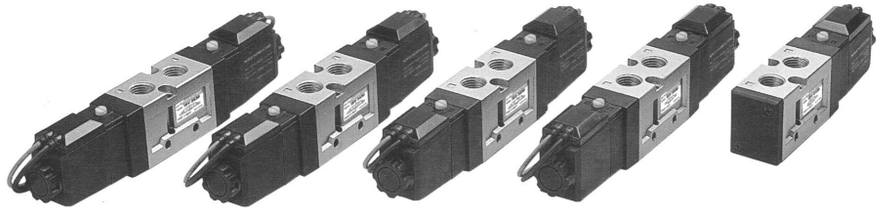
[1] 3000 Series
관절속구경
Pipe Fitting Diameter
Rc(PT)1/4

[2] 절환방식
Position/Solenoid
1:Single
2:Double
3:Closed Center
4:Exhaust Center
5:Pressure Center

[3] 몸체형식
Port Size
30:직접배관형
Direct Piping Type

[4] 전압
Voltage
1:AC110V, 50/60Hz
2:AC220V, 50/60Hz
3:DC24V

[5] 리드선램프타입
Electrical Entry
G:Grommet
(Lead wire 300mm)
D:DIN Terminal



특징 Feature

- 작고 가볍다(폭 : 26.4mm)
- 유량이 많으므로 힘이 세다(1000 ℓ/min)
- 유효단면적이 커서 응답속도가 빠르다(19.0㎟(Cv 1.0))
- 힘이 세면서 소비전력은 적게 든다(DC 2.3W)
- 풍부한 옵션을 자랑한다
- 내구성이 뛰어나다

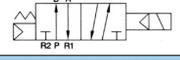
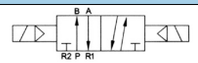
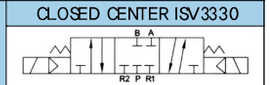
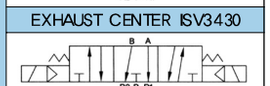
- Small and light(width : 26.4 mm)
- Powerful force through plentiful flux(1000 ℓ/min)
- Rapid response due to extended effective sectional area(19.0㎟(Cv 1.0))
- Lower power consumption and superior power(DC 2.3W)
- Various options
- Superior durability

표준사양 Standard Specification

Model No.	SINGLE ISV3130	DOUBLE ISV3230	CLOSED CENTER ISV3330	EXHAUST CENTER ISV3430	PRESSURE CENTER ISV3530
Port Size Rc(PT)	PT1/4				
Fluid	Air & inert gas				
Working Pressure kgf/㎠	1.5~9.0	1.0~9.0	2~9.0		
Cv value	19.0㎟(Cv 1.0)		14.4㎟(Cv 0.8)		
Ambient and Fluid Temperature	5~60℃				
Response time(at 5kgf/㎠ condition)	Below 20ms		Below 30ms		
Maximum frequency	10c/sec		3c/sec		
Oil supply	Unnecessary(In case of oil supply, use ISO VG32#)				
Manual override	Screwdriver-operated locking button				
Shock resistance/vibration resistance	30G-5G(8.3~200Hz)				
Safety construction	Protection against dust				
Rated voltage	AC220V, 110V(50/60Hz) / DC24V				
Permissible voltage fluctuation	±10% of rating voltage				
Indicator light	LED				
Power consumption DC	2.3W				

※상기 사양은 성능개선을 위하여 예고 없이 변경될 수 있습니다.
The above specifications can be changed to improve functions without notification.
※유효 단면적, 통과유량은 6kgf/㎠일 때의 측정치임.
The effective sectional area and the passage flux are measured at 6kgf/㎠ condition.

모델 Model

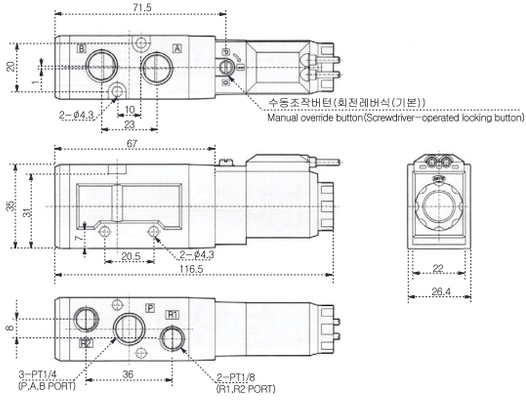
2위치	SINGLE ISV3130
	
	DOUBLE ISV3230
	
3위치	CLOSED CENTER ISV3330
	
	EXHAUST CENTER ISV3430
	
	PRESSURE CENTER ISV3530
	

ISV3130

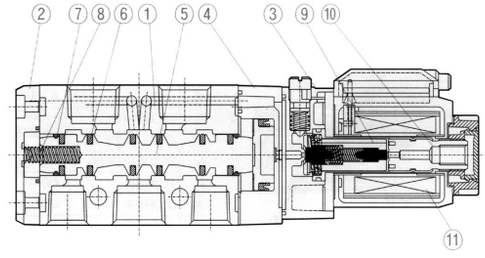
형식번호 Ordering Code

ISV 3130

외형치수도 Dimension



구조 Structure



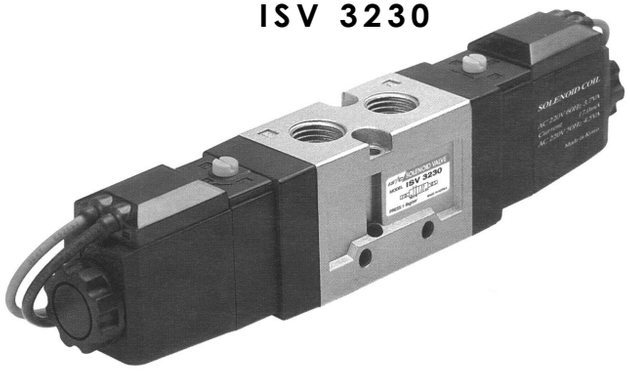
부품리스트 Part list

No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	COVER	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOL I-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	SPRING	SUS
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	

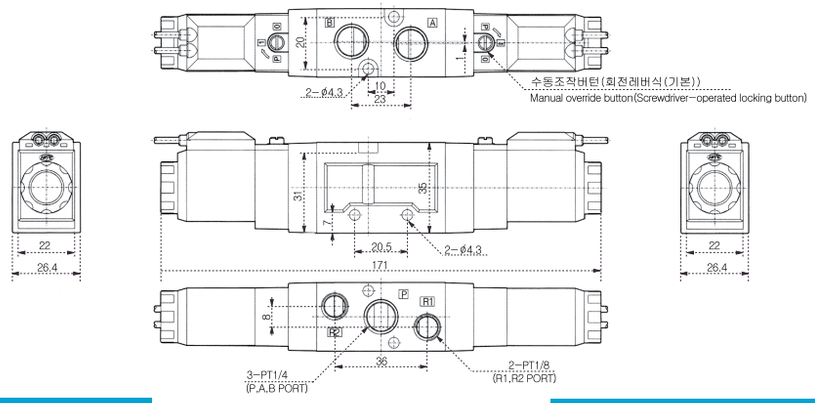
ISV3230

형식번호 Ordering Code

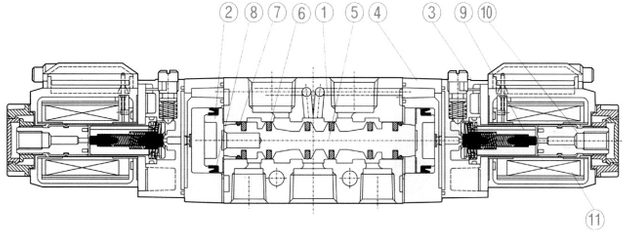
ISV 3230



외형치수도 Dimension



구조 Structure



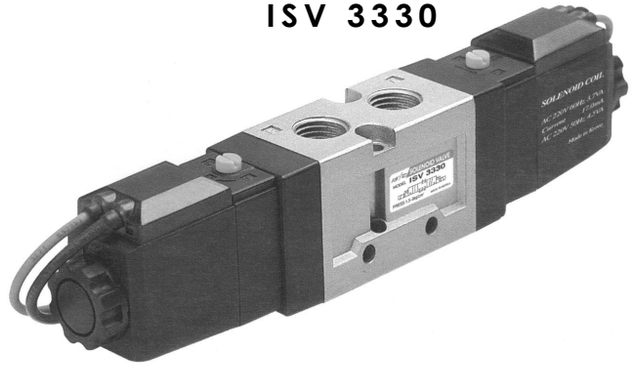
부품리스트 Part list

No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	PISTON	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOL I-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	PISTON PACKING	KSZ-80000
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	

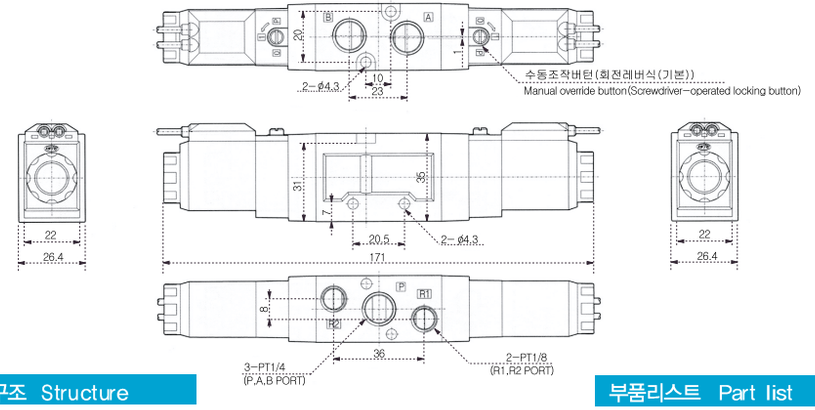
ISV3330

형식번호 Ordering Code

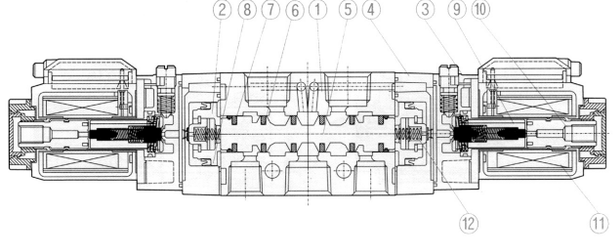
ISV 3330



외형치수도 Dimension



구조 Structure



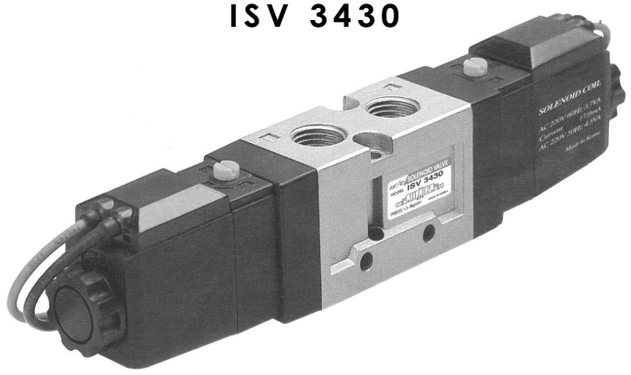
부품리스트 Part list

No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	PISTON	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOL I-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	PISTON PACKING	KSZ-8000
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	
⑫	PISTON SPRING	SUS

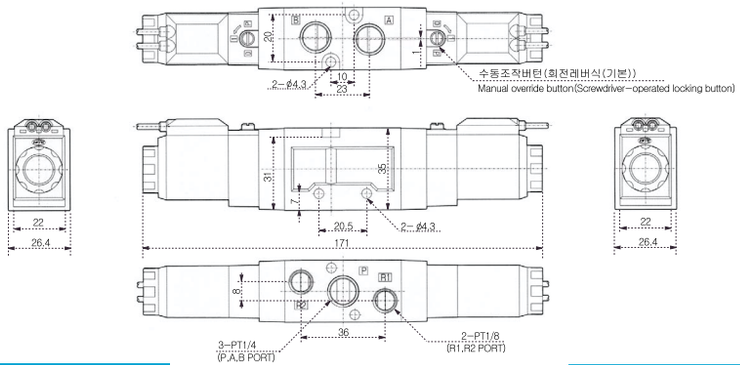
ISV3430

형식번호 Ordering Code

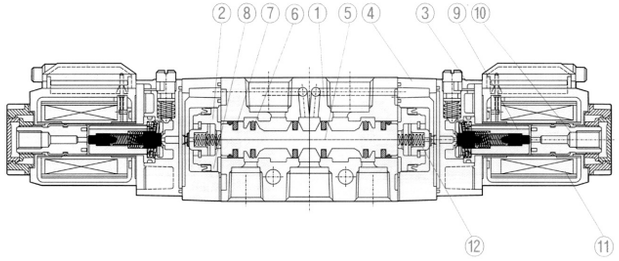
ISV 3430



외형치수도 Dimension



구조 Structure



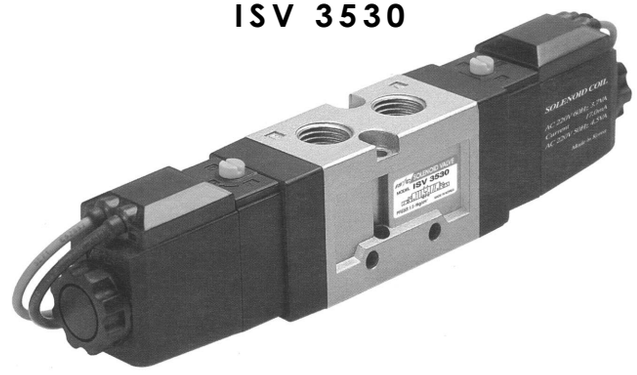
부품리스트 Part list

No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	PISTON	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOLI-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	PISTON PACKING	KSZ-8000
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	
⑫	PISTON SPRING	SUS

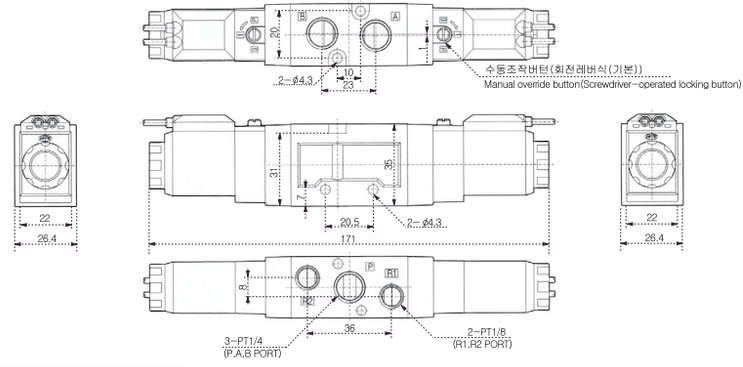
ISV3530

형식번호 Ordering Code

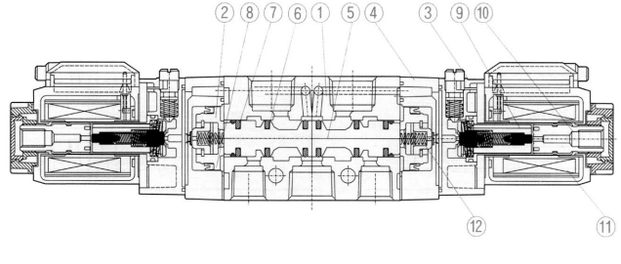
ISV 3530



외형치수도 Dimension



구조 Structure



부품리스트 Part list

No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	PISTON	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOLI-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	PISTON PACKING	KSZ-8000
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	
⑫	PISTON SPRING	SUS

ISV5000 시리즈 ISV5000 SERIES

형식번호 Ordering Code

ISV 5120-2G
1 2 3 4 5

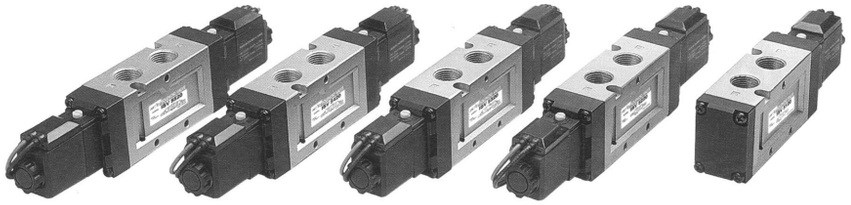
1 5000 Series
관접속구경
Pipe Fitting Diameter
Rc(PT)3/8

2 절환방식
Position/Solenoid
1:Single
2:Double
3:Closed Center
4:Exhaust Center
5:Pressure Center

3 몸체형식
Port Size
20:직접 배관형
Direct Piping Type

4 전압
Voltage
1:AC110V, 50/60Hz
2:AC220V, 50/60Hz
3:DC24V

5 리드선램프타입
Electrical Entry
G:Grommet
(Lead wire 300mm)
D:DIN Terminal



특징 Feature

-작고 가볍다(폭 : 32mm)
-유량이 많으므로 힘이 세다(2000 ℓ/min)
-유효단면적이 커서 응답속도가 빠르다(45.0㎟(Cv 2.5))
-힘이 세면서 소비전력은 적게 든다(DC 2.3W)
-풍부한 옵션을 자랑한다
-내구성이 뛰어나다

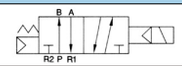
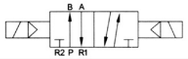
-Small and light(width : 32mm)
-Powerful force through plentiful flux(2000 ℓ/min)
-Rapid response due to extended effective sectional area(45.0㎟(Cv 2.5))
-Lower power consumption and superior power(DC 2.3W)
-Various options
-Superior durability

표준사양 Standard Specification

Model No.	SINGLE ISV3130	DOUBLE ISV3230	CLOSED CENTER ISV3330	EXHAUST CENTER ISV3430	PRESSURE CENTER ISV3530
Port Size Rc(PT)	PT3/8				
Fluid	Air & inert gas				
Working Pressure kgf/㎠	1.5~9.0	1.0~9.0	2~9.0		
Cv value	45.0㎟(Cv 2.5)		36.0㎟(Cv 2.0)		
Ambient and Fluid Temperature	5~60℃				
Response time(at 5kgf/㎠ condition)	Below 25ms		Below 35ms		
Maximum frequency	8c/sec		3c/sec		
Oil supply	Unnecessary(In case of oil supply, use ISO VG32#)				
Manual override	Screwdriver-operated locking button				
Shock resistance/vibration resistance	30G-5G(8.3~200Hz)				
Safety construction	Protection against dust				
Rated voltage	AC220V, 110V(50/60Hz) / DC24V				
Permissible voltage fluctuation	±10% of rating voltage				
Indicator light	LED				
Power consumption DC	2.3W				

※상기 사양은 성능개선을 위하여 예고 없이 변경될 수 있습니다.
The above specifications can be changed to improve functions without notification.
※유효단면적, 통과유량은 6kgf/㎠일 때의 측정치임.
The effective sectional area and the passage flux are measured at 6kgf/㎠ condition.

모델 Model

2위치	SINGLE ISV5120
	
	DOUBLE ISV5220
	
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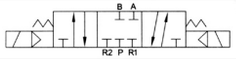
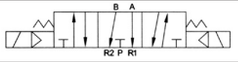
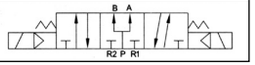
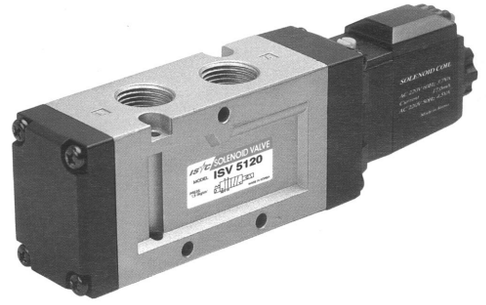
	
	EXHAUST CENTER ISV5420
	
	PRESSURE CENTER ISV5520
	

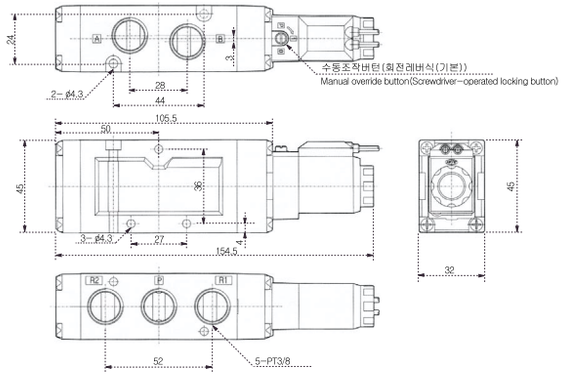
ISV5120

형식번호 Ordering Code

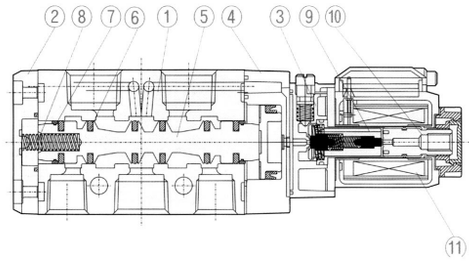
ISV 5120



외형치수도 Dimension



구조 Structure



부품리스트 Part list

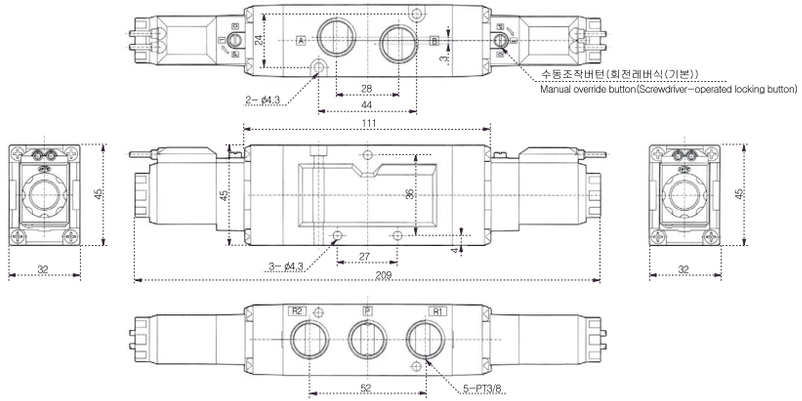
No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	COVER	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOL I-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	SPRING	SUS
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	

ISV5220

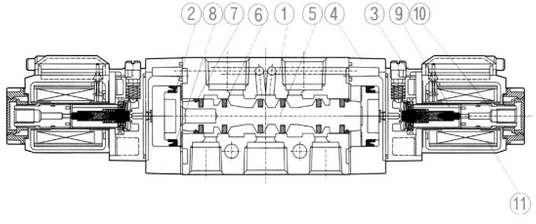
형식번호 Ordering Code

ISV 5220

외형치수도 Dimension



구조 Structure



부품리스트 Part list

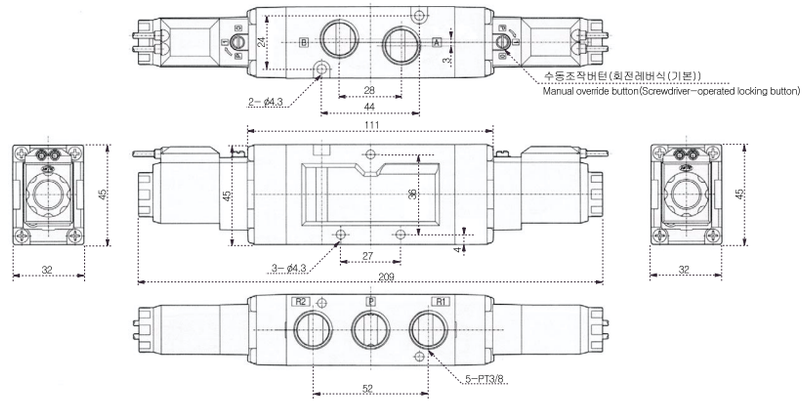
No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	PISTON	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOLI-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	PISTON PACKING	KSZ-80000
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	

ISV5320

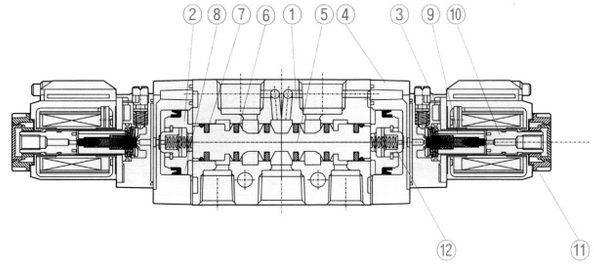
형식번호 Ordering Code

ISV 5320

외형치수도 Dimension



구조 Structure



부품리스트 Part list

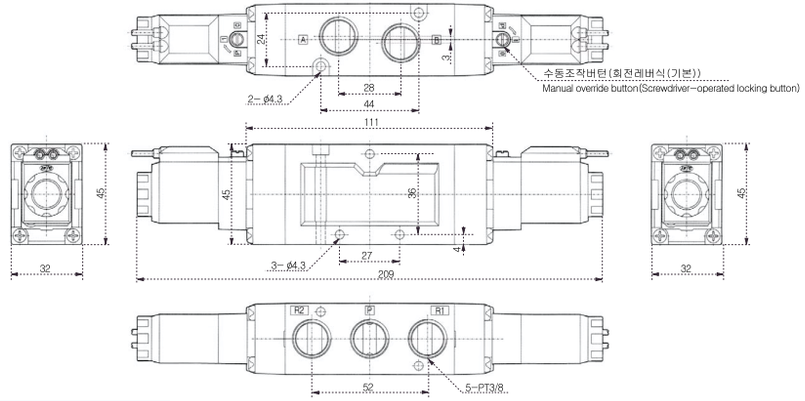
No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	PISTON	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOLI-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	PISTON PACKING	KSZ-8000
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	
⑫	PISTON SPRING	SUS

ISV5420

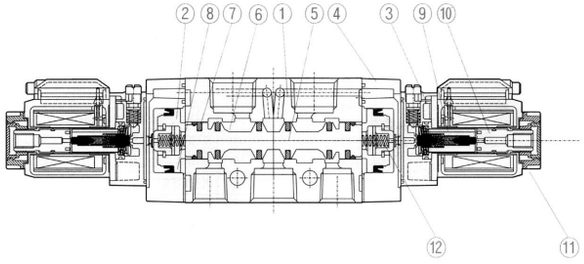
형식번호 Ordering Code

ISV 5420

외형치수도 Dimension



구조 Structure



부품리스트 Part list

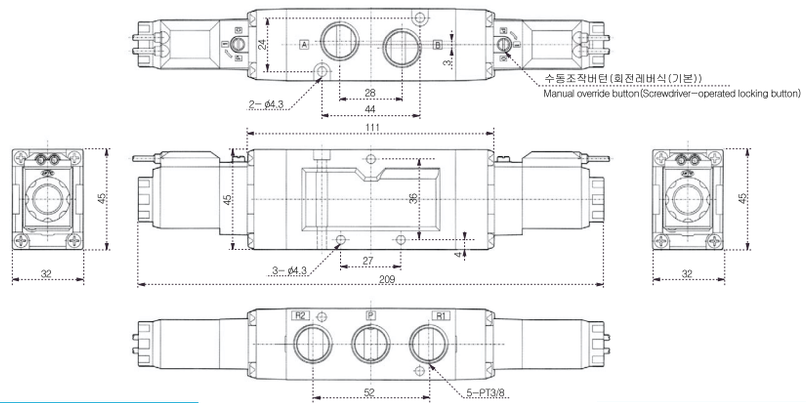
No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	PISTON	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOLI-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	PISTON PACKING	KSZ-8000
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	
⑫	PISTON SPRING	SUS

ISV5520

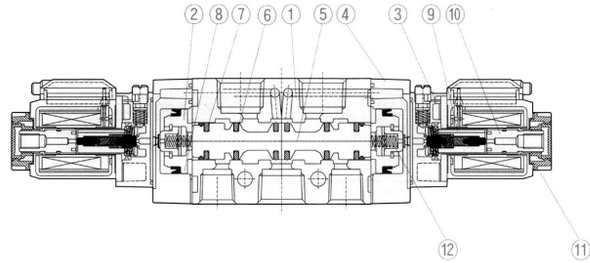
형식번호 Ordering Code

ISV 5520

외형치수도 Dimension



구조 Structure



부품리스트 Part list

No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	PISTON	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOLI-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	PISTON PACKING	KSZ-8000
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	
⑫	PISTON SPRING	SUS

ISV6000 시리즈 ISV6000 SERIES

형식번호 Ordering Code

ISV 6120-2G
1 2 3 4 5

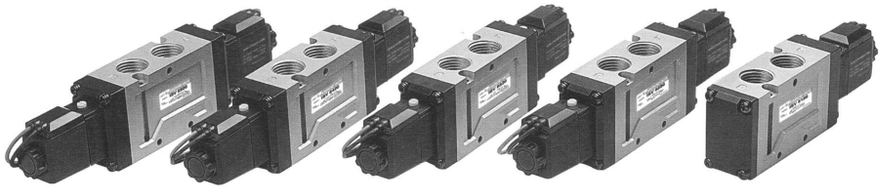
1 5000 Series
관접속구경
Pipe Fitting Diameter
Rc(PT) 1/2

2 절환방식
Position/Solenoid
1:Single
2:Double
3:Closed Center
4:Exhaust Center
5:Pressure Center

3 몸체형식
Port Size
20 직접 배관형
Direct Piping Type

4 전압
Voltage
1:AC110V, 50/60Hz
2:AC220V, 50/60Hz
3:DC24V

5 리드선램프타입
Electrical Entry
G:Grommet
(Lead wire 300mm)
D:DIN Terminal



특징 Feature

-작고 가볍다(폭 : 32mm)
-유량이 많으므로 힘이 세다(3250 ℓ/min)
-유효단면적이 커서 응답속도가 빠르다(58㎟(Cv 3.2))
-힘이 세면서 소비전력은 적게 든다(DC 2.3W)
-풍부한 옵션을 자랑한다
-내구성이 뛰어나다(3250 ℓ/min), (58㎟(Cv 3.2))

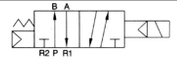
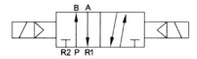
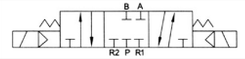
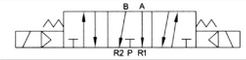
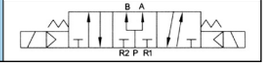
-Small and light(width : 32mm)
-Powerful force through plentiful flux(3250 ℓ/min)
-Rapid response due to extended effective sectional area(58㎟(Cv 3.2))
-Lower power consumption and superior power(DC 2.3W)
-Various options
-Superior durability

표준사양 Standard Specification

Model No.	SINGLE ISV3130	DOUBLE ISV3230	CLOSED CENTER ISV3330	EXHAUST CENTER ISV3430	PRESSURE CENTER OSV3530
Port Size Rc(PT)	PT1/2				
Fluid	Air & inert gas				
Working Pressure kgf/㎠	1.5~9.0	1.0~9.0	2~9.0		
Cv value	58㎟(Cv 3.2)		45.0㎟(Cv 2.5)		
Ambient and Fluid Temperature	5~60℃				
Response time(at 5kgf/㎠ condition)	Below 25ms		Below 35ms		
Maximum frequency	8c/sec		3c/sec		
Oil supply	Unnecessary(In case of oil supply, use ISO VG32#)				
Manual override	Screwdriver-operated locking button				
Shock resistance/vibration resistance	30G-5G(8.3~200Hz)				
Safety construction	Protection against dust				
Rated voltage	AC220V, 110V(50/60Hz) / DC24V				
Permissible voltage fluctuation	±10% of rating voltage				
Indicator light	LED				
Power consumption DC	2.3W				

※상기 사양은 성능개선을 위하여 예고 없이 변경될 수 있습니다.
The above specifications can be changed to improve functions without notification.
※유효 단면적, 통과유량은 6kgf/㎠일 때의 측정치임.
The effective sectional area and the passage flux are measured at 6kgf/㎠ condition.

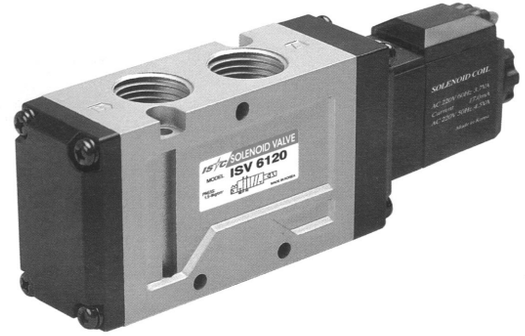
모델 Model

2위치	SINGLE ISV6120
	
	DOUBLE ISV6220
	
3위치	CLOSED CENTER ISV6320
	
	EXHAUST CENTER ISV6420
	
	PRESSURE CENTER ISV6520
	

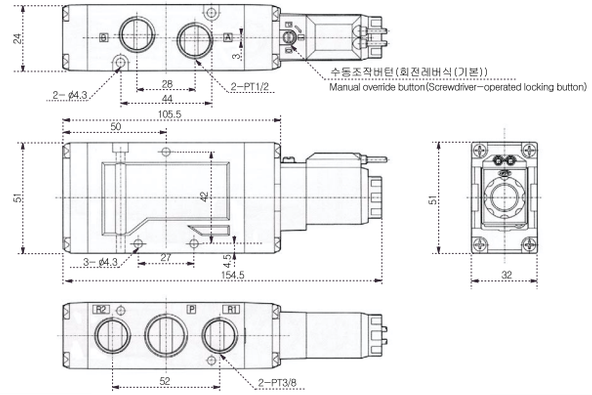
ISV6120

형식번호 Ordering Code

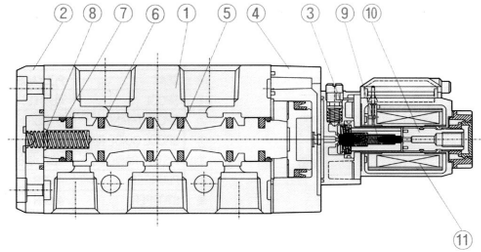
ISV 6120



외형치수도 Dimension



구조 Structure



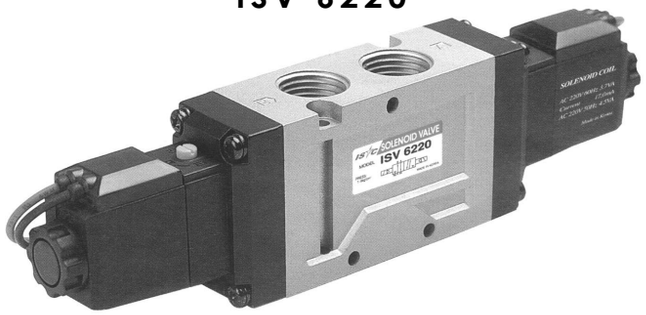
부품리스트 Part list

No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	COVER	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOL I-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	SPRING	SUS
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	

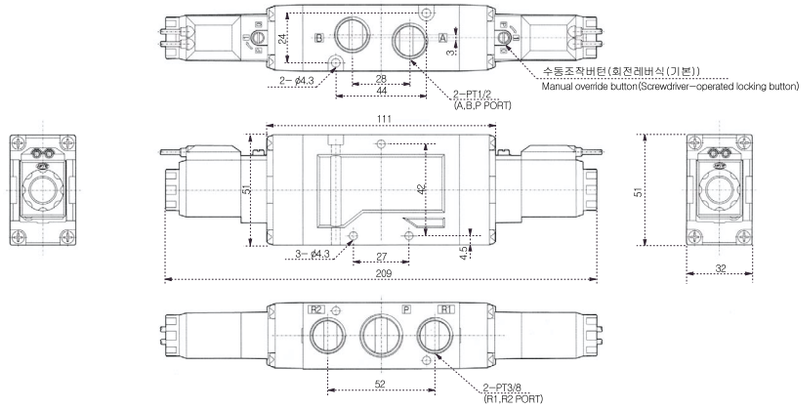
ISV6220

형식번호 Ordering Code

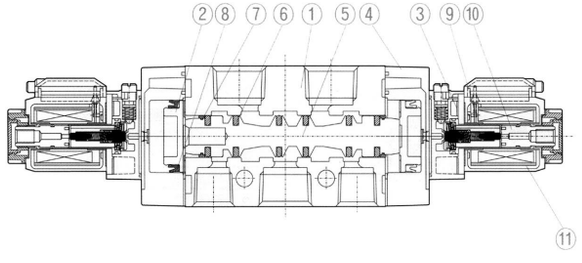
ISV 6220



외형치수도 Dimension



구조 Structure



부품리스트 Part list

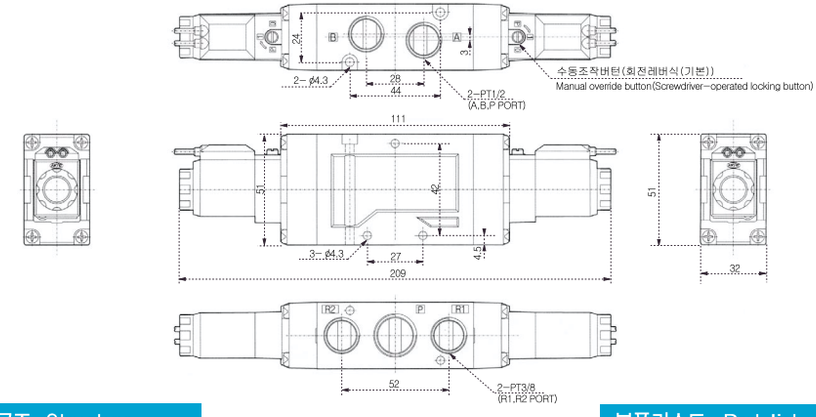
No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	PISTON	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOLI-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	PISTON PACKING	KSZ-80000
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	

ISV6320

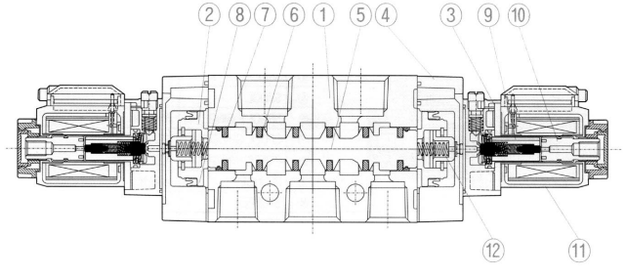
형식번호 Ordering Code

ISV 6320

외형치수도 Dimension



구조 Structure



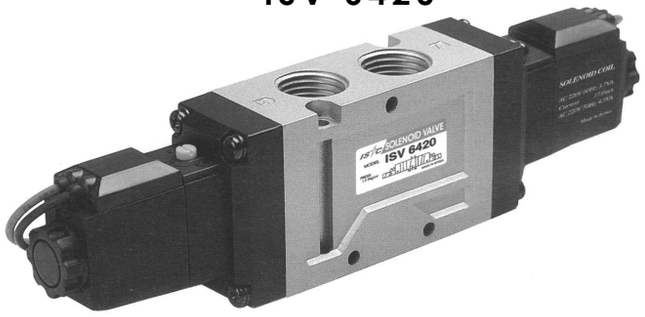
부품리스트 Part list

No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	PISTON	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOLI-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	PISTON PACKING	KSZ-8000
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	
⑫	PISTON SPRING	SUS

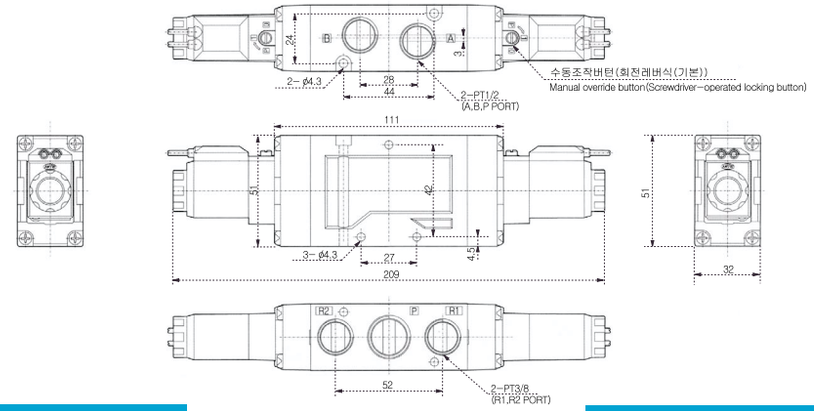
ISV6420

형식번호 Ordering Code

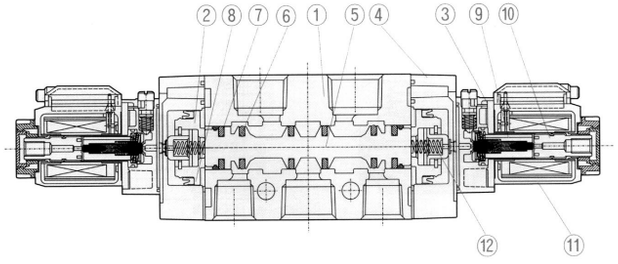
ISV 6420



외형치수도 Dimension



구조 Structure



부품리스트 Part list

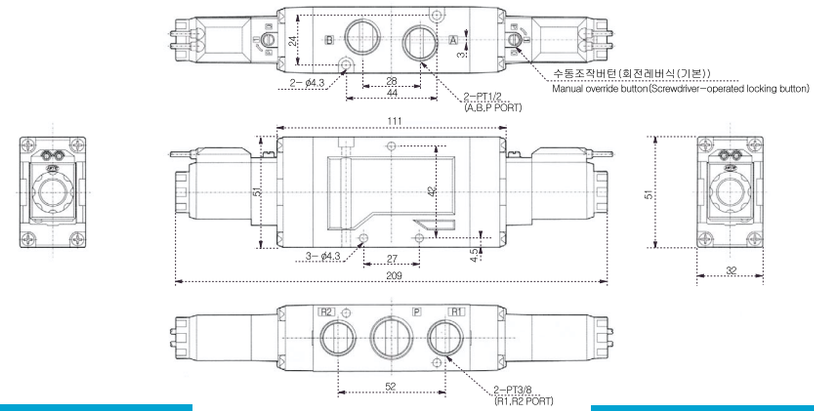
No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	PISTON	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOLI-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	PISTON PACKING	KSZ-8000
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	
⑫	PISTON SPRING	SUS

ISV6520

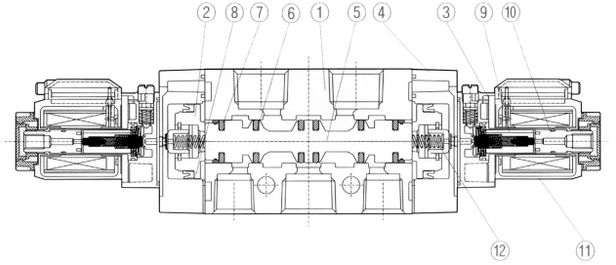
형식번호 Ordering Code

ISV 6520

외형치수도 Dimension



구조 Structure



부품리스트 Part list

No.	부품명 Part Name	재질 Material
①	BODY	ADC12
②	PISTON	POLYACETAL
③	PILOT	POLYACETAL
④	SEAT	POLYACETAL
⑤	SPOOL	AL2011
⑥	SPOOLI-RING	X-NBR
⑦	SPOOL GUIDE RING	POM
⑧	PISTON PACKING	KSZ-8000
⑨	PLUNGER	430FR
⑩	STOPPER	430FR
⑪	COIL ASS'Y	
⑫	PISTON SPRING	SUS

MEMO

에어 유니트 ISC 시리즈
Air Line Equipment

제품일람표 Products List

	관접속구경 Port Size	압력계 접속구경 PressureGauge Size RC(PT)	여과도(μ) Filter Precision	설정압력범위Mpa(Kgf/cm) Pressue Regulating Range	Page	
 FRL 조합형 FRL Combination ISC 2000 ISC 3000 ISC 4000	1/8(6A), 1/4(8A) 1/4(8A), 3/8(10A) 3/8(10A), 1/2(15A)	1/8(6A) 1/8(6A) 1/4(8A)	10μ	0.05~0.85 (0.5~8.5)	134 135 136	
 FRL 조합형 FRL Combination ISC 2010 ISC 3010 ISC 4010	1/8(6A), 1/4(8A) 1/4(8A), 3/8(10A) 3/8(10A), 1/2(15A)	1/8(6A) 1/8(6A) 1/4(8A)	10μ	0.05~0.85 (0.5~8.5)	137 138 139	
 필터레귤레이터 Filter Regulator ISW 2000 ISW 3000 ISW 4000	1/8(6A), 1/4(8A) 1/4(8A), 3/8(10A) 3/8(10A), 1/2(15A)	1/8(6A) 1/8(6A) 1/4(8A)	10μ	0.05~0.85 (0.5~8.5)	140 141 142	
 에어필터 Air Filter ISF 2000 ISF 3000 ISF 4000	1/8(6A), 1/4(8A) 1/4(8A), 3/8(10A) 3/8(10A), 1/2(15A)	-	10μ	-	143 144 145	
 레귤레이터 Regulator ISR 2000 ISR 3000 ISR 4000	1/8(6A), 1/4(8A) 1/4(8A), 3/8(10A) 3/8(10A), 1/2(15A)	1/8(6A) 1/8(6A) 1/4(8A)	-	0.05~0.85 (0.5~8.5)	146 147 148	
 루브리케이터 Lubricator ISL 2000 ISL 3000 ISL 4000	1/8(6A), 1/4(8A) 1/4(8A), 3/8(10A) 3/8(10A), 1/2(15A)	-	-	-	149 150 151	
부속품 Accessories					152 153	

ISC 2000 시리즈 ISC 2000 SERIES

F.R.L. Combination Series

형식번호 Ordering Code

ISC 2000-02G

1 2 3 4 5

1 FRL조합형 FRL Combination

2 몸체크기 Body Size 2:1/4

3 구성부품 Composition Part
00:Filter+Regulator+Lubricator
10:Filter Regulator+Lubricator

4 관접속구경 Pipe Fitting Diameter
01:Rc(PT)1/8
02:Rc(PT)1/4

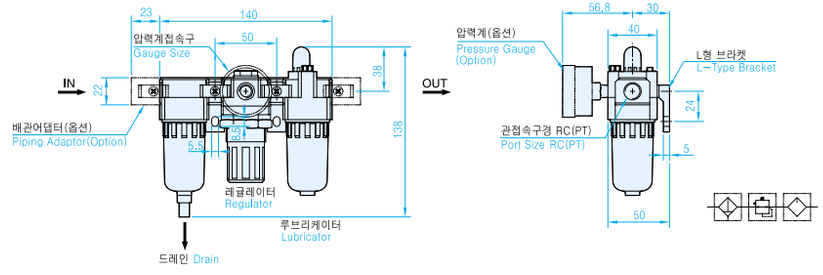
5 부속품 Accessories
G:Pressure Gauge

표준사양 Standard Specification

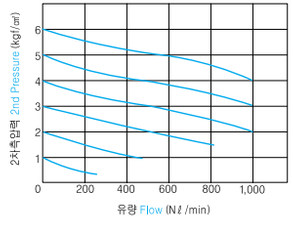
Type	ISC 2000
Unit of Machinery : Air Filter+ Regulator+ Lubricator (ISF2000-02 + ISR2000-02G + ISL2000-02)	
Port Size Rc(PT)	1/8(6A), 1/4(8A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Pressure Regulating Range	0.5~8.5Kgf/㎠(50~850kPa)
Rated Flow(Nℓ/min)	500
Ambient and Fluid Temperature	5~60℃
Filter Precision	Standard: 10㎛
Recommended Oil Use	Terbin No.1 Oil(ISO VG32)
Container Material	Polycarbonate
Construction/Regulator	Relief Type
Weight(Kgf)	0.74

※상기 사양은 성능개선을 위하여 예고 없이 변경될 수 있습니다.
The above specifications can be changed to improve functions without notification.

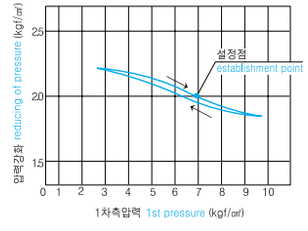
외형치수도 Dimension



유량특성곡선 Flow Characteristic Curve



압력특성곡선 Pressure Characteristic Curve



ISC 3000 시리즈 ISC 3000 SERIES
F.R.L. Combination Series

형식번호 Ordering Code

ISC 3000-03G
1 2 3 4 5

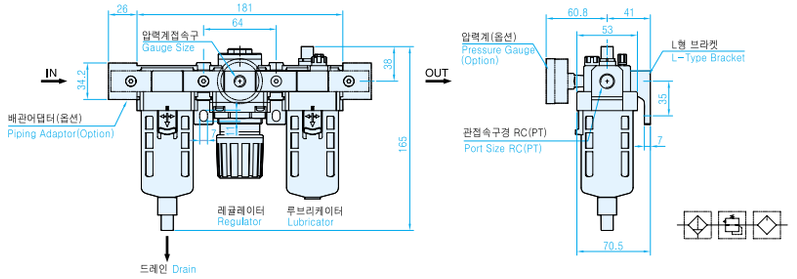
1 FRL조합형 FRL Combination
2 몸체크기 Body Size 3:3/8
3 구성부품 Composition Part 00:Filter+Regulator+Lubricator 10:Filter Regulator+Lubricator
4 관접속구경 Pipe Fitting Diameter 02:Rc(PT)1/4 03:Rc(PT)3/8
5 부속품 Accessories G:Pressure Gauge

표준사양 Standard Specification

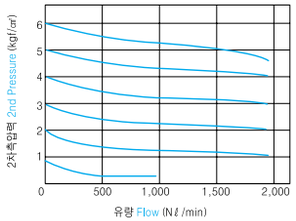
Type	ISC 3000
Unit of Machinery : Air Filter+ Regulator+ Lubricator (ISF3000-03 + ISR3000-03G + ISL3000-03)	
Port Size Rc(PT)	1/4(8A), 3/8(10A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Pressure Regulating Range	0.5~8.5Kgf/㎠(50~850kPa)
Rated Flow(N ℓ /min)	1700
Ambient and Fluid Temperature	5~60℃
Filter Precision	Standard: 10㎛
Recommended Oil Use	Terbin No.1 Oil(ISO VG32)
Container Material	Polycarbonate
Construction/Regulator	Relief Type
Weight(Kgf)	1.18

※상기 사양은 성능개선을 위하여 예고없이 변경될 수 있습니다.
The above specifications can be changed to improve functions without notification.

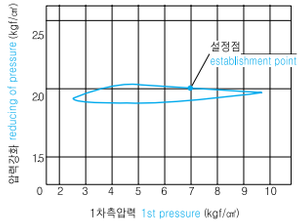
외형치수도 Dimension



유량특성곡선 Flow Characteristic Curve



압력특성곡선 Pressure Characteristic Curve



ISC 4000 시리즈 ISC 4000 SERIES
F.R.L. Combination Series

형식번호 Ordering Code

ISC 4000-04G
1 2 3 4 5

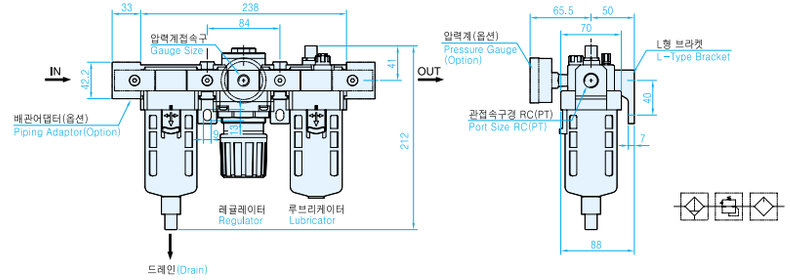
1 FRL조합형 FRL Combination
2 몸체크기 Body Size 4:1/2
3 구성부품 Composition Part 00:Filter+Regulator+Lubricator 10:Filter Regulator+Lubricator
4 관접속구경 Pipe Fitting Diameter 03:Rc(PT)3/8 04:Rc(PT)1/2
5 부속품 Accessories G:Pressure Gauge

표준사양 Standard Specification

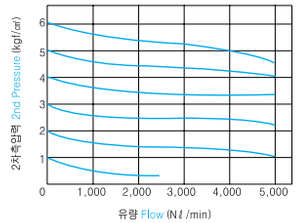
Type	ISC 4000
Unit of Machinery : Air Filter+ Regulator+ Lubricator (ISF2000-02 + ISR2000-02G + ISL2000-02)	
Port Size Rc(PT)	1/8(6A), 1/4(8A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Pressure Regulating Range	0.5~8.5Kgf/㎠(50~850kPa)
Rated Flow(N ℓ /min)	4000
Ambient and Fluid Temperature	5~60℃
Filter Precision	Standard: 10㎛
Recommended Oil Use	Terbin No.1 Oil(ISO VG32)
Container Material	Polycarbonate
Construction/Regulator	Relief Type
Weight(Kgf)	2.14

※상기 사양은 성능개선을 위하여 예고없이 변경될 수 있습니다.
The above specifications can be changed to improve functions without notification.

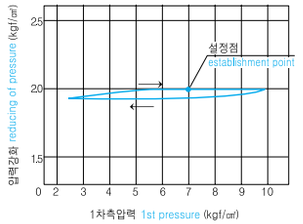
외형치수도 Dimension



유량특성곡선 Flow Characteristic Curve



압력특성곡선 Pressure Characteristic Curve



ISC 2000 시리즈 ISC 2000 SERIES
F.R.L. Combination Series

형식번호 Ordering Code

ISC 2010-02BG
1 2 3 4 5

1 FRL조합형
FRL Combination

2 몸체크기
Body Size
20:1/4

3 구성부품
Composition Part
00:Filter+Regulator+Lubricator
10:Filter Regulator+Lubricator

4 관접속구경
Pipe Fitting Diameter
01:Rc(PT)1/8
02:Rc(PT)1/4

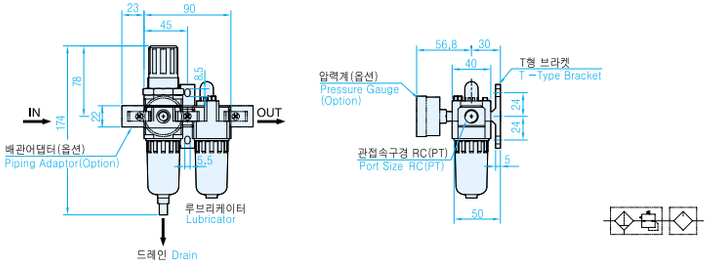
5 부속품
Accessories
B:Bracket
G:Pressure Gauge

표준사양 Standard Specification

Type	ISC 2000
Unit of Machinery : Filter Regulator+Lubricator (ISW2000-02G + ISL2000-02)	
Port Size Rc(PT)	1/8(6A), 1/4(8A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Pressure Regulating Range	0.5~8.5Kgf/㎠(50~850kPa)
Rated Flow(N ℓ /min)	500
Ambient and Fluid Temperature	5~60℃
Filter Precision	Standard:10㎛
Recommended Oil Use	Terbin No.1 Oil(ISO VG32)
Container Material	Polycarbonate
Construction/Regulator	Relief Type
Weight(Kgf)	0.66

※상기 사양은 성능개선을 위하여 예고없이 변경될 수 있습니다.
The above specifications can be changed to improve functions without notification.

외형치수도 Dimension



ISC 3000 시리즈 ISC 3000 SERIES
F.R.L. Combination Series

형식번호 Ordering Code

ISC 3010-03BG
1 2 3 4 5

1 FRL조합형
FRL Combination

2 몸체크기
Body Size
30:3/8

3 구성부품
Composition Part
00:Filter+Regulator+Lubricator
10:Filter Regulator+Lubricator

4 관접속구경
Pipe Fitting Diameter
02:Rc(PT)1/4
03:Rc(PT)3/8

5 부속품
Accessories
B:Bracket
G:Pressure Gauge

표준사양 Standard Specification

Type	ISC 3000
Unit of Machinery : Filter Regulator+Lubricator (ISW3000-03G + ISL3000-03)	
Port Size Rc(PT)	1/4(8A), 3/8(10A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Pressure Regulating Range	0.5~8.5Kgf/㎠(50~850kPa)
Rated Flow(N ℓ /min)	1700
Ambient and Fluid Temperature	5~60℃
Filter Precision	Standard:10㎛
Recommended Oil Use	Terbin No.1 Oil(ISO VG32)
Container Material	Polycarbonate
Construction/Regulator	Relief Type
Weight(Kgf)	0.98

※상기 사양은 성능개선을 위하여 예고없이 변경될 수 있습니다.
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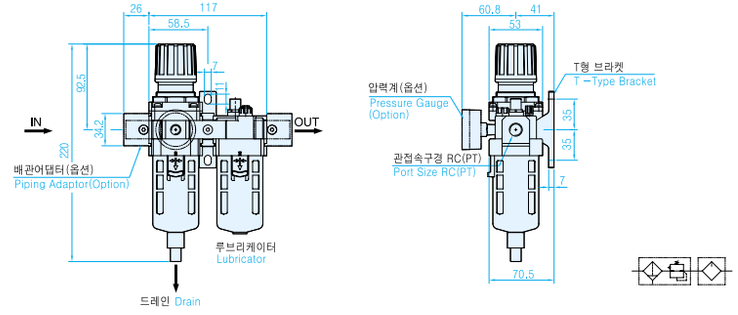
외형치수도 Dimension



ISC 4000 시리즈 ISC 4000 SERIES
F.R.L. Combination Series

형식번호 Ordering Code

ISC 4010-04BG
1 2 3 4 5

1 FRL조합형
FRL Combination

2 몸체크기
Body Size
4:1/2

3 구성부품
Composition Part
00:Filter+Regulator+Lubricator
10:Filter Regulator+Lubricator

4 관접속구경
Pipe Fitting Diameter
03:Rc(PT)3/8
04:Rc(PT)1/2

5 부속품
Accessories
B:Bracket
G:Pressure Gauge

표준사양 Standard Specification

Type	ISC 4000
Unit of Machinery : Filter Regulator+Lubricator (ISW4000-04G + ISL4000-04)	
Port Size Rc(PT)	3/8(10A), 1/2(15A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Pressure Regulating Range	0.5~8.5Kgf/㎠(50~850kPa)
Rated Flow(N ℓ /min)	4000
Ambient and Fluid Temperature	5~60℃
Filter Precision	Standard:10㎛
Recommended Oil Use	Terbin No.1 Oil(ISO VG32)
Container Material	Polycarbonate
Construction/Regulator	Relief Type
Weight(Kgf)	1.93

※상기 사양은 성능개선을 위하여 예고없이 변경될 수있습니다.
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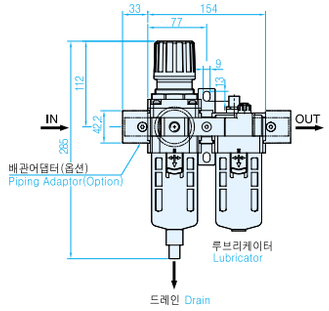
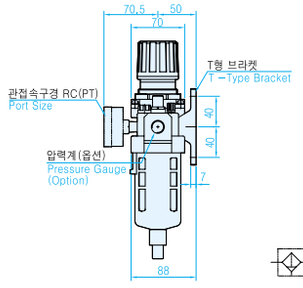
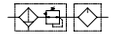
외형치수도 Dimension







ISW 2000 시리즈 ISW 2000 SERIES
Filter Regulator Series

형식번호 Ordering Code

ISW 2000-02BG
1 2 3 4

1 필터레귤레이터
Filter Regulator

2 몸체크기
Body Size
2:1/4

3 관접속구경
Pipe Fitting Diameter
01:Rc(PT)1/8
02:Rc(PT)1/4

4 부속품
Accessories
B:Bracket
G:Pressure Gauge

표준사양 Standard Specification

Type	ISW 2000
Port Size Rc(PT)	1/8(6A), 1/4(8A)
Pressure Gauge Size Rc(PT)	1/8
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Pressure Regulating Range	0.5~8.5Kgf/㎠(50~850kPa)
Filter Precision	Standard:10㎛
Drain Capacity of Flower(㎤)	10
Container Material	Polycarbonate
Construction	Relief Type
Weight(Kgf)	0.36

※상기 사양은 성능개선을 위하여 예고 없이 변경될 수 있습니다.
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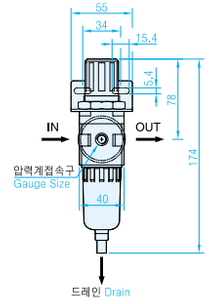
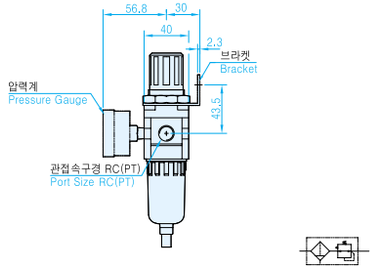
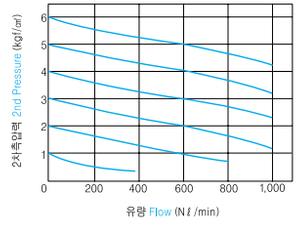
외형치수도 Dimension

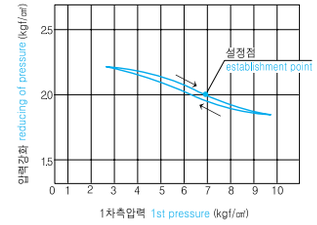




유량특성곡선 Flow Characteristic Curve



압력특성곡선 Pressure Characteristic Curve



ISW 3000 시리즈 ISW 3000 SERIES
Filter Regulator Series

형식번호 Ordering Code

ISW 3000-03BG
1 2 3 4

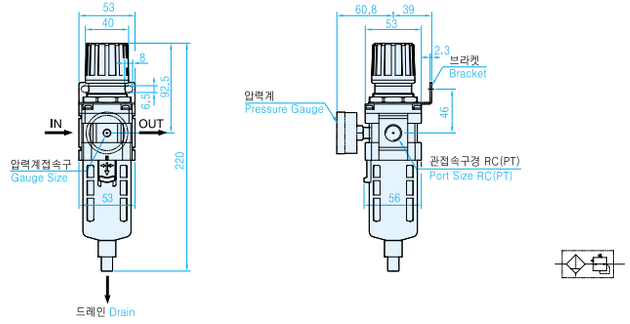
1 필터레귤레이터 Filter Regulator
2 몸체크기 Body Size 30 3/8
3 관접속구경 Pipe Fitting Diameter 02:Rc(PT)1/4 03:Rc(PT)3/8
4 부속품 Accessories B:Bracket G:Pressure Gauge

표준사양 Standard Specification

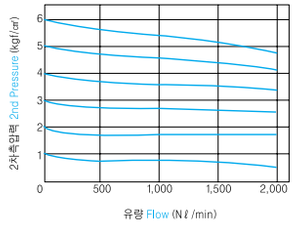
Type	ISW 3000
Port Size Rc(PT)	1/4(8A), 3/8(10A)
Pressure Gauge Size Rc(PT)	1/8
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Pressure Regulating Range	0.5~8.5Kgf/㎠(50~850kPa)
Filter Precision	Standard:10㎛
Drain Capacity of Flower(㎤)	20
Container Material	Polycarbonate
Construction	Relief Type
Weight(Kgf)	0.56

※상기 사양은 성능개선을 위하여 예고없이 변경될 수 있습니다.
The above specifications can be changed to improve function without notification.

