

# *Air Cylinders For Workholding Applications*



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### Commitment to Service

MicroCentric LDZ Air Cylinders are available from stock and can be supplied with adapter plates and draw tubes to interface with any machine spindle or rotary table configuration. MicroCentric is not only committed to building the world's finest workholding products, but we also strive to provide our customers with the best solutions for their machine tool applications, and provide unmatched service and support.



## *LDZ Air Cylinder Design & Features*

MicroCentric LDZ Air Cylinders feature a high performance precision rotary air bearing assembly. The air bearing incorporates a hardened steel journal and a housing supported by high speed ball bearings. This advanced proven design is combined with MicroCentric's precision manufacturing capability to produce a line of air cylinders of unmatched performance and reliability.

Air cylinders offer fine adjustment of draw tube force to prevent distortion of workpieces during clamping as compared to hydraulic actuators. And MicroCentric LDZ Cylinders are virtually maintenance free. The only requirements are that air is continuously supplied to the rotary air bearing during rotation, and that the air is filtered and lubricated.

LDZ Air Cylinders can be adapted to all machine spindle and rotary table configurations to actuate jaw, collet, and diaphragm chucks. MicroCentric will supply spindle mounting plates and draw tubes as required, as well as a variety of precision workholding products to interface with LDZ

## *LDZ Air Cylinder Models*

### LDZ Standard Through Hole Models



- Available in 6, 8, and 10 inch diameter models
- 1.355" (34.4mm) through hole standard
- Speeds to 6,000 rpm
- Clamping Force up to 5,200 lbs (2,360 kg)

### LDZ/42 42mm Through Hole Models



- Available in 8 and 10 inch diameter models
- 1.655" (42mm) through hole standard
- Speeds up to 5,000 rpm
- Clamping Force up to 5,050 lbs (2,290 kg)

### LDZ/HS High Speed Models



- Available in 6 inch diameter models
- 1.355" (34.4mm) through hole
- Speeds up to 8,000 rpm
- High speed models are dynamically balanced

