



Enriching Lives

**FIRE SERVICE WATER CONTROL VALVES - OS & Y AND NRS TYPE ( FM & UL)**

GENERALLY AS PER IS : 14846



**KIRLOSKAR BROTHERS LIMITED**

A Kirloskar Group Company

## FM APPROVED OUTSIDE SCREW & YOKE TYPE (OS & Y) SERIES 21F FM APPROVED NON RISING STEM TYPE (NRS) SERIES 21E

KBL has emerged as India's first and only valve manufacturer to get the Certificate of Compliance from Factory Mutual for its fire service water control valves, which covers Outside Screw & Yoke and Non - Rising Stem Gate Valves (Metal Seated).

### Special Features :

- Metal to metal seating for longer service life
- Rigid and sturdy design with minimum loss of head across the valve
- Accurate interchangeability of components
- Accurate parallelism between side flanges
- Equal taper between wedge faces
- Perfect machining and press fitting of body and wedge rings
- Excellent finish on spindle threads resulting in low friction and smooth operation of valves
- Leak-tightness even after thousands of Open / Close cycles
- Unique spindle with integral forged collar design

### Salient Constructional Features :

- Valve Body : Designed for smooth flow, minimum pressure drop and sufficient thickness to take care of rated working pressures and piping loads
- Dome : Bolted type and designed to withstand same water pressure as that of valve body
- Wedge : Solid and rigid with tapered on both side
- Spindle : Designed for smooth operation and to transmit torque under overloaded conditions
- Body and Wedge Rings : Press fitted and precisely machined to close tolerances
- Hand wheel : Sturdy and rigid design

## OUTSIDE SCREW & YOKE TYPE (OS & Y) SERIES 21F

### Material of Construction :

Scope	Standard Supply
Valve Body	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Wedge	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Spindle	SS ASTM A276 Type 431
Yoke Sleeve	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Body Face Ring	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Wedge Face Ring	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Dome	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Yoke	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Gland	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Handwheel	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Gland packing	Greasy Jute packing / Non Asbestos packing
O ring	Nitrile Rubber (In case of glandless packing)
Gasket for Dome	Natural Rubber
Gasket for Yoke	Natural Rubber
Repacking Bush	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Fasteners	High Tensile Carbon Steel

