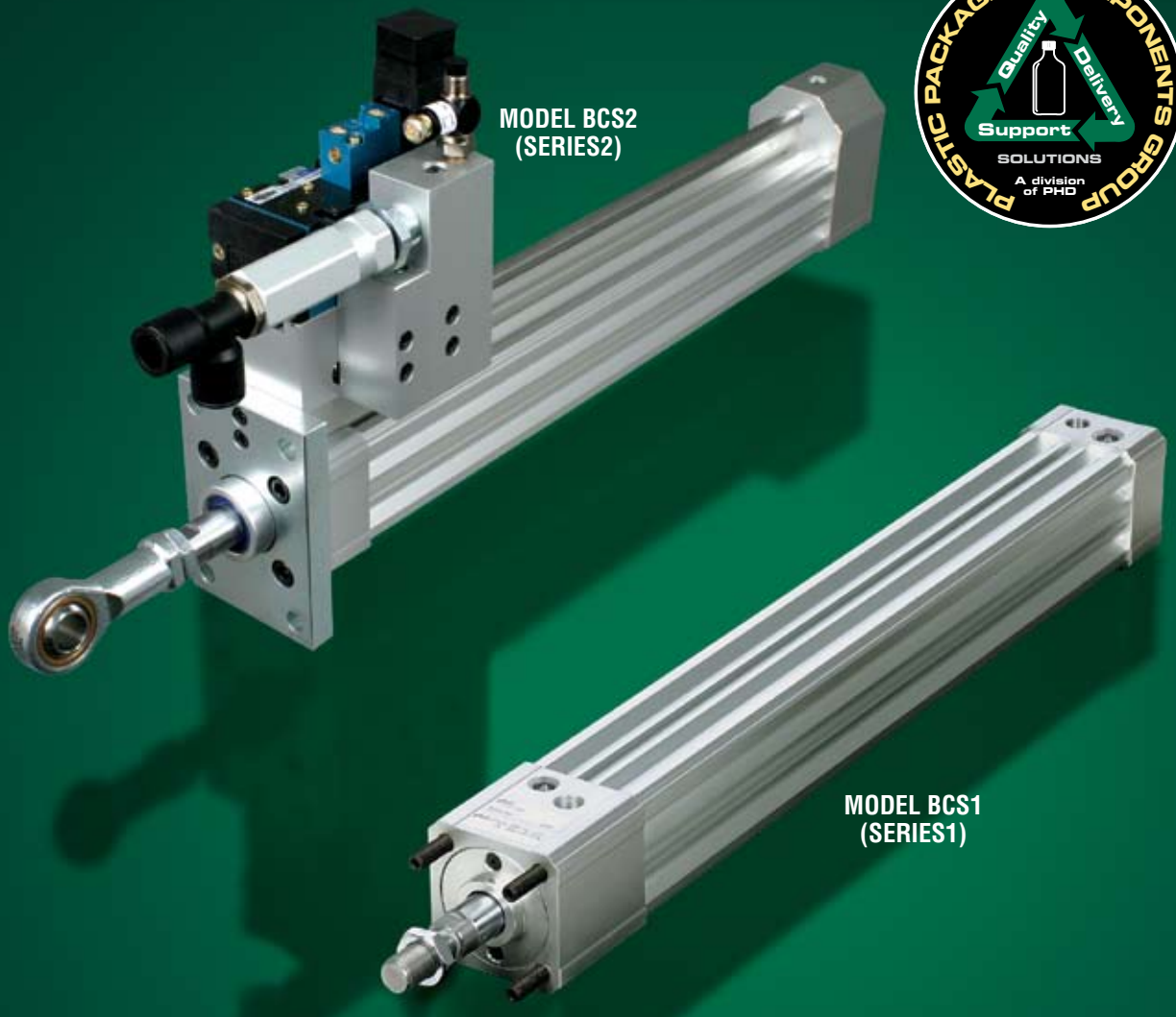
BCS SERIES BCS STRETCH ROD CYLINDERS

for the Plastic Bottle Blowing Industry

DIRECT REPLACEMENT FOR SIDEL® MODEL SBO, ISBM SERIES1 AND SERIES2 MACHINES

PLASTIC PACKAGING COMPONENTS GROUP
Quality Delivery Support
SOLUTIONS
A division of PHD



ISO-9001 CERTIFIED
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BCS05A

MDN

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ORDERING DATA: SERIES BCS STRETCH ROD CYLINDERS

INDEX:

FOR SERIES1 MACHINES SB01, SB02, SB04 CONSULT FACTORY

TO ORDER, SPECIFY:
Product, Series, Type, Machine No., Design No., Bore Size, Stroke, any Options.

B	C	S	1	-	6	-	50	x	406	-	DB	-	U19

PRODUCT
B - Blow Mold

SERIES
C - Cylinder
150 psi [10 bar] Air

TYPE
S - Stretch Rod

MACHINE NO.
1 - Series1 Machine (without Manifold)
2 - Series2 Machine (with Manifold)

BORE SIZE

BORE mm	BORE in	PISTON AREA mm²	PISTON AREA in²
50	1.969	1963	3.05

Contact PHD for smaller or larger bore sizes.

DESIGN NO.
6 - Metric

METRIC STROKE (BCSxx)
STANDARD STROKE LENGTHS
(100 mm = minimum stroke in 1 mm increments)

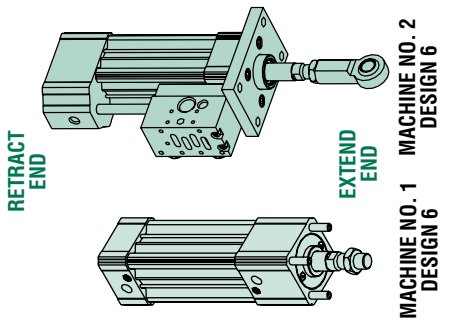
BORE [mm]	MAXIMUM STROKE [mm]
50	450

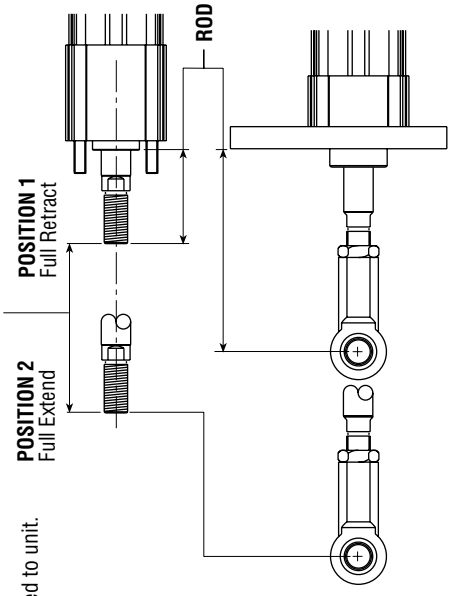
Contact PHD for shorter or longer strokes.

CUSHION CONTROL
DB - Cushion Controls Both Ends*
DR - Cushion Control Retract Only**

CYLINDER OPTIONS
K_ - Extra Rod Extension in 1 mm increments. Length code (BCSxxx) is K5 = 5 mm, K17 = 17 mm, K121 = 121 mm, etc.
U19 - MAC ISO 2 Series Valve with DIN connection
LR6 - 6 mm orifice on retract for 2 m/sec retraction (4 mm orifice standard)
L12 - 1/2 BSPP to 14 mm Elbow Fitting (Replaces Male Run Tee - BCS2 only)
XD - 4 Threaded holes front (BCS1 only)
X25 - Adaptor block attached to manifold only
X26 - Inline check valve with adaptor block attached to manifold

NOTES:
1) Cushions and ports are in positions 1 and 5.
   * -DB Cushions in both directions is standard on Series1 units.
   ** -DR Cushion on retract only is standard on Series2 units.
2) Standard Series1 Stretch Rod Cylinder ordering number is as follows:
   BCS1-6-50x406-DB (Stroke may vary)
3) Standard Series2 Stretch Rod Cylinder ordering number is as follows:
   BCS2-6-50x400-DR (-U19) For CSD machines
   BCS2-6-50x400-DR (-U19) **-LR6** For heat set machines
   -U19 option needs to be specified for valve to be attached to unit.
4) Options not available on Series1 units:
   -U19, -LR6, -L12, -X25, and -X26.





