

Handwheel manual reducer



The range of reducers (quarter of turn) for the butterfly valves is made up of two series X and Q. The denomination MDV of the reducers concerns both series X and Q. The range MDV concerns twelve (12) models of manual reducers DN32 to DN1600.

The reducers series X to be installed on the Butterfly valves DN32 to DN350 are light and easy to handle with an aluminum casing coated with epoxy powder. Standard protection IP67 and possibilities of protection IP68 on request. There are four (4) models in order to work with operating torques up to 600 Nm.

The reducers series Q to be installed on the Butterfly valves DN400 to DN1600 are manufactured with a ductile iron casing coated with epoxy powder and final layer of polyurethane. Protection IP68. Composed of eight (8) models in order to work with operating torques up to 7000 Nm.

Quarter of turn 0° TO 90° adjustable with a MARGIN of $\pm 5^\circ$.

Operating temperature between -25 °C and +110 °C (- 13 °F to 230 °F).

Field of use

The manual reducers are used in the markets of water supply and sewage as well as the industrial applications like fire protection networks, water treatment, desalinization, mines...

They are installed on the concentric butterfly valves, pressure relief valve, etc...

Added-values

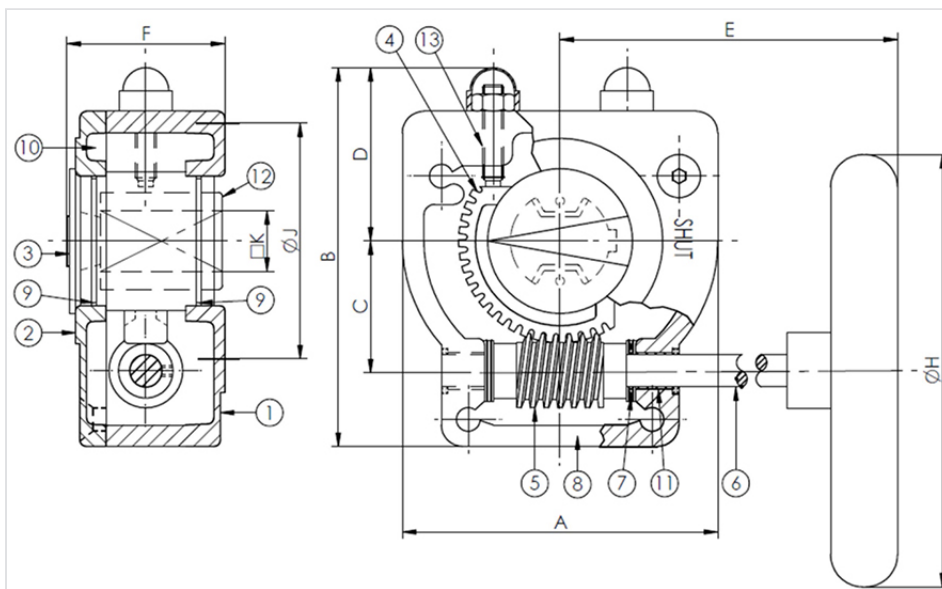
- Shaft in stainless steel.
- Axial needle bearings.
- O'ring NBR 70.
- External visualization of position.
- Internal bearing interchangeable between series X and Q.
- Connection in conformity with ISO 5211.

Choice



Type of Reducer	DN	Model for PN10 bar	Model for PN16 bar	Connection to valve shaft	Handwheel Ø and H
X	32-100	MDV-0 / Type X-21		□ 11	Ø125 and 42
	125-150	MDV-1 / Type X-21		□ 14	Ø160 and 48
	200	MDV-1A / Type X-41		□ 17	Ø200 and 53
	250-350	MDV-2 / Type X-61		□ 22	Ø250 and 66
Q	400	MDV-2A / Type Q-800		□ 27	Ø300 and 86
	450-500	MDV-3 / Type Q-2000		□ 36	Ø400 and 122
	600	MDV-4 / Type Q-4000		Ø 60	Ø500 and 141
	700	MDV-4 / Type Q-4000	MDV-5 / Type Q-6500	Ø 65	Ø600 and 157
	750	MDV-6 / Type Q-12000		Ø 80	Ø600 and 157
	800	MDV-5 / Type Q-6500	-	Ø 80	Ø600 and 157
		-	MDV-6 / Type Q-12000	Ø 80	Ø700 and 180
	900	MDV-6 / Type Q-12000		Ø 80	Ø700 and 180
	1000	MDV-7 / Type Q-16000		Ø 80	Ø700 and 180
	1100	MDV-7 / Type Q-16000	MDV-8 / Type Q-24000	Ø 80	Ø700 and 180
	1200	MDV-8 / Type Q-24000		Ø 100	Ø700 and 180
	1400	MDV-8 / Type Q-24000	-	Ø 120	Ø700 and 180

