TSX SERIES

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NITROGEN GAS SPRING

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STABLE XTRA HIGH POWER

■ 일반 제원

- 충전재
  질소가스 (N_2)
- 분당 최대 스트로크 왕복
  ~50 to 100 (at 20℃)
- 최대 충전 압력
  150 ~ 180 bar (at 20℃)
- 피스톤 로드 속도
  0 ~ 0.8 m/s
- 최소 충전 압력
  25 bar (at 20℃)
- 로드 표면처리
  도금 열처리
- 작동 온도
  0 to 80℃
- 실린더 표면처리
  흑산화 피막
- 온도에 따른 압력 증가량
  ±0.3% / ℃

■ Model별 제원

종류 TYPE	Stroke (mm)	실린더 외경 Φ(mm)	Rod 외경 Φ(mm)	초기 하중 (N)	최대하중 (N)	최대충전압력
TSX0350	10~125	32	16	3,600	5,400	180Bar
TSX0500	10~125	38	20	4,700	7,200	150Bar
TSX0750	10~125	45	25	7,400	11,700	150Bar
TSX1000	13~125	50	28	9,200	14,600	150Bar
TSX1500	13~125	63	36	15,200	23,900	150Bar
TSX2400	16~125	75	45	23,800	38,100	150Bar
TSX4200	16~125	95	60	42,200	69,200	150Bar
TSX6600	16~125	120	75	66,000	105,600	150Bar

※ 상기 사양은 성능개선을 위해 예고없이 변경될 수 있습니다.

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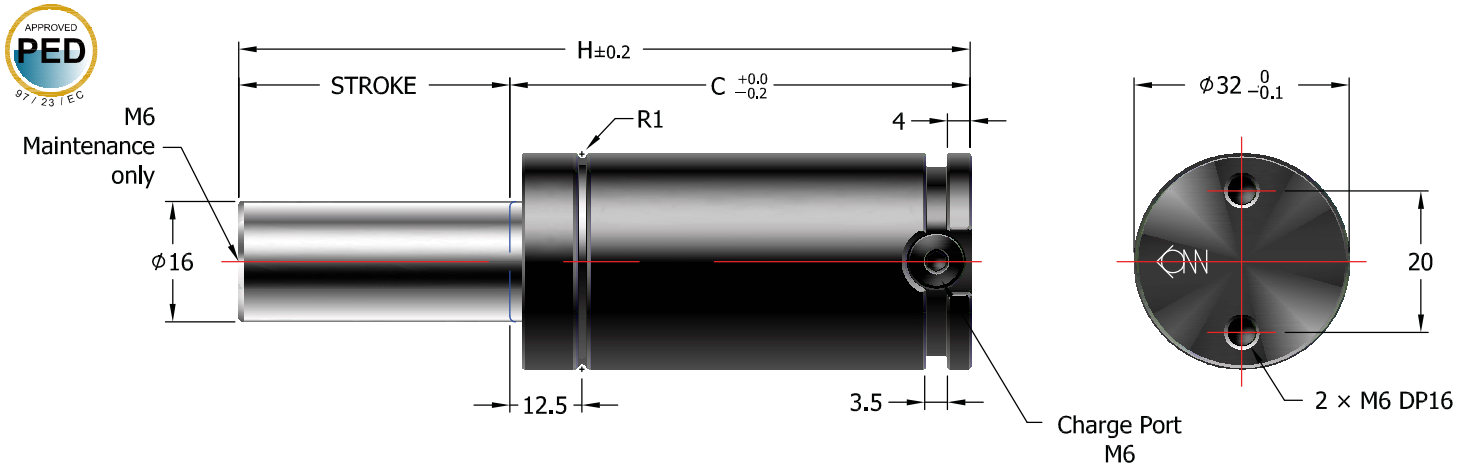
TSX0350 NITROGEN GAS SPRING



규격 표기법

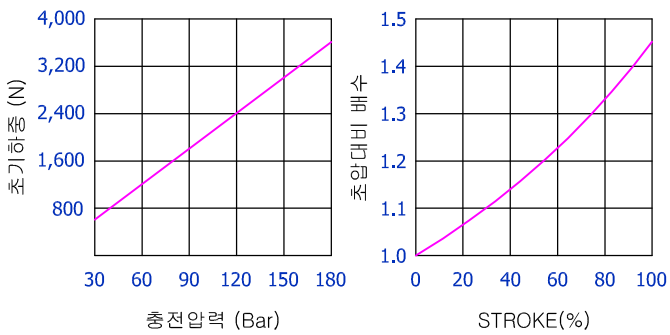
GAS SPRING	TSX0350	×	050	S(F)	–	180
	MODEL		STROKE	단독형-S 배관형-F		충전압력 (Bar)
MOUNT	XP0350					
REPAIR KIT	RCX0350					

[주의!] TSX0350은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(180Bar)으로 출고됩니다.

TSX0350							
Stroke		H	C	Force(N) (180 bar / +20 ℃)		Gas vol. (㎤)	Weight (kg)
(㎜)	(inch)			Initial	End force*		
10	0.39	60	50	3,600	5,000	7.2	0.26
13	0.51	66	53		5,100	9.0	0.27
16	0.63	72	56		5,200	10.8	0.27
20	0.79	80	60		5,200	13.3	0.29
25	0.98	90	65		5,200	16.3	0.31
30	1.18	100	70		5,300	19.4	0.32
35	1.38	110	75		5,300	22.4	0.34
38	1.50	116	78		5,300	24.2	0.35
40	1.57	120	80		5,300	25.4	0.35
45	1.77	130	85		5,300	28.5	0.38
50	1.97	140	90		5,300	31.5	0.39
60	2.36	160	100		5,300	37.6	0.43
63	2.48	166	103		5,300	39.5	0.43
70	2.76	180	110		5,300	43.7	0.46
75	2.95	190	115		5,300	46.8	0.47
80	3.15	200	120		5,300	49.8	0.49
90	3.54	220	130		5,300	55.9	0.52
100	3.94	240	140		5,400	62.5	0.55
125	4.92	290	165		5,400	77.2	0.64

* = at full stroke

■ 충전압력/압축량 대비 하중변화도표



■ TSX0350의 충전 압력(Bar) 계산식

$$\text{충전압력(Bar)} = \frac{\text{초기하중(N)}}{20.1}$$

ex) 필요한 초기하중 3,300N인 GAS SPRING의 충전압력은?

$$164\text{(Bar)} = \frac{3{,}300\text{(N)}}{20.1}$$

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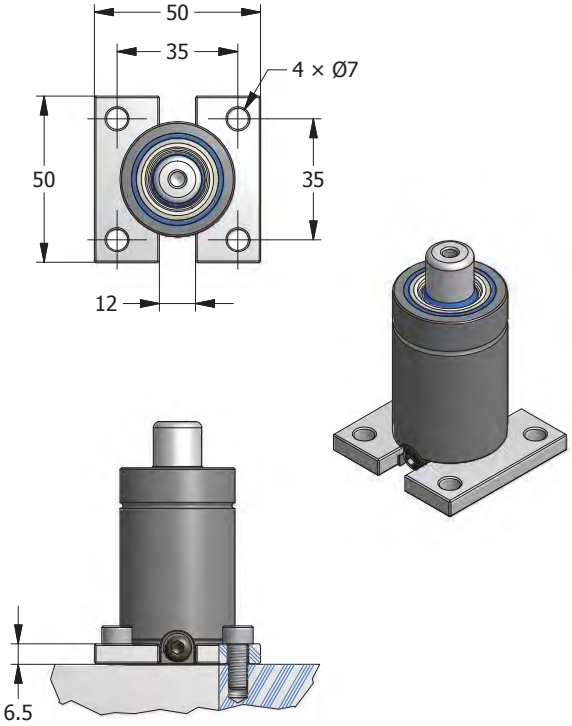
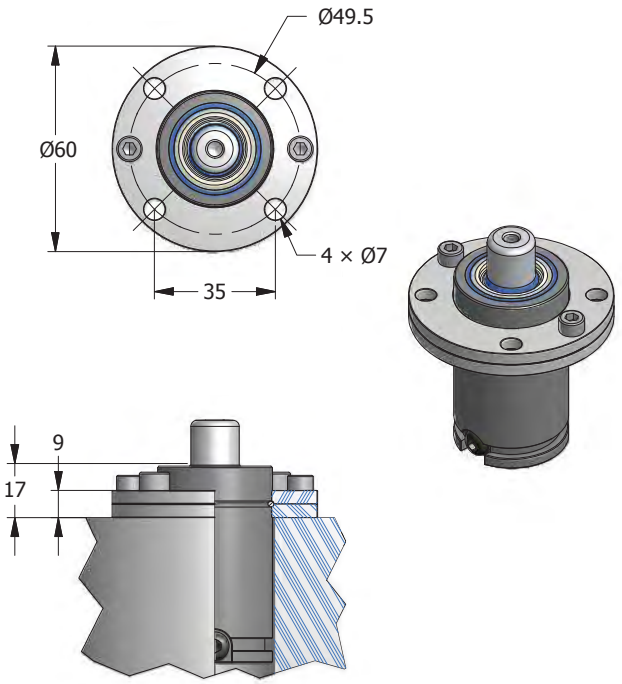
TSX0350 Mounts

XP0350 MOUNT



XR0350 MOUNT



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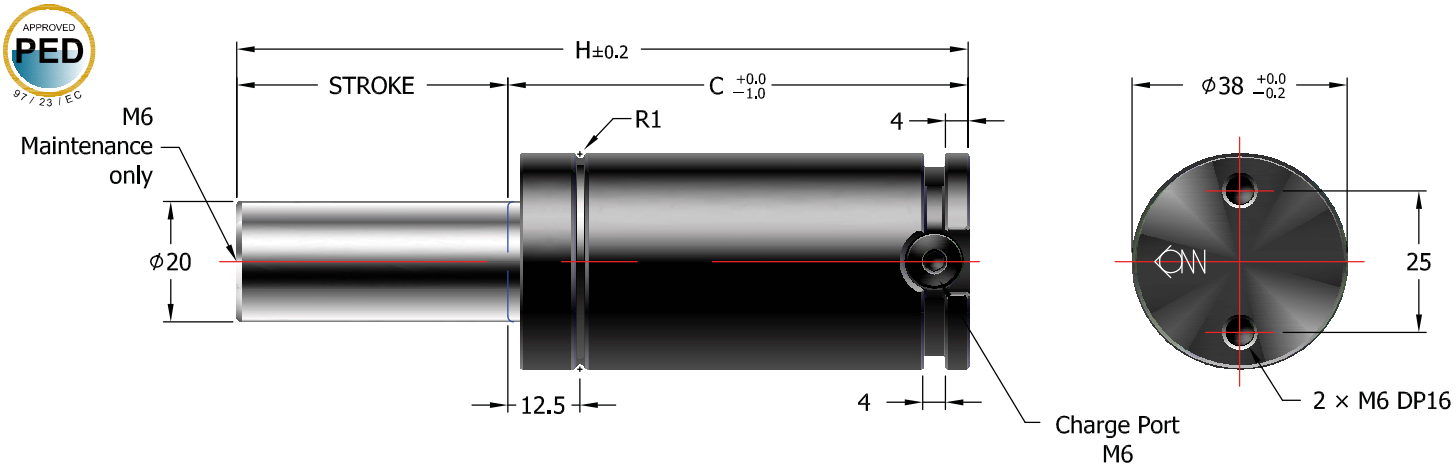
TSX0500 NITROGEN GAS SPRING



