service bulletin

TO: SERVICE MANAGER ☐ TECHNICIANS ☐
PARTS MANAGER ☐

Revised October 1997

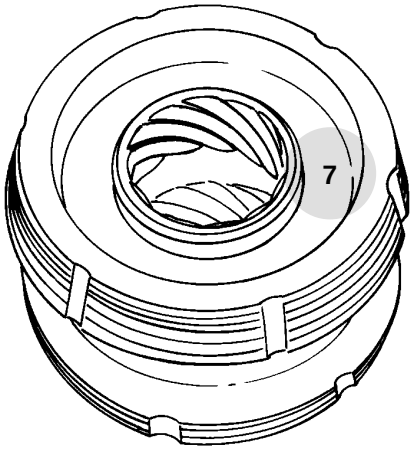
No. 97-18

1997 1/2 Shift Changes for Bravo One / Two / Three and BlackHawk

All Bravo and BlackHawk Models

1. Bravo I / II / III / BlackHawk New Shift Parts

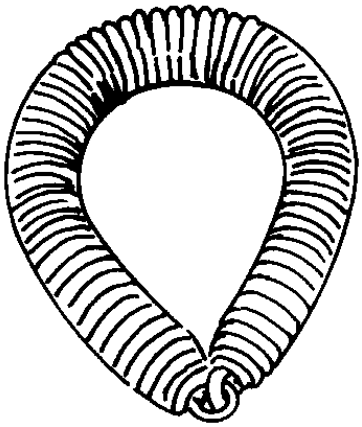
   a. The Cone Clutch has changed. The spring ramp area is different. The yoke groove has been increased by (.010 in.) width. The clutch is identified by a number (7) stamped down at the bottom of the spring groove on every clutch. The number (location of number shown below) may be difficult to read on some of the clutches but none the less it is stamped. Please examine closely.

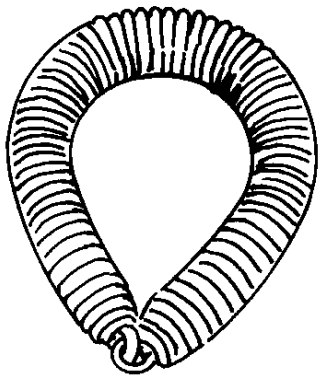


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Cone Clutch (52-807375A2)

   b. The Garter Springs (shown below) now have a smaller diameter on the Bravo only and are colored orange for easy identification.





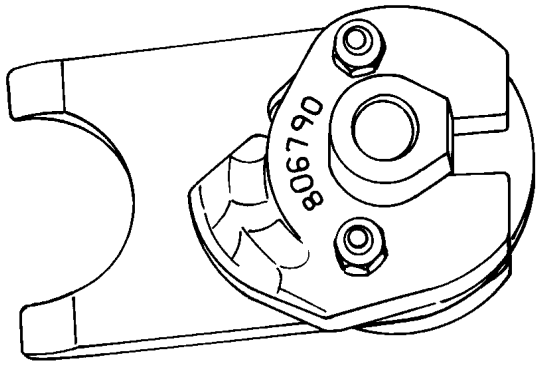
75141

(24-818829)
Silver Color
BlackHawk

(24-93505)
Orange Color
Bravo I / II / III

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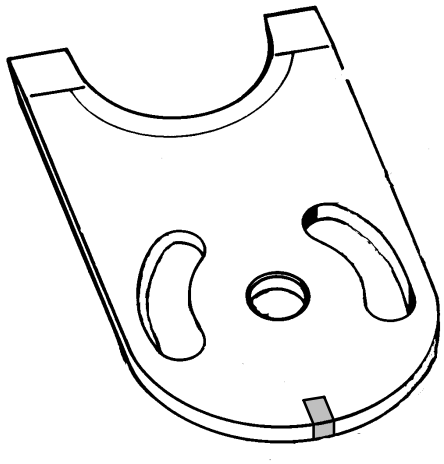
c. The Shift Cams have a new ramp profile and are identified by the part number (as shown below on the assembly) molded into the top surface of the cam,.



75221

Shift Cam Assembly (806552A1)

d. The Shift Yoke has been made .004 in. (approximately 0.1 mm) thicker. The yoke will be identified by a yellow paint stripe (illustrated on the drawing below).



75222

Shift Yoke (806552)

e. Following is a list of the kits that are available to back fit the new shift components into all Bravo units:

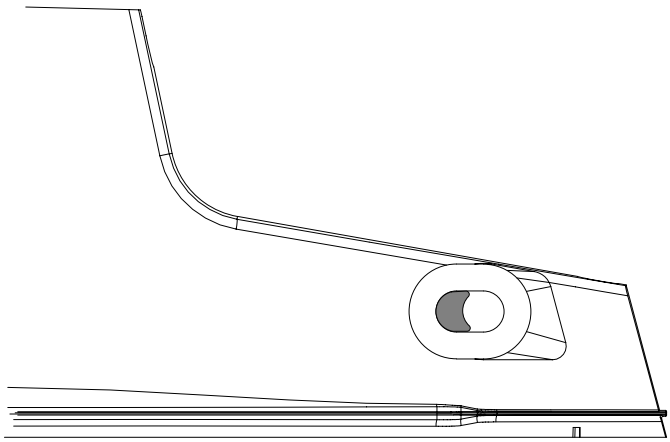
1. Yoke and cam assembly, for units starting with serial number 0K091000 and above.

