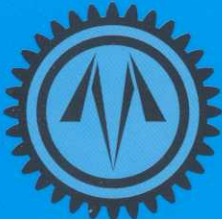
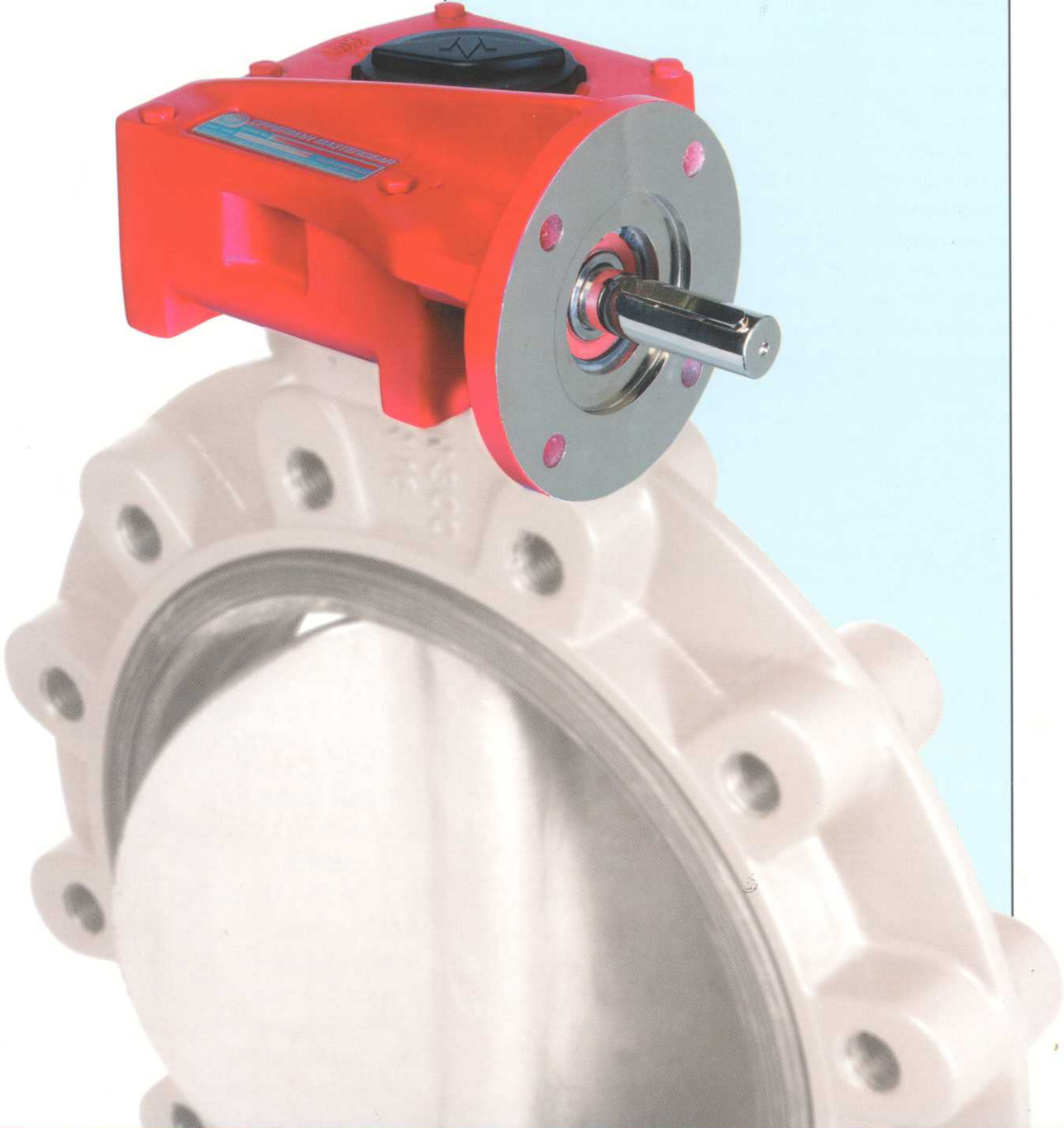


