CEBM026000

Shop Manual

730E Trolley

DUMP TRUCK

SERIAL NUMBERS

A30626 - A30627 &
A30630 - A30631

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HYDRAULIC SYSTEM FILTERS

HOIST CIRCUIT FILTER

The hoist circuit filter (Figure 9-1) is located on the fuel tank below the right frame rail. The filter provides secondary filtering protection for the hydraulic oil flowing to the hoist valve and the hoist circuit components.

Indicator switch (5) is designed to alert the operator of the filter restriction before the actual bypass occurs. The switch contacts close at 275 kPa (40 psi) to actuate a warning lamp on the overhead display panel. The actual filter bypass occurs at 345 kPa (50 psi).

NOTE: When the engine is initially started and the hydraulic oil is cold, the warning lamp may actuate. Allow the hydraulic system oil to reach operating temperature before using the warning lamp as an indicator to change the element.

Refer to Section P, Lubrication and Service, for the recommended normal filter element replacement interval. Earlier replacement may be required if the restriction indicator lamp turns on.

A premature filter restriction may indicate a system component failure and signal a service requirement before extensive secondary damage can occur.

NOTE: An early indication of the filter warning light at the first installation may be due to the restriction in the filter as it cleans the system. Unless the fluid appears contaminated or has a strong foul odor, DO NOT change the oil. Replace only the filter element.

Filter Element Replacement

⚠WARNING

Relieve the pressure before disconnecting the hydraulic and other lines. Tighten all the connections before applying pressure.

Pressurized hydraulic fluid may penetrate the skin and cause serious injury and possibly death if proper medical treatment by a physician familiar with this injury is not received immediately.

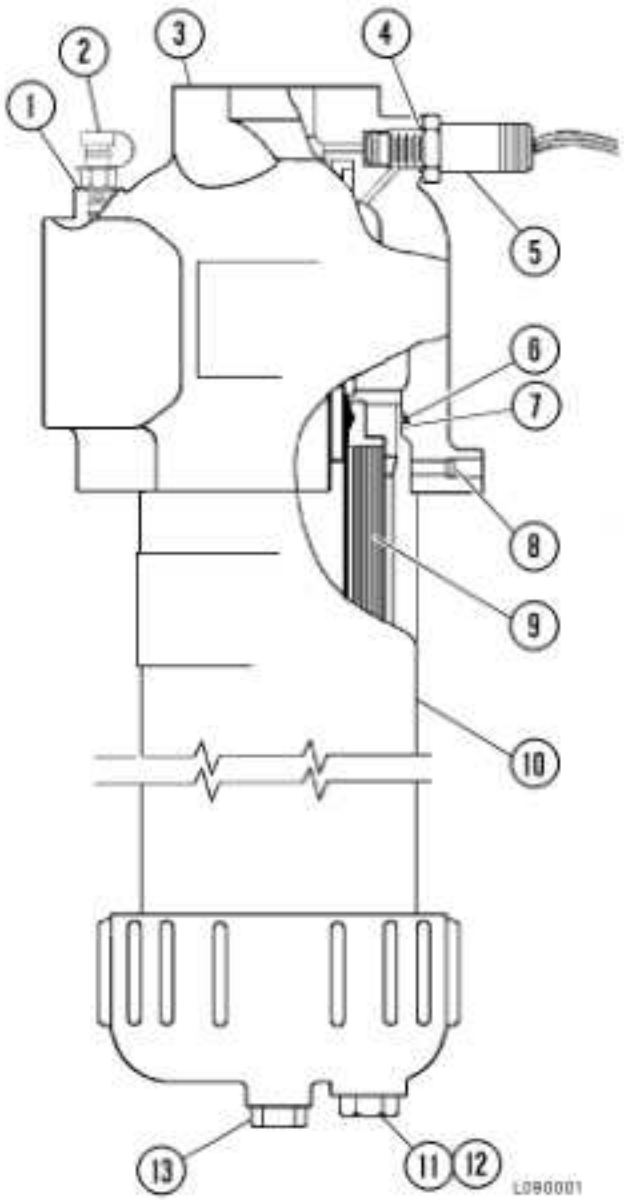


FIGURE 9-1. HOIST CIRCUIT FILTER

1. O-ring
2. Plug
3. Filter Head
4. O-Ring
5. Indicator Switch
6. O-Ring
7. Back-Up Ring
8. Setscrew
9. Filter Element
10. Bowl
11. Bleed Plug
12. O-Ring
13. Bottom Plug

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TROUBLESHOOTING

All hydraulic testing is to be performed with hydraulic oil at normal operating temperature, and engine speed at low idle.

