

# Models UP1/2/3/4/5/6/7 Universal pneumatic rotary actuators

Measurement made easy

High performance actuators for  
precision damper control



#### Wide range of torque ratings

- Seven actuator sizes available in ratings from 122 to 7320 Newton meter (90 to 5400 foot-pounds).
- 12745 Newton meter (9400 foot-pounds) with Master-slave solution.

#### Easy and flexible installation

- Place in convenient locations and connect to driven device by standard linkage components.

#### Control modes for safe operation

- Options available for fail-safe or fail-in-place on loss of control input and air supply.

#### Suitable for high temperature environments

- Use in ambient temperatures up to 85 °C (185 °F), depending on control input.

#### Adjustable relationship between control signal and output shaft position

- Adjusts easily with use of standard positioner characteristics: linear, square and square root relationship or custom-characteristics.

#### Conventional or digital positioner options

- Complete range of control signal options including EDP300 and TZIDC digital positioner with HART® communications.

#### Manual operation

- Quick and smooth transfer shifts easily from automatic to manual control.

#### Wide range of options available

- Factory installed IP66 (NEMA 4X) enclosure, pneumatic or electric position transmitter, alarm/travel switches, air failure lock option and heated enclosures available.

## Universal Rotary Actuators Type UP Pneumatic

The Type UP Pneumatic Universal Rotary Actuators regulate dampers, fan inlet vanes, lever-operated valves, turbine governors, fluid drives and other final control elements (see Figure 1).

These actuators accept electric or pneumatic control signals. This provides modulating or on/off control power to position devices through mechanical linkage or by direct coupling.

Types UP1 and UP2 actuators include a double-acting rotary vane power unit. Types UP3, UP4, UP5, UP6 and UP7 actuators include a double-acting piston with a motion conversion mechanism to convert linear to rotary motion.

Order the actuator with a positioner, or a single or double acting on/off solenoid valve. Refer to ordering information.

Actuators with a positioner include a TZIDC/EDP300 Digital or Type AV Characterizable Analog Positioners. The AV positioner is a push-pull action, force balance type control instrument. It offers a variety of input ranges including 21 to 103 kPa (3 to 15 psig), 21 to 186 kPa (3 to 27 psig) or 4 to 20 milliamps.

With the AV positioner, there are standard cams for linear, square, or square root relationships between the control input and output position.

With the TZIDC or EDP300 Digital positioner, characterization is done electronically. The positioner acts as a pneumatic relay, through a separate air supply it produces the differential pressure that moves the actuator into position.

The TZIDC or EDP300 Digital positioner is available on all sizes of UP drives and offers the following advantages:

1. Configurable Smart Digital Positioner with diagnostics and digital communication capability via HART protocol
2. Auto adjust function provides fast and easy setup and self-tuning
3. Modular: Options or replacement parts can be added easily in the field.
4. As a digital device, it can be integrated as part of the ABB FDT Asset Management solutions with DTM technology.
5. Integral Analog or Digital Position Feedback
6. Fail-safe or Fail-in-Place on loss of mA input signal.
7. High immunity to shock and vibration.
8. Low flow cut-off for valve or damper applications.
9. Configurable custom characterization to correct for non-linear flow characteristics of the damper or butterfly valve.
10. The TZIDC-200 positioner option can be used in Class I, Div. 1, Gr C-G, Explosion Proof Environments. *Refer to the ordering information for option combinations. Also call factory for hazardous area application solutions.*
11. Other approvals (for example, ATEX/IEC) on request.

Actuators with a solenoid valve provide on/off control. In this case, positioning of the actuator is at either of the extreme ends of travel (0 percent or 100 percent). The solenoid valve is suitable for 120 V AC, 115/125 V DC or 220 V AC service, single coil for fail open/close or dual coil for Fail-in-Place, on loss of coil voltage. Refer to ordering information.

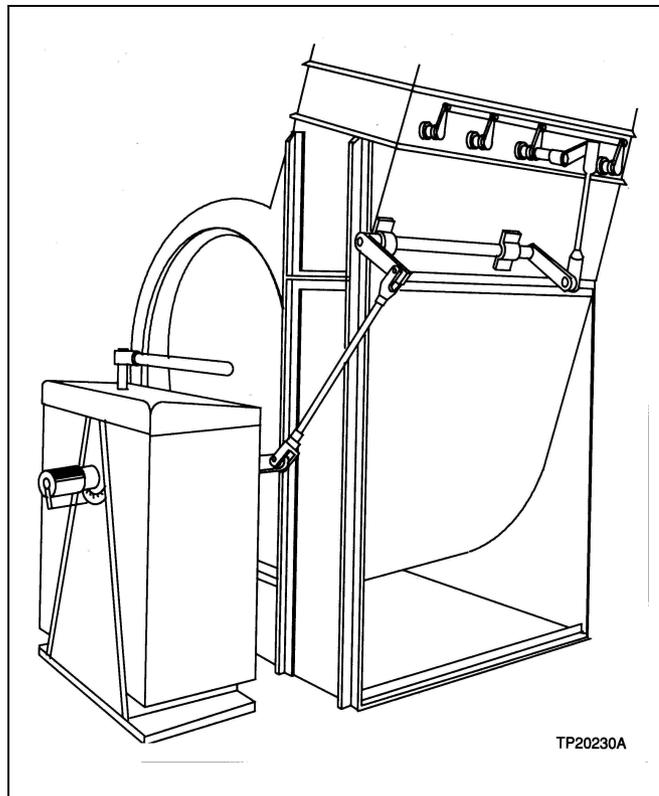


Figure 1. Typical fan damper control application

## Engineering Specifications

### Supply Pressure (minimum and maximum)

276 to 690 kPa (40 to 100 psig) with EDP300 and AV Positioners

276 to 621 kPa (40 to 90 psig) with TZIDC Positioners

### Operating Torque

See Table 1 and Figures 2 & 3 for operating torque versus air supply pressure.

UP1			
supply, kPa	torque, Nm	supply, psig	torque, ft-lb
276	54	40	40
310	59	45	44
345	65	50	48
379	71	55	52
414	76	60	56
448	82	65	60
483	88	70	65
517	93	75	69
552	99	80	73
586	105	85	77
621	110	90	81
655	116	95	85
690	122	100	90

UP2			
supply, kPa	torque, Nm	supply, psig	torque, ft-lb
276	224	40	165
310	256	45	188
345	288	50	212
379	320	55	236
414	352	60	260
448	384	65	283
483	417	70	307
517	449	75	331
552	481	80	355
586	513	85	378
621	545	90	402
655	577	95	426
690	610	100	450

UP3			
supply, kPa	torque, Nm	supply, psig	torque, ft-lb
276	441	40	325
310	494	45	364
345	548	50	404
379	602	55	443
414	655	60	483
448	709	65	522
483	763	70	562
517	816	75	602
552	870	80	641
586	924	85	681
621	977	90	720
655	1031	95	760
690	1085	100	800

UP4			
supply, kPa	torque, Nm	supply, psig	torque, ft-lb
276	746	40	550
310	847	45	625
345	949	50	700
379	1051	55	775
414	1152	60	850
448	1254	65	925
483	1356	70	1000
517	1457	75	1075
552	1559	80	1150
586	1661	85	1225
621	1762	90	1300
655	1864	95	1375
690	1966	100	1450

Note 1: Maximum supply pressure for UP with TZIDC positioner option is 621kPa (90 psi)  
 Maximum supply pressure for UP with EDP300 or AV positioner option is 690 kPa (100 psi)  
 Maximum supply pressure for UP7 is 552 kPa (80 psi)

Table 1. Operating Torque At Minimum And Maximum Supply Pressure <sup>1</sup>

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

UP5			
supply, kPa	torque, Nm		supply, psig
			torque, ft-lb
276	1437		40
310	1633		45
345	1830		50
379	2026		55
414	2223		60
448	2419		65
483	2616		70
517	2813		75
552	3009		80
586	3206		85
621	3402		90
655	3599		95
690	3796		100

UP6			
supply, kPa	torque, Nm		supply, psig
			torque, ft-lb
276	2576		40
310	2892		45
345	3208		50
379	3525		55
414	3841		60
448	4157		65
483	4474		70
517	4790		75
552	5106		80
586	5423		85
621	5739		90
655	6055		95
690	6372		100

UP7			
supply, kPa	torque, Nm		supply, psig
			torque, ft-lb
276	3663		40
310	4120		45
345	4579		50
379	5037		55
414	5495		60
448	5952		65
483	6410		70
517	6869		75
552	7326		80

Note 1: Maximum supply pressure for UP with TZIDC positioner option is 621kPa (90 psi)  
 Maximum supply pressure for UP with EDP300 or AV positioner option is 690 kPa (100 psi)  
 Maximum supply pressure for UP7 is 552 kPa (80 psi)

Table 1. Operating Torque At Minimum And Maximum Supply Pressure <sup>1</sup> (Continued)

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

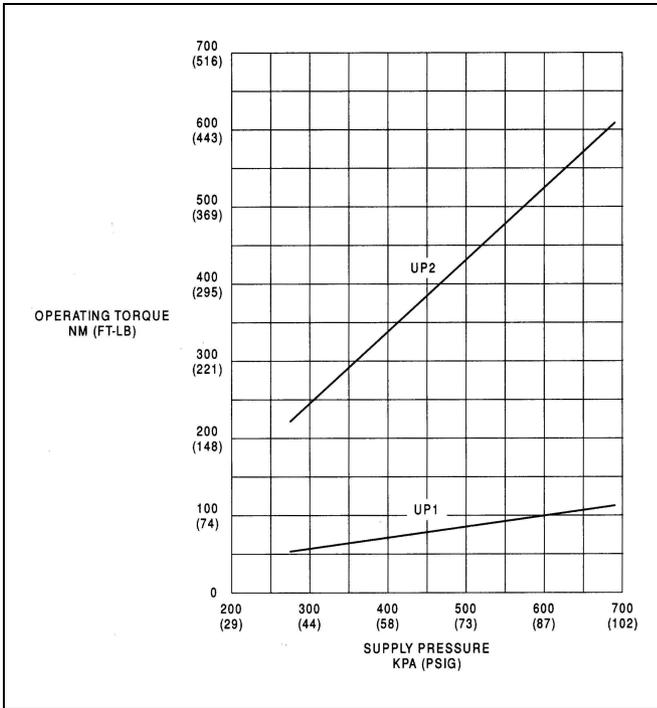


Figure 2. Operating Torque Versus Supply Pressure for Type UP1 & UP2 Actuators

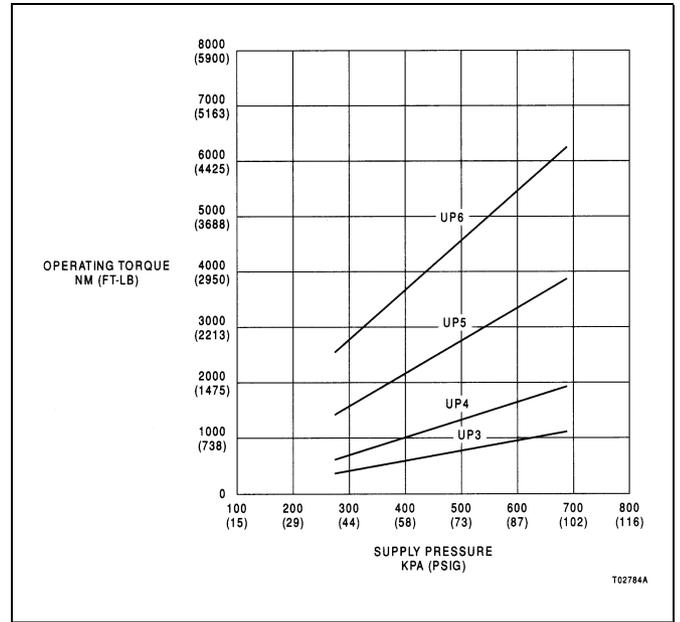


Figure 3. Operating Torque Versus Supply Pressure for Types UP3 thru UP6 Actuators

## Volume Displacement for 90° Mechanical Output Rotation

UP1:	655 cm <sup>3</sup> (40 in. <sup>3</sup> ) rotary vane
UP2:	1965 cm <sup>3</sup> (120 in. <sup>3</sup> ) rotary vane
UP3:	3685 cm <sup>3</sup> (225 in. <sup>3</sup> ) cylinder [15 x 20 cm (6 x 8 in.)]
UP4:	6550 cm <sup>3</sup> (400 in. <sup>3</sup> ) cylinder [20 x 20 cm (8 x 8 in.)]
UP5:	13,110 cm <sup>3</sup> (800 in. <sup>3</sup> ) cylinder [20 x 41 cm (8 x 16 in.)]
UP6:	20,565 cm <sup>3</sup> (1255 in. <sup>3</sup> ) Cylinder [25 x 41 cm (10 x 16 in.)].
UP7:	29,653 cm <sup>3</sup> (1809.5 in. <sup>3</sup> ) Cylinder [30.5 x 41 cm (12 x 16 in.)].

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## Engineering Specifications

### Temperature Limits for positioner options:

- 40 to 82 °C (–40 to 180 °F)<sup>1</sup> for UP with AV positioners
- 40 to 85 °C (–40 to 185 °F) for UP with TZIDC or EDP300 positioners

The low temperature operative limit can be extended below 0 °C (32 °F) without heaters if the dew point of the air supply is maintained at least 10 °C (18 °F) below the minimum expected ambient temperature.

*Note 1: Some actuator/positioner combinations may have slightly higher minimum, and slightly lower maximum operating temperatures. Refer to the appropriate positioner specification for temperature limitations.*

### Mechanical Rotation

UP1 & UP2:	Rotary vane stroke is nominally set for 90 ° rotation, but can be adjusted over a range from 80 to 92 ° via adjustable mechanical stop.
UP 3/4/5/6/7:	Stroke of the cylinder provides a 90 ° rotation of the output lever.

### Positioner Input Signal:

AV1:	21 to 103 kPa (3 to 15 psig) 21 to 186 kPa (3 to 27 psig); 50% range suppression and/or zero elevation capability.
AV2:	4 to 20 mA goes to 0% (direct acting) or 100% (reverse acting) on loss of input signal.
TZIDC/EDP300 (fail-safe):	4 to 20 mA goes to 0% (direct acting) or 100% (reverse acting) on loss of input signal. Refer to nomenclature.
TZIDC/EDP300 (fail-in-place):	4 to 20 mA holds position on loss of input signal. Refer to nomenclature.

### Air Consumption (nominal) at Balance with Positioner:

AV:	Typical 188.8 cm <sup>3</sup> /s (0.4 scfm) @ 517.1 kPa (75.0 psig) supply at null
TZIDC/EDP300:	< 0.03 kg/h (0.015scfm) at null independent of supply pressure

### Air Supply:

UP with TZIDC Positioner:	621kPa (90 psi) maximum
UP with EDP300 or AV positioner:	690 kPa (100 psi) maximum

### Travel Direction of UP Lever Arm (see Note 2):

Direct action is standard.

With increasing signal, actuator lever rotates as follows:

UP1:	Counterclockwise when facing lever (see Note 2)
UP2:	Clockwise when facing lever (see Note 2)
UP3/4:	Clockwise when facing lever (see Notes 1 and 2)
UP5/6/7:	Counterclockwise when facing lever (see Notes 1 and 2)

*Note 1: UP3 thru UP7 can have lever mounted on either side of actuator. Factory delivery provides lever on left-side for UP3 & UP4 and on right-side for UP5/6/7 when facing positioner.*

*Note 2: Consult factory for custom travel directions.*

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## Performance Specifications:

Refer to the appropriate positioner specification for hysteresis, resolution, deadband, repeatability, etc.

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## Solenoid Type & Coil Specifications

	4-way, 2-position, 2-wire type (UP_ _5 and UP_ _6).
	4-way, 2-position, 4-wire type (UP_ _8 and UP_ _9).
UP1/2:	IP66 (NEMA 4X) enclosure rating CSA certified 120 V AC or 240 V AC, 50/60 Hz, 10.1 W; or 125 V DC, 11.6 W
UP3/4/5/6/7:	IP (NEMA) <sup>1</sup> enclosure rating CSA certified 120 V AC or 240 V AC, 50/60 Hz, 10.1 W; or 125 V DC, 11.6 W

*Note 1: The solenoid valve is mounted inside the actuator enclosure on these models, so the environmental rating of the entire unit is a function of the environmental rating of the actuator enclosure. See nomenclature.*

## Models UP1/2/3/4/5/6/7

Universal pneumatic rotary actuators

### External Connections

#### Air Supply:

UP1/2: 1/4 – 18 NPT female

UP3/4: 1/4 – 18 NPT female

UP5/6/7: 1/2 – 14 NPT female

#### Pneumatic Signal:

1/4 – 18 NPT female when using Type AV11 or AV12 positioners as the control input.

#### Air Failure Reset:

1/4 – 18 NPT female

#### Electrical Conduit:

Cutouts for 1/2 and 3/4 in. NPT female when using Type AV2, TZIDC & EDP300 positioners, or a solenoid valve for the control input

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### Manual Operator

#### UP1 & UP2:

Lever type with manual locking bolt.

#### UP3 & UP4:

Split nut with locking ratchet.

#### UP5/6/7:

Gear type with self-locking ratchet.

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### Materials of Construction

#### Frame:

Carbon Steel

#### Output Shaft:

Carbon Steel

#### Top Covers:

Sheet metal

#### End Covers:

Sheet metal

#### Actuators UP1 & UP2:

Die Cast aluminum rotary vane housing

#### Actuators UP3/4/5/6/7:

High tensile aluminum alloy hard coated to 60Rc cylinder housing and high strength 6061-T6 aluminum alloy end flanges

#### Seals on Vane, Vane Shaft, Piston & Piston Rod:

Nitrile rubber

#### Coating on Metal Parts:

Corrosion-resistant polyurethane

### Engineering Specifications

#### Storage:

Store in a dry, indoor location not subject to rapid temperature changes that would cause condensation to form inside the unit.

#### Storage Temperature Limits:

–40 to 82 °C (–40 to 180 °F) with AV positioners

–40 to 85 °C (–40 to 185 °F) with TZIDC/EDP300 positioners

#### Enclosure Certification:

IP24 (NEMA 3R): Standard

IP66 (NEMA 4X): Must be ordered by nomenclature

Refer to order code breakdown

#### Agency Approvals:

cFMus certified for use in general purpose (non-hazardous) locations. Consult factory for other options.

