Neles™ Easyflow™ Manual valve gear

Series MEG

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Installation, maintenance and operating instructions



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Table of contents

GENERAL 3
Preface 3
Technical data Specification 3

INSTALLATION 3
Mounting to the valve 3
Adjustment of the setscrews 4

OPERATING INSTRUCTIONS 5

MAINTENANCE 5

ASSEMBLY DRAWING AND PARTS LIST 6

DIMENSIONS 6

TYPE CODE 7

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READ THESE INSTRUCTIONS FIRST!

These instructions provide information about safe handling and operation of the valve.

If you require additional assistance, please contact the manufacturer or manufacturer’s representative.

SAVE THESE INSTRUCTIONS!

Addresses and phone numbers are printed on the back cover.

1. GENERAL

1.1 Preface

The gearbox of the MEG-series is a quarter turn gearbox intended to be used for the manual operation of valves (e.g. butterfly valves) in pipelines.

This manual is valid only for the standard MEG-series gearboxes of Valmet. For special versions, specifications and model can differ.

Valmet is not responsible for any damage caused by incorrect use of the gearbox.

1.2 Technical data Specification

The maximum allowable input and output torque are listed in the Table 1.

Table 1 Connection data of the gearbox

Model	Drive size	Mounting Base as per ISO 5211	Torque output		Torque input	
			N.m	ft-lb	N.m	ft-lb
25014	14 mm square (female)	F05	250	184	25	18
25017	17 mm square (female)	F07	250	184	25	18
50017	17 mm square (female)	F07	500	368	51	37
50022	22 mm square (female)	F10	500	368	51	37
75022	22 mm square (female)	F10	750	553	65	48
1000	45 mm diameter (female)	F14	1000	737	83	61
1500	45 mm diameter (female)	F14	1500	1106	93	69
4000	45 mm diameter (female)	F14	4000	2950	181	134
5500	45 mm diameter (female)	F14	5500	4056	110	81
8500	70 mm diameter (female)	F16	8500	6269	116	85

This gearbox is applicable to valve shafts with square and keyway only. For more specified information, you can contact our sales office.

Handling and safety precautions

Be sure to read and understand this manual before installation and use of our gearboxes.

Storage

The gearboxes need to be stored in a safe way to avoid accidents. Also avoid storage in areas subjected to high temperature extremes and /or areas subjected to large amounts of humidity and dust.

Handling

Never drop the gearbox or otherwise subject it to strong impact.

Correct use

Prior to installation, be sure the gearbox will NOT be overloaded during normal use. For this, convince yourself the valve size and needed opening torque do not exceed the values given for the gearbox. For the maximum allowable torque on the gearbox, see Table 1.

Installation and operating

Not observing the rules as stated in this manual, can lead to damage and / or personal injuries. The qualified personnel must be fully aware of the instructions as described in this manual.

Only when the instructions are observed, correct operation of the gearboxes can be guaranteed.

Disposal

Never refuse a gearbox at a general disposal unit. The gearbox must be offered to a disposal depot for recycling. The iron parts can be used for recycling. The seals are of nitrile and can be used for plastic recycling.

The grease must not be discharged to sewer- or surface water. It must be disposed according to local regulations for incineration.

2. INSTALLATION

2.1 Mounting to the valve

Following description applies to standard type gearboxes:

1. The gearbox is standard delivered in the closed position
2. It is recommended to mount a handwheel on the input shaft before assembling the gearbox to the valve, Figure 1
3. Check if the bolt circle of the flanges (of gearbox and valve) coincide. Also check if the valve stem and the bore of the gearbox match.
4. Make sure the valve is in the closed position. If not, close the valve before continuing.
5. Check if the gearbox is in fully closed position by turning the handwheel clockwise.
6. In case of use of studs for fixing the gearbox to the valve, it is recommended to screw them into the bottom flange of the gearbox before mounting the gearbox on top of the valve.
7. Coat the valve stem and outer surface of the bushing (2) and actuator bore with a suitable grease to aid fitting. The plate (21) should be installed, when the bushing (2) is used, between the valve flange mounting face. This plate locks up the insert.
8. Mount the gearbox perpendicular to the valve (see Figure 2).
9. Fix the gearbox to the valve with nut. In case of use of bolts, for the maximum screwdepth, see Table 2. For tightening, refer to standard VDI 2230.

