

RIDING TROWEL

HP205



OPERATIONS & PARTS MANUAL

Manual Part #: 065779 | Revision: O
Language: English | Original Instructions



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.

HP205

Riding Trowel

OPERATIONS - PARTS

MANUAL

This manual covers the products listed below:

<u>Part No.</u>	<u>Description</u>
064650	TWIN ENGINE RIDER, HP205 W/ KOHLER ENGINES
079050	TWIN ENGINE RIDER, HP205 W/ VANGUARD ENGINES

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Allen Products are covered under one or more of the following patent numbers:
10,100,537; 9,068,301; 9,068,300; 8,360,680; 7,690,864; 7,114,876B1; 6,857,815B2; 6,582,153
With other Patents Pending.

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Limited Warranty

I. LIMITED WARRANTY & LIMITATION OF LIABILITY

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

TWO YEARS FROM END USER'S DATE OF PURCHASE, SUBJECT TO THE EXCEPTIONS AND SHORTER WARRANTY PERIODS DESCRIBED HEREIN.



The warranty period begins on the date of purchase by the End User of the product. All warranty is based on the following limited warranty terms and conditions, including the disclaimer of all implied warranties of any type and the disclaimer of consequential damages.

1. Allen's obligation and liability under this warranty are 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. All warranty-related parts must be purchased in advance through an Allen dealer. The parts will be made available to the Allen Distributor, Dealer, or Rental Center from whom the End User purchased the product.
For machines being prepared, a warranty request form and/ or RGA request form must be submitted to AEC after the repairs are completed.
3. Replacement warranty parts, installed in the product, are warranted only for the remainder of the warranty period of the product as though they were the original parts.
4. BATTERY POWERED PRODUCTS ARE WARRANTED FOR ONE YEAR FROM END USER'S DATE OF PURCHASE.
5. Allen does not warranty engines or batteries. Engine warranty claims should be made directly to an authorized factory service center for the particular engine manufacturer. Batteries are not warranted due to unknown treatment during transport, etc., and any battery claims should be directed to the battery manufacturer.
6. Allen's warranty does not cover the normal maintenance of products or their components (such as engine tune-ups and oil & filter changes). The warranty also does not cover normal wear and tear items (such as belts, tires, blades, pans and other consumables).
7. Hydraulic Component's are required to be maintained per Allen's mandatory service intervals in each machine's owner's manual. OEM Allen hydraulic filters and consumables are required to service machines during the warranty period. Failure to use OEM Allen hydraulic filters will result in denied warranty.
8. 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 a drop or impact to the rotors.
9. Impact damage to gearboxes is not covered under the Allen warranty and is deemed customer abuse.
10. Impact damage to trowels in any way is not covered under the Allen Warranty and is deemed customer abuse. (Example: Dropping a machine)
11. 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.
12. Allen will credit the cost of ground freight on warranty replacement parts after approval of the warranty claim. No warranty replacement parts will be shipped air-freight at the expense of Allen. Allen does not pay any inbound freight.
13. 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.
14. 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.
15. 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.
16. Warranty claims must be submitted within 30 days from the date of failure.
17. Once a warranty claim has been submitted, AEC has up to 90 business days to process the request.
18. Standard service part warranty will not exceed 90 days from the date of purchase. Exceptions to this are:
#1 Gearboxes: 1 year warranty from date of purchase.
#2 Electrical Components: 30 day warranty from date of purchase. This applies to wiring harnesses, transmitters, ECUs, display screens, and toggle switches.
19. All purchased components are subject to the inspection and warranty of the respective manufacturer. This inspection may extend beyond 90 days.
20. If warranty is suspected do not disassemble any hydraulic or electrical components. Failure to comply with this instruction will lead to denial of a warranty claim.

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**

**SECTION 5
ACCESSORIES**

Complete any warranty requirements as specified by the engine manufacturer in their instructions found inside the manual box located on the operator's control panel.

Your engine is not manufactured by Allen Engineering Corporation, Inc, 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 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.

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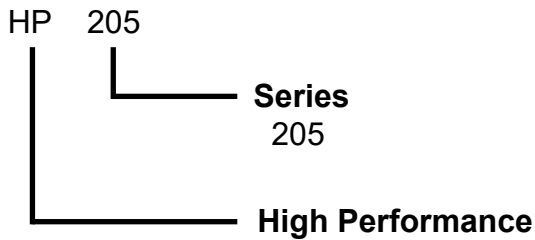
www.youtube.com/AllenMachinery

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.

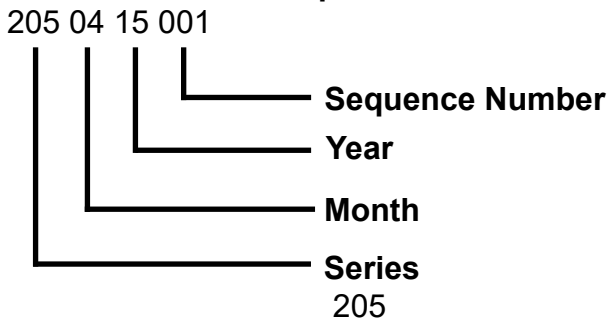
Model Number



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.

Serial Number Example



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 bottom left hand corner of the main frame front deck. See image below for serial number plate 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: _____



Technical Specifications

HP205 is a High Performance Twin Engine Ride-On Power Trowel. It is a work horse delivering a total of 53hp and built for concrete professionals. Utilizing the torque converter clutch, it provides excellent low speed torque for low speed float panning and superior high rotor speed for finishing concrete.

MODEL	HP205
Engine	2x Kohler 37 HP EFI
	2x Vanguard 40 HP
Dimensions (L x W x H)	123.7 x 63.2 x 62.1 in (314.2 x 160.5 x 157.7 cm)
Panning Width	117.6 in
Rotors (Diameter)	57.6 in. (146.3 cm) - Six-Bladed Spider
Maximum Rotor Speed	45 - 180 RPM (Variable Speed)
Weight	2169 lbs (983 kg)
Steering	Power
Fuel Capacity	12 gal. (45.4 L) - Two Tanks
Retardant Capacity	6 gal. (22.7 L)
Seat Frame	Bolt-on with Removable Screen
Finish Blades - Standard	8 x 23
Gearboxes (2)	Super Heavy Duty (SHD) 20:1 Ratio
Steering Control System	Power
Pitch Control	Joystick
Safety Shutdown Switch	Yes (Foot Pedal)
Approximate Running Time	3 Hours
Torque Converter Clutch (TC)	Standard
Engine Hour and RPM Gauge	Digital
Low Oil Detection	Low Oil Pressure Kill
Amperage, Alternator	25 Amp (2)
Lights	6

Engine Specifications 37 HP Kohler

Model	Command PRO EFI ECH980
Power hp(kW) 1	37 (27.6)
Displacement cu in (cc)	61 (999)
Bore in (mm)	3.5 (90)
Stroke in (mm)	3.1 (78.5)
Peak Torque lbs. ft (Nm)	58 (78.6)
Compression Ratio	8.8:1
Dry Weight lbs (kg)	132 (60)
Oil Capacity U.S. quarts (L)	2 (1.9)
Lubrication	Full pressure w/full-flow filter
Dimensions L x W x H in	15.8 x 19.1 x 23.6
Backpressure Limit	40
Rated Speed (RPM)	3600



Engine Specifications (Vanguard 61G2)

Engine Information

HP205 Riding Trowel equipped with a 40 HP Vanguard Gasoline engines. Refer to the applicable engine OEM owner’s manual for specific instructions regarding engine operation and engine components. This manual is included with the riding trowel at the time of shipping from AEC.

Engine Features:

Model Number:	Vanguard 61G2
Fuel Type	Gasoline
HP (Gross) (kW)	40 (29.8)
Displacement cu in (cc)	60.5 (993)
Bore in (mm)	3.37 (85.5)
Stroke in (mm)	3.41 (86.6)
Compression Ratio	8.5:1
Weight lbs (kg)	125 (56.6)
Oil Capacity U.S. oz (L)	78 (2.3)
Lubrication	Full pressure w/ Oil Cleaner
Dimensions L x W x H in	14.92 x 19.53 x 28.54



Engine Specifications (Vanguard 61G2)

Engine Oil

Recommended oil: Briggs & Stratton Warranty Certified oils. For hotter temperatures Vanguard 15W-50 Synthetic oil is recommended.

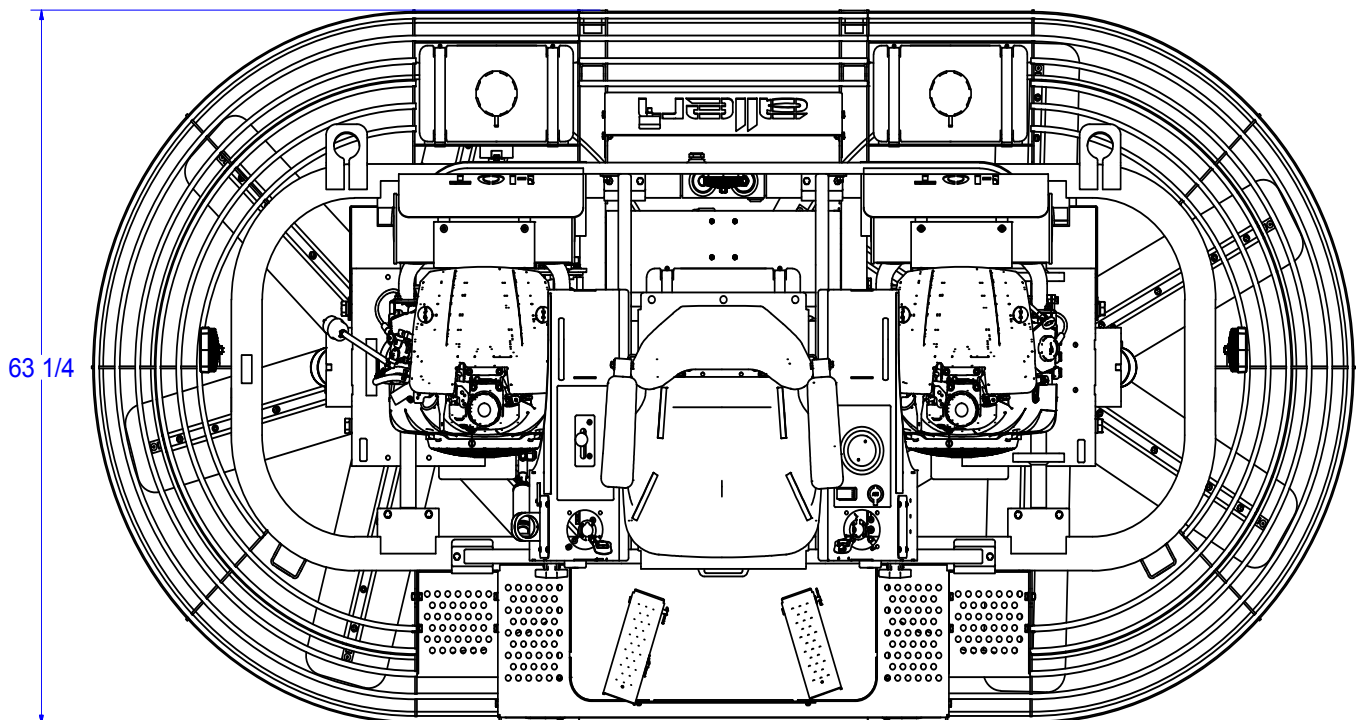
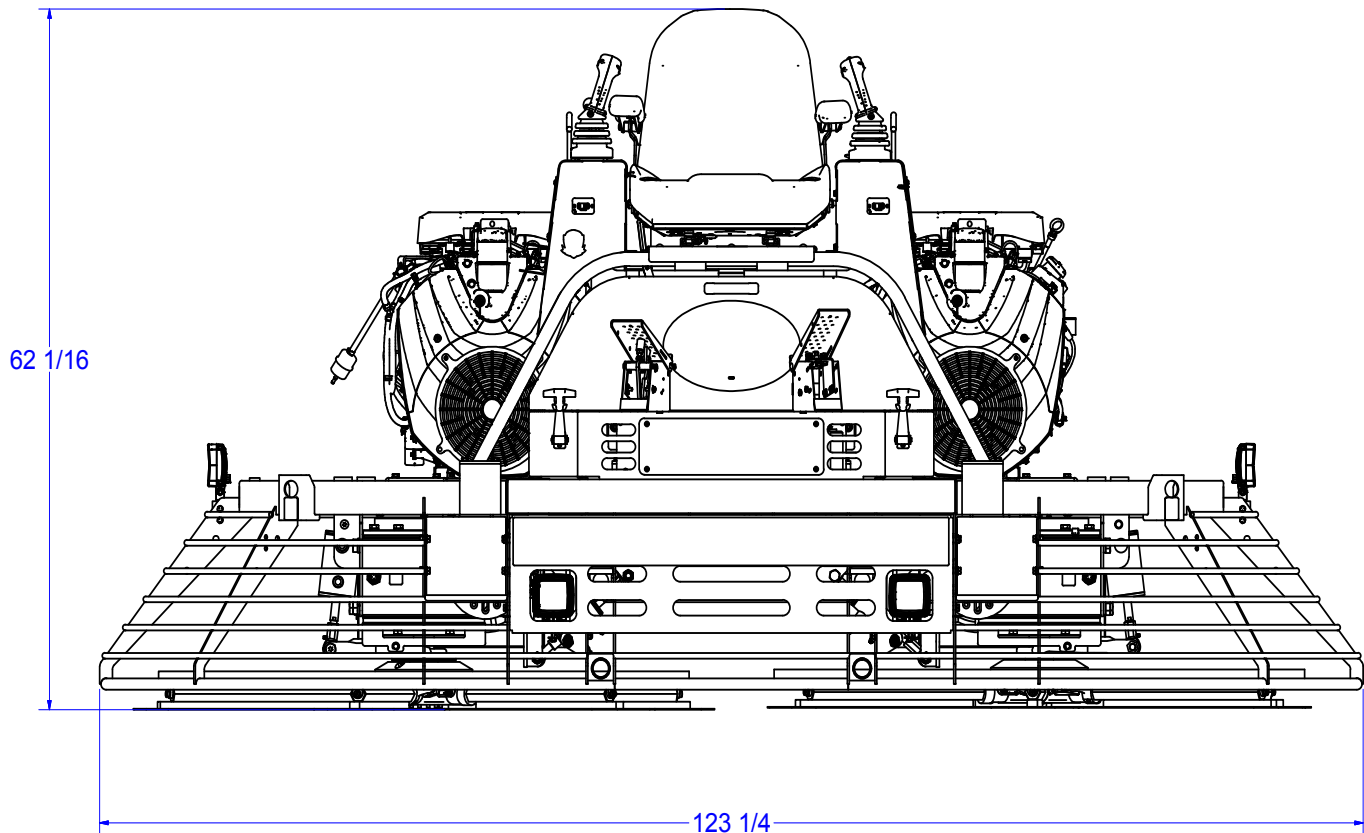
Alternative oils must be classified for service SF, SG, SH, SJ or higher. Do not use special additives.

- Change the type of engine oil according to the ambient temperature.
- When using oil of different brands from the previous one, be sure to drain all the previous oil before adding the new engine oil.
- For general use 10W/30 oil is recommended (78 oz, 2.3L). Using 10W-30 oil may cause increased oil consumption, check oil frequently.

NOTICE

This engine uses Electronic Throttle Control.

Dimensional Specifications



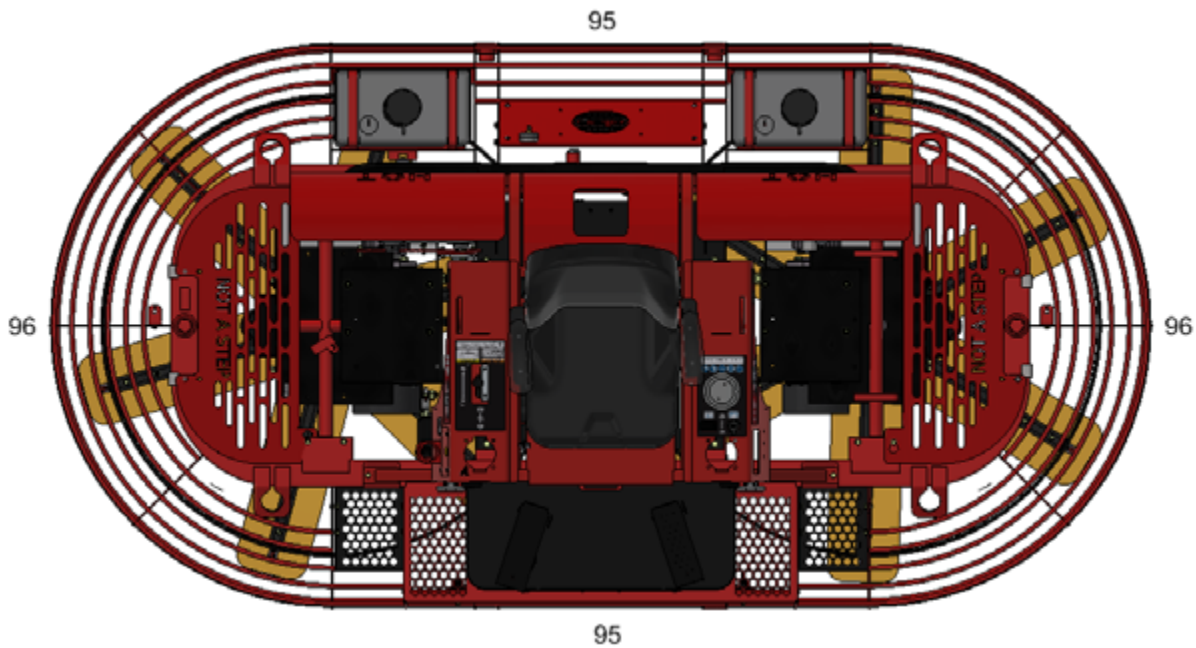
Sound Testing

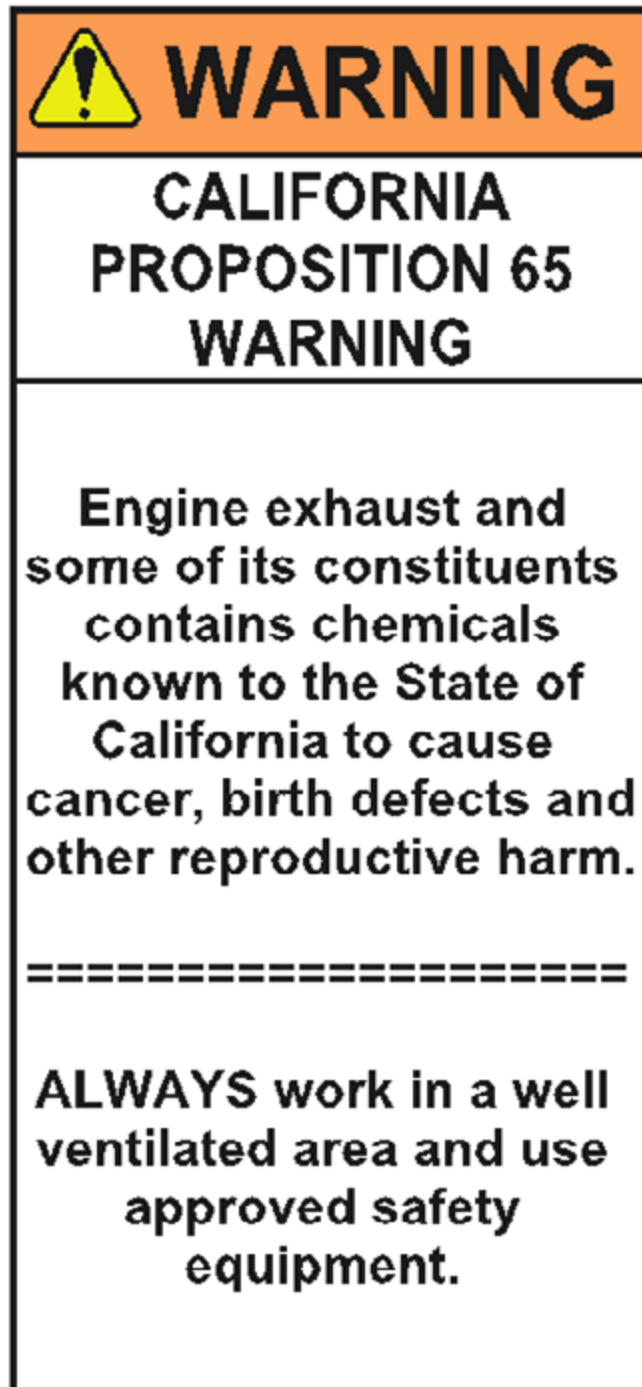


Sound Pressure Level Information:

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.

The sound levels (dB) recorded at the Front, Rear, Left and Right hand sides are shown below:





048181

SECTION 1 SAFETY

Federal Regulations Respiratory Hazards



⚠ WARNING

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.

⚠ WARNING

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.

Do not operate or service the equipment before reading the entire manual. Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the safety messages and operating instructions could result in injury to yourself and others.

SAFETY NOTES

The four safety notes shown below will inform you about potential hazards that could injure you or others. The safety notes specifically address the level of exposure to the operator and are preceded by one of four words: DANGER, WARNING, CAUTION or NOTICE.



Indicates a hazardous situation which, if not avoided, **will** result in death or serious injury.



Indicates a hazardous situation which, if not avoided, **could** result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



Addresses practices not related to personal injury.



SECTION 1 SAFETY

Safety Symbols

Potential hazards associated with the operation of this equipment will be referenced with hazard symbols which may appear throughout this manual in conjunction with safety notes.

Symbol	Safety Hazard
	Lethal exhaust gas hazards
	Explosive fuel hazards
	Burn hazards
	Rotating parts/crush hazards
	Pressurized fluid hazards
	Hydraulic fluid hazards

- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, respiratory protection, hearing protection, steel-toed boots and other protective devices required by the job or city and state regulations.



- **ALWAYS** avoid wearing jewelry or loose fitting clothes that may snag on the controls or moving parts as this can cause serious injury.

- **NEVER** operate this equipment when not feeling well due to fatigue, illness or when under medication.



- **NEVER** operate this equipment under the influence of drugs or alcohol.



- **ALWAYS** clear the work area of any debris, tools, etc. that would constitute a hazard while the equipment is in operation.

- No one other than the operator is to be in the working area when the equipment is in operation.
- **DO NOT** use the equipment for any purpose other than its intended purposes or applications.
- This equipment should only be operated by trained and qualified personnel 18 years of age and older.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult to read.
- AEC does not assume responsibility for any accident due to equipment modifications. Unauthorized equipment modification will void all warranties.
- **NEVER** use accessories or attachments that are not recommended by AEC for this equipment. Damage to the equipment and/or injury to user may result.

- **ALWAYS** know the location of the nearest fire extinguisher.



- **ALWAYS** know the location of the nearest first aid kit.



SECTION 1 SAFETY

General Safety (cont'd)

- **ALWAYS** know the location of the nearest phone or keep a phone on the job site. Also, know the phone numbers of the nearest ambulance, doctor and fire department. This information will be invaluable in the case of an emergency.



- Engine fuel exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled.

- The engine of this equipment requires an adequate free flow of cooling air. never operate this equipment in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause injury to people and property and serious damage to the equipment or engine.

- **NEVER** operate the equipment in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe bodily harm or even death.



- If applicable, never use your hand to find hydraulic leaks. Use a piece of wood or cardboard. Hydraulic fluid injected into the skin must be treated by a knowledgeable physician immediately or severe injury or death can occur.



- **ALWAYS** keep clear of rotating or moving parts while operating the riding trowel.



- **NEVER** disconnect any emergency or safety devices. These devices are intended for operator safety. Disconnection of these devices can cause severe injury, bodily harm or even death. Disconnection of any of these devices will void all warranties.



- **NEVER** allow passengers or riders on the riding trowel during operation.
- **NEVER** lubricate components or attempt service on a running machine.

NOTICE

- **ALWAYS** keep the machine in proper running condition.
- Fix damage to machine and replace any broken parts immediately.
- **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children and unauthorized personnel.

WARNING

- **DO NOT** place hands or fingers inside engine compartment when engine is running.
- **NEVER** operate the engine with heat shields or guards removed.
- Keep fingers, hands hair and clothing away from all moving parts to prevent injury.
- **DO NOT** remove the engine oil drain plug while the engine is hot. Hot oil will gush out of the oil tank and severely scald any persons in the general area of the screed.



CAUTION

- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing equipment.



NOTICE

- **NEVER** run engine without an air filter or with a dirty air filter. Severe engine damage may occur. Service air filter frequently to prevent engine malfunction.
- **NEVER** tamper with the factory settings of the engine or engine governor. Damage to the engine or equipment can result if operating in speed ranges above the maximum allowable.



SECTION 1 SAFETY

General Safety (cont'd)



- **DO NOT** start the engine near spilled fuel or combustible fluids. Fuel is extremely flammable and its vapors can cause an explosion if ignited.
- **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames.
- **ALWAYS** use extreme caution when working with flammable liquids.
- **DO NOT** fill the fuel tank while the engine is running or hot.
- **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system.
- Store fuel in appropriate containers, in well-ventilated areas and away from sparks and flames.
- **NEVER** use fuel as a cleaning agent.
- **DO NOT** smoke around or near the equipment. Fire or explosion could result from fuel vapors or if fuel is spilled on a hot engine.



- **DO NOT** drop the battery. There is a possibility that the battery will explode.
- **DO NOT** expose the battery to open flames, sparks, cigarettes, etc. The battery contains combustible gases and liquids. If these gases and liquids come into contact with a flame or spark, an explosion could occur.



- **ALWAYS** wear safety glasses when handling the battery to avoid eye irritation. The battery contains acids that can cause injury to the eyes and skin.
- Use well-insulated gloves when picking up the battery.
- **ALWAYS** keep the battery charged. If the battery is not charged, combustible gas will build up.
- **DO NOT** charge battery if frozen. Battery can explode. When frozen, warm the battery to at least 61°F (16°C).



- **ALWAYS** recharge the battery in a well-ventilated environment to avoid the risk of a dangerous concentration of combustible gases.

- If the battery liquid (dilute sulfuric acid) comes into contact with clothing or skin, rinse skin or clothing immediately with plenty of water.



- If the battery liquid (dilute sulfuric acid) comes into contact with eyes, rinse eyes immediately with plenty of water and contact the nearest doctor or hospital to seek medical attention.

CAUTION

- **ALWAYS** disconnect the negative battery terminal before performing service on the equipment.
- **ALWAYS** keep battery cables in good working condition. Repair or replace all worn cables.
- Side slope operation is not permitted.
- Walk around the riding trowel before starting it to see if any items are worn, damaged, leaking, etc. that may make the riding trowel dangerous to operate.
- Stop and inspect the equipment if you strike an object. If necessary, make repairs before restarting.
- **ALWAYS** check that all controls are functioning properly immediately after start-up!
- **DO NOT** operate machine unless all controls operate correctly.

SECTION 1 SAFETY

Safety Labels and Decals

This decal notates special safety equipment that is required to operate this machine.



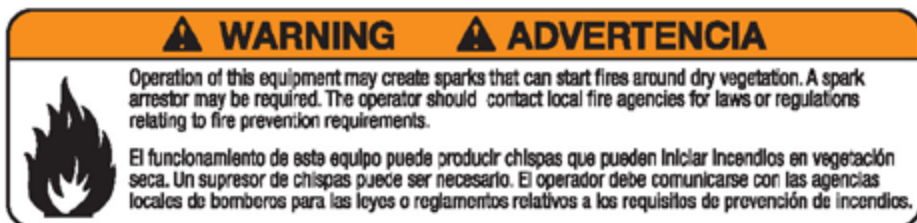
This decal notates the pinch point locations on this machine.



This decal notates the lifting points on this machine.



This decal indicates that this machine can start fires to it's surroundings due to sparks from the exhaust.



This decal indicates a hot surface and warns personnel not to touch.



This decal notates that lifting a trowel with clip on style pans attached is prohibited. Use only safety catch pans.



This decal notates that this equipment was proudly manufactured in the United States of America.



This decal notates the location of the light switch on this machine.



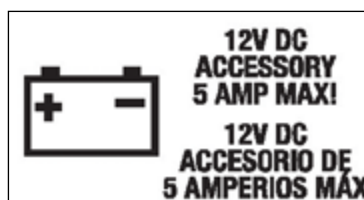
This decal notates that the thrust bearings must be greased daily.



This decal notates that this product was made at the Allen Engineering Corporation manufacturing facilities in Paragould, Arkansas.



This decal notates the location of the 12V accessory port.



SECTION 1 SAFETY

Safety Labels and Decals (cont'd)

This decal notates that this product is covered under one or more patents.



This decal notates that this product uses unleaded gasoline only.



This decal notates the model number and series number of this machine.



This decal notates the location of where to put hand tools on the machine.



This decal notates the location of where the operations and parts manuals are.



This decal illustrates Allen Concrete Equipment.