### LDZ/A Adjustable Draw Tube Models

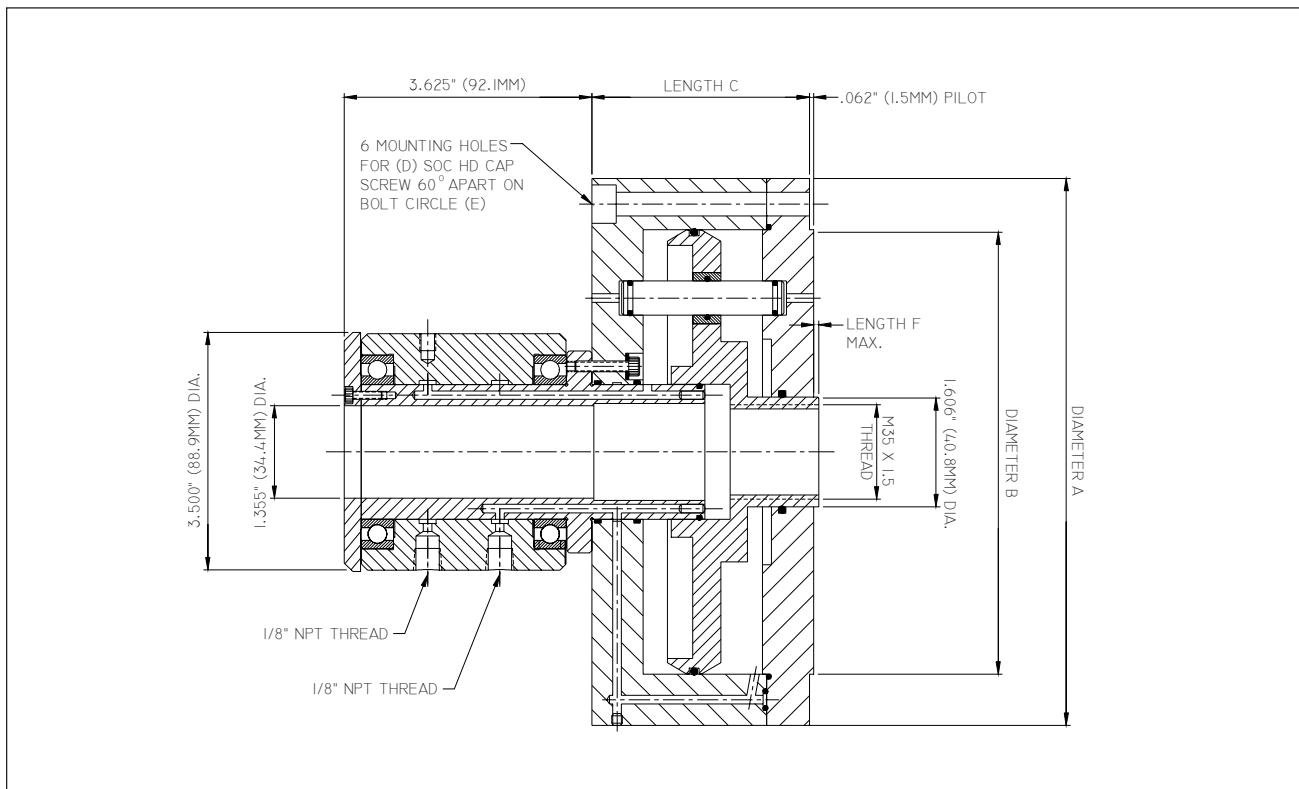


- Adjustable draw tube to install collet and adjust tension
- 6 inch diameter with 5C draw tube standard
- 1.063" (27mm) through hole
- 6,000 rpm

## LDZ Standard Through Hole Models

Size	Cylinder Model	Through Hole	Piston Stroke	Max. Air Pressure	Draw Tube Force*	Max. rpm	Weight
6"	<b>LDZ-150</b>	1.355"	.394"	150 psi	1,640 lb	6,000	12 lb
152 mm		34.4mm	10mm	10.5 kg/cm <sup>2</sup>	745 kg		5.5 kg
8"	<b>LDZ-200</b>	1.355"	.710"	150 psi	2,920 lb	5,000	23 lb
203 mm		34.4mm	18mm	10.5 kg/cm <sup>2</sup>	1,327 kg		10.5 kg
10"	<b>LDZ-250</b>	1.355"	.710"	150 psi	5,200 lb	4,000	32 lb
254 mm		34.4mm	18mm	10.5 kg/cm <sup>2</sup>	2,364 kg		14.5 kg

\*at 100psi (7 kg/cm<sup>2</sup>)

