



PR-68 INTERNAL TUBE CUTTER

OPERATING PROCEDURES



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STAGE ASSEMBLY FOR INTERNAL TUBE CUTTER PR-68



PR-68

TOOL BIT



PR-68 INTERNAL TUBE CUTTER OPERATING PROCEDURES



PLEASE READ THROUGH ALL OPERATING PROCEDURES THOROUGHLY AND CAREFULLY BEFORE ATTEMPTING USING THIS TOOL. COMPLIANCE TO THESE INSTRUCTIONS CAN PREVENT SAFETY HAZARDS.

For cutting pipe or tubing from 0.394 (10mm) ID to 4.400" (113mm) OD. sizes indicated below accommodate a 4" (100mm) reach. 8" (200mm), 12" (300mm) and 16" (400mm) reaches are available on request. Tube cutter is driven by either electric, pneumatic or hydraulic motors. When ordering please specify tube OD and ID, coupled with the number of spare cutting bits desired.



PR-68

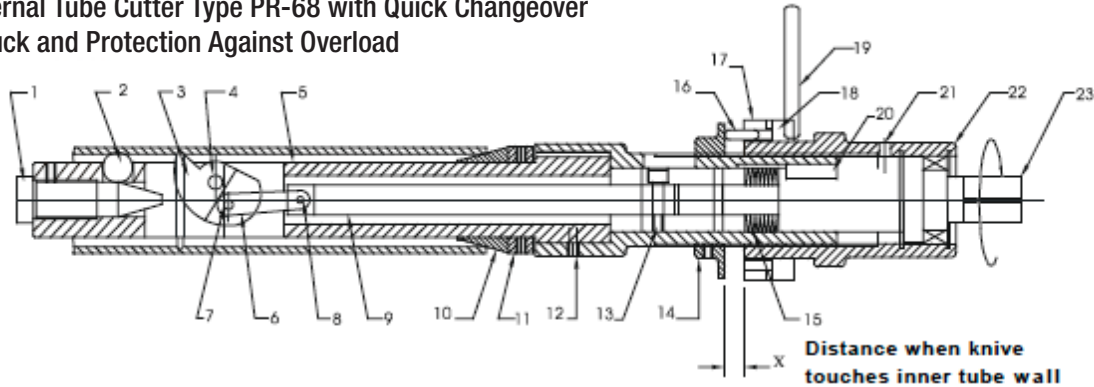
TOOL BIT

Size	Tool Reference Number	Spare Bit Reference Number	Tube I.D. Range		Max. Tube O.D.		Body Diameters		Drive Square Male
			mm	in	mm	in	mm	in	
95	680951	1680951	10-12	.394-.472	15	0.591	9.5	0.374	1/2"
105	681051		11-13	.433-.512	18	0.709	10.5	0.413	
115	681151	1681151	12-14	.472-.551	19	0.748	11.5	0.453	
125	681251	1681251	13-15	.519-.591	20	0.787	12.5	0.492	
135	681351		14-17	.551-.669	23	0.906	13.5	0.531	
155	681551		16-19	.630-.748	25	0.984	15.5	0.61	
175	681751	1681751	18-21	.709-.827	27	1.063	17.5	0.689	
195	681951	1681951	20-25	.787-.984	34	1.339	19.5	0.768	
245	682451	1682451	25-30	.984-1.181	38	1.496	24.5	0.965	
290	682901	1682901	30-35	1.181-1.378	43	1.693	29	1.142	
330	683301		35-40	1.378-1.575	48	1.89	33	1.299	
380	683801		40-50	1.575-1.969	58	2.126	38	1.496	
480	684801	1684801	50-60	1.969-2.362	68	2.677	48	1.89	3/4"
530	685301		55-65	2.165-2.559	73	2.874	53	2.087	
630	686301		65-75	2.559-2.953	83	3.268	63	2.48	
730	687301	1687301	75-85	2.953-3.346	93	3.661	73	2.874	
830	688301		85-95	3.346-3.740	103	4.055	83	3.268	
930	689301		95-105	3.740-4.134	113	4.449	93	3.661	



PR-68 INTERNAL TUBE CUTTER OPERATING PROCEDURES

Internal Tube Cutter Type PR-68 with Quick Changeover
Chuck and Protection Against Overload



1. Mechanical Drive

- The Internal Tube Cutter PR 68 is driven via the square on the end of the spindle (23) in a clockwise direction using either an electric, pneumatic or hydraulic driving machine.

