LB/P

A LeeBoy Company

OPERATIONS, SERVICE AND PARTS MANUAL

FB55 BROOM

Manual No. 1022943-01

This manual applies to Serial Number 247480 and above.

Thank you for purchasing the LB Performance FB55 Broom. We wish you many years of safe and efficient operation of your machine.

READ THIS MANUAL PRIOR TO OPERATING the unit. This is an important part of the machine and should be kept in the dedicated storage container at all times. Though you may be familiar with similar equipment, you MUST read and understand this manual before operating this machine to help prevent injury or damage to the unit. If this manual becomes lost or damaged, contact your authorized Rosco LeeBoy dealer immediately to order a replacement (see **Contact Information** in **Section 2**).

This manual is intended as a guide for the safe and efficient use for proper operation and maintenance of the machine. This manual contains information that was available at the time of printing and are subject to change without notice.

Use this manual along with all related supplemental books, engine and transmission manuals included with your machine. Related Service Bulletins should be reviewed to provide information regarding some of the recent changes. Contact your authorized Rosco LeeBoy dealer for the latest available information.

Section 1 - Safety: Contains general and specific safety guidelines for product and safety label locations.

Section 2 - Information and Specifications: Contains warranty, contact information, machine specification tables, and machine dimensions.

Section 3 - Component Location: Contains overview of major component locations and functions.

Section 4 - Operation: Contains instructions for safe operation and information for optional equipment.

Section 5 - Maintenance: Contains routine maintenance procedures, mechanical adjustments, component replacement and troubleshooting charts for common problems and corrections. (For specific engine maintenance procedures, refer to the engine manufacturer manual.)

Section 6 - Schematics: Contains electrical and hydraulic schematics for product functionality.

Section 7 - Illustrated Parts List (IPL): Contains parts numbers and illustrations for serviceable components.

LeeBoy is proud to be ISO 9001 certified. The International Standards Organization (ISO) establishes guidelines to ensure that products and services are safe, reliable, and of good quality. ISO certifies companies who demonstrate compliance with all aspects of product safety, customer satisfaction, efficiency, environmental stewardship and social responsibility. Our teams work hard to deliver quality industrial machines that exceed customer expectations and we strive for continuous improvement in everything we do. The LeeBoy family of companies is committed to total quality management with a strong focus on meeting customer needs.

LeeBoy is also proud to be an accredited ANAB manufacturer, which is a certification process comprised of quality standards established by the American National Standards Institute (ANSI) and the American Society for Quality (ASQ). The ANSI-ASQ National Accreditation Board plays an important role in ensuring the safety and quality of goods and services, along with protecting the environment.

- Drive the machine with care. Make sure speed is compatible with conditions. Use caution on rough ground, slopes, in traffic zones and while turning.
- Be alert for hazards and obstructions such as ditches, trees, cliffs, overhead power lines, and areas where there is danger of a slide.
- Be aware of and understand the job site traffic flow patterns.
- Obey flagmen, road signs, and signals.
- Watch for bystanders. Never allow anyone to be under the machine during operation. Never allow anyone to reach into the machine during use.
- Operator must know how to use signaling devices and understand which circumstances require use of each signal. Use tail lights, slow moving vehicle signs, and warning beacon as needed when traveling on public roads. It is recommended that you provide an escort on the road.
- DO NOT tow the machine, except to remove from road or load on a trailer for transport.

Storage Precautions

- Store machine in an area away from human activity.
- DO NOT permit children to play on or around the machine. Serious injury or death can occur from improper/unauthorized use of the machine.
- Make sure the unit is stored on a surface that is firm, level, and free of debris.
- Store the machine inside a building or cover securely with a weatherproof tarpaulin.

Maintenance Precautions

- DO NOT attempt repairs unless trained to do so. Refer to manuals and experienced repair personnel for help.
- Before working on the machine, securely block the machine and any components that may fall. Block any working components to prevent unexpected movement while repairs are being made.
- Always wear safety glasses and other required safety equipment when servicing or making repairs.
- Disconnect battery before working on the electrical system.
- Avoid lubrication or mechanical adjustments while the machine is in motion and engine is operating.
- If lubrication or mechanical adjustment is necessary, use extreme caution.
- Never make repairs on pressurized components such as fluid lines, the gas system, or mechanical items until the pressure has been relieved.
- When servicing or replacing hardened pins, use a brass drift or other suitable material between the hammer and pin.
- Keep brake and steering systems in good operating condition.

Table 2-3. Fuel and Lubricant Specifications

ITEM	SPECIFICATION
Engine Oil	15W-40, API CH-4, CI-4
Hydraulic Oil	All Weather All Temperature VG32
Fuel	Ultra-Low Sulfer Diesel
Grease	Shell Avania EP Grease or Equivalent
Drive Axle	80W-90LS GL5
Engine Coolant	Ethylene/Glycol or Propylene Glycol
Master Cylinder	All Weather All Temperature VG32

Table 2-4. Engine Specifications

ITEM	SPECIFICATION
Manufacturer and Model	Hatz 4H50TIC
Engine Type	74 HP (55 kW), 4-Cycle Liquid Cooled Diesel, Tier 4 Final
Peak Torque	184 ft. lb. (249 N•m) @ 1600 RPMs
Displacement	119 cu in (1.95 L)
Combustion System; Intake System	Direct Injection; Turbocharged, Air Cooled
Power Rating HP (kW)	74 HP (55 kW) @ 2500 RPMs
Maximum Speed	2500 RPMs
Fuel	Low Sulfer Diesel (do not use any other type of fuel)

Table 2-5. Drive System Specifications

ITEM	SPECIFICATION
Transmission	2-Speed Hydrostatic
Steering	Hydraulic, Orbital Motor, 3.7 GPM (14 LMP). Priority flow at 103 Bar, 1500 PSI (10342 kPa).
Rear Axle	Comer 068 Series
Tire Size	ST225x75-15R, Load Range E
Tire Inflation Pressure	50 PSI, 3.45 Bar (345 kPa)
Travel Speed	LOW: 0 - 12 mpg (0 - 19 kph) HIGH: 0 to 22 mpg (0 - 35 kph)
Hydrostatic Pump Displacement	2.8 CIR (46 cc)
Hydrostatic Motor Displacement	2.8 CIR (46 cc)
Brakes, Limited Slip	2-Wheel Wet Disc, Foot-Operated with Hand-Operated Park Brake

Table 2-6. Electrical Specifications

ITEM	SPECIFICATION
Battery	12 Vdc Maintenance Free, Negative Ground
Cold Cranking Amps (CCA)	770 CCA (950 CA)
Alternator Output Amperage	110 Amps @ 2500 RPMs
Alternator Fan Belt Tension	Manual belt tension mechanism keeps serpentine belt under tension at all times.

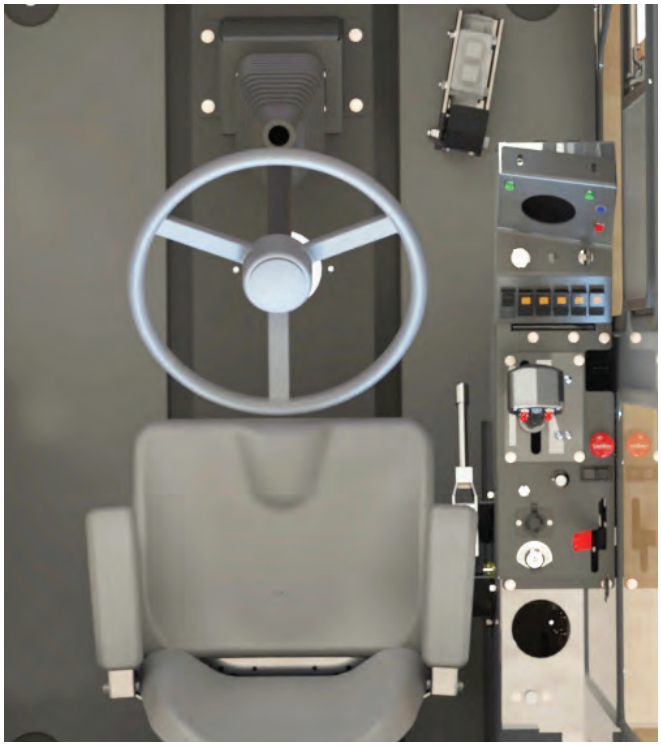
COMPONENTS OVERVIEW

This section describes the major components for the LB Performance FB55 Broom. The FB55 model offers simple operation and superior sweeping action. Wrap-around windows gives the operator excellent visibility inside the fully-enclosed cab. The quick-change brush core system allows brush replacement in minutes without needing tools. The optional Dust Suppression system features two 75-gallon water tanks. Become familiar with these components before operating the machine.

