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The P3 On/Off positioner consists of an electronic positioning circuit mounted in a robust all-metal enclosure, which controls a ¼-turn rotary pneumatic actuator via standard on-off solenoid valves which are direct-mounted on the actuator's own interface.

The P3 circuit is designed so that its assembly can be mounted inside a standard Kinetrol limit switch box (either ULS-type, or explosion proof XLS-type), using only two screws. The P3 assembly includes a feedback potentiometer and anti-backlash gear drive, which engages with gear teeth on the limit switch coupling, to read the actuator's position. The limit switch coupling, complete with gear teeth, needs to replace the standard coupling if a standard box is being retrofitted with a P3.

The positioner circuit is powered by the mid-point input voltage. It functions by comparing the actual mid-point position (read by the feedback potentiometer) with the set position (set via an on-board preset or a remote preset or a remote 4-20mA signal). The positioner circuit uses its solid-state switched outputs to power solenoid valves which drive the actuator towards the position where the set position corresponds with the actual position. When it gets there, the solenoids are switched to hold that position.

The positioner circuit incorporates a unique power supply allowing it to be powered by any of 24V dc, 115V ac or 230V ac, 50/60 Hz, without the need for any change. The supply maintains full isolation of the low voltage control circuit from the power input line (up to 5KV). Switching of the solenoid valve outputs is achieved through opto-isolated solid state switches which operate at all the above voltages – only the solenoid coils themselves need to be adapted specifically to the supply voltage. The use of solid state switching avoids any limitations on relay contact life.

Double acting models are available as fail-free (standard), fail-down (moves clockwise or counter clockwise on loss of electrical power if air supply is still present) and fail-hold (holds position on loss of electrical and / or air supply) variants. Spring return models move in the direction of the spring on loss of electrical or air supply.

An optional angle retransmit (AR) circuit can be retrofitted by plugging it into the top of the positioner circuit and fixing with three screws. The AR circuit is a 2-wire loop-powered 4-20mA device, which reads the position of the positioner's feedback pot. It is fully functional whether or not the positioner circuit is powered. The feedback signal is electronically isolated (ie. floating) relative to the low voltage positioner circuit (which in turn is electrically isolated from the power supply and solenoid connections).

Extra solid-state switches have been incorporated on the positioner board to allow supply to both solenoid valves via a single cable for movement to the upscale position when the positioner is in spring-return or fail-down mode, while still allowing the positioner to control the two valves independently for the mid position. If the mid-position input is energised, then these extra switches isolate the solenoids from the upscale/downscale inputs.

The three power input lines (for up, mid, down positions) are independently fused using plug-in miniature fuses on the positioner circuit board.

External connections are made via a multi-option connector board, which allows simultaneous connection of up to four changeover limit switches, three control supply inputs plus neutral/negative, and a single low-voltage signal. This connector board, like the positioner circuit assembly, mounts in either the standard ULS or XLS box using two screws.

If an angle retransmit circuit is fitted using the low voltage signal terminal, optional 4-20mA inputs or external setpoint pot wires can be connected, either directly to the terminal block on the positioner circuit or, if only three or less limit switches are in use, relayed through an unused limit switch terminal on the connector board.

The limit switch box is fitted with a ground terminal which must be connected to a suitable external ground.

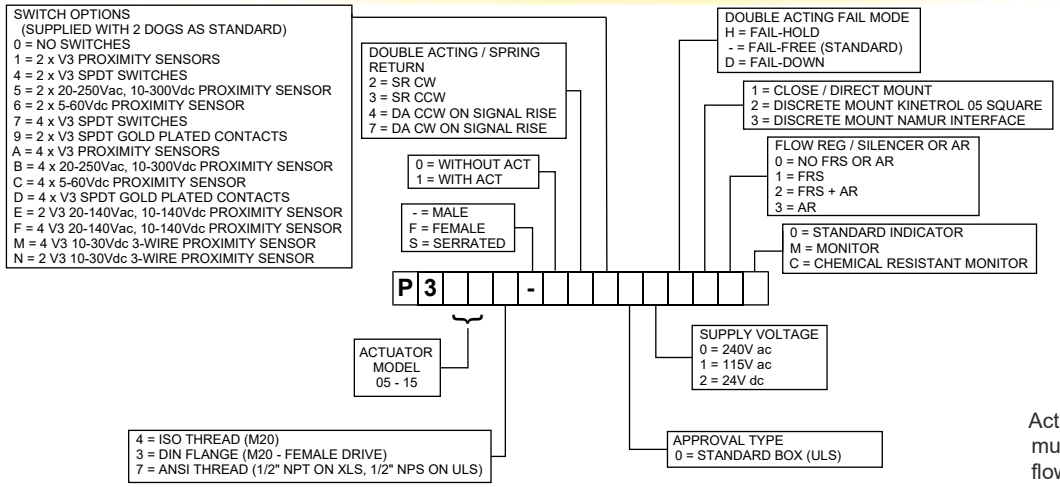
Industrial solenoid valves which permit the use of standard quality air supplies (instrument quality air is not necessary), are direct-mounted on adaptor blocks on the side of the actuator, and electrically connected via steel-armoured flying leads with DIN sockets on the solenoid end. At the positioner end, they connect to two 2-way terminal blocks on the circuit board. A range of solenoid valve options are available, determined by the function required, the supply voltage, and whether or not the unit requires hazardous area certification. Customer selection is via the order code.

- Robust modulating actuator control - tolerant of standard quality air supplies (instrument quality air is not necessary) via industrial solenoid valves.
- Three position rotary control using only three electrical inputs plus air supply, for filling applications etc.
- Two endstop positions + adjustable mid position anywhere in angular range of actuator (90 or 180°).
- Control circuit mounts inside standard all metal industrial quality Kinetrol ULS or XLS limit switch boxes – available fully assembled, or (on non-explosion proof models only) for user retrofit to existing boxes.
- Direct mounting onto model 05 to 15 actuators. Namur mounting options available.
- Uses direct-mounting standard solenoid valves outside box to position actuator.
- Easy adjustment of mid position set point by switch–selectable choice of methods: on-board pot, remote pot or 4-20mA input signal.
- Explosion proof options available (approved to IECEX, ATEX) by use of XLS housing plus standard explosion proof solenoid valves (see page 45).
- All new positioner circuit – runs on 24V dc, 115V ac or 230V ac power without any adjustment.
  - Solid-state universal-voltage solenoid switching -no mechanical contacts.
  - Three separate on-board mains fuses for three inputs.
  - Switchable selection of mid-point setting method (on-board preset, remote preset, remote 4-20mA signal).
  - Switchable selection of double acting or spring return operating mode.
  - Power input isolated from signal inputs and outputs for all voltage options.
  - Moulded reinforced plastic internal circuit cover for insulated safety.
  - Positioner has user-adjustable zero, span, deadband and damping parameters via preset pots for easy optimisation of positioning performance.
  - Damping parameter gives velocity-proportional setpoint advance to allow better stabilisation of fast-moving or high-inertia loads while maintaining resolution and repeatability.
- Retrofittable isolated loop-powered 4-20mA angle-retransmit circuit available – just plugs in inside same enclosure – with its own user-adjustable zero and span presets.

Specification

Compatible Actuator Sizes	models 05 to 15
Supply Voltages	230V ac ± 10%,50 or 60 Hz 115V ac ± 10%, 50 or 60 Hz 24V dc ± 10%
Power Consumption	positioner 1.5W max. solenoids 5 VA max. per solenoid.
Operating Temperature Range	-5 to +50°C (limited by solenoid valve specification) explosion proof option see page 45
Operating Pressure	30 to 100 psi 2.0 to 7.0 Bar
Selectable External Inputs	4-20mA - impedance 250 ohm. Potentiometer - minimum resistance 10K ohm.
Positioner Performance	linearity - better than 1% of range deadband - 0.1 to 3% of range repeatability - better than 1% of range
Optional 2-wire Angle Transducer	supply voltage - 14.7 to 27V dc. output - 4-20mA. linearly proportionate to angular position, electrically isolated from all other inputs and outputs functions with or without positioner circuit energisation
Dimensions	see page 64

Ordering Codes



Actuator size 05 must be fitted with flow regulators

For more information see KF-633

Explosion Proof P3 On/Off Positioner

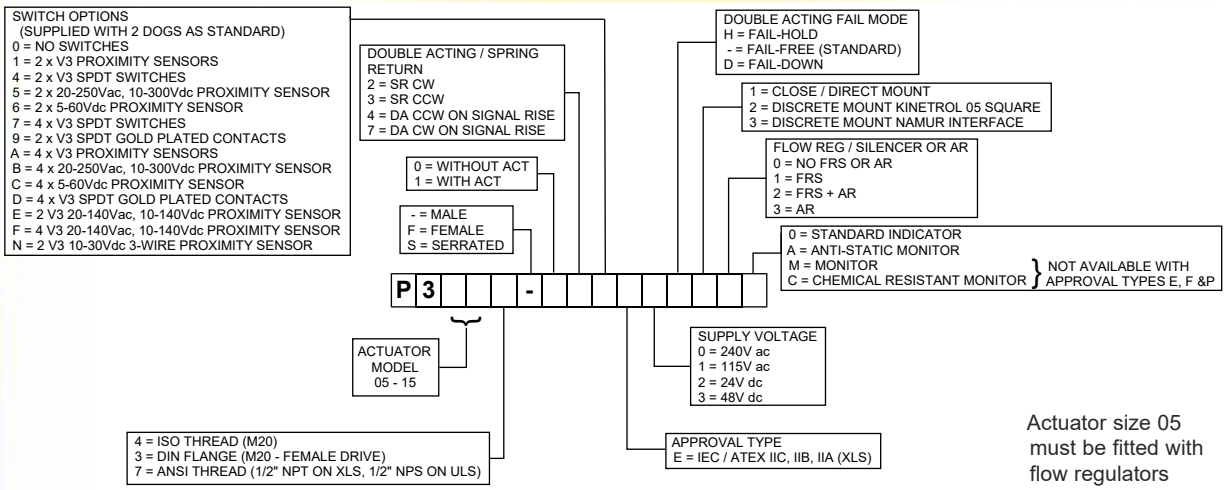
The explosion proof P3 on/off positioner offers a robust three position rotary control device with a fast, smooth, accurate response in a compact corrosion resistant, aluminium housing.

The unit is available ATEX approved to Category 2 and offers four voltages, many switch options and angle position feedback. Available for close mounting on Kinetrol actuator models 05 to 15 or discrete mounting via a Kinetrol 05 square or NAMUR drive.

Specification

European / Global Protection ATEX / IECEX Approval	Exd Group IIC Category 2 Gas & Dust T5, IP66
Voltages	240V ac, 115V ac 48V dc, 24V dc
Working Temperature Range	-20°C to +60°C
Power Consumption	positioner 1.5 W max. solenoids 5 VA max. per solenoid.
Selected External Inputs	4-20mA - impedance 250 ohm. potentiometer - minimum resistance 10K ohm.
Casing	precision diecast LM24 alloy, anodised & epoxy stove enamel.
Coupling	zinc plated steel or stainless steel option.
Positioner Performance	linearity - better than 1% of range deadband - 0.1 to 3% of range (subject to optimisation of speed, deadband and damping).
Optional 2-wire Angle Transducer	supply voltage - 8.5 to 27V dc output - 4-20mA, linearly proportionate to angular position, electrically isolated from all other inputs and outputs functions with or without positioner circuit energisation
Dimensions	see page 64

Ordering Codes



Actuator size 05 must be fitted with flow regulators

ATEX CATEGORY 2 APPROVED

The optional Kinetrol I/P Controller is mounted in place of the standard diaphragm housing on the side of the AP positioner case. The AP positioner can still be mounted in any orientation and gives an angular output position which is proportional to the input current control signal between 4-20mA.

The 4-20mA signal is converted to an air pressure by a coil and magnet and flapper valve arrangement. This air pressure controls the positioner in the normal way.

Zero and range adjustment is done within the positioner in the same way as with a standard pneumatic positioner. No adjustment is necessary within the I/P Controller. The cover is removed only to connect the two wires - this is not necessary with the DIN plug option.

Specification - Safe Area

Electrical Control Signal	4-20mA
Coil Impedance	20 ohms typical
Cable Entry	16mm conduit or gland (mini DIN plug, IP 65 with Pg9 cable gland, 6-8mm dia optional)
Air Supply	80 psi/5.5 bar nominal
Air Entry	$G^1/_8$ (fitted with 6mm pipe dia. push in connector
Weight	1.2 kg
Dimensions	see page 62
Linearity	1.5%*
Hysteresis	less than 1%*
Sensitivity/Deadband	less than 1%*
Supply Pressure Influence	0.2% per psi between 80 and 60 psi
Quiescent Air Consumption	3.5 l/min free air max
Working Temperature Range	-20°C to +80°C

Instrument quality dry, clean air obligatory (Class 6.4.4 ISO8573.2001)

* These refer to the combination of Kinetrol actuator with I/P controller - not just the positioner performance

I/P Controller - Hazardous Area

Kinetrol offers various optional I/P converters which are explosion proof or intrinsically safe certified for use in ATEX Zones 1 & 2 or NEC and CSA CLASS I DIVISION 1. They are mounted directly onto Kinetrol AP positioners with integral air supply.