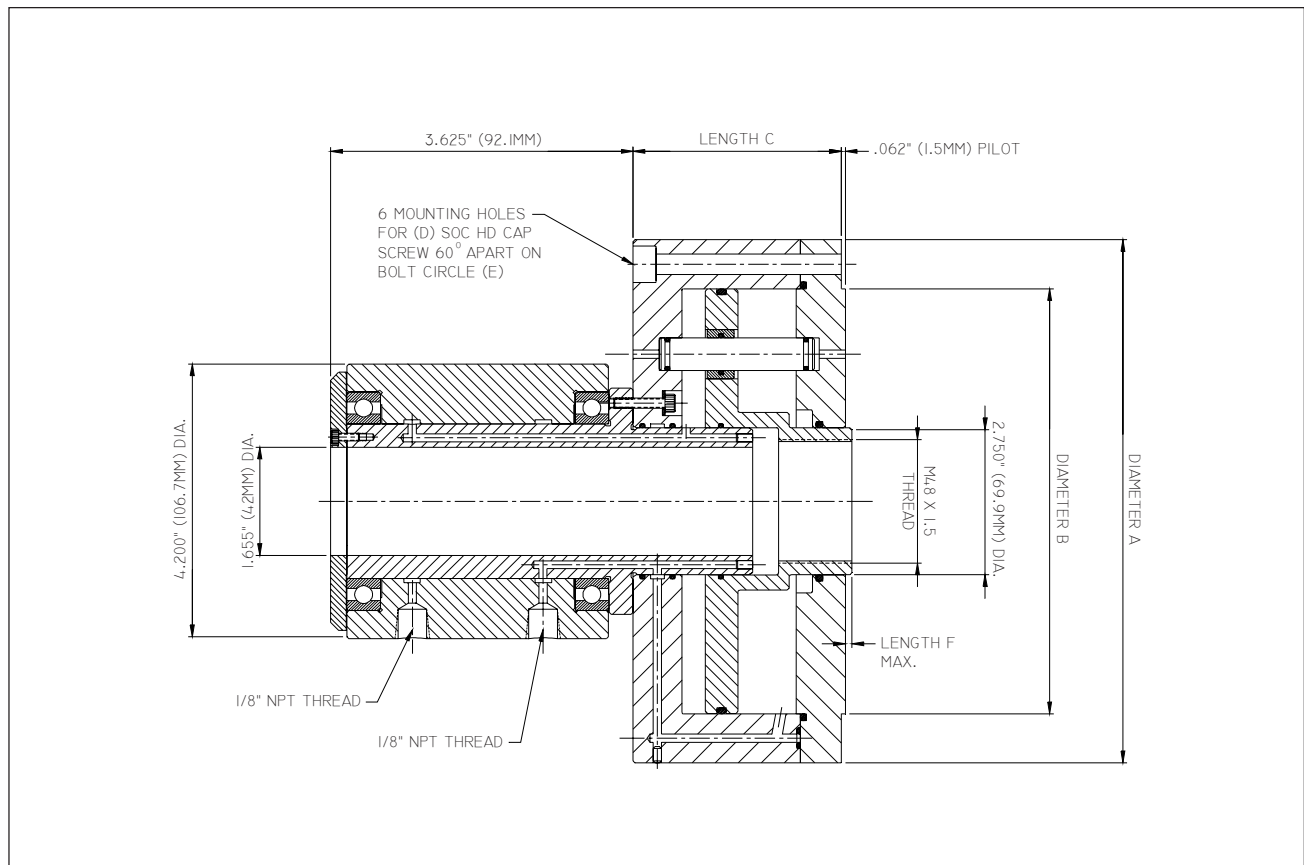


Model	A	B	C	D	E	F
<b>LDZ-150</b>	6.000"	4.999"	2.053"	M6	5.500"	.500"
	152.4mm	126.97mm	52.1mm	M6	139.7mm	12.7mm
<b>LDZ-200</b>	8.000"	6.499"	3.186"	M8	7.250"	.355"
	203.2mm	165.07mm	80.9mm	M8	184.2mm	9mm
<b>LDZ-250</b>	10.000"	8.499"	3.186"	M8	9.250"	.355"
	254mm	215.87mm	80.9mm	M8	235mm	9mm

## LDZ/42 42mm Through Hole Models

Size	Cylinder Model	Through Hole	Piston Stroke	Max. Air Pressure	Draw Tube Force*	Max. rpm	Weight
8"	<b>LDZ/42-200</b>	1.655"	.710"	150 psi	2,775 lb	5,000	25 lb
203 mm		42mm	18mm	10.5 kg/cm <sup>2</sup>	1,260 kg		11.4 kg
10"	<b>LDZ/42-250</b>	1.655"	.710"	150 psi	4,980 lb	4,000	34 lb
254 mm		42mm	18mm	10.5 kg/cm <sup>2</sup>	2,265 kg		15.5 kg

\*at 100psi (7 kg/cm<sup>2</sup>)

