TRIPLE ROLLER TUBE PAVERS

# TRTP255T4


# OPERATIONS & PARTS MANUAL

Manual Part #: 049307 | Revision: 1/2022
Language: English | Original Instructions

ALLEN
CONCRETE PAVERS

**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.

# Triple Roller Tube Paver

## OPERATIONS-PARTS 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.**

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- Amended: March 2019, AW
AEC Manual Part No.: 049307
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# 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**

*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.

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.

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# Information Contained in this Manual

This manual provides information and procedures to safely operate and maintain the Allen Concrete Paver 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 VIBRATION**

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 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 4.0 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.

**NOTE**

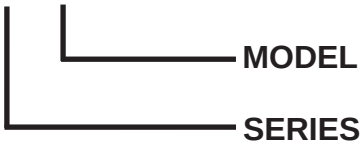
*All information, specifications, and illustrations in this manual are subject to change without notice and are based on the latest information at the time of publication.*

# Model Number - Serial Number Codes

## Manufacturer's Codes:

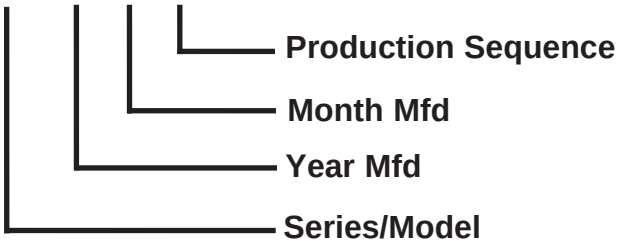
When ordering parts or requesting service information, you will always be asked to specify the model and serial numbers of the machine. The legends below specifically defines each significant character or group of characters of the Model Number and Serial Number codes.

**Model Number**
**T255CD**




**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.

**T255 08 07 47**



## 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:** _____

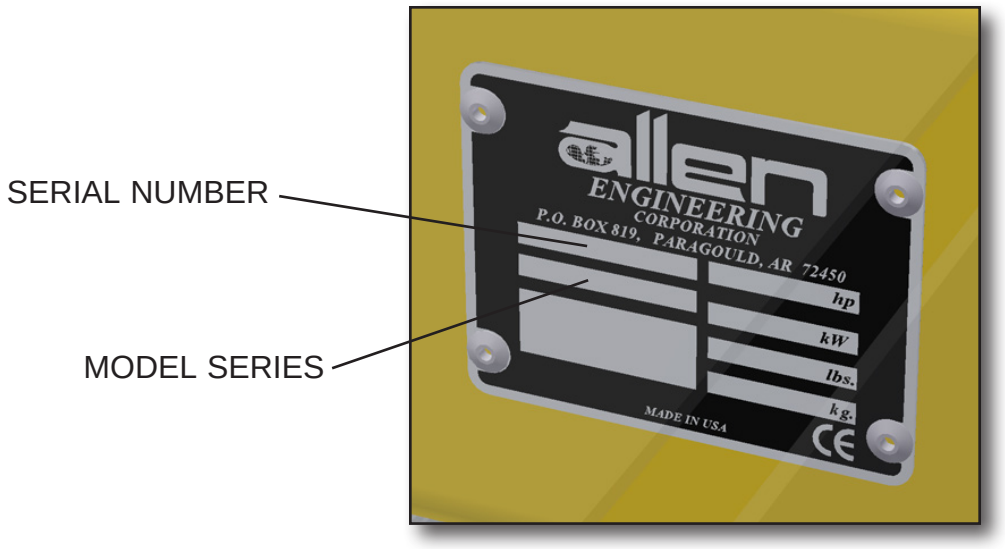



**Figure 1**
Serial Number Location

# Technical Specifications

Measurements in this manual are in U.S. units and their customary metric units (i.e., metric units contained within brackets [8 mm]).

## Machine Features:

**ENGINE:**

- Hydraulic Oil Reservoir . . . . . .25 Gallons (94.6L)
- Fuel Reservoir . . . . . .10 Gallons (37.85L)
- Direct drive hydraulic pump system?. . . . . .Yes
- Machine widths available in 2’ increments . . . . . .12’ to 34’ (3.66M to 10.37M)
- Total machine weight at 22’. . . . . .5,570 lbs (2526.5kg)

(weight will vary depending on machine width and optional accessories)

**HYDRAULIC DRIVES:**

Direct spline drive to each tube?. . . . . .Yes
Individual control for travel and screeding tubes? . . . . . .Yes
Variable speed controls?. . . . . .Yes

**SCREEDING TUBE:**

Direct drive forward and reverse?. . . . . .Yes
Speed from 0 to 180 RPM? . . . . . .Yes

**DRIVE TUBES:**

Direct drive to each tube? . . . . . .Yes
Variable speed forward and reverse 0’ to 25’ per minute? . . .Yes
Drive tube scrapers . . . . . .Standard
Heavy duty alloy steel octagonal drivers with spline motor connectors on all tubes? Yes

**ROLLER TUBES:**

Diameter . . . . . .10” (255mm)
Wall Thickness . . . . . ..25” (6.35mm)
Tube weight per foot . . . . . .27 lbs (12.2kg)
Water Ballast available? . . . . . .Yes
Operator Platform Standard? . . . . . .Yes
Idle end counter weight?. . . . . .Yes
Sectionalized overhead?. . . . . .Yes

**SPRAY SYSTEMS:**

Hydraulic spray system (50 gallon water tank) . . . . . .Standard

# Technical Specifications, continued

**STEERING LEG:**
Hydraulic Steering Leg . . . . . .Standard

**WALKWAYS:**
Front Walkway. . . . . .Optional
Rear Walkway . . . . . .Optional
Counter balance tube (must have rear walkway) . . . . . .Optional

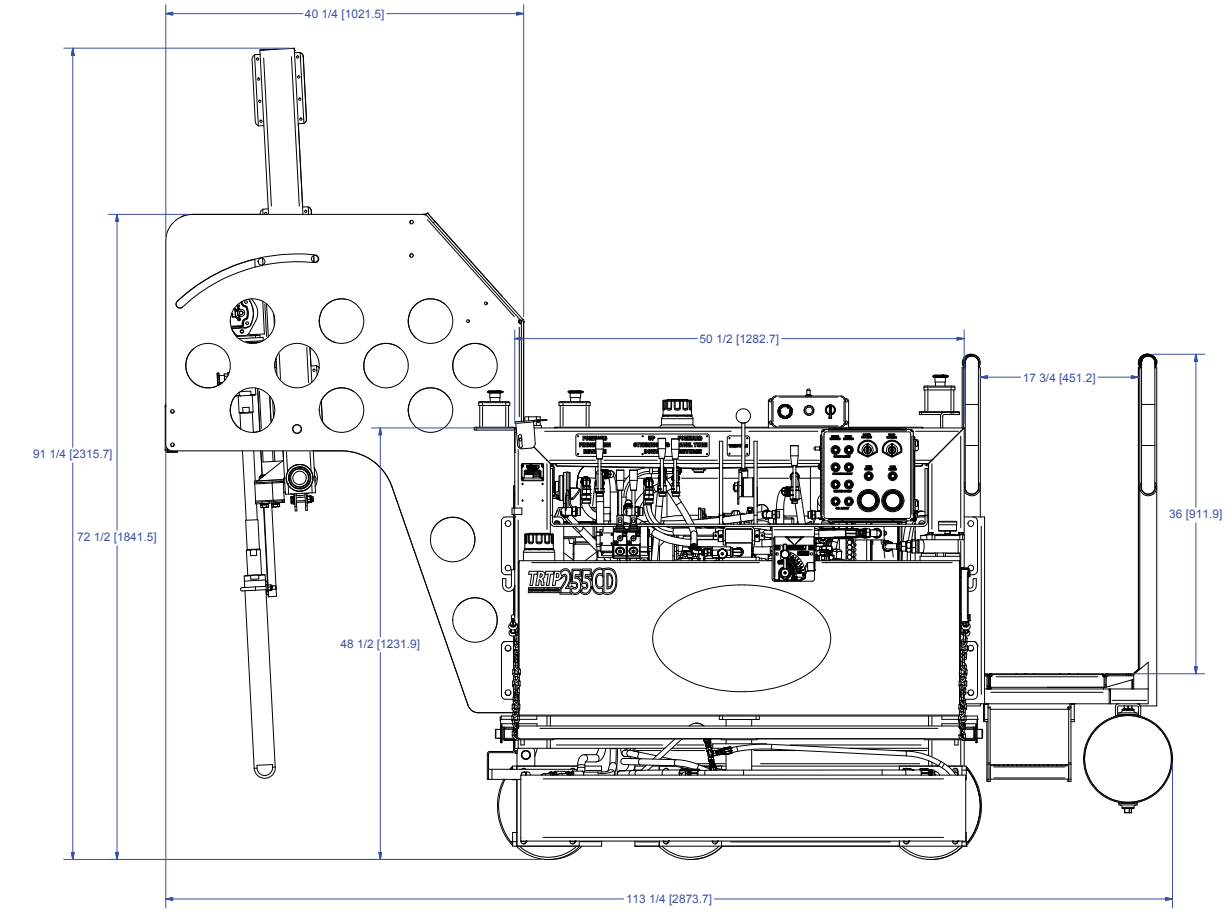
**OPTIONS:**
Manual crown kit . . . . . .Optional
Full width vibration. . . . . .Optional
Edge form vibration . . . . . .Optional

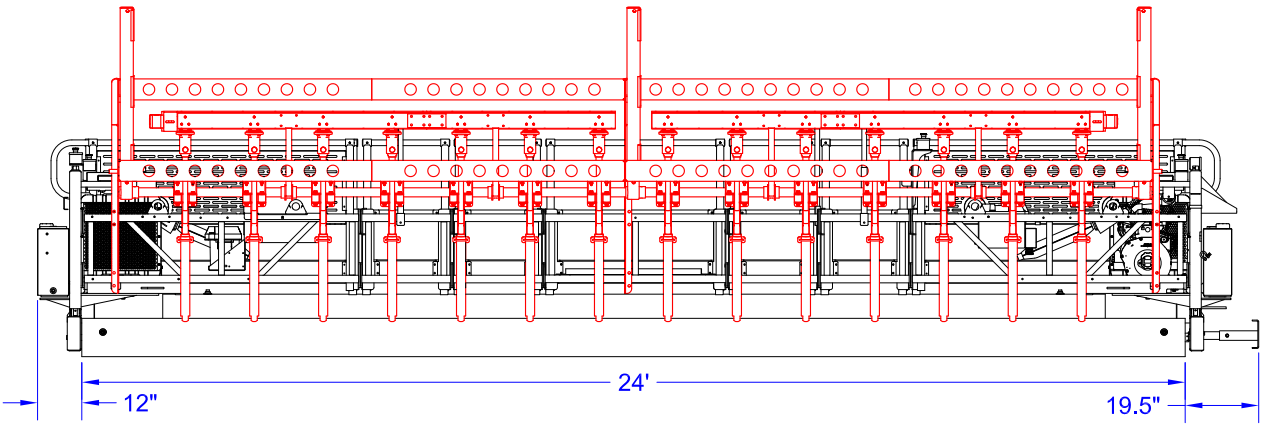
# Engine Specifications

| Engine Make & Model | | Kubota 44HP V1505-TD |
|---|---|---|
| Gross Intermittent output | kW(HP)/rpm | 33.0(44.2)/3,000 |
| Net Continuous output | kW(HP)/rpm | 27.2(36.5)/3,000 |
| Fuel and type | Diesel, No. 2-D (ASTM D975) | |
| Cylinder arrangement | 1-2-3 | |
| Bore x Stroke | mm x mm | 74 x 78.4 |
| Total piston displacement | cc | 1,498 |
| Compression ratio | | 22.5:1 |
| Length x width x height (standard model) | mm | 591.3 x 439.2 x 631.3 |
| Dry weight (standard model) | kg/lb | 114/251.3 |

# 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.



As the angle between each leg of a sling increases, the load on each leg increases. The effect is the same whether a single sling is being used as a basket, or two / three slings are being used in a straight pull.

This illustration shows the increased load on a sling leg when lifting a load with angled slings.

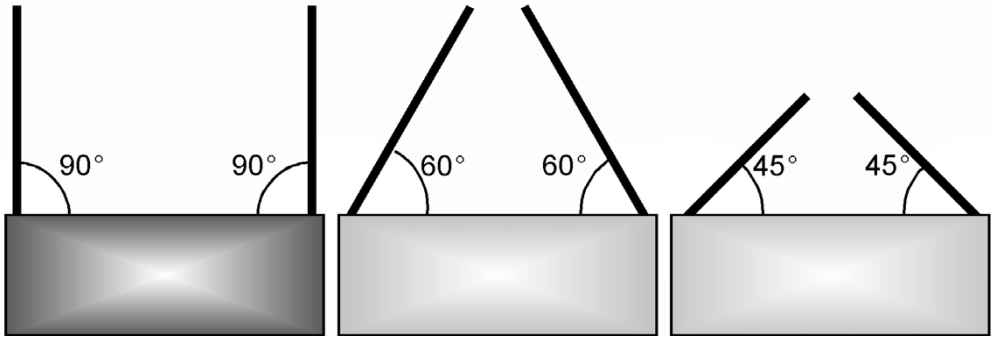
**Sling Angle Factor**

The Sling Angle Factor is a multiplier used to determine the required sling size when angle formed between sling and load is less than 90°.

Need to estimate angle to nearest 5°

Avoid rigging loads where angle is less than 45°

| Sling angle | Load angle factor |
|---|---|
| 90° | 1.000 |
| 85° | 1.004 |
| 80° | 1.015 |
| 75° | 1.035 |
| 70° | 1.064 |
| 65° | 1.103 |
| 60° | 1.155 |
| 55° | 1.221 |
| 50° | 1.305 |
| 45° | 1.414 |
| 40° | 1.555 |
| 35° | 1.742 |
| 30° | 2.000 |
| 25° | 2.366 |
| 20° | 2.924 |
| 15° | 3.864 |
| 10° | 5.759 |
| 5° | 11.47 |

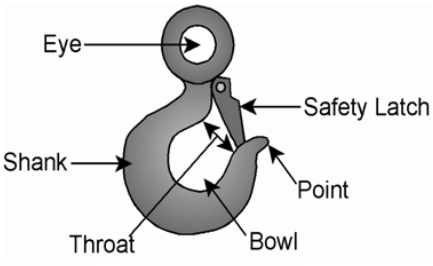


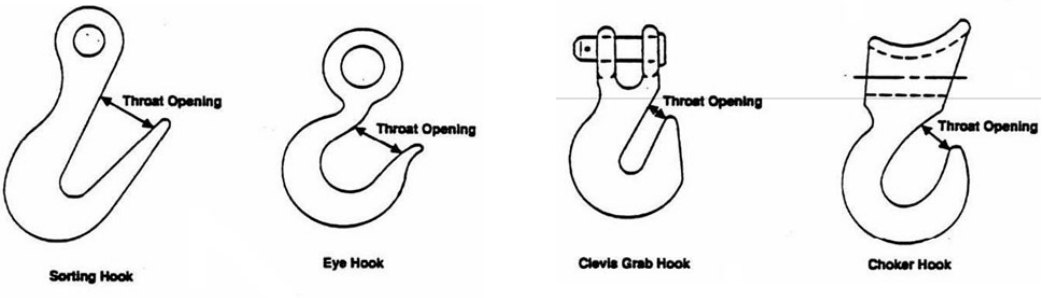

For all lifts, straight pulls or angled lifts, a Riggers Chart must be consulted. With multiple sling lifts the chart will be used to determine the load that each leg can support safely. Determining load on each leg of a multi-leg lift:

- Divide the total load by the number of legs. This provides the lift per leg if the lift were to be a straight pull.
- Determine the angle between the legs of the sling. - When three or more legs will be used, the angle will be twice the angle between one leg and an imaginary line straight down from the lifting hook.
- Multiply the load per leg by the load factor for each leg angle being used. See “computing the load on the legs of a sling” on the Riggers Chart. This will give you the ACTUAL load on each leg.

The actual load must not exceed the rated sling capacity of any sling leg.

## Hooks

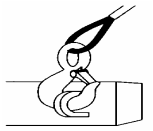


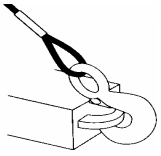

**Eye Hook Rated Capacity Table**
**(Forged Alloy Steel)**

| Throat Opening | Safe Working Limit (SWL, in pounds) |
|---|---|
| 5/8 | 600 |
| 11/16 | 800 |
| 1 | 1500 |
| 1-1/16 | 2000 |
| 1-1/4 | 4000 |
| 1-3/8 | 4500 |
| 1-13/32 | 5000 |
| 1-1/2 | 5500 |
| 1-17/32 | 6000 |

**Incorrect Hook Connections**


Side load

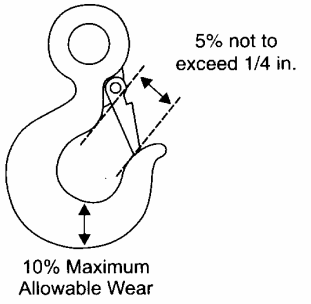

Back load

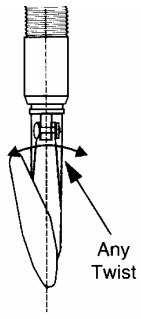

Point load

**Hook Pre-Use Inspection Checklist**

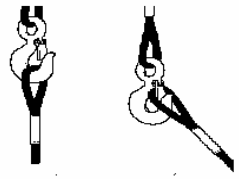
Inspect hooks daily before use and frequently during use. Remove from service when any of the following conditions exist:

- Missing or illegible manufacturer identification
- Cracks, nicks, or gouges
- Damage from heat
- Unauthorized repairs
- Improper operation and locking of self-locking hooks
- Any twist from plane of un bent hook
- Distortion or wear – any increase in throat opening of 5% not to exceed ¼ inch, or wear exceeding 10% of original dimension




For added safety, hooks must be equipped with a latch or the throat opening closed-off/secured with a mouse. The latch or mouse is **not** intended to support the load.

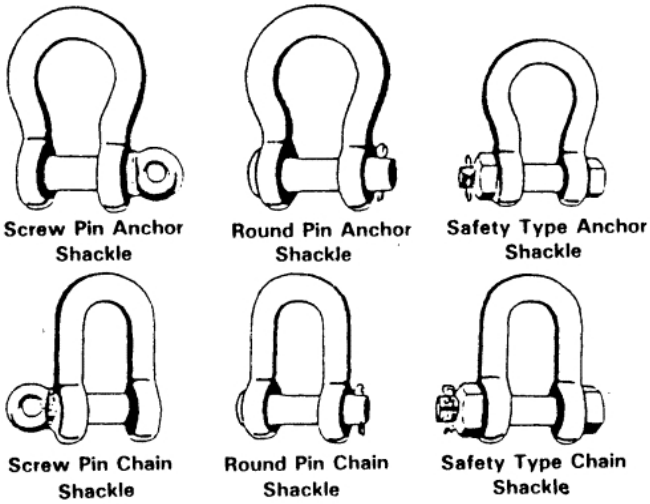


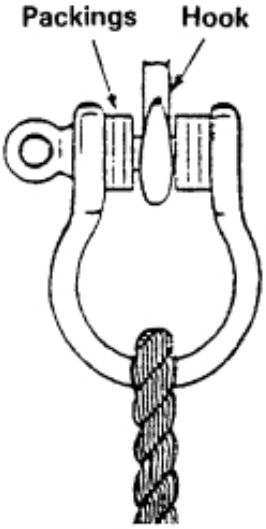
## Shackles

### Shackle Capacity Table (Forged with Alloy Pins)

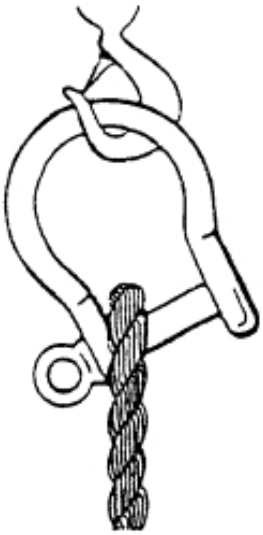
| Nominal Shackle Size | Rated Capacity (Pounds) |
|---|---|
| 3/16 | 660 |
| 1/4 | 1000 |
| 5/16 | 1500 |
| 3/8 | 2000 |
| 7/16 | 3000 |
| 1/2 | 4000 |
| 5/8 | 6500 |
| 3/4 | 9500 |
| 7/8 | 13000 |
| 1 | 17000 |
| 1 1/8 | 19000 |
| 1 1/4 | 24000 |
| 1 3/8 | 27000 |
| 1 1/2 | 34000 |
| 2 1/2 | 110000 |

- If different from capacities listed above, use rated capacity marked on the shackle.
- If capacity marking is absent, shackle should be removed form service.




**Good Practice**
Pack the Pin with Washers to Centralize the Shackle



**Poor Practice**
Never Allow Shackle to be Pulled at an Angle, the Legs will Open Up

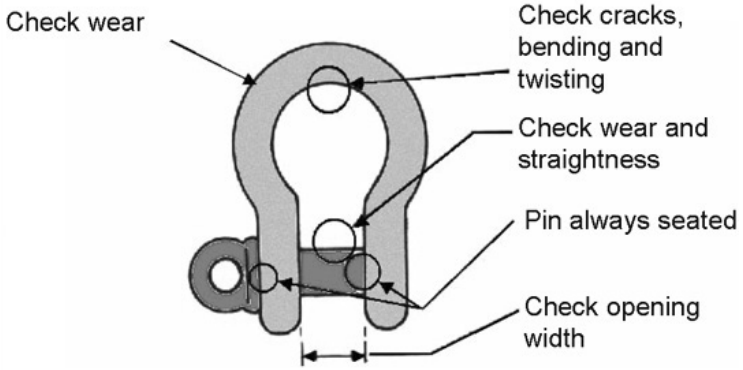
## Shackle Pre-Use Inspection Checklist

Inspect shackles daily before use and frequently during use.

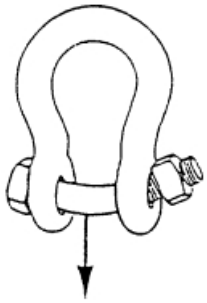
- Each shackle body shall have forged, cast, or die stamped markings by the manufacture showing: name or trademark of the manufacturer, rated load/capacity (WLL or SWL), and size. This information shall not be missing and must be legible.

Remove from service when any of the following conditions exist:

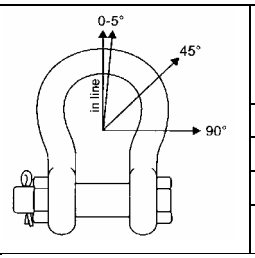
- Indications of heat damage including weld spatter or arc strikes
- Excessive pitting or corrosion
- 10% reduction of the original or catalog dimension at any point around the body or pin
- Body spread including: bent, twisted, distorted, stretched, elongated, cracked, or broken load-bearing components
- Excessive nicks or gouges
- Incomplete pin engagement, shoulder of pin is not flush with shackle body
- Excessive thread damage
- Evidence of unauthorized welding

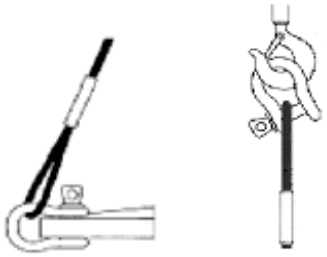



**Never Replace a Shackle Pin with a Bolt**

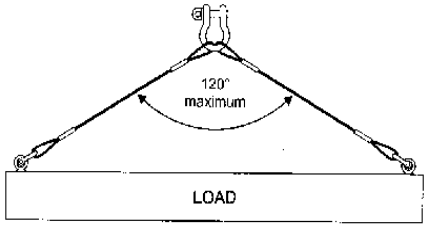


**The Load will Bend the Bolt**

| **Side Loading Reduction Factors**<br>Screw Pin and Bolt Type Shackles | | |
|---|---|---|
|  | Angle of Side Load from Vertical In-Line of Shackle | Percent Rated Load Reduction |
| | 0° - 5° | 0% |
| | 5°- 45° | 30% |
| | 46°-90° | 50% |
| | Over 90° | Avoid |



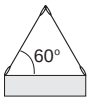
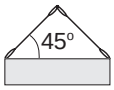
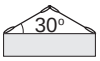
Incorrect Applications




The rated capacity of shackles only applies when they are symmetrically loaded and the included angle between two sling legs is a maximum of 120°. Shackle capacity must be reduced when the angle is greater than 120°.

## Alloy Chain Sling Capacities (lb.)

**Grade 80**

| | Single Leg | | Two Leg Slings | | | Three & Four Leg Slings | |
|---|---|---|---|---|---|---|---|
| Size in inches |  |  |  |  |  | 60° | 45° |
| 9/32 | 3,500 | 2,800 | 6,100 | 4,900 | 3,500 | 9,150 | 7,400 |
| 3/8 | 7,100 | 5,700 | 12,300 | 10,000 | 7,100 | 18,400 | 15,100 |
| 1/2 | 12,000 | 9,600 | 20,800 | 17,000 | 12,000 | 31,200 | 25,500 |
| 5/8 | 18,100 | 14,500 | 31,300 | 25,600 | 18,100 | 47,000 | 38,400 |
| 3/4 | 28,300 | 22,600 | 49,000 | 40,000 | 28,300 | 73,500 | 60,000 |
| 7/8 | 34,200 | 27,400 | 59,200 | 48,400 | 34,200 | 88,900 | 72,500 |
| 1 | 47,700 | 38,200 | 82,600 | 67,400 | 47,700 | 123,900 | 101,200 |
| 1-1/4 | 72,300 | 57,800 | 125,200 | 102,200 | 72,300 | 187,800 | 153,400 |

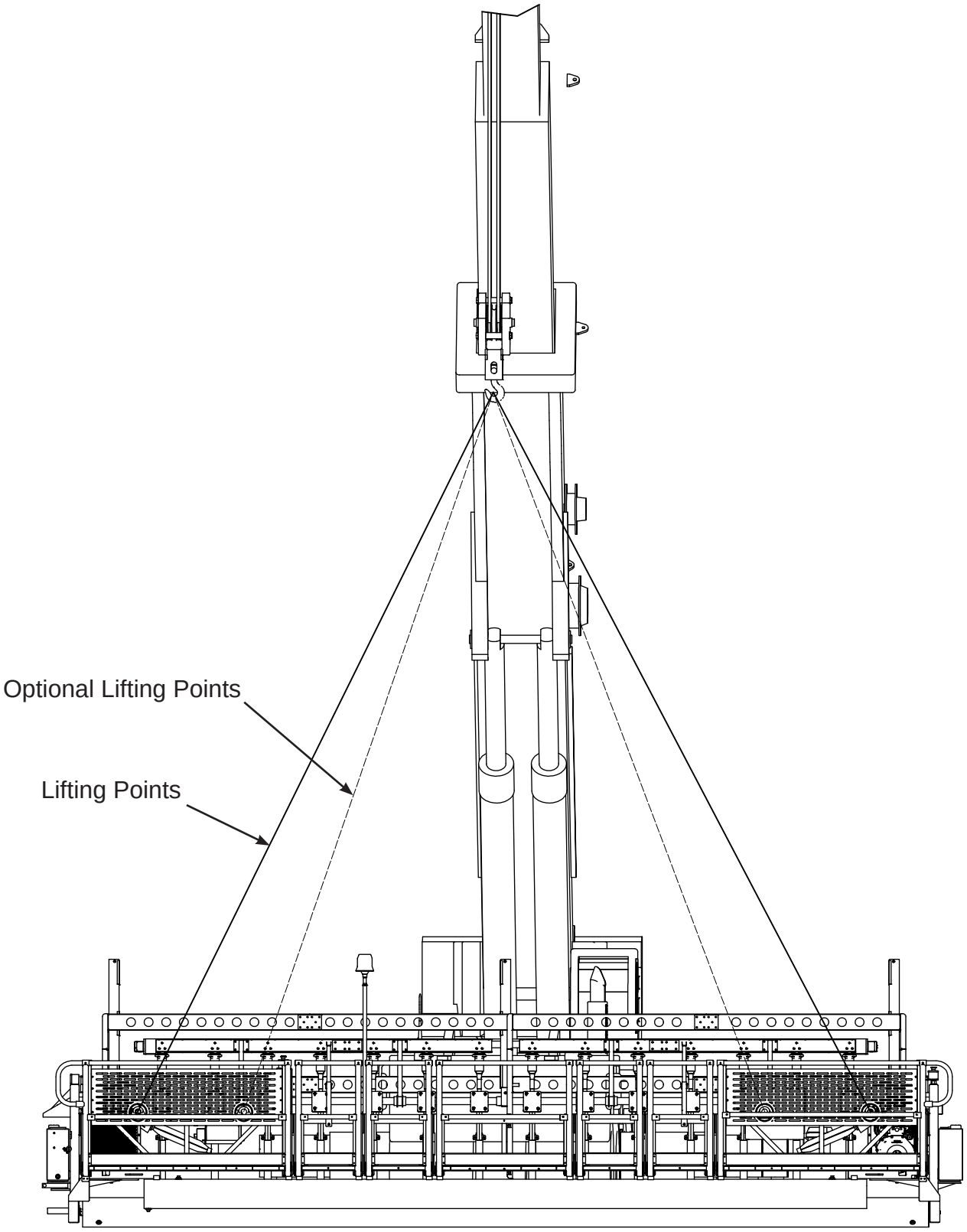
**Grade 100**

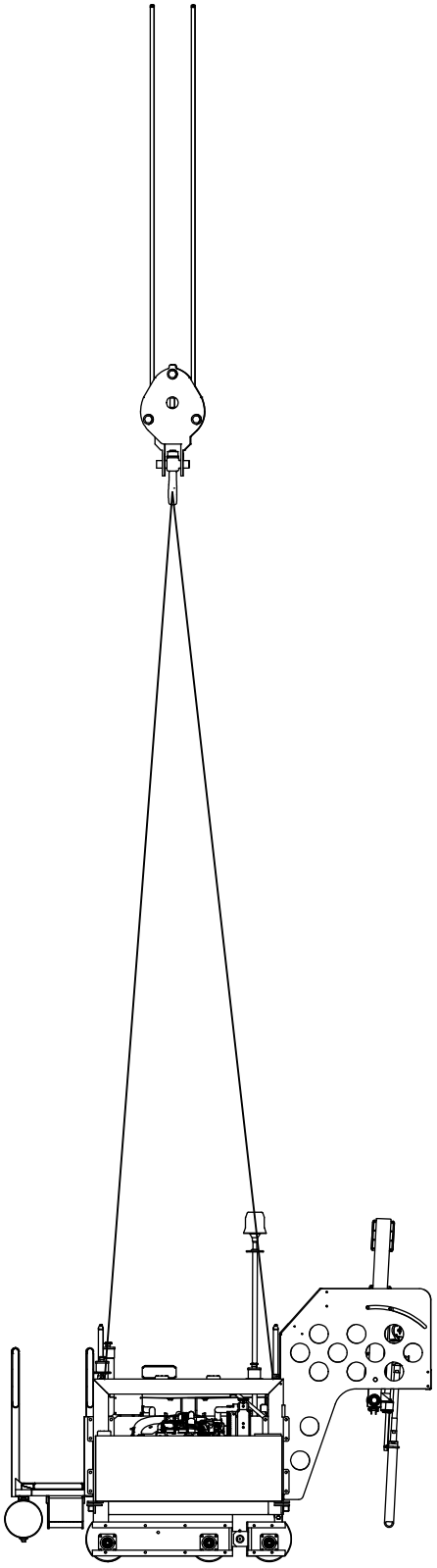
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 9/32 | 4,300 | 3,500 | 7,400 | 6,100 | 4,300 | 11,200 | 9,100 |
| 3/8 | 8,800 | 7,100 | 15,200 | 12,400 | 8,800 | 22,900 | 18,700 |
| 1/2 | 15,000 | 12,000 | 26,000 | 21,200 | 15,000 | 39,000 | 31,800 |
| 5/8 | 22,600 | 18,100 | 39,100 | 32,000 | 22,600 | 58,700 | 47,900 |
| 3/4 | 35,300 | 28,300 | 61,100 | 49,900 | 35,300 | 91,700 | 74,900 |
| 7/8 | 42,700 | 34,200 | 74,000 | 60,400 | 42,700 | 110,900 | 90,600 |

## Rigging Hardware Capacities (lb.)

| Size in inches | Shoulder Eye Bolt | | Turnbuckle | Shackle | Wire Rope Clip | | | Swivel Hoist Rings | Alloy Master Links |
|---|---|---|---|---|---|---|---|---|---|
| | In Line | 45 deg. | Eye or Jaw | SP Anchor | Min. # clips | Turnback (inches) | Torque (ft. lbs.) | WLL (lbs.) | WLL (lbs.) |
| 1/4 | 500 | 125 | 500 | 1,000 | 2 | 4.75 | 15 | ------- | ------- |
| 5/16 | 800 | 200 | 800 | 1,500 | 2 | 5.25 | 30 | 800 | ------- |
| 3/8 | 1,200 | 300 | 1,200 | 2,000 | 2 | 6.50 | 45 | 1,000 | ------- |
| 7/16 | ----- | ------ | -------- | 3,000 | 2 | 7.00 | 65 | ------- | ------- |
| 1/2 | 2,200 | 550 | 2,200 | 4,000 | 3 | 11.50 | 65 | 2,500 | 7,400 |
| 9/16 | ----- | ------ | -------- | ------ | 3 | 12.00 | 95 | ------- | ------- |
| 5/8 | 3,500 | 875 | 3,500 | 6,500 | 3 | 12.00 | 95 | 4,000 | 9,000 |
| 3/4 | 5,200 | 1,300 | 5,200 | 9,500 | 4 | 18.00 | 130 | 5,000 | 12,300 |
| 7/8 | 7,200 | 1,800 | 7,200 | 13,000 | 4 | 19.00 | 225 | 8,000 | 15,200 |
| 1 | 10,000 | 2,500 | 10,000 | 17,000 | 5 | 26.00 | 225 | 10,000 | 26,000 |
| 1-1/8 | ----- | ------ | -------- | 19,000 | 6 | 34.00 | 225 | ------- | ------- |
| 1-1/4 | 15,200 | 3,800 | 15,200 | 24,000 | 7 | 44.00 | 360 | 15,000 | 39,100 |
| 1-1/2 | ----- | ------ | -------- | ------ | ---- | ------ | ------ | ------- | 61,100 |
| 2 | ----- | ------ | -------- | ------ | ---- | ------ | ------ | ------- | 102,600 |
| 2-1/2 | ----- | ------ | -------- | ------ | ---- | ------ | ------ | ------- | 160,000 |
| 3 | ----- | ------ | -------- | ------ | ---- | ------ | ------ | ------- | 228,000 |
| 3-1/2 | ----- | ------ | -------- | ------ | ---- | ------ | ------ | ------- | 279,000 |
| 4 | ----- | ------ | -------- | ------ | ---- | ------ | ------ | ------- | 373,000 |

Lifting Slings - Minimum Capacity: 10,000lbs Each


Optional Lifting Points
Lifting Points



# SAFETY DATA SHEET

CITGO A/W Hydraulic Oil 46

## Section 1. Identification

**GHS product identifier** : CITGO A/W Hydraulic Oil 46

**Synonyms** : Hydraulic Fluid

**Code** : 633492001

**Supplier's details** : CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210
sdsvend@citgo.com

**Emergency telephone number** : Technical Contact: (800) 248-4684
Medical Emergency: (832) 486-4700
CHEMTREC Emergency: (800) 424-9300
(United States Only)

## Section 2. Hazards identification

**OSHA/HCS status** : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

**Classification of the substance or mixture** : Not classified.

**GHS label elements**

**Signal word** : Warning

**Hazard statements** : Injection under the skin can cause severe injury.
Most damage occurs in the first few hours.
Initial symptoms may be minimal.

**Precautionary statements**

**General** : Avoid contact with eyes, skin and clothing. MAY BE HARMFUL IF SWALLOWED. IF IN EYES: Rinse cautiously with water for several minutes. Do NOT induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.

**Prevention** : Not applicable.

**Response** : Not applicable.

**Storage** : Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.

**Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Hazards not otherwise classified** : Injection of petroleum hydrocarbons requires immediate medical attention

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

**Other means of identification** : Hydraulic Fluid

**CAS number/other identifiers**

**CAS number** : Not applicable.

# Section 3. Composition/information on ingredients

Any concentration shown as a range is to protect confidentiality or is due to process variation.

**There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

**Occupational exposure limits, if available, are listed in Section 8.**

# Section 4. First aid measures

## Description of necessary first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

**Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

**Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

**Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

## Most important symptoms/effects, acute

### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.

**Ingestion** : No known significant effects or critical hazards.

### Over-exposure signs/symptoms

**Eye contact** : No specific data.

**Inhalation** : No specific data.

**Skin contact** : No specific data.

**Ingestion** : No specific data.

## Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments** : Treat symptomatically and supportively.

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

**See toxicological information (Section 11)**

# Section 5. Fire-fighting measures

**Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

## Extinguishing media

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : None known.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

## Section 5. Fire-fighting measures

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8).

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

# Section 8. Exposure controls/personal protection

## Control parameters

### Occupational exposure limits

None identified.

**Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.

## Skin protection

**Hand protection** : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

# Section 9. Physical and chemical properties

**Physical state** : Liquid.

**Color** : Light amber [Light]

**Odor** : Mild petroleum odor [Slight]

**pH** : Not applicable.

**Boiling point** : Not available.

**Flash point** : Open cup: 230°C (446°F) [Cleveland.]

**Lower and upper explosive (flammable) limits** : Not available.

**Vapor pressure** : Not available.

**Vapor density** : Not available.

**Relative density** : Not available.

**Density lbs/gal** : 7.2 lbs/gal

**Gravity, °API** : 32.3

**Viscosity** : Dynamic (room temperature): Not applicable.
Kinematic (room temperature): Not applicable.
Kinematic (40°C (104°F)): 0.48 $cm^2/s$ (48 cSt)

## Section 9. Physical and chemical properties

**Viscosity SUS** : 240 SUS @100 F

## Section 10. Stability and reactivity

**Reactivity** : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).

**Chemical stability** : The product is stable.

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid** : No specific data.

**Incompatible materials** : No specific data.

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

**Conclusion/Summary** : **Distillates (petroleum), hydrotreated heavy paraffinic**: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

#### Irritation/Corrosion

**Skin** : No additional information.

**Eyes** : No additional information.

**Respiratory** : No additional information.

#### Sensitization

**Skin** : No additional information.

**Respiratory** : No additional information.

#### Mutagenicity

**Conclusion/Summary** : No additional information.

#### Carcinogenicity

**Conclusion/Summary** : No additional information.

#### Reproductive toxicity

**Conclusion/Summary** : No additional information.

#### Teratogenicity

**Conclusion/Summary** : No additional information.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

# Section 11. Toxicological information

**Information on the likely routes of exposure** : Not available.

**Potential acute health effects**

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.

**Ingestion** : No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Eye contact** : No specific data.

**Inhalation** : No specific data.

**Skin contact** : No specific data.

**Ingestion** : No specific data.

**Potential chronic health effects**

**General** : No known significant effects or critical hazards.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

# Section 12. Ecological information

**Toxicity**

**Conclusion/Summary** : Not available.

**Persistence and degradability**

**Conclusion/Summary** : Not available.

**Bioaccumulative potential**

Not available.

**Mobility in soil**

**Soil/water partition coefficient ($K_{OC}$)** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

# Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed

## Section 13. Disposal considerations

of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

| | DOT Classification | IMDG | IATA |
|---|---|---|---|
| **UN number** | Not regulated. | Not regulated. | Not regulated. |
| **UN proper shipping name** | - | - | - |
| **Transport hazard class(es)** | - | - | - |
| **Packing group** | - | - | - |
| **Environmental hazards** | No. | No. | No. |
| **Additional information** | - | - | - |

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** : **United States inventory (TSCA 8b)**: All components are listed or exempted.

**Clean Water Act (CWA) 307**: Zinc and zinc compounds; toluene; phenol; lead; Cadmium (Non-pyrophoric); benzene

**Clean Water Act (CWA) 311**: toluene; phenol; benzene

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

**SARA 302/304**

**Composition/information on ingredients**

**SARA 304 RQ** : Not applicable.

**SARA 311/312**

**Classification** : Not applicable.

**Composition/information on ingredients**

**State regulations**

**Massachusetts** : None of the components are listed.

**New York** : None of the components are listed.

# Section 15. Regulatory information

**New Jersey** : None of the components are listed.

**Pennsylvania** : None of the components are listed.

**California Prop. 65**

**WARNING:** This product contains less than 0.1% of a chemical known to the State of California to cause cancer.
**WARNING:** This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

| Ingredient name | % | Cancer | Reproductive | No significant risk level | Maximum acceptable dosage level |
|---|---|---|---|---|---|
| toluene | <0.01 | No. | Yes. | No. | 7000 µg/day (ingestion) |
| ethyl acrylate | <0.0001 | Yes. | No. | No. | No. |
| lead | trace | Yes. | Yes. | 15 µg/day (ingestion) | Yes. |
| Cadmium (Non-pyrophoric) | trace | Yes. | Yes. | 0.05 µg/day (inhalation) | 4.1 µg/day (ingestion) |
| benzene | trace | Yes. | Yes. | 6.4 µg/day (ingestion)<br>13 µg/day (inhalation) | 24 µg/day (ingestion)<br>49 µg/day (inhalation) |

**International regulations**

**International lists** : **Australia inventory (AICS)**: All components are listed or exempted.
**China inventory (IECSC)**: All components are listed or exempted.
**Japan inventory**: All components are listed or exempted.
**Korea inventory**: All components are listed or exempted.
**Malaysia Inventory (EHS Register)**: Not determined.
**New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.
**Philippines inventory (PICCS)**: All components are listed or exempted.
**Taiwan inventory (CSNN)**: Not determined.

**Canada inventory** : All components are listed or exempted.

**EU Inventory** : All components are listed or exempted.

**WHMIS (Canada)** : Not controlled under WHMIS (Canada).

# Section 16. Other information

**National Fire Protection Association (U.S.A.)**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**Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.**

**History**

**Date of issue/Date of revision** : 11/20/2014.

# Section 16. Other information

**Key to abbreviations** : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

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# MATERIAL SAFETY DATA SHEET

*Print date:* *25-Oct-2010* *Revision Number: 1* *Revision date: 19-Oct-2010*

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

**Product Name:** Klübersynth GH 6- 460
**Article Code:** 012163
**Synonyms:** No information available
**Chemical characterisation:** Not applicable..

**Supplier:**
Klüber Lubrication North America L.P.
32 Industrial Drive
Londonderry, NH 03053
(603) 647-4104
Fax (603) 647-4106

**Emergency telephone number** CHEMTREC: 1-800-424-9300 International: (703) 527-3887

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Components | CAS-No | ACGIH (TWA mg/m³ ): | OSHA (TWA mg/m³ ): |
|---|---|---|---|
| Polyalkylene glycol oil | | None | None |

## 3. HAZARDS IDENTIFICATION

**Properties affecting health:** Harmful if swallowed

**Principle routes of exposure:** Skin.

**Skin contact:** Substance may cause slight skin irritation.

**Eye contact:** Contact with eyes may cause irritation.

**Inhalation:** Vapors and/or aerosols which may be formed at elevated temperatures may be irritating to eyes and respiratory tract.

**Ingestion:** Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea

## 4. FIRST AID MEASURES

**General advice:** If symptoms persist, call a physician.

**Skin contact:** Rinse with plenty of water. If skin irritation persists, call a physician.

**Inhalation:** Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. If symptoms persist, call a physician.

**Eye contact:** Flush eye with water for 15 minutes. If symptoms persist, call a physician.

**Ingestion:** Do not induce vomiting. Consult a physician.

**Notes to physician:** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media:**
Carbon dioxide (CO2), Dry chemical, Dry sand, Water spray mist or foam

**Extinguishing media which must not be used for safety reasons:**
Do not use a solid water stream as it may scatter and spread fire.

**Special protective equipment for firefighters:**
In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus. Standard procedure for chemical fires.

**Specific hazards:** Burning produces irritant fumes In the event of fire and/or explosion do not breathe fumes

**Unusual hazards:** No hazards resulting from the material as supplied

**Specific methods:** Water mist may be used to cool closed containers. Standard procedure for chemical fires.

**Flash point:** > 482 (°F)

**Autoignition temperature:** Not determined..

**Flammability Limits in Air:**

**Lower** No information available

**Upper** No information available

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Contaminated surfaces will be extremely slippery. Avoid contact with skin, eyes and clothing. Wear personal protective equipment.

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains.

**Methods for cleaning up:** Soak up with oil absorbent material. Clean contaminated surface thoroughly. Pick up and transfer to properly labelled containers.

## 7. HANDLING AND STORAGE

**Handling**

**Technical measures/precautions:** No special technical protective measures required.

**Safe handling advice:** Spilling onto the container`s outside will make container slippery. Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.

**Storage**

**Technical measures/storage conditions:** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep in properly labelled containers. Keep out of reach of children.

**Incompatible products:** Oxidising and spontaneously flammable products.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering measures to reduce exposure:**
Ensure adequate ventilation, especially in confined areas..

