Derecho

PROPANE RIDE-ON FLOOR SCRAPER

Rev 03.2024

OPERATIONS AND MAINTENANCE MANUAL
MUST BE READ BEFORE OPERATING SCRAPER



TABLE OF CONTENTS

DERECHO

SECTION 1	**GENERAL DESCRIPTION**
SECTION 2	**SPECIFICATIONS**
SECTION 3	**SAFETY AND PRECAUTIONS**
SECTION 4	**INSTRUMENTS AND CONTROLS**
SECTION 5	**START-UP AND BREAK-IN**
SECTION 6	**MACHINE OPERATION**
SECTION 7	**PREVENTIVE MAINTAINANCE**
SECTION 8	**ENGINE**
SECTION 9	**FRAME & COWLINGS**
SECTION 10	**HYD AND DRIVE COMPONENTS**
SECTION 11	**STEERING JOYSTICK AND CABLES**
SECTION 12	**PROPANE PARTS**

SECTION 1

GENERAL DESCRIPTION

Derecho

A propane engine powers the Derecho, driving a tandem hydrostatic pump system, creating a (skid-steer) zero turn radius drive train. Surface covering and coatings are removed by lowering a weighted blade onto the surface and moving forward under a high torque drive system. A flexible sharpened blade conforming to the floor surface then removes the surface coating. The weight of the machine holds the blade firmly to the floor and does not allow the blade to lift or ride over well-adhered surface coating material, thus lifting the floor coating.

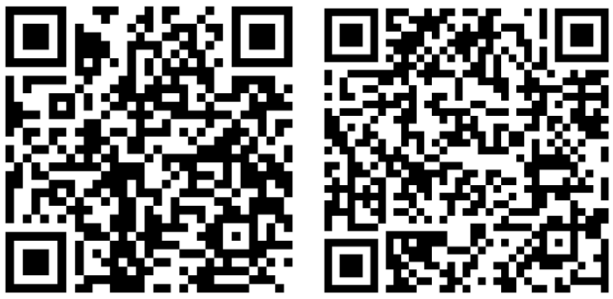
SPECIFICATIONS	
Weight	**2,275 lbs**
Removable weight	**950 lbs**
Machine without weights	**1,325 lbs**
Height	**53 inches**
Width	**24 inches**
Length	**50 inches**
Engine	**Propane**
Max Ground Speed	**335 feet per minute**



SAFETY WARNING

CARBON MONOXIDE can cause severe nausea, fainting or death. Do not operate engine in closed or confined area without proper ventilation! A Personal CO (Carbon Monoxide) monitor is required when operating scraper inside.

Links to 2 CO Monitor Options:



SECTION 3

SAFETY AND PRECAUTIONS

Before operation of the **Derecho** please read the entire operation and safety manual with complete understanding of the safety section. If you have any questions on safety and precautions please call 1-866-636-7763.

There are several advantages to an effective safety program that include: lower operating costs, lower workers' compensations, less work time lost, high employee morale, and overall less problems. No one can work safely without knowing what precautions to take to insure personal safety. Operators must know what equipment to wear, which job practices are safe and which are not, and must be aware of what hazards are possible in the work area. A regular schedule of Preventive Maintenance on your equipment is the best protection against unpleasant surprises that slow production and sometimes result in injuries. Here are a few suggested safety tips.

1. The first step before any maintenance or inspection takes place should be: stop the engine and disconnect the battery terminals.
2. Wear proper eye and ear protection, heavy-duty work gloves, and closed toe shoes or boots.
3. Practice good Preventive Maintenance.
4. Practice good housekeeping.
5. Allow the **Derecho** to come to a complete stop, turn off engine, and chock rear wheels before performing any maintenance procedures.
6. Replace worn parts when necessary.
7. Do not reach into blade or control arm areas while machine is in operation.
8. Do not attempt to open any access door until the machine has come to a complete stop and the engine and propane are turned off.
9. Be sure a qualified electrician does all electrical inspections or changes.
10. Loose surface coating can cause dangerous footing. Always be alert and careful.
11. After replacing parts, be sure all tools used are removed from the machine. Be sure all bolts and nuts are tight. The loose connection of a rotating part could cause the part to fly off with explosive force, causing serious damage to the equipment and possible injury to the operator.
12. Always lower the blade to the ground when the machine is unoccupied by the operator. Serious bodily injury may result if arms are not in the lowered position when not occupied.
13. Never allow unauthorized personnel or the general public into the work area.
14. The work area should be barricaded off to adequately keep all untrained persons out of the work site. If an unauthorized person enters the work area, stop the machine immediately and do not restart the machinery until they have left the work area.
15. Always allow a 200-foot buffer safety zone around all surface preparation activity.

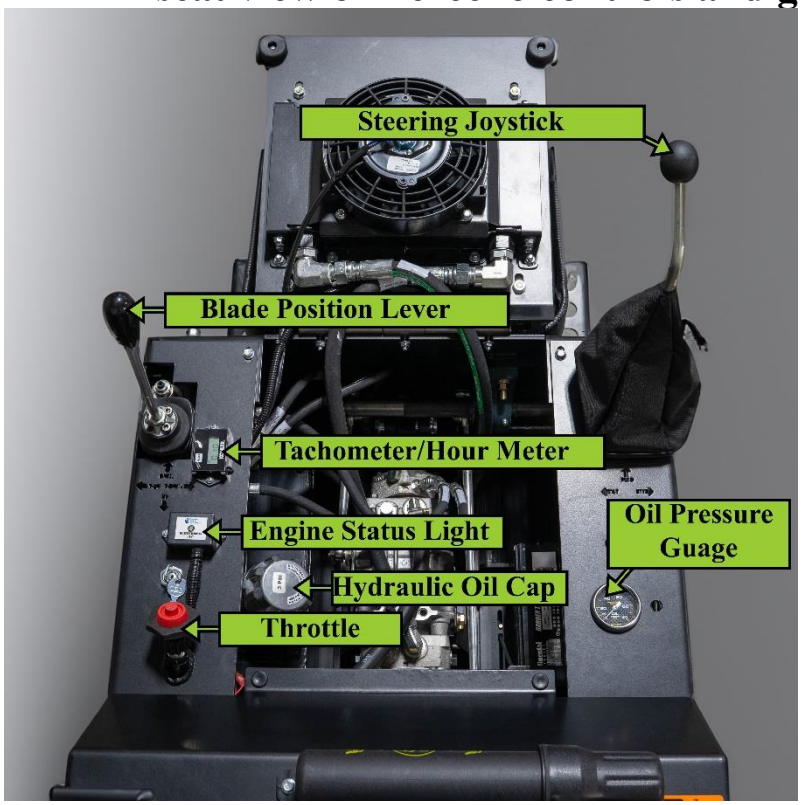
16. Always operate the Derecho in a well-ventilated area, with an approved OSHA air-monitoring system in place and a personal CO monitor.
17. Read and obey all safety labels placed on the machinery at all times. If safety labels have been destroyed or removed, call 1-866-636-7763 for free replacement prior to operating the machinery.
18. The **Derecho** is **not a toy.** All operators must be over 18 years of age, must have read and reviewed the safety and procedures manual before operating the machinery.
19. The **Derecho** is designed for surface preparation *ONLY.* It is not intended for towing, pushing, or any other procedure not described in this manual.
20. Propane systems should be checked and documented twice yearly by a certified propane professional for leaks or damaged parts. If a propane leak is detected, leave the machine immediately and seek assistance from a propane professional. Do not use or restart machinery until it is determined safe.
21. Horseplay and or high speed cornering is not allowed with this machine and could cause rollover resulting in injury or death.
22. No smoking or open flame is allowed while machinery is running or within 50 feet of the machine.
23. Operator must be sober, not under the influence of drugs or medication, and under full control of all bodily senses while operating this or any machinery.
24. When transporting the **Derecho** it is recommended to use a transport dolly. This procedure spreads the weight of the machine over a larger surface area.
25. All **Derecho** operators must receive safety training before performing any functions with the machine. **OEM Products** offers a free safety, maintenance, and orientation seminar at its facility in Oklahoma City, OK.

