

- **Wide Range of Torque Ratings** - Six actuator sizes available in ratings from 122 to 6372 Newton meters (90 to 4700 foot-pounds).
- **Easy and Flexible Installation** - Place in convenient locations and connect to driven device by standard linkage components.
- **Suitable for High Temperature Environments** - Use in ambient temperatures up to 82°C (180°F), depending on control input. (Refer to Specifications for temperature limitations.)
- **Adjustable Relationship Between Control Signal and Output Shaft Position** - Adjusts easily with use of standard positioner cam characteristics (linear, square, and square root relationship) or custom-shaped cam.
- **Conventional or Digital Positioner Options:** Complete range of control signal options including the TZIDC with HART digital communications and explosion proof versions.
- **Manual Operation** - Quick and smooth transfer shifts easily from automatic to manual control.
- **Wide Range of Options Available** - Factory installed NEMA 4X enclosure, pneumatic or electric shaft position transmitter, alarm/travel switches, air failure lock, and heated enclosures available.



Type UP1/2/3/4/5/6
Universal Rotary Actuator UP
Pneumatic

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 and UP6 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 Table 5 for ordering information.

Actuators with a positioner include a Type AV or TZIDC Characterizable Positioners. The positioner is a push-pull action, force balance type control instrument. It offers a variety of input ranges including 21 to 103 kilopascals (3 to 15 psig), 21 to 186 kilopascals (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. Custom shaping the cam provides for specific positioning control characterization of the relationship between the input signal and the output shaft position. With the TZIDC 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 "Smart" positioner is available on all sizes of UP drives. The TZIDC offers the advantages of:

1. Configurable Smart Digital Positioner with diagnostics and digital communication capability via HART protocol (Standard)
2. AUTOSTROKE function provides for self-calibration and self-tuning
3. Modular: Options or replacement parts can be added easily in the field.
4. As a Field IT device, is part of the ABB Industrial IT solutions.
5. Integral Analog or Digital Position Feedback
6. Fail Open/Close or Fail-in-Place on loss of 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. FM/CSA Approved for use in intrinsically safe applications. The TZIDC can be used in Div. 2, Non-Incendive applications without barriers.
11. The TZIDC-200 can be used in Class I, Div. 1, Gr C-G, Explosion Proof Environments.

Please refer to the TZIDC Data Sheet for complete details.

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 VAC or 115/125 VDC service, single or dual coil.

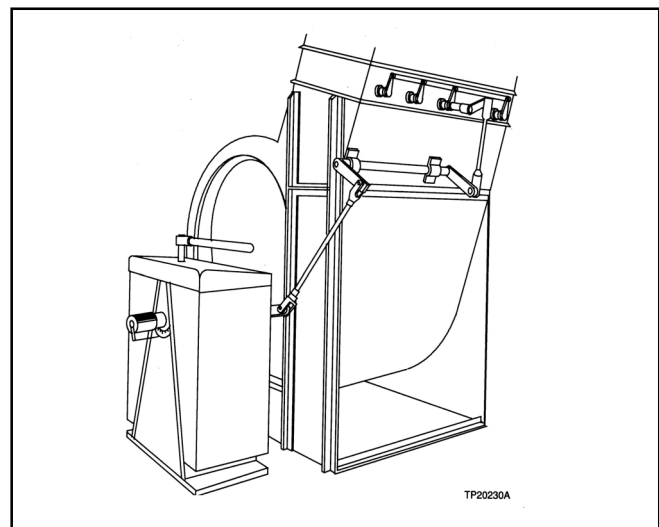


Figure 1. Typical Fan Damper Control Application

Engineering Specifications

Operating Torque

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

Supply Pressure

40 to 100 psig with AV Positioners
20 to 90 psig with TZIDC Positioners

Stroke Times

See Figures 6 through 16

**TABLE 1. - Suggested Maximum Operating Torques at
Minimum and Maximum Supply Pressures ¹**

UP1				
supply, psig	torque, ft-lbs		supply, kPa	torque, Nm
40	40		276	54
45	44.2		310	59.7
50	48.3		345	65.3
55	52.5		379	71
60	56.7		414	76.7
65	60.8		448	82.3
70	65.0		483	88
75	69.2		517	93.7
80	73.3		552	99.3
85	77.5		586	105
90	81.7		621	110.7
95	85.8		655	116.3
100	90		690	122

UP4				
supply, psig	torque, ft-lbs		supply, kPa	torque, Nm
40	550		276	746
45	625.0		310	847.7
50	700.0		345	949.3
55	775.0		379	1051
60	850.0		414	1152.7
65	925.0		448	1254.3
70	1000.0		483	1356
75	1075.0		517	1457.7
80	1150.0		552	1559.3
85	1225.0		586	1661
90	1300.0		621	1762.7
95	1375.0		655	1864.3
100	1450		690	1966

UP2				
supply, psig	torque, ft-lbs		supply, kPa	torque, Nm
40	165		276	224
45	188.8		310	256.2
50	212.5		345	288.3
55	236.3		379	320.5
60	260.0		414	352.7
65	283.8		448	384.8
70	307.5		483	417
75	331.3		517	449.2
80	355.0		552	481.3
85	378.8		586	513.5
90	402.5		621	545.7
95	426.3		655	577.8
100	450		690	610

UP5				
supply, psig	torque, ft-lbs		supply, kPa	torque, Nm
40	1060		276	1437
45	1205.0		310	1633.6
50	1350.0		345	1830.2
55	1495.0		379	2026.75
60	1640.0		414	2223.3
65	1785.0		448	2419.9
70	1930.0		483	2616.5
75	2075.0		517	2813.1
80	2220.0		552	3009.7
85	2365.0		586	3206.25
90	2510.0		621	3402.8
95	2655.0		655	3599.4
100	2800		690	3796

UP3				
supply, psig	torque, ft-lbs		supply, kPa	torque, Nm
40	325		276	441
45	364.6		310	494.7
50	404.2		345	548.3
55	443.8		379	602
60	483.3		414	655.7
65	522.9		448	709.3
70	562.5		483	763
75	602.1		517	816.7
80	641.7		552	870.3
85	681.3		586	924
90	720.8		621	977.7
95	760.4		655	1031.3
100	800		690	1085

UP6				
supply, psig	torque, ft-lbs		supply, kPa	torque, Nm
40	1900		276	2576
45	2133.3		310	2892.3
50	2366.7		345	3208.7
55	2600.0		379	3525
60	2833.3		414	3841.3
65	3066.7		448	4157.7
70	3300.0		483	4474
75	3533.3		517	4790.3
80	3766.7		552	5106.7
85	4000.0		586	5423
90	4233.3		621	5739.3
95	4466.7		655	6055.7
100	4700		690	6372

Note 1: Maximum supply pressure for UP with TZIDC positioner option is 90 psi

Volume Displacement for 90°**Mechanical Output Rotation**

- UP1: 655 cm³ (40 in.³) Rotary Vane
 UP2: 1965 cm³ (120 in.³) Rotary Vane
 UP3: 3685 cm³ (225 in.³) Cylinder
 [15 x 20 cm (6 x 8 in.)]
 UP4: 6550 cm³ (400 in.³) Cylinder
 [20 x 20 cm (8 x 8 in.)]
 UP5: 13,110 cm³ (800 in.³) Cylinder
 [20 x 41 cm (8 x 16 in.)]
 UP6: 20,565 cm³ (1255 in.³) Cylinder
 [25 x 41 cm (10 x 16 in.)].

Engineering Specifications**Temperature Limits:**

- 40 to 82°C (-40 to 180°F)¹ for UP
 with AV positioners
 -40 to 85°C (-40 to 185°F) for UP
 with TZIDC 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.

UP3, UP4, UP5 & UP6: Stroke of the cylinder provides a 90° rotation of the output lever.

Positioner: Refer to Spec/Data Sheet for details on Type AV or TZIDC positioners.

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 20mA (goes to 0% (direct acting) or 100% (reverse acting) on loss of input signal).
 AV3: 4 to 20 mA (holds position on loss of input signal).
 TZIDC: 4 to 20 mA “fail-safe” goes to 0% or 100%, or “fail-freeze” remains in position upon loss of input signal. Refer to nomenclature.

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

- AV: Typical 188.8 cm³/s (0.4 scfm)
 @ 517.1 kPa (75.0 psig) supply at null.
 TZIDC: < 0.03 kg/h (0.015scfm) at null independent of supply pressure

Air Supply:

- For UP with TZIDC Positioner the maximum air supply is 90 psi.
 For UP with AV the maximum air supply is 100 psi.

Positioner Action: Direct action is standard.

With increasing signal, actuator lever rotates as follows:

- UP1: Counterclockwise when facing lever
 UP2: Clockwise when facing lever
 UP3/4*: Clockwise when facing lever
 UP5/6*: Counterclockwise when facing lever

*Note *: UP3 thru UP6 can have lever mounted on either side of actuator.*

Performance Specifications:

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

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 and UP2: NEMA 4X enclosure rating.
 CSA certified 120 VAC or 240 VAC,
 50/60 Hz, 10.1 W ; or 125 VDC, 11.6 W
 UP3, UP4, UP5 & UP6:
 NEMA² enclosure rating.
 CSA certified 120 VAC or 240 VAC,
 50/60 Hz, 10.1 W; or 125 VDC, 11.6 W

Note 2: 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.

External Connections**Air Supply:**

- UP1 and UP2: 1/4 - 18 NPT female
 UP3 and UP4: 1/4 - 18 NPT female
 UP5 and UP6: 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 in. and 3/4 in. NPT female when using Type AV2 and AV3 positioners, or a solenoid valve for the control input.

Manual Operator

- UP1 & UP2: Lever type with manual locking bolt.
 UP3 & UP4: Split nut with locking ratchet.
 UP5 & UP6: Gear type with self-locking ratchet.

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, UP4, UP5 & UP6:

Carbon steel air cylinder housing and ductile iron cylinder 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 93°C (-40 to 200°F) with AV positioners

-40 to 85°C (-40 to 185°F) with TZIDC positioners

Enclosure Certification:

NEMA 3R (Standard)

NEMA 4X - Optional - must be ordered by nomenclature. (For all except Type UP1)

Refer to order code breakdown.

Agency Approvals:

CSA (Canadian Standards Association) certified for use in general purpose (non-hazardous) locations.

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 - 6 if code, UP___ C ___ is not selected.

Consult factory for details.

Electric (internal to positioner):

Two-wire unit requiring a 12 to 34 VDC 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, AV2 and AV3 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:¹

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 indications.

Contact Ratings:

15A @ 125 VAC @ 60°C (140°F).

0.5A @ 125 or 250 VDC @ 60°C (140°F).

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. Each actuator includes a pneumatic pushbutton and contains hardware for local or remote reset connection.

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.

UP3, UP4, UP5 & UP6: Uses a three-way pneumatic trip valve as the air supply sensor, that trips one four-way (UP3 and UP4) or two three-way (UP5 and UP6) lock-up valves to lock the actuator in the last position. Includes a pressure switch used to signal an air failure alarm or for a status light. Trip valve and pressure switch factory preset at 55 psig; both can also be readjusted at site.

Reserve Air Tank: 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. 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.

Alarm Pressure Switch Contact Ratings:¹

13A @ 115/230 VAC @ 60°C (140°F)

0.5A @ 110/125VDC @ 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 UP's 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 VAC,
500 W.

UP3, UP4, UP5 & UP6:
2 heater elements,
120 VAC,
500 W (1000 W total).

Volume Boosters & Quick Exhaust Valves:

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

Accessories

Coalescing Filter/Regulator for UP3-6:
Parker No. 12E37E18AA & PS807P
Auto float drain
1/2" NPT connections
40 SCFM capacity
250 psi maximum inlet
125 psi maximum outlet
with mounting bracket

Coalescing Filter for UP1-2:
Parker No. 11F18EC
Auto float drain
1/4" NPT connections
45 scfm capacity
250 psi maximum inlet

Regulator with gage for UP1-2:
Parker No. 06R118AC
1/4" NPT connection
53 scfm capacity
250 psi maximum inlet
125 psi maximum outlet

Pressure Switch:

Part No. 1941099_2 (UP1 and UP2)

Pressure Gages:

Instrument (for Type AV1 positioner only)
and Output (for positioner)
Part No. 5326605_4 (instrument),
Part No. 5326605_6 (output, two required).

Speed Control Orifices:

Regulates time constant of positioner and final control element. Installed directly into the positioner output ports.
Part No. 5327327_1: 1 mm (0.04 in.).
Part No. 5327327_2: Blank - Drill to suit.

TABLE 3. Type UP Actuator Shipping Weights

Actuator Type	Shipping Weight kg (lb)
UP10A/10B/10C/104/107	25 (55)
UP105/106/108/109	23 (50)
UP20A/20B/20C/204/207	45 (100)
UP205/206/208/209	43 (95)
UP3 A/3 B/3 C/3 4/3 7	145 (320)
UP3 5/3 6/3 8/3 9	143 (315)
UP4 A/4 B/4 C/4 4/4 7	163 (360)
UP4 5/4 6/4 8/4 9	162 (355)
UP5 A/5 B/5 C/5 4/5 7	336 (741)
UP5 5/5 6/5 8/5 9	334 (736)
UP6 A/6 B/6 C/6 4/6 7	369 (814)
UP6 5/6 6/6 8/6 9	367 (809)

TABLE 4. Option Shipping Weights ¹

Option	Shipping Weight - kg (lb)
Electric Shaft Position Transmitter	1.8 (4.0)
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 and UP6 Actuator

Note 1: Add these values to those listed in Table 3 where applicable.

