

# **S**ECTION 5

## **500 SERIES**

7-4	<a href="#"><u>Snubber Assembly – Parts</u></a>
7-5	<a href="#"><u>Slot Housing (B3500-17,B3500-20,B3500-21)</u></a>
7-6	<a href="#"><u>O.E.M. Pinhead Styles</u></a>
7-8	<a href="#"><u>Mounting and Operational Instructions- Wear Block</u></a>
7-10	<a href="#"><u>Mounting and Operational Instructions Kit # B3500-17 (universal slot)</u></a>
7-12	<a href="#"><u>Snubber Ass'y Parts (John Deere)</u></a>
7-13	<a href="#"><u>Snubber Ass'y Mounting JD640 – JD740 (Fabricated Tongs)</u></a>
7-14	<a href="#"><u>Snubber Ass'y Mounting JD548D – JD648D – JD740A (Cast Tongs)</u></a>
7-15	<a href="#"><u>Snubber Ass'y Mounting JD548E – JD648E – JD748E</u></a>
7-16	<a href="#"><u>Snubber Ass'y Mounting John Deere – G series Kit # B3500-6</u></a>
7-17	<a href="#"><u>Snubber Ass'y Parts Timberjack</u></a>
7-19	<a href="#"><u>Snubber Ass'y Parts TJ480 – TJ520</u></a>
7-20	<a href="#"><u>Snubber Ass'y Parts – Ranger 666 – 667, C series, Early D series 1 ¾” pins</u></a>
7-23	<a href="#"><u>Snubber Ass'y Parts – Ranger 666 – 667, late D series, F-G-H 2” pins</u></a>
7-26	<a href="#"><u>Snubber Ass'y Ranger 668D – 668F</u></a>
7-28	<a href="#"><u>Snubber Ass'y Universal Mount</u></a>
7-29	<a href="#"><u>Snubber Ass'y Universal Mount (slot housing) Kit # B3500-17</u></a>
7-30	<a href="#"><u>B3500-1</u></a>
7-32	<a href="#"><u>B3500-2</u></a>
7-34	<a href="#"><u>B3500-3</u></a>
7-36	<a href="#"><u>B3500-4</u></a>
7-38	<a href="#"><u>B3500-5</u></a>
7-40	<a href="#"><u>B3500-6</u></a>
7-42	<a href="#"><u>B3500-7</u></a>

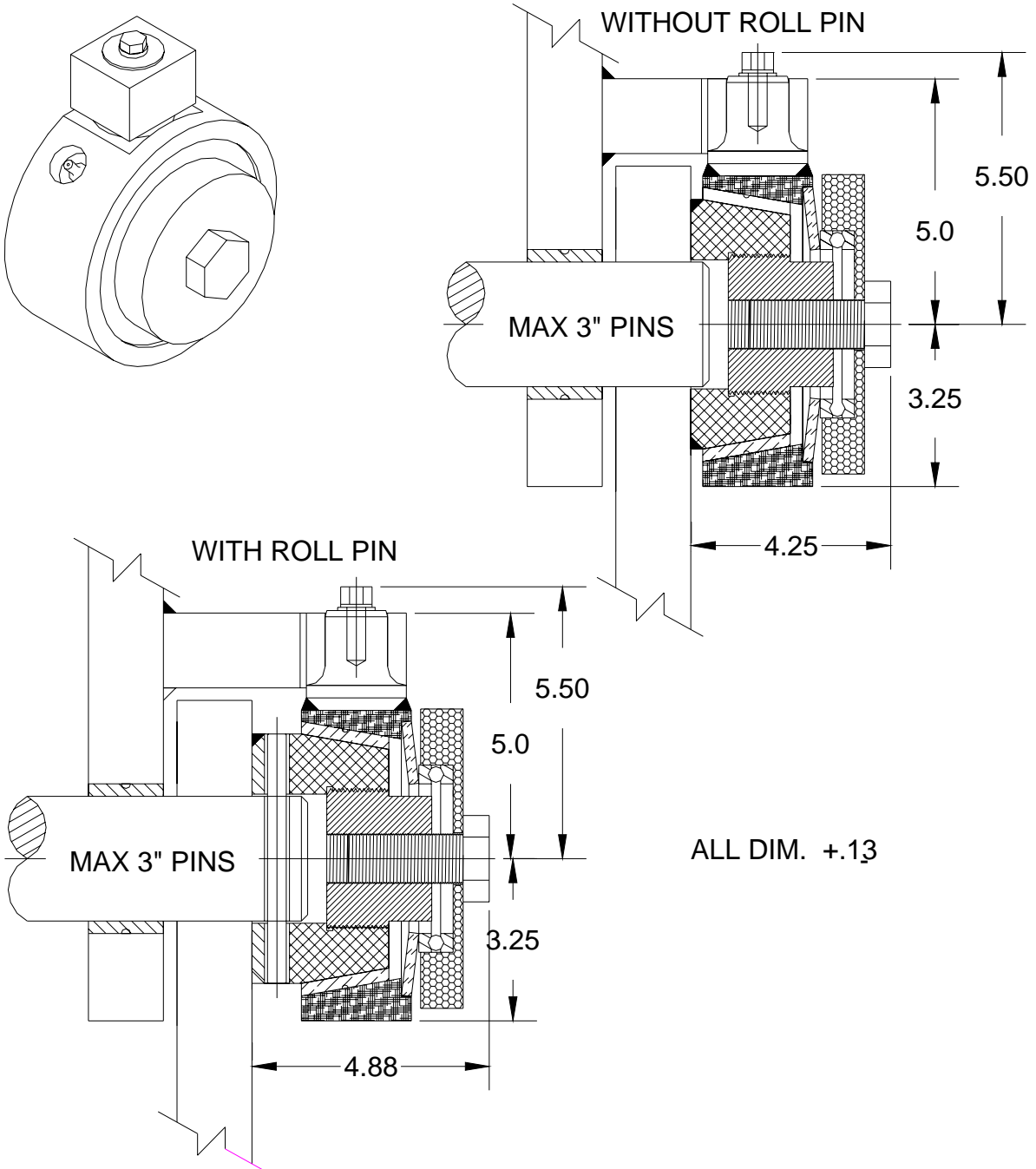
***PROLENC***®  
MANUFACTURING INC.

7-44	<a href="#"><u>B3500-8</u></a>
7-46	<a href="#"><u>B3500-9</u></a>
7-48	<a href="#"><u>B3500-10</u></a>
7-50	<a href="#"><u>B3500-11</u></a>
7-52	<a href="#"><u>B3500-12</u></a>
7-54	<a href="#"><u>B3500-13</u></a>
7-56	<a href="#"><u>B3500-14</u></a>
7-58	<a href="#"><u>B3500-15</u></a>
7-60	<a href="#"><u>B3500-16</u></a>
7-62	<a href="#"><u>B3500-17</u></a>
7-64	<a href="#"><u>B3500-18</u></a>
7-66	<a href="#"><u>B3500-19</u></a>
7-68	<a href="#"><u>B3500-20</u></a>
7-70	<a href="#"><u>B3500-21</u></a>

**EXTERNAL MOUNT**

**500 SERIES**

SNUBBER ASSEMBLY – PARTS



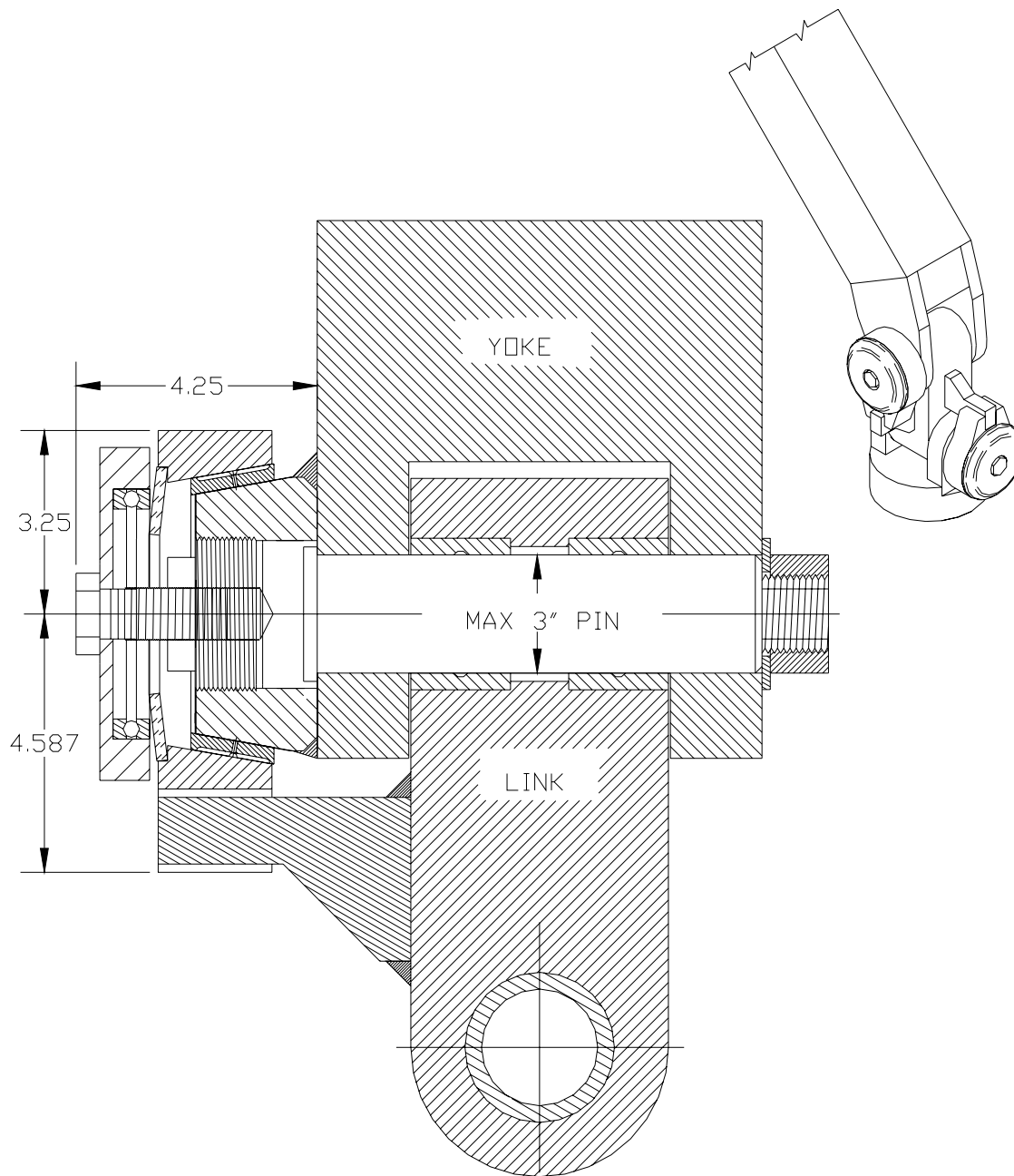
**EXTERNAL MOUNT**

**500 SERIES**

**B3500-17,B3500-20,B3500-21**

SNUBBER ASSEMBLY – PARTS

SLOT HOUSING



**EXTERNAL MOUNT**

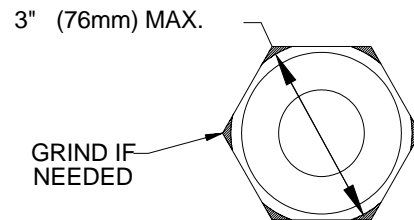
**500 SERIES**

**MOUNTING AND OPERATIONAL INSTRUCTIONS**

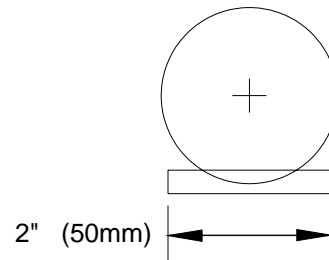
**O.E.M. PINHEAD STYLES**

Original pin heads must be smaller than 3 1/8 " (79 mm.) To allow passage of pin through core during attachment disassembly.

- A)** Hex style pin heads 3 1/8" across corners or larger must have corners of hex ground to 3" (76 mm) or less.

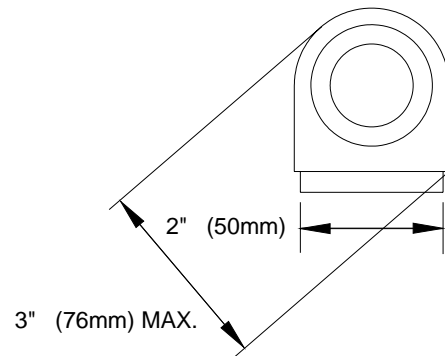


- B)** Pin heads with a milled flat area rest against external keystone to prevent pin from turning during assembly. This keystone must be short enough, 2" (50 mm) maximum, to fit under core when core is welded into position.

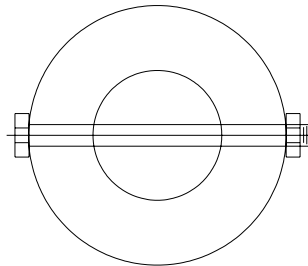


## EXTERNAL MOUNT

- C)** Pinheads with a flat anchor larger than 2 1/2" (63 mm.) can be trimmed and ground.  
\*note\* a flat portion must be retained to stop pin from turning during assembly. Keystock stop maximum 2" (50 mm.) long allowing core to be welded into position.



- D)** Pinheads with cross-bolt/boss heads, usually these are only at one end of pin. Mount snubber at opposite end of pin. If required core # B3T-530 can be ordered, cross drilled for 1/2" spirol pin lock.



**EXTERNAL MOUNT**

500 SERIES

**MOUNTING AND OPERATIONAL INSTRUCTIONS**

**WEAR BLOCK**

The **PROLENC**® snubber is shipped assembled, make note of how it fits together before taking it apart to mount.

1. Remove threaded plug from the center of snubber core.
2. Position the core of the snubber as near to dead center as possible over the pin end, then tack it.\*NOTE\* pins with hex. head may need corners of hex ground to allow removal of pin.
3. To determine where to mount the retaining brackets depends on the attachment link and the clearance for swing. Bolt on brackets fit in the original location. Weld on brackets should be positioned so that the original degree of swing is not restricted, unless stops are provided.

**IMPORTANT:** At no time should the brackets be use as stops.

4. Place the housing with the wear block over the core and friction sleeve.
5. There must be 3/16" clearance between the top of the housing and the bottom of the bracket.
6. There must be 1/2" from the inside of the slot end on the bracket and the wear block.
7. When these distances have been determined, tack the brackets into position and weld. Remove the housing, cover the friction sleeve, and weld. If the bracket or core are welded to cast, welding rod UTP 85 fn has proven very effective after preheating the weld area. For cast steel, low hydrogen 7018 or ARCTEC 223xc welding rod is recommended.
8. Apply a thin coat of LOCTITE 620 (or equivalent) to core and inner sleeve surface before installation of sleeve.
9. Install core plug. Install friction sleeve with sleeve retainer, between core and inner surface of sleeve. Apply a liberal amount of Moly based grease to outer friction sleeve surface, B3T-390G sleeve only, then mount outer housing.
10. **Pack Bearing with Grease---** and install end-cap and bolt.

**EXTERNAL MOUNT**

**500 SERIES**

11. To set the tension, simply tighten end-cap bolt.

**IMPORTANT:** Do not apply so much pressure on the spring washer that it presses it flat. This will result in the grapple being too stiff, and if the spring washer is over-centered, the tension will be lost.

12. To replace the friction sleeve, remove the end-cap bolt, bearing, and housing. Pry off friction sleeve using a bar on each side. Heat may be required to loosen sleeve retainer. To install a new friction sleeve, push on by hand.

13. Wear block may be rotated 90 degrees, to achieve a new wear surface before replacement is necessary. **IMPORTANT:** \*\*\* Turn or Replace wear block once .060" wear clearance has occurred between wear block and anchor bracket\*\*\*

**IMPORTANT:** All service points on the snubber should be greased every 10 hours.  
Friction Sleeve: grease B3T-390G only.

Greases with 5% - 6% MOLY are recommended:

Military Spec. MIL G23549C

-Lubriplate 176            5<sup>0</sup>F./-15<sup>0</sup>C.

-Lubriplate 3000        15<sup>0</sup>F./-9.5<sup>0</sup>C.

-Lubriplate 3000W      -30<sup>0</sup>F./-34.5<sup>0</sup>C.

-OR EQUIVALENT



[MOUNTING AND OPERATIONAL INSTRUCTIONS](#)

KIT # B3500-17 -- UNIVERSAL SLOT

The **PROLENC**® snubber is shipped assembled, make note of how it fits together before taking it apart to mount.

1. Remove threaded plug from the center of snubber core.
2. Position the core of the snubber as near to dead center as possible over the pin end, then tack it. \*NOTE\* pins with hex. head may need corners of hex. Ground to allow removal of pin.
3. To determine where to mount the retaining anchors depends on the attachment link and the clearance for swing. Anchor plates must be cut from 1" QT100 plate and positioned so that the original degree of swing is not restricted, unless stops are provided.

**IMPORTANT:** At no time should the anchors be use as stops.

4. Place the slotted housing over the core and friction sleeve.
5. Position the anchor so there is minimum 3/16" clearance between the bottom of the slot in the housing and the anchor.
6. When these distances have been determined, tack the anchors into position and weld. If required for welding clearance access remove the housing, cover the friction sleeve, and weld. If the anchor or core are welded to cast, welding rod UTP 85 fn has proven very effective after preheating the weld area. For cast steel, low hydrogen 7018 or ARCTEC 223xc welding rod is recommended.
7. Apply a thin coat of loctite 620 , or equivalent, to core and inner sleeve surface before installation of sleeve.
8. Install core plug. Apply liberal amount of Moly based grease to outer friction sleeve surface (B3T-390G sleeve only), then mount outer housing.
9. **Pack Bearing with Grease---** and install end-cap and bolt.

**EXTERNAL MOUNT**

**500 SERIES**

10. To set the tension, simply tighten end-cap bolt.

**IMPORTANT:** Do not apply so much pressure on the spring washer that it presses it flat. This will result in the grapple being too stiff, and if the spring washer is over-centered, the tension will be lost.

11. To replace the friction sleeve, remove the end-cap bolt, bearing, and housing. Pry off friction sleeve using a bar on each side. Heat may be required to loosen sleeve retainer. To install a new friction sleeve, Apply loctite 620 to core, push sleeve on by hand.

**IMPORTANT:** All service points on the snubber should be greased every 10 hours. (friction sleeve: grease B3T-390G only).

Greases with 5% - 6% MOLY are recommended:  
Military Spec. MIL G23549C  
-Lubriplate 176           5<sup>0</sup>F./-15<sup>0</sup>C.  
-Lubriplate 3000       15<sup>0</sup>F./-9.5<sup>0</sup>C.  
-Lubriplate 3000w   -30<sup>0</sup>F./-34.5<sup>0</sup>C.  
-OR EQUIVALENT

**EXTERNAL MOUNT**

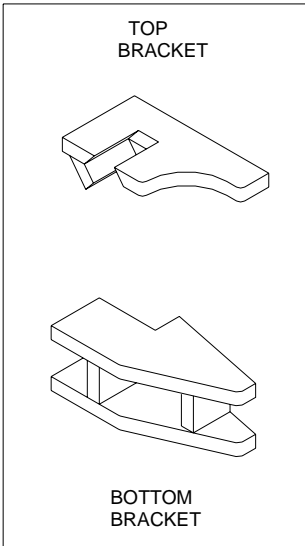
**500 SERIES**

**SNUBBER ASSEMBLY – PARTS**

**JOHN DEERE**

**JD640 - JD740**

**FABRICATED TONGS**



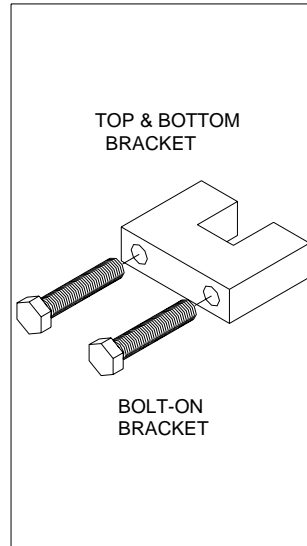
**KIT No. B3500-1**  
FORE AND AFT SWING  
BRACKET B3T-125

REQ.  
1

**KIT No. B3500-2**  
SIDE TO SIDE SWING  
BRACKET B3T-210

1  
1

**JD548E - JD648E - JD748E**

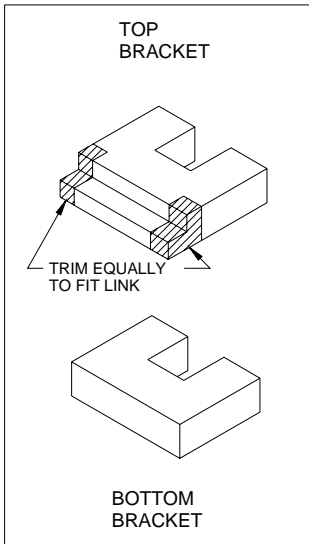


**KIT No. B3500-5**  
TOP & BOTTOM SWING  
BRACKET B3T-205  
BOLT M16x120

REQ.  
2  
1  
2

**JD548D - JD648D - JD740A**

**CAST TONGS**



**KIT No. B3500-3**  
FORE AND AFT SWING  
BRACKET B3T-185

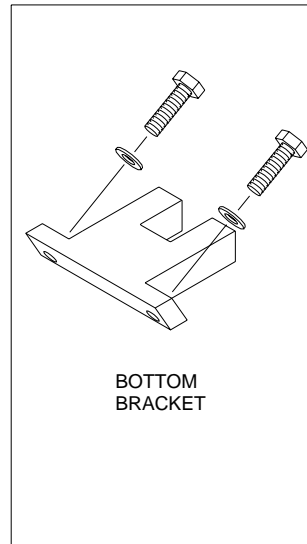
REQ.  
1  
1

**KIT No. B3500-4**  
SIDE TO SIDE SWING  
BRACKET B3T-380

1  
1

**JD548G - JD648G - JD748G**

**SHOCK ABSORBER REPLACEMENT**



**KIT No. B3500-6**  
SIDE TO SIDE SWING  
BRACKET B3T-545  
BOLT B3T-555  
LOCK WASHER B3T-560

REQ.  
1  
1  
2  
2

**EXTERNAL MOUNT**

**SNUBBER ASSEMBLY MOUNTING**

MODEL-----JD640 – JD740 FABRICATED TONGS

TOP PIN KIT No. B3500-1  
BOTTOM PIN KIT No. B3500-2

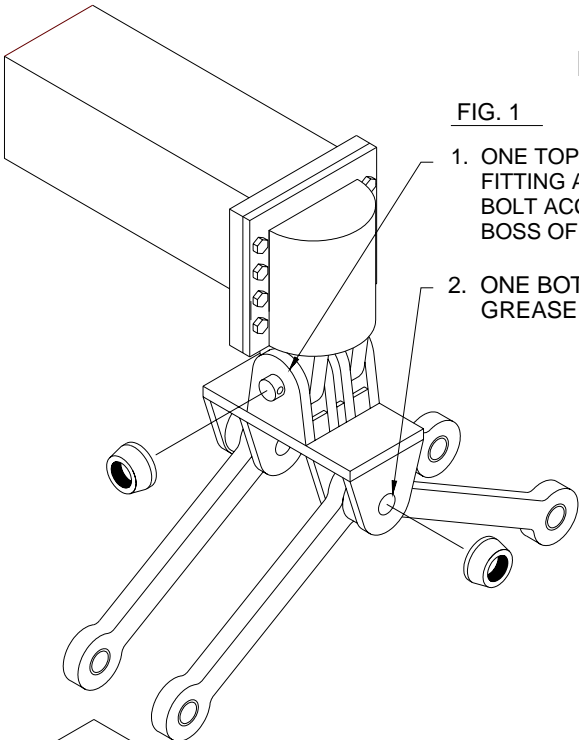


FIG. 1

1. ONE TOP PIN MUST BE REPLACED WITH GREASE FITTING AT OPPOSITE END OF PIN. A KEEPER BOLT ACCESS MUST BE DRILLED THROUGH PIN BOSS OF THE LINK AND THE PIN.
2. ONE BOTTOM PIN MUST BE REPLACED WITH THE GREASE FITTING ON THE OPPOSITE END OF THE PIN.

