

GAS SPRINGS

GAS SPRINGS

NEW



NEW



NEW



Product name Catalog No.	—STANDARD TYPE— GSP·GSQ	—PLATES FOR GSP·GSQ— HM FM	—SHORT TYPE— GSN	—PLATES FOR GSN— BM	—HEAVY LOAD MINI TYPE— MGSN
Page	1451	1452	1453	1453	1454

NEW



NEW



—MINI TYPE— MGSL·H·F	—THREADED TYPE— MGSM	—CLASSIC TYPE— GSX	—PLATES FOR GSX— AM
1455	1456	1457	1458



GSV (GLOBAL STANDARD TYPE)	GST	GAS SPRINGS WITH LINKED SYSTEM GSH	GSK	GSSC	GSU
1459	1461	1463	1465	1467	1469

NEW



NEW



FT·FTP	PLATES FOR GAS SPRINGS WITH LINKED SYSTEM FFC·FFCA·FFCB	FCM	FFS
1472	1473	1474	1474



FFC·FC	PLATES FOR GAS SPRINGS WITH LINKED SYSTEM FC·FCB	FCQ·FCQB
1475	1475	1476



FB·FBA·FBB	PLATES FOR GAS SPRINGS WITH LINKED SYSTEM FSA·FSC·FSD	GKNPS·GKNP
1477	1479	1480



ADAPTERS FOR COMPACT TYPE LSCN-□	ADAPTERS FOR HAND SCREW TYPE LSCN-□
1485	1487



HOSES FOR COMPACT TYPE LSHS5.5-SS-□	HOSES FOR HAND SCREW TYPE LSHS5.1-□	CLIPS LSLCL-6-LSCL-6S
1489	1489	1490



CONTROL PANELS LSCT-□	DISTRIBUTION BLOCKS LSDB-□·LSCN-□
1491	1493

PRECAUTIONS FOR THE USE OF GAS SPRINGS

—GUIDE—

■Precautions for the use of gas springs

If a gas spring is used under any of the conditions listed below, explosion of the spring or other malfunction may result in a major accident or in product trouble.

Be sure to read the following precautions before using gas springs.

■Danger prevention

- ① Never disassemble, weld, fuse, heat, or modify gas springs.
Gas springs contain high-pressure gas. Failure to observe this precaution may cause the internal parts to burst out.
- ② Gas recharge and pressure adjustment are not possible. (except for gas springs with linked system)
Attempting to do so may cause the spring to explode or result in other major accidents.
- ③ The operating environment temperature range (temperature around the die) is 0 ~ 40°C. Use gas springs only within this range.
If gas springs are heated to 80°C or higher, the spring may explode or other major accidents may occur.
Even if a major accident does not occur, the heat will deteriorate the gas seal, possibly resulting in gas leakage.
A clearance of approximately 2mm on each side of the spring is recommended in order to dissipate heat and prevent contact with the mounting holes.

■Disposal method

- ④ Wear protective goggles and discharge the gas from the cylinder before disposing of the spring.
Cut the mounting bolt hole all the way through and verify that the nitrogen gas is discharged completely before disposing.

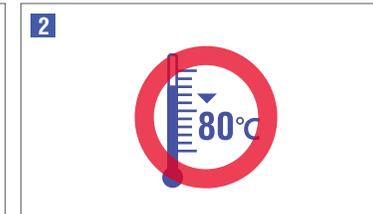
■Preventing gas leakage

- ⑤ Do not use gas springs under any of the conditions listed below.
Failure to observe these precautions may result in gas leakage and other problems.
Moreover, a spring explosion or other major accident may occur.

Conditions of use that may cause problems	Resulting problem	Consequence
a An oblique load or transverse load is applied.	Eccentric load and/or Spring damage	Gas leakage
b Gas spring is not fixed with bolts.		
c Sub-guides are not used or the number is insufficient.		
d The load distribution is not even in all four directions inside the die.		
e There is an obstruction which contacts the gas spring inside the die.		
f The gas spring is fixed in place using the tap hole on the end of the piston rod.		
g An extension pin is mounted on the end of the piston rod.		
h The pressure on the piston rod is not applied to the entire surface.		
i The piston rod contact face is deformed.		
j The piston rod is cut.		
k Welding spatter has adhered to the piston rod.	Seal damage	Gas leakage and/or explosion or other accidents
l Cutting particles or metal particles have adhered to the piston rod.		
m The piston rod is dented.		
n The shot limit is exceeded.		
o A large amount of lubricant (especially chlorine-based lubricant) is applied.		
p The gas spring is exposed to moisture, steam or chemicals.		
q The gas has been recharged or the pressure has been adjusted.	Loss of durability	Gas leakage and/or explosion or other accidents
r The gas spring is used at high temperatures (above 40°C) or low temperatures (below 0°C).		
s Overstroking		
t The cylinder has been ground.		
u Conditions in which the piston rod is released abruptly.		
v The gas spring is used or stored outdoors, or in a humid location.		
w The gas spring is disassembled, welded, fused, heated, or modified.	Unexpected problems	Gas leakage and/or explosion or other accidents
x The gas spring is incorporated in a building or a vehicle.		
y Other unintended uses (uses other than in a die)		



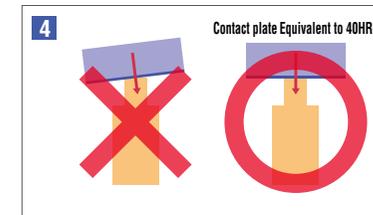
Do not attempt to disassemble, weld, fuse, heat, or modify the product.



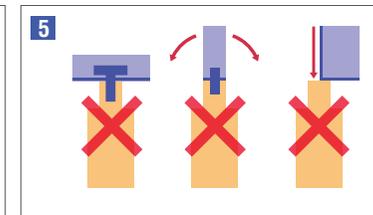
Operating environment temperature range 0 ~ 40°C, gas spring surface temperature 80°C or less.



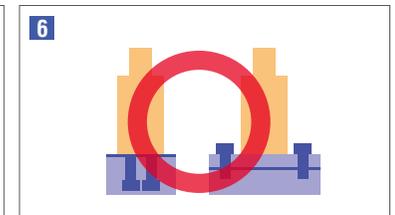
Wear safety goggles and discharge gas before disposal.



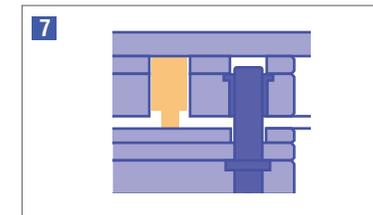
Do not apply oblique or transverse loads.



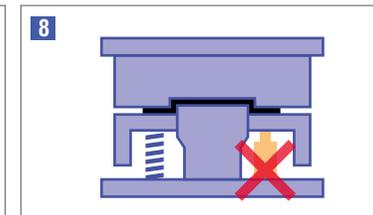
Do not use threaded hole at hole for fastening the spring. Do not use extension pin. Always apply pressure to the entire end surface.



Fasten with bolts and flange.



Use sub guide pins to prevent eccentric loads.



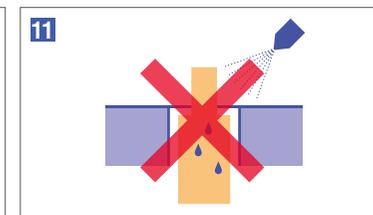
Equalize the load.



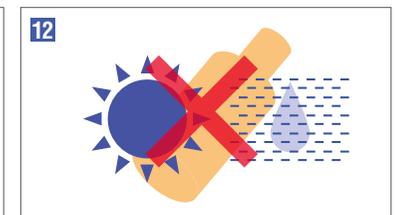
Do not grind the cylinder or cut the piston rod.



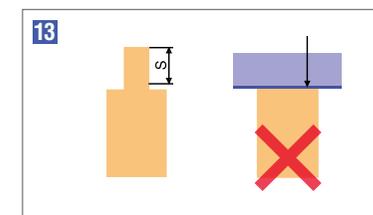
Be careful of weld spatters, cut particles, and metal particles.



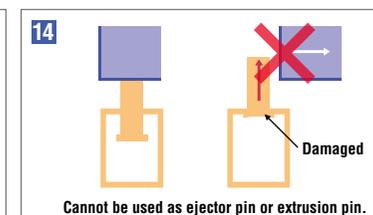
Do not apply excessive lubricant.



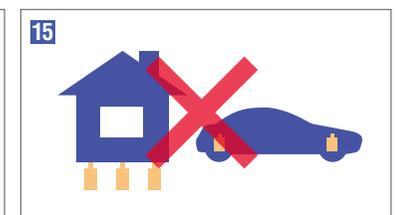
Do not use or store outdoors or at high humidity place.



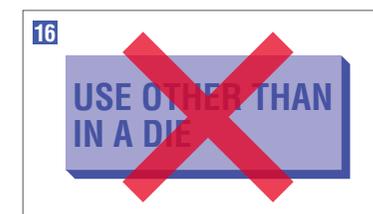
Do not overstroke.



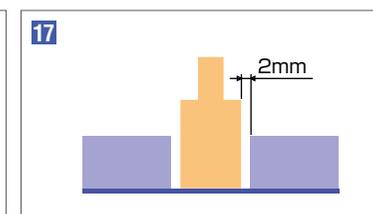
Do not allow the piston rod to be released abruptly.



Do not incorporate in a building or vehicle.



Do not use for applications other than dies.



Keep clearance 1mm per side.

Gas Spring Features

MISUMI gas springs are popular among customers who are having a hard time miniaturizing their products, giving their workpieces a higher tensile strength, or finding a way to lessen the space taken up by molds. The large product lineup means you are sure to find the most appropriate product for your needs.

Space Saving

The lineup features a range of ultra-compact types that offer high-load capabilities and long strokes. These products are able to handle high loads, even in tight spaces.

High Initial Loads

Can handle initial loads up to 184,100 N. Requires no initial deflection like with coil springs, helping simplify work processes.

Wide Range of Strokes

Offers stroke lengths up to 300 mm, making it suitable for deep drawing processing.

List of Gas Springs

Catalog No.	Features	Initial Load — N (kgf)		Outer Diameter — D		Stroke — S	
		min.	max.	min.	max.	min.	max.
GSP	<ul style="list-style-type: none"> Compact and can handle high loads. A larger range of sizes for improved design freedom. 	1500 {153}	30000 {3059}	19	63	10	80
GSQ	<ul style="list-style-type: none"> A high-load capable type of the GSP32 The initial load capability is 32% greater than the GSP32. 	6600 {673}	6600 {673}	32	32	10	80
GSN	<ul style="list-style-type: none"> Features a lower height and is ideal for those occasions where a high-load capability is required. 	3750 {382}	20000 {2039}	32	63	10	100
MGSN	<ul style="list-style-type: none"> An entry level gas spring model. Features a small diameter, ensuring that it even fits within compact molds. 	1000 {102}	5100 {520}	16	32	10	80
MGSL	<ul style="list-style-type: none"> Ideal for those occasions requiring a slightly stronger load than with coil springs. 	800 {82}	1600 {163}	19	25	10	80
MGSM	<ul style="list-style-type: none"> A screw-retaining type. 	400 {41}	800 {82}	12	16	10	25
GSX	<ul style="list-style-type: none"> A classic type. 	4750 {484}	31000 {3161}	32	63	10	80
GSV	<ul style="list-style-type: none"> A wide variation of all 151 sizes. Most commonly used model. 	1700 {173}	117000 {11930}	19	195	7	125
GST	<ul style="list-style-type: none"> The diameter, length and load are same as GSV. The setting hole depth are deeper than GSV. 	3600 {367}	95400 {9728}	32	150	10	125
GSH	<ul style="list-style-type: none"> The diameter, length and load are same as GST. The shape of the lower groove and mounting pitch are different. 	9200 {938}	66300 {6761}	50	120	10	125
GSK	<ul style="list-style-type: none"> Initial load up to maximum 106,000N and stroke maximum length up to 300 mm. 	1700 {173}	106000 {10809}	32	195	10	300
GSSC	<ul style="list-style-type: none"> Initial load up to maximum 184,100N, which is the highest load model among linked system gas spring. Attached plastic cap to reduce contamination of machining oil, metal scrap. 	4250 {433}	184100 {18773}	25	150	6	50
GSU	<ul style="list-style-type: none"> Minimum diameter ϕ 12, mini model of linked system gas spring. Able to select pressure from wide range. 	50 {5}	3200 {326}	12	32	7	125

The model for certain products has been changed.

The initial loads, sizes, and mounting dimensions of the replacement models are all uniform, ensuring that they can be used with existing molds without any problems or additional alterations.

Model Comparison Table

Conventional Model	GSZ	GSC	MGSC	MGSA	MGSB
New Model	GSP	GSN	MGSN	MGSL	MGSM

Some models have different outer diameter tolerances. See the relevant product page for more information.

The maximum load changes because of changes of the internal structure. See the relevant product page for more information.

The conventional products will be subsequently discontinued.

New Model Features

Safety Devices

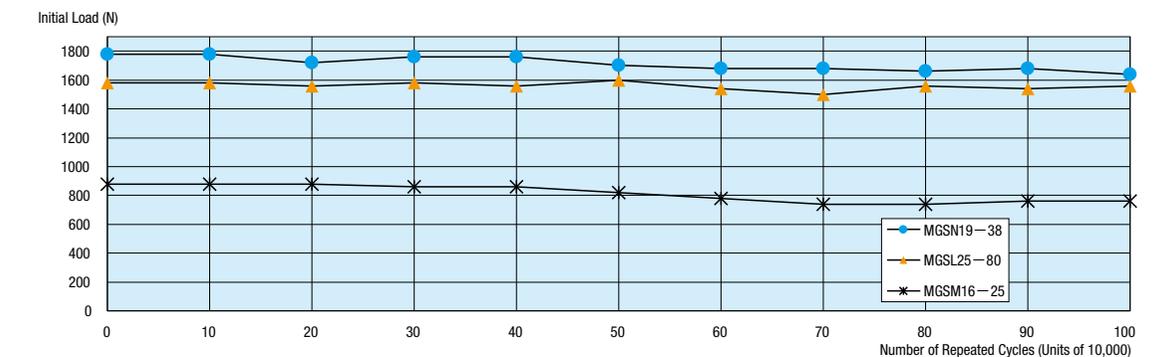
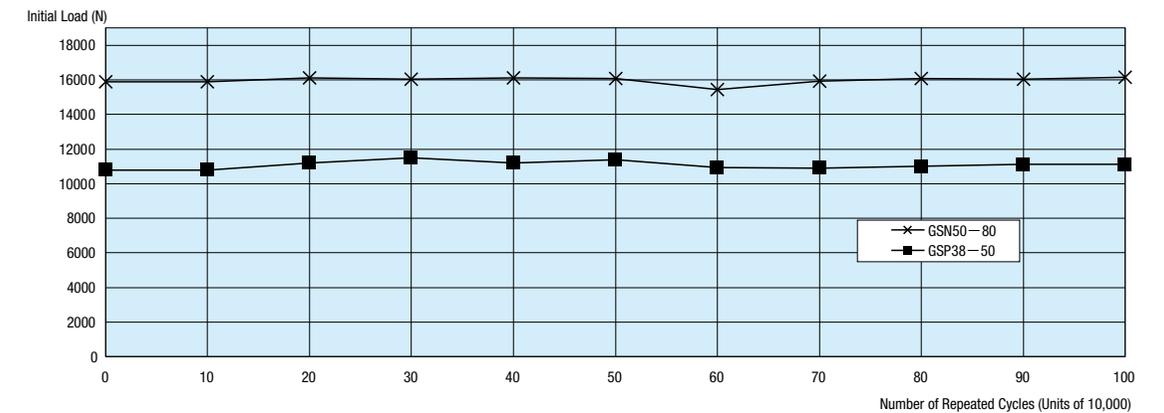
The structure of the safety devices has been redesigned.

The structures exhaust the internal nitrogen gas in a controlled and complete mode, in case of over stroke, over pressure and uncontrolled return of the piston rod. See **P.3** for more information

Durability Testing Results

Durability Testing Conditions

Catalog No.	GSN50-80	GSP38-50	MGSN19-38	MGSL25-80	MGSM16-25
Excitation Amplitude	75mm	45mm	37mm	76mm	24mm
Excitation Speed	30spm	70spm	50spm	76spm	50spm
Mounting Orientation	Upright	Upright	Upright	Upright	Upright



The actual numbers relating to durability will differ depending on the usage environment. This data is for reference only.

GAS SPRING SAFETY DEVICES (1)

A safety device will help reduce damage in the event of unexpected troubles.

OSAS Over Stroke Active Safety



What is OSAS?

A safety device which, during cases of over stroke, exhausts the internal nitrogen gas, thereby helping prevent the gas spring from deforming or rupturing from abnormal internal pressure rises.

An OSAS reduces the risk of over stroke related trouble arising from changes in die height during regrinding or from design and/or processing errors.

USAS Uncontrolled Speed Active Safety



What is USAS?

A safety device which, during instances where the movement of the piston rod becomes uncontrollable, prevents the internal components of the gas spring from breaking and the piston rod from flying off.

The USAS lowers the risk of troubles or issues occurring if the movement of the piston rod becomes uncontrollable during abnormal mold operations.

OPAS Over Pressure Active Safety



What is OPAS?

A safety device which, in the event of machine oil or some other substance getting into the gas spring and causing abnormal rises in pressure, exhausts the internal nitrogen gas, thereby preventing the gas spring from deforming and/or rupturing.

The OPAS lowers the risk of troubles or issues occurring due to a rise in pressure in the event of press machine oil or some other substance getting into the gas spring.

Applicable Sizes

Catalog No.	Structure	Safety Devices		
		OSAS	USAS	OPAS
GSP	19	-	-	●
	25-32	●	●	-
	38-63	●	●	●
GSQ	32	●	●	-
GSN	32-50	●	●	●
	63	●	-	●
MGSN	19-25	-	-	●
	32	●	●	●
MGSL	19	-	-	●
	25	●	●	-
GSV	170-320	-	-	●
	350-12000	●	●	●
GST/GSH/GSK	All	●	●	●
GSSC	750-18500	●	●	●
GSU	90-200	-	-	●
	300	●	●	-

⚠ The MGSN16, MGSM, GSX, GSU50-70 and GSSC400 do not feature built-in safety devices.

⚠ This safety device was developed with the purpose of reducing damage if any trouble or issue occurs. It is not something which will prevent all types of issues from occurring in the first place.

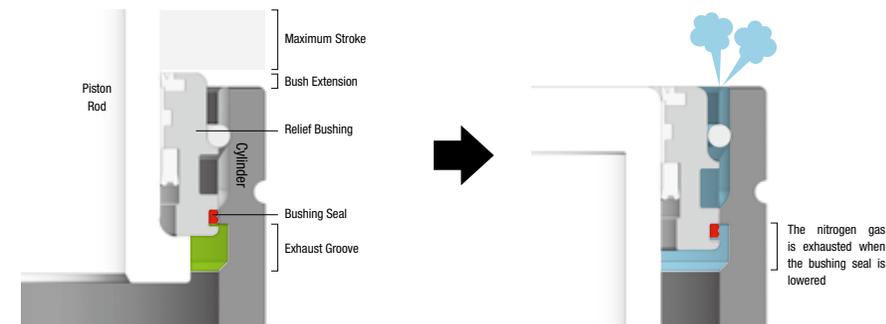
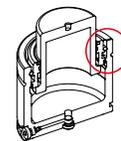
⚠ Make sure to read the precautions regarding gas spring usage (P.1575) before use.

⚠ The applicable time period may differ depending on the product.

⚠ This safety device was developed by Special Springs S.r.l.

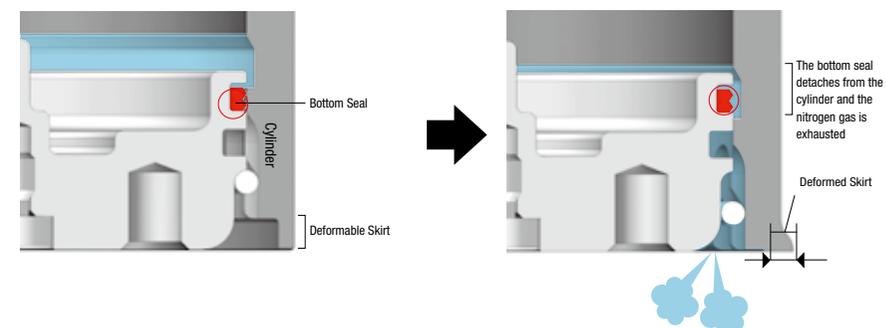
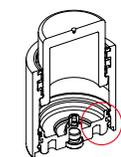
OSAS Structure

Bushing Seal Types



The internal nitrogen gas will be exhausted via the exhaust groove when the bushing seal on the relief bushing is lowered. You can judge the OSAS has worked if the height of bushing is the same as of cylinder.

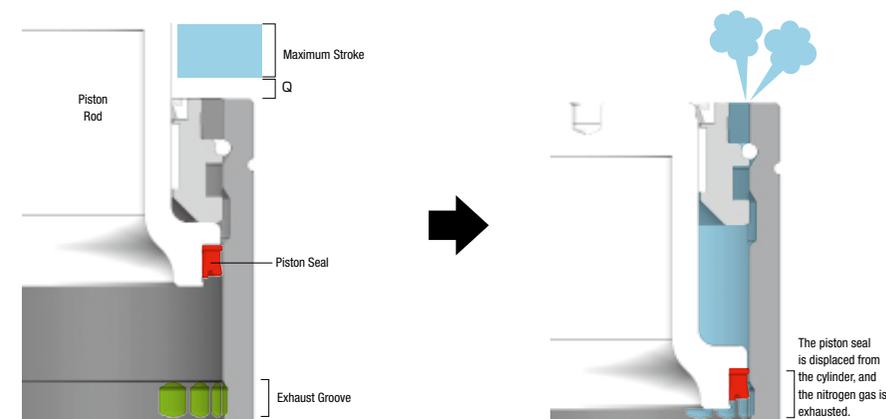
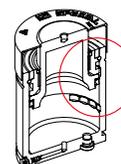
Bottom Seal Types



Should the cylinder lower during instances of over stroke, the bottom seal will detach from the contact point with the cylinder and the cylinder itself will deform at the base, causing a gas exhaust groove to form. The internal nitrogen gas will then be exhausted via the exhaust groove. You can judge the OSAS has worked if the deformable skirt deforms.