2. Cutting Speed

Carbon Steel and Non-Ferrous Tubes		High alloy steels	
O.D.	RPM	O.D.	RPM
1.1/8" - 1.3/4" (28.58 - 44.45MM)	90-115	1.1/8" - 1.3/4" (28.58 - 44.45MM)	51-76
2" - 2.3/4" (50.8 - 69.85MM)		2" - 2.3/4" (50.8 - 69.85MM)	
3" - 3.3/4" (76.2 - 95.25MM)	38-50	3" - 3.3/4" (76.2 - 95.25MM)	22-35
4" - 4.1/2" (101.6 - 114.3MM)	34-40	4" - 4.1/2" (101.6 - 114.3MM)	17-28

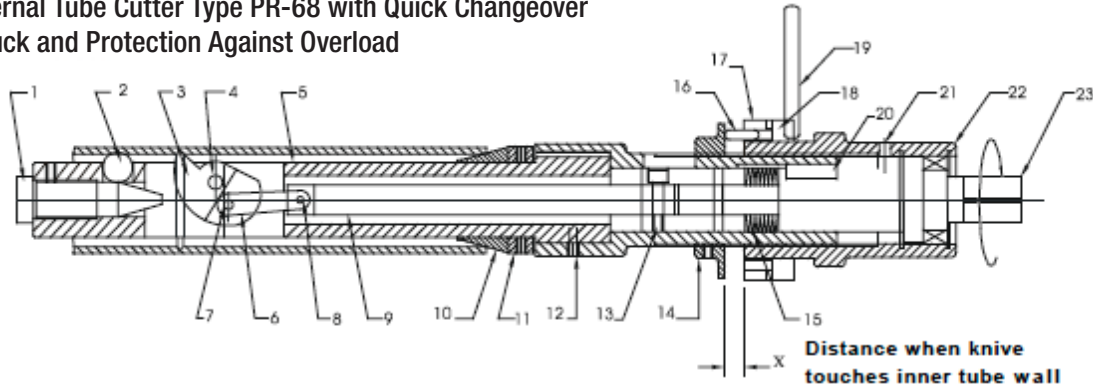
3. Setting Up for Cutting

- First of all adjust the guide balls (2) by turning screw (1) until they fit the inside of the tube and can guide the cutter. Then set the depth of cut using the setting ring (11). Once the internal tube cutter has been positioned inside the tube, the conical ring (10) will act as a second centering device.
- Turn the nut (22) to the left until the cutting knife (3) touches the inside of the tube. When using carbon steel or non-ferrous tubes with wall-thicknesses up to 5 mm (0.20") the distance "X" between the setting ring (14) and the pawl (17) should be set at 7 mm (0.275"). When using tubes with wall-thicknesses above 5 mm (0.20"), especially if they are chromenickel or other hard alloy steel tubes, the distance "X" should be set at 10 mm (0.393").
- If, for any other reason, 7 mm is not sufficient, it can be increased up to a maximum of 10 mm (0.393").



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4. Cutting Operation

- Turn on the driving machine and make sure that it is running in a clockwise direction. The lever (19) should be held by hand or stopped from turning in some other way. The clutch (18) is inserted into pawl (17) by holding the lever (19) and the automatic feed is thus started. The left-hand thread of the nut (22) will push the mandrel (23) forward, while the plate springs (15) take up the feed and partly absorb it. The feed movement will cause the pawl (17) to move against the pins (16) and eventually on to the adjustment collar (14), and thus the clutch dog (18) is disengaged. This means that the feed movement the mandrel (18) has been completed. The plate springs (15) now push forward the knife (3) by means of the rod (9) and the link (6) until the tube has been cut.