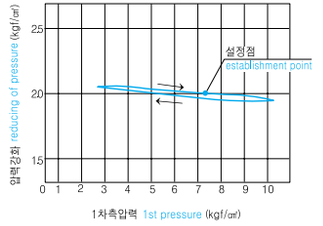
외형치수도 Dimension



유량특성곡선 Flow Characteristic Curve



압력특성곡선 Pressure Characteristic Curve



ISW 4000 시리즈 ISW 4000 SERIES
Filter Regulator Series

형식번호 Ordering Code

ISW 4000-04BG
1 2 3 4

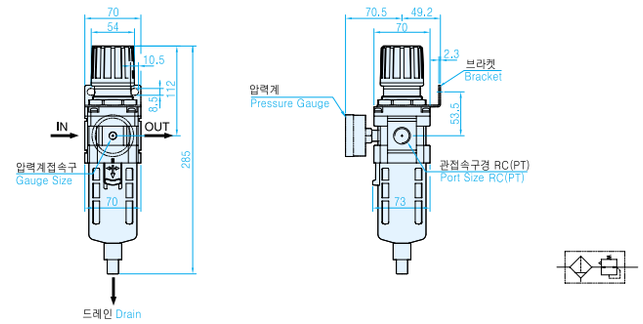
1 필터레귤레이터 Filter Regulator
2 몸체크기 Body Size 40 1/2
3 관접속구경 Pipe Fitting Diameter 03:Rc(PT)3/8 04:Rc(PT)1/2
4 부속품 Accessories B:Bracket G:Pressure Gauge

표준사양 Standard Specification

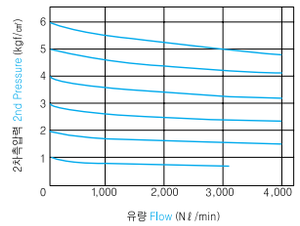
Type	ISW 4000
Port Size Rc(PT)	3/8(10A), 1/2(15A)
Pressure Gauge Size Rc(PT)	1/4
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Pressure Regulating Range	0.5~8.5Kgf/㎠(50~850kPa)
Filter Precision	Standard:10㎛
Drain Capacity of Flower(㎤)	45
Container Material	Polycarbonate
Construction	Relief Type
Weight(Kgf)	1.15

※상기 사양은 성능개선을 위하여 예고없이 변경될 수 있습니다.
The above specifications can be changed to improve function without notification.

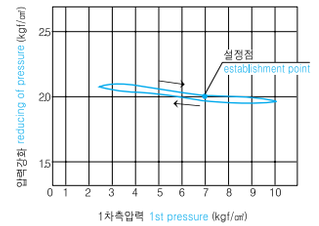
외형치수도 Dimension



유량특성곡선 Flow Characteristic Curve



압력특성곡선 Pressure Characteristic Curve



ISF 2000 시리즈 ISF 2000 SERIES
Air Filter Series

형식번호 Ordering Code

ISF 2000-02B
1 2 3 4

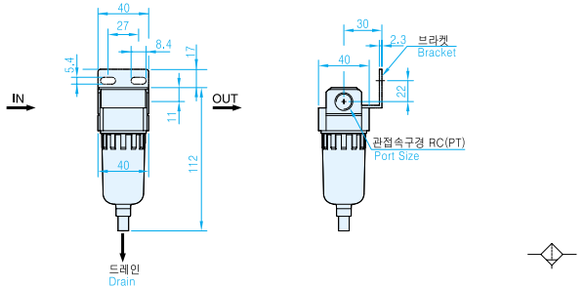
1 에어필터 Air Filter
2 몸체크기 Body Size 20:1/4
3 관절속구경 Pipe Fitting Diameter 01:Rc(PT)1/8 02:Rc(PT)1/4
4 부속품 Accessories B:Bracket

표준사양 Standard Specification

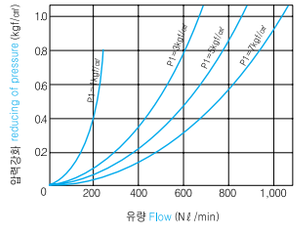
Type	ISF 2000
Port Size Rc(PT)	1/8(6A), 1/4(8A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Ambient and Fluid Temperature	5~60℃
Filter Precision	Standard:10㎛
Drain Capacity of Flower(㎤)	10
Container Material	Polycarbonate
Weight(Kgf)	0.19

※상기 사양은 성능개선을 위하여 예고없이 변경될 수있습니다.
The above specifications can be changed to improve function without notification.

외형치수도 Dimension



유량특성곡선 Flow Characteristic Curve



ISF 3000 시리즈 ISF 3000 SERIES
Air Filter Series

형식번호 Ordering Code

ISF 3000-03B
1 2 3 4

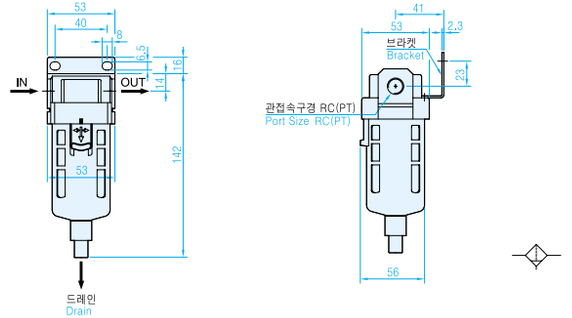
1 에어필터 Air Filter
2 몸체크기 Body Size 30:3/8
3 관절속구경 Pipe Fitting Diameter 02:Rc(PT)1/4 03:Rc(PT)3/8
4 부속품 Accessories B:Bracket

표준사양 Standard Specification

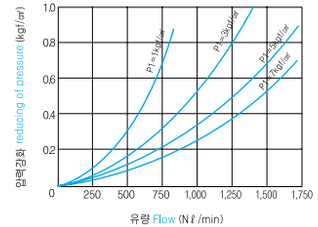
Type	ISF 3000
Port Size Rc(PT)	1/4(8A), 3/8(10A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Ambient and Fluid Temperature	5~60℃
Filter Precision	Standard:10㎛
Drain Capacity of Flower(㎤)	20
Container Material	Polycarbonate
Weight(Kgf)	0.29

※상기 사양은 성능개선을 위하여 예고없이 변경될 수있습니다.
The above specifications can be changed to improve function without notification.

외형치수도 Dimension



유량특성곡선 Flow Characteristic Curve



ISF 4000 시리즈 ISF 4000 SERIES
Air Filter Series

형식번호 Ordering Code

ISF 4000-04B
1 2 3 4

1 에어필터 Air Filter
2 몸체크기 Body Size 20:1/4
3 관접속구경 Pipe Fitting Diameter 01:Rc(PT)1/8 02:Rc(PT)1/4
4 부속품 Accessories B:Bracket

표준사양 Standard Specification

Type	ISF 4000
Port Size Rc(PT)	3/8(10A), 1/2(15A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Ambient and Fluid Temperature	5~60℃
Filter Precision	Standard:10㎛
Drain Capacity of Flower(㎤)	45
Container Material	Polycarbonate
Weight(Kgf)	0.55

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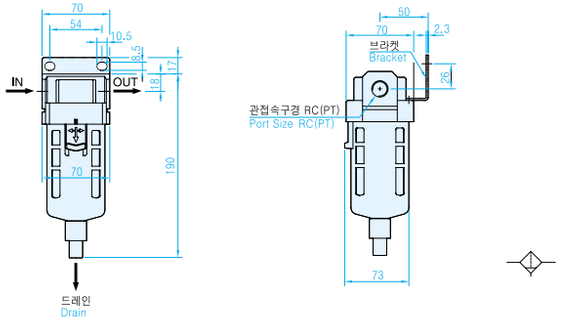
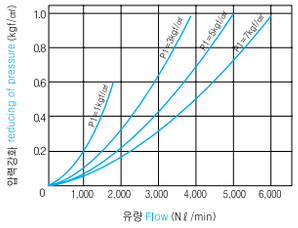
외형치수도 Dimension



유량특성곡선 Flow Characteristic Curve



ISR 2000 시리즈 ISR 2000 SERIES
Regulator Series

형식번호 Ordering Code

ISR 2000-02BG
1 2 3 4

1 레귤레이터 Regulator
2 몸체크기 Body Size 20:1/4
3 관접속구경 Pipe Fitting Diameter 01:Rc(PT)1/8 02:Rc(PT)1/4
4 부속품 Accessories B:Bracket G:Pressure Gauge

표준사양 Standard Specification

Type	ISR 2000
Port Size Rc(PT)	1/8(6A), 1/4(8A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Ambient and Fluid Temperature	5~60℃
Pressure Regulating Range	0.5~8.5Kgf/㎠(50~850kPa)
Pressure Gauge Size Rc(PT)	1/8
Construction	Relief Type
Weight(Kgf)	0.27

※상기 사양은 성능개선을 위하여 예고 없이 변경될 수 있습니다.
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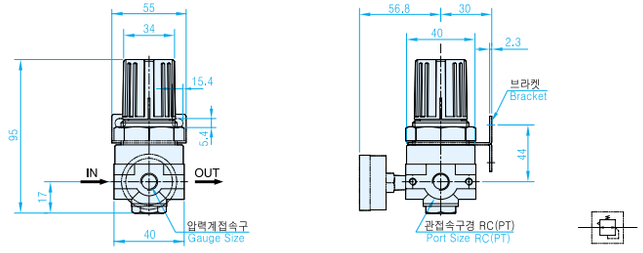
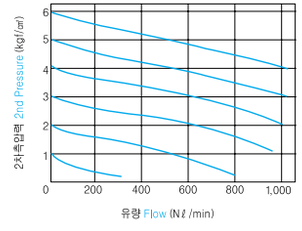
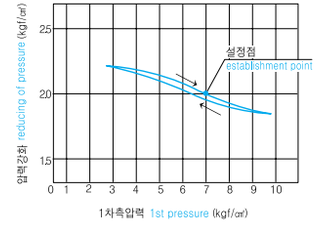
외형치수도 Dimension



유량특성곡선 Flow Characteristic Curve



압력특성곡선 Pressure Characteristic Curve



ISR 3000 시리즈 ISR 3000 SERIES
Regulator Series

형식번호 Ordering Code

ISR 3000-03BG
1 2 3 4

1 레귤레이터 Regulator
2 몸체크기 Body Size 30:3/8
3 관접속구경 Pipe Fitting Diameter 02:Rc(PT)1/4 03:Rc(PT)3/8
4 부속품 Accessories B:Bracket G:Pressure Gauge

표준사양 Standard Specification

Type	ISR 3000
Port Size Rc(PT)	1/4(8A), 3/8(10A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Ambient and Fluid Temperature	5~60℃
Pressure Regulating Range	0.5~8.5Kgf/㎠(50~850kPa)
Pressure Gauge Size Rc(PT)	1/8
Construction	Relief Type
Weight(Kgf)	0.41

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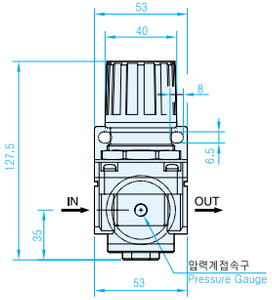
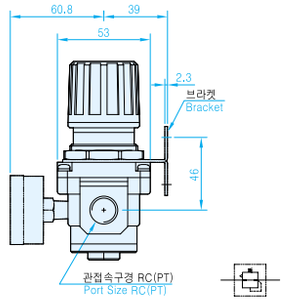
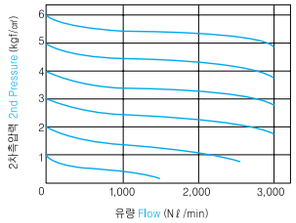
외형치수도 Dimension

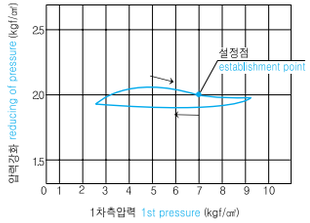




유량특성곡선 Flow Characteristic Curve



압력특성곡선 Pressure Characteristic Curve



ISR 4000 시리즈 ISR 4000 SERIES
Regulator Series

형식번호 Ordering Code

ISR 4000-04BG
1 2 3 4

1 레귤레이터 Regulator
2 몸체크기 Body Size 40:1/2
3 관접속구경 Pipe Fitting Diameter 03:Rc(PT)3/8 04:Rc(PT)1/2
4 부속품 Accessories B:Bracket G:Pressure Gauge

표준사양 Standard Specification

Type	ISR 4000
Port Size Rc(PT)	3/8(10A), 1/2(15A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Ambient and Fluid Temperature	5~60℃
Pressure Regulating Range	0.5~8.5Kgf/㎠(50~850kPa)
Pressure Gauge Size Rc(PT)	1/4
Construction	Relief Type
Weight(Kgf)	0.84

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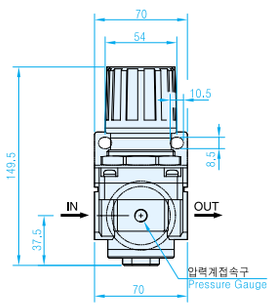
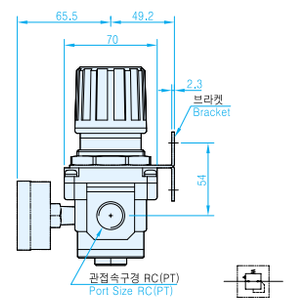
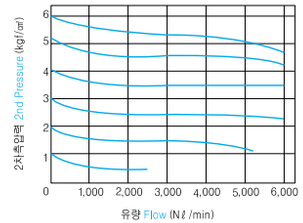
외형치수도 Dimension

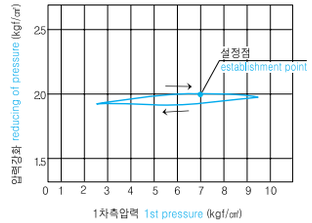




유량특성곡선 Flow Characteristic Curve



압력특성곡선 Pressure Characteristic Curve



ISL 2000 시리즈 ISL 2000 SERIES
Lubricater Series

형식번호 Ordering Code

ISL 2000-02B
1 2 3 4

1 루브리케이터 Lubricator
2 몸체크기 Body Size 20:1/4
3 관절속구경 Pipe Fitting Diameter 01:Rc(PT)1/8 02:Rc(PT)1/4
4 부속품 Accessories B:Bracket

표준사양 Standard Specification

Type	ISL 2000
Port Size Rc(PT)	1/8(6A), 1/4(8A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Minimal Flow of Oil Drop(N ℓ /min)	15
Recommended Oil Use	Terbin No.1 Oil(ISO VG32)
Capacity of Flower(㎤)	25
Ambient and Fluid Temperature	5~60℃
Container Material	Polycarbonate
Weight(Kgf)	0.22

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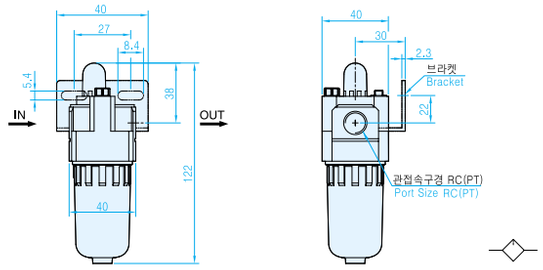
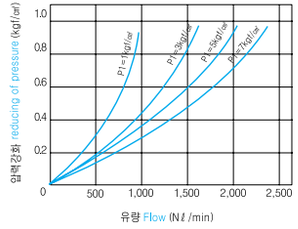
외형치수도 Dimension



유량특성곡선 Flow Characteristic Curve



ISL 3000 시리즈 ISL 3000 SERIES
Lubricater Series

형식번호 Ordering Code

ISL 3000-03B
1 2 3 4

1 루브리케이터 Lubricator
2 몸체크기 Body Size 30:3/8
3 관절속구경 Pipe Fitting Diameter 02:Rc(PT)1/4 03:Rc(PT)3/8
4 부속품 Accessories B:Bracket

표준사양 Standard Specification

Type	ISL 3000
Port Size Rc(PT)	1/4(8A), 3/8
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Minimal Flow of Oil Drop(N ℓ /min)	40
Recommended Oil Use	Terbin No.1 Oil(ISO VG32)
Capacity of Flower(㎤)	50
Ambient and Fluid Temperature	5~60℃
Container Material	Polycarbonate
Weight(Kgf)	0.3

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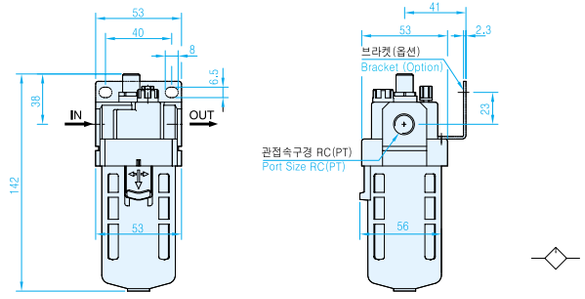
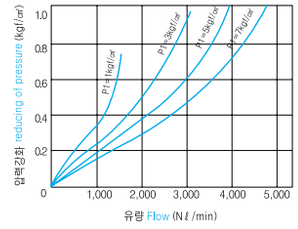
외형치수도 Dimension



유량특성곡선 Flow Characteristic Curve



ISL 4000 시리즈 ISL 4000 SERIES
Lubricater Series

형식번호 Ordering Code

ISL 4000-04B
1 2 3 4

1 루브리케이터 Lubricator
2 몸체크기 Body Size 40:1/2
3 관절속구경 Pipe Fitting Diameter 03:Rc(PT)3/8 04:Rc(PT)1/2
4 부속품 Accessories B:Bracket

표준사양 Standard Specification

Type	ISL 4000
Port Size Rc(PT)	3/8(10A), 1/2(15A)
Ensured Pressure Resistance	15Kgf/㎠(1.5MPa)
Highest Working Pressure	9.9Kgf/㎠(990kPa)
Minimal Flow of Oil Drop(N ℓ /min)	50
Recommended Oil Use	Terbin No.1 Oil(ISO VG32)
Capacity of Flower(㎤)	130
Ambient and Fluid Temperature	5~60℃
Container Material	Polycarbonate
Weight(Kgf)	0.56

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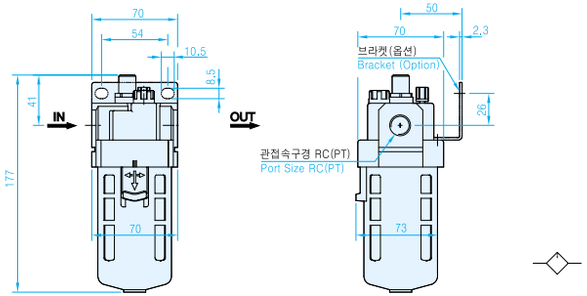
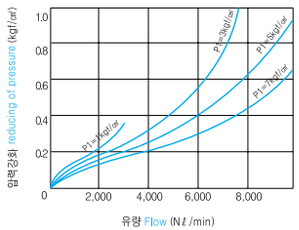
외형치수도 Dimension



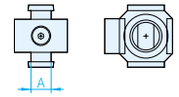
유량특성곡선 Flow Characteristic Curve



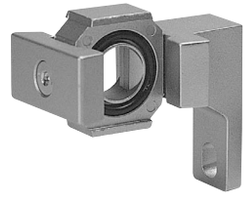
부속품
Accessories

스페이스 Spacer

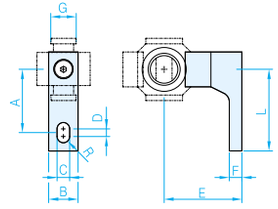
Model	A	Applicable Model
S20	10	ISC2000
S30	11	ISC3000
S40	14	ISC4000



스페이스 부착 L형 브라켓 Spacer with L-Type Bracket

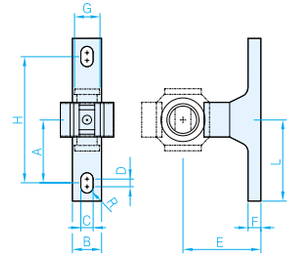


L-Type Bracket	Spacer with L-Type Bracket	A	B	C	D	E	F	G	R	L	Applicable Model
B20L	S20L	24	15	5.5	3	30	5	10	2.75	33	ISC2000
B30L	S30L	35	16	7	4	41	7	11	3.5	45	ISC3000
B40L	S40L	40	22	9	4	50	7	14	4.5	50	ISC4000



스페이스 부착 T형 브라켓 Spacer with T-Type Bracket

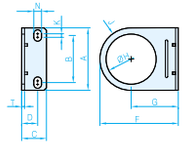
L-Type Bracket	Spacer with T-Type Bracket	A	B	C	D	E	F	G	H	R	L	Applicable Model
B20T	S20T	24	15	5.5	3	30	5	10	48	2.75	33	ISC2010
B30T	S30T	35	16	7	4	41	7	11	70	3.5	45	ISC3010
B40T	S40T	40	22	9	4	50	7	14	80	4.5	50	ISC4010



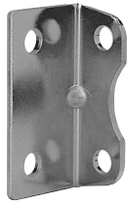
부속품
Accessories

레귤레이터, 필터레귤레이트용 브라켓 (ISR•ISW) / Bracket for Regulator & Filter Regulator (ISR•ISW)

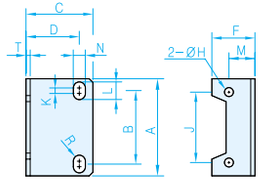
Model	A	B	C	D	F	G	ØH	J	K	L	N	R	T	Applicable Model
B20R	53	40	25	19	49.5	30	32	19.5	6	11.4	5.4	2.7	2.3	ISR2000 & ISW2000
B30R	53	40	21	13.5	66	41	42.5	25	1.5	8	6.5	3.25	2.3	ISR3000 & ISW3000
B40R	70	54	27	18	80	50	52.5	30	2	10.5	8.5	4.25	2.3	ISR4000 & ISW4000



필터, 루브리케이트용 브리켓 (ISF•ISL) / Bracket for Filter & Lubricator (ISF•ISL)

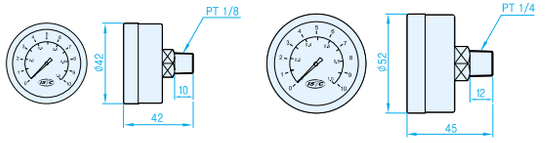


Model	A	B	C	D	F	H	J	K	L	M	N	R	T	SET-SCREW	ApplicableModel
B20F	40	27	33	27	17.4	4.5	24	3	8.4	14	5.4	2.7	2.3	M4X5	ISF2000
														M4X8	ISL2000
B30F	53	40	39	32	25.6	4.5	35	1.5	8	19	6.5	3.25	2.3	M4X8 (Socket head screw)	ISF3000
															ISL3000
B40F	70	54	47	38	31.5	5.5	47	2	10.5	20	8.5	4.25	2.3	M5X10 (Socket head screw)	ISF4000
															ISL4000



압력계 Pressure Gauge

Model	Pressure Range	Applicable Model	Weight
G40-10-01	0-10	2000, 3000 Series	56g
G50-10-02	0-10	4000 Series	80g



G40-10-01 G50-10-02

MEMO

MEMO

오토스위치
AUTO S/W

오토스위치 AUTO S/W

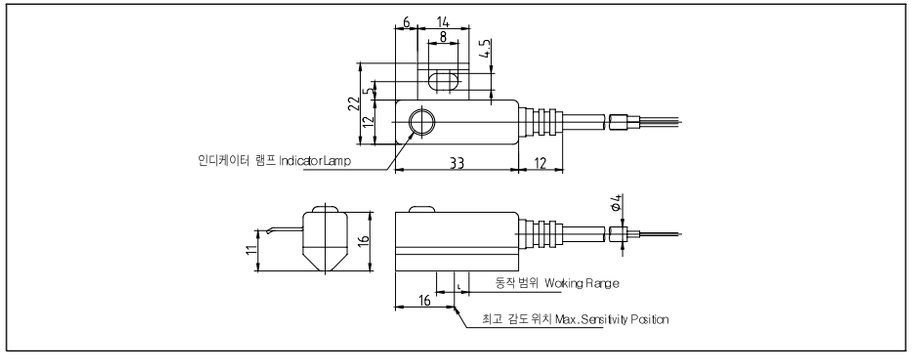
D-A54 유접점 스위치
D-A54 Owned Contact Point Switch, Application : ISM, ISL Cylinder

사양 Specification

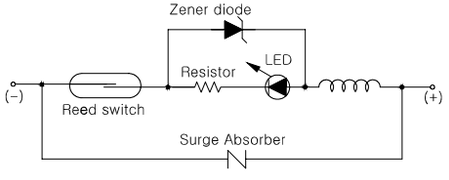
D-A54 Type(mounted Indicator Lamp)			
오토스위치 품번No.of Auto Switch	D-A54		
용도 Usage	D-A54		
부하전압 Load Voltage	DC 24V	AC 100V	AC 220V
최대부하전류 및 부하전류범위Max.Load Voltage & Load Voltage Range	5~5mA	5~25mA	5~12.5mA
접점보호회로 ProtectionCircuit for Contact Point	내장 Built-in		
내부강하전압 Insidedescend voltage	2.4V		
인디케이터 램프 Indicator Lamp	Red Radiation Diode lighting at ON		

▶누설전류:없음 Leakage Current : None
▶동작시간:1.2ms Woking Time:1.2ms
▶리드선:내유비닐 캡 타이어코드 Ø4, 0.3㎟, 2심(적, 흑)
Reed cable:Vinyl Cap Tire Cord for Oil-Proof 4, 0.3㎟, 2leads(Red, Black)
▶내충격:30G Impact-Proof:30G
▶절연저항:DC500V 메가에서 50MΩ이상(리드선 케이스간)
Resistance : Over 50MΩ from DC500V mega(Between Reed cable and Case)
▶내전압:AC1500V 1분간(리드선,케이스간)
Voltage-Proof : AC1500V for 1 min(Between Reed cable and Case)
▶주위온도 : -10~60℃ Ambient Temperature: -10~60℃
▶보호구조:IEC 규격 IP67,방침(JISC0920),방유구조
Protecting Structure : IEC Regulation IP67, Policy (JISC0920), Discharge Structure
※리드선길이 3m의 경우는 품번 끝에 L을 표시한다.(예)D-A54L
In case length of Reed is 3m, there is a letter L at the end of Number.(ex)D-A54L

최고 감도위치/동작범위 Max. Sensitivity Position / Working Range



내부회로도 Inside Circuit Drawings



오토스위치 AUTO S/W

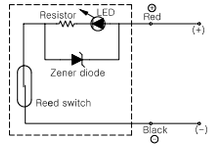
D-A72/73 유접점 스위치, 적용: IDF 박형 실린더
D-A72/73 Owned Contact Point Switch, Application : IDF Thin-Type Cylinder

▶누설전류:없음 Leakage Current : None
▶동작시간:1.2ms Woking Time:1.2ms
▶리드선:내유비닐 캡 타이어코드 Ø3.0 2㎟,2심(적, 흑)
Reed cable: Vinyl Cap Tire Cord for Oil-Proof Ø3.0 2㎟,2 leads(Red, Black)
▶내충격:30G Impact-Proof:30G
▶절연저항:DC500V 메가에서 50MΩ이상(리드선케이스간)
Resistance : Over 50MΩ from DC500V mega(Between Reed cable and Case)
▶내전압:AC1500V1분간(리드선,케이스간)
Voltage-Proof : AC1500V for 1 min(Between Reed cable and Case)
▶주위온도:-5~60℃ Ambient Temperature:-5~60℃
▶보호구조:IEC 규격IP67,방침(JISC0920),방유구조
Protecting Structure : IEC Regulation IP67, Policy (JISC0920), Discharge Structure
※리드선길이 3m의 경우는 품번 끝에 L을 표시한다.(예)D-A73L
In case length of Reed is 3m, there is a letter L at the end of Number.(ex)D-A73L

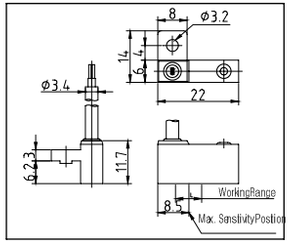
사양 Specification

D-A73 Type(mounted Indicator Lamp)			
오토스위치 품번 No.of Auto Switch	D-A73		D-A72
용도 Usage	Relay, Sequence		
부하전압 Load Voltage	DC 24V	AC 100V	AC 220V
부하전류범위 Load Voltage Range	5~40mA	5~20mA	5~12.5mA
접점보호회로 ProtectionCircuitforContact Point	None		
내부강하전압 Inside descend voltage	Below 2.4V		
인디케이터 램프 Indicator Lamp	Red Radiation Diode lighting at ON		

내부회로도 Inside Circuit Drawings

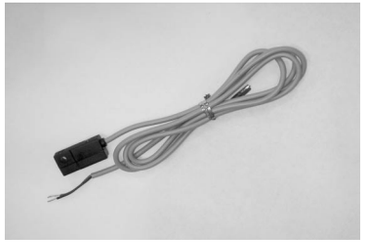


최고 감도위치/동작범위 Max. Sensitivity Position / Working Range



오토스위치 AUTO S/W

D-C72/73 유접점 스위치, 적용: ISP, ISS2, ISS3 소형 실린더
D-C72/73 Owned Contact Point Switch, Application : ISP, ISS2, ISS3 Small-size Cylinder

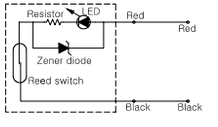


▶누설전류:없음 Leakage Current : None
▶동작시간: 2ms Woking Time:1.2ms
▶리드선:내유비닐 캡 타이어코드 Ø3.0 2㎟,2심(적, 흑)
Reed cable: Vinyl Cap Tire Cord for Oil-Proof Ø3.0 2㎟,2 leads(Red, Black)
▶내충격:30G Impact-Proof:30G
▶절연저항:DC500V 메가에서 50MΩ이상(리드선 케이스간)
Resistance : Over 50MΩ from DC500V mega(Between Reed cable and Case)
▶내전압:AC1500V1분간(리드선, 케이스간)
Voltage-Proof : AC1500V for 1 min(Between Reed cable and Case)
▶주위온도:-10~60℃ Ambient Temperature:-10~60℃
▶보호구조:IEC 규격 IP67,방침(JISC0 920), 방유구조
Protecting Structure : IEC Regulation IP67, Policy (JISC0920) Discharge Structure
※리드선길이3m의 경우는품번 끝에L을 표시한다.(예)D-A73L
In case length of Reed is 3m, there is a letter L at the end of Number.(ex)D-A73L

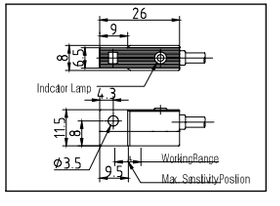
사양 Specification

D-C73 Type(mounted Indicator Lamp)			
오토스위치품번 No.of Auto Switch	D-C73		D-C72
용도 Usage	Relay, Sequence		
부하전압 Load Voltage	DC 24V	AC 100V	AC 220V
최대부하전류및부하전류범위 Max.Load Voltage & Load Voltage Range	5~40mA	5~20mA	5~12.5mA
접점보호회로 ProtectionCircuitforContact Point	None		
내부강하전압 Inside descend voltage	Below 2.4V		
인디케이터 램프 Indicator Lamp	Red Radiation Diode lighting at ON		

내부회로도 Inside Circuit Drawings



최고 감도위치/동작범위 Max. Sensitivity Postion / Working Range



오토스위치 AUTO S/W

RO유접점 스위치, 적용 ISS2, ISS3, ISM, ISL 소, 중, 대 실린더

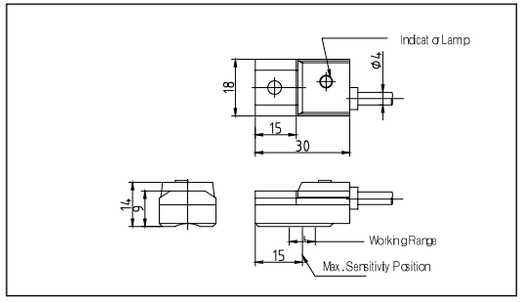
RO Owned Contact Point Switch, Application : ISS2, ISS3, ISM, ISL Small, Mid, Large Size Cylinder

▶누설전류:없음 Leakage Current : None
▶동작시간: 1.2ms Working Time: 1.2ms
▶리드선:내유비닐 캡 타이어코드 Ø3, 0.2㎟, 2심(적, 흑)
Reed cable: Vinyl Cap TireCord for Oil-Proof Ø3, 0.2㎟, 2leads(Red, Black)
▶내충격: 30G Impact-Proof: 30G
▶절연저항: DC500V 메가에서 50MΩ이상(리드선 케이스간)
Resistance: Over 50MΩ from DC500V mega(Between Reed cable and Case)
▶내전압: AC1500V 1분간(리드선, 케이스간)
Voltage-Proof: AC1500V for 1min(Between Reed cable and Case)
▶주위온도: -10~60℃ Ambient Temperature: -10~60℃
▶보호구조: IEC 규격 IP67, 방침(JISC0920), 방유구조
Protecting Structure: IEC Regulation IP67, Policy (JISC0920), Discharge Structure
※리드선길이 3m의 경우는 품번 끝에 L을 표시한다.(예) RO.L
In case length of Reed is 3m, there is a letter L at the end of Number.(ex) RO.L

사양 Specification

RO Type(mounted Indicator Lamp)			
오토스위치 품번 No. of Auto Switch	RO		
용도 Usage	Relay, Sequence		
부하전압 Load Voltage	DC 24V	AC 100V	AC 220V
최대부하전류/최소부하전류 Max. Load Voltage & Load Voltage Range	5~50mA	5~25mA	5~12.5mA
접점보호회로 Protection Circuit for Contact Point	Below 2.4V		
내부강하전압 Inside descend voltage	2.4V		
인디케이터 램프 Indicator Lamp	Red Radiation Diode lighting at ON		

최고 감도위치/동작범위 Max. Sensitivity Position / Working Range



오토스위치 AUTO S/W

FX-2 유접점 스위치, 적용: 에어척 핑거용 실린더

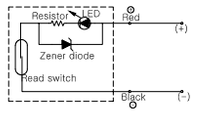
D-A72/73 Owned Contact Point Switch, Application : IDF Thin-Type Cylinder

▶누설전류:없음 Leakage Current : None
▶동작시간: 1.2ms Working Time: 1.2ms
▶리드선:내유비닐 캡 타이어코드 Ø3, 0.2㎟, 2심(적, 흑)
Reed cable: Vinyl Cap TireCord for Oil-Proof Ø3, 0.2㎟, 2leads(Red, Black)
▶내충격: 30G Impact-Proof: 30G
▶절연저항: DC500V 메가에서 50MΩ이상(리드선 케이스간)
Resistance: Over 50MΩ from DC500V mega(Between Reed cable and Case)
▶내전압: AC1500V 1분간(리드선, 케이스간)
Voltage-Proof: AC1500V for 1min(Between Reed cable and Case)
▶주위온도: -5~60℃ Ambient Temperature: -5~60℃
▶보호구조: IEC 규격 IP67, 방침(JISC0920), 방유구조
Protecting Structure: IEC Regulation IP67, Policy (JISC0920), Discharge Structure
※리드선길이 3m의 경우는 품번 끝에 L을 표시한다.(예) FX.2L
In case length of Reed is 3m, there is a letter L at the end of Number.(ex) FX.2L

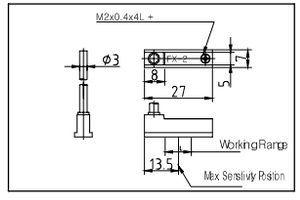
사양 Specification

FX-2 Type(mounted Indicator Lamp)		
오토스위치품번 No. of Auto Switch	FX-2	
용도 Usage	Relay, Sequence	
부하전압 Load Voltage	DC 24V	
최대부하전류/최소부하전류 Max. Load Voltage & Load Voltage Range	5~40mA	5~20mA
접점보호회로 Protection Circuit for Contact Point	None	
내부강하전압 Inside descend voltage	Below 2.4V	
인디케이터램프 Indicator Lamp	Red Radiation Diode lighting at ON	

내부회로도 Inside Circuit Drawings



최고 감도위치 동작범위 Max. Sensitivity Position / Working Range



오토스위치 AUTO S/W

LY-59형 유접점/무접점 스위치

LY-59 Type Owned/None Contact Point Switch

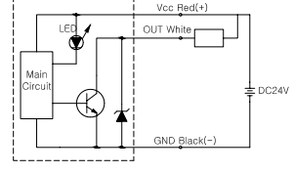
▶누설전류:없음 Leakage Current : None
▶동작시간: 1.2ms Working Time: 1.2ms
▶리드선:내유비닐 캡 타이어코드 Ø3, 0.2㎟, 2심(적, 흑)
Reed cable: Vinyl Cap TireCord for Oil-Proof Ø3, 0.2㎟, 2leads(Red, Black)
▶내충격: 30G Impact-Proof: 30G
▶절연저항: DC500V 메가에서 50MΩ이상(리드선 케이스간)
Resistance: Over 50MΩ from DC500V mega(Between Reed cable and Case)
▶내전압: AC1500V 1분간(리드선, 케이스간)
Voltage-Proof: AC1500V for 1min(Between Reed cable and Case)
▶주위온도: -10~60℃ Ambient Temperature: -10~60℃
▶보호구조: IEC 규격 IP67, 방침(JISC0920), 방유구조
Protecting Structure: IEC Regulation IP67, Policy (JISC0920), Discharge Structure
※리드선길이 3m의 경우는 품번 끝에 L을 표시한다.(예) RO.L
In case length of Reed is 3m, there is a letter L at the end of Number.(ex) RO.L

사양 Specification

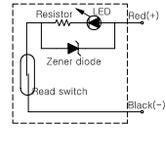
오토스위치품번 No. of Auto Switch	LY-59B	LY-59A	LY-59C
접점형식 Type of Contact Point	None Contact Point		Owned Contact Point
용도 Usage	Relay, Sequence, Small-size Solenoid		
배선방식 Wiring선	3	2	2
전원전압 Voltage of Power Supply	DC 10~28V		-
부하전압 Load Voltage	Below DC28V		100V Combined Use
부하전류 Load Current	Below 100mA		DC 24V:5~4mA AC 110V:5~20mA
내부강하전압 Inside Descend Voltage	Below 0.5V at 100mA		Below 2.4V at 40mA
누설전류 Leak Current	Below 10μA at DC 24V		
소비전류 Required Current	5mA at OFF 36mA at ON		-
동작시간 Working Time	Below 1ms		Below 2ms
리드선 Reed Cable	Vinyl Cap Tire Cord for Oil-Proof No. of Auto Switch		
	3 lead(black, brown, blue)		2 lead(black, blue)
표시등 Indicated Lamp	Green Lighting at ON		
절연저항 Resistance	Over 10MΩ from DC500V mega		
주위온도 Ambient Temperature	-10~60°C		-10~60°C
내충격 Impact-Proof	100G		30G
보호구조 Protecting Structure	IEC Regulation IP67, Policy (JISC0920), Discharge Structure		
내전압 Voltage-Proof	AC 1500V		

내부회로도 Inside Circuit Drawings

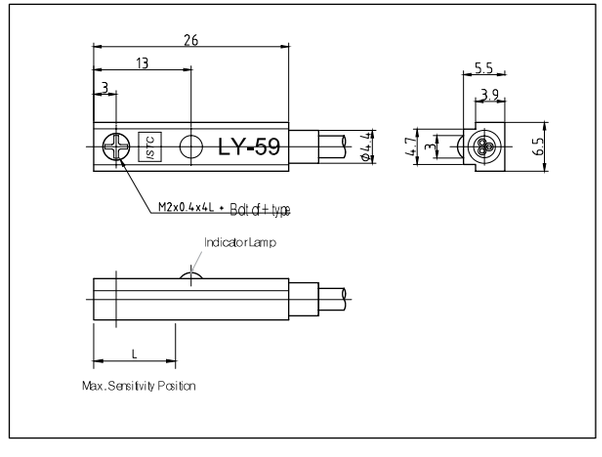
■LY 59 A,B



■LY 59 C



최고 감도위치/동작범위 Max. Sensitivity Position / Working Range



오토스위치 AUTO S/W

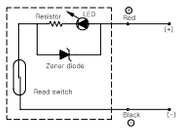
SO-유접점 스위치, 적용: CKD 박형 실린더
SO Owned Contact Point Switch, Application : CKD Thin-Type Cylinder

사양 Specification

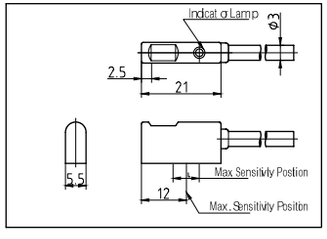
SO Type(mounted Indicator Lamp)		
오토스위치 품번 No.of Auto Switch	SO	
용도 Usage	Relay, Sequence	
부하전압 Load Voltage	DC 24V	AC 100V
최부하전압및부하전류범위Max.Load Voltage & Load Voltage Rang e	5~50mA	5~20mA
접점보호회로 ProtectionCircuitforContact Point	None	
내부강하전압 Inside descend voltage	Below 2.4V	
인디케이터 램프 Indicator Lamp	Red Radiation Diode lighting at ON	

▶누설전류:없음 Leakage Current : None
▶동작시간:1.2ms Working Time: 1.2ms
▶리드선:내유비닐 캡 타이어코드 Ø3, 0.2㎟, 2심(적, 흑)
Reed cable : Vinyl Cap TireCord for Oil-Proof Ø3, 0.2㎟, 2leads(Red, Black)
▶내충격:30G Impact-Proof: 30G
▶절연저항:DC 500V 메가에서 50MΩ이상(리드선 케이스간)
Resistance : Over 50MΩ from DC 500V mega(Between Reed cable and Case)
▶내전압:AC 1500V 1분간(리드선, 케이스간)
Voltage-Proof : AC 1500V for 1 min(Between Reed cable and Case)
▶주위온도 : -5~60℃ Ambient Temperature: -5~60℃
▶보호구조:IEC 규격 IP67, 방침(JISC0920), 방유구조
Protecting Structure : IEC Regulation IP67, Policy (JISC0920), Discharge Structure
※리드선길이 3m의 경우는 품번 끝에 L을 표시한다.(예)SO-2L
In case length of Reed is 3m, there is a letter L at the end of Number.(ex)SO-2L

내부회로도 Inside Circuit Drawings



최고 감도위치/동작범위 Max. Sensitivity Position / Working Range



오토스위치 AUTO S/W

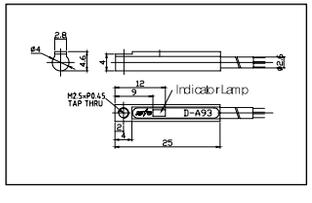
D-A93형 유접점 스위치, 적용: 트윈가이드 박형 실린더 기타
D-A93 Type Owned Contact Point Switch, Application : Twin Guide Thin-Type Cylinder and Others

사양 Specification

D-A93 Type(mounted Indicator Lamp)		
오토스위치 품번 No.of Auto Switch	D-A93	
용도 Usage	Relay, Sequence	
부하전압 Load Voltage	DC 24V	AC 100V
최부하전압및부하전류범위Max.Load Voltage & Load Voltage Rang e	5~50mA	5~20mA
접점보호회로 ProtectionCircuitforContact Point	None	
내부강하전압 Inside descend voltage	Below 2.4V	
인디케이터램프 Indicator Lamp	Red Radiation Diode lighting at ON	

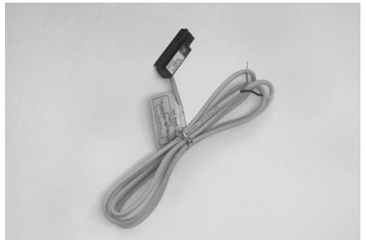
▶누설전류:없음 Leakage Current : None
▶동작시간:1.2ms Working Time: 1.2ms
▶리드선:내유비닐 캡 타이어코드 2, 7, 0.18㎟, 2심(적, 흑)
Reed cable : Vinyl Cap TireCord for Oil-Proof 2and7, 0.17㎟, 2leads(Red, Black)
▶내충격:30G Impact-Proof: 30G
▶절연저항:DC 500V 메가에서 50MΩ이상(리드선 케이스간)
Resistance : Over 50MΩ from DC 500V mega(Between Reed cable and Case)
▶내전압:AC 1500V 1분간(리드선, 케이스간)
Voltage-Proof : AC 1500V for 1 min(Between Reed cable and Case)
▶주위온도 : -5~60℃ Ambient Temperature: -5~60℃
▶보호구조:IEC 규격 IP67, 방침(JISC0920), 방유구조
Protecting Structure : IEC Regulation IP67, Policy (JISC0920), Discharge Structure
※리드선길이 3m의 경우는 품번 끝에 L을 표시한다.(예)D-A93L
In case length of Reed is 3m, there is a letter L at the end of Number.(ex)D-A93L

최고 감도위치/동작범위 Max. Sensitivity Position / Working Range



오토스위치 AUTO S/W

D-50V 유접점 스위치(리더선 수직 방향) D-50V Owned Contact Point Switch(Verticality Reed cable)
적용: ISP 미니실린더, ISS2,ISS3 소형실린더, IDF박형실린더, ISL 대형실린더 까지 다양한 적용 가능
Application :Until ISP Mini Cylinder, ISS2,ISS3 Small-Size Cylinder ,IDF-Thin Type Cylinder, ISL Large-Size Cylinder , Itis various, application possibility

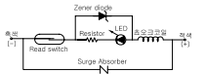


사양 Specification

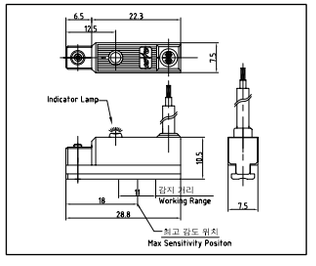
D-50V Type(mounted Indicator Lamp)			
오토스위치 품번 No.of Auto Switch	D-50V		
용도 Usage	Relay, Sequence		
부하전압 Load Voltage	DC 24V	AC 100V	AC 220V
최부하전압및부하전류범위Max.Load Voltage & Load Voltage Rang e	5~50mA	5~20mA	5~12.5mA
접점보호회로 ProtectionCircuitforContact Point	None		
내부강하전압 Inside descend voltage	Below 2.4V		
인디케이터 램프 Indicator Lamp	Red Radiation Diode lighting at ON		

▶누설전류:없음 Leakage Current : None
▶동작시간:1.2ms Working Time: 1.2ms
▶리드선:내유비닐 캡 타이어코드 Ø3, 0.2㎟, 2심(적, 흑)
Reed cable : Vinyl Cap TireCord for Oil-Proof Ø3, 0.2㎟, 2leads(Red, Black)
▶내충격:30G Impact-Proof: 30G
▶절연저항:DC 500V 메가에서 50MΩ이상(리드선 케이스간)
Resistance : Over 50MΩ from DC 500V mega(Between Reed cable and Case)
▶내전압:AC 1500V 1분간(리드선, 케이스간)
Voltage-Proof : AC 1500V for 1 min(Between Reed cable and Case)
▶주위온도 : -5~60℃ Ambient Temperature: -5~60℃
▶보호구조:IEC 규격 IP67, 방침(JISC0920), 방유구조
Protecting Structure : IEC Regulation IP67, Policy (JISC0920), Discharge Structure
※리드선길이 3m의 경우는 품번 끝에 L을 표시한다.(예)D-50V
In case length of Reed is 3m, there is a letter L at the end of Number.(ex)D-50V

내부회로도 Inside Circuit Drawings



최고 감도위 치동작범 위 Max. Sen sitivity Posiiion / Workin gRange



오토스위치 AUTO S/W

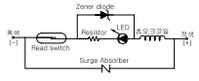
D-50H 유접점 스위치 (리더선 수직 방향) D-50H Owned Contact Point Switch(Verticality Reed cable)
적용: ISP미니시린더, ISS2, ISS3 소형실린더, IDF박형실린더, ISL 대형실린더 까지 다양한 적용 가능
Application :Until ISP-Mini Cylinder, ISS2,ISS3 Small-Size Cylinder ,IDF-Thin Type Cylinder, ISL Large-Size Cylinder , Itis various, application possibility

사양 Specification

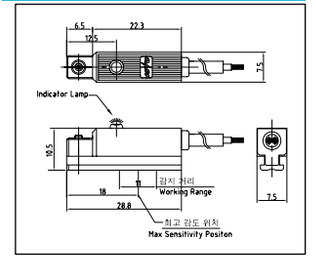
D-50H Type(mounted Indicator Lamp)			
오토스위치 품번 No.of Auto Switch	D-50H		
용도 Usage	Relay, Sequence		
부하전압 Load Voltage	DC 24V	AC 100V	AC 220V
최부하전압및부하전류범위Max.Load Voltage & Load Voltage Rang e	5~50mA	5~20mA	5~12.5mA
접점보호회로 ProtectionCircuitforContact Point	None		
내부강하전압 Inside descend voltage	Below 2.4V		
인디케이터 램프 Indicator Lamp	Red Radiation Diode lighting at ON		

▶누설전류:없음 Leakage Current : None
▶동작시간:1.2ms Working Time: 1.2ms
▶리드선:내유비닐 캡 타이어코드 Ø3, 0.2㎟, 2심(적, 흑)
Reed cable : Vinyl Cap TireCord for Oil-Proof 2and7, 0.17㎟, 2leads(Red, Black)
▶내충격:30G Impact-Proof: 30G
▶절연저항:DC 500V 메가에서 50MΩ이상(리드선 케이스간)
Resistance : Over 50MΩ from DC 500V mega(Between Reed cable and Case)
▶내전압:AC 1500V 1분간(리드선, 케이스간)
Voltage-Proof : AC 1500V for 1 min(Between Reed cable and Case)
▶주위온도 : -5~60℃ Ambient Temperature: -5~60℃
▶보호구조:IEC 규격 IP67, 방침(JISC0920), 방유구조
Protecting Structure : IEC Regulation IP67, Policy (JISC0920), Discharge Structure
※리드선길이 3m의 경우는 품번 끝에 L을 표시한다.(예)D-50H
In case length of Reed is 3m, there is a letter L at the end of Number.(ex)D-50H

내부회로도 Inside Circuit Drawings



최고 감도위 치동작범 위 Max. Sen sitivity Posiiion / Workin gRange



오토스위치 AUTO S/W

설계 Drawings

●사양을 확인해 주십시오. Please Confirm the Specification.
사양범위외의 부하전류,전압,온도,충격, 등에서는 파괴나 작동불량의 원인이 되므로 사양을 잘 확인 후 바르게 사용하여 주십시오.
As Specification Range, Load Currency, Voltage, Temperature and Impact can be the cause of malfunction, confirm the proper specification and use it.

●액츄에이터 끼리의 접근에 주의해주십시오. Please confirm whether actuators are contact or not.
오토스위치 부착 액츄에이터를 2개 이상 병생으로 근접하여 사용하는 경우에는 액츄에이터의 간격을 40mm이상 떨어지도록 설계하여 주십시오.(액츄에이터마다 허용간격이 표시되어 있는 경우는 그 값을 사용하여 주십시오)
쌍방의 자력 간섭 때문에 스위치가 오동작할 가능성이 있습니다.

In case of using two neighboring actuators at the same time, draw the space as over 40mm apart.(If the value of each actuator is set, use that value.) If both sides interfere the magnet power, switch will make a malfunction.

●행정중간위치에서는 스위치의 on시간에 주의하여 주십시오. In the location of Mid Stroke, note On Time.
오토스위치를 행정중간위치에 설정하여 피스톤 통과시에 부하를 구동하는 경우, 속도가 지나치게 빠르면 오코스위치가 동작은 하지만 동작시간이 짧아지고, 부하가 동작할 수 없는 경우가 있기 때문에 주의해 주십시오.
검출가능한 최대 피스톤 속도는

$$V(mm/s)= \frac{\text{오토스위치의 동작범위(mm)}}{\text{부하의 동작시간(ms)}} \times 100$$

이 됩니다.피스톤 속도가 빠른 경우는 OFF DELAY TIMER(약200ms)내장의 오토스위치를 사용하는 것에 의해 부하의 동작시간을 연장시키는 것이 가능합니다.

If set Auto Switch in the middle Stroke and operate load as piston is passing, Auto Switch can work though the speed is so fast, but Max piston speed to detect becomes V(mm/s)= Working Range of Auto Switch(mm)/Load Working Time(ms)×100.
If piston speed is so fast, can delay the load working time by using auto switch of built-in OFF DELAY TIMER(about 200ms).

●배선은 될 수 있는 한 짧게 하여 주십시오. Wiring is good as short as possible.
<유접점> Owned Contact Point
부하까지의 배선길이가 길어지면 스위치 on시의 돌입전류가 증대하여 수명이 저하하는 경우가 있습니다.
(계속적인 on의 상태)
In case the length of wiring to load is much longer, currency to plunge is increasing and the life of machine is shorten.(Continuous On)
1) 접점보호회로가 없는 오토스위치의 경우, 배선길이가 5m이상일때에는 접점보호 박스를 사용하여 주십시오.
1) In case of auto switch of which protecting circuit of contact point isn't built-in; when the length of wiring is over 5m, use protecting box of contact point.
2) 접점보호 회로내장 타입의 오토스위치에서도 배선길이가 30m이상이 되는 경우에는, 그 돌입전류를 충분히 흡수할 수 없으며 수명이 저하하는 경우가 있습니다. 수명을 연장시키기 위해서는 접점보호 박스를 접속할 필요도 있으므로 당사에 연락해 주십시오.
2) In case of auto switch of which protecting circuit of contact point is built-in; when the length of wiring is over 30m, it can't absorb the currency to plunge and the life of machine is shorten. To lengthen the life of machine, it is necessary to connect the protecting box of contact point. In that case, please inform us.
<무접점> None Contact Point
3) 배선길이가 길게 되더라도 기능에 영향은 없습니다. 100m이하에서 사용해주십시오.
Though the length of wiring is longer, there is no effect on the machine. Use it below 100m.
●누설전류에 주의해주십시오. In case of leak of currency, note followings.
<무접점> None Contact Point
2선식 무접점 오토스위치는 OFF시라도 내부회로를 동작시키기 위해 잔류(누설전류)가 부하에 흐릅니다.
부하작동전류(콘트롤러에서는 입력 OFF 전류)>누설전류
이상을 만족하지 않는 경우는 복귀불량(계속적인 on상태)이 됩니다.
사양을 만족하지 않는 경우는 3선식 스위치를 사용하여 주십시오.
또한 병렬(n개) 접속하면 부하에 흐르는 누설전류는 n배가 됩니다.
To work the inside circuit, remain currency(leak currency) flows on the load in case of Auto Switch of 2 two line none contact point.
If Load Working Currency(input OFF currency in controller) and Leak Currency isn't sufficient, it doesn't return to original set up (as continuous On). If it doesn't satisfying the specification, use three line switch. If connects it as parallel circuit(n pieces), flowing leak currency is double n.

배선 Wiring

●리드선을 반복해서 구부림이나 인장력이 가해지지 않도록 하여 주십시오. Prevent Reed line from bending or pulling.
리드선에 반복하여 구부림이 발생하여 응력 및 인장력이 가해지는 것과 같은 배선은 단선의 원인이 됩니다.

If Reed line is bended or added of tension and pulling power, it resulted in disconnection.
●반드시 부하를 접속하고, 난 후 전원에 투입하여 주십시오. (2선식) After connecting load, turn on power supply(2 line type).
오토스위치에 부하를 접속하지 않은 상태로 on시키면 과전류가 흘러 스위치가 순간에 파손됩니다.

If you don't connect load at auto switch and turn on, excess currency flows and breaks the switch at moment.
●배선상의 절연성을 확인하여 주십시오. Confirm the short and connection among much wiring.
배선상에 있어서는 절연불량(다른 회로와 혼선, 지락(地絡), 단자간 절연불량)이 있을 수 있으므로 주의해 주십시오.
오토스위치에 과전류가 흘러들어와 파손될 가능성이 있습니다.

There is a case of the short and connection (Mixing Circuits, Malfunction of parts) among much wiring.
In that case, excess currency flows and breaks the Auto Switch.

공기압 도면 기호
Notations of Air Pressure Drawings

공기압 도면 기호(KSB 0054-80)
Notations of Air Pressure Drawings

기호 표시의 기본 Basis of Notation

기호 Notation	주요표시사항 Main Indications	비고 Remarks
	밸브 Valve	총칭으로 호칭할 경우에는 밸브라 하고 수식어를 붙일 경우에는 OO밸브라고 한다. 보기 압력제어 밸브 In case of calling general term, it becomes a valve. In case of adding additional name, it becomes like OO valve. ex) Pressure Control Valve
	필터: 열교환기 Filter: Heat Exchanger 루브리케이터 배수기 Lubricator drainer	
	조립 유니트 Assembly Unit	
	조정가능한 경우 When it is possible to control.	

관로 및 접속 Pipe Passage & Connection

명칭 Name	기호 Notation	비고 Remarks
주관로 Main Passage		
파일럿 관로 Pilot Passage		
관로의 접촉 Contact of Passage		d≒5E d:검은 원의 지름 d:Diameter of Black Circle E:선의 굵기 E:Thickness of line
관로의 교차 Intersection of Pipe Passage		혼동될 염려가 있을 경우에는 +의 사용은 피하는 것이 좋다. + When it is confused, avoid use of +.

