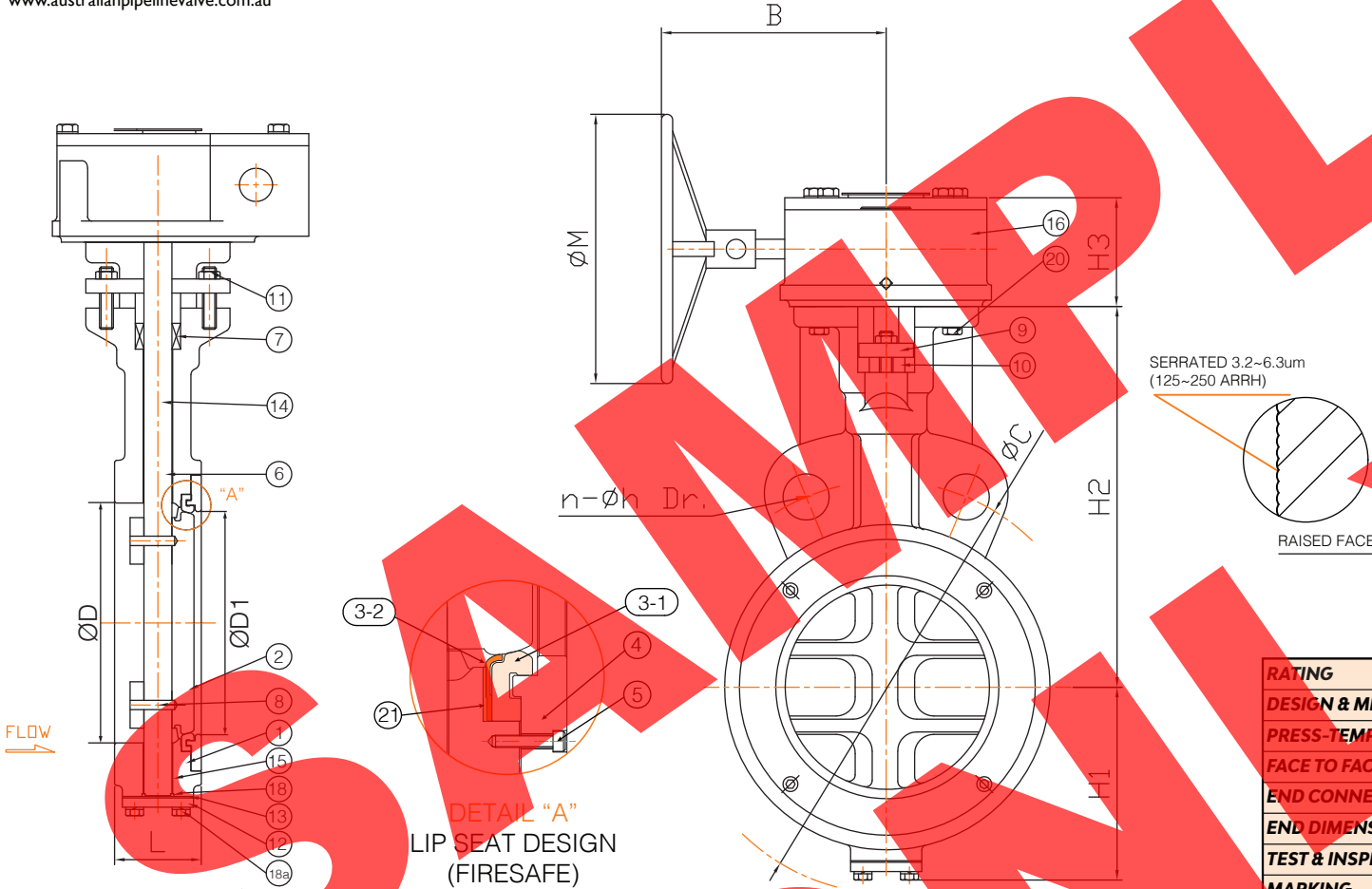


BILL OF MATERIALS

NO.	PART NAME	MATERIAL	NOTES
1	BODY	ASTM A351 CF8M	-
2	DISC	ASTM A351 CF8M	-
3-1	SEAT	PTFE	ENERGISED
3-2	FIRESAFE SEAT BACK UP	ASTM A182 316	-
4	SEAT RETAINER	ASTM A351 CF8M (316)	-
5	BOLT	ASTM A193 B8M	1 SET
6	SHAFT	ASTM A27 T316	(2)
7	PACKING	GRAPHITE	(3) 1 SET
8	LOCK PIN	ASTM A276 T316	1 SET
9	PACKING GLAND	ASTM A240 T316	-
10	GLAND RING	ASTM A276 T316	-
11	GLAND BOLT NUT	ASTM A193 B8M/A194 8M	1 SET
12	END COVER	ASTM A240 T316	-
12A	COVER BOLTS	ASTM A193 B8M	1 SET
13	GASKET	GRAPHITE	-
14	BUSH	OILLESS BEARING	316+GRP+PTFE
15	BUSH	OILLESS BEARING	316+GRP+PTFE
16	GEARBOX	ASSEMBLY	(1)
18	STEM BEARING	ASTM A276 T316	-
20	GEAR BOLT	ASTM A193 B8	-
21	BODY/RETAINER GASKET	GRAPHITE	-

(1) PAINT SPEC PPS 07.00
(2) STEM SMOOTHNESS $R_a \leq 0.80 \mu\text{m}$
(3) PACKING CHAMBER SMOOTHNESS $R_a \leq 3.2 \mu\text{m}$



DETAIL "A"
LIP SEAT DESIGN
(FIRESAFE)

DIMENSIONS (MM) & WEIGHT (KG)

Inch	DN	L	ØD	ØD1	ØC	n-oh Dr.	H1	H2	H3	B	ØM	Weight
6"	150	59	155	146	269.7	2-ø22.4	180	220	85	185	250	19.0

Dimensions in millimeters

RATING	CL 300	TEST PRESSURE	
DESIGN & MFG.	API609 CAT.B ASME B16.34 (WALL)	SHELL HYDRO	SEAT HYDRO
PRESS-TEMP RATING	ASME B16.34 & API 609-B	7.58 Mpa 1100 Psi	5.62 Mpa 815 Psi
FACE TO FACE DIM.	API609 CATEGORY B	SEAT AIR	BACKSEAT
END CONNECTION	RFSF WAFER	0.55 Mpa 80 Psi	Mpa Psi
END DIMENSION	ANSI B16.5	TEMPERATURE	
TEST & INSPECTION	API 598 ISO 5208 RATE A	-29 TO 210 °C -20 TO 410 °F	
MARKING	MS SP-25	MEDIUM	Water, Oil, Gas
OTHER REQ.			
PAINT	PICKLED & PASSIVATED BODY		
TRIM	316SS		
NOTES	FIRESAFE API607 & ISO 10497		
OTHER	DESIGN LIFE 20,000 CYCLES		
SPECIAL	OPTIONAL HP SEAT TEST ALSO PERFORMED ISO 5208-A		

High Performance Butterfly Valve, CF8M
Double Offset Model SLHBFFS-BWJBP3G
NPS 6" (DN150) Class 300,
RF, Wafer, Gear Operated

Australian Pipeline Valve

ORDER N°/ DWG N°	XXXXXX-XX	APPROVED	B.T.
REV.	00	CHECKED	S.Q.
		DRAWN	C.C.

DOUBLE OFFSET MOUNT BASE DIMENSIONS

ANSI CLASS 150

SIZE		MOUNTING BASE			
Inch	mm	TYPE	n	h2	c1
2"	50	F07	4	10	70
3"	80	F07	4	10	70
4"	100	F07	4	10	70
6"	150	F07	4	10	70
8"	200	F10	4	12	102
10"	250	F14	4	18	140
12"	300	F14	4	18	140
14"	350	F14	4	18	140
16"	400	F16	4	22	165
18"	450	F16	4	22	165
20"	500	F16	4	22	165
24"	600	F16	4	22	165
26"	650	F25	8	19	254
28"	700	F25	8	19	254
30"	750	F25	8	19	254
32"	800	F25	8	19	254
36"	900	F25	8	19	254

UOM = mm

ANSI CLASS 300

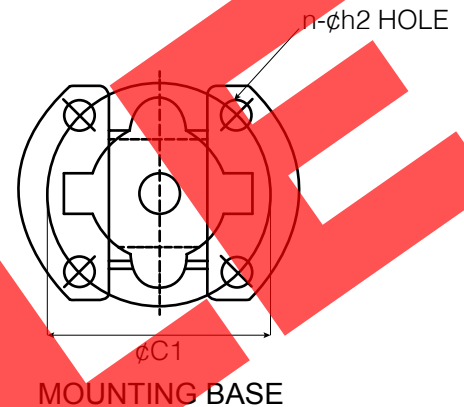
SIZE		MOUNTING BASE			
Inch	mm	TYPE	n	h2	c1
2"	50	F07	4	10	70
3"	80	F07	4	10	70
4"	100	F07	4	10	70
6"	150	F07	4	10	70
8"	200	F10	4	12	102
10"	250	F14	4	18	140
12"	300	F14	4	18	140
14"	350	F14	4	18	140
16"	400	F16	4	22	165
18"	450	F16	4	22	165
20"	500	F16	4	22	165
24"	600	F16	4	22	165
26"	650	F25	8	19	254
28"	700	F25	8	19	254
30"	750	F25	8	19	254
32"	800	F25	8	19	254
36"	900	F30	8	23	298

UOM = mm

ANSI CLASS 600

SIZE		MOUNTING BASE			
Inch	mm	TYPE	n	h2	c1
2"	50	F07	4	10	70
3"	80	F07	4	10	70

UOM = mm

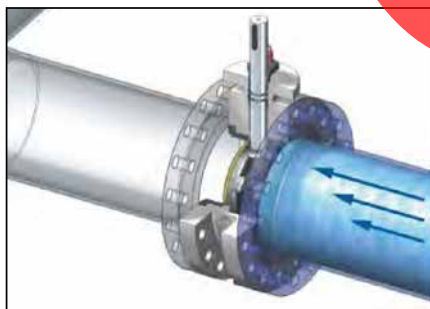


DOUBLE OFFSET - TORQUE & Cv

SIZE		TORQUE AT MAX. DIFFERENTIAL PRESSURE (kgf/cm²)						Cv VALUE FULL OPEN		
Inch	mm	10.5 (150PSI)	20 (285 PSI)	28.1 (400PSI)	42.2 (600PSI)	49.2 (700PSI)	104.1 (1480PSI)	CLASS		
								150	300	600
2"	50	3.1	3.5	4.4	4.6	4.7	-	92	92	-
2-1/2"	65	3.3	3.8	4.5	4.8	4.9	-	150	150	-
3"	80	3.5	4.3	4.8	5.3	5.5	11.8	260	260	155
4"	100	4.6	6.2	7.1	7.9	8.7	21.0	460	460	255
5"	125	6.2	8.8	9.4	11.0	12.2	27.8	760	760	710
6"	150	8.2	10.2	12.2	14.3	14.9	37.0	1150	1100	740
8"	200	14.3	17.3	19.4	22.4	24.5	67.8	2100	1900	1350
10"	250	20.9	29.1	34.7	40.8	45.6	105.0	3200	3000	2050
12"	300	29.9	43.8	53.5	64.2	69.1	160.6	4700	4500	2700
14"	350	44.7	72.2	100.9	126.4	138.7	254.9	5800	5500	3900
16"	400	63.7	106.0	138.7	168.2	185.1	328.3	8000	7600	5100
18"	450	86.2	137.7	185.1	218.7	235.5	408.4	10500	9900	5500
20"	500	130.0	197.3	246.8	291.6	314.1	547.1	14000	13000	7900
22"	550	161.6	242.2	295.7	358.9	381.4	-	-	-	-
24"	600	197.3	296.2	358.9	444.1	475.7	948.3	21000	19500	11100
26"	650	224.3	336.5	413.0	520.5	565.4	-	25009	-	-
28"	700	255.9	394.6	475.7	646.5	708.7	-	29000	-	-
30"	750	304.9	448.7	556.2	735.7	807.6	-	33500	-	-
32"	800	368.1	556.2	-	-	-	-	41000	-	-
34"	850	430.8	646.5	-	-	-	-	-	-	-
36"	900	493.5	744.4	-	-	-	-	55000	-	-
38"	950	565.9	843.3	-	-	-	-	-	-	-
40"	1000	655.7	987.1	-	-	-	-	70000	-	-
42"	1050	717.9	1076.8	-	-	-	-	-	-	-
44"	1100	781.1	1166.5	-	-	-	-	87000	-	-
46"	1150	852.5	1346.0	-	-	-	-	-	-	-
48"	1200	987.1	1480.6	-	-	-	-	104000	-	-

Safety factor not included. Theoretical torque only.

Bi-directional Isolation

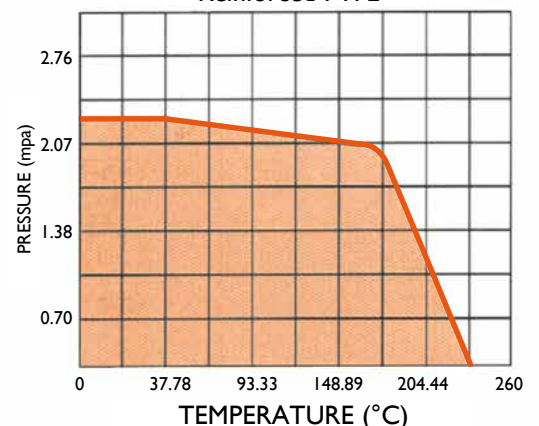


Preferred Direction - Leak tight shut off



Non-Preferred Direction (Not tested leak tight shut off)

Pressure/Temperature Rating 150 Class Reinforced PTFE

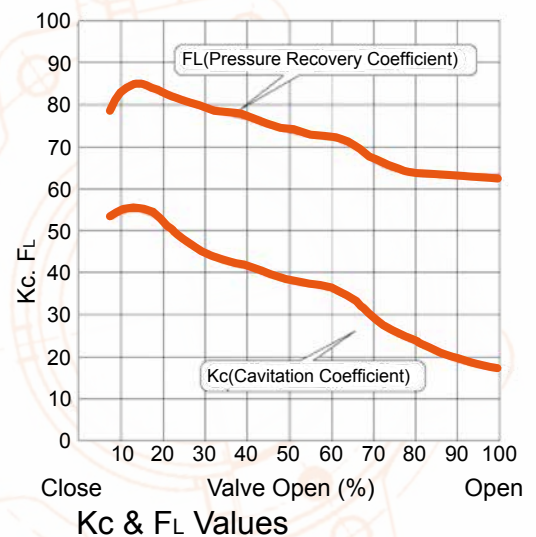
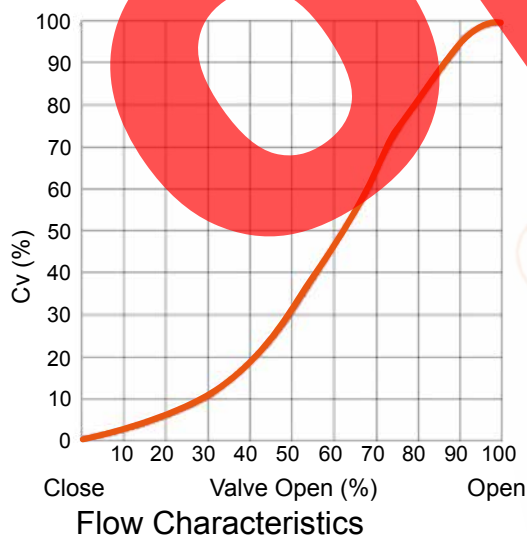




FLOW COEFFICIENTS CURVES

Cv (Coefficient of Volume) is the number of U.S. gallons per minute of water required to pass through a valve with a pressure drop of 1 psi.

Representative
size: 150LB-12"





**AUSTRALIAN
PIPELINE VALVE®**
www.australianpipelinevalve.com.au

SUPERSEAL®

API607 6th & 7th Ed.
ISO 10497
Firesafe Certified

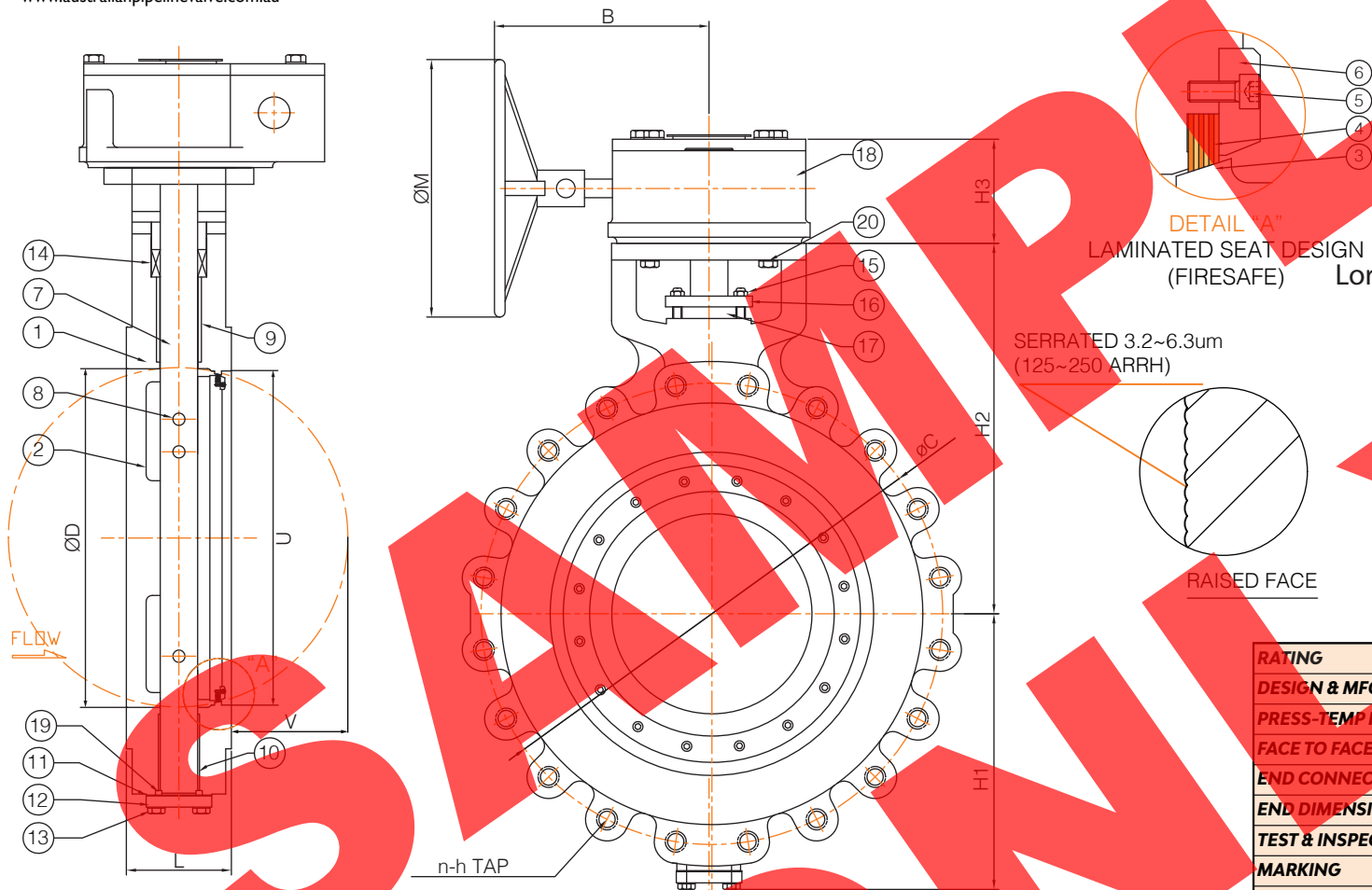
CYCLE
TESTED
API 622/ ISO15848-1
Endurance Test Certified

