

MANUAL GEAR ACTUATORS

Type M Series gear actuators are recommended for use on Jamesbury® ball and butterfly valves. For the sake of convenience, and where lever-handles present space problems, gear actuators are the ideal choice.

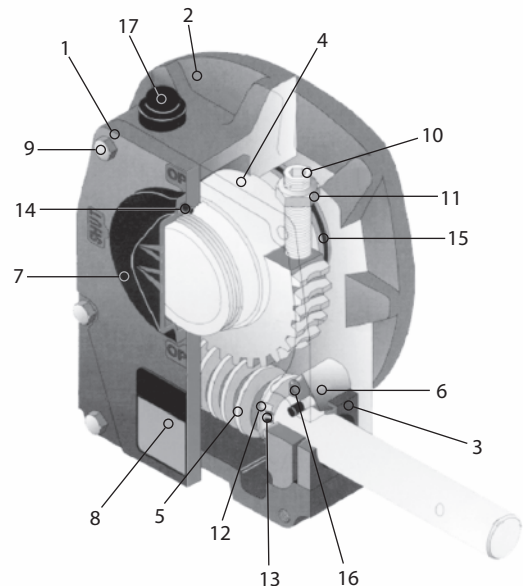
Type M Series actuators are fully enclosed and weather-proof. They are factory lubricated for their lifetime, and each unit includes a pointer to indicate valve position.

Standard M units are temperature rated from -40°F to +176°F (-40°C to +80°C). Units with lower or higher temperature ratings are available on application (See How To Order section).

Type M Series actuators are available factory-mounted on valves or separately for field installation.