Table 2 Max. screw depths

Mounting	F05	F07	F10	F14	F16
Max. screw depth (mm)	8	11	13	18	18

10. The assembly is now ready for adjustment (see Chapter 2.2).

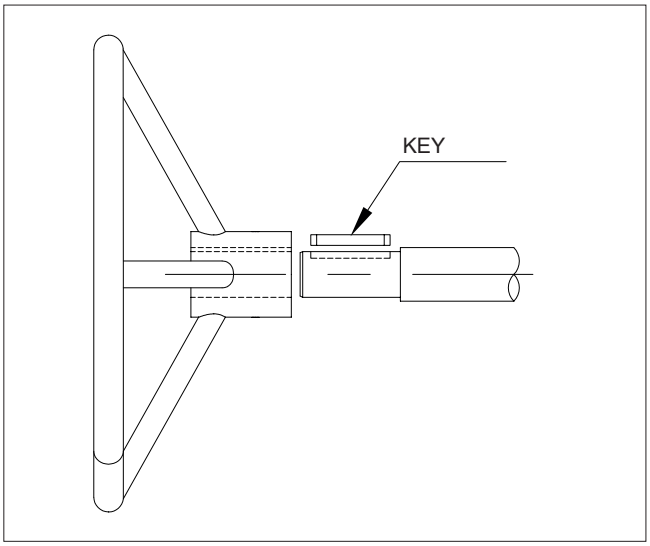


Fig. 1 Mounting handwheel

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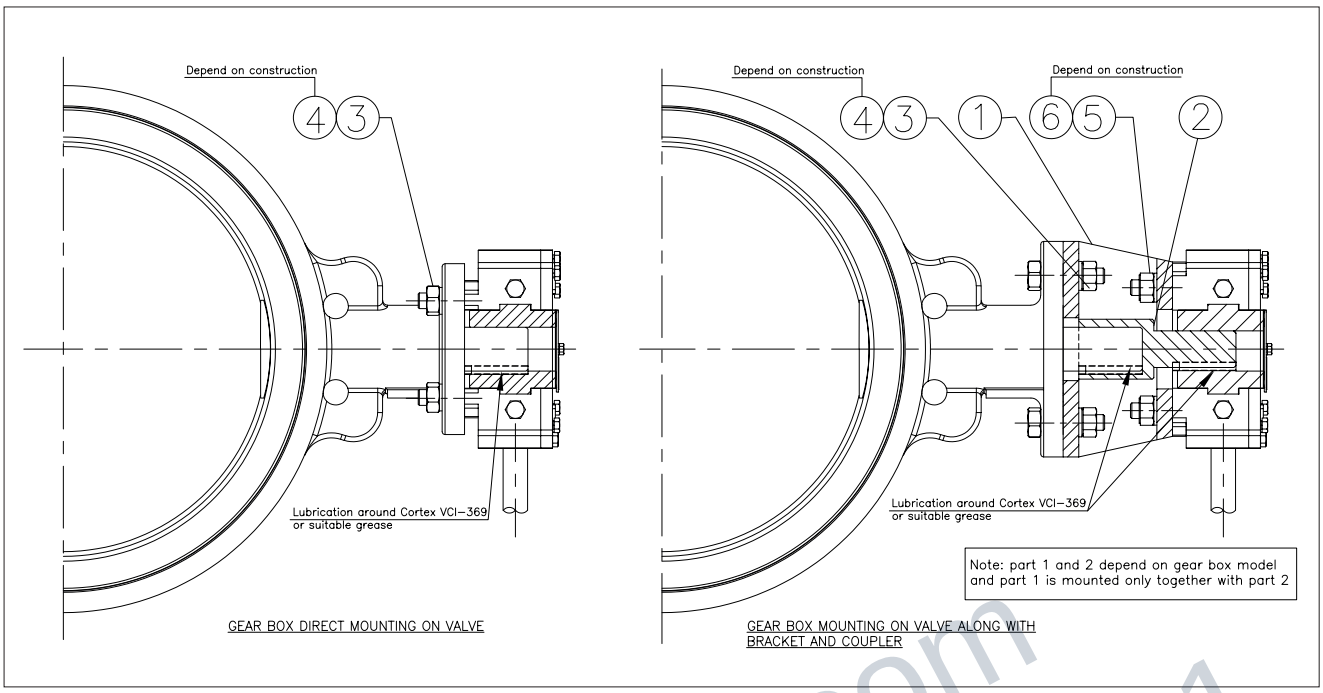


