

# CATERPILLAR 527

3DS / SEBP2577

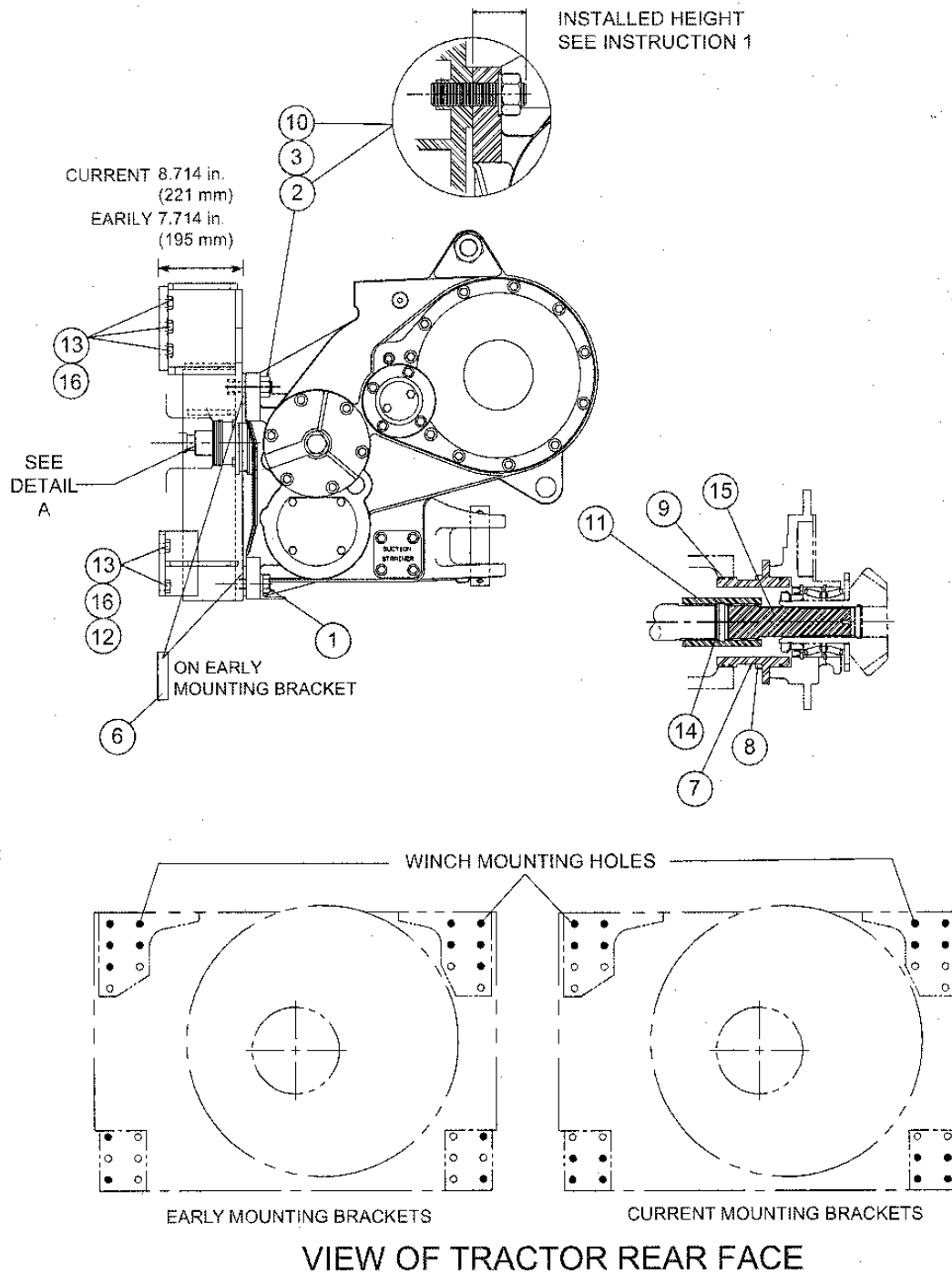
## Contents

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# MOUNTING GROUP

## MOUNTING GROUP

Drawing 1 of 2



## MOUNTING GROUP (continued)

Drawing 2 of 2

### INSTRUCTIONS

1. Apply Loctite 271 to threads of studs, item 3 and install into winch adapter brackets, items 4 and 5, to the height of 3.68 in. (94 mm).
2. PTO rotation is counterclockwise (CCW) as viewed from rear of tractor.  
Remove and discard tractor PTO cover.
3. Remove paint, rust, dirt and grease from mounting surfaces of tractor, winch and winch adapters.
4. Coat splines of PTO shaft, item 15, with multi-purpose grease and install into bevel pinion gear of winch.
5. Install retaining rings, item 14, in coupling, item 11. Place coupling over PTO shaft with beveled end away from winch.
6. Install o-rings, item 9, onto PTO pilot, item 7. NOTE: As the same PTO pilot may be used on several adaptations, usually only one o-ring groove will engage and seal in the tractor PTO opening.
7. Remove winch top cover to gain access to the bevel gears.
8. Coat PTO pilot o-rings and splines of tractor PTO with multi-purpose grease and install winch on the tractor while moving winch bevel gears to align the splines.
9. Apply Loctite 242 to threads of studs, item 3, and capscrews, items 1, 12 & 13, and tighten as follows:
  - A) Tighten nuts, item 2, to 986 lb-ft (1300 N-m).
  - B) Capscrews, item 1, to be tightened to 680 lb-ft (900 N-m) torque.
  - C) Capscrews, items 12 & 13, to be tightened to 275 lb-ft (370 N-m).

### CAUTION

Fill winch to proper level with recommended oil **BEFORE** starting tractor. Winch bearing and gear damage may result if tractor is run without oil in winch.

**NOTE:** New adapters are 1 in. (25 mm) thicker and spacers, item 6, no longer required when new spacers are used.

### WARNING

Winch and adapters weigh approximately 2,500 lb (1,135 kg). Make certain that lifting equipment has adequate capacity. Failure to use adequate lifting equipment may result in property damage, personal injury or death.

966870

| ITEM | PART NO. | DESCRIPTION                               | CURRENT ADAPTERS | EARLY ADAPTERS |
|------|----------|-------------------------------------------|------------------|----------------|
| 1    | 7X-0408  | CAPSCREW, HEX HD, 1 - 8 X 3 1/2 Gd 8      | -                | 4              |
|      | 7X-0404  | CAPSCREW, HEX HD, 1 - 8 X 2 1/2 Gd 8 Z    | 4                | -              |
| 2    | 4J-5977  | NUT, HEX 1-1/8 - 7                        | 4                | 4              |
