

## 2000 SERIES

DOUBLE FLANGED SEAL ON DISC  
BUTTERFLY VALVE TO AS4795



### APPROVED

### ACCORDING TO

✓ AS4087

✓ AS4795

✓ AS4020

### FEATURES

- 316L weld deposited seat is micro finished for low torque and long life.
- Automatic seal ensures low torque.
- AS4020 approved epoxy coating offering high corrosion resistance.
- Low head loss due to disc design.
- Double eccentricity results in unstressed disc seal ring when valve is in the open position.
- Complies with AS4795-2006.
- Rotork Gearbox.
- Direct Mount Pad For ISO Standard 5211.

### OPTIONS

- Clockwise or Anti-clockwise Close Gearbox Operation
- Electric Actuation
- Pneumatic Actuation
- Torque Limiters
- Limit Switch Box
- Extension Spindles
- Keycap Operation
- Mechanical Stop Boxes
- Hydraulic Cylinder
- Position Indicator for buried service
- Special Materials eg. seawater applications etc (refer to pg 4)
- Special Coatings eg. buried service, etc.

### TECHNICAL DATA

Size Range:	DN 100 - DN 3000
Pressure Classes:	PN16, PN 25, PN 40
Face to face:	Model 2160/ 2161 AS4795 ISO 5752/ EN 558-1 Series 13 Model 2010/ 2011 AS4795 ISO 5752/ EN 558-1 Series 14
Temperature Range:	-15 °C to +80 °C
Flange Connection:	AS4087, Class 16, 21 & 35 (Standard) AS2129, ANSI B16.5, AWWAC207 (Optional)
Leakage Tests:	AS4795 & EN 12266-1-Zero leakage API 598 Tables.
Coating:	AS4020 approved epoxy coating internally and externally.
Certification:	AS4795 Material and test certificates, available upon request.

### FACTORY ACCREDITED:



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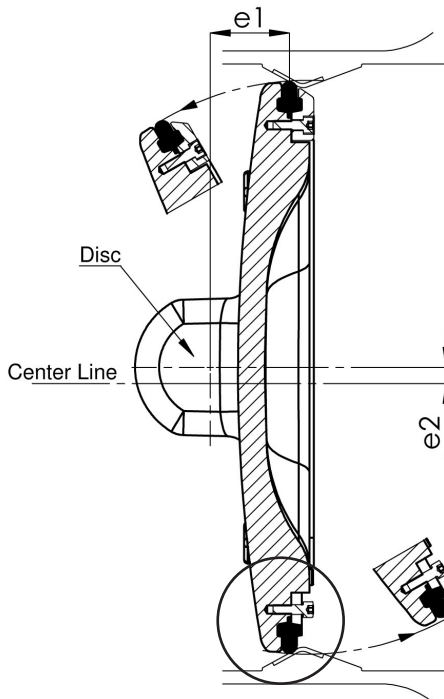


## BENEFITS

### 1. DOUBLE ECCENTRICITY

The disc is supported by two stub shafts mounted offset or eccentric to the disc centreline (e1) and the valve centreline (e2). This double offset design produces the following advantages:

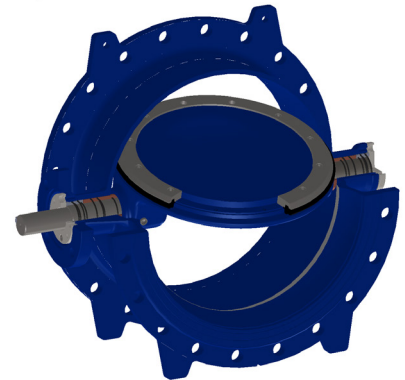
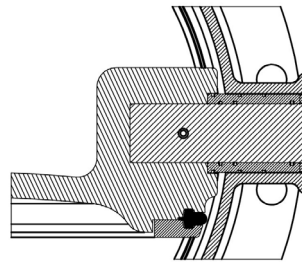
- Reduces seal shear thus reducing torque.
- Allows a single piece seal offering perfect sealing.
- Minimum crush on seat reducing wear.



