

Centered Rubber Seated Valves

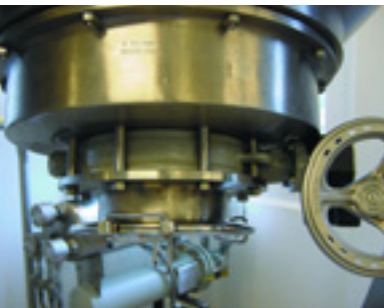
DS Series



The Power to Perform.

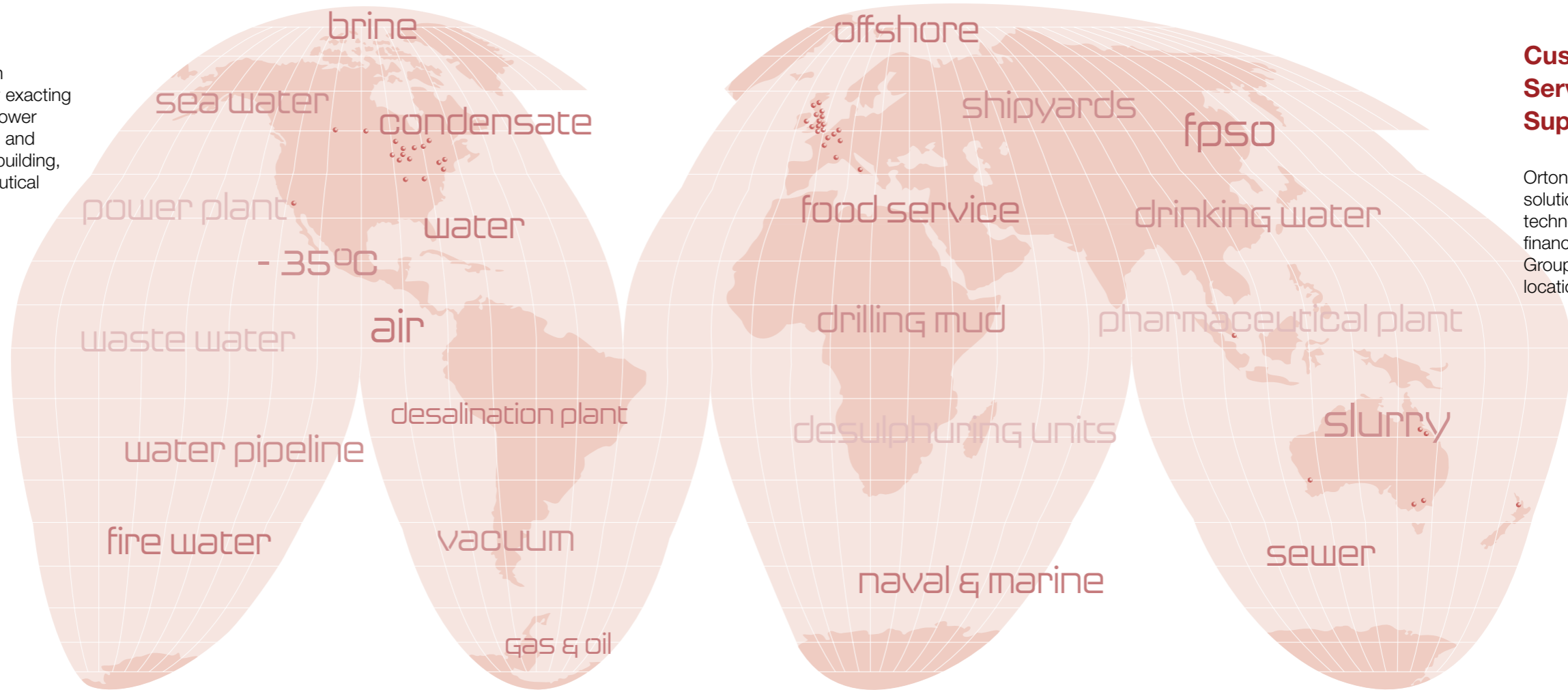
Orton is part of Truflo International plc, a leading supplier of specialist flow control products, with a presence on each continent.

