

TSX SERIES



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NITROGEN GAS SPRING



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STABLE XTRA HIGH POWER

■ 일반 제원

- 충전재
질소가스 (N₂)
- 최대 충전 압력
150 ~ 180 bar (at 20℃)
- 최소 충전 압력
25 bar (at 20℃)
- 작동 온도
0 to 80℃
- 온도에 따른 압력 증가량
±0.3% / °C
- 분당 최대 스트로크 용량
~50 to 100 (at 20℃)
- 피스톤 로드 속도
0 ~ 0.8 m/s
- 로드 표면처리
도금 열처리
- 실린더 표면처리
특산화 피막

■ Model별 제원

종류 TYPE	Stroke (mm)	실린더 외경 Φ(mm)	Rod 외경 Φ(mm)	초기하중 (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.



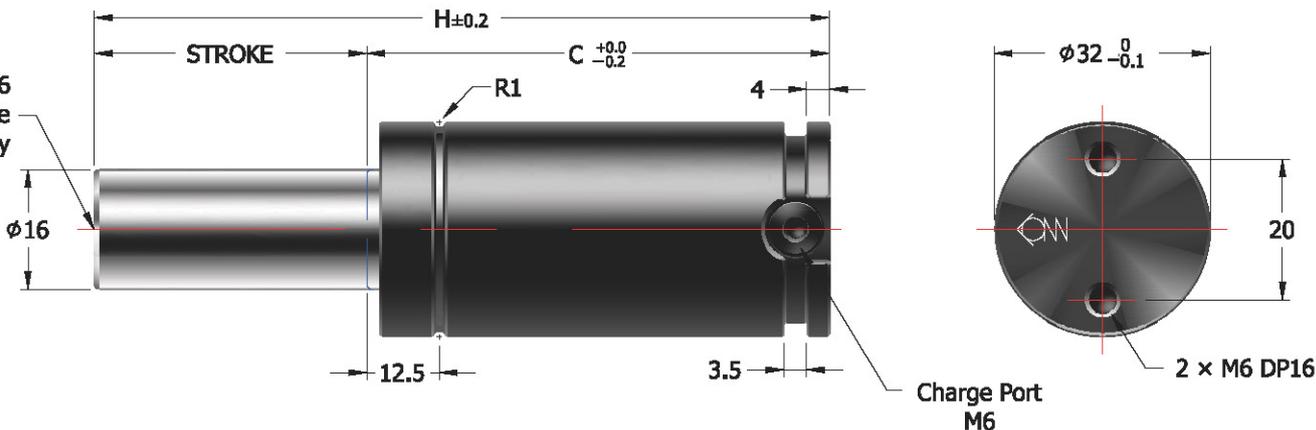


TSX0350

NITROGEN GAS SPRING



M6
Maintenance
only



규격 표기법

GAS SPRING

TSX0350
MODEL

× 050
STROKE

S(F) -
단독형-S
배관형-F

180
충전압력
(Bar)

MOUNT

XP0350

REPAIR KIT

RCX0350

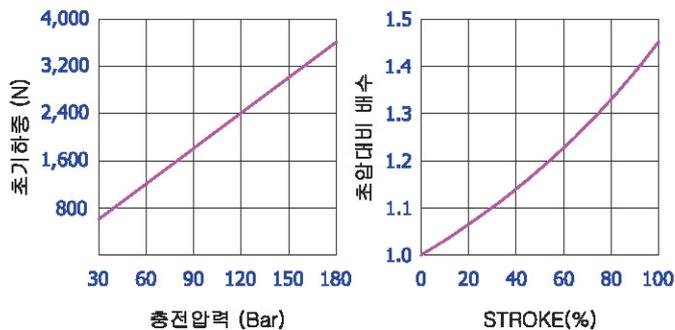
[주의!] TSX0350은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(180Bar)으로 출고됩니다.

TSX0350

Stroke (mm) (inch)	H	C	Force(N) (180 bar / +20 ℃)		Gas vol. (cu ³)	Weight (kg)
			Initial	End force*		
10	0.39	60	50	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

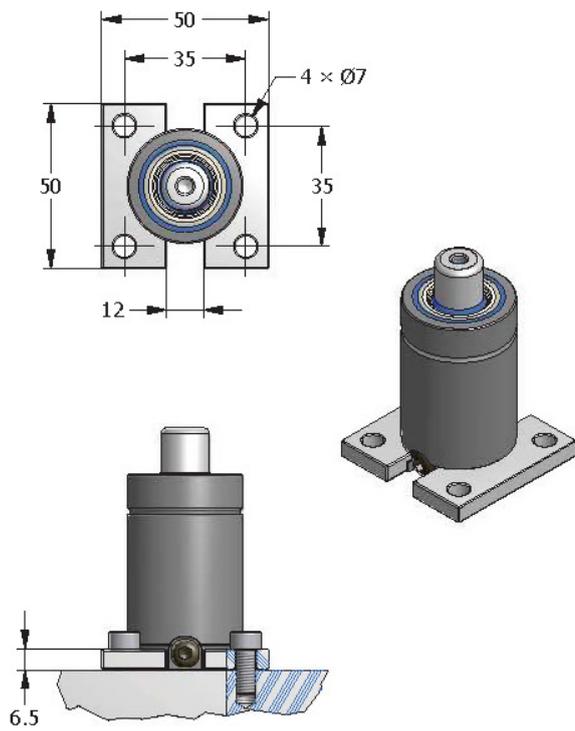
$$\text{충전압력(Bar)} = \frac{\text{초기하중(N)}}{20.1}$$

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

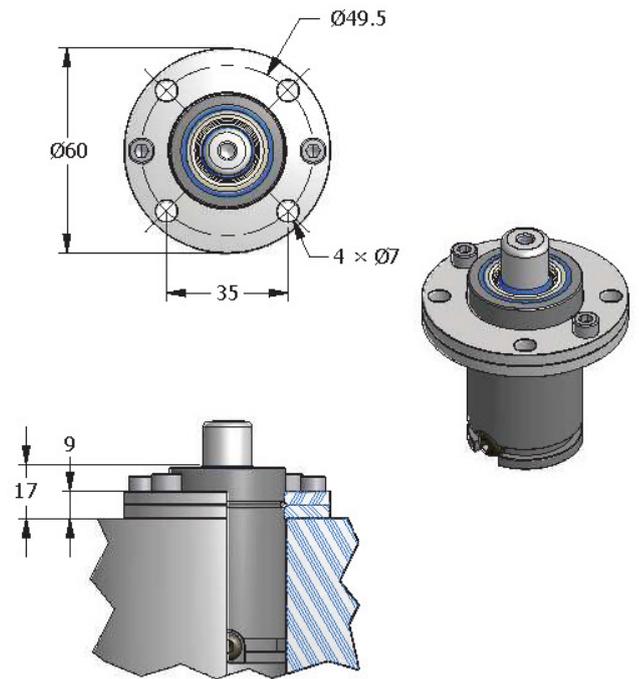
$$164(\text{Bar}) = \frac{3,300(\text{N})}{20.1}$$



XP0350 MOUNT



XR0350 MOUNT



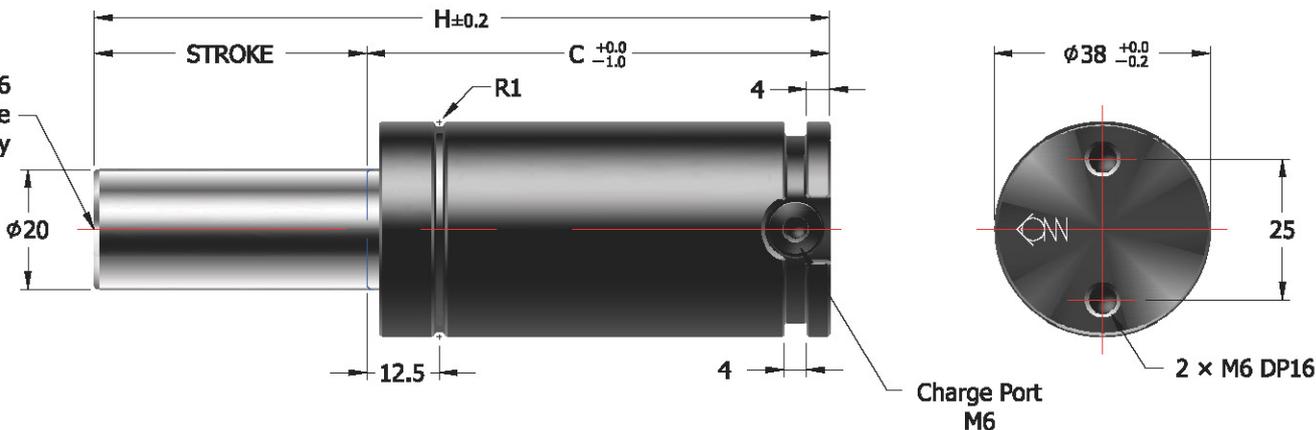


TSX0500

NITROGEN GAS SPRING



M6
Maintenance
only



규격 표기법

GAS SPRING

TSX0500
MODEL

× 050
STROKE

S(F) -
단독형-S
배관형-F

150
충전압력
(Bar)

