

φ50, φ60

GW

Pressure Gauge for Semiconductor Industry

Outline

The pressure gauge is designed for offering excellent performance even with highly pure semiconductor gas process media or in environmental atmosphere surrounded by corrosive gas. The gauge is suitable for the use in semiconductor process application, especially for highly-pure process media measurement with great care of air-tightness and air-cleanliness.

Features

- Primarily internal components (Bourdon tube, socket, case and movement etc.) are made of stainless steel to resist to corrosion both against process media and environmental atmosphere.
- The wetted parts like pressure sensing element are welded by argon arc welding and manufactured under strict quality controls inspecting proof pressure and air-tightness.
- The case is equipped with a blowout disc*. In case the Bourdon tube were to rupture, it would avoid the damage of front window.

*To maximize performance, please select the pressure range with your common operating pressure should be 30 to 65% of the pressure range. Furthermore, please ensure that the wetted parts materials listed are suitable for the use against measuring gas or liquid.



List of grade

The GW pressure gauge has the following grade configuration, as classified based on its cleanliness, and its processing and inspection ratings.

Grade	A	B
Cleaning level	Refer to table below.	
Cleaning	Ultrasonic cleaning, finish cleaning	Cleaning conforming to "Use no oil & water"
Assembly/Adjustment	Clean room (Class 10,000)	General production line
Leak test	Helium Leak Rate	
No oil & water	Use no oil & water	
Packing	Polyethylene-sealed and packaged after nitrogen (N ₂) gas flushing.	Polyethylene bag

*Gas contact inner surface: Specify GW2□ if a special mirror finish is required.

Cleaning level

Grade	Number of fine particles and fibers											Allowable number of hydrocarbon (Max. value: ppm)
	Size of fine particle (μm)					Size of fibers (μm)						
	0 to 20	20 to 50	50 to 100	100 to 500	500 to 1000	0 to 20	20 to 50	50 to 100	100 to 700	700 to 1000	1000 to 6000	
A	(a)	(a)	(a)	5	1 (b)	(a)	(a)	5	1 (b)	—	—	
B	(a)	(a)	(a)	25 (b)	—	(a)	(a)	(a)	(a)	(b)	—	50

Note: (a) No limit (b) More than this size is not allowed.

