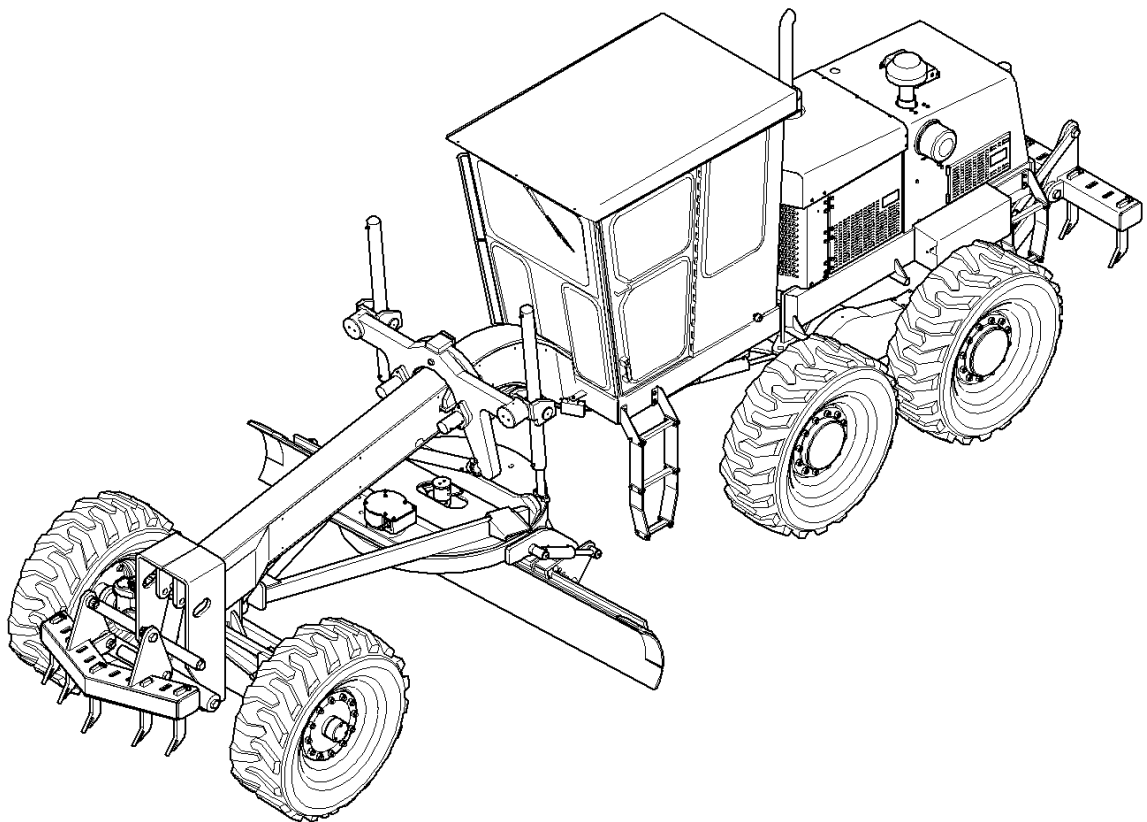




OPERATIONS, SERVICE AND PARTS MANUAL



785 MOTOR GRADER MANUAL

Manual No. 985480

LIMITED WARRANTY POLICY AND PROCEDURES

WARRANTY

1. If a defect in material or workmanship is found and the authorized dealer is notified during the warranty period, LeeBoy will repair or replace any part or component of the unit or part that fails to conform to the warranty during the warranty period.
2. The warranty date will begin upon the completion of the warranty form by the initial customer and will expire after twelve (12) months have passed. The Warranty Card should be filled out within (10) days of delivery of the unit.
3. Engines are warranted by their manufacturers and may have warranty coverage that differs from that of LeeBoy.
4. Replacement parts furnished by LeeBoy are covered for the remainder of the warranty period applicable to the unit or component in which such parts are installed.
5. LeeBoy has the right to repair any component or part before replacing it with a new part.
6. All new replacement parts purchased by a LeeBoy dealer will carry a six (6) month warranty. Remanufactured parts purchased by a LeeBoy dealer will carry a ninety (90) day warranty.

ITEMS NOT COVERED

LeeBoy is not responsible for the following:

1. Charges for travel time, mileage, or overtime.
2. Charges related to transporting the product to and from the place at which warranty work is performed.
3. Airfreight charges related to transporting repair parts to the place at which warranty work is performed.
4. All used units or used parts of any kind.
5. Repairs due to normal wear and tear, or brought about by abuse or lack of maintenance of the equipment, except for premature failures, conveyor chains, polytrack pads, and track rails.

6. Attachments not manufactured or installed by LeeBoy.
7. Liability for incidental or consequential damages of any type including, but not limited to lost profits or expenses of acquiring replacement equipment.
8. Miscellaneous charges.

LIMITATIONS

LeeBoy has no obligation under this warranty for:

1. Any defects caused by misuse, misapplication, negligence, accident or failure to maintain or use in accordance with the most current operating instructions.
2. Unauthorized alterations.
3. Defects or failures caused by any replacement parts or attachments not manufactured by or approved by LeeBoy.
4. Failure to conduct normal maintenance and operating service, including without limitation, providing lubricants, coolant, fuel, tune-ups, inspections or adjustments.
5. Unreasonable delay, as established by LeeBoy, in making the applicable units or parts available upon notification of a service notice ordered by LeeBoy.
6. The warranty responsibility on all engines rests with the respective manufacturer.
7. LeeBoy may have support agreements with some engine manufacturers for warranty and parts support.

OTHER WARRANTIES

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESSED STATUTORY AND IMPLIED WARRANTIES APPLICABLE TO UNITS ENGINES, OR PARTS WITHOUT LIMITATION, ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE OR PURPOSE. IN NO EVENT, WHETHER AS A RESULT OF BREACH OF CONTRACT OR WARRANTY, OR ALLEGED NEGLIGENCE OR LIABILITY WITHOUT FAULT, SHALL LEEBOY BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOSS OF PROFIT OR REVENUE, COST OF CAPITAL, COST OF SUBSTITUTED EQUIPMENT, FACILITIES OR SERVICES DOWNTIME COSTS, LABOR COSTS OR CLAIMS OF CUSTOMERS, PURCHASERS OR LESSEES FOR SUCH DAMAGES.



USER'S REFERENCE GUIDE

DELIVERY DATE _____

UNIT SERIAL NUMBER _____

ENGINE TYPE _____

ENGINE NUMBER _____

DEALER'S NAME AND ADDRESS

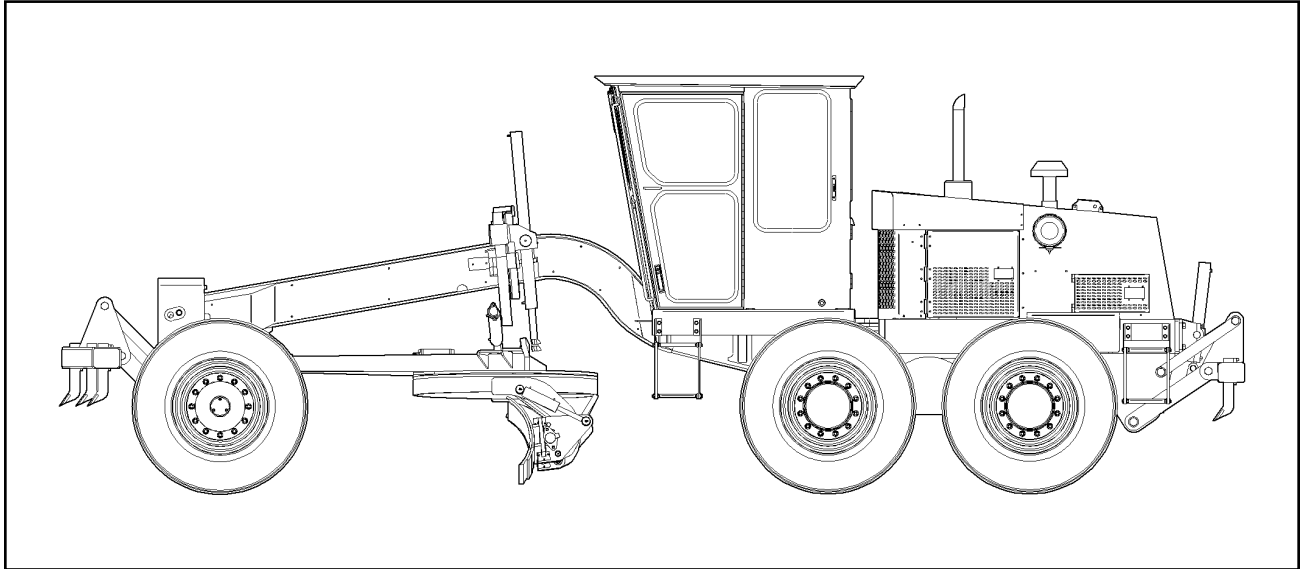
PHONE NUMBER _____

EQUIPMENT HOURS _____

SERVICE MANAGER _____

688 North Highway 16 • Denver, North Carolina 28037 • www.LeeBoy.com • (704) 966-3300

**MODEL 785 MOTOR GRADER
OPERATORS, MAINTENANCE AND PARTS MANUAL**



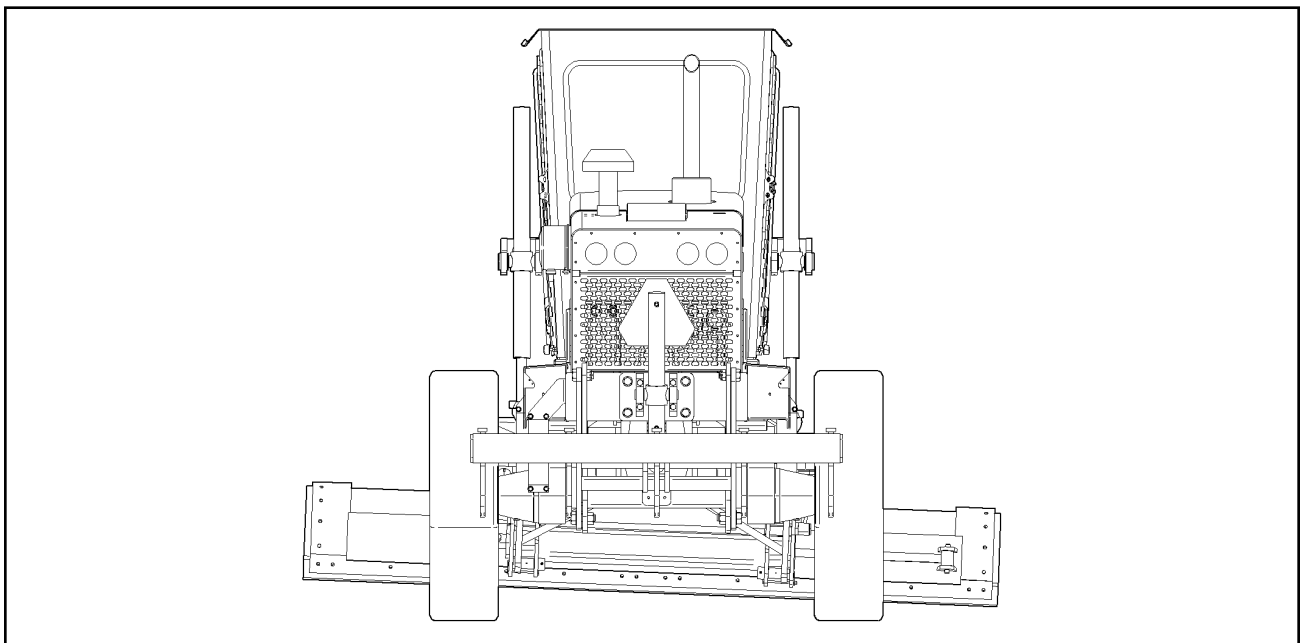
SIDE VIEW

This manual should be used with all related supplemental books, engine and transmission manuals, and parts books. Related Service Bulletins should be reviewed to provide information regarding some of the recent changes.

If any questions arise concerning this publication or others, contact your local

LeeBoy Distributor for the latest available information.

Contents of this manual are based on information in effect at the time of publication and are subject to change without notice.



REAR VIEW

IMPORTANT

SAFETY INSTRUCTIONS

This manual provides important information to familiarize you with safe operating and maintenance procedures. Even though you may be familiar with similar equipment, you **MUST** read and understand this manual before operating this unit.

Safety is everyone's business and is one of your primary concerns. Knowing the guidelines covered in the following paragraphs and in Section 1 will help

provide for your safety, for the safety of those around you, and for the motor grader's proper operation.

LOOK FOR THESE SYMBOLS WHICH POINT OUT ITEMS OF EXTREME IMPORTANCE TO YOU AND YOUR COWORKERS SAFETY. READ AND UNDERSTAND THOROUGHLY. HEED THE WARNINGS AND FOLLOW THE INSTRUCTIONS.

DANGER

YOU MUST FOLLOW ALL DANGER SAFETY NOTES. IF YOU DO NOT FOLLOW THE INSTRUCTIONS, YOUR MISTAKE MIGHT LIKELY RESULT IN VERY SERIOUS INJURY OR DEATH.

WARNING

WARNING safety notes must ALSO be followed. Your mistake might result in SERIOUS INJURY to yourself or others.

CAUTION

CAUTION safety notes are ALSO very important. They point out to you where your mistakes could cause PHYSICAL HARM to you or others, or damage to the machine.

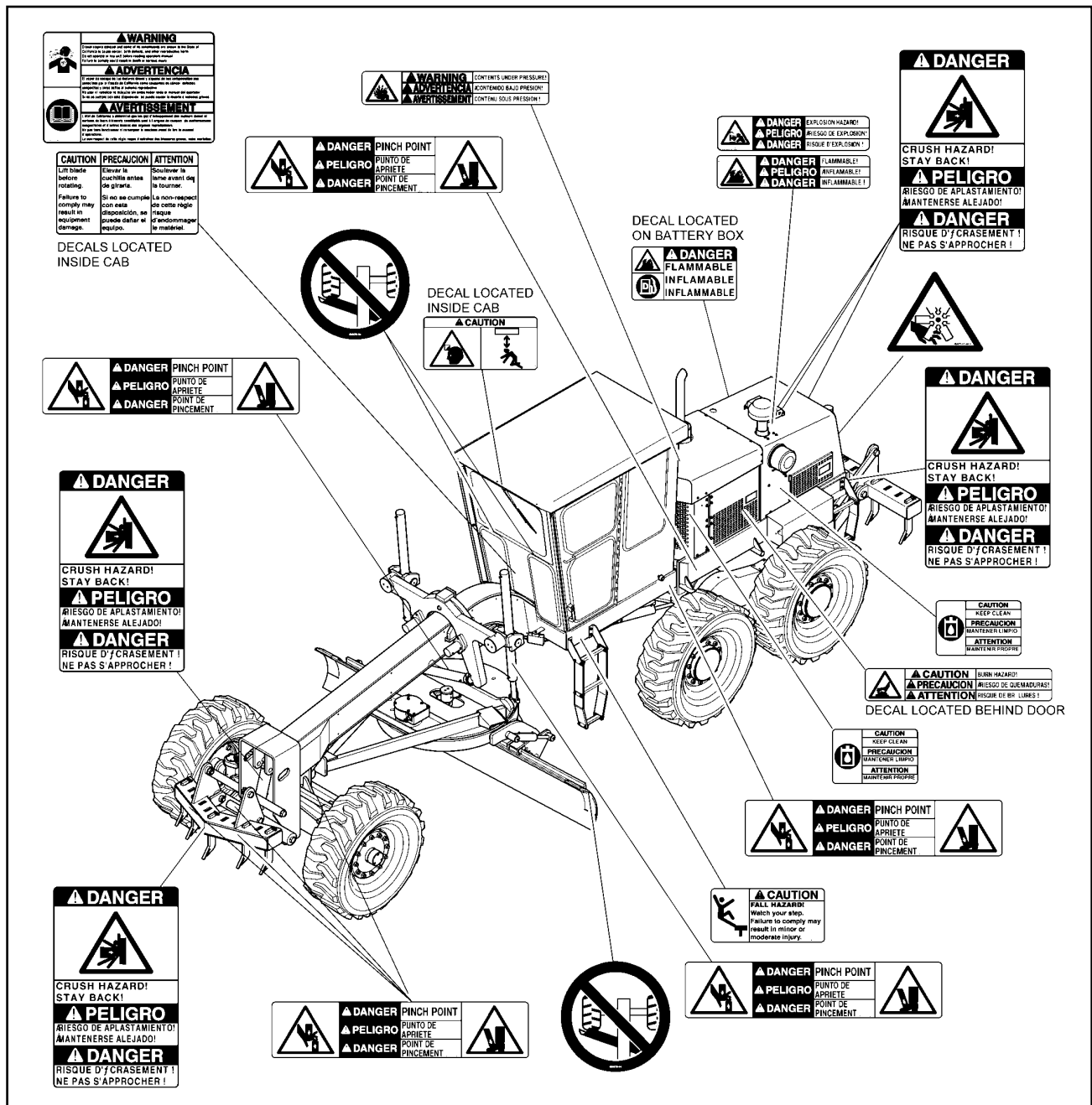
SAFETY PRECAUTIONS

If your motor grader has been repainted, it is extremely important that all the decals referring to cautions warnings and danger be replaced in their proper locations. The illustrations on this page will aid you in determining the proper locations. However for additional help, you should refer to the parts listing in the parts section of this manual and note the description column.

Under this column a description on location is provided for each decal. If you still need more explicit instructions, contact your dealer.

NOTE

It is the responsibility of the owner and operator to make sure that all decals are readable and located on motor grader as designated by the manufacturer.



785 DECALS and DECAL LOCATIONS

PRE-START INSPECTION

INSPECT machine. Have any malfunctioning, broken or missing parts corrected or replaced before using. Hydraulic hoses should be checked daily for wear and leaks. Replace if damaged.

CHECK that all the instruction and safety labels are in place and readable. These are as important as any other equipment on the machine.

READ and FOLLOW all instruction decals.

WEAR OSHA required safety equipment when running the motor grader.

FILL the fuel tank with the engine off. Never fill fuel tank near an open flame, when smoking.

Make sure all covers and guards are in place.

OPERATING SAFETY

ALWAYS make sure no person or object is in your line of travel BEFORE starting.

WORK slowly in tight areas.

DO NOT run engine in a closed building for long periods of time.

AVOID steep hills if possible.

ALWAYS look BEFORE changing your direction of travel.

AVOID leaving engine running without operator present.

ALWAYS wear your seatbelt.

NEVER attempt to jump clear of a tipping machine. FATAL crushing injuries will result.

BEFORE moving machine, check that all persons are clear.

When a signal person is used, BE SURE the person is in view at all times.

To prevent rollaway accidents, MAKE SURE machine is properly secured before leaving operator's seat.

NEVER attempt to mount or stop a moving machine.

USE handholds and steps when getting on or off machine. Be CAREFUL of slippery conditions.

STOPPING SAFETY

ALWAYS park the motor grader on solid, level ground in low range. If this is not possible, always park the motor grader at a right angle to the slope.

USE proper flags, barriers and warning devices especially when parking in areas of traffic.

DRIVING SAFETY

Know location of all bystanders before moving machine.

BE SURE backup warning system is properly operating.

USE a signal person when moving the machine.

AVOID power line, serious injury or death may result.

KEEP riders off the machine.

MAINTENANCE SAFETY

NEVER work on the motor grader with the engine running.

NEVER fill the fuel tank with the engine running.

DO NOT change the engine governor settings.

ALWAYS replace damaged or lost decals.

DISCONNECT battery cables when working on the electrical system or when welding on the unit.

IF battery needs a charge, be sure battery charger is off when making connections.

BE SURE the correct battery polarity is observed (negative (-) to negative (-) and positive (+) to positive (+), when connecting a battery charger or jumper cable.

CLEAN trash from machine. Keep engine compartment and operator's station clean.

WARN others of Service Work. Before performing any machine work attach a "DO NOT OPERATE" tag to steering wheel.

UNDERSTAND the service procedure before beginning work.

ALWAYS lower attachments and implements to the ground before servicing. If work is required on a lifted machine or attachment, properly SUPPORT machine attachment or implement before working on it.



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Section 1

INTRODUCTION



GENERAL INFORMATION

This manual contains Specification information, Controls and Operating Procedures, Maintenance and Repair Procedures and Parts Lists for the 785 Motor Grader.

SPECIFICATIONS

Refer to Section 2 - SPECIFICATIONS in this manual for all major system specifications and for typical torque value tables.

CONTROLS AND OPERATING INSTRUCTIONS

Refer to Section 3 - OPERATION.

The operator of this equipment should READ, UNDERSTAND, and FOLLOW the operating instructions, Cautions, and Warnings provided in the front of this manual and in the OPERATION section.

WARNING: Do not attempt to operate the 785 Motor Grader unless fully trained in the machine operation, only authorized personnel should operate the Model 785 Motor Grader. All instructions provided in this manual and on the machine operating and warning decals must be followed to prevent damage to the equipment and/or injury to operating personnel.



MAINTENANCE PROCEDURES

Refer to Section 4 - MAINTENANCE in this manual for all maintenance and repair procedures.

CAUTION: All maintenance instructions provided in this manual should be followed to insure safety of the personnel performing the maintenance and to prevent damage to the machine.



NAMEPLATE

The Nameplate, Figure 1-1, contain the serial number and basic data used to identify the specific model on the Motor Grader.

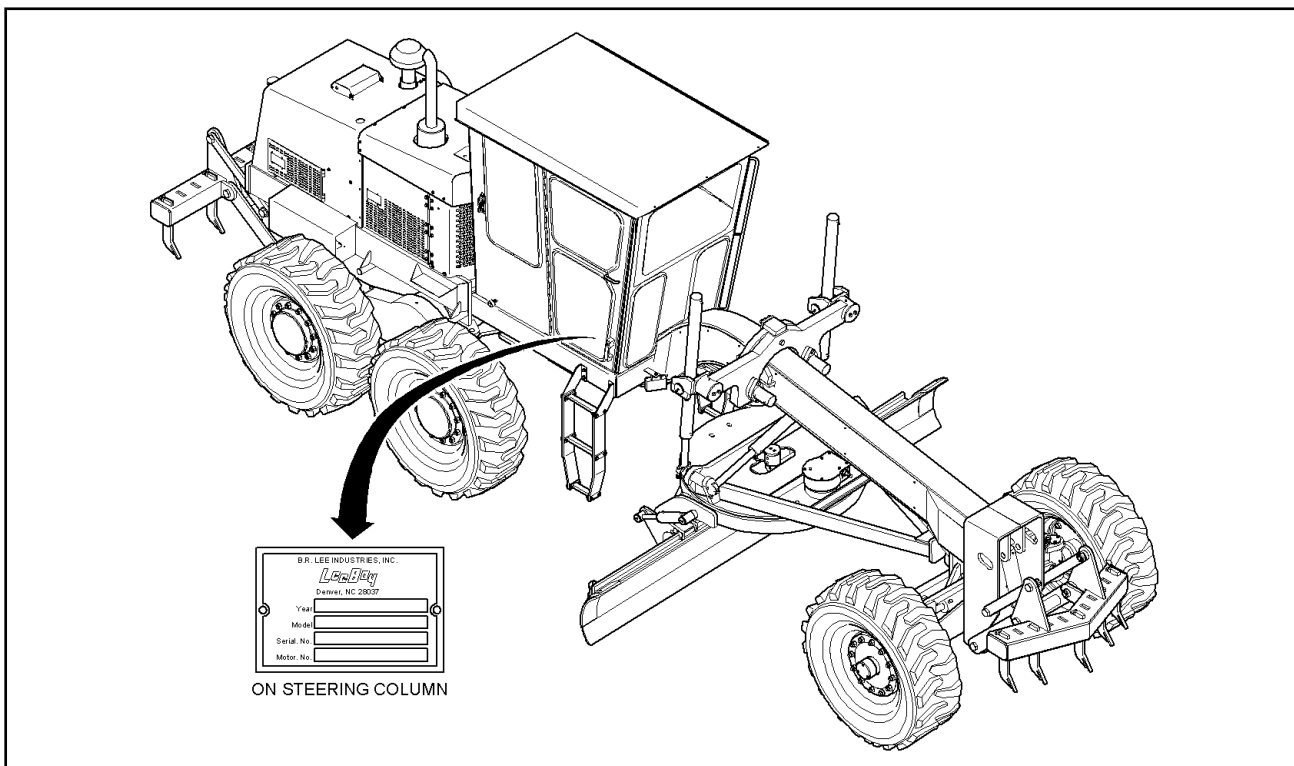


FIGURE 1-1. NAME PLATE



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Section 2

SPECIFICATIONS



GENERAL INFORMATION

The specifications provided in this section are applicable to the Model 785 Motor Grader. Included in this section are machine weights, dimensions, performance and torque values for both metric and standard inch fasteners.

TABLE 2-1. ENGINE SPECIFICATIONS

ITEM	CHARACTERISTIC
ENGINE	
Manufacturer	Cummins 3.9L
Horsepower	130 HP @2500 rpm
Type	Four Stroke Turbo Charged and Charge Air Cooled, In-Line 4 cylinder Diesel engine (Tier II Compliant)
Bore & Stroke	4.02 in. [102 mm] x 4.72 in. [120 mm]
Displacement	238 cu. In.
Compression Ratio	18:01
Maximum Net Torque	355 Pound/Foot @1500 rpm
Lubrication system	Pressure System With Full Flow Filter
Air Cleaner	Two Stage Dry Element
Engine Oil Type	10W-40
Capacity	10 Quarts [9.46 liter]
ENGINE COOLING SYSTEM	
Type	Liquid,
ENGINE FUEL	
Type Used	Diesel Fuel
Fuel Capacity	50 gallons [189.3 liters]
FUEL FILTER	
Spin-On	Cummins P/N 3991498/Fleetguard FS19616
In-Line	P/N 981937

TABLE 2-2. ELECTRICAL SPECIFICATIONS

ITEM	CHARACTERISTIC
BATTERY	
Number Per Machine	Two maintenance free
Ampere Hour Rating	950 CCA
Voltage	12 Volts
ALTERNATOR	
Voltage	12 Volt, negative ground
Output Amperage	100 Amps
Fan Belt Tension	Belt tension mechanism keeps serpentine belt under tension at all times
STARTER	
Manufacturer	(See Engine Starter plate)
Voltage and Type	12 Volt, negative ground

TABLE 2-3. DIMENSION SPECIFICATIONS (see Figure 2-1)

ITEM	SPECIFICATION
DIMENSIONS	
Overall Length	26 ft. [7.92 m]
Overall Length w/Rear mounted Scarifier	28 ft. [8.5 m]
Overall Height	10 ft. [3.0 m]
Overall Width	7 ft. [2.4 mm]
Wheelbase	17 ft. 4 in. [5.3 m]
Tandems	4 ft. 11 in. [1.5 m]
Weight Total	25,300 lbs. [11476 kg]
Front	7,800 lbs. [3538 kg]
Rear	17,700 lbs. [8029 kg]

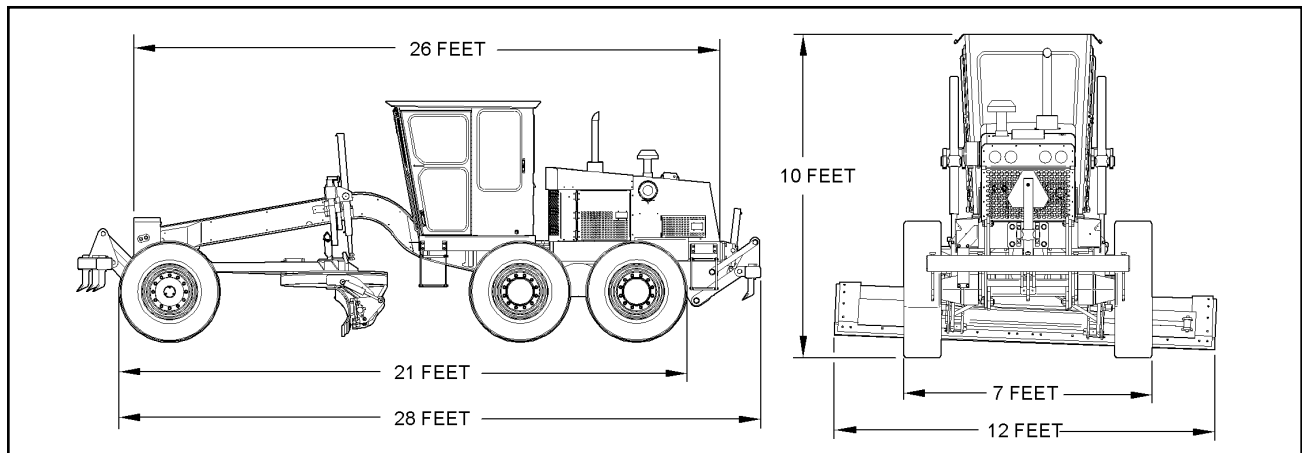


FIGURE 2-1. OUTLINE DIMENSIONAL DRAWING

TABLE 2-4. PERFORMANCE SPECIFICATIONS

ITEM	SPECIFICATION
SPEED	
Travel	0 - 21 mph [0 - 33.8 km/hr]
ARTICULATION	40° Total
WHEEL LEAN	17° each direction, 34° Total
STEERING	Hydraulic Power Steering
TURNING RADIUS	
Straight Frame	20 ft. [6.1 m] inside & 33 ft. [10.0 m] outside
Articulated	13 ft. [3.96 m] inside & 23.5 ft. [8.16 m] outside

Section 2

SPECIFICATIONS



TABLE 2-5. SCARIFIER

Item	Front	Rear
Spacing	4.5 in. [11.4 cm]	6 in. [15.2 cm]
Width	46 in. [116.8 cm]	73 in. [185.4 cm]
Lift Above Ground	17 in. [43.2 cm]	17 in. [43.2 cm]
Penetration	12 in. [30.5 cm]	12 in. [30.5 cm]

TABLE 2-6. MACHINE SYSTEM CAPACITY SPECIFICATIONS

ITEM	SPECIFICATION
Fuel	.50 Gallons [189.3 L]
Cooling System	.525 Gallons [19.9 L]
Crankcase	.25 Gallons [9.5 L]
Hydraulic Oil Reservoir w/oil cooler	.18 Gallons [68.1 L]

TABLE 2-7. MOLDBOARD

ITEM	SPECIFICATION
Length	.12 ft. 0 in. [3 m]
Height	.20 in. [0.5 m]
Cutting Edge Thickness	.0.625 in. [1.588 cm]
Cutting Edge Width	.6 in. [0.15 m]
Edge Tip Cutting Edge	.0.625 in. [1.588 cm]

TABLE 2-8. HYDRAULIC SYSTEM

ITEM	SPECIFICATION
Hydraulic Pumps	Pressure compensated load sensing proportional Hydraulic pump system
Hydraulic Oil Reservoir w/oil cooler	.18 Gallons [68.13 liters]
Hydraulic Pressure Control System	.2600 PSI (Operating) 325 PSI (Standby)

TABLE 2-9 TRANSMISSION

ITEM	SPECIFICATION
Type	Powershift, 6-speed forward/3-speed reverse

Shift Position	Forward Speed (mph)	Reverse Speed mph)
1	2.8	2.7
2	4.0	6.2
3	6.3	14.2
4	9.1	
5	14.7	
6	21.1	

TABLE 2-10. TYPES OF LUBRICANTS

ITEM	SPECIFICATION
Engine Oil	10W-40
Hydraulic Oil	AW #68

TABLE 2-11. TIRES

ITEM	SPECIFICATION
Size	13.00 x 24
Quantity	6

Section 2

SPECIFICATIONS



TABLE 2-12. TORQUE SPECIFICATIONS FOR STANDARD INCH FASTENERS

WARNING: The following Table lists torque values for standard hardware and are intended as a guide for average application involving typical stresses and machined surfaces. Values are based on physical limitations of clean, plated and lubricated hardware. In all cases, when an individual torque value is specified, it should be followed instead of values given in this table.



CAUTION: Replace original equipment with hardware of equal grade.



		CAPSCREWS: SAE GRADE 5				CAPSCREWS: SAE GRADE 8			
SIZE	THREAD	TORQUE FT. LBS.		TORQUE N•m		TORQUE FT. LBS.		TORQUE N•m	
		Dry	Lubed	Dry	Lubed	Dry	Lubed	Dry	Lubed
1/4	20 UNC	8	6	11	9	12	9	16	12
	28 UNF	10	7	13	10	14	10	19	14
5/16	18 UNC	17	13	24	18	25	18	33	25
	24 UNF	19	14	26	20	27	20	37	28
3/8	16 UNC	31	23	42	31	44	33	59	44
	24 UNF	35	26	47	36	49	37	67	50
7/16	14 UNC	49	37	67	50	70	52	95	71
	20 UNF	55	41	75	56	78	58	105	79
1/2	13 UNC	75	57	100	77	105	80	145	110
	20 UNF	85	64	115	86	120	90	165	120
9/16	12 UNC	110	82	145	110	155	115	210	155
	18 UNF	120	91	165	125	170	130	230	175
5/8	11 UNC	150	115	205	155	210	160	285	215
	18 UNF	170	130	230	175	240	180	325	245
3/4	10 UNC	265	200	360	270	375	280	510	380
	16 UNF	295	225	405	300	420	315	570	425
7/8	9 UNC	430	320	580	435	605	455	820	615
	14 UNF	475	355	640	480	670	500	905	680
1	8 UNC	645	485	875	655	910	680	1230	925
	14 NF	720	540	980	735	1020	765	1380	1040
1-1/8	7 UNC	795	595	1080	805	1290	965	1750	1310
	12 UNF	890	670	1210	905	1440	1080	1960	1470
1-1/4	7 UNC	1120	840	1520	1140	1820	1360	2460	1850
	12 UNF	1240	930	1680	1260	2010	1500	2730	2050
1-3/8	6 UNC	1470	1100	1990	1490	2380	1780	3230	2420
	12 UNF	1670	1250	2270	1700	2710	2040	3680	2760
1-1/2	6 UNC	1950	1460	2640	1980	3160	2370	4290	3210
	12 UNF	2190	1650	2970	2230	3560	2670	4820	3620

TABLE 2-13. TORQUE SPECIFICATIONS FOR METRIC FASTENERS

WARNING: The following Table lists torque values for standard hardware and are intended as a guide for average application involving typical stresses and machined surfaces. Values are based on physical limitations of clean, plated and lubricated hardware. In all cases, when an individual torque value is specified, it should be followed instead of values given in this table.



CAUTION: Replace original equipment with hardware of equal grade.



NOMINAL SIZE & PITCH	CLASS 8.8 [GRADE 5 EQUIVALENT]				CLASS 10.9 [GRADE 8 EQUIVALENT]			
	TORQUE FT. LBS.		TORQUE N•m		TORQUE FT. LBS.		TORQUE N•m	
	Dry	Lubed	Dry	Lubed	Dry	Lubed	Dry	Lubed
M4 x 0.7	2.27	1.70	3.07	2.30	2.27	2.31	4.17	3.13
M5 x 0.8	4.58	3.43	6.20	4.65	6.22	4.67	8.43	6.33
M6 x 1	7.75	5.83	10.5	7.90	10.60	7.97	14.3	10.8
M8 x 1.25	18.89	14.17	25.6	19.2	18.95	19.26	34.8	26.1
M10 x 1.25	39.11	29.52	53.0	40.1	53.87	40.59	73.0	55.0
M12 x 1.75	64.94	48.71	88.0	66.0	88.56	66.42	120.0	90.0
M14 x 2	103.32	77.49	140.0	105.0	140.22	107.01	190.0	145.0
M16 x 2	162.36	121.77	220.0	165.0	221.40	166.05	300.0	225.0
M20 x 2.5	317.34	236.16	430.0	320.0	428.04	321.03	580.0	435.0
M24 x 3	516.12	409.59	740.0	555.0	754.38	557.19	1010.0	755.0
M27 x 3	797.04	597.78	1080.0	810.0	1084.86	811.80	1470.0	1100.0
M30 x 3.5	1084.86	811.80	1470.0	1100.0	1476.00	1107.00	2000.0	1500.0

Section 2 SPECIFICATIONS



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GENERAL INFORMATION

This section provides the Operating Instructions for the Model 785 Motor Grader.

It is important to read, understand, and follow all "Precautions, Operating Instructions and Warnings" written in this manual before starting or operating the machine.

DANGER: Failure to observe the "Precautions, Operating Instructions and Warnings" provided in this manual can cause serious injury or death. Only authorized personnel, who are fully trained in the machine operation, can operate the Model 785 Motor Grader.



This machine should be kept in good mechanical condition at all times.

WARNING: Do not operate a machine needing repair. Put an information tag on the instrument panel that says, "DO NOT OPERATE". Remove the key from the ignition switch. Repair all damage at once. Minor damage can result in major system failures.



OPERATING CONTROLS, INDICATORS, AND GAUGES

Operating controls for the Model 785 Motor Grader are shown in Figures 3-1 through 3-6 and listed in Tables 3-1 through 3-6.

WARNING: Do not start or operate the Model 785 Motor Grader before reading, understanding and following all information given in this section and shown on the machine. The operators must read and understand the function of all controls, indicators, and gauges before starting the engine. Serious injury or death can result if these procedures are not followed.



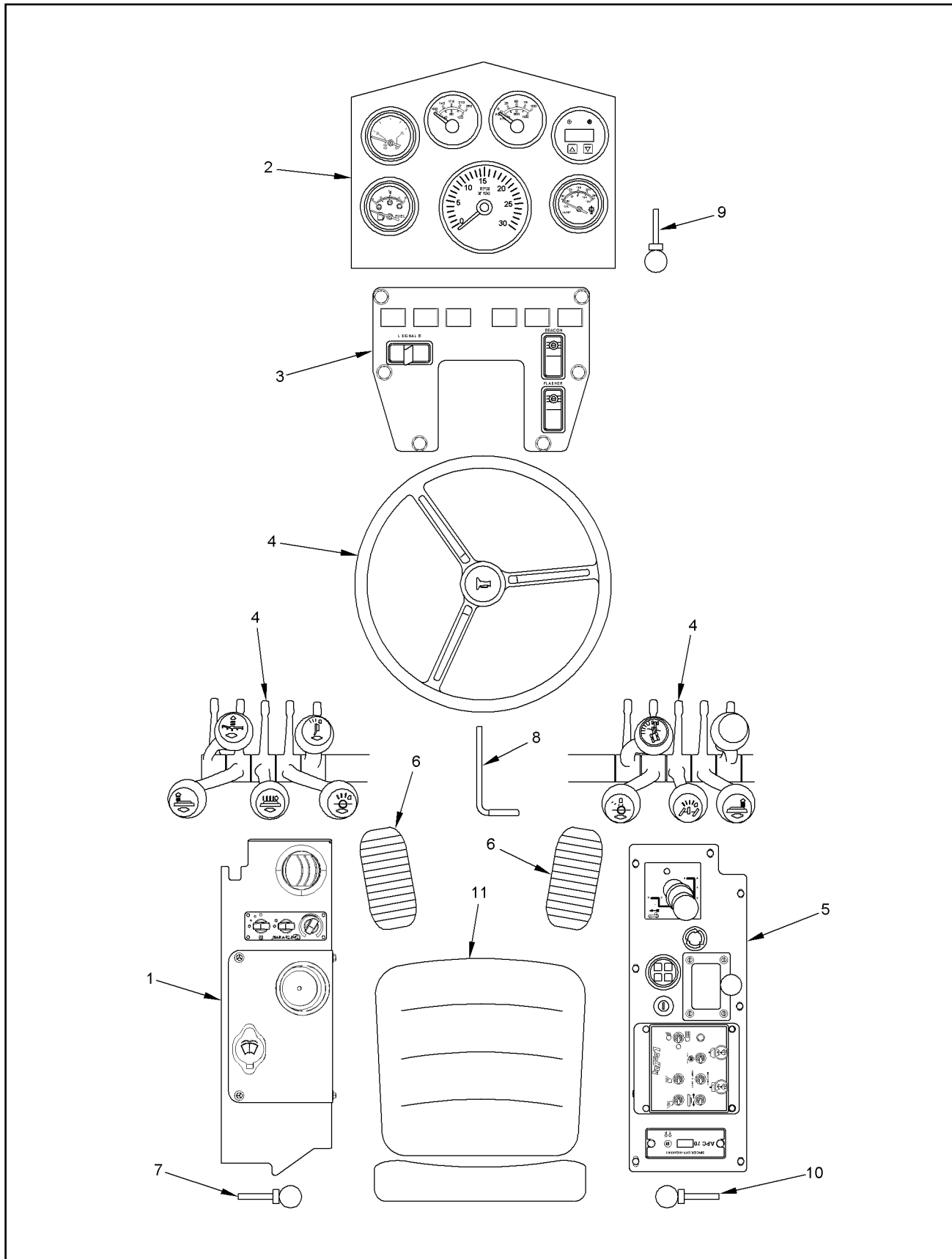


FIGURE 3-1. LOCATION OF CONTROL GROUPS

TABLE 3-1. OPERATING CONTROL GROUPS (see Figure 3-1)

ITEM NO.	NAME	TYPE	FUNCTION
1	Air Conditioning Control Panel		Provide control of the air conditioning unit. Also contains the windshield washer reservoir. See Figure 3-2 for detailed breakdown.
2	Gauges Panel		Contains seen gauges that monitor machine operation. See Figure 3-3 for detailed breakdown.
3	Warning Indicator and Light Switch Panel		Contains warning indicators and light switches. See Figure 3-4 for detailed breakdown.
4	Steering and Control Lever Group		Contains all grader control levers and the steering wheel. See Figure 3-5 for detailed breakdown.
5	Throttle, Brake, Transmission, Stop Controls and Main Switch Panel		Contains driving controls and switches. See Figure 3-6 for detailed breakdown.
6	Foot Pedals	Pedals	Pressing the left pedal down applies the service brake applies the service brake and declutches the transmission. Pressing the right pedal controls the throttle.
7	Left Door Release Lever	Lever	Holds left door open.
8	Dash Tilt Lever	Lever	Position dash for most comfortable operator position.
9	Front Windshield Latch	Lever	Allows front windshield to be opened.
10	Right Door Release Lever	Lever	Holds right door open.
11	Seat		Operator's seat.

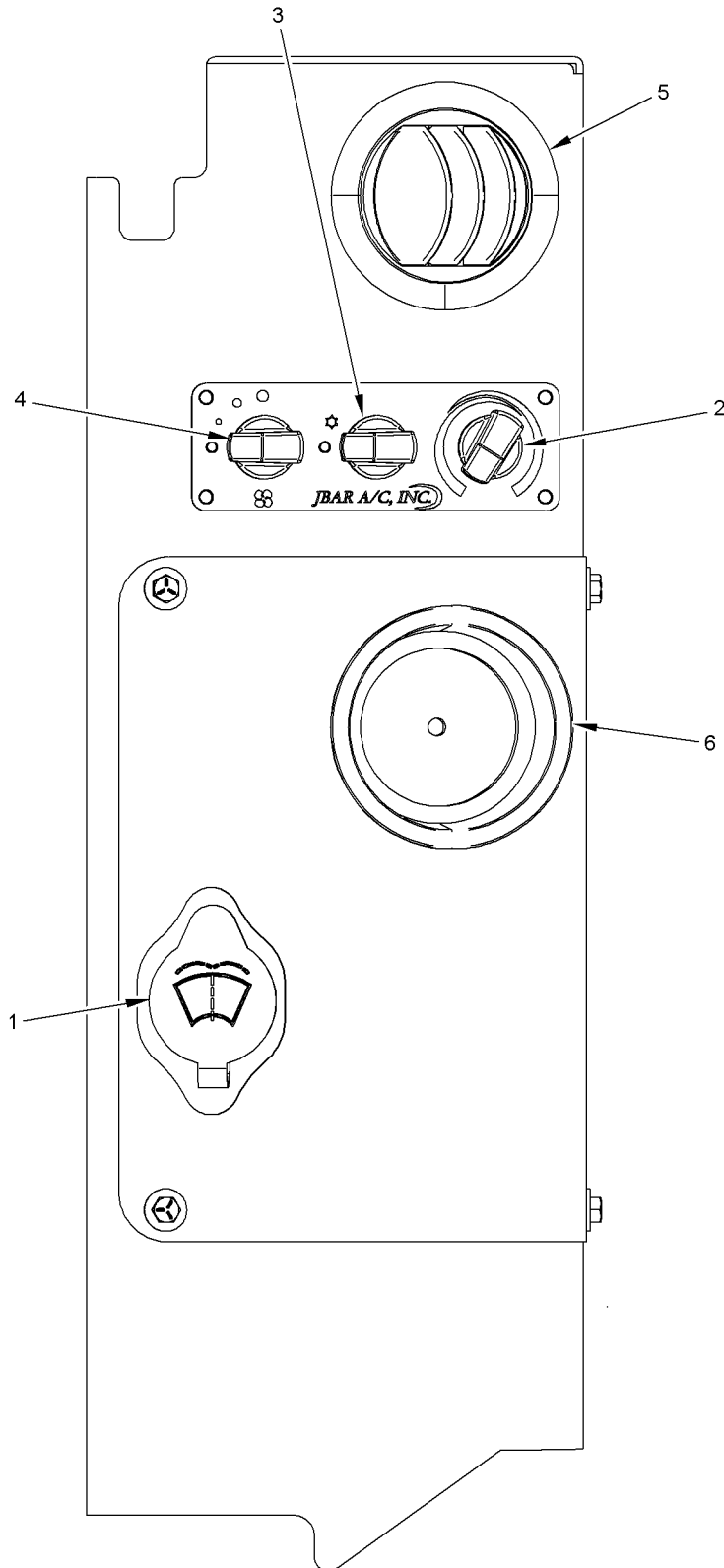


FIGURE 3-2. AIR CONDITIONING CONTROL PANEL

TABLE 3-2. AIR CONDITIONING CONTROL PANEL (see Figure 3-2)

ITEM NO.	NAME	TYPE	FUNCTION
1	Washer Fluid Reservoir		Provides storage for the windshield washer fluid.
2	TEMP Switch	Rotary switch	Adjusts the output temperature of the air conditioner.
3	A/C On/Off Switch	2-Position toggle switch	Turns air conditioner On or Off.
4	Fan Speed	Rotary switch	Adjust speed of blower fan.
5	Vent Opening		Output vent for the air conditioner output air.
6	Cup Holder		Hold drinking cup.

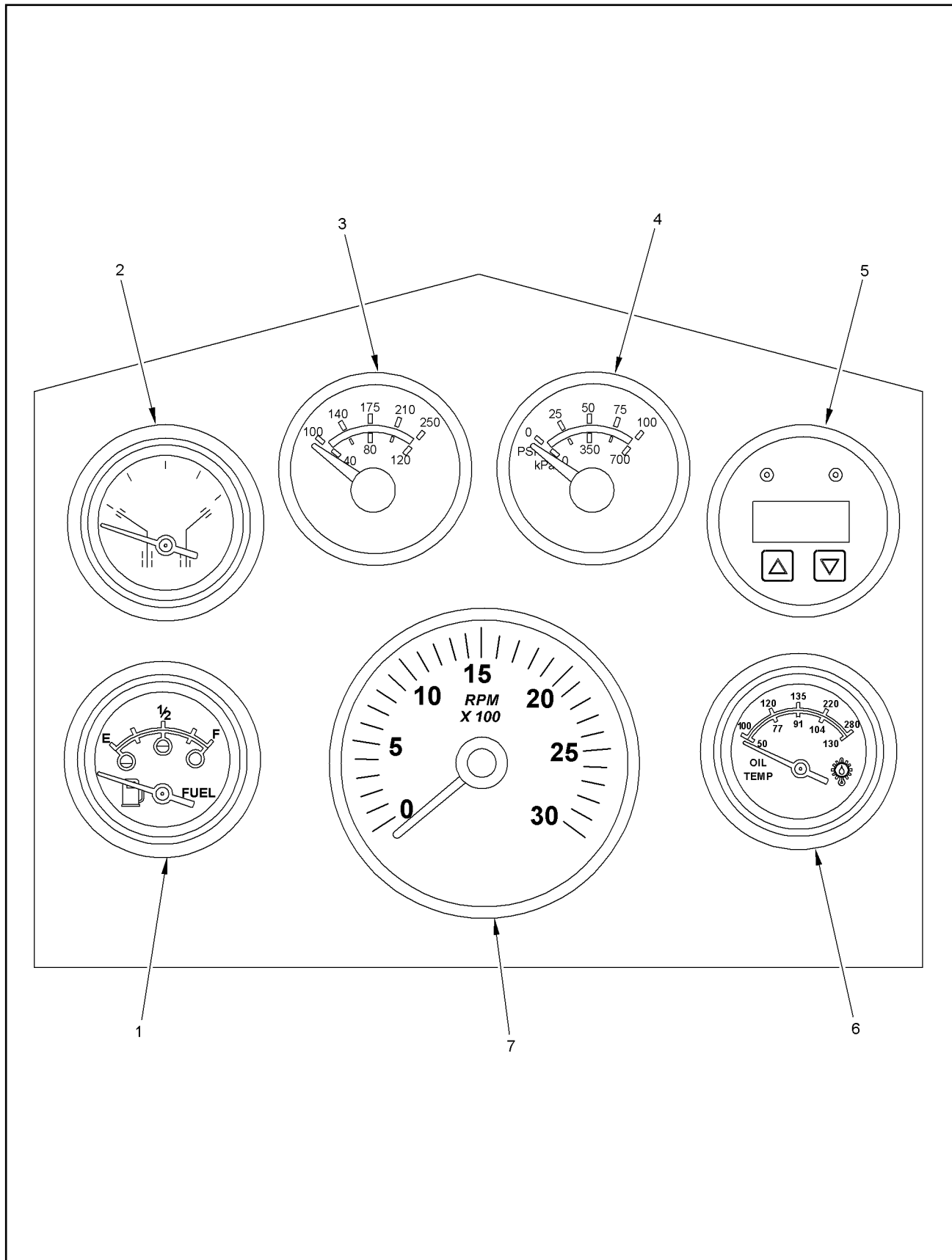


FIGURE 3-3. GAUGE PANEL

TABLE 3-3. GAUGE PANEL (see Figure 3-3)

ITEM NO.	NAME	TYPE	FUNCTION
1	FUEL Gauge	Gauge	Indicates the amount of fuel remaining in the tank.
2	Articulation Gauge	Gauge	Indicates degrees of articulation both left and right.
3	Engine Water Temperature Gauge	Gauge	Indicates the temperature of the water in the engine cooling system.
4	Engine Oil Pressure Gauge	Gauge	Indicates engine oil pressure.
5	Total Time Display Module		Indicates total operating time of the Engine.
6	Transmission Temperature Gauge	Gauge	Indicate the temperature of the transmission fluid.
7	Engine RPM Gauge		Indicate engine RPM.

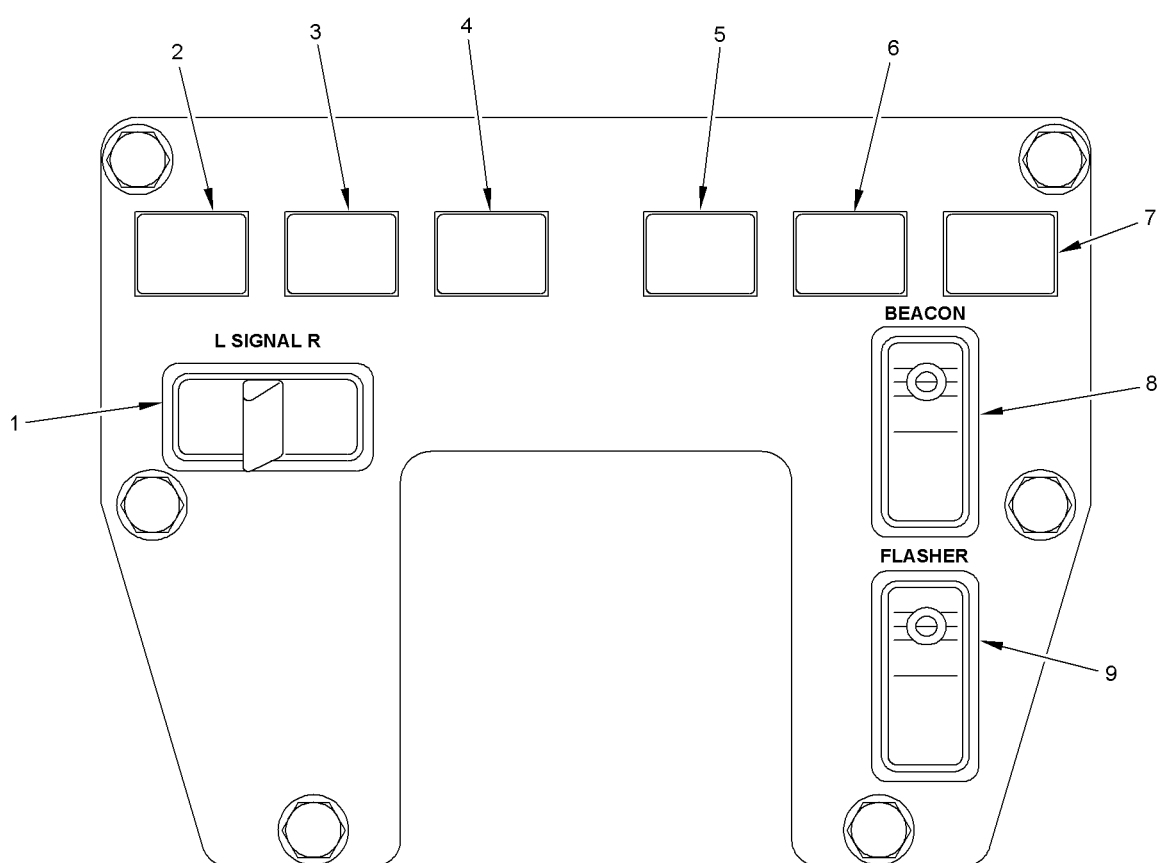


FIGURE 3-4. WARNING INDICATORS AND LIGHT SWITCH PANEL

TABLE 3-4. WARNING INDICATORS AND LIGHT SWITCH PANEL (see Figure 3-4)

ITEM NO.	NAME	TYPE	FUNCTION
1	L SIGNAL R Switch	3- Position toggle switch	Activates either Left or Right Turn signals.
2	Left Turn Indicator	Indicator light	Flashes to indicate the Left turn lights are operating.
3	Transmission Warning Indicator	Indicator light	Illuminates to indicate when the transmission oil temperature is too high.
4	Low Brake Pressure Indicator	Indicator light	Illuminates to indicate the brake pressure is too low.
5	Air Cleaner Restriction Indicator	Indicator light	Illuminates to indicate the air cleaner needs to be serviced.
6	Park Brake Indicator	Indicator light	Illuminates when the Parking Brake is applied.
7	Right Turn Indicator	Indicator light	Flashes to indicate the Right turn lights are operating.
8	BEACON Light Switch	Two position toggle switch	Turns Beacon Light On or Off.
9	Hazard Light Switch	Two position toggle switch	Turns Hazard Lights On or Off.

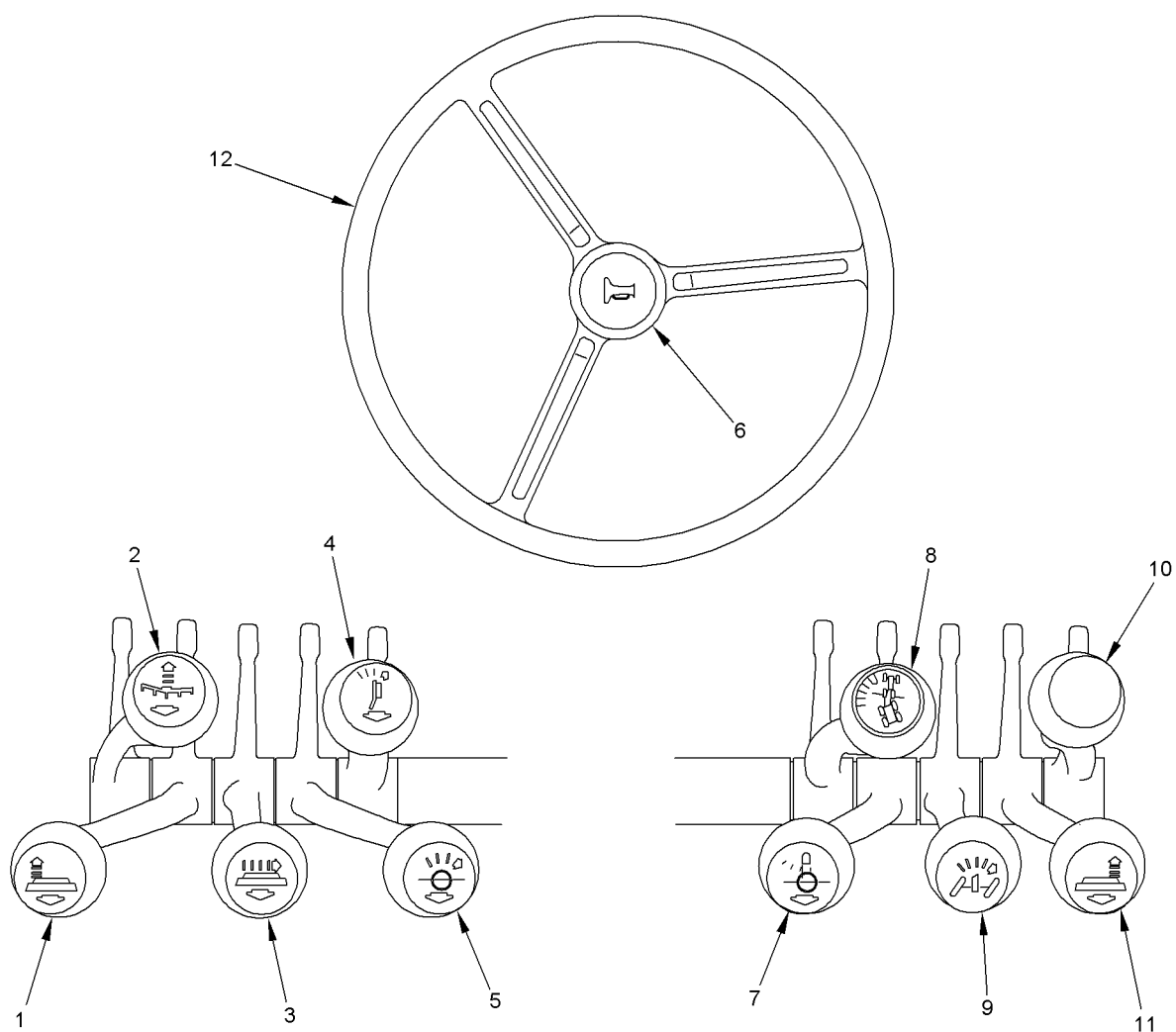


FIGURE 3-5. STEERING AND CONTROL LEVER GROUP

TABLE 3-5. STEERING AND CONTROL LEVER GROUP (see Figure 3-5)

ITEM NO.	NAME	TYPE	FUNCTION
1	Left Blade Lift Lever	Lever	Lifts left Blade when pulled. Lowers left Blade when pushed. Sets to float position when pushed hard.
2	Scarifer Lever	Lever	Lifts Scarifer when pulled. Lowers Scarifer when pushed.
3	Moldboard Slide Lever	Lever	Slides Moldboard left or right, 5 ft. total.
4	Blade Tilt Lever	Lever	Tilts Blade to rear when pulled. Tilts Blade forward when pushed.
5	Circle Turn Lever	Lever	Rotates Circle clockwise when pulled. Rotates Circle counterclockwise when pushed.
6	Horn Button	Push button switch	Sounds Horn when pushed.
7	Circle Shift Lever	Lever	Shifts Circle right when pulled. Shifts Circle left when pushed.
8	Articulation Lever	Lever	Articulates Grader up to 40°.
9	Leaning Wheel Lever	Lever	Leans Wheel right when pulled. Leans Wheel left when pushed.
10	Auxiliary Lever	Lever	Not Used
11	Right Blade Lift Lever	Lever	Lifts right Blade when pulled. Lowers right Blade when pushed. Sets to float position when pushed hard.
12	Steering Wheel	Wheel	Used to steer machine.

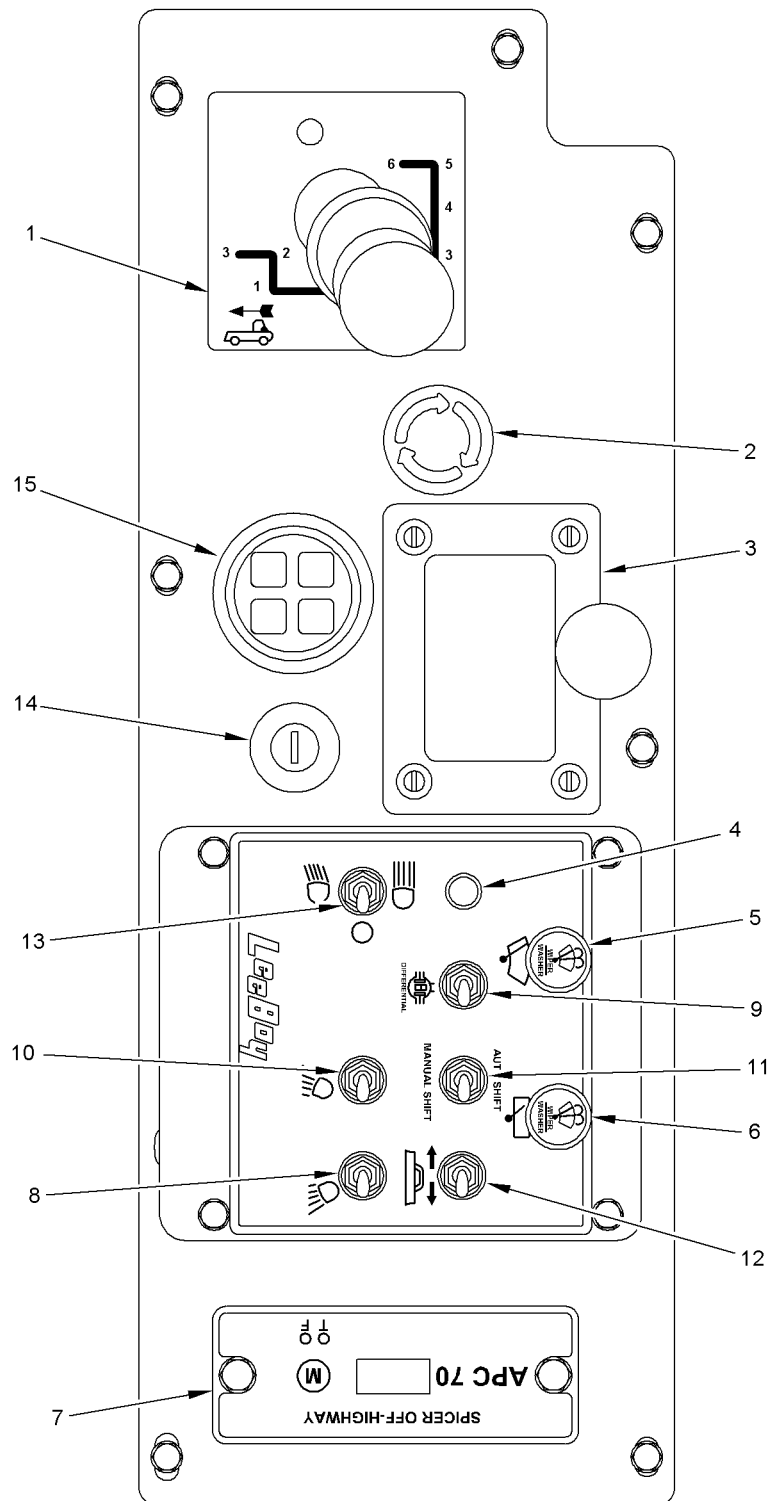


FIGURE 3-6. THROTTLE, BRAKE, TRANSMISSION, STOP CONTROLS AND MAIN SWITCH

**TABLE 3-6. THROTTLE, BRAKE, TRANSMISSION, STOP CONTROLS AND
MAIN SWITCH PANEL Refer to Figure 3-6**

ITEM NO.	NAME	TYPE	FUNCTION
1	Transmission Shifter	Lever	Shifts Transmission through 6-forward speeds and 3-reverse speeds.
2	Emergency Stop Switch	Push switch	Press switch down for emergency stop. Turn and lift to disengage.
3	Engine Throttle	Lever	Adjusts engine RPM.
4	Differential Light	Light	Monitors status of differential. Illuminates to indicate differential is engaged.
5	Front Wiper Switch	Rotary control	Turns front Wiper On or Off and adjusts wiper speed.
6	Rear Wiper Switch	Rotary control	Turns rear Wiper On or Off and adjusts wiper speed.
7	APC Transmission Control		Controls Transmission and troubleshoots.
8	Rear Work Light Switch	2-Position toggle switch	Turns rear Work Lights On or Off.
9	Differential Lock Switch	2-Position toggle switch	The differential lock switch is set to the On (up) position to engage the differential lock for maximum traction.
10	Front Work Light Switch	2-Position toggle switch	Turns front Work Lights On or Off.
11	Transmission AUTO/MANUAL Switch	2-Position toggle switch	Selects AUTO or MANUAL Transmission operation. Set switch to the MANUAL (up) position for manual shifting. Set switch to the AUTO (down) position for auto shifting.
12	Trunion Support Unlock Switch	2-Position toggle switch	Unlocks Trunion Support.
13	Headlights Switch	2-Position toggle switch	Turns Headlights On or Off.
14	Ignition Switch	Key switch	Full clockwise position to start engine. Auto returns to Run position when released.
15	Start Gauge	Indicator	Monitors status of the engine and alerts operator of starting status. Four main indicators are WARN, STOP, WAIT and MAINT.

Section 3

OPERATION



OPERATION

SAFETY

Operating Safety

- Always make sure no person or object is in the line of travel before starting.
- Work slowly in tight areas.
- Do not run engine in a closed building for long periods of time.
- Always look before changing the direction of travel.
- Avoid leaving engine running without operator present.
- Keep hands, feet and clothing away from power driven parts.
- Clothing worn by the operator should be relatively tight and belted. Do not wear loose jackets, shirts, sleeves or other items of clothing because of the danger of catching them in moving parts.
- Before starting the engine, always check the brake system to ensure proper working condition of brakes.
- Keep hands, floors and controls free from water, grease and mud to ensure non-slip control.
- Never attempt to start or operate the grader except from the operator's platform.
- Always keep the grader in gear when going down steep hills.
- When transporting or driving on a road or highway at night or during the day, use accessory lights and devices for adequate warning to the operators of other vehicles. In this regard, check local government regulations.
- Do not oil, grease or adjust any part of the grader while it is in motion.
- Check for faulty wiring or loose connections.
- Keep a firm grip on steering wheel at all times when speed is increased.
- Do not allow anyone near the grader while the driver is in the seat with the engine running.
- Reduce speed before turning or applying brakes. Drive at speeds slow enough to ensure your safety, especially over rough ground.

- Be sure the path ahead is clear to avoid collision with other machines.
- Watch for overhead wires. Never touch wires with any part of grader.
- Always lower moldboard when machine is not in use.
- Park grader on level ground or across the slope.

Stopping Safety

- Always park the grader on solid, level ground. If this is not possible, always park the grader at a right angle to the slope, and set parking brake.
- Use proper flags, barriers and warning devices, especially when parking in areas of traffic.

Maintenance Safety

- Never work on the grader with the engine running.
- Never refuel when the engine is running. Do not smoke while filling the fuel tank or servicing the system.
- Do not change the engine governor settings.
- Always replace damaged or lost decals.
- Disconnect battery when working on the electrical system or when welding on the unit.
- If battery needs a charge, be sure battery charger is off when making connections.
- Be sure the correct battery polarity is observed (negative (-) to negative (-) and positive (+) to positive (+)) when connecting a battery charger or jumper cable.
- Work slowly in tight areas.
- Do not run engine in a closed building for long periods of time.
- Add coolant to the radiator only when the machine is stopped or idling slowly. To avoid being scalded when the pressure-type filler cap is being removed, turn the cap slightly to relieve pressure before removing the cap.
- Do not leave the engine running while making adjustments or repairs unless specifically recommended.
- Never allow anyone to work under a raised moldboard or other attachments.

INSPECTION

Introduction

Daily inspection and servicing at required intervals is necessary for the safe operation and maximum service life of the LeeBoy Model 785 Motor Grader and its components.

WARNING: Do not smoke when performing inspections or servicing unit. Flammable liquids are present.



Receiving Inspection

When the grader arrives at a new site, the grader should be inspected for road hazards or vandalism that could occur during transportation and could have damaged the machine. Perform the following inspections and correct any faulty condition using the procedures in the MAINTENANCE section of this manual.

1. Check for any missing or damaged parts
2. Check Engine Oil Level

3. Check Transmission Oil Level
4. Check Differential Oil Level
5. Check Tandem Oil Level
6. Check Gear Hub Oil Level
7. Check Coolant in Radiator
8. Check Fuel Level
9. Check Tires for Cuts
10. Have a qualified Operator Test All Functions

Inspection Before Initial Start-Up

The following inspection by the operator is essential. This inspection should be performed on a daily basis. Procedures for performing the inspections are described in the MAINTENANCE Section of this manual.

Visually inspect the unit for familiarization and to check its general condition. Continue with a check of special systems and components.

INSPECTED ITEM	PROCEDURE
Loose or Missing Hardware	Check all visually accessible areas for loose or missing hardware. Any loose hardware should be torqued to the correct value.
Check for Worn or Damaged Parts	Check all accessible parts for wear or damage. Replace any part showing excessive wear or damage.
Check for Leaks	Check all hydraulic lines, fuel lines, and tanks for leaks.
Check Engine Oil Level	Check that engine oil is between the marks on the dipstick.
Check Transmission Oil Level	Check oil level with dip stick. Transmission oil level must be hot and engine running with transmission in Neutral when checking. Be sure sufficient oil is present.
Check Differential Oil Level	Check that differential oil level is at proper level.
Check Tandem Oil Level	Check that differential oil level is at proper level.
Check Planetary Hub Oil Level	Check that gear oil level is at proper level.
Check Coolant in Radiator	WARNING: Never remove radiator cap when hot. Serious burns can result from the hot liquid. Allow coolant to cool down before checking level.
Check Fuel Level	Check fuel gauge for sufficient fuel level.
Check Hydraulic Oil Level	Check at sight gauge on side of hydraulic oil tank.
Batteries	Make sure that all cables are tight and clean. Check for corrosion on the battery terminals.

Section 3

OPERATION



INSPECTED ITEM	PROCEDURE
Air Cleaner	Check the air filter element and hose connections. Air cleaner has both a primary and secondary filter.
Check Lugs on All Wheels	Check for loose appearing lugs. If any lug is suspect, tighten to the correct torque.
Check Tire Pressure	Check for correct tire pressure in all six tires.
Drain Plugs	Make sure plugs are in and tight.
Engine Belt	Check for proper tension of belt.
Grease Fittings	Make sure the fittings are greased and in good working order.
Check Steering Joint and Welds	Check for any cracks.
Check all Lights for Proper Operation	Test the signal, brake, flasher, work, strobe and driving lights for proper operation.
Check Parking Brake and Service Brake	Check that both brakes are working properly.
Test All Functions	Have a Qualified Operator Test all Functions before allowing grader to be placed in operation. If any function is not performing properly, take machine out of service until the faulty condition has been corrected.

Preliminary Procedures

Adjusting Front Console

The front console can be positioned using the Dash Tilt Lever (8, Figure 3-1) Adjust for best operator comfort.

Air Conditioner

The air conditioner controls are located to the left of the operator. Proceed as follows to control the air conditioner.

1. Set the A/C ON-OFF switch (3, Figure 3-2) to the ON position.
2. Adjust the vent (5) for the desired opening.
3. Adjust the Temperature switch (2) for the desired temperature.
4. Adjust the Fan Speed (4) for the desired level.
5. To turn the air conditioner off set the A/C On/Off Switch to the OFF position.

