

ODP 40



HOGG & DAVIS, Inc.

The information, specifications, and illustrations in this manual are on the basis of information available at the time it was written. The specifications, torque values, pressures of operation, measurements, adjustments, illustrations, and other items can change at any time. These changes can affect the service of the given product.

For the complete and most current information, contact:

Hogg & Davis, Inc
P.O. Box 405 / 3800 Eagle Loop
Odell, OR 97044-0405
541-354-1001
541-354-1080 Fax

**For most recent manual
version please visit:**

www.hoggdavis.com

ODP 40
4,000 Lb Drum Puller

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"Rugged Dependability."

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Product Warnings

⚠ DANGER

AN UNTRAINED OPERATOR SUBJECTS HIMSELF AND OTHERS TO DEATH OR SERIOUS INJURY

YOU MUST NOT OPERATE THIS MACHINE UNLESS

- You have been trained in the safe operation of this machine.
- You have read, understand and follow the safety and operating recommendations contained in the machine manufacturer's manuals, your employer's work rules and applicable government regulations.
- You are sure the machine is operating properly and has been inspected and maintained in accordance with the manufacturer's manuals.
- You are sure that all safety signs, guards and other safety features are in place and in proper condition.

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⚠ WARNING



Escaping fluid under pressure can penetrate skin causing serious injury.

Relieve pressure before disconnecting hydraulic lines. Keep away from leaks and pin holes. Use a piece of cardboard or paper to search for leaks. Do not use your hand.

Fluid injected into skin must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene will result.

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⚠ DANGER




REACHING INTO REEL AREA OR CONTACTING TURNING REEL OR MOVING LINE DURING OPERATION MAY RESULT IN DEATH OR SERIOUS INJURY

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⚠ DANGER

ELECTROCUTION HAZARD EXISTS

WHEN PULLING LINE OR CONDUCTOR IS NEAR ENERGIZED LINES, MAKE SURE MACHINE IS PROPERLY GROUNDED AND OPERATOR IS PROPERLY PROTECTED.



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⚠ CAUTION



BURN HAZARD

DO NOT TOUCH

BRAKE ROTORS WILL BECOME EXTREMELY HOT DURING OPERATION

PIN D30027

⚠ DANGER



JACKSTAND AND OUTRIGGER CONTACT WILL CAUSE SERIOUS CRUSHING INJURY.


STAND CLEAR

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DIESEL

Use Ultra Low Sulfur Diesel Fuel Only

Otherwise The Emission Control System Will Be Damaged



HYDRAULIC FLUID ONLY



D30010

⚠ DANGER

HOT SURFACE



PIN D30013

HYDRAULIC FLUID

ISO 46 OR EQUAL VALVE MUST BE OPEN WHEN OPERATING

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⚠ WARNING

KEEP HANDS CLEAR



PIN D30041

NOTICE

GROUNDING POINT



PIN D30034

CAUTION

WHEN MACHINE IS STORED RELEASE PRESSURE TO OPEN BRAKE CALIPERS FULLY. CONDENSATION BUILDUP FOR LONG PERIODS OF TIME CAN CAUSE PREMATURE FAILURE OF BRAKE LINING.

PIN D30027

NOTICE

LUBRICATE CHAIN DAILY

PIN D30069

PAYOUT LOCKOUT RELEASE



PAYMENT & LOCKOUT SYMBOL PIN PRESURES AND HELD DURING PAYOUT

⚠ WARNING

THE REEL DRIVE DOG PIN MUST BE INSTALLED PRIOR TO OPERATION. FAILURE TO DO SO MAY ALLOW REEL TO BECOME DISENGAGED DURING OPERATION WHICH COULD CAUSE SERIOUS INJURY OR DEATH.

PIN D30080

← DISENGAGE

REEL DRIVE DOG

→ ENGAGE

CAUTION

DOG MUST BE PINNED IN EITHER POSITION



**ODP 40
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WARNING

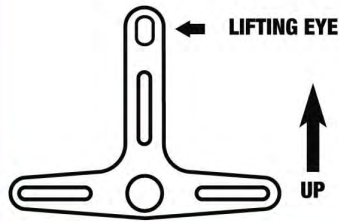
THE REEL MANDREL PIN AND LOCKING PIN MUST BE INSTALLED PRIOR TO OPERATION. FAILURE TO DO SO MAY ALLOW REEL TO BECOME DISENGAGED DURING OPERATION WHICH COULD CAUSE SERIOUS INJURY OR DEATH.

REEL LOADING / UNLOADING INSTRUCTIONS

1. MAKE SURE THAT LIFTING EYES ARE POINTING UP BEFORE REMOVING LOCKING PIN AND MANDREL SHAFT PIN.
2. APPLY OVER SPIN BRAKE.
3. SECURE LOAD WITH LIFTING DEVICE.
4. REMOVE LOCKING PIN AND MANDREL SHAFT PIN.
5. REMOVE REEL MANDREL SHAFT.

LOADING INSTRUCTIONS

1. REPLACE REEL AND SHAFT ASSEMBLY.
2. INSTALL MANDREL SHAFT PIN AND LOCKING PIN.
3. RELEASE LOAD FROM LIFTING DEVICE.
4. RELEASE OVER SPIN BRAKE.



P/N D30082

These warning labels and others like it are Placed in critical areas of the machine. The Warnings are to be read and fully Understood prior to operation of the unit.



ODP 40
4,000 Lb Drum Puller

General Specifications

This unit is designed to install overhead cable/conductor.

- Single Reel Puller
- 4000 lbs Maximum Line Pull
- 72" X 56" Maximum Reel Diameter
- 6,000 lb Maximum Reel Capacity
- Manual Jack stands (2) Rear – (1) Tongue
- Hydraulic Jack stands (optional)
- Maximum Line Speed 0-4 mph

ODP 40 4,000 Lb Drum Puller

YANMAR

INDUSTRIAL / ENGINES / TNV SERIES



Dimensions, Performance Data & Quick Specs

| | |
|---|------------------|
| NET INTERMITTENT POWER (kW/hp) Potencia Neta Intermitente | 34 / 45.6 |
| RATED SPEED (RPM) Velocidad de Regimen | 3000 |
| LENGTH (w/fan) (in/mm) Longitud | 28.6 / 726 w/DPF |
| WIDTH (in/mm) Ancho | 21.9 / 556 w/DPF |
| HEIGHT (in/mm) Altura | 34.0 / 863 w/DPF |

4TNV88C-DYEM

| | |
|--|----------------------------------|
| SPECIFICATION Especificacion | DYEM |
| CYLINDERS Cilindros | 4 |
| BORE X STROKE Diametro x Carrera | 88 x 90 (mm) 3.46 x 3.54 (in) |
| DISPLACEMENT Cilindrada | 2190 (cc) 133.6 (ci) |

| | |
|--|--|
| COMBUSTION TYPE Tipo de Combustion | Common Rail Direct Injection Common Rail de Inyección Directa |
|--|--|

| | |
|---------------------------------|---|
| ASPIRATION Aspiracion | Naturally Aspirated Aspiracion Natural |
|---------------------------------|---|

| | |
|--|-----------------------------------|
| GOVERNOR TYPE Tipo de Gobernador | Electronic Control Electrónico |
|--|-----------------------------------|

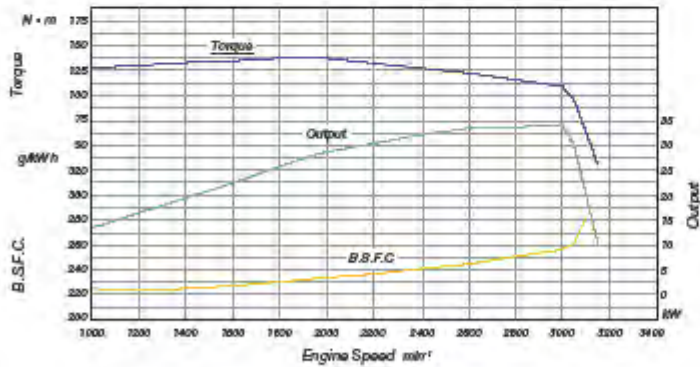
| | |
|---------------------------|----------------------------|
| Lubrication System | 7.4L Capacity Deep Oil Pan |
|---------------------------|----------------------------|

| | |
|--------------------------|---------------------|
| Electrical System | 12V, 55A Alternator |
|--------------------------|---------------------|

| | |
|--------------------|--------------------|
| Fuel System | Common Rail System |
|--------------------|--------------------|

| | |
|-----------------------|-------------------------|
| Cooling System | Water Pump, Belt-driven |
|-----------------------|-------------------------|

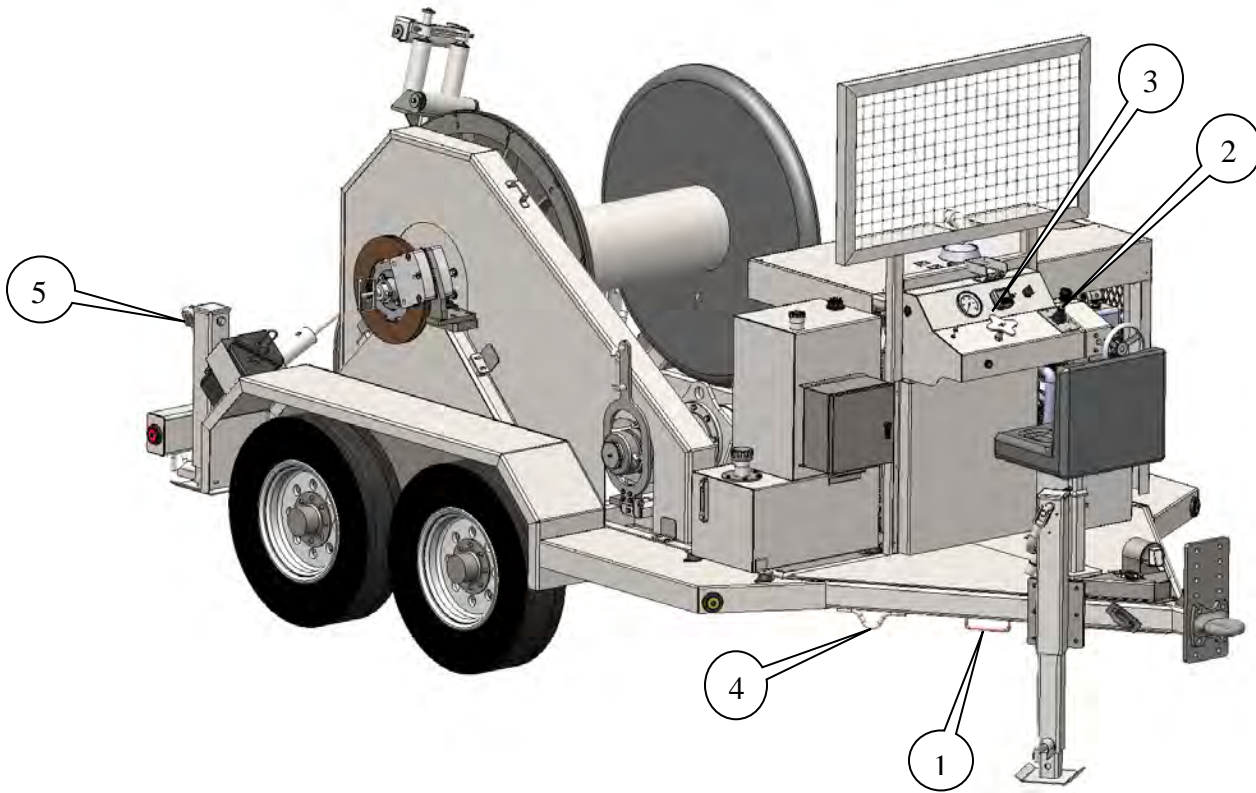
| | |
|-----------------------|------------------------------------|
| Power Take Off | FWH: SAE #5 to 124 FW: SAE 7.5" |
|-----------------------|------------------------------------|



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Engine photo may not reflect actual specifications.
E-4TNV88C-DYEM-500114



ODP 40 4,000 Lb Drum Puller



Operating Instructions

All persons operating this machine must read and understand this manual as well as the operating, danger, and warning decals placed on the machine. Failure to read and understand these items subjects the operator and others to DEATH or SERIOUS INJURY.

Operators shall make themselves familiar with the placement of the following operating and safety features of the machine.

1. Grounding Lugs and their placement on Machine
2. Take Up / Pay-Out Control
3. Engine Controls and Gauges
4. Tie Down Locations
5. Manual Jack stands (standard)

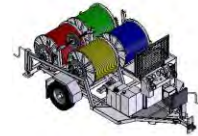
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Setup on the Job

Setup of the unit

Position of unit

Position the trailer with the centerline of the trailers inline with the pull. Place the unit at a minimum of two times the height of the first block.



Jack Stands / Outriggers

Actuate the rear outriggers to stabilize the trailer. Attempt to level the trailer as much as possible. The outriggers have the ability to raise the tires from the ground, but as a rule they should be used to stabilize the load across all contact points on the ground, i.e. Jack stands, tires, front tongue jack stand.

Tie Down/ Brake/ Chock

Chock all wheels and set brakes (if applicable). It should be noted that a fully loaded trailer may exceed the tension desired during the pull. As the pull progresses, the weight of the trailer may increase or decrease, therefore proper securing procedures should be followed during operation. This unit is equipped with tie – down eyes for staking to the ground and it is recommended that the unit stay secured to the tow vehicle whenever possible.

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LOADING INSTRUCTIONS

ALL REELS TO BE LOADED FOR PAYOUT UNDERNEATH THE REEL.
PAYOUT OF CONDUCTOR OVER THE TOP OF THE REEL MAY CAUSE
DAMAGE TO THE CONDUCTOR.

1. Position trailer so that forklift or crane can be easily positioned.
2. Position reel drive pin assembly so that the lifting eye and removable pin are in the top position and apply brake.
3. Remove retaining pin from both the reel drive pin assembly and the dumb end of the mandrel shaft pocket.
4. Remove entire shaft and drive pin assembly by lifting up.
5. Remove Nylatron bearing from dumb end of mandrel shaft.
6. Remove locking collar / lifting assembly and centering cone.
7. Insert mandrel shaft in the reel all the way to the drive pin assembly, being careful to insert the pins completely.
8. Install centering cone (if needed) and locking collar / lifting assembly. Be sure to set reel tight against drive pin assembly.
9. Replace Nylatron bearing onto dumb end of mandrel shaft.
10. Lift reel with forklift or crane making sure that the drive pin assembly has the lifting eye on top for proper fit.
11. Insert reel into the stand by indexing drive pin assembly from above and lower into place.
12. Insert retaining pins into both the drive pin assembly and the dumb end of the shaft pocket.

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WARNING

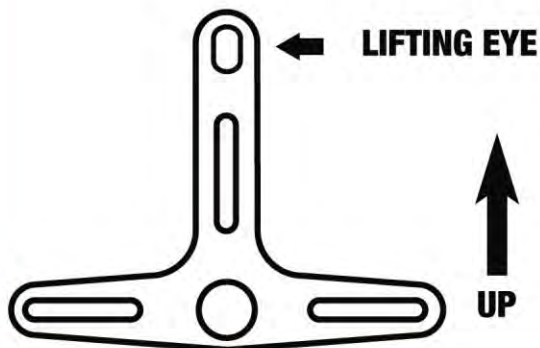
THE REEL MANDREL PIN AND LOCKING PIN MUST BE INSTALLED PRIOR TO OPERATION. FAILURE TO DO SO MAY ALLOW REEL TO BECOME DISENGAGED DURING OPERATION WHICH COULD CAUSE SERIOUS INJURY OR DEATH.

REEL LOADING / UNLOADING INSTRUCTIONS

1. MAKE SURE THAT LIFTING EYES ARE POINTING UP BEFORE REMOVING LOCKING PIN AND MANDREL SHAFT PIN.
2. APPLY OVER SPIN BRAKE.
3. SECURE LOAD WITH LIFTING DEVICE.
4. REMOVE LOCKING PIN AND MANDREL SHAFT PIN.
5. REMOVE REEL MANDREL SHAFT.

LOADING INSTRUCTIONS

1. REPLACE REEL AND SHAFT ASSEMBLY.
2. INSTALL MANDREL SHAFT PIN AND LOCKING PIN.
3. RELEASE LOAD FROM LIFTING DEVICE.
4. RELEASE OVER SPIN BRAKE.



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Rope Payout Procedure (Free Wheel)

When beginning the rope payout feature, be sure that the engine is turned off. Ensure that all tension is removed from the pulling rope before attempting to remove drive pin.

Adjust reel brake to provide tension to the reel of rope. Remove the drive pin from the sprocket drive and place in the provided storage sleeve. Begin to pull rope through the blocks while continuing to adjust the over spin brake. When the rope install is completed, insert the drive pin the sprocket drive. Manual rotation of the rope reel may be needed to properly install drive pin.

Refer to the performance chart for proper hydraulic pressure as it directly relates to conductor tension. ***This chart is located on the control panel of the unit.***

******These instructions assume that the operator has set the proper drive pin for the reel to be pulled in. All other reels are to be disengaged with the over spin brake fully applied.***

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Pulling Control

The following instructions explain how to properly set up the unit when it is to be used as a puller and have a pulling rope with NO TENSION. DO NOT FOLLOW THESE INSTRUCTIONS WHEN YOU HAVE A ROPE UNDER TENSION!!

1. Apply the brake.
2. Turn the Hydraulic Pressure knob CCW to release pressure
3. Increase to approximately full throttle.
4. Begin to actuate the joystick to take up.
5. Turn the Hydraulic Pressure Control knob and set to 800 psi.
6. Release the joystick into the neutral position.
7. Wait for confirmation from the tension side of the job for readiness
8. Release the brake
9. As the rope reel begins to take up, increase the hydraulic to the maximum line pull desired. As the rope diameter increases on the reel, it might be necessary to adjust the Hydraulic Control Knob to keep the pull moving.
10. Adjust joystick for line speed as also desired.
11. To stop the pull, place control into neutral while applying the brake.

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Pulling Control

The following instructions explain how to properly set up the unit when it is to be used as a puller and have a pulling rope UNDER TENSION. Use of these instructions assumes that all controls are at the same setting when the pulled previously stopped.

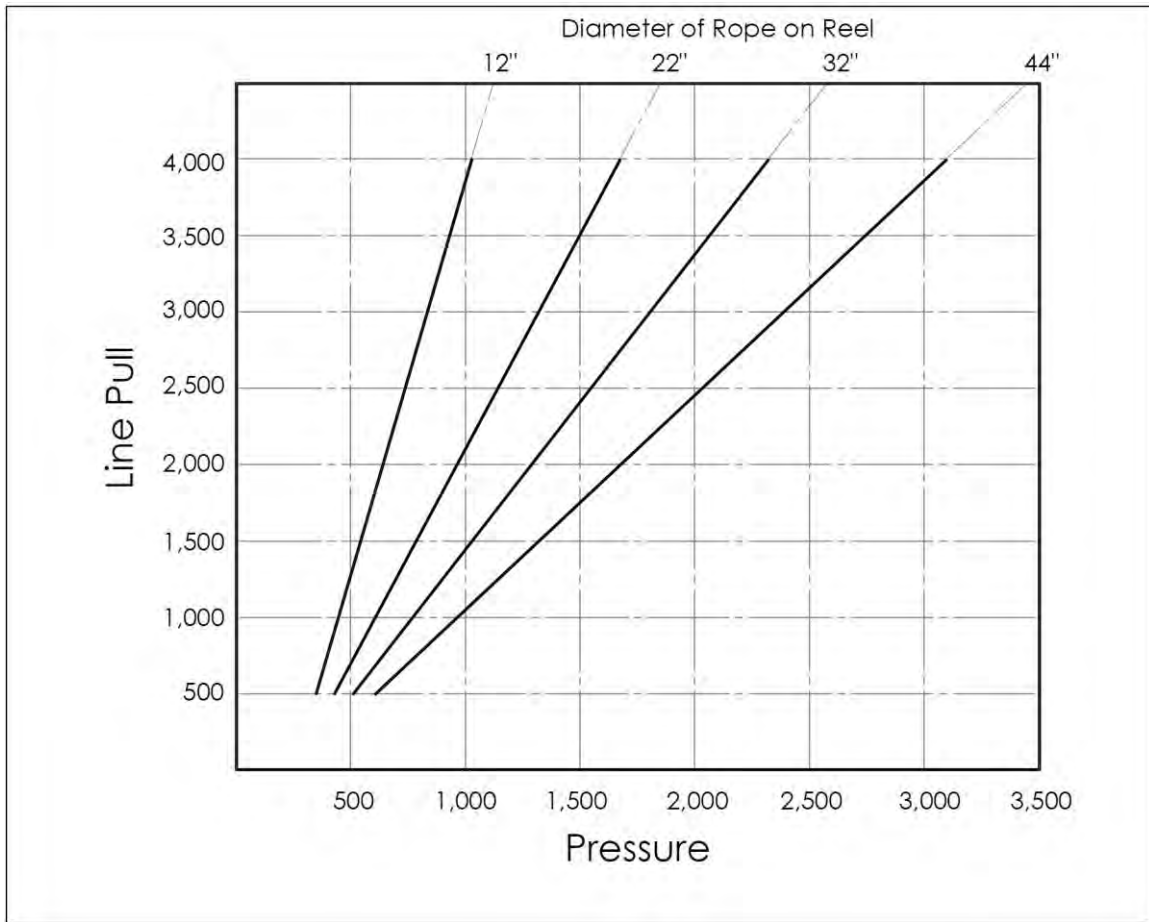
1. Begin to slightly actuate the joystick to take up
2. Release the brake
3. Actuate the joystick to take up as desired (if reel does not begin to move, slightly increase the Hydraulic Pressure Control until it does.

Level wind

This unit is equipped with manual post style level wind. Operator must control during pull as needed for even take up of rope on reel.

IF MACHINE IS TO BE USED FOR FIBRE OPTIC INSTALLATION, REFER TO THE CABLE MANUFACTURER FOR PROPER TENSIONING TECHNIQUES. FAILURE TO CONSULT MANUFACTURER MAY DAMAGE CABLE AND VOID WARRANTY.

**ODP 40
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WARNING

Failure to understand and follow the line pull graph can result in failure of reels and other major components.

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LUBRICATION AND MAINTENANCE

This unit has no set PM schedule beyond that of the engine manufacturers suggested maintenance schedule. This unit should be visually inspected prior to each use while repairing any and all discrepancies prior to use.

Items to be inspected prior to use are:

- Drive Chains and sprockets for wear and slack
- Pintle eye (excessive wear)
- Safety Chains (wear / damage)
- All welds and seams
- Loose or missing fasteners (bolts, nuts, set screws)
- Loose or leaking hydraulic hoses
- Damaged or worn hydraulic hoses
- Brake calipers (loose fittings, hoses, worn linings)
- Brake Pads
- Brake rotors
- Tires and trailer brakes
- Engine and hydraulic system fluid levels.

Lubrication Schedule

- Drive chain and sprockets (daily)
- Reel Shaft Bearings (as needed)
- Reel Bearings (as needed)
- Engine oil as per manufacturers recommendation
- Idler sprocket (daily)
- Axle Bearings (as needed)

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Drawbar inspection

- Regularly inspect the drawbar for wear and damage. If wear exceeds 1/8", replace the drawbar eye.
- Check all drawbar mounting fasteners for proper torque
- Do not modify or add to the product
- Do not weld on this product without written permission from the factory
- Be sure the drawbar size is compatible with the coupling device on the tow vehicle
- Do not damage the coupling components. Be particularly careful during coupling and uncoupling
- Inspect the coupling device on the tow vehicle for proper locking prior to use
- Consult OSHA and DOT regulations and American Trucking Association guidelines for complete operating procedures.

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15-15 Warranty

Hogg and Davis, Inc. warrants its trailers against defects in material or workmanship for period of 15 months from the date of shipment from Hogg and Davis, Inc. (see General Conditions & Exceptions). Hogg and Davis, Inc. will replace, free of charge, F.O.B. Hogg and Davis, Inc. factory, such parts or parts thereof, that in their judgement have proven defective. Additionally, Hogg and Davis, Inc. will pay reasonable and customary labor charges when defective part is replaced, installed or repaired by a fully authorized Hogg and Davis, Inc. trailer dealer at his facility.

Warranty credit will be issued only upon receipt and inspection of defective parts of at the Hogg and Davis, Inc. factory.

Hogg and Davis, Inc. warrants its trailer main frame assemblies (except pintle eyes or other towing attachments, spindles and axles) against defects in material or workmanship for a period of **15 years** from the date of shipment from Hogg and Davis, Inc. (see General Conditions & Exceptions). Hogg and Davis, Inc. shall replace or repair, in a manner as it shall determine, free of charge, F.O.B. factory, any parts or parts thereof, that in its judgement have proven defective. Additionally, Hogg and Davis, Inc. will pay reasonable and customary labor charges when defective part is replaces, installed or repaired by a fully authorized Hogg and Davis, Inc. trailer dealer at his facility.

