

**φ50, φ60****GW**

# Pressure Gauge for Semiconductor Industry

## Outline

This pressure gauge is designed for excellent performance even in atmospheres with highly pure semiconductor gas or corrosive gas.

This pressure gauge is adapted for numerous semiconductor processes, especially those requiring highly pure fluids, with careful consideration having been given to air-tightness and air-cleanliness.

## Features

- Its main internal components (Bourdon tube, socket, case, internal machine, etc.) are made of stainless steel, which resist corrosion from both the body of the gauge and from the atmosphere.
- The wetted components of the pressure elements are welded on using argon arc welding techniques, and manufactured under tight quality controls and inspections for pressure-proof and air-tightness.
- The case is equipped with a safety window\*. In case the Bourdon tube were to rupture, it would avoid the damage of glass.

\*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	Depends on the table below.	
Cleaning	Ultrasonic cleaning, finish cleaning	Cleaning conforming to "Use no oil & water"
Assembly/Adjustment	In 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 <sub>2</sub> ) 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.

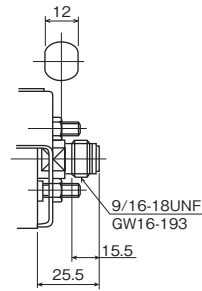
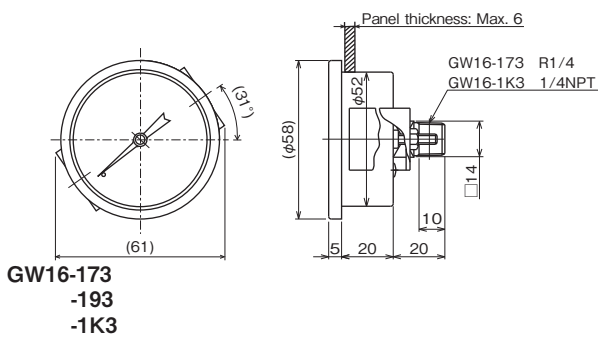
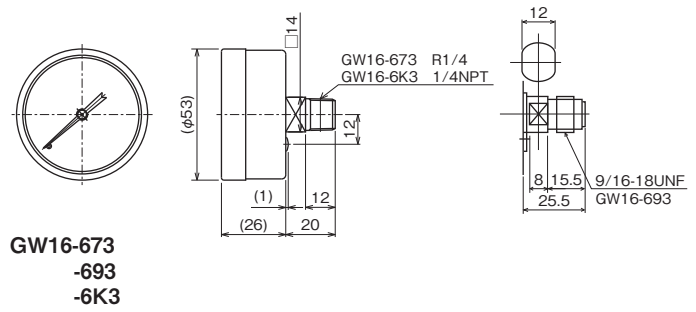
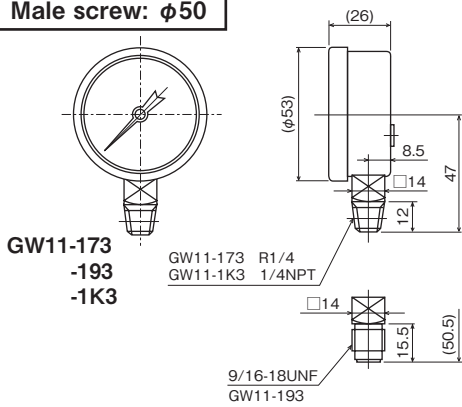
## Specification

Item	Description
Fluid	Air or liquid
Mounting	Lower connection ...  A-frame      Back connection ...  D-frame (Mounting clamp, stem)
Size	φ 50 (Model: GW11, 16, 21) φ 60 (Model: GW12, 17, 22, 27)
Connection	R1/4, 9/16-18UNF, 1/4NPT, G1/4B
Material	Bourdon tube, Socket    SUS316(GW2□ is SUS316L) Case                        SUS304 (Material) Internal machine        SUS
Construction	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 or less) (35MPa or higher: φ 60 only)
Operating temperature	-5 to 40°C
Accuracy	±1.5%F.S.
Leakage (Helium leak rate)	$1.01 \times 10^{-9} \text{ Pa} \cdot \text{m}^3/\text{s}$
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 safety window to function properly. Also, please refrain from tampering with or plugging up the window hole and plug.
Weight	φ 50: Approx. 100 g φ 60: Approx. 200 g