API 622 2011 2nd Edition
Fugitive Emission Certified
(Design Test)

BILL OF MATERIALS

NO.	PART NAME	MATERIAL	NOTES
1	BODY	ASTM A216 WCB	(1)
2	DISC	ASTM A351 CF8M	-
3	BODY SEAT	STELLITE #21	OVERLAY
4	DISC SEAT	ASTM A276 316+GRAPHITE	TRIPLE LAMINATED
5	BOLT	ASTM A193 B8M	1 SET
6	SEAT RETAINER	ASTM A351 CF8M	-
7	SHAFT	ASTM A564 T630 (17-4PH)	(2)
8	LOCK PIN	ASTM A564 T630 (17-4PH)	1 SET
9	BUSH	OILLESS BEARING	316+GRP+PTFE
10	BUSH	OILLESS BEARING	316+GRP+PTFE
11	GASKET	GRAPHITE	-
12	END COVER	ASTM A240 T316	-
13	COVER BOLTS	ASTM A193 B8M	1 SET
14	PACKING V-TYPE	GRAPHITE	(3) 1 SET
15	GLAND BOLT & NUT	ASTM A193 B8M/A194 8M	1 SET
16	PACKING GLAND	ASTM A240 T316	-
17	GLAND RING	ASTM A276 T316	-
18	GEARBOX	ASSEMBLY	(1)
19	STEAM BEARING	ASTM A564 T630 (17-4PH)	-
20	GEAR BOLT	ASTM A193 B8	-

(1) PAINT SPEC PPS 07.00
(2) STEM SMOOTHNESS $R_a \leq 0.80 \mu\text{m}$
(3) PACKING CHAMBER SMOOTHNESS $R_a \leq 3.2 \mu\text{m}$



DIMENSIONS (MM) & WEIGHT (KG)

Inch	DN	L	OD	OC	n-oh TAP	H1	H2	H3	B	OM	U	V	Weight
14"	350	73	318	514.3	20-1 1/8" UNC (80~)	220	270	85	185	250	315	109	38.0

Dimensions in millimeters

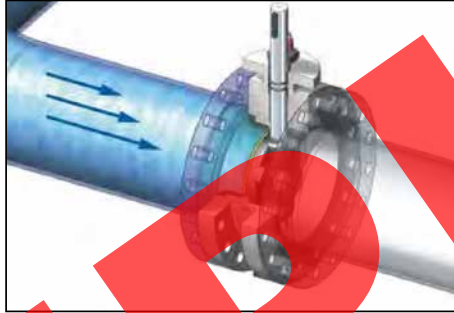
RATING	CL 300	TEST PRESSURE			
DESIGN & MFG.	API609 CAT.B ASME B16.34 (WALL)	SHELL HYDRO		SEAT HYDRO	
PRESS-TEMP RATING	ASME B16.34 & API 609-B	7.58 Mpa	1100 Psi	5.62 Mpa	815 Psi
FACE TO FACE DIM.	API609 CATEGORY B	SEAT AIR		BACKSEAT	
END CONNECTION	RFSF LUGGED	0.55 Mpa	80 Psi	Mpa	Psi
END DIMENSION	ANSI B16.5	TEMPERATURE			
TEST & INSPECTION	API 598 ISO 5208 RATE A ZERO LEAKAGE	-29 TO 210 °C		-20 TO 410 °F	
MARKING	MS SP-25	MEDIUM		Water, Oil, Gas	
OTHER REQ.	NACE MR-01-75/MR-01-03 (ISO 15156)				
PAINT	SPEC PPS07.00 ZINC EPOXY PRIMER, POLYURETHANE TOP COAT				
TRIM	316SS				
NOTES	FIRESAFE API607 & ISO 10497				
OTHER	CORROSION ALLOWANCE: 3.0MM, DESIGN LIFE 20,000 CYCLES				
SPECIAL	OPTIONAL HP SEAT TEST ALSO PERFORMED ISO 5208-A				

High Performance Butterfly Valve, WCB
Triple Offset Model SLHBFFS-T-BLABL1G-N
NPS 14" (DN350) Class 300,
RF, Fully Lugged & Tapped, Gear Operated

Australian Pipeline Valve

ORDER N°/ DWG N°	XXXXXX-XX	APPROVED	B.T.
REV.	00	CHECKED	S.Q.
		DRAWN	C.C.

Uni-Directional Zero Leakage



Preferred Direction



API 622 & ISO 15848-1
Endurance Test Certified



API 607, ISO 10497-5
Firesafe Certified



ISO 15848-1
Fugitive Emission Certified



TRIPLE OFFSET MOUNT BASE DIMENSIONS

ANSI CLASS 150

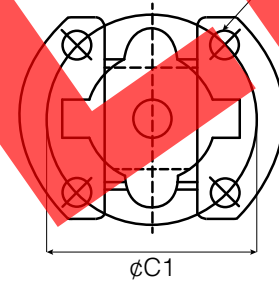
SIZE		MOUNTING BASE			
Inch	mm	TYPE	n	h2	c1
3"	80	F07	70	4	9
4"	100	F07	70	4	9
5"	125	F07	70	4	9
6"	150	F07	70	4	9
8"	200	F10	102	4	11
10"	250	F10	102	4	11
12"	300	F14	140	4	18
14"	350	F14	140	4	18
16"	400	F16	165	4	22
18"	450	F16	165	4	22
20"	500	F16	165	4	22
24"	600	F25	254	8	18

ANSI CLASS 300

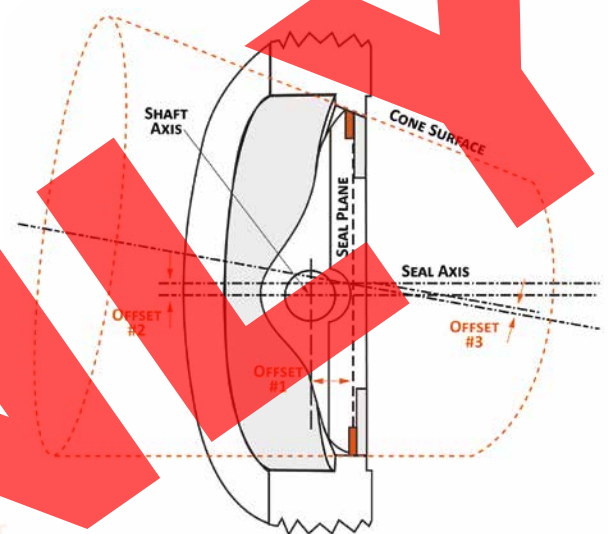
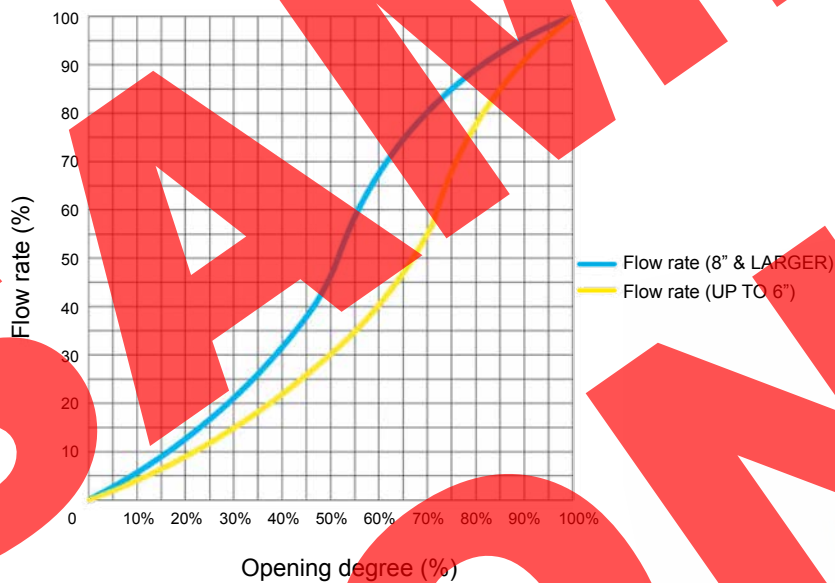
SIZE		MOUNTING BASE			
Inch	mm	TYPE	n	h2	c1
3"	80	F07	70	4	9
4"	100	F07	70	4	9
5"	125	F10	102	4	11
6"	150	F10	102	4	11
8"	200	F14	140	4	18
10"	250	F14	140	4	18
12"	300	F16	165	4	22
14"	350	F16	165	4	22
16"	400	F25	254	8	18
18"	450	F25	254	8	18
20"	500	F30	298	8	22
24"	600	F30	298	8	22

ANSI CLASS 600

SIZE		MOUNTING BASE			
Inch	mm	TYPE	n	h2	c1
3"	80	F07	70	4	9
4"	100	F10	102	4	11
5"	125	F14	140	4	18
6"	150	F14	140	4	18
8"	200	F16	165	4	22
10"	250	F16	165	4	22
12"	300	F25	254	8	18



TRIPLE OFFSET FLOW & TORQUE DATAFLOW CHARACTERISITC CURVE



Triple Offset Design

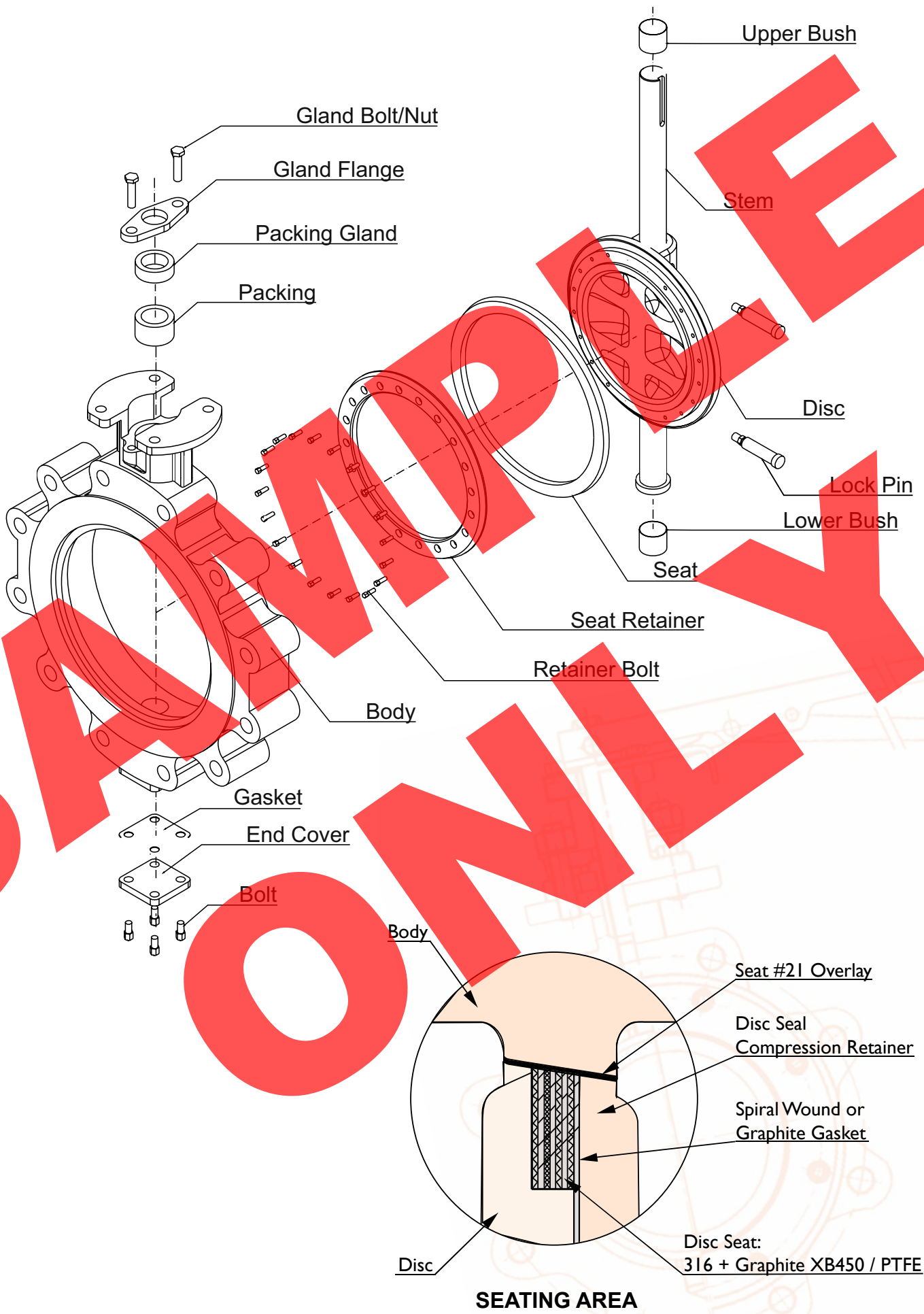
TORQUE DATA

Max ΔP (kdf/cm)	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
10.5 (150PSIG)	2.8	4.9	6.8	11.0	19.3	29.8	51.2	61.7	86.5	143.7	181.8	272.5
20.0 (285PSIG)	5.4	9.3	13.0	20.8	36.5	56.4	96.8	116.5	163.1	271.0	342.1	510.7
28.1 (400PSIG)	7.6	13.0	18.2	29.1	52.3	81.5	134.2	169.3	236.8	386.0	495.1	735.1
42.2 (600PSIG)	11.3	19.3	27.3	43.7	78.4	122.1	201.0	253.6	354.5	578.0	741.0	1098.9
52.0 (740PSIG)	14.0	24.1	33.6	53.9	96.7	150.5	247.8	312.6	436.8	712.3	913.1	1353.5
104.1 (1480PSIG)	36.4	66.2	90.1	14.9	286.6	449.4	642.5					

Theoretical torque only. Safety factor not included.

INSTALLATION

- The valve should be mounted with the stem in a horizontal position, the inclined cone edge of disc faces toward the downstream (refer to directional arrows and stem side).



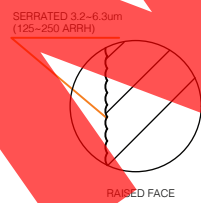
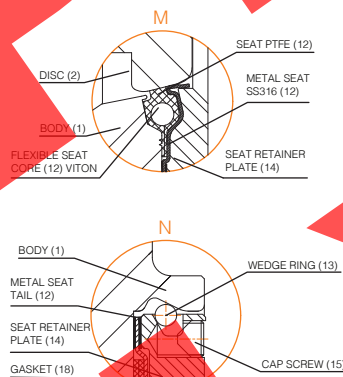
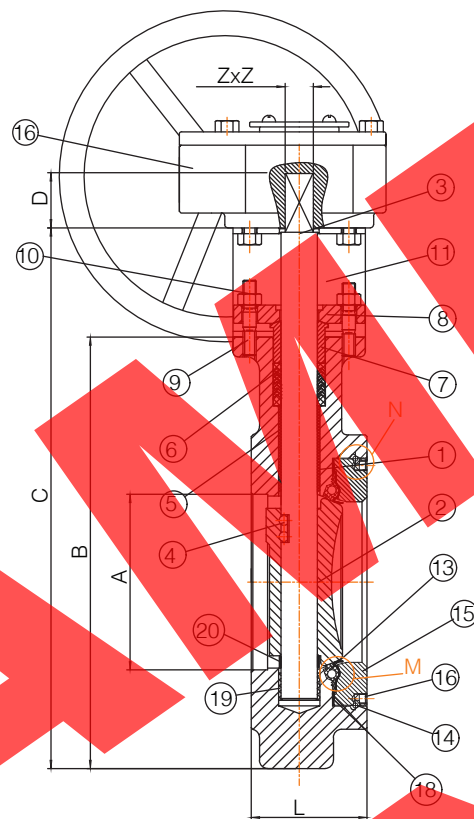
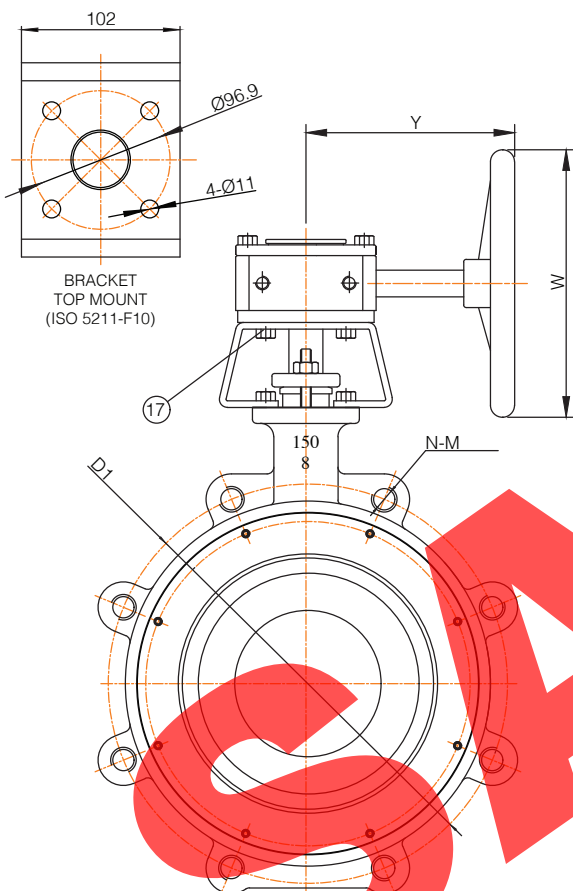
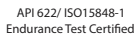
GENERAL SERVICE APPLICATION	Carbon steel surfaces. Body and lever/gearbox.
SCOPE	Standard industrial level protection against weathering, brackish water, etc. for petroleum plants, pipelines & refineries.
TEMPERATURE RESISTANCE	-46°C ~ 240°C
PRELIMINARY SURFACE PREPARATION	Blasting to Grade Sa 2.1/2 then cleaning with degreaser and washing with high pressure water at 100°C, and then drying in open air for 24 hours.
PROTECTION OF UNPAINTED PARTS	Protection with suitable plastic plugs and with sealing tape where applicable.
FINAL SURFACE PREPARATION	Machining to smoothness of $\leq 6,3\mu\text{m}$ where applicable. Prepare all surfaces to ensure proper adhesion of paint film by polishing and de-burring, removing any dust, rust, water, oil or other impurities.
PAINT APPLICATION	Spraying with a gun, drying in between coats as per manufacturer's specification. Painting performed at 5 ~ 30°C at less than 85% humidity. Allow at least 24 hours between coats for drying time. Dip coating allowed for some components.