Specification - Hazardous Area

Electrical Control Signal	4-20mA
Input Resistance	260 ohms at 24°C
Cable Entry	Exd - M20 x 1.5 conduit entry FM/CSA - $^1/_2$ NPT conduit entry
Air Supply	50-100 psi/3.5 to 7 bar
Air Entry	Exd (AP & MP) $G^1/_4$ ($^1/_4$ NPT) (HP) $G^3/_8$ ($^3/_8$ NPT)
Working Temperature	-40°C to 75°C for Exd -55°C to 85°C for Exia

Instrument quality dry, clean air obligatory (Class 3.4.4 ISO 8573.1)

ATEX certificated as follows:

Explosion proof

Ex II 2G Ex d IIB+H2 T6 Ta= -40°C to +75°C
Ex II 2D Ex tD A21 IP65 T85°C Ta= -40°C to +75°C

Intrinsically safe

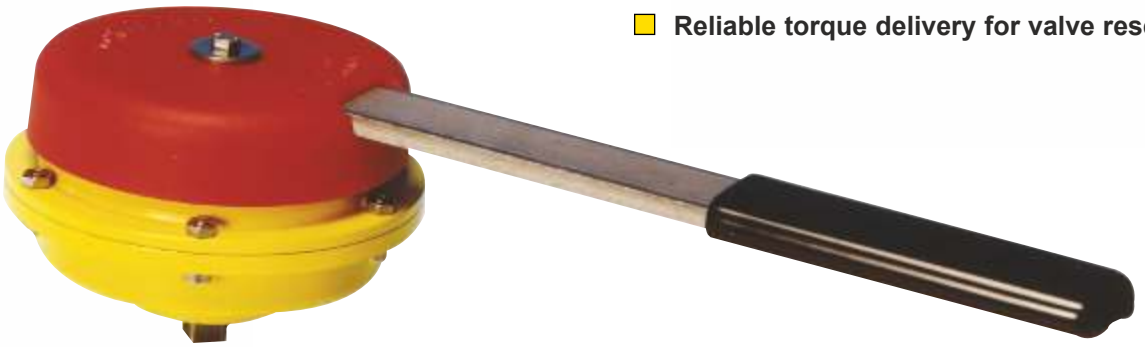
Ex II 1G Ex ia IIC T4 Ta= -55°C to +85°C

For FM Approved version - contact Kinetrol

ATEX UP TO CATEGORY 1 APPROVED

If you want to operate a valve manually, but maintain the advantage of the fail-safe spring's certainty of position when unattended, use this device.

- **Manual unit, cannot be left in the wrong position**
- **Reliable torque delivery for valve reseat**



- **ISO5211 female drive & ATEX Category 2 approved options available for models 02, 03, 05 and 07**
- **Clockwise or counter clockwise 90° spring action**
- **Spring housing sealed to IP65 to protect from internal corrosion**
- **Bi-square (star) and serrated female drive options available**

Application

Manual fail-safe spring units are available in Kinetrol sizes 02, 03, 05 and 07 with factory adjusted torques from 1.4Nm to 45.5Nm.

Specification

Spring Case	
02, 03, 05 & 07 ATEX	Die cast zinc alloy, epoxy paint finish
07 non-ATEX	Die cast aluminium alloy, epoxy paint finish
Shaft	Stainless steel or carbon steel zinc plated
Manual lever	03 & 05 - Stainless Steel 02 - Aluminium
Working Temperature range	-40°C to +80°C

ISO/Female Drive Versions

The 03, 05 and 07 models are available with female drives for direct mount. The model 03 has F03/05 or F04 mounting flanges, the model 05 has F03/05/07 or F04 flanges and the model 07 has a F05/07 flange.

To order female drive versions, replace the '0-' in the product code with '3F'. For example a model 05 ISO female drive manual fail-safe cw handle with F03/05/07 flanges is coded: 053F020-1006. The F04 flange version is coded 053F020-1006/F4.

Female drive versions with the same flange dimensions are available with ANSI threads eg 057F020-1006/F4.

Serrated female drive options can also be supplied for models 05 and 07. To order these replace the 'F' in the product code with an 'S'.

Female 02 versions are available by use of an ISO adaptor. Refer to page 26 for details.

Ordering Codes

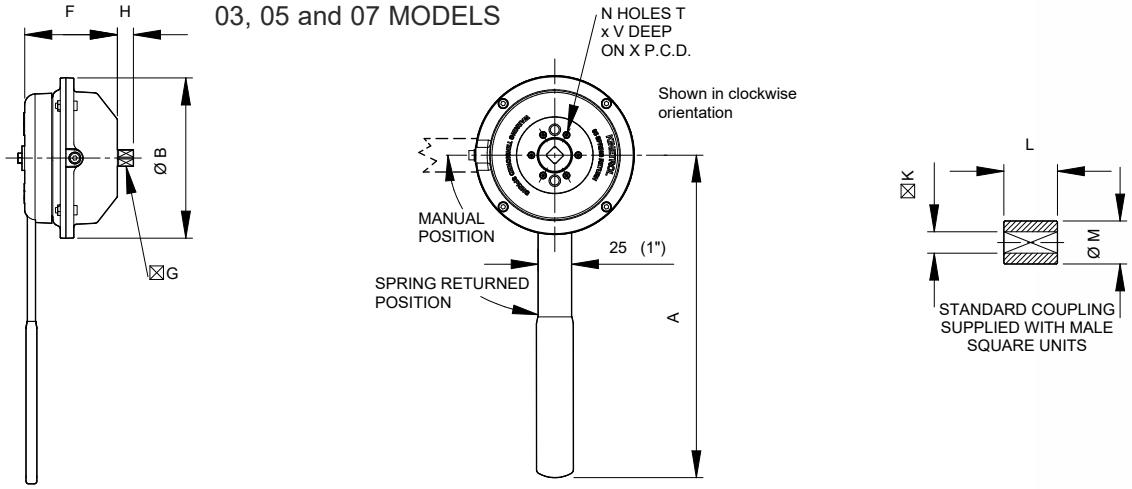
To order a manual fail-safe spring unit, quote model number, direction of spring (as per technical data on page 28) followed by product type code:

Type Codes:	-1006	Manual spring unit (e.g. 054-020-1006)
	-1016	ATEX manual spring unit

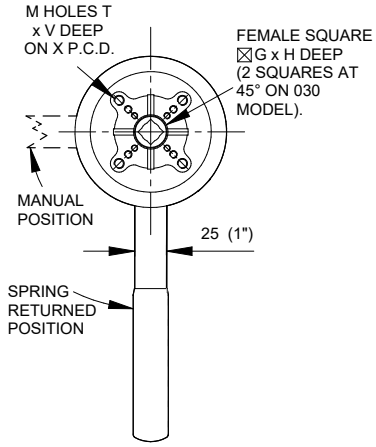
For reduced torque versions contact Kinetrol.

ATEX UP TO CATEGORY 2 APPROVED

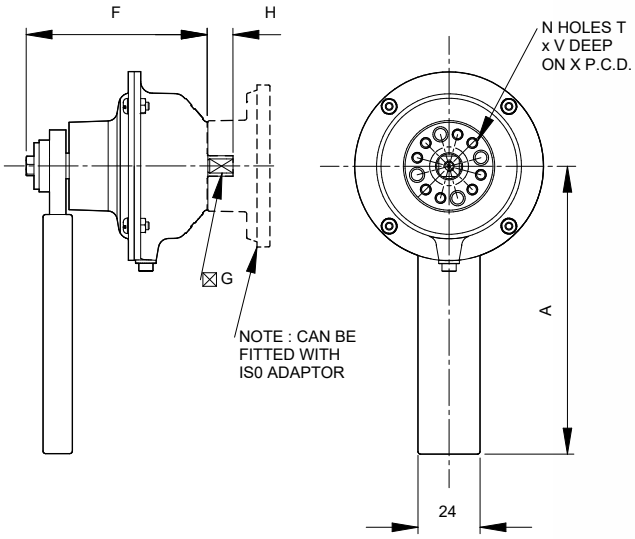
03, 05 and 07 MODELS



ISO MOUNT



02 MODEL



Dimensions/Torques

Metric Units

	A mm	B mm	C mm	D mm	F mm	G mm	H † mm	K mm	L mm	M mm	N	T	V mm	X mm	Maximum Torque Nm	Torque Reduction Thro' Stroke Nm
024-020-1006	110	73	-	-	70	7.98 7.93	10.0	8.022 8.000	22.0	16.0	4	M4	8.0	25.5	5.1	1.0
034-020-1006	238	108	-	-	62	8.98 8.93	12.0	9.022 9.000	22.0	18.0	4	M5	10.0	31.1	14.0	3.0
054-020-1006	238	118	-	-	68.5	9.525 9.470	13.0	9.58 9.55	25.4	19.0	6	M5	8.0	34.9	24.0	3.5
074-020-1006	360	152	-	-	103	15.98 15.93	20.0	16.027 16.000	40.0	32.0	4	M8	15.0	50.8	45.5	5.8
033F020-1006	238	108	-	-	66	11.0	12.0	-	-	-	4	M5/M6	10/12	36/50	14.0	3.0
033F020-1006/F4	238	108	-	-	66	11.0	12.0	-	-	-	4	M5	10.0	42.0	14.0	3.0
053F020-1006	238	118	-	-	68.5	14.0	16.0	-	-	-	4	M5/M6/M8	10/12/13	36/50/70	24.0	3.5
053S020-1006	238	118	-	-	68.5	*	*	-	-	-	4	M5/M6/M8	10/12/13	36/50/70	24.0	3.5
053F020-1006/F4	238	118	-	-	68.5	14.0	16.0	-	-	-	4	M5	10.0	42.0	24.0	3.5
073F020-1006	360	152	-	-	103	17.0	22.0	-	-	-	4	M6/M8	14	50/70	45.5	5.8
073S020-1006	360	152	-	-	103	*	*	-	-	-	4	M6/M8	14	50/70	45.5	5.8

English Units

	A inch	B inch	C inch	D inch	F inch	G inch	H † inch	K inch	L inch	M inch	N	T	V inch	X inch	Maximum Torque lbf.ins	Torque Reduction Thro' Stroke lbf.ins
027-020-1006	4.33	2.87	-	-	2.76	0.314 0.312	0.39	0.316 0.315	0.86	0.63	4	8-32	0.310	1.00	45	8.00
037-020-1006	9.37	4.25	-	-	2.44	0.354 0.352	0.47	0.355 0.354	0.86	0.70	4	10-24	0.390	1.22	124	26.55
057-020-1006	9.37	4.64	-	-	2.70	0.375 0.373	0.51	0.377 0.376	1.00	0.75	6	10-24	0.310	1.37	212	31.00
077-020-1006	14.17	5.98	-	-	4.06	0.629 0.627	0.79	0.631 0.630	1.57	1.26	4	5/16-18	0.625	2.00	400	51.00
037F020-1006	9.37	4.25	-	-	2.60	0.43	0.47	-	-	-	4	10-24 / ¼	0.31/0.39	1.42/1.97	124	26.55
037F020-1006/F4	9.37	4.25	-	-	2.60	0.43	0.47	-	-	-	4	10-24	0.390	1.65	124	26.55
057F020-1006	9.37	4.64	-	-	2.70	0.55	0.63	-	-	-	4	10-24 / ¼ / 5/16	0.39/0.47/0.51	1.42/1.97/2.76	212	30.98
057S020-1006	9.37	4.64	-	-	2.70	*	*	-	-	-	4	10-24 / ¼ / 5/16	0.39/0.47/0.51	1.42/1.97/2.76	212	30.98
057F020-1006/F4	9.37	4.64	-	-	2.70	0.55	0.63	-	-	-	4	10-24	0.390	1.65	212	30.98
077F020-1006	14.17	5.98	-	-	4.06	0.669	0.75	-	-	-	4	¼ / 5/16	0.39/0.51	1.97/2.76	400	51.00
077S020-1006	14.17	5.98	-	-	4.06	*	*	-	-	-	4	¼ / 5/16	0.39/0.51	1.97/2.76	400	51.00

* Refer to TD141 for details on serrations and inserts

† Minimum

Weights – Metric

02 Models – 0.50 kg
03 Models – 1.87 kg
05 Models – 1.87 kg
07 Models
(Non-ATEX) – 4.21 kg
(ATEX) – 5.17 kg

Weights – English

02 Models – 1.102 lb
03 Models – 4.123 lb
05 Models – 4.123 lb
07 Models
(Non-ATEX) – 9.281 lb
(ATEX) – 11.374 lb

ATEX UP TO CATEGORY 2 APPROVED

To open or close a valve or damper automatically in case of a fire this device allows the valve to operate using a fusible link mechanism designed to yield at a set temperature.

- **Reliable torque delivery for valve reseat**
- **Available for Models 05, 07, 09 and 12 (maximum torque 226 Nm 2300 lbf ins)**
- **Two Yield Temperature Options**
- **Clockwise or counter clockwise 90° spring action**
- **ISO5211 female drive options available**
- **Spring housing sealed to IP65 to protect from internal corrosion**
- **ATEX Category 2 approved options available**

Yield Temperatures

Fire fail-safe fusible links
Solder type (UL approved)

Yield temperature options	74°C	100°C
Max. normal ambient temperature	38°C	66°C

ISO/Female Drive Options

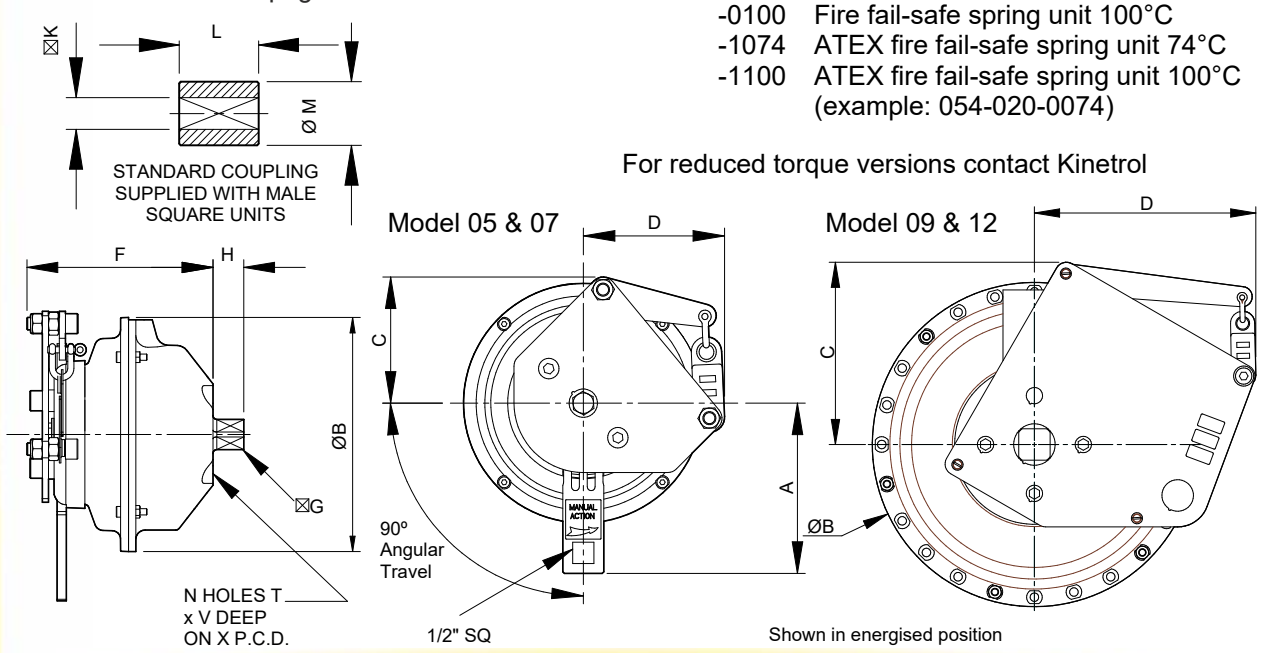
All models are available with female drive options for direct mount - see page 60