Please Note : If the distance “X” is set incorrectly, the plate springs (15) can jam. Neither the clutch (18) nor the pawl (17) will disengage. If, when this happens, the lever (19) is held, the feed movement will be forced by the left hand thread of the nut (22) and will cause breakage of the knife (3). If this does happen, immediately loosen the lever (19).

5. Release

- The internal tube cutter should be disengaged by turning the nut (22) in a clockwise direction by hand, as far as it will go.

Please Note : Never disengage the cutter using a power driven machine, as this may cause the knife to break.

6. Removal of Knife

- Should the knife (3) have to be removed for any reason the following sequence of operations must be done: Knock out pin (4). Remove knife (3). To reassemble, put back together in reverse order.

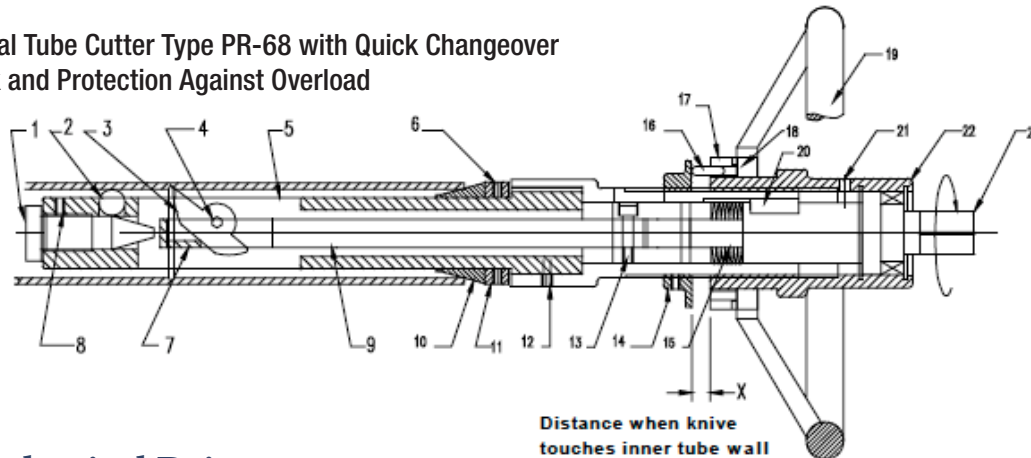
7. Lubrication

- The feed thread of nut (22) should be greased via bore (21) with Molycote or Liquid Moly Oil. Also the knife (3) should be greased using any industrial high speed cutting lubricant.

Attention : The life time of this tool, especially of the knife will increase tremendously if tool will be cleaned thoroughly after each cutting operation.