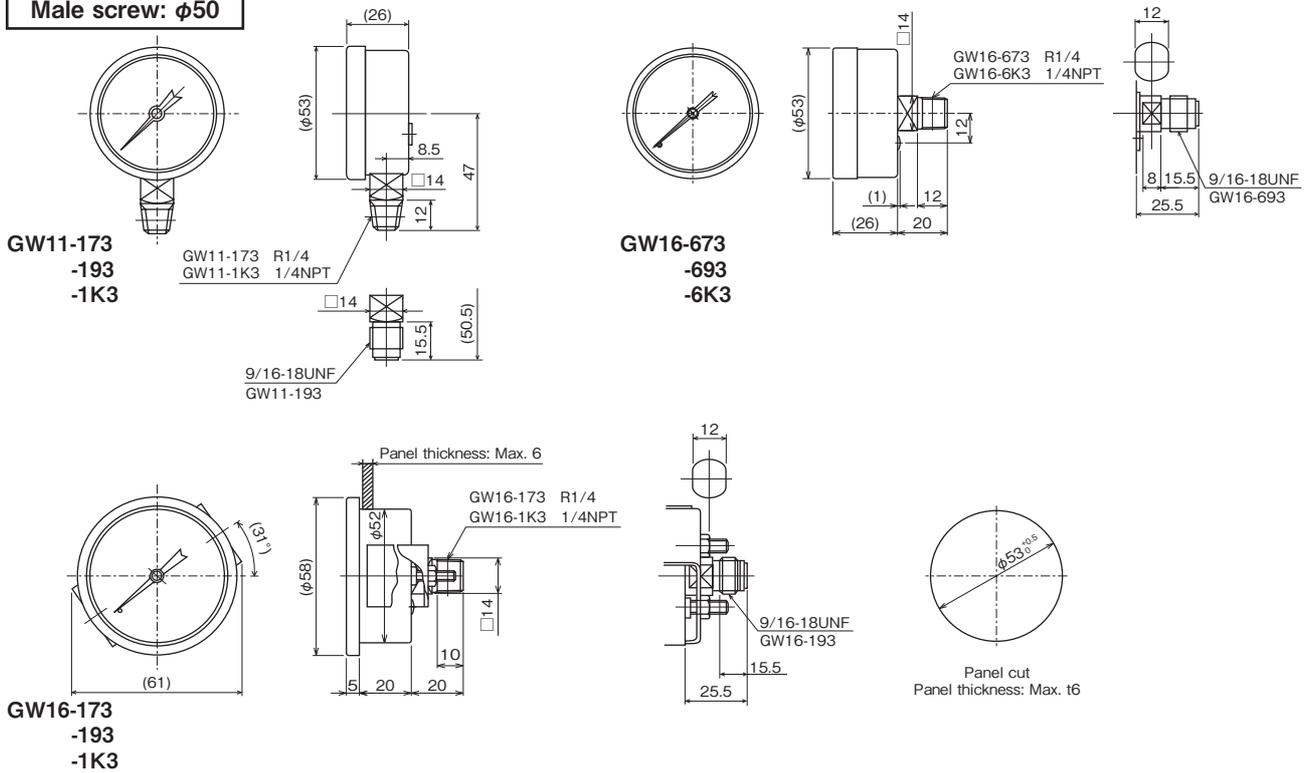
Specification

Item	Description
Fluid	Air or liquid
Mounting	Lower connection ...  A-frame Back connection ...  D-frame (Mounting clamp, stem)
Size	φ50 (Model: GW11, 16, 21) φ60 (Model: GW12, 17, 22, 27)
Connection	R1/4, 9/16-18UNF, 1/4NPT, G1/4B
Material	Bourdon tube, Connecting part SUS316 (GW2□ is SUS316L) Case SUS304 Movement SUS
Enclosure	Indoor use
Gas contact inner surface	GW2□ only: Special mirror-finished
Welding	Argon arc welded
Pressure range	0 to 0.2 → 0 to 100MPa -0.1 to 0.1 → -0.1 to 2MPa (A Grade: 0 to 25MPa and under) (35MPa or greater: φ60 only)
Operating temperature	-5 to 45°C
Accuracy	±1.5%F.S.
Leakage (Helium leak rate)	1.01×10 ⁻⁹ Pa·m ³ /s.
Use no oil & water	Manufacture/process wetted parts not to retain oils and water.
Caution	Please make sure to leave a space greater than 10mm to allow the blowout disc to function properly. Also, please refrain from tampering with or plugging up the window hole and plug.
Weight	φ50: Approx. 100 g φ60: Approx. 200 g

