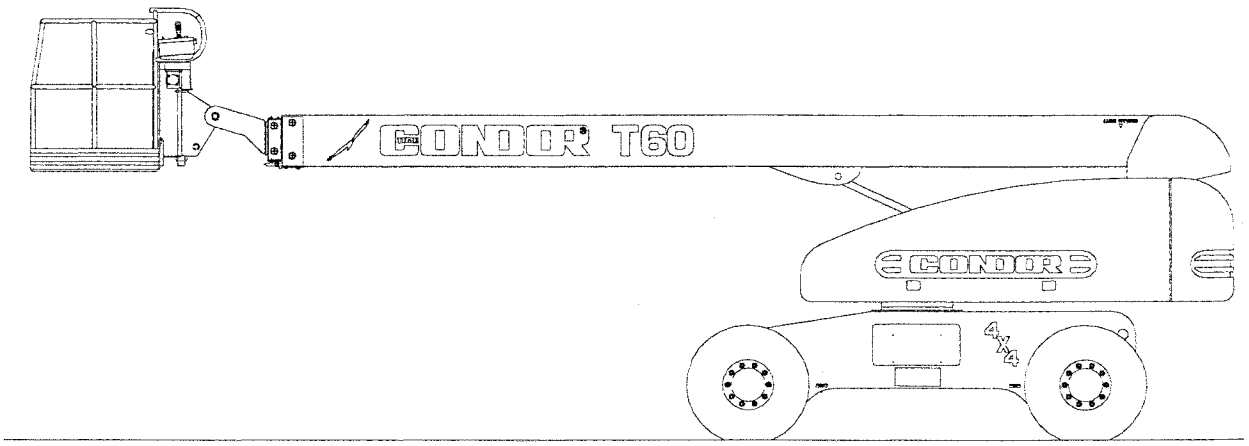
TIME CONDOR Corporation

OPERATION, SERVICE AND PARTS MANUAL

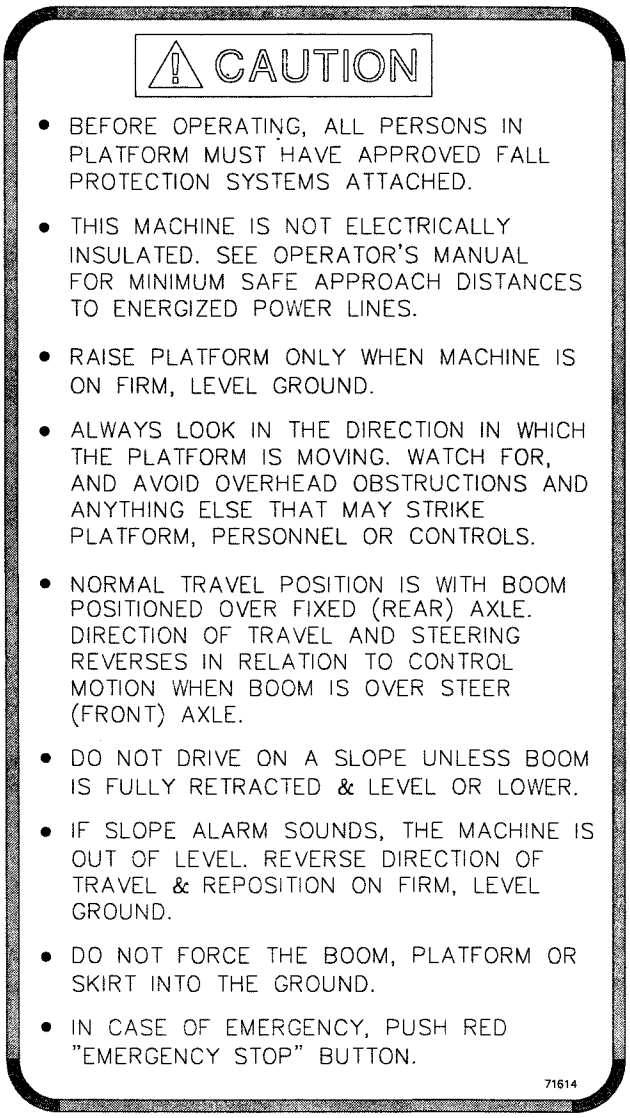
MODELS T60 & T66J

BOOM-SUPPORTED ELEVATING WORK PLATFORM

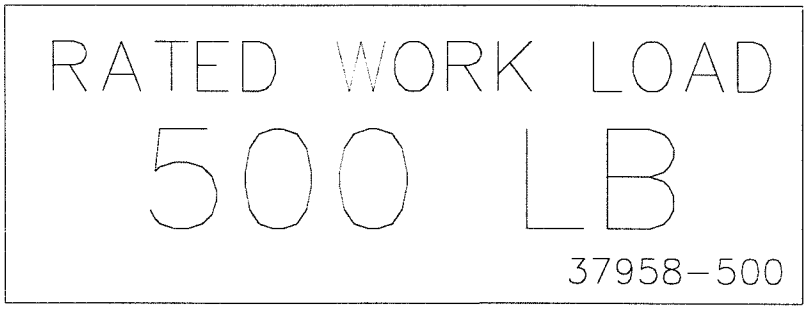
Beginning With Serial Number P34698001



MANUAL 92375-001
April 1998

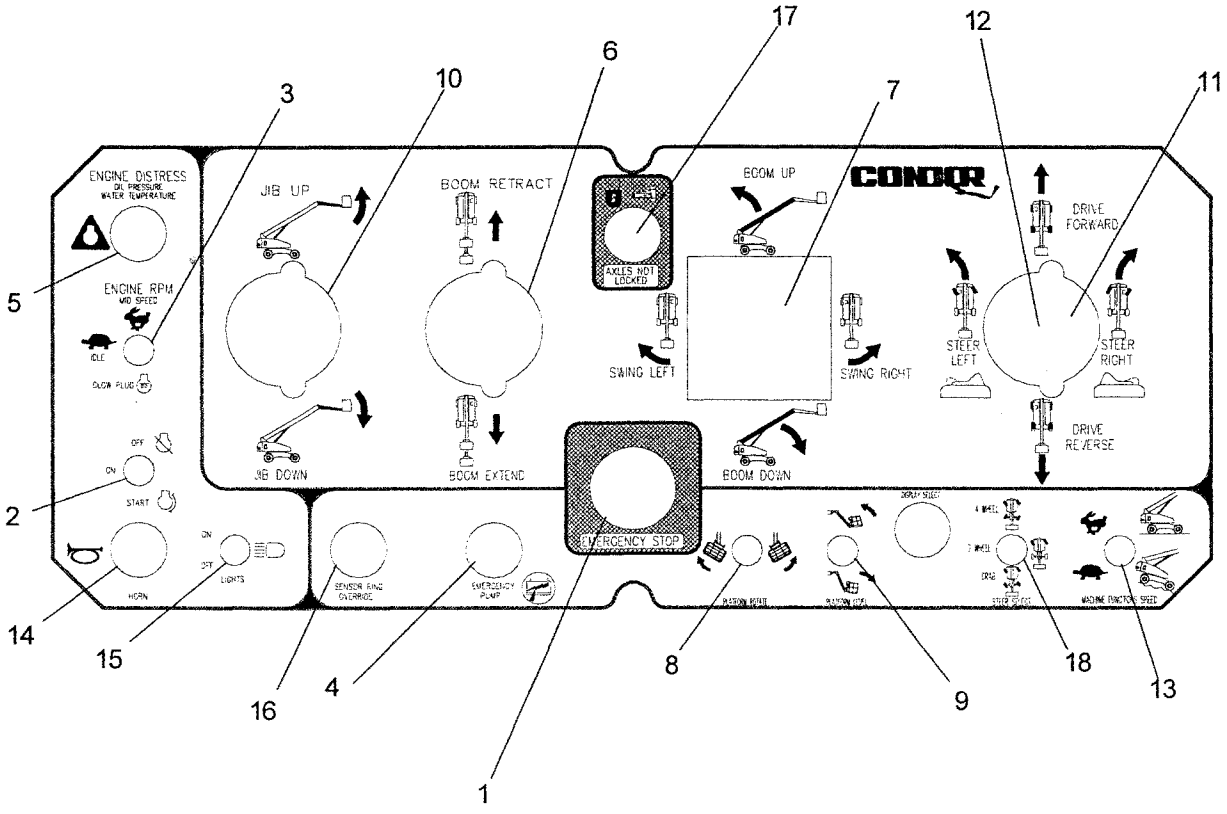


71614 - Decal, Upper Boom Caution



37958-500 - Decal, Rated Work Load

OPERATOR CONTROLS DESCRIPTION
(PLATFORM CONTROLS)



GROUND OPERATION AND CHECKS (Continued)

- While pressing the "OPERATE CONTROLS" button, press and hold "BOOM" toggle to the "UP" position. Raise the boom to the end of its travel. Then, release the "BOOM" toggle.

  — Listen for any unusual noises.
  — Check for any vibration while the boom travels up.
  — Check for uneven or jerky operation.
  — Check for hydraulic leaks.
  — Check pivot pin security. Make sure that all securing bolts are in place on the pin locking point.
  — Visually confirm that the platform has remained level during boom travel.
  — Report to supervisor and repair any problem.

- Press and hold the "BOOM" toggle to lower the boom slightly.

- Press the "EMERGENCY STOP" button. All machine functions must stop, including the engine. Pull the button out or twist to reset. Release the "OPERATE CONTROLS" button.

With the engine off,

- Press the "EMERGENCY" button.

- Press and hold the "BOOM" toggle to lower the boom slightly.

  — Listen for any unusual noises.
  — Check for any vibration while the boom travels down.
  — Check for uneven or jerky operation.
  — Check for hydraulic leaks.

- Once boom movement had been established using the emergency pump, release the "EMERGENCY" button and "BOOM" toggle. Restart engine.

- Return the booms to their stowed positions by using the appropriate toggles for "RETRACT" and "DOWN" correspondingly, and the "OPERATE CONTROLS" button.

  — Listen for any unusual noises.
  — Check for any vibration while the booms lower and retract.
  — Check for uneven or jerky operation.
  — Check for hydraulic leaks.
  — Report to supervisor and repair any problem.

- Operate the "SWING" toggle in each direction while holding the "OPERATE CONTROLS" button.

  — Listen for any unusual noises.
  — Check for any vibration while the turret swings up.
  — Check for uneven or jerky operation.
  — Check for hydraulic leaks.
  — Report to supervisor and repair any problem.

- Release the "SWING" toggle.

SHUT -DOWN PROCEDURES

- When finished with the machine, place the booms in the stowed position.
- Park the unit on a level surface.
- With all toggles/levers to "NEUTRAL" position, allow the engine to slow to idle speed.
- Turn "OFF" the "GROUND/PLATFORM" key switch. Remove key to prevent unauthorized operation.