### 3. SHAFT BEARING ASSEMBLY

Heavy duty shaft bearing and sealing arrangement offers:

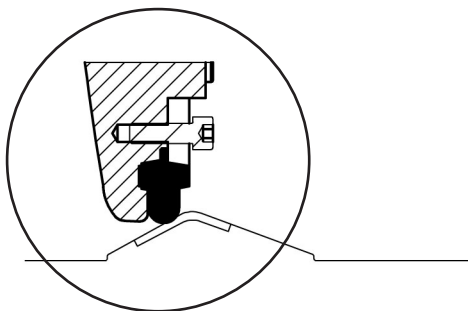
- All stainless steel and bronze components guarantee longevity.
- Arrangement includes up to ten o-ring for guaranteed sealing.
- Thrust bearing ensures disc is centralized under all conditions.



### 2. WELDED BODY SEAT WITH PROFILED SOFT DISC SEAL

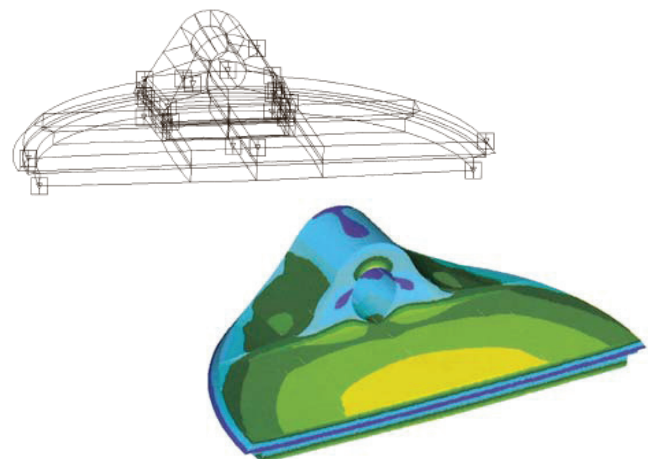
Specially welded 316L stainless steel body seat ring with moulded disc seal provides:

- Easily replaceable seal retaining ring for field serviceability.
- After welding seat is micro-finished for very low wearing surface.
- Specially moulded seal offers high memory to retain shape.



### 4. COMPUTER AIDED DESIGN

Components are hydrodynamically shaped by computer analysis offering very low resistance to flow with maximum mechanical strength. This reduces running costs and ensures high hydraulic safety margins.