Refer to Figure 19-3 for hydraulic troubleshooting test points shown with arrows.

Refer to Table 1 for shutter open and close specifications for Komatsu Engines.

⚠DANGER

Ensure engine and key switch have been OFF for at least 90 seconds to allow accumulator pressure to bleed down.
Relieve pressure before disconnecting hydraulic lines. Tighten all connections securely before applying pressure.

Hydraulic fluid escaping under pressure can have sufficient force to enter a person's body by penetrating the skin and cause serious injury and possibly death if proper medical treatment by a physician familiar with this type of injury is not received immediately.

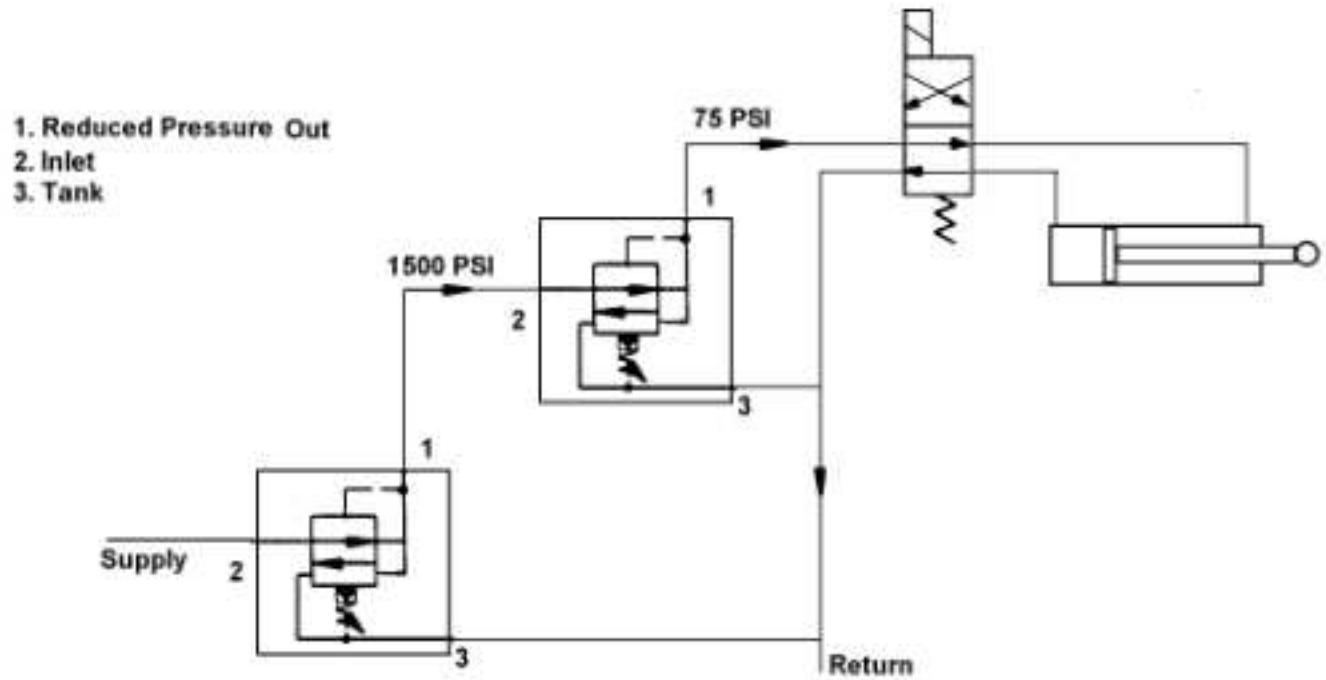


FIGURE 19-3. HYDRAULIC TROUBLESHOOTING

1. Oil Supply
2. Pressure Reducing Valve
3. Pressure Reducing Valve
4. Solenoid Valve
5. Wiring Harness
6. Tee Fitting
7. Pressure Gauge
8. To Cylinder Head End
9. To Cylinder Rod End

TABLE I. Komatsu SSDA16V160 Engines

Coolant Temperature	Intake Manifold Temperature	Fuel Temperature
Open 88 C (190 F) Close 85 C (185 F)	Open 60 C (140 F) Close 54 C (130 F)	Open 68 C (155 F) Close 66 C (150 F)

