

# BCZUS *UNIVERSAL SERIES BCZUS NOZZLE CYLINDERS*



*DIRECT REPLACEMENT FOR SIDEL®  
UNIVERSAL CSD MACHINES*



**ISO 9001  
REGISTERED**

Quality Management  
System Certified

BCZUS01



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# ORDERING DATA: SERIES BCZUS UNIVERSAL NOZZLE CYLINDERS

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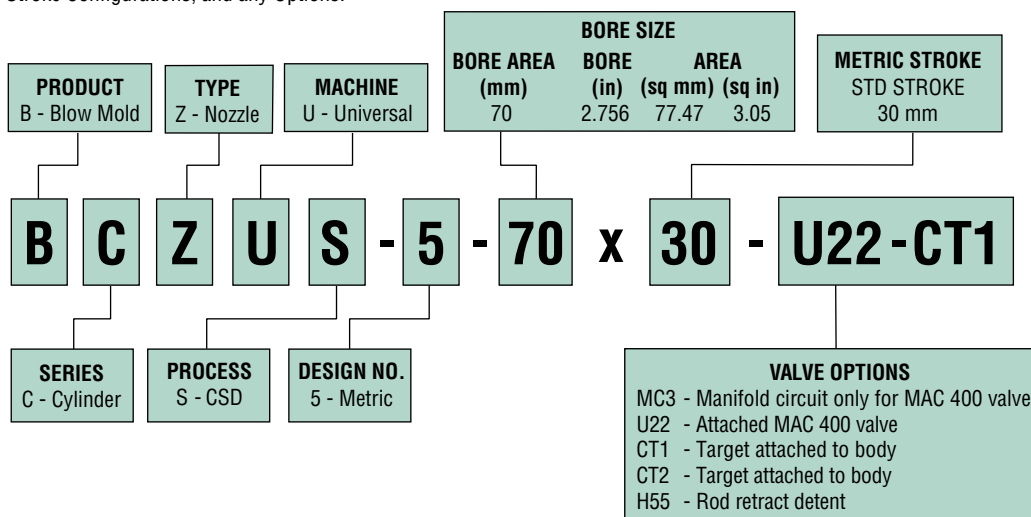


THE FOLLOWING IS A CROSS REFERENCE LISTING OF PHD TO SIDEL® UNITS:

PHD	SIDEL
BCZUS-5-7 X 30-U22-CT1	15.01124520804A
BCZUS-5-7 X 30-U22-CT2	15.01131571501 15.01131444603 15.01124638605A

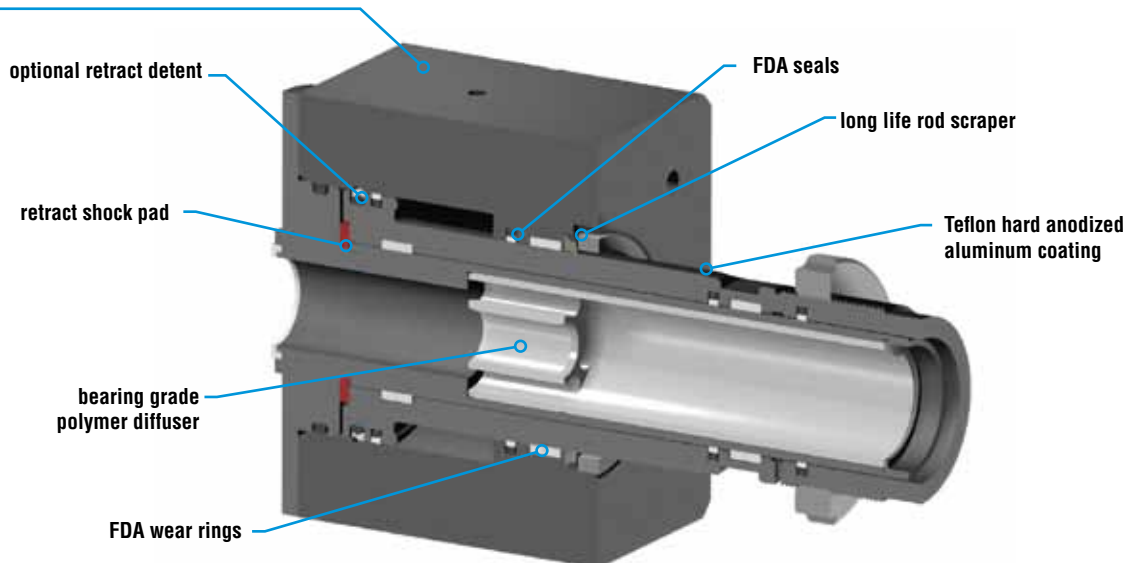
### TO ORDER, SPECIFY:

