



# **OPERATIONS-PARTS MANUAL**



## **HDX740**

*Hydra-Drive Extreme (HDX) Series Riding Trowel*

---

## NOTICE

This manual, or a copy of it, must be kept with the machine at all times.  
There is a manual storage container located on the machine for your convenience.

# Riding Trowel

## OPERATIONS-PARTS

## MANUAL

This manual covers the HDX Hydraulic Riding Trowel(s) listed below:

<u>Part No.</u>	<u>Description</u>
049500	RIDER, HDX740

Copyright © 2009 Allen Engineering Corporation  
All rights reserved

All information, specifications, and illustrations in this manual are subject to change without notice and are based on the latest information at the time of publication. No part of this manual may be reproduced or transmitted in any form or by any means, electronics or mechanical, for any purpose, without the express written permission of Allen Engineering Corporation (AEC). AEC assumes no responsibility or liability for any errors or inaccuracies that may appear in this manual.

Allen® Products are covered under one or more of the following patent numbers:

**U.S. Design Patents:** 344,736; 400,542; 400,544; 402,998; 402,999; 403,332; 404,041; 404,042; 410,931; 413,127; 416,564; 465,897; 466,909; 474,203.

**U.S. Utility Patents:** 5,108,220; 5,238,323; 5,328,295; 5,352,063; 5,405,216; 5,476,342; 5,480,257; 5,480,258; 5,533,831; 5,562,361; 5,567,075; 5,613,801; 5,658,089; 5,685,667; 5,803,658; 5,816,739; 5,816,740; 5,890,833; 5,934,823; 5,967,696; 5,988,938; 5,988,939; 6,019,433; 6,019,545; 6,048,130; 6,053,660; 6,089,786; 6,106,193; 6,857,815; 5,288,166; 6,582,153 B1.

**Canadian Patents:** 2,039,893.

**With other Patents Pending.**

First Issue: March 2009

AEC Manual Part No.: 049831  
Printed in U.S.A.

049831; 03/09

# Limited Warranty

## LIMITED WARRANTY and LIMITATION OF LIABILITY

Allen Engineering Corporation ("Allen") warrants its products to be free of defects in material or workmanship for the following periods:

- A. New Machines and Parts ..... One Year**
- B. Hydraulics ..... One Year**

*The above listed warranty periods are effective for Allen Machines with a first day of use by End User on April 1, 2007 or later.*

Warranty period begins on first day of use by End User. This first day of use is established by the date of a completed Allen Warranty Card or a Bill of Sale to the End User. All warranty is based on the following limited warranty terms and conditions, including the disclaimer of implied warranties and consequential damages.

1. Allen's obligation and liability under this warranty is limited to repairing or replacing parts if, after Allen's inspection, there is determined to be a defect in material or workmanship. Allen reserves the choice to repair or replace.
2. If Allen chooses to replace the part, it will be at no cost to the customer and will be made available to the Allen Distributor, Dealer, or Rental Center from whom the End User purchased the product.
3. Replacement or repair parts, installed in the product, are warranted only for the remainder of warranty period of the product as though they were the original parts.
4. Allen does not warranty engines. Engine warranty claims should be made directly to an authorized factory service center for the particular engine manufacturer.
5. Allen's warranty does not cover the normal maintenance of products or its components (such as engine tune-ups and oil & filter changes). The warranty also does not cover normal wear and tear items (such as belts and consumables).
6. Allen's warranty will be void if it is determined that the defect resulted from operator abuse, failure to perform normal maintenance on the product, modification to product, alterations or repairs made to the product without the written approval of Allen. Allen specifically excludes from warranty any damage to any trowels resulting from an impact to the rotors.
7. Impact damage is not covered under the Allen Gear Box warranty. (Not applicable on hydraulic drive machines.)
8. Allen will pay shop labor on warranty items at the Allen Shop Labor Rate in existence on the date of the warranty claim. An Allen Labor Chart will determine the time allowed to complete a repair and will govern the shop labor hours that will be allowed.
9. Allen will pay freight on warranty replacement parts at worldwide standard ground rates. No warranty replacement parts will be shipped air freight at the expense of Allen. Allen only pays outbound freight charges when sending warranty replacement parts to the customer via ground service. Allen does not pay any inbound freight. However, if Allen determines this to be a warranted item, only then will Allen reimburse the customer for inbound freight at standard ground rates.
10. ALLEN ENGINEERING CORPORATION'S WARRANTY POLICY WILL NOT COVER THE FOLLOWING: TAXES; SHOP SUPPLIES; ENVIRONMENTAL SURCHARGES; AIR FREIGHT; TRAVEL TIME; LOSS OF TIME; INCONVENIENCE; LOSS OF RENTAL REVENUE; RENTAL COSTS OF EQUIPMENT USED TO REPLACE THE PRODUCT BEING REPAIRED; LOSS OF USE OF THE PRODUCT; COMMERCIAL LOSS; OR ANY OTHER CHARGES WHATSOEVER OR ANY LIABILITIES FOR DIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGE OR DELAY.
11. ALLEN ENGINEERING CORPORATION MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THIS LIMITED WARRANTY IS IN LIEU OF THE WARRANTY OF MERCHANTABILITY AND FITNESS. THERE ARE NO OTHER WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THIS DOCUMENT.
12. No Allen employee or representative is authorized to change this warranty in any way or grant any other warranty unless such change is made in writing and signed by an officer of Allen Engineering Corporation.

# Table of Contents

Sect No.	Title	Page
...	Limited Warranty . . . . .	.ii
...	Information Contained In This Manual . . . . .	.v
...	Dealer Information . . . . .	.vi
...	Ordering Parts . . . . .	.vii
...	Model Number - Serial Number Codes . . . . .	.viii
...	Unit Identification . . . . .	.ix
...	Technical specifications . . . . .	.x
...	Engine Specifications . . . . .	.xvi
...	Machine Dimensional Specifications . . . . .	.xiii
...	Sound And Vibration Specifications . . . . .	.xiv
<b>1.0</b>	<b>Safety . . . . .</b>	<b>.1-1</b>
...	State Regulations . . . . .	.1-2
...	Federal Regulations . . . . .	.1-3
1.1	General Safety Precautions . . . . .	.1-4
1.2	Spark Arrestor Notice . . . . .	.1-5
1.3	Operating Safety . . . . .	.1-6 thru 1-7
1.4	Engine Safety . . . . .	.1-8
1.5	Servicing Safety . . . . .	.1-9
1.6	Safety And Operation Labels . . . . .	.1-10 thru 1-12
<b>2.0</b>	<b>Operations . . . . .</b>	<b>.2-1</b>
2.1.1	Description . . . . .	.2-3
2.2.1	Before Starting Procedures . . . . .	.2-4
2.2.2	Start-up Procedures . . . . .	.2-4
2.3.1	Operating the Trowel . . . . .	.2-6
2.3.2	Stopping the Trowel . . . . .	.2-7
2.3.3	Steering the Trowel . . . . .	.2-8
2.3.4	Pitch Adjustment . . . . .	.2-9
2.3.5	Cold Weather Startup Procedures . . . . .	.2-10
<b>3.0</b>	<b>Service . . . . .</b>	<b>.3-1</b>
3.1	Periodic Maintenance . . . . .	.3-2
3.2	Control Linkage Lubrication . . . . .	.3-3
3.3	Lift Lever Adjustment . . . . .	.3-4
3.4	Transporting Trowel . . . . .	.3-6
3.5	Battery Jump Start . . . . .	.3-9

## Table of Contents, continued

<b>4.0</b>	<b>Parts</b>	<b>4-1</b>
...	Factory Service Information	4-2
...	Replacement Part Procedure	4-3
4.1	Seat Frame Unit	4-4 thru 4-9
4.2	Main Frame Unit	4-10 thru 4-13
4.3	Power Unit Assembly	4-14
4.4	Left Rotor Assembly	4-16
4.5	Right Rotor Assembly	4-18
4.6	Left Spider Assembly	4-20
4.7	Right Spider Assembly	4-21
4.8	Hydraulic Schematic	4-22
4.9	Electrical Harness Schematic	4-24
4.10	Tools	4-26
4.11	Dolly Jack Assembly	4-27

---

# Information Contained in this Manual



This manual provides information and procedures to safely operate and maintain the Allen Machine.

For your own safety and protection from personal injury, carefully read, understand, and observe the safety instructions described in this manual. Keep this manual or a copy of it with the machine at all times.

Always operate this machine in accordance with the instructions described in this manual. A well maintained piece of equipment will provide many years of trouble free operation.

This manual is divided into the following sections:

**SECTION 1  
SAFETY**

**SECTION 2  
OPERATIONS**

**SECTION 3  
SERVICE**

**SECTION 4  
PARTS**

---

Complete any warranty requirements as specified by the engine manufacturer in their instructions found inside the manual box located on the back of the riding trowel operator's seat.

Your engine and clutch is not manufactured by Allen Engineering Corporation (AEC) and therefore is not covered under Allen Engineering Corporation, Inc warranty.

Your engine manufacturer should be contacted if you wish to purchase a parts manual or a repair manual for your engine.

Refer to enclosed owners engine manual for complete O&M instructions. See your battery manufacturer for battery warranty.

## Dealer Information

Your Dealer has Allen Engineering Corporation trained mechanics and original Allen replacement parts. Always contact the Allen Dealer who sold you this machine for Allen Certified repairs and replacement parts.

Place Allen Dealer information below for future reference.

**Dealer Name:** \_\_\_\_\_

**Phone #:** (\_\_\_\_) - \_\_\_\_ - \_\_\_\_\_

**Address:** \_\_\_\_\_

**City:** \_\_\_\_\_ **State:** \_\_\_\_\_ **Zip:** \_\_\_\_\_

**Salesman:** \_\_\_\_\_ **Mobile Phone** \_\_\_\_\_

**Additional Comments:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



# Ordering Parts

Section 4.0 contains illustrated parts lists for help in ordering replacement parts for your machine. Follow the instructions below when ordering parts to insure prompt and accurate delivery:

1. All orders for service parts - include the serial number for the machine. Shipment will be delayed if this information is not available.
2. Include correct description and part number from the "PARTS" section of this manual.
3. Specify exact shipping instructions, including the preferred routing and complete destination address.
4. **DO NOT** return parts to AEC without receiving written authorization from AEC. All authorized returns must be shipped pre-paid.
5. When placing an order, please contact the AEC dealer nearest you.



*All information, specifications, and illustrations in this manual are subject to change without notice and are based on the latest information at the time of publication.*

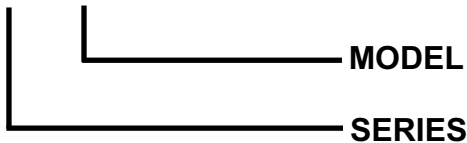
# Model Number - Serial Number Codes

## Manufacturer's Codes:

When ordering parts or requesting service information, you will always be asked to specify the model and serial numbers of the machine. The legends below specifically defines each significant character or group of characters of the Model Number and Serial Number codes.

### Model Number

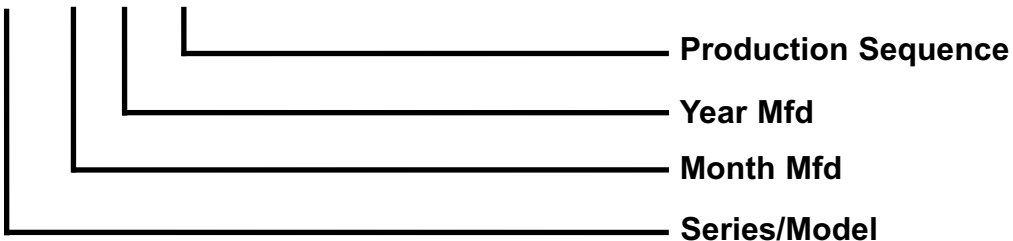
HDX 740



### Serial Number

The serial number found on the identification plate is a ten digit format. The model number identifies your machine and will ensure that you receive the correct replacement parts.

740 06 08 010



# Unit Identification

## Unit Identification Plate Location:

An identification plate listing the model number and the serial number is attached to each unit and is located on the rear lower left side of mainframe. Refer to Figure 1 for serial number and model number location. This plate should not be removed at any time.

Please record the information found on this plate below so it will be available should the identification plate become lost or damaged. When ordering parts or requesting service information, you will always be asked to specify the model and serial numbers of the machine.

### FILL IN FOR FUTURE REFERENCE

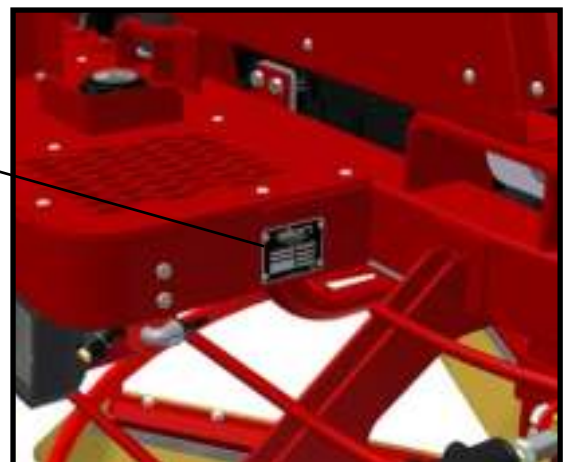
**Model Number:** \_\_\_\_\_

**Serial Number:** \_\_\_\_\_

**Date Purchased:** \_\_\_\_\_

**Purchased From:** \_\_\_\_\_

SERIAL NUMBER PLATE



**Figure 1**  
Serial Number Location

# Technical Specifications

Measurements in this manual are in U.S. units and their customary metric units (i.e., metric units contained within brackets [mm]). The machine RIGHT-HAND and LEFT-HAND sides are determined by sitting on machine (SOM) facing in the direction the machine will travel when going forward.

## Machine Features:

- Dimensions - NOL (L x W x H) inch [mm] .....124 x 63 x 56.75  
(guard rings/top of seat) .....[3,150 x 1,600 x 1,441]
- Operating Weight lb [kg] .....2,023 [918]
- Panning Path Width inch [mm] .....117.75 [2,991]
- Two Rotors (Diameter) inch [mm] .....57.75 [1,467]
- Rotor Speed (RPM) .....145
- Finish Blade (10) inch [mm] .....6 x 18 [15x45]
- Guard Rings .....Fixed
- Fixed Seat Frame .....Standard
- Powered Retardant System .....Standard (Control on Joystick)
- Retardant System Capacity gal [L] .....6 [23]
- Steering System .....Dual Hydraulic Joysticks
- Gearbox Rotation .....Standard
- Battery .....12 Volt
- Safety Shutdown Switch .....Foot Pedal Controlled
- Fuel Capacity gal [L] .....11 [41.6]
- Run Time (Approximate) hr .....3.2
- Drive Belt Type .....Kevlar Cogged Vee
- Hour Meter Type .....Digital Read-out
- Auxillary Power .....12VDC (phone charger, etc)
- Pitch Control .....Electro/Hydraulic
- Engine Control Panel .....Cluster LOFA gauge
- Lights .....6
- Tool Holder .....Standard
- Ergonomic Arm Rest .....Standard
- Cup Holder .....Standard

## CE MARKING Compliance:

AEC hereby declares under our sole responsibility that the machine identified within this manual complies with the provisions in accordance with Machinery Directive 98/37/EC. AEC has applied the following normative documents:

- 2000/14/EC; Noise Emission Of Outdoor Equipment Directive
- EN 294:1992; Safety Of Machinery-Safety Distance Of Danger Zones
- EN 574:1996; Safety Of Machinery-Two-hand Control Devices



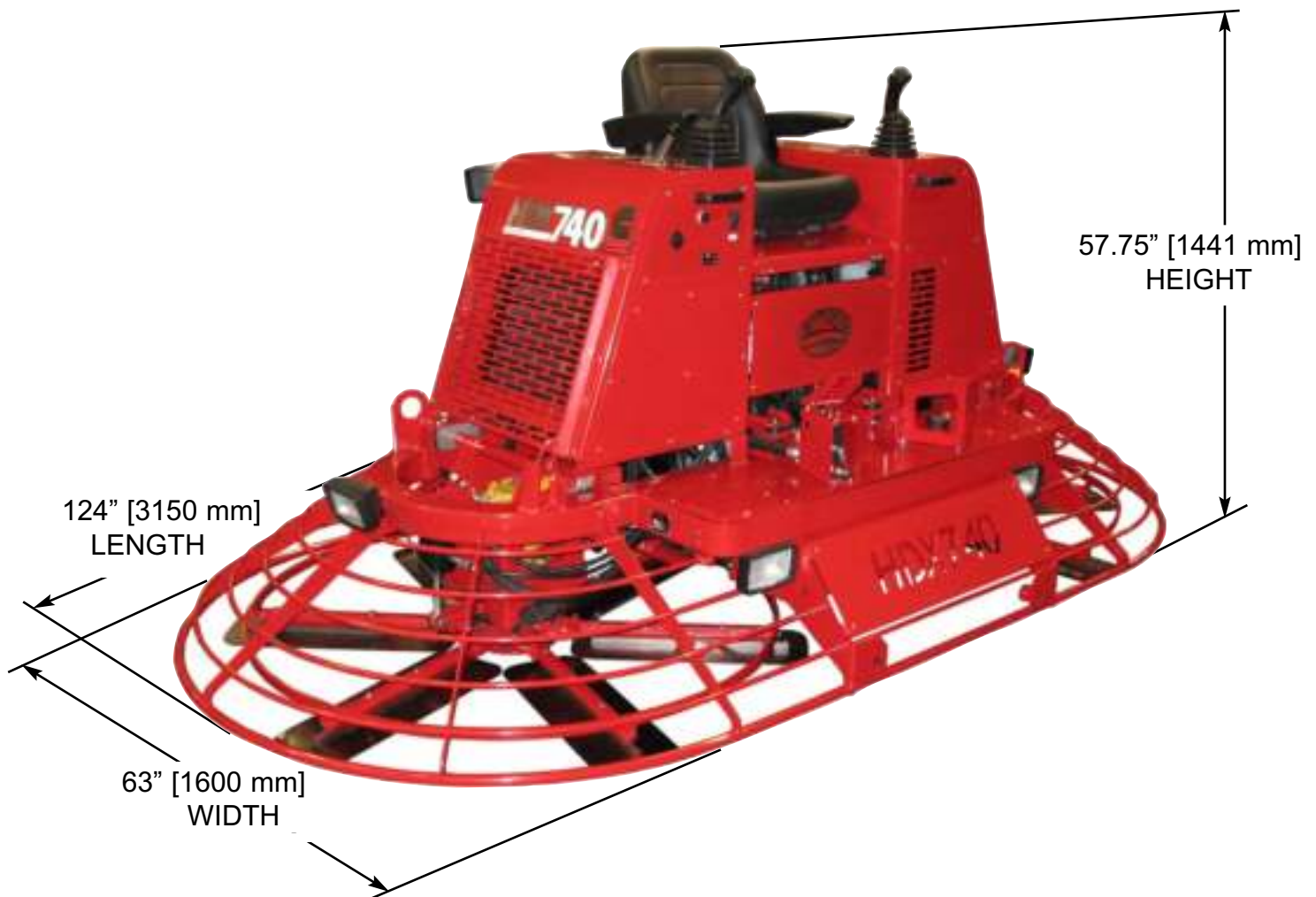
# Engine Specifications

## Cummins Engine Information

- Model .....A2300T
- Advertised Horsepower hp [kW] @ 2,800 RPM .....60 [45]
- Peak Torque lb/ft [Nm] .....134 [182]
- Number of Cylinders .....4
- Displacement in<sup>3</sup> [liters] .....140 [2.3]
- Bore and Stroke .....3.46 in. x 3.7 in. [88mm x 94mm]
- Aspiration .....Turbocharged
- Oil System Capacity quarts [liters] .....7.5 [7]
- Dimensions (L x W x H) inch [mm] .....35.5x24.8x38.8 [902x631x986]
- Fuel (Type) .....Diesel
- Weight (Dry) lb [kg] .....632 [287]

# Machine Dimensional Specifications

All information, specifications, and illustrations on this page in this manual are subject to change without notice and are based on the latest information at the time of publication.