**Personal Protective Equipment**

| | |
|---|---|
| **Respiratory protection:** | No personal respiratory protective equipment normally required. |
| **Hand protection:** | Preventive skin protection |
| **Skin and body protection:** | Usual safety precautions while handling the product will provide adequate protection against this potential effect.. |
| **Eye protection:** | Avoid contact with eyes.. |
| **Hygiene measures:** | Avoid contact with skin, eyes and clothing. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|---|---|---|
| **Physical State:** | Oil | **Appearance:** | Liquid |
| **Color:** | Light yellow | **Odor:** | Not significant |
| **Specific gravity:** | ~ 1.07 | **Boiling point/range** | No information available |
| **Evaporation rate:** | Not determined | **Vapor density:** | Not determined |
| **Vapor pressure:** | Not determined | **Solubility:** | Partly soluble. |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability:** | No hazards to be especially mentioned |
| **Polymerization:** | Hazardous polymerisation does not occur. |
| **Hazardous decomposition products:** | None under normal use |
| **Materials to avoid:** | Strong oxidising agents. |
| **Conditions to avoid:** | Heat, flames and sparks.. |

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity:** No data available

## 12. ECOLOGICAL INFORMATION

**Mobility:** No information available.

**Bioaccumulative potential:** No information available.

**Ecotoxicity effects:** May cause long-term adverse effects in the aquatic environment..

**Aquatic toxicity:** May cause long-term adverse effects in the aquatic environment.

## 13. DISPOSAL CONSIDERATIONS

**Waste from residues / unused products:** In accordance with local and national regulations.

**Contaminated packaging:** Empty containers should be taken for local recycling, recovery or waste disposal

## 14. TRANSPORT INFORMATION

**DOT**

| | |
|---|---|
| **Proper shipping name:** | Bulk Packaging: Environmentally hazardous substances, liquid, n.o.s. (Cresyl diphenyl phosphate and Triphenylphosphate) |
| **UN-No:** | UN3082 |
| **Hazard Class:** | 9 |
| **Packing group:** | III |
| **ERG No:** | 171 |

## 14. TRANSPORT INFORMATION

**TDG (Canada)**

**IMO / IMDG**

**ICAO**

**IATA**

## 15. REGULATORY INFORMATION

**TSCA**

**TSCA:** Listed in TSCA

**U.S. Regulations:**

**Sara (311, 312) hazard class:**

**Canada**

**WHMIS hazard class:**
Non-controlled

## 16. OTHER INFORMATION

| | | | | | | |
|---|---|---|---|---|---|---|
| **NFPA** | **Health:** | 1 | **Flammability:** | 1 | **Instability:** | 0 |
| **HMIS** | **Health:** | 1 | **Flammability:** | 1 | **Physical Hazard:** | 0 |

**Reason for revision:** Not applicable
**Prepared by:** Health & Safety

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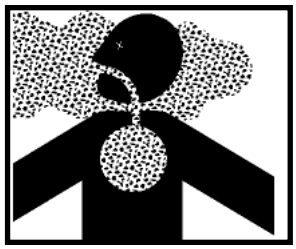
# Section 1
# SAFETY

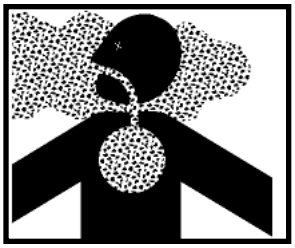
# State Regulations



**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.



**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.

# 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.*

## 1.3.1 Operating Safety

**⚠WARNING**

*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 hot and may cause 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**

**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.

# 1.2, continued
# Operating 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.

ALLEN
CONCRETE PAVERS

## 1.4.1 Engine Safety

**DANGER**

*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.

# 1.4 Service Safety

## 1.5.1 Service Safety

**⚠ WARNING**

*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**

**1.5.4** **DO NOT**

**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**

**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**

**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.

# 1.5 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 odered from your distributor.

**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.

**RETARDANT ONLY**

**⚠ CAUTION**

For diesel-fueled machines, this label identifies the tank used for **DIESEL** fuel only in the machine. **NO OTHER** type of fuel is to be used in this tank.

**DIESEL FUEL ONLY**

**⚠ CAUTION**

This label identifies the tank used for **HYDRAULIC OIL** only in the machine. **NO OTHER** type of fluid is to be used in this tank.

**HYD. OIL ONLY**

**NOTE**

This label identifies the valve that operates the finish tube only.

**FORWARD FINISH TUBE REVERSE**

# 1.5, continued
# Safety and Operation Labels

**NOTE**

This label identifies the valve that operates the travel tubes only.

FORWARD
TRAVEL TUBE
REVERSE

**NOTE**

This label identifies the valve that operates the steering leg only.

UP
STEERING LEG
DOWN

**NOTE**

This label identifies the adjustment nut location that raises and lowers the front finish tube.

FINISH TUBE
VERTICAL
ADJUSTER

**WARNING**

This label warns the operator of the potential hazard of servere 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.


**NOTE**

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.

FUSE BOX
INSIDE
039778

# 1.6, Notes

INTENTIONALLY LEFT BLANK

# Section 2
# OPERATIONS

# SECTION 2
# OPERATIONS

**NOTE**

*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 **Triple Roller Tube Paver** (TRTP) is a simple, but effective, paving machine. This particular model is the largest of the TRTP family. The model 255CD paver is the paver of choice due to the fact of its optional accessories such as front and rear walkways as well as a gang vibration system for concrete consolidation. This machine also comes with a spray system which is a standard option.

Your machine is built from heavy duty steel for reliability and strength. The end frames and overhead truss-work are strongly built for the longer machines as well as the smaller ones. A weight box on the idle-end frame helps to balance out the machine due to the weight on the motor end frame.

This machine is built for the ultimate quick finish for a reasonable investment. The roller tubes on this machine are made of rugged 10” (254mm) diameter tubing. We can customize the length of your machine from 12 ft (3.05m) thru 34 ft. (10.97m) in any 2 ft (.61m) increment. No matter what conditions your job may be under, Allen Concrete Pavers (ACP) can make the machine to fit your needs.

Your machine primarily runs on a 44 HP, 4 cylinder, liquid cooled diesel engine. The liquid cooled engine is electrically started. All hydraulic components function mainly from the 14+3.2 GPM heavy-duty tandem pump mounted to the engine. The hydraulic and fuel tanks are constructed of a heavy-duty steel for durability.

The front paving tube has a variable speed control with forward and reverse move ment. The maximum setting for the finishing tube is 146 RPM’s and the maximum setting for the travel tube is 20 RPM’s. However, this machine can finish an astound ing 382 surface feet per minute.

# 2.2 Start Up Procedures

## 2.2.1 Before Starting Procedures

Before starting the machine check for the following:

1) Oil level in engine(s).

2) Hydraulic oil level in hydraulic tank.

3) Fuel level in fuel tank.

4) Condition of hydraulic oil and air filters.

5) Verify that daily maintenance has been performed.

6) Verify all controls are in the neutral position.

## 2.2.2 Starting Procedures

Before starting the machine, refer to Figure 2.2.1and 2.3.1 for location and identification of operational and visual controls pertaining to the operation of the TRTP.

1) Turn key counter-clockwise until the “GLOW PLUG” turns off.

2) Turn igintion switch key to the start-position, immediately release key when engine starts. Allow engine and hydraulic components to warm up for 5 minutes before operating machine.

**⚠ CAUTION**

*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.*

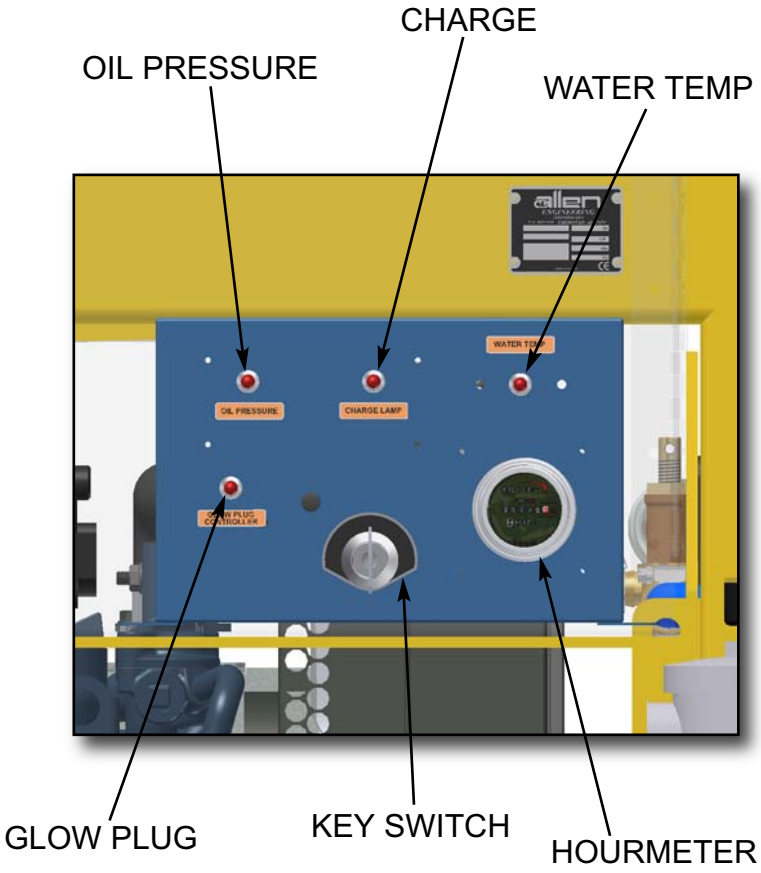



**FIGURE 2.2.1**
VIEW OF CONTROL BOX

# 2.3 Operating Instructions

## 2.3.1 Operating the TRTP

1) Location of Operating Controls

**[A]** Finish Tube Control
**[B]** Steering Leg Control
**[C]** Travel Tube Control
**[D]** Front Tube Adjustment
**[E]** Hydraulic Filter Gauge
**[F]** Engine Control Box
**[G]** Water Pump Control
**[H]** Throttle Control

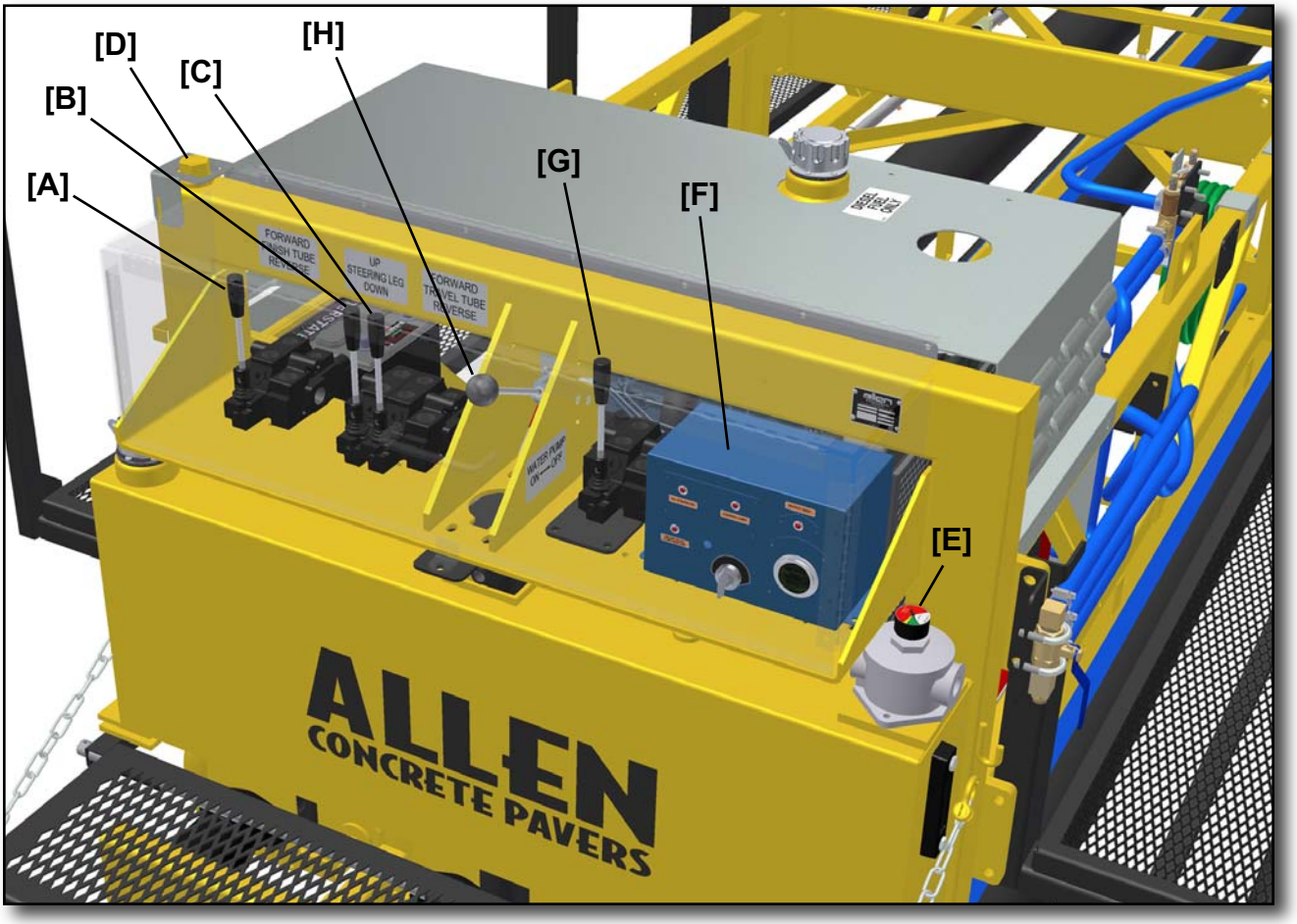



**FIGURE 2.3.1**
Operations Control Components

2) The operation of this machine is easy to learn and is simple on the job. Without a whole lot of components and parts, with the exception of hoses and hydraulic components, this machine is a basic concrete paver. However, with out proper instruction on how to operate this machine, it can very easily become hazardous to the surrounding workers, as well as, being unable to finish a good pour.

- After you start the engine, increase the throttle to 80% of the maximum engine RPM.
- To start paving in the forward motion, push both of the operator levers up.
- For paving in the reverse mode, pull the levers down.
- To make all the tubes travel in the same direction (whether forward or reverse), push one lever up and pull the other down.
- To turn the machine pull the steering leg lever all the way down. Once you have turned the desired distance, push the lever back up to lift up the leg.

**⚠ CAUTION**

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

### 2.3.2 Stopping The Machine

Return all the tube control levers to the neutral position.

### 2.3.3 Finish Tube Height Adjustment

To raise or lower the front finish tube do the following:

- Remove the tube adjustment lock(A) from the end handle.
- To raise the tube, turn the adjustment nut(B) in a clockwise rotation.
- To lower the tube, turn the adjustment counter-clockwise.

**NOTE:** The factory sets this tube at 1/8" above grade. There is a scribe line on the motor and idle end handles at the point where the tube is set. See Fig 2.3.4


**FIGURE 2.3.3**
Front Tube Adjustment

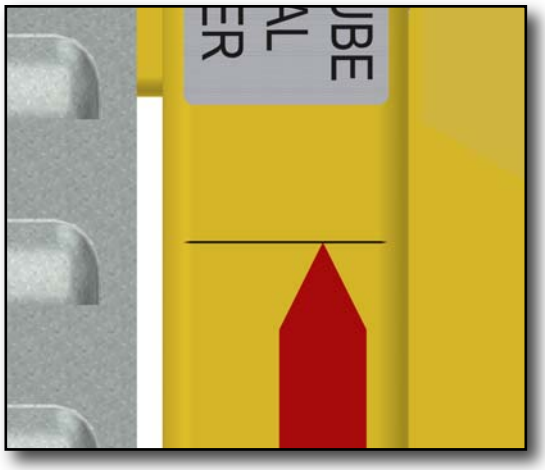
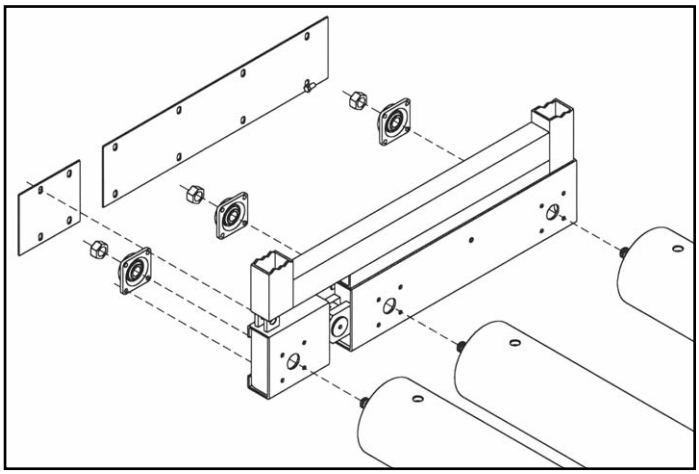


**FIGURE 2.3.4**
Pointer Scribe

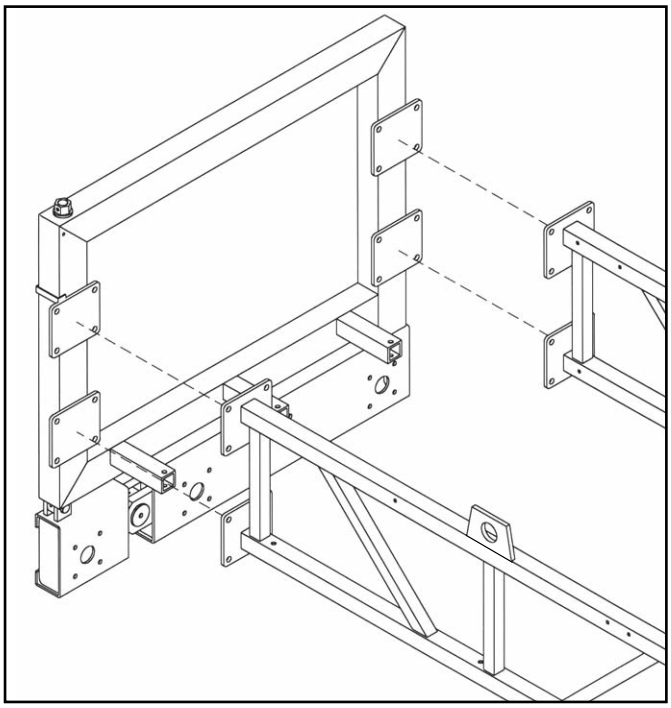
### 2.3.4 Tube Changing Procedures



**Step 1:** Remove the cover off of the idle end frame.

**Step 2:** Take the 1” nuts off of the idle end tubes.

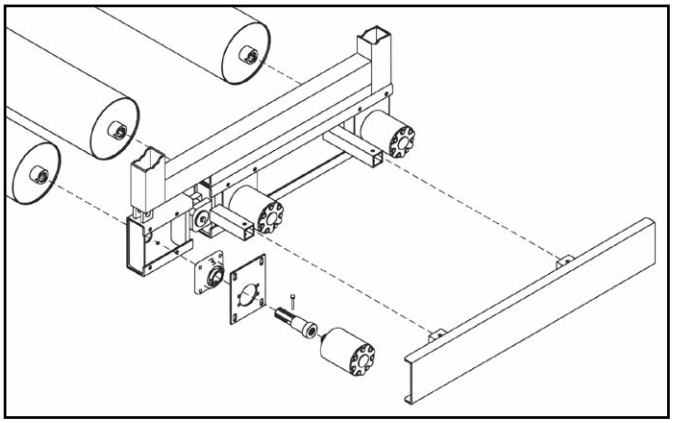
**Step 3:** Loosen set screws on bearings.



**Step 4:** Take the 16 bolts off the idle end frame that connect the framework to the end frame.
**NOTE:** Make sure that the framework is supported by a crane to insure that the framework does not collapse.

**Step 5:** Remove the idle end frame.

**Step 6:** Using the same method as in step 4, take the framework apart or add to section by section until the desired length is achieved.



**Step 7:** Remove the 1/4” bolts from the hex drivers.

**Step 8:** Pull the tube out of the motor end frame, repeat this process with all three tubes.

**Step 9:** Replace with the new length tubes.

**Step 10:** Replace 1/4” bolts into the hex drivers.

Starting with Step 6, reverse the process using the appropriate framework required. As the tube length changes, the framework obviously will change also.

# Notes

# Section 3
# SERVICE

# 3.1 Periodic Maintenance

## 3.1 Periodic Maintenance Schedule

The table below lists basic machine 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.

**TABLE 3.1.1**
CHECK LIST

| ITEM | DAILY | EVERY 20 HRS | EVERY 50 HRS | EVERY 100 HRS | EVERY 300 HRS |
|---|---|---|---|---|---|
| Hydraulic Oil Level | ✓ | | | | |
| Fuel Level | ✓ | | | | |
| Hoses and Fittings | ✓ | | | | |
| External Hardware | ✓ | | | | |
| Change Engine Oil | | | | ✓ | |
| Grease Bearings | | ✓ | | | |
| Replace Fuel Filter | | | | | ✓ |
| Replace Oil Filter | | | | ✓ | |
| Check Valve Clearance | | | ✓ | | |
| Air Filter | ✓ | | | | |
| Hydraulic Motors | | | ✓ | | |
| Steering Leg | | | ✓ | | |
| Hydraulic Filters | ✓ | | | | |

## 3.2 Bearings

The bearings for the roller tubes must be greased approximately every 20 hours. Please note the location of the grease fittings below.

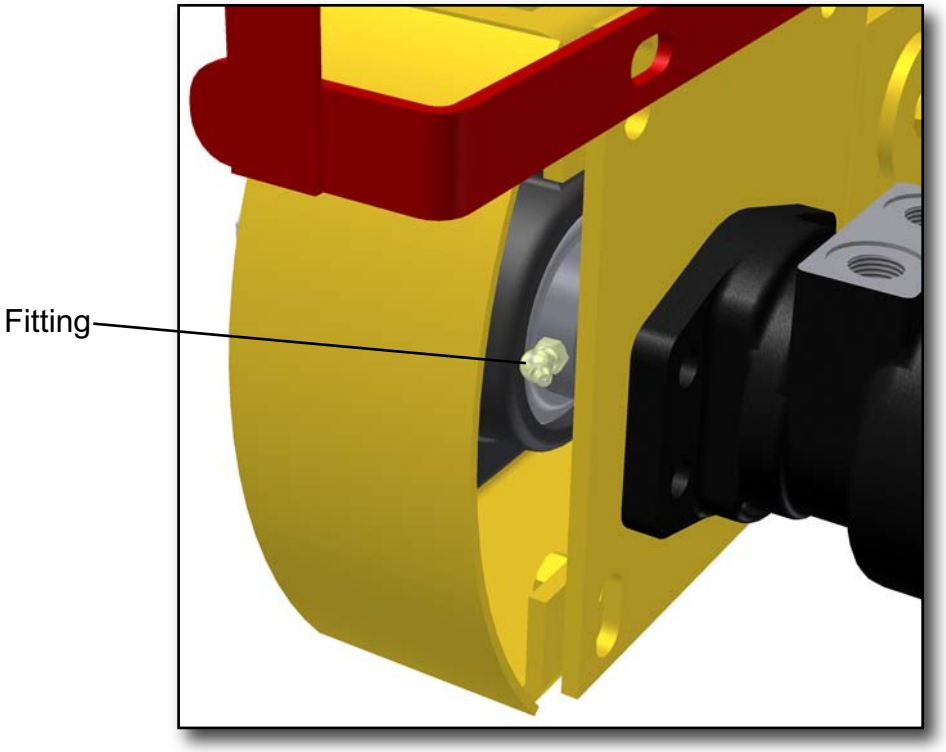



**FIGURE 3.2.1**
MOTOR END FITTINGS

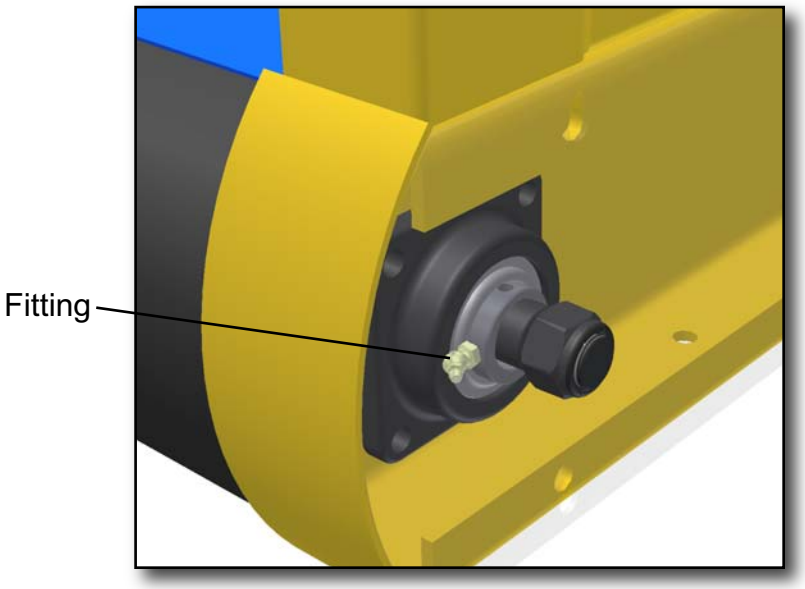



**FIGURE 3.2.2**
IDLE END FITTINGS

# 3.3 Spray Tips

## 3.3 Spray Tips

Make sure before every pour that all the finish tube spray tips and nozzles are not clogged and are in working order. Also make sure that they are drip free when the spray system is not on.

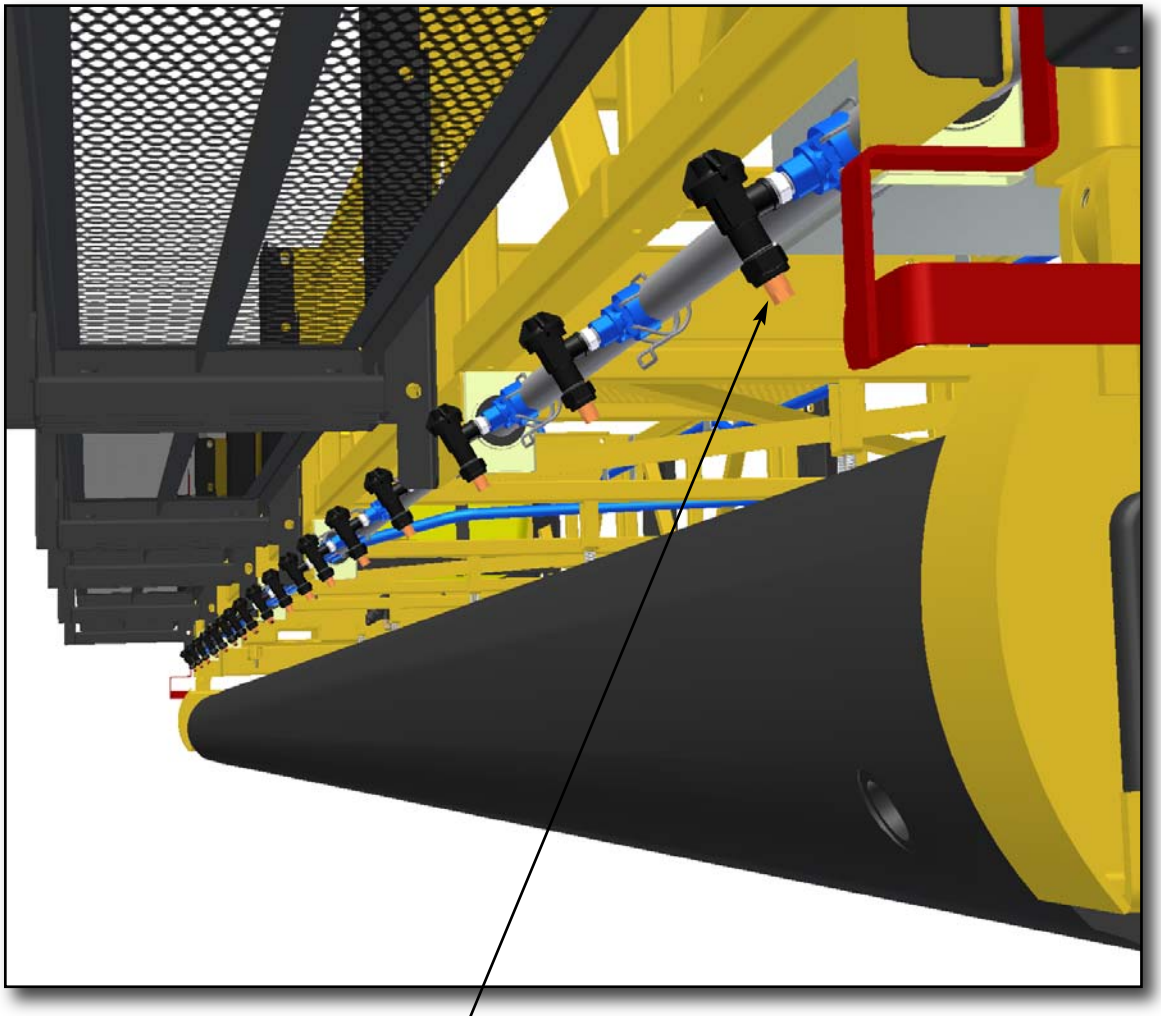



**FIGURE 3.3.1**
SPRAY TIPS

## 3.4 Inline Spray Filter

Make sure before every pour and before the filling the tank that the inline spray filter is free of contaminants. If the filter needs to be replaced, an AEC filter replacement is available.

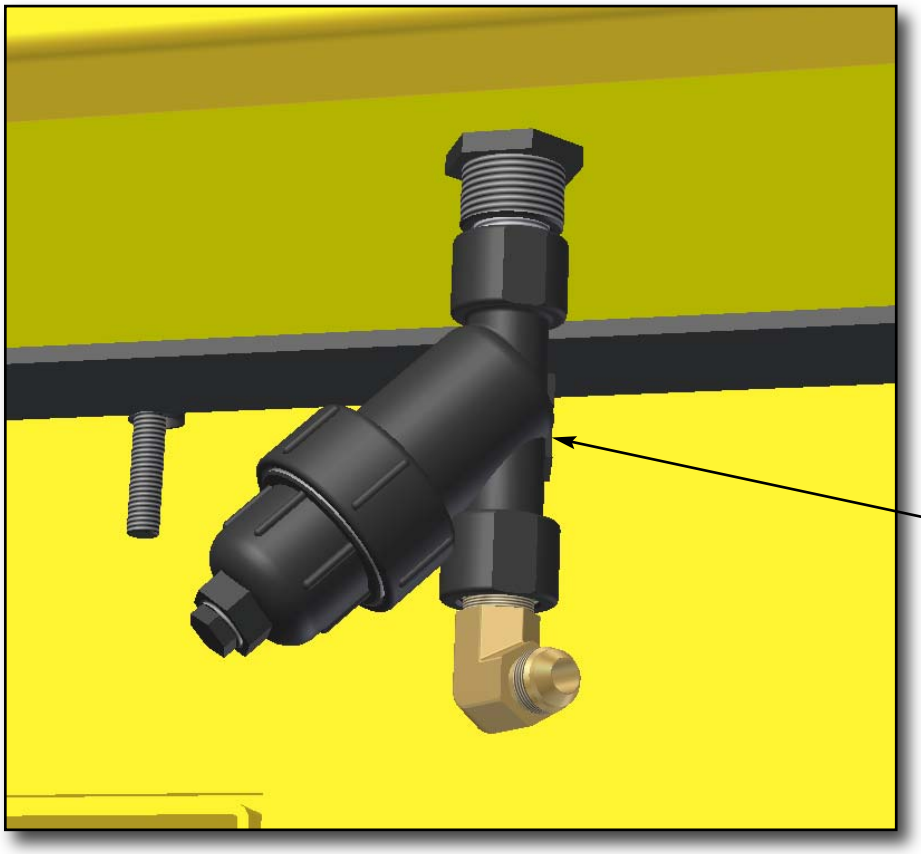
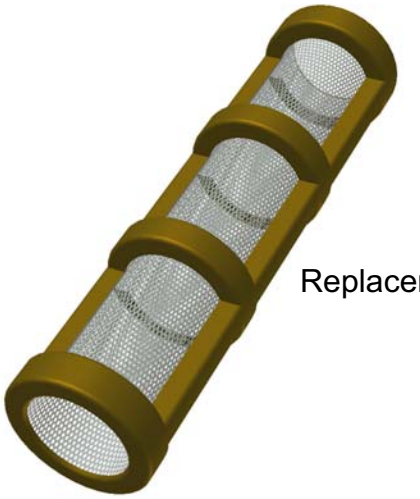



**FIGURE 3.4.1**
INLINE SPRAY FILTER



Replacement Filter: **048383**

# 3.5 Air Filter - Breather

## 3.5 Air Breather

Make sure that the air breather is free of contaminants before each pour. This ensures the turbo will function at it's peak effeciency.

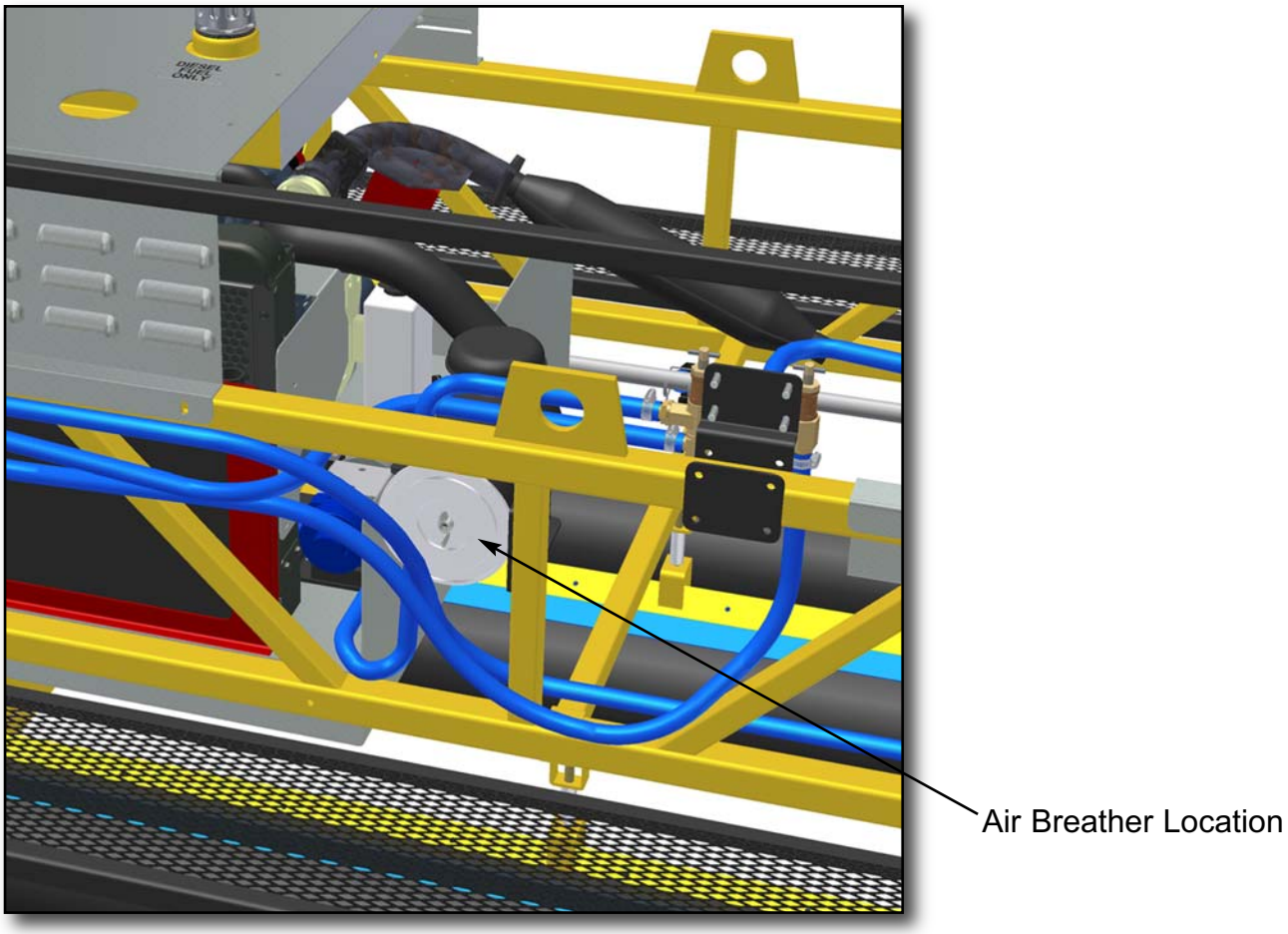



**FIGURE 3.5.1**
AIR FILTER

## 3.6 Engine Oil

Check engine oil daily.

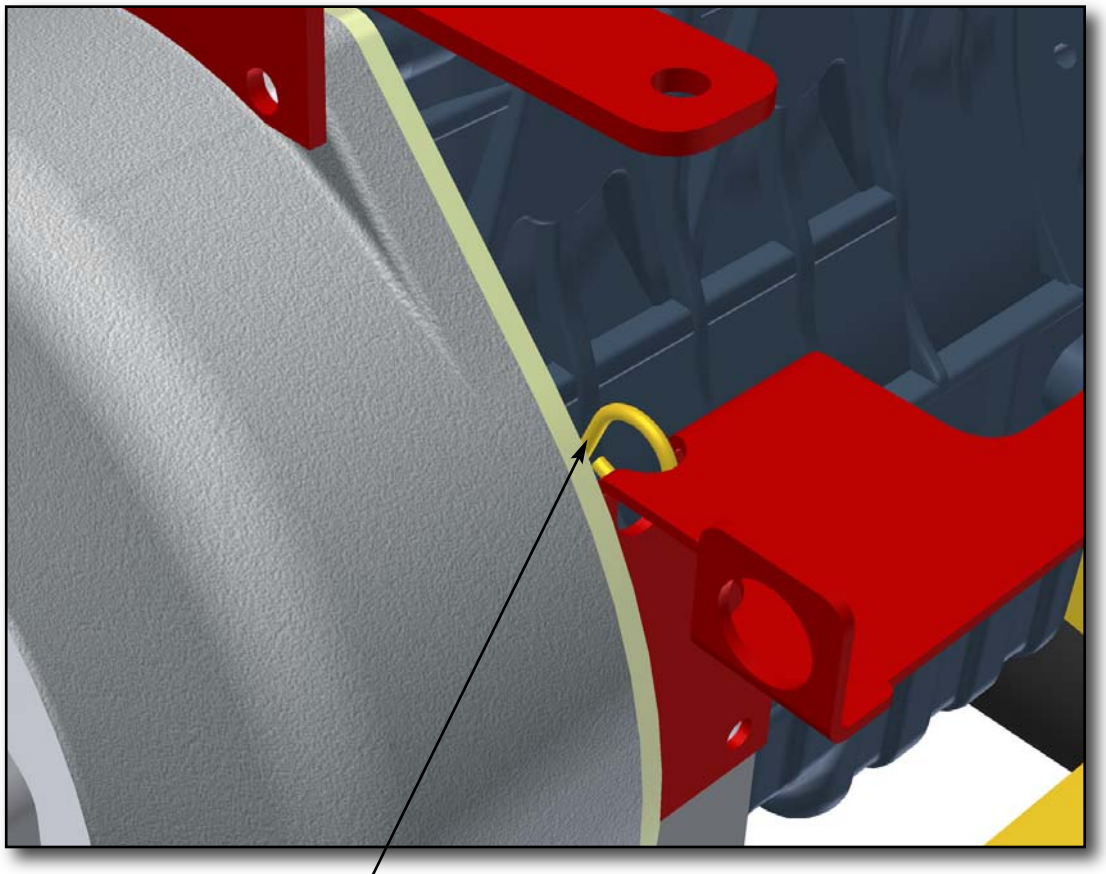



**FIGURE 3.6.1**
Engine Oil

# 3.7 Oil and Fuel Filters

## 3.7 Oil Filter

Replace oil filter approximately every 100 operating hours.

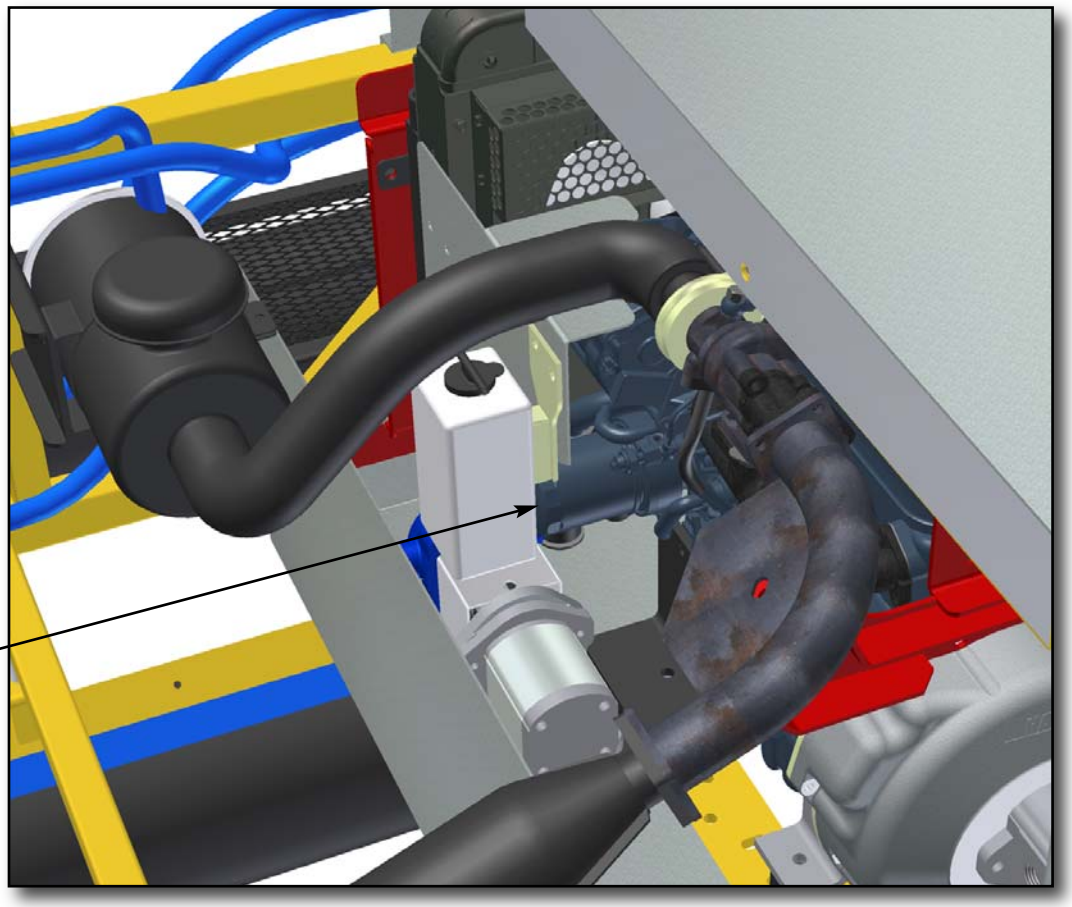



**FIGURE 3.7.1**
Oil Filter

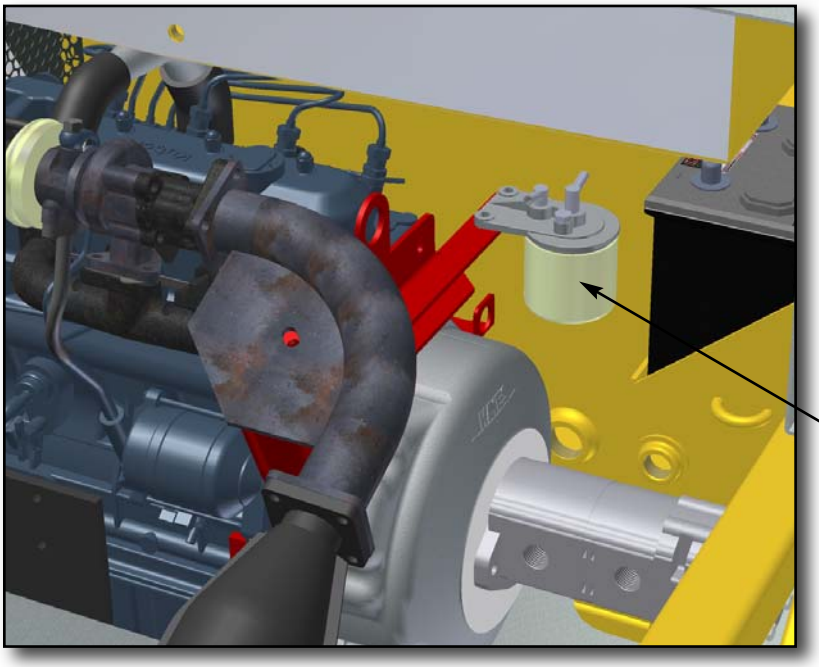



**FIGURE 3.7.2**
Fuel Filter

# 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.

**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 all tube couplings. If these parts are disassembled re-apply a light coat of a graphite based anti-seize.

# 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.

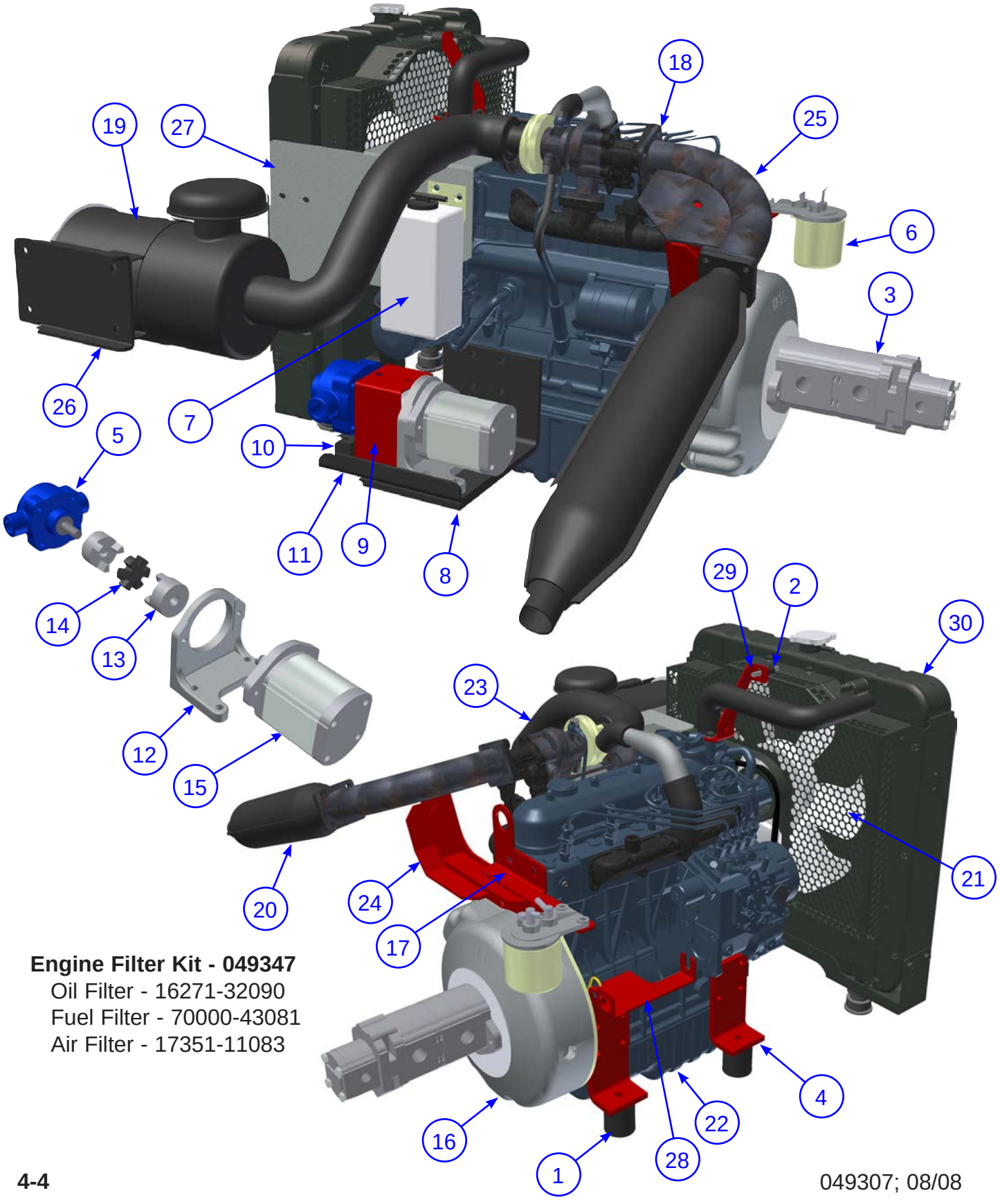
4. **DO NOT** return parts to AEC without receiving written authorization from AEC. All authorized returns must be shipped pre-paid.