New owners and operators are advised to call 1-866-636-7763 for an appointment.

SECTION 4

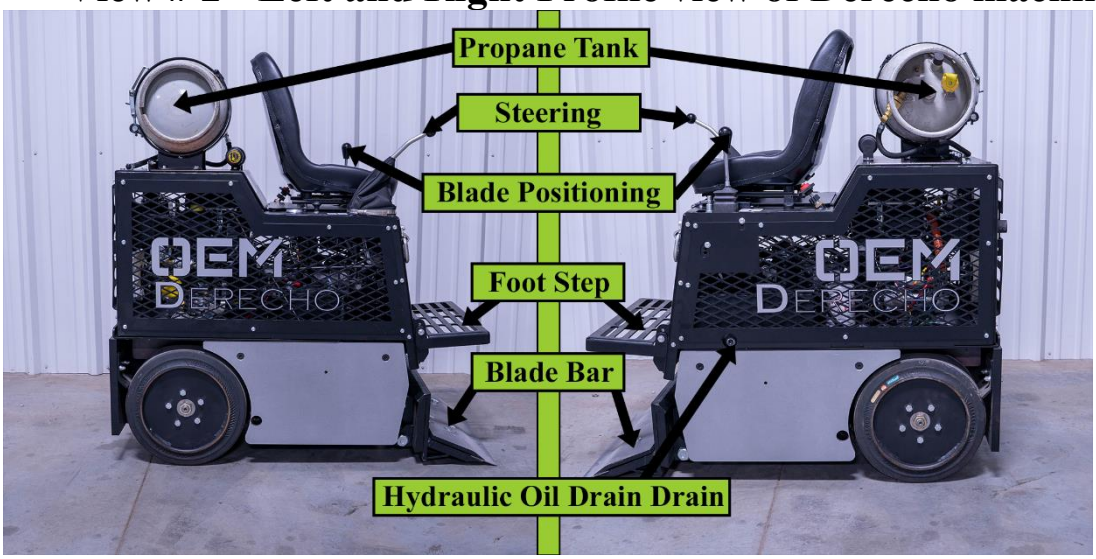
Instruments and Controls

View # 1 – In-seat view of Derecho controls and gauges



LEFT AND RIGHT PROFILE DETAIL

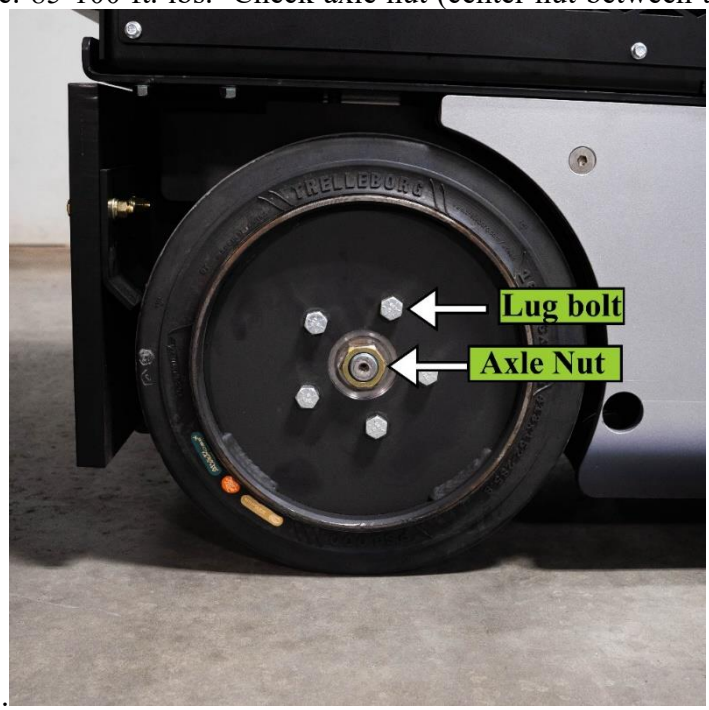
View # 2 - Left and Right Profile view of Derecho machine



SECTION 5
Derecho
START-UP AND BREAK-IN

The **Derecho** has been safety tested and run at our factory prior to shipping. The factory topped off all fluid levels; however, the propane tank shipped empty. Here is a recommended checklist of things to do before operating the **Derecho**:

1. Raise engine covers and check oil level.
2. Check air cleaner filter element for snug fit.
3. Check all battery cable connections for tightness.
4. Inspect for major hydraulic oil leaks. Snug hydraulic fittings using two wrenches. Use caution not to over tighten.
5. Fill propane tank.
6. Mount propane bottle in brackets, be sure bracket alignment pin corresponds with alignment slot on bottle.
7. Attach propane hose to bottle by attaching to the handle valve. Snug fit the female connector attached to the hose and slowly turn valve on. You should hear gas briefly enter the propane hose. Immediately check for propane leaks with soapy water solution. If leak persists after retightening the knurled female connector: **STOP**, turn off the bottle at valve and seek assistance from a certified propane professional. Serious damage and or an explosion could occur.
8. Check lug bolt torque: 85-100 ft. lbs. Check axle nut (center nut between the lug bolts) torque: 200 ft. Lbs.