Defroster Fan

The defroster fan is used to help defrost the front windshield. The switch for the defroster fan is located on the fan at the upper left of the operator.

Opening Windshield

The windshield can be opened by using the front windshield latch (9, Figure 3-1).

Cab Door Release Levers

Both the right door release lever (10, Figure 3-1), and left door release lever (7) will hold the associated door open.

Cab Light

The cab light is located on the cab ceiling. The switch for the cab light is located on the light assembly.

Console Light

The console lights illuminate the gauges for reading at low light levels. These are turned on when the headlight switch is set to the ON (up) position.

DRIVING THE MACHINE

Start-up Procedure

CAUTION: NEVER start engine unless properly seated in the operators seat, seat belt is secured, and transmission is in Neutral.



1. Fasten seat belt.
2. Turn MASTER Switch to the ON position.
3. Set Park Brake (2, Figure 3-6) to ON position.
4. Set Transmission Shifter (1) to Neutral position.
5. Set Throttle (3) to Idle position.

WARNING: Do not move the throttle lever from the idle position while cranking the engine. This can result in engine over-speed and severe damage to the engine.



CAUTION: To prevent damage to the starting motor, do not engage the starting motor for more than 30 seconds. Wait two minutes between each attempt to start.



6. Turn Key ON and wait for all lights to turn off on the Start Gauge.
7. Turn the Ignition switch to the Start position. If the engine does not start after three attempts, check the fuel supply system.

NOTE: The engine must have adequate oil pressure within 15 seconds after starting. If there is no oil pressure indicated on the gauge within 15 seconds, shut off the engine immediately to avoid engine damage.

8. Idle the engine for 3 to 5 minutes before operating with a load.
9. After starting a cold engine, increase the engine speed (rpm) slowly to provide adequate lubrication to the bearings and to allow the oil pressure to stabilize.

CAUTION: Do not operate engine at low idle for long periods with engine coolant temperature below the minimum specification. This can result in the following:



- Fuel dilution of the lubricating oil.
- Cylinder head valve sticking.
- Reduced performance.

Using Booster Batteries

CAUTION: Explosive gases are produced while batteries are in use or being charged. Keep flames or sparks away from battery area. Booster batteries must be connected properly to prevent dangerous sparking.



The grader electrical system is 12 volt negative ground and uses two batteries in parallel. When connecting a booster battery be sure the negative terminal of the booster battery is connected to the negative terminal of the grader battery and positive terminal of the booster battery is connected to the positive terminal of the grader battery

Engine Shutdown

NOTE: Before leaving the operator's seat perform the following shut-down procedure.

1. Place throttle in idle position.
2. Place Transmission Shifter in Neutral position.
3. Set Park brake.
4. Lower all tools (blades).
5. Place all light switches to the off position.
6. Turn Ignition switch to the off position.
7. Turn the Master switch to the off position.

Auto Mode

Moving Forward/Reverse.

1. Start engine as described in START-UP PROCEDURE.
2. Hold foot on brake.
3. Check that area is clear.
4. Lift tools (blades).

NOTE: Make sure blade is not near a tire.

5. Set MANUAL/AUTO switch to the AUTO position.
6. Set throttle to the idle position.

NOTE: If throttle is not at full Idle, controller will not engage transmission.

7. Set Transmission Shifter to the desired gear.
8. Release foot brake.
9. Wait until transmission engages.
10. Increase the engine RPM with the throttle.

NOTE: As the engine RPM's increase the transmission will begin to shift until it reaches the selected gear.

Stopping

1. Apply foot brake.
2. Move throttle back to the idle position.
3. Set Transmission Shifter to Neutral position.

Section 3

OPERATION



Stopping and Restarting

1. Apply foot brake.
2. Set Throttle to the idle position.
3. Release foot brake.
4. Apply Throttle.

NOTE: Transmission will not engage if throttle is not at full Idle position.

Manual Mode

Moving Forward/Reverse

1. Start engine as described in START-UP PROCEDURE
2. Hold foot on brake.
3. Check that area is clear.
4. Lift tools (blades).

NOTE: Make sure blade is not near a tire.

5. Set MANUAL/AUTO switch to the MANUAL position.
6. Set throttle to the idle position.

NOTE: If throttle is not at full Idle, controller will not engage transmission.

7. Set Transmission Shifter to 1st gear forward or reverse as desired.
8. Wait until transmission engages.
9. Release foot brake.
10. Increase the engine RPM with the throttle and shift gears as desired..

NOTE: Grader can be down shifted on the go. The computer will control and protect the transmission.

NOTE: When switching directions, the controller will try to start in 3rd gear. Do not select 1st or 2nd gear unless you need that gear.

Stopping

1. Apply foot brake.
2. Move throttle back to the idle position.
3. Set Transmission Shifter to Neutral position.

Stopping and Restarting

1. Apply foot brake.
2. Set Throttle to the idle position.
3. Release foot brake.
4. Apply Throttle.

NOTE: Transmission will not engage if throttle is not at full Idle position.

OPERATING THE MACHINE

Blade Lift Levers

The Blades Lift levers (1 and 11, Figure 3-5) control the lifting and lowering of the Blade.

1. Pull levers to raise the blade.
2. Push levers to lower the blade.
3. Push levers fully forward into detent to float the blade. Pull levers back to manually release the float.

Blade float allows blade to float over hard surfaces.

Moldboard Slide Lever

The Moldboard Slide lever (3, Figure 3-5) is located in the left lever group.

1. Pull lever to shift blade right.
2. Push lever to shift blade left.

Blade Tilt Lever

The Blade Tilt lever (4, Figure 3-5) is used to tilt the blade.

1. Pull lever to tilt blade to the rear.
2. Push lever to tilt blade forward.

Circle Turn Lever

The Circle Turn lever (5, Figure 3-5) is used to rotate the circle.

1. Pull lever to turn circle clockwise.
2. Push lever to turn circle counterclockwise.

Circle Shift Lever

The Circle Shift lever (7, Figure 3-5) is used to shift the circle left or right.

1. Pull lever to shift circle right.
2. Push lever to shift circle left.

Articulation Lever

The Articulation lever (8, Figure 3-5) is used to set the grader articulation up to 40°.

1. Pull lever for right articulation

2. Push lever for left articulation.

NOTE: Amount of articulation is displayed on the Articulation gauge (2, Figure 3-3).

Leaning Wheel Lever

The Leaning Wheel lever (9, Figure 3-5) is used to set the amount of wheel lean.

1. Pull lever to lean wheels right.
2. Push lever to lean wheel left.

Scarifier Lever

The Scarifier lever (2, Figure 3-5) is used to raise or lower the Scarifier.

1. Pull lever to lift Scarifier.
2. Push lever to lower Scarifier.

Differential Lock Switch

NOTE: The differential lock is used when conditions require maximum traction.

The Differential Lock switch (9, Figure 3-6) is used to help with traction. When the switch is set to the ON (up) position the differential lock is engaged. The differential lock can be locked or release while grader is in motion. Releasing the differential lock will allow shorter turns.

Moving Blade to Bank Position

The following procedure is for moving blade to the right. Use opposite functions to move to the left.

1. Position the circle slightly to the right of center.
2. Shift blade right.
3. Lower blade to ground.
4. Set blades to the float position.
5. Disengage lift arm locking pin.
6. Retract left lift cylinder and circle side shift cylinder and extend right lift cylinder to rotate lift arms.
7. Align lift arm indicator with desired locking position and engage locking pin.
8. Use lift cylinders and circle side shift cylinder to lift blade off ground (4 - 5 in. [100 - 125 mm]).
9. Rotate blade counterclockwise to put right end of blade forward.
10. Retract right lift cylinder, extend left lift cylinder, rotate circle, adjust circle side shift cylinder and pitch, and side shift blade to obtain desired position.

11. Follow steps in reverse order to move blade out of the bank position.

Steering

The grader is steered using the steering wheel (12, Figure 3-5). The machine can be steered in the straight frame or articulated position. The straight frame position is most often used for long runs. The articulated position shortens turns and also can be used to counteract the side thrust in normal grading.

Blade Side Thrust

When a load is being pushed, the front of the grader tends to swing toward the toe of the blade. This can be counteracted as follows:

1. Articulate machine toward the toe of the blade.
2. Lean top of front wheels toward heel (discharge side) of blade.

Blade Pitch Adjustment

Use the upright position of the Moldboard for normal grading. Position the blade so that the top edge is vertical or slightly ahead of bottom edge. This places the cutting edge at the best cutting angle.

Use a backward pitch of the Moldboard for greater cutting ability. This will cause the cutting edge to dig in.

NOTE: Dirt may build up and pile into circle due to decreased rolling action. Adjust position as required.

For better mixing and rolling action, pitch Moldboard ahead of vertical position. When spreading material moldboard should be tipped further forward. This helps compact material and fill low spots. Use only as much forward tilt as necessary for the job.

Pile Spreading

1. Set moldboard at right angles to the direction of travel and shift the moldboard toward pile.
2. Tilt blade slightly forward.
3. Raise blade for the desired depth.
4. Shift circle toward pile.
5. Lean front wheels slightly away from pile.

NOTE: The material spread in each pass will be limited by the power and traction of the grader.

Section 3

OPERATION



Back Filling

The moldboard can be used to backfill a trench and the rear tandem can be used to compact the backfill material.

Vee Ditching

Vee ditching requires at least three passes; The first pass shapes the ditch, the second pass deepens the ditch, and the third pass cleans up the materials. The material is then spread to form the roadbed and shoulder. The final step is cutting the back slope.

First Pass

1. Center the circle.
2. Position toe of blade just outside edge of front tire.
3. Tilt blade and pitch forward until top of blade is in line with center of front tire.
4. Raise blade heel just ahead of tandem tires so dirt will spill out between them.
5. Lead front wheels slightly toward discharge end of blade.
6. Engage the differential lock.
7. Travel in 1st or 2nd gear.
8. Make first pass very shallow in order to establish line of ditch.

Second Pass

Position wheels in vee ditch made on first pass to compensate for side thrust.

NOTE: This allows a deeper cut at higher speed during second pass.

Third Pass

This is the clean-up pass. The cleanup pass is used to reduce the build-up of dirt between the tandem wheels from successive passes. After the cleanup pass the material can be spread to establish the roadbed and the shoulder.

1. Sideshift circle and blade toward ditch.
2. Position front wheels outside windrow.
3. Set blade at an angle that positions heel between tandems with blade pitched slightly forward.
4. Position toe of blade well beyond windrow to minimize spillage back into the vee ditch;.
5. Articulate grader slightly to deposit windrow between tandems.

Spreading Material

1. Use a straight frame position to spread windrow left from cleanup pass.
2. Position circle and moldboard to deposit material evenly. Use material to establish roadbed and shoulder.

Cutting Back Slope

1. Sideshift circle and blade toward bank.
2. Position heel of blade in center of rear tire.
3. Pitch blade slightly forward.
4. Blade angle is toward direction of travel at approximately 40° depending upon degree and height of slope.
5. Drive wheels of machine in established vee ditch.

NOTE: This will deposit dirt from back slope slightly up onto shoulder slope when a cleanup pass will pull it up onto roadbed for spreading.

6. To finish vee ditch; pull windrow up from shoulder slope, clean it away from edge of ditch and spread it.
7. Repeat steps as necessary.

Cleaning Ditches

If ditch is soft or wet and can not support the full weight of the grader, proceed as follows:

1. Offset tandems so that the tandems ride on shoulder of road.
2. Lift material from ditch and dump it outside of tandems.
3. By articulating tandems on road and front wheels into ditch, the grader can be backed up until toe of blade is at end of culvert. Then start cut, windrowing material onto shoulder of roadbed.

NOTE: When filling washouts on existing back slopes, blade can be angled back and side-shifted enough so that material can be rolled up slope.

Road Crowning

1. Blade material inward from shoulders of ditches.
2. Cut top of crown with blade at a 0° angle, or a slight angle to side cast material to whichever side might require it.

3. Spread windrows by putting blade at an angle of 10° - 25° toward center.
4. Keep blade above level of undisturbed surface so as to avoid collision with solid objects such as rocks in roadbed.
5. Perform crowning operation at relatively high speed. High speed causes loose material to be thrown from the blade, which feathers the material and blends it at the top.

NOTE: Any ridge that is left in the center can then be spread out at high speed with a straight blade.

Bank Cutting

1. The first pass should be at the base of the bank to level and smooth a platform for the grader.
2. Locate heel of blade in front of center of rear wheel.
3. Shift toe of blade forward.
4. Tilt blade forward.
5. Lean wheels slightly toward bank.
6. Position grader frame straight with all wheels at base of bank, or if more reach is needed, articulate slightly to position front inside wheel on bank.

Three methods can be used to vary depth of cut these are;

1. Leaning wheels away or toward the bank.
2. Maneuvering lift cylinders.
3. Changing blade pitch.

NOTE: After first bank cut, it may be necessary to clean loose material away from bottom of bank.

Slope Work

1. The first pass should be made from above the slope, if possible, to establish angle.
2. Side-shift the circle and the blade toward slope.
3. Set blade angle slightly toward rear of machine with a slight forward tilt.
4. Reach the blade as far down slope as possible and make first pass.

NOTE: The grader can be in straight frame position or articulated for extra reach.

5. Lean front wheels toward slope on second pass.
6. To help prevent front end from drifting down, position upper front wheel above windrow.
7. To increase stability of machine, articulate tandems down slope.
8. Position toe of blade forward and angled so material is spilled off heel of blade slightly between or under tandems. Set blade pitch ahead of vertical plane and side-shift circle toward the upside.
9. Repeat the procedure until dirt is deposited at toe of slope. Establish toe of slope by cleaning windrow away from bottom.
10. When working on steep slopes, the differential may be locked or unlocked at the operator's preference.

CAUTION: A rollover with the grader articulated is very unlikely; however, extreme caution should always be used when working on slopes steeper than three to one.



Cul-De-Sacs

1. Shift circle to outside.
2. Articulate grader to inside.
3. Tilt blade forward about 5° - 10°.
4. Travel in 1st gear, fast idle with front wheels leaning toward direction of turn.

NOTE: After curb is poured, back fill against the outside of curb to give support.

To finish grading, as the turns become shorter on each succeeding pass, the circle and moldboard are shifted toward the center. Then any excess material left in the middle can be moved out of the cul-de-sac.

LOADING GRADER ON A TRAILER

1. Place chocks against truck wheels.

CAUTION: Ramps must be strong enough to carry the weight of the grader. Also the ramp must have a low angle, and correct height.



2. Use a ramp or loading dock. Load and unload grader on a level surface.

Section 3 OPERATION



3. If grader is equipped with rollover protective structure (ROPS), fasten seat belt before starting engine.
4. Drive grader slowly onto ramps. Centerline of grader should be over the centerline of the trailer.
5. Before leaving operator's seat:
 - a. Lower all equipment onto blocks on trailer bed.

NOTE: Blade must not extend beyond truck bed.

- b. Place transmission in Neutral position.
- c. Set park brake.

CAUTION: Turbocharger may be damaged if engine is not properly shut down.



Run engine at one-half speed for two minutes.

- d. Move engine speed control lever to slow idle.
- e. Turn key switch to OFF position.
- f. Remove key from switch.
- g. Cover exhaust opening to prevent entry of dirt and water.

CAUTION: Do not place chains or cables over or against hydraulic lines or hoses.



6. Fasten chains or cables to grader frame.
7. Fasten each corner of the grader to trailer with a chain or cable.

TOWING PROCEDURE

NOTE: Steering, brakes and transmission may be operational depending on the failure type

CAUTION: Operator must be in operator's seat to control; steering and brakes.



NOTE: Engine can not be started by towing. Damage to transmission will result.

CAUTION: DO NOT tow the grader faster than 25 mph (40 km/h).



1. Secure blade and scarifier.

CAUTION: Before towing the grader, move the tow lever to TOW position to avoid damage to transmission and brakes.



2. Set transmission to Neutral position.
3. Release Park brake.
4. Fasten tow bar or chain to frame.
5. Run the engine for braking and steering.



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Section 4

MAINTENANCE



SYSTEM PRESSURES

FUNCTION	PRESSURE PSI
Hydraulic function	2600
Standby pressure	325
Hydraulic steering pressure	2500
Differential lock pressure	400
Park brake pressure	400
Circle lock pressure	400
Brake accumulator pressure	1000
Transmission declutch pressure	800

FUELS AND LUBRICANTS

FUEL SPECIFICATIONS

Use only clean, high quality fuel

Use Grade No. 2-D fuel above 4°C (40°F)

Use Grade No. 1-D fuel below 4°C (40°F)

Use Grade No. 1-D fuel for all air temperatures at altitudes above 5,000 ft. (1500 m)

NOTE: If sulfur content exceeds 0.5%, change the engine oil at ½ the normal interval.

STORING FUEL

If there is a very slow turnover of fuel in the fuel tank or supply tank, it may be necessary to add a fuel conditioner to prevent water condensation. Contact your authorized dealer for proper service or maintenance recommendations.

Do not use galvanized container to store diesel fuel.

NOTE: Diesel fuel stored in galvanized containers reacts with zinc coating to form zinc flakes. If fuel contains water, a zinc gel will also form. The gel and flakes will quickly plug fuel filters and damage fuel injectors and fuel pumps.

Do not use brass-coated containers. Brass is an alloy of copper and zinc.

FUEL TANK

CAUTION: Do not fill fuel tank if engine is hot.



CAUTION: Do not smoke while filling fuel tank or working on fuel system.



Shut off engine and fill the fuel tank at the end of each day to avoid condensation.

ENGINE OIL

The oil should meet API Service Class CE or CD. Additives are not required and are not recommended.

TRANSMISSION

CITCO transguard THF lo temp

GREASE

SAE multi-purpose EP Grease

LUBRICANT STORAGE

Whenever possible, store lubricants and containers in an area protected from dust, moisture, and other contamination. Store containers on their side to avoid water and dirt accumulation.

MIXING LUBRICANTS

Avoid mixing different brands or types of oil. Oil manufacturers blend additives in their oils to meet certain specification and performance requirements. Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.

HEATER SHUTOFF

Hot water to the heater should be turned off in the summer. Close the heater shutoff valve located by the lower water inlet.

PERIODIC MAINTENANCE

GENERAL

1. Use only recommended fuels and lubricants to prevent machine damage.
2. Use the hour meter to determine when your machine needs periodic maintenance.

NOTE: Intervals on the periodic maintenance chart are for operating in normal conditions. If the machine is operating in difficult conditions, machine should be serviced at shorter intervals.

3. Perform service on items at multiples of the original requirement. For example, at 500 hours, also service these items, if applicable, listed under 250 hours, 100 hours and 50 hours.

PREPARE MACHINE FOR MAINTENANCE

Before performing the following maintenance procedures and before leaving the operator's seat, perform the following steps unless another position is specified in the procedure.

1. Park machine on a level surface.
2. Lower all equipment to the ground.
3. Move transmission selector lever to Neutral.
4. Engage parking brake.

NOTE: Turbocharger may be damaged if engine is not properly shut down.

5. Run engine at one-half speed without load for 2 minutes.
6. Move engine speed control level to slow idle.
7. Turn key switch to OFF position.

NOTE: If maintenance must be performed with the engine running, do not leave machine unattended.

ACCESSING ENGINE

There are two access panels on each side of the grader. These panels are hinged on one side and have a latch on the other side. The engine can be accessed by pushing the latch toward the cab and rotating the access panel on the hinges.

MAINTENANCE SCHEDULE

The following checklist summarizes scheduled maintenance and parts and oil required at each maintenance interval.

Service the machine at intervals shown in the following schedule. Also, perform service on items at multiples of the original requirement. For example, at 500 hours, also service these items, if applicable, listed under 250 hours, 100 hours and 50 hours.

Procedures for performing each of these maintenance tasks are provided in the section SCHEDULED MAINTENANCE PROCEDURES.

As Required

- Check, clean, and tighten battery terminals
- Check tire pressure
- Check belt tension
- Grease saddle locking pin holes
- Grease circle gear
- Check precleaner

Drain fuel tank sump

Clean or replace air cleaner elements

10 Hour Intervals

- Check transmission and hydraulic oil level
- Check coolant level
- Grease frame hinge pivots
- Check engine oil level

50 Hour Intervals

- Grease front axle pivot
- Grease king pins and steering
- Grease circle drive gearbox
- Grease moldboard pivots
- Grease articulated joint
- Grease cylinders joints
- Grease trunions
- Grease front scarifier cylinder
- Grease rear scarifier cylinder
- Grease drawbar pivot
- Change planetary hub oil

250 Hour Intervals

- Check battery electrolyte level
- Grease tandems
- Change engine oil and replace filter

500 Hour Intervals

- Check tandem oil level
- Check brake accumulator
- Change hydraulic return filter
- Change transmission oil filter
- Change fuel filter

1000 Hour Intervals

- Check engine speed
- Check hydraulic oil
- Check, pack, and adjust front wheel bearings
- Check air intake hoses
- Clean fuel tank filter
- Change transmission oil

Section 4

MAINTENANCE



2000 Hour Intervals

- Change tandem oil
- Grease tandem pivots
- Grease circle gearbox
- Change differential oil
- Change planetary hubs oil
- Change hydraulic oil

SCHEDULED MAINTENANCE PROCEDURES

AS REQUIRED MAINTENANCE PROCEDURES

Clean and Tighten Battery Terminals

WARNING: Battery gas can explode. Keep sparks and flames away from batteries. Always remove grounded (-) battery clamp first and replace last.



The batteries are located in a compartment on the left side of the machine.

1. Disconnect battery clamps, grounded clamp first.
2. Clean terminal and clamp with a stiff brush.
3. Install and tighten clamps, grounded clamp last.

Check Tire Pressure

WARNING: Explosive separation of a tire and rim parts can cause serious injury or death.



- DO NOT operate with low pressure, cuts, bubbles, damaged rims, or missing wheel studs and nuts.
- Always maintain correct tire pressure. DO NOT inflate tires above the recommended level.
- When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly.

Check tire pressure with an accurate gauge having 1 PSI (6.9 kPa) (0.07 bar) graduations.

1. Shut off air supply to hose.
2. Move gauge hand to correct pressure.
3. Lock air chuck on tire valve.
4. Turn on air supply. Stand to front or rear of tire when air is added. Inflate tires to 35 PSI (241 kPa) (2.41 bar).

NOTE: Tire pressure may need to be changed for specific working conditions. Refer to manufacturers information.

5. After tire is at correct pressure, shut off air supply. Release chuck.

6. Inspect tire for damage.

Belt Inspection and Adjustment

1. Check belt regularly for wear. Replace if defective.
2. Check tension of belt closest to fan midway between pulleys. Apply a force of 20 lb. (90 N) and check for a deflection of $\frac{3}{4}$ in. (19 mm).
3. If deflection is not within specifications, loosen alternator mounting cap screw.
4. Tighten capscrews to 20 ft. lb. (27.12 N•m).

Lubricate Saddle Locking Pin Holes

Lower blade to ground. Disengage locking pin from hole, Figure 1. Apply grease with brush to all 10 lock pin holes.

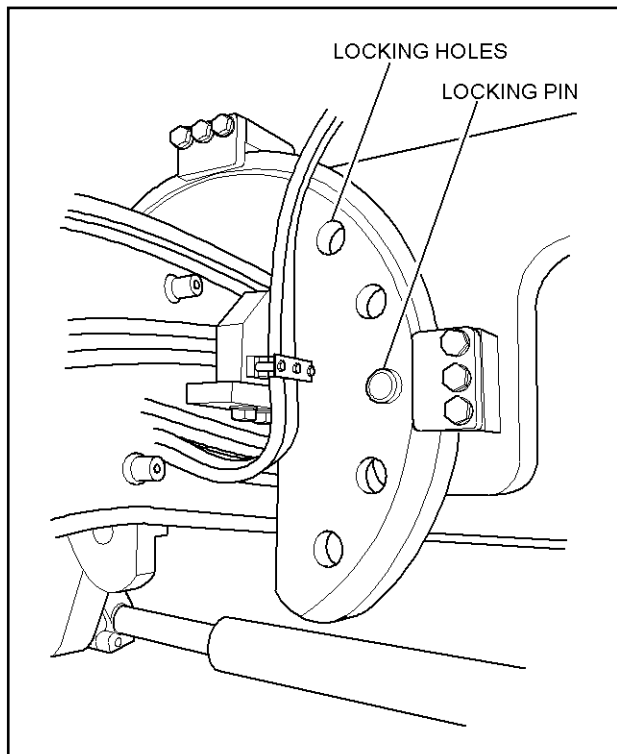


Figure 1. Saddle Locking Pin Holes

Lubricate Circle Gear

Clean circle, if necessary.

Lubricate all contact areas on top and bottom of circle. Rotate circle in both directions.

Check Precleaner

Empty pre-cleaner if accumulations of dirt, dust, or snow is up to the mark in the bowl.

Drain Fuel Tank Sump

1. Remove filler cap from fuel tank.
2. Open fuel tank drain valve, Figure 2, for several seconds to drain water and sediment.
3. Close valve.
4. Install filler cap.

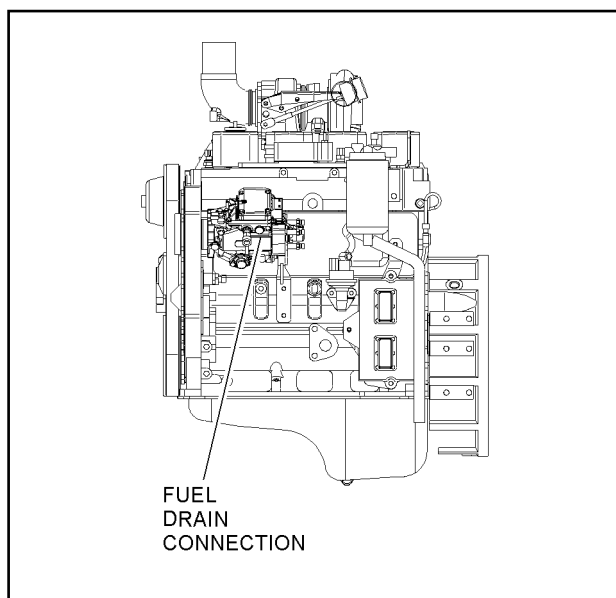


Figure 2. Location of Fuel Drain Valve

Check Air Cleaner

When the engine air filter restriction indicator light illuminates, clean or replace air filter elements.

10 HOUR MAINTENANCE PROCEDURES

Check Transmission-Hydraulic Oil Level

CAUTION: Do not start engine without oil in the transmission-hydraulic system.



1. Park machine on a level surface.
2. Lower all equipment to the ground and roll blade back completely.

3. Wheels must be straight up. Front and back of machine must be aligned.
4. Engine must be running in Neutral.
5. Remove dipstick (see Figure 3). Oil must be in the crosshatched area.
6. If necessary, add oil.
7. Install dipstick.

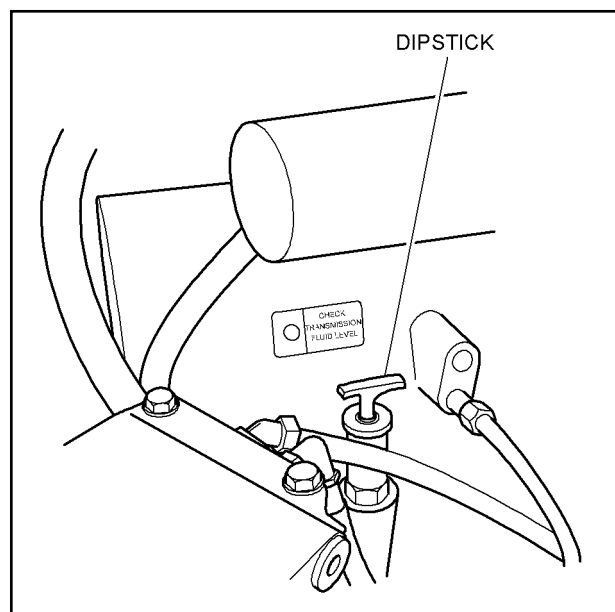


Figure 3. Location of Dip Stick

Check Radiator Coolant Level

WARNING: Explosive release of fluids from pressurized cooling system can cause serious burns.



1. Shut off engine.
2. Remove filler cap when cool enough to touch with bare hands.
3. Slowly loosen cap to first stop to relieve pressure before removing completely.
4. Remove radiator cap. Check that radiator is full. Add coolant as necessary.
5. Install filler cap.

Grease Frame Hinge Pivots

Lubricate grease fittings, until grease escapes at joints, Figure 4.

Section 4 MAINTENANCE

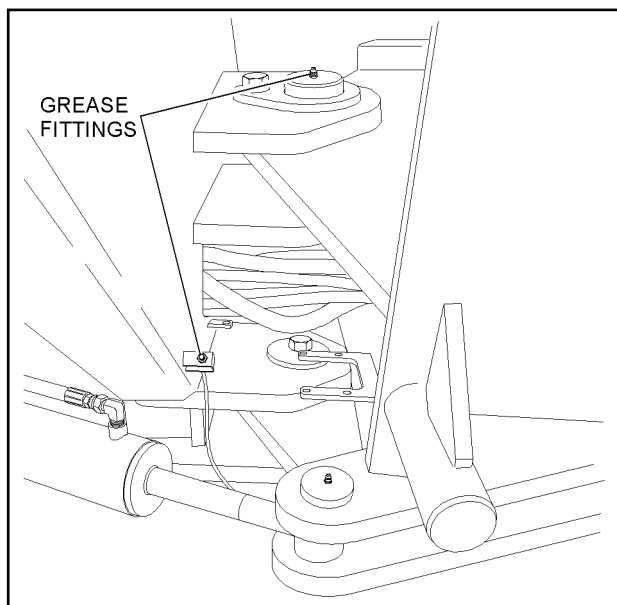


Figure 4. Frame Hinge Pivots

Check Engine Oil Level

NOTE: DO NOT run engine when oil level is below the ADD mark.

Check oil level at the beginning of the day's operation while the engine is still cold.

1. Be sure dipstick, Figure 5, is fully seated.
2. Remove dipstick to check oil level.

NOTE: The engine is full when the oil level is in the cross hatched area on the dipstick before the engine is started.

3. After running the engine allow oil to drain for 10 minutes before checking. Oil level is ok if above the ADD mark on the dipstick.
4. Add oil if necessary.

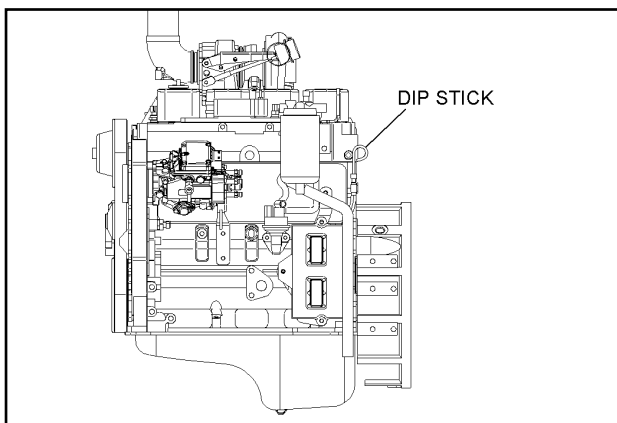


Figure 5. Location of Dip Stick

50 HOUR MAINTENANCE PROCEDURES

Lubricate Pivots and Yoke

Lubricate the following points. Refer to Figure 6. Lubricate until grease escapes at joint.

1. Lubricate Front Axle Pivot (One point)
2. Lubricate King Pins (Two points each side)
3. Lubricate Steering Cylinders (One point each side)
4. Lubricate Wheel Lean Pivots (Five points)
5. Lubricate Tie Rod Ends (Two points)
6. Lubricate Circle Drive (One point)
7. Lubricate Moldboard Pivots (Two points each side)
8. Lubricate Articulated Joint (Two points)
9. Lubricate Articulating Cylinders (Two points each side)
10. Lubricate Lift and Angle Cylinder Joints (Three points)
11. Lubricate Tandems (One point each side)
12. Lubricate Trunions (Three points each side)
13. Lubricate Front Scarifier Cylinder (Two points)
14. Lubricate Rear Scarifier Cylinder (Two points)
15. Lubricate Drawbar Pivot (One point)

250 HOUR MAINTENANCE PROCEDURES

Check Battery Electrolyte Level

CAUTION: Battery gas can explode. Use a flashlight to check electrolyte level.



Sulfuric acid in battery electrolyte is poisonous. It can burn skin, eat holes in clothing and cause blindness.

Use a voltmeter or hydrometer to check battery.

CAUTION: Spilled or swallowed acid can cause serious damage.



1. If acid is spilled on yourself, flush skin with water and apply baking soda or lime to help neutralize the acid.

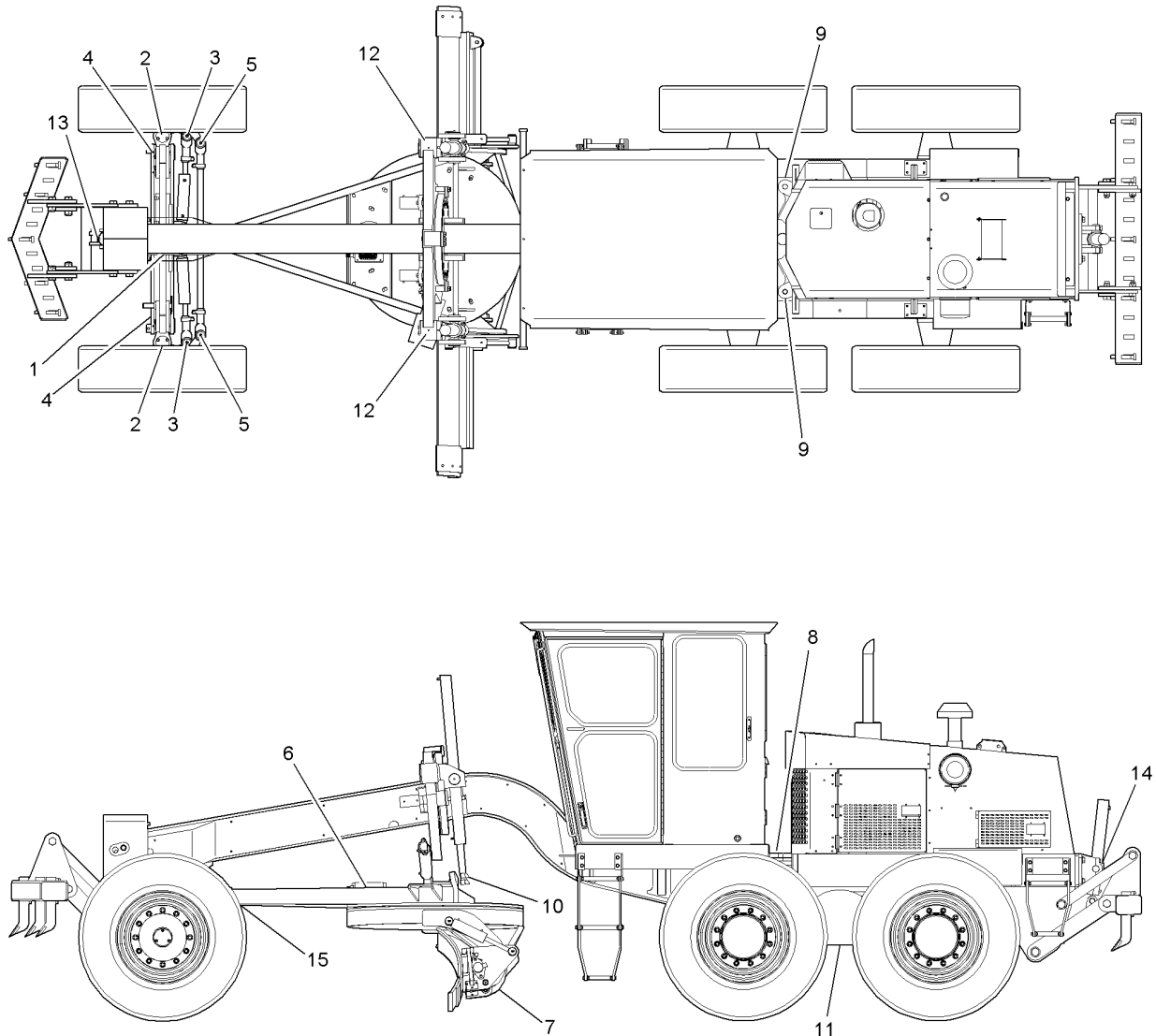


Figure 6. Location of Lubrication Points

Section 4

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2. If acid gets into your eyes. Flush with water for 15 - 30 minutes and seek medical help immediately.
3. If acid is swallowed, do not induce vomiting. Drink large amounts of milk or water, but do not exceed 2 quarts. Seek medical help immediately.

NOTE: If water is added to batteries during freezing weather, batteries must be charged after water is added to prevent batteries from freezing. Batteries can be charged with a charger or by running engine.

Lubricate Circle Drive Gearbox

1. Park machine on level ground.
2. Level frame.
3. Lower blade.
4. Lubricate grease fitting (A), Figure 7.

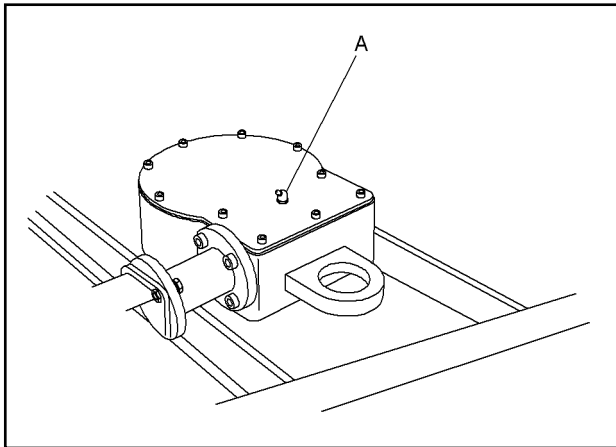


Figure 7. Circle Drive Lubrication Point

Change Engine Oil and Replace Filters

1. Run engine to warm oil.
2. Before leaving operator's seat, perform the following procedures.
 - a. Park machine on a level surface.
 - b. Lower all equipment to the ground.
 - c. Engage parking brake.
 - d. Move transmission selector level to neutral (N) position.

CAUTION: Turbocharger may be damaged if engine is not properly shutdown.



- e. Run engine at one-half speed without load for two minutes.
 - f. Move engine speed control lever to slow idle.
 - g. Turn key switch to OFF position and remove key from switch.
3. Remove drain plug and allow oil to drain into a container. Dispose of waste oil properly.
 4. Remove filter by rotating counterclockwise.
 5. Apply a thin film of oil to rubber gasket of new filter.
 6. Install new filter by turning clockwise to hand tightness.
 7. Tighten $\frac{1}{2}$ - $\frac{3}{4}$ turn more.
 8. Install drain plug.
 9. Remove fill cap.
 10. Fill engine with oil.
 11. Install fill cap.
 12. Start and run engine at a slow idle.
 13. Check that oil pressure light goes out. If light does not go out immediately stop engine and find the cause.
 14. Check for leaks around filter. Tighten filter just enough to stop leaks.
 15. Stop engine. Check oil level.

500 HOUR MAINTENANCE PROCEDURES

Check Tandem Oil Level

1. Remove oil level plug. Oil must be level with plughole.
2. Add oil, if necessary.
3. Install oil level plug.
4. Turn cap on top of breather tube to make sure cap moves freely. A plugged breather tube may cause leakage. Breather tube is on inside front of tandems.

Check Brake Accumulator

1. Engage parking brake.
2. Run engine for 1 minute to fully charge accumulator.

3. Stop engine.
4. Turn key to BULB CHECK position and release to "arm" the monitor. Brake pressure indicator must be off. Other indicator lights will be on and stop engine indicator will flash.
5. Apply brake five times at 5 second intervals. Brake pressure indicator must not come on before three applications and pedal should feel firm for five applications.

NOTE: If brake pressure indicator comes on before three applications or pedal feels "soft" before five applications: There is a hydraulic leak in the brake system, there is air in the brake system or the nitrogen gas precharge in the accumulator is too low.

CAUTION: Do not operate the machine until the problem is resolved.



6. Continue to apply brakes until brake pressure light is on. If pedal feels "soft" before brake pressure light is on, do not operate the machine until low brake pressure condition has been corrected.

Replace Hydraulic Return Oil Filter

NOTE: Hydraulic return oil filter is a spin-on type filter.

1. Remove spin-on filter.
2. Clean mounting surface.
3. Install new filter.
4. Add oil.
5. Start engine and run at one-half speed for 2 minutes.
6. Stop engine.
7. Check for leaks around filter. Tighten filter only enough to stop leaks.
8. Check oil level.

Replace Transmission Oil Filter

NOTE: Transmission oil filter is a spin-on type filter.

1. Remove spin-on filter.
2. Clean mounting surface.

3. Install new filter.
4. Add oil.
5. Start engine and run at one-half speed for 2 minutes.
6. Stop engine.
7. Check for leaks around filter. Tighten filter only enough to stop leaks.
8. Check oil level.

Replace Fuel Filter

NOTE: Fuel filter is a spin-on type filter.

1. Remove spin-on filter.
2. Clean mounting surface.
3. Install new filter.
4. Loosen bleed screw.
5. Operate primer lever until fuel flows from bleed screw is free of bubbles.

1000 HOUR MAINTENANCE PROCEDURES

Engine Speed

1. Warm engine to normal operating temperature.
2. Connect a tachometer to check engine speed.

Slow Idle	900 +/-25 rpm
Fast Idle	2500 +/-25 rpm

If engine speeds need adjustment, see your authorized dealer.

Clean, Pack, and Adjust Front Wheel Bearings

NOTE: If machine is operated in wet or muddy conditions, clean and pack bearing as necessary.

1. Remove the following parts, see Figure 8.
 - a. Hub cap (10)
 - b. Gasket (30)
 - c. Cotter pin (40) and castle nut (50)
 - d. Retainer Washer (60)
 - e. Bearing cone (70)
 - f. Wheel Hub (90)
 - g. Bearing cone (110)
 - h. Bearing cup (120)
 - i. Tandem axle seal (100)

Section 4 MAINTENANCE



2. Clean all parts. Replace worn or damaged parts.
3. Pack bearing cones with grease.
4. Assemble bearing cone, bearing cup and axle seal into wheel hub.
5. Place hub on axle. Install bearing cone and retainer washer.
6. Apply lubricant to threads.
7. Install castellated nut. Tighten nut until you feel a slight drag when wheel is turned. Loosen nut to the nearest alignment or slot with hole in shaft. Install cotter pin.
8. Install hub cap, gasket, and wheel.

Check Air Intake Hoses

1. Check air intake hoses for cracks.
2. Tighten hose clamps.

2000 HOUR MAINTENANCE PROCEDURES

Change Tandem Oil

1. Remove drain plug from tandem.
2. Allow oil to drain into a container.
3. Dispose of waste oil properly.
4. Flush each housing with diesel fuel.
5. Install drain plugs.
6. Add oil to each housing.

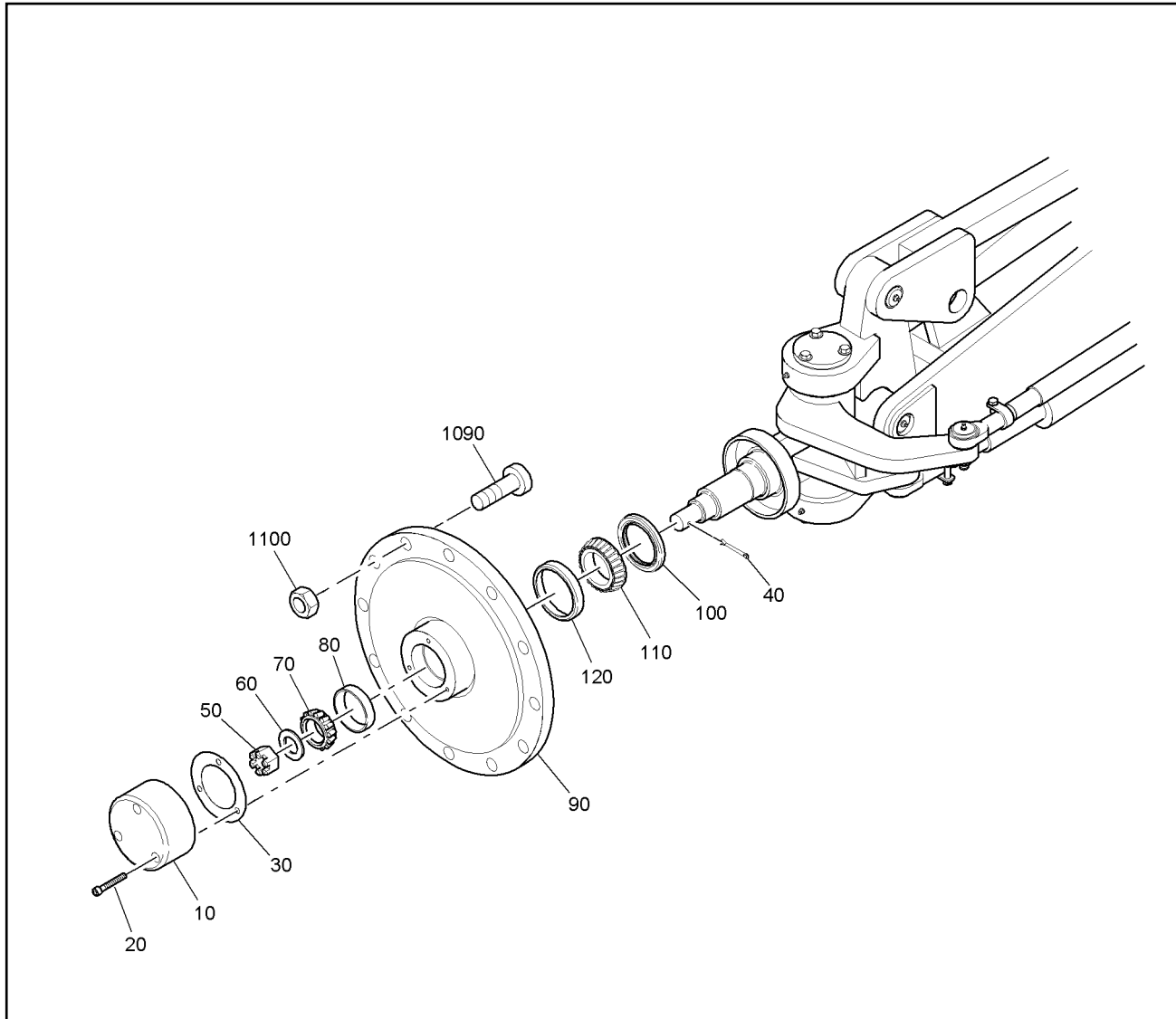


Figure 8. Front Wheel Assembly

Lubricate Tandem Pivots

Lubricate tandem pivot with 3 or 4 shots of grease at each of the fittings; see Figure 9.

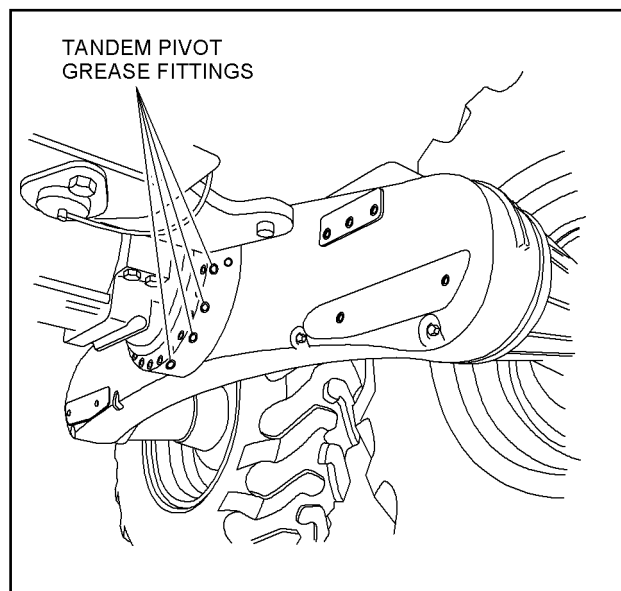


Figure 9. Tandem Pivot Left Side

DRAINING THE COOLING SYSTEM

The cooling system should be drained and flushed every two years. Replace thermostats and refill with new coolant.

CAUTION: Hot coolant can cause serious injury.



1. Shut off engine.
2. Only remove filler cap, Figure 10, when cool enough to touch with bare hands.
3. Slowly loosen cap to first stop to relieve pressure before removing completely.
4. Connect a hose to draincock on radiator.
5. Turn draincock counterclockwise to open valve. Allow coolant to drain into a container. Dispose of used coolant properly.
6. Remove engine block plug to drain engine block. Allow coolant to drain into a container. Dispose of used coolant properly.

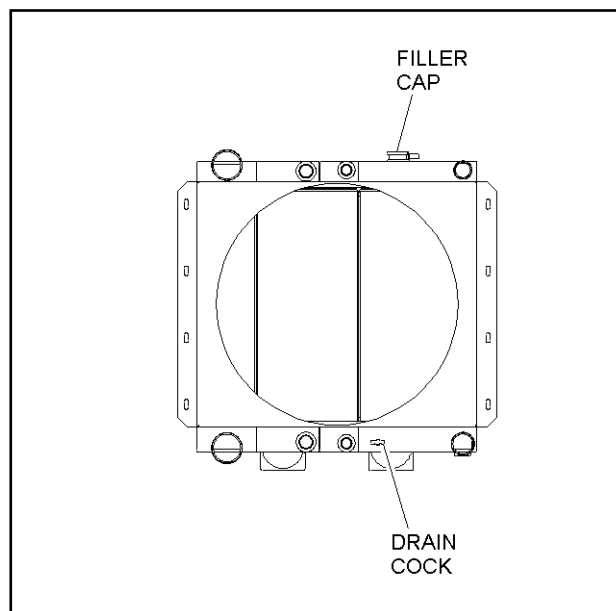


Figure 10. Radiator

7. Close draincock.
8. Install engine block plug.

FILLING THE COOLING SYSTEM

All machines are shipped from the factory with a 50-50 mixture for protection to -34°F (-37°C). Adjust mixture accordingly to provide freeze protection for your machine.

NOTE: After filling radiator, operate engine 15-30 minutes to purge air from the engine block. Shut off engine and add coolant to the radiator. Start engine and run until engine is at normal operating temperature. Stop engine and verify that radiator is completely full.

INJECTION NOZZLES AND PUMP

Do not service or remove injection nozzles. The service life of the injection nozzle may be shortened by:

- Overheating
- Poor quality fuel
- Improper operation
- Excessive idling

If injection nozzles are not working correctly or are dirty, the engine will not run normally. See your authorized dealer for service.

NOTE: Do not adjust injection pumps.

Section 4 MAINTENANCE



Do not attempt to service an injection pump that is not operating correctly. See your authorized injection pump service center.

DRAINING FUEL FILTER SEDIMENT

1. Loosen drain screw on bottom of fuel filter and drain liquid for several seconds.
2. Tighten drain screw.
3. Bleed fuel system (See Change Fuel Filter in 500 Hour Maintenance section).

REPLACING AIR CLEANER ELEMENTS

1. Remove cap, Figure 11.
2. Remove outer air cleaner element.
3. Remove inner air cleaner element.
4. Clean air cleaner housing.
5. Install new elements.
6. Install cap.

FUSES AND CIRCUIT BREAKERS

The fuse box is on the right-hand console. Both fuse and circuit breakers are located in the fuse box.

CAUTION: Install fuses with correct amperage rating to prevent damage to the electrical system from overload.



The following list cross-references blade type fuse color codes to the amperage rating.

Amp rating	Color
1	Black
3	Violet
4	Pink
5	Tan
7.5	Brown
10	Red
15	Light Blue
20	Yellow
25	Natural (white)
30	Light Green

CHECKING NEUTRAL START SYSTEM

1. Engage parking brake.
2. Move transmission selector lever to 1st gear forward or reverse.
3. Turn key switch to START position. Starter must not crank. If starter cranks engine, release key. Do not operate machine.
4. Repeat test with selector lever in each gear, both forward and reverse.

NOTE: Do not operate machine if starter cranks engine with control lever in any gear except neutral.

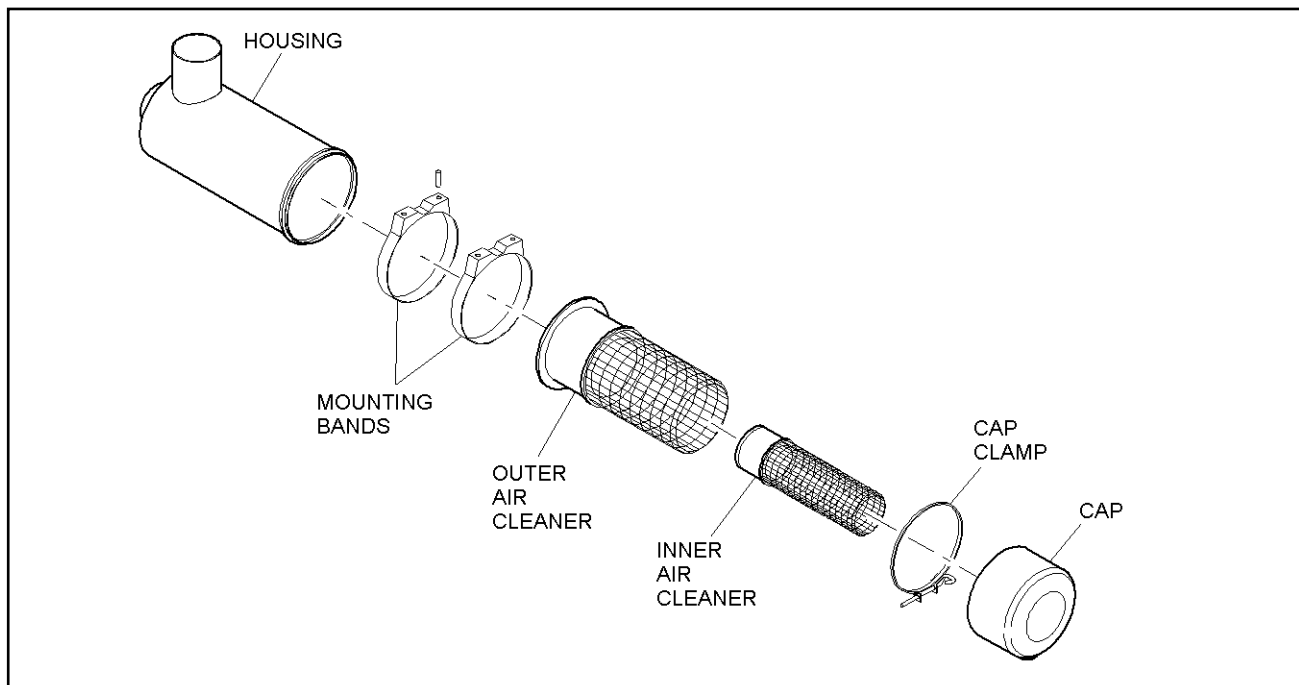


Figure 11. Air Cleaner

5. Move transmission selector lever to neutral "N" and turn key switch to START position. Starter should crank engine.

CHECKS AND ADJUSTMENTS

ADJUSTING BLADE SIDE SHIFT GUIDES

1. Rest blade lightly on the ground. Raise and lower blade slightly to check tightness of the guides. Blade should slide easily.
2. Remove wear bar cover plate, Figure 12, and replace shims as needed.
3. Tighten wear bar cover plate capscrews to 44 ft. lb. (59 N•m).

CHECKING CYLINDER BALL AND SOCKET CLEARANCES

1. Lower blade to ground. Check each ball and socket assembly, Figure 13.

2. Move cylinder without load. Ball should move freely in cylinder socket.
3. Check for excessive looseness (more than 0.045 in. [1.1 mm]).
4. Adjust clearance by removing shims.

CHECK RING RETAINER BAR CLEARANCE

1. Retainer bars, Figure 14, should move freely around saddle assembly.
2. Check for excessive looseness (more than 0.09 in. [2.3 mm]).
3. Adjust clearance by removing ring retainer bar, Figure 14.
4. Replace shims.
5. Install ring retainer bar. Tighten capscrews to 375 ft. lb. (510 N•m).

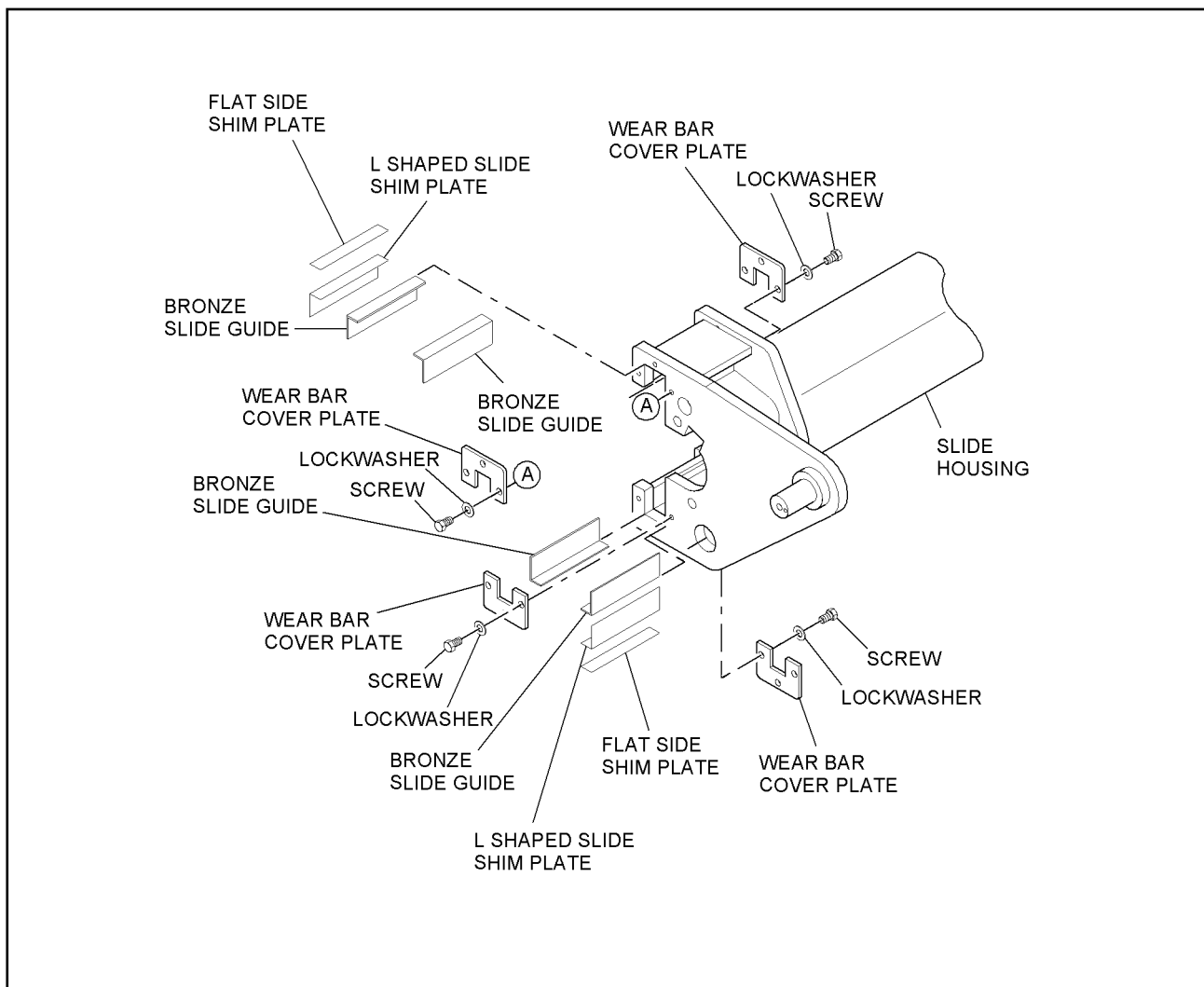


Figure 12. Blade Shift Guides

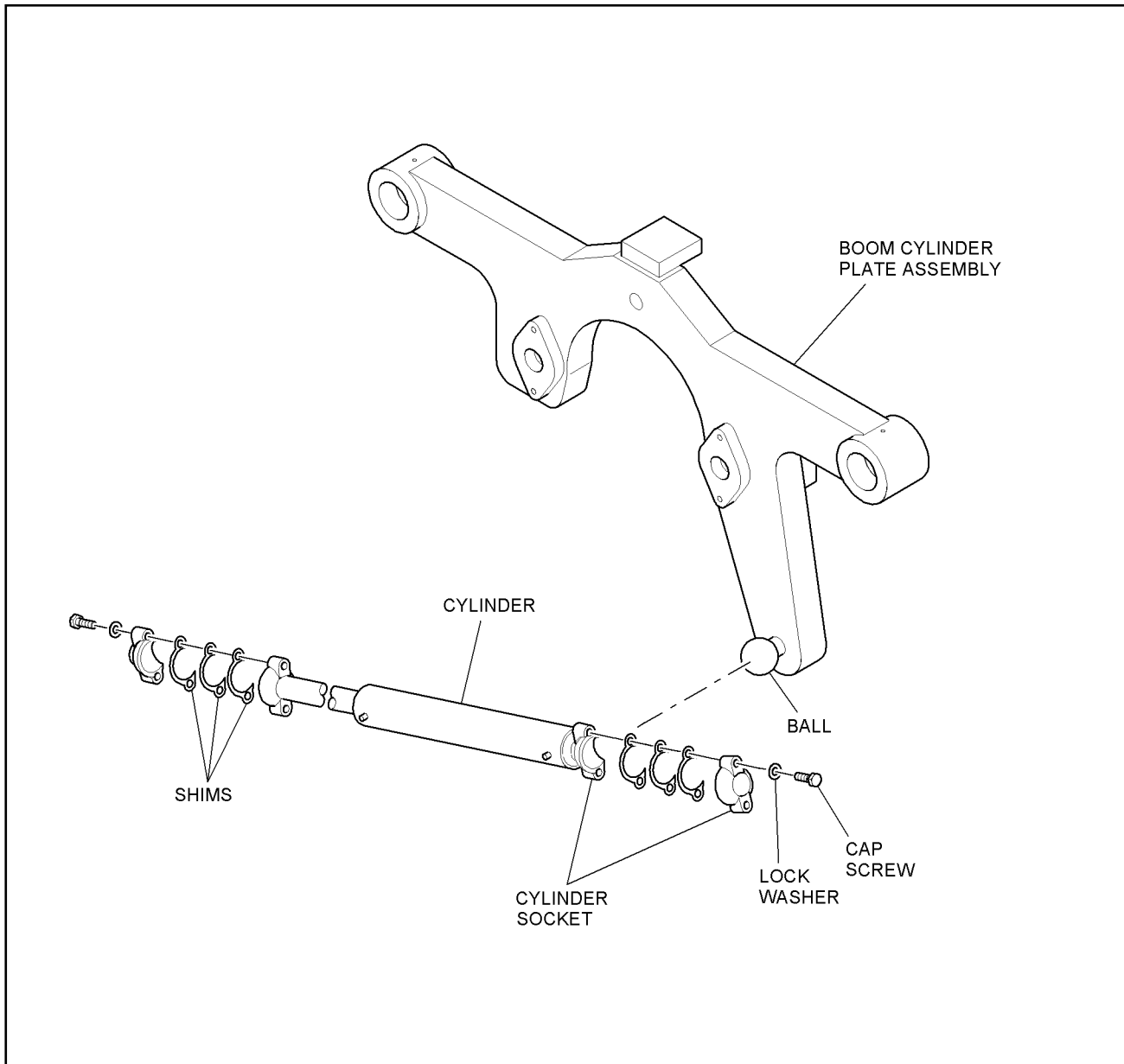


Figure 13. Typical Cylinder Ball and Socket

CHECKING AND ADJUSTING TOE-IN

1. Straighten wheels to vertical position.
2. Lower blade just enough to raise front wheels slightly off the ground. Block the front axle.
3. Turn wheels to straight ahead position.
4. Measure the distance between axle centerline and tie rod pin centerline (A), Figure 15, on each tie rod. The difference between axle centerline should be 0.0 - 0.10 in. (0.0 - 2.5 mm).
5. If the distance is greater than 0.10 in. (2.5 mm) loosen tie rod nut on one tie rod.
6. Turn the tie rod until the distance between the tie rod pins is within 0.10 in. (2.5 mm) of the second tie rod.
7. Measure distance (B), Figure 16, from ground to center of hub.
8. Lift tires off ground enough to rotate.
9. At height (B), make a mark in center of tread on rear of each front tire.
10. Measure distance between marks (C) at rear of tires.
11. Rotate front tires so that marks are at the front.

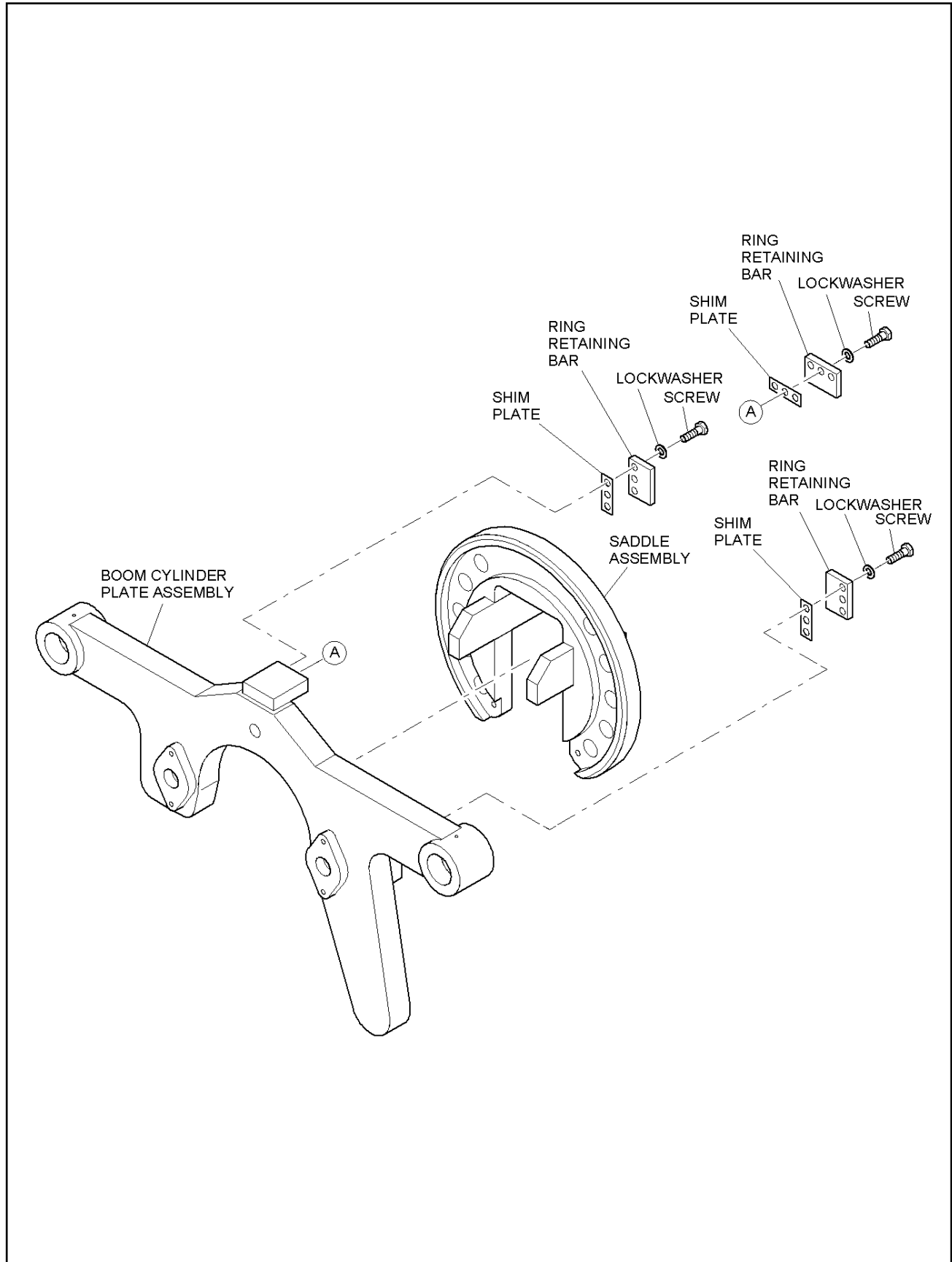


Figure 14. Shoe Saddle Guide

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12. Measure distance between marks (D) on front of tires
13. If difference is greater than 1/4 in. (6.5 mm), loosen tie rod nuts on both tie rods.
14. Turn each tie rod the same number of turns until difference is between 1/4 in. (6.5 mm) and 1/8 in. (3.25mm).
15. Tighten nuts to 210 ft. lb. (285 N.m).

NOTE: After adjustments are made, turn front wheels to the stops in both directions to check for interference.

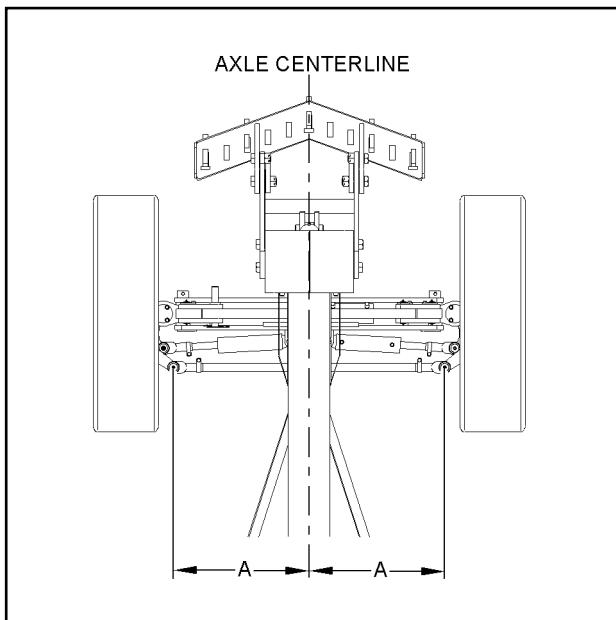


Figure 15. Axle Centerline to Tie Rod Alignment

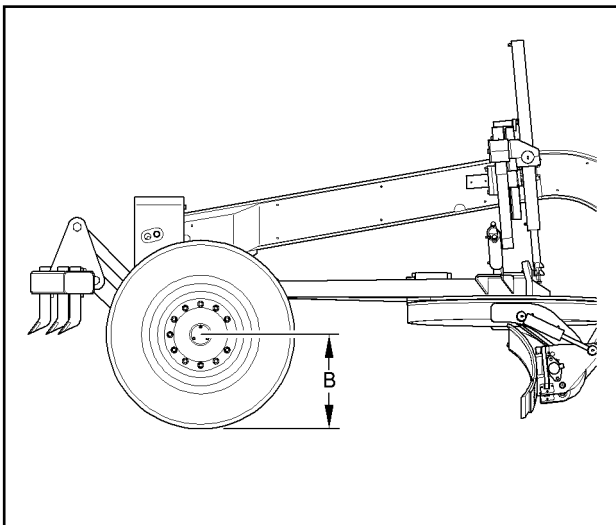


Figure 16. Ground to Hub Center Distance

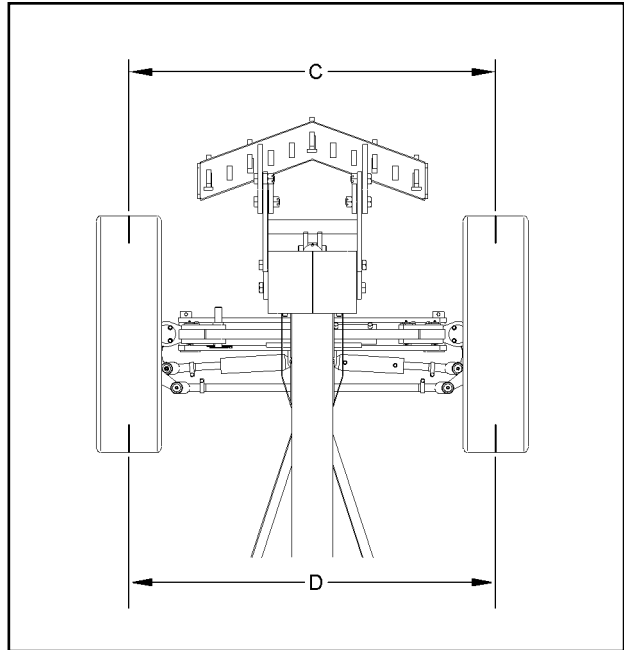


Figure 17. Front and Rear Marks

CHECK OIL LINES AND FITTINGS

WARNING: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluid.



