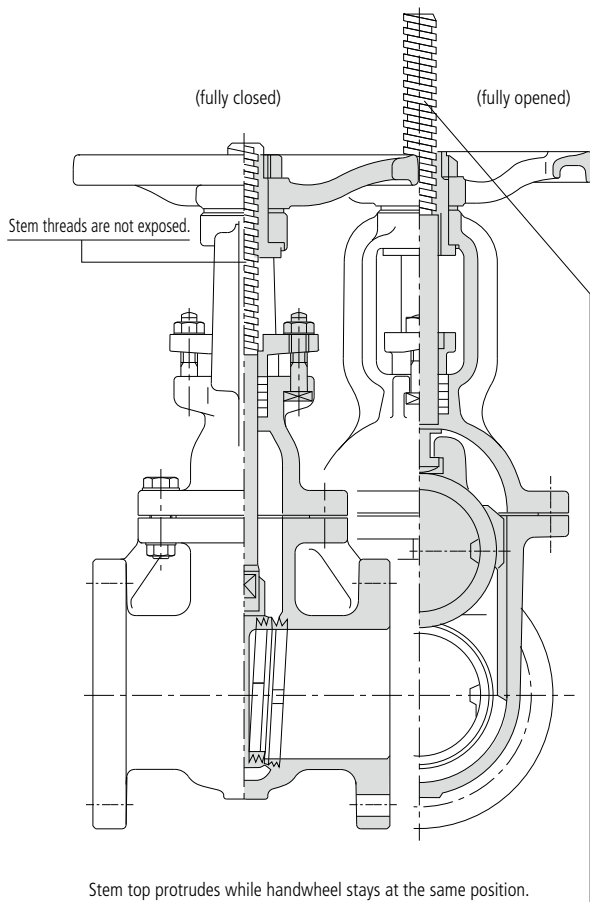
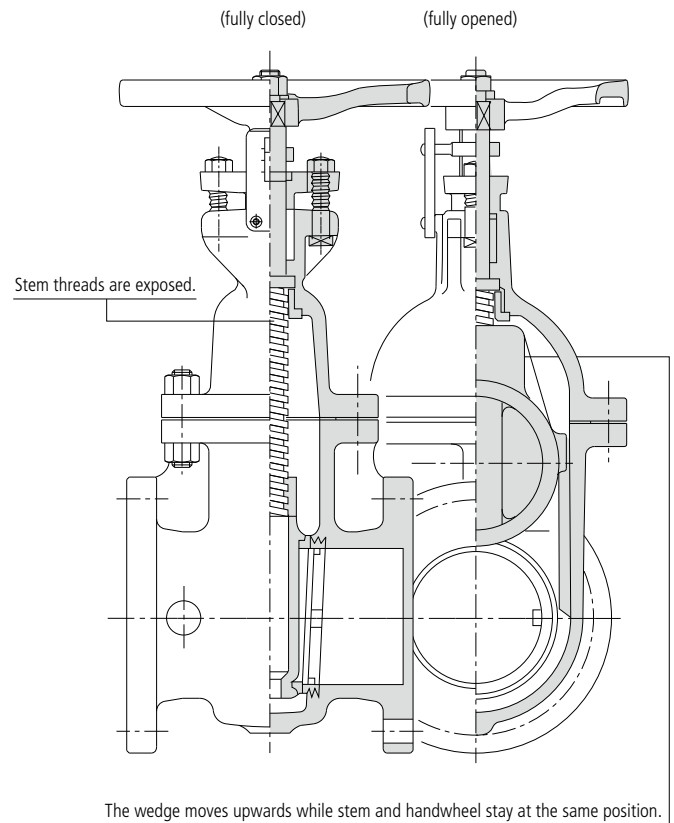


## Outside Screw (O.S.) Valves and Inside Screw (I.S.) Valves

### Outside Screw Gate Valve



### Inside Screw Gate Valve



### Outside Screw Gate Valves

Stem threads are not exposed to the fluid, and valve opening operation moves the stem upwards while the handwheel stays at the same position. The Valve operating position can be visually determined by observing the stem travel KITZ Fig. FCM, FCL, FCLS, and FCLU are designed this way.

