SCHEDULED MAINTENANCE

SCHEDULED MAINTENANCE PROCEDURES AND INTERVALS

The Practice of Scheduled Maintenance

Lubrication and service performed at regular intervals and according to an established routine will be of great help in reducing operating expenses and will prolong the life of your machine. Our recommended maintenance intervals are approximate figures and based on average operating conditions. Deviate from the intervals, however, only when conditions require that they be **shortened.**

Lubrication Fittings Location and Description

The following information includes a brief description of the function, the location and the recommended intervals for lubrication of the grease fittings on the CRUZ-AIR. These fittings are the lifeblood of your machine, and every effort should be made to see that they are lubricated at the proper time.

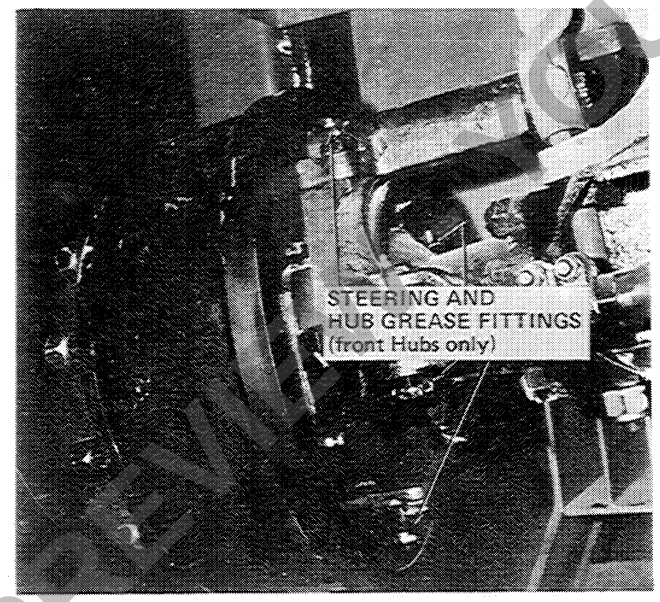


Figure B1. Steering Knuckle and Rzeppa Joint Lube Fitting Locations.

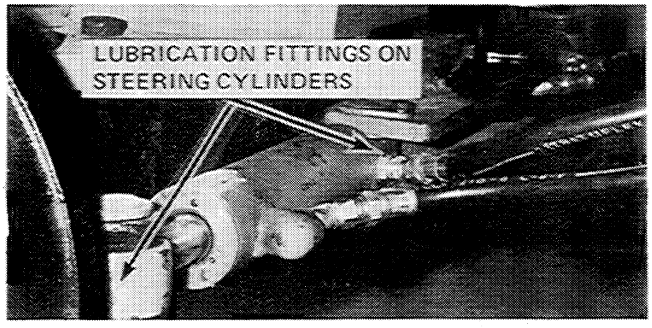


Figure B2. Location of Lube Fittings on Steering Cylinders and Linkage.

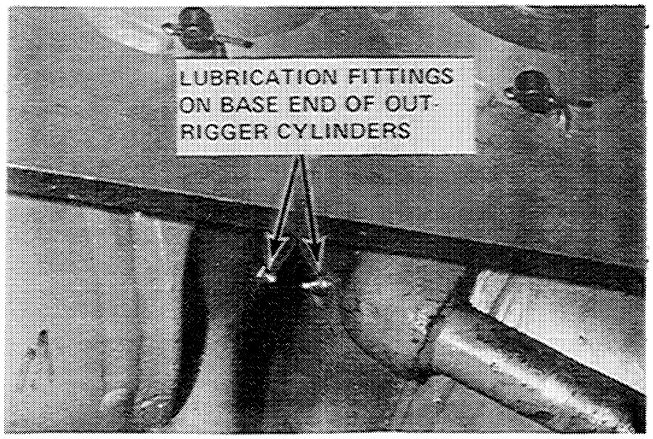


Figure B3. Location of Lube Fittings on Base End of Outrigger Cylinders.