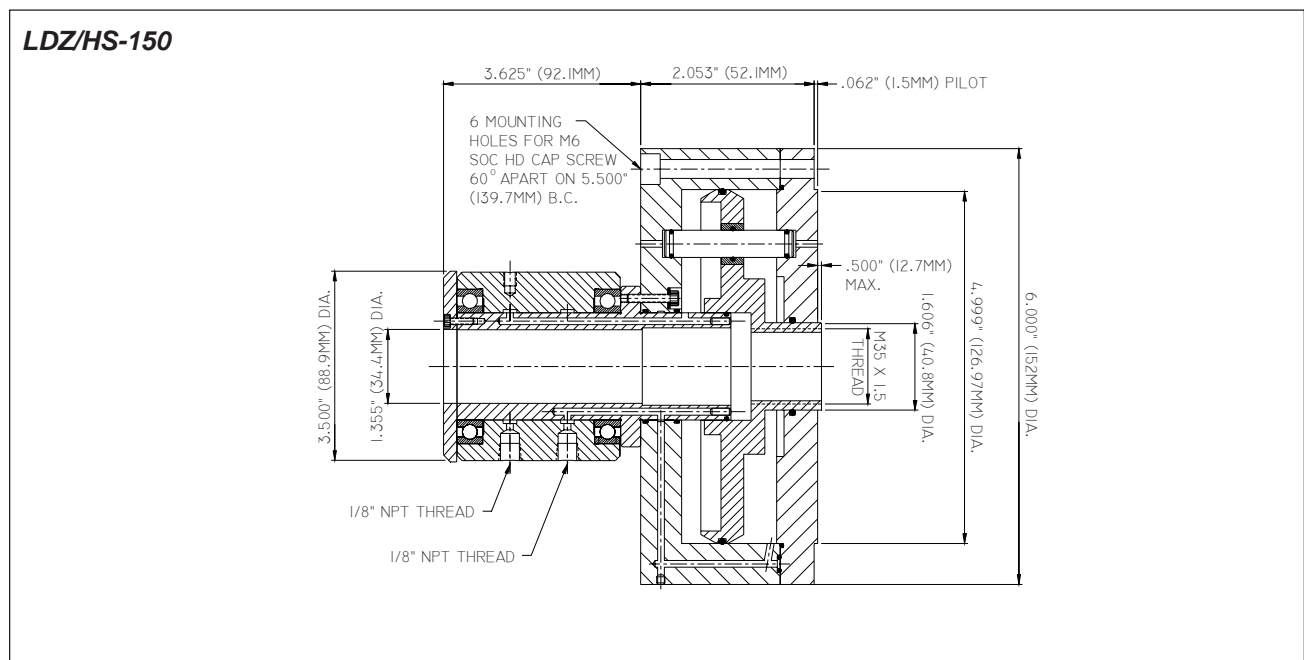


Model	A	B	C	D	E	F
<b>LDZ/42-200</b>	8.000"	6.499"	3.186"	M8	7.250"	.457"
	203.2mm	165.07mm	80.9mm	M8	184.2mm	11.6mm
<b>LDZ/42-250</b>	10.000"	8.499"	3.186"	M8	9.250"	.457"
	254mm	215.87mm	80.9mm	M8	235mm	11.6mm

## LDZ/HS High Speed Models

Size	Cylinder Model	Through Hole	Piston Stroke	Max. Air Pressure	Draw Tube Force*	Max. rpm	Weight
6"	<b>LDZ/HS-150</b>	1.355"	.394"	150 psi	1,640 lb	8,000	12 lb
152 mm		34.4mm	10mm	10.5 kg/cm <sup>2</sup>	745 kg		