# MF SERIES VALVE ACTUATORS

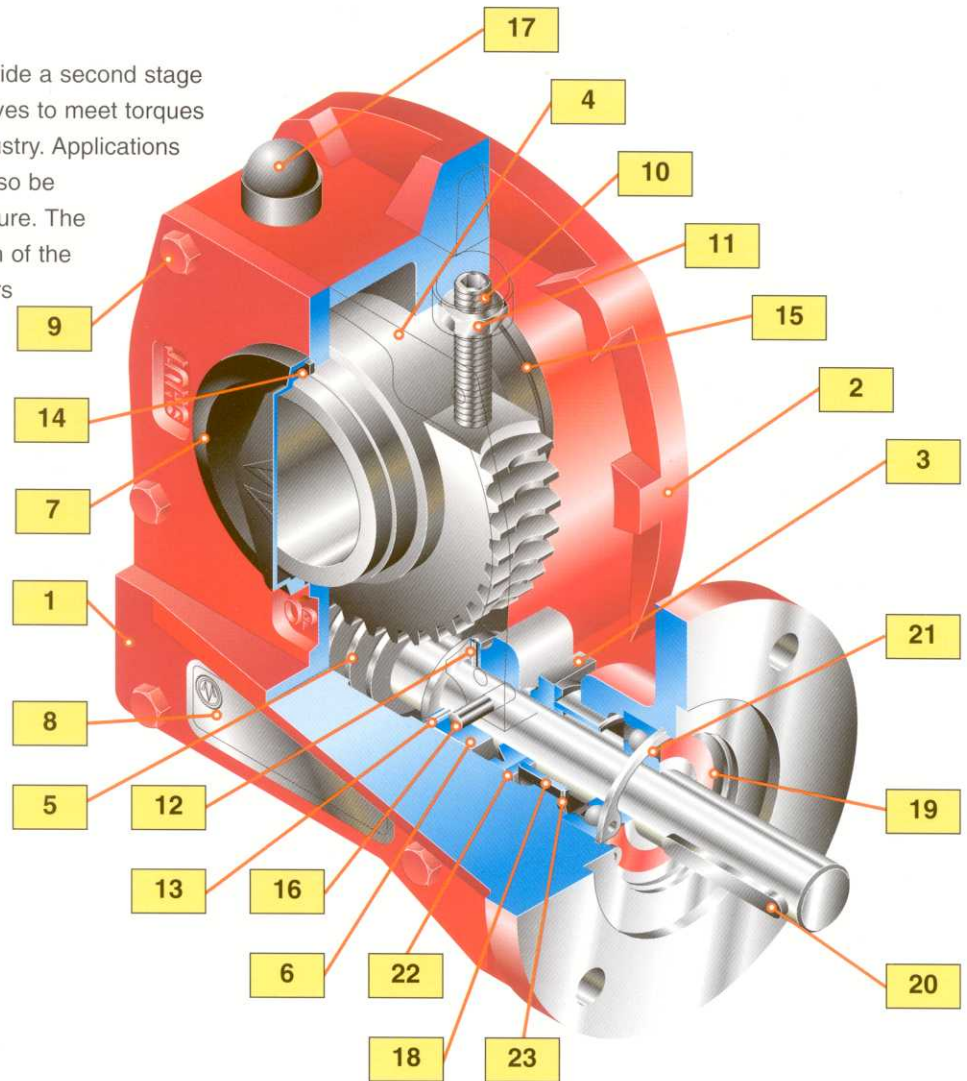


**OPPERMAN MASTERGEAR Ltd**

# MF SERIES VALVE ACTUATORS

## General description

The MF series of 1/4 turn actuators provide a second stage gear reduction for multi turn actuator drives to meet torques and operating times required by the industry. Applications for buried service or remote drive can also be satisfied by utilizing the input flange feature. The cast iron construction and rugged design of the Mastergear "MF" range of valve actuators has been engineered to meet the arduous requirements demanded of industrial environments. Through corrosion resistant treatment of bare metal surfaces and the use of lip seals, the "MF" range is sealed to IP67. All models use high performance axial needle bearings which, combined with a one piece wormshaft, maximises the available mechanical advantage and overall unit efficiency.