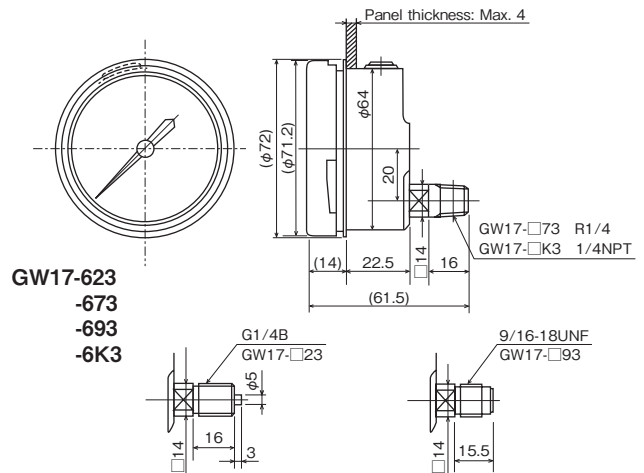
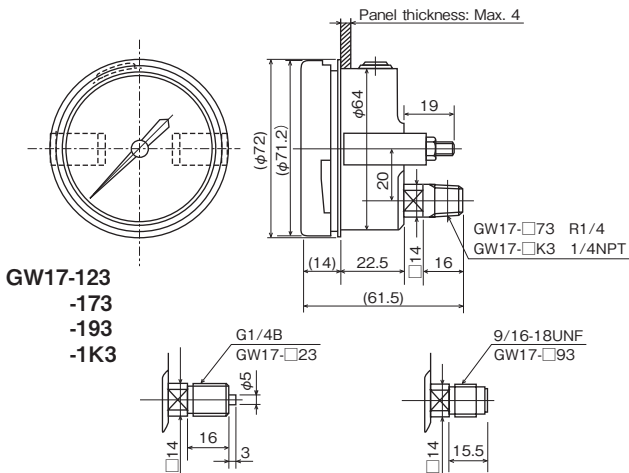
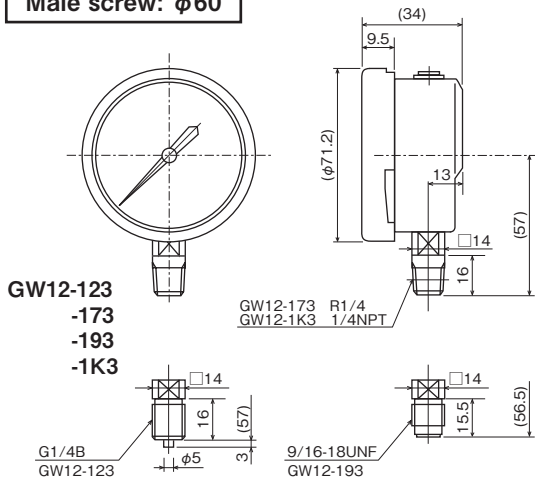
### Dimensions 1

Unit: mm

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



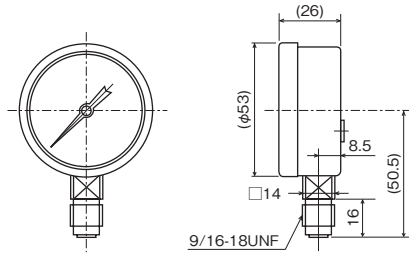
**A Grade/B Grade**  
**Male screw:  $\phi 60$**