| 3    | 133-9225 | STUD, 1-1/8 - 7 X 5 1/4 Gd 8              | -                | 4              |
|      | 133-9224 | STUD, 1-1/8 - 7 X 4 1/4 Gd 8              | 4                | -              |
| 4    | 123-4428 | ADAPTER - RH EARLY                        | -                | 1              |
|      |          | ADAPTER - RH CURRENT (PACCAR 104387)      | 1                | -              |
| 5    | 123-4429 | ADAPTER - LH EARLY                        | -                | 1              |
|      |          | ADAPTER - LH CURRENT (PACCAR 104386)      | 1                | -              |
| 6    | 118-6553 | SPACER                                    | -                | 4              |
| 7    | 118-6537 | PTO PILOT                                 | 1                | 1              |
| 8    | 5P-2228  | CAPSCREW, HEX HD 1/2 - 13 X 1 Gd 8 Z      | 4                | 4              |
| 9    | 8S-5654  | O-RING                                    | 3                | 3              |
| 10   | 119-1551 | WASHER, 1-1/8 HARDENED                    | 4                | 4              |
| 11   | 118-6539 | COUPLING                                  | 1                | 1              |
| 12   | 8T-9398  | CAPSCREW, HEX HD, 3/4 - 10 X 1 1/4 Gd 8 Z | -                | 4              |
| 13   | 7X-0366  | CAPSCREW, HEX HD 3/4 - 10 X 2 Gd 8 Z      | 16               | 10             |
| 14   | 120-7671 | RETAINING RING                            | 2                | 2              |
| 15   | 118-6559 | PTO SHAFT                                 | 1                | 1              |
| 16   | 8T-4994  | WASHER, 3/4 HARDENED                      | 16               | 14             |

| Ref. | Part number | Description                                             | Qty | Code | Group page |
|------|-------------|---------------------------------------------------------|-----|------|------------|
| 1    | 7X-0408     | CAPSCREW (HEX HD) (1-8X3 1/2 GD 8) (EARLY ADAPTERS)     | 4   |      |            |
|      | 7X-0404     | CAPSCREW (HEX HD) (1-8X2 1/2 GD 8 Z) (CURRENT ADAPTERS) | 4   |      |            |
| 2    | 4J-5977     | NUT (HEX 1-1/8-7) (CURRENT ADAPTERS)                    | 4   |      |            |
|      | 4J-5977     | NUT (HEX 1-1/8-7) (EARLY ADAPTERS)                      | 4   |      |            |
| 3    | 133-9225    | STUD (1-1/8-7X5 3/4 GD 8) (EARLY ADAPTERS)              | 4   |      |            |
|      | 133-9224    | STUD (1-1/8-7X4 3/4 GD 8) (CURRENT ADAPTERS)            | 4   |      |            |