MOVING JOB SITE TO JOB SITE

UNLOADING PROCEDURES

⚠ WARNING

TO AVOID A SERIOUS PERSONAL INJURY OR DEATH, ENSURE THAT THE MACHINE IS IN "LOW" DRIVE SPEED WHILE UNLOADING FROM A TRUCK OR TRAILER.

- Inspect the outside of the unit for damage (including the underside). Inspect all hoses, boom sections and cables for chafing or road damage. Confirm that all wheel lug nuts and swing bearing bolts are tight (refer to specifications).
- Remove the pin that locks the turret to the undercarriage near the swing bearing. Stow the lock pin in the location provided nearby.
- Remove all machine tie downs. Remove wheel chocks, if used. Switch the "GROUND/PLATFORM" key switch to "PLATFORM".
- Enter the platform, and restart the engine using the platform controls. Select the "OPERATING" engine speed, and test all platform functions.
- Raise the boom and the jib so that the platform will clear any obstacles as the machine is driven down the loading ramp.
- Carefully drive the unit off the truck or trailer .
- Before placing the unit into service, all operators must read and understand the contents of this Operator's Manual.

  Upon initial unloading of the machine the "Predelivery Inspection Report" must be completed and returned in order to activate the Time Condor Limited Warranty.

INTRODUCTION

The primary purpose of this manual is to provide the user with a thorough understanding of the proper operating procedures necessary to comply with the intended use of the **CONDOR®**.

THIS MANUAL MUST BE RETAINED ON THE UNIT AT ALL TIMES.

Do not attempt to operate the CONDOR® until you have read and understood all information provided in this manual. Familiarize yourself with the functions and operations of the upper and lower controls. A good understanding of the controls, their limitations, and their capabilities will maximize operating efficiency and safety. The various decals attached to this machine contain vital information. Read the decals before operating this machine.

It is YOUR RESPONSIBILITY to follow safe procedures while operating the **CONDOR®**. The manufacturer of this unit cannot control the wide range of applications that may be used in carrying out a variety of jobs. Therefore, IT IS THE USER'S RESPONSIBILITY to consider the safety of all personnel when making decisions regarding the unit's intended use.

It is also YOUR RESPONSIBILITY to understand and obey all federal, state, and local regulations regarding the safe operation and use of aerial work platforms. A copy of the ANSI/SIA A92.5-1992 Manual of Responsibilities is attached for your use.

Condor Division reserves the right to modify, improve, add, and/or delete certain design features of its products without any obligation to incorporate new features into products previously sold. Our manuals are continually updated to reflect these changes.

DO NOT ALTER OR MODIFY THIS UNIT WITHOUT PRIOR WRITTEN APPROVAL FROM THE MANAGEMENT OF TIME CONDOR Corporation

SERVICE & MAINTENANCE

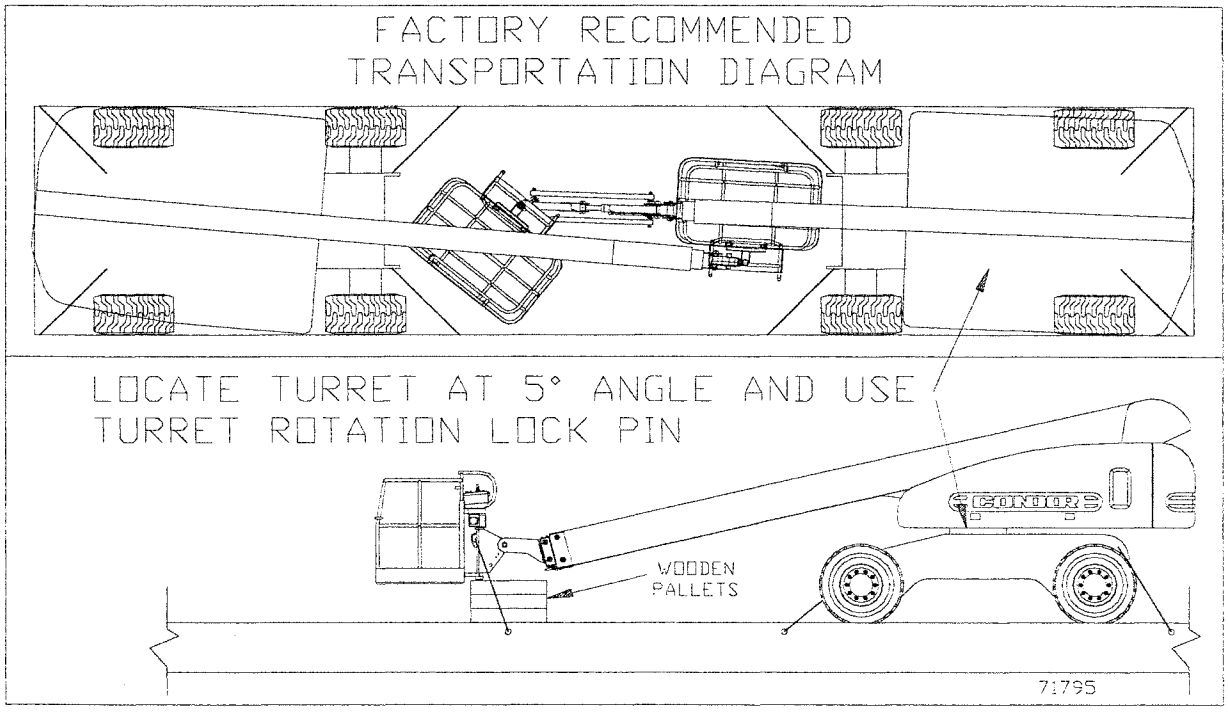
Many of the parts used in the manufacture of the **CONDOR®** have specific properties, and the manufacturer recommends that replacement parts be purchased through Condor Division in order to ensure the original integrity of the product. Repairs and adjustments should only be made by trained and qualified personnel. Please refer to the maintenance and parts sections of the Condor Division's Operation, Parts & Maintenance Manual for information on service and maintenance of the **CONDOR®**.

TABLE OF CONTENTS (Continued)

Section 2: Hydraulic System (Continued)

Section 3: Drive System

Section 4: Electrical System


FACTORY RECOMMENDED
TRANSPORTATION DIAGRAM
LOCATE TURRET AT 5° ANGLE AND USE
TURRET ROTATION LOCK PIN
CONDOR
WOODEN
PALLETS
71795

HYDRAULIC FLUID

HANDLING PRECAUTIONS

⚠ WARNING

PERSONS IN REGULAR CONTACT WITH MINERAL - BASED HYDRAULIC FLUID NEED TO BE AWARE OF THE IMPORTANCE OF THOROUGH HYGIENE, AND THE PROPER METHODS FOR HANDLING MINERAL OILS IN ORDER TO AVOID POTENTIAL HAZARDS TO HEALTH.

If mineral - based hydraulic fluid is SPLASHED INTO THE EYES, it must be WASHED OUT THOROUGHLY using abundant quantities of water. If irritation persists, medical advice should be sought.

Mineral oils act as solvents on the natural oils in the skin. FREQUENT AND PROLONGED SKIN CONTACT CAN CAUSE DERMATITIS OR SEVERE IRRITATION. Mineral - based hydraulic fluids normally present no health hazard when used properly. Protective clothing and proper washing facilities should be provided or be accessible.

⚠ WARNING

HYDRAULIC FLUID UNDER PRESSURE CAN PENETRATE AND BURN THE SKIN, DAMAGE EYES, AND MAY CAUSE SERIOUS INJURY, BLINDNESS, AND EVEN DEATH.

FLUID LEAKS UNDER PRESSURE MAY NOT ALWAYS BE VISIBLE.

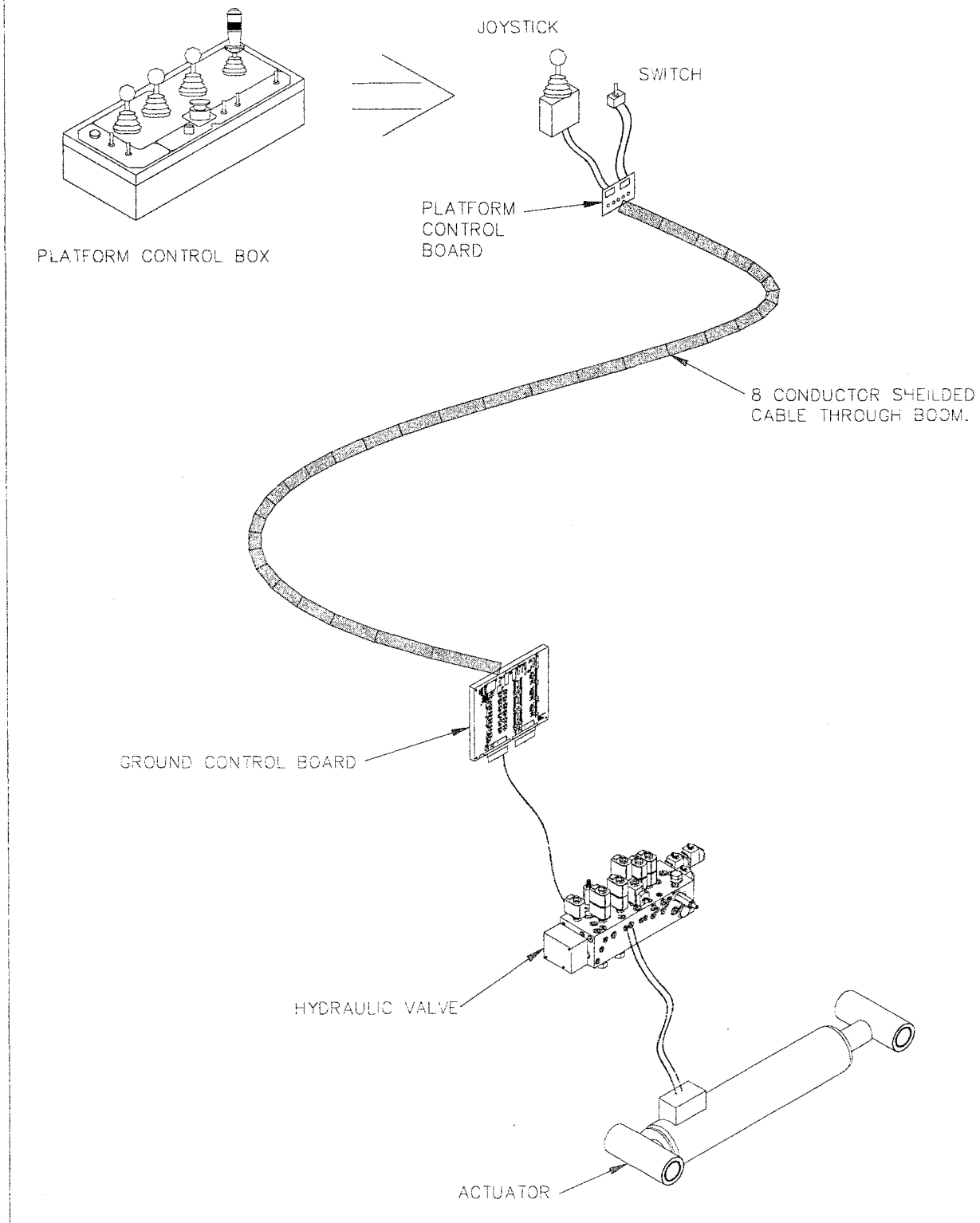
IF MINERAL - BASED HYDRAULIC FLUID HAS PENETRATED THE SKIN, IT MUST BE MEDICALLY TREATED, BY A DOCTOR FAMILIAR WITH THIS TYPE OF INJURY, WITHIN A FEW HOURS.