Ordering Codes

To order a fire fail-safe spring unit, quote model number, direction of spring (as per coding guide on page 47) followed by product type code:

-0074 Fire fail-safe spring unit 74°C
-0100 Fire fail-safe spring unit 100°C
-1074 ATEX fire fail-safe spring unit 74°C
-1100 ATEX fire fail-safe spring unit 100°C
(example: 054-020-0074)

For reduced torque versions contact Kinetrol



Weights – Metric

05 Models – 2.70 kg
07 Models – 4.30 kg
09 Models – 9.20 kg
12 Models – 22.50 kg

Weights – English

05 Models – 5.95 lb
07 Models – 9.48 lb
09 Models – 20.28 lb
12 Models – 49.60 lb

Metric Units

	A mm	B mm	C mm	D mm	F mm	G mm	H † mm	K mm	L mm	M mm	N	T	V mm	X mm	Maximum Torque Nm
054-020-0074	108	118	80	90	88	9.525 9.470	13.0	9.58 9.55	25.4	19.0	6	M5	13.0	34.9	24.0
074-020-0074	108	152	80	90	121	15.98 15.93	20.0	16.027 16.000	40.0	32.0	4	M8	15.0	50.8	45.5
094-020-0074	-	200	108	130	144	18.98 18.93	26.0	19.033 19.000	50.0	38.0	4	M10	20.0	65	95.0
124-020-0074	-	258	145	176	209	25.00 24.90	31.0	25.06 25.00	56.0	50.0	4	M12	24.0	77.8	205.0

English Units

	A inch	B inch	C inch	D inch	F inch	G inch	H † inch	K inch	L inch	M inch	N	T	V inch	X inch	Maximum Torque lbf.ins
057-020-0074	4.25	4.64	3.15	3.54	3.47	0.375 0.373	0.51	0.377 0.376	1.00	0.75	6	10-24	0.510	1.37	212
077-020-0074	4.25	5.98	3.15	3.54	4.76	0.629 0.627	0.79	0.631 0.630	1.57	1.26	4	5/16-18	0.625	2.00	400
097-020-0074	-	7.87	4.25	5.12	5.67	0.747 0.745	1.02	0.749 0.748	1.97	1.50	4	3/8	0.787	2.56	841
127-020-0074	-	10.16	5.71	6.93	8.23	0.984 0.980	1.22	0.986 0.984	2.20	1.97	4	½	0.944	3.06	1814

ATEX UP TO CATEGORY 2 APPROVED

A patented part-turn rotary actuator that is driven to an end stop, in either direction, from an initial centre position and is spring returned to an accurate and positive mid point when the air supply is removed. The mid-position can be set mechanically anywhere in the actuator's travel range.

The spring to centre assemblies consist of one double acting actuator fitted with two or more opposing clock type springs contained within a single housing. Controlled with a dual coil, 5/3 solenoid valve (or two 3/2 single coil valves) which, when totally de-energised, allow the springs to precisely centre the actuator against physical stops. When either coil is energised the actuator will travel towards one of its end stops. As the vane moves towards an end stop the air stroke torque reduces as the spring torque increases and vice versa. When the coil is de-energised the vane will spring return to its original centre position. The usual 'centre' position will be in the middle of the actuator's 0 - 90 degree travel, but this can easily be adjusted to any mid-stroke location. A vernier scale on the adjustable plate (see attached picture) permits precise mid-position setting to within 1 degree.

(Actuator should be mounted to application to enable adjustable centre position and stationary end points)

- Reliable low stress clock type springs.
- Sealed, non-breathing housing protects spring in corrosive environments.
- Available in models 05 to 18 (excluding 15).
- Stroke up to 100° (200° option available - contact Kinetrol)
- Mid position can be set mechanically anywhere in the actuator's travel range using 'vernier' type scale.
- Self contained spring assembly which can be easily removed without a keeper plate.
- Can be used in aggressive or hazardous environments without the need for complex or sensitive instruments.
- Can be fitted with high temperature seal option for up to 100°C

Actuator Model	Torque - Nm Based on 5.5 bar *Start	—	Finish	Torque - lbf ins Based on 80 psi *Start	—	Finish
050-1205	19.2	—	17.5	170.0	—	169.9
070-1205	49.6	—	42.4	412.0	—	375.2
090-1205	99.0	—	93.8	876.0	—	830.1
120-1205	221.0	—	204.0	1956.0	—	1805.5
140-1205	533.0	—	478.0	4717.0	—	4230.6
160-1205	1009.0	—	933.0	8930.0	—	8257.7
180-1205	2686.0	—	2417.0	23771.0	—	21392.2

* Start torque when angle adjusted to mid position
Note: can be ordered without actuator eg. 050-0205

For dimensions see page 65

ATEX Ex CATEGORY 2 APPROVED

- **Simple compact unit**
  No external moving parts
- **Unique linkage design**
  converts to 180° travel
  120° option available
- **Constant gear-up ratio through travel range**
  Hence constant output torque
- **Rolling contact linkage mechanism**
  Ensures low wear, long life, low friction
- **Linkage sealed for life**
  Protected from the environment, long maintenance free life
- **Compatible with all Kinetrol modules**
  Direct mounted spring returns, limit switch boxes, positioners etc.
- **Adjustable endstops**

Operation

Kinetrol's 180° actuator is produced by adding a 2:1 step-up linkage onto the output shaft of well proven 90° vane actuators.

Factory fitted, direct mount linkage units are available to suit model 02, 03, 05, 07, 09, 12, 14 and 16 actuators, giving a neat single unit with no mount kits or brackets. The linkage's unique geometry gives constant 2:1 step-up so that the output torque remains constant throughout the actuator's travel.

The all-steel mechanism of the linkage employs rolling contacts to minimise frictional losses and wear, and to maximise life. The linkage is lubricated for life, and encased in a robust, fully sealed, die cast alloy casing. Exterior surfaces are protected by a corrosion resistant epoxy stove enamel finish. Standard adjustable endstops on the 90 degree actuator can be used to set the angle of travel. The other end of the 90 degree actuator allows the full range of Kinetrol modular accessories to be fitted directly.

120 degree actuators are also available with adjustable end stops to give up to 133° of travel for the above model range - contact Kinetrol for details.

Ordering Codes

To order a 180° actuator, add a '1' to the end of the code for the 90° actuator on which it is based and a '2' for a 120° actuator.

Examples:
To order an 074 cw spring return actuator plus 180° linkage, use code: 074-1201.
To order an 074 cw spring return actuator plus 120° linkage, use code: 074-1202.

ATEX CATEGORY 2 APPROVED

Double Acting Torques/Metric Units Nm

Actuator Model	1.4	2.0	2.8	3.5	4.1	4.8	5.5	6.2	6.9
	Pressure (bar)								
02-1001	0.6	1.1	1.6	2.2	2.7	3.2	3.7	4.2	4.8
03-1001	1.3	2.4	3.5	4.6	5.6	6.7	7.8	8.8	10.0
05-1001	3.2	5.2	7.2	9.3	11.3	13.6	15.6	17.8	19.9
07-1001	7.9	12.6	17.6	22.6	27.6	33.0	38.4	43.2	48.8
09-1001	16.3	20.0	37.1	47.6	58.0	69.2	80.4	91.2	103.0
12-1001	37.5	60.8	84.4	108.0	131.0	156.0	181.0	202.0	226.0
14-1001	97.2	151.0	206.0	262.0	316.0	375.0	434.0	488.0	542.0
16-1001	235.0	357.0	479.1	605.7	727.7	849.8	976.3	1098.4	1220.4

Double Acting Torques/English Units lbf ins

Actuator Model	20	30	40	50	60	70	80	90	100
	Pressure (psi)								
02-1001	5.6	10	14	19	24	28	33	37	42
03-1001	12	21	31	40	50	59	69	78	88
05-1001	28	46	64	82	100	120	138	157	176
07-1001	70	112	156	200	244	292	340	384	432
09-1001	144	236	328	420	512	612	712	808	912
12-1001	332	540	748	960	1160	1376	1588	1792	2000
14-1001	860	1340	1820	2320	2800	3320	3840	4320	4800
16-1001	2080	3160	4240	5360	6440	7520	8640	9720	10800

Spring Return Torques/Metric Units Nm

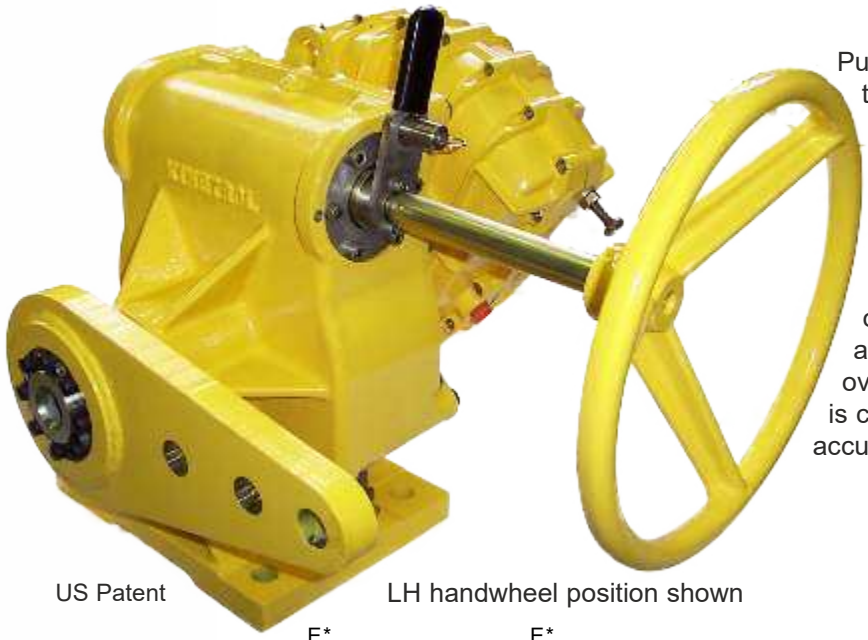
Actuator Model	Position of air OR spring stroke	3.5	4	4.5	5	5.5
		Pressure Setting (bar)				
02-1201	Start	1.1	1.3	1.4	1.6	1.8
	Finish	0.5	0.7	0.9	1.2	1.4
03-1201	Start	3.3	3.7	4.0	4.3	4.9
	Finish	1.0	1.5	1.9	2.2	2.8
05-1201	Start	4.9	5.5	6.2	7.0	7.9
	Finish	3.2	4.0	4.9	5.8	6.7
07-1201	Start	11.6	13.5	15.5	17.4	19.3
	Finish	7.5	9.5	11.6	13.8	16.1
09-1201	Start	23.2	27.4	31.1	35.3	39.5
	Finish	19.1	23.2	27.0	31.4	35.6
12-1201	Start	55.1	64.8	75.6	81.1	90.4
	Finish	42.2	52.0	60.0	68.9	77.5
14-1201-4900	Start	135.0	156.0	178.0	195.0	201.0
	Finish	109.0	131.0	148.0	164.0	170.0
16-1201	Start	346.8	391.0	426.0	465.0	504.3
	Finish	181.4	237.0	282.0	332.0	381.9

Spring Return Torques/English Units lbf ins

Actuator Model	Position of air OR spring stroke	50	60	70	80
		Pressure Setting (psi)			
02-1201	Start	10.3	12.2	14.1	16.0
	Finish	4.6	6.8	9.5	12.5
03-1201	Start	29.6	33.4	37.2	43.7
	Finish	8.7	13.7	19.0	24.7
05-1201	Start	44	51	61	70
	Finish	28	38	49	59
07-1201	Start	103	126	146	171
	Finish	67	92	116	143
09-1201	Start	205	251	300	351
	Finish	169	215	266	315
12-1201	Start	486	595	693	802
	Finish	374	479	585	688
14-1201-4900	Start	1200	1420	1670	1780
	Finish	969	1200	1400	1500
16-1201	Start	3069	3534	3998	4463
	Finish	1605	2197	2788	3380

For dimensions see page 65

ATEX CATEGORY 2 APPROVED

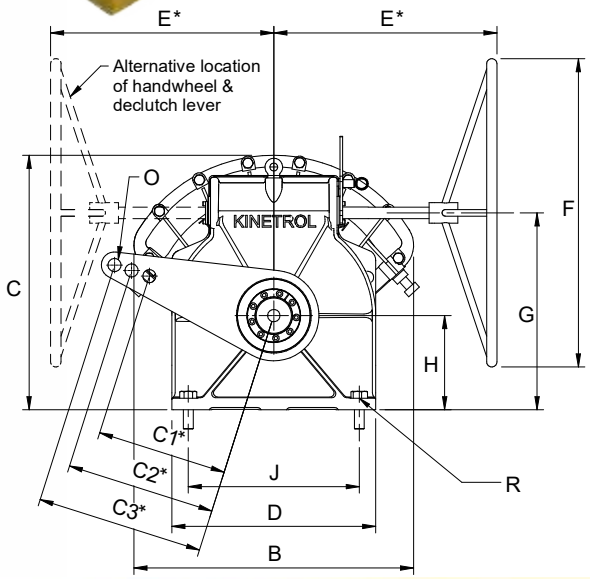


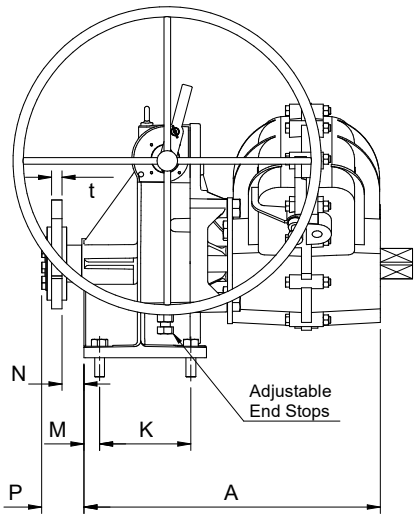
US Patent

LH handwheel position shown

Purpose designed, factory built and tested drives for air/gas flow control dampers on burner, heater, boiler and turbine systems in power plants, refineries and a wide range of industrial applications.