(800) 624-8511
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SERIES BCS STRETCH ROD CYLINDERS

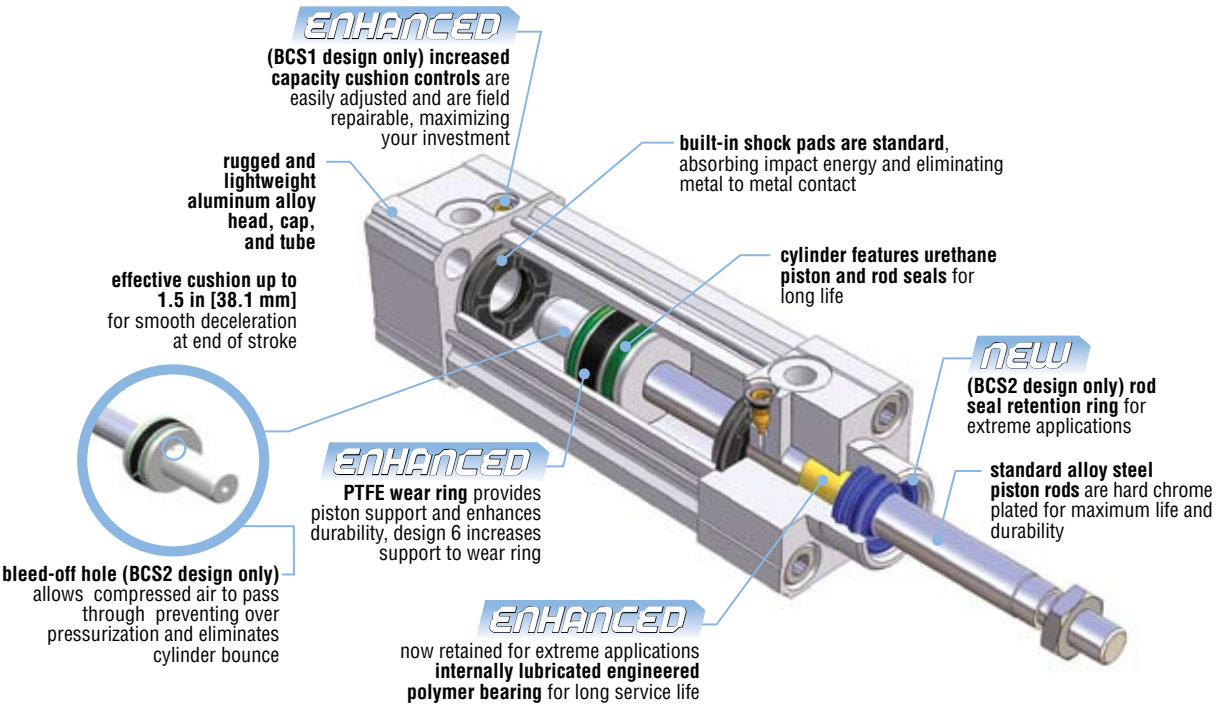
- ***Direct Replacement***
- ***Provides Significantly Longer Life***
- ***Reduces Maintenance and Downtime***

MODEL BCS1 CYLINDER

- Direct replacement for Sidel® Model, SBO ISBM Series1 Machines.

MODEL BCS2 CYLINDER

- Direct replacement for Sidel® Model, SBO ISBM Series2 Machines.



Common Benefits

- PHD Cylinder mounts into the same space and bolt patterns.
- Provides significantly longer life and reduces maintenance and downtime.
- Mounting options provide ease of design into application.
- Internal shock pads are standard, eliminating metal to metal contact.
- Cushion controls are available for end of stroke deceleration.
- Cylinders are easily field repairable, maximizing your investment.

Industry Uses

- Plastic Packaging - Stretch Blow Molding

SPECIFICATIONS	IMPERIAL	METRIC
TYPE	Pneumatic Cylinder	
SERIES	BCS Stretch Rod Cylinder	
BORE SIZE	1.969 in	50 mm
BORE AREA - EXTEND	3.04 in^2	1963 mm^2
BORE AREA - RETRACT	2.56 in^2	1649 mm^2
THEORETICAL OUTPUT	264.5 lb @ 87 psi	1176.6 N @ 6 bar
OPERATION	Double Acting	
OPERATING PRESSURE RANGE	7.5 - 150 psi	0.5 - 10 bar
AMBIENT TEMPERATURE	-20° to 180° F	-29° to 82° C
MAX. OPERATING PISTON SPEED	80 in/sec	2.03 m/sec
ADJUSTABLE CUSHION	Standard	
LUBRICATION	FDA Regulation 21 CFR 1789.3570	
PORT SIZE	1/4 BSPP	
MAXIMUM STROKE RANGE	17.72 in	450 mm
STROKE TOLERANCE	+.079/-.000 in	+2.0/-0.0 mm
BASE WEIGHT	4.28 lb	1.94 kg
STROKE ADDER WEIGHT PER 1 in (25 mm)	0.38 lb	0.17 kg
ALLOWABLE KINETIC ENERGY WITH CUSHION	60.5 in-lb	6.84 Nm
SHOCK PAD	Thermoplastic Polyester Elastomer (TPE)	
HEADS & CAPS	Anodized Aluminum	
CYLINDER TUBE	Anodized Aluminum	
PISTON ROD	Hard Chrome Plated Steel	
ROD BEARING	Internally Lubricated Polymer	
PISTON & ROD SEALS	Urethane	

ACTUATOR SPEEDS

Cylinder speed is up to 80 in/sec [2.03 m/sec].

MAXIMUM ALLOWABLE KINETIC ENERGY

Series BCS1 is provided with cushions on both extend and retract. Its maximum kinetic energy rating is 60.5 in-lb [6.84 Nm].

LIFE EXPECTANCY

Series BCS1 Cylinders have been lab tested over 20 million trouble-free cycles.

LUBRICATION

Series BCS1 Cylinders are lubricated internally at the factory for the life of the cylinder. PHD uses FDA food grade lubrication per regulation 21 CFR 1789.3570. Any other lubrication to the cylinder may decrease the life expectancy.

MAINTENANCE

As with most PHD products, these cylinders are field repairable. Repair kits, piston and rod assemblies, cushion control cartridge assemblies, and main structural components are available as needed for extended service.