Operating Torque/ Stroke Time

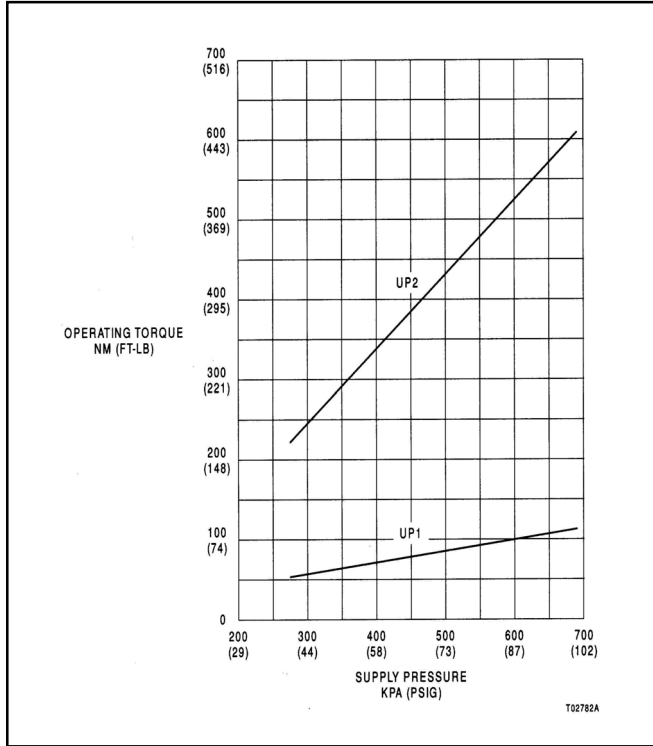


Figure 2. Operating Torque Versus Supply Pressure for Type UP1 and UP2 Actuators

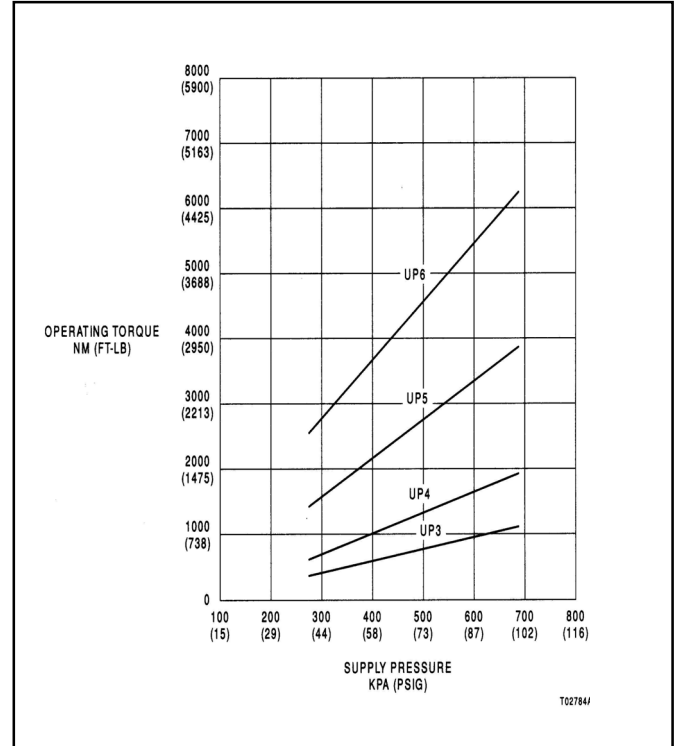


Figure 3. Operating Torque Versus Supply Pressure for Types UP3 through UP6 Actuators

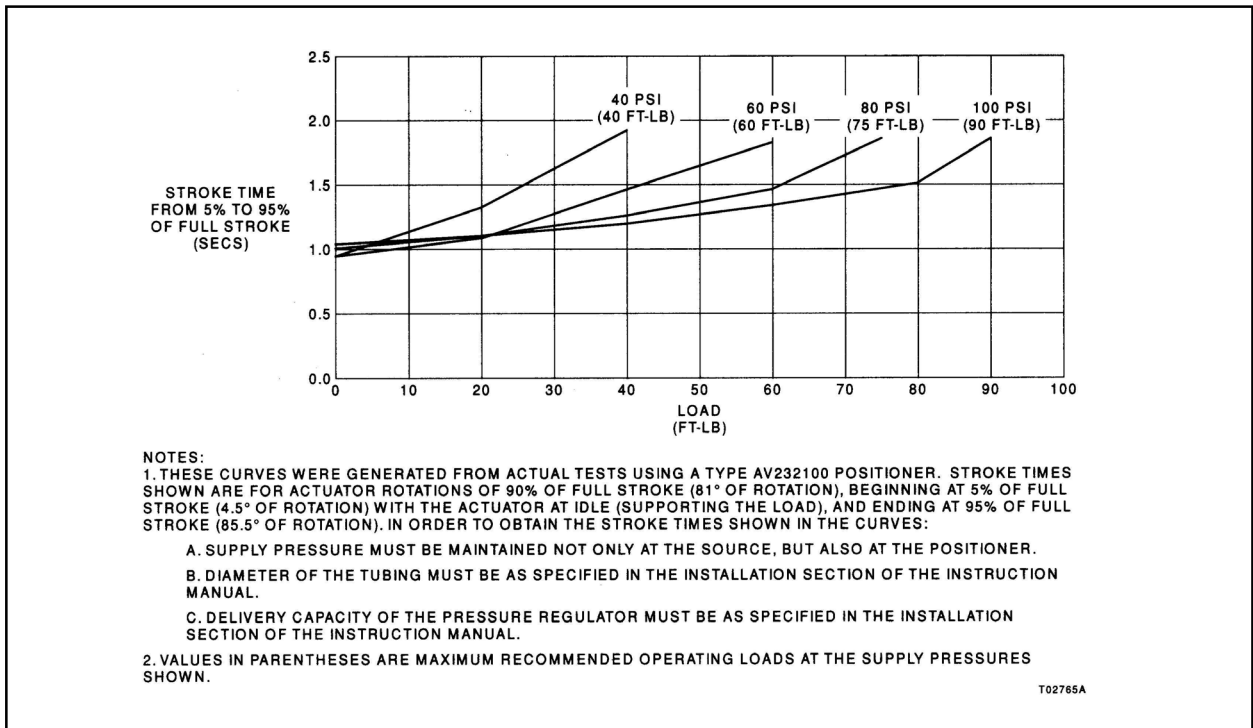


Figure 4. Stroke Times for Type UP1 Actuator with Type AV2 Positioner - 5 to 95% of Stroke

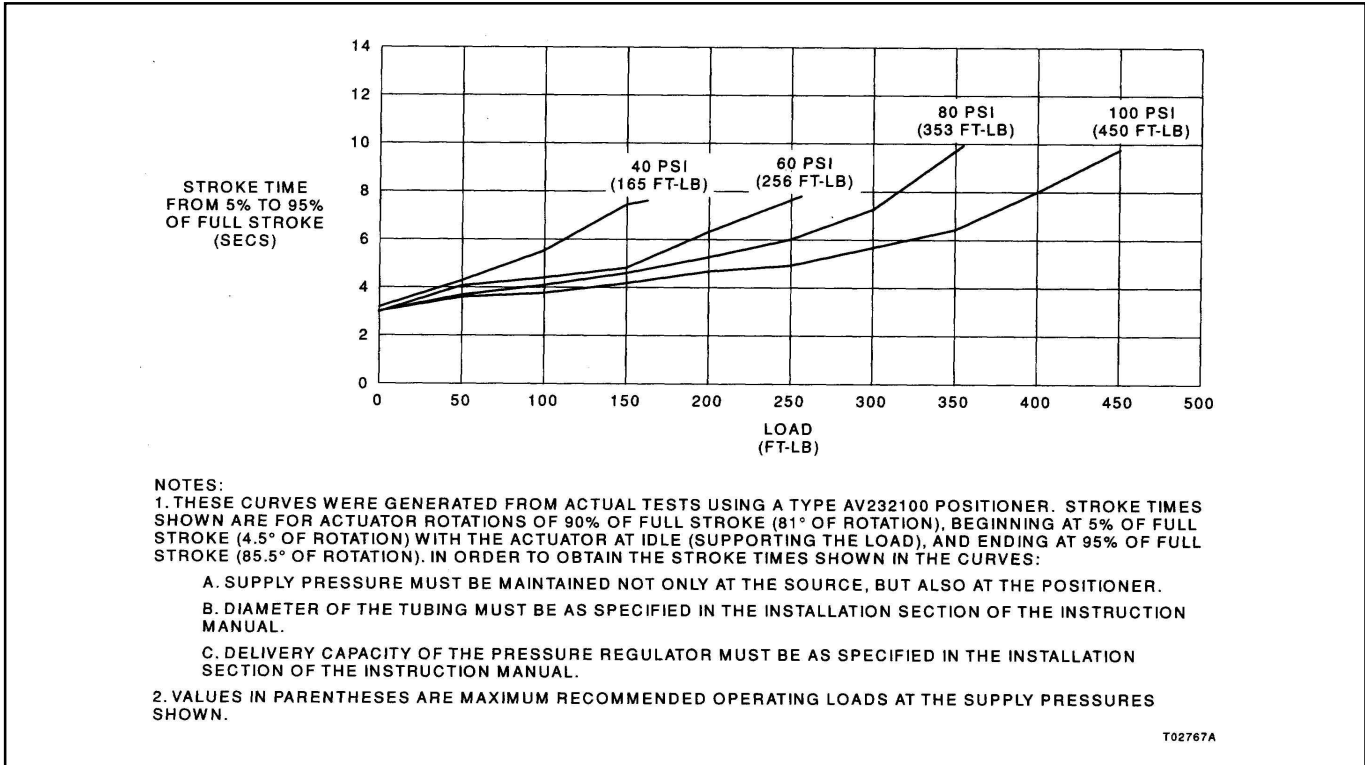


Figure 5. Stroke Times for Type UP2 Actuator with Type AV2 Positioner - 5 to 95% of Stroke

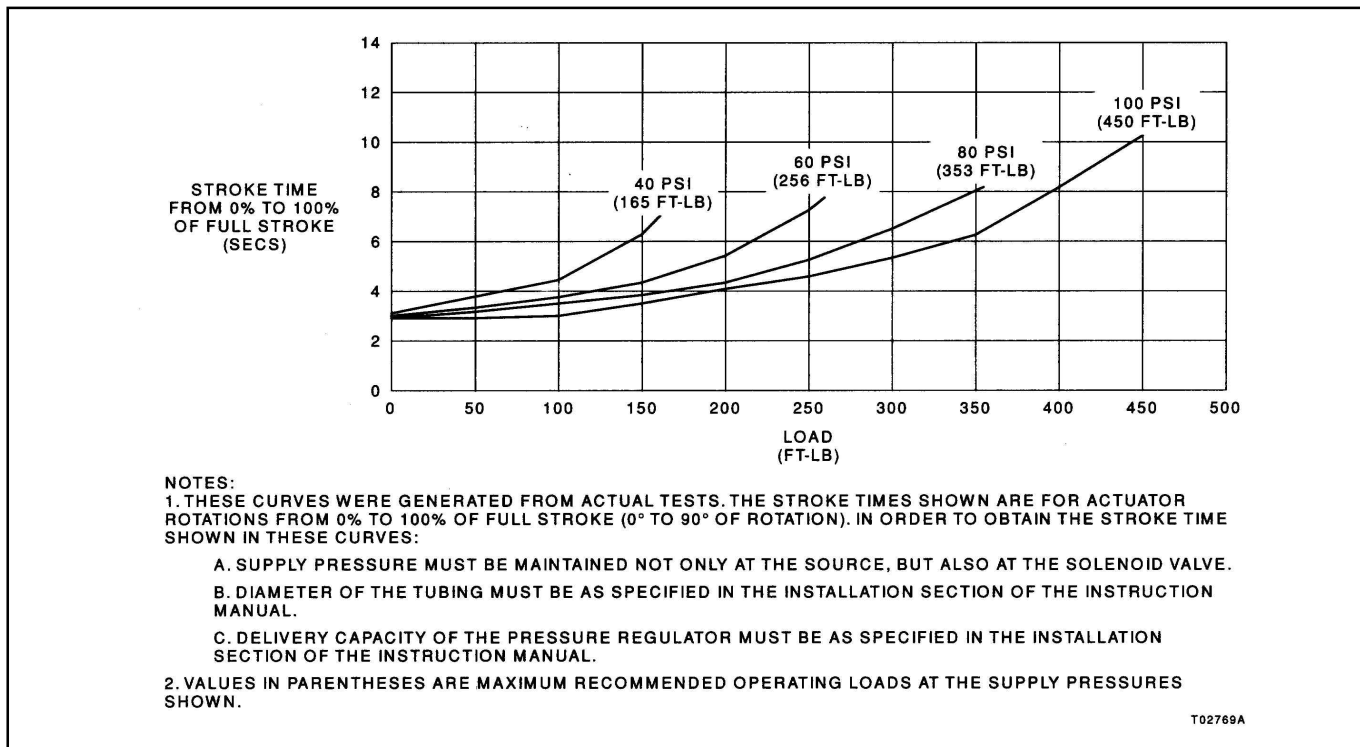


Figure 6. Stroke Times for Type UP2 Actuator with Solenoid Valve

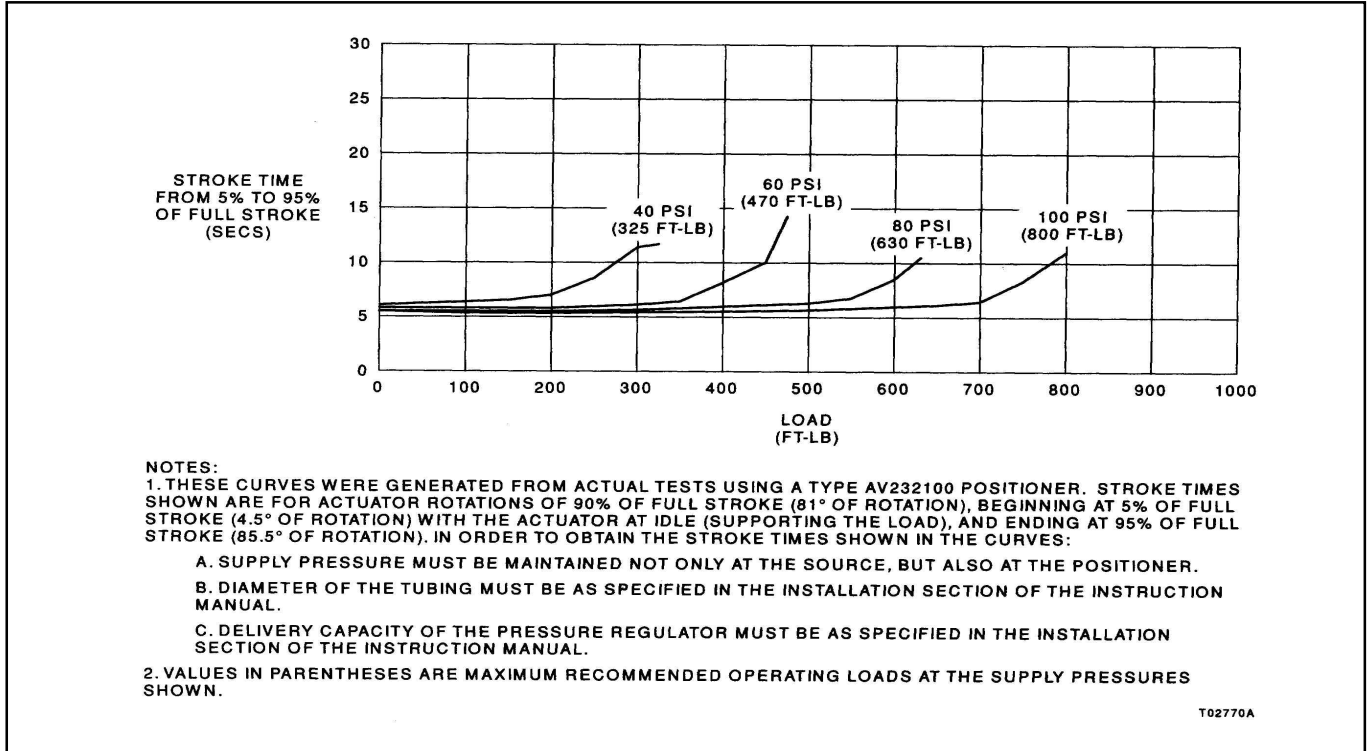


Figure 7. Stroke Times for Type UP3 Actuator with Type AV2 Positioner - 5 to 95% of Stroke