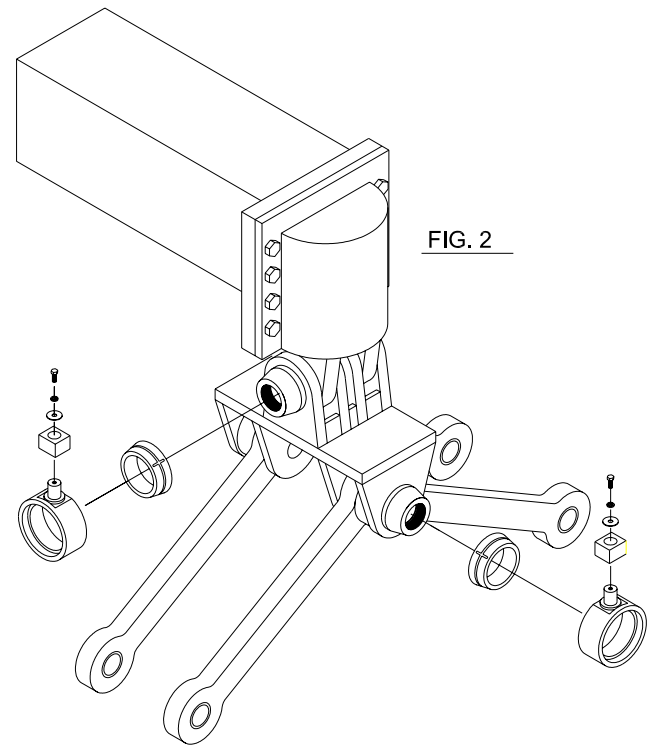


FIG. 2

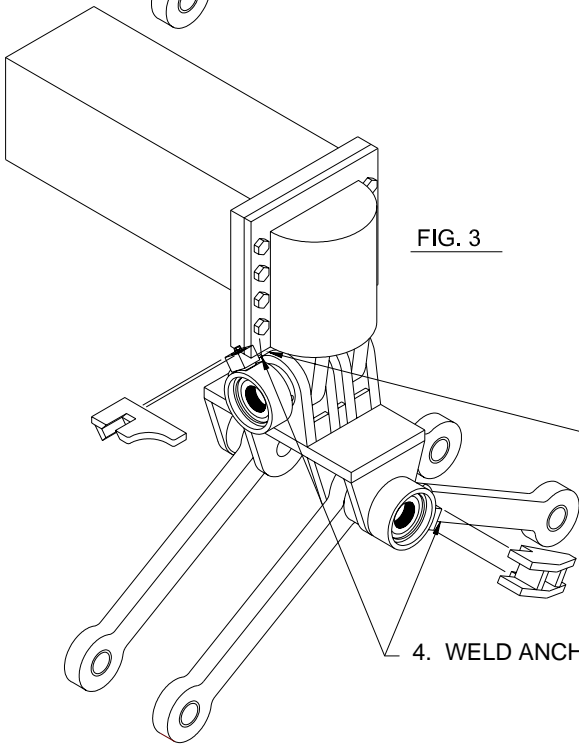


FIG. 3

4. WELD ANCHORS

3. SOME MATERIAL MAY HAVE TO BE REMOVED FROM THE BOTTOM OF THE BOOM. TO ALLOW THE BRACKET TO PASS COMPLETE ROTATION OF THE GRAPPLE.

**EXTERNAL MOUNT**

**SNUBBER ASSEMBLY MOUNTING**

MODEL-----JD548D – JD648D – JD740A CAST TONGS

TOP PIN KIT No. B3500-3  
BOTTOM PIN KIT No. B3500-4

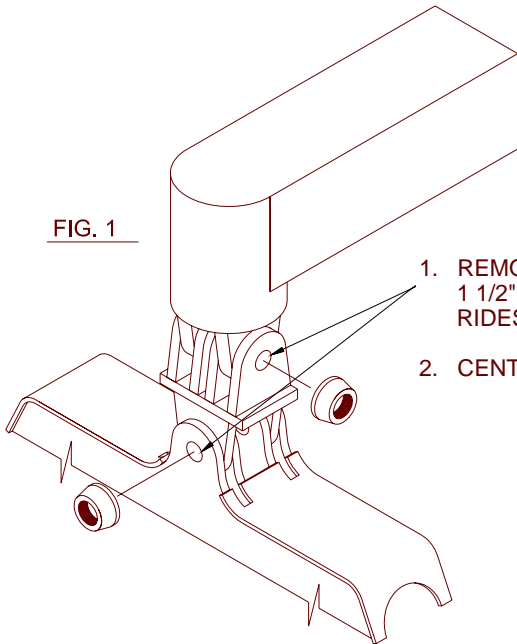


FIG. 1

1. REMOVE ALL JD SNUBBER PARTS. CUT THE 1 1/2" PART OF THE PIN THAT THE SNUBBER RIDES ON FLUSH WITH YOKE AND FRAME.
2. CENTRE CORE AROUND PIN AND WELD.

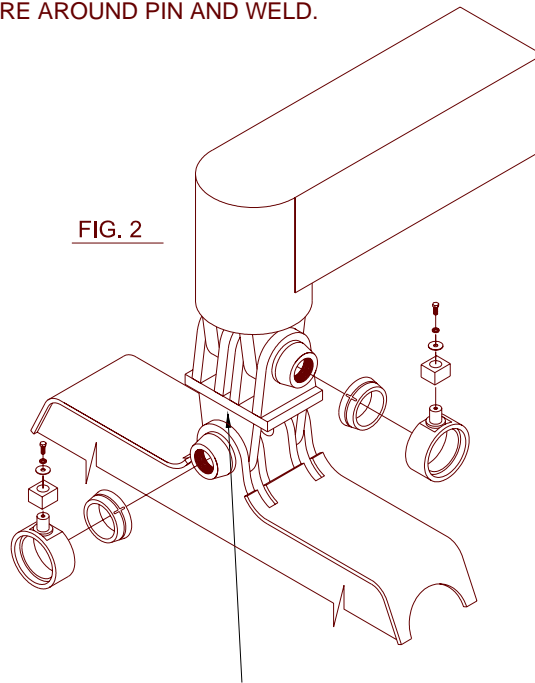


FIG. 2

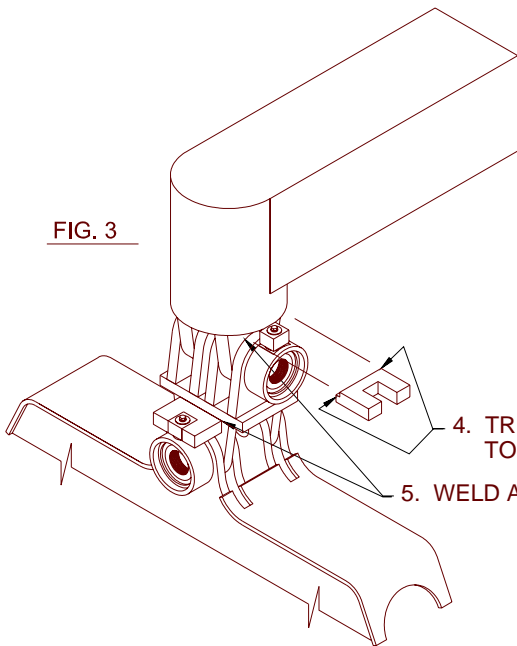


FIG. 3

3. CUT OFF ORIGINAL JD ANCHOR BRACKET MOULDED TO LINK FOR BOTTOM SNUBBER
4. TRIM CORNERS FOR BRACKET TO FIT INTO LINK
5. WELD ANCHORS

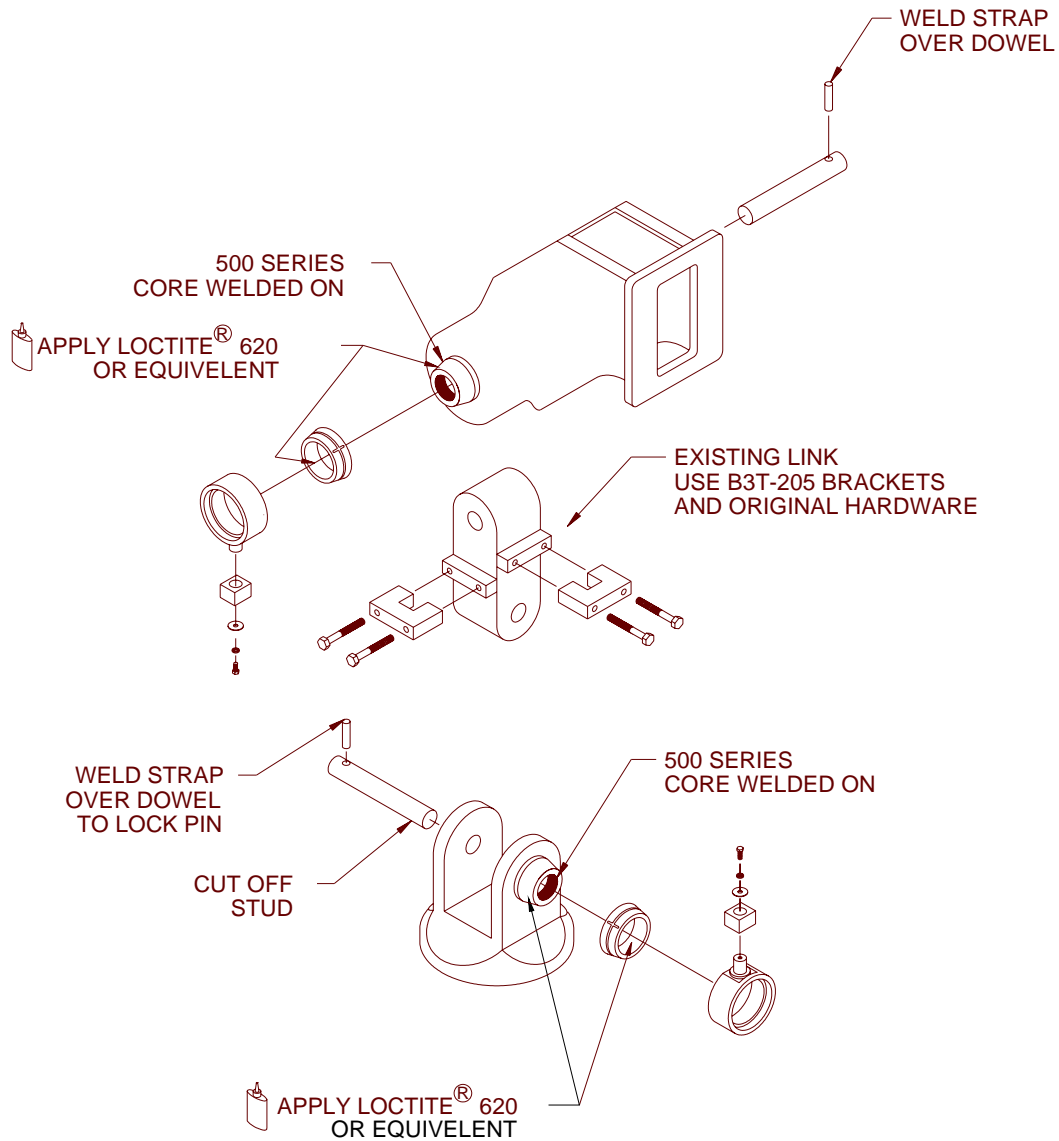
**EXTERNAL MOUNT**

**SNUBBER ASSEMBLY MOUNTING**

**MODELS----JD548E – JD648E – JD748E**

**TOP AND BOTTOM PINS**  
**KIT No. B3500-5 2 REQUIRED PER MACHINE**

1. REMOVE ALL JD ORIGINAL PARTS. CUT THE END OF THE PIN THE SNUBBER RIDES ON.
2. A RETAINING TAB MUST BE WELDED OVER THE PIN RETAINING DOWEL TO LOCK PIN INTO POSITION.
3. REPLACEMENT BOLT ON BRACKETS ARE SUPPLIED.
4. RE-USE ORIGINAL MOUNTING HARDWARE.



**EXTERNAL MOUNT**

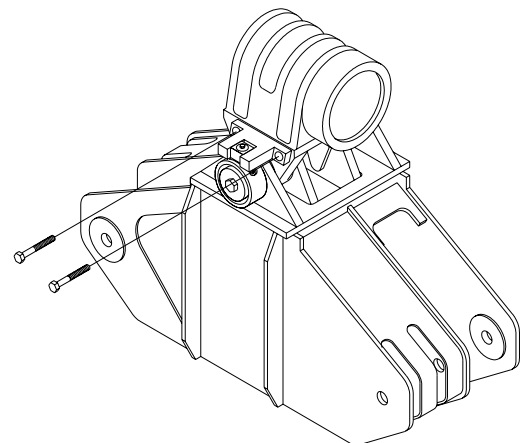
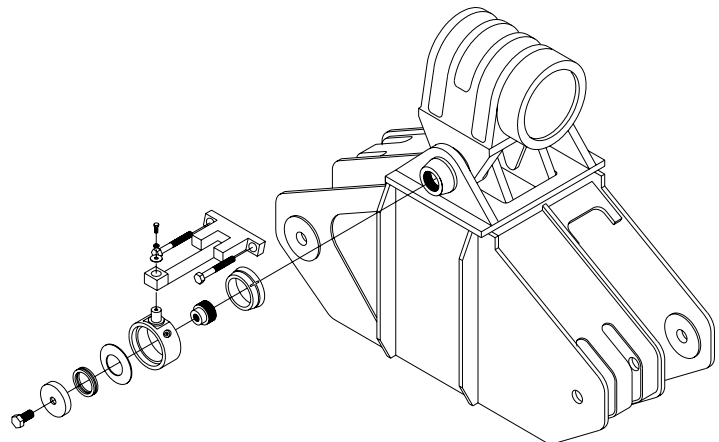
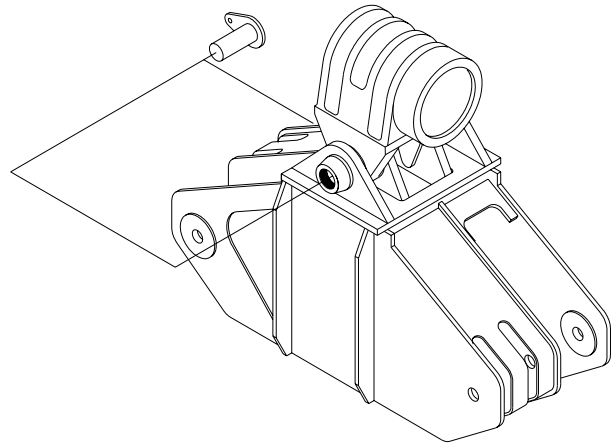
**500 SERIES**

**SNUBBER ASSEMBLY MOUNTING**

**JOHN DEERE – G SERIES**

**SNUBBER KIT # B3500-6**

1. Remove existing shock absorber.
2. Remove 1 pin – grapple frame to grapple yoke. Reinstall pin from inside of grapple frame to grapple yoke. Cut the pin anchor bolt head and install as anchor stud. Weld to grapple frame and lock pin in place.
3. Disassemble snubber. Center core around pin hole of grapple frame and tack into position. Preheat core. Protect core from weld splatter and weld core to frame. Minimum 2 full passes using 7018 welding rod or equivalent.
4. Reassemble snubber. Position anchor bracket provided over the anchor block allowing 1/2" clearance between wear block and inside of slot on the bracket. Mark bolt hole positions on grapple yoke. Drill and tap yoke to accept 3/4" N.C. bolts provided. Reinstall anchor and bolt into position.

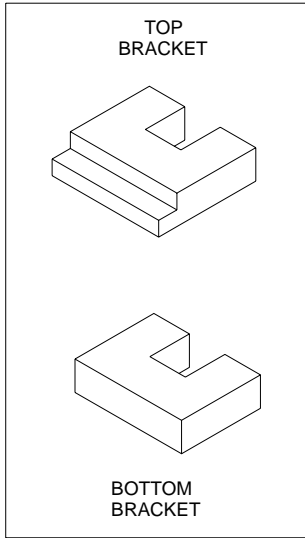


**EXTERNAL MOUNT**

**SNUBBER ASSEMBLY – PARTS**

**TIMBERJACK**

TJ380 - TJ450 (PRIOR TO 1987)  
**105" TIMBERJACK GRAPPLE**



KIT No. B3500-7  
FORE AND AFT SWING  
BRACKET B3T-345

REQ.

1

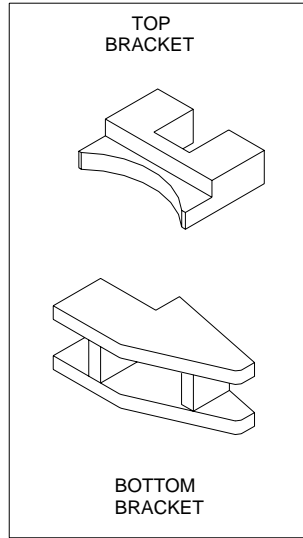
1

KIT No. B3500-3  
SIDE TO SIDE SWING  
BRACKET B3T-185

1

1

TJ480 - TJ520 (PRIOR TO 1987)  
**GRAPPLE WITHOUT SNUBBER**



KIT No. B3500-7  
FORE AND AFT SWING  
BRACKET B3T-345

REQ.

1

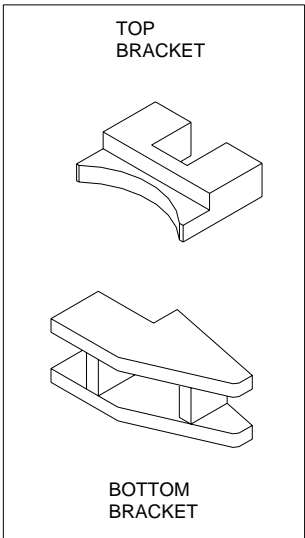
1

KIT No. B3500-18  
SIDE TO SIDE SWING  
BRACKET B3T-355

1

1

TJ480 - TJ520 (PRIOR TO 1987)  
**OLD STYLE BENCO SNUBBER**



KIT No. B3500-7  
FORE AND AFT SWING  
BRACKET B3T-345

REQ.

1

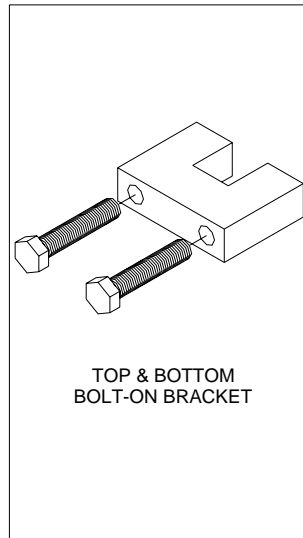
1

KIT No. B3500-18  
SIDE TO SIDE SWING  
BRACKET B3T-355

1

1

ALL MODELS (1987 TO PRESENT)  
**ORIG. SNUB. (BOLT ON BRACKETS)**



KIT No. B3500-8  
TOP & BOTTOM SWING  
BRACKET B3T-360  
BOLT 5/8" X 5-3/4" NC

REQ.

1

1

2



**EXTERNAL MOUNT**

**500 SERIES**

**SNUBBER ASSEMBLY – PARTS**

**TIMBERJACK MODELS**

105" TIMBERJACK GRAPPLE. FITS MODELS 380 – 450 (PRIOR TO 1987 production)

Use this method, then follow standard instructions.

1. Cut the threaded end of the pin.
2. Weld a retainer over the dowel to stop the pin from coming out.
3. Plug the grease hole on the threaded end of the pin.
4. Drill a new grease hole on the dowel end of the pin.

---

USE WHEN MOUNTING A SERIES 500 **PROLENC**® SNUBBER ON A TIMBERJACK GRAPPLE WITHOUT SNUBBER. FITS MODELS 480 – 520 (PRIOR TO 1987 production)

Use this method, then follow standard instructions.

1. Cut the threaded end of the pin.
2. Weld a retainer over the dowel to stop the pin from coming out.
3. Plug the grease hole on the threaded end of the pin.
4. Drill a new grease hole on the dowel end of the pin.

**REQ.** TOP SNUBBER B3500-7 BOTTOM SNUBBER B3500-18

---

USE WHEN MOUNTING A SERIES 500 **PROLENC**® SNUBBER ON A TIMBERJACK GRAPPLE WITH AN EXISTING OLD STYLE Benco SNUBBER. FITS MODELS 480 – 520 (PRIOR TO 1987 production)

Use this method, then follow standard instructions.

1. Cut the 2" part of the pin that the snubber rides on.
2. Weld a retainer over the dowel to stop the pin from coming out.

**REQ.** TOP SNUBBER B3500-7 BOTTOM SNUBBER B3500-18

---

USE WHEN MOUNTING A SERIES 500 **PROLENC**® SNUBBER ON A TIMBERJACK GRAPPLE THAT HAS A FACTORY SNUBBER WITH BOLT ON BRACKETS.

**Fits ALL** T/J MODELS --1987 TO 2001-- Prior to John Deere production grapples.

Use this method, then follow standard instructions.