Product, Series, Type, Machine No., Process, Design No., Bore Size, Stroke Configurations, and any Options.



# BENEFITS: SERIES BCZUS UNIVERSAL NOZZLE CYLINDERS

## Long-life Features



## Major Benefits

- Unit is designed to operate for 20 million cycles
- Drop-in replacement for OEM
- FDA materials used on all soft components inside unit
- Lube-free high pressure section
- Improved geometry over OEM to reduce component fatigue
- Optional internal detent to keep unit in the retract position with loss of air pressure and during service reducing chance of damaged transfer arms
- Composite, high wear resistant, rod scraper
- Tooling kit available for in field re-build

# ENGINEERING DATA: SERIES BCZUS UNIVERSAL NOZZLE CYLINDERS

CYLINDER SPECIFICATION	IMPERIAL	METRIC
Type	Pneumatic Cylinder	
Series	BCZU Two Step Nozzle Cylinder	
Operation	Double Acting	
Bore Size - Actuator	2.756 in	70 mm
Stroke	1.181 in	30 mm
Piston Rod Diameter	2.205 in	56 mm
Bore Area Extend	3.680 in <sup>2</sup>	23.74 cm <sup>2</sup>
Bore Area Retract	2.147 in <sup>2</sup>	13.85 cm <sup>2</sup>
Operating Pressure Range	30 - 145 psi	2.1 - 10 bar
Blow Pressure	580 psi	40 bar
Theoretical Extend Output @ 87 psi (6 bar)	320.2 lbf	1424.4 N
Theoretical Retract Output @ 87 psi (6 bar)	186.7 lbf	830.5 N
Ambient and Fluid Temperature	-20°F to +180°F	-29°C to +82°C
Stroke Time - Applied Power to End of Stroke	Extend 50 ms, Retract 110 ms	
Stroke Time - Start of Movement to End of Stroke	Extend 32 ms, Retract 65 ms	
Lubrication	N/A	
Port Size	N/A	
Glide Ring	FDA Internally Lubricated Engineered Polymer	
Piston & Rod Seals	FDA Internally Lubricated Engineered Polymer	
Bumper	FDA Polyurethane	
Cap	Teflon Hard Anodized Aluminum	
Cylinder Body	Teflon Hard Anodized Aluminum	
Piston Rod	Teflon Hard Anodized Aluminum	
Rod Bearing	FDA Internally Lubricated Engineered Polymer	

VALVE SPECIFICATIONS	
Series	Mac 400 series
Pressure [Max]	125 psi
Flow [Max]	1.0 Cv
Function	5/2
Operator	Single
Pilot	Internal
Spool Return	4 way Pilot
Solenoid	24Vdc, 0.15W
Electrical Connector	Form "B"
Manual Operator	Non-locking Recessed
Pilot Exhaust	Muffled

## LIFE EXPECTANCY

Series BCZUS Cylinders have been designed for 20 million trouble-free cycles.