9. Return all engine guards to proper position.
10. Operator must be in seat before engine will start
11. Crank the engine by turning the key to the on position. The engine will crank for 3 to 5 seconds while the propane enters the carburetor. If the engine does not start, turn the key off, wait 1 minute and try again. If again unsuccessful, check propane valve to be sure it is open. If still unsuccessful, turn off propane valve and seek assistance or call 1-866-636-7763.
12. Operation of the machine can continue when the engine is warm and running with the operator safely in the seat.

Please turn to **Section 6** for Machinery Operation.

SECTION 6
MACHINERY OPERATION

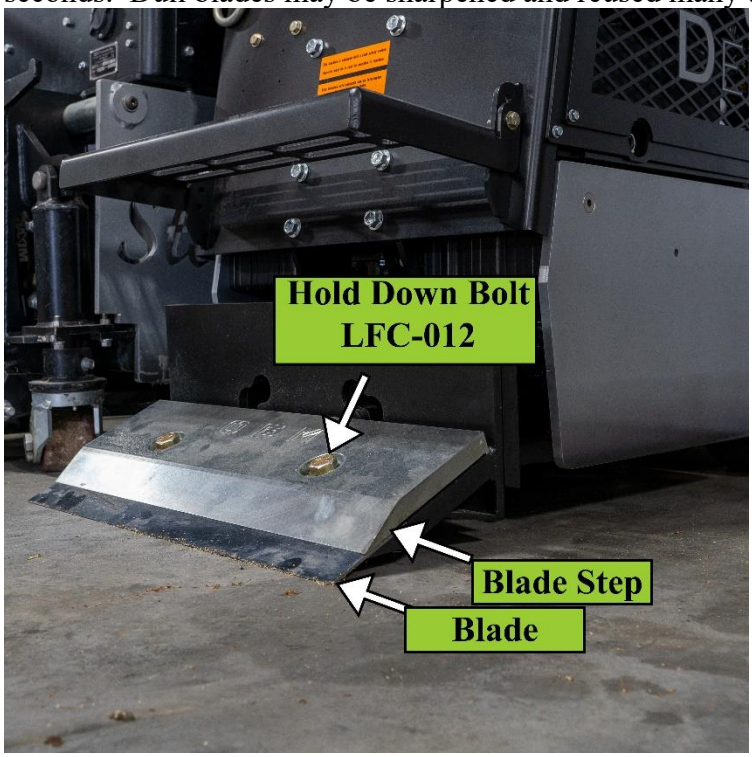
Before reading the machinery operation section, new operators should familiarize themselves with VIEW#1 **In-seat view** and VIEW#2 **Left and Right side detail**. These pictures show the basic parts of the Derecho.

To move the machine: Using the right hand, slowly move the **Steering Joystick** in the desired direction. Forward and left moves the machine to the left, backward and right reverses the machine to the right. It is just that simple to drive. The amount of movement on the joystick, and the level of the throttle, controls the speed of the **Derecho**.

Throttle control is on the left side of the seat, taking the unit from idle to 3400 RPM. The optimum RPM is 2600 to 3200 RPM. To change the RPM of the engine turn throttle knob clockwise to lower RPM and counterclockwise to raise RPM.

The left joystick lever positions the blade to the surface. Moving the lever forward and backward moves the blade up and down. Left and right movement changes the blade pitch. To access the hydraulic reservoir: Lift up on the bottom of the seat

To change scraping blades: Stop engine. Loosen the smaller **Clamp Bolts** at the rear of the blade holder using a ¾" open-end wrench. Slide the dull blade out. Loosen the **Hold-Down Bolts** if necessary to fit the replacement blade against the **Blade Step**. Retighten the **Hold-Down Bolts** by hand and then retighten **the Clamp Bolts** with your wrench. Lower the blade and resume scraping. With a little practice, you should be able to change the blades in 15 seconds. Dull blades may be sharpened and reused many times.

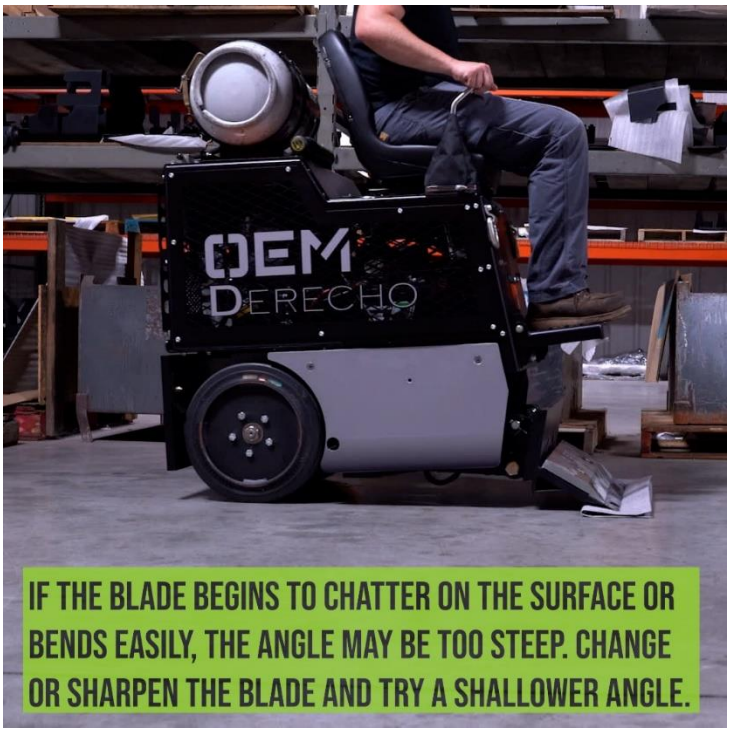


Operators should lower the blade by pressing the left-hand lever forward each time they get off the machine. This safety practice eliminates possible bodily injury from running into the blade or lowering of the blade by unauthorized operators.



The **Caster Wheel** should not be in contact with the floor while scraping. The caster wheel will lift off the floor when the blade is lowered. Caster contact with the floor while scraping will negatively affect scraper productivity and steering. Caster wheel contact with hard debris while scraping can damage the caster wheel and shorten its life.