SPECIFICATIONS	IMPERIAL	METRIC
TYPE	Pneumatic Cylinder	
SERIES	BCS Stretch Rod Cylinder	
BORE SIZE	1.969 in	50 mm
BORE AREA - EXTEND	3.04 in^2	1963 mm^2
BORE AREA - RETRACT	2.56 in^2	1649 mm^2
THEORETICAL OUTPUT	264.5 lb @ 87 psi	1176.6 N @ 6 bar
OPERATION	Double Acting	
OPERATING PRESSURE RANGE	7.5 - 150 psi	0.5 - 10 bar
AMBIENT TEMPERATURE	-20° to 180° F	-29° to 82° C
MAX. OPERATING PISTON SPEED	80 in/sec	2.03 m/sec
ADJUSTABLE CUSHION - RETRACT	Standard	
LUBRICATION; FOOD GRADE	FDA Regulation 21 CFR 1789.3570	
STROKE	15.692 in	400 mm
STROKE TOLERANCE	+.079/-.000 in	+2.0/-0.0 mm
WEIGHT	15.1 lb	5.6 kg
ALLOWABLE KINETIC ENERGY		
RETRACT	181.5 in-lb	20.5 Nm
EXTEND	8.7 in-lb	0.98 Nm
SHOCK PAD	Thermoplastic Polyester Elastomer (TPE)	
HEADS & CAPS	Anodized Aluminum	
CYLINDER TUBE	Anodized Aluminum	
PISTON ROD	Hard Chrome Plated Steel	
ROD BEARING	Internally Lubricated Polymer	
PISTON & ROD SEALS	Urethane	

VALVE SPECIFICATIONS	
SERIES	ISO 2 (ISO 5599/1)
FUNCTION	5/2
OPERATOR	Single
PILOT	Internal
SPOOL RETURN	Spring
SOLENOID	24 Vdc (5.4 W)
VOLTAGE RANGE	-15% to +10% from Nominal
ELECTRICAL CONNECTOR	DIN 43650, Form A
MANUAL OPERATOR	Non-locking Recessed
PILOT EXHAUST	Muffled
FLOW	3.0 Cv
LUBRICATION	FDA Regulation 21 CFR 1789.3570
FILTRATION	40 Micron
OPERATING PRESSURE RANGE	20 to 150 psi [1.37 to 10 bar]
AMBIENT FLUID TEMPERATURE	0° to 120° F [-18° to 50° C]

ACTUATOR SPEEDS

Typical extension cylinder speed is 80 in/sec [2.03 m/sec] but is controlled by the blow mold mechanical cam to provide 63.04 in/sec [1.6 m/sec]. Retract speed has been restricted to provide 39.4 in/sec [1.0 m/sec]. An optional orifice (LR6) can be ordered to provide a velocity of 78.7 in/sec [2.0 m/sec].

MAXIMUM ALLOWABLE KINETIC ENERGY

The Series BCS2 is provided with a cushion on retract. Its maximum kinetic energy rating is 181.5 in-lb [20.5 Nm].

The BCS2 maximum kinetic energy capacity on extend is 8.7 in-lb [0.98 Nm] which is provided by the bumper only.

Note: Cushions are adjustable for 1 m/sec operation. External shock absorbers are required with cushions adjusted for 2 m/sec operation.

LIFE EXPECTANCY

Series BCS2 Cylinders have been lab tested over 20 million trouble-free cycles.

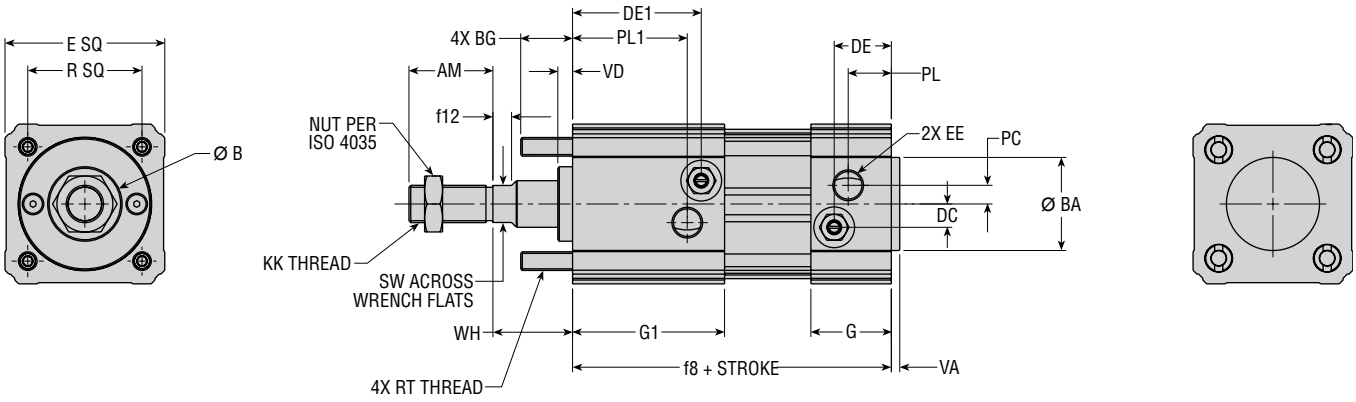
LUBRICATION

Series BCS2 Cylinders are lubricated internally at the factory for the life of the cylinder. PHD uses FDA food grade lubrication per regulation 21 CFR 1789.3570. Any other lubrication to the cylinder may decrease the life expectancy.

MAINTENANCE

As with most PHD products, these cylinders are field repairable. Repair kits, piston and rod assemblies, cushion control cartridge assemblies, and main structural components are available as needed for extended service.

BCS1-6-50 NON-MANIFOLD



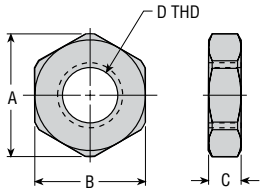
NOTES:
1) DIMENSIONS SHOWN IN [ ] ARE IN mm.
2) DESIGNATED CENTERLINE IS CENTERLINE OF CYLINDER.
3) UNLESS OTHERWISE DIMENSIONED, MOUNTING HOLE PATTERNS ARE CENTERED ON DESIGNATED CYLINDER CENTERLINE.
4) 100 mm MINIMUM STROKE REQUIRED FOR STANDARD, CONSULT PHD FOR OTHER LENGTHS.
5) STANDARD TITLE BLOCK TOLERANCES DO NOT APPLY UNLESS OTHERWISE NOTED.

BORE SIZE [mm]	B	B ±TOL	RT	WH	R	BG	VD	VA MAX.	G	G1	f8	E	f12
50	1.2565 [31.92]	.0025 [0.06]	M8 x 1.25	1.340 [34.0]	1.929 [49.0]	.875 [22.2]	.249 [6.3]	.157 [4.0]	1.358 [34.5]	2.566 [65.2]	5.381 [136.7]	2.697 [68.5]	.315 [8.0]

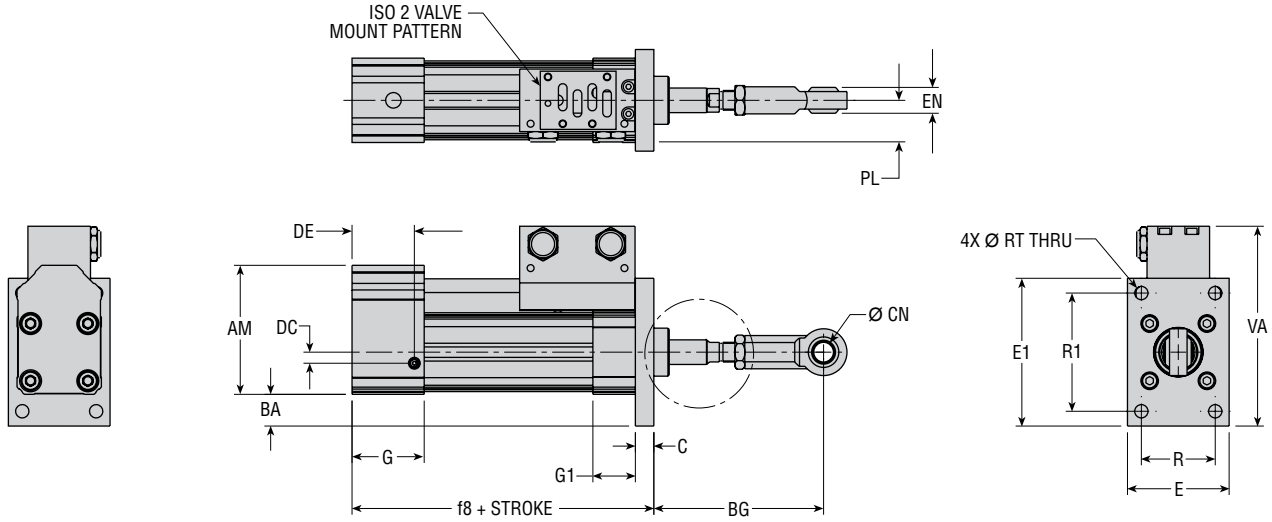
BORE SIZE [mm]	SW (WRENCH FLAT)	BA	KK	AM	EE PORT	EE PORT DEPTH	PL	PL1	PC	DE	DE1	DC
50	.630 [16.0]	1.5709 [39.9]	M16 x 1.5	1.417 [36.0]	G 1/4	.354 [9.0]	.728 [18.5]	1.936 [49.2]	.315 [8.0]	.965 [24.5]	2.173 [55.2]	.394 [10.0]