⚠ The clearance between the outer diameter (d) of the gas spring cylinder and the counterbored holes of the mold must be equal to or greater than 2 mm (on one side) in order to ensure correct operation of the safety devices.
(outer diameter of the mold's counterbored hole = outer diameter of the gas spring cylinder + 4 mm)

Piston Seal Types



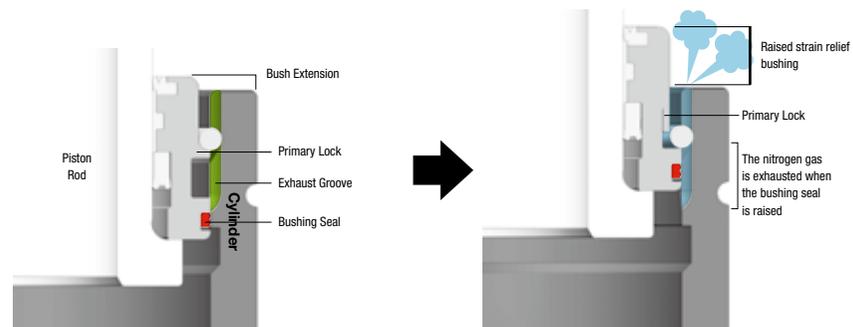
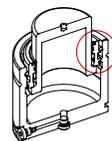
Should the piston rod is pressed down to Q instances of over stroke, piston seal will detach from the contact point with the cylinder, causing a gas exhaust groove to form.

The internal nitrogen gas will then be exhausted via the exhaust groove. You can judge the OSAS has worked if the piston rod is at the same height as the cylinder.

GAS SPRING SAFETY DEVICES (2)

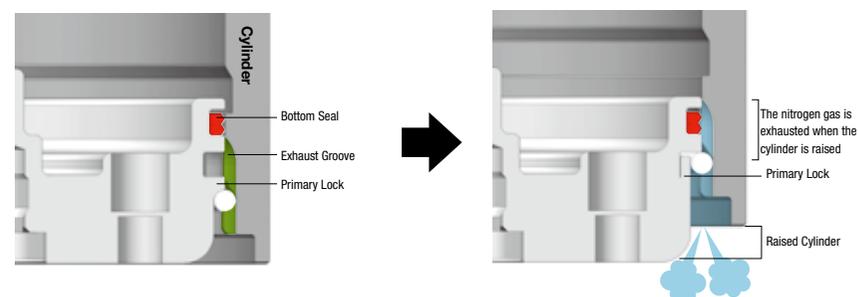
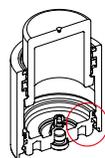
USAS Structure

■ Bushing Seal Types



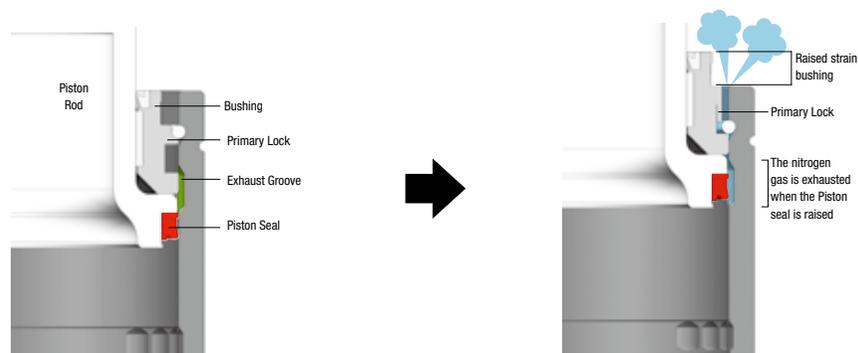
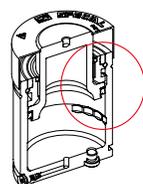
Should the movement of the piston rod become uncontrolled, the primary lock will change shape and the relief bushing will pop out. The internal nitrogen gas will be exhausted via the exhaust groove before the piston rod and/or relief bushing become damaged. You can judge the USAS has worked if the height of bushing extension is above the standard. See the relevant product page for more information regarding the protrusion heights of relief bushing.

■ Bottom Seal Types



Should the movement of the piston rod become uncontrolled, the cylinder will pop up, and the primary lock will change shape. The internal nitrogen gas will then be exhausted via the exhaust groove before the piston rod and/or cylinder become damaged. You can judge the USAS has worked if the cylinder is raised.

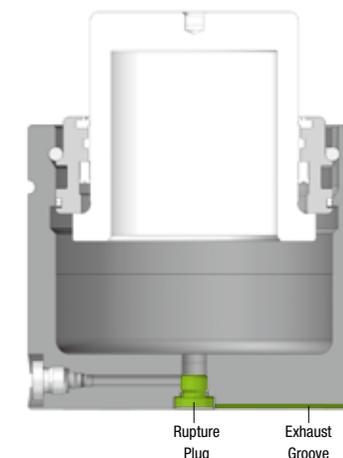
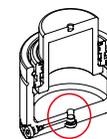
■ Piston Seal Types



Should the movement of the piston rod become uncontrolled, the bushing will pop up, and the primary lock will change shape. The internal nitrogen gas will then be exhausted via the exhaust groove before the piston rod and/or relief bushing become damaged. You can judge the USAS has worked if the bush protrudes from the cylinder.

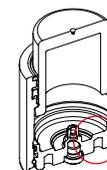
OPAS Structure

■ Rupture Plug Type



The rupture plug on the base of the gas spring will break should the internal pressure exceed the specified value. Consequently, the internal nitrogen gas will be exhausted via the exhaust groove. You can judge the OPAS has worked if the rupture plug is loosened. The release valve cannot be disassembled.

■ Rupture Septum Types



The rupture septum on the base of the gas spring will break should the internal pressure exceed the specified value. Consequently, the internal nitrogen gas will be exhausted via the exhaust groove. You can judge the OPAS has worked if the rupture septum is open.

There is a chance the internal mechanisms and components have got damaged when the OSAS, USAS, or OPAS operate. As such, please ensure you replace the gas spring.



GAS SPRINGS

-STANDARD TYPE-

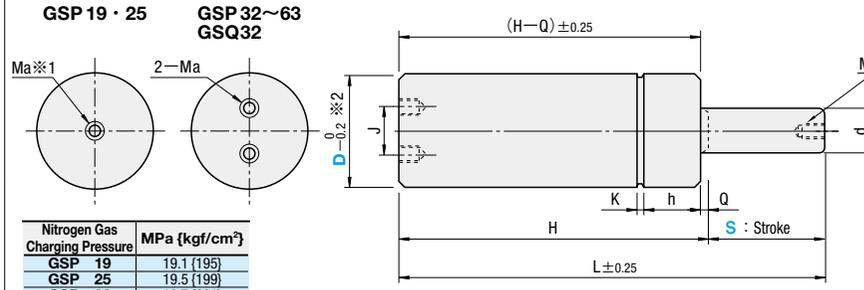
• The GSP is the successor model to the GSZ.

RoHS



GSP GSQ (Main Body)
GSPH GSQH (HM Plate Set)
GSPF GSQF (FM Plate Set)

Ⓜ The GSP and GSQ has a bottom seal type safety device. The diameter of the counterbore holes must be set to at least D + 4 mm in order to ensure correct operation of the OSAS. Safety devices: **DS P.1447**
 Ⓜ Please do not use gas springs in excess of the specified stroke range(S), as it may cause any troubles including gas leakage.
 Ⓜ Do not use the screw hole(M) to fix the gas spring with a bolt nor to install an extension pin. **DS P.1443**
 Ⓜ *1 The mounting taps (Ma) for the GSP19/25 also operate as gas exhaust vents.
 Ⓜ Screwing in the mounting screws to a depth that exceeds that of the tap may cause of gas leakage.
 Ⓜ *2 The outer diameter tolerance (D) for the GSP19 is D ±0.25.



GSP 19 · 25 **GSP 32~63**
GSQ32

Nitrogen Gas Charging Pressure	MPa (kgf/cm ²)
GSP 19	19.1 (195)
GSP 25	19.5 (199)
GSP 32	19.7 (201)
GSQ 32	21.0 (214)
GSP 38	20.5 (209)
GSP 50	20.9 (213)
GSP 63	18.9 (193)

Cylinder body Piston rod
 Ⓜ Equivalent to SCM440 Ⓜ Equivalent to SCM440
 Ⓜ Black Oxide (Fe₃O₄) Ⓜ 600 HV~ (Surface)
 Ⓜ Nitriding + Barrel finishing

Weight (kg)	D	d	M	L	H	Q	h	K	Ma Tap hole for Mounting	J	Load N (kgf)		Catalog No.									
											Initial Load	Maximum Load	Type	D-S								
0.09	19	10	M5	85	70	1	24	2 (R1)	M6 × 8	-	1500 (153)	1935 (197)	19-15									
0.10				2013 (205)	19-20																	
0.11				2074 (211)	19-25																	
0.12				2126 (217)	19-32																	
0.13				2129 (217)	19-38																	
0.14				2161 (220)	19-45																	
0.14				2189 (223)	19-50																	
0.14				2184 (223)	19-56																	
0.15				2204 (225)	19-63																	
0.17				2302 (235)	19-80																	
0.18				4624 (472)	25-15																	
0.20				4890 (499)	25-20																	
0.21				5096 (520)	25-25																	
0.23				5240 (534)	25-32																	
0.25				5196 (530)	25-38																	
0.27				5289 (539)	25-45																	
0.28				5380 (549)	25-50																	
0.30				5331 (544)	25-56																	
0.32	5388 (549)	25-63																				
0.36	5545 (565)	25-80																				
0.29	32	18	M8	75	65	2	26	2 (R1)	M6 × 8	15	5000 (510)	6590 (672)	32-10									
0.31				7085 (722)	32-15																	
0.33				7470 (762)	32-20																	
0.34				7778 (793)	32-25																	
0.37				8032 (819)	32-32																	
0.40				8038 (820)	32-38																	
0.43				8200 (836)	32-45																	
0.45				8341 (851)	32-50																	
0.48				8310 (847)	32-56																	
0.52				8162 (832)	32-63																	
0.59				8436 (860)	32-80																	
0.37				14165 (1444)	38-10																	
0.39				15449 (1575)	38-15																	
0.41				16446 (1677)	38-20																	
0.44				17242 (1758)	38-25																	
0.48				17894 (1825)	38-32																	
0.51				17900 (1825)	38-38																	
0.55				18315 (1868)	38-45																	
0.58	18679 (1905)	38-50																				
0.62	18592 (1896)	38-56																				
0.70	17155 (1749)	38-63																				
0.79	17916 (1827)	38-80																				
0.76	26407 (2693)	50-10																				
0.89	26209 (2673)	50-15																				
0.93	27799 (2835)	50-20																				
0.98	29222 (2980)	50-25																				
1.04	30804 (3141)	50-32																				
1.11	31591 (3221)	50-38																				
1.18	32752 (3340)	50-45																				
1.22	33611 (3427)	50-50																				
1.29	34036 (3471)	50-56																				
1.36	34858 (3555)	50-63																				
1.51	36737 (3746)	50-80																				
1.25	50	35	M8	90	80	3	12	4 (R2)	M8 × 12	20	20000 (2039)	38618 (3938)	63-10									
1.40				39321 (4010)	63-15																	
1.46				41648 (4247)	63-20																	
1.52				43703 (4456)	63-25																	
1.62				45929 (4683)	63-32																	
1.72				46963 (4789)	63-38																	
1.82				48559 (4952)	63-45																	
1.89				49746 (5073)	63-50																	
2.08				51368 (5238)	63-63																	
2.31				53891 (5495)	63-80																	
1.25				63	45							M8	95	85	3	11	5 (R2.5)	M8 × 12	20	30000 (3059)	38618 (3938)	63-10
1.40													39321 (4010)	63-15								
1.46													41648 (4247)	63-20								
1.52													43703 (4456)	63-25								
1.62													45929 (4683)	63-32								
1.72													46963 (4789)	63-38								
1.82													48559 (4952)	63-45								
1.89													49746 (5073)	63-50								
2.08	51368 (5238)	63-63																				
2.31	53891 (5495)	63-80																				

Ⓜ The Initial Load (±10%) is value at 20°C. The maximum load is theoretical value under static condition. Load depends on temperature. Ⓜ For fixing the GSP32-63 and GSQ32, make sure to use the mounting holes (Ma) and two bolts.
 Ⓜ Cannot be refilled or adjusted (pressure). • Load (kgf) = Load N × 0.101972 • Load (N) = Load (kgf) × 9.80665 • Nitrogen Gas Charge Pressure kgf/cm² = MPa × 10.1972 MPa = kgf/cm² × 0.0980665

Weight (kg)	D	d	M	L	H	Q	h	k	Ma Tap hole for Mounting	J	Load N (kgf)		Catalog No.	
											Initial Load	Maximum Load	Type	D-S
0.29	32	20	6	75	65	2	10.5	2 (R1)	M6 × 9	15	6600 (673)	9871 (1007)	GSQ (Main Body)	32-10
0.31				10837 (1105)	32-15									
0.33				11598 (1183)	32-20									
0.35				12140 (1238)	32-25									
0.38				12559 (1281)	32-32									
0.41				12464 (1271)	32-38									
0.44				12732 (1298)	32-45									
0.46				12988 (1324)	32-50									
0.49				12866 (1312)	32-56									
0.53				12505 (1275)	32-63									
0.60				12998 (1325)	32-80									

RoHS

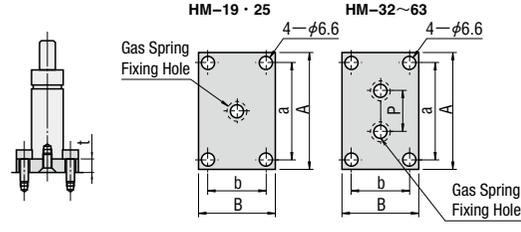


GSPH (Product Set)
GSQH (Product Set)

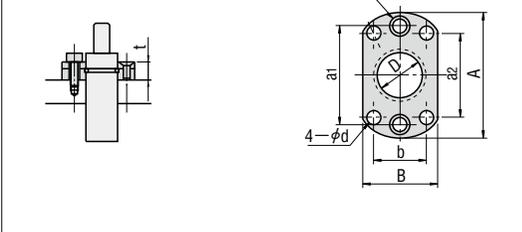
RoHS



HM (Individual Plate Product)
FM (Individual Plate Product)



HM-19 · 25 **HM-32~63**



Gas Spring Fixing Hole

Ⓜ SS400 Ⓜ Black Oxide (Fe₃O₄) Ⓜ S45C Ⓜ Black Oxide (Fe₃O₄)
 Ⓜ Bolt: FB5-10 × 2
 Ⓜ *With FM-63 Bolt: FB5-12 × 2
 Ⓜ Semi-circular Ring × 2

Accessory Bolt	A	B	a	b	P	t	Catalog No.
FB6-16 × 1	38	28	28	18	-	9	19
	44	28	34	18			25
FB6-16 × 2	51	32	41	22	15	9	32
	57	38	47	28			38
FB8-20 × 2	69	50	59	40	20	9	50
	84	65	70	50			63

A	B	a ₁	a ₂	b	d	D	t	Catalog No.
44	28	33	28	18	6.6	11	11	19
50	30	38	34	18				25
57	39	46	40	22				32
63	46	53	45	26	9.0	13	13	38
75	58	64	54	34				50
98	76	86	74	40				63

■ **GSQ32**
 The GSQ32 features a 32% higher initial load than the GSP32.
 The outer diameter and mounting holes etc., are all fully compatible between the two models.

■ **Gas Spring Temperature Range**
 The operating environment temperature is 0-40°C, but please ensure that the surface temperature of the gas spring does not exceed 80°C.

Order **Catalog No.**

GSP 32-25
 GSPH 38-38
 HM- 32

Days to Ship **Quotation**

• The GSN is the successor model to the GSC.

RoHS **GSN** (Main Body) **GSNB** (BM Plate Set)

Please do not use gas springs in excess of the specified stroke range(S), as it may cause any troubles including gas leakage.
To ensure it does not come into contact with the strain Relief Bushing.
Do not use the screw hole(M) to fix the gas spring with a bolt nor to install an extension pin. **P.1443**

Nitrogen Gas Charging Pressure

MPa (kgf/cm ²)
GSN 32 14.7 (150)
GSN 38 19.7 (201)
GSN 50 21.2 (216)
GSN 63 15.9 (162)

Cylinder body: **M** Equivalent to SCM440, **S** Black Oxide (Fe₃O₄)
Piston rod: **M** Equivalent to SCM440, **H** 600 HV~ (Surface), **S** Nitriding + Barrel finishing

Weight (kg)	D	d	M	L	H	Q	Ma Tap hole for Mounting	Load N (kgf)		Catalog No.	
								Initial Load	Maximum Load		
0.20	32	18	M6	55	45	2	M6 × 8	3750 (382)	5687 (580)	32-10	
0.22									5953 (607)		32-15
0.24									6115 (624)		32-20
0.25									6224 (635)		32-25
0.28									6234 (636)		32-32
0.30									6391 (652)		32-38
0.32									6445 (657)		32-45
0.34									6476 (660)		32-50
0.36									6327 (645)		32-56
0.39									6320 (644)		32-63
0.44	6584 (671)	32-80									
0.29	38	22	M6	55	45	2	M8 × 12	7500 (765)	12239 (1248)	38-10	
0.32									12933 (1319)		38-15
0.34									13362 (1363)		38-20
0.37									13652 (1392)		38-25
0.40									13681 (1395)		38-32
0.43									14100 (1438)		38-38
0.46									14246 (1453)		38-45
0.49									14329 (1461)		38-50
0.53									13931 (1421)		38-56
0.56									13914 (1419)		38-63
0.63	14622 (1491)	38-80									
0.53	50	30	M8	60	50	3	M10 × 12	15000 (1530)	22474 (2292)	50-10	
0.57									23947 (2442)		50-15
0.60									24924 (2542)		50-20
0.64									25618 (2612)		50-25
0.69									26309 (2683)		50-32
0.73									26739 (2727)		50-38
0.78									27122 (2766)		50-45
0.82									27340 (2788)		50-50
0.87									27558 (2810)		50-56
0.93									27766 (2831)		50-63
1.03	28137 (2869)	50-80									
0.71	63	40	M8	45	40	3	M10 × 15	20000 (2039)	27188 (2772)	63-5	
0.76									30213 (3081)		63-10
0.83									32666 (3331)		63-15
0.93									34258 (3493)		63-25
1.06									35241 (3594)		63-38
1.18									35741 (3645)		63-50
1.52									35214 (3591)		63-80
1.69									36603 (3732)		63-100

The initial load (±10%) is value at 20°C. The maximum load is theoretical value under static condition. Load depends on temperature. • Load (kgf) = Load N × 0.101972 • Load (N) = Load kgf × 9.80665
Cannot be refilled or adjusted (pressure). • Nitrogen Gas Charging Pressure kgf/cm² = MPa × 10.1972 MPa = kgf/cm² × 0.0980665

Gas Spring Temperature Range

The operating environment temperature is 0-40°C, but please ensure that the surface temperature of the gas spring does not exceed 80°C.

RoHS **GSNB** (Product Set) **BM** (Single Plate Product)

Order **Catalog No.**
GSN 32-25
GSNB 38-38
BM - 32

Days to Ship **Quotation**

• The MGSN is the successor model to the MGSC.

RoHS **MGSN**

Please do not use gas springs in excess of the specified stroke range(S), as it may cause any troubles including gas leakage.
The mounting taps (Ma) for the MGSN16-25 also operate as gas exhaust vents.
Screwing in the mounting screws to a depth that exceeds that of the tap is may cause of gas leakage.

Nitrogen Gas Charging Pressure

MPa (kgf/cm ²)
MGSN 16 20.0 (204)
MGSN 19 21.6 (220)
MGSN 25 20.4 (208)
MGSN 32 20.0 (204)

Cylinder body: **M** Equivalent to SCM440, **S** Black Oxide (Fe₃O₄)
Piston rod: **M** Equivalent to SCM440, **H** 660 HV~ (Surface), **S** Nitriding + Barrel finishing

Weight (kg)	D	d	M	L	H	Ma Tap hole for Mounting	Load N (kgf)		Catalog No.
							Initial Load	Maximum Load	
0.05	16	8	-	55	45	M5 × 7	1000 (102)	1405 (143)	MGSN 16-10 16-15 16-25 16-38
0.05				65	50			1496 (153)	
0.06				85	60			1607 (164)	
0.07				111	73			1685 (172)	
0.06	19	10	-	55	45	M5 × 7	1700 (173)	2373 (242)	19-10 19-15 19-25 19-38
0.07				65	50			2505 (255)	
0.08				85	60			2654 (271)	
0.09				111	73			2755 (281)	
0.11	25	15	-	55	45	M6 × 8	3600 (367)	5397 (550)	25-10 25-15 25-25 25-38
0.12				65	50			5721 (593)	
0.13				85	60			6079 (620)	
0.16				111	73			6314 (644)	
0.20	32	18	M6	55	45	M6 × 8	5100 (520)	8090 (825)	32-10 32-15 32-20 32-25 32-32 32-38 32-45 32-50 32-56 32-63 32-80
0.22				65	50			8510 (868)	
0.24				75	55			8767 (894)	
0.25				85	60			8940 (912)	
0.28				100	68			8955 (913)	
0.30				111	73			9205 (939)	
0.32				125	80			9292 (948)	
0.34				135	85			9340 (952)	
0.36				150	94			9103 (928)	
0.39				165	102			9092 (927)	
0.44	195	115	9513 (970)						

The initial load (±10%) is value at 20°C. The maximum load is theoretical value under static condition. Load depends on temperature. • Load (kgf) = Load N × 0.101972 • Load (N) = Load kgf × 9.80665
Cannot be refilled or adjusted (pressure). • Nitrogen Gas Charging Pressure kgf/cm² = MPa × 10.1972 MPa = kgf/cm² × 0.0980665

Gas Spring Temperature Range

The operating environment temperature is 0-40°C, but please ensure that the surface temperature of the gas spring does not exceed 80°C.