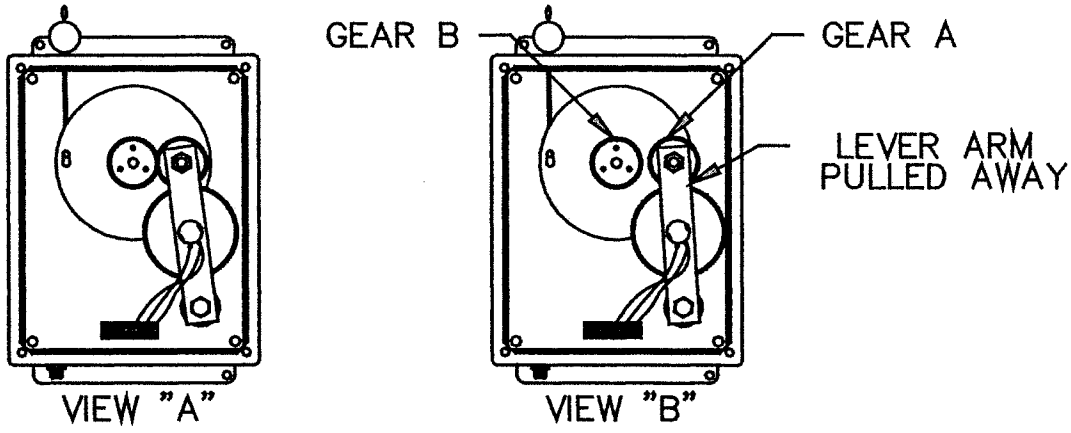
FLUID RECOMMENDATIONS

We strongly recommend the use of SHELL TELLUS T-32 HYDRAULIC FLUID. An EQUIVALENT substitute can be used if absolutely necessary. Mineral - based hydraulic fluids produced by different companies will USUALLY mix with each other satisfactorily, but this IS NOT RECOMMENDED. When in doubt, consult your supplier.

SECTION 3 :
DRIVE SYSTEM

CONTROL SYSTEM DIAGRAM





4. In order to calibrate the length sensor if the boom is extending past the acceptable operating zone, the lever arm needs to be pulled away from Gear B (See View B). Rotate Gear A counter clockwise at 1 tooth increments to calibrate the sensor. If the boom is not extending far enough, rotate gear A clockwise. Rotate the lever arm back until Gear A meshes with Gear B. Retract the boom slightly and extend until it stops. Repeat this step until alignment is achieved.

1. Support the boom securely in the horizontal position (on a boom stand or similar rigid platform).

2. Operate the boom lift control to release hydraulic pressure and remove any load in the lift cylinder circuit.

3. Clean the cylinder, and loosen the cylinder end cap by several turns.

⚠ CAUTION

The cylinder barrel will fall if not supported when the pivot pin is removed.

4. Remove the rod end pivot pin, and support the cylinder barrel.

5. Loosen the end cap completely, and withdraw it carefully over the piston rod.

⚠ CAUTION

Take care no to damage the rod surface and guard against dirt entering the system.

6. Remove the rod and piston assembly.

7. Replace the "O"-rings, seals and backup rings.

8. Reassemble the lift cylinder, again AVOIDING DIRT AND ROD DAMAGE.

9. Tighten the end cap.

10. Install rod end pin.

BENCH REPLACEMENT OF LIFT CYLINDER SEALS

The lift cylinder can also be removed from the machine for seal replacement.

1. Operate boom lift to horizontal position.

⚠ CAUTION

Support the boom any time maintenance is required on the boom or boom cylinders.

Checklist

Perform all items on the Shift Checklist found later in this section.

WEEKLY SERVICE

Swing Bearing and Drive Pinion Gear

Lubricate standard open swing bearing and drive pinion gear, and check optional oil bath swing bearing case.

Checklist

Perform all items on the Weekly Checklist found later in this section.

MONTHLY SERVICE

Hydraulic System

Pressurize the hydraulic circuit and inspect the system for any signs of leakage, particularly at flexible hoses, connections and hydraulic components. Check hydraulic fluid color. If the hydraulic fluid does not appear clear amber, but has a cloudy appearance, it is usually an indication that water is present. A dark drown color, accompanied by a strong "burnt" smell, indicates that the fluid has overheated. If either condition occurs, a complete hydraulic fluid and filter change will be necessary.

The cause of hydraulic fluid deterioration should be investigated and rectified. Have fluid analyzed by a qualified laboratory.

Chassis Bolts

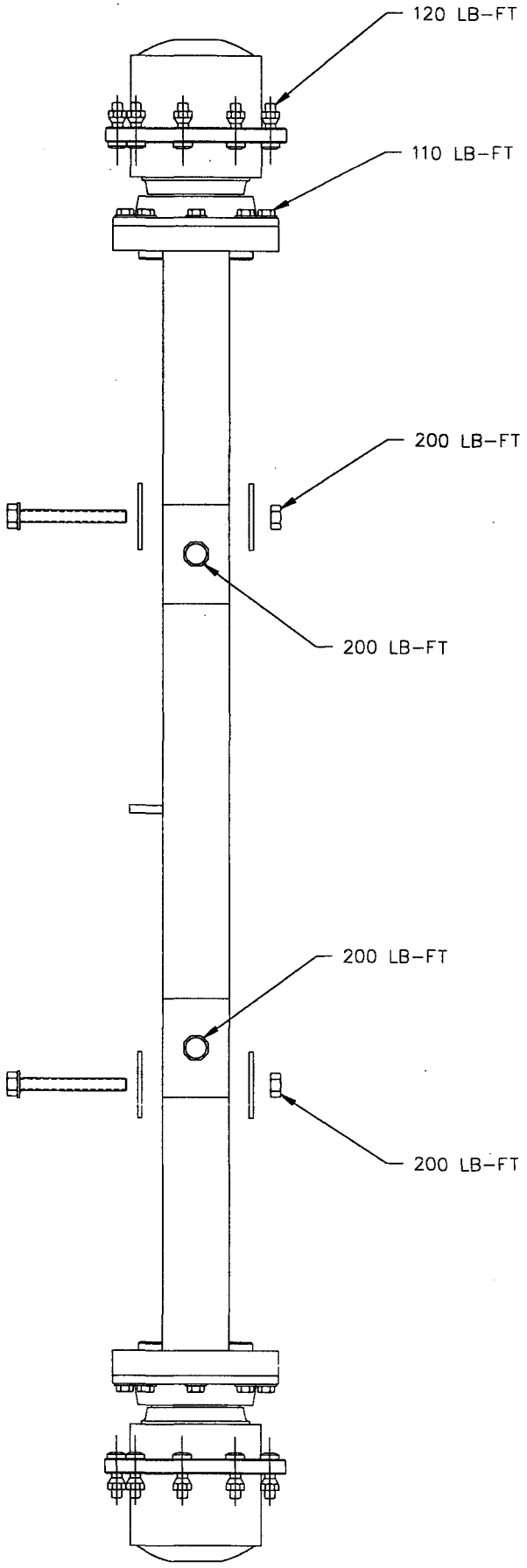
Check all bolts for signs of looseness. Refer to individual items in the Monthly Checklist.

Cylinders

Check all cylinders for hydraulic fluid leakage.

Pivot Pins and Grease Fittings

Lubricate all pivot pins and grease fittings.


120 LB–FT
110 LB–FT
200 LB–FT
200 LB–FT
200 LB–FT
200 LB–FT

INTRODUCTION

IMPORTANT: PLEASE READ THIS SECTION BEFORE ATTEMPTING ANY SERVICE PROCEDURES.

The service procedures given in this section are specifically for all RS Series motors. The procedures given are designed as a guide for the installation of seal kits and are not intended for trouble-shooting purposes. The service procedures given have been presented as clearly and accurately as possible. However, White Hydraulics makes no guarantees that the directions and descriptions are complete or accurate or that following the procedures will result in a properly functioning motor.

All White Hydraulics' motors are of the highest quality and are guaranteed against defects in workmanship and materials for four years from the date of manufacture (a copy of the warranty can be obtained from the distributor or the factory.). However, any disassembly of the motor voids this warranty. If a motor is suspected of having a warranty problem, the motor should not be disassembled, but should be returned to White Hydraulics for analysis and warranty consideration. Before returning motors to the factory, White Hydraulics must be contacted to obtain a Return Authorization number. No returned motors will be accepted at the factory without the RGA number printed on the outside of the box.

Because of the extremely tight tolerances designed into every White Hydraulics' motor, care should be taken to provide a clean work area when servicing a motor. Before the motor is removed from any machinery, all fittings and the area around the fittings should be thoroughly brushed and cleaned to remove all dirt. Care should be taken to insure that no dirt enters the motor through the ports. Once removed from the machinery, the ports should be plugged and the outside of the motor cleaned in preparation for service. White Hydraulics recommends that a new seal kit be installed anytime that the motor is disassembled. Failure to do so could result in leaks when the motor is returned to service.

GENERAL

The following information is intended as an aid to properly applying a Precision Governor Electric Governor. Since these governors are used on a wide range of engines in many different applications, much of the information is somewhat general in nature. If you need assistance concerning a specific detail on your application, please consult Precision Governors Application Engineering at 815/229-5300.

These instructions presume no electrical test equipment other than a multimeter for making the electrical measurements called for on the following pages. If no meter is available, inexpensive but adequate meters, are available from many consumer electronics stores such as Radio Shack.

Many "governor problems" turn out to be installation problems, particularly in first-time applications. Careful attention to the directions provided will go far toward a successful installation made in the least amount of time.

QUICK-START INSTRUCTIONS

If you are experienced in installing and adjusting Electric Governors, follow these steps. Otherwise, refer to the more detailed instructions which begin on Page 2, starting with "Governor Assembly".

1) Mount the governor assembly to the engine manifold using appropriate gaskets. Connect fuel, vacuum electrical and air lines

2) Mount Controller in a dry, fairly cool location. Accessibility for adjusting is required.

3) Wire per the attached schematic, using #16 wire. BE SURE TO OBSERVE CORRECT POLARITY.

4) Hold linkage for safety, and start engine.

5) Adjust engine speed to desired value using **Speed-set** pot. (See figure on page 4.)
Turn CW to increase, CCW to decrease speed.