NO. OF COATS	TYPE OF PROCESS	TYPE	FILM THICKNESS
Primer Coats Body	Anti-rust self curing Epoxy Zinc primer Grey	Zinc-rich Epoxy Polyamide	30 μm
Top Coats Body	Dark Cyan Green/Blue RAL5001 Acrylic Polyurethane	Polyurethane Resin Dark Cyan Green/Blue	30 μm
TOTAL DRY FILM THICKNESS:			60 μm

NOTES:

Application temperature, drying times and other physical data of painting as per manufacturer specifications.

Rev.	Date	Remarks	Issued by:
1	Sept 18th 2018	First Issue	GP



DIMENSIONS (MM) & WEIGHT (KG)

[illegible]

FLOW DIRECTION
(PREFERENTIAL)

High Performance Butterfly Valve, Bi-Directional
Double Offset Model SLHBFFS-ALZGR6G-B
NPS 8" (DN200) Class 150,
RF, Lugged, Gear Operated

Australian Pipeline Valve

BILL OF MATERIALS

NO.	PART NAME	MATERIAL	NOTES
1	BODY	ASTM B148 C95800	NIABZ
2	DISC	ASTM A494 M35-1	MONEL M35-1
3	STEM	UNS N05500	MONEL K500 (2
4	PIN	AISI 316SS	-
5	BUSHING	ASTM A240 316+PTFE	-
6	PACKING	GRAPHITE	(3)
7	GLAND RING	ASTM A269 TP316	-
8	GLAND RETAINER	ASTM A351 CF8M	-
9	STUD	ASTM A193 B8M	-
10	HEX NUT	ASTM A194 8M	-
11	BRACKET	ASTM A240 316	-
12	SEAT ASSEMBLY	ASTM A240 316+RPTFE	FLEXIBLE ENCAPSULATED CORE
13	WEDGE RING	AISI 316SS	-
14	SEAT RETAINER	INCONEL 625	-
15	CAP SCREW	ASTM A193 B8M	-
16	GEAR	ASSEMBLY	(1)
17	BOLT	ASTM A193 B8M	-
18	GASKET	GRAPHITE	-
19	BEARING	SS316L+PTFE	-
20	DISC THRUST SPACER	ASTM A240 316	-

(1) PAINT SPEC SP-P09.001

(2) STEM SMOOTHNESS $R_a \leq 0.80 \mu m$

(3) PACKING CHAMBER SMOOTHNESS $R_a \leq 3.2 \mu m$

RATING	CL 150	TEST PRESSURE	
DESIGN & MFG.	API609 CAT.B ASME B16.34 (WALL)	SHELL HYDRO	SEAT HYDRO
PRESS-TEMP RATING	ASME B16.34 & API 609-B	3.0 _{Mpa} 435 _{Psi}	2.2 _{Mpa} 319 _{Psi}
FACE TO FACE DIM.	API609 CATEGORY B	SEAT AIR	BACKSEAT
END CONNECTION	RFSF FULLY LUGGED & TAPPED	0.55 _{Mpa} 80 _{Psi}	_{Mpa} _{Psi}
END DIMENSION	ANSI B16.5	TEMPERATURE	
TEST & INSPECTION	API 598 ISO 5208 RATE A	-29 TO 200 _{°C}	-20 TO 392 _{°F}
MARKING	MS SP-25	MEDIUM	Water, Oil, Gas
OTHER REQ.	PICKLED & PASSIVATED BODY		
PAINT	GEARBOX 3 COAT SYSTEM SP-P09.001		
TRIM	MONEL, FLO-SEAL SEAT		
NOTES	FIRESAFE API607 & ISO 10497		
OTHER	DESIGN LIFE 20,000 CYCLES. TESTED BI-DIRECTIONAL		
SPECIAL	OPTIONAL HP AND LP SEAT TEST PERFORMED ISO 5208-A		

II	ORDER N°/ DWG N°	XXXXXX-XX	APPROVED	B.T.
	REV.	00	CHECKED	S.Q.
			DRAWN	C.C.

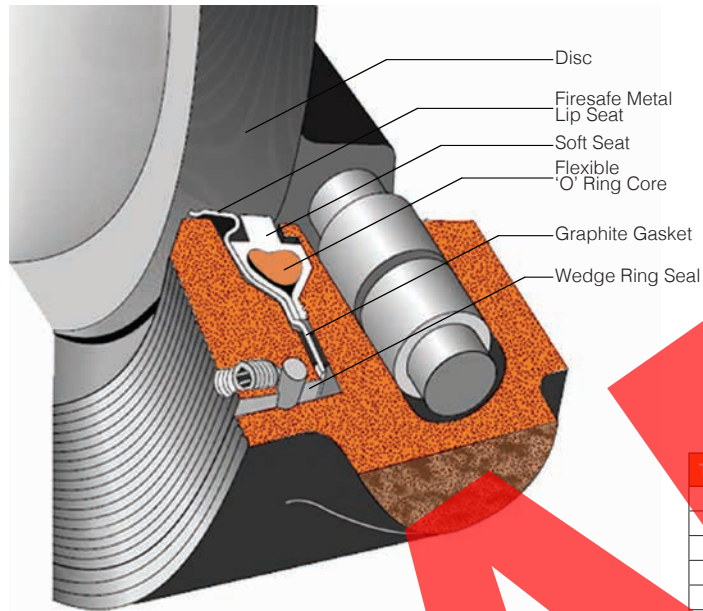
Dimensions in millimeters

 BTO/BTC Torque @ maximum differential pressure, seat upstream. No safety factor included. Theoretical torque only.

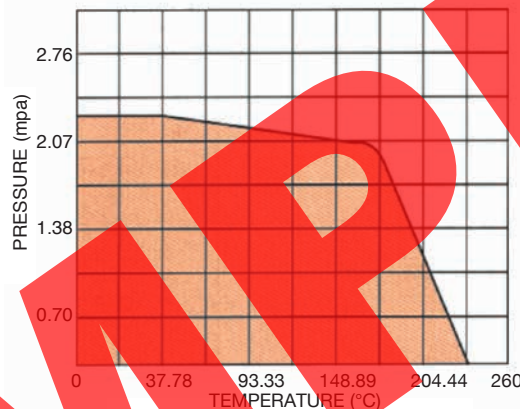
APV DWG FRM 275



**AUSTRALIAN
PIPELINE VALVE®**
www.australianpipelinevalve.com.au



PRESSURE/TEMPERATURE REINFORCED PTFE SEAT P/T RATING 150 CLASS



150 CLASS BODY PRESSURE/TEMPERATURE RATING (BAR)

Temperature (C°)	Carbon Steel	Stainless Steel 316	20# Alloy	Monel
-20 - 38	19.7	19.0	15.8	15.8
93	17.9	16.5	13.8	13.8
149	16.8	14.8	12.4	13.1
204	13.8	13.4	11.0	12.8
260	11.7	11.7	10.3	11.7
Test Pressure	31	29.3	24.1	24.1

Cv VALUES

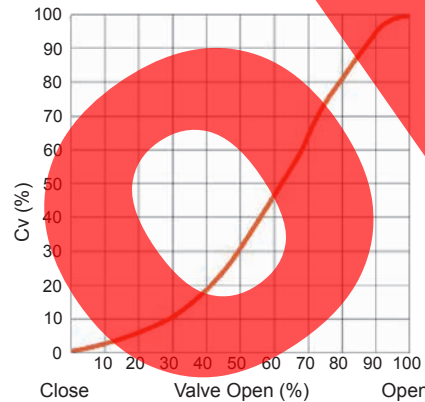
SIZE		Cv VALUE FULL OPEN		
Inch	mm	CLASS		
		150	300	600
2"	50	103	99	92
2-1/2"	65	160	160	140
3"	80	185	185	165
4"	100	375	375	305
5"	125	795	795	-
6"	150	1360	1050	870
8"	200	2830	2010	1510
10"	250	4320	2660	2200
12"	300	6660	4000	3100
14"	350	7650	4120	3900
16"	400	9820	7810	5020
18"	450	10520	9500	6050
20"	500	13550	11000	8050
24"	600	20000	18050	11000

Cv is defined as the volume of water in U.S.P.M. that will flow through a given restriction or valve opening with a pressure drop of one(1) p.s.i. room temperature.

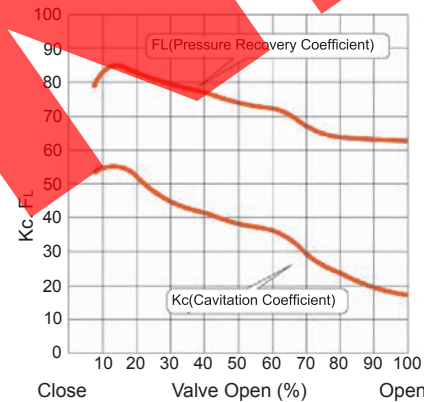
Cv FLOW COEFFICIENTS CURVES

Cv (Coefficient of Volume) is the number of U.S. gallons per minute of water required to pass through a valve with a pressure drop of 1 psi.

Representative size: 150LB - 12"

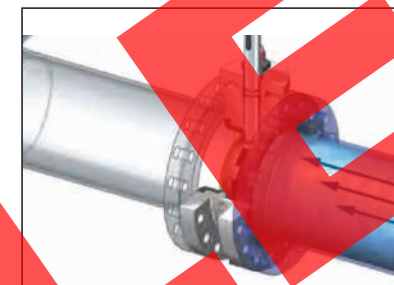


Flow Characteristics

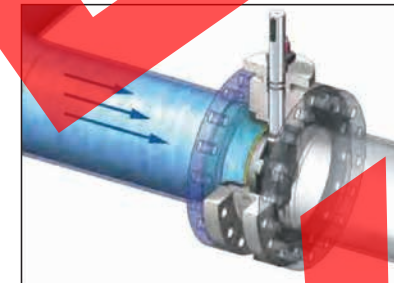


Kc & FL Values

Bi-directional Isolation



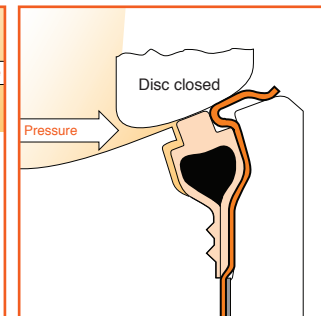
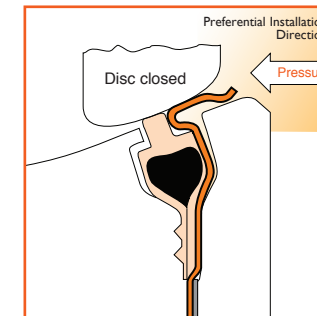
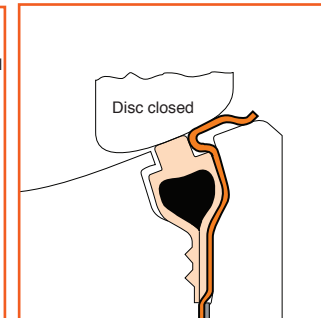
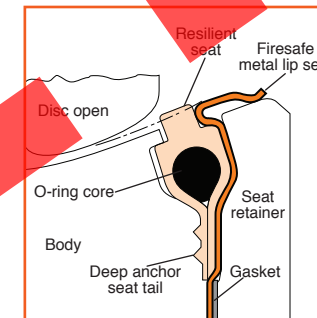
Preferred Direction - Leak tight shut off



Non-Preferred Direction (Tested)



FIRESAFE SOFT SEAT (ENERGISED FLO-SEAL STYLE) BI-DIRECTIONAL

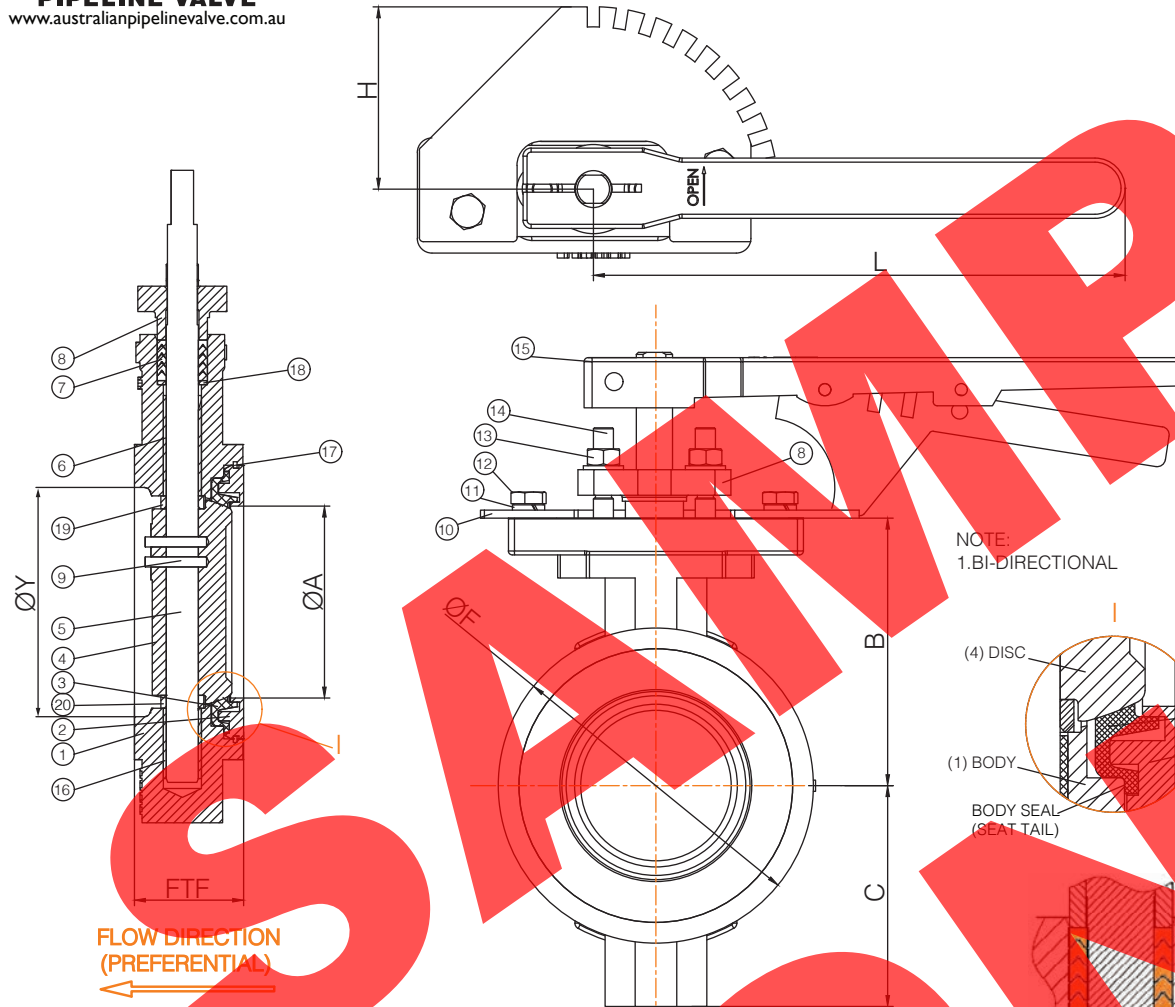




BILL OF MATERIALS

NO.	PART NAME	MATERIAL	NOTES
1	BODY	ASTM A351 CF8M	-
2	INSERT (BOLTED)	ASTM A182 F316	-
3	SEAT	PTFE	-
4	DISC	ASTM A351 CF8M	-
5	STEM	ASTM 182 F316	(2)
6	UPPER BEARING	ASTM A240 316L+RPTFE	1 SET
7	PACKING	PTFE V-TYPE	(3) CHEVRON SET
8	GLAND FLANGE	ASTM A351 CF8M	-
9	PINS	ASTM A182 F316	-
10	POSITION INDICATOR	316 STAINLESS STEEL	-
11	WASHER	304 STAINLESS STEEL	-
12	BOLT	ASTM A193 B8M	-
13	NUT	ASTM A194 8M	-
14	BOLT	ASTM A193 B8M	-
15	LEVER	ASSEMBLY	(1) PAINTING
16	LOWER BEARING	ASTM A240 316L+RPTFE	-
17	LOCK BOLTS	ASTM A193 B8M	-
18	PACKING GASKET	316 STAINLESS STEEL	-
19	UPPER RETAINER RING	316 STAINLESS STEEL	-
20	LOWER RETAINING RING	316 STAINLESS STEEL	-

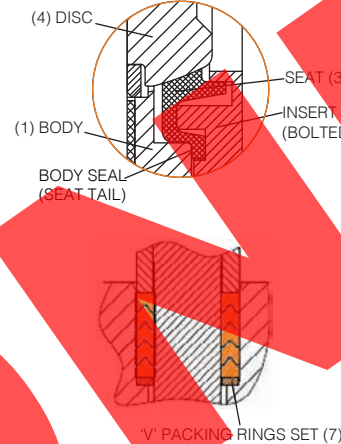
(1) PAINT SPEC SP-P09-001, PROCEDURE AP-SP-PD-P-001
(2) STEM SMOOTHNESS $R_a \leq 0.80 \mu\text{m}$
(3) PACKING CHAMBER SMOOTHNESS $R_a \leq 3.2 \mu\text{m}$



SERRATED 3.2~6.3um
(125~250 ARRH)

RAISED FACE

NOTE:
1. BI-DIRECTIONAL



DIMENSIONS (MM) & WEIGHT (KG)

Inch	DN	A	B	C	F	FTF±3.3	L	Y	H	ISO 5211	Torque ⚠	Torque (MAST)	Weight
6"	150	142	152	135	217	57	262	146	93	F10	126 NM	155 NM	16.0

Dimensions in millimeters

⚠ BTO/BTC Torque @ maximum differential pressure, no safety factor included. Theoretical torque only.

RATING	CL 150	TEST PRESSURE	
DESIGN & MFG.	API 609 CAT.B ASME B16.34 (WALL)	SHELL HYDRO	SEAT HYDRO
PRESS-TEMP RATING	ASME B16.34 & API 609-B	3.0 Mpa 435 Psi	3.2 Mpa 464 Psi
FACE TO FACE DIM.	API 609 CATEGORY B	SEAT AIR	BACKSEAT
END CONNECTION	RFSF WAFER	0.55 Mpa 80 Psi	Mpa Psi
END DIMENSION	ANSI B16.5	TEMPERATURE	
TEST & INSPECTION	API 598 ISO 5208 RATE A	-29 TO 180 °C	-20 TO 356 °F
MARKING	MS SP-25	MEDIUM	Water, Oil, Gas
OTHER REQ.			
PAINT	PICKLED & PASSIVATED BODY		
TRIM	316SS		
NOTES			
OTHER	DESIGN LIFE 20,000 CYCLES, TESTED BI-DIRECTIONAL		
SPECIAL	OPTIONAL HP & LP SEAT TEST ALSO PERFORMED ISO 5208-A		

High Performance Butterfly Valve, CF8M
Double Offset Model SLHBF-AWJBPP-B,
NPS 6" (DN150) Class 150,
Lip Seat, RF, Wafer, Lever Operated

Australian Pipeline Valve

ORDER N°/ DWG N°	XXXXXX-XX	APPROVED	B.T.
REV.	00	CHECKED	S.Q.
		DRAWN	C.C.