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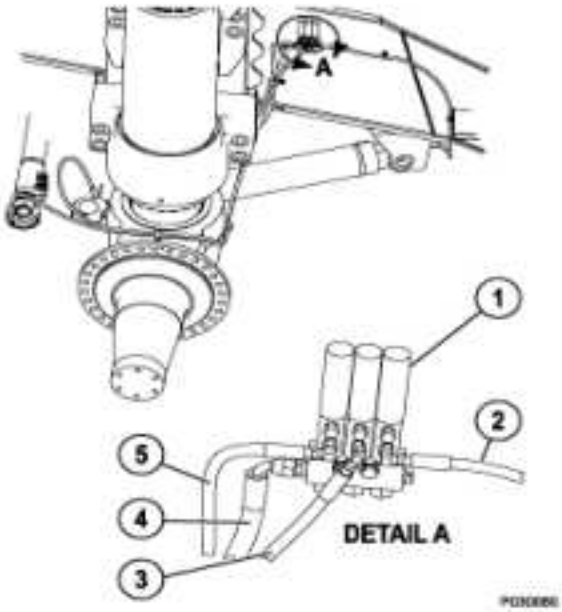


FIGURE 3-2. STEERING CYLINDER AND TIE ROD INJECTORS

1. Steering Cylinder/Tie Rod Injectors
2. To Steering Cylinder Cap End
3. To Steering Cylinder Rod End
4. Supply From Pump
5. To Tie Rod

SYSTEM COMPONENTS

Filter Assembly

Filter assembly (14, Figure 3-3) filters the grease prior to refilling reservoir (6) from the shop supply. Dirty filter indicator (13) alerts service personnel when the filter requires replacement.

Hydraulic Motor and Grease Pump

Hydraulic motor and grease pump (16 and 4, Figure 3-3) is a hydraulically operated grease pump. Integrated pump control manifold (4, Figure 3-1) is incorporated with the motor to control input flow and pressure.

NOTE: The pump crankcase oil level must be maintained to the full level on dipstick (22, Figure 3-3). If necessary, refill with 10W30 motor oil.

⚠WARNING

Hydraulic inlet pressure must not exceed 20685 kPa (3000 psi). Exceeding the rated pressure may result in damage to system components and possible personal injury.

Specifications are as follows:

Maximum hydraulic oil inlet pressure:

. . . . . .20 685 kPa (3,000 psi)

Hydraulic oil operating pressure:

. . . . . 2 240-2 415 kPa (325-350 psi)

Hydraulic inlet flow:

. . . . . up to 28 L/min. (7 GPM)

Pump ratio:

approx. 9:1 @ 2 068 to 2 415 kPa (300 to 350 psi) oil pressure = less than 7 L/min. (2 GPM) flow

Operating temperature:

. . . . . -10 to +65°C (-20 to +150°F)

Reservoir

Reservoir (6) has an approximate capacity of 97 kg (214 lbs) of grease. When the grease supply is replenished by filling the system at the service center, the grease is passed through filter assembly (14) to remove contaminants before it flows into the reservoir.

Fixed Pressure Reducing Valve

Pressure reducing valve (12, Figure 3-3), located on the manifold, is preset and reduces the hydraulic supply pressure from the truck steering circuit to a suitable operating pressure of 2 240 - 2 415 kPa (325 - 350 psi) for the hydraulic motor used to drive the lubricant pump.

The pressure reducing valve has a fixed pressure setting and must not be changed.

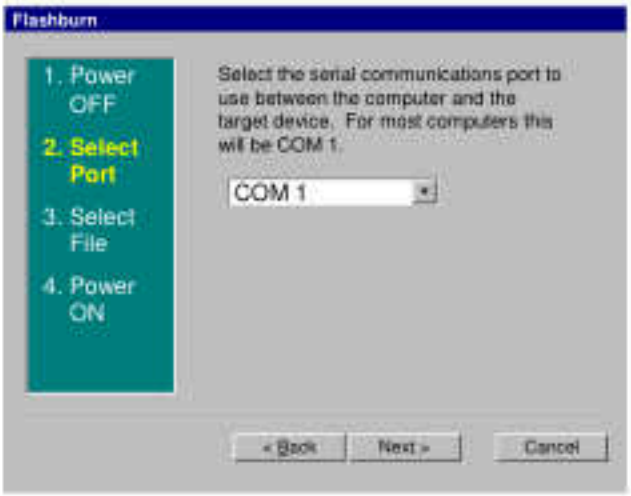
Flow Control Valve

Flow control valve (21, Figure 3-3), mounted on the manifold, is preset and controls the amount of oil flow to the hydraulic motor at 9.5 L/min (2.5 gpm).