SECTION 1 SAFETY

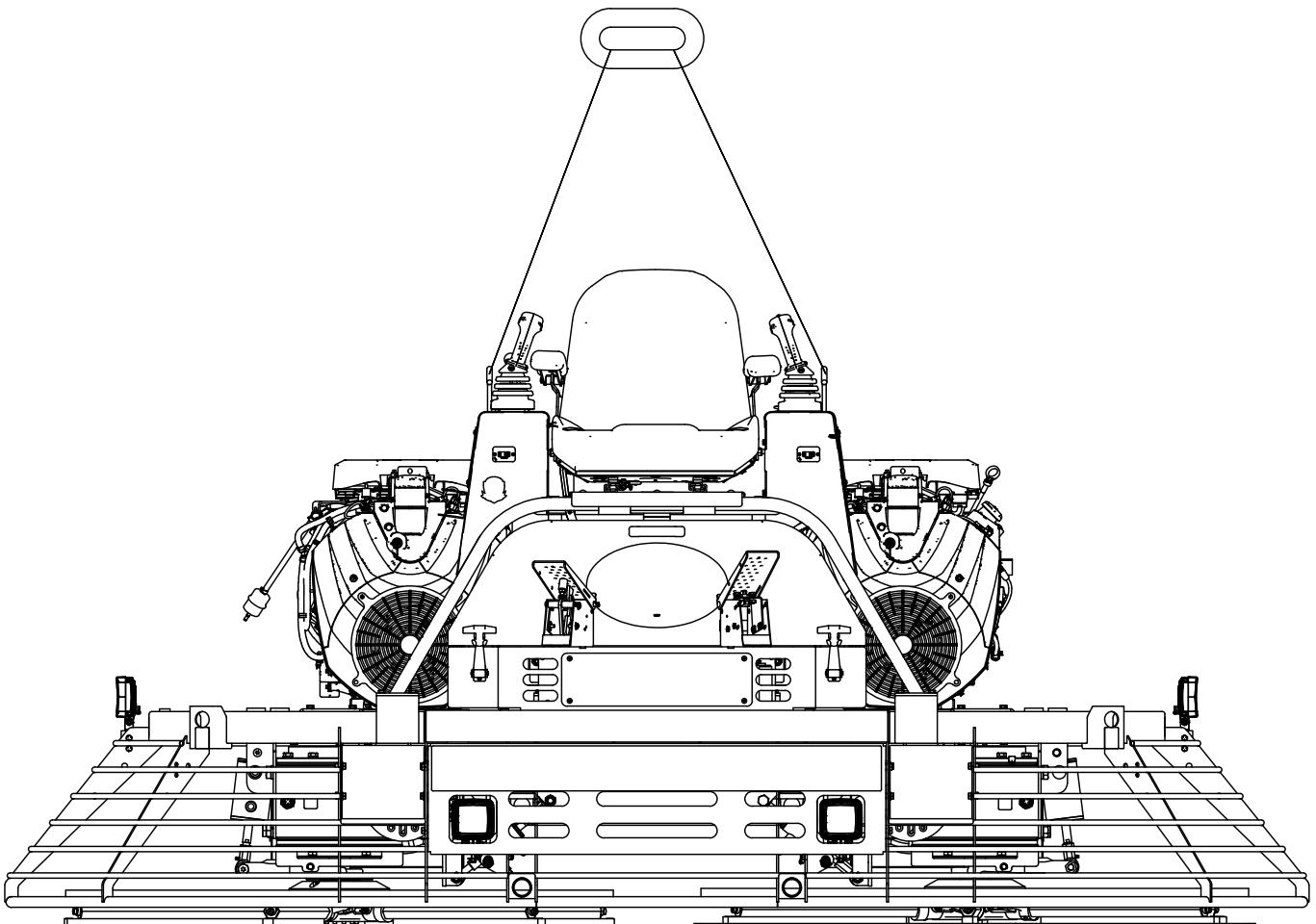
Lifting Safety

CAUTION

- When lifting the riding trowel, all personnel must be clear of the machine.
- **DO NOT** stand near or under the machine while it is being lifted.

Lifting instructions using a hoist:

- Place slings, chains or hooks through each lifting eye on the machine. Use a sling or chains with a minimum length of 2 meters (5 feet) on each leg, connected to a central lifting device. Ensure that all lifting devices have sufficient weight-bearing capacity.
- **ALWAYS** shutdown engine before transporting.
- **NEVER** lift machine with paving pans with z-clips. Only safety catch pans can be lifted.



- Make sure the hitch and coupling of the towing vehicle are rated equal to, or greater than the trailer “gross vehicle weight rating.”
- **ALWAYS** inspect the hitch and coupling for wear. Never tow a trailer with defective hitches, couplings, chains, etc.
- Check the tire air pressure on both towing vehicle and trailer. Trailer tires should be inflated to 50 psi cold. Also check the tire tread wear on both vehicles.
- **ALWAYS** make sure the trailer is equipped with a safety chain.
- **ALWAYS** properly attach trailer’s safety chains to towing vehicle.
- **ALWAYS** make sure the vehicle and trailer directional, backup, brake and trailer lights are connected and working properly.
- DOT Requirements include the following:
 - Connect and test electric brake operation.
 - Secure portable power cables in cable tray with tie wraps.
- The maximum speed for highway towing is 55 MPH unless posted otherwise. Recommended off-road towing is not to exceed 15 MPH or less depending on type of terrain.
- Avoid sudden stops and starts. This can cause skidding, or jack-knifing. Smooth, gradual starts and stops will improve towing.
- Avoid sharp turns to prevent rolling.
- Trailer should be adjusted to a level position at all times when towing.
- Raise and lock trailer wheel stand in up position when towing.
- Place chock blocks underneath wheel to prevent rolling while parked.
- Place support blocks underneath the trailer’s bumper to prevent tipping while parked.
- Use the trailer’s swivel jack to adjust the trailer height to a level position while parked.

SECTION 2 OPERATIONS

Pre-Operating Instructions

Before operation each day ensure the following:

- All guards, side screens and panels are in place.
- All safety and information signs are in place and legible.
- Engine oil levels are correct.
- Check to make sure that the two fuel tank's fuel valves are in the ON position, **see images below** for reference. The lever should be pointing towards the ground when in the ON position
- Check battery level
- Check all operating controls for proper operation and adjustment.
- Check speed control operation before and after starting engine for proper operation.
- Gearbox oil level. Add oil as required.
- The steering, left and right.

Note: If there is any indication that faulty equipment exists, shutdown safely, inform the proper authority and **DO NOT** operate the riding trowel until the problem has been fixed.

- Remove loose objects that could interfere with operation.



Figure: Fuel Tank Valve, ON

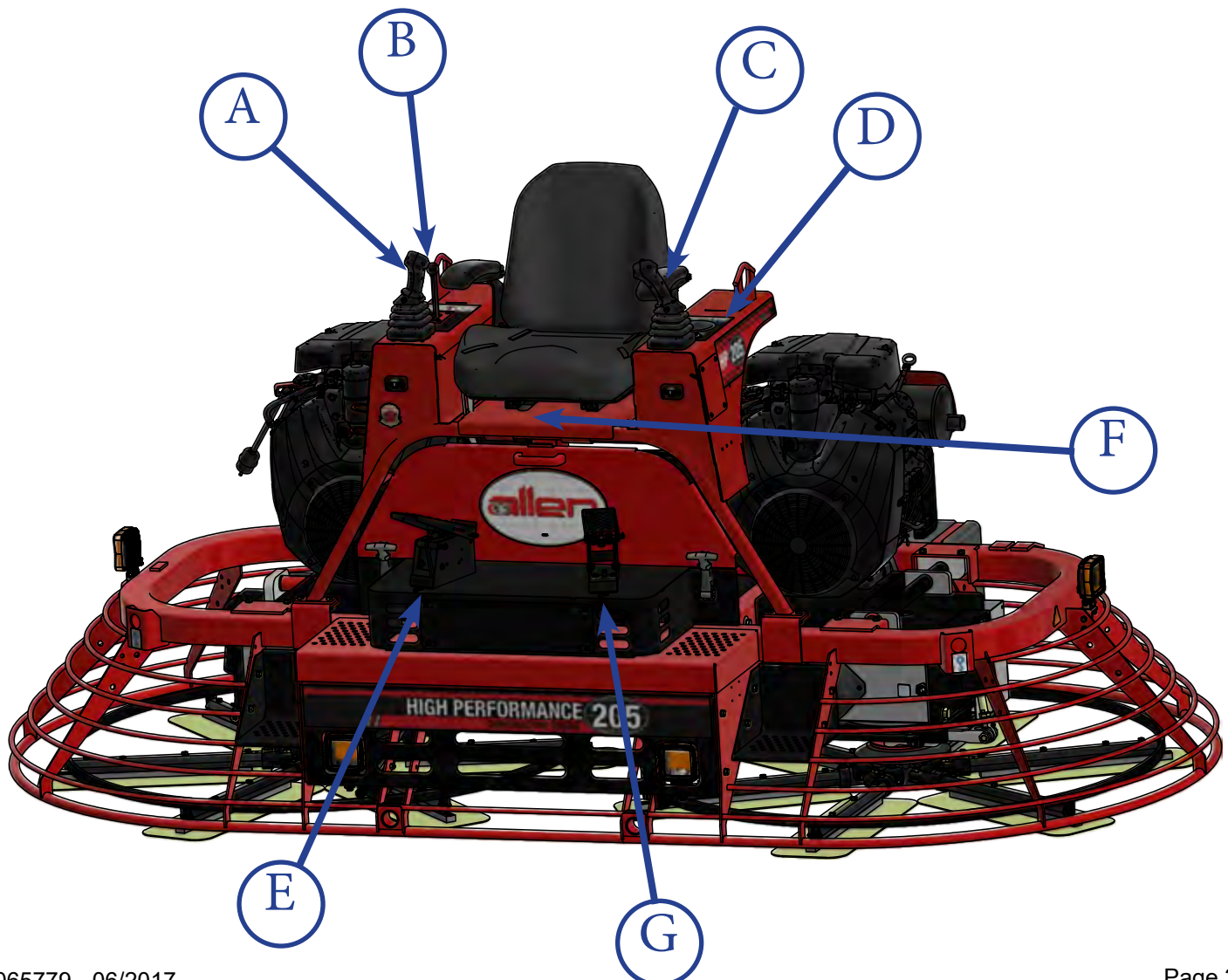


Figure: Fuel Tank Valve, OFF

To utilize your Allen Engineering HP205 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.

Location of all Operating Controls

[A]	Joystick (Forward, Reverse, Left, Right, & Pitch Control)
[B]	Cruise Control
[C]	Joystick (Forward, Reverse, & Pitch Control)
[D]	Cup Holder
[E]	Right Foot Throttle Pedal
[F]	Seat Adjustment
[G]	Left Kill Switch Pedal



SECTION 2 OPERATIONS

Operating Instructions (cont')

With the operator in the seat, show them the functions of the joysticks [A] and [C] and how to start the machine.

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 engine RPM.



After starting the engines fully engage the throttle. This allows the engines to warm up quicker and also engages the torque converter. At this time the machine's rotors will begin turning.



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

Stopping The Riding Trowel

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

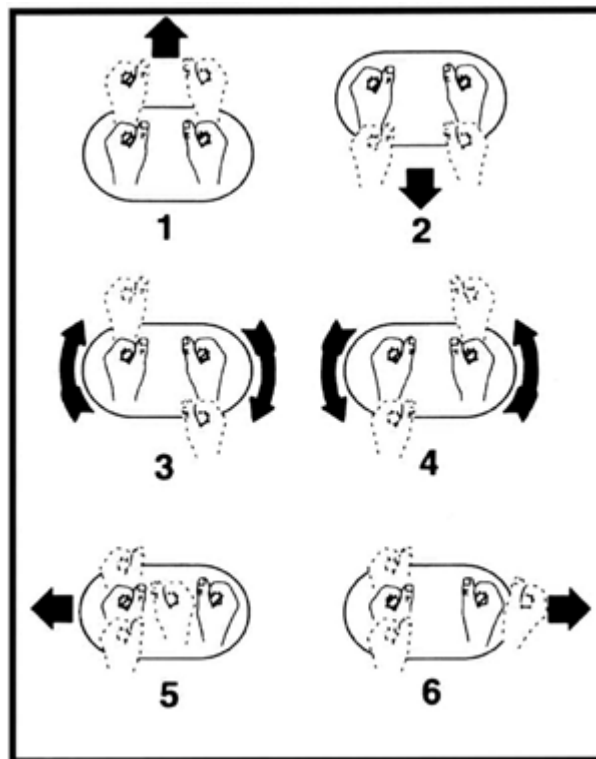


This machine has a kill switch mechanism installed in the left and right foot pedals. If in need of an emergency stop, simply lifting the foot off of the pedals will turn the engines off completely.

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.

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



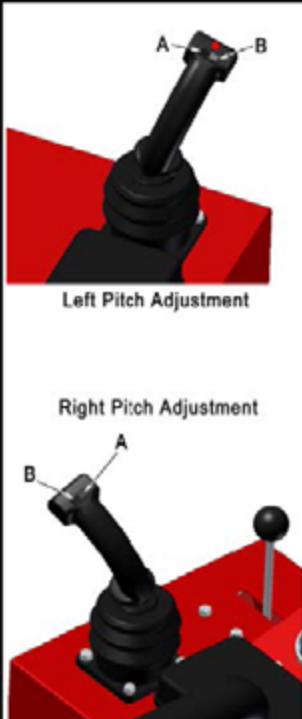
SECTION 2 OPERATIONS

Operating Instructions - cont'd

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.

	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°
	Stage 5: Hard finishing stage (Burnishing)	20°

Maintenance described in this section represents minimum requirements for continuous satisfactory operation of the machine.

Because improperly maintained machines are hazardous, it is extremely important that only qualified mechanics perform maintenance work.

It is imperative that only genuine AEC parts are used if replacement is needed as substituted parts in critical areas may place the operator at risk.

It is recommended that a regular maintenance schedule be followed for mechanical adjustments as well as for lubrication.

Use a preventative maintenance program to catch and correct many serious problems before they occur. The preventative maintenance schedule contained herein gives a daily, weekly, monthly, semi-annually, annually, and break-in 100 hours minimum requirement to keep your riding trowel running for years. The lubrication chart contained herein is one part of riding trowel preventative maintenance.

Because regular maintenance cannot be controlled by the manufacturer or by the distributor, it must ultimately be the responsibility of the owner.

Your AEC dealer stands ready to assist in the event of operational difficulties. However, most adjustments and/or repair can be readily performed by the user.

The instructions provided in this section will facilitate the maintenance of the AEC equipment to operate at peak efficiency.

SECTION 3 SERVICE

Maintenance Schedule

Periodic Maintenance Schedule

The table below lists basic trowel and engine maintenance. Refer to OEM engine manufacturer's Owner's Manual and Service Manual for additional information on engine maintenance.

Maintenance Schedule					
Item	Daily	Weekly	Monthly	Annually	100 Hours
Check external hardware	✓				
Check fuel level	✓				
Check fittings and hoses	✓				
Apply grease to thrust bearings	✓				
Check all operational controls	✓				
Tighten all bolts and nuts.			✓		
Grease steering assembly heim joints			✓		
Inspect visually for loose or missing parts	✓				
Wash wet concrete of machine	✓				
Clean fuel sediment bowl		✓			
Inspect battery (fill with water if needed)		✓			
Change gearbox oil				✓	
Inspect drive belts			✓		
Check all adjustments					✓
Change the engine oil and filter				✓	✓, X
Check air cleaner element		✓, X			
Thoroughly clean machine				✓	
Change the hydraulic oil					✓

Note: Refer to OEM manual for Service specific to the Vanguard 61G2 engine. General maintenance for the Vanguard engine is marked with an X, see page 15 for engine oil recommendations.

Pre-Cleaner Maintenance Procedure, Kohler engine

The Kohler engine is equipped with a large capacity, dual element air filter—an oiled, foam pre-cleaner surrounds a high density paper element.

Loosen knob and remove air cleaner cover.

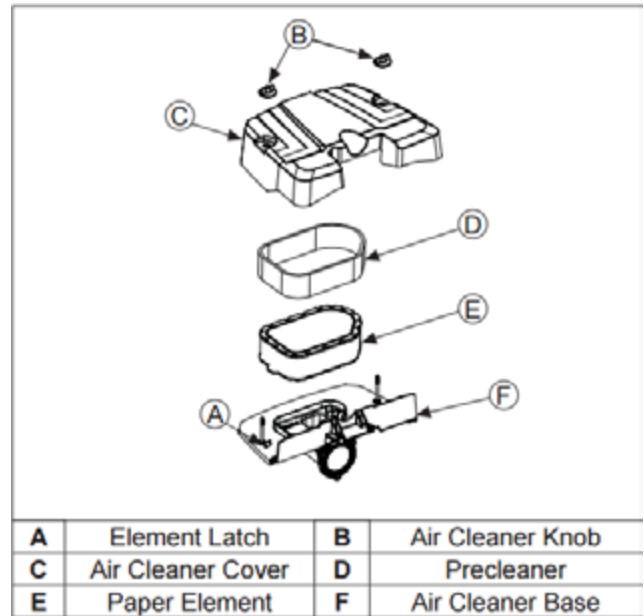
Precleaner (Part #: 057992)

1. Remove precleaner from paper element.
2. Replace or wash precleaner in warm water with detergent. Rinse and allow to air dry.
3. Saturate precleaner with new engine oil; squeeze out excess oil.
4. Reinstall precleaner over paper element.

Paper Element (Part #: 057991)

1. Rotate element latch (if equipped); remove paper element with precleaner.
2. Separate precleaner from element; service precleaner and replace paper element.
3. Install new paper element on base; install precleaner over paper element; rotate element latch (if equipped).

Reinstall air cleaner cover and secure with knob.



Air Filter maintenance, Vanguard

The Vanguard engine used a low profile style air filter, refer to OEM manual for more details.

- A: Fastener
- B: Cover
- C: Fastener
- D: Retainer
- E: Air Filter
- F: Pre Cleaner



Lightly tap loose material and/or clean air filter with liquid detergent and water, allow the filter to dry before assembly. Do not lubricate pre-cleaner.

SECTION 3 SERVICE

Engine Oil Maintenance

Engine Oil Level Check

- ALWAYS check the engine oil dipstick before using the riding trowel. At a minimum check engine oil once per day. Follow the Maintenance and Lubrication Chart contained herein.
- ALWAYS use a good quality engine oil.
- The engine oil fill is the same as the oil dipstick hole and is located on the engine block opposite the crankcase drain hose and plug.
- Use oil grades appropriate to the surrounding temperature range as shown below. See **GRADE OF OIL CHART** under **CHANGING ENGINE OIL** section below.
- Remove engine oil dipstick to access oil fill hole. To fill engine with oil use a long funnel to avoid spilling or use an oil can filled with the proper weight small engine oil and squirt oil directly into fill hole. Check oil level with dipstick. Fill the crank case to the full mark on the dipstick. **DO NOT** overfill.
- Replace dipstick.

Change Engine Oil



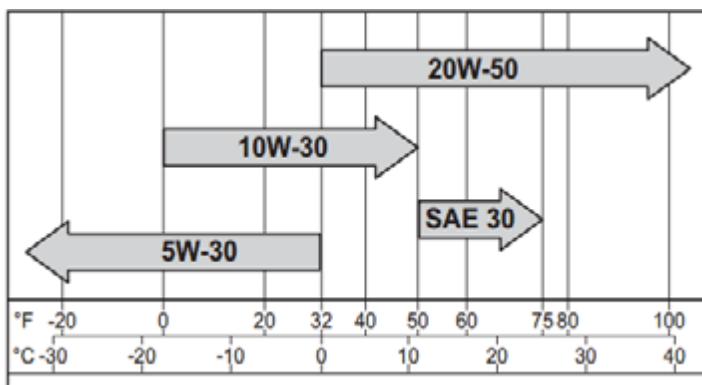
Important: Engine oil is best drained when the engine is warm. Warm oil flows freely and carries away more impurities than cold oil.

Note: Change engine oil every **100 hours** of operation. On a new engine, change oil after the first **5 hours** of operation.

Note: Trowel must be on a level surface when changing and checking oil.

Note: Viscosities shown in the chart below may be used when the average temperature in your area is within the indicated range.

- For the Kohler engine 20W50 is recommended for general, all-temperature use (above 32°F (0°C)).
- For the Vanguard engine 10W30 is recommended for general use.



Filter Replacement

SECTION 3 SERVICE

For Kohler engine:



**ENGINE OIL FILTER
PART #: 57994**



**ENGINE FUEL FILTER
PART #: 57993**

SECTION 3 SERVICE

Troubleshooting

Area	Malfunction	Possible Cause	Corrective Measure	Ref.
Engine	Engine does not start, or is difficult to start	Battery is discharged	- Add battery fluid - Charge the battery - Replace the battery	
		Battery cable is disconnected	- Connect battery cable	
		Blown fuse	- Replace fuse	
		Bad connection or breakage in the wiring	- Contact your AEC dealer	
		Out of fuel	- Fill fuel	
		Air is in fuel	- Contact your AEC dealer	
		Engine fouled	- Wait a while and try starting again	
		Insufficient or wrong oil	- Fill or change oil	
		Dirty or damaged spark plug	- Clean or replace spark plug	
		Contamination in fuel system	- Contact your AEC dealer	
		Other (other than above)	- Contact your AEC dealer	
	Engine stalls	Out of fuel	- Fill fuel	
		Cold engine	- Warm up the engine	
		Other (other than above)	- Contact your AEC dealer	
	Engine stops abruptly	Out of fuel	- Fill fuel	
		Piston seizure due to insufficient or bad oil	- Contact your AEC dealer	
		Other (other than above)	- Contact your AEC dealer	
	Engine does not stop	Electrical malfunction	- Contact your AEC dealer	
		Other (other than above)	- Contact your AEC dealer	
	Idling is not stable	Insufficient intake air (clogged air cleaner)	- Clean or replace the air cleaner	
		Other (other than above)	- Contact your AEC dealer	
	Poor power or acceleration	Bad fuel	- Change fuel	
		Wrong oil (improper viscosity)	- Change to suitable oil	
		Accelerator (throttle) is not properly adjusted	- Contact your AEC dealer	
		Insufficient intake air (clogged air cleaner)	- Clean or replace the air cleaner	
		Excessive load	- Reduce load	
		Loose drive belt	- Adjust	
		Other (other than above)	- Contact your AEC dealer	
	Irregular noise or vibration from or around the engine		- Contact your AEC dealer	
	Excessive oil consumption		- Contact your AEC dealer	
	Engine overheats	Insufficient amount of engine oil	- Fill oil	
		Cooling fan is clogged or blocked	- Clean	
		Other (other than above)	- Contact your AEC dealer	
	Excessive fuel consumption	Clogged air cleaner	- Clean or replace air cleaner	
		Other (other than above)	- Contact your AEC dealer	
	Uneven or low fuel consumption	Blocked fuel flow	-Check fuel tanks fuel valve. Make sure it is in the ON position -Clogged fuel filter. Replace filter.	
		Other (other than above)	Contact your AEC dealer	

Machine Cleaning Procedure

When cleaning the machine, please adhere to the following information to ensure proper cleaning and to keep the machine in the best condition possible.

Power Washing Procedure:

NOTICE

- Ensure that the water pressure is below 2000 PSI (14 MPa)
- Always keep the water temperature below 180°F (80°C)
- Use a spray nozzle with at minimum 40° wide spray angle
- Keep the nozzle at least 1 foot (300mm) away from the machine
- Avoid spraying water on the engine and electronic components. Examples include electronic displays, lights, switches, wiring, etc. The electronic components may be damaged if water is sprayed on them.
- Keep a perpendicular angle (90°) when cleaning over a decal.
 - Holding nozzle of a pressure washer at an angle different from 90° may lift the decal from the machine.
- Recommended using a safe cement dissolver, **BACK-SET** or similar, to remove hardened concrete.
- It is **NOT** recommended to use chemicals such as:
 - Muriatic Acid
 - Hydrochloric Acid
 - Hydrofluoric Acid
 - Sulfuric Acid
 - Phosphoric Acid
- To prevent build-up of concrete on the machine, use **BODY GUARD** or similar protection wax.

Filter Cleaning Procedure:

- Remove air filters and blow out with compressed air, **NOT** to exceed 80 PSI.

SECTION 3 SERVICE

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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 FRONT and/or REAR 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.



! NOTE

Anti-Seize is applied at the factory to drive line couplings, and moving components. If these parts are disassembled re-apply a light coat of a graphite based anti-seize.

SECTION 4 PARTS

Replacement Parts Procedures

We recommend AEC 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.

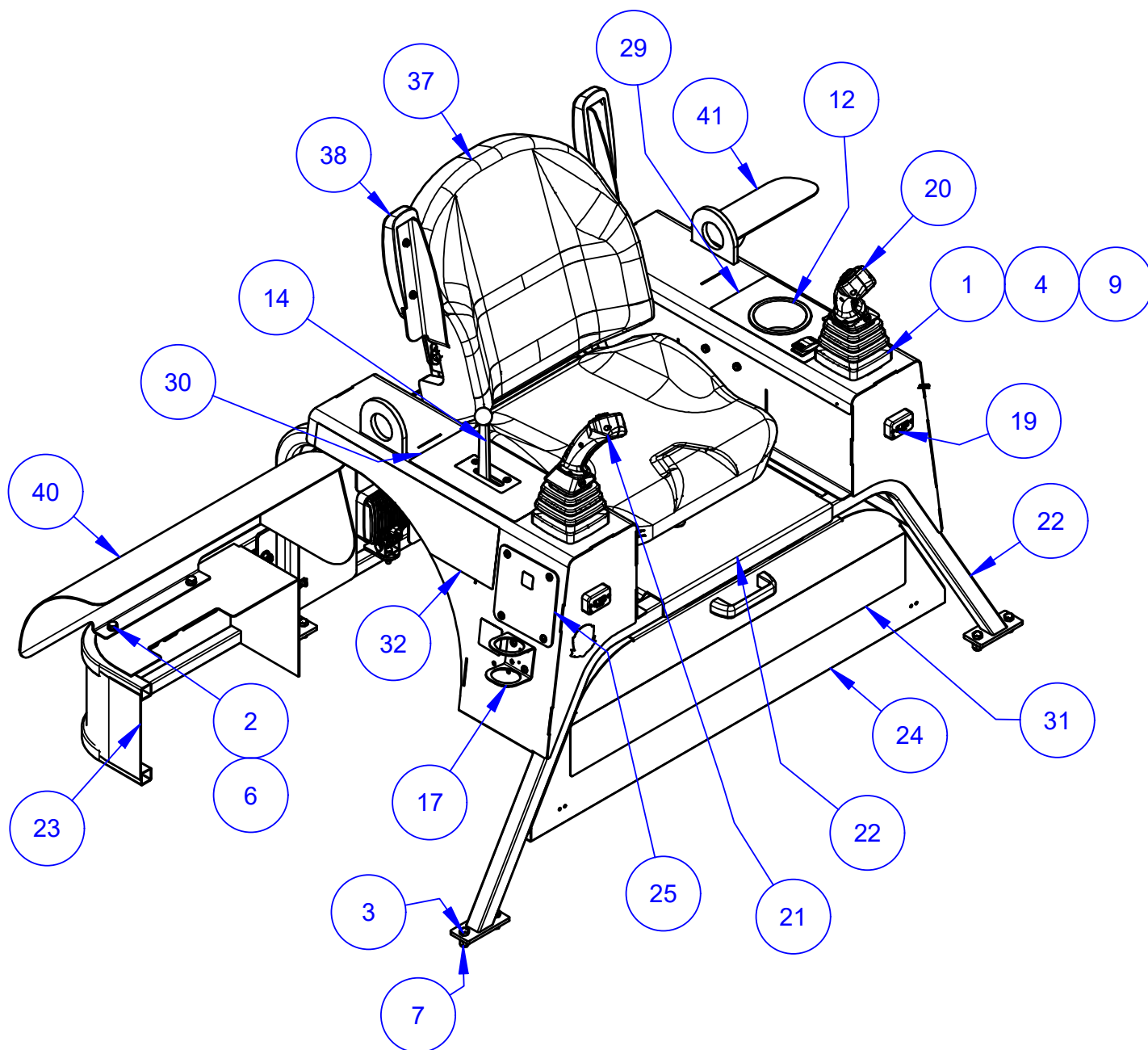
Remember when you order replacement parts, you will need your model number and serial number. These are the numbers that you have recorded in the UNIT ID section of this manual. Please order replacement parts by the appropriate part number, not the key number.

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.



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.