Order **Catalog No.**
MGSN 19-25

Days to Ship **Quotation**

• The MGSL is the successor model to the MGSA.

RoHS

MGSL (Main Body)
MGSLH (H Plate Set)
MGSLF (F Plate Set)

⚠ The MGSL25 has a bottom seal type safety device. The diameter of the counterbore holes must be set to at least D + 4 mm in order to ensure correct operation of the DSAS. Safety Device Details **P.1447**
⚠ Please do not use gas springs in excess of the specified stroke range(S), as it may cause any troubles including gas leakage.
⚠ Do not use the screw hole(M) to fix the gas spring with a bolt nor to install an extension pin. **P.1443**
⚠ *1 The mounting taps (Ma) for the MGSL also operate as gas exhaust vents.
⚠ *2 The outer diameter tolerance (D) for the MGSL19 is D ± 0.02 .

Nitrogen Gas Charging Pressure	MPa (kgf/cm ²)	Cylinder body	Piston rod
MGSL19	10.2 {104}	Equivalent to SCM440 600 HV~ (Surface) Black Oxide (Fe ₃ O ₄)	Equivalent to SCM440 600 HV~ (Surface) Nitriding + Barrel finishing
MGSL25			

Weight (kg)	D	d	M	L	H	Q	h	K	Ma	Load N {kgf}		Catalog No.	
										Initial Load	Maximum Load	Type	D-S
0.08	19	10	M5	65	55	1	18	2 (R1)	M6 × 6	800 {82}	1043 {106}	MGSL (Main Body)	19-10
0.08				1103 {112}	19-15								
0.09				1177 {120}	19-25								
0.11				1231 {126}	19-38								
0.12				1262 {129}	19-50								
0.15				1304 {133}	19-80								
0.15	25	14	M6	65	55	2	17	2 (R1)	M6 × 6	1600 {163}	2371 {242}	MGSLH (H Plate Set) MGSLF (F Plate Set)	25-10
0.16				2528 {258}	25-15								
0.18				2706 {276}	25-25								
0.22				2825 {288}	25-38								
0.25				2889 {295}	25-50								
0.32				2973 {303}	25-80								

⚠ The Initial load (±10%) is value at 20°C. The maximum load is theoretical value under static condition. Load depends on temperature.
⚠ Cannot be refilled or adjusted (pressure).

• Load (kgf) = Load N × 0.101972 • Load (N) = Load kgf × 9.80665
• Nitrogen Gas Charging Pressure kgf/cm² = MPa × 10.1972 MPa = kgf/cm² × 0.0980665

MGSLH (Product Set) **RoHS**

Ⓜ SS400
Ⓢ Black Oxide (Fe₃O₄)

Accessory Bolt	A	B	a	b	t	Catalog No.
FB6-16 × 1	38	28	28	18	9	H 19
FB6-16 × 1	44		34			H 25

MGSLF (Product Set) **RoHS**

Ⓜ SS400
Ⓢ Black Oxide (Fe₃O₄)
Ⓜ Accessories Bolt FB5-10 × 2
Ⓜ Semi-circular Ring × 2

A	B	a1	a2	b	d	D	t	Catalog No.
44	28	33	28	18	6.6	19	11	F 19
50	30	38	34			25		F 25

• The MGSM is the successor model to the MGSB.

RoHS

MGSM

⚠ Please do not use gas springs in excess of the specified stroke range(S), as it may cause any troubles including gas leakage.

Nitrogen Gas Charging Pressure	MPa (kgf/cm ²)	Cylinder body	Piston rod
MGSM12	12.0 {122}	Equivalent to SCM440 600 HV~ (Surface) Black Oxide (Fe ₃ O ₄)	Equivalent to SCM440 600 HV~ (Surface) Nitriding + Barrel finishing
MGSM16	10.1 {103}		

Weight (kg)	D1	D2	d	L1	H	M × P (Fine thread)	L2	Load N {kgf}		Catalog No.	
								Initial Load	Maximum Load	Type	M-S
0.04	14	10.2	5	75	65	M12 × P1.25	27	400 {41}	595 {61}	MGSM	12-10
0.04				90	75				629 {64}		12-15
0.08	18	14.2	8	75	65	M16 × P1.5	37	800 {82}	1244 {127}		16-10
0.09				90	75				1334 {136}		16-15
0.10				120	95				1437 {147}		16-25

⚠ The Initial load (±10%) is value at 20°C. The maximum load is theoretical value under static condition. Load depends on temperature.
⚠ Cannot be refilled or adjusted (pressure).

• Load (kgf) = Load N × 0.101972 • Load (N) = Load kgf × 9.80665
• Nitrogen Gas Charging Pressure kgf/cm² = MPa × 10.1972 MPa = kgf/cm² × 0.0980665

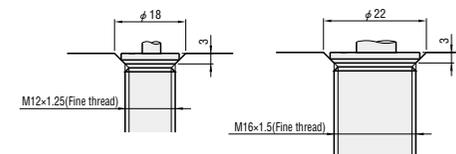
Gas Spring Temperature Range

The operating environment temperature is 0-40°C, but please ensure that the surface temperature of the gas spring does not exceed 80°C.

Order **Catalog No.**
MGSM 12-15

Days to Ship **Quotation**

How to Mount



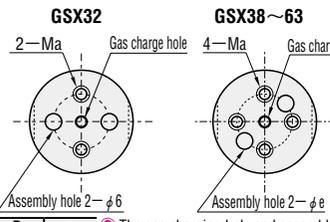
Machine the mounting screws in the manner listed above and ensure the MGSM's flange and the mounting surface are in contact.
As well as preventing the flange part from spinning too much, this also stops it from coming loose so easily.
Mounting Wrench: Please use the PJG wrench.

GAS SPRINGS

—CLASSIC TYPE—

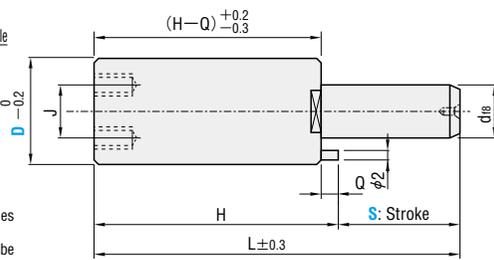
RoHS

GSX



D	e	* The gas charging hole and assembly holes cannot be used for product mounting. The assembly holes will not necessarily be aligned with the spanner grooves.
38	6	
50	7	
63	8	
Nitrogen gas charge pressure		MPa(kgf/cm ²)
GSX32		18.7(191)
GSX38		18.4(188)
GSX50		19.2(196)
GSX63		19.2(196)

⚠ If a gas spring is used in excess of the specified stroke range S, it may cause gas leakage. Use the gas spring within the specified range to avoid contact with the overstroke check pin.
 ⚠ Do not use the screw hole to fix the gas spring with a bolt nor to install an extension pin. The specifications of plates, refer to the page at right.



Cylinder body
 M Equivalent to S45C
 S Black oxide (Fe₃O₄)

Piston rod
 M SCM435
 S 750HV ~ (Surface)
 S Hardening+Polishing finish

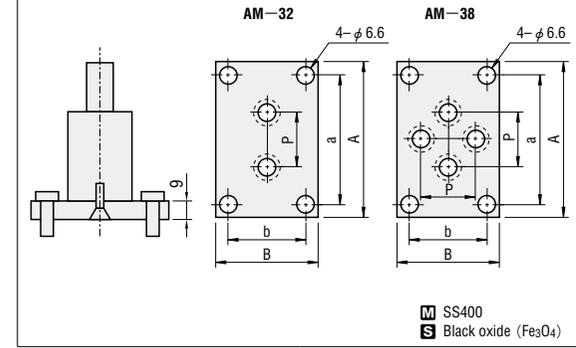
Weight (kg)	D	d	L	H	Ma Tap hole for mounting	J	Q	Load N(kgf)		Catalog No.							
								Initial load	Maximum load	Type	D-S						
0.30	32	18	75	65	M6×9	15	2	4750 (484)	7200 (734)		32-10						
0.32			85	70					8000 (816)	32-15							
0.34			95	75					8300 (846)	32-20							
0.35			105	80					8600 (877)	32-25							
0.39			120	88					8700 (887)	32-32							
0.42			135	97					8850 (902)	32-38							
0.43			145	100					9000 (918)	32-45							
0.45			155	105					9250 (943)	32-50							
0.49			170	114					9300 (948)	32-56							
0.51			185	122					9300 (948)	32-63							
0.57			220	140					9350 (953)	32-80							
0.41			38	25					75	65	M6×9	20	2	9030 (921)	15000 (1530)		38-10
0.44									85	70					17200 (1754)	38-15	
0.47									95	75					17800 (1815)	38-20	
0.49									105	80					18400 (1876)	38-25	
0.55	120	88			18800 (1917)	38-32											
0.59	135	97			19100 (1948)	38-38											
0.60	145	100			19500 (1988)	38-45											
0.62	155	105			19700 (2009)	38-50											
0.67	170	114			19700 (2009)	38-56											
0.70	185	122			19800 (2019)	38-63											
0.80	220	140			19900 (2029)	38-80											
0.90	50	35			110	95	M8×12	25	3	19000 (1937)					24000 (2447)		50-15
0.93					120	100									25000 (2549)	50-20	
0.98					130	105									26000 (2651)	50-25	
1.05					145	113									27000 (2753)	50-32	
1.09			155	117	28000 (2855)	50-38											
1.14			170	125	28500 (2906)	50-45											
1.19			180	130	29000 (2957)	50-50											
1.29			195	139	30000 (3059)	50-56											
1.30			205	142	30500 (3110)	50-63											
1.45			240	160	31500 (3212)	50-80											
1.61			63	45	120	100					M8×12	35	3	31000 (3161)	42500 (4334)		63-20
1.64					130	105									43500 (4436)	63-25	
1.75					145	113									45500 (4640)	63-32	
1.80					155	117									47000 (4793)	63-38	
1.91					170	125									48000 (4895)	63-45	
1.93	180	130			49000 (4997)	63-50											
2.12	205	142			51000 (5201)	63-63											
2.34	240	160			52500 (5354)	63-80											

⚠ The initial load and maximum load vary depending on the temperature and operation speed. The load error is ±10%.
 ●Load (kgf)=Load N×0.101972 ●Load (N)=Load kgf×9.80665 ●Nitrogen gas charge pressure kgf/cm²=MPa×10.1972 MPa=kgf/cm²×0.0980665

RoHS



AM (Plate only)



Provided bolts	A	B	a	b	P	Catalog No.
FB6-16×2 pcs.	51	32	41	22	15	AM 32
FB6-16×4 pcs.	57	38	47	28	20	AM 38

⚠ It is recommended that thread locking compound be applied to the bolts before they are used.

Gas spring temperature range
 The operating environment temperature range is 0~40°C. Ensure that the surface temperature of the gas spring does not exceed 80°C.

Order **Catalog No.**
 GSX 32-38
 AM-32

Days to Ship **Quotation**

Price **Quotation**



GAS SPRINGS

— GLOBAL STANDARD TYPE GSV —



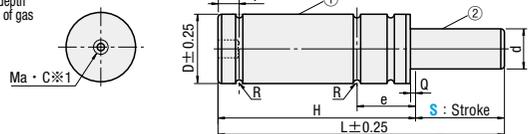
RoHS

GSV

Please inquire separately when using GSV 170 - 320 with piping.
 If a gas spring is used in excess of the specified stroke range S, it may cause gas leakage.
 Use the gas spring within the specified stroke range to avoid the Relief bushing is pushed down. **P.1448**

*1 The mounting taps (Ma) for the GSV170/320 also operate as gas exhaust vents. Screwing in the mounting screws to a depth that exceeds that of the tap may cause of gas leakage.

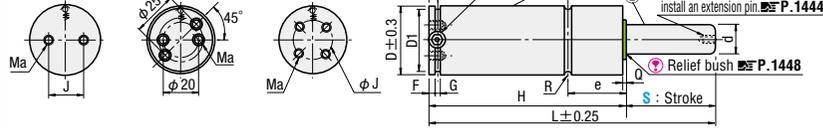
GSV 170 - 320



GSV 350
GSV 750~1500

GSV 500

GSV 2400~12000



Nitrogen gas charge pressure	MPa(kgf/cm ²)
GSV 170~350	18(183.5)
GSV 500~20000	15(153)

- ① Cylinder body
- ② Piston rod
- M Equivalent to SCM440
- S Black oxide (Fe₃O₄)
- H Equivalent to SCM440
- H 600HV ~ (Surface)
- S Nitriding + Barrel finishing



Weight (kg)	D	D1	d	L	H	e	R	T	F	G	Ma Tap hole for mounting	J	Q	C	Load N (kgf)		Catalog No.	Adaptable plate	
															Initial load	Maximum load		Type	Initial load - S
0.06	19	17	11	44	37	17	1	6	-	-	1-M6×6	-	1	M6	1700 [173]	2800 [286]	FCC19	170 - 7	-
0.06				50	40											2800 [286]	FCC19	170 - 10	-
0.07				60	45											2800 [286]	FCC19	170 - 15	-
0.07				68	49											2800 [286]	FCC19	170 - 19	-
0.08				80	55											2800 [286]	FCC19	170 - 25	-
0.09				106	68											2800 [286]	FCC19	170 - 38	-
0.11				130	80											2800 [286]	FCC19	170 - 50	-
0.12				156	93											2800 [286]	FCC19	170 - 63	-
0.14				185	110											2800 [286]	FCC19	170 - 75	-
0.15				195	115											2800 [286]	FCC19	170 - 80	-
0.17				235	135											2800 [286]	FCC19	170 - 100	-
0.19				285	160											2800 [286]	FCC19	170 - 125	-
0.10	25	23	15	44	37	17	1	6	-	-	1-M6×6	-	1	M6	3200 [326]	4800 [488]	FCC25	320 - 7	-
0.10				50	40											4900 [500]	FCC25	320 - 10	-
0.11				60	45											5100 [520]	FCC25	320 - 15	-
0.12				68	49											5100 [520]	FCC25	320 - 19	-
0.13				80	55											5200 [530]	FCC25	320 - 25	-
0.15				106	68											5300 [540]	FCC25	320 - 38	-
0.17				130	80											5300 [540]	FCC25	320 - 50	-
0.19				156	93											5300 [540]	FCC25	320 - 63	-
0.22				185	110											5300 [540]	FCC25	320 - 75	-
0.23				195	115											5300 [540]	FCC25	320 - 80	-
0.26				235	135											5300 [540]	FCC25	320 - 100	-
0.30				285	160											5300 [540]	FCC25	320 - 125	-
0.16	32	27	16	50	40	12.5	1.05	6	4	3.5	2-M6×6	20	2	M6	3600 [367]	5900 [602]	FFC32	350 - 10	FSA32
0.17				56	43											5200 [530]	FFC32	350 - 13	FSD32
0.18				62	46											5300 [540]	FFC32	350 - 16	FSD32
0.19				68	49											5600 [571]	FFC32	350 - 19	FSD32
0.21				80	55											5500 [561]	FFC32	350 - 25	FSD32
0.23				94	62											5500 [561]	FFC32	350 - 32	FSD32
0.25				106	68											5500 [561]	FFC32	350 - 38	FSD32
0.29				130	80											5500 [561]	FFC32	350 - 50	FSD32
0.33				156	93											5500 [561]	FFC32	350 - 63	FSD32
0.36				180	105											5500 [561]	FFC32	350 - 75	FSD32
0.38				190	110											5500 [561]	FFC32	350 - 80	FSD32
0.44				230	130											5500 [561]	FFC32	350 - 100	FSD32
0.51	280	155	5500 [561]	FFC32	350 - 125	FSD32													
0.24	38	33	20	50	40	12.5	1.05	6	4	3.5	2-M6×6 (φ20) or 2-M6×6 (φ25)	-	2	M6	4700 [479]	7200 [734]	FFC38	500 - 10	FSA38
0.25				56	43											7100 [724]	FFC38	500 - 13	FSD38
0.26				62	46											7200 [734]	FFC38	500 - 16	FSD38
0.28				68	49											7400 [755]	FFC38	500 - 19	FSD38
0.31				80	55											7300 [744]	FFC38	500 - 25	FSD38
0.34				94	62											7200 [734]	FFC38	500 - 32	FSD38
0.37				106	68											7200 [734]	FFC38	500 - 38	FSD38
0.42				130	80											7200 [734]	FFC38	500 - 50	FSD38
0.48				156	93											7200 [734]	FFC38	500 - 63	FSD38
0.54				180	105											7100 [724]	FFC38	500 - 75	FSD38
0.61				190	110											7100 [724]	FFC38	500 - 80	FSD38
0.70				230	130											7100 [724]	FFC38	500 - 100	FSD38
0.77	280	155	7100 [724]	FFC38	500 - 125	FSD38													
0.36	45	40	25	52	42	16.5	1.05	6	4	3.5	2-M8×6	20	2	M6	7400 [755]	12100 [1234]	FB45	750 - 10	FSA45
0.38				58	45											12100 [1234]	FB45	750 - 13	FSD45
0.39				64	48											12100 [1234]	FB45	750 - 16	FSD45
0.41				70	51											11700 [1193]	FB45	750 - 19	FSD45
0.45				82	57											11800 [1203]	FB45	750 - 25	FSD45
0.50				96	64											11800 [1203]	FB45	750 - 32	FSD45
0.54				108	70											11800 [1203]	FB45	750 - 38	FSD45
0.61				132	82											11800 [1203]	FB45	750 - 50	FSD45
0.70				158	95											11800 [1203]	FB45	750 - 63	FSD45
0.77				182	107											11900 [1213]	FB45	750 - 75	FSD45
0.81				192	112											11900 [1213]	FB45	750 - 80	FSD45
0.93				232	132											11900 [1213]	FB45	750 - 100	FSD45
1.10	282	152	11900 [1213]	FB45	750 - 125	FSD45													

Weight (kg)	D	D1	d	L	H	e	R	T	F	G	Ma Tap hole for mounting	J	Q	C	Load N (kgf)		Catalog No.	Adaptable plate	
															Initial load	Maximum load		Type	Initial load - S
0.49	50	43	28	58	48	17.5	2.05	6	8	5	2-M8×6	20	3	M6	9200 [938]	13800 [1407]	1000 - 10	FB50	FSA50
0.51				64	51											13800 [1407]	1000 - 13	FSD50	
0.54				70	54											13800 [1407]	1000 - 16	FSD50	
0.56				76	57											14000 [1428]	1000 - 19	FSD50	
0.61				88	63											14200 [1448]	1000 - 25	FSD50	
0.67				102	70											14500 [1478]	1000 - 32	FSD50	
0.71				114	76											14600 [1489]	1000 - 38	FSD50	
0.81				138	88											14700 [1499]	1000 - 50	FSD50	
0.91				164	101											14700 [1499]	1000 - 63	FSD50	
1.05				188	113											14800 [1509]	1000 - 75	FSD50	
1.09				198	118											14800 [1509]	1000 - 80	FSD50	
1.21				238	138											14800 [1509]	1000 - 100	FSD50	
1.41	288	163	14800 [1509]	1000 - 125	FSD50														
0.92	63	56	36	70	57	19	2.05	6	8	5	2-M8×6	20	3	M6	15000 [1530]	24000 [2447]	1500 - 12	FB50	FSA50
0.96				76	60											24100 [2458]	1500 - 16	FSD63	
0.99				82	63											24200 [2468]	1500 - 19	FSD63	
1.06				94	69											24300 [2478]	1500 - 25	FSD63	
1.14				108	76											23800 [2427]	1500 - 32	FSD63	
1.21				120	82											23900 [2437]	1500 - 38	FSD63	
1.35				144	94											24000 [2447]	1500 - 50	FSD63	
1.51				170	107											24100 [2458]	1500 - 63	FSD63	
1.65				194	119											24200 [2468]	1500 - 75	FSD63	
1.71				204	124											24200 [2468]	1500 - 80	FSD63	
1.94				244	144											24300 [2478]	1500 - 100	FSD63	
2.23				294	169											24300 [2478]	1500 - 125	FSD63	
1.36	75	67	45	77	61	21	2.55	6	8	5	4-M8×6	40	3	M6	24000 [2447]	38300 [3906]	2400 - 16	FB75	FSA75
1.40				83	64											38500 [3926]	2400 - 19	FSD75	
1.50				95	70											38700 [3946]	2400 - 25	FSD75	
1.61				109	77											38600 [3936]	2400 - 32	FSD75	
1.70				121	83											38400 [3916]	2400 - 38	FSD75	
1.89				145	95											39200 [3997]	2400 - 50	FSD75	
2.09				171	108											39200 [3997]	2400 - 63	FSD75	
2.28				195	120											39200 [3997]	2400 - 75	FSD75	
2.36				205	125											39200 [3997]	2400 - 80	FSD75	
2.67				245	145											39300 [4007]	2400 - 100	FSD75	
3.07				295	170											39300 [4007]	2400 - 125	FSD75	
2.76				95	87											60	90	74	24
2.83	96	77	63700 [6496]			4200 - 19	FSD95												
2.98	108	83	60800 [6200]			4200 - 25	FSD95												
3.16	122	90	64300 [6557]			4200 - 32	FSD95												
3.30	134	96	65800 [6710]			4200 - 38	FSD95												
3.60	158	108	67000 [6832]			4200 - 50	FSD95												
3.93	184	121	67800 [6914]			4200 - 63	FSD95												
4.20	208	133	68000 [6934]			4200 - 75	FSD95												
4.35	218	138	68600 [6995]			4200 - 80	FSD95												
4.85	258	158	69100 [7046]			4200 - 100	FSD95												
5.47	308	183	69600 [7097]			4200 - 125	FSD95												
5.06	120	112	75			100	84	25.5	2.55	10.5	8	5	4-M10×13	80	3		G1/8	66000 [6730]	
5.17				106	87	91000 [9279]	6600 - 19									FSD120			
5.42				118	93	93900 [9575]	6600 - 25									FSD120			
5.69				132	100	96100 [9799]	6600 - 32									FSD120			
5.93				144	106	98200 [10014]	6600 - 38									FSD120			
6.40				168	118	100600 [10258]	6600 - 50									FSD120			
6.90				194	131	102400 [10442]													