## CYCLE RATE

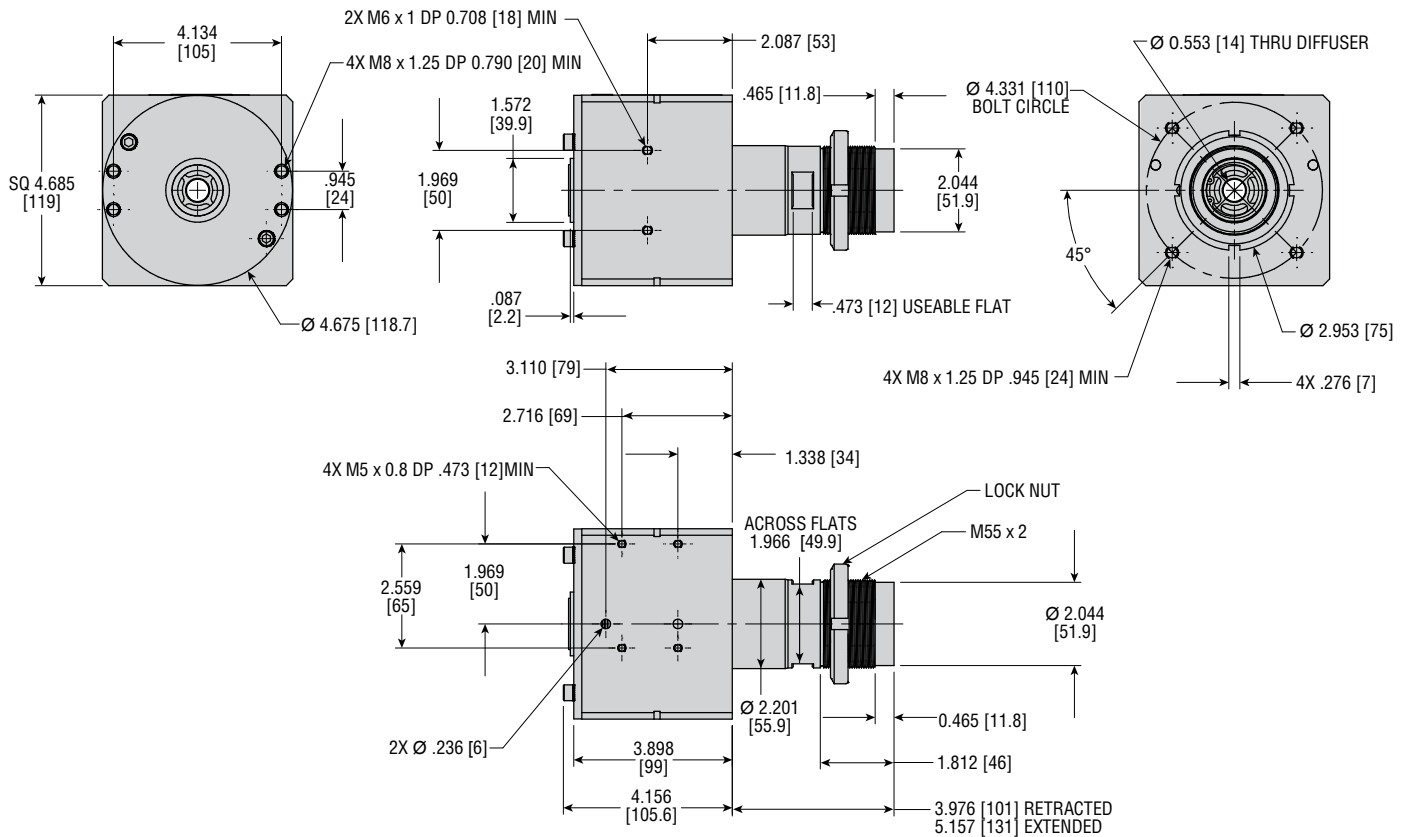
Series BCZUS Nozzle Cylinders meet or exceed cycle rate of competitor's unit when using optional manifold/valve combinations.

## MAINTENANCE

As with most PHD products, these cylinders are field repairable. Repair kits, tooling kits, and main structural components are available as needed for extended service. Rebuild service is available.

