

# CATERPILLAR D6H XR

1YL / SEBP2370

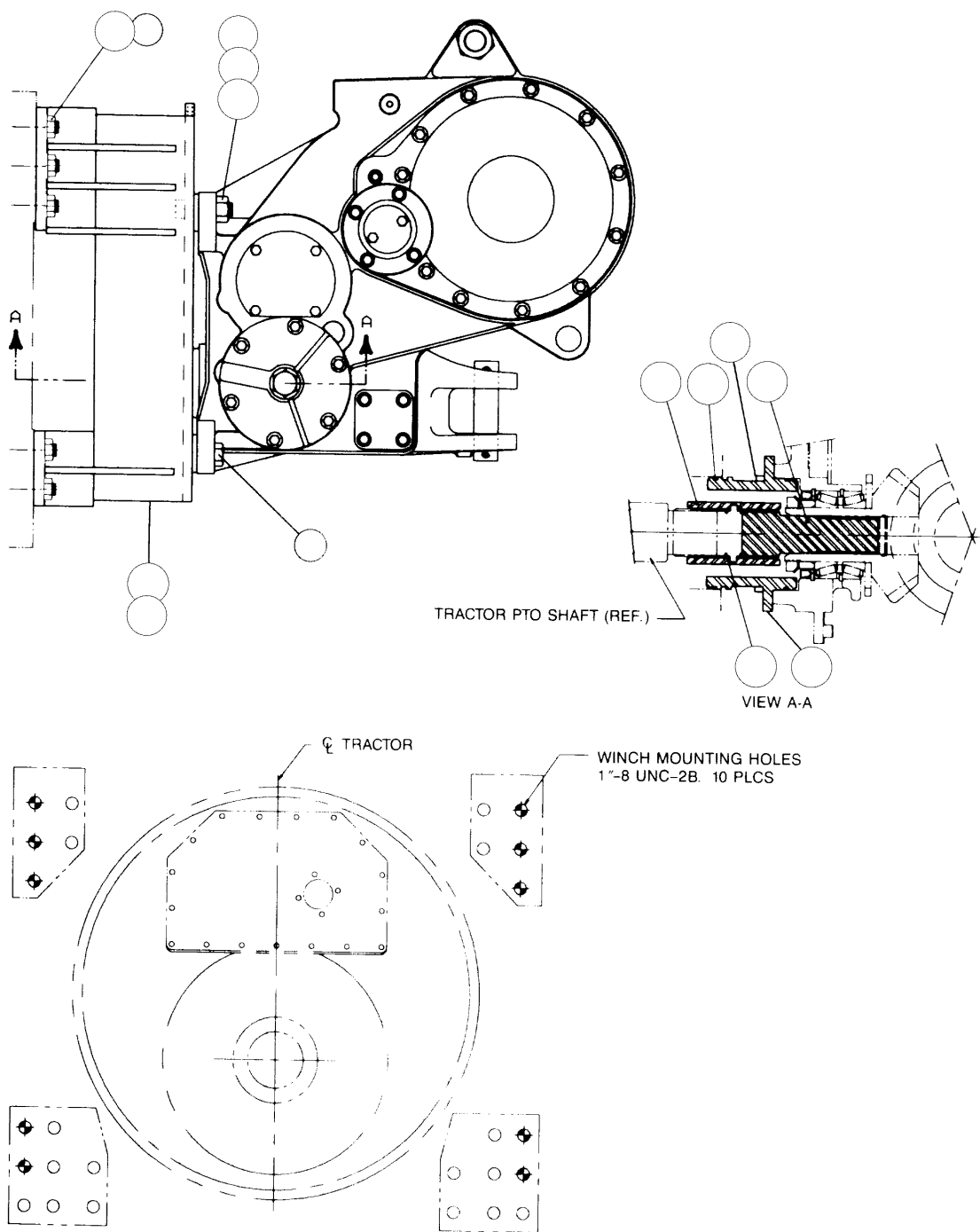
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MOUNTING GP