General Conditions & Exceptions

All warranties, options and representations made herein shall apply only provide such equipment shall not have been subject to misuse, negligence or accident and has been operated in accordance with factory approved procedures. This warranty does not obligate Hogg and Davis, Inc. or its authorized dealers to bear the cost of parts obtained from or labor performed by unauthorized sources. Nor does it obligate Hogg and Davis, Inc. **or its** authorized dealers to bear the cost of transportation of parts or equipment for repair or **replacement purposes**. This warranty is in lieu of any other warranty, expressed **or implied**, or any other obligation or liability on the part of Hogg and Davis, Inc and no persons or entity is authorized to make any representation beyond those stated herein.

Hogg and Davis, Inc. shall not be held liable for consequential damage of any kind. Hogg and Davis, Inc. also reserves the right to make changes and improvements in its products without incurring any obligation to install any such charges or improvements upon its products previously manufactured.

The above warranty shall not be misconstrued to mean warranty of tires, clutch, transmission assemblies or customer requested accessory equipment other than the warranty extended by their respective manufactures to Hogg and Davis, Inc. In addition, friction, drive rollers are warranted only to extent of bonding failure. All warranties, options and representations made herein are applicable to the original end-user of the product and are not sellable or transferable in any manner.



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***Parts and other manufacturer
manuals***

The Following drawings are for part identification only. Please reference the unit V.I.N. number and the corresponding part number when ordering.

The information, specifications, and illustrations in this manual are on the basis of information available at the time it was written. The specifications, torque values, pressures of operation, measurements, adjustments, illustrations, and other items can change at any time. These changes can affect the service of the given product.

For the complete and most current information, contact:

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P.O. Box 405 / 3800 Eagle Loop
Odell, OR 97044-0405
541-354-1001
541-354-1080 Fax
www.hoggdavis.com



Section 2

YANMAR WARRANTIES

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YANMAR LIMITED WARRANTY

What is Covered by this Warranty?

YANMAR warrants to the original retail purchaser that a new YANMAR TNV series industrial engine will be free from defects in material and/or workmanship for the duration of the warranty period.

Note: YANMAR engines may be equipped with external components including, but not limited to: wiring harnesses, electrical devices, control panels, radiators, air filters, fuel filters, and/or exhaust systems that are supplied and/or installed by manufacturers other than YANMAR. For warranty information on such external components, please contact the machine or component manufacturer directly or see your authorized YANMAR dealer or distributor.

This warranty is provided in lieu of all other warranties, express or implied. YANMAR specifically disclaims any implied warranties of merchantability or fitness for a particular purpose, except where such disclaimer is prohibited by law. If such disclaimer is prohibited by law, then implied warranties shall be limited in duration to the life of the express warranty.

How Long is the Warranty Period?

The YANMAR standard limited warranty period runs for a period of **twenty-four (24) months or two-thousand (2000) engine operation hours**, whichever occurs first. An extended limited warranty of thirty-six (36) months or three thousand (3000) engine operating hours, whichever occurs first, is provided for these specific parts only: the cylinder block, cylinder head, crankshaft forging, connecting rods, flywheel, flywheel housing, camshaft, timing gear, and gear case. The warranty period for both the standard limited warranty and the extended limited warranty (by duration or operation hours) begins on the date of delivery to the original retail purchaser and is valid only until the applicable warranted duration has passed or the operation hours are exceeded, whichever comes first.

What the Engine Owner must Do:

If you believe your YANMAR engine has experienced a failure due to a defect in material and/or workmanship, you must contact an authorized YANMAR industrial engine dealer or distributor within thirty (30) days of discovering the failure. You must provide proof of ownership of the engine, proof of the date of the engine purchase and delivery, and documentation of the engine operation hours. Acceptable forms of proof of delivery date include, but are not limited to: the original warranty registration or sales receipts or other documents maintained in the ordinary course of business by YANMAR dealers and/or distributors, indicating the date of delivery of the YANMAR product to the original retail purchaser. This information is necessary to establish whether the YANMAR product is still within the warranty period. Thus, YANMAR strongly recommends you register your engine as soon as possible after purchase in order to facilitate any future warranty matters.

You are responsible for the transportation of the engine to and from the repair location as designated by YANMAR.

YANMAR limited warranty - continued**To Locate an Authorized YANMAR Industrial Engine Dealer or Distributor:**

You can locate your nearest authorized YANMAR industrial engine dealer or distributor by visiting the YANMAR Co., Ltd. website at:

<http://www.yanmar.co.jp> (The Japanese language page will be displayed.) For English language “click” on “English Page.”)

- “Click” on “Network” in the website heading to view the “Yanmar Worldwide Network.”
- Choose and “Click” on the desired product group.
- “Click” on the Icon closest to your region.
- “Click” on the desired country or associate company to locate your nearest authorized YANMAR industrial engine dealer or distributor.
- You may also contact YANMAR by clicking on “Inquiry” in the website heading and typing in your question or comment.

What YANMAR will Do:

YANMAR warrants to the original retail purchaser of a new YANMAR engine that YANMAR will make such repairs and/or replacements at YANMAR’s option, of any part(s) of the YANMAR product covered by this warranty found to be defective in material and/or workmanship. Such repairs and/or replacements will be made at a location designated by YANMAR at no cost to the purchaser for parts or labor.

What is not Covered by this Warranty?

This warranty does not cover parts affected by or damaged by any reason other than defective materials or workmanship including, but not limited to, accident, misuse, abuse, “Acts of God,” neglect, improper installation, improper maintenance, improper storage, the use of unsuitable attachments or parts, the use of contaminated fuels, the use of fuels, oils, lubricants, or fluids other than those recommended in your YANMAR Operation Manual, unauthorized alterations or modifications, ordinary wear and tear, and rust or corrosion. This warranty does not cover the cost of parts and/or labor required to perform normal/scheduled maintenance on your YANMAR engine. This warranty does not cover consumable parts such as, but not limited to, filters, belts, hoses, fuel injector nozzles, lubricants and cleaning fluids. This warranty does not cover the cost of shipping the product to or from the warranty repair facility.

*YANMAR limited warranty - continued***Warranty Limitations:**

The foregoing is YANMAR's only obligation to you and your exclusive remedy for breach of warranty. Failure to follow the requirements for submitting a claim under this warranty may result in a waiver of all claims for damages and other relief. **In no event shall YANMAR or any authorized industrial engine dealer or distributor be liable for incidental, special or consequential damages.** Such consequential damages may include, but not be limited to, loss of revenue, loan payments, cost of rental of substitute equipment, insurance coverage, storage, lodging, transportation, fuel, mileage, and telephone costs. The limitations in this warranty apply regardless of whether your claims are based on breach of contract, tort (including negligence and strict liability) or any other theory. Any action arising hereunder must be brought within one (1) year after the cause of action accrues or it shall be barred. Some states and countries do not allow certain limitations on warranties or for breach of warranties. **This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.** Limitations set forth in this paragraph shall not apply to the extent that they are prohibited by law.

Warranty Modifications:

Except as modified in writing and signed by the parties, this warranty is and shall remain the complete and exclusive agreement between the parties with respect to warranties, superseding all prior agreements, written and oral, and all other communications between the parties relating to warranties. **No person or entity is authorized to give any other warranty or to assume any other obligation on behalf of YANMAR, either orally or in writing.**

Questions:

If you have any questions or concerns regarding this warranty, please call or write to the nearest authorized YANMAR industrial engine dealer or distributor or other authorized facility.

EMISSION SYSTEM WARRANTY

YANMAR CO., LTD. LIMITED EMISSION CONTROL SYSTEM WARRANTY - USA ONLY

Your Warranty Rights and Obligations:

■ **California**

The California Air Resources Board (CARB), the Environmental Protection Agency (EPA) and YANMAR Co., Ltd. hereafter referred to as YANMAR, are pleased to explain the **emission control system warranty** on your industrial compression-ignition engine. In California, model year 2000 or later off-road compression-ignition engines must be designed, built and equipped to meet the state’s stringent anti-smog standards. In all states, 1998 and later non-road compression-ignition engines must be designed, built and equipped to meet the United States EPA emissions standards. YANMAR warrants the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system, Electronic Control Unit, Exhaust Gas Recirculation (EGR) system, after treatment system (DPF) and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, YANMAR will repair your non-road compression-ignition engine at no charge to you including diagnosis, parts and labor.

Manufacturer’s Warranty Period:

The model year 1998 or later certified and labeled non-road compression-ignition engines are warranted for the periods listed below. If any emission-related part on your engine is found to be defective during the applicable warranty period, the part will be replaced by YANMAR.

| If your engine is certified as | And its maximum power is | And its rated speed is | Then its warranty period is |
|----------------------------------|--------------------------|------------------------|--|
| Variable speed or constant speed | kW < 19 | Any speed | 1,500 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years. |
| Constant speed | 19 ≤ kW < 37 | 3,000 rpm or higher | 1,500 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years. |
| Constant speed | 19 ≤ kW < 37 | Less than 3,000 rpm | 3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years. |
| Variable speed | 19 ≤ kW < 37 | Any speed | 3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years. |
| Variable speed or constant speed | kW ≥ 37 | Any speed | 3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years. |

Limited emission control system warranty - USA only - continued**Warranty Coverage:**

This warranty is transferable to each subsequent purchaser for the duration of the warranty period. Repair or replacement of any warranted part will be performed at an authorized YANMAR industrial engine dealer or distributor.

Warranted parts not scheduled for replacement as required maintenance in the operation manual shall be warranted for the warranty period. Warranted parts scheduled for replacement as required maintenance in the operation manual are warranted for the period of time prior to the first scheduled replacement. Any part repaired or replaced under warranty shall be warranted for the remaining warranty period.

During the warranty period, YANMAR is liable for damages to other engine components caused by the failure of any warranted part during the warranty period.

Any replacement part which is functionally identical to the original equipment part in all respects may be used in the maintenance or repair of your engine, and shall not reduce YANMAR's warranty obligations. Add-on or modified parts that are not exempted may not be used. The use of any non-exempted add-on or modified parts shall be grounds for disallowing a warranty.

Warranted Parts:

This warranty covers engine components that are a part of the emission control system of the engine as delivered by YANMAR to the original retail purchaser. Such components may include the following:

- Fuel injection system
- Electronic control system
- Cold start enrichment system
- Intake manifold
- Turbocharger systems
- Exhaust manifold
- EGR system
- Positive crankcase ventilation system
- After treatment system (Diesel Particulate Filter)
- Hoses, belts, connectors and assemblies associated with emission control systems

Since emissions-related parts may vary slightly between models, certain models may not contain all of these parts and other models may contain the functional equivalents.

Limited emission control system warranty - USA only - continued**Exclusions:**

Failures other than those arising from defects in material and/or workmanship are not covered by this warranty. The warranty does not extend to the following: malfunctions caused by abuse, misuse, improper adjustment, modification, alteration, tampering, disconnection, improper or inadequate maintenance or use of non-recommended fuels and lubricating oils; accident-caused damage, and replacement of expendable items made in connection with scheduled maintenance. YANMAR disclaims any responsibility for incidental or consequential damages such as loss of time, inconvenience, loss of use of equipment/engine or commercial loss.

Owner's Warranty Responsibilities:

As the engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. YANMAR recommends that you retain all documentation, including receipts, covering maintenance on your non-road compression-ignition engine, but YANMAR cannot deny warranty solely for the lack of receipts, or for your failure to ensure the performance of all scheduled maintenance.

YANMAR may deny your warranty coverage of your non-road compression-ignition engine if a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

Your engine is designed to operate on diesel fuel only. Use of any other fuel may result in your engine no longer operating in compliance with applicable emissions requirements.

You are responsible for initiating the warranty process. You must present your engine to a YANMAR dealer as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible. If you have any questions regarding your warranty rights and responsibilities, or would like information on the nearest YANMAR dealer or authorized service center, you should contact YANMAR America Corporation.

Website: www.yanmar.com

E-mail: CS_support@yanmar.com

Toll free telephone number: 1-800-872-2867, 1-855-416-7091

| SPN | FMI | TEXT TRANSLATION |
|-----|-----|---|
| 28 | 3 | % Accelerator Position #3 (Throttle 2) Voltage Above Normal or Shorted to High Source H |
| 28 | 4 | Percent Accelerator Position #3 (Throttle 2) Voltage Below Normal or Shorted to Low Source |
| 29 | 3 | Percent Accelerator Position #2 (Throttle 1) Voltage Above Normal or Shorted to High Source |
| 29 | 4 | Percent Accelerator Position #2 (Throttle 1) Voltage Below Normal or Shorted to Low Source |
| 91 | 3 | Accelerator Pedal Position (Multi-State Throttle) Voltage Above Normal, or Shorted to High Source |
| 91 | 4 | Accelerator Pedal Position (Multi-State Throttle) Voltage Below Normal or Shorted to Low Source |
| 91 | 9 | Accelerator Pedal Position A valid throttle message is not being received or is late |
| 91 | 14 | Accelerator Pedal Position Throttle signal voltage is or has been out of range |
| 94 | 1 | Fuel Delivery Pressure Pressure Very low |
| 94 | 3 | Fuel Delivery Pressure Fuel Rail Pressure Voltage out of range high |
| 94 | 4 | Fuel Delivery Pressure Fuel Rail Pressure Voltage out of range low |
| 94 | 10 | Fuel Delivery Pressure Pressure dropping too fast |
| 94 | 13 | Fuel Delivery Pressure Out of calibration |
| 94 | 16 | Fuel Delivery Pressure High fuel pressure |
| 94 | 17 | Fuel Delivery Pressure No rail fuel pressure |
| 94 | 18 | Fuel Delivery Pressure Low fuel pressure |
| 97 | 0 | Water In Fuel Indicator Water In Fuel Detected |
| 97 | 3 | Water In Fuel Indicator Water In Fuel Voltage out of range high |
| 97 | 4 | Water In Fuel Indicator Water In Fuel Voltage out of range low |
| 97 | 16 | Water In Fuel Indicator Water In Fuel Detected |
| 97 | 31 | Water In Fuel Indicator Water In Fuel Detected |
| 100 | 1 | Engine Oil Pressure Low oil pressure |
| 100 | 3 | Engine Oil Pressure Voltage Above Normal or Shorted to High Source |
| 100 | 4 | Engine Oil Pressure Voltage Below Normal or Shorted to Low Source |
| 100 | 16 | Engine Oil Pressure Oil pressure reading incorrect |
| 100 | 18 | Engine Oil Pressure Low oil pressure |
| 105 | 0 | Intake Manifold 1 Temperature High manifold air temperature |
| 105 | 3 | Intake Manifold 1 Temperature Voltage Above Normal or Shorted to High Source |
| 105 | 4 | Intake Manifold 1 Temperature Voltage Below Normal or Shorted to Low Source |
| 105 | 16 | Intake Manifold 1 Temperature High manifold air temperature |
| 107 | 0 | Air Filter Differential Pressure Plugged air filter condition detected |
| 107 | 31 | Air Filter Differential Pressure Plugged air filter condition detected |
| 110 | 0 | Engine Coolant Temperature High coolant temperature |
| 110 | 3 | Engine Coolant Temperature Voltage Above Normal or Shorted to High Source |
| 110 | 4 | Engine Coolant Temperature Voltage Below Normal or Shorted to Low Source |
| 110 | 15 | Engine Coolant Temperature High coolant temperature |
| 110 | 16 | Engine Coolant Temperature High coolant temperature |
| 111 | 1 | Coolant Level Low coolant level |
| 158 | 2 | Keyswitch Intermittent |
| 158 | 17 | Keyswitch Circuit problem |
| 174 | 0 | Fuel Temperature High fuel temperature |
| 174 | 3 | Fuel Temperature Voltage Above Normal or Shorted to High Source |
| 174 | 4 | Fuel Temperature Voltage Below Normal or Shorted to Low Source |
| 174 | 15 | Fuel Temperature High fuel temperature |
| 174 | 16 | Fuel Temperature High fuel temperature |
| 174 | 31 | Fuel Temperature Voltage out of range |
| 189 | 31 | Rated Engine Speed Speed Derate Condition Exists due to fault |
| 190 | 0 | Engine Speed Engine overspeed |
| 190 | 2 | Engine Speed Data Erratic, Intermittent or Incorrect |
| 190 | 3 | Engine Speed Voltage Above Normal or Shorted to High Source |
| 190 | 4 | Engine Speed Voltage Below Normal or Shorted to Low Source |
| 190 | 5 | Engine Speed Circuit is open |
| 190 | 16 | Engine Speed Engine overspeed |

| SPN | FMI | TEXT TRANSLATION |
|------|-----|---|
| 611 | 3 | Injector Wiring Shorted to battery |
| 611 | 4 | Injector Wiring Shorted to ground |
| 620 | 3 | Sensor Supply Voltage 1 (+5V DC) Voltage Above Normal or Shorted to High Source |
| 620 | 4 | Sensor Supply Voltage 1 (+5V DC) Voltage Below Normal or Shorted to Low Source |
| 627 | 1 | Power Supply Low voltage to injectors |
| 627 | 4 | Power Supply Power interruption |
| 629 | 13 | Reprogram Controller ECU problem |
| 629 | 19 | ECU to Pump Communications Error ECU not receiving messages from Pump |
| 632 | 2 | Fuel Shutoff Valve Fuel Shutoff Error Detected |
| 632 | 5 | Fuel Shutoff Valve Fuel Shutoff Non-Functional |
| 632 | 11 | Fuel Shutoff Valve Fuel Shutoff Solenoid circuit is open or shorted |
| 636 | 2 | Engine Position Sensor Timing signal error |
| 636 | 8 | Engine Position Sensor Timing signal error |
| 636 | 10 | Engine Position Sensor Timing signal error |
| 637 | 2 | Timing (Crank) Sensor Timing signal error |
| 637 | 7 | Timing (Crank) Sensor Timing signal error |
| 637 | 8 | Timing (Crank) Sensor Timing signal error |
| 637 | 10 | Timing (Crank) Sensor Timing signal error |
| 639 | 13 | CAN Bus The CAN bus failure |
| 651 | 5 | Injector Cylinder #1 The current to the injector is less than expected |
| 651 | 6 | Injector Cylinder #1 The current to the injector increases too rapidly |
| 651 | 7 | Injector Cylinder #1 The injector fuel flow is lower than expected |
| 652 | 5 | Injector Cylinder #2 The current to the injector is less than expected |
| 652 | 6 | Injector Cylinder #2 The current to the injector increases too rapidly |
| 652 | 7 | Injector Cylinder #2 The injector fuel flow is lower than expected |
| 653 | 5 | Injector Cylinder #3 The current to the injector is less than expected |
| 653 | 6 | Injector Cylinder #3 The current to the injector increases too rapidly |
| 653 | 7 | Injector Cylinder #3 The injector fuel flow is lower than expected |
| 654 | 5 | Injector Cylinder #4 The current to the injector is less than expected |
| 654 | 6 | Injector Cylinder #4 The current to the injector increases too rapidly |
| 654 | 7 | Injector Cylinder #4 The injector fuel flow is lower than expected |
| 655 | 5 | Injector Cylinder #5 The current to the injector is less than expected |
| 655 | 6 | Injector Cylinder #5 The current to the injector increases too rapidly |
| 655 | 7 | Injector Cylinder #5 The injector fuel flow is lower than expected |
| 656 | 5 | Injector Cylinder #6 The current to the injector is less than expected |
| 656 | 6 | Injector Cylinder #6 The current to the injector increases too rapidly |
| 656 | 7 | Injector Cylinder #6 The injector fuel flow is lower than expected |
| 729 | 3 | Inlet Air Heater Driver #1 Inlet air heater stuck on |
| 729 | 5 | Inlet Air Heater Driver #1 Inlet air heater will not turn on |
| 833 | 2 | Rack Position Sensor Error |
| 833 | 3 | Rack Position Sensor Rack Position Voltage above normal |
| 833 | 4 | Rack Position Sensor Rack Position Voltage below normal |
| 834 | 2 | Rack Actuator Rack Error |
| 834 | 3 | Rack Actuator Rack Actuator Circuit voltage above normal |
| 834 | 5 | Rack Actuator Rack Actuator Circuit open |
| 834 | 6 | Rack Actuator Rack Actuator Circuit grounded |
| 834 | 7 | Rack Actuator Rack Position Error |
| 970 | 2 | Auxiliary Engine Shutdown Switch External Engine Shutdown Switch intermittent |
| 970 | 11 | External Engine Protection Shutdown External Engine Protection Shutdown active |
| 970 | 31 | Auxiliary Engine Shutdown Switch External Engine Protection Shutdown active |
| 971 | 31 | Engine Derate Switch External Derate input has been activated |
| 1041 | 2 | Start Signal Indicator Start Signal Missing |
| 1041 | 3 | Start Signal Indicator Start Signal Always Active |

| SPN | FMI | TEXT TRANSLATION |
|------|-----|---|
| 1076 | 0 | Fuel Injection Pump Fuel Control Valve Error |
| 1076 | 1 | Fuel Injection Pump Fuel Control Valve Error |
| 1076 | 2 | Fuel Injection Pump Fuel Control Valve Error |
| 1076 | 3 | Fuel Injection Pump Fuel Control Valve Error |
| 1076 | 5 | Fuel Injection Pump Fuel Control Valve Error |
| 1076 | 6 | Fuel Injection Pump Fuel Control Valve Error |
| 1076 | 7 | Fuel Injection Pump Fuel Control Valve Error |
| 1076 | 10 | Fuel Injection Pump Fuel Control Valve Error |
| 1076 | 13 | Fuel Injection Pump Fuel Control Valve Error |
| 1077 | 7 | Fuel Injection Pump Controller |
| 1077 | 11 | Fuel Injection Pump Controller |
| 1077 | 12 | Fuel Injection Pump Controller |
| 1077 | 19 | Fuel Injection Pump Controller |
| 1077 | 31 | Fuel Injection Pump Controller Power derated |
| 1078 | 7 | Fuel Injection Pump Speed/Position Sensor Error |
| 1078 | 11 | Fuel Injection Pump Speed/Position Sensor Error |
| 1078 | 31 | Fuel Injection Pump Speed/Position Sensor VP44 Unable to Achieve Desired Timing |
| 1079 | 3 | Sensor Supply Voltage 1 (+5V DC) Voltage Above Normal or Shorted to High Source |
| 1079 | 4 | Sensor Supply Voltage 1 (+5V DC) Voltage Below Normal or Shorted to Low Source |
| 1080 | 3 | Sensor Supply Voltage 2 (+5V DC) Voltage Above Normal or Shorted to High Source |
| 1080 | 4 | Sensor Supply Voltage 2 (+5V DC) Voltage Below Normal or Shorted to Low Source |
| 1109 | 31 | Engine Protection System Approaching Shutdown Approaching Shutdown |
| 1110 | 31 | Engine Protection System Engine has been shutdown |
| 1347 | 5 | Fuel Pump Assembly #1 The circuit is open, shorted to ground, or overloaded |
| 1347 | 7 | Fuel Pump Assembly #1 Rail pressure control mismatch |
| 1347 | 10 | Fuel Pump Assembly #1 Low fuel flow |
| 1348 | 5 | Fuel Pump Assembly #2 The circuit is open, shorted to ground, or overloaded |
| 1348 | 10 | Fuel Pump Assembly #2 Low fuel flow |
| 1485 | 2 | ECU Main Relay Pump power relay fault |
| 1569 | 31 | Engine Protection Torque Derate Fuel derate limit condition exists |
| 2000 | 6 | Fuel Injection Pump Fuel Control Valve Error |
| 2000 | 13 | Security Violation The proper controller has not been installed |