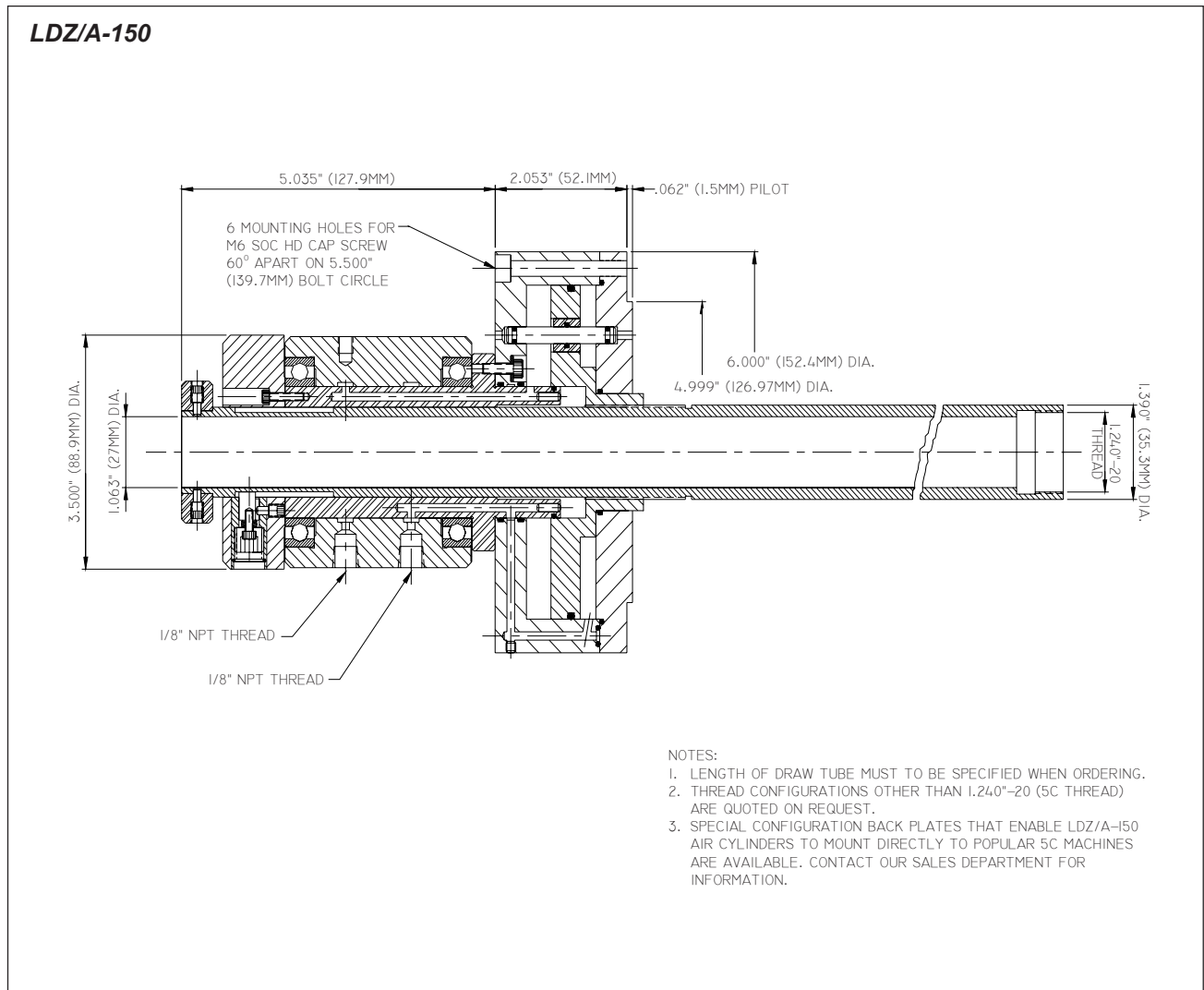
\*at 100psi (7 kg/cm<sup>2</sup>)