5. When placing an order, please contact the AEC Dealer nearest you.

**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.

# 4.1 Illustration
# Power Unit Assembly

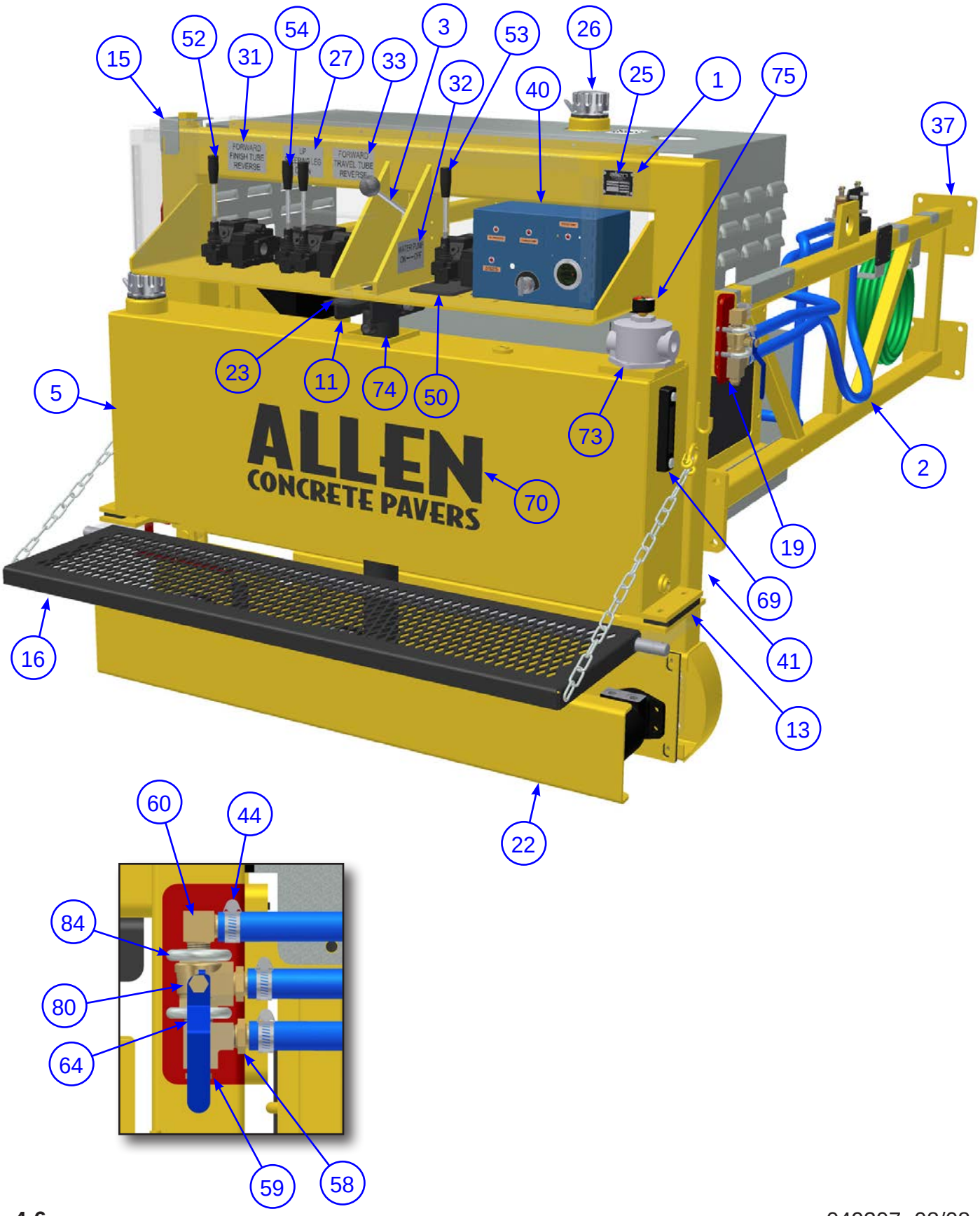



**Engine Filter Kit - 049347**
Oil Filter - 16271-32090
Fuel Filter - 70000-43081
Air Filter - 17351-11083

# 4.1 Parts List
# Power Unit Assembly

| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 012725 | ISOLATORS, RUBBER MOUNTS | 4 |
| 2 | 028556 | ISOLATOR, RUBBER | 1 |
| 3 | 029229 | PUMP,TANDEM TRTF | 1 |
| 4 | 029245 | BRACKET, ENGINE TRTF | 3 |
| 5 | 029418 | PUMP, HYPRO 6500C-R | 1 |
| 6 | 037777 | ASSY, FUEL FILTER | 1 |
| 7 | 037791 | TANK, OVERFLOW W/ BRACKET | 1 |
| 8 | 039787 | PLATE, MOUNT WATER PUMP TRTP | 1 |
| 9 | 039788 | GUARD, F/HYD. WATER PUMP TRTP | 1 |
| 10 | 039789 | SPACER, BLOCK F/WATER PUMP F/TRTP | 1 |
| 11 | 039790 | PLATE,F/HYD. MOTOR & H20 PUMP F/TRTP | 1 |
| 12 | 040059 | FOOT BRACKET, WATER PUMP TRTP | 1 |
| 13 | 040060 | COUPLER, JAW F/ WATER PUMP (TRTP) | 2 |
| 14 | 040061 | INSERT, JAW COUPLER WATER PUMP TRTP | 1 |
| 15 | 040065 | MOTOR, WATER PUMP (TRTP) | 1 |
| 16 | 040905 | KIT, HYD PUMP DRIVE ADAPTOR HAYES | 1 |
| 17 | 041586 | BRACKET, FUEL FILTER KUBOTA ENGINE | 1 |
| 18 | 042338 | GASKET, KUBOTA 38HP MUFFLER | 2 |
| 19 | 043287 | CLEANER, 44KB TURBO B53 AIR | 1 |
| 20 | 043288 | MUFFLER, 44KB TURBO C52 | 1 |
| 21 | 043289 | FAN, 44KB TURBO 16299-74112 PUSHER | 1 |
| 22 | 043291C | ENGINE, KUBOTA 44 TURBO V1505TE3BB-1 | 1 |
| 23 | 043393 | HOSE, 44KB AIR CLEANER | 1 |
| 24 | 046375 | MUFFLER MOUNT BRKT | 1 |
| 25 | 046379 | TAIL PIPE | 1 |
| 26 | 046382 | BRACKET, AIR CLEANER MOUNT | 1 |
| 27 | 046394 | COVER, ALTERNATOR | 1 |
| 28 | 048635 | BRACKET, THROTTLE X1 | 1 |
| 29 | 049028 | BRACKET, RAD SUPPORT MSP460 & HDX600 | 1 |
| 30 | 047874 | RADIATOR, 44KBT TURBO A47 KIT | 1 |

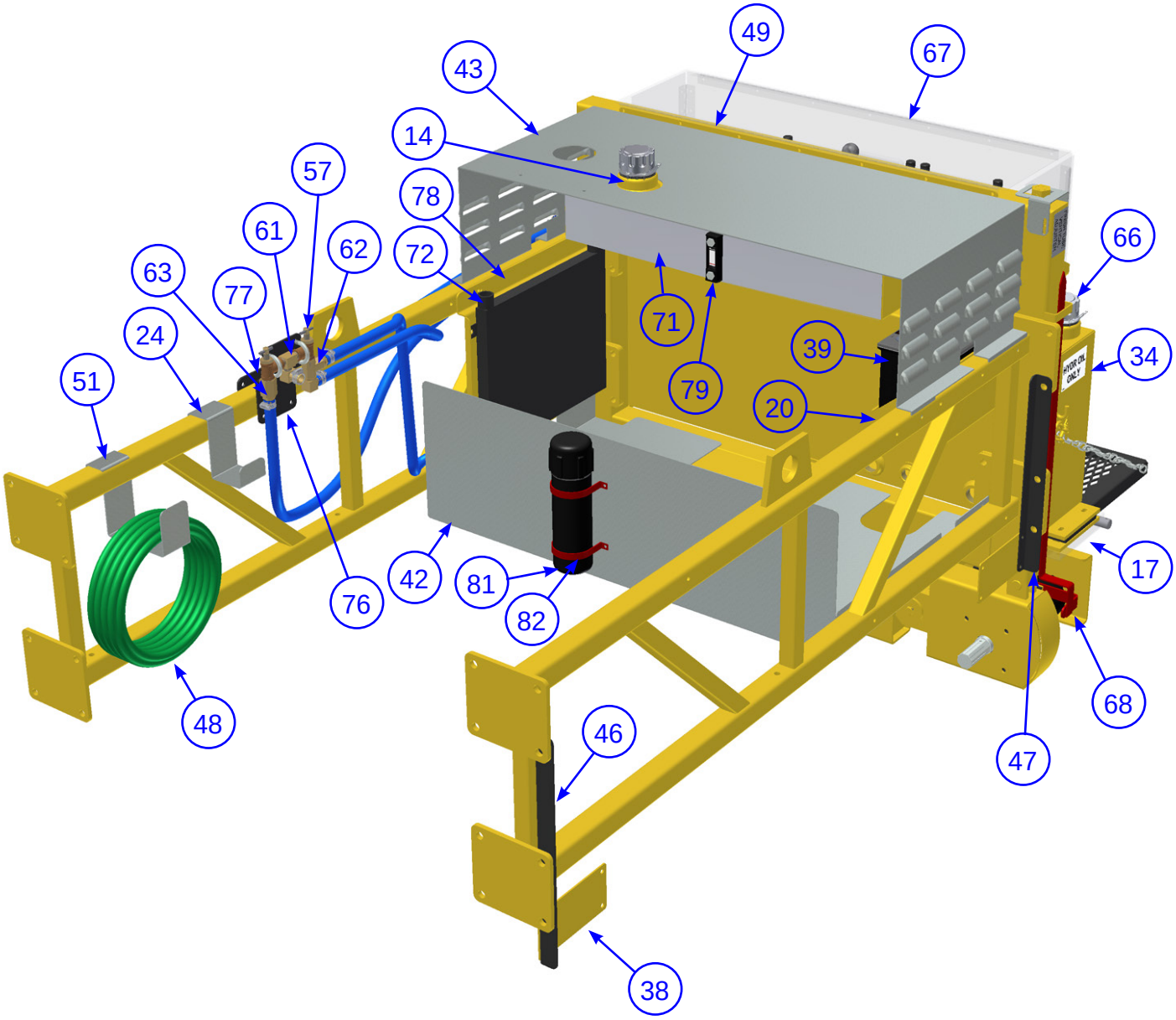
# 4.2 Illustration
# Motor End



# 4.2 Parts List
# Motor End

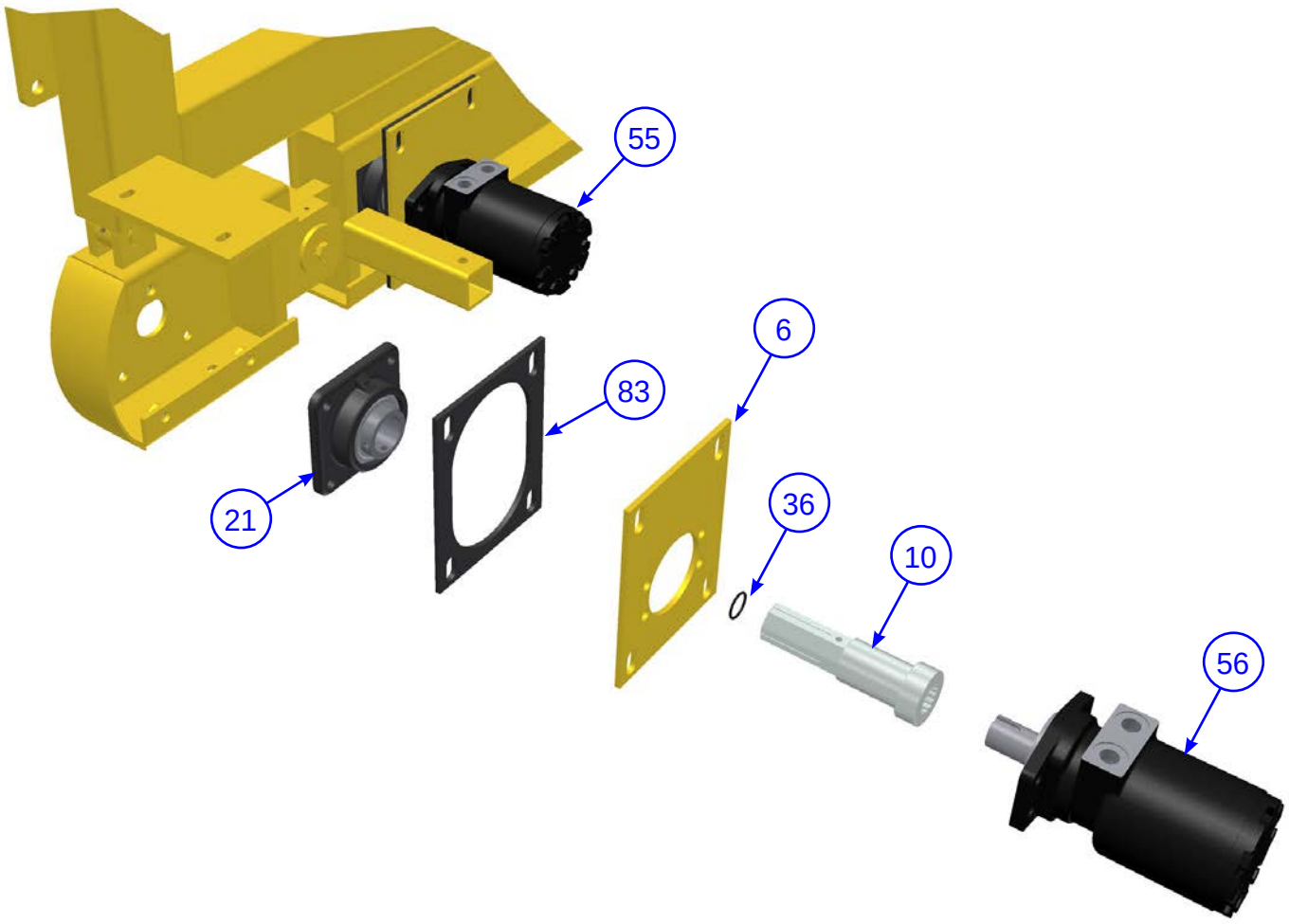
| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 012994 | RIVET, 1/8x3/8 ALUM DOME HD | 4 |
| 2 | 013394 | HOSE, PUSHLOCK 3/4 | 50’ |
| 3 | 028018 | CONTROL, HAND LEVER | 1 |
| | 028243 | ASSY, 52 LG THROTTLE CABLE | 1 |
| 5 | 028269 | TANK, HYD TRTF | 1 |
| 6 | 028279 | PLATE, MOUNT HYD MOTOR TRTF | 3 |
| 7 | 028287 | PAD, FOOT F/CYLINDER TRTF | 1 |
| 8 | 028291-1 | PIN, SHORT F/ CYLINDER TRTF | 1 |
| 9 | 028291-2 | PIN, LONG F/ CYLINDER TRTF | 1 |
| 10 | 028292 | SHAFT, HEX TRIPLE RTF | 3 |
| 11 | 028322 | MOUNT, CYLINDER TRTF | 1 |
| 12 | 029059 | BUSHING, FUEL TANK TRTF | 2 |
| 13 | 029098 | BUSHING, F/HYD TANK TRTF | 2 |
| 14 | 029127 | TANK, FUEL | 1 |
| 15 | 029136 | LOCK, F/ ENDHANDLE TRTF | 1 |
| 16 | 029176 | STAND, TRTF | 1 |
| 17 | 029186 | TUBE, MOUNT F/STAND TRTF | 2 |
| 18 | 029187 | BAR, F/STAND TRTF | 1 |
| 19 | 029208 | BRACKET, TRTP SHORT BALL VALVE | 1 |
| 20 | 029213 | BOX, BATTERY TRTF | 1 |
| 21 | 029223 | BEARING, MOTOR END 1 3/4 TRTF | 3 |
| 22 | 029383 | WELD’T, 255BD STD MOTOR PROTECTOR | 1 |
| 23 | 029407 | PLATE, LATCH (TRTF) | 1 |
| 24 | 029459 | HANGER, HOSE TRTF | 2 |
| 25 | 032097 | DECAL, SERIAL NUMBER PLATE | 1 |
| 26 | 032268 | UNIT, CHROME GAS-HYDR TANK CAP | 2 |
| 27 | 032272 | DECAL, STEERING TRTP | 1 |
| 28 | 032273 | DECAL, VERTICAL ADJ. TRTP | 1 |
| 29 | 032275 | DECAL, DIESEL FUEL ONLY | 1 |
| 30 | 032276 | DECAL, THROTTLE LEVER TRTP | 1 |
| 31 | 032277 | DECAL, FINISH TUBE TRTP | 1 |
| 32 | 032278 | DECAL, WATERPUMP ON/OFF TRTP | 1 |
| 33 | 032279 | DECAL, TRAVEL TUBE TRTP | 1 |
| 34 | 034243 | DECAL, HYDR OIL ONLY | 1 |
| 35 | 037172 | TAB, THROTTLE F/ALL 255 TRTF | 1 |
| 36 | 037560 | O-RING, HEX COUPLER ASSEMBLY | 3 |
| 37 | 037577 | FRAME, TRTP 6’ END | 2 |
| 38 | 037647 | END EXTENSION F/ SPRAY BAR BRKT | 2 |
| 39 | 037771 | BATTERY, 12 V GRAY 655CA | 1 |
| 40 | 037784 | CONTROL BOX W/ WIRING HARNESS | 1 |

# 4.2 Illustration
# Motor End (cont'd)



| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 41 | 038578 | END HANDLE, 255BD MOTOR END | 1 |
| 42 | 038582 | PAN, MOD 255 BD ENGINE | 1 |
| 43 | 038583 | COVER, MOD 255BD ENGINE | 1 |
| 44 | 038664 | #10 HOSE CLAMP | 8 |
| 45 | 038882 | CUSHION,BATT.BOX REAR F/TRTF | 1 |
| 46 | 038914L | BRACKET, SPRAY SYSTEM LH - 255 | 1 |
| 47 | 038914R | BRACKET, SPRAY SYSTEM RH - 255 | 1 |
| 48 | 038942 | HOSE, TRTP 25' WATER | 1 |
| 49 | 039344 | PLATE, TRTP CONTROL COVER HINGE MTG | 1 |
| 50 | 039792 | VALVE, PLATE F/TRTP SPRAY SYSTEM | 1 |
| 51 | 039826 | HANGER, WATER HOSE FOR TRTP | 1 |
| 52 | 040058 | VALVE, STACK 7C7FTLFG/RF-SAE (TRTP) | 1 |
| 53 | 040063 | VALVE, SPRAY SYSTEM (TRTP) | 1 |
| 54 | 040066 | VALVE, STACK (TRAVEL CONTROL) TRTP | 1 |
| 55 | 040067 | MOTOR, 10" TRTP STND HYDR TRAVEL | 2 |
| 56 | 040068 | MOTOR, FINISH 10" TRTP (STRIKE OFF) | 1 |
| 57 | 040107 | RELIEF VALVE, TRTP SPRAY SYSTEM | 2 |
| 58 | 038971 | FTG, 3/4 MPT x 3/4 HOSE BARB | 4 |
| 59 | 040109 | FTG, 3/4 MPT x 3/4 GARDEN | 1 |
| 60 | 040110 | FTG, 3/4 MPT x 3/4 90° HOSE BARB | 4 |
| 61 | 040111 | FTG, 3/4 MPT RUN TEE | 1 |
| 62 | 040114 | FTG, 3/4 FPT TEE | 1 |
| 63 | 040115 | FTG, 3/4 COUPLER | 1 |
| 64 | 040116 | FTG, 3/4 CLOSE NIPPLE | 3 |
| 65 | 040330 | PUMP, 12 V ELECTRONIC FUEL | 1 |
| 66 | 041509 | DECAL, HYDRAULIC OIL CAP | 1 |
| 67 | 042004 | COVER, WELD'T CONTROL PANEL | 1 |
| 68 | 042945 | WELD'T POINTER MOTOR END 255 TRTP | 1 |
| 69 | 043057 | GAUGE, SNA HYDR LEVEL | 1 |
| 70 | 043200 | DECAL, ACP BLACK 7.5 X 22 | 1 |
| 71 | 043394 | TAPE, HIGH TEMP FOIL 54' X 3" WIDE | .200 |
| 72 | 045133 | COOLER, HYDRAULIC F/ TRTP | 1 |
| 73 | 045134 | FILTER, RETURN LINE RTF25N-D10B/S2/N | 1 |
| 74 | 045136 | CYLINDER, STEERING F/ TRTP | 1 |
| 75 | 046241 | GAUGE, CL-20 FILTER | 1 |
| 76 | 046373 | BRACKET, WATER VALVE MNT PLATE | 1 |
| 77 | 046374 | BRACKET, CLAMP PLATE WATER VALVE | 1 |
| 78 | 046393 | BRACKET, HYDRAULIC OIL COOLER MNT | 1 |
| 79 | 047172 | GAUGE, 3" SITE LEVEL | 1 |
| 80 | 047412 | VALVE, 3-WAY BALL 3/4" | 1 |
| 81 | 048665 | TUBE, MANUAL PACK PLASTIC 9000-14 | 1 |
| 82 | 048666 | CLAMP, MANUAL PACK TUBE | 2 |
| 83 | 049322 | PLATE, SPACER F/ TRTP DRIVE MOTORS | 3 |
| 84 | 116008 | FSTN, CLAMP U-BOLT #320 | 4 |

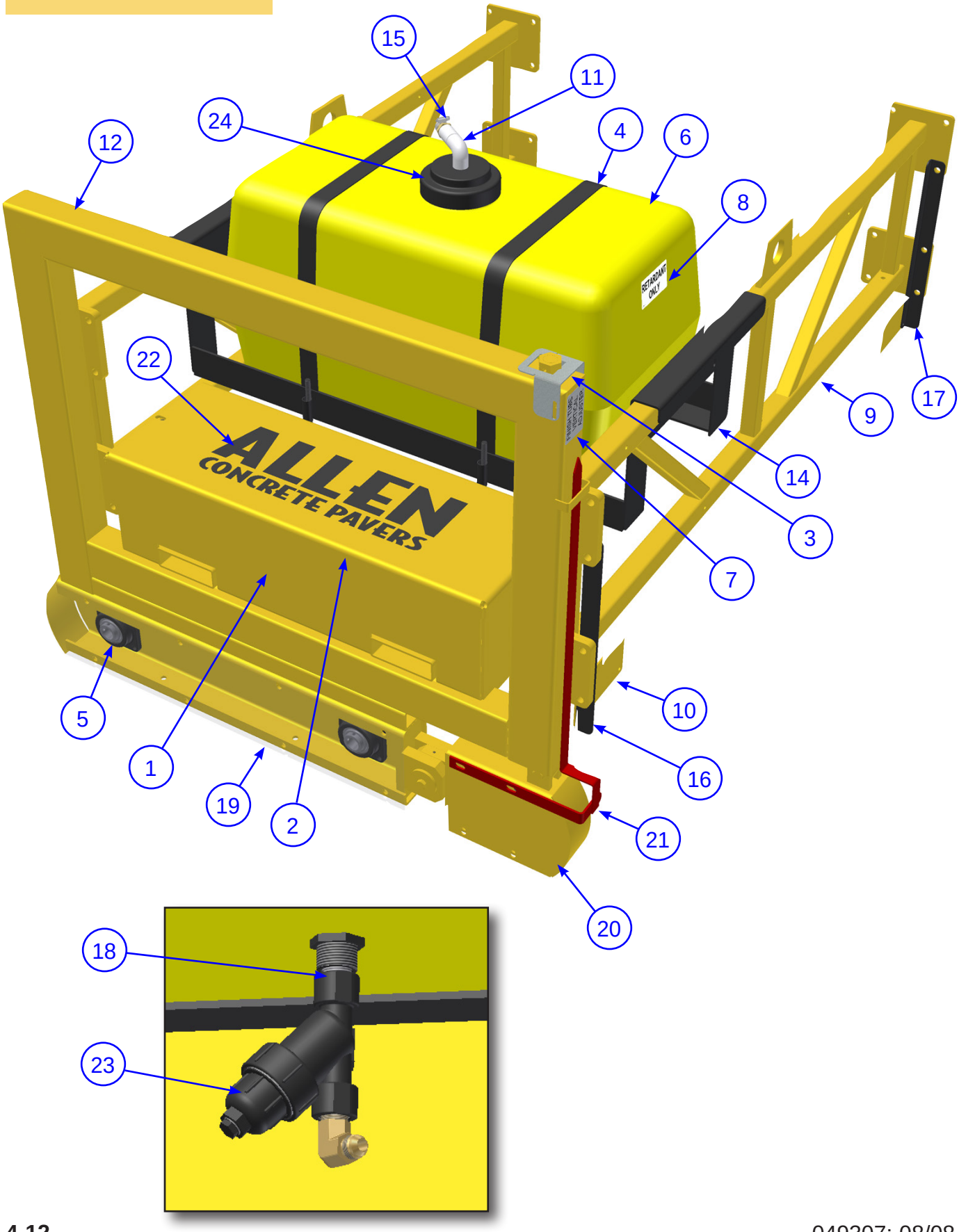
# 4.2 Illustration
# Motor End (cont'd)



# 4.2 Parts List
# Motor End (cont'd)

| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 6 | 028279 | PLATE, MOUNT HYD MOTOR TRTF | 3 |
| 10 | 028292 | SHAFT, HEX TRIPLE RTF | 3 |
| 21 | 029223 | BEARING, MOTOR END 1 3/4 TRTF | 3 |
| 36 | 037560 | O-RING, HEX COUPLER ASSEMBLY | 3 |
| 55 | 040067 | MOTOR, 10" TRTP STND HYDR TRAVEL | 2 |
| 56 | 040068 | MOTOR, FINISH 10" TRTP (STRIKE OFF) | 1 |
| 83 | 049322 | PLATE, SPACER F/ TRTP DRIVE MOTORS | 3 |

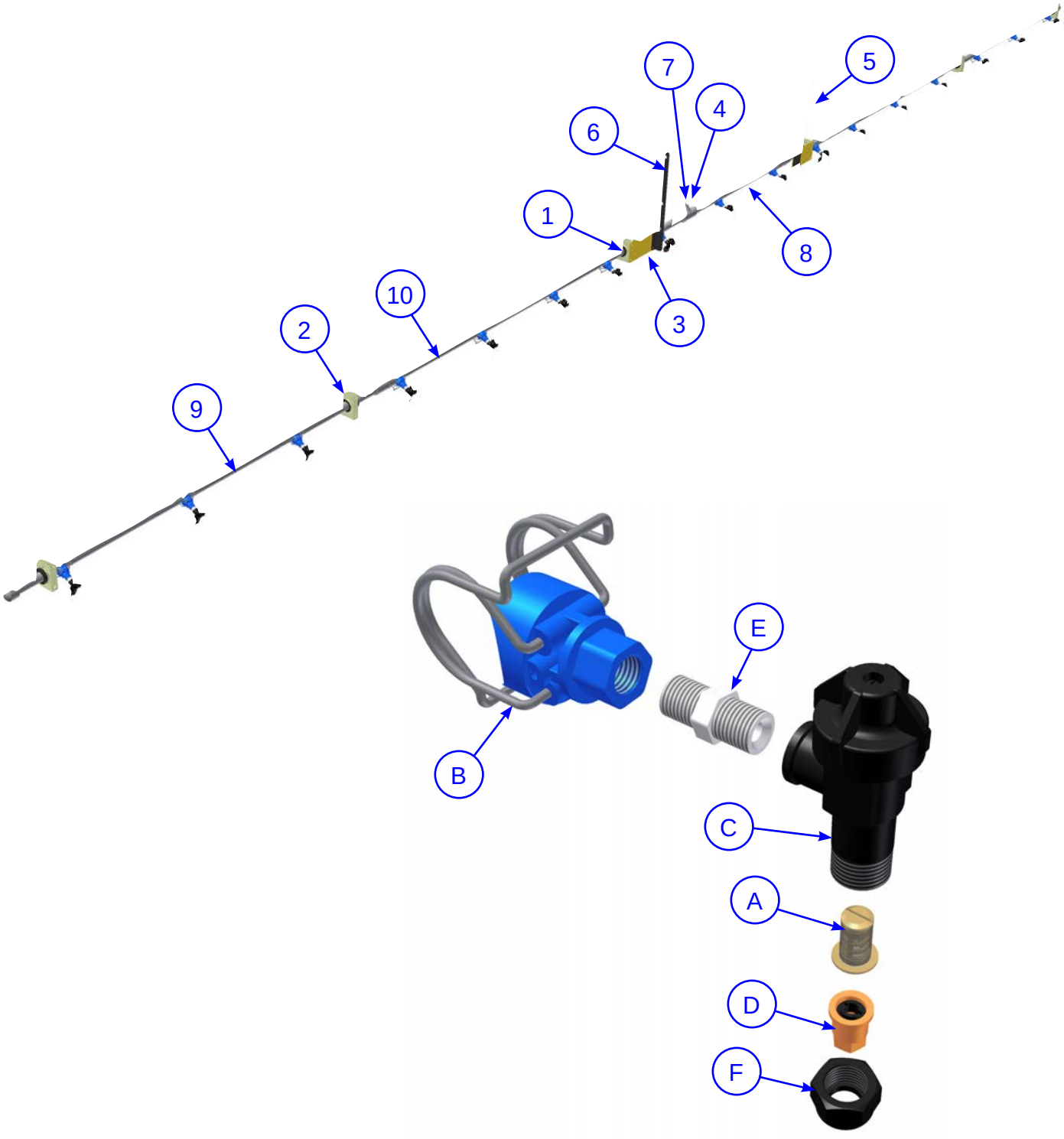
# 4.3 Illustration
# Idle End



# 4.3 Parts List
# Idle End

| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 029085 | BOX, WEIGHT TRTF | 1 |
| 2 | 029088 | COVER, BOX WEIGHT TRTF | 1 |
| 3 | 029136 | LOCK, F/ END HANDLE TRTF | 1 |
| 4 | 029139 | STRAP, BARREL BRACKET TRTF | 2 |
| 5 | 029222 | BEARING IDLE END 1 1/4 TRTF | 3 |
| 6 | 029317 | TANK, WATER 55 GAL TTRF LOOSE 3/4FTG | 1 |
| 7 | 032273 | DECAL, VERTICAL ADJ. TRTP | 1 |
| 8 | 036767 | DECAL, RETARDANT ONLY | 1 |
| 9 | 037577 | FRAME, TRTP 6’ END | 2 |
| 10 | 037647 | END EXTENSION F/SPRAY BAR BRKT | 2 |
| 11 | 038233 | ASSEMBLY, RETURN TUBE F/ TRTP | 1 |
| 12 | 038577 | END HANDLE, 255BD IDLE END | 1 |
|  | 038579 | BASKET, MOD 255BD CENTER WELDT | 1 |
| 14 | 038584 | BRKT, MOD 255BD BARREL | 1 |
| 15 | 038664 | #10 HOSE CLAMP | 1 |
| 16 | 038914L | BRACKET, SPRAY SYSTEM LH - 255 | 1 |
| 17 | 038914R | BRACKET, SPRAY SYSTEM RH - 255 | 1 |
| 18 | 040116 | FTG, 3/4 CLOSE NIPPLE | 1 |
| 19 | 042005 | COVER, BASE FORWARD IDLE END (LARGE) | 1 |
| 20 | 042006 | COVER, BASE FORWARD IDLE END (SMALL) | 1 |
| 21 | 042942 | WELD’T POINTER IDLE END 255 TRTP | 1 |
| 22 | 043200 | DECAL, ACP BLACK 7.5 X 22 | 1 |
| 23 | 048382 | Y-STRAINER, POLY 3/4 NPT F/ TRTP | 1 |
| 24 | 049350 | CAP, 55 GALLON TANK W/ HOLE F/ TRTP | 1 |

# 4.4 Illustration
# Spray Bar Assembly

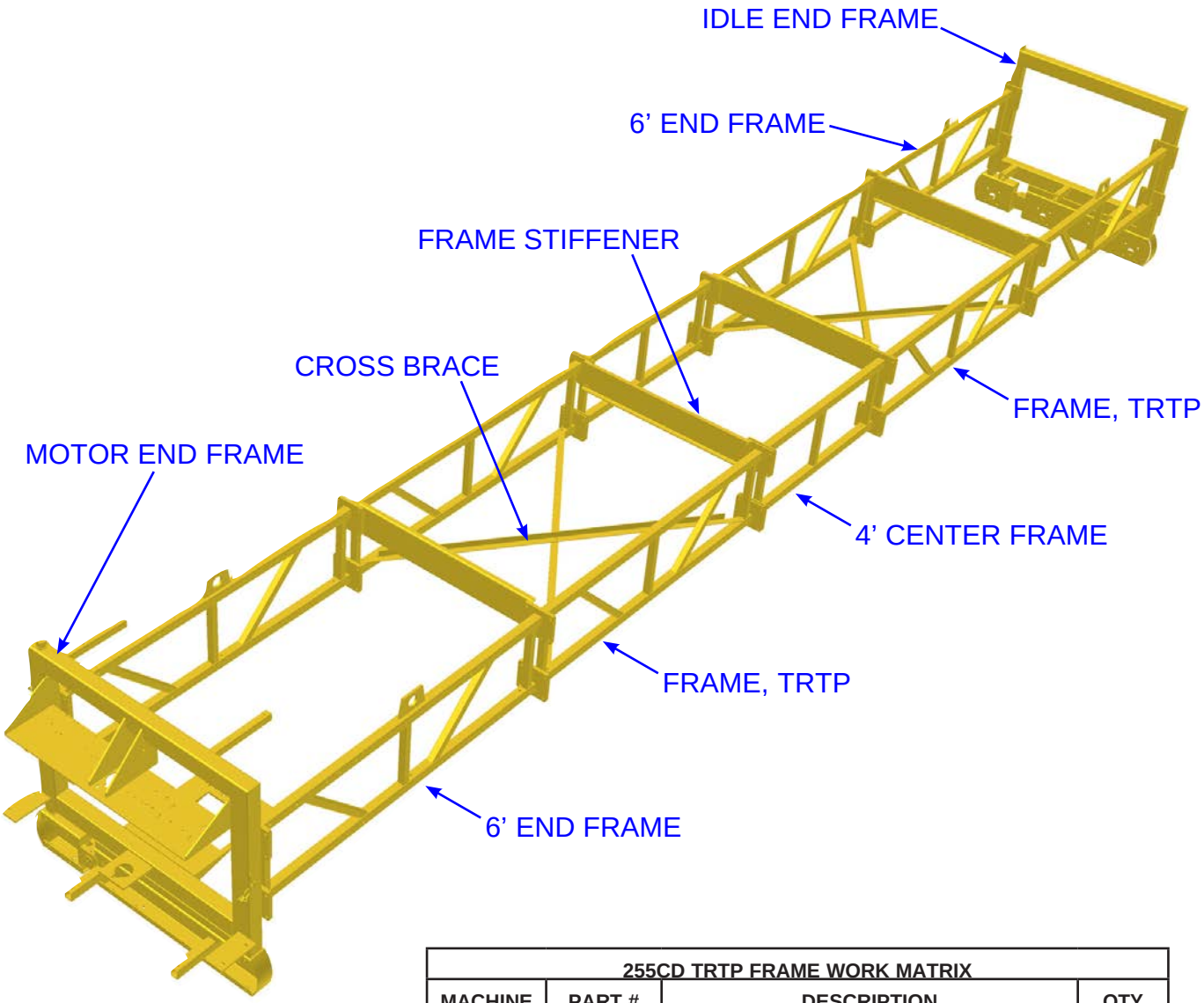


# 4.4 Parts List
# Spray Bar Assembly

| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 027883 | BUSHING, RUBBER SPLIT | 6 |
| 2 | 027884 | CLAMP, LOPRO ENGINE MOUNT | 12 |
| 3 | 037647 | END EXTENSION F/SPRAY BAR BRKT | 2 |
| 4 | 038664 | #10 HOSE CLAMP | 1 |
| 5 | 038914L | BRACKET, SPRAY SYSTEM LH - 255 | 1 |
| 6 | 038914R | BRACKET, SPRAY SYSTEM RH - 255 | 1 |
| 7 | 038971 | FTG, 3/4 MPT x 3/4 HOSE BARB | 1 |
| 8 | 041609 | ASSY, SPRAY BAR (4' CTR) | 1 |
| 9 | 041611 | ASSY, SPRAY BAR (6' END) | 2 |
| 10 | 041623 | ASSY, SPRAY BAR (6' SPACER) | 2 |
| | | | |
| - | 044914 | ASSY, TRTP PLASTIC SPRAY NOZZLE | |
| A | 065244 | STRAINER, 5053100SS | |
| B | 041603 | ADAPTOR CLAMP-ON 1/4 | |
| C | 041604 | VALVE, CHECK BODY | |
| D | 041605 | SPRAY TIP F/TRTP (PLASTIC) | |
| E | 041606 | PLASTIC 1/4 NPT CLOSE NIPPLE | |
| F | 041624 | RETAINER, NYLON SPRAY TIP | |

| 255CD TRTP SPRAY BAR MATRIX | | | |
|---|---|---|---|
| MACHINE | SPRAY BAR # | LENGTH | QTY |
| 12' | 041611 | 6' | 1 |
| | 041663 | 6' | 1 |
| 14' | 041611 | 6' | 2 |
| | 041613 | 1' | 2 |
| 16' | 041611 | 6' | 2 |
| | 041609 | 4' | 1 |
| 18' | 041611 | 6' | 2 |
| | 041609 | 4' | 1 |
| | 041613 | 1' | 2 |
| 20' | 041611 | 6' | 2 |
| | 041609 | 4' | 1 |
| | 041615 | 2' | 2 |
| 22' | 041611 | 6' | 2 |
| | 041609 | 4' | 1 |
| | 041617 | 3' | 2 |
| 24' | 041611 | 6' | 2 |
| | 041609 | 4' | 1 |
| | 041619 | 4' | 2 |
| 26' | 041611 | 6' | 2 |
| | 041609 | 4' | 1 |
| | 041621 | 5' | 2 |
| 28' | 041611 | 6' | 2 |
| | 041609 | 4' | 1 |
| | 041623 | 6' | 2 |
| 30' | 041611 | 6' | 2 |
| | 041609 | 4' | 1 |
| | 041617 | 3' | 2 |
| | 041619 | 4' | 2 |
| 32' | 041611 | 6' | 2 |
| | 041609 | 4' | 1 |
| | 041615 | 2' | 2 |
| | 041623 | 6' | 2 |
| 34' | 041611 | 6' | 2 |
| | 041609 | 4' | 1 |
| | 041619 | 4' | 2 |
| | 041621 | 5' | 2 |

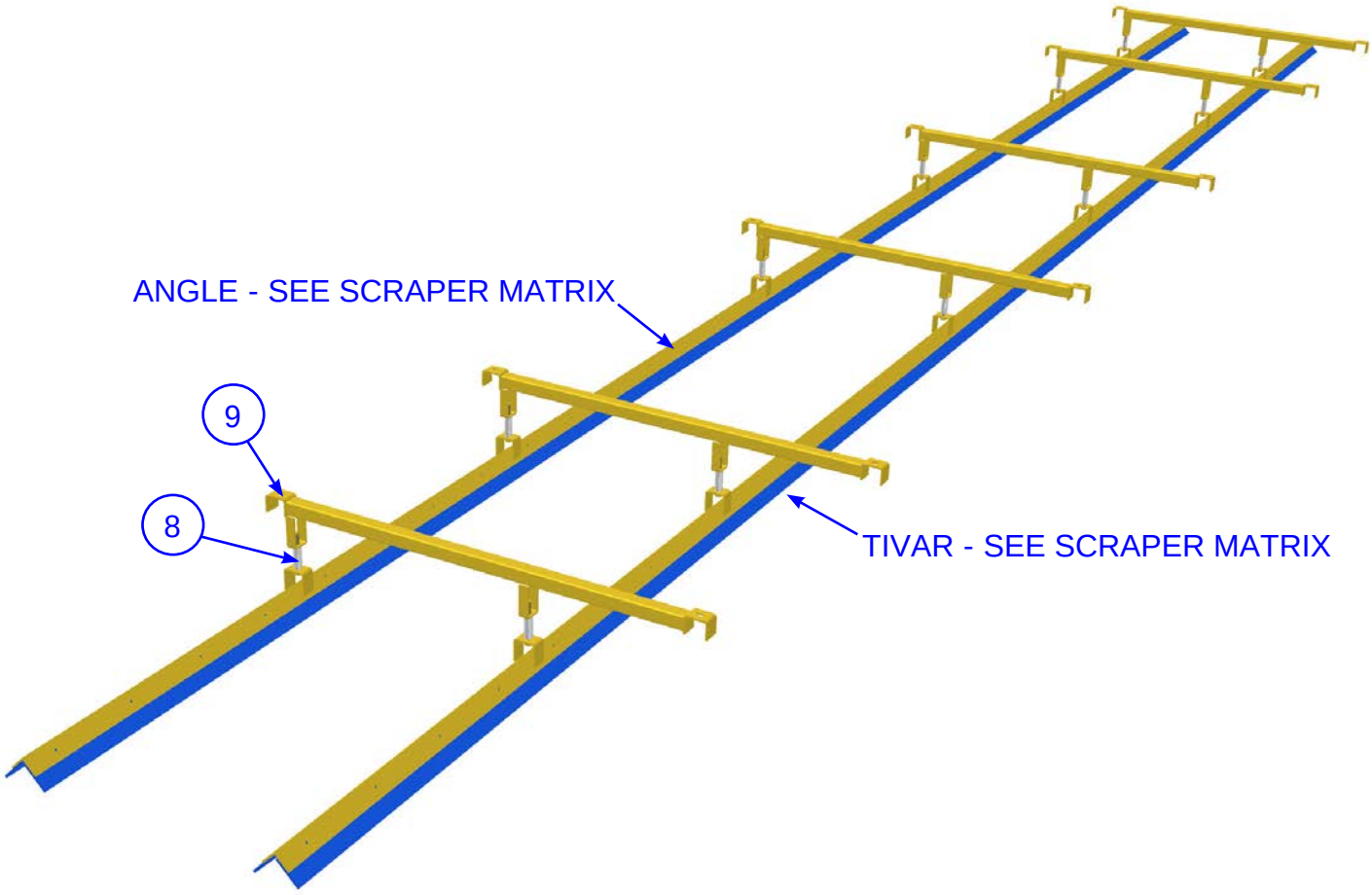
# 4.5 Illustration
# Frame Assembly




| 255CD TRTP FRAME WORK MATRIX | | | |
|---|---|---|---|
| MACHINE | PART # | DESCRIPTION | QTY |
| 12’ | 037577 | FRAME, TRTP 6’ END | 4 |
| | 029205 | BRACKET, STIFFENER TRTF | 1 |
| | | | |
| 14’ | 037577 | FRAME, TRTP 6’ END | 4 |
| | 037569-18 | FRAME, TRTP 1’ SPACER | 4 |
| | 029205 | BRACKET, STIFFENER TRTF | 2 |
| | | | |
| 16’ | 037577 | FRAME, TRTP 6’ END | 4 |
| | 029205 | BRACKET, STIFFENER TRTF | 2 |
| | 037580 | FRAME, TRTP 4’ SPACER | 2 |
| | | | |
| 18’ | 037577 | FRAME, TRTP 6’ END | 4 |
| | 029205 | BRACKET, STIFFENER TRTF | 4 |
| | 037580 | FRAME, TRTP 4’ SPACER | 2 |
| | 037569-18 | FRAME, TRTP 1’ SPACER | 4 |

| 255CD TRTP FRAME WORK MATRIX (cont'd) | | | |
|---|---|---|---|
| MACHINE | PART # | DESCRIPTION | QTY |
| 20' | 037577 | FRAME, TRTP 6' END | 4 |
| | 029205 | BRACKET, STIFFENER TRTF | 4 |
| | 037569-20 | FRAME, TRTP 2' SPACER | 4 |
| | 037580 | FRAME, TRTP 4' SPACER | 2 |
| | | | |
| 22' | 037577 | FRAME, TRTP 6' END | 4 |
| | 029205 | BRACKET, STIFFENER TRTF | 4 |
| | 037569-22 | FRAME, TRTP 3' SPACER | 4 |
| | 037580 | FRAME, TRTP 4' SPACER | 2 |
| | 038957-22 | BRACE, CROSS (3'SPCR) - 255BD TRTP | 4 |
| | | | |
| 24' | 037577 | FRAME, TRTP 6' END | 4 |
| | 029205 | BRACKET, STIFFENER TRTF | 4 |
| | 037580 | FRAME, TRTP 4' SPACER | 6 |
| | 038957-24 | | 4 |
| | | | |
| 26' | 037577 | FRAME, TRTP 6' END | 4 |
| | 029205 | BRACKET, STIFFENER TRTF | 4 |
| | 037569-26 | FRAME, TRTP 5' SPACER | 4 |
| | 037580 | FRAME, TRTP 4' SPACER | 2 |
| | 038957-26 | BRACE, CROSS (5'SPCR) - 255BD TRTP | 4 |
| | | | |
| 28' | 037577 | FRAME, TRTP 6' END | 4 |
| | 029205 | BRACKET, STIFFENER TRTF | 4 |
| | 037569-28 | FRAME, TRTP 6' SPACER | 4 |
| | 037580 | FRAME, TRTP 4' SPACER | 2 |
| | 038957-28 | BRACE, CROSS (6'SPCR) - 255BD TRTP | 4 |
| | | | |
| 30' | 037577 | FRAME, TRTP 6' END | 4 |
| | 029205 | BRACKET, STIFFENER TRTF | 6 |
| | 037569-22 | FRAME, TRTP 3' SPACER | 4 |
| | 037580 | FRAME, TRTP 4' SPACER | 6 |
| | 038957-22 | BRACE, CROSS (3'SPCR) - 255BD TRTP | 4 |
| | 038957-24 | BRACE, CROSS (4'SPCR) - 255BD TRTP | 4 |
| | | | |
| 32' | 037577 | FRAME, TRTP 6' END | 4 |
| | 029205 | BRACKET, STIFFENER TRTF | 6 |
| | 037569-20 | FRAME, TRTP 2' SPACER | 4 |
| | 037569-28 | FRAME, TRTP 6' SPACER | 4 |
| | 037580 | FRAME, TRTP 4' SPACER | 2 |
| | 038957-24 | BRACE, CROSS (4'SPCR) - 255BD TRTP | 8 |
| | | | |
| 34' | 037577 | FRAME, TRTP 6' END | 4 |
| | 029205 | BRACKET, STIFFENER TRTF | 6 |
| | 037569-26 | FRAME, TRTP 5' SPACER | 4 |
| | 037580 | FRAME, TRTP 4' SPACER | 6 |
| | 038957-24 | BRACE, CROSS (4'SPCR) - 255BD TRTP | 4 |
| | 038957-26 | BRACE, CROSS (5'SPCR) - 255BD TRTP | 4 |