MOUNT

XP0500

REPAIR KIT

RCX0500

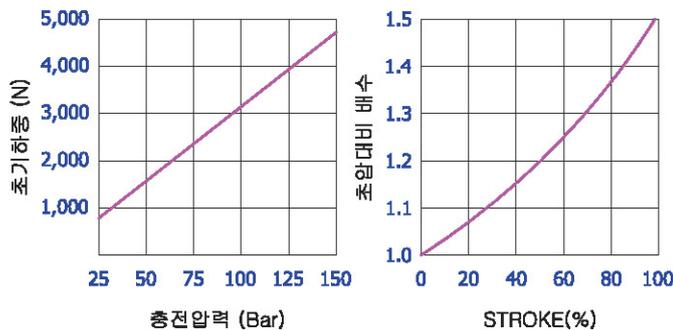
[주의!] TSX0500은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX0500

Stroke (mm) (inch)	H	C	Force(N) (150 bar / +20 °C)		Gas vol. (cu ³)	Weight (kg)
			Initial	End force*		
10	0.39	60	4,700	6,700	10.4	0.35
13	0.51	66	4,700	6,800	13.1	0.37
16	0.63	72	4,700	6,900	15.7	0.38
20	0.79	80	4,700	7,000	19.3	0.40
25	0.98	90	4,700	7,000	23.7	0.42
30	1.18	100	4,700	7,100	28.2	0.45
35	1.38	110	4,700	7,100	32.6	0.47
38	1.50	116	4,700	7,100	35.3	0.48
40	1.57	120	4,700	7,100	37.0	0.50
45	1.77	130	4,700	7,100	41.5	0.52
50	1.97	140	4,700	7,200	45.9	0.55
60	2.36	160	4,700	7,200	54.8	0.60
63	2.48	166	4,700	7,200	57.4	0.61
70	2.76	180	4,700	7,200	63.6	0.64
75	2.95	190	4,700	7,200	68.1	0.66
80	3.15	200	4,700	7,200	72.5	0.69
90	3.54	220	4,700	7,200	81.4	0.74
100	3.94	240	4,700	7,200	90.3	0.79
125	4.92	290	4,700	7,200	112.4	0.91

* = at full stroke

■ 충전압력/압축량 대비 하중변화도표



■ TSX0500의 충전 압력(Bar) 계산식

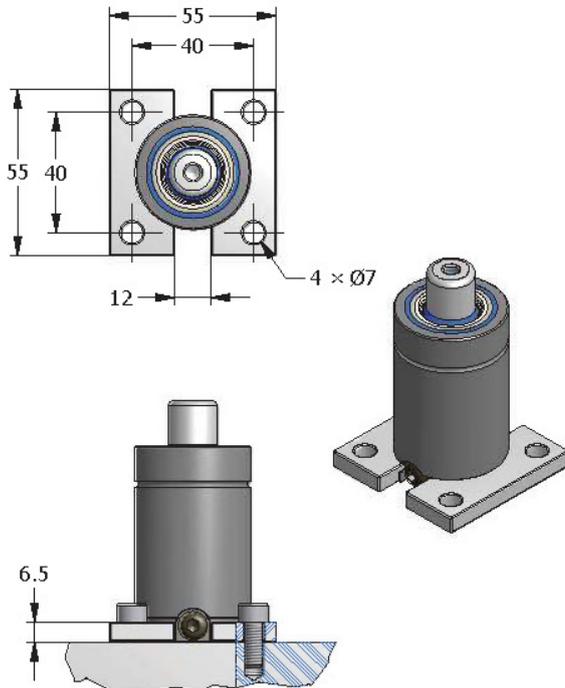
$$\text{충전압력(Bar)} = \frac{\text{초기하중(N)}}{31.4}$$

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

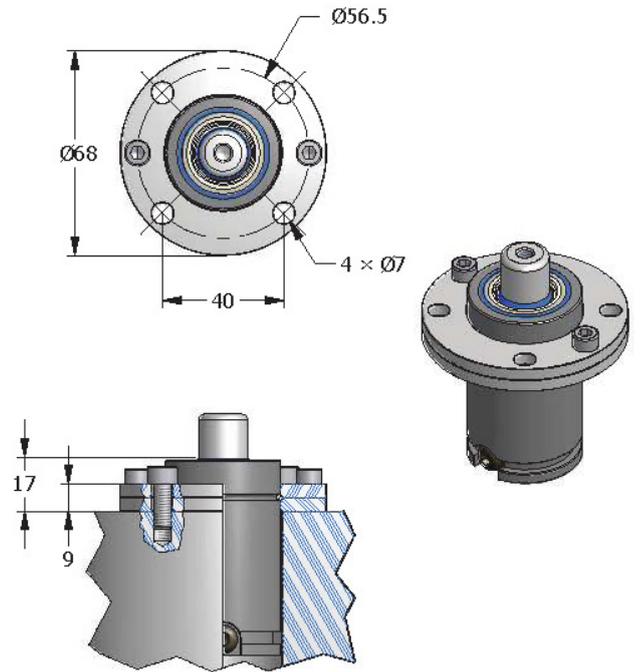
$$127(\text{Bar}) = \frac{4,000(\text{N})}{31.4}$$



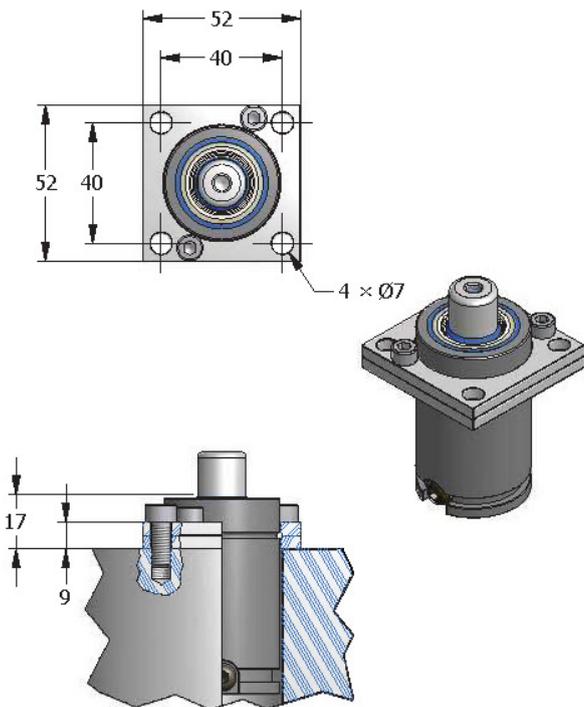
XP0500(SP0300) MOUNT



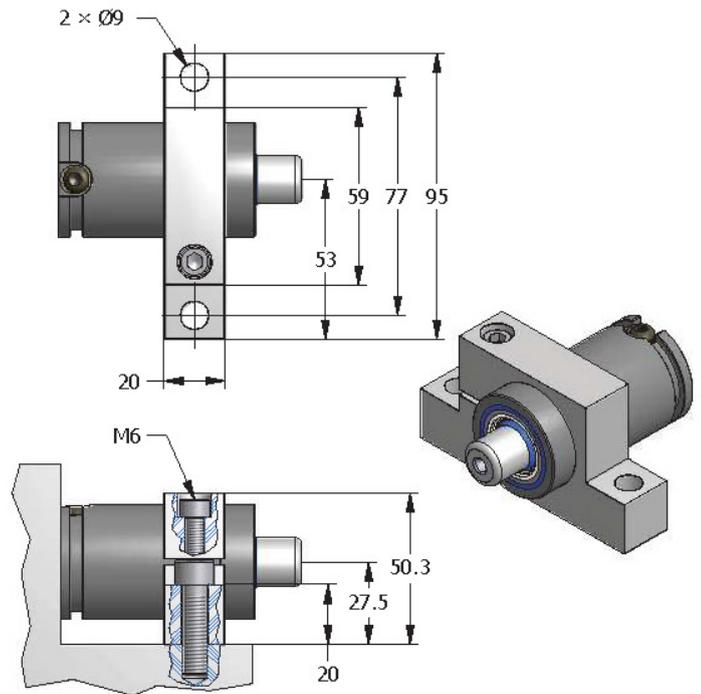
XR0500(SR0300) MOUNT



XT0500(ST0300) MOUNT



XC0500(SC0300) MOUNT



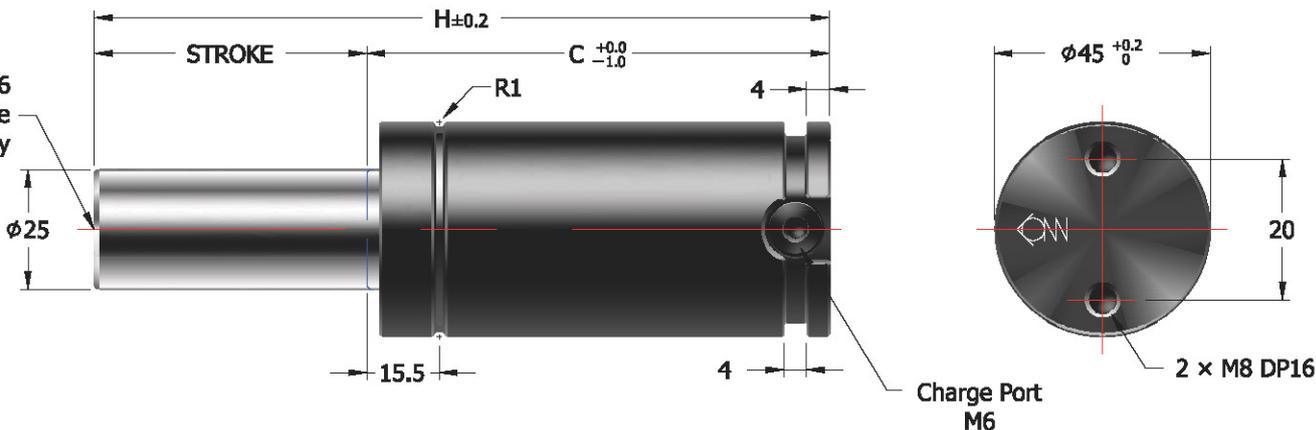


TSX0750

NITROGEN GAS SPRING



M6
Maintenance
only



규격 표기법

GAS SPRING

TSX0750
MODEL

× 050
STROKE

S(F) -
단독형-S
배관형-F

150
충전압력
(Bar)

