Lexair, Inc.

Lexair,Inc.



Lexair is a privately held, American owned corporation committed to the design and manufacturing of industrial products. We are a World Class Manufacturer of Fluid Power Products, Valves, and Machine Tool Accessories, delivering the best products possible for today's global market needs.



The History of Lexair

Lexair was founded in April of 1977 as a manufacturer of high pressure compressors and stainless steel valves for the United States Navy. Mid-year 1985 we acquired all rights to the hydraulic and pneumatic valve lines from Airmatic Allied (a division of Snaptite, Inc) which included the Hi-Cyclic® product line from Beckett-Harcum. These products are now manufactured and distributed under the Lexair name. In addition to previously existing products and these acquisitions, we have continually expanded our Fluid Power Product offerings as we design and manufacture new or modified items to meet the special requirements of our customers. As a world leader in this market segment, we stand ready to meet any challenge.

In 1994 we introduced our first barfeed product, the Rhinobar®. This heavy-duty hydrodynamic bar feeder for CNC lathes launched Lexair firmly into the Machine Tool Accessory marketplace. That same year, we also became the exclusive North American agent for the "Multifeed", a "magazine style" short bar loader manufactured by Hydrafeed LTD., a major European barfeed manufacturer. In 1996, our patented Mini-Rhinobar® hydrodynamic bar feeder was designed and released specifically for the CNC swiss-type screw machine market. Mid-year 1996 we acquired the complete collet chuck line from Buck Tool Company (formerly part of the Buck Chuck line). Following this acquisition, we developed many new collet workholding devices for the machine tool industry. In August 2002, we acquired the Production Dynamics® line of collet style chucks which includes our popular Full Bore® and Prodyne® models. With the acquisition of these two companies and our continued new product development, Lexair has become a world leader in the Machine Tool Accessory market. In 2012, we were appointed to be the North American importer and master distributor for SYSTEC which is the leading manufacturer of chucks in Brazil. In the spring of 2014 Lexair became the exclusive importer and distributor of Breuning IRCO in North and South America. Breuning IRCO is the premier German manufacturer of lathe automation, offering custom solutions for loaders and unloaders. Our products are distributed by over 100 independent distributors and agents in the United States, Canada and Mexico with exports to the United Kingdom, Europe, and Australia.



From standard valves for use with air, gases, liquids or vacuum to specially manufactured items, we have a product to fit your every need.







- •Normally open or normally closed models available
- •Port sizes range from ½" NPT to 2" NPT
- •Coefficient of flow values to a C_v 50
- •Standard working pressures to 500 PSI, higher pressures are available, consult factory
- •Bodies are manufactured from cast bronze, internal materials of construction include aluminum, brass and stainless steel



Normally Open Model



Normally Closed Model



- •Normally open or normally closed models available
- •Port sizes range from 1/4" NPT to 2" NPT
- •Coefficient of flow values to a C_v 50
- •Standard working pressures to 500 PSI, higher pressures are available, consult factory
- •Bodies are manufactured from cast bronze, internal materials of construction include aluminum, brass and stainless steel
- •Corrosion resistant normally closed version



Features include: 316 stainless steel body, stainless hardware, nickel plated brass cap and Viton® seals



³/₄" and 1" NPT sizes are available

- •Normally open or normally closed models available
- •Port sizes range from ¼" NPT to 2" NPT
- •Coefficient of flow values to a C_v 50
- •Standard working pressures to 500 PSI, higher pressures are available, consult factory
- •Bodies are manufactured from cast bronze, internal materials of construction include aluminum, brass and stainless steel
- •Corrosion resistant normally closed version

•Pulse width modulated direct solenoid model assures high reliability and low current draw in a

normally closed version

Extremely quick response time, approximately 10ms required to open



Electrical connections include ½" NPT conduit with flying leads (shown) or Brad Harrison® style connector



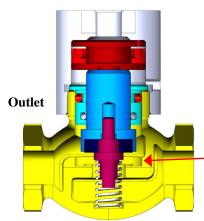
Available in ¼" through 2" port sizes

- •Normally open or normally closed models available
- •Port sizes range from ¼" NPT to 2" NPT
- •Coefficient of flow values to a C_v 50
- •Standard working pressures to 500 PSI, higher pressures are available, consult factory
- •Bodies are manufactured from cast bronze, internal materials of construction include aluminum, brass and stainless steel
- •Corrosion resistant normally closed version
- •Pulse width modulated direct solenoid model assures high reliability and low current draw in a normally closed version
- •Fast-acting direct cam operated normally closed model

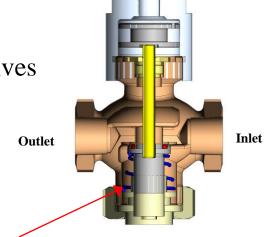
Available in ¼" through 2" NPT pipe sizes





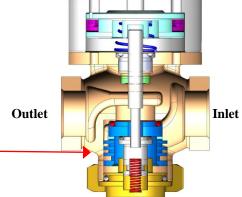


Normally Open Poppet



Normally Closed Single Poppet

- •Normally open or normally closed models available
- •Port sizes range from ¼" NPT to 2" NPT
- •Coefficient of flow values to a C_v 50
- •Standard working pressures to 500 PSI, higher pressures are available, consult factory
- •Bodies are manufactured from cast bronze, internal materials of construction include aluminum, brass and stainless steel
- •Corrosion resistant normally closed version
- •Pulse width modulated direct solenoid model assures high reliability and low current draw in a normally closed version
- •Fast-acting direct cam operated normally closed model
- •Poppet designs assure quick, "bubble tight" control and long service life



Normally Closed Dual Poppet



Seal materials include: Buna-N, Molybdenum Disulfide impregnated Buna-N, Viton®, Teflon® and Ethylene Propylene

- •Normally open or normally closed models available
- •Port sizes range from ¼" NPT to 2" NPT
- •Coefficient of flow values to a C_v 50
- •Standard working pressures to 500 PSI, higher pressures are available, consult factory
- •Bodies are manufactured from cast bronze, internal materials of construction include aluminum, brass and stainless steel
- •Corrosion resistant normally closed version
- •Pulse width modulated direct solenoid model assures high reliability and low current draw in a normally closed version
- •Fast-acting direct cam operated normally closed model
- •Poppet designs assure quick, "bubble tight" control and long service life
- •Extensive offering of seal materials provides a wide range of temperatures (-40 to 400 degrees F)



2-way Direct Pilot Operated Poppet Valves

Pilot media can be air, oil, water etc.

Main body media can be, air, oil, water, vacuum, etc.