2G-ECO Governor Controller DTC Table

| Remark | DTC | | | Description | J1939 Lamp Status | | | |
|--------|--------------|--|-----|--|-------------------|---------------------|--------------------|----|
| | J1939 Format | | | | MIL | RSL | AWL | PL |
| | SPN (Hex) | SPN (DEC) | FMI | | | | | |
| | 4BA | 1210 | 4 | Engine Fuel Rack Position Sensor : Shorted to low source | | | X | |
| | | | 3 | Engine Fuel Rack Position Sensor : Shorted to high source | | X (Engine drive) | X (E-ECU start) | |
| | 5B | 91 | 4 | Accelerator Pedal Position Sensor "A" : Shorted to low source | | | X | |
| | | | 3 | Accelerator Pedal Position Sensor "A" : Shorted to high source | | | X | |
| | | | 2 | Accelerator Pedal Position Sensor "A" : Intermittent fault | | | | |
| | | | 1 | Accelerator Pedal Position Sensor "A" : Below normal operational range (SAE J1843) | | | X | |
| | | | 0 | Accelerator Pedal Position Sensor "A" : Above normal operational range (SAE J1843) | | | X | |
| | 1D | 29 | 15 | Accelerator Pedal Position Sensor "A" : Not available (SAE J1843) | | | X | |
| | | | 4 | Accelerator Pedal Position Sensor "B" : Shorted to low source | | | X | |
| | | | 3 | Accelerator Pedal Position Sensor "B" : Shorted to high source | | | X | |
| | | | 2 | Accelerator Pedal Position Sensor "B" : Intermittent fault | | | | |
| | | | 1 | Accelerator Pedal Position Sensor "B" : Below normal operational range (SAE J1843) | | | X | |
| | 6C | 108 | 0 | Accelerator Pedal Position Sensor "B" : Above normal operational range (SAE J1843) | | | X | |
| | | | 8 | Accelerator Pedal Position Sensor "B" : Communication fault | | | X | |
| | | | 15 | Accelerator Pedal Position Sensor "B" : Not available (SAE J1843) | | | X | |
| | | | 4 | Barometric Pressure Sensor : Shorted to low source | X | | | |
| | | | 3 | Barometric Pressure Sensor : Shorted to high source | X | | | |
| | 470 | 1136 | 2 | Barometric Pressure Sensor : Intermittent fault | | | | |
| | | | 4 | E-ECU Internal Temperature Sensor : Shorted to low source | | | X | |
| | | | 3 | E-ECU Internal Temperature Sensor : Shorted to high source | | | X | |
| | | | 2 | E-ECU Internal Temperature Sensor : Intermittent fault | | | | |
| | 6E | 110 | 0 | E-ECU Internal Temperature : Too High | | | | X |
| | | | 4 | Engine Coolant Temperature Sensor : Shorted to low source | | | X | |
| | | | 3 | Engine Coolant Temperature Sensor : Shorted to high source | | | X | |
| | | | 2 | Engine Coolant Temperature Sensor : Intermittent fault | | | | |
| | 437 | 1079 | 0 | Engine Coolant Temperature : Too High | | | | X |
| | | | 4 | Sensor 5V : Shorted to low source | | | X | |
| | | | 3 | Sensor 5V : Shorted to high source (FUEL INJ PUMP SPEED SENSOR) | | | | |
| | | | 2 | Sensor 5V : Intermittent fault | | | | |
| | 9E | 158 | 1 | System Voltage : Too Low | | | | X |
| | | | 0 | System Voltage : Too High | | | | X |
| | 436 | 1078 | 4 | Engine Fuel Injection Pump Speed Sensor : Shorted to low source | | X (Both) | X (Ether) | |
| * | 7F8A2 | 522402 | 4 | Auxiliary Speed Sensor : Shorted to low source | | | | |
| * | 7F801 | 522241 | 4 | Engine Fuel Rack Actuator Relay : Circuit fault A | | X | | |
| | | | 3 | Engine Fuel Rack Actuator Relay : Circuit fault B | | X | | |
| | | | 7 | (Reserved) | | | | |
| | 2 | Engine Fuel Rack Actuator Relay : Intermittent fault | | | | | | |
| * | 7F803 | 522243 | 4 | Air Heater Relay : Circuit fault A | X | | | |
| | | | 3 | Air Heater Relay : Circuit fault B | X | | | |
| | | | 2 | Air Heater Relay : Intermittent fault | | | | |
| * | 7F802 | 522242 | 4 | Cold Start Device : Circuit fault A | X | | | |
| | | | 3 | Cold Start Device : Circuit fault B | X | | | |
| | | | 2 | Cold Start Device : Intermittent fault | | | | |
| * | 7F80B | 522251 | 4 | EGR Stepping Motor "A" : Circuit fault A | X | | | |
| | | | 3 | EGR Stepping Motor "A" : Circuit fault B | X | | | |
| * | 7F80C | 522252 | 4 | EGR Stepping Motor "B" : Circuit fault A | X | | | |
| | | | 3 | EGR Stepping Motor "B" : Circuit fault B | X | | | |
| * | 7F80D | 522253 | 4 | EGR Stepping Motor "C" : Circuit fault A | X | | | |
| | | | 3 | EGR Stepping Motor "C" : Circuit fault B | X | | | |
| * | 7F80E | 522254 | 4 | EGR Stepping Motor "D" : Circuit fault A | X | | | |
| | | | 3 | EGR Stepping Motor "D" : Circuit fault B | X | | | |
| | 64 | 100 | 4 | Oil Pressure Switch : Shorted to low source | | | X | |
| | | | 1 | Oil Pressure : Too Low | | | | X |
| | A7 | 167 | 4 | Battery Charge Switch : Shorted to low source | | | X | |
| | | | 1 | Charge warning | | | | X |
| * | 7F84A | 522314 | 0 | Engine Coolant Temperature : Abnormal temperature | | | | X |
| * | 7F853 | 522323 | 0 | Air Cleaner : Mechanical Malfunction | | | | X |
| * | 7F859 | 522329 | 0 | Oily Water Separator : Mechanical Malfunction | | | | X |
| | BE | 190 | 0 | Engine speed : Over speed Condition | | X | | |
| | 27E | 638 | 4 | Engine Fuel Rack Actuator : Shorted to low source | | X | | |
| | | | 3 | Engine Fuel Rack Actuator : Shorted to high source | | X | | |
| | | | 7 | Engine Fuel Rack Actuator : Mechanical Malfunction | | X | | |
| | | | 2 | Engine : Malfunction | | X | | |
| | 27F | 639 | 12 | High Speed CAN Communication : Communication fault | | | X | |
| | 276 | 630 | 2 | E-ECU internal fault : EEPROM Check Sum Error (Data Set 2) | | X | | |
| | | | 12 | E-ECU internal fault : EEPROM ReadWrite fault | | | X | |
| | 274 | 628 | 12 | E-ECU internal fault : FlashROM Check Sum Error (Main Software) | | X | | |
| | | | 2 | E-ECU internal fault : FlashROM Check Sum Error (Data Set 1) | | X | | |
| | | | 2 | E-ECU internal fault : FlashROM Check Sum Error (Data Set 2) | | X | | |
| | 5CD | 1485 | 4 | E-ECU Main Relay : Shorted to low source | | | X | |
| * | 7F9E7 | 522727 | 12 | E-ECU internal fault : Sub-CPU Error A | | | X | |
| | | | 12 | E-ECU internal fault : Sub-CPU Error B | | | X | |
| | | | 12 | E-ECU internal fault : Sub-CPU Error C | | | X | |
| | | | 12 | E-ECU internal fault : Engine Map Data Version Error | | X | | |
| * | 7F9EA | 522730 | 12 | Immobilizer : CAN Communication fault | | | X | |
| | | | 8 | Immobilizer : Pulse Communication fault | | | X | |
| | 4B2 | 1202 | 2 | Immobilizer : System fault | | | X | |

Remark : Yanmar original DTC

PARTS MANUAL



The information, specifications, and illustrations in this manual are on the basis of information available at the time it was written. The specifications, torque values, pressures of operation, measurements, adjustments, illustrations, and other items can change at any time. These changes can affect the service of the given product.

For the complete and most current information, contact:

Hogg & Davis, Inc
P.O. Box 405 / 3800 Eagle Loop
Odell, OR 97044-0405
541-354-1001
541-354-1080 Fax

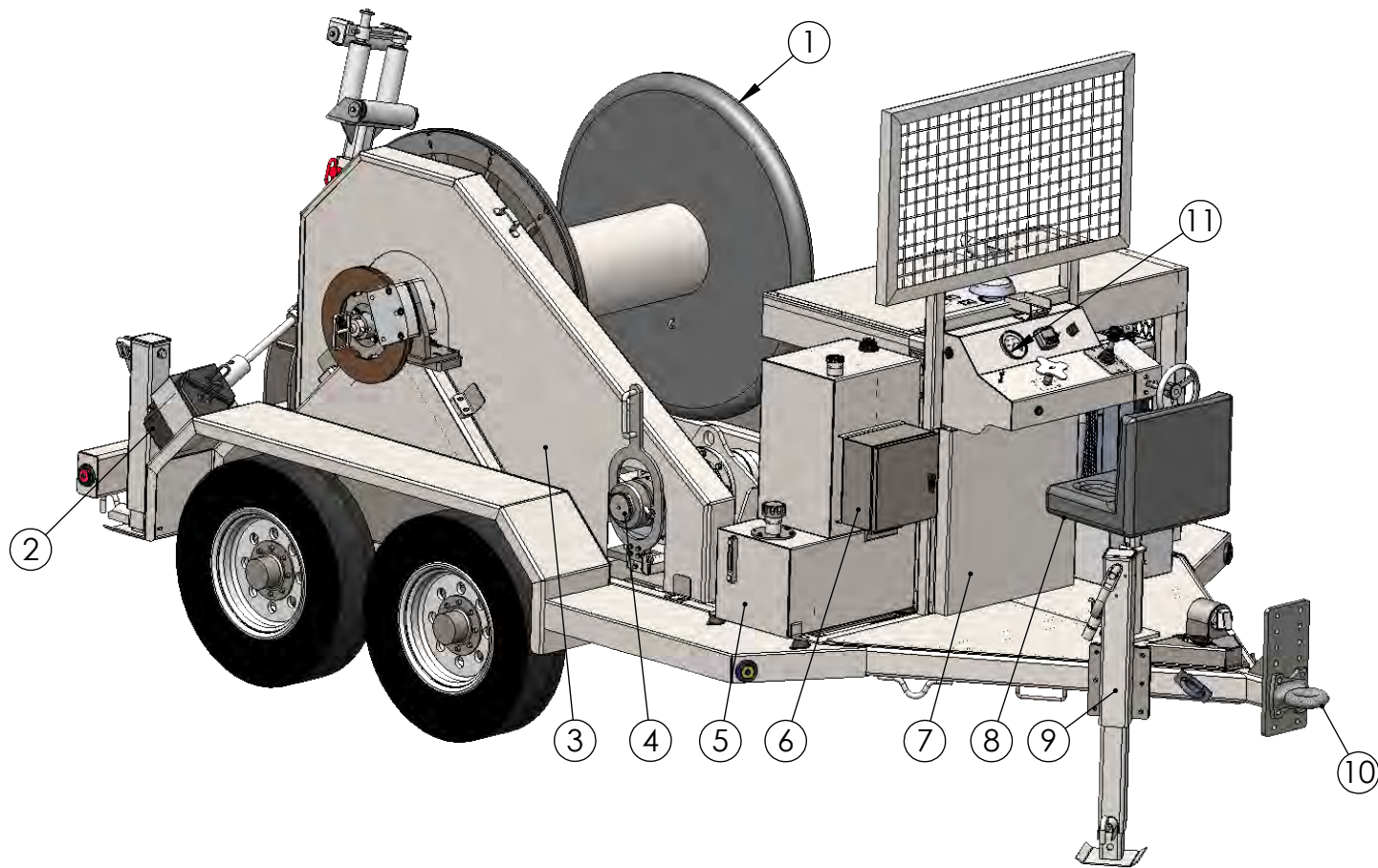
For most recent manual
version please visit:
www.hoggdavis.com

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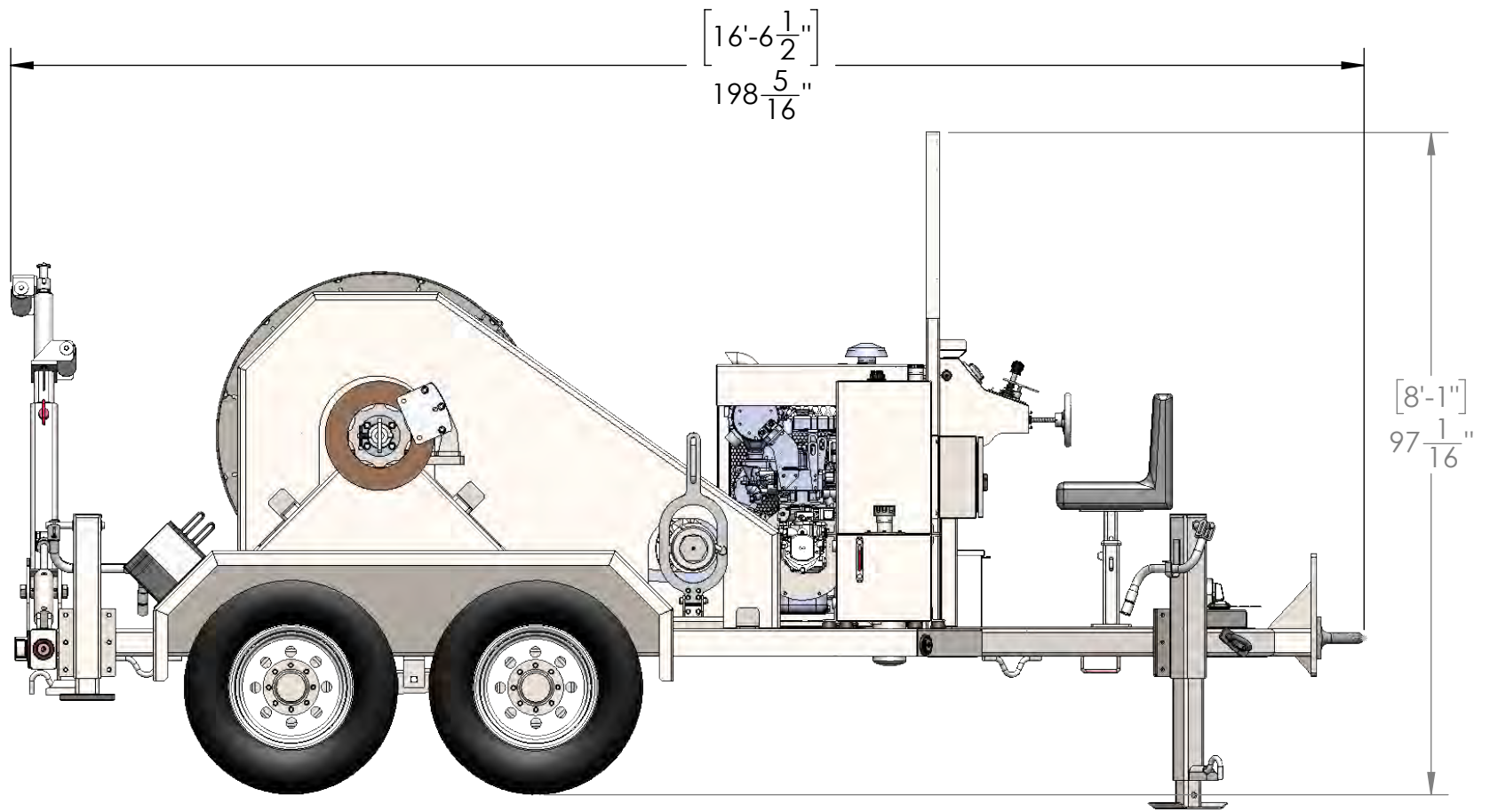
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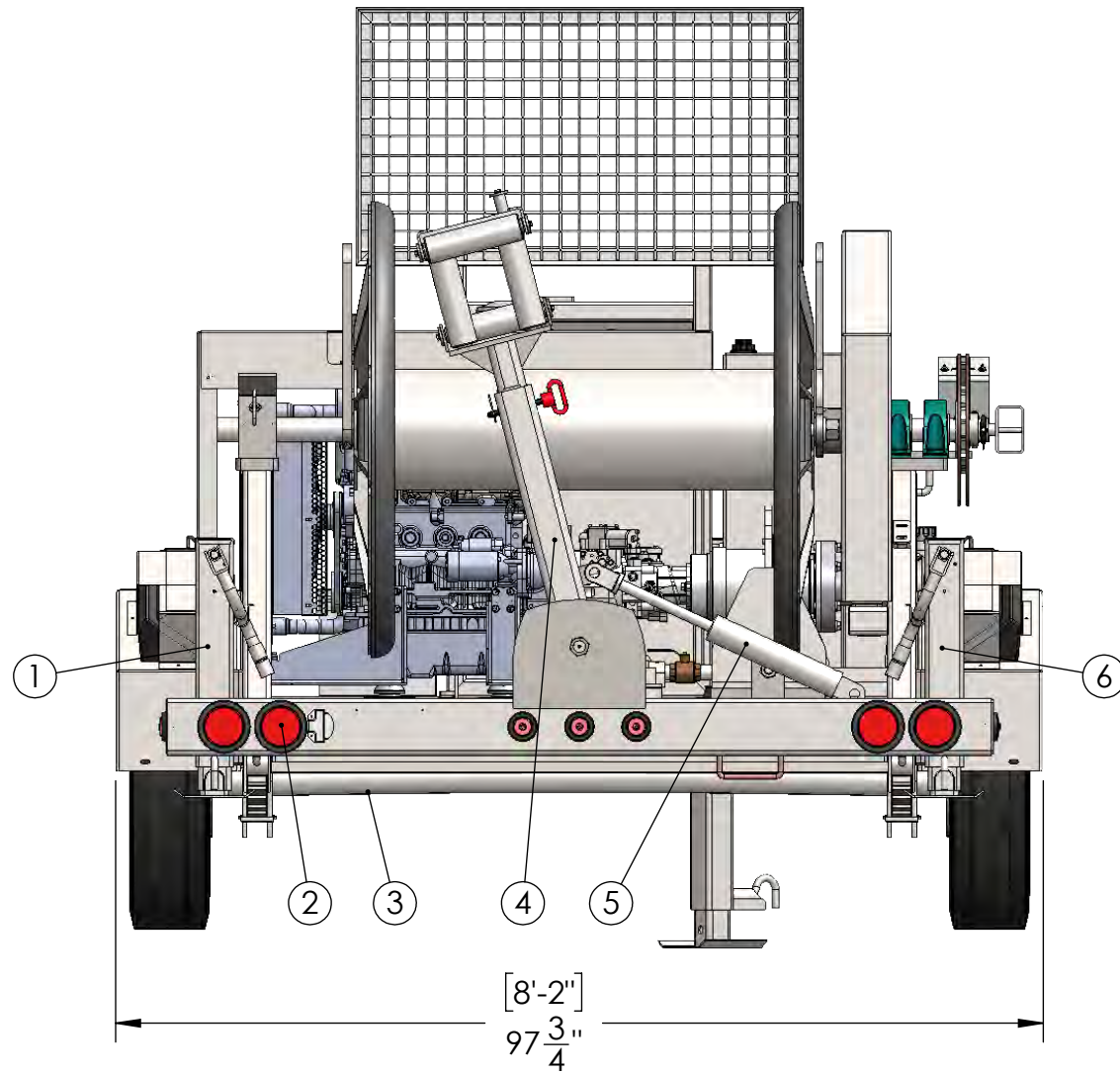
If items look different than the parts breakdown please call for assistance. (541)354-1001





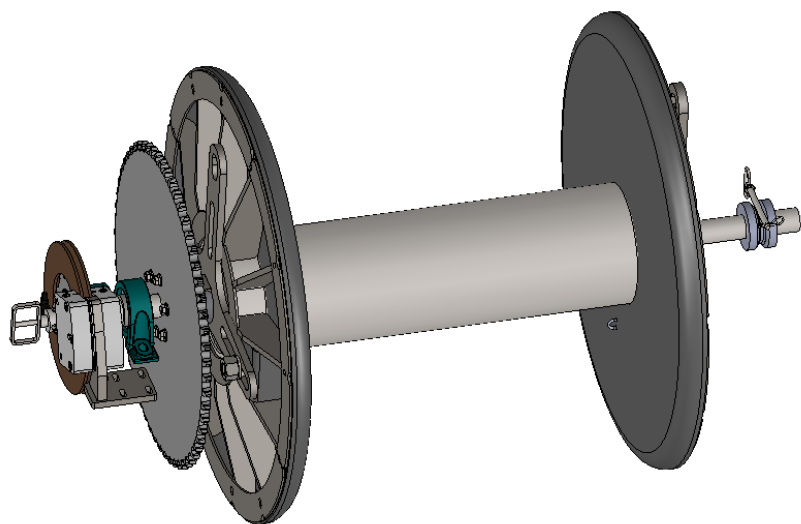
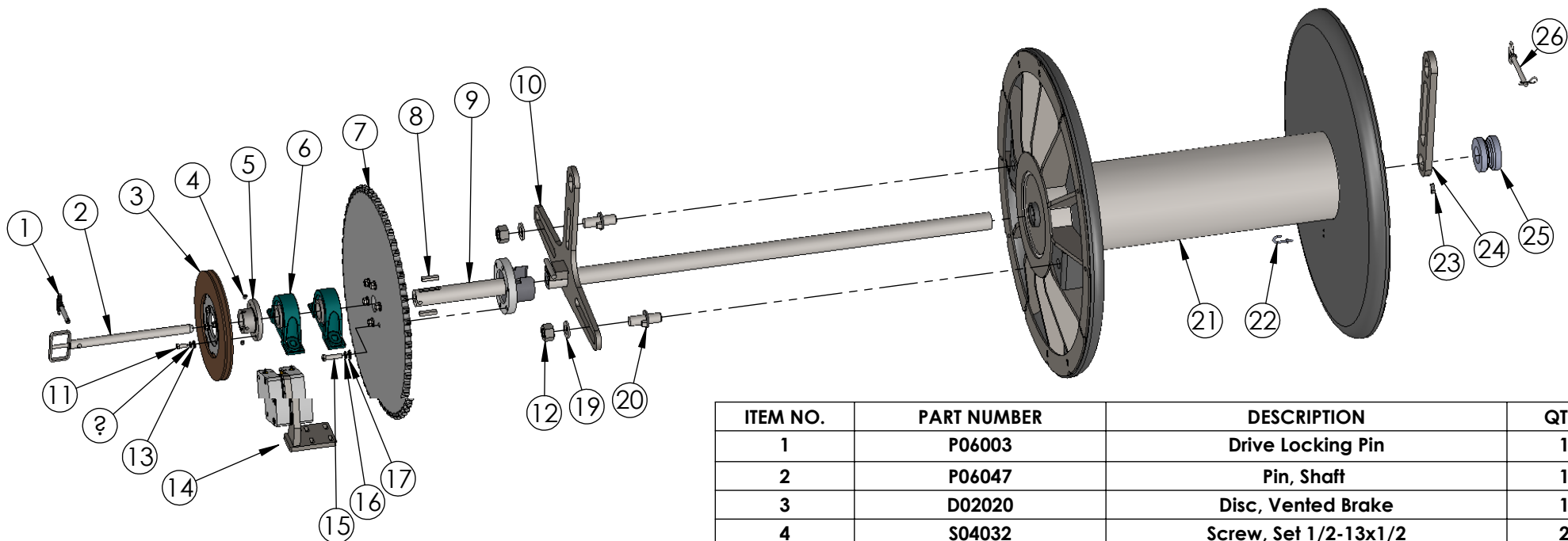
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|---------------|--------------------|------|
| 1 | Reel Assembly | Reel Assembly | 1 |
| 2 | C12005 | Wheel Chock | 4 |
| 3 | G09221 | Guard, Chain | 1 |
| 4 | ODP40 Drive | See Drive Sheet | 1 |
| 5 | Tanks | See Tanks Sheet | 1 |
| 6 | B13106 | Box, Electrical | 1 |
| 7 | C29027 | Cover, Kick Panel | 1 |
| 8 | Seat Assy | Seat Assy w/ pin | 1 |
| 9 | J04044 | 12k Dropleg Jack | 1 |
| 10 | E04017 | Eye, Pintle | 1 |
| 11 | Controls T4f | See Controls Sheet | 1 |





Weight: 11,720 lbs.