Operator Controls

The Rosco FB55 Broom cab offers operators comfort and convenient accessibility to controls within easy reach from the operator's seat. The tilt steering console is mounted by the floorboard brake pedal.

The main control panel is located to the right of the operator's seat. Various controls and a joystick equipped with controls for floating brush and swinging the broom left or right enhance efficiency and ease of operation on the job site. The PV380 Digital Display unit on the control panel features tachometer, fuel gauge, oil pressure gauge, coolant temperature, voltmeter and hour meter.



Engine

The LB Performance FB55 Broom is powered by a four-cylinder, turbo-charged diesel engine to drive the hydraulic auxiliary pumps for steering and broom control. The engine performs at 2500 RPMs and is easily accessible from either side of the machine.

An air cleaner mounted on top of the engine filters removes fine particles such as dust, sand, chaff, and lint from the air. A pre-cleaner removes larger particles of dirt and debris before the air enters the air filter elements, depositing the trapped materials into the pre-cleaner bowl that can be emptied as needed.

Primary and secondary fuel filters remove contaminants from diesel fuel before the fuel flows to the injection pump for injection into the engine combustion chamber.

A radiator mounted at the rear of the broom cools the engine. As coolant flows through the radiator, airflow from the engine-driven fan removes heat from the coolant.

Refer to your Engine Operator's Manual for a complete description and specifications of the engine.

Cold Weather Starting

- Ensure park brake is properly engaged by pulling the lever UP. **(Figure 4-1)**
- Place the transmission selector into the NEUTRAL position.
- Turn the ignition key to the Start position. The "Wait to Start" light will illuminate for a few seconds on the PV380 digital display controller. ***(Page 4-8)***
- When the Wait to Start banner disappears, turn key to the ON position to crank engine.
- Allow the engine to idle about ten minutes before driving the machine.

Stopping the Engine

1. Adjust throttle to idle using the decrease RPMs feature on the PV380 digital display until idle speed (1200 RPMs) is reached. ***(Page 4-8)***
2. Apply park brake by pulling the park brake lever UP. **(Figure 4-1)**
3. Turn ignition key counterclockwise to the OFF position and remove key.

NOTE: The electrical system will continue to operate for approximately 20 seconds after the ignition is turned off. This allows the engine ECU (Engine Control Unit) to store critical engine data as it powers down.

Emergency Stop Button

The purpose of the Emergency Stop Button (E-Stop) is to shut down the engine and all machine functions in an emergency situation. This additional safety feature should only be used if the operator needs to shut down all machine operations quickly. **(Figure 4-1)**

Figure 4-2. Driving the FB55 Broom

DRIVING THE BROOM

It is important that the operator become familiar with driving the LB Performance FB55 Broom and its components before operating the machine. Know and understand the controls and their functions before operating on the job site. ***(Pages 3-6 and 3-7)***

While the FB55 Broom is easy to operate, operators should become accustomed to using the engine throttle, brakes and hydrostatic transmission before engaging the brush sweeper.

NOTICE NEVER decelerate or change direction rapidly as excess heat and pressure could build in the hydrostatic drive system and, over time, wear out system components.

⚠WARNING ALWAYS fasten your seat belt and adjust steering console, seat and mirrors BEFORE starting the engine.

⚠CAUTION Verify there are no people, obstacles or other equipment in the machine's path before starting the engine.

STARTING TO SWEEP

Figure 4-13. Sweeping Mill Cut Road Construction

The LB Performance FB55 Broom features excellent broom control and functionality for a variety of industrial and commercial applications. Operator controls are conveniently located on the control panel to the operator's right side. These are the primary controls used while sweeping. ***(Refer to controls on Pages 3-6 and 3-7.)***

This broom is easy to operate for drivers of all experience levels. Its heavy-gauge, rectangular tube frame and industrial-grade structure make this self-propelled broom a must for cleanup and removal of dirt, debris and other foreign materials from roadways, landfills, landscaping, and industrial areas. The front rotary broom allows sweeping behind chip seal road projects, asphalt milling and other general construction clean-up applications. Engaging the Dust Suppression watering system allows dust control while sweeping.

Joystick Controls

The transmission selector joystick is equipped with controls to lift or float the brush, and swing it left or right. **(Figure 4-14)** The operator can control these brush functions along with increasing or decreasing the machine's speed as needed for the job by pushing the joystick lever forward or reverse.

The brush speed is also controlled by changing the engine's RPMs using the PV380 digital display control as described on ***Page 4-7.***

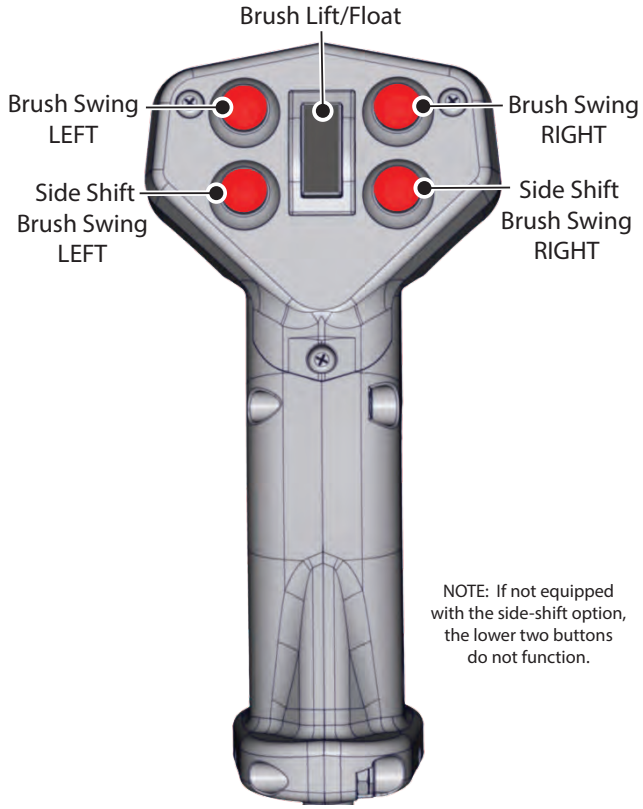


Figure 4-14. Joystick

Brush Lift/Float

The Brush Lift/Float Control switch is located in the center of the joystick. **(Figure 4-14)**

- Pushing the button UP lifts the brush. Releasing the switch automatically returns the brush to the "hold" position.
- The center position "holds" or locks the brush carrier at the height last used while in the UP position.
- Pushing DOWN on the switch activates the brush "float" mode.

NOTE: When releasing the switch back to center, float is maintained until the UP switch is pressed.

MAINTENANCE SCHEDULE

Before performing any maintenance procedures on the LB Performance FB55 Broom, review the safety information in **Section 1**.

⚠WARNING **Always use the appropriate and correct sized tools for the task at hand to prevent damage or possible injury.**

⚠WARNING **Always wear heat-resistant gloves when handling hot components.**

Following the maintenance schedules and procedures will maintain the machine in top operating condition and provide years of trouble-free operation. Refer to the Engine Operator's Manual accompanying your machine for more detailed engine service information.

When performing any routine maintenance, always include the previous routine maintenance hours in the higher hourly schedule.