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ELECTRICAL

CONNECTS TO MAIN
LOWER WIRING HARNESS
SEE PAGE C4

1. Wiring Harness (engine)
2. Torque Converter Sending Unit (pressure to gauge on shroud)
3. Torque Converter Sending Unit (pressure to light in cab)
4. Engine Temperature Sending Unit (to gauge on shroud)
5. Engine Pressure Sending Unit (to light in cab)
6. Engine Temperature Sending Unit (to light in cab)
7. Voltage Regulator
8. Shut-off Control Solenoid
9. Alternator
10. Wiring Harness (alternator)
11. Engine Temperature Sending Unit
12. Engine Oil Pressure Sending Unit
13. Starter Solenoid Relay
14. Torque Converter Temperature Sending Unit (to light in cab)
15. Cold Weather Starter Kit

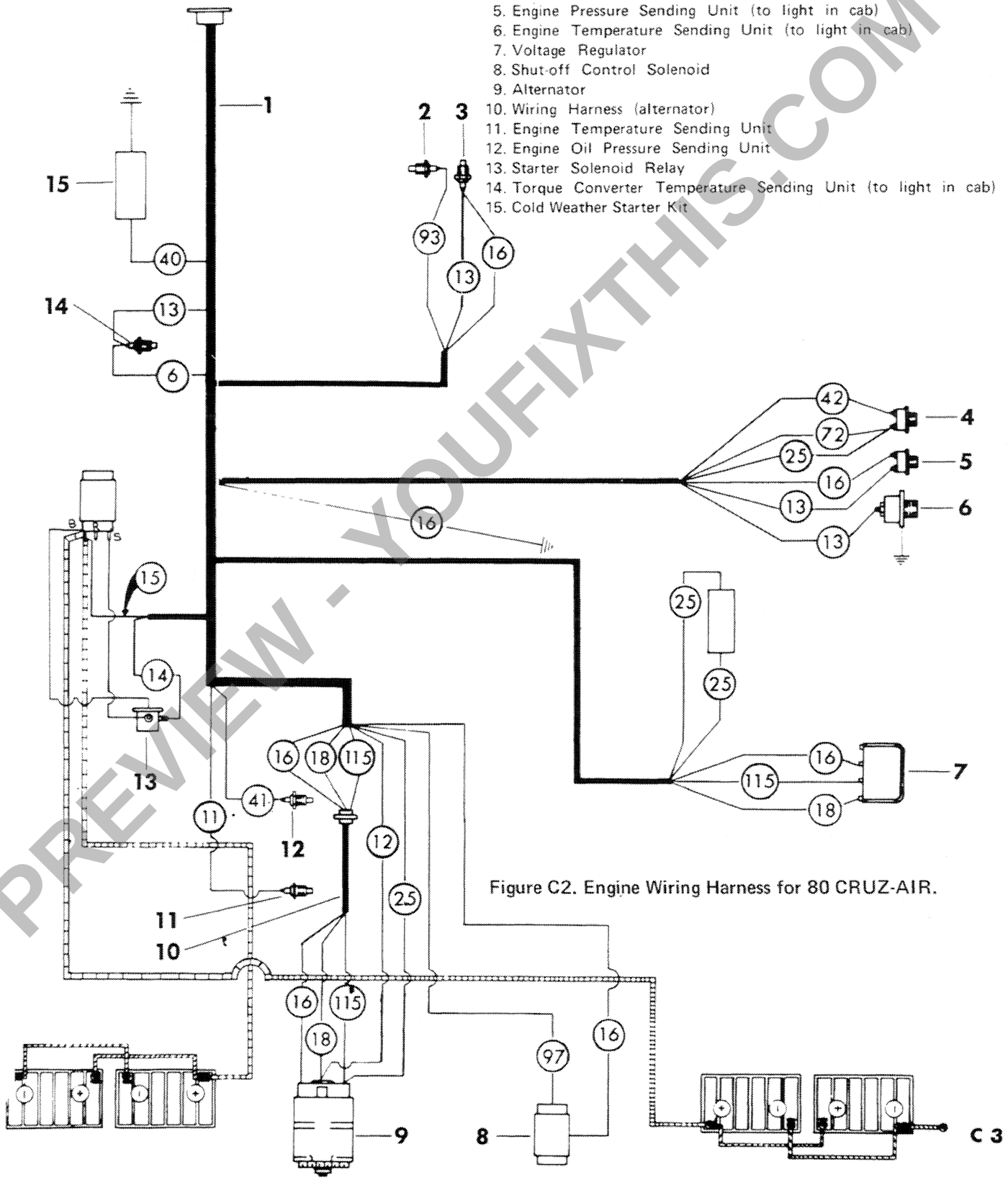


Figure C2. Engine Wiring Harness for 80 CRUZ-AIR.