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|--------------------|---------------------|------|
| 1 | J04042 | 12k Dropleg Jack | 1 |
| 2 | Lighting | See Lighting Sheet | 1 |
| 3 | Axle Assembly | Tandem Axle | 1 |
| 4 | Levelwind Assembly | See Levelwind Sheet | 1 |
| 5 | C32020 | Cylinder, Levelwind | 1 |
| 6 | J04043 | 12k Dropleg Jack | 1 |

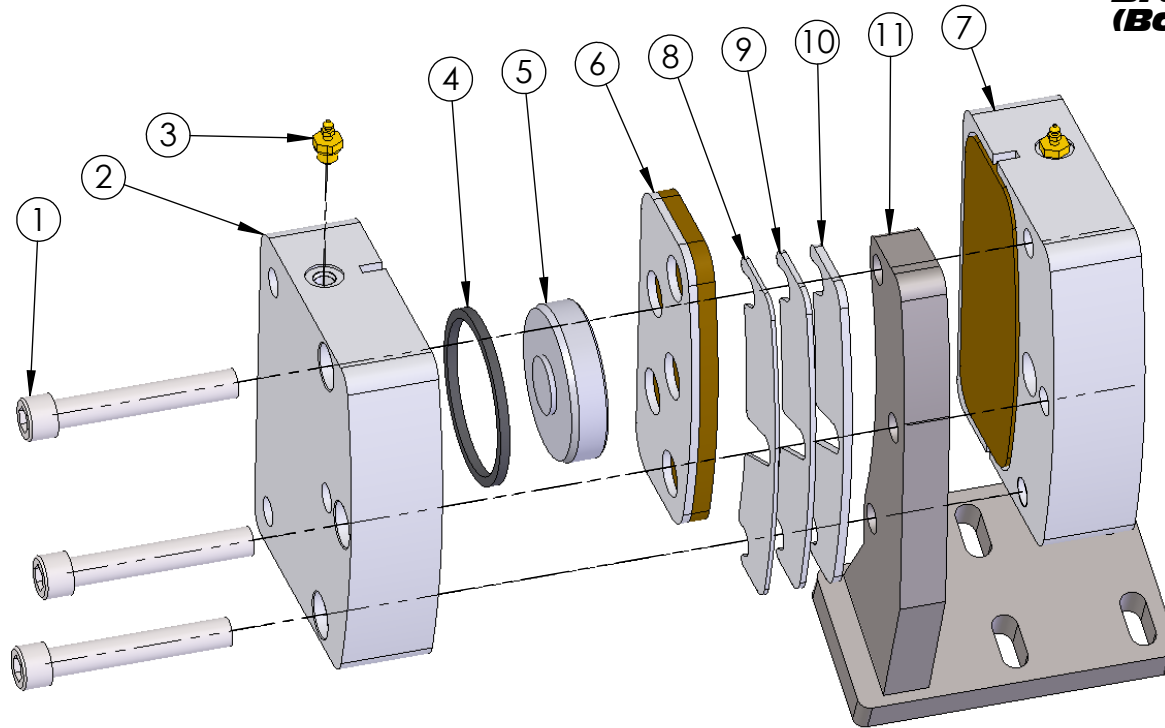


| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|---------------|------------------------------|------|
| 1 | P06003 | Drive Locking Pin | 1 |
| 2 | P06047 | Pin, Shaft | 1 |
| 3 | D02020 | Disc, Vented Brake | 1 |
| 4 | S04032 | Screw, Set 1/2-13x1/2 | 2 |
| 5 | H09106 | Hub, brake 2-7/17" shaft | 1 |
| 6 | B07401 | 2-7/16" Pillow Block Bearing | 2 |
| 7 | S29032 | Drive Sprocket | 1 |
| 8 | K01010 | Key, 1/2 x 1/2 x 2-1/2 | 2 |
| 9 | S43034 | Bearing Shaft w/ Seat | 1 |
| 10 | S43053 | Shaft, Reel | 1 |
| 11 | B11430 | Bolt Hx head 1/2-13x1-1/4 Z8 | 4 |
| 12 | N04380 | Nut, Hex 1-3/8 -6 | 2 |
| 13 | W01005 | Washer Flat SAE 1/2 | 4 |
| 14 | HD Brake assy | Caliper 7" HD brake | 1 |
| 15 | B11476 | Bolt Hx head 5/8-11x2-1/2 Z8 | 6 |
| 16 | W01040 | Washer, Split Lock 5/8" | 6 |
| 17 | W01053 | Washer, Flat 5/8 | 6 |
| 18 | W01565 | Washer, 1/2" Split Lockz | 4 |
| 19 | W01595 | Washer, Reel Pin | 2 |
| 20 | P06062 | Reel Pin, 1-3/8" | 2 |
| 21 | R07006 | 48" OD x 44"W x 12 3/4 core | 1 |
| 22 | H06035 | Holder, Rope | 1 |
| 23 | S04475 | Screw, Set Sq Head 1/2 x 1 | 2 |
| 24 | E04002 | Lifting Eye | 1 |
| 25 | B07077 | Shaft, Bearing- Nylatron | 1 |
| 26 | P06056 | Pin, 5/8 x 6" | 1 |

D02020: Min. thickness - 1.125"

If items look different than the parts breakdown please call for assistance. (541)354-1001

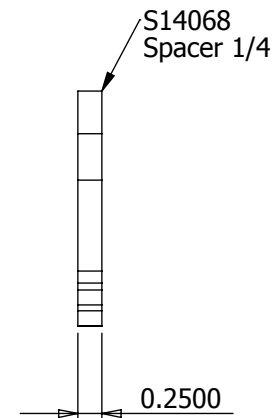
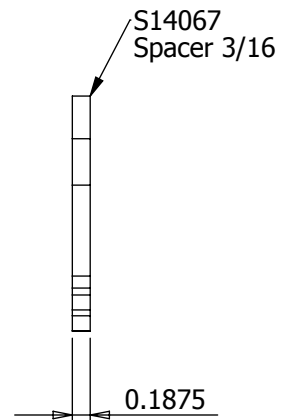
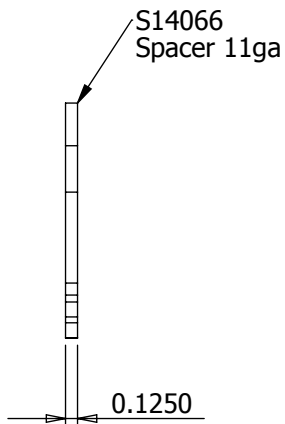
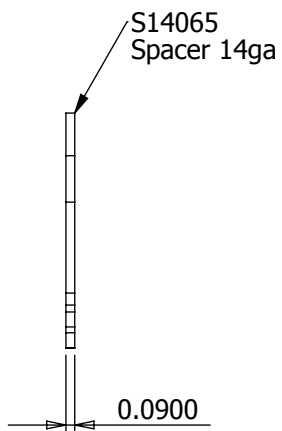
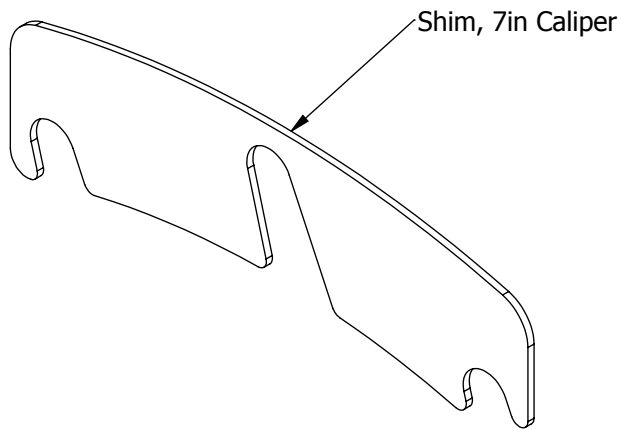
Use Spacers to get Approx. 1/16" Clearance Between Brake Pads and Brake Rotor (Both sides)



**C04031A-- Complete Assembly
(Contains Items 1-7)**

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|-----------------------------|------|
| 1 | S04141 | Screw SHCS 5/8-18x4 | 3 |
| 2 | C04037 | Caliper Half, Countersink | 1 |
| 3 | B18005 | Bleeder, -4 o-ring | 2 |
| 4 | O01225 | O-Ring, Piston | 2 |
| 5 | P08004 | 3-3/8" Piston | 2 |
| 6 | P01012 | Pad, 7" HD brake caliper | 2 |
| 7 | C04038 | Caliper Half, Threaded | 1 |
| 8 | S14065 | Spacer 14ga | 1 |
| 9 | S14066 | Spacer 11ga | 1 |
| 10 | S14067 | Spacer 3/16 | 1 |
| 11 | B15247 | Bracket, Caliper Mount 7"HD | 1 |

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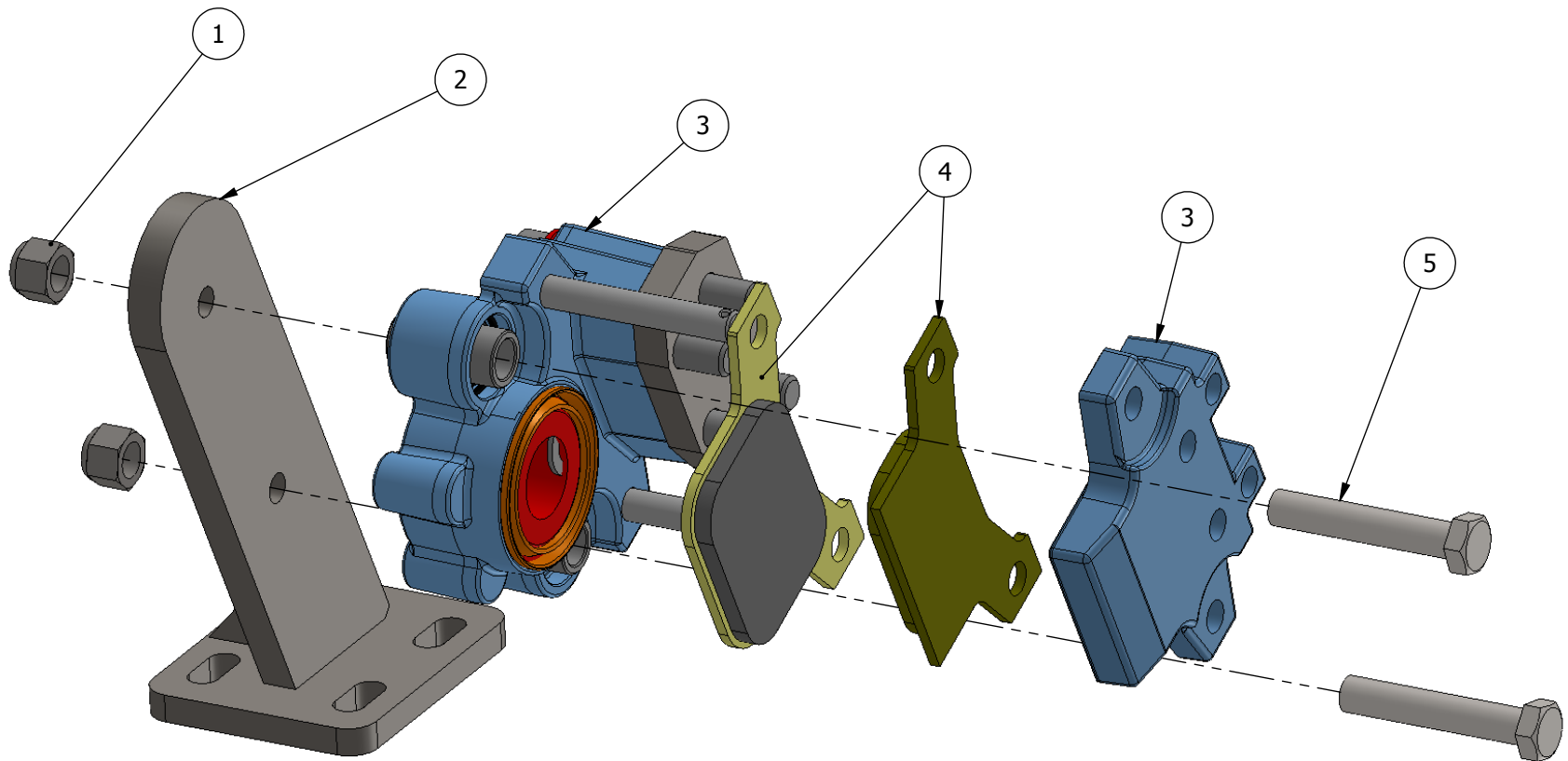
HOGG & DAVIS
 PO BOX 405, 3800 EAGLE LOOP
 ODELL, OR 97044 (541) 354-1001

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| | |
|--------------|------------|
| DRAWN | |
| NAME | sm |
| DATE | 12/27/2010 |
| SHEET 1 OF 1 | |

| |
|------------------------------|
| TITLE: Shim, 7" Caliper |
| Part #: S14065-S14068 |

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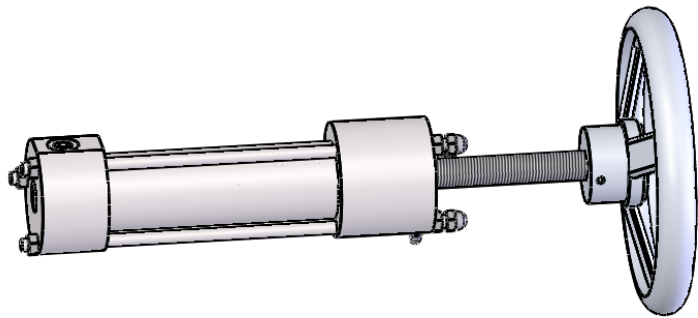
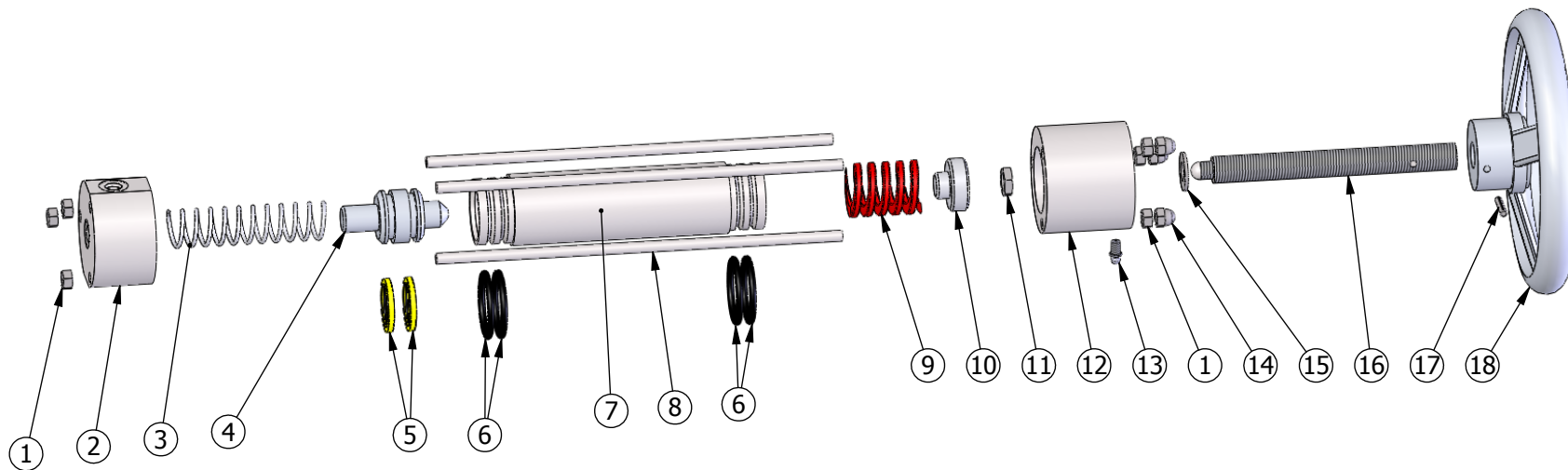


Overspin Brake (Old Style)

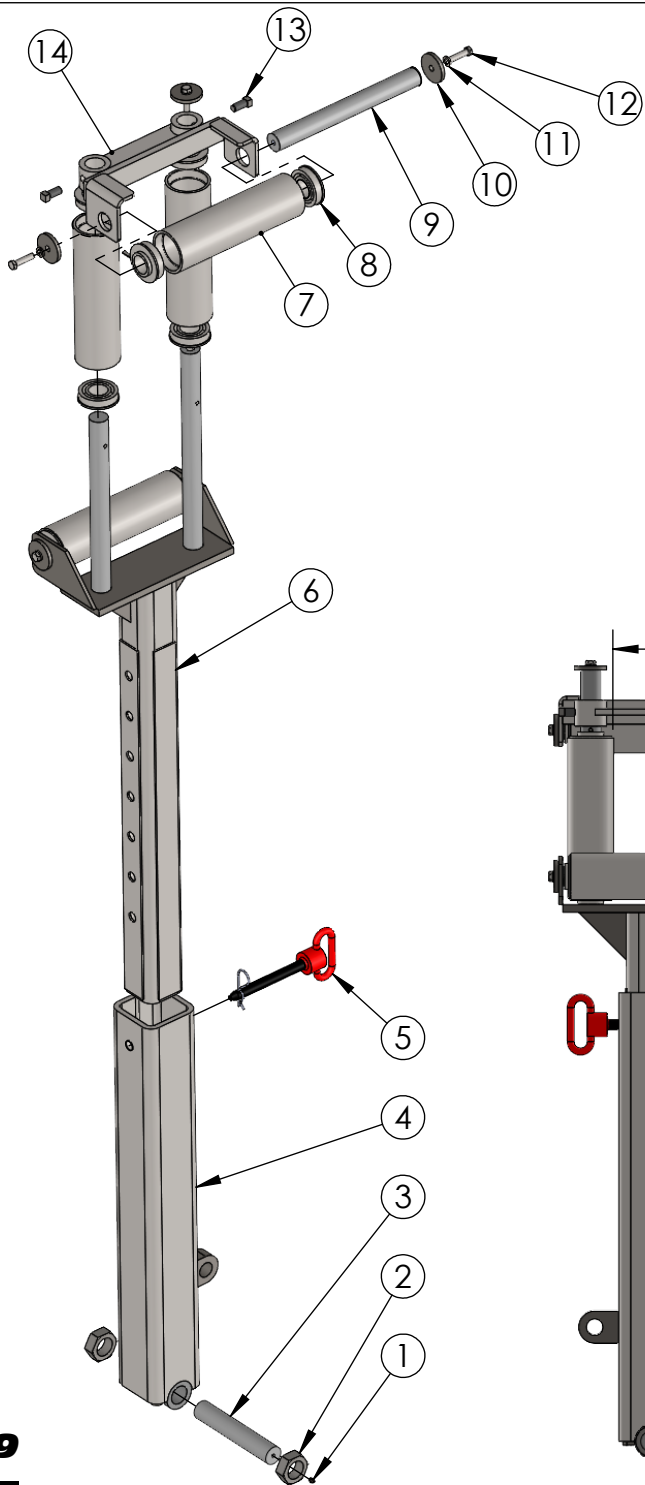


| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|------------------------------|------|
| 1 | N04558 | Nut Hex Nylock® 5/8-11 | 2 |
| 2 | B15924 | Caliper Mount | 1 |
| 3 | C04912WIDE | Caliper, Overspin Brake | 1 |
| 4 | P01052 | Brake Pads (Set of 2) | 2 |
| 5 | B11484 | Bolt Hx head 5/8-11x3-1/2 Z8 | 2 |

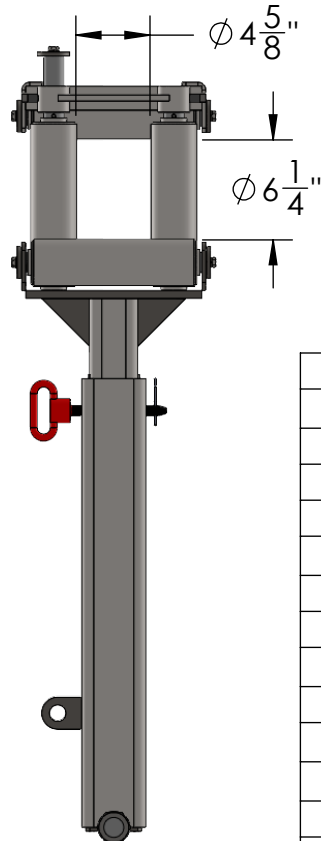
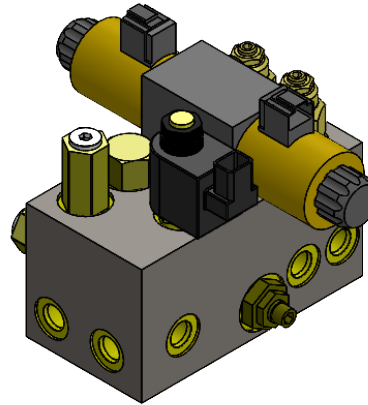
If items look different than the parts breakdown please call for assistance. (541)354-1001



| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|-----------------------------|------|
| 1 | N04107 | Nut Hex 5/16"-18 | 6 |
| 2 | C06009 | Bar round 3" 1018 | 1 |
| 3 | S28022 | Return Spring | 1 |
| 4 | P08017 | Piston, Aluminum two groove | 1 |
| 5 | O01061 | Seal | 2 |
| 6 | O01060 | O-Ring | 4 |
| 7 | H08003 | Cylinder Tube | 1 |
| 8 | R19007 | Bar round 5/16" 1018 | 3 |
| 9 | S28021 | Spring | 1 |
| 10 | P08016 | 2" Aluminum RB | 1 |
| 11 | N04039 | Nut Hex Jam 1/2-20 | 1 |
| 12 | C06012 | Bar round 3" 1018 | 1 |
| 13 | F05630 | Fitting, 1/4"-28 Zerk | 1 |
| 14 | N04103 | Nut Hex 5/16"-18 Acorn | 3 |
| 15 | W01005 | Washer, Flat SAE 1/2" | 1 |
| 16 | S04006 | Bar 3/4"-8 acme thread | 1 |
| 17 | P06186 | Pin, Roll 3/16 "x 1" | 1 |
| 18 | H02060 | Handle, 8" Dia. | 1 |



**M04060
Discontinued 2014**



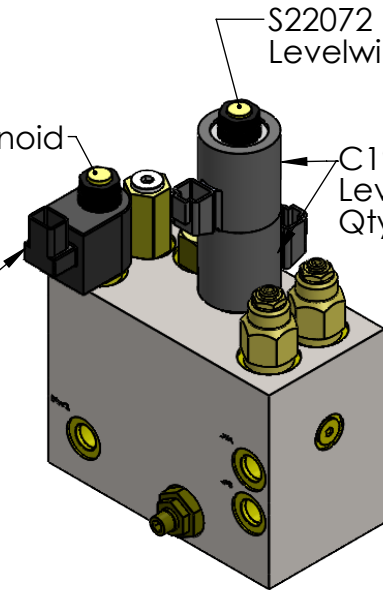
S22070
Brake Solenoid

C19055
Brake Valve Coil

S22072
Levelwind Solenoid

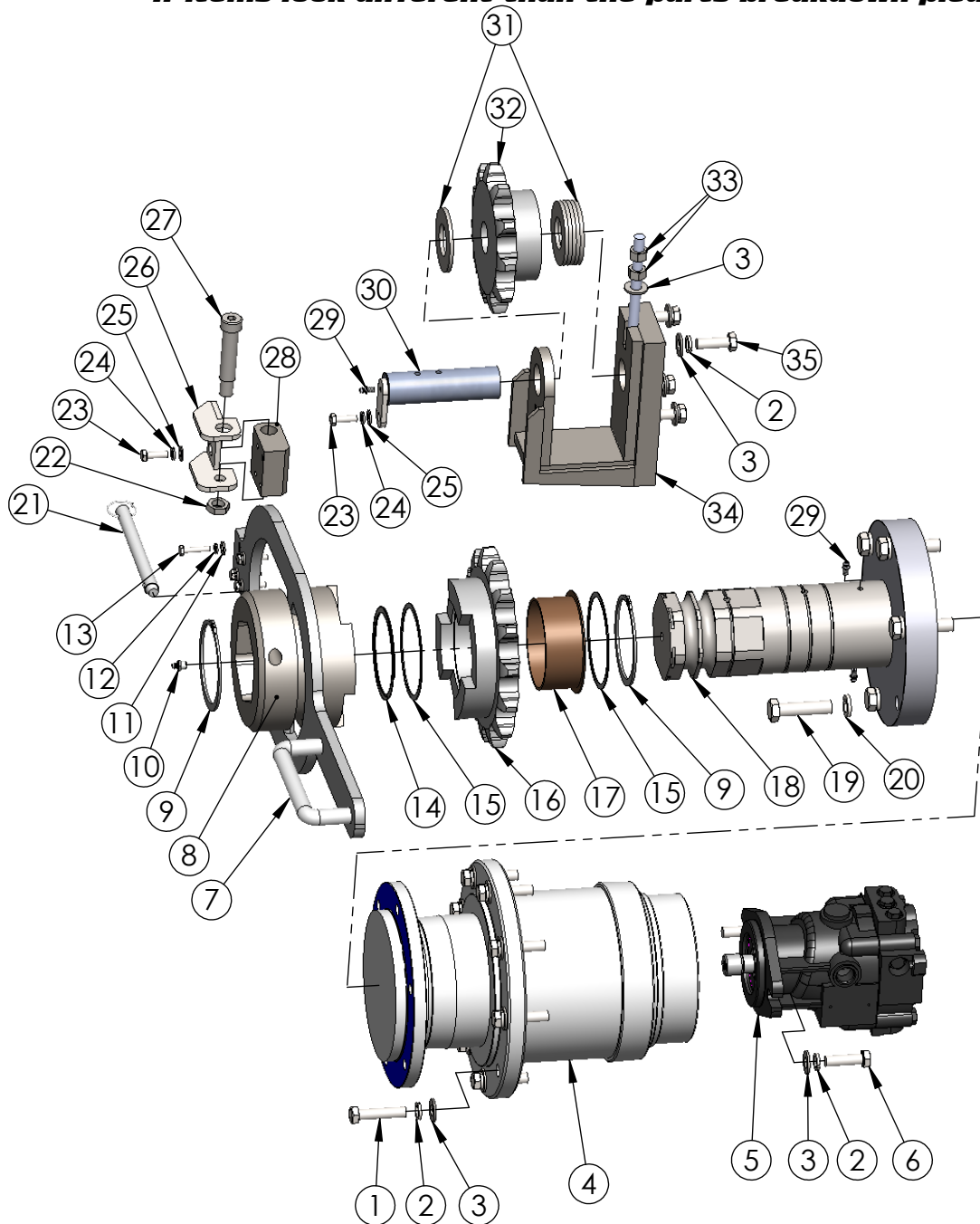
C19056
Levelwind Coil
Qty2

**M04090
Levelwind Manifold**



| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|----------------------------------|------|
| 1 | F05071 | Fitting, Grease Zerk 1/4"-28 tap | 1 |
| 2 | N04097 | Nut, Hx Jam 1-1/4"-12 | 2 |
| 3 | P06156 | Pin, Levelwind Pivot | 1 |
| 4 | S17000 | Sleeve, Levelwind | 1 |
| 5 | P06027 | Pin, Height Adjust | 1 |
| 6 | A08089 | Arm, Levelwind | 1 |
| 7 | R20044 | Roller, Horizontal | 4 |
| 8 | B07110 | Bearing, Roller | 8 |
| 9 | S43129 | Shaft, Roller | 2 |
| 10 | C06041 | Cap, End | 5 |
| 11 | W01545 | Washer, Split Lock 3/8"zinc | 5 |
| 12 | B11344 | Bolt, Hx Head 3/8"-16 x 1-1/2" | 5 |
| 13 | S04475 | Screw, Set Sq Head 1/2" x 1" | 2 |
| 14 | B15897 | Bracket, Swing-away Fairlead | 1 |
| 15 | P06185 | Pin, Roll 1/4" x 1-1/2" | 2 |