GAS SPRINGS

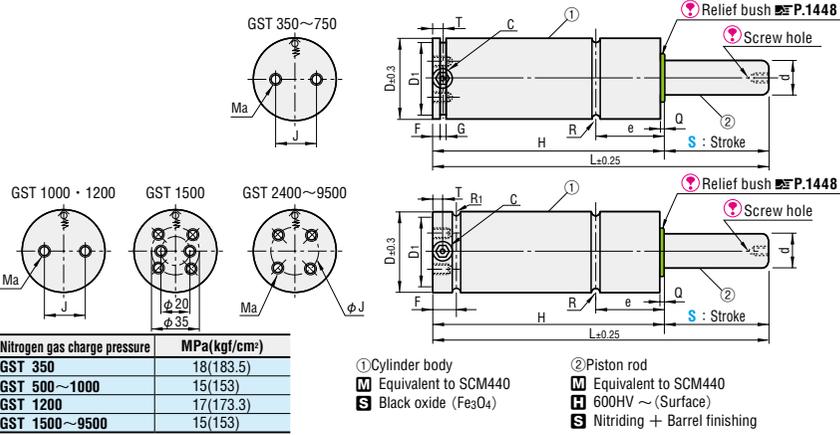
—GST—



RoHS

GST

⚠ If a gas spring is used in excess of the specified stroke range S, it may cause gas leakage. Use the gas spring within the specified stroke range to avoid the Relief bushing is pushed down. **P.1448**
 ⚠ Do not use the screw hole to fix the gas spring with a bolt nor to install an extension pin. **P.1444**



Nitrogen gas charge pressure	MPa(kgf/cm ²)
GST 350	18(183.5)
GST 500~1000	15(153)
GST 1200	17(173.3)
GST 1500~9500	15(153)

Weight (kg)	D	D ₁	d	L	H	e	R	T	F	G	R ₁	Ma Top hole for mounting	J	Q	C	Load N (kgf)		Catalog No.		Adaptable plate																		
																Initial load	Maximum load	Type	Initial load — S	Vertical	Horizontal																	
0.22	32	27	16	60	50	12.5	1.05	10.5	4	3.5	—	2— M6×16	20	2	G1/8	3600 {367}	5900 {602}	350—10	FFC32 FFCA32 FCQ32 FC32	FSA32 FSD32																		
0.23				66	53												5200 {530}	350—13																				
0.24				72	56												5300 {540}	350—16																				
0.25				78	59												5600 {571}	350—19																				
0.26				90	65												5500 {561}	350—25																				
0.29				104	72												5500 {561}	350—32																				
0.30				116	78												5500 {561}	350—38																				
0.34				140	90												5600 {571}	350—50																				
0.38				166	103												5500 {561}	350—63																				
0.42				190	115												5500 {561}	350—75																				
0.43				200	120												5500 {561}	350—80																				
0.49				240	140												5500 {561}	350—100																				
0.57				290	165												5500 {561}	350—125																				
0.33				38	33												20	60				50	12.5	1.05	10.5	4	3.5	—	2— M6×16	25	2	G1/8	4700 {479}	7200 {734}	500—10	FFC38 FFCA38 FT38 FTP38 FCQ38 FC38	FSA38 FSD38	
0.34																		66				53												7100 {724}	500—13			
0.36																		72				56												7200 {734}	500—16			
0.37	78	59	7400 {755}			500—19																																
0.40	90	65	7300 {744}			500—25																																
0.43	104	72	7200 {734}			500—32																																
0.46	116	78	7200 {734}			500—38																																
0.52	140	90	7200 {734}			500—50																																
0.58	166	103	7200 {734}			500—63																																
0.63	190	115	7100 {724}			500—75																																
0.66	200	120	7100 {724}			500—80																																
0.75	240	140	7100 {724}			500—100																																
0.87	290	165	7100 {724}			500—125																																
0.52	45	40	25			73	60	16.5	1.05	10.5	4	3.5	—	2— M8×16	20	2		G1/8	7400 {755}	12100 {1234}	750—13	FBA45 FBB45 FFC45 FFCA45 FT45 FTP45 FCQ45 FC45												FSA45 FSD45				
0.54						79	63													12100 {1234}	750—16																	
0.56						85	66													11700 {1193}	750—19																	
0.60				97	72	11800 {1203}	750—25																															
0.64				111	79	11800 {1203}	750—32																															
0.68				123	85	11800 {1203}	750—38																															
0.76				147	97	11800 {1203}	750—50																															
0.84				173	110	11800 {1203}	750—63																															
0.92				197	122	11900 {1213}	750—75																															
0.95				207	127	11900 {1213}	750—80																															
1.08				247	147	11900 {1213}	750—100																															
1.24				297	172	11900 {1213}	750—125																															
0.72				50	46	28	72										62			17.5	2.05		10.5	13	—	—	2— M10×16	31.7	3	G1/8	9200 {938}	13500 {1377}	1000—10			FFS50 FCQ50 FC50	FSA50 FSD50	
0.75							78										65															13800 {1407}	1000—13					
0.77							84										68															13800 {1407}	1000—16					
0.82							90										71															14000 {1428}	1000—19					
0.86	102	77	14200 {1448}				1000—25																															
0.92	116	84	14300 {1458}				1000—32																															
0.97	128	90	14500 {1479}				1000—38																															
1.08	152	102	14600 {1489}				1000—50																															
1.18	178	115	14700 {1499}				1000—63																															
1.28	202	127	14700 {1499}				1000—75																															
1.35	212	132	14800 {1509}				1000—80																															
1.51	252	152	14800 {1509}				1000—100																															
1.71	302	177	14800 {1509}				1000—125																															

⚠ The Initial load (±10%) is value at 20°C. The maximum load is theoretical value under static condition. Load depends on temperature.
 ●Load (kgf) = Load N×0.101972 ●Load (N) = Load kgf×9.80665 ●Nitrogen gas charge pressure kgf/cm² = MPa×10.1972 MPa = kgf/cm²×0.0980665

Weight (kg)	D	D ₁	d	L	H	e	R	T	F	G	R ₁	Ma Top hole for mounting	J	Q	C	Load N (kgf)		Catalog No.		Adaptable plate																		
																Initial load	Maximum load	Type	Initial load — S	Vertical	Horizontal																	
0.72	50	46	28	72	62	17.5	2.05	10.5	13	—	2.05	2— M10×16	31.7	3	G1/8	10600 {1081}	13700 {1397}	1200—10	FFS50 FCQ50 FC50	FSA50 FSD50																		
0.75				78	65												14200 {1448}	1200—13																				
0.77				84	68												14500 {1479}	1200—16																				
0.82				90	71												14800 {1509}	1200—19																				
0.86				102	77												15200 {1550}	1200—25																				
0.92				116	84												15500 {1581}	1200—32																				
0.97				128	90												15700 {1601}	1200—38																				
1.08				152	102												16000 {1632}	1200—50																				
1.18				178	115												16200 {1652}	1200—63																				
1.28				202	127												16400 {1672}	1200—75																				
1.35				212	132												16400 {1672}	1200—80																				
1.51				252	152												16600 {1693}	1200—100																				
1.71				302	177												16700 {1703}	1200—125																				
1.10				63	59												36	72				62	19	2.05	10.5	13	—	2.05	2— M8×16 or 4— M8×16	20 or 35	3	G1/8	15300 {1560}	23700 {2417}	1500—10	FB50 FBA50 FBB63 FFS63 FCQ63 FC63	FSC63 FSD63	
1.12																		78				65												24000 {2447}	1500—13			
1.16																		84				68												24100 {2458}	1500—16			
1.20	90	71	24200 {2468}			1500—19																																
1.27	102	77	24300 {2478}			1500—25																																
1.35	116	84	23800 {2427}			1500—32																																
1.42	128	90	23900 {2437}			1500—38																																
1.56	152	102	24000 {2447}			1500—50																																
1.71	178	115	24100 {2458}			1500—63																																
1.85	202	127	24200 {2468}			1500—75																																
1.91	212	132	24200 {2468}			1500—80																																
2.15	252	152	24300 {2478}			1500—100																																
2.44	302	177	24300 {2478}			1500—125																																
1.73	75	70	45			79	69	21	2.55	10.5	13	—	2.55	4— M12×16	53.9	3		G1/8	23850 {2432}	38100 {3885}	2400—10	FFS75 FCQ75 FC75												FSA75 FSD75				
1.77						85	72													38200 {3895}	2400—13																	
1.82						91	75													38300 {3906}	2400—16																	
1.87				97	78	38500 {3926}	2400—19																															
1.96				109	84	38700 {3946}	2400—25																															
2.08				123	91	38600 {3936}	2400—32																															
2.18				135	97	38400 {3916}	2400—38																															
2.37				159	109	39200 {3997}	2400—50																															
2.58				185	122	39200 {3997}	2400—63																															
2.83				209	134	39200 {3997}	2400—75																															
2.91				219	139	39200 {3997}	2400—80																															
3.22				259	159	39300 {4007}	2400—100																															
3.63				309	184	39300 {4007}	2400—125																															
3.18				95	90	60	94										78			24	2.55		10.5	13	—	2.55	4— M12×16	76.2	3	G1/8	42400 {4324}	61700 {6292}	4200—16			FFS95 FCQ95 FC95	FSA95 FSD95	
3.27							100										81															61700 {6292}	4200—19					
3.47							112										87															60800 {6200}	4200—25					
3.64	126	94	64300 {6557}				4200—32																															
3.79	138	100	65800 {6710}				4200—38																															
4.25	162	112	67000 {6832}				4200—50																															
4.47	188	125	67800 {6914}				4200—63																															
4.77	212	137	68000 {6934}				4200—75																															
4.96	222	142	68600 {6995}				4200—80																															
5.45	262	162	69100 {7046}				4200—100																															
6.07	312	187	69600 {7097}				4200—125																															
5.55	120	115	75				104	88	25.5	2.55	10.5	13	—	2.55	4— M12×16	80.8	3	G1/8	66300 {6761}			89000 {9075}										6600—16	FBA120 FBB120 FFS120 FCQ120 FC120	FSA120 FSD120				
5.67							110	91														91000 {9279}										6600—19						
5.91							122	97														93900 {9575}										6600—25						
6.18							136	104														96100 {9799}										6600—32						
6.43							148	110														98200 {10014}										6600—38						
6.90				172	122	100600 {10258}	6600—50																															
7.42				198	135	102400 {10442}	6600—63																															
7.90				222	147	103400 {10544}	6600—75																															
8.01				232	152	104100 {10615}	6600—80																															
8.89				272	172	105400 {10748}	6600—100																															
9.89				322	197	106500 {10860}	6600—125																															
9.79				150	145	90	116	97												27.5	2.55	10.5	13	—	2.55	4— M12×16	100	3	G1/8	95400 {9728}	134900 {13756}	9500—19				FBA150 FBB150 FFS150 FCQ150 FC150	FSA150 FSD150	
10.16							128	103																							138900 {14164}	9500—25						
10.60							142	110																							141900 {14470}	9500—32						
10.97							154	116																							142900 {14572}	9500—38						
11.72							178	128																							145900 {14878}	9500—50						
12.53	204	141	147900 {15082}				9500—63																															
13.28	228	153	148900 {15184}				9500—75																															
13.59	238	158	149900 {15286}				9500—80																															
14.84	278	178	150900 {15388}				9500—100																															
16.39	328	203	151900 {15489}				9500—125																															

Gas spring temperature range

The operating environment temperature range is 0~40°C. Ensure that the surface temperature of the gas spring does not exceed 80°C.



Order

Catalog No.

GST 750—50



Days to Ship

Quotation



Price

Quotation



Alterations



Catalog No. — (N)

GST1500—25 — N

Alteration	Code	Spec.
For piping gas releasing	N	For piping, we ship inside gas and valve and pull out. Reduce labor of assembling joints and hoses.

GAS SPRINGS

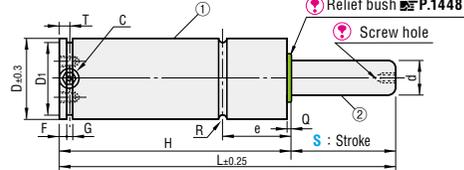
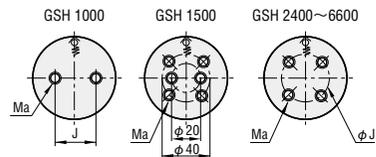
—GSH—



RoHS

GSH

- ⚠ If a gas spring is used in excess of the specified stroke range S, it may cause gas leakage. Use the gas spring within the specified stroke range to avoid the Relief bushing is pushed down. **P.1448**
- ⚠ Do not use the screw hole to fix the gas spring with a bolt nor to install an extension pin. **P.1444**



- ① Cylinder body
- ② Piston rod
- Ⓜ Equivalent to SCM440
- Ⓢ Black oxide (Fe₃O₄)
- Ⓜ Equivalent to SCM440
- Ⓢ 600HV ~ (Surface)
- Ⓢ Nitriding + Barrel finishing

Nitrogen gas charge pressure	MPa (kgf/cm ²)
GSH 1000~6600	15 (153)

Weight (kg)	D	Di	d	L	H	e	R	T	F	G	Ma Tap hole for mounting	J	Q	C	Load N (kgf)		Catalog No.	Adaptable plate																		
															Initial load	Maximum load		Type	Initial load -- S	Vertical	Horizontal															
																						Initial load	Maximum load													
0.72	50	43	28	72	62	15.5	2.05	10.5	8	5	2- M8x16	20	3	G1/8	9200 {938}	13500	{1377}	FSA50 FSD50																		
0.75				78	65											13800	{1407}																			
0.77				84	68											13800	{1407}																			
0.82				90	71											14000	{1428}																			
0.86				102	77											14200	{1448}																			
0.92				116	84											14300	{1458}																			
0.97				128	90											14500	{1479}																			
1.08				152	102											14600	{1489}																			
1.18				178	115											14700	{1499}																			
1.28				202	127											14700	{1499}																			
1.35				212	132											14800	{1509}																			
1.51				252	152											14800	{1509}																			
1.71				302	177											14800	{1509}																			
1.10				63	56											36	72				62	19	2.05	10.5	8	5	2- M8x16 (for φ20) or 4- M8x16 (for φ40)	-	3	G1/8	15300 {1560}	23700	{2417}	FSA50 FSD50		
1.12																	78				65											24000	{2447}			
1.16																	84				68											24100	{2458}			
1.20																	90				71											24200	{2468}			
1.27	102	77	24300			{2478}																														
1.35	116	84	23800			{2427}																														
1.42	128	90	23900			{2437}																														
1.56	152	102	24000			{2447}																														
1.71	178	115	24100			{2458}																														
1.85	202	127	24200			{2468}																														
1.91	212	132	24200			{2468}																														
2.15	252	152	24300			{2478}																														
2.44	302	177	24300			{2478}																														
1.73	75	67	45			79	69	21	2.55	10.5	8	5	4- M8x16	40	3		G1/8	23850 {2432}	38100	{3885}	FSA75 FSD75															
1.77						85	72												38200	{3895}																
1.82						91	75												38300	{3906}																
1.87						97	78												38500	{3926}																
1.96				109	84	38700	{3946}																													
2.08				123	91	38600	{3936}																													
2.18				135	97	38400	{3916}																													
2.37				159	109	39200	{3997}																													
2.58				185	122	39200	{3997}																													
2.83				209	134	39200	{3997}																													
2.91				219	139	39200	{3997}																													
3.22				259	159	39300	{4007}																													
3.63				309	184	39300	{4007}																													

⚠ The initial load (±10%) is value at 20°C. The maximum load is theoretical value under static condition. Load depends on temperature.
 ● Load [kgf] = Load N/0.101972 ● Load [N] = Load kgf×9.80665 ● Nitrogen gas charge pressure kgf/cm² = MPa×10.1972 MPa = kgf/cm²×0.0980665

Weight (kg)	D	Di	d	L	H	e	R	T	F	G	Ma Tap hole for mounting	J	Q	C	Load N (kgf)		Catalog No.	Adaptable plate																				
															Initial load	Maximum load		Type	Initial load -- S	Vertical	Horizontal																	
																						Initial load	Maximum load															
3.18	95	87	60	94	78	24	2.55	10.5	8	5	4- M8x16	60	3	G1/8	42400 {4324}	61700	{6292}	GSH	4200-16	FSA95 FSD95																		
3.27				100	81											61700	{6292}																					
3.47				112	87											60800	{6200}																					
3.64				126	94											64300	{6557}																					
3.79				138	100											65800	{6710}																					
4.25				162	112											67000	{6832}																					
4.47				188	125											67800	{6914}																					
4.77				212	137											68000	{6934}																					
4.96				222	142											68600	{6995}																					
5.45				262	162											69100	{7046}																					
6.07				312	187											69600	{7097}																					
5.55				120	112											75	104					88	25.5	2.55	10.5	8	5	4- M10x16	80	3	G1/8	66300 {6761}	89000	{9075}	GSH	6600-16	FSA120 FSD120	
5.67																	110					91											91000	{9279}				
5.91																	122					97											93900	{9575}				
6.18																	136					104											96100	{9799}				
6.43																	148					110											98200	{10014}				
6.90																	172					122											100600	{10258}				
7.42	198	135	102400			{10442}																																
7.90	222	147	103400			{10544}																																
8.01	232	152	104100			{10615}																																
8.89	272	172	105400			{10748}																																
9.89	322	197	106500			{10860}																																

Gas spring temperature range

The operating environment temperature range is 0~40°C. Ensure that the surface temperature of the gas spring does not exceed 80°C.



Catalog No. — (N)
GSH1500-25 — N



Catalog No.

GSH 1000-10



Quotation



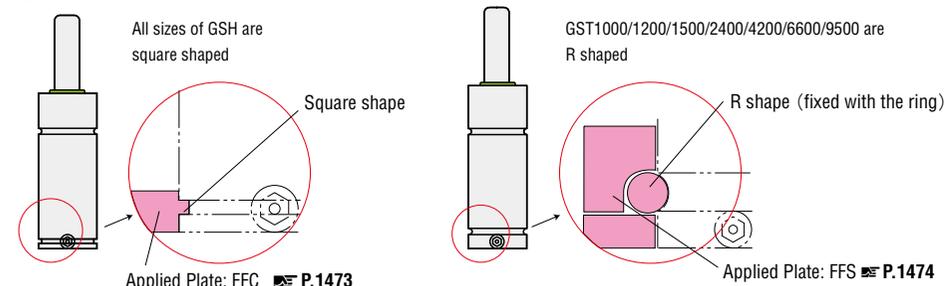
Price Quotation

Alteration	Code	Spec.
For piping gas releasing	N	For piping, we ship inside gas and valve and pull out. Reduce labor of assembling joints and hoses.

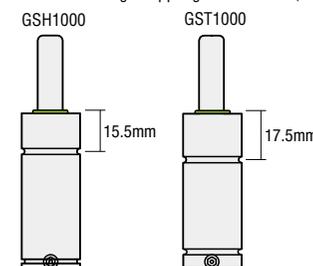
Features

The outer diameter and initial load of GSH are same as GST, however, the below mentioned points are different.

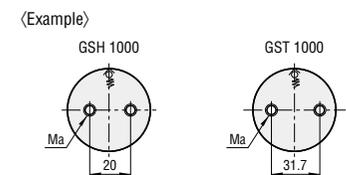
① Shape of the lower groove for vertical setting type plate.



② Dimensions from relief bushing to upper groove center. (GSH1000 and GST1000 only)



③ Tap hole size for mounting and its pitch.



To check the tap hole size and pitch, refer the value of Ma and J on GSH and GST catalog pages.