# Sound And Vibration Data



## Sound Pressure Level Information:

Sound pressure is "A" weighted . Measured at the operators ear position while the ride-on trowel is operating at full throttle on concrete in a manner most often experienced in “normal ” circumstances. Sound pressure may vary depending upon the condition of the concrete. Hearing protection is always recommended.



## Vibration Level Information:

The vibration level indicated is the maximum RMS (Root Mean Square) velocity value obtained at the handle grip while operating the ride-on trowel on curing concrete in a manner most often experienced in “normal ” circumstances. Values were obtained from all three axes of motion. The values shown represent the maximum RMS value from these measurements.

Certified European testing was completed at the Allen Engineering Corporation facility. During the test the following data was collected and is on file at AEC under test number *SND09-03001*.

Summary Data Of Sound And Vibration Testing for CE Marking							
Test Machine	Engine Type	Distant Sound Press	Operator Ear SPL	Sound Power Level	Seat Vibration Overall	Foot Vibration Overall	Hand Vibration Maximum
HDX740	Cummins	dB (A) 96.53	dB (A) 96.05	dB (A) 98.80	m/sec <sup>2</sup> 1.20	m/sec <sup>2</sup> 1.92	m/sec <sup>2</sup> N/A
This information was acquired from extensive sound and vibration analysis tests conducted at Allen Engineering Corporation test facilities.							



# ***Section 1*** ***SAFETY***

## SECTION 1 SAFETY

### State Regulations



### **CALIFORNIA PROPOSITION 65 WARNING**

**Engine exhaust** from this product contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.



### **SILICOSIS WARNING**

Grinding/cutting/drilling of masonry, concrete, metal and other materials with silica in their composition may give off dust or mists containing crystalline silica. Silica is a basic component of sand, quartz, brick clay, granite and numerous other minerals and rocks. Repeated and/or substantial inhalation of airborne crystalline silica can cause serious or fatal respiratory diseases, including silicosis. In addition, California and some other authorities have listed respirable crystalline silica as a substance known to cause cancer. When cutting such materials, always follow the respiratory precautions mentioned above.



### **RESPIRATORY HAZARDS**

Grinding/cutting/drilling of masonry, concrete, metal and other materials can generate dust, mists and fumes containing chemicals known to cause serious or fatal injury or illness, such as respiratory disease, cancer, birth defects or other reproductive harm. If you are unfamiliar with the risks associated with the particular process and/or material being cut or the composition of the tool being used, review the material safety data sheet and/or consult your employer, the material manufacturer/supplier, governmental agencies such as OSHA and NIOSH and other sources on hazardous materials. California and some other authorities, for instance, have published lists of substances known to cause cancer, reproductive toxicity, or other harmful effects.

Control dust, mist and fumes at the source where possible. In this regard use good work practices and follow the recommendations of the manufacturers or suppliers, OSHA/NIOSH, and occupational and trade associations. Water should be used for dust suppression when wet cutting is feasible. When the hazards from inhalation of dust, mists and fumes cannot be eliminated, the operator and any bystanders should always wear a respirator approved by NIOSH/MSHA for the materials being used.

## SECTION 1 SAFETY

### 1.1 General Safety Precautions

#### 1.1.1 Safety-Alert Signs

This manual contains Safety-Alert Signs, as defined below, which must be followed to reduce the possibility of improper service damage to the equipment or personal injury. Read and follow all Safety-Alert Signs included in this manual.



*NOTE defines an operating procedure, condition, etc. which is essential to highlight that contains useful or important information.*



*EMERGENCY is used for the identification of safety equipment, first aid, or emergency egress locations.*



*NOTICE used to convey safety information on labels and signs.*



*CAUTION is indicative of a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.*



*Potentially hazardous situations that could result in death or serious injury are indicated by the word WARNING.*



*DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.*

## **1.2 Spark Arrestor Notice**

## **SECTION 1 SAFETY**

### **1.2.1 Laws Pertaining to Spark Arrestors**

Some states require that in certain locations arrestors be used on internal combustion engines. A spark arrester is a device designed to prevent the discharge of spark or flames from the engine exhaust. It is often required when operating equipment on forested land to prevent the risk of fires. Consult the engine distributor or local authorities and make sure that you comply with regulations regarding spark arrestors.

### 1.3 Operating Safety

#### 1.3.1 Operating Safety



*Familiarity and proper training are required for the safe operation of this equipment! Equipment operated improperly or by untrained personnel can be dangerous! Read the operating instructions contained in both this manual and the engine manual and familiarize yourself with the location and proper use of all controls.*

- 1.3.2 **NEVER** operate this machine in applications for which it is not intended.
- 1.3.3 **NEVER** allow anyone to operate this equipment without proper training. People operating this equipment must be familiar with the risks and hazards associated with it.
- 1.3.4 **NEVER** touch the engine or muffler while the engine is on or immediately after it has been turned off. These areas get extremely hot and may cause severe burns.
- 1.3.5 **NEVER** use accessories or attachments that are not recommended by AEC. Damage to equipment and injury to the user may result.
- 1.3.6 **NEVER** operate the machine with the guards missing.
- 1.3.7 **NEVER** leave machine running unattended.
- 1.3.8 **DO NOT** run the machine indoors or in an enclosed area such as a deep trench unless adequate ventilation, through such items as exhaust fans or hoses, is provided. Exhaust gas from the engine contains poisonous carbon monoxide gas; exposure to carbon monoxide can cause loss of consciousness and may lead to death.
- 1.3.9 **ALWAYS** remain aware of moving parts and keep hands, feet, and loose clothing away from the moving parts of the equipment.
- 1.3.10 **ALWAYS** keep hands, feet, and loose clothing away from moving parts of the machine.
- 1.3.11 **ALWAYS** read, understand, and follow procedures in the Operator's Manual before attempting to operate the equipment.
- 1.3.12 **ALWAYS** be sure operator is familiar with proper safety precautions and operation techniques before using machine.

## 1.3, continued Operating Safety

## SECTION 1 SAFETY

- 1.3.13 **ALWAYS** close fuel valve on engines equipped with one when machine is not being operated.
- 1.3.14 **ALWAYS** store the equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.
- 1.3.15 **ALWAYS** operate the machine with all safety devices and guards in place and in working order.

## **1.4** **Engine Safety**

### **1.4.1 Engine Safety**



*Internal combustion engines present special hazards during operation and fueling. Read and follow the warning instructions in the engine owner's manual and the safety guidelines below. Failure to follow the warnings and safety guidelines could result in severe injury or death.*

- 1.4.2 DO NOT** run the machine indoors or in an enclosed area such as a deep trench unless adequate ventilation, through such items as exhaust fans or hoses, is provided. Exhaust gas from the engine contains poisonous carbon monoxide gas; exposure to carbon monoxide can cause loss of consciousness and may lead to death.
- 1.4.3 DO NOT** smoke while operating the machine.
- 1.4.4 DO NOT** smoke when refueling the engine.
- 1.4.5 DO NOT** refuel a hot or running engine.
- 1.4.6 DO NOT** refuel the engine near an open flame.
- 1.4.7 DO NOT** spill fuel when refueling the engine.
- 1.4.8 DO NOT** run the engine near open flames.
- 1.4.9 ALWAYS** refill the fuel tank in a well-ventilated area.
- 1.4.10 ALWAYS** replace the fuel tank cap after refueling.
- 1.4.11 ALWAYS** keep the area around the muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite the debris and start a fire.



### 1.5.1 Service Safety



*Poorly maintained equipment can become a safety hazard! In order for the equipment to operate safely and properly over a long period of time, periodic maintenance and occasional repairs are necessary.*

- 1.5.2 **DO NOT** attempt to clean or service the machine while it is running. Rotating parts can cause severe injury.
- 1.5.3 **DO NOT** crank a flooded engine with the spark plug removed on gasoline-powered engines. Fuel trapped in the cylinder will squirt out the spark plug opening.
- 1.5.4 **DO NOT** test for spark on gasoline-powered engines if the engine is flooded or the smell of gasoline is present. A stray spark could ignite the fumes.
- 1.5.6 **DO NOT** use gasoline or other types of fuels or flammable solvents to clean parts, especially in enclosed areas. Fumes from fuels and solvents can become explosive.
- 1.5.7 **ALWAYS** turn engine off and remove key from machine before performing maintenance or making repairs.
- 1.5.8 **ALWAYS** handle blades carefully. The blades can develop sharp edges which can cause serious cuts.
- 1.5.9 **ALWAYS** keep the area around the muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite the debris and start a fire.
- 1.5.10 **ALWAYS** replace worn or damaged components with spare parts designed and recommended by AEC Corporation.
- 1.5.11 **ALWAYS** disconnect the spark plug on machines equipped with gasoline engines, before servicing, to avoid accidental start-up.
- 1.5.12 **ALWAYS** switch off the power supply at the battery disconnect before adjusting or maintaining the electrical equipment.
- 1.5.13 **ALWAYS** keep the machine clean and labels legible. Replace all missing and hard-to-read labels. Labels provide important operating instructions and warn of dangers and hazards.

## SECTION 1 SAFETY

### 1.6 Safety and Operation Labels

The safety and operation labels shown in this section are placed in important areas on the machine to draw attention to potential safety hazards and service information. Should any of these labels become unreadable or damaged, replacement labels can be ordered from your distributor.

#### CAUTION

This is a multi-purpose label that requires the operator to have maximum eye, hearing, hand, and feet protection. Also, it highly recommends that the operator reads the manual.



#### DANGER

This label identifies the lift locations on the machine. No other locations or features on the machine are to be used as lifting points. Failure to use these points will cause damage to the machine and could result in personal injury or death.



#### NOTE

This label identifies the tank used for retardant spray agents (i.e., water-based retardants) only on the machine. **NO OTHER** non-retardant chemicals nor fuel is to be in this tank.



## 1.6, continued Safety and Operation Labels

## SECTION 1 SAFETY

### **NOTE**

This label is a maintenance reminder to grease the thrust bearing daily. This will ensure that the life span of the bearings will be maintained at their optimal performance level.

**GREASE THRUST  
BEARING DAILY**

### **CAUTION**

This label cautions against allowing cleaning agents, surface treatments, or other foreign substances to contaminate drive components.

The drive components could be damaged from the contaminants and cause the drive system to fail.



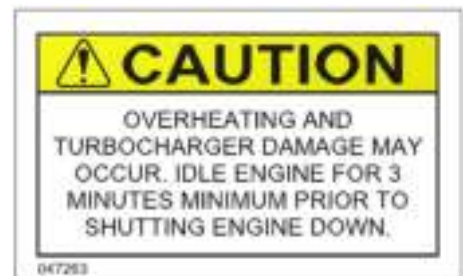
### **CAUTION**

This label cautions against operating the machine at full RPM before actual engine warmup. Failure to comply with this procedure can destroy your engine and void all AEC warranties.

**IMPORTANT!**  
**COLD WEATHER START UP**  
COLD WEATHER STARTING BELOW  
60° F (16° C) RUN ENGINE AT 1/4 THROTTLE  
(SEE COLD WEATHER THROTTLE POSITION  
MARK) ROTATE ROTORS 5-7 MINUTES.  
**DO NOT THROTTLE ENGINE TO FULL RPM  
DURING THIS PROCESS**

### **CAUTION**

This label cautions against operating the machine at full RPM before actual engine warmup. Failure to comply with this procedure can destroy your engine and void all AEC warranties.

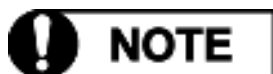


## SECTION 1 SAFETY

### 1.6, continued Safety and Operation Labels



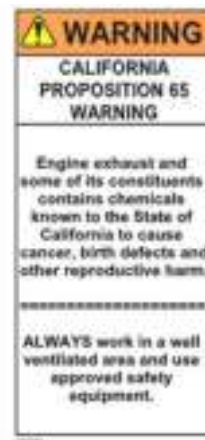
This label warns the operator of the potential hazard of severe burns from hot coolant if radiator is still hot and the radiator cap is removed before the coolant has had sufficient time to cool down.



This label identifies the location of the fuse box that contains the associated fuses that make up the internal electrical circuit of various components in the wiring system.



This label warns of the risk hazards associated with engine exhaust fumes causing health issues as identified by the State of California.



# ***Section 2*** ***OPERATIONS***

## SECTION 2

# OPERATIONS



*This machine is built with user safety in mind. However, it can present hazards if improperly operated and serviced. Follow operating instructions carefully.*

*If you have any questions about operating or servicing this equipment, please contact your Allen Engineering Dealer or AEC Customer Service at 800-643-0095 or 870-236-7751.*

### 2.1.1 Description

The **HDX740** riding trowel is a modern high production machine. Finishing rates will vary depending on the operators skill and job conditions. This riding trowel has twelve finishing blades.

The standard hydraulic drive system is designed to provide exceptional performance with low maintenance and trouble free use under some of the worst conditions.

All Allen Engineering **HDX740** trowels are equipped with a safety shutdown switch and a low oil warning light for added job safety and engine protection.

Operating time between fuel refills is approximately 3.2 hours with rotor speeds of 145 RPM.

The **HDX Riders** are the most technically advanced riding trowels on the market today. With proper maintenance and use, your riding trowel will provide you with exceptional service and dependability.

## **2.2**

### **Start Up Procedures**

#### **2.2.1 Before Starting Procedures**

Before starting the riding trowel check for the following:

- 1) Oil level in engine.
- 2) Hydraulic oil level in the reservoir.
- 3) Fuel level in fuel tank.
- 4) Condition of riding trowel arms and blades.
- 5) Verify that daily maintenance of grease points has been performed.
- 6) Check all hoses and fittings for leaks.
- 7) Check engine coolant.

#### **2.2.2 Starting Procedures**

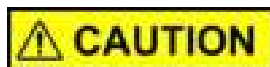
Before starting riding trowel, refer to Figure 2.2.1 and Figure 2.2.2 for location and identification of operational and visual controls pertaining to the operation of the riding trowel.

- 1) Sit down correctly on the riding trowel seat. **DO NOT** attempt to start the riding trowel without an operator in the seat. This machine is equipped with an automatic shut down system if an operator is not in the seat.
- 2) Turn key counter-clockwise until the glow plug light goes off then clockwise until the engine engages and starts.



*To much throttle during start-up will flood the engine.*

- 3) Turn key to the run position and allow spring back. Allow engine and hydraulics to warm up before operating trowel. **(See Cold Weather Startup Procedures ???)**

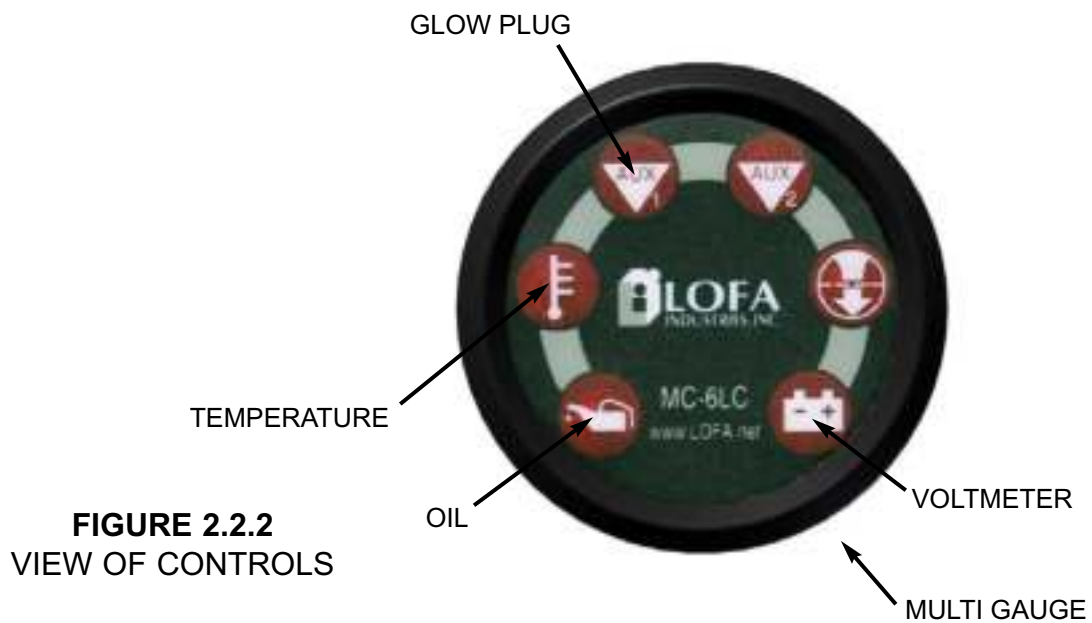
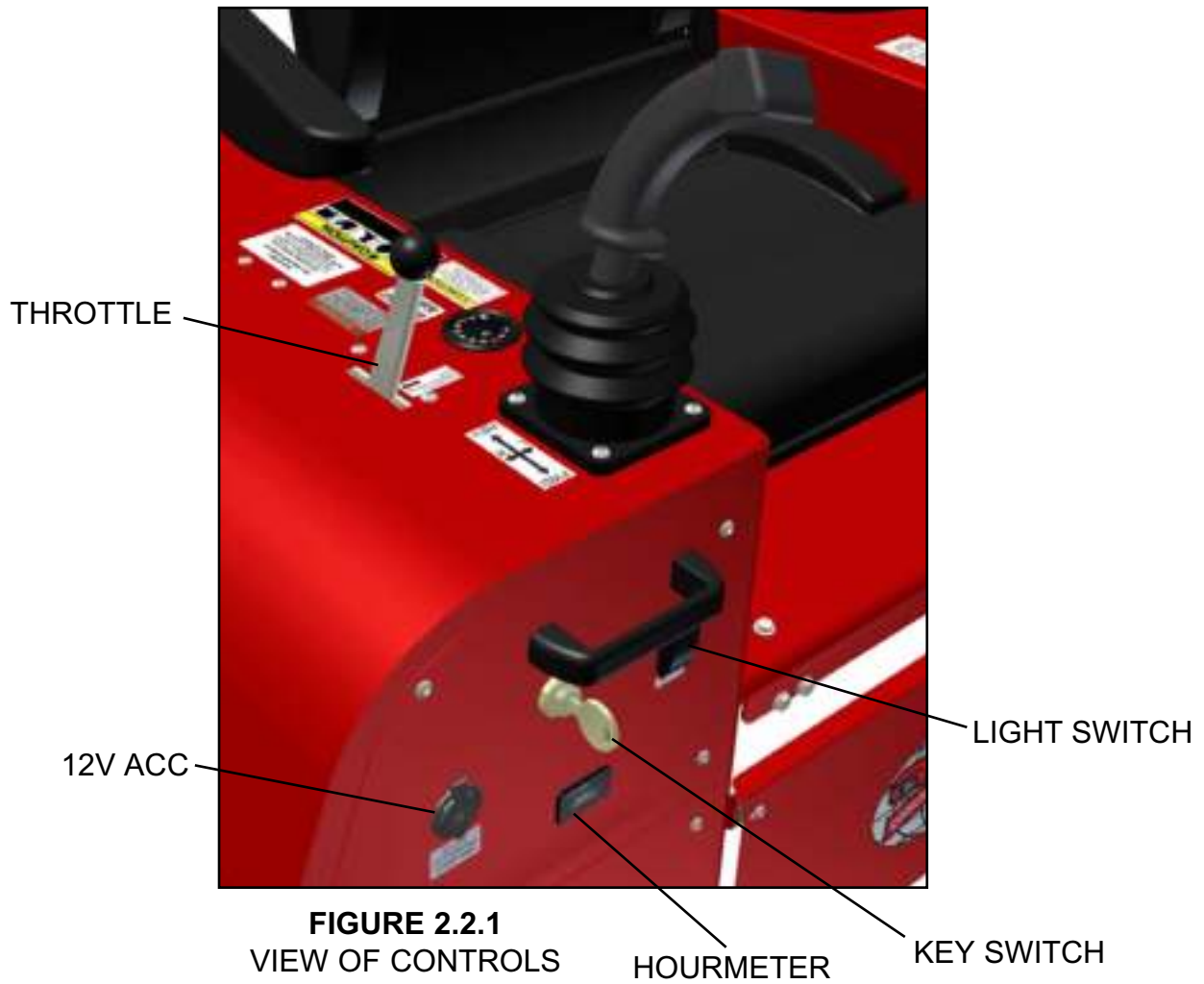