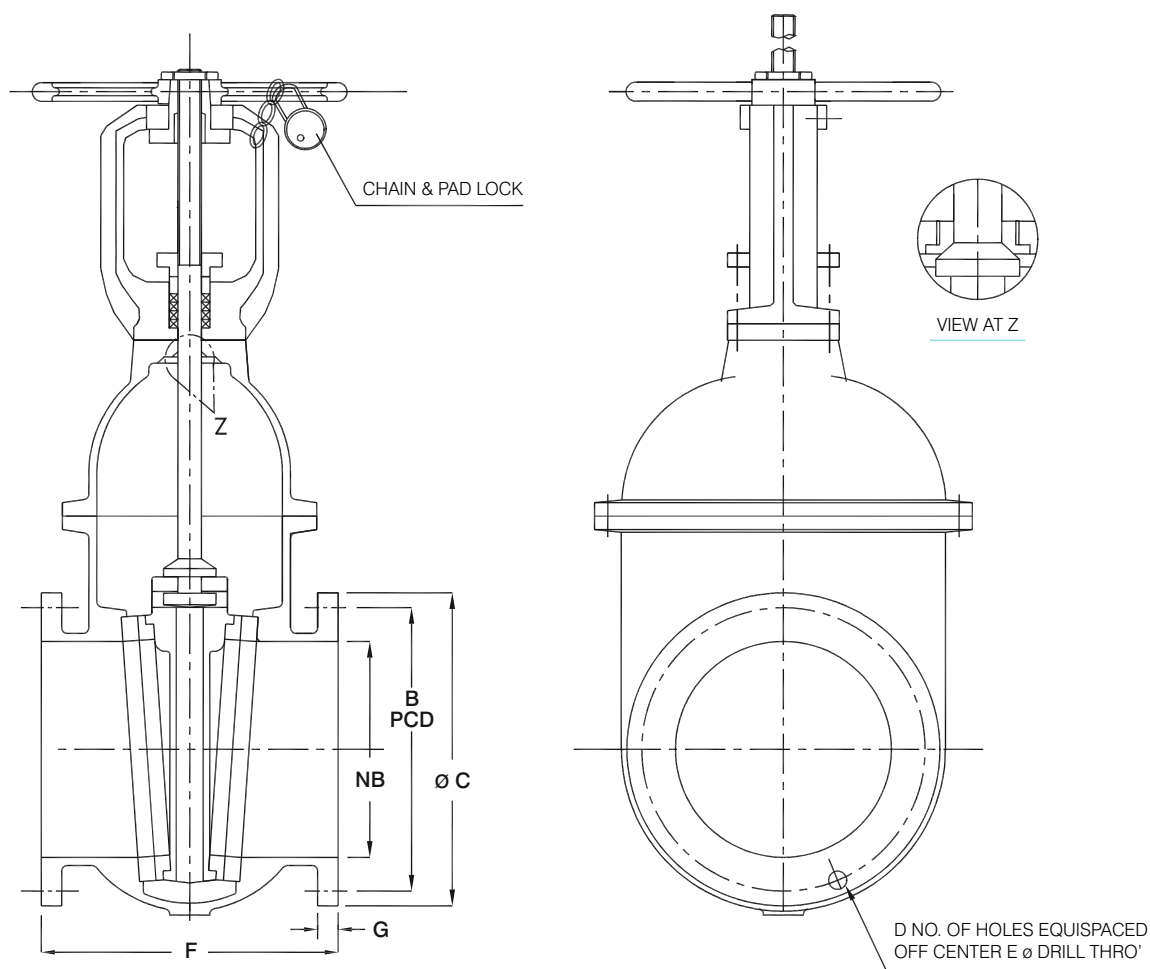
### Technical Specifications :

Design and Manufacturing Standard	IS : 14846 (Generally)
Size Range	50 mm (2") to 250 mm (10")
Operation	Manual Hand wheel
Rated Working Pressure	250 PSI (1725 KPa)
End Connections	Flanges drilled to BSEN: 1092 - 2, PN 16 FF/ANSI B16.1 CL125 (Flat Faced)
Application	Fire service water control valves

### Hydrostatic Test Pressures :

Testing as per FM Approval Class Number 1120/1130	Body	Seat
Pressure (Kg/Cm <sup>2</sup> ) Minimum	35.15	17.57
Duration (Seconds)	60	15

## General Outline Drawing [ Series 21F] :



## General Outline Dimensions :

Valve Size NB	Rated Working Pressure	F ±2	Ø C	G <sup>+4</sup> / <sub>-3</sub>	B <sub>PCD</sub>	D	Ø E
250	250 PSI (1725 KPa)	330	405	26	355	12	28
200	250 PSI (1725 KPa)	292	340	24.5	295	12	23
150	250 PSI (1725 KPa)	267	285	23	240	8	23
125	250 PSI (1725 KPa)	254	250	22.5	210	8	19
100	250 PSI (1725 KPa)	229	220	22	180	8	19
80	250 PSI (1725 KPa)	203	200	21	160	8	19
65	250 PSI (1725 KPa)	190	185	19	145	4	19
50	250 PSI (1725 KPa)	178	165	19	125	4	19

Note: 1. All dimensions are in 'mm' otherwise stated.