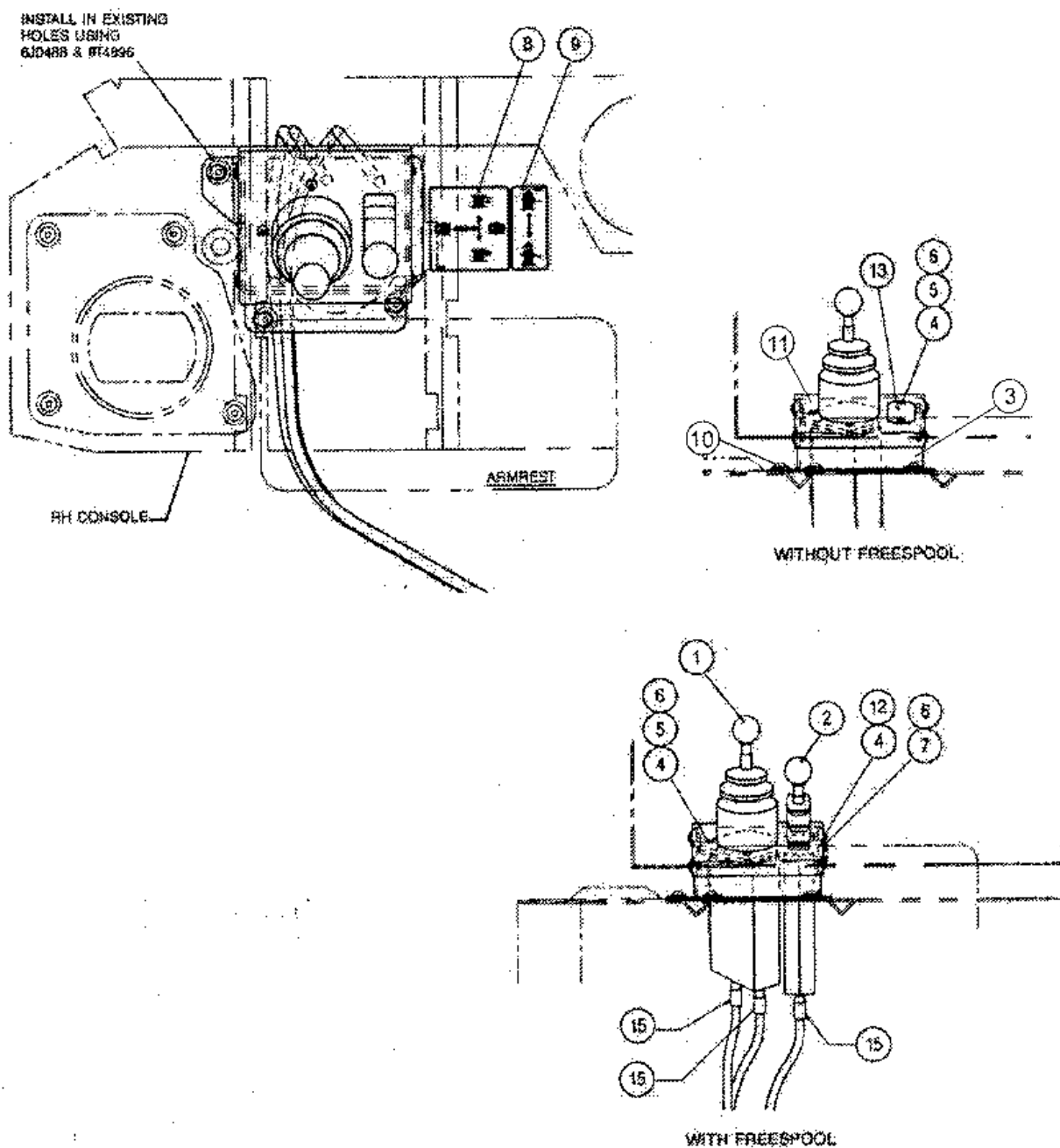
## MOUNTING GROUP (continued)