GAS SPRINGS

GAS SPRINGS

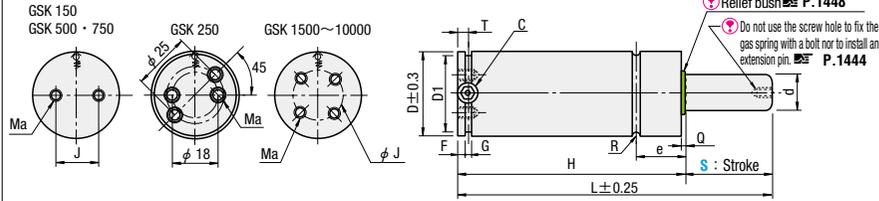
—ISO11901 TYPE—



RoHS

GSK

⚠ If a gas spring is used in excess of the specified stroke range S, it may cause gas leakage.
Use the gas spring within the specified stroke range to avoid the Relief bushing is pushed down. **P.1448**



Relief bush **P.1448**
Do not use the screw hole to fix the gas spring with a bolt nor to install an extension pin. **P.1444**

Nitrogen gas charge pressure	MPa(kgf/cm ²)
GSK 150~10000	15(153)

Cylinder body
M Equivalent to SCM440
S Black oxide (Fe₃O₄)

Piston rod
M Equivalent to SCM440
F 600HV ~ (Surface)
S Nitriding+Barrel finishing

Weight (kg)	D	D ₁	d	L	H	e	R	T	F	G	Ma Tap hole for mounting	J	Q	C	Load N (kgf)		Catalog No.		Adaptable plate																
															Initial load	Maximum load	Type	Initial load—S	Vertical	Horizontal															
0.28	32	27	12	70	60	12.5	1	6	4	3.5	2—M6×8	18	2	M6	1700 (173)	1870	[191]	150—10	FFC32 FFCA32 FCQ32 FC32	FSA32 FSD32															
0.29				75.4	62.7											1900	[194]	150—12.7																	
0.30				82	66											1920	[196]	150—16																	
0.33				100	75											1970	[201]	150—25																	
0.36				126	88											2000	[204]	150—38																	
0.40				150	100											2030	[207]	150—50																	
0.44				177	113.5											2040	[208]	150—(63)																	
0.49				210	130											2050	[209]	150—80																	
0.55				250	150											2070	[211]	150—100																	
0.64				300	175											2080	[212]	150—125																	
0.40				38	33											15	70	60			12.5	1	6	4	3.5	2—M6×8 (for φ18)	—	2	M6	2600 (265)	3500	[357]	250—10	FFC38 FFCA38 FT38 FTP38 FCQ38 FC38	FSA38 FSD38
0.41																	75.4	62.7													3500	[357]	250—12.7		
0.43																	82	66													3500	[357]	250—16		
0.45																	88	69													3500	[357]	250—19		
0.48																	100	75													3500	[357]	250—25		
0.54																	126	88													3500	[357]	250—38		
0.60	150	100	3500			[357]	250—50																												
0.66	177	113.5	3500			[357]	250—(63)																												
0.74	210	130	3500			[357]	250—80																												
0.81	250	150	3500			[357]	250—100																												
0.98	300	175	3500			[357]	250—125																												
0.90	45	40	20			105	95	16.5	1	10.5	4	3.5	2—M8×13	20	2		G1/8	4700 (479)	6000	[612]											500—10	FB45 FBA45 FBB45 FFC45 FFCA45 FT45 FTP45 FCQ45 FC45	FSA45 FSD45		
1.00						110.4	97.7												6100	[622]											500—12.7				
1.09						135	110												6400	[653]											500—25				
1.20						161	123												6500	[663]											500—38				
1.29						185	135												6600	[673]											500—50				
1.38				212	148.5	6600	[673]									500—(63)																			
1.50				245	165	6700	[683]									500—80																			
1.64				285	185	6700	[683]									500—100																			
1.85				335	210	6700	[683]									500—125																			
2.10				405	245	6700	[683]									500—160																			
1.28				50	43	25	120.4									107.7			17.5	2	10.5	8	5	2—M8×13	20	3	G1/8	7400 (755)	12000	[1224]	750—12.7			FB50 FBA50 FBB50 FFC50 FFCA50 FT50 FTP50 FCQ50 FC50	FSA50 FSD50
1.38							145									120													12000	[1224]	750—25				
1.48							171									133													12000	[1224]	750—38				
1.58							195									145													12000	[1224]	750—50				
1.69							222									158.5													12000	[1224]	750—(63)				
1.82							255									175													12000	[1224]	750—80				
1.99	295	195	12000				[1224]	750—100																											
2.19	345	220	12100				[1234]	750—125																											
2.52	415	255	12100				[1234]	750—160																											
2.92	495	295	12100				[1234]	750—200																											
3.40	595	345	12100				[1234]	750—250																											
3.90	695	395	12100				[1234]	750—300																											

⚠ Catalog No.S (63) → Actual stroke is 63.5
 ⚠ The initial load (±10%) is value at 20°C. The maximum load is theoretical value under static condition. Load depends on temperature.
 ● Load (kgf) = Load N×0.101972 ● Load (N) = Load kgf×9.80665 ● Nitrogen gas charge pressure kgf/cm² = MPa×10.1972 MPa = kgf/cm²×0.0980665

Weight (kg)	D	D ₁	d	L	H	e	R	T	F	G	Ma Tap hole for mounting	J	Q	C	Load N (kgf)		Catalog No.		Adaptable plate														
															Initial load	Maximum load	Type	Initial load—S	Vertical	Horizontal													
3.26	75	67	36	135	122	21	2.5	10.5	8	5	4—M8×13	40	3	G1/8	15300 (1560)	23000	[2345]	1500—13	FSA75 FSD75														
3.47				160	135											23000	[2345]	1500—25															
3.66				186	148											23000	[2345]	1500—38															
3.84				210	160											23000	[2345]	1500—50															
4.05				237	173.5											23000	[2345]	1500—(63)															
4.30				270	190											23000	[2345]	1500—80															
4.60				310	210											23000	[2345]	1500—100															
4.98				360	235											23000	[2345]	1500—125															
5.51				430	270											23000	[2345]	1500—160															
6.14				510	310											23000	[2345]	1500—200															
7.10				610	360											23000	[2345]	1500—250															
8.05				710	410											23000	[2345]	1500—300															
5.65				95	87											50	145	132		24	2.5	10.5	8	5	4—M8×13	60	3	G1/8	29450 (3003)	42000	[4283]	3000—13	FSA95 FSD95
6.00																	170	145												42000	[4283]	3000—25	
6.29																	196	158												43000	[4385]	3000—38	
6.57																	220	170												44000	[4487]	3000—50	
6.09	247	183.5	45000			[4589]	3000—(63)																										
7.30	280	200	46000			[4691]	3000—80																										
7.78	320	220	47000			[4793]	3000—100																										
8.38	370	245	47000			[4793]	3000—125																										
9.22	440	280	47000			[4793]	3000—160																										
10.19	520	320	48000			[4895]	3000—200																										
11.40	620	370	48000			[4895]	3000—250																										
12.84	720	420	48000			[4895]	3000—300																										
11.07	120	112	65			190	165	25.5	2.5	10.5	8	5	4—M10×16	80	3		G1/8	49800 (5078)	71000											[7240]	5000—25	FSA120 FSD120	
11.60						216	178												75000											[7648]	5000—38		
12.08						240	190												77000											[7852]	5000—50		
12.70						267	203.5												80000											[8158]	5000—(63)		
13.28				300	220	81000	[8260]									5000—80																	
14.08				340	240	82000	[8362]									5000—100																	
15.10				390	265	82000	[8362]									5000—125																	
16.50				460	300	83000	[8464]									5000—160																	
18.10				540	340	84000	[8566]									5000—200																	
20.10				640	390	84000	[8566]									5000—250																	
22.12				740	440	84000	[8566]									5000—300																	
19.10				150	142	80	205									180			27.5	2.5	10.5	8	7	4—M10×16	100	3	G1/8	75400 (7689)	105000	[10714]	7500—25		FSA150 FSD150
19.95							231									193													110000	[11224]	7500—38		
20.70							255									205													113000	[11531]	7500—50		
21.50							282									218.5													115000	[11735]	7500—(63)		
22.50							315									235													117000	[11939]	7500—80		
23.70	355	255	119000				[12143]	7500—100																									
25.20	405	280	121000				[12347]	7500—125																									
27.40	475	315	122000				[12449]	7500—160																									
29.80	555	355	123000				[12551]	7500—200																									
32.90	655	405	124000				[12653]	7500—250																									
35.90	755	455	124000				[12653]	7500—300																									
35.09	195	187	95				210	185	33.5	2.5	10.5	8	8	4—M12×16	120	3	G1/8	106000 (10809)											138000	[14082]	10000—25	-	
36.55							236	198																					143000	[14592]	10000—38		
37.89							260	210																					147000	[15000]	10000—50		
39.40							287	223																					150000	[15306]	10000—(63)		
41.24							320	240																					152000	[15510]	10000—80		
43.48				360	260	156000	[15918]	10000—100																									
46.28				410	285	157000	[16020]	10000—125																									
50.12				480	320	158000	[16122]	10000—160																									
55.15				560	360	160000	[16327]	10000—200																									
61.85				660	410	160000	[16327]	10000—250																									
68.54				760	460	160000	[16327]	10000—300																									

Gas spring temperature range

The operating temperature range is 0~40°C. Ensure that the surface temperature of the gas spring does not exceed 80°C.



Order

Catalog No.

GSK 1500—50



Days to Ship

Quotation



Price

Quotation



Alterations

Catalog No. — (N)

GSK1500—25 — N

Alteration	Code	Spec.
For piping gas releasing	N	For piping, we ship inside gas and valve and pull out. Reduce labor of assembling joints and hoses.

GAS SPRINGS

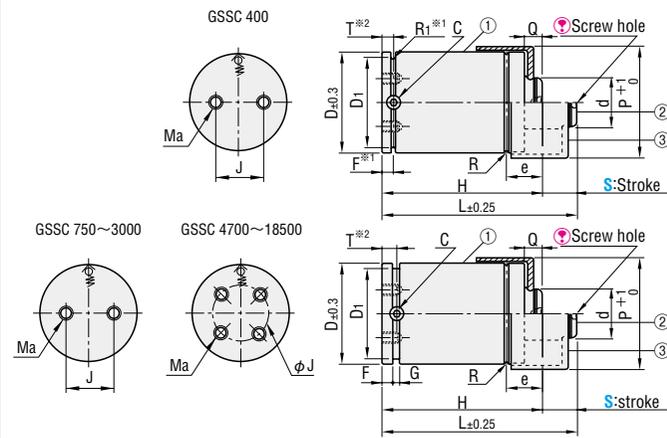
— COVERED TYPE —



RoHS

GSSC

- ⚠ If a gas spring is used in excess of the specified stroke range S, it may cause gas leakage. Use the gas spring within the specified stroke range.
- ⚠ Do not use the screw hole to fix the gas spring with a bolt nor to install an extension pin. **P.1444**



- ① Cylinder body
- M Equivalent to SCM440
- S Black oxide (Fe₃O₄)
- ② Piston rod
- M Equivalent to SCM440
- H 600HV ~ (Surface)
- S Nitriding + Barrel finishing
- ③ Cover
- M Resin

- ※1: Fixing groove of GSSC400 is R shape. F is center distance from R1.
- ※2: T is center distance from C (Gas charging valve).

Nitrogen gas charge pressure	MPa(kgf/cm ²)
GSSC	15(153)

Weight (kg)	D	P	D ₁	d	L	H	e	R	T	F	G	R _i	Ma Top hole for mounting	J	Q	C	Load N (kgf)		Catalog No.	Adaptable plate		
																	Initial load	Maximum load		Type	Initial load - S	Vertical
0.16					70	60												7000	714	400-10		
0.19					91	75												7050	719	400-16		
0.23	25	28	23	10	120	95	13.5	1	6	5	-	1	2- M5×7	14	4.8	M6	4250	7160	730	400-25	FCC25	
0.25					140	108												8040	820	400-32	FC25	
0.28					165	125												8040	820	400-40		
0.32					195	145												8120	828	400-50		
0.23	32	35	27	13	63	57	11.5	1	6	4	3.5	-	2- M6×8	15	4.8	M6	7400	11160	1138	750-6		
0.25					75	65												11190	1141	750-10	FFC32	
0.28					93	77												12250	1249	750-16	FCA32	FSA32
0.33					120	95												13010	1327	750-25	FCQ32	FSD32
0.37					140	108												13360	1362	750-32	FC32	
0.42					165	125												13360	1362	750-40		
0.47					195	145												13480	1375	750-50		
0.33	38	41	33	18	61	55	10.5	1	6	4	3.5	-	2- M6×8	17	4.8	M6	10600	17330	1767	1000-6		
0.38					78	68												16800	1713	1000-10	FFC38	
0.44					100	84												16650	1698	1000-16	FFCA38	FSA38
0.53					135	110												16300	1662	1000-25	FT38	FSD38
0.62					167	135												15770	1608	1000-32	FTP38	
0.70					195	155												15980	1630	1000-40	FCQ38	
0.79					230	180												16150	1647	1000-50	FC38	
0.62	50	53	43	25	66	60	14.5	1	6	8	5	-	2- M6×8	26	4.8	M6	18850	26270	2679	1800-6		
0.68					80	70												16800	1713	1800-10	FFC50	
0.80					106	90												27690	2824	1800-16	FFCA50	FSA50
0.92					135	110												28890	2946	1800-25	FT50	FSD50
1.05					162	130												28680	2925	1800-32	FTP50	
1.17					190	150												28910	2948	1800-40	FCQ50	
1.30					220	170												29680	3027	1800-50	FCB50	
1.23	63	66	56	32	85	75	19	1.5	6	8	5	-	2- M8×8	34	4.8	M6	29450	44200	4507	3000-10	FFC63	FSC63
1.35					103	87												45860	4676	3000-16	FFCA63	FSD63
1.54					130	105												49060	5003	3000-25	FT63	
1.68					150	118												50550	5155	3000-32	FTP63	
1.86					175	135												51460	5247	3000-40	FCQ63	
2.07					205	155												50240	5123	3000-50	FCB63	
1.60	75	78	67	45	80	70	18	1.5	6	8	5	-	4- M8×8	40	4.8	M6	46750	73560	7501	4700-10	FB75	FSA75
1.93					106	90												69300	7067	4700-16	FBA75	FSD75
2.07					135	110												71730	7314	4700-25	FB75	
2.37					167	135												69140	7050	4700-32	FFCA75	
2.66					200	160												68460	6981	4700-40	FTP75	
3.01					240	190												68190	6953	4700-50	FCQ75	

⚠ The Initial load (±10%) is value at 20°C. The maximum load is theoretical value under static condition. Load depends on temperature.
 ● Load (kgf) = Load N × 0.101972 ● Load (N) = Load (kgf) × 9.80665 ● Nitrogen gas charge pressure kgf/cm² = MPa × 10.1972 MPa = kgf/cm² × 0.0980665

Weight (kg)	D	P	D ₁	d	L	H	e	R	T	F	G	R _i	Ma Top hole for mounting	J	Q	C	Load N (kgf)		Catalog No.	Adaptable plate		
																	Initial load	Maximum load		Type	Initial load - S	Vertical
2.87	95	98	87	55	90	80	21	1.5	6	8	5	-	4- M8×8	52	4.8	M6	75400	110720	11290	GSSC	7500-10	FFC95
3.23					116	100												108000	11013		7500-16	FFCA95
3.62					145	120												112740	11496		7500-25	FTP95
4.16					182	150												107390	10951		7500-32	FCQ95
4.54					210	170												109050	11120		7500-40	FCB95
5.17					255	205												107520	10964		7500-50	
5.50					200	90												166990	17028		12000-10	FFC120
6.10	120	123	112	70	126	110	22.5	2.5	10.5	8	5	-	4- M10×12	68	4.8	G1/8	117800	165440	16870	GSSC	12000-16	FFCA120
6.77					155	130												173370	17679		12000-25	FT120
7.54					187	155												169520	17286		12000-32	FTP120
8.31					220	180												168990	17232		12000-40	FCQ120
9.25					260	210												169130	17246		12000-50	FC120
9.23					110	100												245100	24993		18500-10	FFC150
10.20					136	120												247650	25253		18500-16	FFCA150
11.22	165	140	260060	26519	18500-25	FT150																
12.43	197	165	256720	26178	18500-32	FTP150																
13.85	235	195	253560	25856	18500-40	FCQ150																
15.11	270	220	257970	26306	18500-50	FC150																

Gas spring temperature range

The operating environment temperature range is 0~40°C. Ensure that the surface temperature of the gas spring does not exceed 80°C.



Order

Catalog No.

GSSC 1000-50



Alterations

Catalog No.

GSSC1000-50 - N



Days to Ship

Quotation



Price

Quotation

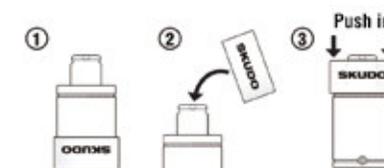
Alteration	Code	Spec.
For piping gas releasing	N	For piping, we ship inside gas and valve and pull out. Reduce labor of assembling joints and hoses.

Features

- The cover put on piston rod reduces and/or prevents penetration of contamination such as press oil and metal scrap.
- The cover can be taken away if it is not needed.

How to install the cover

- At the time of delivery, the covers cover is bundled with the gas spring reversed to the bottom as shown below ①. Please push firmly from the top of the gas spring and insert it into the groove of the piston rod by the following procedure

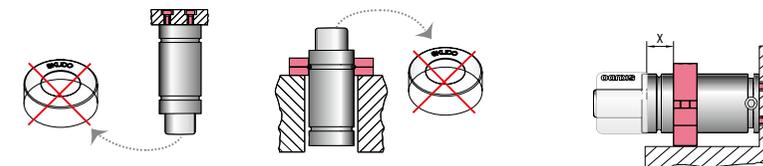


Precautions

- Remove cover when using in following

- ① When fixing in the upper die
- ② When using FC, FCB, FCC, FCQ, FCQB plate.

When using the horizontal type plate (FSA, FSC, FSD), set the plate taking clearance of Xmin or more as illustrated below.



$$X_{min} = S (\text{Stroke}) + 5\text{mm}$$

※ Always remove the cover when using the horizontal type plate, for following catalog No.

- GSSC750-6 GSSC1000-6 GSSC1800-6 GSSC4700-10 GSSC7500-10
- GSSC750-10 GSSC1000-10 GSSC1800-10

GAS SPRINGS

—SELECTIVE CHARGING PRESSURE TYPE—



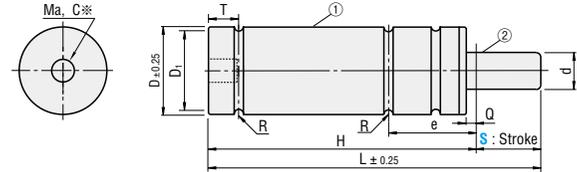
RoHS

GSU

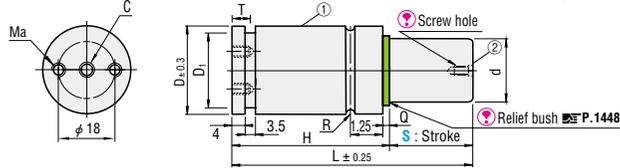


- When piping, connect the hose from the bottom. Please fix with upper plate fixing plate.
- If a gas spring is used in excess of the specified stroke range S, it may cause gas leakage. Use the gas spring within the specified stroke range to avoid the Relief bushing is pushed down. **P.1448**
- Do not use the screw hole to fix the gas spring with a bolt nor to install an extension pin. **P.1444**

GSU50~200



GSU300



- ※1 ※Ma (tap hole for mounting) can be used as gas charging port. Do not screw deeper than mentioned depth for mounting in order to avoid discharge of gas.
- ※2 D dimension tolerance K is GSU50-70:±0.1 GSU90-200:±0.25
- ① Cylinder body
- ② Piston rod
- M Equivalent to SCM440
- H Equivalent to SCM440
- S Black oxide (Fe₃O₄)
- N Nitriding + Barrel finishing

※ The appearance changes as per the Color Code.