2. Flange Drilling dimensions shown in above Table are as per BS EN 1092-2, PN16 (Flat Faced)

## NON RISING STEM TYPE (NRS) SERIES 21E

### Material of Construction :

Scope	Standard supply
Valve Body	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Wedge	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Spindle	SS ASTM A276 Type 431
Spindle Nut	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Body Face Ring	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Wedge Face Ring	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Dome	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Stuffing Box	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Gland	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Repacking Bush	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Valve Cap	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Thrust Bearing	As per Manufacturing Standard (For 200 mm and above sizes)
Gland packing	Greasy Jute packing / Non Asbestos packing
O ring	Nitrile Rubber (In case of glandless packing)
Gasket for Dome	Natural Rubber
Fasteners	High Tensile Carbon Steel

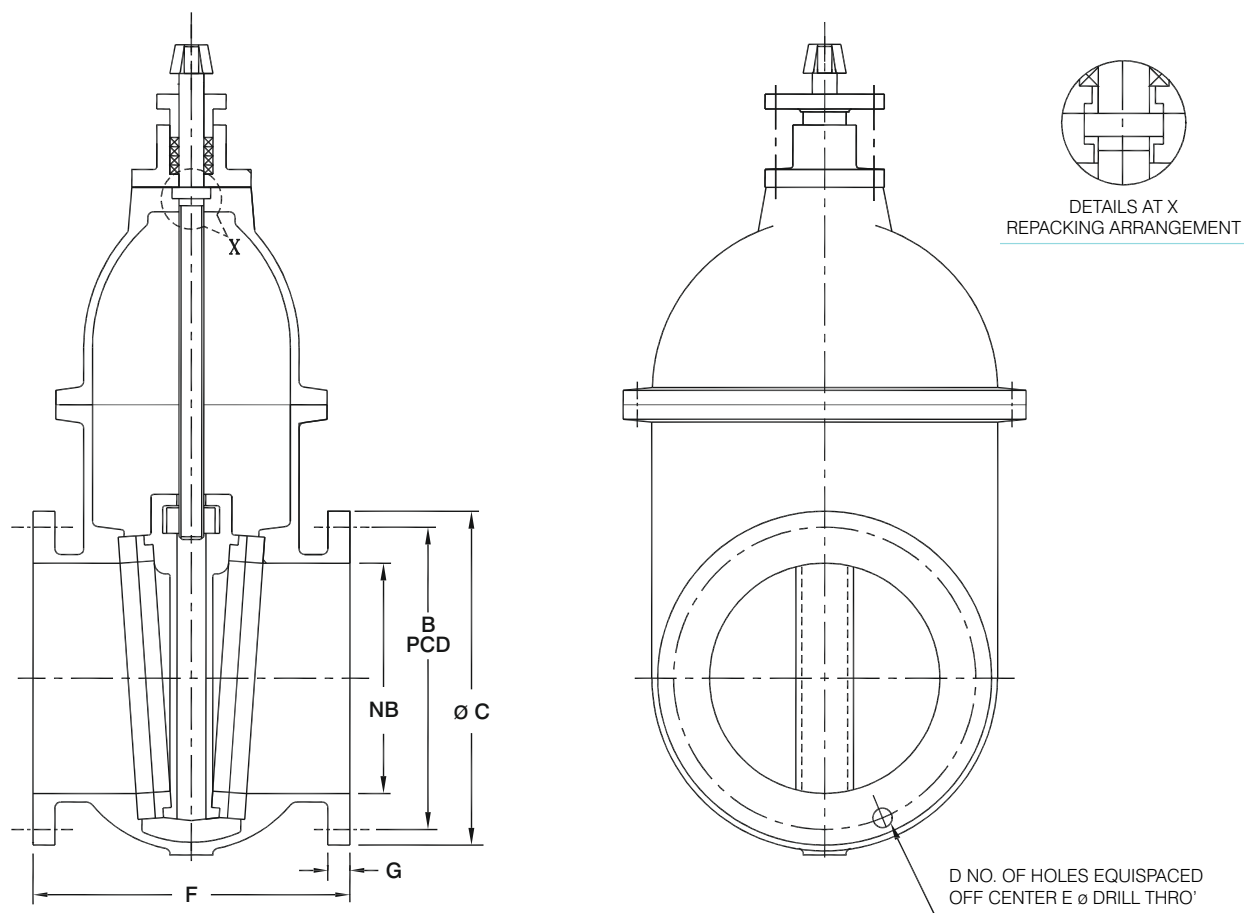
### Technical Specifications :

