Enriching Lives

RESILIENT SEATED CENTRIC BUTTERFLY VALVE

AS PER API 609 / EN 593
SERIES - 2E4, 2E5, 2E6, 2E7, 2EA, 2EB, 2EC, 2ED

KIRLOSKAR BROTHERS LIMITED
Established 1888
A Kirloskar Group Company

ABOUT KBL

Kirloskar Brothers Limited (KBL) is a world-class pump manufacturing company with expertise in the engineering and manufacturing of fluid management systems. Established in 1888 and incorporated in 1920, KBL is the mother company of the Kirloskar Group. KBL provides complete fluid management solutions for large infrastructure projects in the areas of water supply, power plants, irrigation, building & construction, oil & gas industry, and marine & defence. KBL manufactures industrial, agriculture and domestic pumps, valves and hydro-turbines.

Over the years, KBL has developed innovative products, which have enabled it to carve a niche globally. It is a global conglomerate and is equipped with the best technologies in the world. It is also India's largest centrifugal pump manufacturer with nine manufacturing facilities in India along with other international subsidiaries and operations in the Netherlands, South Africa, Thailand, the United Kingdom, and the United States of America. KBL has over 16,000 channel partners globally and is supported by best-in-class Pan-India network of authorised service and refurbishment centres.

KBL is the first Indian pump manufacturing company to be certified for Integrated Management System, (ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, ISO 50001:2018).

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

Indian subsidiaries and joint ventures

- Kirloskar Ebara Pumps Limited (KEPL) manufactures API, Non-API pumps, and steam turbines.
- Kirloskar Corrocoat Private Limited (KCPL) is the leading solution provider in long-term corrosion protection and energy conversion.
- Karad Projects and Motors Limited (KPML) is a motor manufacturing company with expertise in the manufacture of stampings, stators, rotors, AC rotating machines, aluminium die-cast connecting rods and pump assemblies. It also houses a notable foundry facility specialising in the manufacture of a wide range of carbon steel, alloy steel, stainless steel and cast iron castings for industries such as pumps, valves, turbines, shipping, heavy engineering applications and more.

International, subsidiaries and joint ventures

- SPP Pumps Limited, United Kingdom is a 140-year-old leading pumps manufacturer of centrifugal pumps and associated systems, a global principal in the design, supply and servicing of pumps, renowned fire pump packages and high-quality equipment for a wide range of applications and industry sectors. It is the largest pump manufacturer in the United Kingdom.
- SyncroFlo, Inc., United States of America manufacturespre-assembled pumping systems and provides solutions for HVAC systems, fire protection and turf irrigation.
- Rodelta Pumps International is a Dutch pump manufacturing company that offers products for flood control, irrigation, drinking water, wastewater, pulp & paper, power, chemical, oil & gas and general industries.
- Kirloskar Brothers Thailand Limited (KBTL), Bangkok is the Thailand Board of Investment (BOI) promoted headquarters and assembly plant of the KBL Group companies for the ASEAN and East Asia regions.
- Braybar Pumps (Pty) Limited, Republic of South Africa is engaged in the manufacturing and sales of high-head multi-stage pumps, rubber-lined slurry pumps and metal-lined bearings.

Pumps I Valves I Hydro Turbines I Turnkey Projects

Water Resource Management I Irrigation I Power I Industry I Oil & Gas I Marine & Defence I Building & Construction I Distribution (Small Pumps) I Valves I Customer Service & Spares

Global Headquarter: "Yamuna", Baner, Pune.