### Outside Screw Globe Valves

The stem and handwheel move upwards or downwards at the same time, following valve opening or closing operation. All KITZ globe valves are provided with this design.

### Inside Screw Gate Valves

Stem threads are exposed to the fluid. Opening the valve does not make the stem or handwheel move. Thus, the valve operating position is not visible. A position indicator is provided for this reason.

Inside screw gate valves are generally designed shorter than outside screw gate valves and the stem and handwheel always at the same position. For this feature, inside screw gate valves are widely employed for underground installation or service in narrow areas with limited room. KITZ Fig. FCWI and FCHI are designed this way.

### Asbestos-free Packings and Gaskets

KITZ has led the industry in employing asbestos-free sealers for all cast iron valves, meeting the requirement of pollution-free valve materials. PTFE-impregnated glass fiber gland packings and compressed glass and aramid fiber gaskets are the standard sealers for KITZ cast iron valves.

**JIS 5K**

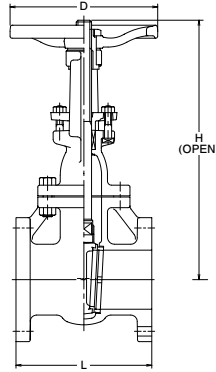
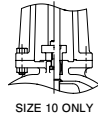
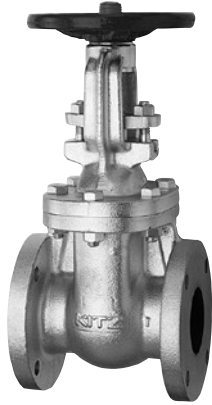
**GATE VALVE**

Bolted bonnet, outside screw & yoke, rising stem.

Designed to JIS B2031

**Fig. 5FCM**

- Bronze trim



**Materials**

Parts	Material	JIS Spec.	
Body	Cast Iron	FC200	
Bonnet	Cast Iron	FC200	
Stem	Forged Brass	C3771	
Disc	Cast Iron	FC200	
Disc seat ring	Cast Bronze	CAC406	
Body seat ring	Cast Bronze	CAC406	
Gland	Ductile Iron	FCD-5	
Gland packing	Non-Asbestos Packing		
Gasket	Non-Asbestos Sheet Gasket		
Gland bolt/nut	Carbon Steel		
Bonnet bolt/nut	Carbon Steel		
Yoke sleeve	Cast Bronze		
Handwheel	Cast Iron		

For JIS Valves Pressure-Temperature Ratings MPa, refer to page 2.

**Dimensions**

Valve Size	B A	2	2½	3	4	5	6	8	10	mm
		L Face-to-face	50	65	80	100	125	150	200	
H Height (OPEN)		160	170	180	200	220	240	260	300	
D Diameter		328	382	436	532	627	726	919	1134	

**JIS 10K**

**GATE VALVE**

Bolted bonnet, outside screw & yoke, rising stem.

Designed to JIS B2031

**Fig. 10FCL**

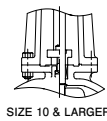
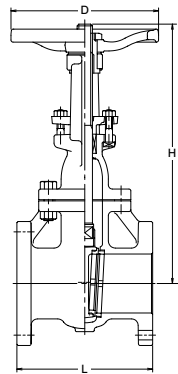
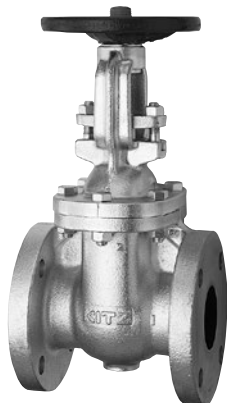
- Bronze trim

**Fig. 10FCLS**

- Stainless steel trim (13 Cr.)