API 622/ ISO 15848-1
Endurance Test Certified



API 622 2011 2nd Edition
Fugitive Emission Certified
(Design Test)

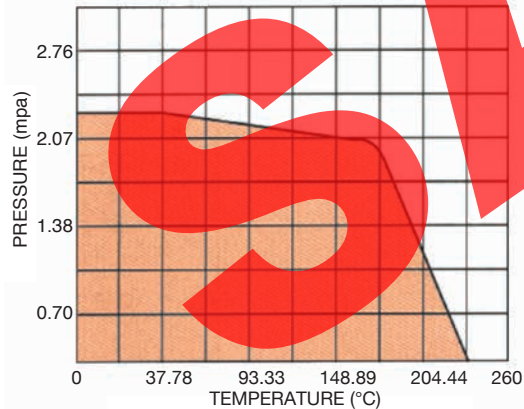


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VALVE TORQUES

VALVE SIZE		150LB - Stem Upstream - Standard Seat					
Inch	mm	Closing differential pressure					
		lb-ft@ 100 psi	lb-ft@ 6.9 bar	lb-ft@ 200 psi	N-m@ 13.8 bar	lb-ft@ 285 psi	N-m@ 19.7 bar
2-1/2"	65	21	29	23	31	24	33
3"	80	25	34	27	37	29	39
4"	100	35	47	39	53	43	58
5"	125	48	65	56	76	63	86
6"	150	72	97	83	113	93	126
8"	200	121	164	142	193	160	217
10"	250	163	222	202	274	234	318
12"	300	214	290	287	390	350	475
14"	350	362	491	505	684	626	849
16"	400	463	628	646	876	1,091	1,512
18"	450	602	816	844	1,144	1,387	1,923
20"	500	810	1,098	1,140	1,546	1,776	2,407
24"	600	1,234	1,673	1,758	2,384	2,200	2,983
30"	750	2,170	2,942	2,940	3,986	3,595	4,873
36"	900	3,530	4,786	4,860	6,589	5,990	8,121
42"	1,050	5,780	7,837	8,060	10,928	10,000	13,558
48"	1,200	9,170	12,433	12,840	17,409	15,960	21,638
54"	1,350	12,950	17,558	17,900	24,269	22,110	29,977
60"	1,500	19,020	25,790	26,040	35,310	32,000	43,397

PRESSURE/TEMPERATURE REINFORCED PTFE 150 CLASS



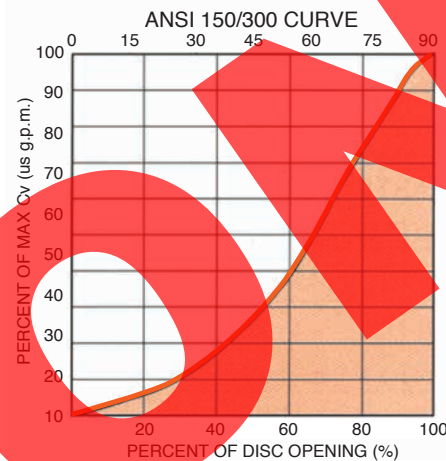
150 CLASS BODY PRESSURE/TEMPERATURE RATING (BAR)

Temperature (C°)	Carbon Steel	Stainless Steel 316	20# Alloy	Monel
-20 - 38	19.7	19.0	15.8	15.8
93	17.9	16.5	13.8	13.8
149	15.8	14.8	12.4	13.1
204	13.8	13.4	11.0	12.8
260	11.7	11.7	10.3	11.7
Test Pressure	31	29.3	24.1	24.1

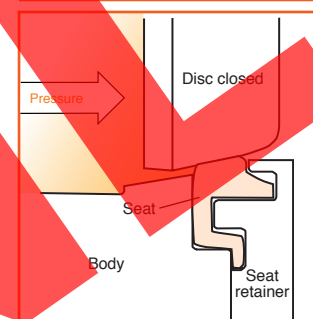
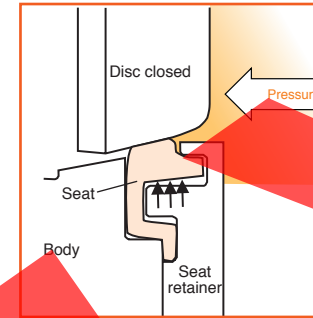
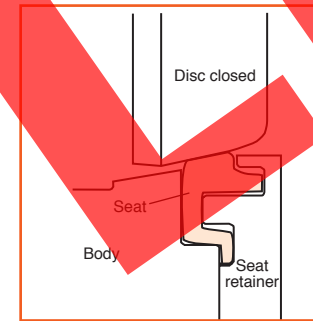
Cv VALUES

SIZE		Cv VALUE	
Inch	mm	CLASS	
		150	300
2-1/2"	65	78	165
3"	80	165	400
4"	100	400	1,050
5"	125	650	1,800
6"	150	1,050	3,150
8"	200	2,200	4,750
10"	250	3,300	5,200
12"	300	5,100	6,900
14"	350	5,800	9,300
16"	400	8,000	11,300
18"	450	10,500	18,500
20"	500	14,000	29,100
24"	600	21,600	47,500
30"	750	34,000	-
36"	900	55,500	-
42"	1050	82,650	-
48"	1200	108,300	-
54"	1350	133,500	-
60"	1500	159,000	-

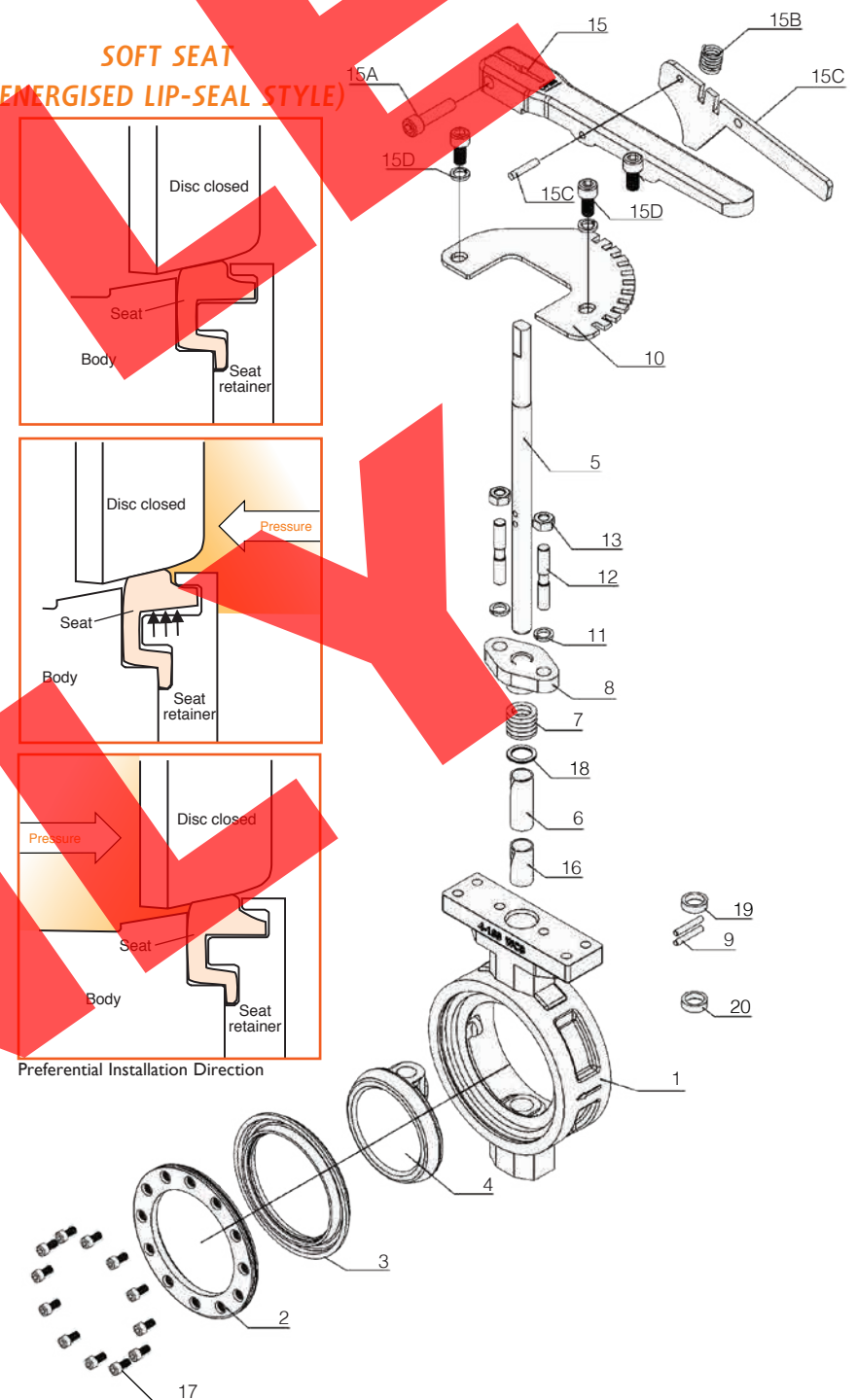
Cv CURVE



SOFT SEAT (ENERGISED LIP-SEAL STYLE)



Preferential Installation Direction





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SUPERSEAL®



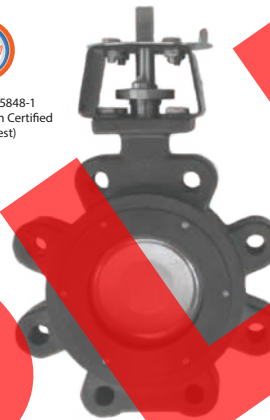
API607 6th & 7th Ed.
ISO 10497
Firesafe Certified



API 622/ ISO15848-1
Endurance Test Certified



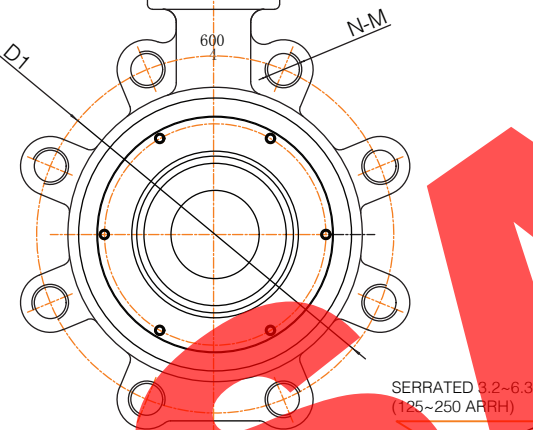
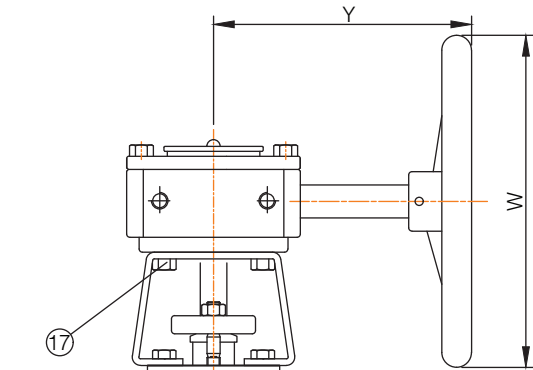
API 622 ISO 15848-1
Fugitive Emission Certified
(Design Test)



BILL OF MATERIALS

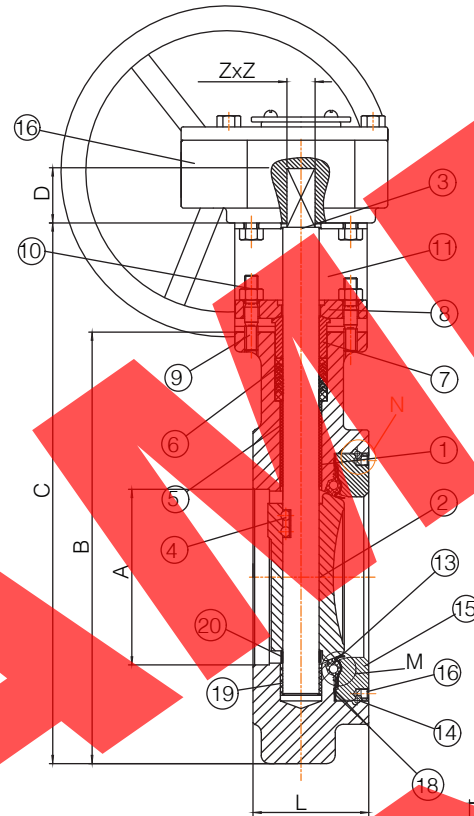
NO.	PART NAME	MATERIAL	NOTES
1	BODY	ASTM A105N	(1)
2	DISC	ASTM A351 CF8M	-
3	STEM	ASTM A564 630	17-4PH (2)
4	PIN	AISI 316SS	-
5	BUSHING	ASTM A240 316+PTFE	-
6	PACKING	GRAPHITE	(3)
7	GLAND RING	ASTM A269 TP316	-
8	GLAND RETAINER	ASTM A351 CF8	-
9	STUD	ASTM A193 B8M	-
10	HEX NUT	ASTM A194 8M	-
11	BRACKET	ASTM A240 304	-
12	SEAT ASSEMBLY	ASTM A240 316+RPTFE	FLEXIBLE ENCAPSULATED CORE
13	WEDGE RING	AISI 316SS	-
14	SEAT RETAINER	ASTM A240 316	-
15	CAP SCREW	ASTM A193 B8	-
16	GEAR ASSEMBLY		(1)
17	BOLT	ASTM A193 B7	ZINC PLATED
18	GASKET	GRAPHITE	-
19	BEARING	SS316L+PTFE	-
20	DISC THRUST SPACER	ASTM A240 316	-

(1) PAINT SPEC SP-P09.001
(2) STEM SMOOTHNESS $R_a \leq 0.80 \mu m$
(3) PACKING CHAMBER SMOOTHNESS $R_a \leq 3.2 \mu m$

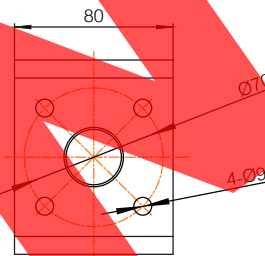


SERRATED 3.2~6.3um
(125~250 ARRH)

RAISED FACE



FLOW DIRECTION
(PREFERENTIAL)



BRACKET
TOP MOUNT
(ISO 5211-F10)

DIMENSIONS (MM) & WEIGHT (KG)

Inch	DN	L	A	B	C	D	Z X Z	W	Y	D1	N-M	ISO 5211	Torque	Torque (MAST)	Weight
4"	100	70	106	261	327	33	17 X 17	200	156	215.9	7/8"-9x8	F07	290 NM	630 NM	30.0

Dimensions in millimeters

⚠ Torque @ maximum differential pressure, seat upstream. No safety factor included. Theoretical torque only.

RATING	CL 600	TEST PRESSURE	
DESIGN & MFG.	API609 CAT.B ASME B16.34 (WALL)	SHELL HYDRO	SEAT HYDRO
PRESS-TEMP RATING	ASME B16.34 & API 609-B	15.0 Mpa 2175 Psi	11.0 Mpa 1595 Psi
FACE TO FACE DIM.	API609 CATEGORY B	SEAT AIR	BACKSEAT
END CONNECTION	RFSF FULLY LUGGED & TAPPED	0.55 Mpa 80 Psi	Mpa Psi
END DIMENSION	ANSI B16.5	TEMPERATURE	
TEST & INSPECTION	API 598 ISO 5208 RATE A	-29 TO 200 °C	-20 TO 392 °F
MARKING	MS SP-25	MEDIUM	Water, Oil, Gas
OTHER REQ.	PICKLED & PASSIVATED BODY		
PAINT	3 COAT SYSTEM SP-P09.001		
TRIM	316SS, NACE MR-01-75 & MR-01-03		
NOTES	FIRESAFE API607 & ISO 10497, 10.0 MPA MAX CWP		
OTHER	DESIGN LIFE 20,000 CYCLES. TESTED BI-DIRECTIONAL		
SPECIAL	OPTIONAL HP AND LP SEAT TEST PERFORMED ISO 5208-A		

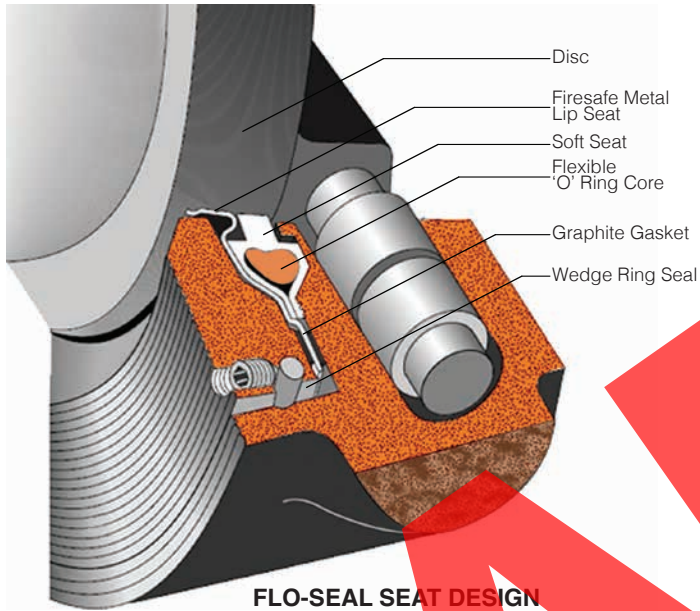
High Performance Butterfly Valve, Bi-Directional
Double Offset Model SLHBFFS-CLABR1G-BN
NPS 4" (DN100) Class 600,
RF, Lugged, Gear Operated

Australian Pipeline Valve

ORDER N°/ DWG N°	XXXXXX-XX	APPROVED	B.T.
REV.	00	CHECKED	S.Q.
		DRAWN	C.C.