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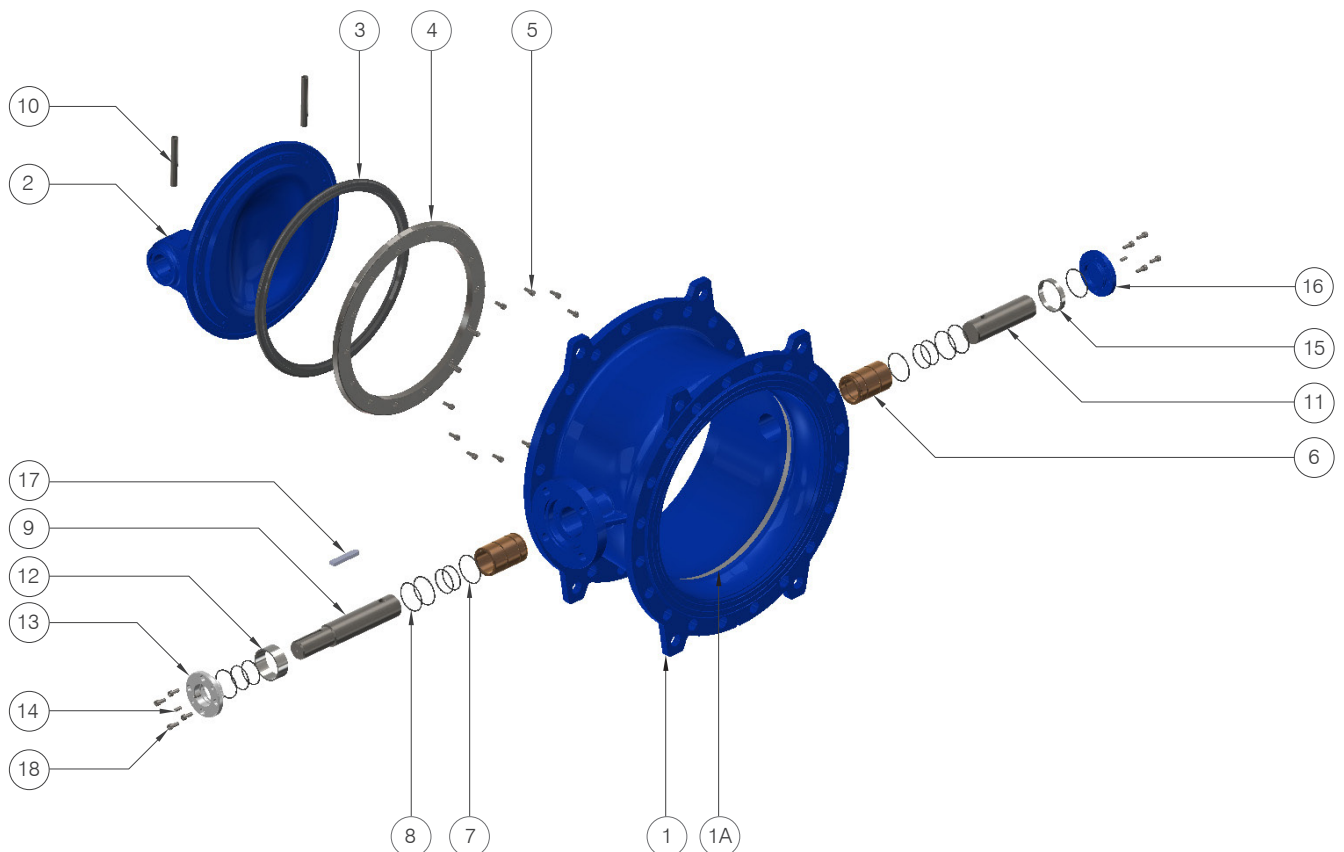
### MATERIAL SPECIFICATIONS & PARTS LIST

MODEL 2160 & 2010

NO.	DESCRIPTION	MATERIAL
1	Body	GGG50
1A	Body Seat	AISI 316L (with welding)
2	Disc	GGG50
3	Disc Seat	EPDM
4	Retaining Ring	316 Stainless Steel
5	Bolt	316 Stainless Steel
6	Front Back Bushing	Bronze
7	O-Ring	NBR
8	O-Ring	NBR
9	Front Shaft	1.4057

NO.	DESCRIPTION	MATERIAL
10	Pin	1.4057
11	Back Shaft	1.4057
12	Adjustment Bushing	Carbon Steel (epoxy coated)
13	Front Cover	St-37 (epoxy coated)
14	Setscrew	316 Stainless Steel
15	Adjustment Bushing	Carbon Steel (epoxy coated)
16	Back Cover	St-37 (epoxy coated)
17	Key for gearbox connection	C 45 K
18	Bolt	316 Stainless Steel

FIGURE 1. EXPLODED VIEW



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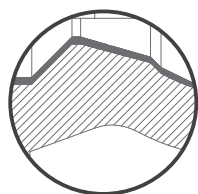
## MATERIAL SPECIFICATIONS & PARTS LIST - SPECIAL SEAWATER CONSTRUCTION

MODEL 2160 & 2010

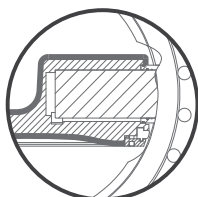
NO.	DESCRIPTION	MATERIAL
1	Body	GGG50
1A	Body Seat	Ebonite Coated
2	Disc	GGG50 (Ebonite Coated)
3	Disc Seat	EPDM
4	Retaining Ring	316 Stainless Steel
5	Bolt	1.4462 Duplex Stainless Steel
6	Setscrew	1.4462 Duplex Stainless Steel
7	Front Shaft	1.4462 Duplex Stainless Steel
8	Key	1.4462 Duplex Stainless Steel
9	Back Shaft	Duplex Stainless Steel 1.4462
10	Front-Back Bushing	C 95800 Aluminium Bronze
11	O-Ring	NBR