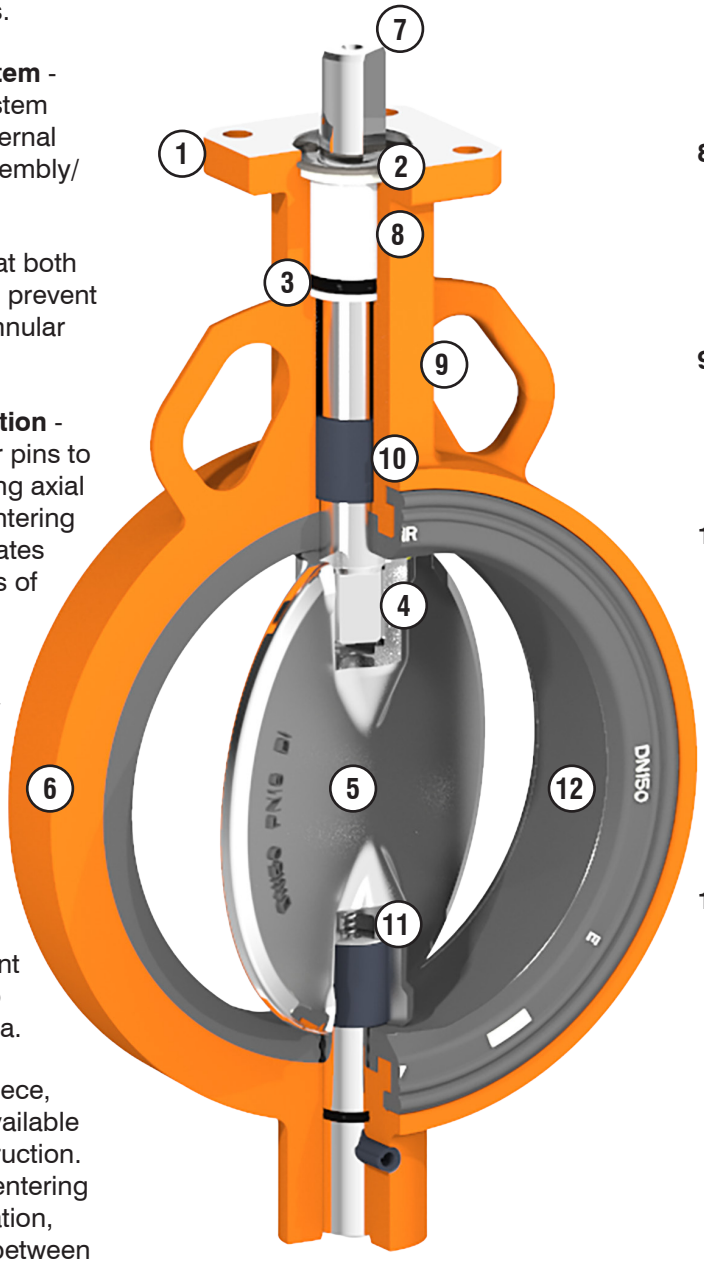
INTRODUCTION & FEATURES

KBL develops and manufactures a variety of valves for regulating and isolating pipeline flow. These products are manufactured using the modern manufacturing processes and high quality assurance systems. These systems ensure products of consistent quality and durable performance.

KBL's resilient seated centric butterfly valve is a quarter turn rotary valve using concentric disc as the closure member. With its superior sealing profile these butterfly valves become an excellent choice for tight shut-off (ON/OFF) and regulating applications. Thoughtfully designed Two-piece stub shaft design provides maximum strength and high flow characteristics. Available in wafer as well as lug body construction to be installed between flanges of various international standards. With in-house foundry support variety of material and seat combinations are easily supplied to suit wide range of industrial applications.