실린더 Cylinder

명칭 Name	기호 Notation	비고 Remarks
단동 실린더 Single-acting Cylinder 스프링 없음 No Spring 스프링 있음 Spring 램형 실린더 Ram Type Cylinder		1)상세기호 Detailed Notation 2)간략기호 Shorten Notation
복동실린더 Double-acting Cylinder 한쪽로드형 One direction Rod Type 양쪽로드형 Both side Rod Type		1)상세기호 Detailed Notation 2)간략기호 Shorten Notation
쿠션붙이 실린더 Cushion-attached Cylinder 한쪽 쿠션형 One direction Cushion Type 양쪽 쿠션형 Both side Cushion Type		쿠션 붙임을 표시하는 ◘는 실린더의 쿠션 이작동하는 정지 단을 향하여 기입하고 ↗는 외부로부터 조정 가능한 경우를 표시한다. The notation ↗ which indicates Cushion-attached Cylinder should enter to Stop mark which can operate Cylinder Cushion. The notation indicates the case can be operated from outside. 1)상세 기호 Detailed Notation 2)간략 기호 Shorten Notation

제어방식 Control Method

명칭 Name	기호 Notation	비고 Remarks
스프링 방식 Spring		
조정 스프링방식 Controlled Spring		
파일럿 방식 Pilot Passage 직접 작동형 Direct Working Type 간접 작동형 Indirect Working Type		1)가압하여 제어하는 경우 1)In case of control by adding pressure 2)감압하여 제어하는 경우 직접 작동형은 공기압의 경우만을 표시한다. 2)In case of control by reducing pressure Direct Working Type indicates only Air Pressure.
인력방식(기본기호) Magnetic Type Basic Notation 레버방식 lever Type 누름단추 방식 Push Button Type 페달방식 Pedal Type		
기계방식 Machine Type 누름봉방식 Push Bar Type 기계방식의 기본기호 Basic Notation of Machine Type 스프링방식 Spring Type 롤러방식 Roller Type 한쪽작동 롤러 방식 One direction working Roller Type		
조합방식 Assembly Type 전자공기압제어 Electronic Air Pressure Control 전자공기압제어 Electronic Air Pressure Control		
보조방식 Support Type 위치고정 방식 Fixing Type of Location 로크방식 Lock Type 오우버센터 Over-Center		세로의 짧은 선은 위치 고정된 위치를 표시한다. The long short line indicates the fixed location. ★표시의 곳에 논로크를 푸는 제어 방식을 표시하는 임의의 기호를 기입한다. Enter temporary notation which indicate control type to unlock lock in * position. 중간 위치에서 멈추지 않고 양단 위치에 기기를 멈춘다. Don't stop the machine at the middle position. Stop it at the both ends.

공기압 도면 기호(KSB 0054-80)
Notations of Air Pressure Drawings

압력제어밸브 Pressure Control Valve

명칭 Name	기호 Notation	비고 Remarks
감압밸브 Reducing pressure valve 릴리이프 없음(내부파일럿 방식) No Relief (Inside Pilot Type) (외부파일럿 방식) (Outside Pilot Type) 릴리이프 붙이(내부파일럿방식) A piece of Relief Inside Pilot Type (외부파일럿 방식) (Outside Pilot Type)		1)유압용 For Hydraulic 2)공기압용 For Air pressure

유량제어밸브 Flow Control Valve

명칭 Name	기호 Notation	비고 Remarks
가변조리개 밸브 Variable Iris Valve 1)인력방식 Magnetic Type 2)기계방식 Machine Type		관로를 표시하는 실선과 흐름의 방향을 표시하는 화살표를 비껴서 기입함으로써 흐름이 조려짐을 표시한다. Entering thin line to indicate Pipe Passage and the arrow to indicate the Flow direction athwart, indicate the iris of Flow 1)상세기호 1)Detailed Notation 2)간략기호 2)Shorten Notation
유량 조정 밸브 Flow-Control Valve 고정형 Fixing Type 고정형(기본기호) Fixing Type Basic Notation		

유량제어밸브 Flow Control Valve

명칭 Name	기호 Notation	비고 Remarks
기본표시 Basic Indication 2포오트 2위치전환밸브 2 Port 2 Location Exchange Valve 4포오트 3위치전환밸브 4 Port 3 Location Exchange Valve 4포오트 조리개전환밸브 4Port Iris Exchange Valve		
2포오트 2위치전환밸브 2 Port 2 Location Exchange Valve 인력방식 Magnetic Type 스프링오프셋 Spring Off Set 파일럿 방식 Pilot Type		

방향제어밸브 Direction Control Valve

명칭 Name	기호 Notation	비고 Remarks
3포오트 2위치전환밸브 3 Port 2 Location Exchange Valve 외부파일럿 방식 Outside Pilot Type 스프링오프셋전자방식 Spring Off Set Electronic Type		3전환의 과도적인 중간위치를 표시할 필요가 있는 경우에는 점선의 구간을 사용하여 이를 표시한다. In case of indicating center position of exchange, use dotted line period.
5포오트 2위치전환밸브 5 Port 2 Location Exchange Valve 외부파일럿 방식 Outside Pilot Type		

방향제어밸브 Direction Control Valve

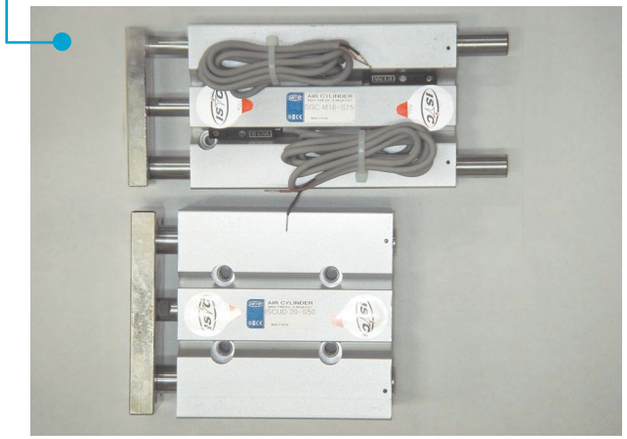
명칭 Name	기호 Notation	비고 Remarks
체크밸브 Check Valve		
고정 조리개 붙이 A piece of Fixed-Iris Valve 체크밸브 Check Valve		

부속기기 Additional Equipment

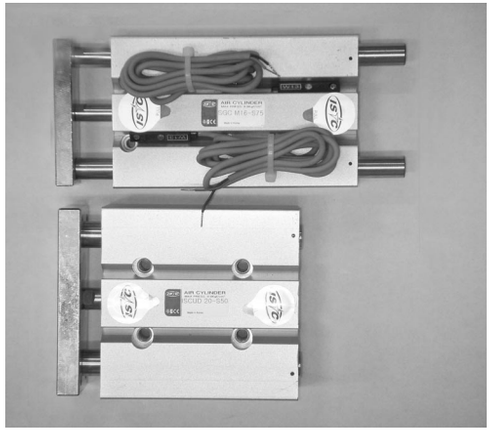
명칭 Name	기호 Notation	비고 Remarks
공기탱크 Air Tank		공기압용 For Air Pressure
압력원 Pressure Circle		공기압용 For Air Pressure
배수기 Drainer 인력방식 Magnetic Type 자동방식 Automatic Type		
필터 Filter 배수기없음 None 배수기붙이 A piece of Drainer (인력방식) Magnetic Type (자동방식) Automatic Type		공기압용 흡입필터 및 기름탱크 내에 설치된 탱크용 필터에 대하여 다음의 간략 기호를 사용하여도 좋다. Can following shortened notation to Tank Filter which is installed in the Oil Tank and Inhale Filter for Air Pressure. Pilot Type
에어 드라이 Air Dry		
루브리 케이터 Lubricator		
소음기 Muffler		

MEMO

가이드 부착 박형 실린더 IGQ시리즈
GUIDE-MOUNTED THIN TYPE CYLINDER IGQ SERIES



가이드 부착 박형 실린더 IGQ 시리즈
GUIDE-MOUNTED THIN TYPE CYLINDER IGQ SERIES
형식 및 사양 Model & Specification



표준사양 Standard Specification

형식 Type	Air pressure (No Oil Supply)	
사용유체 Fluid	Air	
보증내압력 Bearing pressure	15.3kgf/㎠	
최고사용압력 Max. set pressure	9.9kgf/㎠	
주위온도 및 사용유체온도 Ambient and fluid temperature for Warming Up	−10°C ~ +60°C	
쿠션 Cushion	Rubber cushion	
최저사용압력 Min. Working Pressure	⌀12,⌀16	1.2kgf/㎠
	⌀25,⌀100	1.0kgf/㎠
행정길이의 허용차 Allowance of stroke length	$^{+1.5}_{0}$	
피스톤사용속도 Working Piston Speed	⌀12,⌀16	50~500mm/s
	⌀25,⌀100	50~400mm/s

실린더표준행정표 Standard Stroke Table of Cylinder

Type	Kinds	I-D	Standard Stroke(mm)
IGQM	Slipping Bearing	⌀12~⌀16	10,20,30,40,50,75,100
		⌀20~⌀25	20,30,40,50,75,100
IGQL	Ball Bush Bearing	⌀32~⌀100	25,50,75,100,125,150

※단 표준 행정 중간 행정은 스페이스를 장착하여 제작한다.
예)IGQM20-25st 주문시 IGQM20-30st의 바디 내부를 5mm 스페이스 장착함
Mid Stroke and Standard Stroke should be installed with Space.
ex) When order IGQM20-25st, install 5mm Space in the Body of IGQM20-30st.

형식 표시 방법 Indication of Model

IGQ M 40 S20 A 73 S1

- IGQ: 가이드부착 박형실린더 GUIDE-MOUNTED THIN TYPE CYLINDER
- M: 형식 M:미끄럼 베어링 L:볼 부쉬 베어링 Type M: Slipping Bearing L: Ball Bush Bearing
- 40: 튜브내경 Inside diameter of Tube
  12-12mm
  16-16mm
  20-20mm
  25-25mm
  32-32mm
  40-40mm
  50-50mm
  63-63mm
  80-80mm
  100-100mm
- S20: 실린더 행정 표준행정표 참조 Cylinder Stroke Refer to table of standard stroke
- A: 몸체사양 무기호:표준형 동계불가형:A Body specification None: standard A Noaccept Copper-related Type :A
- 73: 무기호:오토 스위치 없음 오토스위치 종류-유접점 None: No Auto Switch kind of auto switch -Owned Contact Point

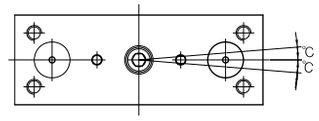
D-A72	AC 110[V] Use
D-A73	AC 110V, DC24[V] Combined Use
LY59C	AC 110V, DC24[V] Combined Use

LY59B	ForDC24[V] 3lines
LY59A	ForDC24[V] 3lines

- S1: None : no auto switch 무기호: 오토 스위치 없음
  S1 : 1EA
  S2 : 2EA
  S3 : 3EA

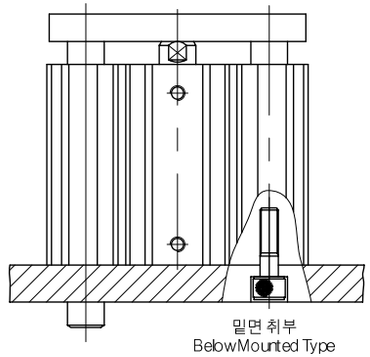
가이드 부착 박형 실린더 IGQ 시리즈
GUIDE-MOUNTED THIN TYPE CYLINDER IGQ SERIES
Ø12, Ø16, Ø20, Ø25, Ø32, Ø40, Ø50, Ø63, Ø80, Ø100

플레이트 회전 정도 Revolution degree of Plate



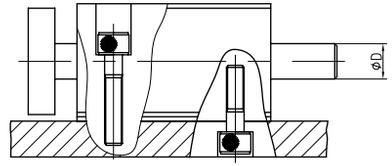
I-D (mm)	Allowance for admitting revolution	
	IGQM	IGQL
12	±0.07	±0.10
16		
20	±0.06	±0.09
25		
32	±0.06	±0.08
40		
50	±0.05	±0.06
63		
80	±0.04	±0.05
100		

취부방식 Mounted Type

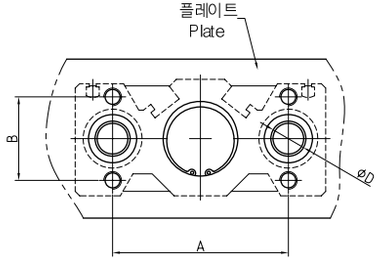


밑면 취부
Below Mounted Type

상면 취부
Upper Mounted Type



배면 취부
Rear Mounted Type

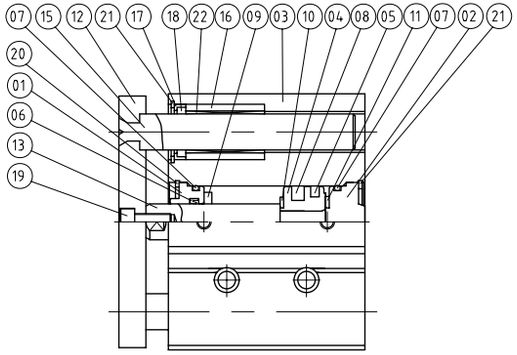


취부볼트규격 Bolt Regulation of Fitting Surface

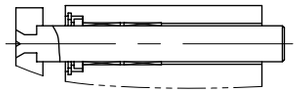
I-D (mm)	A (mm)	B (mm)	⌀D		Wrench Bolt for Fitting Surface
			IGQM	IGQL	
12	50	18	10	8	M4*0.7
16	56	22	12	10	M5*0.8
20	72	24	14	12	M5*0.8
25	82	30	18	15	M6*1.0
32	80	38	22	18	M8*1.25
40	90	38	22	18	M8*1.25
50	100	44	27	22	M10*1.5
63	110	44	27	22	M10*1.5
80	140	56	31	28	M12*1.75
100	170	62	39	33	M14*2.0

내부구조도 Inside Structure Drawings

IGQM Φ12-25 30st 이하



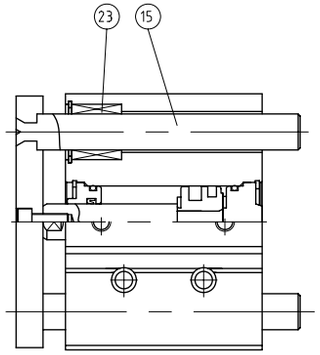
IGQM ⌀12~25 30st 초과



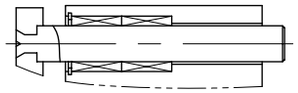
IGQM ⌀12~25 50st 초과

내부구조도 Inside Structure Drawings

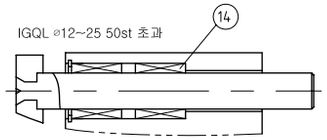
IGQL Φ12~25 30st 이하



IGQL ⌀12~25 30st 초과



IGQL ⌀12~25 50st 초과



부품리스트 Parts List

No	Name	Materials	Remarks
1	ROD COVER	A6063	
2	HEAD COVER	A6063	
3	TUBE	A6063	
4	PISTON	AC4C	
8	MAGNET	NBR	
9	SPACER	A2024	
10	DEMPER-1	URETHANE	
11	DEMPER-2	URETHANE	
12	PLATE	S45C	
13	PISTON ROD	S45C	
14	GUIDE SPACER	A2024	

No	Name	Materials	Remarks
15	GUIDE ROD	S45C	IGQM
		SUJ2	IGQL
16	BUSH SLEEVE	S20C	
17	HOLDER	S45C	IGQM
18	FELT	WOOL	IGQM
19	PLATE BOLT	SCM4	
20	SNAP RING-1	SCM4	
21	SNAP RING-2	SCM4	
22	OILLESS BUSH	CU+OIL	
23	BOLL BUSH BEAR		

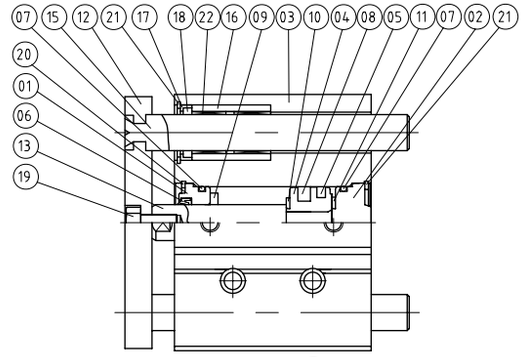
패킹리스트 Packing List

No	Name	Materials	I-D(mm)			
			⌀12	⌀16	⌀20	⌀25
5	PISTON PACKING	NBR	PSD-12	PSD-16	PSD-20	PSD-25
6	ROD PACKING	NBR	DYR-6	DYR-8	DYR-10SK	DYR-12
7	COVER O-RING	NBR	S10	S14	S18	S22.4

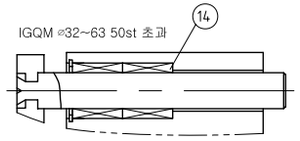
가이드 부착 박형 실린더 IGQ 시리즈
GUIDE-MOUNTED THIN TYPE CYLINDER IGQ SERIES
내부구조도 Inside Structure Drawings

내부구조도 Inside Structure Drawings

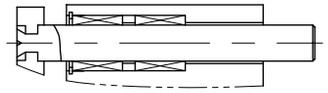
IGQM Φ32~63 50st 이하



IGQM ⌀32~63 50st 초과

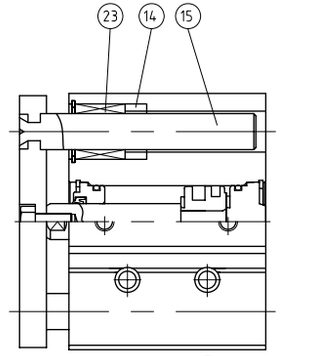


IGQM ⌀32~63 100st 초과

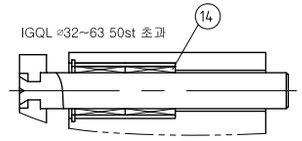


내부구조도 Inside Structure Drawings

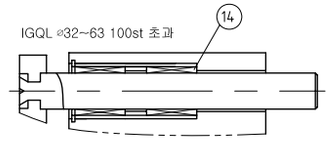
IGQL Φ32~63 50st 이하



IGQL ⌀32~63 50st 초과



IGQL ⌀32~63 100st 초과



부품리스트 Parts List

No	Name	Materials	Remarks
1	ROD COVER	A6063	
2	HEAD COVER	A6063	
3	TUBE	A6063	
4	PISTON	AC4C	
8	MAGNET	NBR	
9	SPACER	A2024	
10	DEMPER-1	URETHANE	
11	DEMPER-2	URETHANE	
12	PLATE	S45C	
13	PISTON ROD	S45C	
14	GUIDE SPACER	A2024	

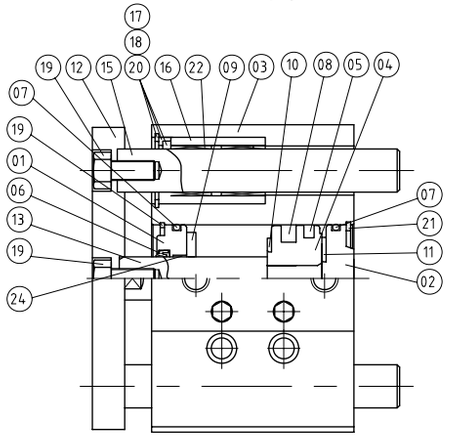
No	Name	Materials	Remarks
15	GUIDE ROD	S45C	IGQM
		SUJ2	IGQL
16	BUSH SLEEVE	S20C	
17	HOLDER	S45C	IGQM
18	FELT	WOOL	IGQM
19	PLATE BOLT	SCM4	
20	SNAP RING-1	SCM4	
21	SNAP RING-2	SCM4	
22	OILLESS BUSH	CU+OIL	
23	BOLL BUSH BEAR		

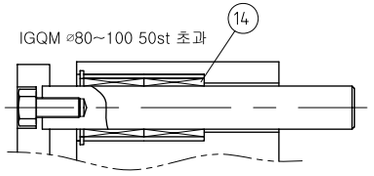
패킹리스트 Packing List

No	Name	Materials	I-D(mm)			
			⌀32	⌀40	⌀50	⌀63
5	PISTON PACKING	NBR	PSD-32	PSD-40	PSD-50	PSD-63
6	ROD PACKING	NBR	DYR-16	DRP-16	DRP-20	DRP-20
7	COVER O-RING	NBR	S28	S37	S46	S60

내부구조도 Inside Structure Drawings

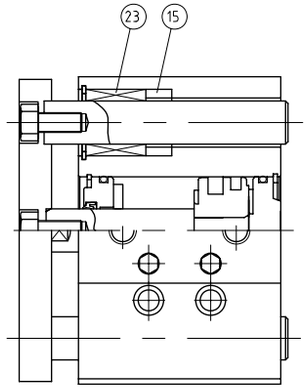
IGQM Φ80~100 50st 이하

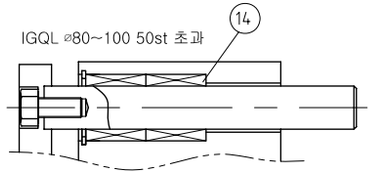




내부구조도 Inside Structure Drawings

IGQL Φ80~100 50st 이하





부품리스트 Parts List

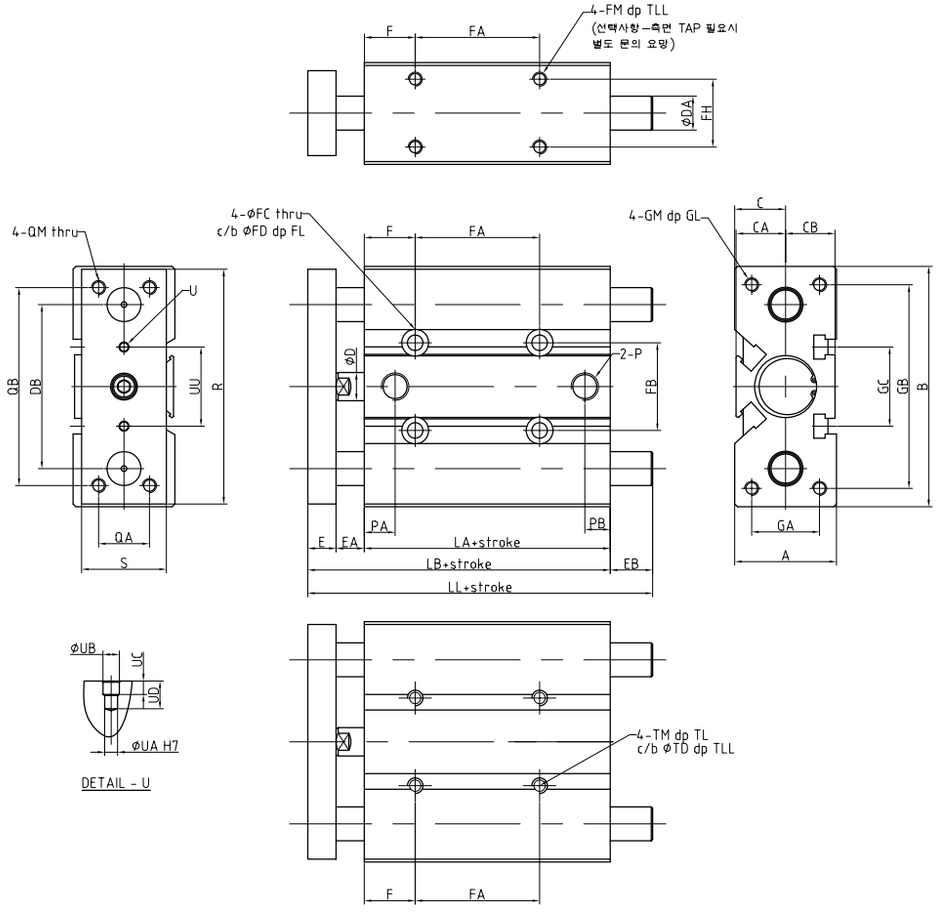
No	Name	Materials	Remarks
1	ROD COVER	A6063	
2	HEAD COVER	A6063	
3	TUBE	A6063	
4	PISTON	AC4C	
8	MAGNET	NBR	
9	SPACER	A2024	
10	DEMPER-1	URETHANE	
11	DEMPER-2	URETHANE	
12	PLATE	S45C	
13	PISTON ROD	S45C	
14	GUIDE SPACER	A2024	

No	Name	Materials	Remarks
15	GUIDE ROD	S45C	IGQM
		SUJ2	IGQL
16	BUSH SLEEVE	S20C	
17	HOLDER	S45C	IGQM
18	FELT	WOOL	IGQM
19	PLATE BOLT	SCM4	
20	SNAP RING-1	SCM4	
21	SNAP RING-2	SCM4	
22	OILLESS BUSH	CU+OIL	
23	BOLL BUSH BEAR		
24	DU BUSH		

패킹리스트 Packing List

No	Name	Materials	I-D(mm)	
			⌀80	⌀100
5	PISTON PACKING	NBR	PSD-80	PSD-100
6	ROD PACKING	NBR	DRP-25	DRP-30
7	COVER O-RING	NBR	S75	S95

Φ12~Φ25 IGQM / IGQL



가이드 부착 박형 실린더 IGQ 시리즈
GUIDE-MOUNTED THIN TYPE CYLINDER IGQ SERIES
일반형 General Type

Φ12~Φ25 IGQM / IGQL

단위 unit:mm

I-D (mm)	Stroke Range (mm)	A	B	C	CA	CB	D	DA		DB	E	EA	EB							F	FA	
								IGQM	IGQL				IGQM			IGQL						
																10ST	20ST	30ST	41~51ST			
12	~ 100	26	60	13	12.5	13	6	8	6	46	8	5	0	5	34	3	13	13	23	28	7	20	40
16	~ 100	30	67	15	14.5	15	8	10	8	50	8	5	0	5	34	5	20	20	30	35	7	24	44
20	~ 150	36	85	18	17.5	18	10	12	10	58	10	6	3	5	47	-	12	25	35	42	18	24	44
25	~ 150	42	95	21	20.5	21	12	16	13	68	10	6	3	5	47	-	18	18	37	48	18	24	44

단위 unit:mm

I-D (mm)	Stroke Range (mm)	FB	FC	FD	FL	FH	FM	FLL	GA	GB	GC	GD	GM	GL	LA	LB	P	PA	PB	QA
12	~ 100	25	4.3	8	13.5	18	M5x0.8	12	18	50	23	M3	M4x0.7	10	29	42	M5x0.8	11	8.5	14
16	~ 100	27	4.3	8	12.5	22	M5x0.8	12	22	56	24	M3	M5x0.8	12	33	46	M5x0.8	11	8	16
20	~ 150	31	5.5	9.5	13.5	24	M5x0.8	13	24	72	28	M5	M5x0.8	13	37	53	Rc1/8	10.5	9	18
25	~ 150	35	5.5	9.5	14.5	30	M6x1.0	15	30	82	34	M5	M6x1.0	15	37.5	53.5	Rc1/8	11.5	9.5	26

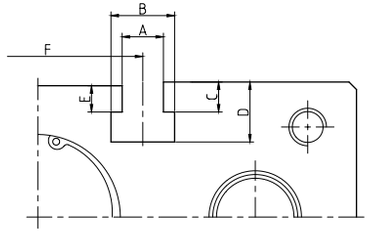
단위 unit:mm

I-D (mm)	Stroke Range (mm)	LL							QB	QM	R	S	TM	TL	TD	TLL	UU	UA	UB	UC	UD
		IGQM			IGQL																
					10ST	20ST	30ST	41~51ST													
12	~ 100	42	47	76	45	55	55	65	70	48	M4x0.7	58	22	M5x0.8		6	4.5	23	3	3.5	3	6
16	~ 100	46	51	80	51	66	66	76	81	54	M5x0.8	65	25	M5x0.8	10	6	4.8	24	3	3.5	3	6
20	~ 150	56	58	100	-	65	78	88	95	70	M5x0.8	83	30	M6X1.0	12	7	8	28	3	3.5	3	6
25	~ 150	56.5	58.5	100.5	-	71.5	71.5	90.5	100.5	78	M6X1.0	93	38	M6x1.0	12	7	8.2	34	4	4.5	3	6

고정용 구멍 Hole for fixing

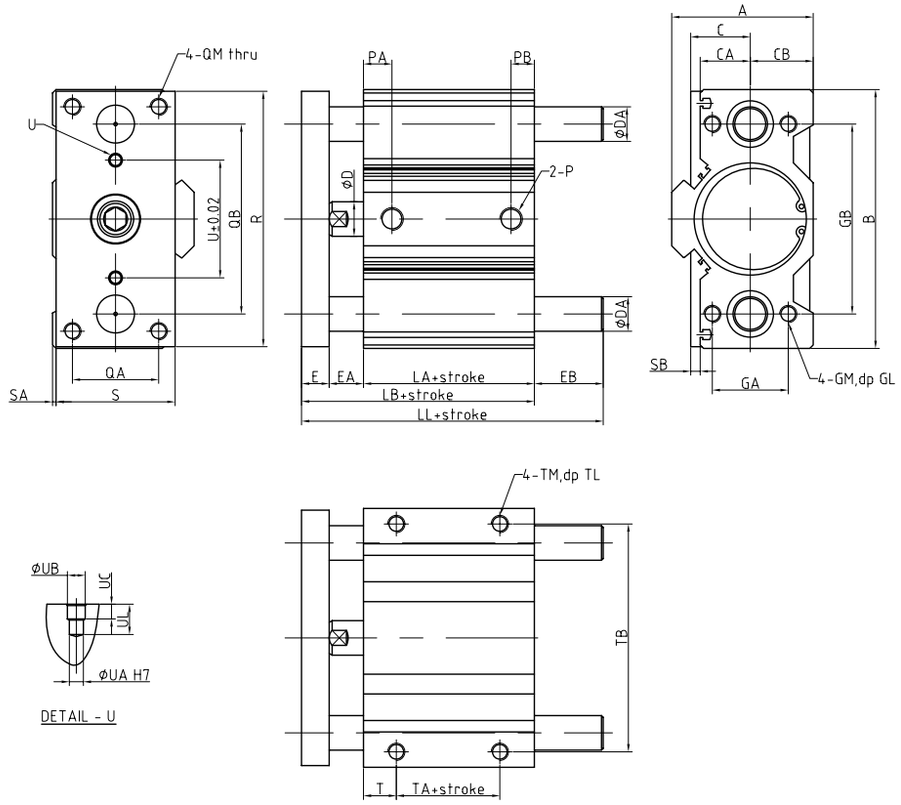
아래 치수표 및 도면설명부는 오토 스위칭 기타 리드선을 결속하거나 단자대등을 실린더에 직접 고정할 경우에 사용함.
Next dimension table and Explantion of Diwaings are used directly to fix and connect Auto Switch and Reed Cable in the cylinder.

I-D (mm)	A	B	C	D	E	F	Bolt
⌀12	3.5	6	2	4.3	1.5	23	M3
⌀16	3.7	6.2	2	4.6	1.5	24	M3
⌀20	5.5	8.5	3.5	7.8	3	28	M3
⌀25	5.5	8.5	3.5	8	3	34	M5



가이드 부착 박형 실린더 IGQ 시리즈
GUIDE-MOUNTED THIN TYPE CYLINDER IGQ SERIES
일반형 General Type

Φ32~Φ63 IGQM / IGQL



가이드 부착 박형 실린더 IGQ 시리즈
GUIDE-MOUNTED THIN TYPE CYLINDER IGQ SERIES
일반형 General Type

Φ32~Φ63 IGQM / IGQL

단위 unit:mm

I-D (mm)	Stroke Range (mm)	A	B	C	CA	CB	D	DA		E	EA	EB											
												IGQM						IGQL					
								IGQM	IGQL			25ST	50ST	75ST	100ST	125ST	150ST	25ST	50ST	75ST	100ST	125ST	150ST
32	~ 150	53	114	27	25	26	16	20	16	12	10	23.2	41.2	46.2	46.2	51.2	51.2	4.4	41.4	46.4	46.4	66.4	66.4
40	~ 150	57	124	31	25	26	16	20	16	12	10	16.7	34.7	39.7	39.7	44.7	44.7	0	34.9	39.9	39.9	59.9	59.9
50	~ 150	69	140	39	29	30	20	25	20	16	12	27.7	39.7	49.7	49.7	54.7	54.7	2.9	44.9	49.9	49.9	69.9	69.9
63	~ 150	82	150	45.5	29	36.5	20	25	20	16	12	22.7	34.7	44.7	44.7	49.7	49.7	0	39.9	44.9	44.9	64.9	64.9

단위 unit:mm

I-D (mm)	Stroke Range (mm)	GA	GB	GL	GM	I	LA	LB	LL										P	PA
									IGQM						IGQL					
									25ST	50ST	75ST	100ST	125ST	150ST	25ST	50ST	75ST	100ST	125ST	150ST		
32	~ 150	38	80	20	M8x1.25	22	37.5	59.5	82.7	100.7	105.7	105.7	110.7	110.7	63.9	100.9	105.9	105.9	125.9	125.9	1/8	12.5
40	~ 150	38	90	20	M8x1.25	22	44	66	82.7	100.7	105.7	105.7	110.7	110.7	63.9	100.9	105.9	105.9	125.9	125.9	1/8	14
50	~ 150	44	100	25	M10x1.5	22	44	72	99.7	111.7	121.7	121.7	126.7	126.7	74.9	116.9	121.9	121.9	141.9	141.9	1/4	14
63	~ 150	44	100	25	M10x1.5	31	49	77	99.7	111.7	121.7	121.7	126.7	126.7	74.9	116.9	121.9	121.9	141.9	141.9	1/4	16.5

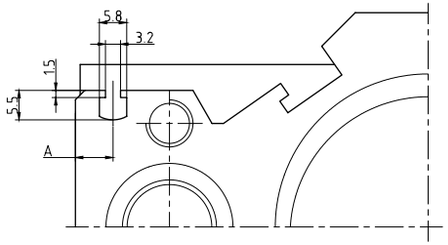
단위 unit:mm

I-D (mm)	Stroke Range (mm)	PB	QA	QB	QM	R	S	SA	SB	T	TA	TB	TL	TM	U	UA	UB	UC	UL
32	~ 150	9	30	96	M8x1.25	112	48	2	1	16	5	100	11	M8x1.25	42	4	4.5	3	6
40	~ 150	10.5	30	106	M8x1.25	122	48	2	1	17	10	110	11	M8x1.25	50	4	4.5	3	6
50	~ 150	11	40	120	M10x1.5	138	56	2	1	17	10	124	12.5	M10x1.5	56	5	6	4	8
63	~ 150	13.5	50	130	M10x1.5	148	69	2	5.5	19	10	132	15	M10X1.5	66	5	6	4	8

고정용 구멍 Hole for fixing

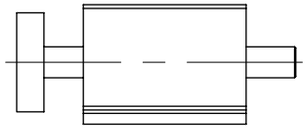
아래 치수표 및 도면 설명부는 오토스위 및 기타리드선을 결속하거나 단자대등을 실린더에 직접 고정할 경우에 사용함.
Next dimension table and Explantion of Dwaings are used directly to fix and connect Auto Switch and Reed Cable in the cylinder.

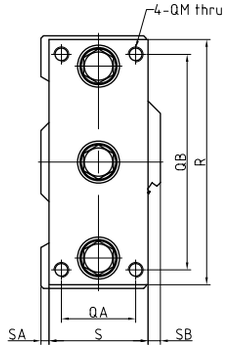
I-D (mm)	A
⌀32	8
⌀40	8
⌀50	8
⌀63	8
⌀80	10
⌀100	10

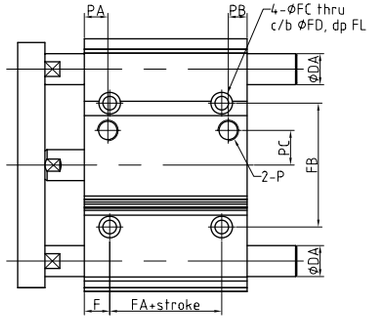


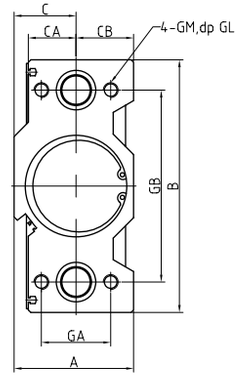
가이드 부착 박형 실린더 IGQ 시리즈
GUIDE-MOUNTED THIN TYPE CYLINDER IGQ SERIES
일반형 General Type

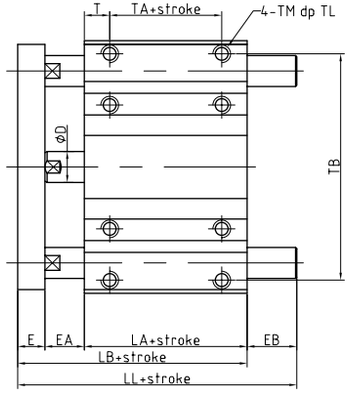
Φ80~Φ100 IGQM / IGQL











Φ80~Φ100 IGQM / IGQL

단위 unit:mm

I-D (mm)	Stroke Range (mm)	A	B	C	CA	CB	D	DA		E	EA	EB											
												IGQM						IGQL					
								TGQM	TGQL			25ST	50ST	75ST	100ST	125ST	150ST	25ST	50ST	75ST	100ST	125ST	150ST
80	~ 150	96.5	204	50	38.5	46.5	25	30	25	22	18	23.2	25.3	53.3	53.3	58.3	58.3	8.5	8.5	72.5	72.5	72.5	72.5
100	~ 150	114.5	238	58	41	56.5	30	35	30	25	20	18.8	23.8	48.8	48.8	53.8	53.8	4.0	4.0	73.0	73.0	73.0	73.0

단위 unit:mm

I-D (mm)	Stroke Range (mm)	F	FA	FB	FC	FD	FL	GA	GB	GL	LL												LA
											IGQM							IGQL						
											25ST	50ST	75ST	100ST	125ST	150ST	25ST	50ST	75ST	100ST	125ST	150ST	
80	~ 150	20.5	15.5	100	11	17.5	11	56	155	30	119.8	121.8	149.8	149.8	154.8	154.8	105	105	169	169	169	169	56.5
100	~ 150	20.5	25	120	13	20	13	62	184	35	129.8	134.8	159.8	159.8	164.8	164.8	115	115	184	184	184	184	66

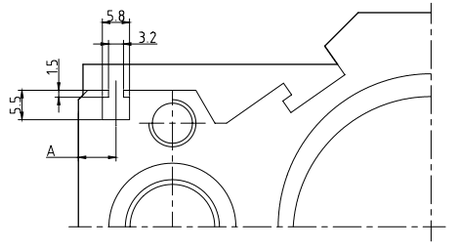
단위 unit:mm

I-D (mm)	Stroke Range (mm)	LB	GM	P	PA	PB	PC	QA	QB	QM	R	S	SA	SB	T	TA	TB	TL	QM
80	~ 150	96.5	M12x1.75	3/8	19	15.2	28	60	174	M12X1.75	198	80	6.5	10	20.5	15.5	182	18	M12X1.75
100	~ 150	111	M14X2	3/8	22.5	18.8	35	64	200	M14x2	231	95	9	10.5	20.5	25	211	21	M14x2.0

고정용 구멍 Hole for fixing

아래 치수표 및 도면 설명부는 오토 스위칭 기타리드선을 결속하거나 단자대등을 실린더에 직접 고정할 경우에 사용함.
Next dimension table and Explantion of Dwaings are used directly to fix and connect Auto Switch and Reed Cable in the cylinder.

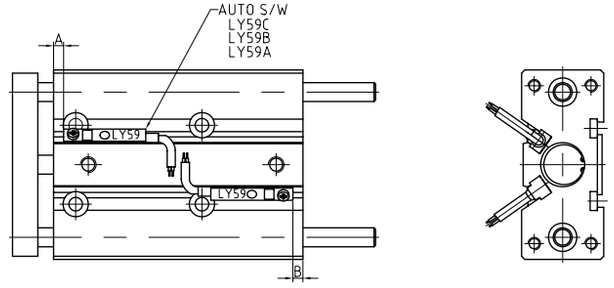
I-D (mm)	A
⌀32	8
⌀40	8
⌀50	8
⌀63	8
⌀80	10
⌀100	10



가이드 부착 박형 실린더 IGQ 시리즈
GUIDE-MOUNTED THIN TYPE CYLINDER IGQ SERIES
일반형 General Type

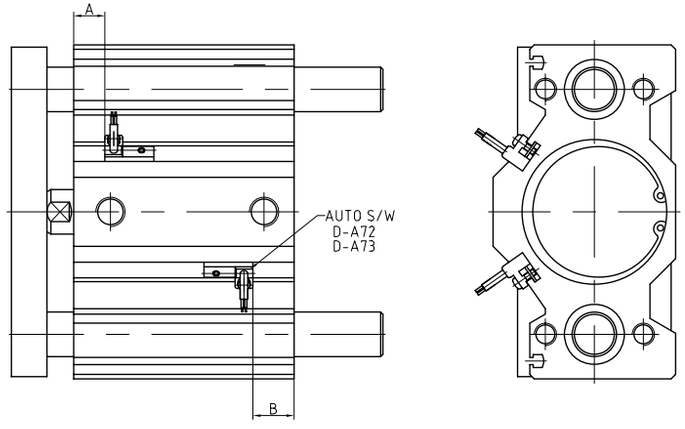
AUTO S/W 부착 방법 Mounted Method of AUTO S/W

Φ12~Φ100 IGQM / IGQL



I-D(mm)	⌀12	⌀16	⌀20	⌀25	⌀32	⌀40	⌀50	⌀63	⌀80	⌀100
A	1.5	4.5	4	4.5	5.5	9.5	7.5	10	13	17.5
B	3	4	8	8	7	9.5	11.5	14	18.5	23.5

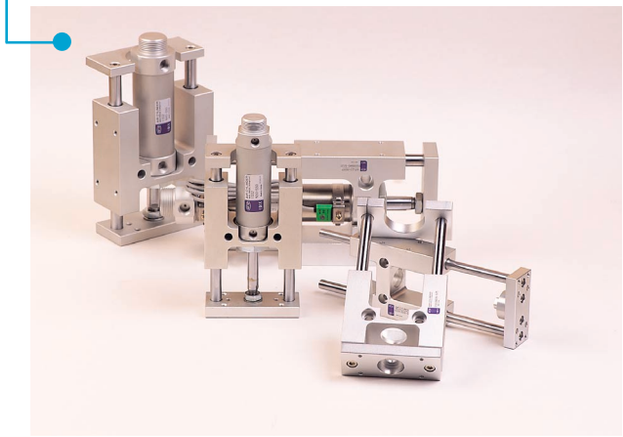
Φ32~Φ63 IGQM / IGQL



I-D(mm)	⌀32	⌀40	⌀50	⌀63
A	9.5	13.5	11.5	14
B	11.5	14	15.5	18.5

MEMO

가이드 부착 실린더 유니트 IGM3시리즈
GUIDE-MOUNTED UNIT IGM3 SERIES



가이드 부착 실린더 유니트 IGM3 시리즈
GUIDE-MOUNTED UNIT IGM3 SERIES
형식 및 사양 Model & Specification

표준사양 Standard Specification

형식 Type	Air pressure Type
사용유체 Fluid	Air
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. set pressure	9.9kgf/㎠
주위온도 및 사용유체온도 Ambient&temperature for Working Oil	−10°C ~ +60°C
나사공차 Screw tolerance	2nd KS level
행정길이의 허용차 Allowance of stroke length	$^{+1.5}_{0}$

실린더표준행정표 Standard Stroke Table of Cylinder

I-D(mm)	Standard stroke(mm)
⌀20,⌀25	75,100,125,150,200,250,300
⌀32	75,100,125,150,200,250,300,350,400
⌀40	75,100,125,150,200,250,300,350,400,450,500

형식 표시 방법 Indication of Model

IGM3 B B 40 S20 A 73 S1

- IGM3: 가이드부착 소형 실린더 Guide−Mounted Small Size Thin−Type Cylinder
- B: 방식 B: 부쉬 타입 Type B: Bush Type
- B: 형식B: 기본형 Kinds B: General Type
- 40: 튜브내경 Inside−diameter of Tube 20−20mm 25−25mm 32−32mm 40−40mm
- S20: 실린더행정 표준행정표 참조 Cylinder Stroke Refer to Standard Stroke Table
- A: 몸체사양 Body Spec. 무기호: 표준형 None : Standard Type 동계불가형 : A No accept Copper−related
- 73: 무기호:오토스위치 없음 None: No Auto Switch 오토스위치종류- 유접점 kind of autoswitch - Owned Contact Point

D−C73	AC 110V,DC24V

Combined Use

- S1: 무기호 : 오토 스위치 없음 None: No Auto Switch S1 : 1EA S2 : 2EA S3 : 3EA

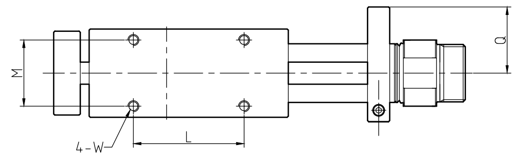
형식 표시 방법 Indication of Model

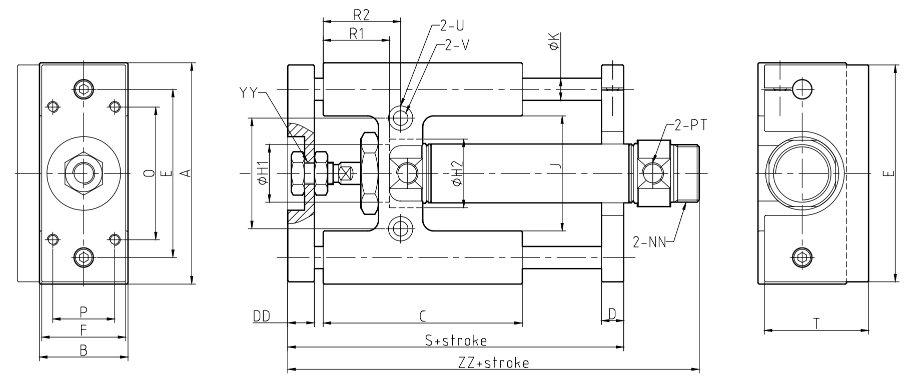
ISG B B 40 S20

- ISG: 가이드 유니트 Guide Unit
- B: 방식 B: 부쉬 타입 Type B: Bush Type
- B: 형식B: 기본형 Kinds B: General Type
- 40: 튜브내경 Inside−diameter of Tube 20−20mm 25−25mm 32−32mm 40−40mm
- S20: 실린더행정 표준행정표 참조 Cylinder Stroke Refer to Standard Stroke Table

가이드 부착 실린더 유니트 IGM3 시리즈
GUIDE-MOUNTED UNIT IGM3 SERIES
Ø20, Ø25, Ø32, Ø40

가이드 부착 실린더 Guide−Mounted Cylinder





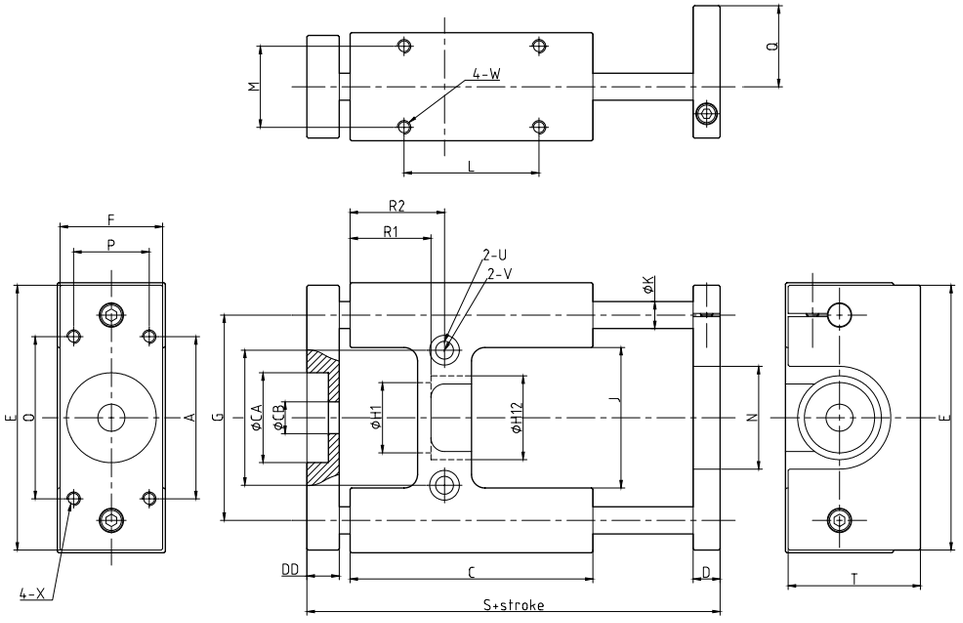
단위 unit:mm

I-D(mm)	A	B	C	D	E	F	G	⌀H1	⌀H2	I	J	⌀K	L	M	N	O	P
20	80	30	80	10	78	28	60	20	28	38	40	10	50	22	22	40	18
25	100	40	90	10	98	38	76	26	34	50	52	10	50	30	30	60	28
32	100	40	90	12	98	38	76	26	38	50	52	12	50	30	30	60	28
40	126	52	126	12	124	50	100	32	50	68	76	16	70	38	38	70	38

I-D(mm)	PT	Q	R1	T	R2	S	YY	U	V	W	X	DD	ZZ	NN
32	1/8	22	30	36	35	106	M8x1.25	⌀8	M5 DP 8	M4 DP 10	M4	10	116.5	M20x1.5
40	1/8	30	30	49	35	121	M10x1.25	⌀8	M5 DP 10	M4 DP 12	M4	12	121	M26x1.5
50	1/8	30	30	49	35	123	M10x1.25	⌀9	M6 DP 12	M5 DP 12	M5	12	123	M26x1.5
63	1/4	40	35	60	43	151	M14x1.5	⌀12	M8 DP 16	M6 DP 13	M6	13	155	M32x2.0

가이드 부착 실린더 유니트 IGM3 시리즈
GUIDE-MOUNTED UNIT IGM3 SERIES
Ø20, Ø25, Ø32, Ø40

가이드 부착 실린더 Guide-Mounted Cylinder



단위 unit:mm

I-D(mm)	A	⌀CA	B	⌀CB	C	D	E	F	G	⌀H1	⌀H2	I	J	⌀K	L	M
20	80	21 DP 6.5	30	9	80	10	78	28	60	20	28	38	40	10	50	22
25	100	25 DP 7	40	11	90	10	98	38	76	26	34	50	52	10	50	30
32	100	25 DP 7	40	11	90	12	98	38	76	26	38	50	52	12	50	30
40	126	33 DP 9	52	15.5	126	12	124	50	100	32	50	68	74	14	70	38

I-D(mm)	N	O	P	T	Q	R1	R2	S	U	V	W	X	DD
32	32	40	18	36	22	30	35	106	⌀8	M5 DP 8	M4 DP 10	M4	10
40	38	60	28	49	30	30	35	121	⌀8	M5 DP 10	M4 DP 12	M4	12
50	42	60	28	49	30	30	35	123	⌀9	M6 DP 12	M5 DP 12	M5	12
63	54	70	38	60	40	35	43	151	⌀12	M8 DP 16	M6 DP 13	M6	13

MEMO

편박형 실린더 ICUD 시리즈 THIN-TYPE CYLINDER ICUD SERIES

Ø10, Ø16, Ø20, Ø25

편박형 실린더 ICUD 시리즈
THIN-TYPE CYLINDER ICUD SERIES

표준사양 Standard Specification

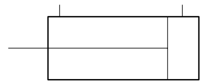
형식 Type	No Oil Supply
사용유체 Fluid	공기 Air
보증내압력Bearing pressure	10.5kgf/㎠
최고사용압력 Max. set pressure	7kgf/㎠
주위온도및 사용유체온도Ambient&temperature forWorking Oil	5°C ~ +60°C
나사공차Screw tolerance	KS2급 2nd KS level
행정길이의 허용차Allowance of stroke length	$^{+1.0}_{0}$
사용피스톤 속도 Working Piston Speed	50~500mm/s
쿠션 Cushion	Rubber cushion
로드끝단나사 Rod-end screw	수나사 male screw

실린더 표준 행정표 Standard Stroke Table of Cylinder

I-D(mm)	standard stroke
⌀10	5,10,15,20,25,30
⌀16	5,10,15,20,25,30
⌀20	5,10,15,20,25,30,40,50
⌀25	5,10,15,20,25,30,40,50

표시기호 Notation

■ 복동 편로드 / double-actiong single-rod



형식표시방법 Indication of Model

ICUD 10 - S20 D 59C S1 A

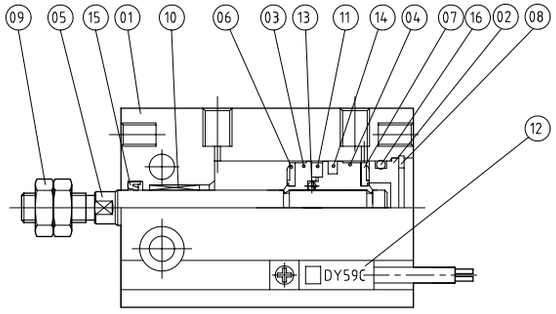
- **ICUD**: 복동편 로드 편박형 실린더 마그네트 쿠션 기본내장 / Basic built-in of double-acting single-rod, Thin type cylinder magnet, and cushion
- **10**: 튜브내경 / Inside diameter of Tube
  - 10-10mm
  - 16-16mm
  - 20-20mm
  - 25-25mm
- **S20**: 실린더 행정 표준행정표참조 / Cylinder Stroke Refer to table of standard stroke
- **D**: 작동방식 D:복동형 / working type Double-action type
- **59C**: 무기호:오토스위치 없음 / 오토스위치 종류-유접점 / None : no auto switch / kind of auto switch - Owned Contact Point

LY59C	Owned Contact Point
LY59B	No contact point
LY59A	No contact point

- **S1**: 무기호:오토스위치 없음 / None : no auto switch
  - S1 : 1EA
  - S2 : 2EA
  - S3 : 3EA
- **A**: 몸체사양 무기호:표준형 동계불가형 :A / Body specification None: standard A Noaccept Copper-related Type :A

편로드형 Single-rod type

ICUD⌀10,⌀16,⌀20,⌀25



부품리스트 Parts List

No	Name	Materials	Remarks
1	BODY TUBE	A6063	
2	HEAD COVER	A6063	
3	PISTON-A	A2024	⌀6,⌀10 BRASS
4	PISTON-B	A2024	
5	ROD	NBR	
6	DEMPER-1	URETHANE	
7	DEMPER-2	URETHANE	
8	SNAP RING	SCM4	
9	LOCKET NUT	S20C	
10	BUSH	DU	
11	MAGNET	STEEL	

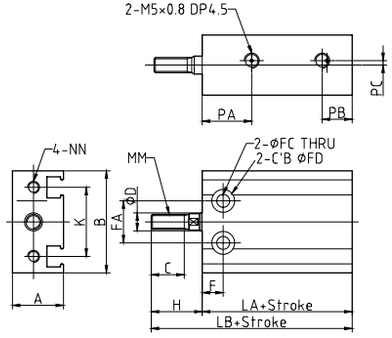
No	Name	Materials	Remarks
12	AUTO S/W		

페킹 리스트 Packing List

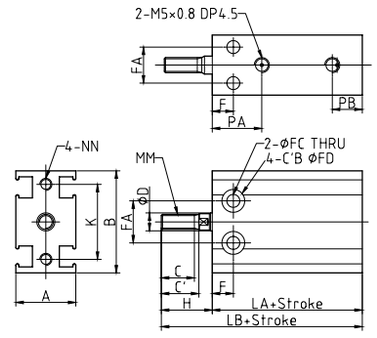
No	Name	Materials	H-D(mm)			
			⌀10	⌀16	⌀20	⌀25
13	ROD O-RING	NBR	⌀2.8×0.7	S5	S6	S8
14	PISTON PACKING	NBR	PSD10	PSD16	OPA20	OPA25
15	ROD PACKING	NBR	DYR 4K	DYR 6K	DYR 10SK	DYR 12
16	COVER O-RING	NBR	S10	S14	S18	S22

복동/편로드형 Double-acting Type/ Single-rod Type

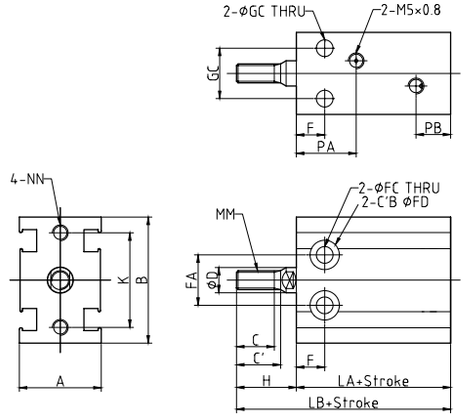
ICUD⌀10



ICUD⌀16



ICUD ⌀20,⌀25



단위 unit:mm

H-D(mm)	A	B	C	C'	D	F	FA	FC	FD	H	K	G	GC	MM	NN	PA	PB	PC	PD	LA	LB
10	15	28	10		4	7	11	3.2	⌀6 DP5	16	18	9	7	M4X0.7	M3X0.5 DP5	16.5	9	1		35	51
16	20	34	11	12.5	6	7	14	4.3	⌀7.6 DP6.5	16	25	12	9	M5X0.8	M4X0.7 DP6	16.5	10			40	56
20	26	40	12	14	8	9	16	5.3	⌀9.3 DP8	19	30	16	12	M6X1.0	M5X0.8 DP8	19	11	4	8	44	63
25	32	50	15.5	18	10	10	20	5.3	⌀9.3 DP9	23	38	20	16	M8X1.25	M5X0.8 DP8	21.5	13	4.5	9	48	71

편박형 실린더 ICUW 시리즈 THIN-TYPE CYLINDER ICUW SERIES

Ø10, Ø16, Ø20, Ø25

표준사양 Standard Specification

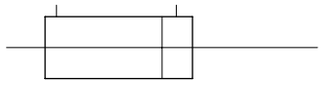
형식 Type	No Oil Supply
사용유체 Fluid	공기 Air
보증내압력 Bearing pressure	10.5kgf/㎠
최고사용압력 Max. set pressure	7kgf/㎠
주위온도(사용온도) Ambient temperature (working)	-10°C ~ +60°C
나사등급 Screw tolerance	KS2급 2nd KS level
행정길이의 허용차 Allowance of stroke length	$^{+1.0}_{0}$
사용피스톤 속도 Working Piston Speed	50~500mm/s
쿠션 Cushion	Rubber cushion
로드끝단나사 Rod-end screw	수나사 male screw

실린더 표준 행정표 Standard Stroke Table of Cylinder

I-D(mm)	Standard stroke
⌀10	5,10,15,20,25,30
⌀16	5,10,15,20,25,30
⌀20	5,10,15,20,25,30,40,50
⌀25	5,10,15,20,25,30,40,50

표시기호 notation

■ 복동양로드 / double-actiong single-rod



형식표시방법 Indication of Model

ICUW — 10 — S20 — D — 59C — S1 — A

- ICUW: 복동양로드 편박형 실린더 마그네트 쿠션 기본내장 Basic built-in of double-acting double-rod, Thin type cylinder magnet, and cushion
- 10: 튜브내경 Inside diameter of Tube — 10-10mm, 16-16mm, 20-20mm, 25-25mm
- S20: 실린더 행정 표준행정표참조 Cylinder Stroke Refer to table of standard stroke
- D: 작동방식 D:복동형 working type Double-action type
- 59C: 무기호:오토스위치 없음 오토스위치 종류-유접점 None : no auto switch kind of auto switch -Owned Contact Point

LY59C	Owned Contact Point
LY59B	No contact point
LY59A	No contact point

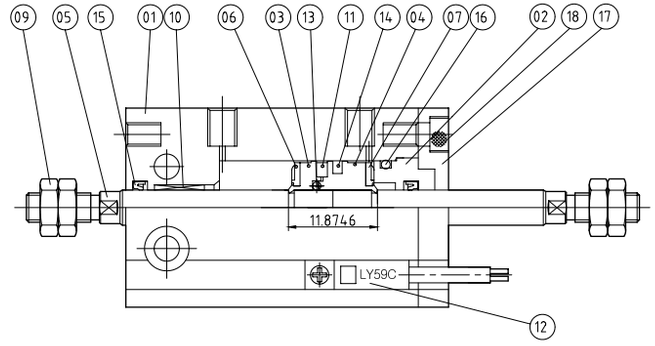
- S1: 무기호:오토스위치 없음 None : no auto switch S1 : 1EA S2 : 2EA S3 : 3EA
- A: 몸체사양 무기호:표준형 동계불가형 :A Body specification None: standard A Noaccept Copper-related Type :A