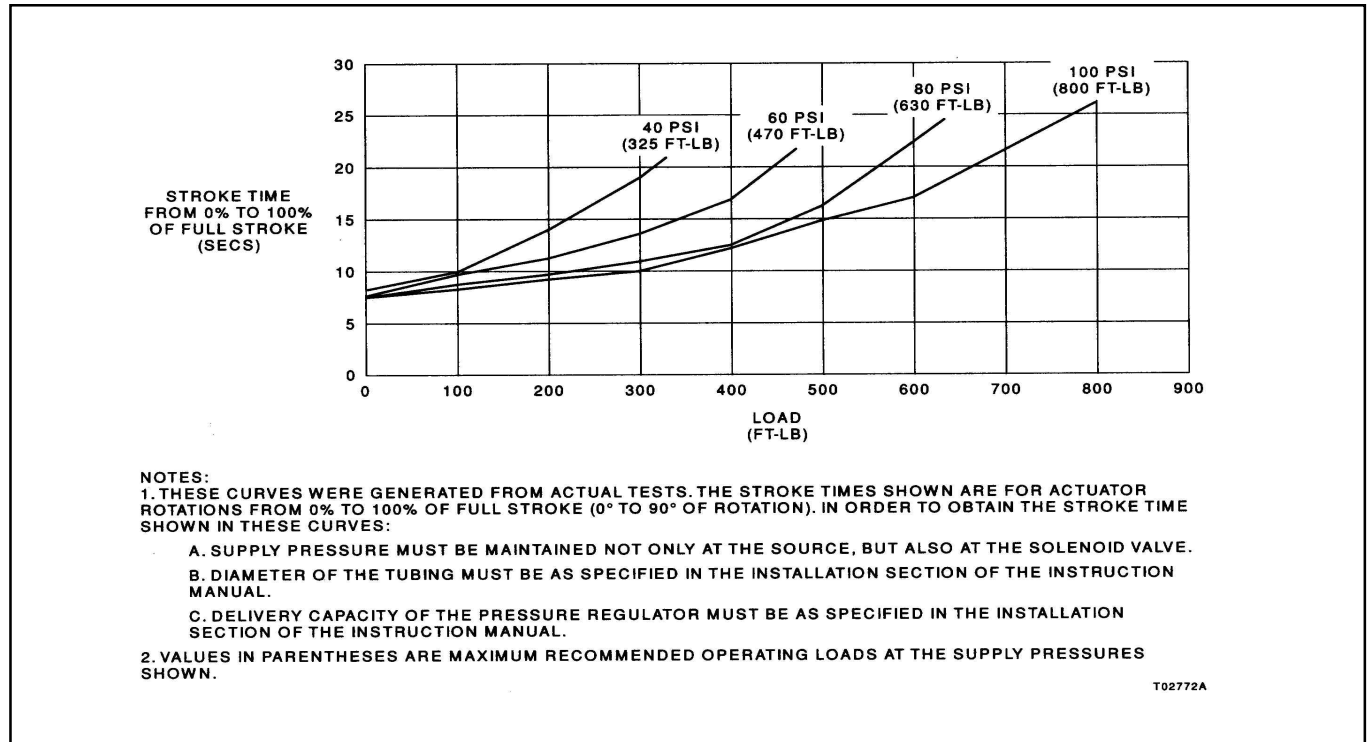


Figure 8. Stroke Times for Type UP3 Actuator with Solenoid Valve

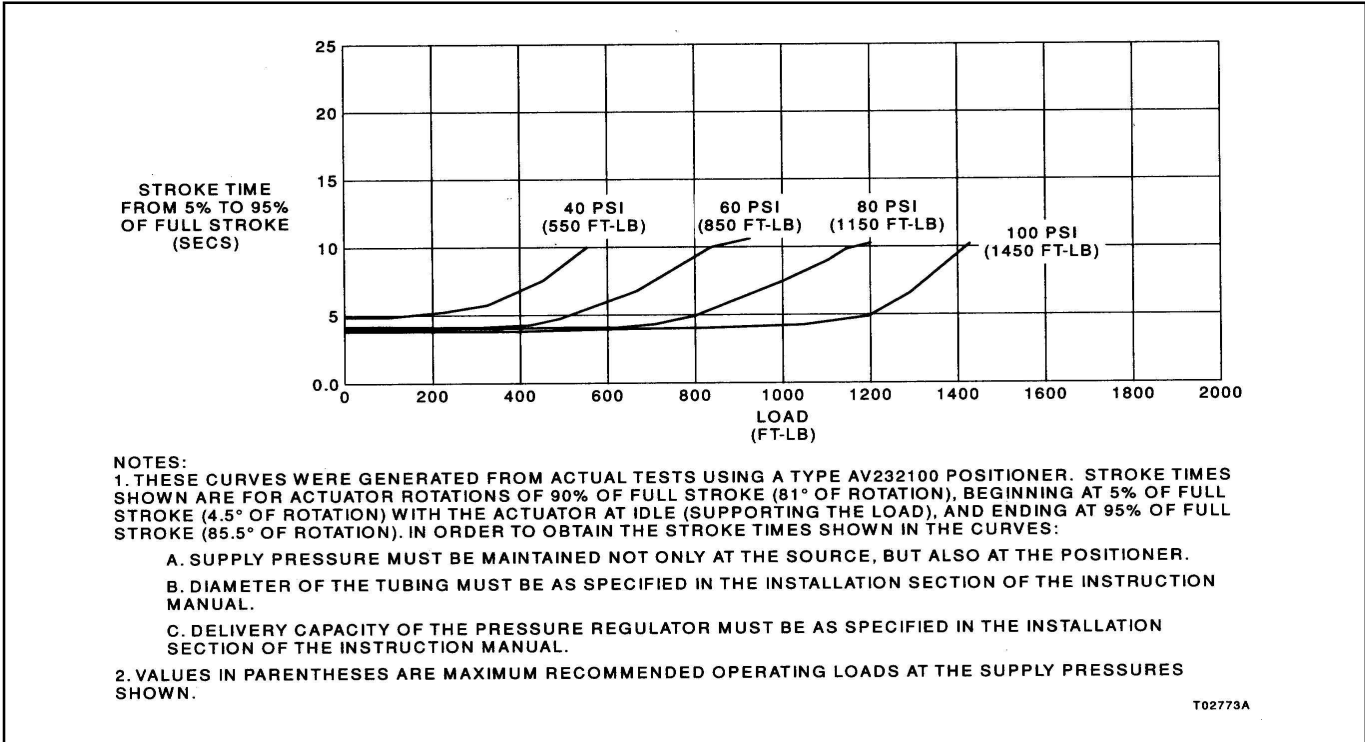


Figure 9. Stroke Times for Type UP4 Actuator with Type AV2 Positioner - 5 to 95% of Stroke

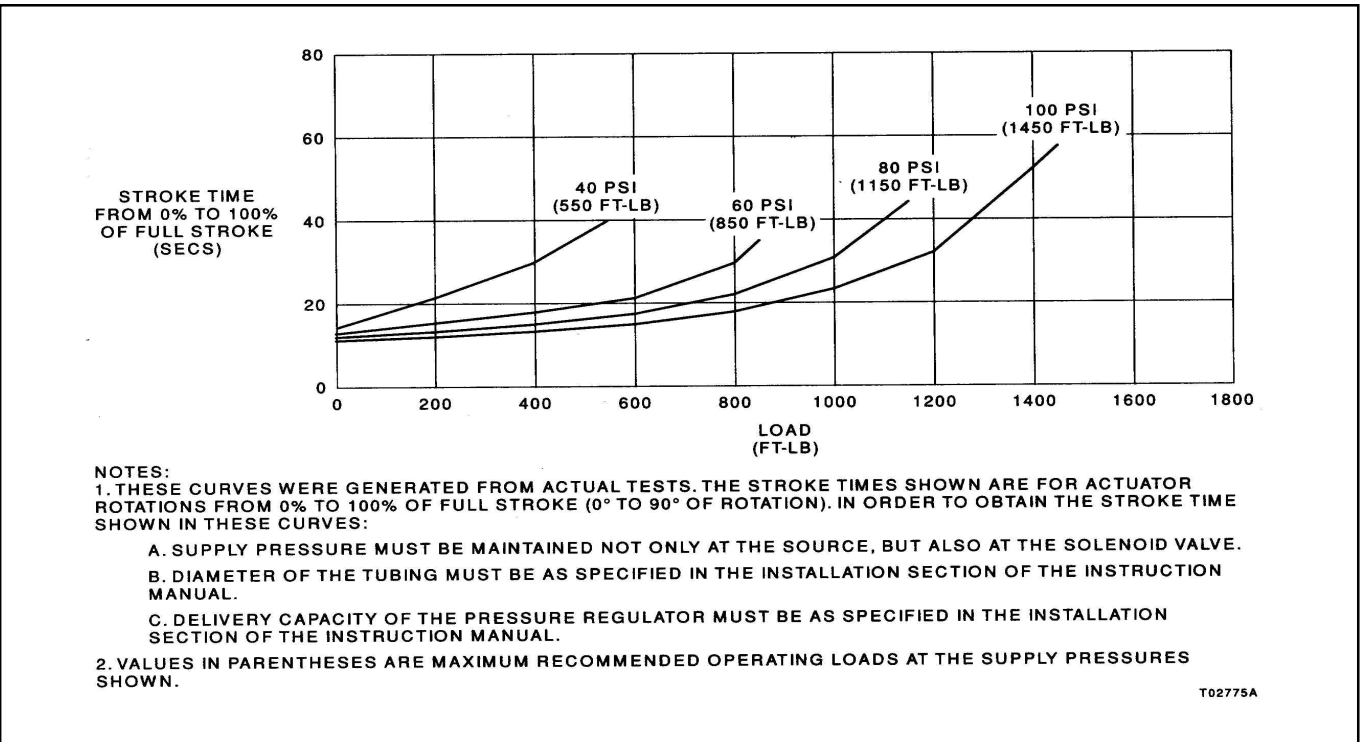


Figure 10. Stroke Times for Type UP4 Actuator with Solenoid Valve

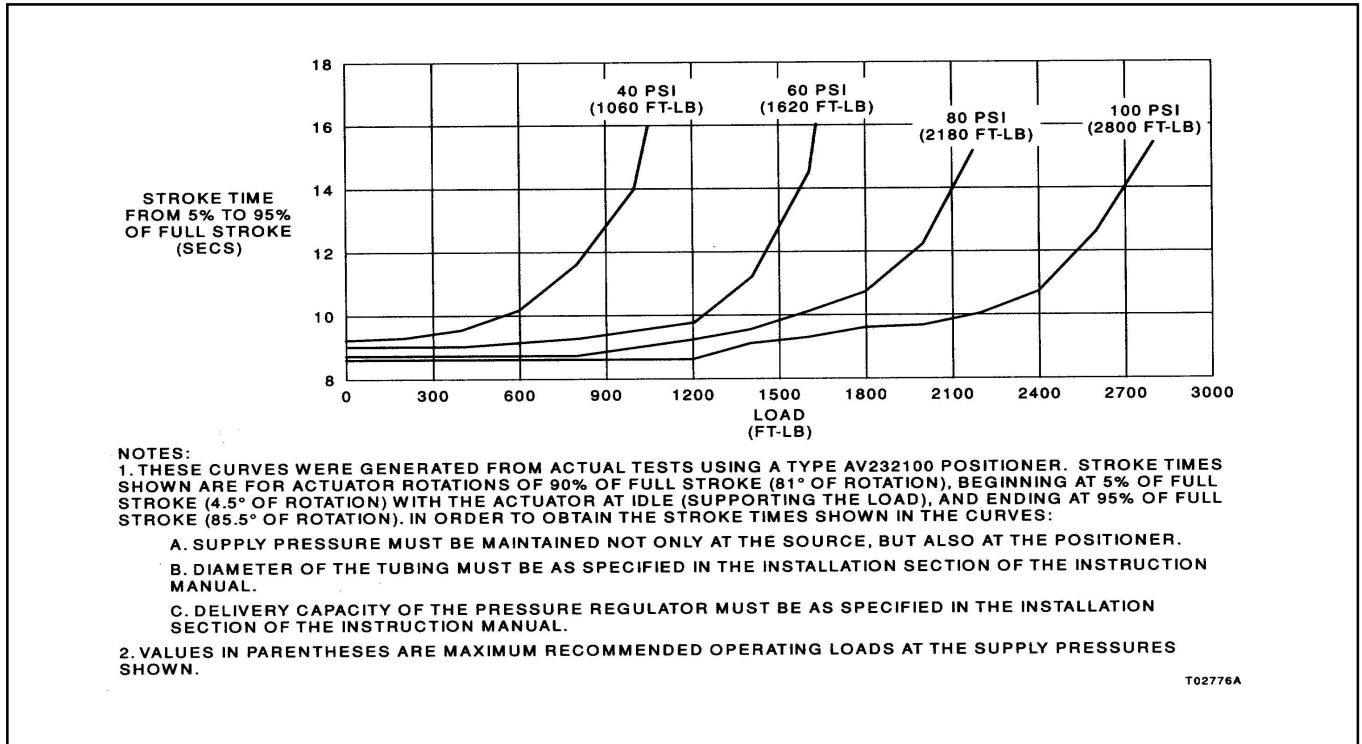


Figure 11. Stroke Times for Type UP5 Actuator with Type AV2 Positioner - 5 to 95% of Stroke