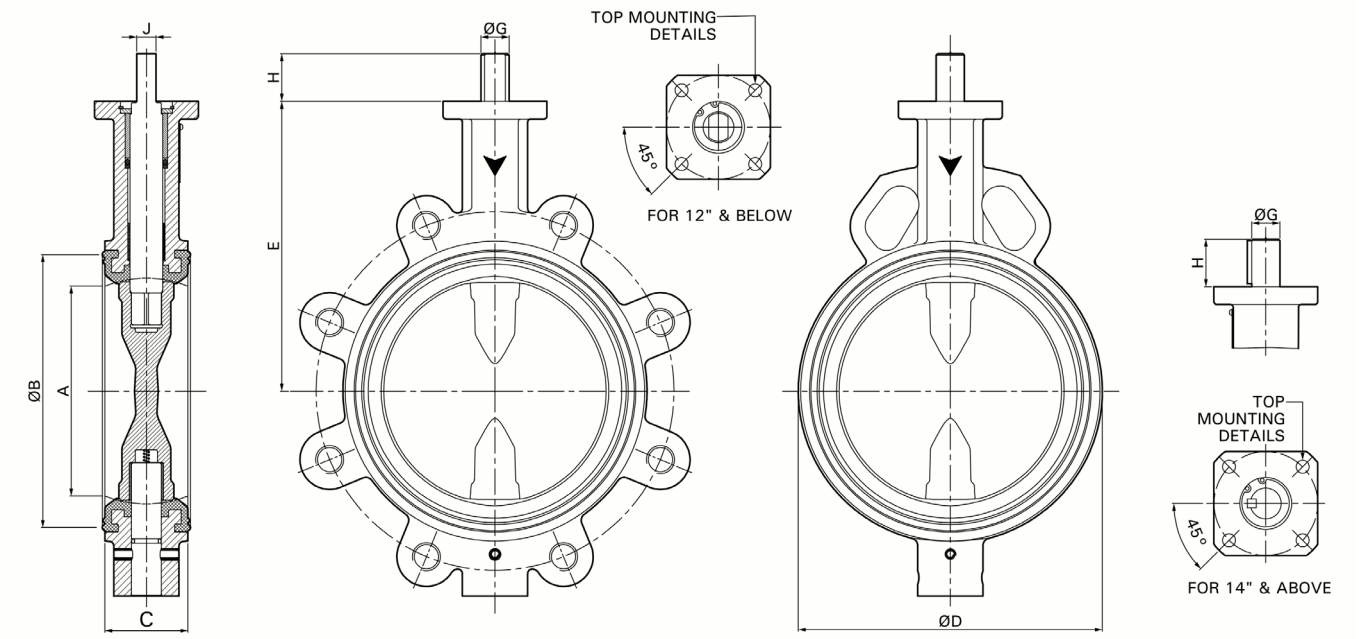
Kirloskar butterfly valves are designed to be compact, rugged, reliable and comply with many international standards.

1. **ISO Top Flange** - Universal mounting dimensions as per ISO 5211 to accommodate direct mounting of various type and range of operators.
2. **Anti-Blowout Proof Stem** - with circlip to prevent stem from ejection under internal pressure and easy assembly/di-assembly of valve.
3. **Stem Seal** - Provided at both top and bottom side to prevent leakage through the annular channel of the shaft.
4. **Square Drive Connection** - Eliminates the need for pins to avoid leak path, allowing axial movement and self centering of the disc. This eliminates excess wear and stress of the elastomer seat.
5. **Disc** – High strength cast disc is Spherically precision machined with polished disc edges & hubs, to reduce torque, longer seat life with improve flow Characteristics. Nylon coated disc options ensure excellent corrosion resistance to several Chemical media.
6. **Body** - Robust, one- piece, unique body design available in wafer and lug construction. Wafer body with self centering design for easy installation, suitable for mounting between various flange.



7. **Stem** – High torsional two-piece stub shaft design resulting into low obstacles to enhances flow with higher Cv. Double-D and Key arrangements drive suitable for various operator.
8. **Stem Bush** – Non corrosive, acetal bush absorb actuator side thrust and the force acting on the disc-stem assembly due to line pressure.
9. **Body Extended Neck** – suitable for 2"(50mm) pipe insulation, accumulating installation for various operators.
10. **Stem Bearings** – The self-lubricated wear resistance bearings helps to reduce valve operating torque and increase valve reliability.
11. **Anti-static** - feature that ensures electrical continuity between the stem, body and disc.
12. **Replaceable Seat** – Tongue and groove design with and internally locked seat, featuring integral molded O-rings that serve as a flange gasket. EPDM/NBR seats are peroxide cured to yield superior thermal, chemical and abrasion resistance.

