

BST

SERIES BST TRANSFER ARM

for Plastic Bottle Blowing Industry

Replacement for Sidel® Series1 SB02 through SB040 Machines



30° Jaw Opening

160°/180° Jaw Opening



**ISO-9001
CERTIFIED**

Quality Management
System Certified

BST01^A



phd
SOLUTIONS FOR INDUSTRIAL AUTOMATION

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ORDERING DATA: SERIES BST TRANSFER ARM

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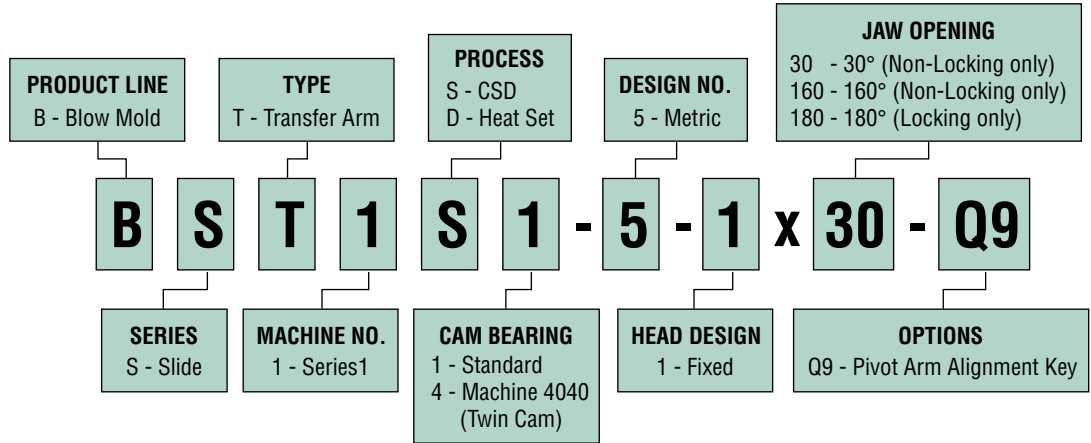
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TO ORDER SPECIFY:

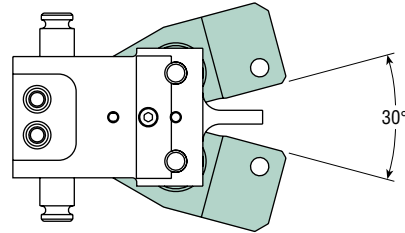
Product Line, Series, Type, Machine No., Process, Cam Bearing, Design No., Head Design, Jaw Opening and Options if required.



30° JAW OPENING (NON-LOCKING)

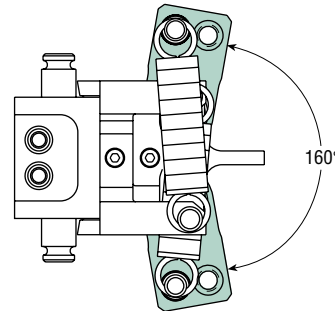
Gripper head utilizes an internal compression spring and has a maximum opening angle of 30°. This head design is non-locking and provides superior performance and longevity over traditional extension spring designs. This spring force can be adjusted by adding shims.

Shim Kit No. 76159 sold separately.



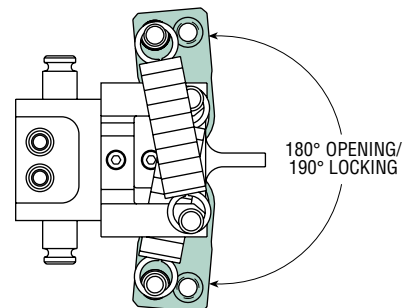
160° JAW OPENING (NON-LOCKING)

Gripper head utilizes external extension springs and has a maximum opening angle of 160°. This head design is non-locking and provides greater opening capacity than the 30° head design. Unit can be converted to a 180° locking design simply by replacing the jaw stops.