#### Weight:

Refer to Tables 3 and 4.

## Options and Accessories

### Shaft Position Transmitter:

- Electric (external to positioner): 4 to 20mA linear output relative to the actuator shaft position. Use AVPT position transmitter as a non-standard option. Only possible on UP2 – 7 if code, UP\_\_\_ C \_\_\_ is not selected. Consult factory for details.
- Electric (internal to positioner): Two-wire unit requiring a 12 to 24 V DC supply and producing a 4 to 20 mA linear output relative to the actuator shaft position.
- Pneumatic: Produces a 21 to 103 kPa (3 to 15 psig) or 21 to 186 kPa (3 to 27 psig) linear output relative to the actuator shaft position. Minimum required air supply is 138 kPa (20 psig). The output may be characterized by the user (not available for Type UP1 actuators).
- Potentiometric Resistive: A potentiometer internal to the Types AV1 and AV2 positioners. Gears connect the potentiometer to the positioner output shaft. The position of the potentiometer shaft indicates the actuator shaft position. The relationship between the potentiometer and the output shaft results in one degree of rotation of the output shaft corresponding to approximately 9.9 ohms of resistive change at the potentiometer. Refer to the appropriate Type AV positioner instruction for more information.

### Adjustable Alarm/Travel Switches:

Consists of four or two (see options) linkage-driven, cam-operated SPDT microswitches, adjustable over the full stroke of the actuator. Used as alarm contacts or for external position indications.

- Contact Ratings: 15A @ 125/250 V AC @ 60 °C (140 °F).<sup>1</sup>  
0.5A @ 125 V DC @ 60 °C (140 °F).  
0.25A @ 250 V DC @ 60 °C (140 °F).

*Note 1: Switch contacts must be derated 1.5 A for every 10 °C (18 °F) rise above 60 °C (140 °F)*

### Air Failure Lock:

Locks actuator in its last position when the air supply falls below a preset value. Refer to UP nomenclature options for manual pushbutton reset options or only automatic reset. Note; in case of automatic reset only the pushbutton is omitted.

- UP1 & UP2: Mechanical latch device with a three-way pneumatic trip valve as the air supply sensor. Trip valve factory preset at 35 psig. Trip valve can also be readjusted at site. Refer to nomenclature for pressure switch option on UP2 used to signal an air failure alarm or for status indication. For UP1 the pressure switch is available as an accessory.
- UP 3/4/5/6/7: Uses a pneumatic trip valve as the air supply sensor that trips a four-way lock-up valve to lock the actuator in the last position. The trip valve is factory preset at 55 psig but can also be readjusted on site (see Note 1).

*Note 1: Refer to nomenclature for pressure switch option on UP3 through UP7 used to signal an air failure alarm or for status indication. When this option is selected, the pressure switch will be installed and set at 55 psig. The pressure switch can also be readjusted on site.*

### Reserve Air Tank for Air Failure Option:

Available for all but UP1. Drives actuator into the full open or full closed position when the air supply falls below a preset value. Factory preset values are 35 psig for UP2 & 55 psig for UP3/4/5/6/7. Value can also be readjusted at site. Tank sizes are 20.8 L (5.5 gal) for UP2, 30.3 L (8.0 gal) for UP3/4/5, and 64.4 L (17.0 gal) for UP6/7 (see Note 1).

*Note 1: Refer to nomenclature for pressure switch option on UP2 through UP7 used to signal an air failure alarm or a status indication.*

### Alarm Pressure Switch Contact Ratings:<sup>1</sup>

- 13A @ 115/230 V AC @ 60 °C (140 °F)  
0.5A @ 110/125 V DC @ 60 °C (140 °F)

Switch contacts must be derated 1.5 A for every 10 °C (18 °F) rise above 60 °C (140 °F)

*Note 1: Not available in combination with TZIDC-200 Explosion-Proof Positioner. Consult factory for details.*

### Strip Heaters (Thermostatically Controlled)

Available for all except Type UP1 actuators and UPs with Explosion Proof TZIDC-200 Positioner.

The low temperature operative limit can be extended below 0 °C (32 °F) without heaters if the dew point of the air supply is maintained at least 10 °C (18 °F) below the minimum expected ambient temperature.

- UP2: 1 heater element, 120 V AC, 500 W  
UP 3/4/5/6/7: 2 heater elements, 120 V AC, 500 W (1000 W total)

### Volume Boosters & Quick Exhaust Valves:

To decrease stroke time  
Option available on UP6 & UP7  
Refer to Figure 13 for stroke time

### Temperature Limits for Air Failure Lock

#### & Reserve Air Tank Option:

–20 to 70 °C (–4 to 158 °F) for pneumatic trip and lock valves (see Note 1)

*Note 1: For applications at temperatures below –20 °C (–4 °F) add option for strip heater. Refer to UP2 through UP7 nomenclature for heater option. For applications at temperatures above 70 °C (158 °F) consult factory for alternative high temperature options.*

## Models UP1/2/3/4/5/6/7

Universal pneumatic rotary actuators

### Accessories

#### Coalescing Filter/Regulator for UP3/4/5/6/7:

Part No. 1951439D1  
 Parker No. 12E37E18AA & PS807P  
 Auto float drain  
 1/2 in. NPT connections  
 1132 l/m (40 scfm) capacity  
 17 barg (250 psig) maximum inlet  
 8.6 barg (125 psig) maximum outlet  
 with mounting bracket

#### Coalescing Filter for UP1 & UP2:

Part No. 5328563D2  
 Parker No. 11F18EC  
 Auto float drain  
 1/4 in. NPT connections  
 1274 l/m (45 scfm) capacity  
 17 barg (250 psig) maximum inlet

#### Regulator with Gage for UP1 & UP2:

Part No. 1951029D5  
 Parker No. 06R118AC  
 1/4 in. NPT connection  
 1500 l/m (53 scfm) capacity  
 17 barg (250 psig) maximum inlet  
 8.6 barg (125 psig) maximum outlet

#### Pressure Switch:

Part No. 1941099A2

#### Pressure Gages:

Instrument signal (3 to 15 psi) for AV1 positioner  
 Output pressure for AV, TZIDC & EDP300  
 Part No. 5326605A4 (Instrument one required)  
 Part No. 5326605A6 (Output, two required).

#### Speed Control:

Regulates time constant of positioner and final control element.  
 Orifices installed directly into the positioner output ports (only for AV positioners).

Part No. 5327327A1: 1 mm (0.04 in.).

Part No. 5327327A2: Blank – Drill to suit.

For TZIDC & EDP300 positioners the speed control is electronically adjustable.

(Refer to TZIDC & EDP300 configuration)

### Shipping Weights

See Tables 2 and 3

Actuator Type	Shipping Weight – kg (lb)
UP1 with positioner	25 (55)
UP1 with solenoid	23 (50)
UP2 with positioner	45 (100)
UP2 with solenoid	43 (95)
UP3 with positioner	145 (320)
UP3 with solenoid	143 (315)
UP4 with positioner	163 (360)
UP4 with solenoid	162 (355)
UP5 with positioner	336 (741)
UP5 with solenoid	334 (736)
UP6 with positioner	369 (814)
UP6 with solenoid	367 (809)
UP7 with positioner	379 (836)
UP7 with solenoid	377 (831)

Table 2. Type UP Actuator Shipping Weights

Option	Shipping Weight – kg (lb)
Electric Shaft Position Transmitter	0 (0)
Pneumatic Shaft Position Transmitter	5.0 (11.0)
Alarm/Travel Switches	1.1 (2.5)
Strip Heaters	1.1 (2.5) for UP2 Actuator 2.0 (4.5) for all others
Air Failure Lock	3.6 (8.0) for UP1 Actuator 5.0 (11.0) for UP2 Actuator 5.9 (13.0) for UP3 and UP4 Actuator 6.8 (15.0) for UP5 to UP7 Actuator

Table 3. Option Shipping Weights<sup>1</sup>

Note 1: Add these values to those listed in Table 2 where applicable.

## Stroke Times

See Figures 4 through 14 for stroke times for UP with Type AV positioner and solenoid valve control input options.

### Stroke time with load for UP with TZIDC positioner.

UP1 with TZIDC		
Stroke	81 Nm (60 ft-lb) @ 414 kPa (60 psi)	102 Nm (75 ft-lb) @ 552 kPa (80 psi)
5 to 95 %	3 seconds	4 seconds

UP2 with TZIDC		
Stroke	347 Nm (256 ft-lb) @ 414 kPa (60 psi)	479 Nm (353 ft-lb) @ 552 kPa (80 psi)
5 to 95 %	10 seconds	12 seconds

UP3 with TZIDC*		
Stroke	637 Nm (470 ft-lb) @ 414 kPa (60 psi)	854 Nm (630 ft-lb) @ 552 kPa (80 psi)
5 to 95 %	17 seconds	19 seconds

UP4 with TZIDC*		
Stroke	1152 Nm (850 ft-lb) @ 414 kPa (60 psi)	1559 Nm (1150 ft-lb) @ 552 kPa (80 psi)
5 to 95 %	20 seconds	23 seconds

UP5 with TZIDC*		
Stroke	2196 Nm (1620 ft-lb) @ 414 kPa (60 psi)	2956 Nm (2180 ft-lb) @ 552 kPa (80 psi)
5 to 95 %	16 seconds	18 seconds

UP6 with TZIDC**		
Stroke	3864 Nm (2850 ft-lb) @ 414 kPa (60 psi)	5152 Nm (3800 ft-lb) @ 552 kPa (80 psi)
5 to 95 %	22 seconds	24 seconds

UP7 with TZIDC**		
Stroke	5495 Nm (4053 ft-lb) @ 414 kPa (60 psi)	7325 Nm (5403 ft-lb) @ 552 kPa (80 psi)
5 to 95 %	28 seconds	30 seconds

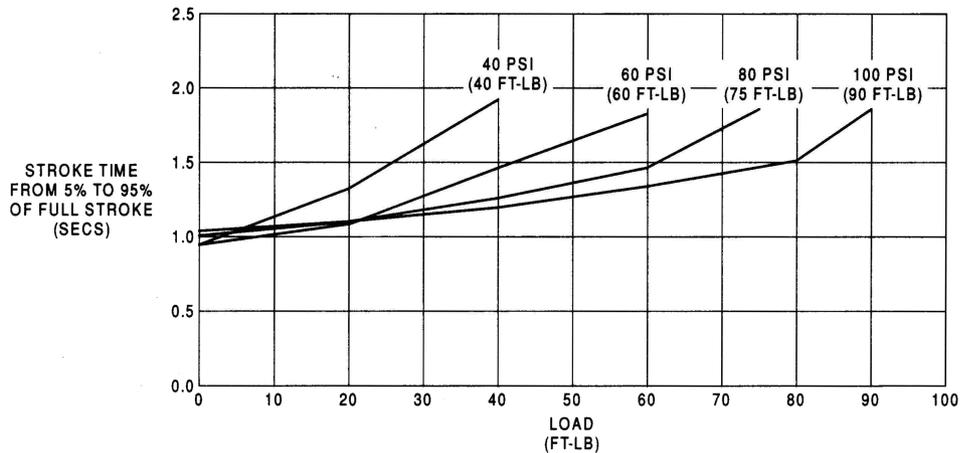
\* Consult factory for non-standard option with volume boosters for faster stroke time

\*\* Refer to nomenclature for volume booster options for faster stroke times

Note A: Supply pressure must be maintained at positioner.

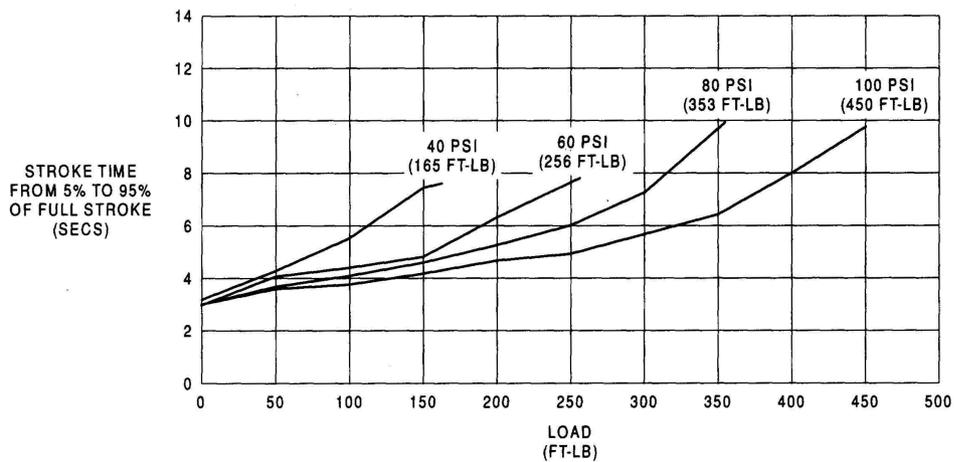
Note B: Diameter of the tubing must be as specified in the installation section of the instruction manual.

Note C: Delivery capacity of the pressure regulator must be as specified in the installation section of the instruction manual.



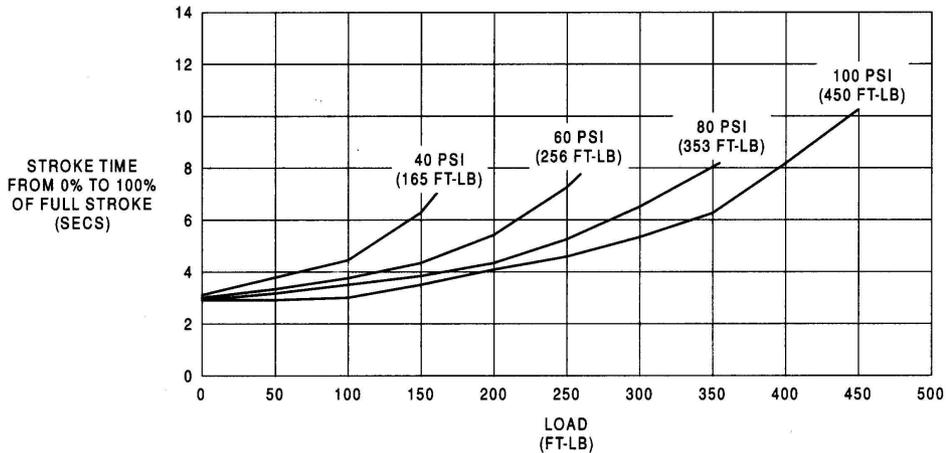
**NOTES:**  
 1. THESE CURVES WERE GENERATED FROM ACTUAL TESTS USING A TYPE AV232100 POSITIONER. STROKE TIMES SHOWN ARE FOR ACTUATOR ROTATIONS OF 90% OF FULL STROKE (81° OF ROTATION), BEGINNING AT 5% OF FULL STROKE (4.5° OF ROTATION) WITH THE ACTUATOR AT IDLE (SUPPORTING THE LOAD), AND ENDING AT 95% OF FULL STROKE (85.5° OF ROTATION). IN ORDER TO OBTAIN THE STROKE TIMES SHOWN IN THE CURVES:  
 A. SUPPLY PRESSURE MUST BE MAINTAINED NOT ONLY AT THE SOURCE, BUT ALSO AT THE POSITIONER.  
 B. DIAMETER OF THE TUBING MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 C. DELIVERY CAPACITY OF THE PRESSURE REGULATOR MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 2. VALUES IN PARENTHESES ARE MAXIMUM RECOMMENDED OPERATING LOADS AT THE SUPPLY PRESSURES SHOWN.

Figure 4. Stroke Times for Type UP1 Actuator with Type AV2 Positioner – 5 to 95% of Stroke



**NOTES:**  
 1. THESE CURVES WERE GENERATED FROM ACTUAL TESTS USING A TYPE AV232100 POSITIONER. STROKE TIMES SHOWN ARE FOR ACTUATOR ROTATIONS OF 90% OF FULL STROKE (81° OF ROTATION), BEGINNING AT 5% OF FULL STROKE (4.5° OF ROTATION) WITH THE ACTUATOR AT IDLE (SUPPORTING THE LOAD), AND ENDING AT 95% OF FULL STROKE (85.5° OF ROTATION). IN ORDER TO OBTAIN THE STROKE TIMES SHOWN IN THE CURVES:  
 A. SUPPLY PRESSURE MUST BE MAINTAINED NOT ONLY AT THE SOURCE, BUT ALSO AT THE POSITIONER.  
 B. DIAMETER OF THE TUBING MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 C. DELIVERY CAPACITY OF THE PRESSURE REGULATOR MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 2. VALUES IN PARENTHESES ARE MAXIMUM RECOMMENDED OPERATING LOADS AT THE SUPPLY PRESSURES SHOWN.

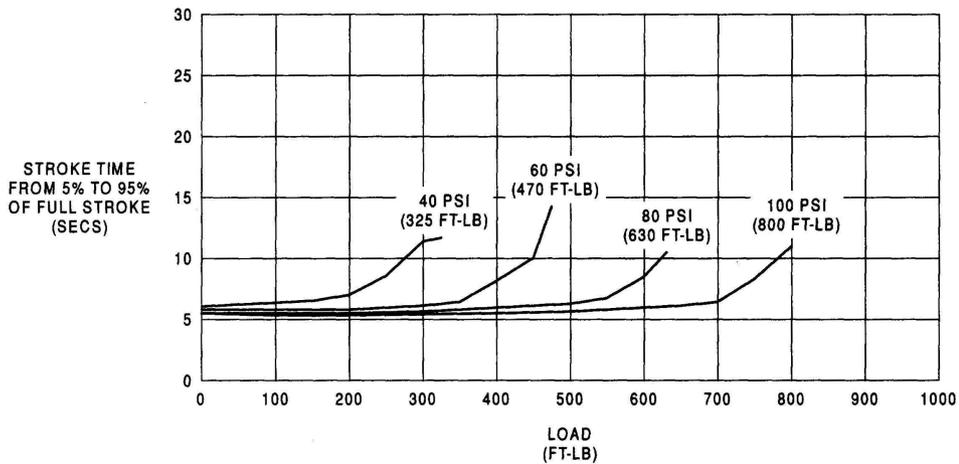
Figure 5. Stroke Times for Type UP2 Actuator with Type AV2 Positioner – 5 to 95% of Stroke



NOTES:  
 1. THESE CURVES WERE GENERATED FROM ACTUAL TESTS. THE STROKE TIMES SHOWN ARE FOR ACTUATOR ROTATIONS FROM 0% TO 100% OF FULL STROKE (0° TO 90° OF ROTATION). IN ORDER TO OBTAIN THE STROKE TIME SHOWN IN THESE CURVES:  
 A. SUPPLY PRESSURE MUST BE MAINTAINED NOT ONLY AT THE SOURCE, BUT ALSO AT THE SOLENOID VALVE.  
 B. DIAMETER OF THE TUBING MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 C. DELIVERY CAPACITY OF THE PRESSURE REGULATOR MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 2. VALUES IN PARENTHESES ARE MAXIMUM RECOMMENDED OPERATING LOADS AT THE SUPPLY PRESSURES SHOWN.