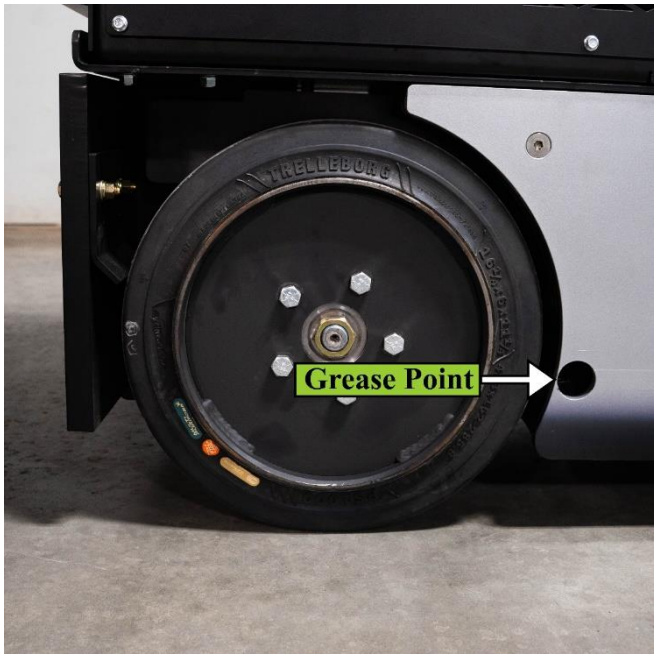




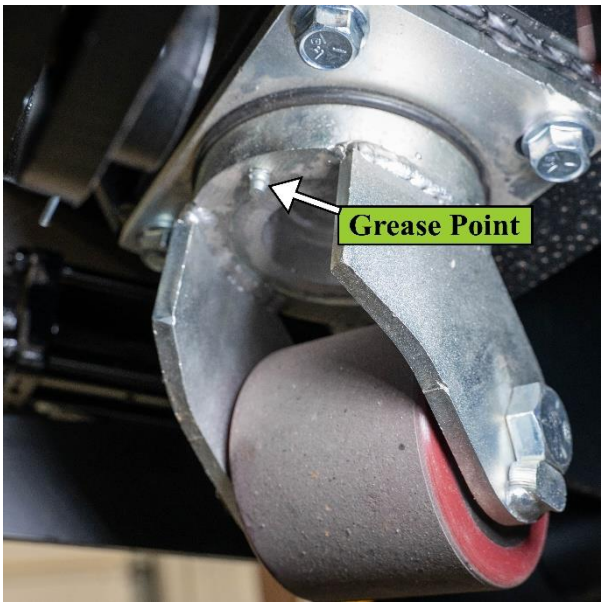
Video on how to select the correct blade angle

.

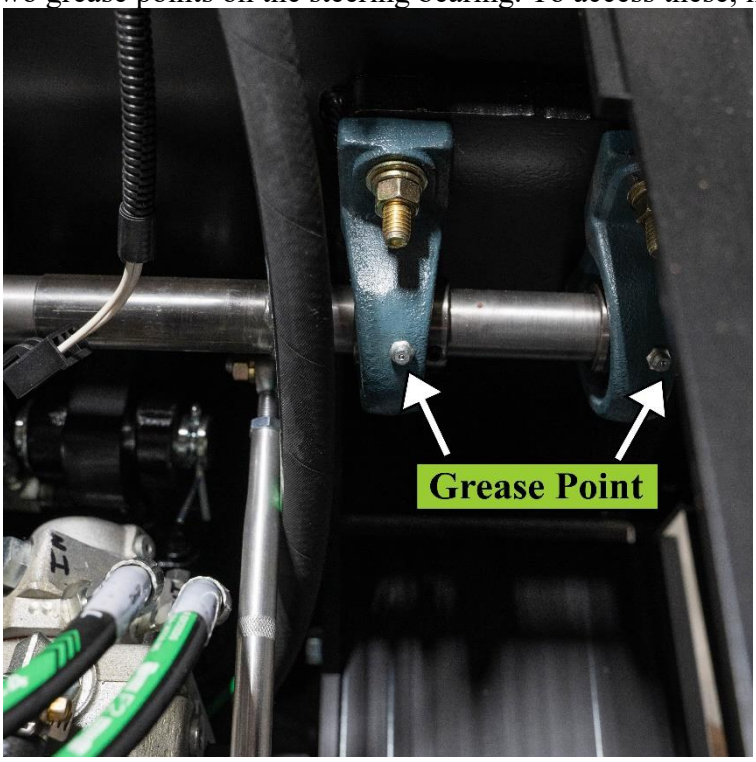
There are **seven** important grease points on the Derecho. A newer model Derecho will have a hole in the side weight cover for access to the grease zerk on the Derecho arms. If your Derecho does not have the access hole then simply remove the 2 bolts holding the side cover on for easy access.



There is at least one grease point on the main caster wheel. One for the swivel action and - depending on the date of manufacture - one of the caster wheel axel.



There are two grease points on the steering bearing. To access these, lift the seat.



The final and **most important** grease point is the one on the stub shaft. It is critical to pump one pump of grease into it **once every 100 hours** of machine operation.



SECTION 7

Preventive Maintenance

FOLLOW KOHLER OR VANGUARD SUGGESTED SCHEDULE FOR ENGINE MAINTENANCE

DAILY MAINTENANCE

- CHECK ENGINE OIL LEVEL
- CHECK HYDRAULIC OIL LEVEL
- INSPECT FOR HYDRAULIC OIL LEAKS
- INSPECT FOR PROPANE SYSTEM LEAKS
- SERVICE ENGINE AIR CLEANER
- RETORQUE WHEEL LUG BOLTS AND AXLE NUT
- INSPECT AND TIGHTEN ALL COWLING BOLTS

20 HR MAINTENANCE

- REPLACE ENGINE AIR CLEANER

100 HR MAINTENANCE

- GREASE CASTER BEARINGS
- GREASE BLADE ARMS
- 1 PUMP OF GREASE FOR THE STUB SHAFT
- GREASE STEERING BEARINGS
- INSPECT ALL BOLTS AND NUTS AND TIGHTEN IF NEEDED