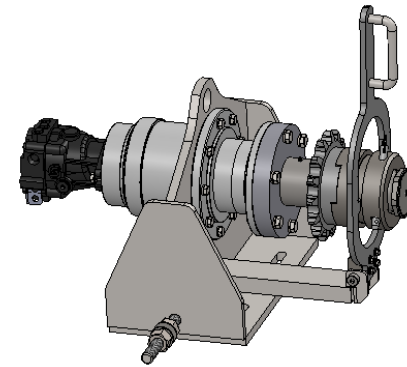
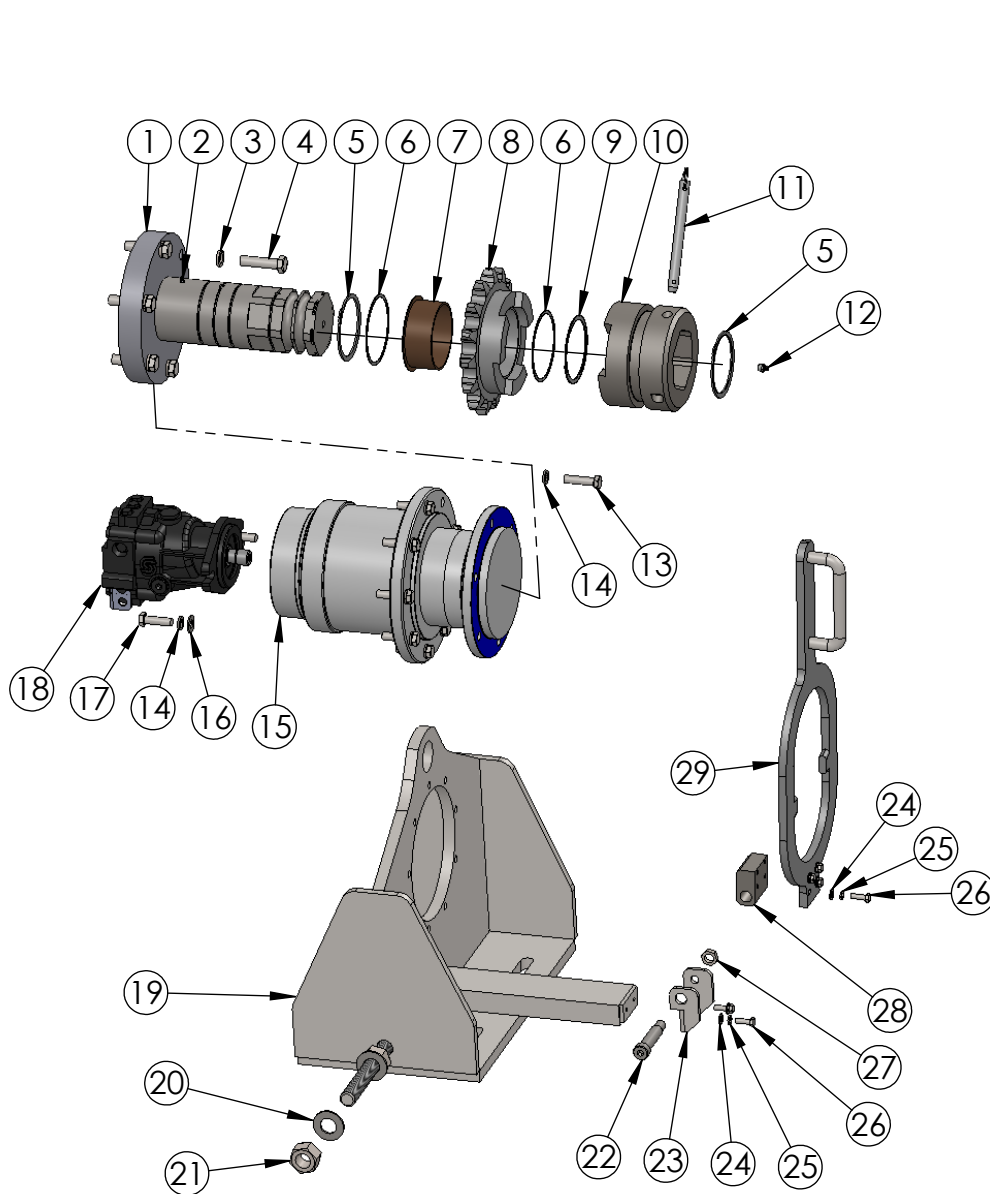
If items look different than the parts breakdown please call for assistance. (541)354-1001



Drive Chain Slack Range: 1"-2"

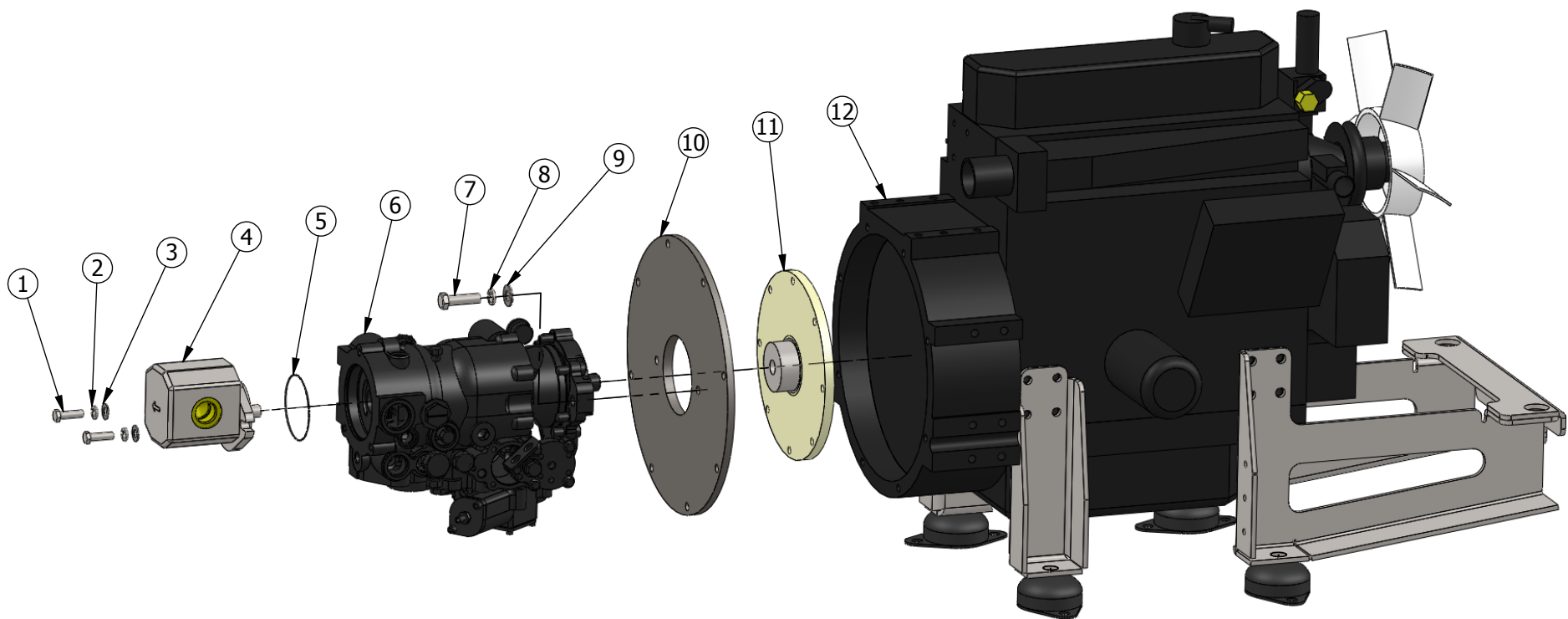
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|-----------------------------------|------|
| 1 | B11451 | Bolt Hx head 1/2-13x2-1/4 Z8 | 9 |
| 2 | W01565 | Washer, Split Lock 1/2" | 15 |
| 3 | W01005 | Washer Flat SAE 1/2 | 16 |
| 4 | G12006 | Planetary Gear | 1 |
| 5 | M08043 | Motor, Sauer MMF035D | 1 |
| 6 | B11445 | Bolt Hx head 1/2-13x1-3/4 Z8 | 2 |
| 7 | Y01068 | Drive Disengage Yoke | 1 |
| 8 | H09022 | Engagement Hub | 1 |
| 9 | R18014 | Ring, Snap External | 2 |
| 10 | F05629 | Grease Zerk 1/8NPT | 1 |
| 11 | W01205 | Washer, Flat SAE 1/4" | 4 |
| 12 | W01525 | Washer, Split Lock 1/4" | 4 |
| 13 | B11325 | Bolt, Hex 1/4"-20 x 1-1/4" | 4 |
| 14 | R18009 | External 4" Spiral Retaining Ring | 1 |
| 15 | W01014 | Washer, Thrust | 2 |
| 16 | S29068 | Sprocket | 1 |
| 17 | B21019 | Bushing, Bronze | 1 |
| 18 | S43057 | Hex Shaft | 1 |
| 19 | B11476 | Bolt Hx head 5/8-11x2-1/2 Z8 | 6 |
| 20 | W01040 | Washer, Split Lock 5/8" | 6 |
| 21 | P06049 | Pin, 5/8" X 5-1/2" w/ Lanyard | 1 |
| 22 | N04474 | Nut Hex Jam 5/8-11 | 1 |
| 23 | B11020 | Bolt, Hex 5/16"-18 x 1" | 3 |
| 24 | W01048 | Washer, Split Lock 5/16" | 3 |
| 25 | W01235 | Washer Flat SAE 5/16 | 3 |
| 26 | B15084 | Yoke Pivot | 1 |
| 27 | B11030 | Bolt shoulder 3/4x2-3/4 | 1 |
| 28 | B15114 | 2-1/2" SQ | 1 |
| 29 | F05630 | Fitting, 1/4-28 Zerk | 3 |
| 30 | S43062 | Shaft, Idler Sprocket | 1 |
| 31 | W01110 | 1 1/2" SAE Washer | 6 |
| 32 | S29014 | Sprocket, Idler 11t | 1 |
| 33 | N04264 | Nut Hex 1/2-13 | 2 |
| 34 | I02101 | Idler Sprocket Bracket | 1 |
| 35 | B11433 | Bolt, Hex 1/2"-13 x 1-1/2" Z8 | 4 |

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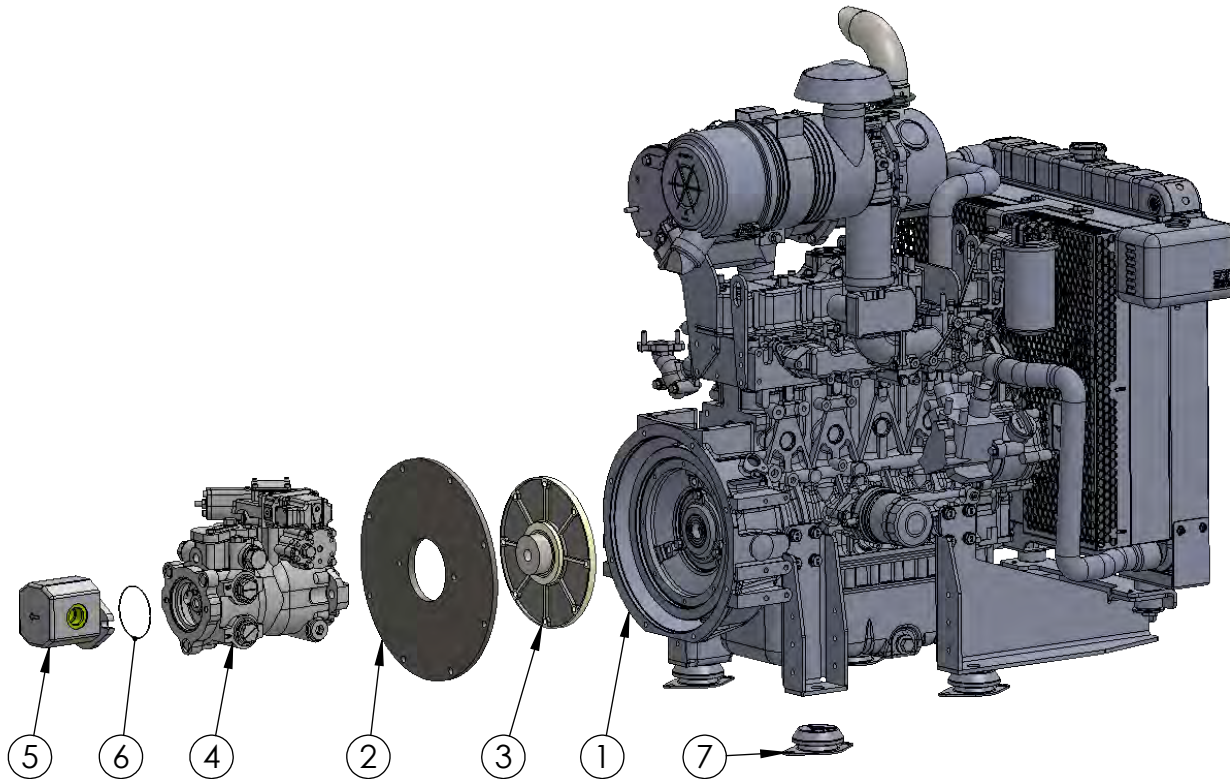
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|-----------------------------------|------|
| 1 | S43057 | Hex Shaft | 1 |
| 2 | F05630 | Zerk, Grease 1/4"-28 | 1 |
| 3 | W01040 | Washer, Split Lock 5/8"zinc | 6 |
| 4 | B11476 | Bolt, Hx Head 5/8"-11 x 2-1/2" Z8 | 6 |
| 5 | R18014 | Ring, Snap External | 2 |
| 6 | W01014 | Washer, Thrust | 2 |
| 7 | B21019 | Bushing, Bronze | 1 |
| 8 | S29068 | Sprocket | 1 |
| 9 | R18009 | External 4" Spiral Retaining Ring | 1 |
| 10 | H09022 | Engagement Hub | 1 |
| 11 | P06049 | Pin, 5/8" X 5-1/2" w/ Lanyard | 1 |
| 12 | F05629 | Zerk, Grease 1/8"NPT | 1 |
| 13 | B11446 | Bolt, Hx Head 1/2"-13 x 2" Z8 | 9 |
| 14 | W01565 | Washer, 1/2" Split Lockz | 11 |
| 15 | G12006 | Gear, Planetary | 1 |
| 16 | W01005 | Washer, Flat SAE 1/2"zinc | 2 |
| 17 | B11445 | Bolt, Hx Head 1/2"-13 x 1-3/4" Z8 | 2 |
| 18 | M08043 | Motor, Sauer | 1 |
| 19 | M09048 | Mount, Planetary | 1 |
| 20 | W01293 | Washer, Flat SAE 1" | 2 |
| 21 | N04267 | Nut, 1-8 Z | 2 |
| 22 | B11030 | Bolt, Shoulder 3/4" x 2-3/4" | 1 |
| 23 | B15084 | Yoke Pivot | 1 |
| 24 | W01235 | Washer, Flat SAE 5/16"zinc | 6 |
| 25 | W01048 | Washer, Split Lock 5/16"zinc | 6 |
| 26 | B11020 | Bolt, Hx Head 5/16"-18 x 1" | 6 |
| 27 | N04474 | Nut, Hx Jam 5/8"-11 | 1 |
| 28 | B15114 | 2-1/2" SQ | 1 |
| 29 | Y01062 | Yoke, Hex Drive | 1 |

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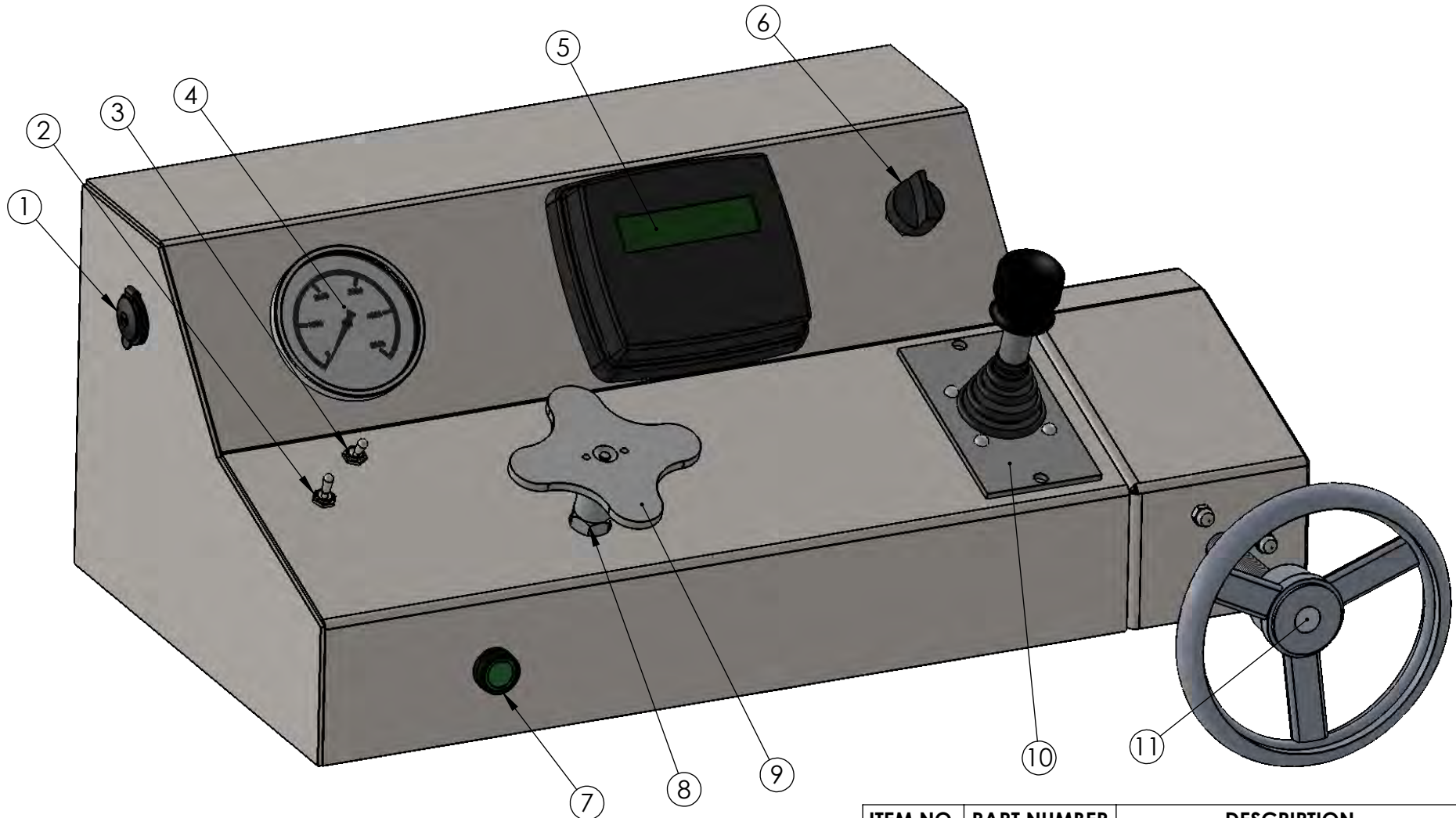
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---------------------------|------|
| 1 | B11343 | Bolt Hx head 3/8-16x1-1/4 | 2 |
| 2 | W01545 | Washer, Split Lock 3/8" | 2 |
| 3 | W01002 | Washer Flat SAE 3/8 | 2 |
| 4 | P20103 | Pump, 10gpm | 1 |
| 5 | O01111 | O-ring Small Gear Pump | 1 |
| 6 | P20070 | Pump, Hydraulic | 1 |
| 7 | B11364 | Bolt Hx head 1/2-13x1-3/4 | 2 |
| 8 | W01565 | Washer, Split Lock 1/2" | 2 |
| 9 | W01005 | Washer Flat SAE 1/2" | 2 |
| 10 | P09097 | Pump Adapter Plate | 1 |
| 11 | C28026 | Pump Adapter/ Flywheel | 1 |
| 12 | E02024 | Engine | 1 |



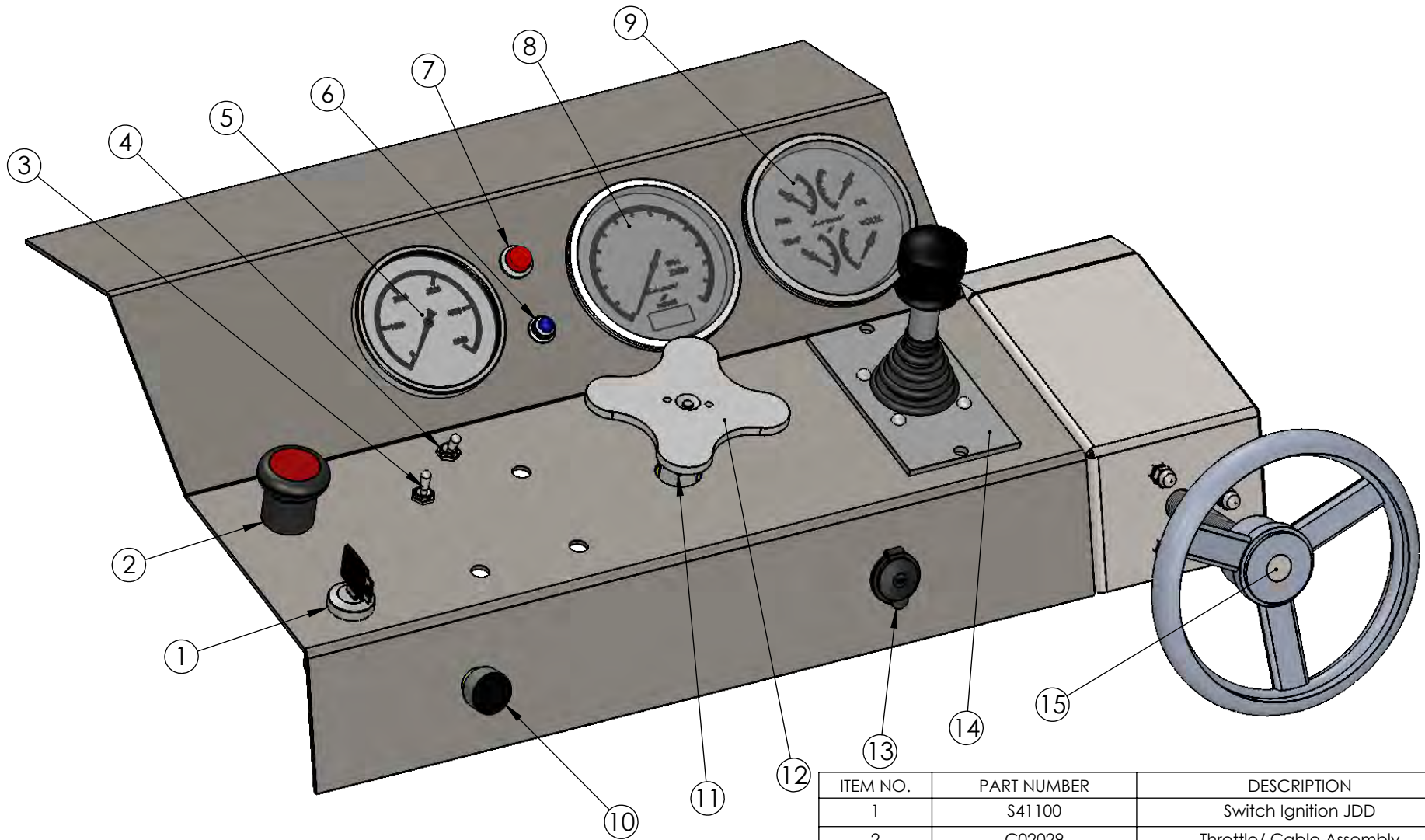


| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|------------------------|------|
| 1 | E02034 assy | Engine | 1 |
| 2 | P09097 | Pump Adapter Plate | 1 |
| 3 | C28026 | Pump Coupler/ Flywheel | 1 |
| 4 | P20070 | Pump, Hydraulic | 1 |
| 5 | P20103 | Pump, 10gpm | 1 |
| 6 | O01111 | O-ring Small Gear Pump | 1 |
| 7 | I04010 | Spring Isolator 176# | 4 |