If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

Check all oil lines, hoses, and fittings regularly for leaks or damage. Make sure all clamps are in position and tight. Make sure hoses are not twisted or touching moving machine parts. If abrasion or wear occurs, replace immediately.

Tubing with dents may cause the oil to overheat. If you find tubing with dents, install new tubing immediately.

When tightening connections, use two wrenches to prevent bending or breaking tubing and fittings.

REPLACEMENT PROCEDURES

Reference numbers shown in parenthesis () in the following procedures refer to item references in the Illustrated Parts List for the specified Figure Number.

REPLACING FRONT OR REAR SCARIFIER ASSEMBLY SHANK

Removal

1. Lift shank (30), IPL Figure 7 and 41, to relieve pressure.
2. Pull retainer (20) up to remove.
3. Pull shank forward and drop down.

Installation

1. Insert shank (30) through bottom of slot.
2. Attach retainer (20).
3. Pull shank (30) down to lock into place.

REPLACING SCARIFIER TOOTH

CAUTION Wear safety glasses when replacing scarifier tooth



1. Pry tooth (40), IPL Figure 7 and 41, away from shank (30).
2. Slide new tooth on to shank.
3. Bump new tooth tight with a hammer.

REPLACING ARTICULATE CYLINDERS

For replacement of the articulate cylinders, refer to IPL Figure 4 for the articulation group.

WARNING: When replacing any hydraulic components, remove pressure from the hydraulic system by lowering all items, discharge any accumulator, block any load whose movement could generate pressure, and turn off the engine to prevent pump operation. Remove keys from the ignition to prevent unexpected starting of the machine.



NOTE: Plug and cap all lines and ports when disconnected to prevent entry of dirt into the system.

Removal

1. Lower all hydraulically operated components then turn engine off to stop hydraulic pumps.

2. Support cylinder during removal process.

NOTE: Place a container under hydraulic hoses to catch any hydraulic fluid when disconnecting hoses.

3. Disconnect hydraulic hoses from the cylinder (10).
4. Remove roll pin (50) and articulating cylinder pin (60).
5. Disengage cylinder from boom weldment.
6. Remove roll pin (20) and articulating cylinder pin (30).
7. Lift cylinder out of assembly.
8. Remove bushings (40) and (70) from cylinder.

Installation

1. Install new bushings (40) and (70) into cylinder (10) before installing cylinder.
2. Attach cylinder (10) to boom weldment with articulating pin (60) and roll pin (50).
3. Attach cylinder (10) to rear frame assembly with articulating cylinder pin (30) and roll pin (20).
4. Connect the two hydraulic hoses.
5. Add hydraulic oil, if necessary.
6. Start engine and operate cylinder to check for leaks and for proper operation.
7. Stop the engine.

REPLACING RIGHT WHEEL STEERING CYLINDERS

For replacement of the right wheel steering cylinders, refer to IPL Figure 8 (sheet 4) for the front axle assembly.

WARNING: When replacing any hydraulic components, remove pressure from the hydraulic system by lowering all items, discharge any accumulator, block any load whose movement could generate pressure, and turning off the engine to prevent pump operation. Remove keys from the ignition to prevent unexpected starting of the machine.



1. Lower all hydraulically operated components then turn engine off to stop hydraulic pumps.
2. Support steering cylinder during removal process.

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NOTE: Place a container under hydraulic hoses to catch any hydraulic fluid when disconnecting hoses.

3. Disconnect hydraulic hoses from the steering cylinder (530).
4. Remove nut (570) and capscrew (560) and two bushings (620).
5. Remove cotter pin (540) and castellated nut (550) then drop ball joint (580) out of hub and lever arm assembly (790).
6. Lift cylinder out of assembly.
7. Remove ball joint (580) from cylinder (530).

Installation

NOTE: If ball joint (580) needs to be replaced, be sure zerk fitting (610) is in place and grease new ball joint.

1. Attach ball joint (580) and zerk fitting (610) to cylinder (530).
2. Attach cylinder (530) to front axle with nut (570) and capscrew (580) and two bushings (620).
3. Attach ball joint (580) to hub and lever arm assembly (790) with cotter pin (540) and castellated nut (550).
4. Add hydraulic oil, if necessary.
5. Start engine and operate cylinder to check for leaks and for proper operation.
6. Stop the engine.

REPLACING LEFT WHEEL STEERING CYLINDERS

For replacement of the left wheel steering cylinders, refer to IPL Figure 8 (sheet 3) for the front axle assembly.

1. Lower all hydraulically operated components then turn engine off to stop hydraulic pumps.
2. Support steering cylinder during removal process.

NOTE: Place a container under hydraulic hoses to catch any hydraulic fluid when disconnecting hoses.

3. Disconnect hydraulic hoses from the steering cylinder (250).
4. Remove nut (290) and capscrew (280) and two bushings (340).

5. Remove cotter pin (260) and castellated nut (270) then pull ball joint (300) out of hub and lever arm assembly (510).
6. Lift cylinder out of assembly.
7. Remove ball joint (300) from cylinder (250).
8. Reverse procedure to install a new cylinder.

NOTE: If ball joint (300) needs to be replaced, be sure zerk fitting (330) is in place and grease new ball joint.

REPLACING WHEEL LEAN CYLINDER

For replacement of the wheel lean cylinder, refer to IPL Figure 8 (sheet 6) for the front axle assembly.

1. Lower all hydraulically operated components then turn engine off to stop hydraulic pumps.
2. Support steering cylinder during removal process.

NOTE: Place a container under hydraulic hoses to catch any hydraulic fluid when disconnecting hoses.

3. Disconnect hydraulic hoses from the lean cylinder (1050).
4. Remove nut (1040) and capscrew (1030).
5. Remove wheel lean pin shaft (1020).
6. Check condition of two bushings (1060) and replace if damaged.
7. Remove capscrew (920) and lockwasher (930).
8. Remove capscrew (932), lockwasher (934) and flat washer (936).
9. Pull out retainer pin assembly (910).
10. Check condition of two bushings (950) and replace if damaged.
11. Lift cylinder out of assembly.
12. Reverse procedure to install a new cylinder.

NOTE: If retainer pin assembly (910) needs to be replaced, be sure grease fitting (940) is in place and grease new retainer pin assembly.

REPLACING SCARIFIER LIFT CYLINDER, FRONT SCARIFIER ASSEMBLY

For replacement of the scarifier lift cylinder, refer to IPL Figure 7 for the front scarifier assembly.

1. Lower all hydraulically operated components then turn engine off to stop hydraulic pumps.

2. Support lift cylinder during removal process.

NOTE: Place a container under hydraulic hoses to catch any hydraulic fluid when disconnecting hoses.

3. Disconnect hydraulic hoses from the lift cylinder (250).
4. Remove one roll pin (260) and upper scarifier pin (270).
5. Remove one roll pin (230) and lower scarifier pin (240).
6. Lift cylinder out of assembly.
7. Reverse procedure to install a new cylinder.

REPLACING SCARIFIER LIFT CYLINDER, REAR SCARIFIER ASSEMBLY

For replacement of the scarifier lift cylinder, refer to IPL Figure 41 for the rear scarifier assembly.

1. Lower all hydraulically operated components then turn engine off to stop hydraulic pumps.
2. Support lift cylinder during removal process.

NOTE: Place a container under hydraulic hoses to catch any hydraulic fluid when disconnecting hoses.

3. Disconnect hydraulic hoses from the lift cylinder (130).
4. Remove two roll pins (110) and rear scarifier pin (120).
5. Remove four screws (140), lockwashers (150) and two cylinder mounting collars (160) attached to cylinder mounting plate (170).
6. Lift cylinder out.
7. Reverse procedure to install a new cylinder.

REPLACING MOLDBOARD SLIDE HYDRAULIC CYLINDER

For replacement of the moldboard slide hydraulic cylinder, refer to IPL Figure 10 for the moldboard assembly.

1. Lower all hydraulically operated components then turn engine off to stop hydraulic pumps.
2. Support slide cylinder (130) during removal process.

NOTE: Place a container under hydraulic hoses to catch any hydraulic fluid when disconnecting hoses.

3. Disconnect hydraulic hoses from the slide cylinder (130).
4. Remove two roll pins (20) and slide cylinder mounting pin (30).
5. Remove capscrews (140) and lockwashers (150).
6. Lift out slide cylinder (130).
7. Reverse procedure to install slide cylinder.

REPLACING MOLDBOARD TILT HYDRAULIC CYLINDERS

For replacement of the moldboard tilt hydraulic cylinders, refer to IPL Figure 10 for the moldboard assembly.

1. Lower all hydraulically operated components then turn engine off to stop hydraulic pumps.
2. Support tilt cylinder (40) during removal process.

NOTE: Place a container under hydraulic hoses to catch any hydraulic fluid when disconnecting hoses.

3. Disconnect hydraulic hoses from the tilt cylinder (40).
4. Remove hex capscrew (50), lockwasher (70) and cylinder end cap plate (60) from both ends of the cylinder to be replaced.
5. Slide cylinder ends off the slide assembly (160) and turntable assembly (200) and lift out tilt cylinder (40).
6. Reverse procedure to install tilt cylinders.

REPLACING CIRCLE SHIFT HYDRAULIC CYLINDERS

For replacement of the moldboard angle hydraulic cylinder, refer to IPL Figure 9, Yoke Assembly.

1. Lower all hydraulically operated components then turn engine off to stop hydraulic pumps.
2. Support shift cylinder (40) during removal process.

NOTE: Place a container under hydraulic hoses to catch any hydraulic fluid when disconnecting hoses.

3. Disconnect hydraulic hoses from the shift cylinder (40).
4. Remove four hex head screws (50), lockwashers (60), and two bearing caps (40),

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5. Remove cylinder from plate assembly (270) and from moldboard assembly (10), IPL Figure 2, and lift out shift cylinder (40), IPL Figure 9.
6. Reverse procedure to install shift cylinders and torque capscrews (50) to 210 in. lb. (23.7 N•m).

REPLACING MOLDBOARD LIFT HYDRAULIC CYLINDERS

For replacement of the moldboard lift hydraulic cylinders, refer to IPL Figure 9, Yoke Assembly.

Removal

1. Lower all hydraulically operated components then turn engine off to stop hydraulic pumps.
2. Support lift cylinder (220) to be removed during removal process.

NOTE: Place a container under hydraulic hoses to catch any hydraulic fluid when disconnecting hoses.

3. Disconnect hydraulic hoses from the lift cylinder (220).
4. Remove two hex capscrews (230), lockwashers (240) and the bearing cap (220), disconnecting cylinder (220) from moldboard assembly (10), IPL Figure 2.
5. Remove two capscrews (150), IPL Figure 9, lockwashers (160), and each cylinder bottom clamp plate (140).
6. Remove cylinder end cap (180), steel bushing (190), drawbar bushing (200), and oil seal (210).

Installation

1. Install grease fittings (250) into cylinder end caps (180).
2. Install new oil seals (210), drawbar bushings (200), steel bushings (190), and cylinder end caps (180).
3. Position cylinders (220) in cylinder clamps (170).
4. Attach each cylinder bottom clamp plate (140) with two capscrews (150) and lockwashers (160).
5. Torque capscrews (150) to 105 in. lb. (11.9 N•m).
6. Attach bearing cap (220) with hex cap screw (230) and lockwasher (240) to moldboard assembly (10), IPL Figure 2.
7. Torque capscrews (230), IPL Figure 9, to 210 in. lb. (23.7 N•m).

NOTE: If hydraulic fittings have been removed from the cylinder, be sure that the fitting with the orifice is attached at the rod end.

REPLACING MOLDBOARD END BITS

For replacement of the moldboard end bits, refer to IPL Figure 11 for the moldboard assembly.

1. Remove the four nuts (60) and plow bolts (50) securing each end bit (40) to moldboard weldment (70) and remove end bit (40).
2. Reverse procedures to install a new end bit.

REPLACING MOLDBOARD CUTTING EDGE

For replacement of the moldboard cutting edge, refer to IPL Figure 11 for the moldboard assembly.

1. Raise moldboard so that cutting edges (10) are off ground.
2. Remove the eight nuts (30) and plow bolts (20) securing each cutting edge (10) to moldboard weldment (70) and remove each cutting edge (10).
3. Reverse procedures to install a new cutting edge.

REPLACING HYDRAULIC RESERVOIR STRAINERS

For replacement of the hydraulic reservoir strainers refer to IPL Figure 37.

Hydraulic Oil Suction Strainer and Hydraulic Oil Strainer Filter

WARNING: Hydraulic oil is extremely hot after use. Allow oil to cool before servicing.



1. Lower all hydraulically operated components. Turn engine off to stop hydraulic pumps.
2. Place a container with enough capacity to hold the hydraulic fluid from the hydraulic tank.
3. Drain the hydraulic tank and discard the oil in accordance with regulations.
4. Disconnect suction line from strainer.
5. Remove the oil suction strainer (20) or oil strainer filter (30) as applicable.
6. Install new components.
7. Reconnect the suction line to strainer.
8. Refill the hydraulic tank with new hydraulic fluid.
9. Check system operation.

Strainer and Gasket Kit

WARNING: Hydraulic oil is extremely hot after use. Allow oil to cool before servicing.



1. Remove cap (40).
2. Remove six screws (60).
3. Remove filler neck (50).
4. Remove strainer and gasket (70).
5. Install new strainer and gasket (70) and align the six screw holes of the components.
6. Install filler neck (50) and align screw holes.
7. Attach filler neck (50) and strainer and gasket kit (70) with the six screws (60).
8. Check hydraulic oil level and add oil if required.
9. Install cap (40).

REPLACING EXHAUST SYSTEM

For replacement of the muffler, refer to IPL Figure 33.

WARNING: Allow engine to cool down before performing any service.



1. Support muffler (150) then loosen clamp (160) attaching muffler to engine assembly (170).
2. Remove muffler (150) from grader.
3. Install new muffler by reversing procedure.

REPLACING RADIATOR ASSEMBLY

For replacement of the radiator, refer to IPL Figure 33.

WARNING: Allow engine to cool down before performing any service.



NOTE: Remove hood and grill to access radiator.

1. Drain radiator coolant into a container large enough to hold all radiator coolant.
2. Disconnect the transmission fluid lines and plug lines. Allow transmission fluid in radiator to drain into a container.
3. Disconnect the hydraulic fluid lines and plug lines. Allow hydraulic fluid in radiator to drain into a container.

4. Support radiator during removal process.
5. Remove nuts (70), lockwashers (80), and screws (60) attaching radiator-mounting pad (50) to radiator support plate (90).
6. Lift radiator (10) off of mounting surface.
7. Remove screw (20), nut (30), and lockwasher (40) attaching radiator-mounting pad (50) to radiator.

NOTE: Check radiator mounting pads (50) for wear or damage and replace if necessary.

8. Install a new radiator by reversing procedure.
9. Check for proper centering of the fan in the shroud. Fan should be 2/3 in shroud for proper air flow.
10. After reconnecting hoses, add coolant, hydraulic fluid and transmission fluid as needed. Add coolant to overflow tank if necessary.

REPLACING VALVE BANK

Refer to IPL Figure 24 to replace a valve in the valve group.

WARNING: When replacing any hydraulic components, remove pressure from the hydraulic system by lowering all items, discharge any accumulator, block any load whose movement could generate pressure, and turning off the engine to prevent pump operation. Remove keys from the ignition to prevent unexpected starting of the machine.



1. Lower all hydraulically operated components then turn engine off to stop hydraulic pumps.

NOTE: Place a container under hydraulic hoses to catch any hydraulic fluid when disconnecting hoses.

2. Disconnect all hydraulic hoses from the valves.
3. Remove valve assembly and place on a clean table for service.
4. Disconnect the ball stud heim joint (150 or 170), as applicable, from the valve mount shaft (190).
5. Remove two nuts (100) and slide capscrew (90) out far enough to clear the valve that is to be replaced.
6. Slide the defective valve out of the valve assembly.

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7. Reverse procedure when installing a new valve.
8. Torque nuts (100) and capscrews (90) to 49 ft. lb. (67 N•m).

REPLACING WINDSHIELD WIPER ASSEMBLY

The motor assembly (220) for the windshield wiper is attached at the center of the windshield. Refer to IPL Figure 17 to replace the motor assembly.

1. Remove wiper motor cover (215).
2. Disconnect electrical wires from wiper motor (220).
3. Remove the wiper arm retaining nut (200), flat washer (210), and wiper arm (190).
4. Remove self-locking nut (240), flat washer (250) inside cab.
5. Remove screw (230) and flat washer (250) outside cab.
6. Remove wiper motor (220).
7. Reverse procedure to install a new wiper motor (220).

REPLACING WHEEL AND TIRE

Front Wheel

For replacement of the front tire and wheel, refer to IPL Figure 1.

Removal

1. Place wooden blocks in front of and in back of the rear wheels.
2. Jack up the front end of the grader, under the wheel that is to be removed so it is just touching the ground.
3. Place wooden bracing under the frame in the event the jack slips.
4. Remove the 12 nuts (120) securing the front wheel (100 or -130) to the axle, then remove wheel.

Installation

NOTE: Be sure tires are mounted on the rim with proper tread orientation as shown in the IPL.

1. Slide the front wheel (100 or -130) onto the axle with the tire oriented as shown in the IPL.

2. Secure the tire to the axle with the 12 nuts (120) and studs (110). Be sure flat side of nut is toward tire rim.
3. Using a torque wrench, torque the nuts in a star pattern to even the tension on the wheel as the nuts are tightened. Torque nuts to 460 ft. lb. (628 N•m).
4. Remove the wooden bracing from under the frame and lower to the ground.
5. Check tire pressure. Pressure should be 35 psi (241 kPa) (2.45 bar).

Rear Wheel

For replacement of the rear tire and wheel, refer to IPL Figure 4.

Removal

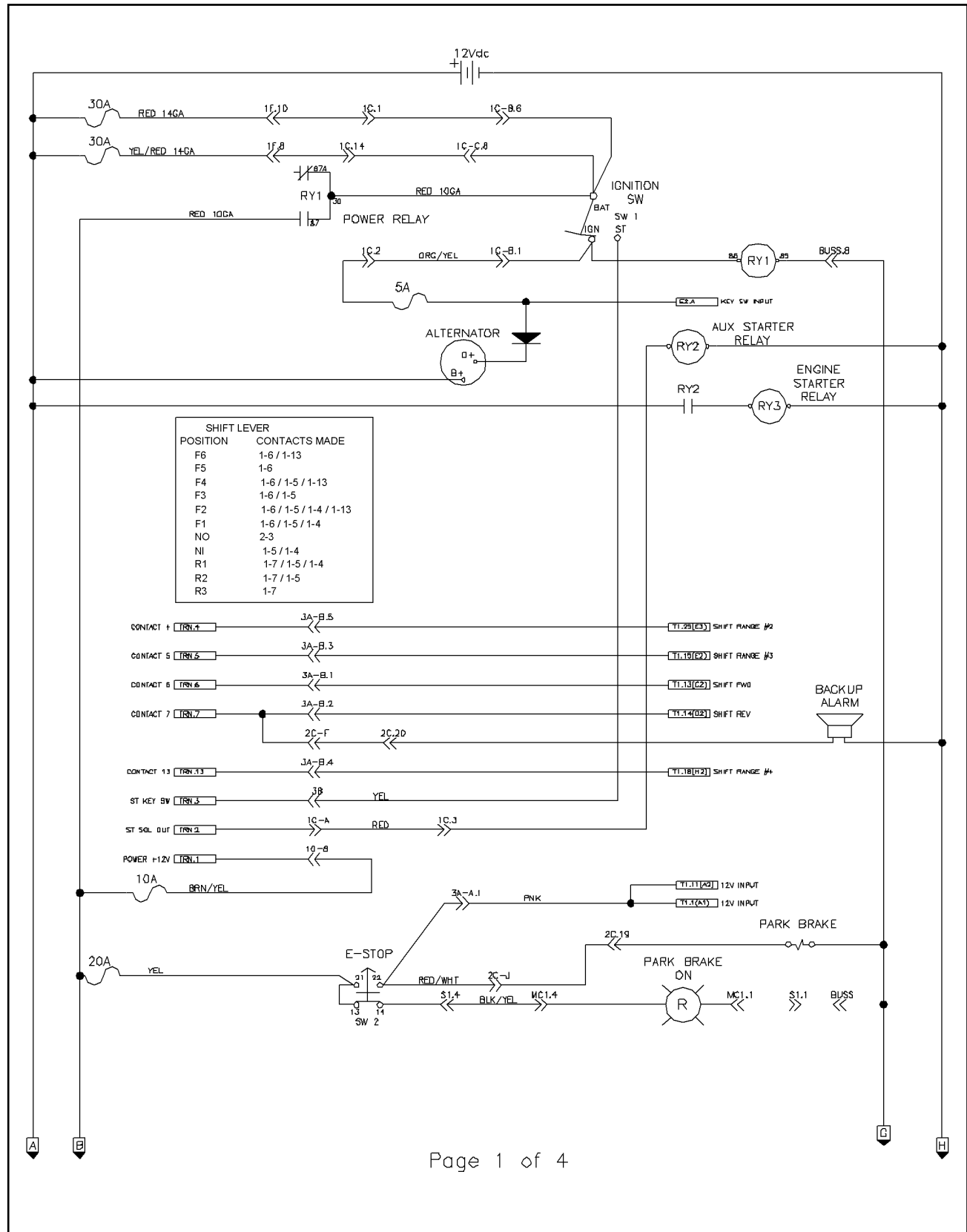
1. Place wooden blocks in front of and in back of the front wheels.
2. Jack up the rear end of the grader, so that the wheel that is to be removed is just touching the ground.
3. Place wooden bracing under the frame in the event the jack slips.
4. Remove the 12 nuts (230) securing the rear wheel (210 or -240) to the axle, then remove wheel.

Installation

NOTE: Be sure tires are mounted on the rim with proper tread orientation as shown in the IPL.

1. Slide the rear wheel (210 or -240) onto the axle with the tire oriented as shown in the IPL.
2. Secure the tire to the axle with the 12 nuts (230). Be sure flat side of nut is toward tire rim.
3. Using a torque wrench, torque the nuts in a star pattern to even the tension on the wheel as the nuts are tightened. Torque nuts to 460 ft. lb. (624 N•m).
4. Remove the wooden bracing from under the frame and lower to the ground.
5. Check tire pressure. Pressure should be 35 psi (241 kPa) (2.45 bar).

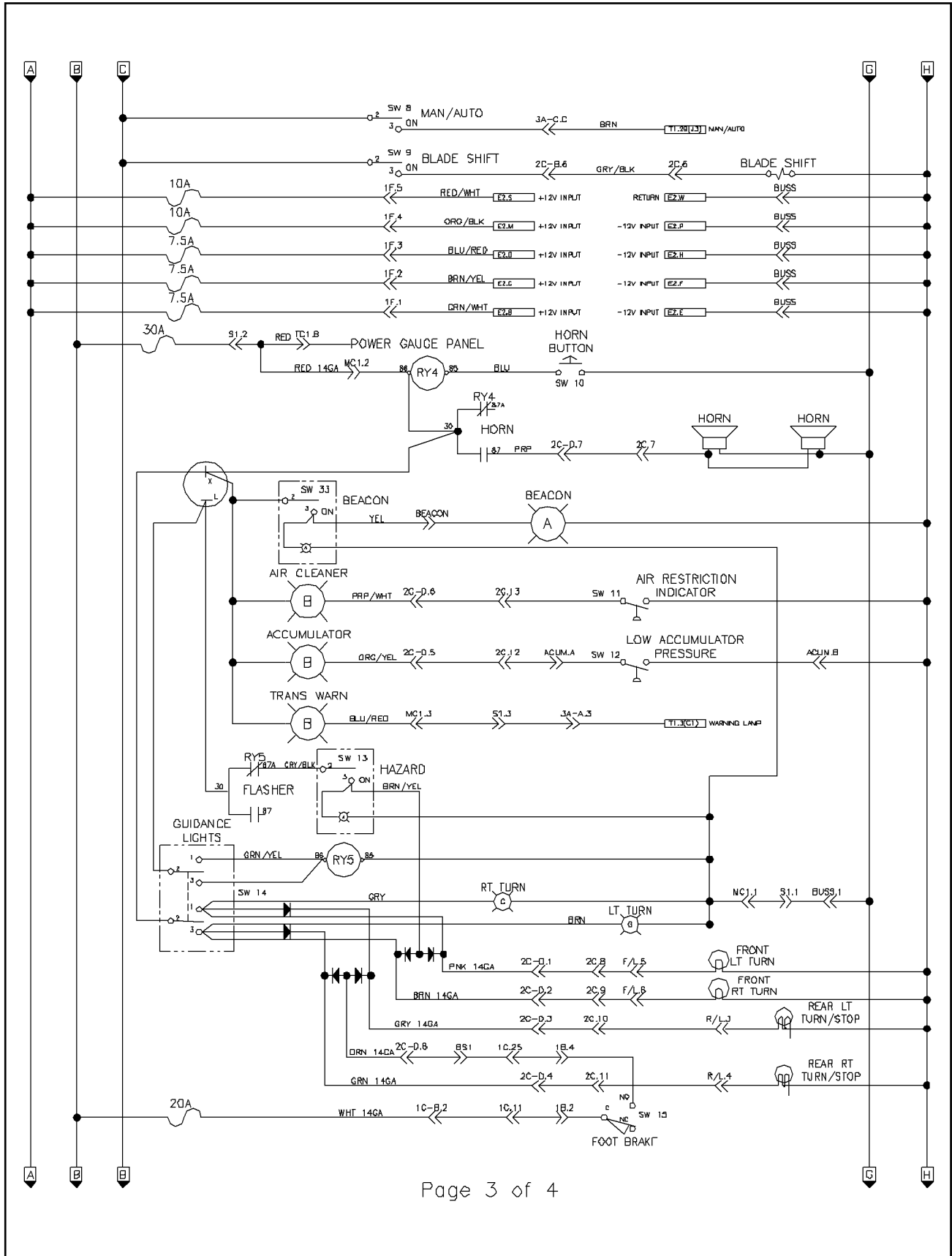
SCHEMATIC DIAGRAMS



WIRING SCHEMATIC (sheet 1 of 4)

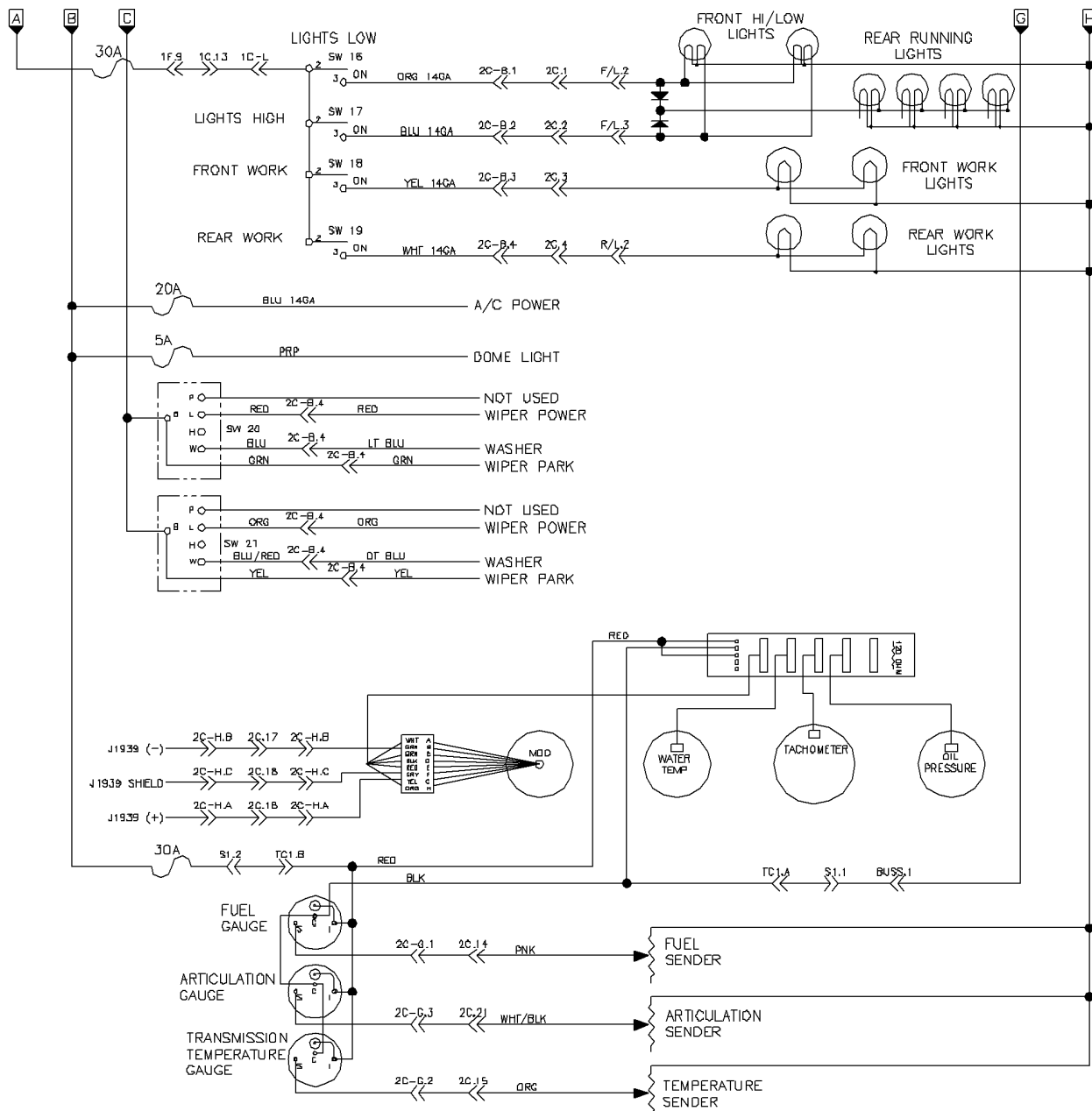
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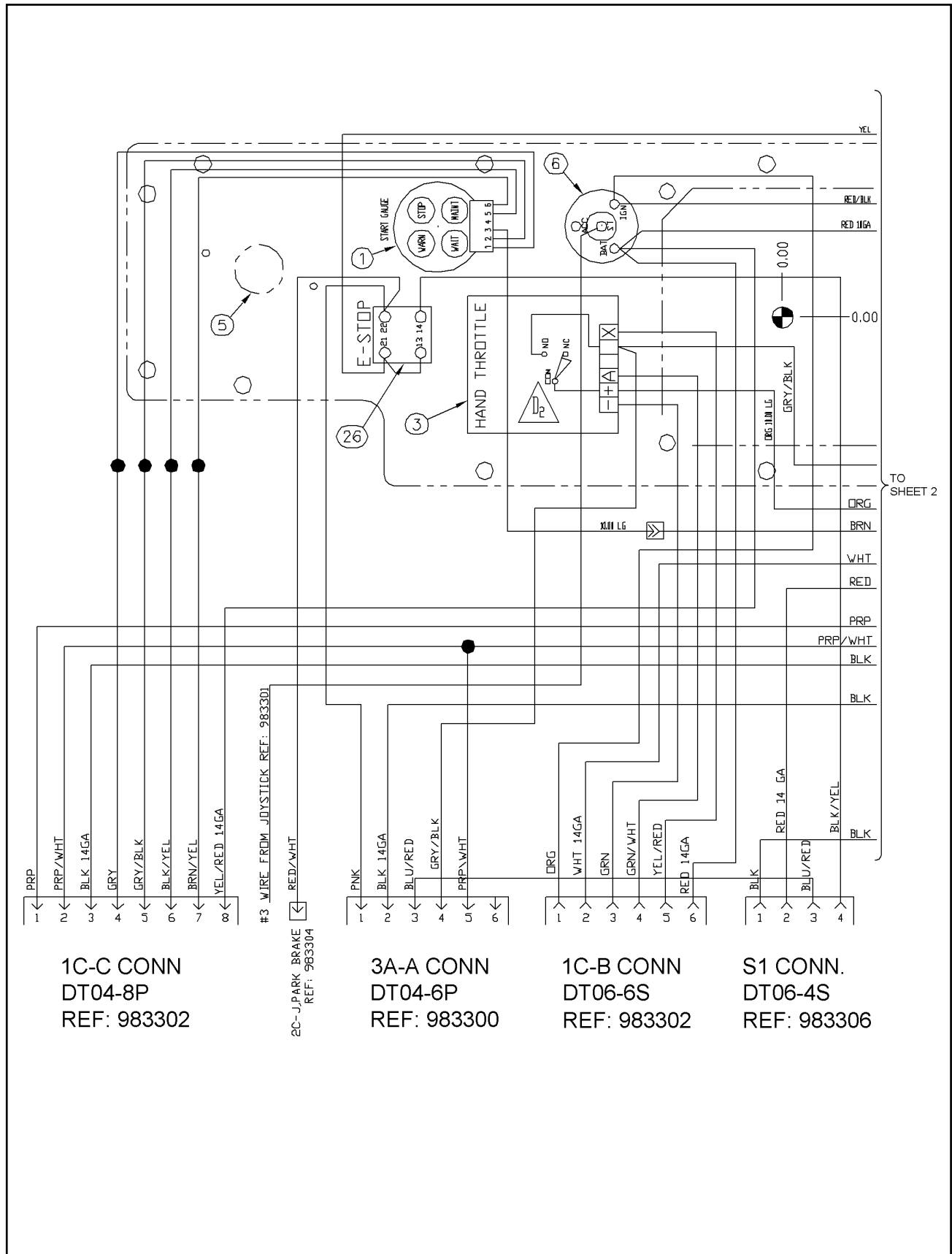




WIRING SCHEMATIC (sheet 3 of 4)

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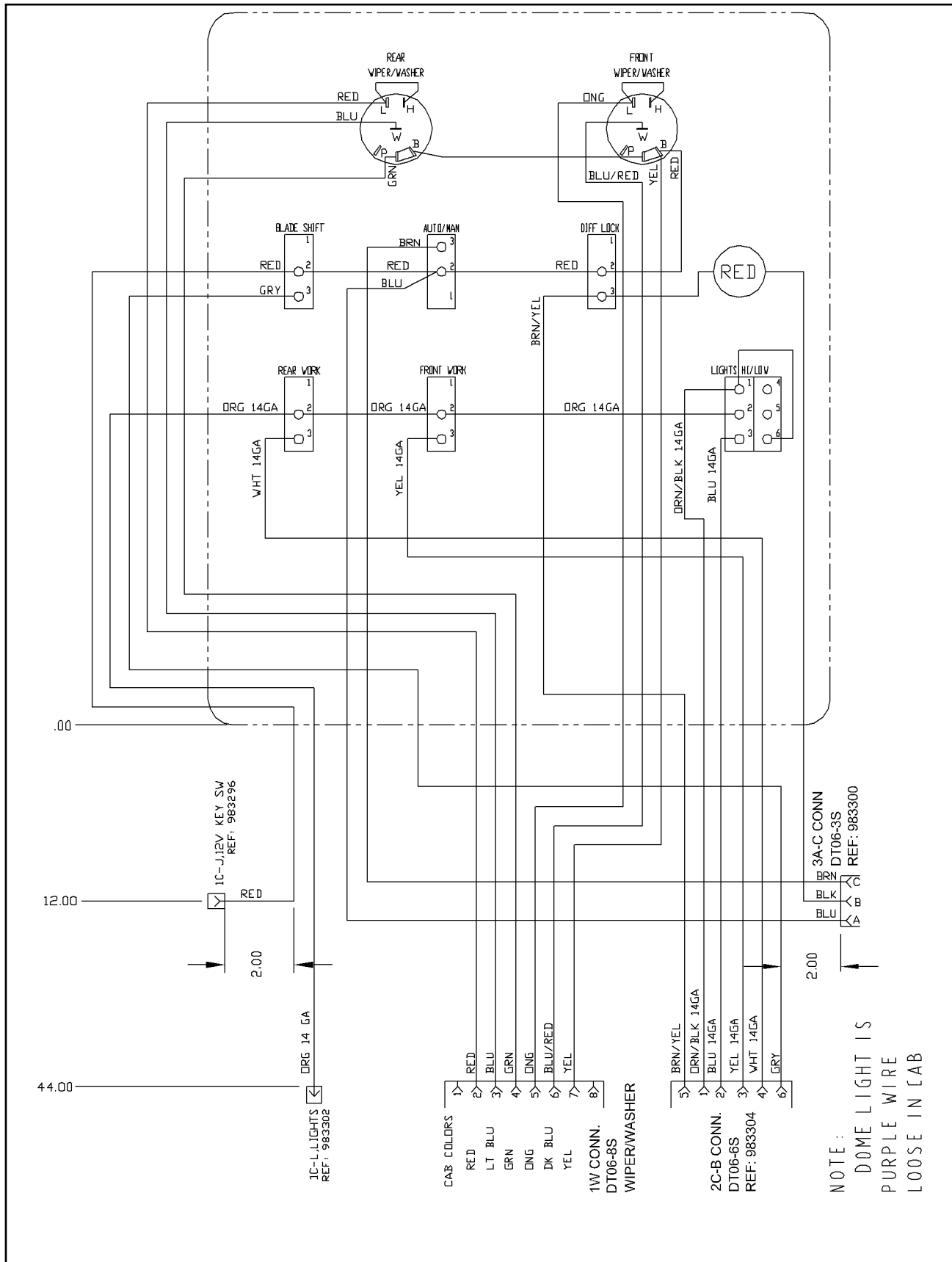
SIDE PANEL WIRING SCHEMATIC (sheet 1 of 3)

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SIDE PANEL WIRING SCHEMATIC (sheet 2 of 3)

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	73200	GUAGE, WARNING LIGHTS, QSB	1
2	982430	CONTROLLER, TRANS ELECTRONIC	1
3	982876	CONTROLLER, ELEC THROTTLE	1
4	983296-01	PANEL, SIDE, 785, SUB-WIRED	1
5	984265	SHIFTER, ELEC, 6 FWD, 3 REV	1
6	500010	SWITCH, IGNITION, 3 POS, 10 AMP	1
7	36085	RELAY, SPDT	1
8	36086	BASE, RELAY	1
9	36118-2	TERM, RELAY	4
10	36694	FUSE BLOCK, BLADE, 10	1
11	39102	RESISTOR, 2K OHM, 0.25 WATT	2
12	982449	CONN, DEUTSCH, DT04-8P	1
13	983216	WEDGE, 8P	1
14	983204	CONN, DEUTSCH, DT04-6P	1
15	983215	WEDGE, 6P	1
16	983205	CONN, DEUTSCH, DT06-6S	1
17	983214	WEDGE, 6P	1
18	983203	CONN, DEUTSCH, DT06-4S	1
19	983214	WEDGE, 4P	1
20	983198	CONN, DEUTSCH, DT04-28P	1
21	983207	WEDGE, 2P	1
22	33600	TERM, PUSH ON, 0.25, FEMALE	1
23	36348	TERM, PUSH ON, 0.25, MALE	4
24	982456	TERM, DEUTSCH, MALE	14
25	982448	TERM, DEUTSCH, FEMALE	10
26	981507	SWITCH, EMERGENCY STOP	1
27	984254	DEUTSCH, BUSS, 8 PIN	1
28	982455	CONN, DEUTSCH, DT06-8S	1
29	983218	WEDGE, 8P	1

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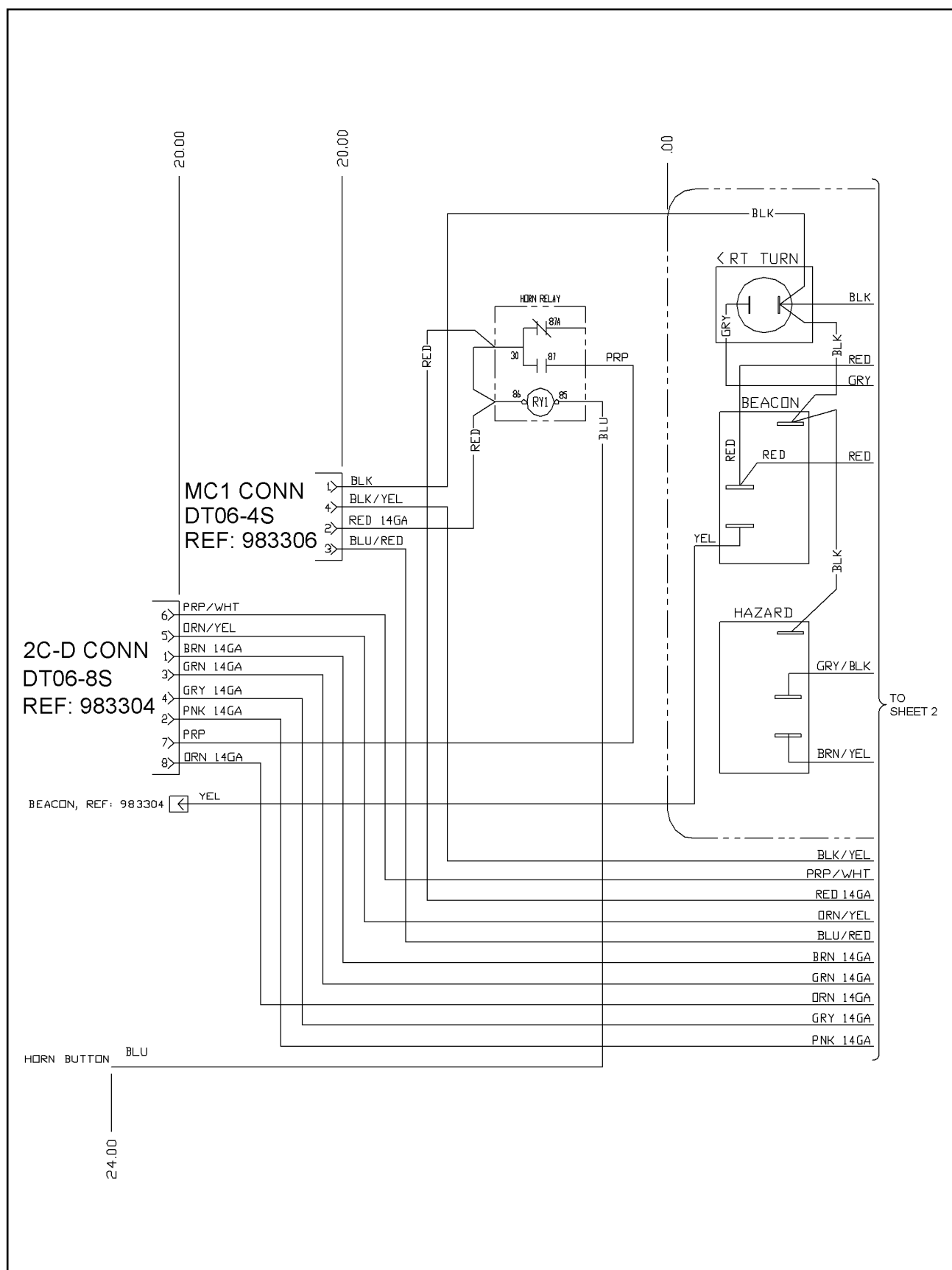
SIDE AUXILIARY PANEL WIRING SCHEMATIC (sheet 1 of 2)



Section 4 MAINTENANCE

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	33600	TERM, PUSH ON, 0.25, FEMALE, 16-14 GA	1
2	36348	TERM, PUSH ON, 0.25, MALE, 18-14, SLV	1
3	851391	SWITCH, TOGGLE, SP5T, 2 POS	5
4	853090	SWITCH, WIPER/WASHER 3000	1
5	982441	PLATE, COVER	1
6	982448	TERM, SOC, DEUTSCH, 16 AWG	15
7	982455	CONN, PLUG, DEUTSCH, 8P, TYPE A	1
8	983201	CONN, PLUG, 3P, DEUTSCH	1
9	983205	CONN, PLUG, 6P, DEUTSCH	1
10	983210	CONN, WEDGE, PLUG, 3P, DEUTSCH	1
11	983214	CONN, WEDGE, PLUG, 6P, DEUTSCH	1
12	983218	CONN, WEDGE, PLUG, 8P, DEUTSCH	1
13	31983	LIGHT, INDICATOR RED	1
14	36149	SWITCH, TOGGLE, DP0T, 2 POS	1

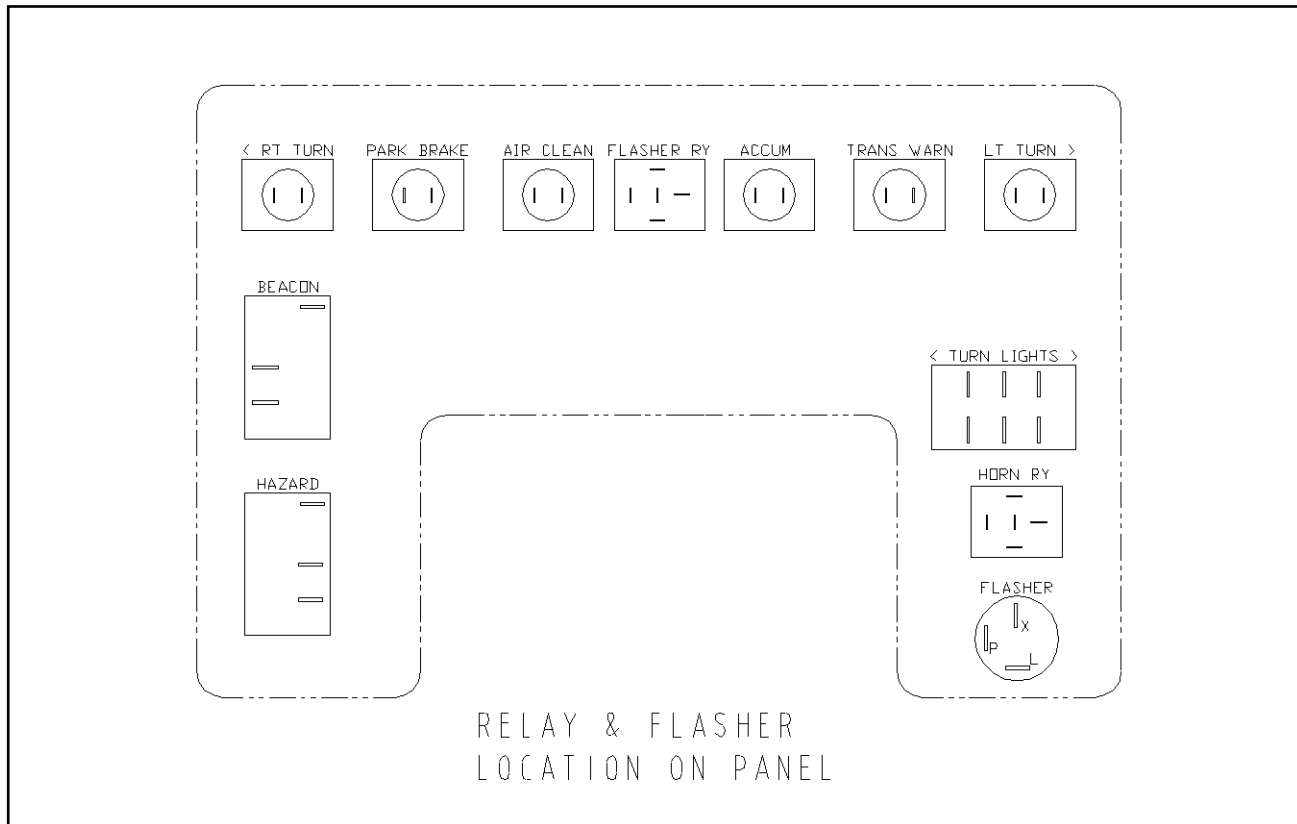
Section 4 MAINTENANCE



TURN SIGNAL PANEL WIRING SCHEMATIC (sheet 1 of 3)



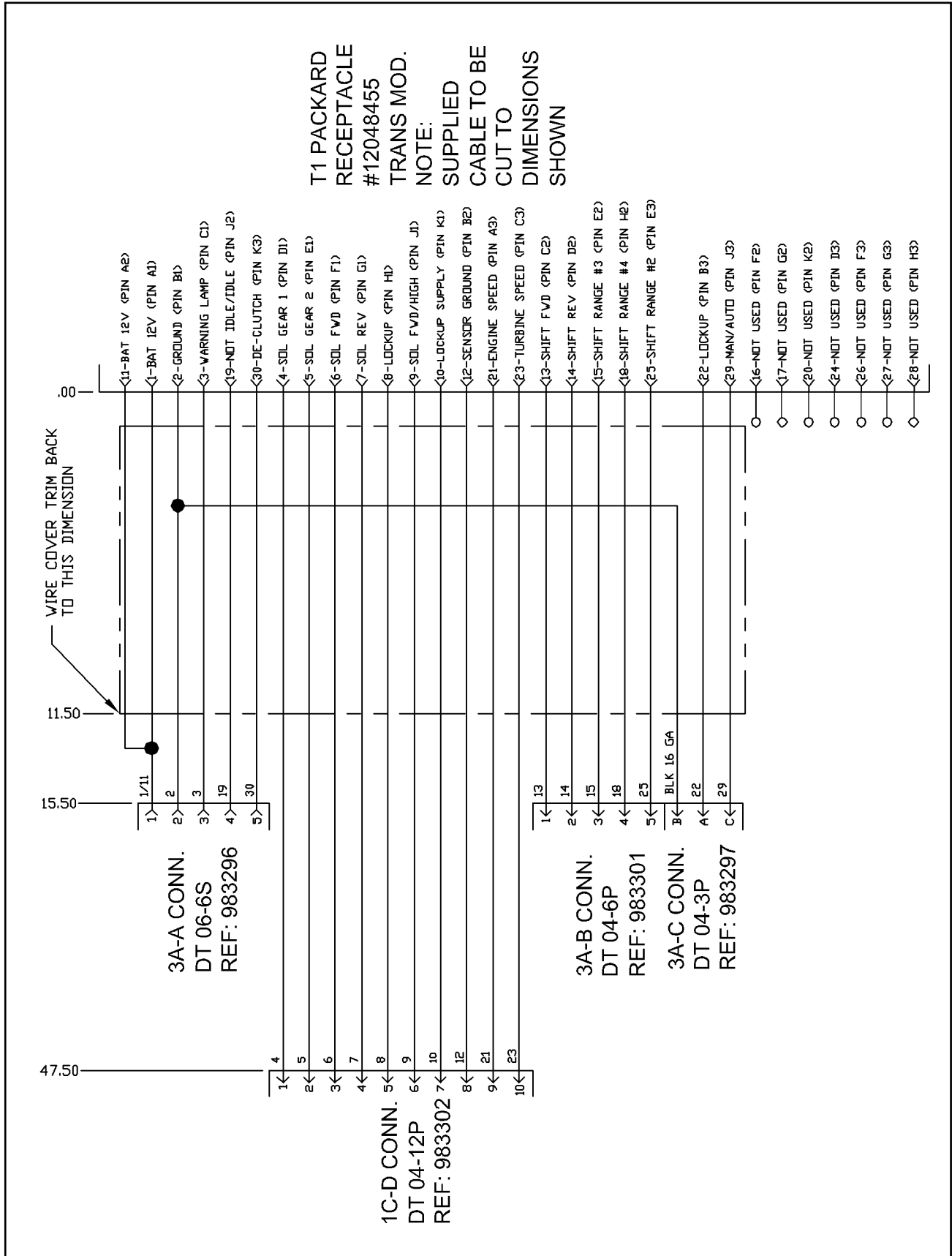
Section 4 MAINTENANCE



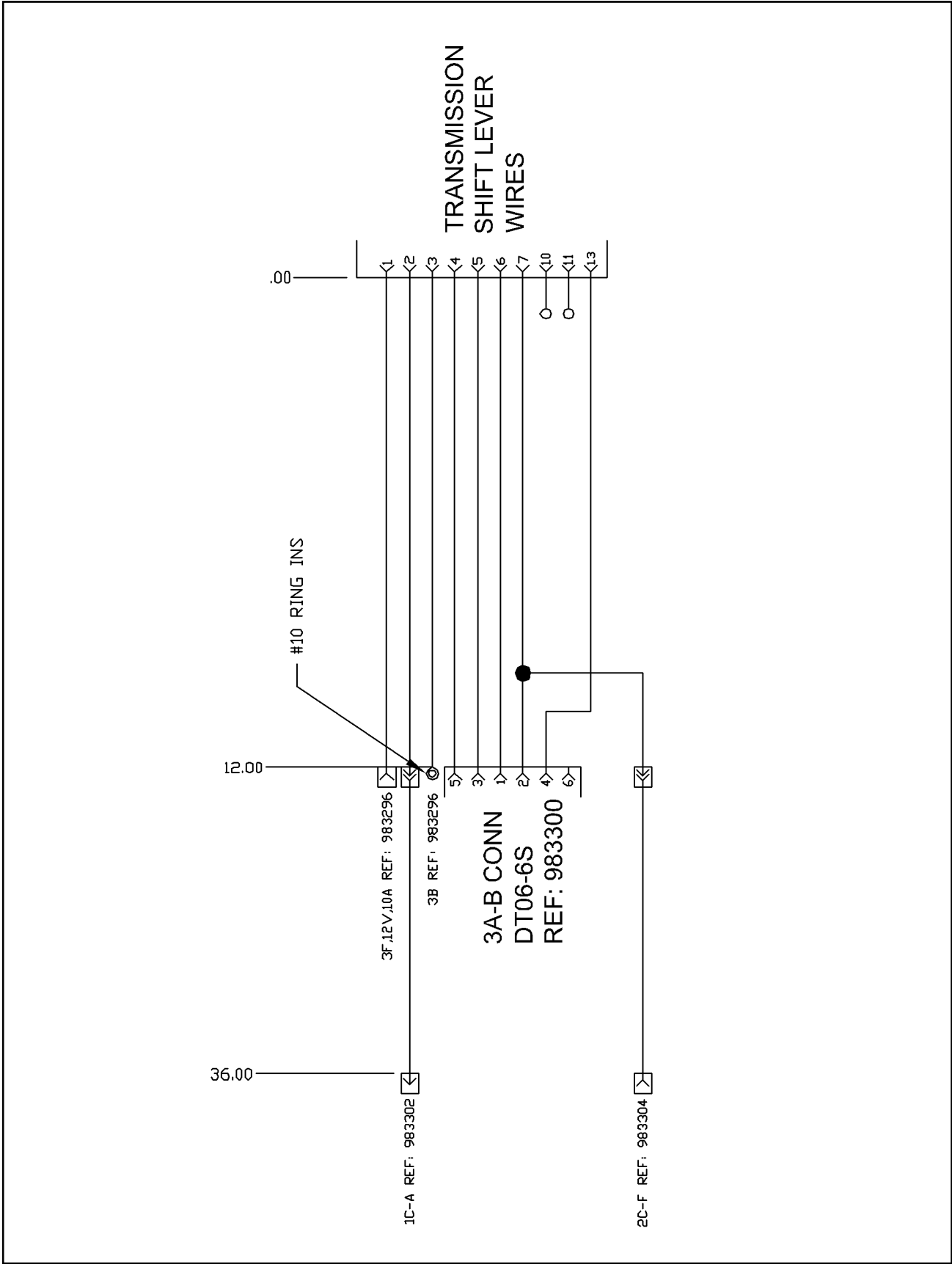
TURN SIGNAL PANEL WIRING SCHEMATIC (sheet 3 of 3)

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	160035	FLASHER, TURN SIGNAL 635/685	1
2	33600	TERM, PUSH ON, 0.25, FEMALE, 16-14 GA	1
3	35004	DIODE, 3 AMP, PLASTIC	4
4	36348	TERM, PUSH ON, 0.25, MALE, 18-14, SLV	1
5	39140-09	OVERLAY	6
6	39140-10	LIGHT, EURO, SMOKED, GRN/RED	6
7	39140-11	SWITCH, ROCKER, PADDLE, DPDT	1
8	39140-14	SWITCH, ROCKER, AMBER, SPST	1
9	39140-18	SWITCH, ROCKER, AMBER, DPDT	1
10	981809	PLATE, LIGHT PANEL	1
11	982448	TERM, SOC, DEUTSCH, 16 AWG	10
12	983202	CONN, SOC, 4P, DEUTSCH	1
13	983205	CONN, PLUG, 6P, DEUTSCH	1
14	983212	CONN, WEDGE, PLUG, 4P, DEUTSCH	1
15	983214	CONN, WEDGE, PLUG, 6P, DEUTSCH	1
16	983275	ELECTRICAL SERVICE INDICATOR	1

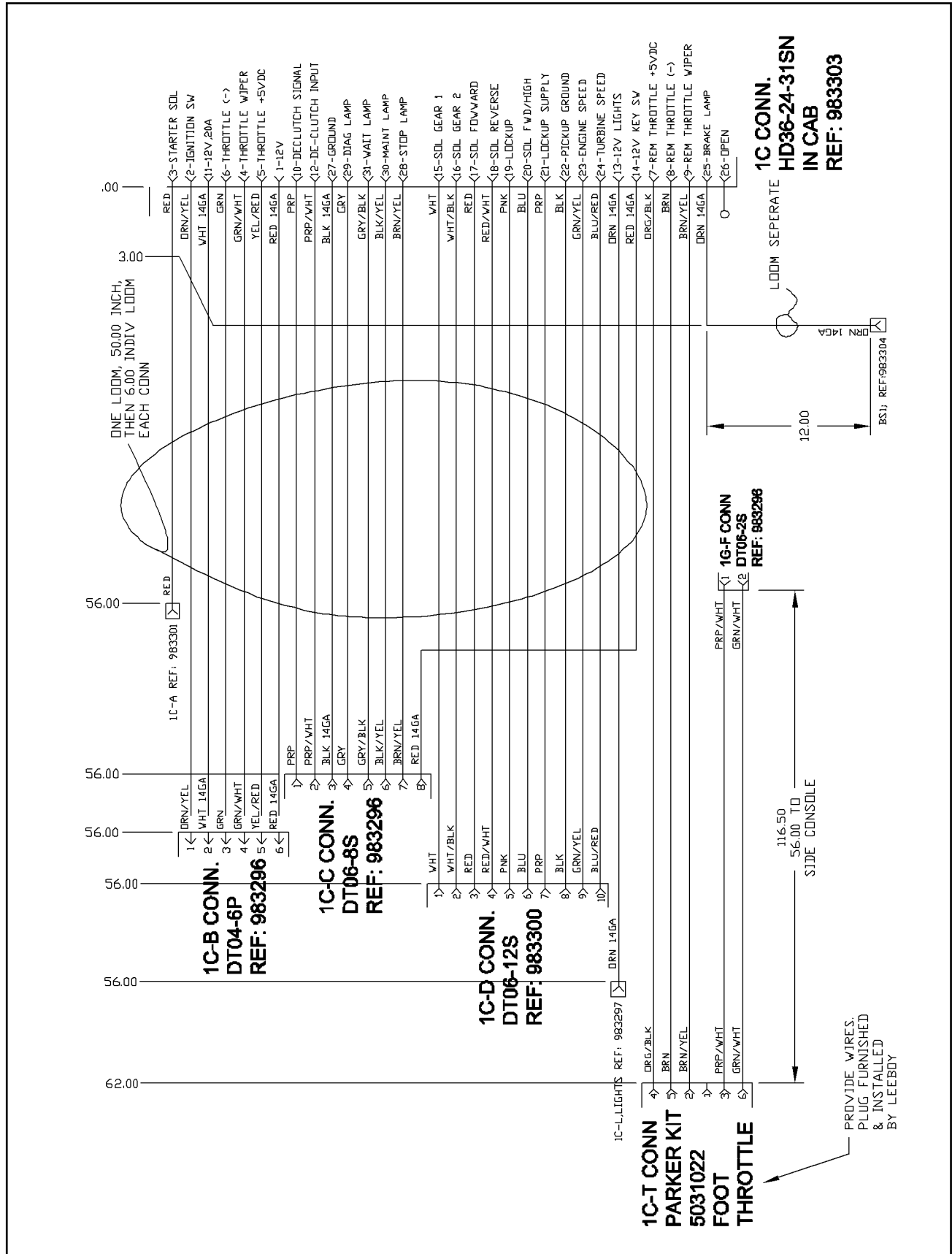
TURN SIGNAL PANEL WIRING LEGEND (sheet 3 of 3)



TRANSMISSION MODULE HARNESS, APC SCHEMATIC

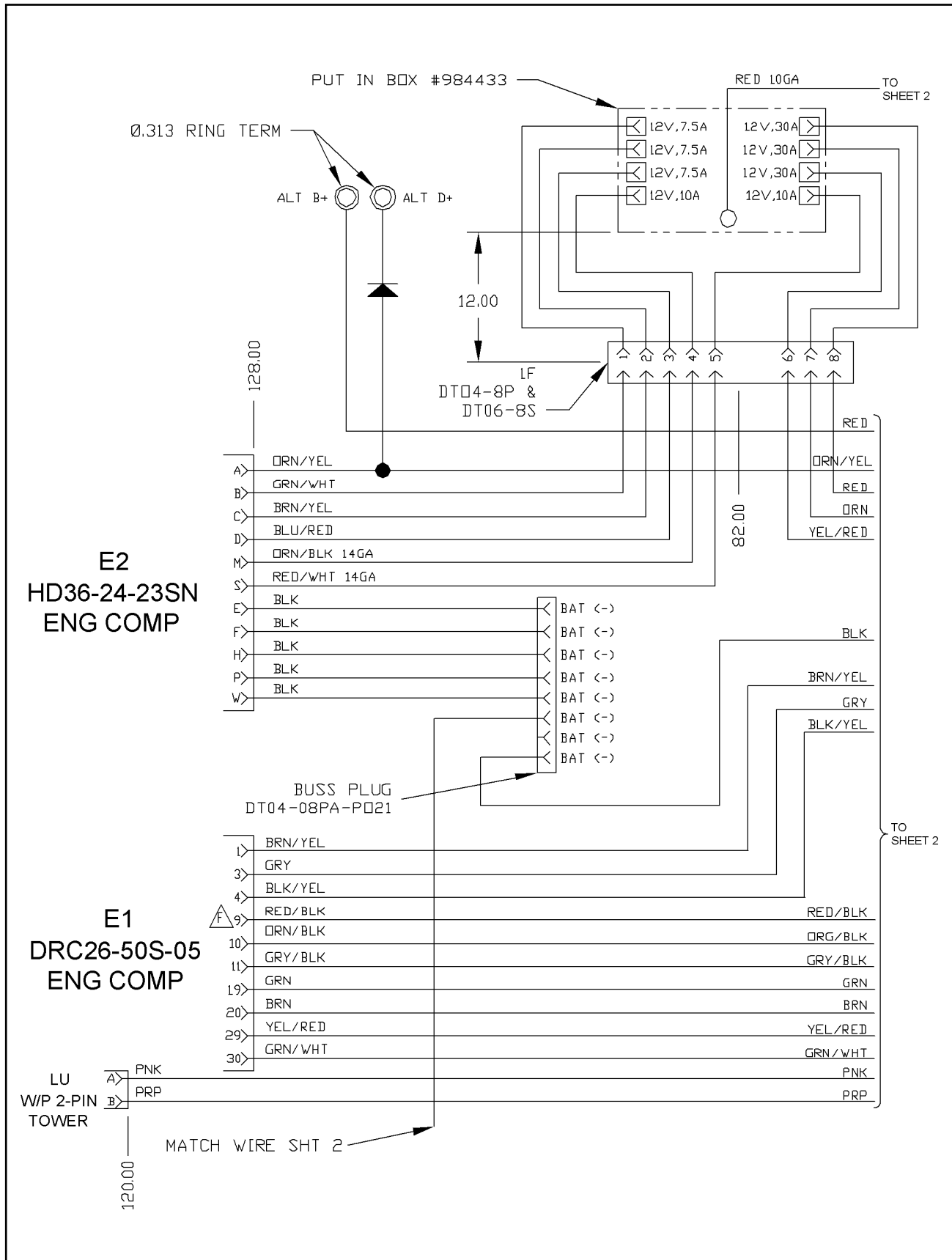


SHIFT HARNESS SCHEMATIC

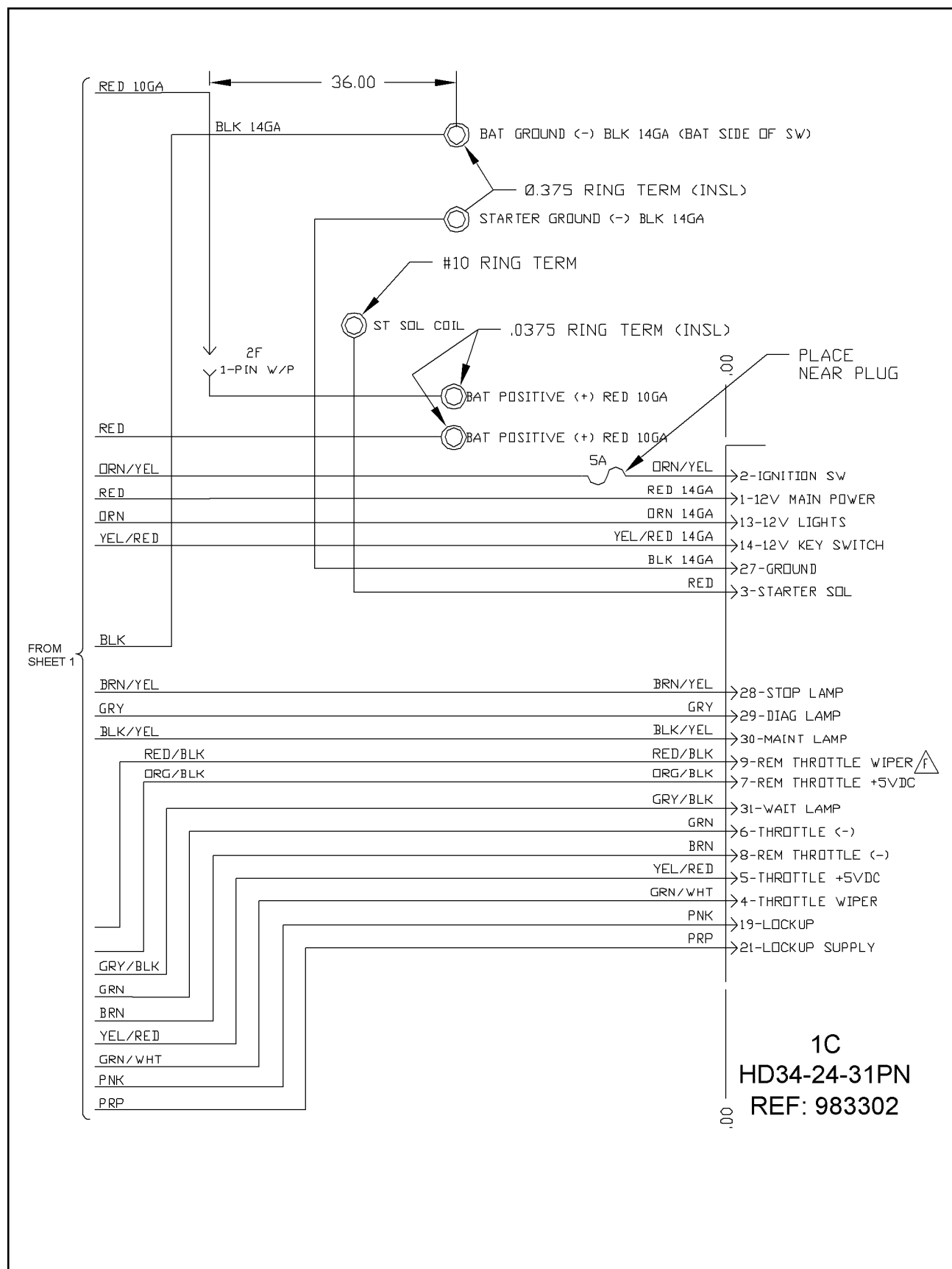


CAB TO PANELS, #1C HARNESS SCHEMATIC

Section 4 MAINTENANCE

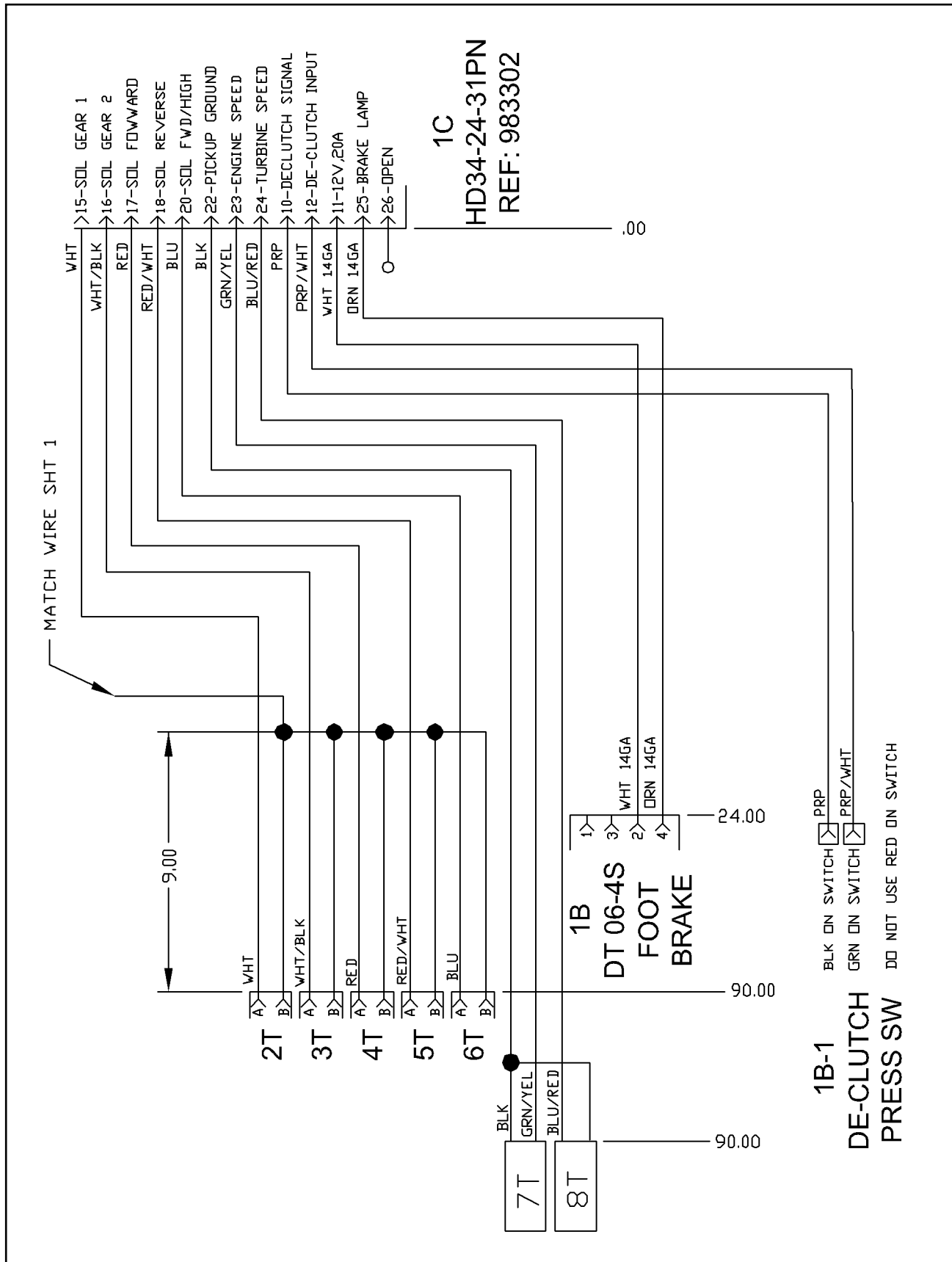


CAB TO ENGINE AND TRANSMISSION, #1C HARNESS SCHEMATIC (sheet 1 of 4)