- •Normally open or normally closed models available
- •Port sizes range from ¼" NPT to 2" NPT
- •Coefficient of flow values to a C_v 50
- •Standard working pressures to 500 PSI, higher pressures are available, consult factory
- •Bodies are manufactured from cast bronze, internal materials of construction include aluminum, brass and stainless steel
- •Corrosion resistant normally closed version
- •Pulse width modulated direct solenoid model assures high reliability and low current draw in a normally closed version
- •Fast-acting direct cam operated normally closed model
- •Poppet designs assure quick, "bubble tight" control and long service life
- •Extensive offering of seal materials provides a wide range of temperature (-40 to 400 degrees F)
- •Seal offerings also permit a wide variety of media to be used in the main valve body or the pilot section



2-way Direct Pilot Operated Poppet Valves

Normally closed, ½" NPT model with an 8:1 pilot ratio – main body media pressure of 500 PSI can be controlled with as little as 62.5 PSI pilot pressure, a 100 PSI inlet only requires a 12.5 PSI pilot signal



- •Normally open or normally closed models available
- •Port sizes range from 1/4" NPT to 2" NPT
- •Coefficient of flow values to a C_v 50
- •Standard working pressures to 500 PSI, higher pressures are available, consult factory
- •Bodies are manufactured from cast bronze, internal materials of construction include aluminum, brass and stainless steel
- •Corrosion resistant normally closed version
- •Pulse width modulated direct solenoid model assures high reliability and low current draw in a normally closed version
- •Fast-acting direct cam operated normally closed model
- •Poppet designs assure quick, "bubble tight" control and long service life
- •Extensive offering of seal materials provides a wide range of temperature (-40 to 400 degrees F)
- •Seal offerings also permit a wide variety of media to be used in the main valve body or the pilot section
- •High ratio pilots are available as standard cataloged items for use with high media pressure/low pilot pressure applications





Normally Open models - simply remove pilot cap for access to the poppet assembly and piston seal

Remove the cap for access to the piston seal and stem seal if needed

Normally Closed models – simply remove bottom nut for access to the poppet assembly



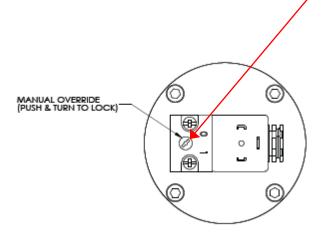
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- •Coefficient of flow values to a C_v 50
- •Standard working pressures to 500 PSI, higher pressures are available, consult factory
- •Bodies are manufactured from cast bronze, internal materials of construction include aluminum, brass and stainless steel
- •Corrosion resistant normally closed version
- •Pulse width modulated direct solenoid model assures high reliability and low current draw in normally closed version
- •Fast-acting direct cam operated normally closed model
- •Poppet designs assure quick, "bubble tight" control and long service life
- •Extensive offering of seal materials provides a wide range of temperatures (-40 to 400 degrees F)
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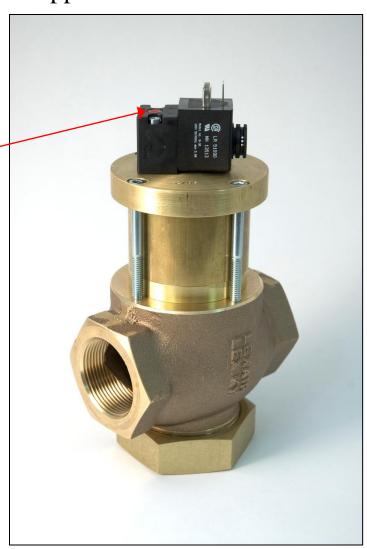


•Innovative design allows the valve to be serviced without disturbing the plumbing

2-way DIN Solenoid/Pilot Operated Poppet Valves

- •Latest addition to the 2-way product line
- •UL Recognized/CSA approved coil on standard solenoids
- •NEMA 4 electrical protection on standard solenoids
- •Standard DIN 43650 "Form A" electrical connection
- •Dual function manual override with "push-and-release" momentary or "push-and-turn" to lock operation







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- •NEMA 4 electrical protection on standard solenoids
- •Standard DIN 43650 "Form A" electrical connection
- •Dual function manual override with "push-and-release" momentary or "push-and-turn" to lock operation
- •Main valve body features vacuum-500 PSI capability, higher pressure ratings are available, consult the factory
- •Main valve can be used with air, liquids or gases solenoid operator is for use with compressed air or gases that are compatible with Viton® seals
- •Maximum standard solenoid valve inlet pressure is 232 PSI (16 bar)
- •Factory Mutual and CSA approved Intrinsically Safe Solenoid is available with a maximum inlet pressure of 115 PSI (8 bar) which can be used in the following Hazardous Locations:

Class I: Groups A, B, C and D

Class II: Groups E, F and G

Class III: Division 1



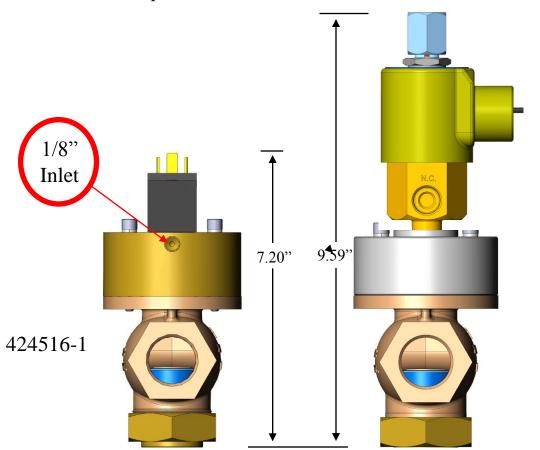




2-way DIN Solenoid/Pilot Operated Poppet Valves

•Typical height is over 2.25 inches shorter than the equivalent model equipped with our original solenoid unit

•Solenoid inlet port is 1/8" NPT







324516 with 03-3031 installed

Fluid Power Products 2-way DIN Solenoid/Pilot Operated Poppet Valves

- •Typical height is over 2.25 inches shorter than the equivalent model equipped with our original solenoid unit
- •Solenoid inlet port is 1/8" NPT
- •1/4", 3/8", 1/2" and 3/4" models all feature an 8:1 pilot ratio
- •1" models feature a 4:1 or 10:1 pilot ratio
- •1-1/4" models feature a 3:1 or 10:1 pilot ratio
- •1-1/2" models feature a 2:1 or 10:1 pilot ratio
- •2" models feature a 1:1 or 10:1 pilot ratio

The integrated solenoids add only \$45.00 to the list price of the valve chosen for standard versions and \$75.00 for intrinsically safe units which makes either a great value. The addition of the intrinsically safe models will allow us to offer valves to customers in markets where we could not do so before with solenoid operated valves. Applications involving chemical processing, paint or solvent processing, petro-chemical processing, natural gas and oilfield installations as well as many other industries where standard solenoids and even explosion-proof solenoids could not be used are perfect examples of where these operators can be utilized.



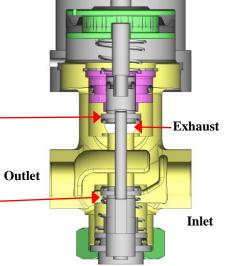




- •Normally closed function
- •Port sizes include ½", ¾" and 1" NPT
- •Coefficient of flow values to a C_v 8
- •Standard working pressures to 500 PSI, higher pressures are available, consult factory
- •Bodies are manufactured from cast bronze, internal materials of construction include aluminum, brass and stainless steel
- •Wide variety of media can be used in the main valve body or the pilot section
- •Same extensive offering of seal materials as the 2-way Poppet Valve series allows same range of temperatures and media capability



Separate exhaust and supply poppets assure high flow and positive sealing



- Normally closed function
- •Port sizes include ½", ¾" and 1" NPT
- •Coefficient of flow values to a C_v 8
- •Standard working pressures to 500 PSI, higher pressures are available, consult factory
- •Bodies are manufactured from cast bronze, internal materials of construction include aluminum, brass and stainless steel
- •Wide variety of media can be used in the main valve body or the pilot section
- •Same extensive offering of seal materials as the 2-way Poppet Valve series allows same range of temperatures and media capability
- •Unique poppet design assures quick, "bubble tight" control and long service life



