


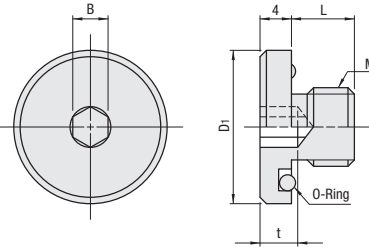
# Seal Plugs & Washers

Bolt Head / Fixed Type



**Seal Plugs**


**FSPS**



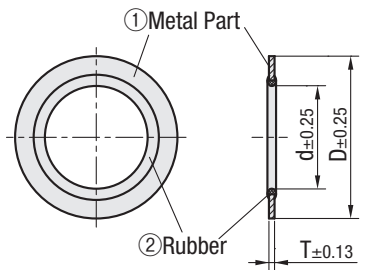
**Operating Temperature Range:** -40~200°C  
**Material:** Body: 304 Stainless Steel  
 O-Ring: Fluoro Rubber (Hardness: Shore A75)  
 (JIS B2401 4 Type D)

Part Number		M (Fine)	L	D <sub>1</sub>	B	t	O-Rings No.	Recommended Tightening Torque (N·m)	Mass (g)
Type	No.								
FSPS	8	M8 x 1.0	7	16	5	3.5	P10	10.9	4
	10	M10 x 1.0	8	19.5	5	4	P12.5	13.7	7
	12	M12 x 1.5	12	21	6	5	P14	19.2	14
	14	M14 x 1.5	12	23	6	5	P16	27.4	19
	16	M16 x 1.5	12	25	8	6	P18	44.5	25

Part Number Example: **FSPS10**



**Bolt Head Fixed Type**

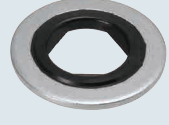


Type	Metal Part		Rubber		Operating Temperature Range
	Material	Surface Treatment	Material	Hardness	
GSW	Low Carbon Steel	Chromate	Nitrile Rubber (NBR)	Shore A70	-30~100°C
GSWF	Low Carbon Steel Equivalent	Chromate	Fluoro Rubber (FKM)	Shore A65	-10~200°C
SGSW	304 Stainless Steel	—	NBR Nitrile Rubber	Shore A65	-30~100°C
SGSWF	304 Stainless Steel	—	Fluoro Rubber (FKM)	Shore A70	-10~200°C

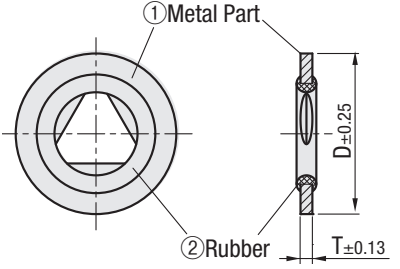
Part Number		T	D	d	Applicable Bolt	Max. Allowable Pressure	Reference Value			
Type	No.						Tightening Torque N-m		Size of Application Part	
						Min.	Max.	Hole I.D. max	Tightening Face O.D. Min	
GSW Nitrile Rubber GSWF Fluoro Rubber SGSW Stainless Steel / Nitrile Rubber SGSWF Stainless Steel / Fluoro Rubber	3	1.0	7.8	2.85	M3	5MPa	0.7	1.2	3.3	5.4
	4		10.2	3.85	M4	5MPa	1	2.2	4.4	7
	5		12.5	4.85	M5	5MPa	2.2	3.8	5.3	8
	6		14	5.85	M6	10MPa	3	8.5	6.5	10
	8		17.5	7.8	M8	10MPa	4.5	20	8.7	13
	10		20	9.8	M10	10MPa	6	25	10.8	15
	12	24	1.3	11.8	M12	10MPa	8	56	13.7	17.5
	16	30.3		15.8	M16	10MPa	10	125	17.5	22
	20	32.7		19.8	M20	10MPa	40	135	21.5	26
	24	37.6		23.8	M24	10MPa	60	190	25	30

# Seal Plugs & Washers

Bolt Head / Fixed Type, *continued*



**Thread Fixed Type**




Type	Metal Part		Rubber		Operating Temperature Range
	Material	Surface Treatment	Material	Hardness	
GSWM	Low Carbon Steel	Chromate	Nitrile Rubber (NBR)	Shore A65	-30~100°C
GSWMF	Low Carbon Steel	Chromate	Fluoro Rubber (FKM)	Shore A70	-10~200°C
SGSWMF	304 Stainless Steel	—	Fluoro Rubber (FKM)	Shore A70	-10~200°C