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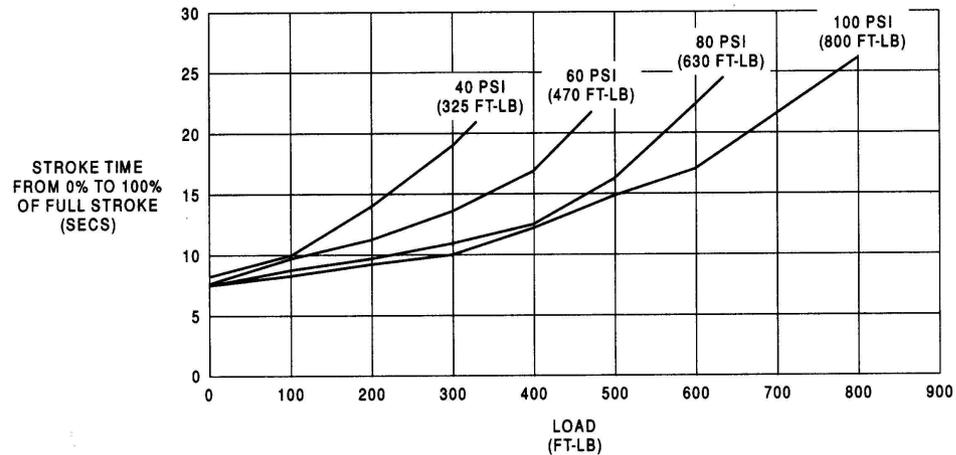
Figure 6. Stroke Times for Type UP2 Actuator with Solenoid Valve



NOTES:  
 1. THESE CURVES WERE GENERATED FROM ACTUAL TESTS USING A TYPE AV232100 POSITIONER. STROKE TIMES SHOWN ARE FOR ACTUATOR ROTATIONS OF 90% OF FULL STROKE (81° OF ROTATION), BEGINNING AT 5% OF FULL STROKE (4.5° OF ROTATION) WITH THE ACTUATOR AT IDLE (SUPPORTING THE LOAD), AND ENDING AT 95% OF FULL STROKE (85.5° OF ROTATION). IN ORDER TO OBTAIN THE STROKE TIMES SHOWN IN THE CURVES:  
 A. SUPPLY PRESSURE MUST BE MAINTAINED NOT ONLY AT THE SOURCE, BUT ALSO AT THE POSITIONER.  
 B. DIAMETER OF THE TUBING MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 C. DELIVERY CAPACITY OF THE PRESSURE REGULATOR MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 2. VALUES IN PARENTHESES ARE MAXIMUM RECOMMENDED OPERATING LOADS AT THE SUPPLY PRESSURES SHOWN.

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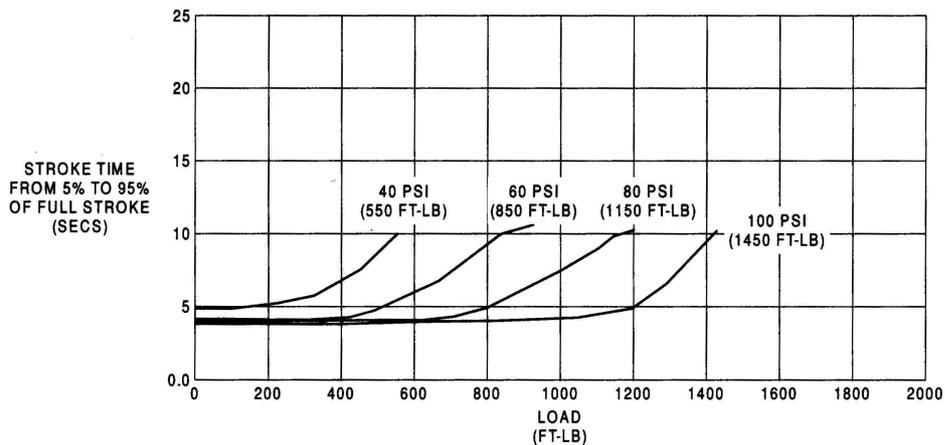
Figure 7. Stroke Times for Type UP3 Actuator with Type AV2 Positioner - 5 to 95% of Stroke



**NOTES:**  
 1. THESE CURVES WERE GENERATED FROM ACTUAL TESTS. THE STROKE TIMES SHOWN ARE FOR ACTUATOR ROTATIONS FROM 0% TO 100% OF FULL STROKE (0° TO 90° OF ROTATION). IN ORDER TO OBTAIN THE STROKE TIME SHOWN IN THESE CURVES:  
 A. SUPPLY PRESSURE MUST BE MAINTAINED NOT ONLY AT THE SOURCE, BUT ALSO AT THE SOLENOID VALVE.  
 B. DIAMETER OF THE TUBING MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 C. DELIVERY CAPACITY OF THE PRESSURE REGULATOR MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 2. VALUES IN PARENTHESES ARE MAXIMUM RECOMMENDED OPERATING LOADS AT THE SUPPLY PRESSURES SHOWN.

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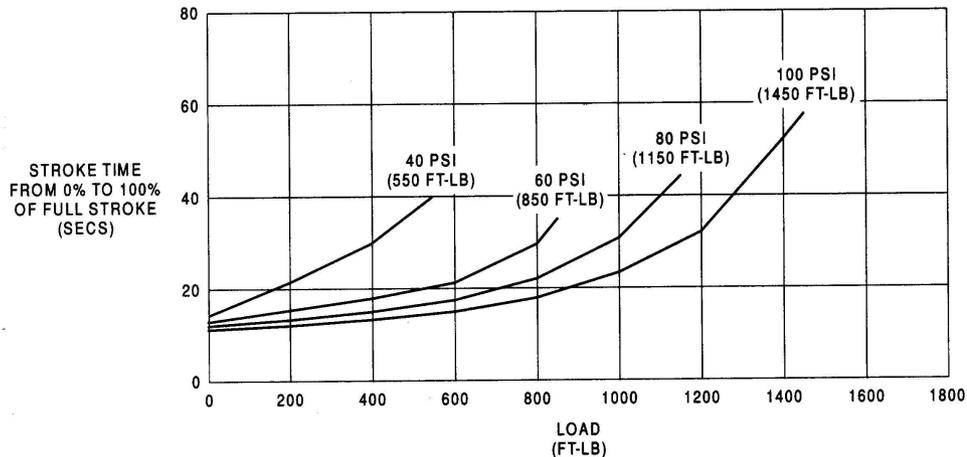
Figure 8. Stroke Times for Type UP3 Actuator with Solenoid Valve



**NOTES:**  
 1. THESE CURVES WERE GENERATED FROM ACTUAL TESTS USING A TYPE AV232100 POSITIONER. STROKE TIMES SHOWN ARE FOR ACTUATOR ROTATIONS OF 90% OF FULL STROKE (81° OF ROTATION), BEGINNING AT 5% OF FULL STROKE (4.5° OF ROTATION) WITH THE ACTUATOR AT IDLE (SUPPORTING THE LOAD), AND ENDING AT 95% OF FULL STROKE (85.5° OF ROTATION). IN ORDER TO OBTAIN THE STROKE TIMES SHOWN IN THE CURVES:  
 A. SUPPLY PRESSURE MUST BE MAINTAINED NOT ONLY AT THE SOURCE, BUT ALSO AT THE POSITIONER.  
 B. DIAMETER OF THE TUBING MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 C. DELIVERY CAPACITY OF THE PRESSURE REGULATOR MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 2. VALUES IN PARENTHESES ARE MAXIMUM RECOMMENDED OPERATING LOADS AT THE SUPPLY PRESSURES SHOWN.

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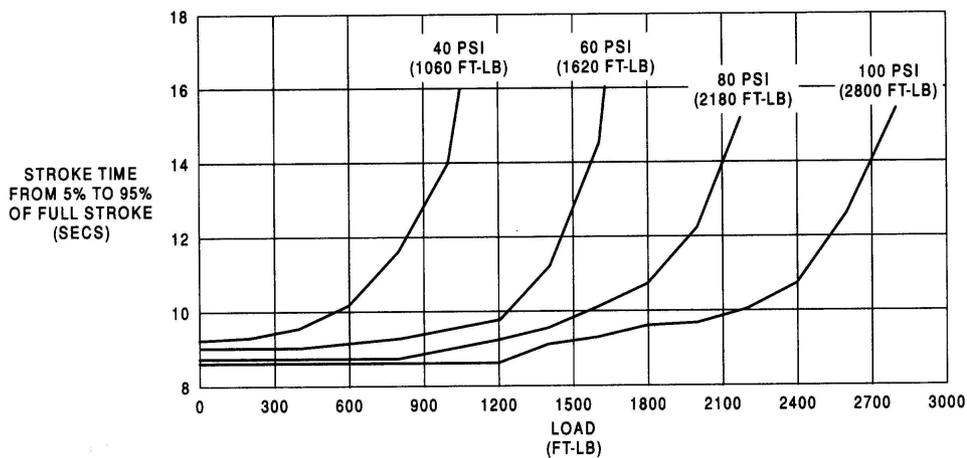
Figure 9. Stroke Times for Type UP4 Actuator with Type AV2 Positioner - 5 to 95% of Stroke



NOTES:  
 1. THESE CURVES WERE GENERATED FROM ACTUAL TESTS. THE STROKE TIMES SHOWN ARE FOR ACTUATOR ROTATIONS FROM 0% TO 100% OF FULL STROKE (0° TO 90° OF ROTATION). IN ORDER TO OBTAIN THE STROKE TIME SHOWN IN THESE CURVES:  
 A. SUPPLY PRESSURE MUST BE MAINTAINED NOT ONLY AT THE SOURCE, BUT ALSO AT THE SOLENOID VALVE.  
 B. DIAMETER OF THE TUBING MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 C. DELIVERY CAPACITY OF THE PRESSURE REGULATOR MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 2. VALUES IN PARENTHESES ARE MAXIMUM RECOMMENDED OPERATING LOADS AT THE SUPPLY PRESSURES SHOWN.

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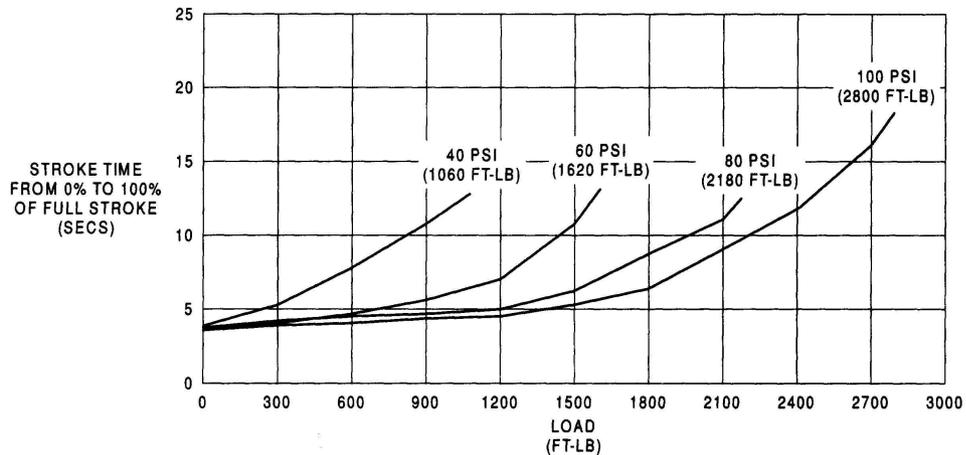
Figure 10. Stroke Times for Type UP4 Actuator with Solenoid Valve



NOTES:  
 1. THESE CURVES WERE GENERATED FROM ACTUAL TESTS USING A TYPE AV232100 POSITIONER. STROKE TIMES SHOWN ARE FOR ACTUATOR ROTATIONS OF 90% OF FULL STROKE (81° OF ROTATION), BEGINNING AT 5% OF FULL STROKE (4.5° OF ROTATION) WITH THE ACTUATOR AT IDLE (SUPPORTING THE LOAD), AND ENDING AT 95% OF FULL STROKE (85.5° OF ROTATION). IN ORDER TO OBTAIN THE STROKE TIMES SHOWN IN THE CURVES:  
 A. SUPPLY PRESSURE MUST BE MAINTAINED NOT ONLY AT THE SOURCE, BUT ALSO AT THE POSITIONER.  
 B. DIAMETER OF THE TUBING MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 C. DELIVERY CAPACITY OF THE PRESSURE REGULATOR MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.  
 2. VALUES IN PARENTHESES ARE MAXIMUM RECOMMENDED OPERATING LOADS AT THE SUPPLY PRESSURES SHOWN.

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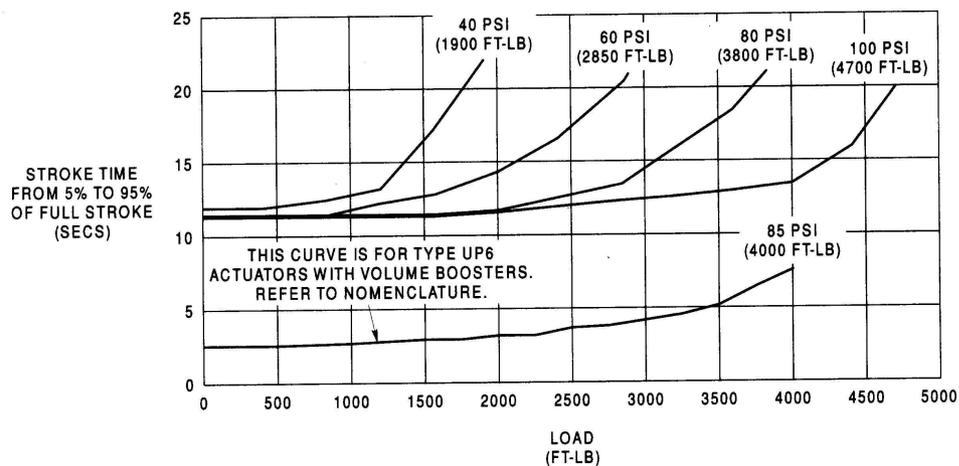
Figure 11. Stroke Times for Type UP5 Actuator with Type AV2 Positioner - 5 to 95% of Stroke



- NOTES:
- THESE CURVES WERE GENERATED FROM ACTUAL TESTS. THE STROKE TIMES SHOWN ARE FOR ACTUATOR ROTATIONS FROM 0% TO 100% OF FULL STROKE (0° TO 90° OF ROTATION). IN ORDER TO OBTAIN THE STROKE TIME SHOWN IN THESE CURVES:
    - SUPPLY PRESSURE MUST BE MAINTAINED NOT ONLY AT THE SOURCE, BUT ALSO AT THE SOLENOID VALVE.
    - DIAMETER OF THE TUBING MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.
    - DELIVERY CAPACITY OF THE PRESSURE REGULATOR MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.
  - VALUES IN PARENTHESES ARE MAXIMUM RECOMMENDED OPERATING LOADS AT THE SUPPLY PRESSURES SHOWN.

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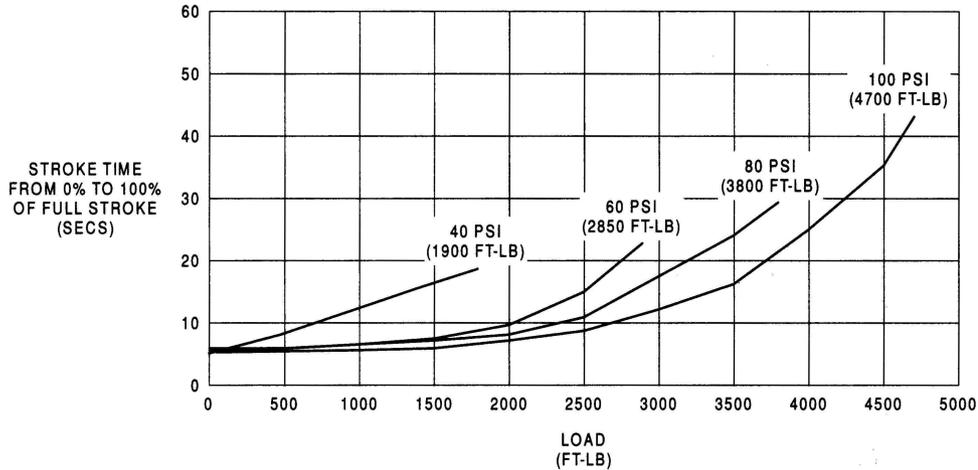
Figure 12. Stroke Times for Type UP5 Actuator with Solenoid Valve



- NOTES:
- THESE CURVES WERE GENERATED FROM ACTUAL TESTS USING A TYPE AV232100 POSITIONER. STROKE TIMES SHOWN ARE FOR ACTUATOR ROTATIONS OF 90% OF FULL STROKE (81° OF ROTATION), BEGINNING AT 5% OF FULL STROKE (4.5° OF ROTATION) WITH THE ACTUATOR AT IDLE (SUPPORTING THE LOAD), AND ENDING AT 95% OF FULL STROKE (85.5° OF ROTATION). IN ORDER TO OBTAIN THE STROKE TIMES SHOWN IN THE CURVES:
    - SUPPLY PRESSURE MUST BE MAINTAINED NOT ONLY AT THE SOURCE, BUT ALSO AT THE POSITIONER.
    - DIAMETER OF THE TUBING MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.
    - DELIVERY CAPACITY OF THE PRESSURE REGULATOR MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.
  - VALUES IN PARENTHESES ARE MAXIMUM RECOMMENDED OPERATING LOADS AT THE SUPPLY PRESSURES SHOWN.