**Fig. 10FCLU**

- Stainless steel trim (18-8)



**Materials**

Parts	Material	JIS Spec.		
		10FCL	10FCLS	10FCLU
Body	Cast Iron	FC200		
Bonnet	Cast Iron	FC200		
Stem	Forged Brass/Stainless Steel	C3771	403SS	304SS
Disc	Cast Iron	FC200		
Disc seat ring	Cast Bronze/Stainless Steel	CAC406	403SS	304SS
Body seat ring	Cast Bronze/Stainless Steel	CAC406	403SS	304SS
Gland	1½ to 14 16 to 24	Ductile Iron	FCD-5	
Gland packing		Stainless Steel		
Gland packing		SUS403		
Gland packing		Non-Asbestos Packing		
Gasket		Non-Asbestos Sheet Gasket		
Gland bolt/nut		Carbon Steel		
Bonnet bolt/nut		Carbon Steel		
Yoke sleeve		Cast Bronze		
Handwheel	1½ to 8 10 to 24	Cast Iron	FC250	
Handwheel		Ductile Iron	FCD400-15	

For JIS Valves Pressure-Temperature Ratings MPa, refer to page 2.

**Dimensions**

Valve Size	B A	1½*	2	2½	3	4	5	6	8	10	12	14*	16*	18*	20*	24*	mm
		L Face-to-face	40	165	180	190	200	230	250	270	290	330	350	381	406	432	
H Height (OPEN)		306	343	389	462	547	648	759	956	1168	1363	1560	1795	1995	2230	2640	
D Diameter		160	170	170	200	250	280	300	350	400	450	500	600	600	680	760	

\*JIS Mark is not applicable

JIS 10K

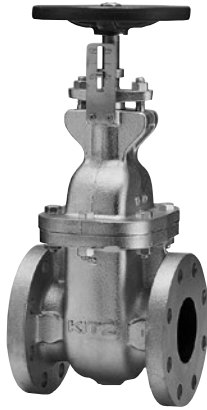
GATE VALVE

Bolted bonnet, inside screw with indicator, non-rising stem.

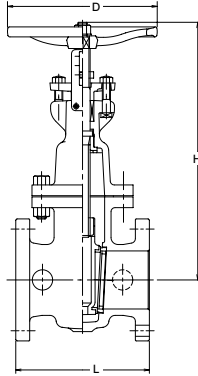
Designed to JIS B2031

Fig. 10FCWI

- Bronze trim



SIZE 8 & LARGER



Materials

Parts	Material	JIS Spec.
Body	Cast Iron	FC200
Bonnet	Cast Iron	FC200
Stem	Forged Brass	C3771BD
Disc	Cast Iron	FC200
Disc seat ring	Cast Bronze	CAC406
Body seat ring	Cast Bronze	CAC406
Gland	Ductile Iron	FCD-5
Gland packing	Non-Asbestos Packing	
Gasket	Non-Asbestos Sheet Gasket	
Gland bolt/nut	Carbon Steel	
Bonnet bolt/nut	Carbon Steel	
Bonnet bushing	Cast Bronze	CAC406
Handwheel	1 1/2 to 8	Cast Iron
	10 to 12	Ductile Iron
		FCD400-15

For JIS Valves Pressure-Temperature Ratings MPa, refer to page 2.

Dimensions

Valve Size	B	1 1/2	2	2 1/2	3	4	5	6	8	10	12
	A	40*	50	65	80	100	125	150	200	250	300
L Face-to-face		165	180	190	200	230	250	270	290	330	350
H Height		285	313	344	401	444	517	577	693	814	925
D Diameter		160	180	180	200	250	280	300	350	400	450

\*No JIS Mark

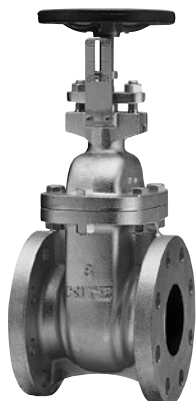
10K

GATE VALVE

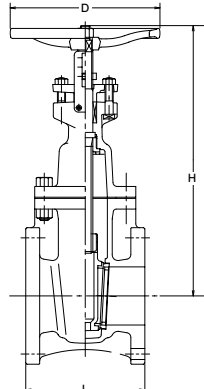
Bolted bonnet, inside screw with indicator, non-rising stem.