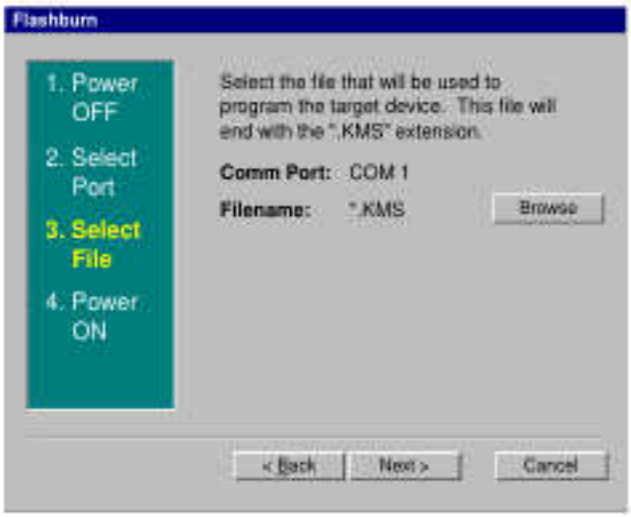
The flow control valve has a fixed pressure setting and must not be changed.

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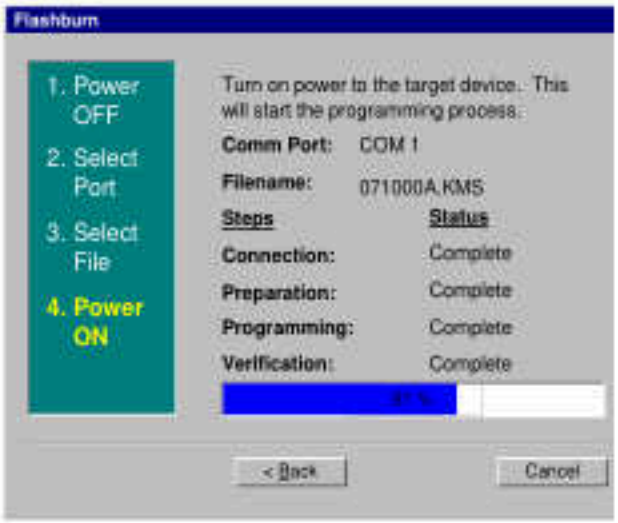
4. Confirm the proper communications port for the programming laptop. This is usually COM 1. Press "NEXT".



5. Press "BROWSE" and select the ".kms" file to program into the payload meter. Press "NEXT".



6. When instructed, turn the key switch ON in order to power-up the payload meter. The PC will begin to reprogram the payload meter. This process takes approximately 5 minutes.



7. After successful programming, turn the key witch OFF.
8. Wait 20 seconds and turn the key switch ON.
9. The payload meter will need to be configured as instructed in the manual using the Payload Data Manager software on the laptop computer.

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A/C DRIVE BELT CHECKOUT PROCEDURE

This procedure must be performed each time any component in the accessory drive is serviced, such as replacing a belt or removing the compressor. In addition, a 250 hour inspection of the AC drive belt is mandatory. The belts must be inspected for indications of wear and damage that may hinder performance. Replace as necessary and perform the following procedure.

Pulley Alignment

1. Install alignment tool (EL8868) onto the pulleys to check the alignment. Refer to Figure 4-15. If misalignment of the pulleys exceeds 3 mm (0.13 in.), the position of the compressor must be adjusted.

Belt Tension Check

NOTE: This procedure has been written for use with belt tension tool (XA3379), shown in Figure 4-13. Other tension tools may differ in functionality.