NOTICE **Changing oil and cleaning the machine should only be done in a designated area where the oil and chemicals can be contained. These by-products should be discarded in accordance with environmental regulations.**

Table 5-1. Periodic Maintenance Schedule

SYSTEM	ITEM	Every 10 Hours Daily	Every 50 Hours Weekly	Every 100 Hours Monthly	Every 250 Hours Quarterly	Every 500 Hours Semi-Annually	Every 1000 Hours Annually
Engine	Check oil level.	X					
	Check coolant level.	X					
	Replace coolant.					X	
	Check primary and secondary air filters.		X				
	Change air filters.			X			
	Replace fuel filter.				X		
	Check and drain fuel water separator.				X		
	Change oil and oil filter. **(Initial 50 Hours)**				X		
	Check main engine belt (Change every 3000 hours).			X			
Hydraulic	Check hydraulic oil level and filters.	X					
	Change hydraulic filters.				X		
	Change hydraulic oil.						X
	Clean hydraulic oil strainer.				X		
	Drain hydraulic tank. Replace strainer.						X
Mechanical	Lubricate steering axle pivot.			X			
	Lubricate steering axle king pins and tie rods.			X			
	Replace drive axle oil.						X
	Repack wheel bearings.						X
	Check fluid at master cylinder.	X					
	Change filter for crankcase bleeding.					X	

5

FUEL SYSTEM

Fuel Tank

Use only low-sulphur diesel fuel and always fill the fuel tank at the end of the work day to prevent condensation. The green fuel cap is located on the left side of the broom on top of the . **(Figure 5-6)**

NOTICE **Fill up with low-sulphur diesel fuel at the end of the day to reduce condensation in the tank.**

Figure 5-6. Fuel Filler Cap

⚠WARNING **Diesel fuel is highly FLAMMABLE. DO NOT smoke while filling the fuel tank. Fill the fuel tank in a designated area that provides proper ventilation with a fire extinguisher available.**

⚠WARNING **NEVER overfill the tank, check fuel level or check for fuel leaks near an open flame or near equipment that can create sparks.**

⚠WARNING **Explosion Hazard! Never fill the fuel tank near an open flame, or near equipment that can create sparks. Never check fuel level or fuel system components near an open flame.**

⚠DANGER **NEVER loosen a fuel injector line as contents are under high pressure. DO NOT try to bleed air by loosening injector lines.**

To fill the fuel tank:

1. Stop engine and apply park brake.
2. Remove fuel cap from fuel tank.
3. Fill with diesel fuel until full.
4. Replace fuel cap.

Fuel Filter

The fuel filter elements are located inside the left engine access panel. **(Figures 5-7)**

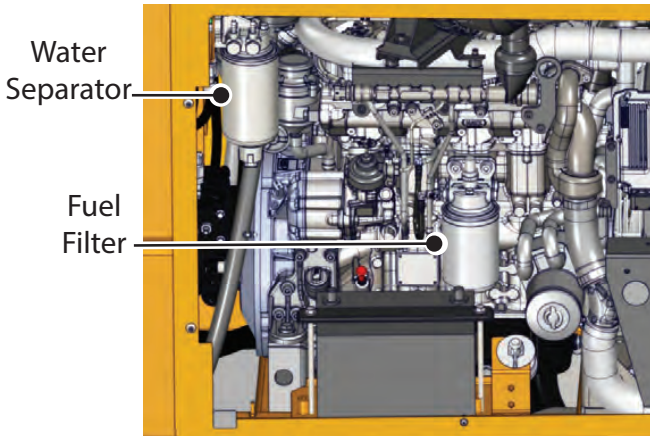


Figure 5-7. Fuel Filter and Water Separator Location

⚠WARNING **DO NOT change the fuel filter while the machine is running. DO NOT change the fuel filter in an area near an open flame or smoke while changing the fuel filter.**

Replace the fuel filter using the following general procedures:

1. Stop the engine. Put a container under fuel filters before removing the filter elements.

NOTE: Dispose of fuel filters in accordance with safe and lawful practices.

2. Wipe the area around the fuel filter elements and element mounting heads using a clean, lint-free cloth.
3. Use a filter removal wrench to loosen and remove fuel filter elements by turning in a counterclockwise direction. Drain and discard the removed elements.
4. Wipe the inside area of the filter heads with a clean, lint-free cloth. Fill the new fuel filter elements completely with clean fuel.
5. Put clean fuel onto the element rubber gaskets.
6. Install the new fuel filter elements onto the filter heads. Carefully tighten the elements (by hand only).

NOTICE **DO NOT overtighten the fuel filter elements onto the filter heads.**

7. Start the engine and check for ANY fuel leaks.

⚠WARNING **STOP the engine immediately if any fuel leakage is noted. DO NOT start the engine until the leakage problem is corrected.**

Priority Relief Valve

The priority flow divider in the hydraulic manifold is set to supply the power steering with approximately 4 GPM (15 LPM) of hydraulic flow. This flow goes to the steering circuit before any other circuit.

The Priority Relief Valve controls the maximum operating pressure for the power steering, brush lift and swing circuits. **(Figure 5-21)** This valve is located in the hydraulic pump attached to the rear of the hydrostatic pump on the engine flywheel.

These are signs the priority relief valve needs adjusting:

- Total or partial loss of steering functions or hard steering.
- Constant noise from the hydraulic pump when using steering or brush lift and swing.
- Hydraulic oil overheating.

⚠WARNING Only an experienced technician should service the hydraulic manifold (priority relief) as death or serious injury can result from improper valve adjustments. See your authorized LeeBoy/LB Performance dealer for assistance if experiencing steering function issues or hydraulic oil overheating.

To adjust the priority relief valve:

1. Set the park brake and ensure the transmission is in neutral. Use the foot brake as an extra precaution.
2. Plumb a 0 to 5000 PSI pressure gauge into the priority flow circuit.
3. Start the engine and allow the hydraulic oil to warm to at least 100° F (37.7° C).
4. Increase engine speed to 2500 RPMs.
5. Raise the brush until it stops, continuing to hold pressure to the lift cylinder until a gauge reading can be taken.
6. The pressure gauge should read 1500 +/- 50 PSI.
7. Adjust the relief pressure by removing the locknut and turning the adjusting screw:
   - Turn adjusting screw clockwise to increase pressure.
   - Turn adjusting screw counterclockwise to decrease pressure.

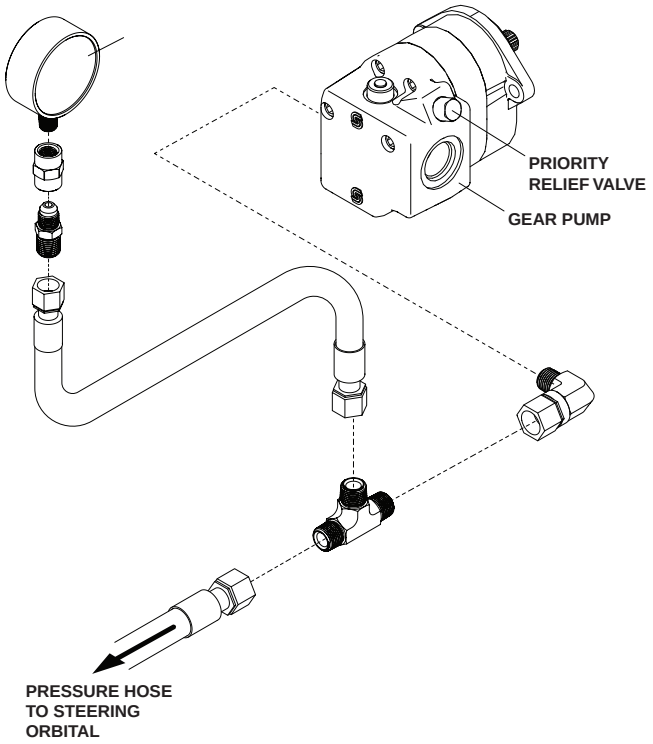


Figure 5-21. Hydraulic Manifold (Priority Relief)

5

TROUBLESHOOTING

Hydraulic Motor Installation Start-Up Procedure

Pre-Start

If the hydraulic system is down as a result of a major component failure:

1. Drain and clean the tank and system components (hoses, valves, fittings and cooler) to ensure it is free from metallic debris and other contamination. Failure to do so may result in damage to the pump(s) and/or other components on start-up.
2. Change all the filters.
3. Change the fluid. On large systems where the cost of changing the fluid may be prohibitive, the fluid should be flushed until a cleanliness level of ISO 4406 18/13 or better is achieved.