Fig. 2 Gearbox perpendicular to the valve

2.2 Adjustment of the setscrews

The gearbox is mounted on top of valve (see installation).

1. Close the valve totally, by turning the handwheel clockwise
2. The valve position is indicated by the arrow on the position indicator
3. When the fully closed position cannot be achieved, loosen the setscrew-close (see Figure 3) by turning them counterclockwise. Continue turning the handwheel until the valve is totally closed. Please note, that the butterfly valves need to be closed using a given torque, see the tables in a relevant valve manual.
4. Screw the setscrew back into the gearbox (by turning clockwise) until blocked. Secure the setscrew– close with the nut.
5. Open the valve by turning the handwheel counterclockwise
6. When it cannot be achieved to open the valve totally (90°), loosen the setscrew-open (see Figure 3) by turning it counterclockwise. Continue turning the handwheel until the valve is totally opened.
7. Screw the set-screw back into the gearbox (by turning clockwise) until blocked. Secure the setscrew– open with the nut.
8. Close the valve with the handwheel
9. Adjustment completed

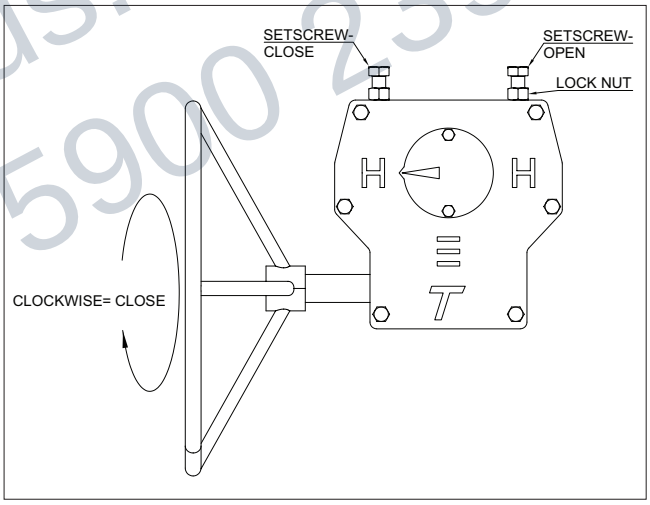


Fig. 3 Gearbox setscrew adjustment

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3. OPERATING INSTRUCTIONS

The series MEG gears are manually operated quarter turn gearboxes made of cast iron.

The maximum allowable input and output torques are mentioned in Chapter 1.2.

1. The gearbox is manually operated by handwheel
2. For opening the valve, the handwheel is turned counterclockwise. Closing is clockwise.
3. Stop turning when the required valve position is achieved. The number of turns needed from totally open to totally close the valve is in Table 3.
4. The valve position is indicated by the position indicator on top of the gearbox
5. When the valve cannot be totally opened (or closed), first detect and solve the cause of malfunction
6. In case of malfunction of the gearbox, this one must be replaced (see chapter installation for dismounting). Return the gearbox to your supplier for repair.
7. When you do the repair in house, all replacement parts must be obtained from the manufacturer to assure proper operation of the gearbox.
8. The gearbox is self-locking. Therefore, no fixation needs to be installed to retain the valve position.
9. When the fault is repaired, turn the handwheel until blocked
10. The system is ready for use