Type of Reducer	DN	Model for PN10 bar	Model for PN16 bar	Connection to valve shaft	Handwheel Ø and H
	1600	MDV-9 / Type Q-32000	-	Ø 130	Ø700 and 180



Dimensions

Type	A	B	C	D	E	F	H	J	K
MDV-0	84	118	43.5	50.5	128	51.2	125	F-07	11
MDV-1	84	118	43.5	50.5	135	51.2	160	F-07	14
MDV-1A	112	138.5	52.5	57.0	152	63.5	200	F-07/F-10	17
MDV-2	120	170.5	61.5	70.5	222	77.0	250	F-10/F-12	22

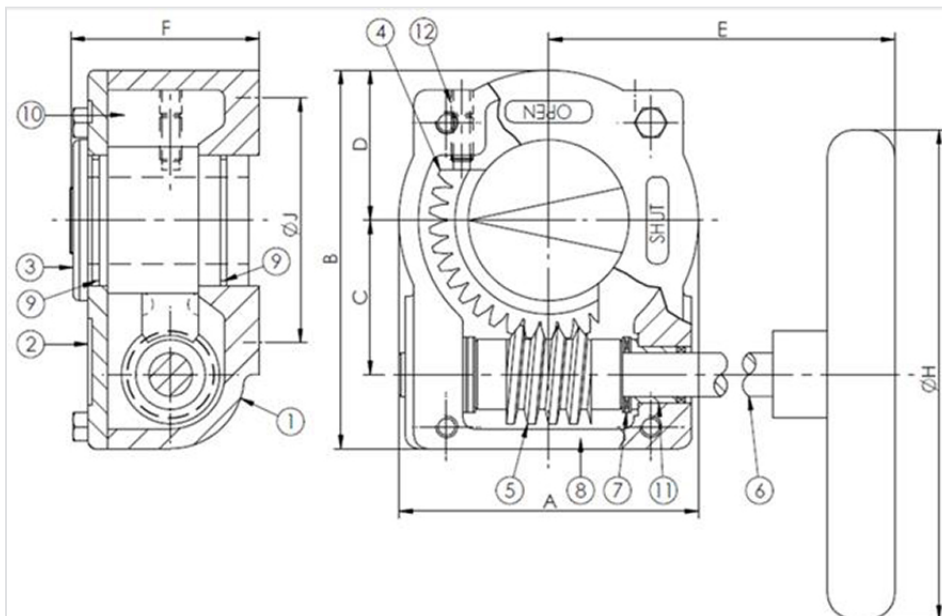
Technical data

Type	Maxi output torque	Maxi input torque	Ratio	Number of turns to close	Mass	Mechanical advantage
MDV-0	200 Nm	16.8 Nm	40:1	10	1.2	11.9%
MDV-1	200 Nm	16.8 Nm	40:1	10	1.4	11.9%
MDV-1A	400 Nm	31.25 Nm	44:1	11	2.6	12.8%
MDV-2	600 Nm	46.5 Nm	34:1	8.5	3.5	12.9%

Material

Item	Description	Material	Quantity
1	Body	Aluminium	1
2	Cover plate	Aluminium	1
3	Position indicator	Polyethylene	1
4	Quadrant	Cast iron GGG-40 - ASTM A356	1
5	Worm	Carbon steel C45/AISI 1045	1
6	Shaft	Stainless steel AISI 303	1
7	Axial needle bearing	AXK-AS	2
8	Tightness joint	Nitrile/Silicone	1
9	Joint	Nitrile	2
10	Grease	Lithium/Calcium	1
11	Plain bearing	Permaglide P-10	2
12	Inserts	Steel	1
13	Screw	Steel 45H : DIN 915	2

Range of reducers MDV-2A to MDV-4 (Series Q)



Dimensions

Type	A	B	C	D	E	F	H	J
MDV-2A	135	187	69	72.5	278	90.5	300	F-10/F-14
MDV-3	180	235	96.5	91.5	321	100	400	F-12/F-16
MDV-4	282	326	137.5	140	408	128	500	F-16/F-25