※2 D dimension tolerance K is GSU50-70:±0.1 GSU90-200:±0.25

Weight (kg)	D	D ₁	d	L	H	R	T	Ma Tap hole for mounting	Q	C Gas charge hole	Catalog No.		Load N (kgf)						Adaptable plate		
											Type	Initial load—S	Color Code	Initial load	Maximum load						
															OR	PR	GR	BU		RD	YW
0.03	12	10.4	6	56	49	0.8	6	M6×6	3	M6	GSU	50-7	—	—	166 [17]	320 [33]	486 [50]	640 [65]	FCC12		
0.03				50-10	—							—	173 [18]	333 [34]	505 [51]	665 [68]					
0.03				50-12.7	—							—	178 [18]	343 [35]	521 [53]	685 [70]					
0.03				50-15	GR							GR:	—	—	181 [18]	348 [35]	528 [54]	695 [71]			
0.03				50-19	(Green)							130 [13]	—	—	185 [19]	355 [36]	540 [55]	710 [72]			
0.03				50-25	BU							BU:	—	—	190 [19]	365 [37]	555 [57]	730 [74]			
0.04				50-38	(Blue)							250 [25]	—	—	195 [20]	375 [38]	570 [58]	750 [76]			
0.05				50-50	RD							RD:	—	—	198 [20]	380 [39]	578 [59]	760 [77]			
0.05				50-63.5	(Red)							380 [39]	—	—	194 [20]	373 [38]	566 [58]	745 [76]			
0.06				50-75	YW							YW:	—	—	196 [20]	378 [39]	574 [59]	755 [77]			
0.06				50-80	(Yellow)							500 [51]	—	—	198 [20]	380 [39]	578 [59]	760 [77]			
0.07				50-100	—							—	—	—	199 [20]	383 [39]	581 [59]	765 [78]			
0.08	50-125	—	—	—	—	200 [20]	385 [39]	585 [60]	770 [79]												
0.04	15	13.4	7	56	49	0.8	6	M6×6	3	M6	GSU	70-7	—	—	223 [23]	434 [44]	620 [63]	868 [89]	FCC15		
0.05				70-10	—							—	232 [24]	452 [46]	645 [66]	903 [92]					
0.05				70-12.7	—							—	238 [24]	462 [47]	660 [67]	924 [94]					
0.05				70-15	GR							GR:	—	—	241 [25]	469 [48]	670 [68]	938 [96]			
0.05				70-19	(Green)							180 [18]	—	—	247 [25]	480 [49]	685 [70]	959 [98]			
0.06				70-25	BU							BU:	—	—	250 [25]	487 [50]	695 [71]	973 [99]			
0.07				70-38	(Blue)							350 [36]	—	—	257 [26]	501 [51]	715 [73]	1001 [102]			
0.08				70-50	RD							RD:	—	—	261 [27]	508 [52]	725 [74]	1015 [104]			
0.09				70-63.5	(Red)							500 [51]	—	—	257 [26]	501 [51]	715 [73]	1001 [102]			
0.10				70-75	YW							YW:	—	—	261 [27]	508 [52]	725 [74]	1015 [104]			
0.10				70-80	(Yellow)							700 [71]	—	—	261 [27]	508 [52]	725 [74]	1015 [104]			
0.12				70-100	—							—	—	—	261 [27]	508 [52]	725 [74]	1015 [104]			
0.14	70-125	—	—	—	—	265 [27]	515 [53]	735 [75]	1029 [105]												
0.07	19	17	8	56	49	1	5	M6×6	1	M6	GSU	90-7	OR	OR:	57 [6]	113 [12]	339 [35]	565 [58]	791 [81]	1017 [104]	FCC19 FC19
0.07				90-10	(Orange)							50 [5]	58 [6]	116 [12]	348 [35]	580 [59]	812 [83]	1044 [106]			
0.08				90-12.7	PR							PR:	60 [6]	119 [12]	357 [36]	595 [61]	833 [85]	1071 [109]			
0.08				90-15	(Purple)							100 [10]	60 [6]	120 [12]	360 [37]	600 [61]	840 [86]	1080 [110]			
0.09				90-25	GR							GR:	62 [6]	124 [13]	372 [38]	620 [63]	868 [89]	1116 [114]			
0.11				90-38.1	(Green)							300 [31]	64 [7]	127 [13]	381 [39]	635 [65]	889 [91]	1143 [117]			
0.12				90-50	BU							BU:	64 [7]	128 [13]	384 [39]	640 [65]	896 [91]	1152 [117]			
0.14				90-63.5	(Blue)							500 [51]	64 [7]	127 [13]	381 [39]	635 [65]	889 [91]	1143 [117]			
0.15				90-80	RD							RD:	65 [7]	129 [13]	387 [39]	645 [66]	903 [92]	1161 [118]			
0.17				90-100	(Red)							700 [71]	65 [7]	130 [13]	390 [40]	650 [66]	910 [93]	1170 [119]			
0.20				90-125	YW							YW:	66 [7]	131 [13]	393 [40]	655 [67]	917 [94]	1179 [120]			

※ Initial load is the value when the enclosed pressure is maximum.

※ The Initial load (±10%) is value at 20°C. The maximum load is theoretical value under static condition. Load depends on temperature.

● Load (kgf) = Load N × 0.101972 ● Load (N) = Load kgf × 9.80665 ● Nitrogen gas charge pressure kgf/cm² = MPa × 10.1972 MPa = kgf/cm² × 0.0980665

Weight (kg)	D	D ₁	d	L	H	R	T	Ma Tap hole for mounting	Q	C Gas charge hole	Catalog No.		Load N (kgf)						Adaptable plate		
											Type	Initial load—S	Color Code	Initial load	Maximum load						
															OR	PR	GR	BU		RD	YW
0.12	25	23	12	56	49	1	5	M6×6	1	M6	GSU	200-7	OR	OR:	197 [20]	325 [33]	580 [59]	1160 [118]	1740 [178]	2320 [237]	FCC25 FC25
0.13				200-10	(Orange)							170 [17]	204 [21]	336 [34]	600 [61]	1200 [122]	1800 [184]	2400 [245]			
0.13				200-12.7	PR							PR:	209 [21]	344 [35]	615 [63]	1230 [125]	1845 [188]	2460 [251]			
0.14				200-15	(Purple)							280 [29]	211 [22]	347 [35]	620 [63]	1240 [126]	1860 [190]	2480 [253]			
0.16				200-25	GR							GR:	219 [22]	361 [37]	645 [66]	1290 [132]	1935 [197]	2580 [263]			
0.19				200-38.1	(Green)							500 [51]	226 [23]	372 [38]	665 [68]	1330 [136]	1995 [203]	2660 [271]			
0.20				200-50	BU							BU:	1000 [102]	230 [23]	378 [39]	675 [69]	1350 [138]	2025 [206]	2700 [273]		
0.23				200-63.5	(Blue)							1500 [153]	228 [23]	375 [38]	670 [68]	1340 [137]	2010 [205]	2680 [270]			
0.26				200-80	RD							RD:	1500 [153]	231 [24]	381 [39]	680 [69]	1360 [139]	2040 [208]	2720 [277]		
0.30				200-100	YW							YW:	2000 [204]	233 [24]	384 [39]	685 [70]	1370 [140]	2055 [210]	2740 [279]		
0.34				200-125	(Yellow)							2000 [204]	235 [24]	386 [39]	690 [70]	1380 [141]	2070 [211]	2760 [281]			
0.21				32	27							15	56	49	1	—	2-M6×8	2	M6	GSU	
0.22	300-10	(Green)	800 [82]			—	—	976 [100]	1952 [199]	2928 [299]	3904 [398]										
0.23	300-12.7	BU	BU:			—	—	1000 [102]	2000 [204]	3000 [306]	4000 [408]										
0.24	300-15	(Blue)	1600 [163]			—	—	1040 [106]	2080 [212]	3120 [318]	4160 [424]										
0.26	300-25	RD	RD:			—	—	1064 [108]	2128 [217]	3192 [325]	4256 [434]										
0.30	300-38	(Red)	2400 [245]			—	—	1080 [110]	2160 [220]	3240 [330]	4320 [441]										
0.34	300-50	YW	YW:			—	—	1072 [109]	2144 [219]	3216 [328]	4288 [437]										
0.39	300-63.5	(Yellow)	3200 [326]			—	—	1088 [111]	2176 [222]	3264 [333]	4352 [444]										
0.44	300-80	—	—			—	—	1088 [111]	2176 [222]	3264 [333]	4352 [444]										
0.50	300-100	—	—			—	—	1088 [111]	2176 [222]	3264 [333]	4352 [444]										
0.57	300-125	—	—			—	—	1096 [112]	2192 [224]	3288 [335]	4384 [447]										

Nitrogen gas charge pressure MPa (kgf/cm²)

型式	Color Code					
	OR {Orange}	PR {Purple}	GR {Green}	BU {Blue}	RD {Red}	YW {Yellow}
GSU50	—	—	4.5 [45.9]	9 [91.7]	13.5 [137.6]	18 [183.4]
GSU70	—	—	4.5 [45.9]	9 [91.7]	13.5 [137.6]	18 [183.4]
GSU90	1 [10.2]	2 [20.4]	6 [61.6]	10 [101.9]	14 [142.7]	18 [183.4]
GSU200	1.5 [15.3]	2.5 [25.5]	4.5 [45.9]	9 [91.7]	13.5 [137.6]	18 [183.4]
GSU300	—	—	4.5 [45.9]	9 [91.7]	13.5 [137.6]	18 [183.4]

Gas spring temperature range

The operating environment temperature range is 0~40°C. Ensure that the surface temperature of the gas spring does not exceed 80°C.



Order

Catalog No.

GSU50-15-GR



Days to Ship

Quotation



Price

Quotation



PLATES FOR GAS SPRINGS

— VERTICAL SETTING TYPE —

RoHS

**FFC
FFCA
FFCB**

FFC32~38

**FFC45~150
FFCB**

FFCA

M Equivalent to S45C
S Black oxide (Fe₃O₄)

A	a	C	d	f	h	j	g	e	Catalog No.	Adaptable gas spring						Recommended bolts(×4)	
										GSV	GST	GSH	GSK	GSSC	GSU		
50	35	49.5	6.6	21	17	6.5	7	4	FFC	32	350	350	—	150	750	300	CB6-18
55	40	56.7	6.6	21	17	6.5	7	4		38	500	500	—	250	1000	—	CB6-18
70	50	70.7	9	20	—	—	7	4		45	750	750	—	500	—	—	CB8-20
75	56.5	79.9	9	24	—	—	12	8		50	1000	—	1000	750	1800	—	CB8-25
85	63.5	89.8	11	24	—	—	12	8		63	1500	—	1500	—	3000	—	CB10-30
100	73.5	104	11	24	—	—	12	8		75	2400	—	2400	1500	4700	—	CB10-30
120	92	130.1	13.5	24	—	—	12	8		95	4200	—	4200	3000	7500	—	CB12-30
140	109.5	154.9	13.5	24	—	—	12	8		120	6600	—	6600	5000	12000	—	CB12-30
190	138	195.1	17.5	24	—	—	12	8		150	9500	—	—	—	18500	—	CB16-40
210	170	240.4	17.5	24	—	—	13	8		195	20000	—	—	10000	—	—	CB16-40

A	a	B	b	d	f	g	e	Catalog No.	Adaptable gas spring						Recommended bolts(×4)	
									GSV	GST	GSH	GSK	GSSC	GSU		
50	40	27	18	6.6	20	7	4	FFCA	32	350	350	—	150	750	300	CB6-18
55	44	33	20	6.6	20	7	4		38	500	500	—	250	1000	—	CB6-18
70	57	40	27	9	25	7	4		45	750	750	—	500	—	—	CB8-20
75	62	45	32	9	25	12	8		50	1000	—	1000	750	1800	—	CB8-25
85	69	58	42	11	30	12	8		63	1500	—	1500	—	3000	—	CB10-30
100	84	70	54	11	30	12	8		75	2400	—	2400	1500	4700	—	CB10-30
120	100	90	70	13.5	40	12	8		95	4200	—	4200	3000	7500	—	CB12-30
140	120	115	95	13.5	50	12	8		120	6600	—	6600	5000	12000	—	CB12-30
190	165	145	120	17.5	60	12	8		150	9500	—	—	—	18500	—	CB16-40
210	185	190	165	17.5	80	13	8		195	20000	—	—	10000	—	—	CB16-40

A	a	C	d	f	g	e	Catalog No.	Adaptable gas spring						Recommended bolts(×4)	
								GSV	GST	GSH	GSK	GSSC	GSU		
100	73.5	103.9	11	24	12	8	FFCB 63	1500	—	1500	—	3000	—	—	CB10-30



Order

Catalog No.

FFC38
FFCA75
FFCB63
FCM19
FFS63



Days to Ship

Quotation



Price

Quotation

RoHS

FCM

RoHS

FFS

M Equivalent to S45C
S Black oxide (Fe₃O₄)

M Equivalent to S45C
S Black oxide (Fe₃O₄)

A	a	B	d	t	Catalog No.	Adaptable gas spring GSV	Recommended bolts(×4)
45	32	25	7	9.2	FCM	170	CB6-20
50	38	30	7	9.2		19 25	320

A	a	C	d	h	g	k	f	Catalog No.	Adaptable gas spring GST	Recommended bolts(×4)	
75	53.9	50.5	17	11	25	11	30	FFS	1000 1200	CB10-30	
100	73.5	63.5	17	11	25	11	30		63	1500	CB10-30
100	76.2	75.5	20	13	25	13	30		75	2400	CB12-25
125	98.3	95.5	20	13	25	13	30		95	4200	CB12-25
140	114.3	120.5	20	13	25	13	30		120	6600	CB12-25
175	139.7	150.5	25	17	25	17	30		150	9500	CB16-30

Features

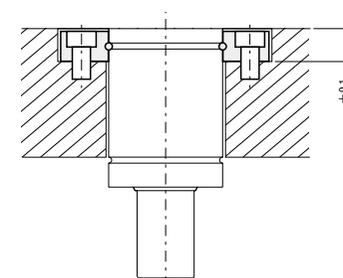
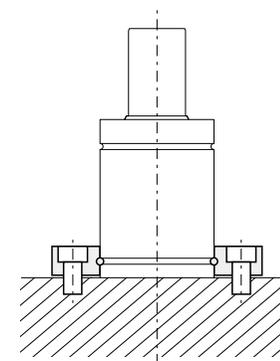
• FFS can be used in both upper die and lower die.



Example

Fix on lower die

Fix on upper die



⚠ The load is received at the bottom of the gas spring and please set the clearance with the plate 0.4 mm.

GAS SPRINGS

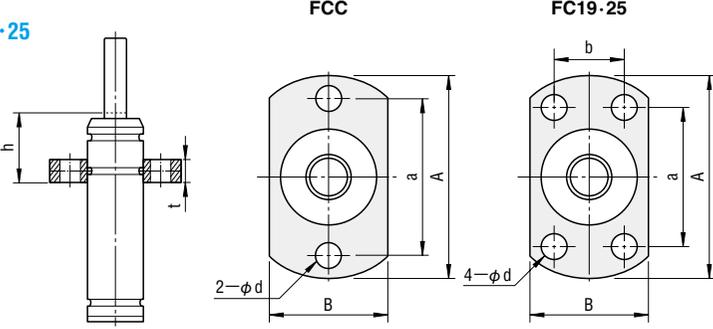
PLATES FOR GAS SPRINGS

—VERTICAL SETTING TYPE—

RoHS

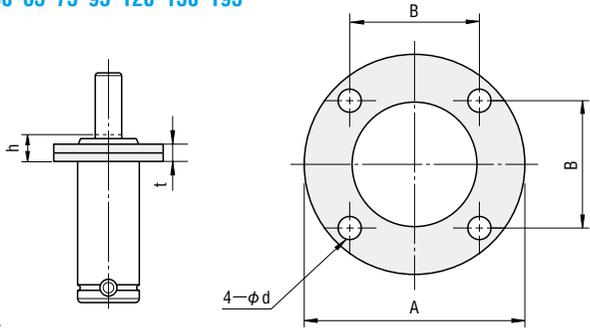


FCC **FC19-25**



RoHS

FC32-38-45-50-63-75-95-120-150-195
FCB

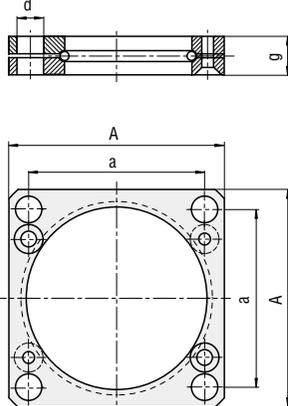


M Equivalent to S45C
S Black oxide (Fe₃O₄)

RoHS



FCQ
FCQB



M Equivalent to S45C
S Black oxide (Fe₃O₄)

A	a	B	d	t	h			Catalog No.	Adaptable gas spring						Recommended bolts(×2)	
					GSV	GSSC	GSU		GSV	GST	GSH	GSK	GSSC	GSU		
34	24	21	6.6	9	—	—	21.5	FCC	12	—	—	—	—	—	50	CB6-18
37	27	24	6.6	9	—	—	21.5		15	—	—	—	—	—	70	CB6-18
44	32	25	6.6	9	21.5	—	21.5		19	170	—	—	—	—	90	CB6-18
50	38	30	6.6	9	21.5	18	21.5		25	320	—	—	—	400	200	CB6-18

A	a	B	b	d	t	h				Catalog No.	Adaptable gas spring						Recommended bolts(×4)		
						GSV	GST	GSH	GSU		GSV	GST	GSH	GSK	GSSC	GSU			
44	30	25	12	6.6	9	21.5	—	—	21.5	FC	19	170	—	—	—	—	90	CB6-18	
50	34	30	18	6.6	9	21.5	—	18	21.5		25	320	—	—	—	400	200	CB6-18	
60	—	35	—	7	9	17	—	16	15		32	350	350	—	150	750	300	CB6-18	
68		40		7	9	17	—	15	—		38	500	500	—	250	1000	—	CB6-18	
86		50		9	13	23	—	—	—		45	750	750	—	500	—	—	CB8-25	
95		56.5		9	13	24	22	—	—		50	1000	1000	1000	750	—	—	CB8-25	
122	—	73.5	—	11	16	27	27	—	—		63	1500	1500	1500	—	—	—	CB10-35	
122		73.5		11	16	29	29	—	—		75	2400	2400	2400	1500	—	—	CB10-35	
150		92		13.5	18	33	33	—	—		95	4200	4200	4200	3000	—	—	CB12-40	
175		109.5		13.5	21	36	36	33	—		120	6600	6600	6600	5000	12000	—	CB12-40	
220	—	138	—	17.5	27	41	—	38	—		150	9500	12000	9500	—	—	18500	—	CB16-55
290		170		17.5	27	—	—	—	—		195	20000	—	—	10000	—	—	—	CB16-55

A	B	d	t	h	Catalog No.	Adaptable gas spring		Recommended bolts(×4)
						GSSC		
95	56.5	9.0	13	21	FCB	50	1800	CB8-30
122	73.5	11.0	16	27		63	3000	CB10-35
122	73.5	11.0	16	26		75	4700	CB10-35
150	92.0	13.5	18	30		95	7500	CB12-40

A	a	d	g	Catalog No.	Adaptable gas spring						Recommended bolts(×4)		
					GSV	GST	GSH	GSK	GSSC	GSU			
45	35	6.6	9	FCQ	32	350	350	—	150	750	300	CB6-18	
52	40	6.6	9		38	500	500	—	250	1000	—	CB6-18	
64	50	9	13		45	750	750	—	500	—	—	CB8-25	
70	56.5	9	13		50	1000	1000	1000	750	—	—	CB8-25	
90	73.5	11	16		63	1500	1500	1500	—	—	—	CB10-35	
90	73.5	11	16		75	2400	2400	2400	1500	—	—	CB10-35	
110	92	13.5	18		95	4200	4200	4200	3000	—	—	CB12-40	
130	109.5	13.5	21		120	6600	6600	6600	5000	12000	—	CB12-40	
162	138	17.5	27		150	9500	12000	9500	—	—	18500	—	CB16-55
210	170	17.5	27		195	20000	—	—	10000	—	—	—	CB16-55

A	a	d	g	Catalog No.	Adaptable gas spring						Recommended bolts(×4)	
					GSV	GST	GSH	GSK	GSSC	GSU		
70	56.5	9	13	FCQB	50	—	—	—	—	1800	—	CB8-25
90	73.5	11	16		63	—	—	—	—	3000	—	CB10-35
90	73.5	11	16		75	—	—	—	—	4700	—	CB10-35
110	92	13.5	18		95	—	—	—	—	7500	—	CB12-40

■ The upper groove fixed type plate can receive the load with the plate. However, please receive the load on the entire mounting part.



Catalog No.

FC12
FC38
FCB63
FC50
FCQB63



Days to Ship

Quotation



Price

Quotation

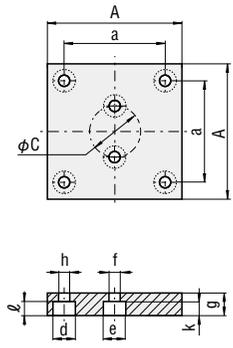
PLATES FOR GAS SPRINGS

—VERTICAL SETTING TYPE—

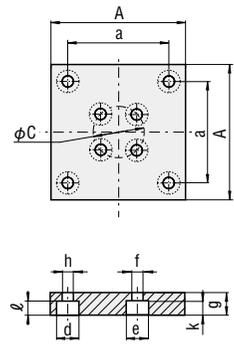


FB

FB45~50



FB75~195

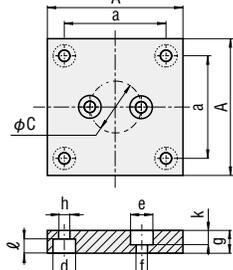


M Equivalent to S45C
S Black oxide (Fe₃O₄)

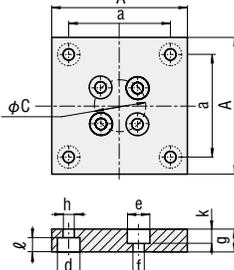


FBA

FBA45~50



FBA75~195



M Equivalent to S45C
S Black oxide (Fe₃O₄)

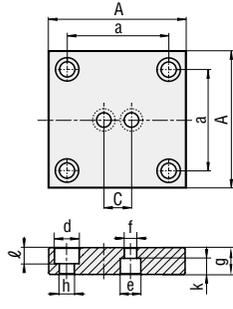
A	a	C	g	e	d	f	h	k	ℓ	Catalog No.	Asaptable gas spring						Recommended bolts 4-φ d	Recommended bolts 4(2)-φ e	
											GSV	GST	GSH	GSK	GSSC	GSU			
70	50	20	20	15	15	9	9	14	12	FB	45	750	750	—	500	—	—	CB 8—20	CB 8—18
75	56.5	20	20	15	15	9	9	14	12		50	1000	1500	1000	750	—	—	CB 8—20	CB 8—18
100	73.5	40	20	15	18	9	11	14	12		75	2400	—	2400	1500	4700	—	CB10—25	CB 8—18
120	92	60	20	15	20	9	13.5	14	13		95	4200	—	4200	3000	—	—	CB12—25	CB 8—18
140	109.5	80	20	18	20	11	13.5	15	13		120	6600	6600	6600	5000	—	—	CB12—25	CB10—20
190	138	100	25	18	26	11	17.5	15	17		150	9500	9500	—	—	—	—	CB16—35	CB10—25
210	170	120	25	20	26	13.5	17.5	13	17		195	20000	—	—	10000	—	—	CB16—35	CB12—30

A	a	C	g	e	d	f	h	k	ℓ	Catalog No.	Asaptable gas spring						Recommended bolts 4-φ d	Recommended bolts 4(2)-φ e	
											GSV	GST	GSH	GSK	GSSC	GSU			
70	50	20	20	15	18	9	11	14	12	FBA	45	750	750	—	500	—	—	CB10—25	CB 8—18
75	56.5	20	20	15	18	9	11	14	12		50	1000	1500	1000	750	—	—	CB10—25	CB 8—18
100	73.5	40	20	15	18	9	11	14	12		75	2400	—	2400	1500	4700	—	CB10—25	CB 8—18
120	92	60	20	15	20	9	13.5	14	13		95	4200	—	4200	3000	—	—	CB12—25	CB 8—18
140	109.5	80	20	18	20	11	13.5	15	13		120	6600	6600	6600	5000	—	—	CB12—25	CB10—20
190	138	100	25	18	26	11	17.5	15	17		150	9500	9500	—	—	—	—	CB16—35	CB10—25
210	170	120	25	20	26	13.5	17.5	15	17		195	20000	—	—	10000	—	—	CB16—35	CB12—30

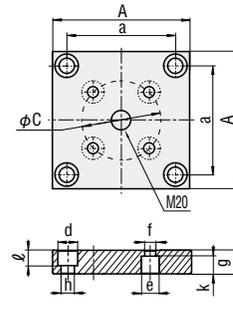


FBB

FBB45~63



FBB75~195



M Equivalent to S45C
S Black oxide (Fe₃O₄)

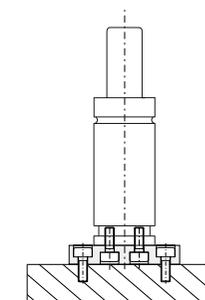
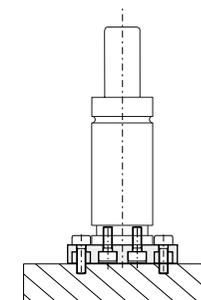
A	a	C	g	e	d	f	h	k	ℓ	Catalog No.	Asaptable gas spring						Recommended bolts 4-φ d	Recommended bolts 4(2)-φ e	
											GSV	GST	GSH	GSK	GSSC	GSU			
70	50	20	20	15	15	9	9	12	12	FBB	45	750	750	—	500	—	—	CB 8—20	CB 8—20
75	56.5	20	20	15	15	9	9	12	12		50	1000	—	1000	750	—	—	CB 8—20	CB 8—20
100	73.5	20	20	15	18	9	11	12	12		63	1500	1500	1500	—	—	—	CB10—25	CB 8—20
100	73.5	40	20	15	18	9	11	12	14		75	2400	—	2400	1500	4700	—	CB10—25	CB 8—20
120	92	60	20	15	20	9	13.5	14	13		95	4200	—	4200	3000	—	—	CB12—25	CB 8—20
140	109.5	80	20	18	20	11	13.5	15	13		120	6600	6600	6600	5000	—	—	CB12—25	CB10—20
190	138	100	20	18	26	11	17.5	15	17		150	9500	9500	—	—	—	—	CB16—30	CB10—20
210	170	120	25	20	26	13.5	17.5	15	17	195	20000	—	—	10000	—	—	CB16—35	CB12—30	



Example

Fixed with FB

Fixed with FBA,FBB



Order

Catalog No.