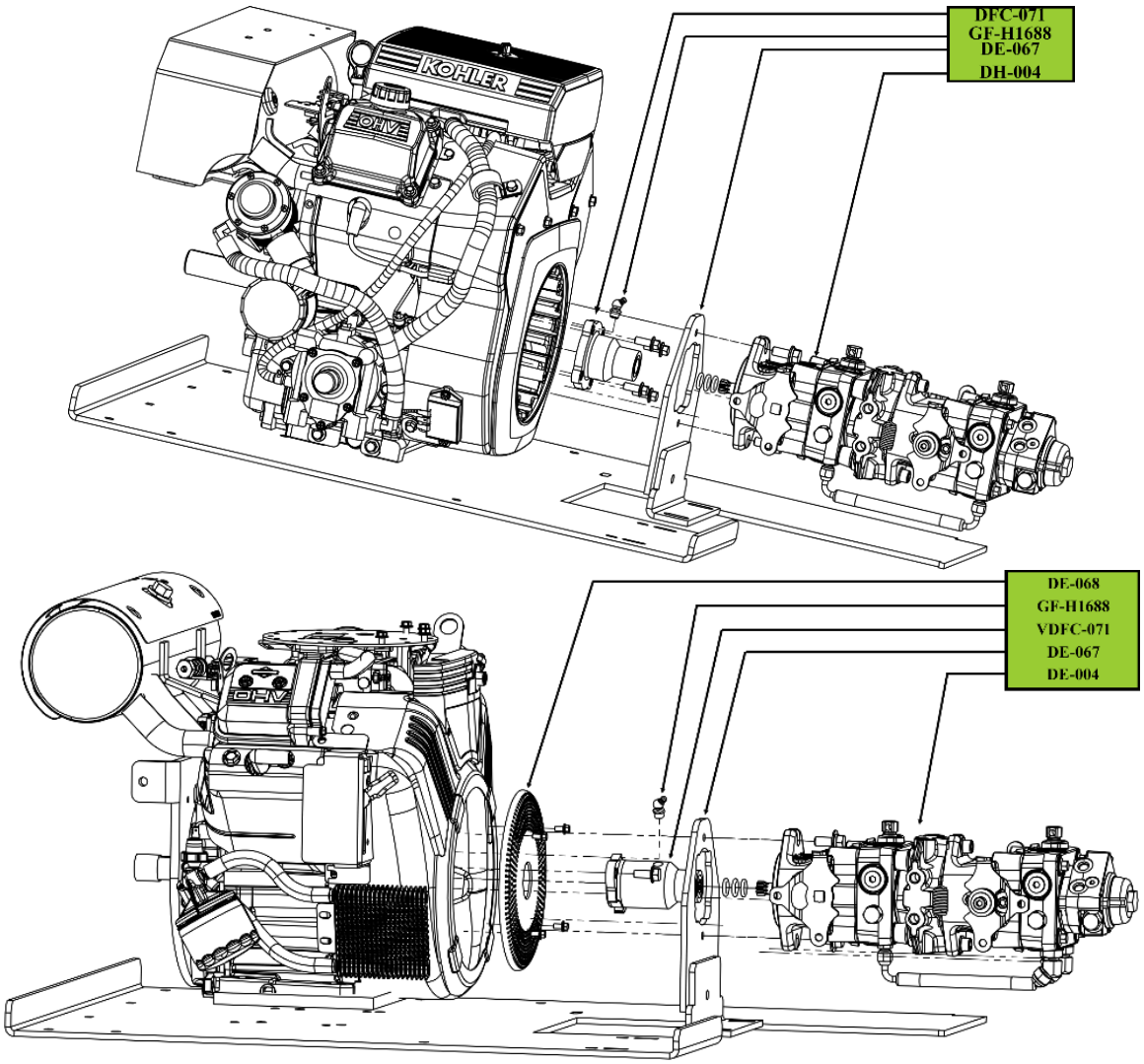
250 HR MAINTAINANCE

- CHANGE HYDRAULIC OIL WITH:
  - A Synthetic 15w-50 Motor Oil
- CHANGE HYDRAULIC OIL FILTERS