Orton designs and manufactures high performance valves and actuators for exacting markets as diverse as desalination, power generation, oil, natural gas, chemical and petrochemical, pulp and paper, shipbuilding, steel, food and drink, and pharmaceutical industries.



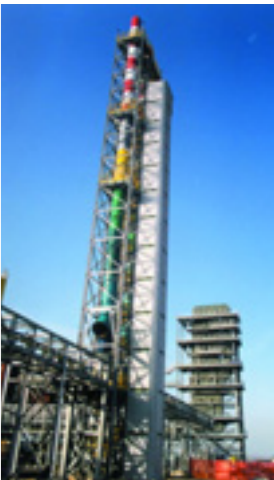
Manufacturing & Distribution

worldwide



Customer Service and Support.

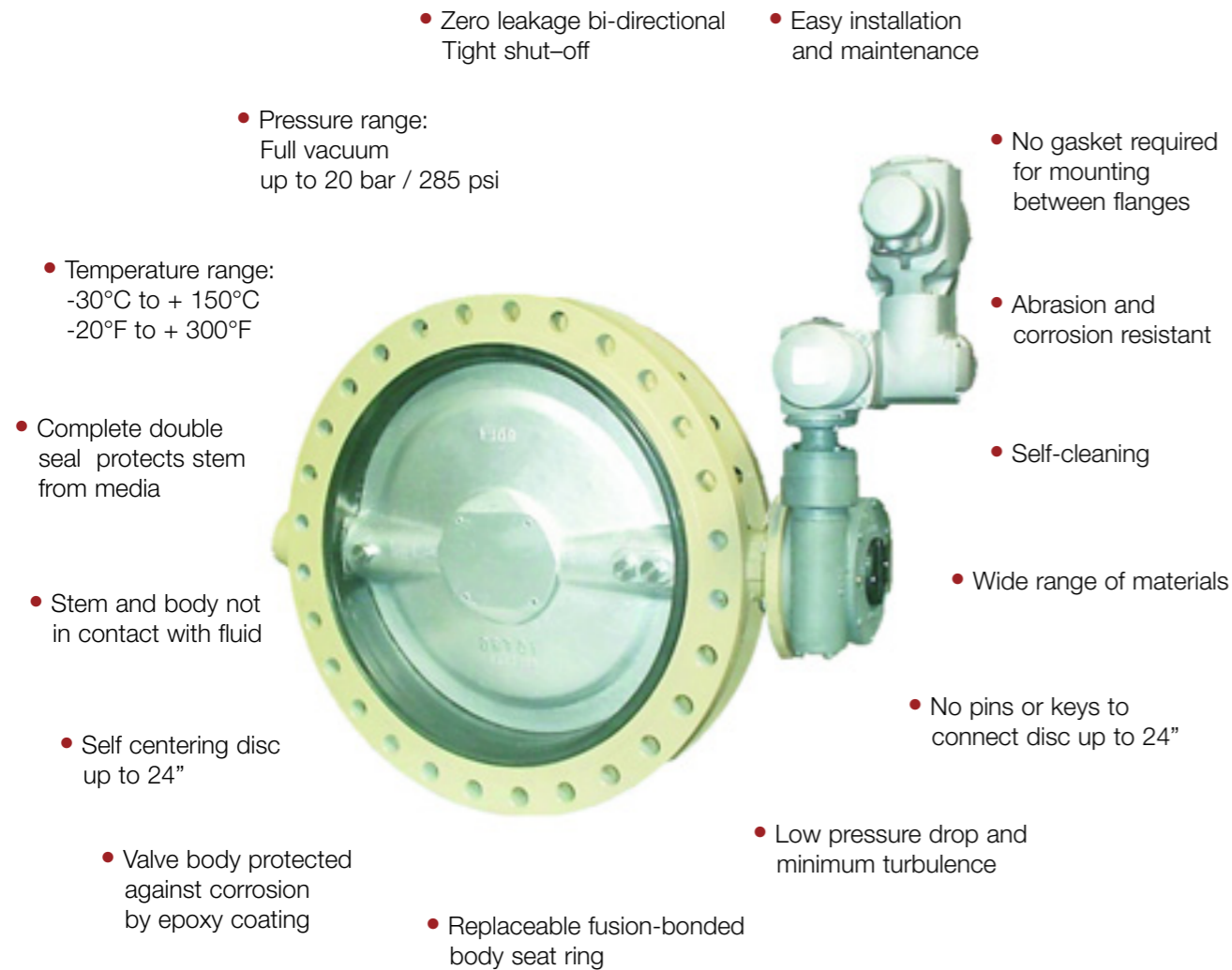
Orton engineered solutions draw on the technological and financial backing of the Group in over 80 locations worldwide.