*Operating the starter for more than 5 seconds can damage the starter or engine. If engine fails to start release the switch and wait 15 seconds before operating starter again.*



## 2.2, continued Start Up Procedures

## SECTION 2 OPERATIONS



### 2.3 Operating Instructions

#### 2.3.1 Operating The Riding Trowel

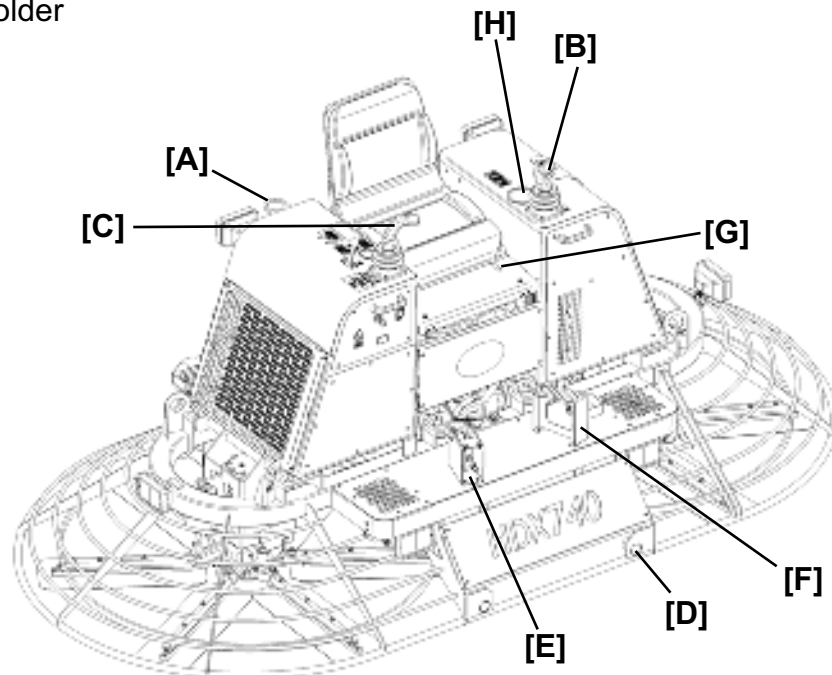
To utilize your Allen Engineering **HDX740 Rider** to its fullest capacity the machine should be driven in the direction the operator is facing. This will finish the widest possible area while giving the operator an excellent view of the slab surface about to be troweled. When the machine reaches the end of the slab make a 180 degree turn and repeat the straight line of direction to the other end of the slab. To familiarize a new operator with the riding trowel the following steps should be taken.

#### **! NOTE**

*All items in this manual are described from the operator Sitting On Machine or **SOM** for short.*

##### 1) Location of all Operating Controls

- [A] Tool Holder
- [B] Joystick (Forward & Reverse, Blade Pitch) & Retardant Spray Switch
- [C] Joystick (Left & Right, Forward & Reverse, Blade Pitch)
- [D] Dolly Jack Lift Points
- [E] Right Foot - Rotor Speed Control
- [F] Left Foot - Rest
- [G] Seat Adjustment
- [H] Cup Holder



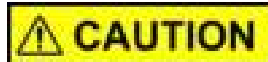
**FIGURE 2.3.1**  
Operations Control Components

## 2.3, continued Operating Instructions

## SECTION 2 OPERATIONS

- 2) With the operator in the seat, show him the functions of the joysticks [B] and [C] and how to start the machine. Refer to Figure 2.3.1.

A hard level concrete slab with water on the surface is an ideal place for an operator to practice with the machine. For practice pitch the blades up approximately 1/4 inch on the trailing edge. Start by making the machine hover in one spot and then practice driving the machine in a straight line and making 180 degree turns. Best control is achieved at full rotor RPM.



***DO NOT** use excessive pressure on the joysticks.  
Excessive pressure does not increase the reaction  
time of the machine and can damage steering controls.*

### 2.3.2 Stopping The Riding Trowel

To stop the trowel's movement, let go of the joysticks [B] and [C]. They will return to their neutral position. Also release pressure on the right foot pedal [E].



*If in need of an emergency stop, simply turning the key  
off or raising your right foot off the pedal will stop the rotors from turning.*

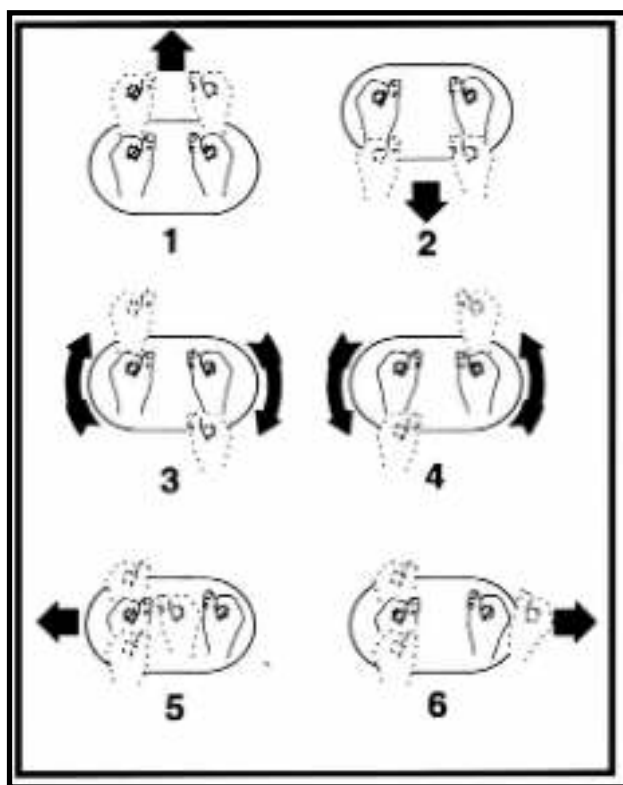


### 2.3, continued Operating Instructions

#### 2.3.3 Steering The Riding Trowel

A slight "feathering motion" forward and backward with the left hand joystick is required to move the machine in a straight path to the left or right while operating the right hand joystick. Refer to Figure 2.3.3..

Position	Action
1	Forward
2	Reverse
3	Rotate clockwise
4	Rotate counter clockwise
5	Left sideways
6	Right sideways



**FIGURE 2.3.3**  
Steering Control Diagram








## 2.3, continued Operating Instructions

## SECTION 2 OPERATIONS

### 2.3.4 Pitch Adjustment

Different pitch angles are needed as you work the different stages of the concrete. See the drawing below. When changing or setting pitch (angle of trowel blades), set the desired degree of pitch on the left side of the machine and then adjust the right side to match.

To increase the pitch, press the pitch control button (a) which is located on top of joystick towards the inside. To decrease the pitch, press the pitch control button (b) which is located on top of joystick towards the outside.

 Left Pitch Adjustment	Working Conditions of Concrete	Suggested Working Pitch	
	Stage 1: Wet surface working stage	0°	
	Stage 2: Wet plastic working stage	5°	
	Stage 3: Plastic working stage	10°	
	Stage 4: Semi-hard working stage	15°	
 Right Pitch Adjustment	Stage 5: Hard finishing stage (Burnishing)	20°	

**FIGURE 2.3.4**  
Pitch Adjustment

## SECTION 2 OPERATIONS

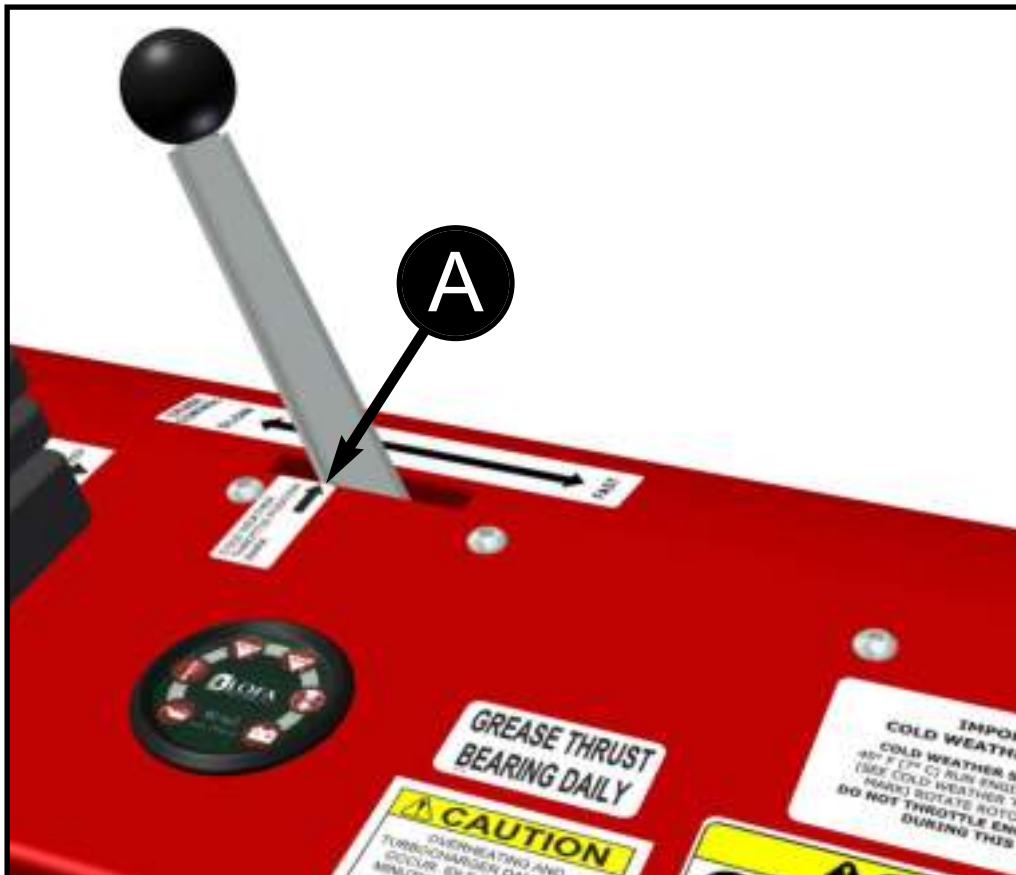
### 2.3, continued Operating Instructions

#### 2.3.5 Cold Weather Startup Procedures

When ambient temperatures are below 60°F (16°C) cold weather startup procedures must be followed before bringing machine into maximum engine RPM and rotor speed.

***If the procedure is not followed, damage could occur which will void the warranty.***

See below for startup procedure.



When ambient temperatures are below 60°F (16°C) run engine at 1/4" throttle. There is an arrow (A) located on a decal showing where the throttle lever's front edge should be located. Engage the rotors by pressing on the right foot pedal for approximately 5 to 7 minutes to allow the hydraulic system and engine system time to adequately warm up before operation.

# ***Section 3*** ***SERVICE***

## SECTION 3

### SERVICE

## 3.1

### Periodic Maintenance

#### 3.1 Periodic Maintenance Schedule

The table below list basic trowel and engine maintenance. Refer to OEM engine manufacturer's Operation Manual for additional information on engine maintenance. A copy of the engine operator's manual was supplied with the machine when it was shipped. To service the engine pull the seat locking pin out and tilt seat back.

**TABLE 3.1.1**  
**CHECK LIST**

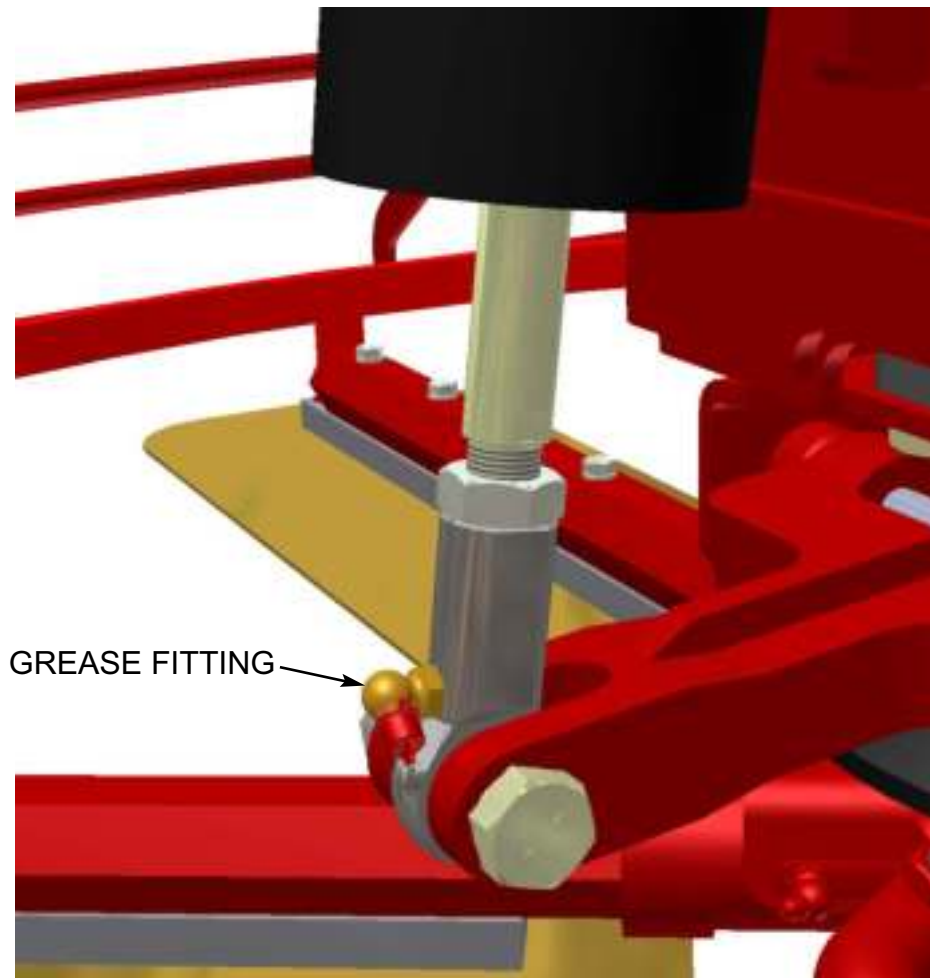
ITEM	DAILY	EVERY 20 HRS	EVERY 50 HRS	EVERY 100 HRS	EVERY 300 HRS
Grease towel arms	✓				
Check fuel and coolant levels	✓				
Check engine oil level	✓				
Check & tighten external hardware	✓				
Check air filters - replace as needed	✓				
Check hydraulic oil filters	✓				
Change engine oil				✓	
Replace engine oil filter				✓	
Check coolant in radiator	✓				
Control linkage lubrication		✓			



## 3.2 Control Linkage Lubrication

## SECTION 3 SERVICE

- 3.2** The control linkage is equipped with several grease fitting to lubricate pivot points. Grease control linkage once a week or every 20 hours to prevent wear and ensure free movement and smooth response of control levers. Use a general purpose grease and add one to two shots of grease to each fitting.



**FIGURE 3.2.1**  
GREASE FITTING LOCATION

## **3.3**

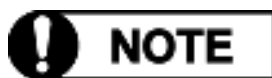
### **Lift Lever Adjustment**

#### **3.3 Lift Lever Adjustment Procedure**

Damage to and/or replacement of a trowel arm can change the adjustment of the lift lever. This can unbalance the trowel arms and cause the riding trowel to wobble during operation. To operate smoothly the lift lever on all trowel arms must be adjusted the same to ensure that the riding trowel is balanced correctly.

Adjusting the trowel arms is accomplished by using the optional trowel arm alignment jig AEC PN 016863. The service manual that is included with the alignment jig describes in detail the steps to perform this procedure and to check the flatness and straightness of the trowel arms.

The steps below describe the general procedure to remove the trowel arms to be aligned.



#### **NOTE**

*Make sure that there is no pitch in the blades before attempting to remove a trowel arm.*

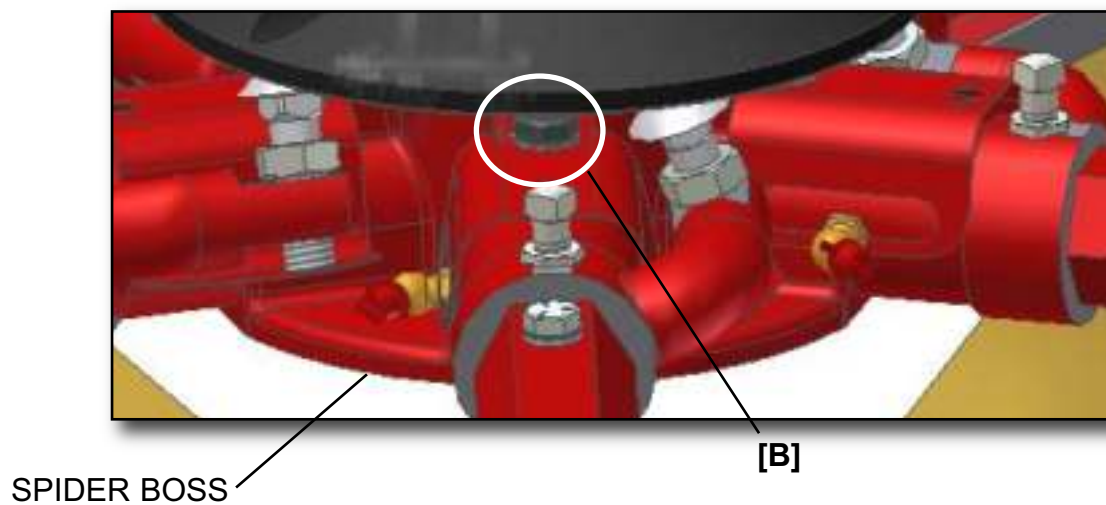
- 1) Block up pressure plate **[A]** using a wooden block.
- 2) Remove stabilizer ring from spider assembly (only on available models).
- 3) Remove blades from trowel arms.
- 4) Loosen hex head cap screw **[B]** and remove it and the external star washer from the spider boss.
- 5) Remove trowel arms from spider boss with lift levers in place.
- 6) Clean flats on trowel arm before placing it in the trowel arm jig (PN 016863).
- 7) Perform the alignment procedures as outlined in the alignment jig service manual (PN 047427).
- 8) Re-attach trowel arm to spider boss and blades to trowel arms.
- 9) Tighten down hex head cap screw to secure trowel arm in place.
- 10) Reattach stabilizer ring (only on available models).