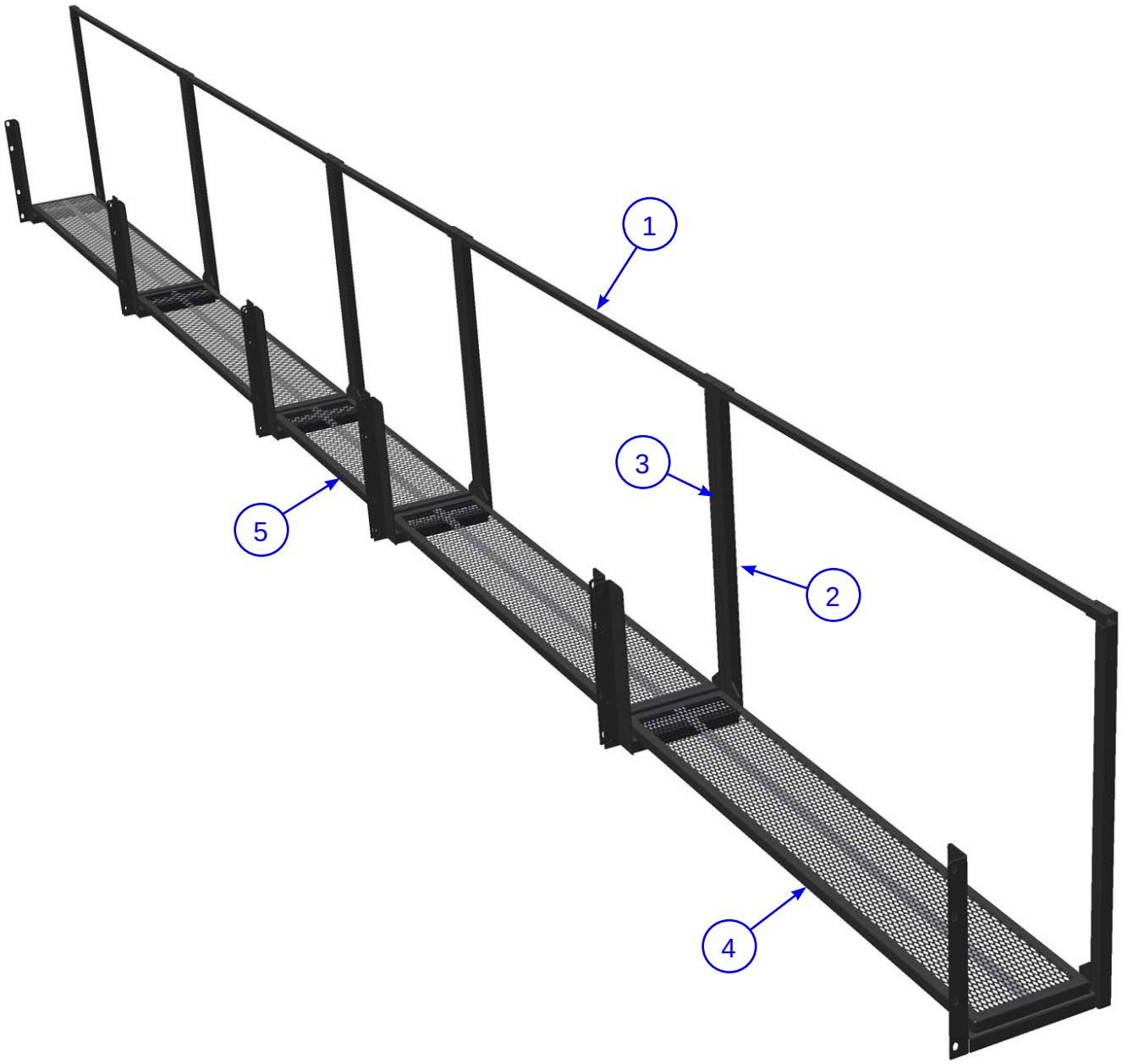
# 4.6 Illustration
# Scraper Assembly



| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 010003 | FSTN, HHCS 1/4-20 X 1 | - |
| 2 | 010075 | FSTN, HHCS 1/2-13 X 3 GR 5 | - |
| 3 | 010081 | FSTN, FW 1/4 | - |
| 4 | 010089 | FSTN, LW 1/4 | - |
| 5 | 010098 | FSTN, NUT HEX 1/4-20 | - |
| 6 | 011238 | FSTN, NUT HEX NYLOK 1/2-13 | - |
| 7 | 011490 | FSTN, FW HARDENED 1/2 | - |
| 8 | 033936 | SPRING, SCRAPER ASSEMBLY TRTP | - |
| 9 | 039906 | FRAME MOUNT ASSY, TRTP SCRAPER | - |

| 255CD TRTP SCRAPER MATRIX | | | | |
|---|---|---|---|---|
| MACHINE | SCRAPER # | QTY | TIVAR # | QTY |
| **12’** | 039909-12 | 2 | 039907-12 | 8 |
| **14’** | 039909-14 | 2 | 039907-14 | 8 |
| **16’** | 039909-16 | 2 | 039907-16 | 8 |
| **18’** | 039909-18 | 2 | 039907-18 | 8 |
| **20’** | 039909-20 | 4 | 039907-20 | 8 |
| **22’** | 039909-22 | 4 | 039907-22 | 16 |
| **24’** | 039909-24 | 2 | 039907-24 | 16 |
| **26’** | 039909-26 | 4 | 039907-26 | 8 |
| | | | 039907-26B | 8 |
| **28’** | 039909-28 | 4 | 039907-28 | 16 |
| **30’** | 039909-30 | 4 | 039907-30 | 12 |
| **32’** | 039909-32 | 4 | 039907-32 | 16 |
| **34’** | 039909-34 | 4 | 039907-34 | 16 |

# 4.7 Illustration
# Front Walkway Assembly



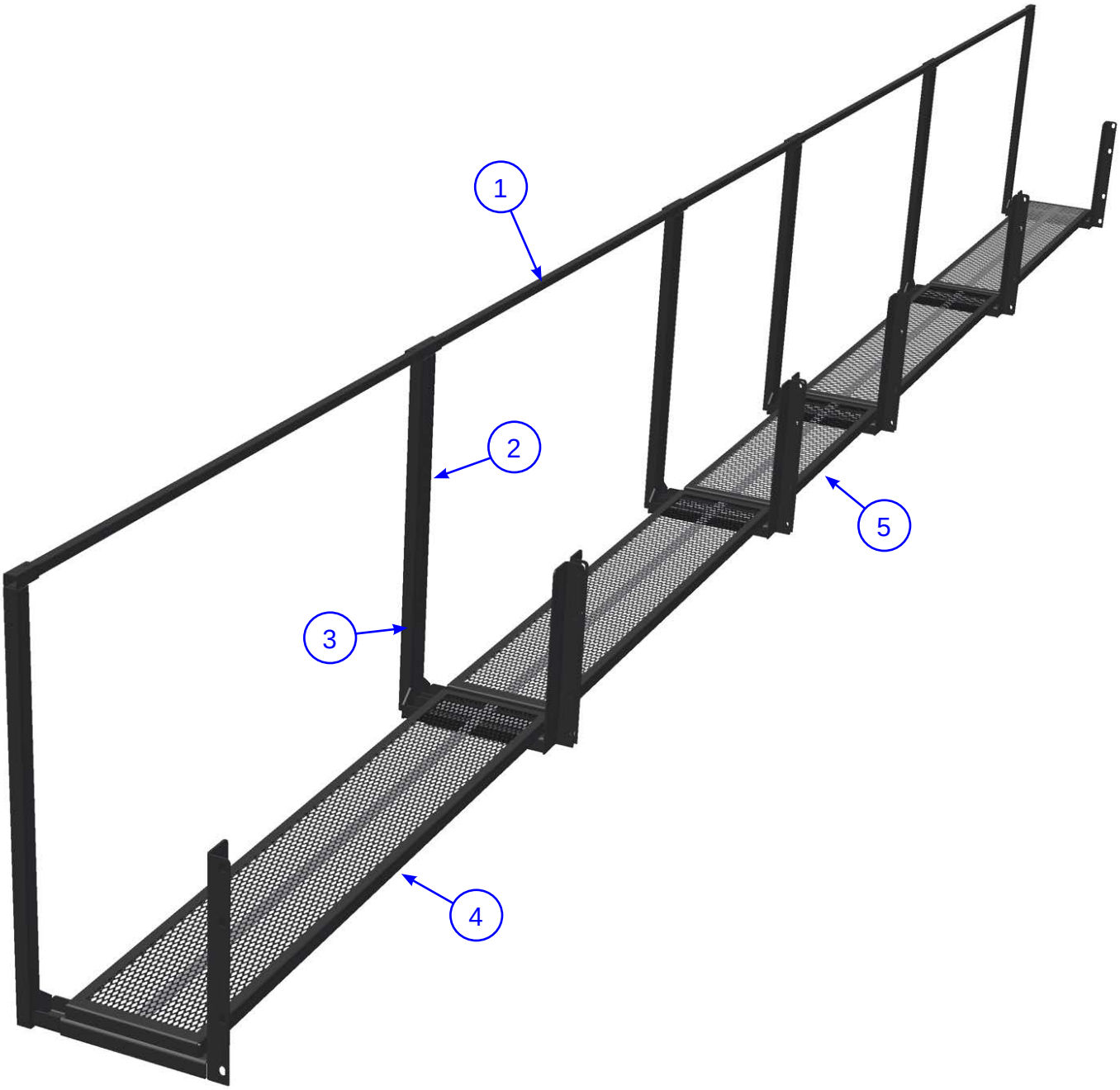
# 4.7 Parts List
# Front Walkway Assembly

| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 033585-1 | TUBE, RAIL TOP (1'SPCR) | - |
| | 033585-2 | TUBE, RAIL TOP (2'SPCR) | - |
| | 033585-3 | TUBE, RAIL TOP (3'SPCR) | - |
| | 033585-4 | TUBE, RAIL TOP (4'SPCR) | - |
| | 033585-5 | TUBE, RAIL TOP (5'SPCR) | - |
| | 033587 | TUBE, TOP RAIL (6' END) | 2 |
| 2 | 037594L | WELD'T FRONT WALKWAY BRKT. LH | - |
| 3 | 037594R | WELD'T FRONT WALKWAY BRKT. RH | - |
| 4 | 038812 | WELD'T, TRTP END WALKWAY | 2 |
| 5 | 038816 | WELD'T, TRTP 4' WALKWAY | - |
| | 038840 | WELD'T, TRTP 6' WALKWAY | - |
| | 038824 | WELD'T, TRTP 2' WALKWAY | - |
| | 038820 | WELD'T, TRTP 1' WALKWAY | - |
| | 038828 | WELD'T, TRTP 3' WALKWAY | - |
| | 038836 | WELD'T, TRTP 5' WALKWAY | - |

## Front Walkway Assemblies

| PART # | DESCRIPTION |
|---|---|
| 037599-12 | WALKWAY, FRONT 12' 200BD/255BD |
| 037599-14 | WALKWAY, FRONT 14' 200BD/255BD |
| 037599-16 | WALKWAY, FRONT 16' 200BD/255BD |
| 037599-18 | WALKWAY, FRONT 18' 200BD/255BD |
| 037599-20 | WALKWAY, FRONT 20' 200BD/255BD |
| 037599-22 | WALKWAY, FRONT 22' 200BD/255BD |
| 037599-24 | WALKWAY, FRONT 24' 200BD/255BD |
| 037599-26 | WALKWAY, FRONT 26' 200BD/255BD |
| 037599-28 | WALKWAY, FRONT 28' 200BD/255BD |
| 037599-30 | WALKWAY, FRONT 30' 200BD/255BD |
| 037599-32 | WALKWAY, FRONT 32' 200BD/255BD |
| 037599-34 | WALKWAY, FRONT 34' 200BD/255BD |

# 4.8 Illustration
# Rear Walkway Assembly



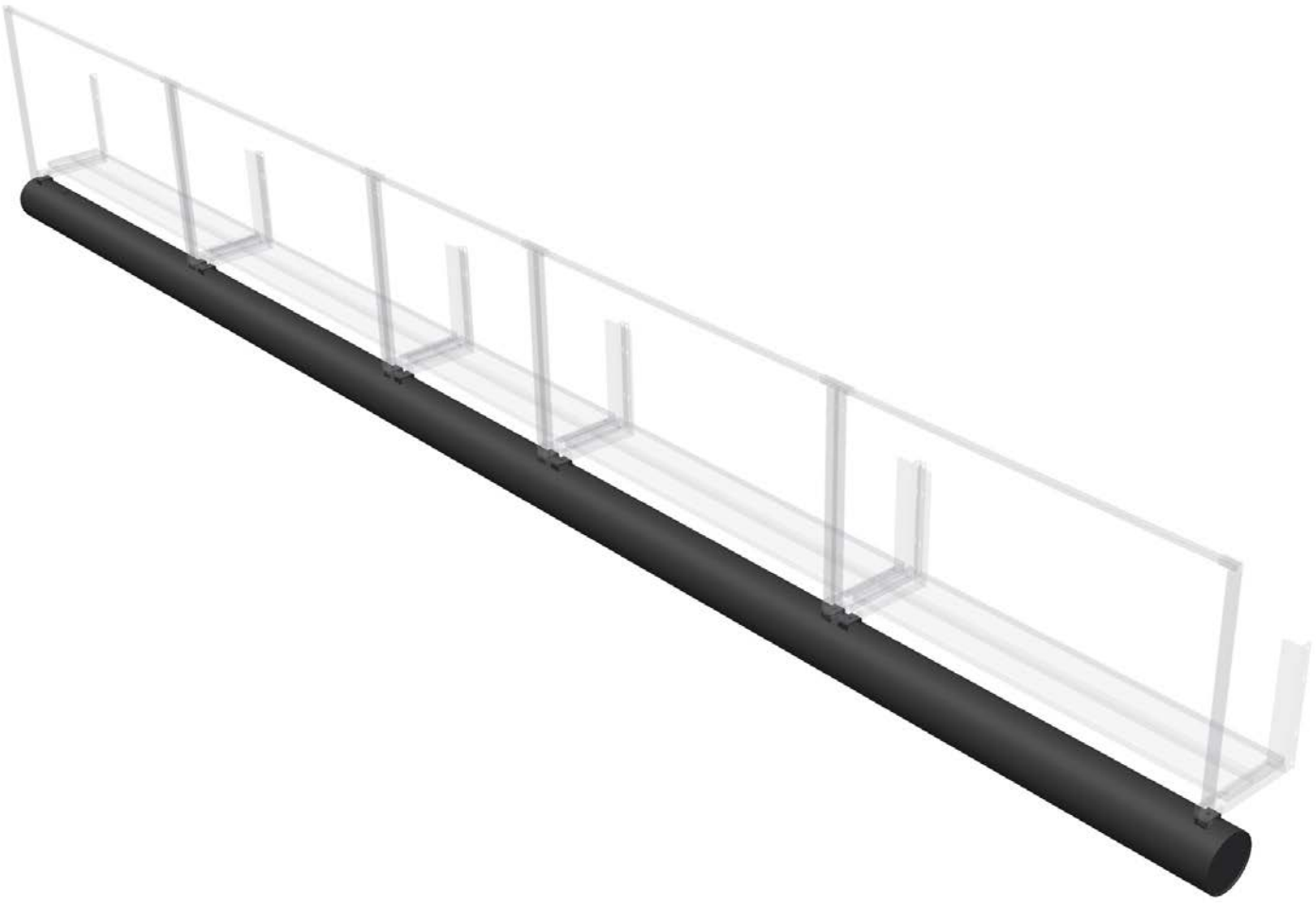
# 4.8 Parts List
# Rear Walkway Assembly

| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 033585-1 | TUBE, RAIL TOP (1'SPCR) | - |
| | 033585-2 | TUBE, RAIL TOP (2'SPCR) | - |
| | 033585-3 | TUBE, RAIL TOP (3'SPCR) | - |
| | 033585-4 | TUBE, RAIL TOP (4'SPCR) | - |
| | 033585-5 | TUBE, RAIL TOP (5'SPCR) | - |
| | 033587 | TUBE, TOP RAIL (6' END) | 2 |
| 2 | 037601L | WELD'T REAR WALKWAY LEFT | - |
| 3 | 037601R | WELD'T REAR WALKWAY RIGHT | - |
| 4 | 038812 | WELD'T, TRTP END WALKWAY | 2 |
| 5 | 038816 | WELD'T, TRTP 4' WALKWAY | - |
| | 038840 | WELD'T, TRTP 6' WALKWAY | - |
| | 038824 | WELD'T, TRTP 2' WALKWAY | - |
| | 038820 | WELD'T, TRTP 1' WALKWAY | - |
| | 038828 | WELD'T, TRTP 3' WALKWAY | - |
| | 038836 | WELD'T, TRTP 5' WALKWAY | - |

## Rear Walkway Assemblies

| PART # | DESCRIPTION |
|---|---|
| 037597-12 | WALKWAY, REAR 12' 200BD/255BD |
| 037597-14 | WALKWAY, REAR 14' 200BD/255BD |
| 037597-16 | WALKWAY, REAR 16' 200BD/255BD |
| 037597-18 | WALKWAY, REAR 18' 200BD/255BD |
| 037597-20 | WALKWAY, REAR 20' 200BD/255BD |
| 037597-22 | WALKWAY, REAR 22' 200BD/255BD |
| 037597-24 | WALKWAY, REAR 24' 200BD/255BD |
| 037597-26 | WALKWAY, REAR 26' 200BD/255BD |
| 037597-28 | WALKWAY, REAR 28' 200BD/255BD |
| 037597-30 | WALKWAY, REAR 30' 200BD/255BD |
| 037597-32 | WALKWAY, REAR 32' 200BD/255BD |
| 037597-34 | WALKWAY, REAR 34' 200BD/255BD |

# 4.9 Illustration
# Ballast Tube Assembly



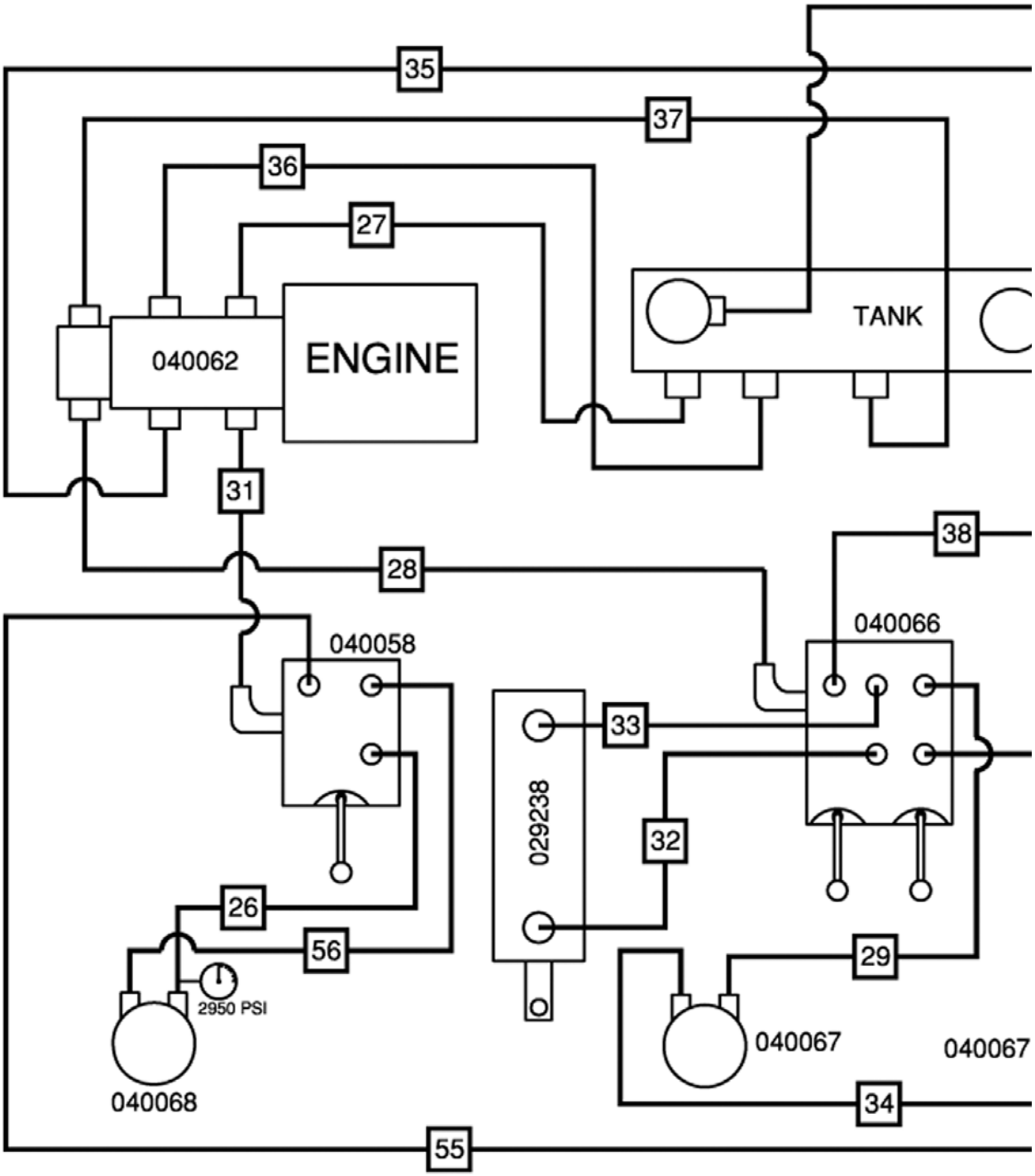
## Ballast Tubes

| PART # | DESCRIPTION |
|---|---|
| 034003-12 | BALLAST, WATER TUBE 12’ |
| 034003-14 | BALLAST, WATER TUBE 14’ |
| 034003-16 | BALLAST, WATER TUBE 16’ |
| 034003-18 | BALLAST, WATER TUBE 18’ |
| 034003-20 | BALLAST, WATER TUBE 20’ |
| 034003-22 | BALLAST, WATER TUBE 22’ |
| 034003-24 | BALLAST, WATER TUBE 24’ |
| 034003-26 | BALLAST, WATER TUBE 26’ |
| 034003-28 | BALLAST, WATER TUBE 28’ |
| 034003-30 | BALLAST, WATER TUBE 30’ |
| 034003-32 | BALLAST, WATER TUBE 32’ |
| 034003-34 | BALLAST, WATER TUBE 34’ |

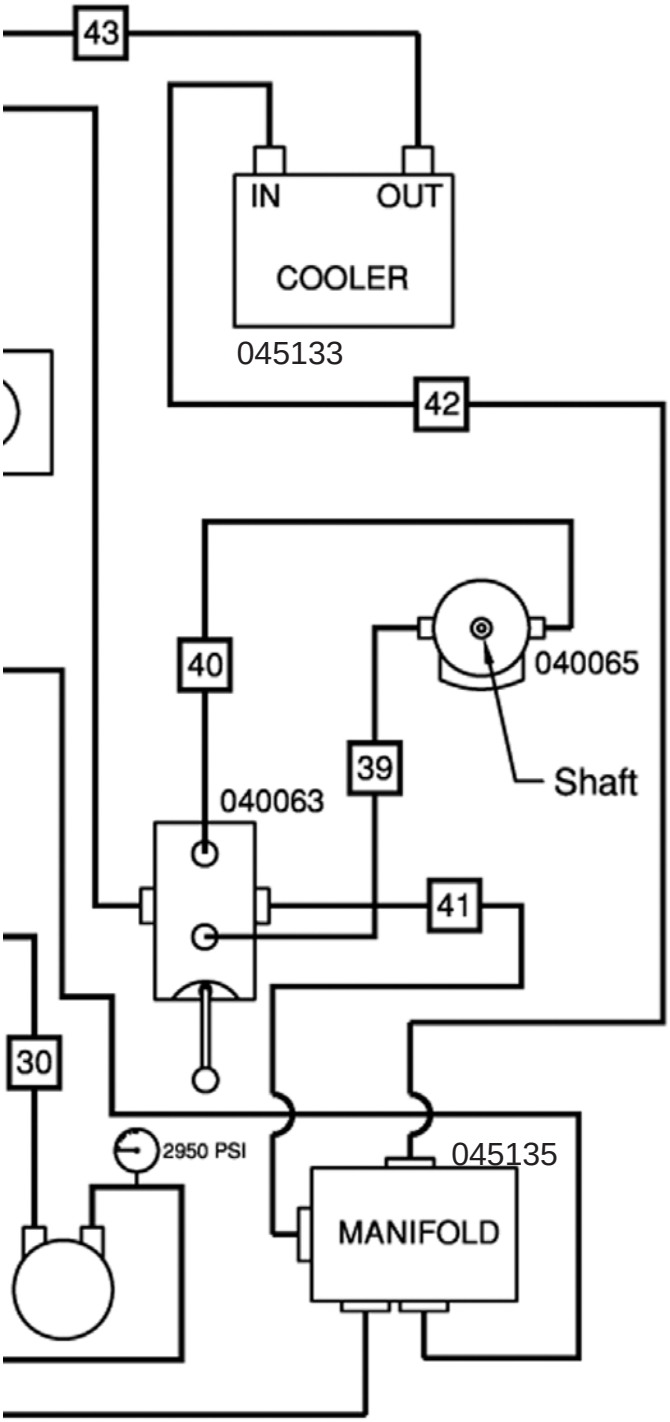
**NOTE**

A rear walkway must be installed on the machine prior to installing a ballast tube.

# 4.10 Illustration
# Hydraulic Schematic

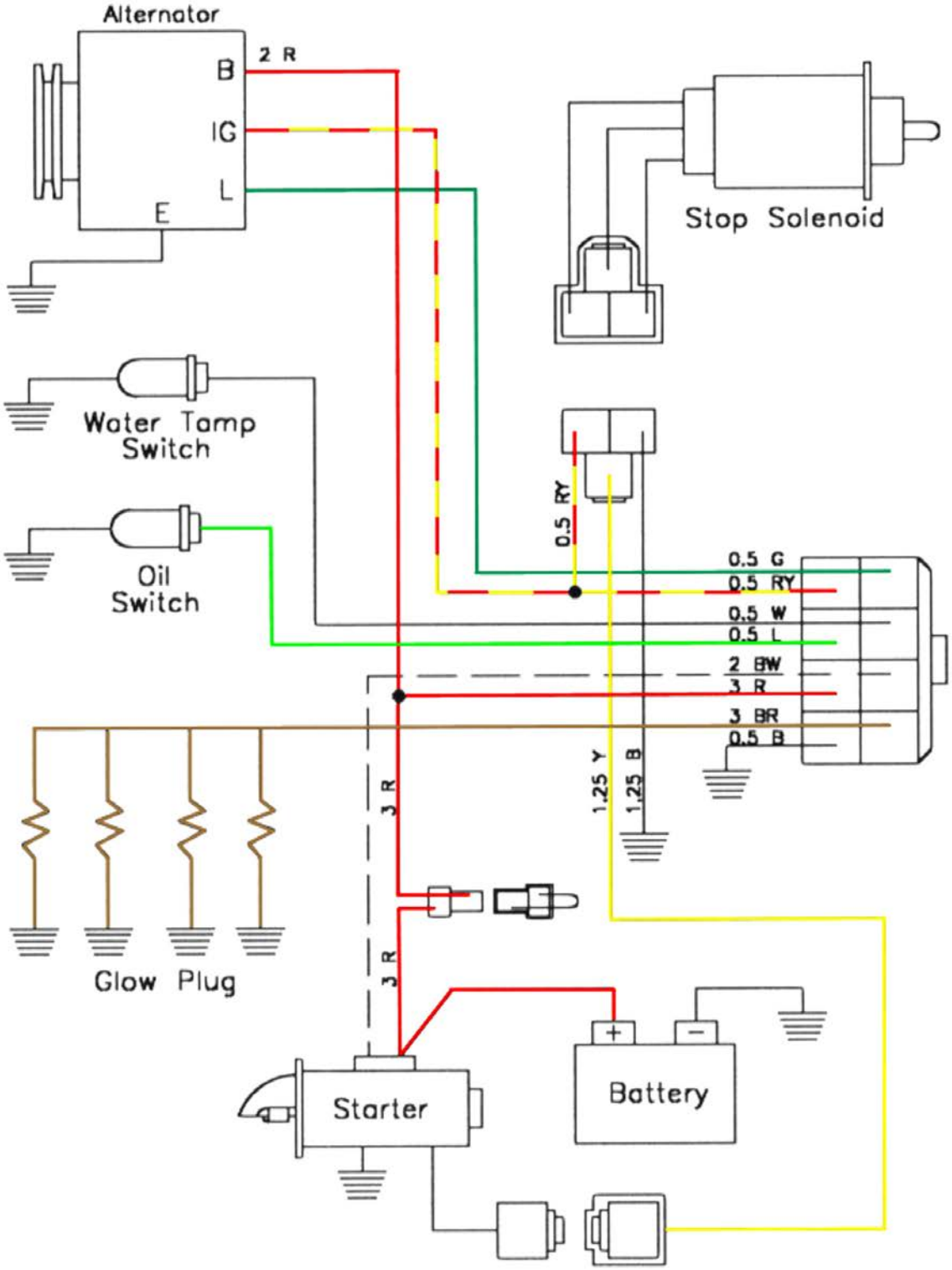


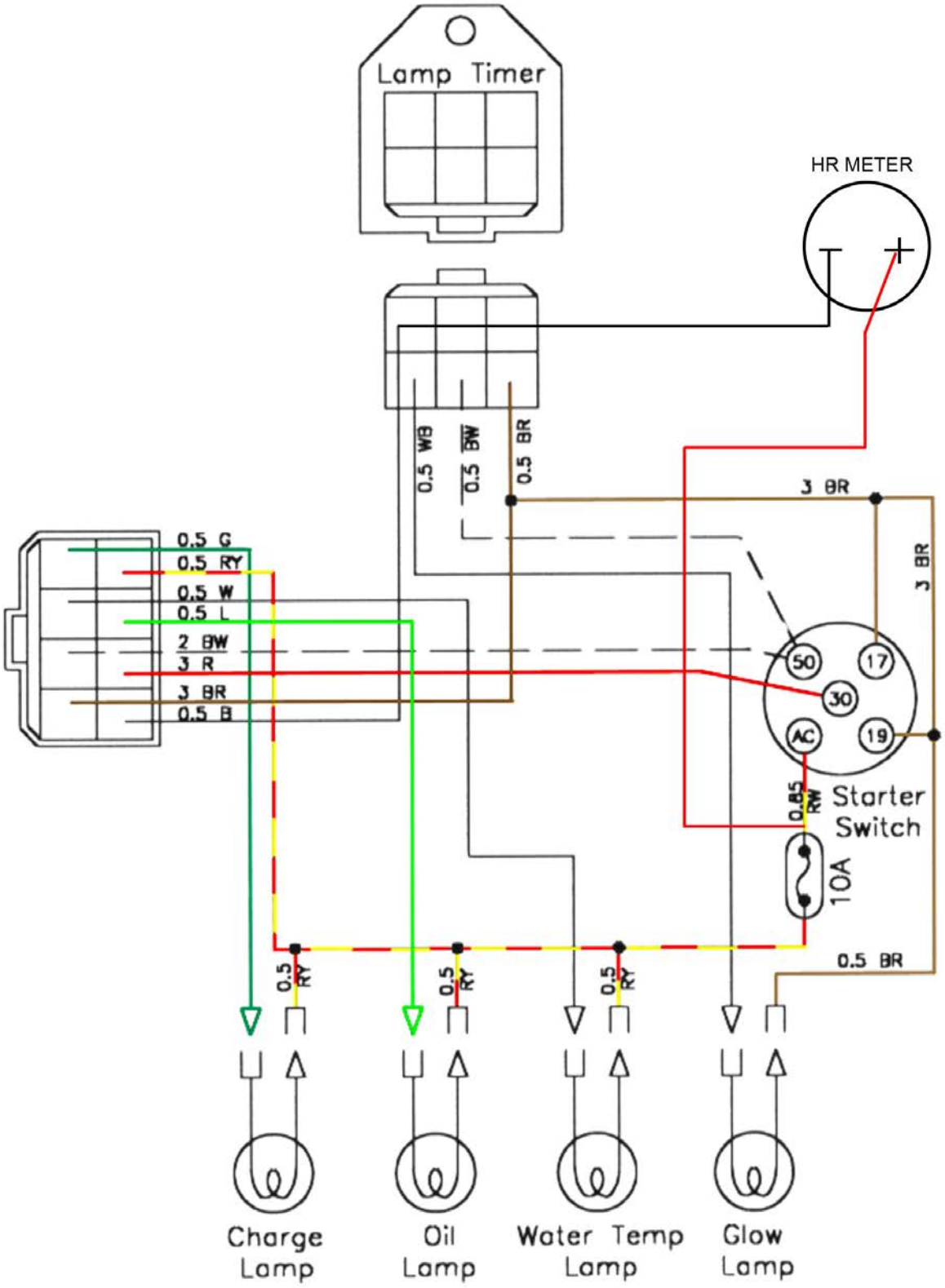
# 4.10 Illustration
# Hydraulic Schematic



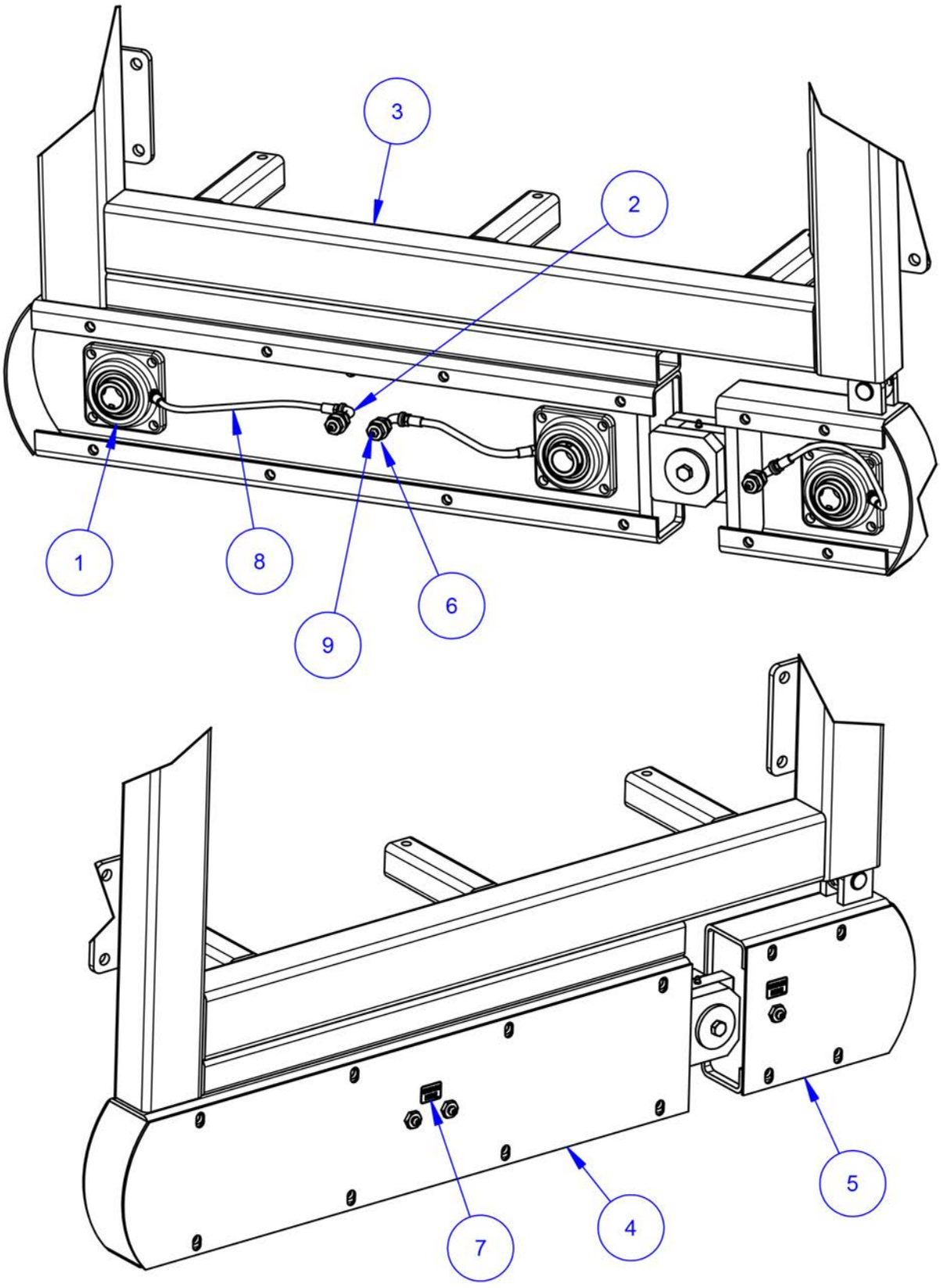

| PART # | DESCRIPTION | QTY |
|---|---|---|
| 040086 | HOSE ASSEMBLY, 10” TRTP (#26) | 1 |
| 040087 | HOSE ASSEMBLY, 10” TRTP (#27) | 1 |
| 040088 | HOSE ASSEMBLY, 10” TRTP (#28) | 1 |
| 040089 | HOSE ASSEMBLY, 10” TRTP (#29) | 1 |
| 040090 | HOSE ASSEMBLY, 10” TRTP (#30) | 1 |
| 040091 | HOSE ASSEMBLY, 10” TRTP (#31) | 1 |
| 040092 | HOSE ASSEMBLY, 10” TRTP (#32) | 1 |
| 040093 | HOSE ASSEMBLY, 10” TRTP (#33) | 1 |
| 040094 | HOSE ASSEMBLY, 10” TRTP (#34) | 1 |
| 040095 | HOSE ASSEMBLY, 10” TRTP (#35) | 1 |
| 040096 | HOSE ASSEMBLY, 10” TRTP (#36) | 1 |
| 040097 | HOSE ASSEMBLY, 10” TRTP (#37) | 1 |
| 040098 | HOSE ASSEMBLY, 10” TRTP (#38) | 1 |
| 040099 | HOSE ASSEMBLY, 10” TRTP (#39) | 1 |
| 040100 | HOSE ASSEMBLY, 10” TRTP (#40) | 1 |
| 040101 | HOSE ASSEMBLY, 10” TRTP (#41) | 1 |
| 040102 | HOSE ASSEMBLY, 10” TRTP (#55) | 1 |
| 040103 | HOSE ASSEMBLY, 10” TRTP (#56) | 1 |
| 047093 | HOSE ASSEMBLY, 10” TRTP (#42) | 1 |
| 047094 | HOSE ASSEMBLY, 10” TRTP (#43) | 1 |

# 4.11 Illustration
# Wiring Schematic




Lamp Timer
HR METER
0.5 WB
0.5 BW
0.5 BR
3 BR
3 BR
0.5 G
0.5 RY
0.5 W
0.5 L
2 BW
3 R
3 BR
0.5 B
50
17
30
AC
19
0.85 RW
Starter Switch
10A
0.5 BR
0.5 RY
0.5 RY
0.5 RY
Charge Lamp
Oil Lamp
Water Temp Lamp
Glow Lamp

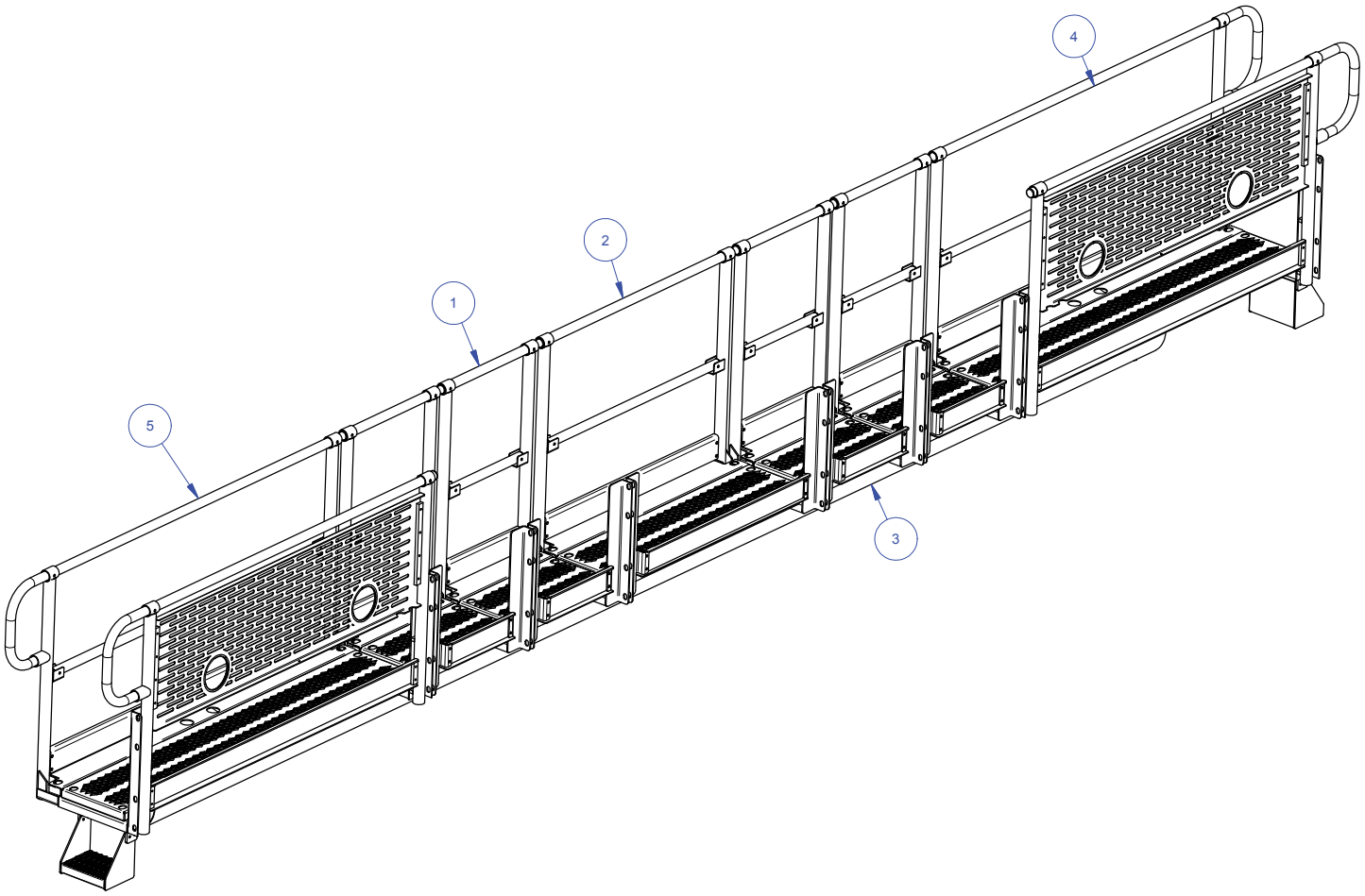
# 4.12 Illustration
# Idle End Grease Fittings (Oct 2014)



# 4.12 Parts List
# Idle End Grease Fittings (Oct 2014)

| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 029222 | IDLE END BEARING | 3 |
| 2 | 034389 | ELBOW, 1/8-27 NPT 90° GALV ST | 3 |
| 3 | 038577 | END HANDLE, 255BD IDLE END | 1 |
| 4 | 042005 | COVER, BASE FORWARD FOR IDLE END HANDLE 255 TRTF | 1 |
| 5 | 042006 | COVER, BASE FORWARD IDLE END (SMALL) 255 TRTF | 1 |
| 6 | 062423 | FTG, BULK HEAD 1/8” NPT X 5/8-18 OD THREADS BRASS | 3 |
| 7 | 062921 | DECAL, GREASE HERE | 2 |
| 8 | 063085 | HOSE,18” LONG FLEXIBLE GREASE W/ 1/8 | 3 |
| 9 | 201163 | FITTING, 1/8-27 PTF STR GREASE | 3 |