SECTION 8

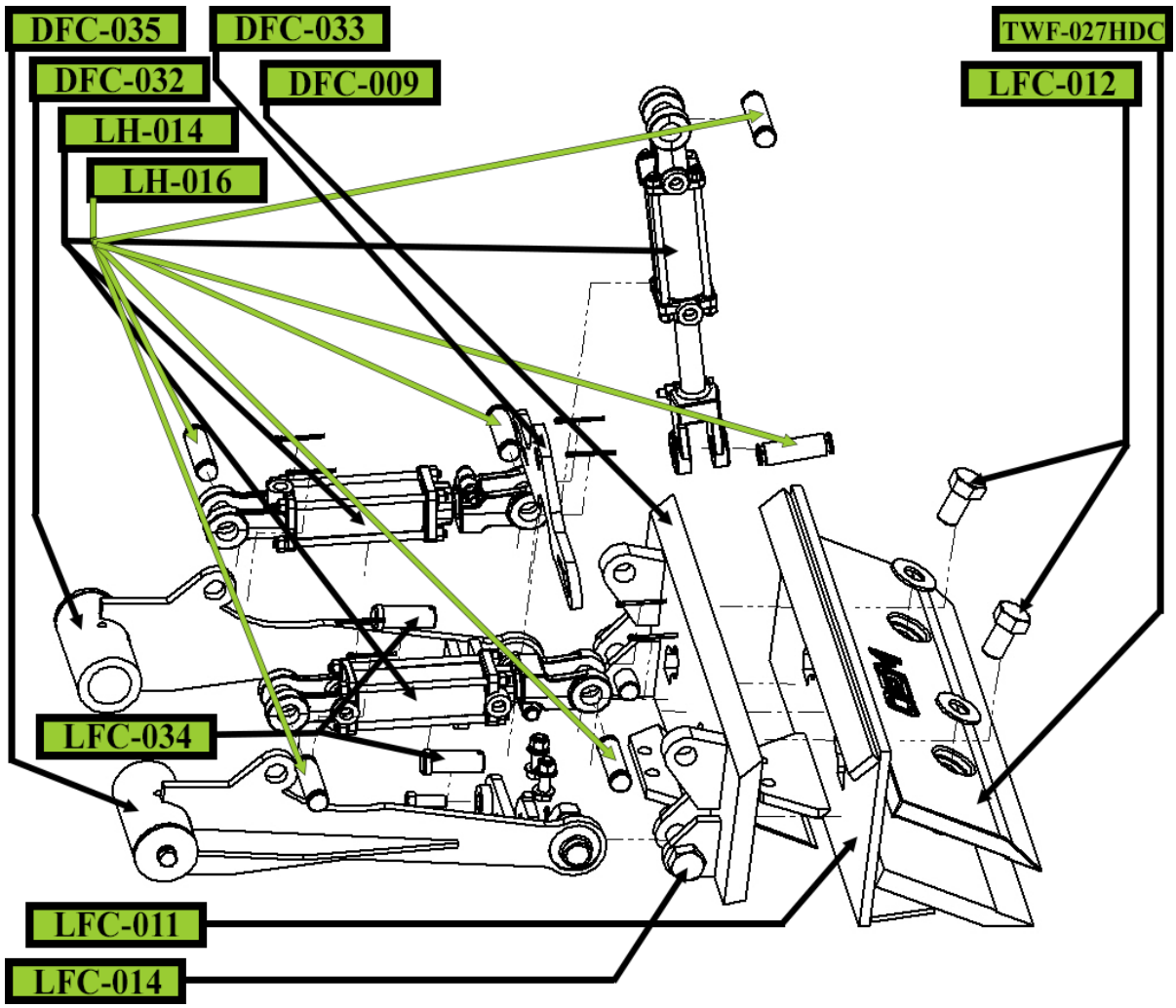
ENGINE COMPONENTS LIST

Part Number	Item Description
LE-001	ENGINE - KOHLER
DE-001-V	ENGINE - VANGAURD
LE-004	COOLING FAN WHITE
LE-005	ENGINE FLYWHEEL
LE-006	FLYWHEEL FAN
LE-007	STATOR ASSEMBLY
LE-008	THROTTLE LINKAGE ASSEMBLY
LE-009	AIR CLEANER COVER
LE-010	ENGINE AIR FILTER WITH PRE-CLEANER
DE-010	VANGUARD DERECHO AIR FILTER
LE-011	PRE CLEANER FOR AIR FILTER
LE-012	ENGINE OIL FILTER, KOHLER PROPANE
LE-013	OIL PRESSURE SWITCH
LE-014	KIT, GOVERNOR GEAR W/PIN
LE-015	EXHAUST PURIFIER
LE-016 - Kohler Ignition switch	DE-016 Vanguard IGNITION SWITCH
LE-017	WIRING HARNESS
LE-018	ENGINE TACHOMETER
LE-019	MUFFLER BRACKET
LE-020	ENGINE SPARK PLUG
LE-021	ENGINE STARTER
LE-022	EXHAUST GASKET
LE-028	BATTERY
LE-029	BLACK (-) BATTERY CABLE 24”
LE-030	RED (+) BATTERY CABLE 36”
LE-039	ENGINE OIL CASE DRAIN HOSE
LE-040	IGNITION COIL
LE-042	IGNITION KEYS
LE-051	GEAR PUMP QD BUSHING
LE-053	REGULATOR RECTIFIER
LE-054	PROPANE FUEL FILTER KIT



SECTION 9
FRAME AND COWLINGS

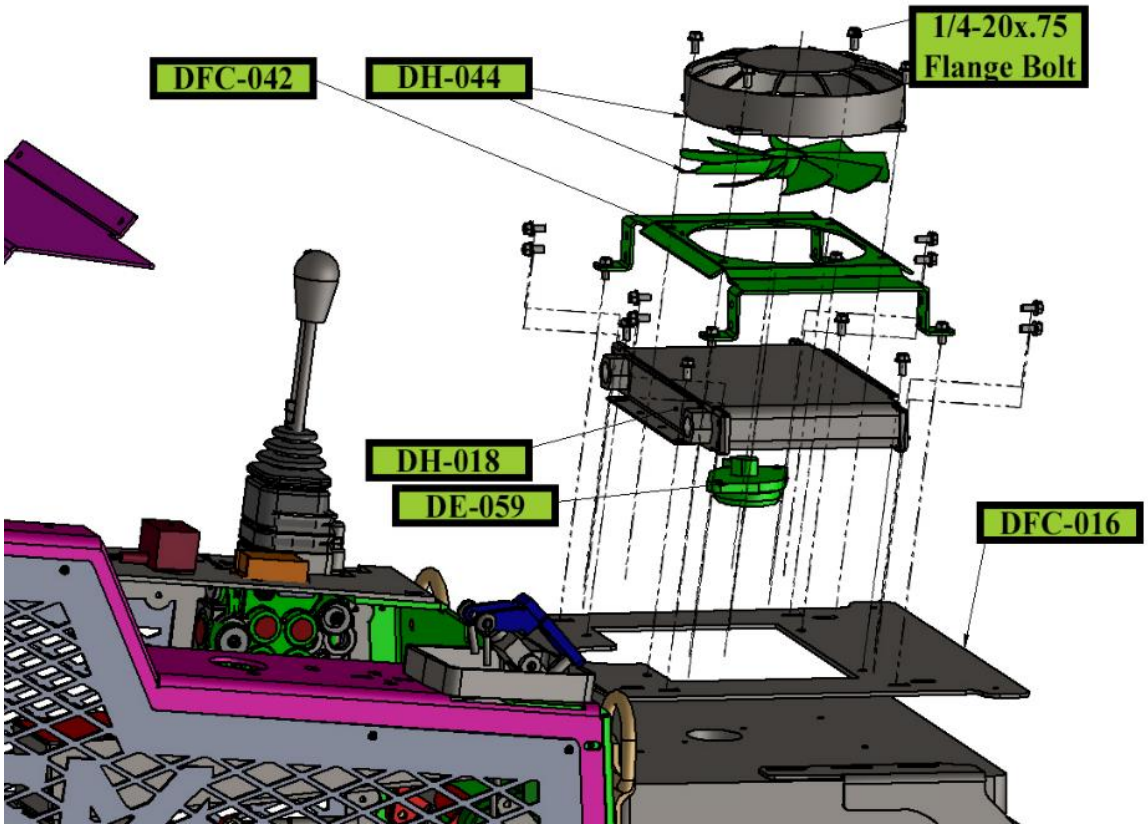
PART NUMBER	DESCRIPTION
LFC-001	TIRE/WHEEL – BLACK
LFC-001	TIRE/WHEEL (NON-MARKING) - WHITE
LFC-002	LUG BOLTS
LFC-003	WHEEL HUB
DFC-004	1” 2-BOLT PILLOW BLOCK
LFC-005	CASTER ASSEMBLY (Front wheel with frame)
LFC-006	BATTERY HOLD DOWN BRACKET