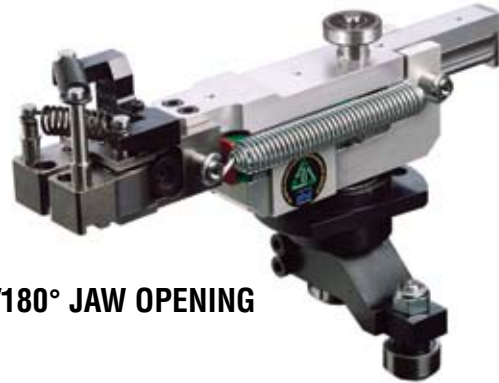
180° JAW OPENING (LOCKING)

Gripper head utilizes external extension springs and has a maximum opening angle of 190°. This head design will cause the jaws to lock open once rotated past 180°. This jaw design can make performing maintenance easier by allowing the jaw to stay open while manually rotating the transfer arm table. Unit can be converted to a 160° non-locking design simply by replacing the jaw stops.

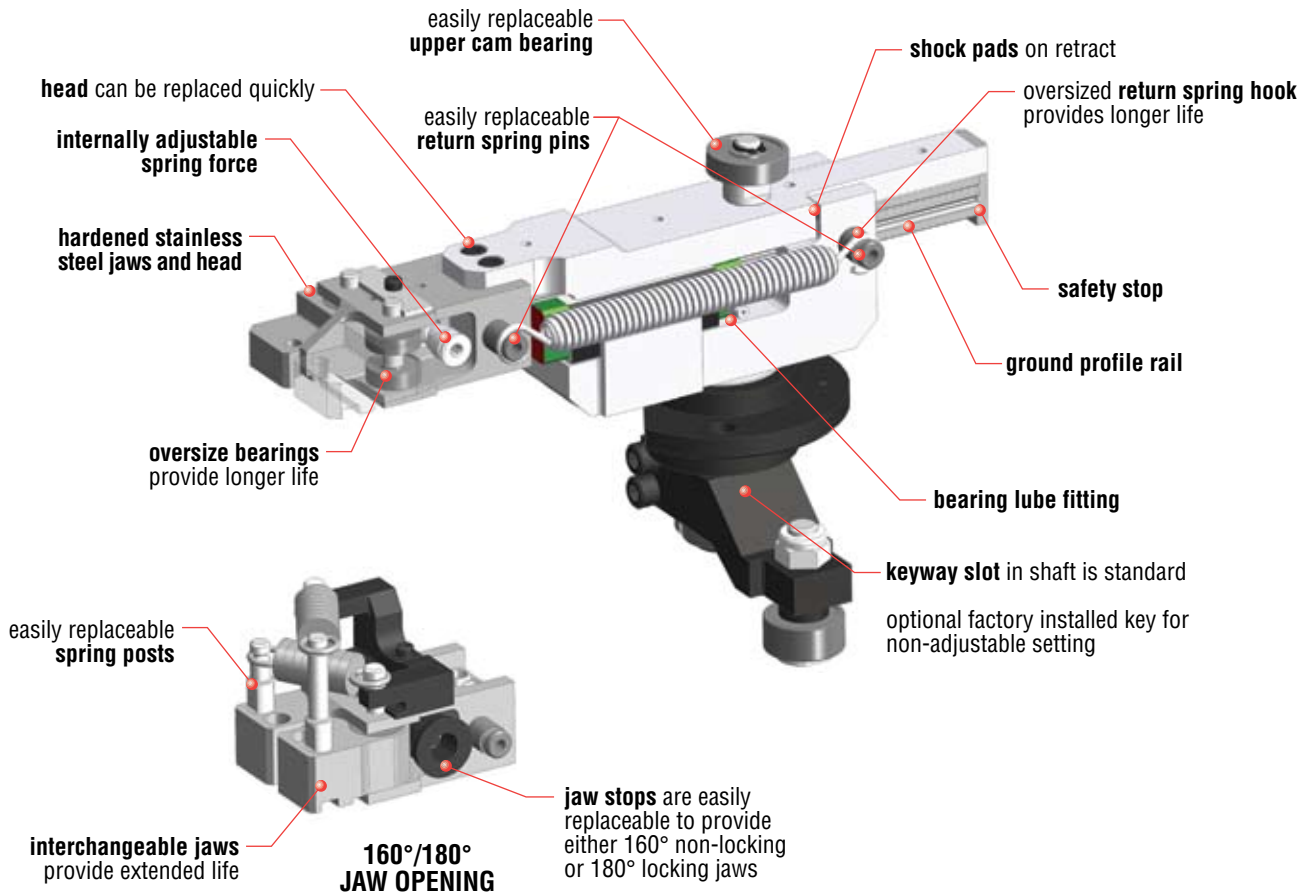




30° JAW OPENING



160°/180° JAW OPENING



Common Benefits

- Unit is designed to operate for 20 million cycles.
- Design is significantly more rigid (with reduced jaw vibration) than other available arms.
- Jaw springs are manufactured especially for PHD and provide greater life.
- Lighter in overall weight than other available arms.
- Gripper heads are lower in profile design and fit most Sidel® Series1 Machines requiring a fixed head.
- Common head design is used on all fixed head units and can be easily converted to other jaw openings.