### 3.3, continued Lift Lever Adjustment

## SECTION 3 SERVICE



**[A]** **FIGURE 3.3.1**  
PRESSURE PLATE LOCATION



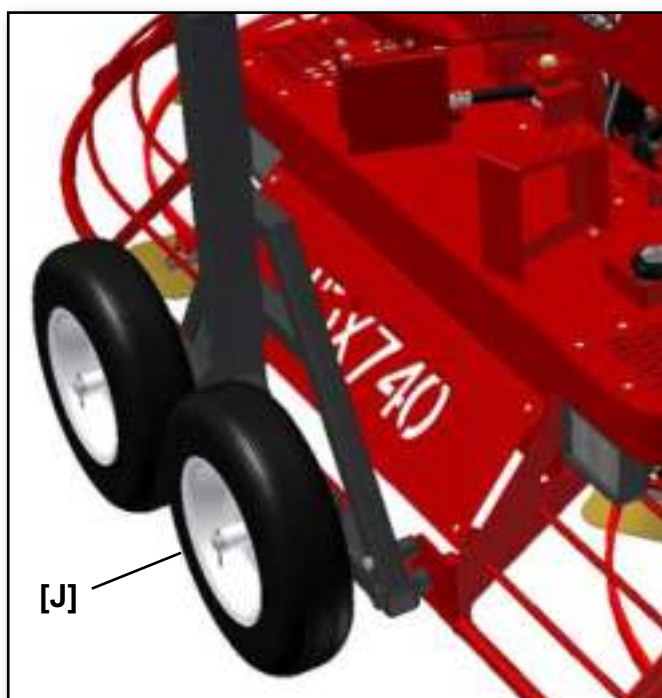
**[B]** **FIGURE 3.3.2**  
FASTENER HARDWARE REMOVAL

## **3.4** **Transporting Trowel**

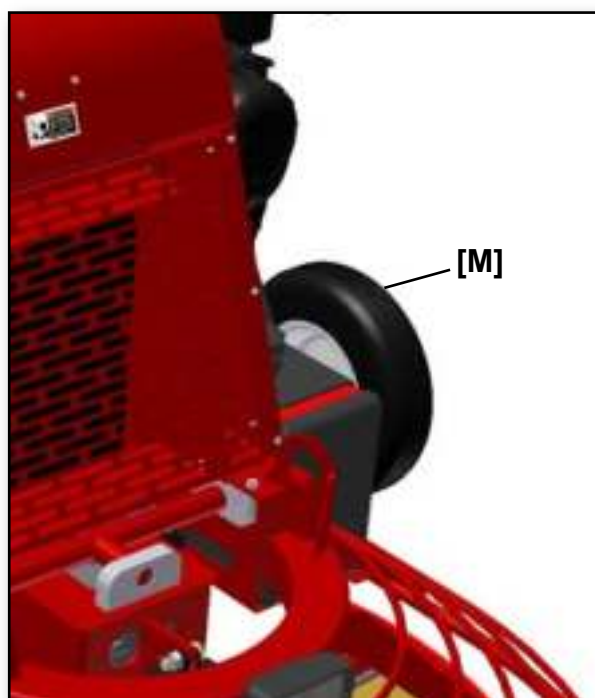
### **3.5 Transporting Trowel Procedures**

Optional dolly jacks are available for short moves or to aid in servicing the trowel. Install dolly jacks as follows:

- 1) Inspect dolly jack for serviceability and damage.
- 2) Place riding trowel on firm level ground.
- 3) Insert the front dolly jack **[J]** fully into the holes in the mainframe of the riding trowel. The front dolly jacks are equipped with short lifting tubes while the rear dolly jacks have long lifting tubes.
- 4) Insert the rear dolly jack **[M]** with the long lifting tubes into the holes provided in the rear of the mainframe. The holes in the mainframe are located directly opposite the front holes.
- 6) Turn jack handles clockwise to lift trowels and counter-clockwise to lower trowel.



**FIGURE 3.4.1**  
FRONT DOLLY JACK LOCATION



**FIGURE 3.4.2**  
REAR DOLLY JACK LOCATION

## 3.4, continued Transporting Trowel

## SECTION 3 SERVICE



*The dolly jack lifting system is designed for short moves and to aid in servicing the trowel. It is not a substitute for a towing system or trailer. An optional lifting bridle [N] is available and recommended for lifting the trowel. Attach the bridle to each of the four lifting eyes [O] on the trowel. Refer to Figure 3.7.7.*



*Secure steering levers to frame to prevent them from tipping forward when the trowel is being lifted.*



**FIGURE 3.4.3**  
LIFTING BRIDLE



**FIGURE 3.4.4**  
**LIFTING HOOK LOCATION**



## 3.5 Battery Jump Start

## SECTION 3 SERVICE

### 3.9 Battery Jump Start Procedures

Occasionally it may be necessary to jump start a weak battery. If jump starting is necessary the following procedure is recommended to prevent starter damage, battery damage, and personal injury.

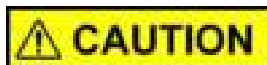


*Jump starting a battery incorrectly can cause the battery to explode resulting in severe personal injury or death.  
Do not smoke or allow any ignition sources near the battery and do not start a frozen battery.*



*Electrical arcing can cause severe personal injury.  
Do not allow positive and negative cable ends to touch.*

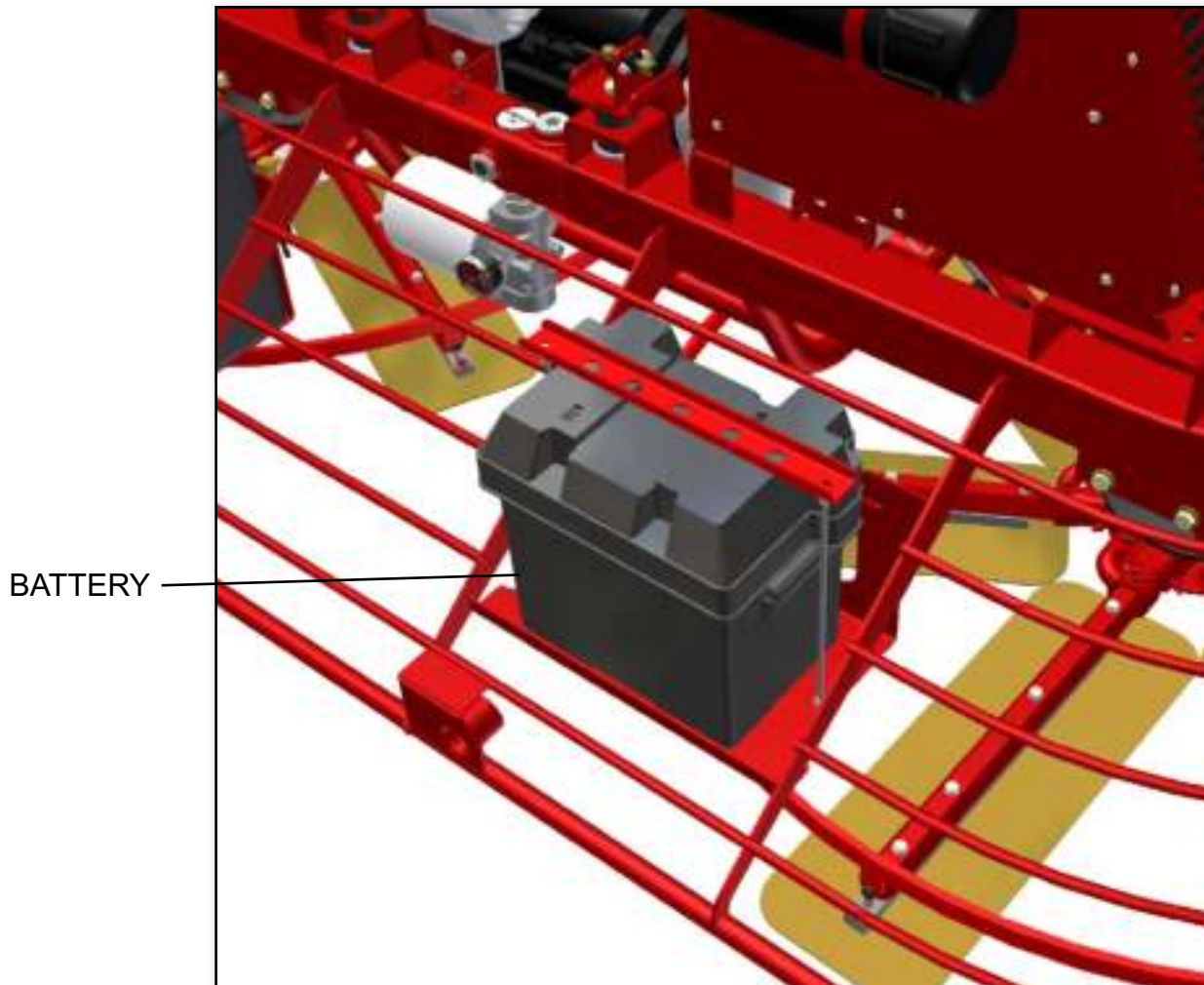
- 1) Use a battery of the same voltage (12V) as is used with your engine.
- 2) Attach one end of the positive booster cable (red) to the positive (+) terminal of the booster battery. Attach the other end to the terminal of your engine battery.
- 3) Attach one end of the negative booster cable (black) to the negative (-) terminal on the booster. Attach the other end of the negative cable to your engine battery.
- 4) Jump starting in any other manner may result in damage to the battery or the electrical system.



*Over cranking the engine can cause starter damage.  
Allow 5 minutes for starter to cool if engaged for more than 15 seconds.*



*When using lights or high amperage draw accessories, idle the engine for a period of 20 minutes to bring the battery to charge state.*



**FIGURE 3.5.1**  
**BATTERY LOCATION**



# ***Section 4***

## ***PARTS***

## SECTION 4 PARTS

### Factory Service Information

This section contains the illustrated drawings and parts list for help in identifying and/or ordering replacement parts for your machine. Follow the instructions in the front section of this manual “Ordering Parts” when ordering replacement parts to insure prompt and accurate delivery.

The Right Hand (RH) and/or Left Hand (LH) orientations are defined from the operator’s view of sitting on machine (SOM).

#### NOTE

All set screws have blue (LOC-TITE™) applied at the factory. If set screw is removed or loosened for any reason re-apply blue (LOC-TITE™).

#### NOTE

All grease fittings are capped with CAP PLUG GC-5 (AEC PN 015692) to protect the fitting. If cap becomes missing or damaged replace it as soon as possible.

We recommend Allen quality replacement parts, available from the AEC Customer Service Department or your nearest AEC Dealer.

Part numbers are subject to change without notice. Part numbers might be different outside of the United States of America. Use part numbers listed in the applicable parts list table when you place your order. If a part number changes, the AEC Customer Service Department or your nearest AEC dealer will have the latest part number for the replacement part.

Remember when you order replacement parts, you will need your model number and serial number. These are the numbers that you have recorded in the UNIT ID section of this manual. Please order replacement parts by the appropriate part number, not the key number.

This manual contains an illustrated parts list for help in ordering replacement parts for your machine. Follow the instructions below when ordering parts to insure prompt and accurate delivery:

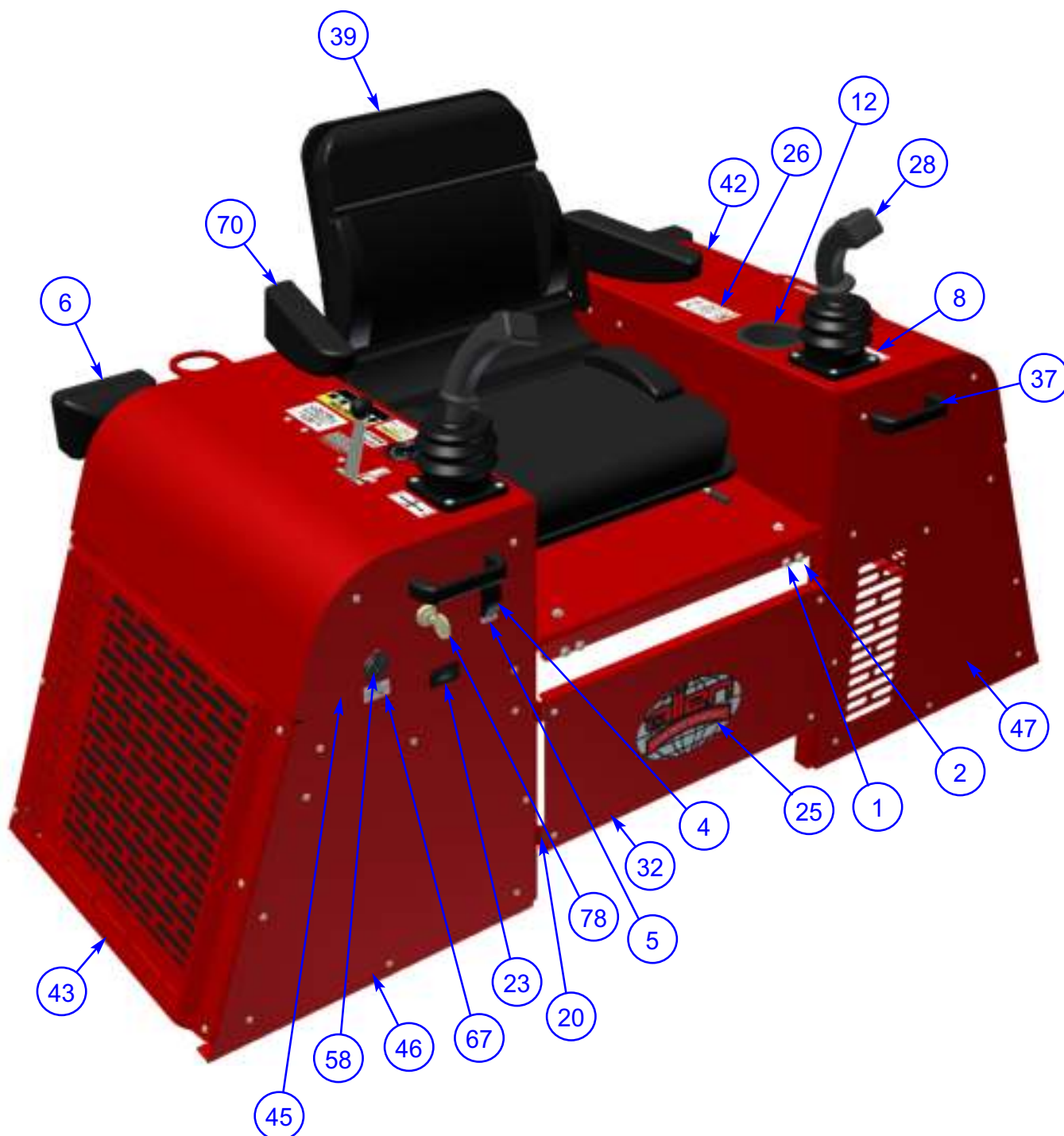
1. All orders for service parts - include the serial number for the machine. Shipment will be delayed if this information is not available.
2. Include correct description and part number from the "PARTS" Section 4.
3. Specify exact shipping instructions, including the preferred routing and complete destination address.
4. **DO NOT** return parts to AEC without receiving written authorization from AEC. All authorized returns must be shipped pre-paid.
5. When placing an order, please contact the AEC Dealer nearest you.

### **NOTE**

All information, specifications, and illustrations in this manual are subject to change without notice and are based on the latest information at the time of publication.

## SECTION 4 PARTS

### 4.1 Illustration Seat Frame Unit - 049554



## 4.1 Parts List Seat Frame Unit

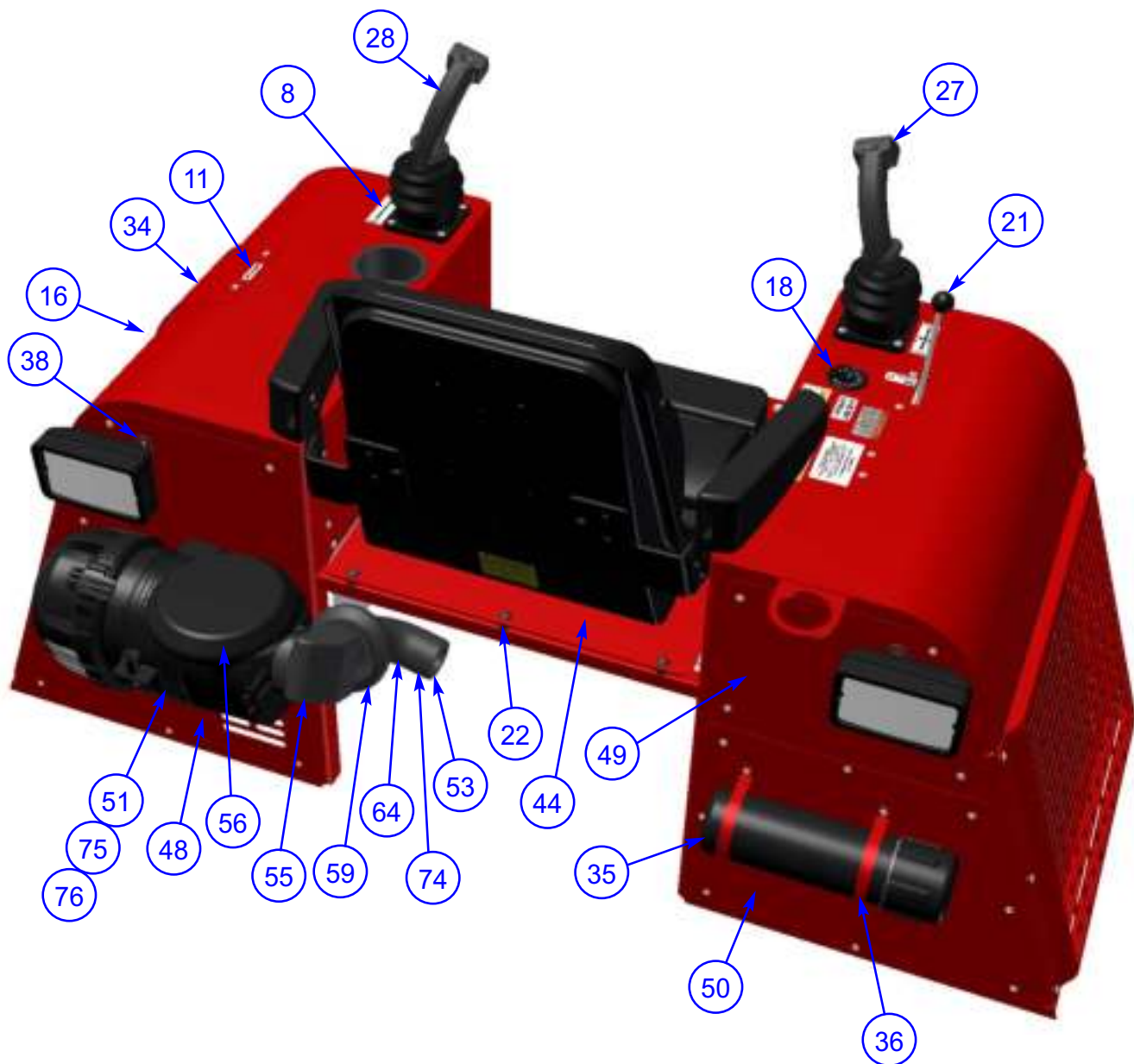
## SECTION 4 PARTS

ITEM	PART #	DESCRIPTION	QTY
1	010007	FSTN, HHCS 1/4-20 X 2	6
2	010081	FSTN, FW 1/4	12
3	020542	NUT, 1/4-20 ZINC STOVER	18
4	032125	SWITCH, ROCKER #91B2184	1
5	034876	DECAL, LIGHTS	1
6	036881	LIGHT ASSEMBLY	2
7	038979	DECAL, FWD-REV/LT-RT	1
8	038980	DECAL, FWD-REV	1
9	039048	DECAL, GEN PROTECTION WARNING	1
10	039778	DECAL, GREASE THRUST BEARING DAILY	1
11	040442	DECAL, ENGINE COOLANT	1
12	041537	CUP HOLDER	1
13	042343	FSTN, SFBHCS 1/4"-20 x 3/4	96
14	045843	16" ELECTRIC PUSHER FAN 12VDC	1
15	047263	DECAL, DIESEL OVERHEAT CAUTION	1
16	047265	DECAL, HOT COOLANT WARNING	1
17	047372	PLATE FUSE PANEL MNTSP500/HDX	1
18	047406	GUAGE, LOFA MULTIFUNCTION	1
19	047546	PAL NUT- 1/4-20	74
20	047547	FSTN, 5/16-18 PAL SNAP NUT	16
21	047643	LOCKING CONTROL, QUADRASTAT (Q14020)	1
22	047665	RUBBER BUMPER	3
23	047685	HOURLMETER, SENDEC 807-204-0111	1
24	047886	CAP, FILLER BREATHER SPB-S-1-10-N04	1
25	048036	DECAL, ACE LARGE OVAL	1
26	048181	DECAL, CALIFORNIA PRPSTN 65	1
27	048302	JOYSTICK, RH 560/HDX600 181420096-SP	1
28	048303	JOYSTICK, LH 560/HDX600 181420097-SP	1
29	048397	DECAL, COLD WEATHER START	1
30	048399	DECAL, COLD WEATHER	1
31	048595	TANK, VENT X1	1
32	048600	COVER, FRONT CENTER F/ SEAT FRAME X1	1
33	048601	BRACKET, THROTTLE CABLE X1	1
34	048605	COVER, RADIATOR ACCESS X1	1
35	048665	TUBE, MANUAL PACK PLASTIC 9000-14	1
36	048666	CLAMP, MANUAL PACK TUBE	2
37	048678	HANDLE, LOAD RATED NYLON	2
38	048681	RUBBER GROMMET	2
39	049060	SEAT, WITH DRAIN	1
40	049061	SWITCH, SEAT FOR HDX740	1
41	049550	CONNECTOR, SEAT LID PIVOT - HDX740	2
42	049551	SEAT FRAME WELDMENT HDX740	1
43	049552	COVERM RH & LH FOR HDX740 SEAT FRAME	2
44	049553	SEAT LID WELDMENT HDX740	1
45	049555	COVER, FRONT TOP CONTROL PANEL HDX740	1
46	049556	COVER, FRONT RH BOTTOM HDX740	1
47	049557	COVER, FRONT LEFT HAND HDX740	1