½" NPT model with 10:1 pilot ratio — main body media pressure of 500 PSI can be controlled with as little as 50 PSI pilot pressure - a 100 PSI inlet only requires a 10 PSI pilot signal

- Normally closed function
- •Port sizes include ½", ¾" and 1" NPT
- •Coefficient of flow values to a C_v 8
- •Standard working pressures to 500 PSI, higher pressures are available, consult factory
- •Bodies are manufactured from cast bronze, internal materials of construction include aluminum, brass and stainless steel
- •Wide variety of media can be used in the main valve body or the pilot section
- •Same extensive offering of seal materials as the 2-way Poppet Valve series allows same range of temperatures and media capability
- •Unique poppet design assures quick, "bubble tight" control and long service life
- •High ratio pilots are standard 10:1 for the ½" and 5:1 for the ¾" and 1" NPT models
- •Innovative design allows the valve to be serviced or repaired without disturbing the plumbing



Remove the cap for access to the exhaust poppet, stem seal and pilot piston u-cup

Simply remove nut for access to the inlet poppet assembly



Applications and Industries Serviced by Our Poppet Valves

- •Economical replacements for expensive ¼ turn ball valves/actuators
- •Car wash equipment low or high pressure water and chemical control
- •Commercial laundry equipment
- •Air compressors and controls
- •Industrial air dryers and controls
- •Industrial liquid or air controls excellent for applications with aggressive fluids and gases
- •Water/waste water treatment filtration flow, pollution control equipment, etc.
- •Utility facilities for controlling the flow of liquids, gases, etc.
- •Induction heating equipment controlling quench or cooling water flow
- •Resistance welding equipment controlling cooling water flow
- •Mining and construction equipment dust suppression, product separation, etc.
- •Machine tool coolant flow
- •Coolant flow on buses, ships, construction equipment and other on/off highway vehicles and machinery
- •Paper and pulp processing
- •Injection molding machines coolant water controls
- •Cooling or refrigeration heat exchanger controls
- •Textile industry flow on bleaching, dyeing and drying equipment
- •Foundry equipment for high flow air, water or other liquids for cooling and processing
- Lexair, Inc.
- •High pressure/flow of air for blow molding machines
- •Nitrogen, oxygen or other types of gas generation equipment

Applications and Industries Serviced by Our Poppet Valves

- •Any application that requires a high flow filling or quick exhaust function with liquids or gases
- •Test equipment requiring a fast acting or high pressure, "bubble tight" valve includes air or other gases, vacuum, liquids, etc.

Specific Applications

Stainless Steel Version

- •Dairy processing or other applications where Clean-In-Place (CIP) ability is needed
- •Food and beverage filling, packaging and dispensing
- •Corrosive chemical dispensing and processing
- •Breweries and distilleries water, pasteurization, glycol solutions for cooling, deaeration processes, blending, carbonation, etc.
- •Fertilizer production
- •Pharmaceutical and cosmetic mixing, blending and dispensing
- •Bottling and bottle washing equipment

Bronze Star® Direct Solenoid Version

- •Low/high pressure (gases or liquids) and vacuum applications where pilot operated valves will not or can not function due to an inadequate pilot source (either too low or too high)
- •Aggressiveness of media would clog pilot passages (in competitors' product)



•Excellent for fast filling/exhaust applications due to extremely fast response time of about 10ms to open the poppet

Applications and Industries Serviced by Our Poppet Valves

Direct Cam Operated

•Any application that requires a direct mechanically actuated valve to control the flow of air or other gases, oil, water, vacuum, etc.

DIN Solenoid/Pilot Operated

- •Great value for any application as the price adder is low (\$45.00 for standard solenoid version, \$75.00 for the Intrinsically Safe version)
- •Valves are supplied complete with solenoid so only one line item need be ordered
- •Complete ready-to-use unit means no assembly is required
- •Intrinsically Safe models allow us to offer solenoid valves to customers in hazardous location markets where we could not do so before such as:

Chemical Processing

Paint Manufacturing or Mixing

Petro-chemical Processing

Natural Gas and Oilfield Installations

Any application involving the need for an IS valve to control gases or liquids

3-Way Normally Closed Poppet

•Processes that require "rinsing cycles" – fresh liquid pumped in then emptied and refilled with fresh liquid



•Air or liquid pressurization/dumping applications

Tube-O-Matic® Valves

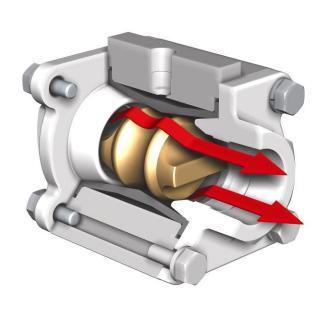
- •Specially designed for abrasive and corrosive media applications
- •1/4" NPT to 2-1/2" NPT port sizes are available
- •Coefficient of flow values to a C_v 75

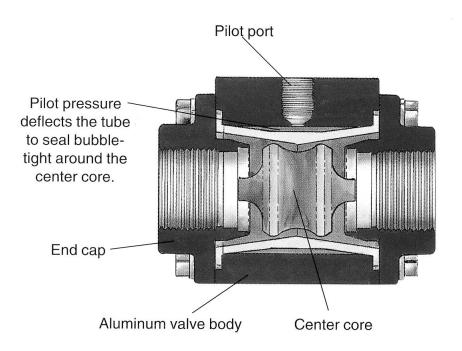




Tube-O-Matic[®] Valves

- •Specially designed for abrasive and corrosive media applications
- •¼" NPT to 2-½" NPT port sizes are available
- •Coefficient of flow values to a C_v 75
- •Advanced inner airfoil design means high flow and exceptionally long life compared to other pinch valves on the market (due to limited flexing of the tube sleeve)

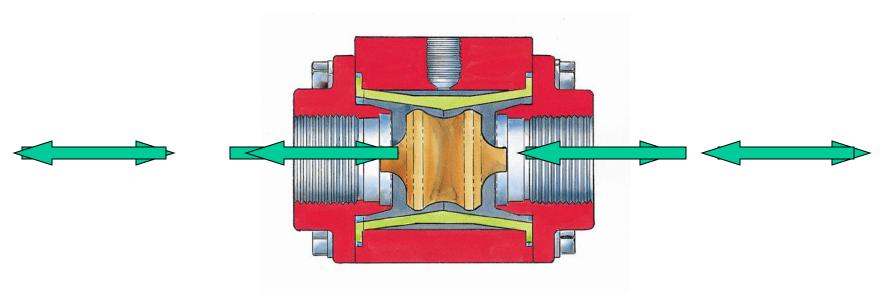






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- •Specially designed for abrasive and corrosive media applications
- •1/4" NPT to 2-1/2" NPT port sizes are available
- •Coefficient of flow values to a C_v 75
- •Advanced inner airfoil design means high flow and exceptionally long life (due to limited flexing of the tube sleeve) compared to other pinch valves on the market
- •Normally open valve is capable of bi-directional flow of media





Tube-O-Matic[®] Valves

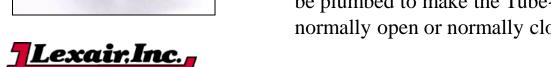
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- •Coefficient of flow values to a C_v 75
- •Advanced inner airfoil design means high flow and exceptionally long life (due to limited flexing of the tube sleeve) compared to other pinch valves on the market
- •Normally open valve is capable of bi-directional flow of media
- •Pilot operated via a wide range of media or can be used with our multifunction solenoid operators to create a normally open or normally closed function of the tube



Pilot operated via air, gas, water, oil, etc.

or....