| Ref. | Part number | Description                                              | Qty | Code | Group page |
|------|-------------|----------------------------------------------------------|-----|------|------------|
| 4    | 123-4428    | ADAPTER (RH EARLY) (EARLY ADAPTERS)                      | 1   |      |            |
|      | 123-4428    | ADAPTER (RH CURRENT) (PACCAR 104387) (CURRENT ADAPTERS)  | 1   |      |            |
| 5    | 123-4429    | ADAPTER (LH EARLY) (EARLY ADAPTERS)                      | 1   |      |            |
|      | 123-4429    | ADAPTER (LH CURRENT) (PACCAR 104386) (CURRENT ADAPTERS)  | 1   |      |            |
| 6    | 118-6553    | SPACER (EARLY ADAPTERS)                                  | 4   |      |            |
| 7    | 118-6537    | PTO PILOT (CURRENT ADAPTERS)                             | 1   |      |            |
|      | 118-6537    | PTO PILOT (EARLY ADAPTERS)                               | 1   |      |            |
| 8    | 5P-2228     | CAPSCREW (HEX HD) (1/2-13X1 GD 8 Z) (CURRENT ADAPTERS)   | 4   |      |            |
|      | 5P-2228     | CAPSCREW (HEX HD) (1/2-13X1 GD 8 Z) (EARLY ADAPTERS)     | 4   |      |            |
| 9    | 8S-5654     | O-RING (CURRENT ADAPTERS)                                | 3   |      |            |
|      | 8S-5654     | O-RING (EARLY ADAPTERS)                                  | 3   |      |            |
| 10   | 119-1551    | WASHER (1-1/8 HARDENED) (CURRENT ADAPTERS)               | 4   |      |            |
|      | 119-1551    | WASHER (1-1/8 HARDENED) (EARLY ADAPTERS)                 | 4   |      |            |
| 11   | 118-6539    | COUPLING (CURRENT ADAPTERS)                              | 1   |      |            |
|      | 118-6539    | COUPLING (EARLY ADAPTERS)                                | 1   |      |            |
| 12   | 8T-9398     | CAPSCREW (HEX HD) (3/4-10X1 3/4 GD 8 Z) (EARLY ADAPTERS) | 4   |      |            |
| 13   | 7X-0366     | CAPSCREW (HEX HD) (3/4-10X2 GD 8 Z) (CURRENT ADAPTERS)   | 16  |      |            |
|      | 7X-0366     | CAPSCREW (HEX HD) (3/4-10X2 GD 8 Z) (EARLY ADAPTERS)     | 10  |      |            |
| 14   | 120-7671    | RETAINING RING (CURRENT ADAPTERS)                        | 2   |      |            |
|      | 120-7671    | RETAINING RING (EARLY ADAPTERS)                          | 2   |      |            |
| 15   | 118-6559    | PTO SHAFT (CURRENT ADAPTERS)                             | 1   |      |            |
|      | 118-6559    | PTO SHAFT (EARLY ADAPTERS)                               | 1   |      |            |
| 16   | 8T-4994     | WASHER (3/4 HARDENED) (CURRENT ADAPTERS)                 | 16  |      |            |
|      | 8T-4994     | WASHER (3/4 HARDENED) (EARLY ADAPTERS)                   | 14  |      |            |

## CONTROL GROUP

### CONTROL GROUP

Drawing 1 of 3



## CONTROL GROUP (continued)

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### CONTROL INSTALLATION INSTRUCTIONS

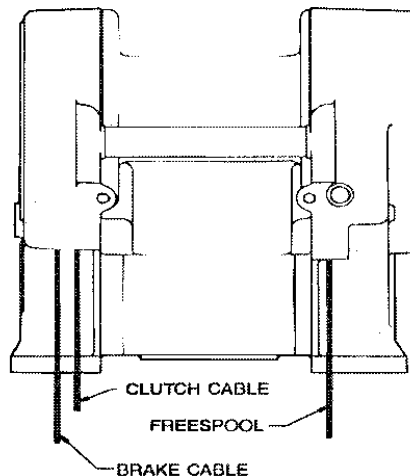
**i** **NOTE:** These instructions are provided as a general guide. Tractor options, application requirements or local regulations may require deviation from these recommendations.