DIMENSIONS



VALVE SIZE		A	ØB	C	ØD	E	ØG	H	J	KEY SIZE	TOP MOUNTING DETAILS			LUG BOLTING DATA			WEIGHT (APPROX)	
DN	NPS										PCD	NO OF HOLES	HOLE DIA.	PCD	NO OF HOLES	THREADS UNC-2B	WAFER	LUG
40	1½	26	66	33	84	115	12	30	9		70	4	9	98.6	4	1/2" - 13	1.8	2.5
50	2	34.3	77	43	95	120	14	32	10	---	70	4	9	120.7	4	5/8" - 11	2.4	3.2
65	2½	50.1	91	46	109	132	14	32	10	---	70	4	9	139.7	4	5/8" - 11	2.9	3.7
80	3	67.9	105	46	123	145	14	32	10	---	70	4	9	152.4	4	5/8" - 11	3.3	4.1
100	4	90.1	131	52	149	170	16	32	11	---	70	4	9	190.5	8	5/8" - 11	5.2	7.9
125	5	119.5	160	56	179	185	19	32	13	---	70	4	9	215.9	8	3/4" - 10	7.1	10.3
150	6	141.3	184	56	205	195	19	32	13	---	70	4	9	241.3	8	3/4" - 10	8.3	11.6
200	8	187.6	234	60	256	220	22	32	16	---	102	4	11	298.5	8	3/4" - 10	13.2	18.3
250	10	232.2	293	68	320	272	25	51	19	---	125	4	14	362.0	12	7/8" - 9	25	32
300	12	281.4	343	78	374	307	25	51	19	---	125	4	14	431.8	12	7/8" - 9	35	46
350	14	327.3	377	78	407	350	35	51	---	10 x 8	125	4	14	476.2	12	1" - 8	47	57
400	16	374.9	429	102	462	380	35	51	---	10 x 8	125	4	14	539.8	16	1" - 8	69	84
450	18	422.4	488	114	528	420	50	64	---	14 x 9	165	4	21	577.8	16	1 1/8" - 8	99	112
500	20	471.7	538	127	579	445	50	64	---	14 x 9	165	4	21	635.0	20	1 1/8" - 8	119	143
600	24	561.8	638	154	681	495	63.5	102	---	18 x 11	165	4	21	749.3	20	1 1/8"- 8	179	210

Note : All dimensions are in mm and weight in kg (Approx).

STANDARD AND COMPLIANCE

DESIGN STANDARD:
API-609 Category-A, BS EN 593, IS 13095,
ASME B16.34, MSS SP-67

FACE TO FACE STANDARD:
API-609 Category - A, MSS SP 67, ASME B16.10
BS EN 558 Series 20, ISO 5752 Series 20,

FLANGE DRILLING STANDARD:
ASME B16.5, ASME B16.1, ASME B16.42, AWWA C207,
DIN EN 1092-1, DIN EN 1092-2, JIS B 2220, BS10,
IS 1538, IS 6392, DIN 2532, IS 6418, EN 1759-1, BS 4504

TESTING STANDARD:
API 598, BS EN 12266-1, ANSI FCI 70.2 Class VI,
MSS SP-67, ISO 5208

MOUNTING FLANGE:
ISO 5211

DEAD END SERVICE:
Lug Type (6 bar)

NOMINAL SIZE:
DN40 (1½") to DN600(24")

PRESSURE RATING:
PN6, PN10, PN 16,
ASME B16.34 - Class 150

BODY STYLE:
Wafer, Lug

MODE OF OPERATION:
Hand Lever / Gear Box / Pneumatic Actuator /
Gear box with Electric Actuator

COMPLIANCE WITH:
Pressure Equipment Directive 2014/68/EU

TEMPERATURE RANGE:
- 29°C to 200°C (depending on material of construction,
Refer temperature table)

VALVE TORQUE – (Nm)

Valve Size		PN6	PN10	PN16	Class 150
DN	NPS				
40	1½	6	7	10	11
50	2	8	10	15	18
65	2½	10	14	19	23
80	3	13	18	25	30
100	4	19	27	40	49
125	5	28	42	64	78
150	6	37	57	86	105
200	8	76	112	166	202
250	10	123	186	283	346
300	12	166	259	398	490
350	14	235	369	571	705
400	16	337	519	792	976
450	18	447	698	1079	1330
500	20	580	920	1432	1774
600	24	939	1511	2370	2941

The above torque values are for on/off applications & suitable for clean, normal liquid & gas applications & do not include any safety factor. For other applications, a service factor must be applied. For service factor. please contact KBL R&D valve department.