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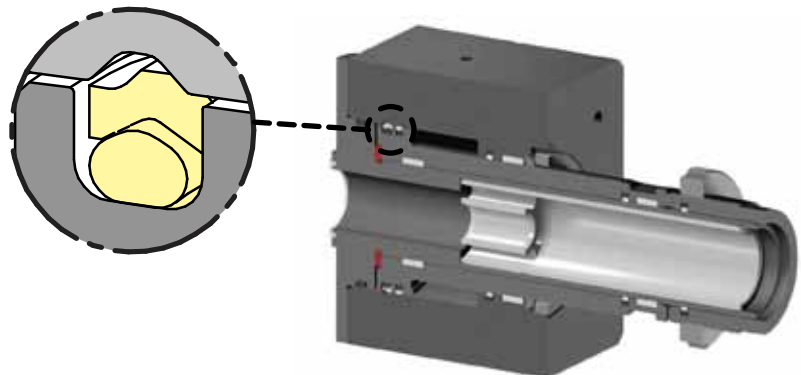
# DIMENSIONS: SERIES BCZUS UNIVERSAL NOZZLE CYLINDERS



# OPTIONS: SERIES BCZUS UNIVERSAL NOZZLE CYLINDERS

## H55 ROD RETRACT DETENT

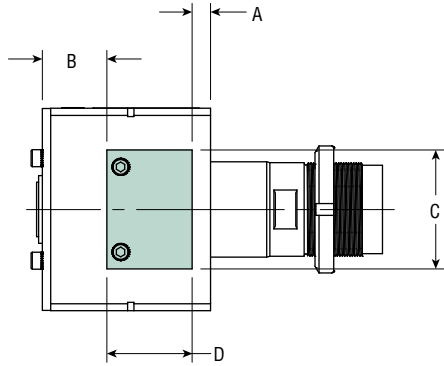
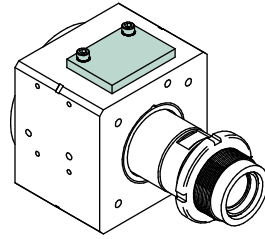
The H55 option provides additional retract position retention force. This additional retention force reduces the potential for nozzle drooping when the air pressure is removed.



# OPTIONS: SERIES BCZUS UNIVERSAL NOZZLE CYLINDERS

## CT1 CT2 TARGET ATTACHED TO BODY

The CT1 & CT2 target option is required for sensing of the cylinder on the machine.

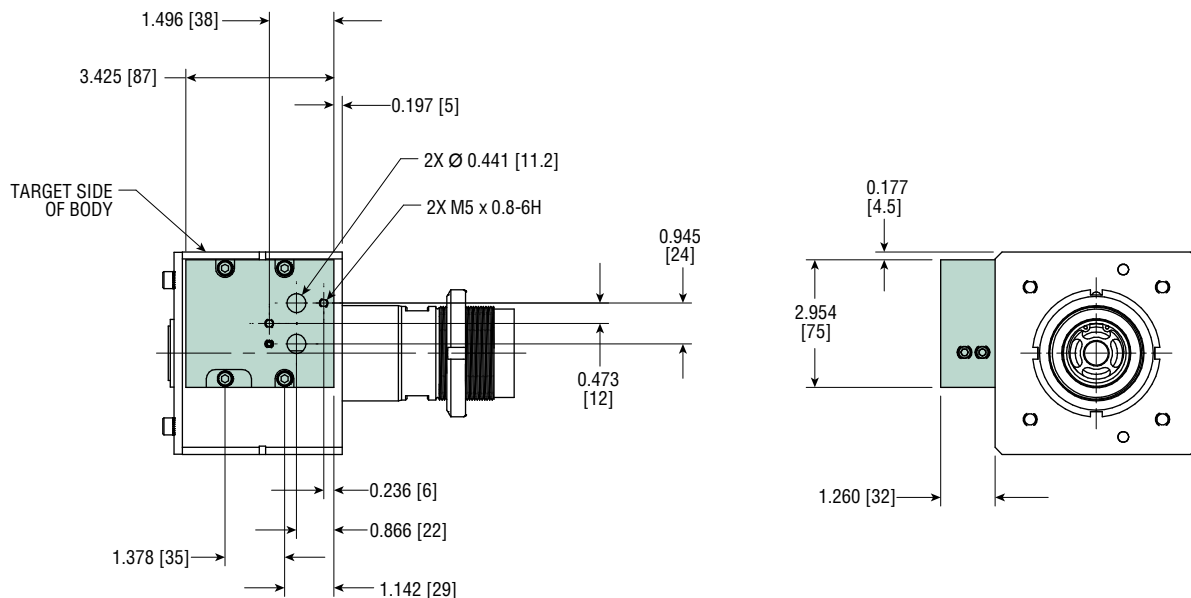
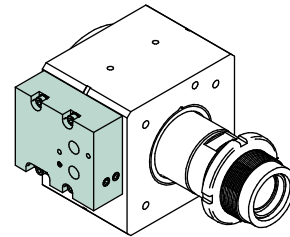