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ENGINEERING DATA: SERIES BST TRANSFER ARM

SPECIFICATIONS	IMPERIAL	METRIC
SERIES	Sidel® Series1 Replacement	
OPERATION	Cam Operated, Spring Return	
BEARING SYSTEM	Steel Ground Profile Rail with Recirculating Ball Bearings	
LUBRICATION	FDA Regulation 21 CFR 1789.3570	
AMBIENT TEMPERATURE	-20° to 180° F	-29° to 82° C
GRIP FORCE AT TOOLING		
CSD	13 to 17 lb	57.8 to 75.6 N
HEAT SET	23 to 27 lb	102.3 to 120.1 N
EXTENSION SPRING FORCE		
FULL RETRACT	7 to 13 lb	31.1 to 57.8 N
FULL EXTEND	21 to 27 lb	93.4 to 120.1 N
WEIGHT	10.7 lb	4.9 kg
STROKE	3.576 ± .059 in	90.8 ± 1.5 mm

LIFE EXPECTANCY

Series BST Transfer Arms are designed for 20 million trouble-free cycles with proper maintenance.

MAINTENANCE

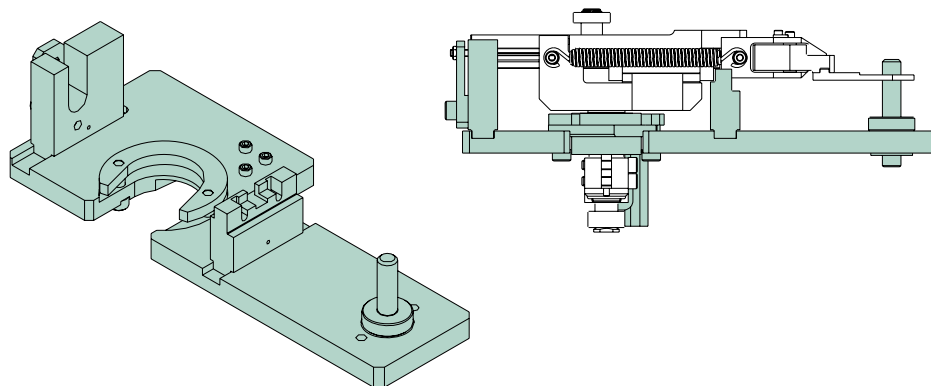
As with most PHD products, these slides are field repairable. Repair kits, jig kits, and main structural components are available as needed for extended service.