Via our multifunction solenoid operator which can be plumbed to make the Tube-O-Matic have a normally open or normally closed function





Tube-O-Matic® Valves

- •Specially designed for abrasive and corrosive media applications
- •¼" NPT to 2-½" NPT port sizes are available
- •Coefficient of flow values to a C_v 75
- •Advanced inner airfoil design means high flow and exceptionally long life (due to limited flexing of the tube sleeve) compared to other pinch valves on the market
- •Normally open valve is capable of bi-directional flow of media
- •Pilot operated via a wide range of media or can be used with our multifunction solenoid operators to create a normally open or normally closed function of the tube
- •Wide range of tube, center core and end cap materials to handle virtually any application or media that you choose

Tube

Buna-N Viton® Ethylene Propylene

Center Core

Brass (Nickel Plated)
Aluminum (Nickel Plated)
PVC
316 Stainless Steel
Teflon®

End Caps

Bronze (wetted surfaces
Nickel Plated)
316 Stainless Steel
PVC



Tube-O-Matic[®] Valves

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- •1/4" NPT to 2-1/2" NPT port sizes are available
- •Coefficient of flow values to a C_v 75
- •Advanced inner airfoil design means high flow and exceptionally long life (due to limited flexing of the tube sleeve) compared to other pinch valves on the market
- •Normally open valve is capable of bi-directional flow of media
- •Pilot operated via a wide range of media or can be used with our multifunction solenoid operators to create a normally open or normally closed function of the tube
- •Wide range of tube, center core and end cap materials to handle virtually any application or media that you choose
- •Our material offerings also allow and extensive range of operating temperatures (-25 to +400 degrees F depending upon material combinations)







Applications and Industries Serviced by Our Tube-O-Matic® Valves

- •Economical replacements for expensive ¼ turn ball valve/actuators
- •Chemical processing and mixing
- •Pharmaceutical and cosmetic mixing, blending and dispensing
- •Dairy processing or other applications where Clean-In-Place (CIP) ability is needed
- •Oilfield equipment
- •Water/waste water treatment filtration flow, pollution control, etc.
- •Food and beverage filling, packaging and dispensing
- Machine tool coolants
- •Coolant flow on buses, ships, construction equipment and other on/off highway vehicles and machinery
- •Utility facilities coolant flow, coal slurry removal, fly ash slurry removal, etc.
- •Industrial liquid or air controls
- •Sandblasting equipment
- •Air conveyed materials plastic pellets, sand, other aggressive materials
- Asphalt batching plants
- Paper and pulp processing
- •Fertilizer production
- •Breweries and Distilleries water, pasteurization, glycol solutions for cooling, deaeration processes, blending, carbonation, etc.
- •Any circuit that requires a fast-acting, high flow, "bubble tight" valve



3-Way Solenoid Valves

3-Way Multi-Function Solenoid Valve

- •Perfect for use as an operator on our direct pilot operated 2-way and 3-way Poppet Valves and our Tube-O-Matic® series products
- •Bubble-tight design
- •Can be used as a normally open or normally closed valve for gases or liquids
- •1/8" female NPT inlet and exhaust with 1/4" male NPT outlet
- •Wide range of voltages are available
- •Coefficient of flow value is a C_v.095
- •Brass and stainless steel construction with Buna-N seals
- •Pressures to 150 PSI
- •Temperature range is 0 to 180 degrees F





Applications and Industries Serviced by Our Solenoid Valves

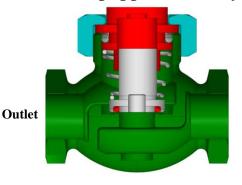
- •Solenoid operator for Lexair 2-way and 3-way Poppet valves and Tube-O-Matic® valves
- •Valve for use to operate small bore single acting cylinders, rotary actuators, etc.
- •Standard valve is both multifunction and multipurpose can be plumbed normally open or normally closed and used with air, oil or liquids (compatible with Buna seals)



Check Valves



Simply remove the nut for access to the poppet assembly





- •Port sizes range from ½" to 2" NPT
- •Coefficient of flow values to a C_v 50
- •Standard working pressure is 500 PSI, higher pressures available, consult factory
- •Cracking pressures range from 2 to 15 PSI (special springs are available, consult factory)
- •Bubble-tight design for use with gases or liquids
- •Body is manufactured from cast bronze, internal materials of construction include aluminum, brass and stainless steel
- •Same range of optional seal materials and temperatures as our 2 and 3-Way Poppet Valve series
- •Easily serviced without the need to disturb the plumbing



Applications and Industries Serviced by Our Check Valves

- •Car wash equipment
- •Commercial laundry equipment
- •Air compressors and controls
- •Industrial air dryers and controls
- •Water/waste water treatment
- Utility facilities
- •Virtually any application listed for our Poppet or Tube-O-Matic® series products involving circuits that require the flow of air, gases, liquids, etc in only one direction

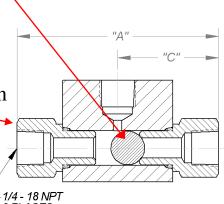


Fluid Power Products Shuttle Valves

- •Port sizes range from 1/4" to 2" NPT
- •Coefficient of flow values to a C_v 59.0
- •Standard working pressure is 250 PSI, consult the factory for higher pressures
- •Designed for use with gases or liquids
- •Bubble tight sealing even at lower pressures
- •Temperature range is -30 to 180 degrees F

Details for 1/4" Model

- •Body is anodized aluminum, screw-in end caps are steel
- •Valve element (rolling ball) is Buna-N
- •Easy to service design



Simply remove a line from either fitting then remove it to replace rolling ball element

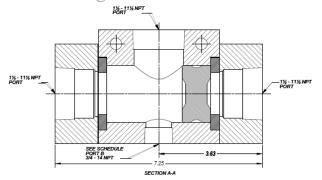




Fluid Power Products Shuttle Valves

Simply remove the screws that hold the end caps to the body and "drop out" the center section

- •Port sizes range from ½" to 2" NPT
- •Coefficient of flow values to a C_v 59.0
- •Standard working pressure is 250 PSI, consult the factory for higher pressures
- •Designed for use with gasses or liquids
- •Bubble tight sealing even at lower pressures
- •Temperature range is -30 to 180 degrees F





Details for ½" to 2" Models

- •Body and end caps are anodized aluminum
- •Internal materials of construction are Delrin® (piston) and Buna-N (seals)
- •Unique "drop-out" body design allows for quick and easy service without the need to disconnect the plumbing.