## LDZ/A Adjustable Draw Tube Models

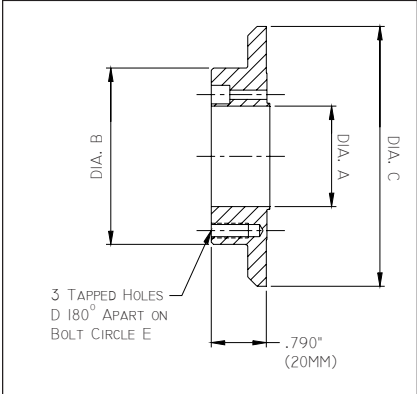
Size	Cylinder Model	Through Hole	Piston Stroke	Max. Air Pressure	Draw Tube Force*	Max. rpm	Weight
6"	<b>LDZ/A-150</b>	1.063"	.394"	150 psi	1,640 lb	6,000	14.5 lb
152 mm		27mm	10mm	10.5 kg/cm <sup>2</sup>	745 kg		6.6 kg

\*at 100psi (7 kg/cm<sup>2</sup>)



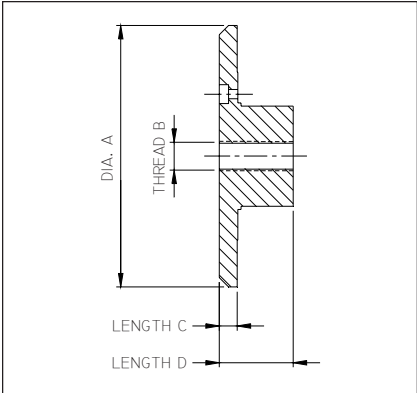
## Air Cylinder Accessories

### End Cap For Spindle Liners

	<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
	ECS-34	1.350" 34.3mm	2.375" 60.3mm	3.500" 88.9mm	M5	2.000" 50.8mm
	ECS-42	1.650" 41.9mm	2.680" 68mm	4.200" 106.7mm	M6	2.375" 60.3mm

End caps for spindle liners are made from steel and are designed to replace the standard end cap supplied with LDZ Air Cylinders. Spindle liner end caps include (3) tapped holes that are used to mount the spindle liner to the air cylinder assembly.

### End Caps For Rotary Air/Coolant Unions

	<i>Model</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
	ECS-34	2.730" 69.3mm	3/8" - 32 UNEF	1.000" 25.4mm	.250" 6.4mm
	ECS-34	3.500" 88.9mm	3/8" - 32 UNEF	1.000" 25.4mm	.250" 6.4mm
	ECS-42	4.200" 106.7mm	5/8" - 18 UNF	1.250" 31.8mm	.375" 9.5mm

End caps for rotary unions are made from steel and are intended to replace the standard end cap supplied with LDZ Air Cylinders. The threaded hole in the center of the rotary union end cap is tapped through making it possible to mount a pipe in the ID of the draw tube to deliver coolant or air to the workholding fixture.

## Operating Valves



<i>Model</i>	<i>Port Size</i>	<i>Max Pressure</i>	<i>Handle Movement</i>
HV-10	1/8" NPT	150 psi 10 kg/cm <sup>2</sup>	1/4 Turn

The HV-10 is a 3 position manually operated valve that directs and exhausts air to open and close LDZ Air Cylinders.

## Air Filter/Regulator/Lubricator Units



<i>Model</i>	<i>Port Size</i>	<i>Max Pres.</i>	<i>Operating Range</i>
FRL-15	1/8" NPT	150 psi 10 kg/cm <sup>2</sup>	5 to 125 psi 0.5 to 9 kg/cm <sup>2</sup>

The FRL-15 is used to set operating air pressure of LDZ Air Cylinders. This unit also provides lubrication to the rotary air bearing assembly and filters contaminants from the air supply. Water that accumulates in the filter unit can be purged by the manual drain. A pressure gage is included with each unit.