LUBRICATION

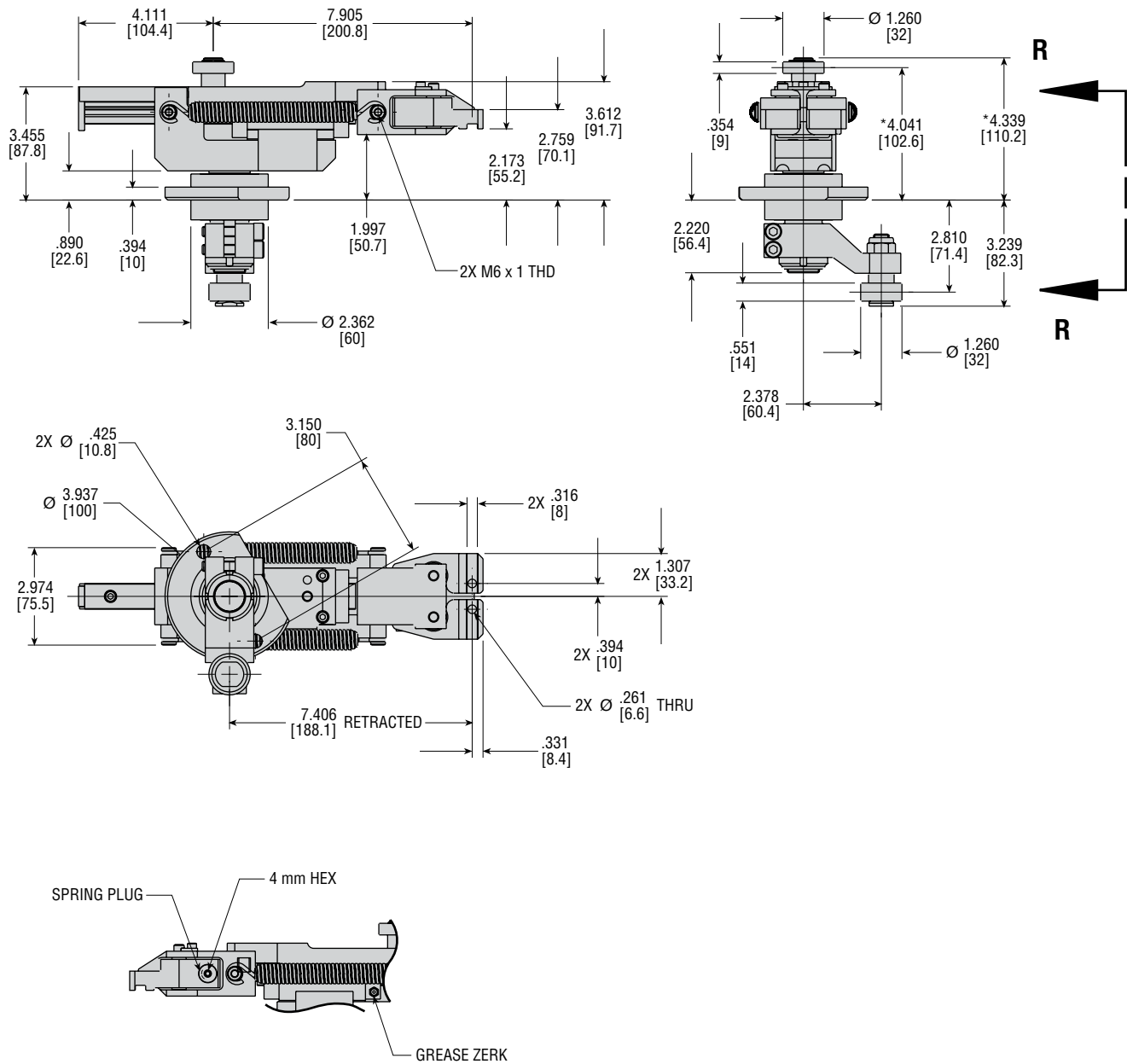
Series BST Transfer Arms bearing systems are lubricated with FDA-approved food grade lube which provides extended life. Lubrication of the bearing system every six months is recommended. Lubricant is available from PHD. Refer to repair procedures for proper application locations.