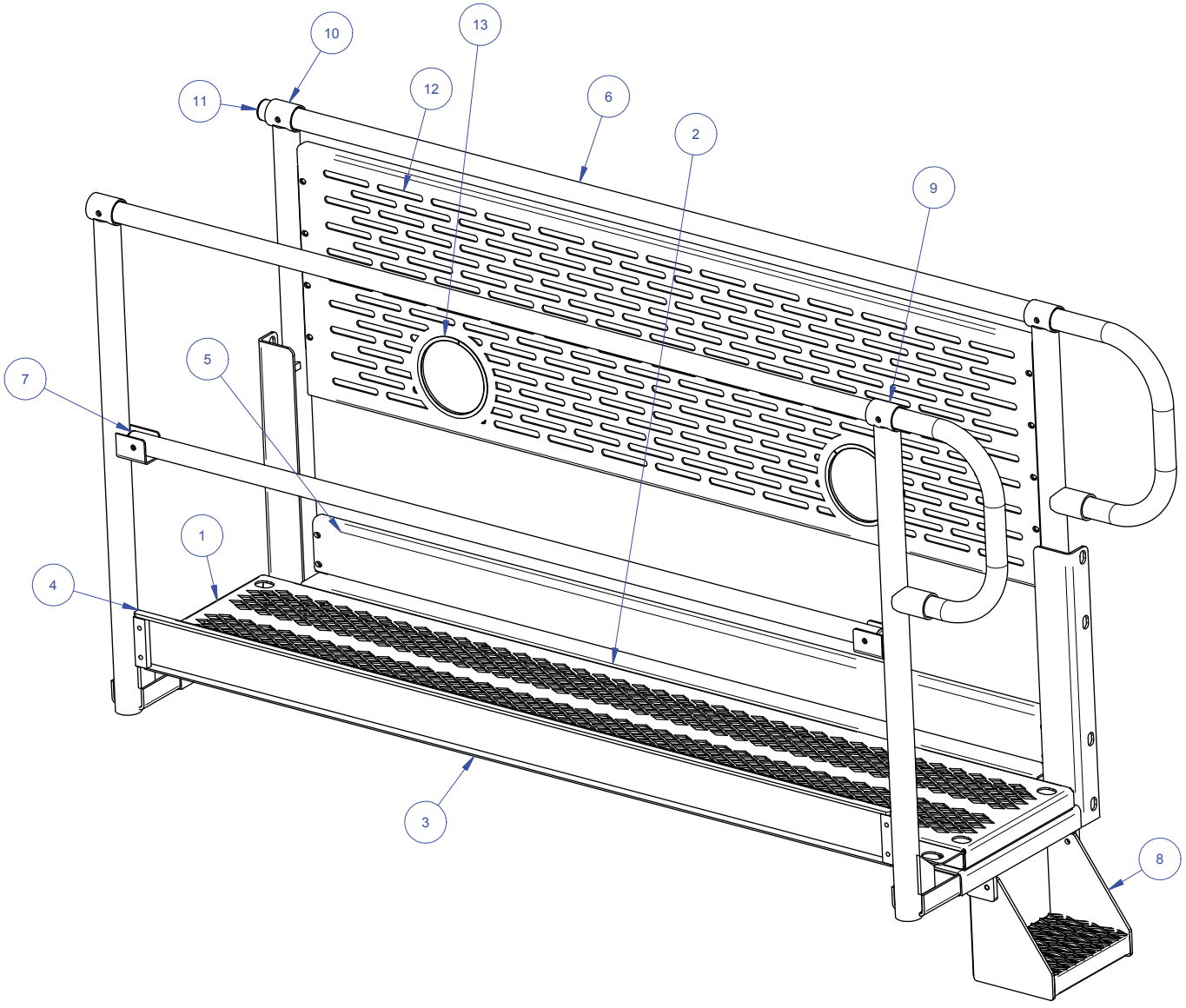
# 24’ Access Platform Assembly Illustration



# 24’ Access Platform Assembly Parts List

| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 2’ | 2’ ACCESS PLATFORM Assembly | 4 |
| 2 | 4’ | 4’ ACCESS PLATFORM Assembly | 1 |
| 3 | 2726-025 | BALLAST TUBE, 20’ | 1 |
| 4 | LH | End ACCESS PLATFORM LH | 1 |
| 5 | RH | End ACCESS PLATFORM RH | 1 |

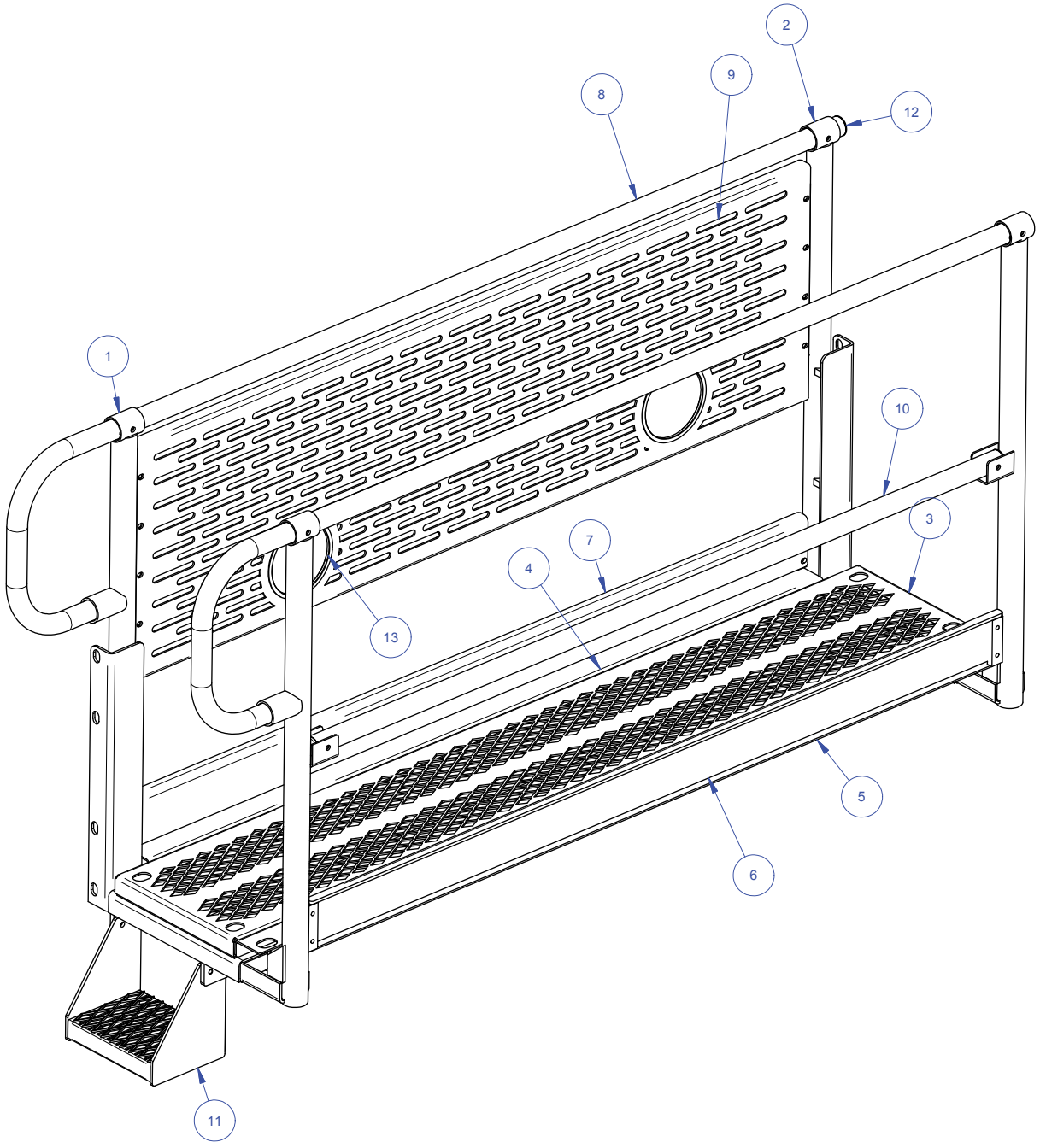
# RH End Access Platform Assembly Illustration



# RH End Access Platform Assembly Parts List

| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 067028 | WELD'T, TRTP END ACCESS PLATFORM (AUS) | 1 |
| 2 | 067030 | EXTENSION, INSIDE END ACCESS PLATFORM (AUS) | 1 |
| 3 | 067031 | EXTENSION WELDMENT, OUTSIDE END ACCESS PLATFORM (AUS) | 1 |
| 4 | 067034 | KICK PLATE, OUTSIDE END ACCESS PLATFORM (AUS) | 1 |
| 5 | 067035 | KICK PLATE, INSIDE END ACCESS PLATFORM (AUS) | 1 |
| 6 | 067037 | TOP RAIL TUBE F/ END ACCESS PLATFORM (AUS) | 2 |
| 7 | 067040 | TUBE, MIDDLE RAIL F/ END ACCESS PLATFORM (AUS) | 1 |
| 8 | 067044 | END STEP WELDMENT (AUS) | 1 |
| 9 | 067045 | RH OUTSIDE END ACCESS PLATFORM WELDMENT (AUS) | 1 |
| 10 | 067046 | RH INSIDE END ACCESS PLATFORM WELDMENT (AUS) | 1 |
| 11 | 067057 | PLUG, 9283K34 F/ RAIL TUBES (AUS) | 6 |
| 12 | 067143 | GUARD, LH ENGINE F/ END ACCESS PLATFORM (AUS) | 1 |
| 13 | 067171 | RUBBER U-CHANNEL PUSH ON TRIM | 2 |

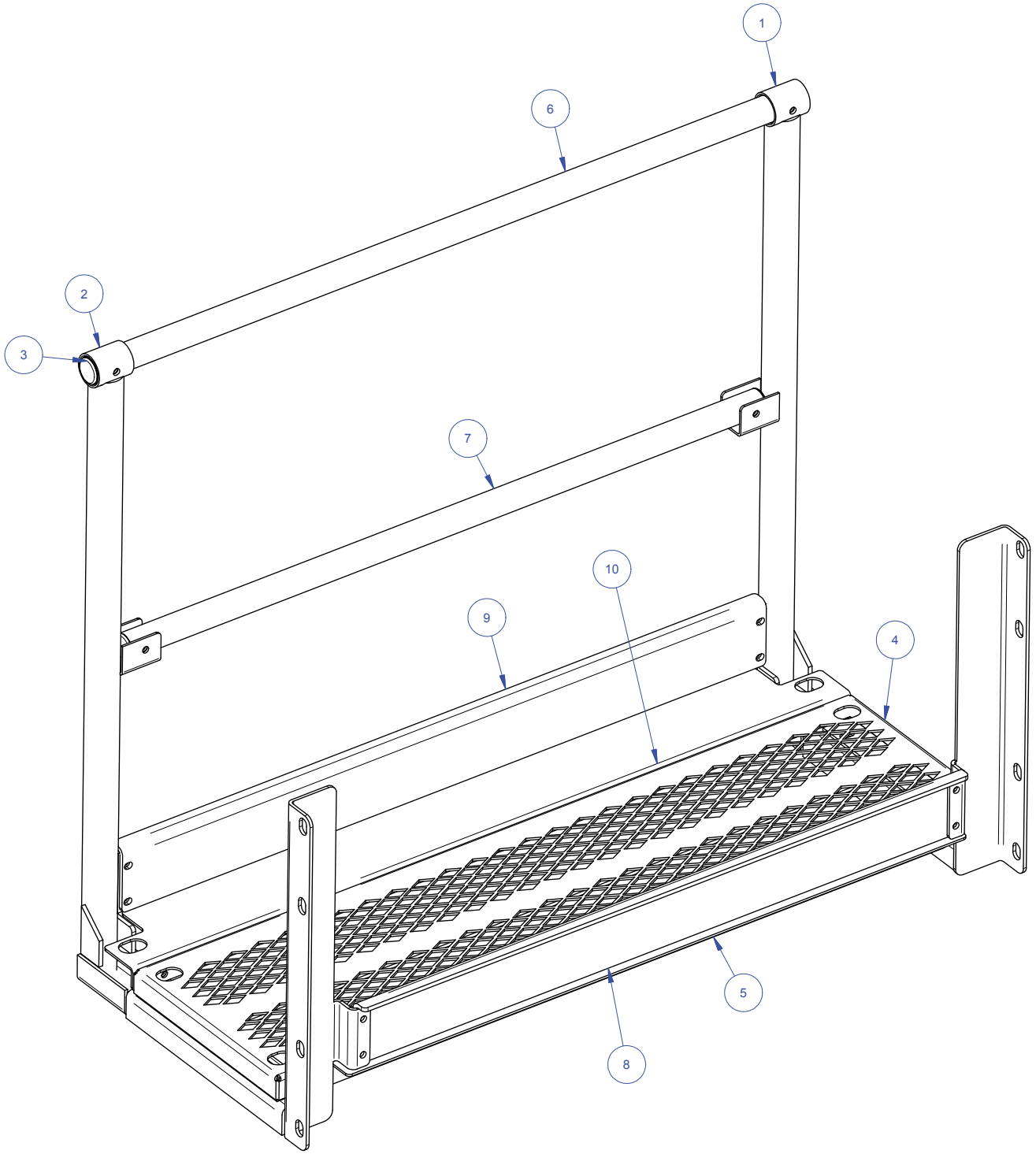
# LH End Access Platform Assembly Illustration



# LH End Access Platform Assembly Parts List

| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 067018 | LH OUTSIDE END ACCESS PLATFORM WELDMENT (AUS) | 1 |
| 2 | 067027 | LH INSIDE END ACCESS PLATFORM WELDMENT (AUS) | 1 |
| 3 | 067028 | WELD'T, TRTP END ACCESS PLATFORM (AUS) | 1 |
| 4 | 067030 | EXTENSION, INSIDE END ACCESS PLATFORM (AUS) | 1 |
| 5 | 067031 | EXTENSION WELDMENT, OUTSIDE END ACCESS PLATFORM (AUS) | 1 |
| 6 | 067034 | KICK PLATE, OUTSIDE END ACCESS PLATFORM (AUS) | 1 |
| 7 | 067035 | KICK PLATE, INSIDE END ACCESS PLATFORM (AUS) | 1 |
| 8 | 067037 | TOP RAIL TUBE F/ END ACCESS PLATFORM (AUS) | 2 |
| 9 | 067039 | GUARD, RH ENGINE F/ END ACCESS PLATFORM (AUS) | 1 |
| 10 | 067040 | TUBE, MIDDLE RAIL F/ END ACCESS PLATFORM (AUS) | 1 |
| 11 | 067044 | END STEP WELDMENT (AUS) | 1 |
| 12 | 067057 | PLUG, 9283K34 F/ RAIL TUBES (AUS) | 6 |
| 13 | 067171 | RUBBER U-CHANNEL PUSH ON TRIM | 2 |

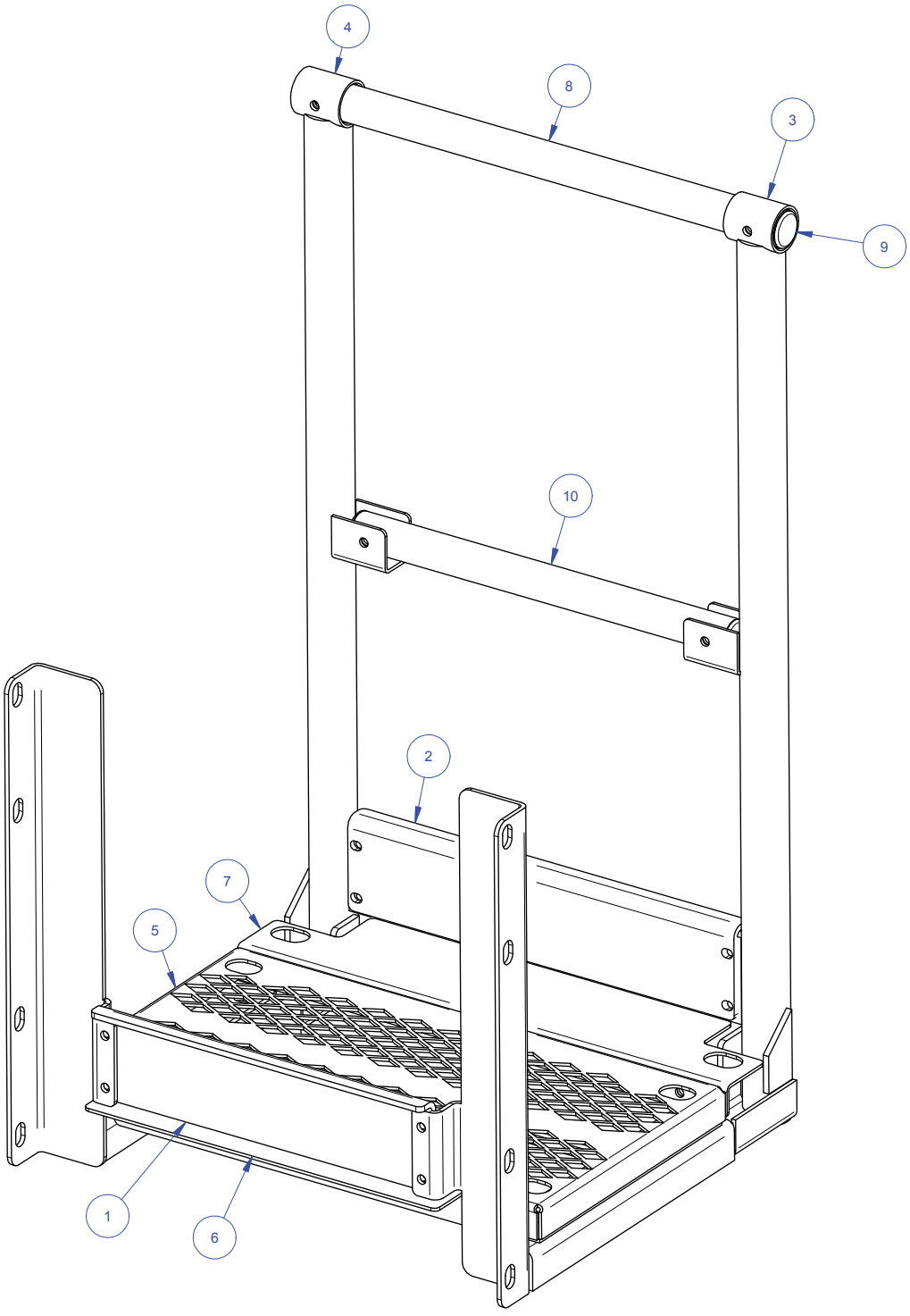
# 4’ Access Platform Assembly Illustration



# 4’ Access Platform Assembly Parts List

| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 067048 | WELD’T REAR ACCESS PLATFORM RIGHT | 1 |
| 2 | 067050 | WELD’T REAR ACCESS PLATFORM LEFT | 1 |
| 3 | 067057 | PLUG, 9283K34 F/ RAIL TUBES (AUS) | 4 |
| 4 | 067060 | DECK WELDMENT, 4’ ACCESS PLATFORM (AUS) | 1 |
| 5 | 067061 | EXTENSION, INSIDE 4’ ACCESS PLATFORM (AUS) | 1 |
| 6 | 067063 | TOP RAIL TUBE F/ 4’ ACCESS PLATFORM (AUS) | 1 |
| 7 | 067064 | TUBE, MIDDLE RAIL F/ 4’ ACCESS PLATFORM (AUS) | 1 |
| 8 | 067065 | KICK PLATE, INSIDE 4’ ACCESS PLATFORM (AUS) | 1 |
| 9 | 067066 | KICK PLATE, OUTSIDE 4’ ACCESS PLATFORM (AUS) | 1 |
| 10 | 067079 | WELDMENT F/ 4’ OUTSIDE ACCESS PLATFORM EXTENSION (AUS) | 1 |

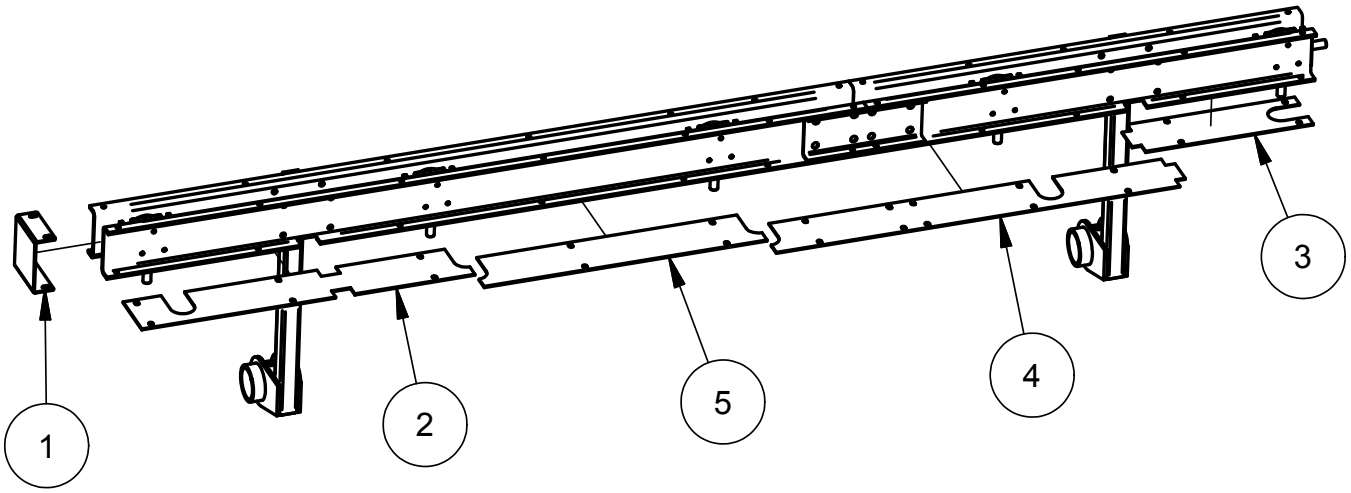
# 2’ Access Platform Assembly Illustration



# 2’ Access Platform Assembly Parts List

| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 067036 | KICK PLATE, INSIDE 2’ ACCESS PLATFORM (AUS) | 1 |
| 2 | 067038 | KICK PLATE, OUTSIDE 2’ ACCESS PLATFORM (AUS) | 1 |
| 3 | 067048 | WELD’T REAR ACCESS PLATFORM RIGHT | 1 |
| 4 | 067050 | WELD’T REAR ACCESS PLATFORM LEFT | 1 |
| 5 | 067051 | DECK WELDMENT, 2’ ACCESS PLATFORM (AUS) | 1 |
| 6 | 067054 | EXTENSION, INSIDE 2’ ACCESS PLATFORM (AUS) | 1 |
| 7 | 067055 | EXTENSION, OUTSIDE 2’ ACCESS PLATFORM (AUS) | 1 |
| 8 | 067056 | TOP RAIL TUBE F/ 2’ ACCESS PLATFORM (AUS) | 1 |
| 9 | 067057 | PLUG, 9283K34 F/ RAIL TUBES (AUS) | 4 |
| 10 | 067058 | TUBE, MIDDLE RAIL F/ 2’ ACCESS PLATFORM (AUS) | 1 |

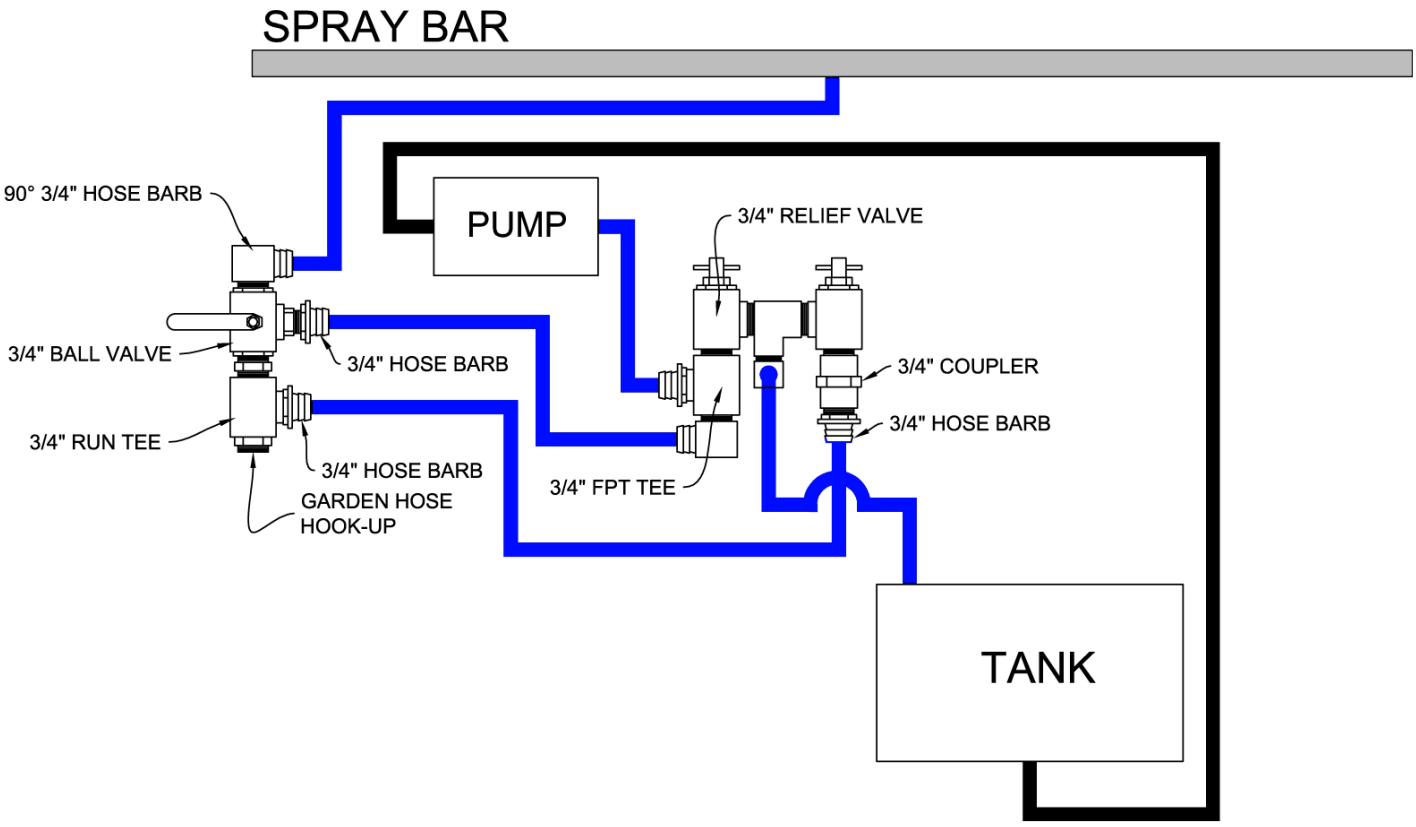
# Vibrator Channel Bottom Covers Illustration



# Vibrator Channel Bottom Covers Parts List

| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 066895 | COVER, END CAP FOR VIB DRIVE ASSEMBLY 255 TRTP GANG | 1 |
| 2 | 066896 | COVER, BOTTOM FOURTH FROM DRIVE END 5 BANK VIB DRIVE CHNL. | 1 |
| 3 | 066897 | COVER, BOTTOM FOR GANG TRTP 5 VIB BANK DRIVE CHANNEL FOR 255 TRTP | 1 |
| 4 | 066898 | COVER, BOTTOM SECOND FROM DRIVE END 5 BANK VIB DRIVE CHNL. | 1 |
| 5 | 066899 | COVER, BOTTOM THIRD FROM DRIVE END 5 BANK VIB DRIVE CHNL. | 1 |

# 4.13 Illustration
# Spray Schematic



# Section 5
# VIBRATION

SECTION 5
VIBRATION

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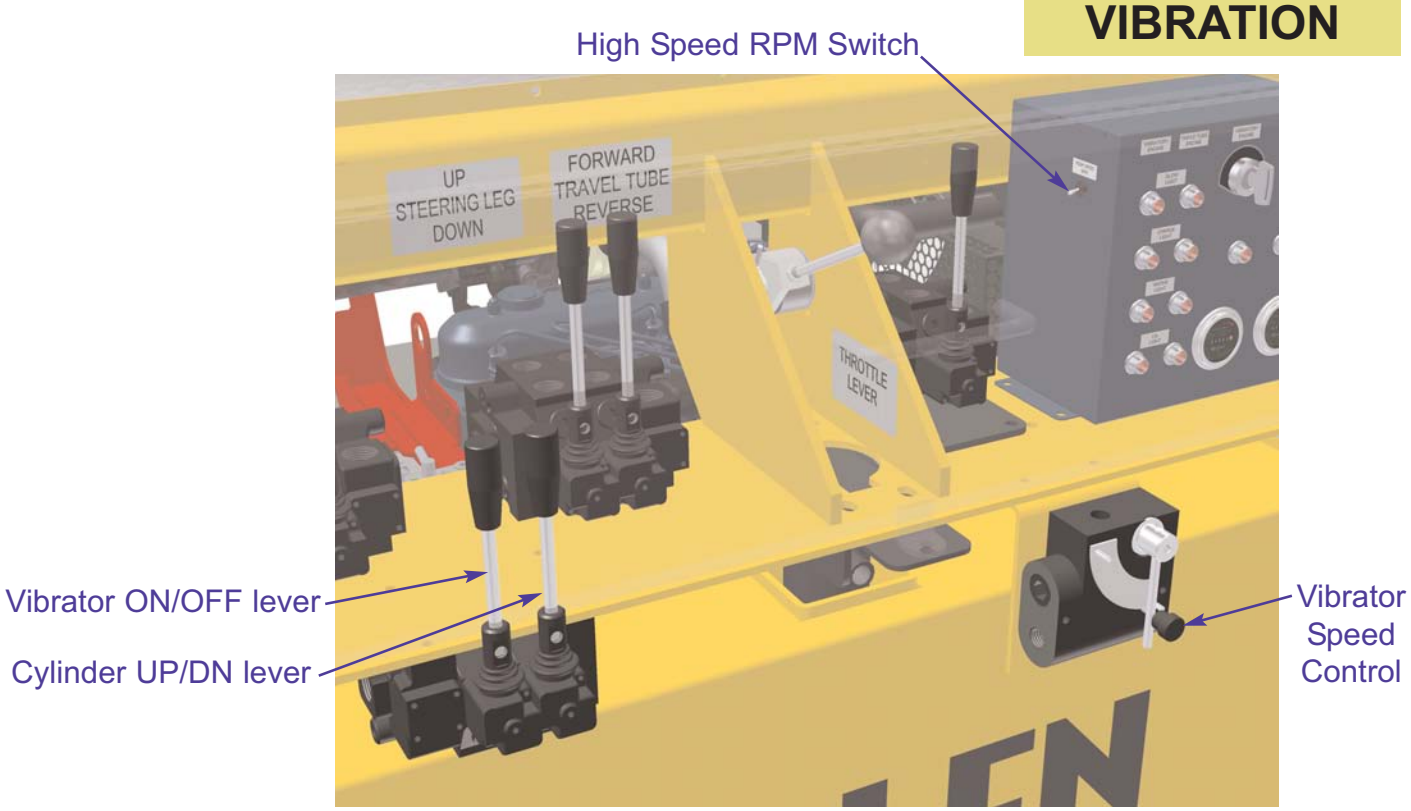
ALLEN CONCRETE PAVERS™

# Vibration Operations






**1)** Start the engines normally as described on page 2-4.

**2)** Bring the operator engine to operating RPM.

**3)** Activate the switch on the side of the engine control box to bring the idle engine to operating RPM.

**4)** Turn the Vibrator ON/OFF lever to turn the vibrators “on” when entering concrete and “off” when exiting concrete. (Leaving the vibrators on out of concrete for more than 3 minutes can cause internal damage due to overheating.)

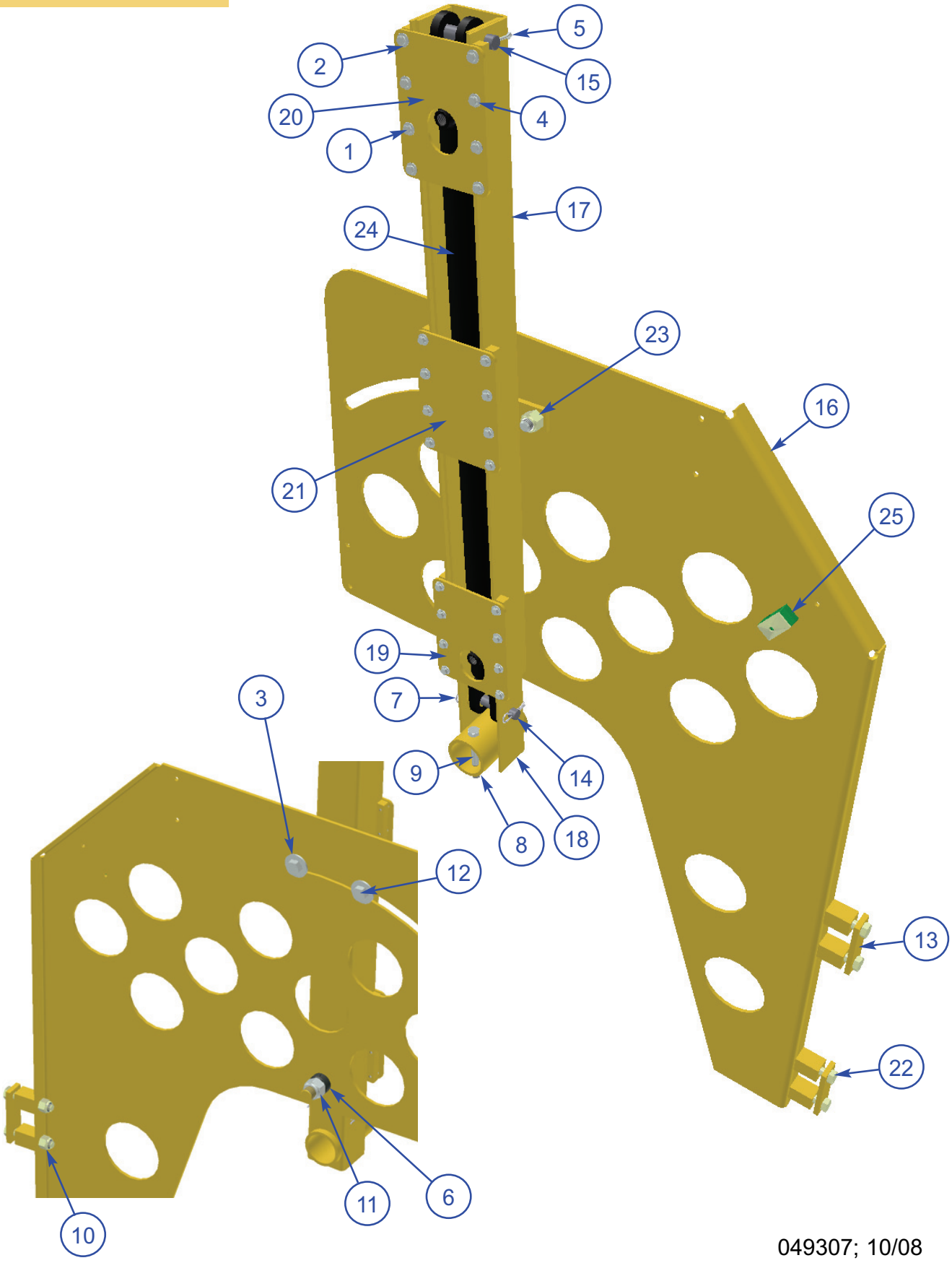
**5)** Use the Cylinder UP/DN lever to lower the vibrators into the concrete and raise them out.

**6)** Use the Vibrator Speed Control to control the amount of VPM’s into the concrete.

Vibrator Technical Data

| Model | Dia (mm) | Head Length (mm) | Freq (VPM) | Drive Size | Weight (kg) |
|---|---|---|---|---|---|
| VWU60 | 60 | 600 | 11,000 | 13 x 32 | 29 |

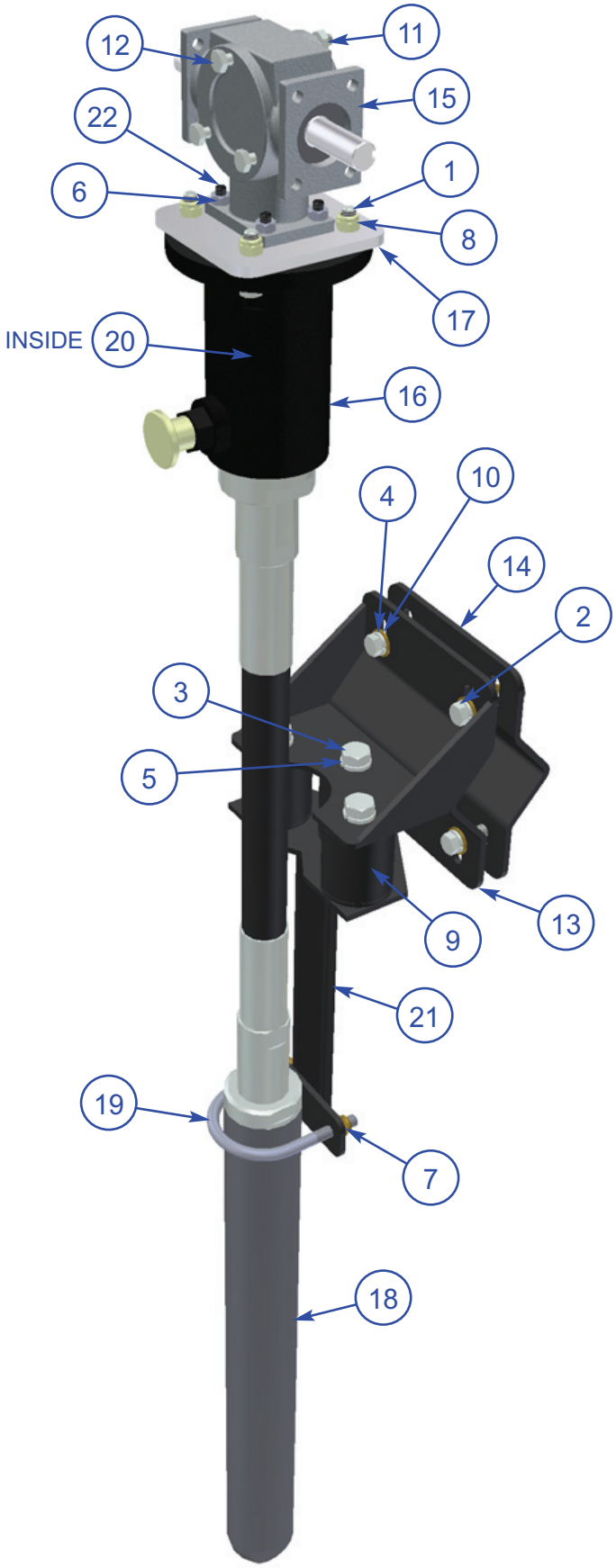
# 5.1 Illustration
# Butterfly Assembly



# 5.1 Parts List
# Butterfly Assembly

| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 010003 | FSTN, HHCS 1/4-20 X 1 | 24 |
| 2 | 010081 | FSTN, FW 1/4 | 24 |
| 3 | 010087 | FSTN, FW 3/4 | 2 |
| 4 | 010089 | FSTN, LW 1/4 | 24 |
| 5 | 010133 | PIN, Ø3/16 X 2 ZP STL COTTER | 2 |
| 6 | 010666 | COLLAR, Ø1 ID SET | 1 |
| 7 | 010711 | CLIP, .125x2-9/16 HITCH PIN | 2 |
| 8 | 011238 | FSTN, NUT HEX NYLOK 1/2-13 | 1 |
| 9 | 023003 | FSTN, HHCS 1/2-13 X 4 | 1 |
| 10 | 037509 | FSTN, NUT NYLOC 5/8-18 GR 8 | 4 |
| 11 | 038783 | FSTN, NUT NYLOK 1"-8 | 1 |
| 12 | 040275 | FSTN, HHCS 3/4-16 X 2 GR 8 | 2 |
| 13 | 048251 | PLATE, CLAMP F/ GANG VIB MNT PLATE | 2 |
| 14 | 048255 | PIN, CYLINDER SHORT F/ GANG VIB | 1 |
| 15 | 048256 | PIN, CYLINDER LONG F/ GANG VIB | 1 |
| 16 | 049243 | BUTTERFLY, LH GANG VIB MOUNT | 1 |
|  | 049244 | BUTTERFLY, RH GANG VIB MOUNT | 1 |
| 17 | 049252 | CHANNEL, OUTER HYD. CYL. WELD'T | 1 |
| 18 | 049254 | CHANNEL, MALE JACK WELD'T | 1 |
| 19 | 049318 | PLATE, TOP HOLDING HYD CYL | 1 |
| 20 | 049319 | PLATE, BOTTOM HOLDING HYD CYL | 1 |
| 21 | 049320 | PLATE, MIDDLE HOLDING HYD CYL | 1 |
| 22 | 049346 | FSTN, HHCS 5/8-11x3-3/4 GR 8 | 4 |
| 23 | 049351 | FSTN, NUT 3/4-10 GR 8 NYLOCK HEX | 2 |
| 24 | 049366 | CYLINDER, LIFT F/ GANG RACK 255CD | 1 |
| 25 | 049421 | CLAMP, HOSE 5/8" HYD SP2D | 1 |

# 5.2 Illustration
# Vibrator Assembly



# 5.2 Parts List
# Vibrator Assembly

| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 010021 | FSTN, HHCS 5/16-18 X 1-1/4 GR5 | 4 |
| 2 | 010040 | FSTN, HHCS 3/8-16 X 2 GR 5 | 4 |
| 3 | 010066 | FSTN, HHCS 1/2-13 X 3/4 GR 5 | 6 |
| 4 | 010091 | FSTN, LW 3/8 | 4 |
| 5 | 010093 | FSTN, LW 1/2 | 6 |
| 6 | 010098 | FSTN, NUT HEX 1/4-20 | 4 |
| 7 | 010464 | FSTN, NUT NYLOK 3/8-16 | 6 |
| 8 | 012612 | FSTN, NUT HEX NYLOCK 5/16-18 | 4 |
| 9 | 012725 | ISOLATORS, RUBBER MOUNTS | 3 |
| 10 | 017751 | FSTN, FW HARD A325 3/8 | 8 |
| 11 | 020542 | FSTN, NUT STOVER LOCK 1/4-20 | 3 |
| 12 | 033711 | FSTN, HHCS 1/4-20 X 2 3/4 | 3 |
| 13 | 038735 | GANG VIB TOP MFG BRKT | 1 |
| 14 | 038738 | CLAMP HALF F/ VIB MNT BRKT WELDMENT | 1 |
| 15 | 044858 | GEARBOX, AD5 F/ VIBRATORS | 1 |
| 16 | 044861 | POWER TAKE-OFF F/ VWU60 VIB (PT01) | 1 |
| 17 | 044862 | QUICK DISCONNECT ADAPTOR PLATE | 1 |
| 18 | 044893 | VIBRATOR, GANG VIB TRTP VWU60 | 1 |
| 19 | 045876 | CLAMP, MUFFLER 2 1/2 EXHAUST | 1 |
| 20 | 048345 | COUPLER, DRIVE for VIBRATOR | 1 |
| 21 | 049186 | VIBRATOR SUPPORT BRACKET | 1 |
| 22 | 049352 | FSTN, 1/4-20x1 SKT FLT HD CAP SCR | 4 |

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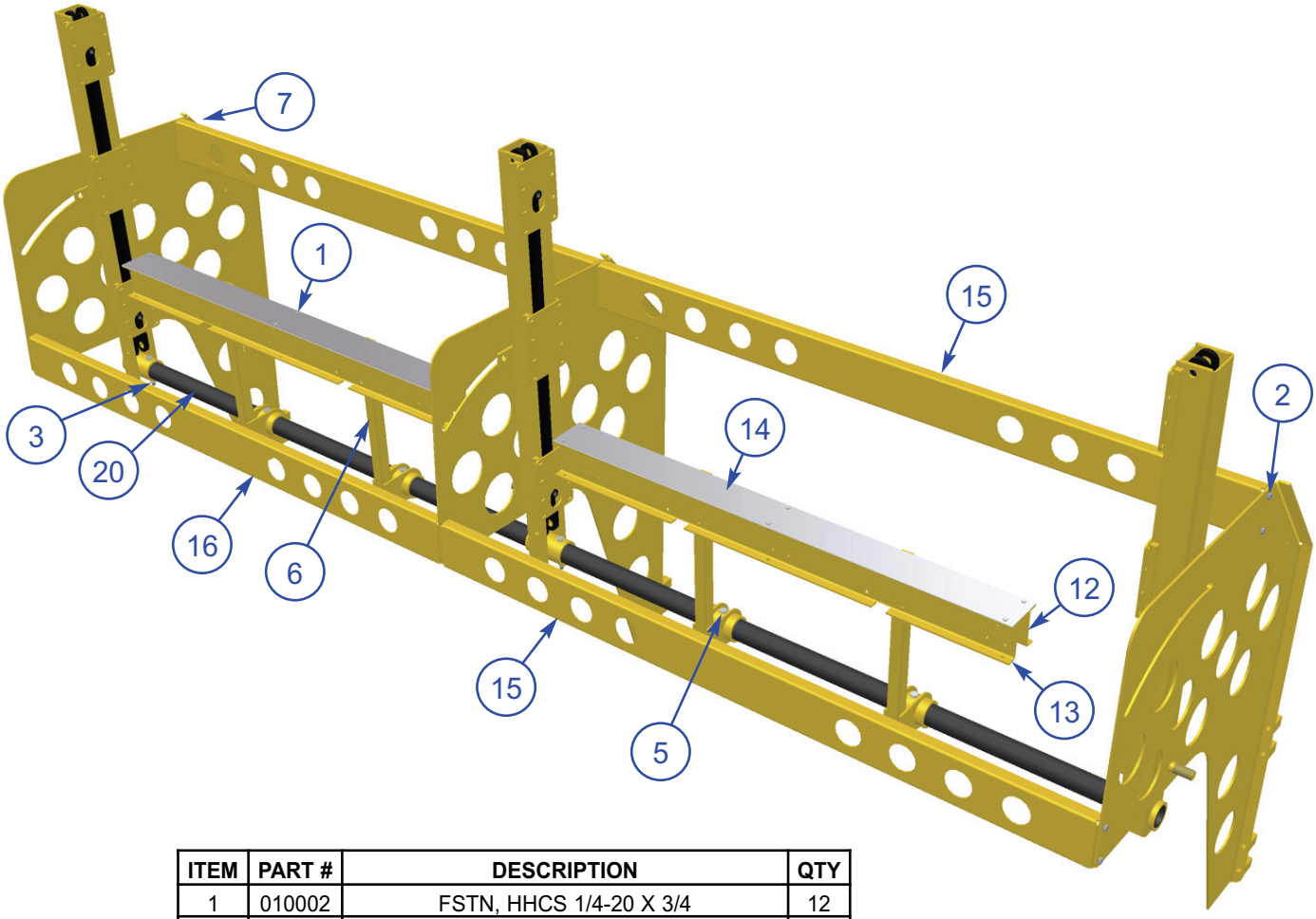
# 5.3 Illustration
# Vibration Rack Assembly