UNIT SIZE	-CT1 OPTION LETTER DIMENSIONS			
	A	B	C	D
BCZUS-5-70-CT1	0.433 [11.0]	1.496 [38.0]	2.756 [70.0]	1.969 [50.0]

UNIT SIZE	-CT2 OPTION LETTER DIMENSIONS			
	A	B	C	D
BCZUS-5-70-CT2	0.826 [21.0]	1.103 [28.0]	2.756 [70.0]	1.969 [50.0]

## MC3 MANIFOLD CIRCUIT ONLY FOR MAC 400 SERIES VALVE

The MC3 option provides a manifold circuit only for use with MAC 400 Series valves. All hardware relating to mounting the manifold such as fasteners and seals will be provided in kit form.

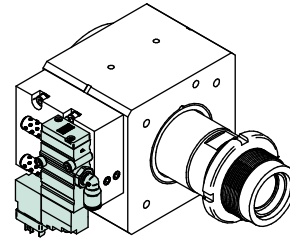


All dimensions are reference only unless specifically tolerated.

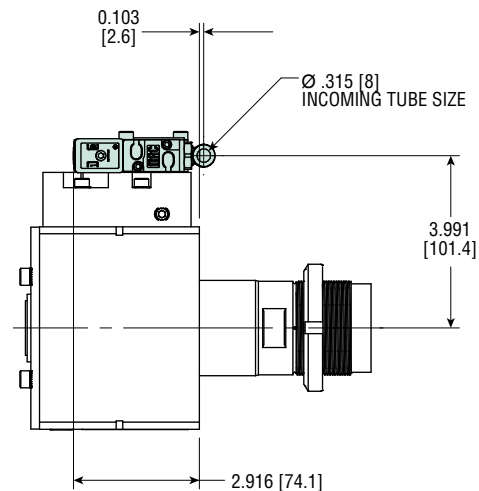
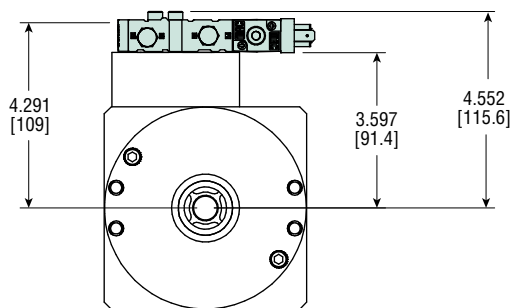
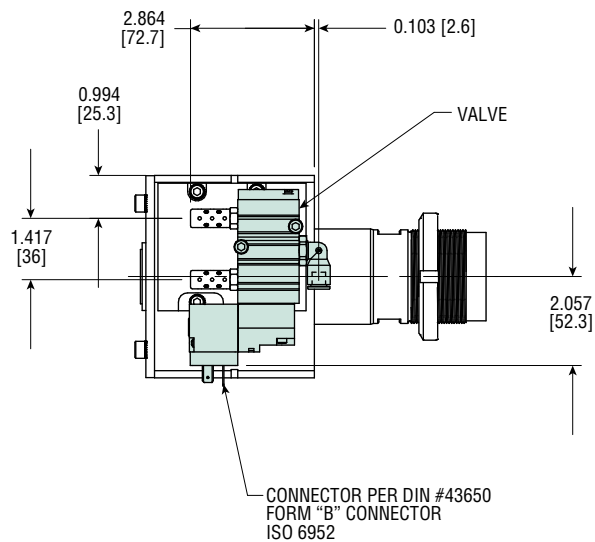
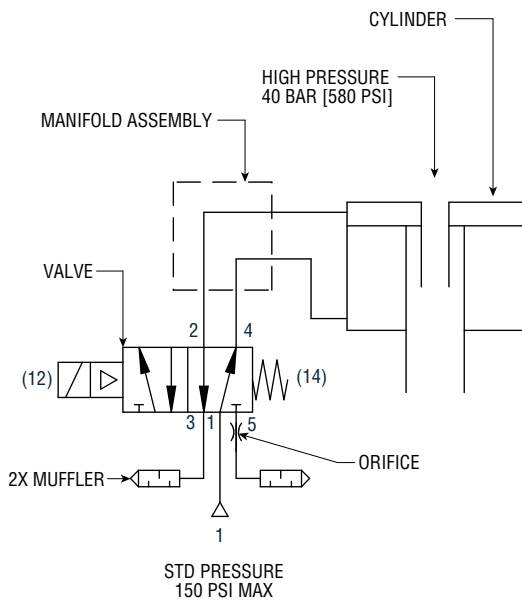
# OPTIONS: SERIES BCZUS UNIVERSAL NOZZLE CYLINDERS