6) Set Gain as required, using **Gain** pot. (See page 4.) CW increases sensitivity.
Load and unload engine to check for proper gain. Also, pull back Governor arm slightly and release.

MOUNTING-GOVERNOR ASSEMBLY

The governor assembly is a preassembled and pretested unit consisting of a carburetor, actuator, mounting bracket and linkage. The end user need only mount the unit to the engine intake manifold with any needed adapter; connect fuel, vacuum, electric lines and the clean air hose to complete the installlation. Appropriate gaskets should be used.

A ball-end allen wrench or driver is highly recommenced for the fasteners used on the governor assembly. Typically, these are 6 mm socket head cap screws requiring a 5 mm wrench.

MOUNTING-CONTROLLER

The controller is water and weather resistant when the cover plate is filleted with RTV by the user. However, attention to the following points will enhance its performance and reliability;

SLIP (COLLECTOR) RING PARTS LIST

Illus. Ref. No.	Part Number	Quantity Required	Name and Description
5-6	(For Circuits # 0)		45 Amp Brush & Holder Assembly (Pair). Used on Circuits Rated 28VDC Thru 120VAC. Brush is ¼" Thick. Assembly Also Includes: Spring, (2) Jumbo Knife Disconnect Terminals for 8 Ga. Wires & Plastic Sleeve. Shunt Wire Insulation is Black. (Some Early Models of This Assembly May Have Eyelet Terminal Instead of Knife Disconnect. Use Knife Disc. Style to Replace.)
5-6	(For Circuits # 0)		45 Amp High Abrasive Type Brush & Holder Assembly (Pair). Used on Circuits Rated 28VDC Thru 120VAC. Brush is ¼" Thick. Assembly Also Includes: Spring, (2) Jumbo Knife Disconnect Terminal for 8 Gauge Wires, & Plastic Sleeve. (This Brush is Used on Assemblies in Extremely Dirty Conditions.) Shunt Wire Insulation is Black.

NOTE: 75 AMP CAPACITY CIRCUITS REQUIRE (2) PAIRS OF BRUSH AND ARM ASSEMBLIES.

HIGH VOLTAGE CIRCUITS (220-600V) BRUSH & ARM ASSEMBLIES

5-6	(For Circuits # 0)		Brush & Holder Assembly (Pair) With Knife Disconnects for 12-10 Ga. Wire. Brush is 1/8" Thick. 20 Amp Capacity, 220 Thru 600 Volts. Assembly Also Includes: Spring, (2) Knife Disconnect Terminals, & Red Insulating Sleeve. Shunt Wire Insulation is Red.

NOTE: 30 AMP CAPACITY CIRCUITS REQUIRE (2) PAIRS OF ASSEMBLY.

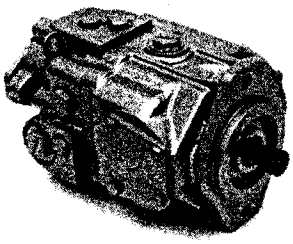
Introduction

The purpose of this manual is to provide information useful in the normal servicing of the Series 40 - M35 Hydrostatic Pumps and Motors. This manual includes unit and component description, troubleshooting, adjustment, and minor repair procedures. Following the procedures in this manual, the minor repairs may be performed without affecting the unit warranty.

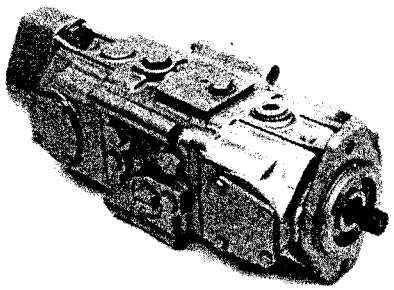
A Series 40 Transmission does occasionally require servicing, and these units have been designed with this in mind. Some repairs and adjustments can be accomplished without removing the unit from its installed location, provided that the unit is accessible and can be thoroughly cleaned before beginning any procedures. Since dirt or contamination is the greatest enemy of any hydraulic equipment, the greatest possible cleanliness is necessary.

Sundstrand-Sauer provides a complete repair service for its products. Contact any Sundstrand-Sauer Authorized Service Center for details. (See pages 35 and 36.

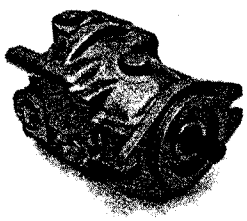
The torque values, pressures, and dimensions used throughout this manual are given in English and metric measurements.



Variable Displacement Pump



Variable Displacement Tandem Pump



Fixed Displacement Motor

Variable Displacement Motor

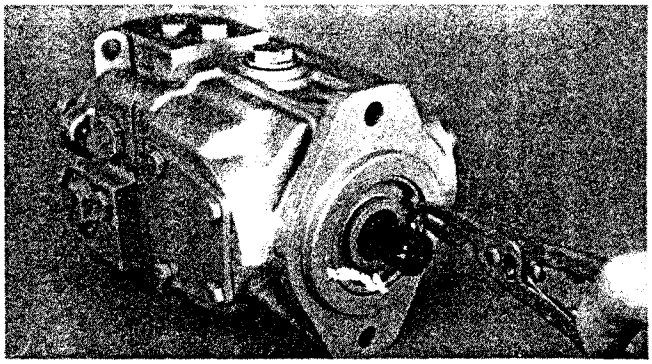


Fig. 15 - Remove Seal Cover Retaining Ring

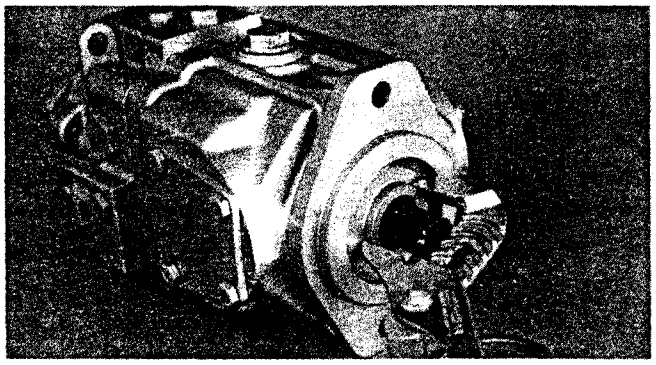


Fig. 16 - Remove Seal Cover from Housing

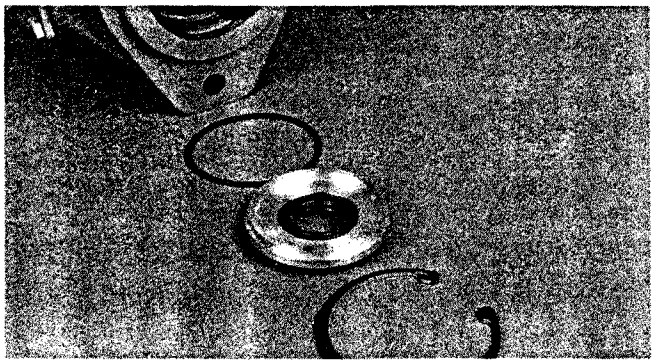


Fig. 17 - Shaft Seal Removed

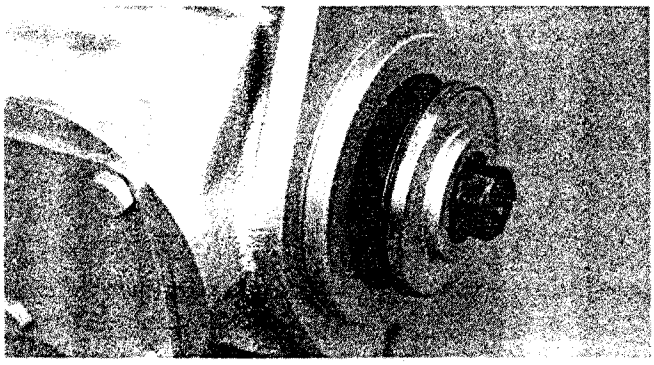


Fig. 18 - Install Seal Cover with O-Ring

Shaft Seal

Lip type shaft seals are used on the Series 40 - M35 pumps and motors. These seals can be replaced without major disassembly of the unit. However, replacement of the shaft seal generally requires removal of the pump or motor from the machine.

Remove the retaining ring from the housing.

Carefully pull the seal cover out of the housing using pliers. Care must be taken so as not to damage the housing bore or shaft.

CAUTION

After the seal cover is removed, the shaft may be free in the housing. DO NOT PULL SHAFT OUT. The slipper hold down pins could become dislodged, requiring major disassembly of the unit.

Remove the O-ring from the seal cover or the housing.

Place the seal cover in an arbor press and press out the old seal . An appropriately sized pipe spacer or socket wrench can be used as a press tool. Once removed, the seal is not reusable.

Inspect the seal cover, the new seal, and the O-ring for damage. Inspect the sealing area on the shaft for rust, wear, or contamination. Polish the sealing area on the shaft if necessary.

Using the arbor press, press the new seal into the seal cover. Be careful not to damage seal.

NOTE: New seals are lubricated with an assembly grease

Wrap the spline or key end of shaft with thin plastic to prevent damage to the seal lip during installation.

Install the O-ring onto the seal cover and retain with petroleum jelly.

Slide the seal cover assembly over the shaft and into the housing bore. Install the retaining ring.

NOTE: If a beveled retaining ring is used, install the ring with its beveled side out.