SETUP TOOLING

Jig kits are available to verify and re-align transfer arms as needed in the field. Jig Kit #77301 sold separately.



DIMENSIONS: SERIES BST TRANSFER ARM - 30° HEAD

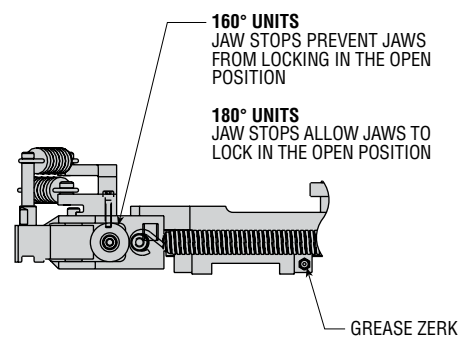
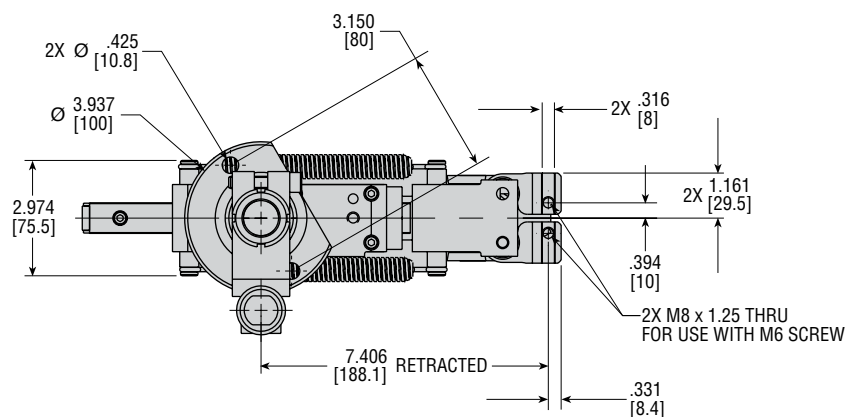
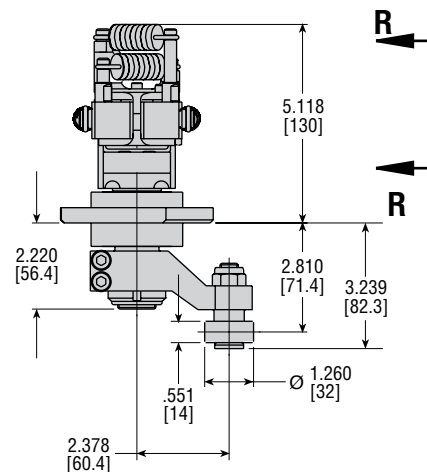
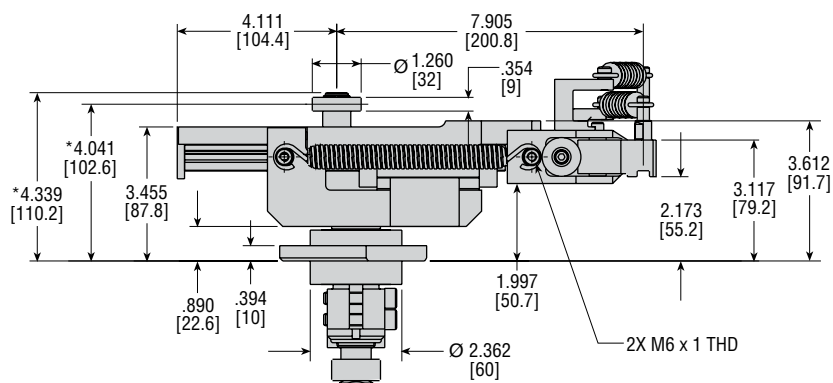


VIEW R-R - 30° HEAD

NOTES:

- 1) ALL DIMENSIONS ARE FOR REFERENCE ONLY
- 2) DIMENSIONS IN [] INDICATE VALUES IN mm
- 3) * DIMENSION IS INCREASED BY .472 [12] FOR MACHINE 4040 UNITS (TWIN CAM)