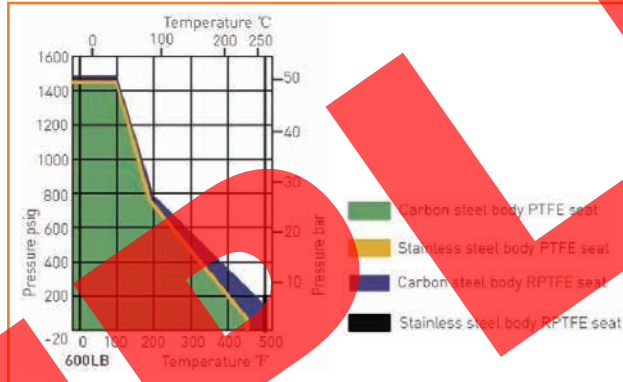


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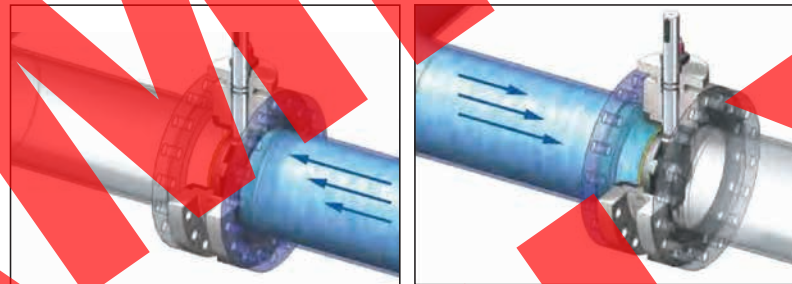


FLO-SEAL SEAT DESIGN

PRESSURE/TEMPERATURE RATING (BODY)

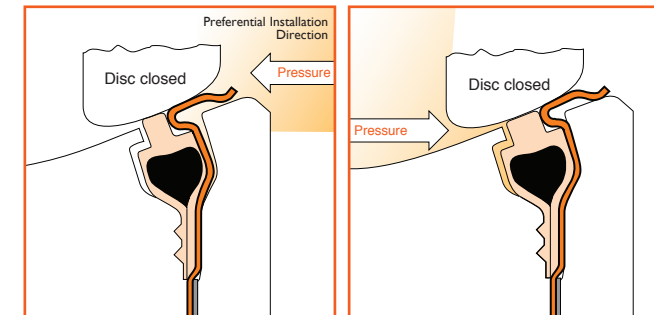
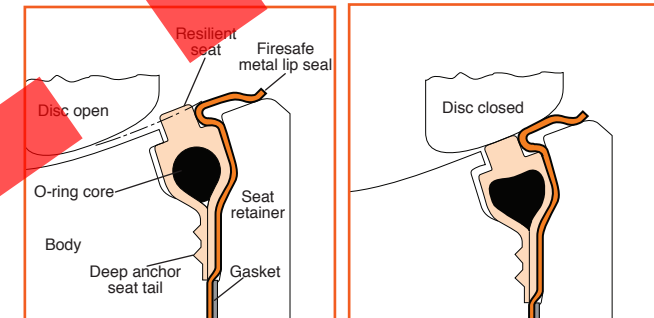


Bi-directional Isolation



Preferred Direction - Leak tight shut off Non-Preferred Direction (Tested)

FIRESAFE SOFT SEAT (ENERGISED FLO-SEAL STYLE) BI-DIRECTIONAL



Cv VALUES

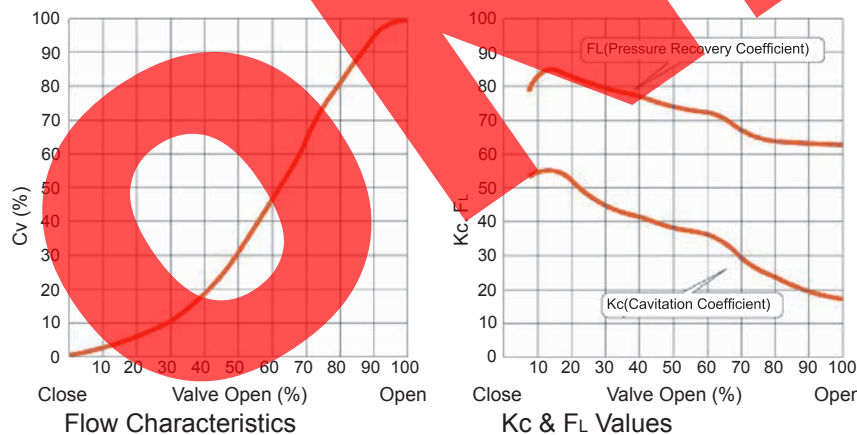
SIZE		Cv VALUE FULL OPEN		
Inch	mm	CLASS		
		150	300	600
2"	50	103	99	92
2-1/2"	65	160	160	140
3"	80	185	185	165
4"	100	375	375	305
5"	125	795	795	-
6"	150	1360	1050	870
8"	200	2830	2010	1510
10"	250	4320	2660	2200
12"	300	6660	4000	3100
14"	350	7650	4120	3900
16"	400	9820	7810	5020
18"	450	10520	9500	6050
20"	500	13550	11000	8050
24"	600	20000	18050	11000

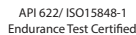
Cv is defined as the volume of water in U.S.P.M. that will flow through a given restriction or valve opening with a pressure drop of one(1) p.s.i. room temperature.

Cv FLOW COEFFICIENTS CURVES

Cv (Coefficient of Volume) is the number of U.S. gallons per minute of water required to pass through a valve with a pressure drop of 1 psi.

Representative size: 150LB - 12"





NO.	PART NAME	MATERIAL	NOTES
1	BODY	ASTM A216 WCB	(1)
2	DISC	ASTM 351 CF8M	-
3	STEM	ASTM A182 F316	(2)
4	PIN	AISI 316SS	-
5	BUSHING	ASTM A240 316+PTFE	-
6	PACKING	GRAPHITE	(3)
7	GLAND RING	ASTM A269 TP304	-
8	GLAND RETAINER	ASTM A351 CF8	-
9	STUD	ASTM A193 B8M	-
10	HEX NUT	ASTM A194 8M	-
11	BRACKET	ASTM A240 304	-
12	NOTCH PLATE	ASTM A240 304	-
13	SEAT ASSEMBLY	ASTM A240 316+RPTFE	FLEXIBLE ENCAPSULATED CORE
14	WEDGE RING	AISI 304SS	-
15	SEAT RETAINER	ASTM A240 316	-
16	CAP SCREW	ASTM A193 B8	-
17	LEVER	ASSEMBLY	(1)
18	POSITION INDICATOR	AISI 304SS	-
19	GASKET	GRAPHITE	-
20	BEARING	SS316L+PTFE	-
21	DISC THRUST SPACER	ASTM A240 316	-

(1) PAINT SPEC SP-P09.001
(2) STEM SMOOTHNESS $R_a \leq 0.80 \mu\text{m}$
(3) PACKING CHAMBER SMOOTHNESS $R_a \leq 3.2 \mu\text{m}$

RATING	CL 150	TEST PRESSURE	
DESIGN & MFG.	API 609 CAT.B ASME B16.34 (WALL)	SHELL HYDRO	SEAT HYDRO
PRESS-TEMP RATING	ASME B16.34 & API 609-B	3.0 <small>Mpa</small> 435 <small>Psi</small>	2.2 <small>Mpa</small> 319 <small>Psi</small>
FACE TO FACE DIM.	API 609 CATEGORY B	SEAT AIR	BACKSEAT
END CONNECTION	RFSF WAFER	0.55 <small>Mpa</small> 80 <small>Psi</small>	<small>Mpa</small> <small>Psi</small>
END DIMENSION	ANSI B16.5	TEMPERATURE	
TEST & INSPECTION	API 598 ISO 5208 RATE A	-29 TO 200 <small>°C</small>	-20 TO 392 <small>°F</small>
MARKING	MS SP-25	MEDIUM	Water, Oil, Gas
OTHER REQ.	NACE MR-01-75 & MR-01-03		
PAINT	HEMPLE SP-P09.001		
TRIM	FLO-SEAL SEAT 316 TRIM		
NOTES	FIRESAFE API 607 & ISO 10497		
OTHER	DESIGN LIFE 20,000 CYCLES. TESTED BI-DIRECTIONAL		
SPECIAL	OPTIONAL HP AND LP SEAT TEST PERFORMED ISO 5208-A		

DIMENSIONS (MM) & WEIGHT (KG)


[illegible]

High Performance Butterfly Valve, Bi-Directional
Double Offset Model SLHBFFS-AWABP3G-BN
NPS 4" (DN100) Class 150,
RF, Wafer, Lever Operated

Australian Pipeline Valve

a)	ORDER N°/ DWG N°	XXXXXX-XX	APPROVED	B.T.
	REV.	00	CHECKED	S.Q.
			DRAWN	C.C.

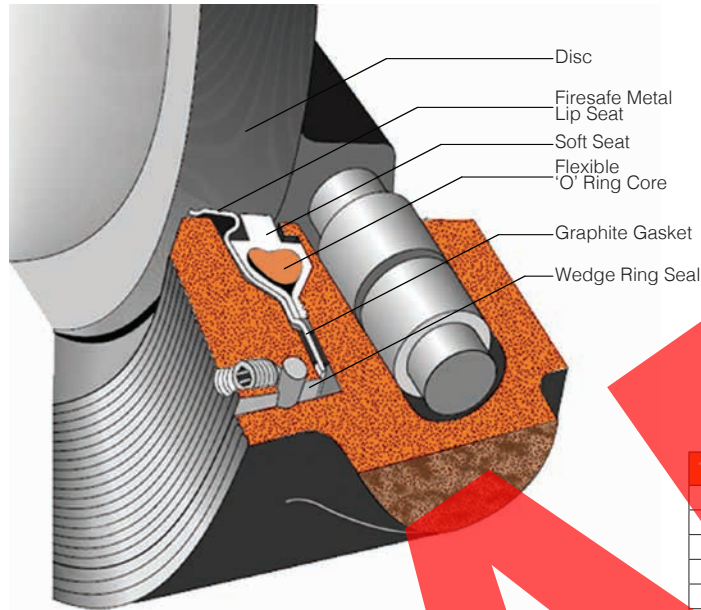
Dimensions in millimeters

 BTO/BTC Torque @ maximum differential pressure, seat upstream. No safety factor included. Theoretical torque only.

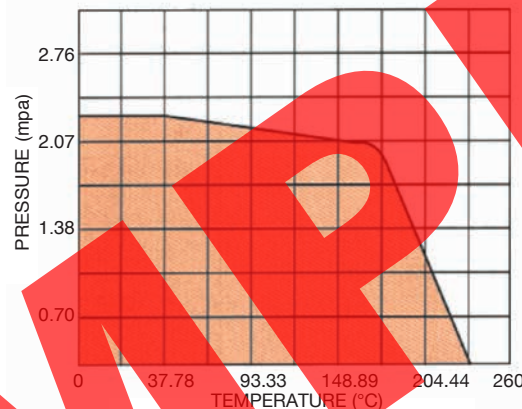
APV DWG FRM 429



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PRESSURE/TEMPERATURE REINFORCED PTFE SEAT P/T RATING 150 CLASS



150 CLASS BODY PRESSURE/TEMPERATURE RATING (BAR)

Temperature (C°)	Carbon Steel	Stainless Steel 316	20# Alloy	Monel
-20 - 38	19.7	19.0	15.8	15.8
93	17.9	16.5	13.8	13.8
149	16.8	14.8	12.4	13.1
204	13.8	13.4	11.0	12.8
260	11.7	11.7	10.3	11.7
Test Pressure	31	29.3	24.1	24.1

Cv VALUES

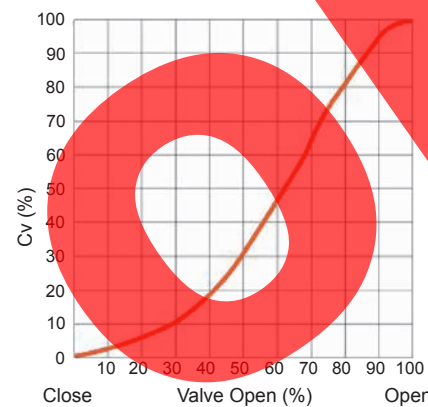
SIZE		Cv VALUE FULL OPEN		
Inch	mm	CLASS		
		150	300	600
2"	50	103	99	92
2-1/2"	65	160	160	140
3"	80	185	185	165
4"	100	375	375	305
5"	125	795	795	-
6"	150	1360	1050	870
8"	200	2830	2010	1510
10"	250	4320	2660	2200
12"	300	6660	4000	3100
14"	350	7650	4120	3900
16"	400	9820	7810	5020
18"	450	10520	9500	6050
20"	500	13550	11000	8050
24"	600	20000	18050	11000

Cv is defined as the volume of water in U.S.P.M. that will flow through a given restriction or valve opening with a pressure drop of one(1) p.s.i. room temperature.

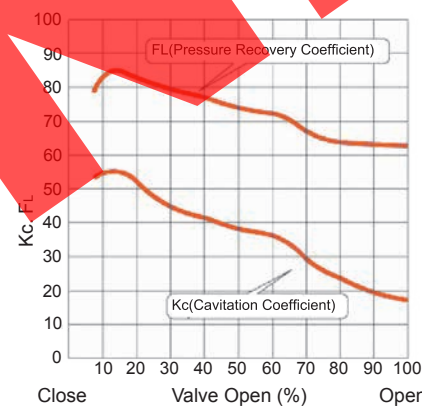
Cv FLOW COEFFICIENTS CURVES

Cv (Coefficient of Volume) is the number of U.S. gallons per minute of water required to pass through a valve with a pressure drop of 1 psi.

Representative size: 150LB - 12"

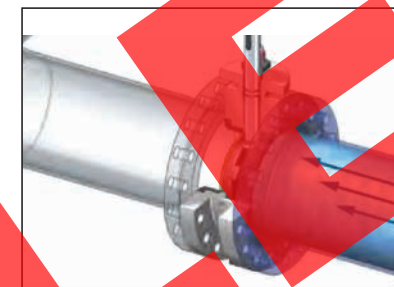


Flow Characteristics

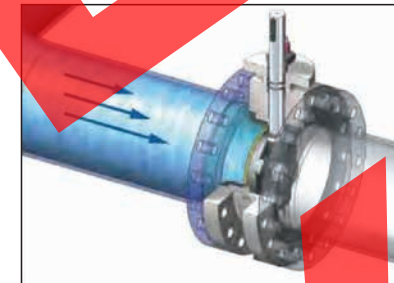


Kc & FL Values

Bi-directional Isolation



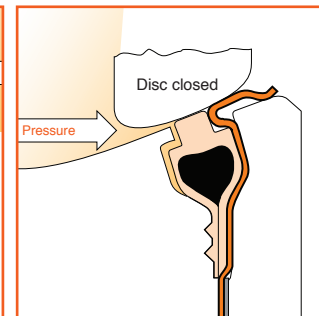
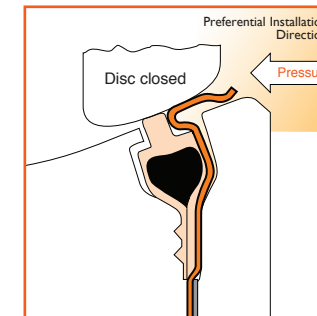
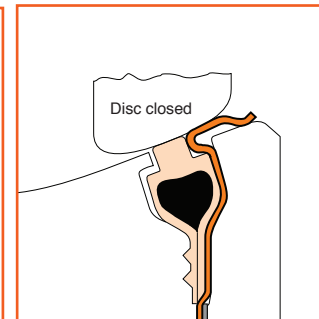
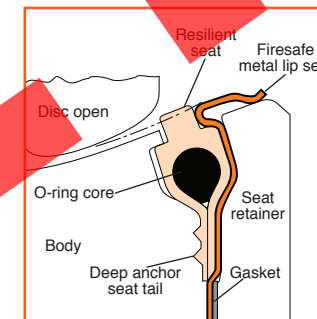
Preferred Direction - Leak tight shut off



Non-Preferred Direction (Tested)



FIRESAFE SOFT SEAT (ENERGISED FLO-SEAL STYLE) BI-DIRECTIONAL





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SUPERSEAL®



API607 6th & 7th Ed.
ISO 10497
Firesafe Certified



API 622/ ISO15848-1
Endurance Test Certified



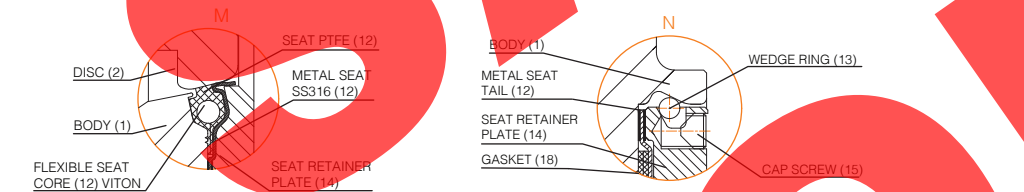
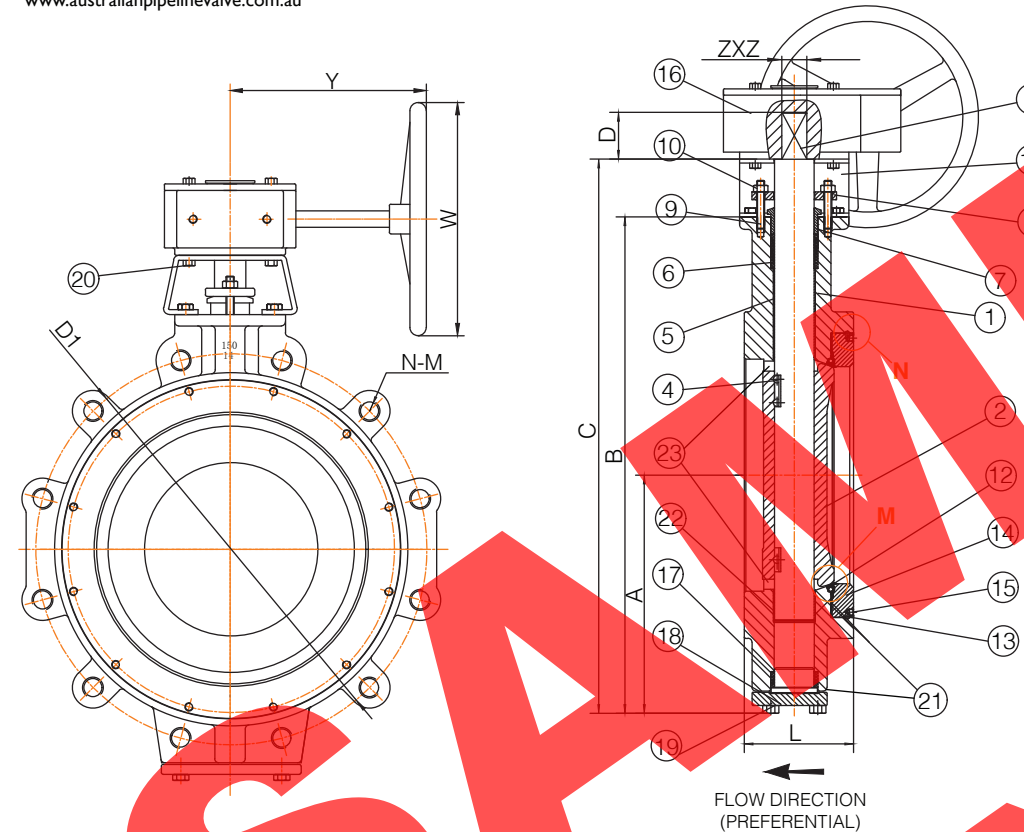
API 622 ISO 15848-1
Fugitive Emission Certified
(Design Test)