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HYDRAULIC SYSTEM

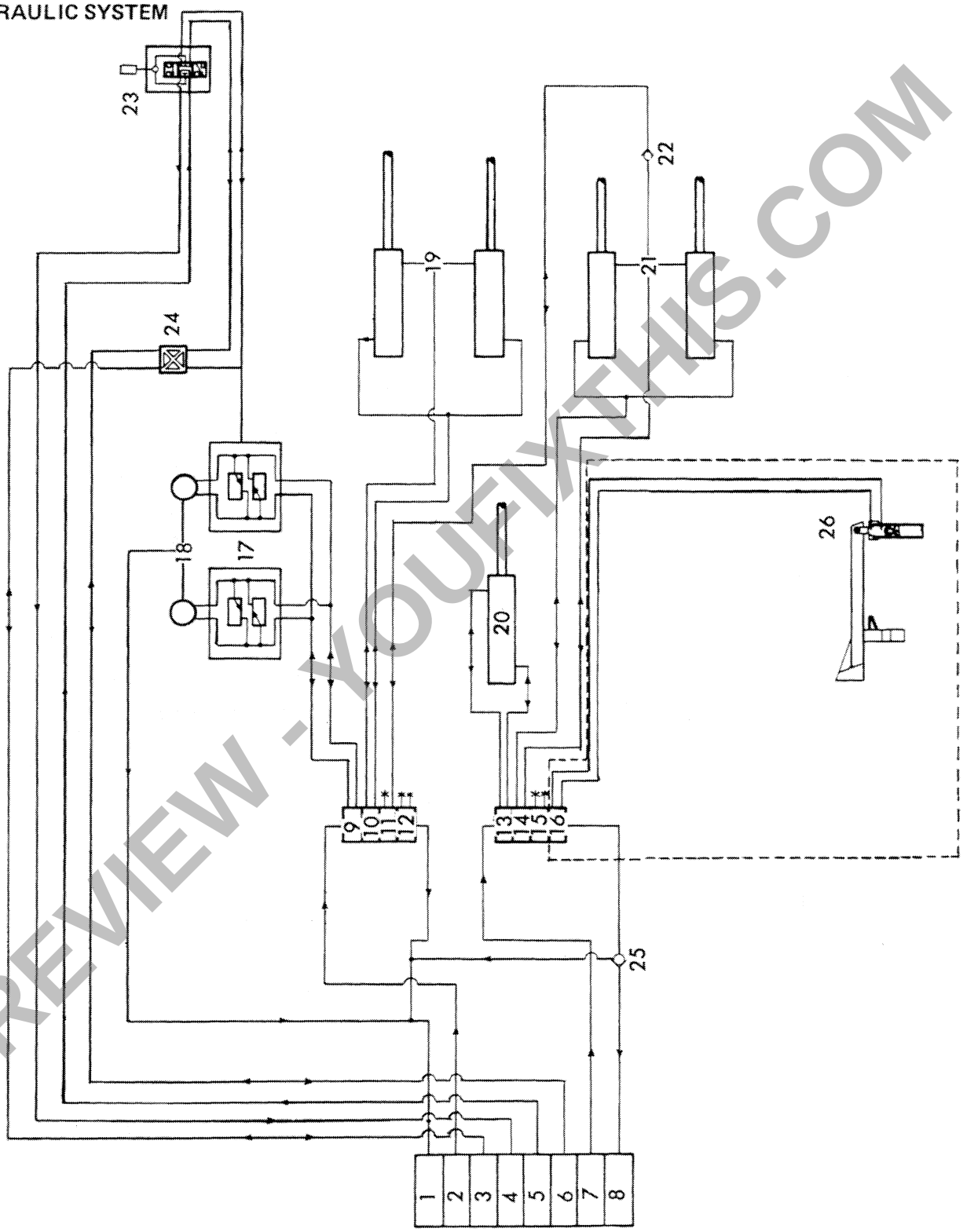


Figure H27. Upper Hydraulic Schematic

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Tighten packing gland until packings start to draw up, but don't overtighten. DO NOT COMPLETELY TIGHTEN PACKING GLAND until cylinder has been completely filled with hydraulic oil.