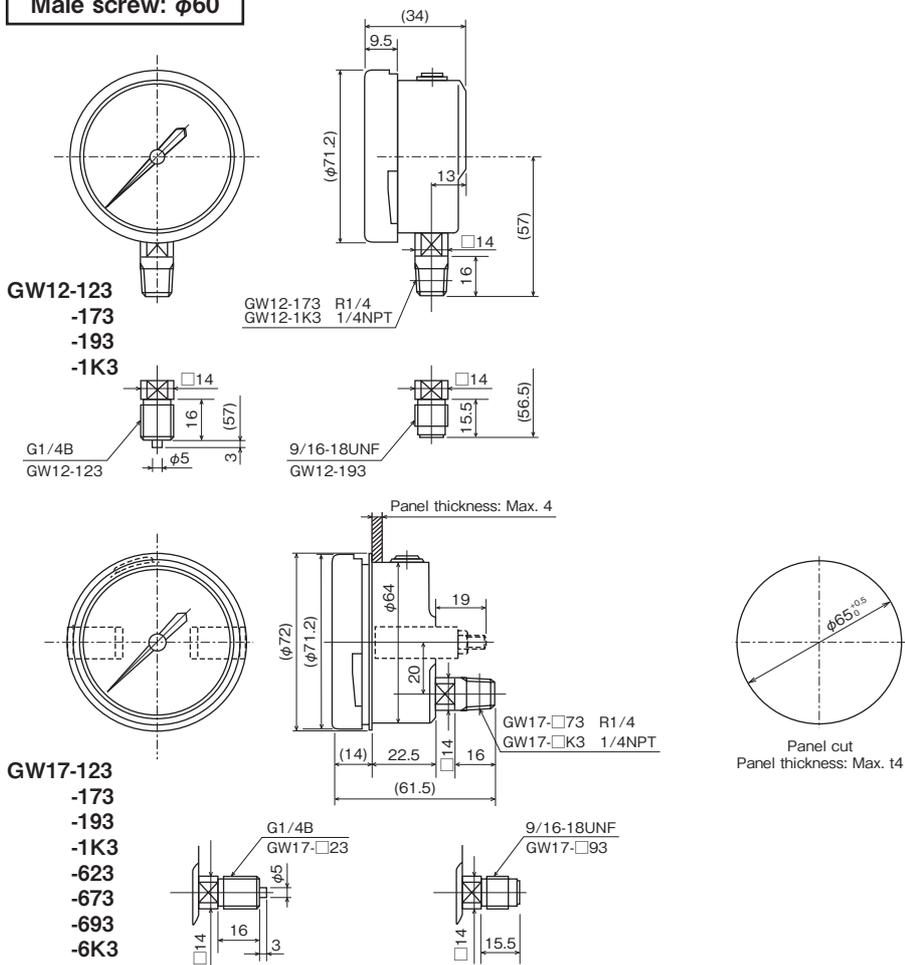
Dimensions 1

Unit: mm

**A Grade/B Grade
Male screw: $\phi 50$**



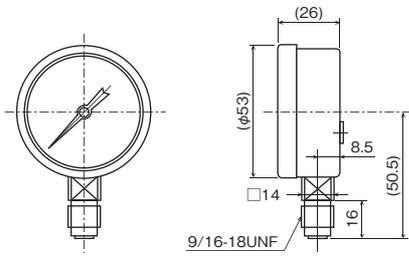
**A Grade/B Grade
Male screw: $\phi 60$**



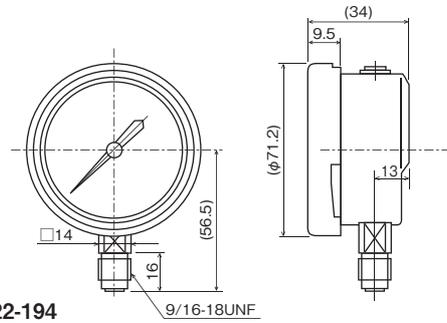
Dimensions 2

Unit: mm

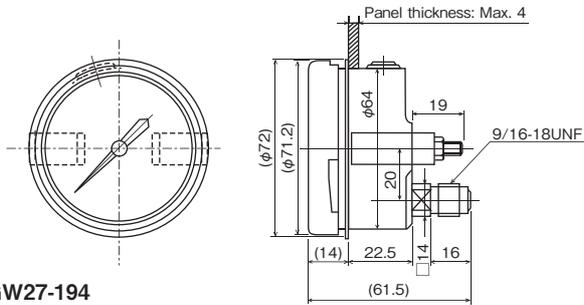
A Grade
Male screw: $\phi 50$, $\phi 60$