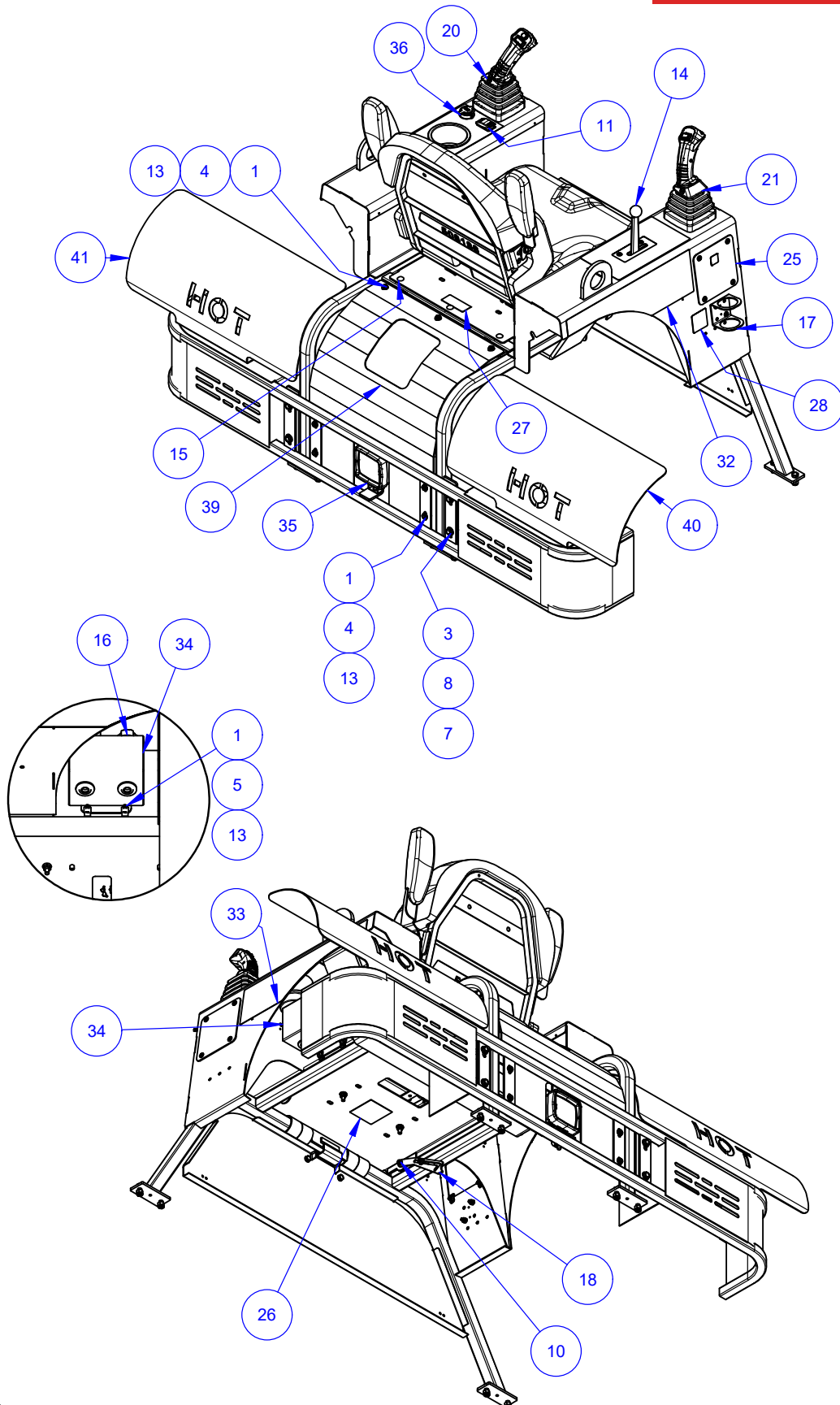


If you remove the seat, you must use
grade 8 bolts when replacing

SECTION 4 PARTS

Seat Frame Assembly Parts List

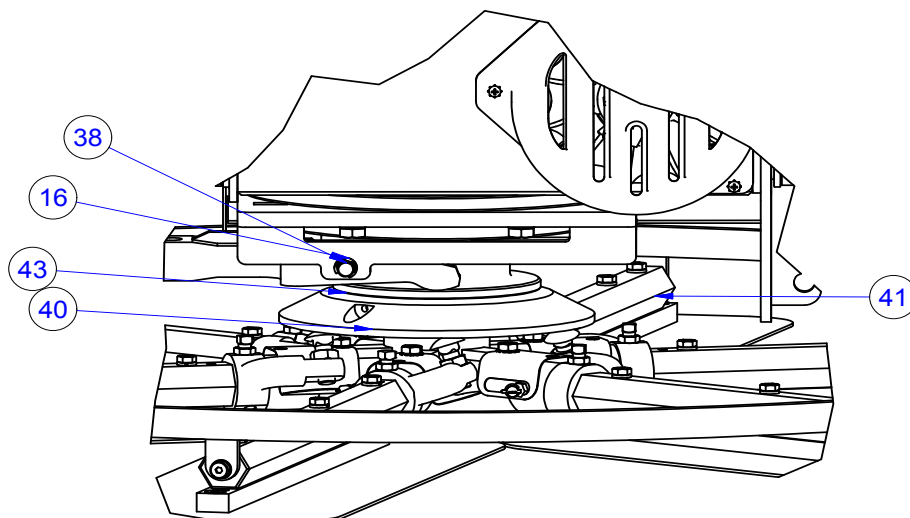
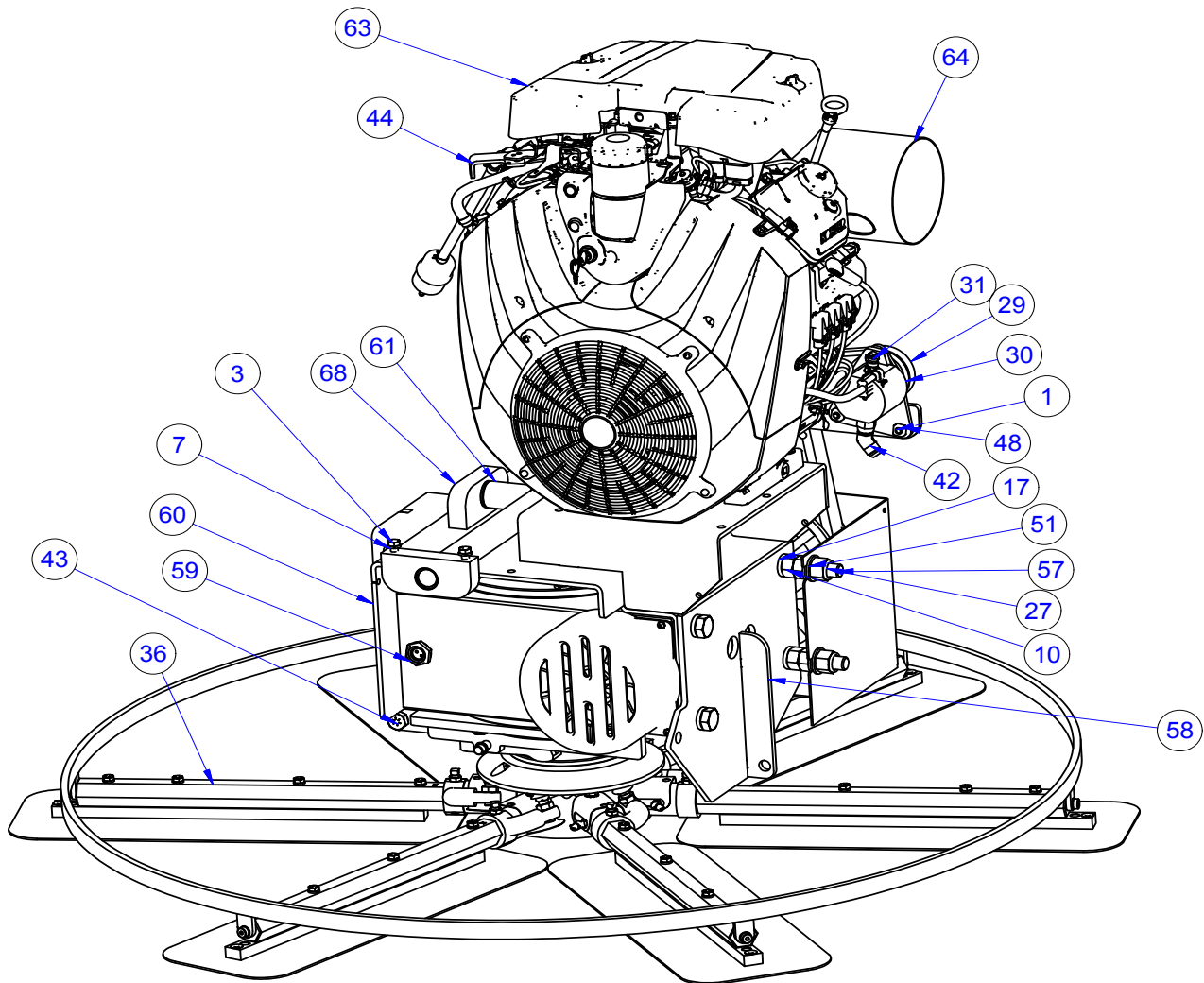
ITEM	PART NO.	DESCRIPTION	QTY
1	010002	FSTN, 1/4-20 HHCS X 3/4	19
2	010034	FSTN, HHCS 3/8-16 X 1/2	4
3	010036	FSTN, HHCS 3/8-16 X 1	12
4	010081	FSTN, FW 1/4	16
5	010089	FSTN, LW 1/4	4
6	010091	FSTN, LW 3/8	4
7	010464	FSTN, NUT NYLOK 3/8-16	12
8	017751	FSTN, FW HARD A325 3/8 (p)	8
9	020542	FSTN, NUT STOVER LOCK 1/4-20	8
10	029671	FSTN, NUT HEX 1/4-20 NYLOC	6
11	032125	ROCKER SWITCH	1
12	041537	CUP HOLDER	1
13	047546	FSTN, PAL SNAP NUT 1/4-20	8
14	047643	LOCKING CONTROL, QUADRASTAT (Q14020)	1
-	032300	CABLE, THROTTLE (ALSO USED AS CRUISE CONTROL CABLE) 60" HD (NOT SHOWN)	1
-	032301	THROTTLE CABLE, 72" (NOT SHOWN)	1
15	047665	RUBBER BUMPER	3
16	047886	CAP, FILLER BREATHER SPB-S-1-10-N04	1
17	049632	TOOL HOLDER BRACKET	1
18	053211	PROP F/ SEAT FRAME	1
19	064386	METER, TACH/HOUR INDUCTIVE, F/EFI	2
20	064510	JOYSTICK, LH HDX760/HP205	1
21	064511	JOYSTICK, RH HDX760/HP205	1
22	064577	SEAT FRAME WELDMENT	1
23	064588	CLUTCH GUARD ASSEMBLY	1
24	064620	ASSEMBLY, FRONT SCREEN	1
-	048678	HANDLE, LOAD RATED NYLON	1
25	064927	COVER PLATE	2
26	065908	DECAL, EPA LABEL	1
27	066066	DECAL, SINGLE POINT LIFT HP205	1
28	066068	DECAL, HAND TOOL HP205	1
29	066069	DECAL, LH SEAT FRAME WRAP	1
30	066071	DECAL, CRUISE HP205	1
31	066126	DECAL, FRONT STRIPE 32" X 4.25"	1
32	066127	DECAL, RH STRIPE HP205	1
33	066128	DECAL, LH STRIPE HP205	1
34	066130	TANK, VENT	1



SECTION 4 PARTS

Seat Frame Assembly (cont'd) Parts List

35	069835	LIGHT, LED (OLD 064749)	1
36	069850	FEMALE RECEPTACLE 12VDC (OLD 049588)	1
37	069874	SEAT, RIDER (OLD 061372)	1
38	061373	ARM RESTS FOR SEAT	1
39	074289	GUARD, REAR CENTER	1
40	074292	HEAT SHIELD RH REAR	1
41	074293	HEAT SHIELD LH REAR	1



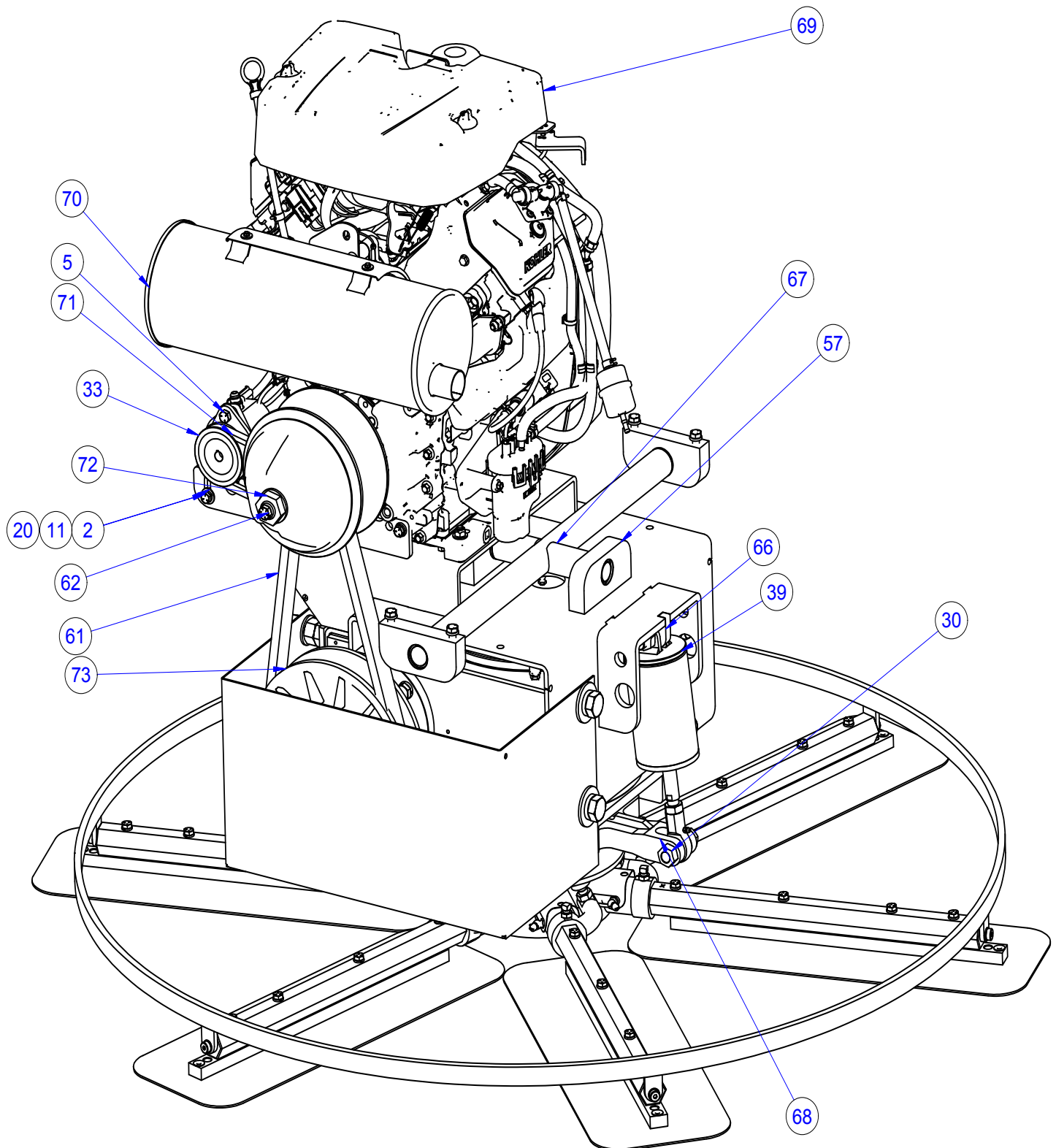
SECTION 4 PARTS

RH Rotor Module Assembly Parts List

ITEM	PART NO.	DESCRIPTION	QTY
2	010020	FSTN, HHCS 5/16-18 X 1	4
3	010024	FSTN, HHCS 5/16-18 X 2 GR 5	24
4	010036	FSTN, HHCS 3/8-16 X 1	8
5	010037	FSTN, HHCS 3/8-16 X 1-1/4 GR 5	2
6	010039	FSTN, HHCS 3/8-16 X 1 3/4" LONG GR8	4
7	010082	FSTN, FW 5/16	2
8	010084	FSTN, FW 7/16	1
9	010087	FSTN, FW 3/4	2
11	010090	FSTN, LW 5/16	28
12	010091	FSTN, LW 3/8	8
13	010092	FSTN, LW 7/16	2
14	010112	FSTN, NUT HEX 3/4-10	4
15	010464	FSTN, NUT NYLOK 3/8-16	2
16	015677	RING, Ø7/16 E-STYLE RETAINING	2
17	015691	FSTN, SHCS 1/2-13 X 1-1/2 RH	1
18	015693	PLUG, PLASTIC CAP EC12	1
19	015694	PLUG W-1 RED PLASTIC TAPERD	6
20	017751	FSTN, FW HARD A325 3/8 (p)	5
21	018097	FSTN, LW 3/4	8
22	020514	FSTN, NUT STOVER LOCK 3/8-16	4
23	020688	FSTN, JAM HEX NUT 5/8-18 RH	1
24	025091	FSTN, 3/8 SHOULDER BOLTx1/2 LONG	6
25	025092	BUSHING, 3/8x1/2x5/16 BRONZE	6
26	026992	KEY, 1/4 X 3 1/8" LONG, F/ DRIVEN PULLEY	1
27	027969	FSTN, HHCS 5/8-18 X 2 GR 8	1
29	042547	FSTN, HHCS, 3/4-10 X 1 1/4" LONG	4
30	043269	FSTN, NUT STOVER 5/8-18	2
31	044129	FSTN, NYLON NUT 3/4-10	2
32	045921	FTG, F6400-8-8-O STR JIC-SAE	1
33	046550	AK30X1/2	1
34	046738	HYD PUMP, AUX	1
35	046777	FTG, F6400-6-4-O STR JIC-SAE	1
36	047354	FSTN, HHCS 5/8-18x2-1/4 GR8 YZPLT	1
37	047973	BLADE, 8 X 23 FLAT FINISH	6
38	048628	PIN, YOKE ARM	1

RH Rotor Module Assembly (cont'd) Illustration

SECTION 4 PARTS



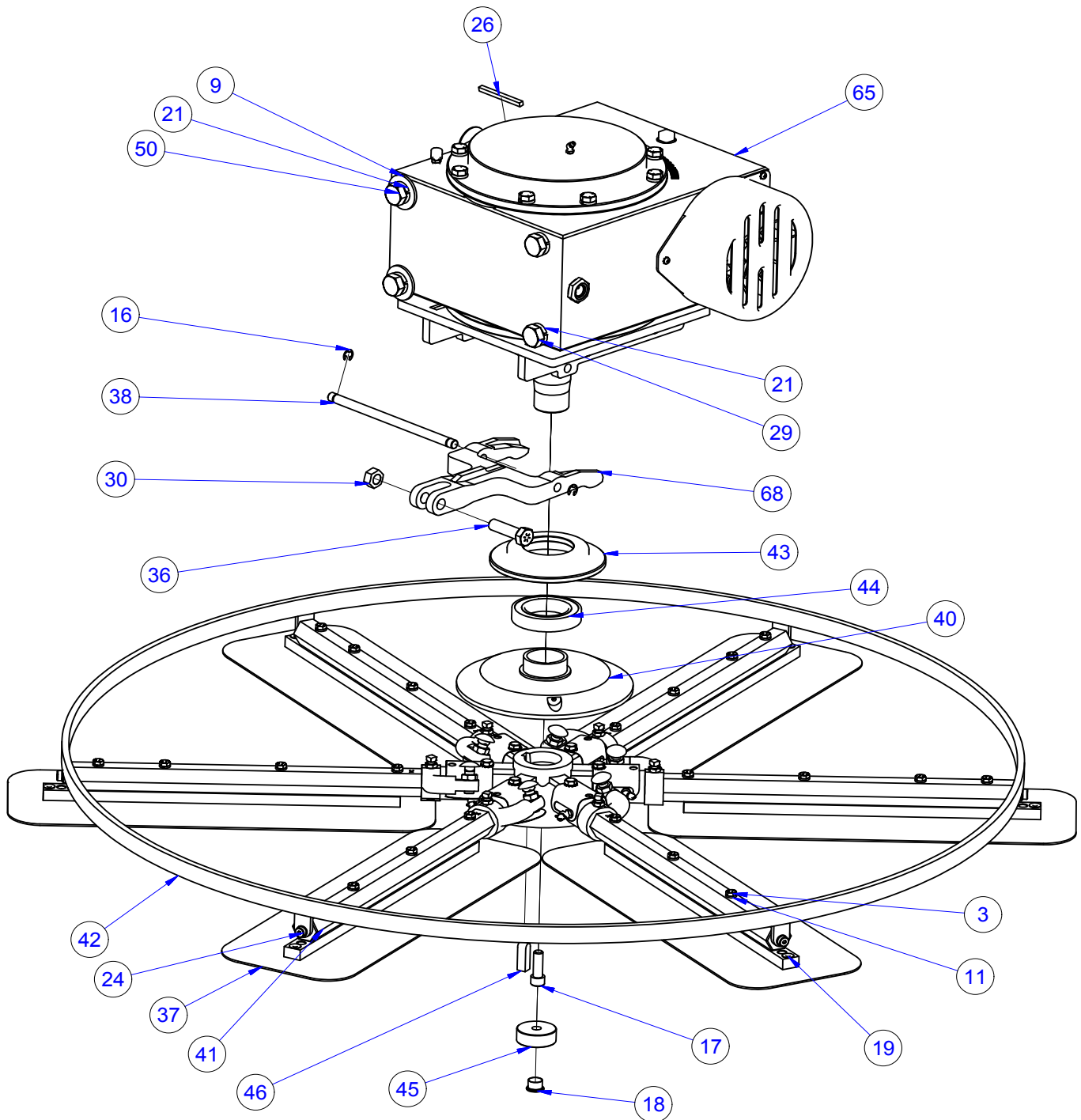
SECTION 4 PARTS

RH Rotor Module Assembly (cont'd) Parts List

ITEM	PART NO.	DESCRIPTION	QTY
39	048659	PITCH CYLINDER HDX SERIES 3" BORE 1 1/2" STROKE	1
40	049537	PLATE, PRESSURE 6 BOSS HDX740	1
41	049538	SPIDER ASSEMBLY LH SOM HDX750	1
42	049543	STABILIZER RING HDX740	1
43	049599	BEARING CAP HDX740	1
44	049697	BEARING HDX740 SPIDER ASSEMBLY	1
45	049708	WASHER, HD RETAINING	1
46	046231	KEY, HDX740 ROTOR	1
47	052927	FTG, HYD F6502-8-8	1
48	053223	KEY, 3/16 X 1/4 X 2	1
49	053385	THROTTLE BRKT	1
50	055380	FSTN, HHCS 3/4-10 X 1 3/4" GR. 8 YELLOW ZINC	2
51	056775	AK30X1 1/8	1
52	056906	ENGINE CONNECTING PLATE	1
53	056912	HYDRAULIC PUMP MNTG PLATE WMNT	1
54	058757	KEY, 1/4 X 3/4" LONG	1
55	059513	SPACER F/ CLUTCH, MSP445	2
56	059776	FSTN, FW 3/4" GRADE 8 YELLOW ZINC	4
57	066253	BEARING ASSEMBLY FOR HP205	4
58	060865	WASHER, LARGE OD	1
59	060870	HHCS, 7/16-20 X 3/4	1
60	061234	ROD END	1
61	063930	BELT, CVT	1
62	064574	SCR, 7/16-20x4-1/2 YZ GR 8 HHC	1
63	064592	STUD, 3/4-10 X 4	2
64	064595	CYL MNT PLATE WMNT, RH	1
65	064614	GEARBOX, RH	1
66	064655	ENGINE MNT, GEARBOX HOUSING	1
67	064656	CROSSHEAD WELDMENT, L,R & F&R	1
68	065116	PITCH YOKE ARM FOR HP205	1
69	065825-1	ENGINE, KOHLER ECH980	1
70	065876	MUFFLER, RH	1
71	065907	BELT, 3L230	1
72	065967	PULLEY, HP205, DRIVER	1
-	053223	KEY, 3/16 X 1/4 X 2 F/ DRIVER PULLEY	1
73	066107	PULLEY, HP205	1
96	064591	LOWER BELT GUARD	1

RH Rotor Assembly Illustration

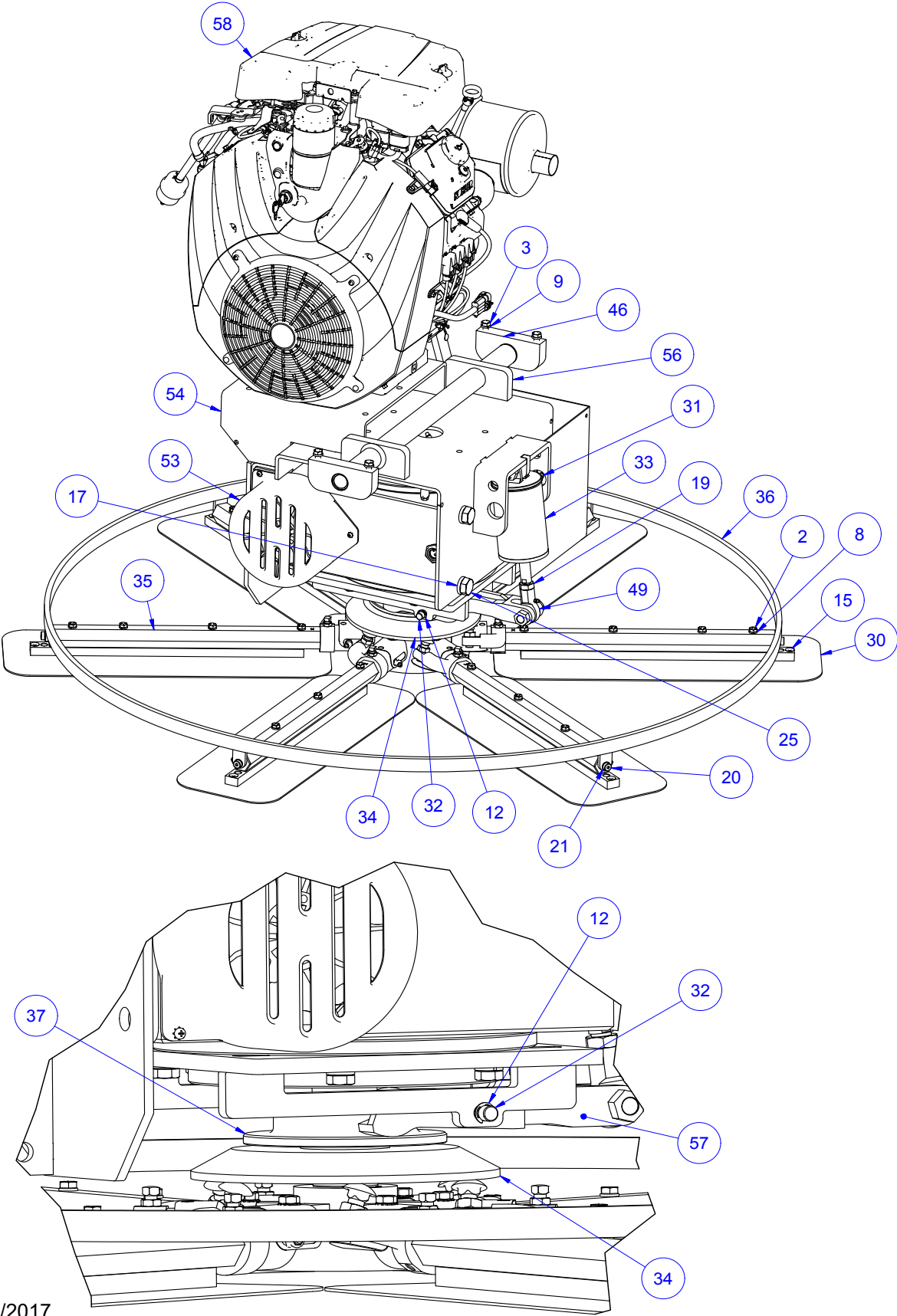
SECTION 4 PARTS



SECTION 4 PARTS

RH Rotor Assembly Parts List

ITEM	PART NO.	DESCRIPTION	QTY
3	010024	FSTN, HHCS 5/16-18 X 2 GR 5	24
4	010036	FSTN, HHCS 3/8-16 X 1	8
5	010037	FSTN, HHCS 3/8-16 X 1-1/4 GR 5	2
6	010039	FSTN, HHCS 3/8-16 X 1 3/4" LONG GR8	4
7	010082	FSTN, FW 5/16	2
8	010084	FSTN, FW 7/16	1
9	010087	FSTN, FW 3/4	2
11	010090	FSTN, LW 5/16	28
12	010091	FSTN, LW 3/8	8
13	010092	FSTN, LW 7/16	2
14	010112	FSTN, NUT HEX 3/4-10	4
15	010464	FSTN, NUT NYLOK 3/8-16	2
16	015677	RING, Ø7/16 E-STYLE RETAINING	2
17	020155	FSTN, SHCS 1/2-13 X 1-1/2 RH	1
18	015693	PLUG, PLASTIC CAP EC12	1
19	015694	PLUG W-1 RED PLASTIC TAPERD	6
20	017751	FSTN, FW HARD A325 3/8 (p)	5
21	018097	FSTN, LW 3/4	8
22	020514	FSTN, NUT STOVER LOCK 3/8-16	4
23	020688	FSTN, JAM HEX NUT 5/8-18 RH	1
24	025091	FSTN, 3/8 SHOULDER BOLTx1/2 LONG	6
25	025092	BUSHING, 3/8x1/2x5/16 BRONZE	6
26	026992	KEY, 1/4 X 3 1/8" LONG, HARD	1
27	027969	FSTN, HHCS 5/8-18 X 2 GR 8	1
29	042547	FSTN, HHCS, 3/4-10 X 1 1/4" LONG	4
30	043269	FSTN, NUT STOVER 5/8-18	2
36	047354	FSTN, HHCS 5/8-18x2-1/4 GR8 YZPLT	1
37	047973	BLADE, 8 X 23 FLAT FINISH	6
38	048628	PIN, YOKE ARM	1
40	049537	PLATE, PRESSURE 6 BOSS HDX740	1
41	049538	SPIDER ASSEMBLY LH SOM HDX750	1
42	049543	STABILIZER RING HDX740	1
43	049599	BEARING CAP HDX740	1
44	049697	BEARING HDX740 SPIDER ASSEMBLY	1
45	049708	WASHER, HD RETAINING	1
46	050700	KEY, HDX740 ROTOR	1
50	055380	FSTN, HHCS 3/4-10 X 1 3/4" GR. 8 YELLOW ZINC	2
65	064614	GEARBOX, RH	1
68	065116	PITCH YOKE ARM FOR HP205	1



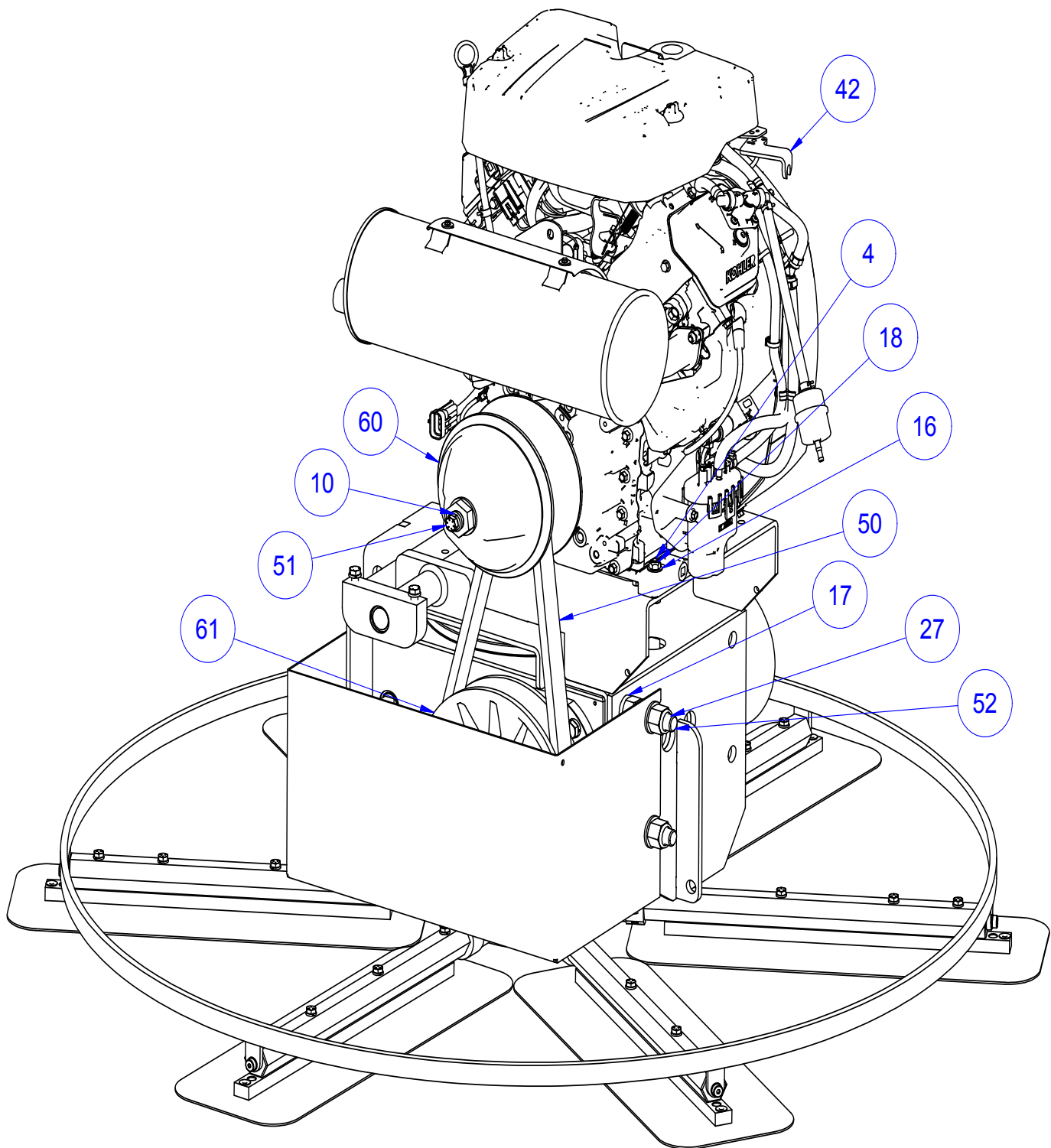
SECTION 4 PARTS

LH Rotor Module Assembly Parts List

ITEM	PART NO.	DESCRIPTION	QTY
2	010024	FSTN, HHCS 5/16-18 X 2 GR 5	24
3	010036	FSTN, HHCS 3/8-16 X 1	8
4	010039	FSTN, HHCS 3/8-16 X 1 3/4" LONG GR8	4
5	010084	FSTN, FW 7/16	1
6	010087	FSTN, FW 3/4	2
8	010090	FSTN, LW 5/16	24
9	010091	FSTN, LW 3/8	8
10	010092	FSTN, LW 7/16	2
11	010112	FSTN, NUT HEX 3/4-10	4
12	015677	RING, Ø7/16 E-STYLE RETAINING	2
13	015691	FSTN, SHCS 1/2-13 X 1-1/2 RH	1
14	015693	PLUG, PLASTIC CAP EC12	1
15	015694	PLUG W-1 RED PLASTIC TAPERD	6
16	017751	FSTN, FW HARD A325 3/8 (p)	4
17	018097	FSTN, LW 3/4	8
18	020514	FSTN, NUT STOVER LOCK 3/8-16	4
19	020688	FSTN, JAM HEX NUT 5/8-18 RH	1
20	025091	FSTN, 3/8 SHOULDER BOLTx1/2 LONG	6
21	025092	BUSHING, 3/8x1/2x5/16 BRONZE	6
22	026992	KEY, 1/4 X 3 1/8" LONG, F/ DRIVEN PULLEY	1
23	027969	FSTN, HHCS 5/8-18 X 2 GR 8	1
25	042547	FSTN, HHCS, 3/4-10 X 1 1/4" LONG	4
26	043269	FSTN, NUT STOVER 5/8-18	2
27	044129	FSTN, NYLON NUT 3/4-10	2
28	045922	FTG, F6400-4-6-O STR JIC-SAE	2
29	047354	FSTN, HHCS 5/8-18x2-1/4 GR8 YZPLT	1
30	047973	BLADE, 8 X 23 FLAT FINISH	6
31	048385	ORIFICE, FOR L/R STEERING CYL CFJ4-043	1
32	048628	PIN, YOKE ARM	1
33	048659	PITCH CYLINDER HDX SERIES 3" BORE 1 1/2" STROKE	1
34	049537	PLATE, PRESSURE 6 BOSS HDX740	1
35	049539	SPIDER ASSEMBLY, RH HDX740	1
36	049543	STABILIZER RING HDX740	1
37	049599	BEARING CAP HDX740	1
38	049697	BEARING HDX740 SPIDER ASSEMBLY	1
39	049708	WASHER, HD RETAINING	1