DFC-035
DFC-033
DFC-032
DFC-009
LH-014
LH-016
TWF-027HDC
LFC-012
LFC-034
LFC-011
LFC-014

DFC-007F	FRONT WEIGHTS
DFC-007S	SIDE WEIGHTS
DFC-007IL	INSIDE WEIGHT LONG
DFC-021	REAR WEIGHT
LFC-008	TRANSPORT DOLLY
DFC-009	BLADE BAR (24") MOUNT PLATE
TWF-027HDC	BLADE BAR (24") TOP
LFC-011	BLADE BAR (24") BOTTOM
LFC-012	BLADE HOLD-DOWN BOLTS
LFC-0131A	WEIGHT HANGER
LFC-014	BLADE BAR PIVOT PINS WITH LOCK NUT
LFC-015	SEAT
DFC-016	SEAT MOUNTING PLATE
LFC-017	SEAT MOUNTING PLATE HINGE
DFC-018	FRONT PLATE
LFC-019	FOOTREST
LFC-020	TIE DOWN D-RINGS
LFC-021	REAR PLATE
DFC-022-V	REAR COWLING
LFC-023	TOP COWLING HINGE
DFC-024	TOP COWLING
DFC-025	FRAME, RIGHT SIDE
DFC-026	COWLING, RIGHT SIDE
DFC-027	WEIGHT COVER, RIGHT SIDE
DFC-028	FRAME, LEFT SIDE
DFC-029	COWLING, LEFT SIDE
DFC-030	WEIGHT COVER, LEFT SIDE
DFC-032	LEFT ARM
DFC-033	CROSSOVER ARM
LFC-034	CROSSOVER ARM PIN
DFC-035	RIGHT ARM
LFC-038	FIRE SLEEVE, THROTTLE CABLE
DFC-039	THROTTLE CABLE
LFC-040	CENTER FRONT CASTER "WHEEL ONLY"
LFC-041	BATTERY HOLD DOWN BOLTS
DFC-042	HYDRAULIC COOLER MOUNTING PLATE
DE-067	REAR PUMP MOUNT
LFC-043	BLADE BAR (8") ASSEMBLY (TOP AND BOTTOM)
LFC-044	BLADE BAR (8") TOP ONLY
LFC-045	BLADE BAR (8") BOTTOM ONLY
DFC-046	BLADE ARM SPACER
LFC-047	BLADE ARM RETAINING WASHER
LFC-048	WHEEL SCRAPER