Mounting Gp

Drawing 1 of 2



## MOUNTING GP (continued)

Drawing 2 of 2

### INSTRUCTIONS

1. PTO rotation is counterclockwise (CCW) as viewed from rear of tractor.
2. 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 4, with multi-purpose grease and install into bevel pinion gear of winch.
5. Install retaining rings, Item 3, in coupling, Item 5. Place coupling over PTO shaft with beveled end away from winch.
6. Install o-rings, Item 2, onto PTO pilot Item 11. 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. Apply Loctite 271 to threads and install studs, Item 8, into winch adapter to a height of 2½ in. (64 mm).
9. Apply Loctite 271 to threads and install studs, item 1, into the rear face of the tractor to a height of 1.80 in. (46 mm).
10. Apply Loctite 242 to the threads of the capscrews, item 6 and studs, item, 8, then install the winch adapter brackets onto the winch. At this time, only tighten the capscrews, item 6, and nuts, item 7, to approximately 50 lb.·ft. (68 N·m) torque.
11. Apply Loctite 242 to the threads of studs, item 1. Apply multi-purpose grease to the PTO pilot o-rings and PTO shaft splines, then install the winch onto the tractor while moving the bevel gears to align the PTO shaft splines. Tighten nuts, item 14 and capscrews, item 6, to 640 lb.·ft. (868 N·m) torque.

### ⚠ 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.

### ⚠ 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.

| ITEM | PART NO. | DESCRIPTION                         | QTY. |
|------|----------|-------------------------------------|------|
| 1    | 119-0171 | STUD (1 - 8 × 3¼ Gd8)               | 10   |
| 2    | 8S-5654  | O-RING                              | 2    |
| 3    | 002-3455 | RETAINING RING                      | 2    |
| 4    | 118-6595 | PTO SHAFT                           | 1    |
| 5    | 118-5863 | COUPLING                            | 1    |
| 6    | 7X-0405  | CAPSCREW, HEX HEAD (1 - 8 × 2¾ Gd8) | 4    |
| 7    | 7X-0450  | NUT, HEX (1½ - 7)                   | 4    |
| 8    | 133-9224 | STUD (1½ - 7 × 4¾)                  | 4    |
| 9    | 118-6929 | ADAPTER, RH                         | 1    |
| 10   | 118-6930 | ADAPTER, LH                         | 1    |
| 11   | 118-6537 | PILOT, PTO                          | 1    |
| 12   | 5P-2228  | CAPSCREW, HEX HEAD (½ - 13 × 1)     | 4    |
| 13   | 119-1551 | WASHER, HARDENED, 1½                | 4    |
| 14   | 6V-8190  | NUT, HEX (1 - 8)                    | 10   |

| Ref. | Part number | Description                            | Qty | Code | Group page |
|------|-------------|----------------------------------------|-----|------|------------|
| 1    | 119-0171    | STUD (1 - 8 x 3 1/4 Gd8)               | 10  |      |            |
| 2    | 8S-5654     | O-RING                                 | 2   |      |            |
| 3    | 002-3455    | RETAINING RING                         | 2   |      |            |
| 4    | 118-6595    | PTO SHAFT                              | 1   |      |            |
| 5    | 118-5863    | COUPLING                               | 1   |      |            |
| 6    | 7X-0405     | CAPSCREW, HEX HEAD (1 - 8 x 2 3/4 Gd8) | 4   |      |            |

MOUNTING GP (continued)