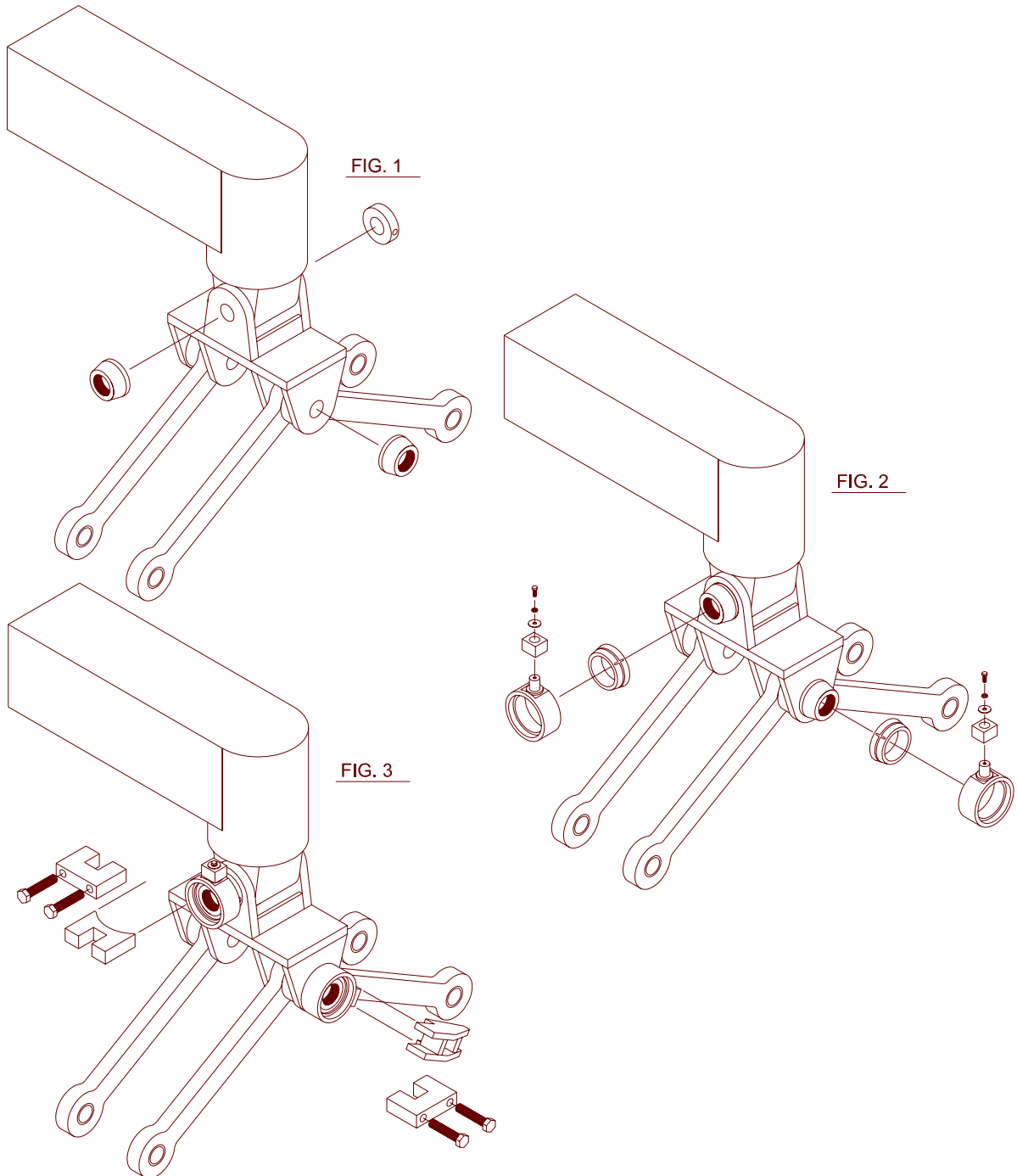
1. Cut the 2" part of the pin that the snubber rides on.
2. Switch to B3T-360 brackets which are supplied with the snubber.

**REQ.** TOP SNUBBER B3500-8 BOTTOM SNUBBER B3500-8

**EXTERNAL MOUNT**

**SNUBBER ASSEMBLY – PARTS**

MODELS ---- TJ480 – TJ520 (PRIOR TO 1987)  
TIMBERJACK ALL MODELS --1987 TO 2001

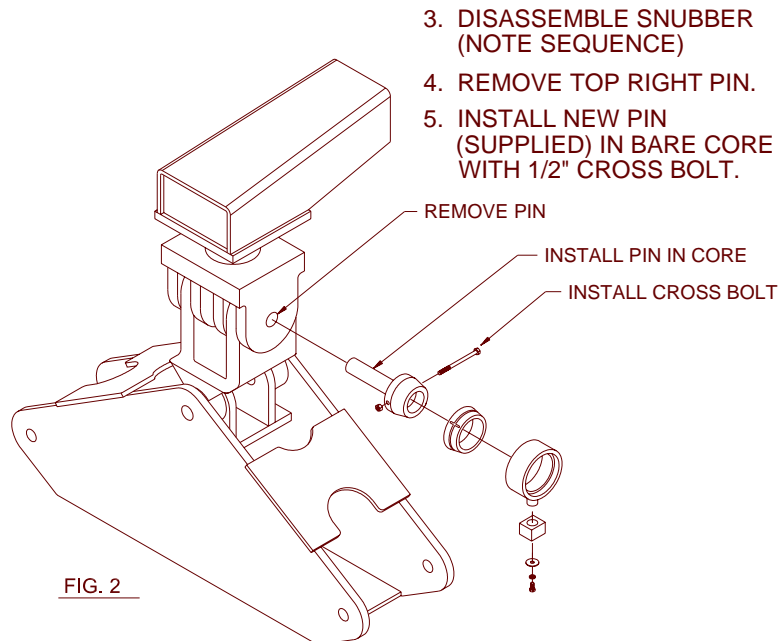
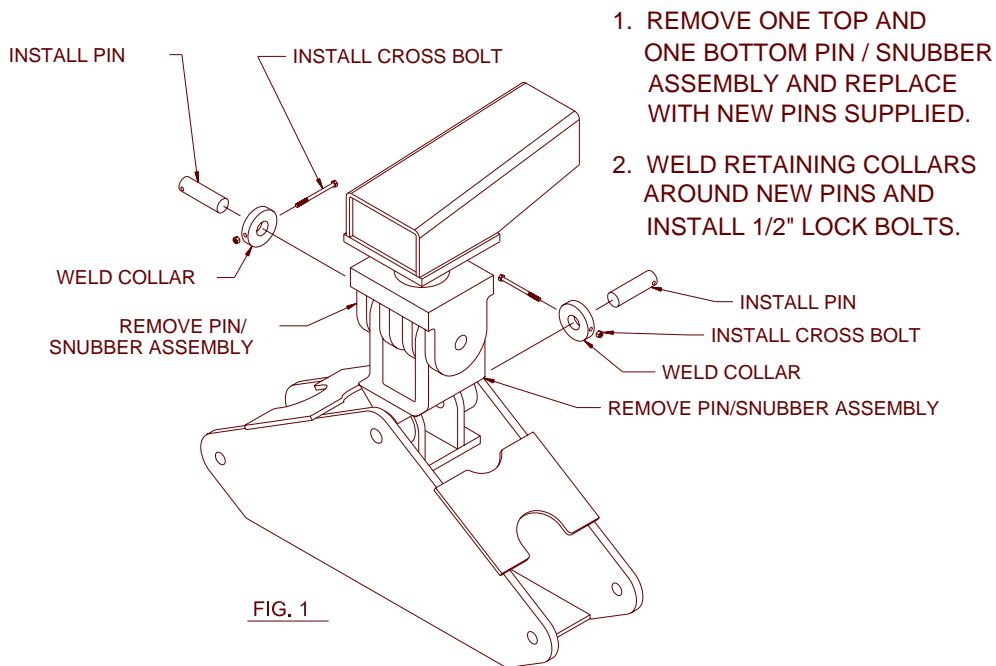


**EXTERNAL MOUNT**

**SNUBBER ASSEMBLY – PARTS**

MODELS ---- RANGER 666 – 667, C SERIES, EARLY D SERIES 1-3/4" PINS

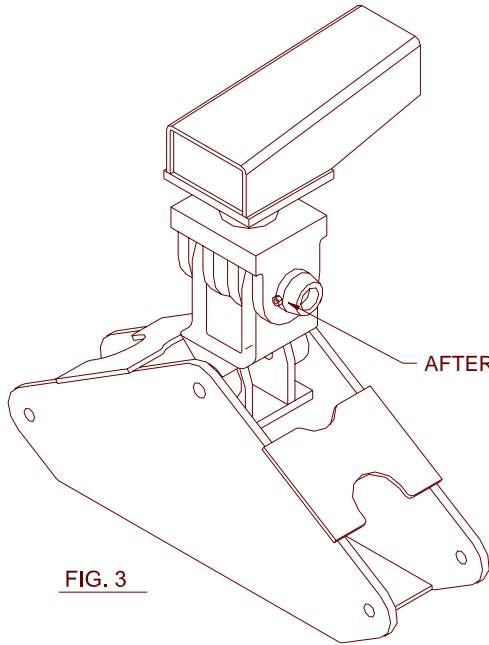
**TOP & BOTTOM  
KIT # B3500-12 (2 KITS PER MACHINE)**



**EXTERNAL MOUNT**

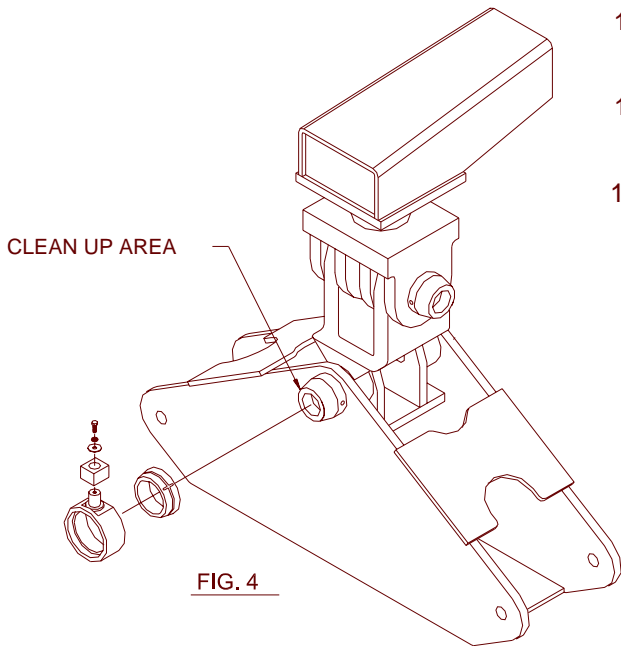
**SNUBBER ASSEMBLY – PARTS**

MODELS ---- RANGER 666 – 667, C SERIES, EARLY D SERIES 1-3/4” PINS



6. INSTALL PIN IN YOKE BORE AND CENTER CORE AROUND PIN WITH CROSS BOLT IN HORIZONTAL POSITION.
7. TACK CORE TO YOKE (NOTE: PROTECT CORE FROM WELD SPLATTER)
8. PREHEAT WELD AREA ON YOKE AND WELD CORE TO YOKE (NOTE: MINIMUM 2 PASSES)
9. REMOVE CROSS BOLT AND REPLACE WITH ROLL PIN SUPPLIED IN KIT.

FIG. 3



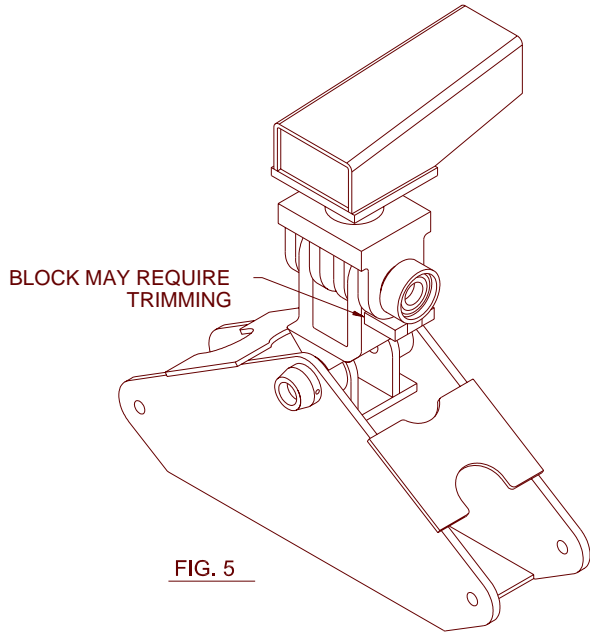
10. IF REQUIRED, CLEAN UP GRAPPLE FRAME AROUND REAR BOTTOM PIN BOSS AREA TO ACHIEVE A LEVEL WORKING SURFACE.
11. CENTER BARE SNUBBER CORE (WITHOUT CROSS HOLE) AROUND PIN AND TACK WELD. (NOTE: PROTECT CORE FROM WELD SPLATTER)
12. PREHEAT WELD AREA AND WELD CORE TO FRAME MINIMUM 2 PASSES.

FIG. 4

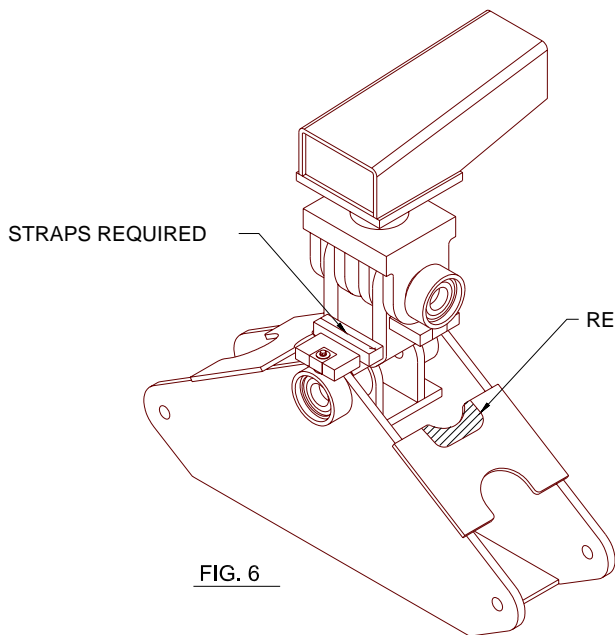
**EXTERNAL MOUNT**

**SNUBBER ASSEMBLY – PARTS**

MODELS ---- RANGER 666 – 667, C SERIES, EARLY D SERIES 1-3/4" PINS



- 13. REASSEMBLE TOP SNUBBER WITH OUTER HOUSING WEAR BLOCK FACING DOWN.
- 14. WELD RETAINING BRACKET TO GRAPPLE YOKE ALLOWING MINIMUM 3/8" BETWEEN WEAR BLOCK AND BOTTOM OF RETAINER SLOT. (NOTE: BASE OF RETAINER BLOCK MAY REQUIRE TRIMMING TO ACHIEVE CLEARANCE.)



- 15. REASSEMBLE BOTTOM SNUBBER WITH OUTER HOUSING WEAR BLOCK FACING UP.
- 16. WELD RETAINER BLOCK TO GRAPPLE YOKE (NOTE: STRAPS WILL NEED TO BE WELDED TO THE YOKE FOR RETAINER BASE. ALLOW 3/8" CLEARANCE BETWEEN WEAR BLOCK AND THE BOTTOM OF THE RETAINER SLOT.
- 17. IN EXTREME CONDITION, SIDE TO SIDE GRAPPLE SWING MAY ALLOW GRAPPLE FRAME TO CONTACT TOP SNUBBER BRACKET. RELIEVE TOP OF GRAPPLE FRAME TO ALLOW FREE TRAVEL. REINFORCING OF GRAPPLE FRAME IS RECOMMENDED.

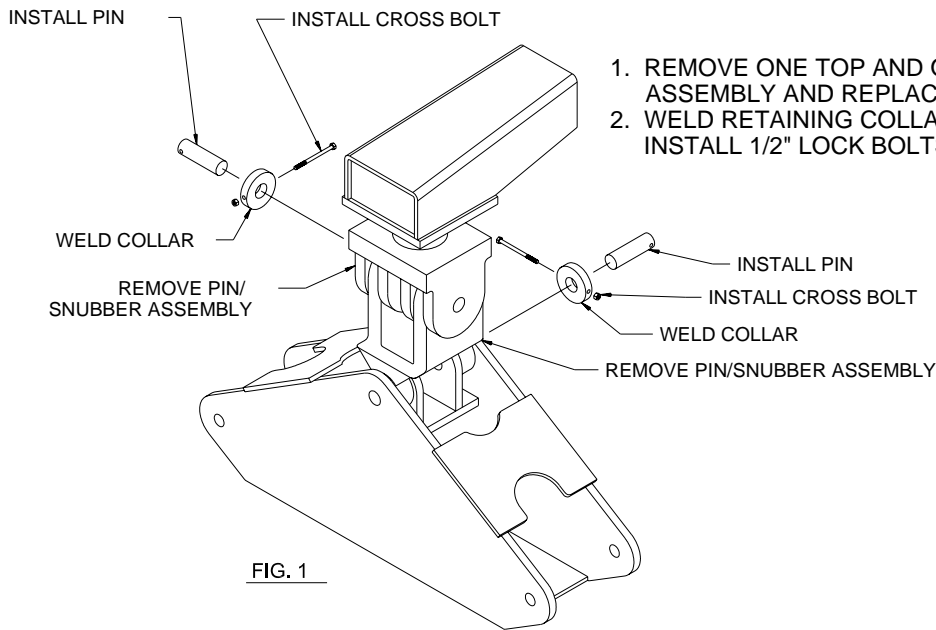
**EXTERNAL MOUNT**

**SNUBBER ASSEMBLY – PARTS**

MODELS ---- RANGER 666 – 667, LATE D SERIES, SERIES F – G - H 2" PINS

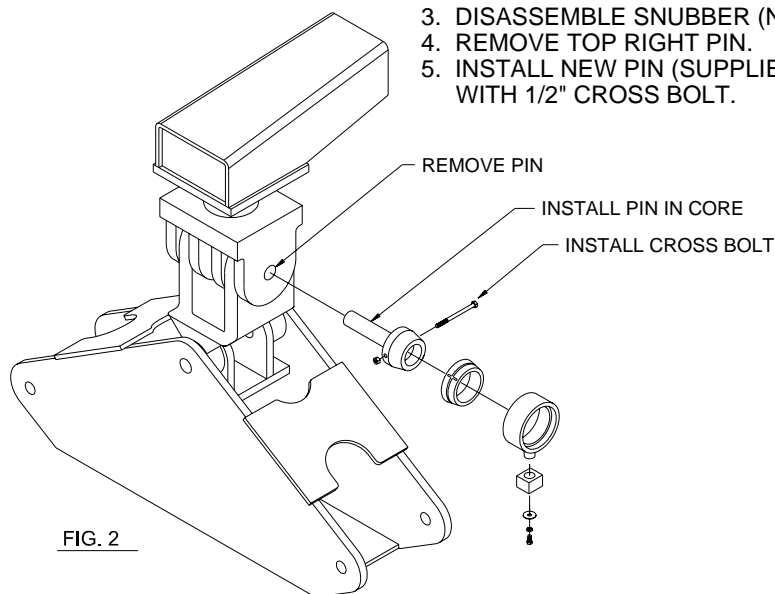
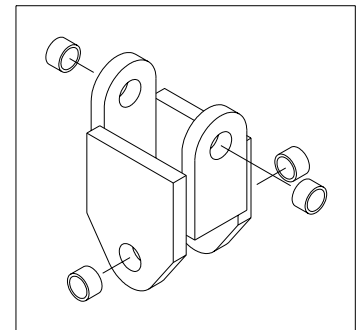
**TOP & BOTTOM**

**KIT # B3500-11 (2 KITS PER MACHINE)**



1. REMOVE ONE TOP AND ONE BOTTOM PIN / SNUBBER ASSEMBLY AND REPLACE WITH NEW PINS SUPPLIED.
2. WELD RETAINING COLLARS AROUND NEW PINS AND INSTALL 1/2" LOCK BOLTS.

OPTIONAL: INSTALL FABRICATED YOKE 2" PINS ONLY



3. DISASSEMBLE SNUBBER (NOTE SEQUENCE)
4. REMOVE TOP RIGHT PIN.
5. INSTALL NEW PIN (SUPPLIED) IN BARE CORE WITH 1/2" CROSS BOLT.

**EXTERNAL MOUNT**

**SNUBBER ASSEMBLY – PARTS**

MODELS ---- RANGER 666 – 667, LATE D SERIES, SERIES F – G - H 2” PINS

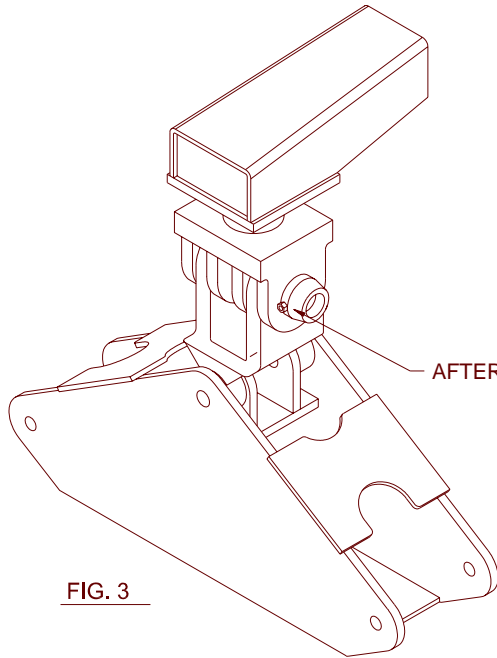


FIG. 3

6. INSTALL PIN IN YOKE BORE AND CENTER CORE AROUND PIN WITH CROSS BOLT IN HORIZONTAL POSITION.
7. TACK CORE TO YOKE (NOTE: PROTECT CORE FROM WELD SPLATTER)
8. PREHEAT WELD AREA ON YOKE AND WELD CORE TO YOKE (NOTE: MINIMUM 2 PASSES)
9. REMOVE CROSS BOLT AND REPLACE WITH ROLL PIN SUPPLIED IN KIT.

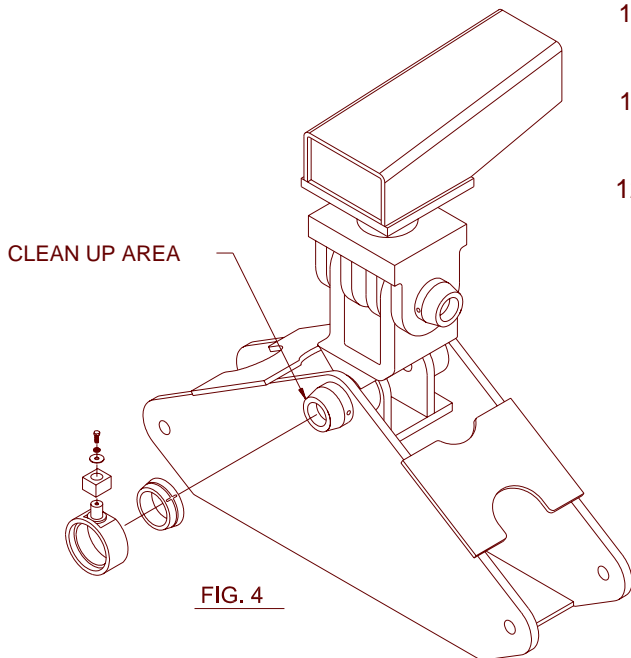


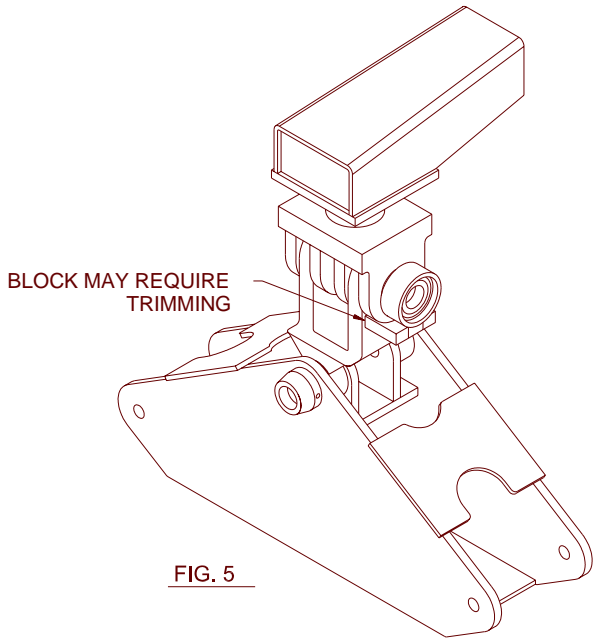
FIG. 4

10. IF REQUIRED, CLEAN UP GRAPPLE FRAME AROUND REAR BOTTOM PIN BOSS AREA TO ACHIEVE A LEVEL WORKING SURFACE.
11. CENTER BARE SNUBBER CORE AROUND PIN AND TACK WELD. (NOTE: PROTECT CORE FROM WELD SPLATTER)
12. PREHEAT WELD AREA AND WELD CORE TO FRAME MINIMUM 2 PASSES.