Combining the proven performance of Kinetrol's vane type actuator with an equally rugged integral manual override/mounting frame, the G3 drive is compact with unbeatable control, accuracy and cycle life.





Metric Units

Model	A mm	B mm	C mm	D mm	E* mm	F* mm	G mm	H mm	J mm	K mm	ØR mm	M mm	P mm	Weight† kgs
124	366	294	336	275	205	300	300	165	216	152	21	25	70	46
144	410	380	390	275	300	300	300	165	216	152	21	25	70	46
164	495	530	470	275	330	400	300	165	216	152	21	25	70	51
184	721	680	620	496	430	760	479	229	416	222	27	38	94	141
204	981	680	620	496	508	600	479	229	416	222	27	38	94	158

English Units

Model	A inch	B inch	C inch	D inch	E* inch	F* inch	G inch	H inch	J inch	K inch	ØR inch	M inch	P inch	Weight† lbs
127	14.4	11.6	13.2	10.8	11.0	12.0	12.0	6.5	8.50	6.00	0.83	1	2.8	102
147	16.2	15.0	15.4	10.8	12.0	12.0	12.0	6.5	8.50	6.00	0.83	1	2.8	102
167	19.5	20.9	18.5	10.8	13.0	16.0	12.0	6.5	8.50	6.00	0.83	1	2.8	112
187	28.4	26.8	24.4	19.5	17.0	30.0	18.9	9.0	16.38	8.74	1.05	1.6	3.7	310
207	38.6	26.8	24.4	19.5	20.0	24.0	18.9	9.0	16.38	8.74	1.05	1.6	3.7	350

* Default dimensions may change according to ordering code options

† Listed weights exclude actuator

- **Integral manual override**
- **Suitable for new installations or replacement of existing electric or pneumatic drives**
- **Available with same mounting foot print to replace existing floor mount drives**
- **Can result in lower energy costs resulting from accurate flow control**
- **Reduced operating costs due to long maintenance-free life (2 million operation warranty)**
- **Compact space saving design**
- **Quick and easy installation and set up**
- **Robust construction with durable epoxy finish**
- **Manual override usable with actuator removed**

ATEX CATEGORY 2 APPROVED

Options

- **Double acting and spring fail-safe (open or closed)**
- **Modulating** (3-15 psi and 4-20mA signal)
- **Fail to low signal**
- **Lock in last position**
- **Limit switch remote position indication**
- **4-20mA angle retransmission**
- **High visibility position indication**
- **Different sided/diameter handwheels and extensions**
- **Infinitely adjustable output levers to suit existing or new requirements**
- **High temperature option available**

Ordering Codes

HANDWHEEL SIDE (SEE SKETCH)
L=LEFT
R=RIGHT

WHERE APPLICABLE:
S = STANDARD
Y = NO COST OPTION
E = EXTRA COST OPTION
(blank) = NOT AVAILABLE

HANDWHEEL DIAMETER (F)	AVAILABLE ON MODELS: 12	14	16	18	20
3=300mm 12"	S	S	E		
4=400mm 16"	E	E	S		
5=600mm 24"			E	E	S
6=762mm 30"				S	

OUTPUT LEVER THICKNESS (t)
1=3/8"
2=1/2"
3=5/8"
4=3/4"
5=7/8"
6=1"
7=1 1/8"
8=1 1/4"
9=1 1/2"

OPTIONAL LIMIT SWITCH BOX (TO INDICATE IF HANDWHEEL IS ENGAGED OR DISENGAGED)
OPTIONS:
0 = NO LIMIT SWITCH
1 = 2 x i/S PROX. SENSORS
2 = 2 x PNEUMATIC LS
4 = 2 x V3 MECH LS
5 = 2 x 20-260V ac PROX.*
6 = 2 x 5-60V dc PROX.*
7 = 4 x V3 MECH LS

V = HIGH TEMP
= STD

INCLUDING D/A ACTUATOR:
124, 144, 164, 184, 204 = ISO D/A ACT (FOR USE WITH OR WITHOUT POSITIONER)
127, 147, 167, 187, 207 = ANSI D/A ACT (FOR USE WITH OR WITHOUT POSITIONER)

– D

POSITION MONITOR ON LS BOX:
C=YES
0=NO

HANDWHEEL OFFSET (E)	AVAILABLE ON MODELS: 12	14	16	18	20
1=300mm 12"	S	S			
2=330mm 13"			S		
3=430mm 17"	E	E	E	S	
4=508mm 20"	E	E	E	E	S
5=600mm 24"	E	E	E	E	E

IF NECESSARY, FIT OPTIONAL EXTENSION TO ENSURE THAT HANDWHEEL IS AT A SAFE DISTANCE FROM MOVING OUTPUT LEVER.

HOLE DIAMETER (d)
2=12.7mm 1/2"
3=15.9mm 5/8"
A=11/16"
4=19.1mm 3/4"
5=22.2mm 7/8"
6=25.4mm 1"
7=28.6mm 1 1/8"
8=31.8mm 1 1/4"
9=38.1mm 1 1/2"

LEVER HOLE PATTERN

No.	DISTANCE FROM CENTRE C1	C2	C3	AVAILABLE ON MODELS: 12	14	16	18	20
01	101.6mm 4"	152.4mm 6"	203.2mm 8"	Y	Y			
02	127mm 5"	152.4mm 6"	177.8mm 7"	Y	Y	Y		
03	127mm 5"	198.1mm 7.8"	254mm 10"	Y	Y	Y		
04	152.4mm 6"	254mm 10"	304.8mm 12"	Y	Y	Y	Y	
05	165.1mm 6.5"	190.5mm 7.5"	215.9mm 8.5"	Y	Y	Y	Y	
06	190.5mm 7.5"	215.9mm 8.5"	241.3mm 9.5"	Y	Y	Y	Y	
07	266.7mm 10.5"	292.1mm 11.5"	317.5mm 12.5"	Y	Y	Y	Y	Y
08	228.6mm 9"	342.9mm 13.5"	457.2mm 18"	Y	Y	Y	Y	
09	254mm 10"	304.8mm 12"	381mm 15"	Y	Y	Y	Y	Y
10	254mm 10"	381mm 15"	508mm 20"	Y	Y	Y	Y	Y
11	254mm 10"	317.5mm 12.5"	406.4mm 16"	Y	Y	Y	Y	Y
12	254mm 10"	330.2mm 13"	406.4mm 16"	Y	Y	Y	Y	Y
13	304.8mm 12"	406.4mm 16"	444.5mm 17.5"	Y	Y	Y	Y	Y
14	317.5mm 12.5"	363.2mm 14.3"	406.4mm 16"	Y	Y	Y	Y	Y
15	147.3mm 5.8"	279.4mm 11"	304.8mm 12"	Y	Y	Y	Y	
16	152.4mm 6"	190.5mm 7.5"	228.6mm 9"	Y	Y	Y		
17	101.6mm 4"		304.8mm 12"	Y	Y			
18			127mm 5"	Y	Y	Y		
19			203.2mm 8"	Y	Y	Y	Y	

* Not available with ATEX approval

For more information see KF-535

ATEX CATEGORY 2 APPROVED

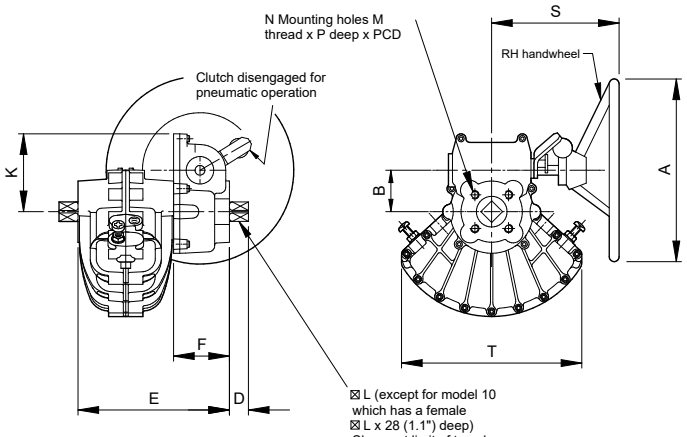
For torque outputs see pages 6-8

Kinetrol declutchable geared overrides are available for models 05 to 20 (excluding model 15), rated for the same torques as the actuators and fitted between the actuator and the load. The standard unit is supplied with the right hand handwheel option (see drawing below), whereby when the handwheel is moved in a clockwise direction the actuator moves in a counter clockwise direction. A left hand handwheel option is also available on some models (see below).

- **Declutch lever switch available**
- **Corrosion resistant -** fully sealed to IP65

PHOTO SHOWS LEFT HAND HANDWHEEL.

Dimensions



DRAWING SHOWS RIGHT HAND HANDWHEEL.

Handwheel Orientation

Models 05 - 14
Standard - Right Hand
- Left Hand option available

Models 16 - 20
Standard - Left Hand only

Working Temperature Range

-20°C to +80°C

Low / High temperature options available on sizes 05 - 14 - contact Kinetrol

Metric Units

Actuator Model (ISO)	A mm	B mm	D mm	E mm	F mm	K mm	☒L mm	M	N No.	P mm	PCD mm	S mm	T mm	Wt kgs
05	300	67.8	13	170	103	127	9.5	M5	6	12	34.9	220	137	9.18
07	300	67.8	20	192	92	127	16.0	M8	4	16	50.9	220	178	11.20
08	300	67.8	19	202	92	127	17.0	M8	4	16	70.0	220	208	10.61
09	300	67.8	26	218	92	127	19.0	M10	4	20	65.0	220	227	12.06
10	300	67.8	-	267	92	127	22.0	M10	4	20	102.0	220	230	13.40
12	300	67.8	31	248	92	127	25.0	M12	4	25	77.8	220	294	15.40
14	400	67.8	38	292	92	127	28.6	M16	4	28	98.8	250	380	22.36
16*	600	141.0	55	462	188	200	41.0	M20	4	28	165.0	376	530	45.00
18*	920	165.0	78	655	295	225	57.0	M16	8	24	254.0	440	679	75.00
20*	610	150.0	100	600	240	300	75.0	M30	8	35	226.3	640	679	113.00

English Units

Actuator Model (ANSI)	A inch	B inch	D inch	E inch	F inch	K inch	☒L inch	M UNC	N No.	N inch	PCD inch	S inch	T inch	Wt lbs
05	11.81	2.67	0.51	6.69	4.06	5.0	0.375	10-24	6	0.47	1.375	8.66	5.39	20.2
07	11.81	2.67	0.79	7.56	3.62	5.0	0.630	5/16	4	0.63	2.000	8.66	7.01	24.7
08	11.81	2.67	0.75	7.95	3.62	5.0	0.670	5/16	4	0.63	2.760	8.66	8.19	23.4
09	11.81	2.67	1.02	8.58	3.62	5.0	0.748	3/8	4	0.79	2.560	8.66	8.94	26.6
10	11.81	2.67	-	10.51	3.62	5.0	0.866	3/8	4	0.79	4.016	8.66	9.06	29.5
12	11.81	2.67	1.22	9.76	3.62	5.0	0.984	1/2	4	0.98	3.060	8.66	11.57	33.9
14	15.70	2.67	1.50	11.50	3.62	5.0	1.125	5/8	4	1.10	3.890	9.84	14.96	49.2

Handwheel Orientation

MODEL	RH HANDWHEEL		LH HANDWHEEL	
	HANDWHEEL DIRECTION	OUTPUT DIRECTION	HANDWHEEL DIRECTION	OUTPUT DIRECTION
05 to 14	CW	CCW	CW	CW
	CCW	CW	CCW	CCW
16 to 20	N/A		CW	CW
			CCW	CCW

Ordering Codes

Models 05 to 14:
- (Standard right hand handwheel)
Example: 074 K/Box (ISO Version)
077 K/Box (ANSI Version)
- (Left hand handwheel)
Example: 074 K/Box LH (ISO Version)
* For model 16, 18 and 20 replace 'K' with 'G' and add 'LH'
Example: 164 G/Box LH (ISO Version)

ATEX CATEGORY 2 APPROVED

Kinetrol's Blueline Food Grade Finish Product

Kinetrol's Blueline coating solution for food production applications meets FDA and BfR L1 specification and is available on all Kinetrol actuators and accessories offering significant advantages including:

- Good resistance to "caustic washdown"
- Exceptional resistance to chipping / flaking
- Good non-stick properties
- Good resistance to salt-laden environments
- In extreme circumstances if the coating becomes dislodged, it is clearly visible to the human eye, and sensors/detectors used in food production

KINETROL® BLUELINE

Kinetrol's Valve Automation Service & Interfacing Options

Kinetrol can select, supply and actuate ball, butterfly and plug valves from across the industry or mount free issue valves to Kinetrol actuators and control units for either on / off or modulating valve service.

With over 50 years of valve automation experience Kinetrol can also offer a wide range of engineered and customised packages including assemblies which are SIL rated and/or fully compliant with ATEX, NEC or IEC requirements.