DIMENSIONS: SERIES BST TRANSFER ARM - 160°/180° HEAD



VIEW R-R - 160° / 180° HEAD

NOTES:

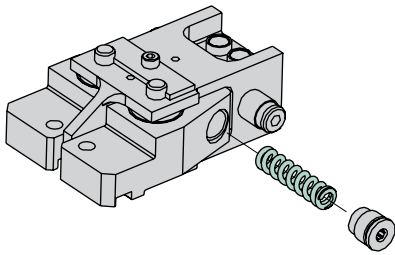
- 1) ALL DIMENSIONS ARE FOR REFERENCE ONLY
- 2) DIMENSIONS IN [] INDICATE VALUES IN mm
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PROCESSES & OPTIONS: SERIES BST TRANSFER ARM

CSD PROCESS

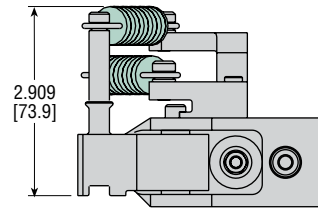
30° JAW OPENING

An internal compression spring provides the necessary grip force for CSD bottle processes.



160°/180° JAW OPENING

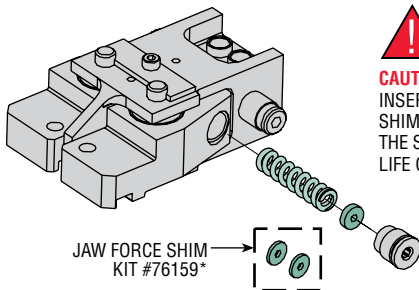
External extension springs provide the necessary grip force for CSD bottle processes.



HEAT SET PROCESS

30° JAW OPENING

An internal compression spring with a jaw force shim provides the necessary grip force for heat set bottle processes. An additional shim kit is available to adjust the spring force higher or lower than standard. The kit provides two shims that are half the thickness of the standard shim and increases the grip force by 2.8 lb [12.5 N] each at the finger tooling.



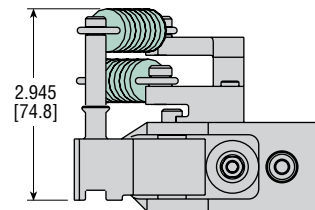
CAUTION:
INSERTION OF MORE THAN TWO SHIMS PER SIDE MAY DAMAGE THE SPRING AND/OR REDUCE THE LIFE OF THE UNIT.

JAW FORCE SHIM
KIT #76159*

* KIT INCLUDES: 2 SHIM WASHERS

160°/180° JAW OPENING

External extension springs with heavier spring force provide the necessary grip force for heat set bottle processes.

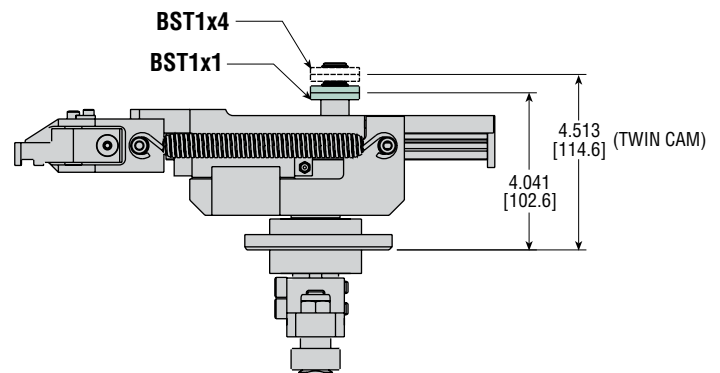


CAM BEARING

BST1x1 - This is for most Series1 Transfer Arms.

BST1x4 - 4040 Machines (Twin Cam)

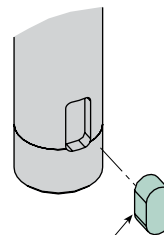
This raises the cam bearing .472 [12 mm] higher from the arm face.