MOUNT

XP0750

REPAIR KIT

RCX0750

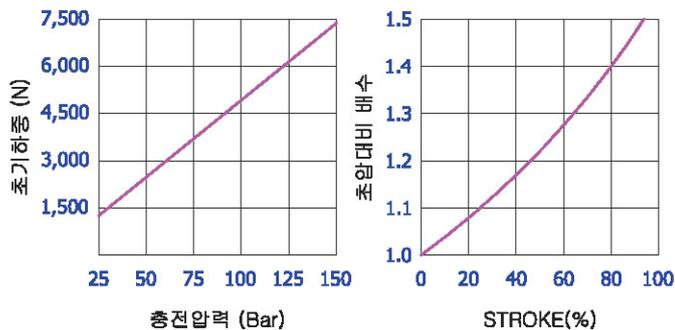
[주의!] TSX0750은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX0750

Stroke (mm) (inch)	H	C	Force(N) (150 bar / +20 ℃)		Gas vol. (cm ³)	Weight (kg)
			Initial	End force*		
10	0.39	67	57	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

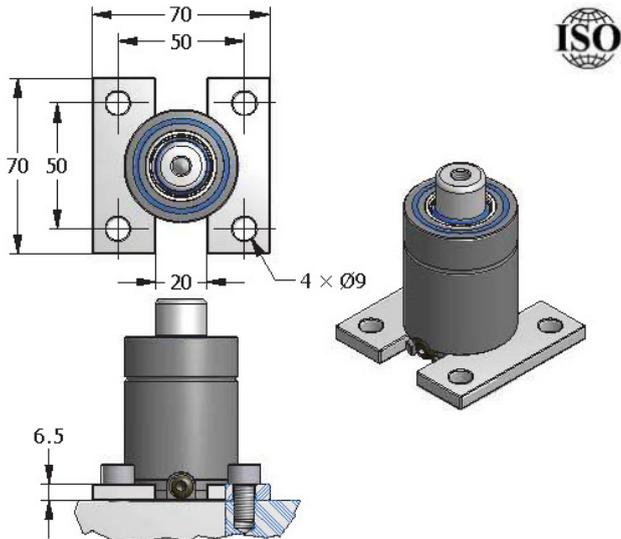
$$\text{충전압력(Bar)} = \frac{\text{초기하중(N)}}{49.1}$$

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

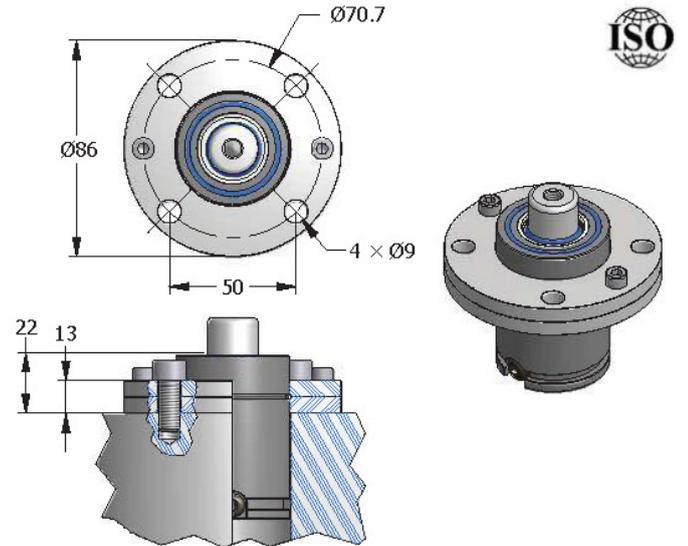
$$122(\text{Bar}) = \frac{6,000(\text{N})}{49.1}$$



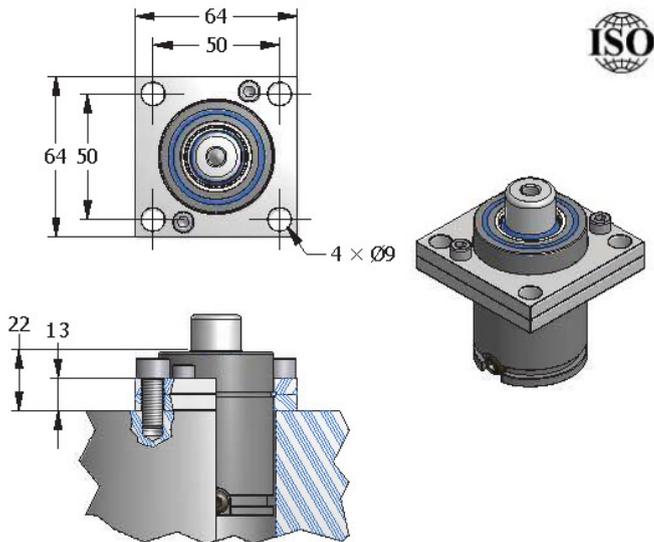
XP0750(SP0500) MOUNT



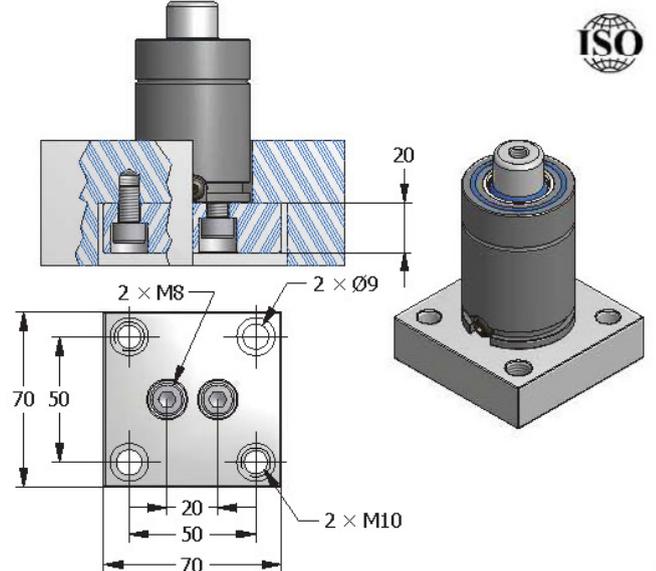
XR0750(SR0500) MOUNT



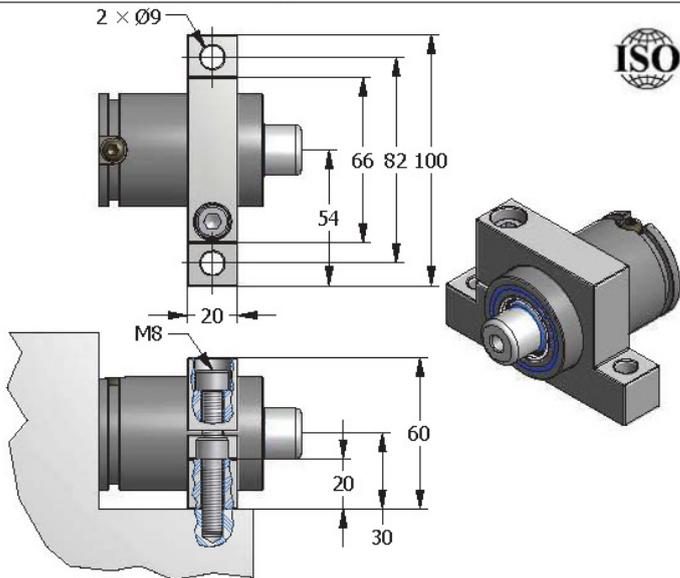
XT0750(ST0500) MOUNT



XB0750(SB0500) MOUNT



XC0750(SC0500) MOUNT



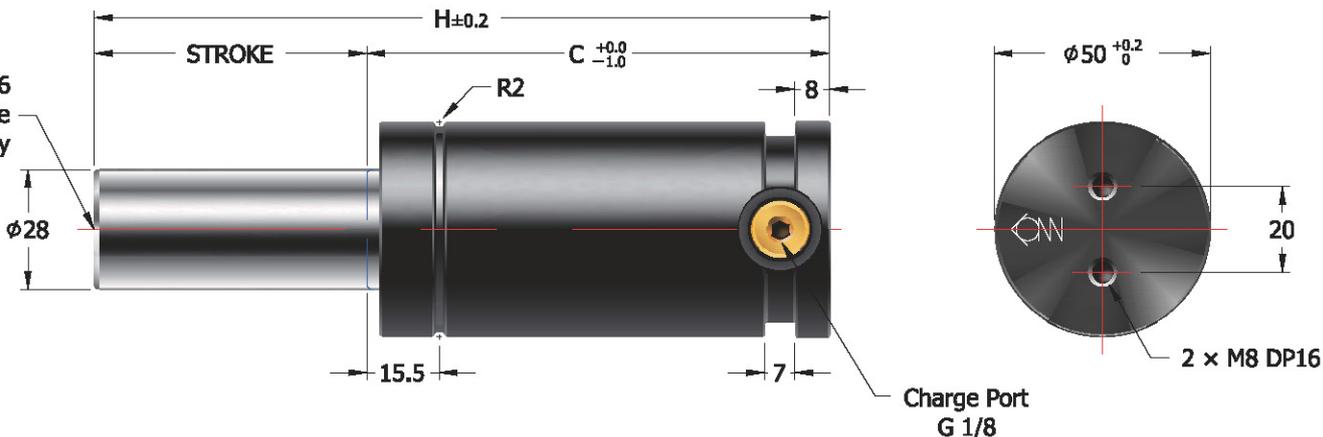


TSX1000

NITROGEN GAS SPRING



M6
Maintenance
only



규격 표기법

GAS SPRING

TSX1000
MODEL

× 050
STROKE

S(F) -
단독형-S
배관형-F

(MSA) -
일체형 마운트
(선택사항)