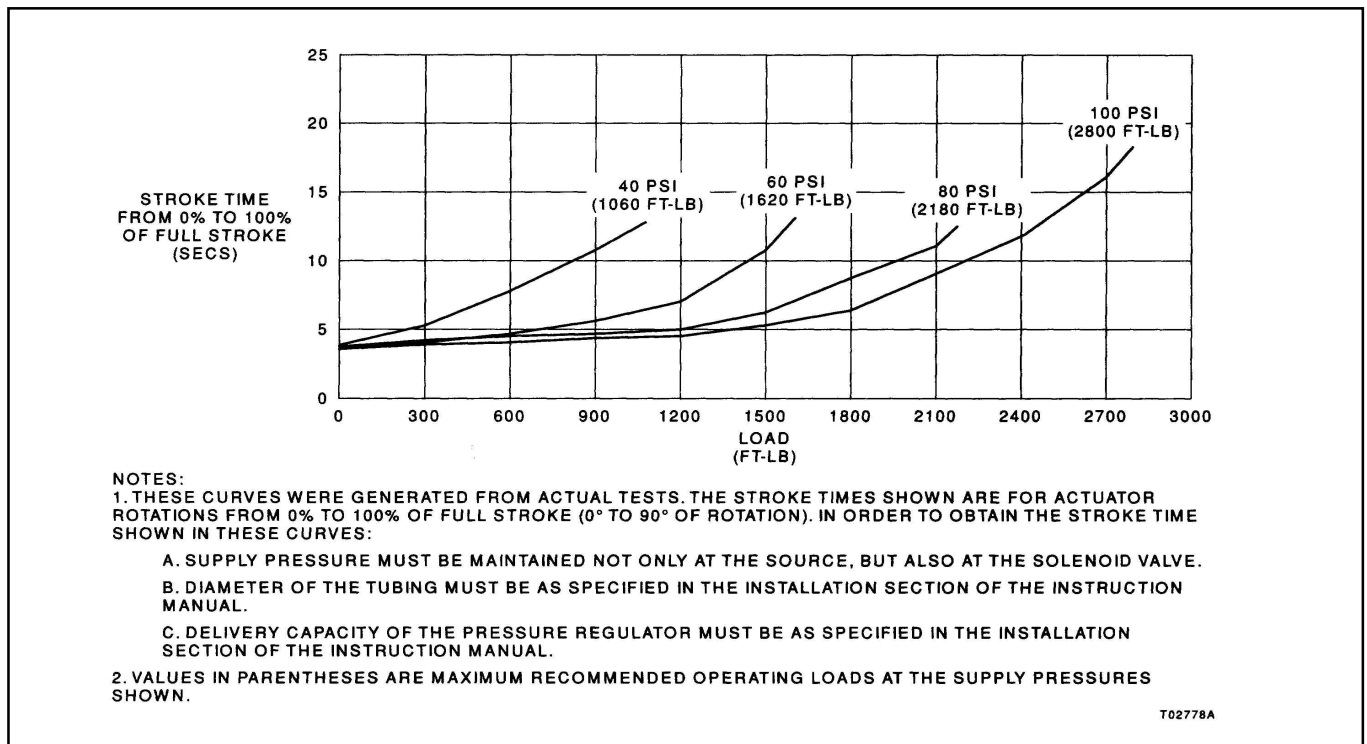


Figure 12. Stroke Times for Type UP5 Actuator with Solenoid Valve

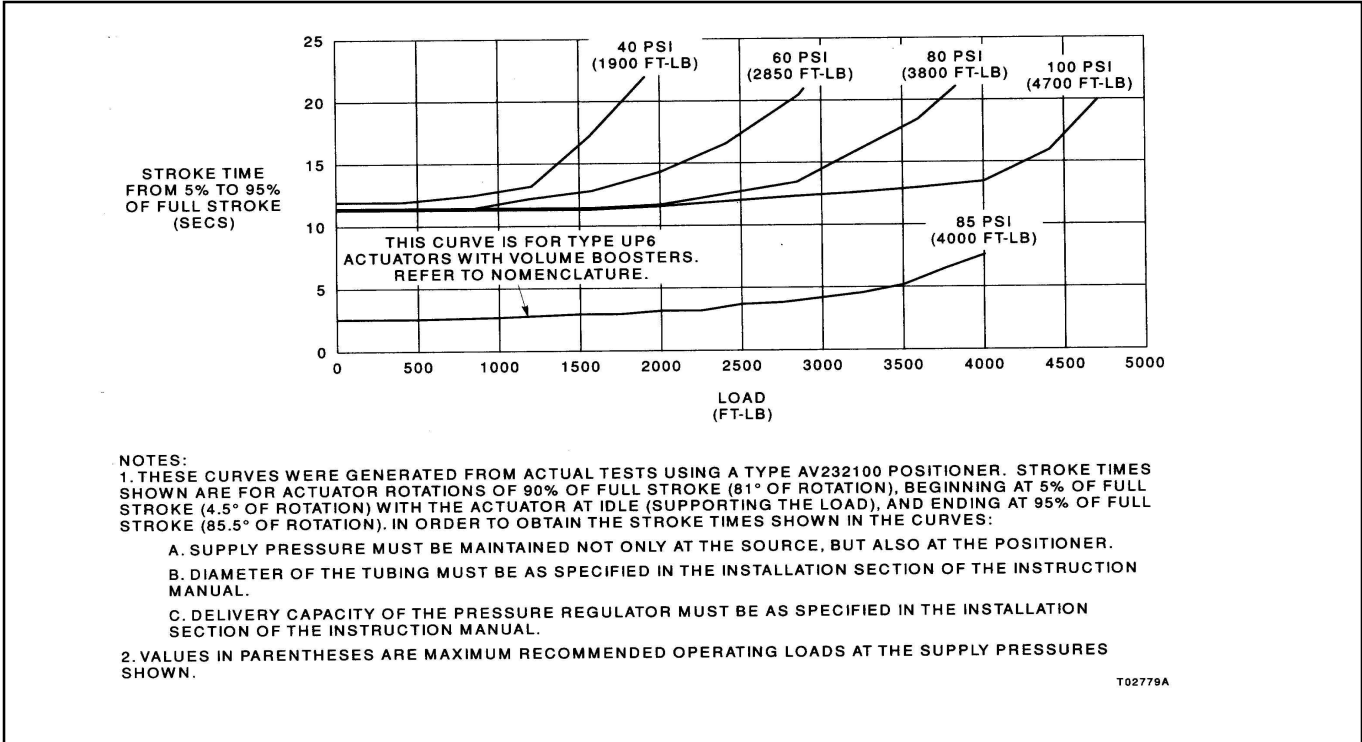


Figure 13. Stroke Times for Type UP6 Actuator with Type AV2 Positioner - 5 to 95% of Stroke

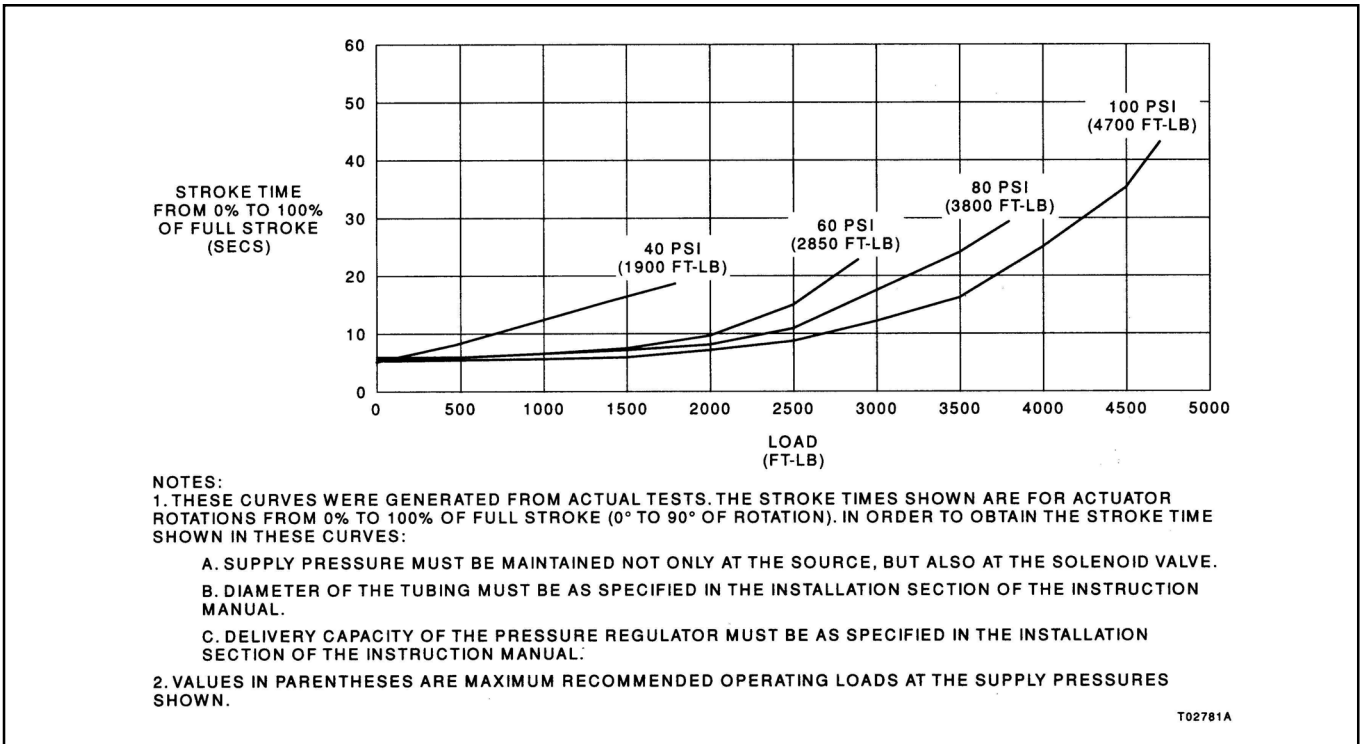


Figure 14. Stroke Times for Type UP6 Actuator with Solenoid Valve

Dimensional Detail

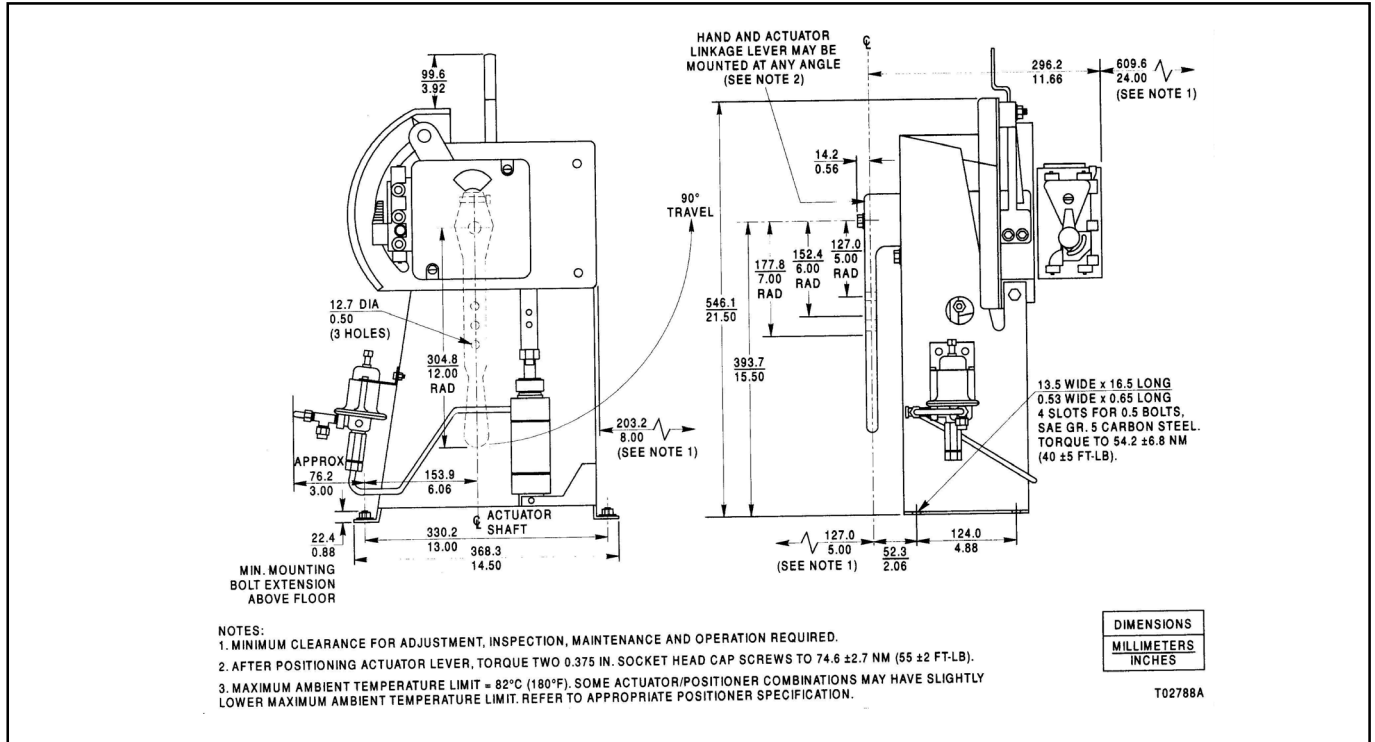


Figure 15. Type UP1 Actuator with Positioner and Air Failure Lock

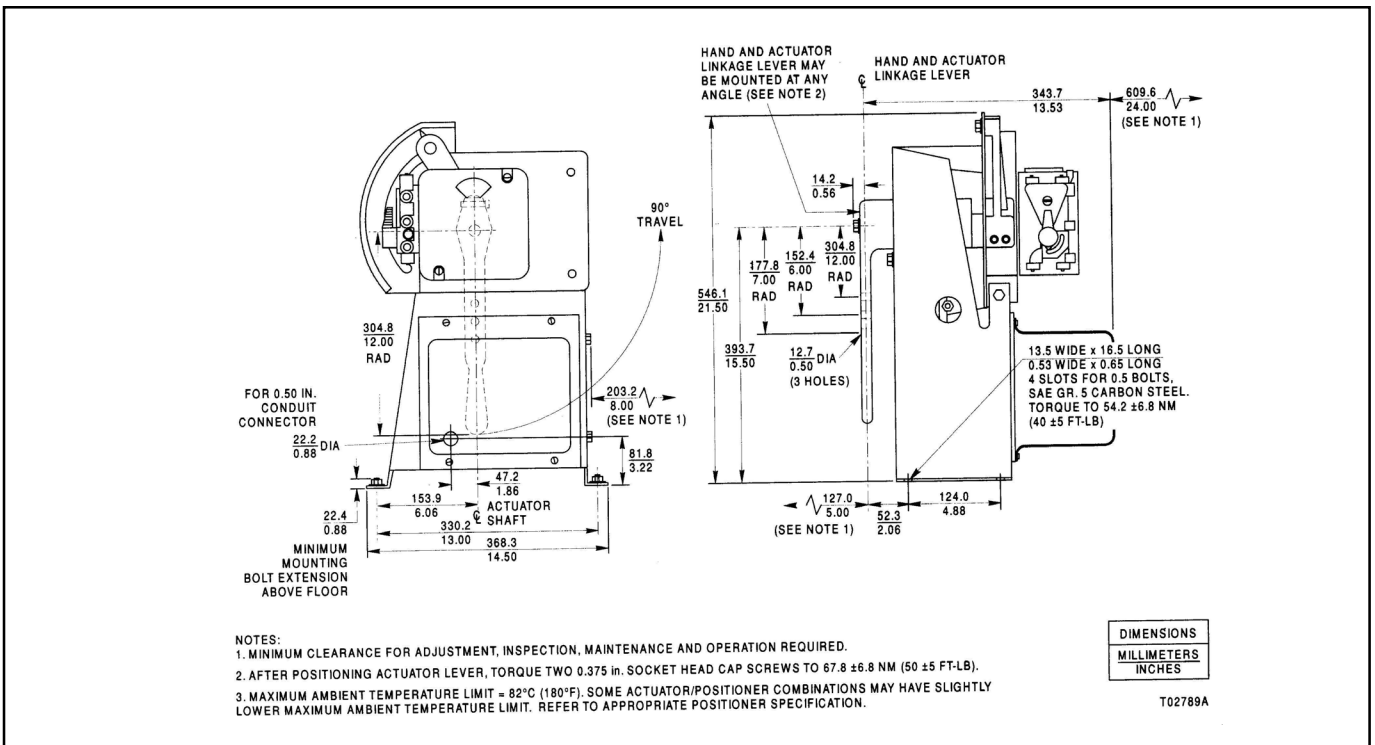


Figure 16. Type UP1 Actuator with Electric Shaft Position Transmitter and Travel Switches