NO.	DESCRIPTION	MATERIAL
12	O-Ring	NBR
13	Front Adjusting Ring	DELTRIN
14	Back Adjusting Ring	DELTRIN
15	Front Cover	C 95800 Aluminium Bronze
16	Bolt	316 Stainless Steel
17	Back Cover	C 95800 Aluminium Bronze
18	Eye Bolt	A 105
19	Key	1.4462 Duplex Stainless Steel
20	Gearbox	GG 25
21	Washer	A4 Stainless Steel
22	Bolt	A4 Stainless Steel

FIGURE 1. DETAILED SECTIONAL VIEW

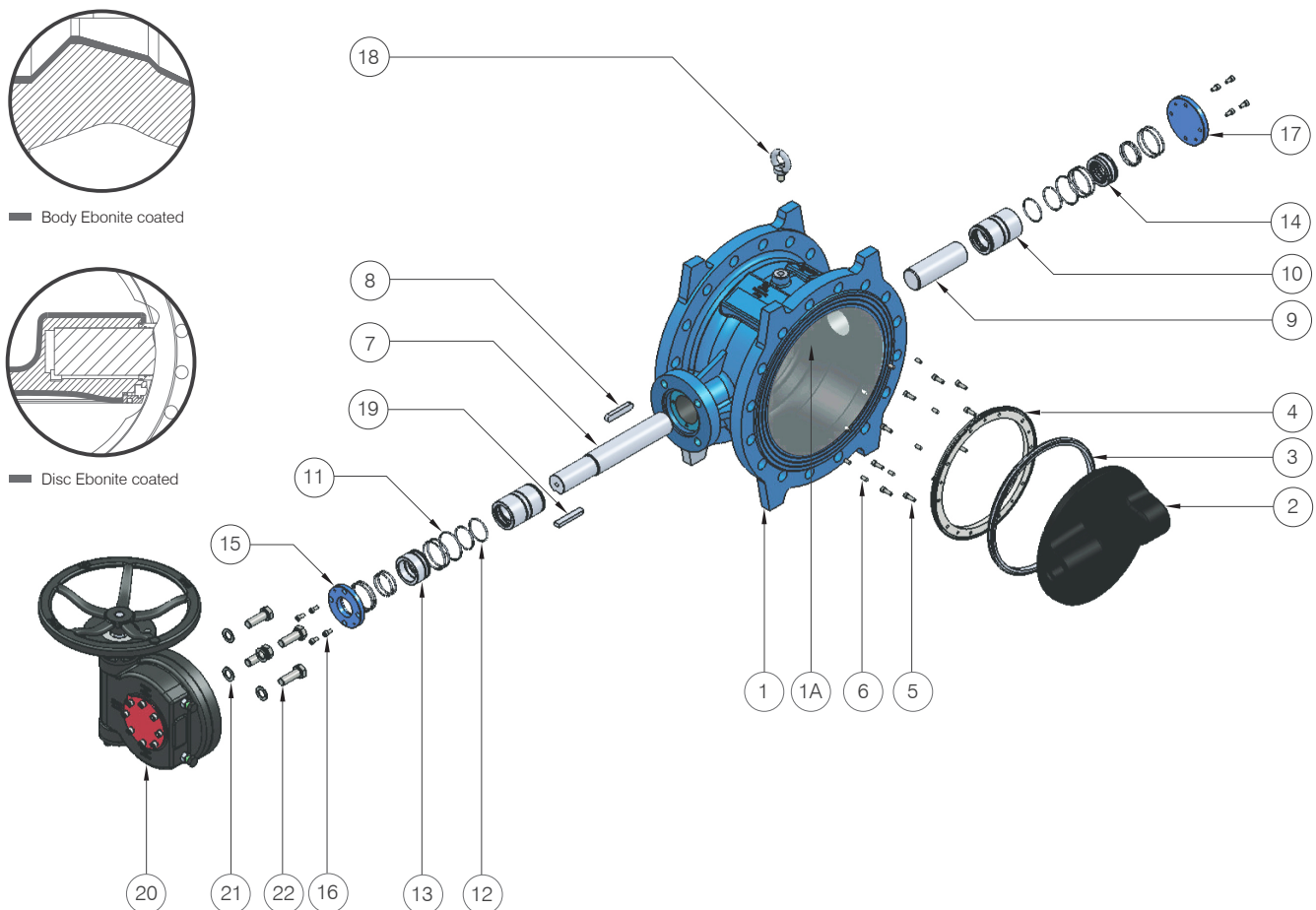


Body Ebonite coated



Disc Ebonite coated

FIGURE 2. EXPLODED VIEW



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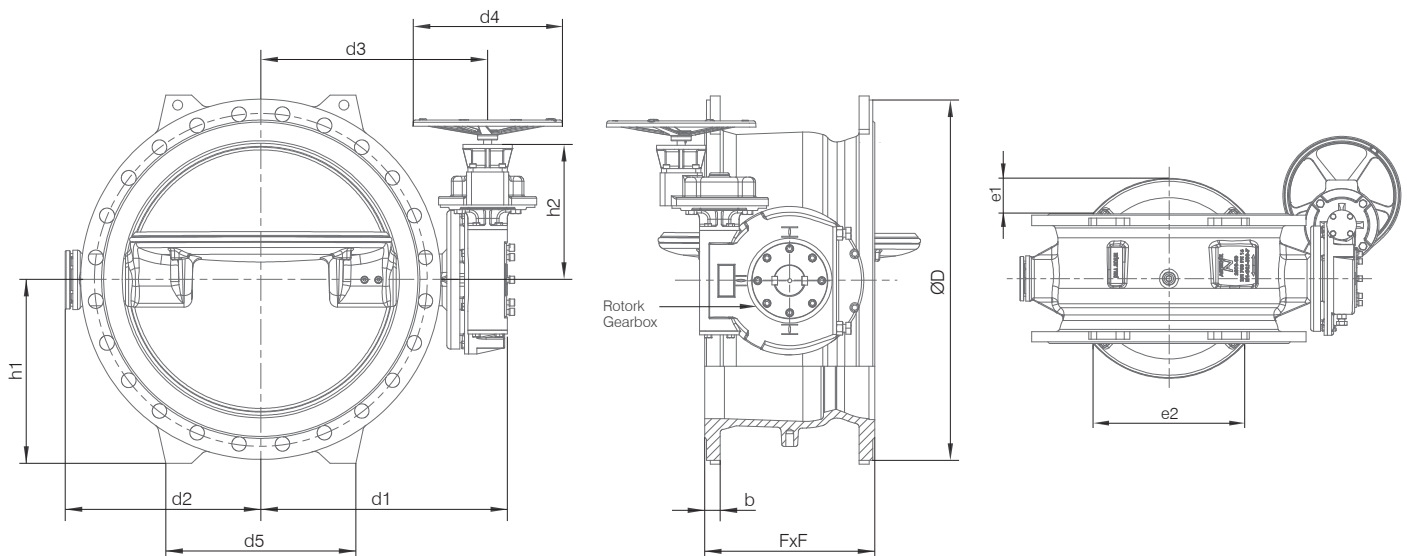
### DIMENSIONS (MM)