150
총전압력
(Bar)

MOUNT

XP1000

REPAIR KIT

RCX1000

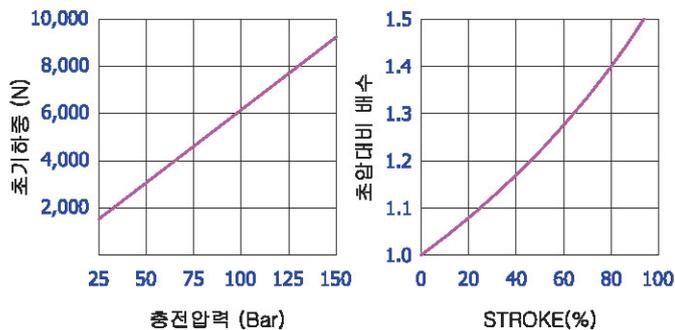
[주의!] TSX1000은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX1000

Stroke (mm) (inch)	H	C	Force(N) (150 bar / +20 °C)		Gas vol. (cu ³)	Weight (kg)
			Initial	End force*		
13	0.51	78	65	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

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

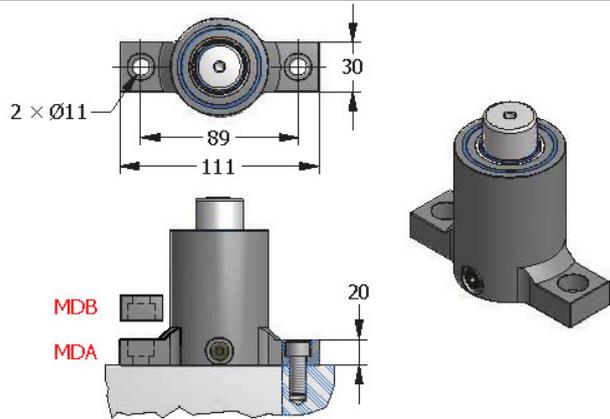
ex) 필요한 초기하중 8,500N인 GAS SPRING의 충전압력은?

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



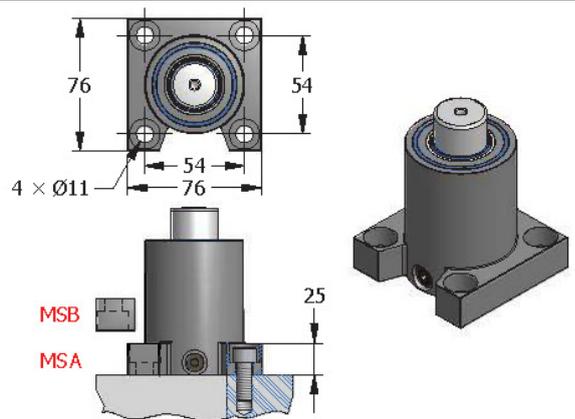
MD MOUNT

일체형



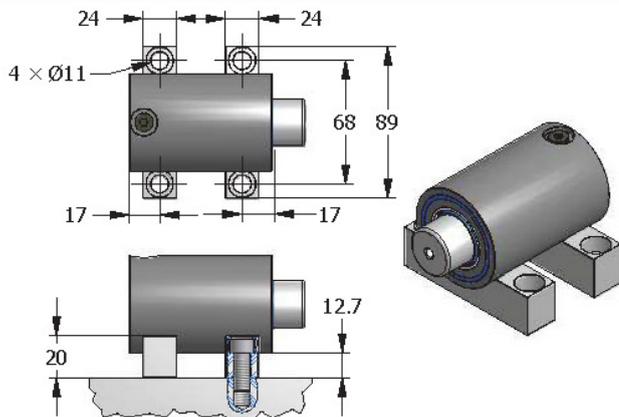
MS MOUNT

일체형

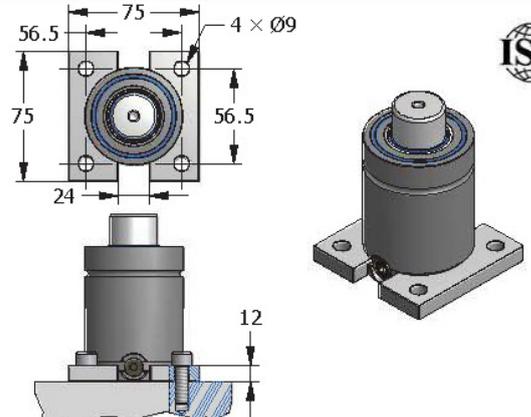


MK MOUNT

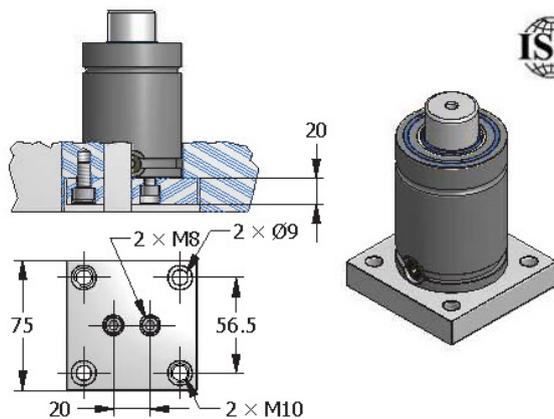
일체형



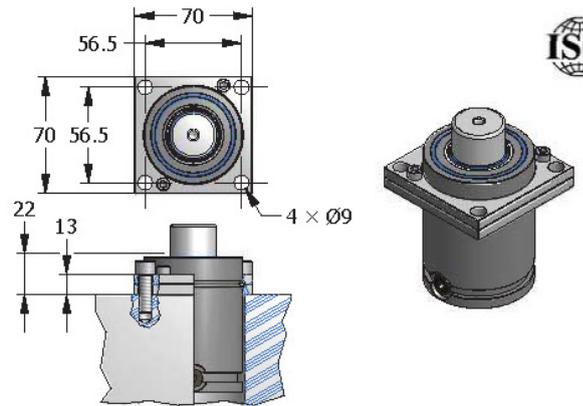
XP1000(SP0750) MOUNT



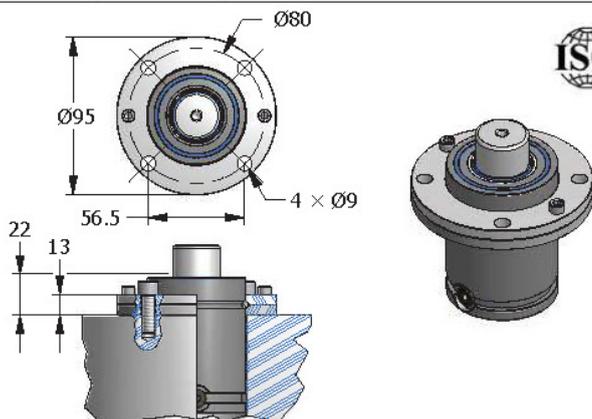
XB1000(SB0750) MOUNT



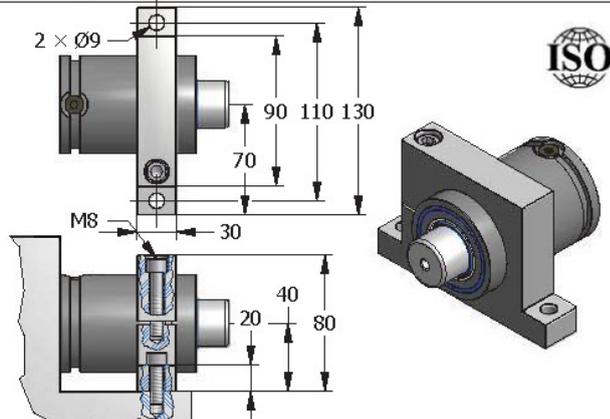
XT1000(ST0750) MOUNT



XR1000(SR0750) MOUNT



XC1000(SC0750) MOUNT



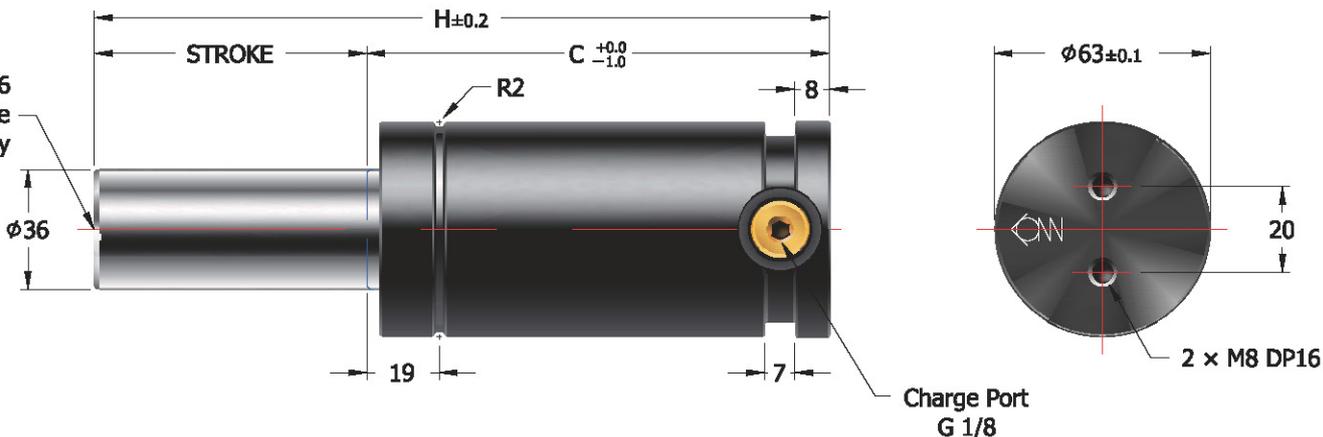


TSX1500

NITROGEN GAS SPRING



M6
Maintenance
only



규격 표기법

GAS SPRING

TSX1500
MODEL

× 050
STROKE

S(F) —
단독형-S
배관형-F

(MSA) —
일체형 마운트
(선택사항)