## SECTION 4 PARTS

### 4.1 Illustration Seat Frame Unit (cont'd)



## 4.1 Parts List Seat Frame Unit (cont'd)

## SECTION 4 PARTS

ITEM	PART #	DESCRIPTION	QTY
48	049558	COVER, REAR LH HDX740	1
49	049559	COVER, REAR RH TOP HDX740	1
50	049560	COVER, REAR RH BOTTOM HDX740	1
51	049579	AIR CLEANER 60HP CUMMINS	1
52	049580	MOUNTING BAND FOR HDX740 AIR CLEANER	1
53	049582	1/2"-2" REDUCING ADAPTER	1
54	049583	2"-3" REDUCING ADAPTER	1
55	049584	3" 90 DEGREE RUBBER CONNECTOR	1
56	049585	RAIN CAP F/ HDX740	1
57	049586	TUBE SPLICER INTAKE HDX740	1
58	049588	FEMALE RECEPTICAL 12VDC	1
59	049696	MODIFIED 3" RUBBER HUMP CONNECTOR	1
60	049725	SHROUD, HEAT TOP FOR SEAT FRAME HDX740	1
61	049726	SHROUD END SIDE F/ TOP SEAT FRAME HDX740	2
62	049734	HYD OIL COOLER - HDX740	1
63	049735	SHROUD, COOLER FAN F/ HDX740 HYD OIL	1
64	049797	2" ID 90 DEGREE ELBOW RUBBER	1
65	049805	FSTN, HWHS #12 x 1/2 TYPE B	2
66	049833	DECAL, SPARK WARNING	1
67	049834	DECAL, ACCESSORY	1
68	049835	ISOLATOR, FOR FUSE PANEL HDX740/560	2
69	049836	FSTN, SFBHCS 1/4-20 X 1/4" LONG	2
70	049062	ARM REST, RIDER SEAT (RH/LH SET)	2
71	049829	HARNESS, WIRING - HDX740 (NOT SHOWN)	1
72	049830	HARNESS, LIGHT - HDX740 (NOT SHOWN)	1
73	028243	CABLE, THROTTLE 52" HD (NOT SHOWN)	1
74	044831	CLAMP, 2" LINED HOSE	2
75	049851	FILTER, AIR PRIMARY F/ 60HP CUMMINS	
76	049852	FILTER, AIR SAFETY F/ 60HP CUMMINS	
77	049798	DECAL, UNLOADER PATENT PENDING	1
78	049589	KEY SWITCH, CUMMINS FOR HDX740	1



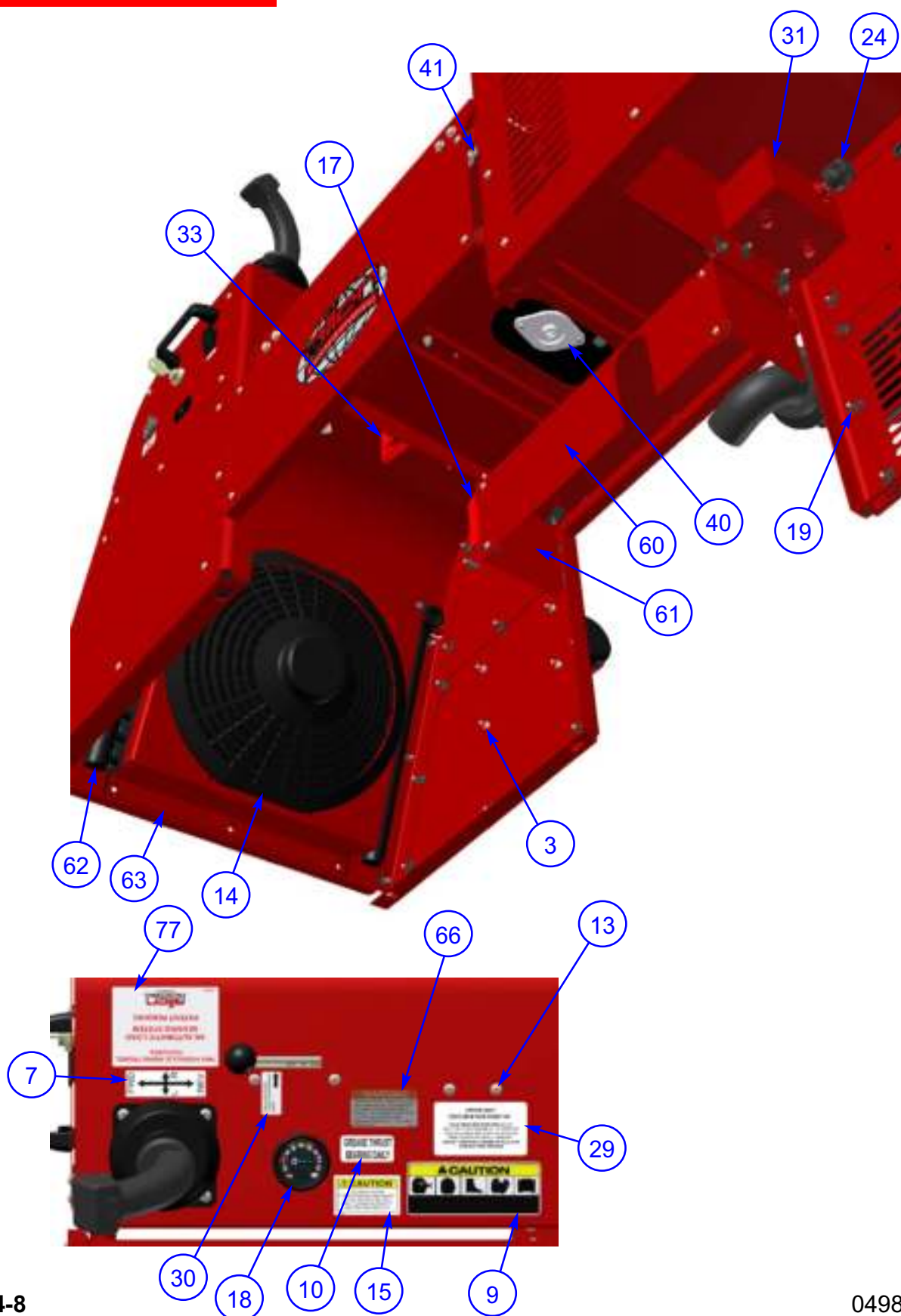
### NOTE

Parts List is continued from Page 4-5. Parts will be bulleted on different pages.



## SECTION 4 PARTS

### 4.1 Illustration Seat Frame Unit (cont'd)





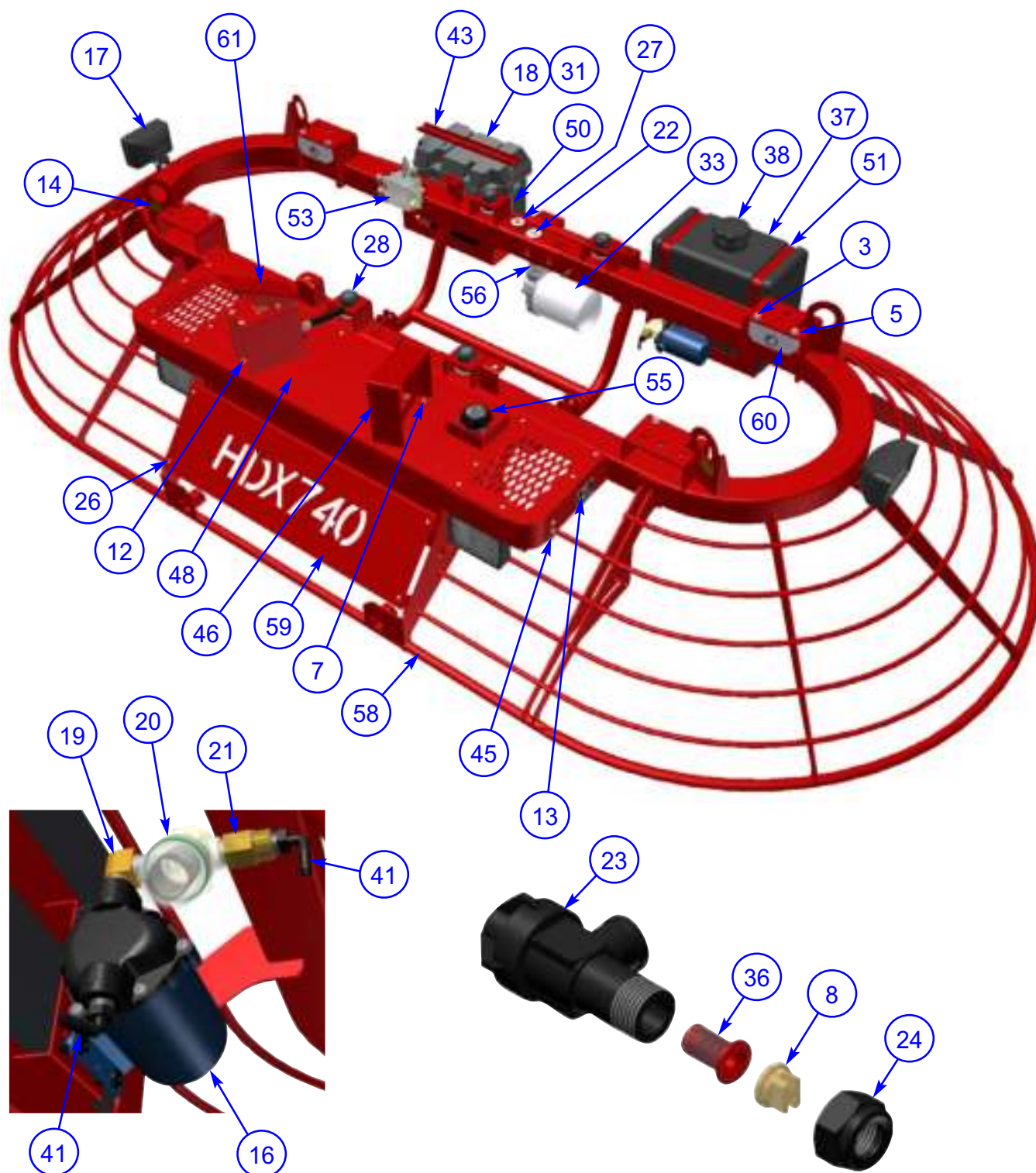
## 4.1 Parts List Seat Frame Unit (cont'd)

## SECTION 4 PARTS

ITEM	PART #	DESCRIPTION	QTY
1	010007	FSTN, HHCS 1/4-20 X 2	6
2	010081	FSTN, FW 1/4	12
3	020542	NUT, 1/4-20 ZINC STOVER	18
4	032125	SWITCH, ROCKER #91B2184	1
5	034876	DECAL, LIGHTS	1
6	036881	LIGHT ASSEMBLY	2
7	038979	DECAL, FWD-REV/LT-RT	1
8	038980	DECAL, FWD-REV	1
9	039048	DECAL, GEN PROTECTION WARNING	1
10	039778	DECAL, GREASE THRUST BEARING DAILY	1
11	040442	DECAL, ENGINE COOLANT	1
12	041537	CUP HOLDER	1
13	042343	FSTN, SFBHCS 1/4"-20 x 3/4	96
14	045843	16" ELECTRIC PUSHER FAN 12VDC	1
15	047263	DECAL, DIESEL OVERHEAT CAUTION	1
16	047265	DECAL, HOT COOLANT WARNING	1
17	047372	PLATE, FUSE PANEL 560/600 SEAT FRAME	1
18	047406	GUAGE, LOFA MULTIFUNCTION	1
19	047546	PAL NUT- 1/4-20	74
20	047547	FSTN, 5/16-18 PAL SNAP NUT	16
21	047643	LOCKING CONTROL, QUADRASTAT (Q14020)	1
22	047665	RUBBER BUMPER	3
23	047685	HOURLMETER, SENDEC 807-204-0111	1
24	047886	CAP, FILLER BREATHER SPB-S-1-10-N04	1
25	048036	DECAL, ACE LARGE OVAL	1
26	048181	DECAL, CALIFORNIA PRPSTN 65	1
27	048302	JOYSTICK, RH 560/HDX600 181420096-SP	1
28	048303	JOYSTICK, LH 560/HDX600 181420097-SP	1
29	048397	DECAL, COLD WEATHER START	1
30	048399	DECAL, COLD WEATHER	1
31	048595	TANK, VENT X1	1
32	048600	COVER, FRONT CENTER F/ SEAT FRAME X1	1
33	048601	BRACKET, THROTTLE CABLE X1	1
34	048605	COVER, RADIATOR ACCESS X1	1
35	048665	TUBE, MANUAL PACK PLASTIC 9000-14	1
36	048666	CLAMP, MANUAL PACK TUBE	2
37	048678	HANDLE, LOAD RATED NYLON	2
38	048681	RUBBER GROMMET	2
39	049060	SEAT, WITH DRAIN	1
40	049061	SWITCH, SEAT FOR HDX740	1
41	049550	CONNECTOR, SEAT LID PIVOT - HDX740	2
42	049551	SEAT FRAME WELDMENT HDX740	1
43	049552	COVERM RH & LH FOR HDX740 SEAT FRAME	2
44	049553	SEAT LID WELDMENT HDX740	1
45	049555	COVER, FRONT TOP CONTROL PANEL HDX740	1
46	049556	COVER, FRONT RH BOTTOM HDX740	1
47	049557	COVER, FRONT LEFT HAND HDX740	1

## SECTION 4 PARTS

### 4.2 Illustration Main Frame Assembly - 049740



## 4.2 Parts List Main Frame Assembly

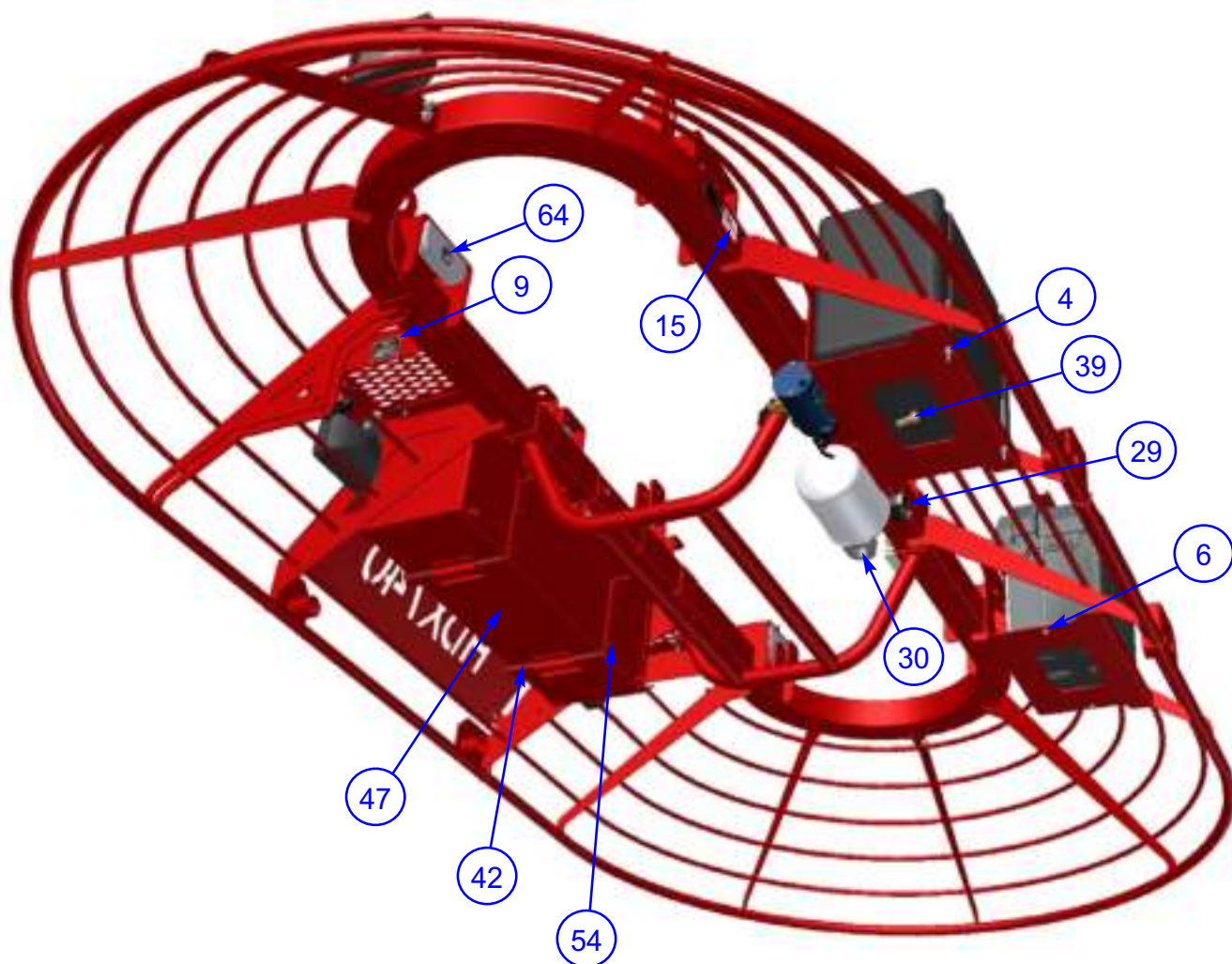
## SECTION 4 PARTS

ITEM	PART #	DESCRIPTION	QTY
1	010001	FSTN, HHCS 1/4-20 X 1/2 GR 5	4
2	010035	FSTN, HHCS 3/8-16 X 3/4	4
3	010036	FSTN, HHCS 3/8-16 X 1	8
4	010089	FSTN, LW 1/4	6
5	010091	FSTN, LW 3/8	8
6	010098	FSTN, NUT HEX 1/4-20	8
7	010568	FSTN, RHMS 10-32 X 1/2	8
8	012702	TIP, 80°x0.10 GPM BRASS SPRAY	2
9	012994	RIVET, 1/8x3/8 ALUM DOME HD	4
10	020514	FSTN, NUT STOVER LOCK 3/8-16	4
11	020542	FSTN, NUT STOVER LOCK 1/4-20	4
12	029568	FSTN, NUT NYLOK 10-32	8
13	032097	DECAL, SERIAL NUMBER PLATE	1
14	032159	DECAL, LIFT HERE ONLY (SMALL)	4
15	032896	DECAL, MADE IN USA-FLAG	1
16	033735	PUMP, SPRAY SYSTEM	1
17	036881	LIGHT, PREP F/ RIDING TROWELS	4
18	037771	BATTERY, 12 V GRAY 655CA	1
19	038105	ELBOW, 3/8x3/8 INVERTED FLARE BRASS	1
20	040209	FILTER, RETARDANT SPRAY SYSTEM	1
21	040388	FTG, 3/8X1/4 BRASS FM TO FM REDUCER	1
22	041509	DECAL, HYDRAULIC OIL CAP	1
23	041604	BODY, NYLON CHECK VALVE NOZ	2
24	041624	RETAINER, NYLON SPRAY TIP	2
25	042140	BRACKET, REAR LIGHT SP400B	2
26	042343	FSTN, SFBHCS 1/4"-20 x 3/4	18
27	044216	FTG, PLUG #12 SAE	1
28	043364	ISOL, FRONT NEOPRENE MOTOR MT	4
29	046242	FILTER GAUGE, GV-10 (HD530)	1
30	046243	FILTER SUCTION HEAD, SSF130002	1
31	046696	BOX, STANDARD BATTERY	1
32	046731	SIGHT GLASS SLW-CL-12-SAE	1
33	049801	ELEMENT, SUCTION FILTER	1
34	047294	PAD, 7-7/16x5-11/16x1-1/2 BARRIER	2
35	047546	PAL NUT- 1/4-20	18
36	047578	STRAINER, POLY 50 µ MESH	2
37	047700	TANK, 6 GALLON PLASTIC BLACK	1
38	047701	CAP, 3-1/2" VENTED BLACK	1
39	047702	FTG, 'L' FUEL 1/4" NIPPLE 90 DEG	1
40	047703	BUSHING, 6 GAL PLASTIC TANK	1
41	047933	ELBOW, 1/4 PUSHLOK x 1/4 NPT PLASTIC	2