Design and Manufacturing Standard	IS : 14846 (Generally)
Size Range	50 mm (2") to 250 mm (10")
Operation	Cap Top (operating nut)
Rated Working Pressure	250 PSI (1725 KPa)
End Connections	Flanges drilled to BSEN: 1092 - 2, PN 16 FF / ANSI B16.1 CL125 (Flat Faced)
Application	Fire service water control valves

### Hydrostatic Test Pressures :

Testing as per FM Approval Class Number 1120/1130	Body	Seat
Pressure (Kg/Cm2) Minimum	35.15	17.57
Duration (Seconds)	60	15

## General Outline Drawing [ Series 21E] :



## General Outline Dimensions :

Valve Size NB	Rated Working Pressure	$F \pm 2$	$\varnothing C$	$G \begin{smallmatrix} +4 \\ -3 \end{smallmatrix}$	$B_{PCD}$	D	$\varnothing E$
250	250 PSI (1725 KPa)	330	405	26	355	12	28
200	250 PSI (1725 KPa)	292	340	24.5	295	12	23
150	250 PSI (1725 KPa)	267	285	23	240	8	23
125	250 PSI (1725 KPa)	254	250	22.5	210	8	19
100	250 PSI (1725 KPa)	229	220	22	180	8	19
80	250 PSI (1725 KPa)	203	200	21	160	8	19
65	250 PSI (1725 KPa)	190	185	19	145	4	19
50	250 PSI (1725 KPa)	178	165	19	125	4	19

Note: 1. All dimensions are in 'mm' otherwise stated.

2. Flange Drilling dimensions shown in above Table are as per BS EN 1092-2, PN16 (Flat Faced)

## UL LISTED OUTSIDE SCREW & YOKE TYPE (OS & Y) SERIES 21H

## UL LISTED NON RISING STEM TYPE (NRS) SERIES 21G

KBL has emerged as India's first and only valve manufacturer to get the Certificate of Compliance from Under writers Laboratories for its fire service water control valves, which covers Outside Screw & Yoke and Non - Rising Stem Gate Valves (Metal Seated).

### **Special Features :**

- Metal to metal seating for longer service life
- Rigid and sturdy design with minimum loss of head across the valve
- Accurate interchangeability of components
- Accurate parallelism between side flanges
- Equal taper between wedge faces
- Perfect machining and press fitting of body and wedge rings
- Excellent finish on spindle threads resulting in low friction and smooth operation of valves
- Leak-tightness even after thousands of Open / Close cycles
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### **Salient Constructional Features :**

- Valve Body : Designed for smooth flow, minimum pressure drop and sufficient thickness to take care of rated working pressures and piping loads
- Dome : Bolted type and designed to withstand same water pressure as that of valve body
- Wedge : Solid and rigid with tapered on both side
- Spindle : Designed for smooth operation and to transmit torque under overloaded conditions
- Body and Wedge Rings : Press fitted and precisely machined to close tolerances
- Hand wheel : Sturdy and rigid design