## Rotary Air/Coolant Unions



<i>Model</i>	<i>Inlet Port</i>	<i>Rotor Thread</i>	<i>Max Pres.</i>	<i>Max rpm</i>
RU-10	1/8" NPT	3/8" - 32 UNEF	150 psi 10 kg/cm <sup>2</sup>	6,000 rpm
RU-20	1/4" NPT	5/8" - 18 UNF	150 psi 10 kg/cm <sup>2</sup>	4,000 rpm

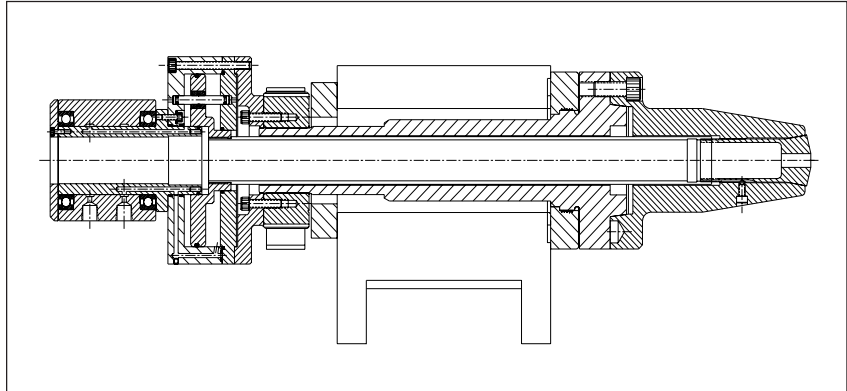
Rotary unions can be mounted to the rear of LDZ Air Cylinders to supply coolant or air through the machine spindle to the workholding fixture.

## *Air Cylinder Options*

### *Mounting Plates & Draw Tubes*

Spindle mounting plates and draw tubes to adapt LDZ Air Cylinders to a specific machine spindle or rotary table are quoted on request.

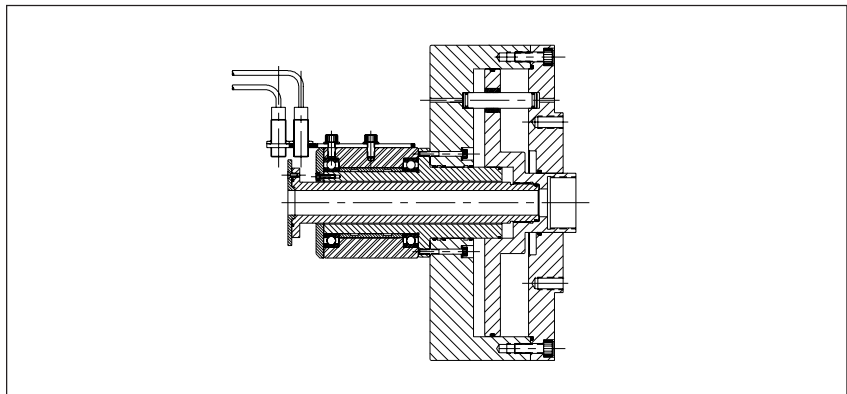
Refer to page 10 for spindle data sheet.



## *Proximity Switches*

A proximity switch kit is available for most LDZ Cylinders. Proximity switches provide a signal to the machine control to confirm whether the chuck or workholding fixture is clamped or unclamped.

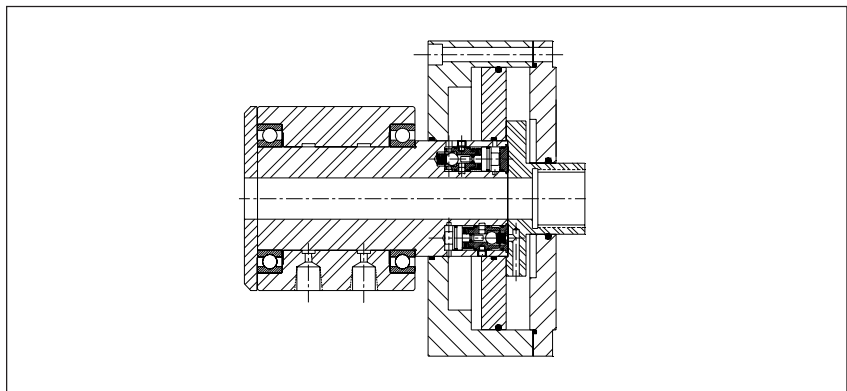
Contact our sales engineers for information on proximity switch kits for LDZ Cylinders.