**SECTION 4**  
**PARTS**

**4.2 Illustration**  
**Main Frame Assembly (cont'd)**





## 4.2 Parts List Main Frame Assembly (cont'd)

## SECTION 4 PARTS

ITEM	PART #	DESCRIPTION	QTY
42	048562	CUSHION, BOTTOM TANK (RUBBER) X1	2
43	048563	CHANNEL, BATTERY HOLD-DOWN X1	1
44	048564	BRACKET, RH SPRAY NOZZLE X1	1
45	048566	BRACKET, LH SPRAY NOZZLE X1	1
46	048571	FOOT REST, X1	1
47	048577	TANK, FUEL ALUM F/ X1	1
48	048583	COVER, FRONT DECK X1	1
49	048588	CUSHION, TOP TANK (RUBBER) X1	1
50	048589	ROD, BATTERY HOLD-DOWN X1	2
51	048591	STRAP, RETARDANT TANK HOLD-DOWN X1	2
52	048653	BARB, HOSE PLASTIC 1/4" x 1/4 NPT	2
53	048657	MANIFOLD, HIGH PRESSURE X1	1
54	048676	PLUG, HOLLOW SBR RUBBER	8
55	048680	CAP, VENTED W/ GAUGE X1	1
56	048737	FTG., 6407-16-16-NWO	1
57	048937	DECAL, MFG BY ALLEN ENGR	1
58	049501	WELD, MAIN FRAME HDX740	1
59	049531	COVER, FRONT FOR HDX740	1
60	049738	BEARING ASSEMBLY FOR HDX740 WITH WHITE D9 MOTORS	4
61	049806	ASSEMBLY, VALVE FOOT PEDAL HDX740	1
62	019429	HOSE, 5/16" FUEL LINE (NOT SHOWN)	108"
63	048246	HOSE, 3/8" WATER LINE (NOT SHOWN)	106"
64	048560	BEARING, I-GLIDE FLANGED T500 (REPLACEMENT PART)	

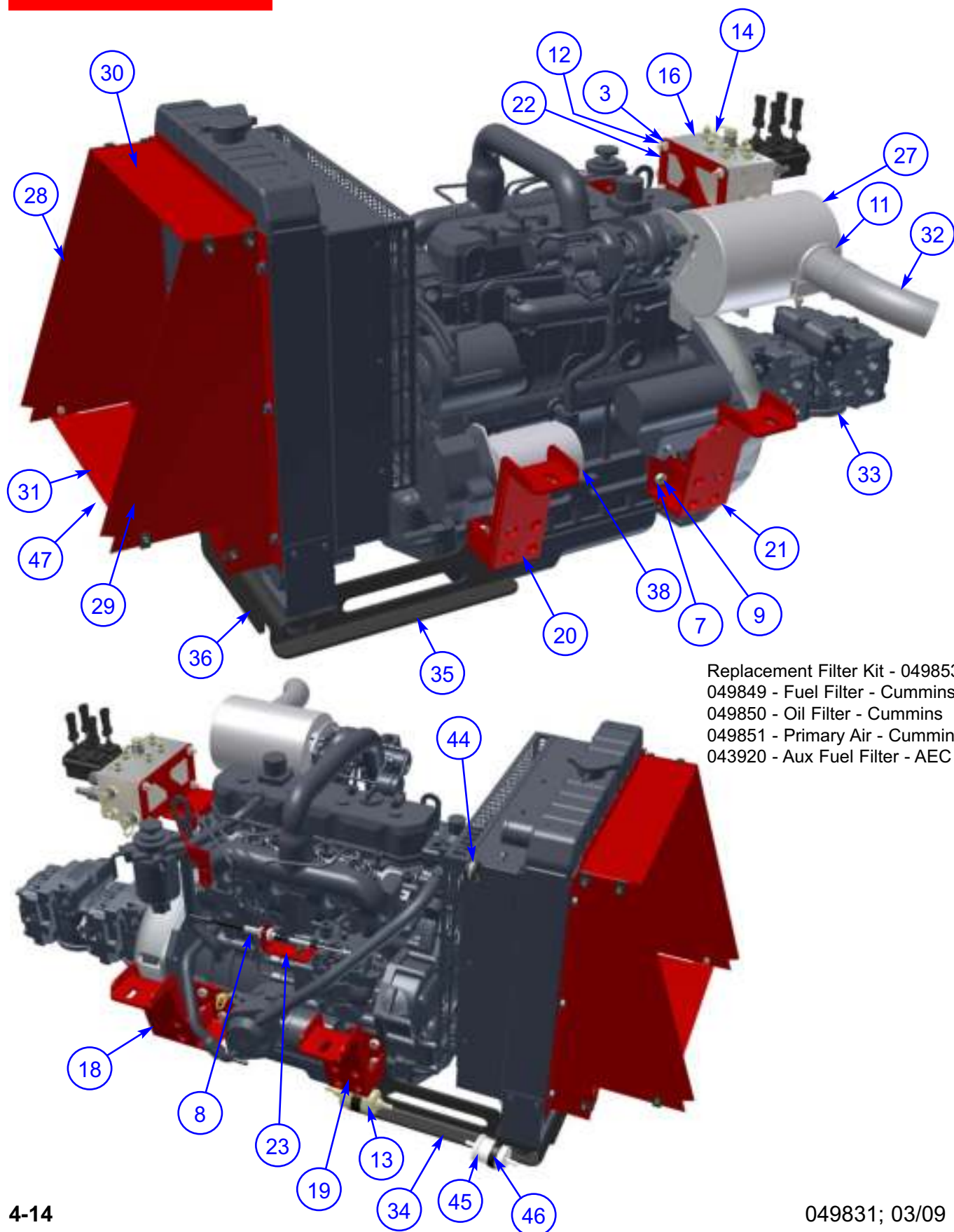


### NOTE

Parts List is continued from Page 4-11. Parts will be bulleted on different pages.

## SECTION 4 PARTS

### 4.3 Illustration Power Unit Assembly - 049590



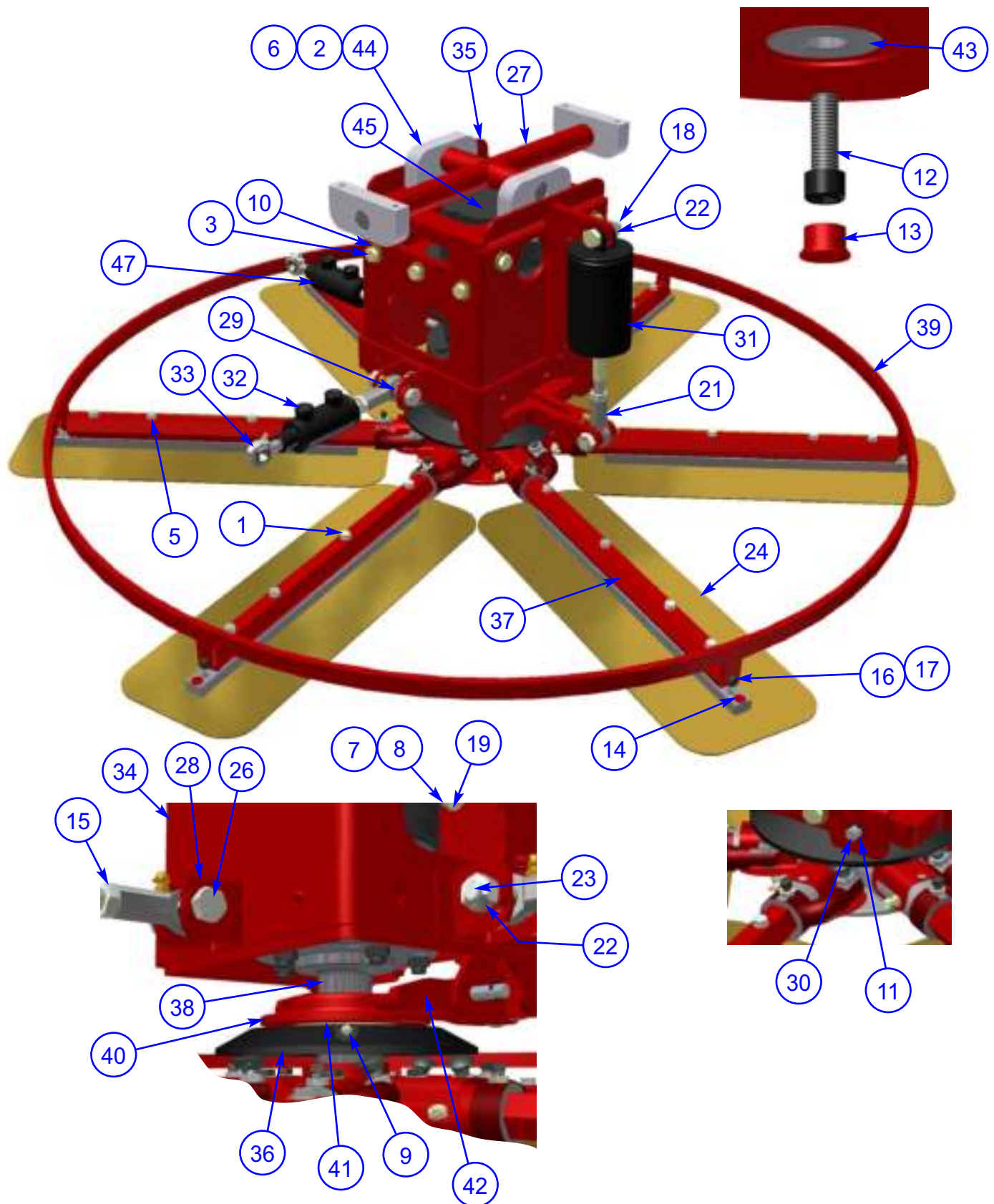
## 4.3 Parts List Power Unit Assembly

## SECTION 4 PARTS

ITEM	PART #	DESCRIPTION	QTY
1	010001	FSTN, HHCS 1/4-20 X 1/2 GR 5	8
2	010002	FSTN, HHCS 1/4-20 X 3/4	1
3	010082	FSTN, FW 5/16	4
4	010093	FSTN, LW 1/2	2
5	011490	FSTN, FW HARDENED 1/2	2
6	020542	FSTN, NUT STOVER LOCK 1/4-20	1
7	021072	FSTN, LW 10MM	18
8	028243	CABLE, THROTTLE 52" HD	1
9	029023	FSTN, HHCS 10 X1.5 X 20 MM LONG	8
10	029026	FSTN, HHCS 10 X1.5 X 35 MM LONG	8
11	038381	CLAMP, 2 1/8" MUFFLER	1
12	040004	FSTN, 5/16-18 GR-C STOVER HEX NUT	4
13	043922	FUEL PUMP HD550/560	1
14	044966	FSTN, HHCS 5/16-18 X 4 1/4 GR8	4
15	047546	FSTN, 1/4-20 PAL SNAP NUT	8
16	048656	MANIFOLD, STEERING X1	1
17	049037	END, 10-32 FEM AF-3 ROD	1
18	049564	ENGINE MOUNT REAR OIL FILTER SIDE HDX740	1
19	049567	ENGE MNT. FRONT OIL FILTER SIDE	1
20	049569	WELD, ENG MNT FRONT (TURBO SIDE)	1
21	049573	ENGINE MNT BRACKET TURBO SIDE REAR	1
22	049576	MOUNT, MANIFOLD PITCH/STEER HDX740	1
23	049577	BRACKET, THROTTLE 60 HP CUMMINS	1
24	049578	BRACKET, FUEL FILTER HDX740	1
25	049591	ENGINE CUMMINS 60HP A2300T	1
26	049592	HAYES HOUSING, 942510	1
27	049719	MUFFLER, 60 HP CUMMINS	1
28	049721	SHROUD, LH SIDE FOR HDX740 CUMMINS ENGINE	1
29	049722	SHROUD, RH SIDE FOR HDX740 CUMMINS ENGINE	1
30	049723	SHROUD. TOP FOR HDX740 CUMMINS ENGINE	1
31	049724	SHROUD, BOTTOM FOR HDX740 CUMMINS ENGINE	1
32	049729	EXHAUST TAIL PIPE FOR HDX740 CUMMINS	1
33	049736	TANDEM HYD PUMP FOR HDX740	1
34	049742	BRACKET, RADIATOR OIL FILTER SIDE CUMMINS 60HP	1
35	049743	BRACKET RADIATOR ALTERNATOR SIDE	1
36	049744	BRACKET RADIATOR CENTER	1
37	049745	PLATE, SPACER FOR RADIATOR HDX740	2
38	049775	AUX PUMP, HYD FOR PITCH STEER AND PILOT VALVE	1
39	049810	FSTN, SHCS 10 X 1.5 X 50 MM	2
40	049812	BRACKET, COIL SOLENOID CUMMINS 60 HP ENGINE HDX740	1
41	049813	COIL 12V DC - 60HP CUMMINS - HDX740	1
42	049814	FSTN, HHCS 8MM x 1.25 x 16MM	6
43	049848	FSTN, HHCS M8 X 1.25 X 20 MM GR8	2
44	028794	CLIP, WIRE HOLDER INS 1/4 BLT	1
45	043920	FILTER, IN-LINE DIESEL	1
46	040389	CLIP, SP500 1 3/4" WIRE LOOM	1
47	034368	WEATHER STRIP, FINGER STYLE (NOT SHOWN)	60.6"