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Figure 13. Stroke Times for Type UP6 Actuator with Type AV2 Positioner – 5 to 95% of Stroke

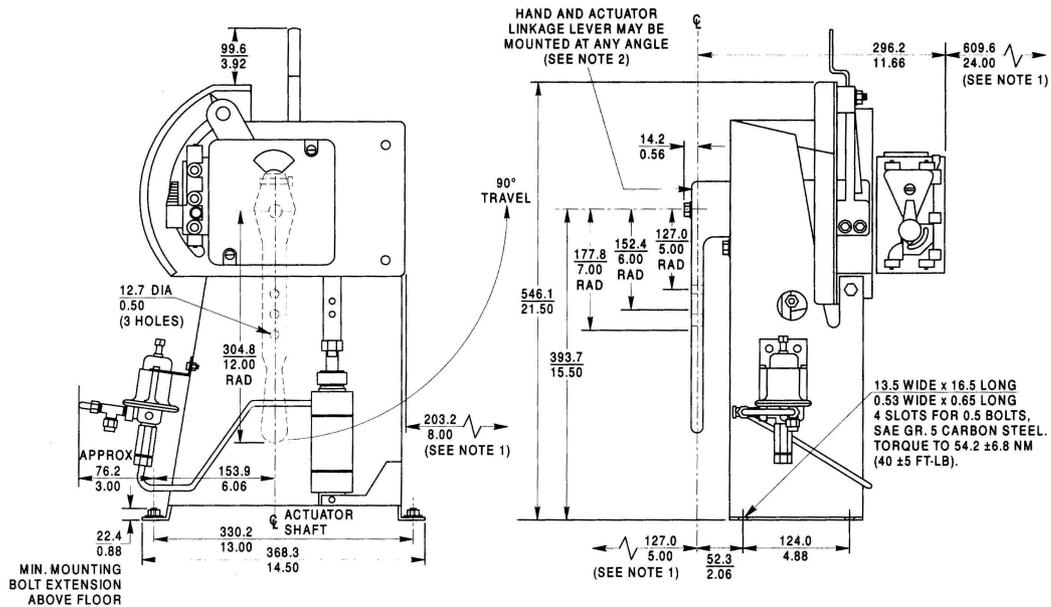


- NOTES:
- THESE CURVES WERE GENERATED FROM ACTUAL TESTS. THE STROKE TIMES SHOWN ARE FOR ACTUATOR ROTATIONS FROM 0% TO 100% OF FULL STROKE (0° TO 90° OF ROTATION). IN ORDER TO OBTAIN THE STROKE TIME SHOWN IN THESE CURVES:
    - SUPPLY PRESSURE MUST BE MAINTAINED NOT ONLY AT THE SOURCE, BUT ALSO AT THE SOLENOID VALVE.
    - DIAMETER OF THE TUBING MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.
    - DELIVERY CAPACITY OF THE PRESSURE REGULATOR MUST BE AS SPECIFIED IN THE INSTALLATION SECTION OF THE INSTRUCTION MANUAL.
  - VALUES IN PARENTHESES ARE MAXIMUM RECOMMENDED OPERATING LOADS AT THE SUPPLY PRESSURES SHOWN.

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Figure 14. Stroke Times for Type UP6 Actuator with Solenoid Valve

### Dimensional Detail



- NOTES:
- MINIMUM CLEARANCE FOR ADJUSTMENT, INSPECTION, MAINTENANCE AND OPERATION REQUIRED.
  - AFTER POSITIONING ACTUATOR LEVER, TORQUE TWO 0.375 IN. SOCKET HEAD CAP SCREWS TO 74.6 ± 2.7 NM (55 ± 2.7 FT-LB).
  - MAXIMUM AMBIENT TEMPERATURE LIMIT = 82°C (180°F). SOME ACTUATOR/POSITIONER COMBINATIONS MAY HAVE SLIGHTLY LOWER MAXIMUM AMBIENT TEMPERATURE LIMIT. REFER TO APPROPRIATE POSITIONER SPECIFICATION.

DIMENSIONS
MILLIMETERS
INCHES

T02788A

Figure 15. Type UP1 Actuator with Positioner and Air Failure Lock

Models UP1/2/3/4/5/6/7  
 Universal pneumatic rotary actuators

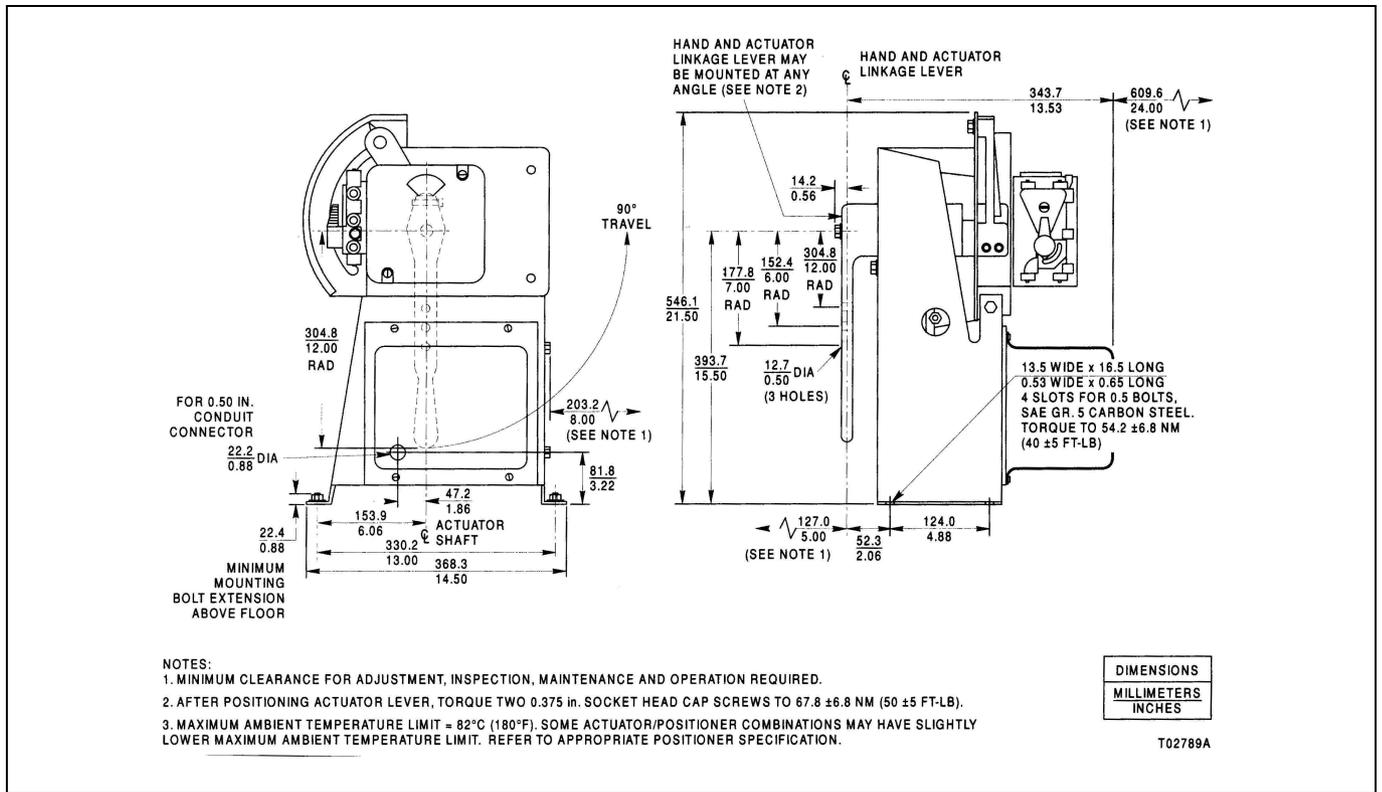


Figure 16. Type UP1 Actuator with Electric Shaft Position Transmitter and Travel Switches