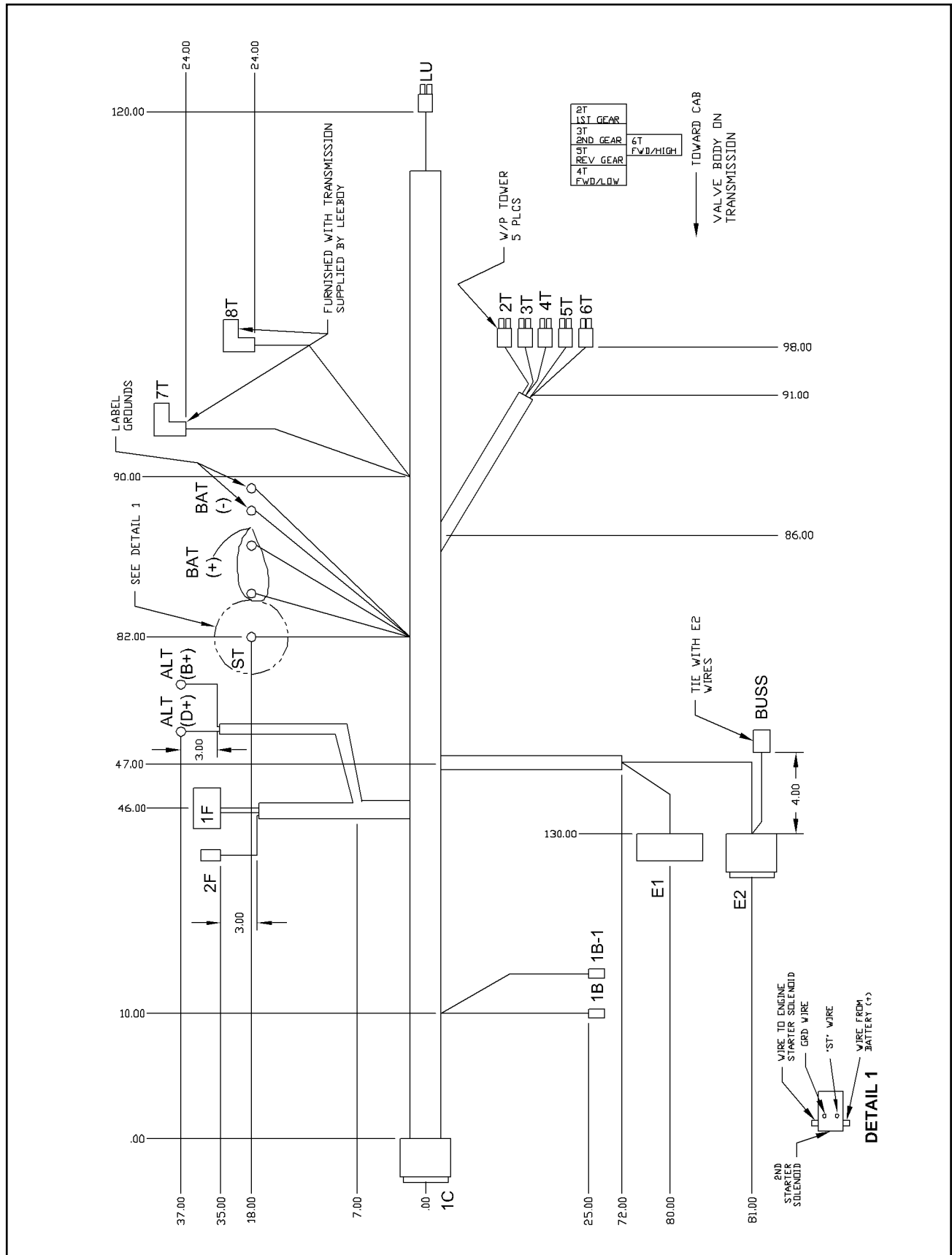


CAB TO ENGINE AND TRANSMISSION, #1C HARNESS SCHEMATIC (sheet 2 of 4)

Section 4 MAINTENANCE



CAB TO ENGINE AND TRANSMISSION, #1C HARNESS SCHEMATIC (sheet 3 of 4)

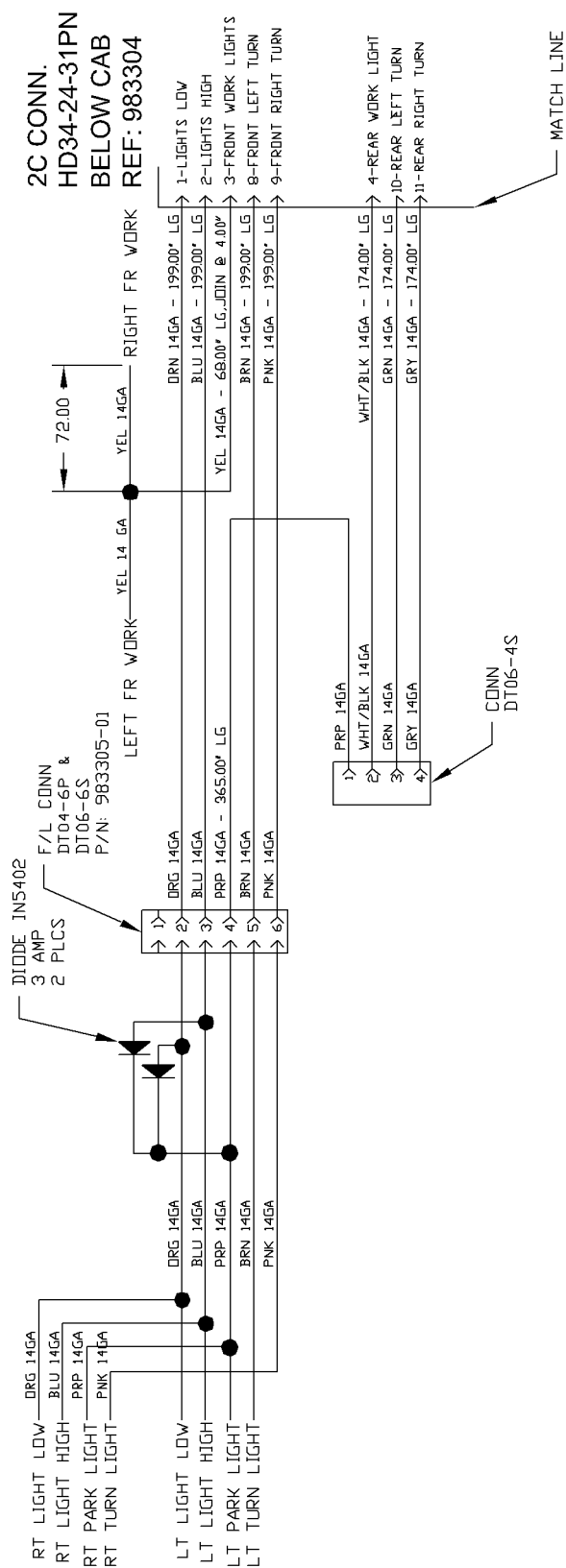


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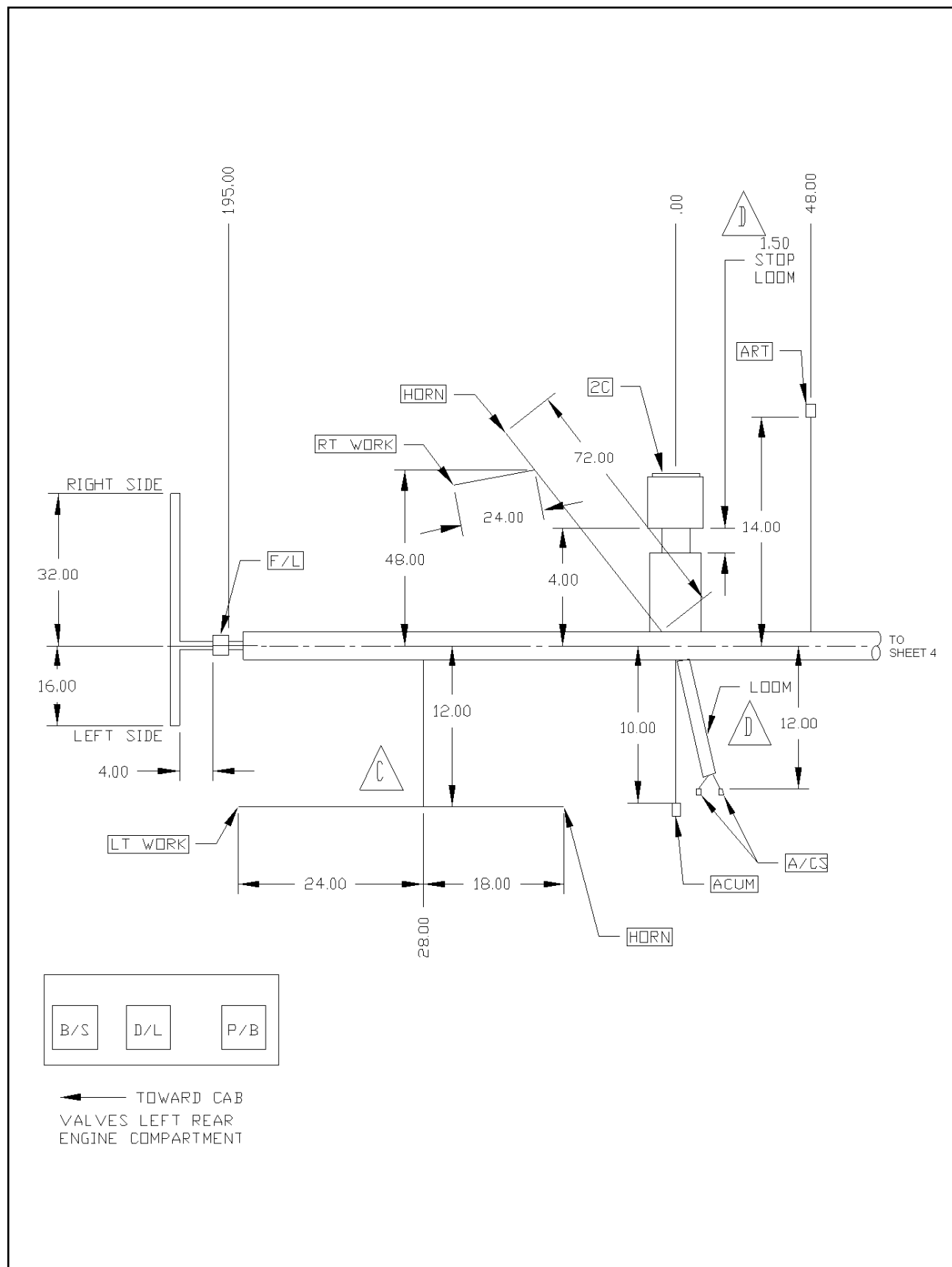
Lee Boy





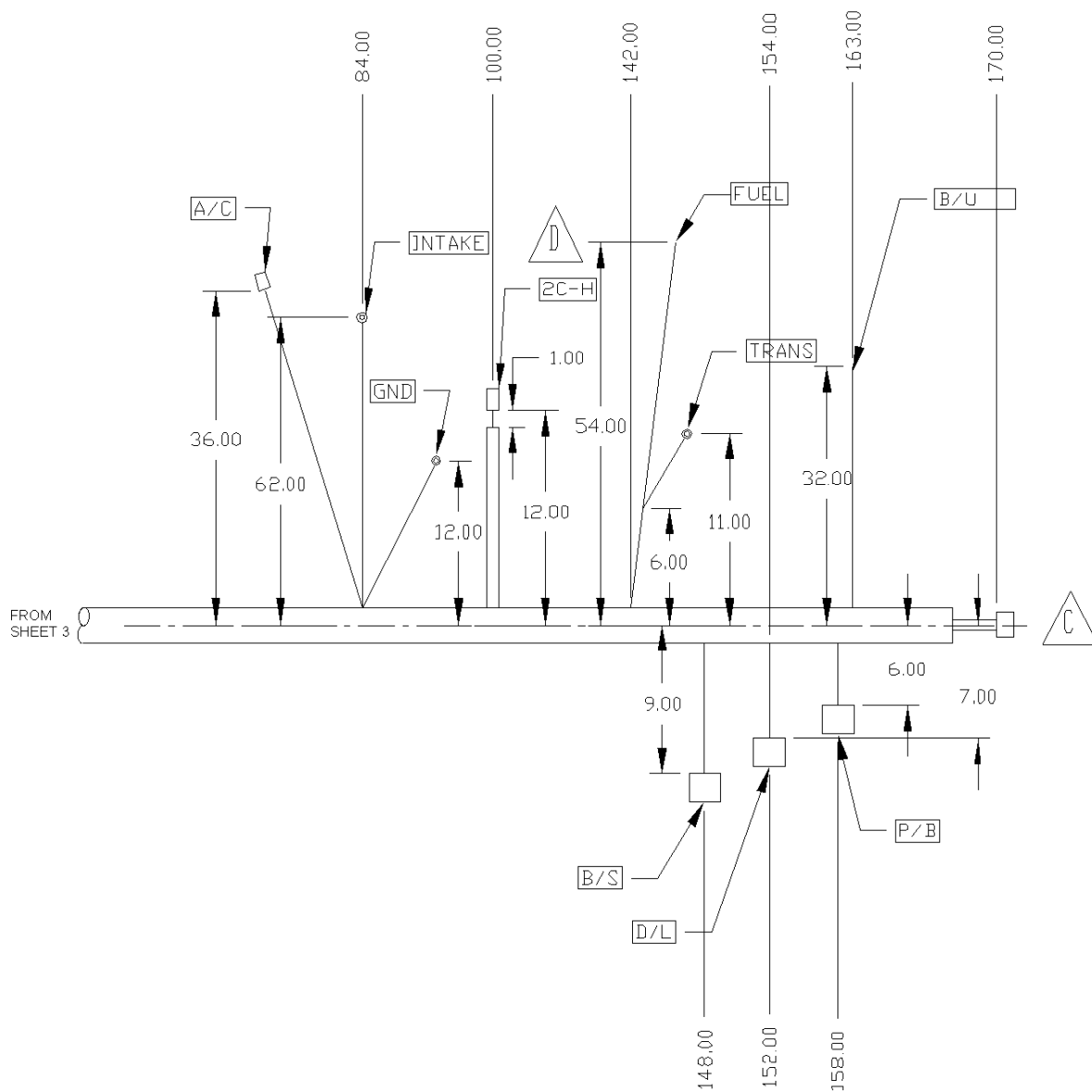


CAB TO ENGINE, #2C HARNESS SCHEMATIC (sheet 2 of 4)

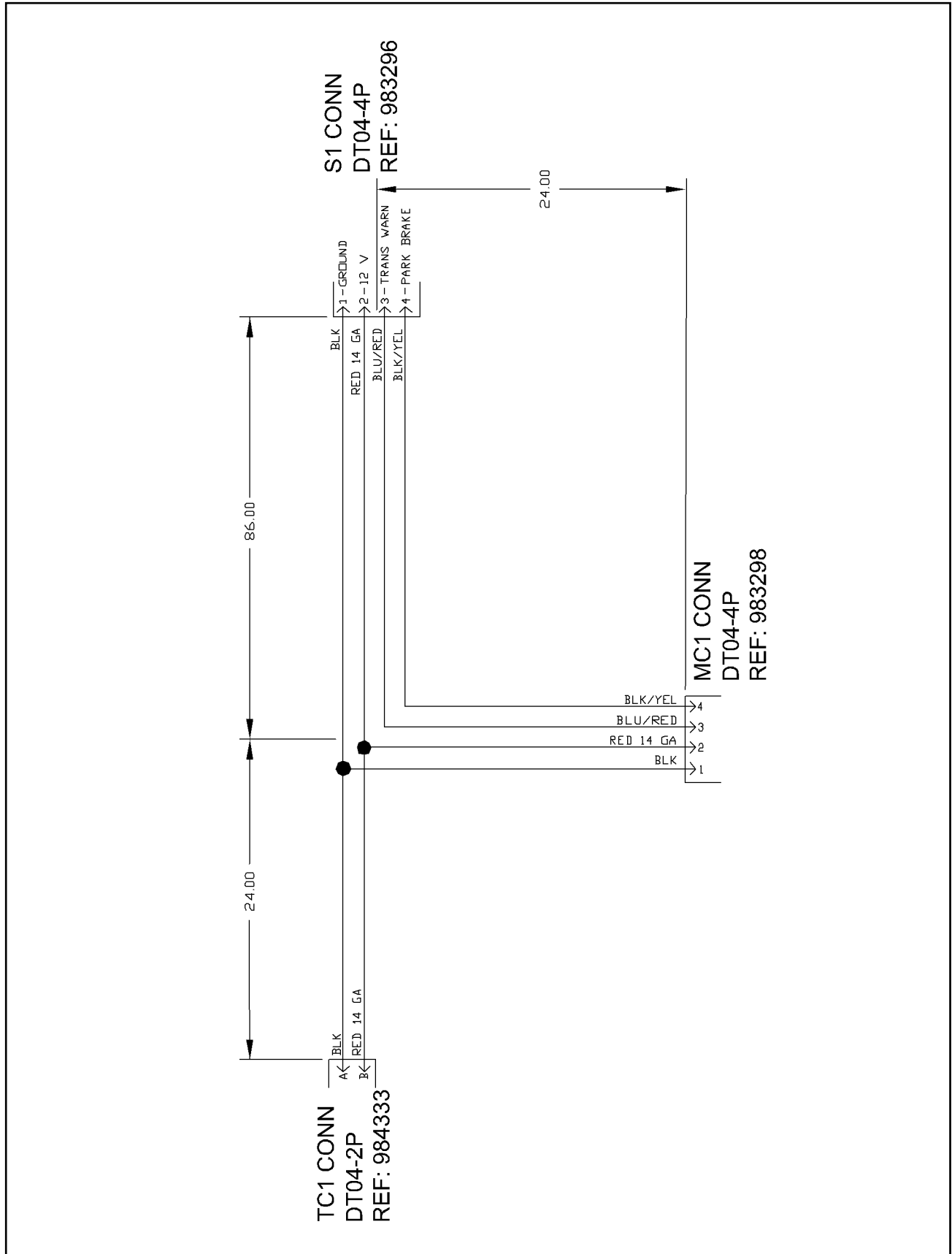


CAB TO ENGINE, #2C HARNESS SCHEMATIC (sheet 3 of 4)

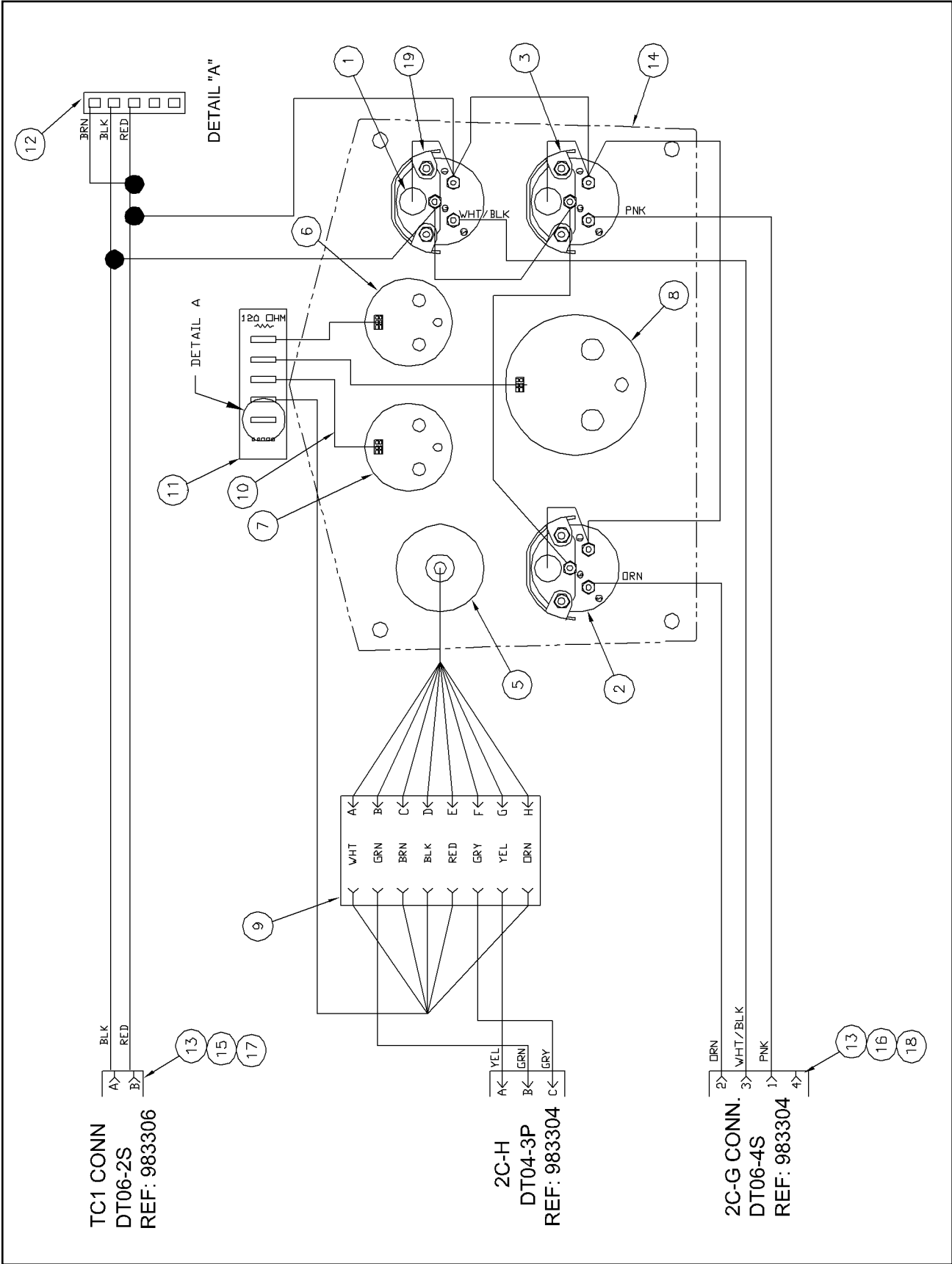
Section 4 MAINTENANCE



CAB TO ENGINE, #2C HARNESS SCHEMATIC (sheet 4 of 4)



SIDE TO CENTER PANELS HARNESS SCHEMATIC



GAUGE PANEL WIRING SCHEMATIC (sheet 1 of 2)

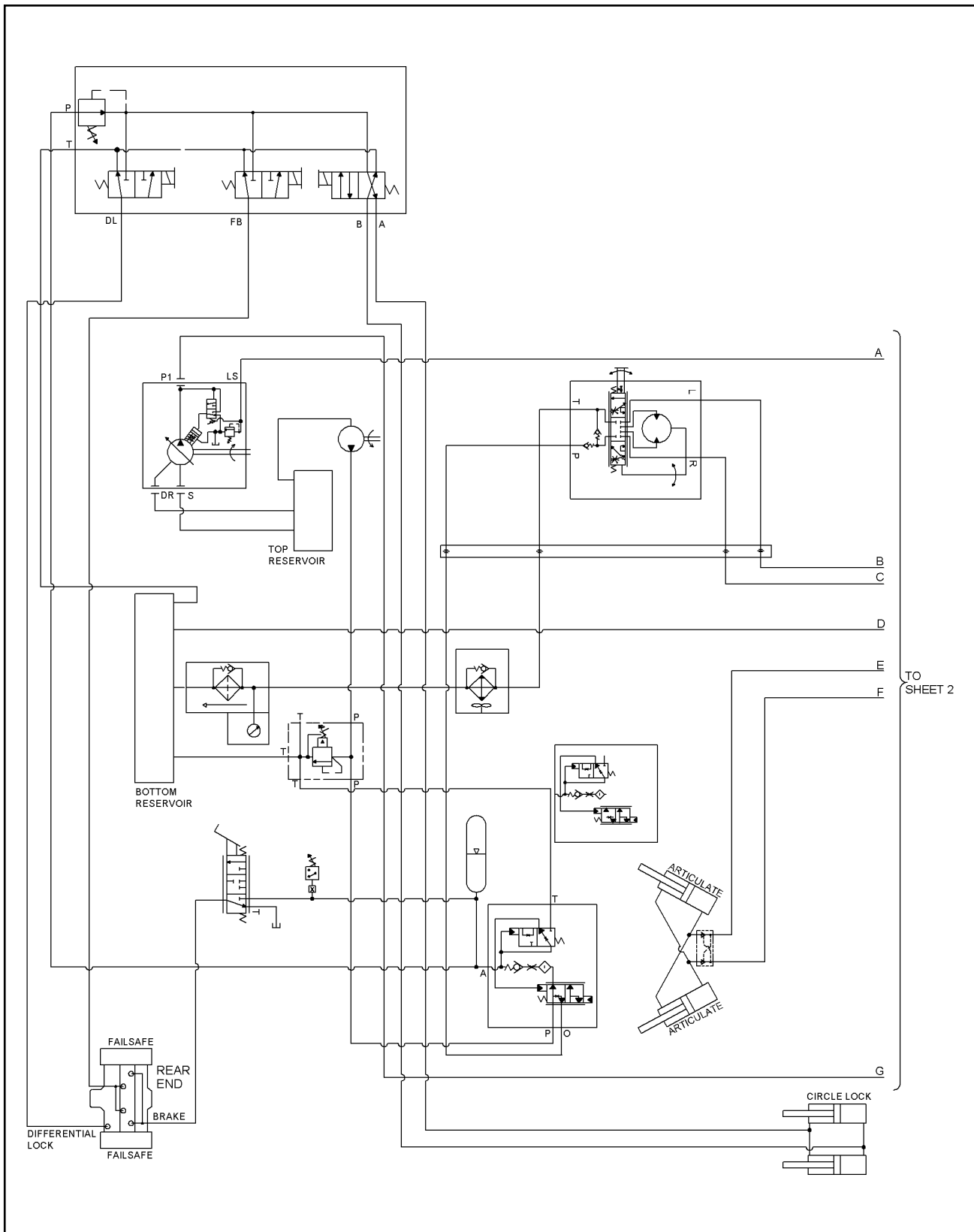
ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	33435	LIGHT AND SOCKET, 12V, 2.00 GUAGE	3
2	35365	GUAGE, TEMP, HYD OIL	1
3	35366	GUAGE, FUEL	1
4	35367	SENDER, TEMP GUAGE, OB MP	1
5	73255	GUAGE, DISPLAYU MODULE, QSB	1
6	73255-01	GUAGE, ENGINE OIL PRESSURE, J1939	1
7	73255-02	GUAGE, COOLANT TEMP, J1939	1
8	73255-07	GUAGE, TACH 3000 RPM, J1939	1
9	73255-08	HARNESS, MDDM, 25, J1939	1
10	73255-09	HARNESS, MLINK, 12, J1939	3
11	73255-10	HARNESS, MDDM CONNECTOR HEAD	1
12	73255-11	HARNESS, MDDM, 12V POWER	1
13	982448	TERM, SOC, DEUTSCH, 16 AWG	5
14	982850	PLATE, CENTER GUAGE MOUNT	1
15	983199	CONN, PLUG, 2P, DEUTSCH	1
16	983203	CONN, PLUG, 4P, DEUTSCH	1
17	983208	CONN, WEDGE, PLUG, 2P, DEUTSCH	1
18	983212	CONN, WEDGE, PLUG, 4P, DEUTSCH	1
19	984471	GUAGE, ARTICULATION	1

GAUGE PANEL WIRING LEGEND (sheet 2 of 2)

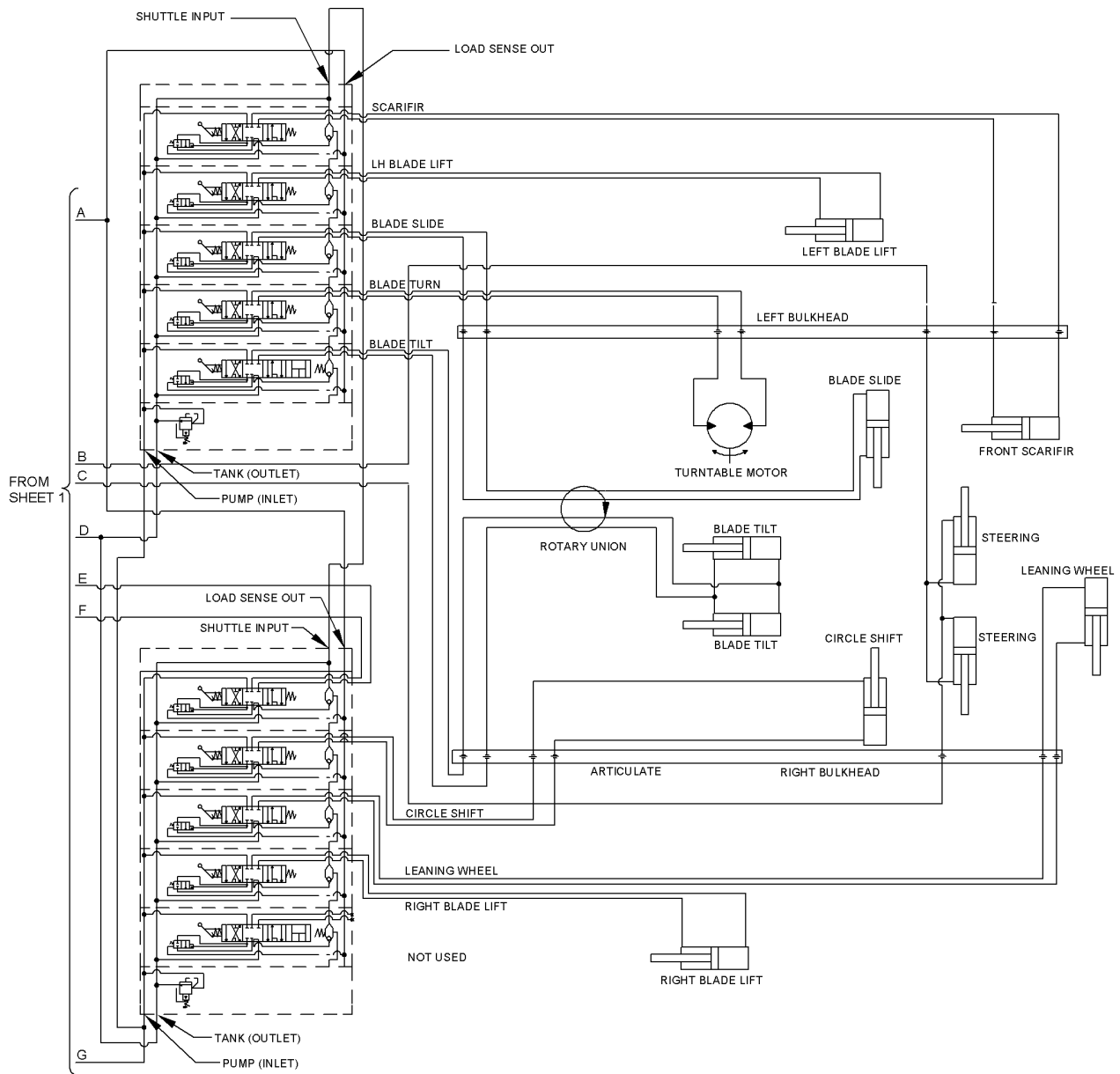
Section 4 MAINTENANCE



HYDRAULIC DIAGRAMS



HYDRAULIC SCHEMATIC (sheet 1 of 2)



HYDRAULIC SCHEMATIC (sheet 2 of 2)

Section 4

MAINTENANCE



TROUBLESHOOTING

GENERAL

The Troubleshooting Chart is based on identifying a symptom, identifying the probable causes, and identifying the remedy for the indicated symptom.

The causes listed are the most probable. If these causes do not locate the problem a more detailed analysis is required.

TROUBLESHOOTING CHARTS

ENGINE PROBLEMS

SYMPTOM	CAUSE	REMEDY
Engine Won't Turn Over (Starter Motor Will Not Turn)	Master switch in OFF position Ignition switch defective Controls not in Neutral Engine ground corroded Batteries undercharged Battery cable making poor contact Start Relay Starter solenoid Key switch Starter motor Neutral start switch	Set switch to the ON position. Check ignition switch. Check safety neutral switches. Check engine ground wire. Disconnect batteries and charge separately. Replace both batteries if one is dead. Clean connections at battery and starter solenoid. Check for 24 VDC at large starter solenoid terminals. Listen for solenoid to "click" as key is turned to start. If no "click" is heard, relay or wiring needs repair or replacement. Check for 24 VDC at small solenoid terminal as key is turned to start. If 24 VDC is present, replace solenoid. Check for 24 VDC at key switch "ST" terminal with key in "start" position. Listen for starter solenoid "click" as key is turned to "start". If "click" is heard, starter motor may be defective. Repair or replace. Replace switch. See your authorized dealer.
Engine Won't Start-"Engine Turns Over"	Low fuel level Contaminated fuel Fuel flow cutoff Fuel tank vent clogged Fuel pump faulty Air filter element restricted Injection pump faulty Injection nozzle(s) faulty Blown head gasket No voltage to injection transfer pump Engine flooded	Check fuel in tank. Drain fuel tank and refill. Check fuel cutoff. Remove cap and listen for air entering tank rapidly. Repair or replace pump. Clean or replace filter element. See your authorized dealer. See your authorized dealer. See your authorized dealer. Check voltage to pump. Turn off fuel valve under tank and turn engine over until it cleans out the cylinders and starts. When engine starts, turn fuel valve on.

TROUBLESHOOTING CHARTS ENGINE PROBLEMS (Continued)

SYMPTOM	CAUSE	REMEDY
Starter Motor Turns But Will Not Crank Engine	Pinion gear teeth broken Fly wheel gear teeth broken Starter pinion gear not engaging flywheel ring gear	Repair starter. See your authorized. Repair. See your authorized. Pinion shift mechanism "jammed" or malfunctioning. See your authorized dealer.
Engine Cranks Slowly	Battery or starter cable connections loose or corroded Battery cable damaged or broken internally Batteries discharged or will not hold a charge Wrong oil for low ambient temperature Dirty connections at battery or starter Starter motor faulty Batteries not charging	Clean and tighten connections. Inspect and replace cables. Recharge or replace both batteries. Drain and refill with proper weight oil. Change oil filter. Clean battery posts and cable ends. Also clean connections at starter and start relay. Replace starter motor. Check specific gravity of batteries. Check alternator output. Check alternator belt tension. If batteries are to be replaced, replace both batteries.
Engine Surges or Stalls Frequently	Air entering suction side of fuel system Fuel tank vent clogged Air filter element restricted Fuel pump faulty Air filter element restricted Injection pump faulty Injection nozzle(s) faulty	Check fuel filter for air bubble. Tighten fittings. Remove cap and listen for air entering tank rapidly. Clean or replace filter element. Repair or replace pump. Clean or replace filter element. See your authorized dealer. See your authorized dealer.
Erratic Engine or Poor Slow Speed Operation	Air entering suction side of fuel system Fuel tank vent clogged Air filter element restricted Fuel pump faulty Air filter element restricted Injection pump faulty Injection nozzle(s) faulty Slow idle speed set too low Incorrect valve clearance Leaking head gasket	Check fuel filter for air bubble. Tighten fittings. Remove cap and listen for air entering tank rapidly. Clean or replace filter element. Repair or replace pump. Clean or replace filter element. See your authorized dealer. See your authorized dealer. Check for worn or loose speed control linkage and reset slow idle. Adjust clearance. Replace head. See engine manual.

Section 4 MAINTENANCE



TROUBLESHOOTING CHARTS ENGINE PROBLEMS (Continued)

SYMPTOM	CAUSE	REMEDY
Engine not Developing Full Power	Wrong grade of fuel or water in fuel Air filter elements clogged Fuel filter clogged Exhaust system restriction Incorrect valve clearance Fuel line restriction Fuel transfer pump malfunction Injection pump or nozzle malfunction	Drain water from fuel sump or drain and refill with proper fuel. Clean or replace elements. Replace fuel filter. Check condition of muffler interior. Adjust clearance. Clear restriction with compressed air. Repair or replace pump. See your authorized dealer. Repair or replace. See your authorized dealer.
Low Engine Oil Pressure (oil pressure indicator light On)	Low oil level Low viscosity using winter oil in summer Oil pressure sensor Clogged oil pump intake screen	Check oil level. Fill to correct level. Check for leaks and repair as necessary. Drain and fill with summer weight oil. Replace sensor. See your authorized dealer.
Engine Overheats	Loose, worn, or broken fan belt Low coolant level Radiator dirty or clogged Engine overloaded Radiator cap not sealing Faulty sender Excessive brake drag Thermostat stuck or missing Water pump leaking	Tighten or replace belt. Fill to correct level and check for leaks. Check airflow. Clean radiator. Reduce load. Operate in low gear. Replace cap. Replace sender. Repair. See your authorized dealer. Replace thermostat. Repair or replace water pump.
Excessive Fuel Consumption	Air system restricted Fuel system leakage Incorrect grade of fuel	Clean or replace filter elements. Repair. Drain and fill with proper fuel.
Oil in Coolant or Coolant in Oil	Leaking cylinder head gasket or cracked cylinder or block	Repair. See your authorized dealer.

TROUBLESHOOTING CHARTS HYDRAULIC SYSTEM

SYMPTOM	CAUSE	REMEDY
Grader Will Not Move	Transmission fluid low Parking brake engaged Throttle not at idle Check that rpm is less than 1200 No power to shifter Check that APC is operating	Add transmission fluid. Disengage parking brake. Set throttle to idle. Lower rpm to 1200 or less. Check for power at shifter and correct if defective. Correct defect.
No Hydraulic Steering Power	Steering pump bad Relief valve bad Brake charge valve bad Steering valve bad	Replace pump. Replace valve. Replace valve. Replace valve.
Slow Hydraulic Functions	Low oil level Air in hydraulic oil Engine rpm low Hydraulic strainer clogged Hydraulic standby pressure too low Low pump flow (worn pump)	Add oil. Inspect suction side hoses and fittings. Inspect and adjust speed control. Change strainer. Adjust. See your authorized dealer. See your authorized dealer.
Hydraulics Overheat	Excessive load Low oil level Oil cooler clogged Max pressure on the valve is set lower than the maximum pressure on the pump causing pump to operate all the time	Reduce load. Fill to proper level. Clean and check airflow. Adjust pressure setting.
Hydraulic Functions Drift or Settle	Cylinder or control valve leaking Contamination in valve bore Score valve bore or bent valve spool	Repair leakage. See your authorized dealer. See your authorized dealer.
Foaming Oil	Incorrect type of oil Air leak on suction side of pump Oil level too high or low	Use recommended oil. Tighten fittings and inspect hoses for damage. Adjust to FULL mark on dipstick.
Hydraulic Pump Leaking	Worn shaft seal Capscrews holding pump housing loose	See your authorized dealer. Tighten capscrews.

Section 4

MAINTENANCE



TROUBLESHOOTING CHARTS

ELECTRICAL SYSTEM

SYMPTOM	CAUSE	REMEDY
Starter Solenoid Chatters	Poor connections at battery or starter Defective start solenoid Batteries discharged	Clean connections. See your authorized dealer. Recharge or replace batteries.
Excessive Noise When Cranking the Engine	Hydraulic pump or pump drive Major engine malfunction	Repair. See our authorized dealer. Repair. See your authorized dealer.
Battery Uses Too Much Water	Battery being overcharged High ambient temperature Faulty regulator	If one battery is low on charge, the other battery will be overcharged. Recharge low battery separately. Replace both batteries if one fails. Refill with distilled water. See your authorized dealer.
Cracked Battery Case	Frozen battery Battery hold down clamp too tight, too loose, or missing	Keep batteries fully charged during cold weather. Replace both batteries. Install new batteries. Install hold down clamps correctly.
Low Battery Output	Low water level Corroded or loose battery cable ends Loose fan/alternator belt or worn pulleys Low alternator output	Refill with distilled water. Recharge batteries separately. Clean and tighten cable and clamps. Recharge batteries separately. Belt is slipping. Adjust or replace belt. Replace pulleys if needed. Inspect charging system and repair. See your authorized dealer.
High Charging System Voltage (Batteries Hot or Boiling)	Alternator or regulator malfunction	See your authorized dealer.
Noisy Alternator	Bearings in alternator	Remove alternator belt. Turn pulley by hand. If any roughness is felt, replace bearings.
Horn Will Not Sound	Horn fuse Poor ground connection Broken wire Horn faulty	Replace fuse. Clean connector and frame. Replace wire. Replace horn.
Front Wiper Will Not Operate at any Switch Position	Wiper fuse Wiper switch Wiper motor	Replace fuse. Replace switch. Replace motor.
Front Wiper Operates in One Position Only	Open wire Wiper motor	Repair wire. Replace motor.

TROUBLESHOOTING CHARTS ELECTRICAL SYSTEM (Continued)

SYMPTOM	CAUSE	REMEDY
Front Wiper Will Not Operate at any Switch Position	Wiper fuse Wiper switch Wiper motor	Replace fuse. Replace switch. Replace motor.
Front Washer Will Not Operate	Washer fuse Wiper switch Washer pump	Replace fuse. Replace switch. Replace pump.
Driving Lights Will Not Operate	Blown fuse Driving light switch Accessory relay	Replace fuse. 0 volts at light with key on and light switch on. Replace switch. Turn key switch to ACC or ON. Accessory relay inside console "click". If no click is heard and 24 volts read on wire from switch to relay, replace relay.
One Front Driving Light Does Not Operate	Bulb	Replace bulb.
One Rear (Red) Tail Light Does Not Operate	Bulb	Replace bulb.

Section 4

MAINTENANCE



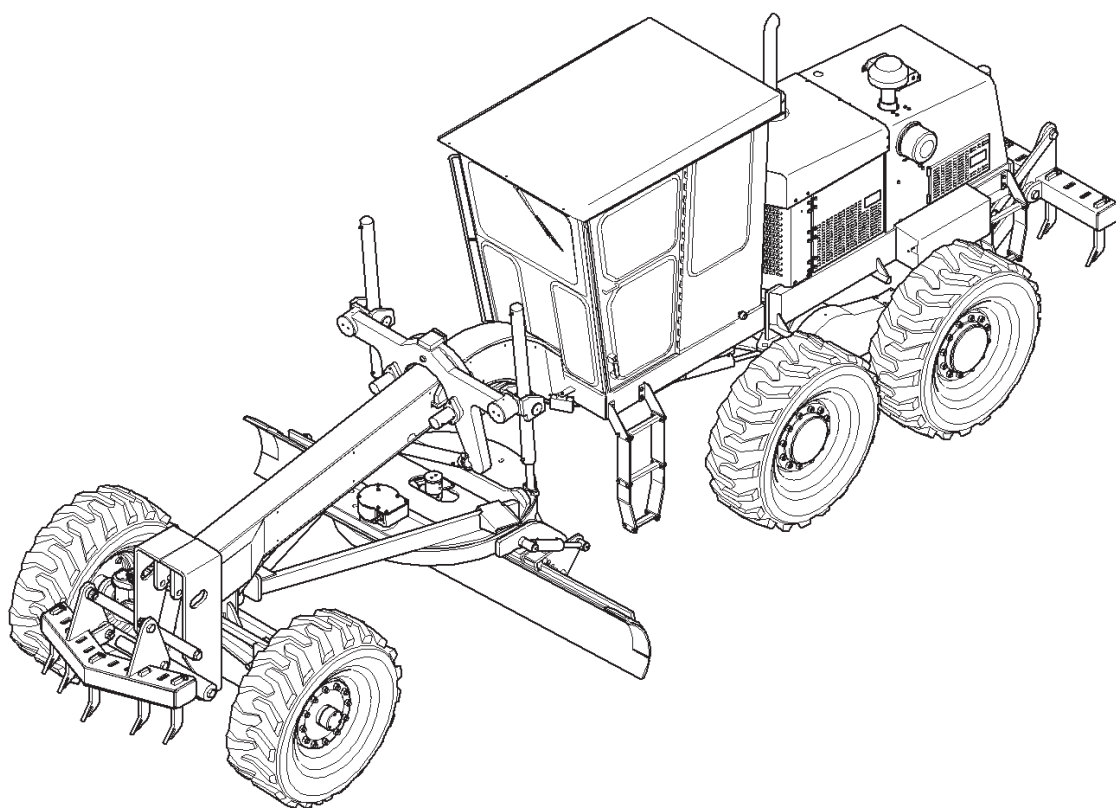
TROUBLESHOOTING CHARTS

POWER TRAIN

SYMPTOM	CAUSE	REMEDY
Transmission Overheats	High oil level Restricted oil filter Low lubrication oil flow or pressure Clutch or brake disc warped Excessive high speed operation in hot weather Running in too high of a gear when working Transmission cooler not clean	Adjust to correct level. Change filter. See our authorized dealer. See your authorized dealer. Lower transport speed. Set transmission to a lower gear. Clean transmission cooler.
Machine Lacks Power or Moves Slow	Low oil level Brakes dragging Overloading machine Restricted filter Transmission leaking Low engine power Transmission slipping	Adjust to correct level. Check for excessive heat in tandem pivot housing. See your authorized dealer. Reduce load. Change filter. See your authorized dealer. See your authorized dealer. See your authorized dealer.
Machine Makes Excessive Noise When Moving	Transmission/hydraulic oil level low Transmission or differential Wheel bearing Brakes dragging	Adjust to correct level. See your authorized dealer. See your authorized dealer. See your authorized dealer.
Excessive Machine Vibration	Engine slow idle too low Engine mounting hardware loose or missing Hydraulic pump drive coupling or mounting hardware loose Hydraulic pump malfunction Engine malfunction Transmission malfunction Axle or final drive malfunction	Adjust slow idle speed. See your authorized dealer. See your authorized dealer. See your authorized dealer. See your authorized dealer. See your authorized dealer. See your authorized dealer.



ILLUSTRATED PARTS LIST



785 MOTOR GRADER

Manual No. 985480



ILLUSTRATED PARTS LIST

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ILLUSTRATED PARTS LIST

INTRODUCTION

GENERAL INFORMATION

This Illustrated Parts List (IPL), as part of the Operations, Service and Parts Manual, is intended for use in identifying and requisitioning replacement parts.

NUMERICAL INDEX

A numerical index is provided to supplement the detailed parts list. Part number arrangement begins at the extreme left-hand position and continues from left to right, one position at a time. The order of precedence is as follows: Letters A through Z; Numerals 0 through 9. The alpha "O" shall be considered as a numeric zero. Each part number provides a reference to its appearance in the IPL by figure and item number.

EQUIPMENT DESIGNATOR INDEX

If equipment designators are used in place of part numbers at any place in the IPL, an Equipment Designator Index is provided listing all equipment designators listed in the illustrated parts list.

DETAILED PARTS LIST

How to Use the IPL

- (1) The figure number refers to the corresponding illustration.
- (2) The item number corresponds to the item number shown for the part in the illustration.
- (3) If standard parts (those with AN, MS, NAF, NAS prefixes) are used the standard part number is listed in the part number column.
- (4) Part quantities listed are for one component or subcomponent. For example, if the parts list shows two platform assemblies, the quantities shown for the parts in the platform assembly is for one platform assembly.
- (5) Attaching parts are captioned ATTACHING PARTS and are listed immediately following the part(s) attached. The -----*----- symbol follows the last item of the attaching parts group. The quantity listed for the attaching parts is the quantity required to attach one item.
- (6) Parts with item numbers preceded with a dash are not illustrated.

- (7) If a company other than Leeboy is referred to as the original manufacturer of some of the parts, these parts may carry the original manufacturers part number or a Leeboy part number. These manufacturers are identified by an appropriate vendor code following the nomenclature. If the part number in the part number column is a Leeboy part number, the original manufacturer's part number is given after his vendor code. Vendor codes are in accordance with the current issue of Cataloging Handbook "Commercial and Government Entity" (H4-1 and H4-2) and are preceded by the capital letter "V".
- (8) When a Vendor Code cannot be obtained from the H4-1 and H4-2 Cataloging Handbook, the manufacturer's full name and address is included in the parts list. Government standard parts, such as, AN, MS, NAF, and NAS parts are not identified with a Vendor Code.

General System of Assembly Order - Detailed Parts List

The indenture system used in the Detailed Parts List shows relationship of parts and assemblies to next higher assemblies or installations, as follows:

1 2 3 4 5 6 7

Installation

- Detail parts for installation
- Assembly
- Attaching parts for assemblies
- -----*-----
- Detail parts for assembly
- Sub-assembly
- Attaching parts for sub-assembly
- -----*-----
- Detail parts for sub-assembly
- Assembly
- Attaching parts for sub-sub-assembly
- -----*-----
- Detail parts for sub-sub-assembly

ILLUSTRATED PARTS LIST

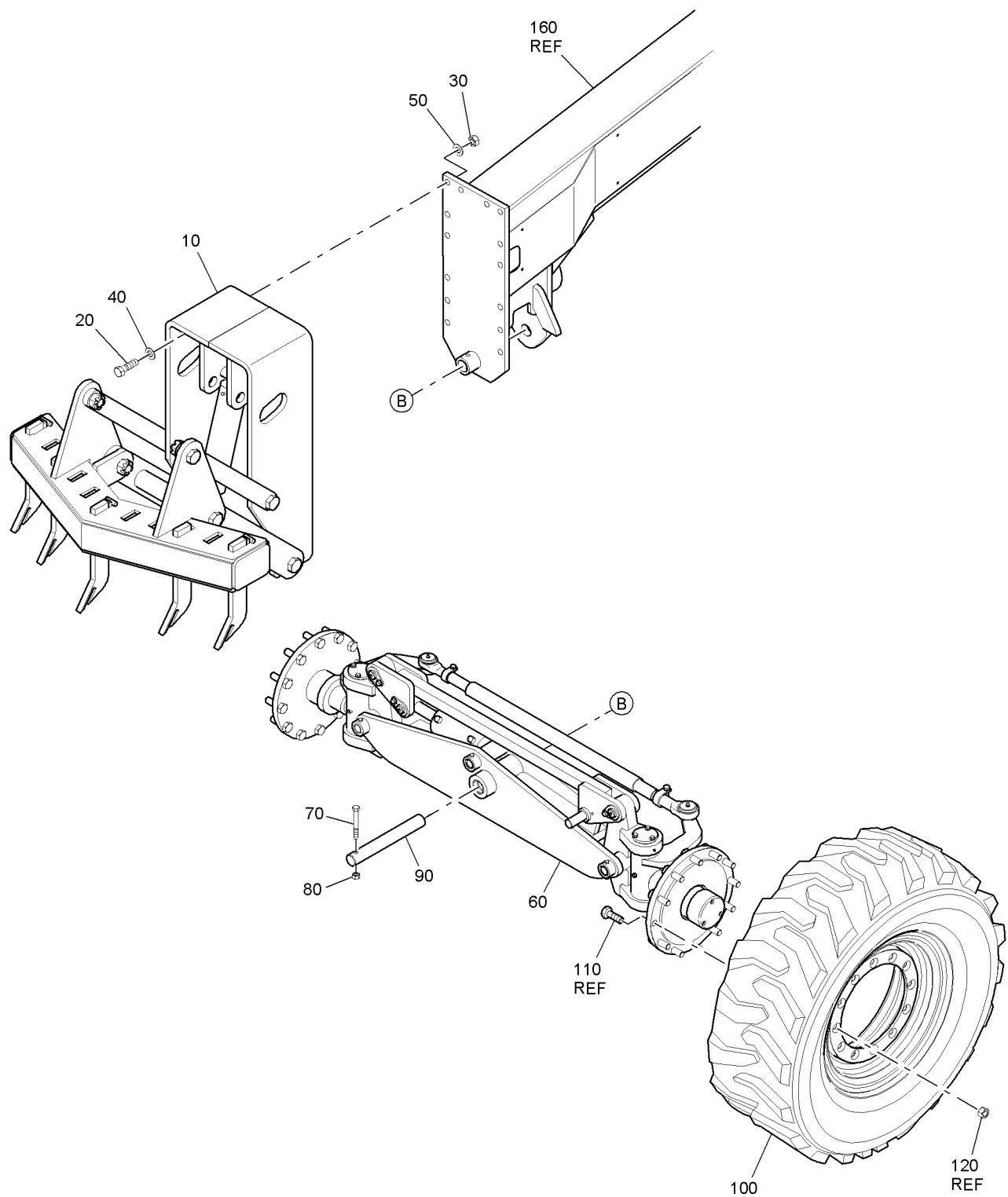


FIGURE 1. FRONT SCARIFIER AND FRONT AXLE ASSEMBLY

FIGURE 1. FRONT SCARIFIER AND FRONT AXLE ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
1			
-1	MODEL 785	FRONT SCARIFIER AND FRONT AXLE ASSEMBLY	REF
10	982184	• FRONT SCARIFIER ASSEMBLY (SEE IPL FIGURE 7 FOR BREAKDOWN)	1
		ATTACHING PARTS	
20	81058	• CAP SCREW, 7/8"-9 X 3.0, HEX, GRADE 5	14
30	116-9	• NUT, 7/8"-9 HEX	14
40	81059	• WASHER, FLAT, 7/8"	14
50	118-9	• LOCKWASHER, 7/8"	14
		-----*	
60	982900	• FRONT AXLE ASSEMBLY (SEE IPL FIGURE 8 FOR BREAKDOWN)	REF
		ATTACHING PARTS	
70	80289	• CAP SCREW, 5/8"-11 X 3.50, HEX, GRADE 5	1
80	80356	• NUT, FLEXLOC, 5/8"-11	1
90	981339	• SHAFT, CENTER PIVOT PIN	1
		-----*	
100	982878	• TIRE AND WHEEL COMBO, LEFT-HAND, 13.0 X 24.0	1
		ATTACHING PARTS	
110	982883	• STUD, WHEEL, M22 X 1.5-INCH	REF(12)
120	983552	• NUT, WHEEL, FLAT, M22	REF(12)
		-----*	
-130	982879	• TIRE AND WHEEL COMBO, RIGHT-HAND, 13.0 X 24.0	1
		ATTACHING PARTS	
-140	982883	• STUD, WHEEL, M22 X 1.5-INCH	REF(12)
-150	983552	• NUT, WHEEL, FLAT, M22	REF(12)
		-----*	
160	983108	• BOOM WELDMENT AND COVER ASSEMBLY (SEE IPL FIGURE 6 FOR BREAKDOWN)	REF

- ITEM NOT ILLUSTRATED

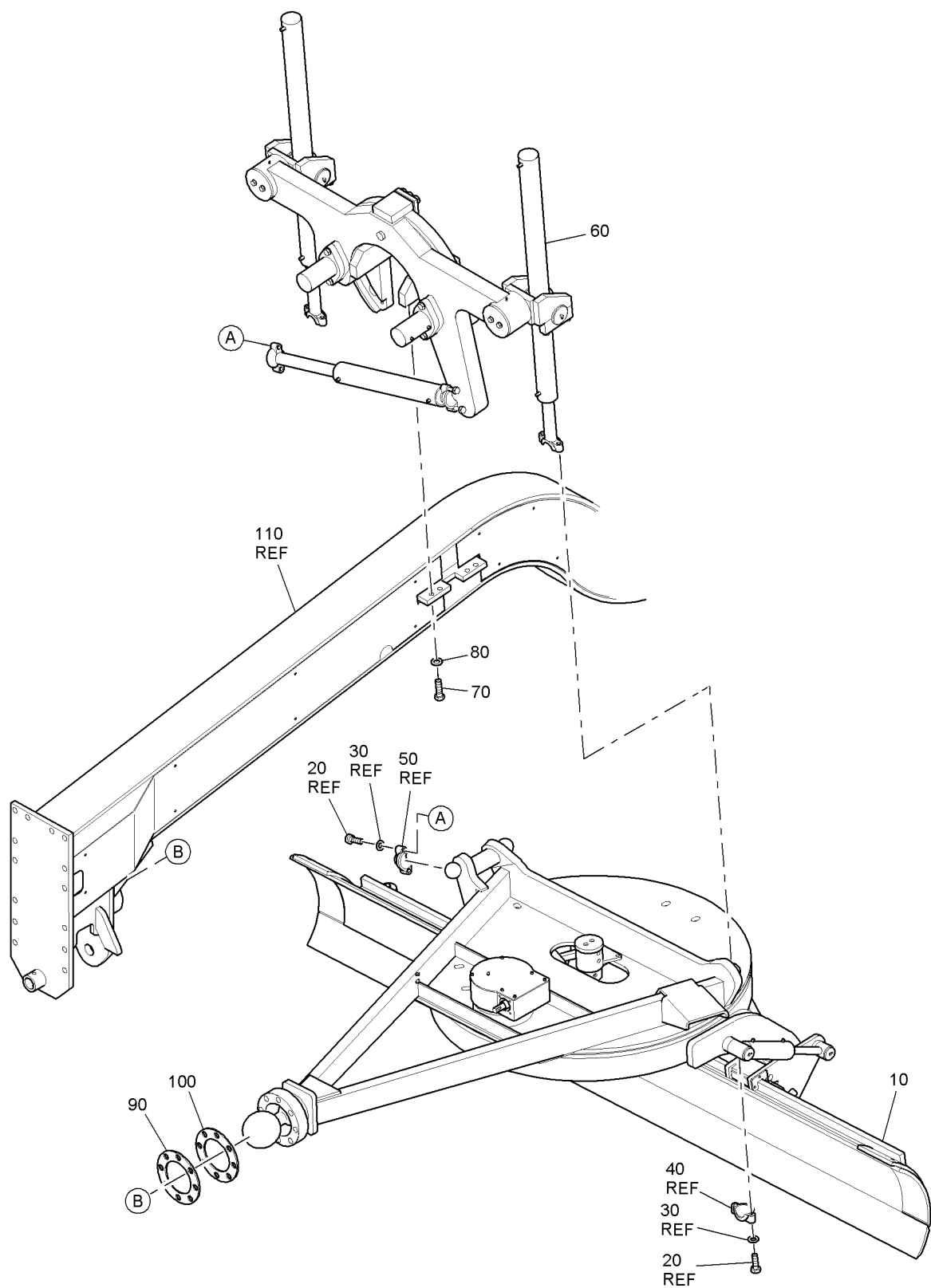


FIGURE 2. YOKE AND MOLDBOARD ASSEMBLY

FIGURE 2. YOKE AND MOLDBOARD ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
2			
-1	MODEL 785	YOKE AND MOLDBOARD ASSEMBLY	REF
10	985152	• MOLDBOARD ASSEMBLY (SEE IPL FIGURE 10 FOR BREAKDOWN)	1
		ATTACHING PARTS	
20	811358	• CAP SCREW, 5/8"-11 X 3.0, HEX, GRADE 8	REF(6)
30	118-7	• LOCKWASHER, 5/8"	REF(6)
40	981874	• BEARING CAP (PART OF HYDRAULIC CYLINDER)	REF(2)
50	981875	• BEARING CAP (PART OF HYDRAULIC CYLINDER)	REF(1)
		-----*	
60	2NONUMBER60	• YOKE ASSEMBLY (SEE IPL FIGURE 9 FOR BREAKDOWN)	1
		ATTACHING PARTS	
70	102-709-1A	• CAP SCREW, 3/4"-10 X 2, HEX	8
80	118-8	• LOCKWASHER, 3/4"	8
		-----*	
90	981717	• SHIM, DRAWBAR	AR
100	982888	• SHIM, DRAWBAR	AR
110	983108	• BOOM WELDMENT AND COVER ASSEMBLY (SEE IPL FIGURE 6 FOR BREAKDOWN)	REF

- ITEM NOT ILLUSTRATED

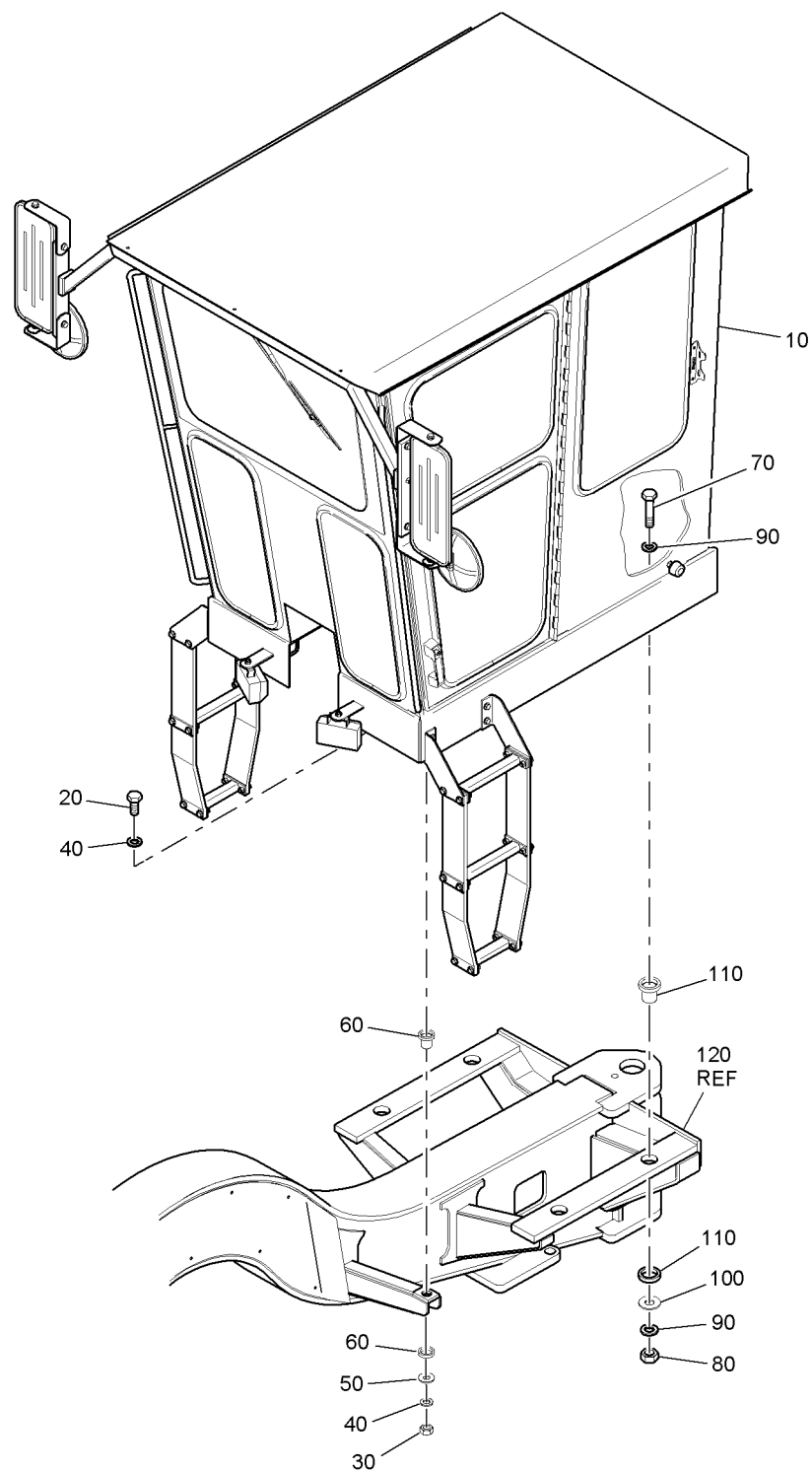


FIGURE 3. CAB MOUNTING ASSEMBLY

FIGURE 3. CAB MOUNTING ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
3			
-1	MODEL 785	CAB MOUNTING ASSEMBLY	REF
10	982700	• CAB ASSEMBLY (SEE IPL FIGURES 15, 16, 26, 27, 28, AND 29 FOR BREAKDOWN)	1
		ATTACHING PARTS	
20	102-423-1A	• CAP SCREW, 1/2"-13 X 5.50 HEX	2
30	143-5	• LOCKNUT, 1/2"-13 HEX	2
40	119-5	• FLAT WASHER, 1/2" SAE	4
50	982324	• WASHER, MOUNT	2
60	982322	• RUBBER MOUNT, TWO-PIECE	2
70	102-831-1A	• CAP SCREW, 7/8"-9 X 7.50 HEX	4
80	143-9	• LOCKNUT, 7/8"-9 HEX	4
90	120-9	• FLAT WASHER, 7/8" SAE	8
100	982326	• WASHER, MOUNT	4
110	982323	• RUBBER MOUNT, TWO-PIECE	4
		-----*	
120	983108	• BOOM WELDMENT AND COVER ASSEMBLY (SEE IPL FIGURE 6 FOR BREAKDOWN)	REF

- ITEM NOT ILLUSTRATED

ILLUSTRATED PARTS LIST

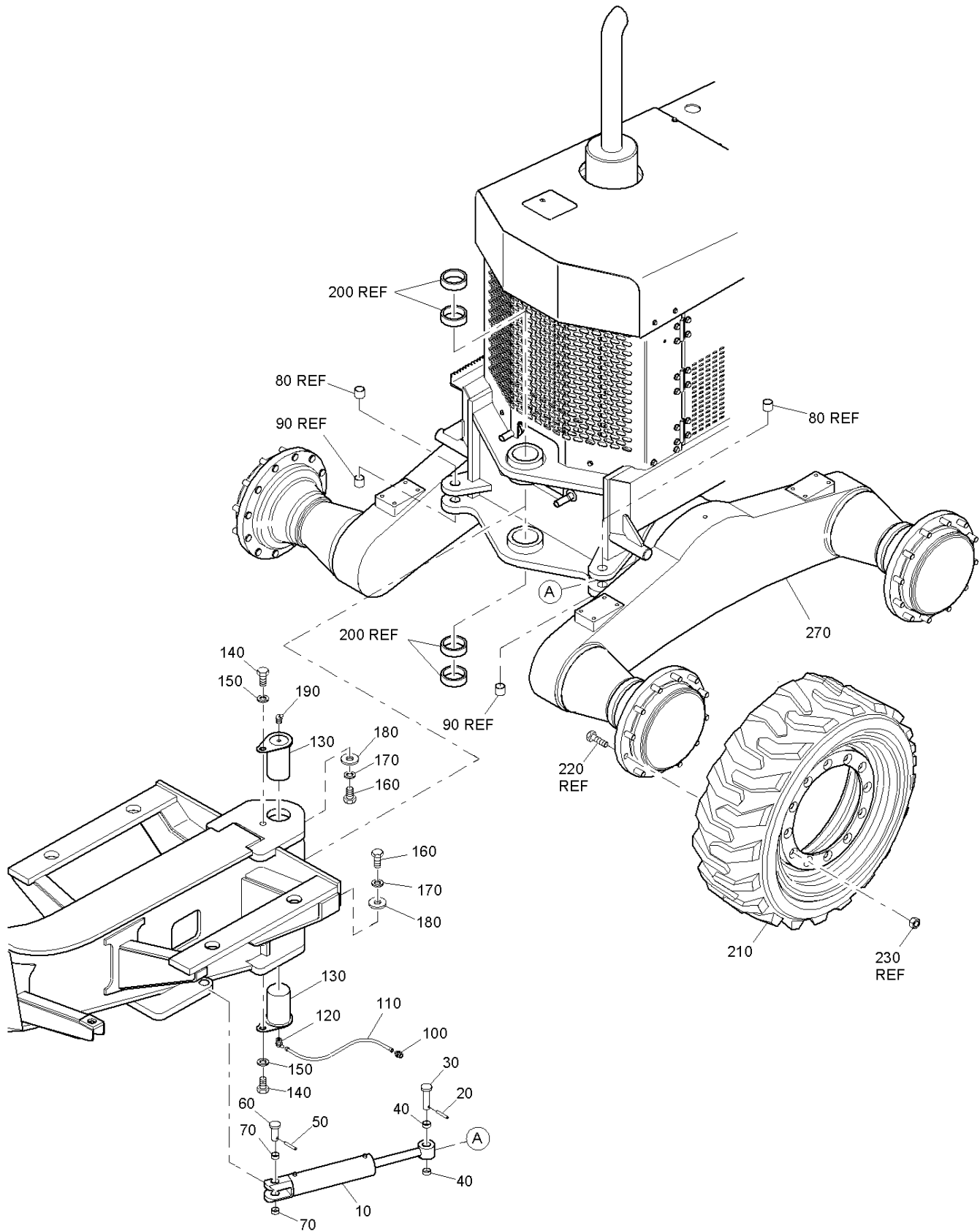


FIGURE 4. ARTICULATION GROUP

FIGURE 4. ARTICULATION GROUP

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
4			
-1	MODEL 785	ARTICULATION GROUP	REF
10	981877	• HYDRAULIC CYLINDER, 3.00 X 10.00", 2500 PSI	2
		ATTACHING PARTS	
20	871081835	• ROLL PIN, 0.375 X 2.00"	1
30	981819	• PIN, ARTICULATING CYLINDER	1
40	110130	• BUSHING, WHEEL LEAN TIE ROD	2
50	871081835	• ROLL PIN, 0.375 X 2.00"	1
60	981822	• PIN, ARTICULATING CYLINDER	1
70	110130B	• BUSHING, WHEEL LEAN PIN, 1.25"	2
		-----*	
80	110130	• BUSHING, WHEEL LEAN TIE ROD	REF(2)
90	983379	• BUSHING, STEEL, 1.5 X 1.25 X 1.25"	REF(2)
100	985094	• GREASE FITTING, 1/8" NPT STRAIGHT	1
110	520210	• HOSE, 400 REAR DRUM BEARING	1
120	37311	• FITTING, 90° BRASS, 02MP-02FP	1
130	985673	• PIN ASSEMBLY, ARTICULATION JOINT	2
		ATTACHING PARTS	
140	102-909-1A	• CAP SCREW, "1-8 X 2.0 HEX	1
150	118-10	• LOCKWASHER, 1.0"	1
160	102-909-1A	• CAP SCREW, 1"-8 X 2.0 HEX	1
170	118-10	• LOCKWASHER, 1.0"	1
180	981398	• WASHER, ARTICULATING SHAFT	1
		-----*	
190	985095	• GREASE FITTING, 1/8", 90° NPT	1
200	983376	• BUSHING, STEEL, 4.0 X 3.5 X 2.5" LONG	REF(4)
210	982878	• TIRE AND WHEEL ASSEMBLY	2
		ATTACHING PARTS	
220	982883	• STUD, WHEEL, M22 X 1.5-INCH	REF(12)
230	983552	• WHEEL NUT, FLAT, M22	REF(12)
		-----*	

- ITEM NOT ILLUSTRATED

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ILLUSTRATED PARTS LIST

FIGURE 4. ARTICULATION GROUP (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
4			
-240	982879	• TIRE AND WHEEL COMBO, RIGHT-HAND, 13.0 X 24.0	2
		ATTACHING PARTS	
-250	982883	• STUD, WHEEL, M22 X 1.5-INCH	REF(12)
-260	983552	• NUT, WHEEL, FLAT, M22	REF(12)
		-----*	
270	982428	• AXLE ASSEMBLY, DRIVE	1