LH Rotor Module Assembly (cont'd) Illustration

SECTION 4 PARTS

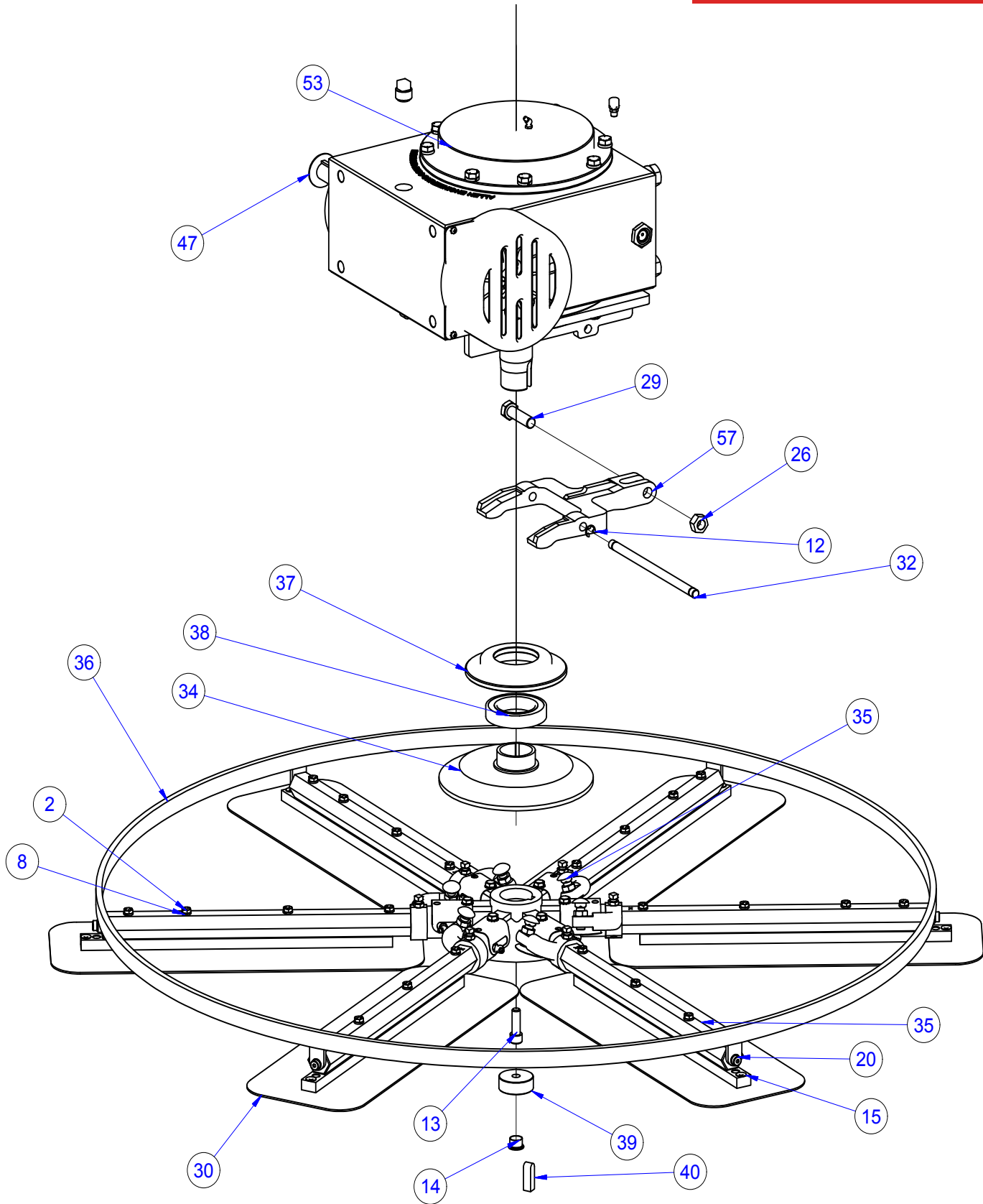


SECTION 4 PARTS

LH Rotor Module Assembly (cont'd) Parts List

ITEM	PART NO.	DESCRIPTION	QTY
40	050700	KEY, HDX740 ROTOR	1
41	053223	KEY, 3/16 X 1/4 X 2 F/ DRIVER PULLEY	1
42	053385	THROTTLE BRKT	1
43	055380	FSTN, HHCS 3/4-10 X 1 3/4" GR. 8 YELLOW ZINC	2
44	055616	SPACER F/ CLUTCH, MSP445	1
45	059776	FSTN, FW 3/4" GRADE 8 YELLOW ZINC	4
46	066253	BEARING ASSEMBLY FOR HP205	2
47	060865	WASHER, LARGE OD	1
48	060870	HHCS, 7/16-20 X 3/4	1
49	061234	ROD END	1
50	063930	BELT, CVT	1
51	064574	SCR, 7/16-20x4-1/2 YZ GR 8 HHC	1
52	064592	STUD, 3/4-10 X 4	2
53	064613	GEARBOX ASSEMBLY, LH	1
54	064655	ENGINE MNT, GEARBOX HOUSING	1
55	064659	CYL MNT PLATE WMNT, LH	1
56	064664	CROSSHEAD, 2-WAY	1
57	065116	PITCH YOKE ARM FOR HP205	1
58	065825	ENGINE, KOHLER ECH980	1
59	065875	MUFFLER, LH	1
60	065967	PULLEY, HP205, DRIVER	1
61	066107	PULLEY, HP205	1
101	064591	LOWER BELT GUARD	1





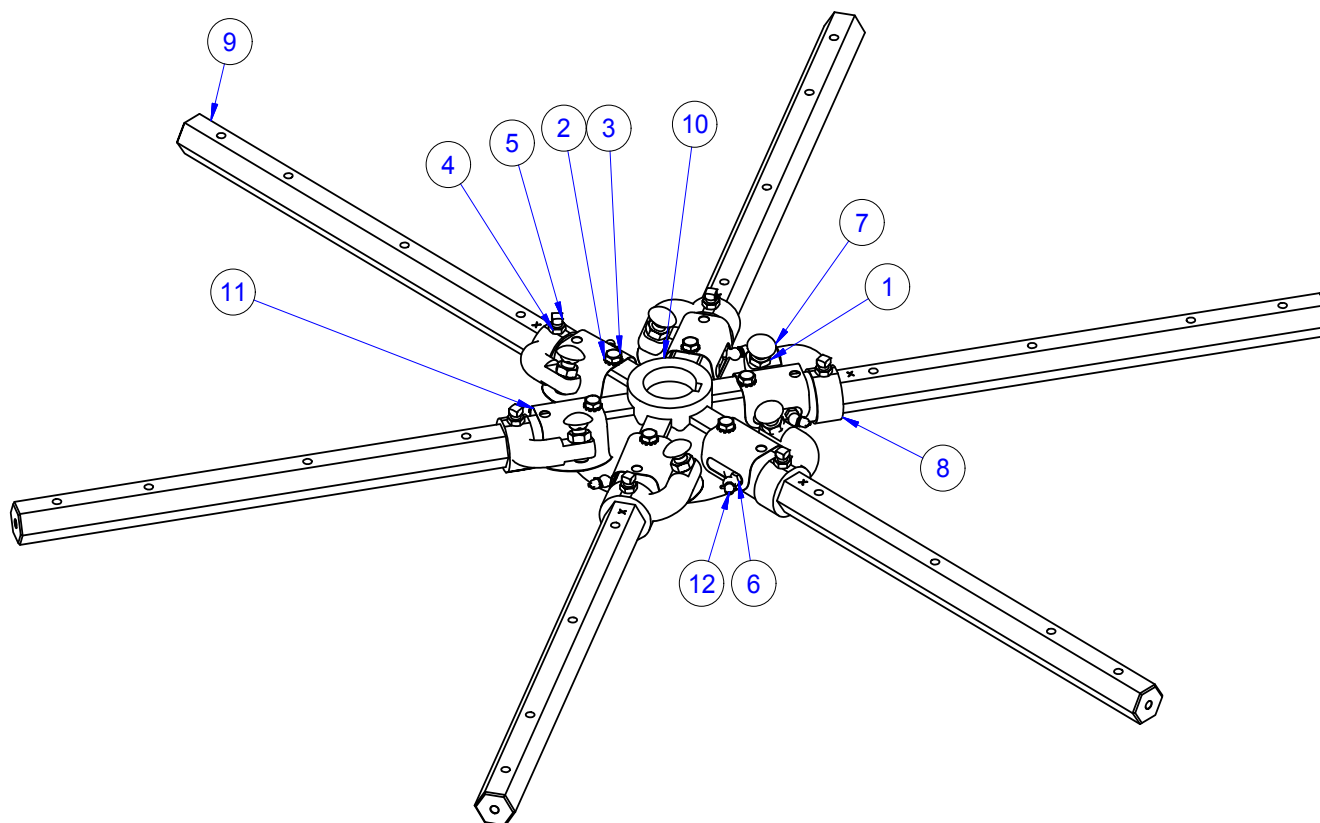
SECTION 4 PARTS

LH Rotor Assembly Parts List

ITEM	PART NO.	DESCRIPTION	QTY
2	010024	FSTN, HHCS 5/16-18 X 2 GR 5	24
8	010090	FSTN, LW 5/16	24
12	015677	RING, Ø7/16 E-STYLE RETAINING	2
13	015691	FSTN, SHCS 1/2-13 X 1-1/2 RH	1
14	015693	PLUG, PLASTIC CAP EC12	1
15	015694	PLUG W-1 RED PLASTIC TAPERD	6
20	025091	FSTN, 3/8 SHOULDER BOLTx1/2 LONG	6
26	043269	FSTN, NUT STOVER 5/8-18	2
29	047354	FSTN, HHCS 5/8-18x2-1/4 GR8 YZPLT	1
30	047973	BLADE, 8 X 23 FLAT FINISH	6
32	048628	PIN, YOKE ARM	1
34	049537	PLATE, PRESSURE 6 BOSS HDX740	1
35	049539	SPIDER ASSEMBLY, RH HDX740	1
36	049543	STABILIZER RING HDX740	1
37	049599	BEARING CAP HDX740	1
38	049697	BEARING HDX740 SPIDER ASSEMBLY	1
39	049708	WASHER, HD RETAINING	1
40	050700	KEY, HDX740 ROTOR	1
47	060865	WASHER, LARGE OD	1
53	064613	GEARBOX ASSEMBLY, LH	1
57	065116	PITCH YOKE ARM FOR HP205	1

RH Spider Assembly Illustration and Parts List

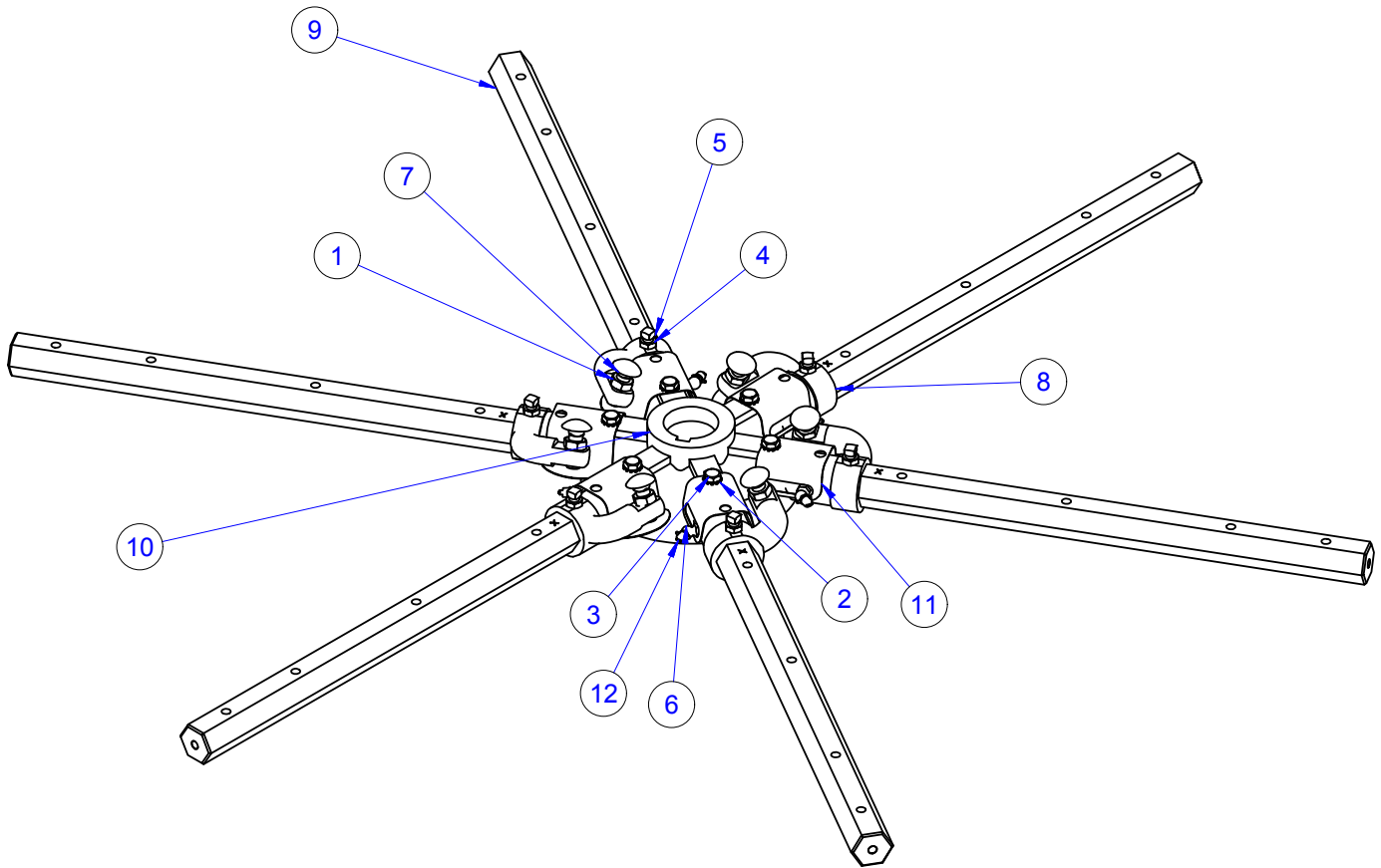
SECTION 4 PARTS



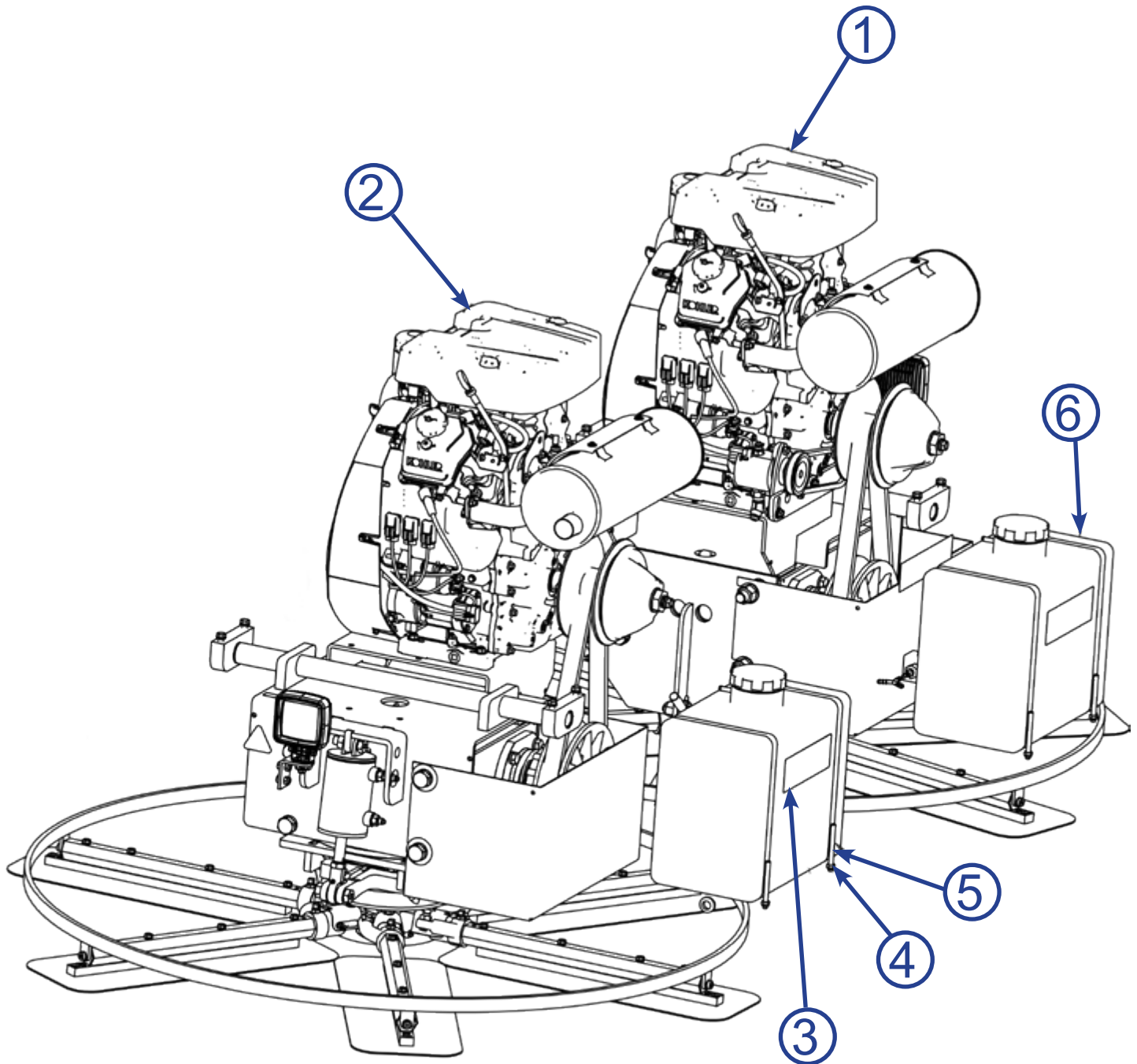
ITEM	PART NO.	DESCRIPTION	QTY
-	049539	SPIDER ASSY, RH SHD 1200-6	1
1	010050	FSTN, NUT HEX JAM 1/2-13	6
2	015682	WASHER, 3/8 EXT TOOTH LOCK	6
3	015683	BOLT, 3/8-16 X 7/8 DOG PT HEX HD CAP	6
4	015684	FSTN, NUT HEX JAM 3/8-16	6
5	015686	FSTN, SQHSS 3/8-16 X 1	6
6	024755	FITTING, 1/8-27 NPT 45° GREASE	6
7	028216	FSTN, CABLT 1/2-13 X 1-1/2 GR8	6
8	033034	LEVER, LIFT SD UNIVERSAL	6
9	049533	TROWEL ARM, 6 BOSS SPIDER ASSY	6
10	064198	SPIDER BOSS, 6 BLADE UNIVERSAL	1
11	051043	CLIP, 46-48 UNIV SPIDER SPRING	6
12	015692	CAP, Ø1/4 RED GREASE	6

SECTION 4 PARTS

LH Spider Assembly Illustration and Parts List



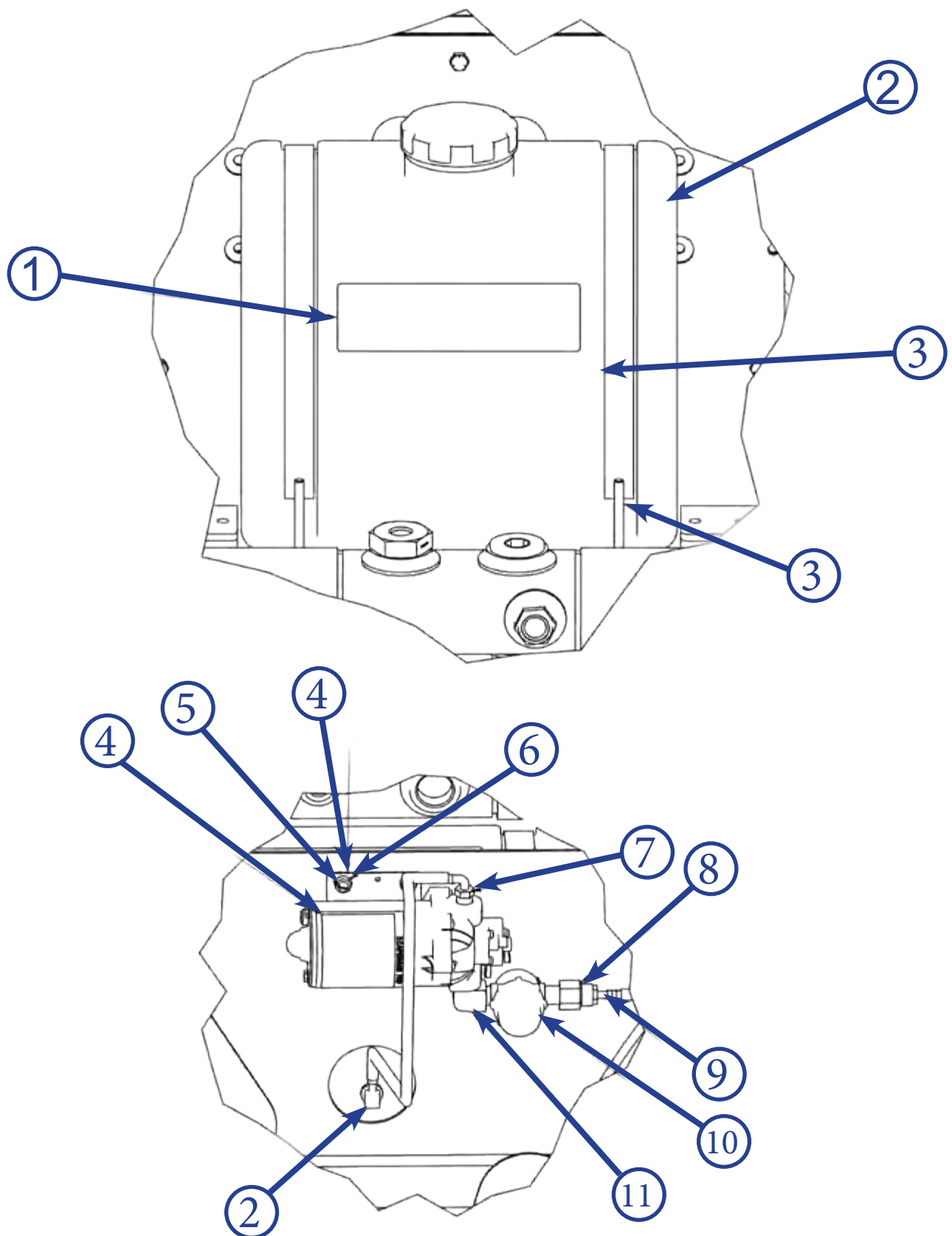
ITEM	PART NO.	DESCRIPTION	QTY
-	049538	SPIDER ASSY, LH SHD 1200-6	1
1	010050	FSTN, NUT HEX JAM 1/2-13	6
2	015682	WASHER, 3/8 EXT TOOTH LOCK	6
3	015683	BOLT, 3/8-16 X 7/8 DOG PT HEX HD CAP	6
4	015684	FSTN, NUT HEX JAM 3/8-16	6
5	015686	FSTN, SQHSS 3/8-16 X 1	6
6	024755	FITTING, 1/8-27 NPT 45° GREASE	6
7	028216	FSTN, CABLT 1/2-13 X 1-1/2 GR8	6
8	033034	LEVER, LIFT SD UNIVERSAL	6
9	049533	TROWEL ARM,6 BOSS SPIDER ASSY	6
10	064198	SPIDER BOSS, 6 BLADE UNIVERSAL	1
11	051043	CLIP, 46-48 UNIV SPIDER SPRING	6
12	015692	CAP, Ø1/4 RED GREASE	6



SECTION 4 PARTS

Fuel System Assembly Parts List

ITEM	PART NO.	DESCRIPTION	QTY
1	064654	ROTOR ASSEMBLY, RH	1
2	064651	ROTOR ASSEMBLY, LH	1
3	066018	DECAL, GAS ONLY (7.75 X 2.5)	2
4	012612	FSTN, NUT HEX NYLOCK 5/16-18	12
5	048921	STRAP, TANK MSP425 (OLD)	8
-	072737	GUARD, F/ 7 GAL TANK	2
6	053200	TANK ASSY, 6 GAL FUEL W/ CAP (OLD)	2
-	072854	TANK ASSY, 7 GAL FUEL W/ CAP	2
7	019429	HOSE, 5/16" FUEL LINE	-
8	039155	HOSE, 1/4" FUEL LINE	-
9	057993	FUEL FILTER F/ KOHLER (NOT SHOWN)	1



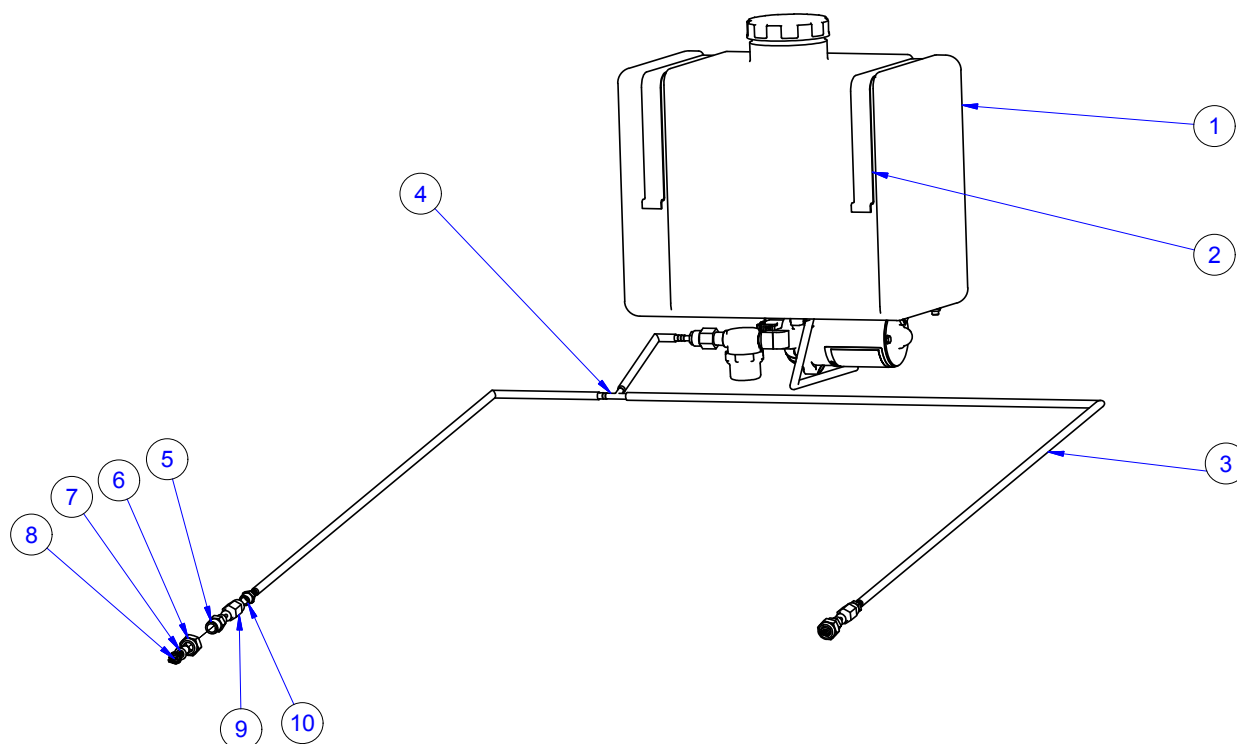
SECTION 4 PARTS

Spray System Assembly Parts List

ITEM	PART NO.	DESCRIPTION	QTY
1	065655	780 DECAL "RETARDANT ONLY"	1
2	047700	TANK, 6 GALLON WATER PLASTIC	1
3	048921	STRAP, TANK MSP425	8
4	033735	PUMP, SPRAY SYSTEM	1
5	016382	SCR, 10-32 X 3/8 SLTD RDH MACH	4
6	018072	WSHR, #10 Z STL SAE FLAT	4
7	047933	ELBOW, 1/4 PUSHLOKx1/4 NPT PLASTIC	1
8	040388	FTG, 3/8X1/4 BRASS FM TO FM REDUCER	1
9	048653	BARB, HOSE PLASTIC 1/4" x 1/4 NPT	3
10	040209	FILTER, RETARDANT SPRAY SYSTEM	1
11	040387	ELBOW, 3/8 BRASS 90° STREET	1