규격 표기법

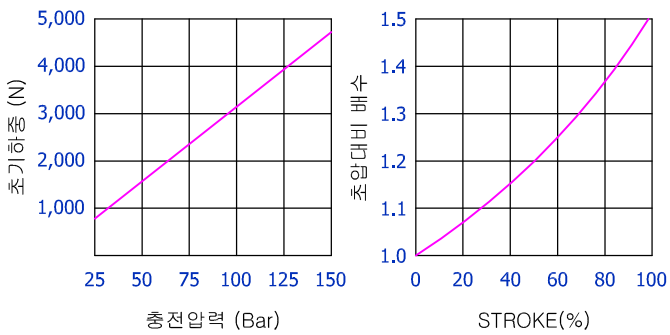
GAS SPRING	TSX0500	×	050	S(F)	–	150
	MODEL		STROKE	단독형-S 배관형-F		충전압력 (Bar)
MOUNT	XP0500					
REPAIR KIT	RCX0500					

[주의!] TSX0500은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX0500							
Stroke		H	C	Force(N) (150 bar / +20 ℃)		Gas vol. (㎤)	Weight (kg)
(㎜)	(inch)			Initial	End force*		
10	0.39	60	50	4,700	6,700	10.4	0.35
13	0.51	66	53		6,800	13.1	0.37
16	0.63	72	56		6,900	15.7	0.38
20	0.79	80	60		7,000	19.3	0.40
25	0.98	90	65		7,000	23.7	0.42
30	1.18	100	70		7,100	28.2	0.45
35	1.38	110	75		7,100	32.6	0.47
38	1.50	116	78		7,100	35.3	0.48
40	1.57	120	80		7,100	37.0	0.50
45	1.77	130	85		7,100	41.5	0.52
50	1.97	140	90		7,200	45.9	0.55
60	2.36	160	100		7,200	54.8	0.60
63	2.48	166	103		7,200	57.4	0.61
70	2.76	180	110		7,200	63.6	0.64
75	2.95	190	115		7,200	68.1	0.66
80	3.15	200	120		7,200	72.5	0.69
90	3.54	220	130		7,200	81.4	0.74
100	3.94	240	140		7,200	90.3	0.79
125	4.92	290	165		7,200	112.4	0.91

* = at full stroke

■ 충전압력/압축량 대비 하중변화도표



■ TSX0500의 충전 압력(Bar) 계산식

$$\text{충전압력(Bar)} = \frac{\text{초기하중(N)}}{31.4}$$

ex) 필요한 초기하중 4,000N인 GAS SPRING의 충전압력은?

$$127\text{(Bar)} = \frac{4{,}000\text{(N)}}{31.4}$$

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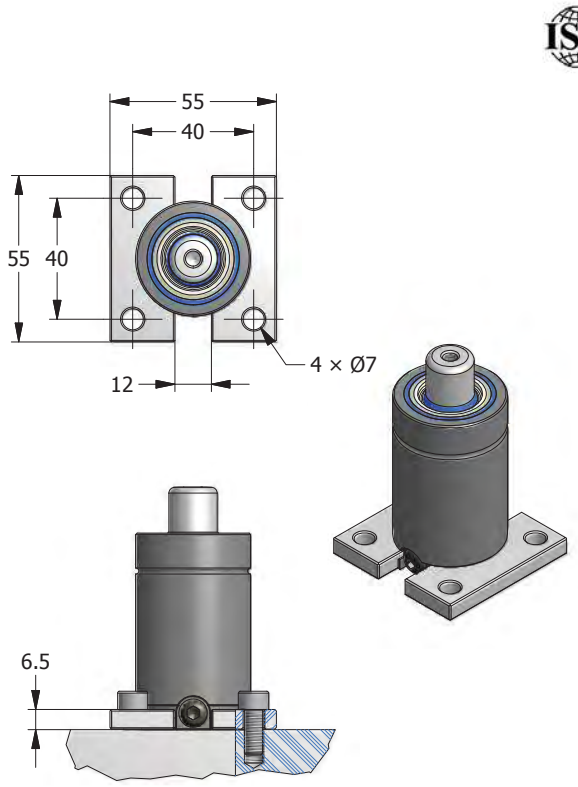
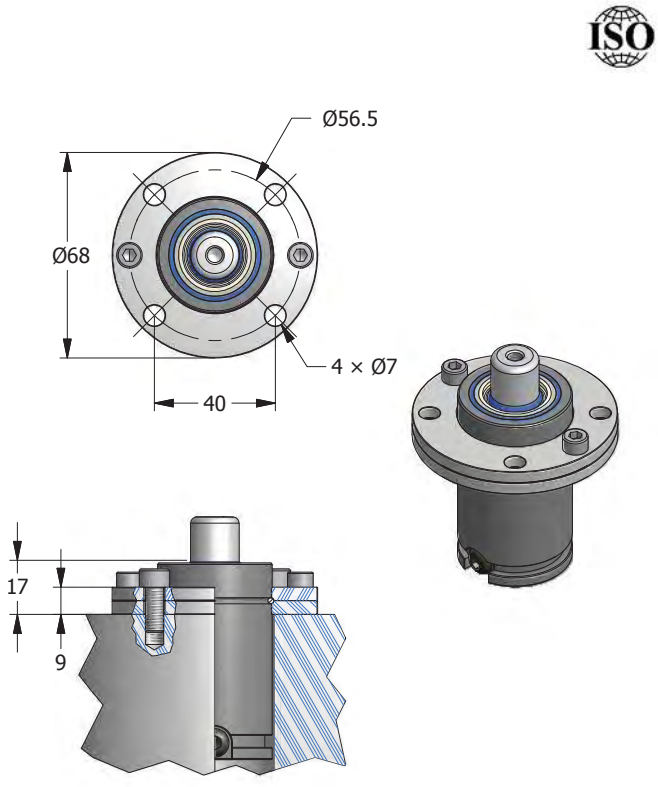
TSX0500 Mounts

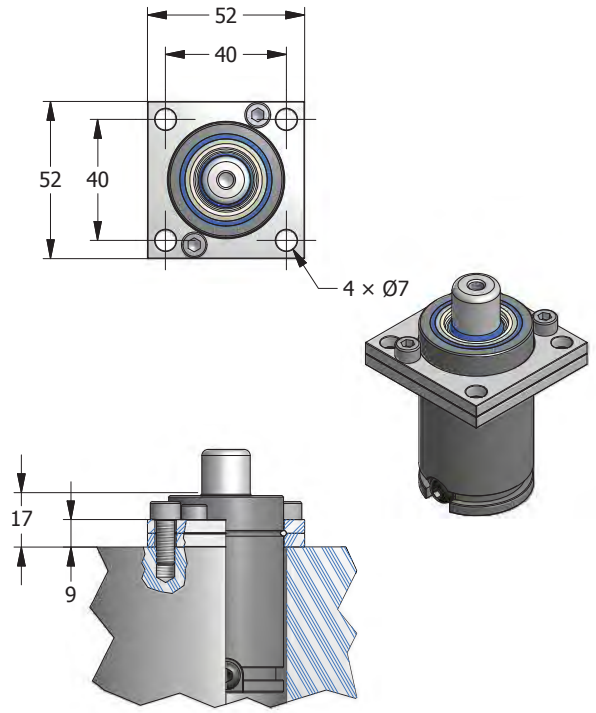
XP0500(SP0300) MOUNT



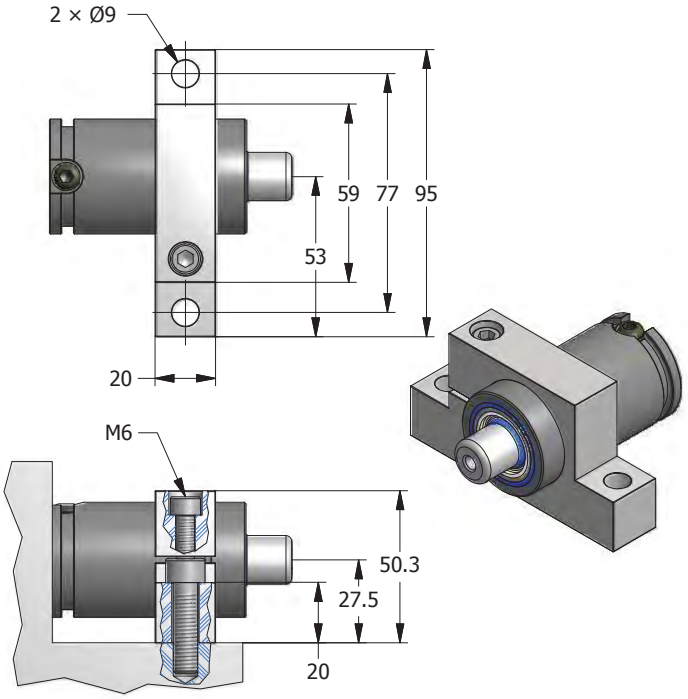
XR0500(SR0300) MOUNT



XT0500(ST0300) MOUNT



XC0500(SC0300) MOUNT



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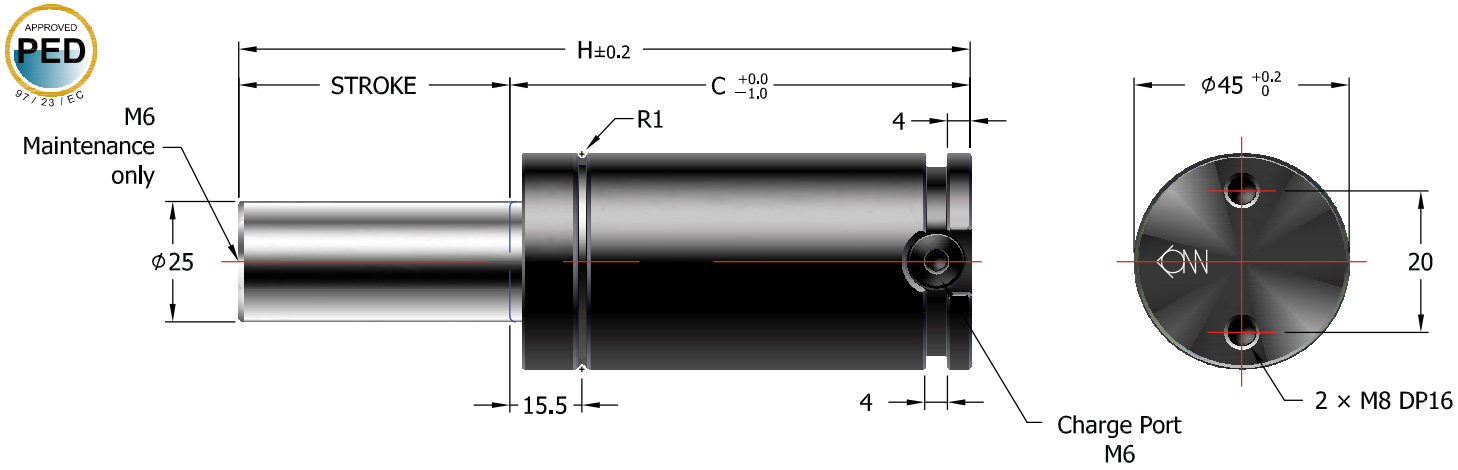
TSX0750 NITROGEN GAS SPRING