Installation and Start-Up

When installing hydraulic motors, it is important that the mounting flange of the motor makes full contact with the mounting surface of the application. Mounting hardware of the appropriate grade and size must be used:

1. Use Grade 8 socket-head capscrews to attach the motor.
2. Install lock washer over capscrew.
3. Apply Loctite 243 (blue) to the capscrew threads.
4. Install extra thick, hardened H-D thick washers over the capscrew.
5. Install the capscrew-hardened washer and lock washer in the SAE two-bolt flange.
6. Torque the capscrew to the wet torque value defined for the capscrew grade and size.

NOTICE **It is CRITICAL to use the correct mounting hardware.**

Hubs, pulleys, sprockets and couplings must be properly aligned to avoid inducing excessive thrust or radial loads. Although the output device must fit the shaft tightly, a hammer should never be used to install any type of output device onto the shaft. The port plugs should only be removed from the motor when the system connections are ready to be made.

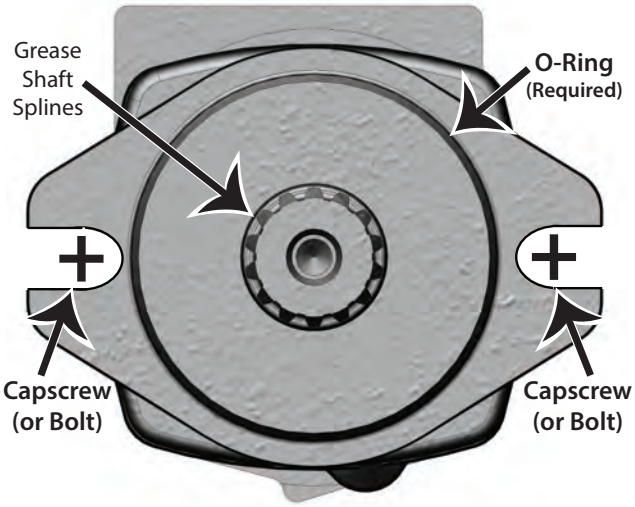


Figure 5-29. Hydraulic Motor Mount

To avoid contamination:

- Remove all matter from around the ports of the motor and the threads of fittings.
- Fill the case of the motor being used (piston-type, gear motor, gerotor motor, geroller motor or vane motor) with clean hydraulic fluid through the highest case drain port and connect the case drain line. Failure to do so will result in damage to the motor through inadequate lubrication on start-up.
- Units that are mounted vertically with the shaft up require special attention to ensure the fluid level in the case is high enough to lubricate the front shaft bearing(s).

Once all system connections are made, the motor should be run for 15 - 30 minutes at no-load and half-speed to bleed air from the hydraulic system.

WIRING SCHEMATIC (3 OF 4)

Schematic #1022225

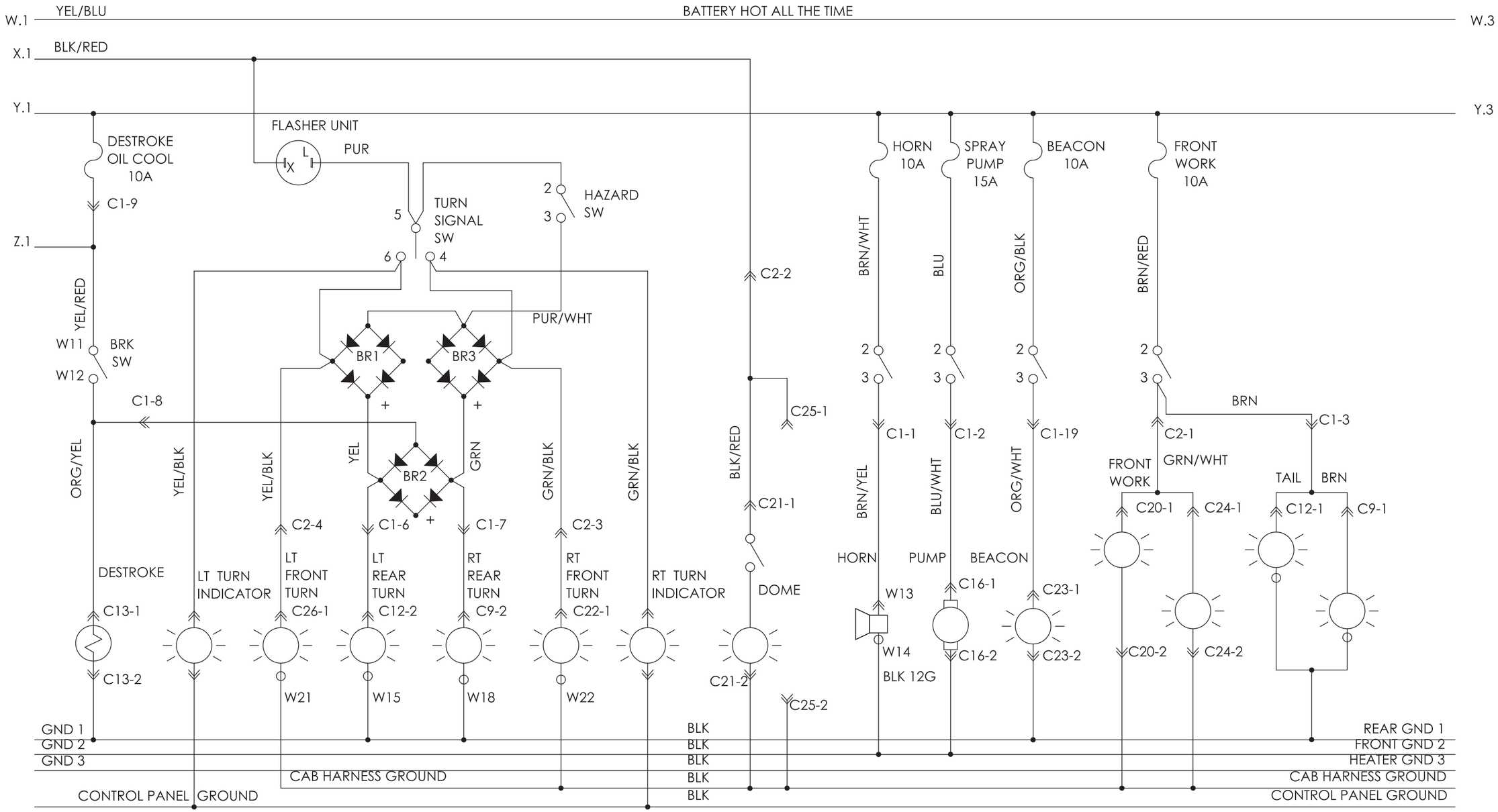


Figure 6-3. Wiring Schematic (3 of 4)

CAB HARNESS (1 OF 2)