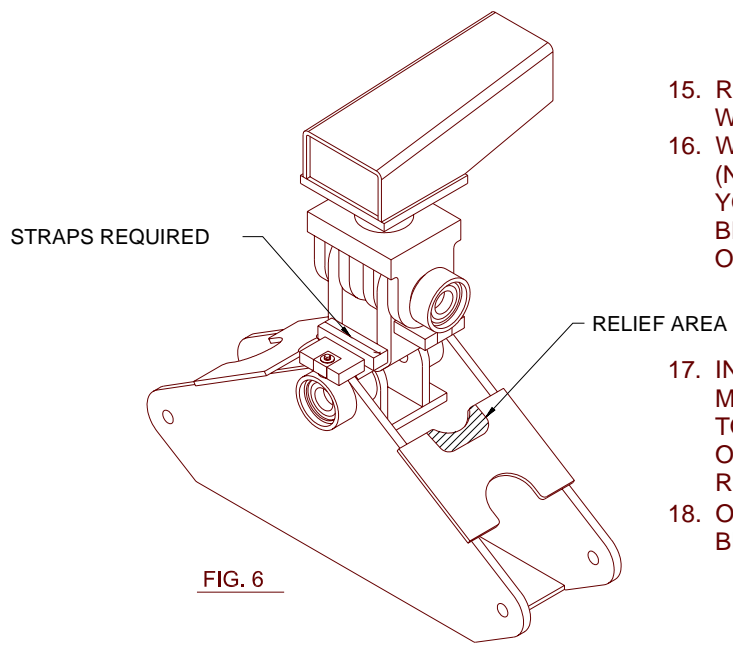
**EXTERNAL MOUNT**

**SNUBBER ASSEMBLY – PARTS**

MODELS ---- RANGER 666 – 667, LATE D SERIES, SERIES F – G - H 2” PINS



- 13. REASSEMBLE TOP SNUBBER WITH OUTER HOUSING WEAR BLOCK FACING DOWN.
- 14. WELD RETAINING BRACKET TO GRAPPLE YOKE ALLOWING MINIMUM 3/8" BETWEEN WEAR BLOCK AND BOTTOM OF RETAINER SLOT. (NOTE: BASE OF RETAINER BLOCK MAY REQUIRE TRIMMING TO ACHIEVE CLEARANCE.)



- 15. REASSEMBLE BOTTOM SNUBBER WITH OUTER HOUSING WEAR BLOCK FACING UP.
- 16. WELD RETAINER BLOCK TO GRAPPLE YOKE (NOTE: STRAPS WILL NEED TO BE WELDED TO THE YOKE FOR RETAINER BASE. ALLOW 3/8" CLEARANCE BETWEEN WEAR BLOCK AND THE BOTTOM OF THE RETAINER SLOT.

- 17. IN EXTREME CONDITION, SIDE TO SIDE GRAPPLE SWING MAY ALLOW GRAPPLE FRAME TO CONTACT TOP SNUBBER BRACKET. RELIEVE TOP OF GRAPPLE FRAME TO ALLOW FREE TRAVEL. REINFORCING OF GRAPPLE FRAME IS RECOMMENDED.
- 18. OPTION TO STEP 17, WELD STOPS ON GRAPPLE FRAME. BENEATH RETAINING BLOCK TO LIMIT FRAME SWING.



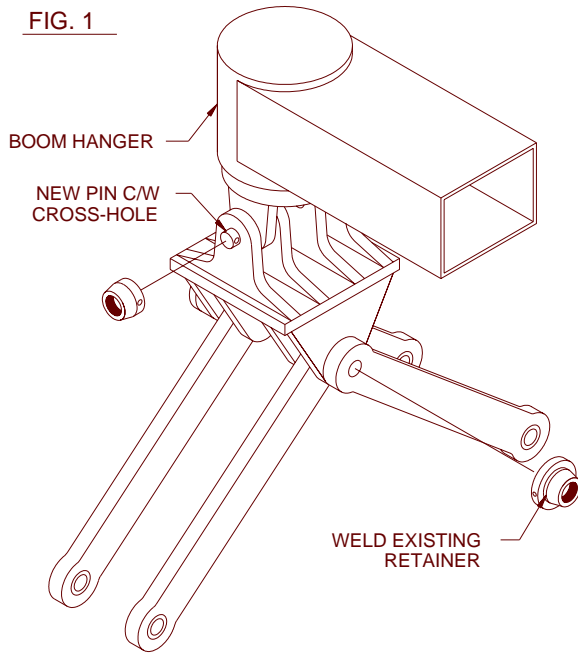
**EXTERNAL MOUNT**

**SNUBBER ASSEMBLY – PARTS**

MODELS ---- 668D – 668F

**TOP PIN KIT # B3500-13**  
**BOTTOM PIN KIT # B3500-9**

FIG. 1



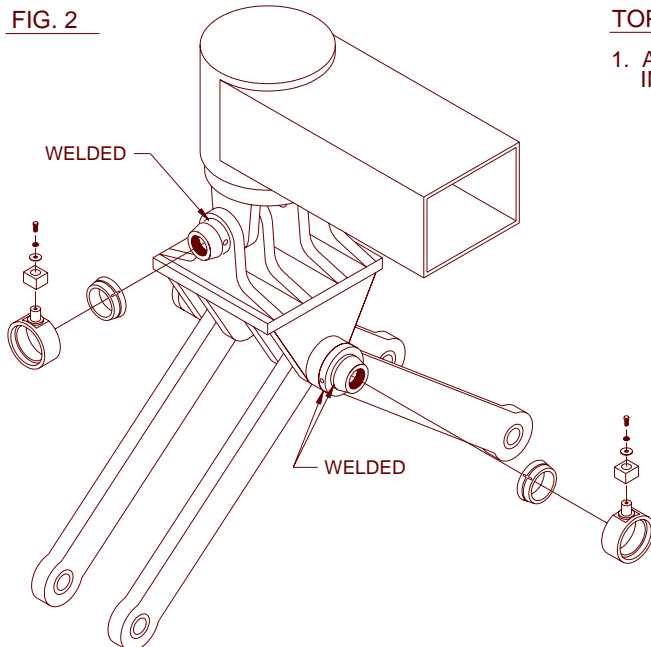
TOP BRAKE

1. TOP CORE SUPPLIED WITH CROSS HOLE PIN RETENTION.
2. A NEW PIN MUST BE MADE TO FIT IN THE CORE WITH THE ROLL PIN.  
SUGGESTED: FOR THE NEW TOP PIN USE A STOCK BOTTOM PIN AND CUT OFF THE EXCESS LENGTH. THE NEW PIN LENGTH IS 5-1/2".
3. INSTALL PIN IN THE CORE. INSERT THE ROLL PIN. INSTALL THE PIN IN THE YOKE BORES. CENTER CORE ON PIN AND WELD CORE TO THE YOKE USING STANDARD INSTRUCTIONS.

BOTTOM BRAKE

1. THE PIN RETAINING COLLAR ON THE OUTER LINK ARM IS WELDED TO THE CORE THEN THE LINK ARM. THE BOTTOM PIN CAN BE RE-USED OR REPLACED IF WORN.

FIG. 2



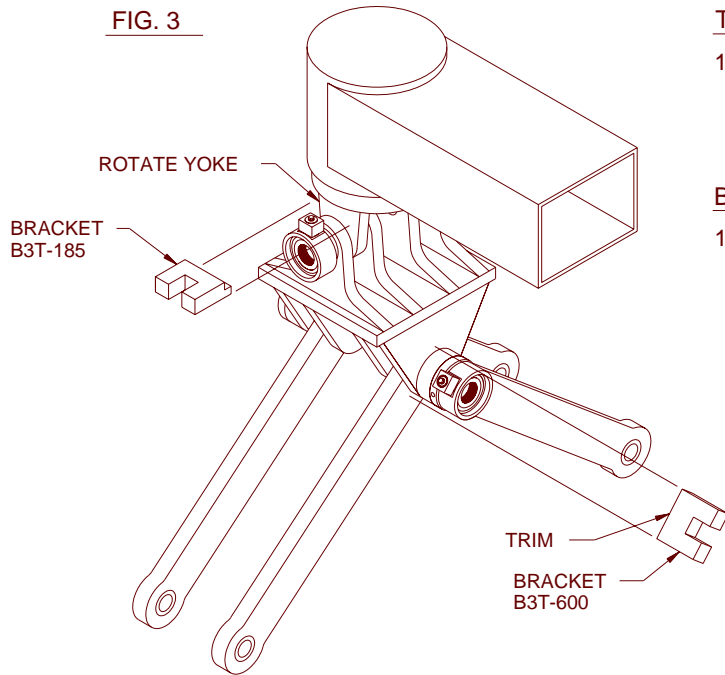
TOP / BOTTOM BRAKE

1. ASSEMBLE BOTH BRAKES AS PER STANDARD INSTRUCTIONS.

**EXTERNAL MOUNT**

**SNUBBER ASSEMBLY – PARTS**

MODELS ---- 668D – 668F

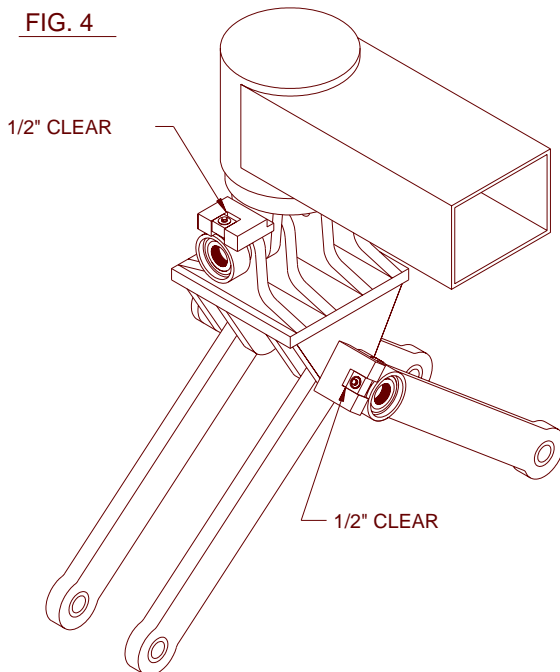


**TOP BRACKET**

1. TOP BRACKET IS A B3T-185, WELD BRACKET TO ROTATE YOKE.  
NOTE: ALLOW 1/2" CLEARANCE BETWEEN WEAR BLOCK AND INSIDE OF SLOT.

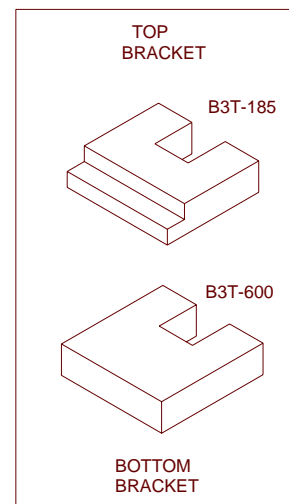
**BOTTOM BRACKET**

1. BOTTOM BRACKET IS A B3T-600. THE BOTTOM BRACKET WILL HAVE TO BE TRIMMED TO ALLOW 1/2" CLEARANCE BETWEEN REAR BLOCK AND INSIDE OF SLOT. WELD BRACKET AT SAME ANGLE AS THE LINK ARM THAT THE CORE IS WELDED TO. THIS WILL ALLOW FOR FULL SWING OF THE GRAPPLE.



**NOTE:**

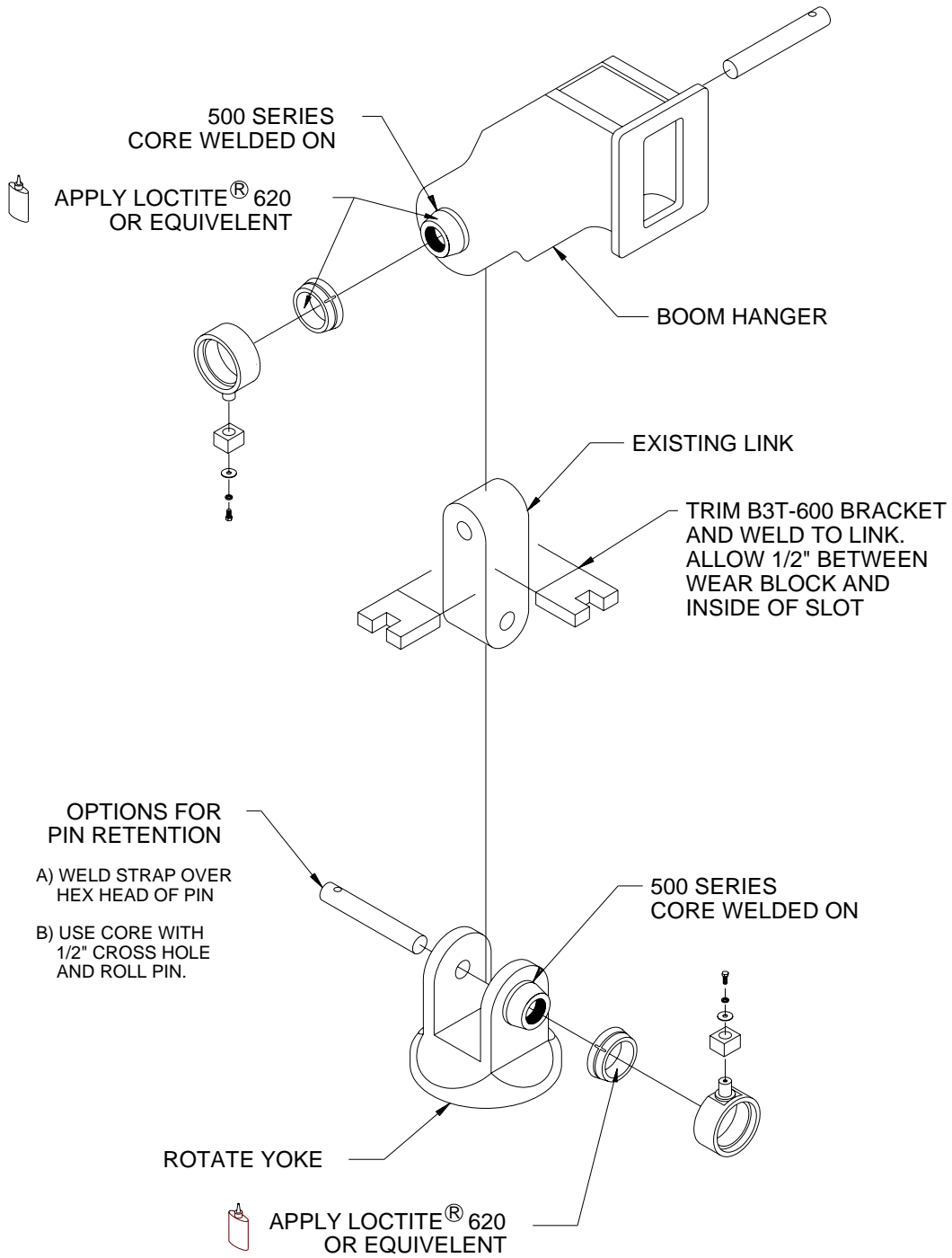
USE STANDARD INSTRUCTIONS PROVIDED TO WELD BRACKETS AND CORES.



**EXTERNAL MOUNT**

**500 SERIES**

**SNUBBER ASSEMBLY**  
UNIVERSAL MOUNT

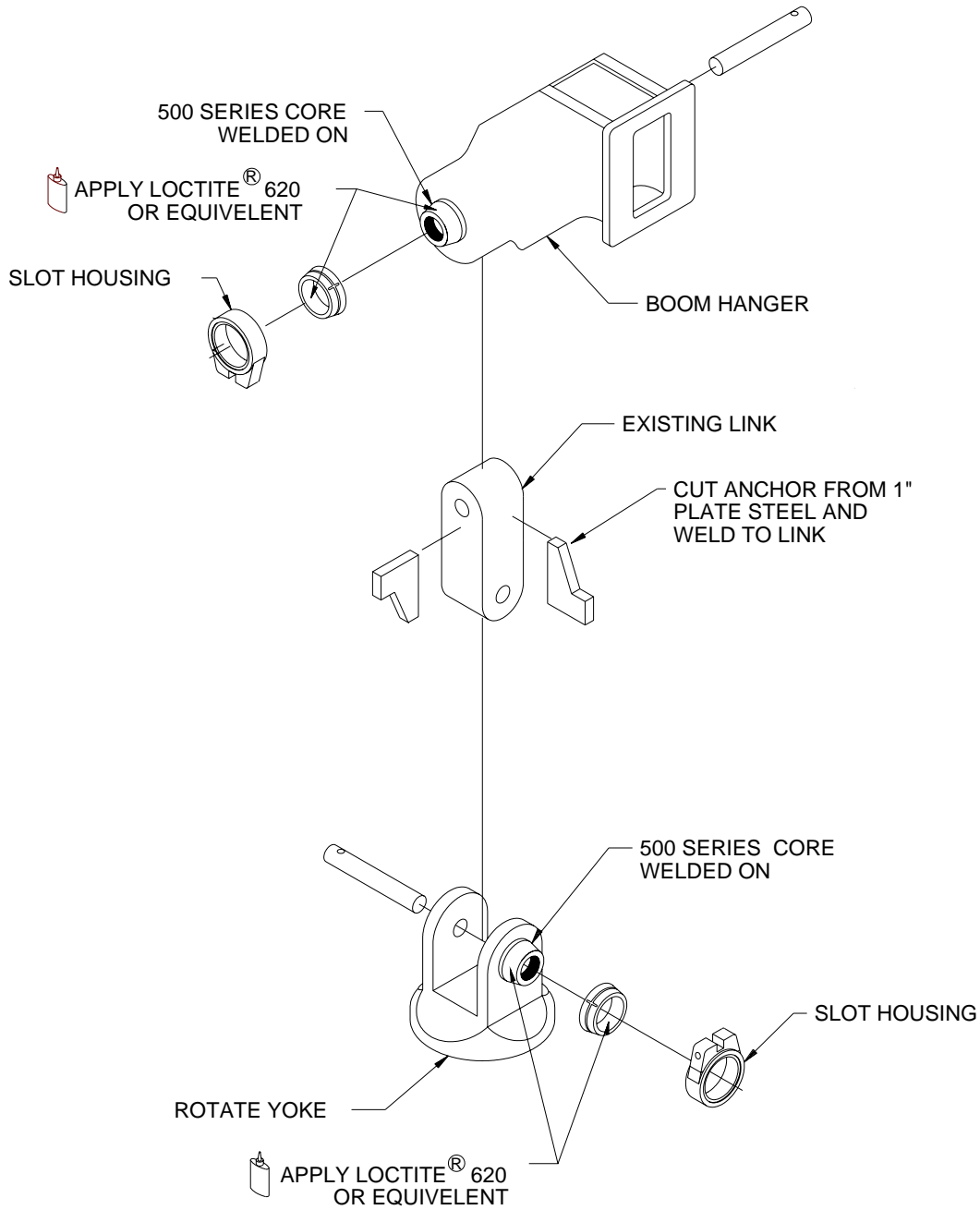


**EXTERNAL MOUNT**

**SNUBBER ASSEMBLY**

UNIVERSAL MOUNT (SLOT HOUSING)