Spray System Assembly (cont'd) Illustration

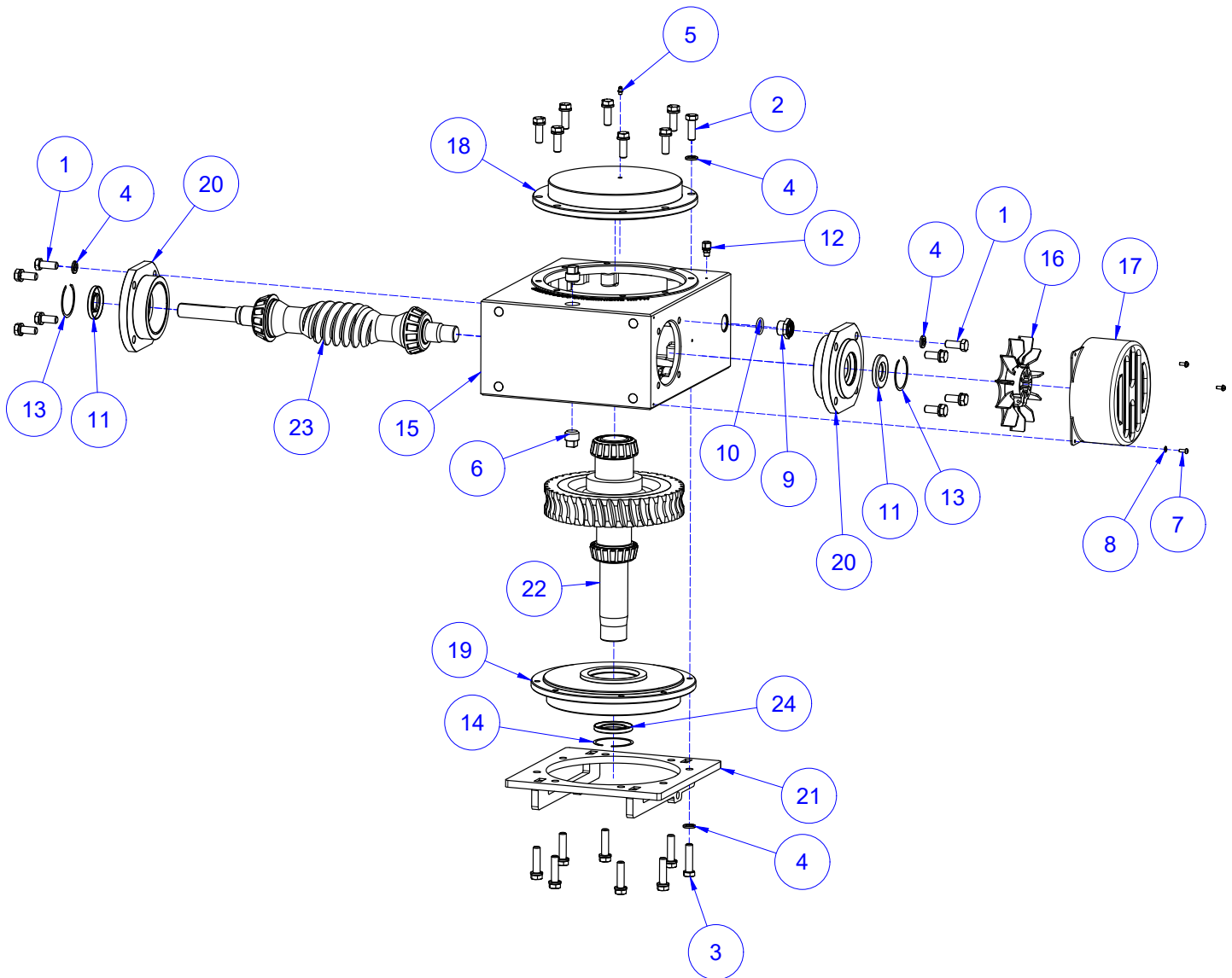
SECTION 4 PARTS



ITEM	PART NO.	DESCRIPTION	QTY
1	047700	TANK, 6 GALLON WATER PLASTIC	1
2	048921	STRAP, TANK MSP425	8
3	048246	HOSE 3/8" WATER LINE	
4	048652	TEE, PLASTIC 1/4 x 1/4 x 1/4	1
5	071531	NOZZLE BODY MALE STRAIGHT CP8028-NYB	2
6	012705	RETAINER, METAL SPRAY TIP	2
7	065244	STRAINER, POLY 100 μ MESH, W/ CHECK VALVE	2
8	012702	TIP, 80°x0.10 GPM BRASS SPRAY	2
9	065175	CHECK VALVE F/ SPRAY SYSTEM	2
10	048653	BARB, HOSE PLASTIC 1/4" x 1/4 NPT	3

SECTION 4 PARTS

LH Gearbox Assembly Illustration



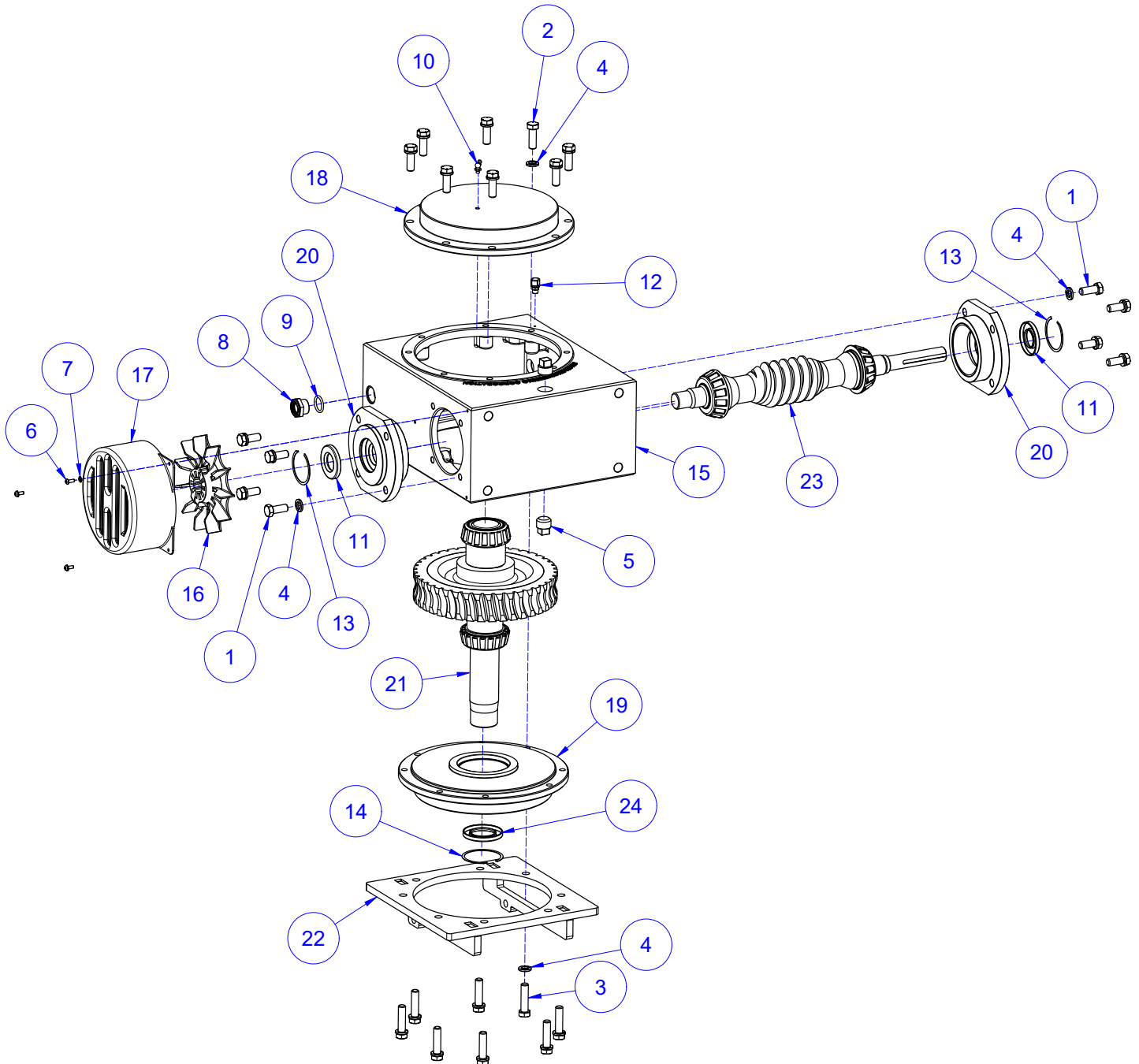
LH Gearbox Assembly Parts List

SECTION 4 PARTS

ITEM	PART NO.	DESCRIPTION	QTY
-	064613	GEARBOX ASSEMBLY LH - HP205	1
1	010068	FSTN, HHCS 1/2-13 X 1-1/4 GR 5	8
2	010069	FSTN, HHCS 1/2-13 X 1-1/2 GRADE 8	8
3	010071	FSTN, HHCS 1/2-13 X 2-1/4 GR 5	8
4	010093	FSTN, LW 1/2 GR8	24
5	010513	FITTING, 1/4-28 NPT GREASE	1
6	012953	PLUG, 3/4 NPTF BI SQ HD PIPE	3
7	013484	SCR, 10-24x1/2 RDH PPH	3
8	013740	FSTN, LW STAR #10	3
9	015672	GAUGE, 3/4-14 NPT PORTHOLE VIEW	1
10	015673	O-RING, 15/16x1-3/16x1/8 BUNA	1
11	029179	SEAL, Ø1.375 RADIAL SHAFT OIL	2
12	029529	VALVE, RELIEF 1/8-27NPT (AIR V)	1
13	032714	RING, RETAINING Ø2.4780	2
14	032715	RING, Ø2.857 RETAINING	1
15	041546	CASE, GEARBOX 600 SERIES	1
16	041578	FAN, 600 SERIES GEARBOX	1
17	041579	COVER, FAN 600 SERIES GEARBOX	1
18	041580	COVER, TOP ASSEMBLY 600 SERIES	1
19	041581	COVER, BOTTOM ASSEMBLY 600 SERIES	1
-	029184	CUP, Ø3-43/64" TPR ROLLER BEARING (USED W/ 041580 & 041581)	1
20	041583	CAP, FLANGE ASSEMBLY 600 SERIES	2
21	061222	GEARBOX RING WMNT	1
22	064611	SHAFT/GEAR ASSBMELY, LH GEAR, RH THRDS	1
23	064616	SHAFT ASSEMBLY, LH WORM	1
24	MS3700	SEAL, Ø1.875" RADIAL SHAFT OIL	1

SECTION 4 PARTS

RH Gearbox Assembly Illustration



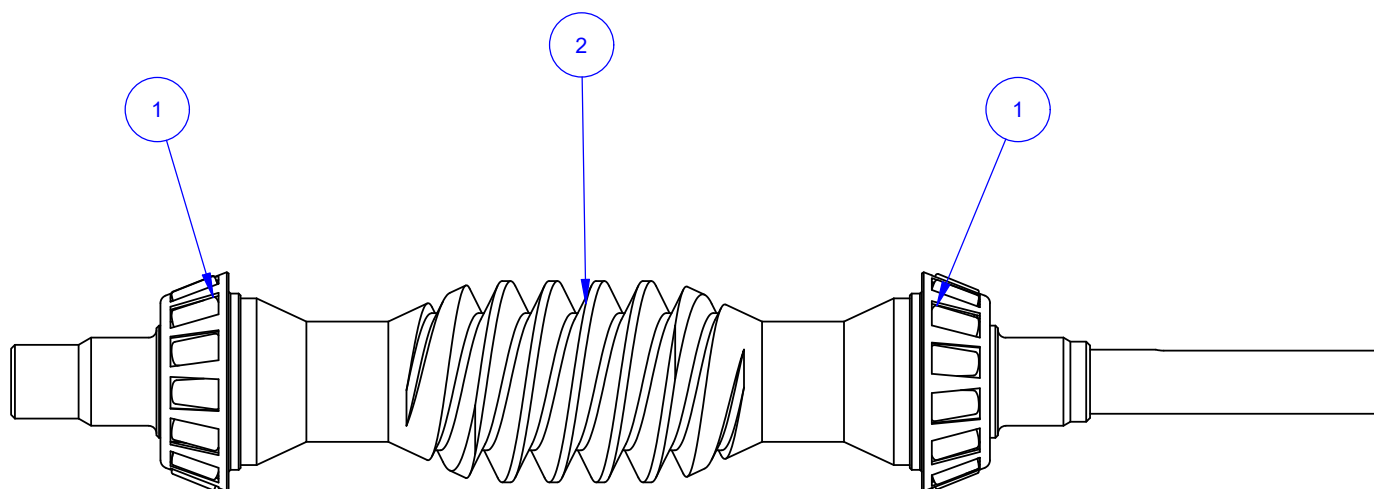
RH Gearbox Assembly Parts List

SECTION 4 PARTS

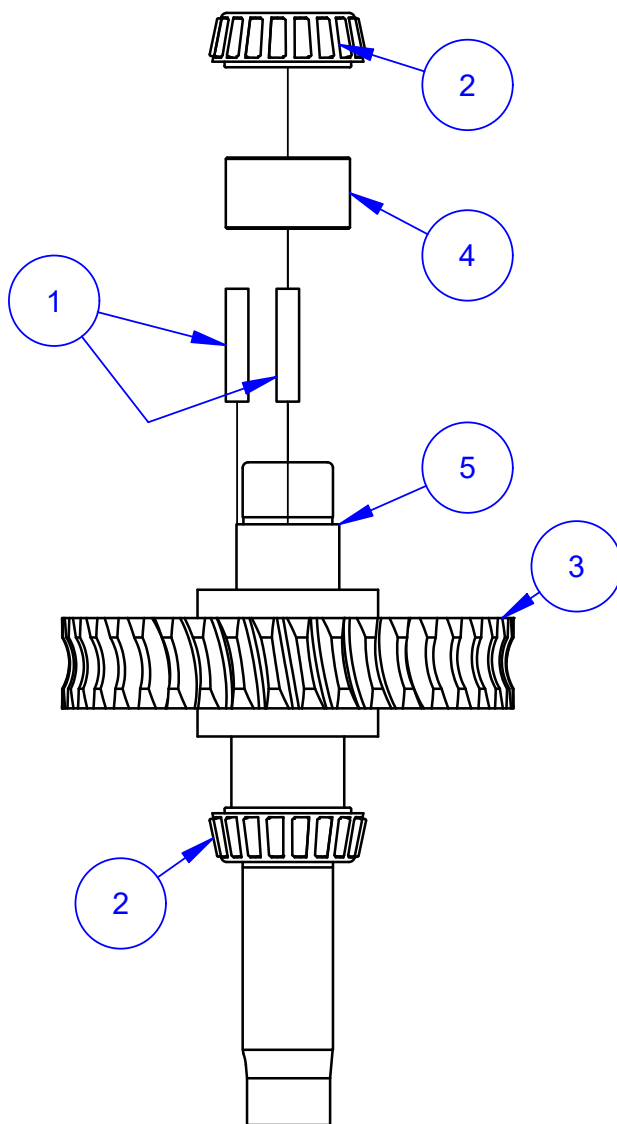
ITEM	PART NO.	DESCRIPTION	QTY
-	064614	GEARBOX ASSEMBLY RH - HP205	1
1	010068	FSTN, HHCS 1/2-13 X 1-1/4 GR 5	8
2	010069	FSTN, HHCS 1/2-13 X 1-1/2 GRADE 8	8
3	010071	FSTN, HHCS 1/2-13 X 2-1/4 GR 5	8
4	010093	FSTN, LW 1/2 GR8	24
5	012953	PLUG, 3/4 NPTF BI SQ HD PIPE	3
6	013484	SCR, 10-24x1/2 RDH PPH	3
7	013740	FSTN, LW STAR #10	3
8	015672	GAUGE, 3/4-14 NPT PORTHOLE VIEW	1
9	015673	O-RING, 15/16x1-3/16x1/8 BUNA	1
10	018510	FITTING, 1/4-28 NPT 45° GREASE	1
11	029179	SEAL, Ø1.375 RADIAL SHAFT OIL	2
12	029529	VALVE, RELIEF 1/8-27NPT (AIR V)	1
13	032714	RING, RETAINING Ø2.4780	2
14	032715	RING, Ø2.857 RETAINING	1
15	041546	CASE, GEARBOX 600 SERIES	1
16	041578	FAN, 600 SERIES GEARBOX	1
17	041579	COVER, FAN 600 SERIES GEARBOX	1
18	041580	COVER, TOP ASSEMBLY 600 SERIES	1
19	041581	COVER, BOTTOM ASSEMBLY 600 SERIES	1
-	029184	CUP, Ø3-43/64" TPR ROLLER BEARING (USED W/ 041580 & 041581)	1
20	041583	CAP, FLANGE ASSEMBLY 600 SERIES	2
21	061217	MAIN SHAFT ASSEMBLY, LH	1
22	061222	GEARBOX RING WMNT	1
23	064616	SHAFT ASSEMBLY, LH WORM	1
24	MS3700	SEAL, Ø1.875 RADIAL SHAFT OIL	1

SECTION 4 PARTS

GEARBOX SHAFT ASSEMBLY



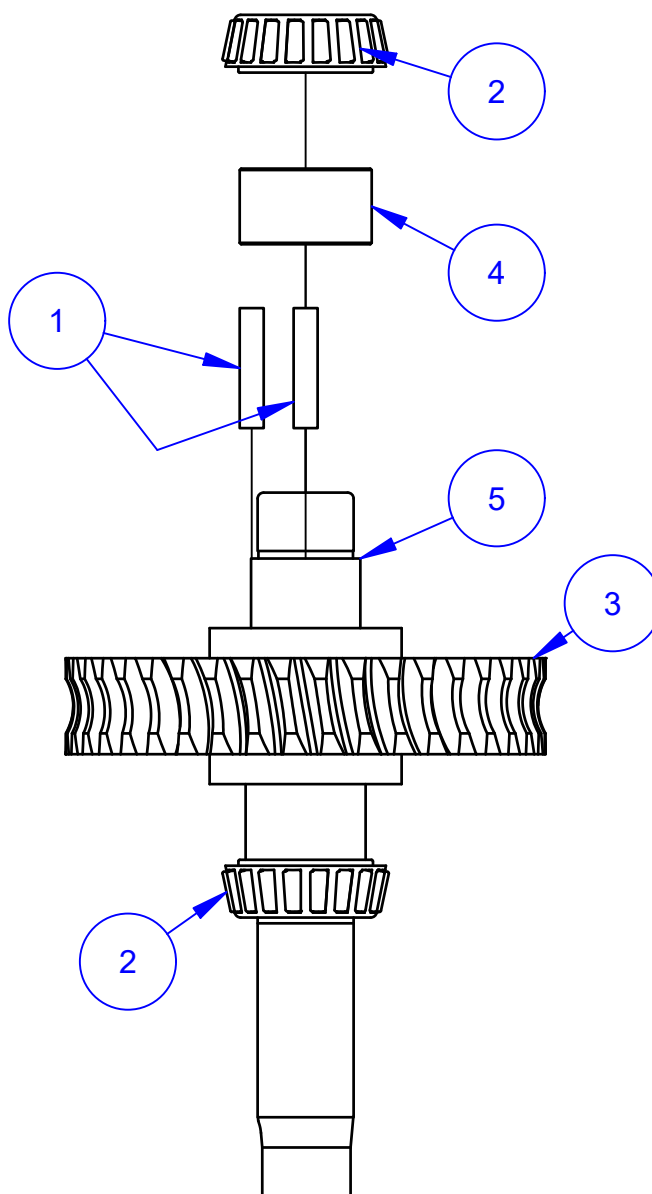
ITEM	PART NO.	DESCRIPTION	QTY
-	064616	SHAFT ASSEMBLY	-
1	041561	CONE BEARING	2
2	064615	SHAFT, WORM GEAR	1



ITEM	PART NO.	DESCRIPTION	QTY
-	064611	SHAFT/GEAR ASSEMBLY, LH	-
1	029146	KEY, 1/2" SQ X 2-1/2"	2
2	029183	TAPERED BEARING, Ø2 BORE	1
3	041555	LH GEAR F/ GEARBOX	1
4	041559	SPACER F/ MAIN SHAFT ASSEMBLY	1
5	061301	SHAFT, 2" RH F/ MAIN SHAFT ASSEMBLY	1

SECTION 4 PARTS

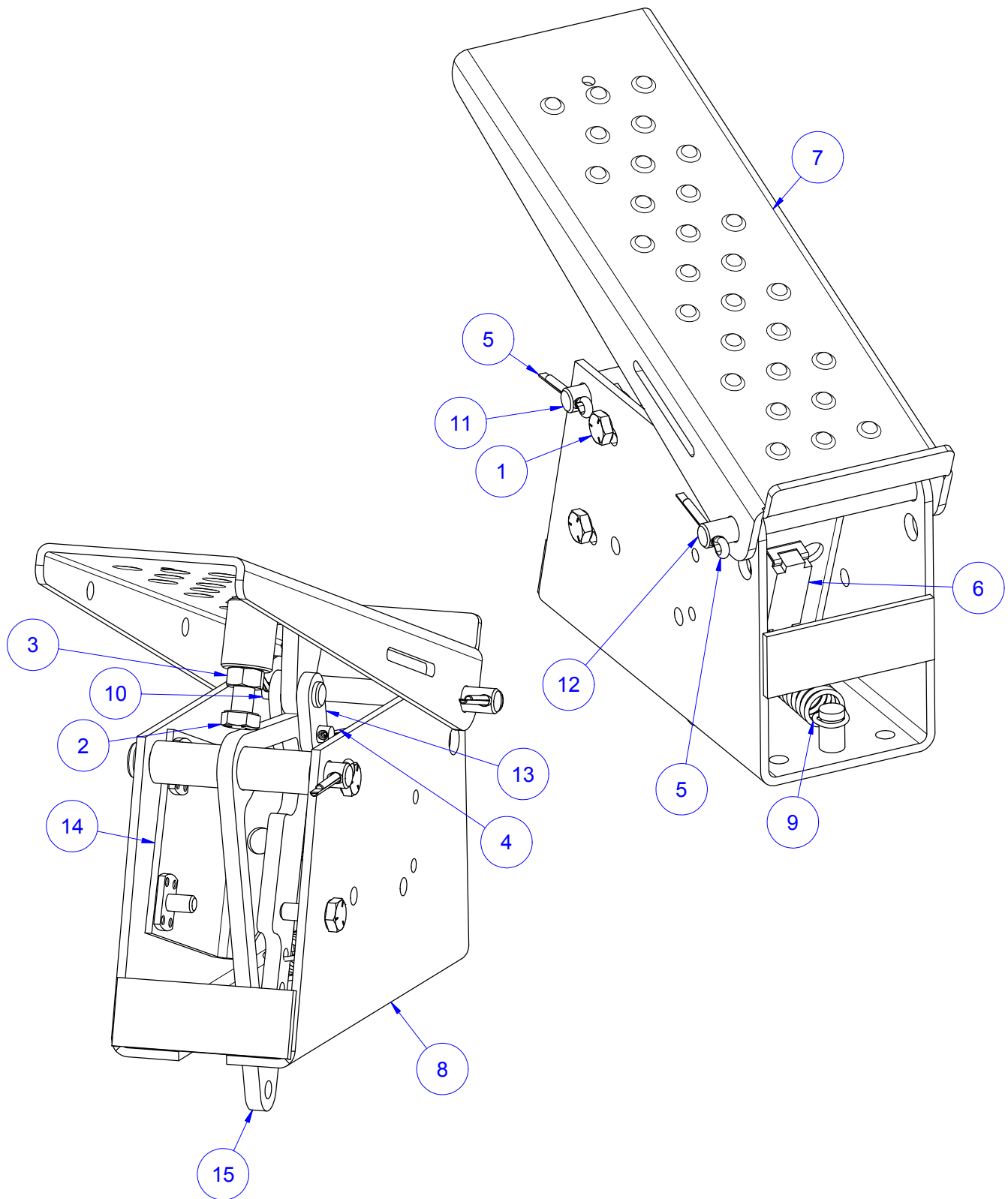
RH GEARBOX MAIN SHAFT



ITEM	PART NO.	DESCRIPTION	QTY
-	061217	SHAFT/GEAR ASSEMBLY, RH ASSEMBLY	-
1	029146	KEY, 1/2" SQ X 2-1/2"	2
2	029183	TAPERED BEARING, Ø2 BORE	1
3	041555	LH GEAR F/ GEARBOX	1
4	041559	SPACER F/ MAIN SHAFT ASSEMBLY	1
5	061300	SHAFT, 2" LH F/ MAIN SHAFT ASSEMBLY	1

Throttle Pedal Assembly - 064255 Illustration

SECTION 4 PARTS



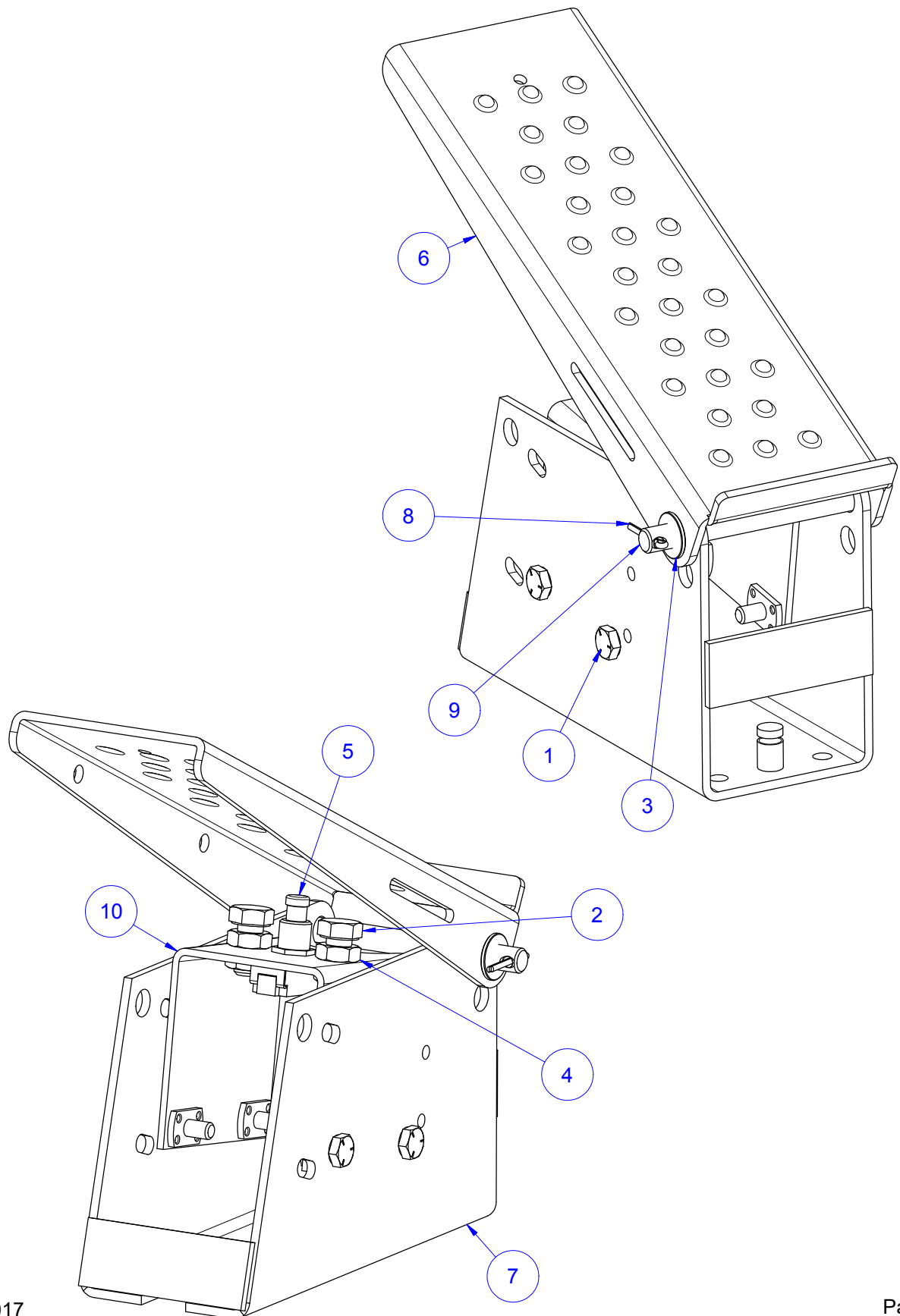
SECTION 4 PARTS

Throttle Pedal Assembly - 064255 Parts List

ITEM	PART NO.	DESCRIPTION	QTY
1	010002	FSTN, HHCS 1/4-20 X 3/4	4
2	010020	FSTN, HHCS 5/16-18 X 1	1
3	010100	FSTN, NUT HEX 5/16-18	1
4	010131	PIN, Ø1/16 X 1 ZP STL COTTER	2
5	012361	PIN, Ø1/8 X 1 COTTER	2
6	024631	SWITCH, KILL FOR RIDING TROWEL	1
7	024839	ASSY, FOOT SPEED PEDAL	1
8	024851	THROTTLE HOUSING WMNT	1
9	024981	EXTENSION SPRING	1
10	024982	FSTN, PIN CLEVIS 1/4 X 51/64	2
11	024983	FSTN, PIN CLEVIS 3/8 X 3-1/4	1
12	028895	FSTN, PIN CLEVIS 3/8 X 3 3/4	1
13	040246	SHACKLE 1-1/4" FOOT SPEED SHORT	2
14	041596	WELDMENT, KILL SWITCH PLATE	1
15	059534	FULCRUM WMNT	1