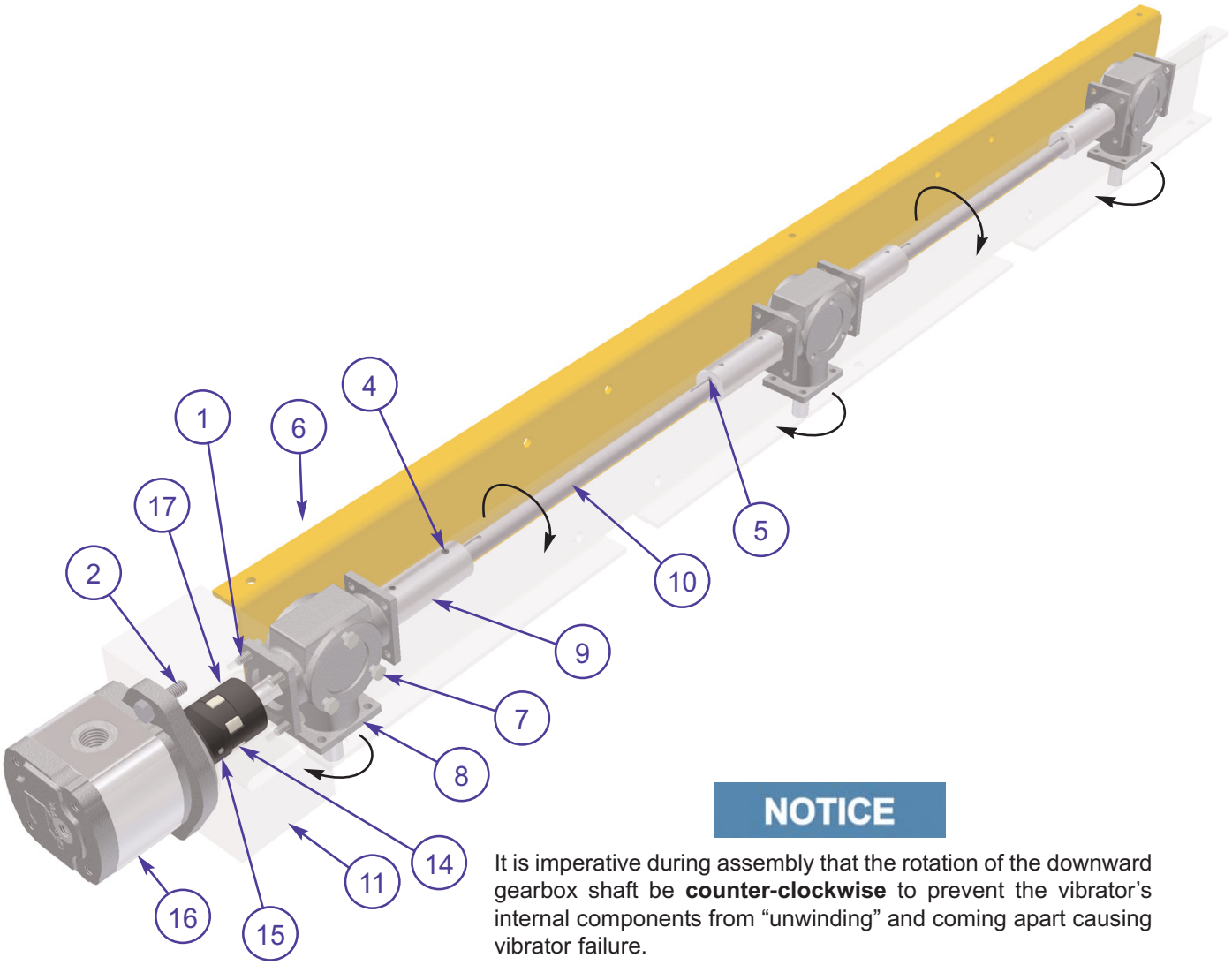



| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 010002 | FSTN, HHCS 1/4-20 X 3/4 | 12 |
| 2 | 010037 | FSTN, HHCS 3/8-16 X 1-1/4 GR 5 | 28 |
| 3 | 011238 | FSTN, NUT HEX NYLOK 1/2-13 | 19 |
| 4 | 020542 | FSTN, NUT STOVER LOCK 1/4-20 | 15 |
| 5 | 023003 | FSTN, HHCS 1/2-13 X 4 | 7 |
| 6 | 038772 | WELD'T, GANG VIBRATOR MOUNT | 4 |
| 7 | 046844 | FSTN, 3/8-24 YEL-ZINC GR 8 HEX NUT | 16 |
| 8 | 049243 | BUTTERFLY, LH GANG VIB MOUNT | 1 |
| 9 | 049244 | BUTTERFLY, RH GANG VIB MOUNT | 2 |
| 10 | 049252 | CHANNEL, OUTER HYD. CYL. WELD'T | 3 |
| 11 | 049254 | CHANNEL, MALE JACK WELD'T | 3 |
| 12 | 049279 | PLATE, GEARBOX MOUNT RHF/LHR 14' | 2 |
| 13 | 049280 | PLATE, GEARBOX MOUNT RHR/LHF 14' | 2 |
| 14 | 049281 | PLATE, GEARBOX TOP COVER 14' | 2 |
| 15 | 049282 | CHANNEL, LH STIFFENER 14' SETUP | 2 |
| 16 | 049283 | CHANNEL, RH STIFFENER 14' SETUP | 2 |
| 17 | 049318 | PLATE, TOP HOLDING HYD CYL | 3 |
| 18 | 049319 | PLATE, BOTTOM HOLDING HYD CYL | 3 |
| 19 | 049320 | PLATE, MIDDLE HOLDING HYD CYL | 3 |
| 20 | 049324 | TUBE, 14' VIB RACK | 1 |
| 21 | 049366 | CYLINDER, LIFT F/ GANG RACK 255CD | 3 |

# 5.4 Matrix
# Vibration Rack Assembly

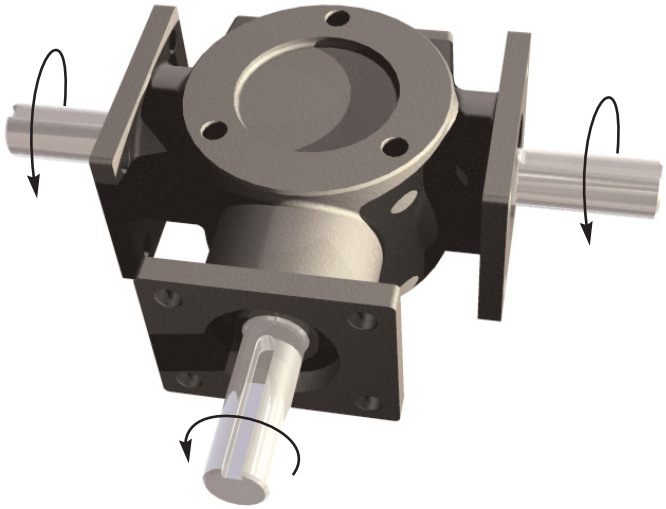
| | PART # | DESCRIPTION | QTY | | | PART # | DESCRIPTION | QTY |
|---|---|---|---|---|---|---|---|---|
| **12'** | | | | | **26'** | | | |
| | 049432 | COVER, 38" GEAR DRIVE F/ GANG | 1 | | | 049433 | COVER, 62" GEAR DRIVE F/ GANG | 2 |
| | 049434 | COVER, 64-1/4" GEAR DRIVE GANG | 1 | | | 049434 | COVER, 64-1/4" GEAR DRIVE GANG | 2 |
| | 049441 | WELD'T, 102-1/4" DRIVE MNT LHF/RHR | 1 | | | 049435 | WELD'T, 126 1/4" DRIVE MNT LHF/RHR | 2 |
| | 049442 | WELD'T, 102-1/4" DRIVE MNT LHR/RHF | 1 | | | 049436 | WELD'T, 126 1/4" DRIVE MNT LHR/RHF | 2 |
| | 049447 | STIFFENER, LH 126-5/8" GANG 255CD | 2 | | | 049445 | STIFFENER, RH 143-3/4" GANG 255CD | 2 |
| | 049480 | TUBE, 126 1/2" VIBRATOR RACK | 1 | | | 049476 | WELD'T, STIFFENER CHAN'L 150 5/8"LG | 2 |
| **14'** | | | | | | 049478 | TUBE, 145 3/4" VIBRATOR RACK | 1 |
| 12 | 051082 | CHANNEL, VIBRATOR 14' | 1 | | | 049479 | TUBE, 148 1/2" VIBRATOR RACK | 1 |
| 13 | 051082 | CHANNEL, VIBRATOR 14' | 1 | | **28'** | | | |
| 14 | 051083 | COVER, 14' VIB CHANNEL | 2 | | | 049433 | COVER, 62" GEAR DRIVE F/ GANG | 1 |
| 15 | 051085 | STIFFENER, 14' GANG VIB | 1 | | | 049434 | COVER, 64-1/4" GEAR DRIVE GANG | 2 |
| 16 | 051085 | STIFFENER, 14' GANG VIB | 1 | | | 049435 | WELD'T, 126 1/4" DRIVE MNT LHF/RHR | 1 |
| 20 | 049324 | TUBE, 14' VIB RACK | 1 | | | 049436 | WELD'T, 126 1/4" DRIVE MNT LHR/RHF | 1 |
| **16'** | | | | | | 049445 | STIFFENER, RH 143-3/4" GANG 255CD | 2 |
| | 049279 | PLATE, GEARBOX MOUNT RHF/LHR 14' | 1 | | | 049450 | TUBE, 24' RH VIB RACK | 1 |
| | 049280 | PLATE, GEARBOX MOUNT RHR/LHF 14' | 1 | | | 049458 | WELD'T, STIFFENER CHAN'L 174 5/8"LG | 2 |
| | 049283 | CHANNEL, RH STIFFENER 14' SETUP | 2 | | | 049460 | COVER, 86" GEAR DRIVE F/ GANG | 1 |
| | 049415 | TUBE, 16' VIB RACK | 1 | | | 049461 | WELD'T, 150 1/4" DRIVE MNT LHR/RHF | 1 |
| | 049468 | 78 1/4" GEAR MNT CHANL LHF/RHR | 1 | | | 049462 | WELD'T, 150 1/4" DRIVE MNT RHR/LHF | 1 |
| | 049469 | STIFFENER CHAN'L 102 5/8"LG | 2 | | | 049465 | TUBE, 172 1/2" VIBRATOR RACK | 1 |
| | 049470 | COVER, 78 1/4" GEAR DRIVE F/ GANG | 1 | | **30'** | | | |
| **18'** | | | | | | 049432 | COVER, 38" GEAR DRIVE F/ GANG | 2 |
| | 049467 | 78 1/4" GEAR MNT CHANL LHR/RHF | 2 | | | 049434 | COVER, 64-1/4" GEAR DRIVE GANG | 2 |
| | 049468 | 78 1/4" GEAR MNT CHANL LHF/RHR | 2 | | | 049441 | WELD'T, 102-1/4" DRIVE MNT LHF/RHR | 2 |
| | 049469 | STIFFENER CHAN'L 102 5/8"LG | 2 | | | 049442 | WELD'T, 102-1/4" DRIVE MNT LHR/RHF | 2 |
| | 049470 | COVER, 78 1/4" GEAR DRIVE F/ GANG | 2 | | | 049454 | WELD'T, STIFFENER CHAN'L 119 3/4"LG | 2 |
| | 049471 | STIFFENER CHAN'L 95 3/4" LG | 2 | | | 049455 | WELD'T, STIFFENER CHAN'L 126 1/4"LG | 2 |
| | 049472 | TUBE, 198 1/2" VIBRATOR RACK | 1 | | | 049467 | 78 1/4" GEAR MNT CHANL LHR/RHF | 1 |
| **20'** | | | | | | 049468 | 78 1/4" GEAR MNT CHANL LHF/RHR | 1 |
| | 049432 | COVER, 38" GEAR DRIVE F/ GANG | 2 | | | 049470 | COVER, 78 1/4" GEAR DRIVE F/ GANG | 1 |
| | 049434 | COVER, 64-1/4" GEAR DRIVE GANG | 1 | | | 049471 | STIFFENER CHAN'L 95 3/4" LG | 2 |
| | 049441 | WELD'T, 102-1/4" DRIVE MNT LHF/RHR | 2 | | | 049482 | TUBE, 121 3/4" VIBRATOR RACK | 1 |
| | 049442 | WELD'T, 102-1/4" DRIVE MNT LHR/RHF | 1 | | | 049483 | TUBE, 122 1/2" VIBRATOR RACK | 1 |
| | 049454 | WELD'T, STIFFENER CHAN'L 119 3/4"LG | 1 | | | 049484 | TUBE, 97 1/2" VIBRATOR RACK | 1 |
| | 049467 | 78 1/4" GEAR MNT CHANL LHR/RHF | 1 | | **32'** | | | |
| | 049468 | 78 1/4" GEAR MNT CHANL LHF/RHR | 1 | | | 049432 | COVER, 38" GEAR DRIVE F/ GANG | 3 |
| | 049469 | STIFFENER CHAN'L 102 5/8"LG | 1 | | | 049434 | COVER, 64-1/4" GEAR DRIVE GANG | 3 |
| | 049470 | COVER, 78 1/4" GEAR DRIVE F/ GANG | 1 | | | 049441 | WELD'T, 102-1/4" DRIVE MNT LHF/RHR | 3 |
| | 049481 | TUBE, 222 1/2" VIBRATOR RACK | 1 | | | 049442 | WELD'T, 102-1/4" DRIVE MNT LHR/RHF | 3 |
| **22'** | | | | | | 049452 | TUBE, 121 3/4" VIBRATOR RACK | 2 |
| | 049432 | COVER, 38" GEAR DRIVE F/ GANG | 2 | | | 049453 | TUBE, 122 1/2" VIBRATOR RACK | 1 |
| | 049434 | COVER, 64-1/4" GEAR DRIVE GANG | 2 | | | 049454 | WELD'T, STIFFENER CHAN'L 119 3/4"LG | 4 |
| | 049441 | WELD'T, 102-1/4" DRIVE MNT LHF/RHR | 2 | | | 049455 | WELD'T, STIFFENER CHAN'L 126 1/4"LG | 2 |
| | 049442 | WELD'T, 102-1/4" DRIVE MNT LHR/RHF | 2 | | **34'** | | | |
| | 049447 | STIFFENER, LH 126-5/8" GANG 255CD | 2 | | | 049432 | COVER, 38" GEAR DRIVE F/ GANG | 2 |
| | 049454 | WELD'T, STIFFENER CHAN'L 119 3/4"LG | 2 | | | 049433 | COVER, 64-1/4" GEAR DRIVE GANG | 1 |
| | 049474 | TUBE, 124 1/2" VIBRATOR RACK | 1 | | | 049434 | COVER, 64-1/4" GEAR DRIVE GANG | 3 |
| | 049475 | TUBE, 121 3/4" VIBRATOR RACK | 1 | | | 049435 | WELD'T, 126 1/4" DRIVE MNT LHF/RHR | 1 |
| **24'** | | | | | | 049436 | WELD'T, 126 1/4" DRIVE MNT LHR/RHF | 1 |
| | 049433 | COVER, 62" GEAR DRIVE F/ GANG | 1 | | | 049441 | WELD'T, 102-1/4" DRIVE MNT LHF/RHR | 2 |
| | 049434 | COVER, 64-1/4" GEAR DRIVE GANG | 2 | | | 049442 | WELD'T, 102-1/4" DRIVE MNT LHR/RHF | 2 |
| | 049435 | WELD'T, 126 1/4" DRIVE MNT LHF/RHR | 1 | | | 049445 | STIFFENER, RH 143-3/4" GANG 255CD | 2 |
| | 049436 | WELD'T, 126 1/4" DRIVE MNT LHR/RHF | 1 | | | 049447 | STIFFENER, LH 126-5/8" GANG 255CD | 2 |
| | 049441 | WELD'T, 102-1/4" DRIVE MNT LHF/RHR | 1 | | | 049450 | TUBE, 24' RH VIB RACK | 1 |
| | 049442 | WELD'T, 102-1/4" DRIVE MNT LHR/RHF | 1 | | | 049452 | TUBE, 121 3/4" VIBRATOR RACK | 1 |
| | 049445 | STIFFENER, RH 143-3/4" GANG 255CD | 2 | | | 049453 | TUBE, 122 1/2" VIBRATOR RACK | 1 |
| | 049447 | STIFFENER, LH 126-5/8" GANG 255CD | 2 | | | 049454 | WELD'T, STIFFENER CHAN'L 119 3/4"LG | 2 |
| | 049450 | TUBE, 24' RH VIB RACK | 1 | | | | | |
| | 049451 | TUBE, 24' LH VIB RACK | 1 | | | | | |

# 5.5 Illustration
# Vibrator Shaft Assembly




**NOTICE**

It is imperative during assembly that the rotation of the downward gearbox shaft be **counter-clockwise** to prevent the vibrator's internal components from "unwinding" and coming apart causing vibrator failure.



# 5.5 Parts List
# Vibrator Shaft Assembly

| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 049959 | STUD, ADAPTER BLOCK MOUNT | 4 |
| 2 | 010037 | FSTN, HHCS 3/8-16 X 1-1/4 GR 5 | 2 |
| 3 | 010089 | FSTN, LW 1/4 | 4 |
| 4 | 012869 | FSTN, SHSS 1/4-20 X 3/8 | 4 |
| 5 | 015813 | KEY, 3/16" SQ X 1" LG | 8 |
| 6 | 020542 | FSTN, NUT STOVER LOCK 1/4-20 | 3 |
| 7 | 033711 | FSTN, HHCS 1/4-20 X 2 3/4 | 3 |
| 8 | 044858 | GEARBOX, AD5 F/ VIBRATORS | 3 |
| 9 | 044859 | COUPLER, DRIVE SHAFT F/ VIB RACK | 4 |
| 10 | 044860 | SHAFT, 15 1/2" DRIVE | 2 |
| 11 | 044889 | ADAPTOR BLOCK F/ GEARBOX DRIVE | 1 |
| 12 | 049279 | PLATE, GEARBOX MOUNT RHF/LHR 14' | 1 |
| 13 | 049280 | PLATE, GEARBOX MOUNT RHR/LHF 14' | 1 |
| 14 | 049327 | SPIDER, LOVEJOY HYD MOTOR (L-075) | 1 |
| 15 | 049345 | COUPLER, JAW (685144-37240) | 1 |
| 16 | 049367 | MOTOR, HYD F/ GANG VIB 255CD | 1 |
| 17 | 049416 | COUPLER, JAW (685144-10688) | 1 |

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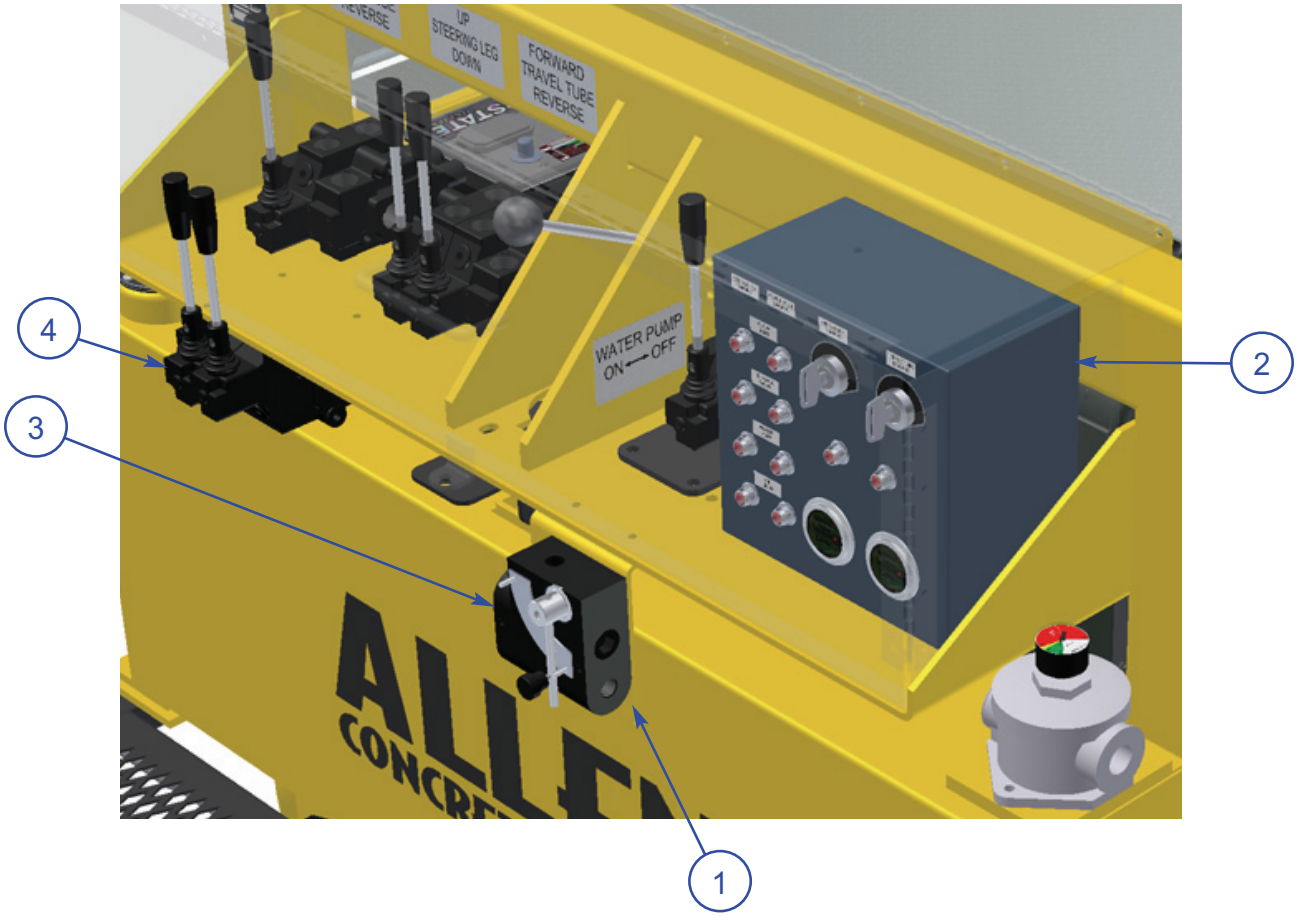
# 5.6 Illustration
# Motor End Assembly

**NOTE** See page 4-6 for complete motor end component breakdown. This illustration only shows only items that pertain to the vibration system.



# 5.6 Parts List
# Motor End Assembly

| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 048203 | PLATE, FLOW CONTROL MOUNT | 1 |
| 2 | 049407 | PANEL, GANG VIBRATION CONTROL | 1 |
| 3 | 049368 | FLOW CONTROL, ADJ F/ GANG VIB 255CD | 1 |
| 4 | 049369 | VALVE STACK, 2-STATION PILOT CONTROL | 1 |
| | | | |

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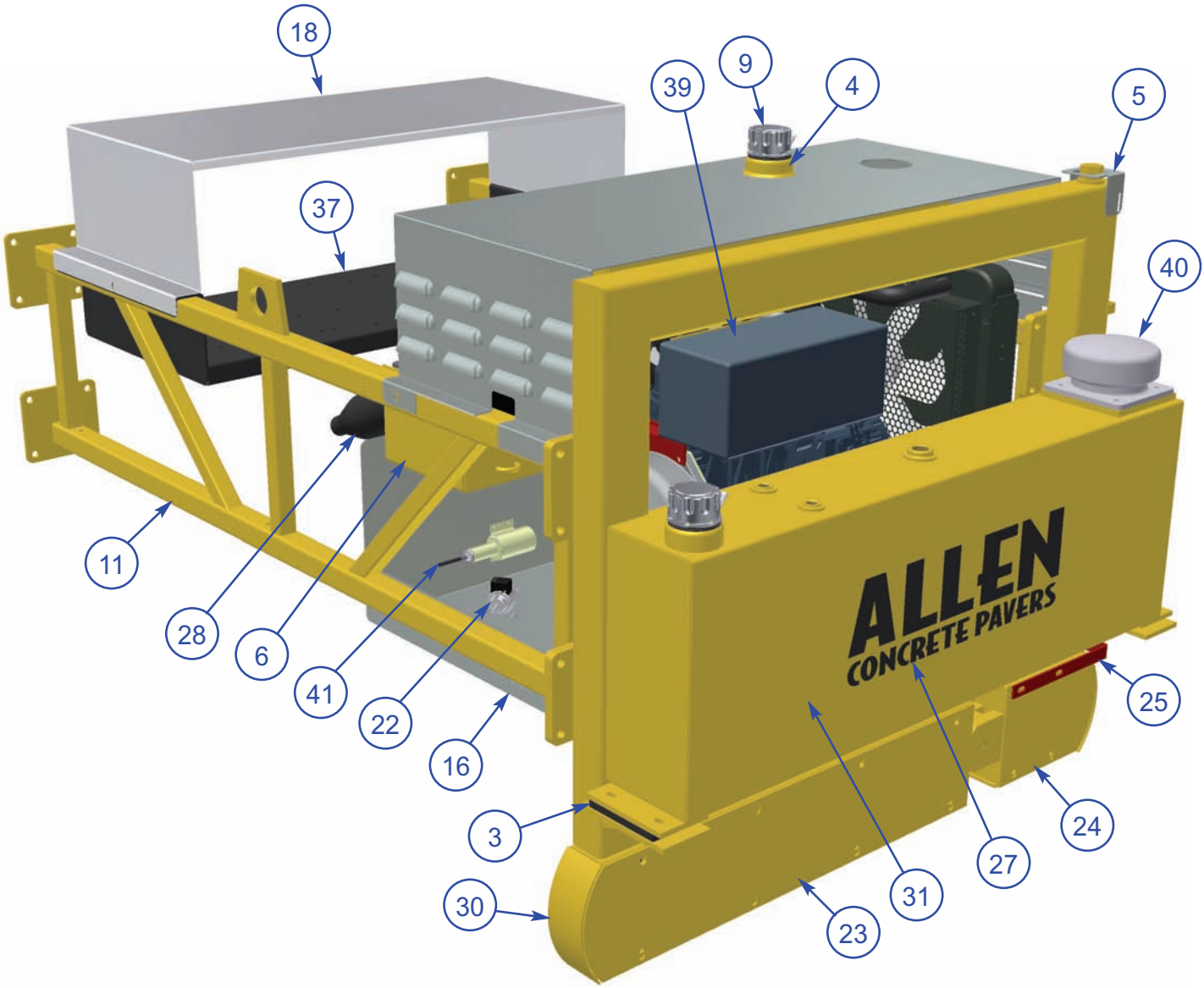
# 5.7 Illustration
# Idle End Assembly

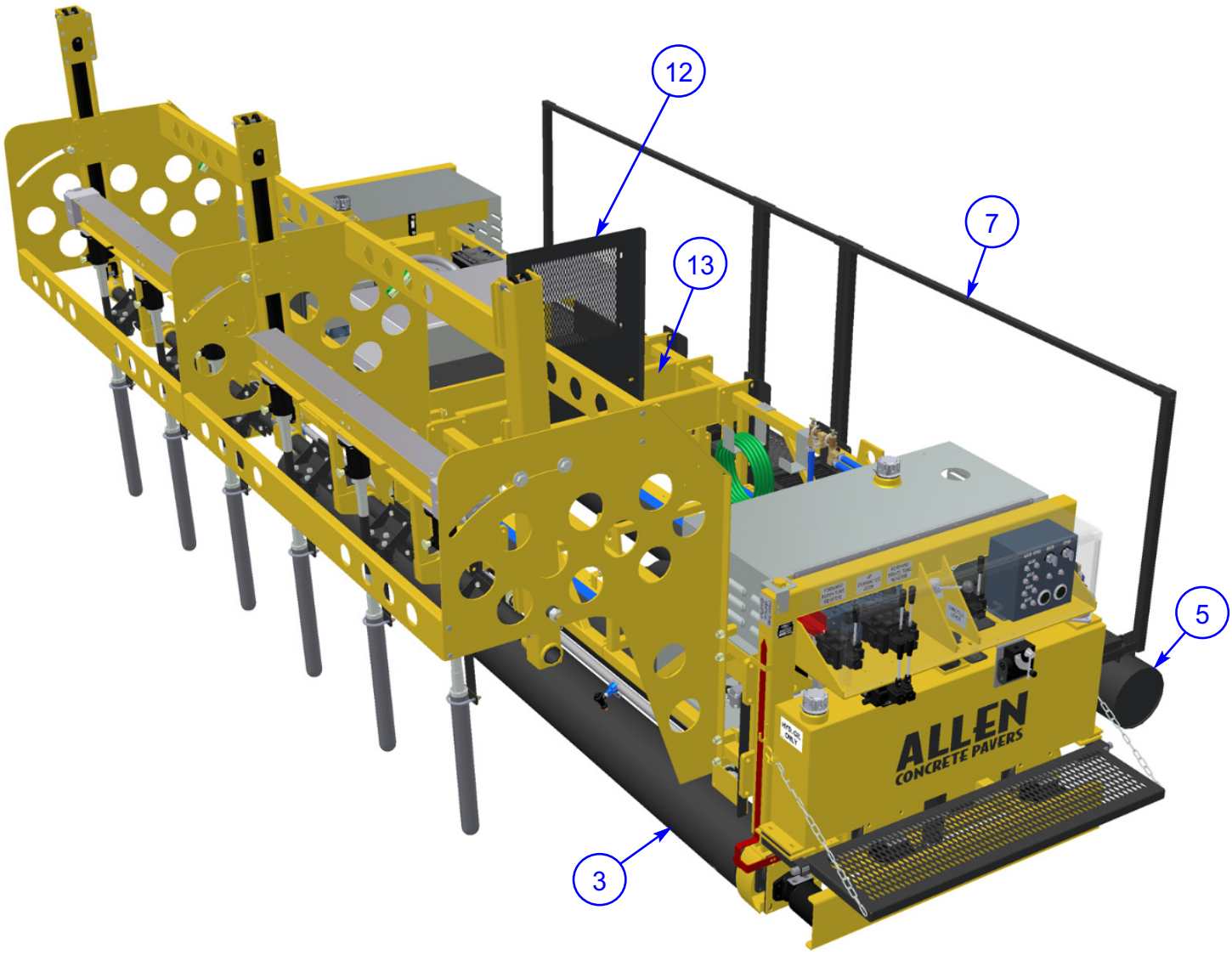
**NOTE** See hydraulic schematic Page 5-21 for hydraulic component parts list.



# 5.7 Parts List
# Idle End Assembly

| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 012725 | ISOLATORS, RUBBER MOUNTS | 4 |
| 2 | 029059 | BUSHING, FUEL TANK TRTF | 2 |
| 3 | 029098 | BUSHING, F/HYD TANK TRTF | 2 |
| 4 | 029127 | TANK, FUEL | 1 |
| 5 | 029136 | LOCK, F/ END HANDLE TRTF | 1 |
| 6 | 029213 | BOX, BATTERY TRTF | 1 |
| 7 | 029222 | BEARING IDLE END 1 1/4 TRTF | 3 |
| 8 | 029245 | BRACKET, ENGINE TRTF | 4 |
| 9 | 032268 | UNIT, CHROME GAS-HYDR TANK CAP | 2 |
| 10 | 032273 | DECAL, VERTICAL ADJ. TRTP | 1 |
| 11 | 037577 | FRAME, TRTP 6' END | 2 |
| 12 | 037647 | END EXTENSION F/SPRAY BAR BRKT | 2 |
| 13 | 037771 | BATTERY, 12 V GRAY 655CA | 1 |
| 14 | 037791 | TANK, OVERFLOW W/ BRACKET | 1 |
| 16 | 038582 | PAN, MOD 255 BD ENGINE | 1 |
| 17 | 038583 | COVER, MOD 255BD ENGINE | 1 |
| 18 | 038799 | COVER, GANG VIB CONTROL | 1 |
| 19 | 038882 | CUSHION,BATT.BOX REAR F/TRTF | 1 |
| 20 | 038914L | BRACKET, SPRAY SYSTEM LH - 255 | 1 |
| 21 | 038914R | BRACKET, SPRAY SYSTEM RH - 255 | 1 |
| 22 | 040330 | PUMP, 12 V ELECTRONIC FUEL | 1 |
| 23 | 042005 | COVER, BASE FORWARD IDLE END (LARGE) | 1 |
| 24 | 042006 | COVER, BASE FORWARD IDLE END (SMALL) | 1 |
| 25 | 042942 | WELD'T POINTER IDLE END 255 TRTP | 1 |
| 26 | 043057 | GAUGE, SNA HYDR  LEVEL | 1 |
| 27 | 043200 | DECAL, ACP BLACK 7.5 X 22 | 1 |
| 28 | 043288 | MUFFLER, 44KB TURBO C52 | 1 |
| 29 | 043291C | ENGINE, KUBOTA 44 TURBO V1505TE3BB-1 | 1 |
| 30 | 044775 | END HANDLE, GANG VIB TRTP IDLE END | 1 |
| 31 | 044777 | TANK, GANG VIB TRTP HYDRAULIC | 1 |
| 32 | 046375 | WELDMENT, MUFFLER MOUNT BRKT | 1 |
| 33 | 046379 | WELDMENT, TAIL PIPE | 1 |
| 34 | 046394 | COVER, ALTERNATOR | 1 |
| 35 | 046688 | HOUSING, HD530A 952057 COUPLER | 1 |
| 36 | 047172 | GAUGE, 3" SITE LEVEL | 1 |
| 37 | 048218 | VALVE MOUNT, SPLITTER/ROTORY GANG | 1 |
| 38 | 048658 | PUMP, AUXILLARY X1 | 1 |
| 39 | 049353 | PANEL, GANG VIBRATION ENGINE RELAY | 1 |
| 40 | 049355 | FILTER, IKRON F/ GANG VIB 255CD | 1 |
| 41 | 049406 | KIT, THROTTLE (P613-K1V12) | 1 |

# 5.8 Illustration
# Gang Vibration Parts




**NOTE:**
It is not uncommon for a pendulum-type vibrator head to fail to vibrate when the motor is switched on or started. If the vibrating head does not commence vibrating immediately, **tap the tip of the vibrator head sharply with a rubber mallet**.

# 5.8 Parts List
# Gang Vibration Parts

| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 027883 | BUSHING, RUBBER SPLIT | 4 |
| 2 | 027884 | CLAMP, LOPRO ENGINE MOUNT | 8 |
| 3 | 028319-NL | TUBE, TRTF 10" | 3 |
| 4 | 029205 | BRACKET, STIFFENER TRTF | 2 |
| 5 | 034003-NL | BALLAST, WATER TUBE | 1 |
| 6 | 037569-18 | FRAME, TRTP 1' SPACER | 4 |
| 7 | 037597-NL | WALKWAY, REAR 200B/200BD | 1 |
| 8 | 038914L | BRACKET, SPRAY SYSTEM LH - 255 | 1 |
| 9 | 040108 | FTG, 3/4 MPT x 3/4 HOSE BARB | 1 |
| 10 | 041611 | ASSY, SPRAY BAR (6' END) | 1 |
| 11 | 042035-NL | ASSY, 255BD TRTP SCRAPER | 1 |
| 12 | 049192 | COOLER, MOUNT BRACKET | 1 |
| 13 | 049326 | STIFFENER, FRAME W/ COOLER MNT HOLES | 1 |

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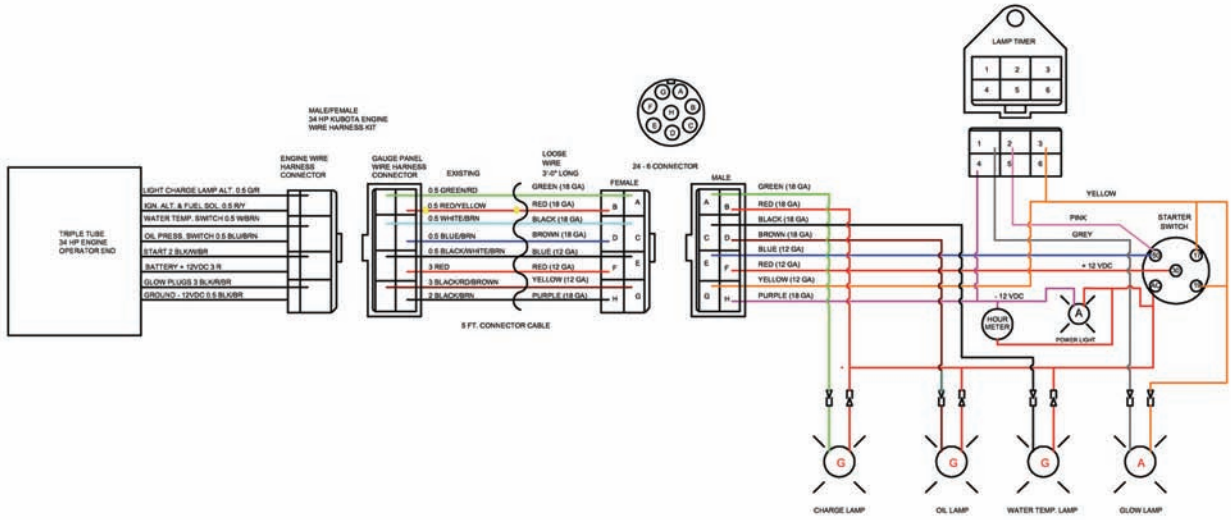
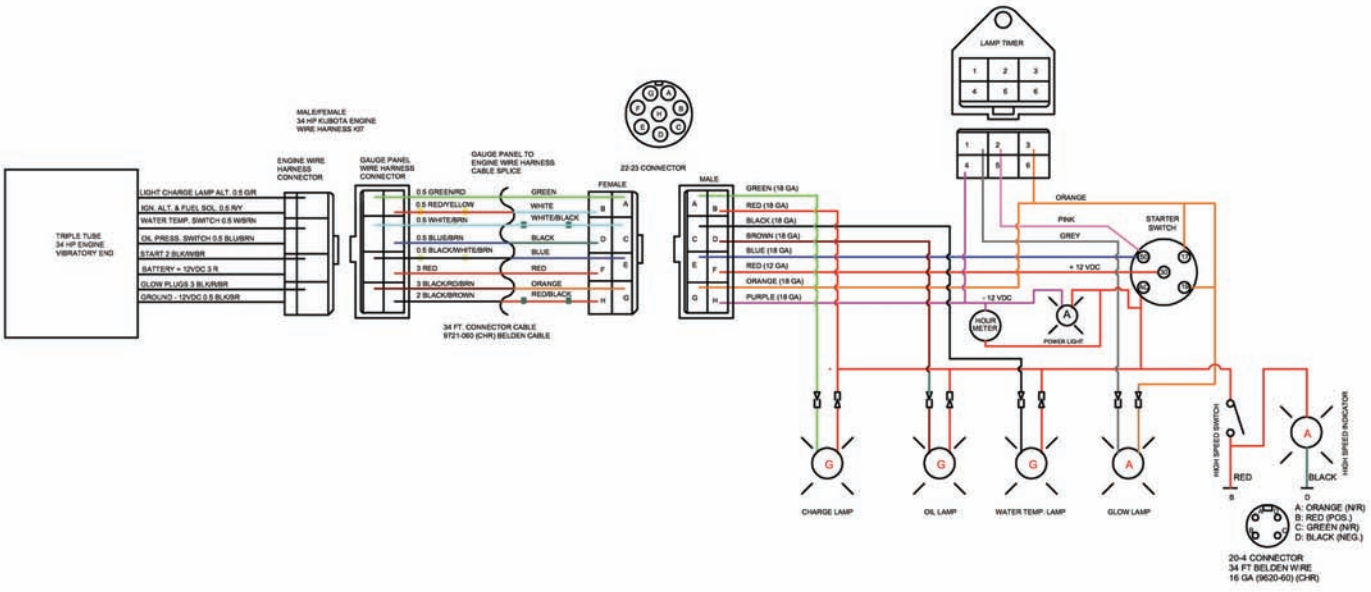
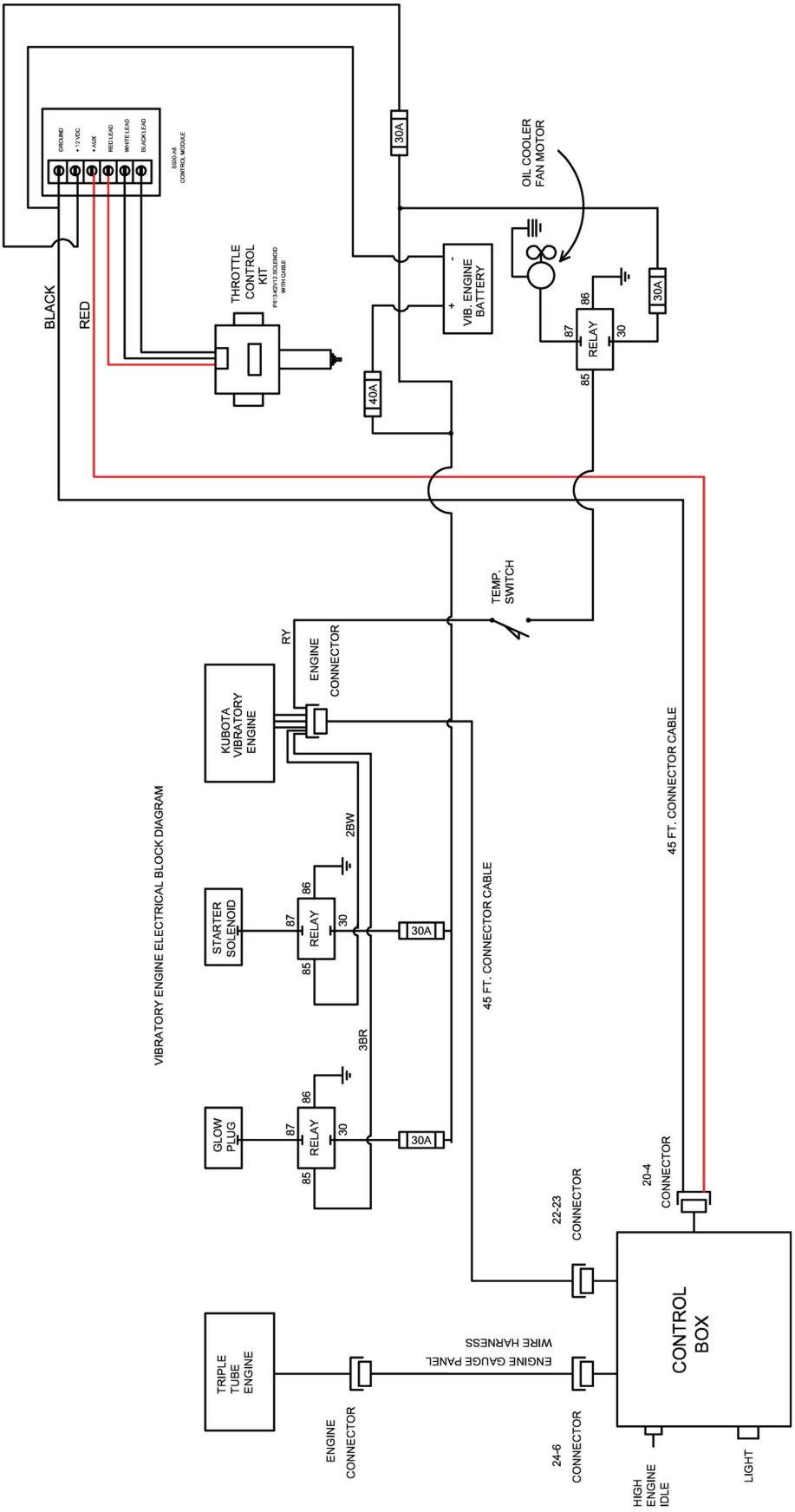
# 5.9 Schematic
# Motor Electrical Schematics