HEX NUT DIMENSIONS PER ISO 4035 (DIN 4398)

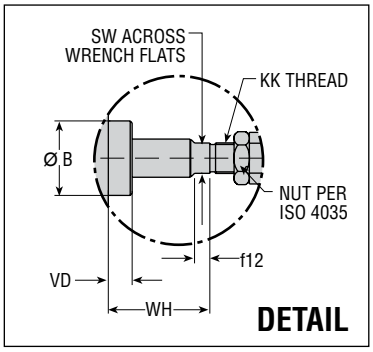
BORE SIZE [mm]	A MIN	B	C	D THD	PHD PART NUMBER	PHD PART NUMBER (-Z1)
50	1.053 [26.75]	.945 [24.0]	.315 [8.0]	M16 x 1.5	3204-003-01	19735-003



BCS2-6-50 MANIFOLD



NOTES:
1) DIMENSIONS SHOWN IN [ ] ARE IN mm.
2) DESIGNATED CENTERLINE IS CENTERLINE OF CYLINDER.
3) UNLESS OTHERWISE DIMENSIONED, MOUNTING HOLE PATTERNS ARE CENTERED ON DESIGNATED CYLINDER CENTERLINE.
4) 100 mm MINIMUM STROKE REQUIRED FOR STANDARD, CONSULT PHD FOR OTHER LENGTHS.
5) FOR ILLUSTRATION PURPOSES, UNIT SHOWN IS AT 100 mm OF STROKE, BUT CHARTED DIMENSION f8 IS AT 0 mm STROKE.

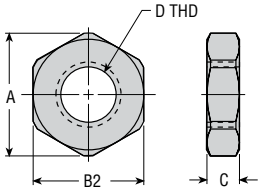


BORE SIZE [mm]	B	B ±TOL	C	RT	WH	R	R1	BG	VD	VA	G	G1	f8
50	1.5350 [38.99]	.0050 [0.13]	.591 [15.0]	.425 [10.8]	2.091 [53.1]	2.362 [60.0]	3.780 [96.0]	5.427 [137.8]	.491 [12.5]	6.388 [162.3]	2.307 [58.6]	1.358 [34.5]	5.713 [145.1]

BORE SIZE [mm]	E	E1	f12	SW (WRENCH FLAT)	BA	KK	AM	PL	DE	DC	CN H9 TOL.	EN h12 TOL.
50	3.250 [82.6]	4.724 [120.0]	.315 [8.0]	.630 [16.0]	1.014 [25.8]	M16 x 1.5	4.125 [104.8]	1.330 [33.8]	1.992 [50.6]	.354 [9.0]	.630 [16.0]	.827 [21.0]

HEX NUT DIMENSIONS PER ISO 4035 (DIN 4398)

BORE SIZE [mm]	A MIN	B2	C	D THD	PHD PART NUMBER	PHD PART NUMBER (-Z1)
50	1.053 [26.75]	.945 [24.0]	.315 [8.0]	M16 x 1.5	3204-003-01	19735-003



OPTIONS: SERIES BCS STRETCH ROD CYLINDERS

DB CUSHION CONTROL IN BOTH DIRECTIONS (BCS1 ONLY)

(standard location 1 & 5)

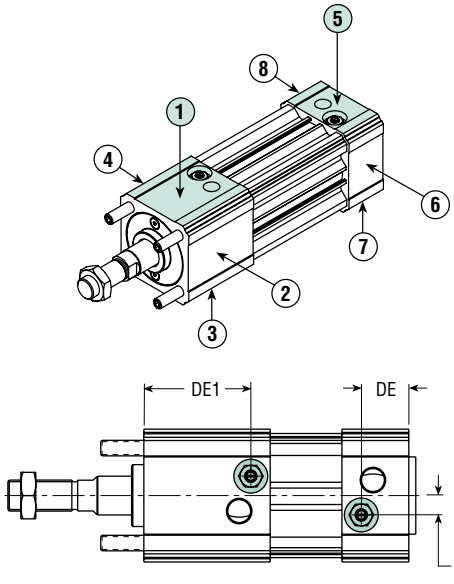
DR CUSHION CONTROL ON RETRACT ONLY(BCS2 ONLY)

(standard location 8)

PHD cushions are designed for smooth deceleration at the end of stroke. When the cushion is activated, the remaining volume in the cylinder must exhaust past an adjustable needle which controls the amount of deceleration. The effective cushion lengths for each bore size are shown in the table below.

- DB CUSHION CONTROLS

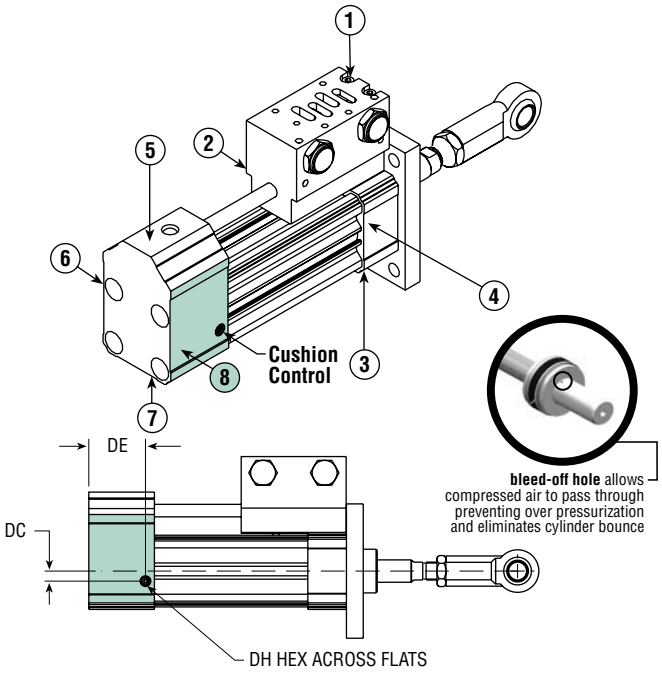
Note: Cushion controls are standard in locations 1 and 5 only.



BORE SIZE [mm]	DE1	DC	DE	EFFECTIVE CUSHION LENGTH
50	2.173 [55.2]	.394 [10.0]	.965 [24.5]	.930 [23.6]

- DR CUSHION CONTROL

Note: Cushion control is standard in location 8 only.



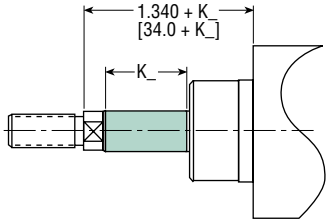
BORE SIZE [mm]	DE	DC	DH	EFFECTIVE CUSHION LENGTH
50	1.992 [50.6]	.354 [9.0]	— [2.5]	1.496 [29.2]

K_ EXTRA ROD EXTENSION

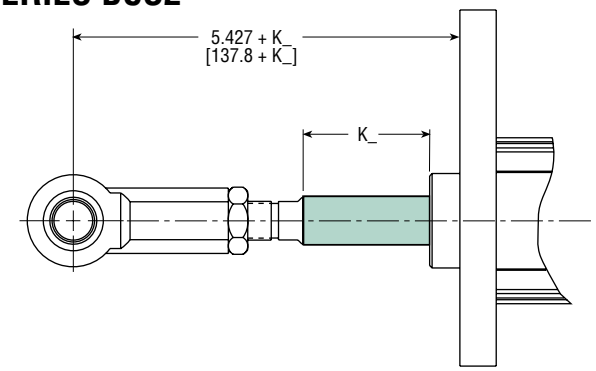
Extra rod extension can be achieved by specifying the option -K followed by the length code. Rod extension is available in 1 mm increments. Contact PHD for other combinations.