규격 표기법

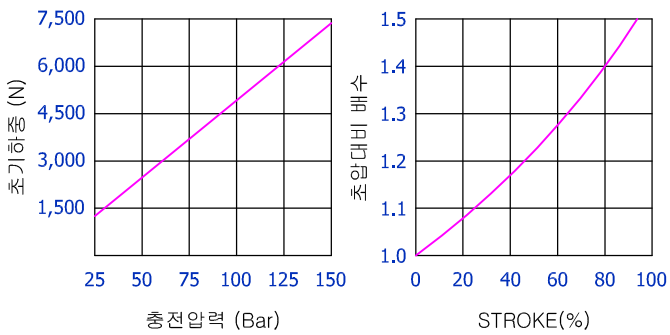
GAS SPRING	TSX0750	×	050	S(F)	–	150
	MODEL		STROKE	단독형-S 배관형-F		충전압력 (Bar)
MOUNT	XP0750					
REPAIR KIT	RCX0750					

[주의!] TSX0750은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX0750							
Stroke		H	C	Force(N) (150 bar / +20 ℃)		Gas vol. (㎤)	Weight (kg)
(㎜)	(inch)			Initial	End force*		
10	0.39	67	57	7,400	10,200	17.9	0.55
13	0.51	73	60		10,500	21.8	0.57
16	0.63	79	63		10,600	25.7	0.59
20	0.79	87	67		10,800	30.9	0.62
25	0.98	97	72		11,000	37.4	0.65
30	1.18	107	77		11,100	43.9	0.68
35	1.38	117	82		11,200	50.4	0.71
38	1.50	123	85		11,300	54.3	0.73
40	1.57	127	87		11,300	57.0	0.74
45	1.77	137	92		11,300	63.5	0.78
50	1.97	147	97		11,400	70.0	0.81
60	2.36	167	107		11,500	83.0	0.87
63	2.48	173	110		11,500	86.9	0.89
70	2.76	187	117		11,500	96.0	0.94
75	2.95	197	122		11,500	102.5	0.97
80	3.15	207	127		11,600	109.0	1.00
90	3.54	227	137		11,600	122.0	1.07
100	3.94	247	147		11,600	135.0	1.13
125	4.92	297	172		11,700	167.6	1.29

* = at full stroke

■ 충전압력/압축량 대비 하중변화도표



■ TSX0750의 충전 압력(Bar) 계산식

$$\text{충전압력(Bar)} = \frac{\text{초기하중(N)}}{49.1}$$

ex) 필요한 초기하중 6,000N인 GAS SPRING의 충전압력은?

$$122\text{(Bar)} = \frac{6{,}000\text{(N)}}{49.1}$$

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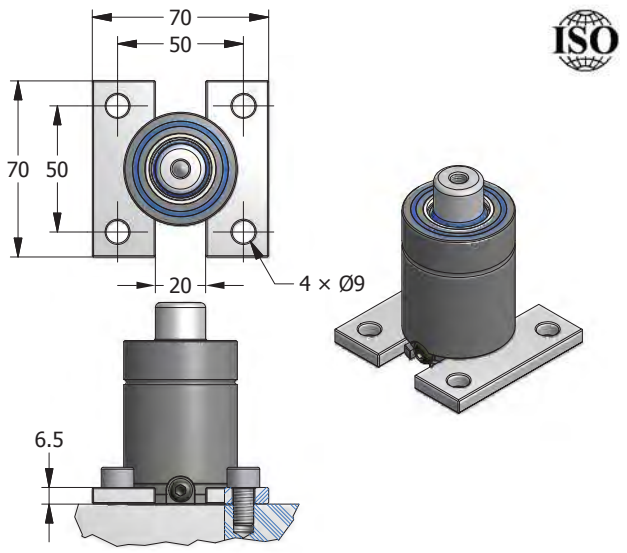
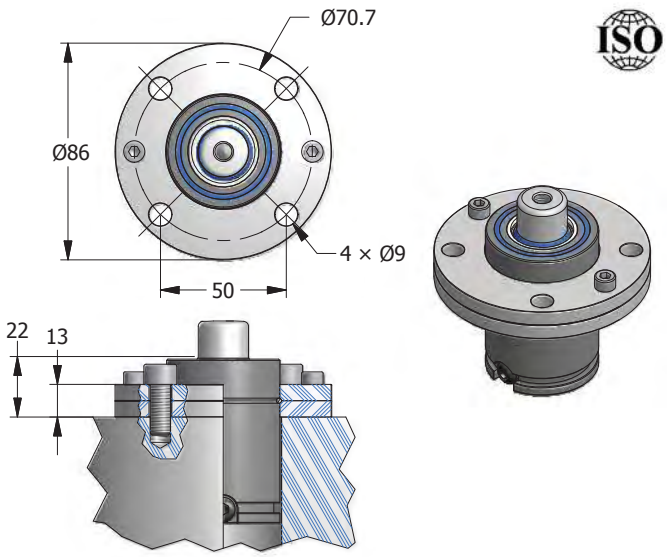
TSX0750 Mounts

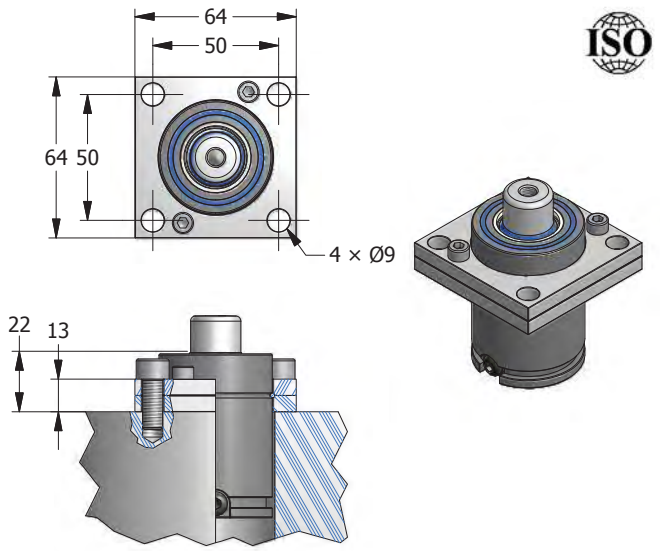
XP0750(SP0500) MOUNT



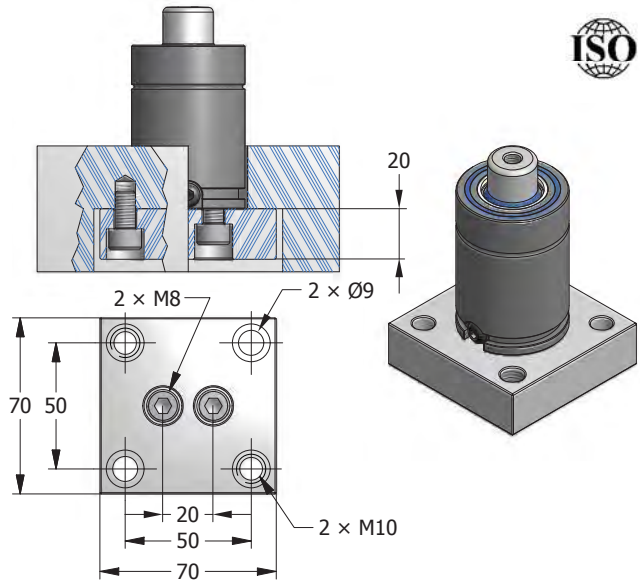
XR0750(SR0500) MOUNT



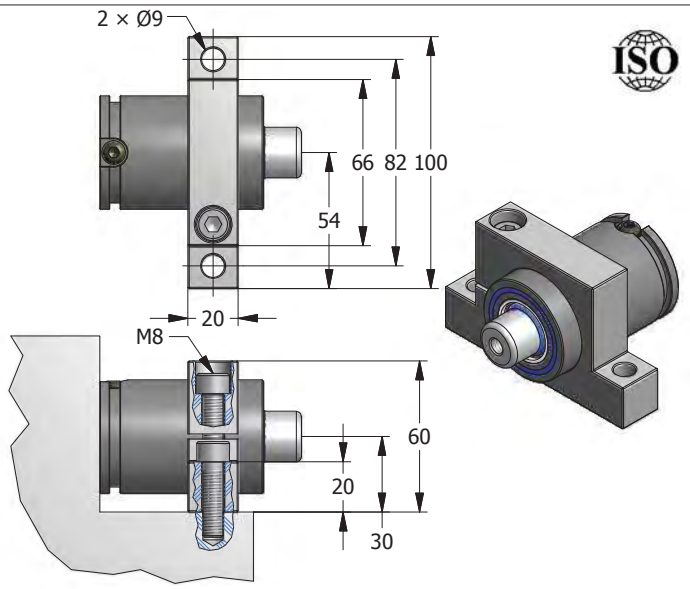
XT0750(ST0500) MOUNT



XB0750(SB0500) MOUNT



XC0750(SC0500) MOUNT



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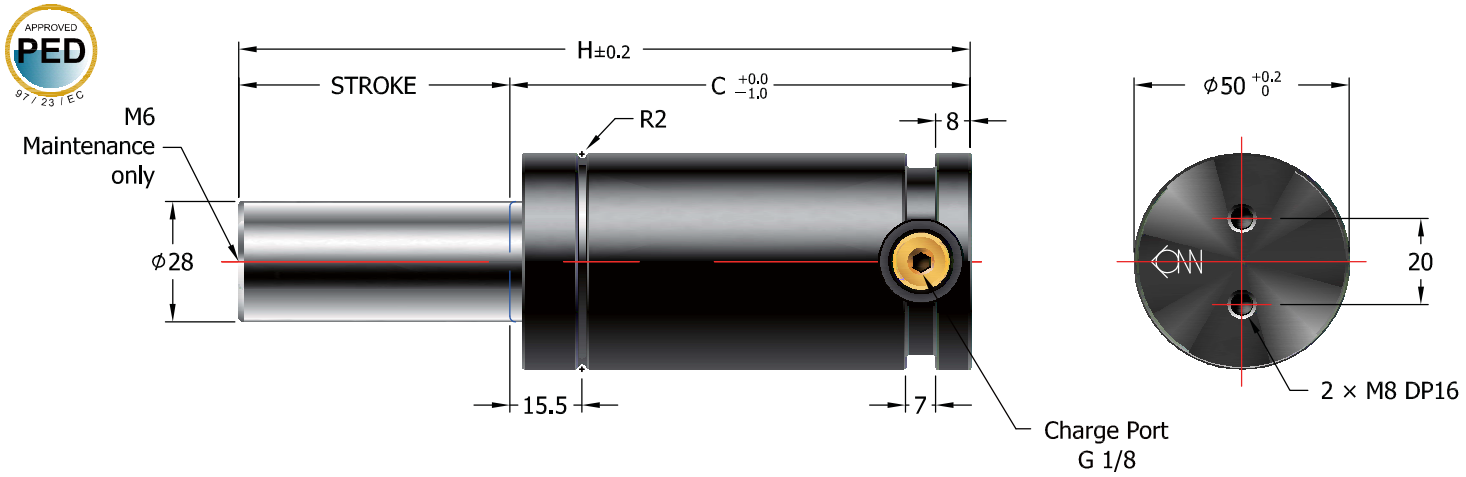
TSX1000 NITROGEN GAS SPRING



규격 표기법

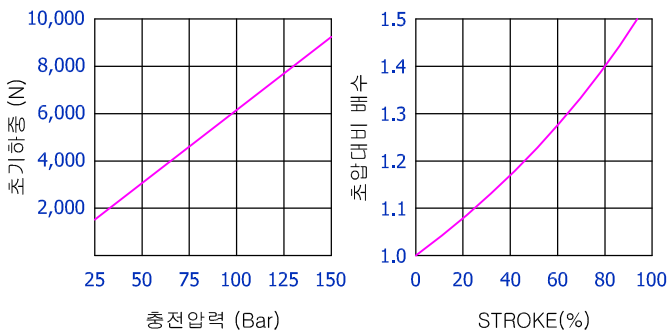
GAS SPRING	TSX1000	×	050	S(F)	–	(MSA)	–	150
	MODEL		STROKE	단독형-S 배관형-F		일체형 마운트 (선택사항)		충전압력 (Bar)
MOUNT	XP1000							
REPAIR KIT	RCX1000							

