



**SERIES BCSU UNIVERSAL STRETCHING CYLINDER  
START-UP AND INFORMATION SHEET**

# IMPORTANT INFORMATION DO NOT DISCARD!

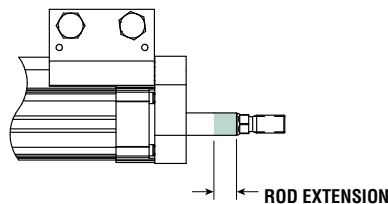
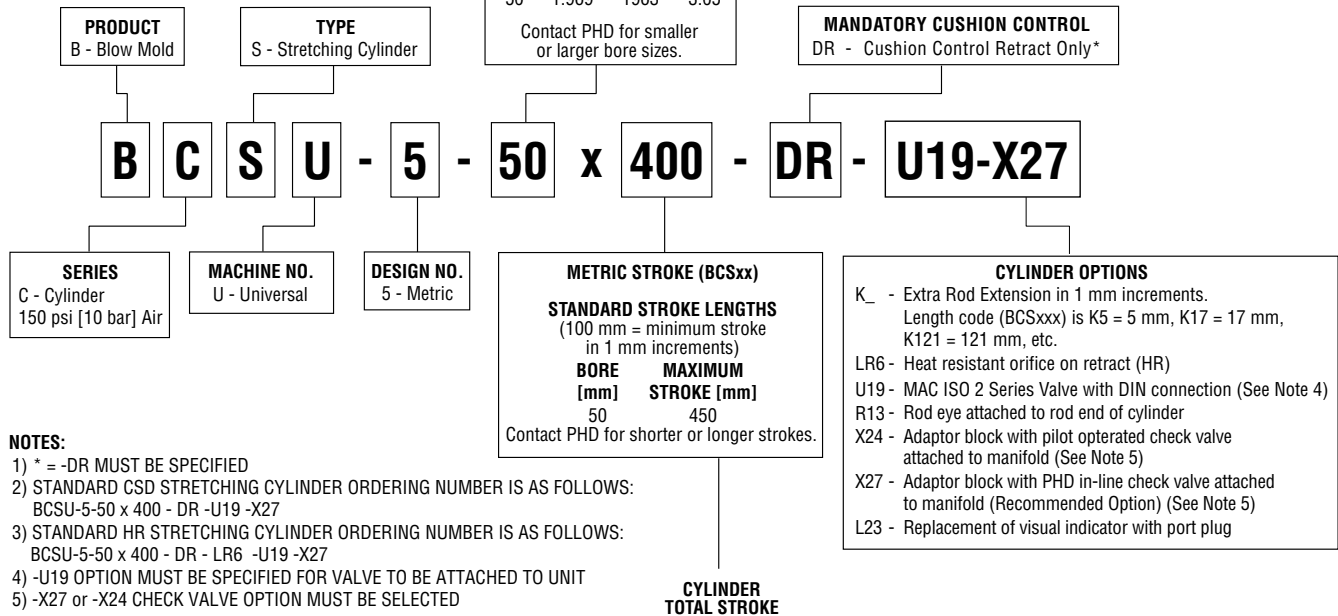
Use this information sheet to assist with cylinder installation and setup.  
File with maintenance or machine documentation.

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

PHD	SIDEL	REPLACES PHD ML#
BCSU-5-50 x 400-DR-U19-X24 BCSU-5-50 x 400-DR-X24	1129149801 & 1137662801	ML308217 ML306987
BCSU-5-50 x 400-DR-LR6-U19-X24 BCSU-5-50 x 400-DR-LR6-X24 BCSU-5-50 x 400-DR-LR6-X27	1129263701 & 1137662701	ML309326 ML307364 ML313256

**TO ORDER, SPECIFY:**

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



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**phd,inc.** P.O. Box 9070, Fort Wayne, IN 46899  
1-800-624-8511  
www.phdinc.com

# phd® START-UP PROCEDURE: SERIES BCSU UNIVERSAL STRETCHING CYLINDER

## TEMPERATURE LIMITS

Series BCSU Stretching Cylinders are designed for use in temperatures from -20° to +180°F [-29° to +82°C]. For temperatures outside this range, consult PHD.

## PRESSURE RATINGS

All Series BCSU Stretching Cylinders have an operating pressure range of 7.5 psi minimum to 150 psi maximum [0.5 to 10 bar].