FB50
FBA45
FBB75



Days to Ship

Quotation



Price

Quotation

PLATES FOR GAS SPRINGS WITH LINKED SYSTEM

—HORIZONTAL SETTING TYPE—

RoHS **FSA**

① **M** Equivalent to S45C
S Black oxide (Fe₃O₄)
 ② **A** For detailed dimensions, See the table below.

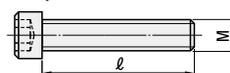
A	B	C	D	E	F	G	H	J	K	L	M	Catalog No.	Adaptable gas spring						Recommended bolts(X2)	
													GSV	GST	GSH	GSK	GSSC	GSU		
90	54	32	20	9	72	31	22	45	22.5	15	M8	FSA	32	350	350	—	150	750	300	CB8—35
95	59	38	20	9	77	34	25	55	27.5	15	M8		38	500	500	—	250	1000	—	CB8—35
100	64	45	20	9	82	37	28	60	30	15	M8		45	750	750	—	500	—	—	CB8—35
130	90	50	30	9	110	50	40	80	40	20	M8	FSA	50	1000	1000	1000	750	1800	—	CB8—40
160	115	75	30	11	137	63.5	52.5	105	52.5	20	M10		75	2400	2400	2400	1500	4700	—	CB10—40
195	145	95	30	13.5	170	80	67.5	125	62.5	20	M12		95	4200	4200	4200	3000	7500	—	CB12—45
220	165	120	30	13.5	195	92.5	77.5	148	74	20	M12		120	6600	6600	6600	5000	12000	—	CB12—46
260	200	150	30	13.5	230	110	95	200	100	20	M12		150	9500	9500	—	—	18500	—	CB12—47

RoHS **FSC**
FSD

① **M** Equivalent to S45C
S Black oxide (Fe₃O₄)
 ② **A** For detailed dimensions, See the table on the page at left.
 ⚠ Bolts are not included with FSC.
 (Recommended bolts : CB10-140)

A	B	C	D	E	F	G	H	J	K	Catalog No.	Adaptable gas spring						
											GSV	GST	GSH	GSK	GSSC	GSU	
105	80	40	11	80	63	10.5	17	10	30	FSC	63	1500	1500	1500	—	3000	—
68	48	20.9	10	50	32.5	9	15	4	20		32	350	350	—	150	750	300
74	54	23.9	16	54	38.5	9	15	4	20		38	500	500	—	250	1000	—
80	60	27.5	22	60	45.5	9	15	4	20	FSD	45	750	750	—	500	—	—
90	70	30	25	68	50.5	11	18	5	30		50	1000	1000	1000	750	1800	—
108	82	36.5	27	84	63.5	11	18	5	30		63	1500	1500	1500	—	3000	—
125	94	42	32	100	75.5	13.5	20	5	30		75	2400	2400	2400	1500	4700	—
140	115	52.5	33	115	95.5	13.5	20	5	30		95	4200	4200	4200	3000	7500	—
170	140	65	58	145	120.5	13.5	20	7	30		120	6600	6600	6600	5000	12000	—
200	170	80	68	175	150.5	13.5	20	7	30		150	9500	9500	—	—	18500	—

■ Dimension of provided bolts



Catalog No.	A	
	M	l
FSA	32	8 30
	38	8 35
	45	8 35
	50	8 45
	75	10 55
	95	12 60
FSD	63	10 70
	75	12 80
	95	12 100
	120	12 100
	150	12 120



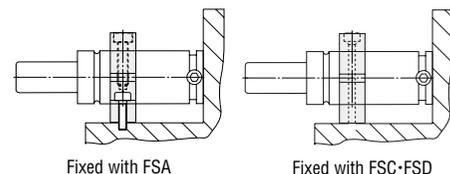
Catalog No.
FSA32
FSC63
FSD50



Quotation



Price Quotation



NAME PLATE FOR GAS SPRING

RoHS **GKNPS** (①+②)
GKNP (① only)

① Plate
 ② Mounting bolts CB3-6 ×4

WARNING
 1. Tool contains **HIGH PRESSURE NITROGEN GAS** Springs
 2. Protect against damage from side load, shocks, extreme temperatures, grinding dust, and welding particles.

Die No. _____
 Gas Spring _____
 Operating Pressure _____ MPa Qty _____

MISUMI

Ⓜ A1050P
 Plate thickness 0.5mm
S baking finish



Order

Catalog No.
GKNPS



Days to Ship

Quotation



Price

Quotation

■ Features

- Please help us maintain and manage the mold.
- You can write using a permanent marker or an oil-based ball point pen.
- You can engrave on the product with a chisel as it is made out of Aluminum.

■ Precautions

- Heat resistance of the surface coating is up to 150°C.

LINKED SYSTEM SELECTION PROCEDURE

— COMPACT TYPE —

Suitable for M6 charging port type gas spring.
※1※2※3

Blue words represent the catalog No. of relevant components.

Selection procedure 1 Check the gas spring type



< M6 charging port type >

GSV350 ~ 2400
GSK150 / 250
GSSC4200 ~ 7500

For G1/8" charging port type, refer to the hand screw type selection procedure. (P.1483)

Selection procedure 2 Select adapter

Number of hoses connected from gas spring		
1	2	3
 M6 Gas spring side M8 Hose side LSCN-S-S-M6-M-M8	 M6 Gas spring side M8 Hose side LSCN-S-T-M6-M-M8	 M6 Gas spring side M8 Hose side LSCN-S-ST-M6-M-M8
 M6 Gas spring side M8 Hose side LSCN-S-L-M6-M-M8	 M6 Gas spring side M8 Hose side LSCN-S-SL-M6-M-M8	 M8 Hose side M8 Hose side LSCN-S-ST-M6-M-M8

Selection procedure 3 Decide the hose length and clip quantity.



LSHS5.5-SS-□
□ is L dimension. For details, P.1489

LSCL-6

Selection procedure 4 Decide the adapter quantity for connecting to the control panel.



LSCN-S-S-M6-M-M8

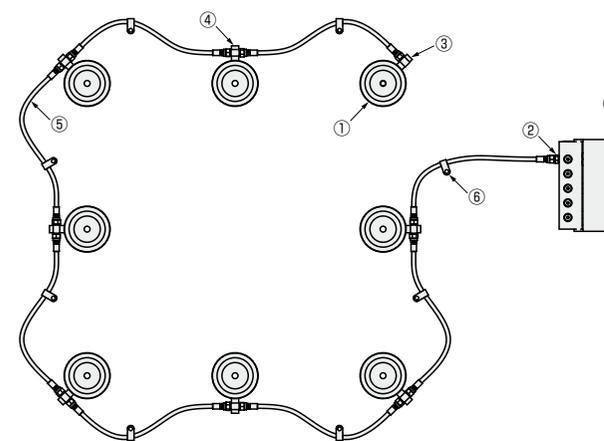
M6 insertion port type



LSCT-C

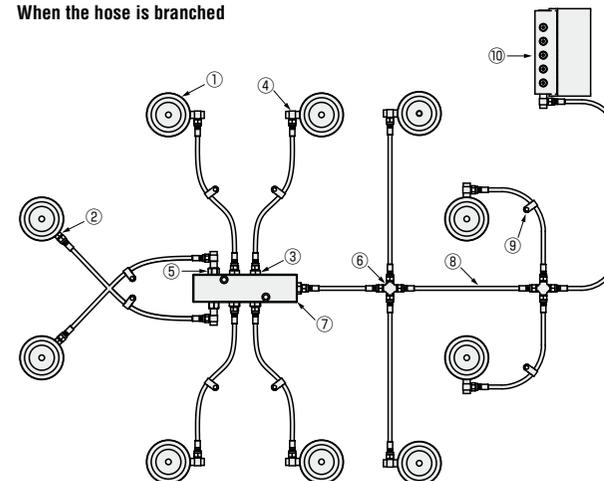
Example of use

When the hose is not branched



List of components used			
No.	Product name	Type	Quantity
①	GAS SPRING	GSV1500	8
②	adapter	LSCN-S-S-M6-M-M8	1
③	adapter	LSCN-S-L-M6-M-M8	1
④	adapter	LSCN-S-T-M6-M-M8	7
⑤	HOSE	LSHS5.5-SS	8
⑥	CLIP	LSCL-6	8
⑦	CONTROL PANEL	LSCT-C	1

When the hose is branched



List of components used			
No.	Product name	Type	Quantity
①	GAS SPRING	GSV1500	10
②	adapter	LSCN-S-S-M6-M-M8	2
③	adapter	LSCN-S-S-M8-M-G1	5
④	adapter	LSCN-S-L-M6-M-M8	11
⑤	adapter	LSCN-S-S-G1-F-M6	2
⑥	adapter	LSCN-S-X-M8-M-M8	2
⑦	Distribution block	LSDB-R-10-G1	1
⑧	HOSE	LSHS5.5-SS	13
⑨	CLIP	LSCL-6	8
⑩	CONTROL PANEL	LSCT-C	1

- ※1 If hand screw type is preferred, refer to the hand screw type selection procedure (P.1483).
- ※2 Cannot be used only for gas springs with linked system.
- ※3 For products other than compact type and hand screw type, please consult us.

When the hose is branched

Number of branches	3		4		6	10
	adapter		Distribution block			
Product name	adapter LSCN-S-T-M8-M-M8		adapter LSCN-S-S-M6-M-M8			adapter LSCN-S-S-M8-M-G1
Component used	 3-M8 LSCN-S-T-M8-M-M8	 4-M8 LSCN-S-X-M8-M-M8	 4-M6 LSDB-S-4-M6	 6-M6 LSDB-R-6-M6	 6-M6 LSDB-H-6-M6	 10-G1/8" LSDB-R-10-G1

LINKED SYSTEM SELECTION PROCEDURE

— HAND SCREW TYPE —

Suitable for G1/8" charging port type gas spring.
※1※2※3

Blue words represent the catalog No. of relevant components.

Selection procedure 1 Check the gas spring type



< G1/8" charging port type >

GSV4200—6600
GST all size
GSK500—10000
GSH all size
GSSC12000 / 18500

For M6 charging port type, refer to the compact type selection procedure. (P.1481)

Selection procedure 2 Select adapter

Number of hoses connected from gas spring			
1	2	3	4
 G1/8" Gas spring side S12.65 Hose side LSCN-S-S-G1-M-5.1 G1/8" adapter side G1/8" Gas spring side LSCN-□-L-G1-F-G1 + LSCN-S-S-G1-M-5.1	 G1/8" Gas spring side G1/8" adapter side LSCN-□-T-G1-F-G1 + LSCN-S-S-G1-M-5.1	 G1/8" Gas spring side G1/8" adapter side LSCN-□-S2-G1-F-G1 + LSCN-S-S-G1-M-5.1	 G1/8" Gas spring side G1/8" adapter side LSCN-□-T2-G1-F-G1 + LSCN-S-S-G1-M-5.1

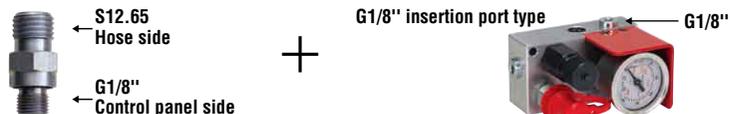
Word in □ varies with L dimension. For details, P.1489

Selection procedure 3 Decide the hose length and clip quantity.



□ is L dimension. For details, P.1489

Selection procedure 4 Decide the adapter quantity for connecting to the control panel.



LSCN-S-S-G1-M-5.1

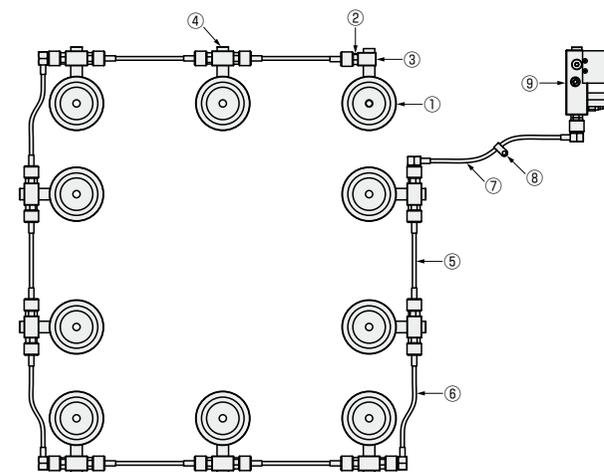
LSCT-F

When the hose is branched

Number of branches	3	4	6	10
Product name	Distribution block adapter LSCN-S-S-G1-M-5.1			
Component used	 3-G1/8" LSDB-S-3-G1	 4-G1/8" LSDB-S-4-G1	 6-G1/8" LSDB-R-6-G1 6-G1/8" LSDB-H-6-G1	 10-G1/8" LSDB-R-10-G1

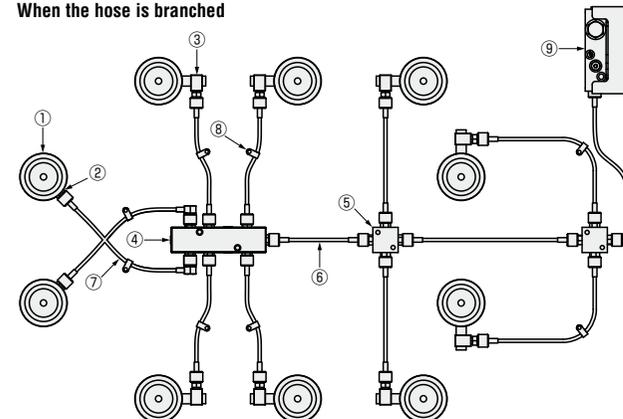
Example of use

When the hose is not branched



List of components used			
No.	Product name	Type	Quantity
①	GAS SPRING	GST2400	10
②	adapter	LSCN-S-S-G1-M-5.1	20
③	adapter	LSCN-S-L-G1-F-G1	1
④	adapter	LSCN-S-T-G1-F-G1	9
⑤	HOSE	LSHS5.1-SS	6
⑥	HOSE	LSHS5.1-SL	3
⑦	HOSE	LSHS5.1-LL	1
⑧	CLIP	LSCL-6	1
⑨	CONTROL PANEL	LSCT-F	1

When the hose is branched



List of components used			
No.	Product name	Type	Quantity
①	GAS SPRING	GST2400	10
②	adapter	LSCN-S-S-G1-M-5.1	26
③	adapter	LSCN-S-L-G1-F-G1	8
④	Distribution block	LSDB-R-10-G1	1
⑤	Distribution block	LSDB-S-4-G1	1
⑥	HOSE	LSHS5.1-SS	10
⑦	HOSE	LSHS5.1-SL	3
⑧	CLIP	LSCL-6	8
⑨	CONTROL PANEL	LSCT-F	1

- ※1 If compact type is preferred, refer to the compact type selection procedure (P.1481). For connection between gas spring and compact type adapter, use the conversion adapter LSCN-S-S-G1-F-M6 (P.1485). Connect male screw to gas spring and female screw to each adapter.
- ※2 Cannot be used only for gas springs with linked system.
- ※3 For products other than compact type and hand screw type, please consult us.

GAS SPRINGS



LINKED SYSTEM COMPONENTS

—ADAPTERS FOR COMPACT TYPE—

Suitable for M6 charging port type gas spring.

Hose connection adapter

For connecting gas spring and hose. Connect M6 screw to gas spring and M8 screw to hose.

RoHS **LSCN-S-S-M6-M-M8**

M Sulphur compound free-cutting steel
S Zinc coating
Max. tightening torque 6Nm

RoHS **LSCN-S-L-M6-M-M8**

M Equivalent to S45C
S Black oxide (Fe₃O₄)
Max. tightening torque 6Nm

RoHS **LSCN-S-T-M6-M-M8**

M Equivalent to S45C
S Black oxide (Fe₃O₄)
Max. tightening torque 6Nm

RoHS **LSCN-S-SL-M6-M-M8**

M Equivalent to S45C
S Black oxide (Fe₃O₄)
Max. tightening torque 6Nm

RoHS **LSCN-S-ST-M6-M-M8**

M Equivalent to S45C
S Black oxide (Fe₃O₄)
Max. tightening torque 6Nm

Extension adapter when using FFC/FFS plate

In order to prevent interference in FCC/FFS, extension adapter is needed when using FFC/FFS. Connect male screw to gas spring and female screw to hose connection adapter.

RoHS **LSCN-S-S-M6-F-M6**

M Sulphur compound free-cutting steel
S Zinc coating
Max. tightening torque 6Nm

Conversion adapter for G1/8" charging port type gas spring

Adapters is needed in case of using compact type hose for G1/8" charging port type gas springs.

RoHS **LSCN-S-S-G1-F-M6**

M Sulphur compound free-cutting steel
S Zinc coating
Max. tightening torque 25Nm

Hose extension adapter

For connecting one hose with another.

RoHS **LSCN-S-S-M8-M-M8**

M Sulphur compound free-cutting steel
S Zinc coating
Max. tightening torque 6Nm

RoHS **LSCN-S-L-M8-M-M8**

M Sulphur compound free-cutting steel
S Zinc coating
Max. tightening torque 6Nm

Hose branching adapter

For hose branching.

RoHS **LSCN-S-T-M8-M-M8**

M Sulphur compound free-cutting steel
S Zinc coating
Max. tightening torque 6Nm

RoHS **LSCN-S-X-M8-M-M8**

M Sulphur compound free-cutting steel
S Zinc coating
Max. tightening torque 6Nm

G1/8" insertion port connection adapter

For connecting hose with G1/8" insertion part control panel or distribution block. Connect M8 screw to hose and G1/8" screw to control panel or distribution block.

RoHS **LSCN-S-S-M8-M-G1**

M Sulphur compound free-cutting steel
S Zinc coating
Max. tightening torque 6Nm for M8
25Nm for G1/8"

M6 insertion part connection adapter

For connecting hose with M6 insertion port control panel or distribution block, use LSCN-S-S-M6-M-M8 (P.1485). Connect M8 screw to hose and M6 screw to control panel or distribution block.



Order
Catalog No.
LSCN-S-S-M6-M-M8



Days to Ship

Quotation



Price

Quotation



LINKED SYSTEM COMPONENTS

—ADAPTERS FOR HAND SCREW TYPE— Suitable for G1/8" charging port type gas spring.

■ Hose connection adapter

For connecting gas spring and hose. Connect G1/8" screw to gas spring and S12.65 screw to hose. This adapter is always needed to connect hose with other adapter. Connect G1/8" screw to female screw of other adapter and S12.65 to hose.

RoHS **LSCN-S-S-G1-M-5.1**

M Sulphur compound free-cutting steel
S Zinc coating
 Max. tightening torque 25Nm

■ Connecting adapter between gas spring and hose connection adapter

For connecting gas spring with hose or connecting one gas spring with several hoses. Connect male screw to gas spring and female screw to hose connection adapter.