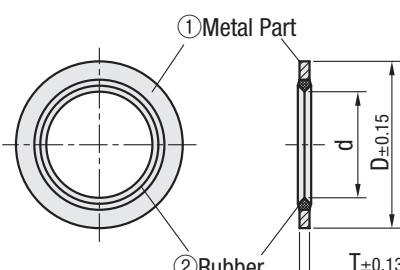
ⓘ Be sure to see caution for fastening shown below.

Part Number		T	D	Applicable Bolt	Max. Allowable Pressure	Reference Value				GSWM		GSWMF		SGSWMF	
Type	No.					Tightening Torque N-m		Size of Application Part		1-49	50-99	1-49	50-99	1-49	50-99
						Min.	Max.	Hole I.D. Max.	Tightening Face O.D. min.	Chamfering Max.					
GSWM Nitrile Rubber GSWMF Fluoro Rubber SGSWMF Stainless Steel / Fluoro Rubber	3	1.0	7.8	M3	5MPa	0.7	1.2	3.3	5.4	0.2	•	•	•	•	
	4		10.2	M4	5MPa	1	2.2	4.4	7	0.2	•	•	•	•	
	5		12.5	M5	5MPa	2.2	3.8	5.3	8	0.2	•	•	•	•	
	6		14	M6	10MPa	3	8.5	6.5	10	0.2	•	•	•	•	
	8		17.5	M8	10MPa	4.5	20	8.7	13	0.4	•	•	•	•	
	10		20.3	M10	10MPa	6	25	10.8	15	0.4	•	•	•	•	
	12	24.3	2.0	12	M12	10MPa	8	56	13.7	17.5	0.4	•	•	•	•
	16	30.3		M16	10MPa	10	125	17.5	23	0.8	•	•	•	•	
	20	36.5		M20	10MPa	40	135	21.5	28	0.8	•	•	•	•	
	24	42.8		M24	10MPa	60	190	25	34	0.8	•	•	•	•	

ⓘ Please use air under 0.98MPa.



**Counterbore Hole Fixed Type**



Type	Metal Part		Rubber		Operating Temperature Range
	Material	Surface Treatment	Material	Hardness	
GSWC	Low Carbon Steel	Chromate	Nitrile Rubber (NBR)	Shore A80	-30~100°C
GSWCF	301 Stainless Steel	—	Fluoro Rubber (FKM)	Shore A75	-10~200°C

Part Number		T	D	d	Applicable Bolt	Max. Allowable Pressure	Reference Value				GSWC		GSWCF	
Type	No.						Tightening Torque N-m		Size of Application Part		1-49	50-99	1-49	50-99
						Min.	Max.	Hole I.D. Max.	Counterbore Dia. Min.					
GSWC Nitrile Rubber GSWCF Fluoro Rubber	3	0.7	6	2.9	M3	10MPa	0.7	1.4	3.3	6.6	•	•	•	•
	4		7.5	3.9	M4	10MPa	1.1	3.1	4.2	8.2	•	•	•	•
	5		9	4.9	M5	10MPa	2.2	6.5	5.2	10	•	•	•	•
	6		10.5	5.9	M6	10MPa	3	15	6.2	11.5	•	•	•	•
	8		13.5	7.9	M8	10MPa	4.5	37	8.2	14.5	•	•	•	•
	10		17	9.9	M10	10MPa	6	73	10.4	18	•	•	•	•
	12	19	1.5	11.9	M12	10MPa	8	115	12.5	21	•	•	•	•
	16	25		15.9	M16	10MPa	10	290	16.5	27	•	•	•	•

ⓘ Please use air under 0.98MPa.

ⓘ For rubber properties, P2566.

Part Number Example: **GSW4**, **SGSWMF6**

### Cautions for Thread Fixed Type

- Install the washer (1) by rotating onto the thread.
- Install the washer (1) completely to the base, then install the nut (2).
- Tighten the nut (2) until it firmly contacts the washer.

ⓘ Do not force the washer (1) down by pushing with the nut (2).