## OPERATOR END ENGINE ELECTRICAL SCHEMATIC

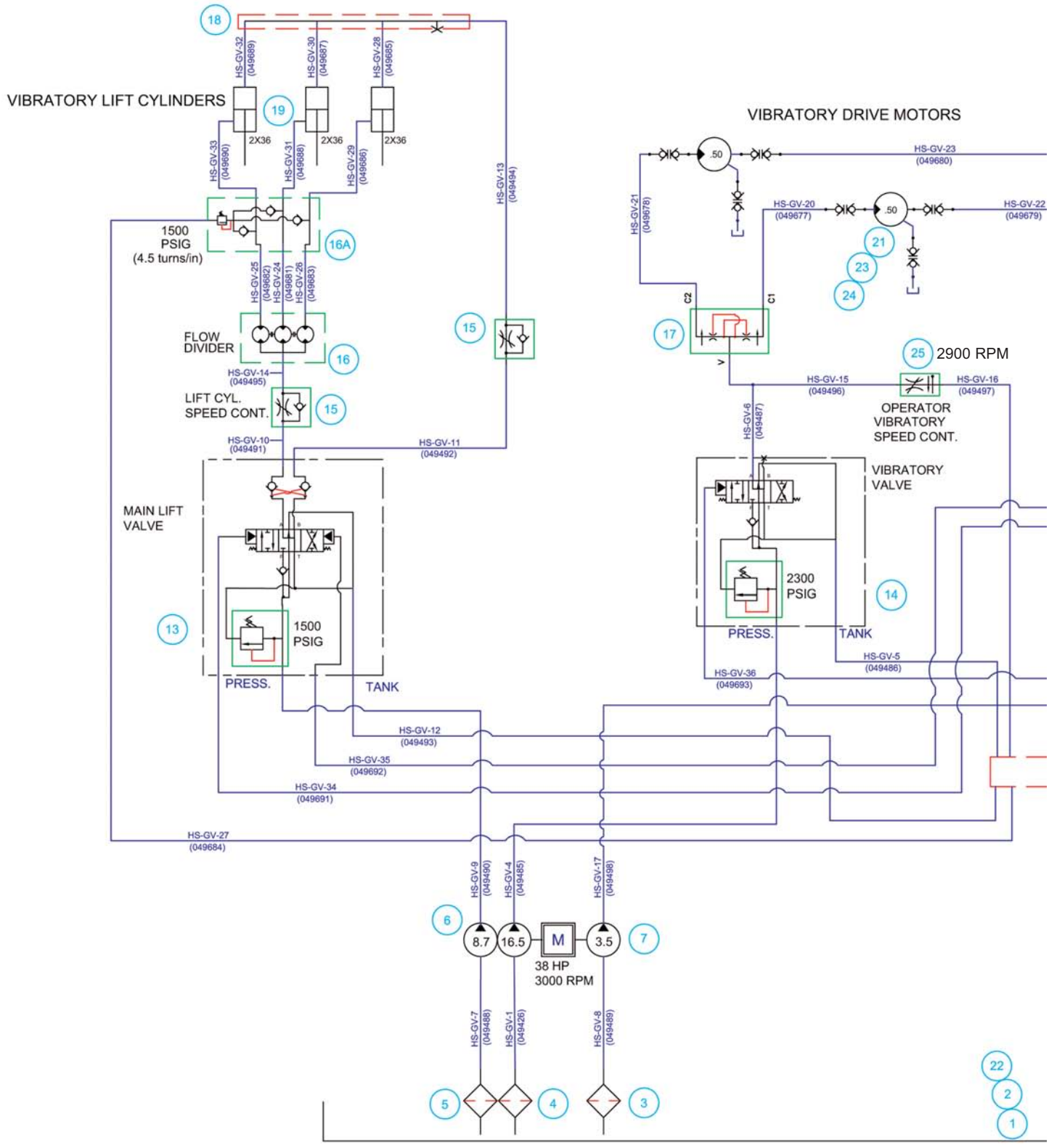



## VIBRATORY END ENGINE ELECTRICAL SCHEMATIC



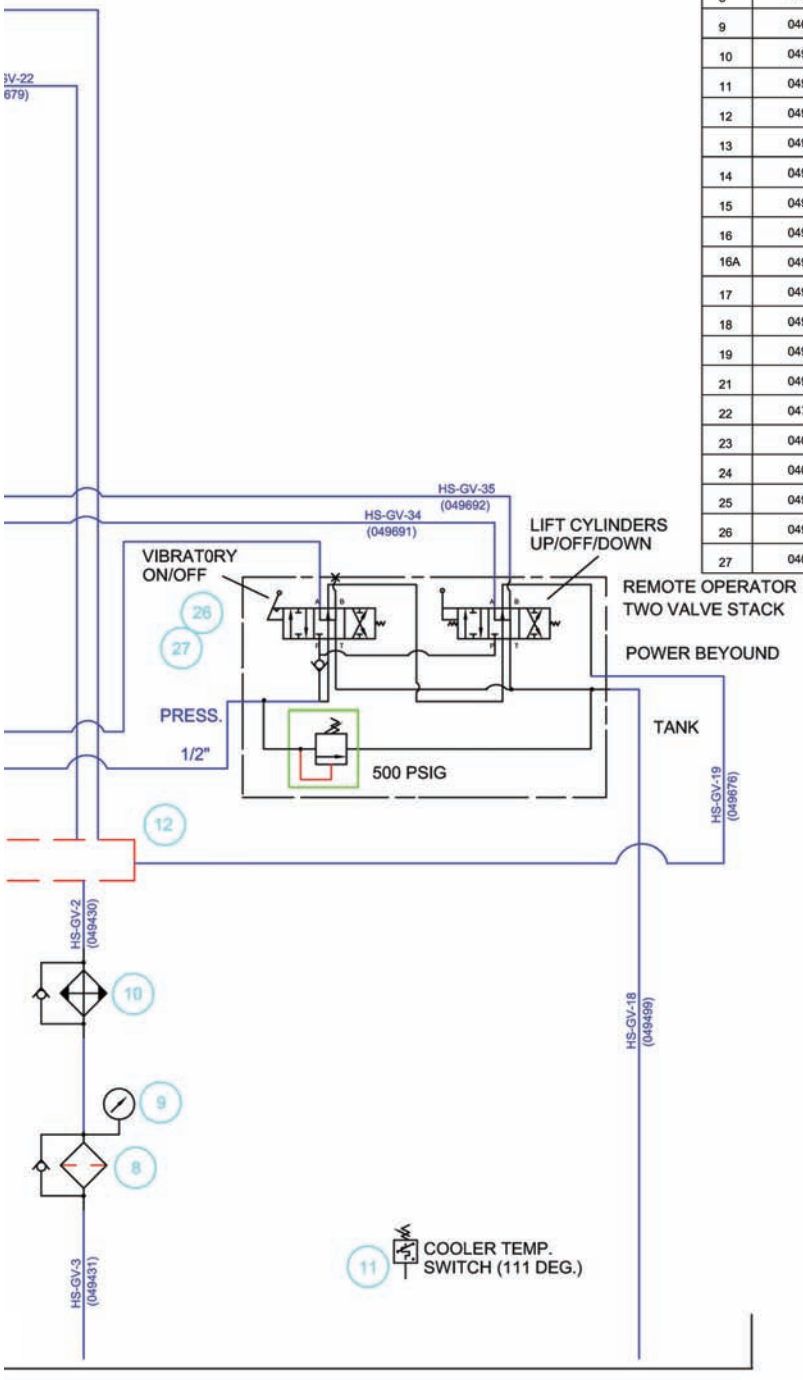

VIBRATORY ENGINE ELECTRICAL BLOCK DIAGRAM
GROUND
+12 VDC
+AUX
RED LEAD
WHITE LEAD
BLACK LEAD
6500 LR
CONTROL MODULE
BLACK
RED
THROTTLE
CONTROL
KIT
PB134DV12 SOLENOID
WITH CABLE
30A
OIL COOLER
FAN MOTOR
VIB. ENGINE
BATTERY
86
87
RELAY
30
85
40A
TEMP.
SWITCH
RY
ENGINE
CONNECTOR
KUBOTA
VIBRATORY
ENGINE
2BW
STARTER
SOLENOID
3BR
GLOW
PLUG
45 FT. CONNECTOR CABLE
45 FT. CONNECTOR CABLE
22-23
CONNECTOR
20-4
CONNECTOR
CONTROL
BOX
TRIPLE
TUBE
ENGINE
ENGINE GAUGE PANEL
WIRE HARNESS
ENGINE
CONNECTOR
24-6
CONNECTOR
HIGH
ENGINE
IDLE
LIGHT

# 5.10 Schematic
# Vibration Hydraulic Schematic



# 5.10 Schematic
# Vibration Hydraulic Schematic

| ITEM | PART # | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 042844 | SNA127BSTU SITE LEVEL GAUGE | 1 |
| 2 | 032268 | SMBB-80S-L-40-0-B-SO80-0 FILLER/BREATHER ASSY. | 2 |
| 3 | 040072 | TMF-05-5 SUCTION STRAINER | 1 |
| 4 | 049357 | TMF-25-5 SUCTION STRAINER | 1 |
| 5 | 040073 | TMF-10-5 SUCTION STRAINER | 2 |
| 6 | 049354 | PLP-20-20-04S5-LOD/OC/20-11,2-LOC/OC-D-N-EL TANDEM PUMP | 1 |
| 7 | 048658 | PLP10.4S0-C9W7-POB/OA-N-EL PILOT CONTROL PUMP | 1 |
| 8 | 049355 | HF550-30.162-AS-FG010-B17-(#16 SAE)-6B-H-Z-XA/XB-(1/8" NPT)-G-YN TANK FILTER | 1 |
| 9 | 046241 | CL-20 DIRTY FILTER GAUGE | 1 |
| 10 | 049356 | DC-20-12-VDC AIR/OIL COOLER | 1 |
| 11 | 049102 | SP.1068 TEMPERATURE SWITCH ASSY. | 1 |
| 12 | 049358 | AH0900412S TANK RETURN HEADER | 1 |
| 13 | 049359 | SD5/1-P(KG3-120)/281B3/BP3/AET-SAE LIFT CYLINDER CONTROL VALVE | 1 |
| 14 | 049360 | SD18/1-P(KG3-120)/28IB2/AET-SAE VIBRATORY MOTOR CONTROL VALVE | 1 |
| 15 | 049089 | NDRV12 FLOW CONTROL VALVES | 2 |
| 16 | 049361 | 950900M8699AAAAA THREE SECTION FLOW DIVIDER | 1 |
| 16A | 049362 | SP.1274 FLOW DIVIDER RELIEVING MANIFOLD | 1 |
| 17 | 049466 | SP.1382 FLOW COMBINER / FLOW DIVIDER | 1 |
| 18 | 049365 | AH0000308S HEADER BLOCK | 1 |
| 19 | 049366 | 661325 VIBRATORY HYDRAULIC CYLINDERS | 3 |
| 21 | 049367 | PLM20-8R0-31S1-L0C/0C-N-EL VIBRATORY MOTORS | 2 |
| 22 | 047172 | SNA-076-B-S-O-U DIESEL TANK SITE GLASS | 1 |
| 23 | 040070 | SP2D-2171/171DPP-GDAS 3/8" HOSE BRACKET ASSEMBLY | 3 |
| 24 | 040071 | SP3D-3200/200DPP-GDAS 1/2" HOSE BRACKET ASSEMBLY | 2 |
| 25 | 049368 | FC-51-1/2" VIBRATORY BYPASS FLOW CONTROL | 1 |
| 26 | 049369 | SD5/2-P(KG3-500)/28L/29L/AE-SAE TWO STATION PILOT CONTROL VALVE STACK | 1 |
| 27 | 040064 | AL01/M8X150 CONTROL HANDLES | 2 |



# Notes

# Section 6
# HATZ DIESEL

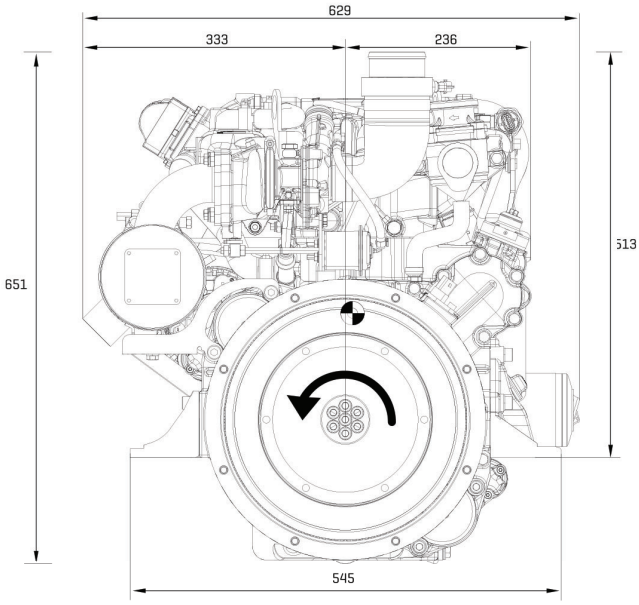
# Hatz Diesel Specifications

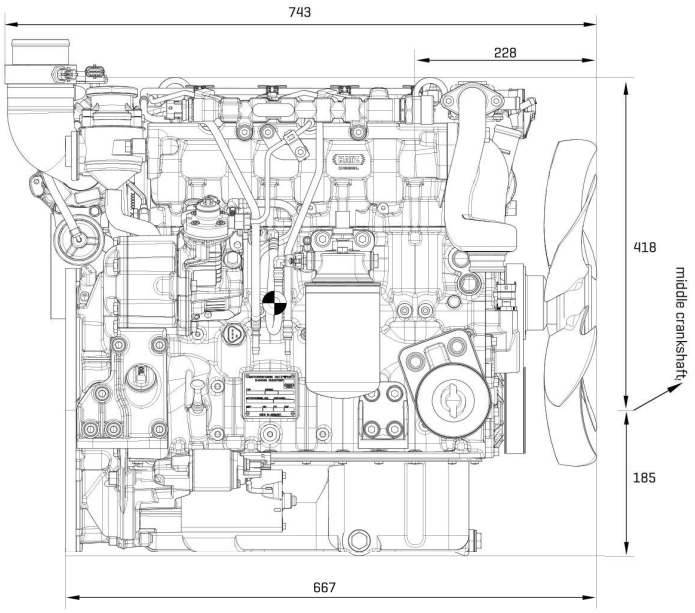
| Technical data | | | 4H50TIC .DPF | 4H50TIC | 4H50TI |
|---|---|---|---|---|---|
| Engine | Type | | Water-cooled 4-cylinder turbo engine with BOSCH common rail OHW, 1800 bar, charge air cooling | | |
| | Exhaust emission after-treatment | | EGR, DOC, DPF | EGR, DOC | — |
| | Bore x stroke (mm / inches) | | 84 x 88 / 3.31 x 3.46 | | |
| | Displacement (l / cu.in.) | | 1.952 / 119.12 | | |
| | Mean piston speed at 3000 rpm (m/s / ft/min) | | 8.8 / 1.732 | | |
| | Compression ratio | | 17,5:1 | | |
| | Lub. oil consumption, related to full load | | max. 0.5 % of fuel consumption | | |
| | Oil filling | max (l / US qts) | 7.0 /7.4 | | |
| | | min (l / US qts) | 6.0 /6.3 | | |
| | Speed control<br>' Lowest idle speed | | 900 r.p.m. | | |
| | ' Static speed droop | | adjustable (0, 3, 5, 10 %) | | |
| Installation information | Amount of combustion air at 2800 rpm approx. [1] (kg/h) | | 319 | | |
| | Amount of cooling air at 2800 rpm approx. [1] (kg/h) | | 352 | | |
| | Mass moment of inertia J (kgm² / lb.ft²) | | $J_{engine}$ 0.234 / 5.553 | | |
| | Starter | | 12 V - 2.2 kW (-25°) — 24 V - 3.0 kW (-32°) [2] | | |
| | Alternator charging | | 14 V - 110 A / 28 V - 65 A | | |
| | Battery capacity (max) | | 12 V - 110 Ah /450A DIN 24 V - 66 Ah / 300A DIN | | |
| Weight | Weight (kg / lbs.) | | 173 / 381 (inclusive catalyst)<br>255 / 562 (as Open Power Unit) | | 158 / 348 |

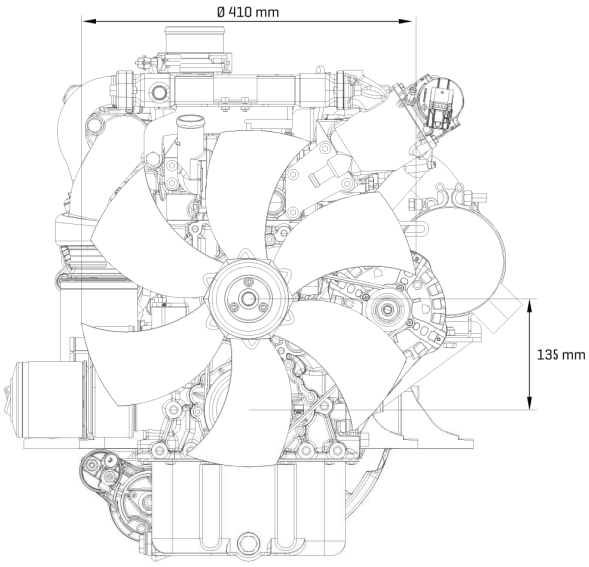
[1] For other speeds there is a linear reduction in the air requirement. [2] -40 °C with special approval possible.

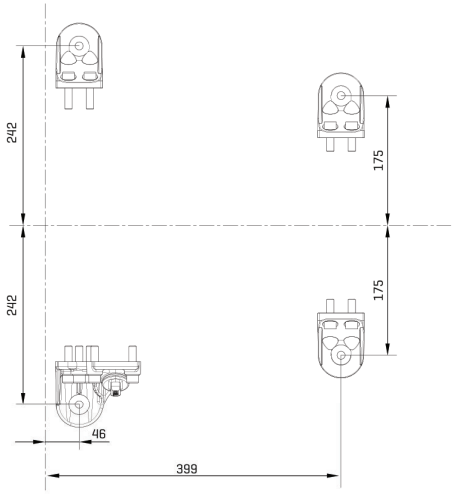
| Engine output (max) | (r.p.m.) | 4H50TIC .DPF<br>kW / HP | 4H50TIC<br>kW / HP | 4H50TI<br>kW / HP |
|---|---|---|---|---|
| Blocked ISO brake horsepower (IFN) for intermittent loading according to ISO 3046-1. | 2800 | 55.0 / 74.8 | 55.0 / 74.8 | 62.0 / 84.3 |
| | 2600 | 54.9 / 74.6 | 54.9 / 74.6 | 62.0 / 84.3 |
| | 2300 | 54.0 / 73.4 | 54.0 / 73.4 | 61.2 / 83.2 |
| | 2000 | 50.3 / 68.4 | 50.3 / 68.4 | 55.3 / 75.2 |
| | 1800 | 45.2 / 61.5 | 45.2 / 61.5 | 49.7 / 67.6 |
| | 1500 | 37.1 / 50.4 | 37.1 / 50.4 | 40.8 / 55.5 |
| Blocked ISO standard power output (no overload permissible) acc. to ISO 3046-1. For constant load (ICFN). | 2800 | 49.5 / 67.3 | 49.5 / 67.3 | — |
| | 2600 | 49.4 / 67.2 | 49.4 / 67.2 | — |
| | 2300 | 48.6 / 66.1 | 48.6 / 66.1 | — |
| | 2000 | 45.2 / 61.5 | 45.2 / 61.5 | — |
| | 1800 | 40.7 / 55.3 | 40.7 / 55.3 | — |
| | 1500 | 33.4 / 45.4 | 33.4 / 45.4 | — |
| Blocked ISO standard power output (no overloadpermissible) acc. to ISO 3046-1. For constant speed and constant load (ICFN). - e.g. power generators | 3000 | 50.0 / 68.0 | 50.0 / 68.0 | 50.0 / 68.0 |
| | 1800 | 36.4 / 49.5 | 36.4 / 49.5 | 36.4 / 49.5 |
| | 1500 | 28.7 / 39.0 | 28.7 / 39.0 | 28.7 / 39.0 |

# Hatz Diesel Specifications (cont'd)

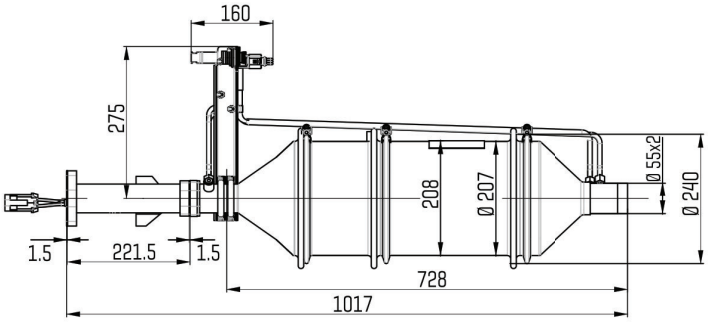



## Diesel particulate filter (DPF)

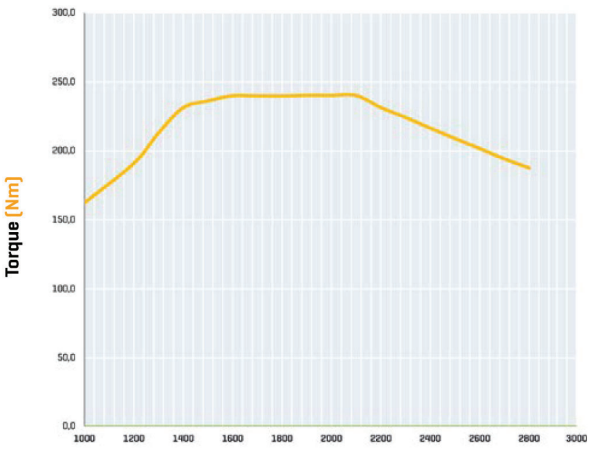


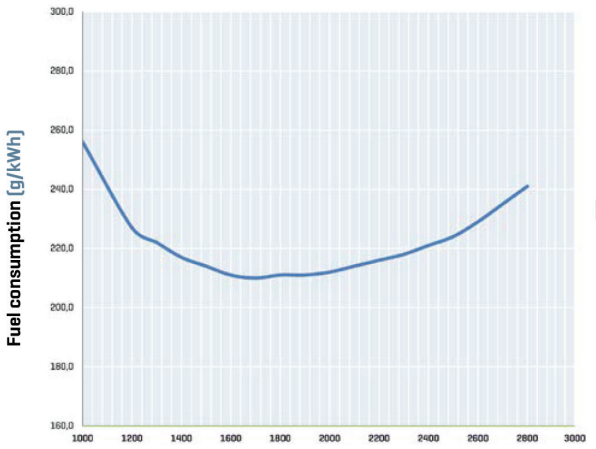

Spread at box dimensions ± 3 mm due to tolerance.
Drawings with detail and connection dimensions as PDF resp. DXF can be found at www.HATZ-DIESEL.com.

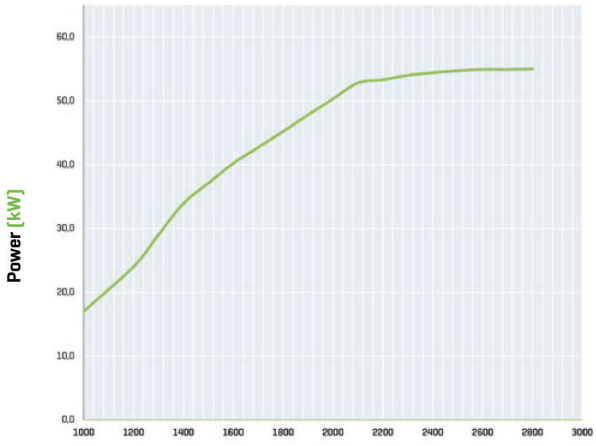
# Hatz Diesel Specifications (cont'd)

## Power output, torque und fuel consumption

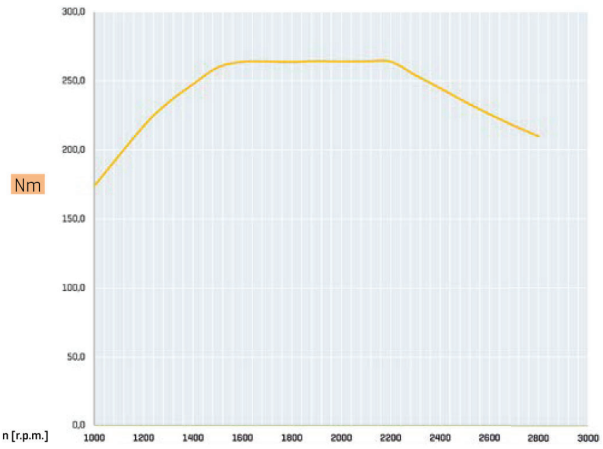
### 4H50TIC, 4H50TIC DPF

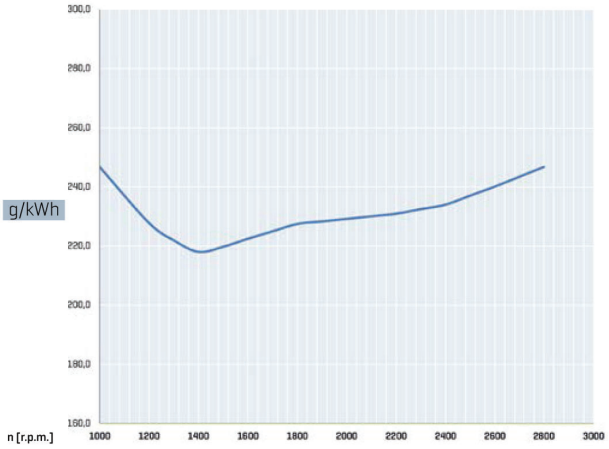


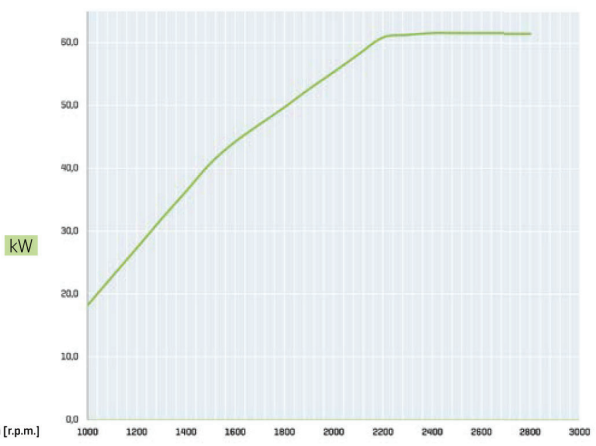



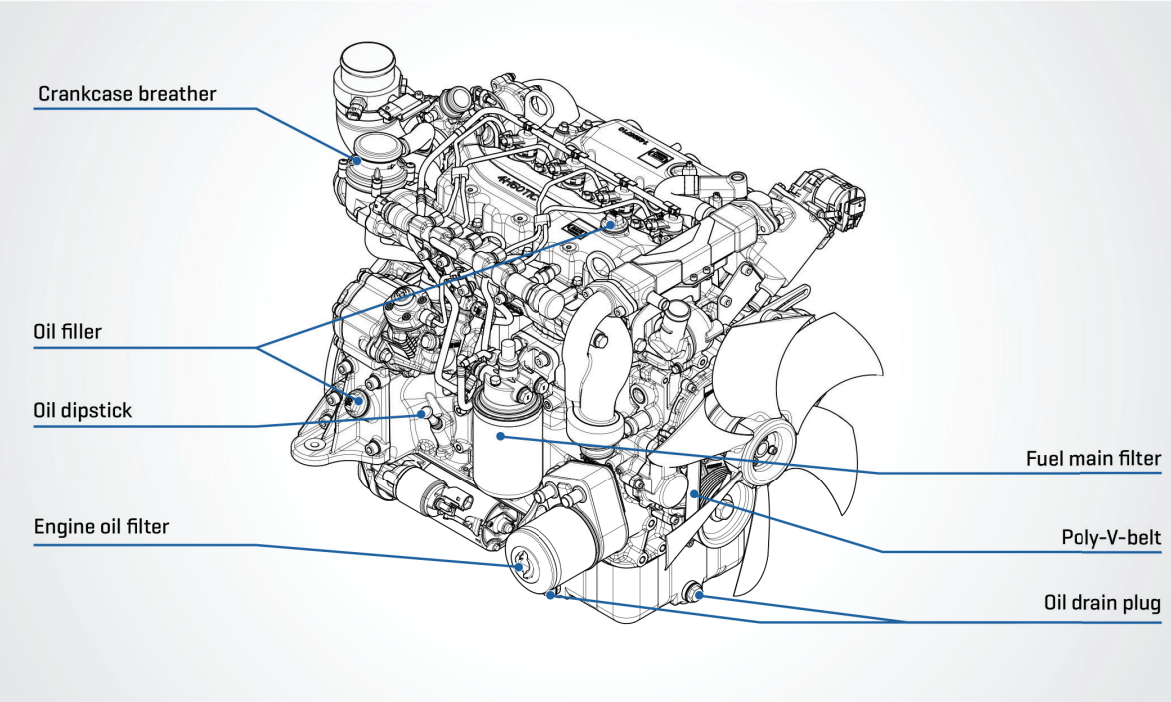

### 4H50TI



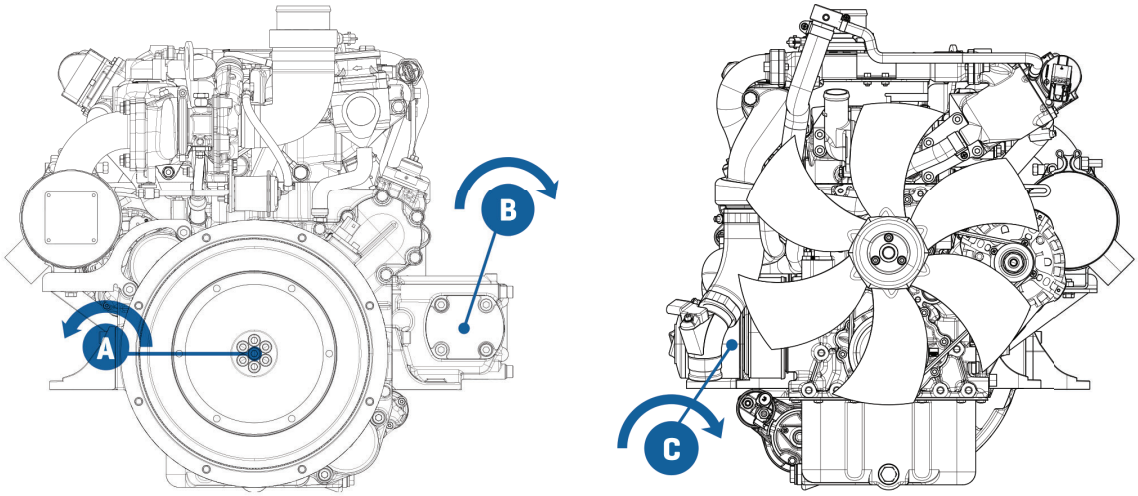



## Maintenance and operating points




## Power take off



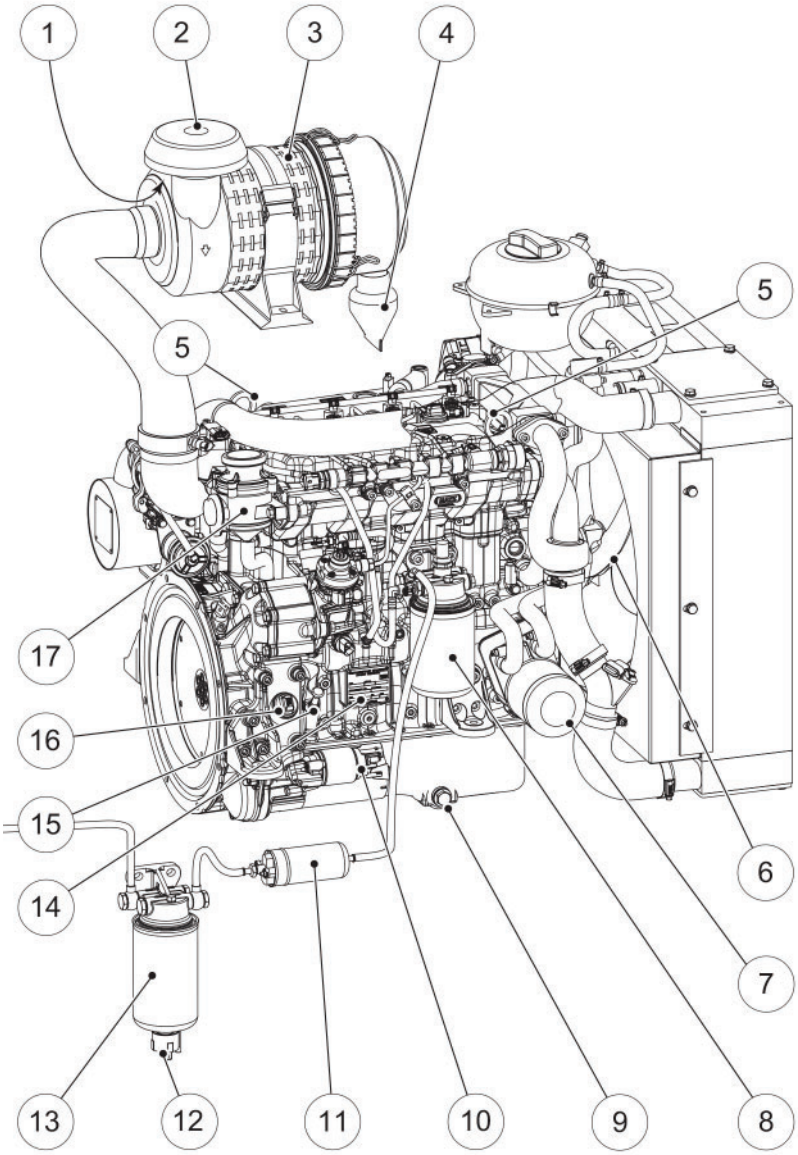

| Power take off | | 4H50TIC |
|---|---|---|
| Transmittable torque | A | 100% |
| | B | Σ = 100 Nm |
| | C | |

# Hatz Diesel Specifications (cont'd)


The engine type plate is located on the crankcase and contains the following engine information:

| | |
|---|---|
| 1 | Model designation of the engine |
| 2 | Engine serial number |
| 3 | Serial rating (kW) at nominal speed (rpm) |
| 4 | Displacement (liters) |
| 5 | Information for US emission certification (EPA/CARB) |
| 6 | EU type approval |
| 7 | EU country of origin (Germany) |
| 8 | Model year (month/year) |
| 9 | Bar code (engine serial number) |

# Hatz Diesel Specifications (cont'd)




| | |
|---|---|
| 1 | Intake opening for combustion air |
| 2 | Rain cap |
| 3 | Air filter (optional) |
| 4 | Dust discharge valve |
| 5 | Lifting eyes |
| 6 | Fan |
| 7 | Oil filter |
| 8 | Fuel fine filter |
| 9 | Side oil drain screw |
| 10 | Starter (low mounting position) |
| 11 | Electric fuel pump |
| 12 | Drain plug on fuel prefilter |
| 13 | Fuel prefilter |
| 14 | Engine type plate |
| 15 | Dipstick |
| 16 | Oil filler plug, bottom |
| 17 | Crankcase ventilation |

# Hatz Diesel Declaration of Comformity

## Extended Declaration of Incorporation
## EC Machinery Directive 2006/42/EC

The manufacturer: **Motorenfabrik Hatz GmbH & Co.KG**
**Ernst-Hatz-Straße 16**
**D-94099 Ruhstorf a. d. Rott**

hereby declares that the incomplete machine: product description: **Hatz diesel engine**
Type designation and as of serial number:
**3H50TIC = 13510, 3H50TI = 16310**
**4H50TIC = 13610, 4H50TI = 16110**

satisfies the following basic safety and health protection requirements in acc. with Annex I to the above-mentioned Directive.

- Annex I, General principles no. 1
- Nr. 1.1.2., 1.1.3., 1.1.5., 1.2.1., 1.2.2., 1.2.3., 1.2.4.1., 1.2.4.2., 1.3.1., 1.3.2., 1.3.3., 1.3.4., 1.3.7., 1.3.8.1., 1.4.1., 1.5.1., 1.5.2., 1.5.8., 1.5.9., 1.6.1., 1.6.2., 1.6.4., 1.7.

All relevant basic safety and health protection requirements down to the interfaces described
- ☒ in the manual for diesel engine
- ☒ in the enclosed data sheets
- ☒ in the enclosed technical documents

have been complied with.

The special technical documents in acc. with Annex VII B of the Directive 2006/42/EC have been prepared.

Conformity with the provisions of the following, other EC Directives, i.e.
**- 2014/30/EU Electromagnetic Compatibility** (EMC), dated 26.02.2014
(was tested in association with a generator)

The following standards have been used (completely or partially):
- EN 1679-1: 092011
- EN ISO 12100: 032011
- EN ISO 13857: 062008
- EN 60204-1: 062007
- EN ISO 13849-1: 062016

The manual for diesel engine has been enclosed to the incomplete machine and the Assembly Instructions have been provided to the customer electronically together with the order confirmation.

Commissioning has been prohibited until it has been established, if applicable, that the machine into which the above-mentioned incomplete machine is to be incorporated, satisfies the provisions of the Machinery Directive.

Wolfgang Krautloher / see "Manufacturer"
Name / address of EC documentation officer

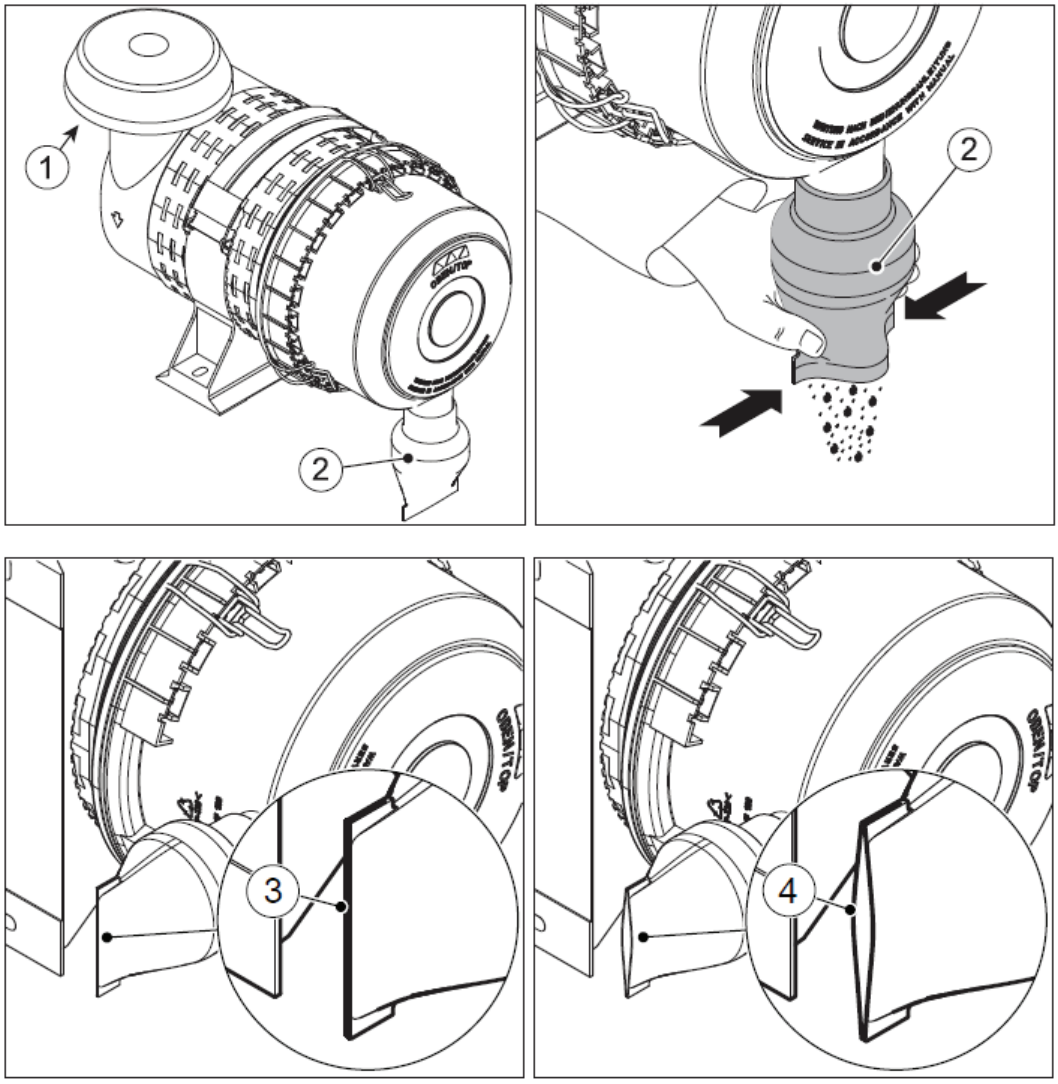
| 03.07.2017 | Krautloher / Directives official | Krautloher |
|---|---|---|
| Date | Signature and information on the undersigned | Signature |

# Engine Maintenance Schedule

| Symbol | Maintenance interval | Maintenance activity/check |
|---|---|---|
| **8-15h** | Every 8–15 operating hours or every day before starting | Check the oil level. |
| | | Check the intake area of the combustion air. |
| | | Check the radiator fins for dirt accumulation. |
| | | Check the cooling system |
| **500h** | Every 500 operating hours or every 2 years | Change the engine oil and oil filter[1)] |
| | | Change the fuel prefilter[1)] |
| | | Replace the main fuel filter[1)] |
| | | Check the poly v belt[1)] |
| | | Change the oil separator of the crankcase ventilation[1)] |
| | | Check the screw connections[1)] |
| | | Clean the engine[1)] |
| | Every 500 operating hours or when indicated, at least every 2 years | Change the air filter cartridge |
| | When indicated, at least every 2 years | Drain the water separator[1)] |
| | Every 4 years | Change the coolant |
| | If necessary, but every 3,000 operating hours at the latest | Replace the poly v belts |
| | Every 4,000 operating hours | Clean the entire exhaust gas recirculation section (EGR pre- cooler, EGR valve, EGR main cooler as well as EGR mixing nozzle) (to be carried out by a trained specialist) |

- Maintenance tasks may only be performed by trained personnel.
- Accident prevention measures must be in accordance with the local accident prevention regulations.
- Perform setting and maintenance work at the specified intervals.
- Replace faulty machine parts as soon as possible.
- Always wear personal protection equipment.
- Only use fully functional tools.
- Installation of unsuitable spare parts can lead to problems. We cannot accept responsibility for direct damage or secondary damage that results from this.We therefore recommend the use of Hatz original spare parts.
- Closely adhere to the maintenance conditions prescribed in this manual.
- Only make changes to the machine in agreement with the manufacturer.
- Only perform maintenance work when the engine is stopped.
- Protect the starting key from unauthorized access.
- Disconnect the negative battery terminal before carrying out maintenance work.
- Adhere to legal regulations when handling and disposing of used oil, filters, coolants, and cleaning agents.
- After completing maintenance work, check that all tools, bolts, aids, and other objects are removed from the machine, and that all safety equipment has been replaced.

# Air Cleaner Maintenance




| | |
|---|---|
| 1 | Intake opening for combustion air |
| 2 | Dust discharge valve |
| 3 | Rubber lips OK |
| 4 | Rubber lips deformed |

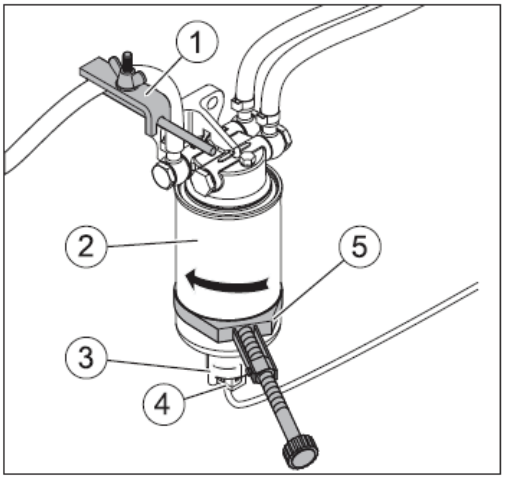
**Step Activity**

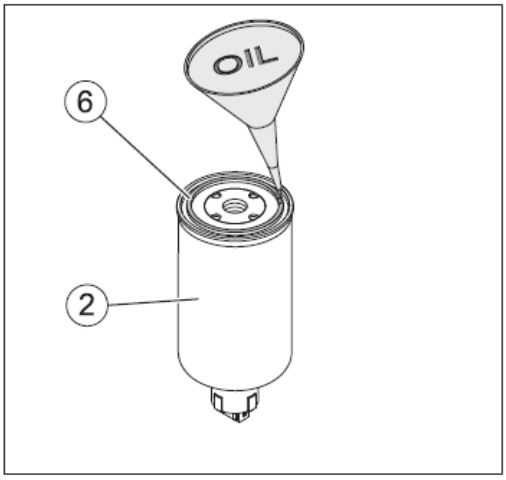
1. Check the intake opening (1) for coarse contamination such as leaves, heavy dust deposits, etc., and clean if necessary.
2. Check that the dust discharge valve (2) is clear. Remove dust seals by pressing them together.
3. Make sure that the rubber lips (3) run parallel to each other. The gap between the rubber lips must be a maximum of 2 mm. Deformed rubber lips (4) impair the function of the precleaner, thus shortening the maintenance interval of the air filter. Replace the dust discharge valve if required.

# TRTP Maintenance Schedule

| CHECK LIST | | | | | |
|---|---|---|---|---|---|
| **ITEM** | **DAILY** | **EVERY 20 HRS** | **EVERY 50 HRS** | **EVERY 100 HRS** | **EVERY 300 HRS** |
| Hydraulic Oil Level | ✓ | | | | |
| Fuel Level | ✓ | | | | |
| Hoses and Fittings | ✓ | | | | |
| External Hardware | ✓ | | | | |
| Change Engine Oil | | | | ✓ | |
| Grease Bearings | | ✓ | | | |
| Replace Fuel Filter | | | | | ✓ |
| Replace Oil Filter | | | | ✓ | |
| Check Valve Clearance | | | ✓ | | |
| Air Filter | ✓ | | | | |
| Hydraulic Motors | | | ✓ | | |
| Steering Leg | | | ✓ | | |
| Hydraulic Filters | ✓ | | | | |

# Filter Replacement
# Pre-Fuel Filter



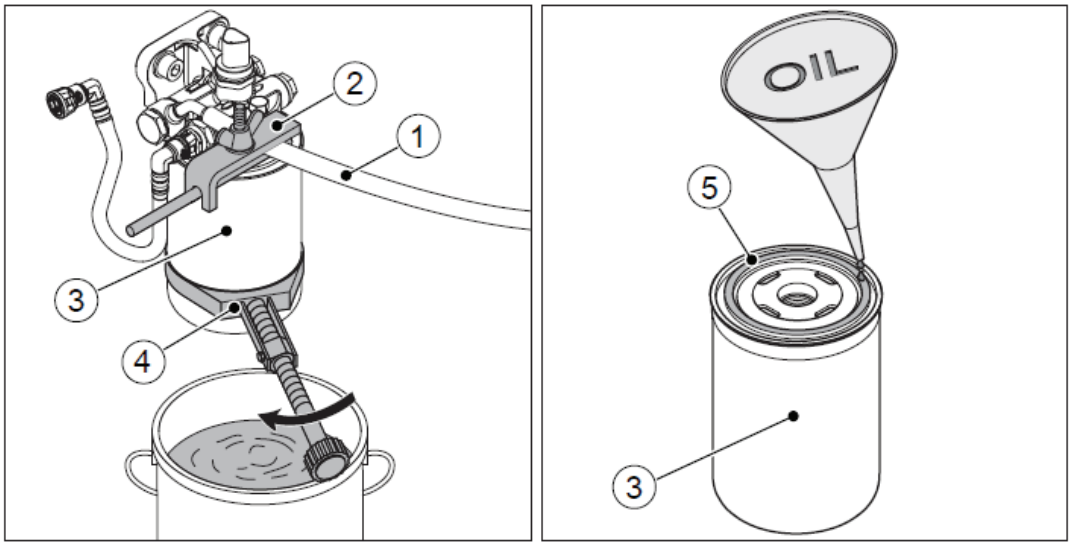




| | |
|---|---|
| 1 | Hose clip on fuel feed line |
| 2 | Fuel prefilter |
| 3 | Drain plug with integrated water level sensor |
| 4 | Water level sensor cable |
| 5 | Strap wrench |
| 6 | Gasket |

**Step Activity**

1. Lock the fuel supply line on the fuel prefilter.
2. Place a suitable container under the filter to collect emerging fuel.
3. Disconnect the water level sensor cable (4) from the drain plug (3).
4. Release the drain screw (3) and drain the fuel.
5. Unscrew the fuel prefilter. Completely unscrew the drain plug with integrated water level sensor
6. Dispose of the used fuel prefilter according to local environmental regulations.
7. Clean the drain plug with integrated water level sensor and lightly oil the sealing surfaces. Screw the drain plug into the new fuel prefilter.
8. Lightly oil the gasket (6) of the new fuel prefilter, fit the dry filter and tighten it by hand.
9. Release the fuel feed line and connect the cable of the water level sensor.
10. Start the engine and perform a test run.
11. After the test run, check the fuel prefilter and drain plug for leaks, tighten by hand if necessary.