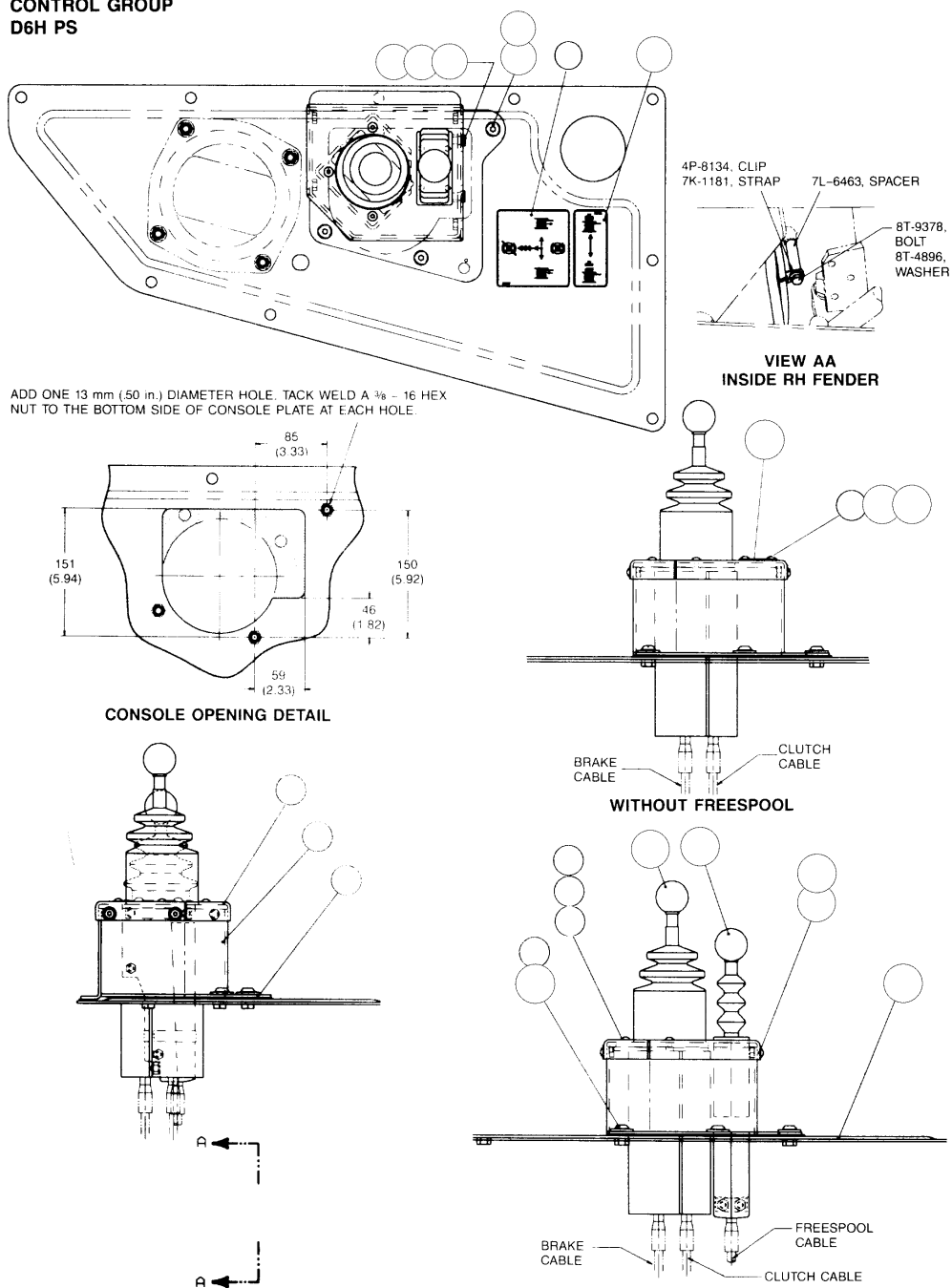
| Ref. | Part number | Description                       | Qty | Code | Group page |
|------|-------------|-----------------------------------|-----|------|------------|
| 7    | 7X-0450     | NUT, HEX (1 1/8 - 7)              | 4   |      |            |
| 8    | 133-9224    | STUD (1 1/8 - 7 X 4 3/4)          | 4   |      |            |
| 9    | 118-6929    | ADAPTER, RH                       | 1   |      |            |
| 10   | 118-6930    | ADAPTER, LH                       | 1   |      |            |
| 11   | 118-6537    | PILOT, PTO                        | 1   |      |            |
| 12   | 5P-2228     | CAPSCREW, HEX HEAD (1/2 - 13 X 1) | 4   |      |            |
| 13   | 119-1551    | WASHER, HARDENED, 1 1/8           | 4   |      |            |
| 14   | 6V-8190     | NUT, HEX (1 - 8)                  | 10  |      |            |