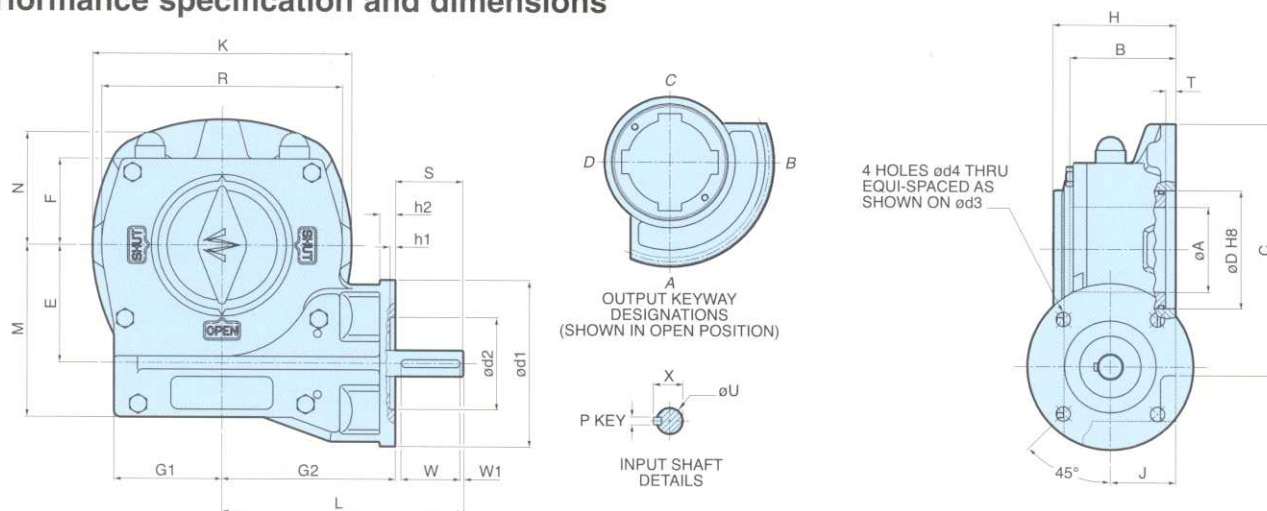


## Features & general specifications:

- Sealed to IP67
- Maintenance free
- Input flanges to ISO5210 & DIN3210 with keyed input shaft
- Available for buried service
- Optional output drive bushes
- Self locking
- High mechanical advantage
- Cast iron enclosure
- 90°±5° (adjustable) travel
- Up to 4500 Nm output torque
- 5 frame sizes
- 50% grease fill for life
- Capability to withstand an overload of twice the maximum torque rating
- -20°C to +80°C temperature range for continuous operation
- Unrivalled versatility for direct fixing to valves

Item	Component	Material description	Specification
1	Cover/input flange	S.G. cast iron	BS2789 grade 420/12
2	Gearcase	Grey cast iron	BS1452 grade 250
3	Wormshaft oilseal	Injection moulded plastic	HYTREL 5526
4	Quadrant	S.G. cast iron	BS2789 grade 500/7
5	Wormshaft	Nitempered steel	BS970 606M36
6	Wormshaft bearings	Sintered iron copper	FC025 40
7	Indicator cap	Injection moulded plastic	Acetal kemetal WR90
8	Nameplate	Self adhesive aluminium	Blue on bright background
9	Cover screws	Hex. head set screws	BS3692 grade 8.8
10	Stop screws	Socket set screws	BS4168 part 2
11	Locknuts	Hexagonal locknut	BS3692
12	Bearing thrust washers	Needle thrust washer	Type AS
13	Thrust bearings	Needle thrust bearing	Type AXK
14	Indicator O-ring	Medium nitrile	60-80 Shore hardness
15	Quadrant O-ring	Medium nitrile	60-80 Shore hardness
16	Dowels	Hardened & ground steel	BS7055 type A
17	Locknut protection cap	Injection moulded plastic	Low density polyethylene
18	Protection sleeve	Steel	BS970 220M07
19	Bearing	Deep groove ball bearing	Double seal type
20	Key	Key steel	BS4235
21	Circlip	Carbon steel	Type D1300
22	Sealing ring	Rubber	Neoprene
23	Protection sleeve retainer	Carbon steel	Type VH light duty