BILL OF MATERIALS

NO.	PART NAME	MATERIAL	NOTES
1	BODY	ASTM A216 WCB	(1)
2	DISC	ASTM A351 CF8M	-
3	STEM	ASTM A564 630	17-4PH (2)
4	PINS	AISI 316SS	-
5	BUSHING	ASTM A240 316+PTFE	-
6	PACKING	GRAPHITE	(3)
7	GLAND RING	ASTM A269 TP316	-
8	GLAND RETAINER	ASTM A351 CF8	-
9	STUDS	ASTM A193 B8M	-
10	HEX NUTS	ASTM A194 8M	-
11	BRACKET	ASTM A240 304	-
12	SEAT ASSEMBLY	ASTM A240 316+RPTFE	FLEXIBLE ENCAPSULATED CORE
13	WEDGE RING	AISI 316SS	-
14	SEAT RETAINER	ASTM A240 316	-
15	CAP SCREWS	ASTM A193 B8	-
16	GEAR	ASSEMBLY	(1)
17	SEALING RING	GRAPHITE	-
18	BOTTOM COVER	ASTM A216 WCB	-
19	BOLTS	ASTM A193 B7	-
20	BOLTS	ASTM A193 B7	ZINC PLATED
21	GASKET	GRAPHITE	-
22	BEARING	SS316L+PTFE	-
23	DISC THRUST SPACER	ASTM A240 316	-

(1) PAINT SPEC SP-P09.001
(2) STEM SMOOTHNESS Ra ≤ 0.80 µm
(3) PACKING CHAMBER SMOOTHNESS Ra ≤ 3.2 µm

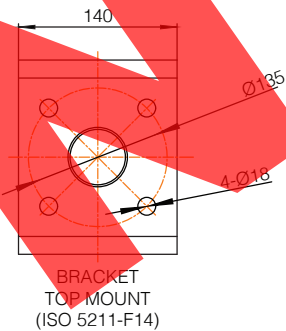
RATING	CL 150	TEST PRESSURE	
DESIGN & MFG.	API 609 CAT.B ASME B16.34 (WALL)	SHELL HYDRO	SEAT HYDRO
PRESS-TEMP RATING	ASME B16.34 & API 609-B	3.0 Mpa 435 Psi	2.2 Mpa 319 Psi
FACE TO FACE DIM.	API609 CATEGORY B	SEAT AIR	BACKSEAT
END CONNECTION	RFSF FULLY LUGGED & TAPPED	0.55 Mpa 80 Psi	Mpa Psi
END DIMENSION	ANSI B16.5	TEMPERATURE	
TEST & INSPECTION	API 598 ISO 5208 RATE A	-29 TO 200 °C	-20 TO 392 °F
MARKING	MS SP-25	MEDIUM	Water, Oil, Gas
OTHER REQ.	PICKLED & PASSIVATED BODY		
PAINT	3 COAT SYSTEM SP-P09.001		
TRIM	316SS		
NOTES	FIRESAFE API607 & ISO 10497, 10.0 MPA MAX CWP		
OTHER	DESIGN LIFE 20,000 CYCLES. TESTED BI-DIRECTIONAL		
SPECIAL	OPTIONAL HP AND LP SEAT TEST PERFORMED ISO 5208-A		



DIMENSIONS (MM) & WEIGHT (KG)

Inch	DN	L	A	B	C	D	Z X Z	W	Y	D1	N-M	ISO 5211	Torque (MAST)	Weight
14"	350	92	295	581	712	58	27 X 27	284	239	476	1"UNC 8X20	F14	1200 NM	115.0

Dimensions in millimeters ⚠ Maximum BTO/BTC. Torque @ maximum differential pressure, seat upstream. No safety factor included. Theoretical torque only.



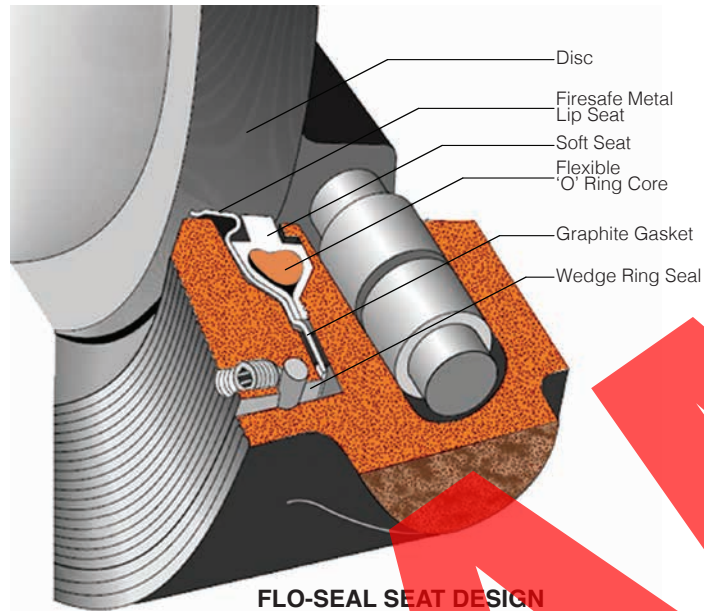
High Performance Butterfly Valve, Bi-Directional
Double Offset Model SLHBFFS-ALABR1G-B
NPS 14" (DN350) Class 150,
RF, Lugged, Gear Operated

Australian Pipeline Valve

ORDER N°/ DWG N°	XXXXXX-XX	APPROVED	B.T.
REV.	00	CHECKED	S.Q.
		DRAWN	C.C.



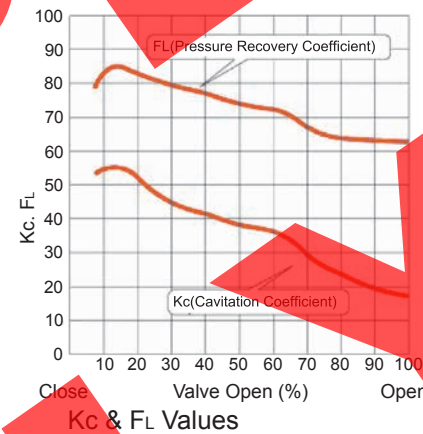
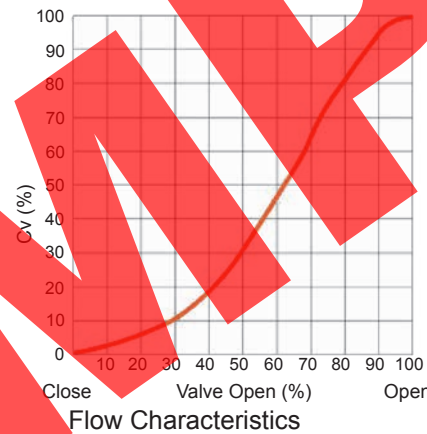
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Cv FLOW COEFFICIENTS CURVES

Cv (Coefficient of Volume) is the number of U.S. gallons per minute of water required to pass through a valve with a pressure drop of 1 psi.

Representative size: 150LB - 12"

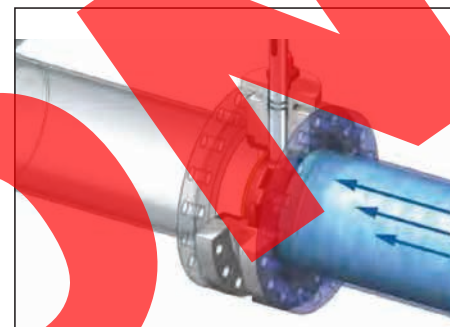


Cv VALUES

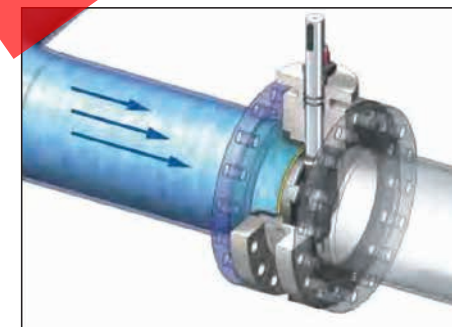
SIZE		Cv VALUE FULL OPEN		
Inch	mm	150	300	600
2"	50	103	99	92
2-1/2"	65	160	160	140
3"	80	185	185	165
4"	100	375	375	305
5"	125	795	795	-
6"	150	1360	1050	870
8"	200	2830	2010	1510
10"	250	4320	2660	2200
12"	300	6660	4000	3100
14"	350	7650	4120	3900
16"	400	9820	7810	5020
18"	450	10520	9500	6050
20"	500	13550	11000	8050
24"	600	20000	18050	11000

Cv is defined as the volume of water in U.S.P.M. that will flow through a given restriction or valve opening with a pressure drop of one(1) p.s.i. room remperatre.

Bi-directional Isolation



Preferred Direction - Leak tight shut off

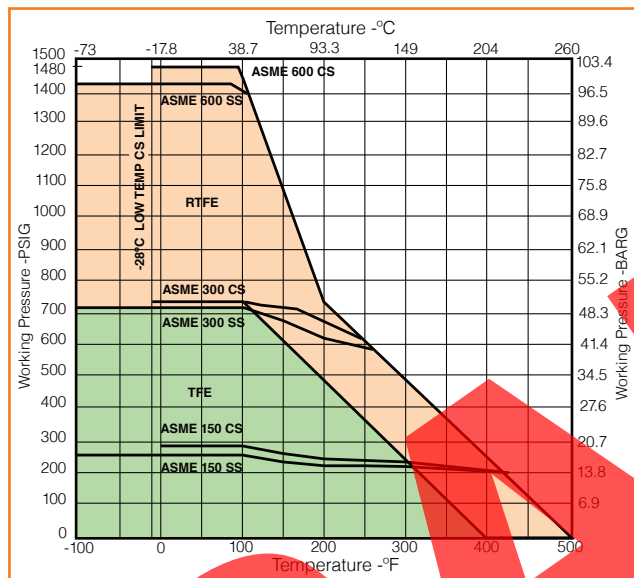


Non-Preferred Direction (Tested)

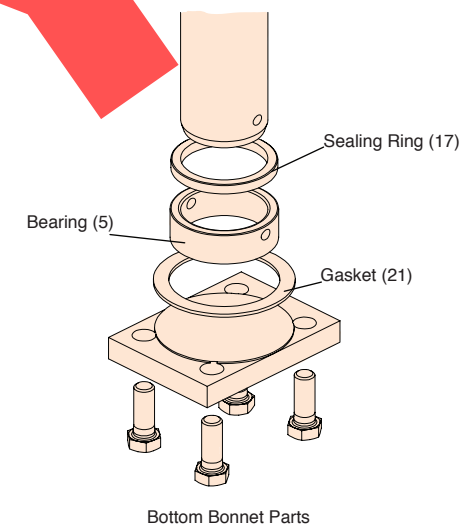
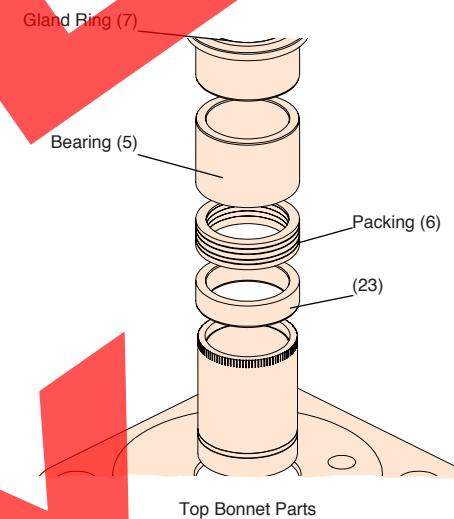
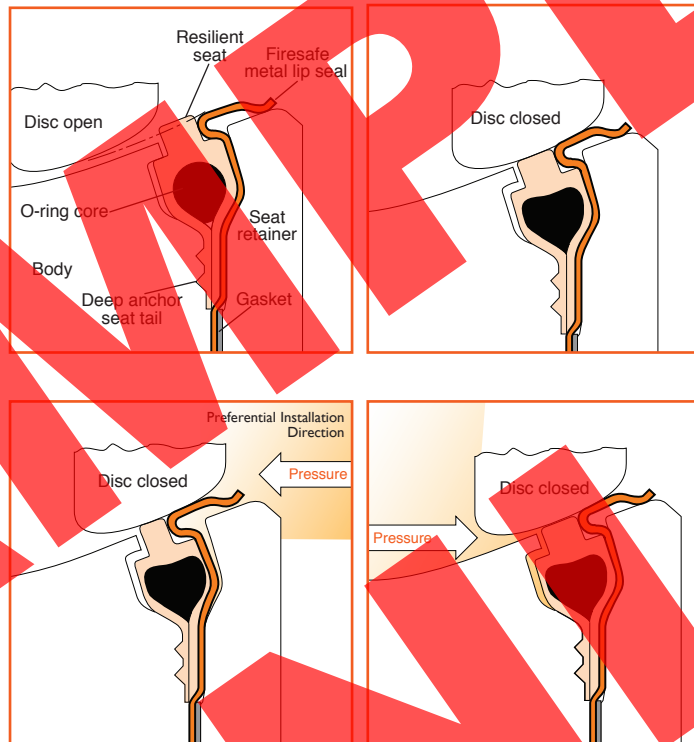


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ASME B16.34 BODY & SOFT SEAT PRESSURE TEMPERATURE RATING



FIRESAFE SOFT SEAT (ENERGISED FLO-SEAL STYLE) BI-DIRECTIONAL





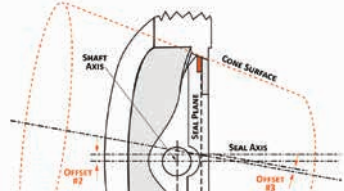
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SUPERSEAL®

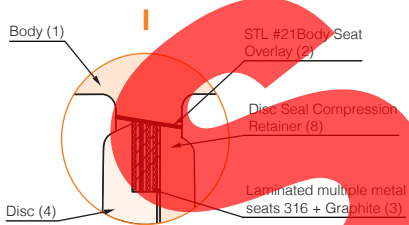
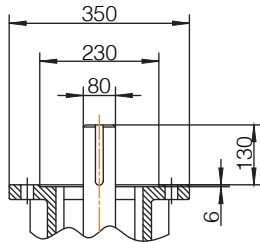
API 607 7th Ed.
ISO 10497
Firesafe Certified

API 622/ ISO15848-1
Endurance Test Certified

API 622 ISO 15848-1
Fugitive Emission Certified
(Design Test)



Triple Offset Design

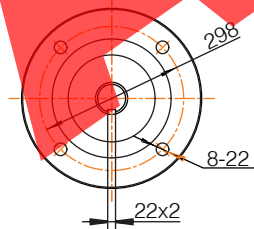
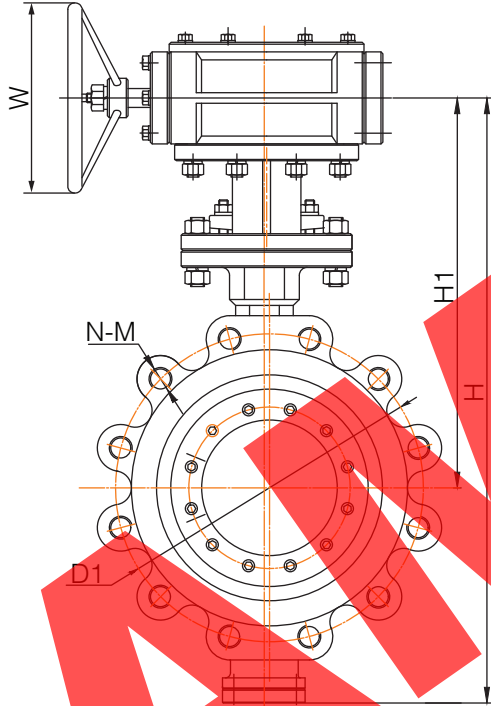


DIMENSIONS (MM) & WEIGHT (KG)

Inch	DN	L	D1	D2	H1	H	N-M	W	ISO 5211	Torque ⚠	Torque (MAST)	Weight
24"	600	81	813	692	850	13600	24-1 1/2"	300	F30	5500 NM	28,000 NM	1060.0

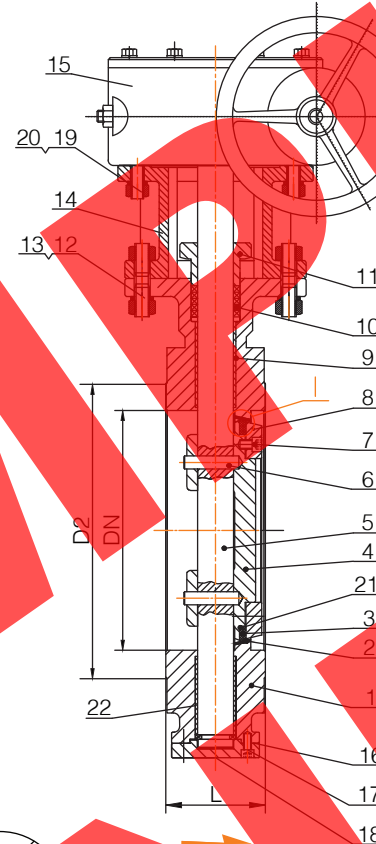
Dimensions in millimeters

⚠ BTO & BTC Torque @ maximum differential pressure, stem upstream. No safety factor included. Theoretical torque only.