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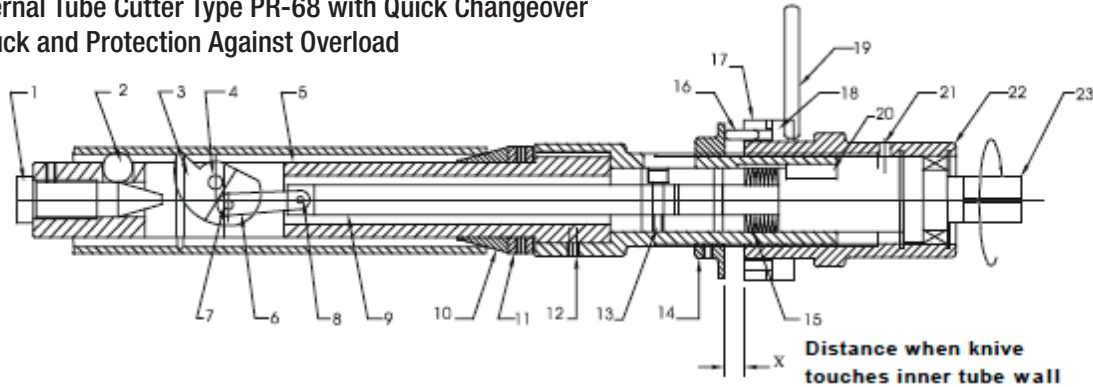
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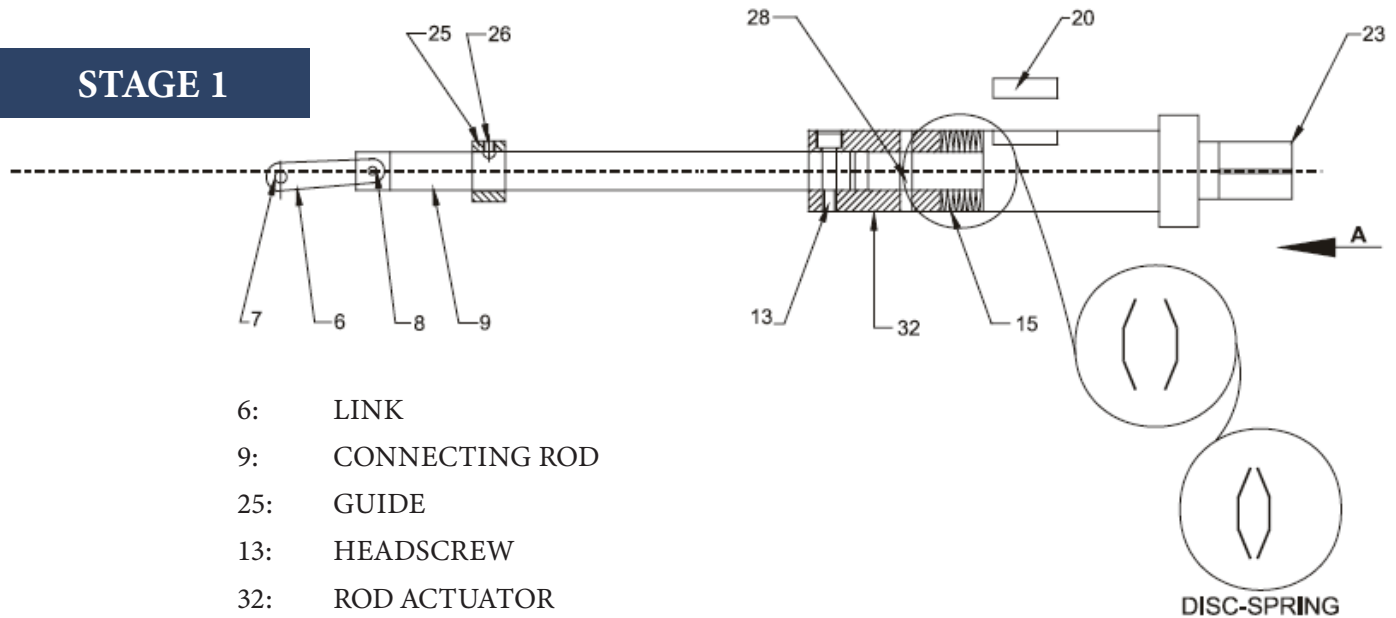
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PR-68 INTERNAL TUBE CUTTER OPERATING PROCEDURES