[주의!] TSX1000은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX1000							
Stroke		H	C	Force(N) (150 bar / +20 ℃)		Gas vol. (㎤)	Weight (kg)
(㎜)	(inch)			Initial	End force*		
13	0.51	78	65	9,200	12,200	32.7	0.71
16	0.63	84	68		12,500	37.4	0.74
20	0.79	92	72		12,800	43.7	0.77
25	0.98	102	77		13,200	51.6	0.81
30	1.18	112	82		13,400	59.4	0.65
35	1.38	122	87		13,600	67.3	0.89
38	1.50	128	90		13,700	72.0	0.91
40	1.57	132	92		13,700	75.1	0.93
45	1.77	142	97		13,900	83.0	0.97
50	1.97	152	102		14,000	90.8	1.02
60	2.36	172	112		14,100	106.5	1.09
63	2.48	178	115		14,200	111.2	1.11
70	2.76	192	122		14,300	122.2	1.17
75	2.95	202	127		14,300	130.1	1.22
80	3.15	212	132		14,400	137.9	1.25
90	3.54	232	142		14,400	153.6	1.34
100	3.94	252	152		14,500	169.2	1.42
125	4.92	302	177		14,600	208.6	1.62

* = at full stroke

■ 충전압력/압축량 대비 하중변화도표



■ TSX1000의 충전 압력(Bar) 계산식

$$\text{충전압력(Bar)} = \frac{\text{초기하중(N)}}{61.5}$$

ex) 필요한 초기하중 8,500N인 GAS SPRING의 충전압력은?

$$138\text{(Bar)} = \frac{8{,}500\text{(N)}}{61.5}$$

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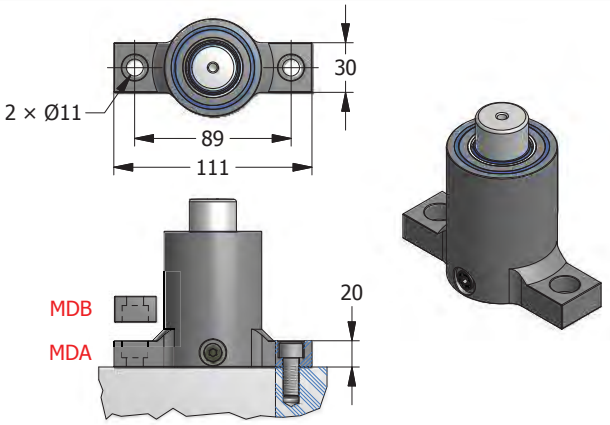
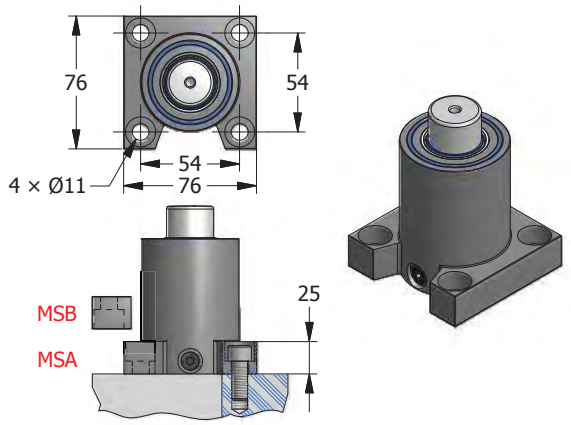
TSX1000 Mounts

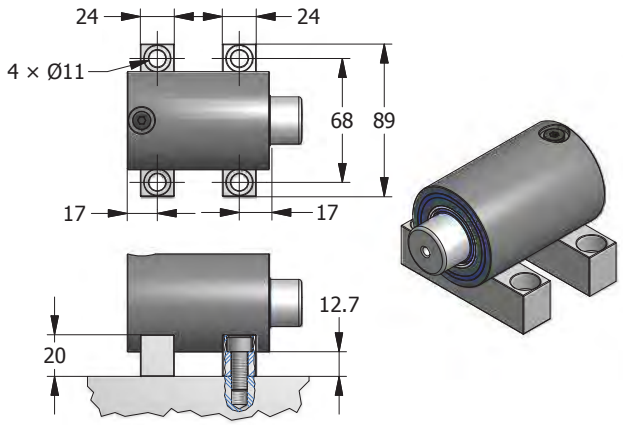
MD MOUNT
일체형



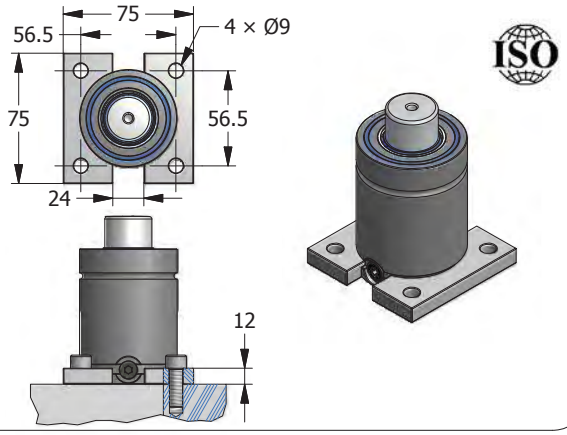
MS MOUNT
일체형



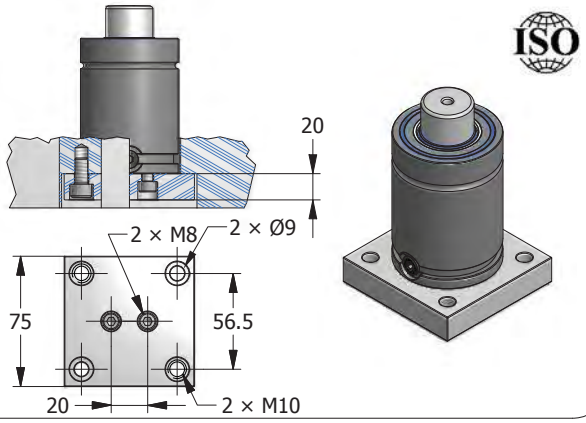
MK MOUNT
일체형



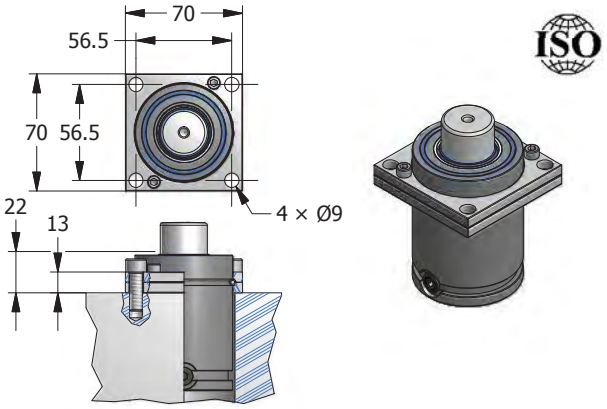
XP1000(SP0750) MOUNT



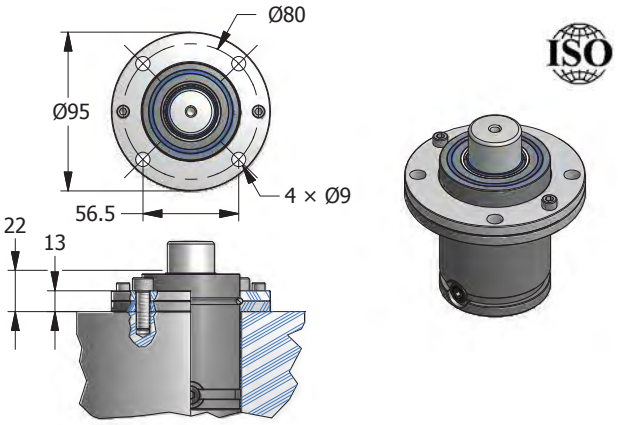
XB1000(SB0750) MOUNT



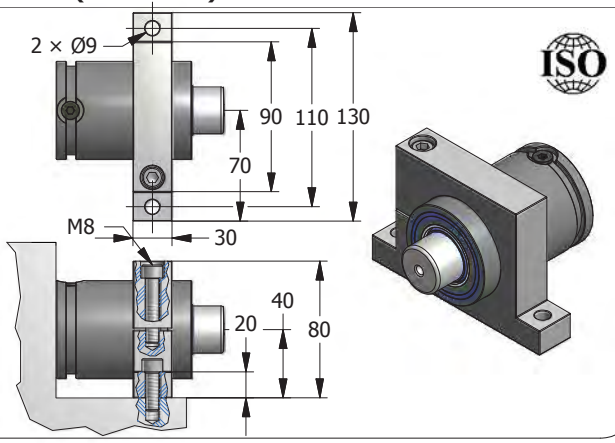
XT1000(ST0750) MOUNT



XR1000(SR0750) MOUNT



XC1000(SC0750) MOUNT



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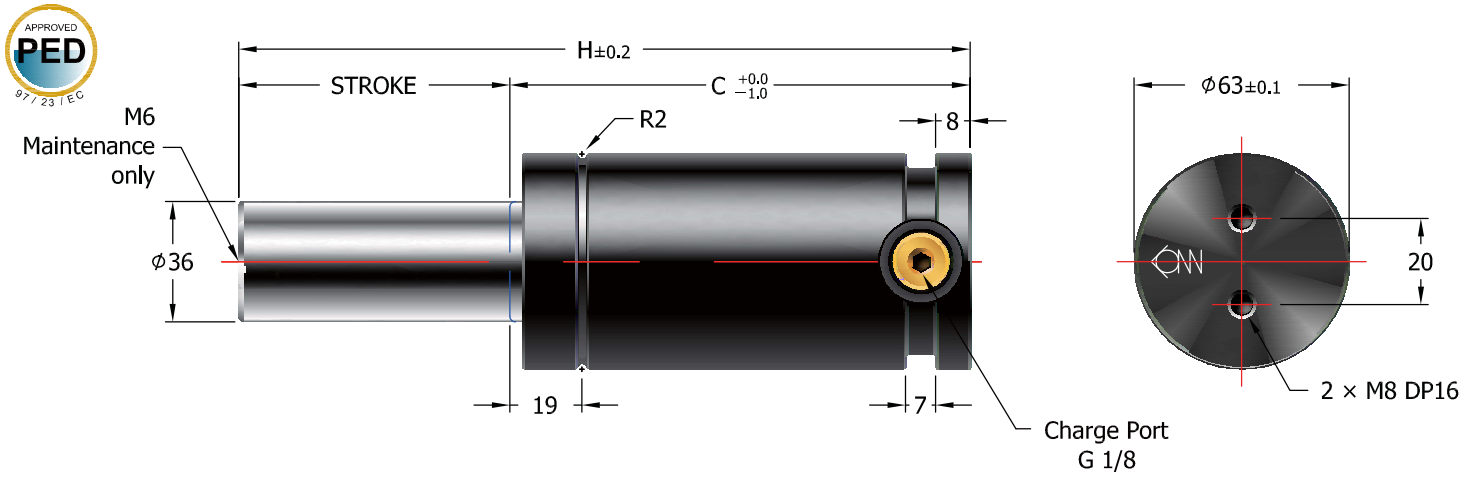
TSX1500 NITROGEN GAS SPRING