ISO 5211-F16

SERRATED 3.2~6.3um
(125~250 ARRH)



FLOW DIRECTION

BILL OF MATERIALS

NO.	PART NAME	MATERIAL	NOTES
1	BODY	ASTM A216 WCB	(1)
2	BODY SEAT SURFACE	WELDING STELLITE#21	OVERLAY
3	DISC SEAT RING	ASTM A240 316+GRAPHITE	LAMINATED
4	DISC	ASTM A351 CF8M	-
5	STEM	ASTM A564 630	(2) 17-4PH
6	PINS	ASTM A564 630	17-4PH
7	SCREWS	ASTM A193 B8M	-
8	SEAT RETAINER	ASTM A182 F316	-
9	BUSHING UPPER	ASTM A240 316	NITRIDED
10	PACKING	GRAPHITE	(3)
11	PACKING GLAND	ASTM A216 WCB	-
12	STUD	ASTM A193 B7M	ZINC PLATED
13	HEX NUT	ASTM A194 2HM	-
14	ADAPTOR	ASTM A216 WCB	ZINC PLATED
15	GEAR	ASSEMBLY	(1) PAINTED
16	GASKET	AISI 316SS+GRAPHITE	-
17	BOLT	ASTM A193 B7M	ZINC PLATED
18	BOTTOM COVER	ASTM A216 WCB	-
19	BOLTS	ASTM A193 B7	ZINC PLATED
20	NUTS	ASTM A194 2H	ZINC PLATED
21	GASKET	GRAPHITE	-
22	LOWER BUSHING	ASTM A269 TP316	NITRIDING

(1) PAINT SPEC SP-P09.001
(2) STEM SMOOTHNESS Ra ≤ 0.80 µm
(3) PACKING CHAMBER SMOOTHNESS Ra ≤ 3.2 µm

RATING	CL 300	TEST PRESSURE	
DESIGN & MFG.	API609 CAT.A ASME B16.34 (WALL)	SHELL HYDRO	SEAT HYDRO
PRESS-TEMP RATING	ASME B16.34 & API 609-A	7.6 Mpa 1103 Psi	5.5 Mpa 798 Psi
FACE TO FACE DIM.	API609 CATEGORY A	SEAT AIR	BACKSEAT
END CONNECTION	RFSF WAFER	0.55 Mpa 80 Psi	Mpa Psi
END DIMENSION	ANSI B16.5	TEMPERATURE	
TEST & INSPECTION	API 598 ISO 5208 RATE A	ASME B16.34 TC	ASME B16.34 TF
MARKING	MS SP-25	MEDIUM	Water, Oil, Gas
OTHER REQ.	ZERO LEAKAGE		
PAINT	3 COAT HEMPLE PAINT SYSTEM SP-P09.001		
TRIM	LAMINATED METAL SEAT 316/STELLITE		
NOTES	FIRESAFE CERTIFIED API 607 7TH EDITION		
OTHER	DESIGN LIFE 20,000 CYCLES		
SPECIAL	NACE MR-01-75 & MR-01-03		

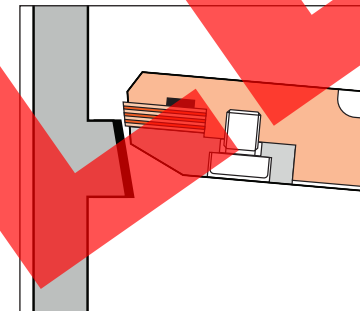
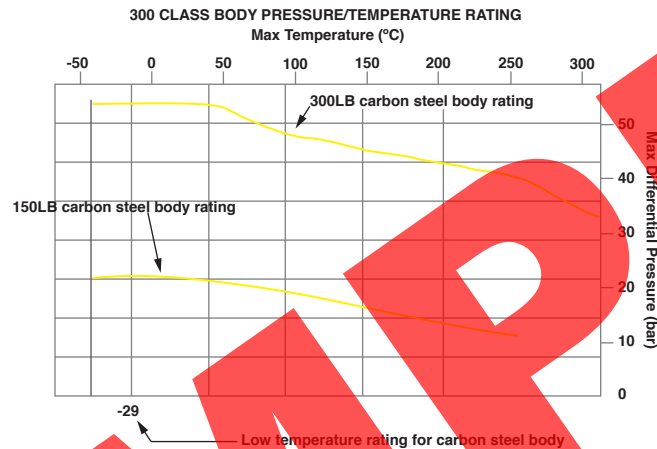
High Performance Butterfly Valve, Bi-Directional
Triple Offset Model SLHBFFS-T-BLABL1G-SN
NPS 18" (DN450) Class 300,
RF, Wafer, Gear Operated

Australian Pipeline Valve

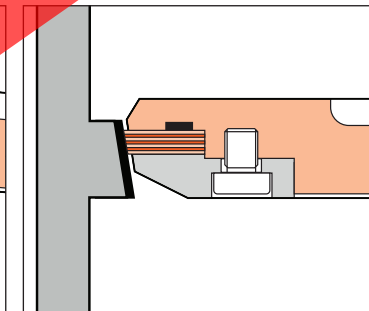
ORDER N°/ DWG N°	XXXXXX-XX	APPROVED	B.T.
REV.	00	CHECKED	S.Q.
		DRAWN	C.C.



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Disc slightly open



Disc closed: Multi layer seat ring

1. Multi-sealing triple eccentric construction
 - Primary metal seat
 - Multiple metal laminations graphite filled
2. Excellent sealing in both directions
3. Firesafe API 607
4. Stellite overlay on disc seat

300 CLASS BODY PRESSURE/TEMPERATURE RATING (BAR)

Temperature (°C)	Carbon Steel	Stainless Steel 316	20# Alloy	Monel
-20 - 38	51.0	49.6	41.4	41.1
93	46.5	42.7	35.9	36.5
149	45.2	38.6	32.1	34.1
204	43.8	35.5	29.0	33.1
260	41.4	33.1	26.9	32.8
Test Pressure	77.6	75.8	62	62

Over 260°C refer to ASME B16.34

Cv VALUES

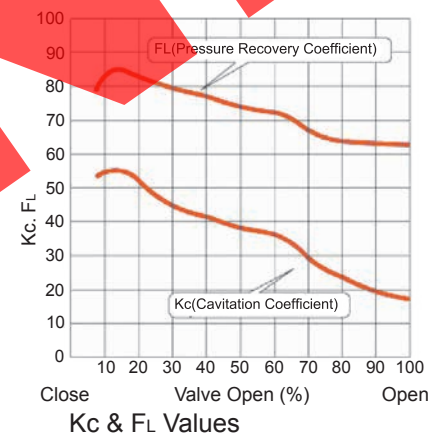
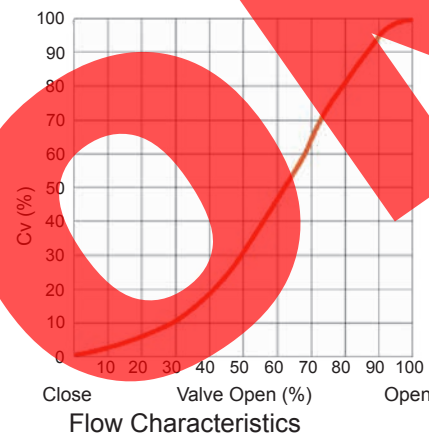
SIZE		Cv VALUE FULL OPEN		
Inch	mm	CLASS		
		150	300	600
2"	50	103	99	92
2-1/2"	65	160	160	140
3"	80	185	185	165
4"	100	375	375	305
5"	125	795	795	-
6"	150	1360	1050	870
8"	200	2830	2010	1510
10"	250	4320	2660	2200
12"	300	6660	4000	3100
14"	350	7650	4120	3900
16"	400	9820	7810	5020
18"	450	10520	9500	6050
20"	500	13550	11000	8050
24"	600	20000	18050	11000

Cv is defined as the volume of water in U.S.P.M. that will flow through a given restriction or valve opening with a pressure drop of one(1) p.s.i. room temperature.

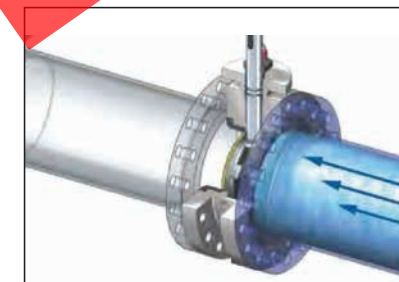
Cv FLOW COEFFICIENTS CURVES

Cv (Coefficient of Volume) is the number of U.S. gallons per minute of water required to pass through a valve with a pressure drop of 1 psi.

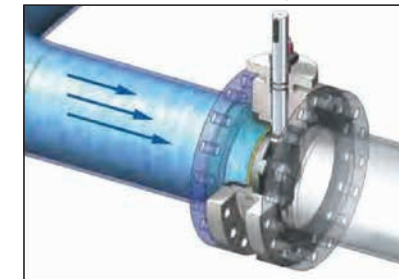
Representative size: 150LB - 12"



Bi-directional Isolation



Preferred Direction - Leak tight shut off



Non-Preferred Direction

MULTIPLE LAMINATED DISC SEATING

Key Components

- 8. Disc retainer
- 3. Seal ring triple laminated
- 21. Spiral wound or graphite gasket
- 4. Disc and reference pin

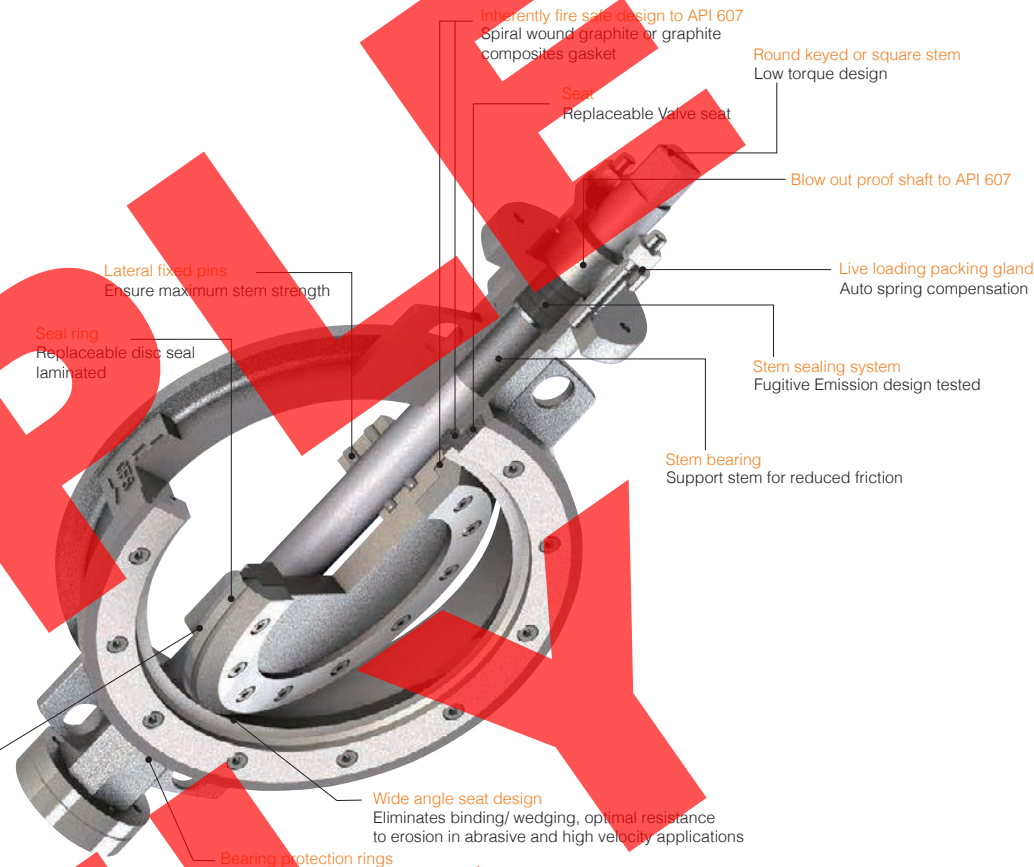
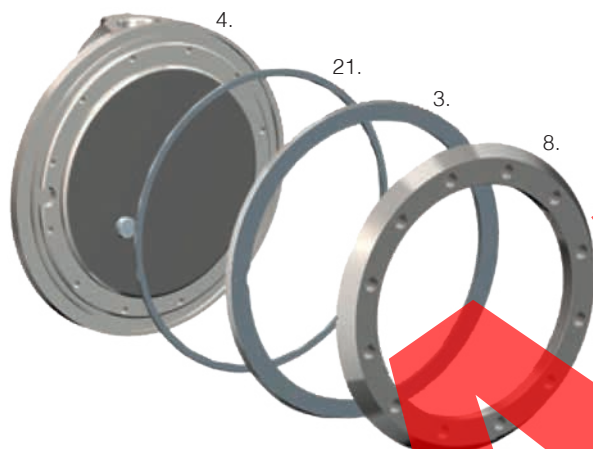


Table 5 - Maximum Allowable Closure Test Seat Leakage Rate ISO 5208:2008(E)/API 6D* (2008)

Test fluid	Unit leakage rates	Rate A	Rate AA	Rate B	Rate C	Rate CC	Rate D	Rate E	Rate EE	Rate F	Rate G
Liquid	mm³/s	No visually detectable leakage for the duration of the test	0,006 x DN	0,01 x DN	0,03 x DN	0,08 x DN	0,1 x DN	0,3 x DN	0,39 x DN	1 x DN	2 x DN
	drops/s		0,000 1 x DN	0,000 16 x DN	0,000 5 x DN	0,001 3 x DN	0,001 6 x DN	0,004 8 x DN	0,006 2 x DN	0,016 x DN	0,032 x DN
Gas	mm³/s	No visually detectable leakage for the duration of the test	0,18 x DN	0,3 x DN	3 x DN	22,3 x DN	30 x DN	300 x DN	470 x DN	3 000 x DN	6 000 x DN
	bubbles/s		0,003 x DN	0,0046 x DN	0,045 8 x DN	0,340 7 x DN	0,458 4 x DN	4,583 7 x DN	7,129 3 x DN	45,837 x DN	91,673 x DN

*API 6D - 2008 refers to ISO 5208 (2008-E) for leakage rates. EN 12266-1 also corresponds to ISO 5208 leakage rates but only for class A, B, C, D, E, F & G.

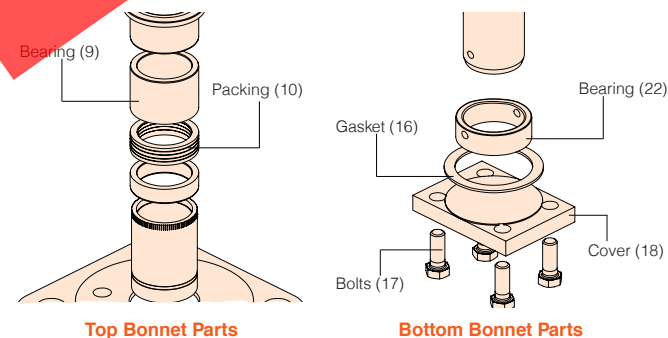
NOTE 1 The leakage rates only apply when discharging test fluid to the atmosphere.

NOTE 2 The closure leakage rate that applies is either that identified in a valve product standard or a leakage rate identified in a purchaser's valve procurement purchase order that is more stringent than that specified in the product standard.

NOTE 3 The meaning of "No visually detectable leakage" is that there is no visible weeping or leakage in the form of drops or bubbles.

NOTE 4 There is a loosely defined correspondence between the leakage rate acceptance values of API 598 and the leakage values Rate A as applied to DN < 50, Rate AA-Gas CC-Liquid for other than metal seated check valves and for check valves Rate EE-Gas and Rate G-Liquid. Rates A, B, C, D, E, F and G correspond to values in EN 12266-1.

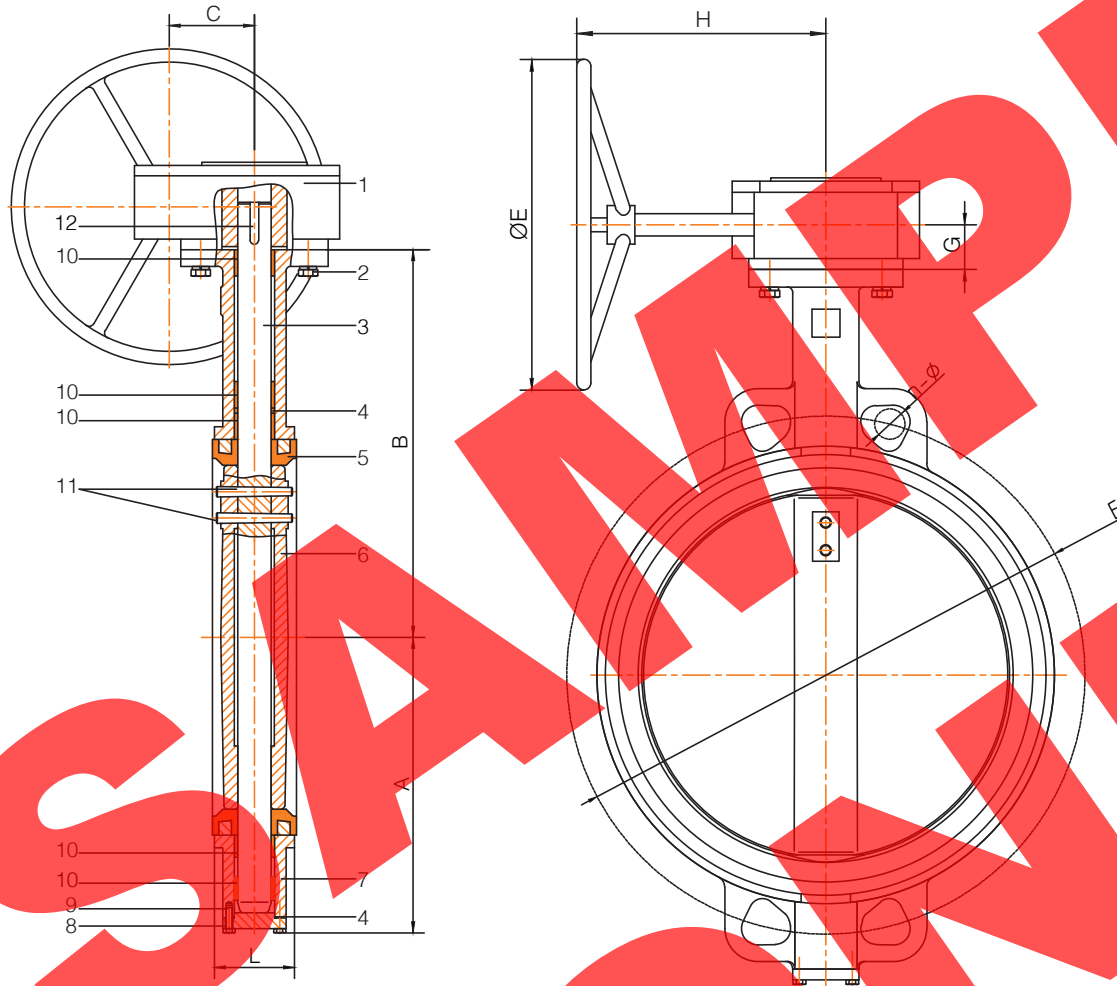
NOTE 5 Double block & bleed leakage test is optional only and the client can specify the allowable leakage past the first seat for larger sizes.