TEMPERATURE LIMIT DATA

Seat Material	Minimum Temperature Limit**	Maximum Temperature Limit**
EPDM / WHITE EPDM	-29°C	120°C
HTEPDM	-29°C	150°C
BUNA-N (NBR) / WHITE BUNA	-18°C	100°C
VITON® (FKM)	-18°C	200°C
SILICONE (VMQ)*	-29°C	200°C

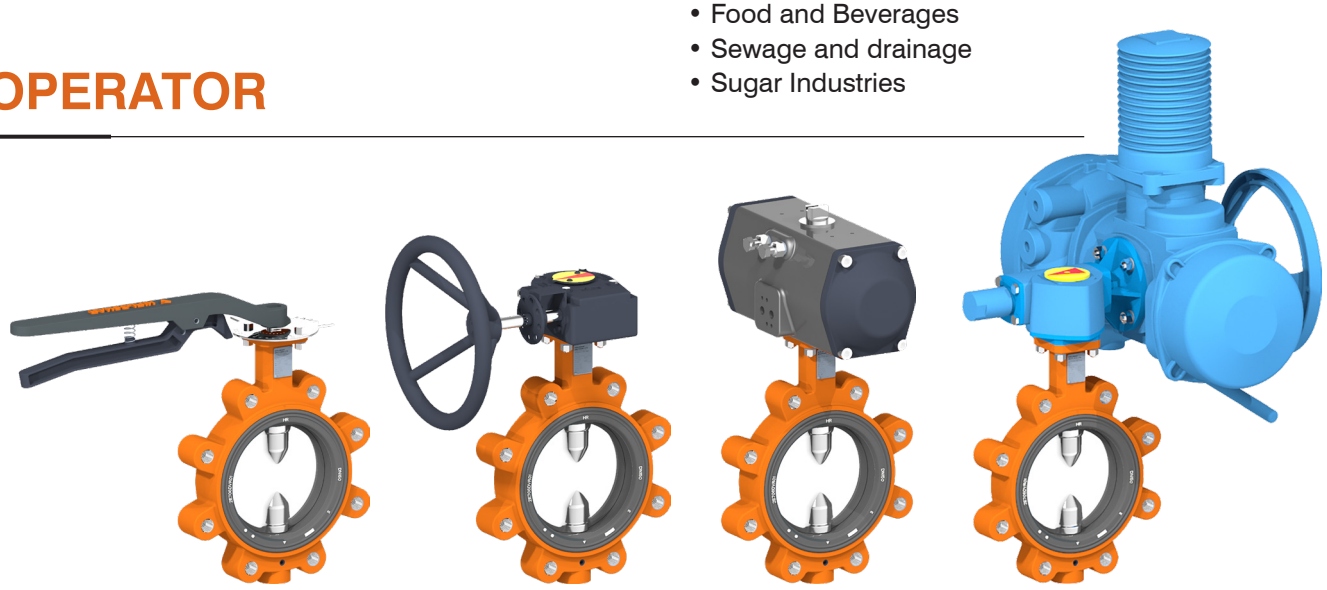
Note : * Only applicable to PN6 pressure rating.
**Consider disc coating temperature limits as well

APPLICATION SECTOR

Butterfly valves are designed for long service life, maintenance free performance and are the most popular choice for

- Water and Air (Supply and Treatment)
- Power
- Chemical and Petrochemical
- Oil & Gas
- Marine
- Building and Construction
- Irrigation
- Steel Industry
- Food and Beverages
- Sewage and drainage
- Sugar Industries

OPERATOR



Valve Pressure Rating	Hand Lever
PN6	Up to 12”
PN10	Up to 10”
PN16	Up to 6”
Class 150	Up to 5”

Our valves can be directly mounted with manual gearbox or gearbox with Electric actuator or Pneumatic actuator (Double acting and spring return with fail safe condition to open or close) with various automation accessories such as manual overrides, Solenoid valves, limits switches, positioners etc. & more.