## SECTION 4 PARTS

### 4.4 Illustration Left Rotor Assembly - 049596





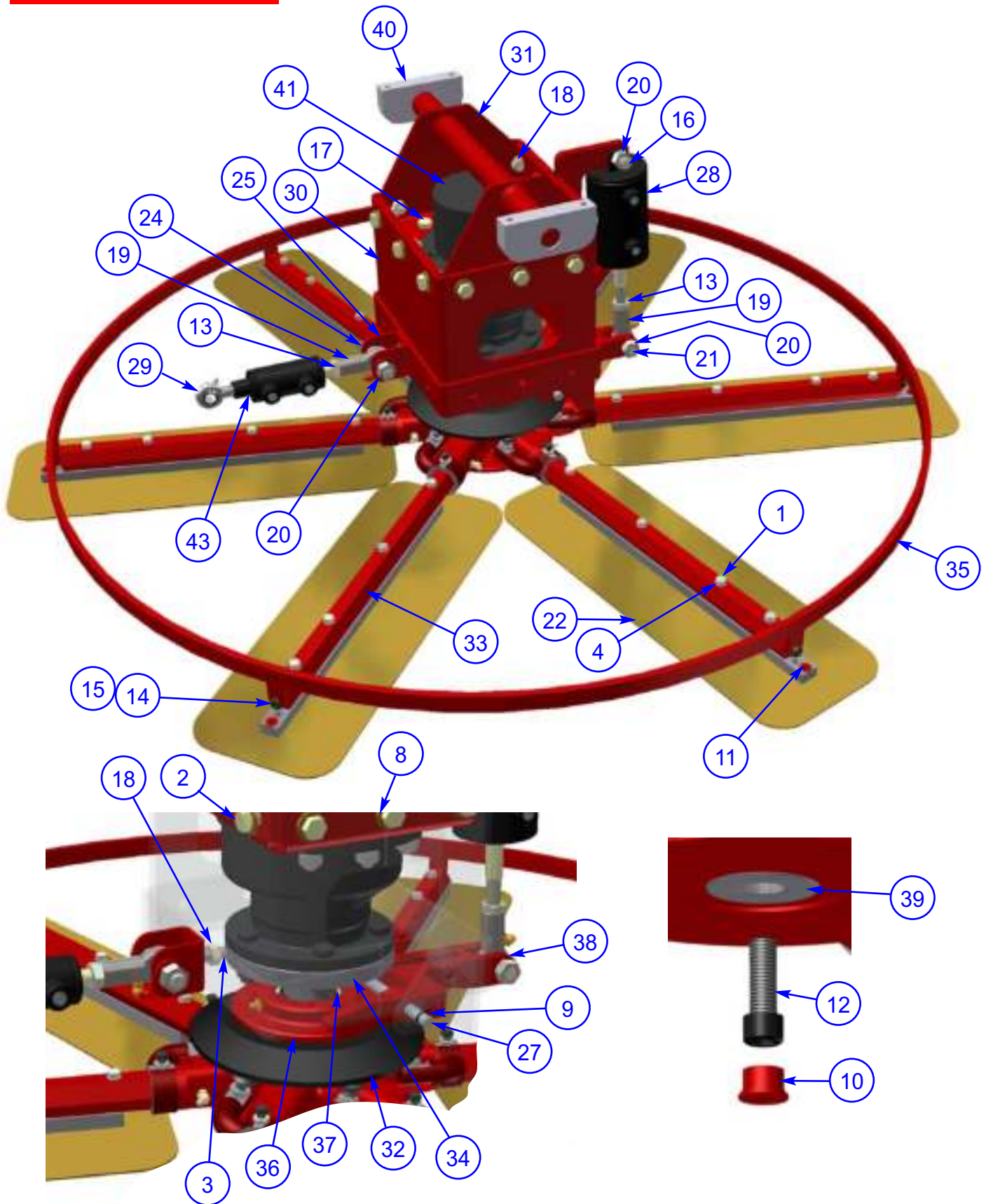
## 4.4 Parts List Left Rotor Assembly

## SECTION 4 PARTS

ITEM	PART #	DESCRIPTION	QTY
1	010024	FSTN, HHCS 5/16-18 X 2 GR 5	24
2	010036	FSTN, HHCS 3/8-16 X 1	4
3	010068	FSTN, HHCS 1/2-13 X 1 1/4 GR 8	11
4	010069	FSTN, HHCS 1/2-13 X 1-1/2	2
5	010090	FSTN, LW 5/16	24
6	010091	FSTN, LW 3/8	4
7	010093	FSTN, LW 1/2	6
8	010106	FSTN, NUT HEX 1/2-13	6
9	010513	FITTING, 1/4-28 STR GREASE	1
10	011490	FSTN, FW HARDENED 1/2	13
11	015677	RING, Ø7/16 E-STYLE RETAINING	2
12	015691	FSTN, SHCS 1/2-13 X 1-1/2 RH	1
13	015693	PLUG, PLASTIC CAP EC12	1
14	015694	PLUG W-1 RED PLASTIC TAPERD	6
15	020688	FSTN, JAM HEX NUT 5/8-18	3
16	025091	FSTN, 5/16-18x1/2xØ3/8x3/8 SHLDR SCR	6
17	025092	BUSHING, 3/8x1/2x5/16 BRONZE	6
18	027969	FSTN, HHCS 5/8-18 X 2 GR 8	1
19	037798	FSTN, HHCS 1/2-13 X 1 1/2 GR8	6
20	040208	FSTN, 1/2-13 STOVER NUT	11
21	043125	1/2" FEMALE ROD END	3
22	043269	FSTN, NUT STOVER 5/8-18	4
23	047354	FSTN, HHCS 5/8-18x2-1/4 GR8 YZPLT	1
24	047973	BLADE, 8 X 23 FLAT FINISH	6
25	048097	ORIFICE, SS SAE 37DEG FLARE ADAPTOR (NOT SHOWN)	2
26	048339	FSTN, HHCS 5/8-18 x 3 GR 8	2
27	048622	CROSSHEAD WELDMENT, L,R & F&R	1
28	048624	CHANNEL, CYLINDER ROD END CONNECTOR	2
29	048627	SPACER, STEERING CONNECTION	4
30	048628	PIN, YOKE ARM	1
31	048659	CYLINDER, PITCH HDX RIDERS	1
32	048661	CYLINDER, 1.5x1.25 STEERING	1
33	048747	1/2" MALE ROD END	2
34	049518	HYD. MTR. MNT POCLAIN MS03	1
35	049526	HYD MTR. MNT RH FOR POCLAIN MC03 MTRS	1
36	049537	PLATE, PRESSURE 6 BOSS HDX740	1
37	049538	SPIDER ASSY, LH SHD 1200-6	1
38	049541	SHAFT, ROTOR LH SOM HDX740	1
39	049543	STABILIZER RING HDX740	1
40	049599	BEARING CAP HDX740	1
41	049697	BEARING HDX740 SPIDER ASSEMBLY	1
42	049698	PITCH YOKE ARM FOR HDX740	1
43	049708	WASHER, HD RETAINING	1
44	049738	BEARING ASSEMBLY F/ ROTOR MOUNT X1	4
45	049953	MOTOR, ROTOR HYDRADYNE MSE03 HDX740	1
46	050700	KEY, HDX740 ROTOR 1/2 x 1-5/8	1
47	050718	CYLINDER, 1.5x1.5 STEERING	1
48	201163	FITTING, 1/8-27 NPT STRAIGHT GREASE	1

## SECTION 4 PARTS

### 4.5 Illustration Right Rotor Assembly - 049595



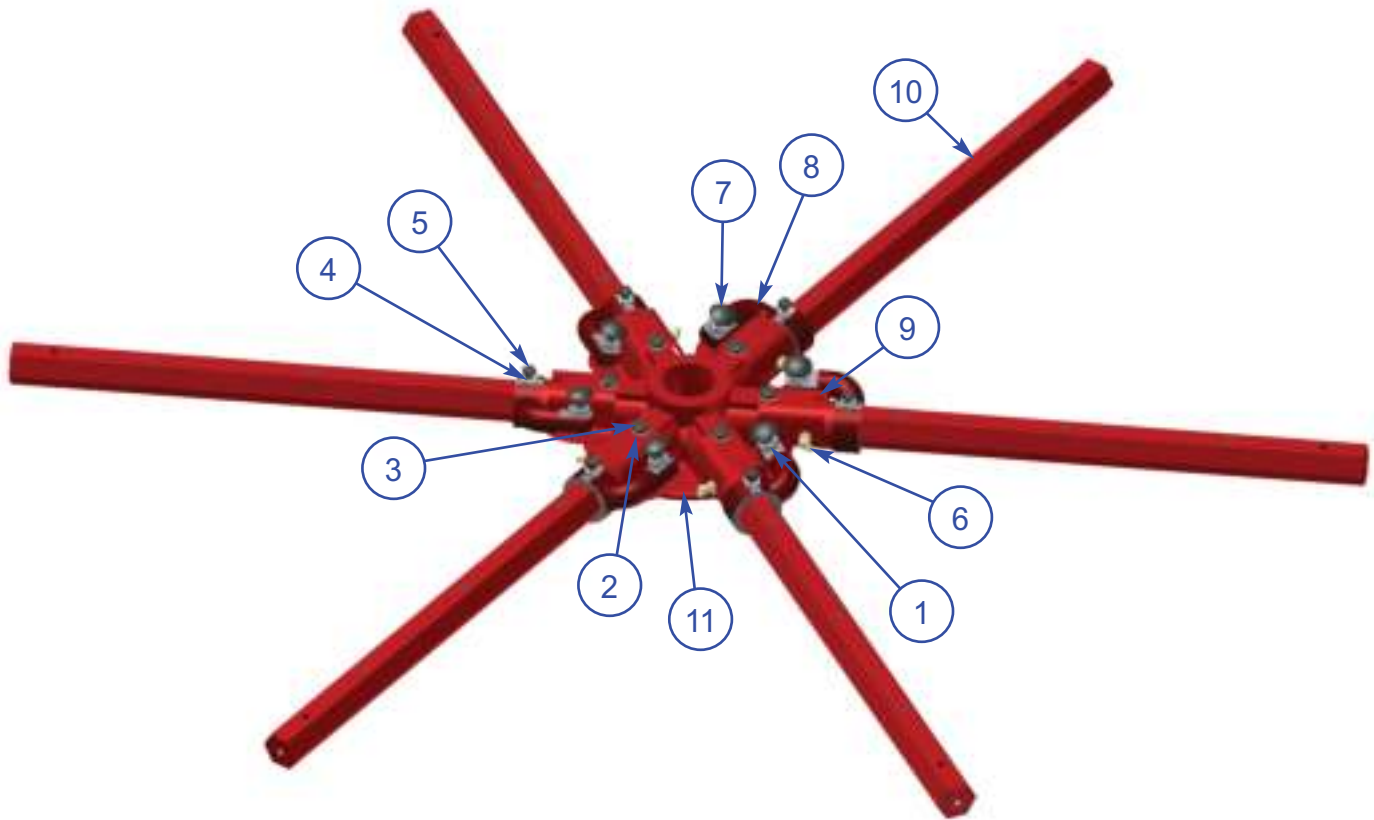
## 4.5 Parts List Right Rotor Assembly

## SECTION 4 PARTS

ITEM	PART #	DESCRIPTION	QTY
1	010024	FSTN, HHCS 5/16-18 X 2 GR 5	24
2	010068	FSTN, HHCS 1/2-13 X 1-1/4 GR 8	11
3	010069	FSTN, HHCS 1/2-13 X 1-1/2	1
4	010090	FSTN, LW 5/16	24
5	010093	FSTN, LW 1/2	6
6	010106	FSTN, NUT HEX 1/2-13	6
7	010513	FITTING, 1/4-28 STR GREASE	1
8	011490	FSTN, FW HARDENED 1/2	12
9	015677	RING, Ø7/16 E-STYLE RETAINING	2
10	015693	PLUG, PLASTIC CAP EC12	1
11	015694	PLUG W-1 RED PLASTIC TAPERD	6
12	020155	FSTN, SHCS 1/2-13 X 1-1/2 LH	1
13	020688	FSTN, JAM HEX NUT 5/8-18	2
14	025091	FSTN, 5/16-18x1/2xØ3/8x3/8 SHLDR SCR	6
15	025092	BUSHING, 3/8x1/2x5/16 BRONZE	6
16	027969	FSTN, HHCS 5/8-18 X 2 GR 8	1
17	037798	FSTN, HHCS 1/2-13 X 1 1/2 GR8	6
18	040208	FSTN, 1/2-13 STOVER NUT	12
19	043125	ROD, END FEMALE 5/8 WITH FITTING	2
20	043269	FSTN, NUT STOVER 5/8-18	3
21	047354	FSTN, HHCS 5/8-18x2-1/4 GR8 YZPLT	1
22	047973	BLADE, 8 X 23 FLAT FINISH	6
23	048097	ORIFICE, SS SAE 37DEG (NOT SHOWN)	1
24	048339	FSTN, HHCS 5/8-18 x 3 GR 8	1
25	048624	CHANNEL, CYLINDER ROD END CONNECTOR	1
26	048627	SPACER, STEERING CONNECTION	2
27	048628	PIN, YOKE ARM	1
28	048659	CYLINDER, PITCH HDX RIDERS	1
29	048747	ROD, END MALE 5/8 X1 MODIFIED	1
30	049518	HYD. MTR. MNT POCLAIN MS03	1
31	049529	HYD MTR. MNT. RH POCLAIN MS03 MOTOR	1
32	049537	PLATE, PRESSURE 6 BOSS HDX740	1
33	049539	SPIDER ASSEMBLY, RH HDX740	1
34	049540	SHAFT, RH SOM HYD. MOTOR HDX740	1
35	049543	STABILIZER RING HDX740	1
36	049599	BEARING CAP HDX740	1
37	049697	BEARING HDX740 SPIDER ASSEMBLY	1
38	049698	PITCH YOKE ARM FOR HDX740	1
39	049708	WASHER, HD RETAINING	1
40	049738	BEARING ASSEMBLY FOR HDX740	2
41	049953	MOTOR, ROTOR HYDRADYNE MSE03 HDX740	1
42	050700	KEY, HDX740 ROTOR	1
43	050718	CYLINDER F&R HDX RIDERS	1
44	201163	FITTING, 1/8-27 PTF STR GREASE	1

## SECTION 4 PARTS

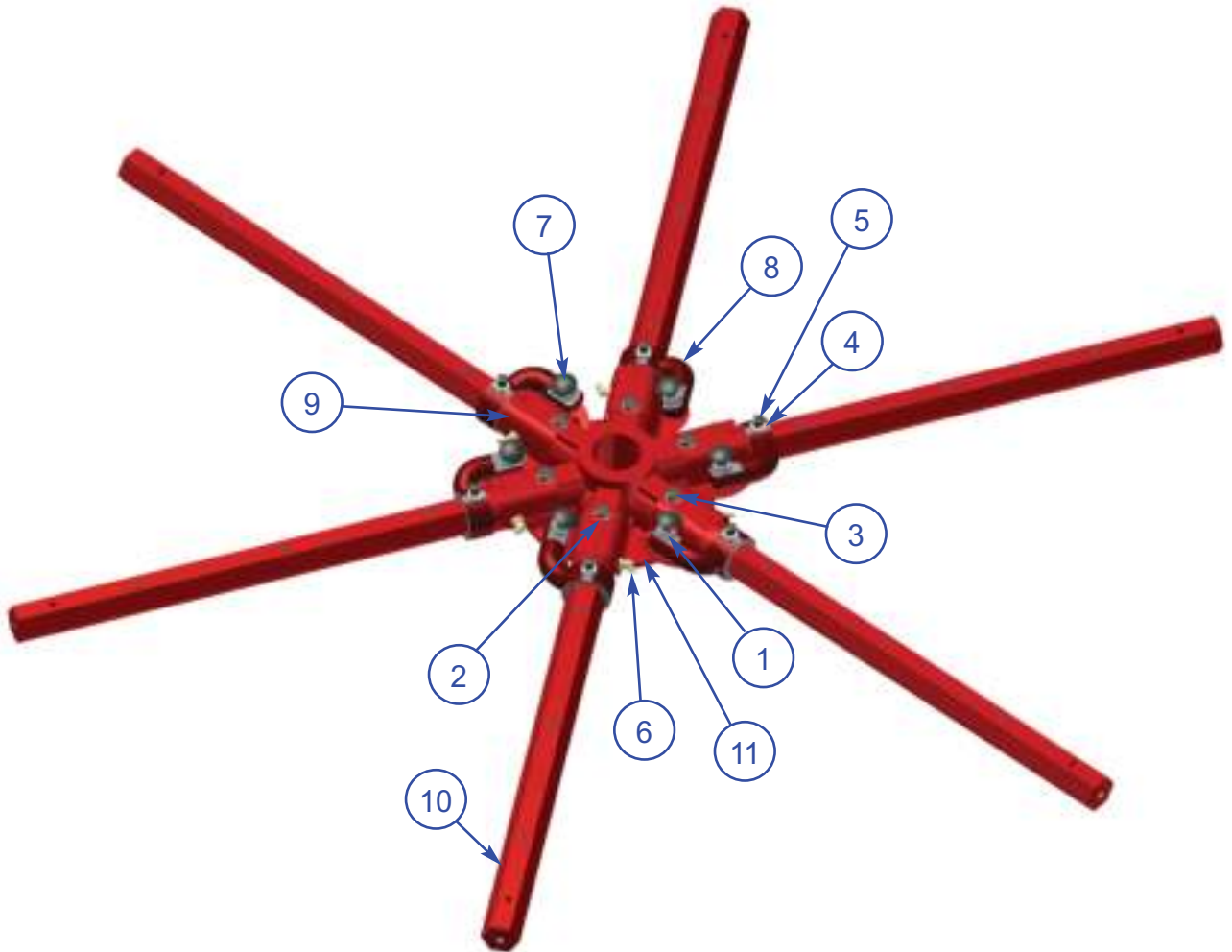
### 4.6 Illustration and Parts List LH Spider Assembly - 049538



ITEM	PART #	DESCRIPTION	QTY
1	010050	FSTN, NUT HEX JAM 1/2-13	6
2	015682	FSTN, LW EXT STAR 3/8	6
3	015683	FSTN, 3/8-16 X 7/8 DOG CAP SCREW	6
4	015684	FSTN, NUT HEX JAM 3/8-16	6
5	015686	FSTN, SQHSS 3/8-16 X 1	6
6	024755	FITTING, 1/8-27 NPT 45° GREASE	6
7	028216	FSTN, CABLT 1/2-13 X 1-1/2 GR8	6
8	033034	LEVER, LIFT SD UNIVERSAL	6
9	040792	CLIP, 46-48 UNIV SPIDER SPRING	6
10	049533	TROWEL ARM F/ 6 BOSS SPIDER ASSY	6
11	049535	SPIDER LH 6 BOSS CW ROTATION	1

## 4.7 Illustration and Parts List RH Spider Assembly - 049539

## SECTION 4 PARTS



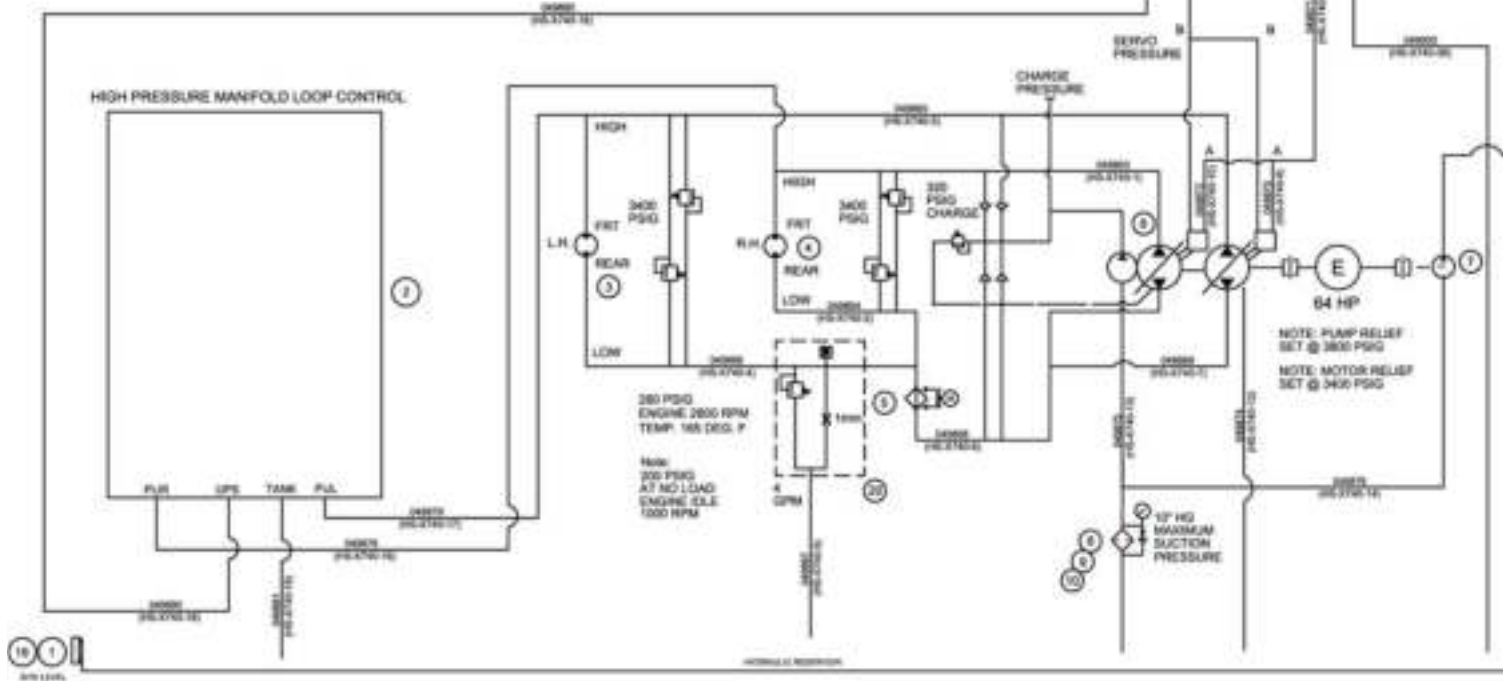
ITEM	PART #	DESCRIPTION	QTY
1	010050	FSTN, NUT HEX JAM 1/2-13	6
2	015682	FSTN, LW EXT STAR 3/8	6
3	015683	FSTN, 3/8-16 X 7/8 DOG CAP SCREW	6
4	015684	FSTN, NUT HEX JAM 3/8-16	6
5	015686	FSTN, SQHSS 3/8-16 X 1	6
6	024755	FITTING, 1/8-27 NPT 45° GREASE	6
7	028216	FSTN, CABLT 1/2-13 X 1-1/2 GR8	6
8	033034	LEVER, LIFT SD UNIVERSAL	6
9	040792	CLIP, 46-48 UNIV SPIDER SPRING	6
10	049533	TROWEL ARM F/ 6 BOSS SPIDER ASSY	6
11	049536	SPIDER RH 6 BOSS CW ROTATION	1