MODEL 2160 & 2010 PN16

DN	Model 2160 Series 13				Model 2010 Series 14				PN16								
	FxF (ISO 5752)	e1	e2	Weight (Kg)	FxF (ISO 5752)	e1	e2	Weight (Kg)	ØD	b	h1	h2	d1	d2	d3	d4	d5
150	140	—	—	37	210	—	—	41	285	23	160	118	235	157	200	230	180
200	152	16.4	95.7	48	230	—	—	56	340	23	190	118	283	183	248	230	200
250	165	37.9	174.2	70	250	—	—	75	405	24	220	118	290	223	255	230	280
300	178	48.6	215.9	90	270	—	83.98	95	455	30	250	118	343	245	308	230	300
350	190	68.6	267	142	290	18.3	148.9	161	525	33	280	268	370	279	328	400	360
375	216	87.4	318.6	160	310	32.2	223.1	179	580	33	310	268	410	316	368	400	380
400	216	87.4	316.8	160	310	32.2	223.1	179	580	33	310	268	410	316	368	400	380
450	222	101	367.6	184	330	47.9	272.6	256	640	33	330	268	443	355	400	600	342
500	229	119	410	216	350	59.1	318.2	281	715	35	360	268	482	388	440	600	423
600	267	157	516.2	343	390	81.8	410.2	383	840	42	440	335	575	451	520	600	550
700	292	180.6	586	525	430	116.4	511.9	556	910	45	465	342	615	494	559.5	600	480
750	318	195.4	631.7	685	430	141.1	584.5	726	1025	47	540	469	720	566	650	600	630
800	318	217	682.8	685	470	141.1	584.5	726	1060	48	540	469	720	566	650	600	630
900	330	259.5	780.5	1000	510	167.6	682.4	1058	1175	52	570	505	800	600	720	600	694
1000	410	276	871.7	1330	550	204.6	790.5	1539	1255	56	676	505	842	698	762	600	743
1200	470	340	1053.2	1846	630	206	980.9	1929	1490	63	735	505	960	845	896.5	600	916
1400	—	—	—	—	710	318.5	1155.3	2680	1685	63	878	505	1122	932	1042	600	1000
1600	—	—	—	—	790	371.1	1310	3689	1930	65	976	648	1355	1070	1232.5	600	1100
1800	—	—	—	—	870	427	1506.6	4366	2130	70	1058	648	1415	1158	1292.5	600	1214
2000	—	—	—	—	950	494.6	1692.3	6300	2345	75	1173	648	1535	1329	1412.5	600	1424

Note: Other sizes available on request.

### DIMENSIONAL DRAWINGS



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Quality  
ISO 9001  
SAI GLOBAL

## DIMENSIONS (MM)

MODEL 2161 & 2011 PN25 & PN40

DN	FxF (ISO 5752)		PN 25										Weight (Kg)
	Model 2161 Series 13	Model 2011 Series 14	ØD	b	d1	d2	d3	l1	h1	h2	d4	d5	
100	127	190	235	22	290	104	197	120	118	203	185	—	36
125	140	200	270	27	325	140	232	120	135	203	185	—	39
150	140	210	305	27	344	155	252	120	150	203	185	—	48
200	152	230	375	31	383	187	290	120	180	203	185	—	70
250	165	250	450	34	489	258	366	175	235	260	245	305	160
300	178	270	515	38	505	271	383	198	252	360	245	340	187
350	190	290	580	41	552	310	430	198	287	360	245	350	208
375	216	310	660	42	612	340	459	244	319	409	305	376	289
400	216	310	660	44	612	340	459	244	319	409	305	376	289
450	222	330	685	46	655	380	502	244	345	409	305	470	352
500	229	350	755	49	693	385	540	313	375	472	305	430	470
600	267	390	890	54	761	452	608	313	430	472	305	530	690
700	292	430	995	58	849	533	664	366	490	519	370	540	860
750	318	430	1140	59	934	590	749	366	558	519	370	575	1184
800	318	470	1140	63	934	590	749	366	558	519	370	575	1184
900	330	510	1250	68	1096	677	853	515	613	625	485	745	1800
1000	410	550	1360	72	1171	734	928	515	675	625	485	760	2084
1200	470	630	1530	82	1350	870	1043	515	775	625	485	880	2700
1400	530	710	1755	82	1413	930	1170	656	887	768	485	1010	3960
1600	600	790	1975	82	1577	1042	1275	656	995	909	605	1200	5100