NOTE: -K_ = Extra rod extension in 1 mm increment lengths
code examples: -K5 = 5 mm extension
-K15 = 15 mm extension

SERIES BCS1



SERIES BCS2



All dimensions are reference only unless specifically toleranced.

(800) 624-8511
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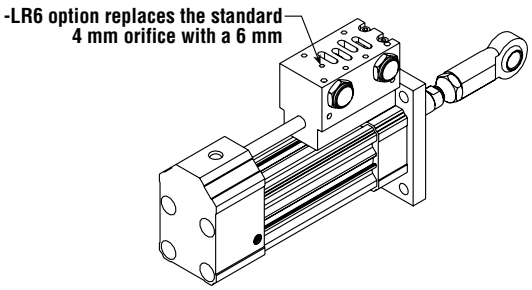
OPTIONS: SERIES BCS STRETCH ROD CYLINDERS

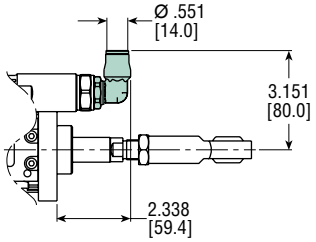
LR6 — 6 mm ORIFICE ON RETRACT (BCS2 HEAT SET ONLY)

The LR6 option is required on all BCS2 heat set units and replaces the standard 4 mm orifice which provides 39.4 in/sec [1.0 m/sec] retract velocity with a 6 mm orifice that increases retract velocity to 78.7 in/sec [2.0 m/sec].



L12 — 1/2 BSPP TO 14 mm ELBOW FITTING (BCS2 HEAT SET ONLY)

The L12 option is required on all BCS2 heat set units and replaces the standard 1/2 BSPP male run tee pressure inlet fitting with a 1/2 BSPP to 14 mm elbow fitting. **NOTE:** The L12 option is only available if combined with the X26 option. See the X26 option for more information.

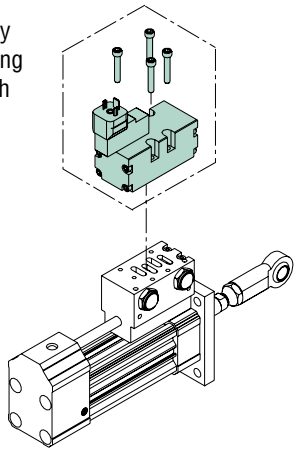


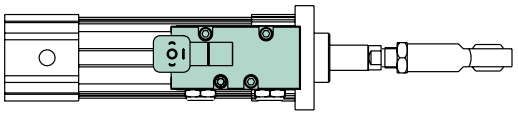
-L12 option with -X26 option

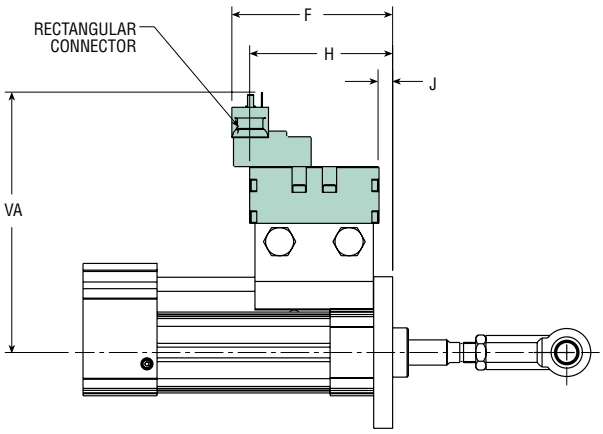
U19 — MAC ISO 2 SERIES VALVE DIN CONNECTION (BCS2 ONLY)

A MAC ISO 2 Series valve is optionally provided assembled to the unit by specifying the -U19 option. The valve is equipped with a DIN 43650, shape A connector, and is lubricated with FDA Regulation 21 CFR 1789.3570 food grade lubrication.

Reference valve specification chart page 5.







BORE SIZE [mm]	F	H	J	VA
50	5.011 [127.3]	4.456 [113.2]	.424 [10.8]	8.135 [206.6]

NOTES:
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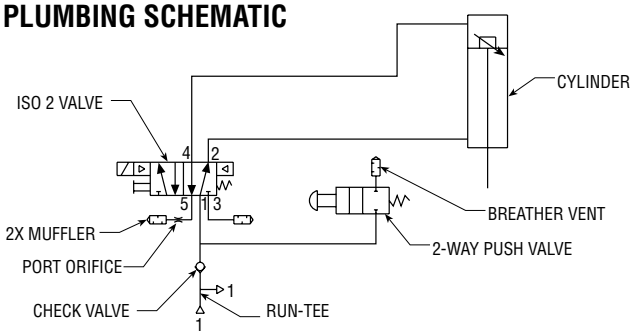
PLUMBING SCHEMATIC

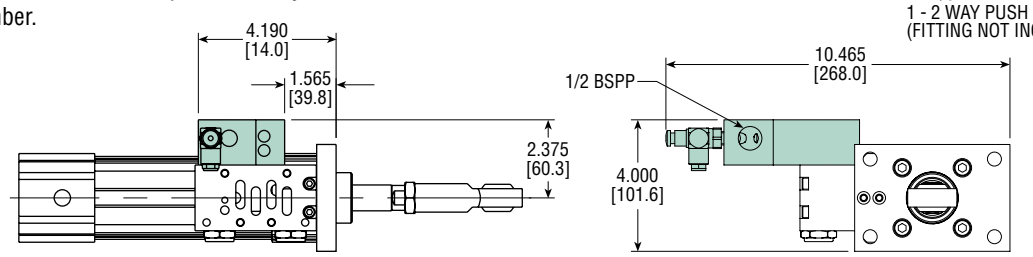


X25 ADAPTOR BLOCK ATTACHED TO MANIFOLD ONLY

This option omits the check valve completely allowing the customer to provide the check valve of choice. See the drawing for thread and port sizing required. This option is assembled at the factory, or a kit is available for quick and easy field retrofit. See kit ordering number.

UNIT	INLET ADAPTOR KIT#
BCS2650	76066

NOTE:
KIT INCLUDES -
1 - INLET ADAPTOR ASSEMBLY
1 - 1/8 NPT O-RING SEAL
1 - 1/2 NPT O-RING SEAL
4 - INLET ADAPTOR TO MANIFOLD SHCS
1 - 1/8 NPT BREATHER VENT
1 - 2 WAY PUSH BUTTON VALVE
(FITTING NOT INCLUDED)

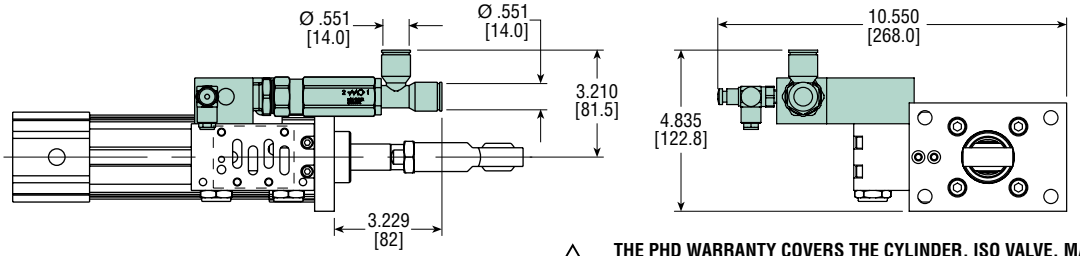


X26 INLINE CHECK VALVE WITH ADAPTOR BLOCK ATTACHED TO MANIFOLD

The inline check valve with adaptor block assembly is provided with an inline poppet style check valve to keep incoming air from exhausting through the inlet pressure supply tube during maintenance and keeps the stretch rod from dropping. This option is assembled at the factory, or a kit is available for quick and easy field retrofit. See kit ordering number. **NOTE:** Comes standard from factory with male run tee. Option -L12 replaces the male run tee with elbow fitting.