RoHS **LSCN-L-L-G1-F-G1**

M Equivalent to S45C
S Black oxide (Fe3O4)
 Max. tightening torque 25Nm

RoHS **LSCN-L-T-G1-F-G1**

M Equivalent to S45C
S Black oxide (Fe3O4)
 Max. tightening torque 25Nm

L	Catalog No.	L	Catalog No.
24	LSCN-S-L-G1-F-G1	26	LSCN-S-T-G1-F-G1
38.5	LSCN-L-L-G1-F-G1	40.5	LSCN-L-T-G1-F-G1
48	LSCN-X-L-G1-F-G1	50	LSCN-X-T-G1-F-G1

RoHS **LSCN-L-S2-G1-F-G1**

M Equivalent to S45C
S Black oxide (Fe3O4) Max. tightening torque 25Nm

RoHS **LSCN-L-T2-G1-F-G1**

M Equivalent to S45C
S Black oxide (Fe3O4) Max. tightening torque 25Nm

L	Catalog No.	L	Catalog No.
33.5	LSCN-S-S2-G1-F-G1	26	LSCN-S-T2-G1-F-G1
48	LSCN-L-S2-G1-F-G1	40.5	LSCN-L-T2-G1-F-G1
57.5	LSCN-X-S2-G1-F-G1	50	LSCN-X-T2-G1-F-G1

⚠ The female screw for connection is attached with cover cap. Remove the cover cap before connection.

■ Conversion adapter for M6 charging port type gas spring

Adapter is needed in case of using hand screw type hose for M6 charging port type gas springs. Connect male screw to gas spring and female screw to hose.

RoHS **LSCN-L-T-M6-F-G1**

M Equivalent to S45C
S Black oxide (Fe3O4)
 Max. tightening torque 25Nm

RoHS **LSCN-S-L-M6-F-G1**

M Equivalent to S45C
S Black oxide (Fe3O4)
 Max. tightening torque 25Nm

L	Catalog No.	L	Catalog No.
26	LSCN-S-T-M6-F-G1	33	LSCN-S-L-M6-F-G1
42	LSCN-L-T-M6-F-G1	49	LSCN-L-L-M6-F-G1

⚠ The female screw for connection is attached with cover cap. Remove the cover cap before connection.

RoHS **LSCN-S-S-M6-F-G1**

M Sulphur compound free-cutting steel
S Zinc coating
 Max. tightening torque 6Nm

⚠ Counter bore about 5mm depth to prevent interference in press die.

■ Hose extension adapter

For connecting one hose with another.

RoHS **LSCN-S-S-5.1-M-5.1**

M Sulphur compound free-cutting steel
S Zinc coating

■ G1/8" insertion port connection adapter

For connecting hose with G1/8" insertion port control panel or distribution block, use LSCN-S-S-G1-M-5.1 (REF. P.1487). Connect S12.65 screw to hose and G1/8" screw to control panel or distribution block.

■ M6 insertion port connection adapter

For connecting hose with M6 insertion port control panel or distribution block, use LSCN-S-S-G1-M-5.1 (REF. P.1487) and conversion adapter for M6 charging port type gas spring. Connect S12.65 screw of LSCN-S-S-G1-M-5.1 to hose, M6 screw of conversion adapter to control panel or distribution block.

Order **Catalog No.**
LSCN-S-S-G1-M-5.1

Days to Ship **Quotation**

Price **Quotation**

GAS SPRINGS



LINKED SYSTEM COMPONENTS

—HOSE—

HOSE

For compact type

RoHS

LSHS5.5-SS-□

① Hose

Inner Surface	Outer Surface
Polyamide	Polyurethane

② Joint Equivalent to S45C
Max. Tightening Torque 6Nm

Catalog No.	L (Configurable L < 1000 10mm increments L ≥ 1000 20mm increments)
LSHS5.5-SS	90-5000

For hand screw type

RoHS

LSHS5.1-SS-□

① Hose

Inner Surface	Outer Surface
Polyamide	Polyurethane

② Joint Equivalent to S45C

RoHS

LSHS5.1-SL-□

① Hose

Inner Surface	Outer Surface
Polyamide	Polyurethane

② Joint Equivalent to S45C

RoHS

LSHS5.1-LL-□

① Hose

Inner Surface	Outer Surface
Polyamide	Polyurethane

② Joint Equivalent to S45C

Catalog No.	L (Configurable L < 1000 10mm increments L ≥ 1000 20mm increments)
LSHS5.1-SS	90-5000
LSHS5.1-SL	110-5000
LSHS5.1-LL	110-5000

① 5000mm
② Specification and performance of the hoses

	Outer Diameter mm	Normal Pressure MPa	Max. Burst Pressure MPa	Min. Bending Radius
For compact type	5.5	63	189	R20
For hand screw type	5.1	63	195	R20

Order
LSHS5.1-SS-110

Days to Ship

Alterations - L - (S)
LSHS5.5-SS - 400 - S010

Price

Alterations	Code	Spec.
ID Number	S	ID number is shown to hoses. It can be used for real thing checks with a plan. Please designate 3 digits of number as S.



LINKED SYSTEM COMPONENTS

—CLIP—

CLIP

RoHS

LSCL-6

LSCL-6S

① Hose

Inner Surface	Outer Surface
Polyamide	Polyurethane

② Joint Equivalent to S45C

Catalog No.	L (Configurable L < 1000 10mm increments L ≥ 1000 20mm increments)
LSCL-6	90-5000

Order
LSCL-6

Price

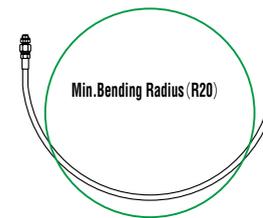
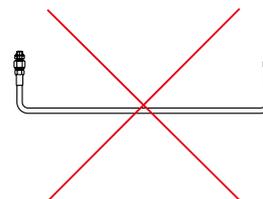
Quotation

Days to Ship

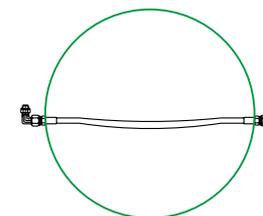
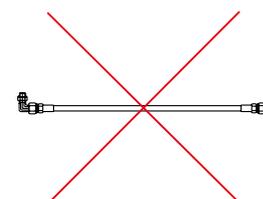
Quotation

Precautions for hose handling

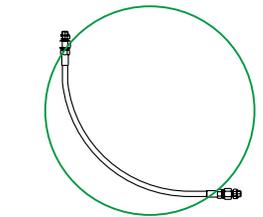
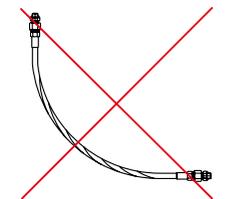
1. Rotate at a radius larger than the smallest bend radius (R20).



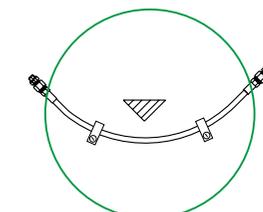
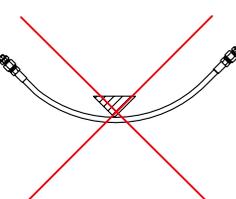
2. Keep sufficient margin such that the hose is not pulled (hose length criteria: 10 to 20 % extra of piping route).



3. Connect such that the hose is not twisted.



4. Fix the hose in the mold with the grip such that it does not spring away due to the pulsation of internal pressure or vibration of the press.





LINKED SYSTEM COMPONENTS

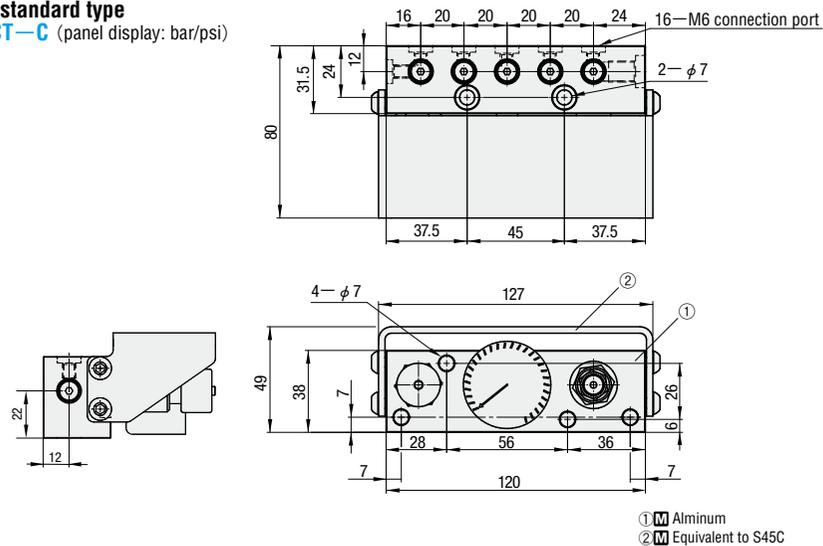
—CONTROL PANELS—

CONTROL PANELS

Inlet M6 type M6 standard type Convenient for compact hose connections

RoHS

M6 standard type
LSCT—C (panel display: bar/psi)



Connection fittings:

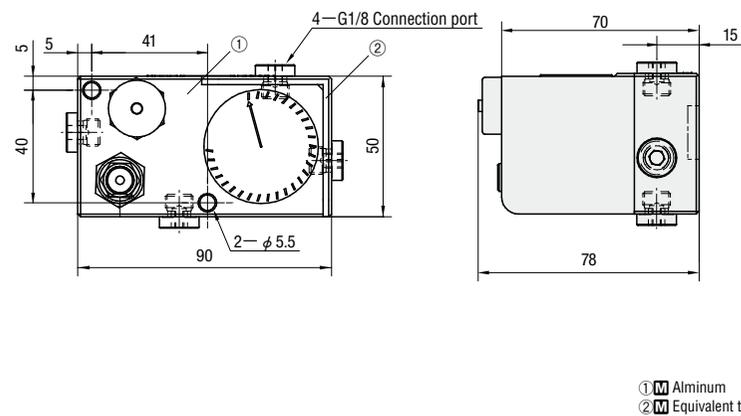
When connecting to the compact type hose use LSCN—S—S—M6—M—M8 (P.1485), when connecting the manual tightening type hose use LSCN—S—S—G1—M—5.1 (P.1487) and pipe fittings (P.1488) used while using the inlet M6 type gas spring.

Inlet G1/8 type

G1/8 Standard type Connects easily to the manual tightening type.

RoHS

G1/8 Standard type
LSCT—F (panel display: bar/psi)



Connection fittings:

When connecting to the compact type hose use LSCN—S—S—M8—G1 (P.1486) and LSCN—S—S—G1—M—5.1 (P.1487) when connecting to the manual tightening type.

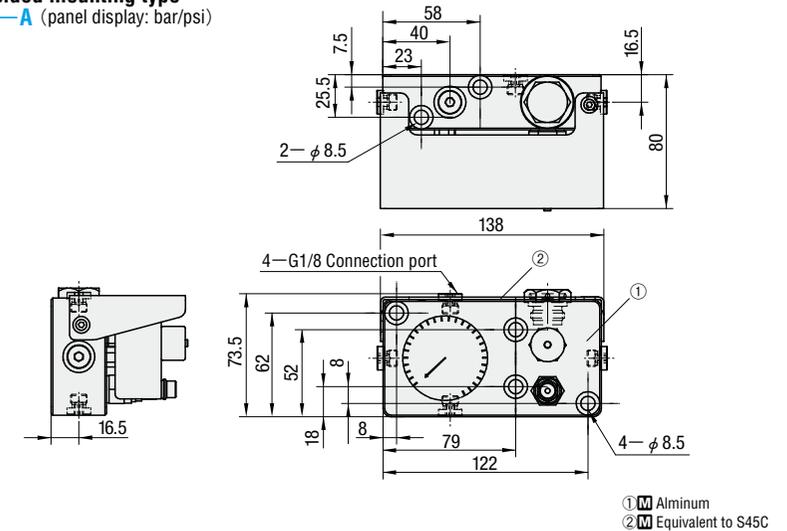
●1bar=1kgf/cm²=0.1MPa 1MPa=10kgf/cm²=145psi

Inlet G1/8 type

Two-sided mounting type You can change the mounting direction to match the mold.

RoHS

Two-sided mounting type
LSCT—A (panel display: bar/psi)



Connection fittings:

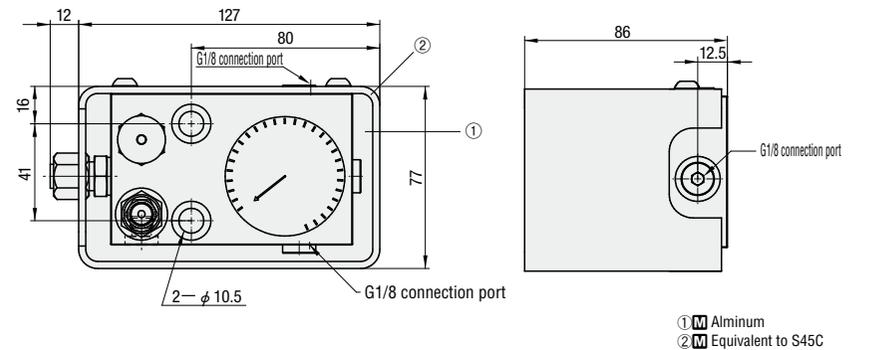
Use LSCN—S—S—M8—M—G1 when connecting to compact type hose (P.1486) and LSCN—S—S—G1—M—5.1 (P.1487) when connecting to the manual tightening type.

The entire circumference protected type

Excellent for protecting protruding parts such as a panel.

RoHS

The entire circumference protected type
LSCT—D (panel display: bar/psi)
LSCT—DM (panel display: MPa/bar)



Connection fittings:

Use LSCN—S—S—M8—M—G1 (P.1486) when connecting to compact type hose and LSCN—S—S—G1—M—5.1 (P.1487) when connecting to the manual tightening type.

⚠The female thread that is used for connection has an attached cover cap. Remove the cover cap before connecting.



Catalog No.
LSCT—A



Quotation

GAS SPRINGS



LINKED SYSTEM COMPONENTS

— DISTRIBUTION BLOCKS —

■ Distribution block M6 insertion port type

LSDB-S-4-M6

RoHS

Equivalent to S45C
Black oxide (Fe₃O₄)

LSDB-R-6-M6

RoHS

Equivalent to S45C
Black oxide (Fe₃O₄)

LSDB-H-6-M6

RoHS

Equivalent to S45C
Black oxide (Fe₃O₄)

Connection adapter :
Use LSCN-S-S-M6-M-M8 (P.1485) to connect the hose for compact type.
Use LSCN-S-S-G1-M-5.1 (P.1487) and the conversion adapter for M6 charging port type gas spring when connecting the hose for hand screw type (P.1488).

■ G1/8" insertion port type

LSDB-S-3-G1

RoHS

Equivalent to S45C
Black oxide (Fe₃O₄)

LSDB-S-4-G1

RoHS

Equivalent to S45C
Black oxide (Fe₃O₄)

Connection adapter :
Use LSCN-S-S-M8-M-G1 (P.1486) to connect the hose for compact type, LSCN-S-S-G1-M-5.1 (P.1487) to connect the hose for hand screw type.

■ G1/8" insertion port type

LSDB-R-6-G1

RoHS

Equivalent to S45C
Black oxide (Fe₃O₄)

LSDB-H-6-G1

RoHS

Equivalent to S45C
Black oxide (Fe₃O₄)

LSDB-R-10-G1

RoHS

Equivalent to S45C
Black oxide (Fe₃O₄)

Connection adapter :
Use LSCN-S-S-M8-M-G1 (P.1486) to connect the hose for compact type.
Use LSCN-S-S-G1-M-5.1 (P.1487) to connect the hose for hand screw type.

■ G1/8" insertion port type (with G1/4" type)

LSDB-R-13-G1-1-G2

RoHS

Equivalent to S45C
Black oxide (Fe₃O₄)

■ G1/4" insertion port connection adapter

LSCN-S-S-G2-M-M8

RoHS

Equivalent to S45C
Zinc coating
Max. tightening torque 60Nm

LSCN-S-S-G2-F-M6

RoHS

Equivalent to S45C
Zinc coating
Max. tightening torque 60Nm

Use to connect the hose for compact type.

Used for connecting the hand screw type hose.

⚠ The female screw for connection is attached with cover cap. Remove the cover cap before connection.
(Excluding LSCN-S-S-G2-F-M6)

Order **Catalog No.**
LSDB-R-6-G1

Price **Quotation**

Days to Ship **Quotation**

GAS SPRINGS

LINKED SYSTEM INSTALLATION PROCEDURE



Do not charge any gas other than Nitrogen. Or it may cause serious accidents including explosion.

Installation precautions

- Check that no foreign substances adhere to the hose or connector before assembly. Contamination of foreign substances may result in gas leakage.
- When discharging gas, never allow anyone to be exposed to the injection port. The operator must wear protective glasses. Lubricant oil may blow out from inside the gas spring.
- Check that the gas is completely discharged before assembly. The piston rod will drop if it is pressed down when the gas is completely discharged.
- When tightening the adapters, follow the max. tightening torque indicated on the adapter product page. Exceeding the max. tightening torque will cause damage of adapter and result in gas leakage.
- When charging the gas, do not exceed the Nitrogen gas charge pressure indicated on each gas spring product page. The gas spring may be damaged if the charging pressure exceeds gas spring specifications.
- Do not remove any hose or connections during operation and/or while gas is charged. Follow linked system de-installation procedure.

Tools to prepare

Nitrogen gas charging kit (Contents) •Hose •Gas changing device •Adapter	Connecting part for nitrogen tank	Fixing part for nitrogen tank	Degassing jig (Set for M6·G1/8" charging port type)	T-bolt (Set for M6·G1/8" charging port type)
Catalog No. LSTL-CK	Catalog No. LSTL-CH	Catalog No. LSTL-CF	Catalog No. LSTL-GL	Catalog No. LSTL-TB
		※The appearance of LSTL-GL has been changed. There is no change on the function.		
Hexagon wrench (Set for M6·G1/8" charging port type)	Special screwdriver for valve removal			
Catalog No. LSTL-HW	Catalog No. LSTL-VD			
Spanner	Protective glasses	Gas leakage detecting spray	Nitrogen gas Pressure 18MPa (183kgf/cm ²)	GAS SPRINGS with Linked System

☞Spanners, protective glasses, Gas leakage detecting spray can be purchased from WOS.

	Catalog No. LSTL-GL		Quotation		Quotation
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Procedure and precautions

1. Remove the protective cap with hexagon wrench.



2. Use a degassing jig (LSTL-GL) to discharge gas.



☞When gas is drawn out rapidly, the gas charge valve will be damaged.

3. Press the gas spring against to check that the piston rod pushed.



4. Remove the gas charge valve with the special screwdriver (LSTL-VD).



5. Install the adapter to the gas spring. (☞Pay attention to the tightening torque)



6. Connect the hose to the adapter installed in Step 5. (☞For compact type, pay attention to the tightening torque)



7. Connect to the adapter to branch the hose.



Same for distribution blocks.



If the cover cap is attached, remove it before connection.



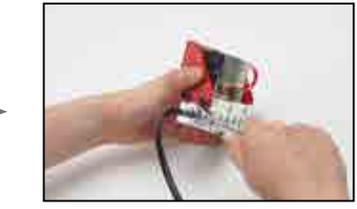
8. Remove the control panel cap with hexagon wrench.



9. Install the conversion adapter the control panel insertion port.



10. Connect the hose to the control panel. (☞For compact type, pay attention to the tightening torque)



11. Use T-bolt (LSTL-TB) to pull up the piston rod.



12. Check that the adjustment valve on control panel is closed.



13. Check that the valve on Nitrogen gas tank is closed.



LINKED SYSTEM INSTALLATION PROCEDURE

LINKED SYSTEM DE-INSTALLATION PROCEDURE

■ Procedure and precautions (continued)

14. Remove the red cap of the control panel, and insert the hose end of Nitrogen gas charging kit (LSTL-CK).



15. Check that the hose valve is closed.



16. Open the valve on Nitrogen gas tank.



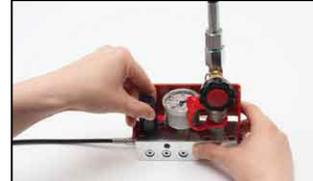
17. Open the hose valve.



18. Close the hose valve once the pressure rises to the target pressure. (⚠ never exceed the gas spring charge pressure)



19. If the pressure exceeds the target, gradually open the adjustment valve on the control panel to discharge the gas.



20. Check that the hose valve and control panel valve are closed.



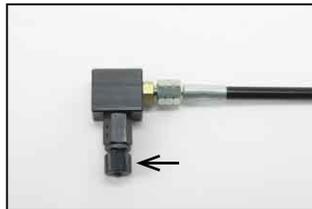
21. Close the valve on Nitrogen gas tank.



22. Remove the hose from the control panel.



23. Loosen the valve on the gas tank side to release the residual pressure in the hose.



24. Use gas leakage detection spray to check that no large bubbles appear.



[Reference]
Gas leaking status (bubbles appear).



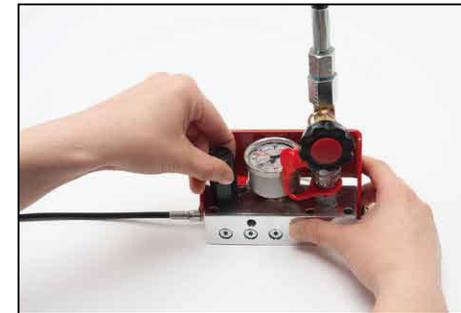
The same procedure is applied to inspection of gas leakage during maintenance.

■ De-installation precautions

• When discharging the gas, never stand in front of the adjustment valve. And the operator must wear protective glasses. Lubricant oil may blow out from inside the gas spring.

■ Procedure and precautions

1. Gradually open the adjustment valve on control panel to discharge the gas.



2. Check that the monitor on control panel reads zero.



3. Remove the hose from the gas spring.



4. Remove the adapter from the gas spring.