## SECTION 4 PARTS

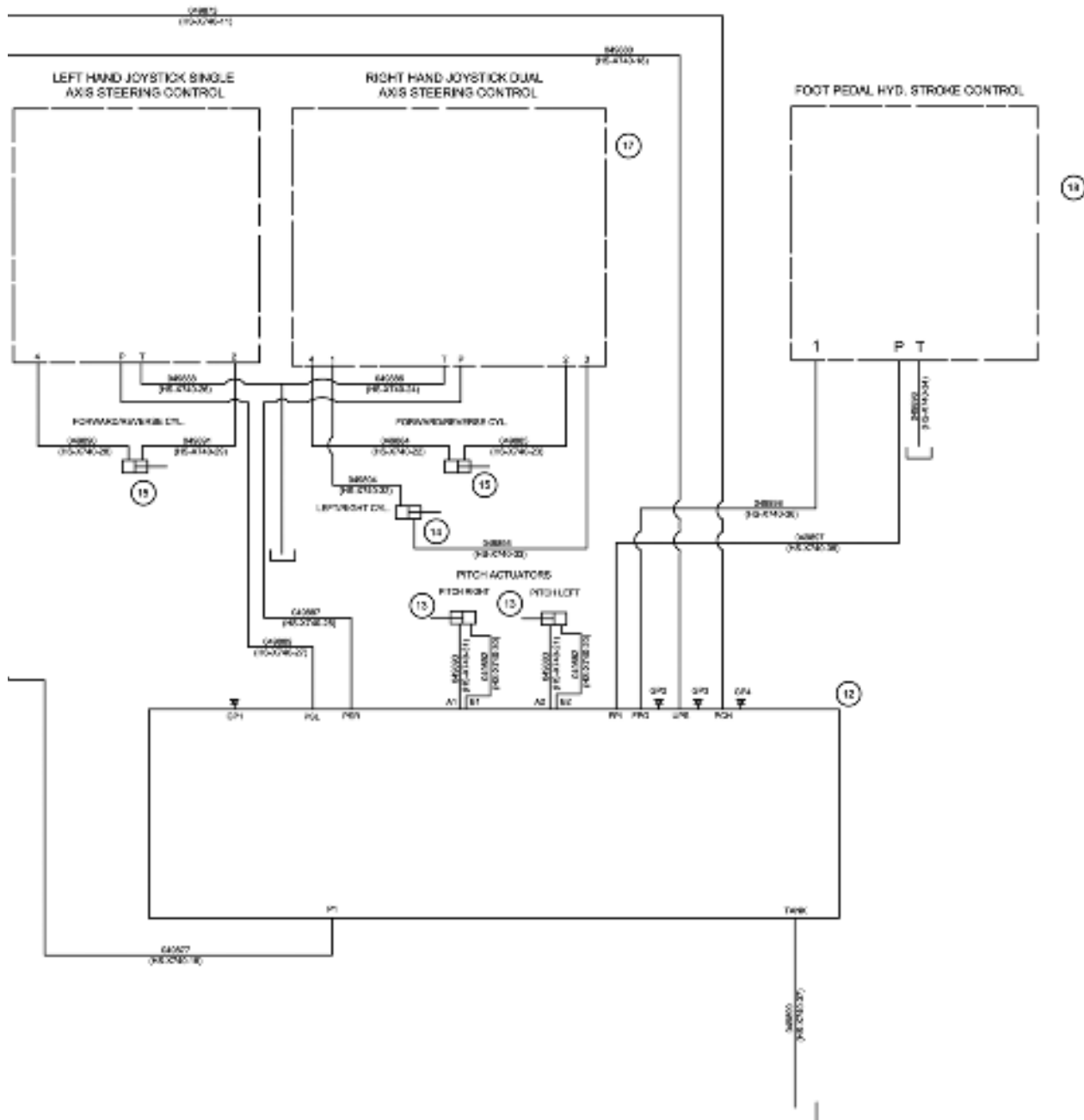
## 4.8 Illustration Hydraulic Schematic

ITEM	PART #	DESCRIPTION	QTY
1	046731	SITE LEVEL GLASS	1
2	046657	HIGH PRESSURE MANFOLD	1
3	049598	LEFT HAND MOTOR (R.H. THREAD)	1
4	049597	RIGHT HAND MOTOR (L.H. THREAD)	1
5	049734	HYDRAULIC COOLER	1
6	049738	TANDEM PISTON PUMP	1
7	049775	GEAR PUMP	1
8	046242	FILTER GAUGE	1
9	046243	FILTER HEAD	1
10	049801	FILTER ELEMENT	1
11	047888	BREATHER ELEMENT	1
12	048656	STEERING MANFOLD	1
13	048658	PITCH CYLINDER	2
14	049660	L/R STEERING CYLINDER	1
15	049661	F/R STEERING CYLINDER	2
16	048303	L.H. SINGLE AXIS JOYSTICK	1
17	048302	R.H. DUAL AXIS JOYSTICK	1
18	049800	FOOT PEDAL CONTROL	1
19	046733	MAGNETIC PLUG	1
20	049799	COOLER PURGING MANFOLD	1



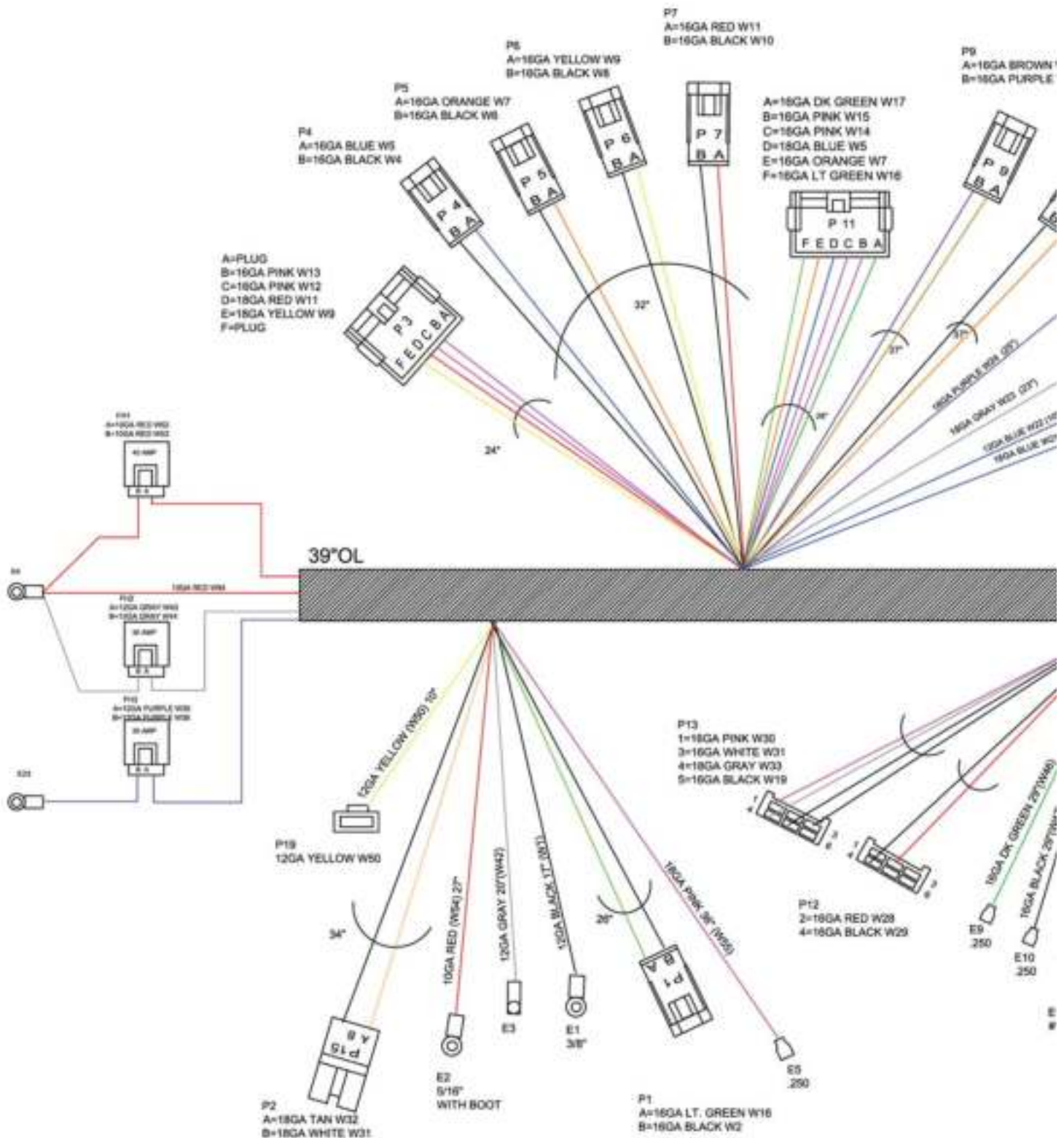
## 4.8 Illustration Hydraulic Schematic

## SECTION 4 PARTS



## SECTION 4 PARTS

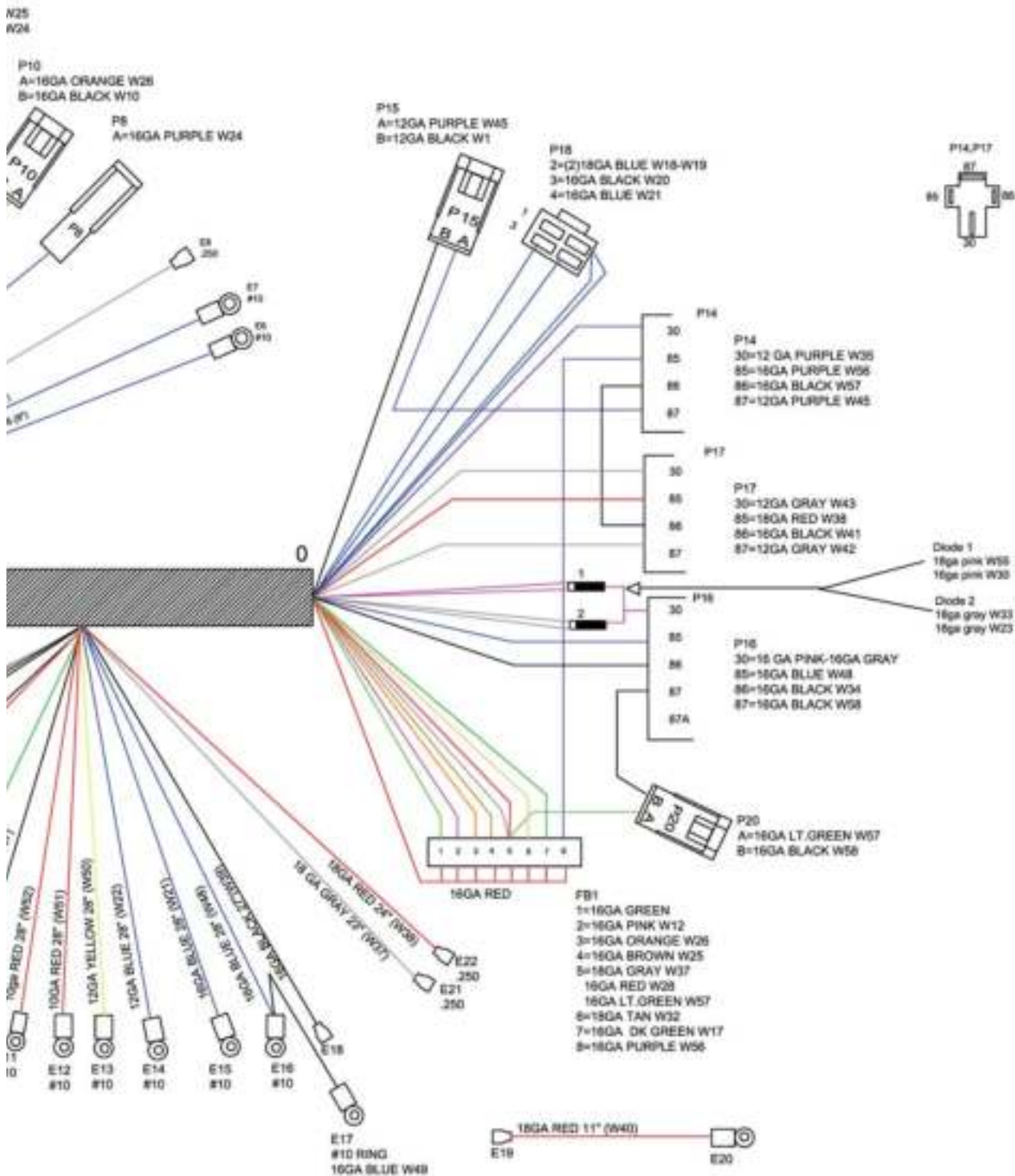
## 4.9 Illustration Electrical Harness Schematic





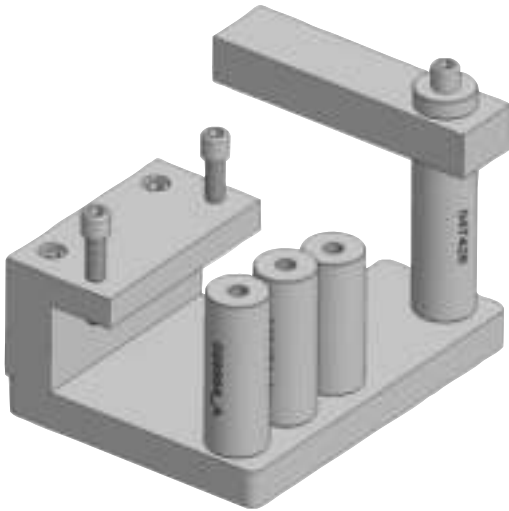
## 4.9 Illustration Electrical Harness Schematic

## SECTION 4 PARTS



## SECTION 4 PARTS

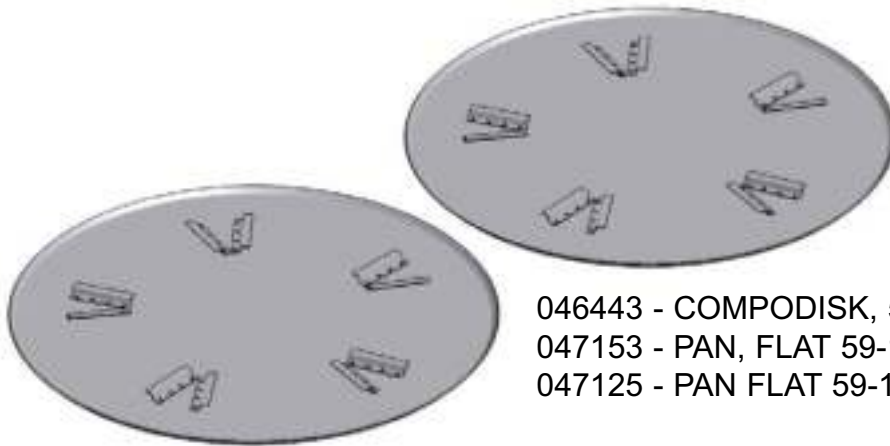
### 4.10 Tools and Accessories



016863 - TROWEL ARM JIG



040041 - LIFT BRIDLE



046443 - COMPODISK, 59-1/4" OD X 1"

047153 - PAN, FLAT 59-1/4" CLIP-ON (SHOWN)

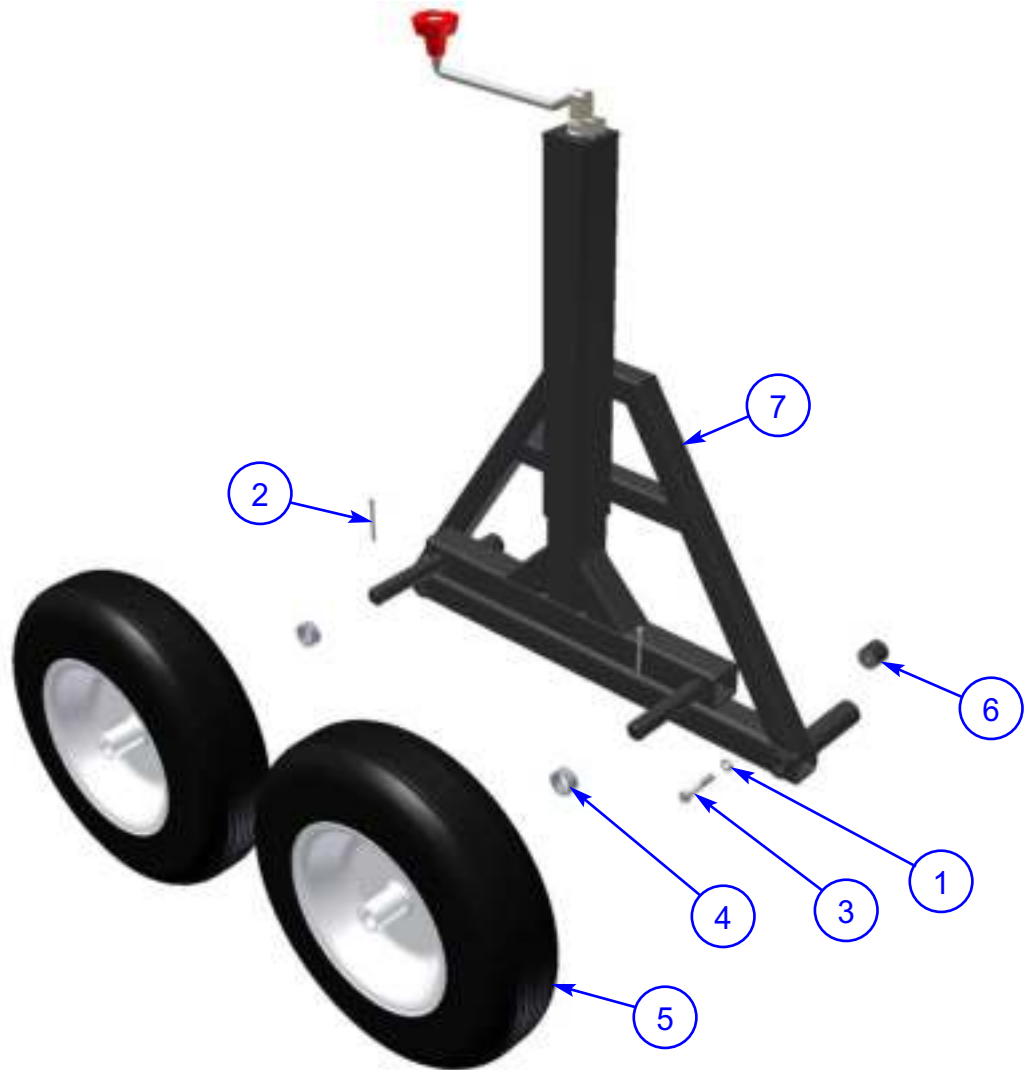
047125 - PAN FLAT 59-1/4" SAFETY CATCH



049858 - HDX740 SPIDER PULLER

## 4.11 Dolly Jack Assembly 048770

## SECTION 4 PARTS



ITEM	PART #	DESCRIPTION	QTY
1	010091	FSTN, LW 3/8	2
2	010133	PIN, Ø3/16 X 2 ZP STL COTTER	2
3	026775	FSTN, HHCS 3/8-16 X 2 GR 8	2
4	039094	SPACER, SP DOLLY JACK OUTSIDE	2
5	039095	WHEEL, SP DOLLY JACK	2
6	048423	BUMPER, RUBBER F/ HDX DOLLY JACK	2
7	048769	DOLLY JACK - HDX RIDERS	1



---

INTENTIONALLY BLANK

**YOUR TOTAL SOURCE FOR CONCRETE EQUIPMENT**



**800-643-0095 Or 870-236-7751**  
**FAX: 800-643-0097 Or 870-236-3934**

P.O. Box 819 Paragould, Arkansas 72451 USA  
[www.alleneng.com](http://www.alleneng.com)