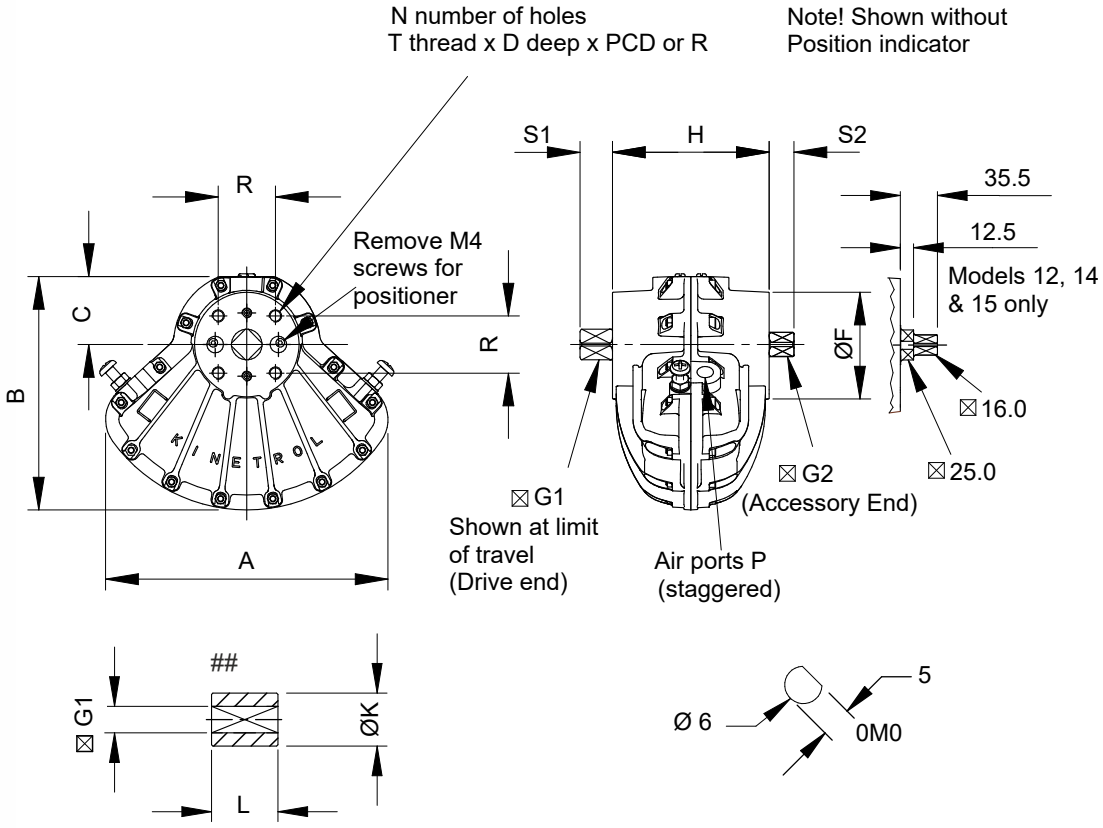
Kinetrol is continually responding to the evolving requirements of the industry for interfacing and mounting arrangements that satisfy user needs and conform to industry standards. The Kinetrol female drive spring fail safe and hand spring unit options with topworks details that conform to ISO 5211 standard, facilitate direct mounting to valves. The innovative, patented ISO adaptor for Kinetrol Models 02 – 09 provides versatile direct mounting to ISO top works valves (see page 26).

Kinetrol's direct mounting limit switch boxes, positioners and other control modules eliminate the cost of interfacing hardware resulting in compact assemblies. Our larger actuators, models 16 and above also offer a drive slot and insert option which is designed to interface with ancillary drives which comply to VDI/VDE 3485 norm.

Our rigorous QA and test procedures ensure that effective solutions are engineered and built to the highest standard.

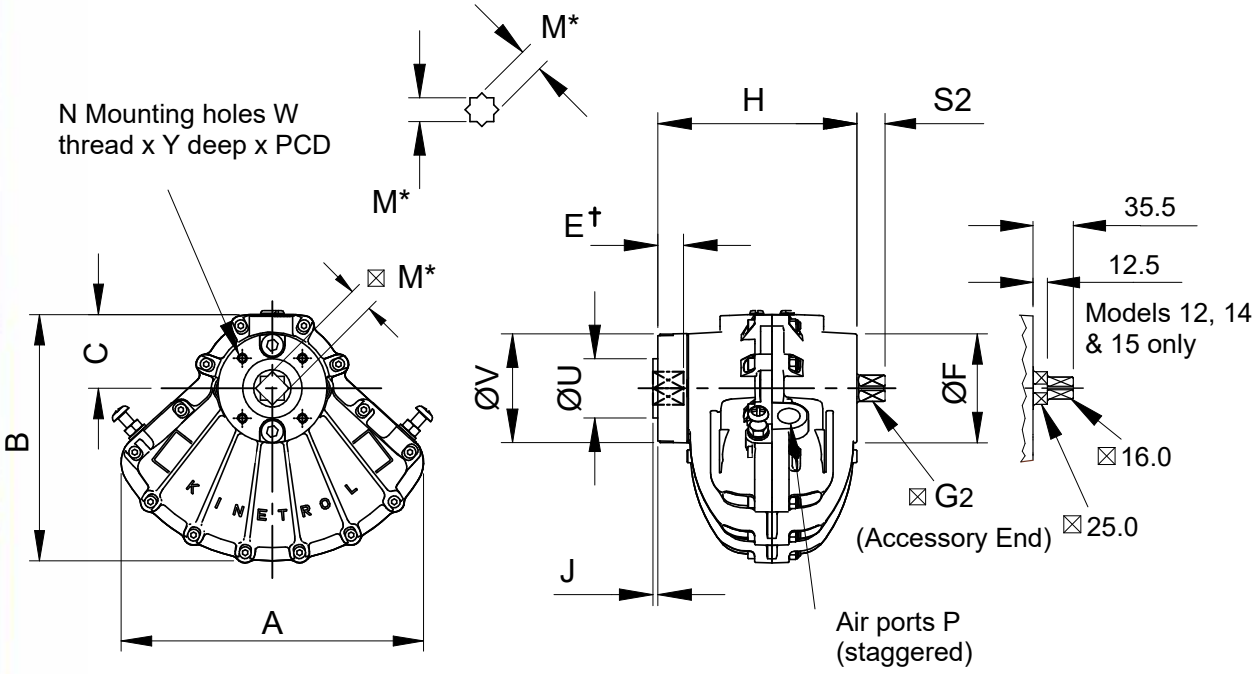
For more information on either of the above please contact Kinetrol.

Standard Actuator



For Model 15, 16, 18, 20, 30 and 60 coupling details see pages 20 to 25

ISO/DIN Options



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**	G⅛	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.			G⅛	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	G⅛	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	G⅛	18.0	22.0	0.73
054	137	113	33.6	9.5	9.5	67	50	13.0	13.0	6	M5	10.0	-	34.9	G⅛	19.0	25.4	1.28
074	178	147	43.4	16.0	16.0	100	68	20.0	20.0	4	M8	16.0	36.0	50.9	G¼	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	G¼	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	G¼	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	G⅜	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
204	680	554	162.0	73.0	73.0	620	286	100.0	100.0	8	M30	50.0	160.0	226.3	G1	150.0	170.0	211.00
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	⅛	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.			⅛	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	⅛	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	⅛	0.71	0.87	1.61
057	4.45	3.62	1.32	0.375	0.37	2.64	1.97	0.51	0.51	6	10-24	0.39	-	1.375	⅛	0.75	1.00	2.82
077	5.79	4.45	1.71	0.630	0.63	3.94	2.68	0.79	0.79	4	5/16-18	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	5/16-18	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	⅜-16	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	⅜-16	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	⅜	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	⅝-11	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	⅝-11	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	⅞-9	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	1⅛-7	1.97	6.300	8.910	¾	4.53	5.12	207.23
207	26.77	21.81	6.38	2.874	2.87	24.41	11.26	3.94	3.94	8	1⅛-7	1.97	6.300	8.910	1	5.91	6.69	464.20
307	26.77	21.81	6.38	2.874	2.87	34.65	11.26	3.94	3.94	8	1⅛-7	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	1⅛-7	3.15	-	14.020	2	7.87	5.51	1095.70

FEMALE DRIVE

† All weights include coupling - except 107

ISO/DIN Options

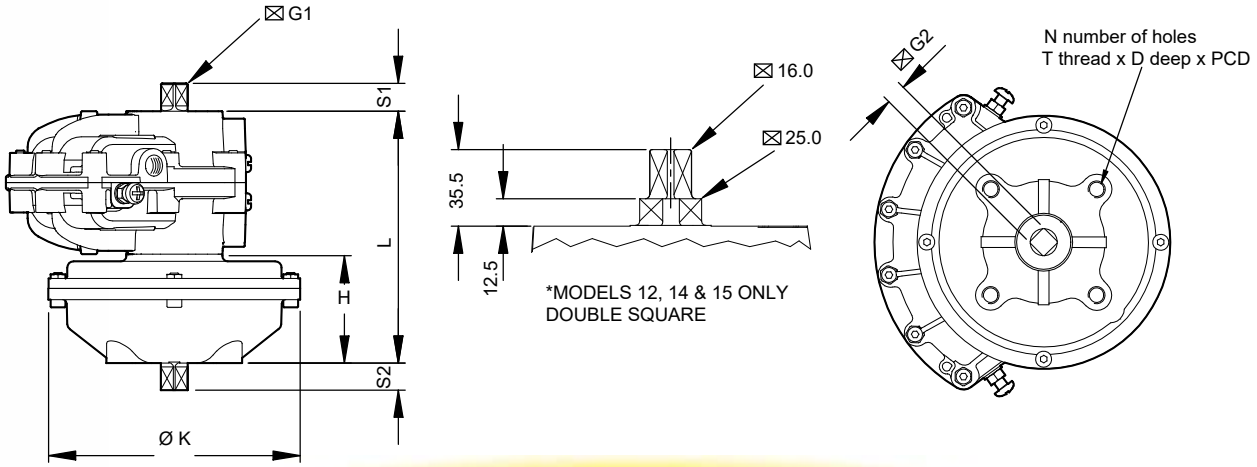
Actuator Model	A mm	B mm	C mm	H mm	ØF mm	ISO/DIN flange no.	M* mm	V mm	ØU mm	PCD mm	N No.	W	Y(Min) mm	J mm	E † mm	P Port	G2 mm	S2 mm
023	91	76	24.1	66	29	F03	9	46	25	36	4	M5	8	2	10	G⅛	8.0	10.0
033	113	92	28.0	74	36	F03	9	46	25	36	4	M5	8	2	10	G⅛	9.0	12.0
053	137	113	33.6	81	50	F04	11	54	30	42	4	M5	8	2	12	G⅛	9.5	13.0
073	178	147	43.4	117	68	F05	14	64	35	50	4	M6	10	3	16	G¼	16.0	20.0
083	208	167	46.3	133	65	F07	17	70	55	70	4	M8	16	3	19	G¼	16.0	20.0
093	227	187	54.7	146	84	F07	17	85	55	70	4	M8	13	3	19	G¼	16.0	20.0
103	229	188	57.0	175	77	F10	22	-	-	102	4	M10	16	-	24	G¼	16.0	20.0
123	294	239	68.0	181	100	F10	22	125	70	102	4	M10	16	3	24	G⅜	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
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
203	680	554	162.0	800	286	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

ATEX UP TO CATEGORY 1 APPROVED

Male Spring Return Actuator Dimensions



Metric Units

Actuator** Model	L mm	H mm	ØK mm	⊠G1 mm	⊠G2 mm	S1 mm	S2 mm	N No.	T ISO	D mm	PCD mm	Wt kg †
024-120	90	40	73	8.0	8.0	10	10	4	M4	8.0	25.5	0.93
034-120	103	43	108	9.0	9.0	12	12	4	M5	10.0	31.1	2.03
054-120	117	50	119	9.5	9.5	13	13	6	M5	8.0	34.9	3.12
074-120	182	82	152	16.0	16.0	20	20	4	M8	16.0	50.9	4.71
084-120	197	87	174	16.0	17.0	20	19	4	M8	16.0	70.0	7.62
094-120	218	92	200	16.0	19.0	20	26	4	M10	20.0	65.0	11.06
104-120	285	110	206	16.0	22.0	20	26	4	M10	16.0	102.0	14.80
124-120	292	136	258	16.0*	25.0	36	31	4	M12	24.0	77.8	23.50
144-120-4900	417	217	258	16.0*	28.6	36	38	4	M16	28.5	98.8	43.10
144-120	387	187	396	16.0*	28.6	36	38	4	M16	28.5	98.8/140.0	64.10
144-120-5000	337	137	258	16.0*	28.6	36	38	4	M16	28.5	98.8	38.18
154-120	432	187	396	16.0*	36.0	36	41	4	M16	28.5	140.0	77.00
164-120-6100	461	187	396	41.0	41.0	55	55	4	M24	28.0	152.7	88.10
164-120	486	212	524	41.0	41.0	55	55	4	M24	38.0	152.7	140.0
184-120-7000	572	212	524	57.0	57.0	78	78	4	M30	50.0	226.3	161.0
184-120	602	242	634	57.0	57.0	78	78	4	M30	50.0	226.3	278.0
204-120-8000	861	238	634	73.0	73.0	100	100	8	M30	50.0	226.3	390.0
204-120-7300	1032	412	524	73.0	73.0	100	100	8	M30	50.0	226.3	408.0
204-120	982	359	634	73.0	73.0	100	100	8	M30	50.0	226.3	538.0
304-120-7600	1293	412	524	73.0	73.0	100	100	8	M30	50.0	226.3	524.0
304-120-8300	1243	358	634	73.0	73.0	100	100	8	M30	50.0	226.3	630.4
304-120-7800	1493	612	524	73.0	73.0	100	100	8	M30	50.0	226.3	688.0
304-120	1354	483	634	73.0	73.0	100	100	8	M30	50.0	226.3	768.4
600-120-8400***	1194	604	634	***	***	***	***	***	***	***	***	1125.0
600-120-8500***	1315	725	634	***	***	***	***	***	***	***	***	1272.0
600-120***	1436	846	634	***	***	***	***	***	***	***	***	1420.0