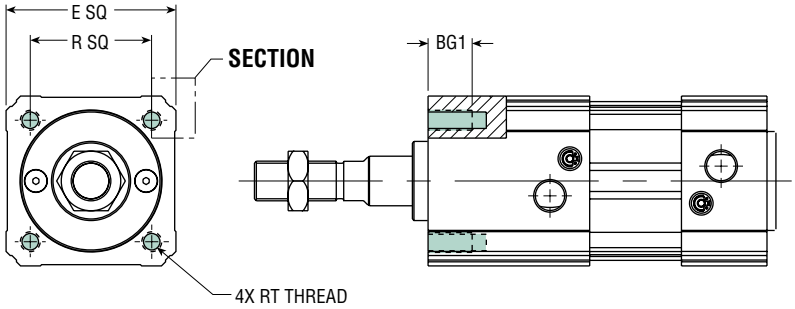
UNIT	INLINE CHECK VALVE KIT#
BCS2650	80138

NOTE:
KIT INCLUDES -
1 - INLINE CHECK VALVE
1 - BSPP MALE TO BSPP MALE NIPPLE
1 - SEALING RING
(FITTING NOT INCLUDED)



THE PHD WARRANTY COVERS THE CYLINDER, ISO VALVE, MANIFOLD AND ALL OTHER COMPONENTS ON THE CYLINDER WITH THE EXCEPTION OF THE CHECK VALVE. THE CHECK VALVE IS PROVIDED AS A SERVICE TO THE CUSTOMER, BUT DOES NOT CARRY THE PHD WARRANTY.

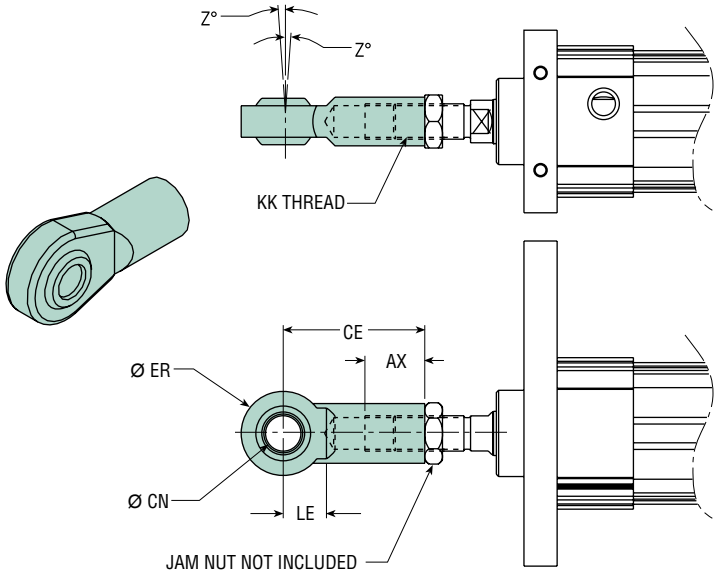
XD 4 THREADED HOLES FRONT (BCS1 ONLY)



BORE SIZE [mm]	RT	R	BG1 MIN.	E
50	M8 x 1.25	1.929 [49.0]	.875 [22.2]	2.697 [68.5]

NOTES:
1) DIMENSIONS SHOWN IN [ ] ARE IN mm.
2) DESIGNATED CENTERLINE IS CENTERLINE OF CYLINDER.
3) UNLESS OTHERWISE DIMENSIONED, MOUNTING HOLE PATTERNS ARE CENTERED ON DESIGNATED CYLINDER CENTERLINE.
4) 100 mm MINIMUM STROKE REQUIRED FOR STANDARD, CONSULT PHD FOR OTHER LENGTHS.

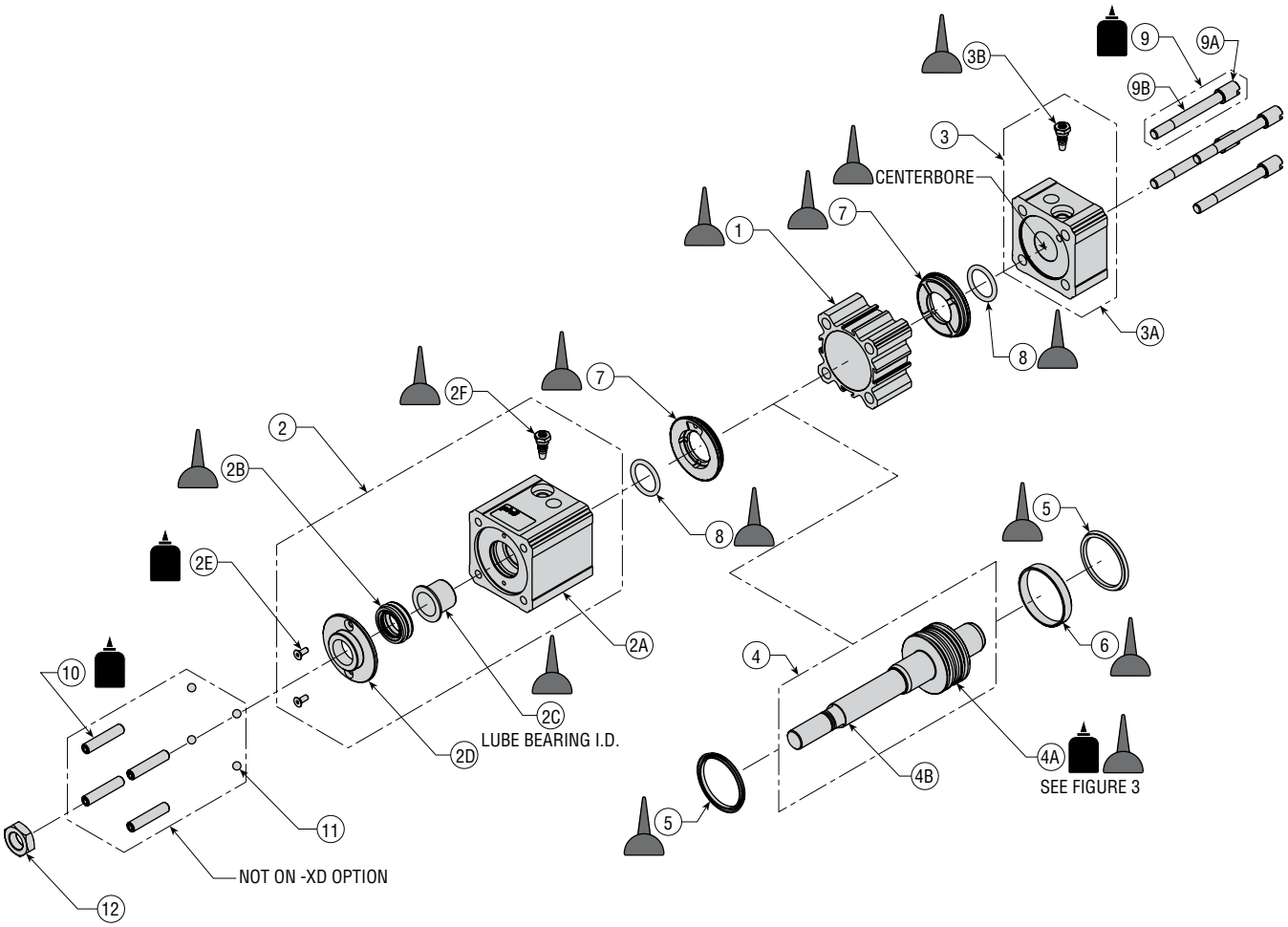
ROD EYE MOUNTING WITH SPHERICAL BEARING
(DIN 8139)



BORE SIZE [mm]	KK	AX MIN.	CN H9	EN h12	CE	LE MIN.	ER MAX.	Z°	*KIT
50	M16 x 1.5	1.102 [28.0]	.630 [16.0]	.827 [21.0]	2.520 [64.0]	.866 [22.0]	.827 [21.0]	4°	52493-03-1

NOTE: * KIT DOES NOT INCLUDE JAM NUT.