2. Clutch Kit assembly, (52-807375A1) which includes the new cone clutch and springs as well as the yoke and cam assembly and two new socket head Allen screws for use on units starting with serial number 0F345868 thru 0K090999.

3. Shift Upgrade Kits, for use in units with serial number 0F345867 and prior, back to the first Bravo unit built. Each kit will be preassembled and consist of the following parts:
(2) new driven gears, (1) new cone clutch, (2) new garter springs
(1) upper drive shaft, (2) thrust bearings, (2) thrust bearing races,
(1) new shift yoke, (2) shift cams, and the misc. bolts and spacers required to assemble the kits, the kit part numbers are as follows;
(43-807436A1) 32 TEETH
(43-807437A1) 30 TEETH
(43-807438A1) 29 TEETH

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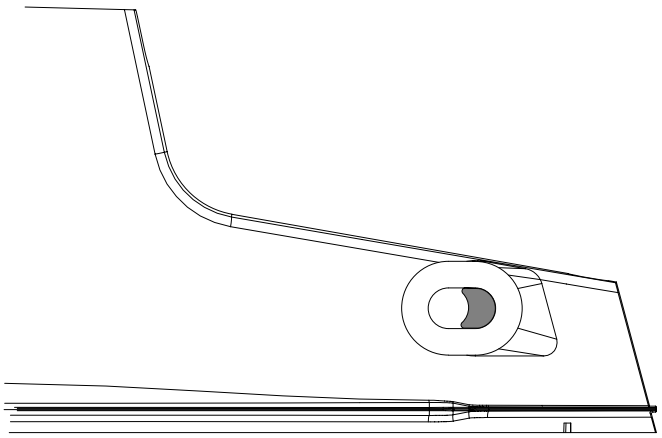
4. In October 1997 1/2 Model Year starting with serial number 0K184626 the Bravo Drive Shaft Housing changed **AFT ANCHOR PIN HOLE** location to accommodate the new **TRIM IN LIMIT SPACER**. This change replaced the **(A - B)** blocks that were on the Gimbal Housing front anchor pin.



75157

Bravo One and Two (Trim-In Limit Pin)

[Spacer Positioned Forward]

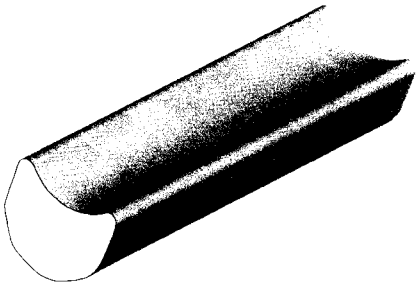


75158

Bravo Three (Trim-In Limit pin)

[Spacer Positioned Aft]

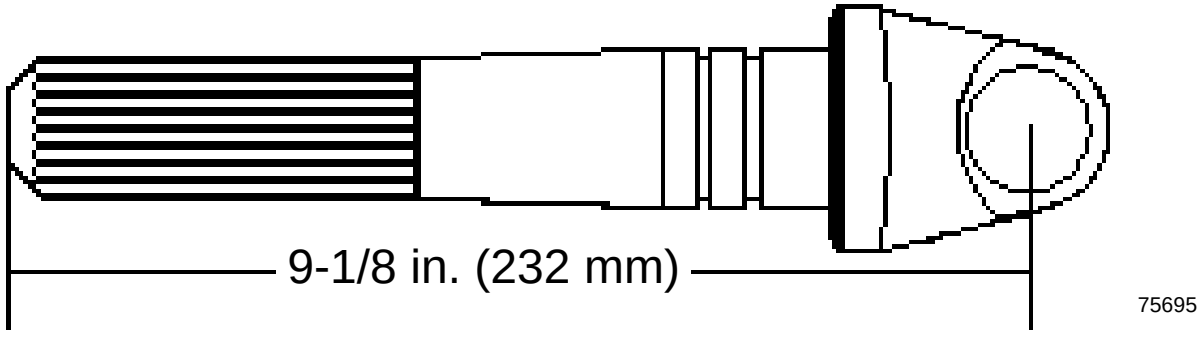
5. As mentioned in the statement above there is a new Trim-in Limit Spacer, this spacer (is shown in the illustration below) is to be placed in the drive shaft housing in the Aft (rear) anchor pin hole.



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Bravo **Trim-In limit** Spacer (808006)

6. The Universal joint splined yoke (shown Below) on the Bravo Drive for the **New Two Speed Transmission** will have a 19 tooth spline and will be 2-1/8 inches (54 mm) shorter inches shorter from the center of the bearing cap to the tip of the splined yoke. The standard Bravo Drive yoke has 17 teeth and is (11-1/4 in.) (286 mm) long as used on the Bravo Drive unit today.



75695

(59830A8)
New Splined Yoke for the Bravo Drive when used with a Black Trac two speed Transmission.

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