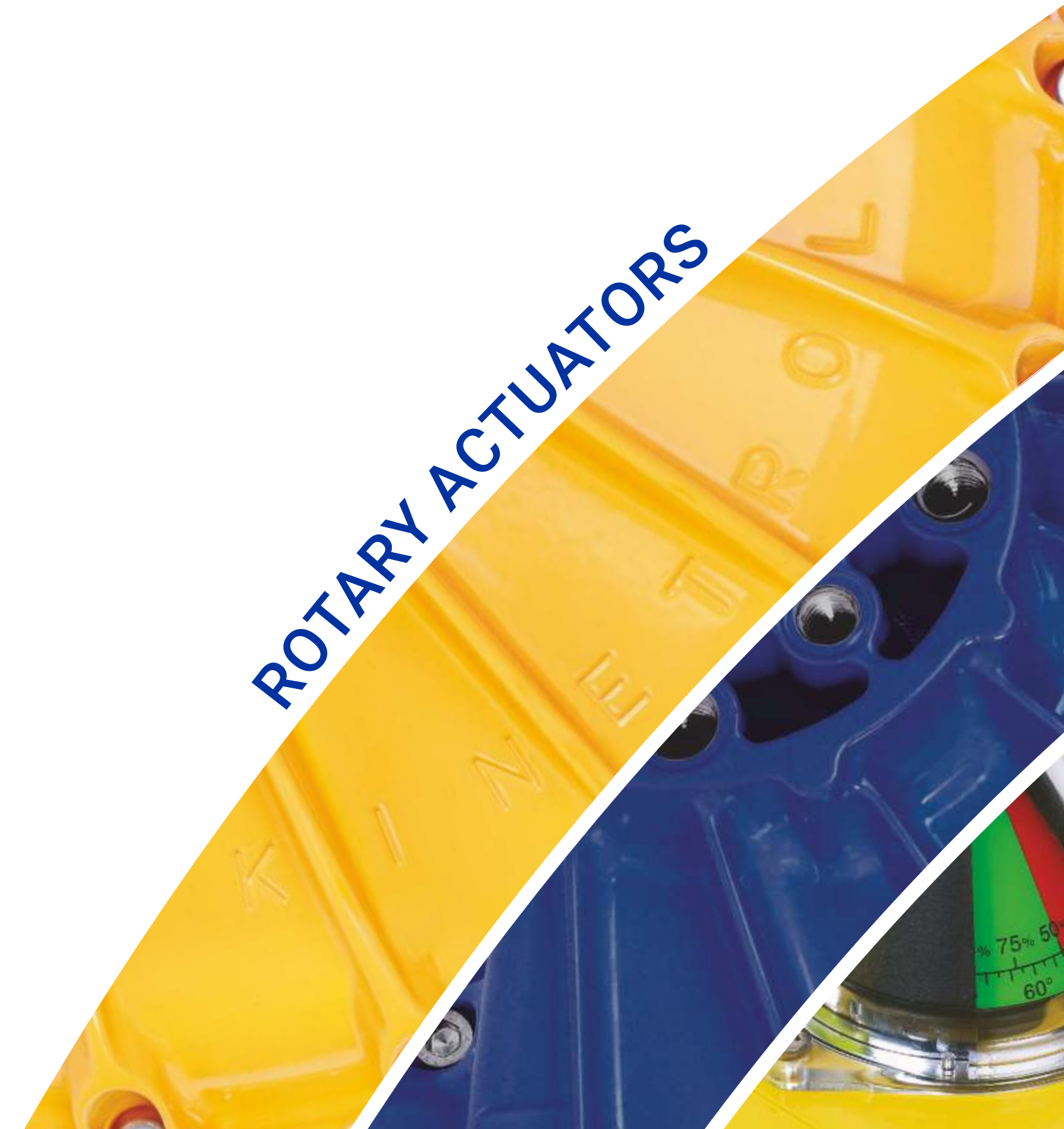


KINETROL®

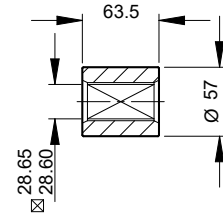
ROTARY ACTUATORS



Model 14



Standard Coupling
(supplied with actuator
weight 1.5 lbs/0.7 kg)



Specification

Output Torque

12000 lbf ins/1375 Nm
at 100 psi/7 bar

Angle of Travel (adjustable)

80° - 100°
(restricted travel
versions available)