## LUBRICATION

Series BCSU Stretching Cylinders are lubricated internally at the factory for the life of the cylinder using lubrication per FDA Regulation 21CFR 178.3570.

## CUSHIONS

Standard placement of the cushion is in location 8 (full retract, cap). The cushion needle is pre-adjusted from the factory for the life of the cylinder at 2-1/8 full turn from fully closed position. Different adjustment of the cushion needle could void the warranty of the BCSU Stretching Cylinder.

## PHD UNLIMITED - UNIQUE SOLUTIONS®

A model number "ML-xxxxxx" indicates the unit is a unique solution. Contact your local distributor or PHD, Inc. for a complete cylinder description. ML308217, ML306987, ML309326, ML307364, and ML313256 have been replaced by Series BCSU Stretching Cylinders.

## START-UP PROCEDURES

Proper alignment of cylinder to stretch housing must be assured. (See alignment procedures.) Care should be taken to provide adequate space for the rod to extend from cylinder. Cushion needles are pre-adjusted from the factory.

## CYLINDER ALIGNMENT PROCEDURES

To maximize the service life of stretching cylinders, careful installation is key.

This guide is a suggestion of practices that machine operators and maintenance personnel routinely use to ensure satisfactory stretching cylinder performance.

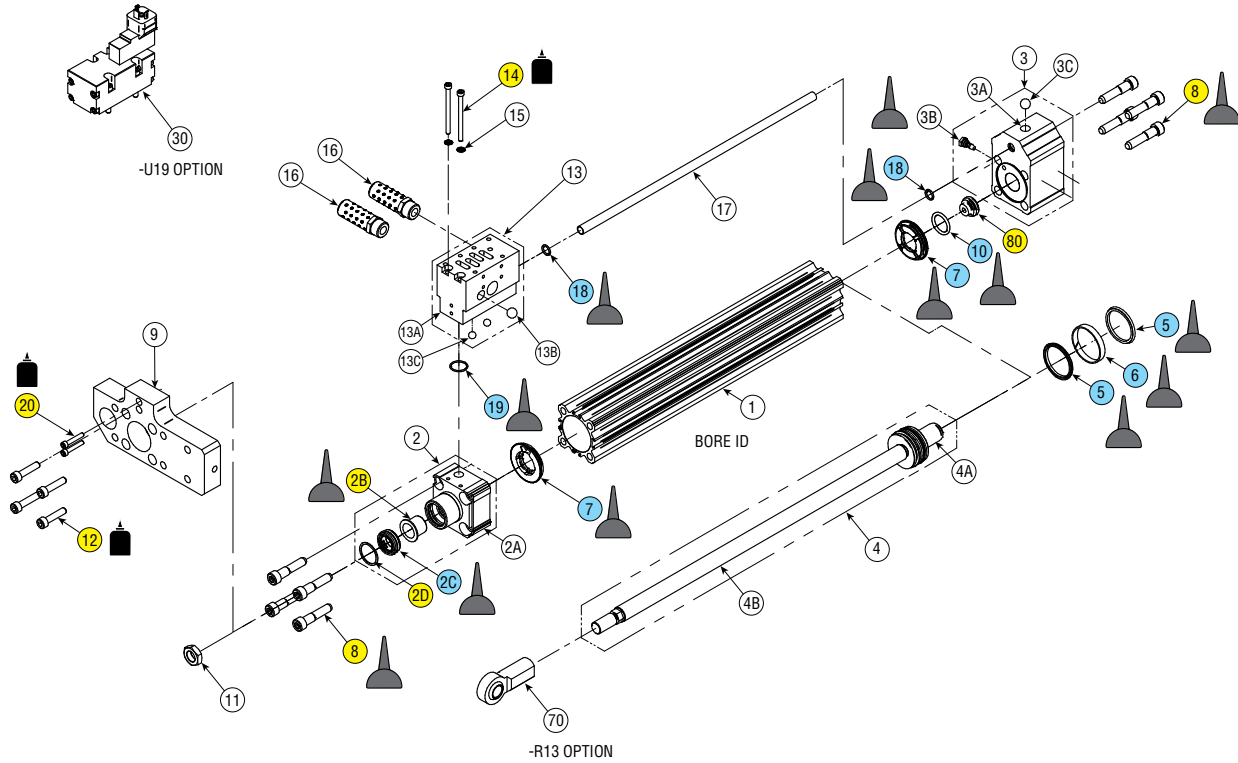
- 1) Place the new cylinder in the proper location and loosely thread in the fasteners to insure cylinder support but not interfere with locational adjustment
- 2) Attach the rod eye to the cylinder and stretch housing
- 3) Manually slide the stretch housing up and down to help center the cylinder
- 4) Torque the cylinder mounting fasteners in a incremental diagonal pattern
- 5) Verify that the stretch housing manually slides freely up and down and that the cylinder does not bind up at any point in travel
- 6) Reconnect air and power to the cylinder
- 7) Set stretching cam location per the machine builders instructions
- 8) Pneumatically cycle the cylinder to ensure proper function