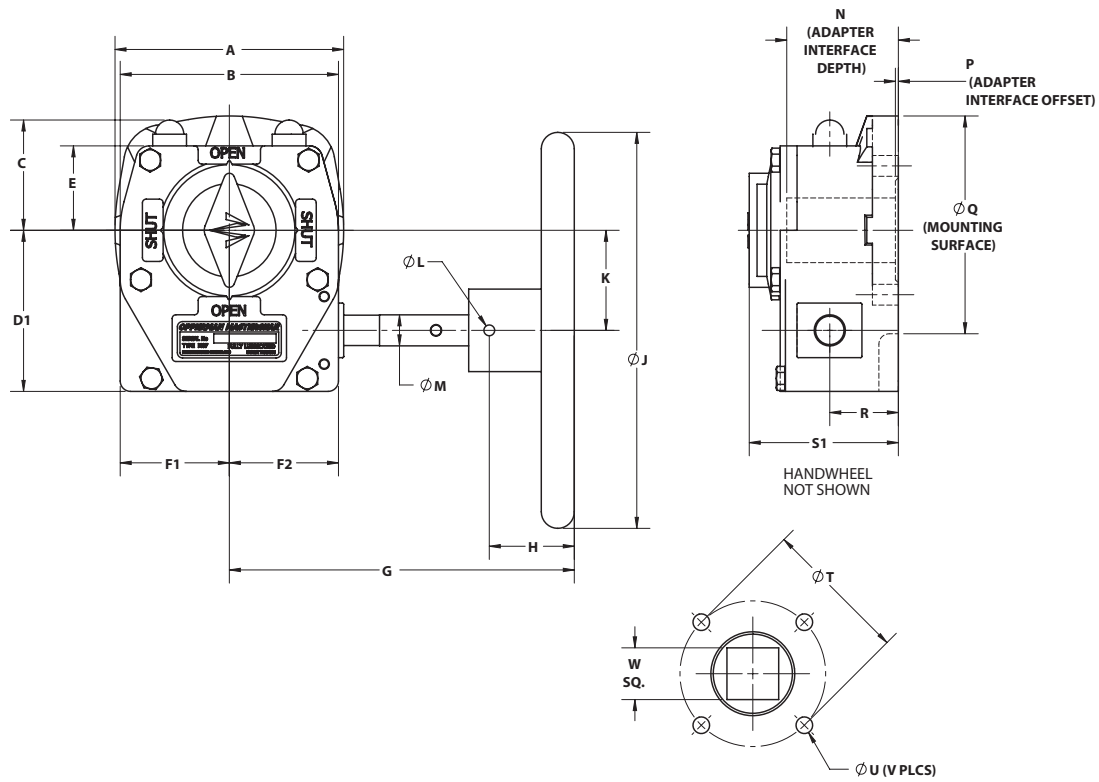


Item	Components	Material Description	Material Specification
1.	Cover	Gray iron	BS1452 grade 260
2.	Gearcase	Gray iron	BS1452 grade 260
3.	Wormshaft oilseal	Injection molded plastic	Hytrel 5526
4.	Quadrant	Ductile iron	BS2789 grade 500/7
5.	Wormshaft	Nitempered steel	BS970 606M36
6.	Wormshaft bearings	Sintered iron copper	FC02540
7.	Indicator cap	Injection molded plastic/Gray iron	Acetal Kematal WR90/BS1452 grade 260
8.	Nameplate	Self-adhesive aluminum	Black on bright background
9.	Cover screws	Hex head set screws	BS3692 grade 8.8
10.	Stop screws	Socket set screws	BS4168 part 2
11.	Locknut	Hex 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 caps	Injection molded plastic	Low density polyethylene