Install cylinder on machine, refill hydraulic system (if drained) and work the cylinder with packing relatively loose until it is saturated with oil.

Tighten packing gland (while working cylinder) one turn at a time until a thin film of oil appears on rod when extended.

note

Overtightening packing gland will lead to "drying out" and shrinking of chevron packing, which in turn will lead to a serious leakage problem.
If overtight wiper seal and packing wipe piston completely dry, lubrication will stop and serious damage to cylinder rod and body will result.

GLANDS AND HEADS HAVE BEEN TORN OUT OF CYLINDERS BY OVERTIGHTENING AND "DRIED UP" CYLINDER HEAD PACKING.

If you do not intend to install cylinder on machine immediately after overhaul, collapse it until rod is completely retracted into cylinder and plug ports to keep out dirt.

TOLERANCES IN HYDRAULIC CYLINDERS MUST BE EXTREMELY CLOSE.

For this reason, use only genuine DROTT repair parts and order carefully to be sure of getting the right part.

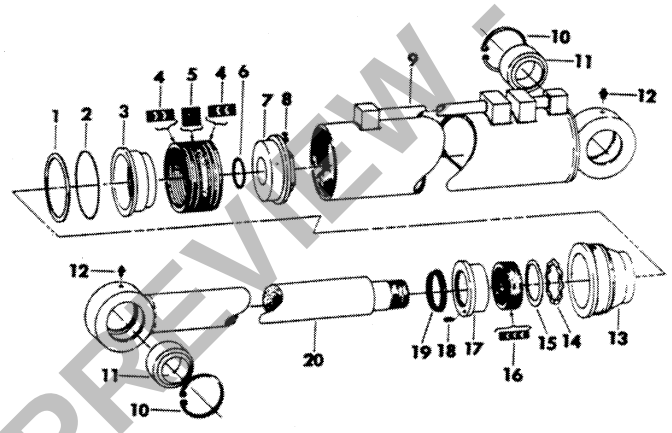


Figure H22. Tool and Crowd Cylinder
7" Bore x 52.50" Stroke - used for all Crowd Cylinders and for Tool Cylinders with Serial Numbers 100 thru 115.
8" Bore x 52.50" Stroke - used for Tool Cylinders with Serial Number 116 and up.

1. BACK UP RING
2. "O" RING
3. TOP OF PISTON
4. "V" RING PACKING
5. PISTON PACKING
6. "O" RING
7. BASE OF PISTON
8. SET SCREW
9. CYLINDER TUBE
10. SNAP RING
11. BUSHING
12. GREASE FITTING
13. CYLINDER HEAD
14. WASHER
15. WASHER
16. "V" RING PACKING
17. PACKING FLANGE
18. SET SCREW
19. OIL SEAL
20. PISTON ROD

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TABULATION OF TORQUE LIMITS - AXLES

CAP SCREWS AND STUD NUTS

LOCATION	DIAMETER	NO. THREADS	TORQUE — LB. FT. MIN.	TORQUE — LB. FT. MAX.
Pinion cage	3/8"	16	27	35
	1/2"	13	81	104
	9/16"	12	116	149
	5/8"	11	160	205
Carrier to housing	7/16"	14	53	67
	1/2"	20	92	118
	5/8"	18	185	235
	3/4"	16	320	415
Differential case bolt	1/2"	20	92	118
	9/16"	18	130	167
	5/8"	18	185	235
	3/4"	16	320	415
Pinion shaft	7/8"	20	175	250
	1"	20	300	400
	1 1/4"	18	700	900
	1 1/2"	18	800	1100
	1 1/2"	12	800	1100
	1 3/4"	12	800	1100
Differential bearing adjusting nut lock	5/16"	18	16	20
	1/2"	13	81	104

DIFFERENTIAL BEARING CAP CAP SCREWS OR STUD NUTS

(Earlier Axle Models Without Hardened Washers)