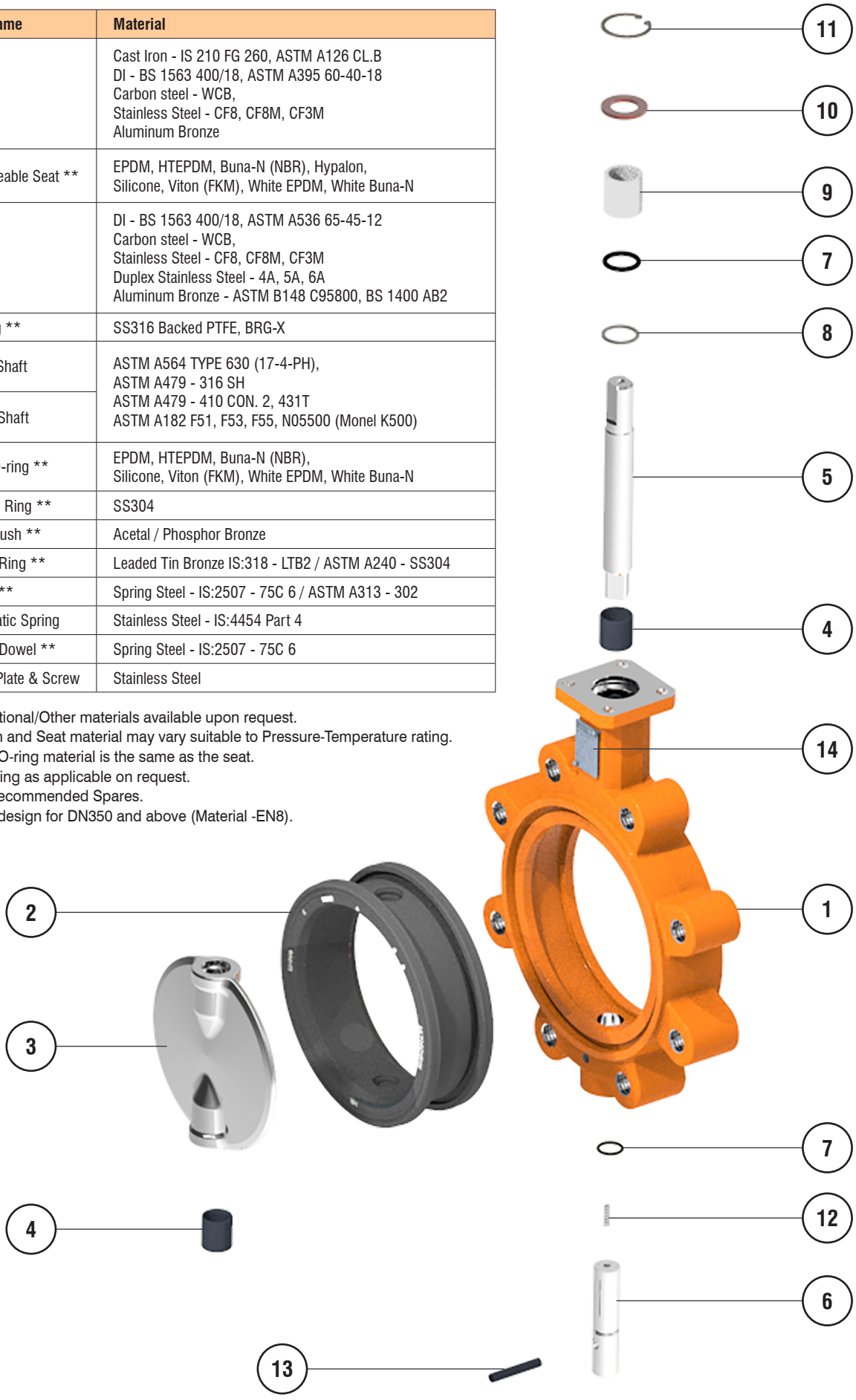
Depending on the torque, the valves can be equipped with a Hand-Lever for manual operation (refer table for valve size). The spring loaded rigid handle with notch plate allows the valve to be locked at 10 different position between the fully open and fully closed condition.