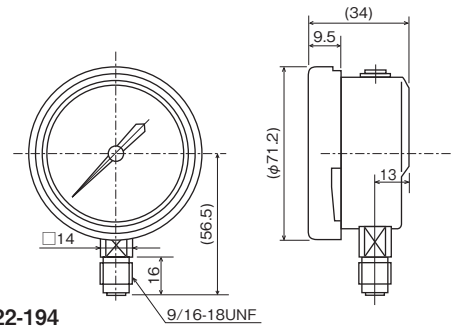
### Dimensions 2

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

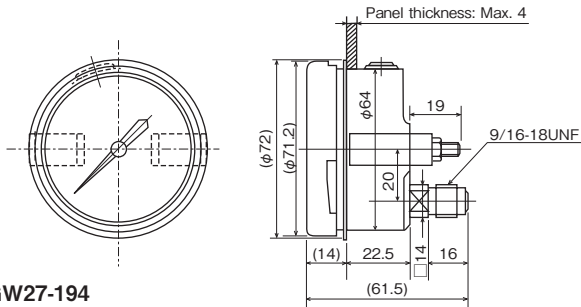
Unit: mm



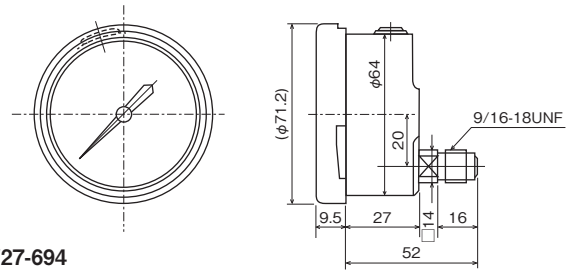
GW21-194



GW22-194



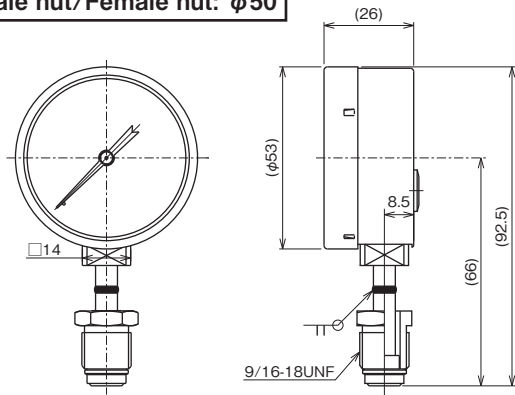
GW27-194



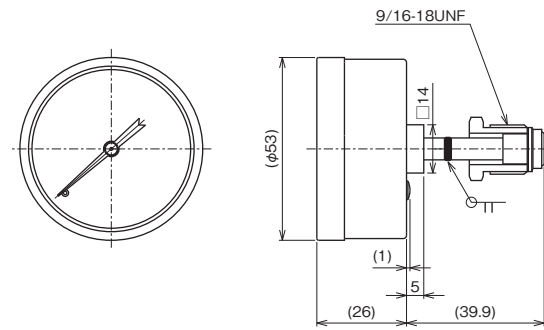
GW27-694

\* Connection: 9/16-18UNF complies with "Cajon VCR®".

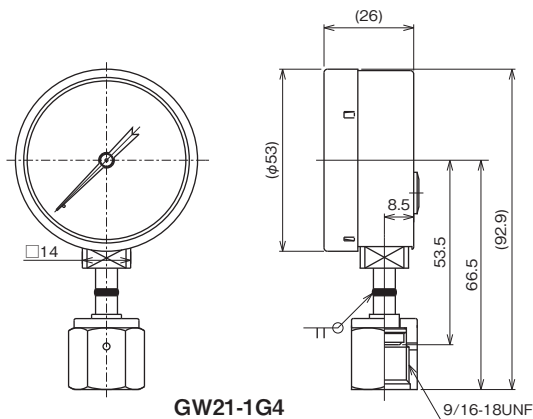
**A Grade/B Grade**  
Male nut/Female nut:  $\phi 50$



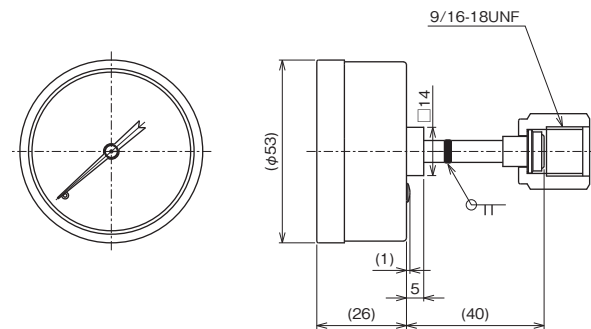
GW21-1E4



GW26-6E4



GW21-1G4



GW26-6G4

### Model number configuration

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

Model

<b>G</b>	<b>W</b>	<b>1</b>				<b>3</b>		<b>0</b>	<b>0</b>	<b>0</b>	×	×	×	×	×	×		

①      ②      ③                      ④      ⑤      ⑥      ⑦      ⑧      ⑨      ⑩      ⑪      ⑫      ⑬      ⑭      ⑮

Pressure Gauge for Semiconductor Industry  
A/B Grade

Model number		Selective spec.		Additional spec. (Option)	
Model	1	Mounting	Case materials/Outer	Wetted parts	Connection
	2	φ50 Lower connection	SUS304 Material	SUS316	R1/4
	6	φ60 Lower connection	SUS304 Material	SUS316	G1/4B
	6	φ50 Back connection	SUS304 Material	SUS316	R1/4
	7	φ60 Back connection	SUS304 Material	SUS316	G1/4B

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

② Connection	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	SUS316
----------------------------	---	--------

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

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	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

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

⑥ Pointer	0	Standard type
--------------	---	---------------

⑦ Glass	0	Standard (Inorganic glass)
------------	---	----------------------------

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

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

\* 1 Not special mirror-finished

\* Specify "X" if there is no specification item.

### 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	Case materials/Outer	Wetted parts	Connection
	2	φ50 Lower connection	SUS304 Material	SUS316L	9/16-18UNF
	6	φ50 Back connection	SUS304 Material	SUS316L	9/16-18UNF
	7	φ60 Back connection	SUS304 Material	SUS316L	9/16-18UNF
① Mounting		1	Lower connection	Back connection	
		6	A-frame	D-frame (Mounting clamp) (GW26 cannot be manufactured)	
		—	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 sheet, 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 specification item.