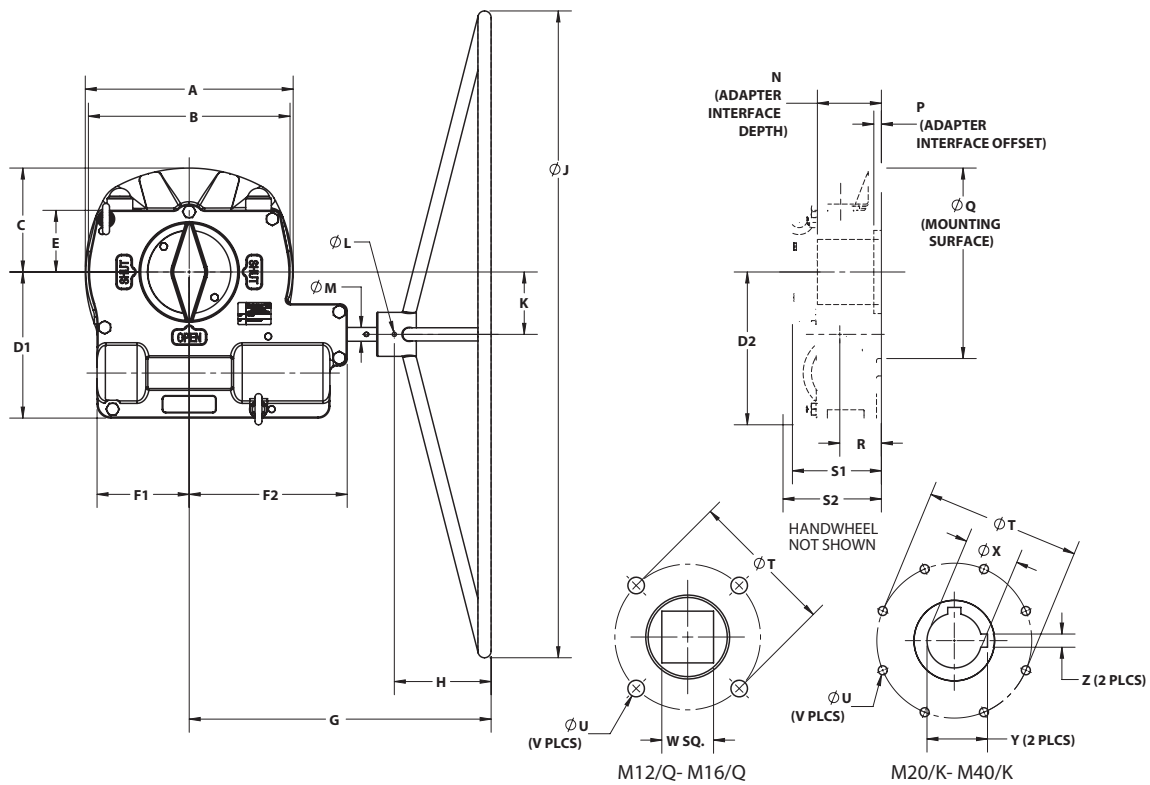
DIMENSIONS

M5/Q, M7/Q, M10/Q MODELS



MOUNTING INTERFACE

M12/Q-M16/Q AND M20/K85, M30/K105, M40/K135 MODELS



MOUNTING INTERFACE

DIMENSIONS

Actuator	Dimensions – Inches																										
	A	B	C	D1	D2	E	F1	F2	G	H	J	K	L	M	N	P	Q	R	S1	S2	T	U	V	W	X	Y	Z
M5/Q	3.46	3.31	1.77	2.44	N/A	1.30	1.65	1.65	5.23	1.29	6	1.54	0.16	0.47	2.01	N/A	3.46	1.06	2.28	N/A	1.97	0.24	4	0.55	N/A	N/A	N/A
M7/Q	3.46	3.31	1.77	2.44	N/A	1.30	1.65	1.65	5.23	1.29	6	1.54	0.16	0.47	2.01	N/A	3.46	1.06	2.28	N/A	2.76	0.31	4	0.75	N/A	N/A	N/A
M10/Q	4.57	4.21	2.28	3.31	N/A	1.73	2.09	2.09	7.77	3.44	12	2.05	0.20	0.59	2.24	0.20	4.41	1.38	2.64	N/A	4.02	0.39	4	0.87	N/A	N/A	N/A
M12/Q	5.91	5.35	2.95	4.13	N/A	2.20	2.60	2.60	10.30	4.94	18	2.64	0.24	0.79	2.83	0.31	5.91	1.65	3.19	N/A	5.51	0.63	4	1.42	N/A	N/A	N/A
M14/Q	7.80	7.24	3.39	5.16	N/A	2.60	3.27	3.27	12.21	6.19	24	3.54	0.24	0.79	3.19	0.31	7.56	1.97	3.66	N/A	6.50	0.79	4	1.81	N/A	N/A	N/A
M15/Q	9.92	9.76	4.49	7.01	N/A	3.19	4.37	4.37	15.76	7.69	30	4.84	0.31	1.18	3.62	0.35	9.25	1.97	4.17	N/A	6.50	0.79	4	1.81	N/A	N/A	N/A
M16/Q	12.40	12.32	4.61	8.23	N/A	3.31	4.92	4.92	17.75	8.69	36	6.06	0.31	1.18	4.45	0.35	11.42	1.97	5.00	N/A	10.00	0.63	8	2.17	N/A	N/A	N/A
M20/K85	11.81	11.46	5.91	8.31	8.70	3.50	5.24	8.98	20.34	8.69	30	3.54	0.24	0.79	4.57	0.16	11.81	2.36	N/A	5.59	10.00	0.63	8	N/A	3.35	3.74	0.88
M30/K105	14.57	N/A	7.28	10.47	10.51	3.94	6.30	10.35	21.70	8.69	30	4.25	0.24	0.79	5.67	0.16	14.57	3.35	N/A	6.69	11.73	0.79	8	N/A	4.13	4.57	1.00
M40/K135	19.13	N/A	9.02	12.95	N/A	4.72	8.35	14.49	25.78	8.69	30	2.76	0.24	0.79	7.99	0.20	18.03	4.25	8.82	N/A	14.02	1.18	8	N/A	5.31	5.87	1.25

Actuator	Dimensions – mm																										
	A	B	C	D1	D2	E	F1	F2	G	H	J	K	L	M	N	P	Q	R	S1	S2	T	U	V	W	X	Y	Z
M5/Q	88	84	45	62	N/A	33	42	42	133	33	152	39	4	12	51	N/A	88	27	58	N/A	50	M6	4	14	N/A	N/A	N/A
M7/Q	88	84	45	62	N/A	33	42	42	133	33	152	39	4	12	51	N/A	88	27	58	N/A	70	M8	4	19	N/A	N/A	N/A
M10/Q	116	107	58	84	N/A	44	53	53	197	87	305	52	5	15	57	5	112	35	67	N/A	102	M10	4	22	N/A	N/A	N/A
M12/Q	150	136	75	105	N/A	56	66	66	262	125	457	67	6	20	72	8	150	42	81	N/A	140	M16	4	36	N/A	N/A	N/A
M14/Q	198	184	86	131	N/A	66	83	83	310	157	610	90	6	20	81	8	192	50	93	N/A	165	M20	4	46	N/A	N/A	N/A
M15/Q	252	248	114	178	N/A	81	111	111	400	195	762	123	8	30	92	9	235	50	106	N/A	165	M20	4	46	N/A	N/A	N/A
M16/Q	315	313	117	209	N/A	84	125	125	451	221	914	154	8	30	113	9	290	50	127	N/A	254	M16	8	55	N/A	N/A	N/A
M20/K85	300	291	150	211	221	89	133	228	517	221	762	90	6	20	116	4	300	60	N/A	142	254	M16	8	N/A	85	95	22
M30/K105	370	N/A	185	266	267	100	160	263	551	221	762	108	6	20	144	4	370	85	N/A	170	298	M20	8	N/A	105	116	25
M40/K135	486	N/A	229	329	N/A	120	212	368	655	221	762	70	6	20	203	5	458	108	224	N/A	356	M30	8	N/A	135	149	32