# CONTROL GP

Control Gp

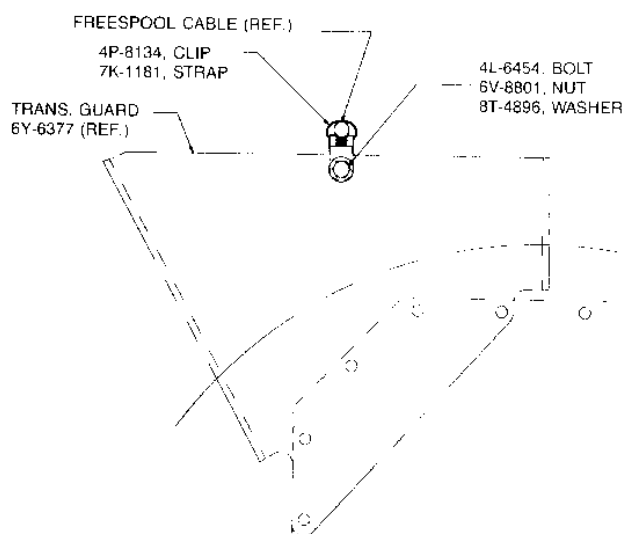
Drawing 1 of 5

**MODEL PA56  
CONTROL GROUP  
D6H PS**

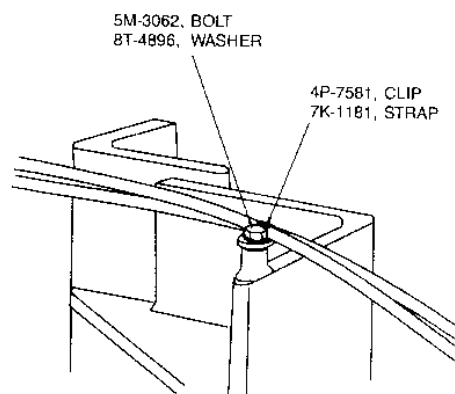


## CONTROL GP (continued)

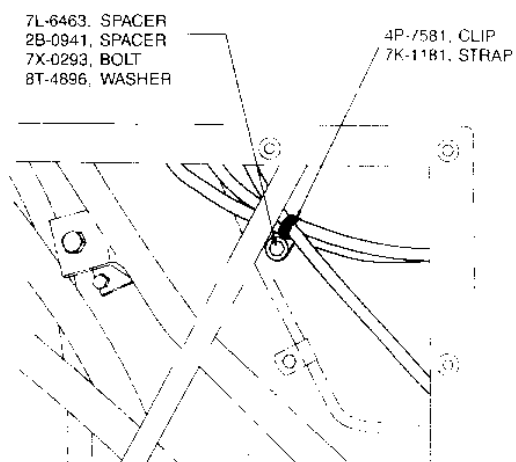
Drawing 2 of 5



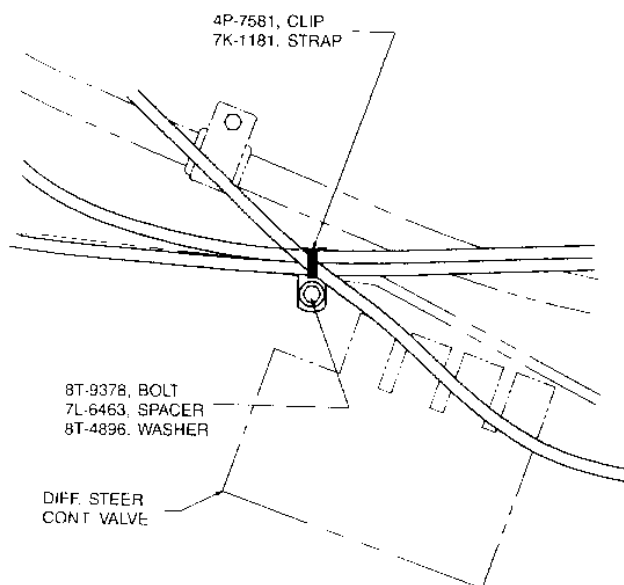
**VIEW OF TRACTOR  
REAR FACE**



**TOP OF RH WINCH  
ADAPTER BRACKET**



**TOP OF CASE  
BELOW PLATFORM  
CLUTCH/BRAKE STEERING  
ONLY**



**TOP OF CASE  
BELOW PLATFORM  
DIFFERENTIAL STEERING  
ONLY**

## CONTROL GP (continued)

Drawing 3 of 5

MODEL PA56  
CONTROL GROUP  
D6H PS

### CONTROL INSTALLATION INSTRUCTION

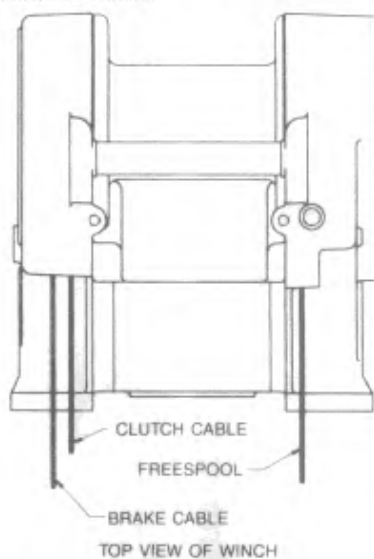
**Note:** These instructions are provided as a general guide. Tractor options, application requirements or local regulations may require deviation from these recommendations.