Added Value for Demanding Applications.

Orton centered rubber seated valves are specified worldwide for their unique combination of control, reliability, compactness and fitness for purpose in tight shut-off and control duties.

Centered Rubber Seated Valves. Orton DS Series.



Applicable Standards

- **Design**
ASME B16.34
ASME VIII
DIN 3840
- **Face to face**
API 609
ISO 5752
DIN 3202 K1
- **Flanges**
ASME / ANSI
ISO
DIN
JIS
- **Quality**
ISO 9001
- **European directive**
PED-H
- **Fugitive Emission**
TA-LUFT
- **Testing**
API 598 - API 6D
ISO 5208
DIN
BS

Sizes

- 1½" - 80"
(40 mm - 2000 mm)

Rating

- PN 2,5 - 6 - 10 - 16
- ASME / ANSI Cl. 150

Body Styles

- Wafer
- Lug
- Double flanged "U" Section
- Special execution on request

Centered Rubber Seated Valves. Orton DS Series.

Typical Materials and Specifications

	Material	ASTM Designation
Body	Ductile iron	ASTM A 536 Gr. 65-45-12
	Carbon steel	ASTM A 216 WCB
	Stainless steel	ASTM A 351 CF8M
	Aluminium bronze	ASTM B 148 C 95500
	Aluminium	ASTM B 275
Disc	Ductile iron	ASTM A 536 Gr. 65-45-12
	Carbon steel	ASTM A 216 Gr. WCB / ASTM A 105
	Stainless steel	ASTM A 314 Tp. 316
	Stainless steel	ASTM A 351 Gr. CF8M
	Aluminium bronze	ASTM B 148 UNS C 95500
	Hastelloy C276	ASTM A 494 Gr. CW-12MW/C
	254 SMO	ASTM A 351 Gr.CK3MCuN
	Duplex	UNS S31803
	Titanium	ASTM B 367 Gr. C-2
	Coated	EPDM - VITON - BUNA etc.
Seat	EPDM	ASTM D 2000 2CA720A25B44Z1
	EPDM H.T.	ASTM D 2000 2CA720A25B44Z2
	Buna - N	ASTM D 2000 2BG720B14E14E53E73L14
	Neoprene	ASTM D 2000 3BC725B14
	Hypalon	ASTM D 2000 2CE725B15EO86
	Viton	ASTM D 2000 4HK710
	Natural Rubber	ASTM D 2000 2AA725Z
	Silicone	ASTM D 2000 2FC610A19B37
Shaft	Stainless Steel	AISI 416 S.S.
	Stainless Steel	AISI 316 - ASTM A 479 Tp. 316
	Stainless Steel	17-4 PH ASTM A 564 Tp. 630
	Hastelloy C276	ASTM B 574 UNS N10276
	Titanium	ASTM B 348 Gr. 5
	Monel K 500	ASTM B 164
	Aluminium Bronze	ASTM B 150 UNS C63000 HS
	254 SMO	ASTM A 479 UNS S31254
Duplex	UNS S31803	

Other materials available on request.

254 SMO is a registered trademark of Avesta Sheffield

Monel® is a registered trademark of Inco Alloys International, Inc.

Hastelloy® is a registered trademark of Haynes International, Inc.

Viton® and Hypalon® are registered trademarks of Du Pont

**Centered Rubber Seated Valves.
Orton DS Series.**

The DS Series design is based upon the centered shaft concept to allow easy installation and maintenance. These features make the DS Series ideally suitable for small and large size valves where the cost of ownership needs to be kept to a minimum.

Engineered for Superior Performance.