Kill Switch Pedal Assembly - 059535 Illustration

SECTION 4 PARTS



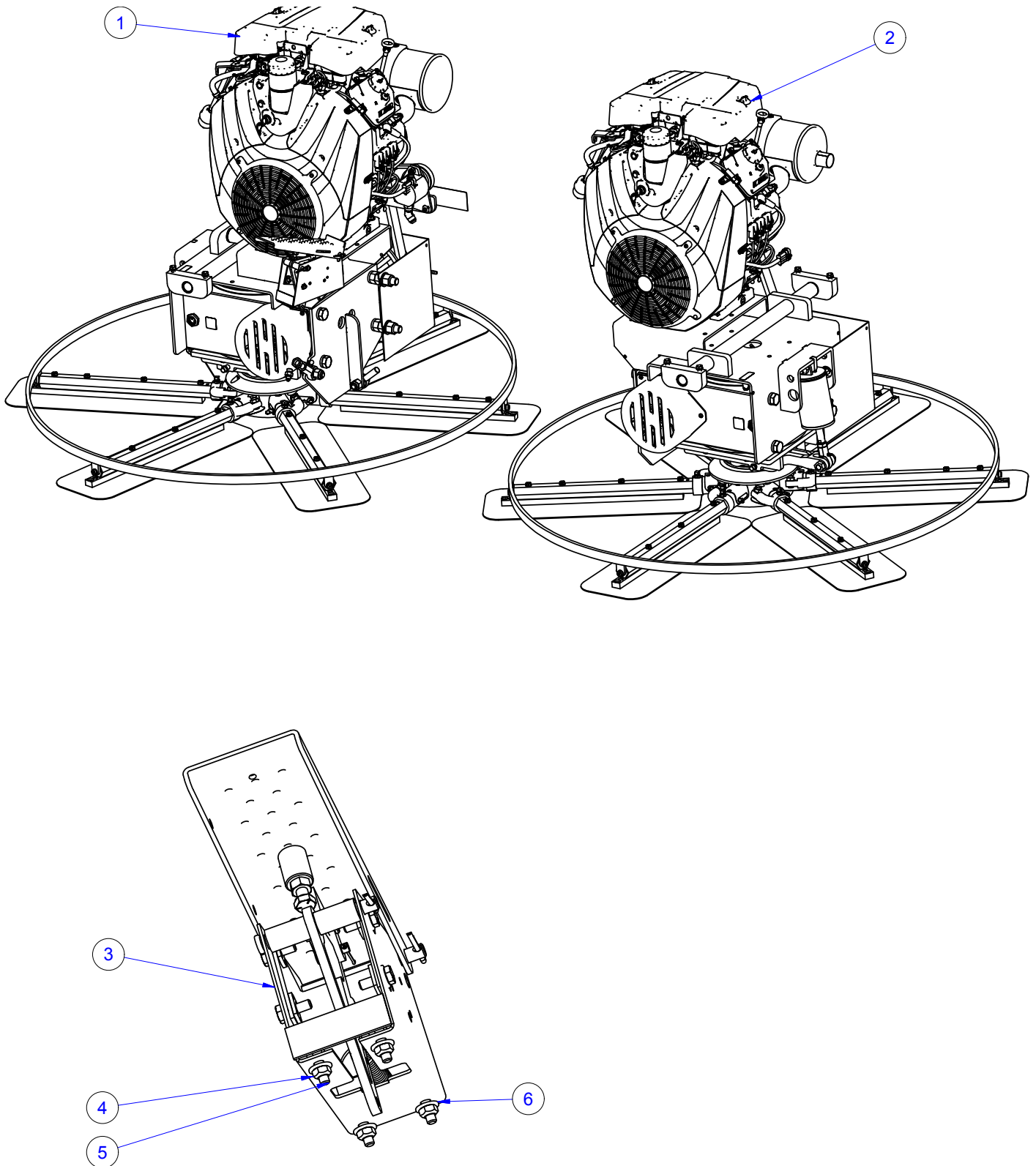
SECTION 4 PARTS

Kill Switch Pedal Assembly - 059535 Parts List

ITEM	PART NO.	DESCRIPTION	QTY
1	010002	FSTN, HHCS 1/4-20 X 3/4	4
2	010035	FSTN, HHCS 3/8-16 X 3/4	2
3	010082	FSTN, FW 5/16	1
4	015684	FSTN, NUT HEX JAM 3/8-16	4
5	024631	SWITCH, KILL FOR RIDING TROWEL	1
6	024840	PLATE, PEDAL FOOT SPEED	1
7	024851	THROTTLE HOUSING WMNT	1
8	026226	PIN, Ø3/32 X 3/4 ZP STL COTTER	1
9	028895	FSTN, PIN CLEVIS 3/8 X 3 3/4	1
10	041596	WELDMENT, KILL SWITCH PLATE	1

Throttle Assembly Illustration

SECTION 4 PARTS



SECTION 4 PARTS

Throttle Assembly Parts List

ITEM	PART NO.	DESCRIPTION	QTY
1	064654	ROTOR ASSEMBLY, RH	1
2	064651	ROTOR ASSEMBLY, LH	1
3	064255	FOOT PEDAL W/ THROTTLE, RH	1
4	020542	FSTN, NUT STOVER LOCK 1/4-20	10
5	010002	FSTN, HHCS 1/4-20 X 3/4 GR8	10
6	010081	FSTN, FW 1/4	16
7	032301	CABLE, THROTTLE 72" HD	1
8	032300	CABLE, THROTTLE 52" HD	1

SECTION 4 PARTS

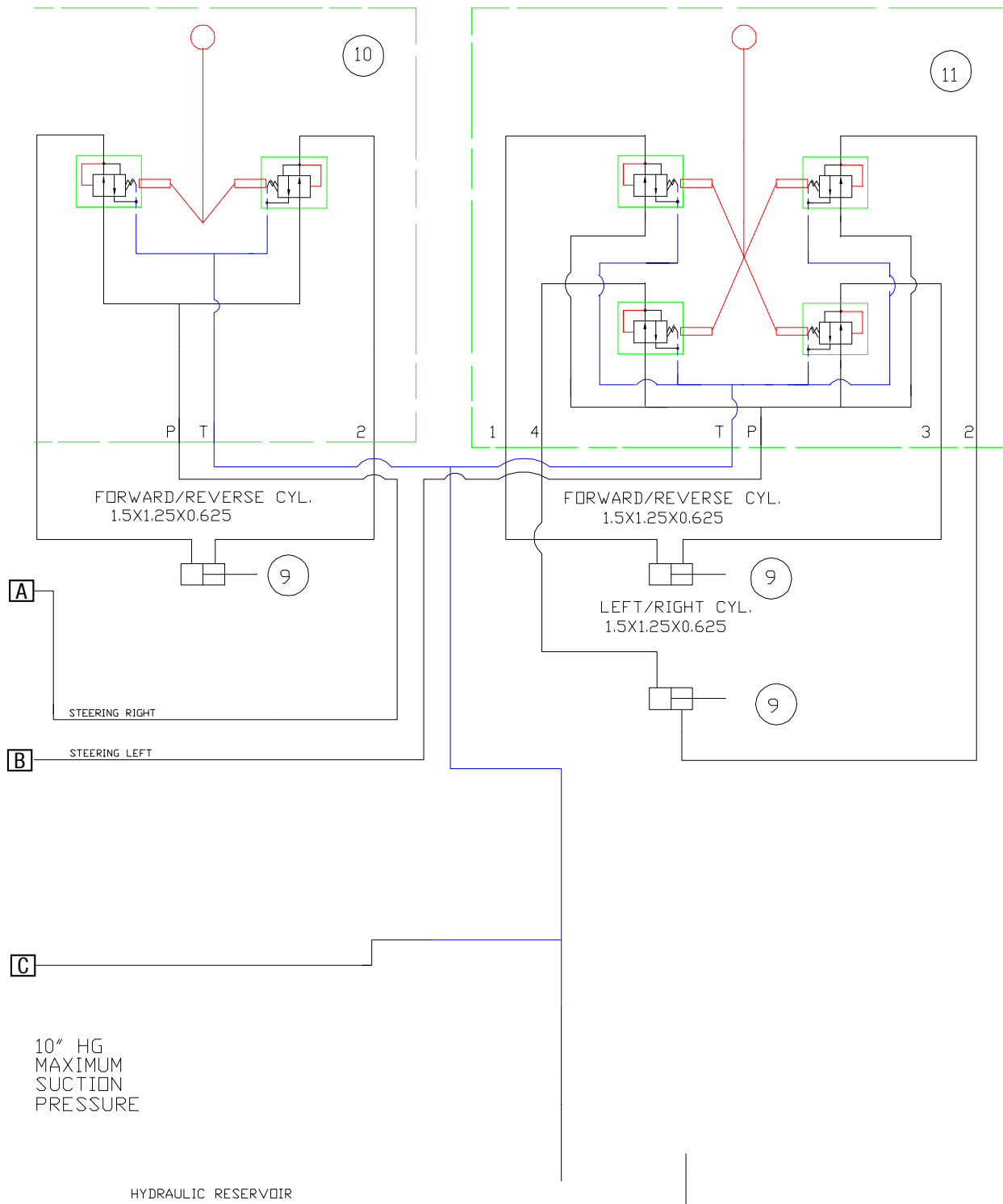


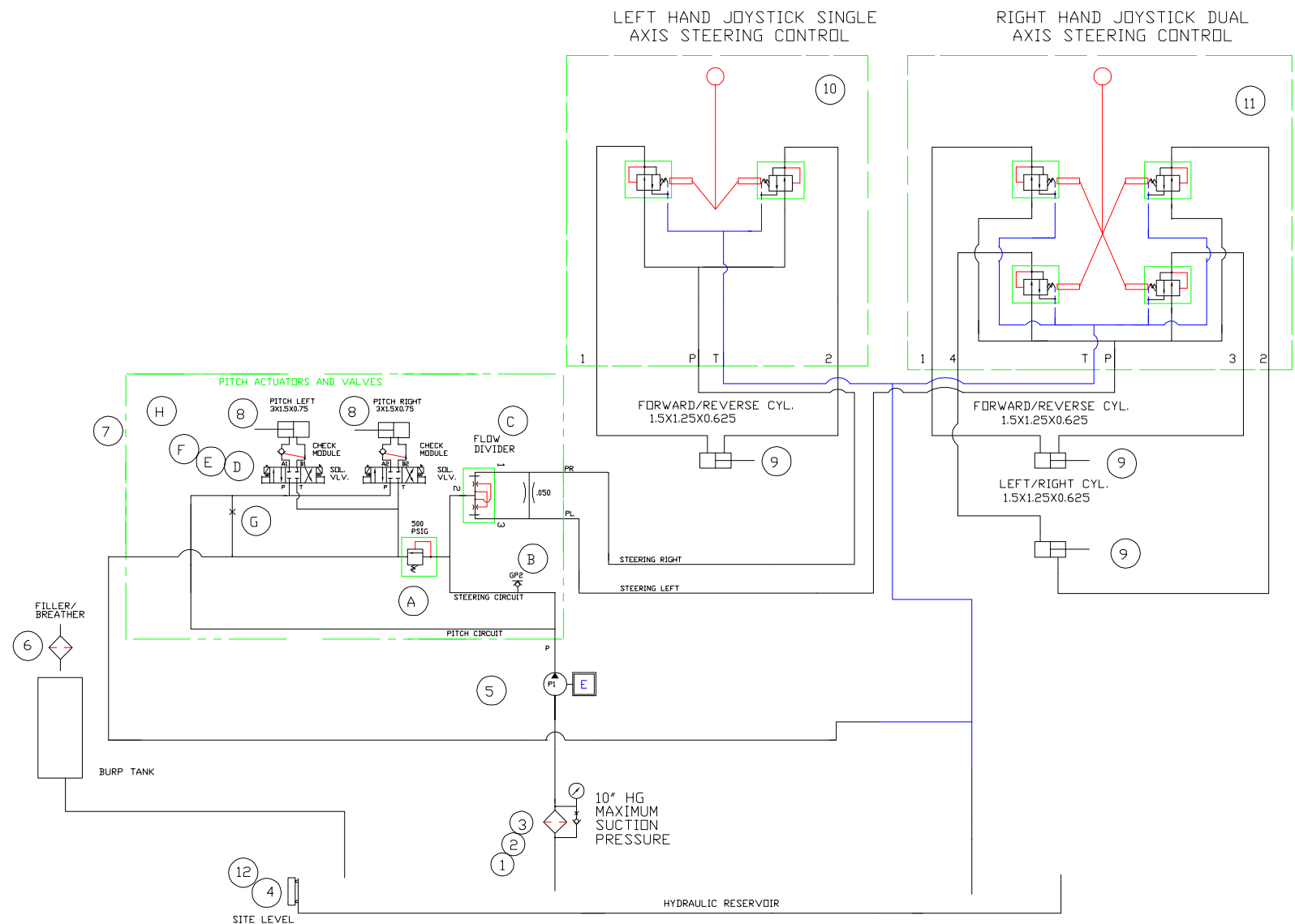
SECTION 4 PARTS

Hydraulics Assembly Illustration (Split)

LEFT HAND JOYSTICK SINGLE
AXIS STEERING CONTROL

RIGHT HAND JOYSTICK DUAL
AXIS STEERING CONTROL

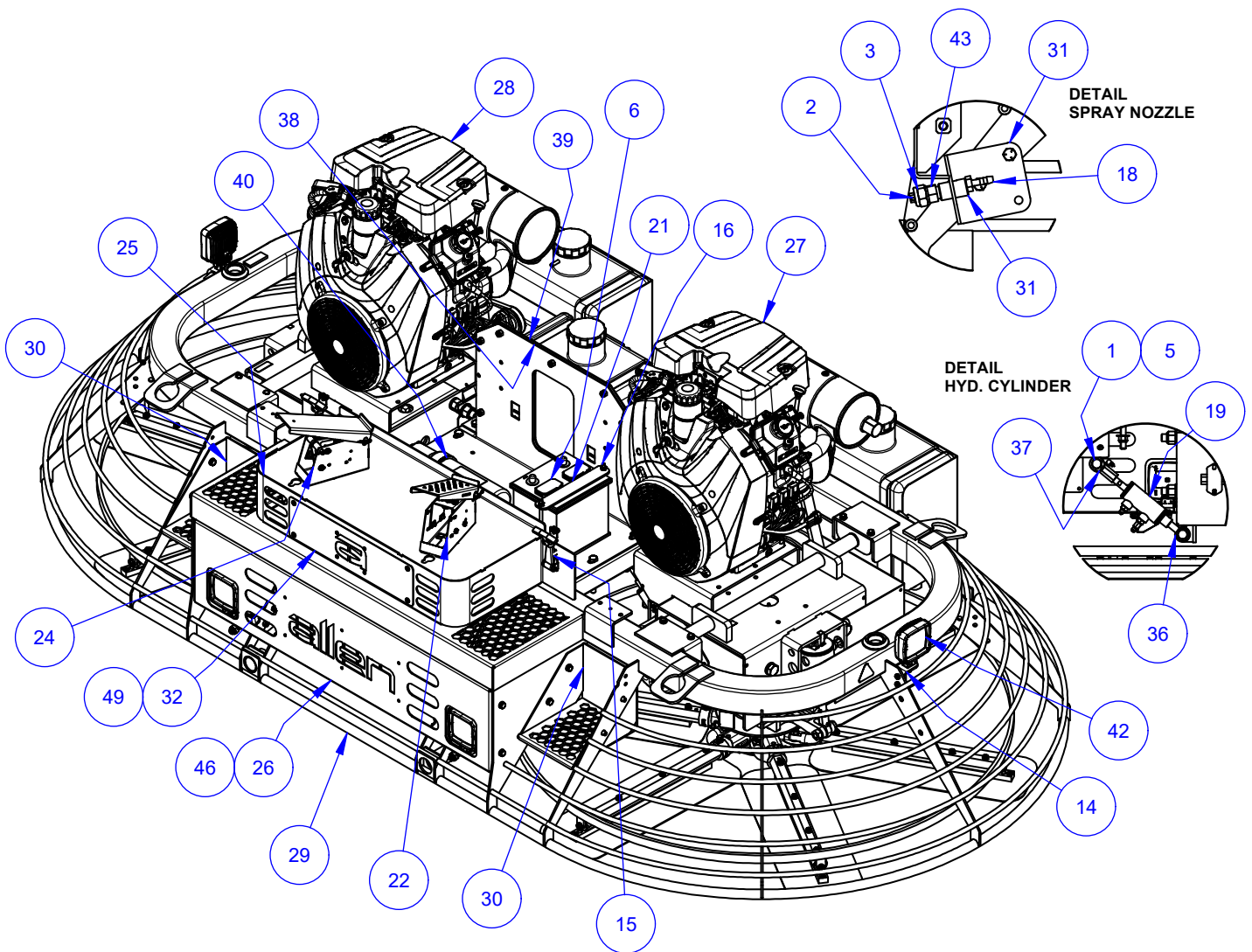




SECTION 4 PARTS

Hydraulics Assembly Parts List

ITEM	PART NO.	DESCRIPTION	QTY
-	066243	KIT, HP205 COMPONENT	1
-	001002	OIL, HYDRAULIC 46 (DTE25)	2.5
1	066149	SUCTION FILTER HEAD	1
2	046916	SUCTION FILTER ELEMENT	1
3	046242	SUCTION FILTER GAUGE	1
4	046731	TANK SITE GAUGE (PART OF FITTINGS KIT)	1
5	046738	HYDRAULIC GEAR PUMP	1
6	047886	BURP TANK BREATHER (PART OF FITTINGS KIT)	1
7	066150	STEERING/PITCH MANIFOLD ASSEMBLY (ITEMS A-H)	1
A	-	RELIEF VALVE CARTRIDGE	1
B	-	TEST PORT	1
C	-	FLOW DIVIDER	1
D	-	SOLENOID CARTRIDGE VALVE	2
E	-	12 VDC COILS	4
F	-	CHECK VALVE CARTRIDGE	2
G	-	CAVITY PLUG	1
H	-	STEERING/PITCH MANIFOLD	1
8	048659	PITCH CYLINDERS	2
9	048661	FORWARD/REVERSE & LEFT/RIGHT, STEERING CYLINDERS	3
10	064510	JOYSTICK, LEFT HAND	1
11	064511	JOYSTICK, RIGHT HAND	1
12	065017	TANK MAGNETIC PLUG	1
13	066241	HP205 HOSE KIT	1
14	066242	HP205 FITTING KIT	1



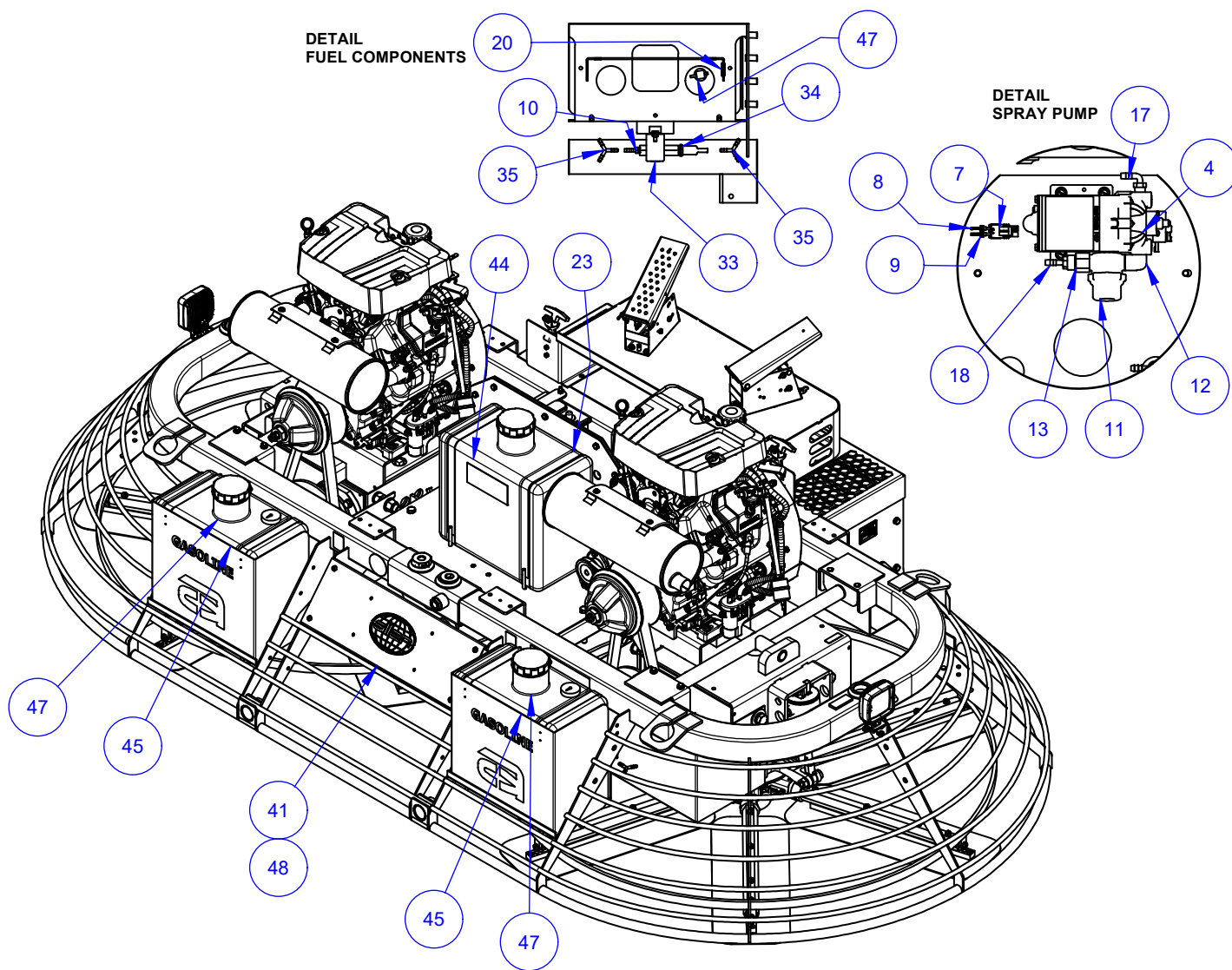
SECTION 4 PARTS

Mainframe Assembly (064618) Parts List

ITEM	PART NO.	DESCRIPTION	QTY
1	010632	FASTENER, HHCS 5/8"-11 X 2"	6
2	012702	SPRAY TIP, 80° X 0.10 GPM	2
3	012705	RETAINER FOR SPRAY TIP	2
4	033735	PUMP FOR SPRAY SYSTEM	1
5	037139	FASTENER, HEX NUT NYLOK 5/8"-18	6
6	037771	BATTERY	1
7	038641	CONNECTOR HOUSING, 2 POSN FEMALE	1
8	038644	TERMINAL, FEMALE 16-14 AWG	2
9	038648	CAVITY SEAL, 16-14 AWG	2
10	040030	FITTING, HOSE BARB 1/4" BARB X 1/8" NPT	1
11	040209	FILTER FOR SPRAY SYSTEM	1
12	040387	FITTING, 3/8" STREET ELBOW 90°	1
13	040388	FITTING, 3/8" X 1/4" FM TO FM REDUCER	1
14	042140	BRACKET FOR LIGHT	2
15	042260	LATCH, T HANDLE	2
16	047715	ROD, 5/16"-18 BATTERY HOLD DOWN	2
17	047933	FITTING, ELBOW 1/4 PUSHLOK X 1/4 NPT	1
18	048653	FITTING, BARB 1/4" X 1/4 NPT	3
19	048661	CYLINDER, STEER	3
20	048681	RUBBER GROMMET	2
21	048932	BAR F/ BATTERY HOLD DOWN	1
22	059535	FOOT PEDAL W/ KILL SWITCH	1
23	063088	TANK STRAP F/ 7GAL TANK	2
24	064255	FOOT PEDAL W/ THROTTLE	1
25	064621	TOP DECK	1
26	064622	FRONT PANEL	1
27	064651	ROTOR ASSEMBLY, LH	1
28	064654	ROTOR ASSEMBLY, RH	1
29	064663	MAINFRAME WELDMENT	1
30	064688	STEP F/ FRAME	2
31	064701	BRACKET F/ SPRAY NOZZLE	2
32	065039	COVER F/ FRONT DECK	1
33	065172	FUEL PUMP	1
34	065173	INLINE FILTER, FUEL	1
35	065174	Y-CONNECTOR, 1/4" HOSE	2
36	065446	ROD END MALE 5/8"	3
37	066188	ROD END FEMALE 5/8"	3
38	066250	BATTERY MOUNT PLATE	1
39	066251	TANK MOUNT PLATE	1
40	066255	MANUAL TUBE (OLD 048665)	1
41	066603	COVER F/ REAR CENTER	1
42	069835	LIGHT, 1200 LUMENS 12V (OLD 064749)	4
43	071531	NOZZLE BODY	2
44	071536	TANK, 7GAL RETARDANT (OLD 047700)	1
45	072737	GUARD F/ 7 GAL TANK (GAS)	2
46	072739	PLATE, BACKER F/ FRONT BOTTOM COVER	1
47	072854	TANK, 7GAL FUEL (OLD 053200)	2
48	072856	PLATE, BACKER F/ REAR COVER	1
49	074535	PLATE, BACKER F/ TOP FRONT COVER	1

Mainframe Assembly (074535) (cont'd) Illustration

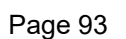
SECTION 4 PARTS



SECTION 4 PARTS

Mainframe Assembly (cont'd) Parts List

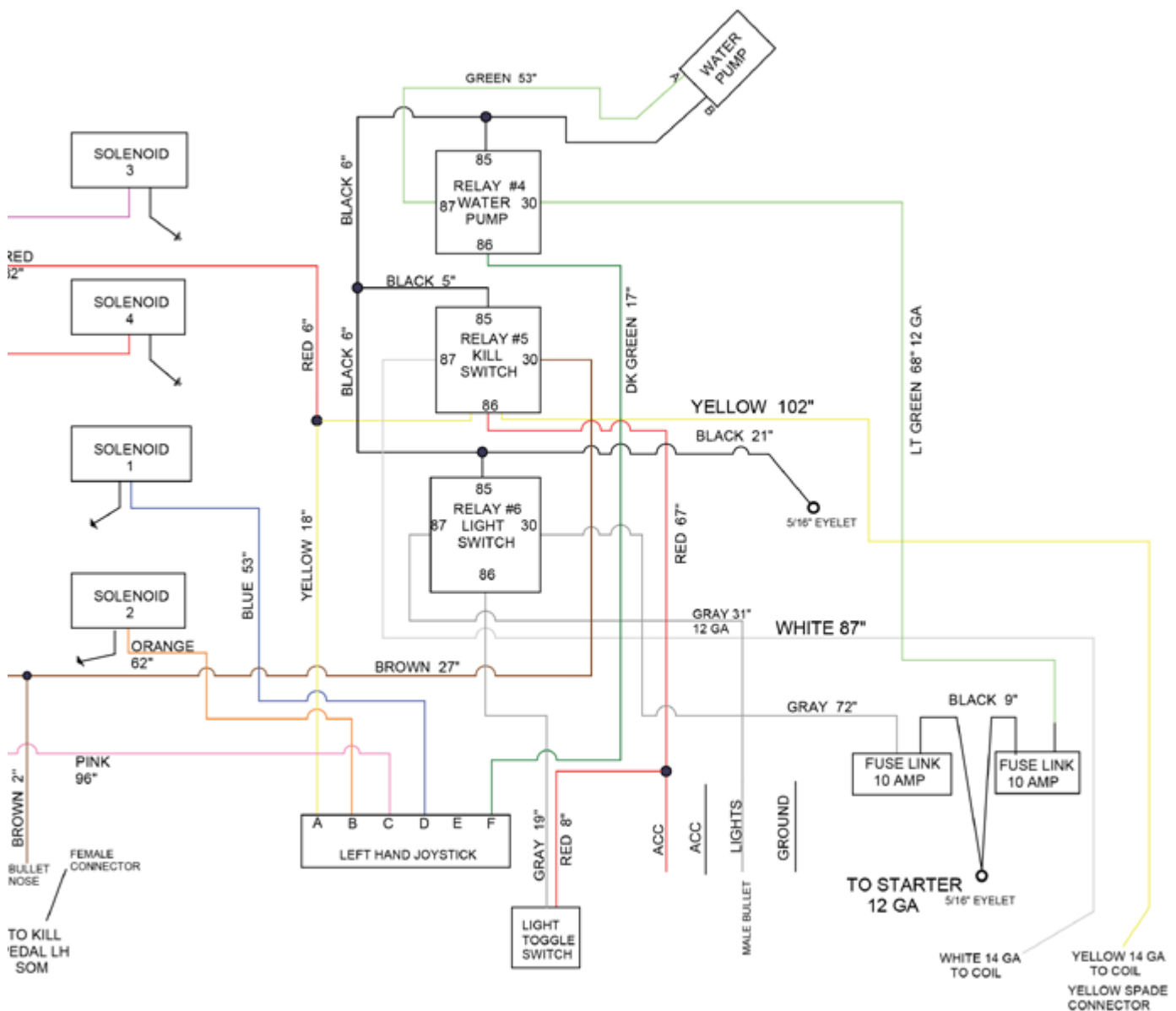
ITEM	PART NO.	DESCRIPTION	QTY
1	010632	FASTENER, HHCS 5/8"-11 X 2"	6
2	012702	SPRAY TIP, 80° X 0.10 GPM	2
3	012705	RETAINER FOR SPRAY TIP	2
4	033735	PUMP FOR SPRAY SYSTEM	1
5	037139	FASTENER, HEX NUT NYLOK 5/8"-18	6
6	037771	BATTERY	1
7	038641	CONNECTOR HOUSING, 2 POSN FEMALE	1
8	038644	TERMINAL, FEMALE 16-14 AWG	2
9	038648	CAVITY SEAL, 16-14 AWG	2
10	040030	FITTING, HOSE BARB 1/4" BARB X 1/8" NPT	1
11	040209	FILTER FOR SPRAY SYSTEM	1
12	040387	FITTING, 3/8" STREET ELBOW 90°	1
13	040388	FITTING, 3/8" X 1/4" FM TO FM REDUCER	1
14	042140	BRACKET FOR LIGHT	2
15	042260	LATCH, T HANDLE	2
16	047715	ROD, 5/16"-18 BATTERY HOLD DOWN	2
17	047933	FITTING, ELBOW 1/4 PUSHLOK X 1/4 NPT	1
18	048653	FITTING, BARB 1/4" X 1/4 NPT	3
19	048661	CYLINDER, STEER	3
20	048681	RUBBER GROMMET	2
21	048932	BAR F/ BATTERY HOLD DOWN	1
22	059535	FOOT PEDAL W/ KILL SWITCH	1
23	063088	TANK STRAP F/ 7GAL TANK	2
24	064255	FOOT PEDAL W/ THROTTLE	1
25	064621	TOP DECK	1
26	064622	FRONT PANEL	1
27	064651	ROTOR ASSEMBLY, LH	1
28	064654	ROTOR ASSEMBLY, RH	1
29	064663	MAINFRAME WELDMENT	1
30	064688	STEP F/ FRAME	2
31	064701	BRACKET F/ SPRAY NOZZLE	2
32	065039	COVER F/ FRONT DECK	1
33	065172	FUEL PUMP	1
34	065173	INLINE FILTER, FUEL	1
35	065174	Y-CONNECTOR, 1/4" HOSE	2
36	065446	ROD END MALE 5/8"	3
37	066188	ROD END FEMALE 5/8"	3
38	066250	BATTERY MOUNT PLATE	1
39	066251	TANK MOUNT PLATE	1
40	066255	MANUAL TUBE (OLD 048665)	1
41	066603	COVER F/ REAR CENTER	1
42	069835	LIGHT, 1200 LUMENS 12V (OLD 064749)	4
43	071531	NOZZLE BODY	2
44	071536	TANK, 7GAL RETARDANT (OLD 047700)	1
45	072737	GUARD F/ 7 GAL TANK (GAS)	2
46	072739	PLATE, BACKER F/ FRONT BOTTOM COVER	1
47	072854	TANK, 7GAL FUEL (OLD 053200)	2
48	072856	PLATE, BACKER F/ REAR COVER	1
49	074535	PLATE, BACKER F/ TOP FRONT COVER	1