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 plate, item 14, using button head capscrews and washers, items 50 and 51.
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 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:



### Power Shift Control - Dual Axis

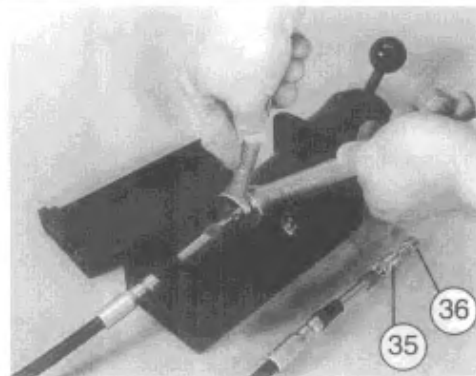
1. Remove the six through-bolts, item 34, from the control stand and separate the two cable support

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 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 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 into "clutch" control plunger. Move the control lever to extend the plungers far enough to expose the wrench flats. With a wrench, hold the plunger as you tighten the sliding lock screw to 50 lb•ft (68 N•m) torque. Photo 1

#### 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, lockwashers and nuts, items 31, 33, 34 & 41. Evenly tighten the bolts to 85 lb•in. (10 N•m) torque.
6. Insert the controller/cables sub-assembly from the bottom into the opening of the control bracket cover,

## CONTROL GP (continued)

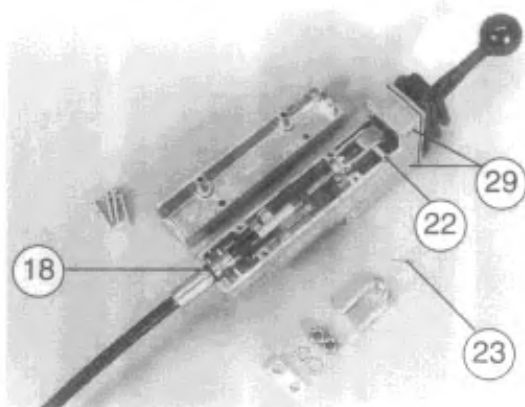
Drawing 4 of 5

### MODEL PA56 CONTROL GROUP D6H PS

item 11, and secure with three button, socket-head capscrews, lockwashers and nuts, items 4, 5 & 6. If the winch is equipped with freespool, install the freespool controller/cable sub-assembly at this time. If not equipped with freespool, install the cover/controllers sub-assembly onto the control bracket with four capscrews, item 4.

#### Freespool Control Lever

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  $\frac{7}{32}$  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. Photo 2
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 lockwashers 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 & 17.
10. Remove the two through-bolts and nuts, items 19 and 29, from the top two mounting holes of the lever housing.
11. Remove the four oval head machine screws, item 27, from the boot retainer plate, item 30. Remove the boot, item 28, and boot retainer plate.
12. Secure the lever to the control bracket with capscrews, nuts and lockwashers, items 5, 6 and 7. The long cover of the lever housing must face toward the operator.
13. Install the control bracket cover/controller sub-assembly onto the control bracket base using four button, socket-head capscrews and washers, items 4 and 12. Install the boot and retainer plate, items 28 and 30, removed in step 11 above. Secure the boot retainer plate with machine screws, item 27. Install the knob, item 32, onto the lever.