DN	FxF (ISO 5752)		PN 40										Weight (Kg)
	Model 2161 Series 13	Model 2011 Series 14	ØD	b	d1	d2	d3	l1	h1	h2	d4	d5	
100	127	190	235	22	320	118	197	120	118	203	185	—	36
125	140	200	270	27	355	140	232	120	135	203	185	—	39
150	140	210	305	27	374	155	252	120	150	203	185	—	48
200	152	230	375	31	413	193	290	120	180	203	185	—	70
250	165	250	450	34	552	259	367	175	235	260	245	305	180
300	178	270	515	38	568	271	383	198	252	360	245	340	200
350	190	290	580	41	615	311	430	198	287	360	245	350	270
375	216	310	660	42	644	340	459	244	319	409	305	376	380
400	216	310	660	44	644	340	459	244	319	409	305	376	380
450	222	330	685	46	687	380	502	244	345	409	305	470	460
500	229	350	755	49	745	385	540	313	375	472	305	430	520
600	267	390	890	54	794	452	608	313	430	472	305	530	760
700	292	430	995	58	849	533	664	366	490	519	370	540	1020
750	318	430	1140	59	934	588	749	366	558	519	370	575	1480
800	318	470	1140	63	934	588	749	366	558	519	370	575	1480
900	330	510	1250	68	1096	677	853	515	613	625	485	745	2250
1000	410	550	1360	72	1171	734	928	515	675	625	485	760	2600

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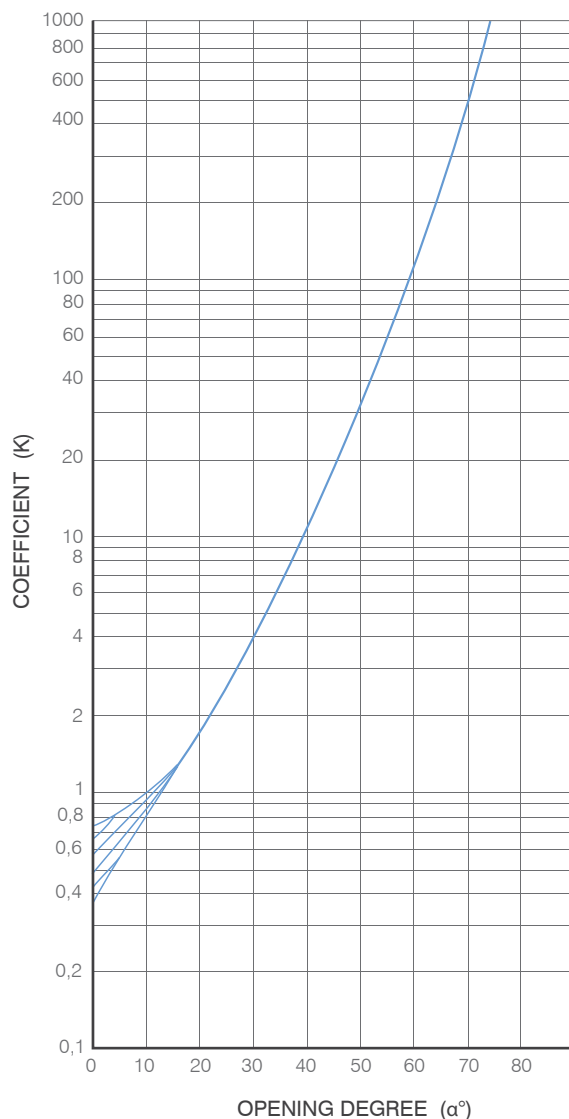