- ITEM NOT ILLUSTRATED

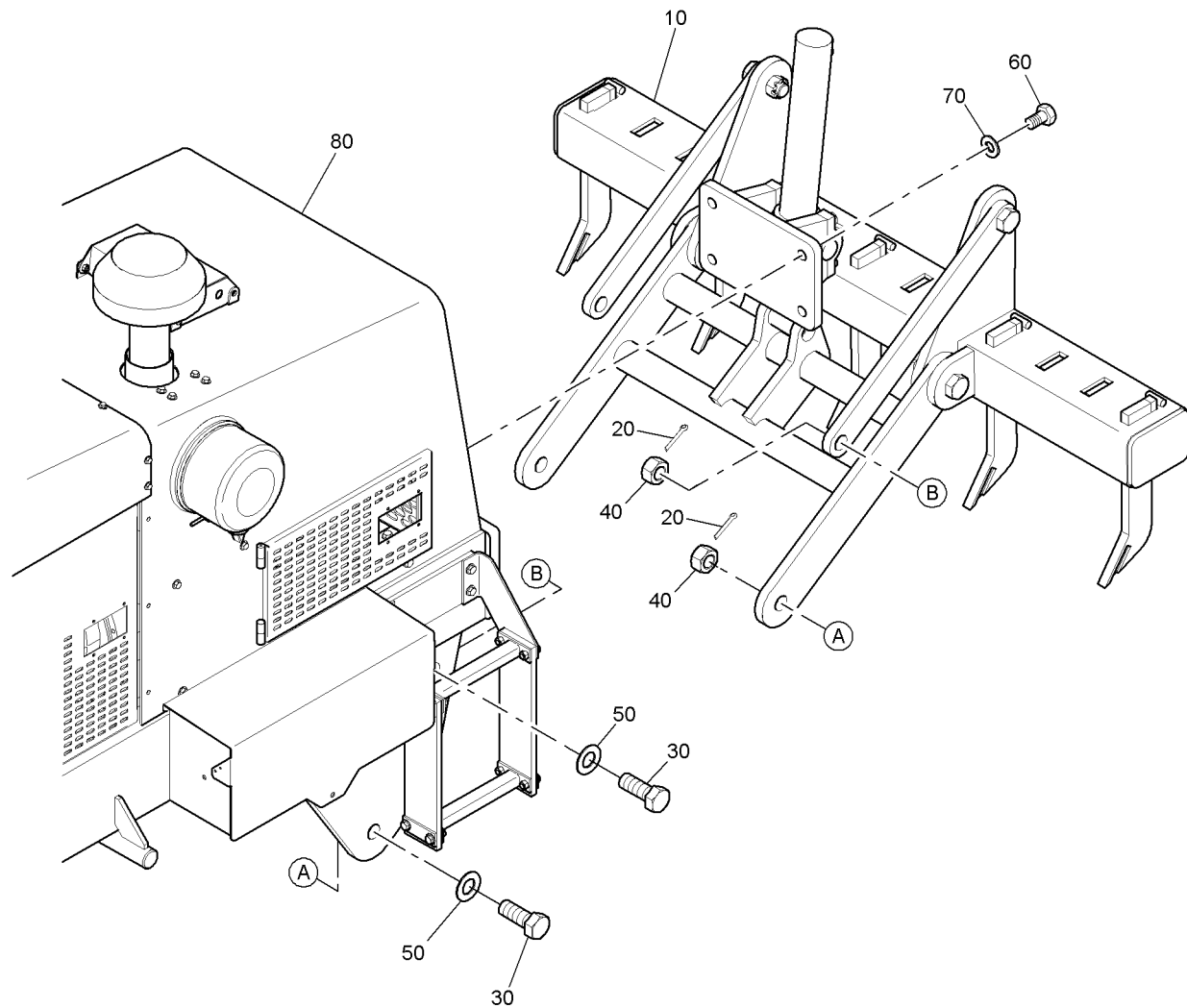


FIGURE 5. REAR FRAME AND SCARIFIER ASSEMBLY

FIGURE 5. REAR FRAME AND SCARIFIER ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
5			
-1	MODEL 785	REAR FRAME AND SCARIFIER ASSEMBLY	REF
10	982238	• REAR SCARIFIER ASSEMBLY (SEE IPL FIGURE 41 FOR BREAKDOWN)	1
		ATTACHING PARTS	
20	871082639	• COTTER PIN, 0.188 X 3.0"	2
30	985092	• BOLT W/HOLE, 1.5"-6 X 4.0 HEX	2
40	115-14-2	• NUT, 1.5"-6 SLOTTED HEX	2
50	119-14	• FLAT WASHER, 1.5" SAE	2
60	102-909-1A	• CAP SCREW, 1"-8 X 2.0 HEX	4
70	118-10	• LOCKWASHER, 1"	4
		-----*	
80	5NONUMBER80	• REAR FRAME AND ENGINE ASSEMBLY (SEE IPL FIGURES 31, 32, 33 AND 34 FOR BREAKDOWN)	1

- ITEM NOT ILLUSTRATED

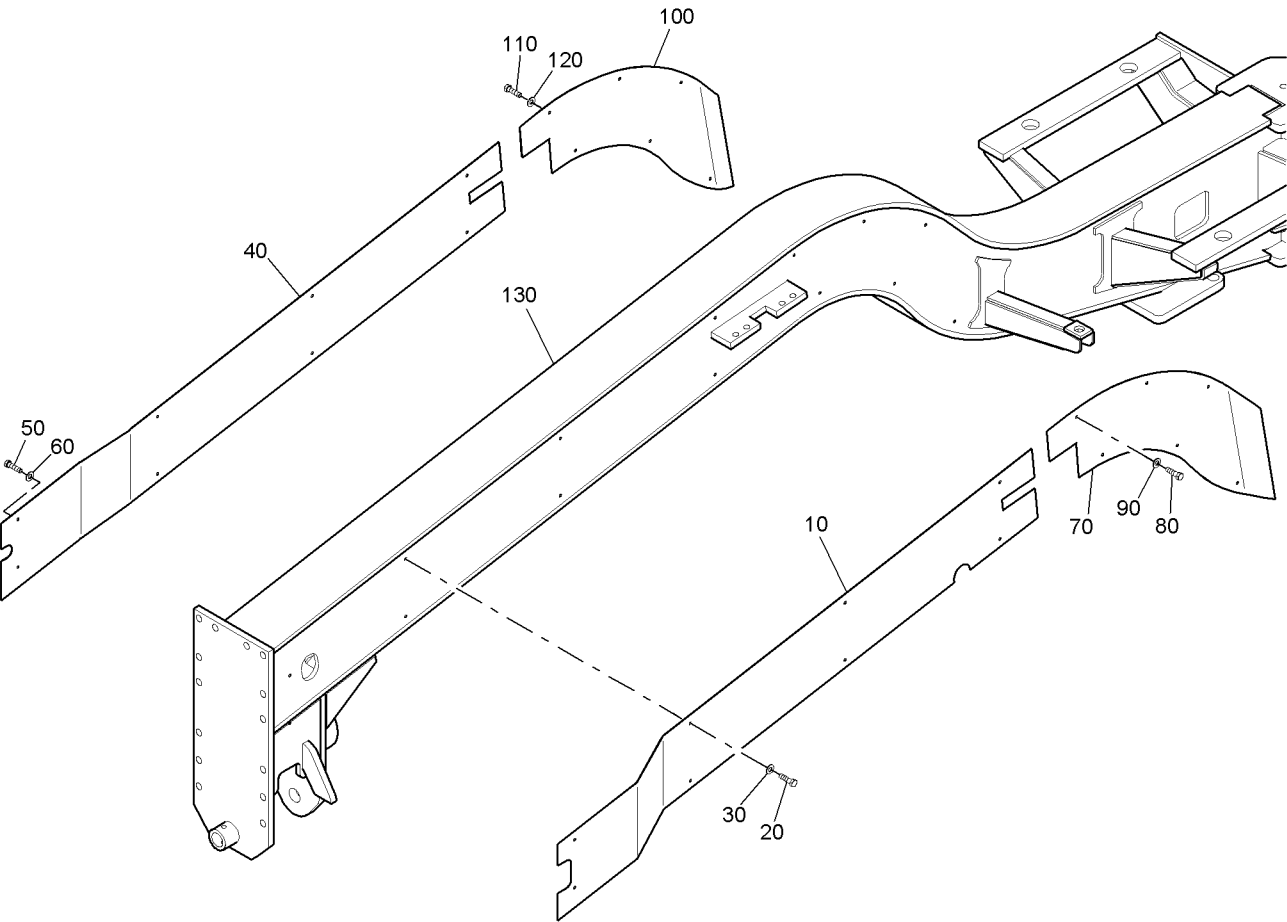


FIGURE 6. BOOM WELDMENT AND COVER ASSEMBLY

FIGURE 6. BOOM WELDMENT AND COVER ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
6			
-1	983108	BOOM WELDMENT AND COVER ASSEMBLY (SEE IPL FIGURES 1, 2, 3 AND 4 FOR NHA)	REF
10	982541	• COVER PLATE, LEFT-HAND BOOM	1
		ATTACHING PARTS	
20	102-203-1A	• CAP SCREW, 3/8"-16 X 3/4 HEX	8
30	118-3	• LOCKWASHER, 3/8"	8
		-----*	
40	982544	• COVER PLATE, RIGHT-HAND BOOM	1
		ATTACHING PARTS	
50	102-203-1A	• CAP SCREW, 3/8"-16 X 3/4 HEX	8
60	118-3	• LOCKWASHER, 3/8"	8
		-----*	
70	982543	• COVER PLATE, REAR, LEFT-HAND BOOM	1
		ATTACHING PARTS	
80	102-203-1A	• CAP SCREW, 3/8"-16 X 3/4 HEX	6
90	118-3	• LOCKWASHER, 3/8"	6
		-----*	
100	982545	• COVER PLATE, REAR, RIGHT-HAND BOOM	1
		ATTACHING PARTS	
110	102-203-1A	• CAP SCREW, 3/8"-16 X 3/4 HEX	6
120	118-3	• LOCKWASHER, 3/8"	6
		-----*	
130	6NONUMBER130	• BOOM WELDMENT	1

- ITEM NOT ILLUSTRATED

ILLUSTRATED PARTS LIST

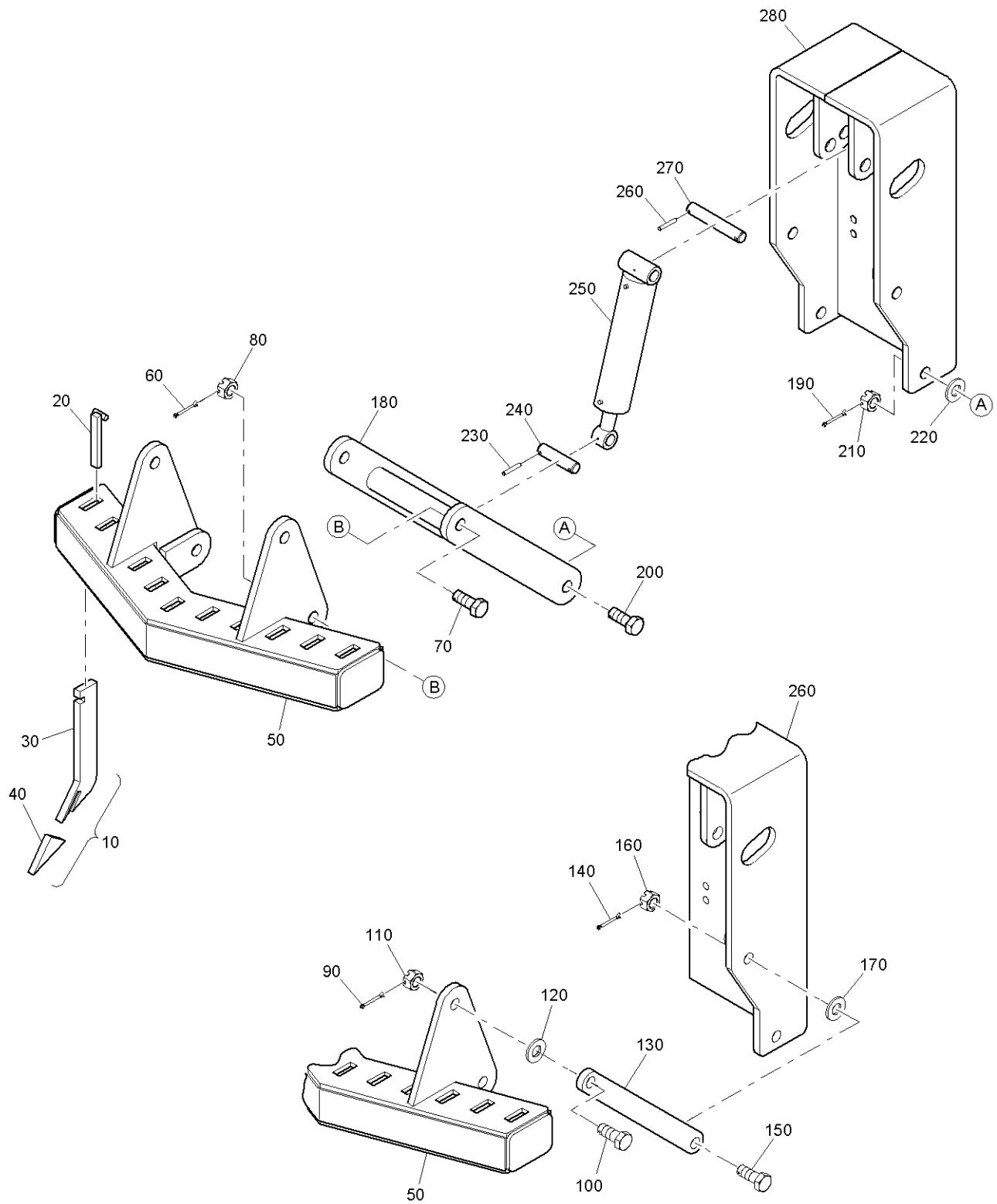


FIGURE 7. FRONT SCARIFIER ASSEMBLY

FIGURE 7. FRONT SCARIFIER ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
7			
-1	982184	FRONT SCARIFIER ASSEMBLY (SEE IPL FIGURE 1 FOR NHA)	REF
10	983100	• SHANK AND TOOTH ASSEMBLY, SCARIFIER	10
		ATTACHING PARTS	
20	982829	• RETAINER, SHANK	1
		-----*	
30	982243	• • SHANK, SCARIFIER	10
40	983095	• • TOOTH, SCARIFIER	10
50	982831	• SCARIFIER WELDMENT, FRONT	1
		ATTACHING PARTS	
60	871082639	• COTTER PIN, 3/16 X 3.0"	2
70	985092	• BOLT W/HOLE, 1.5"-6 X 4.0 HEX	2
80	115-14-2	• NUT, 1.5"-6 SLOTTED HEX	2
90	871082639	• COTTER PIN, 3/16 X 3.0"	2
100	985092	• BOLT W/HOLE, 1.5"-6 X 4.0 HEX	2
110	115-14-2	• NUT, 1.5"-6 SLOTTED HEX	2
120	119-14	• FLAT WASHER, 1.5" SAE	2
		-----*	
130	982220	• BAR, TOP SUPPORT ARM	2
		ATTACHING PARTS	
140	871082639	• COTTER PIN, 3/16 X 3.0"	1
150	985092	• BOLT W/HOLE, 1.5"-6 X 4.0 HEX	1
160	115-14-2	• NUT, 1.5"-6 SLOTTED HEX	1
170	119-14	• FLAT WASHER, 1.5" SAE	1
		-----*	
180	982830	• SUPPORT FRAME, FRONT SCARIFIER	1
		ATTACHING PARTS	
190	871082639	• COTTER PIN, 3/16 X 3.0"	2
200	985092	• BOLT W/HOLE, 1.5"-6 X 4.0 HEX	2

- ITEM NOT ILLUSTRATED

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FIGURE 7. FRONT SCARIFIER ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
7			
210	115-14-2	• NUT, 1.5"-6 SLOTTED HEX	2
220	119-14	• FLAT WASHER, 1.5" SAE	2
230	871081835	• ROLL PIN, 0.375 X 2.00"	2
240	982526	• SCARIFIER PIN, LOWER FRONT	1
		-----*	
250	981878	• CYLINDER, HYDRAULIC, 4.00 X 14.00", 2500 PSI	1
		ATTACHING PARTS	
260	871081835	• ROLL PIN, 0.375 X 2.00"	2
270	982525	• SCARIFIER PIN, UPPER FRONT	1
		-----*	
280	985761	• MOUNTING FRAME, SCARIFIER	1

- ITEM NOT ILLUSTRATED

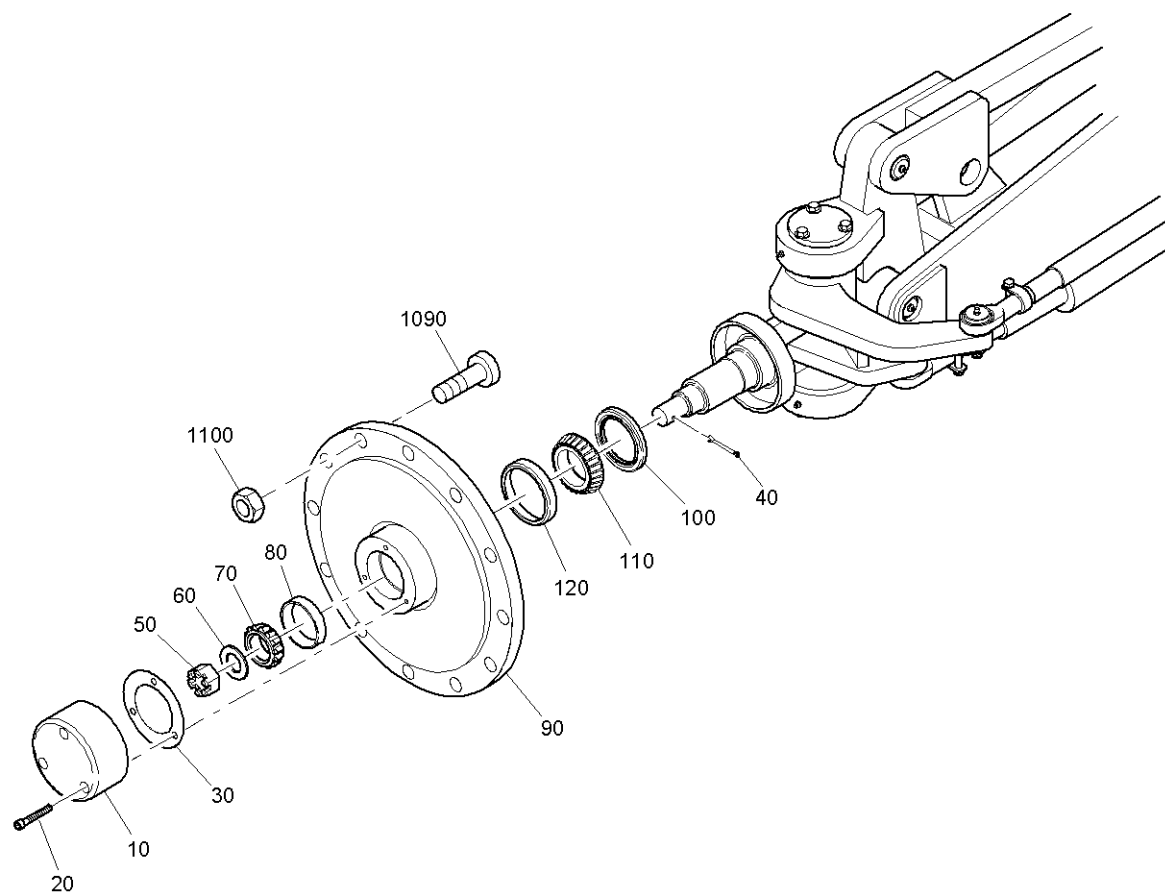


FIGURE 8. FRONT AXLE ASSEMBLY (SHEET 1 OF 6)

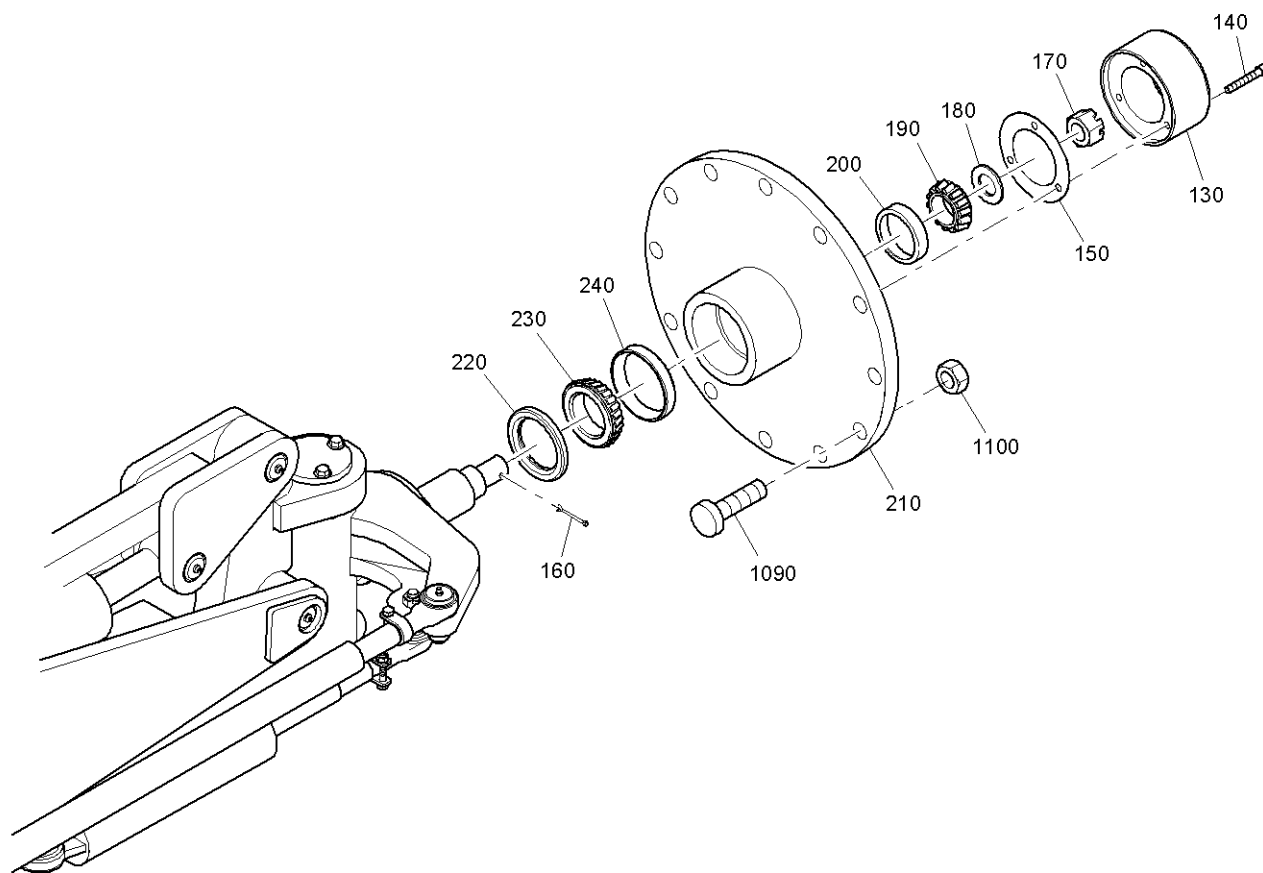


FIGURE 8. FRONT AXLE ASSEMBLY (SHEET 2 OF 6)

ILLUSTRATED PARTS LIST

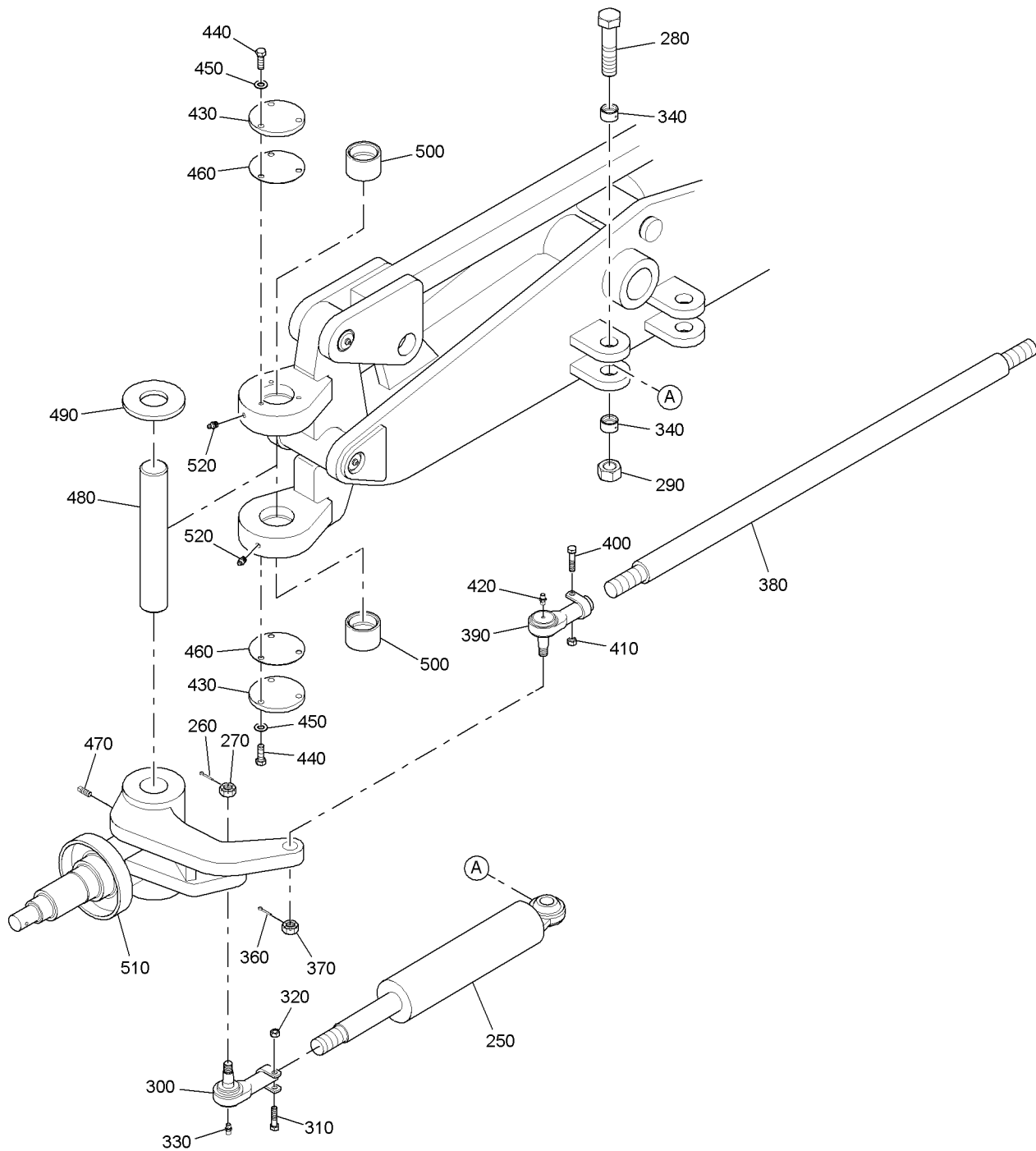


FIGURE 8. FRONT AXLE ASSEMBLY (SHEET 3 OF 6)

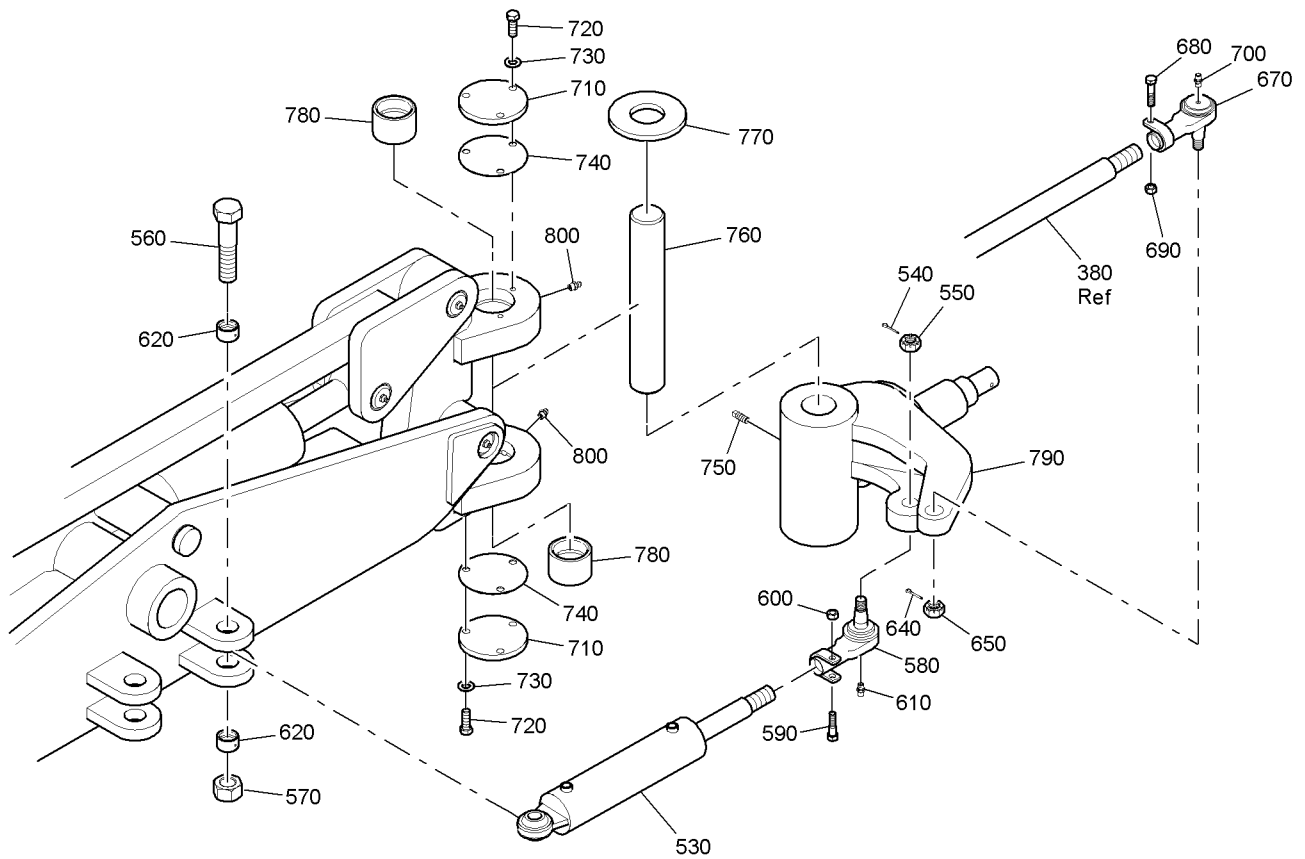


FIGURE 8. FRONT AXLE ASSEMBLY (SHEET 4 OF 6)

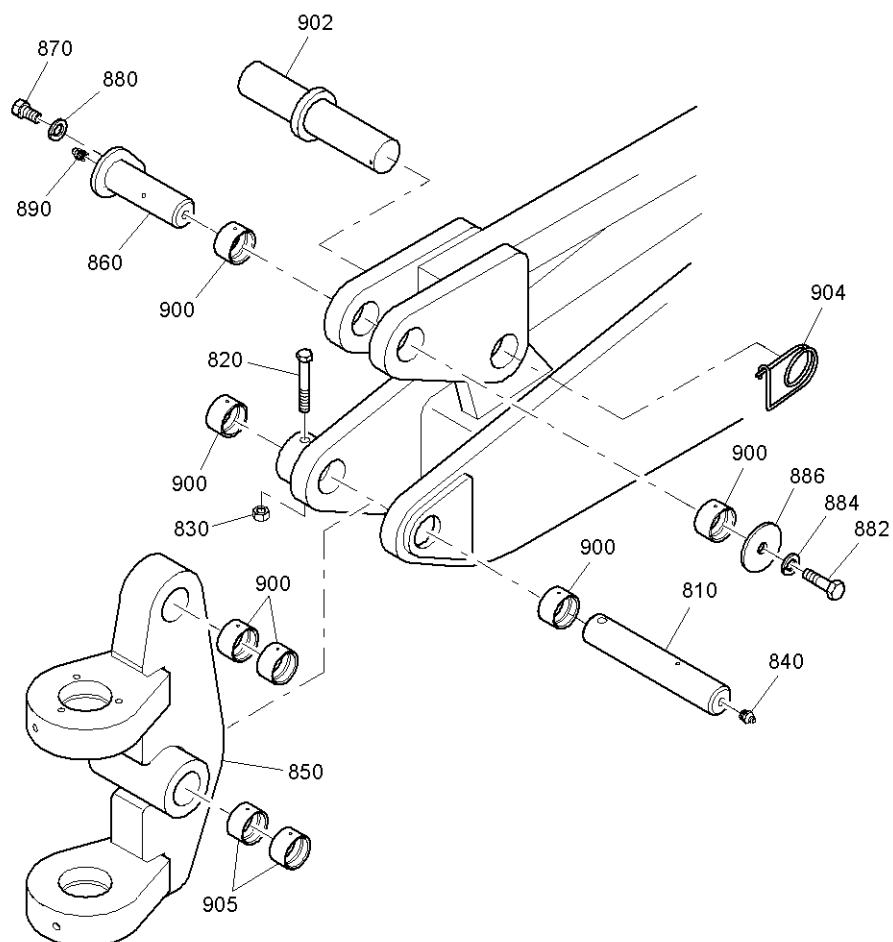


FIGURE 8. FRONT AXLE ASSEMBLY (SHEET 5 OF 6)

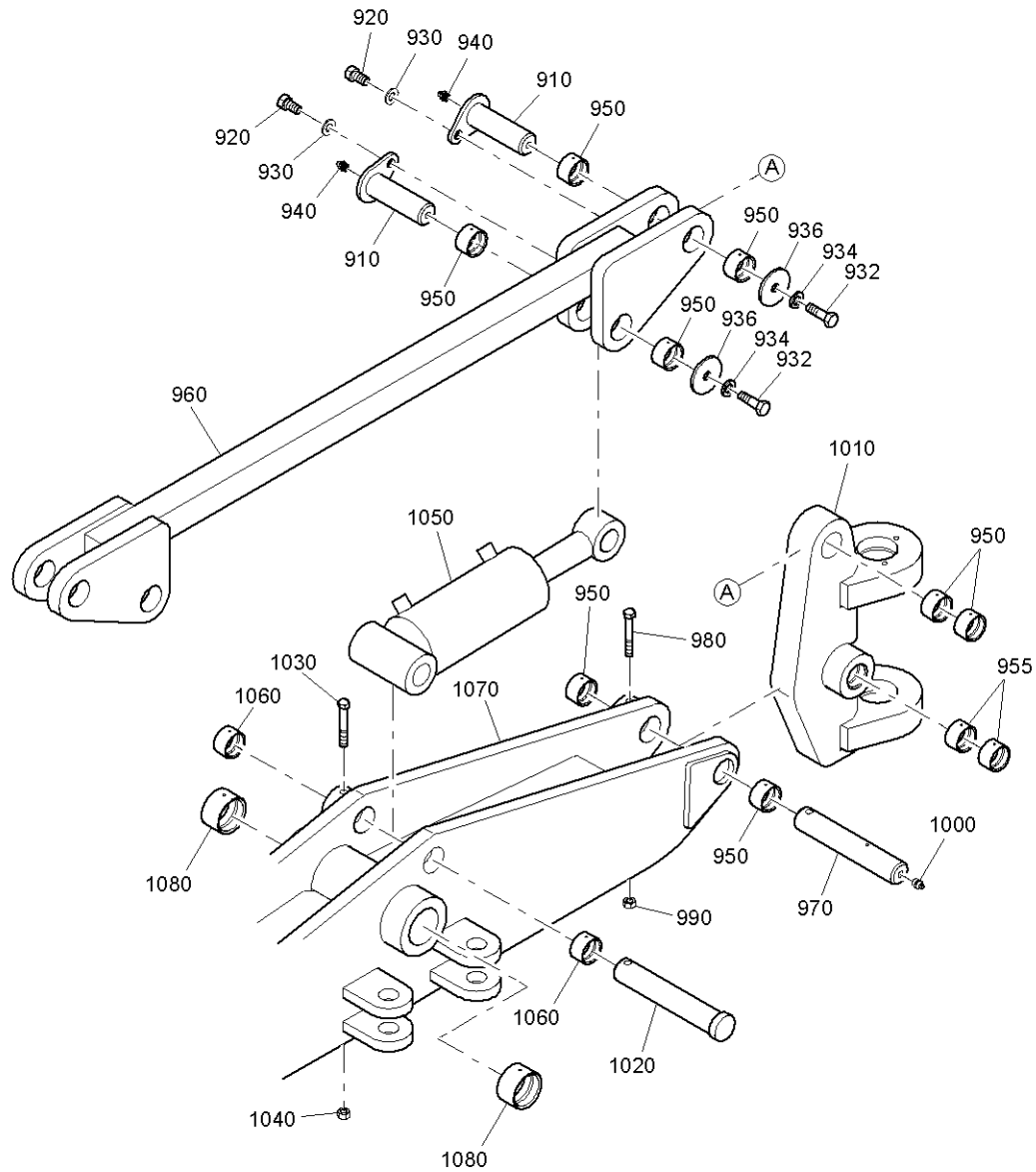


FIGURE 8. FRONT AXLE ASSEMBLY (SHEET 6 OF 6)

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FIGURE 8. FRONT AXLE ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
8			
-1	982900	FRONT AXLE ASSEMBLY (SEE IPL FIGURE 1 FOR NHA)	REF
10	981402	• HUB CAP, WHEEL	1
		ATTACHING PARTS	
20	110-207	• CAP SCREW, 3/8"-16 X 1.5 HEX	3
		-----*	
30	983104	• GASKET, HUB CAP	1
40	984892	• COTTER PIN, 0.25 X 3.00"	1
50	115-11-2	• NUT, CASTLE, 1-1/8"-13	1
60	119-14	• FLAT WASHER, 1.5" SAE	1
70	610210	• BEARING CONE	1
80	610200	• BEARING CUP	1
90	981654	• HUB ASSEMBLY, WHEEL	1
100	120060A	• SEAL, TANDEM AXLE	1
110	210180A	• BEARING CONE	1
120	210190A	• BEARING CUP	1
130	981402	• HUB CAP, WHEEL	1
		ATTACHING PARTS	
140	110-207	• CAP SCREW, 3/8"-16 X 1.5	3
		-----*	
150	983104	• GASKET, HUB CAP	1
160	984892	• COTTER PIN, 0.25 X 3.00"	1
170	115-11-2	• NUT, CASTLE, 1-1/8"-13	1
180	119-14	• FLAT WASHER, 1.5" SAE	1
190	610210	• BEARING CONE	1
200	610200	• BEARING CUP	1
210	981654	• HUB ASSEMBLY, WHEEL	1
220	120060A	• SEAL, TANDEM AXLE	1
230	210180A	• BEARING CONE	1
240	210190A	• BEARING CUP	1
250	981872	• CYLINDER, HYDRAULIC, 3.00 X 9.87"	1

- ITEM NOT ILLUSTRATED

ILLUSTRATED PARTS LIST



FIGURE 8. FRONT AXLE ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
8			
		ATTACHING PARTS	
260	871082603	• COTTER PIN, 1/8 X 1-3/4"	1
270	115-9-2	• NUT, CASTLE, 7/8"-14	1
280	102-919-1A	• CAP SCREW, 1"-8 X 4.5 HEX	1
290	143-10	• LOCKNUT, 1"-8 HEX	1
		-----*	
300	130060	• BALL JOINT	1
		ATTACHING PARTS	
310	102-613-1A	• CAP SCREW, 5/8"-11 X 3.0 HEX	1
320	116-7	• NUT, 5/8"-11 HEX	1
		-----*	
330	140610	• GREASE FITTING, 1/4"-28	1
340	982887	• BUSHING, 1.25 OD X 1.0 ID X 0.75" L	2
-350	8NONUMBER350	• TIE ROD AND BALL JOINT ASSEMBLY	1
		ATTACHING PARTS	
360	871082603	• COTTER PIN, 1/8 X 1-3/4"	1
370	115-9-2	• NUT, CASTLE, 7/8"-14	1
		-----*	
380	981810	• SHAFT, TIE ROD	1
390	130060	• BALL JOINT	1
		ATTACHING PARTS	
400	102-613-1A	• CAP SCREW, 5/8"-11 X 3.0 HEX	1
410	116-7	• NUT, 5/8"-11 HEX	1
		-----*	
420	140610	• GREASE FITTING, 1/4"-28	2
430	981353	• COVER PLATE, KINGPIN	2

- ITEM NOT ILLUSTRATED

FIGURE 8. FRONT AXLE ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
8			
		ATTACHING PARTS	
440	102-205-1A	• CAP SCREW, 3/8"-16 X 1.0 HEX	3
450	118-3	• LOCKWASHER, 3/8"	3
		-----*	
460	982884	• SEAL RUBBER, KINGPIN	2
470	108-412	• SETSCREW, SQUARE HEAD, 1/2"-13 X 3.75	1
480	981391	• SHAFT, SPINDLE PIN	1
490	982851	• SPACER, WHEEL HUB	1
500	210010	• BUSHING, DRAWBAR	2
510	982895	• HUB AND LEVER ARM ASSEMBLY	1
520	985094	• GREASE FITTING, STRAIGHT, 1/8 NPT	2
530	981872	• CYLINDER, HYDRAULIC, 3.00 X 9.87"	1
		ATTACHING PARTS	
540	871082603	• COTTER PIN, 1/8 X 1-3/4"	1
550	115-9-2	• NUT, CASTLE, 7/8"-14	1
560	102-919-1A	• CAP SCREW, 1"-8 X 4.5 HEX	1
570	143-10	• LOCKNUT, 1"-8	1
		-----*	
580	130060	• BALL JOINT	1
		ATTACHING PARTS	
590	102-613-1A	• CAP SCREW, 5/8"-11 X 3.0 HEX	1
600	116-7	• NUT, 5/8"-11 HEX	1
		-----*	
610	140610	• GREASE FITTING, 1/4-28	1
620	982887	• BUSHING, 1.25 OD X 1.0 ID X 0.75" L	2
-630	8NONUMBER630	• TIE ROD AND BALL JOINT ASSEMBLY	1
		ATTACHING PARTS	
640	871082603	• COTTER PIN, 1/8 X 1-3/4"	1

- ITEM NOT ILLUSTRATED

ILLUSTRATED PARTS LIST



FIGURE 8. FRONT AXLE ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
8			
650	115-9-2	• NUT, CASTLE, 7/8"-14	1
		-----*-----	
660	NOT USED		
670	130060	• BALL JOINT	1
		ATTACHING PARTS	
680	102-613-1A	• CAP SCREW, 5/8"-11 X 3.0 HEX	1
690	116-7	• NUT, 5/8"-11 HEX	1
		-----*-----	
700	140610	• GREASE FITTING, 1/4-28	1
710	981353	• COVER PLATE, KINGPIN	2
		ATTACHING PARTS	
720	102-205-1A	• CAP SCREW, 3/8"-16 X 1.0 HEX	3
730	118-3	• LOCKWASHER, 3/8"	3
		-----*-----	
740	982884	• SEAL RUBBER, KINGPIN	2
750	108-412	• SETSCREW, SQUARE HEAD, 1/2"-13 X 3.75	1
760	981391	• SHAFT, SPINDLE PIN	1
770	982851	• SPACER, WHEEL HUB	1
780	210010	• BUSHING, DRAWBAR	2
790	982894	• HUB AND LEVER ARM ASSEMBLY	1
800	985094	• GREASE FITTING, STRAIGHT, 1/8 NPT	2
810	981392	• SHAFT, SPINDLE PIN	1
		ATTACHING PARTS	
820	102-213-1A	• CAP SCREW, 3/8" X 16 X 3.0 HEX	1
830	143-3	• LOCKNUT, 3/8-16" HEX	1
		-----*-----	
840	985094	• GREASE FITTING, STRAIGHT, 1/8 NPT	1
850	982896	• MOUNT ASSEMBLY, STEERING SPINDLE	1
860	982898	• RETAINER PIN ASSEMBLY	1

- ITEM NOT ILLUSTRATED

FIGURE 8. FRONT AXLE ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
8			
		ATTACHING PARTS	
870	102-403-1A	• CAP SCREW, 1/2"-13 X 0.75 HEX	1
880	118-5	• LOCKWASHER, 1/2"	1
882	102-406-1A	• CAP SCREW, 1/2"-13 X 1-1/4, HEX	1
884	118-5	• LOCKWASHER, 1/2"	1
886	R49	• FLAT WASHER	1
		-----*	
890	985094	• GREASE FITTING, STRAIGHT, 1/8 NPT	2
900	982886	• BUSHING, 1.75 OD X 1.5 ID X 1.0" L	6
902	983105	• LOCKING PIN ASSEMBLY	1
904	983103	• LOCKING PIN	1
905	110130A	• BUSHING, 1.75 OD X 1.5 ID X 1.25" L	2
910	982898	• PIN ASSEMBLY, RETAINER	2
		ATTACHING PARTS	
920	102-403-1A	• CAP SCREW, 1/2"-13 X 0.75 HEX	1
930	118-5	• LOCKWASHER, 1/2"	1
932	102-406-1A	• CAP SCREW, 1/2"-13 X 1-1/4, HEX	1
934	118-5	• LOCKWASHER, 1/2"	1
936	R49	• FLAT WASHER	1
		-----*	
940	985094	• GREASE FITTING, STRAIGHT, 1/8 NPT	4
950	982886	• BUSHING, 1.75 OD X 1.5 ID X 1.0" L	8
955	110130A	• BUSHING, 1.75 OD X 1.5 ID X 1.25" L	2
960	982897	• CROSSBAR ASSEMBLY, WHEEL LEAN	1
970	981392	• SHAFT, SPINDLE PIN	1
		ATTACHING PARTS	
980	102-213-1A	• CAP SCREW, 3/8" X 16 X 3.0 HEX	1
990	143-3	• LOCKNUT, HEX, 3/8"-16	1
		-----*	
1000	985094	• GREASE FITTING, STRAIGHT, 1/8 NPT	1
1010	982896	• MOUNT ASSEMBLY, STEERING SPINDLE	1

- ITEM NOT ILLUSTRATED

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FIGURE 8. FRONT AXLE ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
8			
1020	982852	• PIN SHAFT, WHEEL LEAN	1
		ATTACHING PARTS	
1030	102-213-1A	• CAP SCREW, 3/8" X 16 X 3.0 HEX	1
1040	143-3	• LOCKNUT, HEX, 3/8"-16	1
		-----*	
1050	981873	• CYLINDER, HYDRAULIC, 4.00 X 6.00", 2500 PSI	1
1060	982886	• BUSHING, 1.75 OD X 1.5 ID X 1.0" L	2
1070	982903	• CROSSMEMBER ASSEMBLY, FRONT END	1
1080	210010	• BUSHING, DRAWBAR	2
1090	982883	• STUD, WHEEL, M22 X 1.5-INCH	24
1100	983552	• NUT, WHEEL, FLAT, M22	24

- ITEM NOT ILLUSTRATED

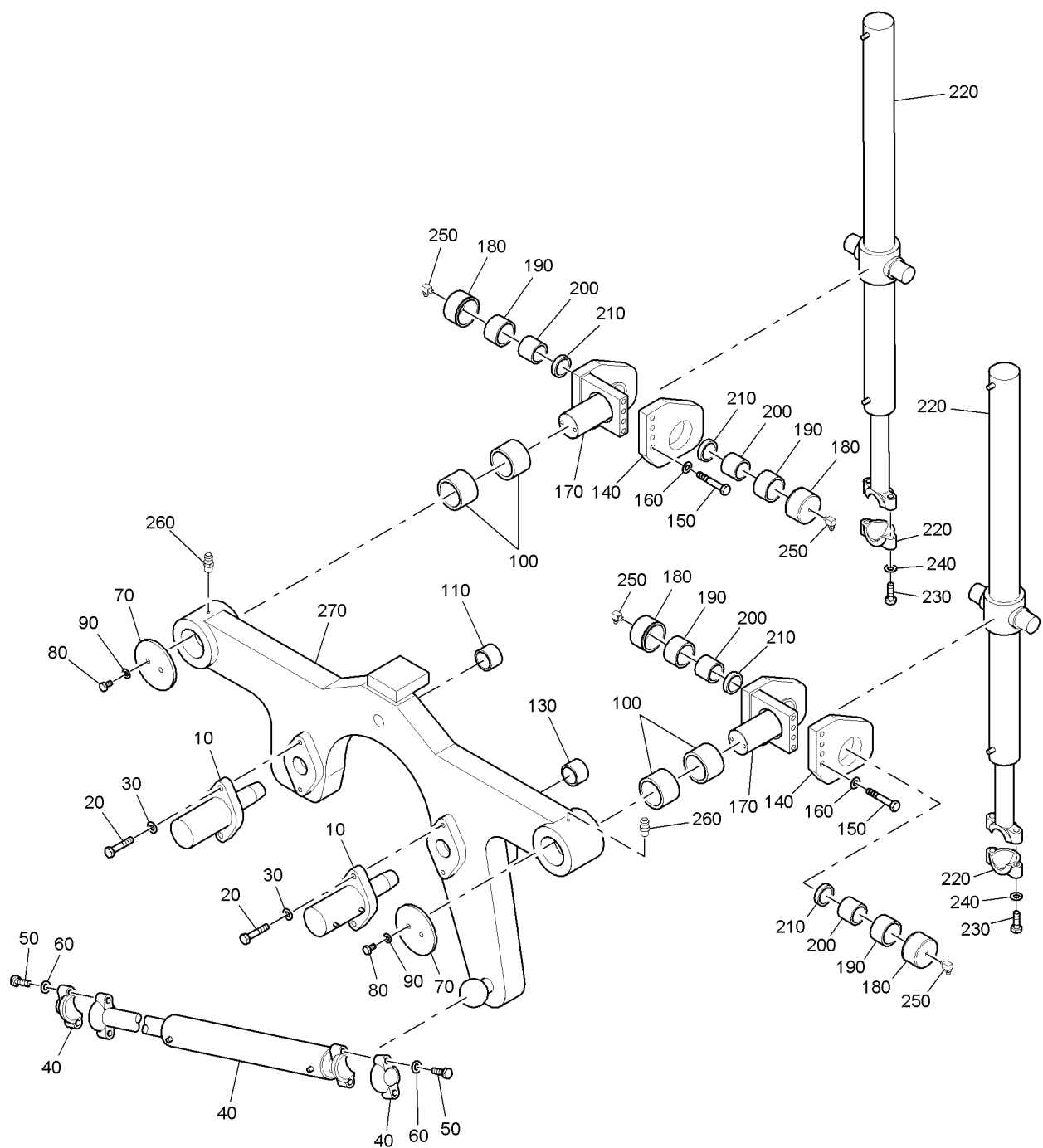


FIGURE 9. YOKE ASSEMBLY (SHEET 1 OF 2)

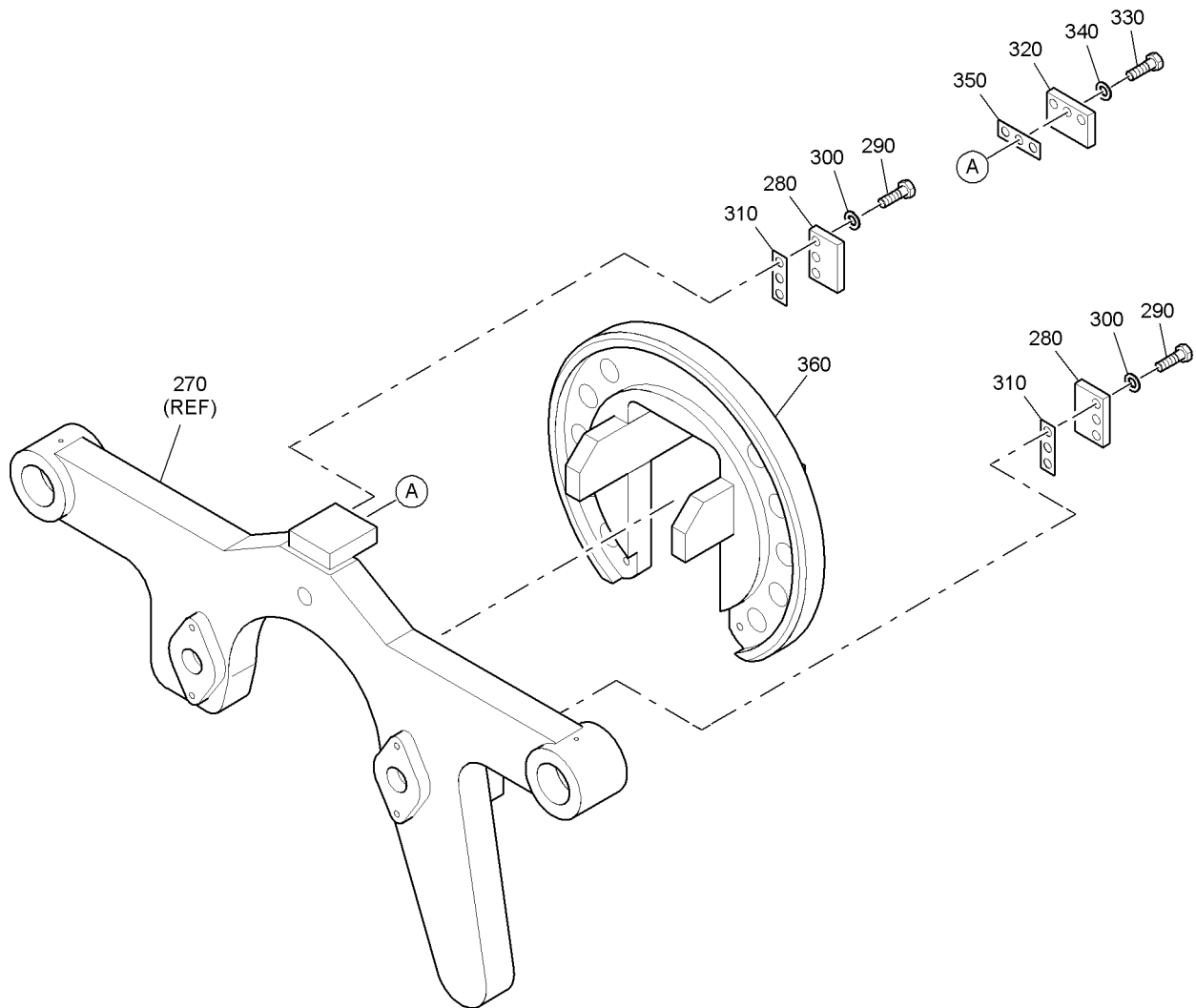


FIGURE 9. YOKE ASSEMBLY (SHEET 2 OF 2)

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FIGURE 9. YOKE ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
9			
-1	2NONUMBER60	YOKE ASSEMBLY (SEE IPL FIGURE 2 FOR NHA)	REF
10	980444	• CYLINDER, HYDRAULIC	2
		ATTACHING PARTS	
20	102-609-1A	• CAP SCREW, 5/8"-11 X 2, HEX	2
30	118-7	• LOCKWASHER, 5/8"	2
		-----*	
40	981875	• CYLINDER, HYDRAULIC (INCLUDES BEARING CAPS), 3.00 X 23.00", 2500 PSI	1
		ATTACHING PARTS	
50	102-614-1A	• CAP SCREW, 5/8"-11 X 3-1/4, HEX	4
60	118-7	• LOCKWASHER, 5/8"	4
		-----*	
70	981911	• CAP PLATE, CYLINDER SHAFT	2
		ATTACHING PARTS	
80	102-406-1A	• CAP SCREW, 1/2"-13 X 1-1/4, HEX	2
90	118-5	• LOCKWASHER, 1/2"	2
		-----*	
100	983381	• BUSHING, STEEL	4
110	983375	• BUSHING, STEEL, 90 X 80 X 25 MM	1
120	NOT USED		
130	983366	• BUSHING, BRONZE, 2.5 X 2.0 X 2.5"	1
140	985763	• TRUNION PLATE, LIFT CYLINDER.	4
		ATTACHING PARTS	
150	811352	• CAP SCREW, 5/8"-11 X 2.25, HEX, GRADE 8	4
160	118-5	• LOCKWASHER, 1/2"	4
		-----*	
170	986265	• TRUNION ASSEMBLY, LIFT CYLINDER	2
180	981910	• END CAP, CYLINDER	4

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FIGURE 9. YOKE ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
9			
190	983380	• BUSHING, STEEL, 3.0 X 2.5 X 1.5"	4
200	210010	• BUSHING, DRAWBAR	4
210	983377	• SEAL, OIL, 3.0 X 2.5 X 0.25"	4
220	981874	• CYLINDER, HYDRAULIC (INCLUDES BEARING CAPS), 3.00 X 48.00", 2500 PSI	2
		ATTACHING PARTS	
230	102-614-1A	• CAP SCREW, 5/8"-11 X 3-1/4, HEX	2
240	118-7	• LOCKWASHER, 5/8"	2
		-----*	
250	985095	• GREASE FITTING, 1/8" NPT, 90 DEGREE	4
260	140620	• GREASE FITTING, 1/4-28, W90	2
270	985104	• PLATE ASSEMBLY, BOOM CYLINDER	1
280	981908	• RETAINER BAR, RING	2
		ATTACHING PARTS	
290	102-709-1A	• CAP SCREW, 3/4"-10 X 2.0, HEX	3
300	118-8	• LOCKWASHER, 3/4"	3
		-----*	
310	981907	• SHIM PLATE, SWIVEL RING	2
320	981908	• RETAINER BAR, RING	1
		ATTACHING PARTS	
330	102-709-1A	• CAP SCREW, 3/4"-10 X 2.0, HEX	3
340	118-8	• LOCKWASHER, 3/4"	3
		-----*	
350	981907	• SHIM PLATE, SWIVEL RING	1
360	985103	• SADDLE ASSEMBLY, BOOM	1

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FIGURE 10. MOLDBOARD ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
10			
-1	985152	MOLDBOARD ASSEMBLY (SEE IPL FIGURE 2 FOR NHA)	REF
10	983149	• MOLDBOARD AND BLADE ASSEMBLY, 12 FT. (SEE IPL FIGURE 11 FOR BREAKDOWN)	1
		ATTACHING PARTS	
20	871081835	• ROLL PIN, 0.375 X 2.00"	2
30	981856	• MOUNTING PIN, SLIDE CYLINDER	1
		-----*	
40	981860	• CYLINDER, HYDRAULIC, 2.50 X 7.00", 2500 PSI	2
		ATTACHING PARTS	
50	102-407-1A	• CAP SCREW, 1/2"-13 X 1.50 HEX	2
60	981883	• PLATE, CYLINDER END CAP	2
70	118-5	• LOCKWASHER, 1/2"	2
		-----*	
80	981859	• SHAFT, BLADE SLIDE PIN	2
		ATTACHING PARTS	
90	102-407-1A	• CAP SCREW, 1/2"-13 X 1.50 HEX	1
100	981833	• PLATE, CYLINDER END CAP	1
110	118-5	• LOCKWASHER, 1/2"	1
120	72161	• ROLL PIN, 0.375 X 3.00", STL ZPL	1
		-----*	
130	981860	• CYLINDER, HYDRAULIC, 2.50 X 58.00", 2500 PSI	1
		ATTACHING PARTS	
140	102-707-1A	• CAP SCREW, 3/4"-10 X 1.50 HEX	2
150	118-8	• LOCKWASHER, 3/4"	2
		-----*	
160	983150	• SLIDE ASSEMBLY (SEE IPL FIGURE 12 FOR BREAKDOWN)	1

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FIGURE 10. MOLDBOARD ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE	UNITS PER ASSY
		1 2 3 4 5 6 7	
10			
170	985479	• GEARBOX ASSEMBLY, 54" TURNTABLE (SEE IPL FIGURE 13 FOR BREAKDOWN)	1
180	100-609-1A	• CAP SCREW, 5/8"-18 X 2, HEX, GRADE 8	5
190	118-7	• LOCKWASHER, 5/8", GRADE 8	5
200	983151	• TURNTABLE ASSEMBLY (SEE IPL FIGURE 14 FOR BREAKDOWN)	1

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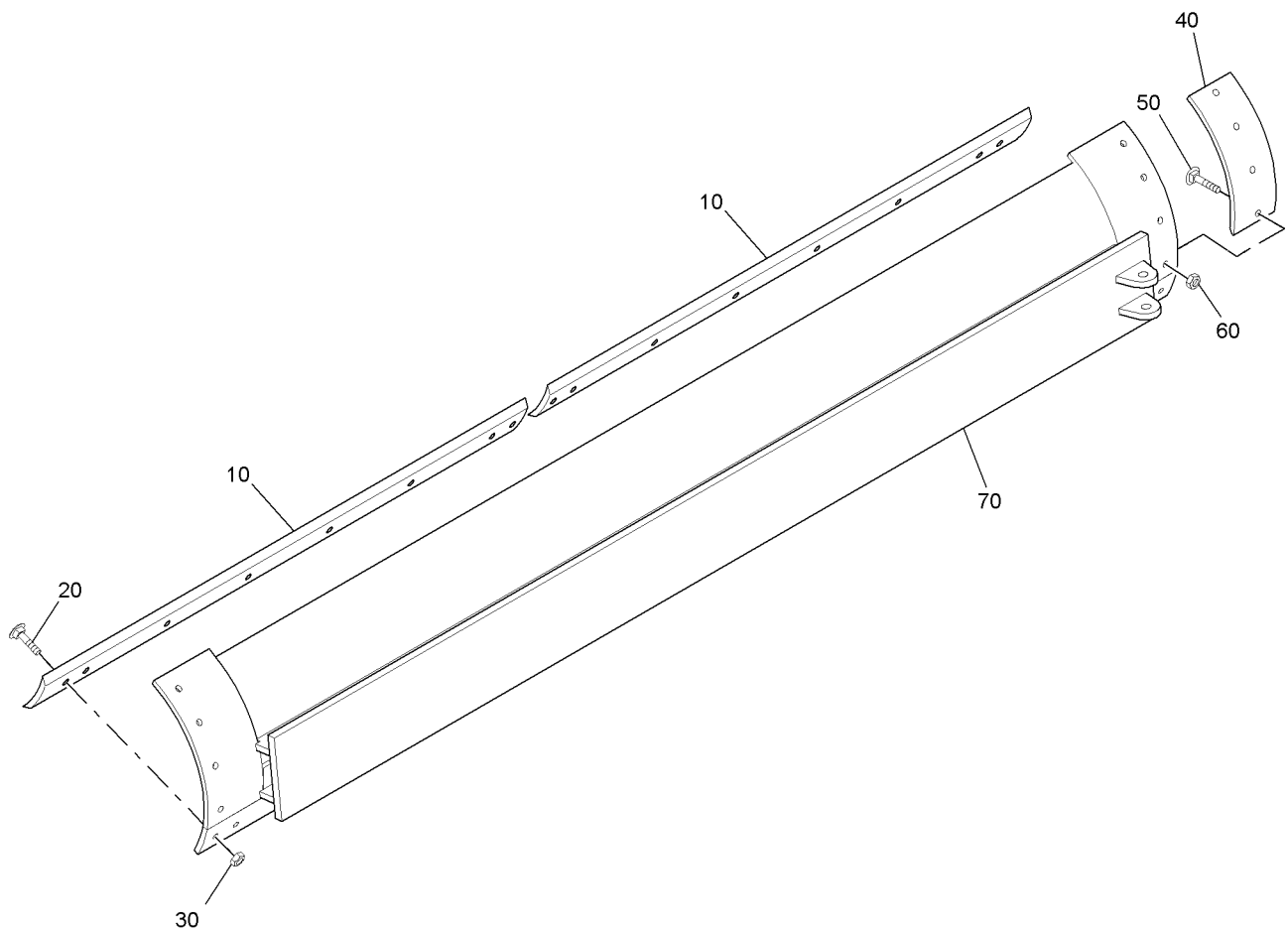


FIGURE 11. MOLDBOARD AND BLADE ASSEMBLY, 12-FOOT

FIGURE 11. MOLDBOARD ASSEMBLY, 12-FOOT

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
11			
-1	983149	MOLDBOARD AND BLADE ASSEMBLY, 12-FOOT (SEE IPL FIGURE 10 FOR NHA)	REF
10	853860	• CUTTING EDGE, 6-FOOT	2
		ATTACHING PARTS	
20	130220	• BOLT, PLOW, 5/8-11 X 2-INCHES	8
30	116-7	• NUT, 5/8"-11 HEX	8
		-----*	
40	130180	• END BIT, CURVED, MOLDBOARD	2
		ATTACHING PARTS	
50	130220	• BOLT, PLOW, 5/8-11 X 2-INCHES	4
60	116-7	• NUT, 5/8"-11 HEX	4
		-----*	
70	985460	• MOLDBOARD WELDMENT	1

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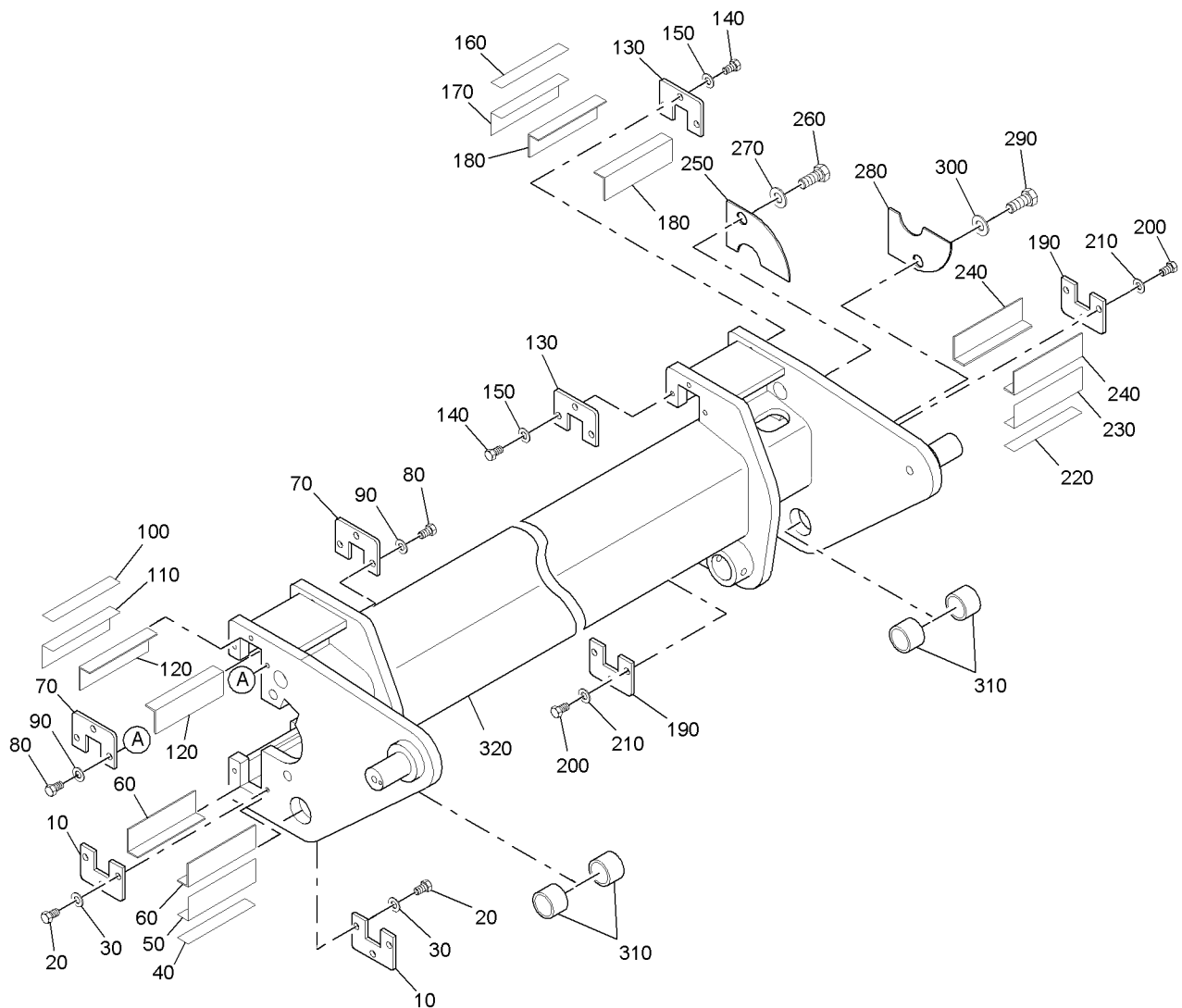


FIGURE 12. SLIDE ASSEMBLY

FIGURE 12. SLIDE ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
12			
-1	983150	SLIDE ASSEMBLY (SEE IPL FIGURE 10 FOR NHA)	REF
10	981857	• COVER PLATE, WEAR BAR	2
		ATTACHING PARTS	
20	102-205-1A	• CAP SCREW, 3/8"-16 X 1 HEX	3
30	118-3	• LOCKWASHER, 3/8"	3
		-----*	
40	983551	• SHIM PLATE, FLAT SLIDE	1
50	983554	• SHIM PLATE, L-SHAPED SLIDE	1
60	982899	• GUIDE, BRONZE SLIDE	2
70	981857	• COVER PLATE, WEAR BAR	2
		ATTACHING PARTS	
80	102-205-1A	• CAP SCREW, 3/8"-16 X 1 HEX	3
90	118-3	• LOCKWASHER, 3/8"	3
		-----*	
100	983551	• SHIM PLATE, FLAT SLIDE	1
110	983554	• SHIM PLATE, L-SHAPED SLIDE	1
120	982899	• GUIDE, BRONZE SLIDE	2
130	981857	• COVER PLATE, WEAR BAR	2
		ATTACHING PARTS	
140	102-205-1A	• CAP SCREW, 3/8"-16 X 1 HEX	3
150	118-3	• LOCKWASHER, 3/8"	3
		-----*	
160	983551	• SHIM PLATE, FLAT SLIDE	1
170	983554	• SHIM PLATE, L-SHAPED SLIDE	1
180	982899	• GUIDE, BRONZE SLIDE	2
190	981857	• COVER PLATE, WEAR BAR	2
		ATTACHING PARTS	
200	102-205-1A	• CAP SCREW, 3/8"-16 X 1 HEX	3

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FIGURE 12. SLIDE ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
12			
210	118-3	• LOCKWASHER, 3/8"	3
		-----*	
220	983551	• SHIM PLATE, FLAT SLIDE	1
230	983554	• SHIM PLATE, L-SHAPED SLIDE	1
240	982899	• GUIDE, BRONZE SLIDE	2
250	982864	• COVER PLATE, UPPER SLIDE	1
		ATTACHING PARTS	
260	985440	• CAP SCREW, 3/4"-10 X 0.625 HEX	1
270	118-8	• LOCKWASHER, 3/4"	1
		-----*	
280	982865	• COVER PLATE, BOTTOM SLIDE	1
		ATTACHING PARTS	
290	985440	• CAP SCREW, 3/4"-10 X 0.625 HEX	1
300	118-8	• LOCKWASHER, 3/4"	1
		-----*	
310	982886	• BUSHING, 1.75 OD X 1.50 ID X 1.00" LG	4
320	983150-01	• HOUSING ASSEMBLY, SLIDE	1