Displaced Volume

201 in³/3294 cm³

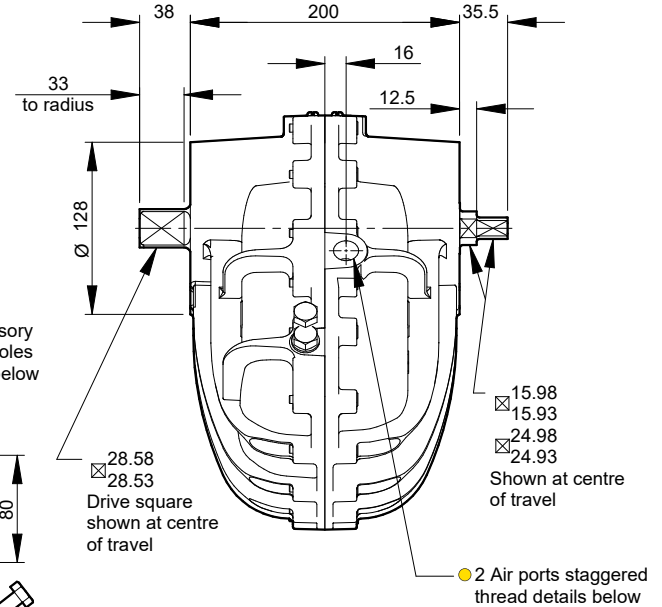
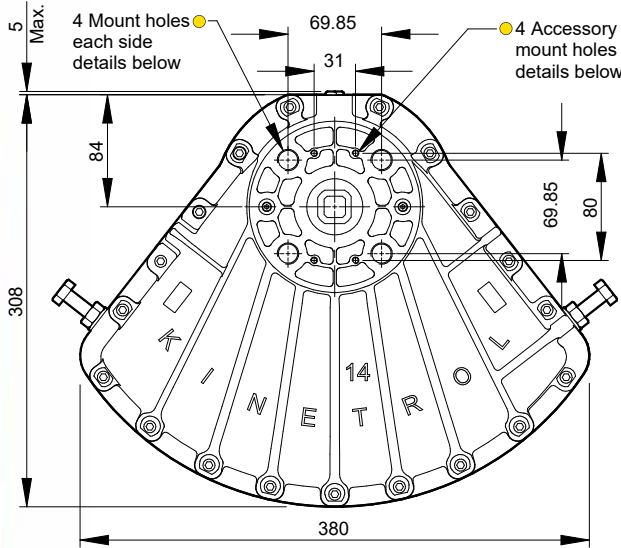
Finish

Epoxy stove enamel

Weight

29.5 lb/13.4 kg
(excluding coupling)

For further information
see General Specification
on page 5.



Air Port/Mount Hole Details

Model	Air Ports	Mount Holes & Accessory Mount Holes
144-100	G ¹ / ₂	4 x M16 x 28.5 deep on 98.8 PCD 4 x M5 x 10 deep
147-100	1/2 NPT	4 x 5/8 - 11 UNC x 1.12" deep on 3.89" PCD 4 x 10-24 x 3/8" deep

Visual Red Indicator supplied as standard - see page 3

Options

- Fail safe spring return units - clockwise or counter clockwise see pages 27-29
- Limit switch boxes for open/close indication - various switches for hazardous areas see pages 31-34
- Integral solenoid valve see page 38
- AP pneumatic positioner - full range of options see pages 41/42
- EL electropneumatic positioner - full range of options see pages 39/40
- P3 on/off positioner - full range of options including hazardous area see pages 43-45
- 180° model see pages 51/52
- Female drive and mounting details to DIN 3337 and ISO 5211 see pages 57/58
- Spring to centre see page 50
- Geared manual override see page 55
- Code identification see page 30
- Torque outputs see pages 6-8
- See pages 57-60 for English dimensions and dimensions of spring options
- Accessory mount plate for positioners, switch boxes and clear cone monitor. See TD149.
- High Temperature / Low temperature options see page 5
- VDI/VDE 3845 Namur accessory mounting option available - contact Kinetrol



The AP positioner can be directly mounted on standard Kinetrol models 05, 07, 08, 09, 10, 12, 14 and 15 actuators, both double acting and spring return, giving an assembly with no external plumbing, wiring or mechanical connections and the best in direct backlash free control. Mount kits are available for models 16, 18, 21, 30 and 60.

Alternatively, discrete versions mount on any actuator using VDI/VDE 3845 NAMUR drive, or Kinetrol male square with mounting brackets. Neat adaptations for linear cylinders are also available - consult Kinetrol for details.