Table 3 No. of turns for totally open/closed

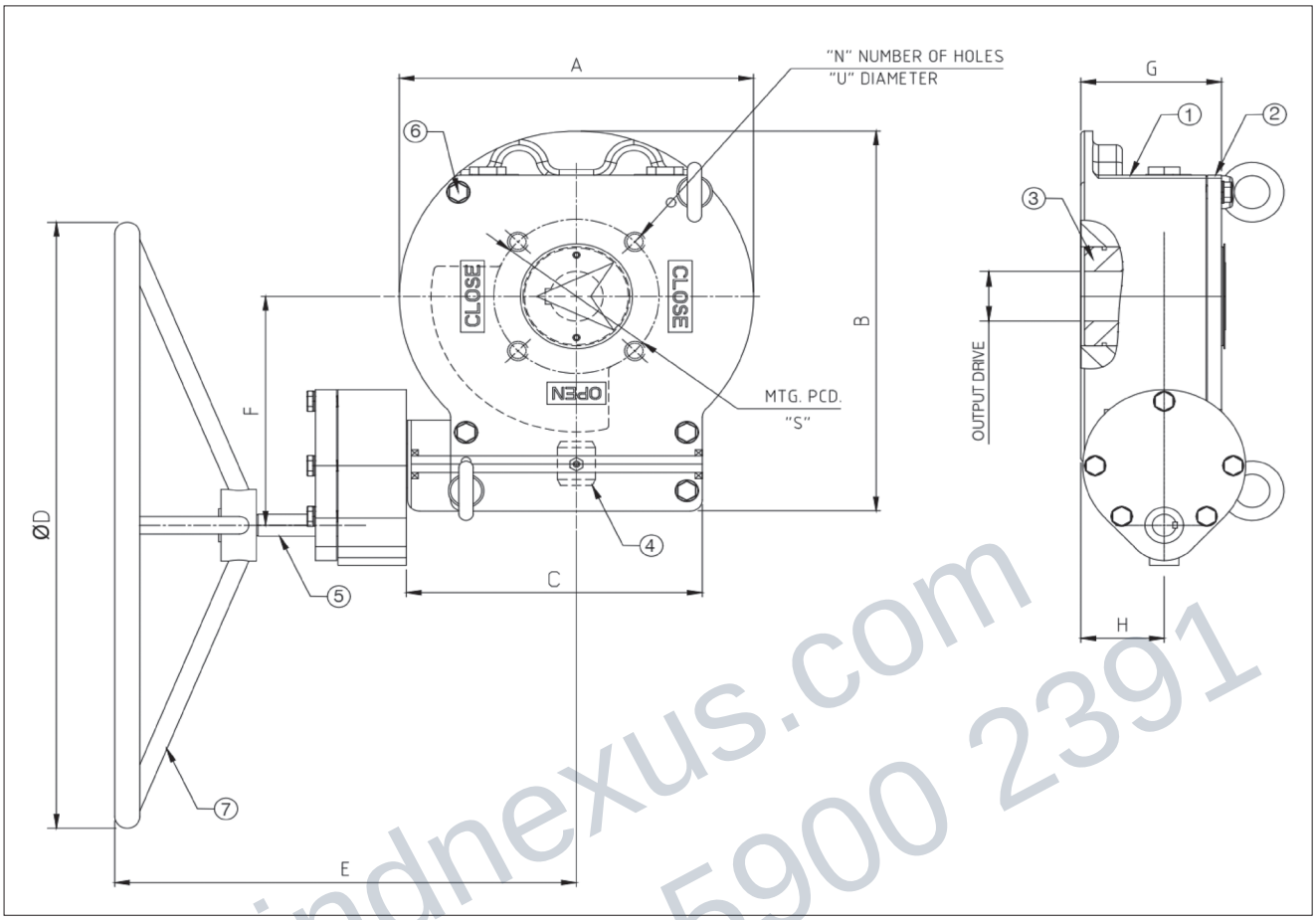
Model	Truns to close
25014	11
25017	11
50017	10
50022	10
75022	12
1000	12
1500	16
4000	22
5500	55
8500	72

4. MAINTENANCE

Under normal conditions, the gearbox is maintenance free. The series MEG gearboxes can be used at ambient temperatures from -20 to +85 °C. The standard gearbox reaches IP65 (weatherproof). Cleaning can be done with a water hose, not pressurised waterjet.