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DIMENSIONS (MM) & WEIGHT (KG)

Inch	DN	L	A	B	C	E	G	H	D	n-Ø	Weight
14"	350	77	277	368	80	278	37	225	270	4-26	85

Dimensions in millimeters

BILL OF MATERIALS

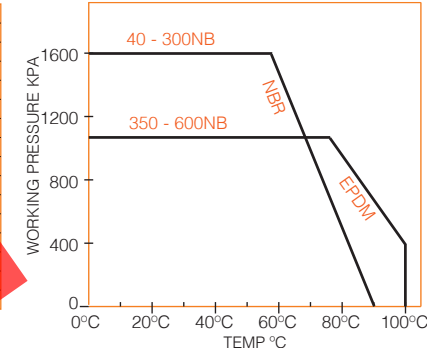
NO.	PART NAME	MATERIAL	NOTES
1	GEAR OPERATOR	CI-ASSEMBLY	+FBE
2	BOLT	CARBON STEEL	+ZINC PLATED
3	STEM	A276 SS316	-
4	O-RING	NBR	-
5	SEAT	NBR	-
6	DISC	ASTM A351 CF8M	-
7	BODY	GGG40 CAST IRON	+FBE
8	END CAP	GGG40 CAST IRON	+FBE
9	BOLT	CARBON STEEL A3	+ZINC PLATED
10	BUSHING	PTFE	-
11	TAPER PIN	AISI SS410	-
11	PINS	CARBON STEEL	+ZINC PLATED

OPERATING TORQUE (NM)

VALVE SIZE		Δ kPa (psi)			
in	mm	170 (25)	340 (50)	680 (100)	1020 (150)
2	50	12	12	20	25
2 1/2	65	12	12	25	30
3	80	18	19	30	35
4	100	32	33	40	50
5	125	48	51	60	70
6	150	72	76	70	90
8	205	127	139	160	190
10	255	196	219	240	300
12	305	289	323	400	500
14	355	439	481	554	830
16	405	568	636	762	1110
18	455	751	831	1005	1390
20	510	931	1052	1282	1730
24	610	1375	1559	1871	2020

Torque shown is break/reseating (same). No safety factor included

SEAT PRESSURE / TEMPERATURE



RATING	1600 kPa	TEST PRESSURE	
DESIGN & MFG.	API609-A, BSEN593, AS4795, MSS SP67	SHELL HYDRO	SEAT HYDRO
PRESS-TEMP RATING	BS/EN 1092-2, AS4331.1 PN16	2.4 Mpa 348 Psi	1.8 Mpa 261 Psi
FACE TO FACE DIM.	API609-A, EN558, AS4795	SEAT AIR	BACKSEAT
END CONNECTION	WAFER SEMI LUG TABLE E & PN16 DRILLING	Mpa Psi	Mpa Psi
END DIMENSION	AS2129 TABLE E/AS4087 PN14/16	TEMPERATURE	
TEST & INSPECTION	API609-A, BS/EN12266-1, AS4795	-4 TO 100 °C 24.8 TO 212 °F	
MARKING	MSS SP-25	MEDIUM	Water
OTHER REQ.			
PAINT	FUSION BONDED EPOXY (BLUE) FBE-CI-01		
TRIM	316SS + NBR		
NOTES			
OTHER	TOP MOUNT ISO 5211		

Lined Butterfly Valve, Wafer
Model 2014HP, Concentric,
NPS 14" (DN350)
1600 kPa, Gear Operated

Australian Pipeline Valve

ORDER N°/ DWG N° XXXXXX-00~00

REV. 00

APPROVED B.T.

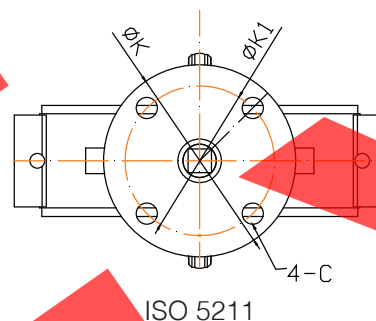
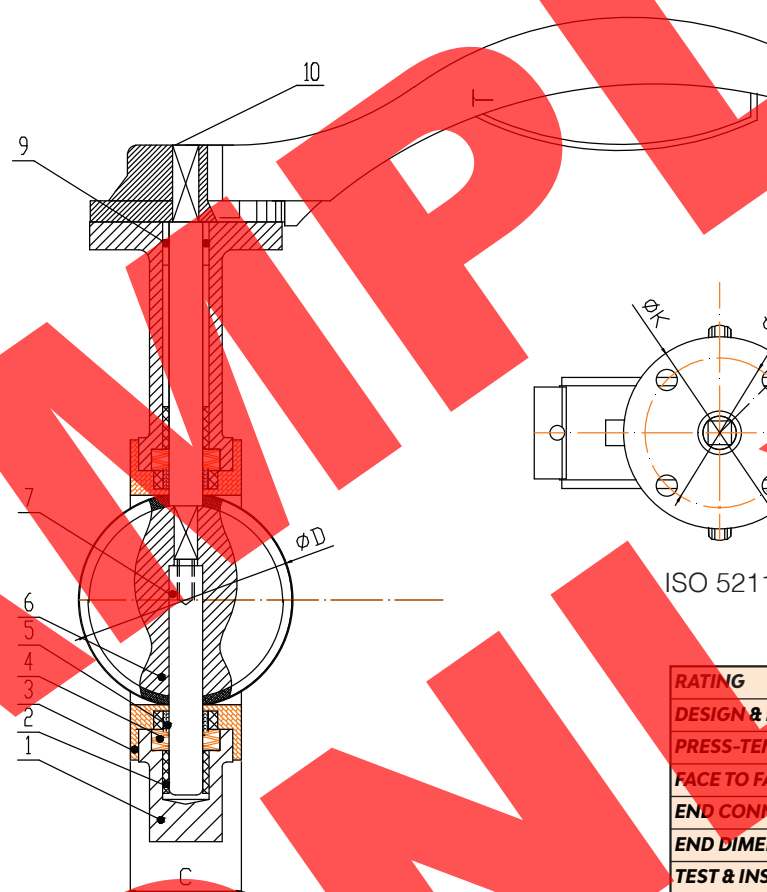
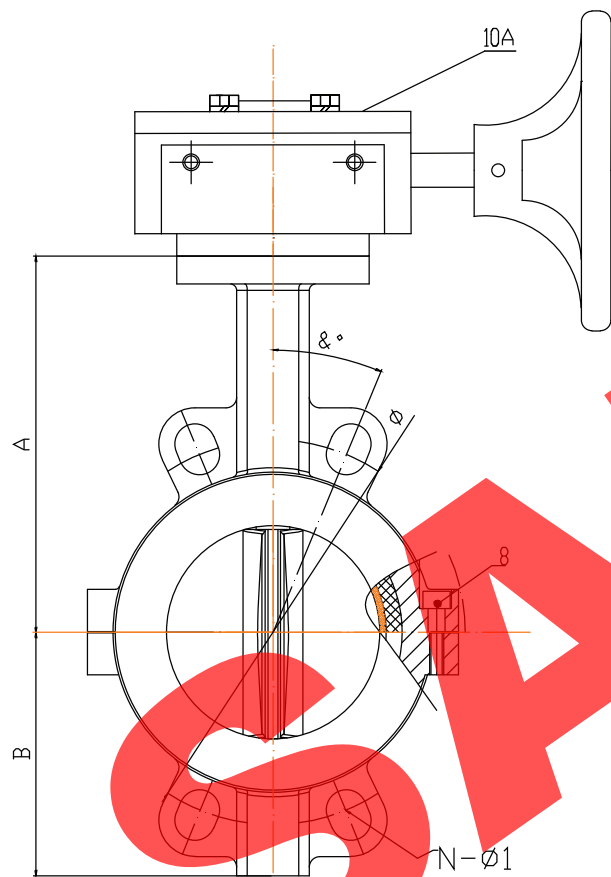
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BILL OF MATERIALS

NO.	PART NAME	QTY	MATERIAL	NOTES
1	BODY	1	ASTM A351 CF8M	-
2	BUSHING	4	PTFE	-
3	SEAT	1	SOLID PTFE	-
4	DISC SPRING	8	AISI 316SS	-
5	RETAINER RING	2	PTFE	-
6	DISC	1	ASTM A351 CF8M	-
7	STEM	1	ASTM A276 SS316	-
8	BOLT	2	AISI SS316	-
9	O-RING	1	VITON	-
10	LEVER	1	CI+FBE	-
10A	GEARBOX-ASSY	1	CI+FBE	-

RATING	1400 kPa CWP	TEST PRESSURE			
DESIGN & MFG.	API609/BS EN593	SHELL HYDRO		SEAT HYDRO	
PRESS-TEMP RATING	BS/EN 1092-2	2.1	304	1.54	223
FACE TO FACE DIM.	API609-A EN558 (DIN 3202 K1)	SEAT AIR		BACKSEAT	
END CONNECTION	WAFER SEMI LUG CLASS PN14 & PN16*				
END DIMENSION	AS2129 TABLE E/AS4087 PN14/PN16*	TEMPERATURE			
TEST & INSPECTION	ISO 5208, BSEN12266-1	-4 TO 150		24.8 TO 302	
MARKING	MS SP-25	MEDIUM		Water	
OTHER REQ.	PICKLED & PASSIVATED BODY				
PAINT					
TRIM	316SS + PTFE				
NOTES	*1400 kPa MAXIMUM CWP				
OTHER	TOP MOUNT ISO 5211				

DIMENSIONS (MM) & WEIGHT (KG)

Inch	DN	A	B	C	øD	ø	n-ø1	&	ISO5211	K	K1	4-C	Weight
2"	50	80	161	43	53	114	4-18	45	F05	90	70	4-10	11
2 1/2"	65	89	175	44.7	63	127	4-18	45	F05	90	70	4-10	11
3"	80	95	181	45.2	77	146	4-18	22.5	F05	90	70	4-10	11
4"	100	114	200	52	101	178	4-18	22.5	F07	90	70	4-10	11
5"	125	127	213	54.5	124	210	4-18	22.5	F07	90	70	4-10	14
6"	150	139	226	55.8	152	235	4-22	22.5	F07	90	70	4-10	14
8"	200	175	260	60.6	202	292	4-22	22.5	F10	125	102	4-12	17
10"	250	203	292	65.6	248	356	4-22	15	F10	125	102	4-12	22
12"	300	242	337	76.9	298	406	4-22	15	F10	125	102	4-12	22

Dimensions in millimeters

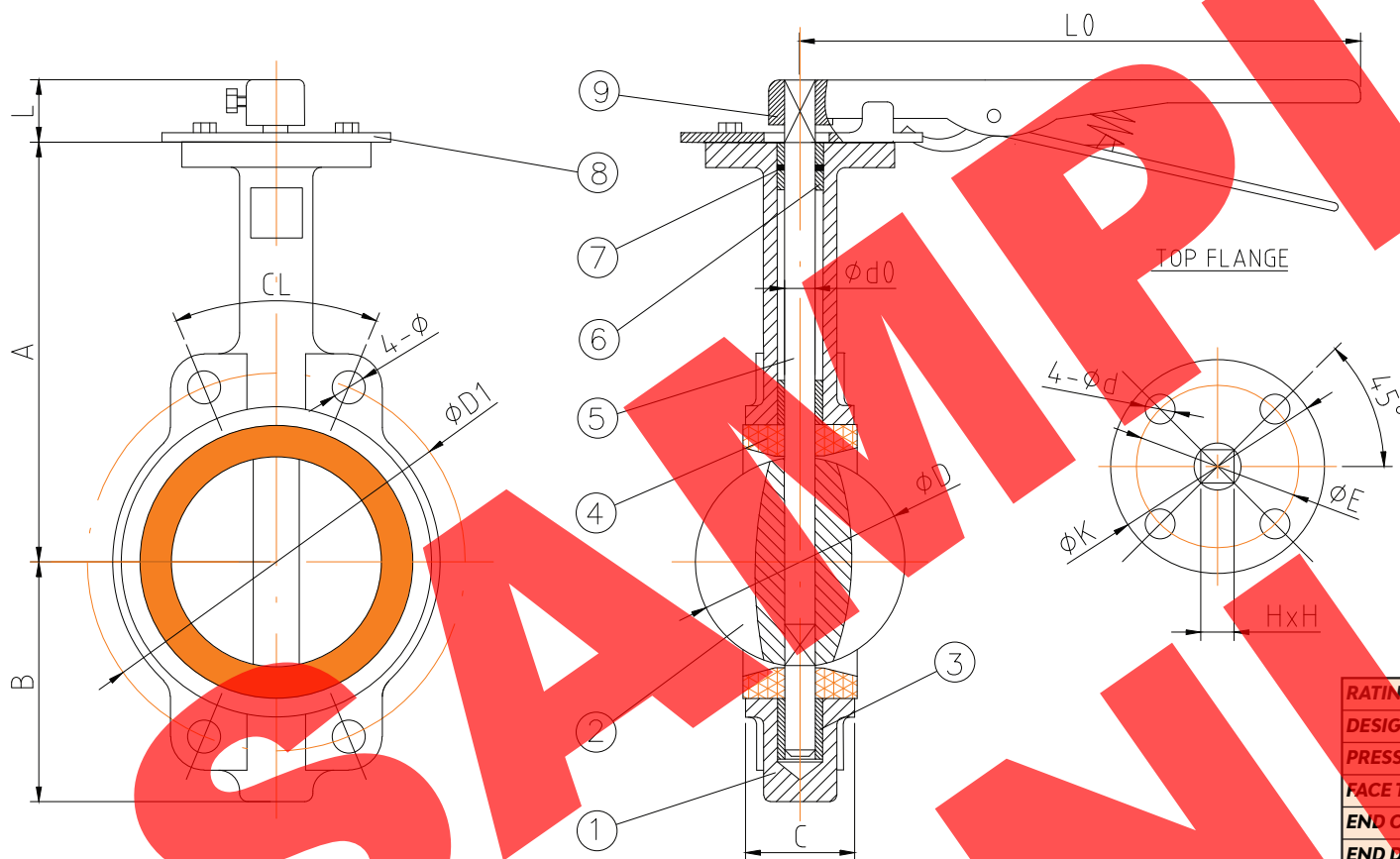
Lined Butterfly Valve, Wafer
Model 2014, Concentric
NPS 2"~12" (DN50~DN300)
1400 kPa, Gear Operated

Australian Pipeline Valve

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BILL OF MATERIALS

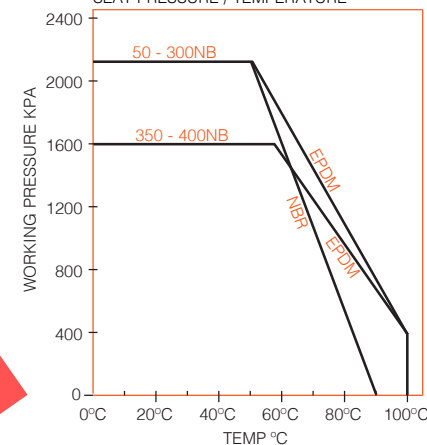
NO.	PART NAME	QTY	MATERIAL	NOTES
1	BODY	1	DUCTILE IRON	+FBE
2	DISC	1	ASTM A351 CF8M	-
3	BUSHING	1	PTFE	-
4	SEAT	1	NBR	-
5	STEM	1	ASTM A276 SS316	-
6	BUSHING	6	PTFE	-
7	O-RING	1	NBR	-
8	INDICATOR	1	CARBON STEEL	GALVANISED
9	LEVER	1	CAST IRON	+FBE

OPERATING TORQUE (NM)

Valve Size (ins)	ΔP (psi)		
	200	250	300
2	30	37	45
2-1/2	35	43	55
3	55	67	75
4	70	90	105
5	100	150	180
6	170	225	240
8	300	416	490

Torque shown is break/seating (same)
Torques based on clean, wet fluids. 20% safety
factor recommended. For oil/lubricated fluids
torque can reduce from 20% to 50%.
For non lubricating dry gases torque will
increase 35% to 80%. Also, dry or abrasive/dirty
service, temperature variations as well as
infrequent use can all dramatically increase
torque.

SEAT PRESSURE / TEMPERATURE



DIMENSIONS (MM) & WEIGHT (KG)

Inch	DN	A	B	C	øD	LO	dO	ISO5211	L	K	E	4-ød	øD1	4-ø	CL	HxH	Weight
2"	50	161	80	42	52.9	260	12.6	F07	30	90	70	4-9	120.6	4-19	85.28	11x11	2.3
2 1/2"	65	175	89	44.7	64.5	260	12.6	F07	30	90	70	4-9	139.7	4-19	98.78	11x11	2.7
3"	80	181	95	45.2	78.8	260	12.6	F07	30	90	70	4-9	152.4	4-19	107.76	11x11	3.6
4"	100	200	114	52.0	104.0	260	15.77	F07	30	90	70	4-9	190.5	4-19	72.90	11x11	5.0
5"	125	213	127	54.4	123.3	260	18.92	F07	30	90	70	4-9	215.9	4-22.4	82.62	14x14	6.1
6"	150	226	139	55.8	155.1	260	18.92	F07	30	90	70	4-9	241.3	4-22.4	92.34	14x14	7.1
8"	200	260	175	60.6	202.3	375	22.1	F10	40	125	102	4-12	298.4	4-22.4	114.19	17x17	13.6

Dimensions in millimeters

RATING	150 LB 2000 kPa CWP	TEST PRESSURE	
DESIGN & MFG.	API609-A/MSS-SP67 ANSI B16.42 (WALL)	SHELL HYDRO	SEAT HYDRO
PRESS-TEMP RATING	ANSI B16.42 MSS-SP67	3.0 Mpa 435 Psi	2.2 Mpa 293 Psi
FACE TO FACE DIM.	API609-A	SEAT AIR	BACKSEAT
END CONNECTION	WAFER SEMI LUG	Mpa Psi	Mpa Psi
END DIMENSION	API609-A	TEMPERATURE	
TEST & INSPECTION	ISO 5208	-4 TO 100 °C	24.8 TO 212 °F
MARKING	MS SP-25	MEDIUM	Water
OTHER REQ.			
PAINT	FUSION BONDED EPOXY (BLUE) FBE-CI-01		
TRIM	316SS + NBR		
NOTES			
OTHER	TOP MOUNT ISO 5211		

Lined Butterfly Valve, Wafer
Model 2014HP, Concentric,
NPS 2"~8" (DN50~DN200)
2000 kPa, 150LB, Lever Operated

Australian Pipeline Valve

ORDER N°/ DWG N°	XXXXXX-01~04	APPROVED	B.T.
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GENERAL SERVICE APPLICATION	Cast Iron/Ductile Iron surfaces
SCOPE	Standard level protection against weathering, brackish water, salt spray, mild acids, alkaline solutions. Resistance to solvents. Good electrical insulation.
TEMPERATURE RESISTANCE	-29°C ~ 180°C
PRELIMINARY SURFACE PREPARATION	Blasting to Grade Sa 2.1/2 then cleaning with degreaser and washing with high pressure water at 100°C, and then drying in open air for 24 hours.
PROTECTION OF UNPAINTED PARTS	Paint prior to assembly internal & external.
FINAL SURFACE PREPARATION	Machining to smoothness of $\leq 6,3\mu\text{m}$ where applicable. Prepare all surfaces to ensure proper adhesion of paint film by polishing and de-burring, removing any dust, rust, water, oil or other impurities.
PAINT APPLICATION	Preheat body prior to spraying, post heat body after spraying electrostatic spray as per manufacturer's specification. Painting performed at 5 ~ 30°C at less than 85% humidity. Allow at least 24 hours between coats for drying time.

NO. OF COATS	TYPE OF PROCESS	TYPE	FILM THICKNESS
Body	Fusion Bonded Epoxy Powder RAL 5005 Light Blue	Anti-Corrosive self curing. Impact resistance (N.cm):500 Bending Test: 2 mm	250 μm
TOTAL DRY FILM THICKNESS:			250 μm

NOTES:

Application temperature, drying times and other physical data of painting as per manufacturer specifications.

Rev.	Date	Remarks	Issued by:
1	Nov 16th 2018	Second Issue	GP