규격 표기법

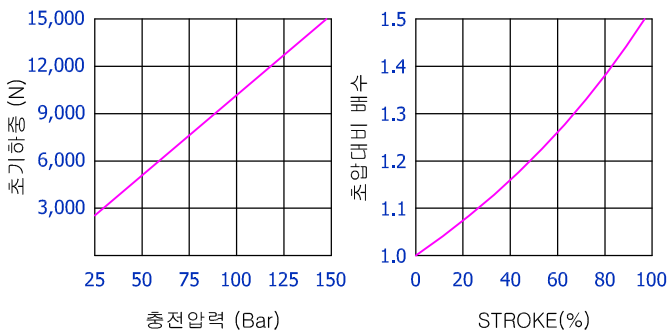
GAS SPRING	TSX1500	×	050	S(F)	–	(MSA)	–	150
	MODEL		STROKE	단독형-S 배관형-F		일체형 마운트 (선택사항)		충전압력 (Bar)
MOUNT	XP1500							
REPAIR KIT	RCX1500							

[주의!] TSX1500은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX1500							
Stroke		H	C	Force(N) (150 bar / +20 ℃)		Gas vol. (㎤)	Weight (kg)
(㎜)	(inch)			Initial	End force*		
13	0.51	78	65	15,200	20,500	50.7	1.20
16	0.63	84	68		21,000	58.7	1.24
20	0.79	92	72		21,500	69.3	1.29
25	0.98	102	77		21,900	82.6	1.36
30	1.18	112	82		22,200	95.8	1.43
35	1.38	122	87		22,500	109.1	1.50
38	1.50	128	90		22,600	117.1	1.53
40	1.57	132	92		22,700	122.4	1.56
45	1.77	142	97		22,900	135.6	1.63
50	1.97	152	102		23,000	148.9	1.74
60	2.36	172	112		23,200	175.4	1.82
63	2.48	178	115		23,300	183.4	1.87
70	2.76	192	122		23,400	202.0	1.96
75	2.95	202	127		23,500	215.2	2.03
80	3.15	212	132		23,500	228.2	2.09
90	3.54	232	142		23,600	254.8	2.23
100	3.94	252	152		23,700	281.4	2.35
125	4.92	302	177		23,900	347.9	2.69

* = at full stroke

■ 충전압력/압축량 대비 하중변화도표



■ TSX1500의 충전 압력(Bar) 계산식

$$\text{충전압력(Bar)} = \frac{\text{초기하중(N)}}{101.7}$$

ex) 필요한 초기하중 12,000N인 GAS SPRING의 충전압력은?

$$118\text{(Bar)} = \frac{12{,}000\text{(N)}}{101.7}$$

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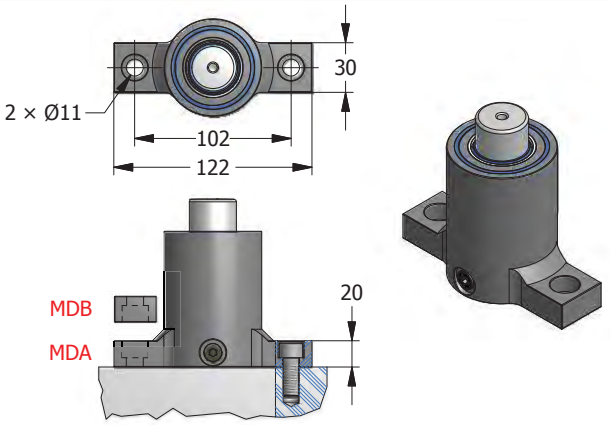
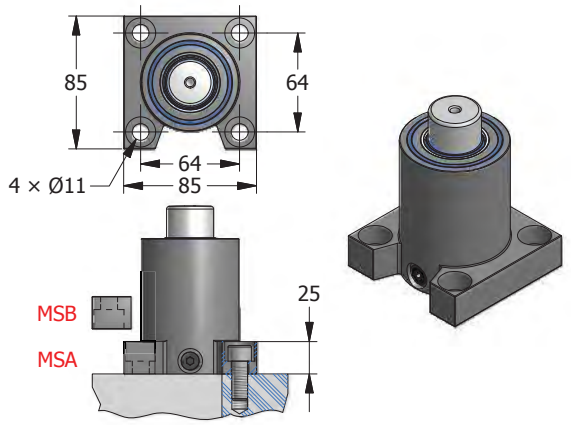
TSX1500 Mounts

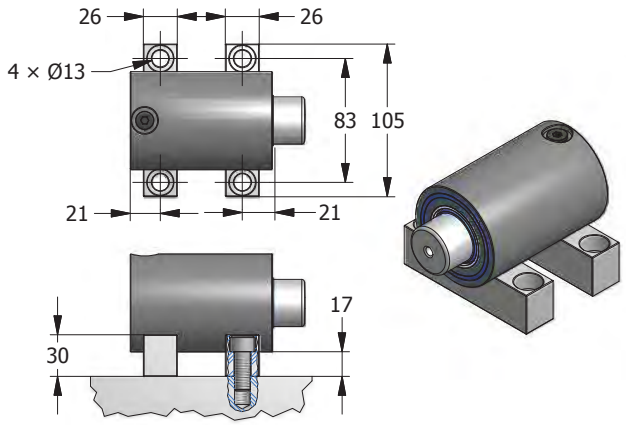
MD MOUNT
일체형



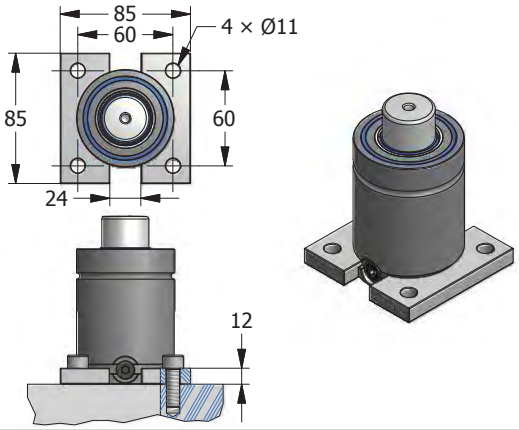
MS MOUNT
일체형



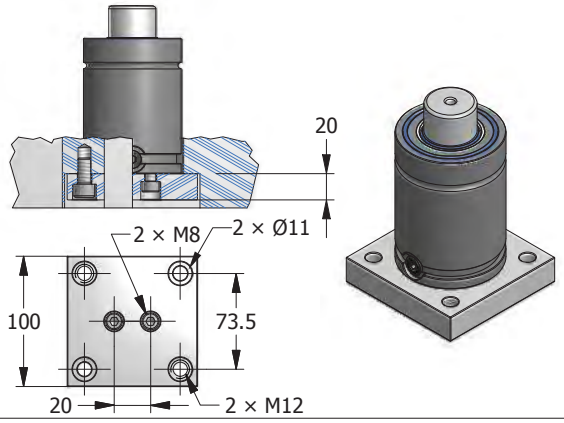
MK MOUNT
일체형



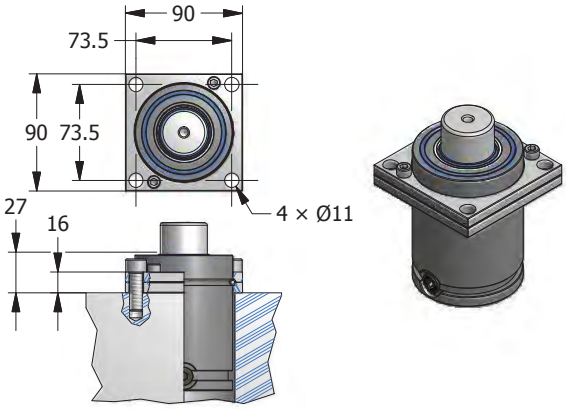
XP1500 MOUNT



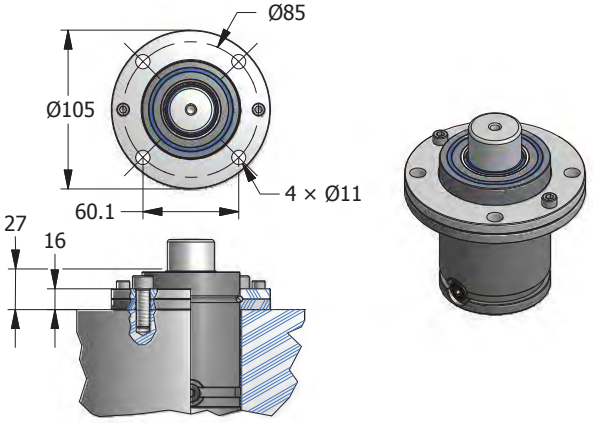
XB1500 MOUNT



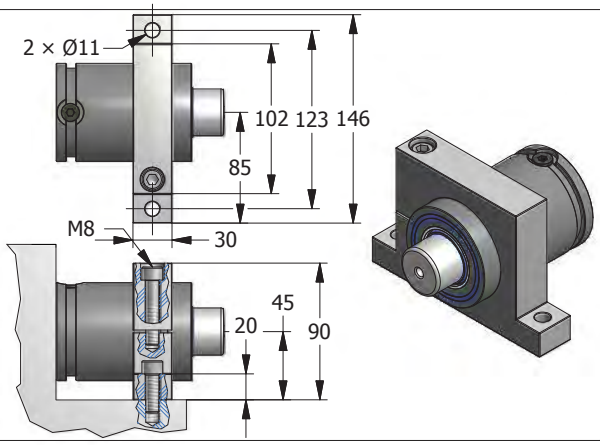
XT1500 MOUNT



XR1500 MOUNT



XC1500 MOUNT



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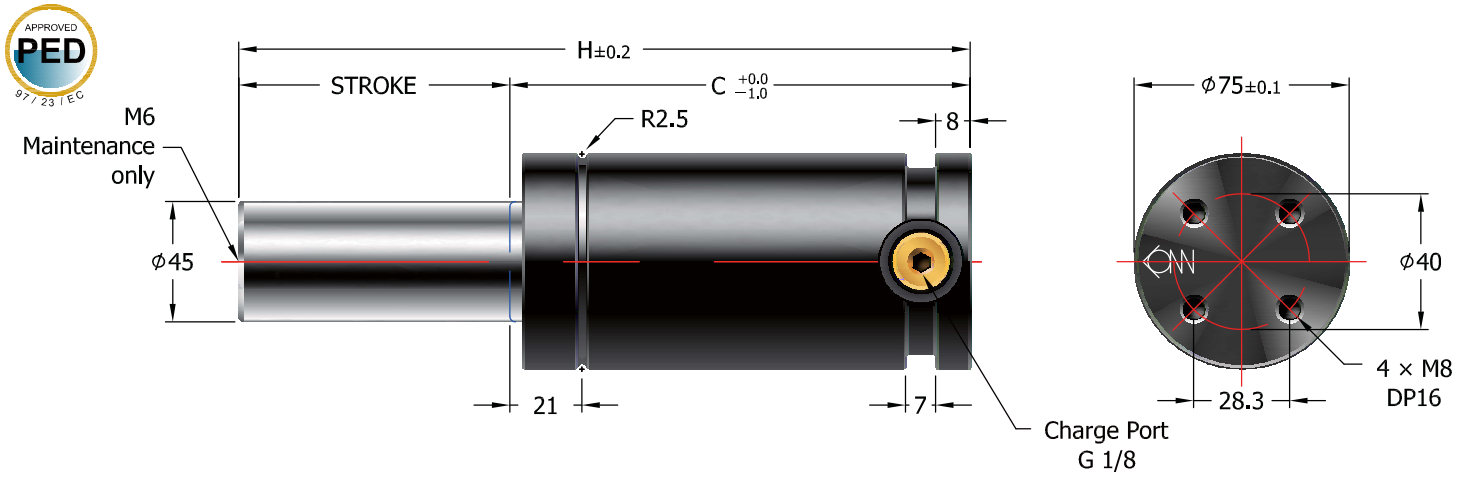
TSX2400 NITROGEN GAS SPRING



