

Jackscrews provide a simple method of manually operating a pneumatically actuated valve. Power air supply may be unavailable during commissioning or emergency circumstances. The jackscrew may then be used to drive the piston of the pneumatic actuator reproducing the effect of the power air supply.

1.0 Operating Instructions

- 1.1** Ensure power medium (air, gas, etc.) to actuator is not active. Try to operate directional control valve locally. If power medium is active at actuator, but below rated pressure, ISOLATE the power medium from the actuator.
- 1.2** Determine which way you wish to turn the valve shaft (most valves turn clockwise to close, but not all).
- 1.3** Looking down on the actuator with the stop bolts away from you (see document drawing #1256), operate the left-hand side jackscrew to turn the valve stem anti-clockwise and operate the right-hand side jackscrew to turn clockwise.
- 1.3.1** On double acting actuators, ensure both jackscrews are at full outboard position before manual operation of the valve.
- 1.3.2** On spring return actuators, only one jackscrew is provided as the spring operates the valve in the other direction.
- 1.4** Back off jamb nut at base of jackscrew.
- 1.5** Ensure jackscrew is well lubricated with keystone General Purpose 81L Grease or similar.
- 1.6** Using wrench or handwheel, turn jackscrew clockwise to push actuator output through 90°. Do not exceed 90° travel; this may result in valve damage. Jackscrew torque should not exceed 800 inch/pounds. (90Nm).

2.0 To Restore Actuator to Automatic Mode

- 2.1** Unscrew jackscrew to full outboard position.
- 2.2** Retighten jamb nut on cylinder side. Screw conical seal washer against cylinder end flange before tightening jamb nut. Tighten jamb nut to approximately 1,000 inch/pounds. (113Nm).

3.0 Maintenance

- 3.1** Ensure stainless steel jackscrew threads are always well greased. This will make operation considerably easier.

4.0 Retrofitting Jackscrew

See Document Drawing #1349.

- 4.1** Before attempting retrofit, ensure power medium is isolated from actuator and locked off.
- 4.2** Ensure no residual pressure is present in the actuator cylinder.
- 4.3 Cylinder side jackscrew**
- 4.3.1** Disconnect air supply to cylinder end flange.
- 4.3.2** Remove four tie rod nuts **58**.
- 4.3.3** Remove cylinder end flange **54** and seal **60**.

4.4

- 4.3.4** Remove piston rod bolt **63**.
- 4.3.5** Fit piston rod bolt **70** supplied with jackscrew retrofit module and tighten to recommended torque.
- 4.3.6** Coat hex nylon piece **71** with type 620 Loctite then assemble into piston bolt **70**.
- 4.3.7** Unscrew jackscrew to full outboard position.
- 4.3.8** Fit end flange with jackscrew and new seal provided with retrofit module over the tie rods **57**.
- 4.3.9** Replace tie rod nuts **58** and tighten to recommended torque.
- 4.3.10** Retighten jamb nut **77** (as **2.2**).
- 4.4 Rod cover side jackscrew**
- 4.4.1** Remove piston rod cover bolts **202**.
- 4.4.2** Remove piston rod cover **201**.
- 4.4.3** Fit piston rod bolt **210** supplied with jackscrew. Retrofit module and tighten to recommended torque.
- 4.4.4** Coat hex nylon piece **211** with type 620 Loctite then assemble into piston bolt **210**.
- 4.4.5** Unscrew jackscrew to fully outboard position on jackscrew piston of cover.
- 4.4.6** Fit jackscrew piston rod cover over piston rod. Ensure flange gasket **51** and rod seal **50** are in place.
- 4.4.7** Replace piston rod cover bolts **202** and lockwashers **203** and tighten to recommended torque.
- 4.4.8** Tighten jackscrew jamb nut.

5.0

Recommended Torques (lbs. ft.)