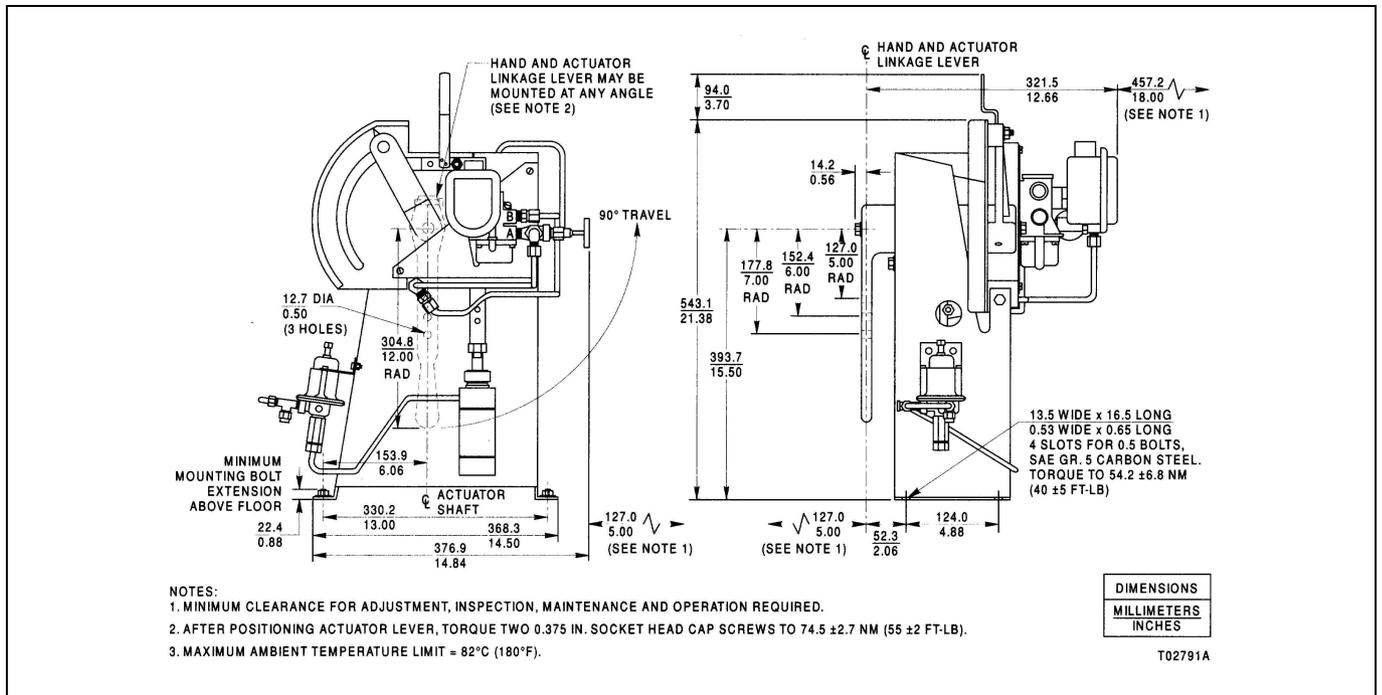


Figure 17. Type UP1 Actuator with Solenoid Valve and Air Failure Lock

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

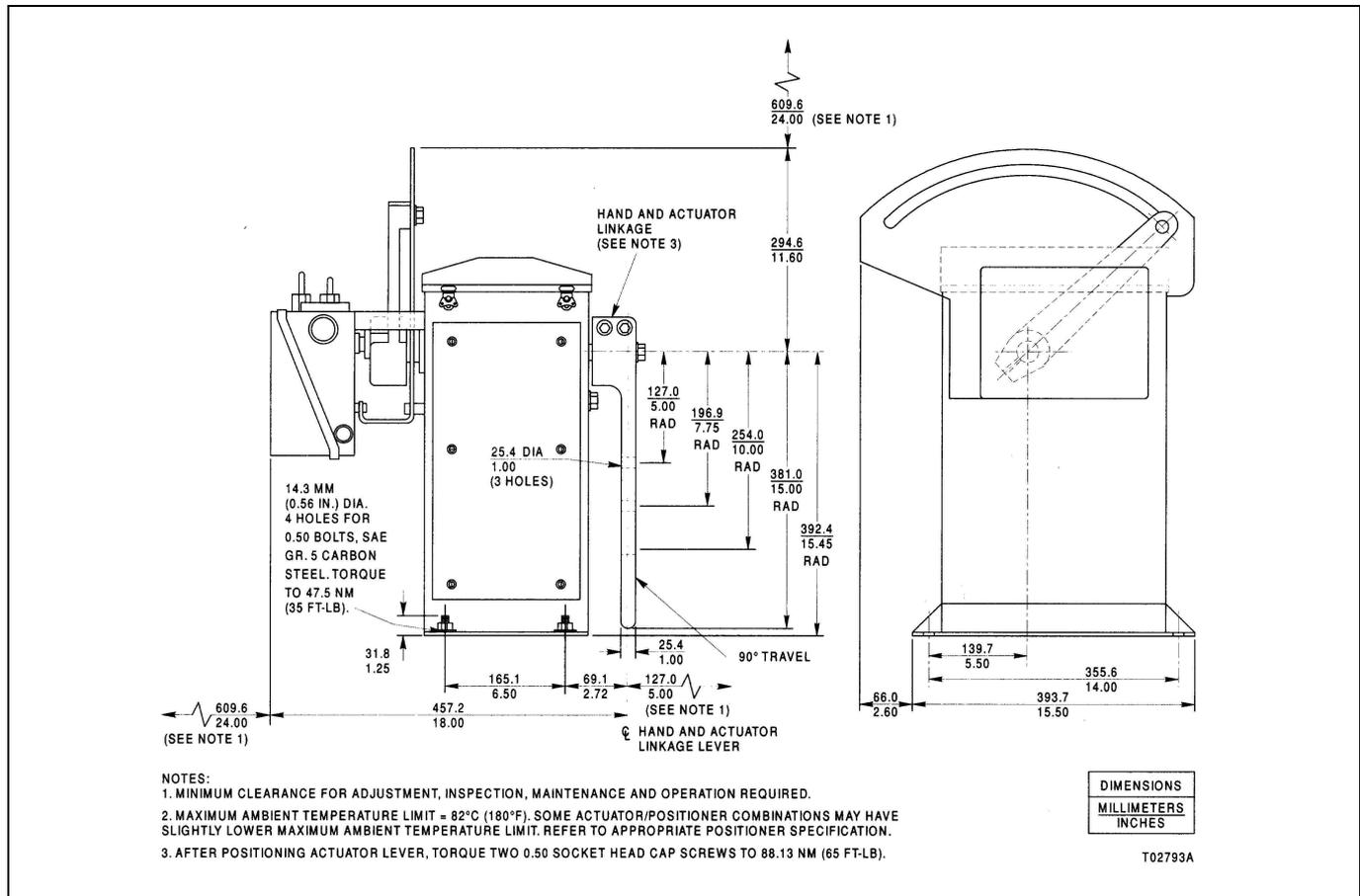


Figure 18. Type UP2 Actuator with Positioner

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

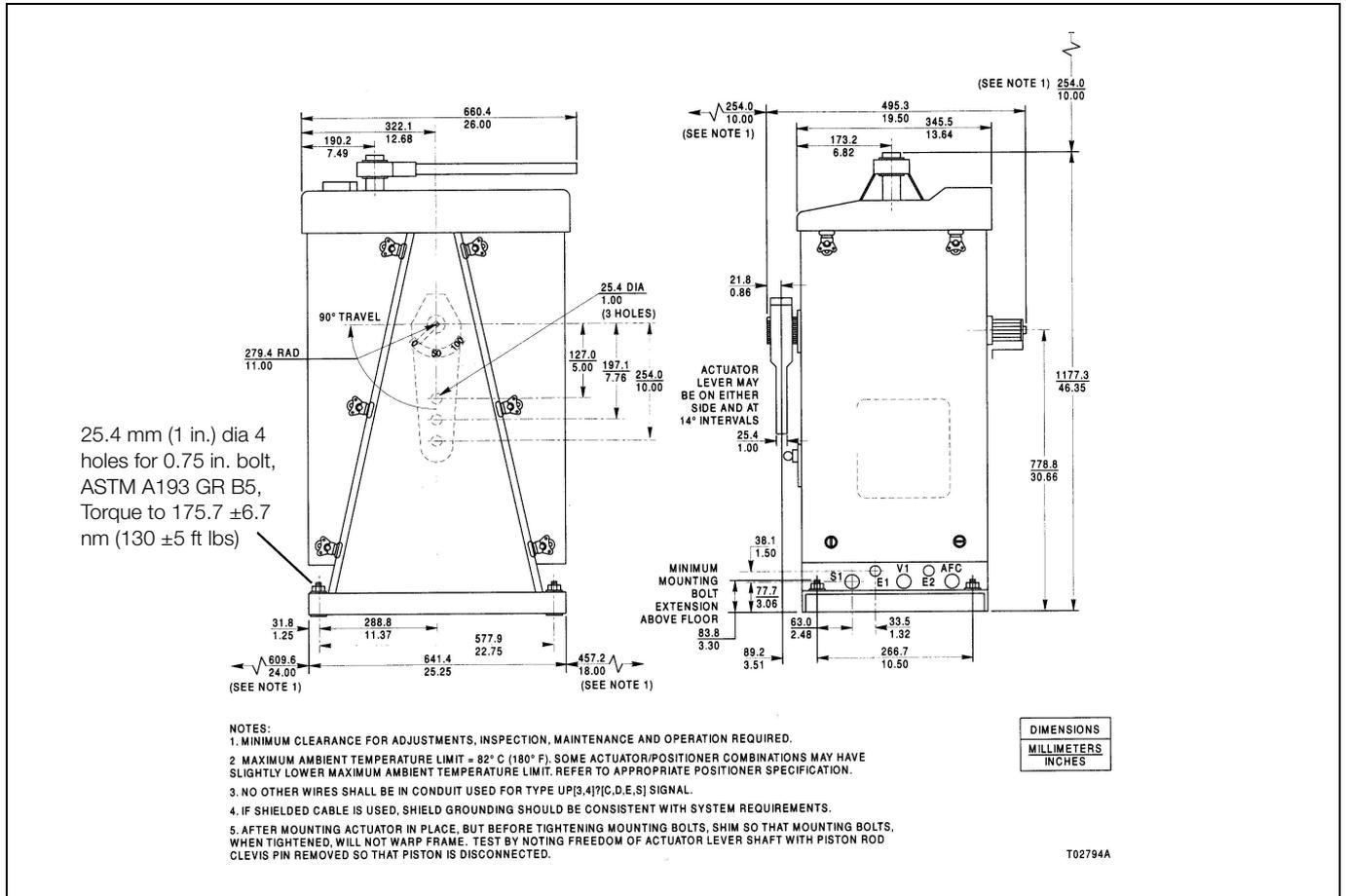


Figure 19. Type UP3 and UP4 Actuators

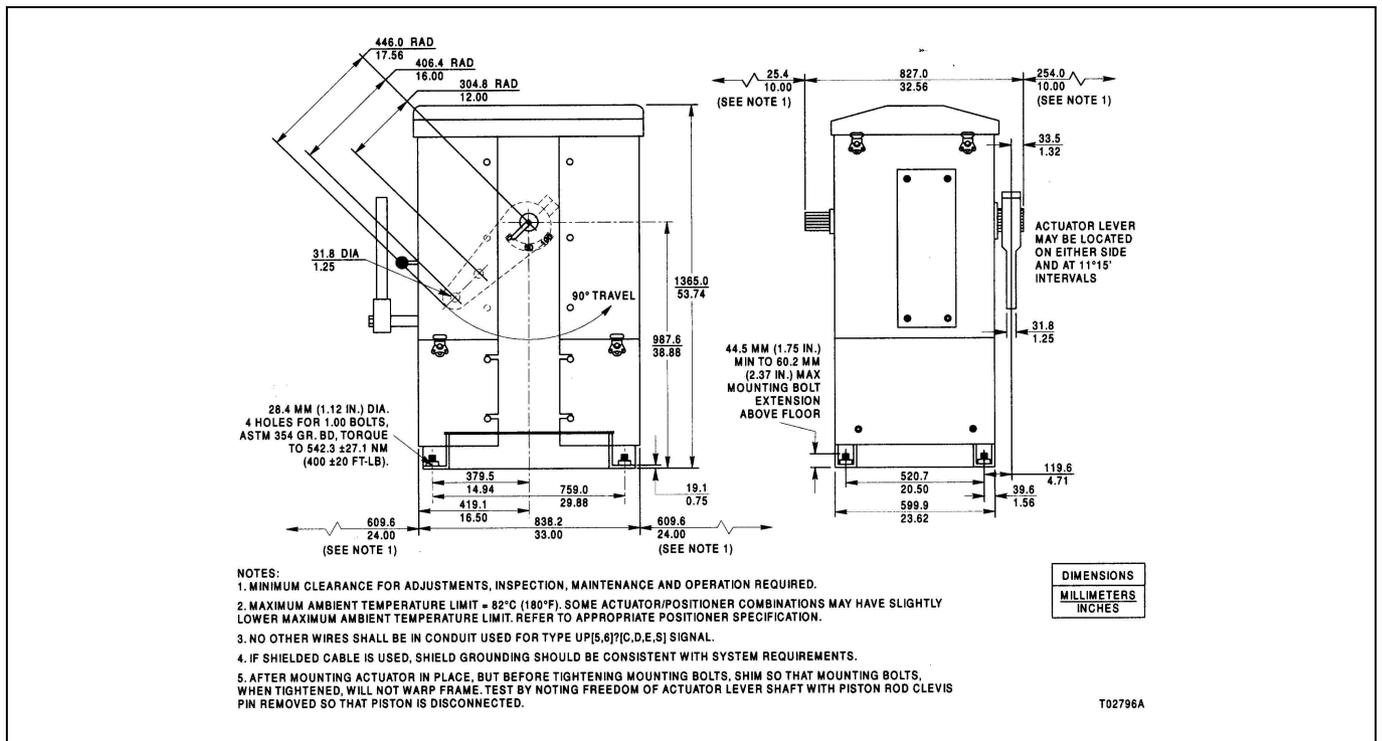


Figure 20. Type UP5 thru UP7 Actuators

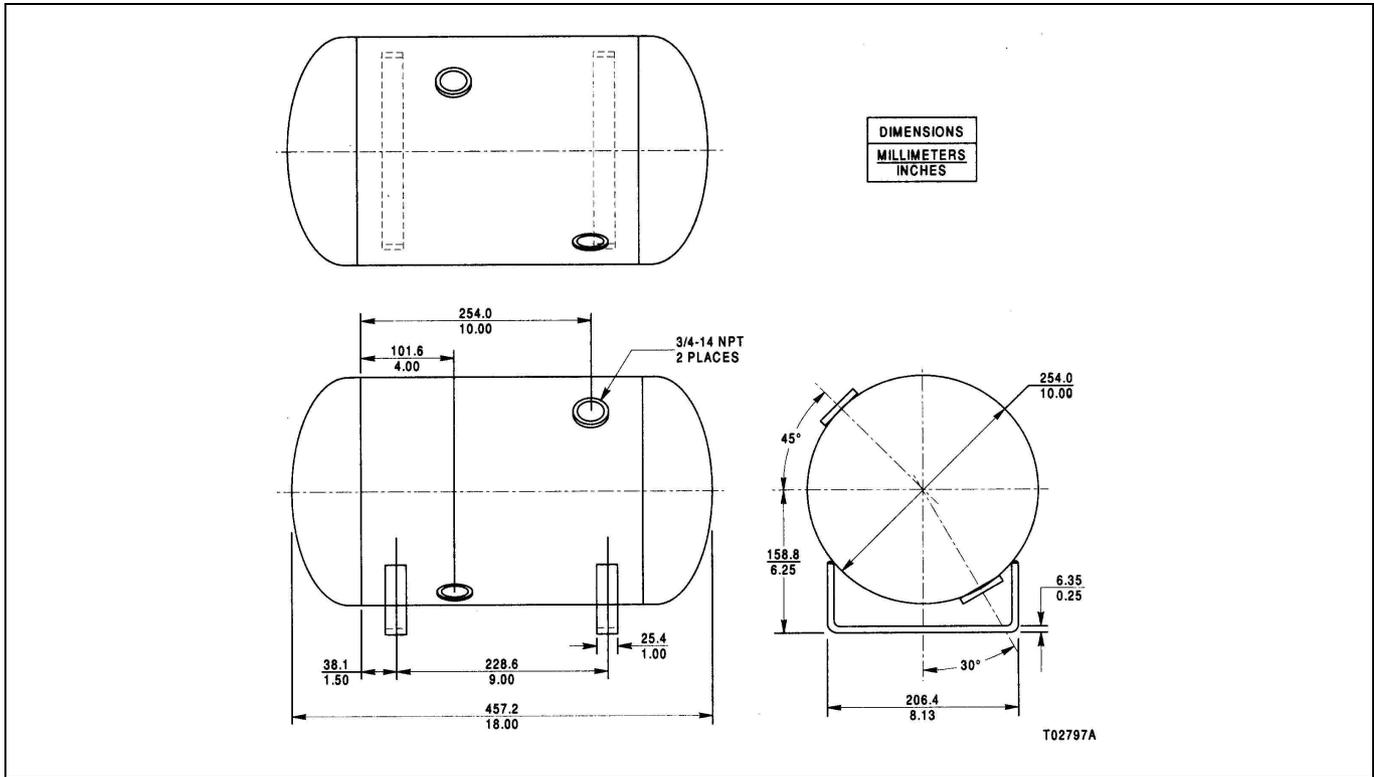


Figure 21. 20.8-Liter (5.5-Gallon) Air Tank for Type UP2 Actuators

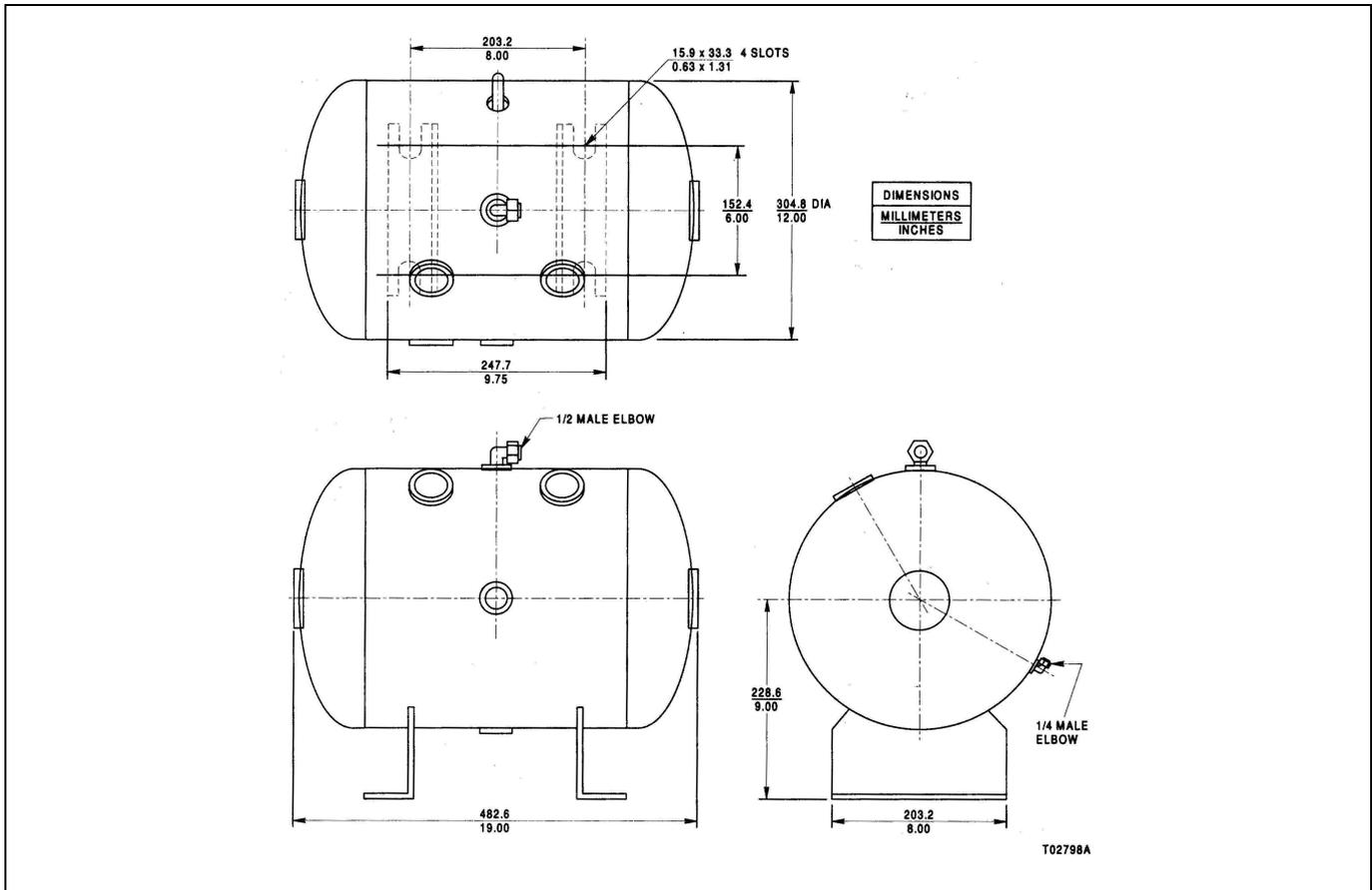


Figure 22. 30.3-Liter (8.0 Gallon) Air Tank for Type UP3, UP4 and UP5 Actuators

Models UP1/2/3/4/5/6/7  
 Universal pneumatic rotary actuators

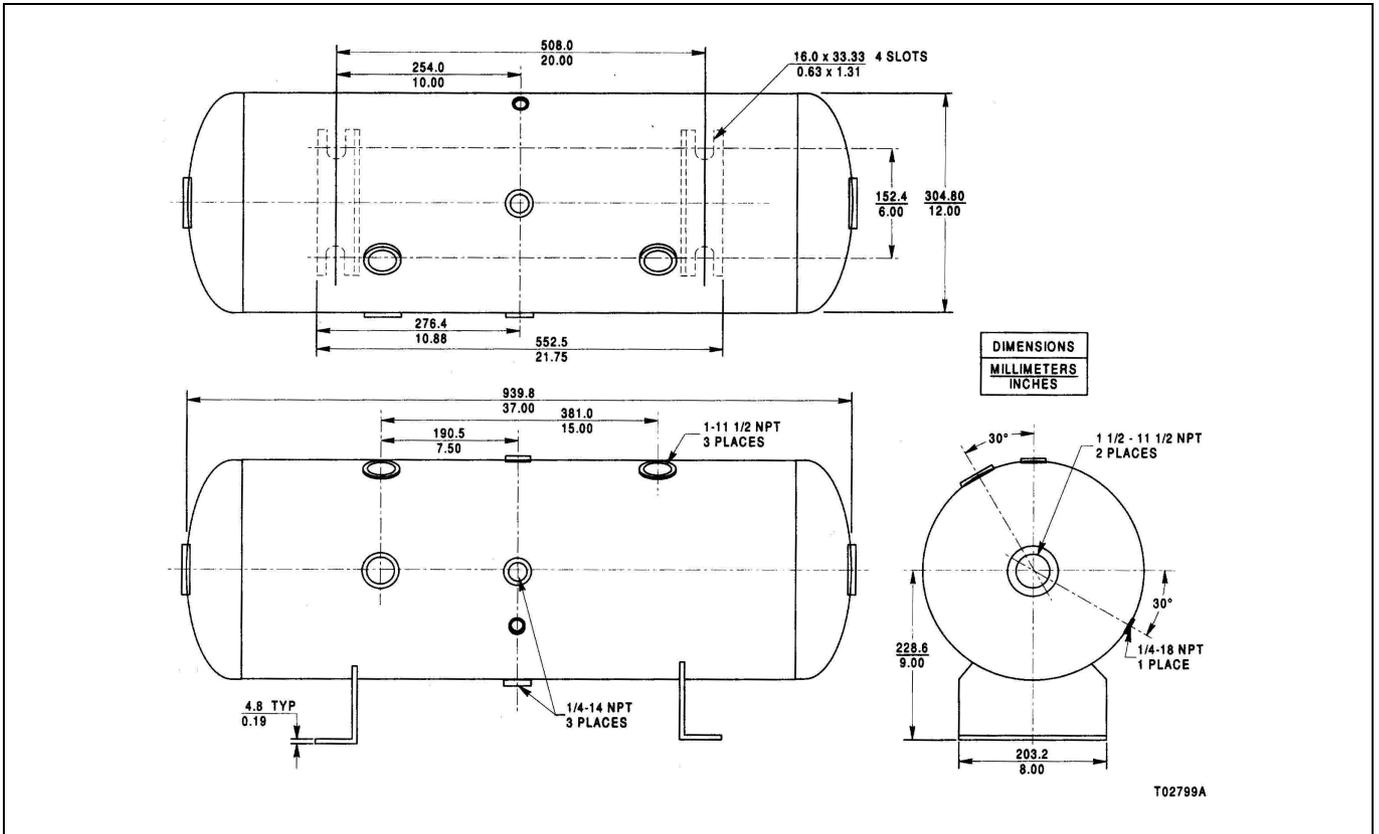


Figure 23. 64.4-Liter (17.0 Gallon) Air Tank for Type UP6 & UP7 Actuators

## Ordering information

### UP1

**Pneumatic Rotary Actuator, 122 Nm (90 ft-lb) Rated Torque at 690 kPa (100 psig) Supply (See Note A)**

**UP1**

#### 1 : Enclosure Rating

Standard, IP24 (NEMA 3R)		0
IP66 (NEMA 4X) Positioner Enclosure only / including CE Conformity		1
Non Standard Option		X

#### 2 : Control Input

0.2 to 1.03 bar (3 to 15 psig) with AV1121_ _ 0 Pneumatic Positioner	(Note: 4)	A
0.2 to 1.86 bar (3 to 27 psig) with AV1221_ _ 0 Pneumatic Positioner	(Note: 4)	B
4 to 20 mA with AV2321_ _ 0 Positioner, Fail Safe (Open/Close) upon loss of mA signal		C
4 to 20 mA with EDP300 Positioner, Fail Safe (Open/Close) upon loss of mA signal		R
4 to 20 mA with EDP300 Positioner, Fail-in-Place upon loss of mA signal		T
4 to 20 mA with TZIDC Positioner, Fail Safe (Open/Close) upon loss of mA signal	(Note: A)	U
4 to 20 mA with TZIDC Positioner, Fail-in-Place upon loss of mA signal	(Note: A)	W
4 to 20 mA with TZIDC-200 (EXP), Fail Safe (Open/Close) upon loss of mA input	(Notes: 5, A)	Y
4 to 20 mA with TZIDC-200 (EXP), Fail-in-Place upon loss of mA input	(Notes: 5, A)	Z
On/Off Solenoid, 120 V AC, Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		5
On/Off Solenoid, 115/125 V DC, Single Coil Fail Safe (Open/Close) upon loss of coil voltage		6
On/Off Solenoid, 120 V AC, Dual Coil Fail-in-Place upon loss of coil voltage		8
On/Off Solenoid, 115/125 V DC, Dual Coil Fail-in-Place upon loss of coil voltage		9
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		F
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Dual Coil, Fail-in-Place upon loss of coil voltage		G
Non Standard Option		X

#### 3 : Shaft Position Transmitter

None		0
Potentiometric Resistive Output, built into Positioner (for UP1_ A / B / C only)	(Note: 1)	A
4 to 20 mA Output, built into AV / TZIDC / EPD300 Positioners (for UP1_ , A/B/C/R/T/U/W/Y&Z only)	(Notes: 2, 6)	B
Non Standard Option		X

#### 4 : Adjustable Travel Switches

None		0
Include, 4-SPDT	(Note: 3)	1
Include, 2-SPDT	(Note: 3)	2
Non Standard Option		X

#### 5 : Air Failure Control

None		0
Air Failure Lock-up (hold last position) with manual or automatic reset function after air recovery (includes remote reset switch) Temperature range -29 to 82 °C (-20 to 180 °F)		1
Air Failure Lock-up (hold last position) with automatic reset function after air recovery Temperature range -29 to 82 °C (-20 to 180 °F)	(Note: 3)	A
Air Failure Lock-up (hold last position) with manual or automatic reset function after air recovery (includes remote reset switch) Temperature range -20 to 70 °C (-4 to 158 °F)	(Note: 3)	5
Air Failure Lock-up (hold last position) with automatic reset function after air recovery Temperature range -20 to 70 °C (-4 to 158 °F)	(Note: 3)	D
Non Standard Option		X