EXPLODED VIEW: SERIES BCS1 CYLINDERS



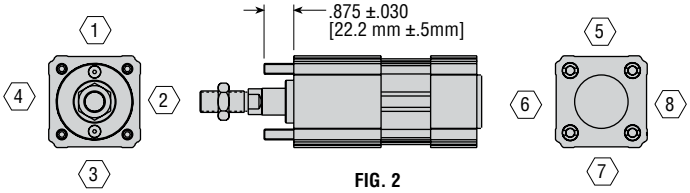


FIG. 2

= THREAD LOCKER

= FOOD GRADE GREASE

TORQUE CHART 1

PART DESCRIPTION	TORQUE in-lb [Nm]
TIEROD AND NUT ASSEMBLIES	110 [12.4]
FLAT HEAD CAP SCREWS (LOCATOR TO HEAD)	20 [2.3]

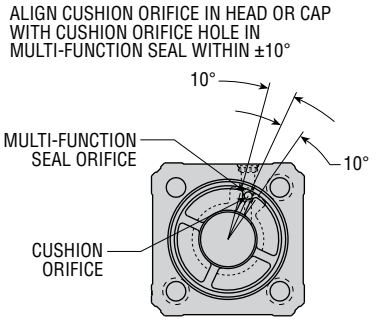


FIG. 1
CUSHION UNITS (-Dx)

All dimensions are reference only unless specifically toleranced.

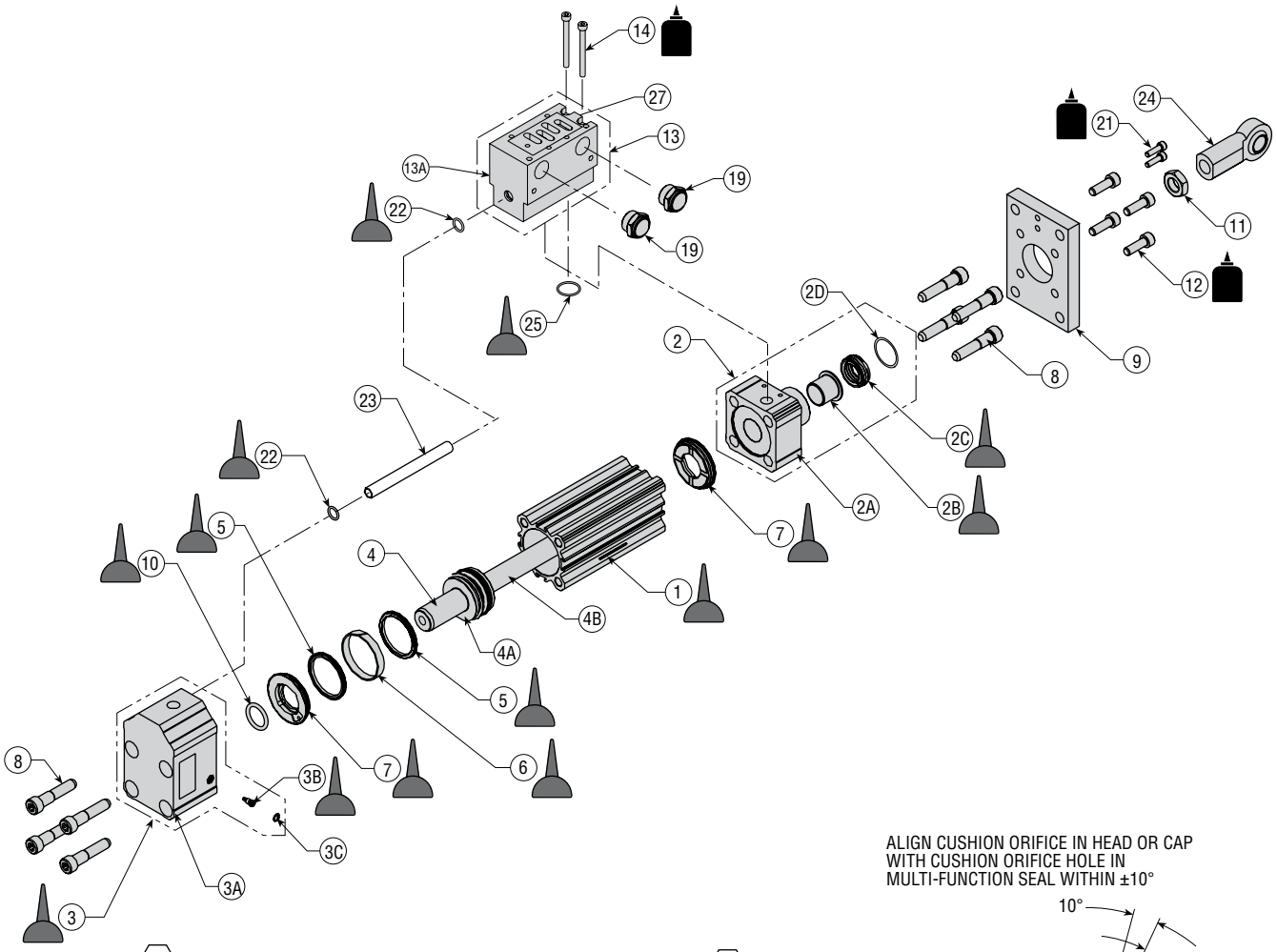
(800) 624-8511
www.phdinc.com/bcs

KEY	PART DESCRIPTION	BCS1-6-50
1	Tube	Full unit description required (followed by -H1300)
2	Head Assembly (Extend End)	Full unit description required (followed by -H1100)
2A	Head	Full unit description required (followed by -H1105)
2B	Rod Seal	Sold as part of Seal and Repair Kit
2C	Flange Bearing	Sold as part of Repair Kit (Full unit description -H9010)
2D	Locator	73624
2E	SFHCS	Sold as part of Repair Kit (Full unit description -H9010)
2F	Needle Assembly	Sold as part of Cushion Kit (Full unit description -H6530)
3	Cap Assembly	Full unit description required (followed by -H1200)
3A	Cap	Full unit description required (followed by -H1205)
3B	Needle Assembly	Sold as part of Cushion Kit (Full unit description -H6530)
4	Piston and Rod Assembly	Full unit description required (followed by -H1000)
4A	Piston	—
4B	Rod	—
5	Piston Seal	Sold as part of Seal and Repair Kit
6	Wear Ring	Sold as part of Repair Kit (Full unit description -H9010)
7	Multi-Function Impact Seal	Sold as part of Seal and Repair Kit
8	Cushion O-Ring Seal	Sold as part of Seal and Repair Kit
9	Tierod and Nut Assembly	Full unit description required (followed by -H1400)
9A	Tierod Nut	—
9B	Tierod	—
10	Socket Set Screw	17424-099
11	Ball (4 per unit)	1976-004
12	Nut (1 per unit)	3204-003

KIT DESCRIPTION	KIT NUMBER
Seal Kit	Full unit description required (followed by -H9000)
Repair Kit	Full unit description required (followed by -H9010)
Cushion Kit	Full unit description required (followed by -H6530)

NOTE: General repair kit (parts for either BCS1-5-50 and BCS1-6-50) and general cushion kit (parts for either BCS1-5-50 and BCS1-6-50) are available. Please contact PHD, Inc. for more information.

