



# START-UP & INFORMATION SHEET: SERIES BCK STRETCHING ROD CYLINDERS

## IMPORTANT INFORMATION DO NOT DISCARD!

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

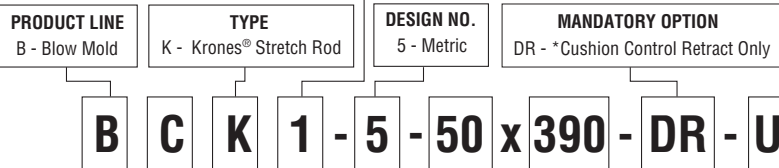
### MODEL NUMBER DEFINITION

#### TO ORDER SPECIFY:

Product Line, Series, Type, OEM Cylinder No.,  
Design No., Bore Size, Metric Stroke, Mandatory  
Option, and Cylinder Options if required.

#### OEM CYLINDER NO.

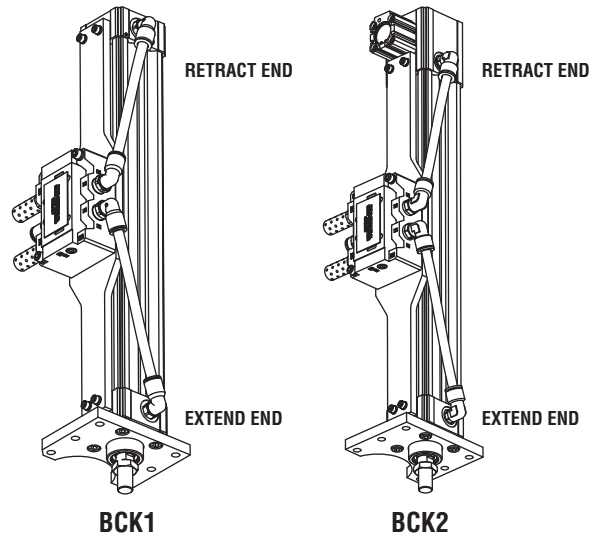
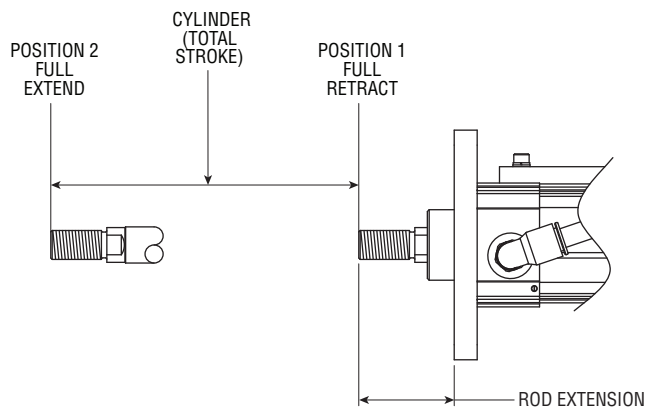
- 1 - Without retract lock  
0-900-99-743-0 / 0-902-52-569-9  
2 - With retract lock  
0-902-52-268-9 / 0-901-85-956-4 / 0-902-18-438-0



SERIES	BORE SIZE				METRIC STROKE		CYLINDER OPTIONS
C - Cylinder 150 psi [10 bar] Air	BORE		AREA		STANDARD STROKE LENGTHS		K_ - Extra Rod Extension in 1 mm increments Length Code (BCKxxx) is -K5 = 5 mm, -K17 = 17 mm, etc. U19 - MAC ISO 2 Series Valve with DIN Connector on Top U23 - MAC ISO 2 Series Valve with DIN Connector Rotated 90° R13 - Rod Eye Attached to Rod End of Cylinder L2116 - 16 mm incoming air line (12 mm standard) F66 - 6 wrench flats (2 wrench flats standard)
	(mm)	(in)	(sq mm)	(sq in)	BORE	MAXIMUM STROKE	
	50	1.969	1963	3.05	(mm)	(mm)	
	Contact PHD for smaller or larger bores.				50	390	
					(164 mm = Minimum Stroke in 1 mm Increments)		
					Contact PHD for longer strokes.		