Schematic #1016077

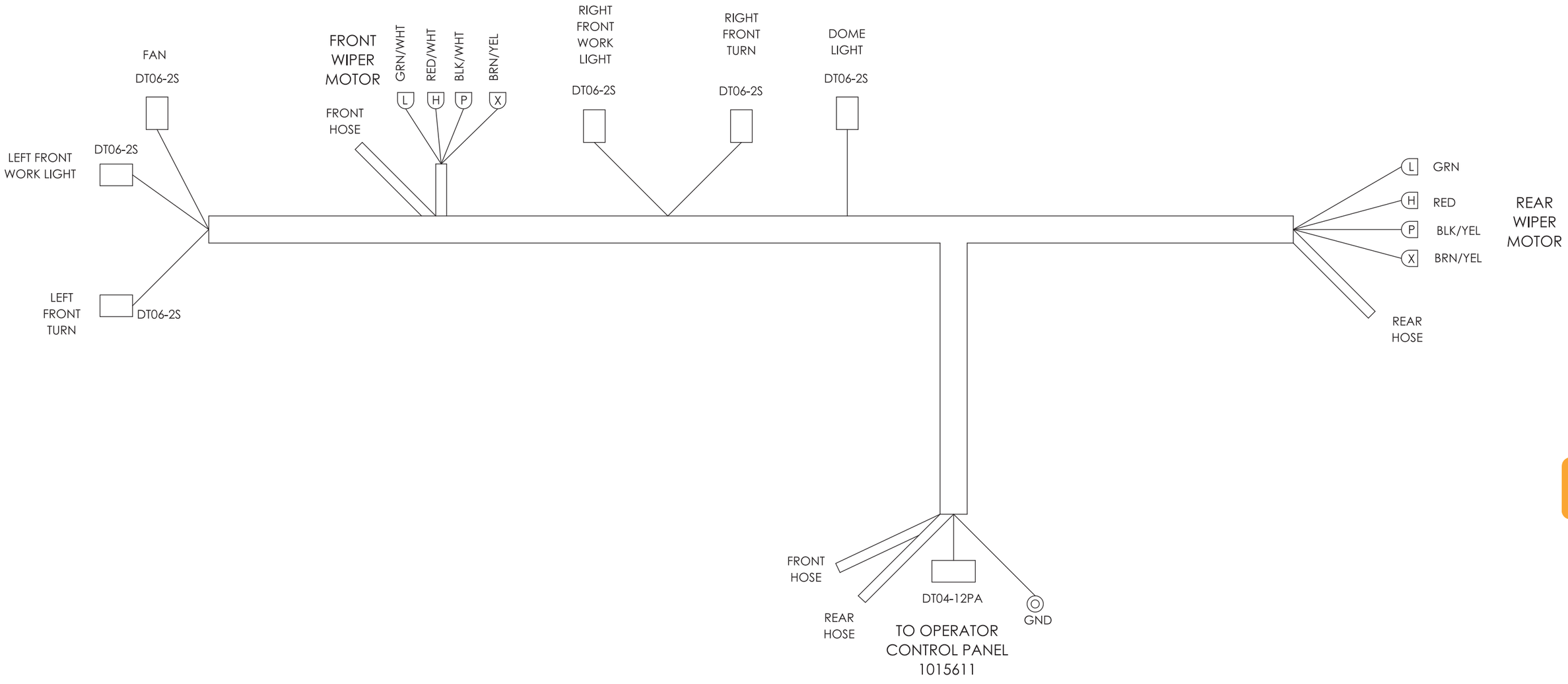
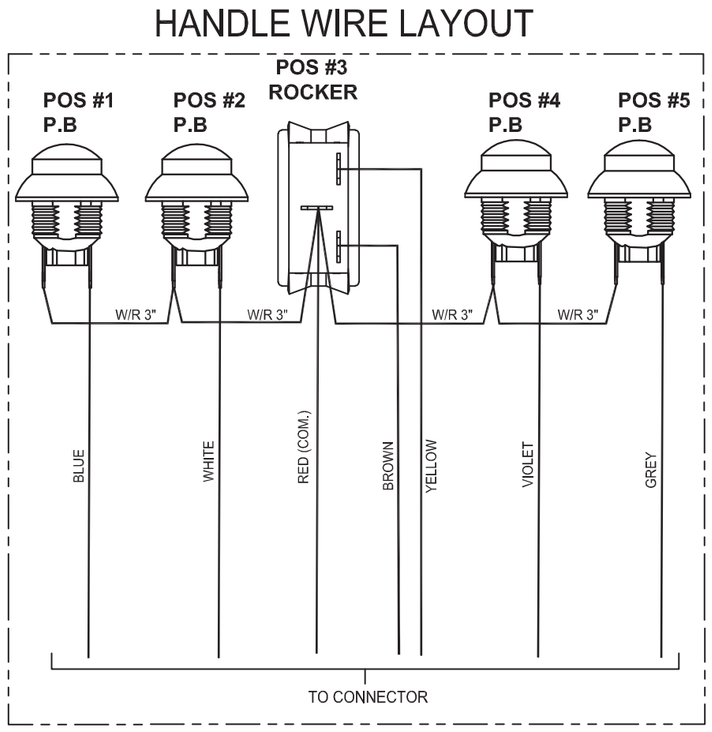
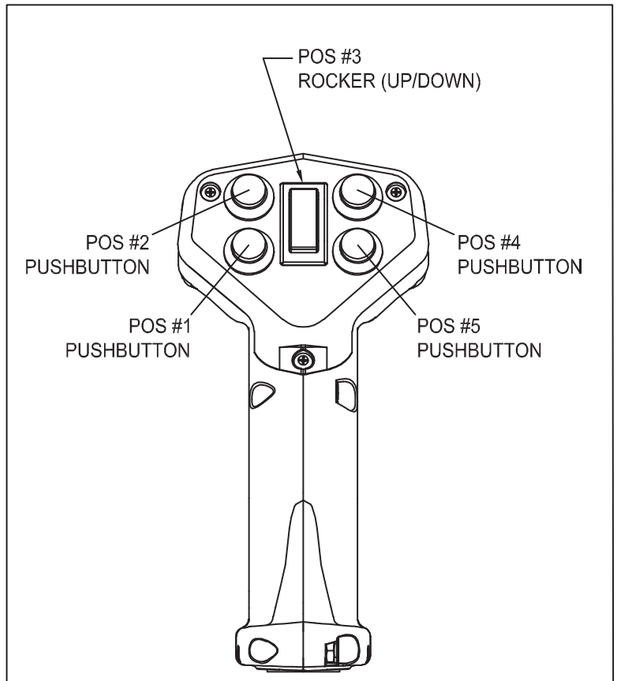


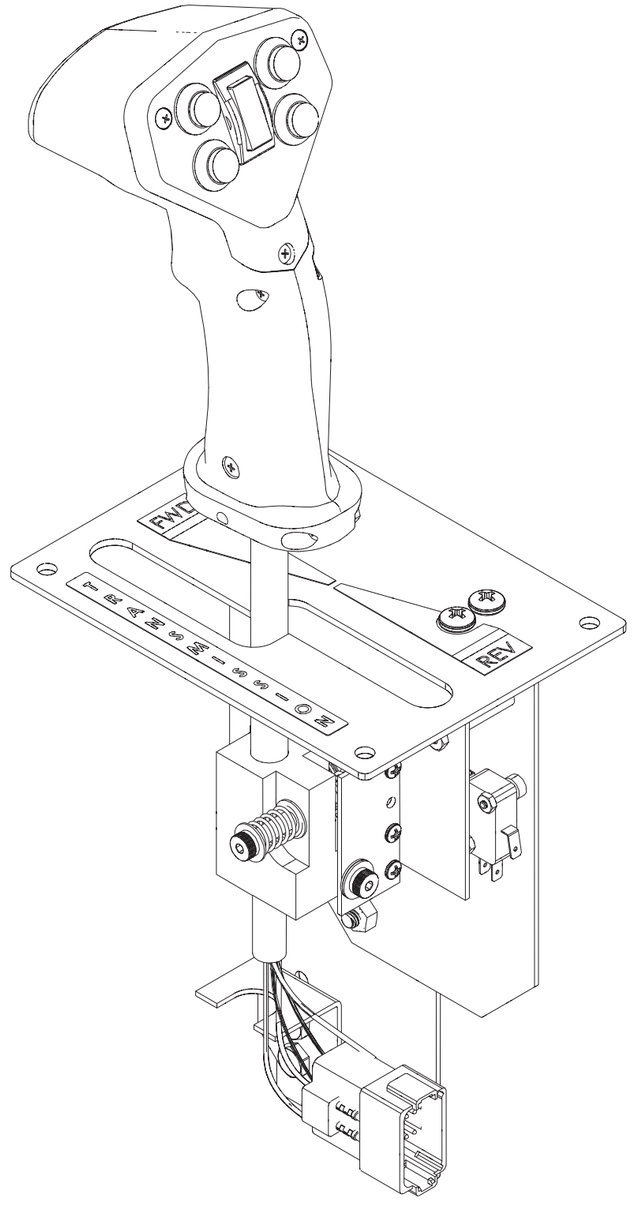
Figure 6-8. Cab Harness (1 of 2)

JOYSTICK, FNR, 4-BUTTON

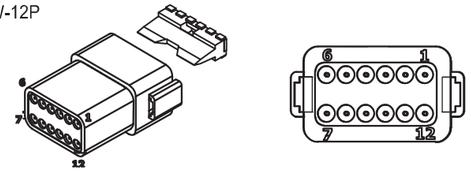
Schematic #1021787



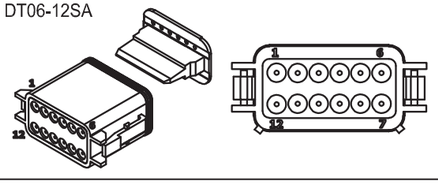




CONNECTOR - DT04-12PA
LOCK - W-12P



ONLY FOR CUSTOMER REFERENCE (MATING)
CONNECTOR - DT06-12SA
LOCK - W-12S



HANDLE WIRING (12" ±1") 12 POS.