EXPLODED VIEW: SERIES BCS2 CYLINDERS



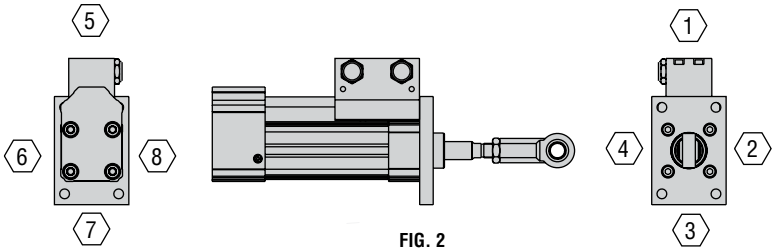


FIG. 2

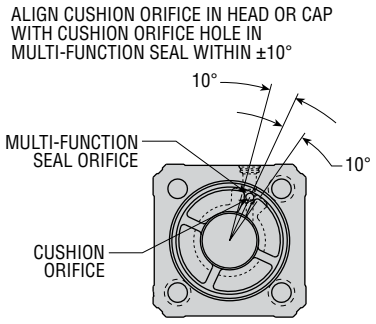


FIG. 1
CUSHION UNITS (-Dx)

= THREAD LOCKER

= FOOD GRADE GREASE

TORQUE CHART 1

KEY	PART DESCRIPTION	TORQUE in-lb [Nm]
12	FLANGE TO HEAD SHCS	200 [22.6]
44	FLANGE TO MANIFOLD SHCS	80 [9.0]
8	SHOULDER BOLT	250 [28.2]
29A	-U19 OPTION VALVE ASSEMBLY	100 [11.3]
4A & 4B	PISTON TO ROD	325 [36.7]
14	MANIFOLD SHCS	80 [9.0]
19	MUFFLER TO MANIFOLD ASSEMBLY	HAND TIGHTEN PLUS 1/4 TURN
33	INLET ADAPTOR TO MANIFOLD SHCS	50 [5.6]

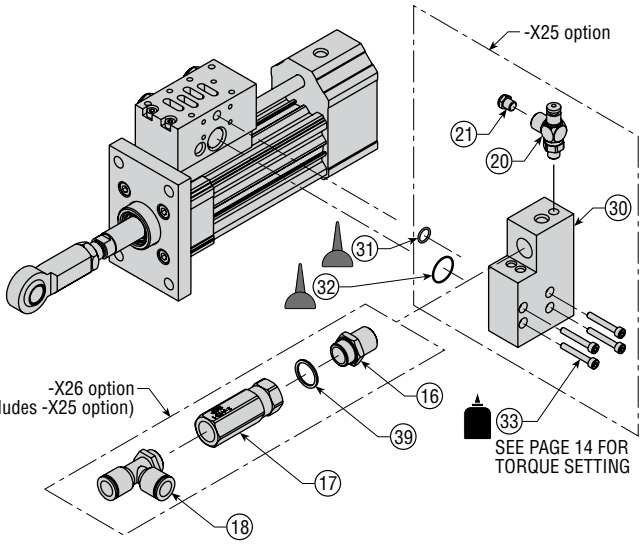
PARTS LIST AND REPAIR KITS: SERIES BCS2 CYLINDERS

KEY	PART DESCRIPTION	BCS2-6-50-X26
1	Finished Tube	Full unit description required (followed by -H1300)
2	Head Assembly	Full unit description required (followed by -H1100)
2A	Head	Sold as part of Head Assembly
2B	Rod Bearing	Sold as part of Head Assembly, Sold as part of Repair Kit (-H9010*)
2C	Rod Seal	Sold as part of Head Assembly, Sold as part of Seal Kit (-H9000*) and Repair Kit (-H9010*)
2D	Retaining Ring	Sold as part of Head Assembly, Sold as part of Repair Kit (-H9010*)
3	Cap Assembly	Full unit description required (followed by -H1200)
3A	Cap	Sold as part of Cap Assembly
3B	Cushion Needle Assembly	Sold as part of Cap Assembly, Sold as part of Cushion Kit (-H6530*)
3C	Retaining Ring	Sold as part of Cap Assembly, Sold as part of Cushion Kit (-H6530*)
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*) and Repair Kit (-H9010*)
6	Wear Ring	Sold as part of Seal Kit (-H9000*) and Repair Kit (-H9010*)
7	Multi-Function Impact Seal	Sold as part of Seal Kit (-H9000*) and Repair Kit (-H9010*)
8	Shoulder Bolt w/Female Thread	Sold as part of Repair Kit (-H9010*)
9	Flange	Full unit description required (followed by -H2005)
10	Cushion O-Ring Seal	Sold as part of Seal Kit (-H9000*) and Repair Kit (-H9010*)
11	Jam Nut	Full unit description required (followed by -H2001)
12	Flange to Head Cap Screw	Sold as part of Seal Kit (-H9000*) and Repair Kit (-H9010*)
13	Manifold Block Assembly	Full unit description required (followed by -H9090)
13A	Manifold Block	Sold as part of Manifold Block Assembly
14	Manifold to Head Cap Screw	Sold as part of Repair Kit (-H9010*) or Manifold Assembly Kit (-H9090*)
16	Fitting Adaptor	77235
17	Check Valve	80010
18	Male Run Tee Fitting	61734-040
19	Muffler	77511-04
20	2 Way Push Button Valve	73660
21	Breather Vent	2804-23
22	Steel Tubing O-Ring Seal	Sold as part of Seal Kit (-H9000*) and Repair Kit (-H9010*)
23	Steel Tube	Full unit description required (followed by -H1310)
24	Rod Eye	63429-003-01
25	Manifold to Head O-Ring Seal	Sold as part of Seal Kit (-H9000*) and Repair Kit (-H9010*)
30	Inlet Adaptor Assembly	Sold as part of Inlet Adaptor Kit (-H9150*)
30A	Inlet Adaptor	Sold as part of Inlet Adaptor Kit (-H9150*)
31	1/8 NPT O-Ring Seal	Sold as part of Inlet Adaptor Kit (-H9150*), Sold as part of Seal Kit (-H9000*)
32	1/2 NPT O-Ring Seal	Sold as part of Inlet Adaptor Kit (-H9150*), Sold as part of Seal Kit (-H9000*)
33	Inlet Adaptor to Manifold Cap Screw	Sold as part of Inlet Adaptor Kit (-H9150*), Sold as part of Repair Kit (-H9010*)
39	Sealing Ring	77629-004
44	Flange to Manifold Cap Screw	Sold as part of Repair Kit (-H9010*)

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

KIT DESCRIPTION	KIT NUMBER
Seal Kit	-H9000*
Repair Kit	-H9010*
Cushion Kit	-H6530*
Inlet Adaptor Assembly Kit	-H9150*
Manifold Assembly Kit	-H9090*
Inline Check Valve -X23 to -X26 Conversion Kit	-H9160*
Inline Check Valve -X26 Kit	-H9165*

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



= THREAD LOCKER

= FOOD GRADE GREASE

OTHER PLASTIC PACKAGING SOLUTIONS

SERIES BST TRANSFER ARM

This unit can be used as a replacement for Sidel® Series1 SB02 through SB040 Machines.
(request the current Series BST catalog)

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