FIGURE 4-13. BELT TENSION TOOL - XA3379

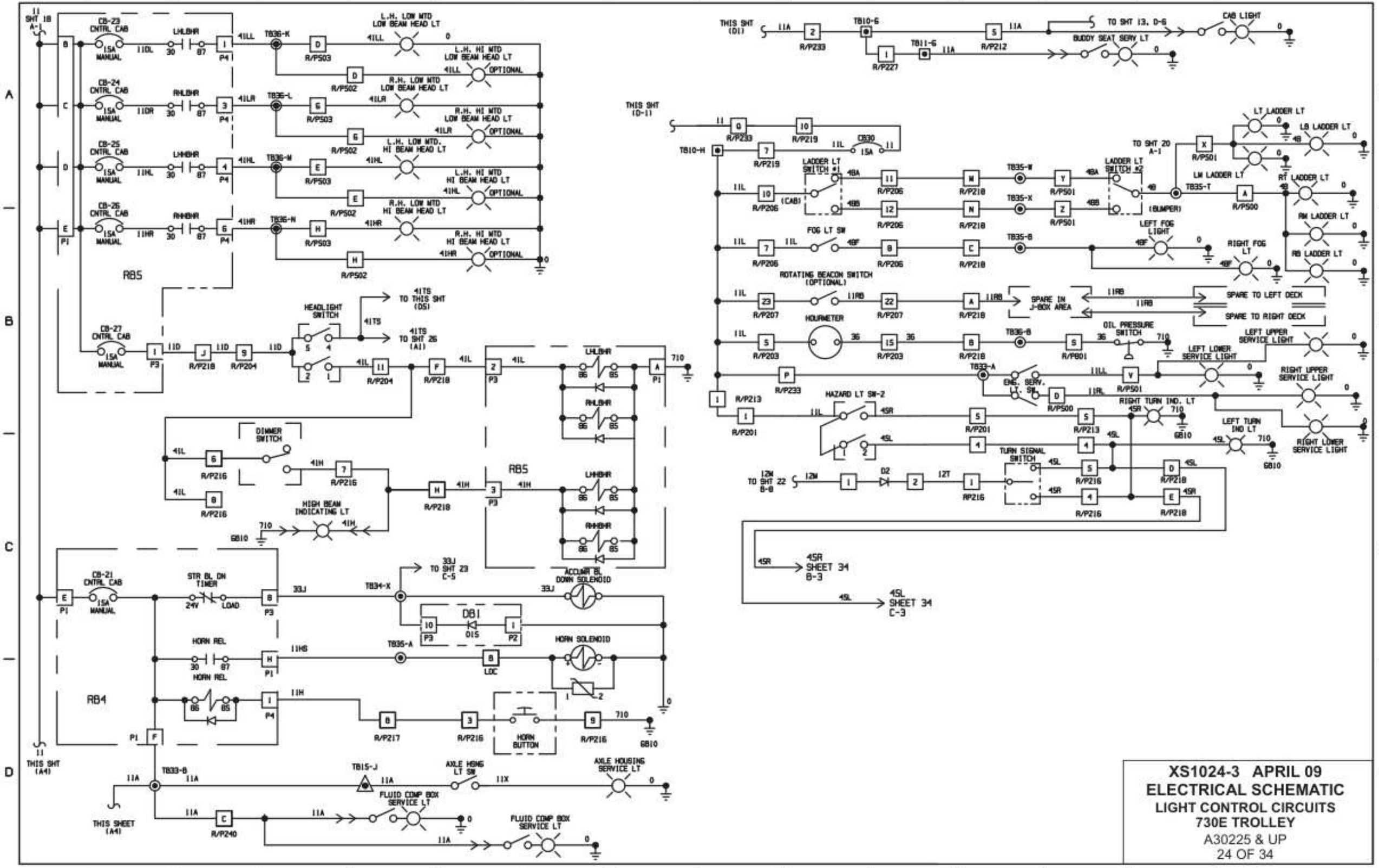
2. Refer to Figure 4-16 for the proper distance from the centerline of the drive pulley to the centerline of the compressor pulley. Set the tension tool accordingly on the deflection scale by moving the deflection O-Ring to the corresponding distance on the scale.
3. Slide the O-Ring for the "force" scale to zero.



FIGURE 4-14. DEFLECTION MEASUREMENT

4. Find the approximate center of the belt between the two pulleys. Place the tip of the tool onto the outer face of the belt and apply pressure, as shown in Figure 4-14. The tool must be perpendicular to the belt. Push on the tool until the bottom edge of the deflection scale O-Ring is even with the outer face of the adjacent drive belt. If only one belt is used, rest a straight edge across both pulleys to serve as the indicating plane.
5. The O-Ring on the force scale indicates the force used to deflect the belt. The belt must deflect 5.3 mm (0.21 in.) under a force of 1.6 ± 0.1 kg f (3.44 ± 0.11 lbf). If not, adjust the belt accordingly and recheck the tension.

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