편박형 실린더 ICUW 시리즈 THIN-TYPE CYLINDER ICUW SERIES

내부구조도 Inside Structure Drawings

양로드형 Standard Specification

■ ICUW Φ10, Φ16, Φ20, Φ25



부품리스트 Parts List

No	Name	materials	Remarks
1	BODY TUBE	A6063	
2	ROD BUSH	A6063	
3	PISTON-A	A2024	⌀6,⌀10 BRASS
4	PISTON-B	A2024	
5	ROD	NBR	
6	DEMPER-1	URETHANE	
7	DEMPER-2	URETHANE	
8	SNAP RING	SCM4	
9	LOCKET NUT	S20C	
10	BUSH	DU	
11	MAGNET	STEEL	

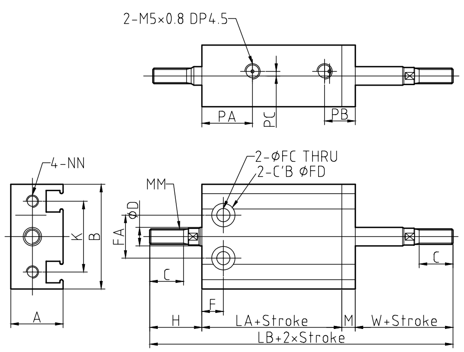
No	Name	materials	Remarks
12	AUTO S/W		
17	RETAINER	A6063	
18	BOLT	SCM4	

페킹 리스트 Packing List

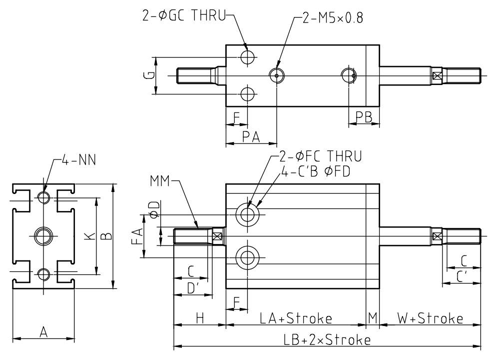
No	Name	materials	Inside-diameter of Tube(mm)			
			⌀10	⌀16	⌀20	⌀25
13	ROD O-RING	NBR	⌀2.8*0.7	S5	S6	S8
14	PISTON PACKING	NBR	PSD10	PSD16	OPA20	OPA25
15	ROD PACKING	NBR	DYR 4K	DYR 6K	DYR 10SK	DYR 12
16	COVER O-RING	NBR	S10	S14	S18	S22

복동/양로드형 Double-acting Type/ Double-rod Type

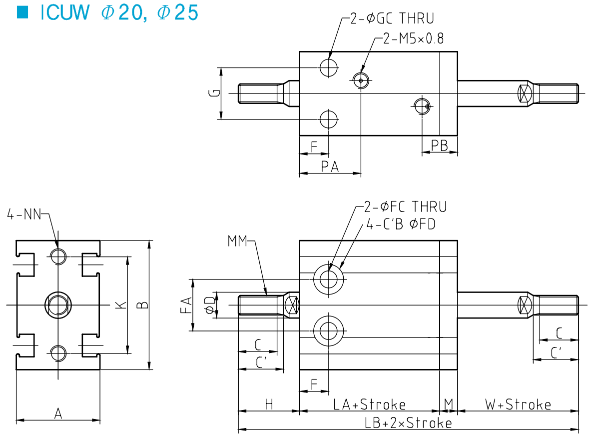
■ ICUW Φ10



■ ICUW Φ16



■ ICUW Φ20, Φ25



단위 unit:mm

I-D(mm)	A	B	C	C'	D	F	FA	FC	FD	H	K	G	GC	M	MM	NN	W	PA	PB	PC	PD	LA	LB
10	15	28	10		4	7	11	3.2	⌀6 DP5	16	18	9	7	6	M4X0.7	M3X0.5 DP5	16	16.5	15	1		35	73
16	20	34	11	12.5	6	7	14	4.3	⌀7.6 DP6.5	16	25	12	9	7.5	M5X0.8	M4X0.7 DP6	16	16.5	17.5			40	79.5
20	26	40	12	14	8	9	16	5.3	⌀9.3 DP8	19	30	16	12	9	M6X1.0	M5X0.8 DP8	19	19	20	4	8	44	91
25	32	50	15.5	18	10	10	20	5.3	⌀9.3 DP9	23	38	20	16	9	M8X1.25	M5X0.8 DP8	23	21.5	22	4.5	9	48	103

표준사양 Standard Specification

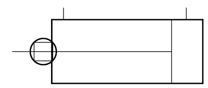
형식 Type	No Oil Supply
사용유체 Fluid	공기 Air
보증내압력 Bearing pressure	10.5kgf/㎠
최고사용압력 Max. set pressure	7kgf/㎠
주위온도 및 사용유체온도 Ambient & temperature for Working O	−10°C ~ +60°C
나사공차 Screw tolerance	2nd KS level
행정길이의 허용차 Allowance of stroke length	$^{+1.0}_{0}$
사용피스톤 속도 Working Piston Speed	50~500mm/s
쿠션 Cushion	Rubber cushion
로드끝단나사 Rod-end screw	수나사 male screw

실린더 표준 행정표 Standard Stroke Table of Cylinder

I-D(mm)	Standard stroke
⌀10	5,10,15,20,25,30
⌀16	5,10,15,20,25,30
⌀20	5,10,15,20,25,30,40,50
⌀25	5,10,15,20,25,30,40,50

표시기호 Notation

■ 회전방지형 복동 편로드 / double-actiong single-rod



형식표시방법 Indication of Model

ICUK 10 – S20 D 59C S1 A

- **ICUK**: 회전방지형 편박형 실린더 마그네트 쿠션 기본내장 / Basic built-in of double-acting double-rod, Thin type cylinder magnet, and cushion
- **10**: 튜브내경 / Inside diameter of Tube
  - 10-10mm
  - 16-16mm
  - 20-20mm
  - 25-25mm
- **S20**: 실린더 행정 표준행정표참조 / Cylinder Stroke Refer to table of standard stroke
- **D**: 작동방식 D:복동형 / working type Double-action type
- **59C**: 무기호:오토스위치 없음 / 오토스위치 종류-유접점 / None : no auto switch / kind of auto switch –Owned Contact Point

LY59C	Owned Contact Point
LY59B	No contact point
LY59A	No contact point

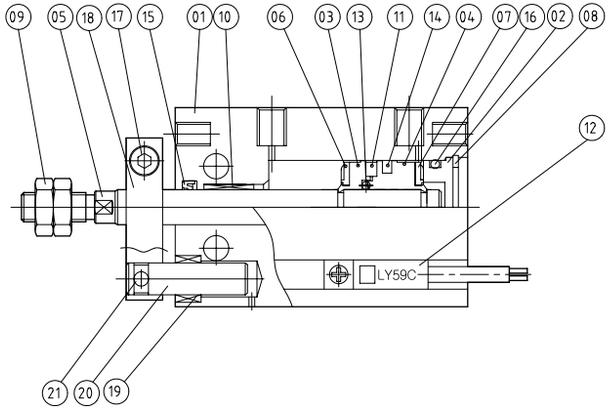
- **S1**: 무기호:오토스위치 없음 / None : no auto switch
  - S1 : 1EA
  - S2 : 2EA
  - S3 : 3EA
- **A**: 몸체사양 무기호:표준형 동계불가형:A / Body specification None: standard A Noaccept Copper-related Type :A

편박형 실린더 ICUK 시리즈 THIN-TYPE CYLINDER ICUK SERIES

내부구조도 Inside Structure Drawings

편로드 회전방지형 Standard Specification

■ ICUW Φ10, Φ16, Φ20, Φ25



부품리스트 Parts List

No	Name	materials	Remarks
1	BODY TUBE	A6063	
2	HEAD COVER	A6063	
3	PISTON-A	A2024	⌀6,⌀10 BRASS
4	PISTON-B	A2024	
5	ROD	NBR	
6	DEMPER-1	URETHANE	
7	DEMPER-2	URETHANE	
8	SNAP RING	SCM4	
9	LOCKET NUT	S20C	
10	DU BUSH	DU	
11	MAGNET	STEEL	

No	Name	materials	Remarks
12	AUTO S/W		
17	LOCK BOLT	SCM4	
18	LOCK PLATE	A6063	
19	GUIDE BUSH	CU	
20	GUIDE PIN	SUS	
21	SET BOLT	SCM4	

페킹 리스트 Packing List

No	Name	materials	Inside-diameter of Tube(mm)			
			⌀10	⌀16	⌀20	⌀25
13	ROD O-RING	NBR	⌀2.8*0.7	S5	S6	S8
14	PISTON PACKING	NBR	PSD10	PSD16	OPA20	OPA25
15	ROD PACKING	NBR	DYR 4K	DYR 6K	DYR 10SK	DYR 12
16	COVER O-RING	NBR	S10	S14	S18	S22

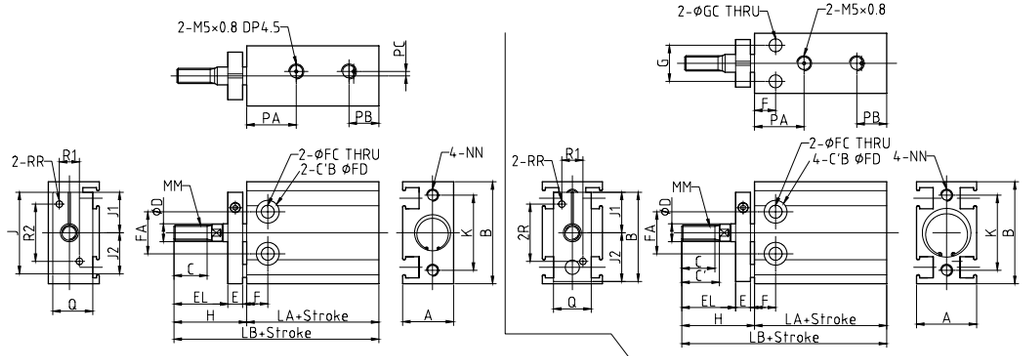
편박형 실린더 ICUK 시리즈 THIN-TYPE CYLINDER ICUK SERIES

복동/편로드 회전방지형 Double-acting Type/Single-rod for protecting revolution

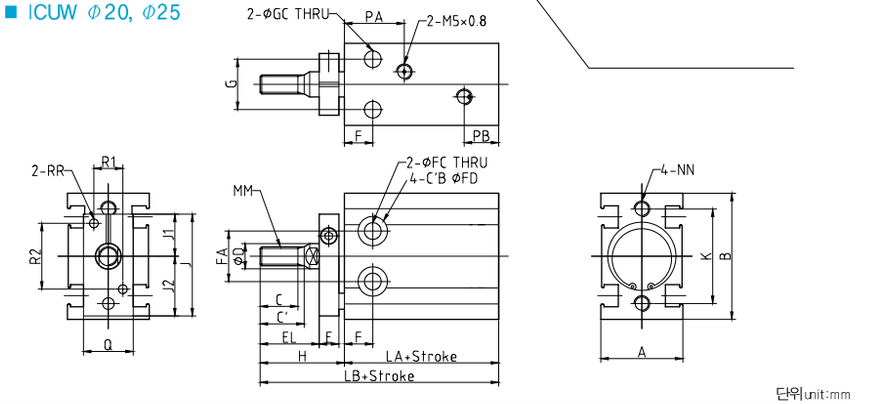
복동/편로드 회전방지형 Double-acting Type/Single-rod for protecting revolution

■ ICUW Φ10

■ ICUW Φ16



■ ICUW Φ20, Φ25



단위 unit:mm

I-D(mm)	A	B	C	C'	D	F	FA	FC	FD	H	K	G	GC	MM	NN	PA	PB	PC	PD	LA	LB
10	15	28	10		4	7	11	3.2	⌀6 DP5	21	18	9	7	M4X0.7	M3X0.5 DP5	16.5	9	1		35	56
16	20	34	11	12.5	6	7	14	4.3	⌀7.6 DP6.5	26	25	12	9	M5X0.8	M4X0.7 DP6	16.5	10			40	66
20	26	40	12	14	8	9	16	5.3	⌀9.3 DP8	29	30	16	12	M6X1.0	M5X0.8 DP8	19	11	4	8	44	73
25	32	50	15.5	18	10	10	20	5.3	⌀9.3 DP9	33	38	20	16	M8X1.25	M5X0.8 DP8	21.5	13	4.5	9	48	81

I-D(mm)	E	EL	J	J1	J2	Q	R1	R2	RR
10	8	12	22	10.5	11.5	12	7	15	M3X0.5
16	8	17	28	12.5	15.5	13	6	18	M4X0.7
20	8	20	23	13.5	19.5	16	8	20	M4X0.7
25	10	22	43.5	19	24.5	20	10	28	M5X0.8

편박형 실린더 ICUKW 시리즈 THIN-TYPE CYLINDER ICUKW SERIES

Ø10, Ø16, Ø20, Ø25

표준사양 Standard Specification

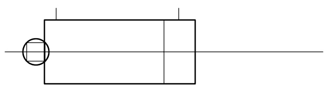
형식 Type	No Oil Supply
사용유체 Fluid	공기 Air
보증내압력 Bearing pressure	10.5kgf/㎠
최고사용압력 Max. set pressure	7kgf/㎠
주위온도및사용유체온도 Ambient&temperature for Working Oil	-10°C ~ +60°C
나사공차 Screw tolerance	KS2급 2nd KS level
행정길이의 허용차 Allowance of stroke length	$^{+1.0}_{0}$
사용피스톤 속도 Working Piston Speed	50~500mm/s
쿠션 Cushion	Rubber cushion
로드끝단나사 Rod-end screw	수나사 male screw

실린더 표준 행정표 Standard Stroke Table of Cylinder

I-D(mm)	Standard stroke
ø10	5,10,15,20,25,30
ø16	5,10,15,20,25,30
ø20	5,10,15,20,25,30,40,50
ø25	5,10,15,20,25,30,40,50

표시기호 Notation

■ 회전방지형 복동 양로드 / double-actiong single-rod



형식표시방법 Indication of Model

CUK 10 - S20 D 59C S1 A

- **CUK**: 회전방지형 양로드 편박형 마운트 실린더 마그네트 쿠션 기본내장 / Basic built-in of double-acting double-rod, Thin type cylinder magnet, and cushion
- **10**: 튜브내경 Inside diameter of Tube
  - 10-10mm
  - 16-16mm
  - 20-20mm
  - 25-25mm
- **S20**: 실린더 행정 표준행정표참조 / Cylinder Stroke Refer to table of standard stroke
- **D**: 작동방식 D: 복동형 / working type Double-action type
- **59C**: 무기호: 오토스위치 없음 / 오토스위치 종류-유접점 / None : no auto switch / kind of auto switch -Owned Contact Point

LY59C	Owned Contact Point
LY59B	No contact point
LY59A	No contact point

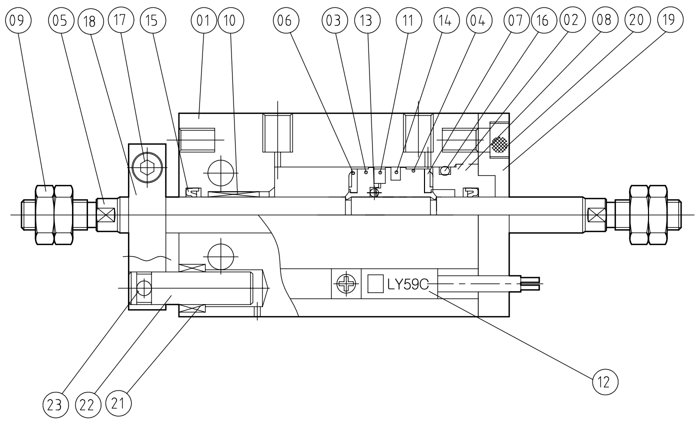
- **S1**: 무기호: 오토스위치없음 / None : no auto switch / S1 : 1EA / S2 : 2EA / S3 : 3EA
- **A**: 몸체사양 / 무기호: 표준형 / 동계불가형: A / Body specification / None: standard / A Noaccept Copper-related Type : A

편박형 실린더 ICUKW 시리즈 THIN-TYPE CYLINDER ICUKW SERIES

내부구조도 Inside Structure Drawings

양로드 회전방지형 Standard Specification

■ ICUKW Ø10, Ø16, Ø20, Ø25



부품리스트 Parts List

No	Name	materials	Remarks
1	BODY TUBE	A6063	
2	HEAD COVER	A6063	
3	PISTON-A	A2024	ø6,ø10 BRASS
4	PISTON-B	A2024	
5	ROD	NBR	
6	DEMPER-1	URETHANE	
7	DEMPER-2	URETHANE	
8	SNAP RING	SCM4	
9	LOCKET NUT	S20C	
10	DU BUSH	DU	
11	MAGNET	STEEL	

No	Name	materials	Remarks
12	AUTO S/W		
17	LOCK BOLT	SCM4	
18	LOCK PLATE	A6063	
19	RETAINER	A6063	
20	BOLT	SCM4	
21	BUSH	CU	
22	GUIDE PIN	SUS	
23	SET BOLT	SCM4	

페킹 리스트 Packing List

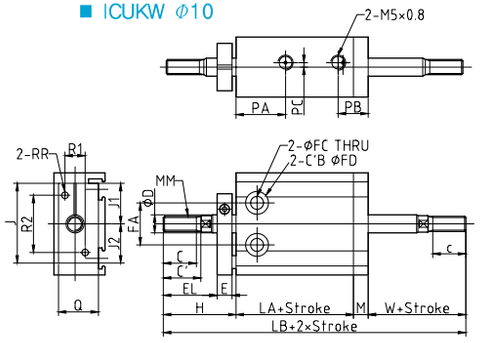
No	Name	materials	Inside-diameter of Tube(mm)			
			ø10	ø16	ø20	ø25
13	ROD O-RING	NBR	ø2.8*0.7	S5	S6	S8
14	PISTON PACKING	NBR	PSD10	PSD16	OPA20	OPA25
15	ROD PACKING	NBR	DYR 4K	DYR 6K	DYR 10SK	DYR 12
16	COVER O-RING	NBR	S10	S14	S18	S22

편박형 실린더 ICUKW 시리즈 THIN-TYPE CYLINDER ICUKW SERIES

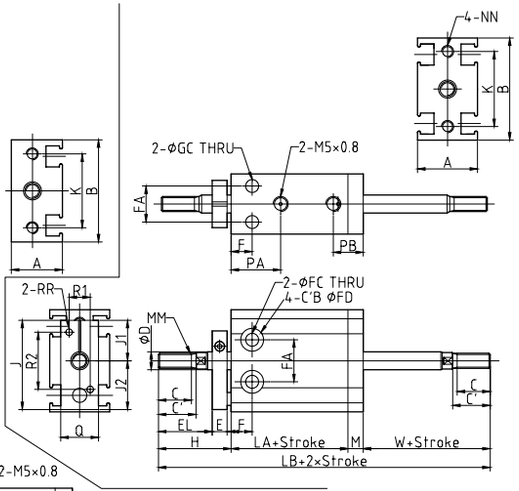
복동 양로드 회전방지형 Double-acting Type Double-rod for protecting revolution

복동/양로드 회전방지형 Double-acting Type/Double-rod for protecting revolution

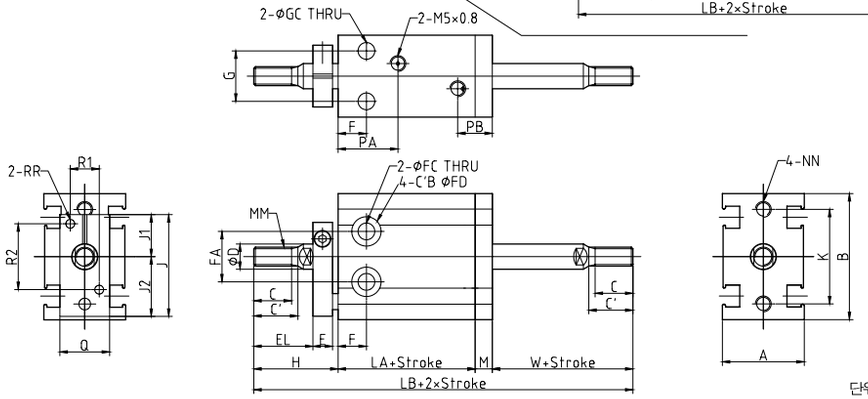
■ ICUKW Φ10



■ ICUKW Φ16



■ ICUKW Φ20, Φ25



단위 unit:mm

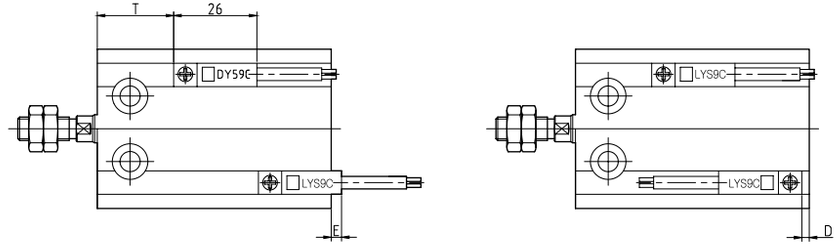
I-D(mm)	A	B	C	C'	D	F	FA	FC	FD	H	K	G	GC	M	MM	NN	W	PA	PB	PC	PD	LA	LB
10	15	28	10		4	7	11	3.2	⌀6 DP5	21	18	9	7	6	M4X0.7	M3X0.5 DP5	16	16.5	15	1		35	78
16	20	34	11	12.5	6	7	14	4.3	⌀7.6 DP6.5	26	25	12	9	7.5	M5X0.8	M4X0.7 DP6	16	16.5	17.5			40	89.5
20	26	40	12	14	8	9	16	5.3	⌀9.3 DP8	29	30	16	12	9	M6X1.0	M5X0.8 DP8	19	19	20	4	8	44	101
25	32	50	15.5	18	10	10	20	5.3	⌀9.3 DP9	33	38	20	16	9	M8X1.25	M5X0.8 DP8	23	21.5	22	4.5	9	48	113

I-D(mm)	E	EL	J	J1	J2	Q	R1	R2	RR
10	8	12	22	10.5	11.5	12	7	15	M3X0.5
16	8	17	28	12.5	15.5	13	6	18	M4X0.7
20	8	20	23	13.5	19.5	16	8	20	M4X0.7
25	10	22	43.5	19	24.5	20	10	28	M5X0.8

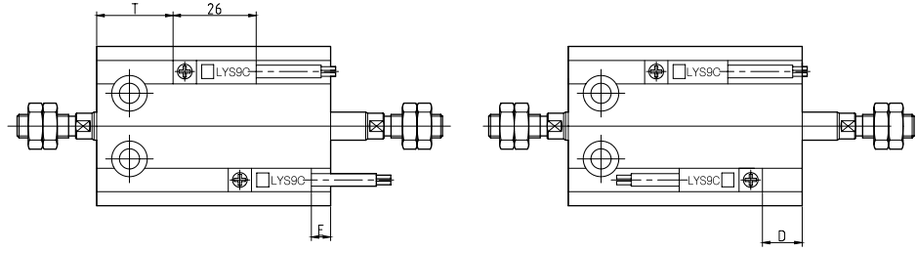
편박형 실린더 ICU 시리즈 THIN-TYPE CYLINDER ICU SERIES

오토스위치 부착 위치 Atuo switch-mounted Position

편로드형/오토스위치 부착 Single-rod type/ Atuo switch-mounted



양로드형/오토스위치 부착 Double-rod type/ Atuo switch-mounted



단위 unit:mm

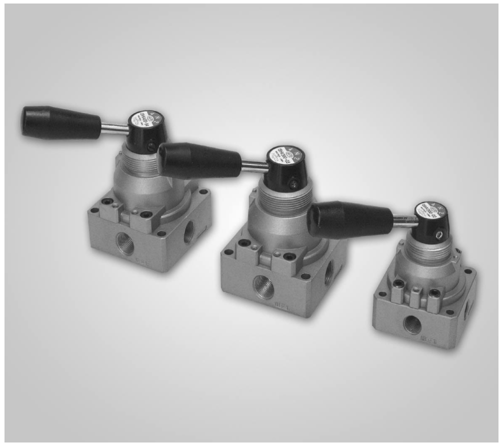
I-D(mm)	Double-acting Single-rod type			Double-acting Double-rod type		
	T	D	E	T	D	E
10	13	-1	-7	13	5	-1
16	13	0.5	-6	13	8	1.5
20	16	1	-4.5	16	10	4.5
25	19.5	3	-3	19.5	12	6

MEMO

핸드밸브 ISHV 시리즈
HAND VALVE ISHV SERIES

핸드밸브 ISHV 시리즈 HAND VALVE ISHV SERIES

형식 및 사양 Type/Specification



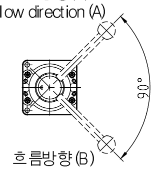
표준사양 Standard Specification

형식 Type	공기압형 Air Pressure type
사용유체 Fluid	공기 Air
보증내압력 Bearing pressure	15kgf/㎠
최고사용압력 Max. set pressure	9.9kgf/㎠
주위온도 및사용유체온도 Ambient&temperature for Working Oi	5°C ~ 50°C
조작각도Control angle	90°

핸들조작 각도와 흐름 방향 Handle control angle/ Flow direction

■ 2포지션 Position 2

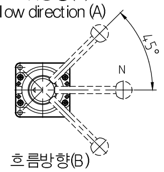
흐름방향(A)
Flow direction (A)



흐름방향(B)
Flow direction (B)

■ 3포지션 Position 3

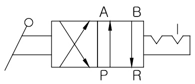
흐름방향(A)
Flow direction (A)



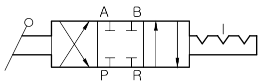
흐름방향(B)
Flow direction (B)

표시기호 Notation

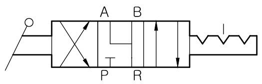
■ 2포지션 / Position 2



■ 크로스 센터 / Cross Center



■ 이그저스트 센터 / Exist Center



형식표시방법 Indication of Model

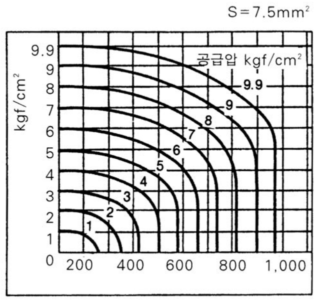
ISHV — 2 — 0 — 0 — 02

- ISHV: 핸드밸브 Hand Valve
- 2: 바디규격
  - 2:1/4기준
  - 3: 3/8기준
  - 4: 1/2기준
  - Spec of Body
  - 2: 1/4 standard
  - 3: 3/8 standard
  - 4: 1/2 standard
- 0: 배관/부착 방법
  - 기호: 0
  - ★배관방향:횡방향
  - ★부착방법:몸체, 판넬
  - Pipe Laying / Mounting type
  - notation :0
  - Pipe direction type : breadthwise
  - Mounting type: Body, Panel
- 0: 심볼
  - ★0:3 포지션(크로스 센터)
  - ★1:3 포지션(이그저스트 센터)
  - ★2:2 포지션
  - symbol
  - 0 : 3position (Cross Center)
  - 1 : 3position (Exist Center)
  - 2 : 2position
- 02: 접속구경Connection Apeture
  - 02: Rc(PT):1/4
  - 03: Rc(PT):3/8
  - 04: Rc(PT):1/2

핸드밸브 ISHV 시리즈 HAND VALVE ISHV SERIES

외형치수도 Outside Dimensions Drawings

ISHV200



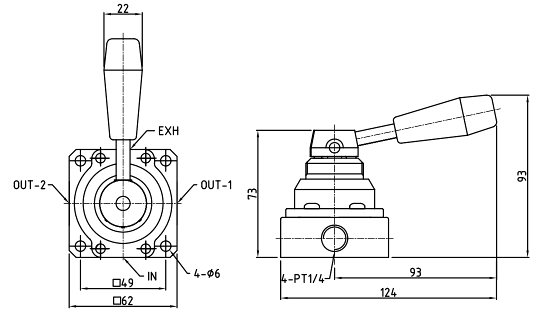
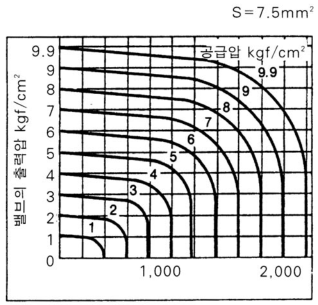


그림 1

ISHV300



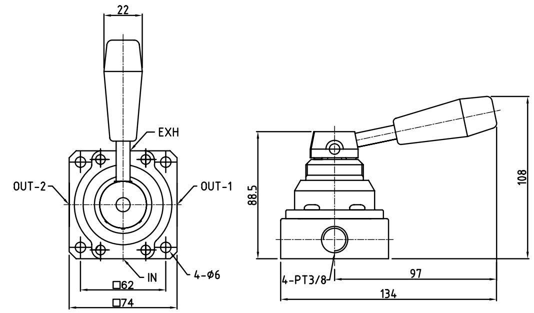
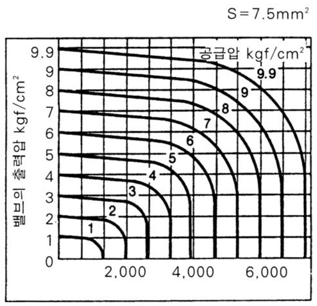


그림 2

ISHV400



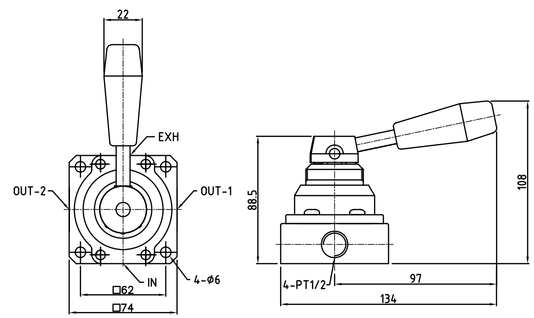


그림 3

MEMO

푸트 밸브
FOOT VALVE IFT SERIES

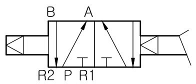
ISTC CO.,LTD

푸트 밸브 IFT 3000 시리즈 FOOT VALVE IFT 3000 SERIES

형식 및 사양 Type/Specification

표시기호 Notation

■ 2포지션 / Position 2



표준사양 Standard Specification

형식 Type	공기압형 Air Pressure type
사용유체 Fluid	공기 Air / 불활성가스 Inertness gas
보증내압력 Bearing pressure	10kgf/㎠
최고사용압력 Max. set pressure	7kgf/㎠
주위온도 및 사용유체온도 Ambient&temperature for Working Oil	5°C ~ 60°C
관접속 구경 Connection Aperture to pipe	PT1/4
6bar시 통과유량 Passing Oil quantity when 6 bar	1100ℓ/mm

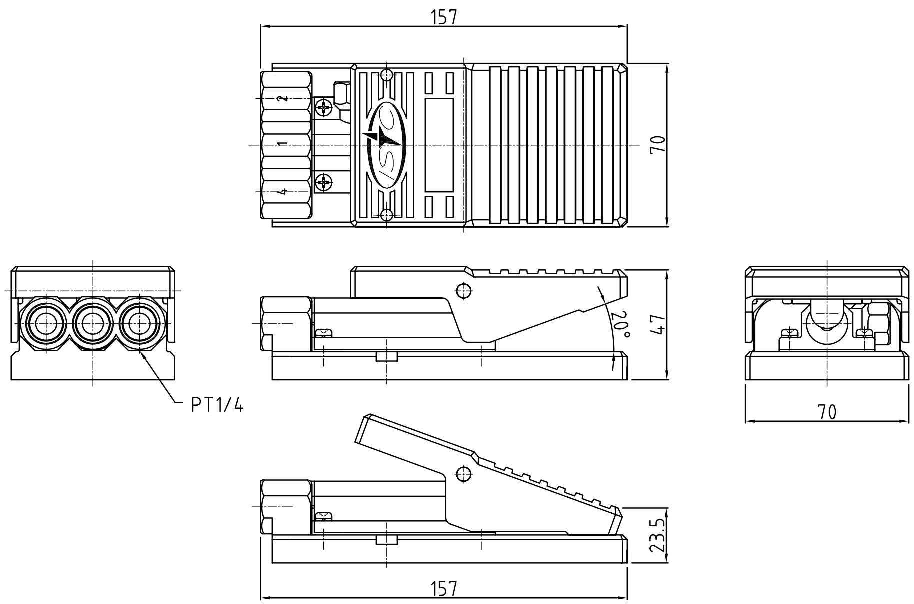
형식 표시 방법 Indication of Model

IFT — 3000 — S

- IFT: 제품 기종 Kinds
- 3000: 바디규격 : ISV3000 5PORT 적용 / Spec of body : ISV3000 5PORT application / 접속구경 : G1/4 / Connection Aperture : G1/4
- S: 싱글 Single

※ISO 표기: P-1, B-2, R2-3, A-4, R1-5 /ISO mark: P-1, B-2, R2-3, A-4, R1-5

IFT3000 외형치수도 IFT3000 Outside Dimensions Drawing

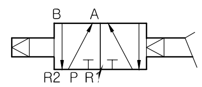


푸트 밸브 IFT 5000 시리즈 FOOT VALVE IFT 5000 SERIES

형식 및 사양 Type/Specification

표시기호 Notation

■ 2포지션 / Position 2



표준사양 Standard Specification

형식 Type	공기압형 Air Pressure type
사용유체 Fluid	공기 Air / 불활성가스 Inertness gas
보증내압력 Bearing pressure	10kgf/㎠
최고사용압력 Max. set pressure	7kgf/㎠
주위온도 및 사용유체온도 Ambient&temperature for Working Oil	5°C ~ 60°C
관접속구경 Connection Aperture to pipe	PT3/8
6bar시 통과유량 Passing Oil quantity when 6 bar	2370ℓ/mm

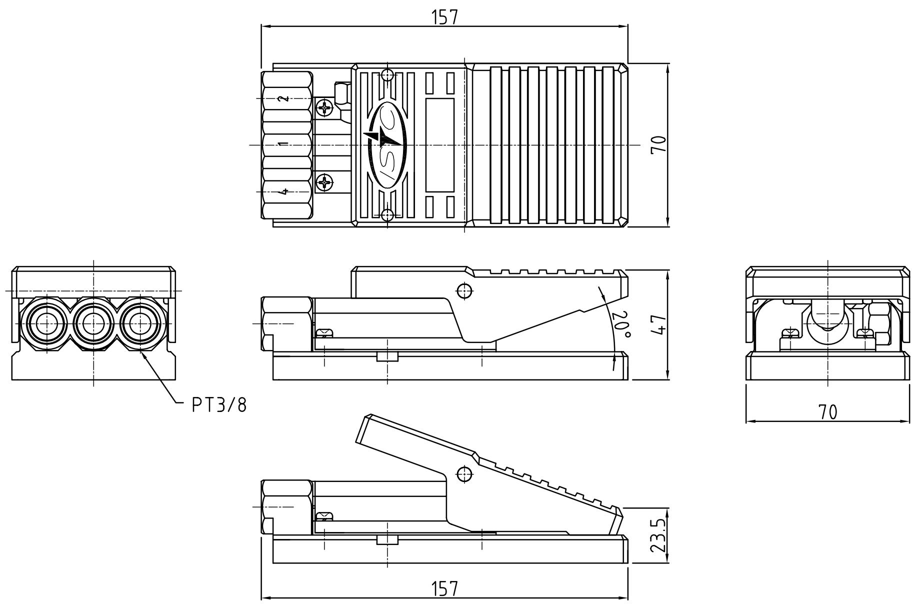
형식 표시 방법 Indication of Model

IFT — 5000 — S

- IFT: 제품 기종 Kinds
- 5000: 바디규격 : ISV5000 5PORT 적용 / Spec of body : ISV5000 5PORT application / 접속구경 : G3/8 / Connection Aperture : G3/8
- S: 싱글 / Single

※ISO 표기: P-1, B-2, R2-3, A-4, R1-5 /ISO mark: P-1, B-2, R2-3, A-4, R1-5

IFT5000 외형치수도 IFT5000 Outside Dimensions Drawing

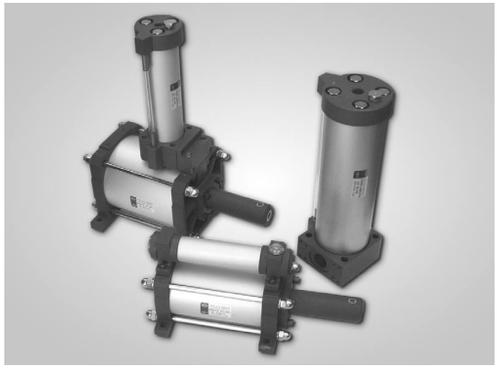


MEMO

부스터 실린더 IBC 시리즈
BOOSTER CYLINDER IBC SERIES

부스터 실린더 IBC 시리즈 BOOSTER CYLINDER IBC SERIES

형식 및 사양 Type/Specification



표준사양 Standard Specification

분류 kinds \ 기종 Model	IBC/P	IBC/P
증압비 Pressure ratio	11:1	25:1
토출유량 Flow of Emitting	70cc	70cc
최고 이론 토출압력 Max.theoretical Emitting Flow	108bar	247bar
형식 Type	공기압형 Air Pressure Type	
사용유체 Fluid	터빈유 Turbine Oil, 유압작동유 Working oil of Oil pressure	
내 압력 Bearing Pressure	10bar	
최고사용압력 Max. Working Pressure	3~7bar	
주변 및 사용온도 Ambient temperature & working oil temperature	5°C ~ +60°C	

*상기사양은 성능개선 을위해 예고 없이 변경 될수 있습니다.
*Upper specification can be changed to improve the function without informing.

사용상 주의사항 Attention

1. 부스타 설치시 항상 수평을 유지시킨다.
   -기울시 호흡구멍으로 오일이 새어 나온다.
2. 지정된 작동유를 사용한다.
3. 부스타는 실린더보다 높이 설치한다.
   -오일 주입시 쉽게 에어를 뺄수있다.
   -실린더가 부스타보다 높을경우 오일 주유후 공기를 뺀 후에 실린더를 설치한다.
4. 부스타의 유량을 확인하며 주입한다.
   -오일 레벨게이지 상태를 중앙일때 중단한다.
   -오일이 과다주입시 실린더 작동시 튀어나오는 현상이 발생한다.
5. 유압 호스는 사용압력 보다 높은것을 준비한다.
   ex)메인 실린더 압력을 140 bar 을 사용시 유압호스는 140 bar를견디는 호스를 적용한다.
6. 사용시 1분당6회 이하 사용한다.
   -사용빈도수가 많을 시 충분한 성능발휘를 할수 없다.

1. When installing Booster, it should be level.
   -If it inclines one side, oil is leaked through breath hole.
2. Should use the indicated working oil.
3. Booster should be installed higher than cylinder.
   -Can deflate air, in case of supplying oil.
   -In case cylinder is installed higher than booster, supply oil, deflate air and then install cylinder.
4. Confirm the flow of booster and supply oil.
   -Stop supplying oil when the oil level gauge is located in middle.
   -When oil supply is excessive, splash is happened in case of working cylinder.
5. Hydraulic hose pressure should be higher than working pressure.
   ex) When main cylinder pressure is 140 bar, hydraulic hose should endure the number.
6. Use below 6 times per minute.
   -When use it too often, it can't work well

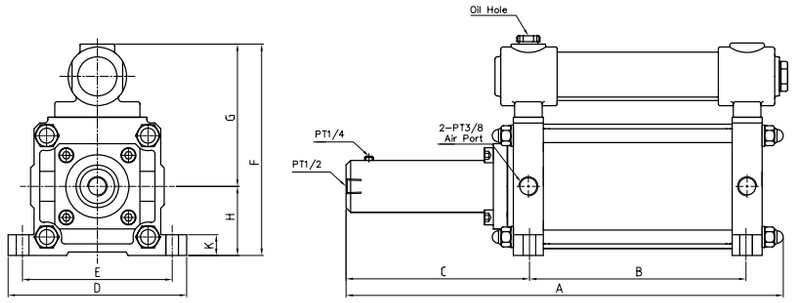
형식 표시 방법 Indication of Model

IBC	B	150	11
제품기종 Model	예압식:P Advanced pressure type:P 직압식:B Direct pressure type:B	튜브내경 Inside-diameter of Tube 100-100mm 150-150mm	11=11:1 25=25:1

부스터 실린더 IBC 시리즈 BOOSTER CYLINDER IBC SERIES

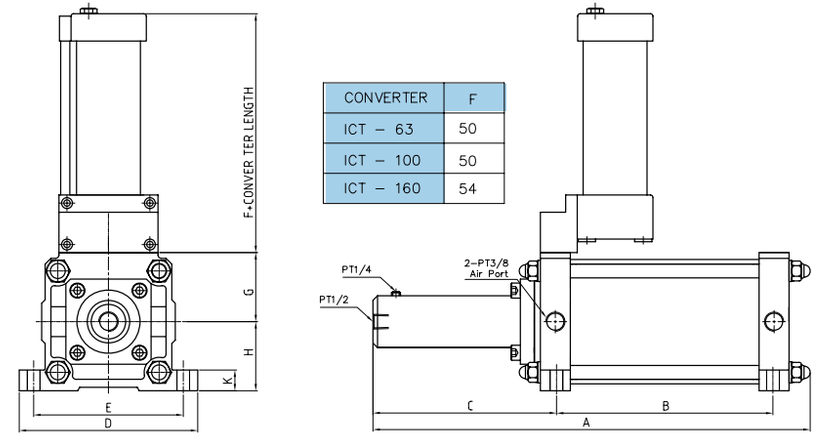
직압식 외형 치수도 Outside Dimensions Drawing of Direct pressure type

직압식 외형 치수도 Outside Dimensions Drawing of Direct pressure type



MODEL NO	A	B	C	D	E	F	G	H	K
IBC-B-100	378	188	160	155	130	184	124	60	18
IBC-B-150	378	188	160	220	190	240	150	90	18

예압식 외형 치수도 Outside Dimensions Drawing of Advanced pressure type



CONVERTER	F
ICT - 63	50
ICT - 100	50
ICT - 160	54

MODEL NO	A	B	C	D	E	G	H	K
IBC-B-100	378	188	160	155	130	124	60	18
IBC-B-150	378	188	160	220	190	150	90	18

MEMO

하이드로 컨버터 유니트 ICT 시리즈
HYDRO CONVERTER UNIT ICT SERIES

ISTC CO.,LTD

하이드로 컨버터 유니트 ICT 시리즈
HYDRO CONVERTER UNIT ICT SERIES
형식 및 사양 Type/Specification

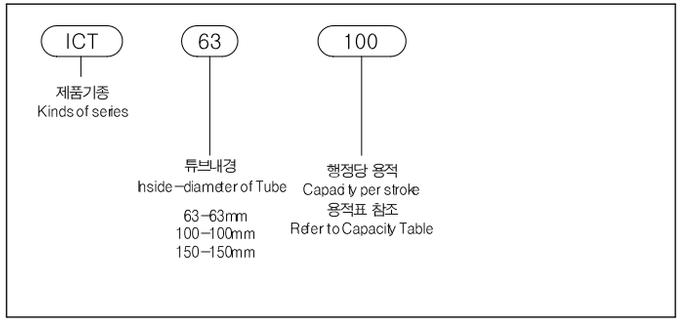
표준사양 Standard Specification

형식 Type	공기압형 Air Pressure type
사용유체 Fluid	터빈유 Turbine oil, 유압작동유 Working oil of Oil pressure
내 압력 Bearing Pressure	10kgf/㎠
사용압력 Working Pressure	3~7kgf/㎠
주변및사용온도 Ambient temperature& Working oil temperature	5°C ~ +50°C
내경규격 Inside-diameter (Spec)	⌀63,⌀100,⌀160
안전속도 Safety Speed	200mm/s

유효 행정별 용적 Effective capacity of each stroke(CC)

I-D(mm) \ stroke(mm)	50	100	200	300	400	500	600	700	800	Max. Flow
⌀63	150	300	600	890	1190	1480				36
⌀100		750	1510	2260	3010	3770	4520	3770	4520	88
⌀160			3660	5490	7320	9150	10980	12810	14640	217

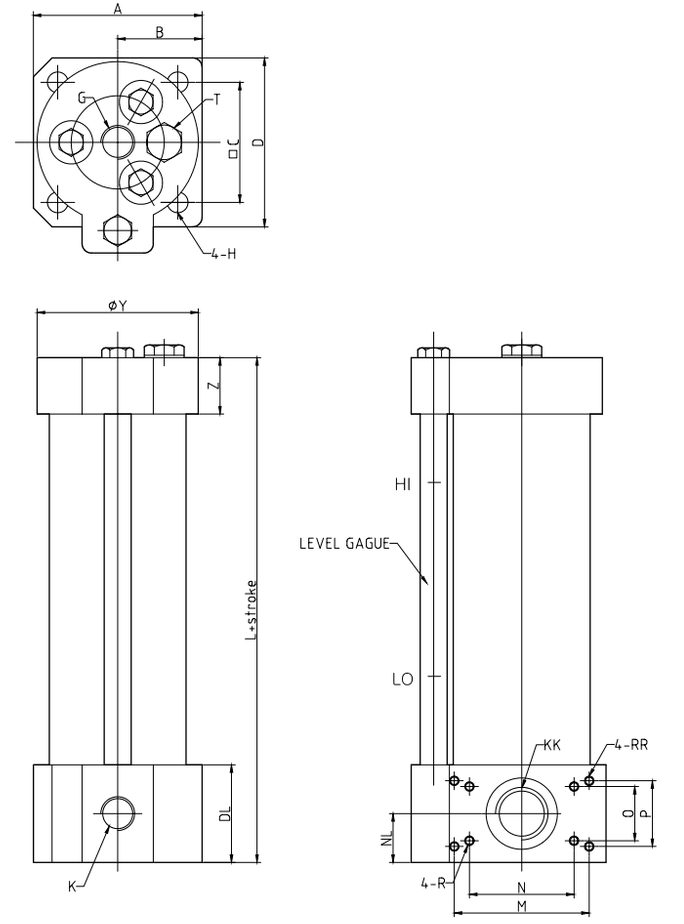
형식 표시 방법 Indication of Model



하이드로 컨버터 유니트 ICT 시리즈
HYDRO CONVERTER UNIT ICT SERIES

외형치수도 Outside Dimensions Drawings

외형치수도 Outside Dimensions Drawing

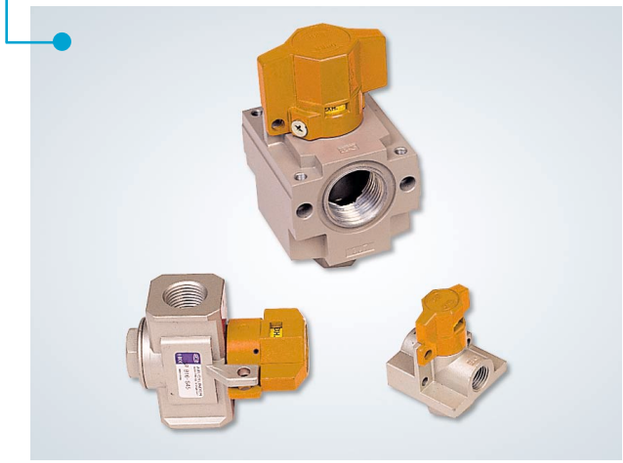


단위 unit:mm

I-D(mm)	A	D	□C	B	T(PT)	G(PT)	⌀H	ØY	DL	Z	L	M	K	KK	N	O	P	NL	R	RR
63	88	88	64	45	PT1/4	PT3/8	11	86	53	30	169		PT1/4	PT3/4	72		35	28		M5
100	125	125	92	65	PT3/8	PT1/2	13	125	61	32	183	72	PT1/4	PT1"	100	36	40	33	M5	M5
160	187	185	144	93	PT3/8	PT3/4	20		60	46			PT1/4	1-1/4				29		

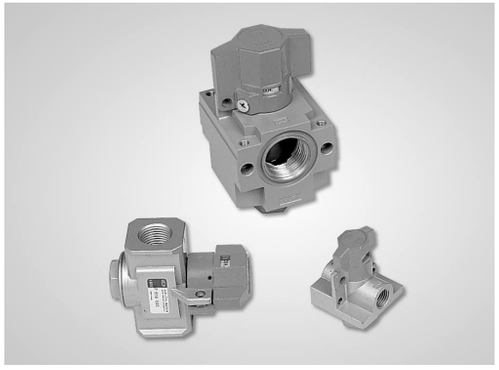
MEMO

잔압 배기 밸브 ISO 시리즈
REMAINED EXHAUST VALVE ISO SERIES

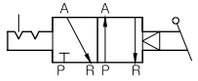


잔압 배기 밸브 ISO 시리즈 REMAINED EXHAUST VALVE ISO SERIES

형식 및 사양 Type/Specification



표시기호 Notation



형식 표시 방법 Indication of Model

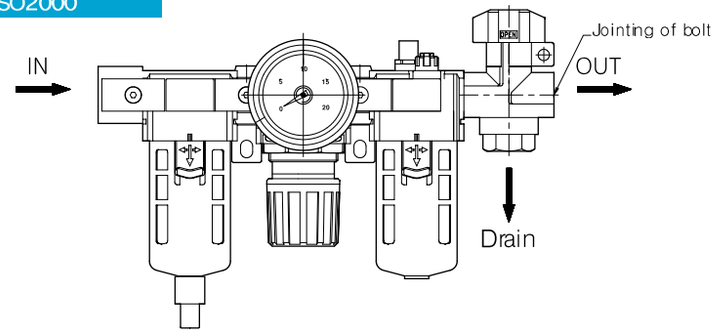
ISO	2000	01	1	1
3포트잔압 배기밸브 (SHUT OFF VALVE) Port 3remained exhaust valve	규격 Spec	접속구경 Connection Aperture	부속품(스페이스) Parts (Space)	HO2000용 브라켓 적용 볼트 Applied Bracket Bolt for HO 2000
	2000:PT1/4기준 standard 3000:PT3/8기준 standard 4000:PT1/2기준 standard 5000:PT1 기준 standard	01:Rc(PT)1/8 02:Rc(PT)1/4 03:Rc(PT)3/8 04:Rc(PT)1/2 06:Rc(PT)3/4 10:Rc(PT) 1	1(1/4)-ISC2000:S20 2(3/8)-ISC2000:S30 3(1/2)-ISC2000:S40	1:M4 *0.7 *12(2EA) 2:M4 *0.7 *25(2EA) 3:M4 *0.7 *65(2EA) 가스켓 1EA 포함 Including one Gasket

잔압 배기 밸브 ISO 시리즈 REMAINED EXHAUST VALVE ISO SERIES

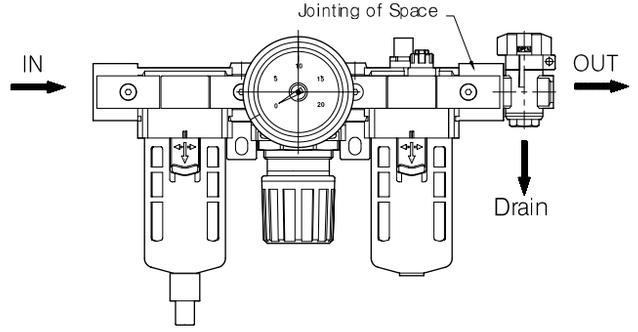
사양별 결합 방식 Jointing method each specification

조립방법 Assembly method

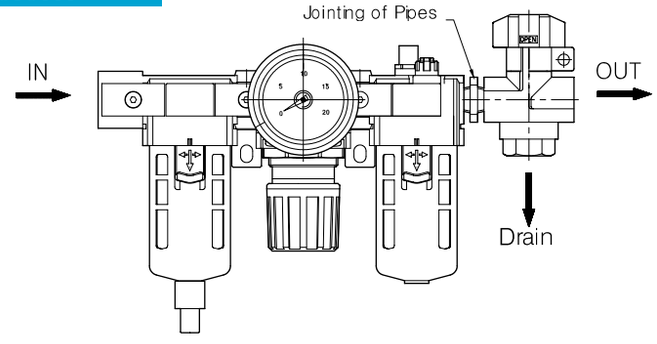
ISO2000



ISO2000, ISO3000, ISO4000



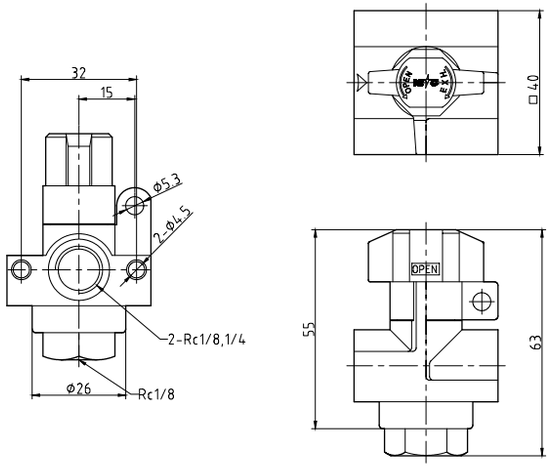
ISO5000



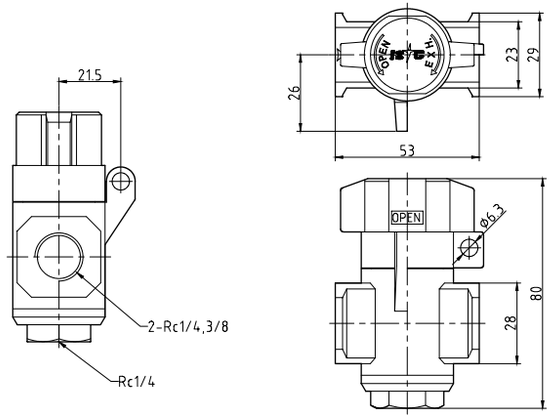
잔압 배기 밸브 ISO 시리즈 REMAINED EXHAUST VALVE ISO SERIES

외형치수도 Outside Dimensions Drawings

ISO2000



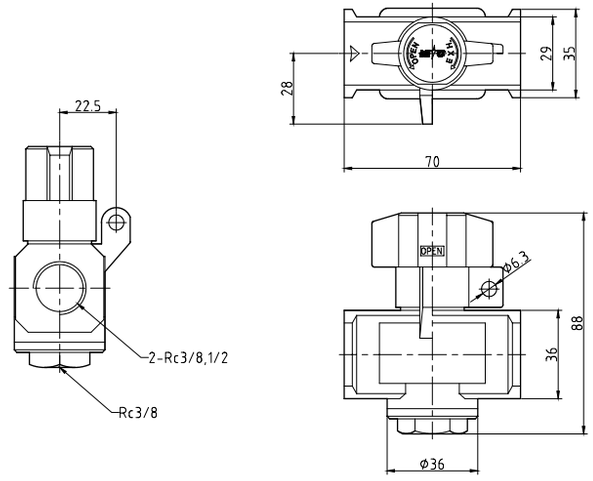
ISO3000



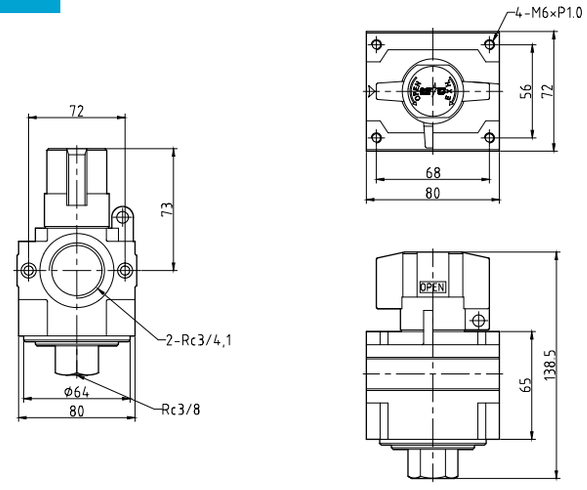
잔압 배기 밸브 ISO 시리즈 REMAINED EXHAUST VALVE ISO SERIES

외형치수도 Outside Dimensions Drawings

ISO4000



ISO5000



MEMO

투웨이 밸브 IPA, IPW, IPS 시리즈
TWO-WAY VALVE IPA, IPW, IPS SERIES

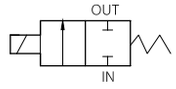
투웨이 밸브 IPA 시리즈 TWO-WAY VALVE IPA SERIES

형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPA	031G	24	D
기종 Type	규격 Spec	종류(50/60Hz) Kind	코일전원접속방법 Electrical Contact of coil
	031G:1/8 032G:1/4	24:DC24V 100:AC100~110V 200:AC200~220V	D:DIN CONNETOR

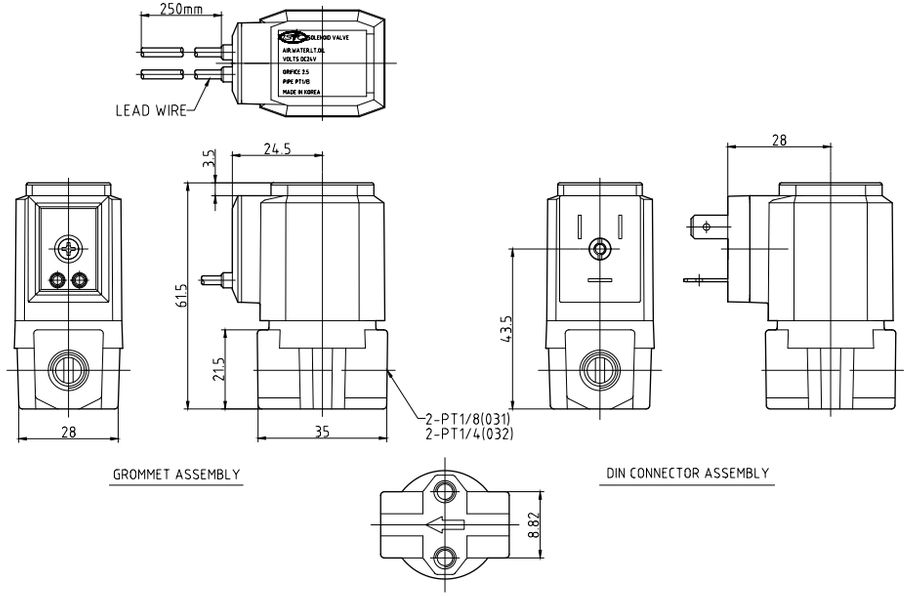
표시기호 Notation



특징 Feature

1. 그로메이트기본(Grommet Standard)
2. 작동방식(Direct Type)
3. 상시 닫힘형(Normally Closed)
4. 유체 사양에 따라 가스켓 변경가능
   (Can change gasket as fluid specification)

Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Air, Water, Oil, Inertness gas		Contact Volatage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~60℃			AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)			DC24V,12V	DC24V,50HZ
Working Pressure	0~7Kgf/㎠		Voltage Allowance Ratio	AC=±10%,DC=±5%	
Insulation Grade of coil	Class B		Consumption of power	AC:6W,DC:8W	
Electrical Contact of col	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc1/8,1/4		Gasket Material	NBR	SILICONE,EPDM FPM
Orifice Size	⌀2.5		Valve Weight		
Application	Water Distribution Pipes, Air conditioner, Welders, Water Filters, Medical Equipment, Compressors, Vacuum Packing				



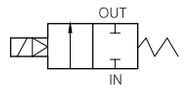
투웨이 밸브 IPW 시리즈 TWO-WAY VALVE IPW SERIES

형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPW	102G	24	D
기종 Type	규격 Spec	종류(50/60Hz) Kind	코일전원접속방법 Electrical Contact of coil
	102G:1/4 103G3/8	24:DC24V 100:AC100~110V 200:AC200~220V	D:DIN CONNETOR