Specification

Air Supply	instrument quality (dry, clean, oil free) 3.5 to 7 bar, (50 psi to 100 psi) standard. Consult Kinetrol for low pressure application
Signal	3-15psi (0.2-1.0 bar) standard. Consult Kinetrol for split range, 6-30 psi etc.
Control Response	0-90° linear output standard. Consult Kinetrol for other characteristic cam options
Sensitivity	better than 0.7% of span*
Hysteresis	better than 0.7% of span*
Deviation from linearity	less than 1% of span*
Flowrates @ 5.5 bar	AP: 3.3 scfm (93nl/min) MP: 10.0 scfm (283nl/min) HP: 27.0 scfm (764nl/min)
Operating Temperature Range	-20° to +80°C Standard -20° to +100°C High Temp -40° to +80°C Low Temp
Weight	2.8 kg/6.2 lb
Materials	<ul style="list-style-type: none"> case and cover - zinc alloy spool and liner - stainless steel diaphragm: <ul style="list-style-type: none"> - reinforced polyurethane (standard) - fluorocarbon rubber (high temp) - silicone rubber (low temp) feedback spring - steel
Dimensions	see page 62
Finish	epoxy stove enamel
Enclosure Rating	IP54
Output Torque	same as double acting or spring return actuator. When controlling fast movement of inertia loads consult Kinetrol

* These refer to the combination of Kinetrol actuator with AP positioner - not just the positioner performance

Maximum Vibration Tolerance 4G, 100Hz

I/P Converter Options see page 46

Travel Times

Maximum velocity (no load) at 80 psi / 5.5 bar

Model	05	07	08	09	10	12	14	15
Deg/Sec	180	90	53	45	33	25	10.6	6.0

*Externally piped from AP positioner to actuator

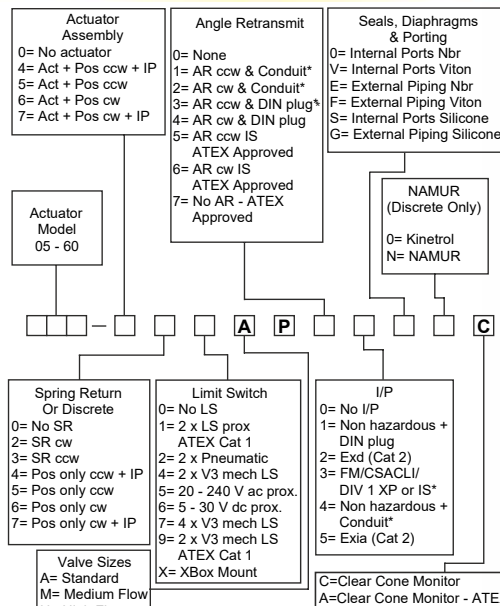
Model	12*	14*	15*	16*	18*	21*	30*	60*
Deg/Sec	32	13.8	7.5	22.5	11.3	5.9	3.8	1.9

Cam Options

Giving typical control characteristics. Contact Kinetrol for details of other options or see TD112.

Air Signal	Electrical Signal	Output Movement	Characteristic	Cam No.
3-15 psi 0.2-1.0 bar	4-20mA	0-90°	Linear	5-1A
3-9psi 0.2-0.6 bar	4-12mA	0-90°	Linear	5-2A
6-12 psi 0.4-0.8 bar	8-16mA	0-90°	Linear	5-3A
9-15psi 0.6-1.0 bar	12-20mA	0-90°	Linear	5-4A
3-15 psi 0.2-1.0 bar	4-20mA	0-60°	Linear	5-5A
3-15 psi 0.2-1.0 bar	4-20mA	0-45°	Linear	5-6A
3-15 psi 0.2-1.0 bar	4-20mA	0-90°	Proportional Flow	5-7A
3-9 psi 0.2-0.6 bar	4-12mA	0-90°	Proportional Flow	5-8A
9-15 psi 0.6-1.0 bar	12-20mA	0-90°	Proportional Flow	5-22A
3-12 psi 0.2-0.8 bar	4-16mA	0-90°	Linear	5-13A
9-15 psi 0.6-1.0 bar	12-20mA	0-60°	Linear	5-14A

Ordering Codes



*A' Valve is supplied with all sizes up to and inc' 09
*M' Valve is supplied with 10-15
*H' Valve is supplied with sizes 16-60

* Not available with ATEX approval

UNLESS SPECIFICALLY REQUESTED OTHERWISE Recommended spring unit for model 14 actuator is 4900 type. This should be coded 12□49AP or 13□49AP instead of the usual 12□AP or 13□AP. The same applies to other specially coded spring assemblies.