COLOR	WIRE GAUGE	PINOUT	FUNCTION
RED	22AWG	PIN 1	**Joystick Power Input (Vbat to handle)**
ORANGE	22AWG	PIN 2	**Backup Switch Output (Micro N.O)**
GREEN	22AWG	PIN 3	**Backup Switch Power Input (Micro Com)**
SEAL PLUG	N/A	PIN 4	**NO CONNECTION**
SEAL PLUG	N/A	PIN 5	**NO CONNECTION**
SEAL PLUG	N/A	PIN 6	**NO CONNECTION**
GREY	22AWG	PIN 7	**Side Shift Left (POS #5)**
BLUE	**22AWG**	PIN 8	**Side Shift Right (POS #1)**
WHITE	**22AWG**	PIN 9	**Swing Left (POS #2)**
VIOLET	22AWG	PIN 10	**Swing Right (POS #4)**
BROWN	22AWG	PIN 11	**Up (POS #3 ROCKER UP)**
YELLOW	22AWG	PIN 12	**Float (POS #3 ROCKER DOWN)**

Figure 6-13. Joystick, FNR, 4-Button

Section 7

ILLUSTRATED PARTS LIST

Axle - Drive (Hub)

Item No	Part Number	Qty	Description	Remarks
1	1006327-01	1	Brake Disc	
2	1006327-12	1	Wheel Hub	
3	1006327-13	1	Bearing 32012X	
4	1006327-11	1	Oil Seal BASL 145X170x12	
5	1006327-14	1	Washer 10x16x1,5	
6	1006327-10	1	Bearing 30214	
7	1006327-15	1	Cap M10x1 DIN908	
8	1006327-02	1	Brake piston	
9	1006327-09	1	Spindle	
10	1006327-16	3	Planetary Gear Pin	
11	1006327-17	6	Planetary Gear Shim	
12	1006327-18	3	Planetary Gear	
13	1006327-19	51	Roller D.4x23.8 DIN5402	
14	1006327-07	1	Parallel Pin 5X12	
15	1006327-03	3	Parallel Pin 6X20	
16	1006327-06	1	Brake Ring	
17	1006327-04	1	Square Ring 237-993-9780	
18	1006327-05	1	Square Ring 238-956-9707	
19	1006327-08	1	Brake Bleeder M10x1	
20	1006327-20	6	Stud Bolt M18x1,5 10.9	
21	1006327-21	1	Cap	
22	1006327-22	1	Lock Washer	
23	1006327-23	1	Locknut M55x2	
24	1006327-73	12	Nut M18x1.5 MF	
25	1006327-74	12	Elastic Washer D. 18	

Brush - Drive

Item No	Part Number	Qty	Description	Remarks
1	28570	1	Drive Hub	
ASSY	1021148	1	Assembly, Brush Motor w/Adapters	Includes Items 2-6
2	1007301	1	Motor, Hydraulic, 29.1 CIR, Brush Drive	
3	1021693	1	Key, Square, 5/16 x 1.25	Included with Item 2
4	FS6801-12-10-NWO-FG	1	Adapter, Elbow, 90°, -12 ORFS/-10 O-Ring	
5	FS6500-12-12-FG	1	Adapter, Elbow, 90°, Swivel, -12 ORFS/-12 O-Ring	
6	FS6400-12-10-O	1	Adapter, Straight, -12 ORFS/-10 O-Ring	
7	100-8-20-24-5F	4	CSHH, 1/2-20 x 1.50, GR5, FT	
8	302-8	4	Washer, Lock, 1/2	
9	300-8	4	Washer, Flat, SAE, 1/2	
10	100-6-16-16-5F	1	CSHH, 3/8-16 x 1.00, GR5, FT	
11	302-6	1	Washer, Lock, 3/8	
12	300-6	1	Washer, Flat, SAE, 3/8	
13	28828	1	Idler Hub	
14	39138	1	Hub Assembly, Brush Drive	
15	1005200-115	1	Pin, Idler Shaft	
16	312030	2	Bearing, Flange, 4-Bolt, 1.50 w/Set Screw	
17	33684	2	Grease Fitting 1/8 NPT	
18	100-8-13-48-5	4	CSHH, 1/2-13 x 3.00, GR5	
19	204-8-13-5	4	Nut, Lock, Stover, 1/2-13, GR5	
20	100-5-18-20-5	4	CSHH, 5/16-18 x 1.25, GR5	
21	300-5	8	Washer, Flat, SAE, 5/16	
22	204-5-18-5	4	Nut, Lock, Stover, 5/16-18, GR5	

Cab - Details (1 of 2)

Item No	Part Number	Qty	Description	Remarks
1	1021679	1	Assembly, Mirror Cluster, RH	Includes Items 3-15
2	1021678	1	Assembly, Mirror Cluster, LH	Includes Items 3-15
3	852570	2	Mirror Head	(1) Per Side
4	100857	2	Mirror - ø7.50, Convex	(1) Per Side
5	856986	2	Brace, Mirror	(1) Per Side
6	856987	4	Mount, Light, Mirror	(2) Per Side
7	200-5-18-5	4	Nut, Hex, 5/16-18, GR5	(2) Per Side
8	302-5	8	Washer, Lock, 5/16	(4) Per Side
9	300-5	4	Washer, Flat, SAE, 5/16	(2) Per Side
10	100-8-13-36-5	2	CSHH, 1/2-13 x 2.25, GR5	(1) Per Side
11	300-8	4	Washer, Flat, SAE, 1/2	(2) Per Side
12	302-8	2	Washer, Lock, 1/2	(1) Per Side
13	200-8-13-5	2	Nut, Hex, 1/2-13, GR5	(1) Per Side
14	100-5-18-32-5	4	CSHH, 5/16-18 x 2.00, GR5	(2) Per Side
15	301-5	8	Washer, Flat, USS, 5/16	(4) Per Side
16	1012563	2	Light, LED Circular	(1) Per Side
17	1005941	2	LED Single Face Pedestal Lamp, Yellow	(1) Per Side
18	151170	1	Motor, Windshield Wiper	
19	81277	1	CSBHS, 1/4-20 x .875, SS	
20	35136-3	1	Plug, Hole, 3/8, Flush Mount, Plastic	
21	1021646	1	Arm, Wiper, 14"	
22	1021649	1	Blade, Wiper, 16"	
23	20190773	1	Horn, Low Pitch	
24	1017058	2	Cover, Side Skirt	(1) Not Shown
25	004684102	A/R	Safety Tread, 4" (Per Ft.)	
26	1021098	2	Fender, Side	(1) Not Shown
27	1015543	1	Rollbar, Complete	
28	101-16-8-48-8	4	CSHH, Heavy, 1-8 x 3.00, GR8	(2) Per Side
29	310-16	4	Washer, Hardened, SAE, 1	(2) Per Side
30	204-16-8-8	4	Nut, Lock, Stover, 1-8, GR8	(2) Per Side
31	1015784	2	Strap, Roll Bar Shipping	(1) Per Side
32	1015036-02	2	Decal - Danger, Roll-Over Hazard	Not Shown, (1) Per Side
33	1015546	6	Loom Clip, ø.50	Not Shown
GRP	1017232		Group - No Water (Standard)	Includes Items 34-37
34	1000884	2	Cover	(1) Per Side
35	100-5-18-16-5F	4	CSHH, 5/16-18 x 1.00, GR5, FT	(2) Per Side
36	302-5	4	Washer, Lock, 5/16	(2) Per Side
37	300-5	4	Washer, Flat, SAE, 5/16	(2) Per Side
38	1013231	1	Beacon Light, Amber, Strobe, LED	
39	1015786	1	Bracket, Beacon Light	
40	33963	1	Alarm, Back-Up	