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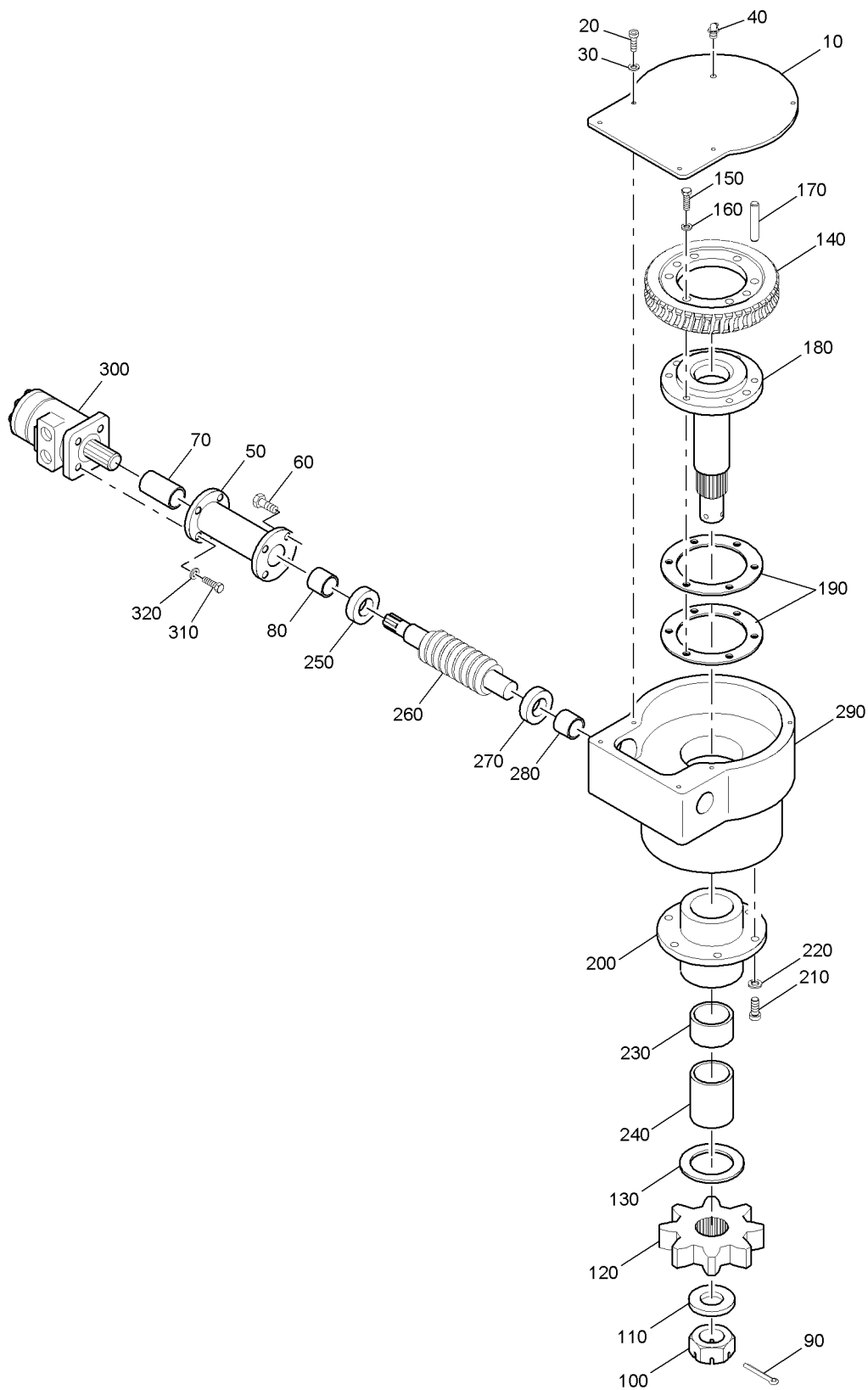


FIGURE 13. GEARBOX ASSEMBLY

FIGURE 13. GEARBOX ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
13			
-1	985479	TURNTABLE GEARBOX ASSEMBLY (SEE IPL FIGURE 10 FOR NHA)	REF
10	983137	• COVER, GEARBOX	1
		ATTACHING PARTS	
20	102-103-1A	• CAP SCREW, 5/16"-18 X 3/4 HEX	9
30	118-2	• LOCKWASHER, 5/16"	9
		-----*	
40	852460	• GREASE FITTING, WITH RELIEF	1
50	983130	• ADAPTER, HYDRAULIC MOTOR	1
		ATTACHING PARTS	
60	110-301-1A	• CAP SCREW, 7/16"-14 X 1 HEX	4
		-----*	
70	983136	• ADAPTER, SPLINED	1
80	983139	• BUSHING, WORM GEARSHAFT	1
90	984892	• COTTER PIN, 1/4 X 3.0"	1
100	115-14-1	• NUT, 1-1/2 - 12 HEX JAM	1
110	984969	• SPACER	1
120	982857	• SPROCKET	1
130	984968	• SPACER	1
140	983135	• GEAR, TURNTABLE WORM DRIVE	1
		ATTACHING PARTS	
150	110-406	• CAP SCREW, 1/2"-13 X 1.25 SOCKET	6
160	118-5	• LOCKWASHER, 1/2"	6
170	985439	• PIN, DOWEL, 1/2 X 1.25"	2
		-----*	
180	983132	• OUTPUT SHAFT, TURNTABLE GEAR	1
190	983141	• SHIM, TURNTABLE OUTPUT SHAFT	2
200	983129	• FLANGE	1

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FIGURE 13. GEARBOX ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
13			
		ATTACHING PARTS	
210	110-406	• CAP SCREW, 1/2"-13 X 1.25 SOCKET	6
220	118-5	• LOCKWASHER, 1/2"	6
		-----*	
230	983140-01	• BUSHING, OUTPUT SHAFT SHORT	1
240	983140	• BUSHING, OUTPUT SHAFT LONG	1
250	983138	• BEARING, THRUST	1
260	983134	• GEARSHAFT, WORM	1
270	983138	• BEARING, THRUST	1
280	983139	• BUSHING, WORM GEARSHAFT	1
290	983128	• HOUSING, TURNTABLE GEARBOX	1
300	982902	• MOTOR, HYDRAULIC	1
		ATTACHING PARTS	
310	102-206-1A	• CAP SCREW, 3/8"-16 X 1.25 SOCKET	4
320	118-3	• LOCKWASHER, 3/8"	4
		-----*	

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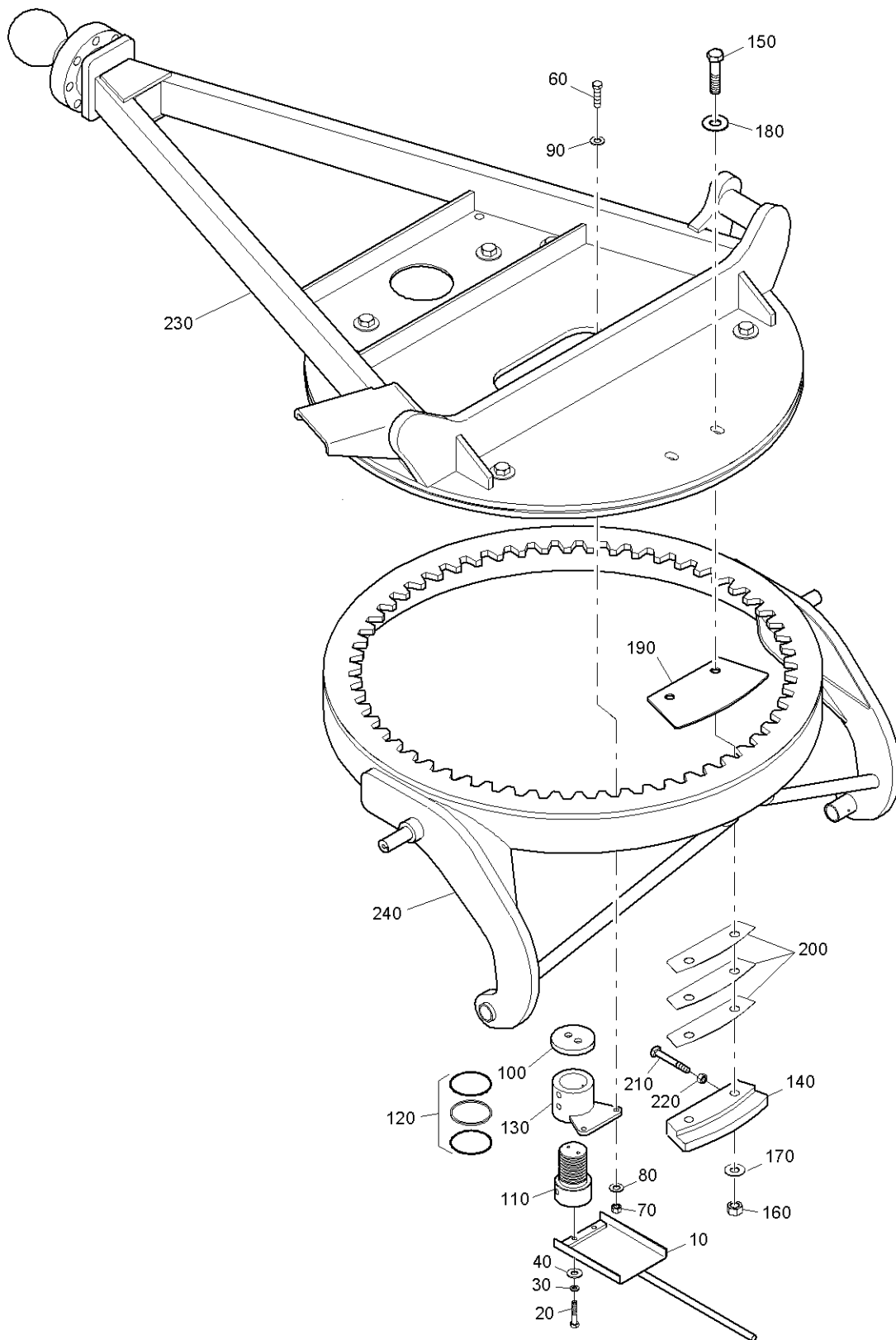


FIGURE 14. TURNTABLE ASSEMBLY

FIGURE 14. TURNTABLE ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
14			
-1	983151	TURNTABLE ASSEMBLY (SEE IPL FIGURE 10 FOR NHA)	REF
10	985458	• SWIVEL ASSEMBLY, CIRCLE MOUNT	1
		ATTACHING PARTS	
20	102-207-1A	• CAP SCREW, 3/8"-16 X 1.5 HEX	2
30	118-3	• LOCKWASHER, 3/8"	2
40	119-3	• FLAT WASHER, 3/8" SAE	2
		-----*	
-50	982495	• SWIVEL ASSEMBLY, HYDRAULIC	1
		ATTACHING PARTS	
60	102-409-1A	• CAP SCREW, 1/2"-13 X 2.0 HEX	2
70	116-5	• NUT, 1/2"-13 HEX	2
80	118-5	• LOCKWASHER, 1/2"	2
90	119-5	• FLAT WASHER, 1/2" SAE	2
		-----*	
100	982498	• • SWIVEL CAP, TOP	1
110	982496	• • LOWER OUTLET, SWIVEL	1
120	983101	• • T-SEAL, HYDRAULIC SWIVEL	1
130	985459	• • MOUNTING HOUSING, SWIVEL	1
140	981892	• MOUNT PLATE, WEAR	5
		ATTACHING PARTS	
150	102-919-1A	• CAP SCREW, 1-8" X 4.5 HEX	2
160	116-10	• NUT, HEX, 1"-8	2
170	118-10	• LOCKWASHER, 1.0"	2
180	120-10	• FLAT WASHER, 1.0" USS	2
		-----*	
190	981893	• WEAR PLATE, TURNTABLE	5
200	982539	• SHIM, WEAR PLATE	AR
210	108723	• SETSCREW, 3/4"-10 X 5.5	10
220	116-8	• NUT, 3/4"-10 HEX	10
230	985465	• DRAWBAR ASSEMBLY, MOLDBOARD	1
240	985466	• CIRCLE ASSEMBLY, MOLDBOARD	1

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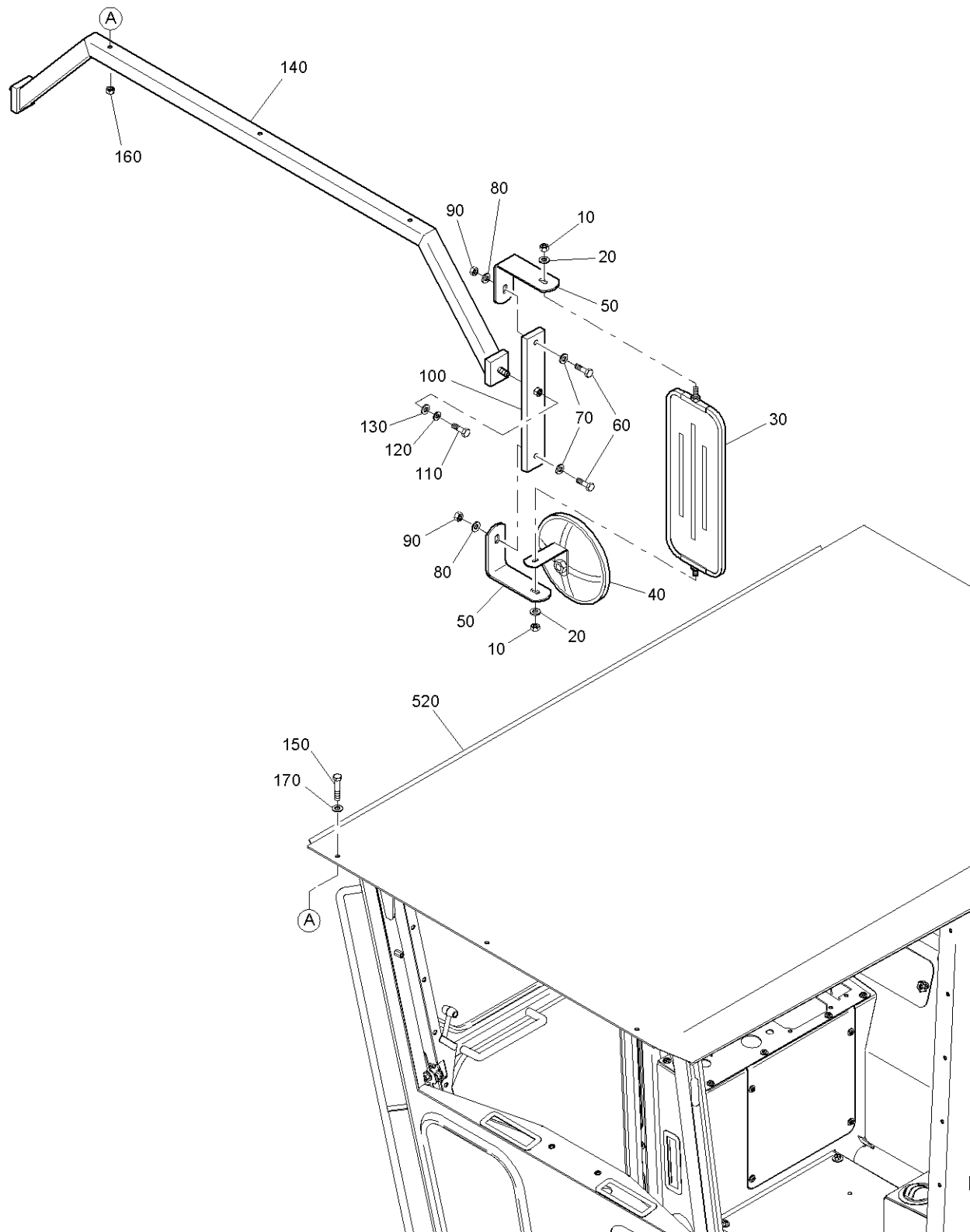


FIGURE 15. CAB ASSEMBLY (LEFT SIDE VIEW) (SHEET 1 OF 4)

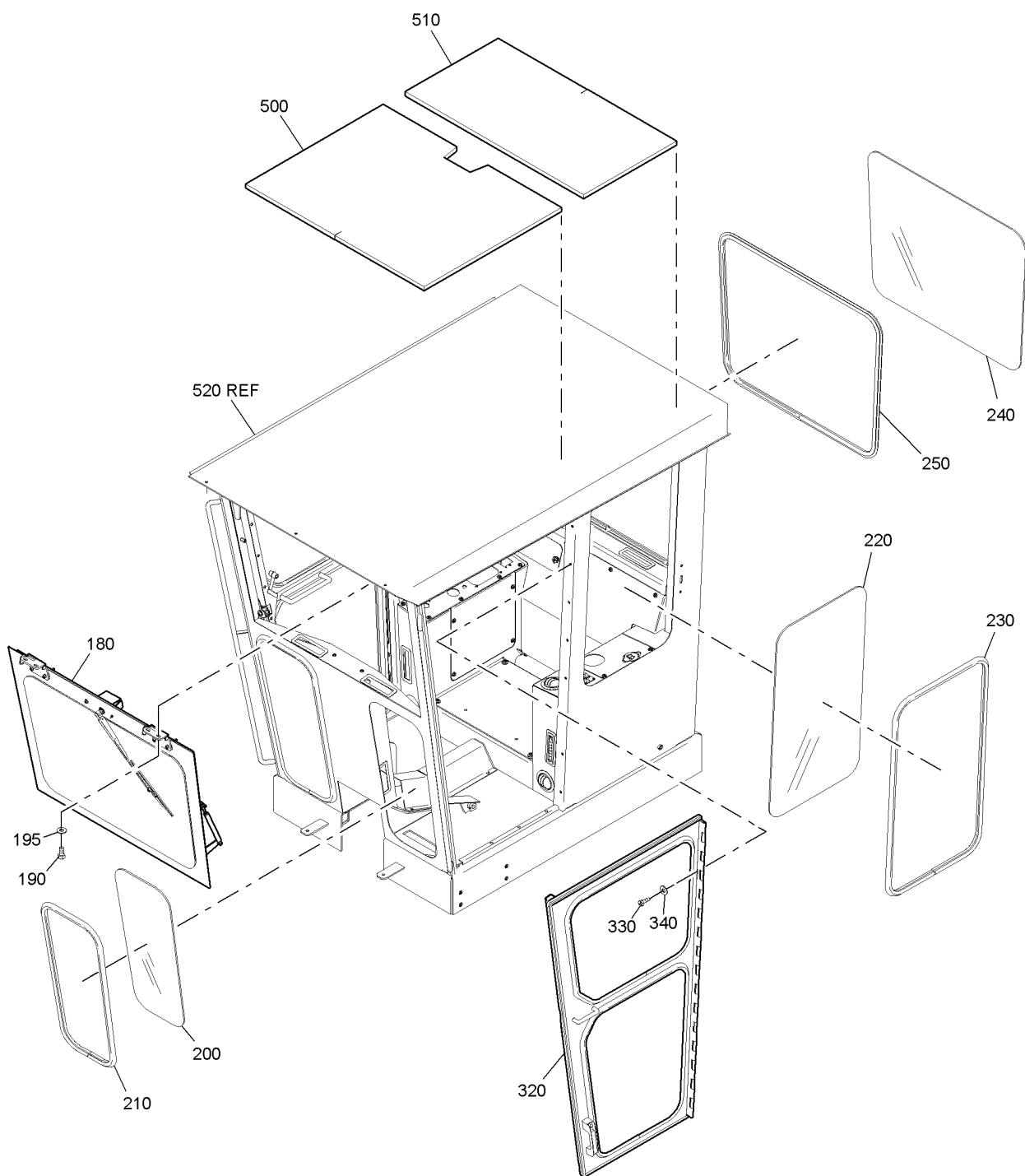


FIGURE 15. CAB ASSEMBLY (LEFT SIDE VIEW) (SHEET 2 OF 4)

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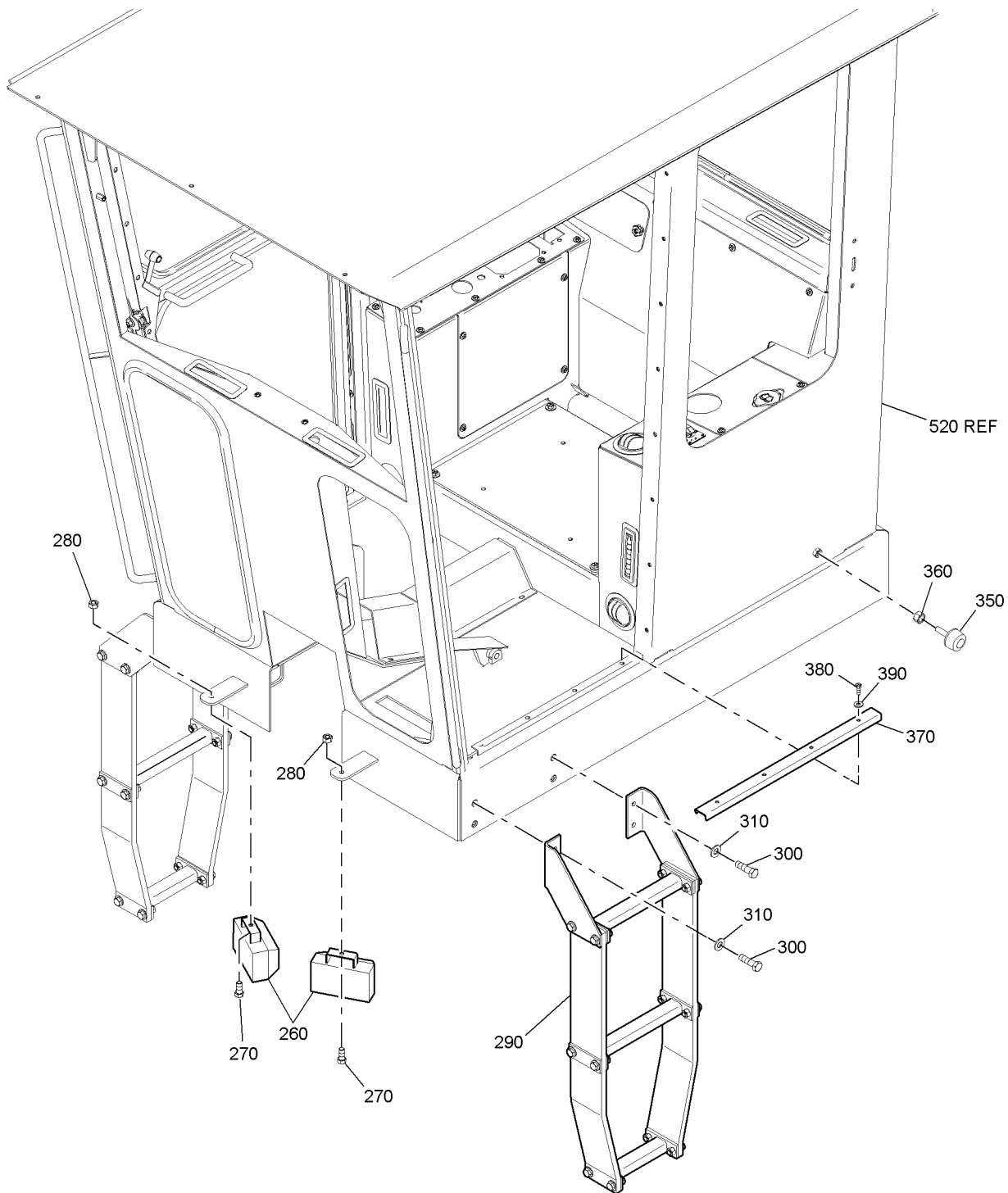


FIGURE 15. CAB ASSEMBLY (LEFT SIDE VIEW) (SHEET 3 OF 4)

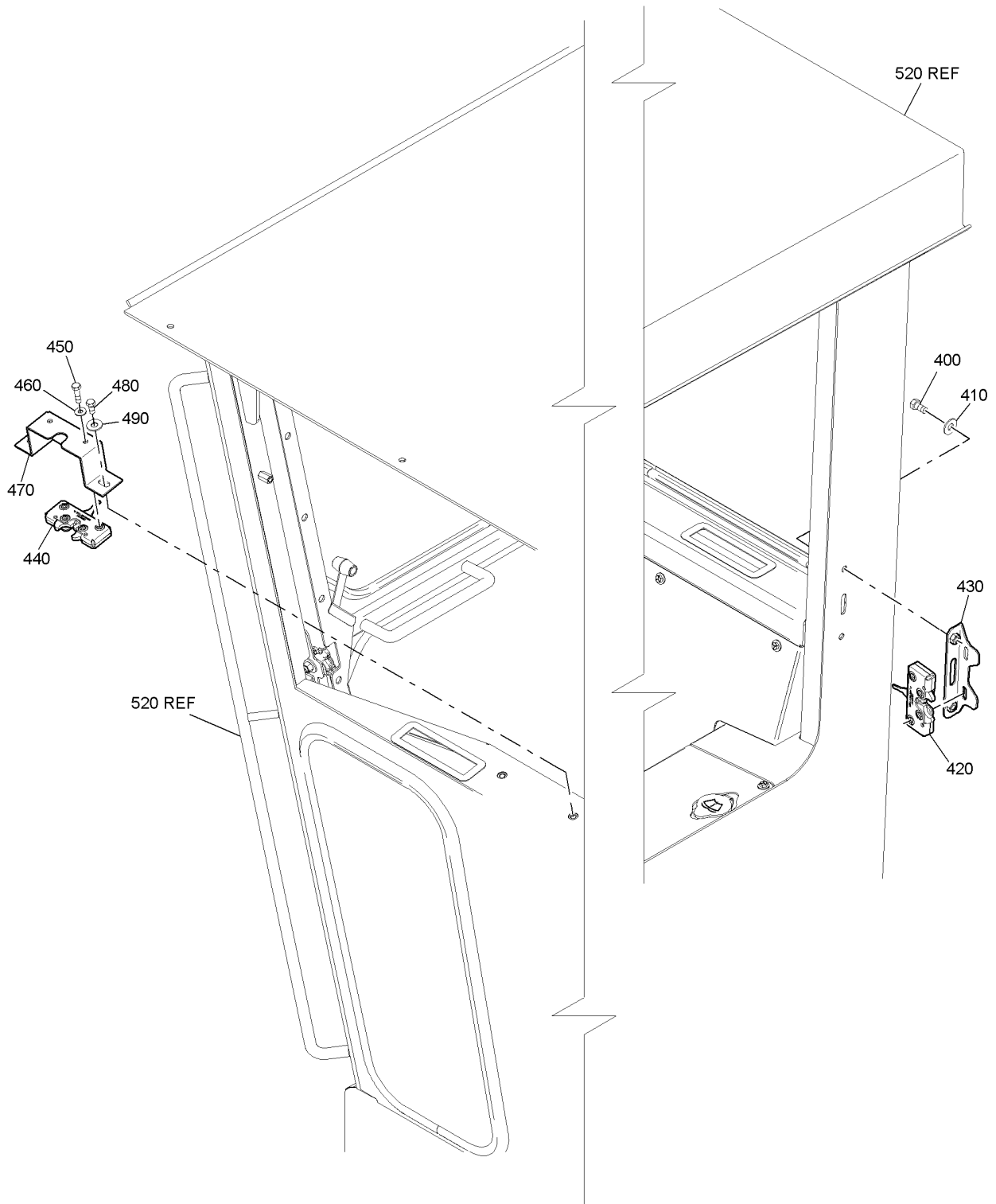


FIGURE 15. CAB ASSEMBLY (LEFT SIDE VIEW) (SHEET 4 OF 4)

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FIGURE 15. CAB ASSEMBLY (LEFT SIDE VIEW

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
15			
-1	982700	CAB ASSEMBLY (SEE IPL FIGURE 3 FOR NHA)	REF
10	143-3	• LOCKNUT, 3/8"-16 HEX	4
20	119-3	• FLAT WASHER, 3/8" SAE	4
30	852570	• MIRROR HEAD, WEST COAST	2
40	151370	• MIRROR	2
50	856987	• MOUNTING BRACKET, MIRROR	4
		ATTACHING PARTS	
60	102-208-1A	• CAP SCREW, 5/16"-18 X 1.75 HEX	1
70	119-3	• FLAT WASHER, 3/8" SAE	2
80	118-3	• LOCKWASHER, 3/8"	1
90	116-3	• NUT, 3/8"-16 HEX	1
		-----*	
100	856896	• MOUNTING BAR, MIRROR GROUP	2
		ATTACHING PARTS	
110	102-406-1A	• CAP SCREW, 1/2"-13 X 1.25 HEX	1
120	118-5	• LOCKWASHER, 1/2"	1
130	119-5	• FLAT WASHER, 1/2" SAE	1
		-----*	
140	985624	• MOUNTING BAR, MIRROR	1
		ATTACHING PARTS	
150	102-211-1A	• CAP SCREW, 3/8"-16 X 2.50 HEX	3
160	143-3	• LOCKNUT, 3/8"-16	3
170	119-3	• FLAT WASHER, 3/8" SAE	3
		-----*	
180	982734	• WINDSHIELD ASSEMBLY (SEE IPL FIGURE 17 FOR BREAKDOWN)	1
		ATTACHING PARTS	
190	102-203-1A	• CAP SCREW, 3/8"-16 X 3/4 HEX	4

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ILLUSTRATED PARTS LIST



FIGURE 15. CAB ASSEMBLY (LEFT SIDE VIEW (CONTINUED))

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
15			
195	119-3	• FLAT WASHER, 3/8" SAE	4
		-----*	
200	982728	• WINDOW, LOWER	1
210	982360-89	• GASKET, LOWER WINDOW	1
220	982608	• WINDOW, SIDE	1
230	982360-122	• GASKET, SIDE WINDOW	1
240	982787	• WINDOW, REAR	1
250	982360-127	• GASKET, REAR WINDOW	1
260	160040A	• WORK LIGHT	2
		ATTACHING PARTS	
270	102-205-1A	• CAP SCREW, 3/8"-16 X 1.0 HEX	1
280	143-3	• LOCKNUT, 3/8"-16	1
		-----*	
290	985625	• LADDER, CAB ENTRY (SEE IPL FIGURE 20 FOR BREAKDOWN)	1
		ATTACHING PARTS	
300	102-406-1A	• CAP SCREW, 1/2"-13 X 1.25 HEX	4
310	118-5	• LOCKNUT, 1/2"-13	4
		-----*	
320	982695	• DOOR ASSEMBLY, LEFT-HAND (SEE IPL FIGURE 18 FOR BREAKDOWN)	1
		ATTACHING PARTS	
330	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	12
340	119-1	• FLAT WASHER, 1/4" SAE	12
		-----*	
350	982668	• BUMPER, DOOR	1
		ATTACHING PARTS	
360	116-5	• LOCKNUT, 1/2"-13	1
		-----*	

- ITEM NOT ILLUSTRATED

FIGURE 15. CAB ASSEMBLY (LEFT SIDE VIEW (CONTINUED))

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
15			
370	982640	• DOORSILL	1
		ATTACHING PARTS	
380	102-1-1A	• CAP SCREW, 1/4"-20 X 1/2 HEX	4
390	119-1	• FLAT WASHER, 1/4" SAE	4
		-----*	
400	102-203-1A	• CAP SCREW, 3/8"-16 X 3/4 HEX	2
410	119-3	• FLAT WASHER, 3/8" SAE	
420	983458	• LATCH, DOOR OPEN	1
430	982680	• BRACKET, LATCH	1
440	982679	• LATCH, WINDOW	1
		ATTACHING PARTS	
450	102-5-1A	• CAP SCREW, 1/4"-20 X 1.0 HEX	2
460	119-1	• FLAT WASHER, 1/4" SAE	2
		-----*	
470	982666	• BRACKET, WINDOW LATCH	1
		ATTACHING PARTS	
480	102-203-1A	• CAP SCREW, 3/8"-16 X 3/4 HEX	2
490	119-3	• FLAT WASHER, 3/8"	2
		-----*	
500	982735	• ROOF PANEL, FRONT	1
510	982376	• ROOF PANEL, REAR	1
520	982701	• CAB WELDMENT	1

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ILLUSTRATED PARTS LIST

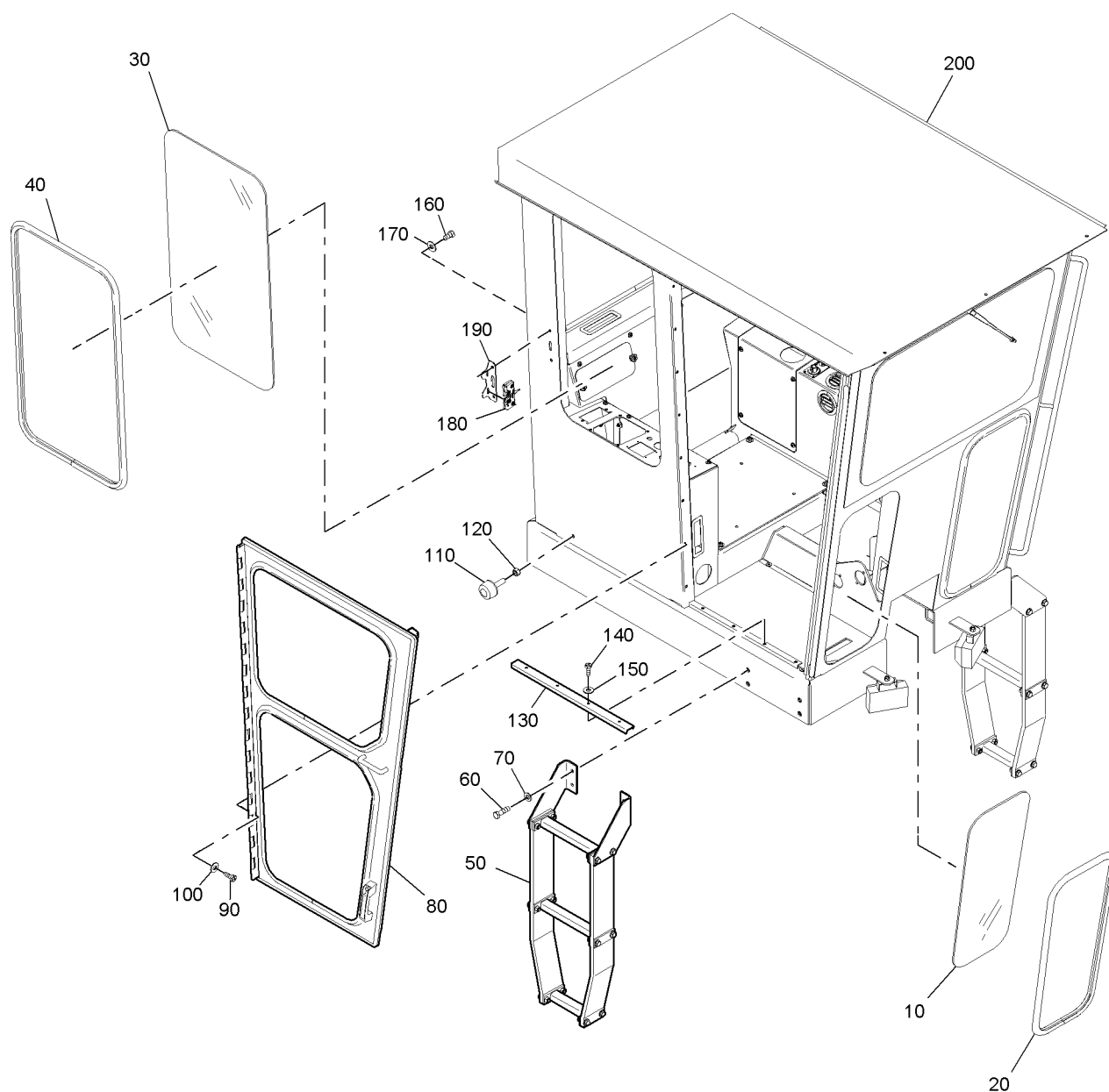


FIGURE 16. CAB ASSEMBLY (RIGHT SIDE VIEW)

FIGURE 16. CAB ASSEMBLY (RIGHT SIDE VIEW)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
16			
-1	982700	CAB ASSEMBLY (SEE IPL FIGURE 3 FOR NHA)	REF
10	982728	• WINDOW, LOWER	1
20	982360-89	• GASKET, LOWER WINDOW	1
30	982608	• WINDOW, SIDE	1
40	982360-122	• GASKET, SIDE WINDOW	1
50	985625	• LADDER, CAB ENTRY (SEE IPL FIGURE 20 FOR BREAKDOWN)	1
		ATTACHING PARTS	
60	102-406-1A	• CAP SCREW, 1/2"-13 X 1.25 HEX	4
70	118-5	• LOCKNUT, 1/2"-13	4
		-----*	
80	982694	• DOOR ASSEMBLY, RIGHT-HAND (SEE IPL FIGURE 19 FOR BREAKDOWN)	1
		ATTACHING PARTS	
90	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	12
100	119-1	• FLAT WASHER, 1/4" SAE	12
		-----*	
110	982668	• BUMPER, DOOR	1
		ATTACHING PARTS	
120	116-5	• LOCKNUT, 1/2"-13	1
		-----*	
130	982640	• DOORSILL	1
		ATTACHING PARTS	
140	102-1-1A	• CAP SCREW, 1/4"-20 X 1/2 HEX	4
150	119-1	• FLAT WASHER, 1/4" SAE	4
		-----*	
160	102-203-1A	• SCREW, HEX CAP, 3/8-16 X 3/4-INCH	2

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ILLUSTRATED PARTS LIST

FIGURE 16. CAB ASSEMBLY (RIGHT SIDE VIEW) (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE	UNITS PER ASSY
		1 2 3 4 5 6 7	
16			
170	119-3	• WASHER, FLAT, 3/8-INCH SAE	
180	983458	• LATCH, DOOR OPEN	1
190	982680	• BRACKET, LATCH	1
200	982701	• CAB WELDMENT	REF

- ITEM NOT ILLUSTRATED

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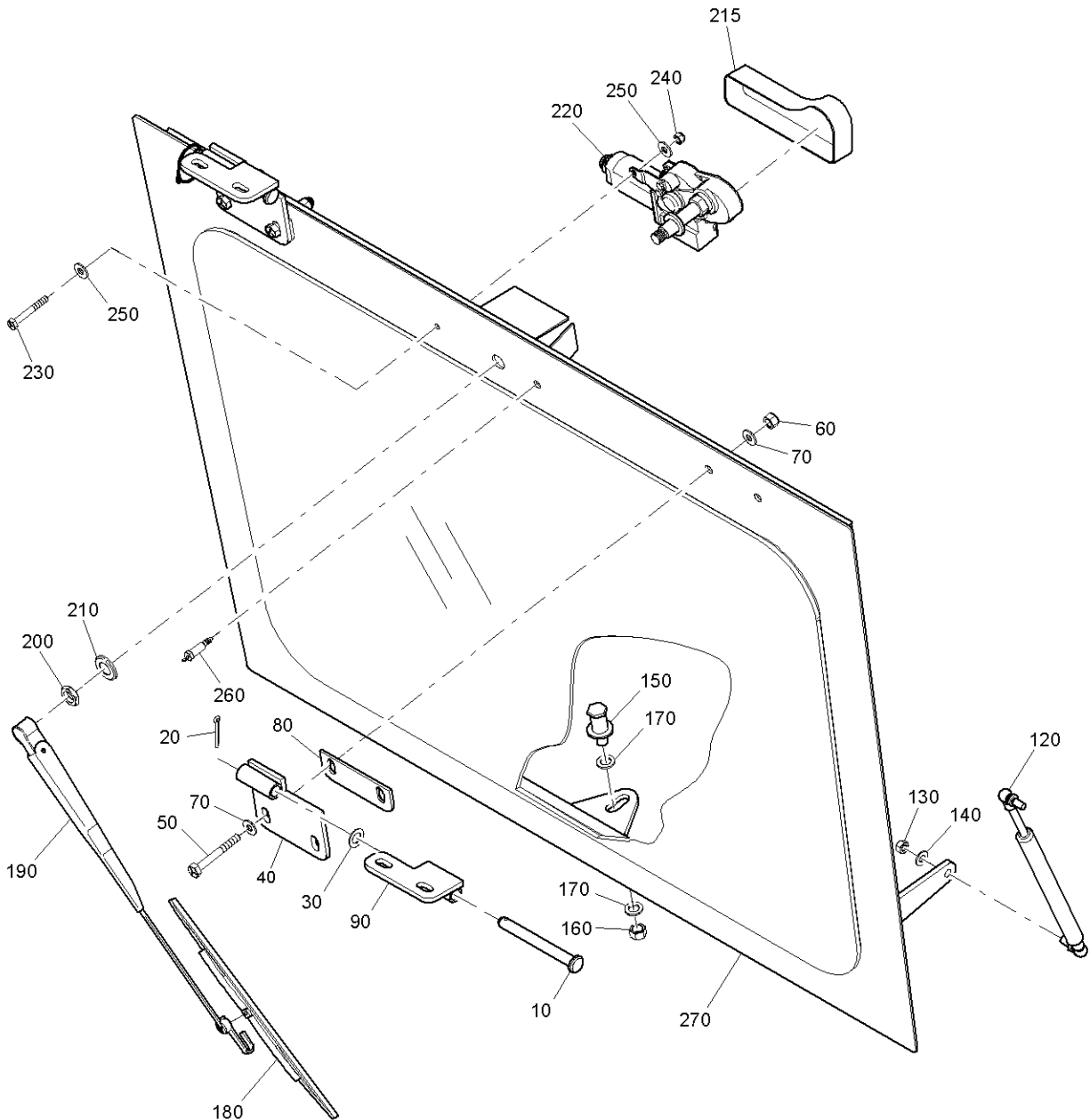


FIGURE 17. WINDSHIELD ASSEMBLY

FIGURE 17. WINDSHIELD ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
17			
-1	982734	WINDSHIELD ASSEMBLY (SEE IPL FIGURE 15 FOR NHA)	REF
10	982598	• PIN, CLEVIS	1
		ATTACHING PARTS	
20	80389	• PIN, COTTER, 1/8 X 1.00"	1
		-----*	
30	119-5	• WASHER, FLAT, 1/2-INCH	1
40	982405	• HINGE BLADE, WINDOW	1
		ATTACHING PARTS	
50	102-210-1A	• CAP SCREW, 1/4"-16 X 2.25 HEX	2
60	143-3	• NUT, SELF-LOCKING, 3/8-16	2
70	119-1	• FLAT WASHER, 3/8" SAE	4
		-----*	
80	982404	• HINGE SHIM, WINDOW	1
90	982408	• HINGE BLADE, ROOF	1
		ATTACHING PARTS	
100	102-203-1A	• CAP SCREW, 3/8"-16 X 3/4 HEX	2
110	119-3	• FLAT WASHER, 3/8" SAE	2
		-----*	
120	982600	• SPRING, GAS	1
		ATTACHING PARTS	
130	143-2	• LOCKNUT, 5/16"	1
140	119-2	• FLAT WASHER, 5/16" SAE	1
		-----*	
150	982416	• BOLT, STRIKER, 2.025"	1
160	116-4	• NUT, 7/16"-14 HEX	1
170	120-4	• FLAT WASHER, 7/16" USS	2

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FIGURE 17. WINDSHIELD ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
17			
180	9892403	• WIPER BLADE, 18"	1
190	982400-17	• WIPER ARM, 17"	1
		ATTACHING PARTS	
200	982399-01	• NUT, WIPER ARM RETAINING	1
210	982399-02	• WASHER, FLAT	1
		-----*	
215	982401	• COVER, WIPER MOTOR	1
220	982399	• WIPER MOTOR, 12-VOLT, 2" SHAFT, 85*	1
		ATTACHING PARTS	
230	102-10-1A	• CAP SCREW, 1/4" 20 X 2.25 HEX	1
240	143-1	• LOCKNUT, 1/4"-20	1
250	119-1	• FLAT WASHER, 1/4" SAE	2
		-----*	
260	982740	• BULKHEAD FITTING KIT	1
270	982362	• WINDSHIELD	1

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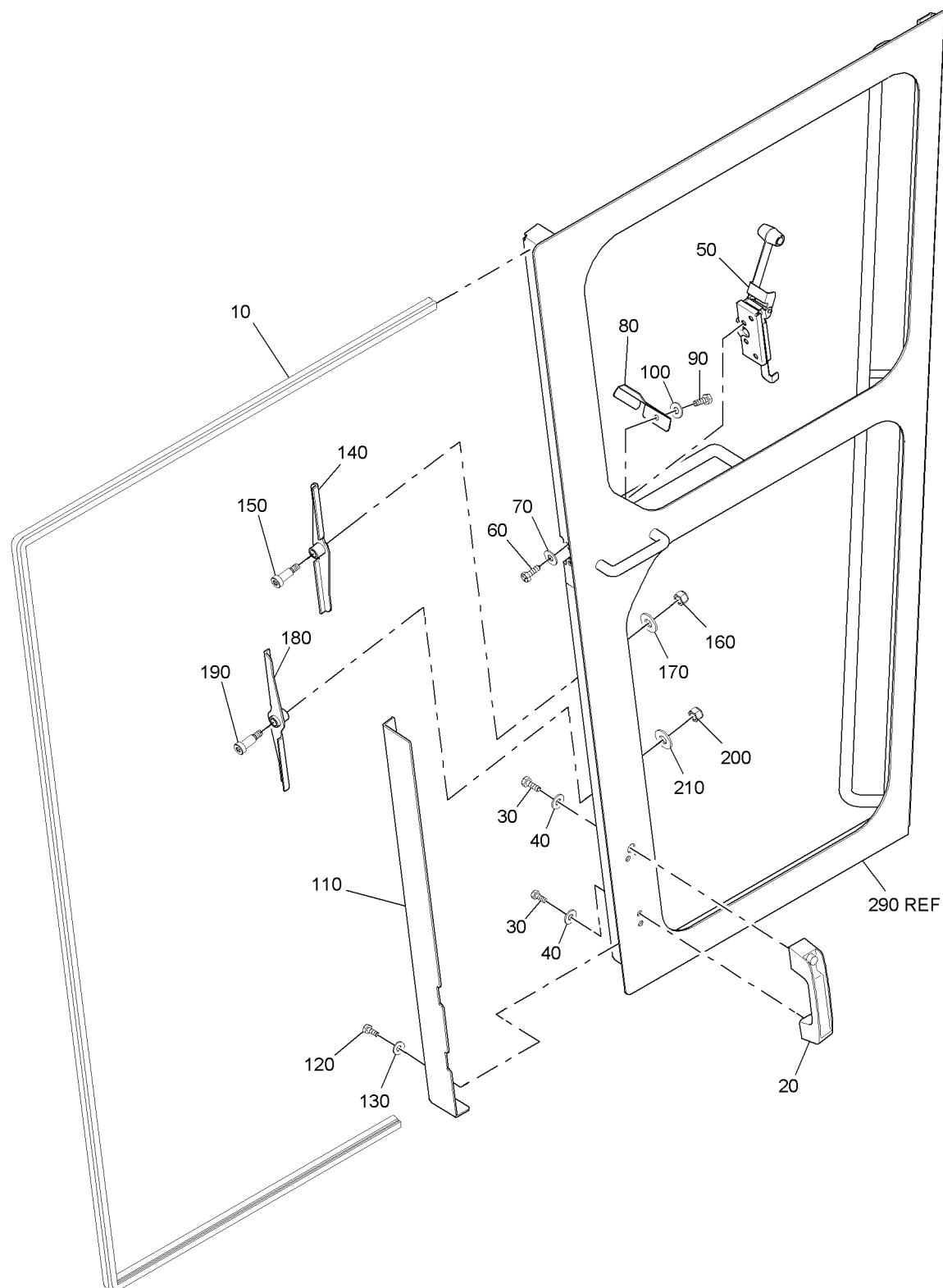


FIGURE 18. LEFT-HAND DOOR ASSEMBLY (SHEET 1 OF 2)

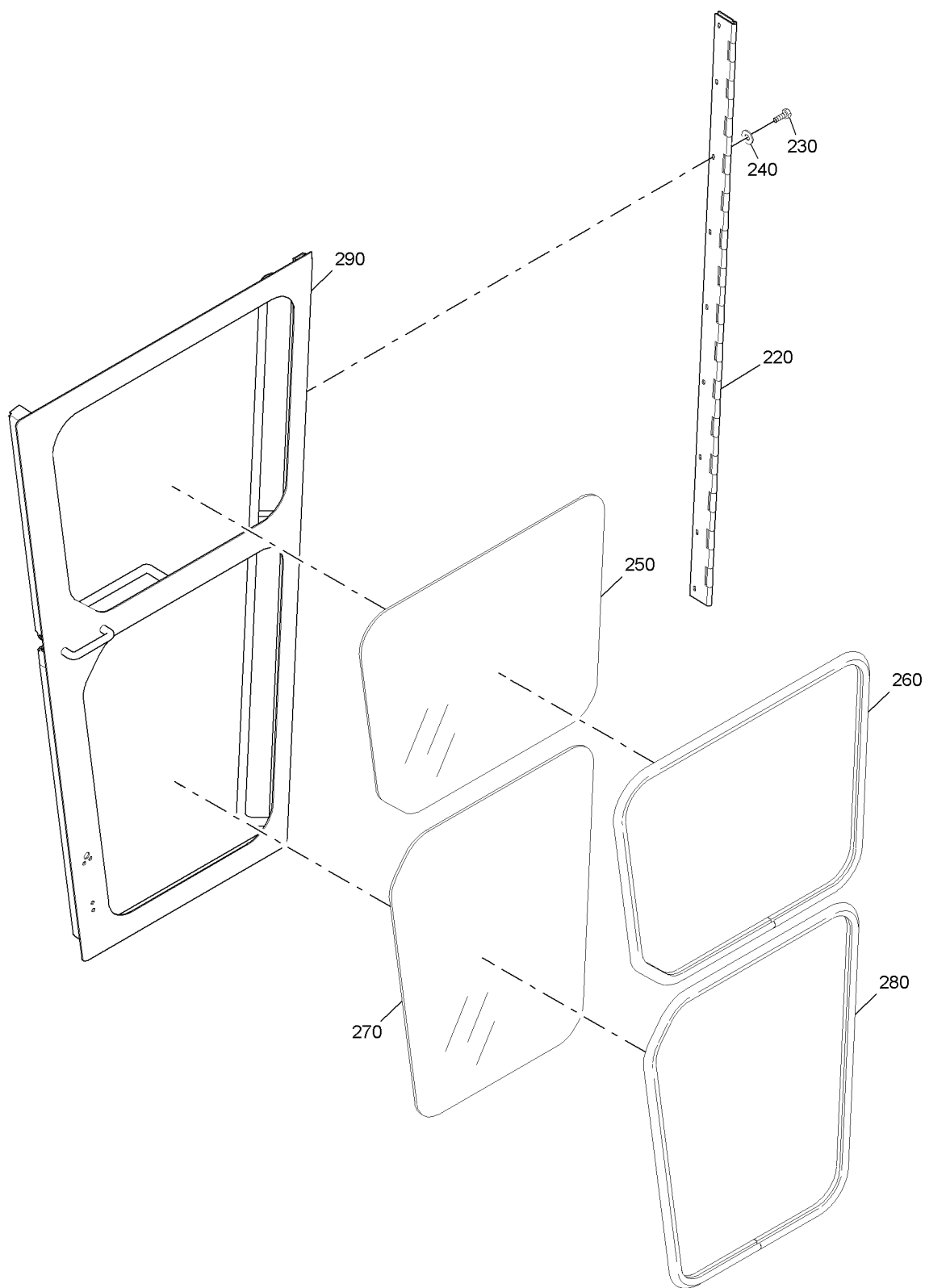


FIGURE 18. LEFT-HAND DOOR ASSEMBLY (SHEET 2 OF 2)

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FIGURE 18. LEFT-HAND DOOR ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
18			
-1	982695	DOOR ASSEMBLY, LEFT-HAND (SEE IPL FIGURE 15 FOR NHA)	REF
10	982539	• SIDE BULB SEAL, DOOR EDGE, RUBBER	1
20	982415	• DOOR HANDLE, PUSHBUTTON	1
		ATTACHING PARTS	
30	102-M06X16-1A	• CAP SCREW, 6 X 16 MILLIMETER HEX	2
40	119-A	• FLAT WASHER, M6	2
		-----*	
50	982716	• DOOR LATCH, LEFT-HAND	1
		ATTACHING PARTS	
60	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	2
70	119-1	• FLAT WASHER, 1/4" SAE	2
		-----*	
80	982630	• LATCH COVER, DOOR, LEFT-HAND	1
		ATTACHING PARTS	
90	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	1
100	119-1	• FLAT WASHER, 1/4" SAE	1
		-----*	
110	982720	• LINKAGE COVER, DOOR, LEFT-HAND	1
		ATTACHING PARTS	
120	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	5
130	119-1	• FLAT WASHER, 1/4" SAE	5
		-----*	
140	982649	• LINKAGE WELDMENT, UPPER LATCH, LEFT-HAND	1
		ATTACHING PARTS	
150	80973	• SCREW, SHOULDER, 1/2 X 1.00 X 3/8-16	1
160	143-3	• LOCKNUT, 3/8"-16	1

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FIGURE 18. LEFT-HAND DOOR ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
18			
170	119-3	• FLAT WASHER, 3/8"	1
		-----*	
180	983456	• LINKAGE WELDMENT, LOWER LATCH, LEFT-HAND	1
		ATTACHING PARTS	
190	80973	• SCREW, SHOULDER, 1/2 X 1.00 X 3/8-16	1
200	143-3	• LOCKNUT, 3/8"-16	1
210	119-3	• FLAT WASHER, 3/8"	1
		-----*	
220	982693	• HINGE, STAINLESS, 1/4-INCH DIAMETER PIN	1
		ATTACHING PARTS	
230	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	9
240	119-1	• FLAT WASHER, 1/4" SAE	9
		-----*	
250	982721	• DOOR GLASS, UPPER, 1/4-INCH, TEMPERED	1
260	982360-104	• SEAL, UPPER WINDOW	1
270	982722	• DOOR GLASS, LOWER, 1/4-INCH, TEMPERED	1
280	982360-109	• SEAL, LOWER WINDOW	1
290	982697	• DOOR FRAME, LEFT-HAND	1

- ITEM NOT ILLUSTRATED

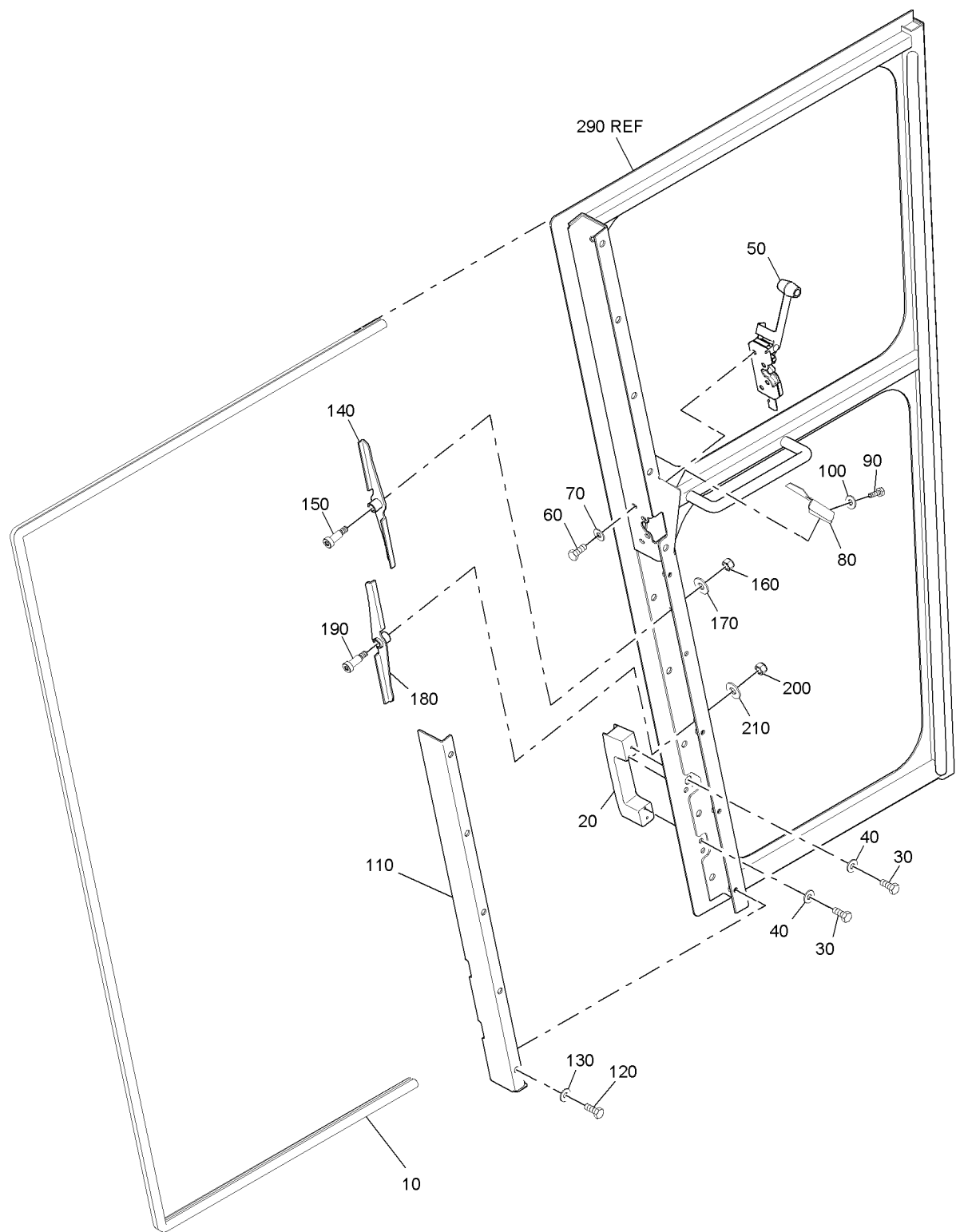


FIGURE 19. RIGHT-HAND DOOR ASSEMBLY (SHEET 1 OF 2)

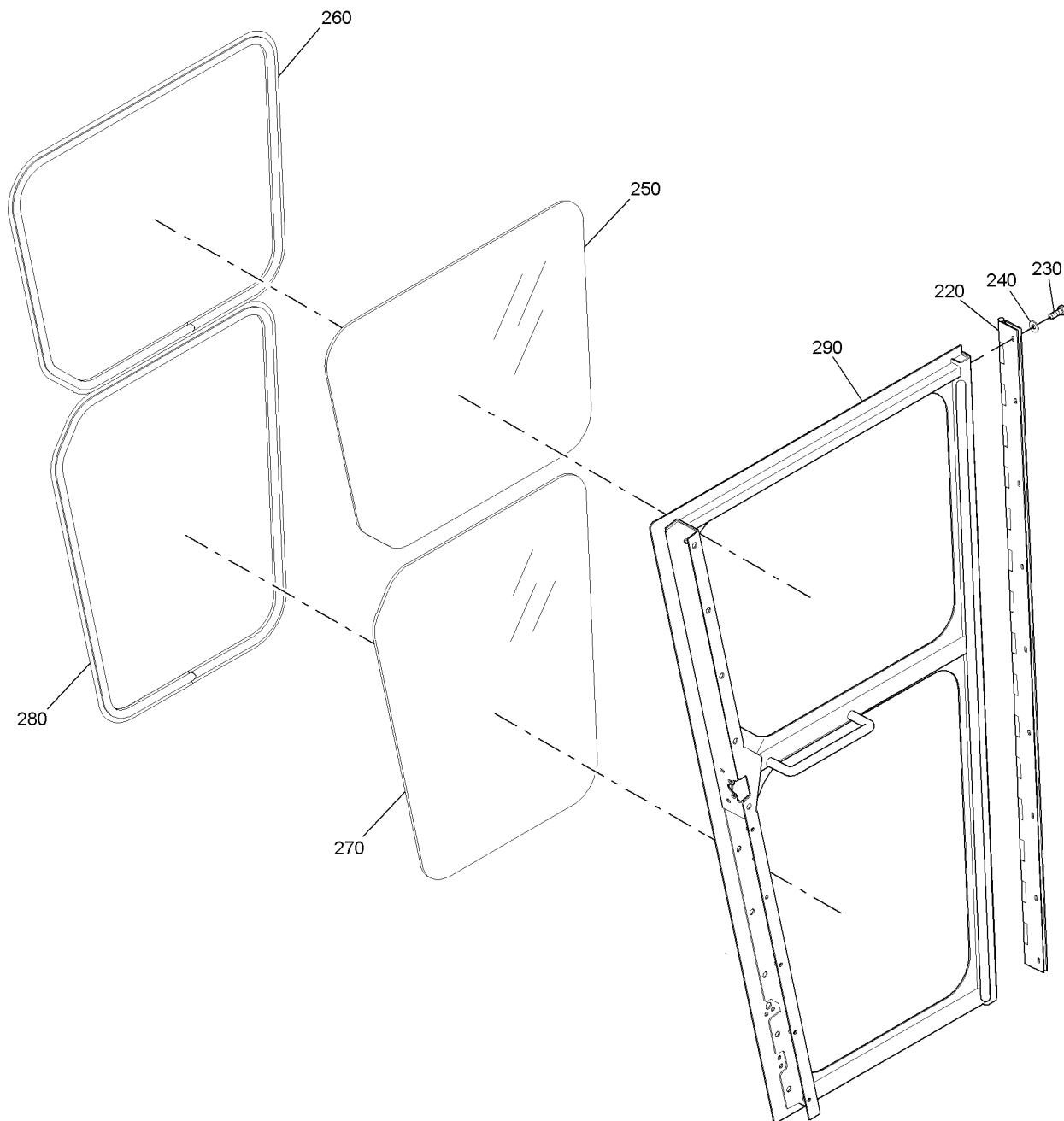


FIGURE 19. RIGHT-HAND DOOR ASSEMBLY (SHEET 2 OF 2)

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FIGURE 19. RIGHT-HAND DOOR ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
19			
-1	982694	DOOR ASSEMBLY, RIGHT-HAND (SEE IPL FIGURE 16 FOR NHA)	REF
10	982539	• SIDE BULB SEAL, DOOR EDGE, RUBBER	1
20	982415	• DOOR HANDLE, PUSHBUTTON	1
		ATTACHING PARTS	
30	102-M06X16-1A	• CAP SCREW, 6 X 16 MILLIMETER HEX	2
40	119-A	• FLAT WASHER, M6	2
		-----*	
50	982715	• DOOR LATCH, RIGHT-HAND	1
		ATTACHING PARTS	
60	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	2
70	119-1	• FLAT WASHER, 1/4" SAE	2
		-----*	
80	982630	• LATCH COVER, DOOR, LEFT-HAND	1
		ATTACHING PARTS	
90	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	1
100	119-1	• WASHER, 1/4" FLAT SAE	1
		-----*	
110	982719	• LINKAGE COVER, DOOR, RIGHT-HAND	1
		ATTACHING PARTS	
120	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	5
130	119-1	• WASHER, 1/4" FLAT SAE	5
		-----*	
140	982657	• LINKAGE WELDMENT, UPPER LATCH, RIGHT-HAND	1
		ATTACHING PARTS	
150	80973	• SCREW, SHOULDER, 1/2" X 1.00 X 3/8-16	1

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FIGURE 19. RIGHT-HAND DOOR ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE							UNITS PER ASSY
		1	2	3	4	5	6	7	
19									
160	143-3	• LOCKNUT, 3/8"-16							1
170	119-3	• FLAT WASHER, 3/8" SAE							1
		-----*							
180	982656	• LINKAGE WELDMENT, LOWER LATCH, RIGHT-HAND							1
		ATTACHING PARTS							
190	80973	• SCREW, SHOULDER, 1/2" X 1.00 X 3/8-16							1
200	143-3	• LOCKNUT, 3/8"-16							1
210	119-3	• FLAT WASHER, 3/8" SAE							1
		-----*							
220	982693	• HINGE, STAINLESS, 1/4-INCH DIAMETER PIN							1
		ATTACHING PARTS							
230	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX							9
240	119-1	• FLAT WASHER, 1/4" SAE							9
		-----*							
250	982721	• DOOR GLASS, UPPER, 1/4-INCH, TEMPERED							1
260	982360-104	• SEAL, UPPER WINDOW							1
270	982722	• DOOR GLASS, LOWER, 1/4-INCH, TEMPERED							1
280	982360-109	• SEAL, LOWER WINDOW							1
290	982696	• DOOR FRAME, RIGHT-HAND							1

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ILLUSTRATED PARTS LIST

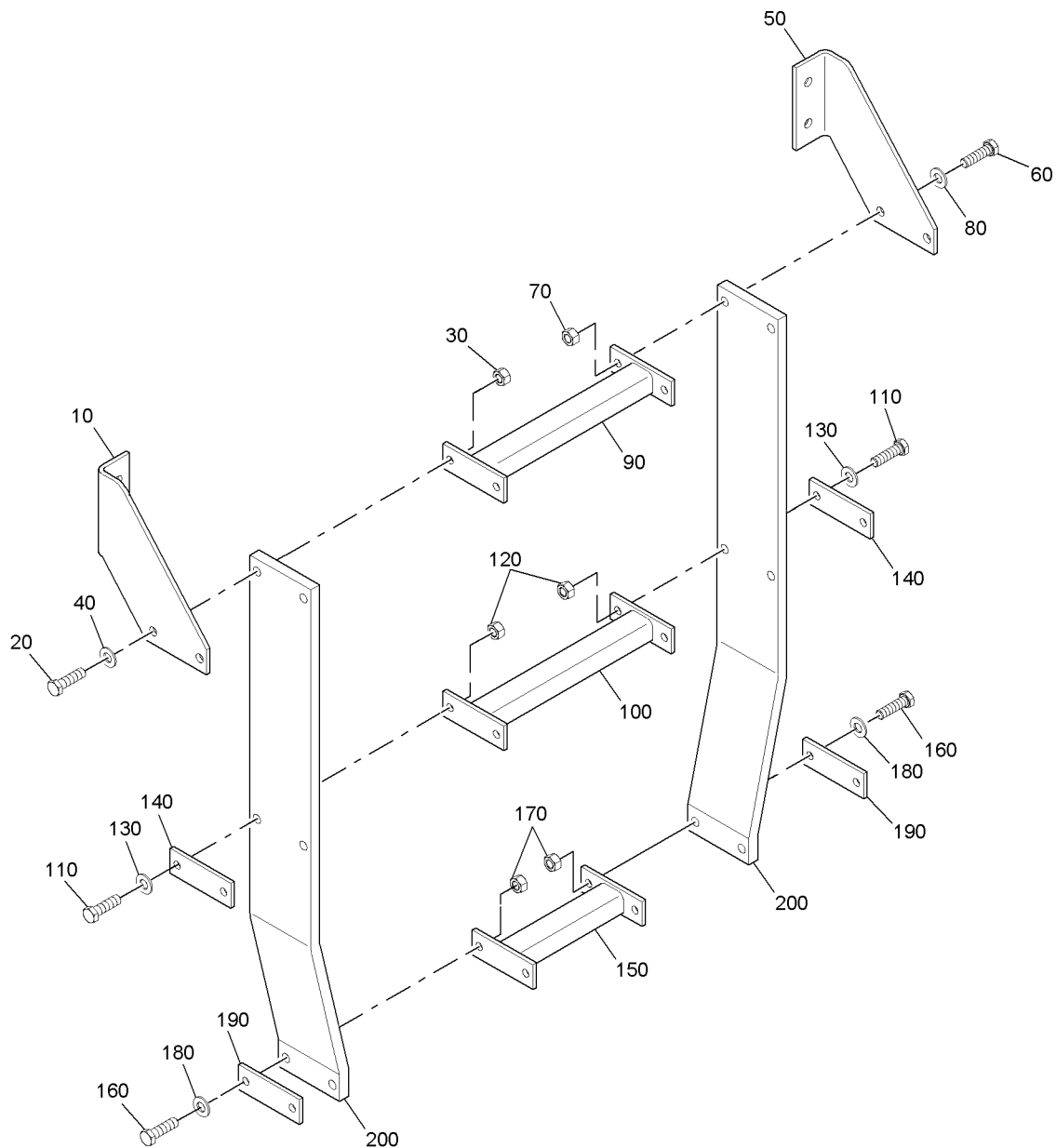


FIGURE 20. CAB ENTRY LADDER

FIGURE 20. CAB ENTRY LADDER

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
20			
-1	985625	LADDER, CAB ENTRY (SEE IPL FIGURES 15 AND 16 FOR NHA)	REF
10	982841	• STEP MOUNT, CAB, LEFT-HAND	1
		ATTACHING PARTS	
20	102-207-1A	• CAP SCREW, 3/8"-16 X 1.50 HEX	2
30	143-3	• LOCKNUT, 3/8"-16	2
40	119-3	• FLAT WASHER, 3/8" SAE	2
		-----*-----	
50	982839	• STEP MOUNT, CAB, RIGHT-HAND	1
		ATTACHING PARTS	
60	102-207-1A	• CAP SCREW, 3/8"-16 X 1.50 HEX	2
70	143-3	• LOCKNUT, 3/8"-16	2
80	119-3	• FLAT WASHER, 3/8" SAE	2
		-----*-----	
90	985512	• STEP, CAB	1
100	985512	• STEP, CAB	1
		ATTACHING PARTS	
110	102-207-1A	• CAP SCREW, 3/8"-16 X 1.50 HEX	4
120	143-3	• LOCKNUT, 3/8"-16	4
130	119-3	• FLAT WASHER, 3/8" SAE	4
		-----*-----	
140	982838	• MOUNT BAR, END STEP	2
150	985513	• STEP, CAB	1
		ATTACHING PARTS	
160	102-207-1A	• CAP SCREW, 3/8"-16 X 1.50 HEX	4
170	143-3	• LOCKNUT, 3/8"-16	4
180	119-3	• FLAT WASHER, 3/8" SAE	4
		-----*-----	

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FIGURE 20. CAB ENTRY LADDER (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE	UNITS PER ASSY
		1 2 3 4 5 6 7	
20			
190	982838	• MOUNT BAR, END STEP	2
200	982840	• CAB STEP SUPPORT, RUBBER	2

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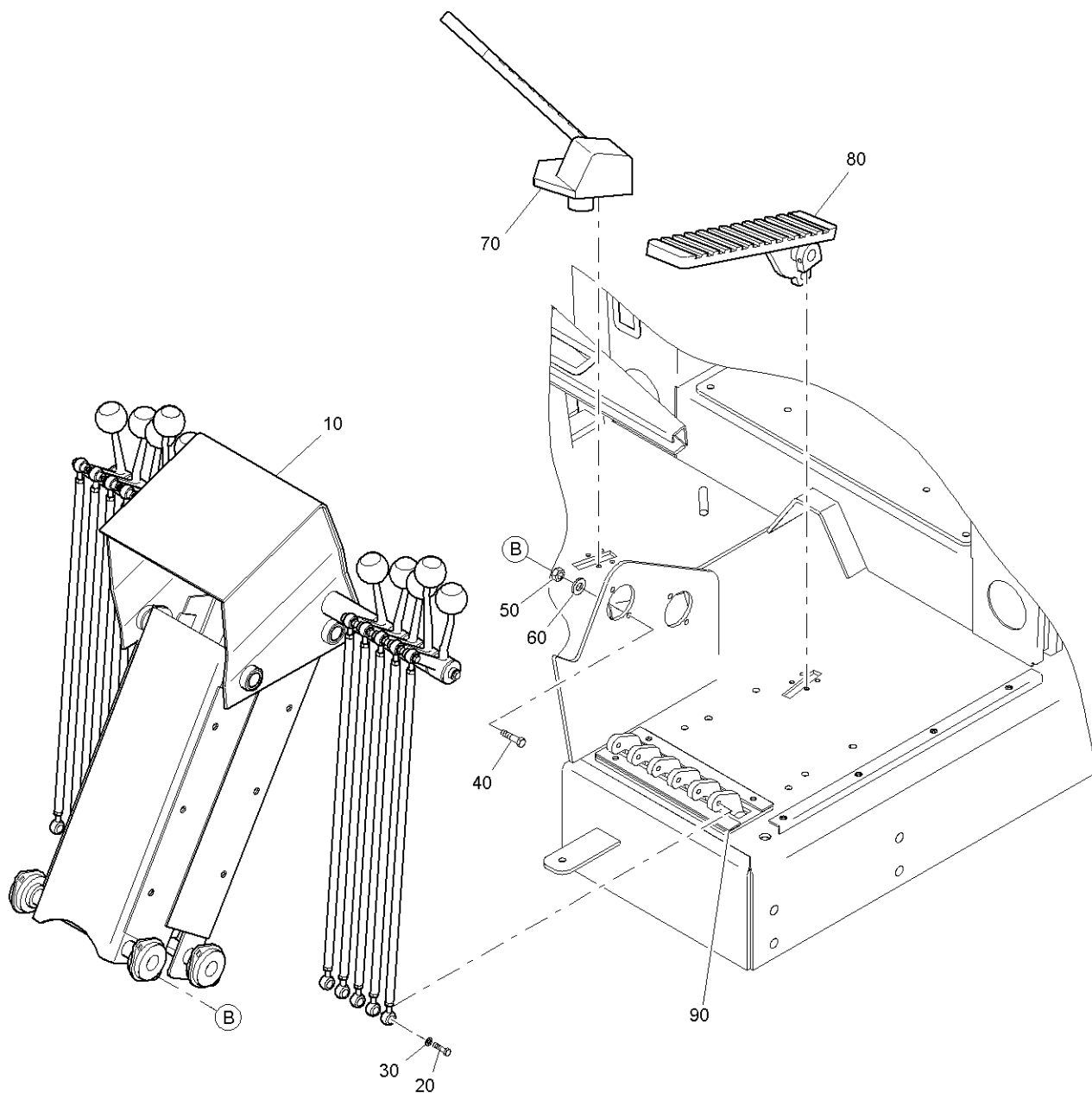