## OUTSIDE SCREW & YOKE TYPE (OS & Y) SERIES 21H

### Material of Construction :

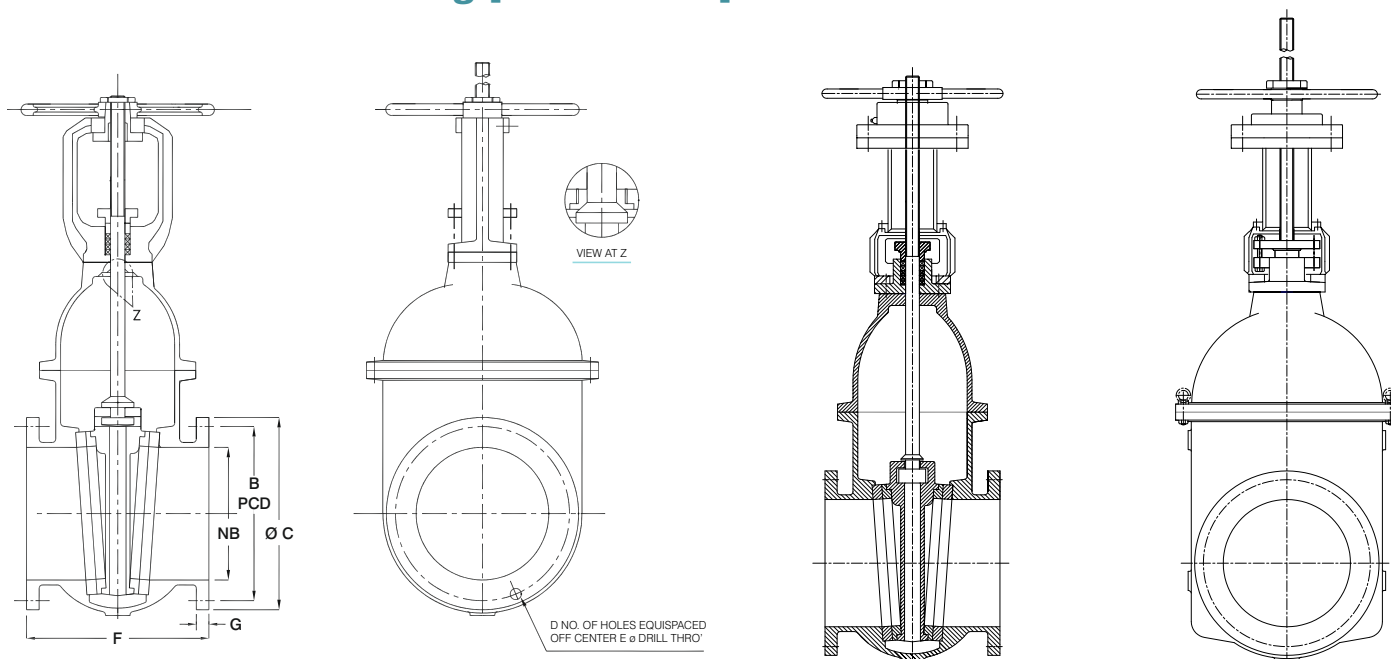
Scope	Standard Supply
Valve Body ( Size 50-125)	CI IS :210 Gr FG 260 ( Equivalent to CI BSEN 1561 EN-GJL-250)
Valve Body (Size 150-400)	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Wedge (Size 50-125)	CI IS :210 Gr FG 260 ( Equivalent to CI BSEN 1561 EN-GJL-250)
Wedge (Size 150-400)	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Dome (Size 50-125)	CI IS :210 Gr FG 260 ( Equivalent to CI BSEN 1561 EN-GJL-250)
Dome (Size 150-400)	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Yoke (Size 50-125)	CI IS :210 Gr FG 260 ( Equivalent to CI BSEN 1561 EN-GJL-250)
Yoke (Size 150-300)	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Yoke (Size 350-400)	MS IS : 2062 Gr. E250, A
Gland (Size 50-125)	CI IS :210 Gr FG 260 ( Equivalent to CI BSEN 1561 EN-GJL-250)
Gland (Size 150-400)	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Handwheel (Size 50-125)	CI IS :210 Gr FG 260 ( Equivalent to CI BSEN 1561 EN-GJL-250)
Handwheel (Size 150-400)	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Spindle	SS ASTM A276 Type 431
Yoke Sleeve	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Body Face Ring	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Wedge Face Ring	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Gland packing	Greasy Jute packing / Non Asbestos packing
Repacking Bush	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Fasteners	High Tensile Carbon Steel
O ring	Nitrile Rubber (In case of glandless packing)
Gasket for Dome	Natural Rubber
Gasket for Yoke	Natural Rubber