Applications and Industries Serviced by Our Shuttle Valves

- •Multiple station control of pilot signals
- •Two pressure selector when using different inlet pressures
- •Selection of media viscosity, type, color, etc.
- •Air compressors and controls
- •Industrial air dryers and controls



HI-CYCLIC® Directional Control Valves

2, 3 and 4-Way Valves for Pneumatic and Hydraulic Service

- •Precision honed body with individually matched spool provides for a nearly frictionless fit
- •Body material is Brass Alloy 360, spool is 303 Stainless Steel





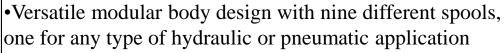


HI-CYCLIC® Directional Control Valves

2, 3 and 4-Way Valves for Pneumatic and Hydraulic Service



•Body material is Brass Alloy 360, spool is 303 Stainless Steel



•Pneumatic service pressures - vacuum through 250 PSI

•Hydraulic service pressures - 3000 PSI with 7/16-20 or 9/16-18 SAE ports; 2000 PSI with 1/8", 1/4", 3/8" or 1/2" NPT ports; 1000 PSI on B, BB, BSL with 1/4" NPT ports

•Temperature range is -20 through 160 degrees F

•Compact design with fast response time – maximum spool travel is only .217"

•Wide range of mechanical, manual, solenoid and pilot

operators are available











HI-CYCLIC® Directional Control Valves

2, 3 and 4-Way Valves for Pneumatic and Hydraulic Service



•Body material is Brass Alloy 360, spool is 303 Stainless Steel



- •Pneumatic service pressures vacuum through 250 PSI
- •Hydraulic service pressures 3000 PSI with 7/16-20 or 9/16-18 SAE ports; 2000 PSI with 1/8", 3/8" or 1/2" NPT ports; 1000 PSI with 1/4" NPT ports
- •Temperature range is -20 through 160 degrees F
- •Compact design with fast response time maximum spool travel is only .217"
- •Wide range of mechanical, manual, solenoid and pilot operators are available
- •1/8", 1/4", 3/8" and 1/2" NPT plus 7/16-20 and 9/16-18 SAE port sizes
- •Coefficient of flow values to a C_v 1.13 for air service
- •Hydraulic flow capacities to 16 G.P.M.

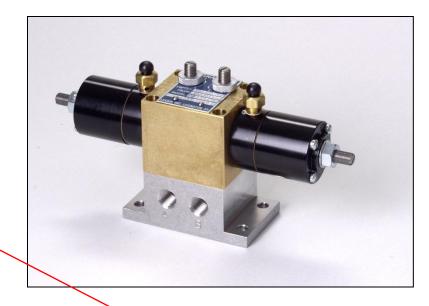


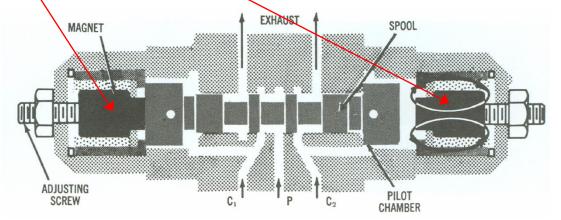


HI-CYCLIC® Directional Control Valves

MAGNA-CYCLE®

- •4-way, 2 position pneumatic operation
- •Unique valve features air pilot operators plus adjustable magnetic detents for built-in automatic control functions
- •Magnetic detents allow control functions to be consistently and reliably repeated.







HI-CYCLIC® Directional Control Valves

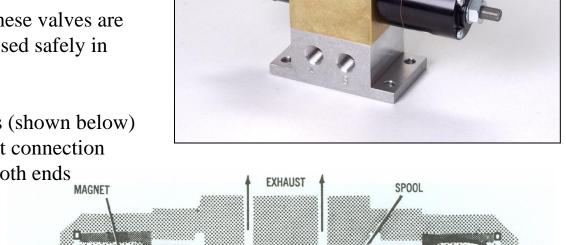
MAGNA-CYCLE®

- •4-way, 2 position pneumatic operation
- •Unique valve features air pilot operators plus adjustable magnetic detents for built-in automatic control functions
- •Magnetic detents allow control functions to be consistently and reliably repeated
- •No electrical signals are necessary so these valves are explosion-proof by design and may be used safely in hazardous locations
- •Models available include:

Internal pilot connections - both ends (shown below)

One internal and one external pilot connection

One internal and one external pilot connection External pilot connections – both ends



Internal pilot passages



Applications and Industries Serviced by Our HI-CYCLIC® Valves

- •Hydraulically or pneumatically controlled machine tool applications
- •Operation of pneumatic or hydraulic double acting or single acting cylinders, rotary actuators, etc.
- •Oilfield equipment
- •Control valves for agricultural, construction, or other types of on/off highway equipment

Manually Operated Models

•Any pneumatic or hydraulic circuit that requires the ability for "human interface" capability

Solenoid Operated Models

•Any pneumatic or hydraulic circuit where positive, fast acting electrical control is needed

Pilot Operated Models

- •Control or sequencing in pneumatic or hydraulic circuits that require pilot signals to achieve action
- •Used in hazardous locations where solenoids or other types of operators cannot be used safely



Applications and Industries Serviced by Our HI-CYCLIC® Valves

Mechanically Operated Models

•Control and sequencing in pneumatic and hydraulic circuits that require mechanical "signals" or "triggers" from the process

MAGNA-CYCLE® Valves

- •Operations of any sort that require continuous reciprocation of a cylinder without the use of electrical or mechanical connections, such as to operate a diaphragm pump, shaking of a hopper for compacting or discharging of material, shaking large containers for mixing, etc.
- •Sequential operation or sequencing of two or more cylinders
- •Cylinder force or pressure sensing operations
- •Adjustable or fixed time delays of a cylinder
- •Circuits governing the functions above in hostile or hazardous locations where electrical control is impractical or dangerous to use

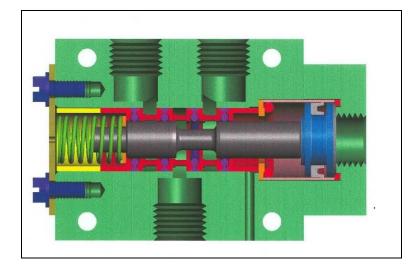


Mini 1 Pneumatic Valves

3 and 4-Way Compact Directional Control Valves

- •Compact, high flow design bodies are only 1" thick and 2" wide
- •Port size is 1/4" NPT
- •Flow coefficient is a C_v 1.0
- •Pressure range is from vacuum to 150 PSI
- •Inline 3 port (3-way) and 5 port (4-way) versions
- •Fast response valve due to a spool travel of only .30"
- •Durable 416 stainless steel spool and patented sealspacer design assure optimum sealing and long service life
- •Balanced spool design provides for true multipurpose capability allowing the use of dual pressures, vacuum, or other non-standard piping of the ports
- •Self lubricating Buna seals coated with a Teflon® based grease allow operation in minimal or even non-lube service







Mini 1 Pneumatic Valves

3 and 4-Way Compact Directional Control Valves

- •Temperature range is from -20 to 160 degrees F depending upon model chosen
- •Manual, mechanical, solenoid and air piloted versions are available











Mini 1 Pneumatic Valves

3 and 4-Way Compact Directional Control Valves

- •Temperature range is from -20 to 160 degrees F depending upon model chosen
- •Manual, mechanical, solenoid and air piloted versions are available
- •U.L. Listed/CSA Certified solenoid operator available for use in the following hazardous locations:

Class 1: Division 1, Groups C and D

Class 2: Division 1, Groups E, F and G

Class 2: Division 2, Groups A, B, C, D, E, F and G





Applications and Industries Serviced by Our Mini 1 Pneumatic Valves

Solenoid Models

- •Electrically controlled actuation of small pneumatic devices, i.e. single and double acting cylinders, rotary actuators, slides, grippers, etc.
- •Optional explosion-proof solenoid safely allows operation in hazardous locations
- •Any pneumatic circuit where electrical control of valves is required

Pilot Operated Models

- •Actuation of small pneumatic devices, i.e. single or double acting cylinders, rotary actuators, slides, grippers, etc.
- •Can be plumbed as pressure selector, diverter, used in vacuum applications, etc.
- •Can be safely operated in hazardous locations

Mechanically Operated Models

•Actuation of small pneumatic devices, i.e. single or double acting cylinders, rotary actuators, slides, grippers, etc.