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

<b>Pneumatic Rotary Actuator, 122 Nm (90 ft-lb) Rated Torque at 690 kPa (100 psig) Supply (See Note A)</b>		<b>UP1</b>
<b>6 : Actuator Heaters</b>		
None		0
Non Standard Option		X
<b>7 : Tubing Material</b>		
Standard Tubing		0
Stainless Steel Tubing and Fittings (304SS)	(Note: 2)	S
Non Standard Option		X
<b>Additional ordering information</b>		
<b>8 : Tagging Option</b>		
Mylar, adhesive backed aluminum finish		1
Stainless Steel, Wire Attached (must specify tag text in parameter data)		2
Stainless Steel, Permanently Attached (must specify tag text in parameter data)		3
<b>9 : Manual for Service and Parts List</b>		
English		M5
<b>10 : Communication Option</b>		
Without HART communication (only for EDP300 or TZIDC control input option)	(Note: 7)	C1
<b>11 : Mechanical Indicator on Positioner Cover</b>		
Beacon for position indication (option for EDP300 or TZIDC positioners)	(Note: 7)	B1
<b>12 : Certification</b>		
Certificate of conformance		F2
<b>13 : Air Supply Filter</b>		
Air supply filter with pressure regulator for field installation	(Note: 2)	A1

Note 1: Not available with Control Input code R, T, U, W, Y, Z, 5, 6, 8, 9, F, G

Note 2: Not available with Control Input code 5, 6, 8, 9, F, G

Note 3: Not available with Control Input code Y, Z

Note 4: kPa = psi x 6.895

Note 5: Explosion Proof Application Cl 1 Div 1 Gr C-G, refer to TZIDC-200 data sheet

Note 6: 24 V Supply required (not included)

Note 7: Only in combination with Control Input code R, T, U, W, Y, Z

Note A: The Maximum Supply Pressure for UP with TZIDC positioner is 621 kPa (90 psig)

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

**UP1 Accessories**

	<b>Code</b>
Installation Manual (One copy is supplied, at no cost, with order)	IM/UP-EN

**Linkage Accessories:**

Light Duty Driven Lever, for interconnecting between linkage and the final control element	
For shaft diameter 12.7 to 22.2 mm (0.500 to 0.875 in.), 4.77 mm (0.188 in.) Groov pin diameter	5328690A1
For shaft diameter 23.8 to 26.9 mm (0.938 to 1.062 in.), 7.97 mm (0.312 in.) Groov pin diameter	5328690A2
For shaft diameter 28.6 to 38.1 mm (1.125 to 1.500 in.), 7.97 mm (0.312 in.) Groov pin diameter	5328690A3
Light Duty Linkage Components	
Clevis	5313902A1
Clevis Pin Assembly	5313974A1
Ball and Socket	5323123A1
Pipe Connector, 2.13 m (7 ft.) long	5313940A1
Pipe Connector, 2.3 m (10 ft. 6 in.) long	5313940A2
Adapter Assembly	5314282A1
Reinforcing Sleeve	5328639A1
Rod Connector, 1.09 m (3 ft. 7 in.) long	5313932A16

*NOTE: For complete connecting linkage dimensions, specifications and application examples, see Reference information below\**

**Accessories:**

Supply Air Filter – (coalescing) with Bracket (Maximum inlet pressure 1725 kPa [250 psi], 1/4-18 NPT)	5328563D2
Supply Air Regulator with Bracket and gage (Maximum inlet pressure 1725 kPa [250 psi], 1/4-18 NPT) Secondary pressure 14 to 860 kPa (2 to 125 psi)	1951029D5
Pressure Gages – for Actuators with Positioners	
Instrument 0 to 200 kPa (0 to 30 psig) range (AV Only)	5326605A4
Supply 0 to 1100 kPa (0 to 160 psig) range	5326605A5
Output 0 to 1100 kPa (0 to 160 psig) range (2x required)	5326605A6
Speed Control Orifices – Regulates time constant of final control element with AV Positioners. Installs directly into Positioner Port.	
1 mm (0.040 in.) hole	5327327A1
No hole (drill to suit)	5327327A2

**Spare Parts: (Part of nomenclature configuration)**

Rotary Vane Rebuild Kit	258244A1
Vane Actuator	5328575F1

**References**

Customer Information:

Production Specification for AV	DS/AV124
Product Instruction for UP	PN25059A (Service and Parts List) IM/UP-EN (Installation Manual)
Production Specification for TZIDC	42/18-84-EN + CI/TZIDC/110/120-EN
Product Specification for EDP300	OI/EDP300-EN + CI/EDP300-EN
*Connecting Linkage Technical Information	TI-A-UP-Rotary Actuator Connecting Linkage (G81-5-1)

## Models UP1/2/3/4/5/6/7

Universal pneumatic rotary actuators

### UP2

**Pneumatic Rotary Actuator, 610 Nm (450 ft-lb) Rated Torque at 690 kPa (100 psig) Supply (See Note A)**

**UP2**

#### 1 : Enclosure Rating

Standard, IP24 (NEMA 3R)		0
IP66 (NEMA 4X) including CE Conformity		1
Non Standard Option		X

#### 2 : Control Input

0.2 to 1.03 bar (3 to 15 psig) with AV1121__0 Pneumatic Positioner	(Note: 5)	A
0.2 to 1.86 bar (3 to 27 psig) with AV1221__0 Pneumatic Positioner	(Note: 5)	B
4 to 20 mA with AV2321__0 Positioner, Fail Safe (Open/Close) upon loss of mA signal		C
4 to 20 mA with EDP300 Positioner, Fail Safe (Open/Close) upon loss of mA signal		R
4 to 20 mA with EDP300 Positioner, Fail-in-Place upon loss of mA signal		T
4 to 20 mA with TZIDC Positioner, Fail Safe (Open/Close) upon loss of mA signal	(Note: A)	U
4 to 20 mA with TZIDC Positioner, Fail-in-Place upon loss of mA signal	(Note: A)	W
4 to 20 mA with TZIDC-200 (EXP), Fail Safe (Open/Close) upon loss of mA input	(Notes: 6, A)	Y
4 to 20 mA with TZIDC-200 (EXP), Fail-in-Place upon loss of mA input	(Notes: 6, A)	Z
On/Off Solenoid, 120 V AC, Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		5
On/Off Solenoid, 115/125 V DC, Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		6
On/Off Solenoid, 120 V AC, Dual Coil, Fail-in-Place upon loss of coil voltage		8
On/Off Solenoid, 115 / 125 V DC, Dual Coil, Fail-in-Place upon loss of coil voltage		9
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		F
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Dual Coil, Fail-in-Place upon loss of coil voltage		G
Non Standard Option		X

#### 3 : Shaft Position Transmitter

None		0
Potentiometric Resistive Output, built into Positioner (for UP2_ A / B / C only)	(Note: 1)	A
4 to 20 mA Output, built into AV / TZIDC / EDP300 Positioners (for UP2_, A/B/C/R/T/U/W/Y&Z only)	(Notes: 2, 7)	B
0.2 to 1 bar (3 to 15 psig) Pneumatic Position Transmitter Out (AV112000 Positioner) (For UP20A_ _ _ _ only)	(Note: 3)	C
Non Standard Option		X

#### 4 : Adjustable Travel Switches

None		0
Include, 4-SPDT	(Note: 4)	1
Include, 2-SPDT	(Note: 4)	2
Non Standard Option		X

#### 5 : Air Failure Control

None		0
Air Failure Lock-up (hold last position) with manual or automatic reset function after air recovery (includes remote reset switch)		1
Air Failure Lock-up (hold last position) with automatic reset function after air recovery		A
Reserve Air Tank, actuator goes to 0 or 100 % (field selectable) upon loss of air supply with pressure switch for air failure alarm	(Note: 4)	4
Reserve Air Tank, actuator goes to 0 or 100 % (field selectable) upon loss of air supply without pressure switch for air failure alarm		C
Non Standard Option		X

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

**Pneumatic Rotary Actuator, 610 Nm (450 ft-lb) Rated Torque at 690 kPa (100 psig) Supply (See Note A)**

**UP2**

**6 : Actuator Heaters (Note E)**

None		0
120 V AC	(Note: 4)	1
240 V AC	(Note: 4)	2
Non Standard Option		X

**7 : Tubing Material**

Standard Tubing		0
Stainless Steel Tubing and Fittings (304 SS)	(Note: 2)	S
Non Standard Option		X

**Additional ordering information**

**8 : Tagging Option**

Mylar, adhesive backed aluminum finish		1
Stainless Steel, Wire Attached (must specify tag text in parameter data)		2
Stainless Steel, Permanently Attached (must specify tag text in parameter data)		3

**9 : Manual for Service and Parts List**

English		M5
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**10 : Communication Option**

Without HART communication (only for EDP300 or TZIDC control input option)	(Note: 8)	C1
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**11 : Mechanical Indicator on Positioner Cover**

Beacon for position indication (option for EDP300 or TZIDC positioners)	(Note: 8)	B1
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**12 : Certification**

Certificate of conformance		F2
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**13 : Air Supply Filter**

Air supply filter with pressure regulator for field installation	(Note: 2)	A1
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Note 1: Not available with Control Input code R, T, U, W, Y, Z, 5, 6, 8, 9, F, G

Note 2: Not available with Control Input code 5, 6, 8, 9, F, G

Note 3: Not available with Enclosure Rating code 1 and Control Input code B, C, R, T, U, W, Y, Z, 5, 6, 8, 9, F, G

Note 4: Not available with Control Input code Y, Z

Note 5: kPa = psi x 6.895

Note 6: Explosion Proof Application Cl 1 Div 1 Gr C-G, refer to TZIDC-200 data sheet

Note 7: 24 V Supply required (not included)

Note 8: Only in combination with Control Input code R, T, U, W, Y, Z

Note A: The Maximum Supply Pressure for UP with TZIDC positioner is 621 kPa (90 psig)

Note E: Not suitable for hazardous process applications that require FM/CSA approval

## Models UP1/2/3/4/5/6/7

Universal pneumatic rotary actuators

### UP2 Accessories

	Code
Installation Manual (One copy is supplied, at no cost, with order)	IM/UP-EN

#### Linkage Accessories:

Medium Duty Driven Lever, for interconnecting between linkage and the final control element	
For shaft diameter 22.2 to 26.9 mm (0.875 to 1.062 in.), 7.92 mm (0.312 in.) Groov pin diameter	5328976A1
For shaft diameter 28.6 to 34.9 mm (1.125 to 1.375 in.), 9.52 mm (0.376 in.) Groov pin diameter	5328976A2
For shaft diameter 36.5 mm (1.438 in.), 9.52 mm (0.372 in.) Groov pin diameter	5328976A3
Medium Duty Linkage Components	
Clevis	197758A1
Clevis Pin Assembly	197757A1
Ball and Socket, Self Lubricating	5328986A1
1 <sup>1</sup> / <sub>4</sub> in. Pipe Connector, 3.08 m (10 ft. 6 in.) long	5313945A2
1 <sup>1</sup> / <sub>4</sub> in. Pipe Connector, 6.4 m (21 ft.) long	CF
Adapter	53683A1
Reinforcing Sleeve 3.66 m (12 ft.) long	5314038A2
Rod Connector, 1.22 m (4 ft.) long	5313935A2

NOTE: For complete connecting linkage dimensions, specifications and application examples, see Reference information below\*

#### Accessories:

Supply Air Filter – (coalescing) with Bracket (Maximum inlet pressure 1725 kPa [250 psi], 1/4-18 NPT)	5328563D2
Supply Air Regulator with Bracket and gage (Maximum inlet pressure 1725 kPa [250 psi], 1/4-18 NPT) Secondary pressure 14 to 860 kPa (2 to 125 psi)	1951029D5
Pressure Gages – for Actuators with Positioners	
Instrument 0 to 200 kPa (0 to 30 psig) range (AV only)	5326605A4
Supply 0 to 1100 kPa (0 to 160 psig) range	5326605A5
Output 0 to 1100 kPa (0 to 160 psig) range (2x required)	5326605A6
Speed Control Orifices – Regulates time constant of final control element with AV Positioners. Installs directly into Positioner Port.	
1 mm (0.040 in.) hole	5327327A1
No hole (drill to suit)	5327327A2

#### Spare Parts:

Rotary Vane Rebuild Kit	258244A2
Vane Actuator	5328838A1

#### Spare Parts for UP20 with Actuator Heaters (UP20\_ \_ \_ \_ 1\_)

Thermoswitch	662460A1
Solderless Terminal	1941401A1

#### References

Customer Information:

Production Specification for AV	DS/AV124
Product Instruction for UP	PN25059A (Service and Parts List) IM/UP-EN (Installation Manual)
Production Specification for TZIDC	42/18-84-EN + CI/TZIDC/110/120-EN
Product Specification for EDP300	OI/EDP300-EN + CI/EDP300-EN
*Connecting Linkage Technical Information	TI-A-UP-Rotary Actuator Connecting Linkage (G81-5-1)

## UP3

### Pneumatic Rotary Actuator, 1085 Nm (800 ft-lb) Rated Torque at 690 kPa (100 psig) Supply (See Note A)

UP3

#### 1 : Enclosure Rating

Standard, IP24 (NEMA 3R)		0
IP66 (NEMA 4X) including CE Conformity		1
Non Standard Option		X

#### 2 : Control Input

0.2 to 1.03 bar (3 to 15 psig) with AV1121__0 Pneumatic Positioner	(Note: 5)	A
0.2 to 1.86 bar (3 to 27 psig) with AV1221__0 Pneumatic Positioner	(Note: 5)	B
4 to 20 mA with AV2321__0 Positioner, Fail Safe (Open/Close) upon loss of mA signal		C
4 to 20 mA with EDP300 Positioner, Fail Safe (Open/Close) upon loss of mA signal		R
4 to 20 mA with EDP300 Positioner, Fail-in-Place upon loss of mA signal		T
4 to 20 mA with TZIDC Positioner, Fail Safe (Open/Close) upon loss of mA signal	(Note: A)	U
4 to 20 mA with TZIDC Positioner, Fail-in-Place upon loss of mA signal	(Note: A)	W
4 to 20 mA with TZIDC-200 (EXP), Fail Safe (Open/Close) upon loss of mA input	(Notes: 6, A)	Y
4 to 20 mA with TZIDC-200 (EXP), Fail-in-Place upon loss of mA input	(Notes: 6, A)	Z
On/Off Solenoid, 120 V AC, Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		5
On/Off Solenoid, 115/125 V DC, Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		6
On/Off Solenoid, 120 V AC, Dual Coil, Fail-in-Place upon loss of coil voltage		8
On/Off Solenoid, 115 / 125 V DC, Dual Coil, Fail-in-Place upon loss of coil voltage		9
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		F
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Dual Coil, Fail-in-Place upon loss of coil voltage		G
Non Standard Option		X

#### 3 : Shaft Position Transmitter

None		0
Potentiometric Resistive Output, built into Positioner (for UP3_ A / B / C only)	(Note: 1)	A
4 to 20 mA Output, built into AV / TZIDC / EDP300 Positioners (for UP3_A/B/C/R/T/U/W/Y&Z only)	(Notes: 2, 7)	B
0.2 to 1 bar (3 to 15 psig) Pneumatic Position Transmitter (AV112000) (for UP30A___only)	(Note: 3)	C
Non Standard Option		X

#### 4 : Adjustable Travel Switches

None		0
Include, 4-SPDT	(Note: 4)	1
Include, 2-SPDT	(Note: 4)	2
Non Standard Option		X

#### 5 : Air Failure Control

None		0
Air Failure Lock-up (hold last position) with manual or automatic reset function after air recovery (includes remote reset switch and pressure switch)	(Note: 4)	1
Air Failure Lock-up (hold last position) with automatic reset function after air recovery without pressure switch for air failure alarm		A
Reserve Air Tank, actuator goes to 0 or 100 % (field selectable) upon loss of air supply with pressure switch for air failure alarm	(Note: 4)	4
Reserve Air Tank, actuator goes to 0 or 100 % (field selectable) upon loss of air supply without pressure switch for air failure alarm		C
Non Standard Option		X

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

**Pneumatic Rotary Actuator, 1085 Nm (800 ft-lb) Rated Torque at 690 kPa (100 psig) Supply (See Note A) UP3**

**6 : Actuator Heaters (Note E)**

None		0
120 V AC	(Note: 4)	1
240 V AC	(Note: 4)	2
Non Standard Option		X

**7 : Tubing Material**

Standard Tubing		0
Stainless Steel Tubing and Fittings (304 SS)	(Note: 2)	S
Non Standard Option		X

**Additional ordering information**

**8 : Tagging Option**

Mylar, adhesive backed aluminum finish		1
Stainless Steel, Wire Attached (must specify tag text in parameter data)		2
Stainless Steel, Permanently Attached (must specify tag text in parameter data)		3

**9 : Manual for Service and Parts List**

English		M5
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**10 : Communication Option**

Without HART communication (only for EDP300 or TZIDC control input option)	(Note: 8)	C1
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**11 : Mechanical Indicator on Positioner Cover**

Beacon for position indication (option for EDP300 or TZIDC positioners)	(Note: 8)	B1
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**12 : Certification**

Certificate of conformance		F2
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**13 : Air Supply Filter**

Air supply filter with pressure regulator for field installation	(Note: 2)	A1
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Note 1: Not available with Control Input code R, T, U, W, Y, Z, 5, 6, 8, 9, F, G

Note 2: Not available with Control Input code 5, 6, 8, 9, F, G

Note 3: Not available with Control Input code B, C, R, T, U, W, Y, Z, 5, 6, 8, 9, F, G

Note 4: Not available with Control Input code Y, Z

Note 5: kPa = psi x 6.895

Note 6: Explosion Proof Application CI 1 Div 1 Gr C-G, refer to TZIDC-200 data sheet

Note 7: 24 V Supply required (not included)

Note 8: Only in combination with Control Input code R, T, U, W, Y, Z

Note A: The Maximum Supply Pressure for UP with TZIDC positioner is 621 kPa (90 psig)

Note E: Not suitable for hazardous process applications that require FM/CSA approval

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

**UP3 Accessories**

	<b>Code</b>
Installation Manual (One copy is supplied, at no cost, with order)	IM/UP-EN

**Linkage Accessories:**

Medium Duty Driven Lever, for interconnecting between linkage and the final control element	
For shaft diameter 36.5 to 47.6 mm (1.438 to 1.875 in.), 12.7 mm (0.500 in.) Groov pin diameter	5328977A1
For shaft diameter 49.2 to 60.3 mm (1.938 to 2.375 in.), 12.7 mm (0.500 in.) Groov pin diameter	5328977A2
For shaft diameter 61.9 to 73.0 mm (2.439 to 2.875 in.), 12.7 mm (0.500 in.) Groov pin diameter	5328977A3
For shaft diameter 74.6 mm (2.938 in.), 12.7 mm (0.500 in.) Groov pin diameter	5328977A4
Medium Duty Linkage Components	
Clevis	197758A1
Clevis Pin Assembly	197757A1
Ball and Socket, Self Lubricating	5328986A1
1 <sup>1</sup> / <sub>4</sub> in. Pipe Connector, 3.08 m (10 ft.6 in.) long	5313945A2
1 <sup>1</sup> / <sub>4</sub> in. Pipe Connector, 6.4 m (21 ft.) long	CF
Adapter	53683A1
Reinforcing Sleeve 3.66 m (12 ft.) long	5314038A2
Rod Connector, 1.22 m (4 ft.) long	5313935A2