CAP SCREW OR STUD NUT DIAMETER	CAP SCREW OR COARSE STUD THREAD	STUD NUT OR FINE THREAD	TORQUE — LB. FT. MIN.	TORQUE — LB. FT. MAX.
5/8"	11	18	130	170
3/4"	10	16	230	300
7/8"	9	14	345	440
7/8"	14	14	380	485
1"	14	14	380	485

DIFFERENTIAL BEARING CAP CAP SCREWS OR STUD NUTS

(Later Axle Models Employing Hardened Washers)

CAP SCREW OR STUD NUT DIAMETER	CAP SCREW OR COARSE STUD THREAD	STUD NUT OR FINE THREAD	TORQUE — LB. FT. MIN.	TORQUE — LB. FT. MAX.
5/8"	11	18	160	205
3/4"	10	16	290	370
7/8"	9	14	470	595
7/8"	14	14	510	655
1"	14	14	580	745

Torques given apply to parts coated with machine oil; for dry (or "as received") parts increase torques 10%; for parts coated with multi-purpose gear oil decrease torques 10%. Nuts on studs to use same torque as for driving the stud.

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TROUBLE SHOOTING SHIFT LINKAGE (CONT'D)

PROBLEM	PROBABLE CAUSE	REMEDY
Won't shift from High to Low or Vice-Versa	Air pressure not up to operating psi.	Wait for pressure to build up to 60 psi.
	Slave cylinder malfunctioning	Check cylinder
	Control valve in cab not operating	Check valve
	Leak in swivel	Locate leak, repair or replace swivel
	Compressor not functioning	Check V-belts and compressor out pressure
	Leak in air lines or connections	Locate leak and repair or replace fitting
	Reservoir leaking	Locate leak, repair or replace
	Air check valves on Reservoir not letting air escape or enter	Check valve for proper installation and operation
Forward-Reverse, Gear Select inoperative	Shift rod broken in swivel	Inspect rods
	Cable connecting control to rod separated	Inspect cable
	Valve on transmission malfunctioning	Inspect valve, check clutch pressures

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THIS SAFETY ALERT SYMBOL INDICATES IMPORTANT SAFETY MESSAGES IN THIS MANUAL. WHEN YOU SEE THIS SYMBOL, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY OR DEATH.

M171B

If Safety Decals on this machine use the words **Danger, Warning or Caution,** which are defined as follows:

- **DANGER:** Indicates an immediate hazardous situation which if not avoided, will result in death or serious injury. The color associated with Danger is RED.
- **WARNING:** Indicates an potentially hazardous situation which if not avoided, will result in serious injury. The color associated with Warning is ORANGE.
- **CAUTION:** Indicates an potentially hazardous situation which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The color associated with Caution is YELLOW.

If Safety Decals on this machine are ISO two panel Pictorial, decals are defined as follows:

- The first panel indicates the nature of the hazard.
- The second panel indicates the appropriate avoidance of the hazard.
- Background color is YELLOW.
- Prohibition symbols such as  and  if used, are RED.

WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE INJURY OR DEATH. BEFORE USING THIS MACHINE, MAKE CERTAIN THAT EVERY OPERATOR:

- Is instructed in safe and proper use of the machine.
- Reads and understands the Manual(s) pertaining to the machine.
- Reads and understands ALL Safety Decals on the machine.
- Clears the area of other persons.
- Learns and practices safe use of machine controls in a safe, clear area before operating this machine on a job site.

It is your responsibility to observe pertinent laws and regulations and follow Case Corporation instructions on machine operation and maintenance.