STAGE 1



- 6: LINK
- 9: CONNECTING ROD
- 25: GUIDE
- 13: HEADSCREW
- 32: ROD ACTUATOR
- 15: DISC-SPRINGS
- 20: KEY
- 28: PIN



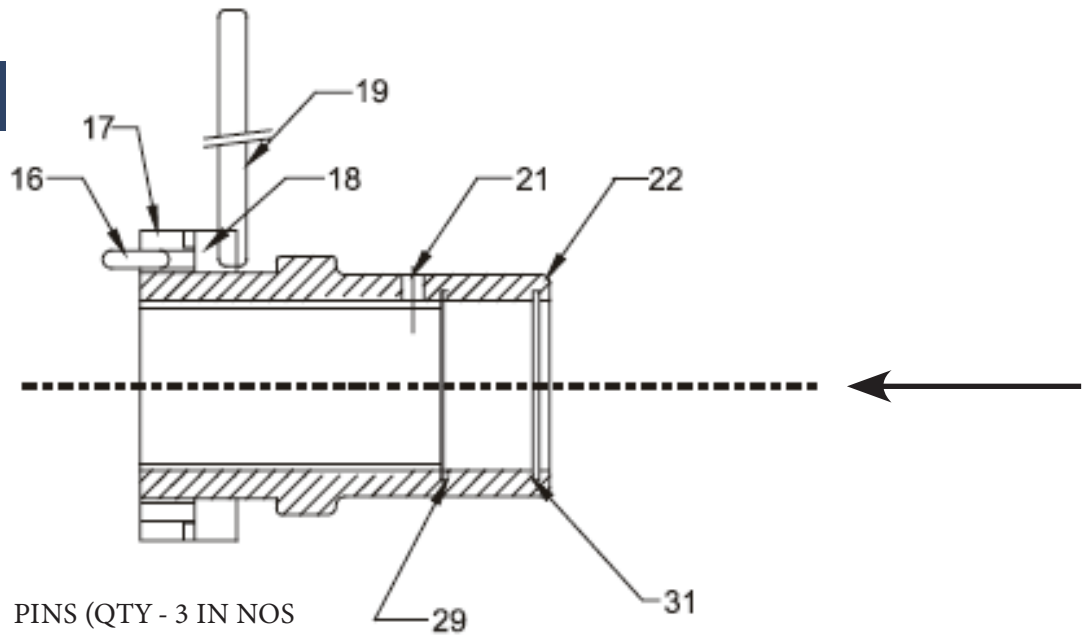
NOTE: AS SHOWN IN STAGE (1), ASSEMBLE IN ORDER

- PLACE THE KEY (20) IN ITS SLOT
- PIN THE ROD ACTUATOR (32) TO THE MANDREL (23) AFTER PLACING THE DISC-SPRINGS. ENSURE THAT THE DISC-SPRINGS ARE PLACED AS SHOWN IN THE ENLARGED VIEW.
- BY USING THE HEAD SCREW (13), ATTACH THE CONNECTING ROD (9) TO THE ROD ACTUATOR (32)
- ATTACH PILOT (25) TO THE CONNECTING ROD (9)
- PIN LINK (6) TO CONNECTING ROD (9) WITH SMALLER DIAMETER INSIDE THE SLOT



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STAGE 2



- 16: PINS (QTY - 3 IN NOS)
- 17: PAWL
- 18: CLUTCH
- 29: CIRCLIP IN ITS GROOVE
- 31: GROOVE FOR SECOND CIRCLIP



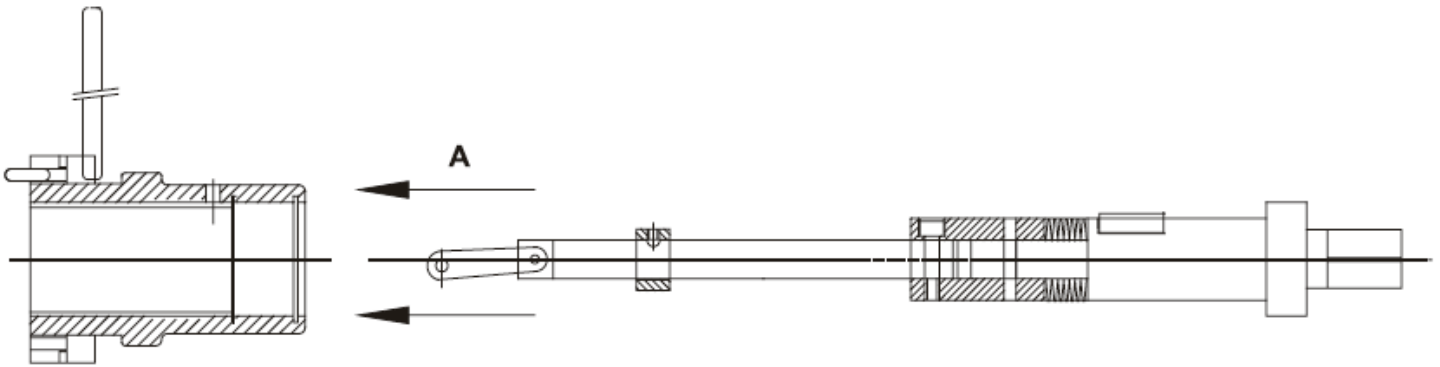
NOTE: AS SHOWN IN STAGE (2), ASSEMBLE IN ORDER