## U22 ATTACHED MAC 400 SERIES VALVE

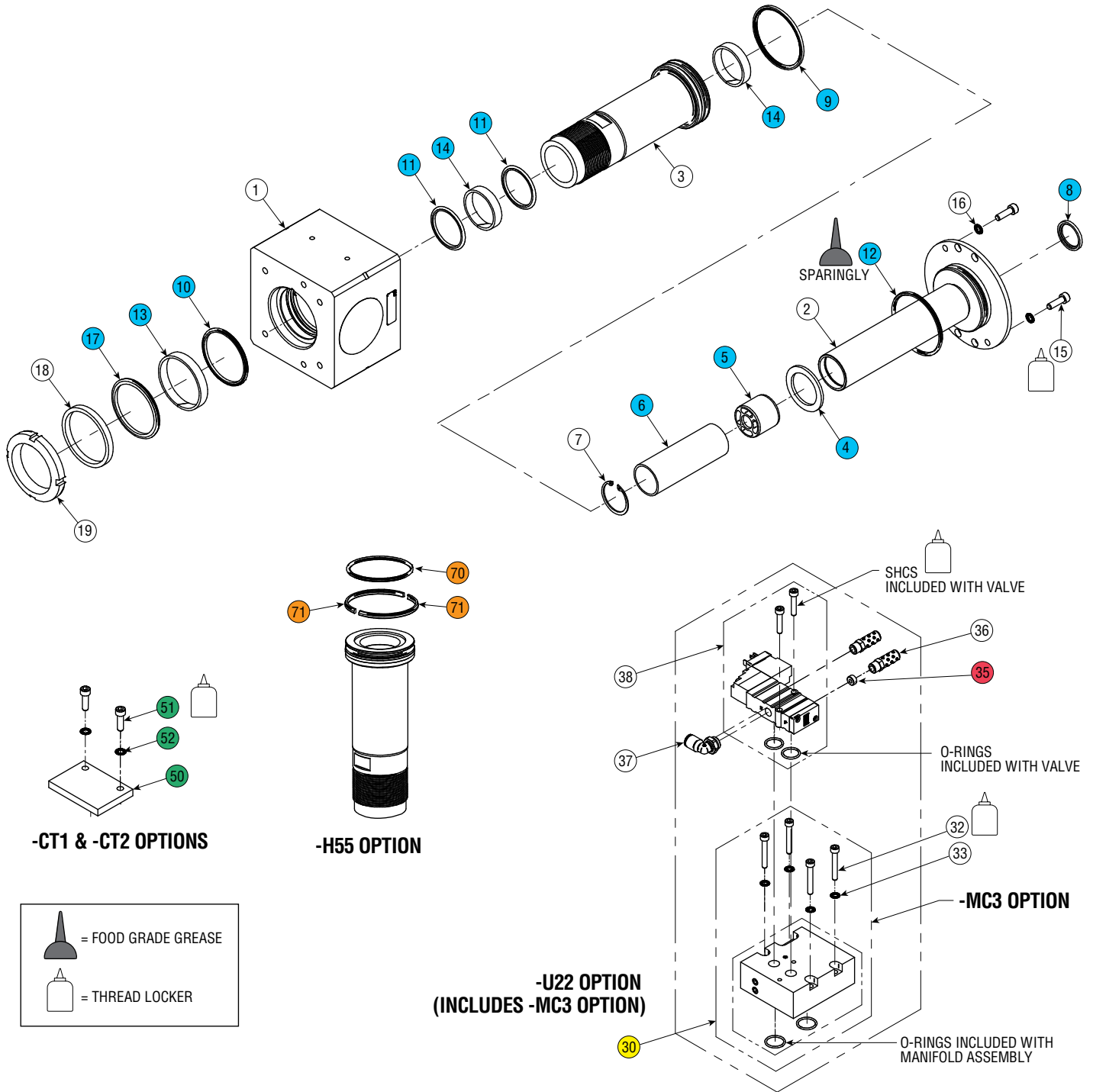
The U22 option provides a manifold mounted valve combination that uses a MAC 400 Series valve. An exhaust orifice is installed in the valve so that the cylinder will achieve cycle rates of an OEM cylinder.