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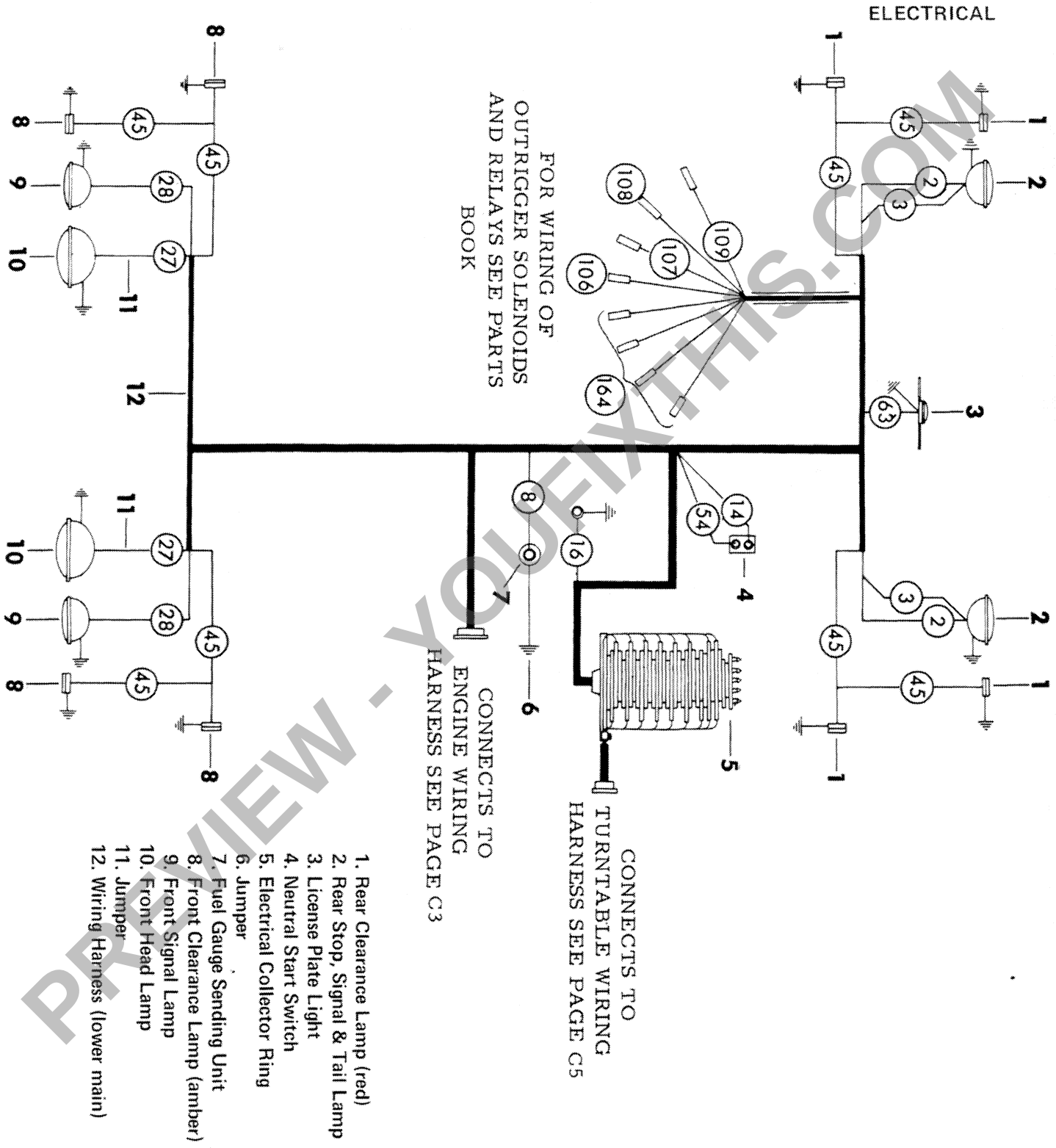


Figure C3. Lower Main Wiring Harness for 80 CRUZ- AIR'

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SWING MECHANISM

Step 5. Shim under bolt holes. Shim under Positions 1 and 2 (see Welding Pattern, Figure F3) in one place. Shim under Position 3 in two places.