*NOTE: For complete connecting linkage dimensions, specifications and application examples, see Reference information below\**

**Accessories:**

Supply Air Regulator / Filter – (Coalescing) with gage (maximum inlet pressure 1725 kPa [250 psi]) Maximum outlet pressure 860 kPa (125 psi), 1/2 NPT (high capacity), 40 scfm	1951439D1
Pressure Gages – for Actuators with Positioners.	
Instrument 0 to 200 kPa (0 to 30 psig) range (AV only)	5326605A4
Supply 0 to 1100 kPa (0 to 160 psig) range	5326605A5
Output 0 to 1100 kPa (0 to 160 psig) range (2x required)	5326605A6
Speed Control Orifices – Regulates time constant of final control element with AV Positioners. Installs directly into Positioner Port.	
1 mm (0.040 in.) hole	5327327A1
No hole (drill to suit)	5327327A2

**Spare Parts:**

Cylinder Rebuild Kit for ABB/Bailey Cylinder Part #5328775A1, see Note 1	258240A1
Replacement Cylinder	614B069U33
Rebuild Kit for Replacement Cylinder, see Note 2	614B069U26

## Models UP1/2/3/4/5/6/7

Universal pneumatic rotary actuators

Code

### Spare Parts for UP40 with Actuator Heaters (UP30 \_ \_ \_ \_ 1\_)

Thermoswitch	662460A1
Heater	1943002A1
Solderless Terminal	1941401A1

### References

Customer Information:

Production Specification for AV	DS/AV124
Product Instruction for UP	PN25059A (Service and Parts List) IM/UP-EN (Installation Manual)
Production Specification for TZIDC	42/18-84-EN + CI/TZIDC/110/120-EN
Product Specification for EDP300	OI/EDP300-EN + CI/EDP300-EN
*Connecting Linkage Technical Information	TI-A-UP-Rotary Actuator Connecting Linkage (G81-5-1)

Note 1: Suitable for UP3 with ABB/Bailey cylinders prior to serial #08W006221 (April 2008)

Note 2: Suitable for UP3 with new cylinder design; cylinder can be identified by silver color of tube and square end flanges

## UP4

### Pneumatic Rotary Actuator, 1966 Nm (1450 ft-lb) Rated Torque at 690 kPa (100 psig) Supply (See Note A)

UP4

#### 1 : Enclosure Rating

Standard, IP24 (NEMA 3R)	0
IP66 (NEMA 4X) including CE Conformity	1
Non Standard Option	X

#### 2 : Control Input

0.2 to 1.03 bar (3 to 15 psig) with AV1121__0 Pneumatic Positioner	(Note: 5)	A
0.2 to 1.86 bar (3 to 27 psig) with AV1221__0 Pneumatic Positioner	(Note: 5)	B
4 to 20 mA with AV2321__0 Positioner, Fail Safe (Open/Close) upon loss of mA signal		C
4 to 20 mA with EDP300 Positioner, Fail Safe (Open/Close) upon loss of mA signal		R
4 to 20 mA with EDP300 Positioner, Fail-in-Place upon loss of mA signal		T
4 to 20 mA with TZIDC Positioner, Fail Safe (Open/Close) upon loss of mA signal	(Note: A)	U
4 to 20 mA with TZIDC Positioner, Fail-in-Place upon loss of mA signal	(Note: A)	W
4 to 20 mA with TZIDC-200 (EXP), Fail Safe (Open/Close) upon loss of mA input	(Notes: 6, A)	Y
4 to 20 mA with TZIDC-200 (EXP), Fail-in-Place upon loss of mA input	(Notes: 6, A)	Z
On/Off Solenoid, 120 V AC, Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		5
On/Off Solenoid, 115/125 V DC, Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		6
On/Off Solenoid, 120 V AC, Dual Coil, Fail-in-Place upon loss of coil voltage		8
On/Off Solenoid, 115 / 125 V DC, Dual Coil, Fail-in-Place upon loss of coil voltage		9
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		F
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Dual Coil, Fail-in-Place upon loss of coil voltage		G
Non Standard Option		X

#### 3 : Shaft Position Transmitter

None		0
Potentiometric Resistive Output, built into Positioner (for UP4_ A, B, C only)	(Note: 1)	A
4 to 20 mA Output, built into AV / TZIDC / EDP300 Positioners (for UP4_ A/B/C/R/T/U/W/Y&Z only)	(Notes: 2, 7)	B
0.2 to 1 bar (3 to 15 psig) Pneumatic Position Transmitter, (AV112000) (for UP4_ A_ _ _ _ only)	(Note: 3)	C
Non Standard Option		X

#### 4 : Adjustable Travel Switches

None		0
Include, 4-SPDT	(Note: 4)	1
Include, 2-SPDT	(Note: 4)	2
Non Standard Option		X

#### 5 : Air Failure Control

None		0
Air Failure Lock-up (hold last position) with manual or automatic reset function after air recovery (includes remote reset switch and pressure switch)	(Note: 4)	1
Air Failure Lock-up (hold last position) with automatic reset function after air recovery without pressure switch for air failure alarm		A
Reserve Air Tank, actuator goes to 0 or 100 % (field selectable) upon loss of air supply with pressure switch for air failure alarm	(Note: 4)	4
Reserve Air Tank, actuator goes to 0 or 100 % (field selectable) upon loss of air supply without pressure switch for air failure alarm		C
Non Standard Option		X

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

**Pneumatic Rotary Actuator, 1966 Nm (1450 ft-lb) Rated Torque at 690 kPa (100 psig) Supply (See Note A) UP4**

**6 : Actuator Heaters (Note E)**

None		0
120 V AC	(Note: 4)	1
240 V AC	(Note: 4)	2
Non Standard Option		X

**7 : Tubing Material**

Standard Tubing		0
Stainless Steel Tubing and Fittings (304 SS)	(Note: 2)	S
Non Standard Option		X

**Additional ordering information**

**8 : Tagging Option**

Mylar, adhesive backed aluminum finish		1
Stainless Steel, Wire Attached (must specify tag text in parameter data)		2
Stainless Steel, Permanently Attached (must specify tag text in parameter data)		3

**9 : Manual for Service and Parts List**

English		M5
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**10 : Communication Option**

Without HART communication (only for EDP300 or TZIDC control input option)	(Note: 8)	C1
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**11 : Mechanical Indicator on Positioner Cover**

Beacon for position indication (option for EDP300 or TZIDC positioners)	(Note: 8)	B1
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**12 : Certification**

Certificate of conformance		F2
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**13 : Air Supply Filter**

Air supply filter with pressure regulator for field installation	(Note: 2)	A1
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Note 1: Not available with Control Input code R, T, U, W, Y, Z, 5, 6, 8, 9, F, G

Note 2: Not available with Control Input code 5, 6, 8, 9, F, G

Note 3: Not available with Control Input code B, C, R, T, U, W, Y, Z, 5, 6, 8, 9, F, G

Note 4: Not available with Control Input code Y, Z

Note 5: kPa = psi x 6.895

Note 6: Explosion Proof Application Cl 1 Div 1 Gr C-G

Note 7: 24 V Supply required (not included)

Note 8: Only in combination with Control Input code R, T, U, W, Y, Z

Note A: The Maximum Supply Pressure for UP with TZIDC positioner is 621 kPa (90 psig)

Note E: Not suitable for use in hazardous process applications require FM/CSA approval

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

**UP4 Accessories**

	<b>Code</b>
Installation Manual (One copy is supplied, at no cost, with order)	IM/UP-EN

**Linkage Accessories:**

Medium Duty Driven Lever, for interconnecting between linkage and the final control element	
For shaft diameter 36.5 to 47.6 mm (1.438 to 1.875 in.), 12.7 mm (0.500 in.) Groov pin diameter	5328977A1
For shaft diameter 49.2 to 60.3 mm (1.938 to 2.375 in.), 12.7 mm (0.500 in.) Groov pin diameter	5328977A2
For shaft diameter 61.9 to 73.0 mm (2.439 to 2.875 in.), 12.7 mm (0.500 in.) Groov pin diameter	5328977A3
For shaft diameter 74.6 mm (2.938 in.), 12.7 mm (0.500 in.) Groov pin diameter	5328977A4
Medium Duty Linkage Components	
Clevis	197758A1
Clevis Pin Assembly	197757A1
Ball and Socket, Self Lubricating	5328986A1
1 1/4 in. Pipe Connector, 3.08 m (10 ft.6 in.) long	5313945A2
1 1/4 in. Pipe Connector, 6.4 m (21 ft.) long	CF
Adapter	53683A1
Reinforcing Sleeve 3.66 m (12 ft.) long	5314038A2
Rod Connector, 1.22 m (4 ft.) long	5313935A2

*NOTE: For complete connecting linkage dimensions, specifications and application examples, see Reference information below\**

**Accessories:**

Supply Air Regulator / Filter – (Coalescing) with gage (maximum inlet pressure 1725 kPa [250 psi]) Maximum outlet pressure 860 kPa (125 psi), 1/2 NPT (high capacity), 40 scfm	1951439D1
Pressure Gages – for Actuators with Positioners.	
Instrument 0 to 200 kPa (0 to 30 psig) range (AV only)	5326605A4
Supply 0 to 1100 kPa (0 to 160) psig range	5326605A5
Output 0 to 1100 kPa (0 to 160) psig range (2x required)	5326605A6
Speed Control Orifices – Regulates time constant of final control element with AV Positioners. Installs directly into Positioner Port.	
1 mm (0.040 in.) hole	5327327A1
No hole (drill to suit)	5327327A2

**Spare Parts:**

Cylinder Rebuild Kit for ABB/Bailey Cylinder Part #5328775A1, see Note 1	258241A1
Replacement Cylinder	614B069U34
Rebuild Kit for Replacement Cylinder, see Note 2	614B069U28

## Models UP1/2/3/4/5/6/7

Universal pneumatic rotary actuators

Code

### Spare Parts for UP40 with Actuator Heaters (UP40 \_ \_ \_ \_ 1\_)

Thermoswitch	662460A1
Heater	1943002A1
Solderless Terminal	1941401A1

### References

Customer Information:

Production Specification for AV	DS/AV124
Product Instruction for UP	PN25059A (Service and Parts List) IM/UP-EN (Installation Manual)
Production Specification for TZIDC	42/18-84-EN + CI/TZIDC/110/120-EN
Product Specification for EDP300	OI/EDP300-EN + CI/EDP300-EN
*Connecting Linkage Technical Information	TI-A-UP-Rotary Actuator Connecting Linkage (G81-5-1)

Note 1: Suitable for UP4 with ABB/Bailey cylinders prior to serial #08W000704 (February 2008)

Note 2: Suitable for UP4 with new cylinder design; cylinder can be identified by silver color of tube and square end flanges

## UP5

### Pneumatic Rotary Actuator, 3796 Nm (2800 ft-lb) Rated Torque at 690 kPa (100 psig) Supply (See Note A)

UP5

#### 1 : Enclosure Rating

Standard, IP24 (NEMA 3R)		0
IP66 (NEMA 4X) including CE Conformity		1
Non Standard Option		X

#### 2 : Control Input

0.2 to 1.03 bar (3 to 15 psig) with AV1121__0 Pneumatic Positioner	(Note: 5)	A
0.2 to 1.86 bar (3 to 27 psig) with AV1221__0 Pneumatic Positioner	(Note: 5)	B
4 to 20 mA with AV2321__0 Positioner, Fail Safe (Open/Close) upon loss of mA signal		C
4 to 20 mA with EDP300 Positioner, Fail Safe (Open/Close) upon loss of mA signal		R
4 to 20 mA with EDP300 Positioner, Fail-in-Place upon loss of mA signal		T
4 to 20 mA with TZIDC Positioner, Fail Safe (Open/Close) upon loss of mA signal	(Note: A)	U
4 to 20 mA with TZIDC Positioner, Fail-in-Place upon loss of mA signal	(Note: A)	W
4 to 20 mA with TZIDC-200 (EXP), Fail Safe (Open/Close) upon loss of mA input	(Notes: 6, A)	Y
4 to 20 mA with TZIDC-200 (EXP), Fail-in-Place upon loss of mA input	(Notes: 6, A)	Z
On/Off Solenoid, 120 V AC, Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		5
On/Off Solenoid, 115/125 V DC, Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		6
On/Off Solenoid, 120 V AC, Dual Coil, Fail-in-Place upon loss of coil voltage		8
On/Off Solenoid, 115 / 125 V DC, Dual Coil, Fail-in-Place upon loss of coil voltage		9
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		F
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Dual Coil, Fail-in-Place upon loss of coil voltage		G
Non Standard Option		X

#### 3 : Shaft Position Transmitter

None		0
Potentiometric Resistive Output, built into Positioner (for UP5_A/B/C only)	(Note: 1)	A
4 to 20 mA Output, built into AV / TZIDC / EDP300 Positioners (for UP5_A/B/C/R/T/U/W/Y&Z only)	(Notes: 2, 7)	B
0.2 to 1 bar (3 to 15 psig), Pneumatic Position Transmitter (AV112000) (for UP5_A____only)	(Note: 3)	C
Non Standard Option		X

#### 4 : Adjustable Travel Switches

None		0
Include, 4-SPDT	(Note: 4)	1
Include, 2-SPDT	(Note: 4)	2
Non Standard Option		X

#### 5 : Air Failure Control

None		0
Air Failure Lock-up (hold last position) with manual or automatic reset function after air recovery (includes remote reset switch and pressure switch)	(Note: 4)	1
Air Failure Lock-up (hold last position) with automatic reset function after air recovery without pressure switch for air failure alarm		A
Reserve Air Tank, actuator goes to 0 or 100 % (field selectable) upon loss of air supply with pressure switch for air failure alarm	(Note: 4)	4
Reserve Air Tank, actuator goes to 0 or 100 % (field selectable) upon loss of air supply without pressure switch for air failure alarm		C
Non Standard Option		X

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

**Pneumatic Rotary Actuator, 3796 Nm (2800 ft-lb) Rated Torque at 690 kPa (100 psig) Supply (See Note A)**

**UP5**

**6 : Actuator Heaters (Note E)**

None		0
120 V AC	(Note: 4)	1
240 V AC	(Note: 4)	2
Non Standard Option		X

**7 : Tubing Material**

Standard Tubing		0
Stainless Steel Tubing and Fittings (304 SS)	(Note: 2)	S
Non Standard Option		X

**Additional ordering information**

**8 : Tagging Option**

Mylar, adhesive backed aluminum finish		1
Stainless Steel, Wire Attached (must specify tag text in parameter data)		2
Stainless Steel, Permanently Attached (must specify tag text in parameter data)		3

**9 : Manual for Service and Parts List**

English		M5
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**10 : Communication Option**

Without HART communication (only for EDP300 or TZIDC control input option)	(Note: 8)	C1
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**11 : Mechanical Indicator on Positioner Cover**

Beacon for position indication (option for EDP300 or TZIDC positioners)	(Note: 8)	B1
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**12 : Certification**

Certificate of conformance		F2
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**13 : Air Supply Filter**

Air supply filter with pressure regulator for field installation	(Note: 2)	A1
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Note 1: Not available with Control Input code R, T, U, W, Y, Z, 5, 6, 8, 9, F, G

Note 2: Not available with Control Input code 5, 6, 8, 9, F, G

Note 3: Not available with Control Input code B, C, R, T, U, W, Y, Z, 5, 6, 8, 9, F, G

Note 4: Not available with Control Input code Y, Z

Note 5: kPa = psi x 6.895

Note 6: Explosion Proof Application CI 1 Div 1 Gr C-G, refer to TZIDC-200 data sheet

Note 7: 24 V Supply required (not included)

Note 8: Only in combination with Control Input code R, T, U, W, Y, Z

Note A: The Maximum Supply Pressure for UP with TZIDC positioner is 621 kPa (90 psig)

Note E: Not suitable for use in Hazardous process application that require FM/CSA approval

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

**UP5 Accessories**

	<b>Code</b>
Installation Manual (One copy is supplied, at no cost, with order)	IM/UP-EN

**Linkage Accessories:**

Heavy Duty Driven Lever, for interconnecting between linkage and the final control element	
For shaft diameter 49.2 to 101.6 mm (1.938 to 4.000 in.)	6628241A1
Heavy Duty Linkage Components	
Clevis	6614440A1
Clevis Pin Assembly	6634507A1
Ball and Socket, Self Lubricating	5328987A1
2½ in. – 8 NPT Pipe Connector, 4.06 m (13 ft. 4 in.) long	6615890A4
2½ in. – 8 NPT Adapter	6614437A1
Reinforcing Sleeve 3.66 m (12 ft.) long	6615891J6
2½ in. – 8 NPT Pipe Connector, 6.10 m (20 ft.)	CF
Retaining Ring	197164A125

*NOTE: For complete connecting linkage dimensions, specifications and application examples, see Reference information below\**

**Accessories:**

Supply Air Regulator / Filter – (Coalescing) with gage (maximum inlet pressure 1725 kPa [250 psi]) Maximum outlet pressure 860 kPa (125 psi), ½ NPT (high capacity), 40 scfm	1951439D1
Pressure Gages – for Actuators with Positioners.	
Instrument 0 to 200 kPa (0 to 30 psig) range (AV only)	5326605A4
Supply 0 to 1100 (0 to 160 psig) range	5326605A5
Output 0 to 1100 (0 to 160 psig) range (2x required)	5326605A6
Speed Control Orifices – Regulates time constant of final control element with AV Positioners. Installs directly into Positioner Port.	
1 mm (0.040 in.) hole	5327327A1
No hole (drill to suit)	5327327A2

**Spare Parts:**

Cylinder Rebuild Kit for ABB/Bailey Cylinder Part #5328952A1, see Note 1	258241A1
Replacement Cylinder	614B069U35
Rebuild Kit for Replacement Cylinder, see Note 2	614B069U29