## Performance specification and dimensions



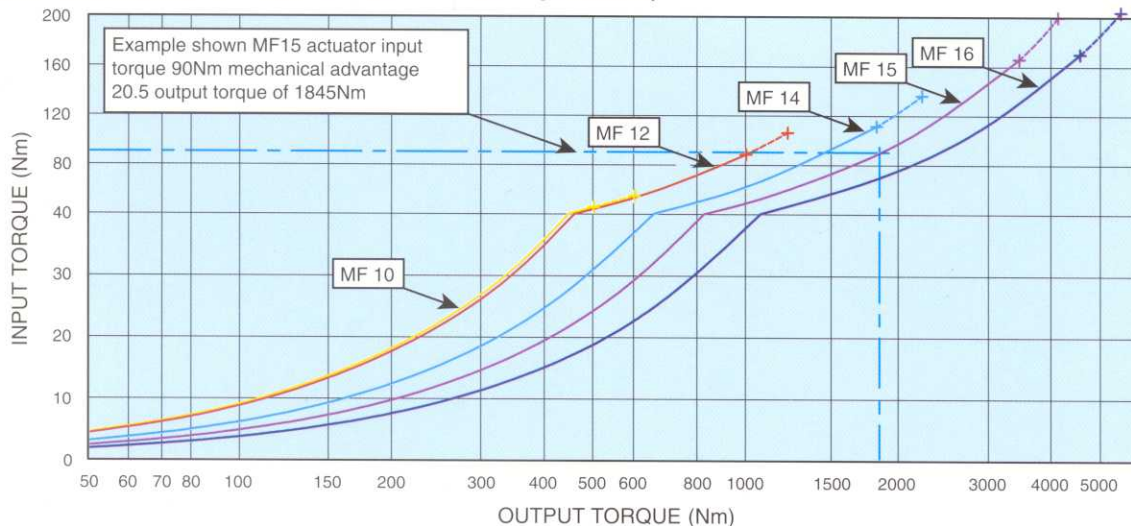
Unit size	MF10	MF12	MF14	MF15		MF16	
ISO 5210 and DIN Input Flange	F07	F10 or G0	F10 or G0	F10 or G0	F14 or G1/2	F10 or G0	F14 or G1/2
Max Output Torque (Nm)	500	1000	1800	3400		4500	
Mechanical Advantage	11.0	11.3	16.2	20.5		26.5	
Input Torque (Nm)	45.5	88.5	111	166		170	
Ratio	40:1	42:1	60:1	68:1		88:1	
Turns to Close	10	10.5	15	17		22	
ISO 5211 Valve Mounting	F05,F10	F10,F12,F14	F12,F14,F16	F14,F16,F20		F16,F20,F25	
A Max Valve Stem Diameter Without Drive Bush	32	45	65	86		92	
A Max Valve Stem Diameter With Drive Bush	25	32	45	70		75	
B Max Valve Stem Height	57	72	81	92		113	
C	112	150	192	235		290	
D	50	65	90	115		120	
E	52	66.7	89.5	123		154	
F	44	56	66	87.5		116	
G1	53	66	82.5	111		125	
G2	100	115.5	132.5	197.5	180	222.5	205
H	67	82	94	106		127	
J	35	42	50	50		50	
K	116	150	198	252		315	
L	135	168	185	250		275	
M	83.5	105	131	178		209	
N	58	75	86	114		117	
P	5x5	6x6	6x6	6x6	8x7	6x6	8x7
R	107	136	184	248		312.5	
S	35	52.5	52.5	52.5	70	52.5	70
T Without Drive Bush	4.5	7.5	7.5	9.5		9.5	
T With Drive Bush	0	0	0	0		0	
U	15.98 15.94	19.98 19.94	19.98 19.94	19.98 19.94	29.98 29.94	19.98 19.94	29.98 29.94
W	32	45	45	45	63	45	63
W1	3	3	3	3	3	3	3
X	18.00 17.90	22.50 22.40	22.50 22.40	22.50 22.40	33.00 32.80	22.50 22.40	33.00 32.80
h1	4	4	4	4	5	4	5
h2	9	12	12	12	15	12	15
d1	90	127	127	127	175	127	175
d2	55.046 55.000	see note (1)	see note (1)	see note (1)	100.054 100.000	see note (1)	100.054 100.000
d3	70	102	102	102	140	102	140
d4	9	11	11	11	18	11	18
Unit Weight (Kg)	6.5	12	17	30.5	33.5	45	48.5