For more information see KF-391



Actuator Metric Units

Actuator Model	A mm	B mm	C mm	G1 mm	G2 mm	H mm	ØF mm	S1 mm	S2 mm	N No.	T ISO	D mm	R mm	PCD mm	P ISO	ØK mm	L mm	Wt kg †
0M0	32	31	12.5	SEE PAGE 57		36	22	10.0	10.0	4	M3	5.0	-	16.0**	M5	-	-	0.12
014	72	59	14.0	4.8	4.8	38	26	12.7*	7.0	4	M4	6.0	-	19.0**	G½	9.5	12.7	0.29
014P	74	60	14.0	4.8	4.8	38	26	12.7*	7.0	4	Ø4.2	UNIQUE MOUNTING CRS.		G½	9.5	12.7	0.35	
024	91	76	24.1	8.0	8.0	50	29	10.0	10.0	4	M4	8.0	18.0	25.5	G½	16.0	20.0	0.46
034	113	92	28.0	9.0	9.0	60	36	12.0	12.0	4	M5	10.0	22.0	31.1	G½	18.0	22.0	0.73
054	132	114	33.6	9.5	9.5	66	50	13.0	13.0	6	M5	10.0	-	34.9	G½	19.0	25.4	0.78
074	178	147	43.4	16.0	16.0	100	68	20.0	20.0	4	M8	16.0	36.0	50.9	G¾	32.0	40.0	1.97
084	208	167	46.3	17.0	16.0	110	65	19.0	20.0	4	M8	16.0	49.5	70.0	G¾	36.0	42.0	2.78
094	227	187	54.7	19.0	16.0	126	84	26.0	20.0	4	M10	20.0	46.0	65.0	G¾	38.0	50.0	4.16
124	294	239	68.0	25.0	16.0	156	100	31.0	35.5	4	M12	24.0	55.0	77.8	G¾	50.0	56.0	7.30
144	380	308	84.0	28.6	16.0	200	128	38.0	35.5	4	M16	28.5	69.9	98.8	G½	57.0	63.5	14.10
154	433	353	101.0	36.0	16.0	245	138	41.0	35.5	4	M16	28.5	99.0	140.0	G½	70.0	80.0	22.70
164	530	427	125.0	41.0	41.0	274	175	55.0	55.0	4	M24	38.0	108.0	152.7	G½	85.0	90.0	39.77
184	680	554	162.0	57.0	57.0	360	286	78.0	78.0	4	M30	50.0	160.0	226.3	G¾	115.0	130.0	94.00
214	842	660	189.0	73.0	73.0	410	298	100.0	100.0	8	M30	50.0	160.0	226.3	G1	150.0	170.0	192.40
304	680	554	162.0	73.0	73.0	880	286	100.0	100.0	8	M30	50.0	160.0	226.3	G1	150.0	170.0	288.40
604	1204	944	257.0	100.0	73.0	590	428	100.0	120.0	8	M30	80.0	-	356.0	G2	200.0	140.0	497.00