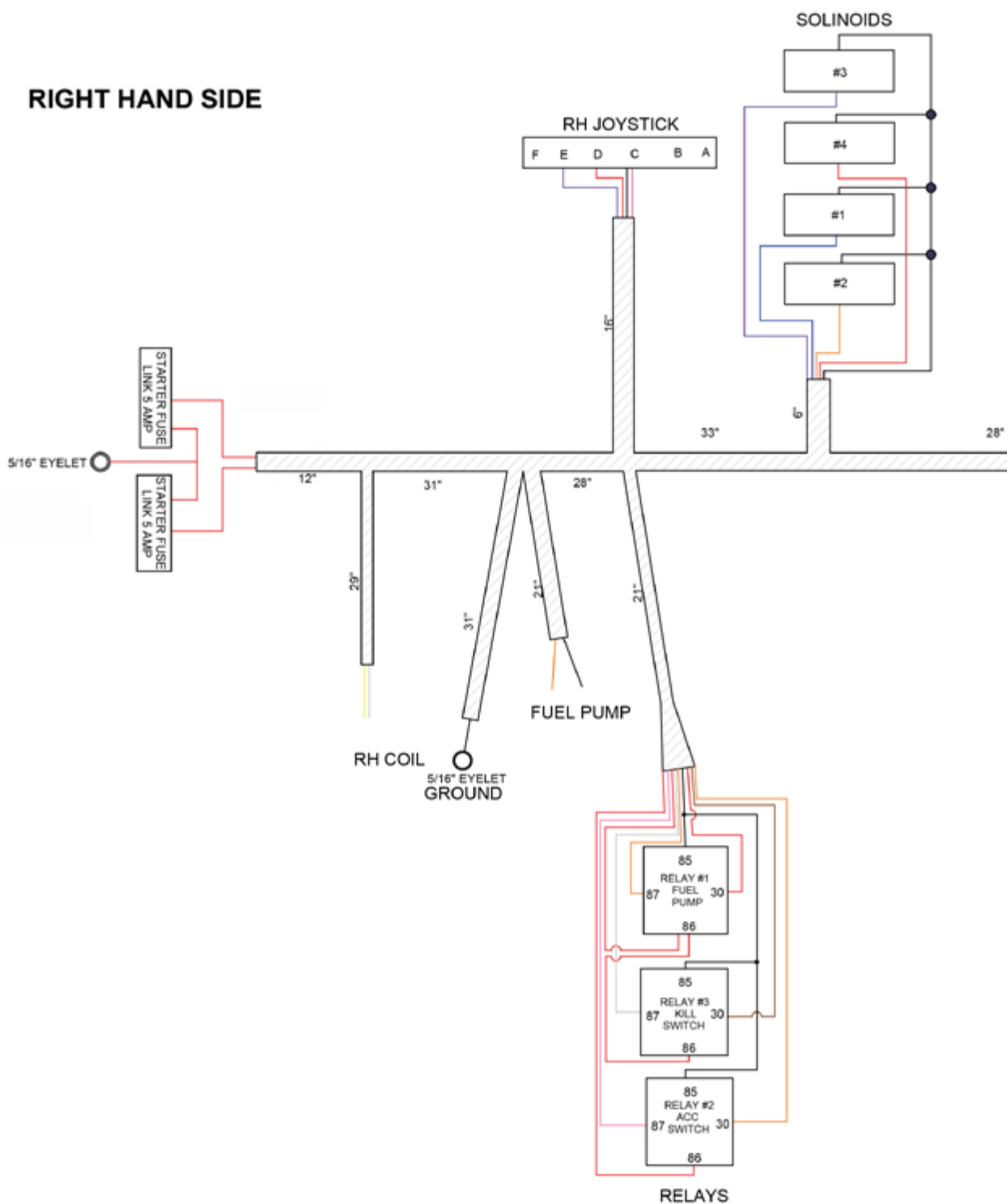


SECTION 4 PARTS

Electrical Schematics, Kohler (cont'd)

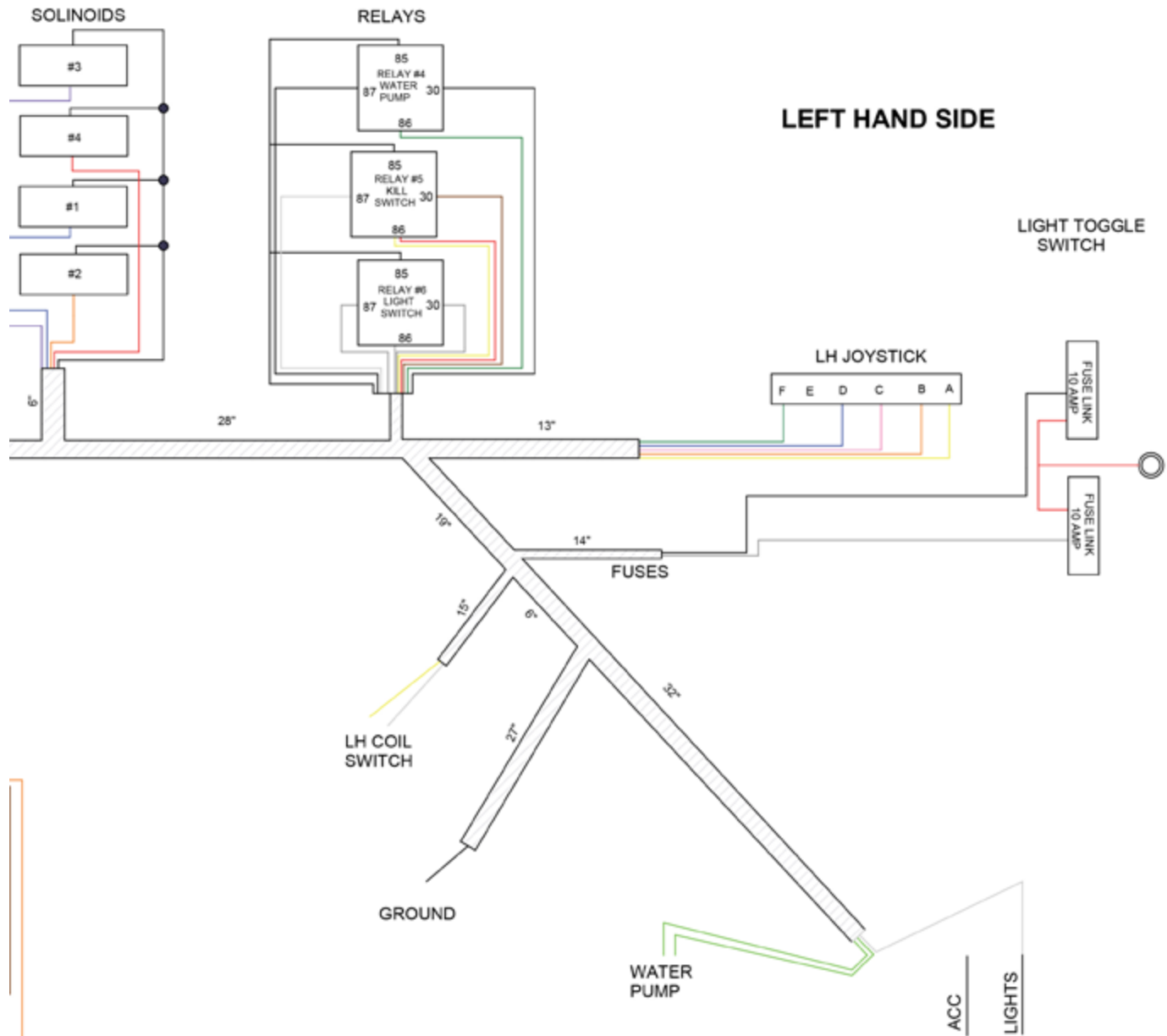
LEFT
HAND

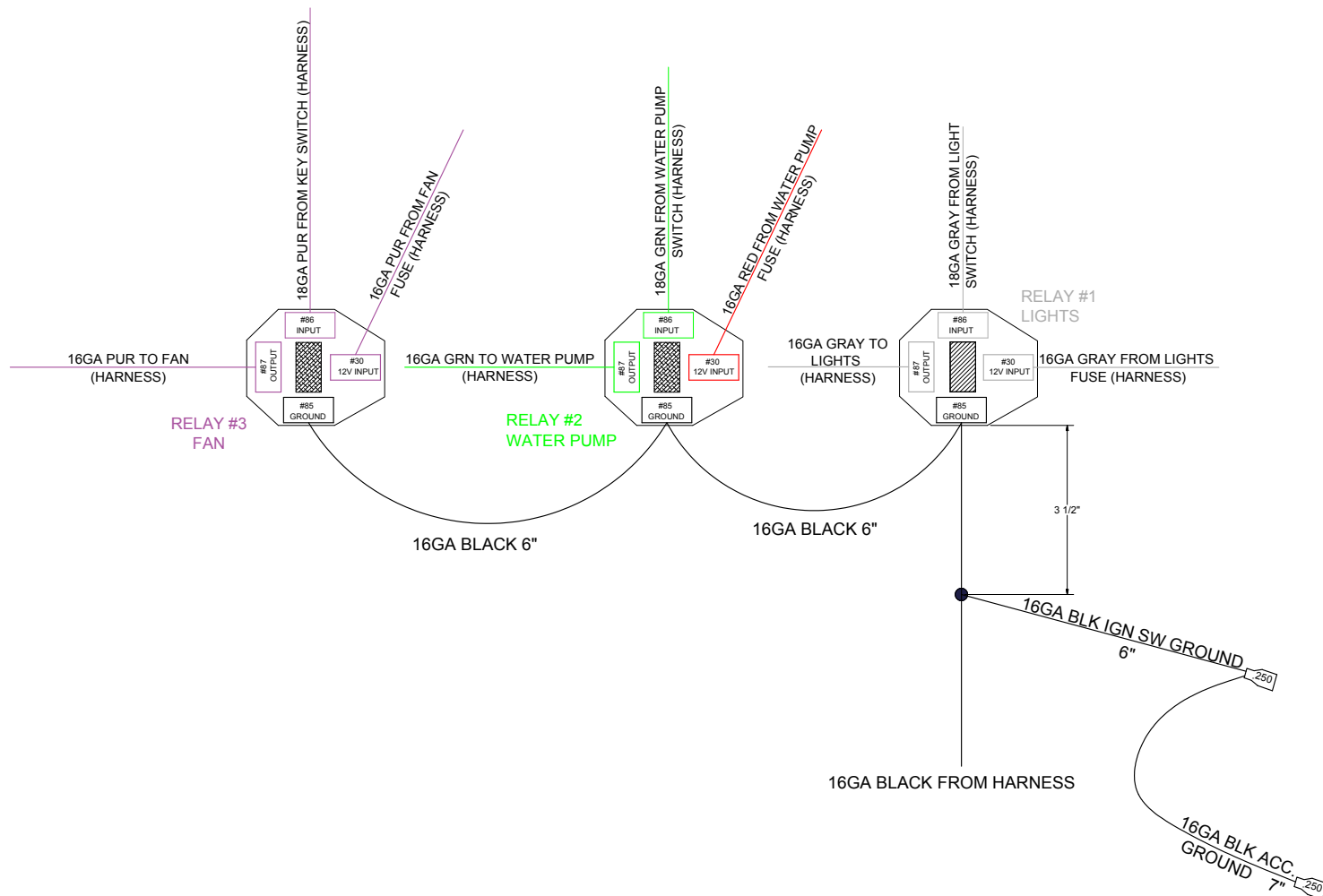




SECTION 4 PARTS

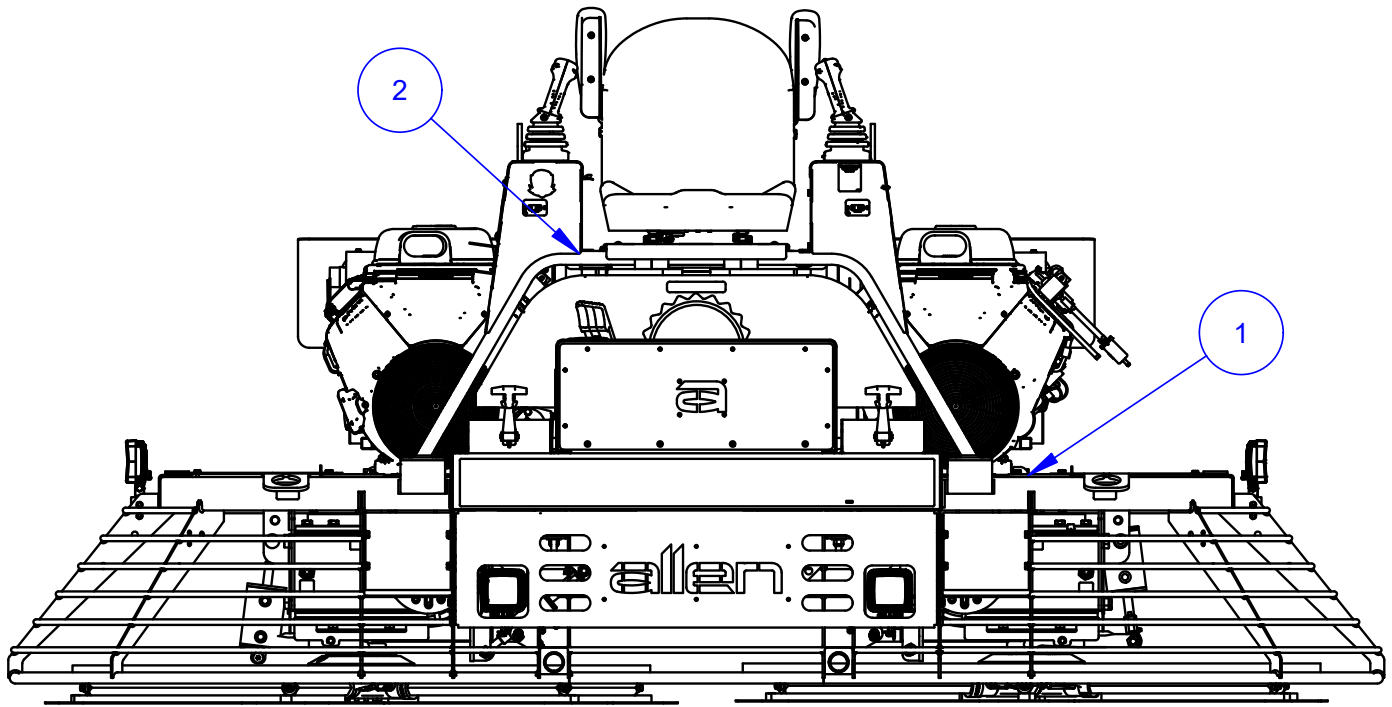
Electrical Schematics, Kohler (cont'd)





SECTION 4 PARTS

GENERAL ASSEMBLY - HP205 W/ VANGUARD

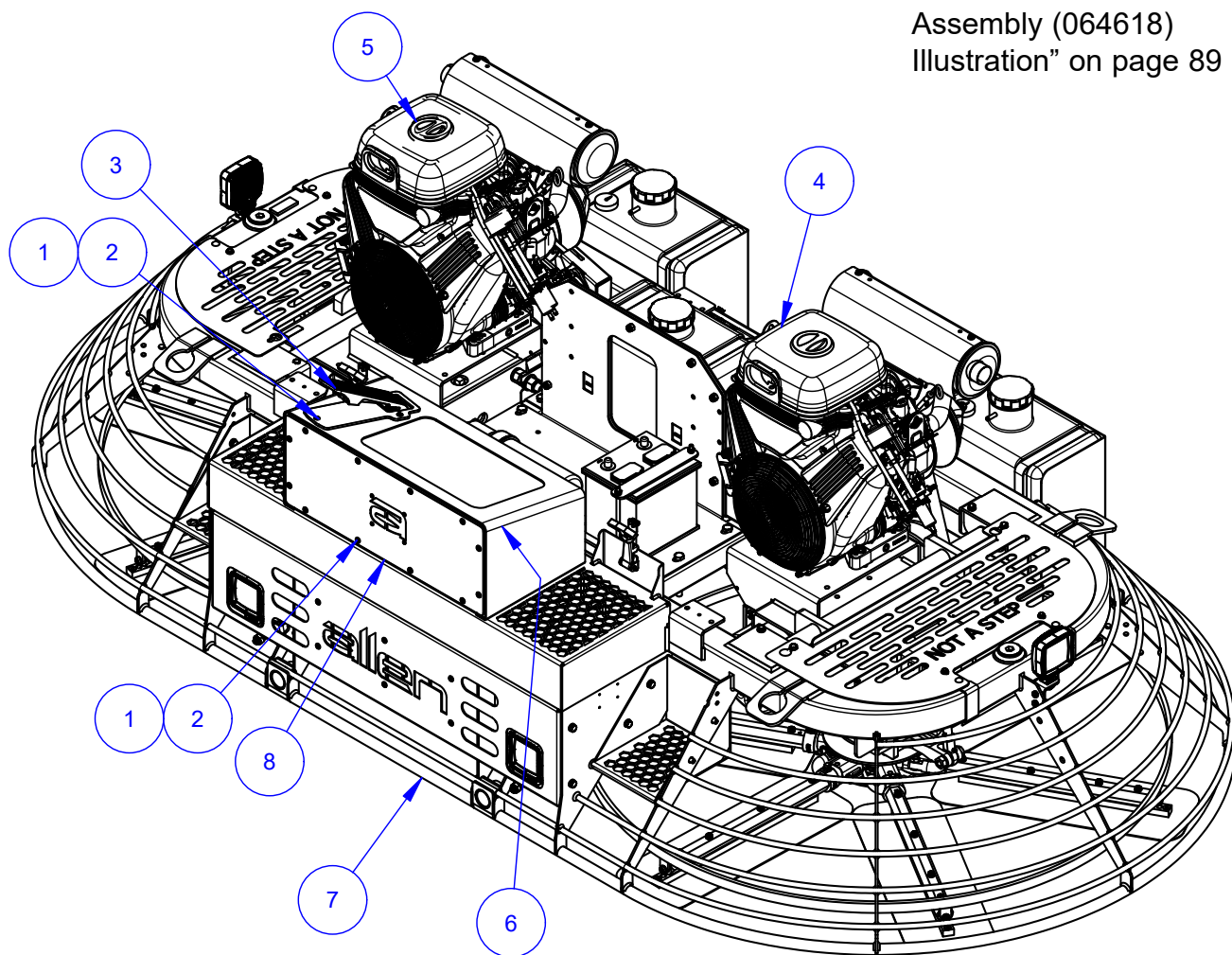


ITEM	PART NO.	DESCRIPTION	QTY
-	079050	ASSEMBLY, HP205 W/ VANGUARD ENGINES	-
1	079051	ASSEMBLY, HP205 MAINFRAME W/ VANGUARD	1
2	079056	ASSEMBLY, SEAT FRAME W/ VANGUARD	1
-	079112	KIT, DECAL HP205 W/ VANGUARD	-
-	066243	KIT, HYDRAULIC COMPONENT HP205	-
-	079380	HARNESS, HP205 W/ VANGUARD ENGINES	-

ASSEMBLY, MAINFRAME - VANGUARD (079051)

SECTION 4 PARTS

Reference "Mainframe
Assembly (064618)
Illustration" on page 89

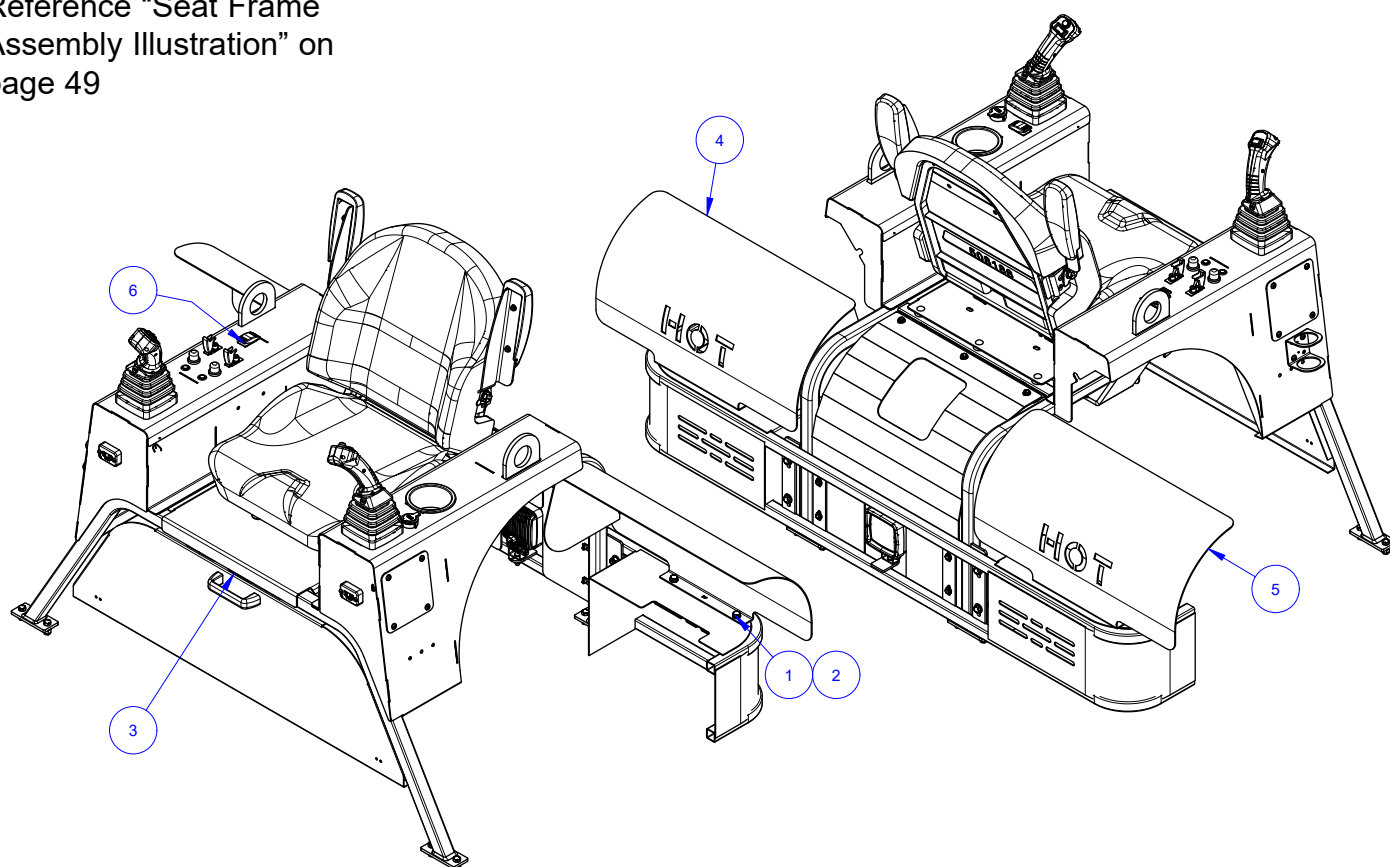


ITEM	PART NO.	DESCRIPTION	QTY
1	029671	FASTENER, HEX NUT NYLOC 1/4"-20	33
2	074541	FASTENER, PAN HEAD SCREW 1/4"-20 X 3/4"	27
3	076973	FOOT PEDAL, ELECTRONIC F/ VANGUARD	1
4	079052	ASSEMBLY, LH ROTOR F/ HP205 W/ VANGUARD	1
5	079053	ASSEMBLY, RH ROTOR F/ HP205 W/ VANGUARD	1
6	079060	TOP DECK, HP205 W/ VANGUARD	1
7	079065	WELDMENT, MAINFRAME HP205 W/ VANGUARD	1
8	079069	COVER, FRONT DECK HP205 W/ VANGUARD	1

SECTION 4 PARTS

ASSEMBLY, SEAT FRAME - VANGUARD (079056)

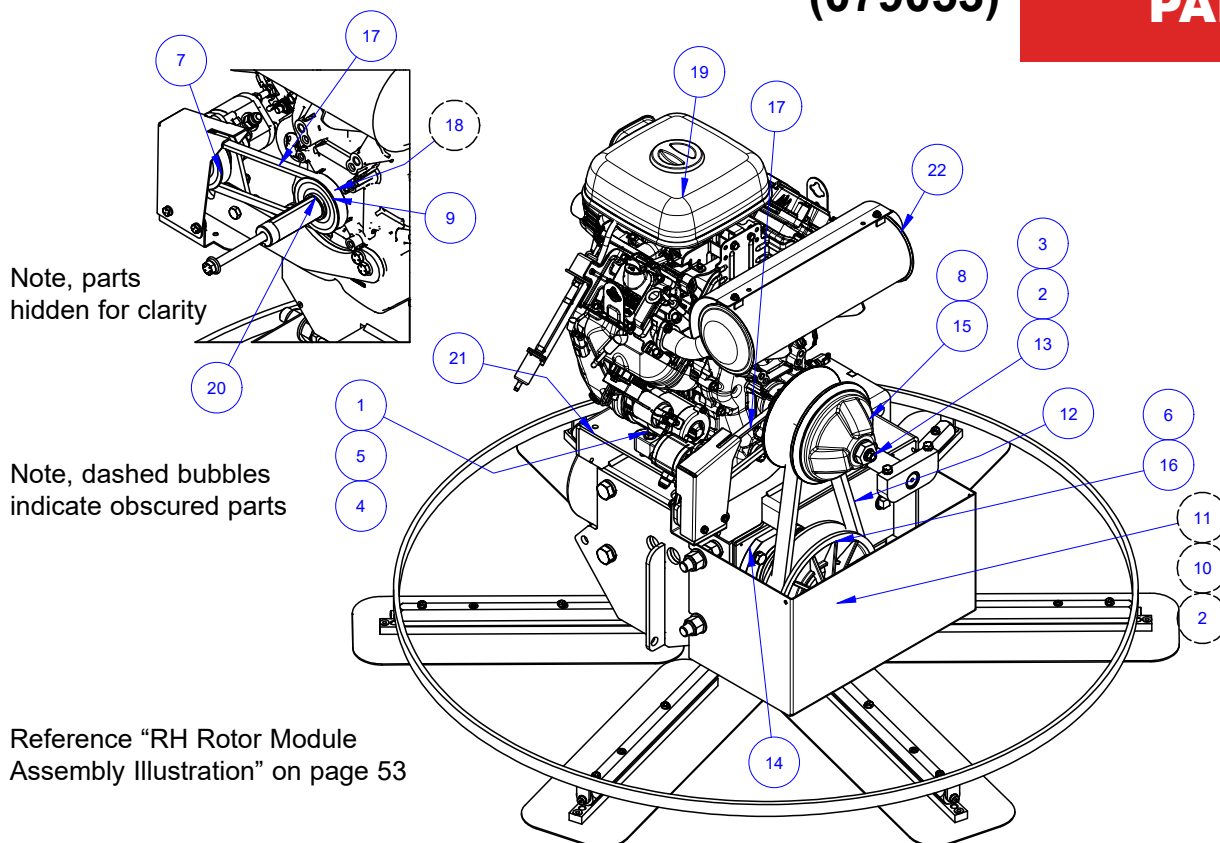
Reference "Seat Frame
Assembly Illustration" on
page 49



ITEM	PART NO.	DESCRIPTION	QTY
1	010034	FASTENER, HHCS 3/8"-16 X 1/2"	4
2	010091	FASTENER, LOCK WASHER 3/8"	4
3	079057	HEAT SHIELD, LH REAR F/ HP205 W/ VANGUARD	1
4	079059	HEAT SHIELD, RH REAR F/ HP205 W/ VANGUARD	1
5	079073	ROCKER SWITCH	1
6	079075	WELDMENT, SEAT FRAME HP205 W/ VANGUARD	1

ASSEMBLY, RH ROTOR - VANGUARD (079053)