FIGURE 21. CONTROL GROUP

FIGURE 21. CONTROL GROUP

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
21			
-1	21NONUMBER1	CONTROL GROUP	REF
10	21NONUMBER10	• CONTROL HANDLE ASSEMBLY (SEE IPL FIGURE 22 FOR BREAKDOWN)	1
		ATTACHING PARTS	
20	102-103-1A	• CAP SCREW, 5/16"-18 X 3/4 HEX	10
30	118-2	• LOCKWASHER, 5/16"	10
40	102-105-1A	• CAP SCREW, 5/16"-18 X 1.0 HEX	4
50	116-2	• NUT, 5/16"-18 HEX	4
60	118-2	• LOCKWASHER, 5/16"	4
		-----*	
70	981781	• PEDAL ASSEMBLY, ACCELERATOR (COVER IS NOT PART OF ASSEMBLY)	1
80	985520	• PEDAL ASSEMBLY, BRAKE (COVER IS NOT PART OF ASSEMBLY) (SEE IPL FIGURE 25 FOR BREAKDOWN)	1
90	982901	• VALVE ASSEMBLY, LEFT HAND (SEE IPL FIGURE 24 FOR BREAKDOWN)	1
-100	982877	• VALVE ASSEMBLY, RIGHT HAND (SEE IPL FIGURE 24 FOR BREAKDOWN)	1

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ILLUSTRATED PARTS LIST

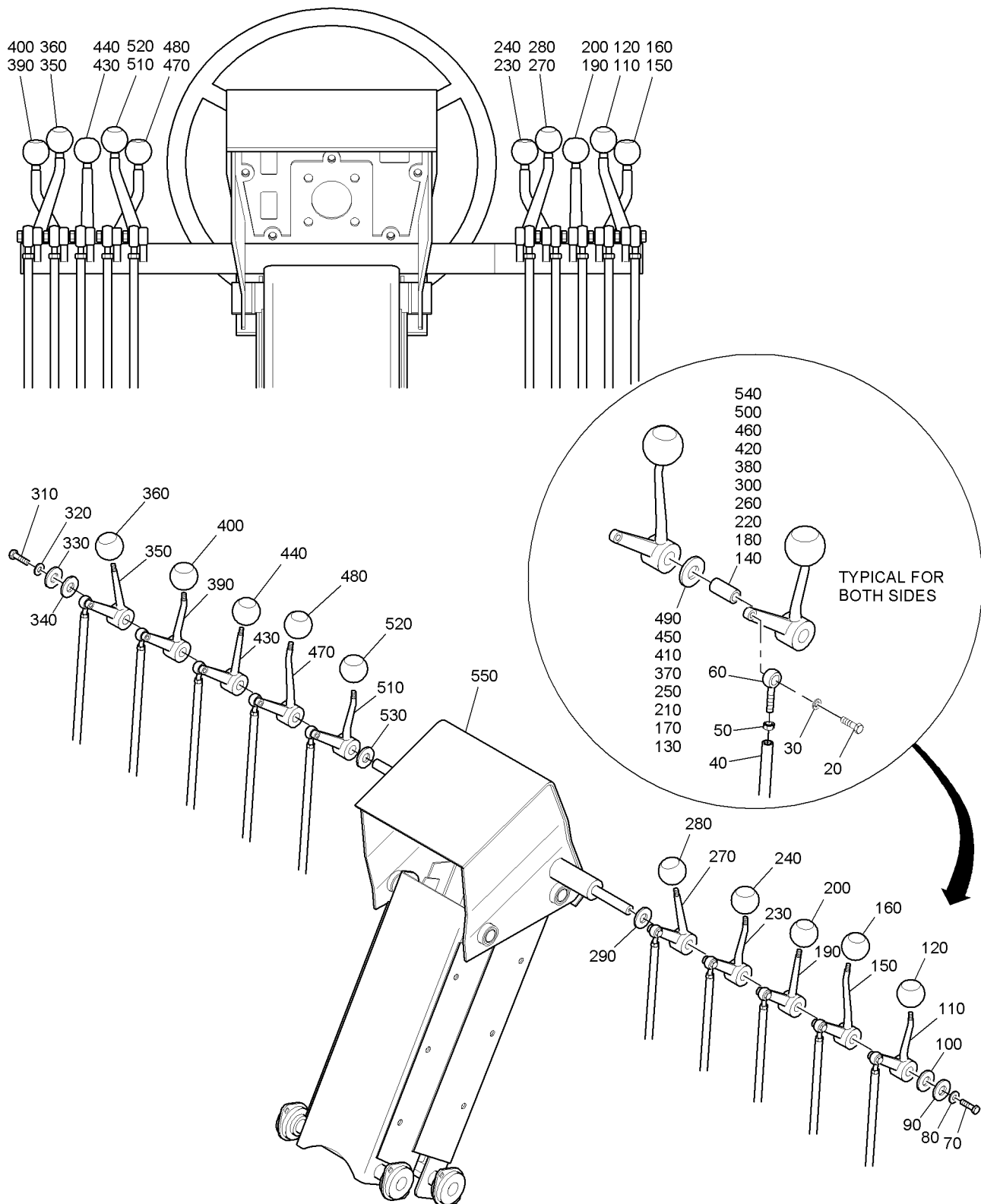


FIGURE 22. CONTROL HANDLE ASSEMBLY

FIGURE 22. CONTROL HANDLE ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
22			
-1	21NONUMBER10	CONTROL HANDLE ASSEMBLY (SEE IPL FIGURE 21 FOR NHA)	REF
-10	22NONUMBER10	• ROD ASSEMBLY, VALVE LEVER	10
		ATTACHING PARTS	
20	100-103-1A	• CAP SCREW, 5/16" X 1/2 HEX	1
30	118-2	• LOCKWASHER, 5/16"	1
		-----*	
40	983382	• ROD, VALVE LEVER	10
50	115-2	• NUT, 5/16"-24 HEX	10
60	983370	• HEIM JOINT, ROD END	10
70	102-103-1A	• CAP SCREW, 5/16"-18 X 3/4 HEX	1
80	118-2	• LOCKWASHER, 5/16"	1
90	981511	• FENDER WASHER, 3/8"	1
100	985045	• SPACER, VALVE LEVER	1
110	982881-5	• LEVER, VALVE HANDLE	1
120	983115	• KNOB, FRONT SCARIFIER	1
130	985045	• SPACER, VALVE LEVER	1
140	982882	• BUSHING, COMPOSITE, 0.813 OD X 0.688 ID X 1.0"	1
150	982881-4	• LEVER, VALVE HANDLE	1
160	983117	• KNOB, LEFT-HAND BLADE LIFT	1
170	985045	• SPACER, VALVE LEVER	1
180	982882	• BUSHING, COMPOSITE, 0.813 OD X 0.688 ID X 1.0"	1
190	982881-3	• LEVER, VALVE HANDLE	1
200	983116	• KNOB, BLADE EXTENSION	1
210	985045	• SPACER, VALVE LEVER	1
220	982882	• BUSHING, COMPOSITE, 0.813 OD X 0.688 ID X 1.0"	1
230	982881-1	• LEVER, VALVE HANDLE	1
240	983112	• KNOB, CIRCLE DRIVE	1
250	985045	• SPACER, VALVE LEVER	1
260	982882	• BUSHING, COMPOSITE, 0.813 OD X 0.688 ID X 1.0"	1

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FIGURE 22. CONTROL HANDLE ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
22			
270	982881-2	• LEVER, VALVE HANDLE	1
280	983113	• KNOB, BLADE TILT	1
290	985045	• SPACER, VALVE LEVER	1
300	982882	• BUSHING, COMPOSITE, 0.813 OD X 0.688 ID X 1.0"	1
310	102-103-1A	• CAP SCREW, 5/16"-18 X 3/4 HEX	1
320	118-2	• LOCKWASHER, 5/16"	1
330	981511	• FENDER WASHER, 3/8"	1
340	985045	• SPACER, VALVE LEVER	1
350	982881-2	• LEVER, VALVE HANDLE	1
360	984276	• KNOB, PLAIN HANDLE MOUNT	1
370	985045	• SPACER, VALVE LEVER	1
380	982882	• BUSHING, COMPOSITE, 0.813 OD X 0.688 ID X 1.0"	1
390	982881-1	• LEVER, VALVE HANDLE	1
400	983118	• KNOB, RIGHT-HAND BLADE LIFT	1
410	985045	• SPACER, VALVE LEVER	1
420	982882	• BUSHING, COMPOSITE, 0.813 OD X 0.688 ID X 1.0"	1
430	982881-3	• LEVER, VALVE HANDLE	1
440	983120	• KNOB, WHEEL LEAN	1
450	985045	• SPACER, VALVE LEVER	1
460	982882	• BUSHING, COMPOSITE, 0.813 OD X 0.688 ID X 1.0"	1
470	982881-4	• LEVER, VALVE HANDLE	1
480	983119	• KNOB, SIDE SHIFT	1
490	985045	• SPACER, VALVE LEVER	1
500	982882	• BUSHING, COMPOSITE, 0.813 OD X 0.688 ID X 1.0"	1
510	982881-5	• LEVER, VALVE HANDLE	1
520	983114	• KNOB, BOOM ARTICULATION	1
530	985045	• SPACER, VALVE LEVER	1
540	982882	• BUSHING, COMPOSITE, 0.813 OD X 0.688 ID X 1.0"	1
550	983153	• CONSOLE GROUP (SEE IPL FIGURE 23 FOR BREAKDOWN)	1

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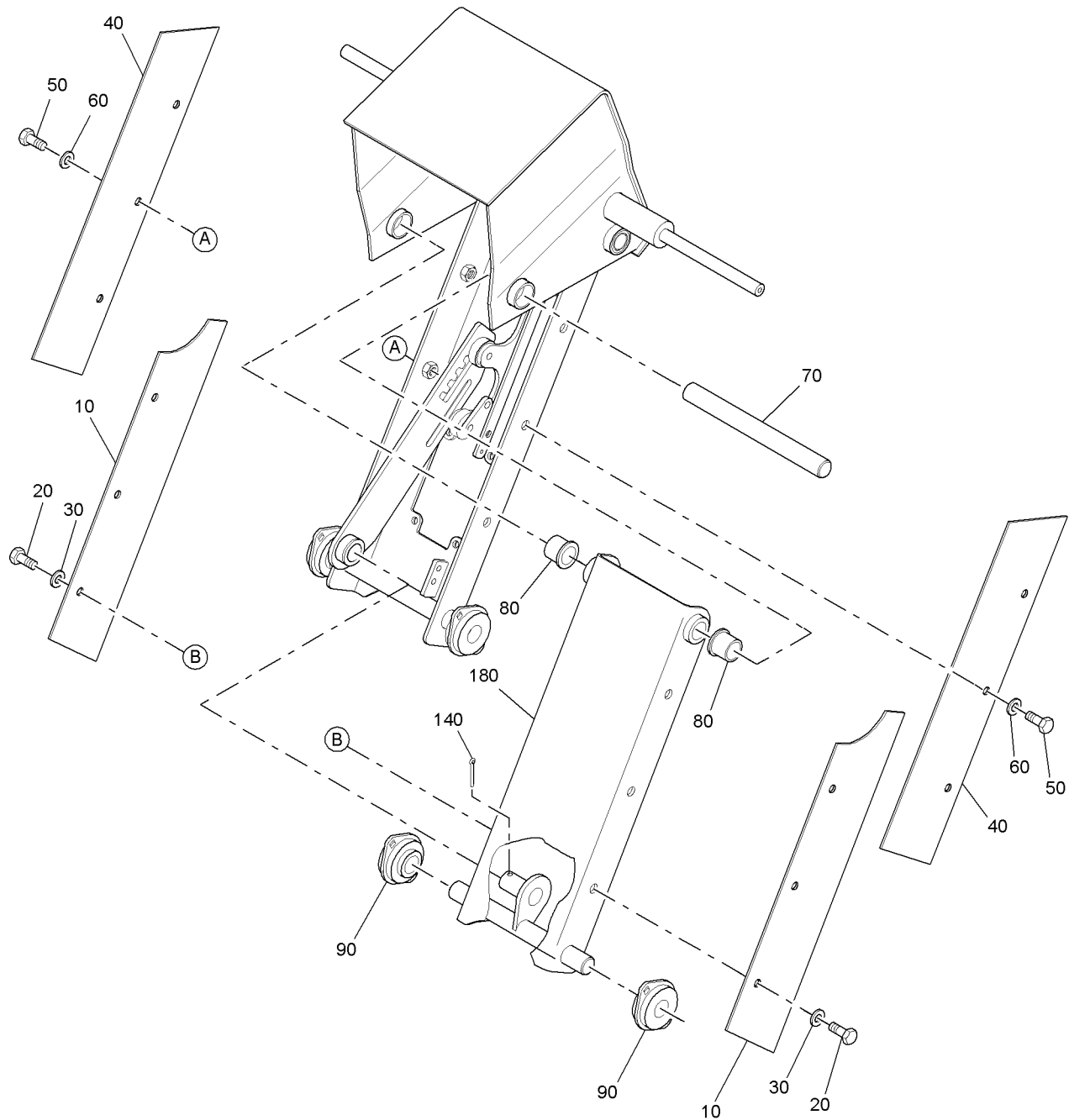


FIGURE 23. CONSOLE GROUP (SHEET 1 OF 2)

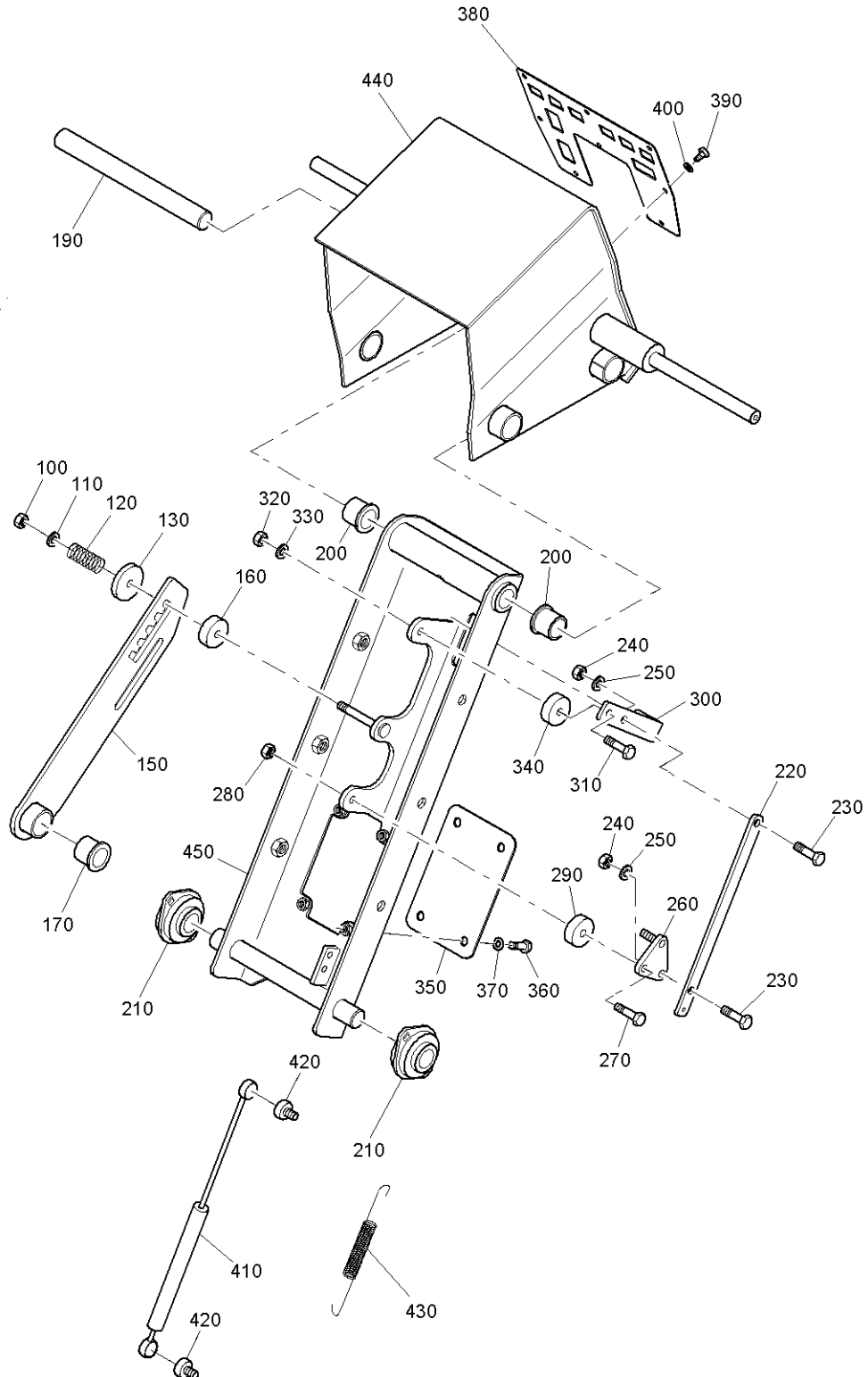


FIGURE 23. CONSOLE GROUP (SHEET 2 OF 2)

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FIGURE 23. CONSOLE GROUP

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
23			
-1	983153	CONSOLE GROUP (SEE IPL FIGURE 22 FOR NHA)	REF
10	981803	• COVER PLATE, TILT CONSOLE	2
		ATTACHING PARTS	
20	102-103-1A	• CAP SCREW, 5/16"-18 X 3/4 HEX	3
30	118-2	• LOCKWASHER, 5/16"	3
		-----*	
40	981802	• COVER PLATE, TILT CONSOLE	2
		ATTACHING PARTS	
50	102-103-1A	• CAP SCREW, 5/16"-18 X 3/4 HEX	3
60	118-2	• LOCKWASHER, 5/16"	3
		-----*	
70	981793	• SHAFT, UPPER TILT CONSOLE	1
80	981804	• BUSHING, COMPOSITE, 1.5 X 1.0 X 1.12"	2
90	983374	• BALL BEARING, MOUNTED	2
100	143-3	• LOCKNUT, 3/8"-16	1
110	119-3	• FLAT WASHER, 3/8" SAE	1
120	670060	• SPRING, COMPRESSION, 0.38 ROD X 0.53 OD X 3.156" LG	1
130	858953	• WASHER, FLAT, 2.50 OD X 0.438 ID C 0.188 THK	1
140	930039	• COTTER PIN, 3/16 X 2.0"	1
150	985490	• LEVER, TILT LINKAGE	1
160	981800	• SPACER, TILT LINKAGE	1
170	981804	• BUSHING, COMPOSITE, 1.5 X 1.0 X 1.12"	1
180	985488	• TILT FRAME	1
190	981793	• SHAFT, UPPER TILT CONSOLE	1
200	981804	• BUSHING, COMPOSITE, 1.5 X 1.0 X 1.12"	2
210	983374	• BALL BEARING, MOUNTED	2
220	981796	• BAR, TILT LINKAGE	1
		ATTACHING PARTS	
230	102-206-1A	• CAP SCREW, 3/8"-16 X 1.25 HEX	2

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ILLUSTRATED PARTS LIST



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FIGURE 23. CONSOLE GROUP (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
23			
240	143-3	• LOCKNUT, 3/8"-16	2
250	119-3	• FLAT WASHER, 3/8" SAE	2
		-----*	
260	985491	• BELL CRANK	1
		ATTACHING PARTS	
270	102-207-1A	• CAP SCREW, 3/8"-16 X 1.25 HEX	1
280	143-3	• LOCKNUT, 3/8"-16	1
290	119-3	• FLAT WASHER, 3/8" SAE	1
		-----*	
300	981801	• BAR, TILT HANDLE	1
		ATTACHING PARTS	
310	102-207-1A	• CAP SCREW, 3/8"-16 X 1.25 HEX	1
320	143-3	• LOCKNUT, 3/8"-16	1
330	119-3	• FLAT WASHER, 3/8" SAE	1
340	981800	• SPACER, TILT LINKAGE	1
		-----*	
350	981805	• PLATE, CONSOLE PANEL	1
		ATTACHING PARTS	
360	102-3-1A	• CAP SCREW, 1/4"-20 X 0.75 HEX	4
370	118-1	• LOCKWASHER, 1/4"	4
		-----*	
380	981809	• PLATE, LIGHT PANEL	1
		ATTACHING PARTS	
390	102-3-1A	• CAP SCREW, 1/4"-20 X 0.75 HEX	8
400	118-1	• LOCKWASHER, 1/4"	8
		-----*	

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ILLUSTRATED PARTS LIST

FIGURE 23. CONSOLE GROUP (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE							UNITS PER ASSY
		1	2	3	4	5	6	7	
23									
410	853610							• CYLINDER, GAS SPRING	1
420	853620							• BALL STUD	2
430	250170							• SPRING, CONVEYOR BELT WIPER	1
440	985493							• HOUSING, TILT PANEL	1
450	985489							• CONSOLE ASSEMBLY, REAR TILT	1

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ILLUSTRATED PARTS LIST

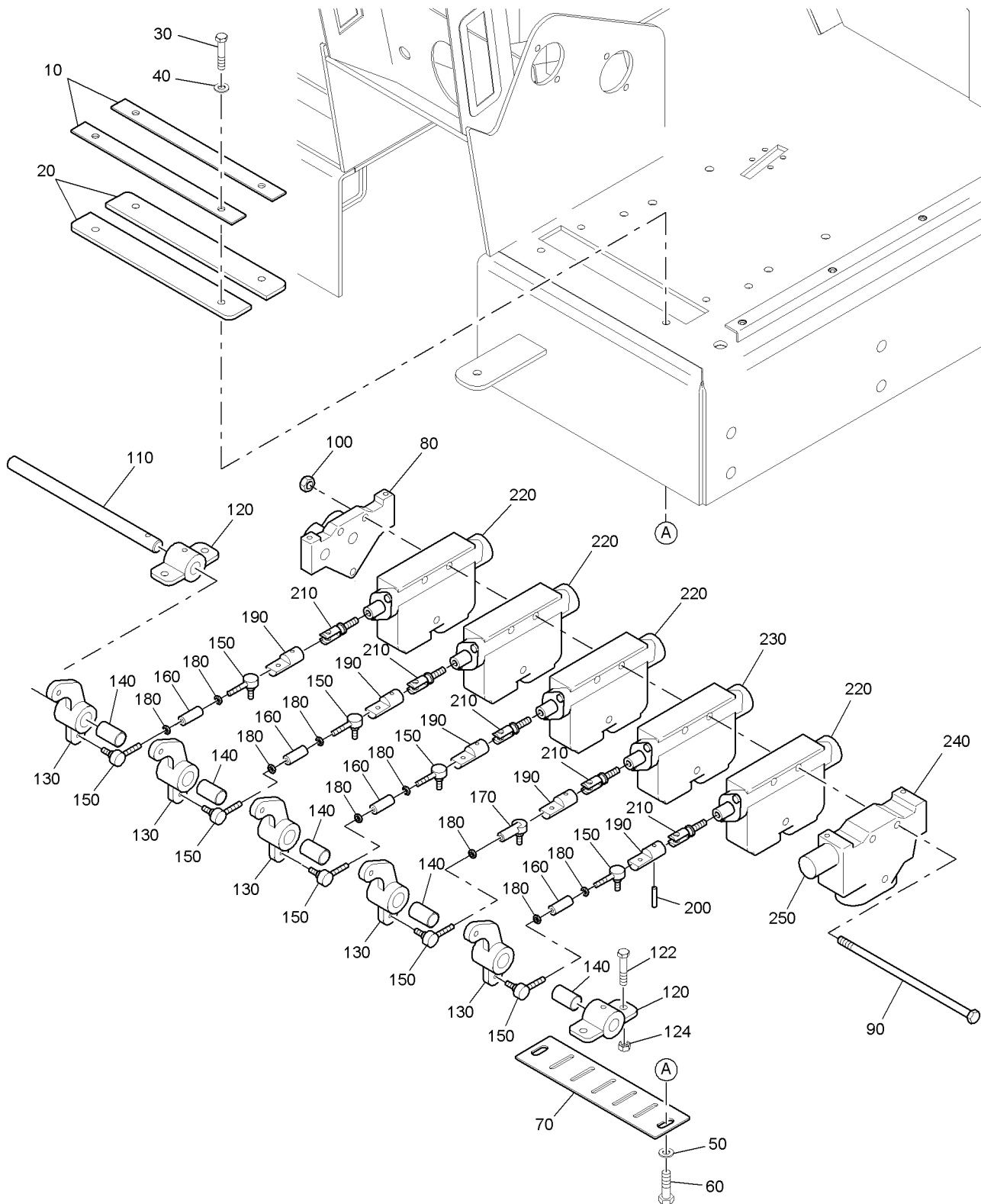


FIGURE 24. VALVE GROUP

FIGURE 24. VALVE GROUP

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
24			
-1	982901	VALVE ASSEMBLY, LEFT HAND (SEE IPL FIGURE 21 FOR NHA)	REF
-2	982877	VALVE ASSEMBLY, RIGHT HAND (SEE IPL FIGURE 21 FOR NHA)	REF
10	984278	• BAR, RUBBER HOLDDOWN	2
20	983126	• RUBBER, VALVE LEVER	2
		ATTACHING PARTS	
30	102-206-1A	• CAP SCREW, 3/8"-16 X 1-1/4 HEX	4
40	119-3	• FLAT WASHER, 1/8" SAE	4
50	118-3	• LOCKWASHER, 3/8"	4
60	102-206-1A	• CAP SCREW, 3/8"-16 X 1-1/4 HEX	4
		-----*	
70	983123	• PLATE, VALVE PIN GUIDE	1
80	982901-03	• COVER, VALVE OUTLET	1
		ATTACHING PARTS	
90	100-242-1A	• CAP SCREW, 3/8"-24 X 10.25 HEX	3
100	115-3	• NUT, 3/8"-24 HEX	3
		-----*	
110	981863	• SHAFT, LEVER MOUNT	1
120	985586	• SHAFT RETAINER ASSEMBLY, VALVE LEVER	2
		ATTACHING PARTS	
122	102-09-1A	• CAP SCREW, 1/4"-20 X 2.0 HEX	4
124	116-1	• NUT, 1/4"-20 HEX	4
130	985585	• LEVER ARM ASSEMBLY, FLOOR MOUNT	5
140	982882	• BUSHING, COMPOSITE, 0.813 x 0.688 x 1.0"	5
150	9833371	• HEIM JOINT, BALL STUD	9
160	981871	• TUBE, BALL JOINT MOUNT	4
170	983372	• HEIM JOINT, FEMALE BALL	1
180	80055	• NUT, 0.312"-24 HEX	9
190	981868	• SHAFT, VALVE MOUNT	5
		ATTACHING PARTS	
200	871081813	• ROLL PIN, 0.188" x 2.00"	5
		-----*	

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ILLUSTRATED PARTS LIST

FIGURE 24. VALVE GROUP (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE							UNITS PER ASSY
		1	2	3	4	5	6	7	
24									
210	981901-07							• CLEVIS, VALVE SPOOL	5
220	982901-01							• VALVE SECTION, WITH SPRING	4
230	982901-02							• VALVE SECTION, WITH FLOAT	1
240	982901-04							• COVER, VALVE INLET	1
250	982901-05							• VALVE, RELIEF	1
-260	982901-06							• SEAL KIT	5

- ITEM NOT ILLUSTRATED

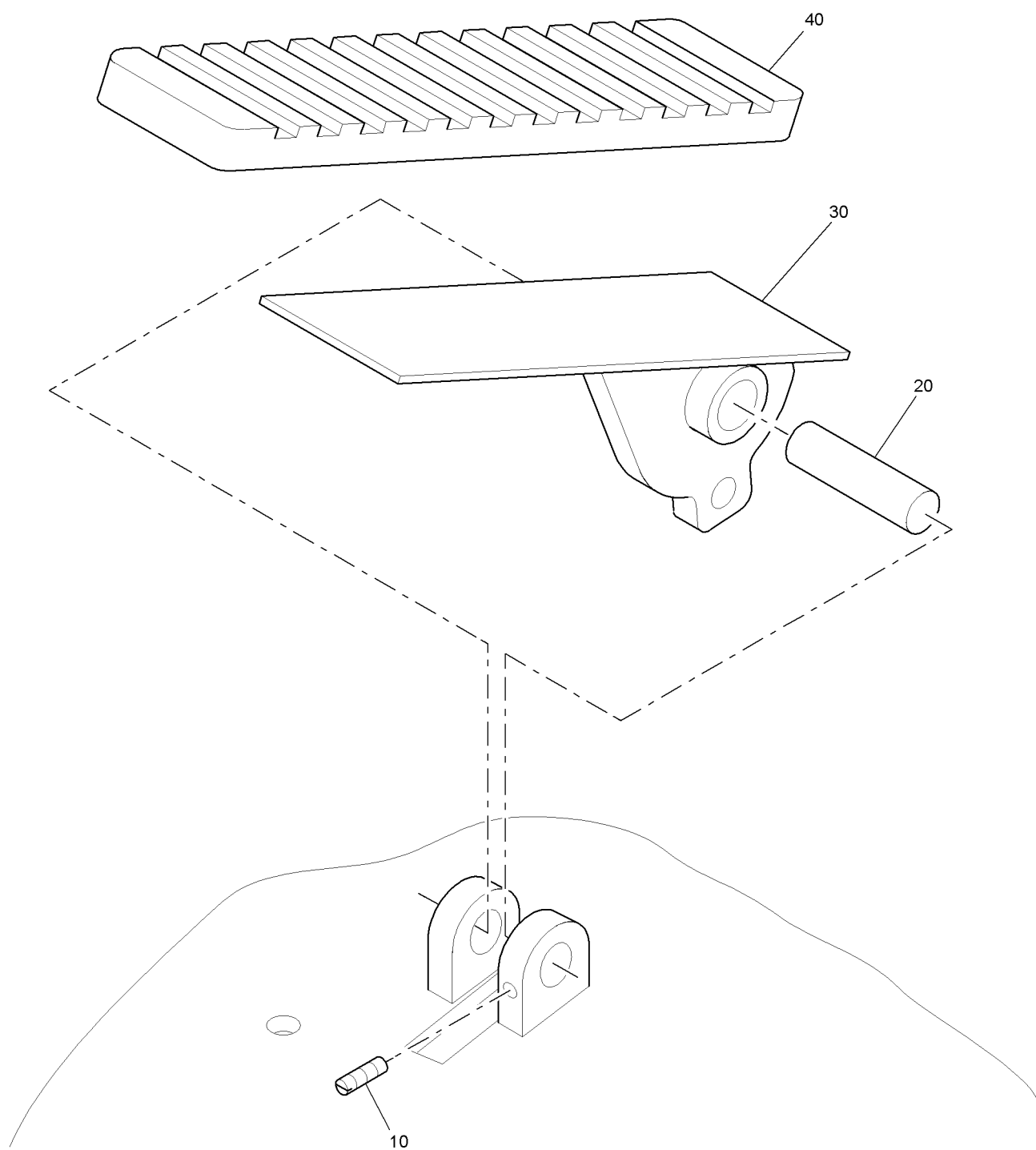


FIGURE 25. BRAKE PEDAL ASSEMBLY



ILLUSTRATED PARTS LIST

FIGURE 25. BRAKE PEDAL ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
25			
-1	985520	BRAKE PEDAL ASSEMBLY (SEE IPL FIGURE 21 FOR NHA)	REF
10	80408	• SETSCREW, HEX SOCKET, 0.312-18 X 3/4-INCH	1
20	982791	• ROD, PEDAL MOUNT	1
30	985520	• PEDAL, BRAKE	1
40	982863	• PEDAL COVER, BRAKE	1

- ITEM NOT ILLUSTRATED

ILLUSTRATED PARTS LIST

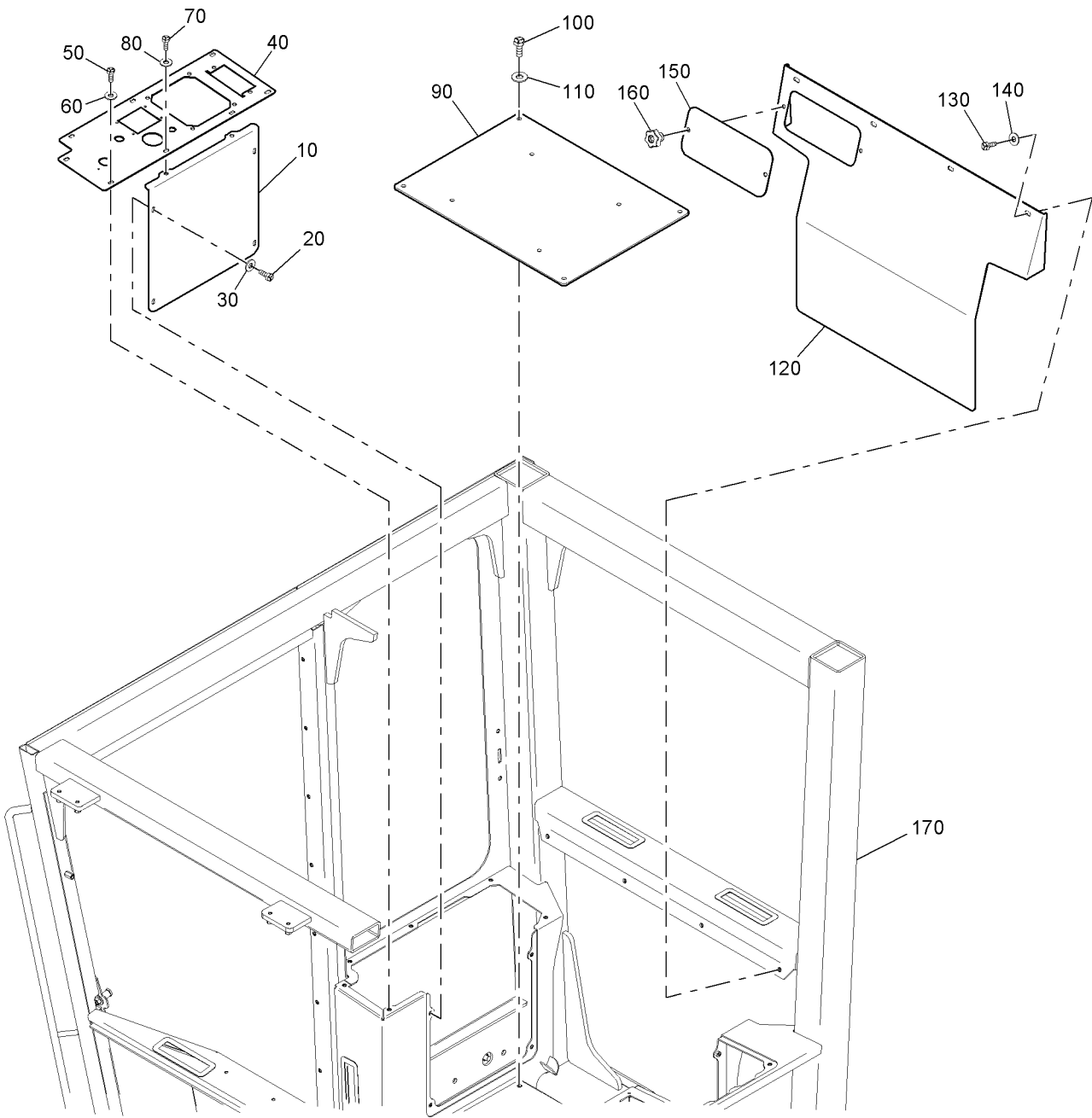


FIGURE 26. CAB ASSEMBLY

FIGURE 26. CAB ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
26			
-1	982700	CAB ASSEMBLY (SEE IPL FIGURE 3 FOR NHA)	REF
10	982373	• FRONT PANEL, RIGHT-HAND CONSOLE	1
		ATTACHING PARTS	
20	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	4
30	119-1	• FLAT WASHER, 1/4" SAE	4
		-----*	
40	982486	• TOP PLATE, RIGHT-HAND CONSOLE	1
		ATTACHING PARTS	
50	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	7
60	119-1	• FLAT WASHER, 1/4" SAE	7
70	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	2
80	119-1	• FLAT WASHER, 1/4" SAE	2
		-----*	
90	982688	• FLOOR PANEL	1
		ATTACHING PARTS	
100	102-205-1A	• CAP SCREW, 3/8"-16 X 1.0 HEX	4
110	119-3	• FLAT WASHER, 3/8" SAE	4
		-----*	
120	982418	• PANEL, CAB REAR	1
		ATTACHING PARTS	
130	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	4
140	119-1	• FLAT WASHER, 1/4" SAE	4
		-----*	
150	982419	• PLATE, PANEL ACCESS	1
		ATTACHING PARTS	
160	983467	• NUT, PLATE RETAINING	2
		-----*	
170	982701	• CAB WELDMENT	1

- ITEM NOT ILLUSTRATED

ILLUSTRATED PARTS LIST

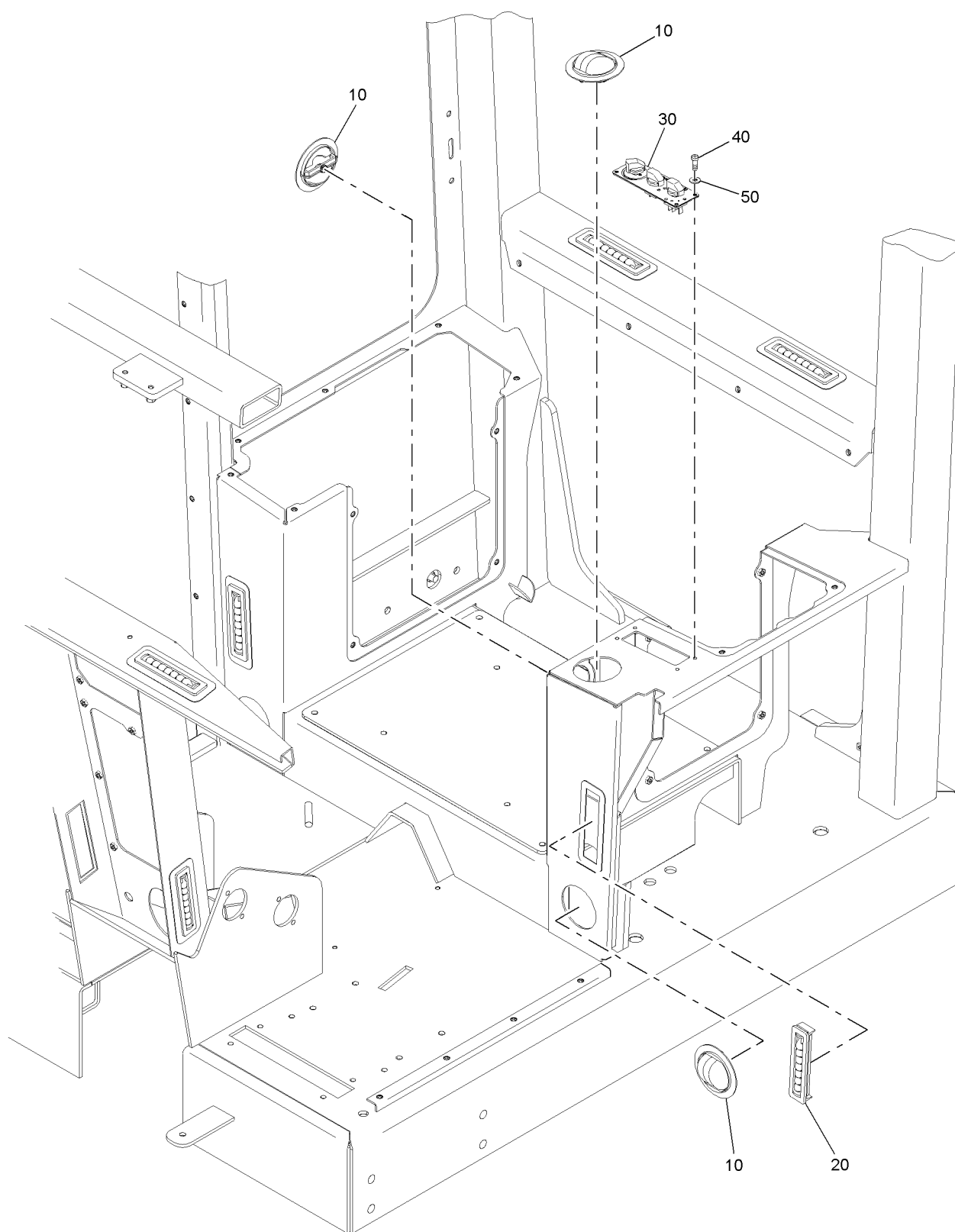


FIGURE 27. CAB ASSEMBLY



ILLUSTRATED PARTS LIST

FIGURE 27. CAB ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
27			
-1	982700	CAB ASSEMBLY (SEE IPL FIGURE 3 FOR NHA)	REF
10	405688	• VENT, DIRECTIONAL	4
20	405450	• VENT, FIXED	8
30	503985	• PANEL, SELECTOR MOUNT	1
		ATTACHING PARTS	
40	900074	• SCREW, MACHINE, 10-32 X 5/8"	4
50	119-A	• FLAT WASHER, 3/16"	4
		-----*	

- ITEM NOT ILLUSTRATED

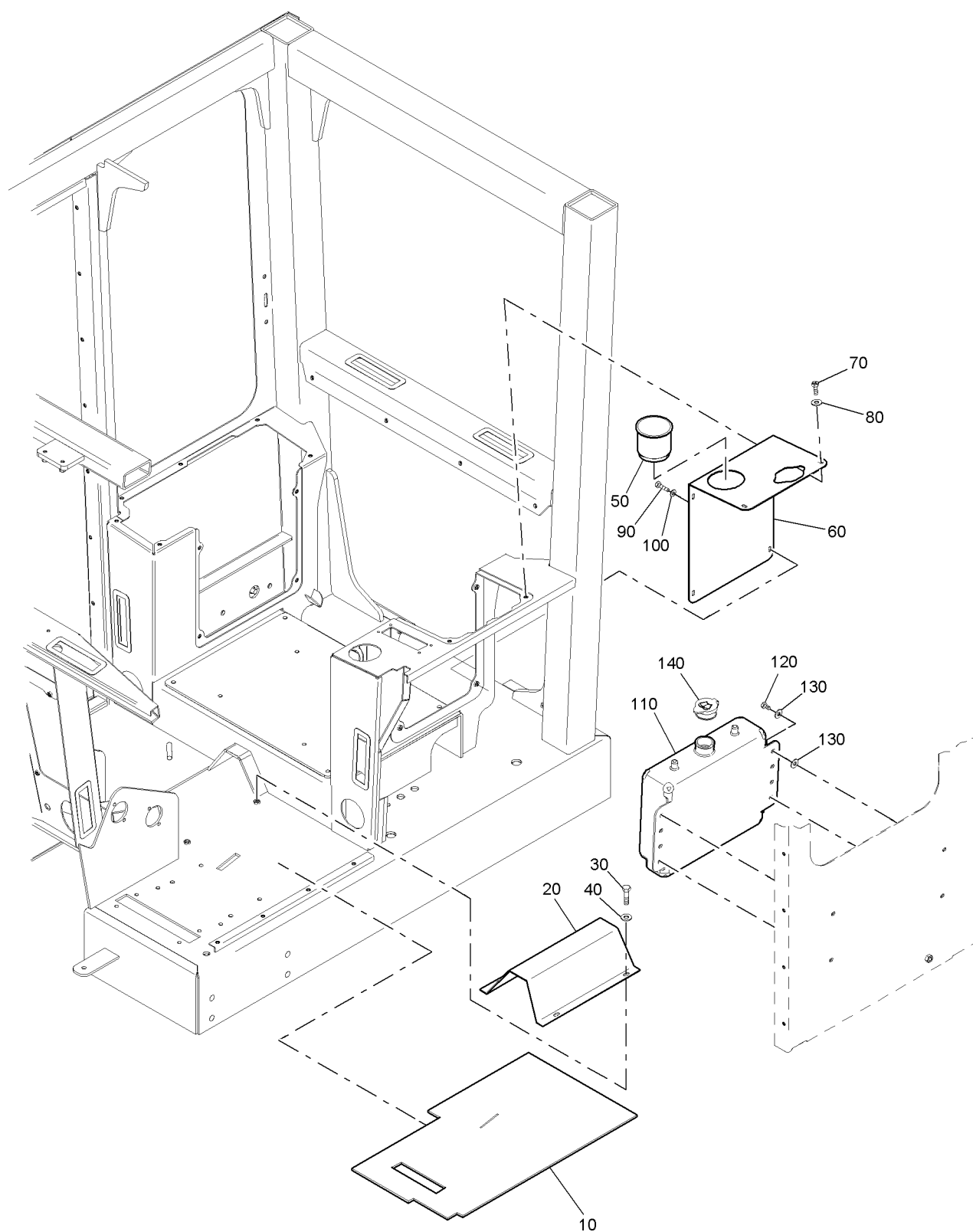


FIGURE 28. CAB ASSEMBLY

FIGURE 28. CAB ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
28			
-1	982700	CAB ASSEMBLY (SEE IPL FIGURE 3 FOR NHA)	REF
10	982739	• FLOOR MAT	1
20	982729	• HOUSING, CENTER	1
		ATTACHING PARTS	
30	102-105-1A	• CAP SCREW, 5/16"-18 X 1.0" HEX	4
40	119-2	• FLAT WASHER, 5/16" SAE	4
		-----*	
50	982689	• CUP HOLDER	1
60	982607	• COVER PANEL, LEFT-HAND CONSOLE	1
		ATTACHING PARTS	
70	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	2
80	119-1	• FLAT WASHER, 1/4" SAE	2
90	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	4
100	119-1	• FLAT WASHER, 1/4" SAE	4
		-----*	
110	982738	• RESERVOIR	1
		ATTACHING PARTS	
120	102-1-1A	• CAP SCREW, 1/4"-20 X 1/2 HEX	4
130	119-1	• FLAT WASHER, 1/4" SAE	8
		-----*	
140	982738-01	• CAP, RESERVOIR	1

- ITEM NOT ILLUSTRATED

ILLUSTRATED PARTS LIST

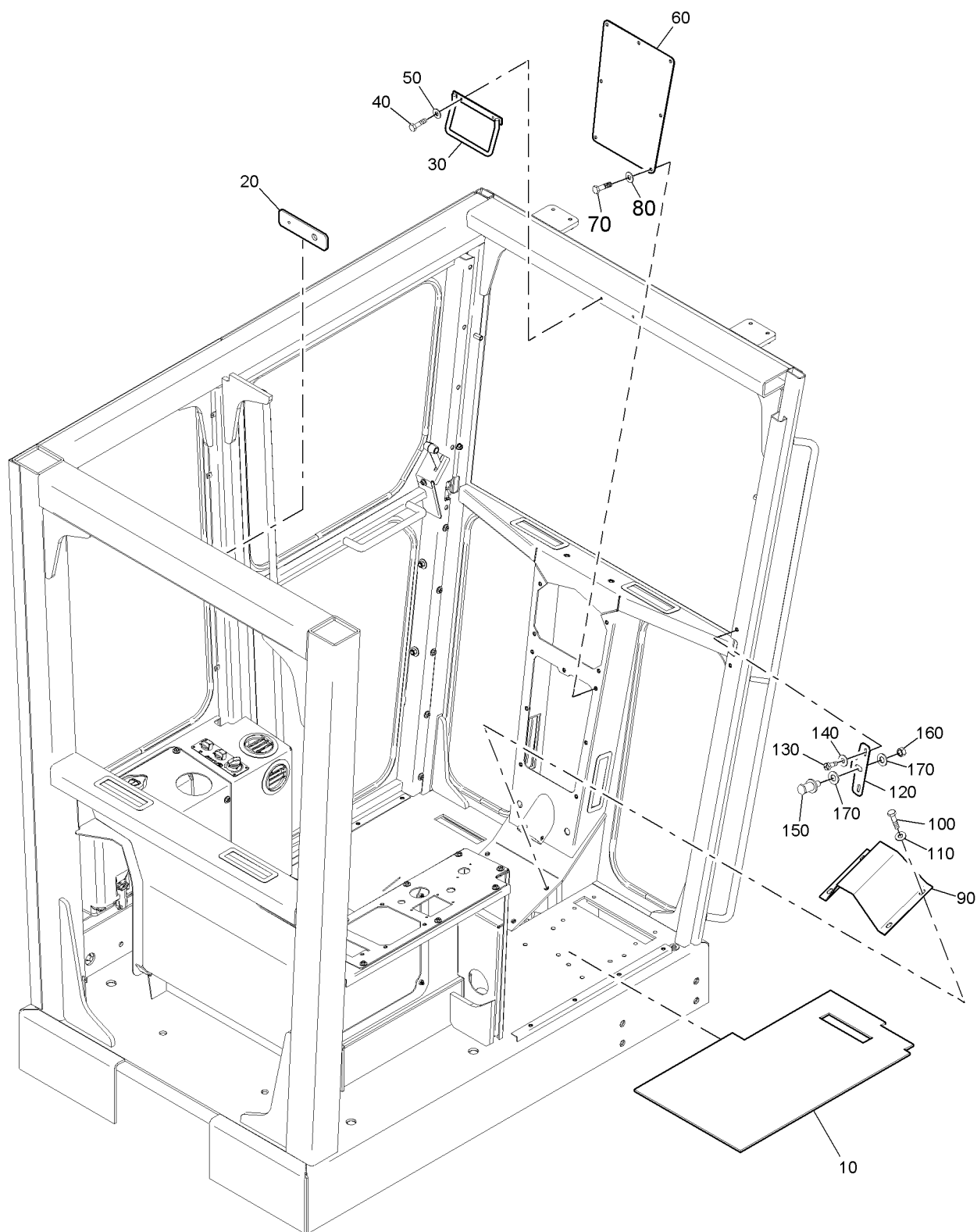


FIGURE 29. CAB ASSEMBLY

FIGURE 29. CAB ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
29			
-1	982700	CAB ACCESSORIES (SEE IPL FIGURE 3 FOR NHA)	REF
10	982737	• FLOOR MAT	1
20	982731	• SPACER PLATE, REAR WIPER	1
30	985269	• BRACKET ASSEMBLY, INSIDE CAB MIRROR	1
		ATTACHING PARTS	
40	102-205-1A	• CAP SCREW, 3/8"-16 X 1.0 HEX	2
50	119-3	• FLAT WASHER, 3/8" SAE	2
		-----*	
60	982390	• ACCESS COVER, DASH	1
		ATTACHING PARTS	
70	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	7
80	119-1	• FLAT WASHER, 1/4" SAE	7
		-----*	
90	982730	• DEFROST COVER, DASH FLOOR PANEL	1
		ATTACHING PARTS	
100	102-205-1A	• CAP SCREW, 3/8"-16 X 1.0 HEX	4
110	119-3	• FLAT WASHER, 3/8" SAE	4
		-----*	
120	982698	• BOLT PLATE, STRIKER	1
		ATTACHING PARTS	
130	102-5-1A	• CAP SCREW, 1/4"-20 X 1.0 HEX	2
140	119-1	• FLAT WASHER, 1/4" SAE	2
		-----*	
150	982416	• BOLT, STRIKER, 2.025"	1
		ATTACHING PARTS	
160	116-4	• NUT, 7/16"-14 HEX	1
170	120-4	• FLAT WASHER, 7/16" USS	1
		-----*	

- ITEM NOT ILLUSTRATED

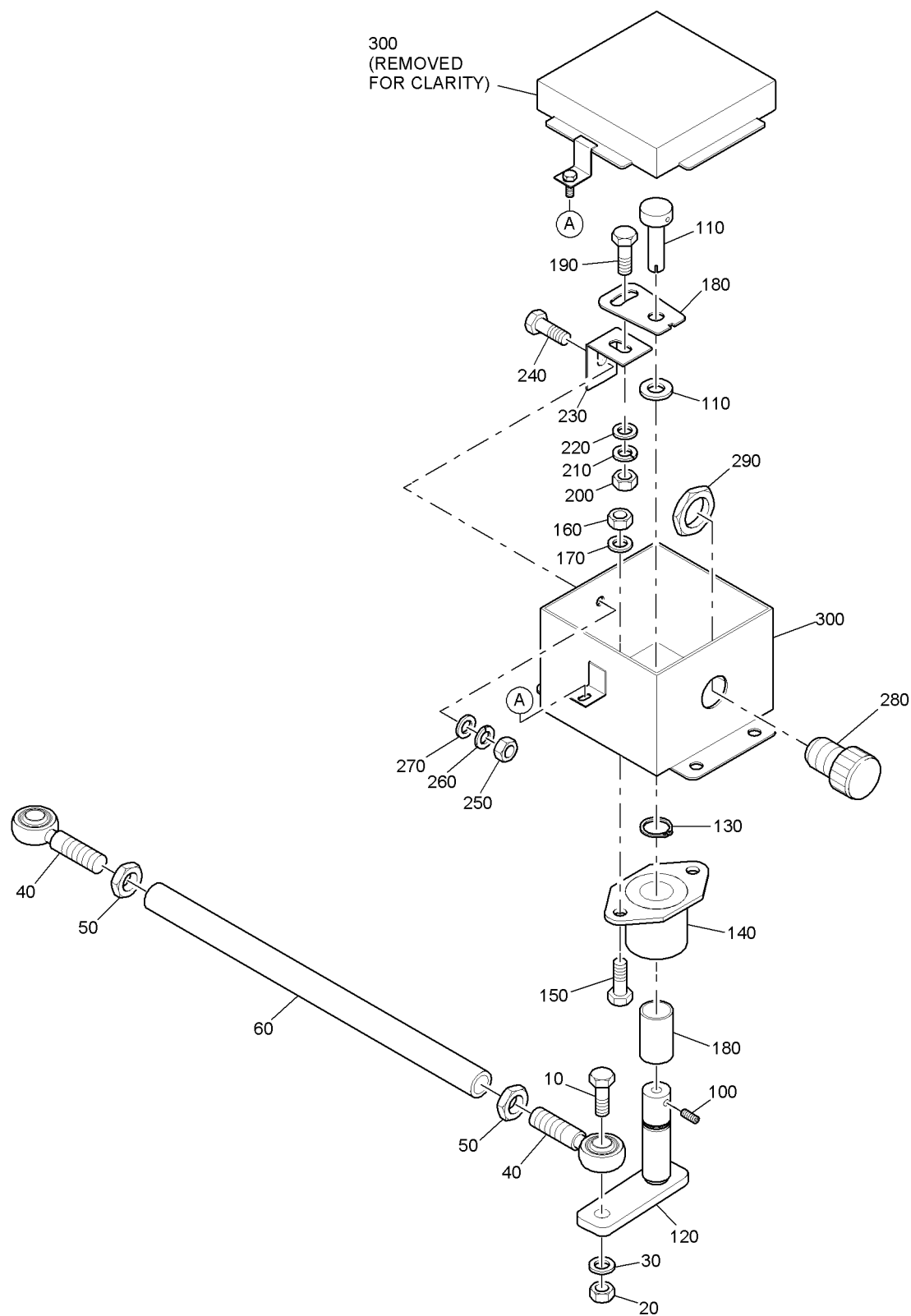


FIGURE 30. ARTICULATION SENSOR ASSEMBLY

FIGURE 30. ARTICULATION SENSOR ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
30			
-1	30NONUMBER2	ARTICULATION SENSOR ASSEMBLY	REF
10	102-106-1A	• CAP SCREW, 5/16"-18 X 1-1/4 HEX	1
20	143-2	• LOCKNUT, 5/16" HEX	1
30	119-2	• FLAT WASHER, 5/16" SAE	1
40	983370	• HEIM JOINT, ROD END	2
50	115-2	• NUT, 5/16"-24 JAM	2
60	984266	• ROD, ARTICULATION LEVER	1
70	NOT USED		
80	NOT USED		
90	NOT USED		
100	81204	• SETSCREW, HEX SOCKET, 10-24 X 0.25", CUP	1
110	34477	• POTENTIOMETER WITH WASHER, 250 OHM	1
120	985784	• PIN ASSEMBLY, ARTICULATION ROD MOUNTING	1
		ATTACHING PARTS	
130	985786	• RETAINING RING, EXTERNAL, 0.625"	1
		-----*	
140	985785	• POD ASSEMBLY, ARTICULATION ROD	1
		ATTACHING PARTS	
150	81057	• CAP SCREW, 1/4"-20 X 3/4 HEX	2
160	116-1	• NUT, 1/4"-20 HEX	2
170	119-1	• FLAT WASHER, 1/4" SAE	2
		-----*	
180	983558	• ADJUSTER PLATE, ARTICULATION SENSOR	1
		ATTACHING PARTS	
190	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	2

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FIGURE 30. ARTICULATION SENSOR ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
30			
200	116-1	• NUT, 1/4-20 HEX	2
210	118-1	• LOCKWASHER, 1/4"	2
220	119-1	• FLAT WASHER, 1/4" SAE	2
		-----*	
230	983557	• ANGLE, SENSOR MOUNTING	1
		ATTACHING PARTS	
240	102-3-1A	• CAP SCREW, 1/4"-20 X 3/4 HEX	1
250	116-1	• NUT, 1/4-20 HEX	1
260	118-1	• LOCKWASHER, 1/4"	1
270	119-1	• FLAT WASHER, 1/4" SAE	1
		-----*	
280	3200DI	• CONNECTOR, WATER TIGHT, 1/2 X 1/2"	1
		ATTACHING PARTS	
290	LN010	• LOCKNUT, 1/2" CONDUIT	1
		-----*	
300	984433	• ENCLOSURE, FUSE PANEL, 4" X 6"	1

- ITEM NOT ILLUSTRATED

ILLUSTRATED PARTS LIST

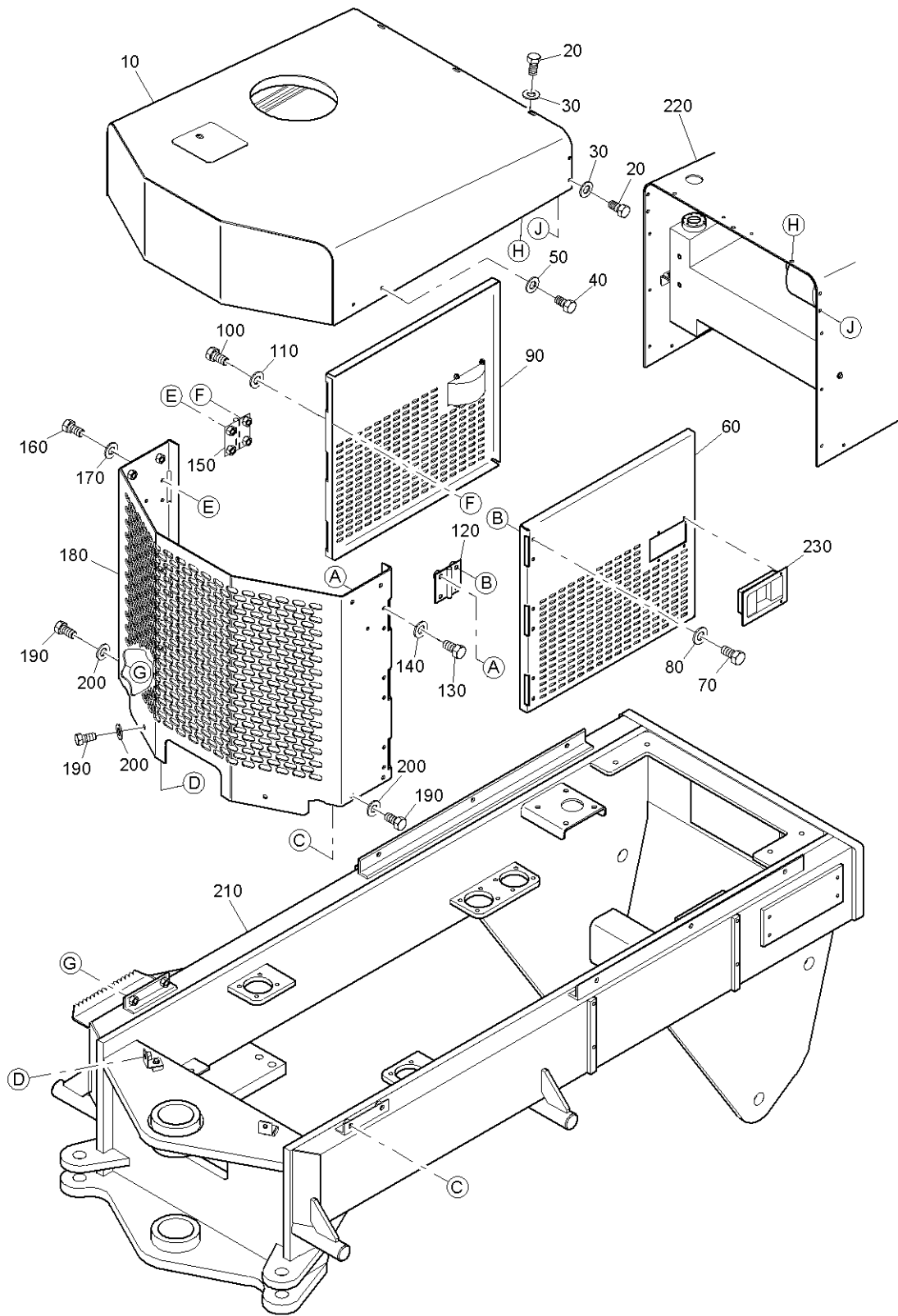


FIGURE 31. REAR FRAME ASSEMBLY

FIGURE 31. REAR FRAME ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
31			
-1	5NONUMBER80	REAR FRAME ASSEMBLY (SEE IPL FIGURE 5 FOR NHA)	REF
10	983357	• HOOD, FRONT ENGINE	1
		ATTACHING PARTS	
20	102-205-1A	• CAP SCREW, 3/8"-16 X 1.0 HEX	7
30	118-3	• LOCKWASHER, 3/8"	7
40	102-405-1A	• CAP SCREW, 1/2"-13 X 1.0 HEX	4
50	118-5	• LOCKWASHER, 1/2"	4
		-----*	
60	981641	• PLATE, ACCESS DOOR, LEFT-HAND	1
		ATTACHING PARTS	
70	102-205-1A	• CAP SCREW, 3/8"-16 X 1.0 HEX	6
80	118-3	• LOCKWASHER, 3/8"	6
		-----*	
90	981482	• PLATE, ACCESS DOOR, RIGHT-HAND	1
		ATTACHING PARTS	
100	102-205-1A	• CAP SCREW, 3/8"-16 X 1.0 HEX	6
110	118-3	• LOCKWASHER, 3/8"	6
		-----*	
120	980316	• HINGE, COVER	3
		ATTACHING PARTS	
130	102-405-1A	• CAP SCREW, 1/2"-13 X 1.0 HEX	2
140	118-5	• LOCKWASHER, 1/2"	2
		-----*	
150	980316	• HINGE, COVER	3

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FIGURE 31. REAR FRAME ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
31			
		ATTACHING PARTS	
160	102-405-1A	• CAP SCREW, 1/2"-13 X 1.0 HEX	2
170	118-5	• LOCKWASHER, 1/2"	2
		-----*	
180	981478	• PLATE, RADIATOR GUARD	1
		ATTACHING PARTS	
190	102-405-1A	• CAP SCREW, 1/2"-13 X 1.0 HEX	4
200	118-5	• LOCKWASHER, 1/2"	4
		-----*	
210	982849	• FRAME WELDMENT	1
220	983360	• HOOD ASSEMBLY, REAR FRAME MOUNT	1
230	160450	• LATCH, ENGINE ACCESS PANEL	2

- ITEM NOT ILLUSTRATED

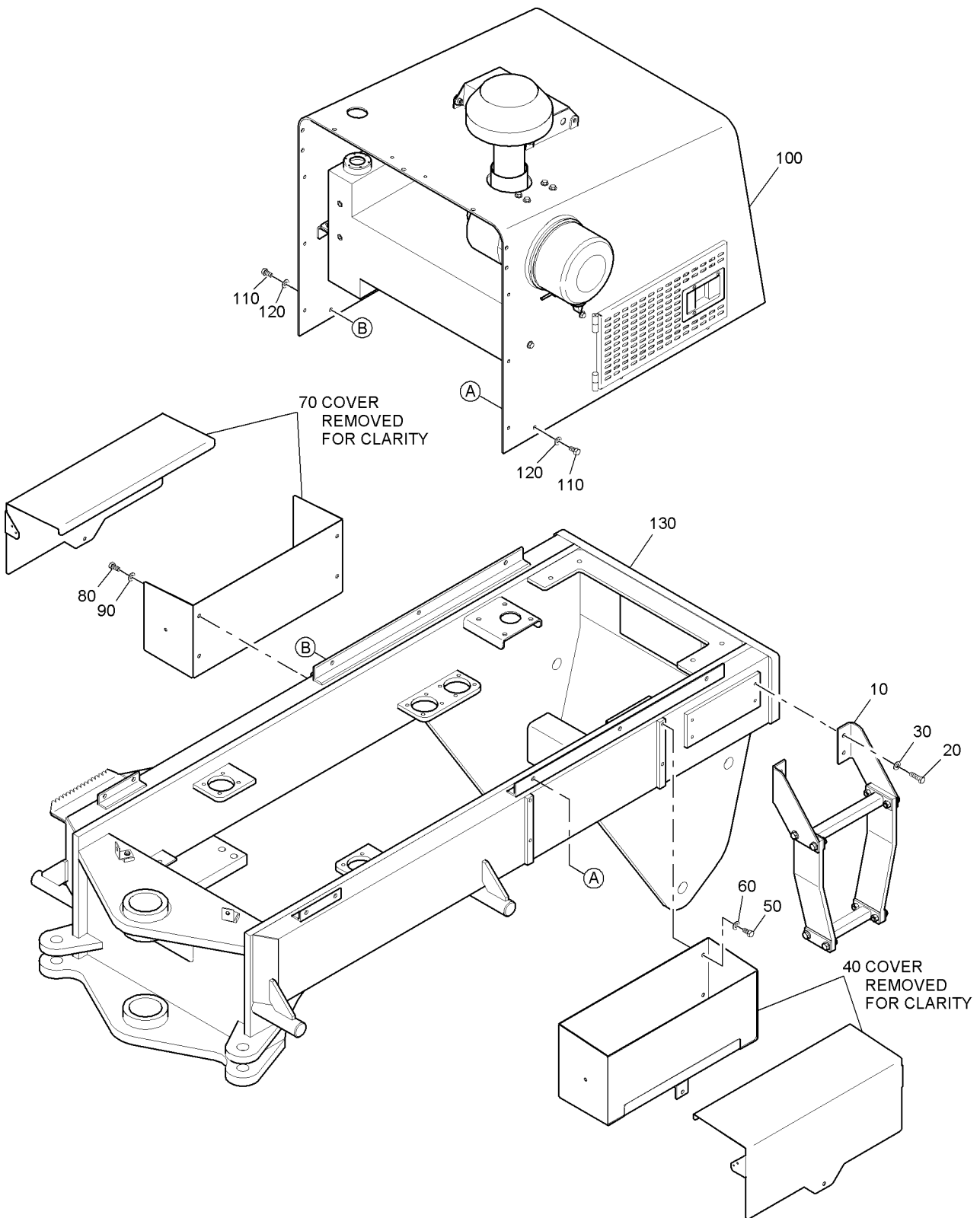


FIGURE 32. REAR FRAME ASSEMBLY

FIGURE 32. REAR FRAME ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
32			
-1	5NONUMBER80	REAR FRAME ASSEMBLY (SEE IPL FIGURE 5 FOR NHA)	REF
10	983367	• REAR STAIRWAY ASSEMBLY (SEE IPL FIGURE 39 FOR BREAKDOWN)	1
		ATTACHING PARTS	
20	102-303-1A	• CAP SCREW, 7/16"-14 X 3/4 HEX	4
30	118-4	• LOCKWASHER, 7/16"	4
		-----*	
40	982522	• TOOLBOX ASSEMBLY, FRAME-MOUNTED (SEE IPL FIGURE 38 FOR BREAKDOWN)	1
		ATTACHING PARTS	
50	102-403-1A	• CAP SCREW, 1/2"-13 X 3/4 HEX	4
60	118-5	• LOCKWASHER, 1/2"	4
		-----*	
70	982255	• BOX ASSEMBLY, BATTERY (SEE IPL FIGURE 38 FOR BREAKDOWN)	1
		ATTACHING PARTS	
80	102-403-1A	• CAP SCREW, 1/2"-13 X 3/4 HEX	4
90	118-5	• LOCKWASHER, 1/2"	4
		-----*	
100	32NONUMBER100	• HOOD ASSEMBLY, REAR FRAME (SEE IPL FIGURE 35 FOR BREAKDOWN)	1
		ATTACHING PARTS	
110	102-405-1A	• CAP SCREW, 1/2"-13 X 1.0 HEX	6
120	118-5	• LOCKWASHER, 1/2"	6
		-----*	
130	982849	• FRAME WELDMENT	REF

- ITEM NOT ILLUSTRATED

ILLUSTRATED PARTS LIST

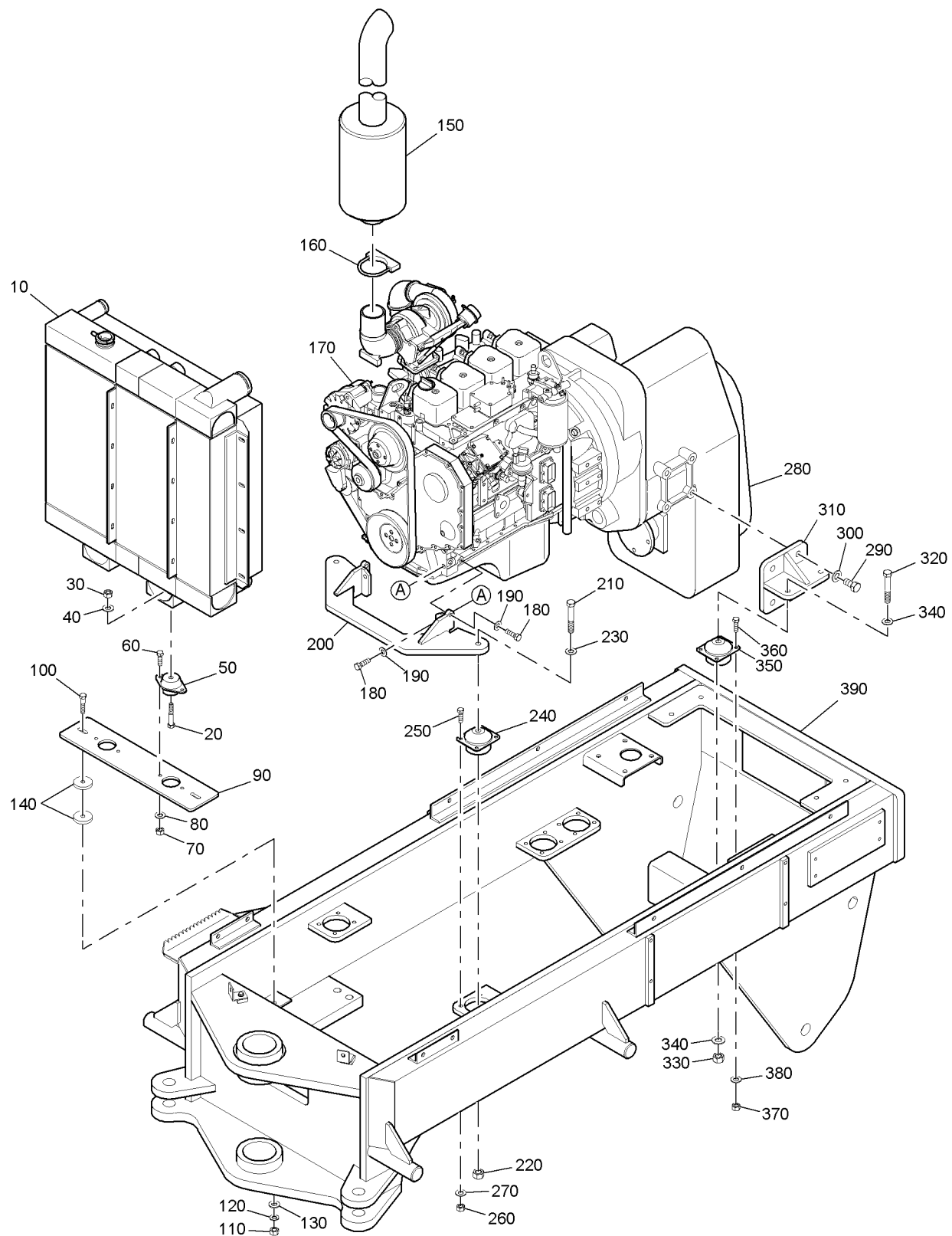


FIGURE 33. ENGINE, TRANSMISSION, AND RADIATOR MOUNT (SHEET 1 OF 2)