규격 표기법

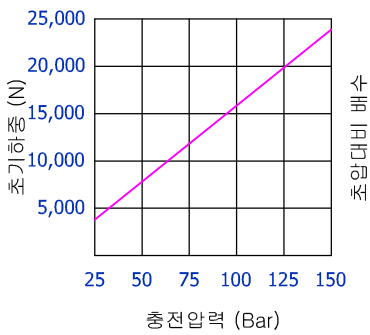
GAS SPRING	TSX2400	×	050	S(F)	–	(MSA)	–	150
	MODEL		STROKE	단독형-S 배관형-F		일체형 마운트 (선택사항)		충전압력 (Bar)
MOUNT	XP2400							
REPAIR KIT	RCX2400							

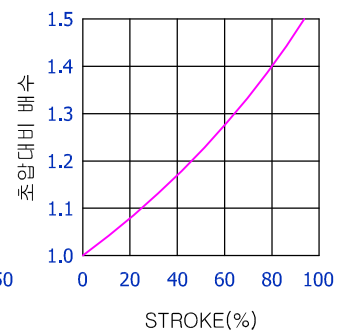
[주의!] TSX2400은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX2400							
Stroke		H	C	Force(N) (150 bar / +20 ℃)		Gas vol. (㎤)	Weight (kg)
(㎜)	(inch)			Initial	End force*		
16	0.63	91	75	23,800	33,000	91.5	1.96
20	0.79	99	79		33,800	107.6	2.03
25	0.98	109	84		34,600	127.7	2.11
30	1.18	119	89		35,100	147.8	2.19
35	1.38	129	94		35,600	167.9	2.27
38	1.50	135	97		35,800	180.0	2.32
40	1.57	139	99		36,000	188.0	2.35
45	1.77	149	104		36,300	208.2	2.43
50	1.97	159	109		36,500	228.3	2.51
60	2.36	179	119		36,900	268.5	2.68
63	2.48	185	122		37,000	280.6	2.72
70	2.76	199	129		37,200	308.7	2.85
75	2.95	209	134		37,300	328.8	2.93
80	3.15	219	139		37,400	349.0	3.01
90	3.54	239	149		37,600	389.2	3.17
100	3.94	259	159		37,800	429.4	3.33
125	4.92	309	184		38,100	530.0	3.75

* = at full stroke

■ 충전압력/압축량 대비 하중변화도표





■ TSX2400의 충전 압력(Bar) 계산식

$$\text{충전압력(Bar)} = \frac{\text{초기하중(N)}}{159.0}$$

ex) 필요한 초기하중 20,000N인 GAS SPRING의 충전압력은?

$$126\text{(Bar)} = \frac{20{,}000\text{(N)}}{159.0}$$

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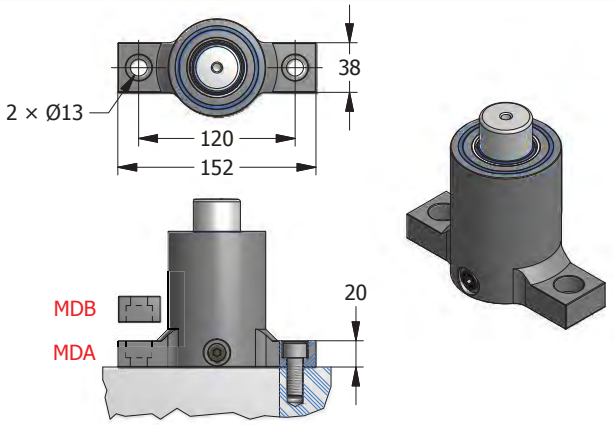
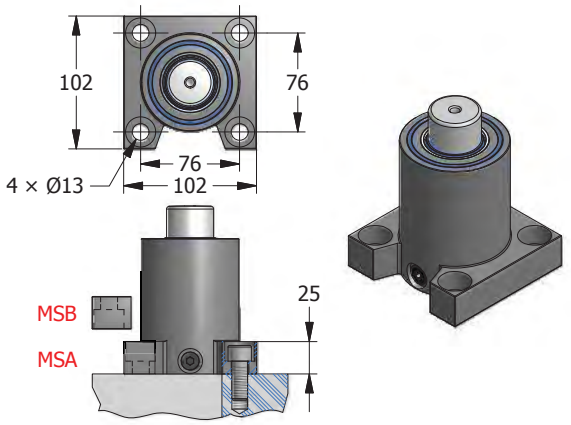
TSX2400 Mounts

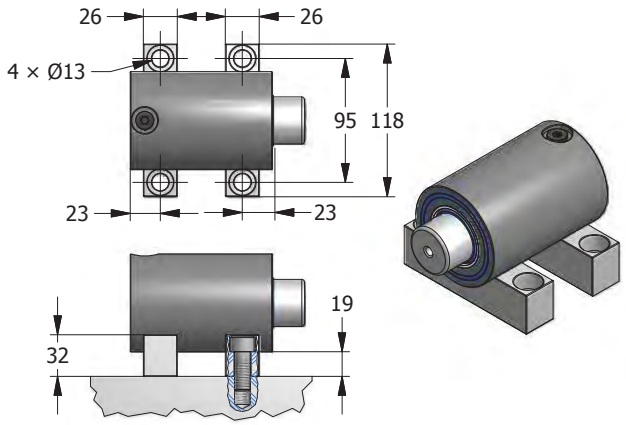
MD MOUNT
일체형



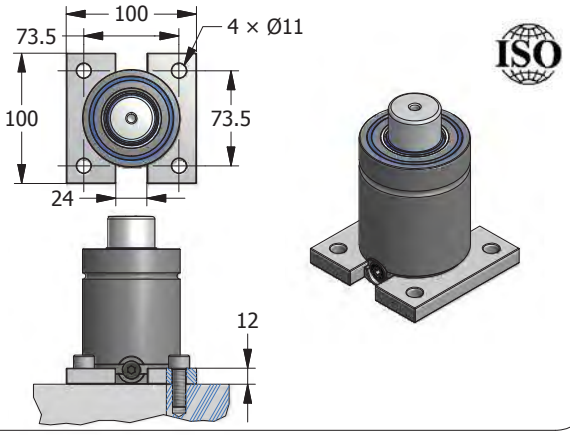
MS MOUNT
일체형



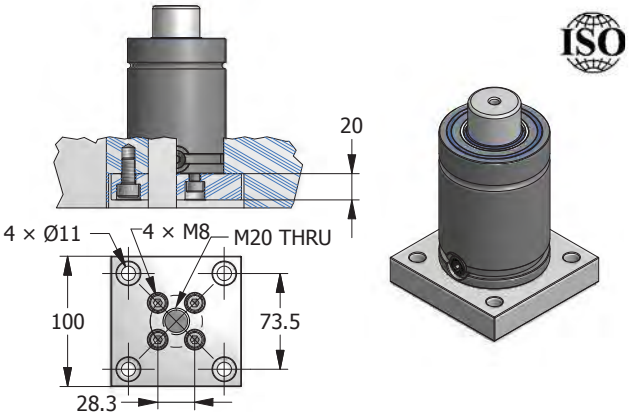
MK MOUNT
일체형



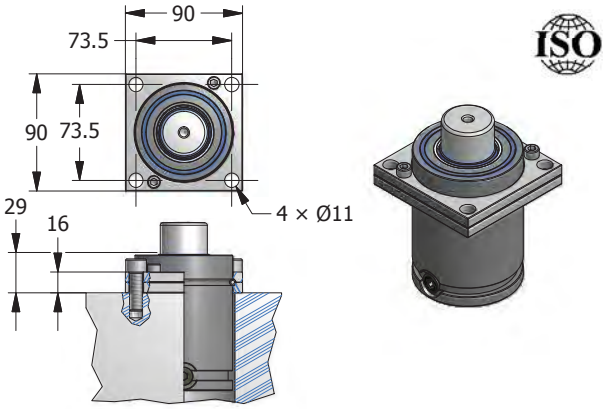
XP2400(SP1500) MOUNT



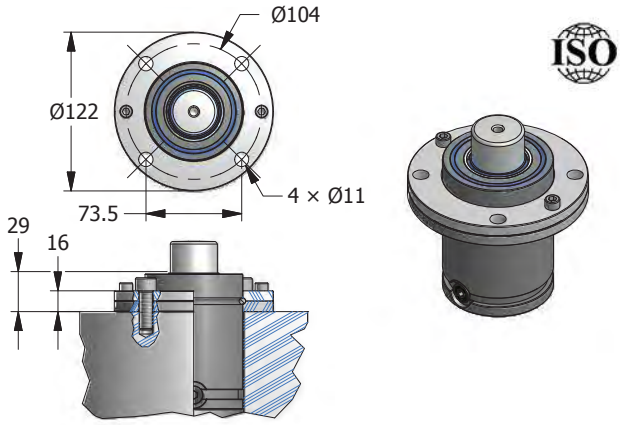
XB2400(SB1500) MOUNT



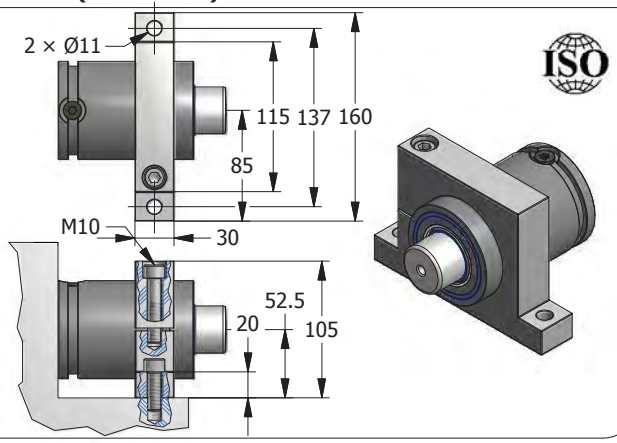
XT2400(ST1500) MOUNT



XR2400(SR1500) MOUNT



XC2400(SC1500) MOUNT



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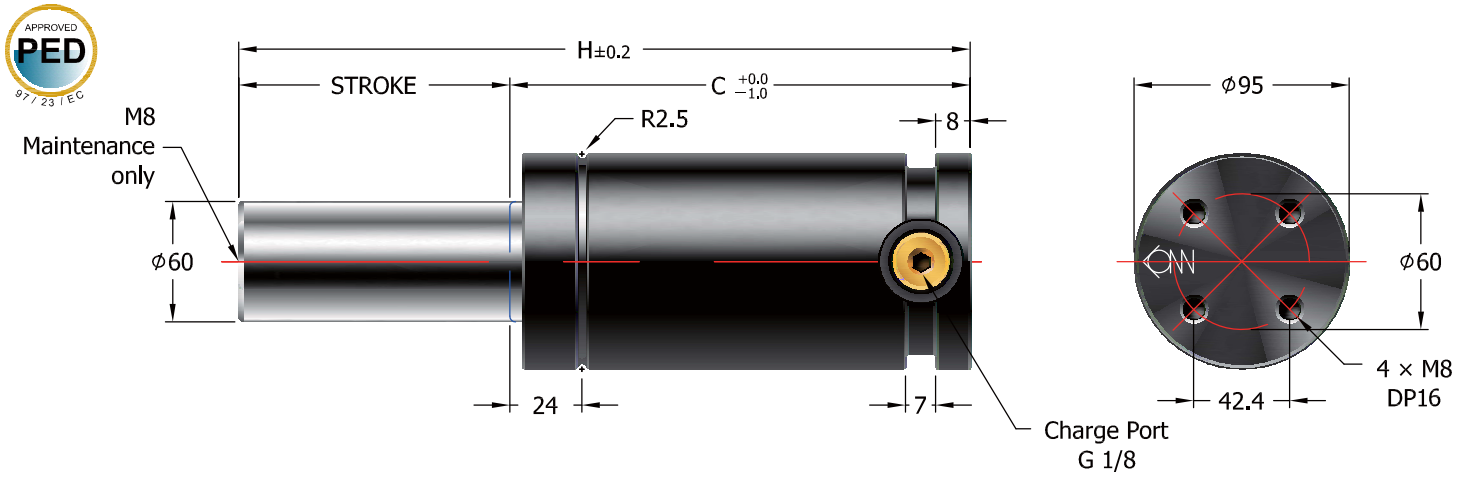
TSX4200 NITROGEN GAS SPRING