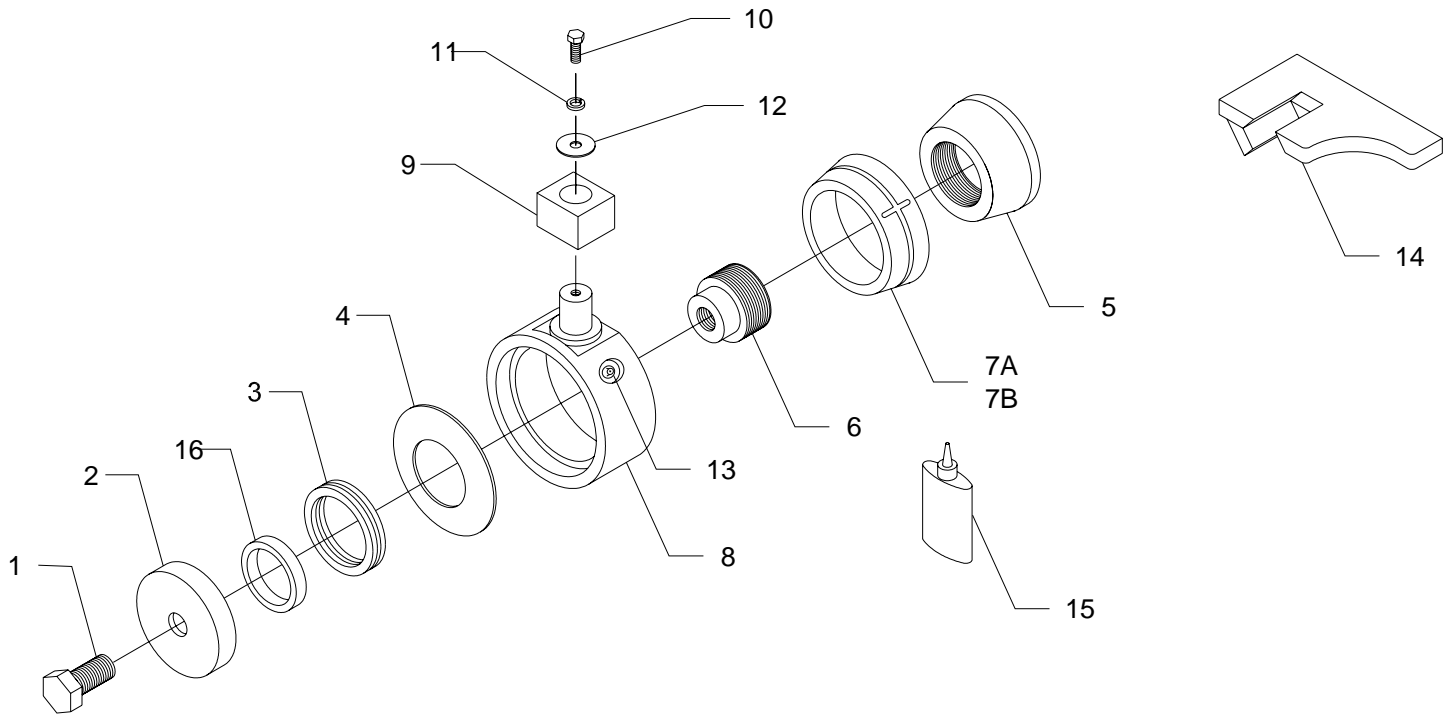
KIT # B3500-17



**EXTERNAL MOUNT**

**B3500-1**

USE WITH JOHN DEERE JD640 / JD740  
ORIGINAL GRAPPLE FABRICATED TONGS  
\*TOP PIN – FORWARD / BACKWARD GRAPPLE SWING



**EXTERNAL MOUNT**

**B3500-1**

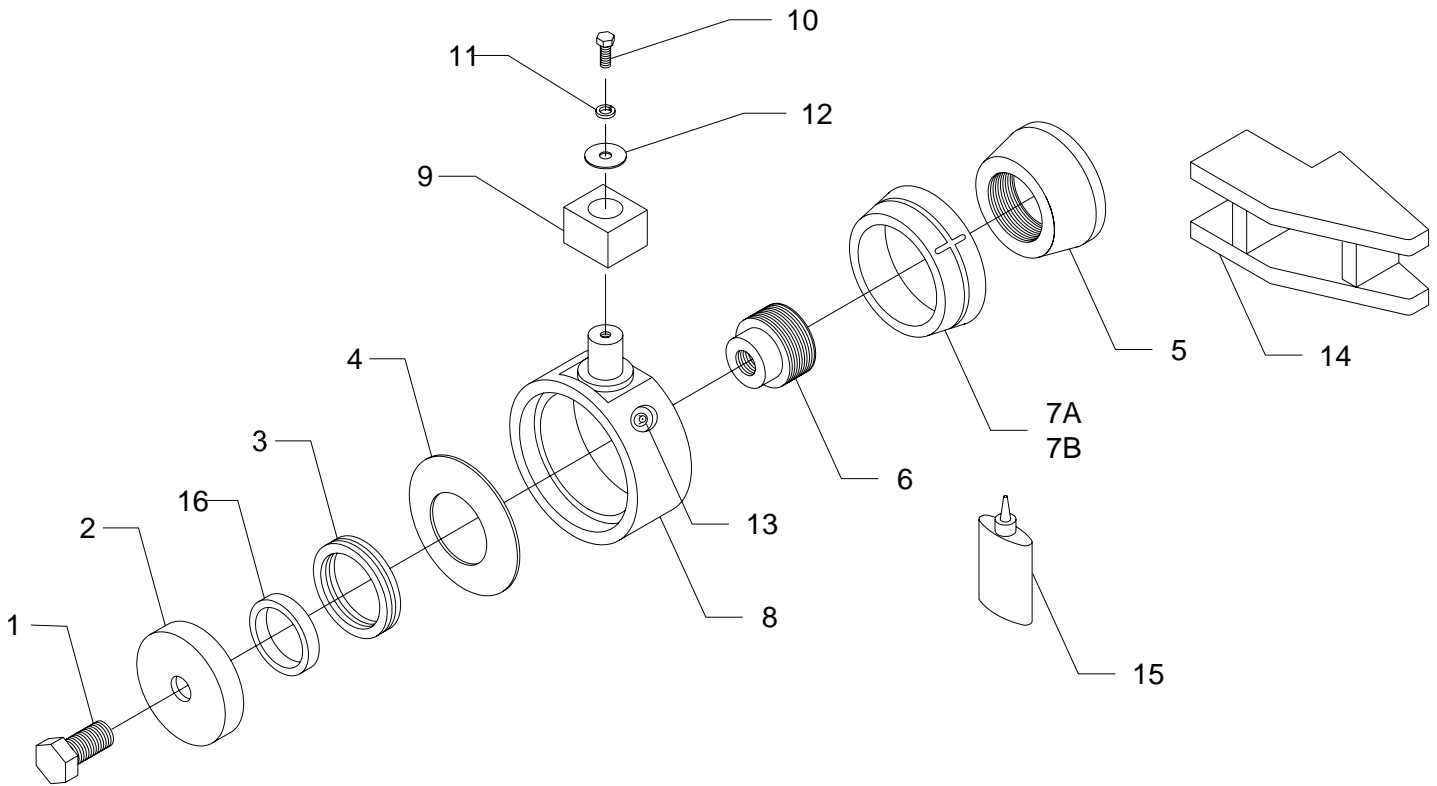
USE WITH JOHN DEERE JD640 / JD740  
 ORIGINAL GRAPPLE FABRICATED TONGS  
 \*TOP PIN – FORWARD / BACKWARD GRAPPLE SWING

<b>ITEM</b>	<b>PART#</b>	<b>DESCRIPTION</b>	<b>QTY</b>
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICITION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICITION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-180S	WEAR BLOCK	1
10	B3T-145	BOLT (1/2"UNC x 1" Gr8 PLATED)	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PLATED)	1
13	B3T-105	ZERK	2
14	B3T-125	BRACKET	1
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

**EXTERNAL MOUNT**

**B3500-2**

USE WITH JOHN DEERE JD640 / JD740  
ORIGINAL GRAPPLE FABRICATED TONGS  
\*BOTTOM PIN – SIDE TO SIDE GRAPPLE SWING



**EXTERNAL MOUNT**

**B3500-2**

USE WITH JOHN DEERE JD640 / JD740  
ORIGINAL GRAPPLE FABRICATED TONGS  
\*BOTTOM PIN – SIDE TO SIDE GRAPPLE SWING

ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICTION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICTION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-180S	WEAR BLOCK	1
10	B3T-145	BOLT (1/2"UNC x 1" Gr8 PLATED)	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PLATED)	1
13	B3T-105	ZERK	2
14	B3T-210	BRACKET	1
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-605	SEAL, INDLUED WITH B3S-155 BEARING	1

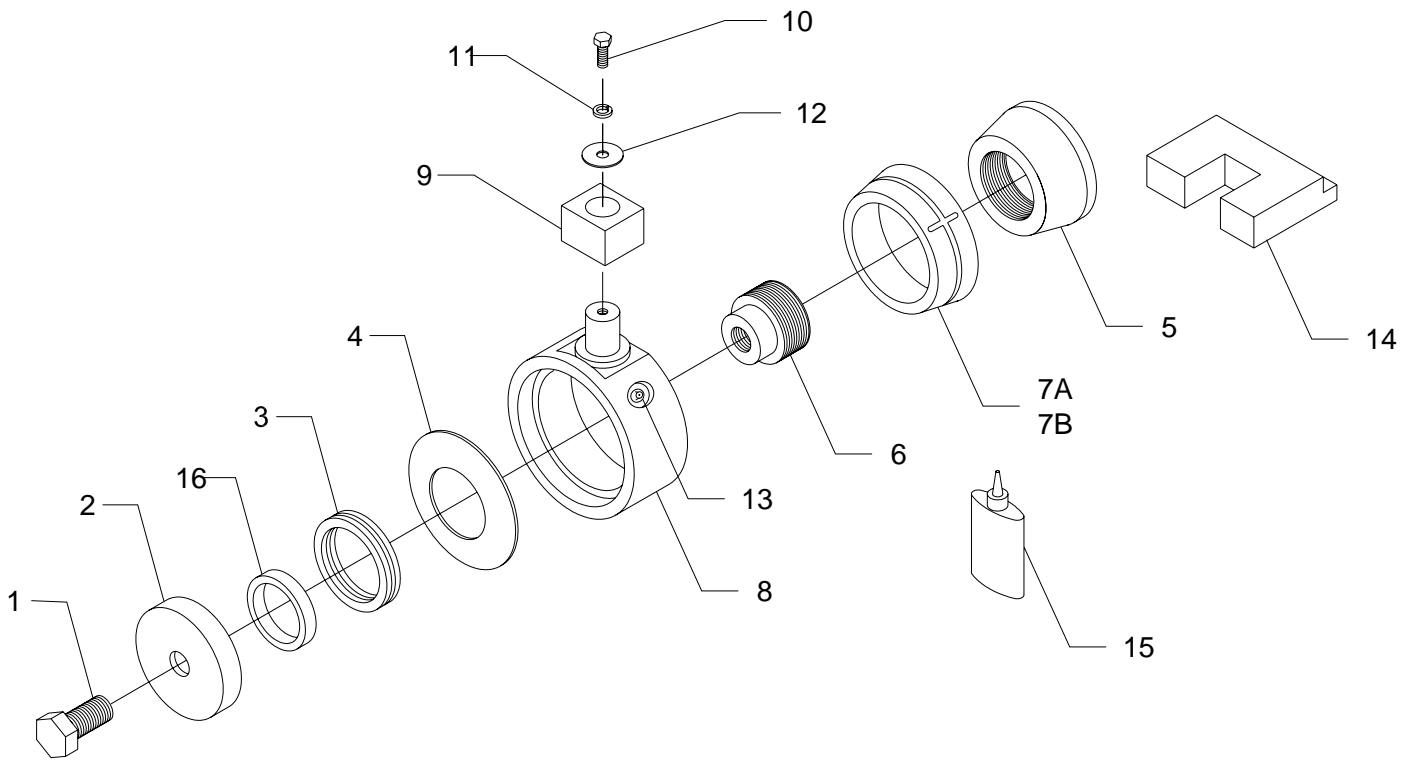


**EXTERNAL MOUNT**

**500 SERIES**

**B3500-3**

USE WITH JOHN DEERE JD648 / JD740A CAST GRAPPLE TONGS  
\*TOP PIN – FORWARD / BACKWARD GRAPPLE SWING  
USE WITH TIMBERJACK 380 / 450 – 105" GRAPPLE -PRIOR TO 1987 PRODUCTION  
\*BOTTOM PIN – SIDE TO SIDE GRAPPLE SWING



**EXTERNAL MOUNT**

**B3500-3**

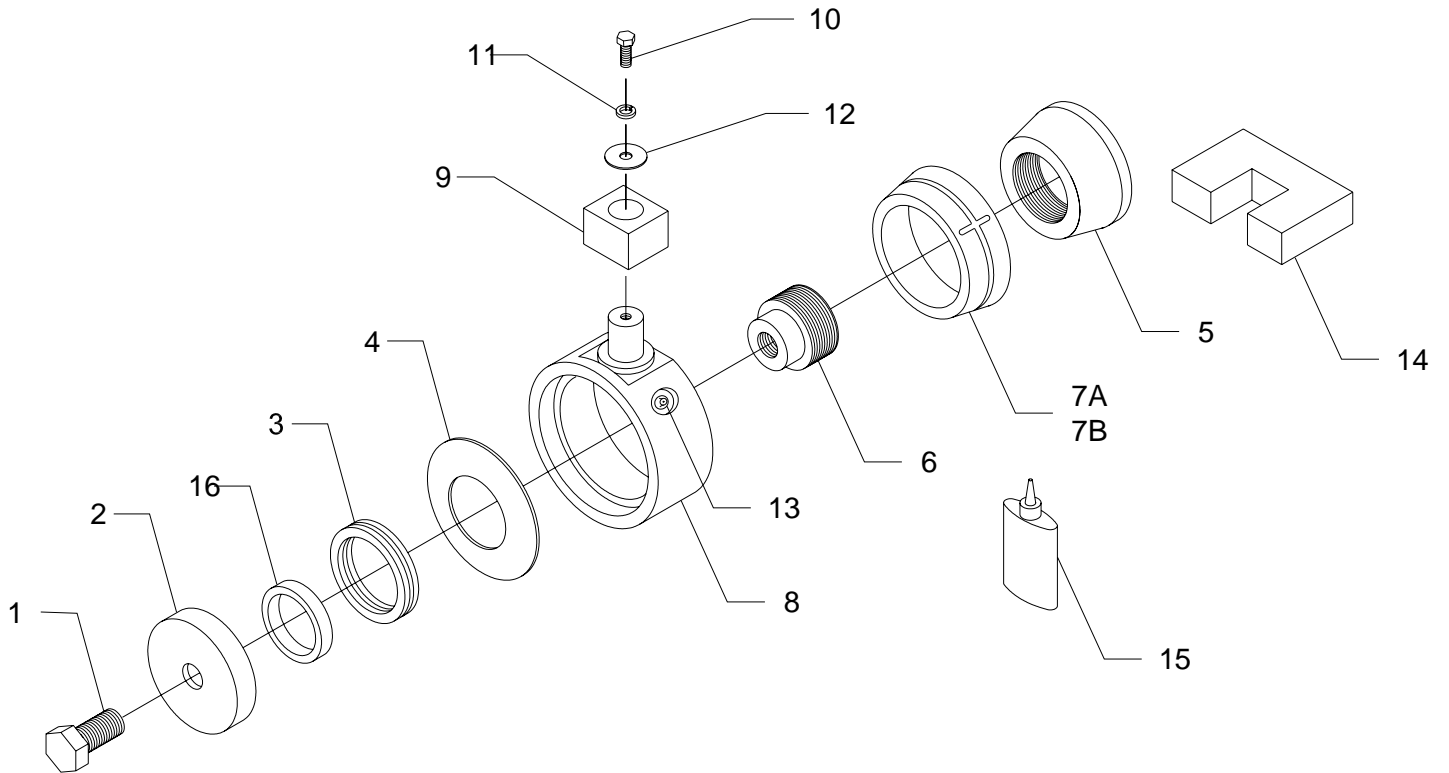
USE WITH JOHN DEERE JD648 / JD740A CAST GRAPPLE TONGS  
 \*TOP PIN – FORWARD / BACKWARD GRAPPLE SWING  
 USE WITH TIMBERJACK 380 / 450 – 105” GRAPPLE --PRIOR TO 1987 PRODUCTION  
 \*BOTTOM PIN – SIDE TO SIDE GRAPPLE SWING

ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, #1 CONCAVE TO HOUSING, 2 & 3 CONCAVE FACE TO FACE	3
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICITION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICITION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-180S	WEAR BLOCK	1
10	B3T-145	BOLT (1/2"UNC x 1" Gr8 PLATED)	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PLATED)	1
13	B3T-105	ZERK	2
14	B3T-185	BRACKET	1
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

**EXTERNAL MOUNT**

**B3500-4**

USE WITH JOHN DEERE JD640D / JD740D / JD740A  
CAST GRAPPLE TONGS  
\*BOTTOM PIN – SIDE TO SIDE GRAPPLE SWING



**EXTERNAL MOUNT**

**B3500-4**

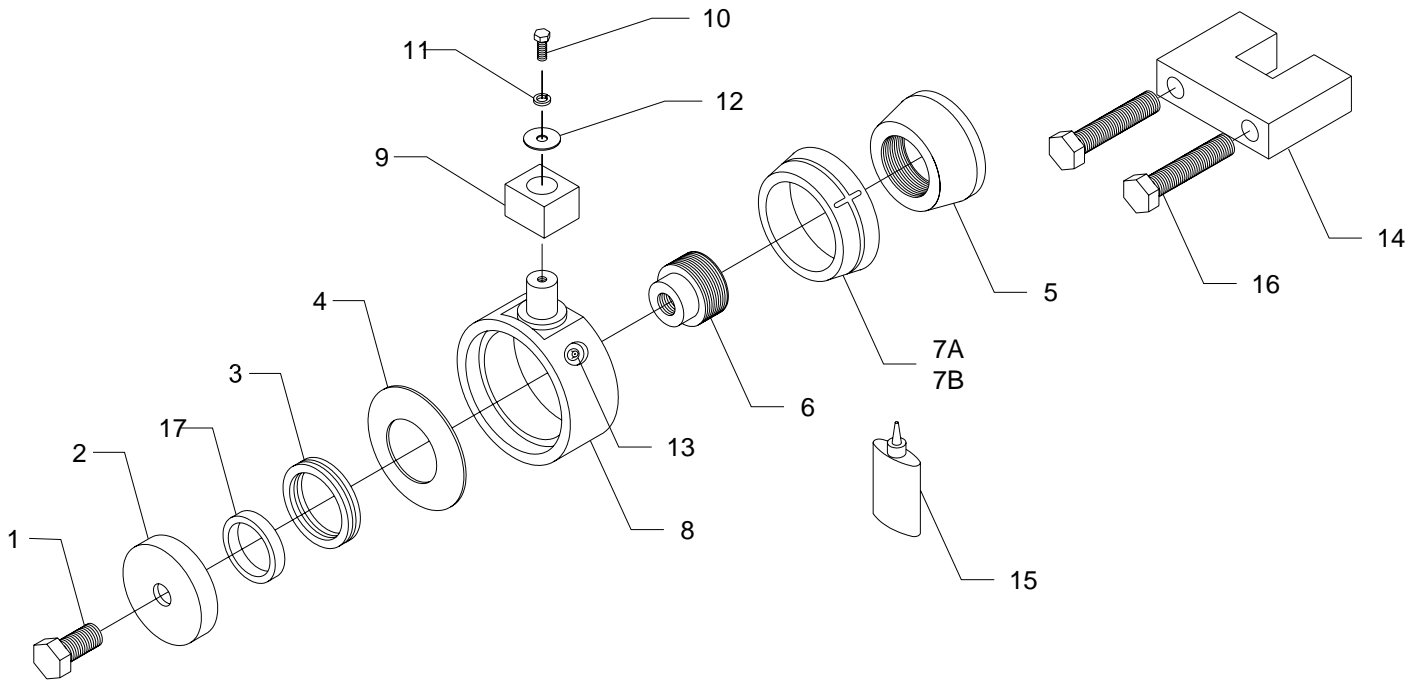
USE WITH JOHN DEERE JD640D / JD740D / JD740A  
CAST GRAPPLE TONGS  
\*BOTTOM PIN – SIDE TO SIDE GRAPPLE SWING

ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, #1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICITION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICITION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-1410 B3T-180S	WEDGE WEAR BLOCK 2" SQUARE WEARBLOCK (ORIGINAL, OPTIONAL)	1 OPTIONAL
10	B3T-145	BOLT (1/2"UNC x 1" Gr8 PLATED)	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PLATED)	1
13	B3T-105	ZERK	2
14	B3T-380W B3T-380	WEDGE WEAR BLOCK 2" SQUARE (ORIGINAL, OPTIONAL)	1 OPTIONAL
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

**EXTERNAL MOUNT**

**B3500-5**

USE WITH JOHN DEERE  
548E / 648E / 748E  
\*TOP OR BOTTOM PIN



**EXTERNAL MOUNT**

**500 SERIES**

**B3500-5**

USE WITH JOHN DEERE  
548E / 648E / 748E  
\*TOP OR BOTTOM PIN

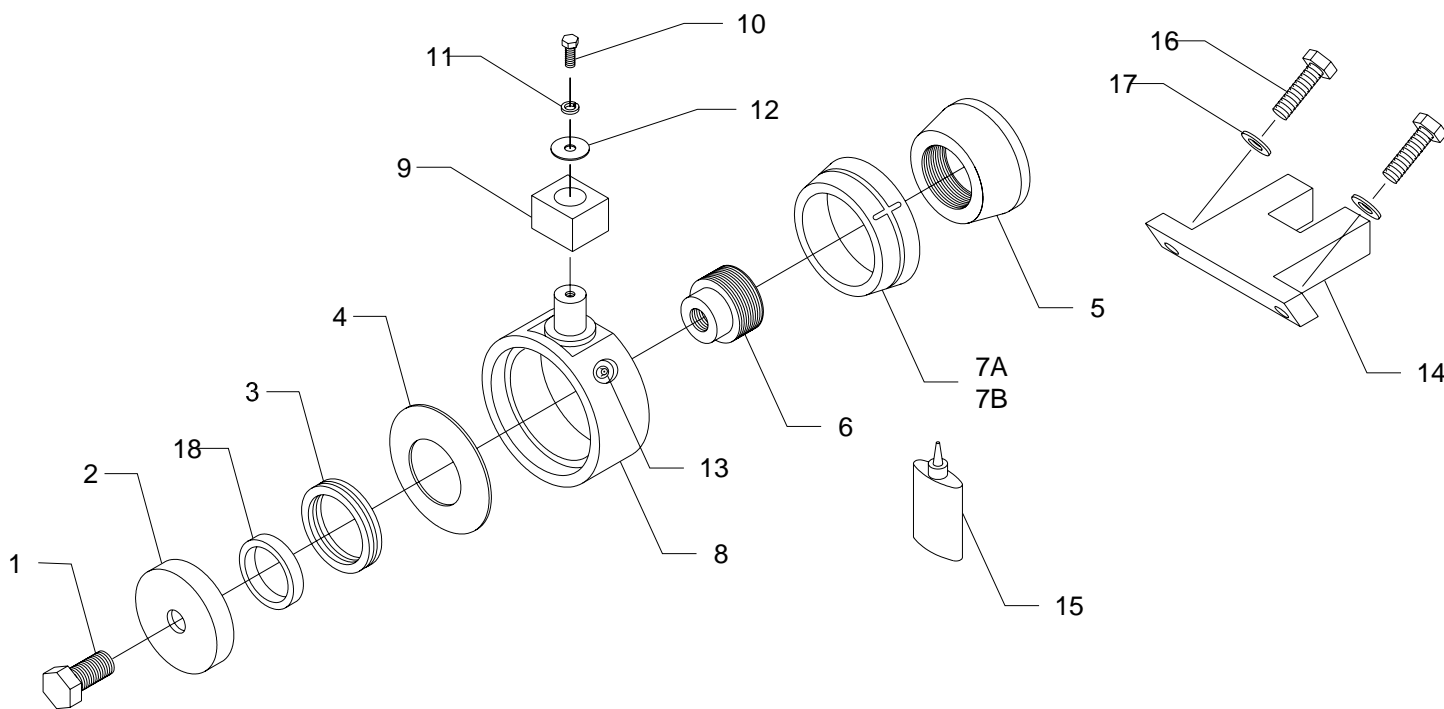
ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, #1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICITION SLEEVE (ZINC ALLOY ZA12)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-1410	WEDGE WEAR BLOCK	1
	B3T-180S	2" SQUARE (ORIGINAL, OPTIONAL)	OPTIONAL
10	B3T-1450	BOLT (1/2"UNC x 1 1/2" Gr8) Use with B3T-1410	1
	B3T-145	BOLT (1/2"UNC x 1" Gr8) Use with B3T-180S Block	
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PLATED)	1
13	B3T-105	ZERK	2
14	B3T-205W	WEDGE ANCHOR	1
	B3T-205	ANCHOR, USE 2" SQUARE BLOCK B3T-180S	OPTIONAL
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIV.	1
16	REUSE ORIG.	BOLT ((M16 x 120 2.00P GRD 12.9 PLATED)	2
17	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

**EXTERNAL MOUNT**

**B3500-6**

USE WITH JOHN DEERE  
548G / 648G / 748G

\*BOTTOM PIN – SIDE TO SIDE (SHOCK ABSORBER)



**EXTERNAL MOUNT**

**B3500-6**

USE WITH JOHN DEERE  
548G / 648G / 748G

\*BOTTOM PIN – SIDE TO SIDE (SHOCK ABSORBER)

ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, #1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICTION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICTION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-180S	WEAR BLOCK	1
10	B3T-145	BOLT (1/2"UNC x 1" Gr8 PLATED)	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PL.)	1
13	B3T-105	ZERK	2
14	B3T-545	BRACKET	1
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-555	BOLT (3/4" x 2NC Gr8)	2
17	B3T-560	WASHER (3/4" » LOCK)	2
18	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