#### NOTES:

- \*-DR must be specified.
- Standard stretch rod cylinder ordering number is as follows:  
BCK1-5-50 x 390 - DR (-U19)  
-U23 or -U19 options need to be specified for valve to be attached to unit.



For additional technical assistance, call or visit our website:

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

# phd® START-UP PROCEDURE: SERIES BCK STRETCHING ROD CYLINDERS

## TEMPERATURE LIMITS

Series BCK Stretch Rod 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 BCK Cylinders have an operating pressure range of 7.5 psi minimum to 150 psi maximum [0.5 to 10 bar].

## LUBRICATION

Series BCK 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 5 (full retract, cap). The cushion needle is pre-adjusted from the factory for the life of the cylinder. A tamper evident tag is placed over the control needle cavity, removal of the tag and / or adjustment of the cushion needle will void the warranty of the BCK cylinder.

## PHD UNLIMITED - UNIQUE SOLUTIONS®

A model number "ML-xxxxx" indicates the unit is a unique solution. Contact your local distributor or PHD, Inc. for a complete cylinder description. ML311941, ML313196, ML313197, ML313198, ML313199, ML313200, and ML312299 have been replaced by Series BCK 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

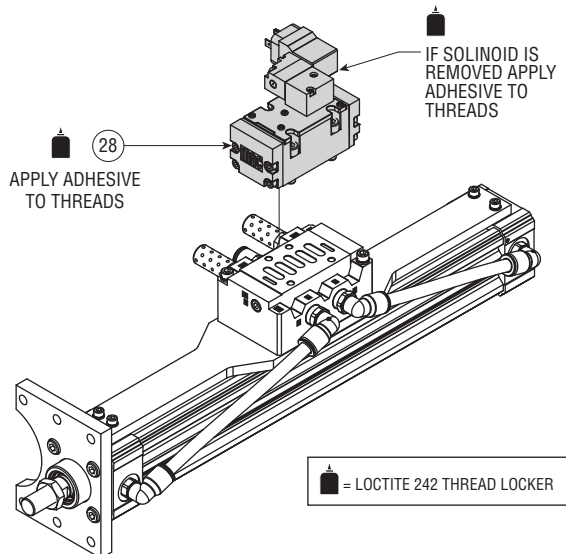
To maximize the service life of stretching cylinders, careful installation is key.

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

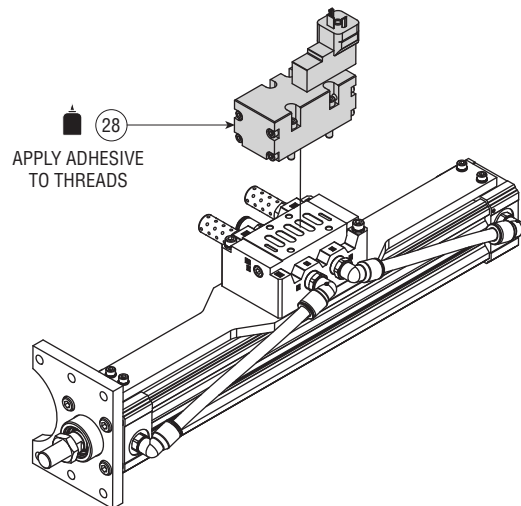
- 1) Place the new cylinder in the proper location and loosely thread in the fasteners to insure cylinder support but not interfere with locational adjustment
- 2) Attach the rod eye to the cylinder and stretch housing
- 3) Manually slide the stretch housing up and down to help center the cylinder
- 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.