1. Modify the right hand console cover by removing the shaded area as shown.
2. Install the gasket, item 10, to the bottom of the control bracket, item 3.
3. Install the control bracket onto the right hand console using existing button head capscrews.
4. Carefully route control cables from winch to underside of right hand console.

#### ⚠ CAUTION ⚠

Avoid routing cables near moving shafts or linkage, which may cause damage to the cables or restrict free movement of tractor components.

5. Route the control cables up through the opening of the control bracket and install cables into controllers as follows:



Top View of Winch

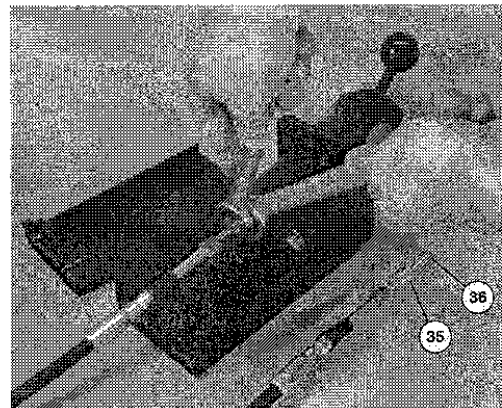
#### Power-Shift Control – Dual Axis

1. Remove the six through-bolts, item 34, from the control stand and separate the two cable support housings, items 37 & 38. From each plunger, remove the sliding lock screw and threaded bushing, items 35 & 36.

2. Install the sliding lock screw, item 35, onto the control cables. Apply two drops of Loctite 242, or equivalent, to the cable threads and install the threaded bushing, item 36, onto the cable core until the end of the cable core is level with the end of the bushing.
3. Hold the controller in your left hand with the knob end up and the mounting bolts located at the 6, 9 and 12 o'clock positions. Mark the plunger closest to the 6 o'clock position as the "clutch" control. Mark the plunger closest to the 12 o'clock position as the "brake" control. The "clipped" corner of the control will be installed toward the rear of the tractor.
4. Install the brake cable to the "brake" control plunger and the clutch cable to the "clutch" control plunger. Move the control lever to extend the plungers far enough to expose the wrench flats. With a wrench, hold the plunger and tighten the sliding lock screw to 50 lb·ft (68 N·m) torque.

#### ⚠ CAUTION ⚠

Tightening the sliding lock screw without holding the plunger with a wrench will result in damage to the control assembly.



5. Install the cable support housings, items 37 & 38, onto the controller. Place the groove of the control cable housings into the saddle of the cable anchors, items 39 & 40. Install the six through-bolts, washers, lock washers and nuts, items 31, 33, 34 & 41. Evenly tighten the bolts to 85 lb·in (10 N·m) torque.
6. Insert the controller and cables sub-assembly from the bottom into the opening of the control bracket cover, item 11, and secure with three button, socket-head capscrews, lock washers and nuts, items 4, 5 & 6. If the winch is equipped with freespool, install the freespool controller / cable sub-assembly at this

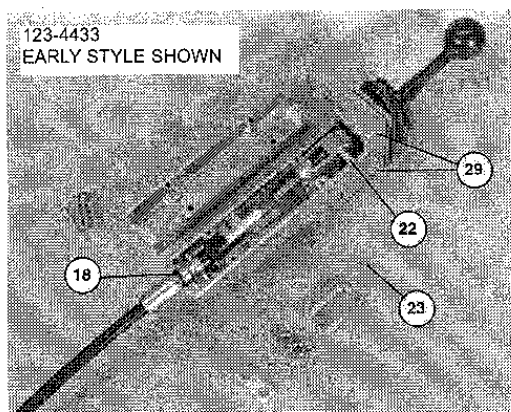
## CONTROL GROUP (continued)

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time. If not equipped with freespool, install the control bracket cover/controllers sub-assembly onto the control bracket using four button, socket-head cap-screws and washers, items 4 and 12.

### Freespool Control – Single Axis

1. Remove the knob, item 32, and the four oval head machine screws and lockwashers, items 16 & 17, from the long lever housing cover and remove the cover.
2. Prepare the control cable for installation by installing the o-ring, item 18, over the control lever end of the cable. The control lever end is identified by the u-bolt groove in the cable housing.
3. Install one nut, item 19, onto the cable core followed by the lockwasher, item 31.
4. Install the clevis, item 21, and one more nut, item 19, onto the cable. The cable core end must extend beyond the nut by 7/32 in. (5.5 mm). Tighten the first nut to secure the clevis in this position.
5. Slip the clevis over the bellcrank of the lever and install the clevis pin, item 22, and secure in place with cotter pin, item 23.