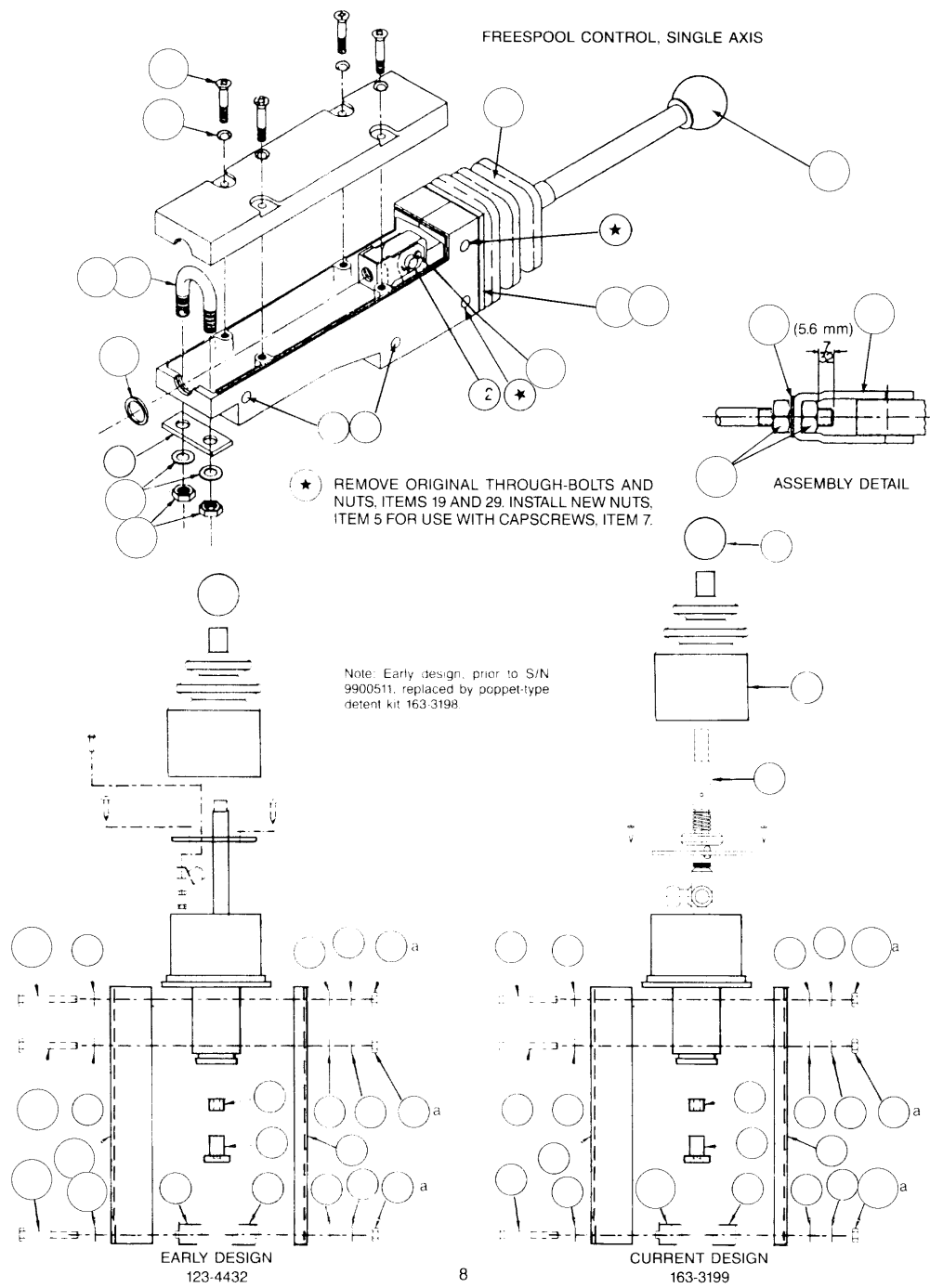


#### General Instructions

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 6884 (Paccar Winch PC-209).
3. Verify proper control cable and operating pressure adjustment by following the procedures found in the Operation and Preventive Maintenance Manual, publication SEBU 6884 (Paccar Winch PC-209) or the service manual, publication SENR 5358 (Paccar Winch PC-210).

CONTROL GP (continued)

Drawing 5 of 5



| Ref. | Part number | Description                                     | Qty       | Code | Group page |
|------|-------------|-------------------------------------------------|-----------|------|------------|
| 1    | 123-4432    | CONTROL, DUAL AXIS - EARLY DESIGN w/o Freespool | Qty is 1  | N    |            |
|      | 163-3199    | CONTROL, DUAL AXIS - NEW DESIGN w/o Freespool   | Qty is 1  | 1    |            |
| 2    | 123-4433    | CONTROL, FREESPOOL, SINGLE AXIS w/o Freespool   | Qty is 0  | 1    |            |
| 3    | 128-1994    | CONTROL BRACKET BASE w/o Freespool              | Qty is 1  | 1    |            |
| 4    | 123-4435    | CAPSCREW, BUTTON SOCKET HEAD w/o Freespool      | Qty is 11 | 7    |            |
| 5    | 6V-8185     | NUT (1/4-20) w/o Freespool                      | Qty is 5  | 7    |            |