규격 표기법

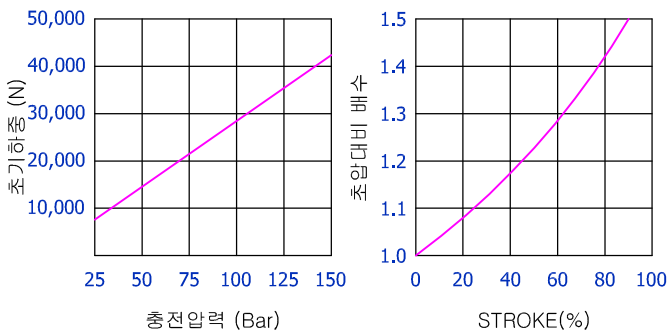
GAS SPRING	TSX4200	×	050	S(F)	–	(MSA)	–	150
	MODEL		STROKE	단독형-S 배관형-F		일체형 마운트 (선택사항)		충전압력 (Bar)
MOUNT	XP4200							
REPAIR KIT	RCX4200							

[주의!] TSX4200은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX4200							
Stroke		H	C	Force(N) (150 bar / +20 ℃)		Gas vol. (㎤)	Weight (kg)
(㎜)	(inch)			Initial	End force*		
16	0.63	94	78	42,200	59,000	158.4	3.27
20	0.79	102	82		60,600	185.7	3.38
25	0.98	112	87		62,100	219.9	3.52
30	1.18	122	92		63,300	254.1	3.66
35	1.38	132	97		64,200	288.2	3.81
38	1.50	138	100		64,600	308.7	3.88
40	1.57	142	102		64,900	322.4	3.94
45	1.77	152	107		65,500	356.6	4.08
50	1.97	162	112		66,000	390.7	4.22
60	2.36	182	122		66,800	459.1	4.50
63	2.48	188	125		67,000	479.6	4.58
70	2.76	202	132		67,400	527.4	4.78
75	2.95	212	137		67,700	561.5	4.92
80	3.15	222	142		67,900	595.7	5.06
90	3.54	242	152		68,300	664.0	5.33
100	3.94	262	162		68,600	732.4	5.62
125	4.92	312	187		69,200	903.2	6.31

* = at full stroke

■ 충전압력/압축량 대비 하중변화도표



■ TSX4200의 충전 압력(Bar) 계산식

$$\text{충전압력(Bar)} = \frac{\text{초기하중(N)}}{282.6}$$

ex) 필요한 초기하중 35,000N인 GAS SPRING의 충전압력은?

$$124\text{(Bar)} = \frac{35{,}000\text{(N)}}{282.6}$$

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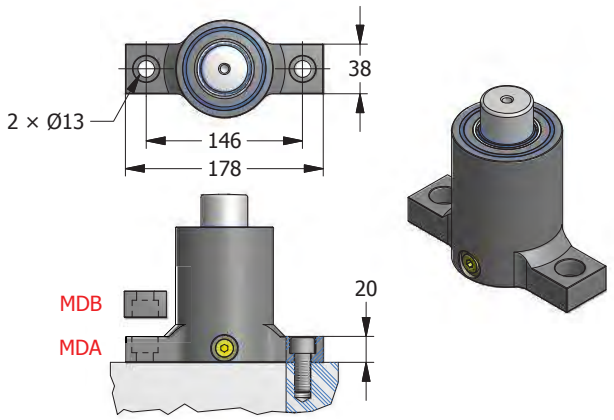
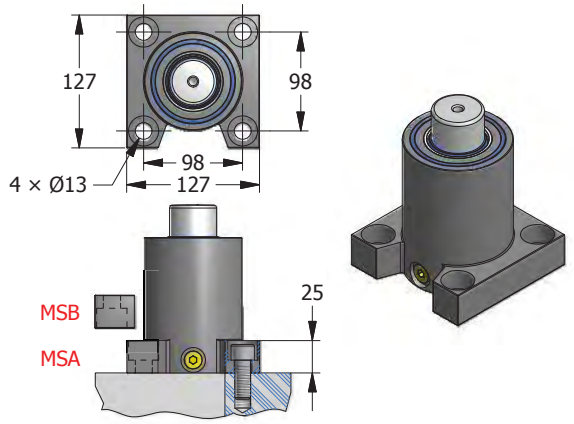
TSX4200 Mounts