*** Springs mounted above actuator - see page 25 for mounting details

† All weights include coupling - except 103

English Units

Actuator** Model	L inch	H inch	ØK inch	⊠ G1 inch	⊠ G2 inch	S1 inch	S2 inch	N No.	T UNC	D inch	PCD inch	Wt lb †
027-120	3.54	1.58	2.87	0.315	0.315	0.39	0.39	4	8-32	0.31	1.00	2.05
037-120	4.06	1.69	4.21	0.354	0.354	0.47	0.47	4	10-24	0.39	1.225	4.48
057-120	4.61	1.97	4.69	0.375	0.375	0.51	0.51	6	10-24	0.31	1.375	6.88
077-120	7.17	3.23	6.00	0.630	0.630	0.79	0.79	4	5/16-18	0.63	2.00	10.38
087-120	7.76	3.43	6.85	0.630	0.669	0.79	0.75	4	5/16-18	0.63	2.76	16.80
097-120	8.58	3.62	7.90	0.630	0.748	0.79	1.02	4	3/8-16	0.79	2.56	24.38
107-120	11.22	4.33	8.11	0.630	0.866	0.79	1.02	4	3/8-16	0.63	4.02	32.63
127-120	11.50	5.35	10.16	0.630*	0.984	1.40	1.22	4	1/2-13	0.94	3.06	51.81
147-120-4900	16.43	8.54	10.16	0.630*	1.125	1.40	1.50	4	5/8-11	1.12	3.89	95.02
147-120	15.24	7.36	15.59	0.630*	1.125	1.40	1.50	4	5/8-11	1.13	5.51	141.32
147-120-5000	13.27	5.40	10.16	0.630*	1.125	1.40	1.50	4	5/8-11	1.13	3.89	84.19
157-120	17.00	7.36	15.59	0.630*	1.417	1.40	1.61	4	5/8-11	1.13	5.51	170.0
167-120-6100	18.15	7.36	15.59	1.614	1.614	2.17	2.17	4	7/8-9	1.10	6.01	194.2
167-120	19.11	8.33	20.63	1.614	1.614	2.17	2.17	4	7/8-9	1.50	6.01	308.0
187-120-7000	22.50	8.33	20.63	2.244	2.244	3.07	3.07	4	1 1/8-7	1.97	8.91	356.0
187-120	23.69	9.52	24.96	2.244	2.244	3.07	3.07	4	1 1/8-7	1.97	8.91	612.9
207-120-8000	33.90	9.37	24.96	2.874	2.874	3.94	3.94	8	1 1/8-7	1.97	8.91	859.8
207-120-7300	40.61	16.20	20.63	2.874	2.874	3.94	3.94	8	1 1/8-7	1.97	8.91	901.0
207-120	38.67	14.13	24.96	2.874	2.874	3.94	3.94	8	1 1/8-7	1.97	8.91	1186.1
307-120-7600	50.91	16.20	20.63	2.874	2.874	3.94	3.94	8	1 1/8-7	1.97	8.91	1158.0
307-120-8300	48.93	14.13	24.96	2.874	2.874	3.94	3.94	8	1 1/8-7	1.97	8.91	1389.8
307-120-7800	58.78	24.07	20.63	2.874	2.874	3.94	3.94	8	1 1/8-7	1.97	8.91	1520.0
307-120	53.68	19.02	24.96	2.874	2.874	3.94	3.94	8	1 1/8-7	1.97	8.91	1694.0
609-120-8400***	47.01	23.78	24.96	***	***	***	***	***	***	***	***	2480.0
609-120-8500***	51.77	28.54	24.96	***	***	***	***	***	***	***	***	2804.0
609-120***	56.54	33.31	24.96	***	***	***	***	***	***	***	***	3131.0

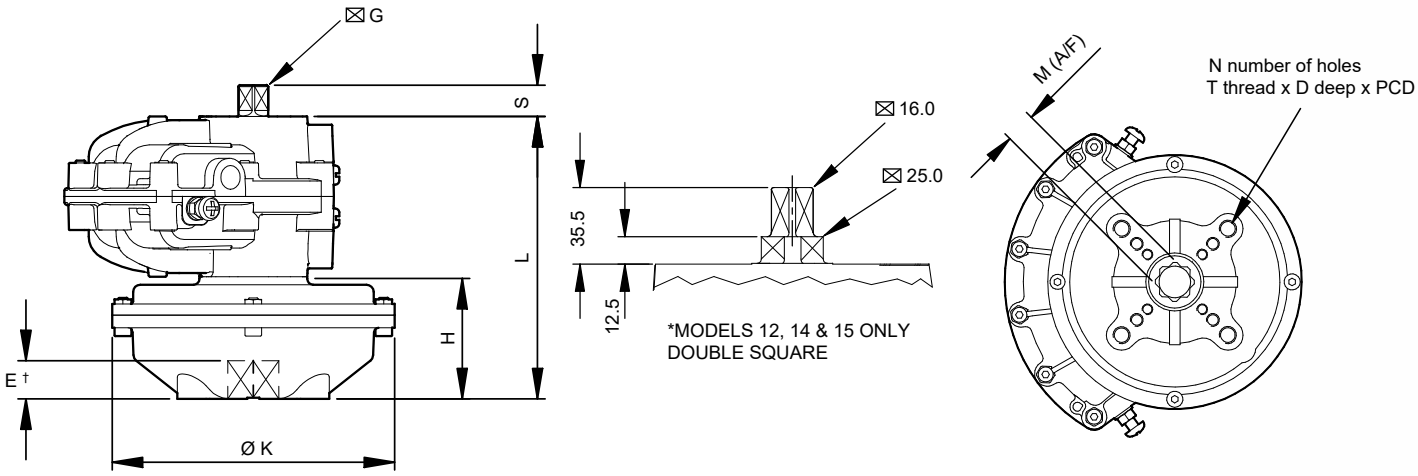
*** Springs mounted above actuator - see page 25 for mounting details

† All weights include coupling - except 107

ATEX UP TO CATEGORY 1 APPROVED

** Clockwise (120) and counterclockwise (130) units have identical dimensions

ISO Flange Female Spring Return Actuator Dimensions



Metric Units

Actuator** Model	ISO Flange No.	L mm	H mm	ØK mm	M mm	S mm	⊠G mm	E † mm	N No.	T ISO	D mm	PCD mm
033F120	F03/F05	103	43	108	11	12	9.0	12	4	M5/M6	8/10	36/50
033F180	F04	103	43	108	11	12	9.0	12	4	M5	10	42
053F120	F03/F05/F07	117	50	119	14	13	9.5	16	4	M5/M6/M8	10/12/13	36/50/70
053F180	F04	117	50	119	14	13	9.5	16	4	M5	10	42
073F120-4000	F03/F05/F07	150	50	118	14	20	16.0	16	4	M5/M6/M8	10/12/13	36/50/70
073F120	F05/F07	182	82	152	17	20	16.0	19	4	M6/M8	10/13	50/70
083F120	F07	197	87	174	17	20	16.0	19	4	M8	16	70
093F120-4200	F05/F07	208	82	152	17	20	16.0	19	4	M6/M8	10/13	50/70
093F120	F07/F10	218	92	200	22	20	16.0	24	4	M8/M10	13/16	70/102
103F120-5800	F07/F10	268	92	200	22	20	16.0	24	4	M8/M10	13/16	70/102
103F120	F10	285	110	206	22	20	16.0	24	4	M10	16	102
123F120-4300	F10	248	92	200	22	35.5	16.0*	25	4	M10	16	102
123F120	F10	292	136	258	22	35.5	16.0*	25	4	M10	16	102
123F180	F12	292	136	258	27	35.5	16.0*	29	4	M12	20	125
143F120-4900	F12	417	217	258	27	35.5	16.0*	29	4	M12	20	125
143F120-5000	F12	337	136	258	27	35.5	16.0*	29	4	M12	20	125
143F120	F12	387	187	396	27	35.5	16.0*	29	4	M12	24	125
153F120***	F14	432	187	396	36	35.5	16.0*	38	4	M16	28	140
163F120***	F14	486	212	524	36	55	41.0	38	4	M16	24	140
183F120-7000***	F16	572	212	524	46	78	57.0	48	4	M20	30	165
183F120***	F16	602	242	634	46	78	57.0	48	4	M20	30	165
203F120-8000***	F25	861	238	634	55	100	73.0	57	8	M16	24	254
203F120-7300***	F25	1032	412	524	55	100	73.0	57	8	M16	24	254
203F120***	F25	982	359	634	55	100	73.0	57	8	M16	24	254

English Units

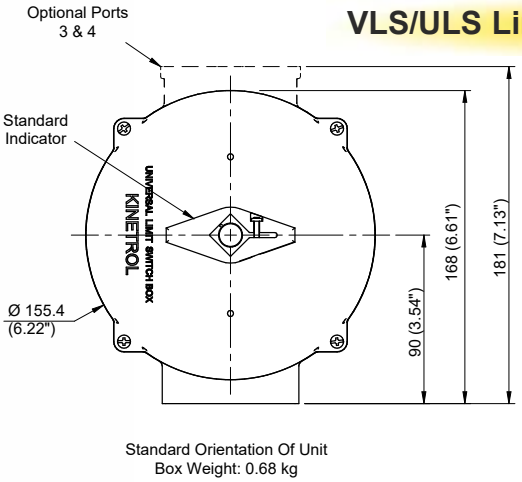
Actuator** Model	ISO Flange No.	L inch	H inch	ØK inch	M inch	S inch	⊠G inch	E † inch	N No.	T UNC	D inch	PCD inch
037F120	F03/F05	4.06	1.69	4.21	0.433	0.47	0.354	0.47	4	10-24 1/4	0.31/0.39	1.41/1.97
037F180	F04	4.06	1.69	4.21	0.433	0.47	0.354	0.47	4	10-24	0.39	1.65
057F120	F03/F05/F07	4.61	1.97	4.69	0.551	0.51	0.374	0.63	4	10-24 1/4 5/16	0.39/0.47/0.51	1.42/1.97/2.76
057F180	F04	4.61	1.97	4.69	0.551	0.51	0.374	0.63	4	10-24	0.39	1.65
077F120-4000	F03/F05/F07	5.91	1.97	4.65	0.551	0.79	0.630	0.63	4	10-24 1/4 5/16	0.39/0.47/0.51	1.42/1.97/2.76
077F120	F05/F07	7.17	3.23	5.98	0.669	0.79	0.630	0.75	4	1/4 5/16	0.39/0.51	1.97/2.76
087F120	F07	7.76	3.43	6.85	0.669	0.79	0.630	0.75	4	5/16	0.63	2.76
097F120-4200	F05/F07	8.19	3.23	5.98	0.669	0.79	0.630	0.75	4	1/4 5/16	0.39/0.51	1.97/2.76
097F120	F07/F10	8.58	3.62	7.87	0.866	0.79	0.630	0.94	4	5/16 3/8	0.51/0.63	2.76/4.01
107F120-5800	F07/F10	10.55	3.62	7.87	0.866	0.79	0.630	0.94	4	5/16 3/8	0.51/0.63	2.76/4.01
107F120	F10	11.22	4.33	8.11	0.866	0.79	0.630	0.94	4	3/8	0.63	4.02
127F120-4300	F10	9.76	3.62	7.87	0.866	1.40	0.630*	0.94	4	3/8	0.63	4.02
127F120	F10	11.50	5.35	10.16	0.866	1.40	0.630*	0.98	4	3/8	0.63	4.02
127F180	F12	11.50	5.35	10.16	1.063	1.40	0.630*	0.98	4	1/2	0.79	4.92
147F120-4900	F12	16.42	8.54	10.16	1.063	1.40	0.630*	1.14	4	1/2	0.79	4.92
147F120-5000	F12	13.27	5.35	10.16	1.063	1.40	0.630*	1.14	4	1/2	0.79	4.92
147F120	F12	15.24	7.36	15.59	1.063	1.40	0.630*	1.14	4	1/2	0.94	4.92
157F120***	F14	17.00	7.36	15.59	1.420	1.40	0.630*	1.50	4	5/8	1.10	5.51
167F120***	F14	19.13	8.35	20.63	1.417	2.17	1.614	1.50	4	5/8	0.94	5.51
187F120-7000***	F16	22.52	8.35	20.63	1.811	3.07	2.244	1.89	4	3/4	1.18	6.50
187F120***	F16	23.69	9.52	24.96	1.811	3.07	2.244	1.89	4	3/4	1.18	6.50
207F120-8000***	F25	33.90	9.37	24.96	2.165	3.94	2.874	2.24	8	5/8	0.94	10.00
207F120-7300***	F25	40.63	16.22	20.63	2.165	3.94	2.874	2.24	8	5/8	0.94	10.00
207F120***	F25	38.67	14.13	24.96	2.165	3.94	2.874	2.24	8	5/8	0.94	10.00

† Minimum

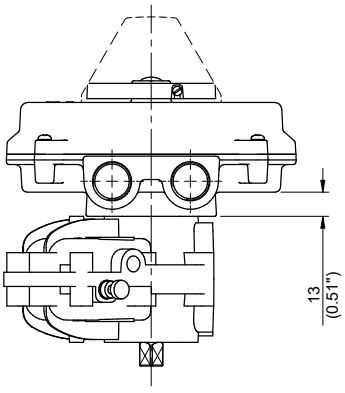
** Clockwise (120 or 180) and counterclockwise (130 or 190) units have identical dimensions

All female drives are "Star" type except for sizes marked "***" where square orientation is shown by dimension "M"

VLS/ULS Limit Switch Box Dimensions

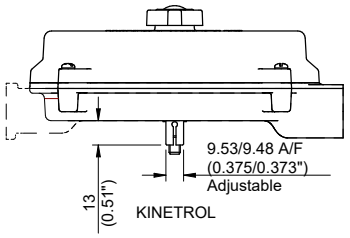


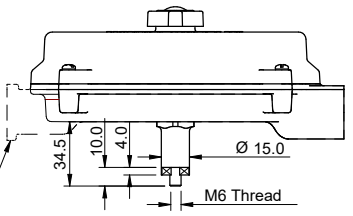
Standard Orientation Of Unit
Box Weight: 0.68 kg