FIGURE 1.1: Final Assembly

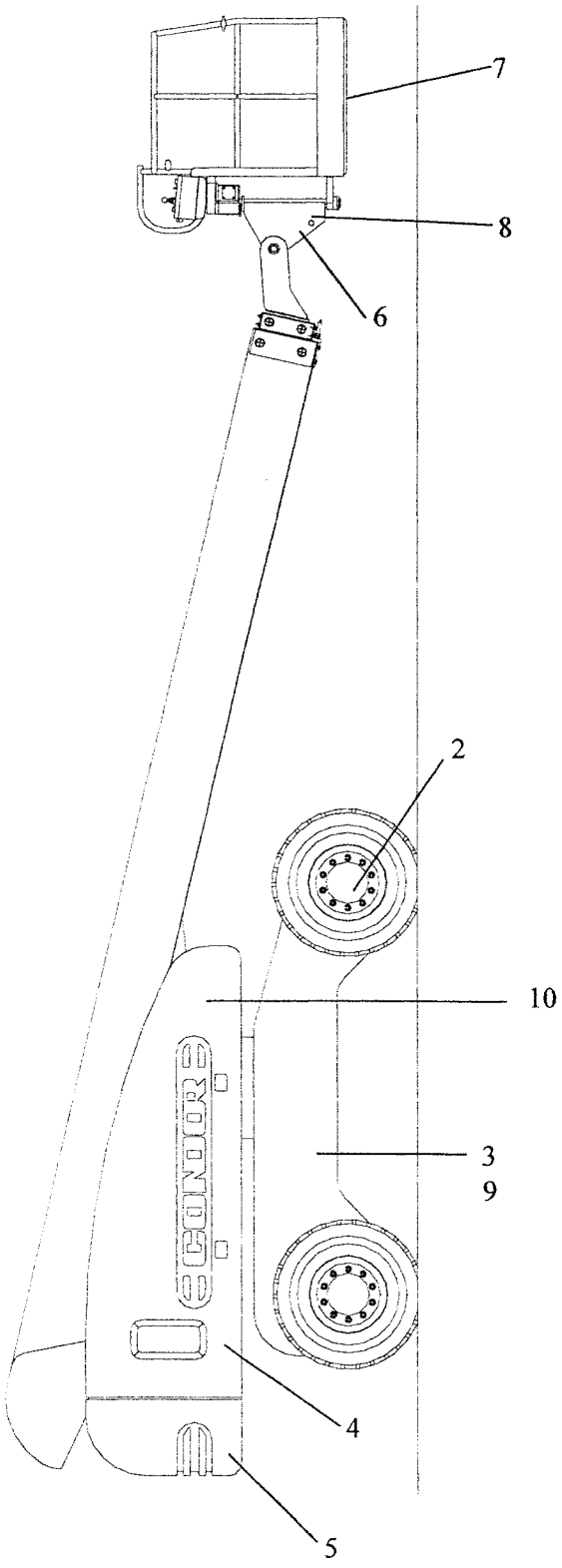
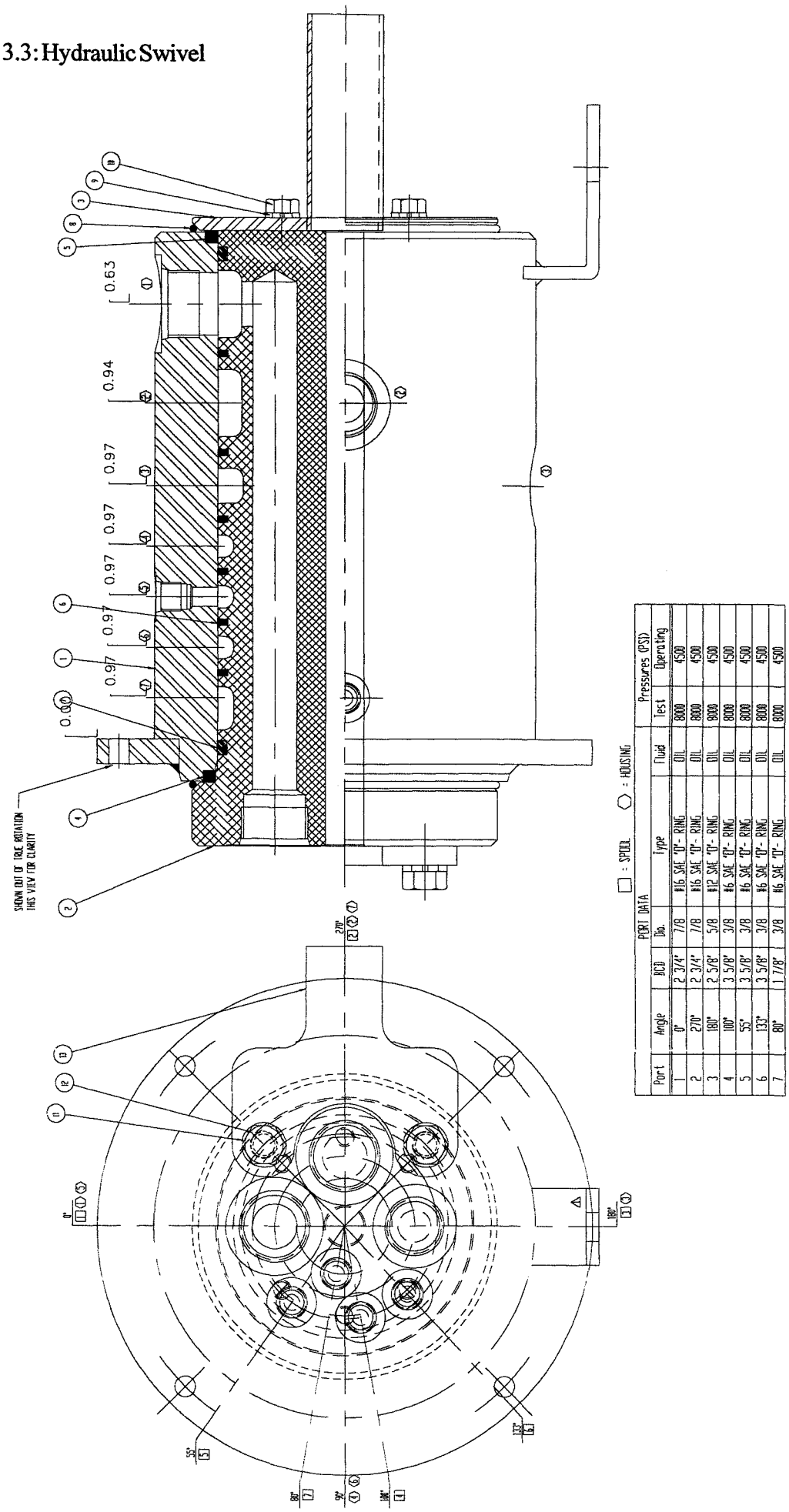


FIGURE 3.3: Hydraulic Swivel



PORT DATA

Port	Angle	BCD	Dia.	Type	Fluid	Pressures (PSI) Test	Operating
1	0°	2 3/4"	7/8	#16 SAE "O"- RING	OIL	8000	4500
2	270°	2 3/4"	7/8	#16 SAE "O"- RING	OIL	8000	4500
3	180°	2 5/8"	5/8	#12 SAE "O"- RING	OIL	8000	4500
4	110°	3 5/8"	3/8	#6 SAE "O"- RING	OIL	8000	4500
5	55°	3 5/8"	3/8	#6 SAE "O"- RING	OIL	8000	4500
6	133°	3 5/8"	3/8	#6 SAE "O"- RING	OIL	8000	4500
7	80°	1 7/8"	3/8	#6 SAE "O"- RING	OIL	8000	4500

FIGURE 3.8: Stationary Block Assembly

ITEM	PART NUMBER	DESCRIPTION	QTY
Ref.	71483	Stationary Block Assembly	Ref.
-1	71483-DWG	DWG Assembly, Stationary Block	1
2	71483-HW	Hardware Kit, Stationary Block	1
3	71106	Stationary Weldment Block	1
4	71105	Shim Pack	2

Ref.	71483-HW	Stationary Block Installation - Hardware Kit	Ref.
1	BOW39108	Bolt 1/2-13 c 2"LG GR8 Hex	4
2	BOW36705-HD	Washer, .50 x 1.06 O.D. HD Flat	8
3	BOW34276	Nut, .50-13UNC Hex Lock	4
4	71483-DWG	Installation DWG, Stationary Block	1

- Indicates Items Not Shown

ITEM	PART NUMBER	DESCRIPTION	QTY
Ref.	71045-001	Tray Installation	Ref.
-1	71045-DWG	Tray Assembly DWG; Telescope Hyd.	1
-2	71045-HW	Hardware Kit	1
-3	71045-FTG-1	Fitting Kit	1
4	71059	Tray Weldment	1
5	71060	Bracket Weldment; Ground Box	1
6	71041	Fuel Tank; 40 Gallons	1
7	71040	Hydraulic Tank; 45 Gallons	1
8	CLL00650-004	Tube Rd 1" OD .25W .50"L	4
9	35659	Motor/Pump 12 VDC Electric	1
10	71039	Turret Tray/Door Lock Plate	2
11	71261	Front Brace Tray Plate	1
12	71023	Rear Brace Tray Plate	1
13	33430	Filter Assembly, Hydraulic	1
14	69327	Gauge, Fuel Tank Magnetic	1
15	71550	Control Valve w/o Axle Lpck	1
16	37042	Filter, R# 66445 Suction	1
17	67585-005	Valve, 3/4" NPT Ball	1
18	67585-006	Valve, 1" NPT Ball	1
19			
20	04625-001	Valve, Mini Ball	1

- Indicates Items Not Shown

Fuel Tank Cap Pt # 71041-100
Hyd. " " Pt # 71040-100

FIGURE 4.4: Battery Assembly

ITEM	PART NUMBER	DESCRIPTION	QTY
Ref.	71386	Battery Assembly	Ref.
-1	71386-DWG	DWG, Battery Assembly	1
2	65176	Battery - 12 Volt 1000 CCA	1
3	71282	Hold-down, 14 1/2"L Battery	1
4	66270	J-Bolt .31-18UNC x 10.00"LG	2
5	BOW31239	Nut, HEX Keps .31-18UNC	2