If items look different than the parts breakdown please call for assistance. (541)354-1001

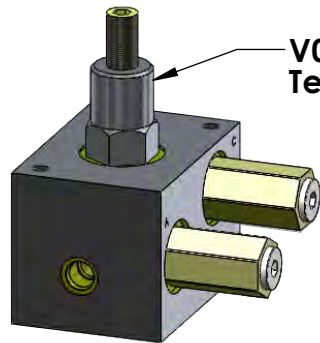
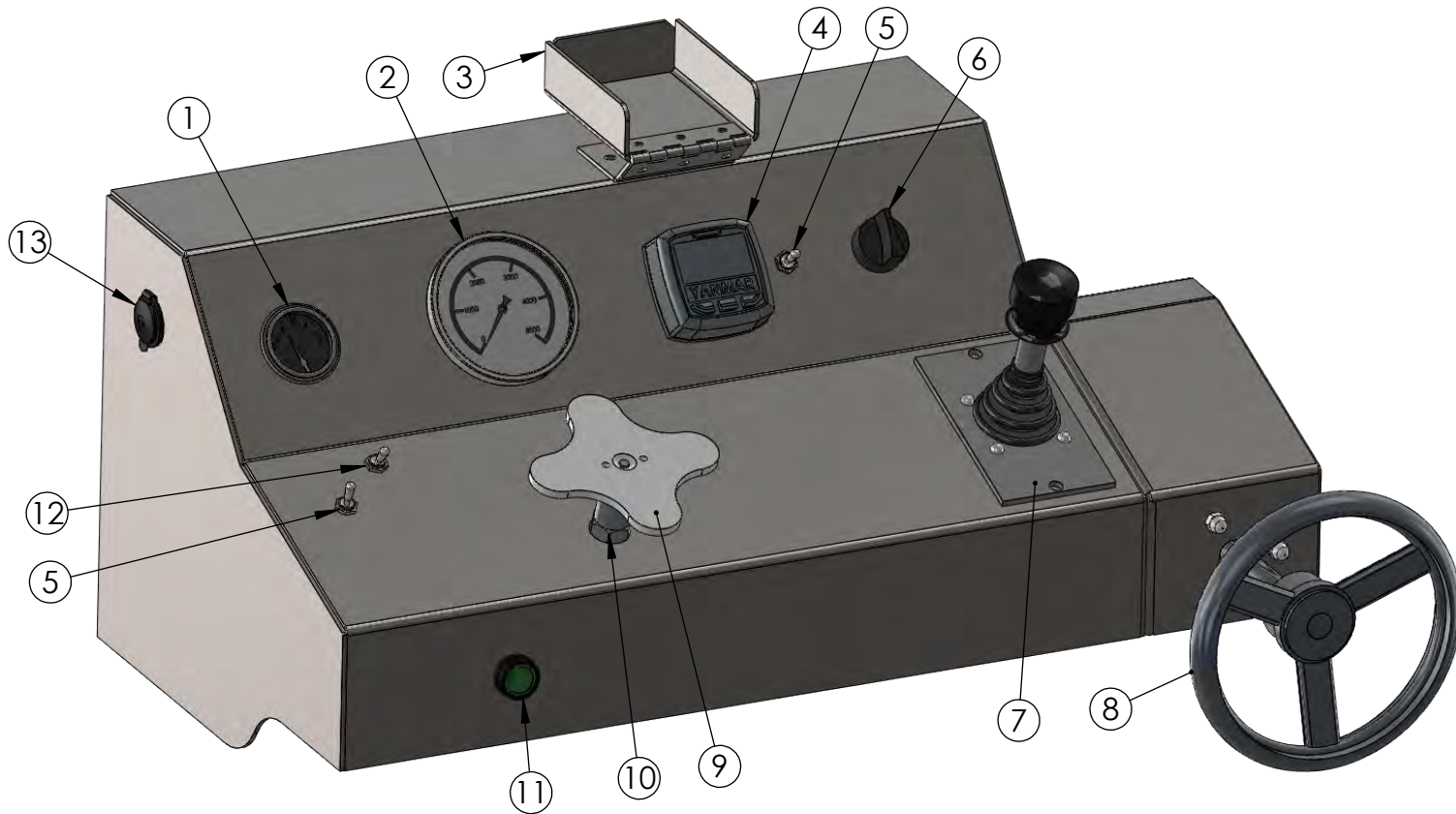


| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|--------------------------|------|
| 1 | R12005 | 12v Socket | 1 |
| 2 | S40100 | Switch, SP/DT Momentary | 1 |
| 3 | S40035 | Switch, SP/ST Toggle | 1 |
| 4 | G02076 | Gauge, 600PSI | 1 |
| 5 | D09030 | Display, Controls Inc. | 1 |
| 6 | S40070 | Switch, Key Cole Hersee | 1 |
| 7 | S40169 | Switch, Payout Lock-Out | 1 |
| 8 | M04061 | Manifold Tension Control | 1 |
| 9 | H02063 | Handle CP210 relief | 1 |
| 10 | C34030 | Controller, Joystick MCH | 1 |
| 11 | C32004 | Brake Cylinder | 1 |



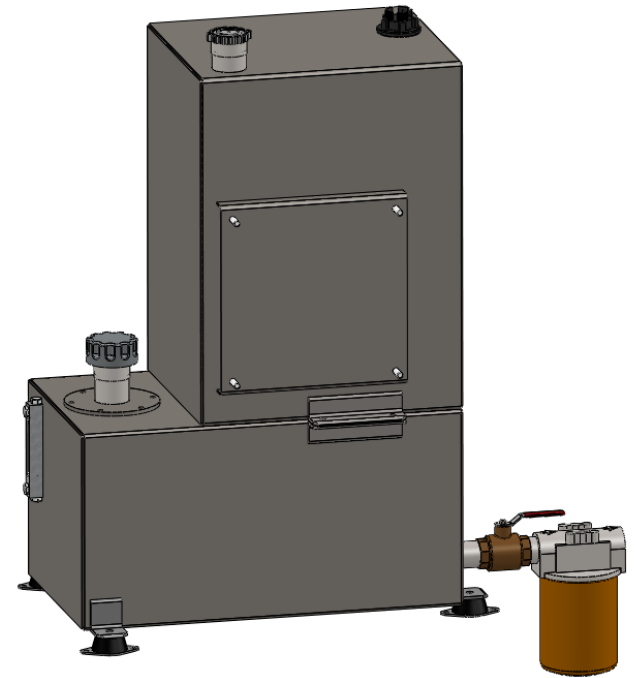
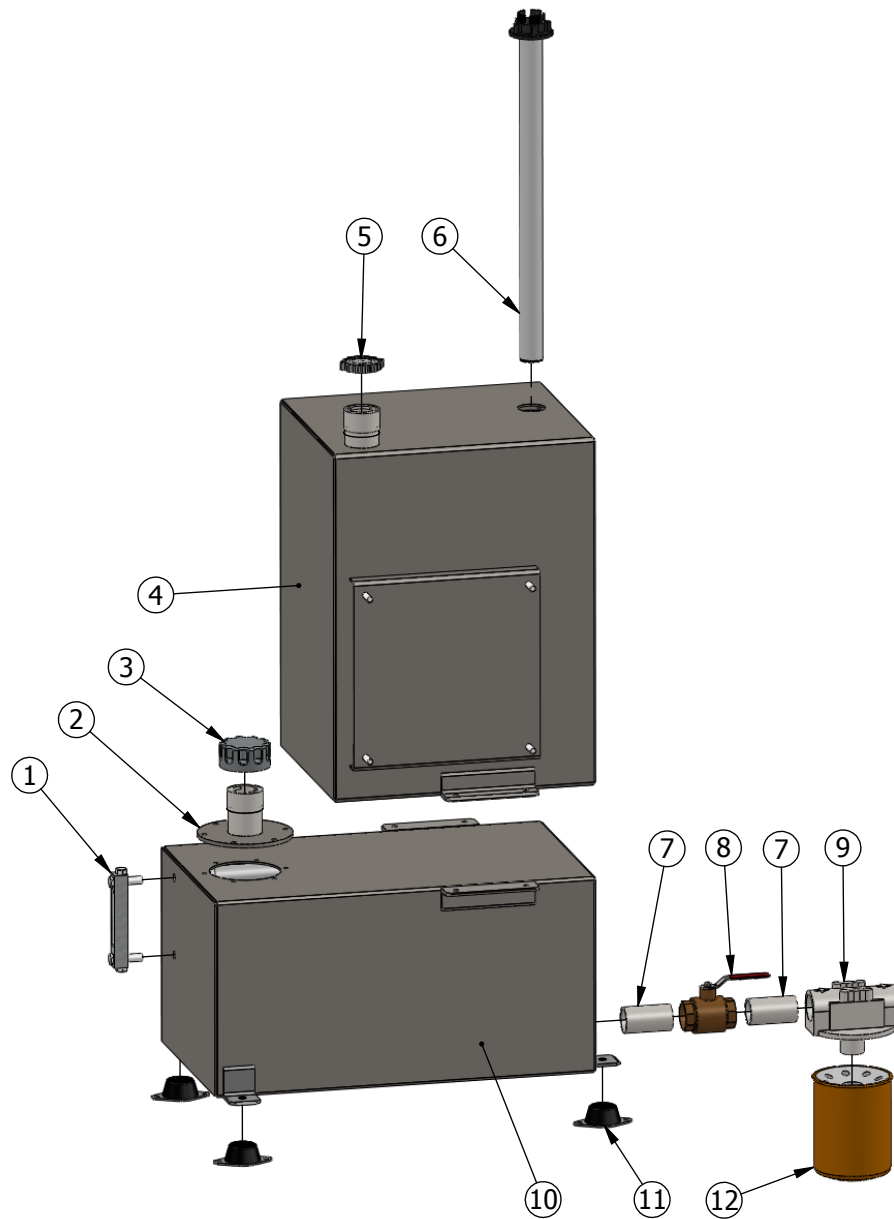
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|--------------------------|------|
| 1 | S41100 | Switch Ignition JDD | 1 |
| 2 | C02029 | Throttle/ Cable Assembly | 1 |
| 3 | S40100 | Switch, SP/DT Momentary | 1 |
| 4 | S40035 | Switch, SP/ST Toggle | 1 |
| 5 | G02076 | Gauge, 600PSI | 1 |
| 6 | L04200 | PreHeat Light | 1 |
| 7 | L04025 | Light, Pilot | 1 |
| 8 | G02022 | Livorsi Tachometer | 1 |
| 9 | G02033 | Gauge, Livorsi 4 in 1 | 1 |
| 10 | S40167 | Switch, Payout Lock-Out | 1 |
| 11 | M04061 | Manifold Tension Control | 1 |
| 12 | H02063 | Handle CP210 relief | 1 |
| 13 | R12005 | 12v Socket | 1 |
| 14 | C34030 | Controller, Joystick MCH | 1 |
| 15 | C32004 | Brake Cylinder | 1 |

If items look different than the parts breakdown please call for assistance. (541)354-1001

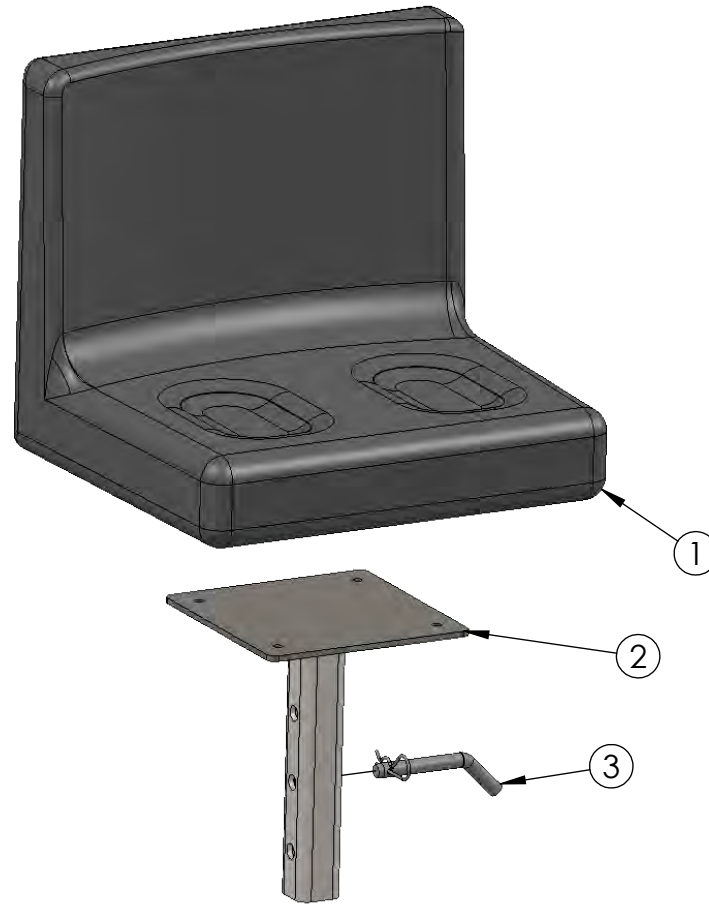


**V02081
Tension Control**

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---------------------------------|------|
| 1 | G02005 | Gauge, Fuel Level | 1 |
| 2 | G02076 | Gauge, 600PSI | 1 |
| 3 | C29034 | Cover, Display Yanmar T4f | 1 |
| 4 | K02707 | Display, Yanmar T4 w/ Keyswitch | 1 |
| 5 | S40100 | Switch, SP/DT Momentary | 2 |
| 6 | S40070 | Switch, Key Cole Hersee | 1 |
| 7 | C34030 | Controller, Joystick MCH | 1 |
| 8 | C32004 | Brake Cylinder | 1 |
| 9 | H02063 | Handle CP210 relief | 1 |
| 10 | M04061 | Manifold Tension Control | 1 |
| 11 | S40169 | Switch, Payout Lock-Out | 1 |
| 12 | S40035 | Switch, SP/ST Toggle | 1 |
| 13 | R12005 | 12v Socket | 1 |

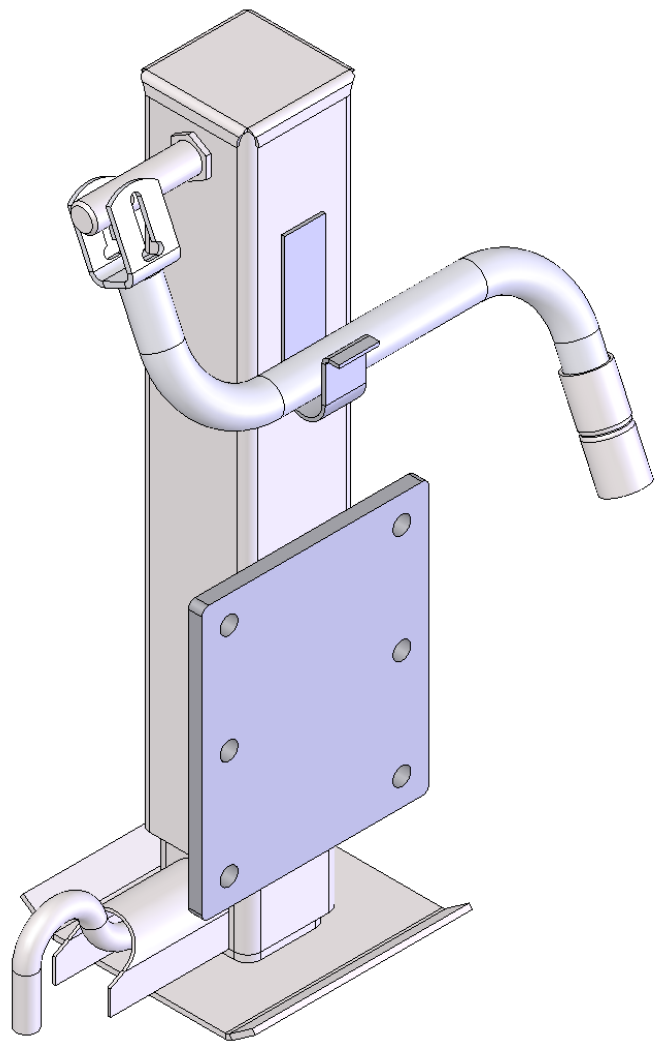


| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---------------------------|------|
| 1 | G02046 | Gauge, Hyd oil level | 1 |
| 2 | N07002 | Neck, Hydraulic fill | 1 |
| 3 | C06155A | Cap, Hydraulic | 1 |
| 4 | T01955 | Tank, Fuel 21 Gallon | 1 |
| 5 | C06205 | Cap, Fuel | 1 |
| 6 | S46006 | Fuel Sender | 1 |
| 7 | N02001 | Nipple, 1-1/4" x 3"LG | 2 |
| 8 | V02001 | Valve, Ball 1-1/4" NPT | 1 |
| 9 | F04021 | Filter Head | 1 |
| 10 | T01004 | Tank, Hyd Fluid 18 Gallon | 1 |
| 11 | I04003 | Insulator, Small | 4 |
| 12 | F04020 | Filter 10 micron | 1 |

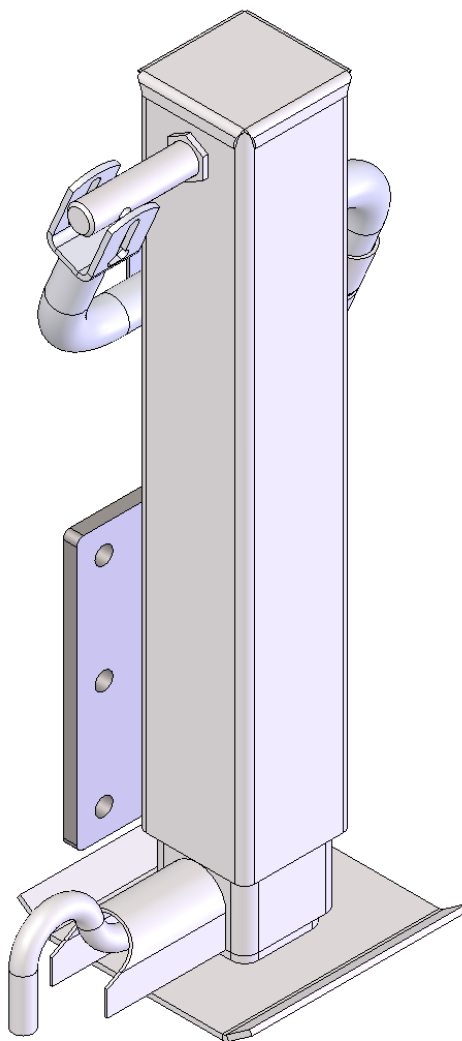


| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|--------------------------|------|
| 1 | S03040 | Seat, Operator JD | 1 |
| 2 | P14051 | Post, Seat Mount | 1 |
| 3 | P06999 | Pin, Bent Hitch 5/8 x 3" | 1 |

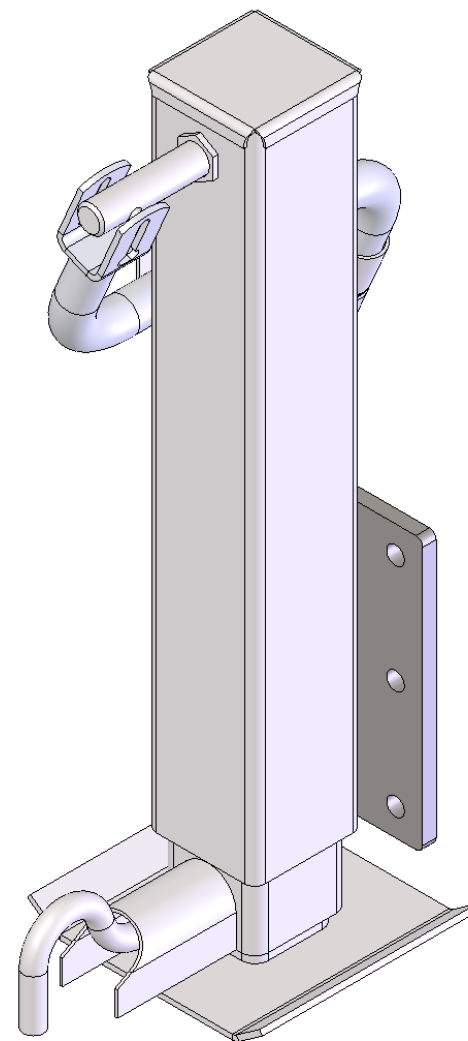
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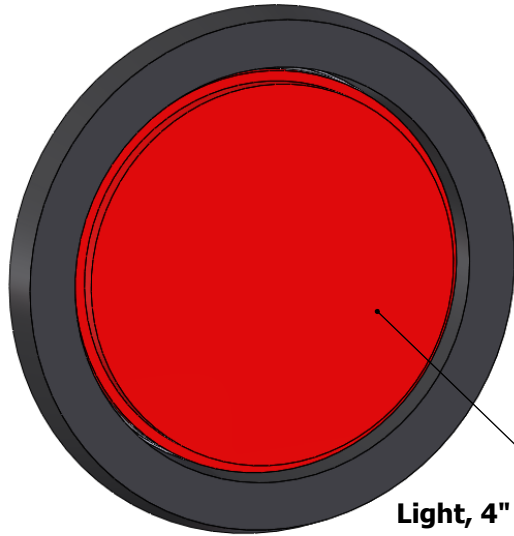
**J04042
LEFT REAR
JACKSTAND**



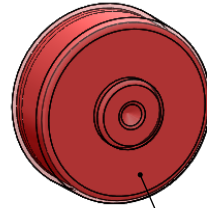
**J04043
RIGHT REAR
JACKSTAND**



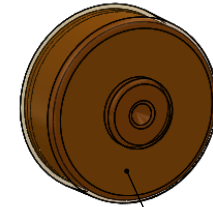
**J04044
FRONT
JACKSTAND**



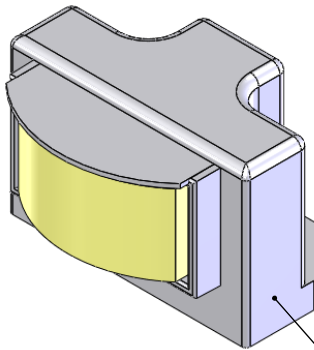
L04032
Light, 4" Tail/Stop/Turn Kit LED



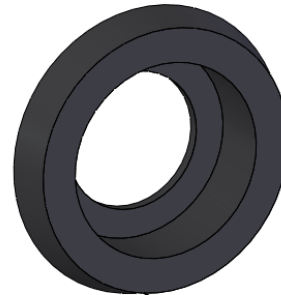
L04310
Light Red 2" LED



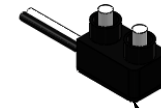
L04311
Light Amber 2" LED



L04055
Light, License plate

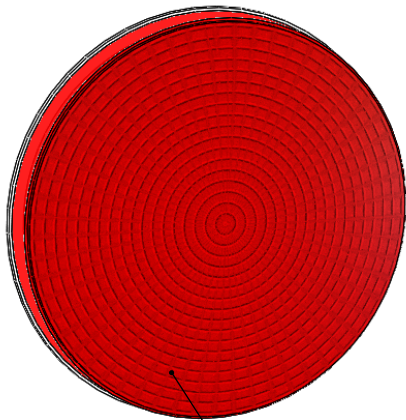


G08005
Grommet 2" Light

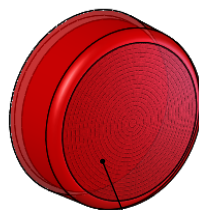


P05025
Pigtail 2 wire

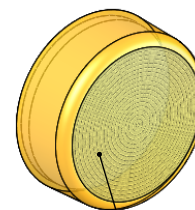
If items look different than the parts breakdown please call for assistance. (541)354-1001