* INCLUDES PLAIN SHAFT Ø6.35 x 8 LONG

** HOLES ON CENTRE LINES

† All weights include coupling - except 103

Actuator English Units

Actuator Model	A inch	B inch	C inch	G1 inch	G2 inch	H inch	ØF inch	S1 inch	S2 inch	N No.	T UNC	D inch	R inch	PCD inch	P NPT	ØK inch	L inch	Wt lb †
0M0	1.26	1.22	0.49	SEE PAGE 57		1.42	0.87	0.39	0.39	4	M3	0.20	0.390	0.630	M5	-	-	0.26
017	2.83	2.32	0.55	0.187	0.19	1.50	1.02	0.50*	0.28	4	8-32	0.24	-	0.750	½	0.37	0.50	0.63
017P	2.91	2.36	0.55	0.187	0.19	1.50	1.02	0.50*	0.39	4	Ø0.17	UNIQUE MOUNTING CRS.		½	0.37	0.50	0.78	
027	3.58	3.00	0.95	0.315	0.32	1.97	1.14	0.39	0.47	4	8-32	0.31	0.709	1.000	½	0.63	0.79	1.01
037	3.62	3.60	1.10	0.354	0.35	2.36	1.42	0.47	0.51	4	10-24	0.39	0.866	1.225	½	0.71	0.87	1.61
057	5.20	4.49	1.32	0.375	0.37	2.64	2.60	0.51	0.51	6	10-24	0.39	-	1.375	½	0.75	1.00	1.72
077	7.00	5.79	1.71	0.630	0.63	3.94	2.68	0.79	0.79	4	¾-18	0.63	1.417	2.000	¼	1.26	1.57	4.34
087	6.57	5.79	1.82	0.669	0.63	4.33	2.56	0.75	0.79	4	¾-18	0.63	1.949	2.756	¼	1.42	1.65	6.10
097	8.94	7.36	2.16	0.748	0.63	4.96	3.31	1.02	0.79	4	¾-16	0.79	1.811	2.560	¼	1.50	1.97	9.15
107 #	9.00	7.40	2.20	0.866	0.63	6.89	5.43	0.94	0.79	4	¾-16	0.63	2.839	4.016	¼	-	-	11.90
127	11.57	9.41	2.68	0.984	0.63	6.14	3.94	1.22	1.40	4	½-13	0.94	2.165	3.060	¾	1.97	2.20	16.11
147	14.96	12.13	3.31	1.125	0.63	7.87	5.00	1.50	1.40	4	¾-11	1.12	2.750	3.890	½	2.24	2.50	31.10
157	17.05	13.90	3.98	1.417	0.63	9.65	6.70	1.61	1.40	4	¾-11	1.12	3.900	5.512	½	2.76	3.15	49.90
167	20.87	16.81	4.92	1.614	1.61	10.79	6.90	2.17	2.17	4	¾-9	1.50	4.250	6.010	½	3.35	3.54	87.49
187	26.77	21.81	6.38	2.244	2.24	14.17	11.26	3.07	3.07	4	1½-7	1.97	6.300	8.910	¾	4.53	5.12	207.23
217	33.15	25.99	7.45	2.874	2.87	16.14	11.73	3.94	3.94	8	1½-7	1.97	6.300	8.910	1	5.91	6.69	424.20
307	26.77	21.81	6.38	2.874	2.87	34.65	11.26	3.94	3.94	8	1½-7	1.97	6.300	8.910	1	5.91	6.69	634.50
607	47.40	37.17	10.12	3.937	2.87	23.23	16.85	4.72	3.94	8	1½-7	3.15	-	14.020	2	7.87	5.51	1095.70

FEMALE DRIVE

† All weights include coupling - except 107

ISO/DIN Options

Actuator Model	A mm	B mm	C mm	H mm	ØF mm	ISO/DIN flange no.	M* mm	V mm	ØU mm	PCD mm	N No.	W mm	Y(Min) mm	J mm	E † mm	P Port	G2 mm	S2 mm
023	91	76	24.1	66	29	F03	9	46	25	36	4	M5	8	2	10	G½	8.0	10.0
033	113	92	28.0	74	36	F03	9	46	25	36	4	M5	8	2	10	G½	9.0	12.0
053	132	114	33.6	81	66	F04	11	47	30	42	4	M5	8	2	12	G½	9.5	13.0
073	178	147	43.4	117	68	F05	14	64	35	50	4	M6	10	3	16	G¾	16.0	20.0
083	208	167	46.3	133	65	F07	17	70	55	70	4	M8	16	3	19	G¾	16.0	20.0
093	227	187	54.7	146	84	F07	17	85	55	70	4	M8	13	3	19	G¾	16.0	20.0
103	229	188	57.0	175	77	F10	22	-	-	102	4	M10	16	-	24	G¾	16.0	20.0
123	294	239	68.0	181	100	F10	22	125	70	102	4	M10	16	3	24	G¾	16.0	35.5
143	380	308	84.0	227	128	F12	27	150	85	125	4	M12	20	3	29	G½	16.0	35.5
153	433	353	101.0	290	138	F14	36	133	100	140	4	M16	38	4	45	G½	16.0	35.5
163	530	427	125.0	380	175	F16	46	203	130	165	4	M20	32	4	48	G½	41.0	55.0
183	680	554	162.0	501	286	F25	55	300	200	254	8	M16	24	4	57	G¾	57.0	78.0
213	842	660	189.0	594	410	F30	75	350	230	298	8	M20	30	4	77	G1	73.0	100.0

† Minimum

* Models 02, 03, 05, 07, 09, 12 and 14 are female star drive, all other models are female square drive