- Indicates Items Not Shown

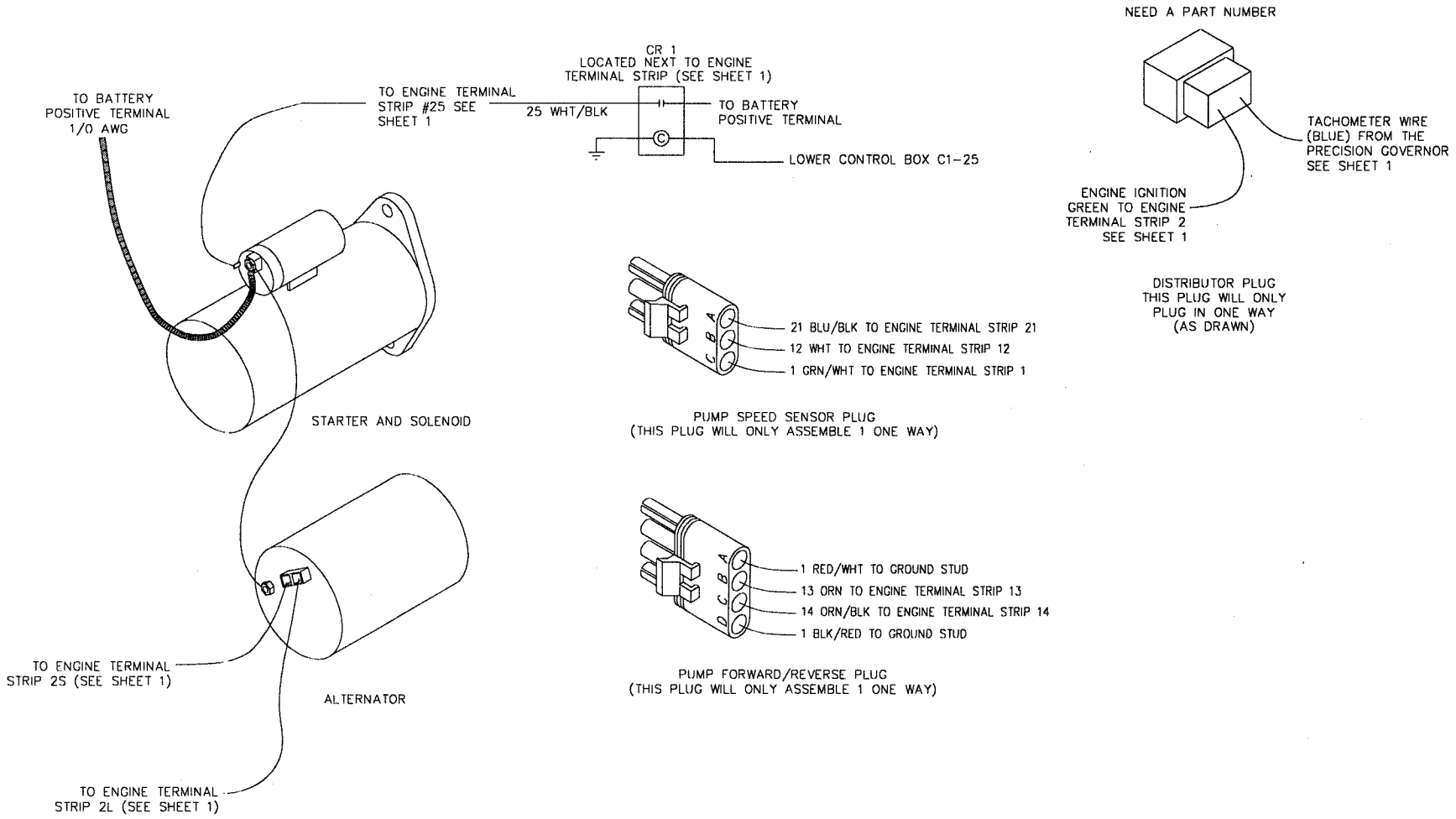


FIGURE 4.10: Nissan Engine Panel Schematic

FIGURE 4.17: Lower Control Box Assembly

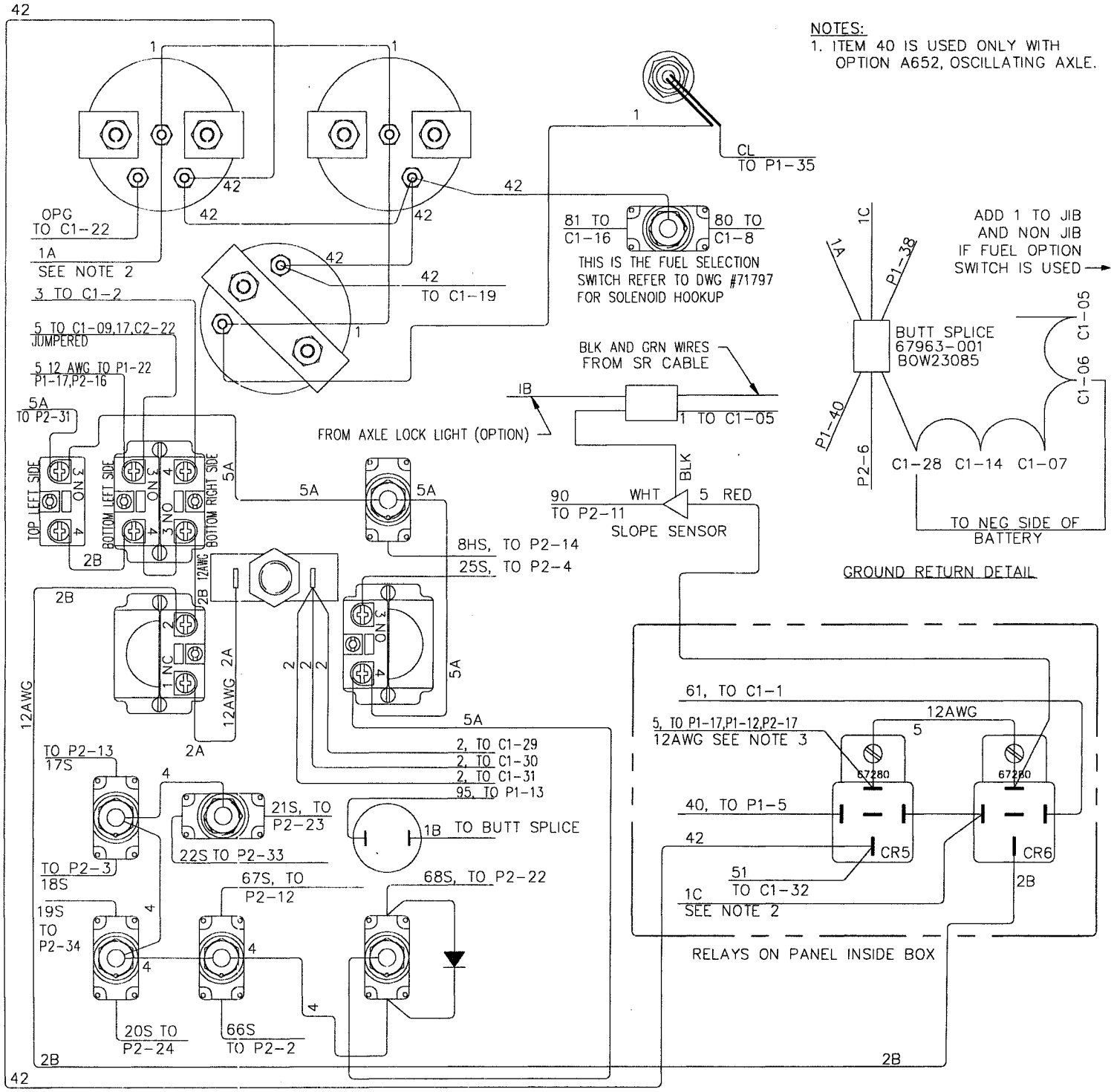
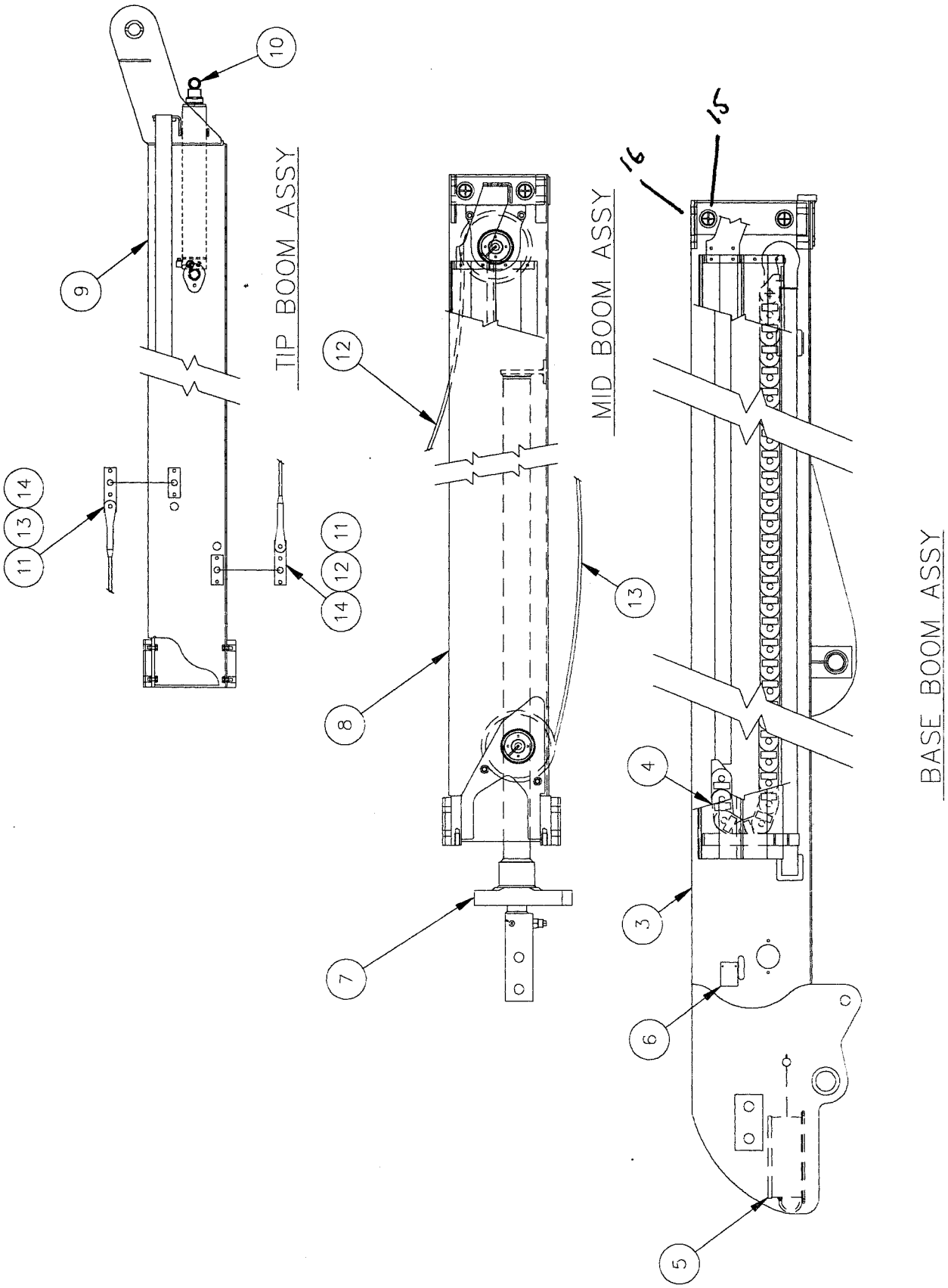
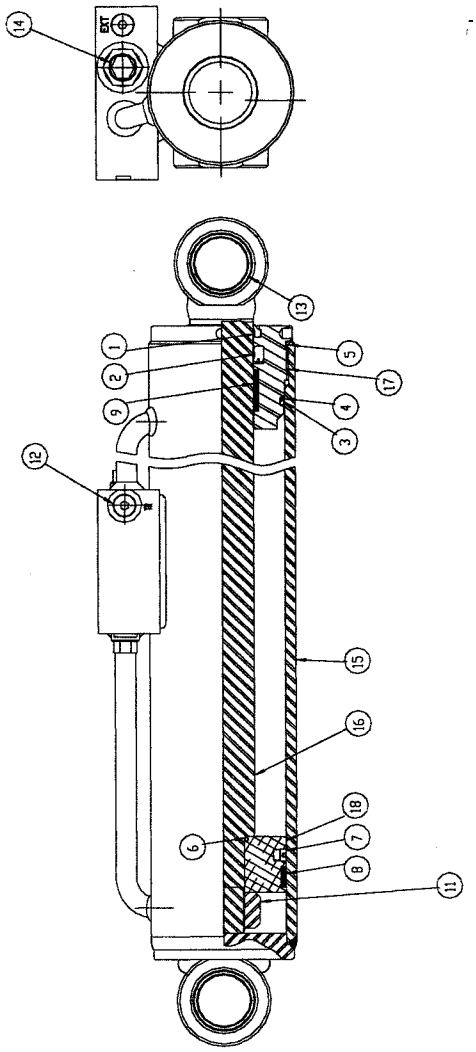