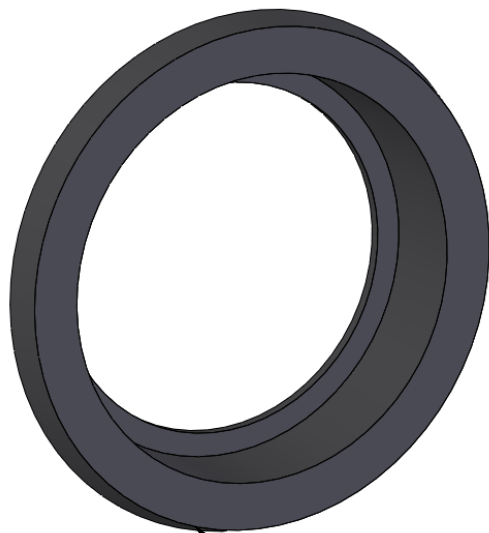
**L04030
Light, 4" Tail Stop Turn**



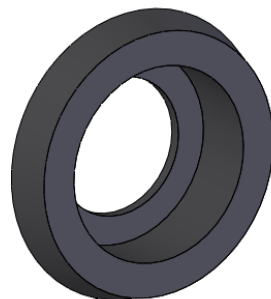
**L04070
Light, 2" Red**



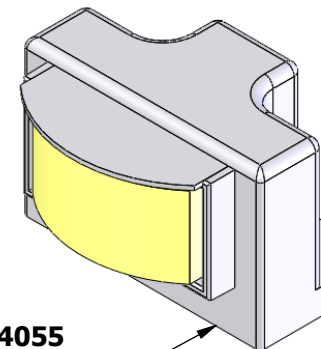
**L04035
Light, 2" Amber**



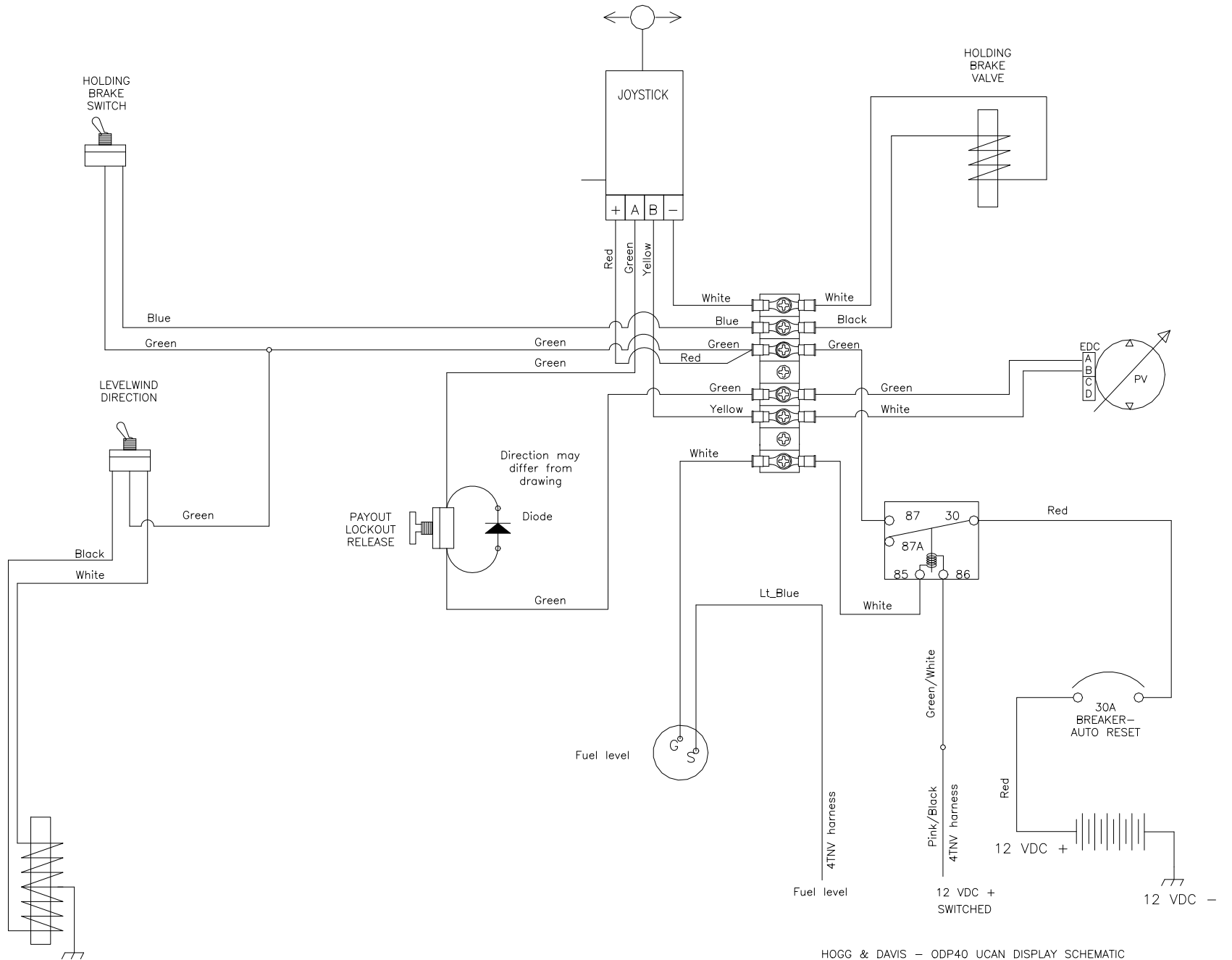
**G08010
Grommet, 4" Tail/Stop/Turn**

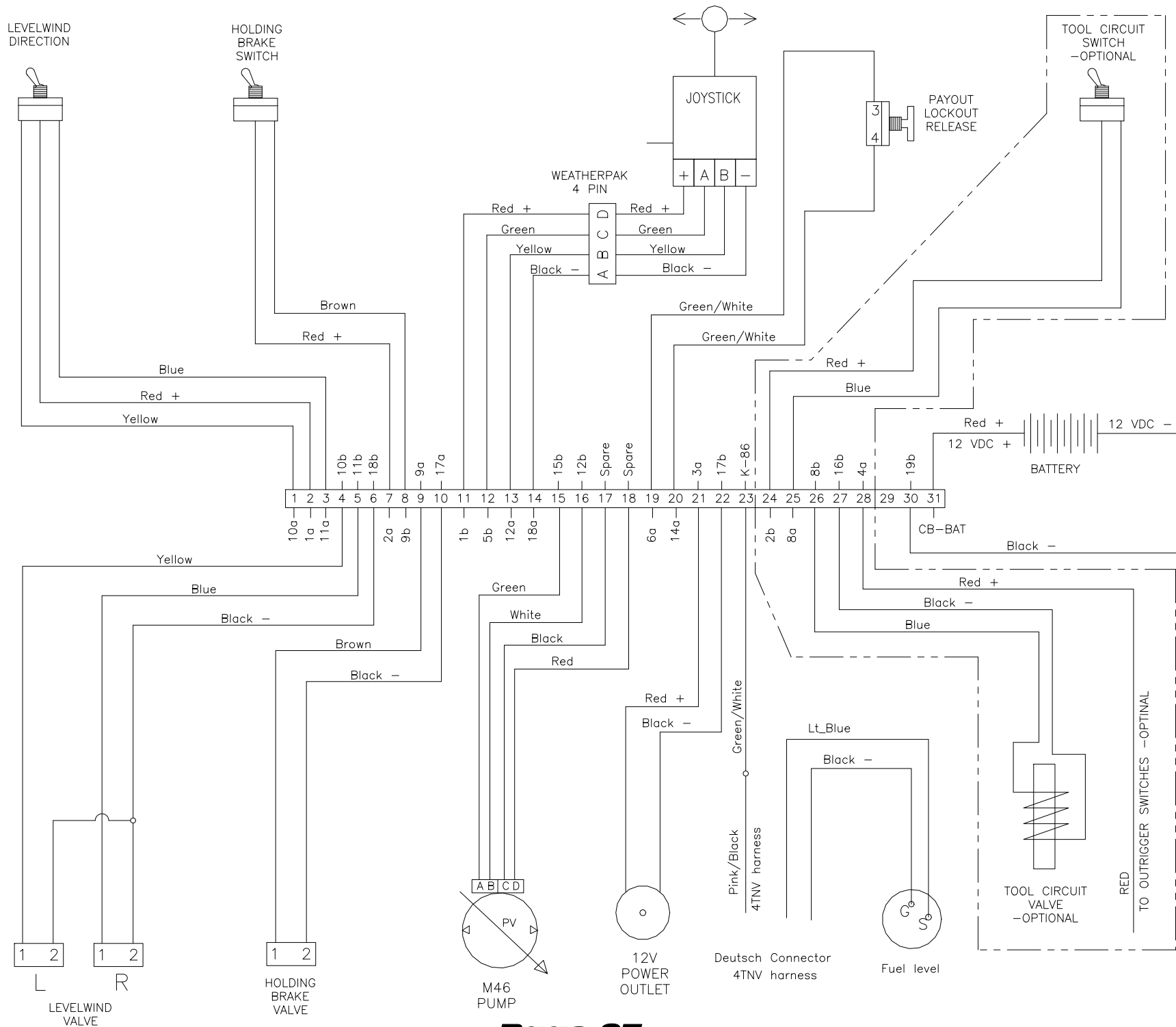


**G08005
Grommet 2" Light**

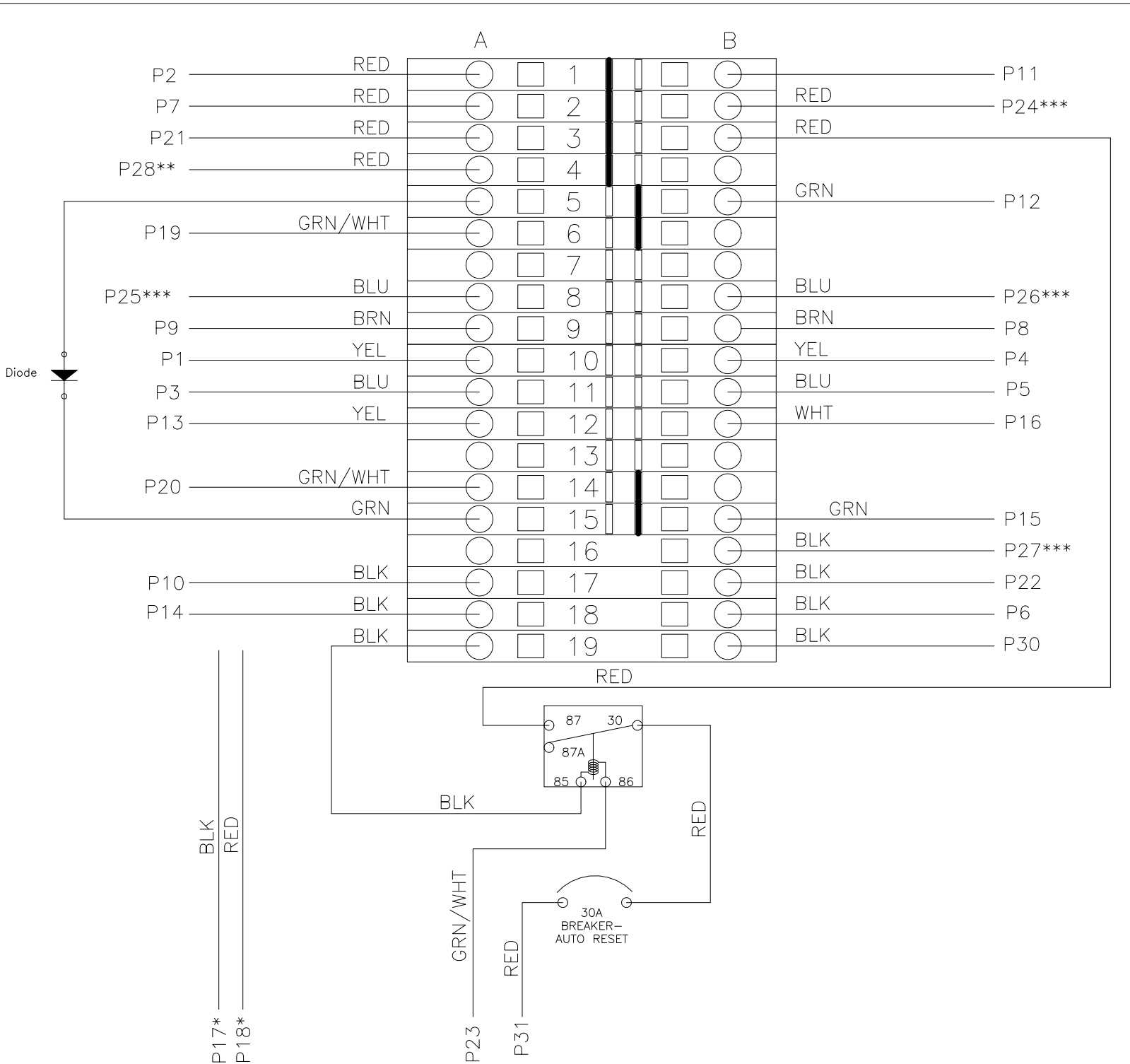


**L04055
Light, License plate**





Note: all wires 16ga



* 2nd coil from M46 pump

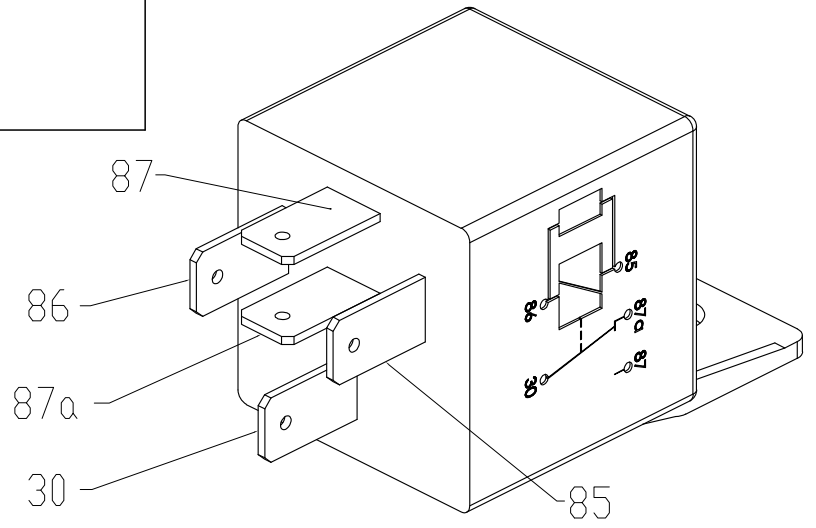
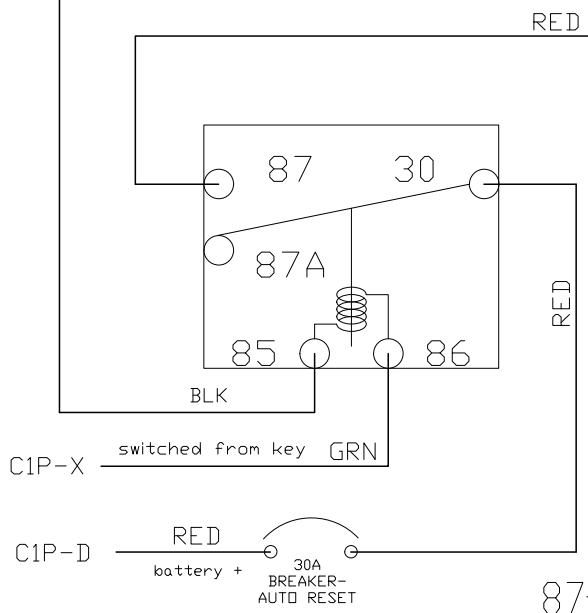
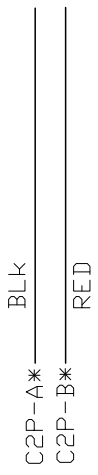
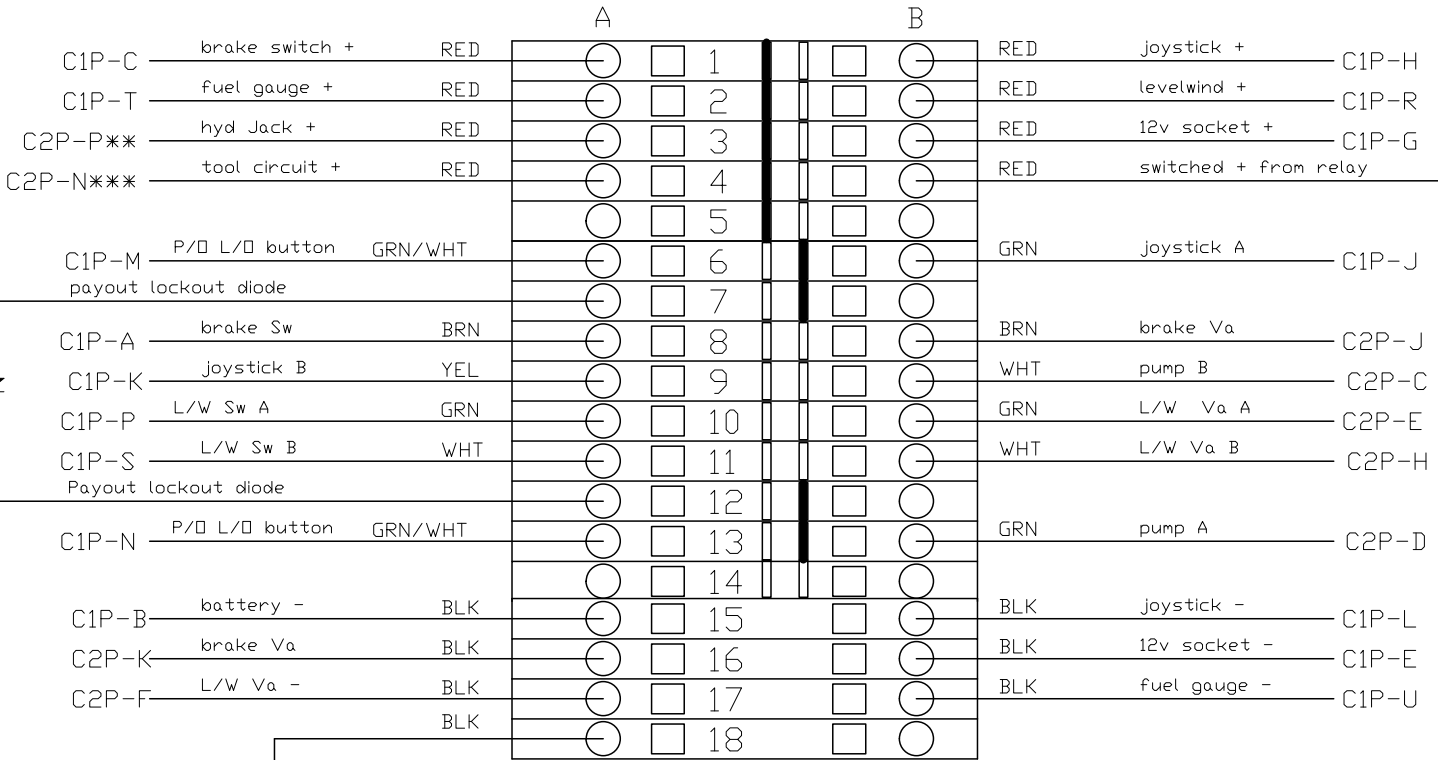
** Pin is OPTINAL power wire for HYDRAULIC OUTRIGGERS

*** Pins are for OPTIONAL TOOL CIRCUIT

Pin 31 is BATTERY +

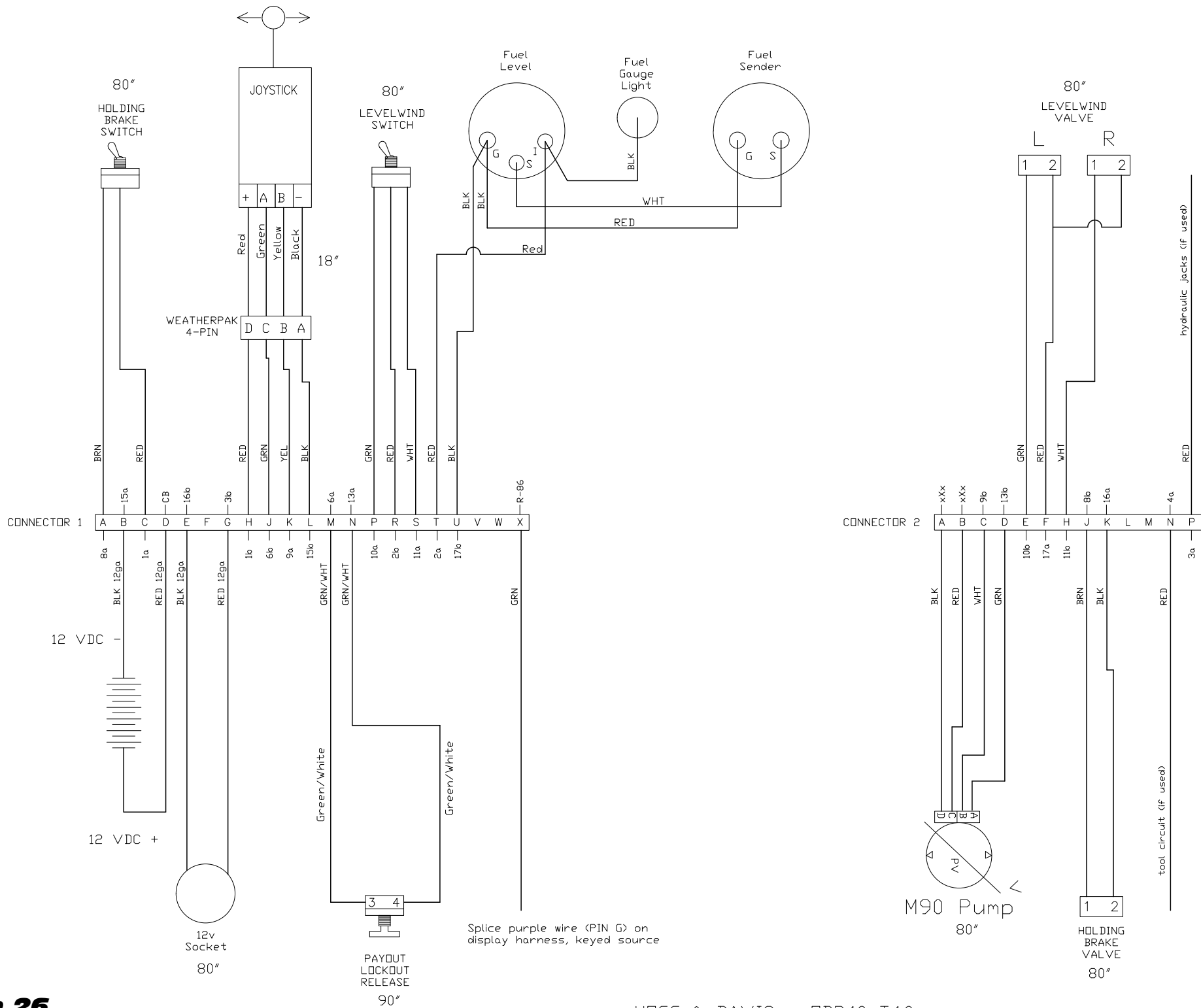
Pin 30 is BATTERY -

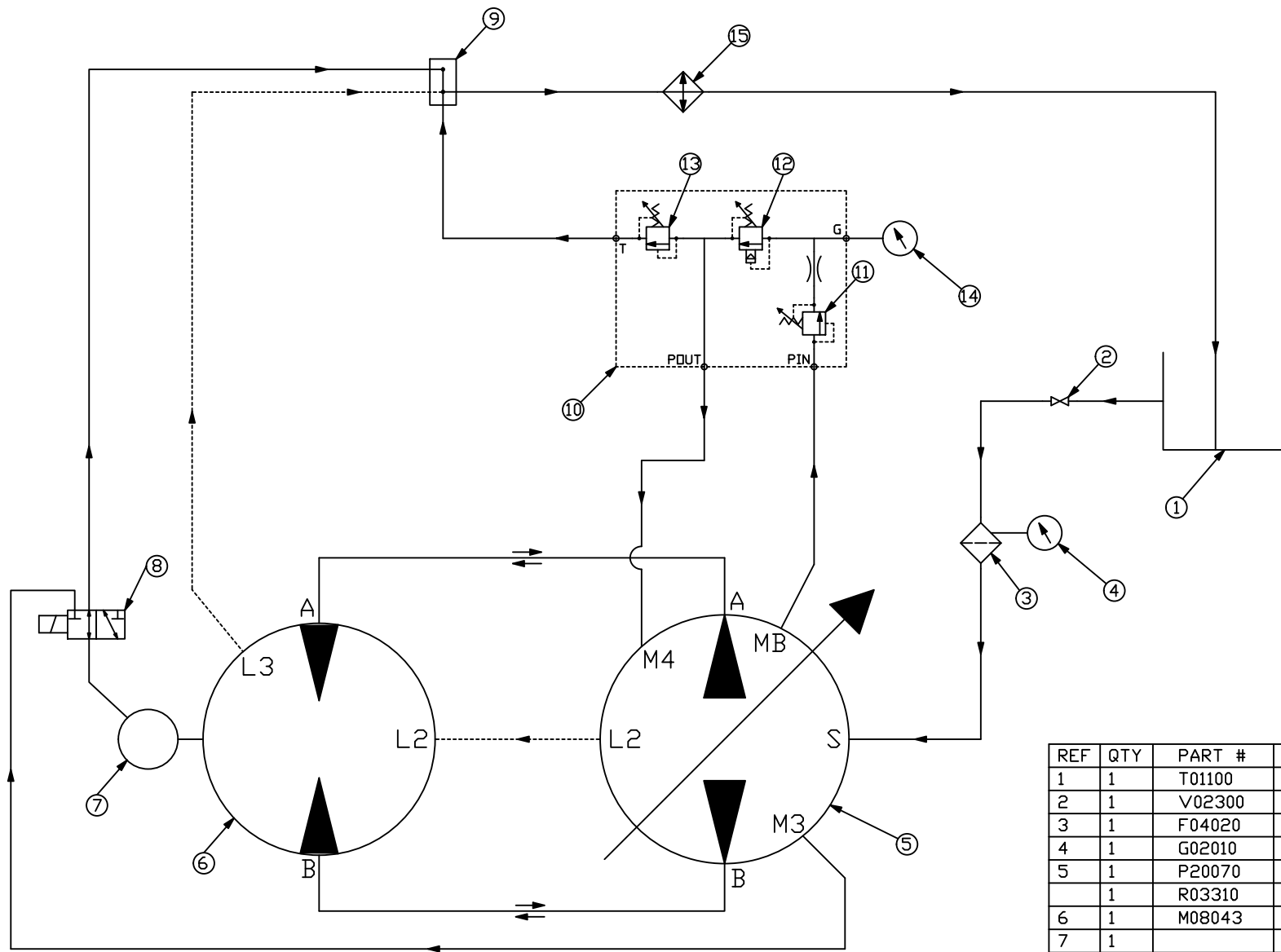
diode - direction may differ from drawing