- PLACE CIRCLIP (29) INTO ITS GROOVE
- PLACE CLUTCH (18) ON FEED NUT (22) AS SHOWN
- LOCK THE PAWL (17) BY GRUB SCREWS AT THEIR RESPECTIVE POSITIONS
- PLACE THE PINS (16) IN POSITION TAKING CARE THAT THEY DO NOT FALL DOWN



PR-68 INTERNAL TUBE CUTTER OPERATING PROCEDURES

STAGE 3



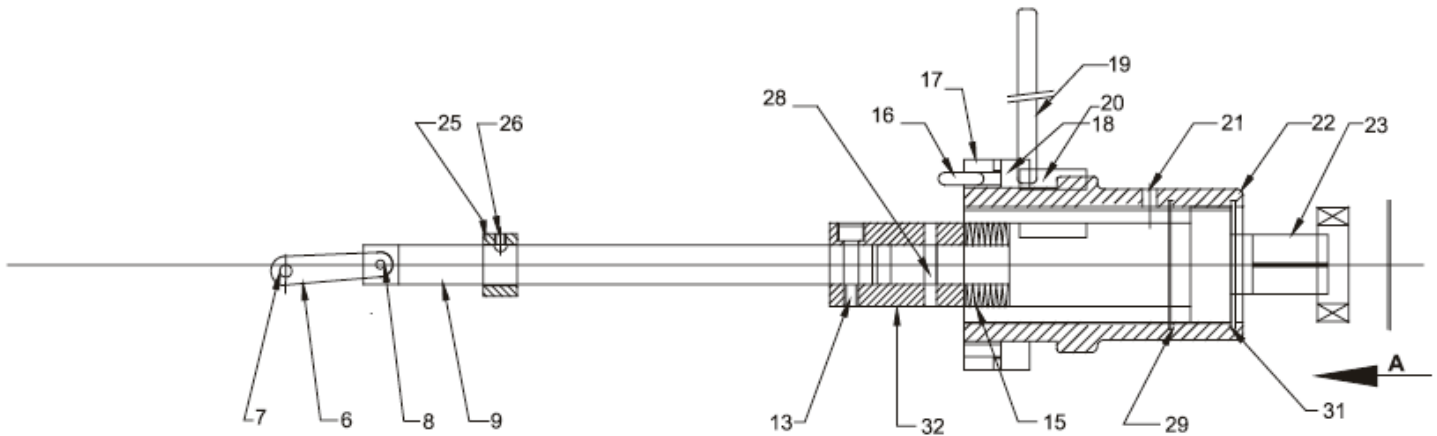
NOTE:

- INSERT THE ASSEMBLY SHOWN IN STAGE (1) THROUGH “A”