Cab - Hydraulic Brakes

Item No	Part Number	Qty	Description	Remarks
1	1009383	1	Master Cylinder	
REF	100-6-16-48-5	2	CSHH, 3/8-16 x 3.00, GR5	Not Shown
REF	302-6	2	Washer, Lock, 3/8	Not Shown
REF	200-6-16-5	2	Nut, Hex, 3/8-16, GR5	Not Shown
2	1010648	1	Boot, Master Cylinder	
3	1009786	1	Pushrod, Brake	
4	28650SRV	1	Weldment, Brake Pedal	
5	100-8-13-60-5	1	CSHH, 1/2-13 x 3.75, GR5	
6	204-8-13-5	1	Nut, Lock, Stover, 1/2-13, GR5	
7	38277	1	Fitting, Master Cylinder Adapter	
8	35465-06	1	Grommet, .375 ID	
9	33953-30	3	Brake Line, .188 x 30.00	
10	33953-50	1	Brake Line, .188 x 50.00	
11	33953-20	1	Brake Line, .188 x 20.00	
12	33949	1	Fitting, Tee 03 IFF, Brass	
13	1009650	2	Adapter, Brass, 3/8-24 #3 INV FL x M10 x 1 Male	
14	39059	2	Fitting, Straight, 02MP-03IFF, Brass	
15	33557	1	Fitting, Tee 02FM, Brass	
16	1020243	1	Pressure Switch, NO, 30-120PSI, 1/8" Male NPT	

Tanks - Fuel

Item No	Part Number	Qty	Description	Remarks
ASSY	1021896	1	Assembly, Fuel Tank, 30 GAL	
1	1021897	1	Fuel Tank, 30 GAL	
2	1021910	1	Sending Unit, Fuel, 21"	
3	122-#10-32-10F	5	PHMS, Cross, #10-32 x .625, FT	
4	1006804	1	Access Port	
5	100-6-16-24-5	1	CSHH, 3/8-16 x 1.50, GR5	
6	6408-4-O	1	Adapter, Plug, O-Ring, -4	
7	6804-6-4 NWO	2	Adapter, Elbow, 90°, -6 JIC/-4 O-Ring	
8	6LOC-6RFJX	2	Fitting, Push Lok, -6 LOC/-6 RFJX	

Engine - Components

Item No	Part Number	Qty	Description	Remarks
GRP	1021576	1	Hatz Engine Assembly, T4F, No AC/Heat	
GRP	1021575	1	Hatz Engine Assembly, T4F, with AC/Heat	Option, Includes Items 2b, 14-19
1	1015794-22	1	Fan	
2a	1015794-07	1	Poly-V Belt - No AC	
2b	1015794-08	1	Poly-V Belt - With AC	
3	1015794-18	1	Water Pump w/Belt Pulley	
REF	1015794-19	1	Water Pump Gasket	Not Shown
REF	1015794-23	1	Phase Sensor	Not Shown
4	1015794-16	1	14V/110A Alternator	
5	1015794-17	1	Electric Fuel Pump	
6	1015794-05	1	Pre-Fuel Filter	
7	1015794-24	1	Oil Filler Cap	
8	1015794-25	1	Oil Filler Cap Seal	
9	1015794-27	1	Dipstick	
10	1015794-06	1	Fuel Filter	
11	1015794-15	1	12V Starter, 2.2KW	
12	1015794-01	1	Oil Filter	
13	1015794-26	2	Magnetic Drain Plug	
14	1015794-30	1	AC Compressor	Option, See Fig. 7-35
15	1015794-33	1	AC Main Mounting Bracket	Option, Not Shown, See Fig. 7-35
16	1015794-31	1	AC Belt Tensioner	Option, See Fig. 7-35
17	1015794-32	1	AC Belt Idler	Option, See Fig. 7-35
18	1015794-34	1	AC Support Bracket	Option, See Fig. 7-35
19	1015794-35	1	AC Support Strap	Option, See Fig. 7-35
20	-	1	12V Battery, 770 CCA, 950 CA, Group 34	Purchase Locally
21	150042SRV	1	Battery Hold Down Strap	
22	410050	1	Battery Hold Down Pad	
REF	800072	1	Battery Cable (+), 16", Eye/Post	Not Shown
REF	70437	1	Red Battery Boot	Not Shown
REF	800076	1	Battery Cable (-), 26", Eye/Post	Not Shown
23	100-6-16-144-5	2	CSHH, 3/8-16 x 9.00, GR5	
24	310-6	2	Washer, Hardened, SAE, 3/8	
25	301-6	2	Washer, Flat, USS, 3/8	
26	109740	1	Switch, Master Disconnect, Battery	
27	1015794-56	1	ECU	
REF	1015794-28	1	Fuse Holder	Not Shown
REF	1015794-29	1	Oil Seal - Intermediate Housing	Not Shown
REF	1015794-57	1	Hatz 4H50TIC Engine Manual	Not Shown

Hydraulics - Oil Cooler

Item No	Part Number	Qty	Description	Remarks
ASSY	1020497	1	Assembly, Oil Cooler w/Adapters	Includes Items 1-5
1	1015757	1	Cooler, Hydraulic Oil, 45,000 BTU	
2	1015163	1	Switch, Temperature, -8 MORB, 115°F	
3	FS6400-12-16-O	2	Adapter, Straight, -12 ORFS/-16 O-Ring	
4	FS6600-12-12-12-FG	1	Adapter, Branch Tee, Swivel, -12 ORFS	
5	1015822	2	Oil Cooler Mount	
6	100-6-16-16-5F	8	CSHH, 3/8-16 x 1.00, GR5, FT	
7	302-6	8	Washer, Lock, 3/8	
8	300-6	8	Washer, Flat, SAE,3/8	
9	200-6-16-5	4	Nut, Hex, 3/8-16, GR5	
10	F387TC06L9121212-44-AS-B-19-40	1	Hose Assembly - Filter To Cooler	Tag# 9
11	F387TCJCJ9121212-27	1	Hose Assembly - Cooler To Tank	Tag# 10
12	F387TCJCJ9060606-54	1	Hose Assembly - Cooler To Charge Pump Inlet	Tag# 7

Option - Air Conditioning/Heater (2 of 2)

Item No	Part Number	Qty	Description	Remarks
REF	1013712	1	Air Conditioner/Heater Kit	Includes 1 - 33
1	38653-04	1	Housing Weldment	
2	36745-17	2	Louver, 2.50: Round	
3	1017782	1	Filter Element, Cab Air	
4	38653-02	1	Cover, Air Filter	
5	36745-24	1	Top Cover	
6	36745-19	1	A/C Thermostat	
7	36745-18	1	Switch, 3-Speed Fan	
8	36749-03	1	Control, Rotary Cable	
9	REF	4	Base, Louver	
10	36745-16	4	Louver, 3” Round	
11	122-4-20-16F	8	PHMS, Cross, 1/4-20 x 1.00, FT	
12	38525-22	3	Panel Nut	
13	37645-21	3	Knob, Fan Switch	
14	100-4-20-16-5F	8	CSHH, 1/4-20- x 1.00, GR5, FT	
15	300-4	16	Washer, Flat, SAE, 1/4	
16	302-4	8	Washer, Lock, 1/4	
17	200-4-20-5	8	Nut, Hex, 1/4-20, GR5	
18	36745-26	1	Blower Plate	
19	35465-06	2	Grommet	
20	36745-13	1	Blower Assembly	
21	36749-02	1	Heater Coil	
22	38653-07	1	Coil Bracket (Right)	
23	38653-06	1	Coil Bracket (Left)	
24	38653-05	1	Evaporator Coil Assembly	
25	36745-25	1	Interior Access Cover	
26	36745-36	2	Fastener, Fractional Turn	
27	36745-29	1	Cover, Recirculation	
28	36745-30	1	Holder, Filter	
29	38525-34	2	Grommet	
30	38606-15	1	Grommet	
31	38606-16	1	Grommet	
REF	36745-34	1	Switch, Low Pressure	Not Shown