### Technical Specifications :

Design and Manufacturing Standard	IS : 14846 (Generally)
Size Range	50 mm (2") to 400 mm (16")
Operation	Manual Hand wheel
Rated Working Pressure	175 PSI (1207 KPa) ; 150 PSI (1034 KPa)
End Connections	Flanges drilled to BSEN: 1092 - 2, PN 16 FF (Flat Faced)
Application	Fire service water control valves



## General Outline Drawing [ Series 21H ] :



**Size**  
50 mm to 300 mm

**Size**  
350 mm to 400 mm

## General Outline Dimensions :

Valve Size NB	Rated Working Pressure	F ±2	Ø C	G <sup>+4</sup> <sub>-3</sub>	B <sub>PCD</sub>	D	Ø E
400	150 PSI (1034 KPa)	406	580	38	525	16	31
350	150 PSI (1034 KPa)	381	520	36	470	16	28
300	175 PSI (1207 KPa)	356	460	27.5	410	12	28
250	175 PSI (1207 KPa)	330	405	26	355	12	28
200	175 PSI (1207 KPa)	292	340	24.5	295	12	23
150	175 PSI (1207 KPa)	267	285	23	240	8	23
125	175 PSI (1207 KPa)	254	250	22.5	210	8	19
100	175 PSI (1207 KPa)	229	220	22	180	8	19
80	175 PSI (1207 KPa)	203	200	21	160	8	19
65	175 PSI (1207 KPa)	190	185	19	145	4	19
50	175 PSI (1207 KPa)	178	165	19	125	4	19

Note: 1. All Dimensions are in 'mm' otherwise stated.

## Hydrostatic Test Pressures ( SERIES 21 H & 21 G ) :

Testing as per UL 262	Size	Body	Seat
Pressure (Kg/Cm <sup>2</sup> ) Minimum	50 mm-300 mm	24.61	18.5
	350 mm-400 mm	21.1	15.8
Duration (Second)	50 mm-400 mm	15	15

## NON RISING STEM TYPE (NRS) SERIES 21G

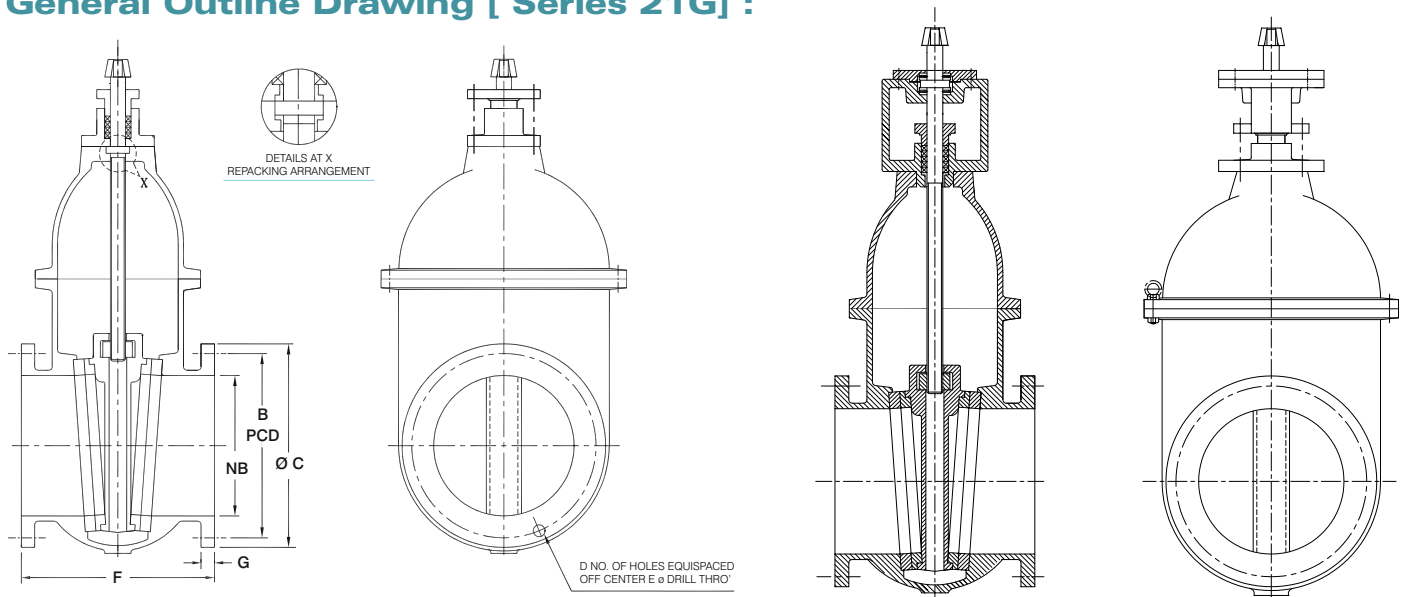
### Material of Construction :