ACTUATOR SELECTION TABLE

Actuator	Approx. Weight (lbs)	Handwheel (inches)	Turns to Open	Operating Values- per API 608 & 609			Operating Values- MAX		
				Rim Pull (lbs)	Max. Input Torque (ft*lbs)	Max. Output Torque (ft*lbs)	Rim Pull (lbs)	Max. Input Torque (ft*lbs)	Max. Output Torque (ft*lbs)
M5/Q	8	6	10	40	10	92	40	10	92
M7/Q	8	6	10	68	17	184	68	17	184
M10/Q	12	12	10	68	34	369	68	34	369
M12/Q	25	18	11	76	57	644	76	57	644
M14/Q	41	24	15	80	80	1296	93	93	1500
M15/Q	71	30	17	80	100	2050	100	125	2563
M16/Q	103	36	22	80	120	3180	101	151	4000
M20/K85	110	30	46	80	100	5700	83	104	5925
M30/K105	197	30	77	78	97	9625	78	97	9625
M40/K135	412	30	154	75	94	17770	75	94	17770

Actuator	Approx. Weight (kg)	Handwheel (mm)	Turns to Open	Operating Values- per API 608 & 609			Operating Values- MAX		
				Rim Pull (N)	Max. Input Torque (N*m)	Max. Output Torque (N*m)	Rim Pull (N)	Max. Input Torque (N*m)	Max. Output Torque (N*m)
M5/Q	3.6	152	10	178	14	125	178	14	125
M7/Q	3.6	152	10	302	23	250	302	23	250
M10/Q	5.4	305	10	302	46	500	302	46	500
M12/Q	11.3	457	11	338	77	873	338	77	873
M14/Q	18.6	610	15	356	108	1757	414	126	2034
M15/Q	32.1	762	17	356	136	2780	445	170	3475
M16/Q	46.6	914	22	356	163	4312	448	205	5424
M20/K85	49.8	762	46	356	136	7729	370	141	8034
M30/K105	89.1	762	77	345	132	13052	345	132	13052
M40/K135	186.4	762	154	334	127	24096	334	127	24096

ACTUATOR SELECTION

To select the proper actuator for a particular valve and service, first determine the maximum operating torque that will be required for the valve from the valve torque chart in the appropriate valve bulletin, taking into consideration valve size, seat material,

maximum pressure differential, and service. Then refer to the tables on page 4 and select the actuator that will provide a torque output no less than the required operating torque for the valve.

HOW TO ORDER

To order a manual gear actuator, simply specify the appropriate model from the Actuator Selection Table on Page 4.

To specify a complete manual gear actuator simply make a selection from the code boxes below.

EXAMPLE: An M12/Q (644 FT•LBS [874 N•m] output) actuator with padlock flange.

1	2
M12/Q	PF

M-SERIES

1	Actuator Series
	Size and Configuration
M5/Q	F05/14 mm (.55") Female Square
M7/Q	F07/19 mm (.75") Female Square
M10/Q	F10/22 mm (.87") Female Square
M12/Q	F14/36 mm (1.42") Female Square
M14/Q	F16/46 mm (1.81") Female Square
M15/Q	F16/46 mm (1.81") Female Square
M16/Q	F25/55 mm (2.17") Female Square
M20/K85	F25/85 mm (3.35") Female Key
M30/K105	F30/105 mm (4.13") Female Key
M40/K135	F35/135 mm (5.31") Female Key

2	M Series Options
PF	Padlock flange on input
HT	High temperature +77°F to 392°F (+25°C to 200°C)
MA	Marinized / buried service

Subject to change without prior notice.

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