## Models UP1/2/3/4/5/6/7

Universal pneumatic rotary actuators

Code

### Spare Parts for UP50 with Actuator Heaters (UP50 \_ \_ \_ \_ 1\_)

Thermoswitch	662460A1
Heater	1943002A1
Solderless Terminal	1941401A1

### References

Customer Information:

Production Specification for AV	DS/AV124
Product Instruction for UP	PN25059A (Service and Parts List) IM/UP-EN (Installation Manual)
Production Specification for TZIDC	42/18-84-EN + CI/TZIDC/110/120-EN
Product Specification for EDP300	OI/EDP300-EN + CI/EDP300-EN
*Connecting Linkage Technical Information	TI-A-UP-Rotary Actuator Connecting Linkage (G81-5-1)

Note 1: Suitable for UP5 with ABB/Bailey cylinders prior to serial #08W006423 (June 2008)

Note 2: Suitable for UP5 with new cylinder design; cylinder can be identified by silver color of tube and square end flanges

## UP6

### Pneumatic Rotary Actuator, 6372 Nm (4700 ft-lb) Rated Torque at 690 kPa (100 psig) Supply (See Note A)

UP6

#### 1 : Enclosure Rating

Standard, IP24 (NEMA 3R)		0
IP66 (NEMA 4X) including CE Conformity		1
Non Standard Option		X

#### 2 : Control Input

None (For Slave Drive Only)	(Note: 8)	0
0.2 to 1.03 bar (3 to 15 psig) with AV1121__0 Pneumatic Positioner	(Note: 9)	A
0.2 to 1.86 bar (3 to 27 psig) with AV1221__0 Pneumatic Positioner	(Note: 9)	B
4 to 20 mA with AV2321__0 Positioner, Fail Safe (Open/Close) upon loss of mA signal		C
4 to 20 mA with EDP300 Positioner, Fail Safe (Open/Close) upon loss of mA signal		R
4 to 20 mA with EDP300 Positioner, Fail-in-Place upon loss of mA signal		T
4 to 20 mA with TZIDC Positioner, Fail Safe (Open/Close) upon loss of mA signal	(Note: A)	U
4 to 20 mA with TZIDC Positioner, Fail-in-Place upon loss of mA signal	(Note: A)	W
4 to 20 mA with TZIDC-200 (EXP), Fail Safe (Open/Close) upon loss of mA input	(Notes: 10, A)	Y
4 to 20 mA with TZIDC-200 (EXP), Fail-in-Place upon loss of mA input	(Notes: 10, A)	Z
On/Off Solenoid, 120 V AC, Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		5
On/Off Solenoid, 115/125 V DC, Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		6
On/Off Solenoid, 120 V AC, Dual Coil, Fail-in-Place upon loss of coil voltage		8
On/Off Solenoid, 115 / 125 V DC, Dual Coil, Fail-in-Place upon loss of coil voltage		9
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		F
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Dual Coil, Fail-in-Place upon loss of coil voltage		G
Non Standard Option		X

#### 3 : Shaft Position Transmitter

None		0
Potentiometric Resistive Output, built into Positioner (for UP6_A/B/C only)	(Note: 1)	A
4 to 20 mA Output, built into AV / TZIDC / EDP300 Positioners (for UP6_A/B/C/R/T/U/W/Y&Z only)	(Notes: 2, 11)	B
0.2 to 1 bar (3 to 15 psig) Pneumatic Position Transmitter (AV112000) (for UP6_A___only)	(Note: 3)	C
Non Standard Option		X

#### 4 : Adjustable Travel Switches

None		0
Include, 4-SPDT	(Note: 4)	1
Include, 2-SPDT	(Note: 4)	2
Non Standard Option		X

#### 5 : Air Failure Control / Volume Boosters

None		0
Air Failure Lock-up (hold last position) with manual or automatic reset function after air recovery (includes remote reset switch and pressure switch)	(Notes: 5, 12)	1
Air Failure Lock-up (hold last position) with automatic reset function after air recovery without pressure switch for air failure alarm	(Note: 12)	A
Volume Boosters for Fast Travel	(Notes: 6, 13)	2
Air Failure Lock-up + Volume Boosters (hold last position) with manual or automatic reset function after air recovery (includes remote reset switch and pressure switch)	(Notes: 5, 6, 13)	3
Air Failure Lock-up + Volume Boosters (hold last position) with automatic reset function after air recovery without pressure switch for air failure alarm	(Notes: 6, 13)	B
Reserve Air Tank, actuator goes to 0 or 100 % (field selectable) upon loss of air supply with pressure switch for air failure alarm	(Notes: 5, 12)	4
Reserve Air Tank, actuator goes to 0 or 100 % (field selectable) upon loss of air supply without pressure switch for air failure alarm	(Note: 12)	C
Non Standard Option		X

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

**Pneumatic Rotary Actuator, 6372 Nm (4700 ft-lb) Rated Torque at 690 kPa (100 psig) Supply (See Note A)**

**UP6**

**6 : Actuator Heaters (Note E)**

None		0
120 V AC	(Note: 4)	1
240 V AC	(Note: 4)	2
Non Standard Option		X

**7 : Tubing Material**

Standard Tubing		0
Stainless Steel Tubing and Fittings (304 SS)	(Note: 7)	S
Non Standard Option		X

**Additional ordering information**

**8 : Tagging Options (Each tag may have 4 lines each consisting of 25 characters)**

Mylar, adhesive backed aluminum finish		1
Stainless Steel, Wire Attached (must specify tag text in parameter data)		2
Stainless Steel, Permanently Attached (must specify tag text in parameter data)		3

**9 : Manual for Service and Parts List**

English		M5
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**10 : Communication Option**

Without HART communication (only for EDP300 or TZIDC control input option)	(Note: 14)	C1
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**11 : Mechanical Indicator on Positioner Cover**

Beacon for position indication (option for EDP300 or TZIDC positioners)	(Note: 14)	B1
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**12 : Certification**

Certificate of conformance		F2
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**13 : Air Supply Filter**

Air supply filter with pressure regulator for field installation	(Note: 2)	A1
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Note 1: Not available with Control Input code R, T, U, W, Y, Z, 5, 6, 8, 9, F, G, 0

Note 2: Not available with Control Input code 5, 6, 8, 9, F, G, 0

Note 3: Not available with Control Input code B, C, R, T, U, W, Y, Z, 5, 6, 8, 9, F, G, 0

Note 4: Not available with Control Input code Y, Z

Note 5: Not available with Control Input code 0, Y, Z

Note 6: Not available with Control Input code 5, 6, 8, 9, F, G, 0, Y, Z

Note 7: Not available with Control Input code 5, 6, 8, 9, F, G

Note 8: Includes Master / Slave Installation Kit, P/N 258458\_1

Note 9: kPa = psi x 6.895

Note 10: Explosion Proof Application CI 1 Div 1 Gr C-G, refer to TZIDC-200 data sheet

Note 11: 24 V Supply required (not included)

Note 12: Not available on UP6\_0\_ \_ \_ \_ \_

Note 13: Not available on UP6\_0\_ \_ \_ \_ \_ , Volume Boosters available on UP6\_A, B, C, U, W, Y, & Z only

Note 14: Only in combination with Control Input code R, T, U, W, Y, Z

Note A: The Maximum Supply Pressure for UP with TZIDC positioner is 621 kPa (90 psig)

Note E: Not suitable for use in Hazardous process application that require FM/CSA approval

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

**UP6 Accessories**

	<b>Code</b>
Installation Manual (One copy is supplied, at no cost, with order)	IM/UP-EN

**Linkage Accessories:**

Heavy Duty Driven Lever, for interconnecting between linkage and the final control element	
For shaft diameter 49.2 to 101.6 mm (1.938 to 4.000 in.)	6628241A1
Heavy Duty Linkage Components	
Clevis	6614440A1
Clevis Pin Assembly	6634507A1
Ball and Socket, Self Lubricating	5328987A1
2½ in. – 8 NPT Pipe Connector, 4.06 m (13 ft. 4 in.) long	6615890A4
2½ in. – 8 NPT Adapter	6614437A1
Reinforcing Sleeve 3.66 m (12 ft.) long	6615891J6
2½ in. – 8 NPT Pipe Connector, 6.10 m (20 ft.)	CF
Retaining Ring	197164A125

*NOTE: For complete connecting linkage dimensions, specifications and application examples, see Reference information below\**

**Accessories:**

Supply Air Regulator / Filter – (Coalescing) with gage (maximum inlet pressure 1725 kPa [250 psi]) Maximum outlet pressure 860 kPa (125 psi), ½ NPT (high capacity), 40 scfm	1951439D1
Pressure Gages – for Actuators with Positioners.	
Instrument 0 to 200 kPa (0 to 30 psig) range (AV only)	5326605A4
Supply 0 to 1100 kPa (0 to 160 psig) range	5326605A5
Output 0 to 1100 kPa (0 to 160 psig) range (2x required)	5326605A6
Speed Control Orifices – Regulates time constant of final control element with AV Positioners. Installs directly into Positioner Port.	
1 mm (0.040 in.) hole	5327327A1
No hole (drill to suit)	5327327A2

**Spare Parts:**

Cylinder Rebuild Kit for ABB/Bailey Cylinder Part #5328952A1, see Note 1	258241A1
Replacement Cylinder	614B069U36
Rebuild Kit for Replacement Cylinder, see Note 2	614B069U30

## Models UP1/2/3/4/5/6/7

Universal pneumatic rotary actuators

Code

### Spare Parts for UP60 with Actuator Heaters (UP60\_ \_ \_ \_ 1\_)

Thermoswitch	662460A1
Heater	1943002A1
Solderless Terminal	1941401A1

### References

Customer Information:

Production Specification for AV	DS/AV124
Product Instruction for UP	PN25059A (Service and Parts List) IM/UP-EN (Installation Manual)
Production Specification for TZIDC	42/18-84-EN + CI/TZIDC/110/120-EN
Product Specification for EDP300	OI/EDP300-EN + CI/EDP300-EN
*Connecting Linkage Technical Information	TI-A-UP-Rotary Actuator Connecting Linkage (G81-5-1)

Note 1: Suitable for UP6; with ABB/Bailey cylinder prior to serial #08W000564 (March 2008)

Note 2: Suitable for UP5 with new cylinder design; cylinder can be identified by silver color of tube and square end flanges

## UP7

### Pneumatic Rotary Actuator, 7326 Nm (5400 ft-lb) Rated Torque at 552 kPa (80 psig) Supply

UP7

#### 1 : Enclosure Rating

Standard, IP24 (NEMA 3R)	(Note: B)	0
IP66 (NEMA 4X) including CE Conformity	(Note: B)	1
Non Standard Option	(Note: B)	X

#### 2 : Control Input

0.2 to 1.03 bar (3 to 15 psig) with AV1121__0 Pneumatic Positioner	(Note: 6)	A
0.2 to 1.86 bar (3 to 27 psig) with AV1221__0 Pneumatic Positioner	(Note: 6)	B
4 to 20 mA with AV2321__0 Positioner, Fail Safe (Open/Close) upon loss of mA signal		C
4 to 20 mA with EDP300 Positioner, Fail Safe (Open/Close) upon loss of mA signal		R
4 to 20 mA with EDP300 Positioner, Fail-in-Place upon loss of mA signal		T
4 to 20 mA with TZIDC Positioner, Fail Safe (Open/Close) upon loss of mA signal		U
4 to 20 mA with TZIDC Positioner, Fail-in-Place upon loss of mA signal		W
4 to 20 mA with TZIDC-200 (EXP), Fail Safe (Open/Close) upon loss of mA input	(Notes: 7)	Y
4 to 20 mA with TZIDC-200 (EXP), Fail-in-Place upon loss of mA input	(Notes: 7)	Z
On/Off Solenoid, 120 V AC, Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		5
On/Off Solenoid, 115/125 V DC, Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		6
On/Off Solenoid, 120 V AC, Dual Coil, Fail-in-Place upon loss of coil voltage		8
On/Off Solenoid, 115 / 125 V DC, Dual Coil, Fail-in-Place upon loss of coil voltage		9
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Single Coil, Fail Safe (Open/Close) upon loss of coil voltage		F
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz Dual Coil, Fail-in-Place upon loss of coil voltage		G
Non Standard Option		X

#### 3 : Shaft Position Transmitter

None		0
Potentiometric Resistive Output, built into Positioner (for UP7_A/B/C only)	(Note: 1)	A
4 to 20 mA Output, built into AV / TZIDC / EDP300 Positioners (for UP7_A/B/C/R/T/U/W/Y&Z only)	(Notes: 2, 8)	B
0.2 to 1 bar (3 to 15 psig) Pneumatic Position Transmitter (AV112000) (for UP7_A___only)	(Note: 3)	C
Non Standard Option		X

#### 4 : Adjustable Travel Switches

None		0
Include, 4-SPDT	(Note: 4)	1
Include, 2-SPDT	(Note: 4)	2
Non Standard Option		X

#### 5 : Air Failure Control / Volume Boosters

None		0
Air Failure Lock-up (hold last position) with manual or automatic reset function after air recovery (includes remote reset switch and pressure switch)	(Note: 4)	1
Air Failure Lock-up (hold last position) with automatic reset function after air recovery without pressure switch for air failure alarm		A
Volume Boosters for Fast Travel	(Notes: 5, 9)	2
Air Failure Lock-up + Volume Boosters (hold last position) with manual or automatic reset function after air recovery (includes remote reset switch and pressure switch)	(Notes: 5, 9)	3
Air Failure Lock-up + Volume Boosters (hold last position) with automatic reset function after air recovery without pressure switch for air failure alarm	(Notes: 4, 5, 9)	B
Reserve Air Tank, actuator goes to 0 or 100 % (field selectable) upon loss of air supply with pressure switch for air failure alarm	(Note: 4)	4
Reserve Air Tank, actuator goes to 0 or 100 % (field selectable) upon loss of air supply without pressure switch for air failure alarm		C
Non Standard Option		X

#### 6 : Actuator Heaters (Note E)

**Models UP1/2/3/4/5/6/7**  
 Universal pneumatic rotary actuators

<b>Pneumatic Rotary Actuator, 7326 Nm (5400 ft-lb) Rated Torque at 552 kPa (80 psig) Supply</b>		<b>UP7</b>
None		0
120 V AC	(Note: 4)	1
240 V AC	(Note: 4)	2
Non Standard Option		X

**7 : Tubing Material**

Standard Tubing		0
Stainless Steel Tubing and Fittings (304 SS)	(Note: 2)	S
Non Standard Option		X

**Additional ordering information**

**8 : Tagging Options (Each tag may have 4 lines each consisting of 25 characters)**

Mylar, adhesive backed aluminum finish		1
Stainless Steel, Wire Attached (must specify tag text in parameter data)		2
Stainless Steel, Permanently Attached (must specify tag text in parameter data)		3

**9 : Manual for Service and Parts List**

English		M5
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**10 : Communication Option**

Without HART communication (only for EDP300 or TZIDC control input option)	(Note: 11)	C1
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**11 : Mechanical Indicator on Positioner Cover**

Beacon for position indication (option for EDP300 or TZIDC positioners)	(Note: 11)	B1
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**12 : Certification**

Certificate of conformance		F2
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**13 : Air Supply Filter**

Air supply filter with pressure regulator for field installation	(Note: 2)	A1
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Note 1: Not available with Control Input code R, T, U, W, Y, Z, 5, 6, 8, 9, F, G

Note 2: Not available with Control Input code 5, 6, 8, 9, F, G

Note 3: Not available with Control Input code B, C, R, T, U, W, Y, Z, 5, 6, 8, 9, F, G

Note 4: Not available with Control Input code Y, Z

Note 5: Not available with Control Input code 5, 6, 8, 9, F, G, Y, Z

Note 6: kPa = psi x 6.895

Note 7: Explosion Proof Application Cl 1 Div 1 Gr C-G, refer to TZIDC-200 data sheet

Note 8: 24 V Supply required (not included)

Note 9: Volume Boosters recommended on UP7\_A, B, C, R, T, U, W, Y & Z only

Note 10: Only in combination with Control Input code R, T, U, W, Y, Z

Note B: The maximum supply pressure for UP7 is 552 kPa (80 psi)

Note E: Not suitable for use in Hazardous process application that require FM/CSA approval

**UP7 Accessories**

	<b>Code</b>
Installation Manual (One copy is supplied, at no cost, with order)	IM/UP-EN

**Linkage Accessories:**

Heavy Duty Driven Lever, for interconnecting between linkage and the final control element	
For shaft diameter 49.2 to 101.6 mm (1.938 to 4.00 in.)	6628241A1
Heavy Duty Linkage Components	
Clevis	6614440A1
Clevis Pin Assembly	6634507A1
Ball and Socket, Self Lubricating	5328987A1
Retaining Ring	197164A125

*NOTE: For complete connecting linkage dimensions, specifications and application examples, see Reference information below\**

**Accessories:**

Supply Air Regulator / Filter – (Coalescing) with gage (maximum inlet pressure 1725 kPa [250 psi]) Maximum outlet pressure 860 kPa (125 psi), 1/2 NPT (high capacity), 40 scfm	1951439D1
Pressure Gages – for Actuators with Positioners.	
Instrument 0 to 200 kPa (0 to 30 psig) range (AV only)	5326605A4
Supply 0 to 1100 kPa (0 to 160 psig) range	5326605A5
Output 0 to 1100 kPa (0 to 160 psig) range (2x required)	5326605A6
Speed Control Orifices – Regulates time constant of final control element with AV Positioners. Installs directly into Positioner Port.	
1 mm (0.040 in.) hole	5327327A1
No hole (drill to suit)	5327327A2

**Spare Parts:**

Replacement Cylinder	Consult Factory
Rebuild Kit for Replacement Cylinder (square caps & silver color)	Consult Factory

**Spare Parts for UP70 with Actuator Heaters (UP70\_ \_ \_ \_ 1\_)**

Thermoswitch	662460A1
Heater	1943002A1
Solderless Terminal	1941401A1

**References**

Customer Information:

Production Specification for AV	DS/AV124
Product Instruction for UP	PN25059A (Service and Parts List) IM/UP-EN (Installation Manual)
Production Specification for TZIDC	42/18-84-EN + CI/TZIDC/110/120-EN
Product Specification for EDP300	OI/EDP300-EN + CI/EDP300-EN
*Connecting Linkage Technical Information	TI-A-UP-Rotary Actuator Connecting Linkage (G81-5-1)

**Models UP1/2/3/4/5/6/7**

Universal pneumatic rotary actuators

**Notes**

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