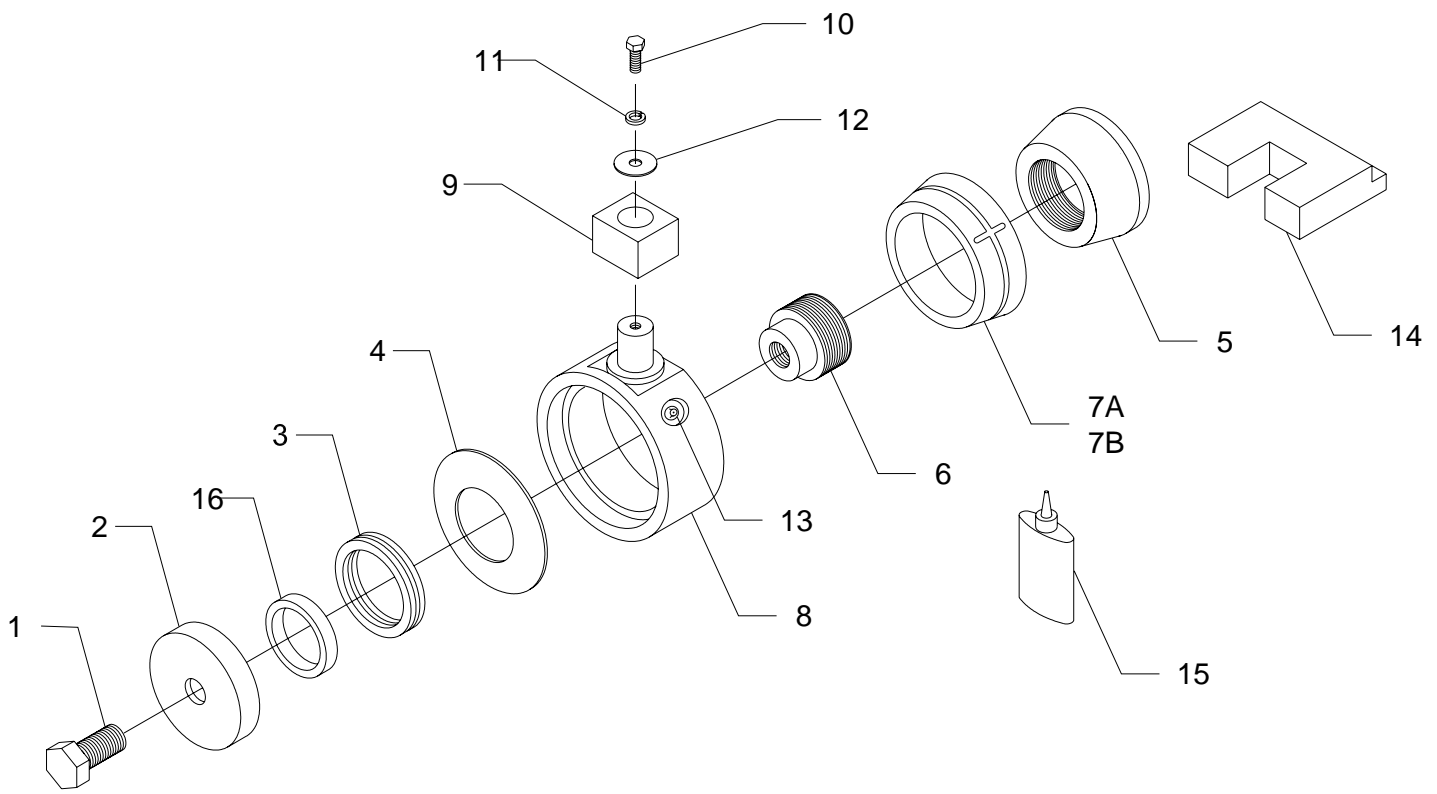


**EXTERNAL MOUNT**

**500 SERIES**

**B3500-7**

USE WITH TIMBERJACK  
TJ380 / TJ450 – 105" GRAPPLE (PRIOR TO 1987 MFG)  
TJ480 / TJ520 (PRIOR TO 1987 MFG WITHOUT FACTORY SNUBBER)  
\*TOP PIN – FORWARDS / BACKWARDS GRAPPLE SWING



**EXTERNAL MOUNT**

**B3500-7**

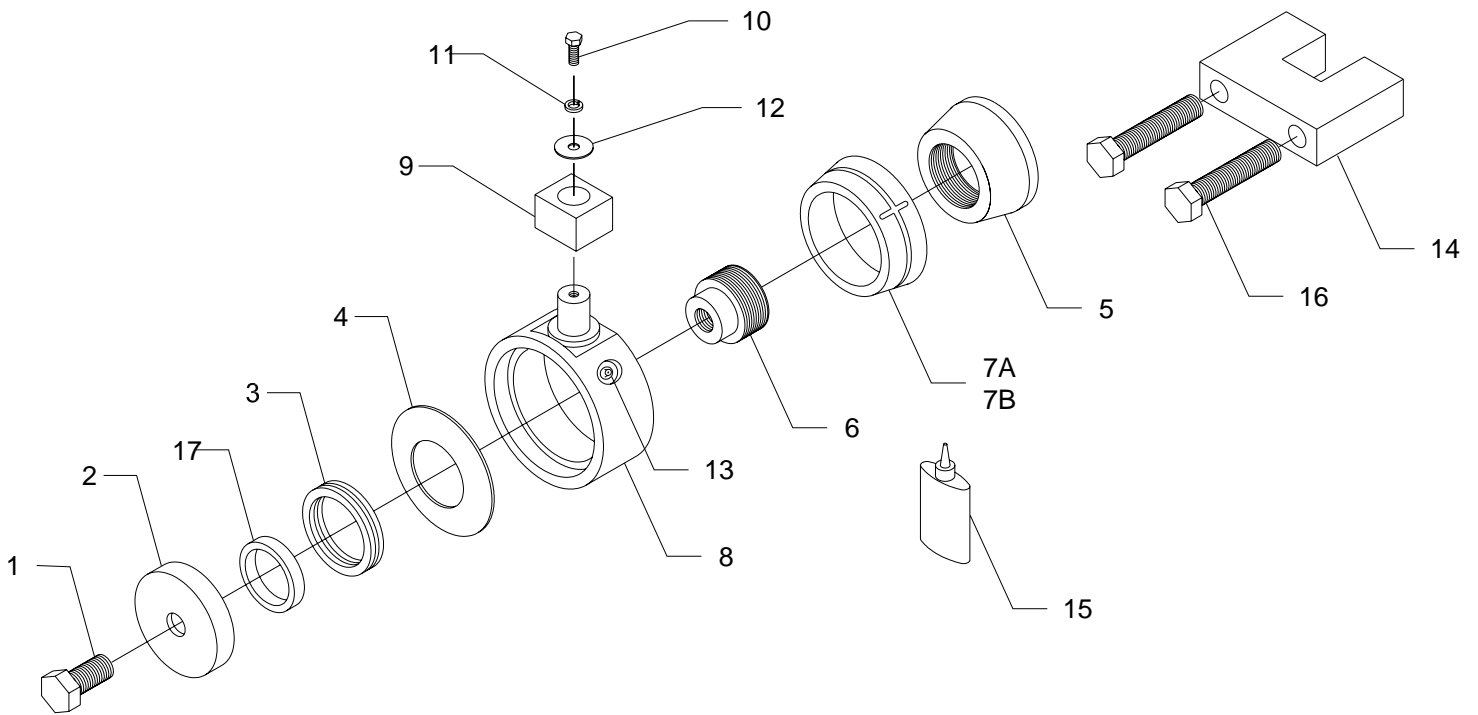
USE WITH TIMBERJACK  
TJ380 / TJ450 – 105" GRAPPLE (PRIOR TO 1987 MFG)  
TJ480 / TJ520 (PRIOR TO 1987 MFG WITHOUT FACTORY SNUBBER)  
\*TOP PIN – FORWARDS / BACKWARDS GRAPPLE SWING

ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICTION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICTION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-180S	WEAR BLOCK	1
10	B3T-145	BOLT (1/2"UNC x 1" Gr8 PLATED)	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PL.)	1
13	B3T-105	ZERK	2
14	B3T-345	BRACKET	1
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

**EXTERNAL MOUNT**

**B3500-8**

USE WITH TIMBERJACK  
ALL MODELS (1987 TO PRESENT)  
\*REPLACES FACTORY SNUBBER W / BOLT ON BRACKETS



**EXTERNAL MOUNT**

**B3500-8**

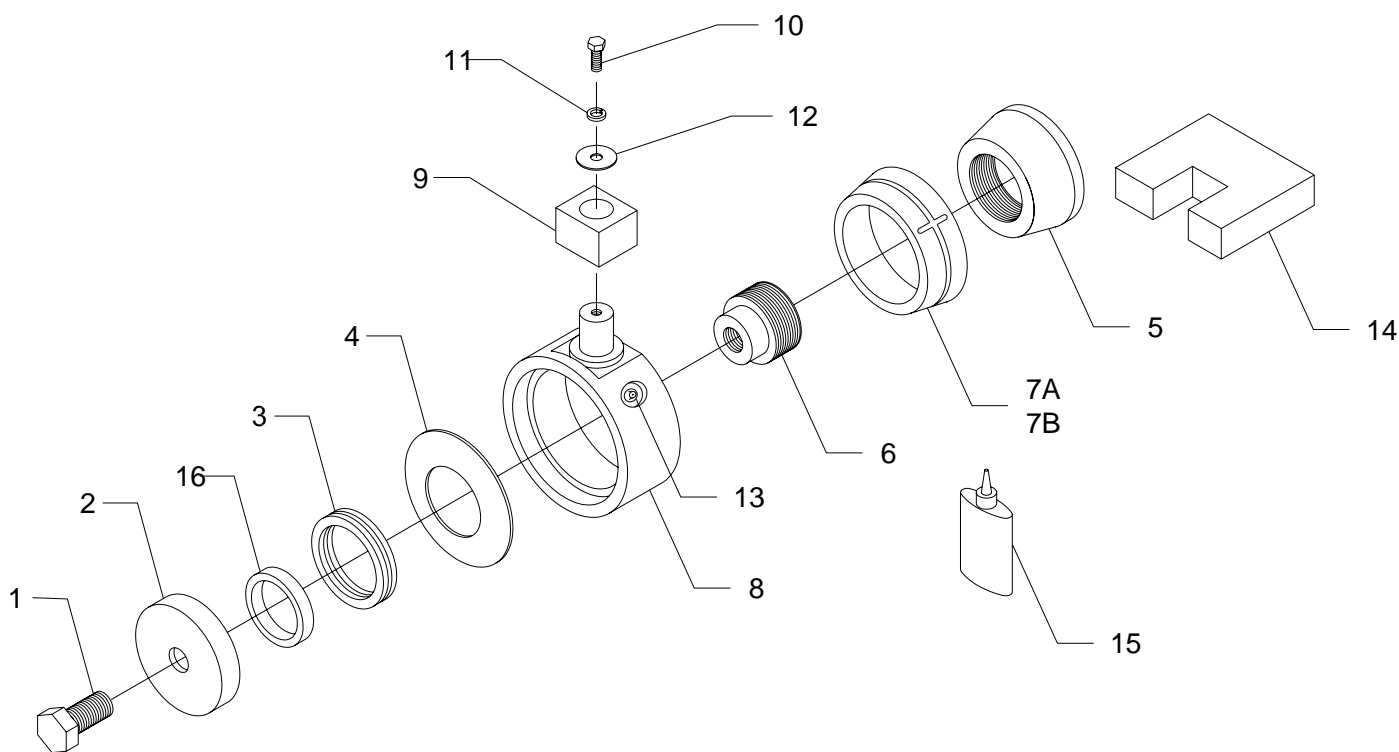
USE WITH TIMBERJACK  
ALL MODELS (1987 TO PRESENT)  
\*REPLACES FACTORY SNUBBER W / BOLT ON BRACKETS

ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICITION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICITION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-1410	WEDGE WEAR BLOCK	1
	B3T-180S	2" SQUARE WEAR BLOCK (ORIGINAL,OPTIONAL)	OPTIONAL
10	B3T-1450	BOLT (1/2"UNC x 1 1/2" Gr8) Use with B3T-1410	1
	B3T-145	BOLT (1/2"UNC x 1" Gr8) Use with B3T-180S	1
11	B3T-150	WASHER (1/2" LOCK Gr8)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PL.)	1
13	B3T-105	ZERK	2
14	B3T-360W	WEDGE ANCHOR	1
	B3T-360	2" SQUARE BRACKET (ORIGINAL, OPTIONAL)	OPTIONAL
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	*REUSE ORIGINAL	BOLT (3/4" x 7" NC GRD 8)	2
17	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

**EXTERNAL MOUNT**

**B3500-9**

UNIVERSAL MOUNT (TRIM BRACKET BEFORE WELDING)  
ALLIED RANGER 668D / 668F  
\*BOTTOM PIN – SIDE TO SIDE GRAPPLE SWING



**EXTERNAL MOUNT**

**B3500-9**

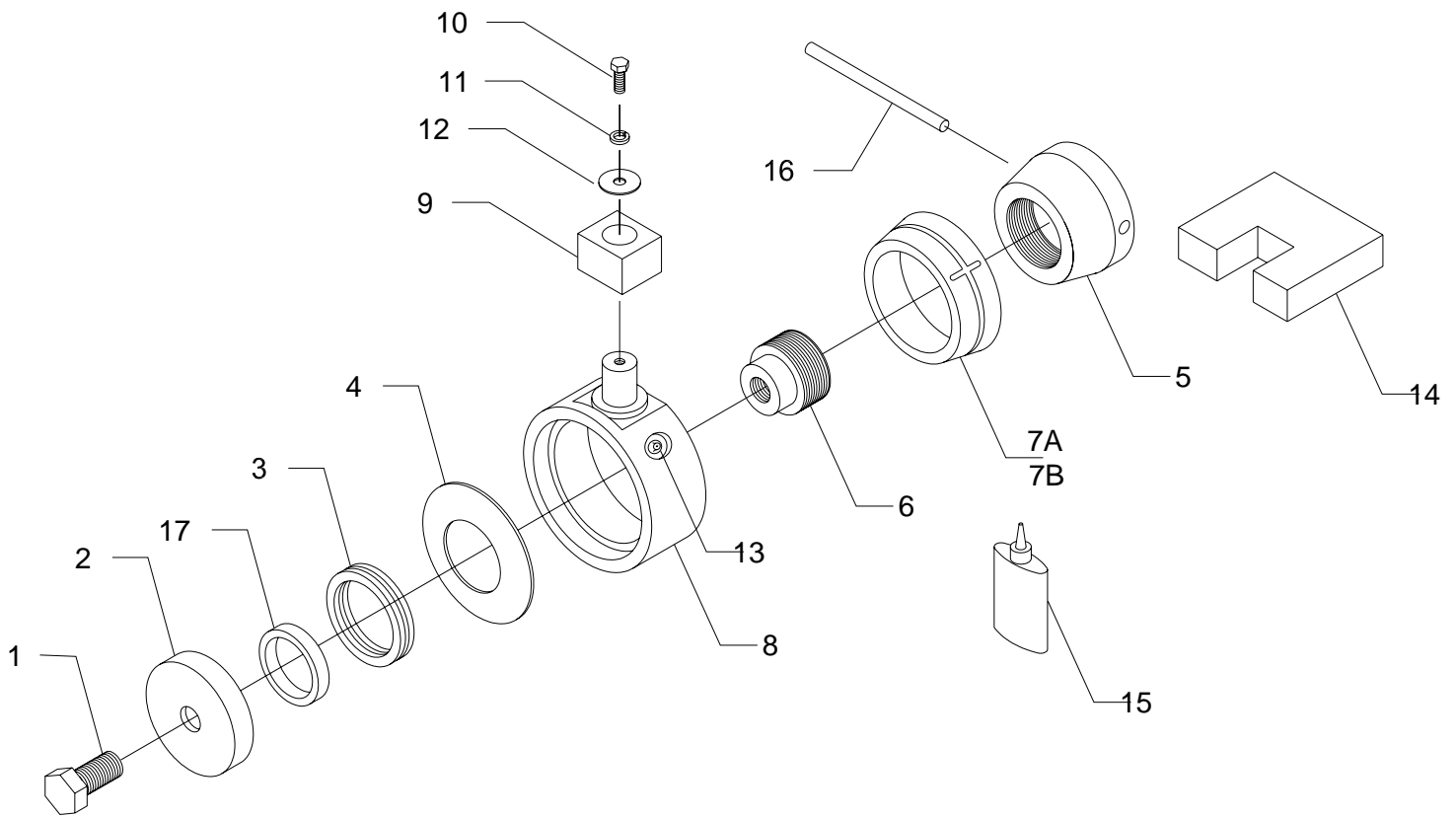
UNIVERSAL MOUNT (TRIM BRACKET BEFORE WELDING)  
 ALLIED RANGER 668D / 668F  
 \*BOTTOM PIN – SIDE TO SIDE GRAPPLE SWING

ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICITION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICITION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-1410	WEDGW WEAR BLOCK	1
	B3T-180S	2" SQUARE WEAR BLOCK(ORIGINAL, OPTIONAL)	OPTIONAL
10	B3T-1450	BOLT (1/2" x 1 1/2" Gr8) Use with B3T-1410	1
	B3T-145	BOLT (1/2"UNC x 1" Gr8) Use with B3T-180S	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PL.)	1
13	B3T-105	ZERK	2
14	B3T-600W	WEDGE ANCHOR	1
	B3T-600	2" SQUARE BRACKET (ORIGINAL,OPTIONAL)	OPTIONAL
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

**EXTERNAL MOUNT**

**B3500-10**

UNIVERSAL MOUNT  
CROSSHOLE STYLE CORE FOR PIN RETENTION  
\*TRIM BRACKET BEFORE WELDING



**EXTERNAL MOUNT**

**B3500-10**

UNIVERSAL MOUNT  
CROSSHOLE STYLE CORE FOR PIN RETENTION  
\*TRIM BRACKET BEFORE WELDING

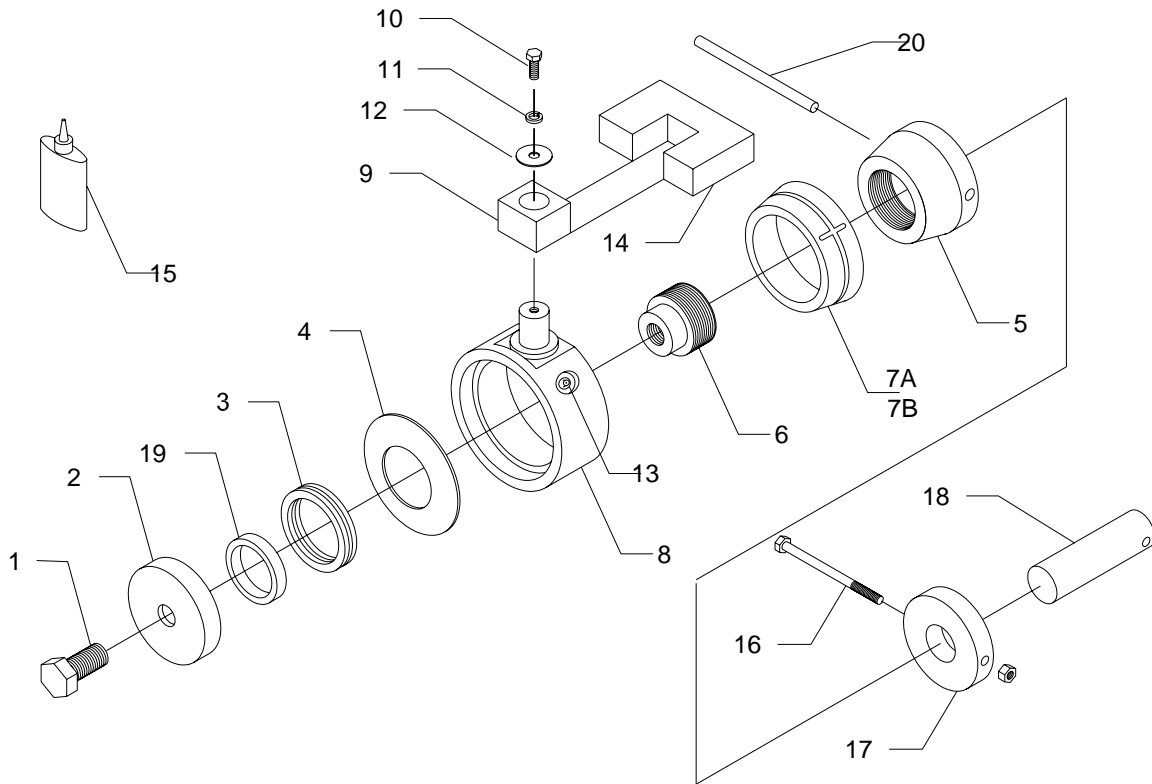
ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-530	CORE (3 1/4" I.D. W/ CROSSHOLE)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICITION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICITION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-1410	WEDGE WEAR BLOCK	1
	B3T-180S	2" SQUARE WEAR BLOCK(ORIGINAL,OPTIONAL)	OPTIONAL
10	B3T-1450	BOLT (1/2" x 1 1/2" Gr8) Use with B3T-1410	1
	B3T-145	BOLT (1/2"UNC x 1" Gr8) Use with B3T-180S	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8)	1
13	B3T-105	ZERK	2
14	B3T-600W	WEDGE ANCHOR, TRIM TO LENGTH	1
	B3T-600	2" SQUARE BRACKET (ORIGINAL, OPTIONAL)	OPTIONAL
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-310	ROLL PIN (1/2" x 5")	1
17	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1