- Multipurpose
- Heavy duty service
- Rigid and heavy construction
- Contoured disc
- Up to 60" replaceable seat
- From 64" up to 80" vulcanized seat on the body
- Fully rated PN 20 bar / 285 psi
- Low pressure drop
- Customized specifications

Body liner and disc configuration.



Standard disc execution



Lined disc execution



**Centered Rubber Seated Valves.
Orton DS Series.**

Efficient Leak-Free Construction.

• **Body**

The body in the Orton DS/DL design is a one piece cast or fabricated design providing the ultimate in rigidity and leak free performance.

• **Replaceable seat**

The rubber seat is fusion-bonded to a rigid backing ring, integrally supported by the robust body. The elastomeric seat extends from face to face insuring critical components are completely sealed from the media. The rigid backing ring creates a "cartridge" type seat which offers unsurpassed stability and durability, completely eliminating the possibility of the detaching, seat tearing or other failures inherent in soft "boot" type seats because of vacuum, mechanical or hydrodynamic stresses.

• **Disc and Shaft Connection**

Through 24" the disc is engaged by the squared end of the upper stem without a set or securing screw. The disc is self centering on the resilient seat due to the dynamic connection between the shaft and disc.

Above 24" the two piece shaft is rigidly secured to the disc by pins which are totally enclosed within the disc and protected from aggressive media.

The upper stem, for all diameters, is retained by an anti-blow out system and not by a lever or gear. The hydro-dynamically efficient disc profile both improves flow capability and reduces pressure drop and dynamic torque.

• **Shaft Bushings**

For DL Series ND 14" and larger all bushings are long and manufactured from self lubricating and resistant alloy

• **Packing**

The standard shaft sealing is obtained by an O-Ring and by a bushing with O-Ring seals. Replaceable packing is also available.



Disc and shaft connection up to ND 24"

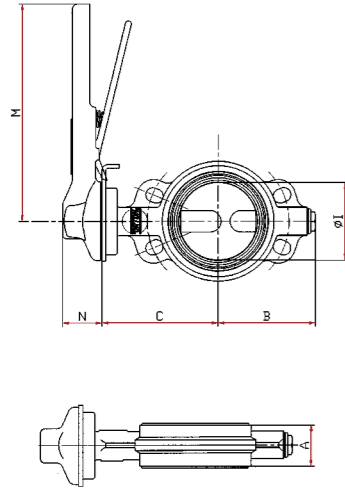


Disc and shaft connection over ND 24"

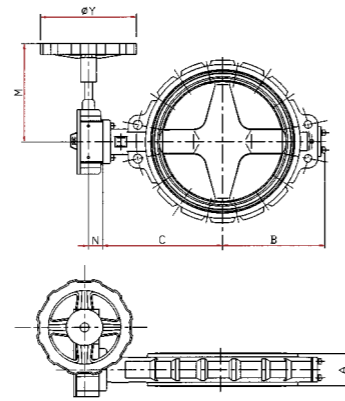
Centered Rubber Seated Valves.
Orton DS Series.

Overall Dimensions

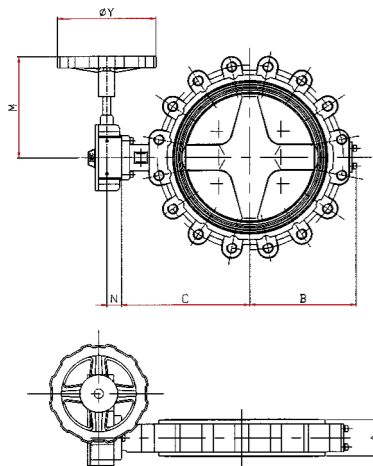
Wafer type
With lever



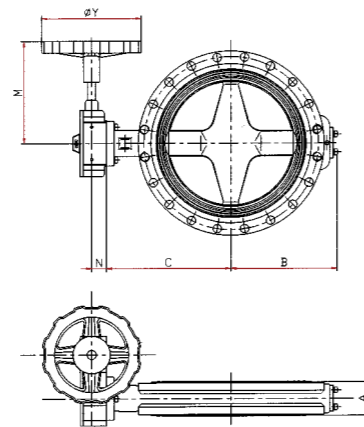
Wafer type
With manual gear



Lug type
With manual gear



U-section type
With manual gear



Notes

1. Face to face dimensions are in strict accordance with the latest edition of the stated standard.
2. Flange drilling is in strict accordance with ASME / ANSI B16.5 or ASME / ANSI B16.47.
3. Please consult Orton for other available sizes, classes and connections.