Scope	Standard Supply
Valve Body ( Size 65-125)	CI IS :210 Gr FG 260 ( Equivalent to CI BSEN 1561 EN-GJL-250)
Valve Body (Size 150-400)	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Wedge (Size 65-125)	CI IS :210 Gr FG 260 ( Equivalent to CI BSEN 1561 EN-GJL-250)
Wedge (Size 150-400)	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Dome (Size 65-125)	CI IS :210 Gr FG 260 ( Equivalent to CI BSEN 1561 EN-GJL-250)
Dome (Size 150-400)	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
St. Box (Size 65-125)	CI IS :210 Gr FG 260 ( Equivalent to CI BSEN 1561 EN-GJL-250)
St. Box (Size 150-300)	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Gland (Size 65-125)	CI IS :210 Gr FG 260 ( Equivalent to CI BSEN 1561 EN-GJL-250)
Gland (Size 150-400)	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Valve Cap (Size 65-125)	CI IS :210 Gr FG 260 ( Equivalent to CI BSEN 1561 EN-GJL-250)
Valve Cap (Size 150-400)	SGI IS: 1865 Gr. 500/7 (Equivalent to SGI BSEN 1563 EN - JS 1082)
Spindle	SS ASTM A276 Type 431
Spindle Nut	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Body Face Ring	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Wedge Face Ring	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Gland packing	Greasy Jute packing / Non Asbestos packing
Repacking Bush	Bronze IS: 318 Gr. LTB 2 (Equivalent to LGM BSEN 1982 CC491 K)
Fasteners	High Tensile Carbon Steel
O ring	Nitrile Rubber (In case of glandless packing)
Gasket for Dome	Natural Rubber
Gasket for Yoke	Natural Rubber

### Technical Specification :

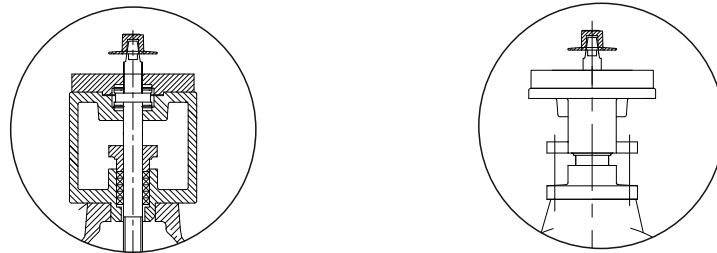
Design and Manufacturing Standard	IS : 14846 (Generally)
Size Range	65 mm (2 1/2") to 400 mm (16")
Operation	Manual Hand wheel
Rated Working Pressure	175 PSI (1207 KPa) ; 150 PSI (1034 KPa)
End Connections	Flanges drilled to BSEN: 1092 - 2, PN 16 FF (Flat Faced)
Application	Fire service water control valves