6. Remove the u-bolt, item 24, from the housing.
7. Position the o-ring, item 18, on the control cable housing so that when the cable is lowered into place, the o-ring fits in the groove in the housing.
8. Install the u-bolt, item 24, over the cable and through the housing. Install the spacer, item 25, over the u-bolt, followed by the lock washers and nuts, items 20 & 26. Tighten the u-bolt nuts to 90 lb•in (10 N•m) torque.
9. Install the cover onto the housing with the four oval head machine screws and lockwashers, items 16 and 17.

10. Remove the two through-bolts and nuts, items 29 and 19, from the top two mounting holes of the lever housing.

11. Secure the lever to the control bracket with cap-screws, lockwashers and nuts, items 5, 6 and 7. The long cover of the lever housing must face toward the operator.

12. Install the control bracket cover/controller sub-assembly onto the control bracket base using four button, socket-head cap screws and washers, items 4 and 12. Install the knob, item 32, onto the lever.

### GENERAL INSTRUCTIONS

1. Install the control instruction self-adhesive decal(s), items 8 and 9, onto the console cover to the rear of the control bracket.
2. Fill winch to proper level with recommended oil. Refer to oil specifications found in the Operation and Preventive Maintenance Manual, publication SEBU 7026.
3. Verify proper control cable and operating pressure adjustment by following the procedures found in the Operation and Preventive Maintenance Manual, publication SEBU 7026 or the service manual, publication SENR 8444.

| Ref. | Part number | Description                              | Qty | Code | Group page |
|------|-------------|------------------------------------------|-----|------|------------|
| 1    | 123-4432    | CONTROL (DUAL AXIS) (W/FS)               | 1   |      |            |
|      | 123-4432    | CONTROL (DUAL AXIS) (W/O FS)             | 1   |      |            |
| 2    | 225-8020    | CONTROL (FREESPOOL) (SINGLE AXIS) (W/FS) | 1   |      |            |
| 3    | 126-2830    | CONTROL BRACKET BASE (W/FS)              | 1   |      |            |
|      | 126-2830    | CONTROL BRACKET BASE (W/O FS)            | 1   |      |            |
| 4    | 123-4435    | CAPSCREW (BUTTON SOCKET HEAD) (W/FS)     | 7   |      |            |

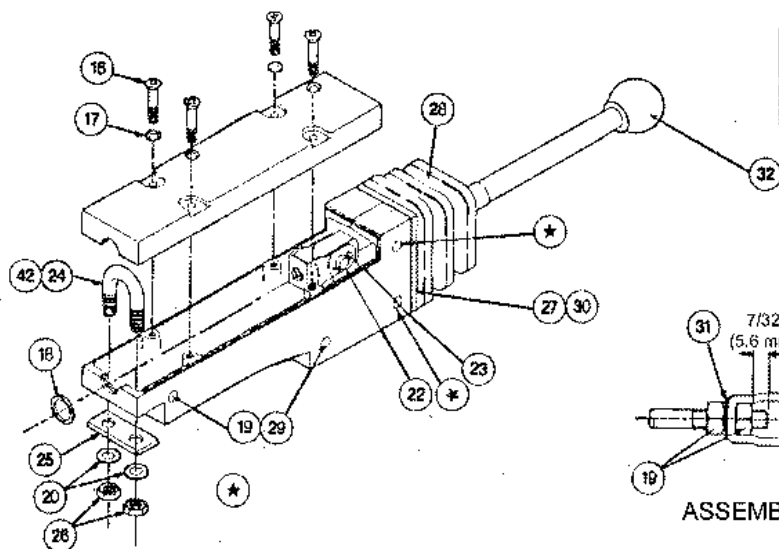
**CONTROL GROUP** (continued)