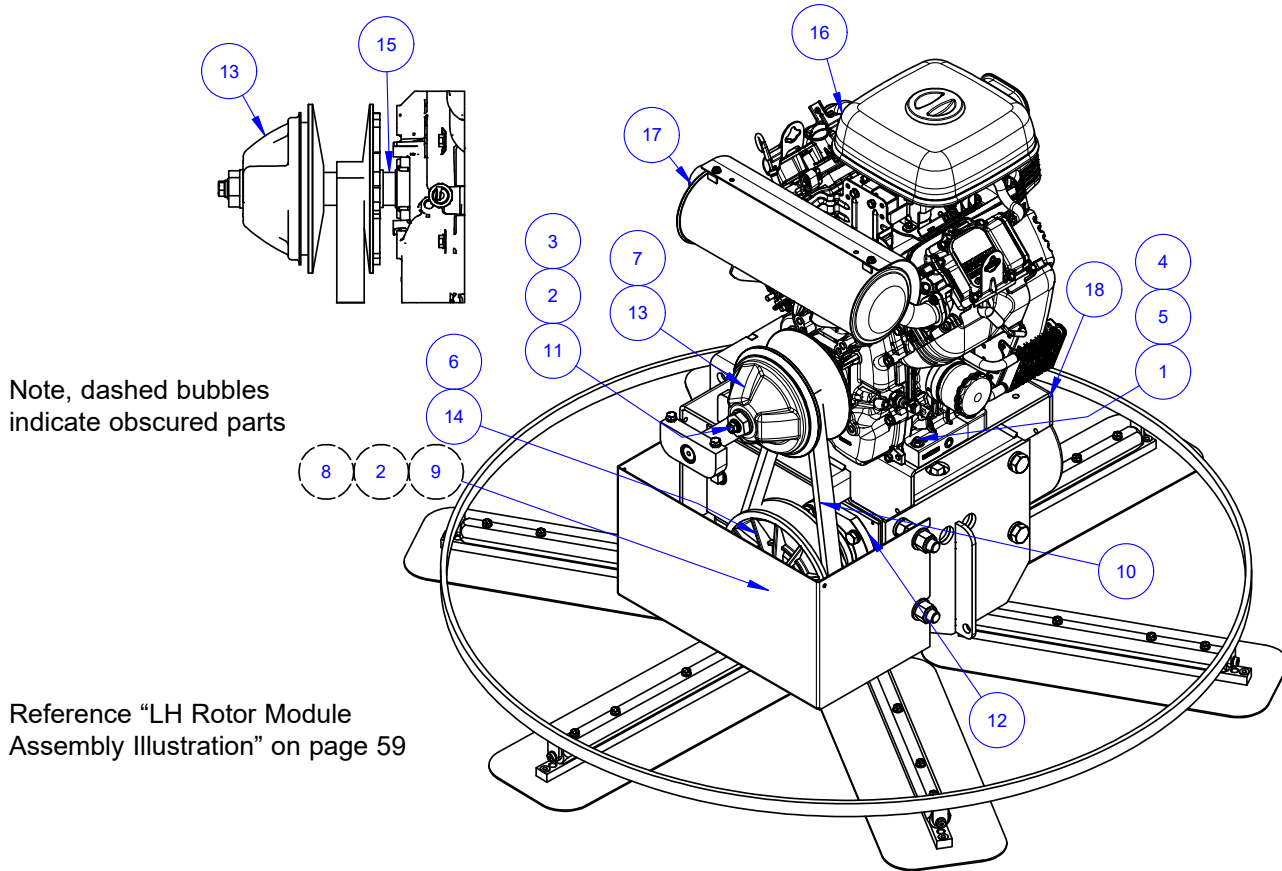
SECTION 4 PARTS



ITEM	PART NO.	DESCRIPTION	QTY
1	010040	FASTENER, HHCS 3/8"-16 X 2"	4
2	010092	FASTENER, LOCK WASHER 7/16"	2
3	010096	FASTENER, 7/16" ID FLAT WASHER	1
4	017751	FASTENER, 3/8" FLAT WASHER	5
5	020514	FASTENER, STOVER LOCK NUT 3/8"-16	4
6	026992	KEY, 1/4" X 3-1/8" LONG (F/ DRIVEN PULLEY)	1
7	046550	PULLEY, AK30 X 1/2" ID	1
8	053223	KEY, 3/16" X 1/4" X 2" (F/ CVT)	1
9	056775	PULLEY, AK30 X 1-1/8" ID	1
10	060865	FASTENER, FLAT WASHER LARGE OD	1
11	060870	FASTENER, HHCS 7/16"-20 X 3/4"	1
12	063930	BELT, CVT	1
13	064574	FASTENER, 7/16"-20 X 4-1/2"	1
14	064614	GEARBOX, RH	1
15	065967	CLUTCH, DRIVER	1
16	066107	PULLEY, DRIVEN	1
17	070520	BELT, GATES A24 SUPER HI-POWER	1
18	075827	SPACER, INNER F/ PULLEY (W/ VANGUARD ENG.)	1
19	076033	ENGINE, 40HP VANGUARD	1
20	076197	SPACER, F/ CLUTCH	1
21	079055	MOUNT, F/ ENGINE & GEARBOX	1
22	079103	MUFFLER, VG 40 HP OIL FILTER SIDE OUTLET	1
-	082476	GASKET, FOR EXHAUST FLANGE	2
-	082477	FASTENER, SCREW FOR EXHAUST FLANGE	4
-	082478	FASTENER, SCREW FOR EXHAUST MOUNT	2

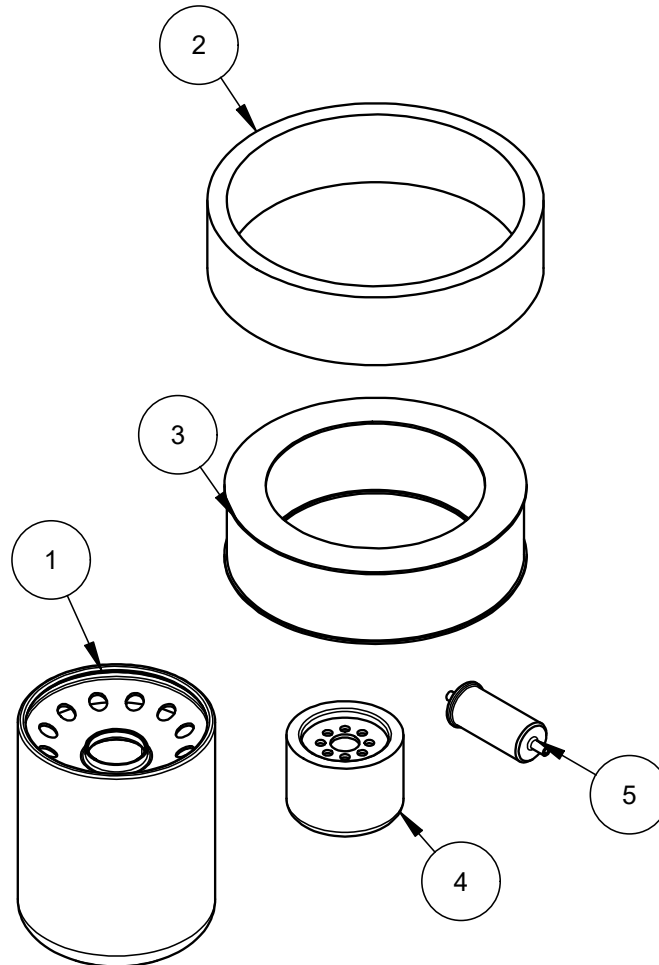
SECTION 4 PARTS

ASSEMBLY, LH ROTOR - VANGUARD (079052)



ITEM	PART NO.	DESCRIPTION	QTY
1	010040	FASTENER, HHCS 3/8"-16 X 2"	4
2	010092	FASTENER, LOCK WASHER 7/16"	2
3	010096	FASTENER, 7/16" ID FLAT WASHER	1
4	017751	FASTENER, 3/8" FLAT WASHER	4
5	020514	FASTENER, STOVER LOCK NUT 3/8"-16	4
6	026992	KEY, 1/4" X 3-1/8" LONG (F/ DRIVEN PULLEY)	1
7	053223	KEY, 3/16" X 1/4" X 2" (F/ CVT)	1
8	060865	FASTENER, FLAT WASHER LARGE OD	1
9	060870	FASTENER, HHCS 7/16"-20 X 3/4"	1
10	063930	BELT, CVT	1
11	064574	FASTENER, 7/16"-20 X 4-1/2"	1
12	064613	GEARBOX, LH	1
13	065967	CLUTCH, DRIVER	1
14	066107	PULLEY, DRIVEN	1
15	076032	SPACER, F/ CLUTCH (W/ VANGUARD ENG.)	1
16	076033	ENGINE, 40HP VANGUARD	1
17	076039	MUFFLER, VG 40 HP	1
-	082476	GASKET, FOR EXHAUST FLANGE	2
-	082477	FASTENER, SCREW FOR EXHAUST FLANGE	4
-	082478	FASTENER, SCREW FOR EXHAUST MOUNT	2
18	076055	MOUNT, F/ ENGINE & GEARBOX	1

Note: Illustrations are for reference only

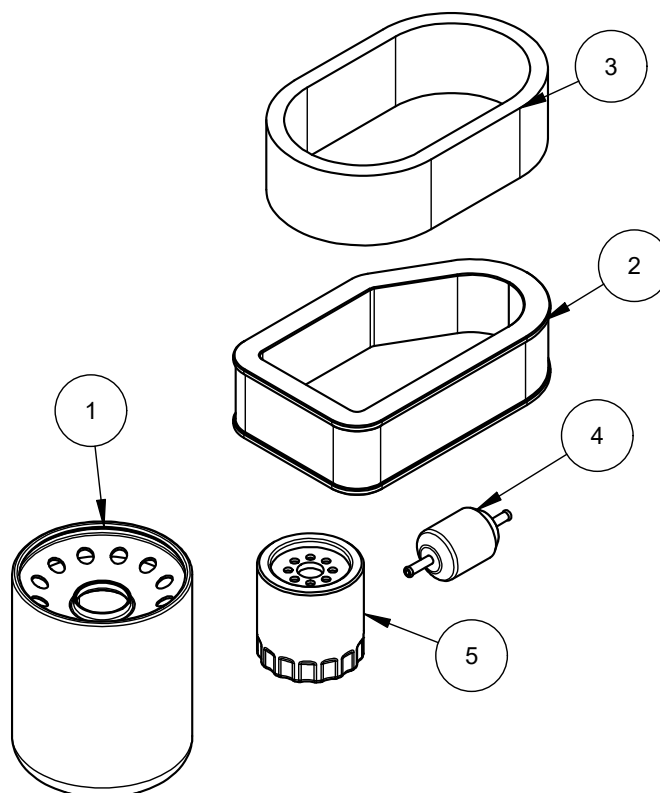


ITEM	PART NO.	DESCRIPTION	QTY
1	046916	FILTER, HYDRAULIC ELEMENT	1
2	049190	FILTER, AIR PRE-CLEANER F/ VANGUARD	1
3	049191	FILTER, AIR PRIMARY F/ VANGUARD	1
4	081770	FILTER, ENGINE OIL F/ VANGUARD	1
5	081771	FILTER, FUEL F/ VANGUARD	1

SECTION 4 PARTS

Service Parts, Filters for Kohler

Note: Illustrations are
for reference only

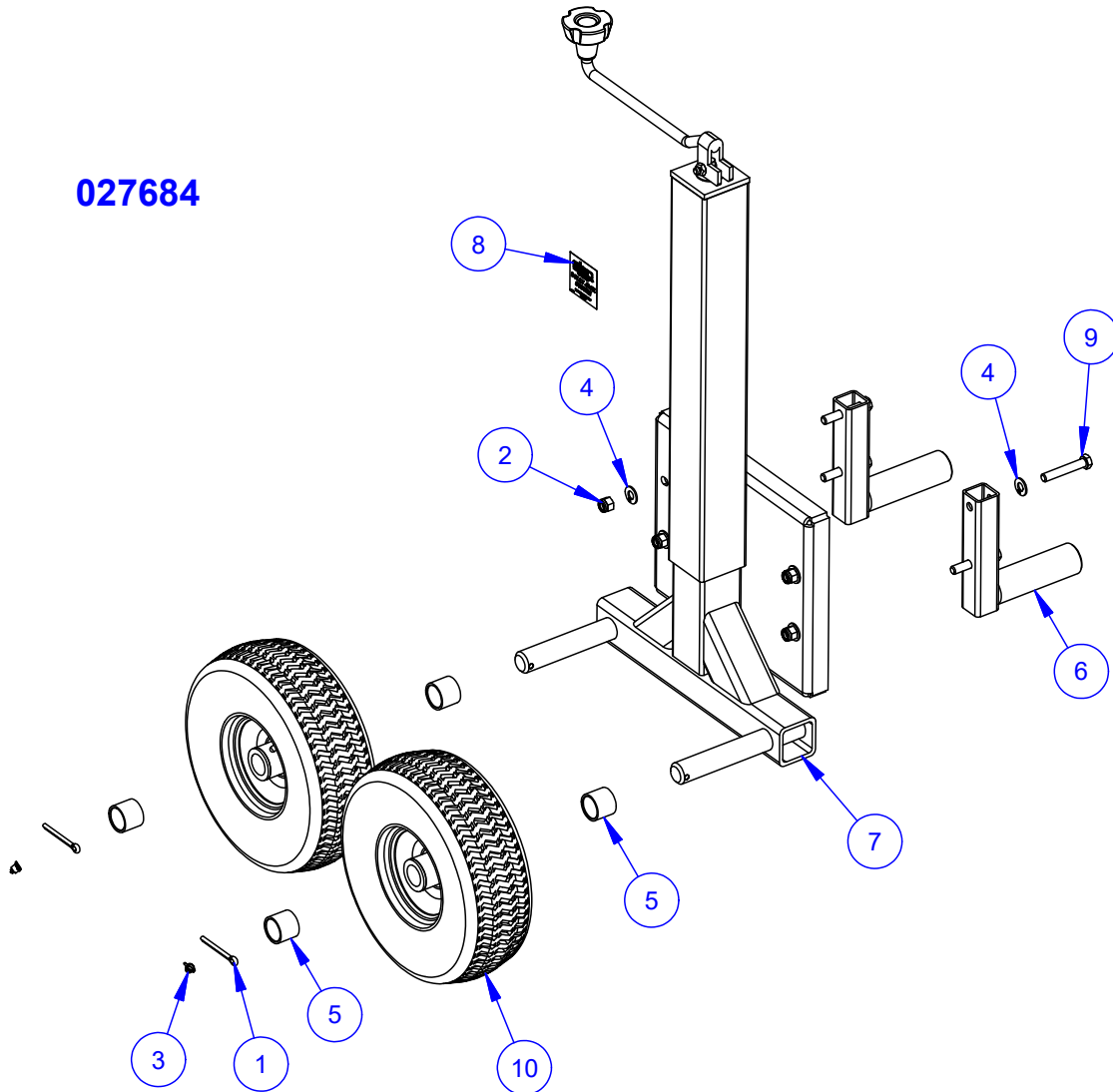


ITEM	PART NO.	DESCRIPTION	QTY
1	046916	FILTER, HYDRAULIC ELEMENT	1
2	057991	FILTER, AIR PRIMARY F/ KOHLER	1
3	057992	FILTER, AIR PRE-CLEANER F/ KOHLER	1
4	057993	FILTER, FUEL F/ KOHLER	1
5	057994	FILTER, ENGINE OIL F/ KOHLER	1

Front Dolly Jack Assembly Illustration (OLD)

SECTION 5 ACCESSORIES

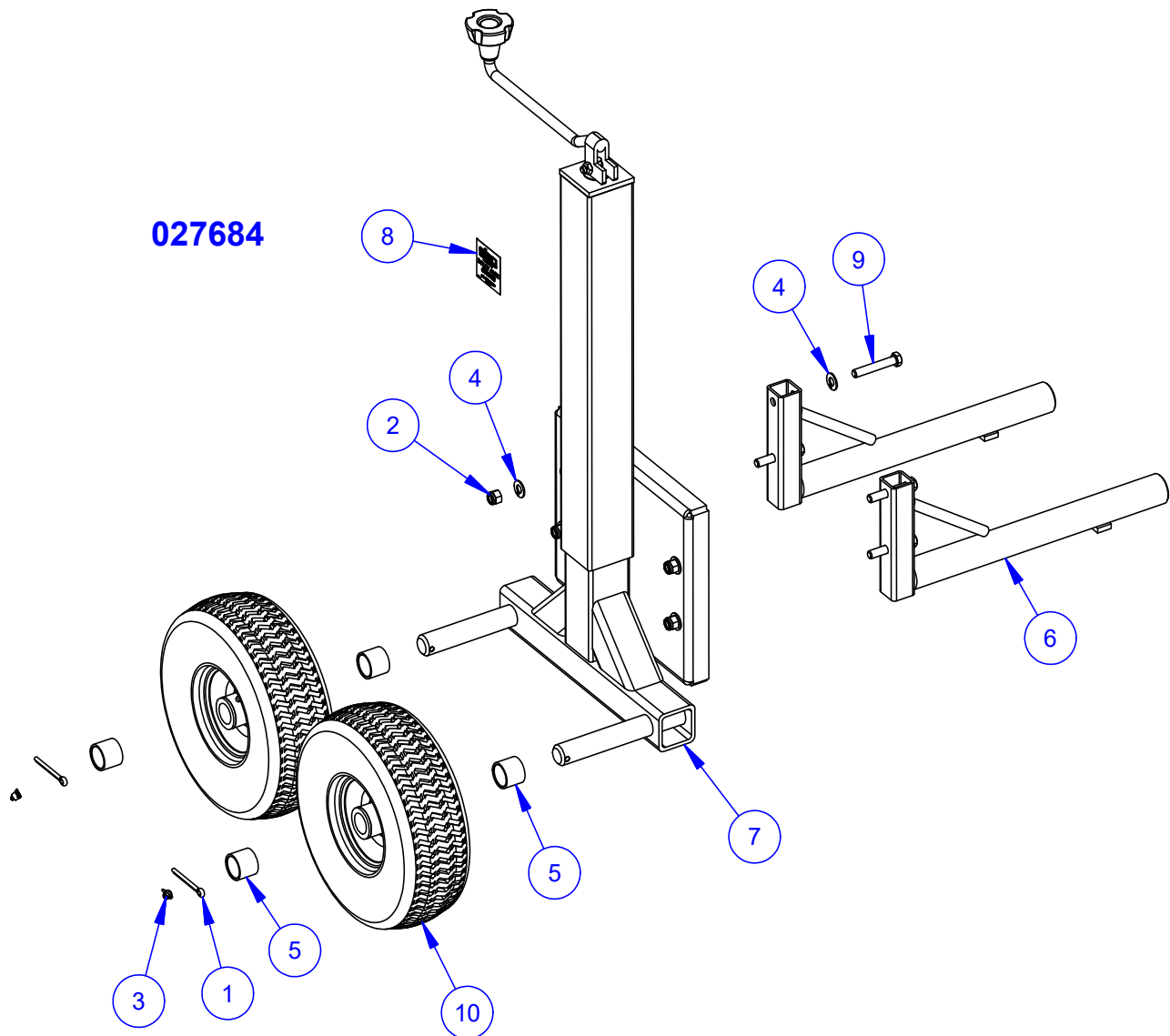
027684



ITEM	PART NO.	DESCRIPTION	QTY
1	010133	PIN, 3/16 X 2 COTTER	2
2	010464	FSTN, NUT NYLOK 3/8-16	4
3	015692	CAP, Ø1/4 RED GREASE	2
4	017751	FSTN, FW HARD A325 3/8 (p)	8
5	024628	SPACER, DOLLY JACK	4
6	026729	LIFT, FRONT DOLLY JACK	2
7	026938	JACK, SP DOLLY	1
8	039633	DECAL, DOLLY JACK SYSTEM	1
9	040637	BOLT, 3/8-16 X 2-1/4 GR 8 HHC	4
10	099014	ASSY, 410/350 X 4 PNEU WHEEL	2

SECTION 5 ACCESSORIES

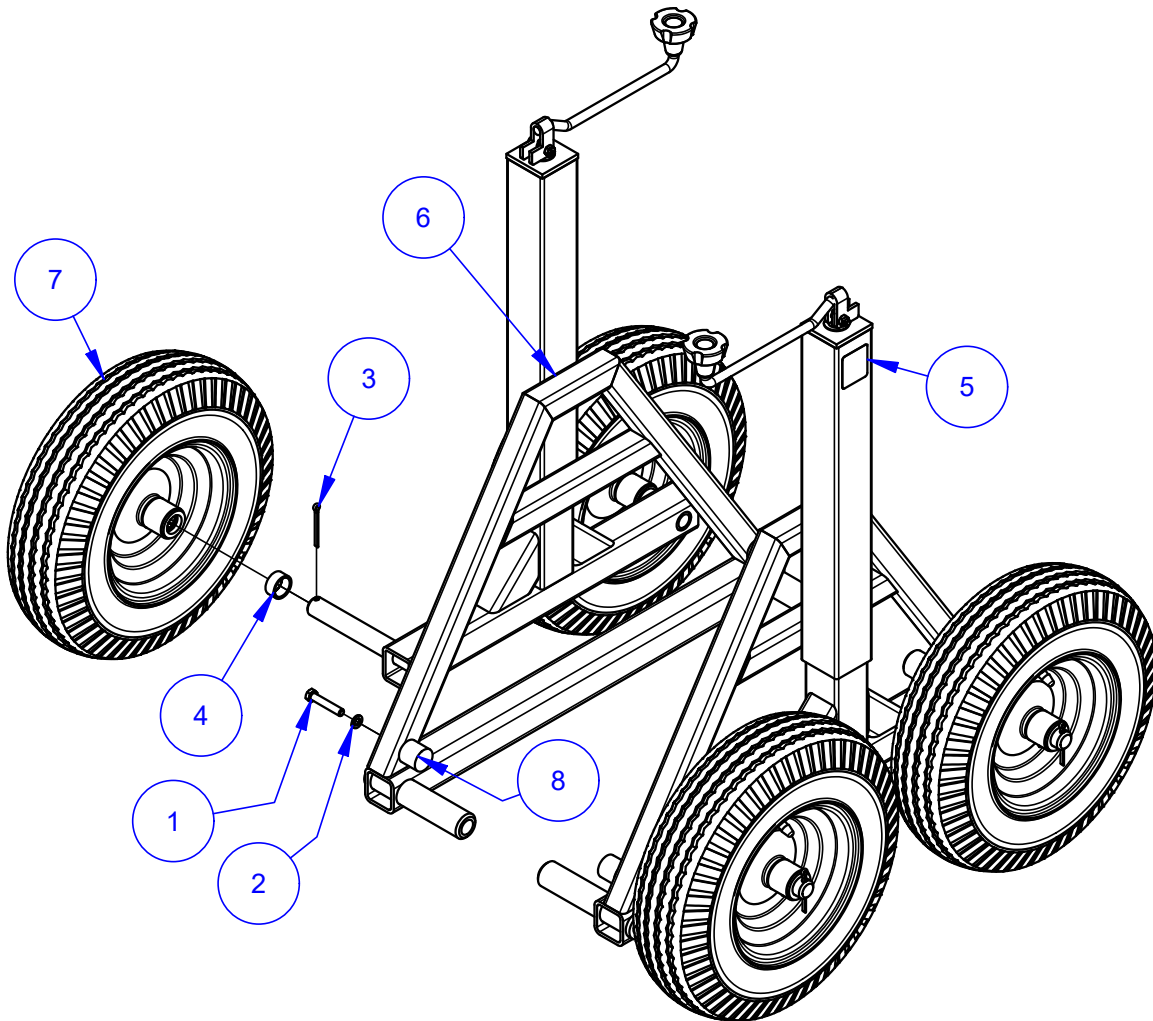
Rear Dolly Jack Assembly Illustration (OLD)



ITEM	PART NO.	DESCRIPTION	QTY
1	010133	PIN, 3/16 X 2 COTTER	2
2	010464	FSTN, NUT NYLOK 3/8-16	4
3	015692	CAP, Ø1/4 RED GREASE	2
4	017751	FSTN, FW HARD A325 3/8 (p)	8
5	024628	SPACER, DOLLY JACK	4
6	026728	LIFT, REAR DOLLY JACK	2
7	026938	JACK, SP DOLLY	1
8	039633	DECAL, DOLLY JACK SYSTEM	1
9	040637	BOLT, 3/8-16 X 2-1/4 GR 8 HHC	4
10	099014	ASSY, 410/350 X 4 PNEU WHEEL	2

Dolly Jack Assembly Illustration

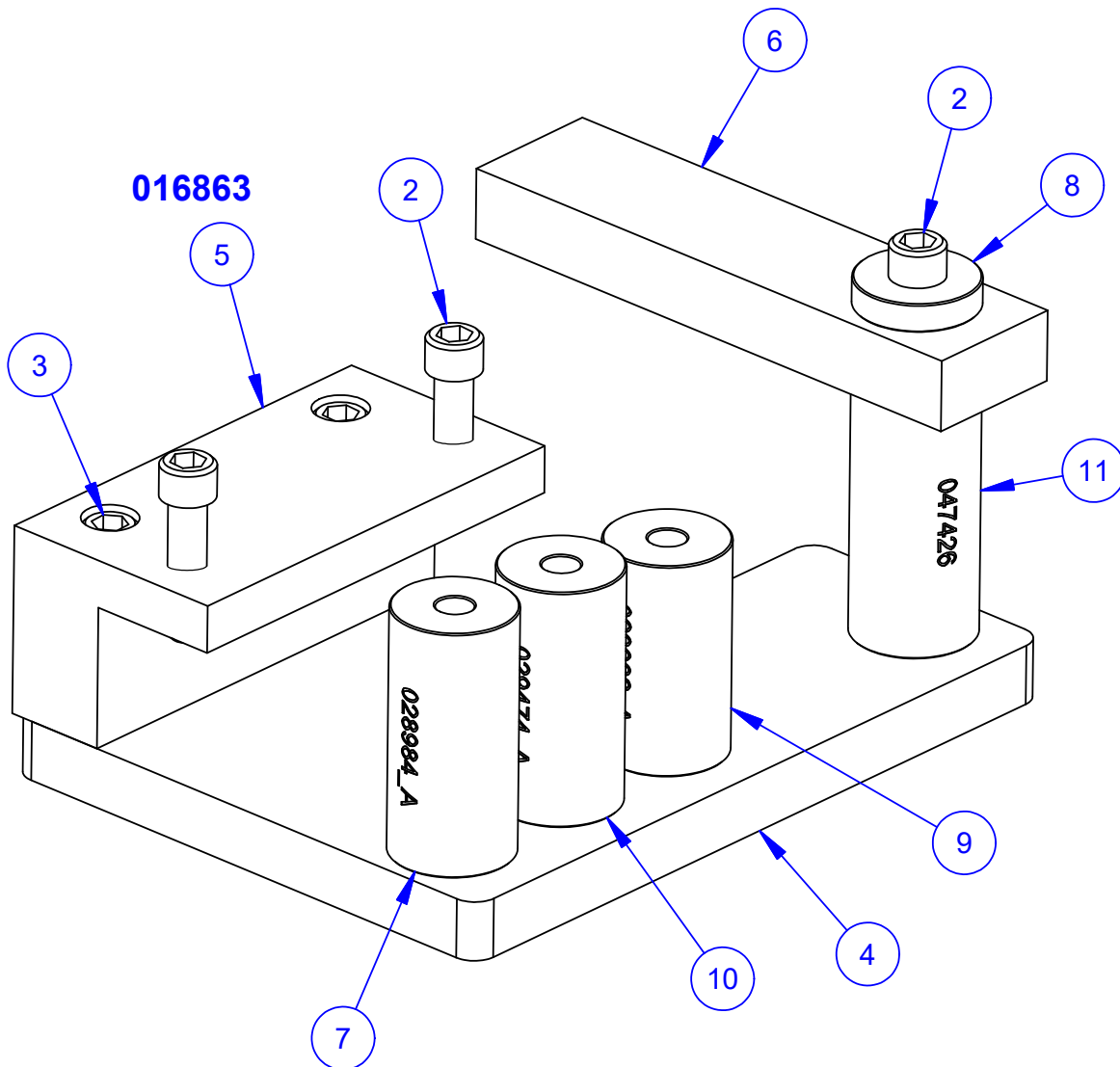
SECTION 5 ACCESSORIES



ITEM	PART NO.	DESCRIPTION	QTY
-	048770-F	ASSEMBLY, DOLLY JACKS (PAIR)	1
1	010040	FASTENER, HHCS 3/8"-16 X 2"	4
2	010091	FASTENER, LOCK WASHER 3/8"	4
3	010133	COTTER PIN 3/16" X 2"	4
4	039094	OUTSIDE SPACER, F/ DOLLY JACK	4
5	039633	DECAL, DOLLY JACK	2
6	048769	WELDMENT, DOLLY JACK	2
7	051838-F	WHEEL & TIRE 16" DIA. FOAM FILLED	4
8	058088	RUBBER BUMPER	4

SECTION 5 ACCESSORIES

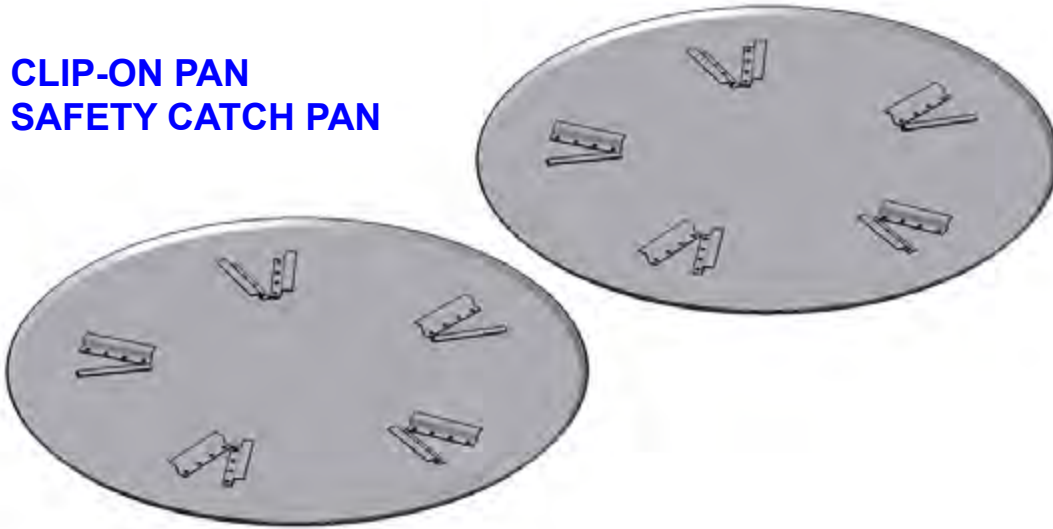
Trowel Arm Alignment Jig Assembly Illustration



ITEM	PART NO.	DESCRIPTION	QTY
1	015884	SCREW, 3/8-16x1 SCKT CAP	4
2	016877	FSTN, SHCS 3/8-16 X 1-1/2	3
3	028076	SCREW, 3/8-16x2 SCKT CAP	2
4	028981	BASE	1
5	028982	CLAMP, BLOCK	1
6	028983	ARM	1
7	028984	SPACER, 2.600 HGT ADJUSTING	1
8	028985	WASHER	1
9	028986	SPACER, 2.243 HGT ADJUSTING	1
10	029474	SPACER, 2.500 HGT ADJUSTING	1
11	047426	SPACER, 2.725 HGT ADJUSTING	1

047153 - CLIP-ON PAN

047125 - SAFETY CATCH PAN



042779 - LIFT BRIDLE, 2500# 6' SLING



Manual Revision

MANUAL REVISION DETAIL

REVISION #	REVISION DATE	REVISION REFERENCE #	REVISION BY
-	02/2017	Initial Release	AW
A	04/2017	-	AW
B	06/2017	-	AW
C	04/2018	MN 18-004	MW
D	01/2019	MN 18-221	MW
E	02/2021	MN 21-003	MW
F	01/2022	Updated Covers	MK
G	02/2022	Correct Hydraulic Information	MK
H	02/2024	MN 24-055, 24-063	MK
I	03/2024	24-159	MK
J	06/24	Vanguard Information	MK
K	03/25	PG 65, 65 049538, 049539 Desc. Correction	MK
L	09/25	Corrected LH/RH description for 064613, 064614 Gearbox	MK
M	10/25	Added Engine Service Parts	MK
N	02/26	Updated warranty policy 2026	MK
O	08/26	26-379, Updated VG power unit parts list, Muffler FSTNs.	MK



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