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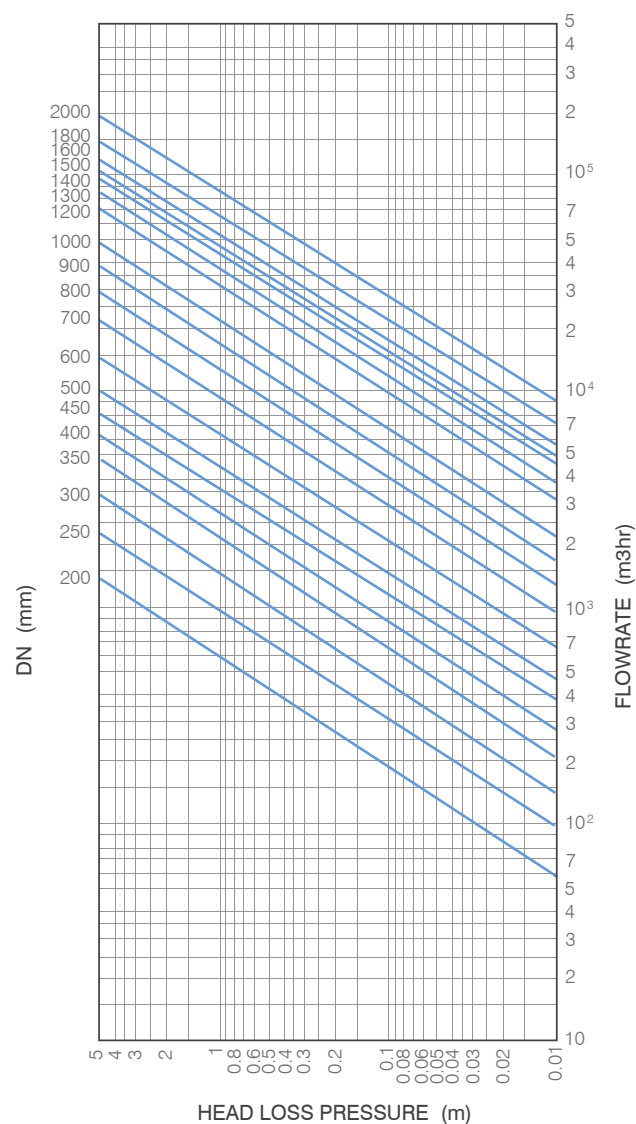
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### HEAD LOSS TABLES

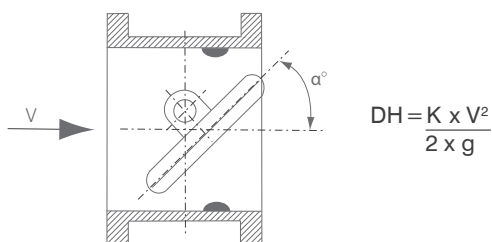
HEAD LOSS COEFFICIENT AS FUNCTION OF OPENING DEGREE



HEAD LOSS AS A FUNCTION OF FLOW RATE



- DH Head loss in column meters of water  
 K Head loss coefficient  
 V Speed of the water in the tube (m/s)  
 g Gravitational acceleration (9,81 m/s)



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## ROTORK GEARBOX OPERATION

The 2000 series has a complete range of Rotork worm and worm/spur combination gearboxes to suit our range of butterfly valves.

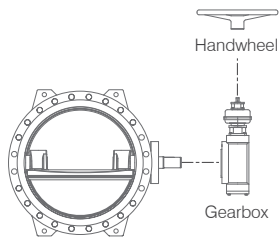
All are fitted with travel stops and are self locking irreversible type for smooth and accurate operation. To meet Australian Water authority and AS4795 standards all gearboxes are designed to be operated by one person with maximum input torque of 100Nm.

Features Include:

- Heavy duty construction greased for life.
- Totally sealed housing to IP67 with special square casing seals.
- Adjustable travel stops as standard.
- Clockwise and Anti-clockwise closing available.
- ISO 5211 input flange for easy installation of actuators.
- IP68, limit switches, torque limiters and other actuators available.

## ACTUATION OPTIONS

### STANDARD CONFIGURATION

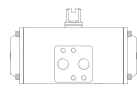


Gearbox Operation

### OTHER OPTIONAL ACTUATION METHODS AND ACCESSORIES AVAILABLE:



1. Electric Actuation



2. Pneumatic Actuation



3. Torque Limiters



4. Limit Switch Box



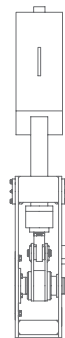
5. Extension Spindles



6. Keycap Operation



7. Mechanical Stop Boxes



8. Hydraulic Cylinder



9. Position Indicator  
for buried service

Figure 3. Exploded View