150
충전압력
(Bar)

MOUNT

XP1500

REPAIR KIT

RCX1500

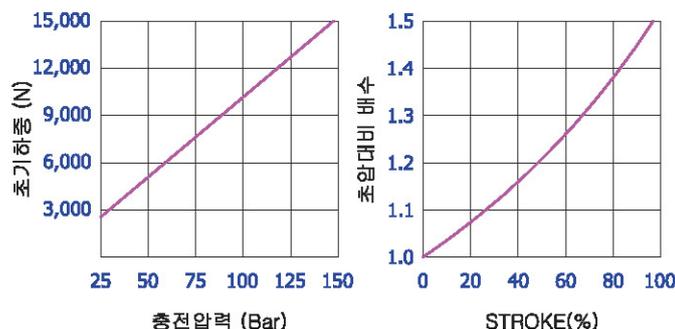
[주의!] TSX1500은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX1500

Stroke (mm) (inch)	H	C	Force(N) (150 bar / +20 °C)		Gas vol. (cu ³)	Weight (kg)
			Initial	End force*		
13	0.51	78	65	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

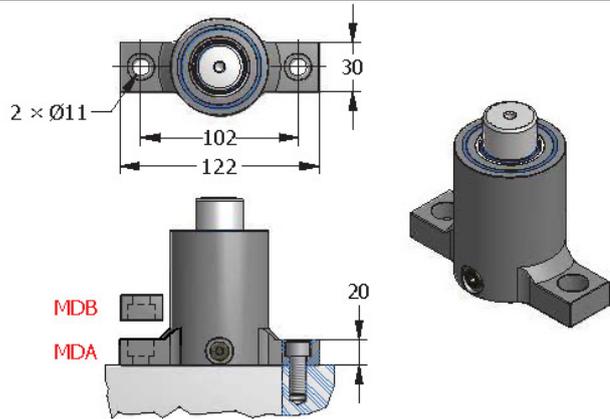
$$\text{충전압력(Bar)} = \frac{\text{초기하중(N)}}{101.7}$$

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

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

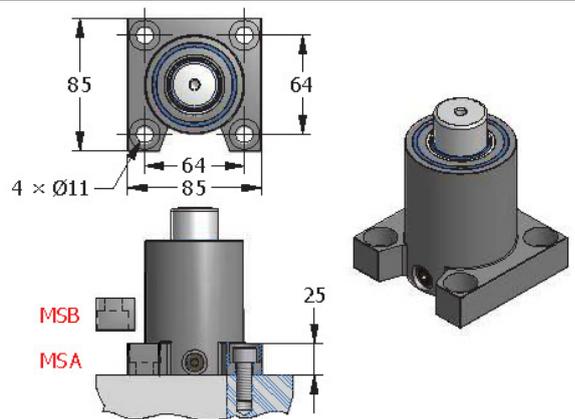
MD MOUNT

일체형



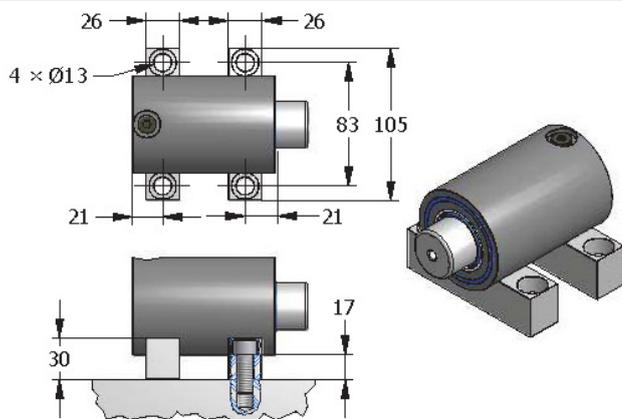
MS MOUNT

일체형

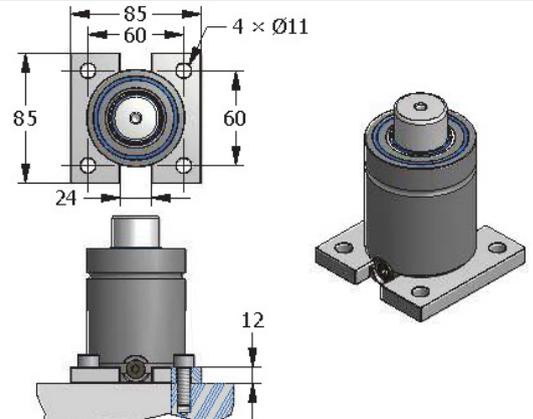


MK MOUNT

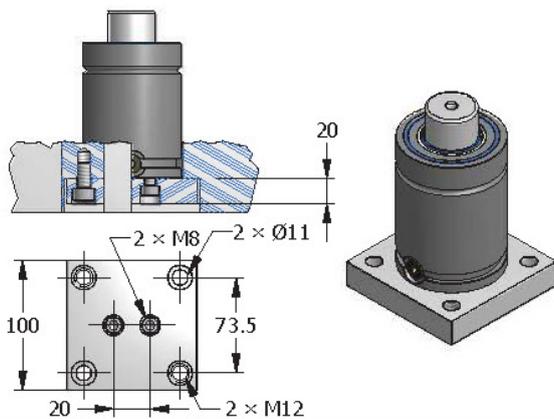
일체형



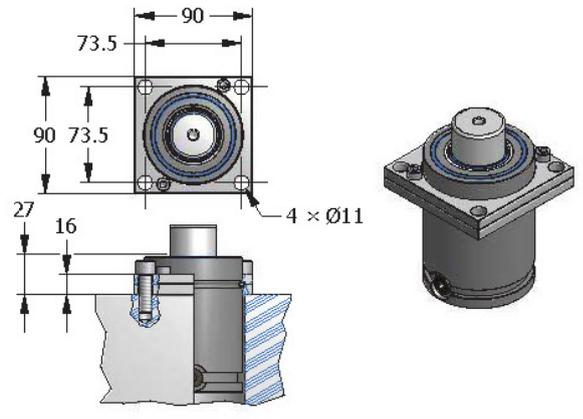
XP1500 MOUNT



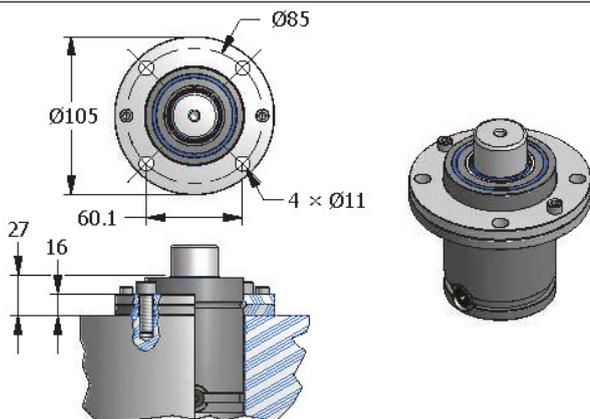
XB1500 MOUNT



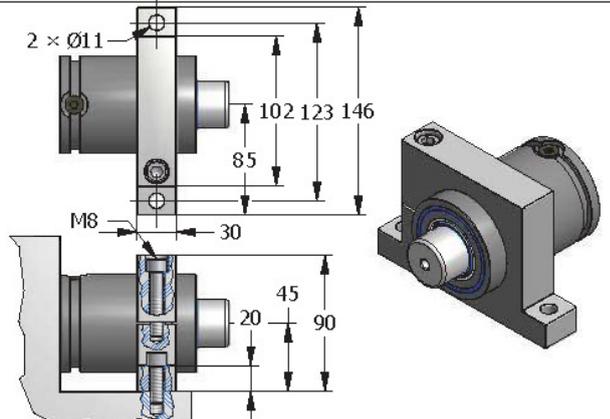
XT1500 MOUNT



XR1500 MOUNT



XC1500 MOUNT



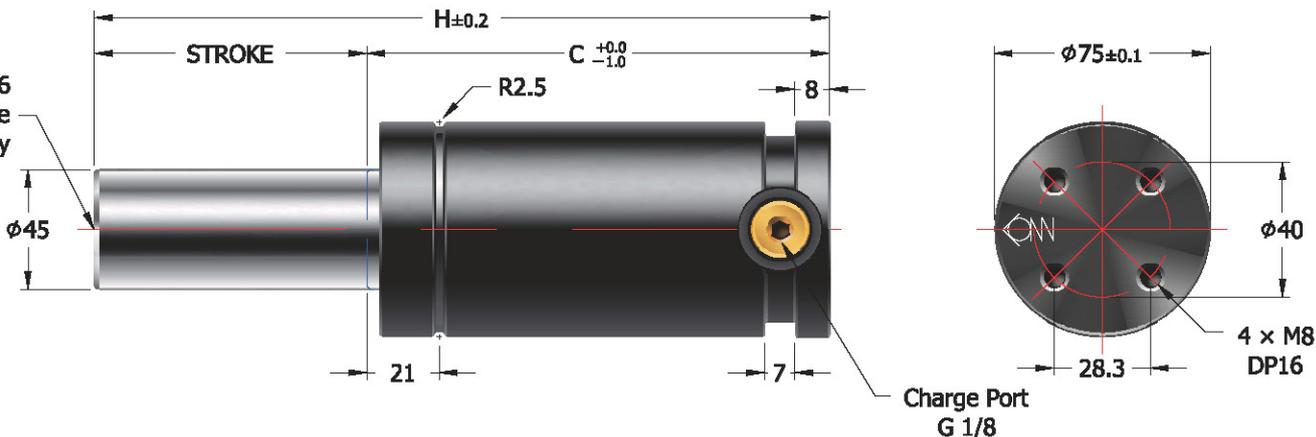


TSX2400

NITROGEN GAS SPRING



M6
Maintenance
only



규격 표기법

GAS SPRING

TSX2400
MODEL

× 050
STROKE

S(F) —
단독형-S
배관형-F

(MSA) —
일체형 마운트
(선택사항)