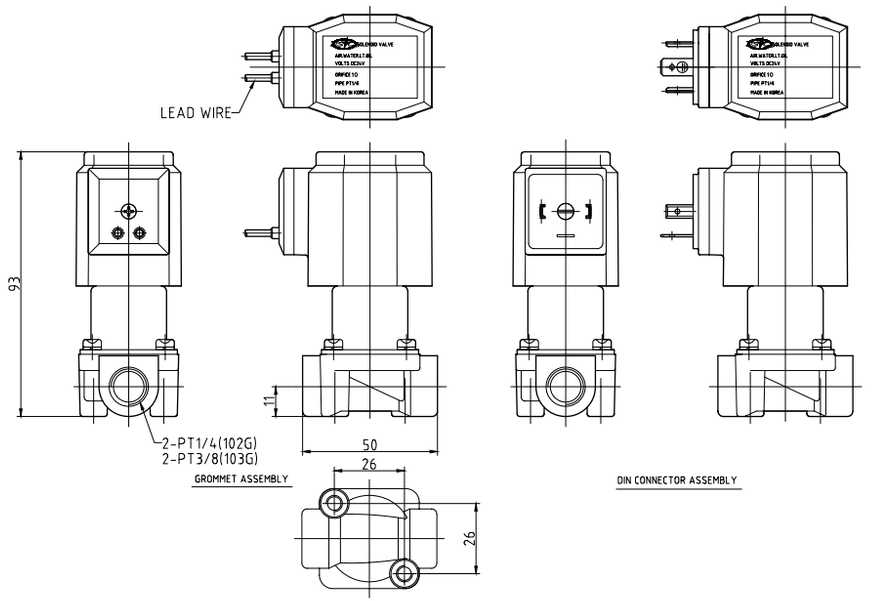
표시기호 Notation



특징 Feature

1. 그로메이트기본(Grommet Standard)
2. 다이아후렘방식(Diaphragm Type)
3. 상시 닫힘형(Normally Closed)
4. 유체 사양에 따라 가스켓 변경가능
   (Can change gasket as fluid specification)
5. 파이롯 작동식 장점 채택
   (Choose the advantage of Pilot working type)

Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Air, Water, Oil, Inertness gas		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~60℃	EPDM(100℃),FPM		AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)			DC24V,12V	DC24V,50HZ
Working Pressure	0~7Kgf/㎠	DC:0.3~5Kgf/㎠ VACUUM(Vacuum)	Voltage Allowance Ratio	AC=±10%,DC=±5%	
Insulation Grade of coil	Class B		Consumption of power	AC:18W,DC:12W	
Electrical Contact of col	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc1/4,3/8		Gasket Material	NBR DIAPHRAGM	EPDM FPM
Orifice Size	⌀10		Valve Weight		
Application	Water Distribution Pipes, Air conditioner, Industrial Cleaning Machine, Compressors, Vacuum Packing, Medical Equipment				



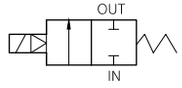
투웨이 밸브 IPW 시리즈 TWO-WAY VALVE IPW SERIES

형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPW	154G	24	D
기종 Type	규격 Spec	종류(50/60Hz) Kind	코일전원접속 방법 Electrical Contact of coil
	154G : 1/2	24 : DC24V 100 : AC100~110V 200 : AC200~220V	D : DIN CONNETOR

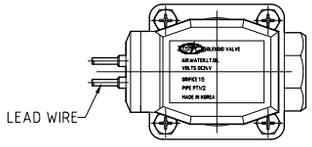
표시기호 Notation

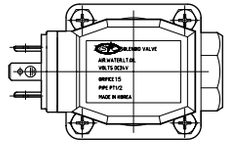


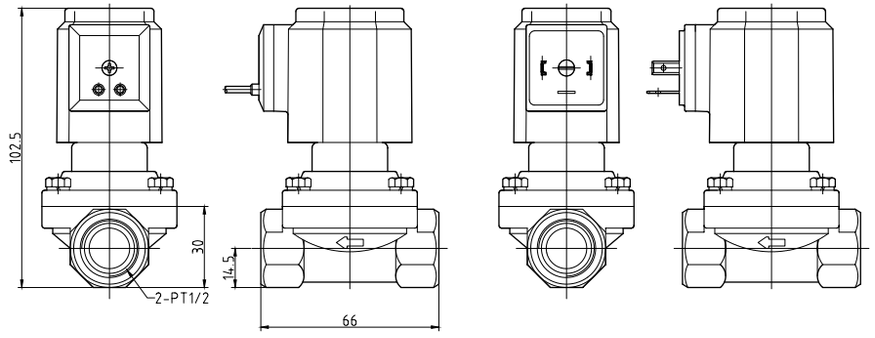
특징 Feature

1. 그로메이트 기본(Grommet Standard)
2. 다이아후렘방식(Diaphragm Type)
3. 상시 닫힘형(Normally Closed)
4. 유체 사양에 따라 가스켓 변경가능
   (Can change gasket as fluid specification)
5. 파이롯 작동식 장점 채택
   (Choose the advantage of Pilot working type)

Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Air, Water, Oil, Inertness gas		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~60℃	EPDM(100℃),FPM		AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)			DC24V,12V	DC24V,50HZ
Working Pressure	0~10Kgf/㎠	DC:0.3~10Kgf/㎠ VACUUM(진공)	Voltage Allowance Ratio	AC=±10%,DC=±5%	
Insulation Grade of coil	Class B		Consumption of power	AC:18W,DC:12W	
Electrical Contact of col	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc1/2		Gasket Material	NBR DIAPHRAGM	EPDM FPM
Orifice Size	⌀15		Valve Weight		
Application	Water Distribution Pipes, Air conditioner, Industrial Cleaning Machine, Water Filters, Vacuum Packing, Medical Equipment, Boiler				







GROMMET ASSEMBLY

DIN CONNECTOR ASSEMBLY

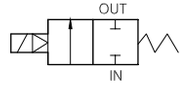
투웨이 밸브 IPW 시리즈 TWO-WAY VALVE IPW SERIES

형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPW	206G	24	D
기종 Type	규격 Spec	종류(50/60Hz) Kind	코일전원접속 방법 Electrical Contact of coil
	206G : 3/4	24 : DC24V 100 : AC100~110V 200 : AC200~220V	D : DIN CONNETOR

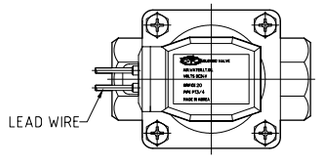
표시기호 Notation

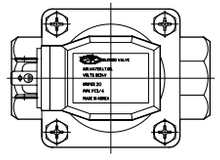


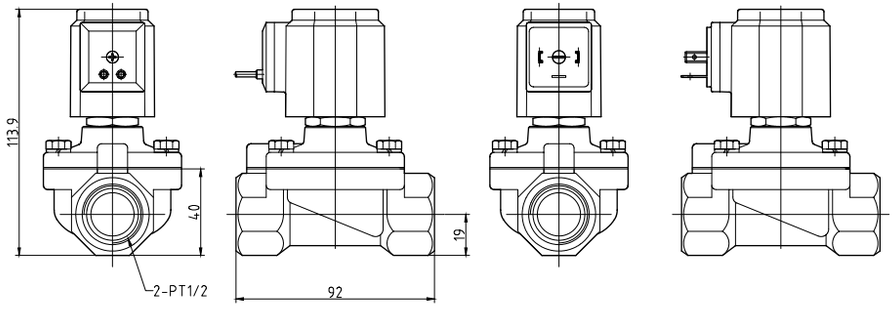
특징 Feature

1. 그로메이트 기본(Grommet Standard)
2. 다이아후렘방식(Diaphragm Type)
3. 상시 닫힘형(Normally Closed)
4. 유체 사양에 따라 가스켓 변경가능
   (Can change gasket as fluid specification)
5. 파이롯 작동식 장점 채택
   (Choose the advantage of Pilot working type)

Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Air, Water, Oil, Inertness gas		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~60℃	EPDM(100℃),FPM		AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)			DC24V,12V	DC24V,50HZ
Working Pressure	0~10Kgf/㎠	DC:0.3~10Kgf/㎠ VACUUM(Vacuum)	Voltage Allowance Ratio	AC=±10%,DC=±5%	
Insulation Grade of coil	Class B		Consumption of power	AC:18W,DC:12W	
Electrical Contact of col	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc3/4		Gasket Material	NBR DIAPHRAGM	EPDM FPM
Orifice Size	⌀20		Valve Weight		
Application	Water Distribution Pipes, Heaters, Industrial Cleaning Machine, Vacuum Packing, Medical Equipment, Boilers				







GROMMET ASSEMBLY

DIN CONNECTOR ASSEMBLY

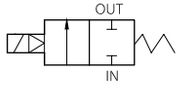
투웨이 밸브 IPW 시리즈 TWO-WAY VALVE IPW SERIES

형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPW	2510G	24	D
기종 Type	규격 Spec	종류(50/60Hz) Kind	코일전원접속 방법 Electrical Contact of coil
	2510G:1"	24:DC24V 100:AC100~110V 200:AC200~220V	D:DIN CONNETOR

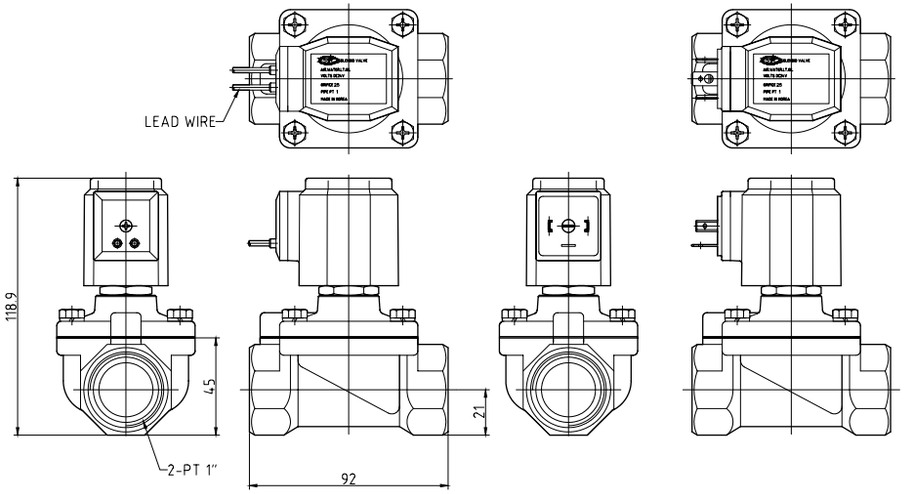
표시기호 Notation



특징 Feature

1. 그로메이트 기본(Grommet Standard)
2. 다이아후렘방식(Diaphragm Type)
3. 상시 닫힘형(Normally Closed)
4. 유체 사양에 따라 가스켓 변경가능
(Can change gasket as fluid specification)
5. 파이롯 작동식 장점 채택
(Chose the advantage of Pilot working type)

Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Air, Water, Oil, Inertness gas		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~60℃	EPDM(100℃),FPM		AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)			DC24V,12V	DC24V,50HZ
Working Pressure	0~10Kgf/㎠	DC:0.3~10Kgf/㎠ VACUUM(Vacuum)	Voltage Allowance Ratio	AC=±10%,DC=±5%	
Insulation Grade of coil	Class B		Consumption of power	AC:18W,DC:12W	
Electrical Contact of col	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc 1"		Gasket Material	NBR DIAPHRAGM	EPDM FPM
Orifice Size	⌀25		Valve Weight		
Application	Water Distribution Pipes, Air Conditioner, Industrial Cleaning Machine, Vacuum Packing, Medical Equipment, Boilers				



GROMMET ASSEMBLY

DIN CONNECTOR ASSEMBLY

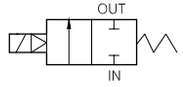
투웨이 밸브 IPW 시리즈 TWO-WAY VALVE IPW SERIES

형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPW	3212G	24	D
기종 Type	규격 Spec	종류(50/60Hz) Kind	코일전원접속 방법 Electrical Contact of coil
	3212G:1-1/4	24:DC24V 100:AC100~110V 200:AC200~220V	D:DIN CONNETOR

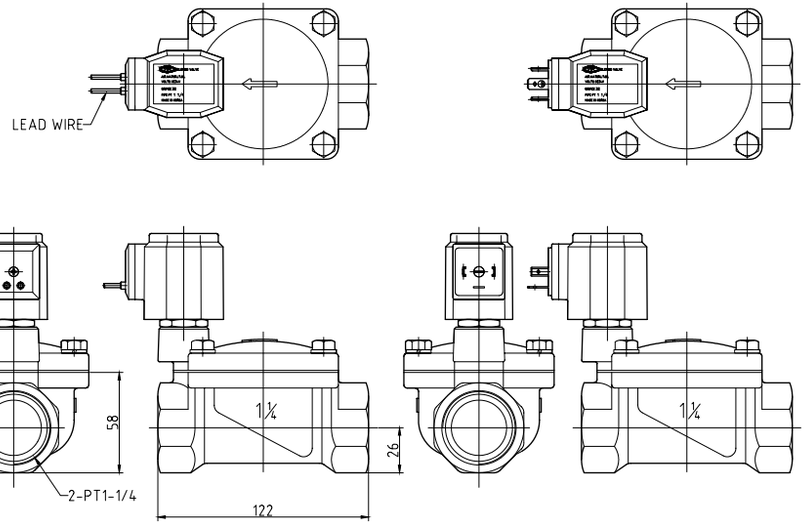
표시기호 Notation



특징 Feature

1. 그로메이트 기본(Grommet Standard)
2. 다이아후렘방식(Diaphragm Type)
3. 상시 닫힘형(Normally Closed)
4. 유체 사양에 따라 가스켓 변경가능
(Can change gasket as fluid specification)
5. 대용량 구조코일 소손 방지 구조
(Structure to protect big capacity structure coil from loss or break)

Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Air, Water, Oil, Inertness gas		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~60℃	EPDM(100℃),FPM		AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)			DC24V,12V	DC24V,50HZ
Working Pressure	0~10Kgf/㎠	DC:0.3~10Kgf/㎠ VACUUM(Vacuum)	Voltage Allowance Ratio	AC=±10%,DC=±5%	
Insulation Grade of coil	Class B		Consumption of power	AC:18W,DC:12W	
Electrical Contact of col	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc 1-1/4		Gasket Material	NBR DIAPHRAGM	EPDM FPM
Orifice Size	⌀32		Valve Weight		
Application	Water Distribution Pipes, Compressors, Industrial Cleaning Machine, Air Ventilation Systems, Medical Equipment, Boilers				



GROMMET ASSEMBLY

DIN CONNECTOR ASSEMBLY

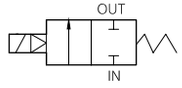
투웨이 밸브 IPW 시리즈 TWO-WAY VALVE IPW SERIES

형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPW (기종 Type) — 4014G (규격 Spec 4014G:1-1/2) — 24 (종류(50/60Hz) Kind 24:DC24V 100:AC100~110V 200:AC200~220V) — D (코일전원접속 방법 Electrical Contact of coil D:DIN CONNETOR)

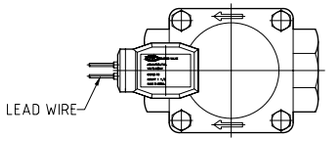
표시기호 Notation

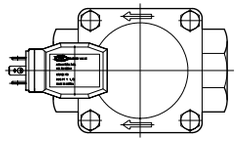


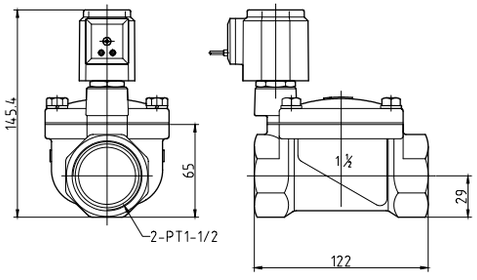
특징 Feature

1. 그로메이트 기본(Grommet Standard)
2. 다이아 후렘 방식(Diaphragm Type)
3. 상시 닫힘형(Normally Closed)
4. 유체 사양에 따라 가스켓 변경가능
   (Can change gasket as fluid specification)
5. 대용량 구조 코일 소손 방지 구조
   (Structure to protect big capacity structure coil from loss orbreak)

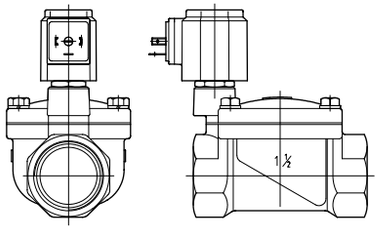
Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Air, Water, Oil, Inertness gas		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~60℃	EPDM(100℃),FPM		AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)			DC24V,12V	DC24V,50HZ
Working Pressure	0.3~10Kgf/㎠		Voltage Allowance Ratio	AC=±10%,DC=±5%	
Insulation Grade of coil	Class B		Consumption of power	AC:18W,DC:12W	
Electrical Contact of coil	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc 1-1/2		Gasket Material	NBR DIAPHRAGM	EPDM FPM
Orifice Size	⌀40		Valve Weight		
Application	Water Distribution Pipes, Compressors, Industrial Cleaning Machine, Air Ventilation Systems, Heaters, Boilers				







GROMMET ASSEMBLY



DIN CONNECTOR ASSEMBLY

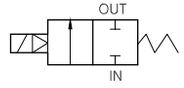
투웨이 밸브 IPW 시리즈 TWO-WAY VALVE IPW SERIES

형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPW (기종 Type) — 5020G (규격 Spec 5020G-2) — 24 (종류類(50/60Hz) Kind 24:DC24V 100:AC100~110V 200:AC200~220V) — D (코일전원접속 방법 Electrical Contact of coil D:DIN CONNETOR)

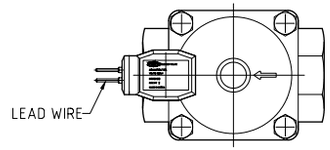
표시기호 Notation

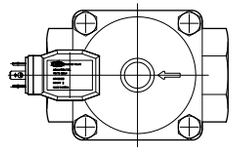


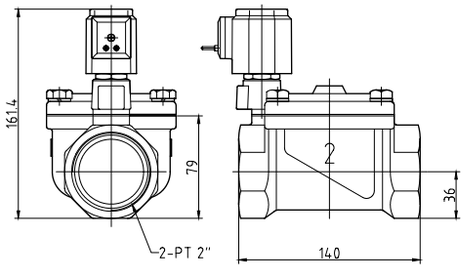
특징 Feature

1. 그로메이트 기본(Grommet Standard)
2. 다이아 후렘 방식(Diaphragm Type)
3. 상시 닫힘형(Normally Closed)
4. 유체 사양에 따라 가스켓 변경가능
   (Can change gasket as fluid specification)
5. 대용량 구조 코일 소손 방지 구조
   (Structure to protect big capacity structure coil from loss or break)

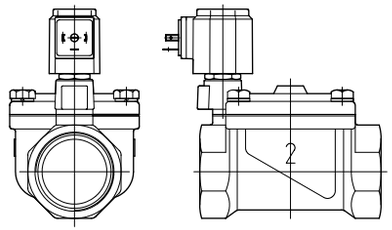
Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Air, Water, Oil, Inertness gas		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~60℃	EPDM(100℃),FPM		AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)			DC24V,12V	DC24V,50HZ
Working Pressure	0.3~10Kgf/㎠		Voltage Allowance Ratio	AC=±10%,DC=±5%	
Insulation Grade of coil	Class B		Consumption of power	AC:18W,DC:12W	
Electrical Contact of coil	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc 2"		Gasket Material	NBR DIAPHRAGM	EPDM FPM
Orifice Size	⌀50		Valve Weight		
Application	Water Distribution Pipes, Compressors, Industrial Cleaning Machine, Air Ventilation Systems, Heaters, Boilers				







GROMMET ASSEMBLY



DIN CONNECTOR ASSEMBLY

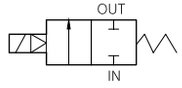
투웨이 밸브 IPS 시리즈 TWO-WAY VALVE IPS SERIES

형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPS	102G	100	D
기종 Type	규격 Spec	종류(50/60Hz) Kind	코일전원접속방법 Electrical Contact of coil
	102G : 1/4 103G : 3/8	100:AC100~110V 200:AC200~220V	D:DIN CONNETOR

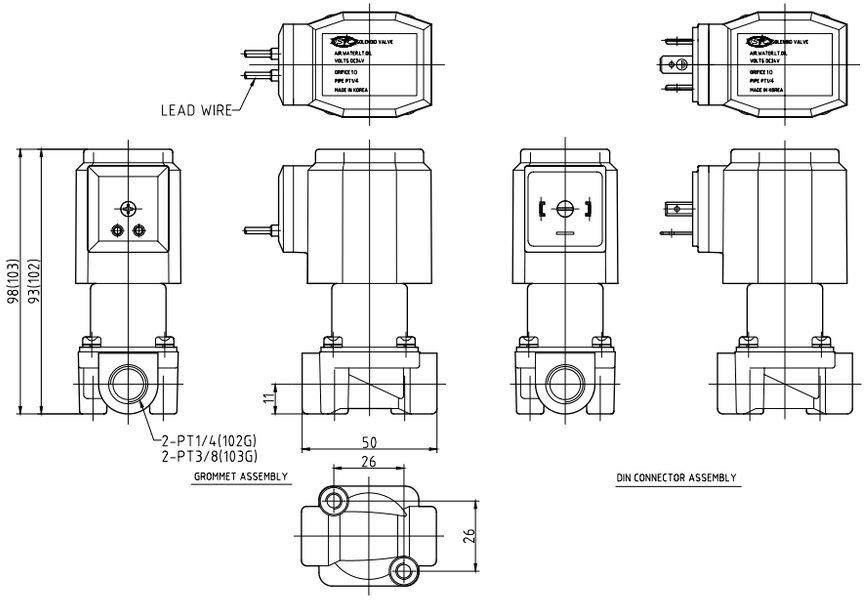
표시기호 Notation



특징 Feature

1. 그로메이트 기본 (Grommet Standard)
2. 피스톤 파이롯 방식(Piston Pilot Type)
3. 상시 닫힘형(Normally Closed)
4. 고온형(High-temperature Type)

Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Steam, Air, Hot water		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~180℃			AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)				DC24V,50HZ
Working Pressure	0.5~7Kgf/㎠		Voltage Allowance Ratio	AC=±10%	
Insulation Grade of coil	Class H		Consumption of power	AC:18W	
Electrical Contact of col	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc1/4,3/8		Gasket Material	TEFLON	
Orifice Size	⌀10		Valve Weight		
Application	Steam Distribution Pipes, Washing Machines, Sterilizers, Heaters, Heat Exchangers, Dyeing Machines, Industrial Cleaning Machine				



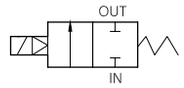
투웨이 밸브 IPS 시리즈 TWO-WAY VALVE IPS SERIES

형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPS	154G	100	D
기종 Type	규격 Spec	종류(50/60Hz) Kind	코일전원접속방법 Electrical Contact of coil
	154G : 1/2	100:AC100~110V 200:AC200~220V	D:DIN CONNETOR

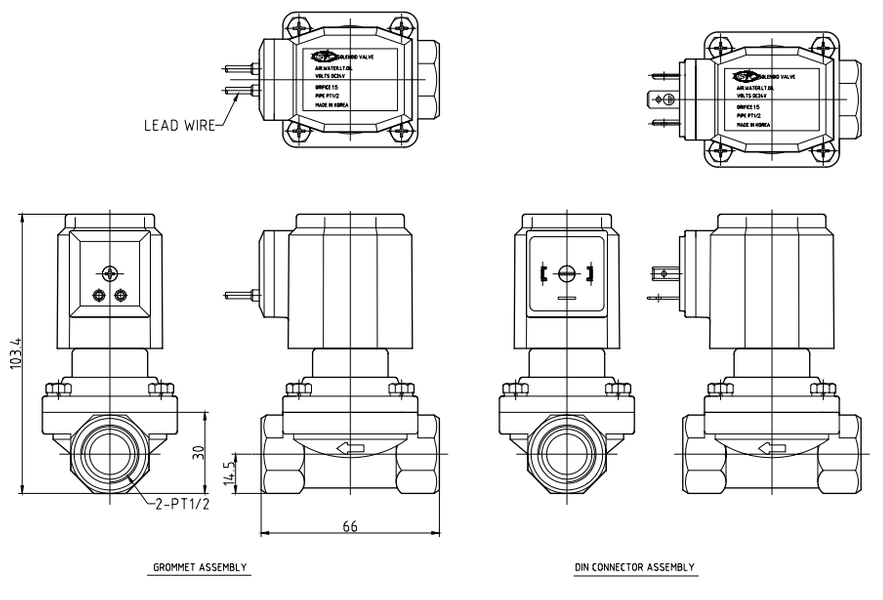
표시기호 Notation



특징 Feature

1. 그로메이트 기본(Grommet Standard)
2. 피스톤 파이롯 방식(Piston Pilot Type)
3. 상시 닫힘형(Normally Closed)
4. 고온형(High-temperature Type)

Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Steam, Air, Hot water		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~180℃			AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)				DC24V,50HZ
Working Pressure	0.5~7Kgf/㎠		Voltage Allowance Ratio	AC=±10%	
Insulation Grade of coil	Class H		Consumption of power	AC:18W	
Electrical Contact of col	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc1/2		Gasket Material	TEFLON	
Orifice Size	⌀15		Valve Weight		
Application	Steam Distribution Pipes, Washing Machines, Sterilizers, Heaters, Heat Exchangers, Dyeing Machines, Industrial Cleaning Machine				



투웨이 밸브 IPS 시리즈 TWO-WAY VALVE IPS SERIES

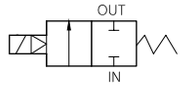
형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPS 206G 24 D

- IPS — 기종 Type
- 206G — 규격 Spec: 206G:3/4
- 24 — 종류(50/60Hz) Kind: 100:AC100~110V, 200:AC200~220V
- D — 코일전원접속방법 Electrical Contact of coil: D:DIN CONNETOR

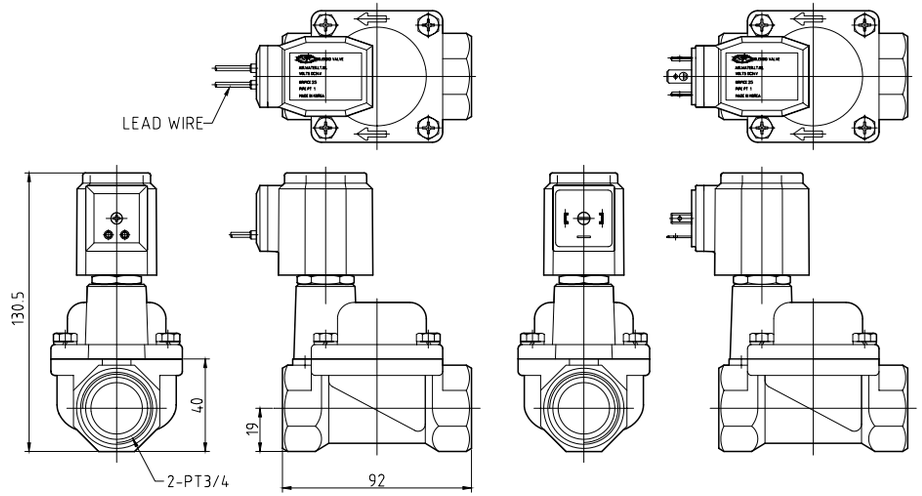
표시기호 Notation



특징 Feature

1. 그로메이트 기본(Grommet Standard)
2. 피스톤 파이롯 방식(Piston Pilot Type)
3. 상시 닫힘형(Normally Closed)
4. 고온형(High-temperature Type)

Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Steam, Air, Hot water		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~180℃			AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)			DC24V,12V	DC24V,50HZ
Working Pressure	0.5~7Kgf/㎠		Voltage Allowance Ratio	AC=±10%,DC=±5%	
Insulation Grade of coil	Class H		Consumption of power	AC:18W,DC:12W	
Electrical Contact of col	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc3/4		Gasket Material	TEFLON	
Orifice Size	⌀ 20		Valve Weight		
Application	Steam Distribution Pipes, Washing Machines, Sterilizers, Heaters, Heat Exchangers, Dyeing Machines, Industrial Cleaning Machine				



GROMMET ASSEMBLY

DIN CONNECTOR ASSEMBLY

투웨이 밸브 IPS 시리즈 TWO-WAY VALVE IPS SERIES

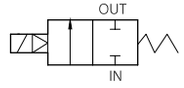
형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPS 2510G 24 D

- IPS — 기종 Type
- 2510G — 규격 Spec: 2510G:1″
- 24 — 종류(50/60Hz) Kind: 100:AC100~110V, 200:AC200~220V
- D — 코일전원접속방법 Electrical Contact of coil: D:DIN CONNETOR

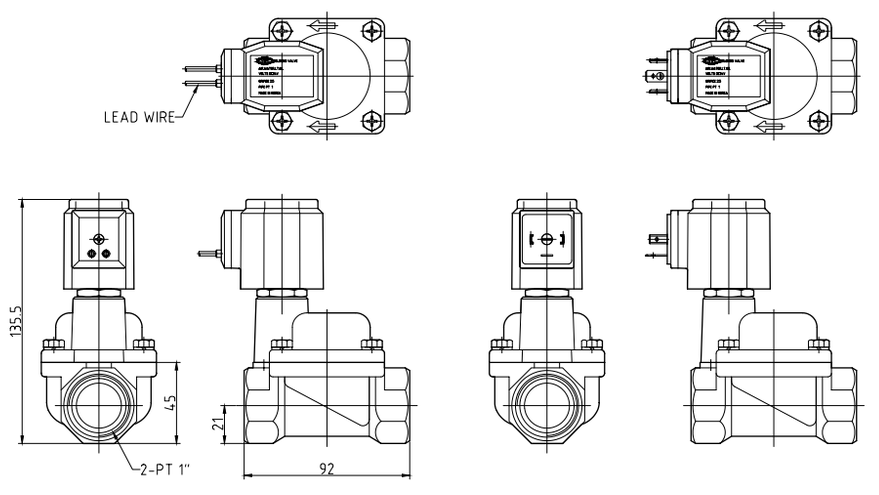
표시기호 Notation



특징 Feature

1. 그로메이트 기본(Grommet Standard)
2. 피스톤 파이롯 방식(Piston Pilot Type)
3. 상시 닫힘형(Normally Closed)
4. 고온형(High-temperature Type)

Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Steam, Air, Hot water		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~180℃			AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)			DC24V,12V	DC24V,50HZ
Working Pressure	0.5~7Kgf/㎠		Voltage Allowance Ratio	AC=±10%,DC=±5%	
Insulation Grade of coil	Class H		Consumption of power	AC:18W,DC:12W	
Electrical Contact of col	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc 1"		Gasket Material	TEFLON	
Orifice Size	⌀25		Valve Weight		
Application	Steam Distribution Pipes, Washing Machines, Sterilizers, Heaters, Heat Exchangers, Dyeing Machines, Industrial Cleaning Machine				



GROMMET ASSEMBLY

DIN CONNECTOR ASSEMBLY

투웨이 밸브 IPS 시리즈 TWO-WAY VALVE IPS SERIES

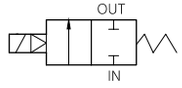
형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPS 3212G 24 D

IPS	3212G	24	D
기종 Type	규격 Spec	종류(50/60Hz) Kind	코일전원접속방법 Electrical Contact of coil
	3212G:1-1/4	24:DC24V 100:AC100~110V 200:AC200~220V	D:DIN CONNETOR

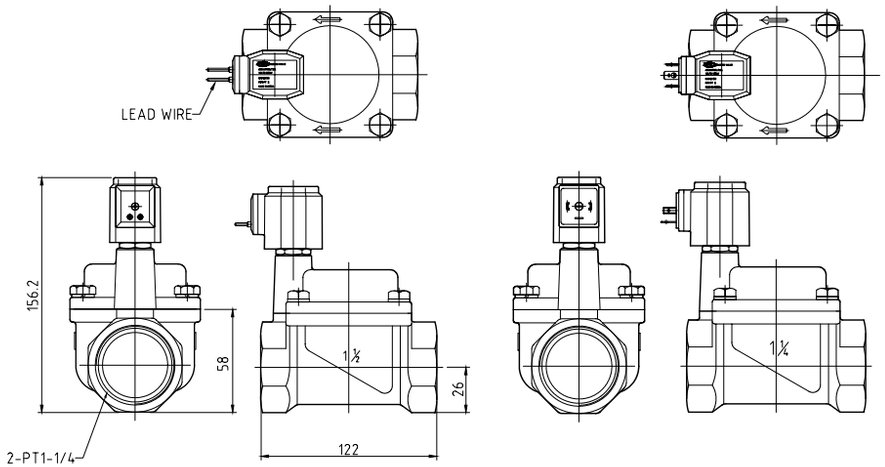
표시기호 Notation



특징 Feature

1. 그로메이트기본(Grommet Standard)
2. 피스톤 파이롯 방식(Piston Pilot Type)
3. 상시 닫힘형(Normally Closed)
4. 고온형(High-temperature Type)
5. 대용량 구조(Big Capacity Structure)

Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Steam, Air, Hot water		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~180℃			AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)			DC24V,12V	DC24V,50HZ
Working Pressure	0.5~7Kgf/㎠		Voltage Allowance Ratio	AC=±10%,DC=±5%	
Insulation Grade of coil	Class H		Consumption of power	AC:18W,DC:12W	
Electrical Contact of coil	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc1-1/4		Gasket Material	TEFLON	
Orifice Size	⌀32		Valve Weight		
Application	Steam Distribution Pipes, Sterilizers, Heaters, Steam Presses, Heat Exchangers, Dyeing Machines, Industrial Cleaning Machine				



GROMMET ASSEMBLY DIN CONNECTOR ASSEMBLY

투웨이 밸브 IPS 시리즈 TWO-WAY VALVE IPS SERIES

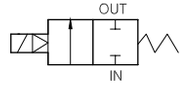
형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPS 4014G 24 D

IPS	4014G	24	D
기종 Type	규격 Spec	종류(50/60Hz) Kind	코일전원접속방법 Electrical Contact of coil
	4014G:1-1/2	24:DC24V 100:AC100~110V 200:AC200~220V	D:DIN CONNETOR

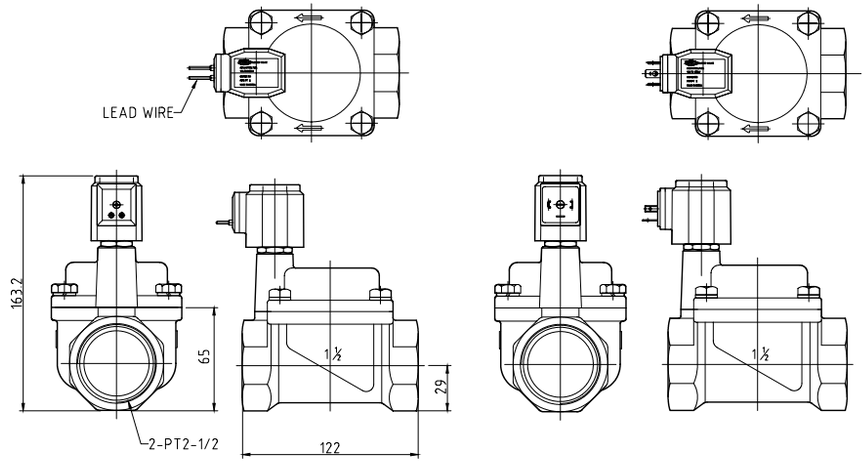
표시기호 Notation



특징 Feature

1. 그로메이트기본(Grommet Standard)
2. 피스톤 파이롯 방식(Piston Pilot Type)
3. 상시 닫힘형(Normally Closed)
4. 고온형(High-temperature Type)
5. 대용량 구조(Big Capacity Structure)

Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Steam, Air, Hot water		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~180℃			AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)			DC24V,12V	DC24V,50HZ
Working Pressure	0.5~7Kgf/㎠		Voltage Allowance Ratio	AC=±10%,DC=±5%	
Insulation Grade of coil	Class H		Consumption of power	AC:18W,DC:12W	
Electrical Contact of coil	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc1-1/2		Gasket Material	TEFLON	
Orifice Size	⌀40		Valve Weight		
Application	Steam Distribution Pipes, Sterilizers, Heaters, Steam Presses, Heat Exchangers, Dyeing Machines, Industrial Cleaning Machine				



GROMMET ASSEMBLY DIN CONNECTOR ASSEMBLY

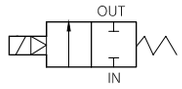
투웨이 밸브 IPS 시리즈 TWO-WAY VALVE IPS SERIES

형식 및 사양 Type/Specification

형식 표시 방법 Indication of Model

IPS	5020G	24	D
기종 Type	규격 Spec 5020G 2"	종류(50/60Hz) Kind 24:DC24V 100:AC100~110V 200:AC200~220V	코일전원접속 방법 Electrical Contact of coil D:DIN CONNETOR

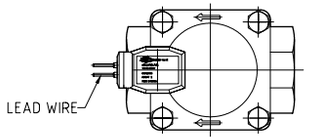
표시기호 Notation

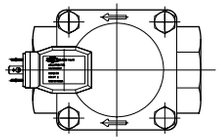


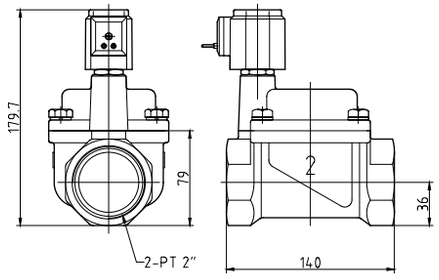
특징 Feature

1. 그로메이트 기본 (Grommet Standard)
2. 피스톤 파이롯 방식(Piston Pilot Type)
3. 상시 닫힘형(Normally Closed)
4. 고온형(High-temperature Type)
5. 대용량 구조(Big Capacity Structure)

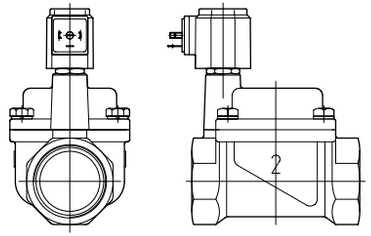
Classification	Standard specification	Special specification	Classification	Standard specification	Special specification
Fluid	Steam, Air, Hot water		Contact Voltage	AC100V,50/60HZ AC110V,60HZ	AC220V,50HZ
Range of temperature	0~180℃			AC200V,50/60HZ AC220V,60HZ	AC240V,50HZ
Ambient Temperature	50℃(Max)			DC24V,12V	DC24V,50HZ
Working Pressure	0.5~7Kgf/㎠		Voltage Allowance Ratio	AC=±10%,DC=±5%	
Insulation Grade of coil	Class H		Consumption of power	AC:18W,DC:12W	
Electrical Contact of col	Grommet Read Wire	Din Connetor	Body material	BRASS	
Body contact	Rc 2"		Gasket Material	TEFLON	
Orifice Size	⌀50		Valve Weight		
Application	Steam Distribution Pipes, Sterilizers, Heaters, Steam Presses, Heat Exchangers, Dyeing Machines, Industrial Cleaning Machine				







GROMMET ASSEMBLY

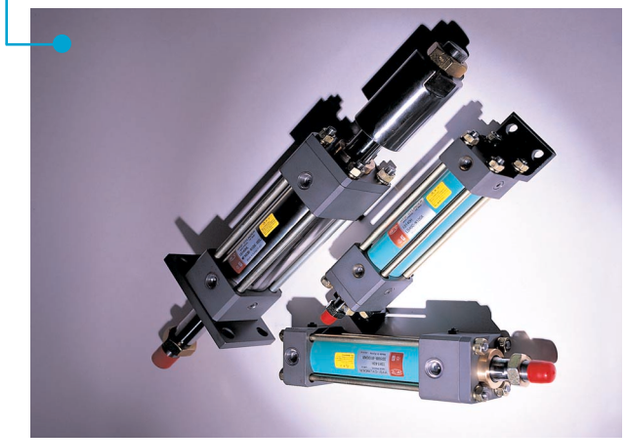


DIN CONNECTOR ASSEMBLY

MEMO

MEMO

유압 실린더 시리즈
HYDRAULIC CYLINDER SERIES

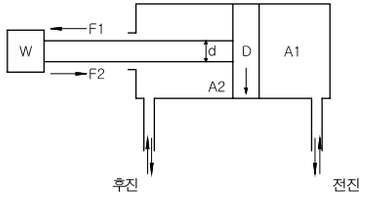


ISTC CO.,LTD

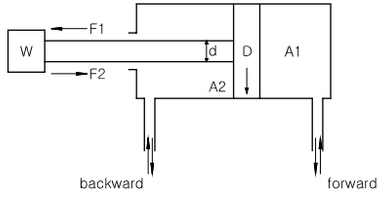
실린더내경의 설정 Determining the inside diameter of Cylinder

실린더의 내경선정은 부하의 크기에 따른 출력으로 결정된다.

The inside of a hydraulic cylinder should be determined on the basis of the force that a cylinder requires.



전진시 $F_1 = A_1 \times p \times \beta$ (Kgf)
후진시 $F_2 = A_2 \times p \times \beta$ (Kgf)



At forward motion $F_1 = A_1 \times p \times \beta$(Kgf)
At backward motion $F_2 = A_2 \times p \times \beta$(Kgf)

(단위:cm)

A_1: 전진시 피스톤 면적(㎠) $A_1 = \frac{\pi}{4} D^2$

A_2: 후진시 피스톤 면적(㎠) $A_2 = \frac{\pi}{4} (D^2 - d^2)$

D : 실린더 내경(㎝)
d : 피스톤 로드경(㎝)
P : 작동압력(Kgf/㎠)
β : 실효율(%)
실출력은 실린더 작동부의 저항, 배관 및 기구의 압력, 손실 등을 고려해서 결정한다.
관성력이 적을 때……60~80%
관성력이 클때……25~30%

※본 카다록의계산 예는 부하율 80%로 계산하였다.

(Unit:cm)

A_1 : Hydraulic pressure area of a piston at forward motion(㎠) $A_1 = \frac{\pi}{4} D^2$

A_2 : Hydraulic pressure area of a piston at backward motion(㎠) $A_1 = \frac{\pi}{4} (D^2 - d^2)$

D:Inside diameter of cylinder(㎝) d:Diameter of piston rod(㎝)
P:Working pressure(Kgh/㎠)
β:Load factor(%)

Acutual output is determining, taking into account the resistance of sliding parts and pressure loss of pipes and instruments. The load factor means the ratio of the actual load calculated at the set pressure. Generally the following values are applied.

In case of a low inertial force ——— 60~80%
In case of a high inertial force——— 25~30%

※The exercises shown in this catalogue were bases on the load factor of 80%

▼예제 1

IS-70/140H 시리즈의 내경 80mm실린더를 사용압력(70㎏g/㎠)으로 사용 했을 때 전진시, 후진시 출력은 얼마인가?

▼ Exercises 1

If a IS-70/140 series cylinder with an inside diameter of 80mm is used at the set pressure of 70Kgf/㎠, what is the force of the cylinder at both pushing and pulling sides?(Provided that the road type B isused)

▼해답

• 전진시 출력(Kgf)
=사용압력(Kgf/㎠)×전진피스톤 면적×부하율
=70× 50.24×0.80=2813(kgf)

• 후진시 출력(Kgf)×후진피스톤
=사용압력(Kgf/㎠)×후진피스톤 면적×부하율
=70× 34.3×0.80=1.921(kgf)

▼ Solution

➧Output at forward motion
= Set pressure(Kgf/㎠) X Hydraulic pressure area of a piston at forward motion X Load factor
= 70X50.24X0.80=2,813(Kgf)

➧Output at backward motion
=Set pressure(Kgf/㎠) X Hydraulic pressure area of a piston at backward motion×Load factor
= 70X34.3X0.80=1,921(Kgf)

▼예제 2

IS-70/140H 시리즈의 사용압력 8,000Kgf의 힘을 얻고자 할 때 실린더의 내경을 얼마로 하면 되겠는가?

▼ Exercises 2

What should be the inside diameter of a cylinder to obtain the force of 8,000Kgf at the set pressure of 70Kgf/㎠ using a IS-70/140H series cylinder?

▼해답

피스톤의 유압면적을 산출한다.

• 피스톤의 면적(㎠) = $\frac{\text{실린더의 힘(Kgf)} \div \text{부하율}}{\text{설정압력(Kgf/㎠)}}$

$= \frac{8,000 \div 0.8}{70} \fallingdotseq 143(㎠)$

• 내경 = $\sqrt{\frac{4 \times \text{피스톤면적(㎠)}}{\pi}} \times 10 = 134.9(mm)$

▼ Solution

➧Calculate the hydraulic pressure area of a piston.

➧Hydraulic pressure area of piston(㎠)

$= \frac{\text{Cylinder force(Kgf)} \div \text{Load factor}}{\text{Set pressure(Kgf/㎠)}}$

$= \frac{8,000 \div 0.8}{70} \fallingdotseq 143(㎠)$

➧Inside of a Hydraulic

$= \sqrt{\frac{4 \text{XPiston area(㎠)}}{\pi}} \text{X10} = 134.9(mm)$

▶피스톤 로드경의 선정

유압실린더를 선정할 때는 실린더 스트로크에 따른 압축응력과 좌굴(buckling)에 대한 것을 고려하여야 한다.
피스톤 로드의 좌굴강도를 유지할 수 있는 방법은 축경의 크기에 따라 변화한다.
피스톤 로드의 좌굴표(Page 11)를 "오일러"공식을 이용하여 최적 압축하중이 작용할 때에 대한 최대 스트로크를 표시한다.

수직, 경사, 수평 등의 특수한 장치 또는 충격부하일 때의 사용 조건에 맞도록 스트로크를 변경시킬 필요가 있다.

예를 들면 수직실린더를 사용하여 "가이드"가 충분할 때는 1/3정도 행정을 증가시켜도 좋고, 수평으로 장착하여 충격부하가 걸릴 때는 표시수치의 1/3에 적용할 때도 있다.

▶피스톤 로드의 좌굴계산

• 실린더 내경에 따른 최대 스트로크를 구하는 방법
1. 실린더의 설치, 형식, 그림①~⑯까지의 형식에서 결정짓는다.(Page 10)
2. 설치형식이 결정되면 그것에 맞는 L값을 구한다.
3. 각 실린더의 좌굴표에서 L의 값과 내경 사용최대하중으로 구한다.

▼예제

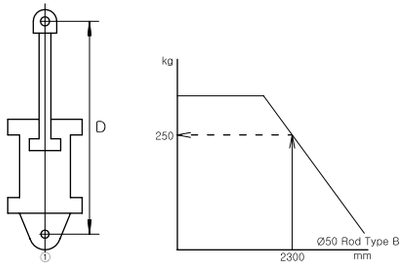
IS 140H- 50 B로드, 행정 1,000mm, CA형일 때, 사용최대 하중은 얼마인가?

▼해답

1. 실린더의 양 끝이 자유축이기 때문에 ①Type L=D

2. 행정이 나왔을 때의 L값을 구한다.
   카다록의 치수표(제품외형도)에서
   L=D=(230+70+1,000+1,000)=2,300mm
   주)70은 선단금구 치수

3. IS 70/140H의 굴절표에서 W=250kg이하로 된다.



▶ Determining the diameter of a piston rod

When using hydraulic cylinder, the compressive stress and buckling by the cylinder stoke should be taken into account. The piston rod shaft is like along column. Therefore, even if it is made of tensile strengh steel or heat-treated, its strength does not become stronger. Keep in mind that using a piston shaft having a larger diameter is the only way to maintain in the buckling strength of a piston rod.

The graphs(Page 11) shown below indicate safe maximum stroke, based on Oiler's formula applicable to a upright long column, when an optimal compressive load is applied to the diameter of each piston rod.

For exemple, when the "guide" is enough with the use of a vertical cylinder, the stroke may be increased by 1/3, and when an impact load is applied due to horizontal mounting, the 1/3 of the indicated value may be applicable.

▶ Calculation of the Buckling of a Piston Rod

• How to find the value of maximum working load according to the inside diameter of a cylinder.

1.Determine one of the cylinder mounting type ①~⑯.(Page10)
2.After determining the mounting type, find the L value coming up to it.
3.Find a maximum working load using the L value and the diameter in the buckling graph.

▼Exercises

What is maximum working load a IS140H cylinder with Ø50, B rod, stroke of 1,000mm and CA type?

▼Solution

1.As both ends of the cylinder are free shafts, the mounting Type is ① L=D

2.When the stroke is obtained, find the L value.
From the dimensions table contained herein,
L = D = (230+70+1,000+1,000) = 2,300mm,
where 70 is the size of the lot end,

3.W will be below 250kg according to the buckling praph of IS70/140H.

▶최대스트로크를 선정할 때

1. 실린더 고정방법은 ①~⑯에서 결정된다.(Page 10)
2. 각 시리즈 좌굴(buckling)표(Page 11)에 따라 사용최대 하중과 내경에서 L값을 구한다.

▼예제

IS 140H-Ø80, B로드, 부하 3,500kg-FZ형일 때 최대행정은 얼마인가? (로드선단은 자유단)

▼해답

1. FB형으로서 로드선단이 자유단인 관계로 ⑦의형식이 된다.
   L=2D
2. W=3500kg이기 때문에 그래프에서 L=1500mm
3. L값으로부터 행정을 구한다.
   D=L/2=1500/2=(2×행정+243)
   제품의 외형도에서 실린더행정 약 253mm이내.

▶실린더 내경을 선정할 때

1. 실린더 장착방식이 다음 페이지의 ①~⑯으로부터 결정(Page 10)
2. 장착방식이 결정되면 그것에 맞추어 L값을 구한다.
3. 각 시리즈의 좌굴표(Page 11)로부터 사용최대 하중과 L값에 따른 실린더 내경을 구한다.

▼예제

IS 140H FY형·행정 1,000mm, 하중 3,000kg, 선단자유일때 실린더 내경 로드경을 구하라.

▼해답

1. FA형에서 로드선단이 자유단인 때문에 ⑤의 형식이다.
L=2D=2 X (1,000+100)=2,200mm
주)차수 100은 로드길이
3. 좌굴표로(Page 11)부터 Ø100 B로드 또는 Ø125C로드

▶How to find a maximum working stroke according to the inside diameter of a culinder.

1.Determine one of the cylinder mounting type①~⑯.
2.Find the L value using the maximum working load and the inside diameter in the buckling graph.

▼Exercises

What is a maximum stroke of a IS140H cylinder with Ø80, B rod, load of 3500kg, and FZ type?

▼Solution

1.As for FB type, the rod end is a free type, the mounting type is ⑦.
L=2D

2.W is 3,500kg, so the L value will be 1,500mm in the graph.
3.Find the stroke from the L value.
D=L/2=1,500/2=(2Xstroke+243)
Therefore, the cylinder stroke is below approximately 253mm.

▶How to find the inside diameter of a cylinder according to a maximum working load. ①~⑯(Page 10).

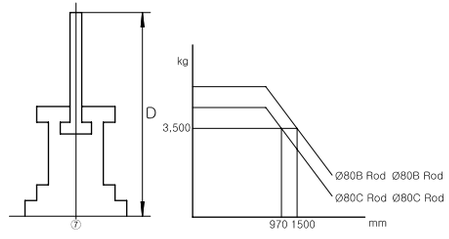
1.Determine one of the cylinder mounting types
2.After determining the mounting type, find the L value coming up to it.
3.Find the inside diameter of a cylinder using the maximum working load and L value in the buckling graph.

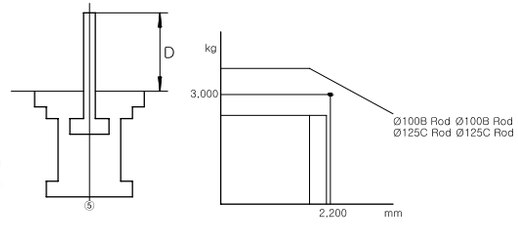
▼Exercise

What is the inside diameter of a IS 140H cylinder with stroke of 1,000mm, load of 3,000kg, free ends and FY type?

▼Solution

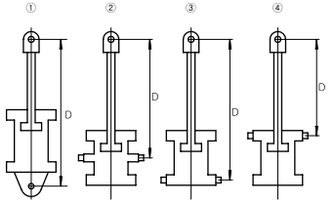
1.As for FA type, the rod end is a free type,the mounting type is⑤.
2.L=2D=2X(1,000+100)=2,200mm
Note) 100 means the length of a load.
3.From the buckling graph.
Ø100 B rod or Ø125 C rod



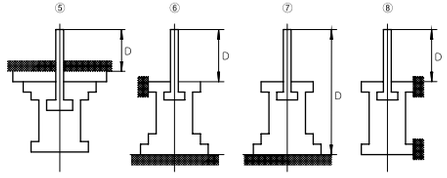


▶실린더의 지지상태 Supporting state of Cylinder

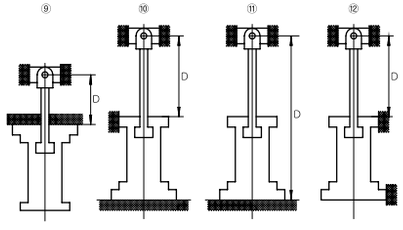
• 양단판 조인트의 경우(D=L)
For both-end pin joint(D=L)



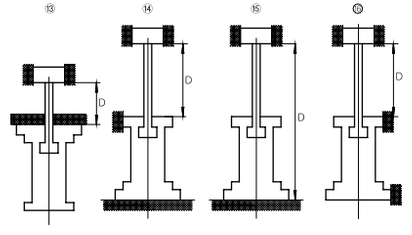
• 실린더 고정, 로드선단자유의 경우(D=L/2)
For rod end free type with a cylinder fixed(D=L/2)



• 실린더 고정, 로드선단 가이드(D=1.4L)-핀조인트의경우
For rod end guide type with a cylinder fixed(D=1.4L) - For pin joint

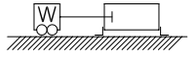


• 실린더 고정, 로드선단 가이드의 경우(D=2L)
For rod end guide type with a cylinder fixed(D=2L)

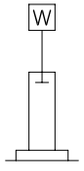


▶ 내부스톱 방식의 하중 Load of internal stop

②의 경우



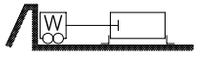
①의 경우

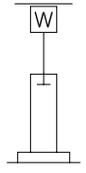


그림과 같이 실린더 행정 단으로 정지하는 상태를 말한다. 좌굴계산에 필요한 하중에 대해 다음과 같이 생각해 주십시오.
①의 경우 하중 = W
②의 경우 하중 = μW(μ마찰계수)

The cylinder is stopped by the stroke end of the cylinder as shown here.
For an accident related to the load necessary for calculation of the buckling, consider as follows.
In the case ①,Load=W
In the case ②,Load=μ•W(μ:friction coefficient)

▶ 외부스톱 방식의 하중 Load of external stop



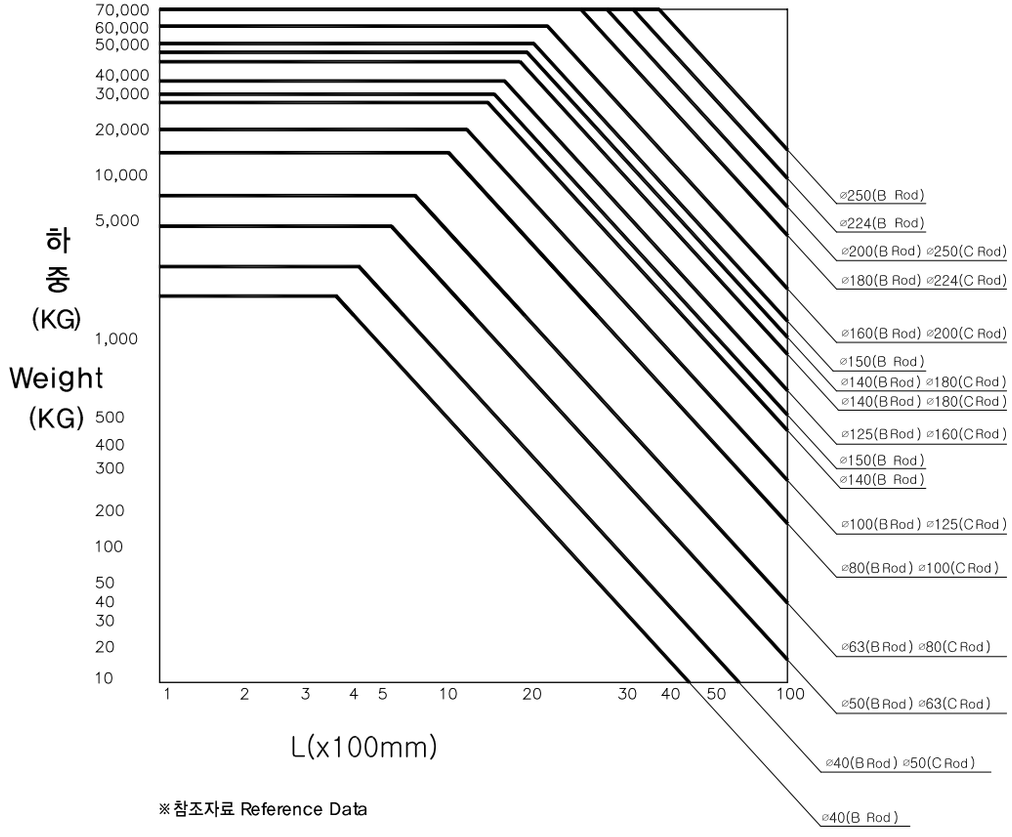


그림과 같이 외부 스토퍼에 의해 작동이 도중에 정지하는 상태를 말한다. 이경우의 좌굴 계산에 필요한 하중은 W가 아니고, 실린더 이론 추력(릴리프의 설정압력kgf/㎠ , 피스톤 단면적㎠)으로 된다.

The cylinder is stopped by the external stopper as shown here.
In this case, the load necessary for calculation of the buckling is not W but theoretical thrust force(set relief pressure-kgf/㎠, cross-section of a piston-㎠)of a cylinder.

▶피스톤 로드 좌굴표 Buckling graph of piston rod(S45c)

■IS 70/140H 시리즈 IS 70/140H Series



※참조자료 Reference Data

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

패킹재질의 선정 Selection a packing meterial

▶작동유와 패킹재질의 적합성 Suitability of Working oil for Packing Materials

기호 No.	Packing Meterials	Working oil				
		Mineral oil	Glycol oil	Phosphate oil	W/O oil	W/O oil
1	NBR	○	○	X	○	○
2	Urethane rubber	◎	X	X	△	△
3	Fluorine rubber	○	X	○	○	○

注)◎, ○표사용가, ×표사용불가 표시, △표 사용의 경우는 상담해 주세요.
◎표는 내마모성을 중시하는 경우의 사용패킹재질을 표시합니다.

Note) The signs ◎and ○mean "aceptable", × "notacceptable" and △ "ask for advice".
The sign ◎also meansa packing material to be used when the wearing resistance is greatly required.

▶패킹재질의 사용가능 온도범위 Range of Working oil temperature for packing materials

기호 No.	Oil temperature with in the cylinder℃ Packing material	-50	0	50	100	150
1	NBR		■	■		
2	Urethane rubber		■	■		
3	Fluorine rubber			■	■	

▶패킹재질에 의한 사용속도 Working of Speed Packing meterials

Packing materials	Range of working speed mm/sec
NBR	8~500
Urethane rubber	8~500
Fluorine rubber	8~300

▶우레탄 고무와 나트릴 고무의 특성 Characteristics of Urethane Rubber

Items	Urethane rubber	NBR
Bearing pressure	◎(Ratio 2.5)	○(Ratio 1)
Wearing resistance	◎	○
Lifetime according to change of ambient temperature	○	◎
Lifetime according to deterioration of working oil	○	◎
Leakage in the lot part	◎	○
If high pressure is mainly used	◎	○
If the frequency of used of low pressure is mainy low	○	◎
Tensile Strengthkgf/㎠)	Morte than 400	More than 150
Elongation(%)	Morte than 400	More than 100
Hardness(Hs)	90±5	85±5

▶우레탄 고무와 나트릴 고무의 특성 Characteristics of Urethane Rubber & NBR

• 우레탄 고무의 특성
우레탄 고무는 상기표에 표시한 것과 같이, 인장강도가 니트릴 고무의 2.5배로 내압성 내마모성이 우수하다. 그밖에 우레탄 고무는 장기간의 사용에 있어서 열 및 작동유의 노화에 의해(유온의 상승효과에 있어) 고무재질이 변화하는 수가 있다. 약 년마다 분해점검할 필요가 있다.

• As shown in the above table. the tensile strength is approximately 2.5 times higher than thatof NBR. and bearing pressure and wearing resistance are very excellent. The rubber materials may change due to heat or deterioration of working oil during a long use. so it needed to check it on ce a year.