These general guidelines can assist in proper installation of the stretching cylinders to achieve maximum performance.

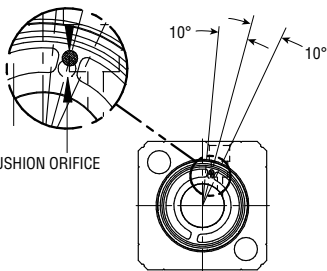
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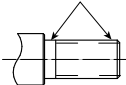
# phd PARTS LIST & REPAIR KITS: SERIES BCSU UNIVERSAL STRETCHING CYLINDER



MULTI-FUNCTION SEAL ORIFICE

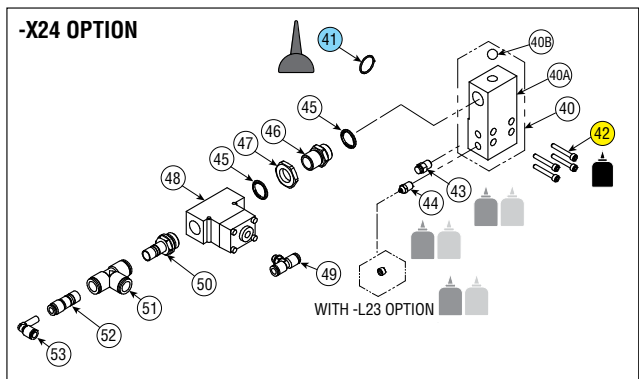
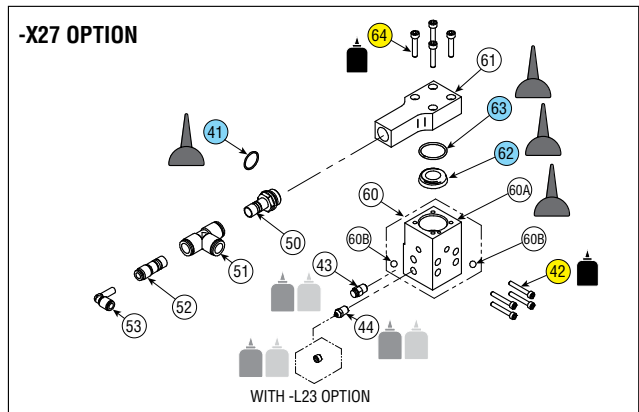


APPLY ADHESIVE TO BOTH SHOULDER & THREADS



ALIGN CUSHION ORIFICE IN CAP WITH CUSHION ORIFICE HOLE IN MULTI-FUNCTION SEAL SO THAT CUSHION ORIFICE HOLE IS NOT BLOCKED MUST BE FREE FLOW THRU ORIFICE

- = LOCTITE 242 THREAD LOCKER
- = LOCTITE HYDRAULIC SEALANT
- = LUBRICANT PER FDA REGULATION 21CFR 178.3570
- = LOCTITE PRIMER 7090



KIT DESCRIPTION	KIT NUMBER	COLOR CODE
Seal Kit	Full unit description required followed by -H9000	
Repair Kit	Full unit description required followed by -H9010	
Cushion Needle Kit	Full unit description required followed by -H6530	

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# PARTS LIST & REPAIR KITS: SERIES BCSU UNIVERSAL STRETCHING CYLINDER