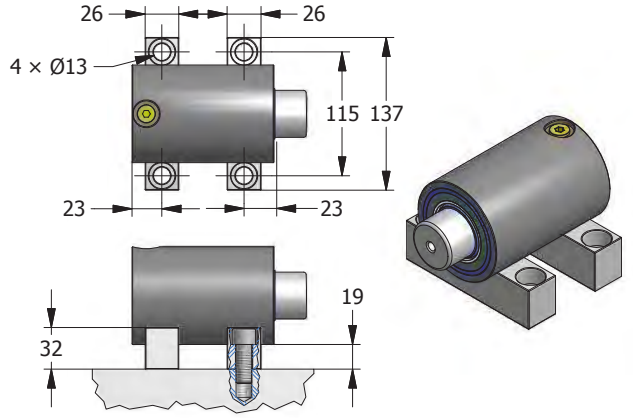
MD MOUNT
일체형



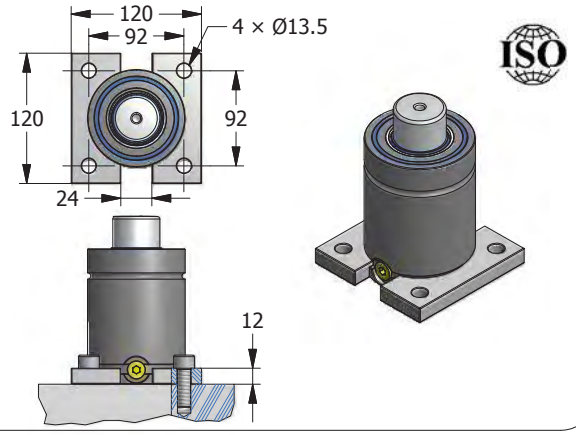
MS MOUNT
일체형



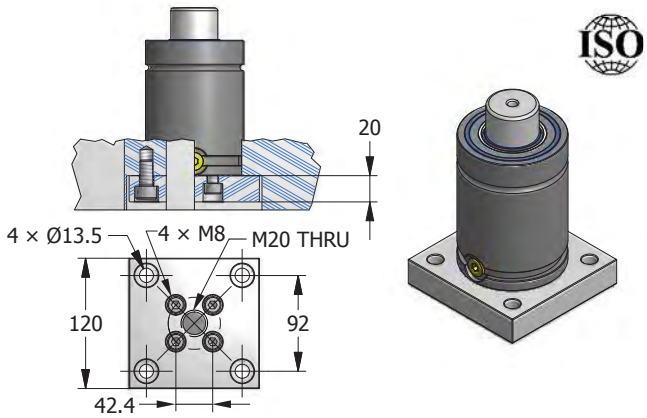
MK MOUNT
일체형



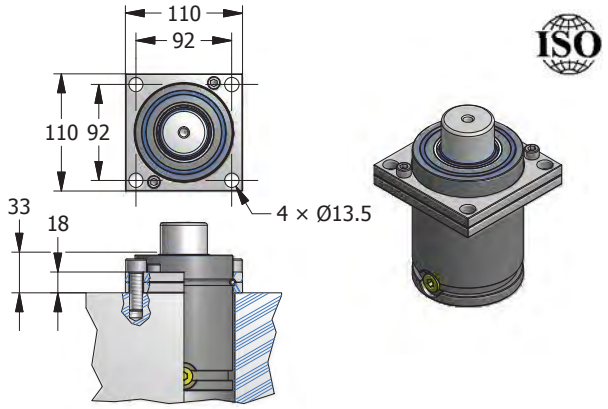
XP4200(SP3000) MOUNT



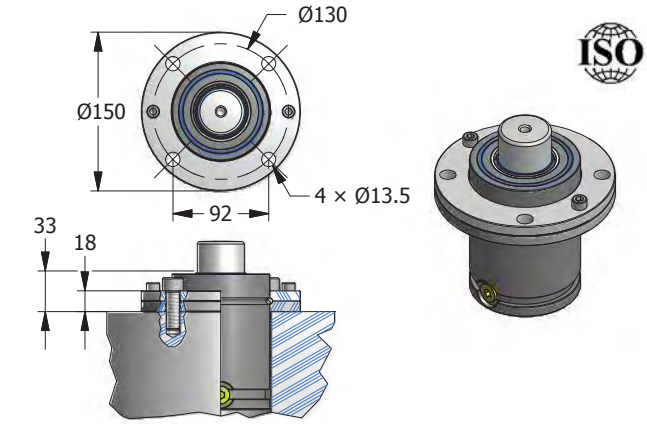
XB4200(SB3000) MOUNT



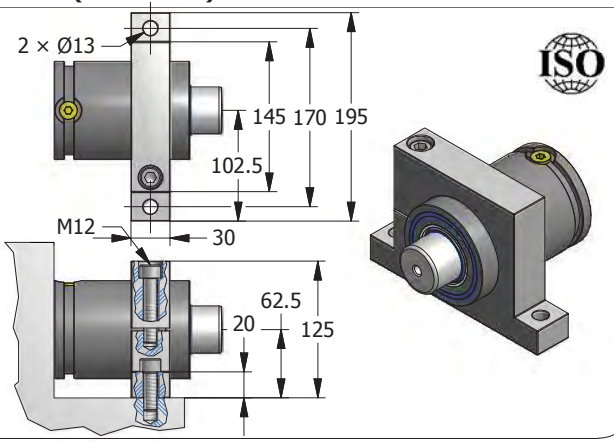
XT4200(ST3000) MOUNT



XR4200(SR3000) MOUNT



XC4200(SC3000) MOUNT



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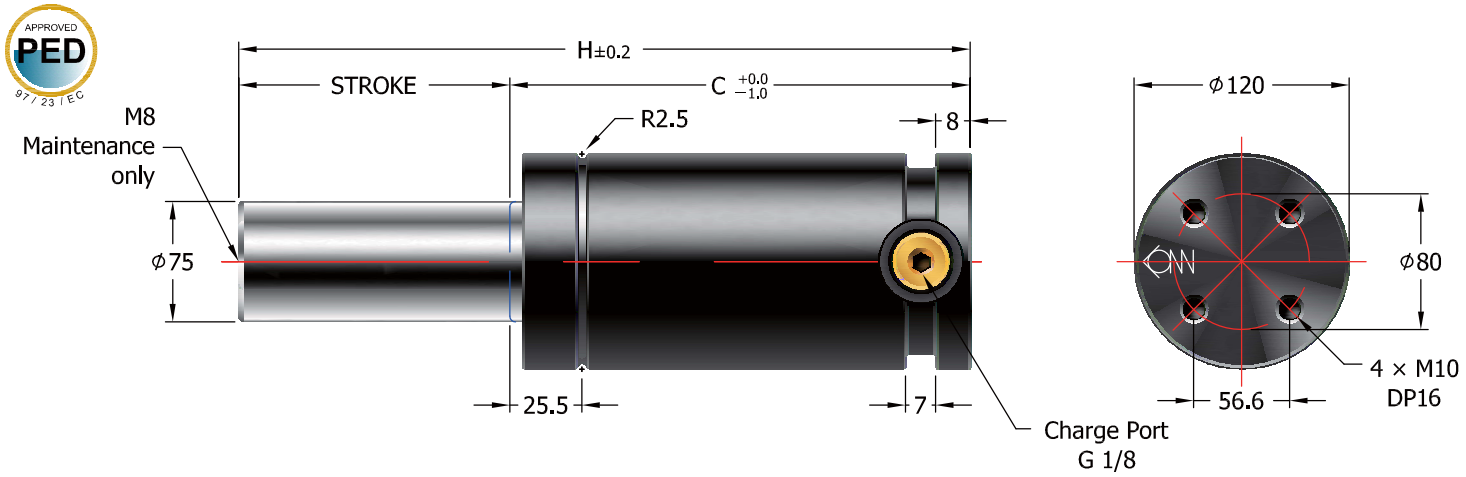
TSX6600 NITROGEN GAS SPRING



규격 표기법

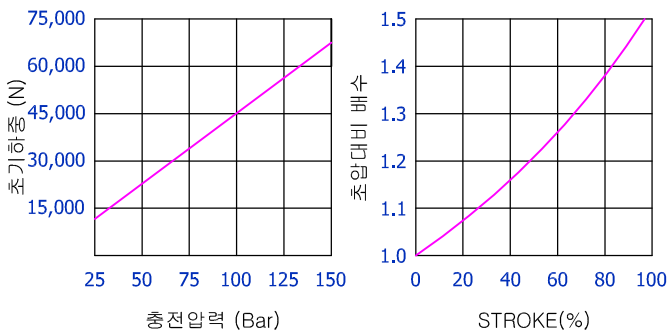
GAS SPRING	TSX6600	×	050	S(F)	–	(MSA)	–	150
	MODEL		STROKE	단독형-S 배관형-F		일체형 마운트 (선택사항)		충전압력 (Bar)
MOUNT	XP6600							
REPAIR KIT	RCX6600							

[주의!] TSX6600은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX6600							
Stroke		H	C	Force(N) (150 bar / +20 ℃)		Gas vol. (㎤)	Weight (kg)
(㎜)	(inch)			Initial	End force*		
16	0.63	104	88	66,000	87,600	285.7	6.11
20	0.79	112	92		90,200	329.1	6.29
25	0.98	122	97		92,600	383.5	6.52
30	1.18	132	102		94,600	437.8	6.75
35	1.38	142	107		96,200	492.1	6.97
38	1.50	148	110		97,000	524.7	7.11
40	1.57	152	112		97,500	546.5	7.21
45	1.77	162	117		98,600	600.8	7.43
50	1.97	172	122		99,500	655.2	7.66
60	2.36	192	132		101,000	763.8	8.11
63	2.48	198	135		101,400	796.4	8.25
70	2.76	212	142		102,100	872.5	8.57
75	2.95	222	147		102,600	926.8	8.80
80	3.15	232	152		103,100	981.2	9.03
90	3.54	252	162		103,800	1089.9	9.48
100	3.94	272	172		104,400	1198.5	9.94
125	4.92	322	197		105,600	1470.2	11.08

* = at full stroke

■ 충전압력/압축량 대비 하중변화도표



■ TSX6600의 충전 압력(Bar) 계산식

$$\text{충전압력(Bar)} = \frac{\text{초기하중(N)}}{441.6}$$

ex) 필요한 초기하중 60,000N인 GAS SPRING의 충전압력은?

$$136\text{(Bar)} = \frac{60{,}000\text{(N)}}{441.6}$$

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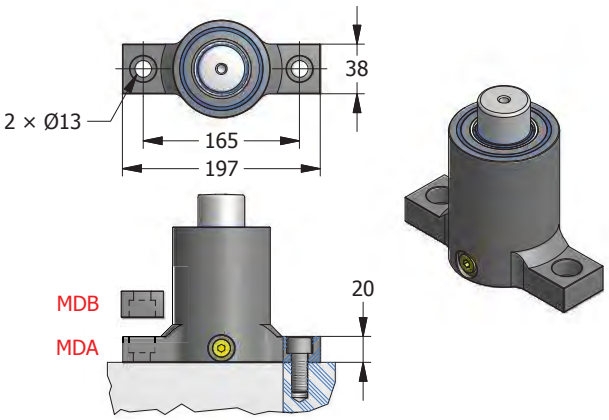
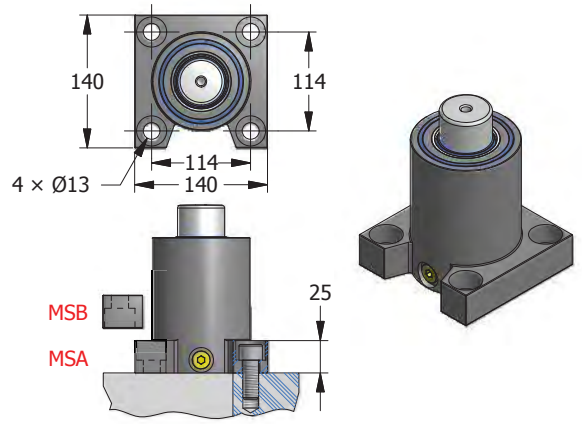
TSX6600 Mounts

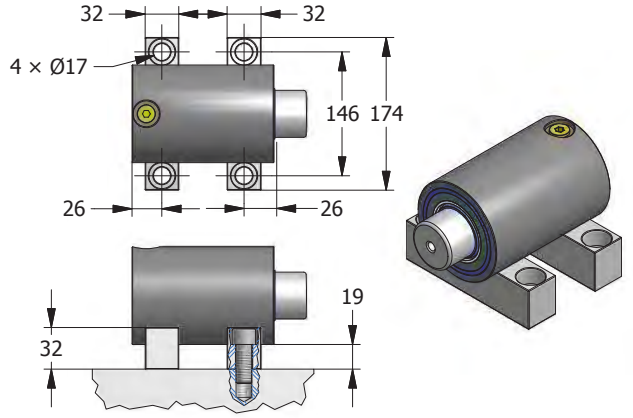
MD MOUNT
일체형



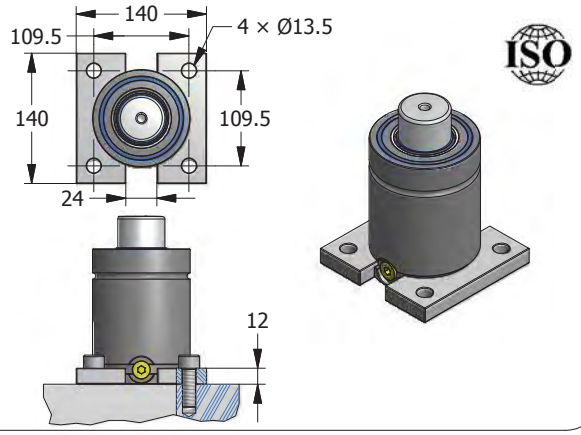
MS MOUNT
일체형



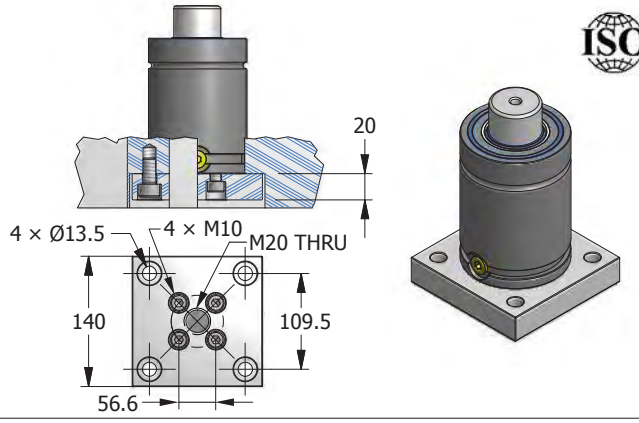
MK MOUNT
일체형



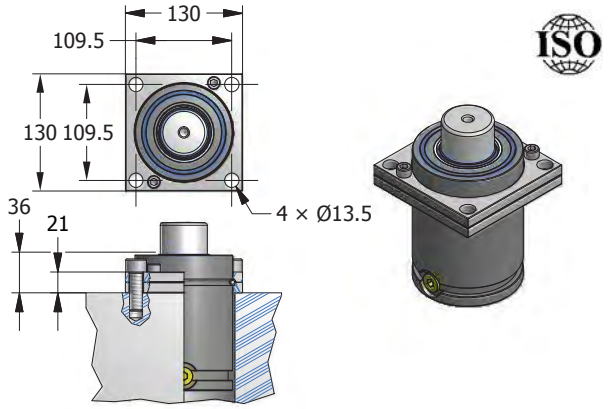
XP6600(SP5000) MOUNT



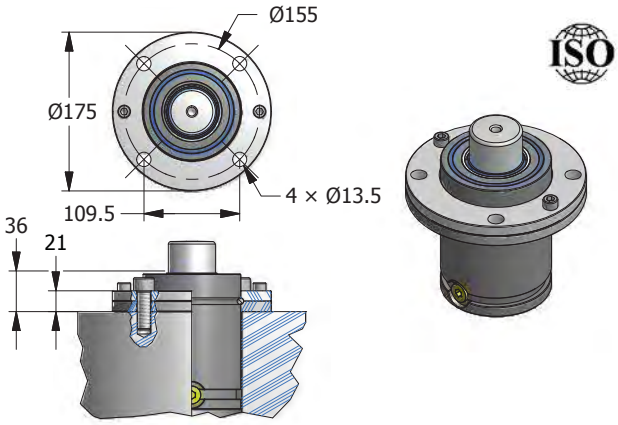
XB6600(SB5000) MOUNT



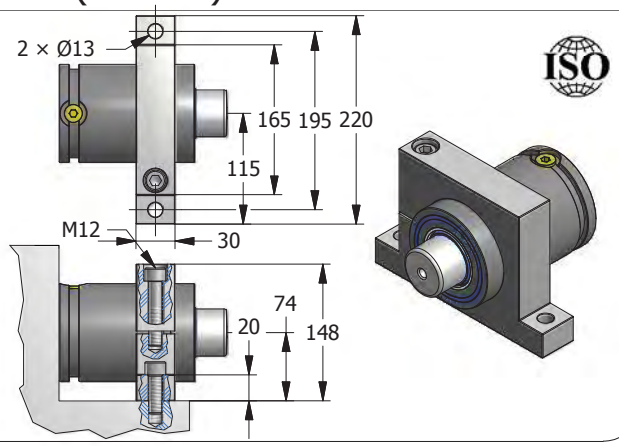
XT6600(ST5000) MOUNT



XR6600(SR5000) MOUNT



XC6600(SC5000) MOUNT



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