Hand lever, Worm & pinion type Gear Box with Pad locking arrangement may be provided to prevent unauthorized operations. It also features visual indicator for valve disc position.

EXPLODED VIEW AND
MATERIAL OF CONSTRUCTION

Part No.	Part Name	Material
1	Body	Cast Iron - IS 210 FG 260, ASTM A126 CL.B DI - BS 1563 400/18, ASTM A395 60-40-18 Carbon steel - WCB, Stainless Steel - CF8, CF8M, CF3M Aluminum Bronze
2	Replaceable Seat **	EPDM, HTEPDM, Buna-N (NBR), Hypalon, Silicone, Viton (FKM), White EPDM, White Buna-N
3	Disc	DI - BS 1563 400/18, ASTM A536 65-45-12 Carbon steel - WCB, Stainless Steel - CF8, CF8M, CF3M Duplex Stainless Steel - 4A, 5A, 6A Aluminum Bronze - ASTM B148 C95800, BS 1400 AB2
4	Bearing **	SS316 Backed PTFE, BRG-X
5	Upper Shaft	ASTM A564 TYPE 630 (17-4-PH), ASTM A479 - 316 SH ASTM A479 - 410 CON. 2, 431T ASTM A182 F51, F53, F55, N05500 (Monel K500)
6	Lower Shaft	
7	Shaft O-ring **	EPDM, HTEPDM, Buna-N (NBR), Silicone, Viton (FKM), White EPDM, White Buna-N
8	Backup Ring **	SS304
9	Stem Bush **	Acetal / Phosphor Bronze
10	Thrust Ring **	Leaded Tin Bronze IS:318 - LTB2 / ASTM A240 - SS304
11	Circlip **	Spring Steel - IS:2507 - 75C 6 / ASTM A313 - 302
12	Anti-static Spring	Stainless Steel - IS:4454 Part 4
13	Spring Dowel **	Spring Steel - IS:2507 - 75C 6
14	Name Plate & Screw	Stainless Steel

Notes:
1. Additional/Other materials available upon request.
2. Stem and Seat material may vary suitable to Pressure-Temperature rating.
3. The O-ring material is the same as the seat.
4. Coating as applicable on request.
5. ** Recommended Spares.
6. Key design for DN350 and above (Material -EN8).



ORDERING INFORMATION

SERIES	VALVE SIZE	MATERIAL				DRILLING STANDARD	OPERATION	COATING	SPECIAL REQUIREMENTS
		BODY	DISC	SEAT	STEM				
2E6	08	01	05	1	1	1	G	0	00

How to order - 8" PN16, Lug type with WCB body, CF8M Disc, EPDM Seat, 17-4PH stem, drilling as per ASME B16.5, Gearbox operator, no coating & no special requirement, enter code **"2E6-08-01-05-1-1-1-G-0-00"**

SERIES
2E4 - PN6, LUGGED,
2E5 - PN10, LUGGED
2E6 - PN16, LUGGED
2E7 - CL.150, LUGGED
2EA - PN6, WAFER
2EB - PN10, WAFER
2EC - PN16, WAFER
2ED - CL.150, WAFER

VALVE SIZE
2Z - DN40(1½")
02 - DN50 (2")
2X - DN65(2½")
03 - DN80 (3")
04 - DN100 (4")
05 - DN125 (5")
06 - DN150 (6")
08 - DN200 (8")
10 - DN250(10")
12 - DN300 (12")
14 - DN350 (14")
16 - DN400 (16")
18 - DN450 (18")
20 - DN500 (20")
24 - DN600 (24")

MATERIAL

BODY
01 - WCB
05 - CF8M
06 - CF8
07 - CF3
08 - CF3M
15 - CI FG.260
16 - SGI 400/18
17 - SGI 500/7
18 - A126 CL. B
19 - A395 60-40-18
20 - EN 1561-JL1030
21 - EN 1561-JL1040
22 - EN 1563-JS1030
23 - B148- C95800