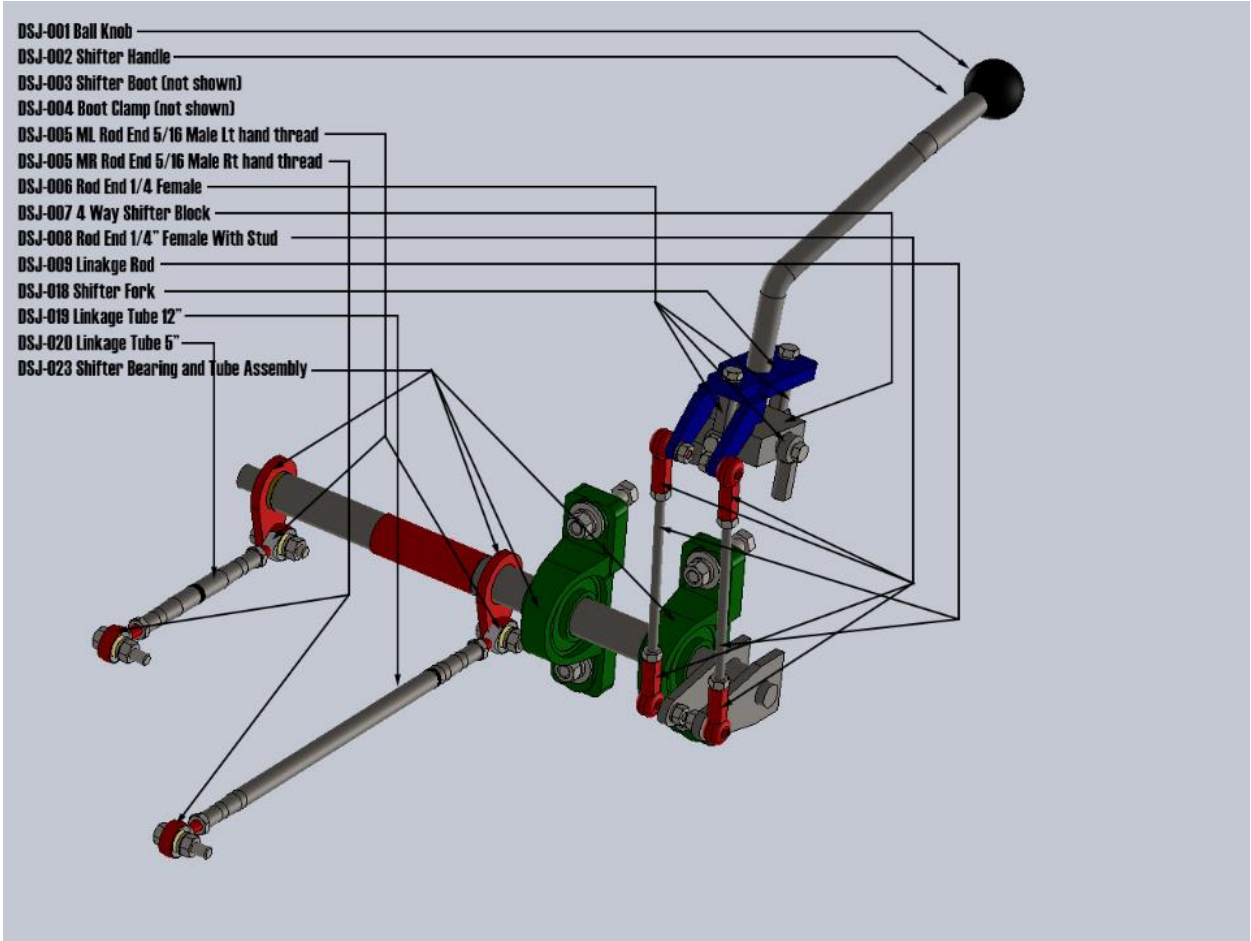
SECTION 10
HYDRAULIC COMPONENTS

PART NUMBER	DESCRIPTION
LH-004	TANDEM PUMP
LH-006	HYDRAULIC TANK
LH-008	TANK FILLER CAP
10CCHFH	FILTER HEAD
10CCHF	FILTER
LH-011	WHEEL MOTOR
LH-014	LIFT/TILT CYLINDER
LH-015	LIFT/TILT CYLINDER CLEVIS
LH-016	LIFT/TILT CYLINDER PIN
DH-018	HYDRAULIC COOLER
DFC-016	HYDRAULIC COOLER MOUNT
DH-044	HYDRAULIC COOLER FAN
DH-001	HYDRAULIC HOSE KIT
DH-002	HOSE - valve out to gear pump in
DH-003	HOSE – gear pump out to valve in
DH-004	HOSE – bottom rear valve to top lift cyl
DH-005	HOSE – top rear valve to bottom lift cyl
DH-006	HOSE – top front valve to tee
DH-007	HOSE – bottom front valve to tee
DH-008	HOSE – tee to right rear tilt cyl
DH-009	HOSE – tee to right front tilt cyl
DH-010	HOSE – tee to left rear tilt cyl
DH-011	HOSE - tee to left front tilt cyl
DH-013	HOSE – left wheel motor
DH-014	HOSE – right wheel motor
DH-016	HOSE – cooler to case drain
DH-017	HOSE – cooler to tank
DH-015	HOSE - engine oil drain
LH-040	BLADE CONTROL JOYSTICK BOOT
LH-041	BLADE CONTROL JOYSTICK HANDLE
LH-042	BLADE CONTROL HYDRAULIC VALVE
LH-042R	BLADE CONTROL VALVE REPAIR KIT


1/4-20x.75
Flange Bolt
DFC-042
DH-044
DH-018
DE-059
DFC-016

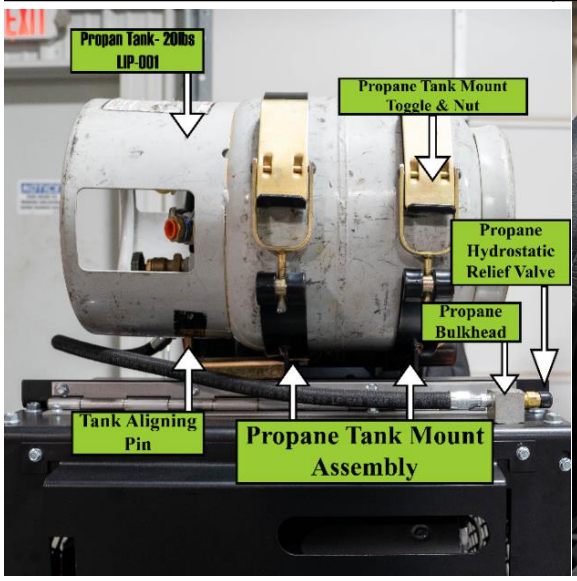
SECTION 11
STEERING JOYSTICK ASSEMBLY

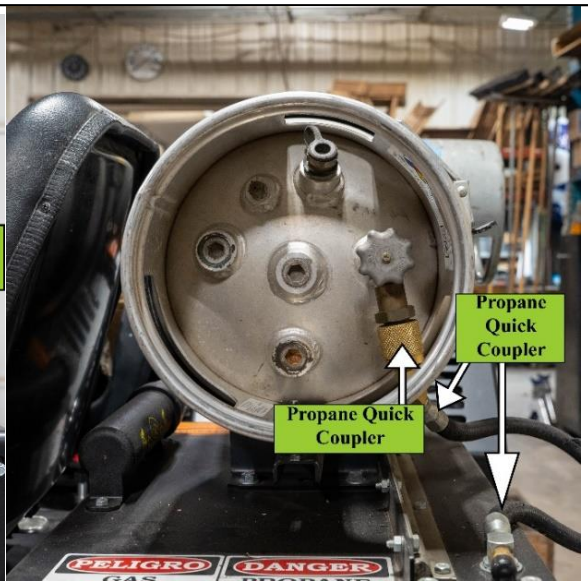
PART NUMBER	DESCRIPTION
DSJ-001	BALL KNOB
DSJ-002	SHIFTER HANDLE
DSJ-003	SHIFTER BOOT
DSJ-004	BOOT CLAMP
DSJ-005 ML	ROD END 5/16 MALE LT
DSJ-005 MR	ROD END 5/16 MALE RT
DSJ-006	ROD END ¼ FEMALE
DSJ-007	4 WAY SHIFTER BLOCK
DSJ-008	ROD END ¼ female with stud
DSJ-009	LINKAGE ROD ¼-28 all thread
DSJ-018	SHIFTER FORK
DSJ-019	LINKAGE TUBE 12”
DSJ-020	LINKAGE TUBE 5”
DSJ-023	SHIFTER BEARING AND TUBE ASSEMBLY


DSJ-001 Ball Knob
DSJ-002 Shifter Handle
DSJ-003 Shifter Boot (not shown)
DSJ-004 Boot Clamp (not shown)
DSJ-005 ML Rod End 5/16 Male Lt hand thread
DSJ-005 MR Rod End 5/16 Male Rt hand thread
DSJ-006 Rod End 1/4 Female
DSJ-007 4 Way Shifter Block
DSJ-008 Rod End 1/4" Female With Stud
DSJ-009 Linakge Rod
DSJ-018 Shifter Fork
DSJ-019 Linkage Tube 12"
DSJ-020 Linkage Tube 5"
DSJ-023 Shifter Bearing and Tube Assembly

SECTION 12
PROPANE PARTS

PART NUMBER	DESCRIPTION
LIP-001	TANK 20 lb,
LIP-002	TANK MOUNT ASSEMBLY
LIP-003	TANK MOUNT TOGGLE & NUT
LIP-004	TANK ALIGNING PIN
LIP-005	QUICK COUPLER
LIP-006	FITTING ¼" MPT x 5/16" hose end
LIP-007	HOSE, Tank to bulkhead 12"
LIP-008	BULKHEAD
LIP-009	HYDROSTATIC RELIEF VALVE
LIP-010	HOSE, Bulkhead to lock-off solenoid
LIP-011	FITTING, 5/16" hose end x 3/8" flare
LIP-012	FITTING, ¼" MPT x 3/8" Flare 90
LIP-013	LOCK-OFF SOLENOID
LIP-014	FITTING ¼" MPT X 1/4" FPT 45
LIP-015	PROPANE VAPORIZER
LIP-017	REGULATOR
LIP-018	REGULATOR MOUNTING BRACKET
LIP-020	LOAD BLOCK
LIP-022	REGULATOR REPAIR KIT





For more help and tutorials, visit OEM Product's YouTube Channel