FIGURE 6.2:Main Boom Assembly T60





ITEM	PART NUMBER	DESCRIPTION	QTY
Ref.	71146	Slave Level Cylinder	Ref.
1		Wiper	1
2		Seal	1
3		O-Ring	1
4		Back-Up	1
5		O-Ring	1
6		O-Ring	1
7		Seal	1
8		Wear Ring	1
9		Wear Ring	2
10		Seal Kit	1
11		Locknut	1
12		Port Plug	4
13		Bushing	4
14		Counterbalance Valve	2
15		Tube Assembly	1
16		Rod Assembly	1
17		Head	1
18		Piston	1

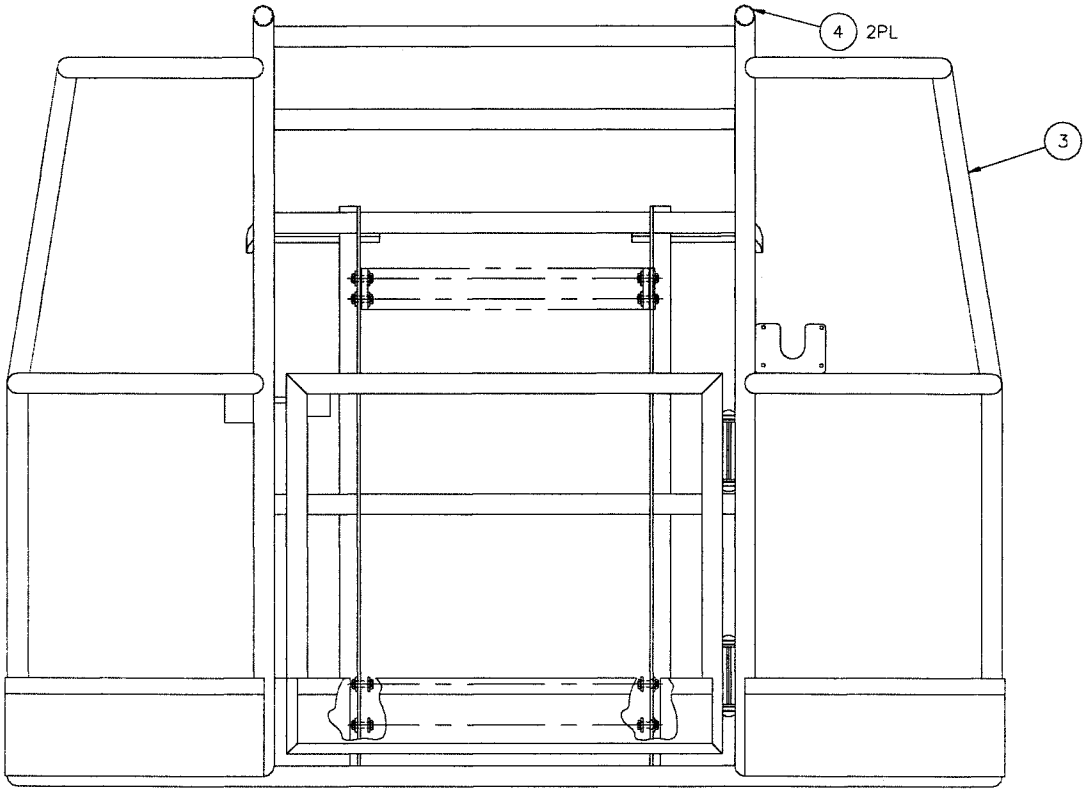
- Indicates Items Not Shown

ITEM	PART NUMBER	DESCRIPTION	QTY
Ref.	71016	Boom/Skirt Installation, T60/T66J	Ref.
1	71016-DWG	Boom/Skirt T60/66J Installation DWG	1
2	71016-HW	Boom/Skirt T60/66J Hardware Kit	1
3	71562	Main Boom Assembly T60/66J	1
4	71627	Angle Sensor Installation	1
5	71563	Jib/Skirt Assembly	1
	71017	Skirt Assembly	1
6	71437	Pin, Base Boom Pivot T60/66J	1
7	71456	Pin, Master Cylinder/Base Boom	1
8	71438	Pin, Lift Cylinder/Base Boom	1
9	71498	Cover, T60/66J Boom Pivot Upper	1
10	71504	Cover, T60/66J Boom Pivot Lower	1
11	71435	Cover, Boom Sheave Access	2
12	71620-T60	Hose Kit, Boom T60/66J	1
	71620-T66J	Hose Kit, Boom T60/66J	1
13	71778-T60	Electrical Cable Assembly	1
	71778-T66J	Electrical Cable Assembly	1
14	71528	Boom Pivot Cover	1

- Indicates Items Not Shown

88 279 - updated Skirt

FIGURE 7.1: Platform Installation



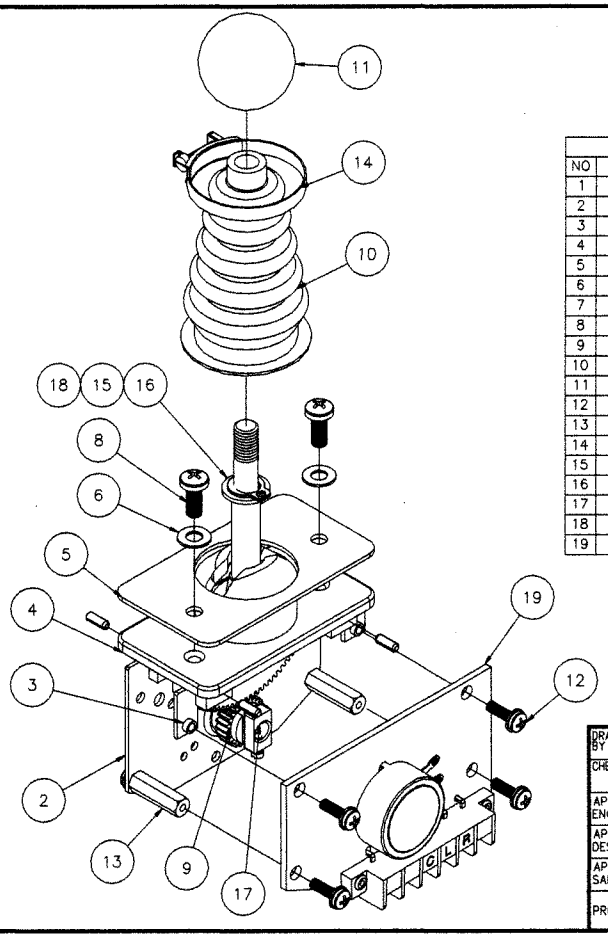
ITEM	PART NUMBER	QTY	UM	DESCRIPTION
	71513-HW	HARDWARE KIT, PLATFORM INST		
1	BOW39055	8.00	EA	BOLT 3/8-16 X 1 1/4" HEX HD
2	BOW36713-HD	16.00	EA	WASHER, .375 SAE
3	BOW34274	8.00	EA	NUT, 3/8-16 UNC HEX LOCK

Hinge
67170

REVISIONS

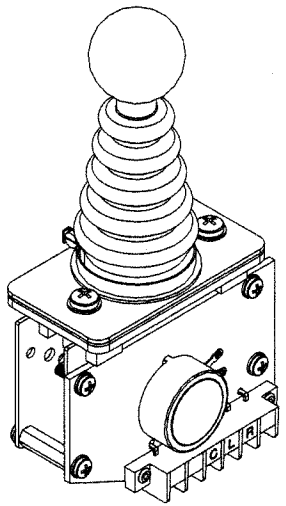
REV	DESCRIPTION		DATE	APPROVED
A	ORIGINAL	PER ECN #7741	AJS 5/31/00	

REVISION						
REV	ERCN NO.	DESCRIPTION	BY	CHKD.	APPR.	DATE
A	11298	SEE ERCN	-	-	-	12/5/97
B	11975	SEE ERCN	-	-	SEC	9/9/98
C	14604	ADD VENDOR DWG & SERVICE P/N'S	KNCS	DWW	DWW	8/14/00



Parts List

NO	PART#	DESCRIPTION	Qty
1	A/292	HANDLE	1
2	A/498	PLATE	1
3	A/327A	PLATE R-SIDE	1
4	A/128	CASTING	1
5	A/133	GASKET	1
6	A/97	WASHER	2
7	A/51	PINS	4
8	EPSU/947	SCREW	2
9	A/46	SLAVE GEAR	1
10	A/346	BOOT	1
11	A/177	ROUND KNOB	1
12	A/252	SCREW	6
13	A/131	STANDOFF	2
14	A/130	BOOT CLAMP	1
15	A/119	RETAINING CLIP	1
16	A/360	WASHER	1
17	MSA1	COUPLING ASSY	1
18	A/111	SLEEVE	1
19	ESA143	PCB ASSY	1



DRAWN BY AJS	DATE 5/31/00	
CHECKED		
APVD ENG.		
APVD DESN		
APVD SALES		
PROJECTION:		

OEM Controls, Inc.
10 Controls Drive - Shelton, CT 06484
Phone: (203) 929-8431 Fax.: (203) 929-7546

MECHANICAL ASSEMBLY & PARTS LIST FOR TIME CONDOR MS4M11320 CONTROLLER

PART NO.	DWG NO. A10721	REV A
SCALE N/A	SHEET 1 OF 1	SIZE A

Parts List

CONDOR P/N	NO	PART#	DESCRIPTION	Qty
71501-100	1	A/292	HANDLE	1
71501-101	2	A/498	PLATE	1
71501-102	3	A/327A	PLATE R-SIDE	1
71501-103	4	A/128	CASTING	1
71501-104	5	A/133	GASKET	1
71501-105	6	A/97	WASHER	2
71501-106	7	A/51	PINS	4
71501-107	8	EPSU/947	SCREW	2
71501-108	9	A/46	SLAVE GEAR	1
71501-109	10	A/346	BOOT	1
71501-110	11	A/177	ROUND KNOB	1
71501-111	12	A/252	SCREW	6
71501-112	13	A/131	STANDOFF	2
71501-113	14	A/130	BOOT CLAMP	1
71501-114	15	A/119	RETAINING CLIP	1
71501-115	16	A/360	WASHER	1
71501-116	17	MSA1	COUPLING ASSY	1
71501-117	18	A/111	SLEEVE	1
71501-118	19	ESA143	PCB ASSY	1

VENDOR : OEM CONTROLS
VPN : MS4M11320

MS4 SINGLE AXIS JOYSTICK

UNLESS OTHERWISE NOTED:
TOLERANCES: DECIMALS
FRACTIONS ± 1/16 .X ± .1
ANGLES ± 1° .XX ± .03
.XXX ± .010
SURFACE FINISH 125
PROJECTION OF MEWS
REMOVE BURRS & SHARP EDGES
ALL DIMENSIONS ARE IN INCHES