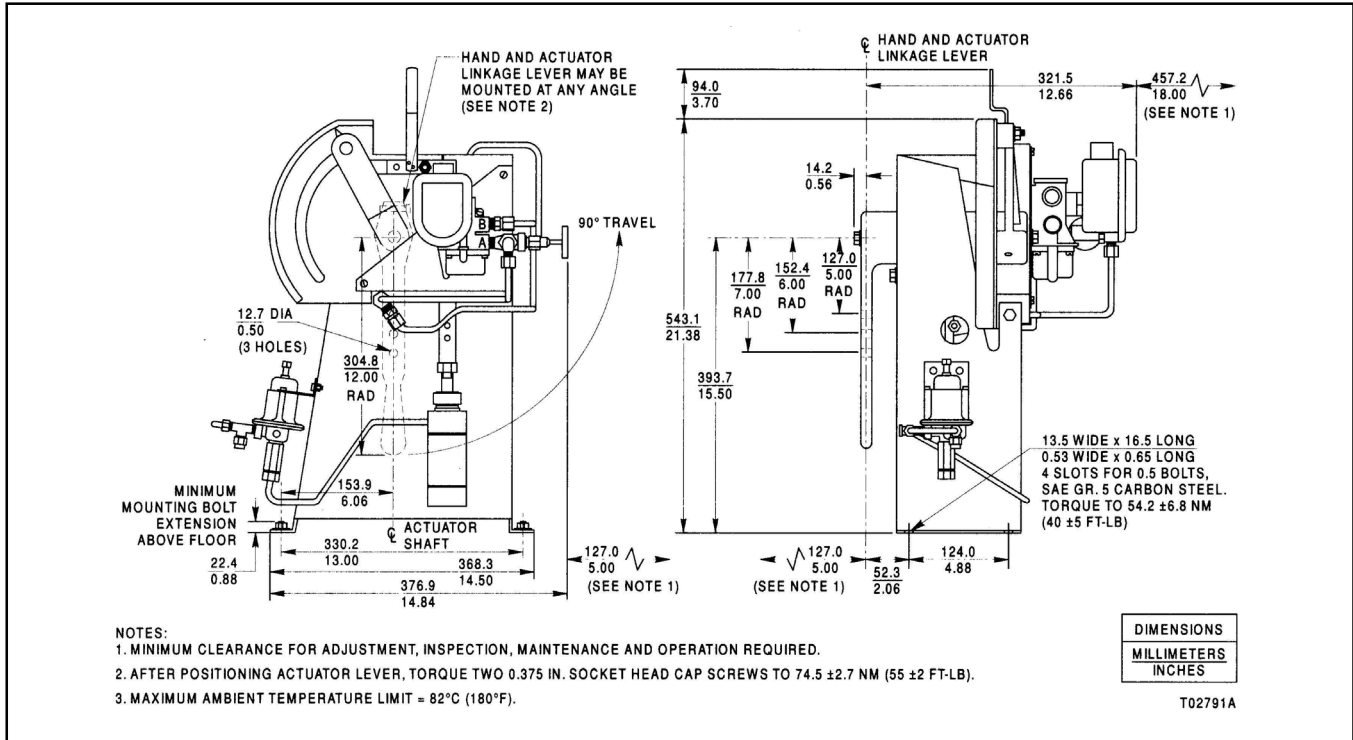


Figure 17. Type UP1 Actuator with Solenoid Valve and Air Failure Lock

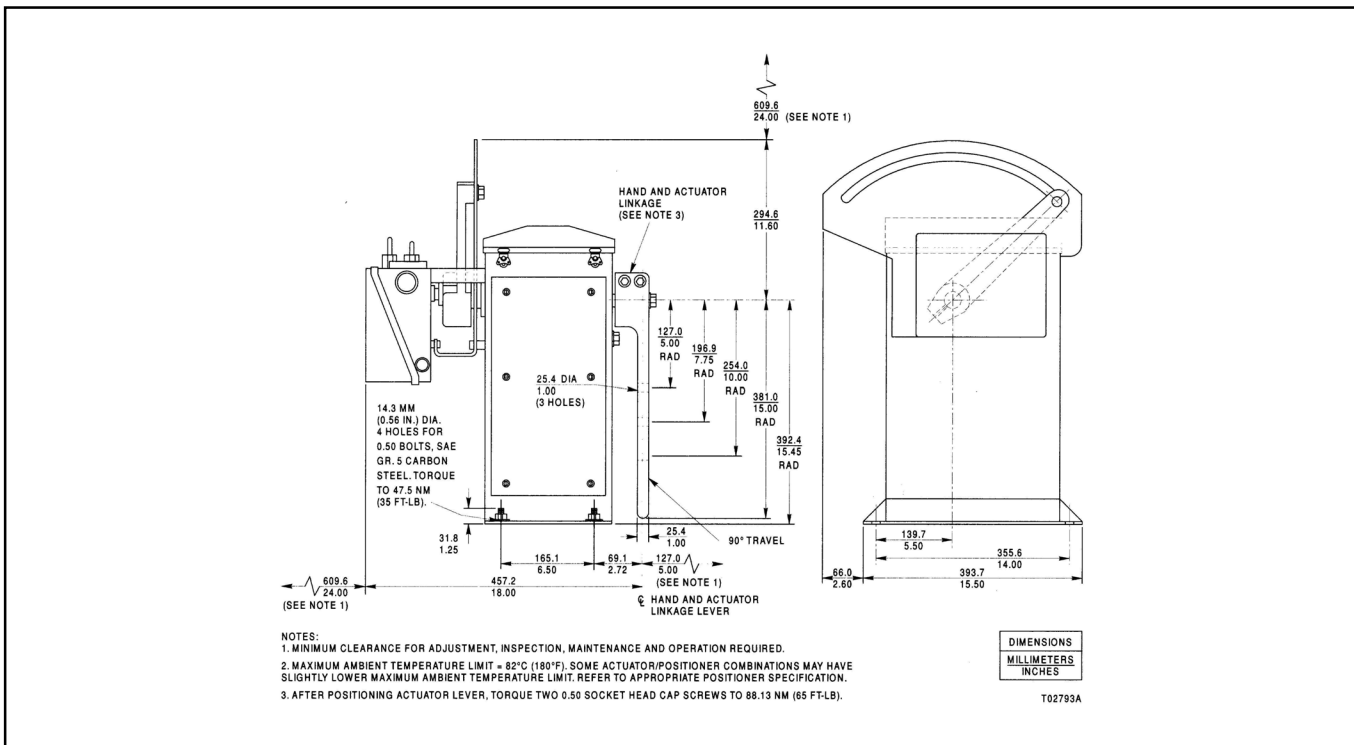


Figure 18. Type UP2 Actuator with Positioner

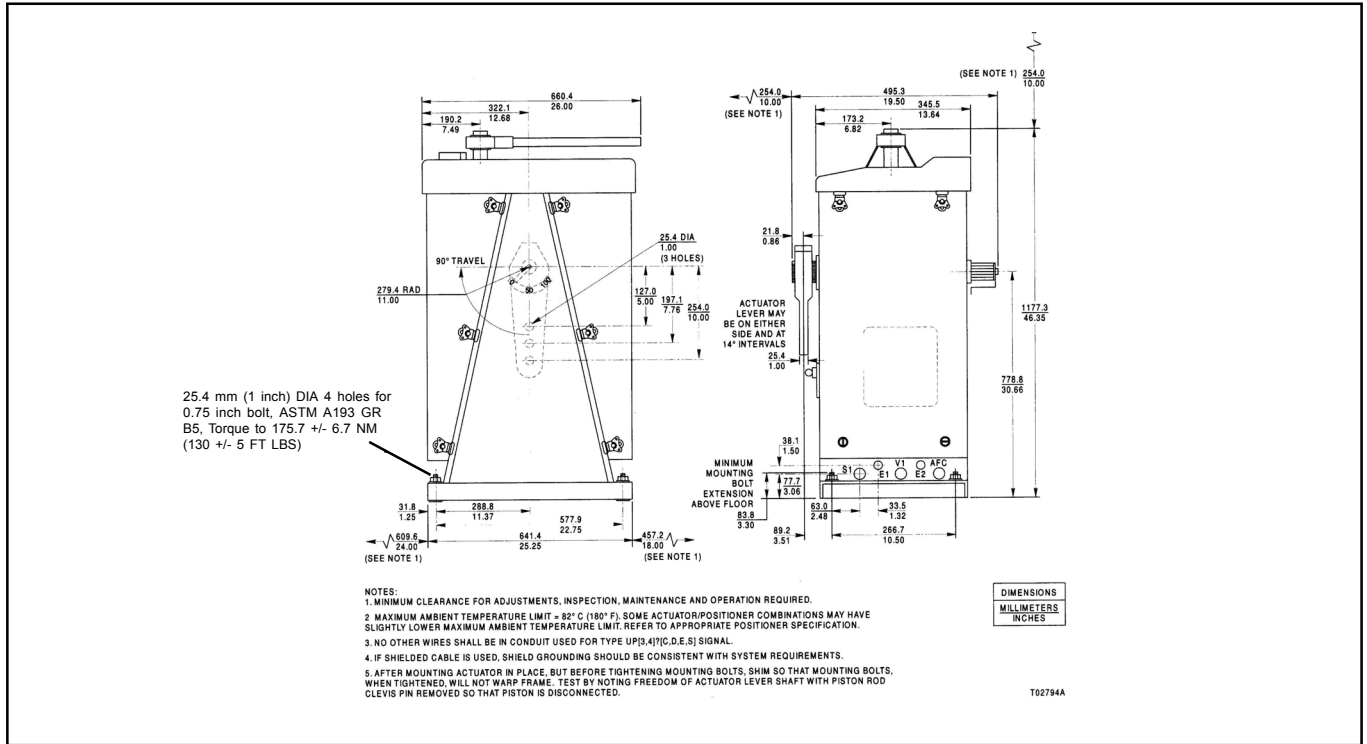


Figure 19. Type UP3 and UP4 Actuators

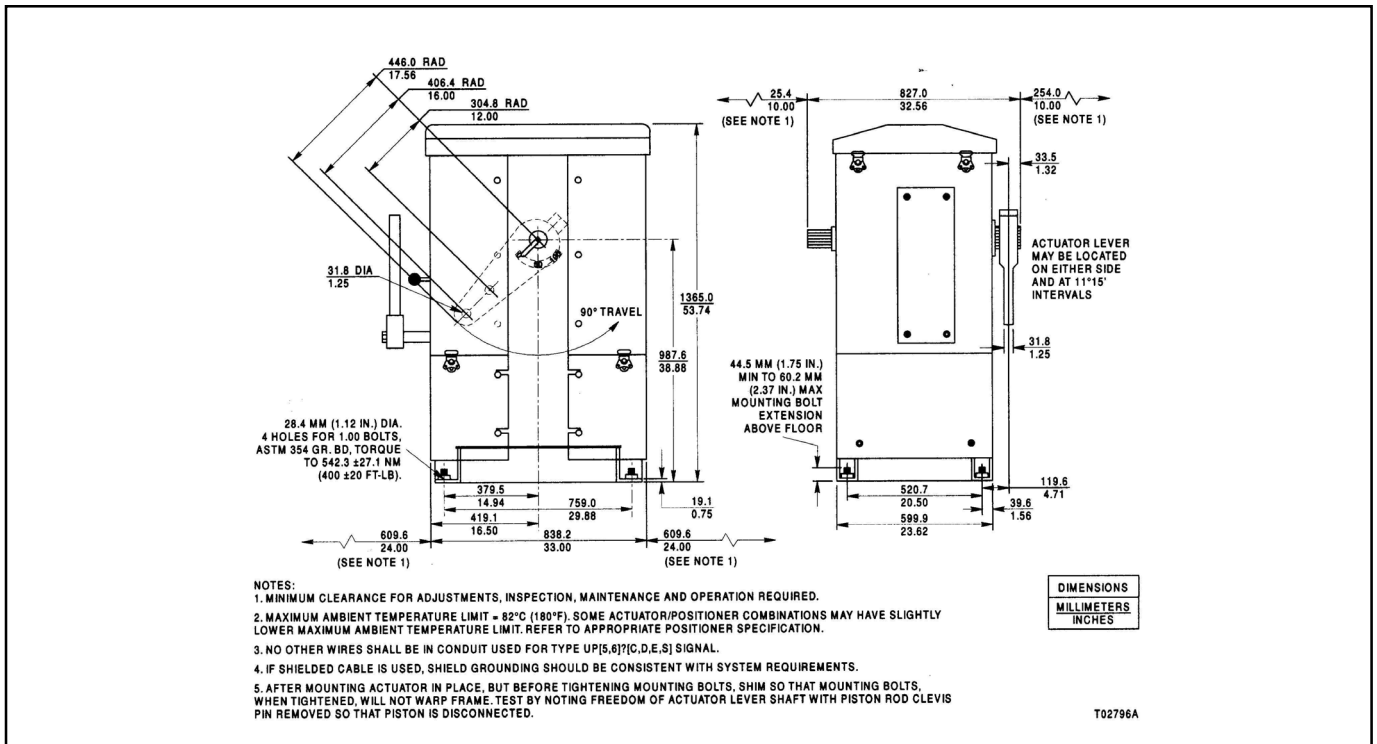


Figure 20. Type UP5 and UP6 Actuators

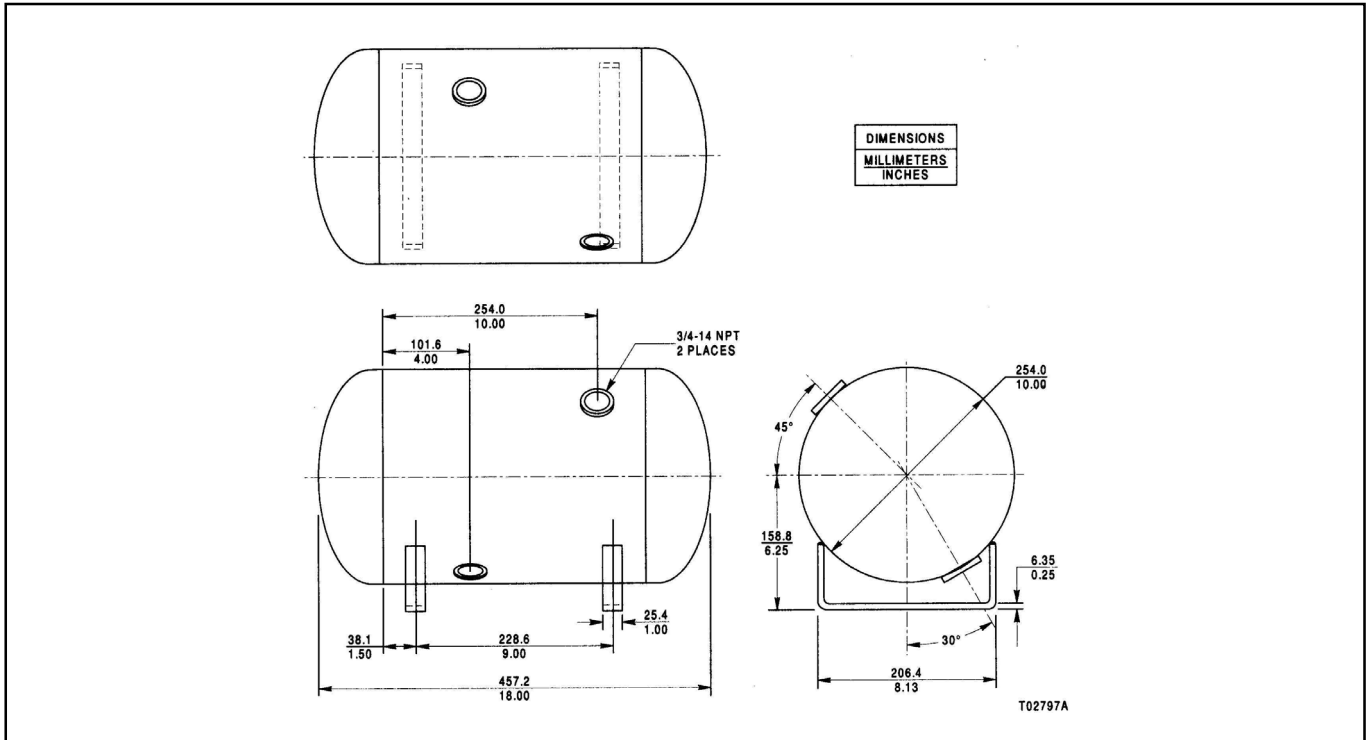


Figure 21. 20.8-Liter (5.5-Gallon) Air Tank for Type UP2 Actuators

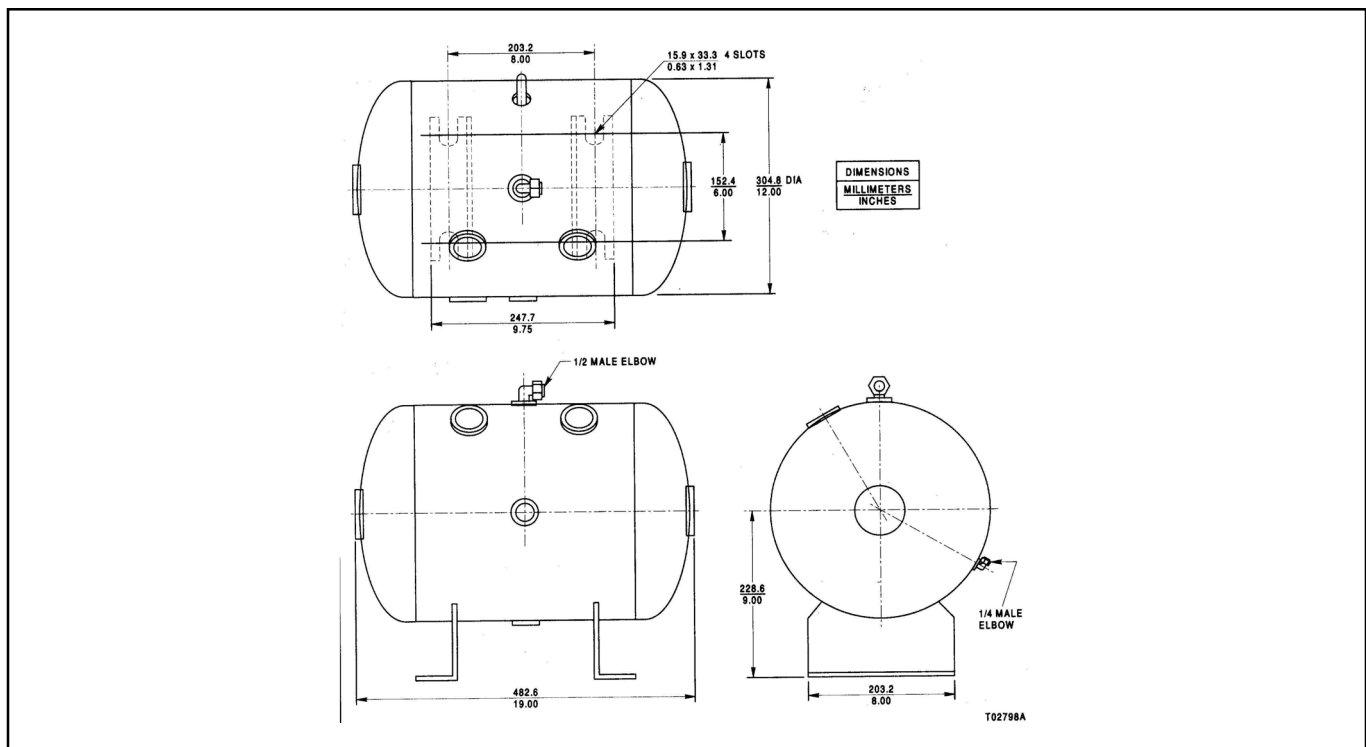


Figure 22. 30.3-Liter (8.0 Gallon) Air Tank for Type UP3, UP4 and UP5 Actuators

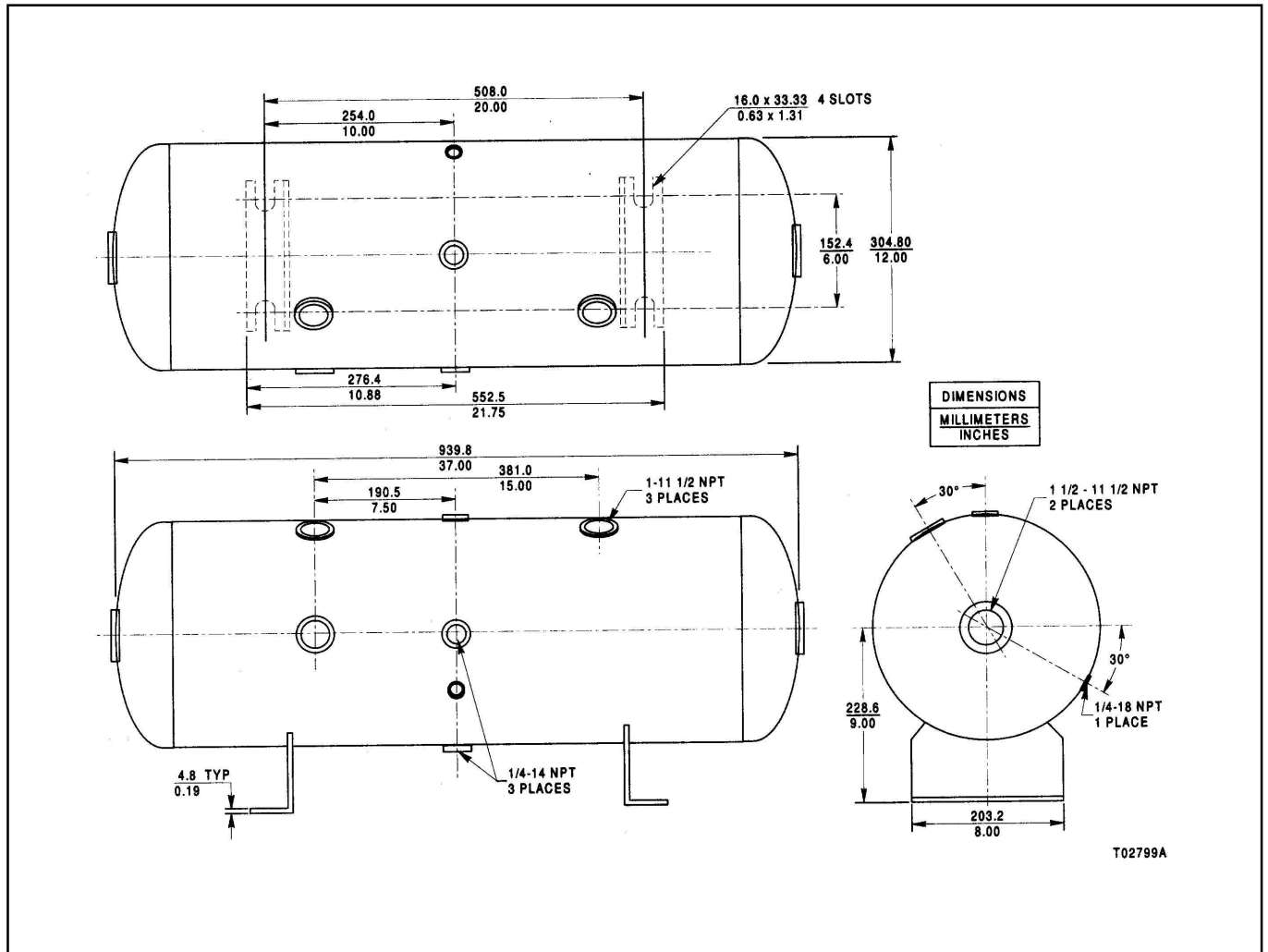


Figure 23. 64.4-Liter (17.0 Gallon) Air Tank for Type UP6 Actuators

Standard Product=

	Code
UP1 Pneumatic Rotary Actuator, 90 ft/lb Rated Torque at 100 psig Supply (see Note A)	UP1
1 : Enclosure Rating	
Standard, NEMA 3R	0
NEMA-4X, Positioner Enclosure only	1
2 : Control Input	
3 ... 15 psig (0.2 ... 1 bar) Characterizable Pneumatic Positioner, AV1121__0 (Note: B)	A
3 ... 27 psig (0.2 ... 1.86 bar) Characterizable Pneumatic Positioner, AV1221__0 (Note: B)	B
4 ... 20 mA Characterizable I/P Positioner, AV2321__0 (Fail Open / Close Upon Loss of Signal)	C
4 ... 20 mA Characterizable I/P Positioner, AV3321__0 (Fail-in-Place Upon Loss of Signal)	D
4 ... 20 mA HART TZIDC, Fail Open / Close, upon loss of signal (Note: A)	U
4 ... 20 mA HART TZIDC, Fail-in-Place, upon loss of signal (Note: A)	W
4 ... 20 mA HART TZIDC-200 (EXP), Fail Open / Close, upon loss of signal (Note: A,C)	Y
4 ... 20 mA HART TZIDC-200 (EXP), Fail-in-Place, upon loss of signal (Note: A,C)	Z
On-Off Solenoid, 120 V AC, Single Coil	5
On-Off Solenoid, 115 / 125 V DC, Single Coil	6
On-Off Solenoid, 120 V AC, Dual Coil	8
On-Off Solenoid, 115 / 125 V DC, Dual Coil	9
On-Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz, Single Coil	F
On-Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz, Single Coil	G
3 : Shaft Position Transmitter	
None	0
Potentiometric Resistive Output, Built into Positioner (for UP1_A / B / C / D only) (Note: 1)	A
4 ... 20 mA Output, Built Into AV / TZIDC Positioners (for UP1_A / B / C / D / U / W / Y & Z only) (Note: 2,D)	B
4 : Adjustable Travel Switches	
None	0
Include, 4-SPDT (Note: 3)	1
Include, 2-SPDT (Note: 3)	2
5 : Air Failure Lock-Up	
None	0
Air Failure Lock-up (Note: 3)	1
6 : Actuator Heaters	
None	0