• 나트릴 고무의 특성
열 및 작동유의 노화에 의한 영향은 우레탄 고무에 비해 원만하다. 나트릴 고무는 우레탄 고무에 비해 인장강도가 작기 때문에 내압·내마모성은 약간 저하된다. 따라서 저압으로 사용빈도가 적은2-3년간 분해 점검하지 않는 곳에 사용하는경우는 나트릴 고무가 적합하다. .

• The effect of heat o r deterioration of working oil is lower than urethane rubber has. As NBR has lower tensile strength than urethane rubber. bearing pressure and wearing resistance are somewhat low. Therefore, NBR is suitable if the frequency of use of low pressure is low and inspection is not done for two or there years.

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

실린더 속도와 포트경과의 관계 Cylinder speed relation to port

실린더의 속도는 실린더 내에 유입시키는유량에 따라 정해지는 관계로 포트경을 선정하여야한다.
The cylinder speed is determined by the flow rate of oil to be supplied to the cylinder. Therefore, the diameter of a port should be so selected that it is the standard diameter.

▶실린더의 속도산출 ▶Calculation of cylinder Speed

V=Qc/A (cm/sec) V=Qc/A(cm/sec)

Qc : 실린더 내의 공급유량(㎤/sec)	Qc : Flow rate oil to be supplied to the inside of the cylinder(cm/sec)
A : 피스톤 유압면적	A : Hydraulic pressure area of the piston

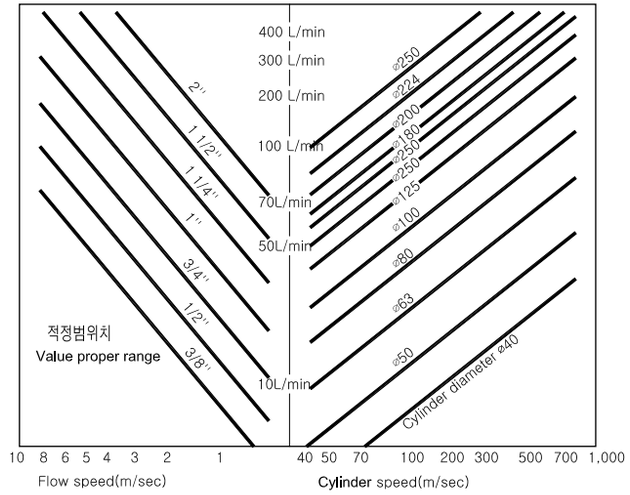
필요유량 Required flow rate

▶오른쪽 도표는 표준 유압실린더의 각 치수에 따라 필요유량과 속도에 대한 포트경과 관내 유속의 관계를 그래프화 한 것임.

▶The graph is show the relations between the diameter of a port and pipe flow speed for required flow rate and speed by each dimensions of standard hydraulic cylinders.

주)일반적으로 관내 유속은 7m/sec를 넘는 경우는 배관저항이 높아지고 압력손실이 많아지기 때문에 작동시 출력이 적어지고 속도가 늦어지므로 7m/sec 를 넘지않도록 하십시오.

Note) Generally, if the pipe flow speed exceeds 7m/sec, the pipe resistance becomes high and the pressure loss becomes great. Consequently, the output becomes low and the speed becomes slow. Therefore, the pipe flow speed should not exceed 7m/sec.



실린더, 속도, 필요유량, 관내유속관계도표=Graph of cylinder speed. Required Rate, Pipe Flow Speed.

▶표준 포트경 Standard Port Diameter

H-D(mm) / series	Port Diameter												
	40	50	63	80	100	125	140	150	160	180	200	224	250
IS70/140H	3/8	1/2	1/2	3/4	3/4	1	1	1	1	1 1/4	1 1/2	1 1/2	2

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

실린더 이론면적 및 출력표 Tables of theoretical areas and outputs of cylinders

▶B형 로드 출력표(효율 100%) Output Table of Rod Type B(Efficiency 100%)

I-D of cylinder(mm)	I-D of Piston Rod(mm)	Working Direction	Effective Area (㎠)	Output(kgf)			Speed(mm/sec) at the Flow of 10ℓ/min	Flow(ℓ/min) at the speed of 10mm/sec	Speed Ratio	
				70kgf/㎠	140kgf/㎠	210kgf/㎠			Forward motion	Backward motion
Ø40	Ø22	F/W Motion	12.56	879	1758	2637	132.6	0.8	1	1.43
		B/W Motion	8.76	613	1226	1839	190.2	0.6		
Ø50	Ø28	F/W Motion	19.63	1374	2748	4122	84.9	1.2	1	1.46
		B/W Motion	13.47	942	1885	2828	123.7	0.8		
Ø63	Ø35	F/W Motion	31.17	2181	4363	6545	53.4	1.9	1	1.45
		B/W Motion	21.55	1508	3017	4525	77.3	1.3		
Ø80	Ø45	F/W Motion	50.26	2518	7036	10554	33.1	3.0	1	1.47
		B/W Motion	34.36	2405	4810	7215	48.5	2.1		
Ø100	Ø55	F/W Motion	78.54	5497	10995	16493	21.2	4.8	1	1.43
		B/W Motion	54.78	3834	7669	11503	30.4	3.3		
Ø125	Ø70	F/W Motion	122.71	8589	17179	25769	13.5	7.4	1	1.46
		B/W Motion	84.23	5896	11792	17688	19.7	5.1		
Ø140	Ø80	F/W Motion	153.93	10775	21551	32325	10.8	9.3	1	1.48
		B/W Motion	103.67	7256	14513	21770	16.0	6.3		
Ø150	Ø85	F/W Motion	176.71	12369	24739	37109	9.4	10.6	1	1.47
		B/W Motion	119.97	8397	16795	25193	13.8	7.2		
Ø160	Ø90	F/W Motion	201.06	14074	28148	42222	8.2	12.1	1	1.48
		B/W Motion	137.44	9620	19241	28862	12.1	8.3		
Ø180	Ø100	F/W Motion	254.46	17812	35624	53436	6.5	15.3	1	1.45
		B/W Motion	175.92	12314	24628	36943	9.4	10.6		
Ø200	Ø110	F/W Motion	314.15	21990	43981	65971	5.3	18.9	1	1.43
		B/W Motion	219.12	15338	30696	46015	7.6	13.2		
Ø250	Ø140	F/W Motion	490.87	34360	68721	103082	3.3	29.5	1	1.48
		B/W Motion	336.93	23585	47170	70755	4.9	20.3		

▶C형 로드 출력표(효율 100%) Output Table of Rod Type C(Efficiency 100%)

I-D of cylinder(mm)	I-D of Piston Rod(mm)	Working Direction	Effective Area (㎠)	Output(kgf)			Speed(mm/sec) at the Flow of 10ℓ/min	Flow(ℓ/min) at the speed of 10mm/sec	Speed Ratio	
				35kgf/㎠	70kgf/㎠	140kgf/㎠			Forward motion	Backward motion
Ø40	Ø18	F/W Motion	12.56	439	879	1758	132.6	0.8	1	1.25
		B/W Motion	10.02	350	701	1402	166.3	0.6		
Ø50	Ø22	F/W Motion	19.63	687	1374	2748	84.9	1.2	1	1.24
		B/W Motion	15.83	554	1108	2216	105.2	1.0		
Ø63	Ø28	F/W Motion	31.17	1090	2181	4363	53.4	1.9	1	1.25
		B/W Motion	25.01	875	1750	3501	66.6	1.5		
Ø80	Ø35	F/W Motion	50.26	1759	3518	7036	33.1	3.0	1	1.24
		B/W Motion	40.64	1422	2844	5689	41.0	2.5		
Ø100	Ø45	F/W Motion	78.54	2748	5497	10995	21.2	4.8	1	1.23
		B/W Motion	62.63	2192	4384	8768	26.1	3.8		
Ø125	Ø55	F/W Motion	122.71	4294	8589	17179	13.5	7.4	1	1.24
		B/W Motion	98.95	3463	6926	13853	16.8	6.0		
Ø140	Ø60	F/W Motion	153.93	5387	10775	21551	10.8	9.3	1	1.22
		B/W Motion	125.66	4398	8796	17592	13.2	7.6		
Ø150	Ø65	F/W Motion	176.71	6184	12369	24739	9.4	10.6	1	1.23
		B/W Motion	143.53	5023	10047	20094	11.6	8.7		
Ø160	Ø70	F/W Motion	201.06	7037	14074	28148	8.2	12.1	1	1.24
		B/W Motion	162.57	5689	11379	22759	10.2	9.8		
Ø180	Ø80	F/W Motion	254.46	8906	17812	35624	6.5	15.3	1	1.25
		B/W Motion	204.20	7147	14294	28588	8.1	12.3		
Ø200	Ø90	F/W Motion	314.15	10995	21990	43981	5.3	18.9	1	1.25
		B/W Motion	250.54	8768	17537	35075	6.6	15.1		
Ø250	Ø110	F/W Motion	490.87	17180	34360	68721	3.3	29.5	1	1.27
		B/W Motion	395.84	13855	27710	55421	4.2	23.8		

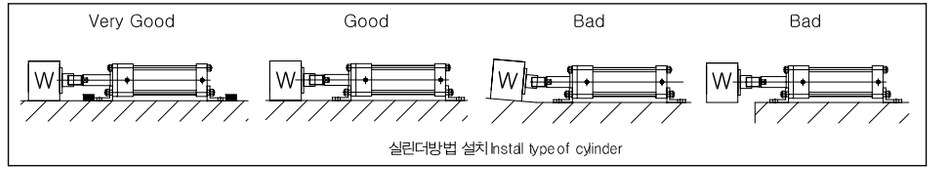
유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

유압 실린더 장착주의사항 및 취급 주의사항 Cautions in Using the Hydraulic Cylinder

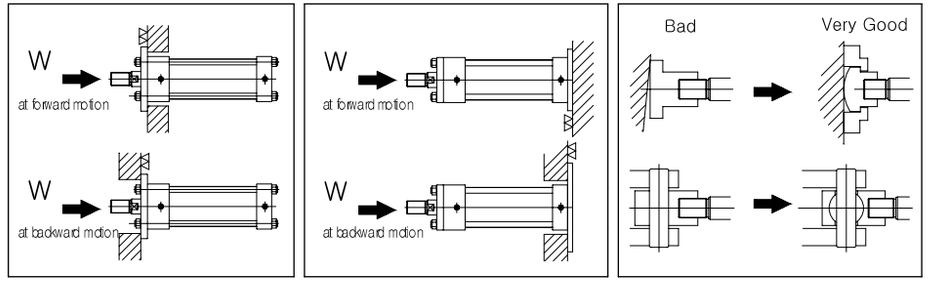
▶고정형의 경우 In case of Fixed Type

실린더에 의해 이동되는 물체의 이동방향은 피스톤 로드의 운동축심과 일치하지 않으면 안됩니다. 그 축심에 일치하지 않았을 경우 부싱의 마모, 실린더 튜브의 긁힘, 로드의 긁힘현상이 생깁니다.
The moving direction of things by cylinder should accord with working shaft lead of Piston rod. If it doesn't accord with shaft lead, abrasion of bushing, scratching of cylinder tube, and scratching of rod is happened.

LA, LB 장착방법 Install type of LA, LB



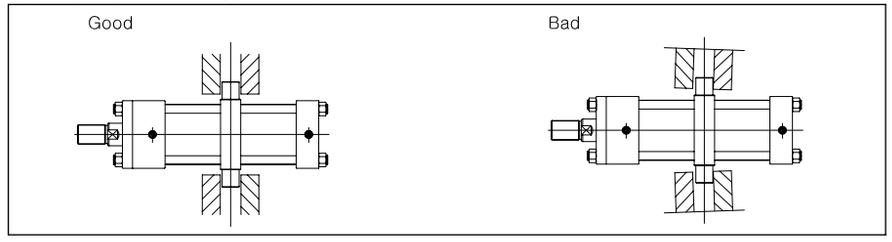
FA,FY,FC장착방법 Install type of FA,FY,FC FB,FZ,FD장착방법 Install type of FB,FZ,FD 로드골단부 취부방법 Mounted type of Rod end parts



▶요동형의 경우 In case of shaking type

스트로크가 1,000mm 이상의 것은 수평설치를 하면 좋지않습니다
If stroke is over 1000mm, don't install as horizontal type.

TA,TC 장착방법 Install type of TA,TC



▶취급주의 사항 Cautions

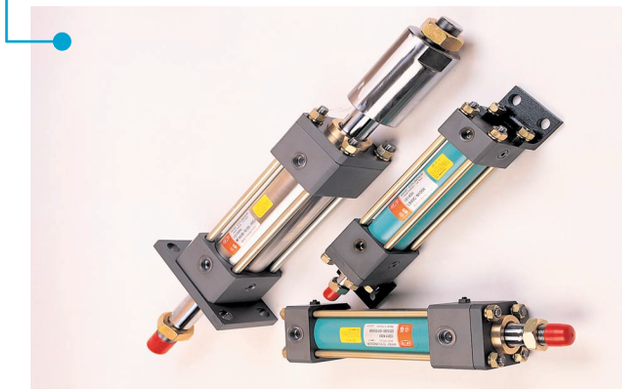
1. 제품고유의 사양 범위에서 사용하여 주십시오.
2. 인체에 위험한 요소가 있는 경우 보호커버를 설치하여 주십시오.
3. 실린더 고정부 및 연결부가 풀리지 않도록 확실히체결하여 주십시오.
4. 제품의 부식우려가 있는 환경에서는 사용하지 마십시오.
5. 유압유를 청정하게 관리, 사용하여 주십시오.

1. Use it within the Spec. Range of each part.
2. If there are dangerous things to human body, install protecting cover.
3. Connect cylinder fixing part and connecting part not to be loose.
4. If there are some situation to be decayed, don't use it.
5. Always keep hydraulic oil clean and use.

MEMO

MEMO

유압 실린더 ISH 70/140 시리즈
HYDRAULIC CYLINDER ISH 70/140 SERIES



유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES
70/140kgf/㎠용 표준유압 실린더 Hydraulic Cylinder for 70/140 kgf/㎠

▶실린더 사양 Cylinder Specifications

종류 kind		표준형 standard type		스위치 부착용 switch-mounted type
형식 model		IS-70H	IS-140H	IS-70HL
실린더 내경 inside-diameter of cylinder(mm)		Ø40,Ø50,Ø63,Ø80,Ø100,Ø125, Ø140,Ø150,Ø160,Ø180,Ø200,Ø250		Ø40,Ø50,Ø63,Ø80,Ø100
사용압력 working pressure		70kgf/㎠(6.685MPa)	140kgf/㎠(13.729MPa)	70kgf/㎠(6.685MPa)
최고허용압력 Max. allowable pressure		Head side:90kgf/㎠(8.826MPa) Rod side:(B)135kgf/㎠(13.239MPa) (C)110kgf/㎠(10.787MPa)	Head side:180kgf/㎠(17.625MPa) Rod side:(B)180kgf/㎠(17.652MPa) (C)140kgf/㎠(13.729MPa)	Head side:90kgf/㎠(8.826MPa) Rod side: (B)135kgf/㎠(13.239MPa) (C)110kgf/㎠(10.787MPa)
내압력 Bearing Pressure		105kgf/㎠(10.297MPa)	210kgf/㎠(20.594MPa)	105kgf/㎠(10.297MPa)
최저작동압력 Min. working pressure		Head side:More than 3kgf/㎠(0.297MPa) Rod side(B rod) More than 4.5kgf/㎠(0.441MPa) Rod side(C rod):More than 4kgf/㎠(0.392MPa)		
사용속도범위 Range of working speed		Ø40~Ø63 : 8~400mm/sec Ø80~Ø125 : 8~300mm/sec Ø140~Ø250 : 8~200mm/sec		Ø40~Ø63 : 8~400mm/sec Ø80~Ø125 : 8~300mm/sec
사용온도범위 Range of working temperature		-10~+80°C(Ambient temperature and oil temperature)		-10~+70°C(Ambient temperature and oil temperature)
쿠션방식 Cushion Type		Metal pressure reducing type		
사용작동유 Working oil		General mineral working oil(For other working oil, give instructions).		
나사공차 Screw Tolerance		2nd KS level		
스트로크 허용치 Stroke Allowance		Less than 100mm $^{+0.8}_{0}$ 101~250mm $^{+1.0}_{0}$ 251~630mm $^{+1.25}_{0}$ 631~1,000mm $^{+1.4}_{0}$ 1,001~1,600mm $^{+1.6}_{0}$ 1,601~2,000mm $^{+1.8}_{0}$		
튜브재질 Tube Material		Structural Carbon Steel		Stainless Steel
지지형식 Supporting type	표준형 standard type	SD・LA・(LB)・(FA)・(FB)・FC・FD・CA・CB・TA・TC		
	양로드형 double-rod type	SD・LA・(LB)・(FA)・(FB)・FC・FD・TA・TC		
관련부품 Related parts	방진커버 Dust-proving cover	Standard : Nylon Tarpaulin Semi-standard : Neoprene		
	선단금구 Lot end	Single thread type(I type) Double thread type(Y type)		
	기타 others	Lock nut		

주)1.사용압력은 실린더를 사용하는 유압회 로의 릴리이 프변의 설정압력 최고치
2.최고허 용압력이 란 실린더 내부에 발생하는 압력의 허용가능 최고치
3.내압력 은 사용압력에 복귀할 때에 성능의 저하를 초래하지 않고 견디어 내지 않으면 안 되는 시험압력
4.최저작 동압력이 란 실린더 를 수평으로 설치해 무부하 로드 (지중분은 별도 고려)의 상태에 있어서 압력을 걸을 때에 실린더 가작동하기 시작하는 압력
5.지지형 식란의 ( )는 사용압력 kgf/㎠이다.
6.피스톤 로드 선단나상부에 로크너 트를 설치해서 사용하는 경우는 나사길이A 치수를 길게 해 주십시오

Note) 1.The working pressure is the maximum set pressure value of the hydraulic circuit.
2.The max. allowable pressure is the max. allowable value of pressure that is generated inside of the cylinder.
3.The bearing pressure is the test pressure to bear without causing a drop in performance when returning to working pressure.
4.The min. working pressure at which the cylinder starts when the pressure is applied under no load after the cylinder is installed horizontally.
5.The type in parentheses in the supporting type section is for 70kgf/㎠.
6.If a lock nut is installed and used in the end screw of the piston rod, make the length of the screw(A) longer.

▶쿠션길이 Cushion Length

단위 unit : mm

I-D(mm)	Ø40~Ø63	Ø80~Ø200	Ø180~Ø200	Ø250
Cushion Length	20	25	30	35

▶행정한계 Stroke Limit

단위 unit : mm

I-D(mm)	Ø40~Ø50	Ø63,Ø80	Ø100	Ø125~Ø250
limit	~1,200	~1,600	~2,000	~2,000

주)1.지지형식에 따른 좌굴은 별도로 계산하여 주십시오.
2..이상보다 긴 스트로크는 상담바랍니다.

Note) 1.Calculate separately the bucking according to the supporting type.
2..For longer strokes, ask for instructions.

▶표준형 패킹재질 Packing materials for standard type

dimensions	items	materials
Ø40 ~ Ø250	DUST SEAL	URETHANE RUBBER
	ROD SEAL	URETHANE RUBBER
	PISTON SEAL	URETHANE RUBBER
	O-RING	NBR

▶실린더 형식 기호 Cylinder Type Notation

IS70/140H ① ○ ② SD ③ 50 ④ C — N ⑤ ⑥ 200 — A ⑦ ⑧ B — ○ ⑨ ⑩

①시리즈 Series

Single rod	IS 70H	70kgf/㎠
	IS 140H	140kgf/㎠
Double rod	IS 70H-W	70kgf/㎠
	IS 140H-W	140kgf/㎠
Switch Mounted	IS 70HL	70kgf/㎠

②패킹재질 Packing materials

notation	materials	remarks
none	materials of our company	standard dimension items
1	NBR	
2	Urethane rubber	
3	Fluorine rubber	

③지지형식 Supporting type

SD - LA - (LB) - (FA) - (FB) - FC - FD - CA - CB - TA - TC

( )은사용압력 70kgf/㎠용
The type in parentheses is for 70kgf/㎠

④실린더내경 Inside diameter of cylinder ⑤ 로드형식 Rod-type

Tube		Rod	
Size	I-D of cylinder	B series	C series
40	Ø40	Ø22	Ø18
50	Ø50	Ø28	Ø22
63	Ø63	Ø35	Ø28
80	Ø80	Ø45	Ø35
100	Ø100	Ø55	Ø45
125	Ø125	Ø70	Ø55
140	Ø140	Ø80	Ø60
150	Ø150	Ø85	Ø65
160	Ø160	Ø90	Ø70
180	Ø180	Ø100	Ø80
200	Ø200	Ø110	Ø90
250	Ø250	Ø140	Ø110

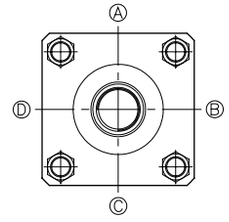
⑥쿠션형식 Cushion Type

B	Both-side cushion
R	Rod-side cushion
H	Head-side cushion
N	No-cushion

⑦실린더 행정(mm) Cylinder Stroke

⑧포트위치:표준Ⓐ Port position : standardⒷ

⑨쿠션밸브위치:표준Ⓑ Cushion Valve position : standardⒷ



포트의 표준위치는 A방향, 쿠션밸브의 표준위치는 B방향입니다
위치변경이필요할 경우 A,B,C,D로 표시하여 주시기 바랍니다

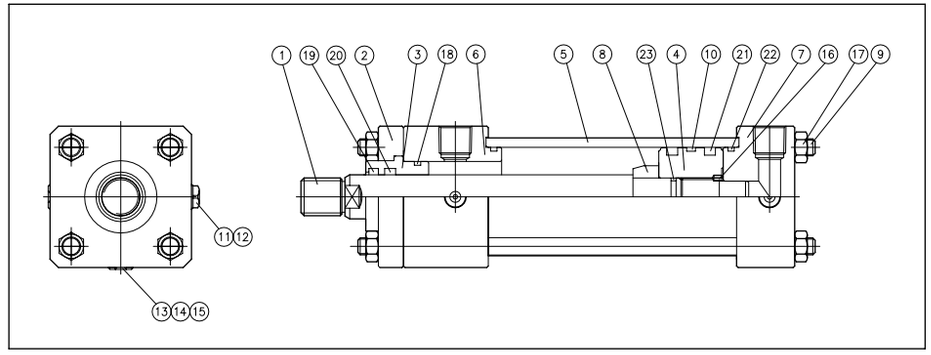
The standard port position is A direction, and the standard cushion valve position B direction, if a necessary to change the position, make with A,B,C,D.

⑩방진커버 Dust-proofing cover

notation	material
J	Nylon Tarpaulin
JN	Neoprene

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES
70/140kgf/㎠용 표준유압 실린더 Hydraulic Cylinder for 70/140kgf/㎠

▶내부구조도 Insded Structure Drawings



1. 부품리스트 Part List

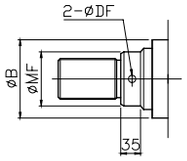
No.	name	material	quantity	No.	name	material	quantity
1	PISTON ROD	S45C	1	10	WEARING	TEFLON	1
2	RETAINER	SS41	1	11	CUSHION VALVE	S45C	2
3	BUSH	BC3	1	12	CUSHION BODY	SS41	2
4	PISTON	SS41	1	13	STEEL BALL	SUJ	2
5	TUBE	STKM13C	1	14	CHECK BODY	SS41	2
6	ROD BLOCK	SS41	1	15	COIL SPRING	SWP	2
7	HEAD BLOCK	SS41	1	16	SET SCREW	SCM	1
8	CUSHION RING	BC6	1	17	TIE ROD NUT	S45C	8
9	TIE ROD	S45C	4				

2. 페킹리스트 Packing List

No.	18		19		20		21	22	23	
name	BUSH O-RING		DUST SEAL		ROD PACKING		PISTON(P)	TUBE O-RING	ROD O-RING	
model	B/C		B	C	B	C	B/C	B/C	B	C
materials	NBR		NBR		URETHANE		URETHANE	NBR	NBR	
I-D \ quantity	1		1	1	1	1	2	2	1	1
Ø40	G25		WD-22	WD-18	RU23-22	RU21-18	PUJ40	G35	P14	P10A
Ø50	G30		WD-28	WD-22	RU21-28	RU23-22	PUJ50	G45	P18	P14
Ø63	G40		WD-35	WD-28	RU20-35	RU21-28	PUJ63	G58	P22A	P20
Ø80	G50		WD-45	WD-35	RU21-45	RU20-35	PUJ80	G75	G29	P22A
Ø100	G60		WD-55	WD-45	RU20-55	RU21-45	PUJ100	G95	G40	G30
Ø125	G80	G65	WD-70	WD-55	RU20-70	RU20-55	PUJ125	G120	G55	G45
Ø140	G90	G70	WD-80	WD-60	RU20-80	RU20-60	PUJ140	G135	G65	G45
Ø150	G95	G75	WD-85	WD-65	RU20-85	RU20-65	PUJ150	G145	G65	G50
Ø160	G100	G80	WD-90	WD-70	RU21-90	RU20-70	PUJ160	G150	G70	G55
Ø180	G110	G90	WD-100	WD-80	RU22-100	RU20-80	PUJ180	G170	G75	G65
Ø200	G125	G105	WD-110	WD-90	RU20-110	RU21-90	PUJ200	G190	G95	G70
Ø250	G155	G130	WD-140	WD-110	RU22-140	RU20-110	PUJ250	G240	G115	G95

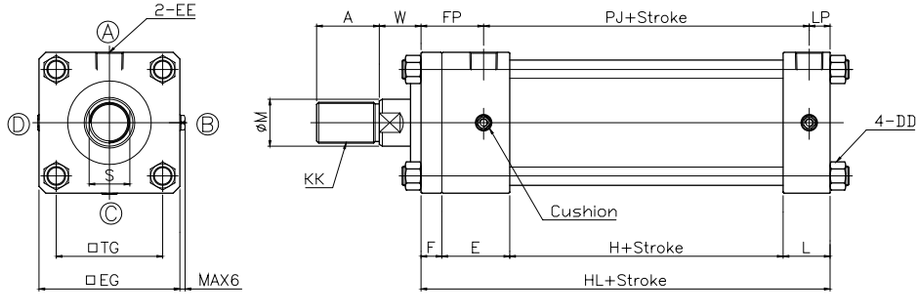
※상기 Packing 품목은 주문에 따라변경될 수 있습니다.
※Upper Packing Items can be changed by order.

SD	IS 70 / 140 H - [2]	SD [4] C/B -	[6] [7] ST [8] — [9] [10]
표준형 standard	[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover		



로드경 ø100 이상은 드릴홀로 합니다
Over ø100 of Rod Diameter is drill hole.

Rod Diameter	ØMF	ØDF
ø100	ø99.5	ø12
ø110	ø109.5	ø15
ø140	ø139.5	ø15



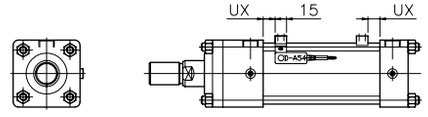
○ 방진커버부는 PAGE28를 참조하여 주세요.
○ ø180-ø250는 아래표와 같이 스트로크에 따라커버 고정방식이 변합니다.
○See page 37 about Dust-Proofing Cover part.
○Cover fixing method of ø180-ø250 is changed as stroke like following table.

series \ fixing method	Tie rod Type	Tube Flange
IS70H	~1,500	1,501~2,000
IS140H	~800	801~2,000

○ 튜브후렌지식이 되어도 취부치수는 변하지 않습니다..
○Though it is changed into Tube French, the dimension of fting surface doesn't change.

notation / I-D	Rod Diameter(B type) A	ØB	KK	ØM	S	Rod Diameter(C type) A	ØB	KK	ØM	S	DD	□EG	EE	F	FP	E	H	HL	L	PJ	LP	□TG	W
Ø40	30	Ø40	M20X1.5	Ø22	19	25	Ø36	M16X1.5	Ø18	16	M10X1.5	65	PT¼	12	39	47	48	141	34	88	14	45	30
Ø50	35	Ø46	M24X1.5	Ø28	24	30	Ø40	M20X1.5	Ø22	20	M10X1.5	76	PT¼	13	47	50	56	155	36	90	15	52	30
Ø63	45	Ø55	M30X1.5	Ø35	30	35	Ø46	M24X1.5	Ø28	24	M12X1.5	90	PT¼	14	51	54	58	163	37	100	16	63	35
Ø80	60	Ø65	M39X1.5	Ø45	41	45	Ø55	M30X1.5	Ø35	30	M16X1.5	110	PT¼	18	54	61	64	184	41	110	20	80	35
Ø100	75	Ø80	M48X1.5	Ø55	50	60	Ø65	M39X1.5	Ø45	41	M18X1.5	135	PT¼	20	60	65	62	192	45	112	20	102	40
Ø125	95	Ø95	M64X2	Ø70	65	75	Ø80	M48X1.5	Ø55	50	M22X1.5	165	PT1	24	66	74	68	220	54	131	23	122	45
Ø140	110	Ø105	M72X2	Ø80	75	80	Ø85	M56X2	Ø60	55	M24X1.5	185	PT1	26	68	74	76	230	54	139	23	138	50
Ø150	115	Ø110	M76X2	Ø85	80	85	Ø90	M60X2	Ø65	60	M27X1.5	196	PT1	28	70	74	84	240	54	147	23	148	50
Ø160	115	Ø120	M80X2	Ø90	85	95	Ø95	M64X2	Ø70	65	M27X1.5	210	PT1	31	73	79	84	253	59	154	26	160	55
Ø180	140	Ø125	M95X2	Ø100	-	110	Ø105	M72X2	Ø80	75	M30X1.5	235	PT¼	33	70	84	91	277	69	170	29	182	55
Ø200	150	Ø140	M100X2	Ø110	-	120	Ø115	M80X2	Ø90	85	M33X2	262	PT¼	37	79	94	91	301	79	188	34	200	55
Ø250	195	Ø170	M130X2	Ø140	-	150	Ø140	M100X2	Ø110	-	M42X2	325	PT2	46	106	114	102	346	84	204	36	250	65

SD	IS 70/140 HL - [2]	SD [4] C/B -	[6] [7] ST [8] — [9] [10]
표준형 스위치 취부치수 Dimension of fitting surface of standard switch	[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover		

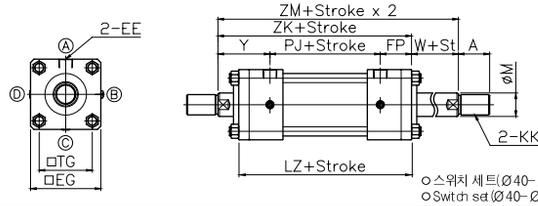


○치수표 / DIMENSION

Rod diameter	ø40	ø50	ø63	ø80	ø100
UX	28	30	35	37	45

□외형도
Outside Dimensions Drawing

SD	IS 70/140 HW - [2]	SD [4] C/B -	[6] [7] ST [8] — [9] [10]
표준형 양로드 형 Dimension of fitting surface of standard switch	[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover		



○ 스위치 세트(Ø40-Ø125)도 준 표준으로 제작합니다.
○Switch set (Ø40-Ø125) is made by semi-standard.

notation / I-D	Rod Diameter(B type) A	KK	ØM	Rod Diameter(C type) A	KK	ØM	□EG	EE	FP	LZ	PJ	□TG	W	Y	ZK	ZM
Ø40	30	M20X1.5	Ø22	25	M16X1.5	Ø18	65	PT¼	39	166	88	45	30	69	196	226
Ø50	35	M24X1.5	Ø28	30	M20X1.5	Ø22	76	PT¼	42	182	98	52	30	72	212	242
Ø63	45	M30X1.5	Ø35	35	M24X1.5	Ø28	90	PT¼	47	194	100	63	35	82	229	264
Ø80	60	M39X1.5	Ø45	45	M30X1.5	Ø35	110	PT¼	54	222	114	80	35	89	257	292
Ø100	75	M48X1.5	Ø55	60	M39X1.5	Ø45	135	PT¼	60	232	112	102	40	100	272	312
Ø125	95	M64X2	Ø70	75	M48X1.5	Ø55	165	PT1	66	264	132	122	45	111	309	354
Ø140	110	M72X2	Ø80	80	M56X2	Ø60	185	PT1	68	276	140	138	50	118	326	376
Ø150	115	M76X2	Ø85	85	M60X2	Ø65	196	PT1	70	288	148	148	50	120	338	388
Ø160	115	M80X2	Ø90	95	M64X2	Ø70	210	PT1	73	304	158	160	55	128	359	414

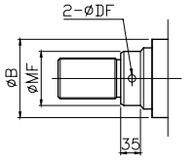
유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

외형도 Outside Dimensions Drawings

LA IS 70 / 140 H − [2] LA [4] C/B − [6] [7] ST [8] — [9] [10]

축방향 풋트형(일체형) Shaft direction Rod Type(Onebody Type)

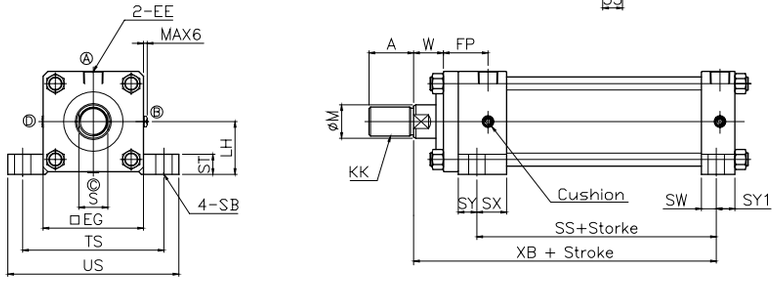
[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover



로드경 ϕ100 이상은 드릴홀로 합니다
Over ϕ100 of Rod Diameter is drill hole.

Rod Diameter	ØMF	ØDF
ø 100	ø99.5	ø12
ø110	ø109.5	ø15
ø140	ø139.5	ø15

○ 오일포트와쿠션밸브 방향선정시Ⓒ위치에는 장착이 불가합니다.
○When choosing cushion valve and oil port direction, can't install at Ⓒ position.

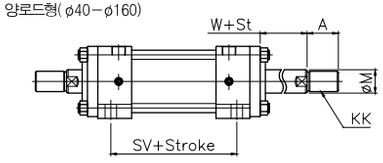


○ 방진커버부는 PAGE281를 참조하여 주세요.
○ ø180− ø250는 아래표와 같이 스트로크에따라 커버 고정방식이 변합니다.
○See page 37 about Dust-Proofing Cover part.
○Cover fixing method of ø180− ø250 is changed as stroke like following table.

fixing method / series	Tie rod Type	Tube Flange
IS70H	~ 1,500	1501 ~ 2,000
IS140H	~ 800	801 ~ 2,000

○ 튜브후렌지식이 되어도 취부치수는 변하지 않습니다.
○Though it is changed into Tube French, the dimension of fitting surface doesn't change.

양로드형(ϕ40−ϕ160)



notation / I-D	Rod Diameter(B type) A	ØB	KK	ØM	S	Rod Diameter(C type) A	ØB	KK	ØM	S	□EG	EE	FP	LH	SB	SS	ST	SV	SW	SX	SY	SY1	TS	US	W	XB
Ø40	30	Ø40	M20X1.5	Ø22	19	25	Ø36	M16X1.5	Ø18	16	65	PT3/8	39	37.5 ±0.15	Ø11	98	14	112	18	32	15	16	95	118	30	155
Ø50	35	Ø46	M24X1.5	Ø28	24	30	Ø40	M20X1.5	Ø22	19	76	PT1/2	42	45 ±0.15	Ø14	103	17	122	14	33	17	22	115	145	30	163
Ø63	45	Ø55	M30X1.5	Ø35	30	35	Ø46	M24X1.5	Ø28	24	90	PT1/2	47	50 ±0.15	Ø18	106	19	122	16	32	22	21	132	165	35	177
Ø80	60	Ø65	M39X1.5	Ø45	41	45	Ø55	M30X1.5	Ø35	30	110	PT3/4	54	60 ±0.15	Ø18	124	25	144	20	40	21	21	155	190	35	198
Ø100	75	Ø80	M48X1.5	Ø55	50	60	Ø65	M39X1.5	Ø45	41	135	PT3/4	60	71 ±0.15	Ø22	122	27	142	20	40	25	25	190	230	40	189
Ø125	95	Ø95	M64X2	Ø70	65	75	Ø80	M48X1.5	Ø55	50	165	PT1	66	85 ±0.15	Ø26	136	32	156	24	44	30	30	224	272	45	235
Ø140	110	Ø105	M72X2	Ø80	75	80	Ø85	M56X2	Ø60	55	185	PT1	68	95 ±0.15	Ø26	144	35	164	24	44	30	30	250	300	50	250
Ø150	115	Ø110	M76X2	Ø85	80	85	Ø90	M60X2	Ø65	60	196	PT1	70	106 ±0.15	Ø30	146	37	166	21	41	33	33	270	320	50	257
Ø160	120	Ø115	M80X2	Ø90	85	95	Ø95	M64X2	Ø70	65	210	PT1	73	112 ±0.15	Ø33	150	42	170	23	43	35	36	285	345	55	272
Ø180	140	Ø125	M95X2	Ø100	−	110	Ø105	M72X2	Ø80	75	235	PT1 1/4	70	125 ±0.15	Ø33	172	47	189	32	49	35	37	315	375	55	295
Ø200	150	Ø140	M100X2	Ø110	−	120	Ø115	M80X2	Ø90	85	262	PT1 1/2	79	140 ±0.15	Ø36	186	52	201	40	55	39	39	355	425	55	317
Ø250	195	Ø170	M130X2	Ø140	−	150	Ø140	M100X2	Ø110	−	325	PT2	106	170 ±0.15	Ø45	206	57	236	37	67	47	47	425	515	65	354

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

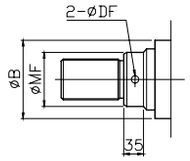
외형도 Outside Dimensions Drawings

LB IS 70 / 140 H − [2] LB [4] C/B − [6] [7] ST [8] — [9] [10]

축방향 풋트형(조립형) Shaft direction foot Type(Assembly Type)

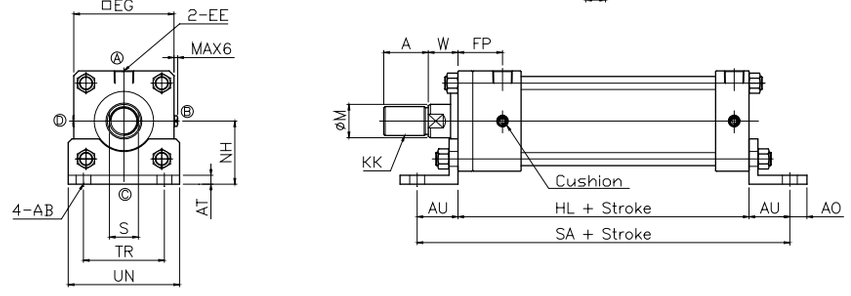
[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover

LB TYPE 선정시 조립브라켓의 강도로 인하여 유압 70kg/㎠용으로 초과하여 사용하지 마시오.
When choosing LB TYPE, don't use oil pressure over 70kg/㎠ considering intensity of Assembly Bracket.



로드경 ϕ100 이상은 드릴홀로 합니다
Over ϕ100 of Rod Diameter is drill hole.

Rod Diameter	ØMF	ØDF
ø 100	ø99.5	ø12
ø110	ø109.5	ø15
ø140	ø139.5	ø15

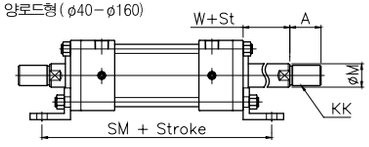


○ 방진커버부는 PAGE281를 참조하여 주세요.
○ ø180− ø250는 아래표와 같이 스트로크에 따라 커버고정방식이 변합니다..
○See page 37 about Dust-Proofing Cover part.
○Cover fixing method of ø180− ø250 is changed as stroke like following table.

fixing method / series	Tie rod Type	Tube Flange
IS70H	ø99.5	ø12
IS140H	ø111.5	ø15

○ 튜브후렌지식이 되어도 취부치수는 변하지 않습니다.
○Though it is changed into Tube French, the dimension of fitting surface doesn't change.

양로드형 (ϕ40−ϕ160)



notation / I-D	Rod Diameter(B type) A	ØB	KK	ØM	S	Rod Diameter(C type) A	ØB	KK	ØM	S	AB	NH	AO	AT	AU	□EG	EE	FP	HL	SA	SM	TR	UN	W
Ø40	30	Ø40	M20X1.5	Ø22	19	25	Ø36	M16X1.5	Ø18	16	Ø11	43 ±0.15	13	8	32	65	PT⅜	39	141	205	230	46	69	30
Ø50	35	Ø46	M24X1.5	Ø28	24	30	Ø40	M20X1.5	Ø22	19	Ø14	50 ±0.15	15	8	35	76	PT⅜	42	155	225	252	58	85	30
Ø63	45	Ø55	M30X1.5	Ø35	30	35	Ø46	M24X1.5	Ø28	24	Ø18	60 ±0.15	18	10	42	90	PT⅜	47	163	247	278	65	98	35
Ø80	60	Ø65	M39X1.5	Ø45	41	45	Ø55	M30X1.5	Ø35	30	Ø18	72 ±0.25	20	12	50	110	PT⅜	54	184	284	322	87	118	35
Ø100	75	Ø80	M48X1.5	Ø55	50	60	Ø65	M39X1.5	Ø45	41	Ø22	85 ±0.25	23	12	55	135	PT⅜	60	192	302	342	109	150	40
Ø125	95	Ø95	M64X2	Ø70	65	75	Ø80	M48X1.5	Ø55	50	Ø26	105 ±0.25	29	15	66	165	PT1	66	220	352	396	130	175	45
Ø140	110	Ø105	M72X2	Ø80	75	80	Ø85	M56X2	Ø60	55	Ø26	115 ±0.25	30	18	70	185	PT1	68	230	370	416	145	195	50
Ø150	115	Ø110	M76X2	Ø85	80	85	Ø90	M60X2	Ø65	60	Ø30	123 ±0.25	30	18	75	196	PT1	70	240	390	438	155	210	50
Ø160	120	Ø120	M80X2	Ø90	85	95	Ø95	M64X2	Ø70	65	Ø33	132 ±0.25	35	18	75	210	PT1	73	253	403	454	170	225	55
Ø180	140	Ø125	M95X2	Ø100	−	110	Ø105	M72X2	Ø80	75	Ø33	148 ±0.25	40	20	85	235	PT⅞	70	275	445	−	185	243	55
Ø200	150	Ø140	M100X2	Ø110	−	120	Ø120	M80X2	Ø90	85	Ø36	165± 0.25	40	25	98	262	PT⅞	79	301	497	−	206	272	55
Ø250	195	Ø170	M130X2	Ø140	−	150	Ø140	M100X2	Ø110	−	Ø45	208± 0.25	50	35	130	325	PT2	106	346	606	−	250	335	65

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

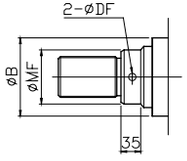
외형도 Outside Dimensions Drawings

FA | IS 70 / 140 H − [2] | FA [4] C/B − | [6] [7] ST [8] — [9] [10]

로드측 축방향 플랜지형 Rod-side, shaft direction, Flange Type

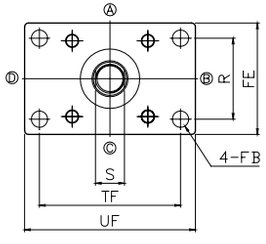
[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover

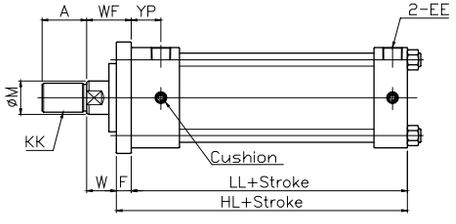
FA형 선정시 70㎏/㎠를 초과하여 사용하지 마십시요.
70㎏/㎠ 초과 사용시 취부형태를 고려하여 설계하십시오.
When choosing FA TYPE, don't use oil pressure over 70㎏/㎠.
When it is over 70㎏/㎠, design it considering fitting surface type.



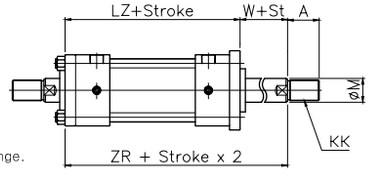
로드경 ø100 이상은 드릴홀로 합니다
Over ø100 of Rod Diameter is drill hole.

Rod Diameter	ØMF	ØDF
ø100	ø99.5	ø12
ø110	ø109.5	ø15
ø140	ø139.5	ø15





양로드형 (ø40 − ø160)



○ 방진커버부는 PAGE281를 참조하여 주세요.
○ ø180 − ø250는 아래표와 같이 스트로크에따라 커버 고정방식이 변합니다.
○See page 37 about Dust-Proofing Cover part.
○Cover fixing method of ø180 − ø250 is changed as stroke like following table.

series \ fixing method	Tie rod Type	Tube Flange
IS70H	~ 1,500	1500이상

○ 튜브후렌지식이 되어도 취부치수는 변하지 않습니다.
○Though it is changed into Tube French, the dimension of fitting surface doesn't change.

notation / H-D	Rod Diameter(B type)					Rod Diameter(C type)					EE	F	FB	FE	HL	LL	LZ	R	TF	UF	W	WF	YP	ZR
	A	ØB	KK	ØM	S	A	ØB	KK	ØM	S														
Ø40	30	Ø40	M20X1.5	Ø22	20	25	Ø36	M16X1.5	Ø18	16	PT¼	12	Ø11	69	141	129	166	46	95	118	30	41	27	196
Ø50	35	Ø46	M24X1.5	Ø28	24	30	Ø40	M20X1.5	Ø22	20	PT¼	13	Ø14	85	155	142	182	58	115	145	30	43	30	212
Ø63	45	Ø55	M30X1.5	Ø35	30	35	Ø46	M24X1.5	Ø28	24	PT¼	14	Ø18	98	163	149	194	65	132	165	35	49	37	229
Ø80	60	Ø65	M39X1.5	Ø45	41	45	Ø55	M30X1.5	Ø35	30	PT¼	18	Ø18	118	184	166	222	87	155	190	35	53	36	257
Ø100	75	Ø80	M48X1.5	Ø55	50	60	Ø65	M39X1.5	Ø45	41	PT¼	20	Ø22	150	192	172	232	109	190	230	40	60	40	272
Ø125	95	Ø95	M64X2	Ø70	65	75	Ø80	M48X1.5	Ø55	50	PT1	24	Ø26	175	220	196	264	130	224	272	45	69	42	309
Ø140	110	Ø105	M72X2	Ø80	75	80	Ø85	M56X2	Ø60	55	PT1	26	Ø26	195	230	204	276	145	250	300	50	76	42	326
Ø150	115	Ø110	M76X2	Ø85	80	85	Ø90	M60X2	Ø65	60	PT1	28	Ø30	210	240	202	288	155	270	320	50	78	42	338
Ø160	120	Ø115	M80X2	Ø90	85	95	Ø95	M64X2	Ø70	65	PT1	31	Ø33	225	253	222	304	170	285	345	55	86	42	359
Ø180	140	Ø125	M95X2	Ø100	-	110	Ø105	M72X2	Ø80	75	PT1¼	33	Ø33	243	275	242	-	185	315	375	55	88	37	-
Ø200	150	Ø140	M100X2	Ø110	-	120	Ø115	M80X2	Ø90	85	PT1½	37	Ø36	272	301	264	-	206	355	425	55	92	42	-
Ø250	195	Ø170	M130X2	Ø140	-	150	Ø140	M100X2	Ø110	-	PT2	46	Ø45	335	346	300	-	250	425	515	65	111	60	-

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

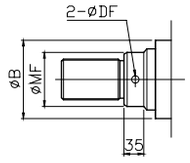
외형도 Outside Dimensions Drawings

FB | IS 70 / 140 H − [2] | FB [4] C/B − | [6] [7] ST [8] — [9] [10]

헤드측 축방향 플랜지형 Head-side, shaft direction, Flange Type

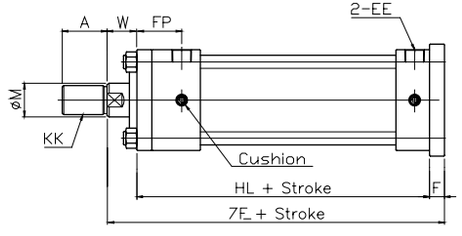
[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover

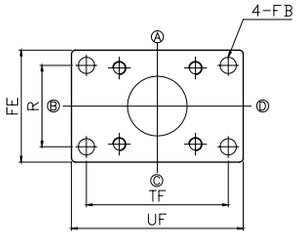
FB형 선정시 70㎏/㎠를 초과하여 사용하지 마십시요.
70㎏/㎠ 초과사용시 취부형태를 고려하여 설계하십시오.
When choosing FB TYPE, don't use oil pressure over 70㎏/㎠.
When it is over 70㎏/㎠, design it considering fitting surface type.



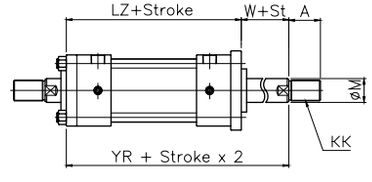
로드경 ø100 이상은 드릴홀로 합니다
Over ø100 of Rod Diameter is drill hole.

Rod Diameter	ØMF	ØDF
ø100	ø99.5	ø12
ø110	ø109.5	ø15
ø140	ø139.5	ø15





양로드형(ø40 − ø160)



○ 방진커버부는 PAGE281를 참조하여 주세요.
○ ø180 − ø250는 아래표와 같이 스트로크에따라 커버 고정방식이 변합니다.
○See page 37 about Dust-Proofing Coverpart.
○Cover fixing method of ø180 − ø250 is changed as stroke like following table.

series \ fixing method	Tie rod Type	Tube Flange
IS70H	~ 1,500	1,501~2,000

○ 튜브후렌지식이 되어도 취부치수는 변하지 않습니다.
○Though it is changed into Tube French, the dimension of fitting surface doesn't change.

notation / H-D	Rod Diameter(B type)					Rod Diameter(C type)					EE	F	FB	FE	FP	HL	LZ	R	TF	UF	W	YR	ZF
	A	ØB	KK	ØM	S	A	ØB	KK	ØM	S														
Ø40	30	Ø40	M20X1.5	Ø22	20	25	Ø36	M16X1.5	Ø18	16	PT¼	12	Ø11	69	39	141	166	46	95	118	30	196	182
Ø50	35	Ø46	M24X1.5	Ø28	24	30	Ø40	M20X1.5	Ø22	20	PT¼	13	Ø14	85	42	155	182	58	115	145	30	212	198
Ø63	45	Ø55	M30X1.5	Ø35	30	35	Ø46	M24X1.5	Ø28	24	PT¼	14	Ø18	98	51	163	194	65	132	165	35	229	213
Ø80	60	Ø65	M39X1.5	Ø45	41	45	Ø55	M30X1.5	Ø35	30	PT¼	18	Ø18	118	54	184	222	87	155	190	35	257	237
Ø100	75	Ø80	M48X1.5	Ø55	50	60	Ø65	M39X1.5	Ø45	41	PT¼	20	Ø22	150	60	192	232	109	190	230	40	272	252
Ø125	95	Ø95	M64X2	Ø70	65	75	Ø80	M48X1.5	Ø55	50	PT1	24	Ø26	175	66	220	264	130	224	272	45	309	289
Ø140	110	Ø105	M72X2	Ø80	75	80	Ø85	M56X2	Ø60	55	PT1	26	Ø26	195	68	230	276	145	250	300	50	326	306
Ø150	115	Ø110	M76X2	Ø85	80	85	Ø90	M60X2	Ø65	60	PT1	28	Ø30	210	70	240	288	155	270	320	50	338	318
Ø160	120	Ø115	M80X2	Ø90	85	95	Ø95	M64X2	Ø70	65	PT1	31	Ø33	225	73	253	300	170	285	345	55	355	339
Ø180	140	Ø125	M95X2	Ø100	-	110	Ø105	M72X2	Ø80	75	PT1½	33	Ø33	243	70	275	-	185	315	375	55	-	363
Ø200	150	Ø140	M100X2	Ø110	-	120	Ø115	M80X2	Ø90	85	PT1½	37	Ø36	272	79	301	-	206	355	425	55	-	393
Ø250	195	Ø170	M130X2	Ø140	-	150	Ø140	M100X2	Ø110	-	PT2	46	Ø45	335	106	346	-	250	425	515	65	-	457

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

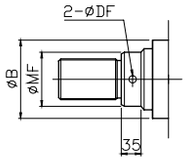
외형도 Outside Dimensions Drawings

FY | IS 70 / 140 H - [2] | FY [4] C/B - | [6] [7] ST [8] – [9] [10]

로드측 축방향 플랜지형 Rod-side, shaft direction, Flange Type

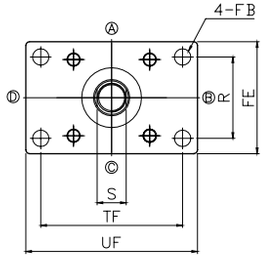
[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover

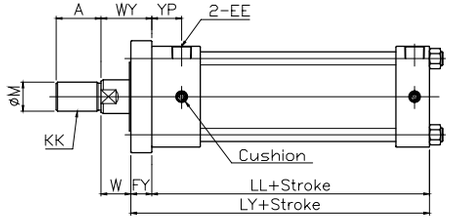
○FY형은 FA형과 다른점은 리테이너 후렌지의 두께를 보강하여 취부강성을 높인 형태입니다.
The difference of FY and FA is to strengthen the thickness of retainer Flange and intensity of fitting surface.



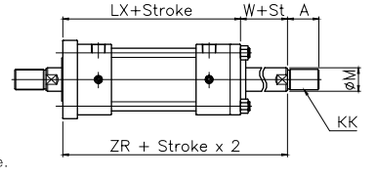
로드경 ø100 이상은 드릴홀로 합니다
Over ø100 of Rod Diameter is drill hole.

Rod Diameter	øMF	øDF
ø100	ø99.5	ø12
ø110	ø109.5	ø15
ø140	ø139.5	ø15





양로드형(ø40 – ø160)



○방진커버부는 PAGE281를 참조하여 주세요.
○ø180 – ø250는 아래표와 같이 스트로크에 따라 커버 고정방식이 변합니다.
○Seepage37 about Dust-Proofing Coverpart.
○Cover fixing method of ø180 – ø250 is changed as stroke like following table.

fixing method / series	Tie rod Type	Tube Flange
IS70H	~ 1,500	1,501~2,000
IS140H	800	801~2,000

○튜브후렌지식이되어도 취부치수는 변하지 않습니다.
○Though it ischanged into Tube French, the dimension of fitting surface doesn't change.

notation / I-D	Rod Diameter(B type) A	ØB	KK	ØM	S	Rod Diameter(C type) A	ØB	KK	ØM	S	EE	FB	FE	FY	LL	LX	LY	R	TF	UF	W	WY	YP	ZR
Ø40	30	Ø40	M20X1.5	Ø22	20	25	Ø36	M16X1.5	Ø18	16	PT⅜	Ø11	69	13	129	168	142	46	95	118	30	43	27	198
Ø50	35	Ø46	M24X1.5	Ø28	24	30	Ø40	M20X1.5	Ø22	20	PT⅜	Ø14	85	18	143	187	161	58	115	145	30	48	30	217
Ø63	45	Ø55	M30X1.5	Ø35	30	35	Ø46	M24X1.5	Ø28	24	PT⅜	Ø18	98	20	149	200	169	65	132	165	37	55	37	234
Ø80	60	Ø65	M39X1.5	Ø45	41	45	Ø55	M30X1.5	Ø35	30	PT⅜	Ø18	118	24	168	228	190	87	155	190	35	59	36	263
Ø100	75	Ø80	M48X1.5	Ø55	50	60	Ø65	M39X1.5	Ø45	41	PT⅜	Ø22	150	28	172	240	200	109	190	230	40	68	40	280
Ø125	95	Ø95	M64X2	Ø70	65	75	Ø80	M48X1.5	Ø55	50	PT1	Ø26	175	33	196	273	229	130	224	272	45	78	42	318
Ø140	110	Ø105	M72X2	Ø80	75	80	Ø85	M56X2	Ø60	55	PT1	Ø26	195	37	204	287	241	145	250	300	45	87	42	337
Ø150	115	Ø110	M76X2	Ø85	80	85	Ø90	M60X2	Ø65	60	PT1	Ø30	210	39	212	299	251	155	270	320	50	89	42	349
Ø160	120	Ø115	M80X2	Ø90	85	95	Ø95	M64X2	Ø70	65	PT1	Ø33	225	41	222	314	263	170	285	345	55	96	42	369
Ø180	140	Ø125	M95X2	Ø100	–	110	Ø105	M72X2	Ø80	75	PT1⅛	Ø33	243	46	242	–	288	185	315	375	55	101	37	–
Ø200	150	Ø140	M100X2	Ø110	–	120	Ø115	M80X2	Ø90	85	PT1⅛	Ø36	272	51	264	–	315	206	355	425	55	106	42	–
Ø250	195	Ø170	M130X2	Ø140	–	150	Ø140	M100X2	Ø110	–	PT2	Ø45	335	65	300	–	365	250	425	515	65	130	60	–

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

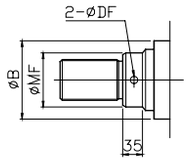
외형도 Outside Dimensions Drawings

FZ | IS 70 / 140 H - [2] | FZ [4] C/B - | [6] [7] ST [8] – [9] [10]

헤드측 축방향 플랜지형 Head-side, shaft direction, Flange Type

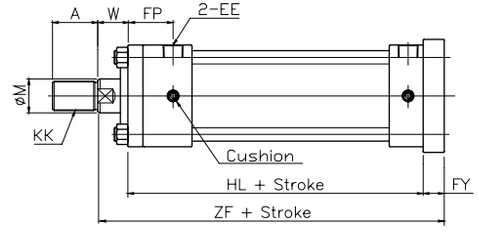
[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover

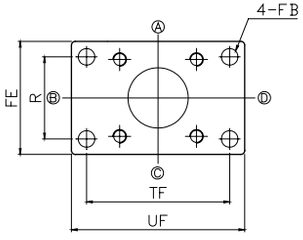
○FZ형은 FB형과 다른점은 리테이너 후렌지의 두께를 보강하여 취부강성을 높인 형태입니다.
The difference of FZ and FB is to strengthen the thickness of retainer Flange and intensity of fitting surface.



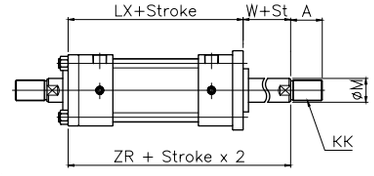
로드경 ø100 이상은 드릴홀로 합니다
Over ø100 of Rod Diameter is drill hole.

Rod Diameter	øMF	øDF
ø100	ø99.5	ø12
ø110	ø109.5	ø15
ø140	ø139.5	ø15





양로드형(ø40 – ø160)



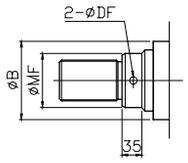
○방진커버부는 PAGE281를 참조하여 주세요.
○ø180 – ø250는 아래표와 같이 스트로크에 따라 커버 고정방식이 변합니다.
○Seepage35 about Dust-Proofing Coverpart.
○Cover fixing method of ø180 – ø250 is changed as stroke like following table.

fixing method / series	Tie rod Type	Tube Flange
IS70H	ø99.5	ø12
IS140H	ø111.5	ø15

○튜브후렌지식이 되어도 취부치수는변하지 않습니다.
○Though it ischanged into Tube French, the dimension of fitting surface doesn't change.