150
충전압력
(Bar)

MOUNT

XP2400

REPAIR KIT

RCX2400

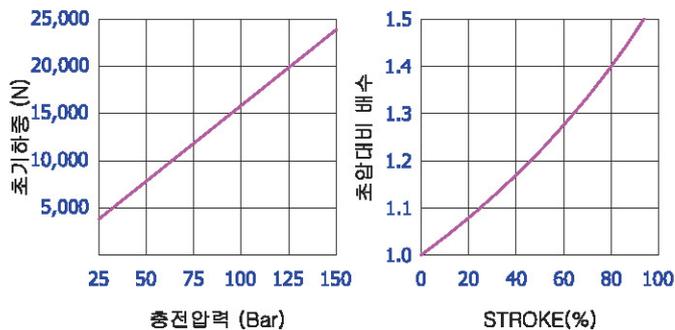
[주의!] TSX2400은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX2400

Stroke (mm) (inch)	H	C	Force(N) (150 bar / +20 °C)		Gas vol. (cm ³)	Weight (kg)
			Initial	End force*		
16	0.63	91	75	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

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

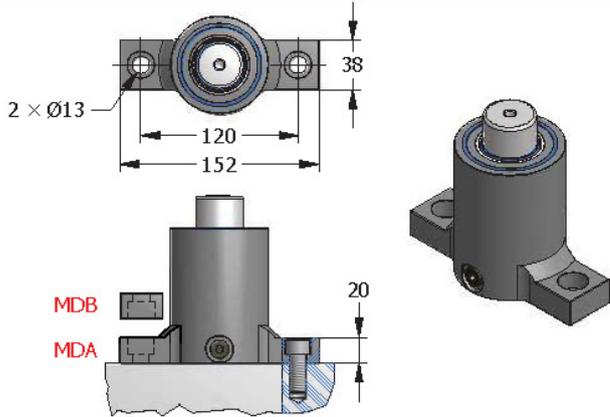
ex) 필요한 초기하중 20,000N인 GAS SPRING의 충전압력은?