| Ref. | Part number | Description                            | Qty | Code | Group page |
|------|-------------|----------------------------------------|-----|------|------------|
|      | 123-4435    | CAPSCREW (BUTTON SOCKET HEAD) (W/O FS) | 9   |      |            |
| 5    | 6V-8185     | NUT (1/4-20) (W/FS)                    | 5   |      |            |
|      | 6V-8185     | NUT (1/4-20) (W/O FS)                  | 5   |      |            |
| 6    | 3B-4504     | LOCKWASHER (1/4) (W/FS)                | 5   |      |            |
|      | 3B-4504     | LOCKWASHER (1/4) (W/O FS)              | 7   |      |            |
| 7    | 8T-9368     | CAPSCREW (1/4-20X2 1/4) (W/FS)         | 2   |      |            |
| 8    | 123-4439    | DECAL (POWERSHIFT CONTROL) (W/FS)      | 1   |      |            |
|      | 123-4439    | DECAL (POWERSHIFT CONTROL) (W/O FS)    | 1   |      |            |
| 9    | 123-4440    | DECAL (FREESPOOL CONTROL) (W/FS)       | 1   |      |            |
| 10   | 126-2831    | GASKET (W/FS)                          | 1   |      |            |
|      | 126-2831    | GASKET (W/O FS)                        | 1   |      |            |
| 11   | 126-2827    | CONTROL BRACKET COVER (W/FS)           | 1   |      |            |
|      | 126-2827    | CONTROL BRACKET COVER (W/O FS)         | 4   |      |            |
| 12   | 8T-4205     | WASHER (1/4) (W/FS)                    | 4   |      |            |
|      | 8T-4205     | WASHER (1/4) (W/O FS)                  | 1   |      |            |
| 13   | 126-2826    | COVER (W/O FS)                         | 2   |      |            |
| 15   | 123-4424    | CONTROL CABLE (90in) (2286mm) (W/FS)   | 3   |      |            |
|      | 123-4424    | CONTROL CABLE (90in) (2286mm) (W/O FS) | 2   |      |            |

# CONTROL GROUP

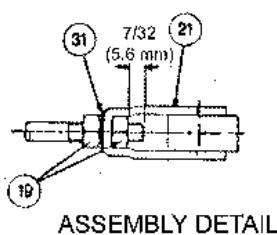
## CONTROL GROUP

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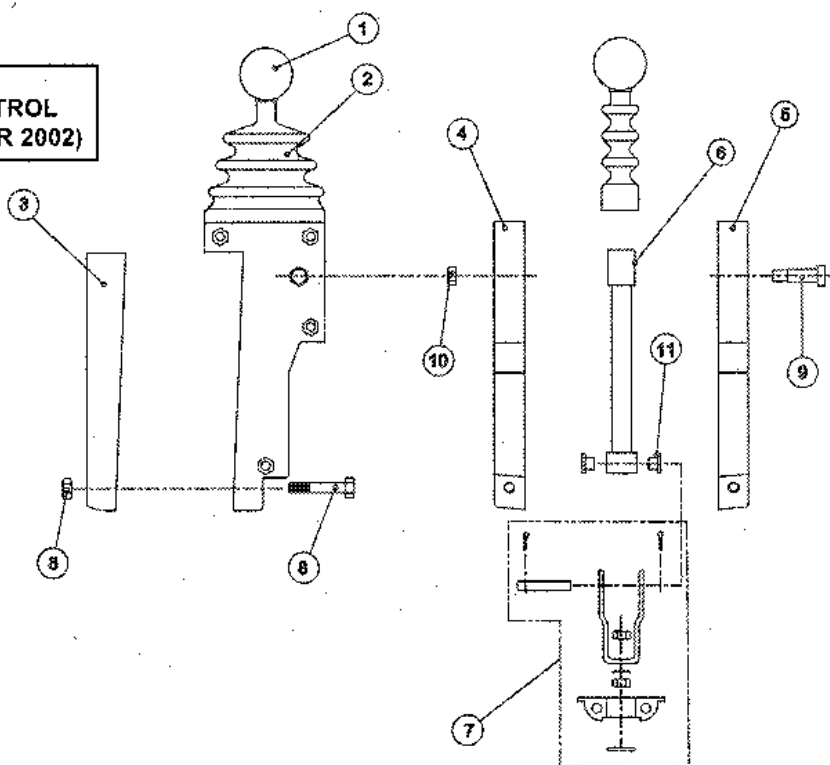


**SINGLE AXIS  
FREESPOOL CONTROL  
(THRU MID YEAR 2002)**

REMOVE ORIGINAL THROUGH-BOLTS  
AND NUTS (ITEMS 19 & 29). INSTALL  
NEW NUTS (ITEM 5) FOR USE WITH  
CAPSCREWS (ITEM 7)