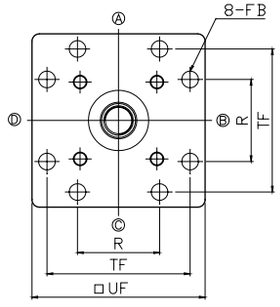
notation / I-D	Rod Diameter(B type) A	ØB	KK	ØM	S	Rod Diameter(C type) A	ØB	KK	ØM	S	EE	FB	FE	FP	FY	HL	LX	R	TF	UF	W	ZF	ZR
Ø40	30	Ø40	M20X1.5	Ø22	20	25	Ø36	M16X1.5	Ø18	16	PT⅜	Ø11	69	39	13	141	168	46	95	118	30	153	198
Ø50	35	Ø46	M24X1.5	Ø28	24	30	Ø40	M20X1.5	Ø22	20	PT⅜	Ø14	85	42	18	155	187	58	115	145	30	173	217
Ø63	45	Ø55	M30X1.5	Ø35	30	35	Ø46	M24X1.5	Ø28	24	PT⅜	Ø18	98	51	20	163	199	65	132	165	35	183	234
Ø80	60	Ø65	M39X1.5	Ø45	41	45	Ø55	M30X1.5	Ø35	30	PT⅜	Ø18	118	54	24	184	228	87	155	190	35	208	263
Ø100	75	Ø80	M48X1.5	Ø55	50	60	Ø65	M39X1.5	Ø45	41	PT⅜	Ø22	150	60	28	192	240	109	190	230	40	220	280
Ø125	95	Ø95	M64X2	Ø70	65	75	Ø80	M48X1.5	Ø55	50	PT1	Ø26	175	66	33	220	273	130	224	272	45	253	318
Ø140	110	Ø105	M72X2	Ø80	75	80	Ø85	M56X2	Ø60	55	PT1	Ø26	195	68	37	230	287	145	250	300	50	267	337
Ø150	115	Ø110	M76X2	Ø85	80	85	Ø90	M60X2	Ø65	60	PT1	Ø30	210	70	39	240	299	155	270	320	50	279	349
Ø160	120	Ø115	M80X2	Ø90	85	95	Ø95	M64X2	Ø70	65	PT1	Ø33	225	73	41	253	314	170	285	345	55	294	369
Ø180	140	Ø125	M95X2	Ø100	–	110	Ø105	M72X2	Ø80	75	PT1⅛	Ø33	243	70	46	275	–	185	315	375	55	321	–
Ø200	150	Ø140	M100X2	Ø110	–	120	Ø115	M80X2	Ø90	85	PT1⅛	Ø36	272	79	51	301	–	206	355	425	55	352	–
Ø250	195	Ø170	M130X2	Ø140	–	150	Ø140	M100X2	Ø110	–	PT2	Ø45	335	106	65	346	–	250	425	515	65	411	–

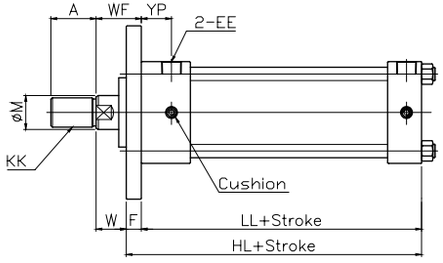
FC	IS 70 / 140 H - 2	FC 4 C/B -	6 7 ST 8 – 9 10
정방형 로드측 플랜지형 Forad direction Rod-side, Flange Type	2 패킹재질 Packing materials 4 실린더 호칭경(내경) Inside Diameter of Cylinder 6 쿠션형식 Cushion Type 7 실린더 행정 Cylinder Stroke 8 포트위치 Port Position 9 쿠션밸브위치 Cushion Valve Position 10 방진커버 Dust-Proofing Cover		



로드경 ø100 이상은 드롭홀로 합니다
Over ø100 of Rod Diameter is drill hole.

Rod Diameter	ØMF	ØDF
ø100	ø99.5	ø12
ø110	ø109.5	ø15
ø140	ø139.5	ø15



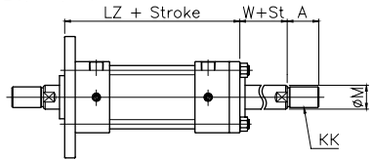


○ 방진커버부는PAGE281를 참조하여 주세요.
○ ø180-ø250는 아래표와 같이스트로크에 따라 커버고정방식이 변합니다.
○Seepage37 aboutDust-Proofing Coverpart.
○Cover fixing method of ø180- ø250is changed as stroke like following table.

series \ fixing method	Tie rod Type	Tube Flange
IS70H	~ 1,500	1,501~2,000
IS140H	~ 800	801~2,000

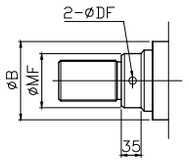
○ 튜브후렌지식이되어도 취부치수는 변하지 않습니다.
○Though it ischanged into Tube French, the dimension of fitting surface doesn't change.

양로드형 (ø40-ø160)



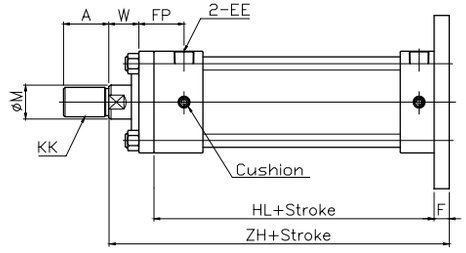
notation \ I-D	Rod Diameter(B type) A	ØB	KK	ØM	S	Rod Diameter(C type) A	ØB	KK	ØM	S	EE	F	FB	HL	LL	LZ	R	TF	□UF	W	WF	YP
Ø40	30	Ø40	M20X1.5	Ø22	20	25	Ø36	M16X1.5	Ø18	16	PT¼	12	Ø11	141	129	166	46	95	118	30	44	27
Ø50	35	Ø46	M24X1.5	Ø28	24	30	Ø40	M20X1.5	Ø22	20	PT¼	13	Ø14	155	142	182	58	115	145	30	43	30
Ø63	40	Ø55	M30X1.5	Ø35	30	35	Ø46	M24X1.5	Ø28	24	PT¼	14	Ø18	163	149	194	65	132	165	35	50	37
Ø80	60	Ø65	M39X1.5	Ø45	41	45	Ø55	M30X1.5	Ø35	30	PT¼	18	Ø18	184	166	222	87	155	190	35	53	36
Ø100	75	Ø80	M48X1.5	Ø55	50	60	Ø65	M39X1.5	Ø45	41	PT¼	20	Ø22	192	172	232	109	190	230	40	60	40
Ø125	95	Ø95	M64X2	Ø70	65	75	Ø80	M48X1.5	Ø55	50	PT1	24	Ø26	220	196	264	130	224	272	45	69	42
Ø140	110	Ø105	M72X2	Ø80	75	80	Ø85	M56X2	Ø60	55	PT1	26	Ø26	230	204	276	145	250	300	50	76	42
Ø150	115	Ø110	M76X2	Ø85	80	85	Ø90	M60X2	Ø65	60	PT1	28	Ø30	240	212	288	155	270	320	50	78	42
Ø160	120	Ø115	M80X2	Ø90	85	95	Ø95	M64X2	Ø70	65	PT1	31	Ø33	253	222	304	170	285	345	55	86	42
Ø180	140	Ø125	M95X2	Ø100	-	110	Ø105	M72X2	Ø80	75	PT1¼	33	Ø33	275	242	-	185	315	375	55	88	37
Ø200	150	Ø140	M100X2	Ø110	-	120	Ø115	M80X2	Ø90	85	PT1¼	37	Ø36	301	264	-	206	355	425	55	92	42
Ø250	195	Ø170	M130X2	Ø140	-	150	Ø140	M100X2	Ø110	-	PT2	46	Ø45	346	300	-	250	425	515	65	111	60

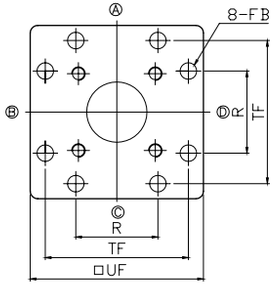
FD	IS 70 / 140 H - 2	FD 4 C/B -	6 7 ST 8 – 9 10
정방형 헤드측 플랜지형 Forard direction Head-side, Flange Type	2 패킹재질 Packing materials 4 실린더 호칭경(내경) Inside Diameter of Cylinder 6 쿠션형식 Cushion Type 7 실린더 행정 Cylinder Stroke 8 포트위치 Port Position 9 쿠션밸브위치 Cushion Valve Position 10 방진커버 Dust-Proofing Cover		



로드경 ø100 이상은 드롭홀로 합니다
Over ø100 of Rod Diameter is drill hole.

Rod Diameter	ØMF	ØDF
ø100	ø99.5	ø12
ø110	ø109.5	ø15
ø140	ø139.5	ø15



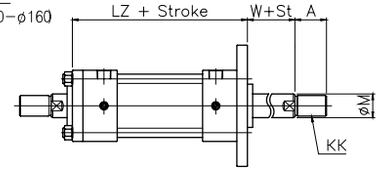


○ 방진커버부는 PAGE281를 참조하여 주세요.
○ ø180- ø250는 아래표와 같이 스트로크에 따라 커버 고정방식이 변합니다.
○Seepage37 aboutDust-Proofing Coverpart.
○Cover fixing method of ø180- ø250 is changed as stroke like following table.

series \ fixing method	Tie rod Type	Tube Flange
IS70H	~1,500	1,500~2,000
IS140H	~800	801~2,000

○ 튜브후렌지식이 되어도 취부치수는변하지 않습니다.
○Though it ischanged into Tube French, the dimension of fitting surface doesn't change.

양로드
(ø40-ø160)

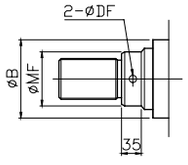


notation \ I-D	Rod Diameter(B type) A	ØB	KK	ØM	S	Rod Diameter(C type) A	ØB	KK	ØM	S	EE	F	FB	FP	HL	LZ	R	TF	□UF	W	ZH
Ø40	30	Ø40	M20X1.5	Ø22	20	25	Ø36	M16X1.5	Ø18	16	PT¼	12	Ø11	39	141	166	46	95	118	30	165
Ø50	35	Ø46	M24X1.5	Ø28	24	30	Ø40	M20X1.5	Ø22	20	PT¼	13	Ø14	42	155	182	58	115	145	30	183
Ø63	45	Ø55	M30X1.5	Ø35	30	35	Ø46	M24X1.5	Ø28	24	PT¼	14	Ø18	51	163	194	65	132	165	35	199
Ø80	60	Ø65	M39X1.5	Ø45	41	45	Ø55	M30X1.5	Ø35	30	PT¼	18	Ø18	54	184	222	87	155	190	35	220
Ø100	75	Ø80	M48X1.5	Ø55	50	60	Ø65	M39X1.5	Ø45	41	PT¼	20	Ø22	60	192	232	109	190	230	40	236
Ø125	95	Ø95	M64X2	Ø70	65	75	Ø80	M48X1.5	Ø55	50	PT1	24	Ø26	66	220	264	130	224	272	45	276
Ø140	110	Ø105	M72X2	Ø80	75	80	Ø85	M56X2	Ø60	55	PT1	26	Ø26	68	230	276	145	250	300	50	286
Ø150	115	Ø110	M76X2	Ø85	80	85	Ø90	M60X2	Ø65	60	PT1	28	Ø30	70	240	288	155	270	320	50	300
Ø160	120	Ø115	M80X2	Ø90	85	95	Ø95	M64X2	Ø70	65	PT1	31	Ø33	73	253	304	170	285	345	55	319
Ø180	140	Ø125	M95X2	Ø100	-	110	Ø105	M72X2	Ø80	75	PT1¼	33	Ø33	70	275	-	185	315	375	55	341
Ø200	150	Ø140	M100X2	Ø110	-	120	Ø115	M80X2	Ø90	85	PT1¼	37	Ø36	79	301	-	206	355	425	55	373
Ø250	195	Ø170	M130X2	Ø140	-	150	Ø140	M100X2	Ø110	-	PT2	46	Ø45	106	346	-	250	425	515	65	436

CA — 1산 클레비스형 Single Thread CLEVIS Type

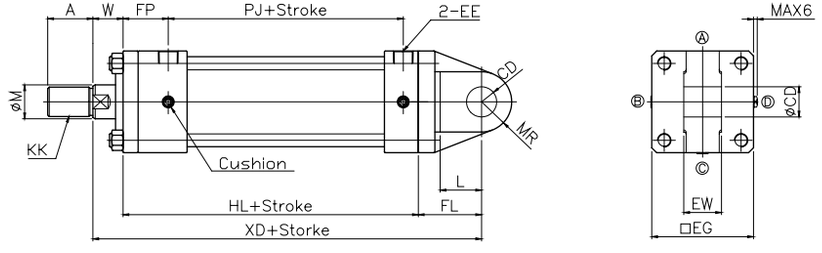
IS 70 / 140 H – [2] CA [4] C/B – [6] [7] ST [8] – [9] [10]

[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover



로드경 ø100 이상은 드릴홀로 합니다
Over ø100 of Rod Diameter is drill hole.

Rod Diameter	øMF	øDF
ø100	ø99.5	ø12
ø110	ø109.5	ø15
ø140	ø139.5	ø15



○방진커버부는 PAGE281를 참조하여 주세요.
○ø180~ø250는 아래표와 같이 스트로크에따라 커버 고정방식이 변합니다.
○See page 37 about Dust-Proofing Cover part.
○Cover fixing method of ø180~ø250 is changed as stroke like following table.

series \ fixing method	Tie rod Type	Tube Flange
IS70H	~1,500	1,501~2,000
IS140H	~800	801~2,000

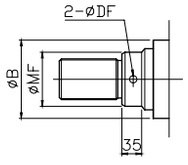
○튜브후렌지식이 되어도 취부치수는 변하지 않습니다.
○Though it is changed into Tube French, the dimension of fitting surface doesn't change.

notation / I-D	Rod Diameter(B type) A	ØB	KK	ØM	S	Rod Diameter(C type) A	ØB	KK	ØM	S	øCD	□EG	EE	EW	FL	FP	HL	L	MR	PJ	W	XD
Ø40	30	Ø40	M20X1.5	Ø22	20	25	Ø36	M16X1.5	Ø18	16	16 H9	65	PT¼	25 -0.1 -0.4	38	39	141	21	R16	88	30	209
Ø50	35	Ø46	M24X1.5	Ø28	24	30	Ø40	M20X1.5	Ø22	20	20 H9	76	PT¼	31.5 -0.1 -0.4	45	42	155	26	R20	95	30	230
Ø63	45	Ø55	M30X1.5	Ø35	30	35	Ø46	M24X1.5	Ø28	24	31.5 H9	90	PT¾	40 -0.1 -0.4	63	51	163	43	R31.5	92	35	261
Ø80	60	Ø65	M39X1.5	Ø45	41	45	Ø55	M30X1.5	Ø35	30	31.5 H9	110	PT¾	40 -0.1 -0.4	72	54	184	49	R31.5	111	35	291
Ø100	75	Ø80	M48X1.5	Ø55	50	60	Ø65	M39X1.5	Ø45	41	40 H9	135	PT¾	50 -0.1 -0.4	84	60	192	59	R40	112	40	316
Ø125	95	Ø95	M64X2	Ø70	65	75	Ø80	M48X1.5	Ø55	50	50 H9	165	PT1	63 -0.1 -0.6	100	66	220	62	R50	131	45	365
Ø140	110	Ø105	M72X2	Ø80	75	80	Ø85	M56X2	Ø60	55	63 H9	185	PT1	80 -0.1 -0.6	120	68	230	79	R63	139	50	400
Ø150	115	Ø110	M76X2	Ø85	80	85	Ø90	M60X2	Ø65	60	63 H9	196	PT1	80 -0.1 -0.6	122	70	240	85	R63	147	50	412
Ø160	120	Ø115	M80X2	Ø90	85	95	Ø95	M64X2	Ø70	65	71 H9	210	PT1	80 -0.1 -0.6	137	73	253	89	R71	158	55	445
Ø180	140	Ø125	M95X2	Ø100	-	110	Ø105	M72X2	Ø80	75	80 H9	235	PT1¼	100 -0.1 -0.6	150	70	275	100	R80	174	55	480
Ø200	150	Ø140	M100X2	Ø110	-	120	Ø115	M80X2	Ø90	85	90 H9	262	PT1½	125 -0.1 -0.6	170	79	301	115	R90	188	55	526
Ø250	195	Ø170	M130X2	Ø140	-	150	Ø140	M100X2	Ø110	-	100 H9	325	PT2	125 -0.1 -0.6	185	106	346	125	R100	204	65	596

CB — 2산 클레비스형 Double Thread CLEVIS Type

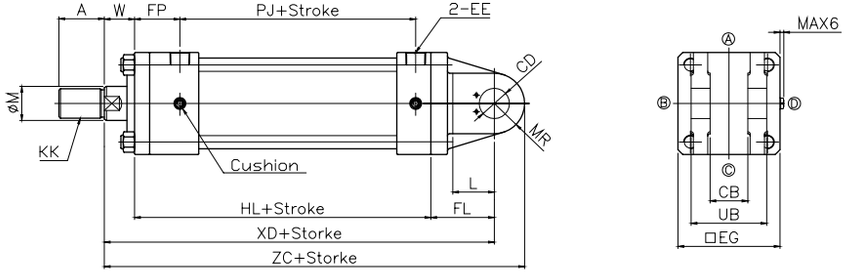
IS 70 / 140 H – [2] CB [4] C/B – [6] [7] ST [8] – [9] [10]

[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover



로드경 ø100 이상은 드릴홀로 합니다
Over ø100 of Rod Diameter is drill hole.

Rod Diameter	øMF	øDF
ø100	ø99.5	ø12
ø110	ø109.5	ø15
ø140	ø139.5	ø15



○방진커버부는 PAGE281를 참조하여 주세요.
○ø180~ø250는 아래표와 같이 스트로크에 따라 커버고정방식이 변합니다.
○See page 37 about Dust-Proofing Cover part.
○Cover fixing method of ø180~ø250 is changed as stroke like following table.

series \ fixing method	Tie rod Type	Tube Flange
IS70H	~1,500	1,501~2,000
IS140H	~800	801~2,000

○튜브후렌지식이 되어도 취부치수는 변하지 않습니다.
○Though it is changed into Tube French, the dimension of fitting surface doesn't change.

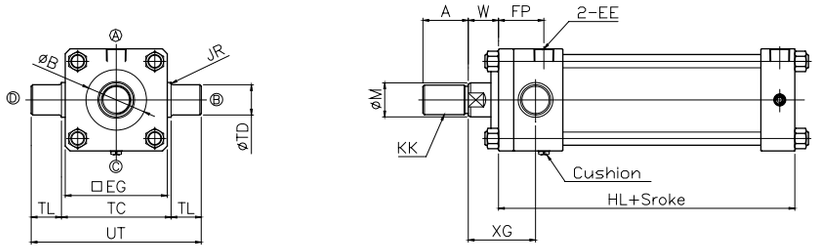
notation / I-D	Rod Diameter(B type) A	ØB	KK	ØM	S	Rod Diameter(C type) A	ØB	KK	ØM	S	CB	øCD	□EG	EE	FL	FP	HL	L	MR	PJ	UB	W	XD	ZC
Ø40	30	Ø40	M20X1.5	Ø22	20	25	Ø36	M16X1.5	Ø18	16	25 +0.4 +0.1	Ø16 H9 f8	65	PT¼	38	39	141	21	R16	88	50	30	209	225
Ø50	35	Ø46	M24X1.5	Ø28	24	30	Ø40	M20X1.5	Ø22	20	31.5 +0.4 +0.1	Ø20 H9 f8	76	PT¼	45	42	155	26	R20	95	63.5	30	230	250
Ø63	45	Ø55	M30X1.5	Ø35	30	35	Ø46	M24X1.5	Ø28	24	40 +0.4 +0.1	Ø31.5 H9 f8	90	PT¾	63	51	163	42	R31.5	92	80	35	261	292.5
Ø80	60	Ø65	M39X1.5	Ø45	41	45	Ø55	M30X1.5	Ø35	30	40 +0.4 +0.1	Ø31.5 H9 f8	110	PT¾	72	54	184	44	R31.5	111	80	35	291	322.5
Ø100	75	Ø80	M48X1.5	Ø55	50	60	Ø65	M39X1.5	Ø45	41	50 +0.4 +0.1	Ø40 H9 f8	135	PT¾	84	60	192	55	R40	112	100	40	316	356
Ø125	95	Ø95	M64X2	Ø70	65	75	Ø80	M48X1.5	Ø55	50	63 +0.4 +0.1	Ø50 H9 f8	165	PT1	100	66	220	62	R50	131	126	45	365	415
Ø140	110	Ø105	M72X2	Ø80	75	80	Ø85	M56X2	Ø60	55	80 +0.6 +0.1	Ø63 H9 f8	185	PT1	120	68	230	79	R63	139	160	50	400	463
Ø150	115	Ø110	M76X2	Ø85	80	85	Ø90	M60X2	Ø65	60	80 +0.6 +0.1	Ø63 H9 f8	196	PT1	122	70	240	85	R63	147	160	50	412	475
Ø160	120	Ø115	M80X2	Ø90	85	95	Ø95	M64X2	Ø70	65	80 +0.6 +0.1	Ø71 H9 f8	210	PT1	137	73	253	89	R71	158	160	55	445	516
Ø180	140	Ø125	M95X2	Ø100	-	110	Ø105	M72X2	Ø80	75	100 +0.6 +0.1	Ø80 H9 f8	235	PT1¼	150	70	275	100	R80	174	200	55	480	560
Ø200	150	Ø140	M100X2	Ø110	-	120	Ø115	M80X2	Ø90	85	125 +0.6 +0.1	Ø90 H9 f8	262	PT1½	170	79	301	115	R90	188	251	55	526	616
Ø250	195	Ø170	M130X2	Ø140	-	150	Ø140	M100X2	Ø110	-	125 +0.6 +0.1	Ø100 H9 f8	325	PT2	185	106	346	125	R100	204	251	65	596	696

TA 로드측 트러니온형 Rod-side Trumion Type

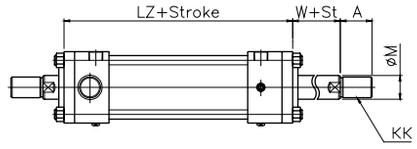
IS 70 / 140 H - [2] TA [4] C/B - [6] [7] ST [8] – [9] [10]

[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover

○TA형은 구조상 쿠션밸브 및 체크밸브의 위치가 Ⓒ에는 장착이 됩니다.
(헤드측 블록)에만 해당됩니다.
TA Type can be installed at Ⓒ positon of cushion valve and check valve.
It comes under Head-side Block.



양로드형 (ø40-ø160)



○방진커버부는 PAGE281를 참조하여 주세요
○ ø180- ø250는 아래표와 같이 스트로크에따라 커버 고정방식이 변합니다.
○See page 37 about Dust-Proofing Cover part.
○Cover fixing method of ø180- ø250 is changed as stroke like following table.

series \ fixing method	Tie rod Type	Tube Flange
IS70H	~1,500	1,501~2,000
IS140H	~800	801~2,000

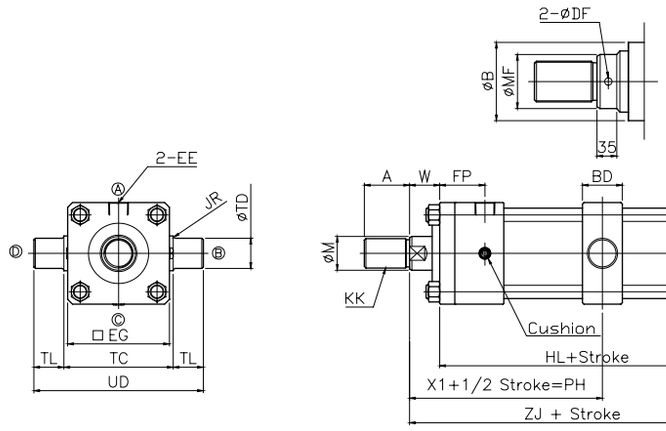
○튜브후렌지식이 되어도 취부치수는 변하지 않습니다.
○Though it is changed into Tube French, the dimension of fitting surface doesn't change.

notation / I-D	Rod Diameter(B type) A	ØB	KK	ØM	S	Rod Diameter(C type) A	ØB	KK	ØM	S	XG	□EG	EE	FP	HL	JR	LZ	TC	øTD	TL	UT	W
Ø40	30	Ø40	M20X1.5	Ø22	20	25	Ø36	M16X1.5	Ø18	16	62	65	PT¼	39	141	R2	166	69 $^{0}_{-0.3}$	Ø20e9	20	109	30
Ø50	35	Ø46	M24X1.5	Ø28	24	30	Ø40	M20X1.5	Ø22	20	66	76	PT¼	42	155	R2.5	182	85 $^{0}_{-0.35}$	Ø25e9	25	135	30
Ø63	45	Ø55	M30X1.5	Ø35	30	35	Ø46	M24X1.5	Ø28	24	70	90	PT¼	51	163	R2.5	194	98 $^{0}_{-0.35}$	Ø31.5e9	31.5	161	35
Ø80	60	Ø65	M39X1.5	Ø45	41	45	Ø55	M30X1.5	Ø35	30	82	110	PT¼	54	184	R2.5	222	118 $^{0}_{-0.35}$	Ø31.5e9	31.5	181	35
Ø100	75	Ø80	M48X1.5	Ø55	50	60	Ø65	M39X1.5	Ø45	41	89	135	PT¼	60	192	R3	232	145 $^{0}_{-0.4}$	Ø40e9	40	225	40
Ø125	95	Ø95	M64X2	Ø70	65	75	Ø80	M48X1.5	Ø55	50	103	165	PT1	66	220	R3	264	175 $^{0}_{-0.4}$	Ø50e9	50	275	45
Ø140	110	Ø105	M72X2	Ø80	75	80	Ø85	M56X2	Ø60	55	112	185	PT1	68	230	R4	276	195 $^{0}_{-0.46}$	Ø63e9	63	321	50
Ø150	115	Ø110	M76X2	Ø85	80	85	Ø90	M60X2	Ø65	60	112	196	PT1	70	240	R4	288	206 $^{0}_{-0.46}$	Ø63e9	63	332	50
Ø160	120	Ø115	M80X2	Ø90	85	95	Ø95	M64X2	Ø70	65	126	210	PT1	73	253	R4	304	218 $^{0}_{-0.46}$	Ø71e9	71	360	55

TC 중간측 트러니온형 Middle side Trumion Type

IS 70 / 140 H - [2] TC [4] C/B - [6] [7] ST [8] – [9] [10]

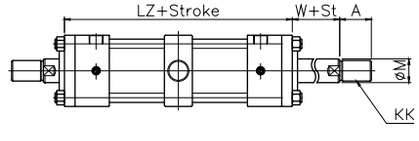
[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover



로드경 ø100 이상은 드릴홀로 합니다
Over ø100 of Rod Diameter is drill hole.

Rod Diameter	øMF	øDF
ø100	ø99.5	ø12
ø110	ø109.5	ø15
ø140	ø139.5	ø15

양로드형(ø40-ø160)



○방진커버부는 PAGE281를 참조하여 주세요.
○ ø180-ø250는 아래표와 같이 스트로크에 따라 커버 고정방식이 변합니다 .
○See page 37 about Dust-Proofing Cover part.
○Cover fixing method of ø180-ø250 is change as stroke like folbwing table.

series \ fixing method	Tie rod Type	Tube Flange
IS70H	~1,500	1,501~2,000
IS140H	~800	801~2,000

○튜브후렌지식이 되어도 취부치수는 변하지 않습니다..
○Though it is changed into Tube French, the dimension of fitting surface doesn't change.

notation / I-D	Rod Diameter(B type) A	ØB	KK	ØM	S	Rod Diameter(C type) A	ØB	KK	ØM	S	BD	□EG	EE	FP	HL	JR	LZ	PH	TD	TL	TC	UD	W	XI	ZJ
Ø40	30	Ø40	M20X1.5	Ø22	20	25	Ø36	M16X1.5	Ø18	16	28	65	PT¼	39	141	R2	166	105	Ø20e9	20	69 $^{0}_{-0.3}$	109	30	113	171
Ø50	35	Ø46	M24X1.5	Ø28	24	30	Ø40	M20X1.5	Ø22	20	33	76	PT¼	42	155	R2.5	182	113.5	Ø25e9	25	85 $^{0}_{-0.35}$	135	30	121	185
Ø63	45	Ø55	M30X1.5	Ø35	30	35	Ø46	M24X1.5	Ø28	24	43	90	PT¼	51	163	R2.5	197	127.5	Ø31.5e9	31.5	98 $^{0}_{-0.35}$	161	35	132	198
Ø80	60	Ø65	M39X1.5	Ø45	41	45	Ø55	M30X1.5	Ø35	30	43	110	PT¼	54	184	R2.5	222	140.5	Ø31.5e9	31.5	118 $^{0}_{-0.35}$	181	35	146	219
Ø100	75	Ø80	M48X1.5	Ø55	50	60	Ø65	M39X1.5	Ø45	41	53	135	PT¼	60	192	R3	232	152.5	Ø40e9	40	145 $^{0}_{-0.4}$	225	40	156	232
Ø125	95	Ø95	M64X2	Ø70	65	75	Ø80	M48X1.5	Ø55	50	58	165	PT1	66	220	R3	264	174	Ø50e9	50	175 $^{0}_{-0.4}$	275	45	177	265
Ø140	110	Ø105	M72X2	Ø80	75	80	Ø85	M56X2	Ø60	55	78	185	PT1	68	230	R4	276	191	Ø63e9	63	195 $^{0}_{-0.46}$	321	50	188	280
Ø150	115	Ø110	M76X2	Ø85	80	85	Ø90	M60X2	Ø65	60	78	196	PT1	70	240	R4	288	193	Ø63e9	63	206 $^{0}_{-0.46}$	332	50	194	290
Ø160	120	Ø115	M80X2	Ø90	85	95	Ø95	M64X2	Ø70	65	88	210	PT1	73	253	R4	304	211	Ø71e9	71	218 $^{0}_{-0.46}$	360	55	207	308
Ø180	140	Ø125	M95X2	Ø100	-	110	Ø105	M72X2	Ø80	75	98	235	PT1¼	70	275	R4	-	225	Ø80e9	80	243 $^{0}_{-0.46}$	403	55	216	330
Ø200	150	Ø140	M100X2	Ø110	-	120	Ø115	M80X2	Ø90	85	108	262	PT1¼	79	301	R4	-	244	Ø90e9	90	272 $^{0}_{-0.52}$	452	55	232	356
Ø250	195	Ø170	M130X2	Ø140	-	150	Ø140	M100X2	Ø110	-	117	325	PT2	106	346	R5	-	257.5	Ø100e9	100	335 $^{0}_{-0.52}$	535	65	271	411

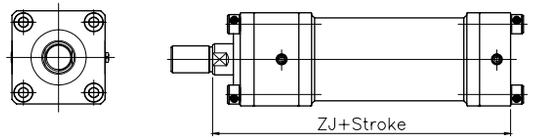
유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

외형도 Outside Dimensions Drawings

SFD 표준형 Standard type

IS 70 / 140 H − [2] SDF [4] C/B − [6] [7]ST [8] - [9] [10]

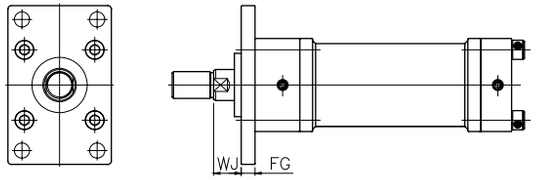
[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover



FGF 표준형 Standard type

IS 70 / 140 H − [2] FGF [4] C/B − [6] [7]ST [8] - [9] [10]

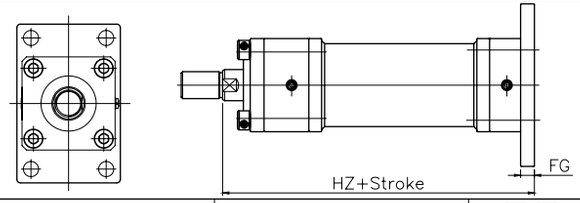
[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover



FHF 표준형 Standard type

IS 70 / 140 H − [2] FHF [4] C/B − [6] [7]ST [8] - [9] [10]

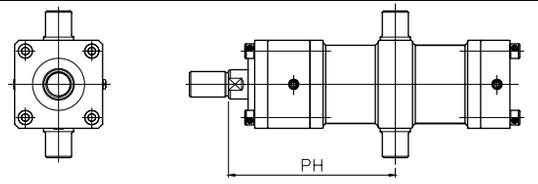
[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover



TCF 표준형 Standard type

IS 70 / 140 H − [2] TCF [4] C/B − [6] [7]ST [8] - [9] [10]

[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover



notation / HD	FG	HZ	WJ	ZJ	PH
Ø180	51	381	37	330	302
Ø200	56	412	36	356	329
Ø250	66	477	45	411	382.5

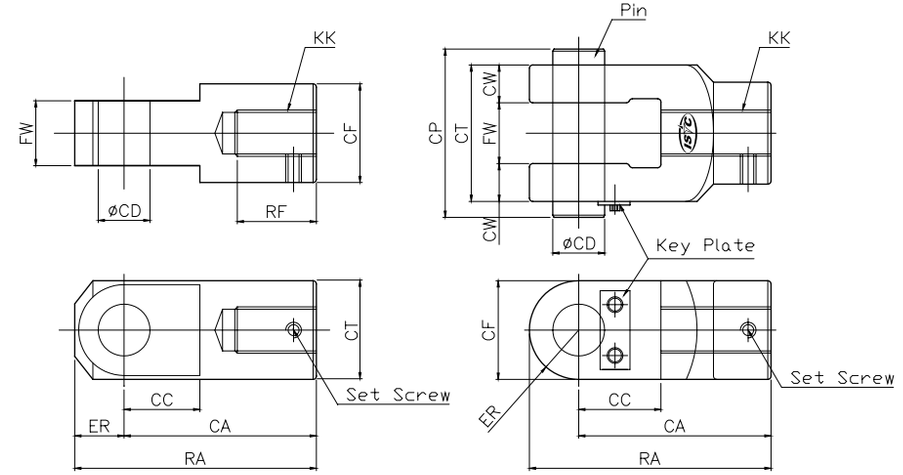
유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

외형치수도/선단금구 Outside Dimensions Drawings

단위 unit : mm

1산 선단금구
Single thread type lot end

2산 선단금구
Double thread type lot end

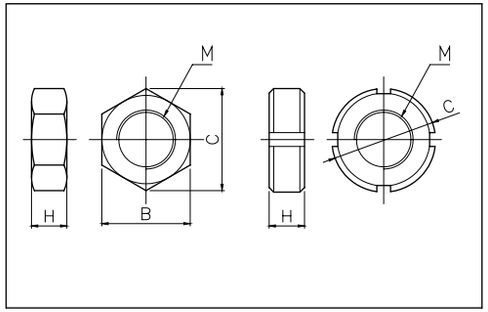


notation / HD	CA	CC		øCD		CF		CP	CT	CW	ER		FW		KK		RA		RF	
		Sgl.thread	Dbl.thread	Single thread	Double thread	Sgl.thread	Dbl.thread				Singlethread	Dbl.thread	Single thread	Double thread	B	C	Sgl.thread	Dbl.thread	Sgl.thread	Dbl.thread
Ø40	60	23	27	Ø16 H10	Ø16 +10/+15	39	32	62	50	12.5	20	R16	25 -0.1/-0.4	25 +0.4/+0.1	M20X1.5	M16X1.5	80	76	32	27
Ø50	70	28	32	Ø20 H10	Ø20 +10/+15	49	40	76.5	63.5	16	25	R20	31.5 -0.1/-0.4	31.5 +0.4/+0.1	M24X1.5	M20X1.5	95	90	37	32
Ø63	115	43	50	Ø3.15 H10	Ø31.5 +10/+15	62	60	93	80	20	35	R30	40 -0.1/-0.4	40 +0.4/+0.1	M30X1.5	M24X1.5	150	145	47	37
Ø80	115	43	50	Ø3.15 H10	Ø31.5 +10/+15	62	60	93	80	20	35	R30	40 -0.1/-0.4	40 +0.4/+0.1	M39X1.5	M30X1.5	150	145	62	47
Ø100	145	55	60	Ø40 H10	Ø40 +10/+15	79	80	117	100	25	40	40	50 -0.1/-0.4	50 +0.4/+0.1	M48X1.5	M39X1.5	185	185	77	62
Ø125	180	65	70	Ø50 H10	Ø50 +10/+15	100	100	143	126	31.5	50	50	63 -0.1/-0.4	63 +0.4/+0.1	M64X2	M48X1.5	230	230	97	77
Ø140	225	85	90	Ø63 H10	Ø63 +10/+15	130	120	183	160	40	65	65	80 -0.1/-0.6	80 +0.6/+0.1	M72X2	M56X2	290	290	112	82
Ø150	225	85	90	Ø63 H10	Ø63 +10/+15	130	120	183	160	40	65	65	80 -0.1/-0.6	80 +0.6/+0.1	M76X2	M60X2	290	290	117	87
Ø160	240	90	100	Ø71 H10	Ø71 +10/+15	140	140	183	160	40	70	70	80 -0.1/-0.6	80 +0.6/+0.1	M80X2	M64X2	310	310	122	97

▶로크 너트 Lock Nut

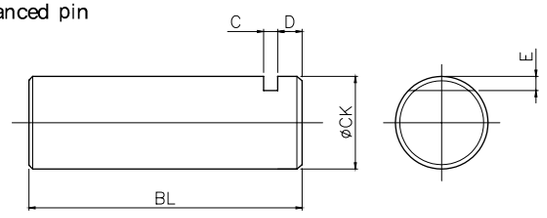
로드 선단 나사에 로크 너트를 사용할 경우는 나사길이(H부 치수)를 길게할필요가 있습니다.
If Locknut is used in rod and screw, it is necessary to make the length of the screw(H) longer.

notation / HD	B rod type Locknut				C rod type Locknut			
	M	B	C	H	M	B	C	H
Ø40	M20X1.5	27	31.2	12	M16X1.5	22	25.4	10
Ø50	M24X1.5	32	37.0	14	M20X1.5	27	31.2	12
Ø63	M30X1.5	41	47.3	17	M24X1.5	32	37.0	14
Ø80	M39X1.5	55	63.5	20	M30X1.5	41	47.3	17
Ø100	M48X1.5	70	80.8	26	M39X1.5	55	63.5	20
Ø125	M64X2	90	104	35	M48X1.5	70	80.8	26
Ø140	M72X2	100	115	38	M56X2	80	92.4	35
Ø150	M76X2	105	121	40	M60X2	85	98.1	33
Ø160	M80X2	110	127	43	M64X2	90	104	35



단위 unit : mm

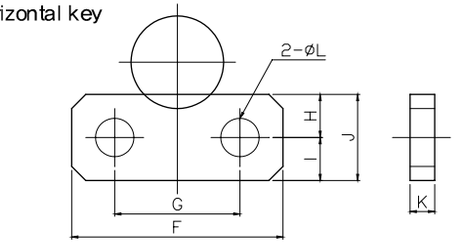
평형핀 Balanced pin



notation / I-D	BL	C	øCK	D	E
Ø40	62	4	16 f8	3	3
Ø50	76.5	5	20 f8	3	3
Ø63	93	5	31.5 f8	3	4.75
Ø80	93	5	31.5 f8	3	4.75
Ø100	117	7	40 f8	5	5
Ø125	143	7	50 f8	5	5
Ø140	183	10	63 f8	8	8
Ø150	183	10	63 f8	8	8
Ø160	183	10	71 f8	8	8

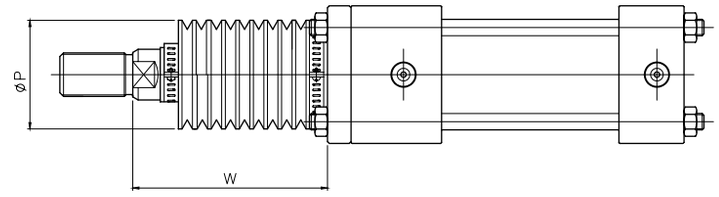
단위 unit : mm

수평키 Horizontal key



notation / I-D	F	G	H	I	J	K
Ø40	25	14	7	6	13	3
Ø50	32	18	8	7	15	4.5
Ø63	32	18	8	7	15	4.5
Ø80	32	18	8	7	15	4.5
Ø100	50	30	10	8	18	6
Ø125	65	40	12	10	22	6
Ø140	75	48	17	13	30	9
Ø150	75	48	17	13	30	9
Ø160	75	48	17	13	30	9

단위 unit : mm



	Standard	Semi-standard
Materials	Nylon tarpaulin	Neoprene
Heat-resistance	80°C	130°C

사양이 변경되어도 취부치수는 변하지 않음. 계산시에 소수미만의 서수가 나올 경우는 끝올림해 주십시오.
Though specification ischanged, the dimensions of fitting parts remain unchanged.
Reckon anydecimalfraction in the calculated value asa unit.

I-D / notation		Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø140	Ø150	Ø160	Ø180	Ø200	Ø250
X	Type B	45	45	55	55	55	65	65	65	65	65	65	80
	Type C												
P	Type B	50	63	71	80	100	125	125	140	140	160	180	200
	Type C	50	50	63	71	80	100	125	125	125	125	140	180
LL		1/3.5		1/4			1/5						1/6
W=(LL × ST)+X													

▶실린더 중량표 Table of Cylinder Weight

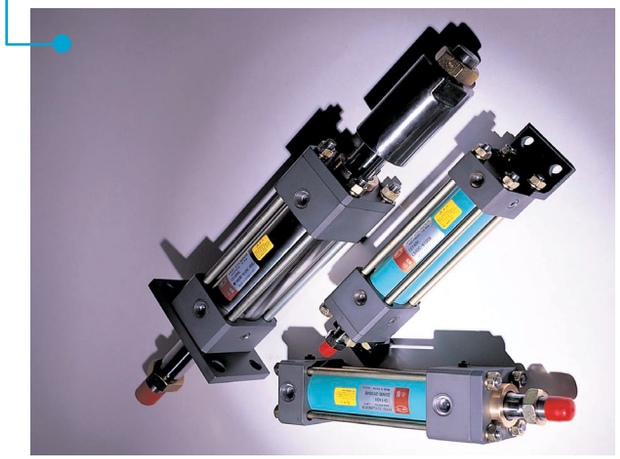
I-D	Rod Type	Basic Weight(SD)		Support Weight										선단금구		스트로 1mm당량	
		Standard Type	Double Rod Type	LA	LB	FA	FB	FC	FD	CA	CB	TA	TC	1산	2산	Standard Type	Double Rod Type
Ø40	B	3.5	4.4	0.5	0.5	0.2	0.7	0.7	1.1	0.5	0.6	0.1	0.6	0.5	0.7	0.011	0.014
	C	3.4	4.3													0.010	0.012
Ø50	B	5.0	6.4	0.9	0.7	0.7	1.2	1.5	2.0	1.0	1.2	0.4	1.0	1.0	1.2	0.014	0.019
	C	4.9	6.2													0.012	0.014
Ø63	B	7.9	10.2	1.0	1.2	1.0	1.8	2.2	3.0	2.0	2.6	0.6	1.2	2.7	3.9	0.019	0.027
	C	7.6	9.8													0.017	0.022
Ø80	B	16.2	20.3	1.8	2.0	1.1	3.0	2.8	4.7	3.0	3.6	0.6	2.1	2.7	3.7	0.032	0.045
	C	155.5	19.4													0.027	0.035
Ø100	B	26.0	32.7	2.1	2.9	1.8	4.8	4.6	7.4	5.5	6.7	1.0	3.8	4.2	7.7	0.048	0.067
	C	24.9	31.1													0.042	0.055
Ø125	B	42.9	53.6	3.2	5.5	2.9	8.4	8.0	13.0	9.9	12.1	2.1	6.2	8.0	14.6	0.077	0.107
	C	42.5	52.7													0.065	0.084
Ø140	B	59.6	73.9	3.8	7.7	3.2	11.1	9.2	17.1	16.7	21.0	4.1	11.1	19.0	28.8	0.100	0.140
	C	56.0	69.6													0.085	0.111
Ø150	B	69.9	86.5	4.8	9.6	4.9	13.7	16.6	22.4	18.2	26.8	4.6	10.9	18.9	28.3	0.118	0.162
	C	67.9	83.6													0.101	0.127
Ø160	B	84.3	114.6	5.4	10.0	5.3	16.5	19.0	25.2	22.9	28.4	5.2	14.8	22.7	34.2	0.121	0.171
	C	79.9	99.1													0.102	0.132
Ø180	B	115.1	-	7.9	13.8	7.7	22.7	25.0	33.6	33.8	42.9	-	19.4	-	-	0.179	0.241
	C	108.5	-													0.157	0.197
Ø200	B	155.2	-	11.4	21.0	10.6	31.6	28.8	48.7	51.4	65.4	-	27.2	-	-	0.220	0.295
	C	147.3	-													0.192	0.242
Ø250	B	283.7	-	18.3	46.7	17.5	55.1	48.2	88.3	74.5	91.6	-	43.3	-	-	0.333	0.454
	C	264.1	-													0.290	0.365

▶설계 변경으로 중량 차이가 있을 수 있음. There will be a weight difference as changed design.

유압실린더 중량계산 식.
실린더 질량(kg) =기본질량 +(STROKE×STROKE 1mm질량 +선단금구 질량+지지금구 질량

MEMO

유압 IS 210H 시리즈
HYDRAULIC IS 210H SERIES



유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

210kgf/㎠용 표준유압 실린더 Hydraulic Cylinder for 210 kgf/㎠

▶실린더 사양 Cylinder Specifications

종류 Kind		표준형 Standard type
형식 Model		IS-210H
실린더 내경 Inside Diameter of cylinder (mm)		Ø40,Ø50,Ø63,Ø80,Ø100,Ø125, Ø140,Ø160
사용압력 Working pressure		210kgf/㎠(21MPa)
최고허용압력 Max. allowable pressure		Head side:180kgf/㎠(17.625MPa) Rod side:(B)180kgf/㎠(17.652MPa) (C)140kgf/㎠(13.729MPa)
내압력 Bearing pressure		315kgf/㎠(31.5MPa)
최저작동압력 Min. working pressure		Rod side:4.5kgf/㎠(0.45MPa), Head side:3kgf/㎠(0.3MPa)
사용속도범위 Range of working speed		8~300mm/sec
사용온도범위 Range of working temperature		-10~+80℃(Ambient temperature and oil temperature)
쿠션방식 Cushion type		Metal pressure reducing type
사용작동유 Working oil		General mineral working oil(For other working oil, give instructions
나사공차 Screw tolerance		2nd KS level
스트로크 허용치 Stroke allowance		~100mm $^{+0.8}_{0}$ 101~250mm $^{+1.0}_{0}$ 251~630mm $^{+1.25}_{0}$ 631~1,000mm $^{+1.4}_{0}$ 1,001~1,600mm $^{+1.6}_{0}$ 1,601~2,000mm $^{+1.8}_{0}$
지지형식 Supporting type	표준형 Standard	SD・LA・FA ・ FB ・ CA・CB・TA・TC
관련부품 Related parts	방잔커버 Dust proding cover	Standard : Nylon tarpaulin semi-standard : Neoprene
	선단금구 Lot end	Single thread type(1 type) double thread type(Y type)
	기타 Others	Locknut

주) 1.사용압력은 실린더를사용하는 유압회로의 릴리이프변의설정압력최고치
2.최고허용압력이란 실린더 내부에 발생하는압력의 허용가능최고치
3.내압력은사용압력에 복귀할 때에성능의 저하를 초래하지 않고견디어 내지 않으면 안 되는시험압력
4.최저작동압력이란실린더를 수평으로설치해 무부하 로드자중분은 별도고려의 상태에 있어서압력을 걸을 때에실린더가작동하기 시작하는압력
5.지지형식란의( )는 사용압력kg/cm 용이다
6.피스톤 로드선단나사부에록크 너트를 설치해서사용하는경우는 나사길이 A 치수를 길게해 주십시오

Note) 1.The working pressure is the maximum set pressure value of the hydraulic circuit.
2.The max.allowable pressure is the max. allowable value of pressure that is generated inside of the cylinder.
3.The bearing pressure is the test pressure to bear without causing a drop in performance when returning to working pressure.
4.The min.working pressure at which the cylinder starts when the pressure is applied under no load after the cylinder is installed horizontally.
5.The type of in parentheses in the supporting type section is for 70kgf/cm
6.If a locknut is installed and used in the end screw of the piston rod, make the length of the screw(A) more longer.

▶행정한계 stroke limit

I-D	Ø40	Ø50~Ø160
limit	~1,500	~2,000

주)1. 지지형식에 따른 좌굴은 별도로 계산하여 주십시오.
2. 이상보다 긴 스트로크는 상담바랍니다

Note) 1. Calculate separately the buckling according to the supporting type.
2. For longer strokes, ask for instructions.

▶표준형 패킹재질 Packing materials for standard type

dimensions	items	materials
Ø40 ~ Ø160	DUST SEAL	URETHANE RUBBER
	ROD SEAL	URETHANE RUBBER
	PISTON SEAL	URETHANE RUBBER
	O-RING	NBR

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

▶실린더 형식기호 Cylinder Type Notations

IS 210H	1	SD	50	B	N	200	A	B	
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩

①시리즈 Series

Single road	IS 210H	210kgf/㎠
Double road	IS 210H-W	210kgf/㎠
Switch mounted	IS 210HL	210kgf/㎠

②패킹재질 Packing materials

Notation	Materials	Remarks
None	Materials	Standard
1	NBR	
2	Urethane rubber	
3	Fluorine rubber	

③지지형식 Supporting type

SD・LA・FA・FB・CA・CB・TA・TC

④실린더 내경 Inside diameter of cylinder ⑤로드형식 Rod Type

Tube		Rod
Sizes	Inside diameter of cylinder	Outside diameter of rod
40	Ø40	Ø22.4
50	Ø50	Ø28
63	Ø63	Ø35.5
80	Ø80	Ø45
100	Ø100	Ø56
125	Ø125	Ø71
140	Ø140	Ø80
160	Ø160	Ø90

★표준 스트로크 Standard stroke

I-D	Stroke
ø40	~1500
ø50~ø160	~2000

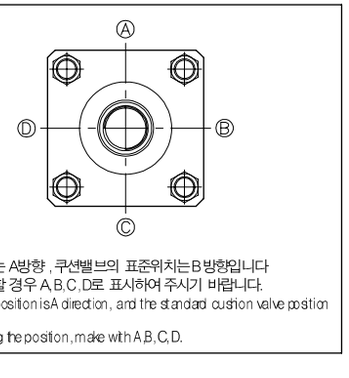
⑥쿠션형식 Cushion Type

B	Both-side cushion
R	Rod-side cusion
H	Head-side cushion
N	No cushion

⑦실린더 행정 (mm)
Cylinder stroke

⑧포트위치: 표준Ⓐ
Port position: standardⒷ

⑨쿠션밸브위치: 표준Ⓑ
Cushion valve position :standardⒷ

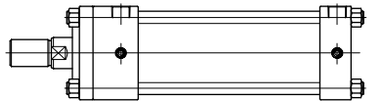


포트의 표준위치는 A방향 , 쿠션밸브의 표준위치는 B 방향입니다
위치변경이 필요할 경우 A,B,C,D로 표시하여 주시기 바랍니다.
The standard port position is A direction, and the standard cushion valve position B direction.
In case of changing the position, make with A,B,C,D.

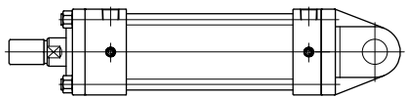
⑩방진커버 Dust-proofing cover

Notations	Materials
J	Nylon Tarpaulin
JN	Neoprene

SD 표준형 Standard type

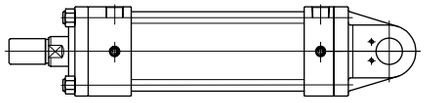


CA 표준형 Standard type

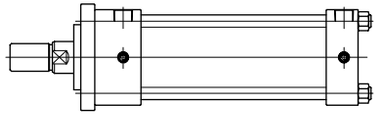


LA 표준형 Standard type

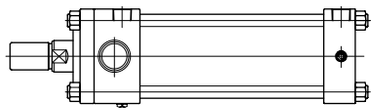
CB 표준형 Standard type



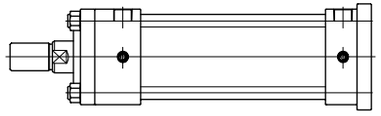
FA 표준형 Standard type



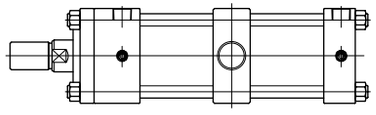
TA 표준형 Standard type



FB 표준형 Standard type



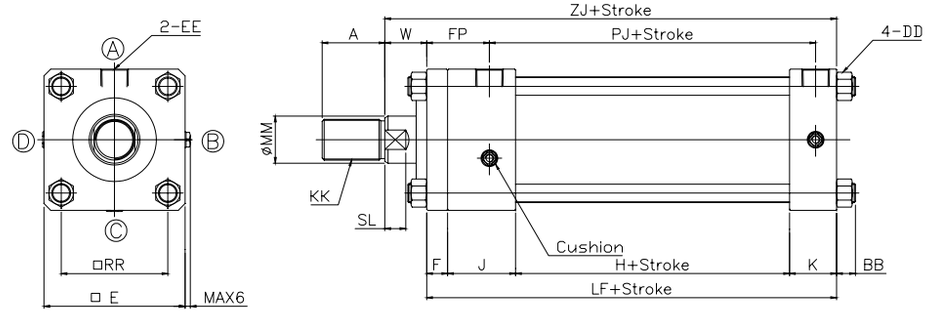
TC 표준형 Standard type

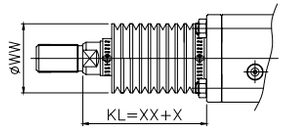


유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES
외형도 Outside Dimensions Drawings

SD 표준형 Standard	IS 210 H - [2]	SD [4] B - [6]	[7] ST [8] - [9] [10]

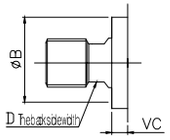
[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover





★KL치수 KL dimension

I-D	XX
ø40,ø50	1/3.5*Stroke
ø63~ø100	1/4*Stroke
ø125~ø160	1/5*Stroke



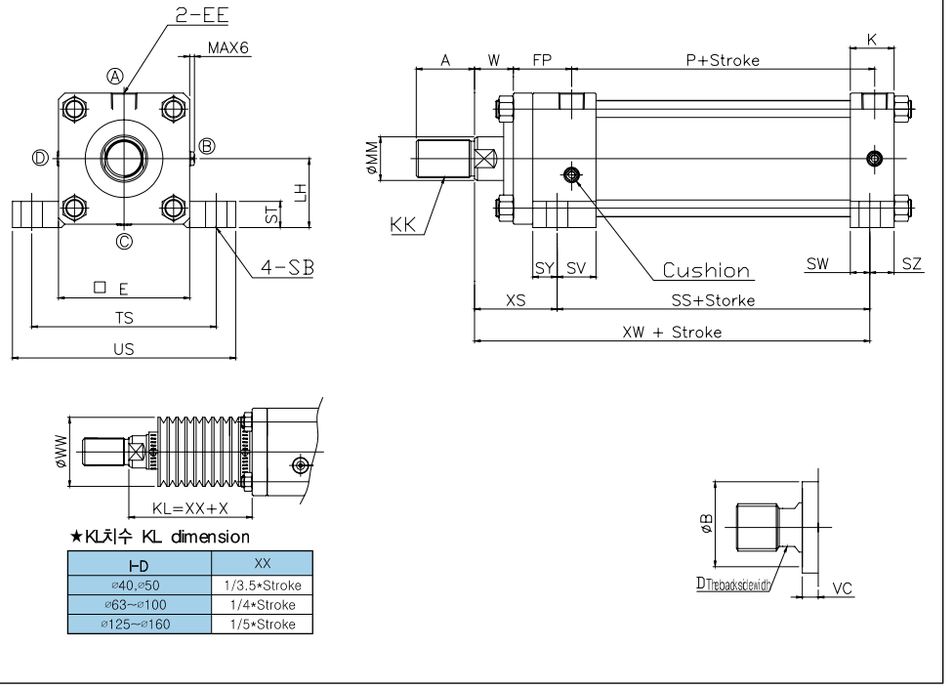
Notation / I-D	A	øB	BB	D	DD	□E	EE	F	FP	H	J	K	KK	øMM	P	□RR	SL	VC	W	ZJ	øWW	X	LF	SB
Ø40	25	40	13	19	M12X1.5	70	PT⅜	13	43	64	47	32	M20X1.5	22	98	50	11	11	30	186	50	47	156	11
Ø50	30	46	14	24	M14X1.5	85	PT⅜	15	48	68	52	37	M24X1.5	28	106	62	12	14	30	202	63	50	172	14
Ø63	35	55	16	30	M16X1.5	100	PT⅜	18	56	75	57	37	M30X1.5	35	113	74	16	15	35	222	71	61	187	18
Ø80	45	65	18	41	M18X1.5	125	PT⅜	24	69	85	67	42	M39X1.5	45	129	92	20	9	35	253	80	55	218	22
Ø100	55	80	21	50	M22X1.5	160	PT⅜	26	71	95	67	42	M48X1.5	55	139	120	20	14	40	270	100	60	230	26
Ø125	75	95	25	65	M27X1.5	190	PT1	33	83	105	77	52	M64X2.0	70	159	145	26	13	45	312	125	69	267	33
Ø140	80	105	27	75	M30X1.5	215	PT1	36	86	110	77	52	M72X2.0	80	164	165	30	14	50	325	125	70	275	33
Ø160	90	120	29	85	M42X2.0	240	PT1	41	94	132	80	51	M80X2.0	90	186	185	33	14	55	359	140	70	304	36

LA

축방향 푸트형(일체형) Start direction Rod Type(Orebod) Type

IS 210 H - [2] LA [4] B - [6] [7] ST [8] - [9] [10]

[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover



★KL치수 KL dimension

H-D	XX
ø40,ø50	1/3.5*Stroke
ø63~ø100	1/4*Stroke
ø125~ø160	1/5*Stroke

H-D \ Notation	A	øB	D	□E	KK	FP	EE	K	LH	øMM	P	SB	SS	ST	SV	SW	SY	SZ	TS	US	VC	W	XS	XW	øWW	X
Ø40	25	40	19	70	M20X1.5	43	PT1/4	32	42 ±0.15	22	98	11	111	15	31	16	16	16	98	122	11	30	59	170	50	47
Ø50	30	46	24	85	M24X1.5	48	PT1/4	37	55 ±0.15	28	106	14	120	20	34	18	18	19	118	145	14	30	63	183	63	50
Ø63	35	55	30	100	M30X1.5	56	PT1/4	37	63 ±0.15	35	113	18	132	25	39	18	18	19	140	175	15	35	71	203	71	61
Ø80	45	65	41	125	M39X1.5	69	PT1/4	42	75 ±0.15	45	129	22	152	30	46	21	21	21	175	210	9	35	80	232	80	55
Ø100	55	80	50	160	M48X1.5	71	PT1/4	42	85 ±0.25	55	139	26	162	35	44	23	23	24	215	260	14	40	89	251	100	60
Ø125	75	95	65	190	M64X2.0	83	PT1	52	105 ±0.25	70	159	33	182	45	49	28	28	29	270	330	13	45	106	288	125	69
Ø140	80	105	75	215	M72X2.0	86	PT1	52	112 ±0.25	80	164	33	187	45	49	28	28	29	280	335	14	50	114	301	125	70
Ø160	90	120	85	240	M80X2.0	94	PT1	51	125 ±0.25	90	186	36	212	50	49	31	31	31	315	375	14	55	127	339	140	70