7 : Tubing Material-10th Character	
Standard Tubing	0
Stainless Steel Tubing (Note: 2)	S
Instruction Manual (One copy is supplied, at no cost, with order)	PN25059

Note 1: Not available with Control Input code 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 A: The maximum supply pressure for UP with TZIDC is 90 psi (g)

Note B: kPa = psi x 6.895

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

Note D: 24 V Supply required (not included)

UP1 ACCESSORIES:

Standard Products =

Linkage Accessories:

	Code
Light Duty Driven Lever, for interconnecting between linkage and the final control element	
For shaft diameter 0.500" to 0.875" (12.7 - 22.2 mm), 0.188" (4.77 mm) Groov pin diameter	5328690A1
For shaft diameter 0.938" to 1.062" (23.8 - 26.9 mm), 0.312" (7.97 mm) Groov pin diameter	5328690A2
For shaft diameter 1.125" to 1.500" (28.6 - 38.1 mm), 0.312" (7.92 mm) Groov pin diameter	5328690A3

Light Duty Linkage Components

Clevis	5313902A1
Clevis Pin Assembly	5313974A1
Ball and Socket	5323123A1
Pipe Connector, 7" (2.13 m) long	5313940A1
Pipe Connector, 10' 6" (2.3 m) long	5313940A2
Adapter Assembly	5314282A1
Reinforcing Sleeve	5328639A1
Rod Connector, 3' 7" (1.09 m) long	5313932A16

NOTE: For complete connecting linkage dimensions, specifications and application examples, see Product Specification

G81-5-1

Accessories:

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

Spare Parts:

Rotary Vane Rebuild Kit	258244A1
Shaft O-Ring, 2 required (contained in above kit)	341816A212
Vane O-Ring, 1 required (contained in above kit)	1951631A425
Lubricant (contained in above kit)	199354A1
Sealant (contained in above kit)	199926A1
0.250" O.D. Aluminum Tubing (3' required)	R1021-0022
Vane Actuator	5328575F1

Tagging Options: See UP Tagging Option Price Sheets

Each tag may have four lines, each having twelve capital letter or number characters specified by customer.

Fifth line will always specify BCCo Job and SO number

Mylar, adhesive backed aluminum finish	Tag Pt. No.	963318_1
Stainless Steel, wire attached	Tag Pt. No.	487436_2
Stainless Steel, permanently attached	Tag Pt. No.	487436_2

To Order

Specify part number and method of attachment where required.

Specify customer information as follows:

- L1 _____
- L2 _____
- L3 _____
- L4 _____

L5 automatically completed by CMO. Fields not completed will be left blank.