## -U23 VALVE ATTACHED CONNECTOR ROTATED 90°



## -U19 VALVE ATTACHED CONNECTOR ON TOP





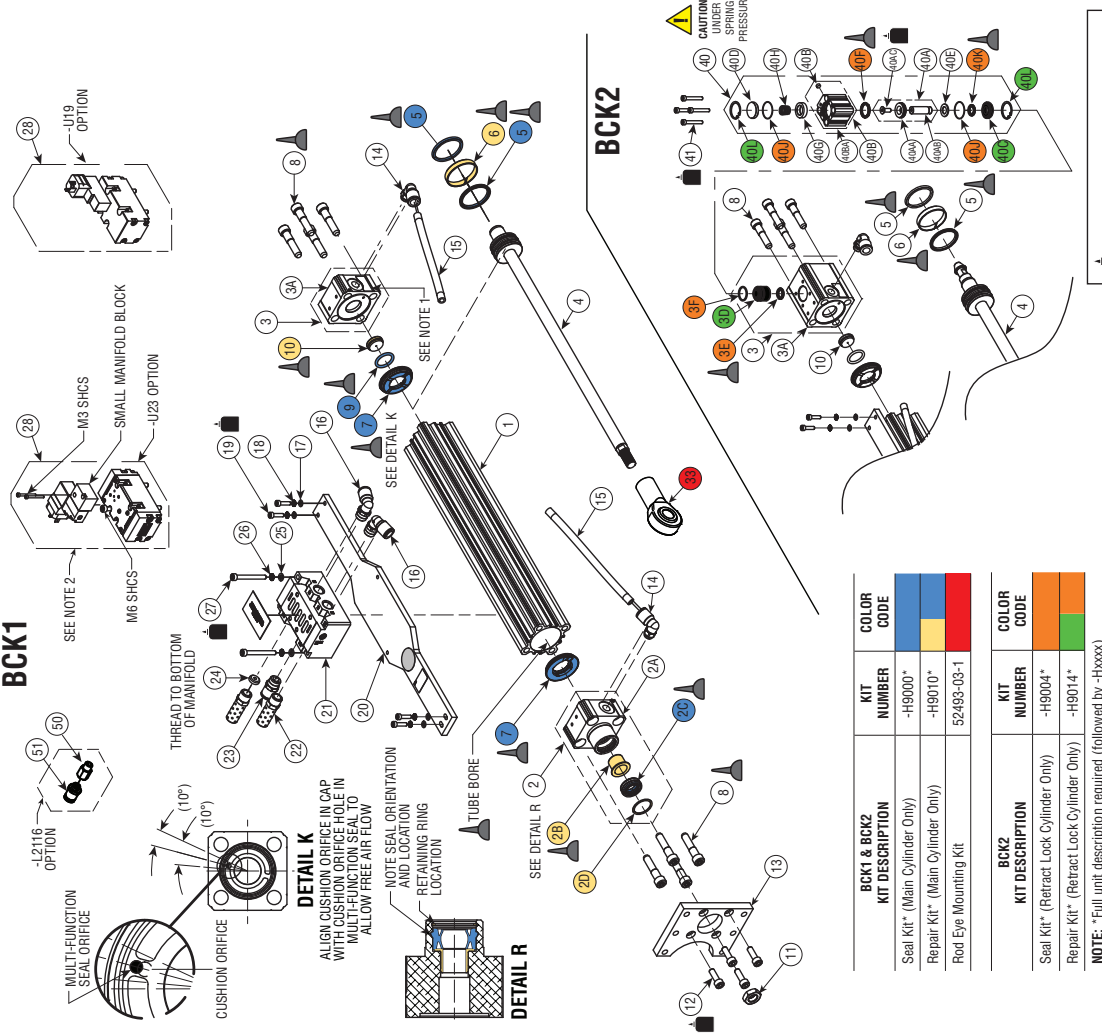
# PARTS & REPAIR KITS: SERIES BCK STRETCHING ROD CYLINDERS