Centered Rubber Seated Valves.
Orton DS Series.

SI Units

ND	A	B	C	Øi	N	M	Ø Y	Weight (Kg)		
(in)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	Wafer	Lug	U Section

With Lever Operator

1½	40	33	79	98	46	36	225	-	3	3	5
2	50	44	88	109	56	36	225	-	4	4	7
2½	65	47	95	122	71	36	225	-	4	5	8
3	80	46	111	131	83	36	225	-	5	6	9
4	100	53	120	152	104	36	225	-	5	9	12
5	125	57	137	177	128	36	280	-	9	12	16
6	150	57	151	193	152	36	280	-	10	14	19
8	200	60	189	225	198	36	280	-	11	16	25
10	250	69	226	274	246	51	305	-	22	30	39
12	300	79	258	297	298	51	305	-	33	49	64

With Gear Operator

1½	40	33	79	98	46	45	214	200	10	10	13
2	50	44	88	109	56	45	214	200	11	11	14
2½	65	47	95	122	71	45	214	200	12	13	16
3	80	46	111	131	83	45	214	200	12	14	17
4	100	53	120	152	104	45	214	200	13	17	20
5	125	57	137	177	128	45	214	200	16	19	24
6	150	57	151	193	152	45	214	200	17	22	27
8	200	60	189	225	198	45	214	200	19	24	33
10	250	69	226	274	246	45	214	200	29	37	46
12	300	79	258	297	298	45	214	200	39	55	70
14	350	78	278	350	331	45	243	300	50	60	72
16	400	102	303	375	379	45	243	300	72	100	116
18	450	114	343	400	430	45	243	300	92	132	138
20	500	125	366	427	482	45	243	300	111	201	192
22	550	152	437	480	530	59	360	600	175	252	235
24	600	154	440	505	578	59	360	600	212	311	284
26	650	165	540	580	630	59	430	600	252	376	340
28	700	165	545	580	680	59	430	600	296	449	403
30	750	190	570	610	740	65	477	600	343	530	474
32	800	190	600	630	790	80	517	600	393	619	554
34	850	203	645	675	840	80	517	600	446	716	642
36	900	203	660	690	876	80	517	600	503	821	740
40	1000	216	730	760	975	80	529	700	625	1058	964
42	1050	216	755	785	1040	96	585	700	691	1190	1092
44	1100	216	765	810	1090	96	603	700	759	1331	1231
48	1200	254	880	895	1190	96	603	700	904	1642	1545
52	1300	254	965	975	1290	96	603	700	1060	1993	1909
56	1400	300	1030	1045	1390	130	950	700	1225	2386	2327
60	1500	300	1040	1050	1500	130	990	700	1400	2823	2803

Centered Rubber Seated Valves.
Orton DS Series.

Imperial Units

ND	A	B	C	Øi	N	M	Ø Y	Weight (lb)		
(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	Wafer	Lug	U Section