PR-68 INTERNAL TUBE CUTTER OPERATING PROCEDURES

STAGE 4

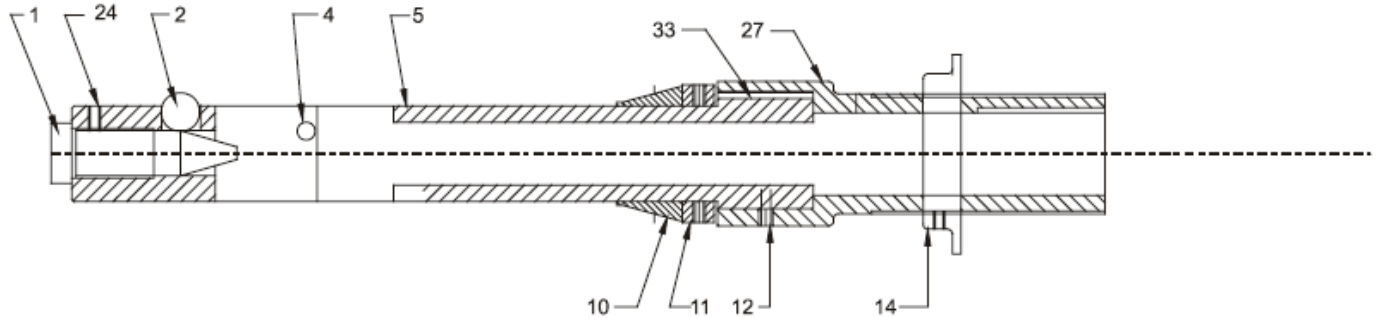


NOTE: ASSEMBLE AS SHOWN IN THE DRAWING

- INSERT THE BEARING (23) INTO ITS POSITION
- LOCK THE MANDREL (23) BY PLACING THE CIRCLIP (34) IN THE GROOVE (31)

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STAGE 5



- 1: GUIDE SCREW
- 24: SCREW TO TIGHTEN THE GUIDE SCREW (1)
- 2: BALLS
- 4: PIN-HOLE
- 5: BODY
- 10: PILOT
- 11: PILOT SUPPORT
- 14: SET RING
- 33: KEY
- 27: CAGE