Applications and Industries Serviced by Our Mini 1 Pneumatic Valves

Mechanically Operated Models – continued

- •End of stroke/cycle sensing to reset circuit
- •Useful in sequencing of pneumatically operated equipment requiring mechanical interface
- •Pilot signals for other products, i.e. Lexair Poppet or TUBE-O-MATIC® valves
- •Can be used as pressure selector, diverter, used in vacuum applications, etc.

Manually Operated Valves

- •Actuation of small pneumatic devices, i.e. single or double acting cylinders, rotary actuators, slides, grippers, etc.
- •Allows "human interface" to pneumatic control systems
- •Pilot signals for other products, i.e. Lexair Poppet or TUBE-O-MATIC® valves
- •Can be plumbed as pressure selector, diverter, used in vacuum applications, etc.

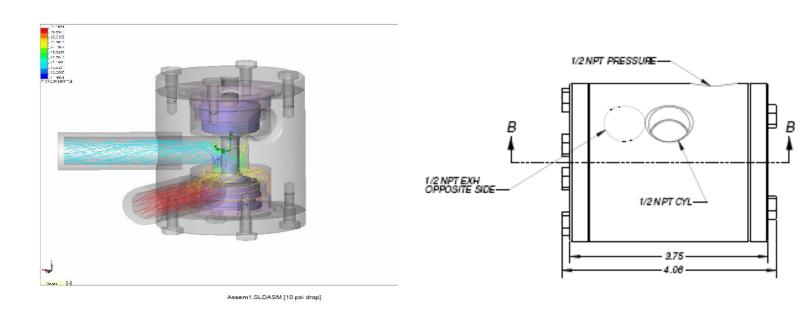


Custom Valve Manufacturing Capabilities

- •Another resource that we can offer to our distributors and customers is our ability to make custom designed or modified products. Because of our engineering design team, our 35+ years in the Fluid Power industry and our expert in-house machining capabilities, we are able to design, manufacture and deliver custom made products or special assemblies of standard products quickly and efficiently.
- •Our Engineering group has flow modeling software that can interface with our Solidworks 3-D software to produce models that have "real-life" flow patterns and calculations. This program assists us when we are designing products to the parameters that are needed for a particular application, nothing is left to guesswork. An example of the flow modeling can be seen on the next page.
- •The following pages depict only a few of the products that we have developed or assembled for specific applications in the past few years. We have added a "Custom Product Request Form" that can be filled out and submitted through our website that will allow anyone to request a quotation for special or non-catalogued items. We have designed many circuits that are laid out on a plate which control, speeds, sequencing, pressure etc, the possibilities are virtually limitless. Special valves have been constructed from, brass, bronze, aluminum and stainless steel of various types. Please do not hesitate to contact us with any or all opportunities.



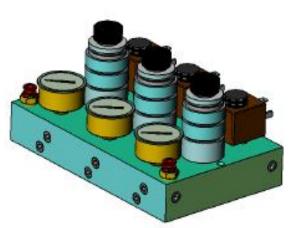
Custom Valve Manufacturing Capabilities



This valve was developed for a high speed/flow food packaging/processing application. All metal components are 316 stainless steel. As mentioned earlier, we were able to tie the Solidworks model to the flow simulation software as shown in the left picture above.



Custom Valve Manufacturing Capabilities



This manifold plate was designed for a carwash manufacturer for use in controlling individual pneumatic pressures to chemical dispensing valves. The plate is anodized aluminum as are the regulator bodies. The gauges used feature corrosion resistant polymer cases and covers. The valves feature NEMA 4 electrical protection.

ISOMETRIC VIEW

This valve was developed for a fluid drive (water) system on an underground mining machine. Working pressure is 1000 PSI, the body and end caps are brass, the spool and lever are stainless steel and the ports are ³/₄" SAE -12. The unit features two separate inlets on top that get diverted to one of two sets of outlets on the sides.





Lexair.Inc.

Custom Valve Manufacturing Capabilities

This valve was a special that we developed for a customer that needed a more compact solenoid and a plug-in connection. This valve was released as our DIN style solenoid/pilot operated product line back in November of 2006. Specials often become standard products that anyone can use.

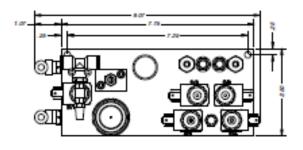
This special assembly consisted of three normally closed 2-way valves. The one on the far left was setup to operate on vacuum while the two on the right are for pressure. The middle valve was to see full line pressure while the valve on the far right was to see a greatly reduced pressure. The check valve keeps the full pressure valve from bleeding into the reduced pressure unit while it is being operated. The application was on a plastic blow-molding machine – an example of standard products being provided in a special

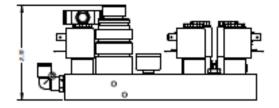
assembly to save the customer time and labor.



Custom Valve Manufacturing Capabilities

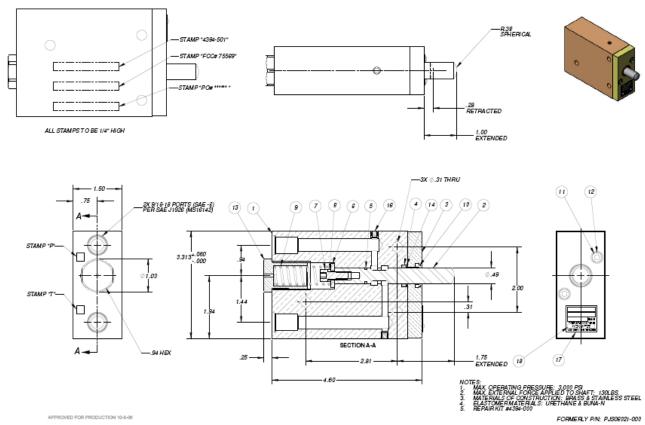






This manifold assembly was created to operate door opening/closing and locking functions on a sliding door unit. The manifold features the ability to run the doors at normal speed, at an adjustable secondary slower speed for safety when coming into the fully open or closed positions plus the ability to regulate the force of the doors while sliding. The timing/force to the lock mechanism is also adjustable and features a connection for a backup/safety supply circuit as well. These manifolds will be used on pneumatic jail cell door assemblies. Custom circuits can be designed for virtually any application that you can come up with.

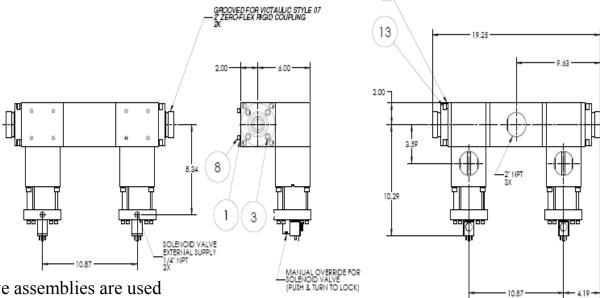
Custom Valve Manufacturing Capabilities



This valve was designed for a customer that had an existing competitor's special valve that was experiencing short life in a drilling rig application. We designed a replacement unit that would fit into the existing piece of machinery with no modifications to the customer's equipment so it can be retro-fitted in the field with no problem. This valve features a brass body with a stainless steel spool and 3000 PSI

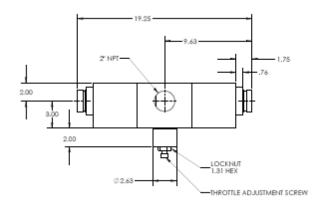
Lexair. Inc. hydraulic pressure capability.