DRAWN K SNYDER	12/9/97	
CHECKED		
APPROVED		

TIME CONDOR CORPORATION
8300 IMPERIAL DRIVE
WACO, TEXAS 76712

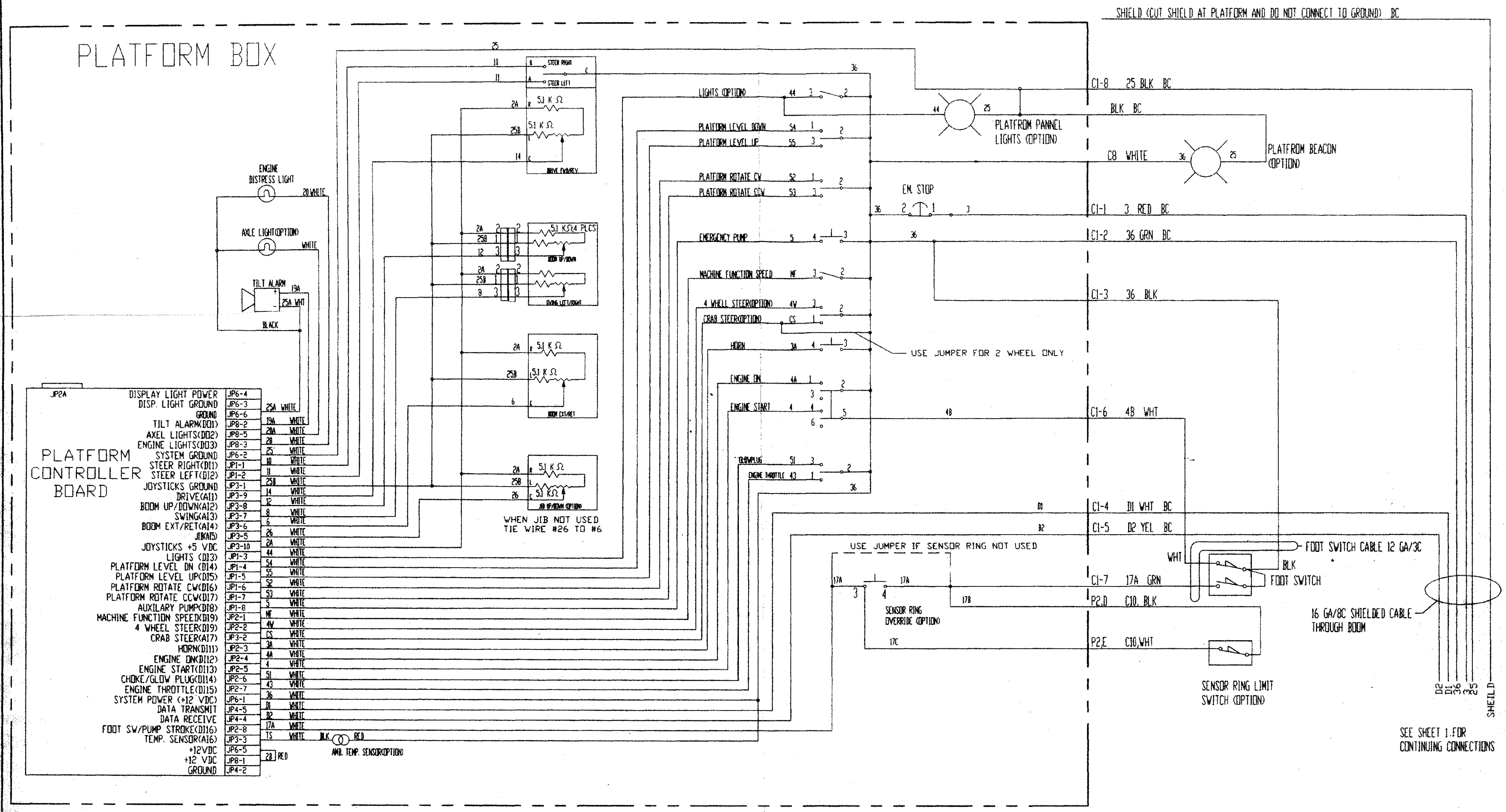
TITLE: JOYSTICK, SINGLE AXIS

SIZE	DRAWING NO.	REV.
B	71501	C

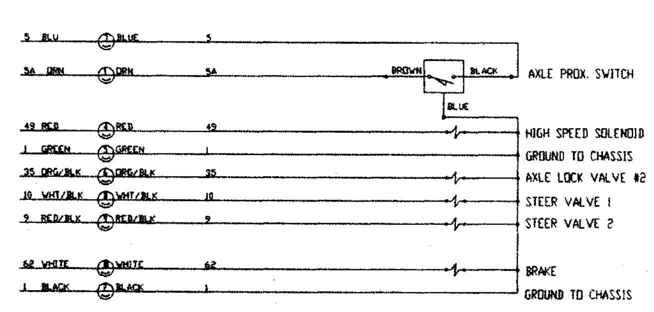
ERCN NO. PMR | SCALE 1/1.5 | SHEET 1 OF 1

ITEM	PART NUMBER	DESCRIPTION	QTY
Ref.	71491	Decal Kit, T60-01	Ref
-*1	71491-100	Decal Kit, M-T60-01 Essential	1
-*2	71491-DWG	Installation DWG, Decal M-T60-01	1
*3	67938-080	Decal, 80 PSI Tire Pressure	4
	67938-075	Decal, 75 PSI	4
*4	54984-004	Decal, Lift And Tie Down	4
*5	56023	Decal, 7.00" High Arrow	2
*6	56024	Decal, 2.50" High " Forward"	2
*7	21882-001	Decal, El Hazard Keep Clear	2
*8	21849	Decal, Unleaded Gas Only	1
	15376-012	Decal, Diesel	1
*9	71799	Decal, Hydraulic Fluid	1
*10	71618	Decal, Lower Caution Boom	2
*11	54984-006	Decal, 110 Volt EXT To Platform	1
*12	21079	Decal, Lube Fitting	1
-*13	71795	Decal, T60 Transportation	1
*14	71614	Decal, Boom Upper Caution	1
*15	37958-500	Decal, 500 LB Rated Work Load	2
*16	56034-500	Decal, 500LBS Rated Work Load	1
*17	71826	Decal, Boom Down	1
*18	38550	Decal, Platform Fall Arrest	2
*19	71369	Decal, Platform Control Box	1
*20	71370	Decal, Lower Control Box	1
*21	71589	Decal, Error Code Turret	1
*22	71617	Decal, Ground Board Lights	1
*23	56033	Decal, 3.5" High Twin Stripes	12.23LF
24	71765	Decal, T60 Gry	2
	71765-1	Decal, T60 Blk	2
25	55941-017	Decal, 17 x 2.5" Condor Bird	1
26	55940-060	Decal, Condor 9 x 60 Gray	1
*27	71768	Decal, Boom Ext.	1
*28	71767	Decal, Boom Raised Fully	1
29	71785	Decal, Rotation Stop	2
*30	71856	Caution Decal, Hi to Low Speed	1
-50	15843	Nameplate, Boom Identification	1
51	56022	Decal, 4 x 4	2

- Indicates Items Not Shown
***Indicates Items In Essential Decals**



PLATFORM BOX
SHIELD (CUT SHIELD AT PLATFORM AND DO NOT CONNECT TO GROUND) BC
PLATFORM CONTROLLER BOARD
DISPLAY LIGHT POWER
DISP. LIGHT GROUND
GROUND
TILT ALARM(DO1)
AXEL LIGHTS(DO2)
ENGINE LIGHTS(DO3)
SYSTEM GROUND
STEER RIGHT(DI1)
STEER LEFT(DI2)
JOYSTICKS GROUND
DRIVE(AI1)
BOOM UP/DOWN(AI2)
SWING(AI3)
BOOM EXT/RET(AI4)
JIB(AI5)
JOYSTICKS +5 VDC
LIGHTS (DI3)
PLATFORM LEVEL DN (DI4)
PLATFORM LEVEL UP(DI5)
PLATFORM ROTATE CW(DI6)
PLATFORM ROTATE CCW(DI7)
AUXILARY PUMP(DI8)
MACHINE FUNCTION SPEED(DI9)
4 WHEEL STEER(DI9)
CRAB STEER(AI7)
HORN(DI11)
ENGINE ON(DI12)
ENGINE START(DI13)
CHOKE/GLOW PLUG(DI14)
ENGINE THROTTLE(DI15)
SYSTEM POWER (+12 VDC)
DATA TRANSMIT
DATA RECEIVE
FOOT SW/PUMP STROKE(DI16)
TEMP. SENSOR(AI6)
+12VDC
+12 VDC
GROUND
ENGINE DISTRESS LIGHT
AXLE LIGHT(OPTION)
TILT ALARM
LIGHTS (OPTION)
PLATFORM LEVEL DOWN
PLATFORM LEVEL UP
PLATFORM ROTATE CW
PLATFORM ROTATE CCW
EMERGENCY PUMP
MACHINE FUNCTION SPEED
4 WHEEL STEER(OPTION)
CRAB STEER(OPTION)
HORN
ENGINE ON
ENGINE START
ENGINE THROTTLE
USE JUMPER FOR 2 WHEEL ONLY
EM. STOP
PLATFROM PANNEL LIGHTS (OPTION)
PLATFROM BEACON (OPTION)
WHEN JIB NOT USED TIE WIRE #26 TO #6
C1-8 25 BLK BC
BLK BC
C8 WHITE
C1-1 3 RED BC
C1-2 36 GRN BC
C1-3 36 BLK
C1-6 4B WHT
C1-4 D1 WHT BC
C1-5 D2 YEL BC
C1-7 17A GRN
P2,D C10, BLK
P2,E C10,WHT
USE JUMPER IF SENSOR RING NOT USED
SENSOR RING OVERRIDE (OPTION)
FOOT SWITCH CABLE 12 GA/3C
FOOT SWITCH
16 GA/8C SHIELDED CABLE THROUGH BOOM
SENSOR RING LIMIT SWITCH (OPTION)
SEE SHEET 1 FOR CONTINUING CONNECTIONS
AXL. TEMP. SENSOR(OPTION)



UNDER CARRIAGE WIRING

NOTES:
1. THIS IS THE CONDOR BUILT ELECTRICAL SYSTEM SEE 71311 FOR THE PROTOTYPE ELECTRCAL
2. UNLESS OTHERWISE SPECIFIED: ALL DIODE ARE: MR756
3. ALL SWITCHES AND CONTACTS SHOWN WITH THE MACHINE IN THE STOWED POSITION.

CONDOR	TIME CONDOR CORPORATION, 8300 IMPERIAL DRIVE, WACO, TEXAS 76712
TITLE	T-ELECTRICAL SCHEMATIC
DRAWN	BRITTAIN 5/1/98
D.C.N. NO.	11779
SIZE	C
DRAWING NO.	71675
SCALE	1=1
SHEET	2 OF 2