DISC
01 - WCB
05 - CF8M
06 - CF8
07 - CF3
08 - CF3M
09 - CD3MN (4A)
10 - CE3MN (5A)
11 - CD3MWCuN (6A)
12 - A536 65-45-12
16 - SGI 400/18
17 - SGI 500/7
21 - EN 1561-250
22 - EN 1563-400/18
23 - B148-C95800
24 - BS 1400-AB2
25 - BS 1452 -250
26 - BS 2789-420/12

SEAT#
1 - EPDM
2 - SILICONE (VMQ)
3 - VITON (FKM)
4 - NBR (BUNA-N)
5 - HTEPDM
6 - HYPALON
7 - White EPDM
8 - White Buna-N

STEM#
1 - 17-4PH
2 - SS316 SH
3 - SS410 CON.2
4 - SS431
5 - F51
6 - F53
7 - F55
8 - N05500 (Monel K500)

DRILLING STANDARD
1 - ASME B16.5 CL.150
2 - EN 1092-1, PN10
3 - EN 1092-2, PN10
4 - EN 1092-1, PN16
5 - EN 1092-2, PN16
6 - JIS B2220-5K
7 - JIS B2220-10K
8 - JIS B2220-16K
9 - JIS B2220-20K
A - AWWA C207 CLASS E (275PSI) *
B - IS 6392 TABLE 4 (PN6) *
C - IS 6392 TABLE 11 (PN10)
D - IS 6392 TABLE 17 (PN16) *
E - BS10 TABLE E (150 PSI) *
F - BS10 TABLE D (75 PSI) *
G - IS 1538 (PN10) *
H - ASME B16.1 Cl.125 *
J - ASME B16.42 *
K - IS 6418 Table 6 to 9 *
L - EN 1759-1 *
M - BS 4504 PN10 *
N - BS 4504 PN16 *

OPERATION
B - Bare
L - Hand Lever
E - Electric Actuator
G - Gear Box with Hand Wheel
H - Gear Box with Pneumatic Actuator
P - Pneumatic Actuator
2 - By Hand Lever + Limit Switch For Open Position
3 - By Hand Lever + Limit Switch For Close Position
4 - By Hand Lever + Limit Switch For Open & Close Position
5 - Gearbox + Hand wheel with Locking Arrangement
6 - Gearbox + Chain & Chain wheel

Note: 1. Additional materials available upon request.
2. *As applicable to selected size and pressure rating.
3. # Stem and Seat material may vary suitable to pressure temperature rating.

WARRANTY AND LIMITATION OF LIABILITY

KBL warrants that its products shipped to its initial purchaser will be free of all defects in material and workmanship for a period of one year from the date of delivery.

Should any failure to conform to this warranty appear before the one-year delivery period, and the product[s] stored, installed and maintained in accordance with published KBL literature recommendations, and standard industry practice, KBL will replace the product as per purchase agreement.

KBL shall not be liable for consequential damages to loss of other equipment or property, loss of profits or revenue, except the price of the KBL goods, which this liability is based.

The customer is expected to check the received goods upon arrival at its premises. Any evident damage to the product or severe damage to its packaging that could affect the functionality of the received item should be reported immediately and no later than 10 days after delivery, possibly with pictures, to sales@kbl.co.in.

*It is the end user's responsibility to confirm that items intended for use satisfy local codes and standards.

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Website: www.kirloskarpumps.com I **CIN No.** L29113PN1920PLC000670

OUR COMPANIES

BRAYBAR PUMPS (PTY) LTD
Republic of South Africa

KARAD PROJECTS AND MOTORS LIMITED
India

KIRLOSKAR BROTHERS (THAILAND) LIMITED
Thailand

KIRLOSKAR CORROCOAT PRIVATE LIMITED
India

KIRLOSKAR EBARA PUMPS LIMITED
India

RODELTA PUMPS INTERNATIONAL B.V.
The Netherlands

SPP PUMPS LIMITED
United Kingdom

SYNCROFLO, INC.
U.S.A.

KBL/Valve/CBPV/July-2026/V1