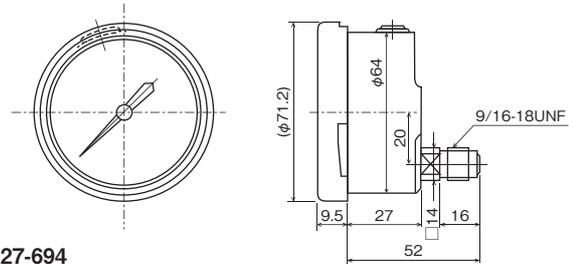
GW21-194



GW22-194

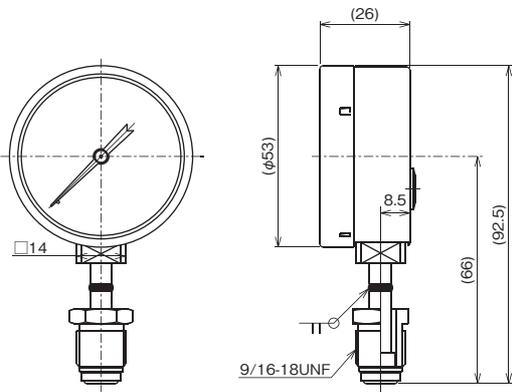


GW27-194

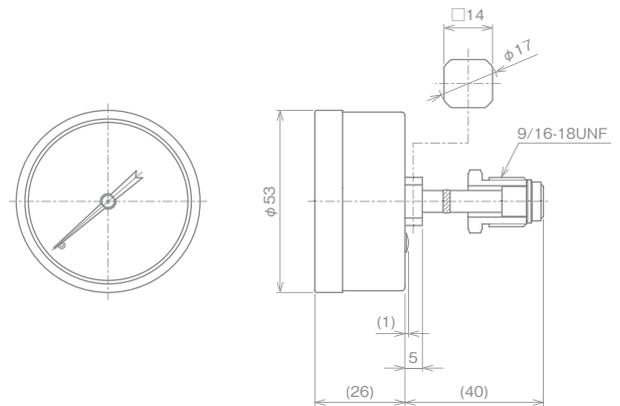


GW27-694

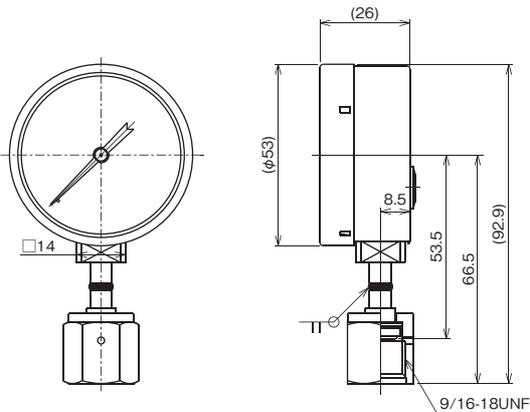
A Grade/B Grade
Male nut/Female nut: $\phi 50$



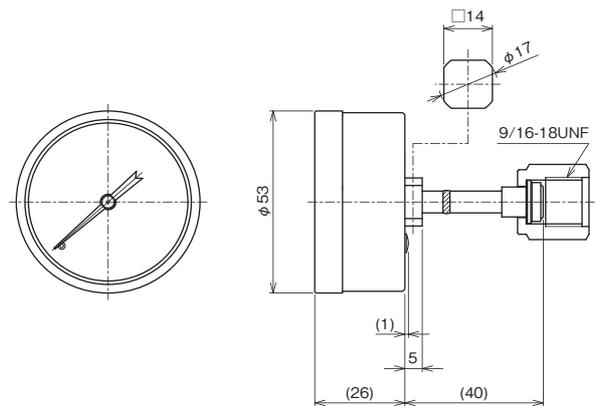
GW21-1E4



GW26-6E4



GW21-1G4



GW26-6G4

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model

G
W
1

—

3

—

0

0

0

×

×

×

×

×

①
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④
⑤
⑥
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⑧
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⑪
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⑬
⑭
⑮