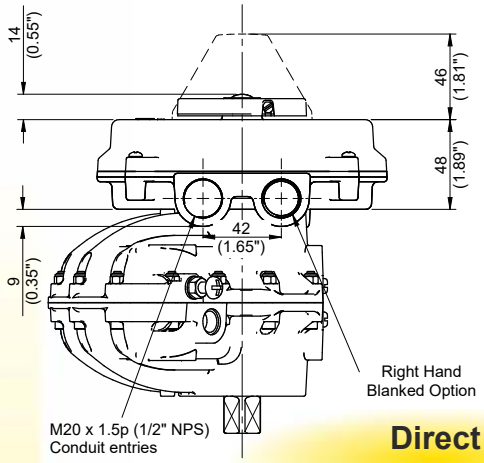


03 & 05
DIRECT MOUNT OPTION
ADDITIONAL ADAPTOR WEIGHT: 0.04 kg

For Atex ULS versions contact Kinetrol

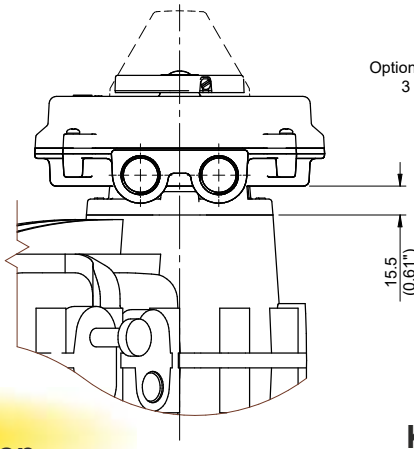




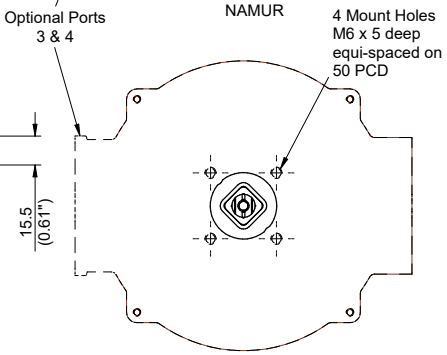


07, 08, 09, 10
DIRECT MOUNT OPTION

Direct Mount Option

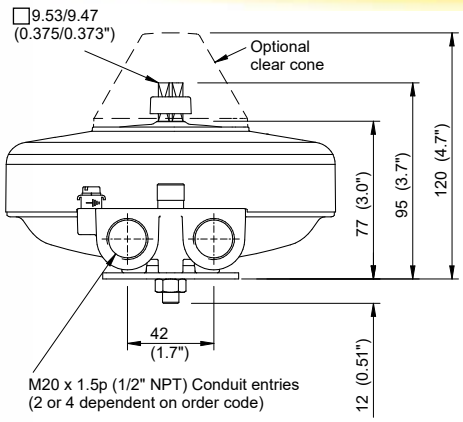


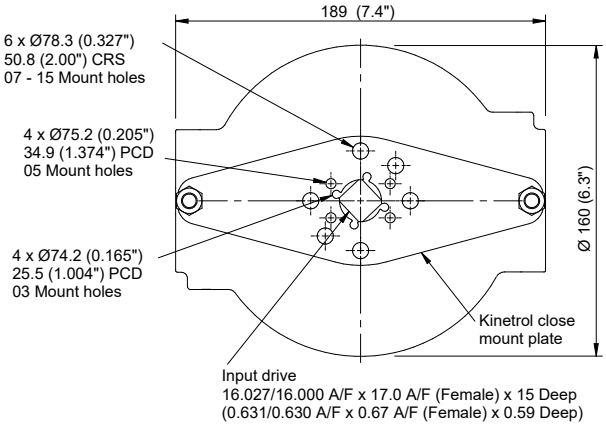
12, 14 & 15
DIRECT MOUNT OPTION
ADDITION ADAPTOR WEIGHT: 0.56 kg



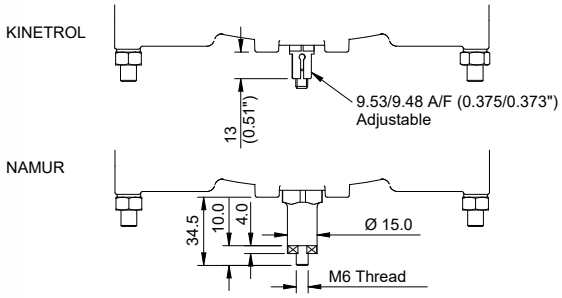
Kinetrol & Namur Discrete Mount Option

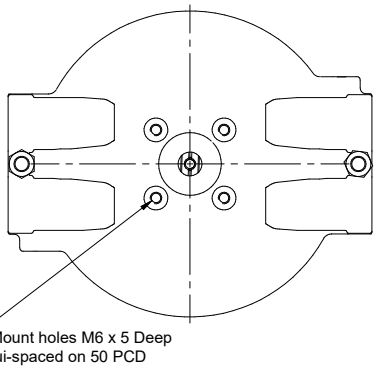
Explosion Proof Limit Switch Box Dimensions





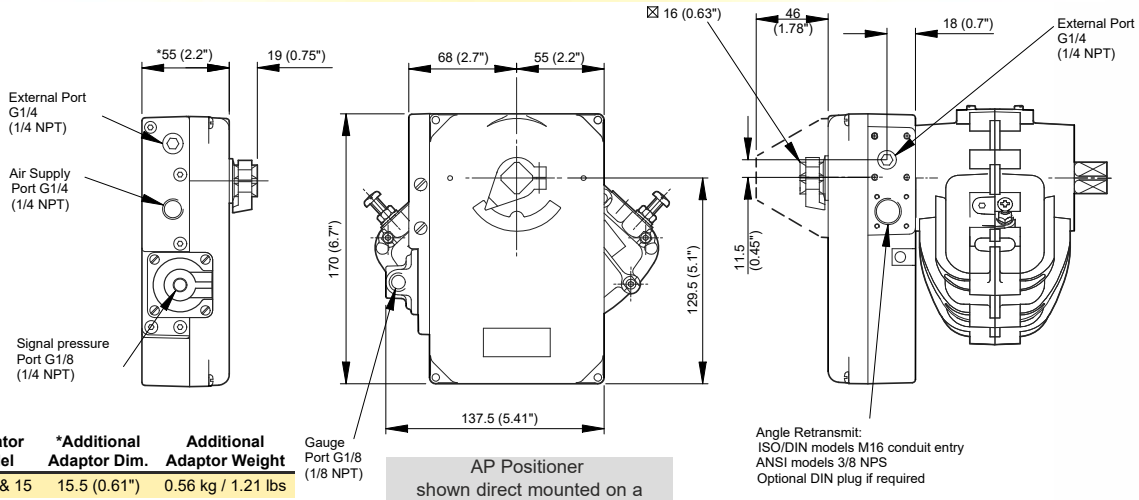
Kinetrol Close Mount Option





Discrete Mount Option

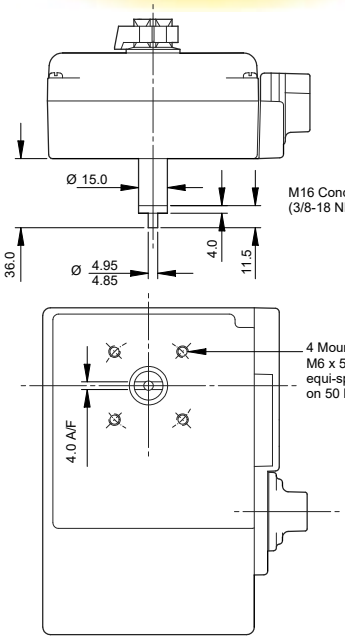
AP Positioner Dimensions



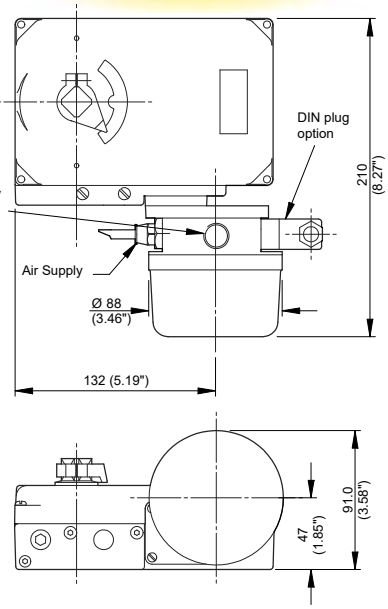
Actuator Model	*Additional Adaptor Dim.	Additional Adaptor Weight
12, 14 & 15	15.5 (0.61")	0.56 kg / 1.21 lbs

AP Positioner shown direct mounted on a Kinetrol 07 Actuator

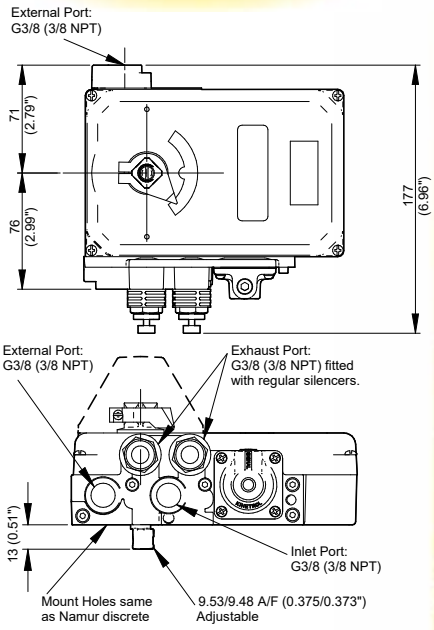
Namur Discrete Version



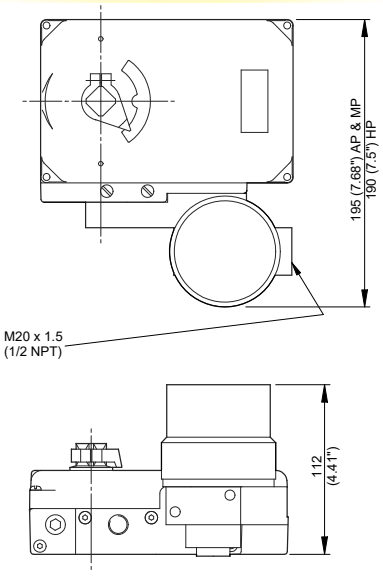
Non-Hazardous I/P Version



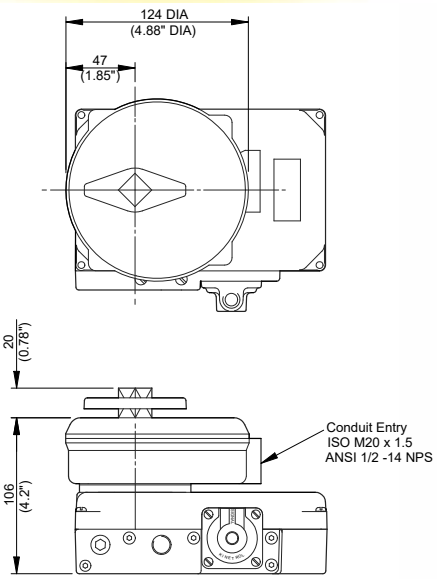
Kinetrol Discrete/ High Flow Version



Explosion Proof I/P Version

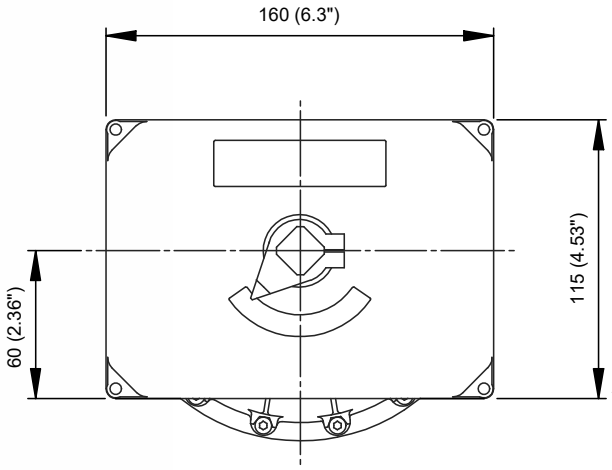


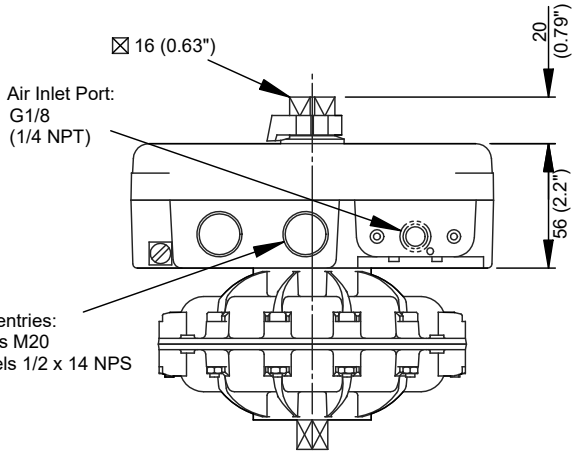
Switch Box Version



Where drawing information is not given - it is the same as the direct mount version

EL Positioner Dimensions

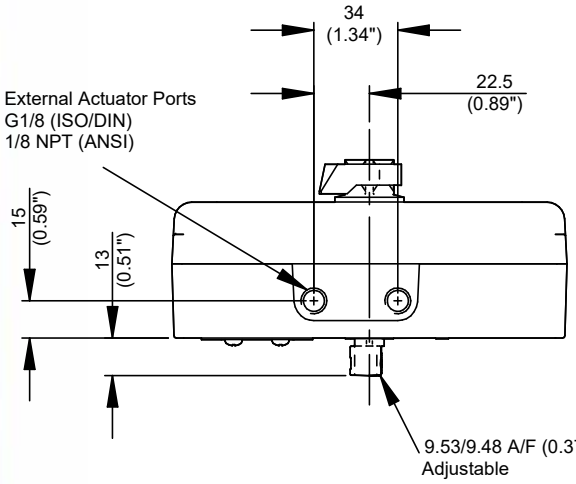


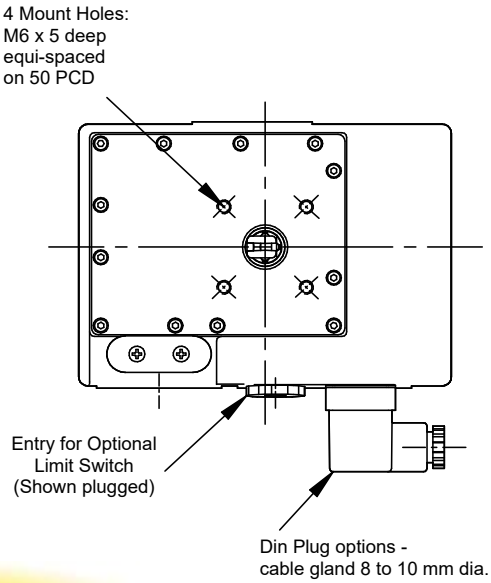


Actuator Model	*Additional Adaptor Dim.	Additional Adaptor Weight
12, 14 & 15	15.5 (0.61")	0.56 kg / 1.21 lbs

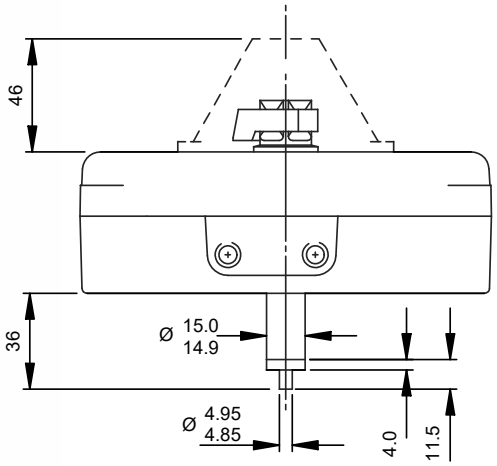
EL Positioner shown direct mounted on a Kinetrol 05 actuator