## *Check Valves*

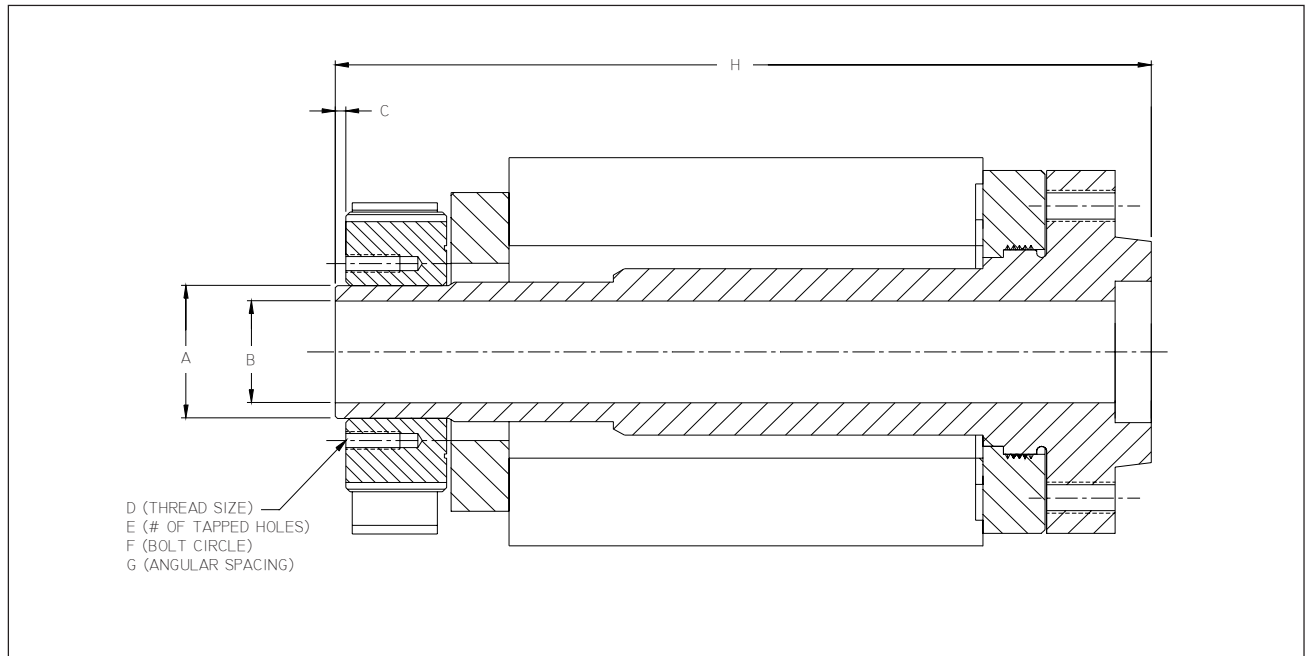
Special LDZ Cylinders are available with integral check valves. Check valves will maintain air pressure in the cylinder and keep the chuck or workholding fixture clamped in the event there is an interruption to the air supply.

Contact our sales engineers for information on LDZ Cylinders with check valves.



# Spindle Data Sheet

Company		Date	
Cylinder Model		Ref. No.	



A completed copy of this data sheet is required when LDZ Air Cylinders are supplied with spindle adapter plates and draw tubes.

If the spindle of your machine has a threaded mounting or is configured differently than this diagram, a detailed drawing of the spindle must be submitted to assure that the adapter plate and draw tube that is supplied is correct.

Contact us at **1-800-573-1139** if you have any questions about completing this data sheet.

Machine Make	
Machine Model	
Machine Serial No.	
A Pilot Diameter	
B Spindle Bore	
C Length of Pilot	
D Thread Size	
E # of Tapped Holes	
F Bolt Circle	
G Angular Spacing	
H Length of Spindle	



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