## PRE-FUEL FILTER PART NUMBER: 065851



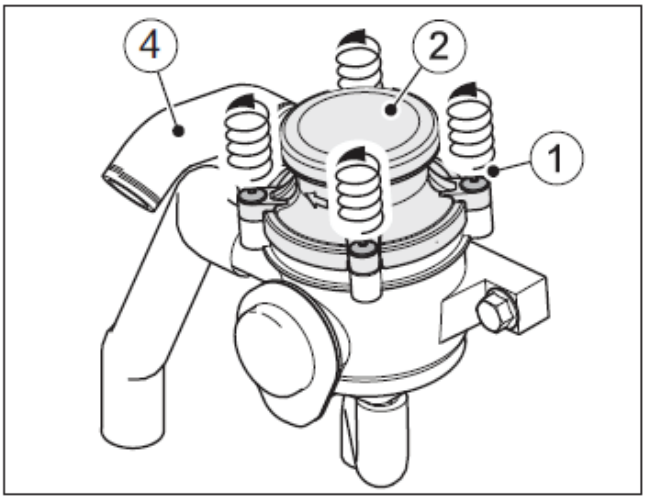

| | |
|---|---|
| 1 | Fuel feed line |
| 2 | Hose clip |
| 3 | Main fuel filter |
| 4 | Strap wrench |
| 5 | Gasket |

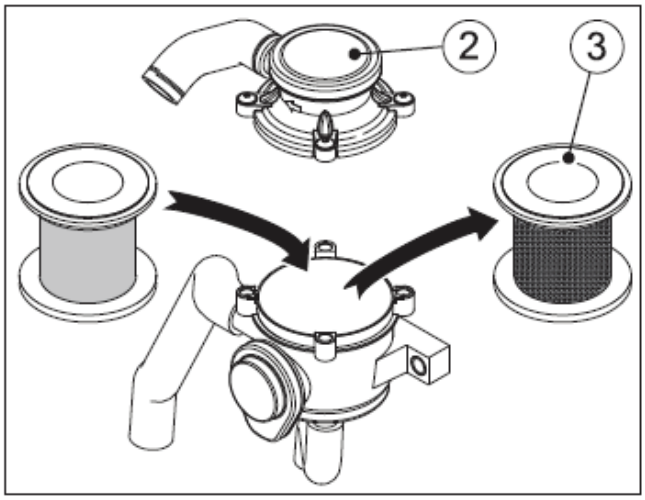
**Step Activity**

1. Block the fuel feed line (1) using the hose clip (2).
2. Place a suitable container under the filter to collect emerging fuel.
3. Unscrew the main fuel filter (3) and dispose of it according to local environmental regulations.
4. Lightly oil the gasket (5) of the new main fuel filter.
5. Fit the filter and tighten it by hand.
6. Release the fuel feed line.
7. Start the engine and perform a test run.
8. After the test run, check the main fuel filter for leaks and tighten by hand if necessary.

## FUEL FILTER PART NUMBER: 065852

# Filter Replacement (cont'd)
# Oil Seperator



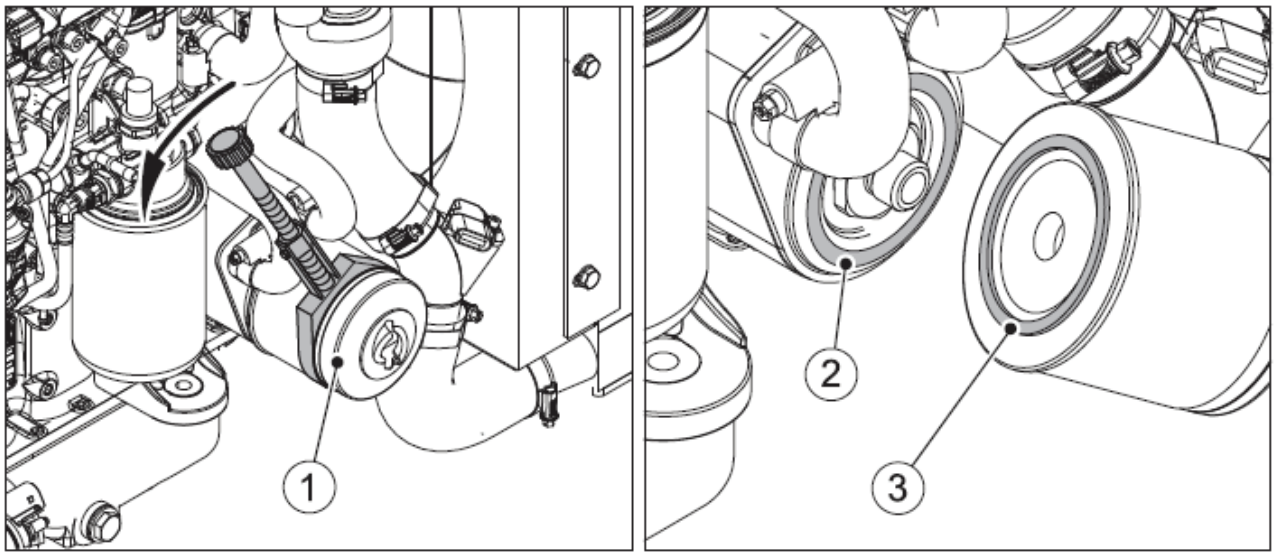




| | |
|---|---|
| 1 | Mounting bolts (captive) |
| 2 | Breather cap |
| 3 | Oil separator cartridge |
| 4 | Vent hose |

**Step Activity**

1. Release the four mounting bolts (1) on the breather cap (2).
2. Carefully lift the breather cap. If necessary, release the vent hose (4).
3. Remove the used oil separator cartridge dispose of it according to local environmental regulations.
4. Wipe out the breather housing with a clean cleaning cloth. Make sure that dirt is not brought into the breather housing.
5. Insert a new oil separator cartridge.
6. Put on the breather cap and tighten the four mounting bolts (max. 4 Nm). If necessary, reattach the vent hose.

## OIL SEPERATOR PART NUMBER: 065853



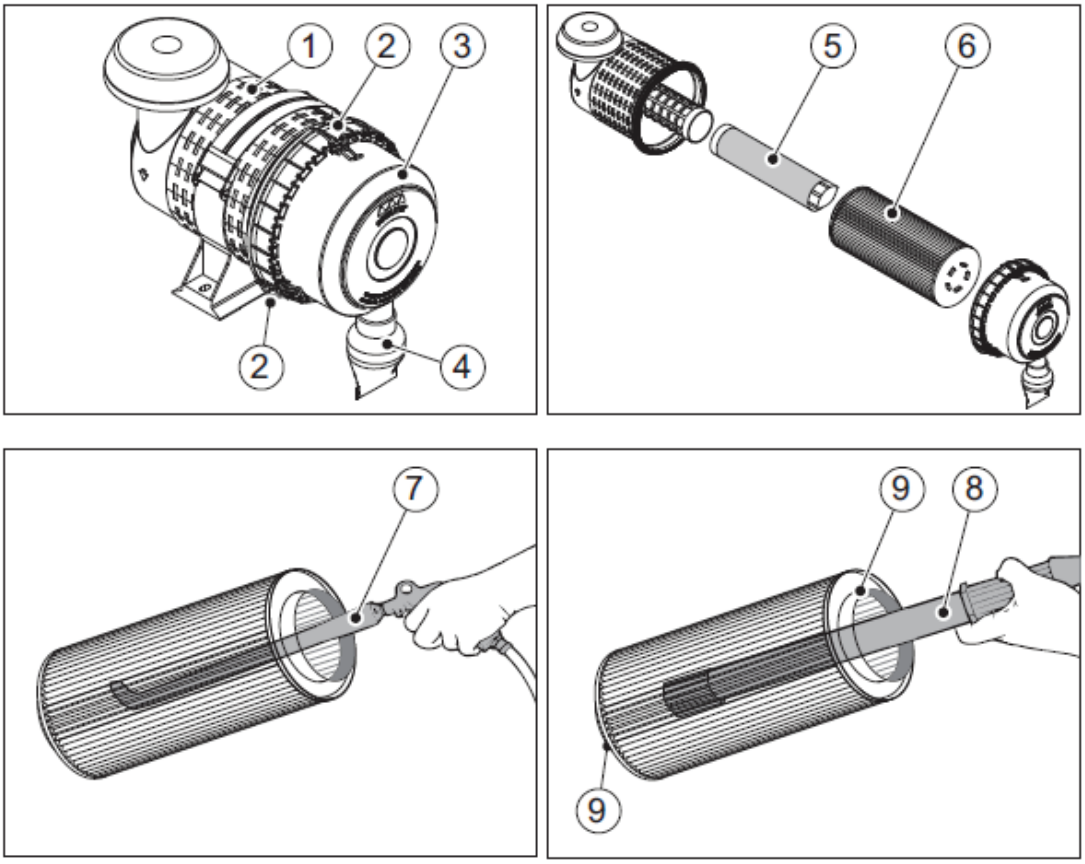

| | |
|---|---|
| 1 | Oil filter |
| 2 | Sealing surface |
| 3 | Gasket |

**Step Activity**

1. Keep a container ready for collecting the used oil.
2. Loosen the oil filter (1) with a strap wrench or similar and unscrew it.
3. Dispose of the old filter in accordance with local environmental regulations.
4. Thoroughly clean the sealing surface (2).
5. Lightly oil the sealing lip (3) of the new oil filter.
6. Screw in the oil filter and tighten it by hand.

## OIL FILTER PART NUMBER: 065854

# Filter Replacement (cont'd)
## Air Filter




| | |
|---|---|
| 1 | Air filter housing |
| 2 | Retaining clips |
| 3 | Air filter cover |
| 4 | Dust discharge valve |
| 5 | Secondary filter |
| 6 | Primary filter |
| 7 | Air gun with extension tube (tip bent) |
| 8 | Lamp |
| 9 | Sealing surfaces |

**Replacing the primary/secondary filters**

**Step Activity**

1. Open the retaining clips (2) and remove the air filter cover (3).
2. Pull out the primary filter (6) and either replace (recommended) or clean (see below). Replace or clean the primary filter according to the service interval indicator. The primary filter must be replaced every two years at the latest however, cleaning is no longer possible after this time.
3. Remove dirt adhering to the inside of the air filter housing (1), air filter cover (3), and dust discharge valve (4).
4. Pull out and check the secondary filter (5), replace if required. The secondary filter can not be cleaned. The secondary filter must be replaced after every fifth replacement of the primary filter, though no later than every two years.
5. Carefully insert new filter elements.
6. Place the air filter cover on the air filter housing and lock all retaining clips making sure that the dust discharge valve points vertically downwards.

**Cleaning the primary filter**

**Step Activity**

1. Blow out the primary filter (6) with dry compressed air from the inside to the outside until dust no longer emerges. Use an air gun with an extension tube (7) with the end bent by approx. 90°. The end of the extension tube must not touch the filter paper.
2. Check the sealing surfaces (9) of the filter cartridge for damage.
3. Check the filter cartridge for tears or other damage in the filter paper by holding it against the light at a slant or shining light from a lamp (8) through it. In case of doubt, always replace the primary filter.

NOTE: The primary filter may only be cleaned once, then it must be replaced.

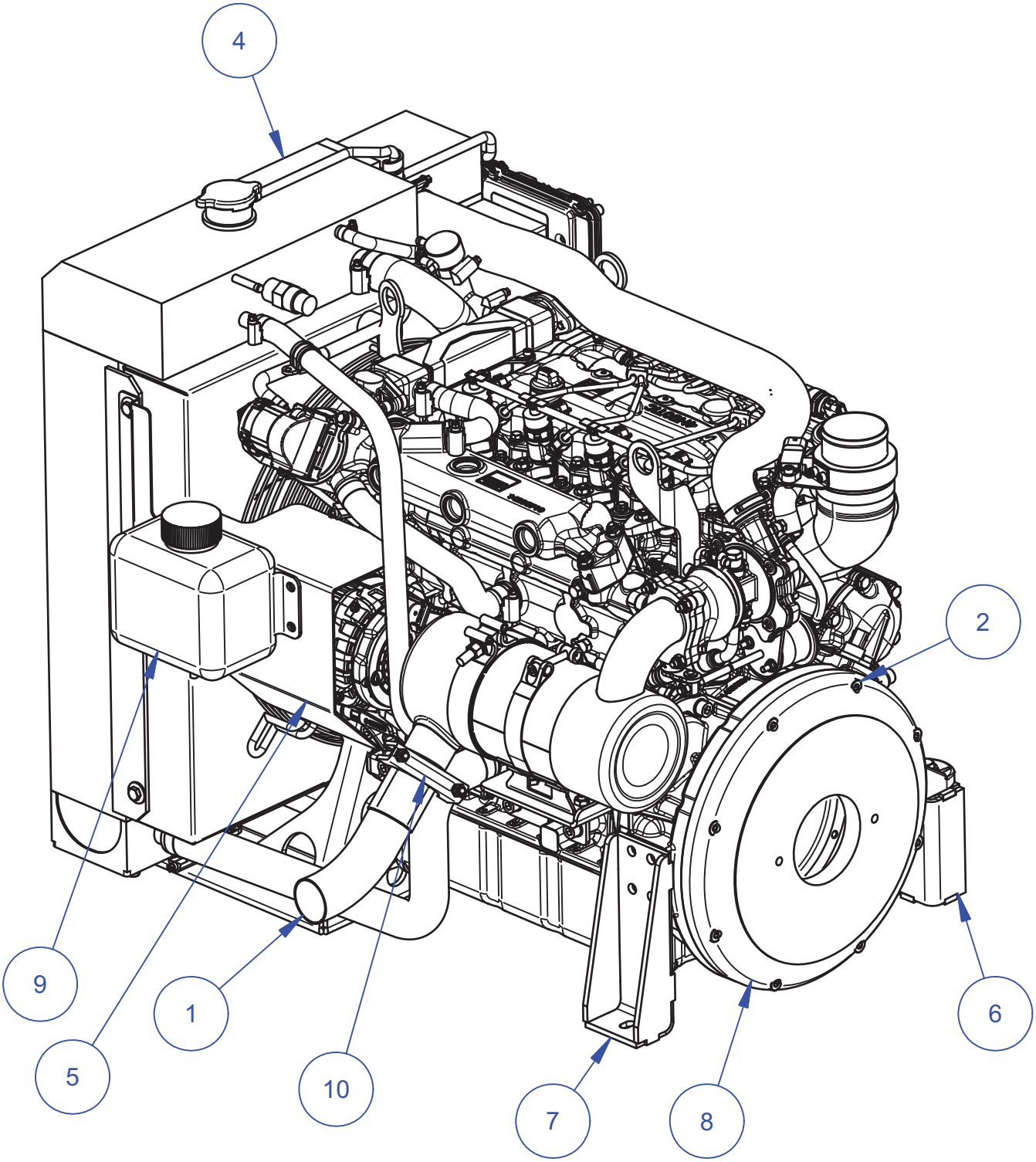
## SECONDARY AIR FILTER PART NUMBER: 065855
## PRIMARY AIR FILTER PART NUMBER: 065856

# Troubleshooting

| Area | Malfunction | Possible Cause | Corrective Measure | Ref. |
|---|---|---|---|---|
| Engine | Engine does not start, or is difficult to start | Battery is discharged | - Add battery fluid<br>- Charge the battery<br>- 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 siezure 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 | |

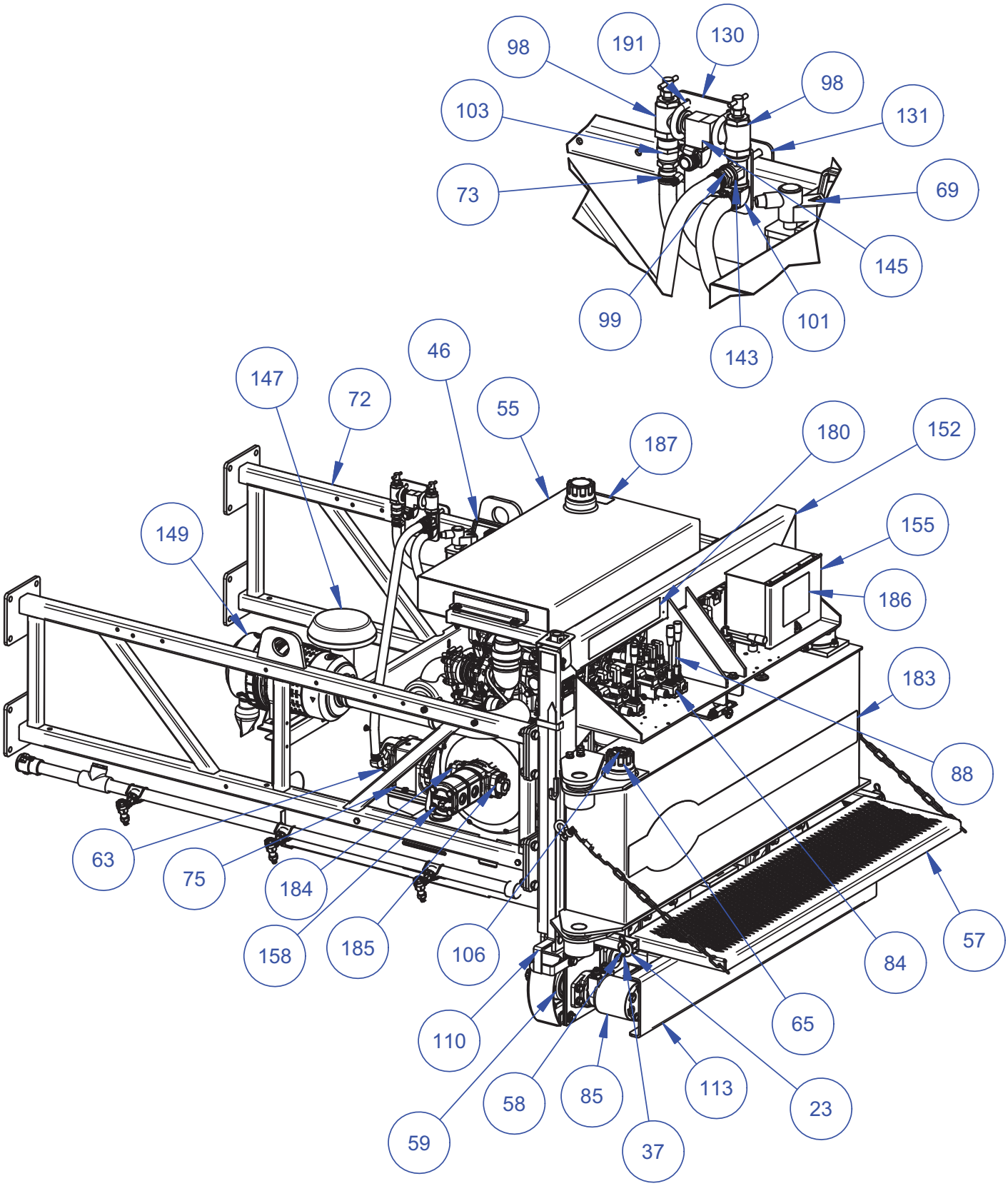
| Area | Malfunction | Possible Cause | Corrective Measure | Ref. |
|---|---|---|---|---|
| Engine | Black smoke comes out of exhaust | Bad fuel | - Change fuel | |
| | | Clogged air cleaner | - Clean or replace the air cleaner | |
| | | Choke is not fully open | - Open the choke fully | |
| | | Other (other than above) | - Contact your AEC dealer | |
| | White or blue smoke comes out of exhaust | Engine oil level is too high | - Adjust the oil level | |
| | | Other (other than above) | - Contact your AEC dealer | |
| Safety Devices | Lamp does not light | Blown bulb | - Replace | |
| | | Blown fuse | - Replace | |
| | | Other (other than above) | - Contact your AEC dealer | |
| Hydraulic System | Pump does not work | Insufficient or deteriorated hydraulic fluid | - Add or change fluid | |
| | | Other (other than above) | - Contact your AEC dealer | |

# Hatz Diesel Engine Assembly Illustration



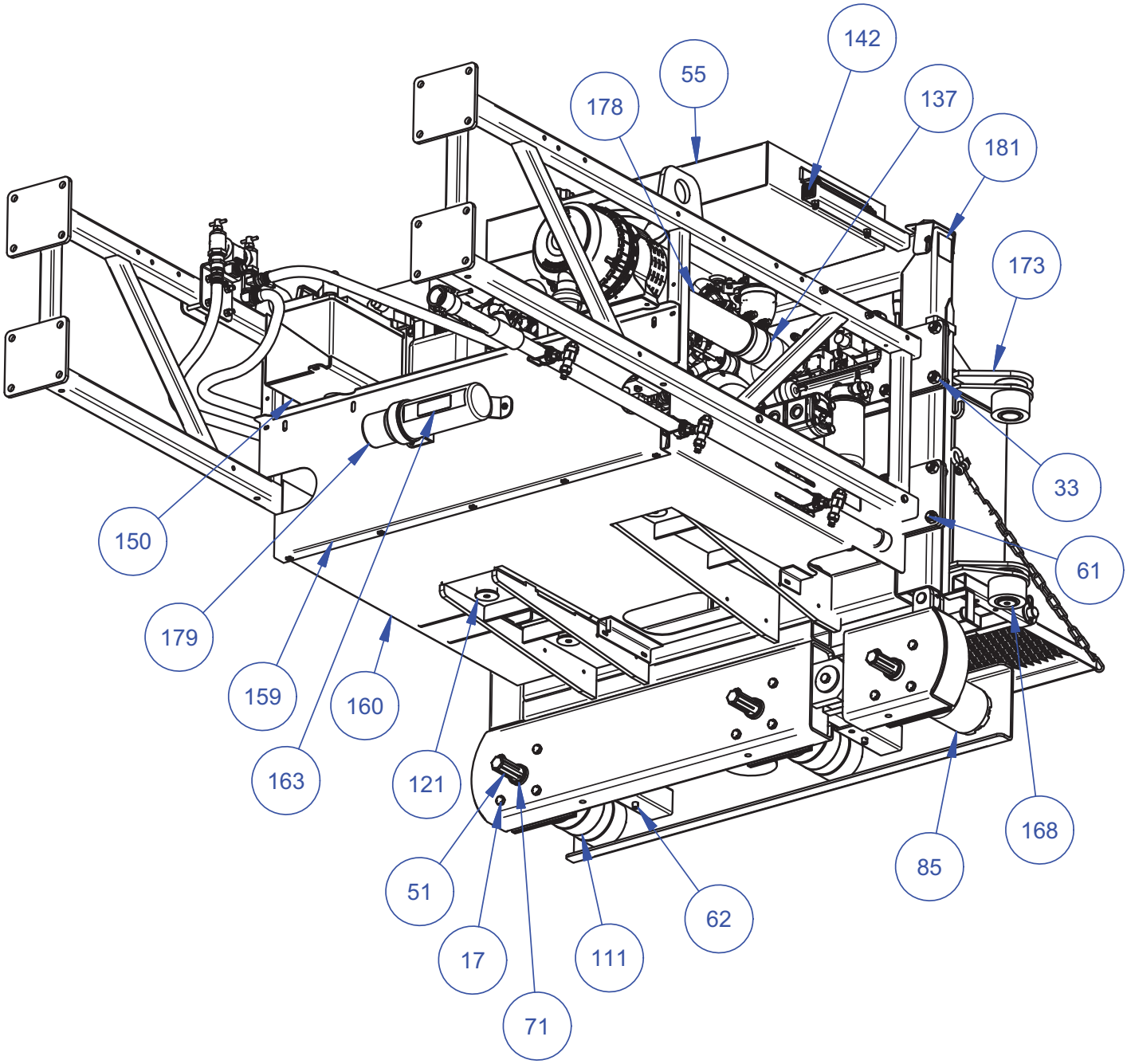
| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 049739 | EXHAUST TAIL PIPE FOR HDX740 CUMMINS | 1 |
| 2 | 065243 | FSTN, SHCS M10 X 1.5 X 30 MM GRADE 12.9 LONG ULTRA CORROSION | 8 |
| 3 | 065398 | AUXILIARY DRIVE FOR HATS H50 ENGINE | 1 |
| 4 | 065453 | HATZ ENGINE H50 1800 RPM | 1 |
| 5 | 065454 | BRACKET, COOLANT OVER FLOW BOTTLE MNT. HATZ TRTP | 1 |
| 6 | 065470 | ENGINE MOUNT, REAR FRONT FOR HATZ ENGINE ON TRTP | 1 |
| 7 | 065474 | ENGINE MNT, REAR LH  FOR 255TRTF WITH HATZ | 1 |
| 8 | 065486 | PUMP MOUNTING PLATE (HAYES043-0-HC4-91-B2) FOR HATZ ENGINE SAE “B” 2 BOLT | 1 |
| 9 | 066028 | COOLANT RECOVERY BOTTLE F/ HATZ ENG. | 1 |
| 10 | 066139 | CLAMP, 2 1/4” MUFFLER | 1 |

# Power End Assembly Illustration



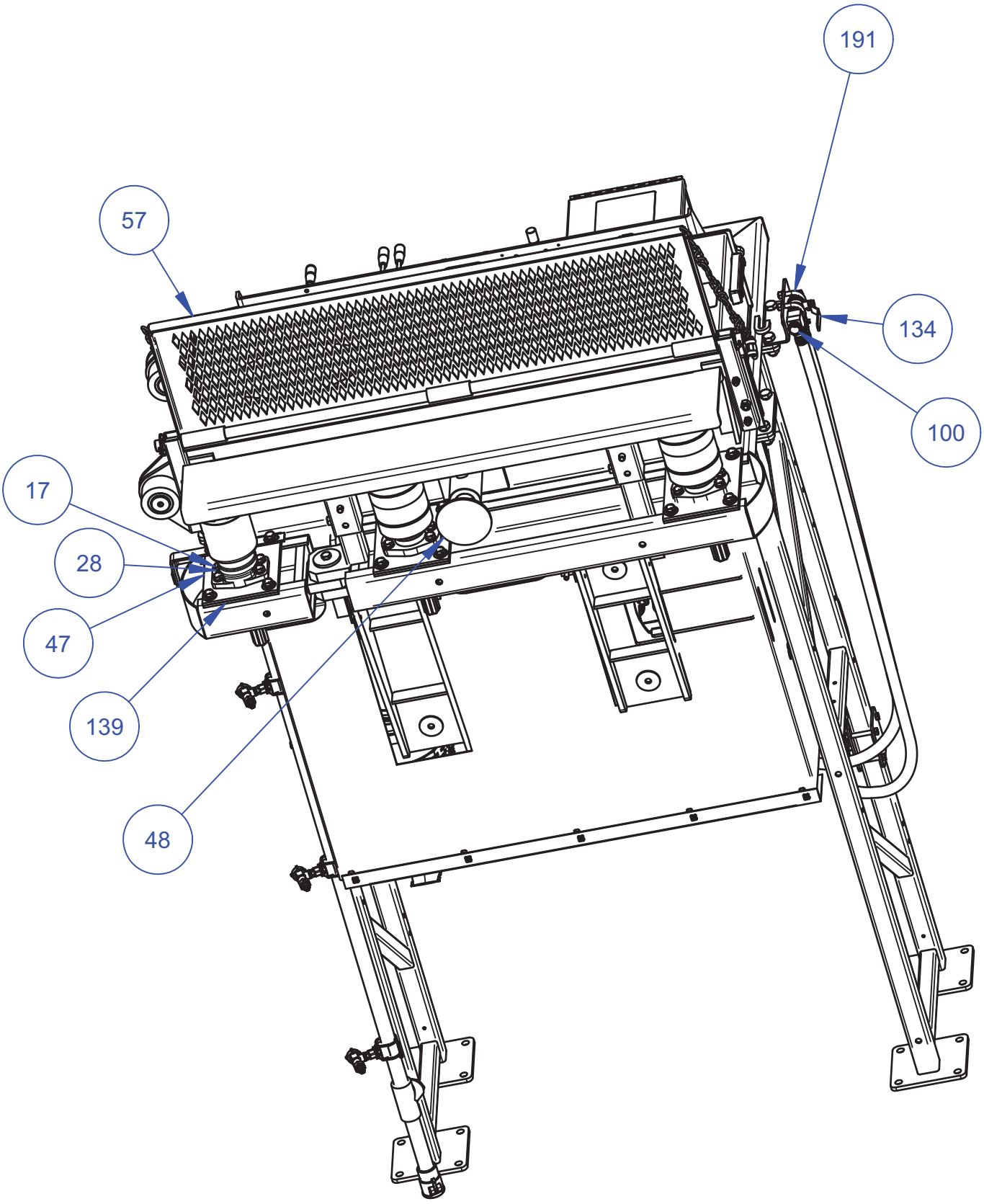
| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 010001 | FSTN, HHCS 1/4-20 X 1/2 GR 5 | 1 |
| 2 | 010002 | FSTN, HHCS 1/4-20 X 3/4 | 3 |
| 3 | 010007 | FSTN, HHCS 1/4-20 X 2 | 2 |
| 4 | 010014 | FSTN, HHCS 1/4-20 X 3 | 1 |
| 5 | 010018 | FSTN, HHCS 5/16 -18 X 1/2 GRADE 8 | 1 |
| 6 | 010019 | FSTN, HHCS 5/16-18 X 3/4 GR 5 | 2 |
| 7 | 010021 | FSTN, HHCS 5/16-18 X 1-1/4 GR5 | 4 |
| 8 | 010023 | FSTN, HHCS 5/16-18 X 1-3/4 | 2 |
| 9 | 010027 | FSTN, HHCS 5/16-18 X 2-1/2 GR5 | 3 |
| 10 | 010034 | FSTN, HHCS 3/8-16 X 1/2 | 1 |
| 11 | 010043 | FSTN, HHCS 3/8-16 X 2-3/4 | 4 |
| 12 | 010044 | FSTN, HHCS 3/8-16 X 3 | 2 |
| 13 | 010045 | FSTN, HHCS 3/8-16 X 3-1/4 | 4 |
| 14 | 010046 | FSTN, HHCS 3/8-16 X 3-1/2 | 3 |
| 15 | 010067 | FSTN, HHCS 1/2-13 X 1 GR8 | 6 |
| 16 | 010068 | FSTN, HHCS 1/2-13 X 1-1/4 GR 8 | 5 |
| 17 | 010069 | FSTN, HHCS 1/2-13 X 1-1/2 GRADE 8 | 36 |
| 18 | 010070 | FSTN, HHCS 1/2-13 X 2-1/4 GR 5 | 2 |
| 19 | 010081 | FSTN, FW 1/4 | 4 |
| 20 | 010082 | FSTN, FW 5/16 | 5 |
| 21 | 010083 | FSTN, FW 3/8 | 13 |
| 22 | 010085 | FSTN, FW 1/2 GR8 | 16 |
| 23 | 010088 | FSTN, FW 1” | 2 |
| 24 | 010089 | FSTN, LW 1/4 | 1 |
| 25 | 010090 | FSTN, LW 5/16 | 10 |
| 26 | 010091 | FSTN, LW 3/8 | 13 |
| 27 | 010092 | FSTN, LW 7/16 GR 8 | 1 |
| 28 | 010093 | FSTN, LW 1/2 GR8 | 29 |
| 29 | 010096 | FSTN, Ø7/16 ID Y-ZINC HRDND FLAT | 1 |
| 30 | 010100 | FSTN, NUT HEX 5/16-18 GR8 | 3 |
| 31 | 010102 | FSTN, NUT HEX 3/8-16 | 4 |
| 32 | 010104 | FSTN, HEX NUT 7/16-14 GR 8 | 1 |
| 33 | 010110 | FSTN, NUT HEX 5/8-11 GR 8 | 16 |
| 34 | 010464 | FSTN, NUT NYLOK 3/8-16 GR 8 | 20 |
| 35 | 010498 | PLUG, 3/8 NPT BI SQ HD PIPE | 2 |
| 36 | 010513 | FITTING, 1/4-28 STR GREASE | 3 |
| 37 | 010711 | CLIP, .125x2-9/16 HITCH PIN | 2 |
| 38 | 011238 | FSTN, NUT HEX NYLOK 1/2-13 | 17 |
| 39 | 012994 | RIVET, 1/8x3/8 ALUM DOME HD [closed] | 4 |
| 40 | 015692 | CAP, Ø1/4 RED GREASE | 3 |
| 41 | 015713 | BUSHING, NITRILE | 4 |
| 42 | 017751 | FSTN, FW HARD A325 3/8 (p) | 3 |
| 43 | 020542 | FSTN, NUT STOVER LOCK 1/4-20 | 6 |
| 44 | 023915 | | 1 |

# Power End Assembly (cont'd)
## Illustration



| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 45 | 024669 | FSTN, HHCS 7/16-14 X 2 | 4 |
| 46 | 026592 | BATTERY HOLD DOWN STRAP | 1 |
| 47 | 028279 | MOTOR MOUNT PLATE | 3 |
| 48 | 028287 | PAD, FOOT F/CYLINDER TRTF | 1 |
| 49 | 028291-1 | PIN, SHORT F/ CYLINDER TRTF | 1 |
| 50 | 028291-2 | PIN, LONG F/ CYLINDER TRTF | 1 |
| 51 | 028292 | SHAFT, HEX TRIPLE RTF | 3 |
| 52 | 028322 | MOUNT, CYLINDER FOR TRTP | 1 |
| 53 | 028402 | FSTN, HHCS 3/8-16 x 1-1/2 GR8 | 8 |
| 54 | 029032 | DIN 127 - M8 | 6 |
| 55 | 029127 | TANK, FUEL | 1 |
| 56 | 029136 | ENDHANDLE LOCK | 1 |
| 57 | 029176 | STAND, TRTF | 1 |
| 58 | 029187 | BAR, F/ OPERATOR STAND | 1 |
| 59 | 029223 | BEARING, 1 3/4" 4 BOLT FLANGE | 3 |
| 60 | 029232 | VALVE, CHECK PNEUTROL 3/8 TRTF | 1 |
| 61 | 029311 | FSTN, HHCS 5/8-11 X 1 3/4 GR 8 YELLOW ZINC | 16 |
| 62 | 029387 | PIN, MOTOR PROTECTOR TRTP 255 | 2 |
| 63 | 029418 | PUMP, 6500C-R | 1 |
| 64 | 032097 | DECAL, SERIAL NUMBER PLATE | 1 |
| 65 | 032268 | UNIT, CHROME LOCKABLE GAS-HYDRA TANK CAP | 2 |
| 66 | 032863 | FSTN, HHCS M8 x 1.25 x 20MM | 6 |
| 67 | 034243 | DECAL, HYDR OIL ONLY | 1 |
| 68 | 035597 | INSULATOR, POS BATT TERMINAL | 1 |
| 69 | 035598 | INSULATOR, NEG BATT TERMINAL | 1 |
| 70 | 037230 | BRACKET, TRTP LONG BALL VALVE | 1 |
| 71 | 037560 | O-RING, HEX COUPLER ASSY (318) | 3 |
| 72 | 037577 | FRAME, TRTP 6' END | 2 |
| 73 | 038664 | #10 HOSE CLAMP | 7 |
| 74 | 038882 | CUSHION,BATT.BOX REAR F/TRTF | 1 |
| 75 | 039788 | GUARD, F/HYD. WATER PUMP TRTP | 1 |
| 76 | 039789 | SPACER, BLOCK F/WATER PUMP F/TRTP | 1 |
| 77 | 040058 | VALVE, STACK (FINISH TUBE CONTROL) TRTP | 1 |
| 78 | 040059 | FOOT BRACKET, WATER PUMP TRTP | 1 |
| 79 | 040060 | COUPLER, JAW F/ WATER PUMP (TRTP) | 2 |
| 80 | 040061 | INSERT, JAW COUPLER WATER PUMP TRTP | 1 |
| 81 | 040063 | VALVE, SPRAY SYSTEM (TRTP) | 1 |
| 82 | 040064 | HANDLE, WATER SPRAY VALVE (TRTP) | 1 |
| 83 | 040065 | MOTOR, WATER PUMP (TRTP) | 1 |
| 84 | 040066 | VALVE, STACK (TRAVEL CONTROL) TRTP | 1 |
| 85 | 040068 | MOTOR, FINISH 10" TRTP (STRIKE OFF) | 1 |
| 86 | 040072 | STRAINER, SMALL HYD. TMF-05-5 TANK (TRTP) | 1 |
| 87 | 040073 | STRAINER, LARGE HYD. TANK (TRTP) | 2 |
| 88 | 040074 | HANDLE, F/ VALVE - TRTP | 3 |
| 89 | 040076 | FTG, MJIC X MSAE ADJ (8-10 90°) | 1 |

# Power End Assembly (cont'd)
## Illustration



| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 90 | 040078 | *Varies* | 2 |
| 91 | 040079 | FTG, O-RING ADAPTOR (8-6) | 4 |
| 92 | 040080 | FTG, MJIC X MSAE ADJ (6-6 90°) | 3 |
| 93 | 040083 | | 3 |
| 94 | 040085 | FTG, O-RING ADAPTOR (6-8) | 2 |
| 95 | 040104 | FTG, MJIC X MSAE ADJ X-LONG (6 90°) | 2 |
| 96 | 040105 | FTG, MJIC X MSAE ADJ LONG (8 90°) | 1 |
| 97 | 040106 | FTG, MJIC X MSAE ADJ (8-6 90°) | 2 |
| 98 | 040107 | RELIEF VALVE, TRTP SPRAY SYSTEM | 2 |
| 99 | 040108 | FTG, 3/4 MPT x 3/4 HOSE BARB | 4 |
| 100 | 040109 | FTG, 3/4 MPT x 3/4 GARDEN | 1 |
| 101 | 040110 | FTG, 3/4 MPT x 3/4 90° HOSE BARB | 4 |
| 102 | 040111 | FTG, 3/4 MPT RUN TEE | 1 |
| 103 | 040115 | FTG, 3/4 COUPLER | 1 |
| 104 | 040116 | FTG, 3/4 CLOSE NIPPLE | 1 |
| 105 | 040208 | FSTN, 1/2-13 STOVER NUT | 4 |
| 106 | 041509 | DECAL, HYDRAULIC OIL CAP | 1 |
| 107 | 042816 | FITTING, #6JICMX#10SAE-OR-M 90 FLARE | 1 |
| 108 | 042821 | FITTING, #JICMX3/8MPT STGT. FLARE-O | 2 |
| 109 | 042844 | GAUGE, SNA HYDR LEVEL | 1 |
| 110 | 042945 | WELD'T POINTER MOTOR END 255 TRTP | 1 |
| 111 | 044652 | MOTOR, 10" TRTP HD HYDR TRAVEL | 2 |
| 112 | 044653 | FITTING, F2603-4-4-4-O | 1 |
| 113 | 044671 | WELD'T, 255BD HD MOTOR PROTECTOR | 1 |
| 114 | 045134 | FILTER, RETURN LINE RTF25N-D10B/S2/N | 1 |
| 115 | 045135 | MANIFOLD, SPECIAL F/ TRTP | 1 |
| 116 | 045136 | CYLINDER, STEERING F/ TRTP | 1 |
| 117 | 045137 | FTG., F2501-12-12-O | 1 |
| 118 | 045140 | FTG., 6409-6-O | 1 |
| 119 | 045141 | FTG., 5406-16-12 | 1 |
| 120 | 045142 | | 2 |
| 121 | 045757 | MOTOR MOUNT ISOLATOR | 4 |
| 122 | 045855 | FSTN, HHCS 1/2-13 X 3-1/2 GR8 | 1 |
| 123 | 045920 | FTG, F6801-8-8-NWO 90° ELB | 3 |
| 124 | 045921 | FTG, F6400-8-8-O STR | 2 |
| 125 | 045928 | FTG, F6400-4-4-O STR JIC-SAE | 1 |
| 126 | 045940 | FTG, F6400-10-10-O STR | 1 |
| 127 | 045950 | FTG, F6400-6-12-O STR | 1 |
| 128 | 045951 | FTG, F6400-8-12-O STR | 2 |
| 129 | 046241 | GAUGE, RETURN FILTER | 1 |
| 130 | 046373 | BRACKET, WATER VALVE MNT PLATE | 1 |
| 131 | 046374 | BRACKET, CLAMP PLATE WATER VALVE | 1 |
| 132 | 046441 | COVER, FUEL PUMP | 1 |
| 133 | 047172 | GAUGE, 3" SITE LEVEL | 1 |

# Power End Assembly (con't)
# Parts List

| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 134 | 047412 | 3/4 NPT Ball Valve | 1 |
| 135 | 047474 | PLUG, SAE-4 O-RING | 2 |
| 136 | 047604 | BATTERY, 700CCA 12V 48-B | 1 |
| 137 | 047850 | CLAMP, TORQUE | 3 |
| 138 | 048739 | | 1 |
| 139 | 049322 | PLATE, SPACER F/ TRTP DRIVE MOTORS | 3 |
| 140 | 049425 | CLAMP, J49 3/4" DIXON TRTP | 1 |
| 141 | 049739 | EXHAUST TAIL PIPE FOR HDX740 CUMMINS | 1 |
| 142 | 050684 | PLUG, 1-1/2 SQ PLASTIC | 2 |
| 143 | 057914 | FTG. 100F 3/4 FGD TEE-3 ENDS FEM PIP | 1 |
| 144 | 057926 | FTG, STRAIGHT THREAD CONNECTOR | 4 |
| 145 | 057930 | 3/4 ML RUN TEE (FEM X ML X FEM PIPE) | 2 |
| 146 | 064419 | RUBBER INSERT SLEEVE 2 3/4" X 3" OD. (33027) | 1 |
| 147 | 065188 | AIR BONNET, FOR HATZ H50 | 1 |
| 148 | 065189 | HATZ AIR CLEANER 4H50 BAND | 1 |
| 149 | 065190 | HATZ AIR CLEANER 4H50 BREATHER | 1 |
| 150 | 065448 | BATTERY BOX WELDMENT FOR TRTP TIER4 | 1 |
| 151 | 065454 | BRACKET, COOLANT OVER FLOW BOTTLE MNT. HATZ TRTP | 1 |
| 152 | 065460 | END HANDLE, MOTOR END 255 TRTP (HATZ ENGINE) | 1 |
| 153 | 065477 | BRACKET, FUEL FILTER AND PUMP FOR HATZ FOR TRTF | 1 |
| 154 | 065478 | CONTROL BOX, FOR 255 TRTP WITH HATZ ENGINE | 1 |
| 155 | 065482 | WELDMENT,CONTROL BOX COVER FOR 255 | 1 |
| 156 | 065486 | PUMP MOUNTING PLATE (HAYES043-0-HC4-91-B2) FOR HATZ ENGINE SAE "B" 2 BOLT | 1 |
| 157 | 065487 | CHANNEL, BRAETHER MNT TO FUEL TANK 255 WITH HATZ | 1 |
| 158 | 065490 | TRIPLE HYD PUMP F/ TRTP W/ HATZ | 1 |
| 159 | 065495 | REAR PLATE FOR PAN ASSEMBLE HATZ TRTP POWER END HANDLE TRTP | 1 |
| 160 | 065497 | PAN, BOTTOM WELDMENT FOR HATZ POWERED END HANDLE ASSEMBLY TRTP | 1 |
| 161 | 065515 | CONTROL PANEL, HATZ 85250208 FOR 255 trtp WITH Hatz Power | 1 |
| 162 | 065517 | NEOPRENE VIBRATION DAMPNER SANDWITCH MNT MALE/FEMAL 3/4" TALL 1" WIDE | 4 |
| 163 | 065657 | 780 DECAL "OPERATOR'S MANUAL" | 1 |
| 164 | 065848 | BATTERY CABLE, NEGATIVE 2 AWG FOR HDX760/255 TRTP TIER4 HATZ | 1 |
| 165 | 065849 | BATTERY CABLE, POSITIVE 2AWG FOR TRTP TIER4 HATZ | 1 |
| 166 | 065864 | ENGINE ASSEMBLY, 255 HATZ GANG 255 | 1 |
| 167 | 065922 | 1/8 x 1/4 HOSE BARB | 1 |
| 168 | 065950 | WELDMENT, 255CD TANK WITH TIER 4 | 1 |
| 169 | 065991 | ELBOW,90 DEGREE AIR INTAKE HATZ ENGINE | 1 |
| 170 | 065993 | CONNECTOR SLEEVE, HATZ ENGINE | 1 |
| 171 | 066027 | FLANGED SLEEVE BEARING HT AND OIL | 2 |
| 172 | 066028 | COOLANT RECOVERY BOTTLE F/ HATZ ENG. | 1 |
| 173 | 066056 | TOP HINGE, FOR HYD TANK 255T4 TRTP WITH HATZ | 1 |
| 174 | 066057 | TUBE, MOUNT F/STAND TRTF T4 HATZ | 2 |
| 175 | 066058 | BUSHING, F/HYD TANK TRTF T4 WITH HATZ | 1 |
| 176 | 066059 | WASHER RETAINER FOR DRIVE SHAFT ASSEMBLY TRACK DRIVE | 1 |

| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 177 | 066139 | CLAMP, 2 1/4" MUFFLER | 1 |
| 178 | 066186 | HOSE, RIGID 2 3/4" I.D, INTAKE HATZ ENGINE CUT TO 6 1/4" | 1 |
| 179 | 066255 | MANUAL TUBE | 1 |
| 180 | 066485 | DECAL, FWD FINISH TUBE/UPSTEERING | 1 |
| 181 | 066497 | DECAL, FINISH TUBE VERTICAL ADJUSTER | 1 |
| 182 | 066508 | DECAL, WATER PUMP/OFF&ON | 1 |
| 183 | 066515 | DECAL, TRIPLE ROLLER TUBE PAVER 255 | 1 |
| 184 | 068806 | FTG, HYDRAULIC FLANGE W46-16-16U | 1 |
| 185 | 068807 | FTG, 3/4 FLANGE KIT, W46-12-12U | 1 |
| 186 | 069130 | | 1 |
| 187 | 069138 | | 1 |
| 188 | 069568 | | 1 |
| 189 | 069569 | | 1 |
| 190 | 069571 | | 1 |
| 191 | 116008 | U-BOLT CLAMP | 4 |

# Notes

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allen® ENGINEERING CORPORATION

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