References

Customer Information:

Production Specification	C-P81-20
Product Instruction	I-P81-20
Connecting Linkage Product Specification	G81-5-1

Standard Product= Code

UP2 Pneumatic Rotary Actuator, 450 ft/lb Rated Torque at 100 psig Supply (see Note A) **UP2**

1 : Enclosure Rating

Standard, NEMA 3R	0
NEMA-4X, Positioner Enclosure only	1

2 : Control Input

3 ... 15 psig (0.2...1 bar) Characterizable Pneumatic Positioner, AV1121__0	(Note: B)	A
3 ... 27 psig (0.2...1.86 bar) Characterizable Pneumatic Positioner, AV1221__0	(Note: B)	B
3 ... 27 psig (0.2...1.86 bar) Characterizable Pneumatic Positioner, AV1221__0 (Fail Open / Close Upon Loss of Signal)		C
4 ... 20 mA Characterizable I/P Positioner, AV3321__0 (Fail-in-Place Upon Loss of Signal)		D
4 ... 20 mA HART TZIDC, Fail Open / Close, upon loss of signal	(Note: A)	U
4 ... 20 mA HART TZIDC, Fail-in-Place, upon loss of signal	(Note: A)	W
4 ... 20 mA HART TZIDC-200 (EXP), Fail Open / Close,	(Note: A,C)	Y
4 ... 20 mA HART TZIDC-200 (EXP), Fail-in-Place, Maximum Supply Pressure for TZIDC is 6 bar (90 psig)	(Note: A,C)	Z
On-Off Solenoid, 120 V AC, Single Coil		5
On-Off Solenoid, 115 / 125 V DC, Single Coil		6
On-Off Solenoid, 120 V AC, Dual Coil		8
On-Off Solenoid, 115 / 125 V DC, Dual Coil		9
On-Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz, Single Coil		F
On-Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz, Single Coil		G

3 : Shaft Position Transmitter

None	0
Potentiometric Resistive Output, Built into Positioner (for UP2_ A / B / C / D only)	(Note: 1) A
4 ... 20 mA Output, Built Into AV / TZIDC Positioners (for UP2_ A / B / C / D / U / W / Y & Z only)	(Notes: 2,D) B
3 ... 15 psig (0.2...1 bar) Pneumatic Position Transmitter Out (AV112000 Positioner) (For UP20A___ only)	(Note: 3) C

4 : Adjustable Travel Switches

None	0
Include, 4-SPDT	(Note: 4) 1
Include, 2-SPDT	(Note: 4) 2

5 : Air Failure Lock-Up

None	0
Air Failure Lock-up	(Note: 4) 1
Reserve Air Tank, Actuator goes to 0 or 100 % Upon Loss of Air Supply	(Note: 4) 4

UP2		Code
6 : Actuator Heaters (Note E)		
None		0
120 V AC	(Note: 4)	1
240 V AC	(Note: 4)	2
7 : Tubing Material-10th Character		
Standard Tubing		0
Stainless Steel Tubing	(Note: 2)	S
Instruction Manual (One copy is supplied, at no cost, with order)		PN25059

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

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

Note A: The maximum supply pressure for UP with TZIDC is 90 psi (g)

Note B: kPa = psi x 6.895

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

Note D: 24 V Supply required (not included)

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

UP2 ACCESSORIES

Standard Products =

Linkage Accessories:

	Code
Medium Duty Driven Lever, for interconnecting between linkage and the final control element	
For shaft diameter 0.875" to 1.062" (22.2 - 26.9 mm), 0.312" (7.92 mm) Groov pin diameter	5328976A1
For shaft diameter 1.125" to 1.375" (28.6 - 34.9 mm), 0.376" (9.52 mm) Groov pin diameter	5328976A2
For shaft diameter 1.438 (36.5 mm), 0.375" (9.52 mm) Groov pin diameter	5328976A3
Medium Duty Linkage Components	
Clevis	197758A1
Clevis Pin Assembly	197757A1
Ball and Socket, Self Lubricating	5323986A1
1-1/4 In. Pipe Connector, 10'6" (3.08 m) long	5313945A1
1-1/4 In. Pipe Connector, 21' (6.4 m) long	
Adapter	53683A1
Reinforcing Sleeve 12'(3.66 m) long	5314038A2
Rod Connector, 4' (1.22 m) long	5313835A2
<i>NOTE: For complete connecting linkage dimensions, specifications and application examples, see Product Specification</i>	G81-5-1

Accessories:

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

Spare Parts:

Rotary Vane Rebuild Kit	258244A2
Shaft O-Ring, 2 required (contained in above kit)	341816A218
Vane O-Ring, 1 required (contained in above kit)	1951631A443
Lubricant (contained in above kit)	199354A1
Sealant (contained in above kit)	199926A1
0.250" O.D. Aluminum Tubing (3' required)	R1021-0022
Vane Actuator	5328838A1

Spare Parts for UP20 with Acuator Heaters (UP20- - - - 1)

Thermoswitch	662460A1
Solderless Terminal	1941401A1

Tagging Options: See UP Tagging Option Price Sheets

Each tag may have four lines, each having twelve capital letter or number characters specified by customer.

Fifth line will always specify BCCo Job and SO number

Mylar, adhesive backed aluminum finish	Tag Pt. No.	963318_1
Stainless Steel, wire attached	Tag Pt. No.	487436_2
Stainless Steel, permanently attached	Tag Pt. No.	487436_2

To Order Specify part number and method of attachment where required.

Specify customer information as follows:

- L1 _____
- L2 _____
- L3 _____
- L4 _____

L5 automatically completed by CMO. Fields not completed will be left blank.

References

Customer Information:

- Production Specification C-P81-20
- Product Instruction I-P81-20
- Connecting Linkage Product Specification G81-5-1

Standard Products= Code

UP3 Pneumatic Rotary Actuator, 800 ft/lb Rated Torque at 100 psig Supply (see Note A)	UP3
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1 : Enclosure Rating

Standard, NEMA 3R	0
NEMA-4X, Positioner Enclosure Only	1

2 : Control Input

3 ... 15 psig (0.2...1 bar) Characterizable Pneumatic Positioner, AV1121__0	(Note: B)	A
3 .. 27 psig (0.2...1.86 bar) Characterizable Pneumatic Positioner, AV1221__0	(Note: B)	B
4 ... 20 mA Characterizable I/P Positioner, AV2321__0 (Fail Open / Close Upon loss of signal)		C
4 ... 20 mA Characterizable I/P Positioner, AV3321__0 (Fail-in-Place Upon Loss of Signal)		D
4 ... 20 mA HART TZIDC, Fail Open / Close, upon loss of signal	(Note: A)	U
4 ... 20 mA HART TZIDC, Fail-in-Place, upon loss of signal	(Note: A)	W
4 ... 20 mA HART TZIDC-200 (EXP), Fail Open / Close, upon loss of signal	(Note: A, C)	Y
4 ... 20 mA HART TZIDC-200 (EXP), Fail-in-Place, upon loss of signal	(Note: A, C)	Z
On-Off Solenoid, 120 V AC, Single Coil		5
On-Off Solenoid, 115 / 125 V DC, Single Coil		6
On-Off Solenoid, 120 V AC, Dual Coil		8
On-Off Solenoid, 115 / 125 V DC, Dual Coil		9
On-Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz, Single Coil		F
On/Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz, Single Coil		G

3 : Shaft Position Transmitter

None		0
Potentiometric Resistive Output, Built into Positioner (for UP3_ A / B / C / D only)	(Note: 1)	A
4 ... 20 mA Output, Built into AV / TZIDC Positioners (for UP3_ A / B / C / D / U / W / Y & Z only)	(Note: 2, D)	B
3 ... 15 psig (0.2...1 bar) Pneumatic Position Transmitter Out (AV112000 Positioner) (for UP30A___only)	(Note: 3)	C

4 : Adjustable Travel Switches

None		0
Include, 4-SPDT	(Note: 4)	1
Include, 2-SPDT	(Note: 4)	2

5 : Air Failure Lock-Up

None		0
Air Failure Lock-up	(Note: 4)	1
Reserve Air Tank, Actuator goes to 0 or 100 % Upon Loss of Air Supply	(Note: 4)	4

UP3

Code

6 : Actuator Heaters (Note E)

None		0
120 V AC	(Note: 4)	1
240 V AC	(Note: 4)	2

7 : Tubing Material-10th Character

Standard Tubing		0
Stainless Steel Tubing	(Note: 2)	S

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

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

Note A: The maximum Supply pressure for UP with TZIDC is 90 psi (g)

Note B: kPa = psi x 6.895

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

Note D: 24 V Supply required (not included)

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

UP3 ACCESSORIES:

Standard Products =

Linkage Accessories:

	Code
Medium Duty Driven Lever, for interconnecting between linkage and the final control element	
For shaft diameter 1.438" to 1.875" (36.5 - 47.6 mm), 0.500" (12.7 mm) Groov pin diameter	5328977A1
For shaft diameter 1.938" to 2.375" (49.2 - 60.3 mm), 0.500" (12.7 mm) Groov pin diameter	5328977A2
For shaft diameter 2.439" to 2.875" (61.9 - 73.0 mm), 0.500" (12.7 mm) Groov pin diameter	5328977A3
For shaft diameter 2.938" (74.6 mm), 0.500" (12.7 mm) Groov pin diameter	5328977A4
Medium Duty Linkage Components	
Clevis	197758A1
Clevis Pin Assembly	197757A1
Ball and Socket, Self Lubricating	5323986A1
1-1/4 In. Pipe Connector, 10'6" (3.08 m) long	5313945A1
1-1/4 In. Pipe Connector, 21' (6.4 m) long	
Adapter	53683A1
Reinforcing Sleeve 12'(3.66 m) long	5314038A2
Rod Connector, 4' (1.22 m) long	5313835A2
<i>NOTE: For complete connecting linkage dimensions, specifications and application examples, see Product Specification</i>	G81-5-1

Accessories:

Supply Air Regulator Filter - Coalescing) with gage (maximum inlet pressure 250 psi)	
Maximum outlet pressure 125 psi, 1/2 NPT (high capacity), 40 SCFM	1951439D1
Parker No. 12E37E18AA / PS807P	
Pressure Gages - for Actuators with Positioners	
Instrument - 0-30 psig range	5326605A4
Supply - 0-160 psig range	5326605A5
Output - 0-160 psig range	5326605A6
Speed Control Orifices - Regulates time constant of final control element with Positioners.	
Installs directly into Positioner Port.	
0.040 in hole	5327327A1
No hole (drill to suit)	5327327A2

Spare Parts:

Cylinder Rebuild Kit	258240A1
O-Ring, 2 required (contained in above kit)	195141A256
O-Ring, 1 required (contained in above kit)	195825A15
O-Ring, 1 required (contained in above kit)	1951399A214
O-Ring, 1 required (contained in above kit)	1951416A218
Wiper Ring (contained in above kit)	1951401A1
Lubricant (contained in above kit)	199354A1
0.250" O.D. Aluminum Tubing (9' required)	R1021-0022

Spare Parts for UP30 with Acuator Heaters (UP30_ _ _ _ _ 1)

Thermoswitch	662460A1
Solderless Terminal	1941401A1

Tagging Options:

Each tag may have four lines, each having twelve capital letter or number characters specified by customer.

Fifth line will always specify BCCo Job and SO number

Mylar, adhesive backed aluminum finish	Tag Pt. No.	963318_1
Stainless Steel, wire attached	Tag Pt. No.	487436_2
Stainless Steel, permanently attached	Tag Pt. No.	487436_2

To Order Specify part number and method of attachment where required.

Specify customer information as follows:

- L1 _____
- L2 _____
- L3 _____
- L4 _____

L5 automatically completed by CMO. Fields not completed will be left blank.

References

Customer Information:

- Production Specification C-P81-20
- Product Instruction I-P81-20
- Connecting Linkage Product Specification G81-5-1

Standard Products=

Code

UP4 Pneumatic Rotary Actuator, 1450 ft/lb Rated Torque at 100 psig Supply (See Note A)

UP4

1 : Enclosure Rating

Standard, NEMA 3R	0
NEMA 4X, Positioner Enclosure only	1

2 : Control Input

3 ... 15 psig (0.2 ... 1 bar) Characterizable Pneumatic Positioner, AV1121__0	(Note: B)	A
3 ... 27 psig (0.2 ... 1.9 bar) Characterizable Pneumatic Positioner, AV1221__0	(Note: B)	B
4 ... 20 mA Characterizable I/P Positioner, AV2321__0 (Fail Open/Closed Upon Loss of Signal)		C
4 ... 20 mA Characterizable I/P Positioner, AV3321__0 (Fail-in-Place Upon Loss of Signal)		D
4 ... 20 mA Hart TZIDC, Fail Open/Close, Upn Loss Of signal	(Note:A)	U
4 ... 20 mA Hart TZIDC, Fail-in-Place, Upon Loss Of Signal	(Note: A)	W
4 ... 20 mA Hart TZIDC-200 (EXP), Fail Open/Close, Upon Loss of Signal	(Note: A,C)	Y
4 ... 20 mA Hart TZIDC-200 (EXP), Fail-in-Place, Maximum Supply Pressure for TZIDC is 6 bar (90 psig)	(Note: A,C)	Z
On-Off Solenoid, 120 V AC, Single Coil		5
On-Off Solenoid, 115 / 125 V DC, Single Coil		6
On-Off Solenoid, 120 V AC, Dual Coil		8
On-Off Solenoid, 115 / 125 V DC, Dual Coil		9
On-Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz, Single Coil		F
On-Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz, Single Coil		G

3 : Shaft Position Transmitter

None		0
Potentiometric Resistive Output, Built into Positioner (for UP4_ A, B, C, D only)	(Note: 1)	A
4 ... 20 mA Output, Built Into AV / TZIDC Positioners (for UP4_ A, B, C, D, U, W / Y / Z only)	(Notes: 2, A)	B
3 ... 15 psig (0.2 ... 1 bar) Pneumatic Position Transmitter Out, AV112000 Positioner (for UP4_A_ __ _only)	(Note: 3)	C

4 : Adjustable Travel Switches

None		0
Include 4-SPDT	(Note: 4)	1
Include 2-SPDT	(Note: 4)	2

5 : Air Failure Lock-Up

None		0
Air Failure Lock-up	(Note: 4)	1
Reserve Air Tank, Actuator goes to 0 or 100 % Upon Loss of Air Supply	(Note: 4)	4

UP4

Code

6 : Actuator Heaters (NoteE)

None		0
120 V AC	(Note: 4)	1
240 V AC	(Note: 4)	2

7 : Special Options

Standard Tubing		0
Stainless Steel Tubing Fittings	(Note: 2)	S

Instruction Manual (One copy is supplied, at no cost, with order)	PN25059
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- Note 1: Not available with Control Input code 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, D, U, W, Y, Z, 5, 6, 8, 9, F, G
- Note 4: Not available with Control Input code Y, Z
- Note A: The Maximum Supply Of Pressure for up with T2IDC (is 90 psig)
- Note B: Explosion Proof Application Cl 1 Div 1 Gr C-G
- Note C: kPa = psi x 6.895
- Note D: 24 V Supply required (not included)
- Note E: Not Suitable for use in Hazardous process applications require FM/CSA approved

UP4 ACCESSORIES

Standard Products =

Linkage Accessories:

	Code
Medium Duty Driven Lever, for interconnecting between linkage and the final control element	
For shaft diameter 1.438" to 1.875" (36.5 - 47.6 mm), 0.500" (12.7 mm) Groov pin diameter	5328977A1
For shaft diameter 1.938" to 2.375" (49.2 - 60.3 mm), 0.500" (12.7 mm) Groov pin diameter	5328977A2
For shaft diameter 2.439" to 2.875" (61.9 - 73.0 mm), 0.500" (12.7 mm) Groov pin diameter	5328977A3
For shaft diameter 2.938" (74.6 mm), 0.500" (12.7 mm) Groov pin diameter	5328977A4
Medium Duty Linkage Components	
Clevis	197758A1
Clevis Pin Assembly	197757A1
Ball and Socket, Self Lubricating	5323986A1
1-1/4 In. Pipe Connector, 10'6" (3.08 m) long	5313945A1
1-1/4 In. Pipe Connector, 21' (6.4 m) long	
Adapter	53683A1
Reinforcing Sleeve 12'(3.66 m) long	5314038A2
Rod Connector, 4' (1.22 m) long	5313835A2
<i>NOTE: For complete connecting linkage dimensions, specifications and application examples, see Product Specification</i>	G81-5-1

Accessories:

Supply Air Regulator Filter - Coalescing) with gage (maximum inlet pressure 250 psi)	
Maximum outlet pressure 125 psi, 1/2 NPT (high capacity), 40 SCFM	1951439D1
Parker No. 12E37E18AA / PS807P	
Pressure Gages - for Actuators with Positioners	
Instrument - 0-30 psig range	5326605A4
Supply - 0-160 psig range	5326605A5
Output - 0-160 psig range	5326605A6
Speed Control Orifices - Regulates time constant of final control element with Positioners.	
Installs directly into Positioner Port.	
0.040 in hole	5327327A1
No hole (drill to suit)	5327327A2

Spare Parts:

Cylinder Rebuild Kit	258241A1
O-Ring, 2 required (contained in above kit)	195141A256
O-Ring, 1 required (contained in above kit)	195825A15
O-Ring, 1 required (contained in above kit)	1951399A214
O-Ring, 1 required (contained in above kit)	1951416A218
Wiper Ring (contained in above kit)	1951401A1
Lubricant (contained in above kit)	199354A1
0.250" O.D. Aluminum Tubing (9' required)	R1021-0022
0.500" O.D. Nylon Tubing (7" required)	R9021-0050

Spare Parts for UP40 with Acutuator Heaters (UP4 _____ 1)

Thermoswitch	662460A1
Heater	1943002A1
Solderless Terminal	1941401A1

Tagging Options: See UP Tagging Option Price Sheets

Each tag may have four lines, each having twelve capital letter or number characters specified by customer.