Custom Valve Manufacturing Capabilities



These 2" NPT Poppet/Shuttle valve assemblies are used as inlet valves on high flow commercial air dryers. The unit shown below is on the same piece of equipment and is used as the outlet selector for the dry air coming from the unit as well as for regulating the adjustable purge between the twin towers for sieve bed regeneration. Both units feature anodized aluminum bodies and "Victaulic" couplings on both ends for "drop-in" installation on the customer's dryer units. These units provided the customer with an economical pre-assembly saving them from having to inventory multiple items plus the assembly and

NOTES:
1. 250 PSI MAX TO MAIN VALVE
2. 150 PSI MAX TO EXTERNAL SUPPLY FOR SOLENOID VALVE
3. 12VDC SOLENOID VOLTAGE



Custom Valve Manufacturing Capabilities



This five station valve manifold was designed specifically for a car wash manufacturer. The valves are a mixture of normally open and normally closed units with varying pilot ratios. The bodies are brass, the pilot caps anodized aluminum and the poppets inside are one of three types – stainless steel with PEEK plastic inserts, brass with PEEK plastic inserts or solid PEEK plastic construction.

This special Tube-O-Matic® Valve assembly is used to control the flow of coolant on commercial buses. They are supplied as shown with a pilot valve and sometimes also with a miniature pressure regulator as well. The mounting bracket and fittings are also installed by Lexair so that when the customer receives this unit, it is ready to install in the hoses on the bus engines cooling system.





Original Series Railcar Valves

Fluid Power Products

Custom Valve Manufacturing Capabilities







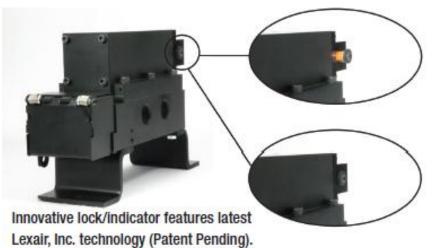
This is one of many versions of a valve that was developed over twenty years ago that is used on bottom dump coal and aggregate cars. This valve actuates the cylinder that controls the opening and closing of the doors. Recent developments include special safety devices such as our patented "safety check end cap" that does not allow the dump mechanism to operate until a preset pressure in the system is reached. Also shown is our integrated valve/cover/bracket combo. The cover has a positive closing latch and features the ability to protect the manual override buttons when closed and padlocked to keep vandals and other unauthorized personnel from operating the system inadvertently.



Second Generation Railcar Valves

Fluid Power Products

Custom Valve Manufacturing Capabilities



Sequenced mechanical lock/indicator is clearly visible in the daytime when the valve is in the unlocked or "door open" condition. It can easily be seen in the dark at distances of 75 feet or more (when immersed with light from a flashlight) due to innovative reflective "glass-bead" technology which makes it "glow" bright orange.

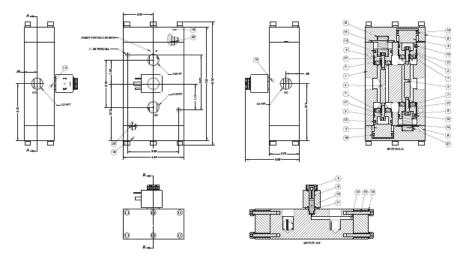
Sequenced mechanical lock/indicator is not visible when the valve is in the "door close" and locked condition.

- •Main valve element is based on our rugged "sliding shoe" construction the same trouble-free design that has been used in our railcar valves for over two decades.
- •A sequenced mechanical lock maintains the valve in the "door close" position regardless of outside forces or vibration.
- •The locking feature is released only when an electrical or manual signal to shift has been received.
- •A visual indicator is operated via the lock mechanism that clearly shows whether the valve is in the "door close" position with the valve element locked in place or if the valve is in the unlocked or "door open" position.
- •Because they are mechanically locked in the "door close" position, the valves may be mounted in any position or orientation the valve element does not have to be perpendicular to the rails.
- •The units can easily be modified so that they can be linked to ECP Brake Systems in the future for communication of valve position status.
- •The modular design allows the main valve unit to be removed/replaced in minutes without disturbing the electrical connection or plumbing when repair due to age or service conditions becomes necessary.
- •Self closing solenoid cover/junction box can be locked to prevent unauthorized access to manual overrides.
- •Our patented "Safety Check" technology (U.S. Patents 7,093,455 and 7,328,661) is available as a "no-charge" option.

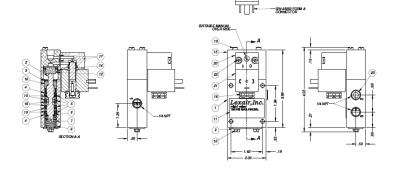


Lexair. Inc. _ Innovative lock/indicator features latest Lexair, Inc. technology (Patent Pending).

Custom Valve Manufacturing Capabilities



The unit above was developed to be a high pressure switching valve for a smaller "wall mounted" commercial dryer. The valve switches inlet air between one of two sieve tanks for drying. The valve below is used as a purge valve to equalize pressures between the tanks rapidly just prior to switching between them with the valve above. Both valves have a working pressure rating of 250 PSI.





Custom Valve Manufacturing Capabilities

The preceding examples are only a few of the specialty items that we have recently produced. Keep in mind that we can not be everything to everyone so there will be times when price, quantity etc may preclude us from being able to provide what is wanted. However, we would like the opportunity to quote on any specialty needs that your customers may have.



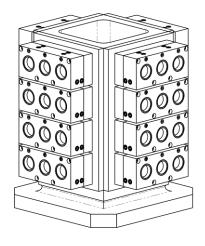
Machine Tool Accessories – Collet Closers

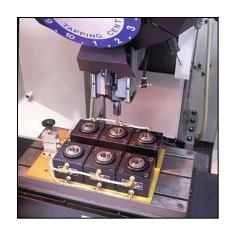


- •Complete family of stationary collet workholding components that can be utilized individually or grouped together form a system
- •Double acting pneumatic or hydraulic models are available in fixed-length and pull-back versions

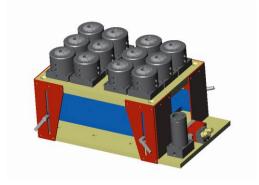


Machine Tool Accessories – Collet Closers









- •Complete family of stationary collet workholding components that can be utilized individually or grouped together form a system
- •Double acting pneumatic or hydraulic models are available in fixed-length and pull-back versions
- •Lexair can custom design and build turnkey solutions for any workholding application



Fluid Power Products Low Pressure Pneumatic Collet Closers



- •Double acting, pull-back operation
- •Designed for use with 5C collets
- •Drawtube force generated is 7.5 times the inlet pressure applied
- •Maximum working pressure is 150 PSI
- •Made from aircraft quality aluminum
- •Supplied with a 5C collet wrench