## General Outline Drawing [ Series 21G] :



**Size**  
65 mm to 150 mm

**Size**  
200 mm to 300 mm



**Size**  
350 mm - 400 mm

## General Outline Dimensions :

Valve Size NB	Rated Working Pressure	F $\pm 2$	Ø C	G $^{+4}_{-3}$	B <sub>PCD</sub>	D	Ø E
400	150 PSI (1034 KPa)	406	580	38	525	16	31
350	150 PSI (1034 KPa)	381	520	36	470	16	28
300	175 PSI (1207 KPa)	356	460	27.5	410	12	28
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150	175 PSI (1207 KPa)	267	285	23	240	8	23
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100	175 PSI (1207 KPa)	229	220	22	180	8	19
80	175 PSI (1207 KPa)	203	200	21	160	8	19
65	175 PSI (1207 KPa)	190	185	19	145	4	19

Note: 1. All Dimensions are in 'mm' otherwise stated.

## ABOUT KBL

Kirloskar Brothers Limited (KBL) is a world class pump manufacturing company with expertise in engineering and manufacture of systems for fluid management. Established in 1888 and incorporated in 1920, KBL is the flagship company of the \$ 2.1 billion Kirloskar Group. KBL, a market leader, provides complete fluid management solutions for large infrastructure projects in the areas of water supply, power plants, irrigation, oil & gas and marine & defence. We engineer and manufacture industrial, agriculture and domestic pumps, valves and hydro turbines.

In 2003, KBL acquired SPP Pumps, United Kingdom and established SPP INC, Atlanta, USA, as a wholly owned subsidiary of SPP, UK to expand its international presence. In 2007, Kirloskar Brothers International B.V., The Netherlands and Kirloskar Brothers (Thailand) Ltd., a wholly owned subsidiary in Thailand, were incorporated. In 2008, KBL incorporated Kirloskar Brothers Europe B.V. (Kirloskar Pompen B.V. since June 2014), a joint venture between Kirloskar International B.V. and Industrial Pump Group, The Netherlands. In 2010, KBL further consolidated its global position by acquiring Braybar Pumps, South Africa. SPP MENA was established in Egypt in 2012. In 2014, KBL acquired SyncroFlo Inc., the largest independent fabricator of commercial and municipal domestic water booster pumps.

To further strengthen its global position, in 2015, Kirloskar Pompen B.V. acquired Rodelta Pumps International, The Netherlands.

KBL has joint venture cooperation with Ebara, Japan since 1988 for the manufacture of API 610 standard pumps. Kirloskar Corrocoat Private Limited is a joint venture cooperation with Corrocoat, UK since 2006. KBL acquired The Kolhapur Steel Limited in 2007 and Hematic Motors in 2010.

KBL has eight manufacturing facilities in India at Kirloskarvadi, Dewas, Kondhapuri, Shirwal, Sanand, Kaniyur, Kolhapur and Karad. In addition, KBL has global manufacturing and packaging facilities in Egypt, South Africa, Thailand, The Netherlands, United Arab Emirates, United Kingdom and United States of America. KBL has 12,700 channel partners in India and 80 overseas and is supported by best-in-class network of Authorised Centres and Authorised Refurbishment Centres across the country.

All the manufacturing facilities at KBL are certified for ISO 9001, ISO 14001, ISO 50001, BS OHSAS 18001 and SA8000. In addition, the Kirloskarvadi plant is also certified for N & NPT Stamp. KBL's corporate office in Pune is certified for ISO 9001 & Sa8000.

The factories deploy Total Quality Management tools using European Foundation for Quality Management (EFQM) model.

The Kirloskarvadi plant of KBL is a state-of-the-art integrated manufacturing facility having Asia's largest hydraulic research centre with testing facility upto 5000 kW and 50,000 m<sup>3</sup>/hr.

KBL is the ninth pump manufacturing company in the world to be accredited with the N and NPT certification by American Society of Mechanical Engineers (ASME).

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## KIRLOSKAR BROTHERS LIMITED

### A Kirloskar Group Company

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#### OUR COMPANIES



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