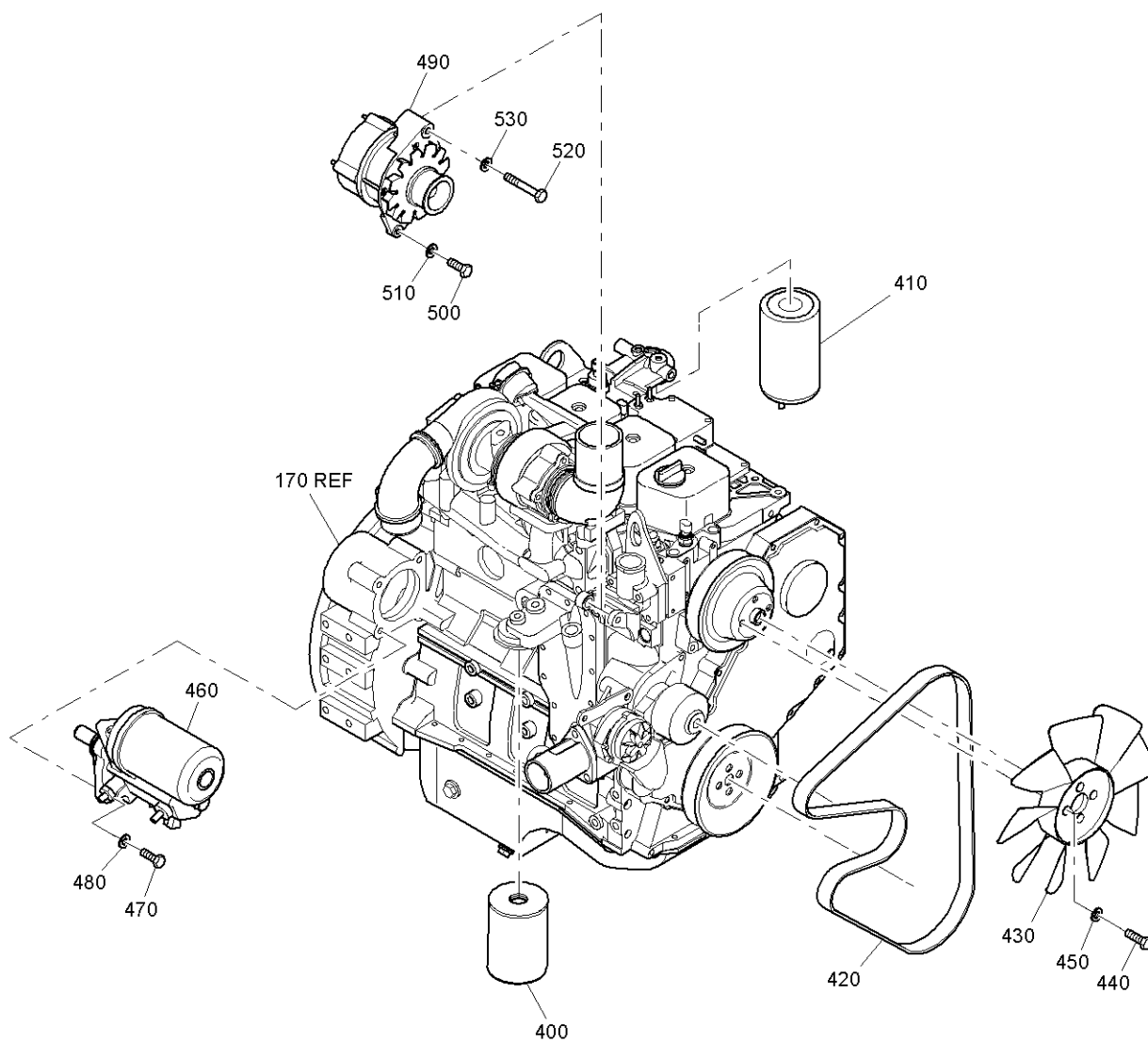


FIGURE 33. ENGINE, TRANSMISSION, AND RADIATOR MOUNT (SHEET 2 OF 2)

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FIGURE 33. ENGINE, TRANSMISSION, AND RADIATOR MOUNT

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
33			
-1	5NONUMBER80.	REAR FRAME AND ENGINE ASSEMBLY (SEE IPL FIGURE 5 FOR NHA)	REF
10	33NONUMBER10	• RADIATOR ASSEMBLY, CHARGE AIR (SEE IPL FIGURE 40 FOR BREAKDOWN)	1
		ATTACHING PARTS	
20	102-413-1A	• CAP SCREW, 1/2"-13 X 3.0 HEX	2
30	116-5	• NUT, 1/2"-13 HEX	2
40	118-5	• LOCKWASHER, 1/2"	2
		-----*	
50	700580	• MOUNTING PAD, RADIATOR (635B)	2
		ATTACHING PARTS	
60	102-206-1A	• CAP SCREW, 3/8"-16 X 1.25 HEX	2
70	116-3	• NUT, 3/8"-16 HEX	2
80	118-3	• LOCKWASHER, 3/8"	2
		-----*	
90	981806	• SUPPORT PLATE, RADIATOR	1
		ATTACHING PARTS	
100	102-410-1A	• CAP SCREW, 1/2"-13 X 2.25 HEX	2
110	116-5	• NUT, 1/2"-13 HEX	2
120	118-5	• LOCKWASHER, 1/2"	2
130	119-5	• FLAT WASHER, 1/2" SAE	2
140	853393	• FLAT WASHER, 2.25 OD X 5/8" ID	4
		-----*	
150	985681	• MUFFLER ASSEMBLY, 3.0 X 24-INCH TAILPIPE	1
		ATTACHING PARTS	
160	161250	• CLAMP, MUFFLER, 3.0"	1
		-----*	

- ITEM NOT ILLUSTRATED

ILLUSTRATED PARTS LIST



FIGURE 33. ENGINE, TRANSMISSION, AND RADIATOR MOUNT (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
33			
170	982859	• ENGINE ASSEMBLY, 130 HP, 4B3.9CA	1
		ATTACHING PARTS	
180	102-M12-1.5X35MM	• CAP SCREW, M12-1.5 X 35 MM HEX	8
190	80475	• FLAT WASHER, M12	8
		-----*	
200	985756	• ENGINE MOUNT ASSEMBLY, FRONT	1
		ATTACHING PARTS	
210	102-619-1A	• CAP SCREW, 5/8"-11 X 4.5 HEX	2
220	143-7	• LOCKNUT, 5/8"-11	2
230	119-7	• FLAT WASHER, 5/8" SAE	2
		-----*	
240	982891	• ENGINE ISOLATOR, RUBBER	2
		ATTACHING PARTS	
250	102-206-1A	• CAP SCREW, 3/8"-16 X 1.25 HEX	2
260	116-3	• NUT, 3/8" HEX	2
270	118-3	• LOCKWASHER, 3/8"	2
		-----*	
280	982429	• TRANSMISSION, POWER SHIFT, 2400	1
		ATTACHING PARTS	
290	102-709-1A	• CAP SCREW, 3/4"-10- X 2.0 HEX	8
300	118-8	• LOCKWASHER, 3/4"	8
		-----*	
310	985755	• MOUNT ASSEMBLY, TRANSMISSION	2
		ATTACHING PARTS	
320	102-619-1A	• CAP SCREW, 5/8"-11 X 4.5 HEX	2
330	143-7	• LOCKNUT, 5/8"-11	2

- ITEM NOT ILLUSTRATED

FIGURE 33. ENGINE, TRANSMISSION, AND RADIATOR MOUNT (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
33			
340	119-7	• FLAT WASHER, 5/8" SAE	4
		-----*	
350	982891	• ENGINE ISOLATOR, RUBBER	4
		ATTACHING PARTS	
360	102-206-1A	• CAP SCREW, 3/8"-16 X 1.25 HEX	2
370	116-3	• NUT, 3/8"-16 HEX	2
380	118-3	• LOCKWASHER, 3/8"	2
		-----*	
390	982849	• FRAME WELDMENT	REF
400	982859-03	• FILTER ELEMENT, ENGINE OIL	1
410	982859-05	• FILTER ELEMENT, FUEL/WATER	1
420	982859-01	• DRIVE BELT, ENGINE, RIBBED	1
430	982880	• FAN, ENGINE, 23-INCH	1
		ATTACHING PARTS	
440	80946	• CAP SCREW, M10-1.50 X 75MM HEX	4
450	320142	• LOCKWASHER, M10	4
		-----*	
460	982859-04	• STARTER, ELECTRIC	1
		ATTACHING PARTS	
470	80516	• CAP SCREW, M10-1.5 X 30MM HEX	4
480	320142	• LOCKWASHER, M10	4
		-----*	
490	982859-02	• ALTERNATOR	1
		ATTACHING PARTS	
500	80515	• CAP SCREW, M10-1.5 X 25MM HEX	1
510	320142	• LOCKWASHER, M10	1
520	80517	• CAP SCREW, M08-1.25 X 80MM HEX	1
530	320142	• LOCKWASHER, M10	1
		-----*	

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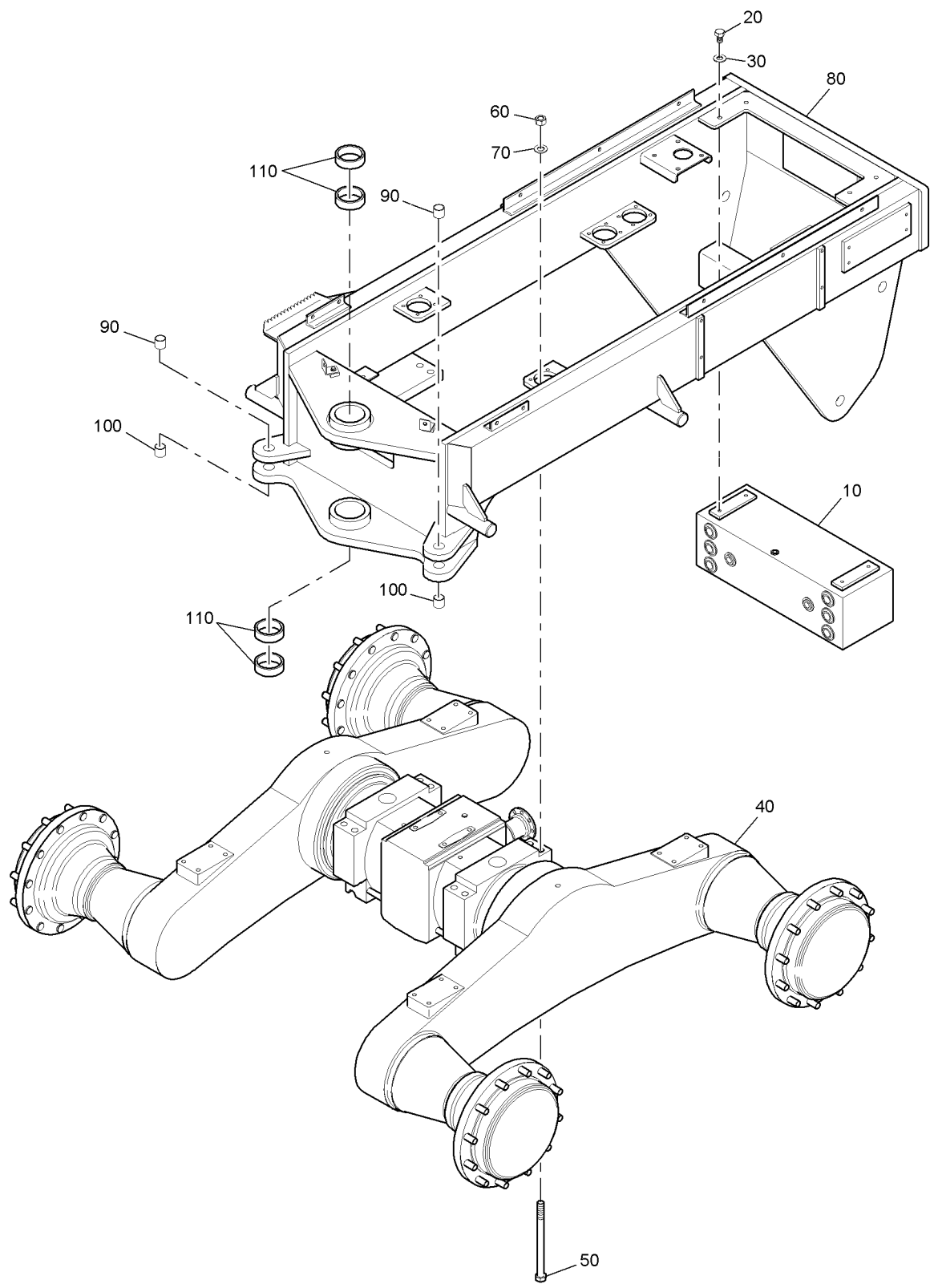


FIGURE 34. REAR AXLE AND FRAME

FIGURE 34. REAR AXLE AND FRAME

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
34			
-1	5NONUMBER80	REAR FRAME AND ENGINE ASSEMBLY (SEE IPL FIGURE 4 FOR NHA)	REF
10	981818	• HYDRAULIC TANK ASSEMBLY, LOWER	1
		ATTACHING PARTS	
20	102-405-1A	• CAP SCREW, 1/2"-13 X 1.0 HEX	4
30	118-5	• LOCKWASHER, 1/2"	4
		-----*	
40	982428	• AXLE ASSEMBLY, DRIVE	REF
		ATTACHING PARTS	
50	100-850-1A	• CAP SCREW, 7/8"-9 X 12.25 HEX	8
60	142-9	• LOCKNUT, 7/8"-9	8
70	119-9	• FLAT WASHER, 7/8"	8
		-----*	
80	982849	• FRAME WELDMENT	REF

- ITEM NOT ILLUSTRATED

ILLUSTRATED PARTS LIST

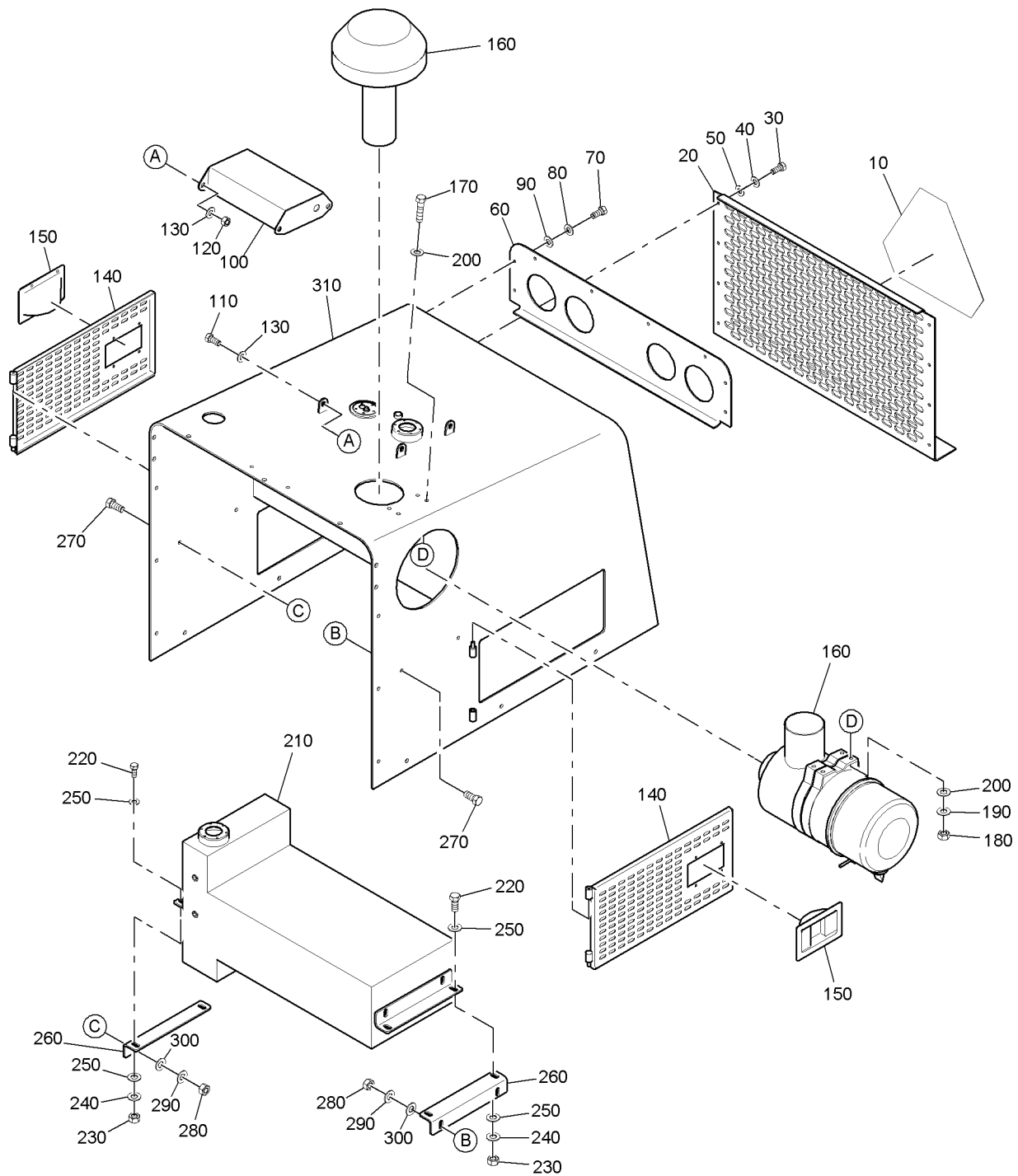


FIGURE 35. HOOD ASSEMBLY

FIGURE 35. HOOD ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
35			
-1	32NONUMBER100	HOOD ASSEMBLY, REAR FRAME (SEE IPL FIGURE 32 FOR NHA)	REF
10	P70036	• SIGN, SLOW MOVING VEHICLE	1
20	981651	• PLATE, REAR GRILL	1
		ATTACHING PARTS	
30	102-205-1A	• CAP SCREW, 3/8"-16 X 1 HEX	8
40	118-2	• LOCKWASHER, 3/8"	8
50	119-2	• FLAT WASHER, 3/8" SAE	8
		-----*	
60	981650	• PLATE, TAIL LIGHT MOUNT	1
		ATTACHING PARTS	
70	102-205-1A	• CAP SCREW, 3/8"-16 X 1 HEX	8
80	118-2	• LOCKWASHER, 3/8"	8
90	119-2	• FLAT WASHER, 3/8" SAE	8
		-----*	
100	982798	• COVER	
		ATTACHING PARTS	
110	102-406-1A	• CAP SCREW, 1/2"-13 X 1-1/4 HEX	2
120	143-5	• LOCK NUT, 1/2"-13	2
130	119-5	• FLAT WASHER, 1/2" SAE	4
		-----*	
140	982837	• PLATE, REAR ACCESS DOOR	2
150	160450	• LATCH, ENGINE ACCESS PANEL	2
160	953521247	• AIR CLEANER AND INLET ASSEMBLY (SEE IPL FIGURE 36 FOR BREAKDOWN)	1
		ATTACHING PARTS	
170	102-209-1A	• CAP SCREW, 3/8"-16 X 2 HEX	4
180	116-3	• NUT, 3/8"-16 HEX	4

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FIGURE 35. HOOD ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
35			
190	118-3	• LOCKWASHER, 3/8"	4
200	119-3	• FLAT WASHER, 3/8" SAE	8
		-----*	
210	35NONUMBER210	• TANK ASSEMBLY, UPPER HYDRAULIC (SEE IPL FIGURE 37 FOR BREAKDOWN)	
		ATTACHING PARTS	
220	102-406-1A	• CAP SCREW, 1/2"-13 X 1-1/4 HEX	4
230	116-5	• NUT, 1/2"-13 HEX	4
240	118-5	• LOCKWASHER, 1/2"	4
250	119-5	• FLAT WASHER, 1/2" SAE	8
		-----*	
260	981648	• MOUNTING PLATE, HYDRAULIC TANK	2
		ATTACHING PARTS	
270	102-406-1A	• CAP SCREW, 1/2"-13 X 1-1/4 HEX	2
280	116-5	• NUT, 1/2"-13 HEX	2
290	118-5	• LOCKWASHER, 1/2"	2
300	119-5	• FLAT WASHER, 1/2" SAE	2
		-----*	
310	983360	• HOOD ASSEMBLY, REAR FRAME MOUNT	1

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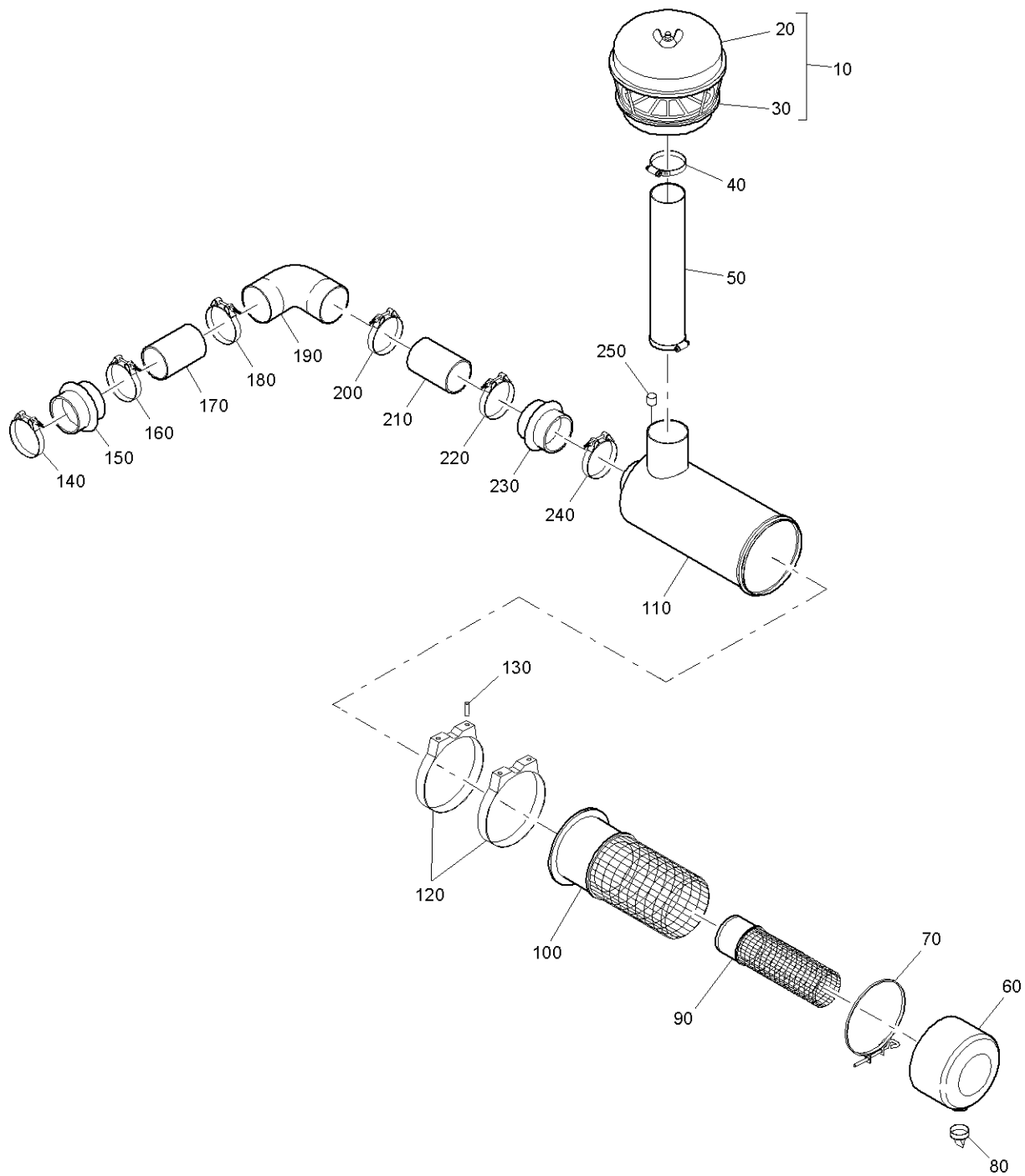


FIGURE 36. AIR CLEANER ASSEMBLY

FIGURE 36. AIR CLEANER ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
36			
-1	953521247	AIR CLEANER ASSEMBLY (SEE IPL FIGURE 35 FOR NHA)	REF
-10	983546	• INTAKE ASSEMBLY	1
20	983543-07	• COVER, INTAKE	1
30	983543-06	• INTAKE HOUSING	1
		ATTACHING PARTS	
40	851437	• HOSE CLAMP, SCREW TYPE	1
		-----*	
50	983545	• INLET TUBE, FLEXIBLE	1
60	983543-04	• CAP, AIR CLEANER	1
		ATTACHING PARTS	
70	983543-03	• CLAMP BAND, CAP	1
		-----*	
80	983543-05	• VACUATOR VALVE, AIR CLEANER	1
90	983543-02	• AIR CLEANER, INNER	1
100	983543-01	• AIR CLEANER, OUTER	1
110	983543	• HOUSING, AIR CLEANER	1
		ATTACHING PARTS	
120	983544	• MOUNTING BAND, AIR CLEANER	2
130	28905	• SCREW	4
		-----*	
140	171090	• CLAMP, SCREW-TYPE	1
150	853521170	• FITTING, DOUBLE MALE	1
160	953521243	• CLAMP, SCREW-TYPE	1
170	983547	• HOSE SECTION	1
180	953521243	• CLAMP, SCREW-TYPE	1
190	36919	• ELBOW	1
200	953521243	• CLAMP, SCREW-TYPE	1
210	983547	• HOSE SECTION	1
220	953521243	• CLAMP, SCREW-TYPE	1
230	853521137	• FITTING, DOUBLE MALE	1
240	953521243	• CLAMP, SCREW-TYPE	1
250	983275	• INDICATOR, AIR RESTRICTION	1

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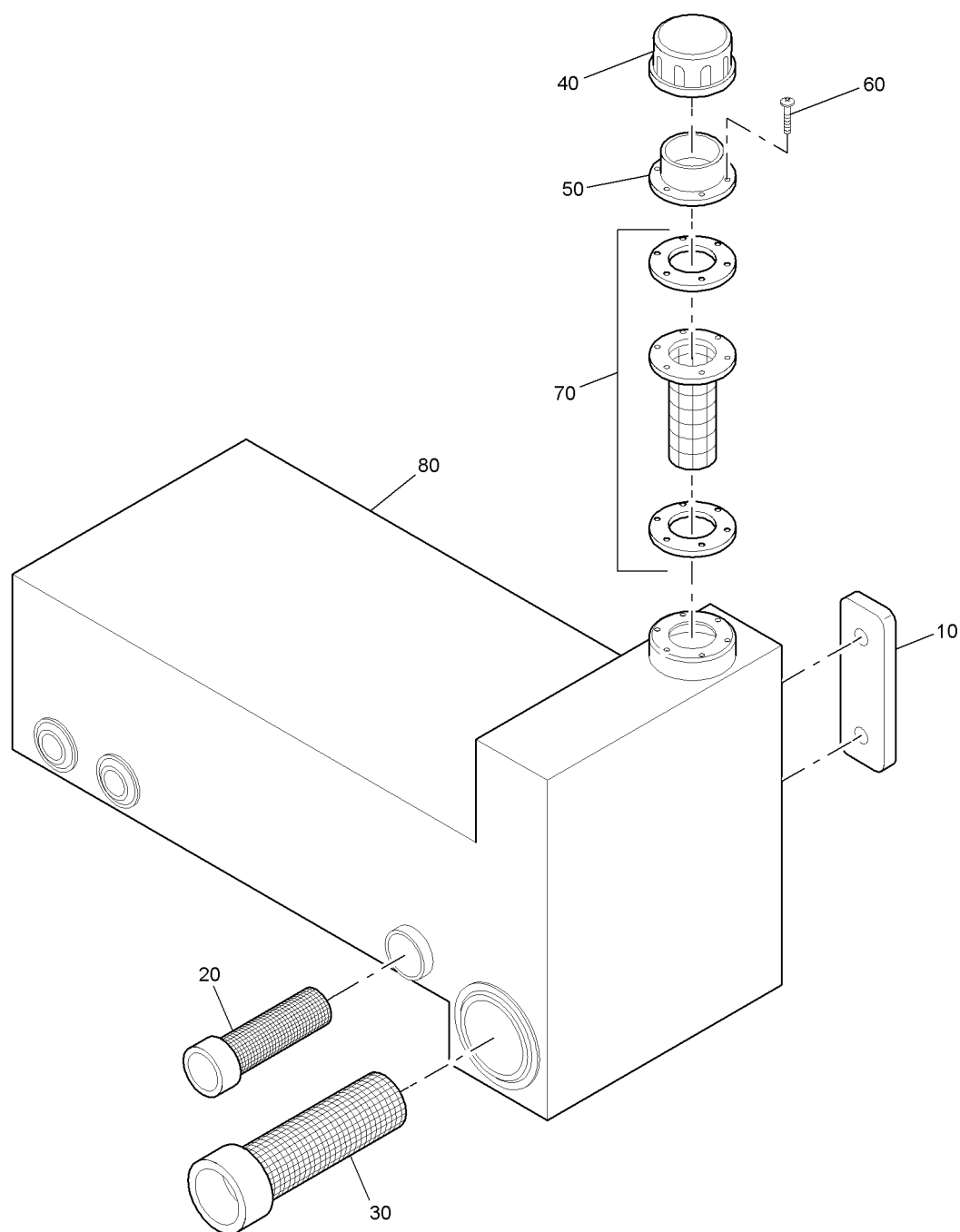


FIGURE 37. UPPER HYDRAULIC RESERVOIR ASSEMBLY

FIGURE 37. UPPER HYDRAULIC RESERVOIR ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
37			
-1	35NONUMBER210	UPPER HYDRAULIC RESERVOIR ASSEMBLY (SEE IPL FIGURE 35 FOR NHA)	REF
10	500070	• GAUGE, HYDRAULIC OIL LEVEL AND TEMPERATURE	1
20	910020	• STRAINER, HYDRAULIC OIL SUCTION	1
30	980630	• FILTER, STRAINER	1
40	140030HL	• CAP, LOCKABLE HYDRAULIC OIL TANK	1
50	140030FN	• FILLER NECK, HYDRAULIC OIL/FUEL CAP	1
		ATTACHING PARTS	
60	81160	• SCREW, SELF TAPPING, 10 X 1.0"	6
		-----*	
70	140030GK	• STRAINER AND GASKET KIT	1
80	981647	• TANK, HYDRAULIC	1

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ILLUSTRATED PARTS LIST

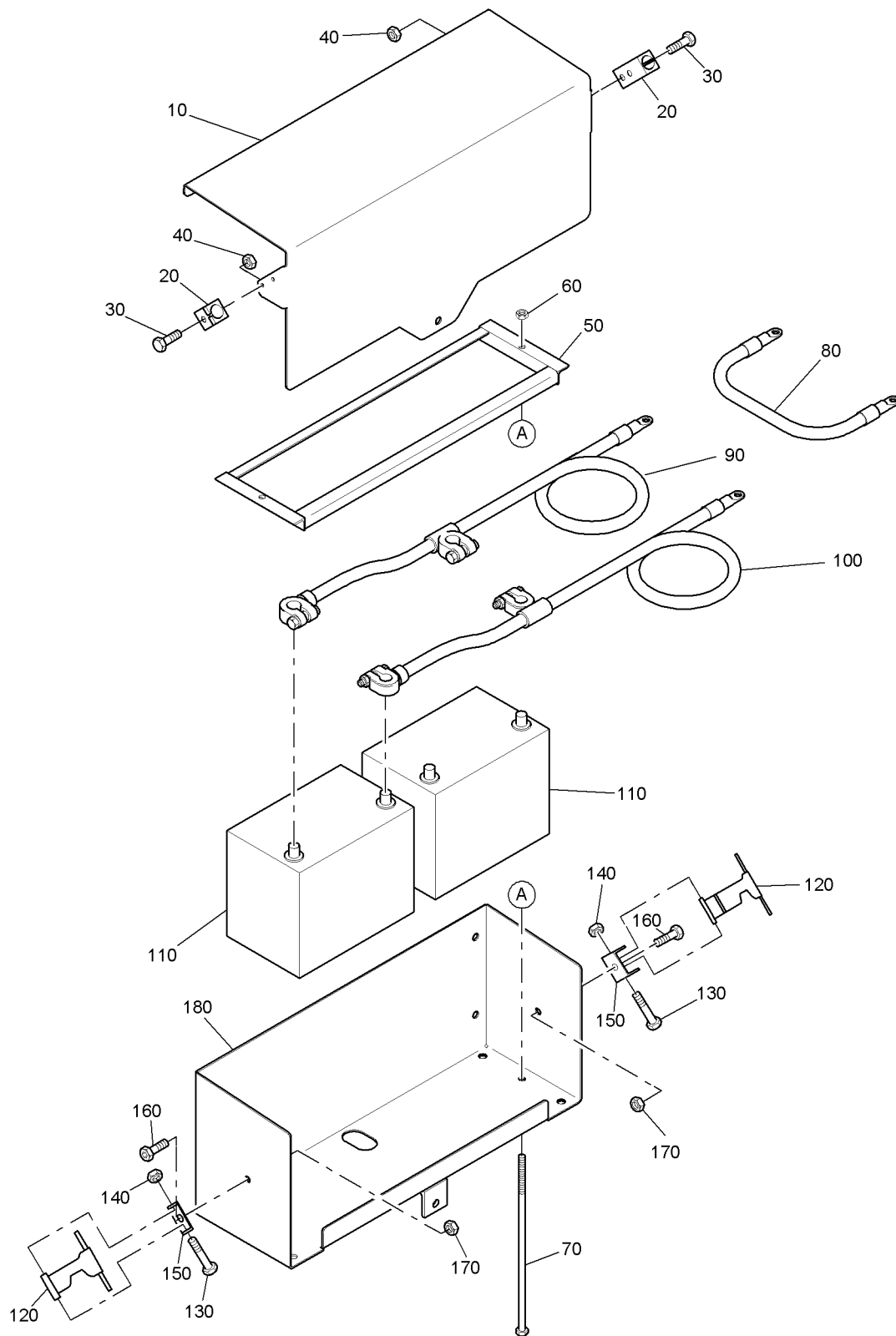


FIGURE 38. BATTERY BOX AND TOOL BOX ASSEMBLIES (SHEET 1 OF 2)

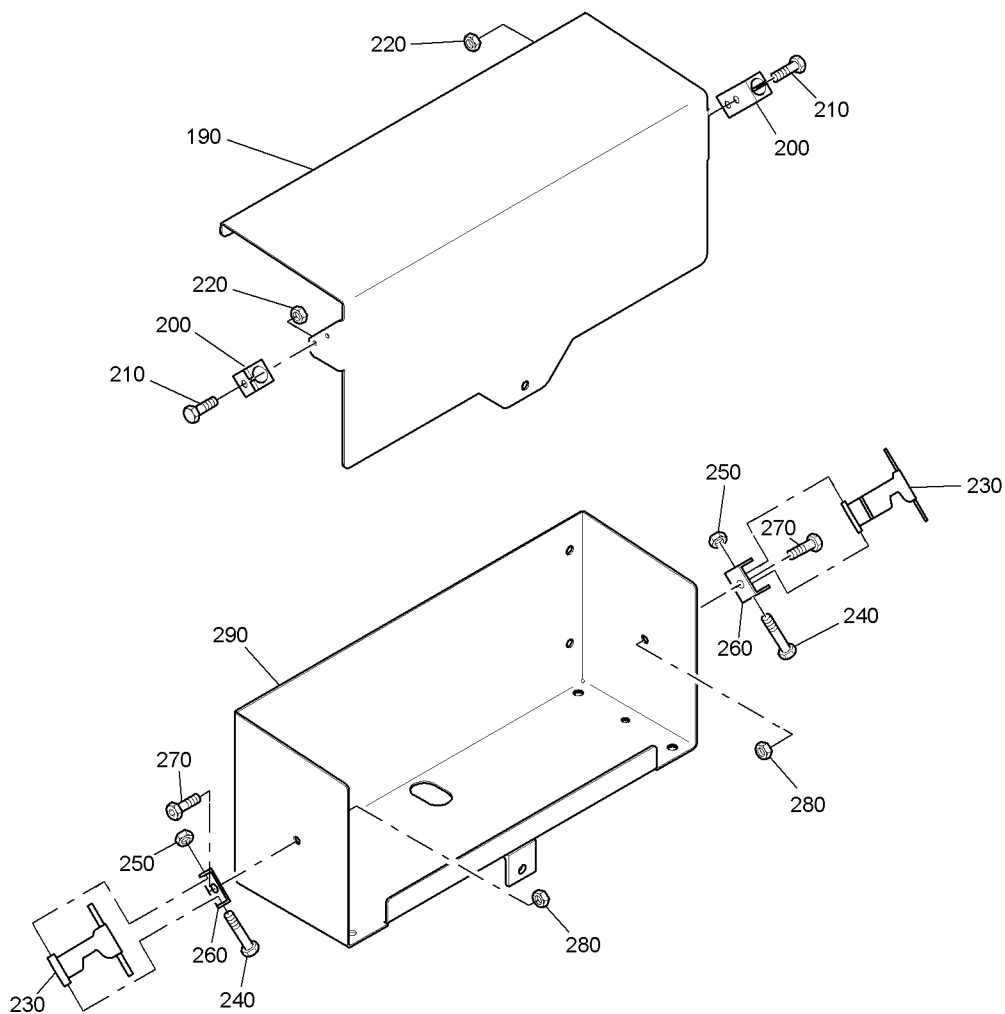


FIGURE 38. BATTERY BOX AND TOOL BOX ASSEMBLIES (SHEET 2 OF 2)

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FIGURE 38. BATTERY BOX AND TOOL BOX ASSEMBLIES

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
38			
-1	38NONUMBER1	BATTERY BOX AND TOOL BOX ASSEMBLIES (SEE IPL FIGURE 32 FOR NHA)	REF
10	982254	• TOP PLATE, BATTERY BOX	1
20	007020098	• BRACKET, HOOD	2
		ATTACHING PARTS	
30	871052400	• MACHINE SCREW, RIGHT-HAND, 10-24 X 0.50"	2
40	80924	• NUT, FLEXLOC, 10-24, FULL	2
		-----*	
50	982962	• HOLDDOWN ASSEMBLY, BATTERY	1
		ATTACHING PARTS	
60	143-3	• LOCKNUT, 3/8"-16 HEX	2
70	80393	• CAP SCREW, 3/8"-16 X 9.5 HEX	2
		-----*	
80	983561	• GROUND CABLE, CAB NEGATIVE	1
90	983562	• BATTERY CABLE, NEGATIVE	1
100	983563	• BATTERY CABLE, POSITIVE	1
110	920152	• BATTERY, 12 VOLT, 750 CCA	2
120	007020096	• HOOK, RUBBER	2
		ATTACHING PARTS	
130	102-109-1A	• CAP SCREW, 5/16"-18 X 2 HEX	1
140	143-2	• LOCKNUT, 5/16"-18	1
		-----*	
150	007020097	• BRACKET, ANCHOR	2
		ATTACHING PARTS	
160	102-1-1A	• CAP SCREW, 1/4"-20 X 1/2 HEX, GRADE 5	1
170	143-1	• LOCKNUT, 1/4"-20, HEX, GRADE 5	1
		-----*	

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FIGURE 38. BATTERY BOX AND TOOL BOX ASSEMBLIES (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
38			
180	982255	• BOX ASSEMBLY, BATTERY	1
190	982254	• TOP PLATE, TOOL BOX	1
200	007020098	• BRACKET, HOOD	2
		ATTACHING PARTS	
210	871052400	• MACHINE SCREW, RIGHT-HAND, 10-24 X 0.50"	2
220	80924	• NUT, FLEXLOC, 10-24, FULL	2
		-----*	
230	007020096	• HOOK, RUBBER	2
		ATTACHING PARTS	
240	102-109-1A	• CAP SCREW, 5/16"-18 X 2 HEX	1
250	143-2	• LOCKNUT, 5/16"-18	1
		-----*	
260	007020097	• BRACKET, ANCHOR	2
		ATTACHING PARTS	
270	102-1-1A	• CAP SCREW, 1/4"-20 X 1/2 HEX, GRADE 5	1
280	143-1	• LOCKNUT, 1/4"-20, HEX, GRADE 5	1
		-----*	
290	982522	• TOOLBOX ASSEMBLY, FRAME MOUNT	1

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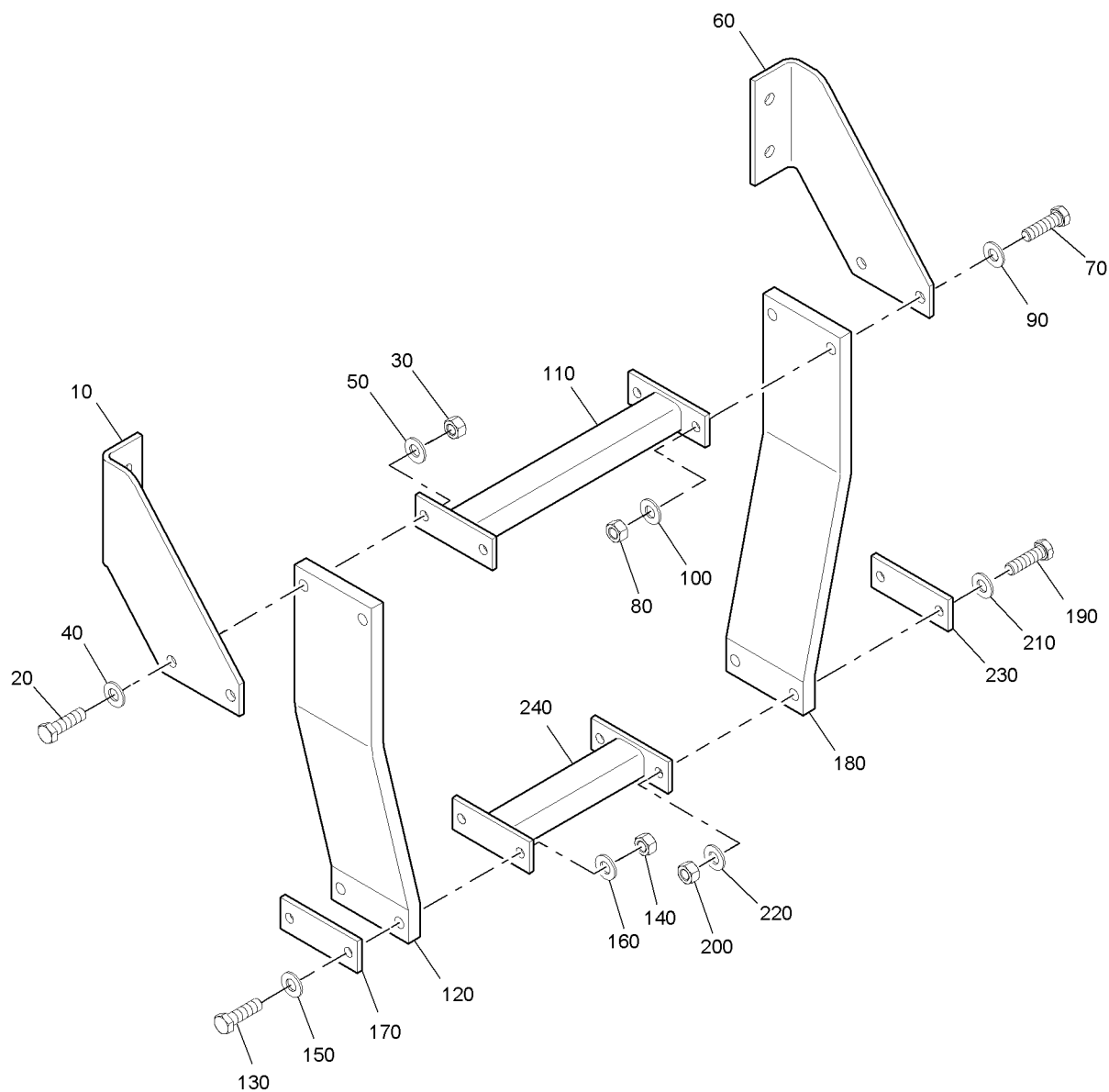


FIGURE 39. REAR STAIRWAY ASSEMBLY

FIGURE 39. REAR STAIRWAY ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
39			
-1	983367	REAR STAIRWAY ASSEMBLY (SEE IPL FIGURE 32 FOR NHA)	REF
-10	982841	• MOUNT PLATE, LH CAB STEP	1
		ATTACHING PARTS	
20	102-202-1A	• CAP SCREW, 3/8"-16 X 1/2 HEX	2
30	116-3	• NUT, HEX, 3/8"-16	2
40	119-3	• FLAT WASHER, 3/8" SAE	2
50	118-3	• LOCKWASHER, 3/8"	2
		-----*	
60	982839	• MOUNT PLATE, RH CAB STEP	1
		ATTACHING PARTS	
70	102-202-1A	• CAP SCREW, 3/8"-16 X 1/2 HEX	2
80	116-3	• NUT, HEX, 3/8"-16	2
90	119-3	• FLAT WASHER, 3/8" SAE	2
100	118-3	• LOCKWASHER, 3/8"	2
		-----*	
110	985512	• STEP, CAB	1
120	983383	• RUBBER, FRAME STEP, 5-PLY	1
		ATTACHING PARTS	
130	102-202-1A	• CAP SCREW, 3/8"-16 X 1/2 HEX	2
140	116-3	• NUT, HEX, 3/8"-16	2
150	119-3	• FLAT WASHER, 3/8" SAE	2
160	118-3	• LOCKWASHER, 3/8"	2
		-----*	
170	982838	• MOUNT BAR, END STEP	1
180	983383	• RUBBER, FRAME STEP, 5-PLY	1
		ATTACHING PARTS	
190	102-202-1A	• CAP SCREW, 3/8"-16 X 1/2 HEX	2
200	116-3	• NUT, HEX, 3/8"-16	2

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ILLUSTRATED PARTS LIST

FIGURE 39. REAR STAIRWAY ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
39			
210	119-3	• FLAT WASHER, 3/8" SAE	2
220	118-3	• LOCKWASHER, 3/8"	2
		-----*	
230	982838	• MOUNT BAR, END STEP	1
240	985513	• STEP, CAB	1

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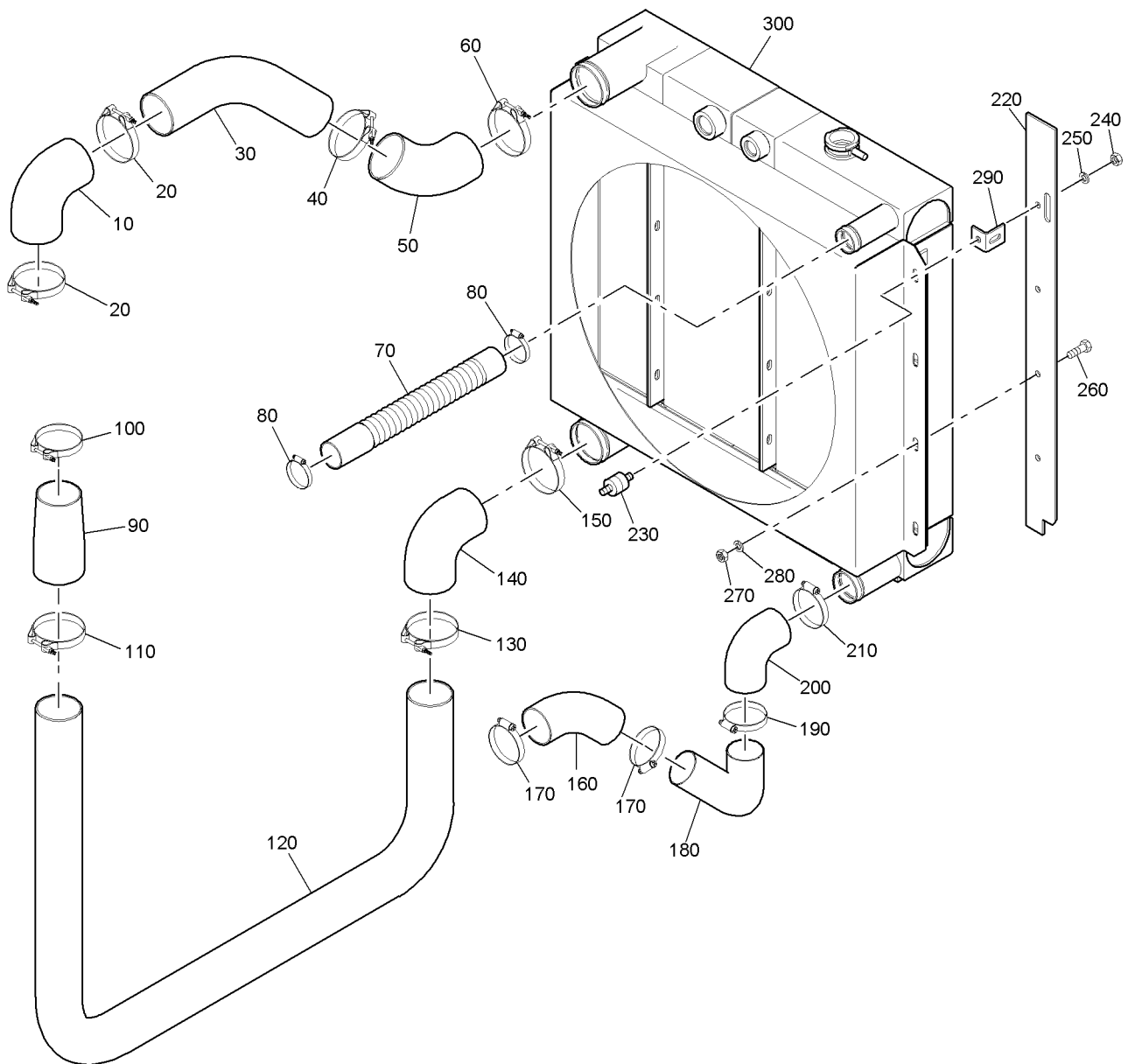


FIGURE 40. RADIATOR AND HOSE ASSEMBLY

FIGURE 40. RADIATOR AND HOSE ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
40			
-1	33NONUMBER10	RADIATOR AND HOSE ASSEMBLY (SEE IPL FIGURE 33 FOR NHA)	REF
10	982779	• CHARGE AIR TUBE, 45 DEGREE	1
		ATTACHING PARTS	
20	36045	• CLAMP, T-BOLT, 2-3/4" NOMINAL	2
		-----*	
30	983146	• TUBE, CHARGE AIR INLET, 3.0" OD	1
		ATTACHING PARTS	
40	36045	• CLAMP, T-BOLT, 2-3/4" NOMINAL	1
		-----*	
50	982779	• ELBOW, CHARGE AIR, 45 DEGREE	1
		ATTACHING PARTS	
60	36045	• CLAMP, T-BOLT, 2-3/4" NOMINAL	1
		-----*	
70	983596	• RADIATOR HOSE, UPPER	1
		ATTACHING PARTS	
80	230240	• CLAMP, HOSE, 3/4" (SIZE 10)	2
		-----*	
90	982780	• REDUCER TUBE, CHARGE AIR	1
		ATTACHING PARTS	
100	38268	• CLAMP, T-BOLT, 2-1/4" NOMINAL	1
110	36045	• CLAMP, T-BOLT, 2-3/4" NOMINAL	1
		-----*	
120	983147	• INLET TUBE, CHARGE AIR, 3.0" OD	1

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FIGURE 40. RADIATOR AND HOSE ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
40			
		ATTACHING PARTS	
130	36045	• CLAMP, T-BOLT, 2-3/4" NOMINAL	1
		-----*	
140	982779	• CHARGE AIR TUBE, 45 DEGREE	1
		ATTACHING PARTS	
150	36045	• CLAMP, T-BOLT, 2-3/4" NOMINAL	1
		-----*	
160	984263	• RADIATOR ELBOW, LOWER, 45 DEGREE, 2.25" ID	1
		ATTACHING PARTS	
170	500230	• HOSE CLAMP, 2-1/2" (SIZE 36)	2
		-----*	
180	983145	• RADIATOR TUBE, LOWER, 2.25" OD	1
		ATTACHING PARTS	
190	500230	• HOSE CLAMP, 2-1/2" (SIZE 36)	1
		-----*	
200	984262	• RADIATOR ELBOW, LOWER, 60 DEGREE, 2.25" ID	1
		ATTACHING PARTS	
210	500230	• HOSE CLAMP, 2-1/2" (SIZE 36)	1
		-----*	
220	982564	• RADIATOR MOUNT, RUBBER	2
		ATTACHING PARTS	
230	440040	• SHOCK MOUNT, ENGINE SEAT	1
240	116-3	• NUT, 3/8"-16 HEX	1
250	118-3	• LOCKWASHER, 3/8"	1
260	102-205-1A	• CAP SCREW, 3/8"-16 X 1.0 HEX	3

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ILLUSTRATED PARTS LIST

FIGURE 40. RADIATOR AND HOSE ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
40			
270	116-3	• NUT, 3/8"-16 HEX	3
280	118-3	• LOCKWASHER, 3/8"	3
		-----*	
290	981833	• MOUNT PLATE, RADIATOR	2
300	982876	• RADIATOR ASSEMBLY, CHARGE AIR	1

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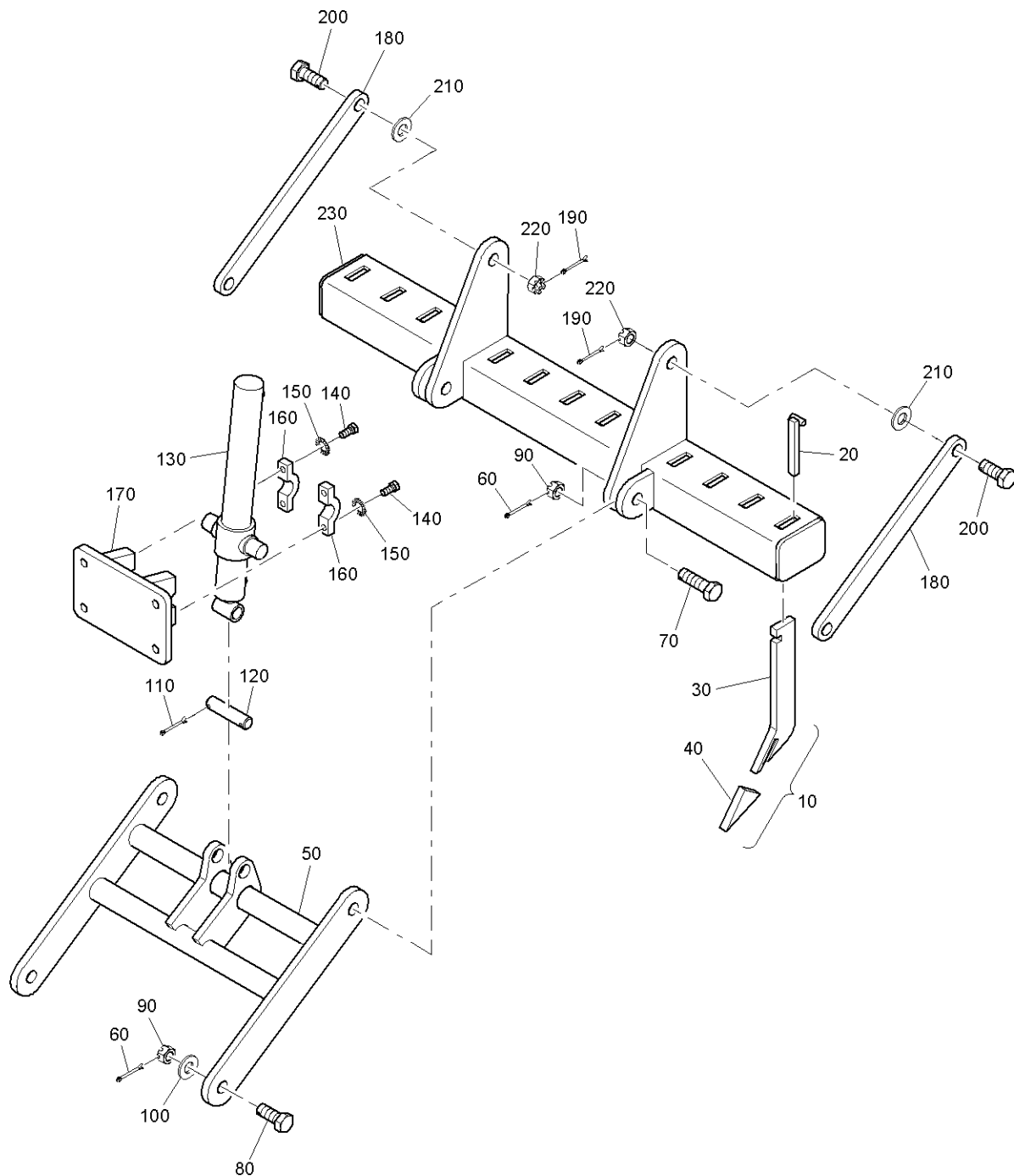


FIGURE 41. REAR SCARIFIER ASSEMBLY

FIGURE 41. REAR SCARIFIER ASSEMBLY

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
41			
-1	982238	REAR SCARIFIER ASSEMBLY (SEE IPL FIGURE 5 FOR NHA)	REF
10	983100	• SHANK AND TOOTH ASSEMBLY, SCARIFIER	11
		ATTACHING PARTS	
20	982829	• RETAINER, SHANK	1
		-----*	
30	982243	• • SHANK, SCARIFIER	11
40	983095	• • TOOTH, SCARIFIER	11
50	986152	• FRAME	1
		ATTACHING PARTS	
60	871082639	• COTTER PIN, 3/16 X 3.0"	4
70	985093	• BOLT W/HOLE, 1.5"-6 X 5.0 HEX	2
80	985092	• BOLT W/HOLE, 1.5"-6 X 4.0 HEX	2
90	115-14-2	• NUT, 1.5"-6 SLOTTED HEX	4
100	119-14	• FLAT WASHER, 1.5" SAE	2
110	871081835	• ROLL PIN, 0.375 X 2.0"	2
120	985105	• PIN, REAR SCARIFIER	1
		-----*	
130	982826	• CYLINDER, HYDRAULIC, 3.00 X 25.00", 2500 PSI	1
		ATTACHING PARTS	
140	102-709-1A	• CAP SCREW, 3/4"-10 X 2.0, HEX	4
150	118-8	• LOCKWASHER, 3/4"	4
160	983094	• MOUNTING COLLAR, CYLINDER	2
		-----*	
170	986154	• MOUNTING PLATE, CYLINDER	1
180	982220	• BAR, TOP SUPPORT ARM	2
		ATTACHING PARTS	
190	871082639	• COTTER PIN, 3/16 X 3.00"	2
200	985092	• BOLT W/HOLE, 1.5"-6 X 4.0 HEX	2

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ILLUSTRATED PARTS LIST

FIGURE 41. REAR SCARIFIER ASSEMBLY (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
41			
210	119-14	• FLAT WASHER, 1.5" SAE	2
220	115-14-2	• NUT, 1.5"-6 SLOTTED HEX	2
		-----*	
230	986151	• SCARIFIER FRAME	1

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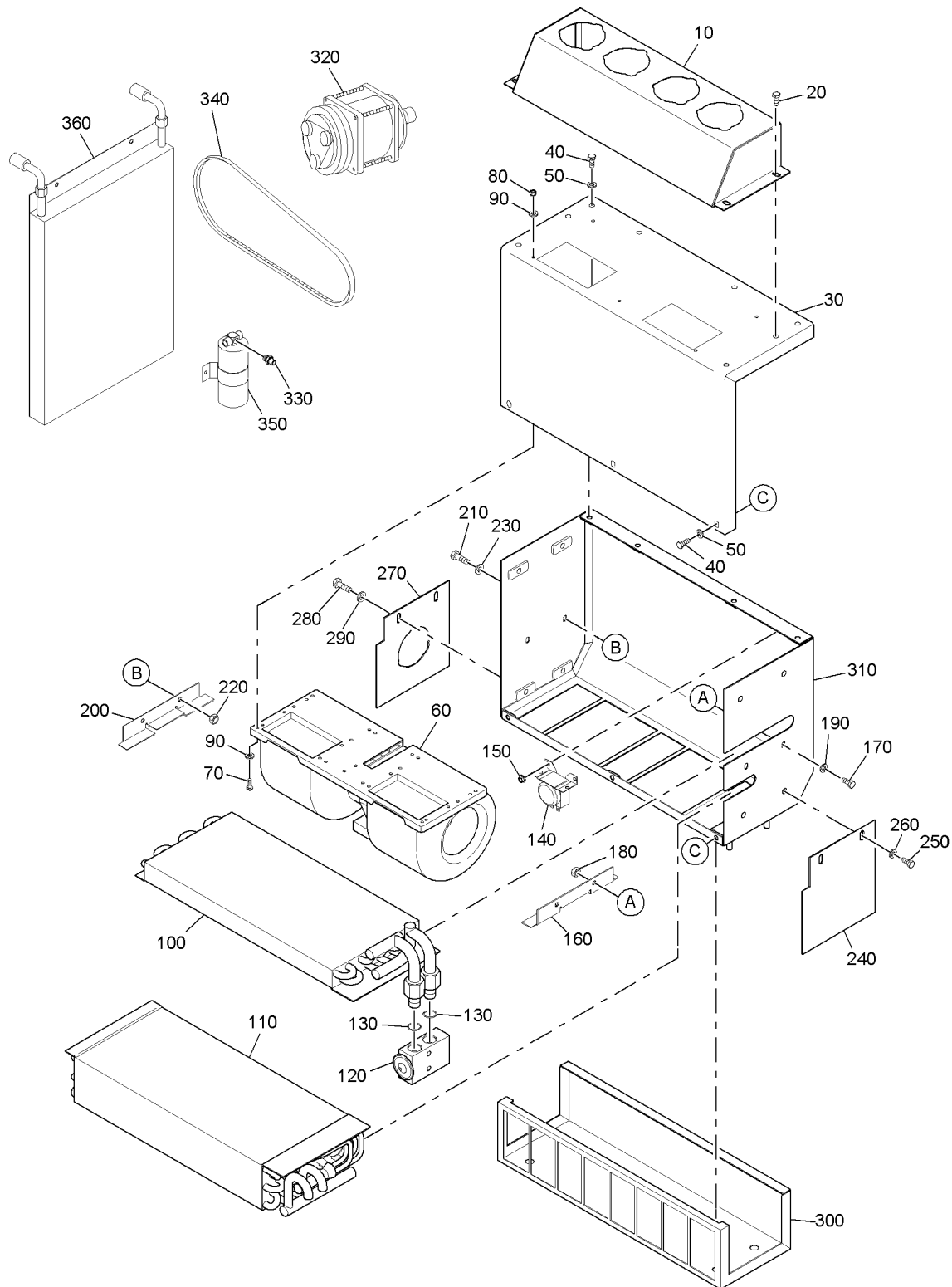


FIGURE 42. AIR CONDITIONING GROUP

FIGURE 42. AIR CONDITIONING GROUP

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
42			
-1	982726	AIR CONDITIONING GROUP	REF
10	982726-15	• PLENUM, AIR DISTRIBUTION	1
		ATTACHING PARTS	
20	80321	• SCREW, SELF-TAPPING, 10 X 1/2"	4
		-----*	
30	982726-05	• COVER, AIR CONDITIONING GROUP	1
		ATTACHING PARTS	
40	80465	• SCREW, M06-1 X 20 MM, HEX	6
50	80472	• WASHER, FLAT, M06, SAE	6
		-----*	
60	982726-09	• BLOWER UNIT	1
		ATTACHING PARTS	
70	90074	• SCREW, MACHINE, 10-32 X 0.50"	5
80	80494	• NUT, 10, HEX	5
90	80995	• WASHER, FLAT, 10 SAE	10
		-----*	
100	982726-12	• EVAPORATOR, AIR CONDITIONER	1
110	982276-11	• HEATER CORE	1
120	982726-08	• VALVE, THERMAL EXPANSION	1
130	982276-10	• O-RING	2
140	982276-07	• THERMOSTAT	1
		ATTACHING PARTS	
150	81007	• NUT, HEX, M05-80	3
		-----*	
160	982726-04	• MOUNTING PLATE	1

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FIGURE 42. AIR CONDITIONING GROUP (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
42			
		ATTACHING PARTS	
170	80465	• SCREW, M06-1 X 20 MM, HEX	2
180	80453	• NUT, HEX, M06-1	2
190	80472	• WASHER, FLAT, M06, SAE	2
		-----*	
200	982726-06	• MOUNTING PLATE	1
		ATTACHING PARTS	
210	80465	• SCREW, M06-1 X 20 MM, HEX	2
220	80453	• NUT, HEX, M06-1	2
230	80472	• WASHER, FLAT, M06, SAE	2
		-----*	
240	982726-15	• END PLATE	1
		ATTACHING PARTS	
250	80465	• SCREW, M06-1 X 20 MM, HEX	2
260	80472	• WASHER, FLAT, M06, SAE	2
		-----*	
270	982726-16	• END PLATE	1
		ATTACHING PARTS	
280	80465	• SCREW, M06-1 X 20 MM, HEX	2
290	80472	• WASHER, FLAT, M06, SAE	2
		-----*	
300	982726-17	• TRAY, AIR INTAKE	1
310	982726-03	• HOUSING, AIR CONDITIONING GROUP	1
320	P204324	• COMPRESSOR	1
330	P204291	• MOUNT, COMPRESSOR	1
340	685070	• BELT, COMPRESSOR DRIVE	1

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ILLUSTRATED PARTS LIST

FIGURE 42. AIR CONDITIONING GROUP (CONTINUED)

FIG ITEM	PART NUMBER	NOMENCLATURE							UNITS PER ASSY
		1	2	3	4	5	6	7	
42									
350	982726-14	• FILTER/DRYER ASSEMBLY							1
360	983096	• CONDENSER							1

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ILLUSTRATED PARTS LIST

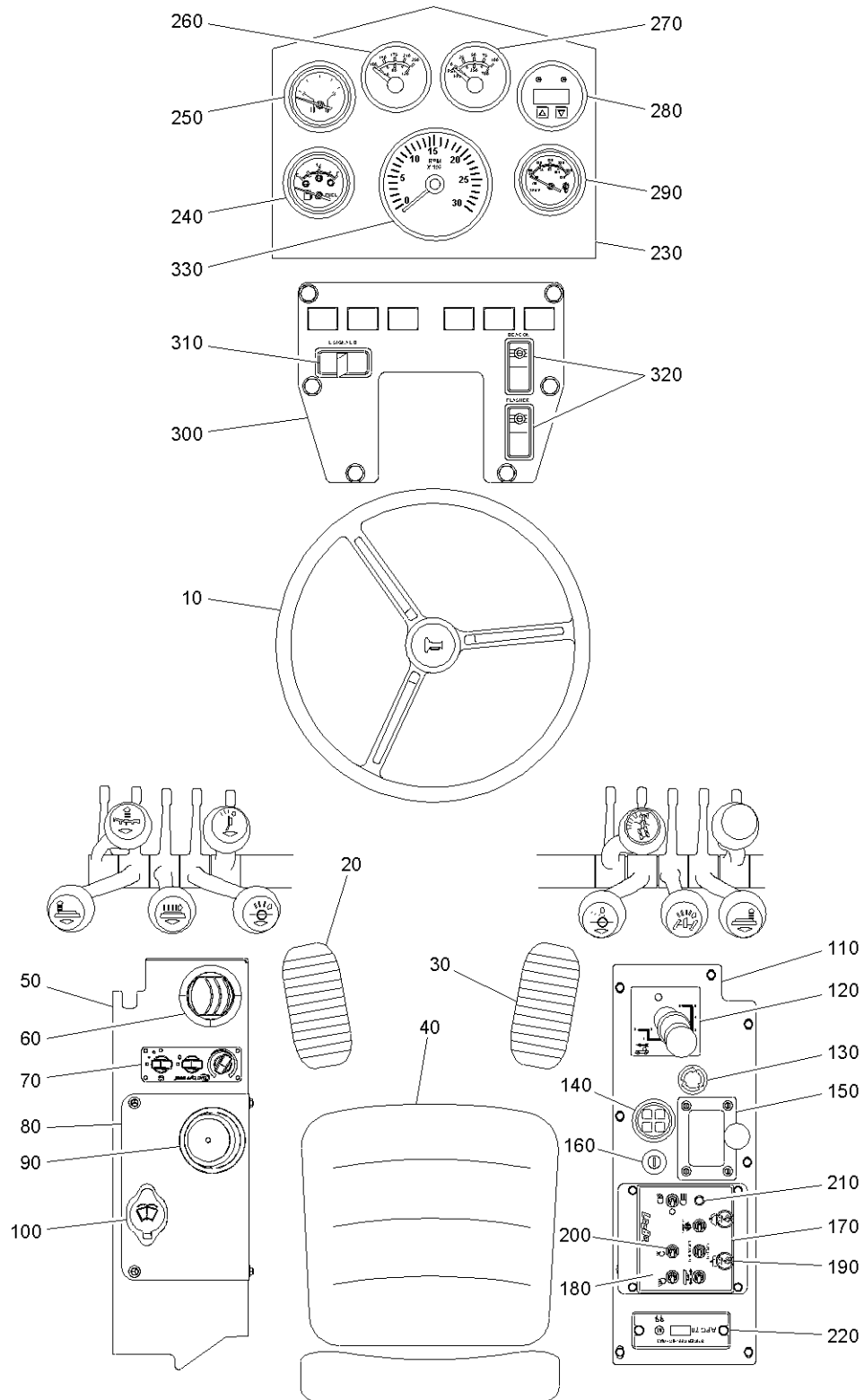


FIGURE 43. CONTROL GROUP

FIGURE 43. CONTROL GROUP

FIG ITEM	PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	UNITS PER ASSY
43			
-1	43NONUMBER1	CONTROL GROUP	REF
10	982170	• STEERING WHEEL	1
20	985520	• PEDAL, BRAKE	1
30	981781	• PEDAL, ACCELERATOR	1
40	982325	• SEAT, MECHANICAL SUSPENSION	1
50	982384	• ACCESSORY BOX	1
60	982726-02	• LOUVER VENT, CIRCULAR	1
70	982726-01	• CONTROL PANEL, HVAC UNIT	1
80	982607	• ACCESS PANEL, LEFT-HAND	1
90	982689	• CUP HOLDER	1
100	982738	• WASHER BOTTLE, 10 LITER	1
110	982486	• CONSOLE PLATE, RIGHT-HAND SIDE	1
120	984265	• SHIFTER, ELECTRIC	1
130	981507	• SWITCH, EMERGENCY STOP	1
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