Piston Bolt (Item 70)

250	5/8 UNC	Grade 8	210
325	1 UNC	Grade 8	866
500	1-1/4 UNC	Grade 8	1750

Piston Rod Bolt (Item 210)

250	5/8 UNC	Grade 5	150
325	1 UNC	Grade 5	583
500	1-1/4 UNC	Grade 5	1097

Tie Rod Nut (Item 58)

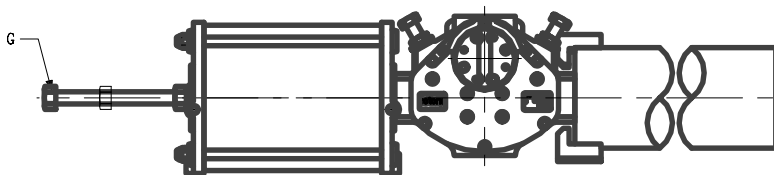
250 05-08	5/8 UNC	95
250 10-12	3/4 UNC	169
325 10-14	3/4 UNC	169
500 12	3/4 UNC	169

Jackscrew Cover Bolt (Item 202)

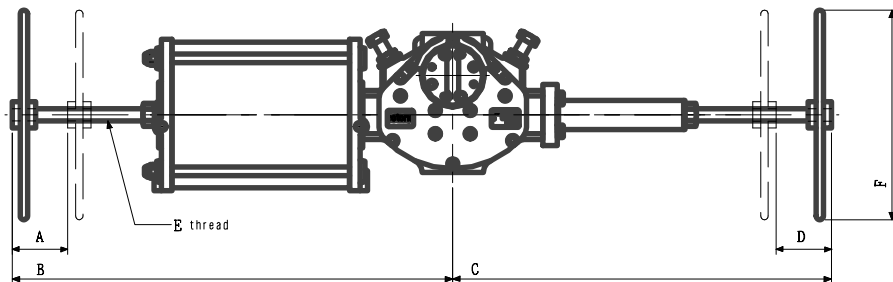
250	1/2 UNC	Grade 5	75
325	5/8 UNC	Grade 5	150
500	1 UNC	Grade 5	525

Spring Return (one jackscrew fitted)

THESE DIMENSIONS SHOULD BE READ IN CONJUNCTION WITH
APPROPRIATE DATA SHEET FOR THE ACTUATOR.



Double acting, single cylinder* (two jackscrews fitted with optional handwheel)



DOUBLE CYLINDER NOT ILLUSTRATED (OVERALL LENGTH=2xB)

Actuator size	Dimension ins/mm						
	A	B (max)	C (max)	D	E	F	G
250 05	5.9/150	26.3/668	25/635	5.6/142	3/4"-6 ACME-2G	14/356	1.25/31.8
250 06	5.9/150	26.3/668	25/635	5.6/142	3/4"-6 ACME-2G	14/356	1.25/31.8
250 07	6.0/152	26.4/671	25/635	5.6/142	3/4"-6 ACME-2G	14/356	1.25/31.8
250 08	5.9/150	30.2/767	29.2/742	5.8/147	1"-5 ACME-2G	14/356	1.50/38.1
250 10	5.6/142	30.3/770	29.2/742	5.8/147	1"-5 ACME-2G	14/356	1.50/38.1
250 12	5.5/140	30.4/772	29.2/742	5.8/147	1"-5 ACME-2G	14/356	1.50/38.1
325 08	9.6/244	38.0/965	38.8/986	10.7/272	1"-5 ACME-2G	18/457	1.50/38.1
325 10	8.6/218	37.6/955	38.8/986	10.7/272	1"-5 ACME-2G	18/457	1.50/38.1
325 12	9.3/236	42.9/1090	42.8/1087	14.2/361	1-1/4"-5 ACME-2G	18/457	2.0/50.8
325 14	8.6/218	42.1/1069	42.8/1087	14.2/361	1-1/4"-5 ACME-2G	18/457	2.0/50.8
500 12	11.6/295	49.3/1252	51.7/1313	15.2/386	1-1/4"-5 ACME-2G	18/457	2.0/50.8