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5. ASSEMBLY DRAWING AND PARTS LIST



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Sr. No.	Quantity	Description	Material	Freezed MOC
1	1	Housing	Cast Iron	FG 220
2	1	Cover	Cast Iron	FG 220
3	1	Worm Wheel	Ductile Iron	SG 500/7
4	1	Worm	Steel	EN8
5	1	Shaft	Steel	SS 410
6		Fastners	Steel	SS 304
7	1	Hand wheel	Mild Steel	Fabricated

6. DIMENSIONS

GEAR MODEL	OUTPUT DRIVE SIZE (FEMALE)	MOUNTING FLANGE ISO 5211	Dimensions 'mm'								S	N	U
			A	B	C	ØD	E	F	G	H			
25014	14 mm square	F05	90	100	90	200	216	43.6	53.5	27.5	50	4	M6
25017	17 mm square	F07	90	100	90	200	216	43.6	53.5	27.5	70	4	M8
50017	17 mm square	F07	110	121	110	300	228	55	60	33	70	4	M8
50022	22 mm square	F10	110	121	110	300	228	55	60	33	102	4	M10
75022	22 mm square	F10	116	149	104	400	261.5	62	64	36	102	4	M10
1000	45 mm diameter	F14	160	166	122	450	333.5	69.75	80	48	140	4	M16
1500	45 mm diameter	F14	191	211	139	500	294	95	88.5	55	140	4	M16
4000	45 mm diameter	F14	300	332	213	700	370	153.75	119	71	140	4	M16
5500	45 mm diameter	F14	300	345	250	550	390	207.71	119	70.5	140	4	M16
8500	70 mm diameter	F16	345	392	257	600	385.5	231.47	147	89.5	165	4	M20

7. TYPE CODE

1.	2.	3.	4.	5.	6.	7.
MEG						

1.	Product series
MEG	Series MEG, manual gear operator for rotary valves with mounting base dimensions as per ISO 5211 (Neles Easyflow)

2-	Output torque	Drive size	ISO 5211 base	Handwheel diameter
25014	250 N.m	14 mm square (female)	F05	200 mm
25017	250 N.m	17 mm square (female)	F07	200 mm
50017	500 N.m	17 mm square (female)	F07	300 mm
50022	500 N.m	22 mm square (female)	F10	300 mm
75022	750 N.m	22 mm square (female)	F10	400 mm
1000	1000 N.m	45 mm diameter (female)	F14	450 mm
1500	1500 N.m	45 mm diameter (female)	F14	500 mm
4000	4000 N.m	45 mm diameter (female)	F14	700 mm
5500	5500 N.m	45 mm diameter (female)	F14	550 mm
8500	8500 N.m	70 mm diameter (female)	F16	600 mm

3.sign	Operation
-	Blank, Handwheel without padlock flange
PF*	Handwheel with padlock flange
C*	Chainwheel without padlock flange
CPF*	Chainwheel with padlock flange
*) Non-standard options	

4.	Temperature rating
-	Blank, Standard Temperature: -20°C to +85°C

5.	Enclosure rating
-	Blank, Standard rating – IP 65

6.	Options
-	Blank, standard option
Y	Special construction, to be specified everytime. e.g. special painting, powder coating, etc.

7.	Model code*
B	Model-B for all size.

* Model code not required when ordering

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NOTE:

As the use of the manual gear is application specific, a number of factors should be taken into account when selecting a manual gear for a given application. Therefore, some of the applications in which the manual gears are used are outside the scope of this document. If you have any questions concerning the use, application or compatibility of the manual gears with the intended service, contact nearest Valmet sales office for more information.

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