Q9 FACTORY INSTALLED PIVOT ARM ALIGNMENT KEY

Factory installation of the key provides a unit that does not need to be jig set.

WARNING: Pivot Arm Alignment Key is for alignment purposes only and is not intended as a safety shear coupling. If the Sidel® machine's torque limiter is set incorrectly, damage to the transfer arm may occur if the arm is contacted during machine operation.



NOTE:

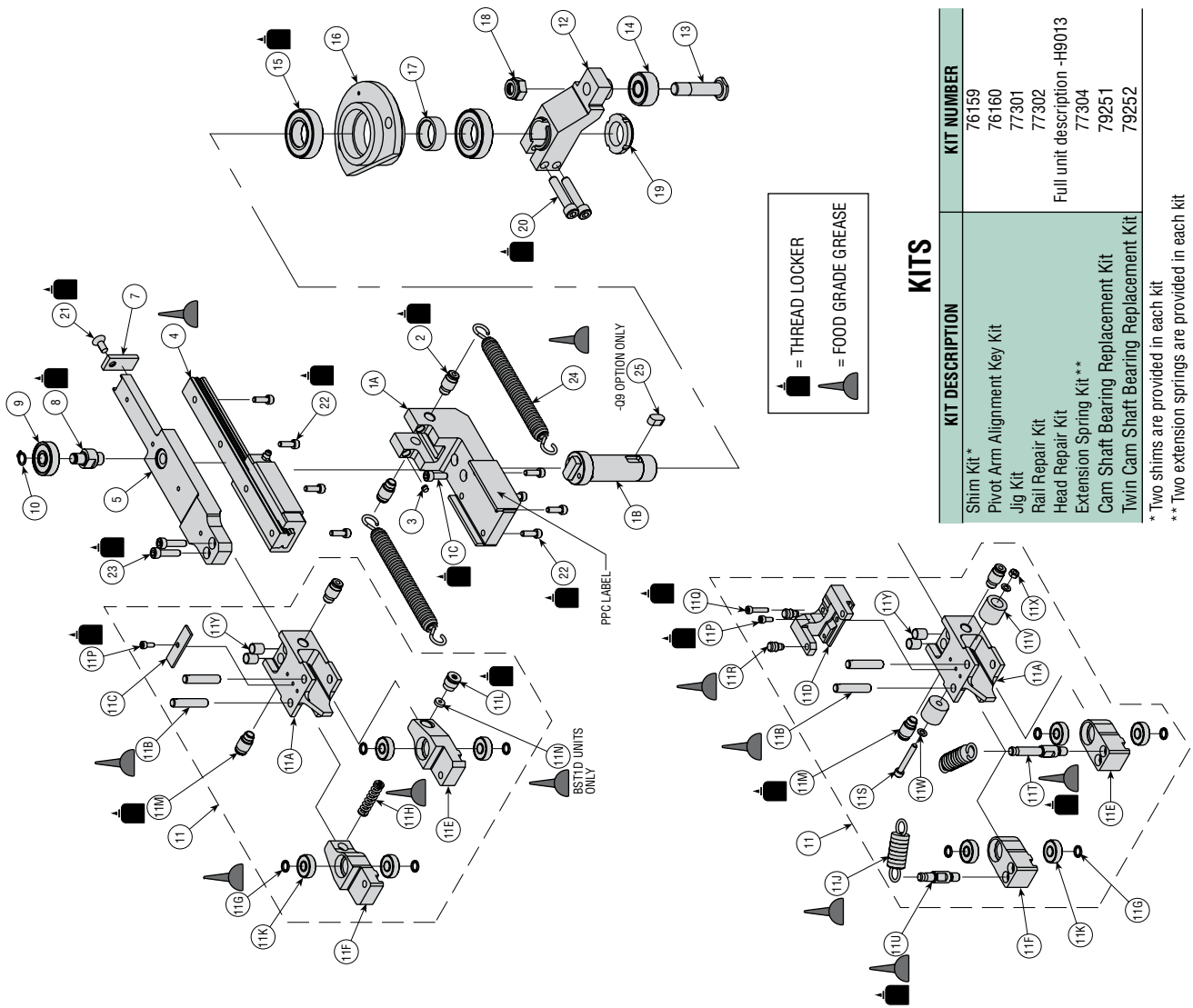
KEYWAY IS PROVIDED AS STANDARD. IF -Q9 OPTION IS NOT ORDERED, THE TRANSFER ARM MUST BE JIG SET. THE KIT CAN BE ORDERED SEPARATELY FOR FIELD RETROFIT IF REQUIRED.