## CONTROL GP (continued)

| Ref. | Part number | Description                                                         | Qty | Code | Group page |
|------|-------------|---------------------------------------------------------------------|-----|------|------------|
| 6    | 3B-4504     | LOCKWASHER (1/4) w/o Freespool Qty is 7                             | 5   |      |            |
| 7    | 8T-9368     | CAPSCREW, HEX HEAD (1/4-20 X 2 1/4) w/o Freespool Qty is 0          | 2   |      |            |
| 8    | 123-4439    | DECAL, POWERSHIFT CONTROL w/o Freespool Qty is 1                    | 1   |      |            |
| 9    | 123-4440    | DECAL, FREESPOOL CONTROL w/o Freespool Qty is 0                     | 1   |      |            |
| 10   | 128-1995    | GASKET w/o Freespool Qty is 1                                       | 1   |      |            |
| 11   | 128-1996    | CONTROL BRACKET COVER w/o Freespool Qty is 1                        | 1   |      |            |
| 12   | 8T-4205     | WASHER (1/4) w/o Freespool Qty is 4                                 | 4   |      |            |
| 13   | 126-2826    | COVER w/o Freespool Qty is 1                                        |     |      |            |
| 14   | 128-1997    | CONSOLE PLATE w/o Freespool Qty is 1                                | 1   |      |            |
| 15   | 123-4424    | CONTROL CABLE - 90 IN. (2286 MM) w/o Freespool Qty is 2             | 3   |      |            |
| 16   | 126-5992    | MACHINE SCREW, CSK, OVAL HEAD (8-32 X 1 1/4) w/o Freespool Qty is 0 | 4   |      |            |
| 17   | 9F-5602     | LOCKWASHER, CSK (8) w/o Freespool Qty is 0                          | 4   |      |            |
| 18   | 8F-9206     | O-RING w/o Freespool Qty is 0                                       | 1   |      |            |
| 19   | 9S-8748     | NUT (1/4-28) w/o Freespool Qty is 0                                 | 6   |      |            |
| 20   | 7H-3937     | LOCKWASHER, EXTERNAL TOOTH (5/16) w/o Freespool Qty is 0            | 2   |      |            |
| 21   | 126-2799    | CLEVIS w/o Freespool Qty is 0                                       | 1   |      |            |
| 22   | 126-2800    | CLEVIS PIN w/o Freespool Qty is 0                                   | 1   |      |            |
| 23   | 3B-4604     | COTTER PIN (1/16 X 1/2 w/o Freespool Qty is 0                       | 1   |      |            |
| 24   | 126-2798    | U-BOLT w/o Freespool Qty is 0                                       | 1   |      |            |
| 25   | 126-2801    | U-BOLT SPACER w/o Freespool Qty is 0                                | 1   |      |            |
| 26   | 6V-8186     | NUT (5/16-24) w/o Freespool Qty is 0                                | 2   |      |            |
| 27   | 126-5990    | MACHINE SCREW, CSK, OVAL HEAD (8-32 X 1/2) w/o Freespool Qty is 0   | 4   |      |            |
| 28   | 126-2825    | BOOT, FREESPOOL LEVER w/o Freespool Qty is 0                        | 1   |      |            |
| 29   | 126-5991    | MACHINE SCREW, FLSTR HEAD (1/4-28 X 1 7/16) w/o Freespool Qty is 0  | 4   |      |            |
| 30   | 126-2802    | BOOT RETAINER PLATE w/o Freespool Qty is 0                          | 1   |      |            |
| 31   | 1H-3338     | LOCKWASHER, EXTERNAL TOOTH (1/4) w/o Freespool Qty is 6             | 7   |      |            |
| 32   | 7R-5874     | KNOB w/o Freespool Qty is 1                                         | 2   |      |            |
| 33   | 6V-8185     | NUT (1/4-20) w/o Freespool Qty is 6                                 | 6   |      |            |
| 34   | 8T-9367     | CAPSCREW, HEX HEAD (1/4-20 X 2) w/o Freespool Qty is 6              | 6   |      |            |
| 35   | 126-2821    | SLIDING LOCKSCREW w/o Freespool Qty is 2                            | 2   |      |            |
| 36   | 126-2822    | CABLE BUSHING w/o Freespool Qty is 2                                | 2   |      |            |
| 37   | 126-2823    | CABLE SUPPORT HOUSING, OUTER w/o Freespool Qty is 1                 | 1   |      |            |
| 38   | 126-2824    | CABLE SUPPORT HOUSING, INNER w/o Freespool Qty is 1                 | 1   |      |            |
| 39   | 126-2818    | CABLE ANCHOR, OUTER w/o Freespool Qty is 1                          | 1   |      |            |

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