(1) For F10 input d2 = 70.000.70.046 for G0 input d2 = 60.000/60.046

# MF SERIES VALVE ACTUATORS

## Actuator selection data

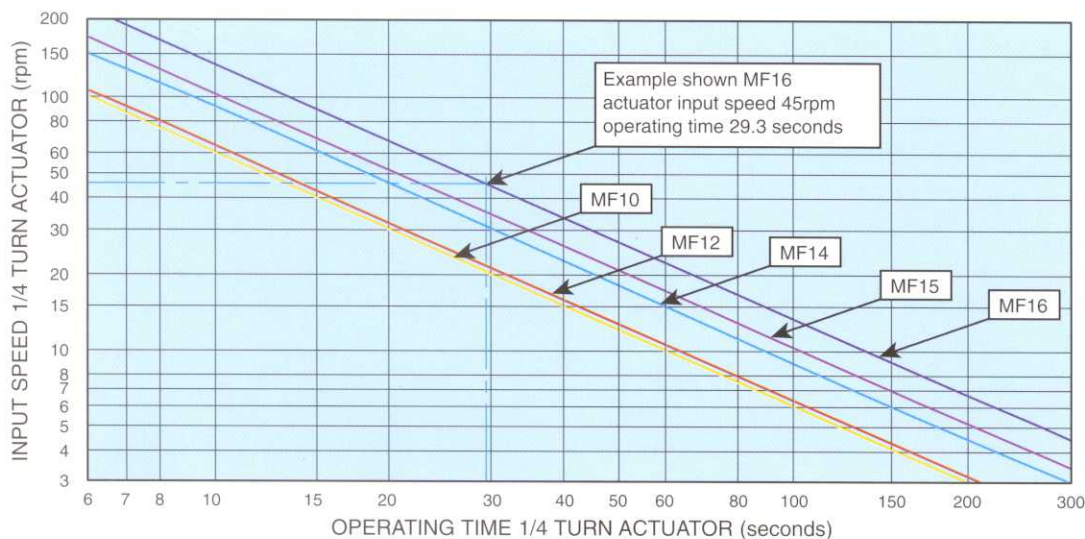
### Input torque/Output torque (Based on 5000 cycles life)



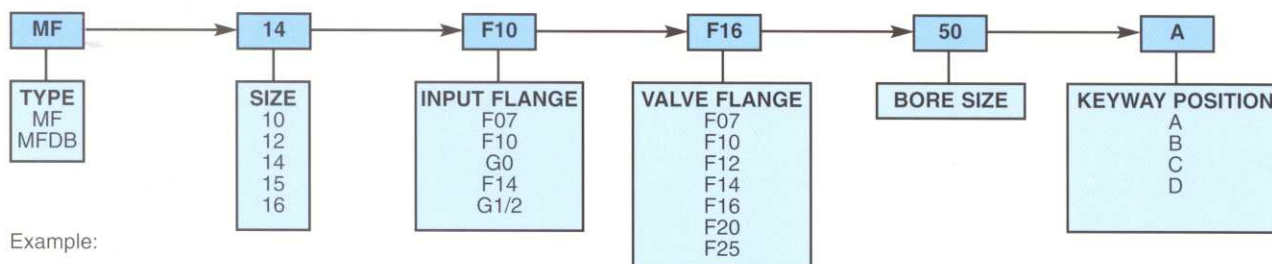
Notes:

- 1) For 1000 life cycles maximum allowable torques are shown (+-----+).
- 2) Input overload or stall torque must not exceed 200% of 1).

### Input speed/operating time



### Actuator designation



Example:

- MF14-F10-F16-80-AC size 14 actuator, F10 input flange, F16 valve mounting flange, eighty mm bore and keyways positions A and C.
- MFDB10-F07-F10-20-B size 10 actuator, drive bush, F07 input flange, F10 valve mounting flange, twenty mm bore and keyway position B.



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