Option - Stereo System

Item No	Part Number	Qty	Description	Remarks
OPT	1016867		Option - Radio/CD w/Speakers & Antenna	
1	1011314	1	Radio, AM/FM/CD w/Auxiliary Input & Speakers	
2	1008092	1	Mount, Weldment, Radio/Speaker	
3	1002021	1	Antenna, AM/FM, Flexible	
4	35465-07	1	Grommet, Insulation, .75 ID x 1.00 OD x .063	
5	122-#10-24-12F	8	PHMS, Cross, #10-24 x .75, FT	
6	300-#10	8	Washer, Flat, SAE, #10	
7	303-#10	8	Washer, Lock, External Tooth, #10	
8	209-#10-24	8	Nut, Hex, Machine, #10-24	
9	100-4-28-12-5F	4	CSHH, 1/4-28 x .75, GR5, FT	
10	302-4	5	Washer, Lock, 1/4	
11	200-4-20-5	1	Nut, Hex, 1/4-20, GR5	
12	300-4	4	Washer, Flat, SAE, 1/4	
13	35136-6	2	Plug, Hole, ø.75, Flush Mount, Plastic	Not Shown

Description	Part No.	Item No.	Figure No.
Assembly, Motor w/Adapters	1020559	7	7-1
Assembly, Motor w/Adapters	1020559	ASSY	7-5
Assembly, Needle Valve w/Adapters	1020371	ASSY	7-20
Assembly, Oil Cooler w/Adapters	1020497	ASSY	7-32
Assembly, Pump Drive Plate	1015794-52	20	7-28
Assembly, Pumps w/Adapters	1021146	ASSY	7-28
Assembly, Rear Pivot	1021225	1	7-10
Assembly, Return Filter w/Adapters	1020370	ASSY	7-23
Assembly, Seat, Black w/Armrest	360010B	1	7-19
Assembly, Side Shift Cylinder Valve w/Adapters	1021127	ASSY	7-31
Assembly, Side Shift Cylinder w/Adapters	1021117	ASSY	7-10
Assembly, Side Shift Cylinder w/Adapters	1021117	15	7-31
Assembly, Solenoid & Check Valve w/Adapters	1022460	ASSY	7-34
Assembly, Spray Bar	1021600	ASSY	7-11
Assembly, Steering Axle	1009423	ASSY	7-6
Assembly, Steering Motor w/Adapters	1021699	ASSY	7-17
Assembly, Swing Cylinder w/Adapters	1020566	ASSY	7-9
Assembly, Swing Cylinder w/Adapters	1020566	20	7-29
Assembly, Tilt Steering	1021625	ASSY	7-17
Assembly, Tire & Wheel	1009432	4	7-43
Assembly, Tire & Wheel, 15x6	1009432	8	7-1
Assembly, Vandalism Cover, Spare Tire	1017980SRV	1	7-43
Aux Pump to Brush Speed Valve 1	F387TCJCJ9121212-48	9	7-33
Aux Pump to Steering Motor In	F387TCJCJC060606-89	24	7-17
Aux Pump to Steering Motor In	F387TCJCJC060606-89	8	7-33
Axle, Drive, Comer 068	1016655	1	7-1
-B-			
Baffle, Radiator, Rubber	1015819	25	7-24
Ball Joint - Left	36757	34	7-6
Ball Joint - Right	36756	32	7-6
Ball Joint, Steering Cylinder End	36755	24	7-6
Ball Valve, 1/2 (Brass)	32874	4	7-36
Bar, Support, Brush Frame	1021123	14	7-9
Base, Louver	REF	9	7-37
Battery Cable (-), 26", Eye/Post	800076	REF	7-27
Battery Cable (+), 16", Eye/Post	800072	REF	7-27
Battery Hold Down Pad	410050	22	7-27
Battery Hold Down Strap	150042SRV	21	7-27

Description	Part No.	Item No.	Figure No.
Hose Assembly - Motor Valve B to Bulkhead -12 LH	F387TCJCJC121212-52	14	7-30
Hose Assembly - Motor Valve B to Bulkhead -12 LH	F387TCJCJC121212-52	9	7-35
Hose Assembly - Motor Valve to Filter	F387TCJCJ7121212-69-AS-B-19-65	17	7-30
Hose Assembly - Motor Valve to Filter	F387TCJCJ7121212-69-AS-B-19-65	12	7-35
Hose Assembly - Motor Valve to Needle Valve	F387TCJCJ9060606-35	20	7-34
Hose Assembly - Needle Valve to Solenoid Valve	F387TCJCJ9060606-54	39	7-20
Hose Assembly - Needle Valve to Solenoid Valve	F387TCJCJ9060606-54	21	7-34
Hose Assembly - Pump A to Motor B	F797TCJCJC161616-45	1	7-33
Hose Assembly - Pump B to Motor A	F797TCJCJ9161616-50	2	7-33
Hose Assembly - Pump Case Outlet to Tank	F387TCJCJ9121212-19	6	7-33
Hose Assembly - Pump Gage Port to Solenoid Valve 3	F387TCJCJ9060606-26	3	7-33
Hose Assembly - Pump Gage Port to Solenoid Valve 3	F387TCJCJ9060606-26	6	7-34
Hose Assembly - Pump Servo Gage M4 to Destroke Valve 1	F387TCJCJC060606-16	4	7-33
Hose Assembly - Pump Servo Gage M4 to Destroke Valve 1	F387TCJCJC060606-16	14	7-34
Hose Assembly - Pump Servo Gage M5 to Destroke Valve 2	F387TCJCJC060606-28	5	7-33
Hose Assembly - Pump Servo Gage M5 to Destroke Valve 2	F387TCJCJC060606-28	13	7-34
Hose Assembly - Side Shift Cylinder Valve 2 to Cylinder Cap End	F387TCJCJC060606-23	13	7-31
Hose Assembly - Side Shift Cylinder Valve 4 to Cylinder Rod End	F387TCJCJ9060606-30	14	7-31
Hose Assembly - Solenoid Valve 1 to Motor X1	F387TCJCJC060606-67	7	7-34
Hose Assembly - Solenoid Valve 2 to Tank	F387TC0606060606-20	8	7-34
Hose Assembly - Solenoid Valve to Motor Valve	F387TCJCJ9060606-35	16	7-30
Hose Assembly - Solenoid Valve to Motor Valve	F387TCJCJ9060606-35	11	7-35
Hose Assembly - Steering Motor Aux to Side Shift Cylinder Valve 3	F387TCJCJ9060606-67	11	7-31
Hose Assembly - Steering Motor Out to Motor Valve	F387TCJCJ9060606-57	21	7-17
Hose Assembly - Steering Motor Out to Motor Valve	F387TCJCJ9060606-57	18	7-30
Hose Assembly - Steering Motor Out to Motor Valve	F387TCJCJ9060606-57	13	7-35
Hose Assembly - Steering Motor RT to Steer Cylinder	F387TCJCJ9060606-137	22	7-17
Hose Clamp, ø10-16mm	1015794-16	5	7-25
Hose Clamp, ø12.8	1015794-39	15	7-25
Hose Clamp, ø12-22mm	1015794-41	12	7-25
Hose Clamp, ø25-40mm	1015794-42	7	7-25
Hose Clamp, ø40-60mm	1015794-47	9	7-25
Hose Kit, Hydraulic, Basic Tractor	1022714	KIT	7-30
Hose Kit, Hydraulic, Basic Tractor	1022714	KIT	7-33
Hose Kit, Hydraulic, Basic Tractor	1022714	KIT	7-35
Hose, 08, Push-On, 250 PSI, Black	6352	16	7-11
Hose, 08, Push-On, 250 PSI, Black	6352	21	7-12
Hose, Windshield Washer, ø.188 ID (Per Foot)	35550	REF	7-39
Housing Weldment	38653-04	1	7-37