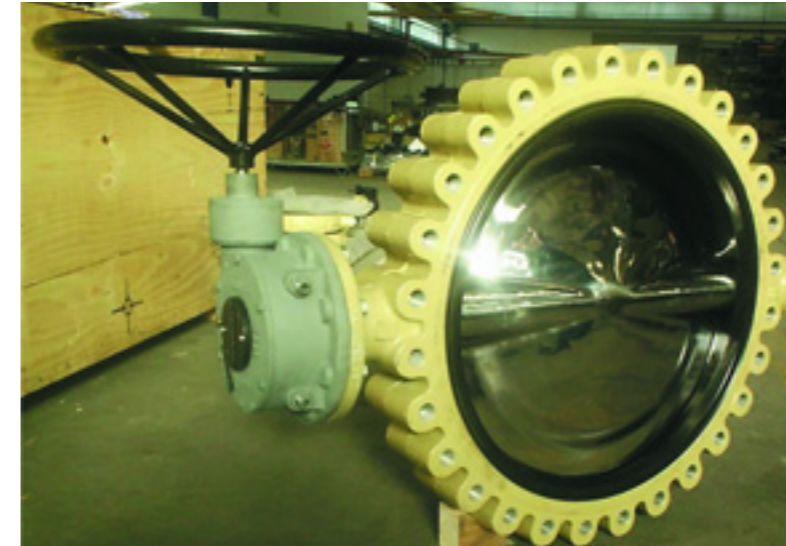
With Lever Operator

1½	40	1.3	3.1	3.9	1.9	1.4	8.9	-	6.6	6.6	11.0
2	50	1.7	3.5	4.3	2.2	1.4	8.9	-	8.8	8.8	15.4
2½	65	1.9	3.7	4.8	2.8	1.4	8.9	-	8.8	11.0	17.6
3	80	1.8	4.4	5.2	3.3	1.4	8.9	-	11.0	13.2	19.8
4	100	2.1	4.7	6.0	4.1	1.4	8.9	-	11.0	19.8	26.5
5	125	2.2	5.4	7.0	5.0	1.4	11.0	-	19.8	26.5	35.3
6	150	2.2	5.9	7.6	6.0	1.4	11.0	-	22.1	30.9	41.9
8	200	2.4	7.4	8.9	7.8	1.4	11.0	-	24.3	35.3	55.1
10	250	2.7	8.9	10.8	9.7	2.0	12.0	-	48.5	66.2	86.0
12	300	3.1	10.2	11.7	11.7	2.0	12.0	-	72.8	108.1	141.2

With Gear Operator

1½	40	1.3	3.1	3.9	1.8	1.8	8.4	7.9	22.1	22.1	28.7
2	50	1.7	3.5	4.3	2.2	1.8	8.4	7.9	24.3	24.3	30.9
2½	65	1.9	3.7	4.8	2.8	1.8	8.4	7.9	26.5	28.7	35.3
3	80	1.8	4.4	5.2	3.3	1.8	8.4	7.9	26.5	30.9	37.5
4	100	2.1	4.7	6.0	4.1	1.8	8.4	7.9	28.7	37.5	44.1
5	125	2.2	5.4	7.0	5.0	1.8	8.4	7.9	35.3	41.9	52.9
6	150	2.2	5.9	7.6	6.0	1.8	8.4	7.9	37.5	48.5	59.5
8	200	2.4	7.4	8.9	7.8	1.8	8.4	7.9	41.9	52.9	72.8
10	250	2.7	8.9	10.8	9.7	1.8	8.4	7.9	64.0	81.6	101.5
12	300	3.1	10.2	11.7	11.7	1.8	8.4	7.9	86.0	121.3	154.4
14	350	3.1	10.9	13.8	13.0	1.8	9.6	11.8	110.3	132.3	158.8
16	400	4.0	13.6	14.8	14.9	1.8	9.6	11.8	158.8	220.6	255.8
18	450	4.5	14.6	15.7	16.9	1.8	9.6	11.8	202.9	291.1	304.4
20	500	4.9	15.0	16.8	19.0	1.8	9.6	11.8	244.8	443.2	423.5
22	550	6.0	17.2	18.9	20.9	2.3	14.2	23.6	385.6	556.5	517.8
24	600	6.1	17.3	19.9	22.8	2.3	14.2	23.6	466.7	685.2	626.2
26	650	6.5	21.3	22.8	24.8	2.3	16.9	23.6	555.6	829.9	749.8
28	700	6.5	21.5	22.8	26.8	2.3	16.9	23.6	651.9	991.1	889.5
30	750	7.5	22.4	24.0	29.1	2.6	18.8	23.6	755.7	1169.2	1046.5
32	800	7.5	23.6	24.8	31.1	3.1	20.4	23.6	866.6	1364.9	1221.7
34	850	8.0	25.4	26.6	33.1	3.1	20.4	23.6	984.6	1578.6	1416.3
36	900	8.0	26.0	27.2	34.5	3.1	20.4	23.6	1109.4	1810.8	1631.2
40	1000	8.5	28.7	29.9	38.4	3.1	20.8	27.6	1379.2	2332.7	2126.4
42	1050	8.5	29.7	30.9	40.9	3.8	23.0	27.6	1523.7	2623.5	2408.7
44	1100	8.5	30.7	31.9	42.9	3.8	23.7	27.6	1674.6	2934.8	2715.6
48	1200	10.0	34.6	35.2	46.9	3.8	23.7	27.6	1994.3	3621.2	3407.3
52	1300	10.0	38.0	38.4	50.8	3.8	23.7	27.6	2337.2	4395.8	4209.8
56	1400	11.8	40.6	41.1	54.7	5.1	37.4	27.6	2701.9	5262.8	5131.6
60	1500	11.8	40.9	41.3	59.1	5.1	39.0	27.6	3087.1	6226.2	6181.0