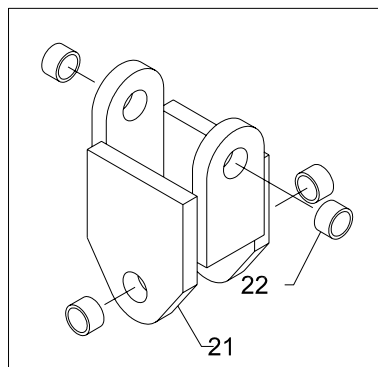
**EXTERNAL MOUNT**

**B3500-11**

USE WITH ALLIED RANGER  
2" PINS 666 – 667 LATE D SERIES, SERIES F – G – H  
\*TOP & BOTTOM



OPTIONAL: INSTALL FABRICATED  
YOKE 2" PINS ONLY



**EXTERNAL MOUNT**

**B3500-11**

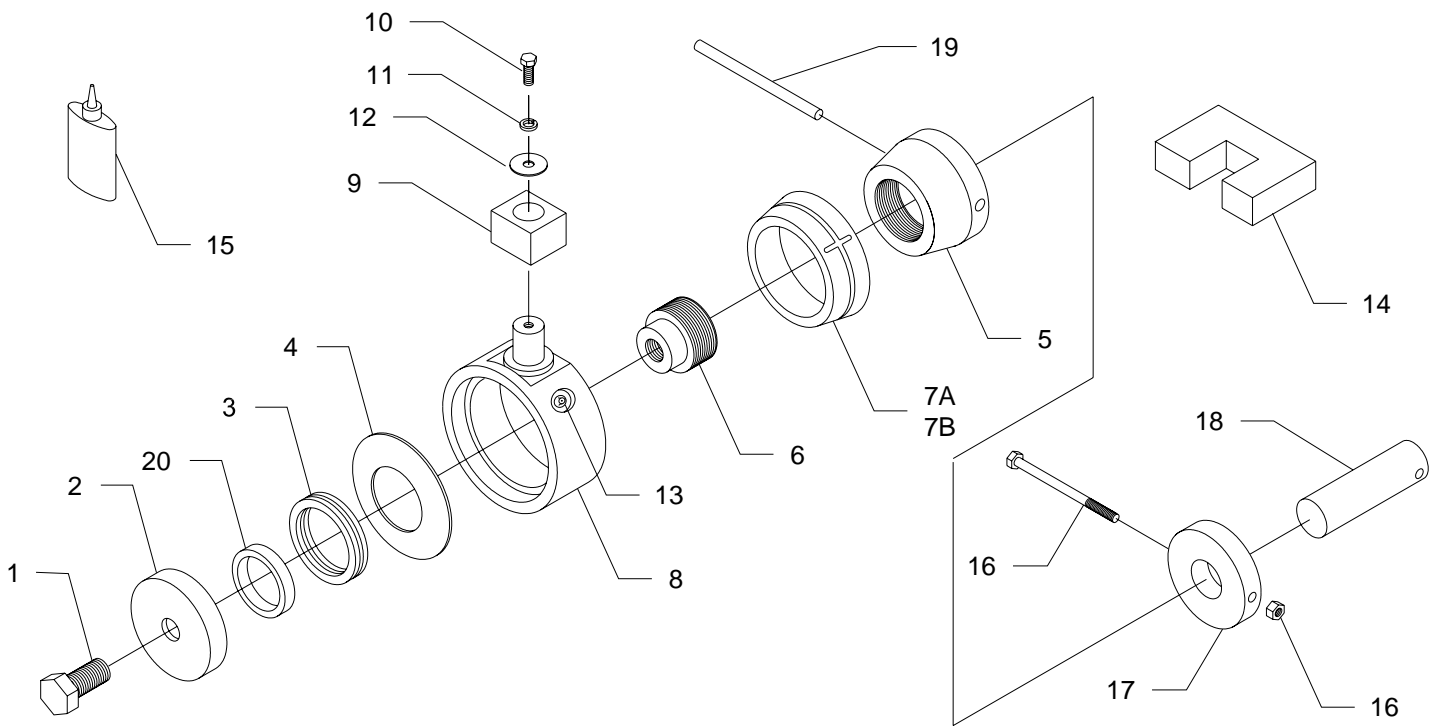
USE WITH ALLIED RANGER  
2" PINS 666 – 667 LATE D SERIES, SERIES F – G – H  
\*TOP & BOTTOM

ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-530	CORE (3 1/4" I.D. W/ CROSSHOLE)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICITION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICITION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-1410	WEDGE WEAR BLOCK	1
	B3T-180S	2" SQUARE WEAR BLOCK(OPTIONAL,OPTIONAL)	OPTIONAL
10	B3T-1450	BOLT ( 1/2" x 1 1/2" Gr8) Use with B3T-1410	1
	B3T-145	BOLT (1/2"UNC x 1" Gr8) Use with B3T-180S	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PL.)	1
13	B3T-105	ZERK	2
14	B3T-600W	WEDGE ANCHOR, TRIM TO LENGTH	1
	B3T-600	2" SQUARE BRACKET OPTIONAL, TRIM TO FIT	OPTIONAL
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-215	BOLT & NUT (1/2" UNC x 6" GRD 8 C/W NUT)	1
17	B3F-460	WELD-ON RETAINER	1
18	B3F-455	PIN (2" O.D.)	2
19	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1
20	B3T-310	ROLL PIN (1/2" x 5")	1
21	B3F-440	YOKE - OPTIONAL, INCLUDES 4 - B3T-305S BUSHING (2" PINS ONLY)	1
22	B3T-305S	BUSHING (2" I.D.) (SUB FOR B3F-480)	4

**EXTERNAL MOUNT**

**B3500-12**

USE WITH ALLIED RANGER  
1 3/4" PINS 666 – 667 C SERIES, EARLY D SERIES  
\*TOP & BOTTOM



**EXTERNAL MOUNT**

**B3500-12**

USE WITH ALLIED RANGER  
1 3/4" PINS 666 – 667 C SERIES, EARLY D SERIES  
\*TOP & BOTTOM

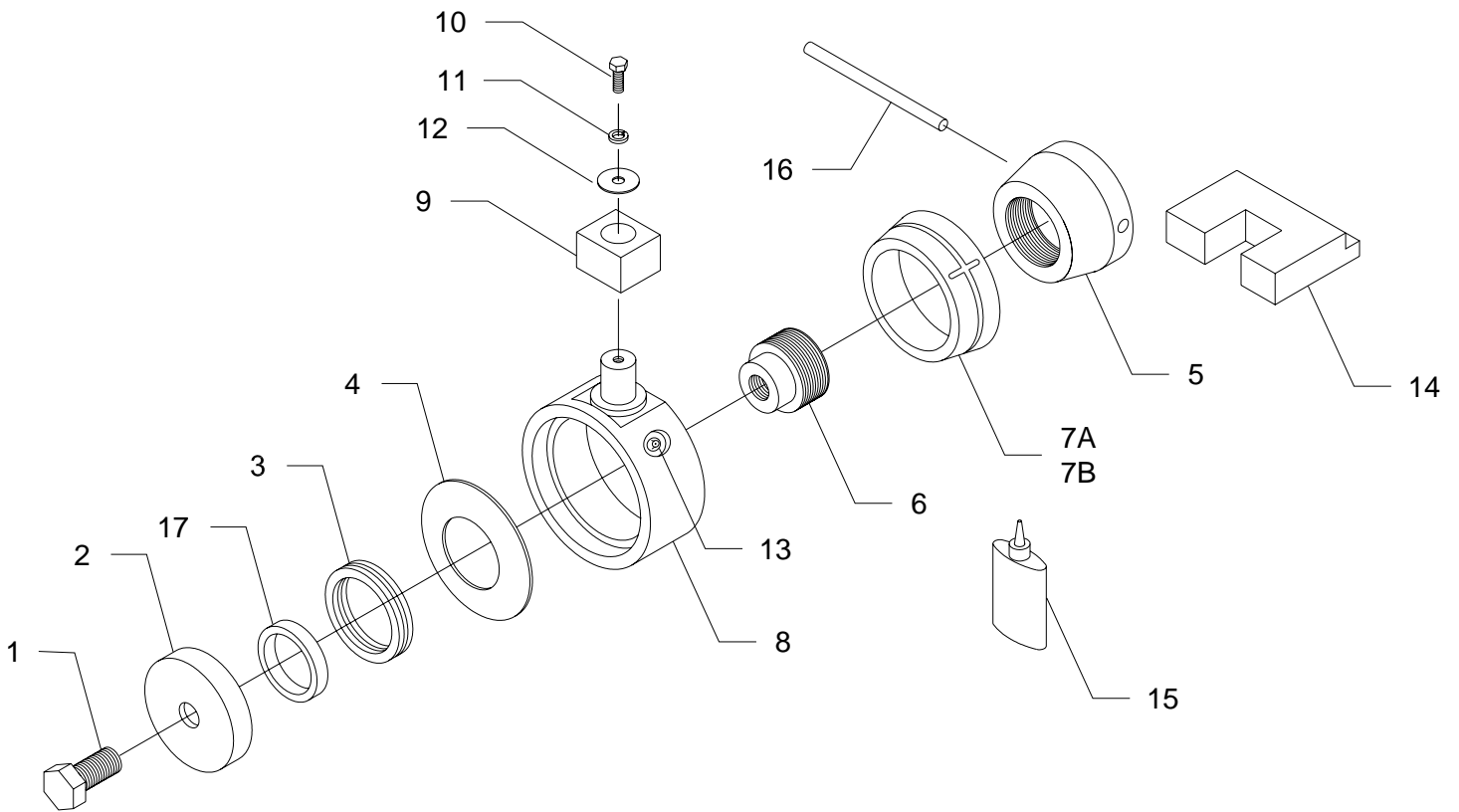
ITEM	PART#	DESCRIPTION	QTY
1	B3T-1345	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-530	CORE (3 1/4" I.D. W/ CROSSHOLE)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICITION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICITION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-1410	WEDGE WEAR BLOCK	1
	B3T-180S	2" SQUARE WEAR BLOCK(OPTIONAL,OPTIONAL)	OPTIONAL
10	B3T-1450	BOLT (1/2"UNC x 1 1/2" Gr8) Use with B3T-1410	1
	B3T-145	BOLT (1/2"UNC x 1" Gr8) Use with B3T-180S	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PL.)	1
13	B3T-105	ZERK	2
14	B3T-600W	WEDGE ANCHOR, TRIM TO LENGTH	1
	B3T-600	BRACKET ORIGINAL, OPTIONAL TRIM TO FIT	ORIGINAL
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-215	BOLT & NUT (1/2" UNC x 6" GRD 8 C/W NUT)	1
17	B3T-460	WELD-ON RETAINER	1
18	B3T-450	PIN (1 3/4" O.D.)	2
19	B3T-310	ROLL PIN (1/2" x 5")	1
20	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

**EXTERNAL MOUNT**

**B3500-13**

USE WITH ALLIED RANGER  
668D / 668F

\*TOP PIN – FORWARDS / BACKWARDS GRAPPLE SWING



**EXTERNAL MOUNT**

**B3500-13**

USE WITH ALLIED RANGER  
668D / 668F

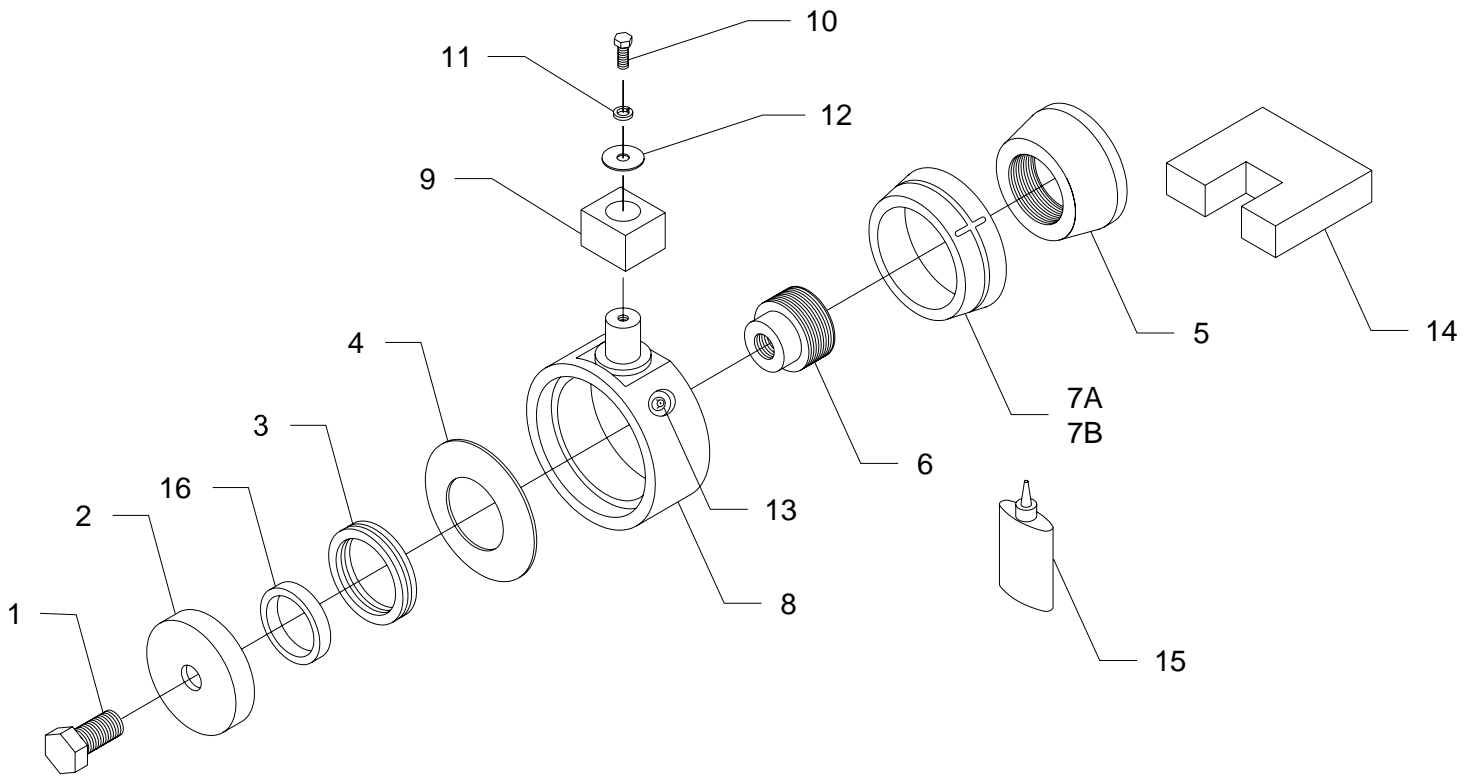
\*TOP PIN – FORWARDS / BACKWARDS GRAPPLE SWING

ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING	1
4	B3T-540	SPRING WASHER	1
5	B3T-530	CORE (3 1/4" I.D. W/ CROSSHOLE)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICTION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICTION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-180S	WEAR BLOCK	1
10	B3T-145	BOLT (1/2"UNC x 1" Gr8 PLATED)	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PL.)	1
13	B3T-105	ZERK	2
14	B3T-185	BRACKET	1
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-310	ROLL PIN (1/2" x 5")	1
17	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

**EXTERNAL MOUNT**

**B3500-14**

UNIVERSAL MOUNT (WITHOUT CROSSHOLE)  
TIGERCAT 860 SHOVEL LOADER  
\*TIGERCAT ASS'Y : CY026



**EXTERNAL MOUNT**

**B3500-14**

UNIVERSAL MOUNT (WITHOUT CROSSHOLE)  
TIGERCAT 860 SHOVEL LOADER  
\*TIGERCAT ASS'Y : CY026

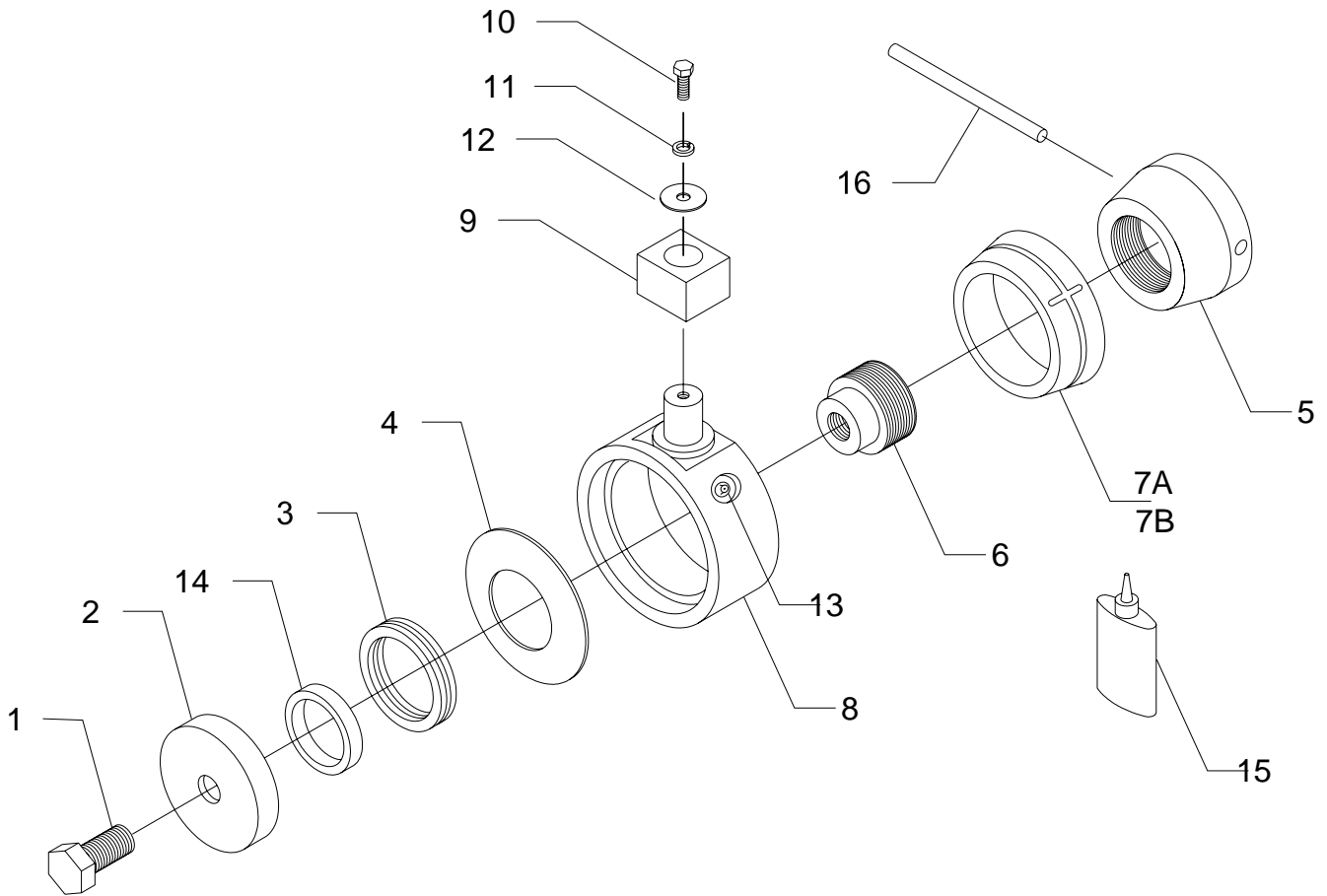
ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICITION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICITION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-1410	WEDGE WEAR BLOCK	1
	B3T-180S	2" SQUARE WEAR BLOCK ORIGINAL,OPTIONAL	OPTIONAL
10	B3T-1450	BOLT (1/2"UNC x 1 1/2" Gr8) Use with B3T-1410	1
	B3T-145	BOLT (1/2"UNC x 1" Gr8) Use with B3T-180S	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. GRD 8 PL.)	1
13	B3T-105	ZERK	2
14	B3T-600W	WEDGE ANCHOR, TRIM TO LENGTH	1
	B3T-600	2' SQUARE BRACKET, ORIGINAL OPTIONAL	OPTIONAL
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-605	SEAL, INCLUDED WITH B3S-155	1



**EXTERNAL MOUNT**

**B3500-15S-3**

USE WITH TIGERCAT (LESS ANCHOR BRACKET)  
630 SKIDDER  
\*TIGERCAT ASS'Y : CY023



**EXTERNAL MOUNT**

**B3500-15S**

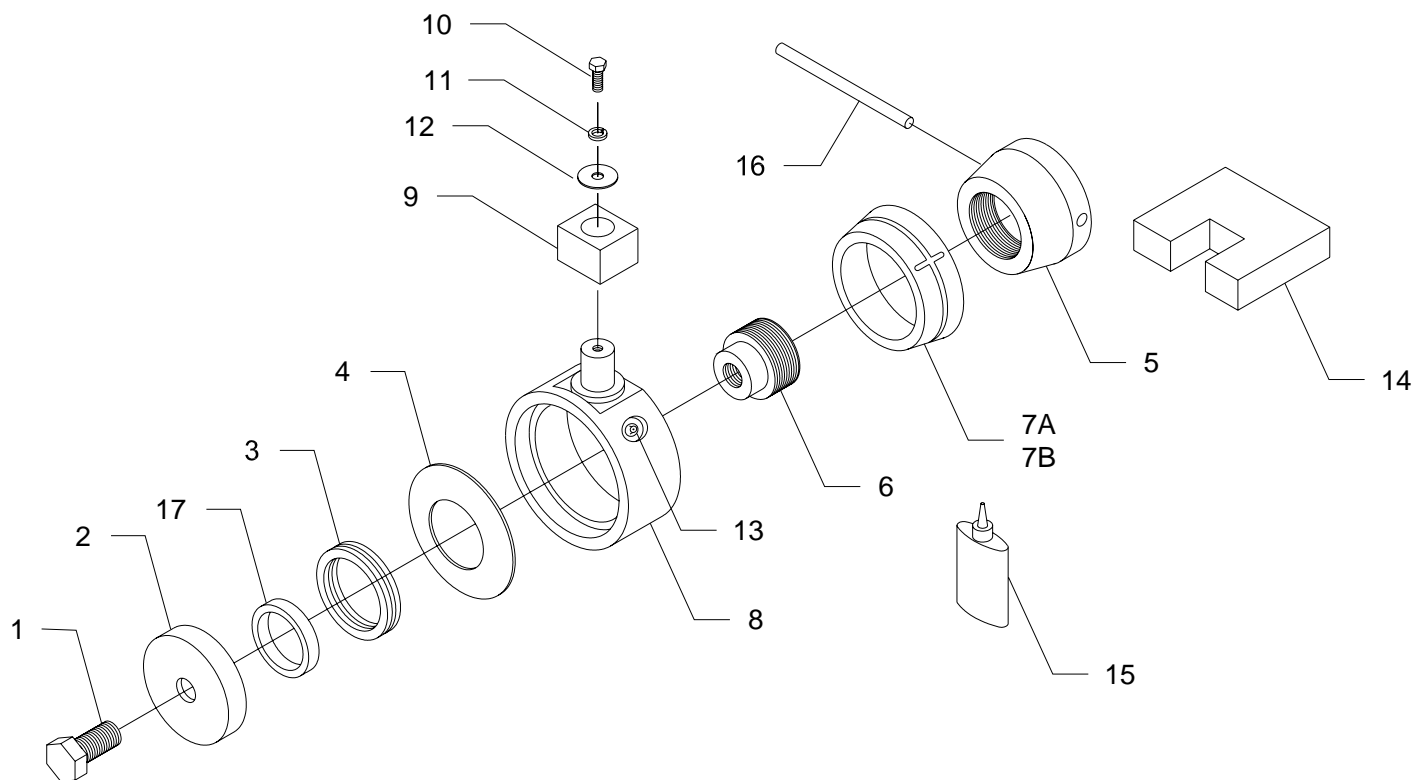
USE WITH TIGERCAT (LESS ANCHOR BRACKET)  
630 SKIDDER  
\*TIGERCAT ASS'Y : CY023

ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, #1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-530	CORE (3 1/4" I.D.W/ CROSSHOLE)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICITION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICITION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-1410	WEDGE WEAR BLOCK	1
	B3T-180S	2" SQUARE WEAR BLOCK ORIGINAL,OPTIONAL	OPTIONAL
10	B3T-1450	BOLT (1/2"UNC x 1 1/2" Gr8) Use with B3T-1410	1
	B3T-145	BOLT (1/2"UNC x 1" Gr8 PLATED)	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PL.)	1
13	B3T-105	ZERK	2
14	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-310	ROLL PIN (1/2" x 5")	1
*****	B3T-380W	WEDGE ANCHOR BRACKET- USE TO TORCH OFF ORIGINAL T-CAT CAST ANCHOR AND RE-WELD TO NEW WEDGE STYLE SPEC	3 PER MACHINE

**EXTERNAL MOUNT**

**B3500-16**

UNIVERSAL MOUNT  
\*MAX 3" PIN O.D.