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



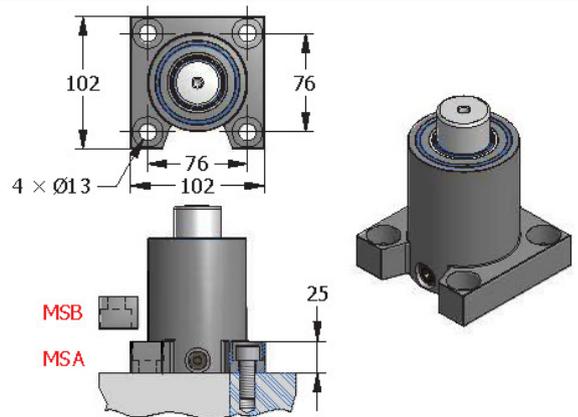
MD MOUNT

일체형



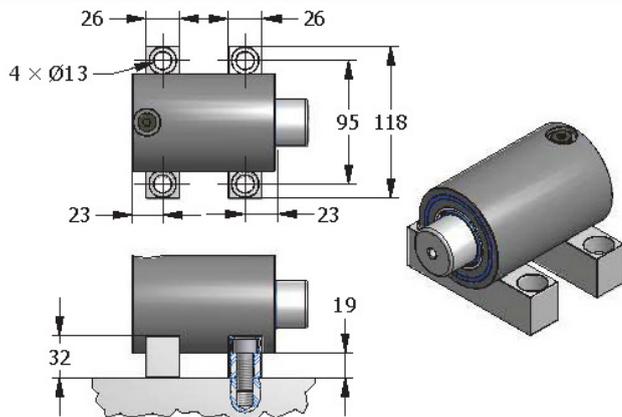
MS MOUNT

일체형

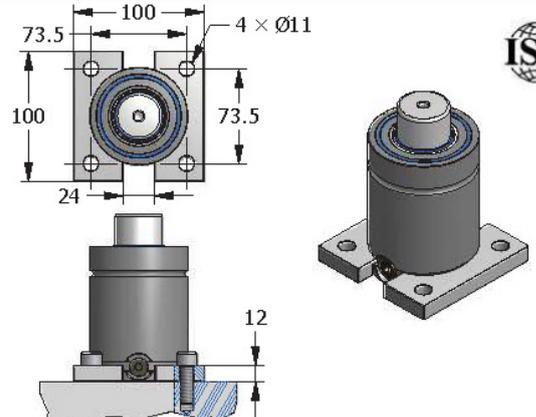


MK MOUNT

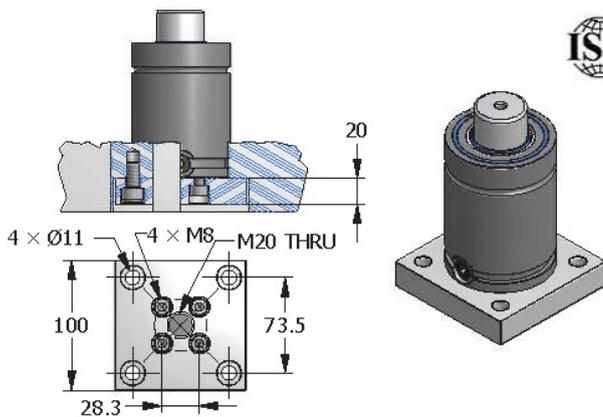
일체형



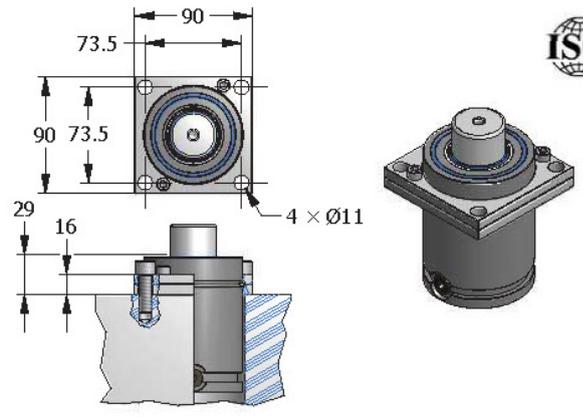
XP2400(SP1500) MOUNT



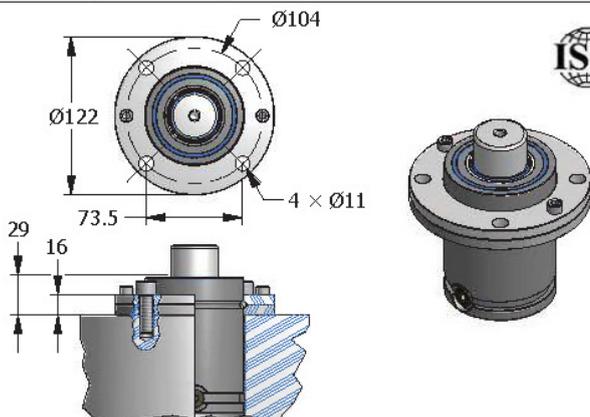
XB2400(SB1500) MOUNT



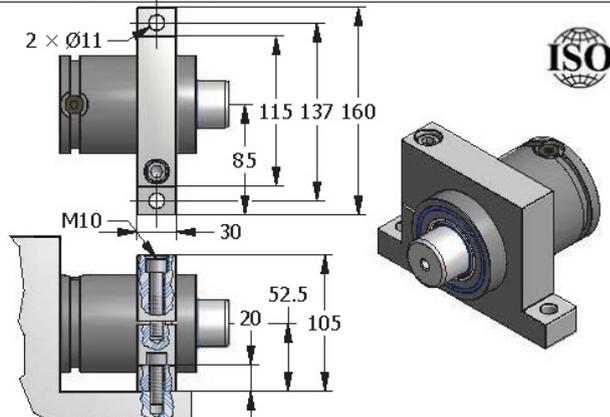
XT2400(ST1500) MOUNT



XR2400(SR1500) MOUNT



XC2400(SC1500) MOUNT



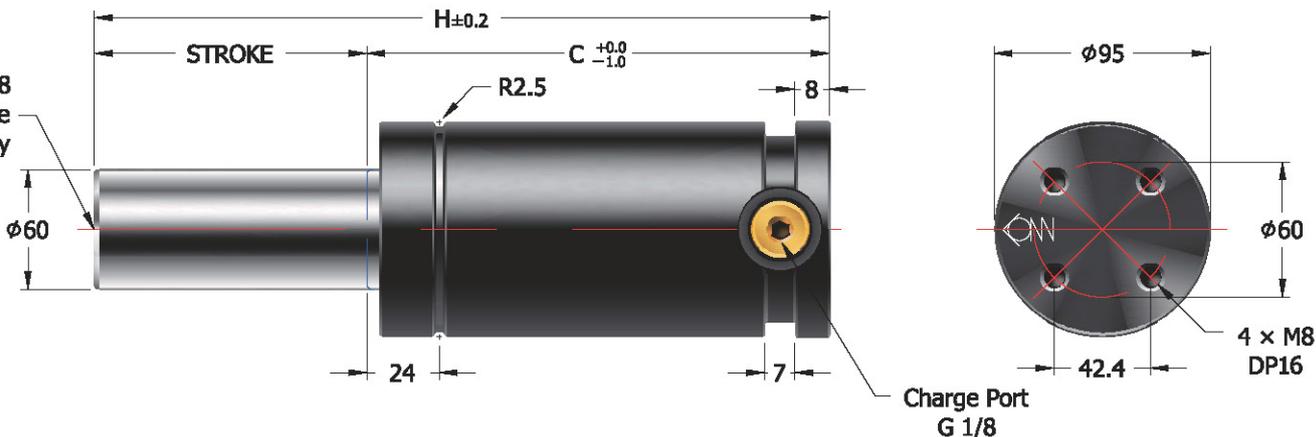


TSX4200

NITROGEN GAS SPRING



M8
Maintenance
only



규격 표기법

GAS SPRING

TSX4200
MODEL

× 050
STROKE

S(F) —
단독형-S
배관형-F

(MSA) —
일체형 마운트
(선택사항)

150
충전압력
(Bar)

MOUNT

XP4200

REPAIR KIT

RCX4200

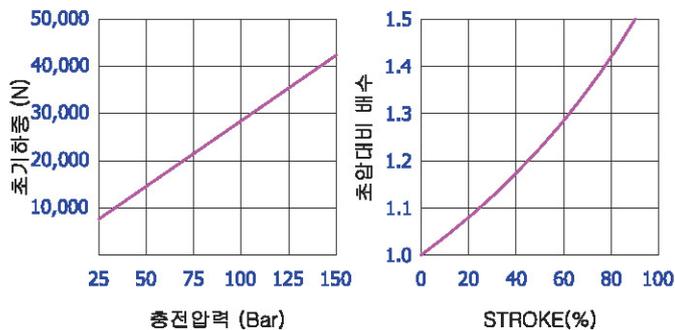
[주의!] TSX4200은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX4200

Stroke (mm) (inch)	H	C	Force(N) (150 bar / +20 °C)		Gas vol. (cm ³)	Weight (kg)
			Initial	End force*		
16	0.63	94	78	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

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

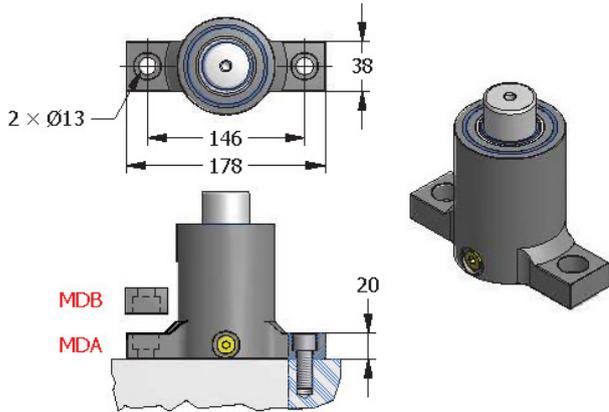
ex) 필요한 초기하중 35,000N인 GAS SPRING의 충전압력은?