Fig. 10FCHI

- Bronze trim



SIZE 8 & LARGER



Materials

Parts	Material	JIS Spec.
Body	Cast Iron	FC300
Bonnet	Cast Iron	FC300
Stem	Forged Brass	C3771
Disc	1 1/2	Cast Bronze
	2 to 12	Cast Iron
Disc seat ring	Cast Bronze	CAC406
Body seat ring	Cast Bronze	CAC406
Gland	Ductile Iron	FCD400
Gland packing	Non-Asbestos Packing	
Gasket	Non-Asbestos Sheet Gasket	
Gland bolt/nut	Carbon Steel	
Bonnet bolt/nut	Carbon Steel	
Bonnet bushing	Cast Bronze	CAC406
Handwheel	Cast Iron	

Pressure-Temperature Ratings MPa, refer to page 2.

Dimensions

Valve Size	B	1 1/2	2	2 1/2	3	4	5	6	8	10	12
	A	40	50	65	80	100	125	150	200	250	300
L Face-to-face		140	146	159	165	171	190	210	241	273	305
H Height		210	250	285	350	400	460	515	635	760	870
D Diameter		140	140	160	160	180	225	225	300	350	350

**Class 125**

**GATE VALVE**

Bolted bonnet, outside screw & yoke, rising stem.

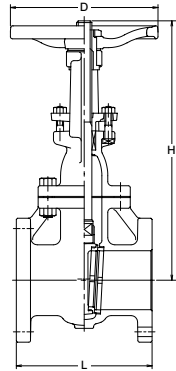
**Fig. 125FCL**

- Bronze trim



**Fig. 125FCLS**

- Stainless steel trim (13 Cr.)



**Materials**

Parts	Material	ASTM Spec.	
		125FCL	125FCLS
Body	Cast Iron	FC200	
Bonnet	Cast Iron	FC200	
Stem	Forged Brass/Stainless Steel	C3771	A276 Type403
Disc	Cast Iron	FC200	
Disc seat ring	Cast Bronze/Stainless Steel	CAC406	A182 Gr.F6a
Body seat ring	Cast Bronze/Stainless Steel	CAC406	A182 Gr.F6a
Gland	Ductile Iron	FCD-5	
Gland packing	Non-Asbestos Packing		
Gasket	Non-Asbestos Sheet Gasket		
Gland bolt/nut	Carbon Steel		
Bonnet bolt/nut	Carbon Steel		
Yoke sleeve	Cast Bronze		
Handwheel	2 to 10	Cast Iron	
	12 & 14	Ductile Iron	

For Class 125 Valves Pressure-Temperature Ratings, refer to page 2.

**Dimensions**

Valve Size	NPS	2	2 1/2	3	4	5	6	8	10	12	14
	DN	50	65	80	100	125	150	200	250	300	350
L Face-to-face		178	190	203	229	254	267	292	330	356	381
H Height (OPEN)		328	382	436	532	627	726	919	1134	1363	1560
D Diameter		160	170	170	225	225	250	280	350	450	500

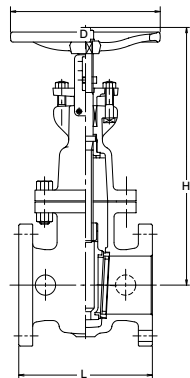
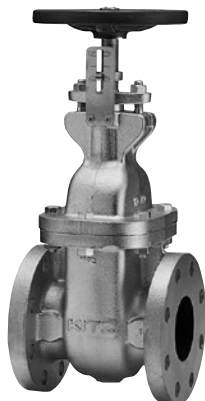
**Class 125**

**GATE VALVE**

Bolted bonnet, inside screw with indicator, non-rising stem.