**EXTERNAL MOUNT**

**B3500-16**

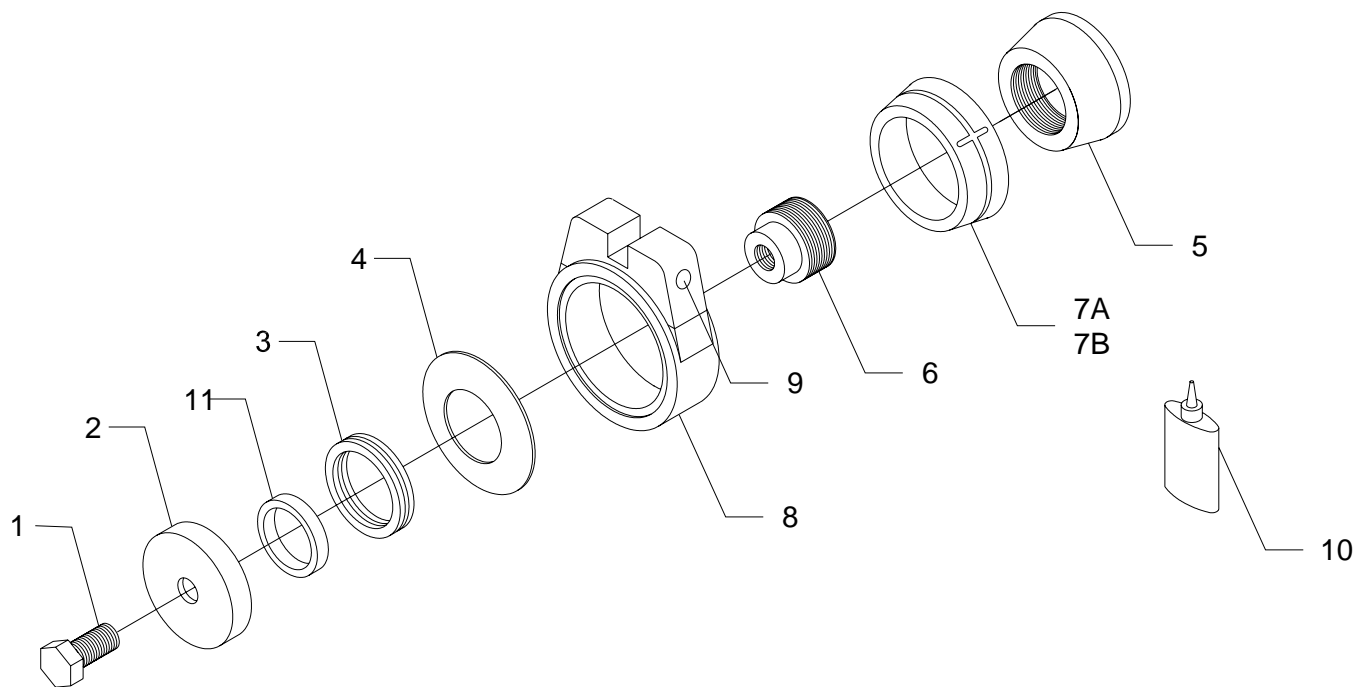
UNIVERSAL MOUNT  
\*MAX 3" PIN O.D.

ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-530	CORE (3 1/4" I.D.W/ CROSSHOLE)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICITION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICITION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-1410	WEDGE WEAR BLOCK	1
	B3T-180S	2" SQUARE WEAR BLOCK ORIGINAL,OPTIONAL	OPTIONAL
10	B3T-1450	BOLT (1/2"UNC x 1 1/2" Gr8) Use with B3T-1410	1
	B3T-145	BOLT (1/2"UNC x 1" Gr8) Use with B3T-180S	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PL.)	1
13	B3T-105	ZERK	2
14	B3T-600W	WEDGE WEAR BLOCK	1
	B3T-600	2" SQUARE BRACKET ORIGINAL,OPTIONAL	OPTIONAL
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-310	ROLL PIN (1/2" x 5")	1
17	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

**EXTERNAL MOUNT**

**B3500-17**

UNIVERSAL MOUNT (SLOT HOUSING)  
FRANKLIN SKIDDER



**EXTERNAL MOUNT**

**B3500-17**

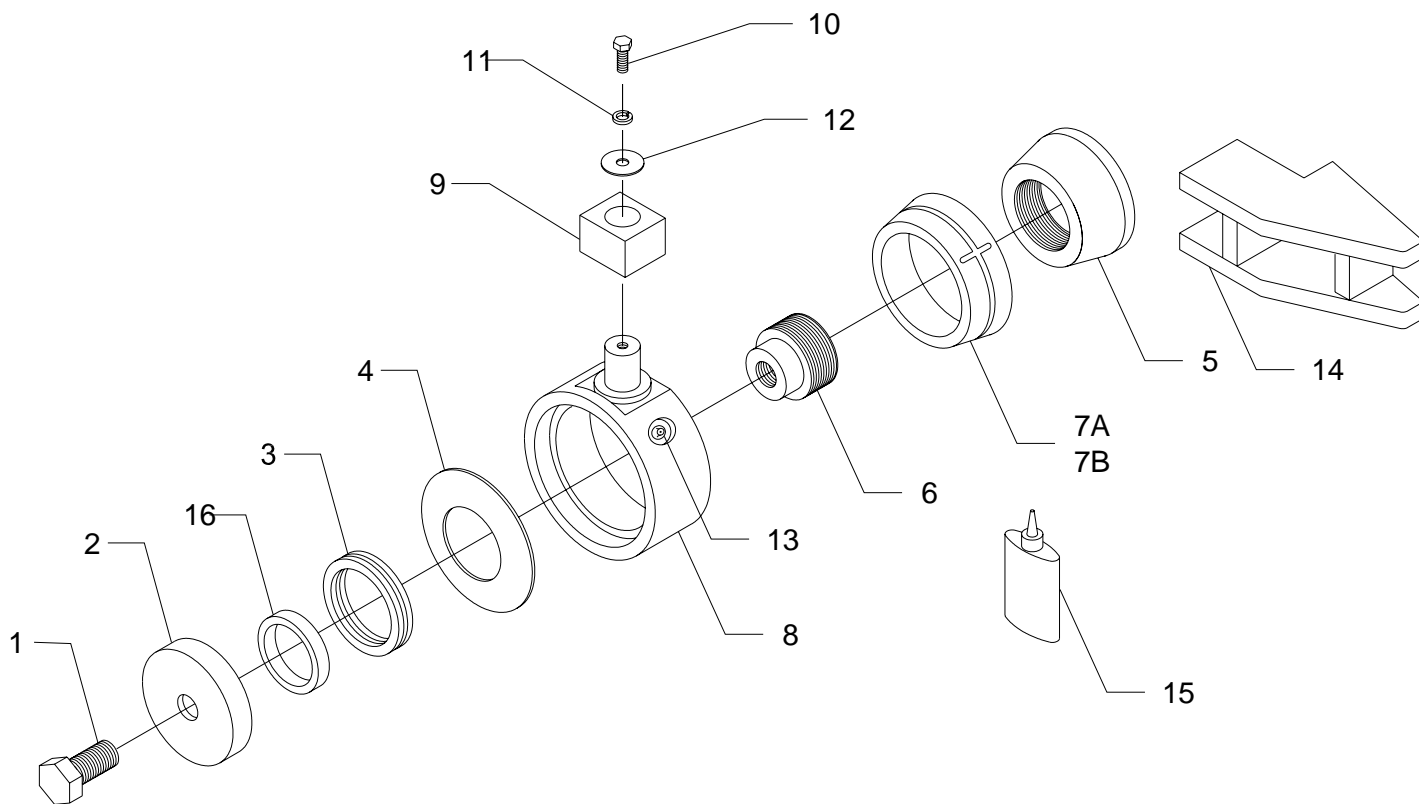
UNIVERSAL MOUNT (SLOT HOUSING)  
 FRANKLIN SKIDDER

<b>ITEM</b>	<b>PART#</b>	<b>DESCRIPTION</b>	<b>QTY</b>
1	B3T-120	BOLT (3/4"-16 x 2" Gr8 ZN)	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER	1
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICTION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICTION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-230	HOUSING, SLOT 1.030" WIDE	1
9	B3T-105	ZERK	2
10	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
11	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

**EXTERNAL MOUNT**

**B3500-18**

USE WITH TIMBERJACK 480 / 520  
PRIOR TO 1987 WITHOUT FACTORY SNUBBER  
\*BOTTOM PIN – SIDE TO SIDE GRAPPLE SWING



**EXTERNAL MOUNT**

**B3500-18**

USE WITH TIMBERJACK 480 / 520  
PRIOR TO 1987 WITHOUT FACTORY SNUBBER  
\*BOTTOM PIN – SIDE TO SIDE GRAPPLE SWING

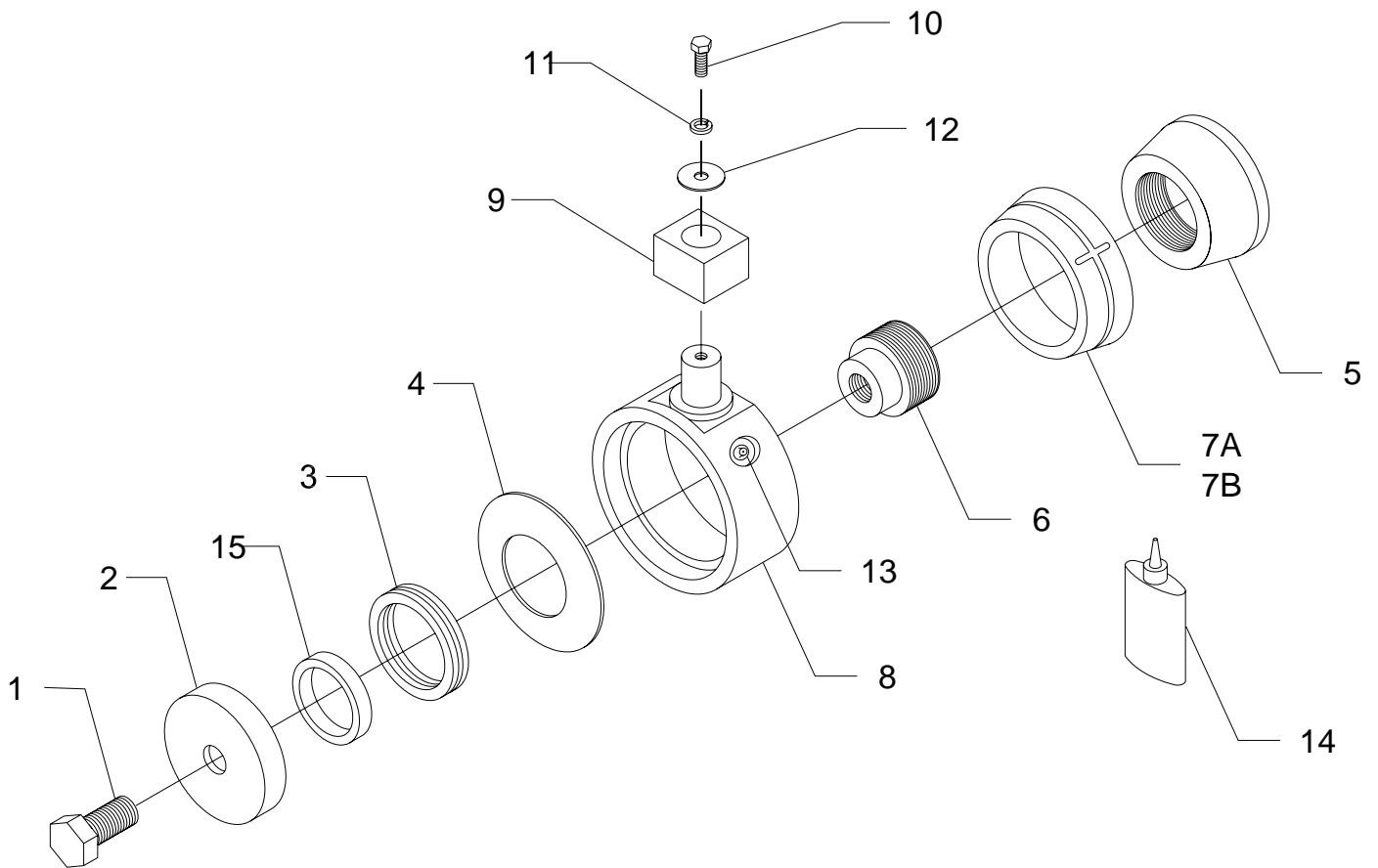
ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICTION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICTION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING, REPLACES B3T-170C	1
9	B3T-180S	WEAR BLOCK	1
10	B3T-145	BOLT (1/2"UNC x 1" Gr8 PLATED)	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PL.)	1
13	B3T-105	ZERK	2
14	B3T-355	BRACKET	1
15	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
16	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1



**EXTERNAL MOUNT**

**B3500-19**

SERIES 500 WITHOUT CROSSHOLE  
BRACKET NOT INCLUDED



**EXTERNAL MOUNT**

**B3500-19**

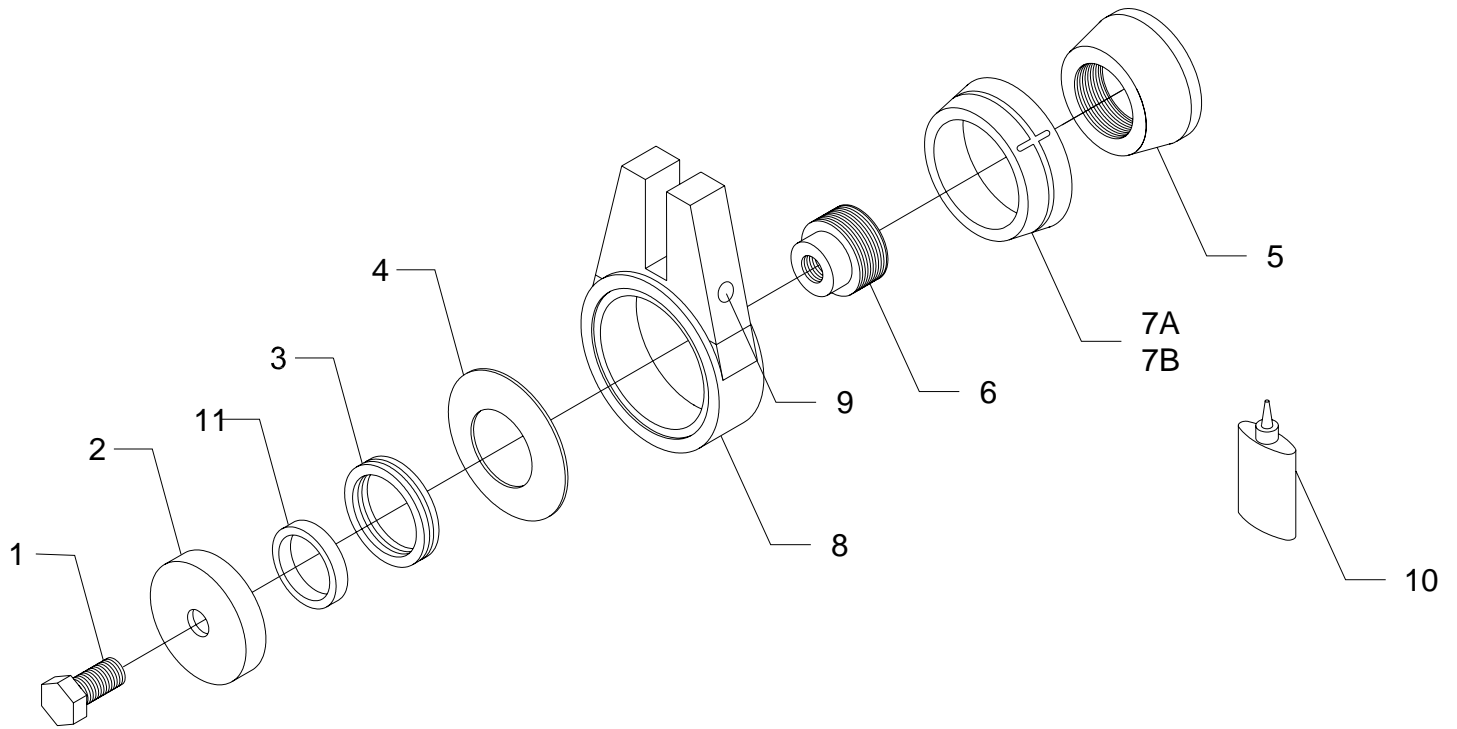
SERIES 500 WITHOUT CROSSHOLE  
BRACKET NOT INCLUDED

ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE , FACE TO FACE	3
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICITION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICITION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-1345	STUD HOUSING- REPLACES B3T-170C	1
9	B3T-1410	WEDGE WEAR BLOCK	1
	B3T-180S	WEAR BLOCK ORIGINAL, OPTIONAL	OPTIONAL
10	B3T-1450	BOLT (1/2"UNC x 1 1/2" Gr8) Use with B3T-1410	1
	B3T-145	BOLT (1/2"UNC x 1" Gr8) Use with B3T-180S	1
11	B3T-150	WASHER (1/2" LOCK Gr8 PLATED)	1
12	B3T-155	WASHER (1/2" FLAT x 1 3/8" O.D. Gr8 PL.)	1
13	B3T-105	ZERK	2
14	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
15	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

**EXTERNAL MOUNT**

**B3500-20**

UNIVERSAL MOUNT (SLOT HOUSING)



**EXTERNAL MOUNT**

**500 SERIES**

**B3500-20**

UNIVERSAL MOUNT (SLOT HOUSING)

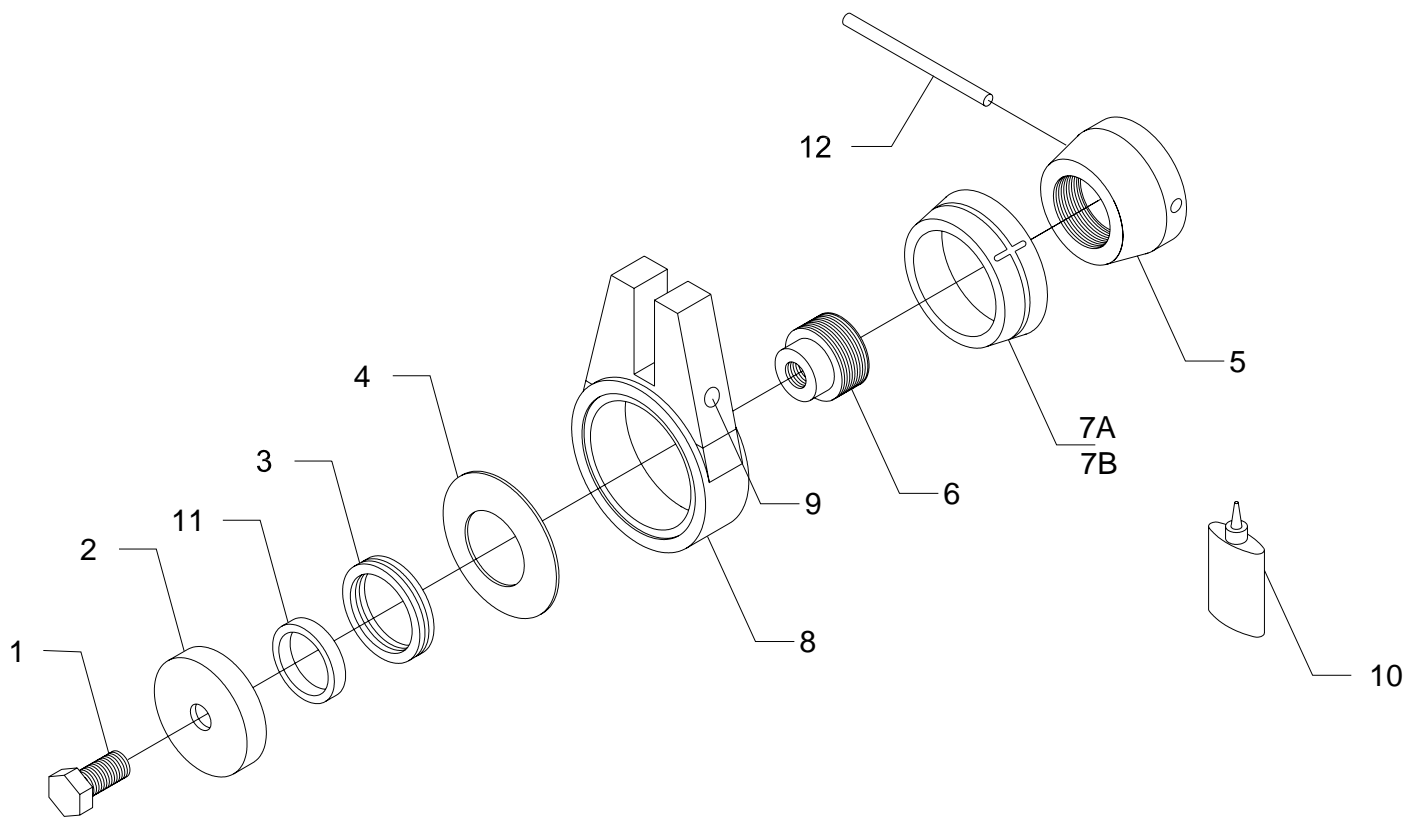
ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-400	CORE (3 1/4" I.D.)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICTION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICTION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-175	STUD HOUSING (1.030" x 4" DEEP SLOT)	1
9	B3T-105	ZERK	2
10	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
11	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1

**EXTERNAL MOUNT**

**500 SERIES**

**B3500-21**

UNIVERSAL MOUNT (SLOT HOUSING)



**EXTERNAL MOUNT**

**B3500-21**

UNIVERSAL MOUNT (SLOT HOUSING)

ITEM	PART#	DESCRIPTION	QTY
1	B3T-1340	BOLT (3/4"-16 x 2 1/2" Gr8 ZN) REPLACES B3T-120	1
2	B3T-135	END CAP	1
3	B3S-155	BEARING, INCLUDES B3T-605 SEAL	1
4	B3T-540	SPRING WASHER, # 1 CONCAVE TO HOUSING, 2 & 3 CONCAVE, FACE TO FACE	3
5	B3T-530	CORE (3 1/4" I.D. W/ CROSSHOLE)	1
6	B3T-405	PLUG (3 1/4" O.D. 3/4" BOLT)	1
7	B3T-390G	FRICTION SLEEVE (ZINC ALLOY ZA12)	1
OPT.	B3T-595	FRICTION SLEEVE (COMPOSITE MATERIAL)	1
8	B3T-175	STUD HOUSING (1.030" x 4" DEEP SLOT)	1
9	B3T-105	ZERK	2
10	B3T-575	SLEEVE RETAINER LOCTITE 620 OR EQUIVALENT	1
11	B3T-605	SEAL, INCLUDED WITH B3S-155 BEARING	1
12	B3T-310	ROLL PIN (1/2" x 5")	1