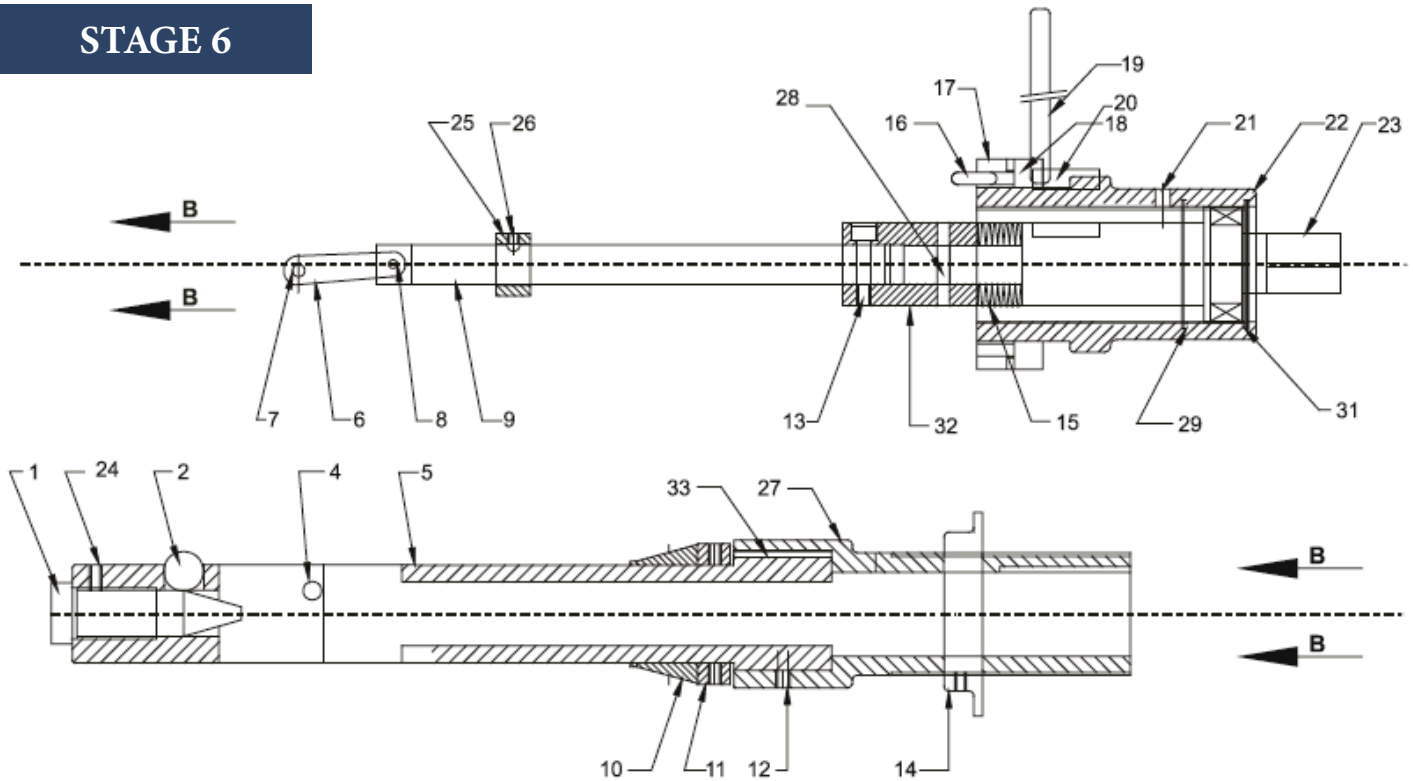


NOTE:

- LOCK THE CAGE (27) TO BODY (5) BY USING GRUB SCREWS
- USE THE KEY (33) TO PLACE THE BODY (5) IN THE CAGE (27)

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STAGE 6



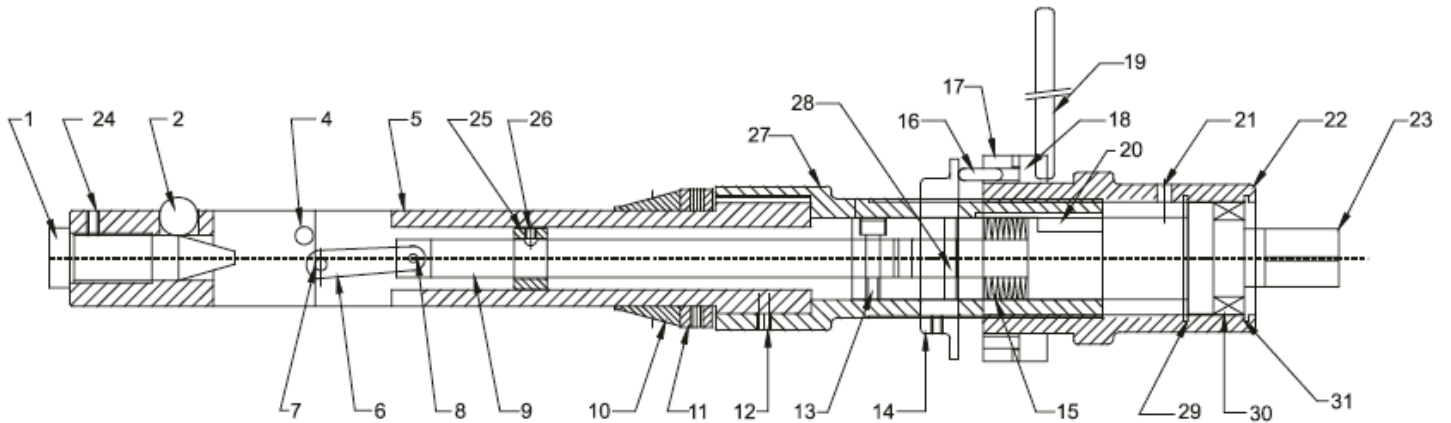
NOTE:

- THREAD ON ASSEMBLY FROM UPPER FIGURE THROUGH B-B
- WHILE THREADING ON THE FEED NUT (COUNTER-CLOCKWISE), ADJUST THE KEY ON MANDREL TO SLIDE IN THE KEY-WAY



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STAGE 7



NOTE:

- PIN THE TOOL BIT ACCORDING TO THE INSTRUCTIONS GIVEN IN THE OPERATING MANUAL