- Q9 OPTION - KEY KIT NO. 76160*
RECTANGULAR KEY INSTALLED

* KIT INCLUDES: 1 - RECTANGULAR KEY - SHAFT TO PIVOT ARM

PARTS LIST & REPAIR KITS: SERIES BST TRANSFER ARM

KEY	PART DESCRIPTION	PART NO.	
		BST1x1	BST1x4
1	Base to Shaft Assembly	78002	
1A	Base		
1B	Shaft		
1C	Base to Shaft SHCS	Sold as part of Base to Shaft Assembly	
2	Return Spring Pin	77564	
3	Shock Pad	68000	
4	Rail and Carriage Assembly	Sold as part of Rail Repair Kit	
5	Mounting Arm	77338	
7	Safety Stop	75559	
8	Upper Bearing Shaft	75545	76043
9	Upper Cam Bearing	2334-047	
10	Retaining Ring	63462-008	
11	Head Assembly	Full unit description -H1100	
11A	Gripper Body	Sold as part of Head Assembly	
11B	Jaw Bearing Pin	Sold as part of Head Assembly or Head Repair Kit	
11C	Jaw Pin Lock		
11D	Spring Body Holder	Sold as part of Head Assembly	
11E	Right Hand Jaw	Head Assembly	
11F	Left Hand Jaw	Head Assembly	
11G	Bearing Washer		
11H	Jaw Compression Spring	Sold as part of Head Assembly or Head Repair Kit	
11J	Jaw Extension Spring		
11K	Jaw Bearing		
11L	Spring Plug		
11M	Return Spring Pin		
11N	Jaw Force Shim		
11P	Pivot Pin Lock SHCS		
11Q	Spring Body Holder SHCS		
11R	Spring Body Holder Pin	Sold as part of Head Assembly	
11S	Jaw Stop SHCS	Head Assembly	
11T	Tail Spring Post		
11U	Short Spring Post		
11V	Jaw Stop		
11W	Washer		
11X	Nut		
11Y	Head Key		
12	Pivot Arm	75543	
13	Lower Cam Bearing Shaft	75552	
14	Lower Cam Bearing	2334-041	
15	Mounting Flange Bearing	2334-013	
16	Mounting Flange	75544	
17	Bearing Spacer	75548	
18	Locking Nut	66759-007	
19	Spanner Locking Nut	75556	
20	Pivot Arm SHCS	14308-031	
21	Safety Stop SFHCS	14308-598	
22	Carriage/Rail SHCS	14308-034	
23	Mounting Arm to Head SHCS	14308-120	
24	Return Extension Spring	Sold as part of Extension Spring Kit	
25	Shaft Key	Sold as part of Pivot Arm Alignment Key Kit	



KITS

KIT DESCRIPTION	KIT NUMBER
Shim Kit*	76159
Pivot Arm Alignment Key Kit	76160
Jig Kit	77301
Rail Repair Kit	77302
Head Repair Kit	77304
Extension Spring Kit**	79251
Cam Shaft Bearing Replacement Kit	79252
Twin Cam Shaft Bearing Replacement Kit	

Full unit description -H9013

* Two shims are provided in each kit
 ** Two extension springs are provided in each kit