KEY	PART DESCRIPTION	BCK1 & BCK2
1	Finished Tube	Full unit description followed by -H1300
2	Head Assembly	Full unit description required followed by -H1100
2A	Head	Sold as part of Head Assembly
2B	Head Bushing	Sold as part of Head Assembly
2C	Rod Seal	Sold as part of Head Assembly. Sold as part of Seal Kit (-H9000*) and Repair Kit (-H9010*)
2D	Retaining Ring	15484-119
3	Cap Assembly	Full unit description required followed by -H1200
3A	Cap	Sold as part of Cap Assembly
3B	Bushing	Sold as part of Cap Assembly. Seal kit (-H9004*) & Repair Kit (-H9014*)
3C	Rod Seal	Sold as part of Cap Assembly & Seal Kit (-H9004*)
3F	O-Ring Seal	Full unit description required followed by -H1000
4	Piston & Rod Assembly	Sold as part of Seal Kit (-H9000*)
5	Wear Ring	Sold as part of Repair Kit (-H9010*)
6	Multi-function Impact Seal	Sold as part of Seal Kit (-H9000*) and Repair Kit (-H9010*)
8	Custom Shoulder Bolt	61933-1-01
9	Cushion O-Ring Seal	Sold as part of Seal Kit (-H9000*) and Repair Kit (-H9010*)
10	Cap Shock Pad	84507
11	Lam Nut	61054-141
12	Socket Head Cap Screw	61054-141
13	Flange	Full unit description required followed by -H2005
14	1/4 BSP Elbow Fitting	74345-071
15	Finished Urethane Tubing	Full unit description required followed by -H4210
16	3/8 NPT Elbow Fitting	74345-183
17	Metric Washer	59022-005-1
18	Serrated Safety Washer	84141-007-02
19	Socket Head Cap Screw	61054-102
20	Mounting Plate	Full unit description required followed by -H4810
21	3/8 NPT ISO 2 Manifold	83424
22	3/8 NPT Muffler	83424
23	3/8 NPT Straight Fitting	74345-135
24	Port Orifice	85268
25	Metric Washer	59022-005-1
26	Serrated Safety Washer	84141-008-02
27	Socket Head Cap Screw	61054-124
50	Fitting Adaptor	86873
51	16 mm Tube Fitting	61734-138

KEY	PART DESCRIPTION	BCK2
40	Locking Cylinder Assembly	85073
40A	Piston & Rod Assembly	86649
40AA	Piston	Sold as part of Piston & Rod Assembly
40AB	Rod	Sold as part of Piston & Rod Assembly
40AC	Flat Head Cap Screw	Sold as part of Piston & Rod Assembly
40B	Body Assembly	85075
40BA	Body	Sold as part of Body Assembly
40BB	Exhaust Filler	Sold as part of Body Assembly
40C	Bushing	Sold as part of Seal kit (-H9004*) & Repair Kit (-H9014*)
40D	Plug	73878
40E	Shock Pad	53803
40F	Piston Seal	Sold as part of Seal kit (-H9004*) & Repair Kit (-H9014*)
40G	Stop Tube	86846
40H	Compression Spring	51608-002
40K	O-Ring Seal	Sold as part of Seal kit (-H9004*) & Repair Kit (-H9014*)
40L	Rod Seal	Sold as part of Seal kit (-H9004*) & Repair Kit (-H9014*)
40M	Retaining Ring	Sold as part of Repair Kit (-H9014*)
41	Socket Head Cap Screw	61054-106

KEY	OPTION	PART NUMBER
28	-U19 (ISO 2 Valve, Connector out Top)	78212
28	-U23 (ISO 2 Valve, Connector out Side)	83392
33	-R13 (See Rodeye Kit Number)	—
50	Fitting Adaptor	86873
51	16 mm Tube Fitting	61734-138



**NOTES:**

- 1) A tamper evident tag is placed over the cushion control needle cavity. Removal of the tag and/or adjustment of the cushion needle will void the warranty of the cylinder.
- 2) **CAUTION:** When attaching the -U23 option to the cylinder manifold (21), the two M6 SHCS that hold the pilot block to the valve body must be removed in order to properly attach the valve to the manifold. If the M6 SHCS are not properly torqued, the valve may leak and the SHCS will damage both the pilot block and the valve body.

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