**Fig. 125FCWI**

- Bronze trim



**Materials**

Parts	Material	ASTM Spec.
Body	Cast Iron	FC200
Bonnet	Cast Iron	FC300
Stem	Forged Brass	C3771
Disc	Cast Iron	FC300
Disc seat ring	Cast Bronze	CAC
Gland	Ductile Iron	FCD-5
Gland packing	Non-Asbestos Packing	
Gasket	Non-Asbestos Sheet Gasket	
Gland bolt/nut	Carbon Steel	
Bonnet bolt/nut	Carbon Steel	
Body seat ring	Cast Bronze	CAC406
Bonnet bushing	Cast Bronze	CAC406
Handwheel	Cast Iron	

For Class 125 Valves Pressure-Temperature Ratings, refer to page 2.

**Dimensions**

Valve Size	NPS	2	2 1/2	3	4	5	6	8	10	12
	DN	50	65	80	100	125	150	200	250	300
L Face-to-face		178	190	203	229	254	267	292	330	356
H Height		250	285	350	400	465	515	630	760	870
D Diameter		140	160	160	180	225	225	300	350	350

# Class 125 GATE VALVE

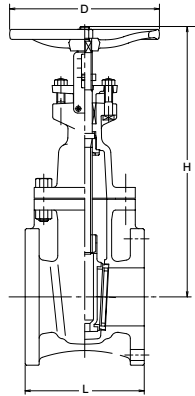
Bolted bonnet, inside screw & yoke, non-rising stem.

Fig. 125FCHI

• Bronze trim



SIZE 8 ONLY



### Materials

Parts	Material	ASTM Spec.	
Body	Cast Iron	FC300	
Bonnet	Cast Iron	FC300	
Stem	Forged Brass	C3771	
Disc	1 1/2 2 & larger	Bronze Cast Iron	CAC FC300
Disc seat ring	Cast Bronze	CAC	
Body seat ring	Cast Bronze	CAC	
Gland	Ductile Iron	FCD-5	
Gland packing	Non-Asbestos Packing		
Gasket	Non-Asbestos Sheet Gasket		
Gland bolt/nut	Carbon Steel		
Bonnet bolt/nut	Carbon Steel		
Bonnet bushing	Cast Bronze	CAC	
Handwheel	Cast Iron		

### Design Specifications

Items	
Shell wall thickness and general valve design	KITZ Standard
Face-to-face dimensions, end-to-end dimensions	KITZ Standard
End flange dimensions, gasket contact facing	ASME B16.1 Class 125

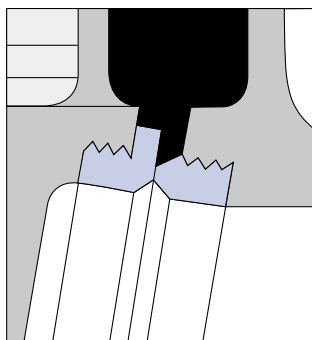
For Class 125 Valves Pressure-Temperature Ratings, refer to page 2.

### Dimensions

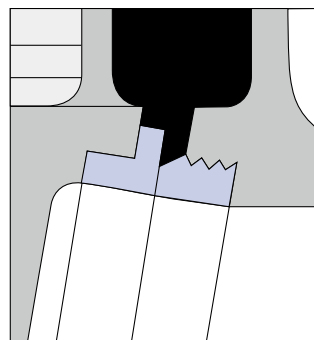
Valve Size	NPS	1 1/2	2	2 1/2	3	4	5	6	8	mm
	DN	40	50	65	80	100	125	150	200	
L Face-to-face		140	146	159	165	171	190	210	241	
H Height		210	250	285	350	400	465	515	630	
D Diameter		140	140	160	160	180	225	225	300	

## Mounting of Seat Rings

In case of KITZ cast iron gate valves, seat rings are mounted on the valve disc by means of either threading or press-fitting. For example, 10K outside screw gate valves are provided with threaded seat rings that are ideal for saturated steam service. Or, 10K inside screw gate valves are provided with mechanically press-fit seat rings by means of a patented special process to suit them also for saturated steam service. All KITZ cast iron globe and check valves are provided with threaded seat rings.



Threaded seat ring



Press-fit seat ring