## CYLINDER ONLY PARTS LIST

KEY	PART DESCRIPTION	PART NO.
1	Finished Tube	Full unit description required followed by -H1300
2	Head Assembly	Full unit description required followed by -H1100
2A	Finished Head	Sold as part of Head Assembly
2B	Rod Bushing	Sold as part of Repair Kit (-H9010*)
2C	Rod Seal	Sold as part of Seal kit (-H9000*) & Repair Kit (-H9010*)
2D	Retaining Ring	Sold as part of Repair Kit (-H9010*)
3	Cap Assembly	Full unit description required followed by -H1200
3A	Finished Cap	Sold as part of Cap Assembly
3B	Needle Assembly	Sold as part of Cap Assembly, Sold as part of Cushion Kit -6530
3C	Steel Ball	Sold as part of Cap Assembly
4	Piston & Rod Assembly	Full unit description required followed by -H1000
4A	Piston	Sold as part of Piston & Rod Assembly
4B	Rod	Sold as part of Piston & Rod Assembly
5	Piston Seal	Sold as part of Seal kit (-H9000*) & Repair Kit (-H9010*)
6	Wear Ring	Sold as part of Repair Kit (-H9010*)
7	Multi-function Impact Seal	Sold as part of Seal kit (-H9000*) & Repair Kit (-H9010*)
8	Custom Shoulder Bolt	Sold as part of Repair Kit (-H9010*)
9	Mounting Plate	87474
10	O-ring Cushion Seal	Sold as part of Seal kit (-H9000*) & Repair Kit (-H9010*)
11	Jam Nut	Full unit description required followed by -H2001
12	SHCS	Sold as part of Repair Kit (-H9010*)
13	Manifold Assembly	Full unit description required followed by -H9090
13A	Manifold	Sold as part of Manifold Assembly
13B	Steel Ball	Sold as part of Manifold Assembly
13C	Steel Ball	Sold as part of Manifold Assembly
14	SHCS	Sold as part of Repair Kit (-H9010)
15	Serrated Safety Washer	84141-007-02
16	Muffler	73616
17	Finished Steel Tube	Full unit description required followed by -H1310
18	O-ring Seal	Sold as part of Seal kit (-H9000*) & Repair Kit (-H9010*)
19	O-ring Seal	Sold as part of Seal kit (-H9000*) & Repair Kit (-H9010*)
20	SHCS	Sold as part of Repair Kit (-H9010*)
80	Shock Pad	Sold as part of Repair Kit (-H9010*)

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

## -U19 OPTION PARTS LIST

KEY	PART DESCRIPTION	PART NO.
30	Mac ISO 2 Valve	78212

## -X24 OPTION PARTS LIST

KEY	PART DESCRIPTION	PART NO.
40	Inlet Adaptor Assembly	Sold as part of Repair Kit (-H9010*)
40A	Inlet Adaptor	Sold as part of Inlet Adaptor Assembly
40B	Steel Ball	Sold as part of Inlet Adaptor Assembly
41	O-ring Seal	Sold as part of Seal kit (-H9000*) & Repair Kit (-H9010*)
42	SHCS	Sold as part of Repair Kit (-H9010)
43	Push Button Bleed Valve	85084-02
44	Mini Pneumatic Indicator	85083
45	Sealing Washer	77629-004
46	Male to Male Nipple	81525
47	BSP Nut	87476
48	Pilot Operated Check Valve	77187
49	Branch Tee Fitting	Full unit description required followed by -H4250
50	Threaded Adaptor Fitting	74345-020
51	Intermediate Tee Fitting	74345-040
52	Fitting Reducer	74345-141
53	Compact Elbow Fitting	61734-150

## -X27 OPTION PARTS LIST

KEY	PART DESCRIPTION	PART NO.
60	Inlet Adaptor Assembly	Sold as part of Repair Kit (-H9010*)
60A	Inlet Adaptor	Sold as part of Inlet Adaptor Assembly
60B	Steel Ball	Sold as part of Inlet Adaptor Assembly
61	Inlet Adaptor Cap	Sold as part of Repair Kit (H9010)
62	Check Seal	85662
63	O-ring Seal	Sold as part of Seal kit (-H9000*) & Repair Kit (-H9010*)
41	O-ring Seal	Sold as part of Seal kit (-H9000*) & Repair Kit (-H9010*)
42	SHCS	Sold as part of Repair Kit (-H9010)
43	Push Button Bleed Valve	85084-02
44	Mini Pneumatic Indicator	85083
50	Threaded Adaptor Fitting	74345-020
51	Intermediate Tee Fitting	74345-040
52	Fitting Reducer	74345-141
53	Compact Elbow Fitting	61734-150

## -R13 OPTION PARTS LIST

KEY	PART DESCRIPTION	PART NO.
70	Rod Eye	63429-003-01

## -L23 OPTION PARTS LIST

KEY	PART DESCRIPTION	PART NO.
54	Port Plug	1992-001-01

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

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