Pressure Gauge for Semiconductor Industry
A/B Grade

Model number		Selective spec.		Additional spec. (Option)	
Model	1	Mounting	Lower connection	Case materials/Outer	Wetted parts
	2	φ50 Lower connection	SUS304	SUS304	SUS316
	6	φ50 Back connection	SUS304	SUS304	SUS316
	7	φ60 Back connection	SUS304	SUS304	SUS316

① Mounting		Lower connection	Back connection
1	1	A-frame	D-frame (Mounting clamp)
	6	—	D-frame (Stem)

② Connection			
2	2	G1/4B	GW11 and 16 cannot be manufactured
	7	R1/4	
	9	9/16-18UNF (Compatible with 1/4 VCR Male)	
	K	1/4NPT	
		Other specifications	

③ Wetted parts material			
3	3	SUS316	

④ Pressure range			
1	1	-0.1 to 0.1, 0.2, 0.3, 0.4, 0.6, 1, 1.5, 2MPa	Compound gauge
	2	0 to 0.2, 0.3, 0.4, 0.6, 1, 1.5, 2, 2.5, 3.5MPa	
	3	0 to 5, 7, 10MPa	
	4	0 to 15, 25MPa	
	5	0 to 35MPa	Only B Grade of GW12 and 17
	6	0 to 50, 70MPa	Only B Grade of GW12 and 17
	7	0 to 100MPa	Only B Grade of GW12 and 17

Please specify the pressure range and units separately besides selection of range code.

⑤ Accuracy			
0	0	Standard (±1.5%F.S.)	

⑥ Pointer			
0	0	Standard type	

⑦ Glass			
0	0	Standard (Inorganic glass)	

⑭ Grade (Specification code)			
0	0	B Grade	
	W	A Grade* ¹	

⑮ Document			
0	0	Nil	
	1	Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, mill test report, test report (1 pc 1 copy), inspection/traceability certificate, strength calculation, attended inspection	

* 1 Please select GW2□, if you request the special mirror-finished.

*Specify "X" if there is no applicable specification.

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model

G W 2				4		0	0	0	×	×	×	×	×	×	W	
	①	②	③		④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮

Pressure Gauge for Semiconductor Industry
A Grade

Model number		Selective spec.		Additional spec. (Option)		
Model	1	Mounting	Lower connection	Case materials/Outer	Wetted parts	Connection
	2	φ50	Lower connection	SUS304	SUS316L	9/16-18UNF
	6	φ50	Back connection	SUS304	SUS316L	9/16-18UNF
	7	φ60	Back connection	SUS304	SUS316L	9/16-18UNF
① Mounting		1	A-frame	D-frame (Mounting clamp) (GW26 cannot be manufactured)		
		6	—	D-frame (Stem)		
② Connection		9	9/16-18UNF (Compatible with 1/4 VCR Male) (GW26 cannot be manufactured)			
		E	9/16-18UNF (1/4CVC Male nut) (GW22 and 27 cannot be manufactured)			
		G	9/16-18UNF (1/4CVC Female nut) (GW22 and 27 cannot be manufactured)			
			Other specifications			
③ Wetted parts material		4	SUS316L			
④ Pressure range		1	-0.1 to 0.1, 0.2, 0.3, 0.4, 0.6, 1, 1.5, 2MPa			Compound gauge
		2	0 to 0.2, 0.3, 0.4, 0.6, 1, 1.5, 2, 2.5, 3.5MPa			
		3	0 to 5, 7, 10MPa			
		4	0 to 15, 25MPa			
⑤ Accuracy		0	Standard (±1.5%F.S.)			
⑥ Pointer		0	Standard type			
⑦ Glass		0	Glass (Inorganic glass)			
⑭ Grade (Specification code)		W	A Grade (Gas contact inner surface: Special mirror-finished)			
⑮ Document		0	Nil			
		1	Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, mill test report, test report (1 pc 1 copy), inspection/traceability certificate, strength calculation, attended inspection			

Please specify the pressure range and units separately besides selection of range code.

*Specify "X" if there is no applicable specification.