Fifth line will always specify BCCo Job and SO number

Mylar, adhesive backed aluminum finish	Tag Pt. No.	963318_1
Stainless Steel, wire attached	Tag Pt. No.	487436_2
Stainless Steel, permanently attached	Tag Pt. No.	487436_2

To Order

Specify part number and method of attachment where required.

Specify customer information as follows:

L1 _____

L2 _____

L3 _____

L4 _____

L5 automatically completed by CMO. Fields not completed will be left blank.

References

Customer Information:

Production Specification	C-P81-20
Product Instruction	I-P81-20
Connecting Linkage Product Specification	G81-5-1

Standard Products=

		Code
UP5 Pneumatic Rotary Actuator, 2800 ft/lb Rated Torque at 100 psig Supply (See Note A)		UP5
1 : Enclosure Rating		
Standard, NEMA 3R		0
NEMA 4X, Positioner Enclosure only		1
2 : Control Input		
3 ... 15 psig (0.2 ... 1 bar) Characterizable Pneumatic Positioner, AV1121__0	(Note: B)	A
3 ... 27 psig (0.2 ... 1.86bar) Characterizable Pneumatic Positioner, AV1221__0	(Note: B)	B
4 ... 20 mA Characterizable I/P Positioner, AV2321__0, Fail Open/Closed Upon Loss of Signal		C
4 ... 20 mA Characterizable I/P Positioner, AV3321__0, Fail-in-Place Upon Loss of Signal		D
4 ... 20 mA Hart TZIDC, Fail Open/Close, Upon Loss Of signal	(Note: A)	U
4 ... 20 mA Hart TZIDC, Fail-in-Place, Upon Loss of Signal)	(Note: A)	W
4 ... 20 mA Hart TZIDC-200 (EXP), Fail-in-Place , Upon lLoss Of signal	(Note: A,C)	Y
4 ... 20 mA Hart TZIDC-200 (EXP), Fail-in-Place,Upon Loss Of signal)	(Note: A,C)	Z
On-Off Solenoid, 120 V AC, Single Coil		5
On-Off Solenoid, 115 / 125 V DC, Single Coil		6
On-Off Solenoid, 120 V AC, Dual Coil		8
On-Off Solenoid, 115 / 125 V DC, Dual Coil		9
On-Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz, Single Coil		F
On-Off Solenoid (220 V AC 50 Hz / 240 V AC 60 Hz), Single Coil		G
3 : Shaft Position Transmitter		
None		0
Potentiometric Resistive Output, Built into Positioner (for UP5_ A / B / C/ D only)	(Note: 1)	A
4 ... 20 mA Output, Built into AV / TZIDC Positioners (for UP5_ A / B / C / D / U / W / Y & Z only)	(Notes: 2, D)	B
3 ... 15 psig (0.2 ... 1 bar), Pneumatic Position Transmitter Out, AV112000 Positioner (for UP5_A__ _only)	(Note: 3)	C
4 : Adjustable Travel Switches		
None		0
Include 4-SPDT	(Note: 4)	1
Include 2-SPDT	(Note: 4)	2
5 : Air Failure Lock-Up		
None		0
Air Failure Lock-up	(Note: 4)	1
Reserve Air Tank, Actuator goes to 0 or 100 % Upon Loss of Air Supply	(Note: 4)	4
6 : Actuator Heaters (Note E)		
None		0
120 V AC	(Note: 4)	1
240 V AC	(Note: 4)	2
7 : Tubing Material-10th Character		
Standard Tubing		0
Stainless Steel Tubing	(Note: 2)	S
Instruction Manual (One copy is supplied, at no cost, with order)		PN25059

UP5

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

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

Note A: The maximum supply pressure for UP with TDIZ is 90 psi (g)

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

Note C: $\text{kPa} = \text{psi} \times 6.895$

Note D: 24 V Supply required (not included)

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

UP5 ACCESSORIES

Standard Products =

Linkage Accessories:	Code
Heavy Duty Driven Lever, for interconnecting between linkage and the final control element For shaft diameter 1.938" to 4.000" (49.2 - 101.6 mm)	6628241A1
Heavy Duty Linkage Components	
Clevis	6614440A1
Clevis Pin Assembly	6634507A1
Ball and Socket, Self Lubricating	5328987A1
2-1/2" - 8 NPT Pipe Connector, 13' 4" (4.06 m) long	6615890A4
2-1/2" - 8 NPT Adapter	6614437A1
Reinforcing Sleeve 12' (3.66 m) long	5314038A2
2-1/2" - 8 NPT Pipe Connector, 20" (6.10 m)	5313835A2
Retaining Ring	197164A125
<i>NOTE: For complete connecting linkage dimensions, specifications and application examples, see Product Specification</i>	G81-5-1

Accessories:

Supply Air Regulator Filter - Coalescing) with gage (maximum inlet pressure 250 psi) Maximum outlet pressure 125 psi, 1/2 NPT (high capacity), 40 SCFM Parker No. 12E37E18AA / PS807P	1951439D1
Pressure Gages - for Actuators with Positioners	
Instrument - 0-30 psig range	5326605A4
Supply - 0-160 psig range	5326605A5
Output - 0-160 psig range	5326605A6
Speed Control Orifices - Regulates time constant of final control element with Positioners. Installs directly into Positioner Port.	
0.040 in hole	5327327A1
No hole (drill to suit)	5327327A2

Spare Parts:

Cylinder Rebuild Kit	258241A1
O-Ring, 2 required (contained in above kit)	5311428A41
O-Ring, 1 required (contained in above kit)	195825A9
O-Ring, 1 required (contained in above kit)	1951359A220
O-Ring, 1 required (contained in above kit)	5311428A24
Backup Ring (contained in above kit)	195851A1
Wiper Ring (contained in above kit)	195852B1
Lubricant (contained in above kit)	199354A1
0.250" O.D. Aluminum Tubing (9' required)	R1021-0022
0.500" O.D. Nylon Tubing (7" required)	197164A37

Spare Parts for UP50 with Acuator Heaters (UP50_____ 1)

Thermoswitch	662460A1
Heater	1943002A1
Solderless Terminal	1941401A1

Tagging Options:

Each tag may have four lines, each having twelve capital letter or number characters specified by customer.

Fifth line will always specify BCCo Job and SO number

Mylar, adhesive backed aluminum finish	Tag Pt. No.	963318_1
Stainless Steel, wire attached	Tag Pt. No.	487436_2
Stainless Steel, permanently attached	Tag Pt. No.	487436_2

To Order

Specify part number and method of attachment where required.

Specify customer information as follows:

- L1 _____
- L2 _____
- L3 _____
- L4 _____

L5 automatically completed by CMO. Fields not completed will be left blank.

References

Customer Information:

Production Specification	C-P81-20
Product Instruction	I-P81-20
Connecting Linkage Product Specification	G81-5-1

Standard Products=

		Code
UP6 Pneumatic Rotary Actuator, 4600 ft/lb Rated Torque at 100 psig Supply (See Note A)		UP6
1 : Enclosure Rating		
Standard, NEMA 3R		0
NEMA-4X, Positioner Enclosure only		1
2 : Control Input		
None (For Slave Drive Only)	(Note: F)	0
3...15 psig Characterizable Pneumatic Positioner, AV1121__0	(Note: B)	A
3 ... 27 psig (0.2 ... 1.86 bar), Characterizable Pneumatic Positioner, AV1221__0	(Note:B)	B
4 ... 20 mA Characterizable I/P Positioner, AV2321__0, Fail Open/Closed Upon Loss of Signal		C
4 ... 20 mA Characterizable I/P Positioner, AV3321__0, Fail-in-Place Upon Loss of Signal		D
4 ... 20 mA Smart TZIDC, Fail Open/Close, Upon Loss of Signal	(Note: A)	U
4 ... 20 mA Smart TZIDC, Fail-in-Place, Upon Loss of Signal	(Note: A)	W
4 ... 20 mA Smart TZIDC-200 (EXP), Fail Open/Close, Upon Loss of Input	(Note:A,C)	Y
4 ... 20 mA Smart TZIDC-200 (EXP), Fail-in-Place, Upon Loss of Input	(Note:A,C)	Z
On-Off Solenoid, 115 / 125 V DC, Single Coil		5
On-Off Solenoid, 120 V AC, Single Coil		6
On-Off Solenoid, 120 V AC, Dual Coil		8
On-Off Solenoid, 115 / 125 V DC, Dual Coil		9
On-Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz, Single Coil		F
On-Off Solenoid, 220 V AC 50 Hz / 240 V AC 60 Hz, Single Coil		G
3 : Shaft Position Transmitter		
None		0
Potentiometric Resistive Output, Built into Positioner (for UP6_ A / B / C / D only)	(Note: 1)	A
4 ... 20 mA Output, Built into AV / TZIDC Positioners (for UP6_ A / B / C / D / U / W / Y / Z only)	(Notes: 2, D)	B
3-15 psig (0.2...1 bar) Pneumatic Position Transmitter Out, AV112000 Positioner (for UP6_A_ __ only)	(Note: 3)	C
4 : Adjustable Travel Switches		
None		0
Include 4-SPDT	(Note: 4)	1
Include 2-SPDT	(Note: 4)	2
5 : Air Failure Control / Volume Boosters		
None		0
Air Failure Lock-up	(Notes: 4, 8)	1
Volume Boosters	(Notes: 6, 9)	2
Air Failure Lock-up + Volume Boosters	(Notes: 4, 6 ,9)	3
Reserve Air Tank, Actuator goes to 0 or 100 % Upon Loss of Air Supply	(Notes: 5, 8)	4
6 : Actuator Heaters (Note E)		
None		0
120 V AC	(Note: 4)	1
240 V AC	(Note: 4)	2
7 : Tubing Material-10th Character		
Standard Tubing		0
Stainless Steel Tubing	(Note: 7)	S
Instruction Manual (One copy is supplied, at no cost, with order)		PN25059

UP6

Note 1: Not available with Control Input code 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, D, 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

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

Note 8: Not available on UP6_0_ _ _ _

Note 9: Not available on UP6_0_ _ _ _ , Volume Boosters available on UP6_A, B, C, D, U, W, Y, & Z only

Note A: The maximum supply pressure for UP with TZIDC is 90psi (g)

Note B: kPa = psi x 6.895

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

Note D: 24 V Supply required (not included)

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

Note F: Includes Master / Slave Installation Kit, P/N 258458-1

UP6 ACCESSORIES:

Standard Products =

Linkage Accessories:

	Code
Heavy Duty Driven Lever, for interconnecting between linkage and the final control element For shaft diameter 1.938" to 4.000" (49.2 - 101.6 mm)	6628241A1
Heavy Duty Linkage Components	
Clevis	6614440A1
Clevis Pin Assembly	6634507A1
Ball and Socket, Self Lubricating	5328987A1
2-1/2" - 8 NPT Pipe Connector, 13' 4" (4.06 m) long	6615890A4
2-1/2" - 8 NPT Adapter	6614437A1
Reinforcing Sleeve 12' (3.66 m) long	6615891A6
2-1/2" - 8 NPT Pipe Connector, 20" (6.10 m)	6615890A8
Retaining Ring	197164A125
<i>NOTE: For complete connecting linkage dimensions, specifications and application examples, see Product Specification</i>	G81-5-1

Accessories:

Supply Air Regulator Filter - Coalescing) with gage (maximum inlet pressure 250 psi) Maximum outlet pressure 125 psi, 1/2 NPT (high capacity), 40 SCFM Parker No. 12E37E18AA / PS807P	1951439A1
Pressure Gages - for Actuators with Positioners	
Instrument - 0-30 psig range	5326605A4
Supply - 0-160 psig range	5326605A5
Output - 0-160 psig range	5326605A6
Speed Control Orifices - Regulates time constant of final control element with Positioners. Installs directly into Positioner Port.	
0.040 in hole	5327327A1
No hole (drill to suit)	5327327A2

Spare Parts:

Cylinder Rebuild Kit	25824A1
O-Ring, 2 required (contained in above kit)	5311428A39
O-Ring, 1 required (contained in above kit)	195825A9
O-Ring, 1 required (contained in above kit)	1951359A220
O-Ring, 1 required (contained in above kit)	5311428A24
Backup Ring (contained in above kit)	195851A1
Wiper Ring (contained in above kit)	195852B1
Lubricant (contained in above kit)	199354A1
0.250" O.D. Aluminum Tubing (9' required)	R1021-0022
0.500" O.D. Nylon Tubing (7" required)	R9021-0050

Spare Parts for UP60 with Acuator Heaters (UP60_ _ _ _ _ 1)

Thermoswitch	662460A1
Heater	1943002A1
Solderless Terminal	1941401A1

Tagging Options:

Each tag may have four lines, each having twelve capital letter or number characters specified by customer.

Fifth line will always specify BCCo Job and SO number

Mylar, adhesive backed aluminum finish	Tag Pt. No.	963318_1
Stainless Steel, wire attached	Tag Pt. No.	487436_2
Stainless Steel, permanently attached	Tag Pt. No.	487436_2

To Order

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Specify customer information as follows:

- L1 _____
- L2 _____
- L3 _____
- L4 _____

L5 automatically completed by CMO. Fields not completed will be left blank.

References

Customer Information:

Production Specification	C-P81-20
Product Instruction	I-P81-20
Connecting Linkage Product Specification	G81-5-1

Notes

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Notes

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