THE DUNHAM
TOOL COMPANY
Div. of Preferred Technologies, Inc.

DUNHAM AIR COLLET CLOSER
MODEL DACCOMNC
ASSEMBLY AND OPERATING INSTRUCTIONS

Specification:

Maximum pull force: 2388 lbs. @ 120 P.S.I. (19.9 X line pressure).
Maximum push force: 1202 lbs. @ 120 P.S.I. (16.2 X line pressure).
Maximum stroke : 5/16"
Maximum RPM : 4500 (continuous)
6000 (intermittent)
Largest diameter: 6.18"
Length : 7.06" open (without spindle adapter)
6.75" closed
Weight : 14 lbs 11 oz. (without spindle adapter)
Through hole : 1.06"

Compressed air requirements:
Actuation: Variable 40 to 120 P.S.I.; clean, dry air required;
Cooling: 15 P.S.I.; clean, lubricated

Lubrication: Mobil "DTE" Light (or equivalent)

Description:

This Dunham air powered rotary actuator operates at up to 4500 RPM, even when powered with maximum air pressure. Special consideration has been given to enhance its durability; this includes hardened wear surfaces, complete sealing of rotating components, and urethane wipers. The bearings are shielded, positive air pressure moves throughout the actuator, and the drawtube mount acts as a seal.

The air actuator is designed to mount to rotating devices, most commonly spindles. The unit will provide a push or pull force capable of opening or closing collets, fixtures, and short stroke power chucks.

Installation:

1) Spindle Mounting Adapter (Main Bearing Mount):

Spindle Adapter does not need to be further machined to fit spindle end. This special mounting adapter has been specifically designed and machined for the Omniturn Lathe so that it threads directly onto the back end of the Omniturn Spindle. The actuator mounting surface of the adapter must measure at least .001" T.I.R. perpendicular with the spindle when mounted.

2) Secure actuator assembly by tightening set screws onto the spindle. Attach air lines to ports on actuator. Insert collet into spindle; power the actuator to its forward position.

Insert drawtube, through the actuator, with its threaded end toward the front of the spindle. Be certain that drawtube lock is retracted to allow insertion of drawtube. Rotate drawtube to fully engage the drawtube threads with collet threads; back off 1-1/2 revolutions. Measure the remaining length extending from the knurled knob, if any. Remove the drawtube to cut off excess length. The drawtube must be flush with the knurled knob when later reinstalled.

3) Fastening Drawtube to Actuator:

The drawtube must have four, equally spaced, 1/4" holes drilled 11/16" from the draw tube end. These holes must be drilled within .003" of drawtube centerline. The holes must be chamfered burr free. The drawtube is now reinstalled into the air actuator. Tighten the four 3/8"-16 socket head set screws so their half dog points engage the newly drilled 1/4" holes. The screws must then be loosened 1/8 turn. Drawtube installation is now complete.

4) Adjusting Actuator Concentricity:

Adjust three brass point set screws to general tightness; please note that this mounting adapter has been designed for ease of mounting and alignment with its ground front face, bore face and bore diameter. Reduce air pressure supplied to forward port of actuator to 15 P.S.I. Using a dial indicator reach to indicator point of large diameter furthest from the spindle. Rotate spindle slowly to measure the rise and fall of this portion of the actuator. Adjust concentricity with the use of the three set screws lightly. If actuator is in good alignment with the spindle, the indicator should measure .0005"-.0010" concentricity. Tighten three set screws to spindle securely.

5) Attached Oil-Mist Lubrication:

To operate actuator to full potential, attaching the oil-mist lubricator assembly is required. The unit supplied must be mounted close to actuator while providing easy access to the oil reservoir. Attach oil-mist to ports labeled on drawing. A shut off valve MUST be used to turn off air supplied to oil-mist assembly when not in use.

FAILURE TO USE THIS LUBRICATION MAY RESULT IN UNIT FAILURE. The air regulator should be adjusted to 15 P.S.I. The Norgren "Type L07 Lubricator" should be adjusted to supply 1 drop every 40 seconds. The reservoir should be replenished with Mobil "DTE" light (or equivalent) as required. A small amount of grease is displaced out of the bearings by the rotation and the oil-mist lubricator; this should be considered normal.

Operating Instructions:

Inserting Collet:

1) With piston in forward or released position, back off locking key , enabling drawtube to be turned by knurled collet adjusting knob.
2) Place collet in spindle. Turn knurled knob clockwise until taper of collet engages with taper of spindle.
3) Align locking key with adjusting slot (4 slots provided) on draw tube, engage locking key. This prevents drawtube from turning and becoming loose during operation.

How to control holding force:

1) By using the regulator and gage, start with air pressure of 40 lbs.; increase pressure gradually until part is held sufficiently for machining operation.
2) The Dunham Air Actuator permits even gripping pressure although workpiece may have diameter variation. Holding force can be adjusted for any type of machining by increasing or decreasing the air pressure.

Maintenance:

1) Little or no maintenance is required. Bearings are self lubricating. All components such as bearings, "O" ring seals and retaining rings are standard.

   Installing an air cleaner and lubricator in line is advisable, but not essential.

*****SAFETY*****

The purchaser or end user of this retrofit unit is fully responsible for the fabrication and application of special protective guarding to cover this unit's moving parts. Drawtube cutoff must be performed as instructed above. Oil must be available for the oil-mist system.

FAILURE TO COMPLETE THE PROPER INSTALLATION AS INSTRUCTED ABOVE CAN RESULT IN OPERATOR INJURY OR PREMATURE WEAR ON THE UNIT.

MANUALS/AIR COLLET CLOSER INSTRUCTIONS MODEL DACCOMNC