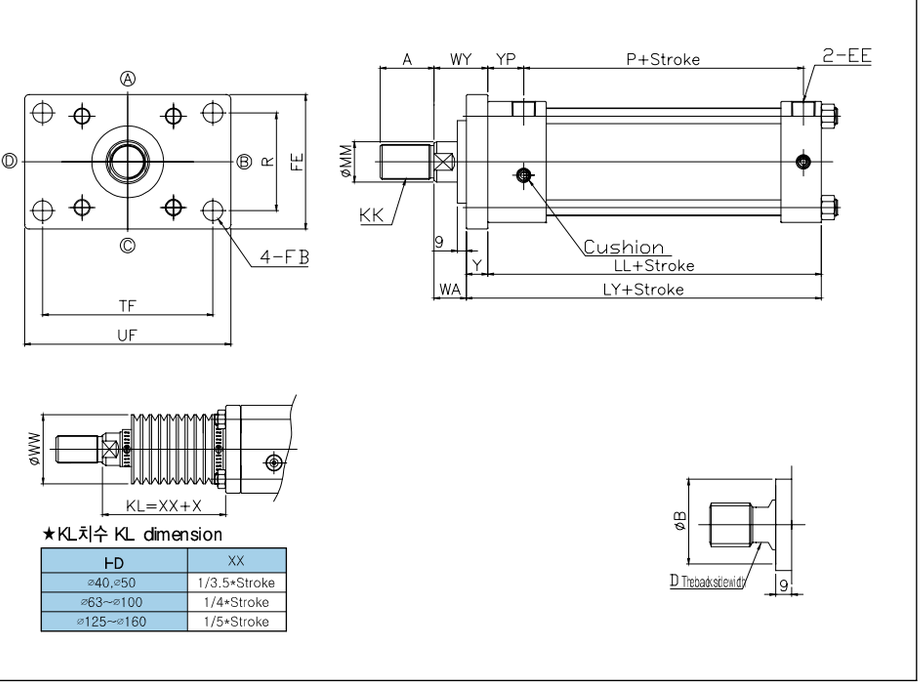
유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES
외형도 Outside Dimensions Drawings

FA

로드측 축방향 플랜지형 Rod-side, shaft direction, Range Type

IS 210 H - [2] FA [4] B - [6] [7] ST [8] - [9] [10]

[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover



★KL치수 KL dimension

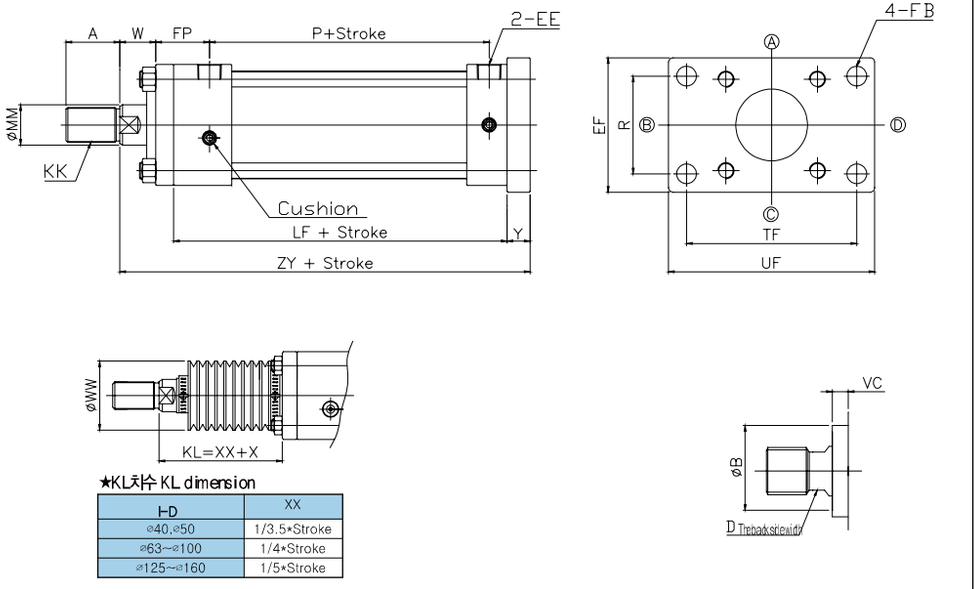
H-D	XX
ø40,ø50	1/3.5*Stroke
ø63~ø100	1/4*Stroke
ø125~ø160	1/5*Stroke

H-D \ Notation	A	øB	D	EE	FE	øFB	KK	LL	øMM	LY	P	R	W	TF	UF	WA	WY	Y	YP	øWW	X
Ø40	25	40	19	PT1/4	73	11	M20X1.5	143	22	158	98	50	30	98	122	28	43	15	30	50	45
Ø50	30	46	24	PT1/4	88	14	M24X1.5	157	28	177	106	60	30	118	145	25	45	20	33	63	45
Ø63	35	55	30	PT1/4	106	18	M30X1.5	169	35	193	113	73	35	140	175	29	53	24	38	71	55
Ø80	45	65	41	PT1/4	130	22	M39X1.5	194	45	218	129	90	35	175	210	35	59	24	45	80	55
Ø100	55	80	50	PT1/4	165	26	M48X1.5	204	55	235	139	115	40	215	260	35	66	31	45	100	55
Ø125	75	95	65	PT1	205	33	M64X2.0	234	70	271	159	145	45	270	330	41	78	37	50	125	65
Ø140	80	105	75	PT1	218	33	M72X2.0	239	80	280	164	160	50	280	335	45	86	41	50	125	65
Ø160	90	120	85	PT1	243	36	M80X2.0	263	90	309	186	180	55	315	375	50	96	46	53	140	65

FB — 헤드측 축방향 플랜지형 Head-side, shaft direction Flange Type

IS 210 H - [2] FB [4] B - [6] [7] ST [8] - [9] [10]

[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover



★KL치수 KL dimension

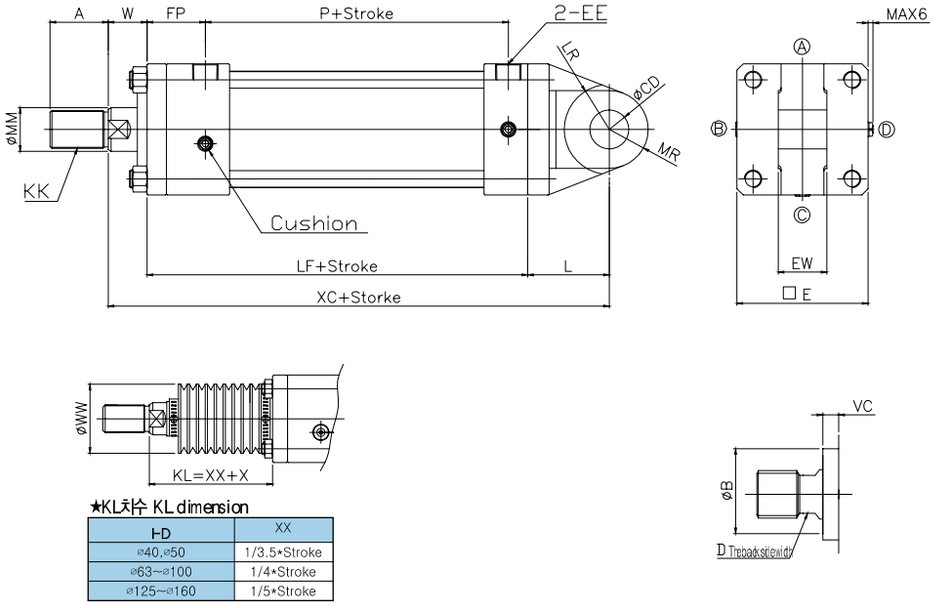
H-D	XX
ø40,ø50	1/3.5*Stroke
ø63~ø100	1/4*Stroke
ø125~ø160	1/5*Stroke

H-D \ Notation	A	øB	D	EE	EF	øFB	KK	FP	øMM	LF	P	R	W	TF	UF	VC	WY	Y	ZY	øWW	X
Ø40	25	40	19	PT⅛	73	11	M20X1.5	43	22	156	98	50	30	98	122	11	43	15	201	50	47
Ø50	30	46	24	PT⅛	88	14	M24X1.5	48	28	172	106	60	30	118	145	14	45	20	222	63	50
Ø63	35	55	30	PT⅛	106	18	M30X1.5	56	35	187	113	73	35	140	175	15	53	24	246	71	61
Ø80	45	65	41	PT⅛	130	22	M39X1.5	69	45	218	129	90	35	175	210	9	59	24	277	80	55
Ø100	55	80	50	PT⅛	165	26	M48X1.5	71	55	230	139	115	40	215	260	14	66	31	301	100	60
Ø125	75	95	65	PT1	205	33	M64X2.0	83	70	267	159	145	45	270	330	13	78	37	349	125	69
Ø140	80	105	75	PT1	218	33	M72X2.0	86	80	275	164	160	50	280	335	14	86	41	366	125	70
Ø160	90	120	85	PT1	243	36	M80X2.0	94	90	304	186	180	55	315	375	14	96	46	405	140	70

CA — 1산 클레비스형 Single Thread CLEVIS Type

IS 210 H - [2] CA [4] B - [6] [7] ST [8] - [9] [10]

[2] 패킹재질 Packing materials [4] 실린더 호칭경(내경) Inside Diameter of Cylinder [6] 쿠션형식 Cushion Type [7] 실린더 행정 Cylinder Stroke [8] 포트위치 Port Position [9] 쿠션밸브위치 Cushion Valve Position [10] 방진커버 Dust-Proofing Cover

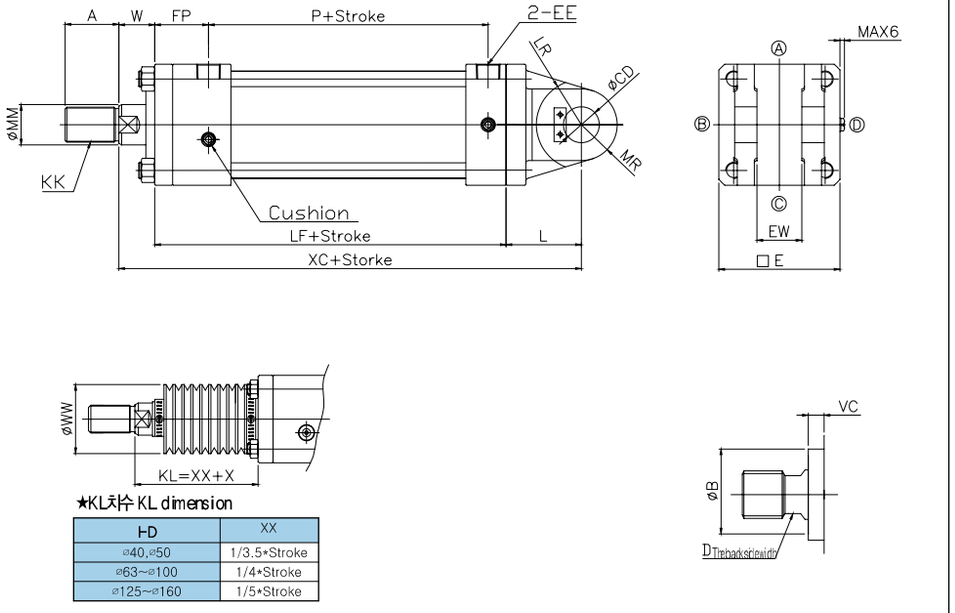


★KL치수 KL dimension

H-D	XX
ø40,ø50	1/3.5*Stroke
ø63~ø100	1/4*Stroke
ø125~ø160	1/5*Stroke

H-D \ Notation	A	øB	D	EE	øCD	KK	FP	øMM	LF	P	□E	W	L	LR	VC	XC	øWW	MR	EW	X
Ø40	25	40	19	PT⅛	20 H9	M20X1.5	43	22	156	98	70	30	35	R25	11	221	50	R25	32 -0.1 -0.4	47
Ø50	30	46	24	PT⅛	25 H9	M24X1.5	48	28	172	106	85	30	45	R32	14	247	63	R30	36 -0.1 -0.4	50
Ø63	35	55	30	PT⅛	31.5 H9	M30X1.5	56	35	187	113	100	35	55	R40	15	277	71	R35	40 -0.1 -0.4	61
Ø80	45	65	41	PT⅛	40 H9	M39X1.5	69	45	218	129	125	35	70	R50	9	323	80	R40	50 -0.1 -0.4	55
Ø100	55	80	50	PT⅛	50 H9	M48X1.5	71	55	230	139	160	40	80	R63	14	350	100	R50	63 -0.1 -0.4	60
Ø125	75	95	65	PT1	63 H9	M64X2.0	83	70	267	159	190	45	105	R79	13	417	125	R63	80 -0.1 -0.6	69
Ø140	80	105	75	PT1	71 H9	M72X2.0	86	80	275	164	215	50	115	R89	14	440	125	R71	80 -0.1 -0.6	70
Ø160	90	120	85	PT1	80 H9	M80X2.0	94	90	304	186	240	55	125	R100	14	484	140	R80	100 -0.1 -0.6	70

CB	IS 210 H - [2]	CB [4] B - [6]	[7] ST [8] - [9] [10]
2산 클레비스형 Double Thread CLEVIS Type	[2] 패킹재질 Packing materials	[4] 실린더 호칭경(내경) Inside Diameter of Cylinder	[6] 쿠션형식 Cushion Type
	[7] 실린더 행정 Cylinder Stroke	[8] 포트위치 Port Position	[9] 쿠션밸브위치 Cushion Valve Position
	[10] 방진커버 Dust-Proofing Cover		

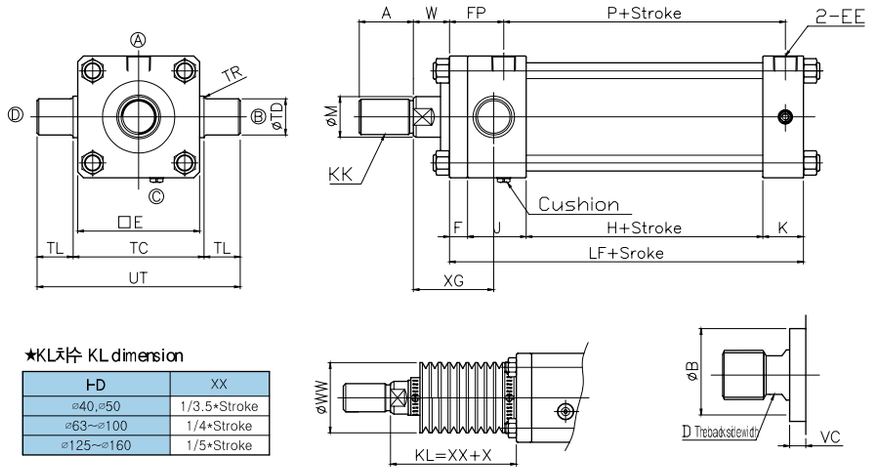


★KL치수 KL dimension

I-D	XX
⌀40,⌀50	1/3.5*Stroke
⌀63~⌀100	1/4*Stroke
⌀125~⌀160	1/5*Stroke

Notation / I-D	A	øB	D	EE	øCD	KK	FP	øMM	LF	P	□E	W	L	LR	VC	XC	øWW	MR	EW	X
Ø40	25	40	19	PT⅜	20 H9/f8	M20X1.5	43	22	156	98	70	30	35	R25	11	221	50	R25	32 +0.4 +0.1	47
Ø50	30	46	24	PT⅜	25 H9/f8	M24X1.5	48	28	172	106	85	30	45	R32	14	247	63	R30	36 +0.4 +0.1	50
Ø63	35	55	30	PT⅜	31.5 H9/f8	M30X1.5	56	35	187	113	100	35	55	R40	15	277	71	R35	40 +0.4 +0.1	61
Ø80	45	65	41	PT⅜	40 H9/f8	M39X1.5	69	45	218	129	125	35	70	R50	9	323	80	R40	50 +0.4 +0.1	55
Ø100	55	80	50	PT⅜	50 H9/f8	M48X1.5	71	55	230	139	160	40	80	R63	14	350	100	R50	63 +0.4 +0.1	60
Ø125	75	95	65	PT1	63 H9/f8	M64X2.0	83	70	267	159	190	45	105	R79	13	417	125	R63	80 +0.6 +0.1	69
Ø140	80	105	75	PT1	71 H9/f8	M72X2.0	86	80	275	164	215	50	115	R89	14	440	125	R71	80 +0.6 +0.1	70
Ø160	90	120	85	PT1	80 H9/f8	M80X2.0	94	90	304	186	240	55	125	R100	14	484	140	R80	100 +0.6 +0.1	70

TA	IS 210 H - [2]	TA [4] B - [6]	[7] ST [8] - [9] [10]
로드측 트러니온형 Rod-side Trumion Type	[2] 패킹재질 Packing materials	[4] 실린더 호칭경(내경) Inside Diameter of Cylinder	[6] 쿠션형식 Cushion Type
	[7] 실린더 행정 Cylinder Stroke	[8] 포트위치 Port Position	[9] 쿠션밸브위치 Cushion Valve Position
	[10] 방진커버 Dust-Proofing Cover		



★KL치수 KL dimension

I-D	XX
⌀40,⌀50	1/3.5*Stroke
⌀63~⌀100	1/4*Stroke
⌀125~⌀160	1/5*Stroke

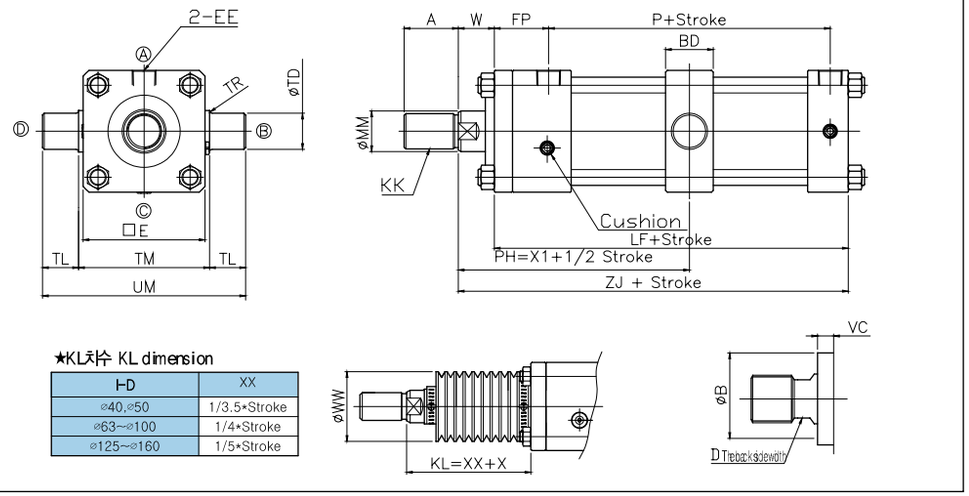
Notation / I-D	A	øB	D	EE	TC	KK	FP	øMM	LF	P	□E	W	F	H	VC	J	øWW	K	øTD	X
Ø40	25	40	19	PT⅜	73 0 -0.3	M20X1.5	43	22	156	98	70	30	13	64	11	47	50	32	25 e9	47
Ø50	30	46	24	PT⅜	88 0 -0.35	M24X1.5	48	28	172	106	85	30	15	68	14	52	63	37	25 e9	50
Ø63	35	55	30	PT⅜	106 0 -0.35	M30X1.5	56	35	187	113	100	35	18	75	15	57	71	37	31.5 e9	61
Ø80	45	65	41	PT⅜	128 0 -0.4	M39X1.5	69	45	218	129	125	35	24	85	9	67	80	42	40 e9	55
Ø100	55	80	50	PT⅜	170 0 -0.4	M48X1.5	71	55	230	139	160	40	26	95	14	67	100	42	50 e9	60
Ø125	75	95	65	PT1	205 0 -0.46	M64X2.0	83	70	267	159	190	45	33	105	13	77	125	52	63 e9	69
Ø140	80	105	75	PT1	225 0 -0.46	M72X2.0	86	80	275	164	215	50	36	110	14	90	125	52	71 e9	70
Ø160	90	120	85	PT1	255 0 -0.52	M80X2.0	94	90	304	186	240	55	41	132	14	100	140	51	80 e9	70

Notation / I-D	TL	TR	UT	XG
Ø40	25	2.5	123	66
Ø50	25	2.5	138	71
Ø63	31.5	2.5	169	81
Ø80	40	3	208	92
Ø100	50	3	270	99
Ø125	63	4	331	116
Ø140	71	4	367	131
Ø160	80	4	415	146

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

외형도 Outside Dimensions Drawings

TC	IS 210 H - [2]	TC [4] B - [6]	[7] ST [8] - [9] [10]
중간측 트러니온형 Middle side Trumion Type	[2] 패킹재질 Packing materials	[4] 실린더 호칭경(내경) Inside Diameter of Cylinder	[6] 쿠션형식 Cushion Type
	[7] 실린더 행정 Cylinder Stroke	[8] 포트위치 Port Position	[9] 쿠션밸브위치 Cushion Valve Position
	[10] 방진커버 Dust-Proofing Cover		



★KL치수 KL dimension

I-D	XX
⌀40,⌀50	1/3.5*Stroke
⌀63~⌀100	1/4*Stroke
⌀125~⌀160	1/5*Stroke

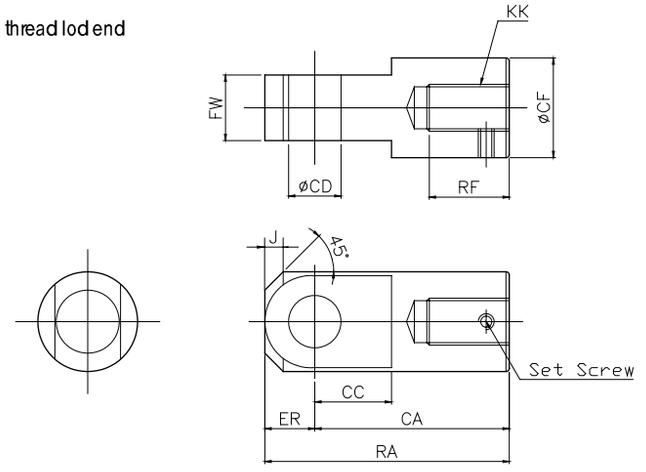
Notation / I-D	A	⌀B	D	EE	BD	KK	FP	⌀MM	LF	P	□E	W	PH	VC	⌀WW	TM	⌀TD	X
Ø40	25	40	19	PT⅜	33	M20X1.5	43	22	156	98	70	30	107	11	50	73 $^{0}_{-0.3}$	25 e9	47
Ø50	30	46	24	PT⅜	33	M24X1.5	48	28	172	106	85	30	114	14	63	88 $^{0}_{-0.35}$	25 e9	50
Ø63	35	55	30	PT⅜	43	M30X1.5	56	35	187	113	100	35	132	15	71	106 $^{0}_{-0.35}$	31.5 e9	61
Ø80	45	65	41	PT⅜	53	M39X1.5	69	45	218	129	125	35	153	9	80	128 $^{0}_{-0.4}$	40 e9	55
Ø100	55	80	50	PT⅜	63	M48X1.5	71	55	230	139	160	40	165	14	100	170 $^{0}_{-0.4}$	50 e9	60
Ø125	75	95	65	PT1	78	M64X2.0	83	70	267	159	190	45	219	13	125	205 $^{0}_{-0.46}$	63 e9	69
Ø140	80	105	75	PT1	88	M72X2.0	86	80	275	164	215	50	232	14	125	225 $^{0}_{-0.46}$	71 e9	70
Ø160	90	120	85	PT1	98	M80X2.0	94	90	304	186	240	55	253	14	140	255 $^{0}_{-0.52}$	80 e9	70

Notation / I-D	TL	TR	UM
Ø40	25	2.5	123
Ø50	25	2.5	138
Ø63	31.5	2.5	169
Ø80	40	3	208
Ø100	50	3	270
Ø125	63	4	331
Ø140	71	4	367
Ø160	80	4	415

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

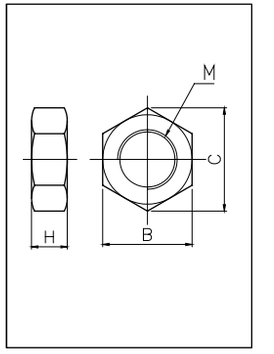
외형치수도/선단금구 로크너트 Outside Dimensions Drawing /Rod End Locknut

I1산 선단금구 Single thread lod end



Notation / I-D	CA	CC	⌀CD	⌀CF	ER	FW	J	KK	RA	RF
Ø40	70	28	20 H10	49	25	31.5 $^{-0.1}_{-0.4}$	10	M20X1.5	95	32
Ø50	85	35	25 H10	55	30	35.5 $^{-0.1}_{-0.4}$	12	M24X1.5	115	35
Ø63	115	43	31.5 H10	62	35	40 $^{-0.1}_{-0.4}$	15	M30X1.5	150	47
Ø80	145	55	40 H10	79	40	50 $^{-0.1}_{-0.4}$	20	M39X1.5	185	62
Ø100	180	65	50 H10	100	50	63 $^{-0.1}_{-0.4}$	30	M48X1.5	230	77
Ø125	225	85	63 H10	130	65	80 $^{-0.1}_{-0.6}$	40	M64X2.0	290	82
Ø140	240	90	71 H10	140	70	80 $^{-0.1}_{-0.6}$	45	M72X2.0	310	97
Ø160	280	100	80 H10	160	80	100 $^{-0.1}_{-0.6}$	50	M80X2.0	360	112

▶로크 너트 Lock Nut

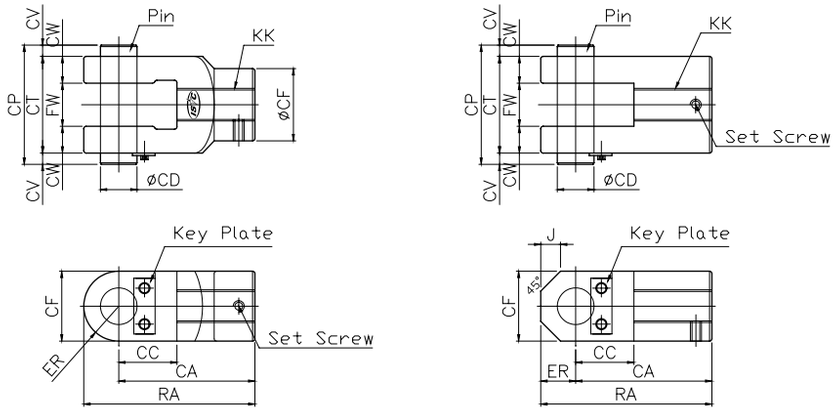


로드 선단 나사에 로크 너트를 사용할 경우는 나사길이(H부 치수)를 길게 할 필요가 있습니다.
If Locknut is used in rod and screw, it is necessary to make the length of the screw(H) longer.

Notation / I-D	B	C	M	H
Ø40	27	31.2	M20*1.5	12
Ø50	32	37	M24*1.5	14
Ø63	41	47.3	M30*1.5	17
Ø80	55	63.5	M39*1.5	20
Ø100	70	80.8	M48*1.5	26
Ø125	90	104	M64*2.0	35
Ø140	100	115	M72*2.0	38
Ø160	110	127	M80*2.0	43

단위 unit :mm

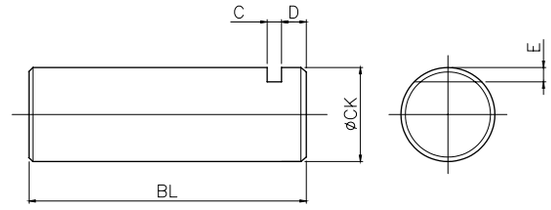
2산 선단금구(Y) Double thread lod end(Y)



notation / HD	CA	CC	øCD	øCF	CP	FW	CT	KK	CW	CV	ER	RA	J
Ø40	70	32	20 H10/f8	40	76.5	31.5 +0.1 +0.4	63.5	M20X1.5	16	8	R20	90	10
Ø50	85	45	25 H10/f8	50	84.5	35.5 +0.1 +0.4	71.5	M24X1.5	18	8	25	115	12
Ø63	115	50	31.5 H10/f8	60	93	40 +0.1 +0.4	80	M30X1.5	20	8	R30	150	15
Ø80	145	60	40 H10/f8	80	117	50 +0.1 +0.4	100	M39X1.5	25	12	R40	185	20
Ø100	180	70	50 H10/f8	100	143	63 +0.1 +0.4	126	M48X1.5	31.5	12	50	230	30
Ø125	225	90	63 H10/f8	120	183	80 +0.1 +0.6	160	M64X2.0	40	18	65	290	40
Ø140	240	100	71 H10/f8	140	183	80 +0.1 +0.6	160	M72X2.0	40	18	70	310	45
Ø160	280	110	80 H10/f8	160	210	100 +0.1 +0.6	180	M80X2.0	40	24	80	360	50

단위 unit :mm

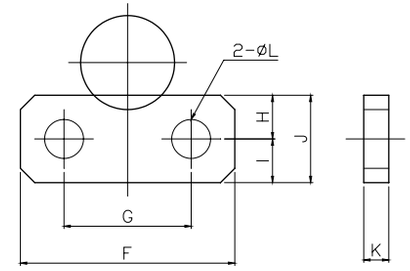
평형핀 Balanced pin



Notation / HD	BL	C	øCK	D	E
Ø40	76.5	5	20 f8	3	3
Ø50	84.5	5	25 f8	3	3.5
Ø63	93	5	31.5 f8	3	4.75
Ø80	117	7	40 f8	5	5
Ø100	143	7	50 f8	5	5

단위 unit :mm

수평키 Horizontal key



Notation / HD	CA	CC	H		I		J		K	øL		J	
			Y type	CB type	Y type	CB type	Y type	CB type		Y type	CB type	Y type	CB type
Ø40	32	18	8	8	7	7	15	15	4.5	7	7	M6	M6
Ø50	32	18	8	8	7	7	15	15	4.5	7	7	M6	M6
Ø63	32	18	8	8	7	7	15	15	4.5	7	7	M6	M6
Ø80	50	30	10	12	8	10	18	22	6	10	12	M8	M10
Ø100	65	40	12	12	10	10	22	22	6	12	12	M10	M10

MEMO

유압 박형 실린더
HYDRAULIC COMPACT CYLINDER

ISTC CO.,LTD

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

70/140kgf/㎠용 표준유압실린더 Hydraulic Cylinder for 70/140kgf/㎠

▶개요 Outline

박형실린더는 압입, 클램프 및 단스트로크에 최적이며 축방향길이가 종래의 길이보다 짧아 좁은 공간에서도 무리없이 설치할 수 있으며, 부착시에도 부착금구류가 필요없이 볼트만으로 체결할수 있도록 설계되었습니다.

The thin-type hydraulic is best for press fit damp and stroke. As the length in the shaft direction is shorter than the conventional length, it can be easily installed in a narrow space. It is also designed to be fastened only by bolts with no need of other fastening tools.

▶실린더 사양

종류	표준형 ISH 140S				스위치 부착형 ISH 140S	
구조	복동형		양로드형		복동형	양로드형
지지형식	기본형(SD형)	풋트형(LA형)	기본형(SW형)	풋트형(LW형)	기본형(SDL형)	기본형(SDWL형)
실리더 내경(mm)	Ø32,Ø40,Ø50, Ø63,Ø80	Ø32,Ø40, Ø50,Ø63	Ø32,Ø40,Ø50, Ø63,Ø80	Ø32,Ø40, Ø50,Ø63	Ø32,Ø40,Ø50,Ø63,Ø80	
최고사용압력	140kgf/㎠(12.729Mpa)					
내압력	210kgf/㎠(20.594Mpa)					
최저작동압력	3kgf/㎠(0.294Mpa)					
사용속도범위	8~100mm/sec					
사용온도범위	-10~+80℃(주위 온도 및 유온)				-10~+70℃(주위 온도 및 유온)	
쿠션기구	무					
적용작동유	일반광물성 작동유(기타의 작동유를 사용하는 경우는 별도로 지시하여 주세요)					
나사공차	KS2급					
스트로크길이의 허용차	0~+0.8mm					

주) 1. 부하의 관성에 의해 실린더내에 발생하는 유압을 내압력 이내로 하여 주세요
2. 지지형식 풋트형에는 평행키가 부착되어 있습니다.

▶Cylinder Specification

Type	Standard type ISH 140S				Switch-mounted type ISH 140S	
Structure	Double-acting type		Double rod type		Double-acting type	Double rod type
Supporting type	Basic type(SD type)	Foot type(LA type)	Basic type(SD type)	Foot type(LW type)	Basic type(SDL type)	Basic type(LDWL type)
Inside diameter of pressure	Ø32,Ø40,Ø50, Ø63,Ø80	Ø32,Ø40, Ø50,Ø63	Ø32,Ø40,Ø50, Ø63,Ø80	Ø32,Ø40, Ø50,Ø63	Ø32,Ø40,Ø50,Ø63,Ø80	
Max. working pressure	140kgf/㎠(12.729Mpa)					
Bearing pressure	210kgf/㎠(20.594Mpa)					
Range of working speed	3kgf/㎠(0.294Mpa)					
Range of working speed	8~100mm/sec					
Range of working temperature	-10~+80°C(Ambient temperature oil temperature)				-10~+70°C(Ambient temperature and oil temperature)	
Cushion tool	None					
Working oil	General mineral working oil(For other working oil,give instruction)					
Screw tolerance						
Allowance of stroke length	0~+0.8mm					

Notes) 1. Oil pressure that is generated inside of the cylinder by the inertia of load should be the bearing pressure.
2. The foot type is equipped with balancing key.

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

70/140kgf/㎠용 표준유압실린더 Hydraulic Cylinder for 70/140kgf/㎠

▶사용상의 주의사항 Attention

1. 실린더의 취부는 육각렌치 볼트(JIS B1176.강도구분 12.9)를 4본 사용하여 주십시오
2. 치구등을 이용하여 피스톤 로드의 나사부에 힘이 가해지지 않도록 로드 끝면까지 나사가 조여 지도록 하여 주세요
3. 피스톤로드에는 횡하중(편심하중)은걸리지 않도록 해 주세요.
4. 실린더는 처음 운전할 때는 반드시 낮은압력상태에서 공기빼기를해 주시고 공기빼기가끝나면, 압력이 낮은 상태에서 실린더를 운전하고, 서서히 압력을 사용압력 까지 올려주세요
5. 실린더에 저압(실린더가 저속10㎜/sec 위치에서 움직이는 정도의 압력)의 기름을 보내고, 실린더의 피스톤 전진때는 로드측의 공기빼기 프라그를 1~2회정도(오른쪽으로 돌린다) 공기빼기를 해 주세요.
6. 실린더 내부에 공기가 모여 있을 경우는 공기빼기 프라그로부터 뿌옇게 흐려진 작동기름이 나오므로, 뿌옇게 흐려지지 않게 되기까지 반복해서 공기빼기를해 주세요.
7. 공기 빼기가 완료되면 공기빼기 프라그를 조여서(왼쪽으로 돌린다) 기름이 새는지 확인해 주세요.
8. 실린더 내의 공기뿐 아니라 배관내에 고여있는 공기도 공기빼기를해 주세요. 만약공기가 남아 있으면, 다음과 같은작동 불량의 원인이 됩니다.

현상 Troubles

1. 스틱슬립이 발생된다.
2. 속도 제어가 부드럽게 되지 않는다.
3. 단열압축에 의한 온도상승으로팩킹의 손상이 일어난다.
4. 외부에 쇼크진동을 준다.

1. Stick slip
2. Improper speed control
3. Damage to packing due to temperature rising by abiabatic compression.
4. Shock or vibration to the outside.

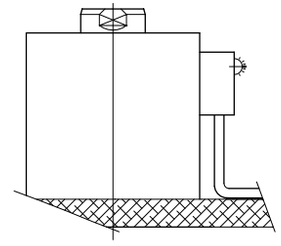
▶스위치의 취급방법 How to handle the switch

실린더 스크로크가 짧고 스위치와 취부면이 근접해서, 스위치의 무리한 구부림이 가해진 경우는 아래 그림과같은 방법으로 한다.

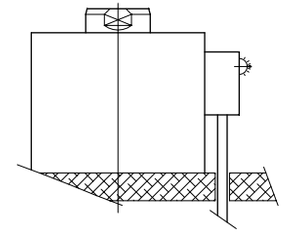
If the cylinder stroke is short, the switch and the fitting surface are close to each other, and the switch code are forced to be excessively bent, take an action as shown in the below figure.

1. Use Four sets of hexagonal wrench bolts.(JIS B1176. Strength Classification:12.9) to mount the cylinder.
2. If the output of the rod forward side is used, make necessary jigs so that the screws are fastened to the rod end side without a force being applied to the screw part of the piston rod.
3. When making the fitting areas, attention should be given so that the piston rod does not have lateral(eccentric) load.
4. When starting cylinder for the first time, be sure to drain air at low pressure. After the air drainage is completed, start the cylinder at low pressure and then slowly raise the pressure to the working pressure.
5. Supply the oil of low pressure(the pressure at which the cylinder moves at a low speed of 10㎜/sec) to the cylinder. When the piston of the cylinder moves forward, unfasten the air vent plug in the rod side by one or two turns(turn clockwise)to drain air.
6. Air is collected in the side of the cylinder, milk-white working oil leaks from the air vent plug, therefore, repeat air draining air until no milk-white working oil comes out.
7. When the air drainage is completed, fasten the air vent plug(turn counter clockwise) and check for any leak of oil.
8. Drain the air collected in the piping as well as in the inside of the cylinder. If air still remains, the following troubles may occur.

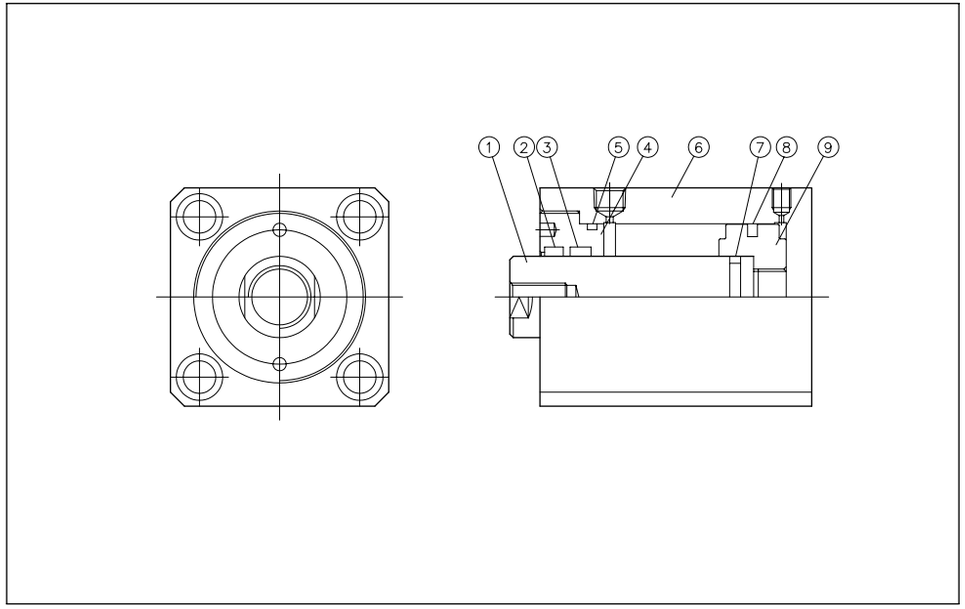
Bad



Good



▶IS 140S내부구조도 IS 140S Inside Structure Drawing



▶부품리스트 Part List

No.	Name	Materials	Quantity
1	ROD	S45C	1
4	ROD COVER	BC3	1
6	TUBE BODY	SS41(S45C)	1
9	PISTON	BC3	1

▶패킹리스트 Packing List

I-D \ No.	2	3	5	7	8
Materials	URETHANE or NBR	URETHANE or NBR	NBR	NBR	NBR+URETHANE
Name	DUST SEAL	ROD PACKING	COVER O-RING	ROD O-RING	PISTON PACKING
Quantity	1	1	1	1	1 SET
Ø32	WD1700180	RU210 018	P26	P14	PW4100320
Ø40	WD1700220	RU2300220	G35	P18	PW4200400
Ø50	WD1700280	RU2100280	G45	P22	PW4200500
Ø63	WD1700350	RU2000350	G58	G30	PW4200630
Ø80	WD1700450	RU2100450	G75	G40	PW4200800
Ø100	WD1700550	RU2100550	G95	G50	PW4301000

※상기 Packing 품목은 주문에 따라 변경될 수 있습니다.
※Upper Packing Items can be changed by order.

▶실린더 형식 기호 Cylinder Type Notation

IS140S ① 2 ② SD ③ W ④ 40 — ⑤ 100 ⑥ M

①패킹재질 Packing materials

None(standard)	NBR, URETHANE
1	NBR
2	Viton

②지지형식 Supporting type

SD	Basic Type
LA	Foot Type

③실린더 형식 Cylinder Type

None	Single-rod
W	Double-rod
L	Switch-mounted Type
WL	Double-rod Switch-mounted Type

④실린더 내경 Inside diameter of cylinder

⑤실린더 행정 Cylinder Stroke

표준 스트로크 하기표 참조 Refer to the bellow table

⑥로드선단(숫나사일 경우) 별도 표기바람

Rod end (for a male screw, give separate instructions)

None	Female screw
M	Male screw

▶표준스트로크 범위 Range of standard stroke

Kind	Structure	Supporting type	I-D(mm)	Stroke(mm)									
				5	10	15	20	25	30	35	40	45	50
Standard Type ISH 140S	Double-acting type Double-rod type	Basic type	Ø32	○	○	○	○	○	○	–	–	–	–
			Ø40	○	○	○	○	○	○	○	○	–	–
			Ø50	○	○	○	○	○	○	○	○	○	○
			Ø63	○	○	○	○	○	○	○	○	○	○
			Ø80	○	○	○	○	○	○	○	○	○	○
		Foot type	Ø32	○	○	○	○	○	○	–	–	–	–
			Ø40	○	○	○	○	○	○	○	○	–	–
			Ø50	○	○	○	○	○	○	○	○	○	○
			Ø63	○	○	○	○	○	○	○	○	○	○
Switch set ISH 140S	Double-acting type Double-rod type	Basic type	Ø32	○	○	○	○	○	○	–	–	–	–
			Ø40	–	○	○	○	○	○	○	○	–	–
			Ø50	–	○	○	○	○	○	○	○	○	○
			Ø63	–	○	○	○	○	○	○	○	○	○
			Ø80	–	○	○	○	○	○	○	○	○	○

▶스위치 셋트의 취부수량
1. ø32전 스트로크 및 ø40, ø50, ø63, ø80의 10 스트로크에 대해서는 스위치 1개만 취부가능합니다.
2. 스위치는 부착해서 출하합니다.
3. ø32(5st-30st), ø40, ø50, ø63, ø80(10st)에 대해서는 스위치 1개만 부착가능하며 스위치는 헤드측에 부착후 출하합니다.

▶Quantity of switch sets to be mounted
1. For all strokes of ø32 and 10mm stroke of ø40,ø50, ø63,ø80, it is possible to mount one switch set.
2. The cylinder delivered are with the switch mounted.
3. For 5-30 mm strokes of ø32(5st-30st)and ,10mm stroke of ø40, ø50,ø63, ø80(10st), it is possible to mount one switch set, and the switch is delivered through detection in the head side.

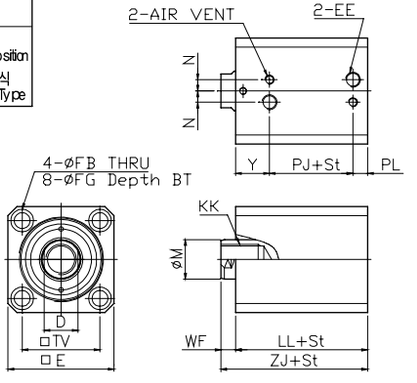
□외형도 Outside Dimension Drawing

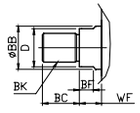
SD
표준형 Standard Type

IS140S - [1] SD [3][4] - [5]ST [6][7]

[1] 패킹재질 Packing Materials
[4] 실린더 내경 Cylinder Inside-diameter
[6] 쿠션위치 Cushion position
[3] 실린더 형식 Cylinder Type
[5] 실린더 행정 Cylinder stroke
[7] 로드선단 형식 Rod-end Type

▶ 표준형 ø32, ø40, ø50, ø63, ø80, ø100
습동면(실린더 내경)에 대한 로드측 취부면 직각도는 0.04 이하
Standard Type ø32, ø40, ø50, ø63, ø80, ø100
The right-angled degree of the fitting surface in the rod side to the sliding surface in the diameter of the cylinder is below 0.04.





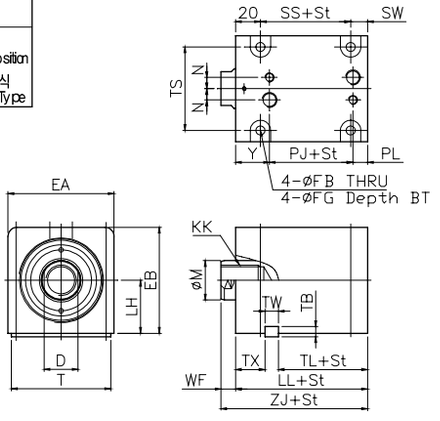
I-D	øBB	BC	WF	BK	D	BF
ø32	ø18	25	10	M16×1.5	14	7
ø40	ø22	30	10	M20×1.5	20	7
ø50	ø28	35	11	M24×1.5	24	8
ø63	ø35	45	13	M30×1.5	30	9
ø80	ø45	60	17	M39×1.5	41	14
ø100	ø55	75	26	M48×1.5	51	18

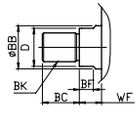
LA
푸트형 Foot Type

IS140S - [1] LA [3][4] - [5]ST [6][7]

[1] 패킹재질 Packing Materials
[4] 실린더 내경 Cylinder Inside-diameter
[6] 쿠션위치 Cushion position
[3] 실린더 형식 Cylinder Type
[5] 실린더 행정 Cylinder stroke
[7] 로드선단 형식 Rod-end Type

▶ 풋트형/내경 ø32, ø40, ø50, ø63, ø80
습동면(실린더 내경)에 대한 로드측 취부면 직각도는 0.04 이하
Foot Type/Inside-diameter ø32, ø40, ø50, ø63, ø80
The right-angled degree of the fitting surface in the rod side to the sliding surface in the diameter of the cylinder is below 0.04.





I-D	øBB	BC	WF	BK	D	BF
ø32	ø18	25	10	M16×1.5	14	7
ø40	ø22	30	10	M20×1.5	20	7
ø50	ø28	35	11	M24×1.5	24	8
ø63	ø35	45	13	M30×1.5	30	9
ø80	ø45	60	17	M39×1.5	41	14
ø100	ø55	75	26	M48×1.5	51	18

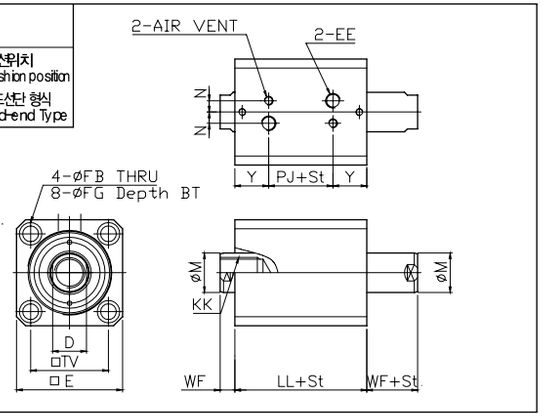
Notation / I-D	BT Basic Type	BT Foot Type	D	□E	EA	EB	EE	FB Basic Type	FB Foot Type	FG Basic Type	FG Foot Type	KK	LH	LL	ØM	N	PJ	PL	SS	SW	T	TL	TS	□TV	TW	TX	WF	Y	ZJ	TB
Ø32	6.5	8.6	14	62	70	56	PT¼	Ø6.6	Ø9	Ø11	Ø14	M12X1.75×DP15	25±0.06	54	Ø18	10	14	12	24	10	63	14	56	47	12	28	10	28	64	8
Ø40	8.6	10.8	19	70	80	64	PT¼	Ø9	Ø11	Ø14	Ø17.5	M16X2.0×DP20	29±0.06	55	Ø22	10	16	12	23	12	70	15	62	52	12	28	10	27	65	8
Ø50	10.8	13	24	80	94	74	PT¼	Ø11	Ø14	Ø17.5	Ø20	M20×2.5×DP24	34±0.06	60	Ø28	10	19	13	27	13	80	17	74	58	14	29	11	28	71	9
Ø63	13	15.2	30	94	114	89	PT¼	Ø14	Ø16	Ø20	Ø23	M27×3.0×DP33	42±0.06	67	Ø35	10	24	13	32	15	100	20	90	69	16	31	13	30	80	10
Ø80	15.2	17.5	41	114	142	109	PT½	Ø16	ø18	Ø23	ø26	M30×3.5×DP33	52±0.06	78	Ø45	15	25	18	40	18	100	26	115	86	16	36	17	35	95	10
Ø100	18	–	51	140	–	–	PT½	Ø18	–	Ø26	–	M30×3.5×DP33	–	110	Ø55	18	35	25	–	–	–	–	–	105	–	–	26	50	138	–

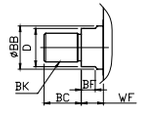
SDW
표준양로드형 Standard Double-rod Type

IS140S - [1] SDW [3][4] - [5]ST [6][7]

[1] 패킹재질 Packing Materials
[4] 실린더 내경 Cylinder Inside-diameter
[6] 쿠션위치 Cushion position
[3] 실린더 형식 Cylinder Type
[5] 실린더 행정 Cylinder stroke
[7] 로드선단 형식 Rod-end Type

▶ 표준형 ø32, ø40, ø50, ø63, ø80, ø100
습동면(실린더 내경)에 대한 로드측 취부면 직각도는 0.04 이하
Standard Type ø32, ø40, ø50, ø63, ø80, ø100
The right-angled degree of the fitting surface in the rod side to the sliding surface in the diameter of the cylinder is below 0.04.





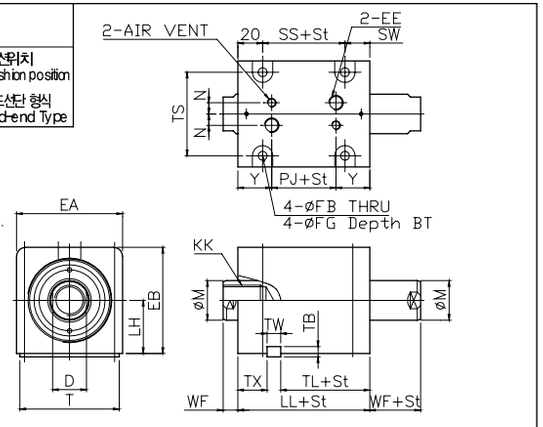
I-D	øBB	BC	WF	BK	D	BF
ø32	ø18	25	10	M16×1.5	14	7
ø40	ø22	30	10	M20×1.5	20	7
ø50	ø28	35	11	M24×1.5	24	8
ø63	ø35	45	13	M30×1.5	30	9
ø80	ø45	60	17	M39×1.5	41	14
ø100	ø55	75	26	M48×1.5	51	18

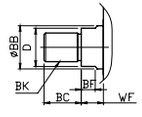
LAW
풋트양로드형 Foot Double-rod Type

IS140S - [1] LAW [3][4] - [5]ST [6][7]

[1] 패킹재질 Packing Materials
[4] 실린더 내경 Cylinder Inside-diameter
[6] 쿠션위치 Cushion position
[3] 실린더 형식 Cylinder Type
[5] 실린더 행정 Cylinder stroke
[7] 로드선단 형식 Rod-end Type

▶ 풋트양로드형 ø32, ø40, ø50, ø63, ø80
습동면(실린더 내경)에 대한 로드측 취부면 직각도는 0.04 이하
Foot Type/Inside-diameter ø32, ø40, ø50, ø63, ø80
The right-angled degree of the fitting surface in the rod side to the sliding surface in the diameter of the cylinder is below 0.04.





I-D	øBB	BC	WF	BK	D	BF
ø32	ø18	25	10	M16×1.5	14	7
ø40	ø22	30	10	M20×1.5	20	7
ø50	ø28	35	11	M24×1.5	24	8
ø63	ø35	45	13	M30×1.5	30	9
ø80	ø45	60	17	M39×1.5	41	14
ø100	ø55	75	26	M48×1.5	51	18

Notation / I-D	BT Basic Type	BT Foot Type	D	□E	EA	EB	EE	FB Basic Type	FB Foot Type	FG Basic Type	FG Foot Type	KK	LH	LL	ØM	N	PJ	SS	T	TL	TS	□TV	TW	TX	WF	Y	TB
Ø32	6.5	8.6	14	62	70	56	PT¼	Ø6.6	Ø9	Ø11	Ø14	M12X1.75×DP15	25±0.06	72	Ø18	10	16	32	63	32	56	47	12	28	10	28	8
Ø40	8.6	10.8	19	70	80	64	PT¼	Ø9	Ø11	Ø14	Ø17.5	M16X2.0×DP20	29±0.06	72	Ø22	10	18	32	70	32	62	52	12	28	10	27	8
Ø50	10.8	13	24	80	94	74	PT¼	Ø11	Ø14	Ø17.5	Ø20	M20×2.5×DP24	34±0.06	75	Ø28	10	19	35	80	32	74	58	14	29	11	28	9
Ø63	13	15.2	30	94	114	89	PT¼	Ø14	Ø16	Ø20	Ø23	M27×3.0×DP33	42±0.06	83	Ø35	10	22	42	100	35	90	69	16	31	13	30	10
Ø80	15.2	–	41	114	–	–	PT½	Ø16	–	Ø23	–	M30×3.5×DP33	52±0.06	96	Ø45	15	25	–	–	–	–	86	–	–	17	35	10
Ø100	18	–	51	140	–	–	PT½	Ø18	–	Ø26	–	M30×3.5×DP33	–	135	Ø55	18	35	–	–	–	–	105	–	–	26	50	–

유압 실린더 시리즈 HYDRAULIC CYLINDER SERIES

외형도 Outside Dimensions Drawings

SDL

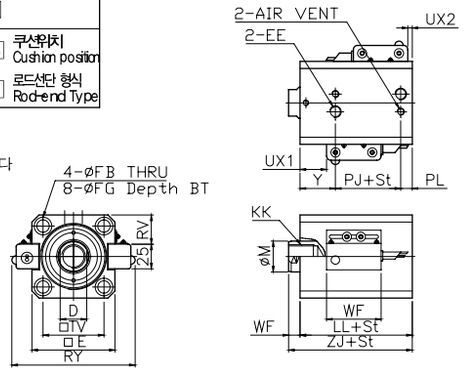
표준스위치부착형
Standard Switch-mounted Type

IS140S - [1] SDW [3][4] - [5]ST [6][7]

[1]	패킹재질 Packing Materials	[4]	실린더 내경 Cylinder Inside-diameter	[6]	쿠션위치 Cushion position
[3]	실린더 형식 Cylinder Type	[5]	실린더 행정 Cylinder stroke	[7]	로드선단 형식 Rod-end Type

▶ 표준형 ø32, ø40, ø50, ø63, ø80
ø32의 경우 리드스위치1개 부착합니다.
ø40, ø50, ø80의 10 스트로크의 경우는 리드스위치1개 부착합니다
습동면(실린더 내경)에 대한 로드측 취부면의 직각도는 0.04 이하.

▶ Standard Type ø32, ø40, ø50, ø63, ø80
For ø32, one reed switch is mounted.
For 10mm stroke of ø40, ø50, ø63, and ø80, one reed switch is mounted.
The right-angled degree of the fitting surface in the rod side to the sliding surface in the diameter of the cylinder is below 0.04.



SDWL

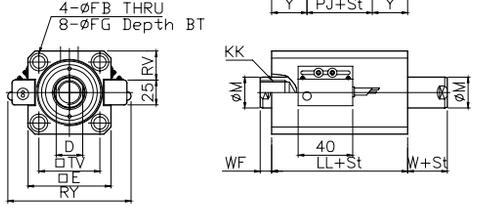
표준 양로드 스위치부착형
Standard Both-end Switch-mount dType

IS140S - [1] SDWL [3][4] - [5]ST [6][7]

[1]	패킹재질 Packing Materials	[4]	실린더 내경 Cylinder Inside-diameter	[6]	쿠션위치 Cushion position
[3]	실린더 형식 Cylinder Type	[5]	실린더 행정 Cylinder stroke	[7]	로드선단 형식 Rod-end Type

▶ 표준 양로드 스위치부착형 ø32, ø40, ø50, ø63, ø80
ø32의 경우 리드스위치1개 부착합니다.
ø40, ø50, ø80의 10 스트로크의 경우는 리드스위치1개 부착합니다
습동면(실린더 내경)에 대한 로드측 취부면의 직각도는 0.04 이하
이며 단면에 V홈이 없는 면이 취부입니다.

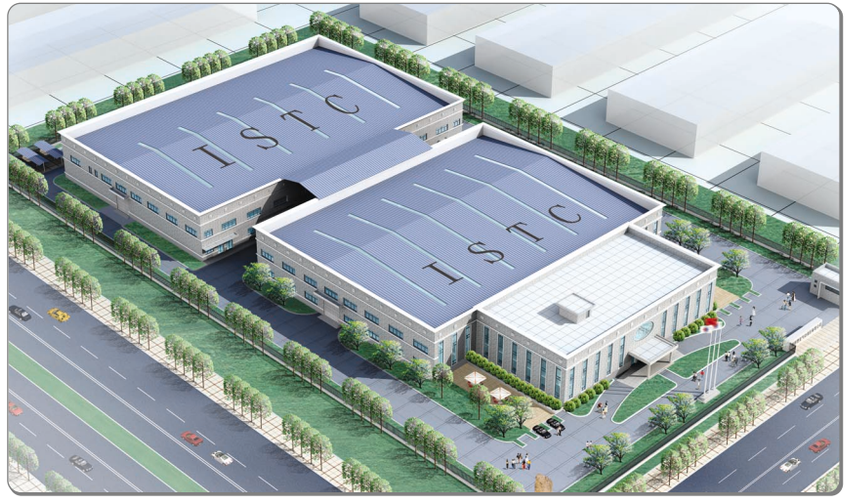
▶ Standard Double-rod Switch-mounted Type ø32, ø40, ø50, ø63, ø80
For ø32, one reed switch is mounted.
For 10mm stroke of ø40, ø50, ø63, and ø80, one reed switch is mounted.
The right-angled degree of the fitting surface in the rod side to the sliding surface in the diameter of the cylinder is below 0.04 and the surface without V-groove in the cross-section is fitting surface.



Notation / H-D	BT	D	□E	EA	FB	FG	KK	LL Standard type	LL Double rod type	ØM	N	PJ Double-action type	PJ Double rod type	PL	RV	RY	□TV	UX_1	UX_2	WF	Y	ZJ
Ø32	6.5	14	62	PT¼	Ø6.6	Ø11	M12X1.75*DP15	54	72	Ø18	10	14	16	12	22	92	47	21	4	10	28	64
Ø40	8.6	19	70	PT¼	Ø9	Ø14	M16X2.0*DP20	55	72	Ø22	10	16	18	12	26	100	52	21	4	10	28	65
Ø50	10.8	24	80	PT¼	Ø11	Ø17.5	M20*2.5*DP24	60	75	Ø28	10	19	19	13	29	110	58	23	8	11	28	71
Ø63	13	30	94	PT¼	Ø14	Ø20	M27*3.0*DP33	67	82	Ø35	10	24	22	13	34.5	124	69	29	14	13	30	80
Ø80	15.2	41	114	PT¾	Ø16	Ø23	M30*3.5*DP33	78	95	Ø45	15	25	25	18	44.5	144	86	39	3	17	35	95

고객만족을 위해
항상 다양한 제품을 생산하고
신속하고 보다나은 서비스를
고객들에게 제공하기 위해 노력하고 있습니다.

〈본사전경〉



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ISTC CO.,LTD

www.istc.co.kr

본　　사 : 704-230 대구광역시 달서구 호산동 705-1 1번지
TEL: (053) 585-7836 (代)　FAX : (053) 585-7839

서 울 지 사 : 152-721 서울 구로 신도림 410-13 안성공구상가 A동 146호
TEL: (02) 2634-7921 (代)　FAX : (02) 2634-7923

부 산 지 사 : 617-716 부산광역시사상구 괘법동 578산업유통상가 20동 120호
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BUSAN BRANCH : #578 GWAEBEOP-DONG, SASANG-GU, BUSAN, KOREA
TEL: 82-51-319-1836 (Rep.) FAX : 82-51-319-1838

中　國 : 嘉兴意新泰克 (韓国) 有限公司
地址 : 中国 浙江省 嘉兴市 秀州工业区 新农路
电话 : 0573-83153388　传真 : 0573-83153315

CHINA : ISTC CO.,LTD
ADDRESS : Xinnong RO Xiuzhou Industrial district,
Jiaxing, Zhejiang, China
TEL NO : 0573-83153388　FAX NO : 0573-83153315