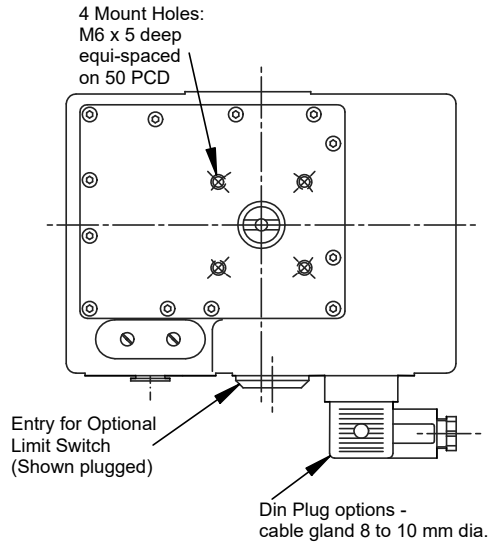
Kinetrol Discrete Version





Namur Discrete Version

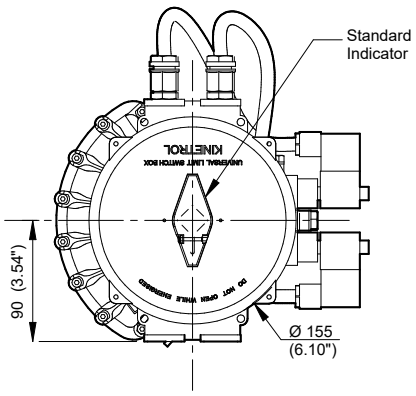


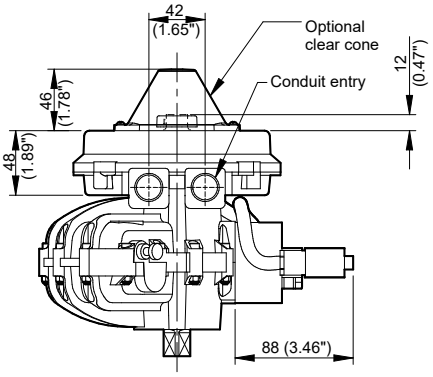


Where drawing information is not given - it is the same for both versions

P3 On/Off Pneumatic Positioner Dimensions

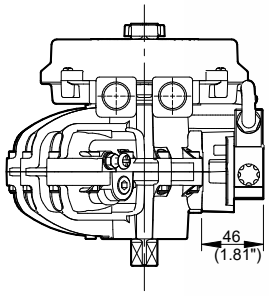
Fail free / Fail down / Spring return units





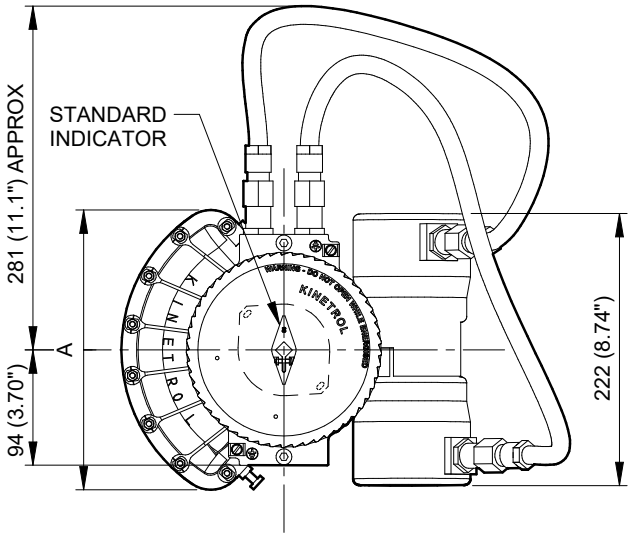
G 1/8 (1/8" NPT) PORT POSITION ON BLOCK
DEPENDS ON ORDER SPECIFICATION

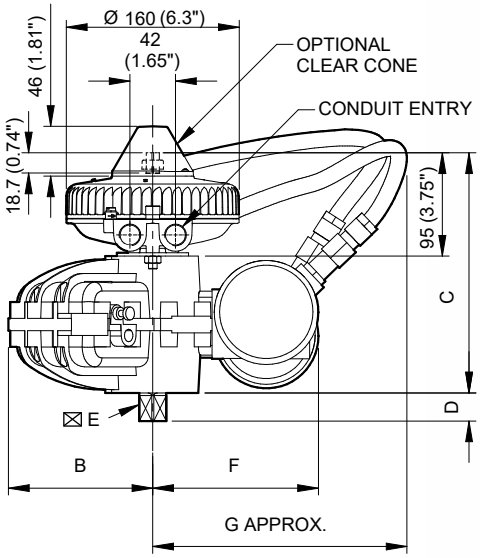
Fail hold unit



G 1/4" (1/4" NPT) PORT
ON SOLENOID

Explosion Proof P3 On/Off Positioner Dimensions

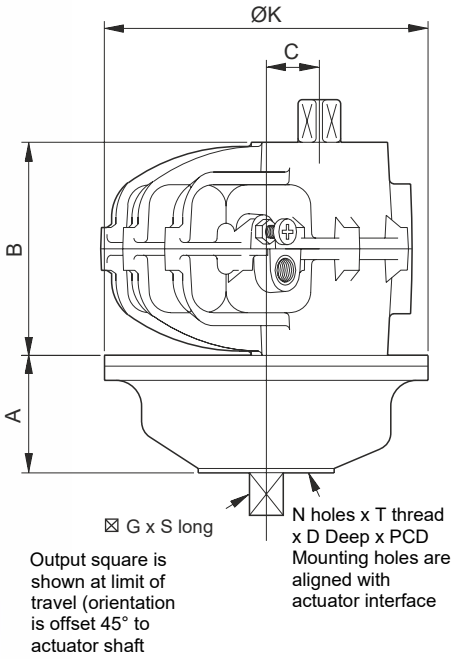




Model	A	B	C	D	⊠E	F	G
05	137.0 (5.39")	78.4 (3.09")	162 (6.4")	13.0 (0.51")	9.5 (0.375")	133 (5.2")	214 (8.4")
07	178.0 (7.01")	102.6 (4.04")	195 (7.7")	20.0 (0.79")	16.0 (0.630")	142 (5.6")	223 (8.8")
08	208.0 (8.19")	120.7 (4.75")	205 (8.1")	19.0 (0.75")	17.0 (0.669")	145 (5.7")	226 (8.9")
09	227.0 (8.94")	133.0 (5.24")	221 (8.7")	26.0 (1.02")	19.0 (0.748")	153 (6.0")	234 (9.2")
10	229.0 (9.00")	130.5 (5.14")	273 (10.75")	24.0 (0.94")	22.0* (0.870")	155 (6.2")	236 (9.3")
12	294.0 (11.57")	171.0 (6.73")	266 (10.5")	31.0 (1.22")	25.0 (0.984")	167 (6.6")	218 (8.6")
14	380.0 (14.96")	222.0 (8.74")	314 (12.4")	38.0 (1.50")	28.6 (1.125")	183 (7.2")	264 (10.4")
15	433.0 (17.05")	252.0 (9.92")	355 (14.0")	41.0 (1.61")	36.0 (1.417")	200 (7.9")	281 (11.1")

* Model 10 DIN (F10) Female Drive

180 Degree Actuator Dimensions



Dimensions/Metric Units

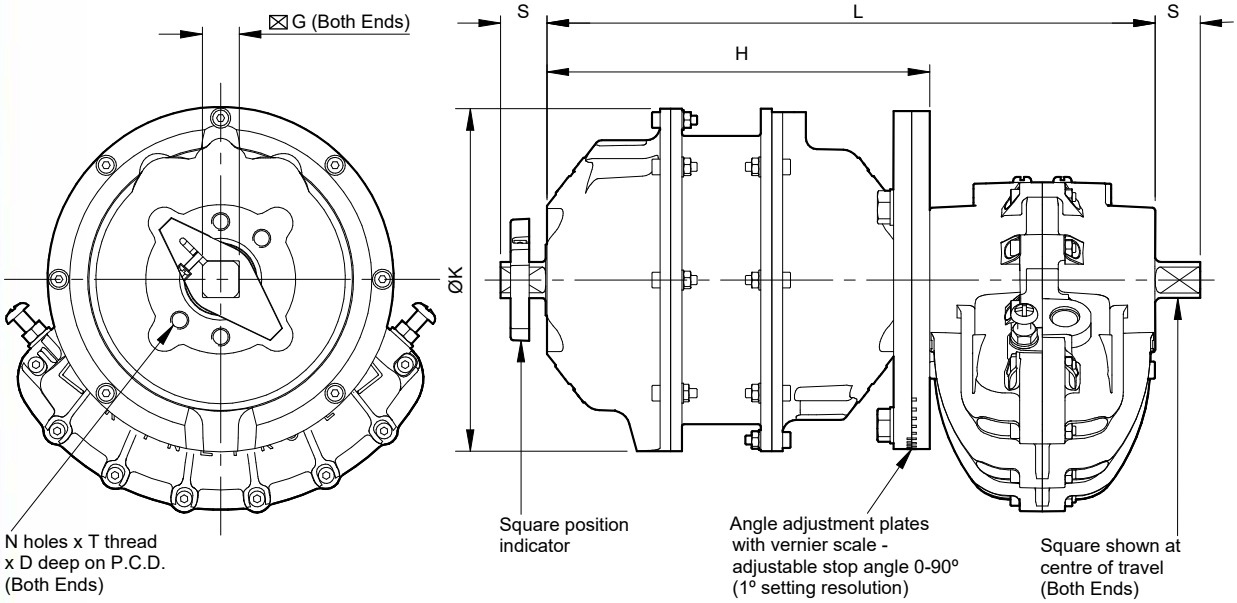
Actuator Model	A mm	B mm	C mm	K mm	G mm	S mm	N	T ISO	D mm	PCD mm	W kg
02 - 1001	32	50	12.5	73	8.0	10.0	4	M4	8.0	25.5	1.1
03 - 1001	36	60	20	108	9.0	12.0	4	M5	10.0	31.1	2
05 - 1001	42	67	20	119	9.5	13.0	6	M5	8.0	34.9	2.5
07 - 1001	59	100	25	152	16.0	20.0	4	M8	16.0	50.9	4.57
09 - 1001	70	126	35	200	19.0	26.0	4	M10	20.0	65.0	13.2
12 - 1001	99	156	45	258	25.0	31.0	4	M12	22.0	77.8	20.45
14 - 1001	125	200	70	396	28.6	38.0	4	M16	28.5	98.8	35.25
16 - 1001	176	274	100	520	41.0	55.0	4	M24	38.0	152.7	125

Dimensions/English Units

Actuator Model	A inch	B inch	C inch	K inch	G inch	S inch	N	T UNC	D inch	PCD inch	W lb
02 - 1001	1.24	1.97	0.49	2.87	0.315	0.39	4	8-32	0.31	1.000	2.43
03 - 1001	1.40	2.36	0.79	4.25	0.354	0.47	4	10-24	0.39	1.225	4.41
05 - 1001	1.65	2.64	0.79	4.69	0.375	0.51	6	10-24	0.31	1.375	5.51
07 - 1001	2.32	3.94	0.98	6.00	0.630	0.79	4	5/16-18	0.63	2.000	11.68
09 - 1001	2.76	4.96	1.38	7.90	0.748	1.02	4	3/8-16	0.79	2.560	29.10
12 - 1001	3.90	6.14	1.77	10.16	0.984	1.22	4	1/2-13	0.87	3.060	44.99
14 - 1001	4.92	7.87	2.76	15.59	1.125	1.50	4	5/8-11	1.13	3.890	77.55
16 - 1001	6.93	10.79	3.94	20.47	1.614	2.17	4	7/8-9	1.50	6.012	275.00

N.B. Weights are inclusive of actuator and 180 degree assembly, coupling and indicator (except models 14 & 16).

Spring to Centre Dimensions



Actuator Model	L mm	H mm	K mm	⊠G mm	S mm	N No.	T ISO	D mm	PCD mm	Wgt* kg
050-1205	178	111	119	9.5	13	6	M5	10	34.9	4.0
070-1205	270	170	152	16.0	20	4	M8	16	50.9	10.2
090-1205	328	202	200	19.0	26	4	M10	20	65.0	23.6
120-1205	466	310	258	25.0	31	4	M12	22	77.8	36.0
140-1205	640	440	400	28.6	38	4	M16	28	98.8	124.0
160-1205	880	606	400	41.0	55	4	M24	38	152.7	200.0
180-1205	1163	803	532	57.0	78	4	M30	50	226.3	445.0

* Weight includes standard coupling

Spring Fail-Safe Electric Actuators

Kinetrol's double acting and spring return electrohydraulic actuators are designed for use in locations without a compressed air supply. A hydraulic pump delivers pressurised oil to a Kinetrol quarter-turn actuator, providing a double acting torque output up to 1220 Nm/10800 lbf in.

In the case of single acting units, a Kinetrol spring return and fail-open solenoid valve produce a positive fail-safe action.

A 100% rated pump motor and pressure release valve provide stall protection. This, together with the units capacity for up to 3000 starts per hour, make it ideal for both high cycle double acting or modulating applications.

Various AC and DC voltage builds are available and options include auxiliary limit switches and/or a 4-20 mA transducer for position feedback.

See leaflet KF-503 for further information.

Rotary Dampers

Kinetrol's range of fluid dashpots are used to steady drives, decelerate motion and damp vibration. Standard designs include fixed and adjustable rate devices for limited angle or continuous rotation damping in one or both directions of travel.

Applications for these robust, industrial dampers include the precise control of:

- tension on wire/paper/film/textile handling equipment
- the rate of descent of curtains, shutters, etc.
- oscillations of pendulums, gimbals, etc.
- jerk on camera & simulator systems
- vibration on transfer machinery.

See catalogue KF-72 for more information.
If required, Kinetrol can engineer special designs to meet customers specifications.

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web: www.stim.bytom.pl

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