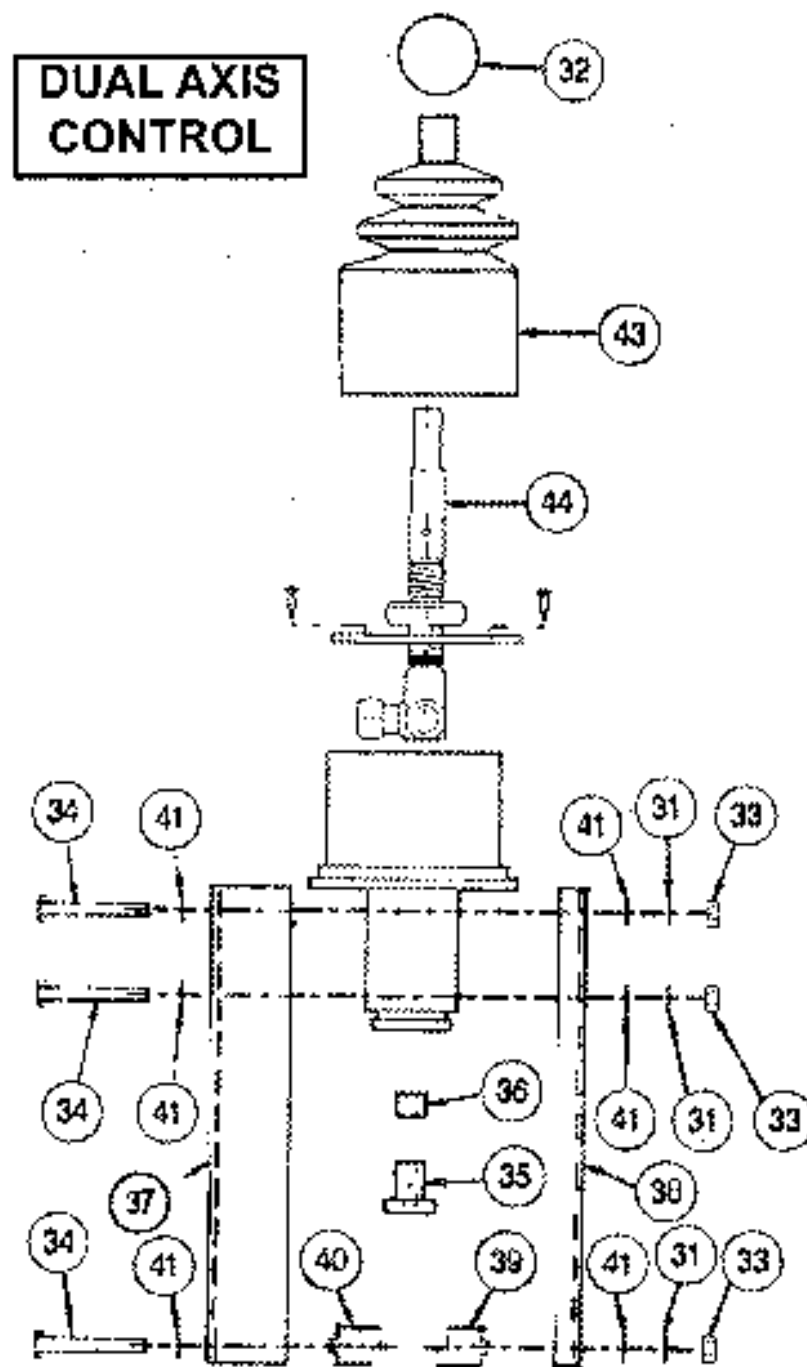


**SINGLE AXIS  
FREESPOOL CONTROL  
(STARTING MID YEAR 2002)**



**CONTROL GROUP** (continued)

Drawing 2 of 2



| Ref. | Part number | Description                                        | Qty | Code | Group page |
|------|-------------|----------------------------------------------------|-----|------|------------|
|      | 123-4432    | CONTROL (DUAL AXIS) (COMPLETE) (W/FS)              | 1   |      |            |
|      | 123-4432    | CONTROL (DUAL AXIS) (COMPLETE) (W/O FS)            | 1   |      |            |
|      | 123-4433    | CONTROL (SINGLE AXIS) (THRU MID-YEAR 2002) (W/FS)  | 1   |      |            |
|      | 225-8020    | CONTROL (SINGLE AXIS) (AFTER MID-YEAR 2002) (W/FS) | 1   |      |            |
| 1    | 7R-5874     | KNOB (W/FS)                                        | 1   |      |            |
| 2    | NONE        | BOOT (PACCAR 104015) (W/FS)                        | 1   |      |            |

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