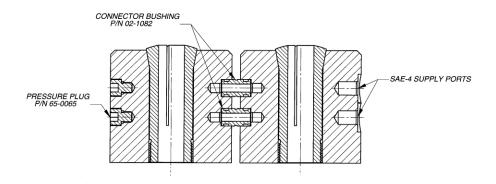




Pneumatic/Low Pressure Hydraulic Collet Closers

- •Double acting, fixed-length operation
- •Designed for use with 1C, 3C, 5C or 16C collets
- •Reamed orientation holes in the base for mounting
- •Patented "accessible-from-the-top" collet locking screw – allows quick and easy collet or part orientation in infinite positions
- •All models feature the ability to be combined into multiple configurations by use of connector bushings – eliminates the external plumbing between units
- •Constructed from aircraft quality aluminum
- •Drawtube force generated ranges from .73 (1C) to 7.5 (5C) times the inlet pressure applied
- •Maximum pneumatic pressure rating of 150 PSI or 250 PSI depending upon the model
- •Maximum hydraulic pressure rating of 750 PSI or 2000 PSI depending upon the model







Pneumatic/Low Pressure Hydraulic Collet Closers

- •Double acting, fixed-length operation
- •Designed for use with 1C, 3C, 5C or 16C collets
- •Reamed orientation holes in the base for mounting
- •Patented "accessible-from-the-top" collet locking screw – allows quick and easy collet or part orientation in infinite positions
- •All models feature the ability to be combined into multiple configurations by use of connector bushings – eliminates the external plumbing between units
- •Constructed from aircraft quality aluminum
- •Drawtube force generated ranges from .73 (1C) to 7.5 (5C) times the inlet pressure applied
- •Maximum pneumatic pressure rating of 150 PSI or 250 PSI depending upon the model
- •Maximum hydraulic pressure rating of 750 PSI or 2000 PSI depending upon the model
- •All units are supplied with a matching collet **Lexair.Inc.** wrench

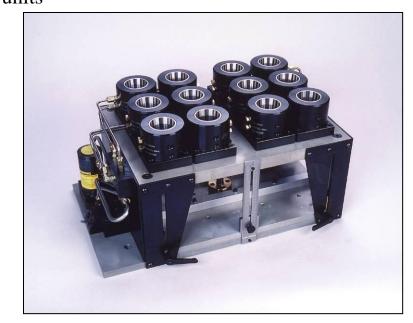




Fluid Power Products High Pressure Hydraulic Collet Closers



- •Double acting, fixed-length operation
- •Designed for use with 5C, 16C, 3J, 22J or 35J collets
- •Reamed orientation holes in the base for mounting
- •Ability to be combined into multiple configurations by use of connector bushings eliminates the external plumbing between units





Fluid Power Products High Pressure Hydraulic Collet Closers



- •Double acting, fixed-length operation
- •Designed for use with 5C, 16C, 3J, 22J or 35J collets
- •Reamed orientation holes in the base for mounting
- •Ability to be combined into multiple configurations by use of connector bushings eliminates the external plumbing between units
- •Heavy duty all steel construction
- •Drawtube force generated is 1.9 times the inlet pressure applied
- •Hydraulic working pressure to 5000 PSI
- •All units are supplied with a matching collet

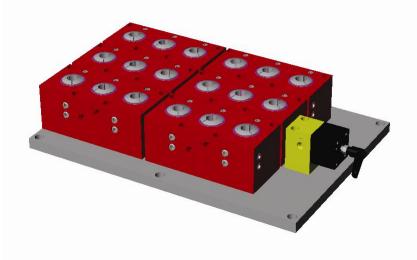
wrench





Fluid Power Products High Pressure Hydraulic Tri-Grip Collet Closers

- •Double acting, fixed-length operation
- •Compact design features three 5C collet closers in one body
- •Ability to be combined into multiple configurations by use of connector bushings eliminates the external plumbing between units





Fluid Power Products High Pressure Hydraulic Tri-Grip Collet Closers

- •Double acting, fixed-length operation
- •Compact design features three 5C collet closers in one body
- •Ability to be combined into multiple configurations by use of connector bushings eliminates the external plumbing between units
- •Patented "accessible-from-the-top" collet locking screw – allows quick and easy collet or part orientation in infinite positions
- •Drawtube force generated is 1.1 times the inlet pressure applied
- •Hydraulic working pressure to 5000 PSI
- •All units are supplied with a matching 5C collet wrench







Models 5C and 16C



- •Double acting, pull-back operation
- •All steel construction
- •Holds standard collets, step chucks and closers, plus expanding collets for I.D. holding of parts up to 6" in diameter





Models 5C and 16C



- •Double acting, pull-back operation
- •All steel construction
- •Holds standard collets, step chucks and closers, plus expanding collets for I.D. holding of parts up to 6" in diameter
- •Drawtube force generated is 7.5 times the inlet pressure applied
- •Pneumatic pressures to 250 PSI, hydraulic pressures to 750 PSI
- •Ability to be combined into multiple configurations by use of connector bushings eliminates external plumbing
- •Supplied with a 5C collet wrench





Models 5C and 16C - continued

- •Double acting, pull-back operation
- •Aircraft aluminum body with hardened steel bushings for long, trouble free life
- •A2-5 spindle nose accepts 16C collets to 1-5/8" or 16C step chucks up to 6" in diameter plus expanding nose collets for I.D. holding of parts





Models 5C and 16C - continued

- •Double acting, pull-back operation
- •Aircraft aluminum body with hardened steel bushings for long, trouble free life
- •A2-5 spindle nose accepts 16C collets to 1-5/8" or 16C step chucks up to 6" in diameter plus expanding nose collets for I.D. holding of parts
- •Drawtube force generated is 22.5 times the inlet pressure applied
- •Pneumatic working pressures to 250 PSI, hydraulic pressures to 400 PSI
- •Supplied with a 16C collet wrench







Applications and Industries Serviced by Our Collet Closers

- Part holding for assembly applications
- •Part holding for machining or grinding applications
- •Part holding for inspection and test procedures
- •High force units can be used for crimping operations
- •Models available are excellent for tool room and production environments
- •Modular units are easily combined into fixtures We can design and manufacture custom turnkey solutions to meet the demands of all your workholding requirements

Industries served include:

- •Electronics
- Dental
- •Heavy Equipment
- Automotive
- •Aerospace
- Power and Hand Tools
- •Medical
- Machine Tool
- •General Industrial



Machine Tool Accessories Disconnect Handles

- •Patented disconnect handle quickly and conveniently allows for connection/disconnection of hydraulic lines to/from machine tool pallets or in other hydraulic applications
- •Designed for use in double acting applications
- •The unit automatically latches when pressure above 2500 PSI is present on either hose preventing accidental disconnects
- •Ergonomic design helps minimize operator hand fatigue
- •Can be integrated with all Lexair, Inc. hydraulic collet closers
- •To be used in conjunction with a matching Lexair manifold. If used with the manifold that features the integrated check valve, a momentary hydraulic pump or a 4-way, 3-position, exhaust open center valve must be used please contact the factory to get the correct plumbing arrangement for your application





Machine Tool Accessories Collets

Lexair offers a complete line of collets available in all sizes and types to fit our entire line of collet closers and chucks. Please consult the factory for assistance and further information for all your collet applications.





Machine Tool Accessories Collet Wrenches

- •Complete line of high quality, light-weight, aluminum collet wrenches
- •Anodized red with our logo and collet size laser engraved – assures that markings will not wear off
- •Available in sizes that fit our wide range of collet closers including 1C, 3C, 5C, 16C, 3J, 22J and 35J sizes
- •One of our durable units is supplied in the correct size with any collet closer that we manufacture