Centered Rubber Seated Valves.
Orton DS Series.



ND 24" ASME / ANSI 150* Lug type, polished disc, PHARMACEUTICAL PLANT



ND 60" AWWA Cl.D Flanged, replaceable seat POWER PLANT



ND 16" ASME / ANSI 150* Lug type, SEA WATER ISOLATION



ND 60" NP 10 Flanged, fabricated body, replaceable seat

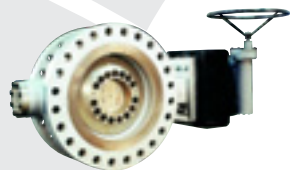


ND 64" AWWA Cl. D Flanged, rubber lined, body and seat vulcanized, POWER PLANT



ND 54" AWWA CL.D, Flanged, POWER PLANT

A member of Truflo International plc, an international leader in specialist flow control products, Orton offers the most complete range of triple eccentric metal seated valves and soft seated butterfly valves for all applications.



Triple Eccentric Metal Seated Valves

MV Series

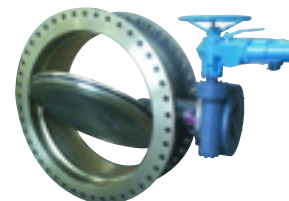
- Triple eccentric 1/4 turn friction-free operation.
- Resilient torque seated metal-to-metal seal.
- Bi-directional zero leakage shut-off.
- Inherently fire-safe.



Triple Eccentric Metal Seated Valves

MV Royal Series

- Triple eccentric 1/4 turn friction-free operation.
- Resilient torque seated metal-to-metal seal.
- Fully replaceable seat and seal with in-line maintenance
- Inherently fire-safe.



Double Eccentric Valves

VF Series

- Resilient disc-mounted seal ring.
- Bi-directional tight shut-off.
- Double eccentric operation.
- Bi-directional axial shaft support.

QS Certificate of Assessment
97/23 EC-PED-H
Pressure Equipment Directive
Certified by DNV

Certificate of Assessment
ATEX 94/9/EC
Filed at DNV

Quality System
ISO 9001
Certified by DNV

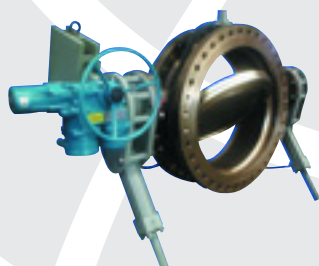
Fugitive Emissions
TA-LUFT Point 3.1.8.4
Certified by TÜV

Fire Safe
API 607 4th Edition
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BS 6755 : Pt. 2 : 1987
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Fire Safe
Department of Trade & Industry
Rule 54 Para 62
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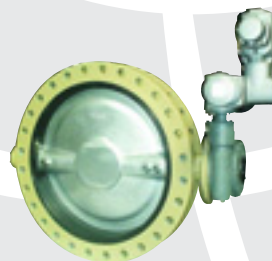
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Non-Return Valves

NR Series

- Triple or double eccentric.
- Metal or rubber seal.
- Counter balance weight with a dampening system.
- Low pressure drop.



Rubber Seated Valves

DS Series

- Bi-directional tight shut-off.
- Self-centering disc on a resilient seat.
- Body and stem free from fluid contact.
- No disc connecting pin or key (up to 24").



PTFE Seated Valves

TF Series

- Self-centering disc on a PTFE seat.
- Bi-directional tight shut-off.
- Body and stem free from fluid contact.
- No disc connecting pin or key.