### PLUMBING SCHEMATIC



# EXPLODED VIEW: SERIES BCZUS UNIVERSAL NOZZLE CYLINDERS



KIT DESCRIPTION	KIT NUMBER	COLOR CODE
Repair Kit	Full unit description required followed by -H9010	
Detent Kit	85082	
Manifold Kit	86255	
Orifice Kit	86256	
-CT1 Target Kit	86291	
-CT2 Target Kit	86292	
Repair Tooling	86257	Not Shown



# PARTS LIST: SERIES BCZUS UNIVERSAL NOZZLE CYLINDERS

## CYLINDER ONLY PARTS LIST

KEY	PART DESCRIPTION	PART NO.
1	Body	86225
2	Cap	86226
3	Piston	86227
4	Shock Pad	86228
5	Diffuser	86229
6	Spacer Tube	86230
7	Retaining Ring	Full unit description required followed by -H7101
8	Compression Seal	Sold as part of Repair Kit (-H9010*)
9	70mm Piston Seal	Sold as part of Repair Kit (-H9010*)
10	56mm Rod Seal	Sold as part of Repair Kit (-H9010*)
11	40mm Rod Seal	Sold as part of Repair Kit (-H9010*)
12	O-Ring Seal	Sold as part of Repair Kit (-H9010*)
13	56mm Wear Ring	Sold as part of Repair Kit (-H9010*)
14	40mm Wear Ring	Sold as part of Repair Kit (-H9010*)
15	Fastener	61054-118
16	Serrated Safety Washer	84141-008-02
17	56mm Rod Scraper	Sold as part of Repair Kit (-H9010*)
18	Rod Scraper Retainer	86237
19	Locking Nut	Full unit description required followed by -H3600

**NOTE:** \* Full unit description required (followed by -Hxxxx)

### -MC3 OPTION PARTS LIST

KEY	PART DESCRIPTION	PART NO.
30	Manifold Assembly	86240
32	Fastener	61054-106
33	Serrated Safety Washer	84141-007-02

### -CT1 OPTION PARTS LIST

KEY	PART DESCRIPTION	PART NO.
50	Target	86239
51	Fastener	61054-118
52	Serrated Safety Washer	84141-008-02

### -U22 OPTION PARTS LIST

KEY	PART DESCRIPTION	PART NO.
30	Manifold Assembly	86240
32	Fastener	61054-106
33	Serrated Safety Washer	84141-007-02
35	Orifice Plug	86242
36	Muffler	86957
37	Elbow Fitting	61734-053
38	400 Series Mac Valve	86243

### -CT2 OPTION PARTS LIST

KEY	PART DESCRIPTION	PART NO.
50	Target	86239
51	Fastener	61054-118
52	Serrated Safety Washer	84141-008-02

### -H55 OPTION PARTS LIST

KEY	PART DESCRIPTION	PART NO.
70	O-Ring Seal	1950-143-14
71	Detent Ring	87095

**NOTE:** \* Full unit description required (followed by -Hxxxx)