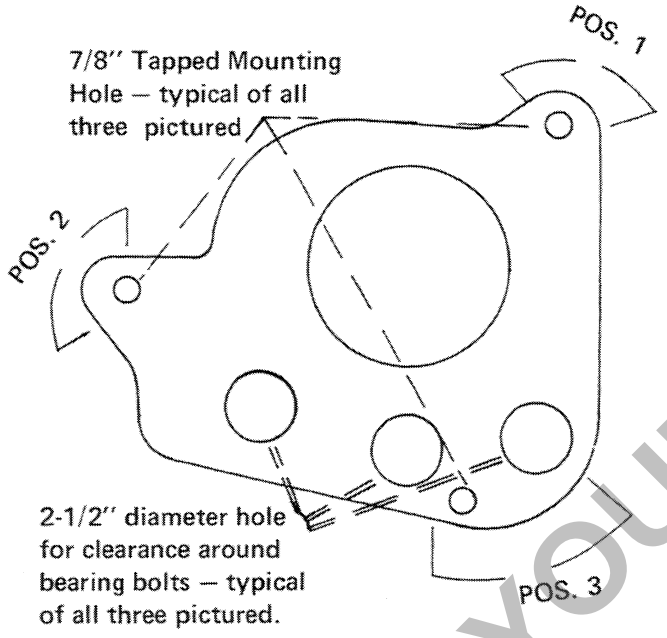


Figure F3. Diagram of Mounting Plate showing welding locations and specifications.

note

No more than .050" shimming is allowable between the Turntable Deck and the Mounting Plate. If more than .050" shim must be used to fill space, Turntable Deck must be ground or the Swing Reducer Mounting Plate must be machined.

Length of Weld:
Pos. 1: 5"
Pos. 2: 5-3/4"
Pos. 3: 6-1/4"

note

Position three's weld should not cover the area over the turntable bearing.

Weld Size: 3/8"
Make three passes with a 7028 Rod.

note

Edge from Pos. 1 to Pos. 3 to be parallel to Centerline for reducer less brake, and perpendicular to Centerline for reducer with brake. The Reducer Mounting Plate is to be centered over hole in the turntable.

Step 6. Tack weld in 1-2-3 sequence.

Step 7. Shim under shoes of Upper Locating Fixture at bolt hole locations. Distance must not exceed .015". If more than that, original shimming under Mounting Plate is wrong. Burn off tack welds and re-shim.

Step 8. If distance is less than .015", finish welding Plate to Deck. Refer to Welding Pattern, Figure F3. for size of welds, thicknesses and special instructions.

Step 9. Check clearance under locating shoes after Plate is completely welded in place. Shim where necessary.

Step 10. Place Swing Reducer on Plate. Shim as required. Check clearance again. Torque down to 465 ft./lbs. ± 25.

note

Clearance must not exceed .015".

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TROUBLE SHOOTING CHARTS FOR 80 CRUZ-AIR

TROUBLE SHOOTING PUMPS — HYDRAULIC SYSTEM

TROUBLE	PROBABLE CAUSE	POSSIBLE REMEDY
SHORT LIFE OF PUMP BEARINGS SHAFTS' WEAR PLATES, ETC.	A. Dirty Oil	A. System should be drained, flushed and refilled. Breathers, seals and gaskets must be kept in good condition.
	B. Wrong oil	B. Use proper viscosity oil.
	C. Incorrect pump assembly	C. Disassemble and correct
PUMP TAKES TOO LONG TO RESPOND OR FAILS TO RESPOND	A. Low oil supply	A. Fill to proper level
	B. Dirty oil screens	B. Clean screens
	C. Insufficient relief valve pressure	C. Reset to correct pressure setting using gauge (2500 PSI)
	D. Insufficient dump valve pressure	D. Reset to correct pressure using gauge (2150 PSI)
	E. Pump worn or damaged	E. Inspect, repair or replace
	F. Bearing carrier installed backwards (through port on high pressure side)	F. Disassemble pump and reassemble with through port on low pressure side.
OIL LEAKAGE AT SHAFT END OF PUMP	A. Worn or damaged seal on shaft retainer	A. Replace "O" ring, check seal and replace if necessary
OIL LEAKAGE BETWEEN PUMP SECTIONS	A. Defective "O" rings between sections	A. Replace as necessary

TROUBLE SHOOTING HYDRAULIC SYSTEM

NOISY OPERATION	A. Air in system	A. Bleed hydraulic system
	B. Insufficient oil supply	B. Check level of oil in oil tank, and oil if necessary
	C. Pump bearings worn out	C. Replace
	D. Pump and coupling worn out	D. Replace
	E. Partially blocked pump inlet	E. Drain hydraulic system and clean screens
	F. Pump squealing caused by A, B & E	F. Either A, B, or E

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