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



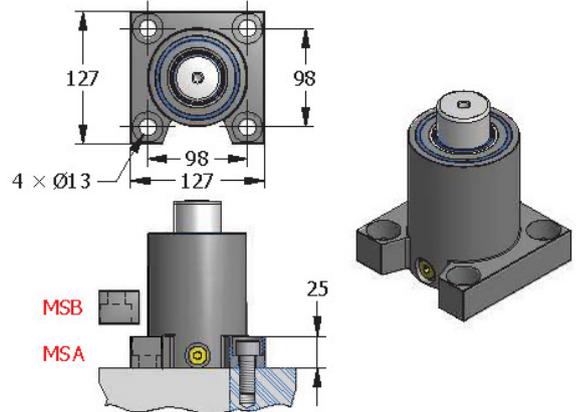
MD MOUNT

일체형



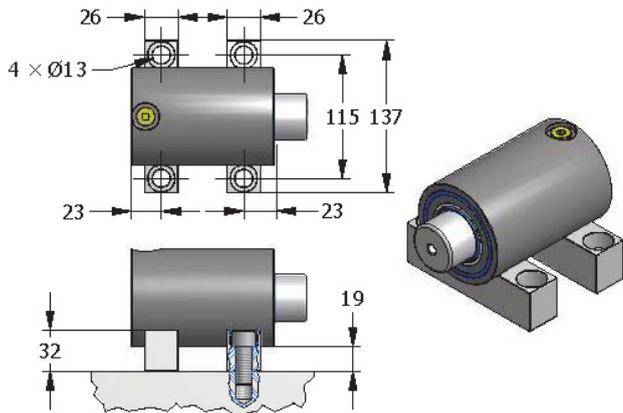
MS MOUNT

일체형

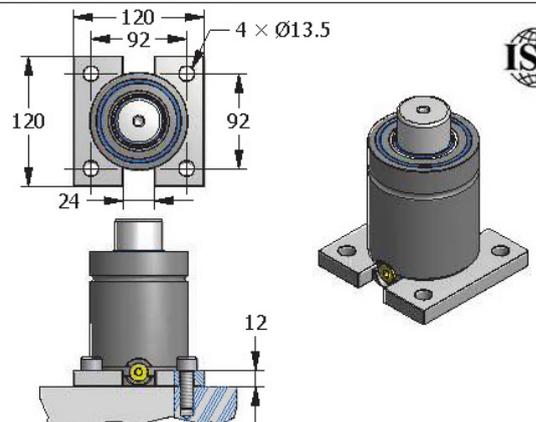


MK MOUNT

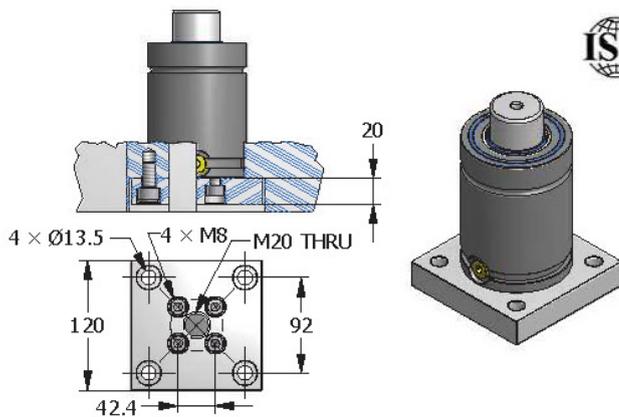
일체형



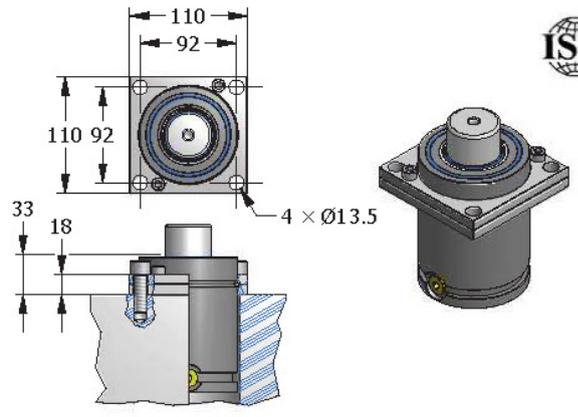
XP4200(SP3000) MOUNT



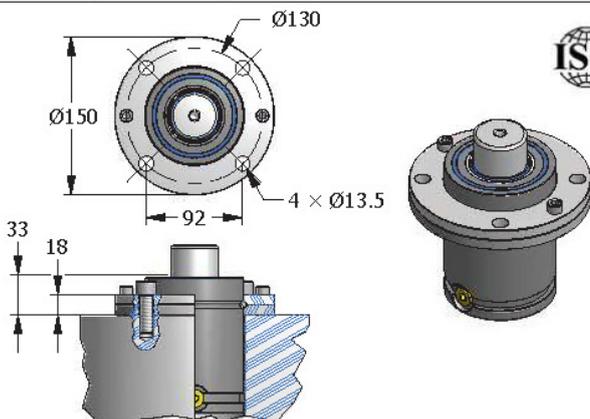
XB4200(SB3000) MOUNT



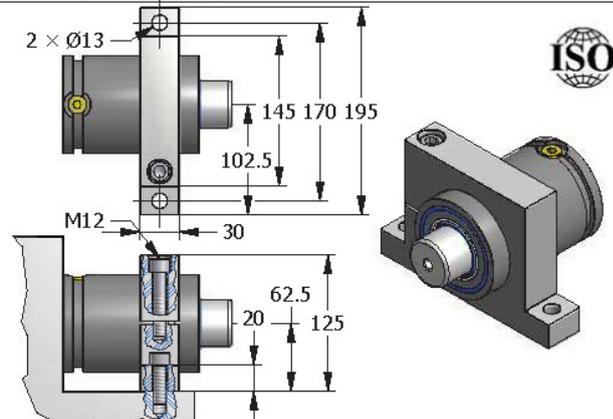
XT4200(ST3000) MOUNT



XR4200(SR3000) MOUNT



XC4200(SC3000) MOUNT



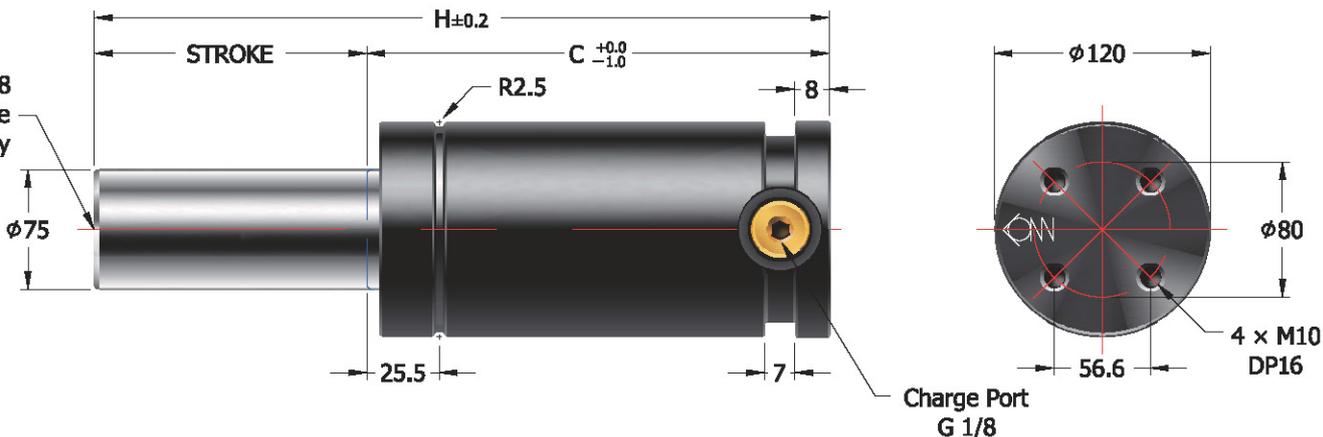


TSX6600

NITROGEN GAS SPRING



M8
Maintenance
only



규격 표기법

GAS SPRING

TSX6600
MODEL

× 050
STROKE

S(F) —
단독형-S
배관형-F

(MSA) —
일체형 마운트
(선택사항)

150
충전압력
(Bar)

MOUNT

XP6600

REPAIR KIT

RCX6600

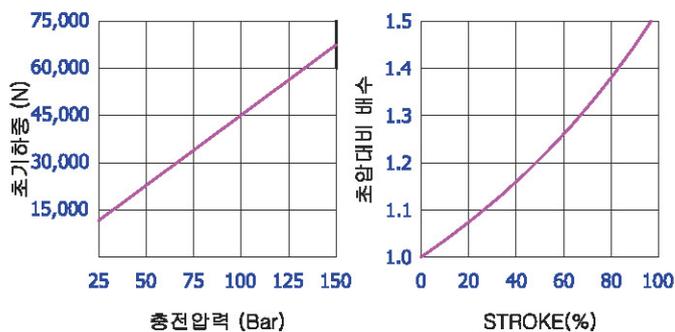
[주의!] TSX6600은 충전 압력을 별도로 지정하지 않을 경우 표준충전압력(150Bar)으로 출고됩니다.

TSX6600

Stroke (mm) (inch)	H	C	Force(N) (150 bar / +20 °C)		Gas vol. (cm ³)	Weight (kg)
			Initial	End force*		
16	0.63	104	88	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

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

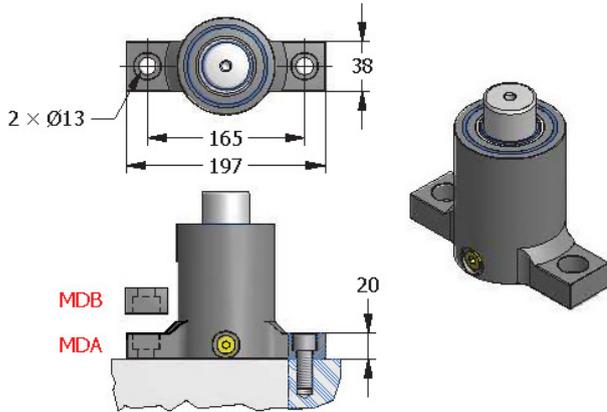
ex) 필요한 초기하중 60,000N인 GAS SPRING의 충전압력은?

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



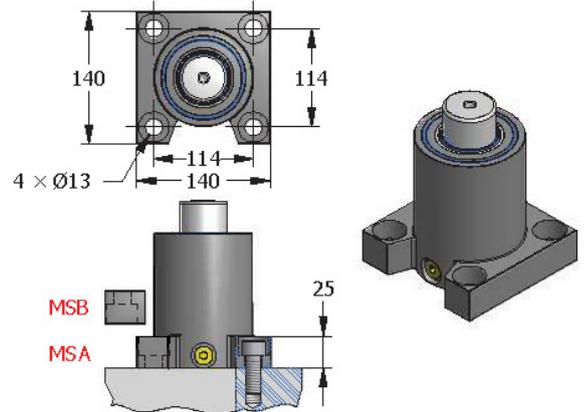
MD MOUNT

일체형



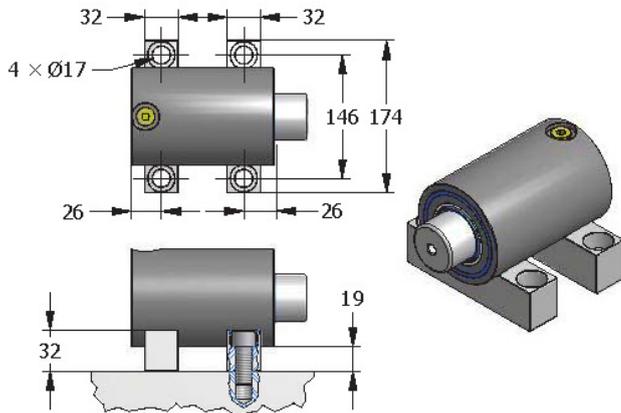
MS MOUNT

일체형

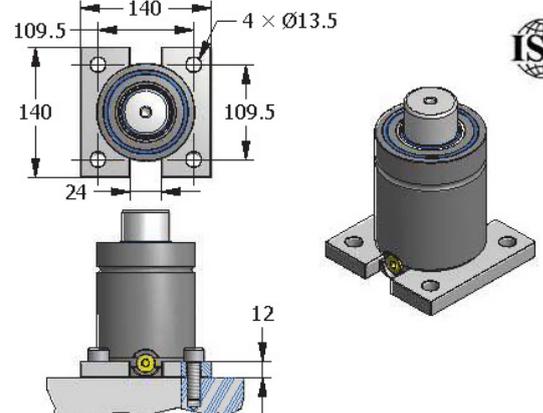


MK MOUNT

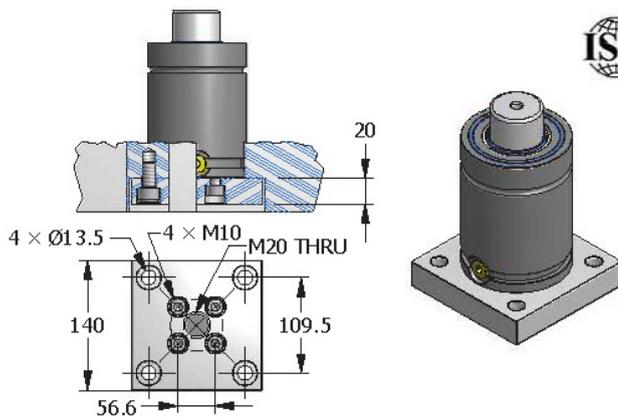
일체형



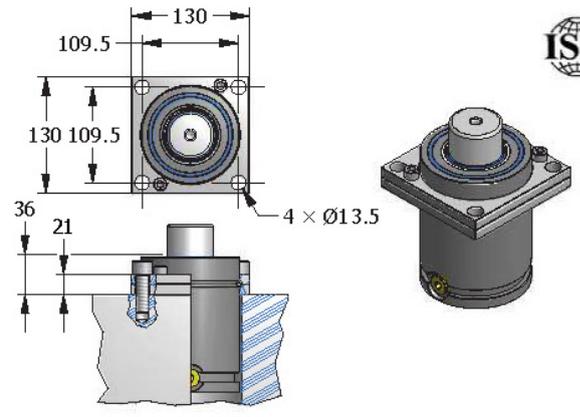
XP6600(SP5000) MOUNT



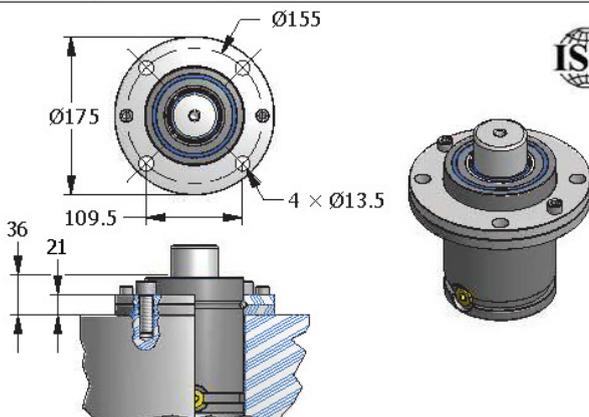
XB6600(SB5000) MOUNT



XT6600(ST5000) MOUNT



XR6600(SR5000) MOUNT



XC6600(SC5000) MOUNT