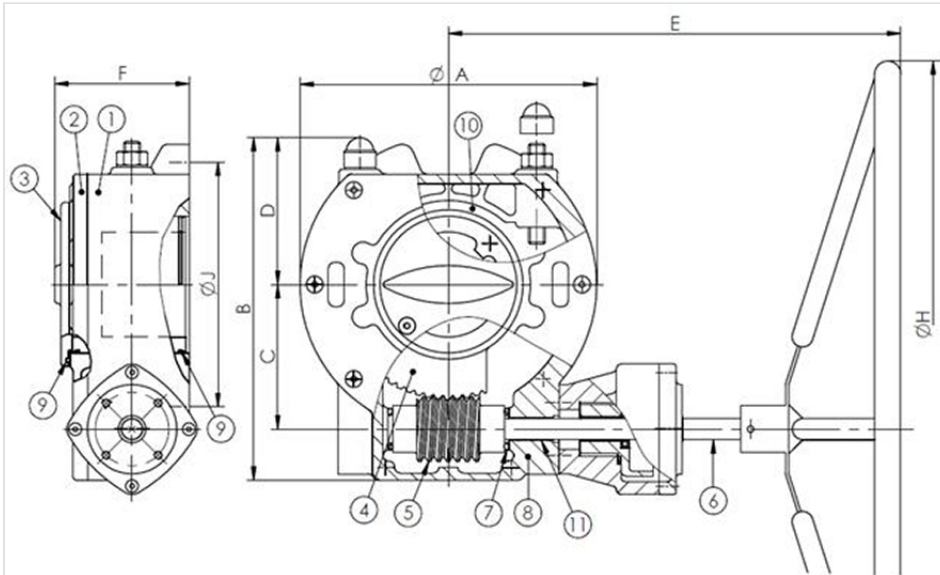
Technical data

Type	Maxi output torque	Maxi input torque	Ratio	Number of turns to close	Mass	Mechanical advantage
MDV-2	800Nm	60 Nm	40:1	10	8.9	13.3%
MDV-3	2000 Nm	131 Nm	48:1	12	18.4	15.3%
MDV-4	4000 Nm	185 Nm	72:1	18	34.2	21.6%

Material

Item	Description	Material	Quantity
1	Body	Cast iron GG-25 - ASTM A48	1
2	Cover plate	Cast iron GG-25 - ASTM A48	1
3	Position indicator	Cast iron GG-25 - ASTM A48	1
4	Quadrant	Cast iron GGG-40 - ASTM A356	1
5	Worm	Carbon steel C45/AISI 1045	1
6	Shaft	Stainless steel AISI 303	1
7	Axial needle bearing	AXK-AS	2
8	Tightness joint	Nitrile/Silicone	1
9	Joint	Nitrile	2
10	Grease	Lithium/Calcium	1
11	Plain bearing	Steel	2
12	Screw	Steel 45H : DIN 915	2

Range of reducers MDV-5 to MDV-9 (Series Q)



Dimensions

Type	A	B	C	D	E	F	H	J
MDV-5	282	326	137.5	140	456	128	600	F-16/F-25
MDV-6	376	396	180.0	156	510	135	700	F-25/F-30
MDV-7	376	396	180.0	156	579	135	700	F-25/F-30
MDV-8	510	536	252.5	201	593	189	700	F-25/F-40
MDV-9	510	536	252.5	201	593	189	700	F-25/F-40

Technical data

Type	Maxi output torque	Maxi input torque	Ratio	Number of turns to close	Mass	Mechanical advantage
MDV-5	6500Nm	95 Nm	267:1	67	41.0	68.4%
MDV-6	12000 Nm	168.48 Nm	267:1	67	60.6	71.0%
MDV-7	16000 Nm	120 Nm	648:1	162	66.4	133.3%
MDV-8	24000 Nm	140 Nm	720:1	180	196.0	171.5%
MDV-9	32000 Nm	140 Nm	960:1	240	196.0	228.6%

Material

Item	Description	Material	Quantity
1	Body	Cast iron GG-25 - ASTM A48	1

Item	Description	Material	Quantity
2	Cover plate	Cast iron GG-25 - ASTM A48	1
3	Position indicator	Cast iron GG-25 - ASTM A48	1
4	Quadrant	Cast iron GG-25 - ASTM A48	1
5	Worm	Carbon steel C45/AISI 1045	1
6	Shaft	Stainless steel AISI 303	1
7	Axial needle bearing	AXK-AS	2
8	Tightness joint	Nitrile/Silicone	1
9	Joint	Nitrile	2
10	Grease	Lithium/Calcium	1
11	Plain bearing	Steel	2

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