* 2nd coil from M90 pump
 ** Pin is OPTINAL power wire for HYDRAULIC OUTRIGGERS
 *** Pins are for OPTIONAL TOOL CIRCUIT

C1P-D is BATTERY (+)
 C1P-P is BATTERY (-)





| REF | QTY | PART # | DESCRIPTION |
|-----|-----|--------|-----------------------------|
| 1 | 1 | T01100 | Tank, Hydraulic |
| 2 | 1 | V02300 | Valve, Ball 1-1/4 |
| 3 | 1 | F04020 | Filter, Spin-on 10 Micron |
| 4 | 1 | G02010 | Gauge, Suction |
| 5 | 1 | P20070 | Pump Sundstrand |
| | 1 | R03310 | Relief, 2755 PSI |
| 6 | 1 | M08043 | Motor, Sauer Danfoss |
| 7 | 1 | | Planetary Brake |
| 8 | 1 | V02006 | Valve, Two Position |
| 9 | 1 | M04010 | Return Manifold |
| 10 | 1 | M04061 | Manifold, Pressure Limiting |
| 11 | 1 | | Relief, LDW PSI |
| 12 | 1 | | Relief, TENSION |
| 13 | 1 | | Relief, HIGH PSI |
| 14 | 1 | G02076 | Gauge, 5K PSI |
| 15 | 1 | C35010 | Cooler, Hydraulic Oil |

Page 27

using charge pressure for the planetary brake

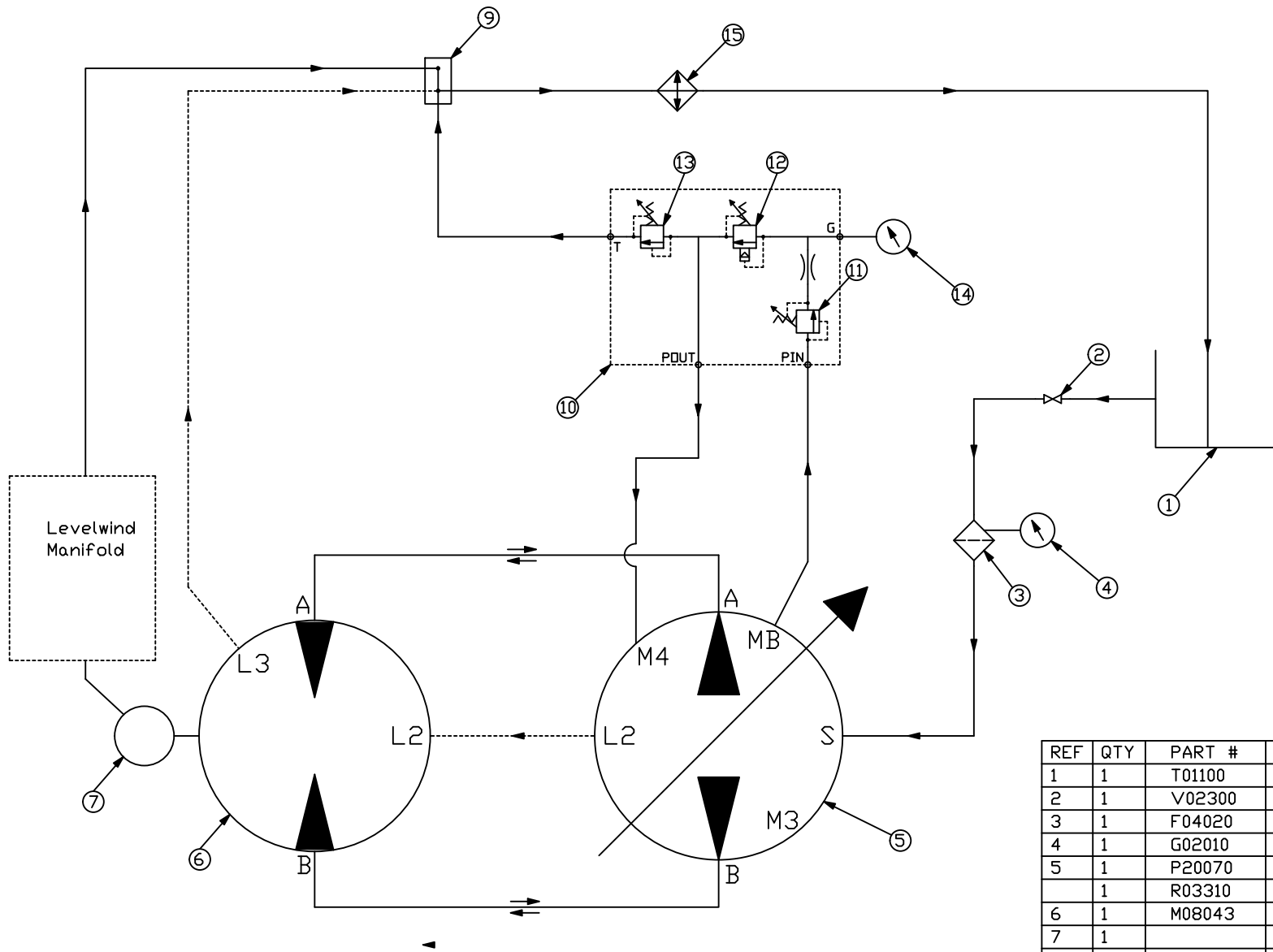


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 ODELL, OR 97044 (541) 354-1001

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| | |
|--------------|------------|
| DRAWN | |
| NAME | sm |
| DATE | 10/21/2011 |
| SHEET 1 OF 1 | |

TITLE: Hydrostatic Schematic
 Part #: ODP40 Hydrostatic



| REF | QTY | PART # | DESCRIPTION |
|-----|-----|--------|-----------------------------|
| 1 | 1 | T01100 | Tank, Hydraulic |
| 2 | 1 | V02300 | Valve, Ball 1-1/4 |
| 3 | 1 | F04020 | Filter, Spin-on 10 Micron |
| 4 | 1 | G02010 | Gauge, Suction |
| 5 | 1 | P20070 | Pump Sundstrand |
| | 1 | R03310 | Relief, 2755 PSI |
| 6 | 1 | M08043 | Motor, Sauer Danfoss |
| 7 | 1 | | Planetary Brake |
| 8 | 1 | V02006 | Valve, Two Position |
| 9 | 1 | M04010 | Return Manifold |
| 10 | 1 | M04061 | Manifold, Pressure Limiting |
| 11 | 1 | | Relief, LOW PSI |
| 12 | 1 | | Relief, TENSION |
| 13 | 1 | | Relief, HIGH PSI |
| 14 | 1 | G02076 | Gauge, 5K PSI |
| 15 | 1 | C35010 | Cooler, Hydraulic Oil |

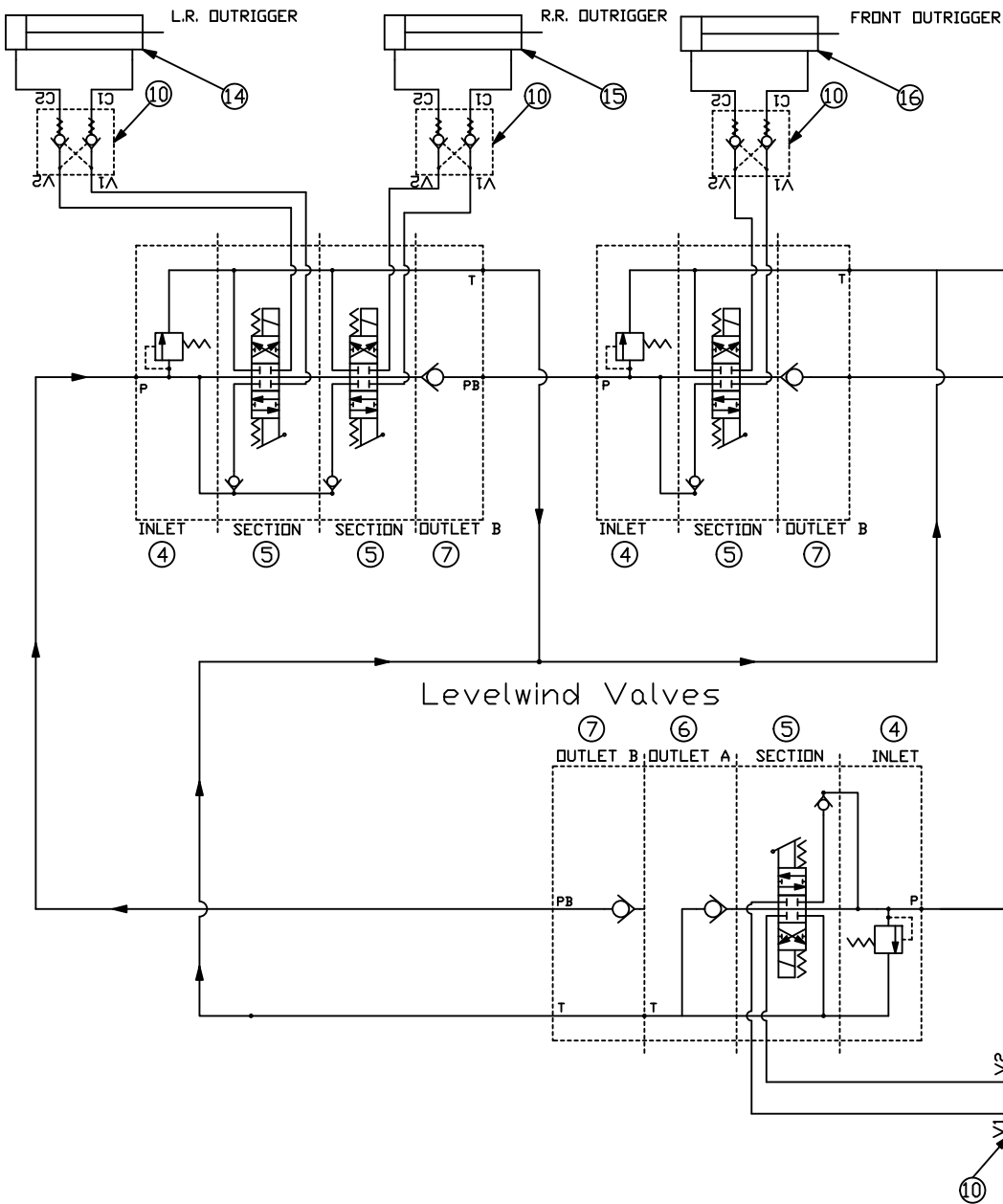


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DRAWN
 NAME sm
 DATE 10/21/2011
 SHEET 1 OF 1

TITLE: Hydrostatic Schematic
 Part #: ODP40 Hydrostatic



note: All ODP40 trailers are equipped with a levelwind, which uses a block off for the power beyond port on the Outlet (item 6). If equipped with outriggers or a tool circuit, an outlet with a power beyond must be used (item 7).

| REF | QTY | PART # | DESCRIPTION |
|-----|------|--------|--------------------------|
| 1 | 1 | T01100 | Tank, Hydraulic |
| 2 | 1 | F04040 | Filter, Suction Strainer |
| 3 | 1 | P20103 | Pump, Sauer Gear Pump |
| 4 | 1* | V02100 | Valve, Inlet w/ Relief |
| 5 | 4* | V02103 | Valve, Section |
| 6 | 1* | V02106 | Valve, Outlet w/o PB |
| 7 | 1-3 | V02104 | Valve, Outlet w/ PB |
| 8 | 1 | M04010 | Return Manifold |
| 9 | 4 | C32070 | Cylinder, Levelwind |
| 10 | 4* | V02075 | Valve, Loadlock |
| 11 | 1 tc | V02143 | Valve, Tool Circuit |
| 12 | 1 tc | C28062 | Connector, Quick Male |
| 13 | 1 tc | C28061 | Connector, Quick Female |
| 14 | 1 tc | V02037 | Valve, Flow Control |





HOGG & DAVIS, INC
Odell, Oregon USA

| | |
|--------------|------------------------------------|
| MODEL | ODP40 Single Drum Puller |
|--------------|------------------------------------|

Unit Concept:

- Single drum puller capable of pulling up to 4,000 lbs. Trailer mounted.
- Puller unit totally independent of truck or trailer system
- Drum is individually powered by hydraulic motor coupled to chain and sprocket.
- The ability to engage and disengage pulling drum from Mechanical Clutch on drive hub.

Unit Specifications:

- Unit constructed of 6" x 4" Rect. Tubing A500 gr B, fully welded and reinforced.
- Dimensions:
 - Length – Puller unit: 194" (16'-4")
 - Width – Puller unit: 98"
 - Height – Puller unit: 97"
 - Weight – Puller unit with reel and 10,000' of 5/8" dia rope: 11,000lb approx.
- 12V-DC electric system. Wiring installed in metal conduit or mesh loom when applicable. All wiring terminated with heat shrink connectors and mounted to terminal block.
- Double Shock mounted Lexan lights with pigtail connectors (FMVSS108)
- Conspicuity system
- Unit is metal grit blasted, primer coated, and flash baked. 2 finish coats baked at 140 degF for 2 hours. All components painted prior to assembly.

Trailer Data:

- Tandem Axle – 7,000 pound rating each with leaf springs
- Electric Brakes
- Tires: (4) R17.5 - 16 Ply Rating
- GVWR: 14,000 lbs
- Leveling Jacks: One Front, Two Rear - Drop Leg Manual Screw type
- Trailer Lighting: D.O.T. 4-Light System, 7 Wire Connector
- Fenders: Full Coverage with Mudflaps

Reel Capacity:

- Reel: 48" dia x 40" inside width x 12-3/4" dia core
- Rope Capacity: 10,000 ft of 5/8" dia rope
- Maximum Reel weight capacity: 6,000lbs
- Maximum Reel diameter: 72 inches
- Reel maximum width: 56 inches
- Reel shaft: 2.5" dia StressProof

Overspin brakes: Reel has a 16" dia ventilated disc with hydraulic control

Levelwind: Individual pivot arm style for reel



HOGG & DAVIS, INC
Odell, Oregon USA

| | |
|--------------|------------------------------------|
| MODEL | ODP40 Single Drum Puller |
|--------------|------------------------------------|

Performance:

- Torque Rating – Continuous/Intermittent 88,000 in-lb / 99,000 in-lb
- Linepull Ratings: 44" full drum dia 4,000 lbs pull
- Reel speed– Infinitely Variable: 0.0 ~ 30.5 rpm
- Speed – Infinitely Variable: 0.0 ~ 4.0 mph Full Drum

Engine Specifications:

- 45.6 HP @ 3,000 RPM Diesel
- With weather enclosure
- 21 gallon metal fuel tank with sender

Hydraulic Drive Specifications:

- Fully hydrastatic drive system with infinite speed and tension control up to 4,000 lbs
- Electric hydraulic controls with positive stop in neutral
- Spring applied – hydraulic release brake incorporated into the reel drive system. Brake rated at 150% of maximum rated torque.
- Hydraulic oil cooler
- 17.5 gallon metal hydraulic tank with oil level gauge
- Reel drive to be disconnected from system to provide freewheel when needed

Operators Console:

- Elevated and positioned closest to unit centerline for maximum visibility and safety.
- OPCON provided with the following controls:
 - Hydraulic pressure gauge
 - Take-up and Pay-out / Tension functions
 - Throttle control
 - Ammeter
 - Engine oil pressure
 - Engine temperature
 - Hour meter
 - Tachometer
 - Fuel gauge
 - 12V-DC auxiliary power outlet
- Permanently engraved operators panel: Material shall be RowMark Laser Engraveable Industrial Plastic. Engraved no deeper than 0.005" for cleaning. Material has a guaranteed life of seven (7) years in UV exposure. Panel adhered with 3M VHB sheet adhesive.
- Operator seat and welded wire protective screen.

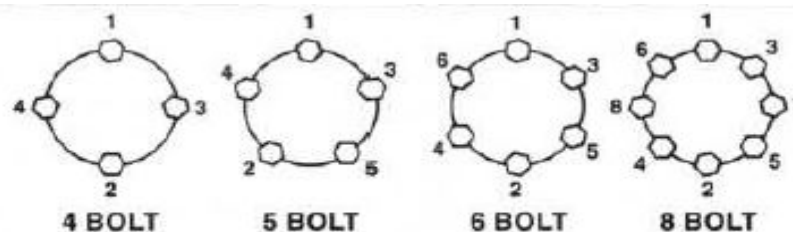
04/04/2011

Wheel Torque Requirements

Be sure to use only the fasteners matched to the cone angle of your wheel (usually 60° or 90°). The proper procedure for attaching your wheels is as follows:

1. Start all bolts or nuts by hand to prevent cross threading.
2. Tighten bolts or nuts in the sequence shown for wheel torque requirements.
3. The tightening of the fasteners should be done in stages. Following the recommended sequence, tighten fasteners as shown in the chart below.
4. Wheel nuts/bolts should be torqued before first road use and after each wheel removal. Check and re-torque after the first 10 miles, 25 miles and again at 50 miles. Check periodically thereafter.

| Wheel Size | 1st Stage | 2nd Stage | 3rd Stage |
|---|-------------------------|-----------|-----------|
| 12" | 20-25 | 35-40 | 50-75 |
| 13" | 20-25 | 35-40 | 50-75 |
| 14" | 20-25 | 50-60 | 90-120 |
| 15" | 20-25 | 50-60 | 90-120 |
| 16" | 20-25 | 50-60 | 90-120 |
| 16.5" x 6.75" | 20-25 | 50-60 | 90-120 |
| 16.5" x 9.75" | 55-60 | 120-125 | 175-225 |
| 14.5" Demount | Tighten Sequentially to | | 85-95 |
| 17.5" Hub Pilot Clamp Ring & Cone Nuts | 50-60 | 100-120 | 190-210 |
| 17.5" Hub Pilot 5/8" Flange Nuts | 50-60 | 90-200 | 275-325 |



Maximum Wheel Fastener Torque

The wheel mounting studs used on Dexter Axles conforms to the SAE standards for grade 8. The maximum torque level that can be safely applied to these studs is listed in the following chart:

| Stud Size | Max. Torque |
|-----------------------|--------------------|
| 1/2"-20 UNF, class 2A | 120 lb ft. |
| 9/16"-18, class 2A | 170 lb ft. |
| 5/8"-18, class 2A | 325 lb ft. |

CAUTION

Exceeding the above listed torque limits can damage studs and/or nuts and lead to eventual fractures and dangerous wheel separation.

Decal Kit #K40015



D30001
(1)

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D30018
(1)



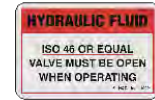
D30009
(1)



D30010
(3)



D30015
(2)



D30033
(1)



D30042
(8)



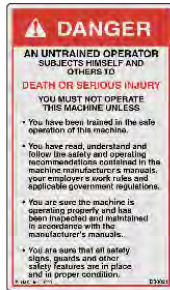
D30077
(2)



D30034
(3)



D30022
(1)



D30021
(1)



D30026
(3)



D30028
(5)



D30036
(5)



D30127
(2)



D30067
(2)



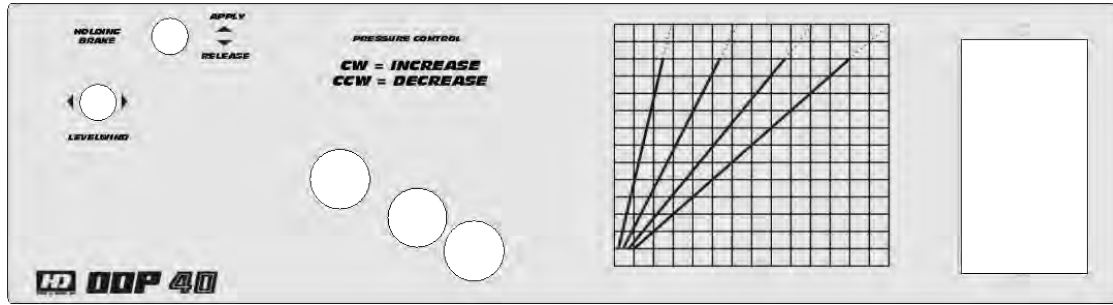
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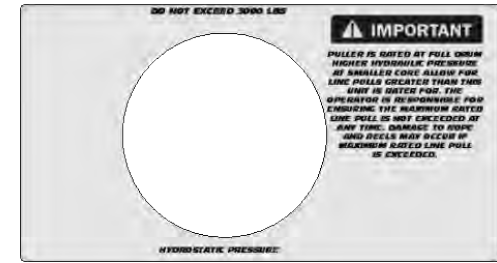
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D30081
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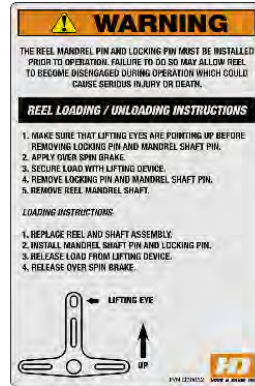
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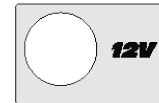
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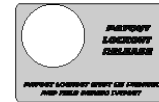
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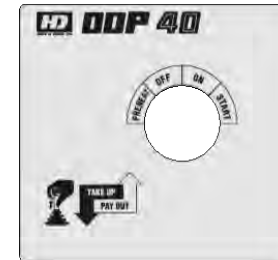
D30082
(1)



D30083
(1)



D30068
(1)



D30078
(1)



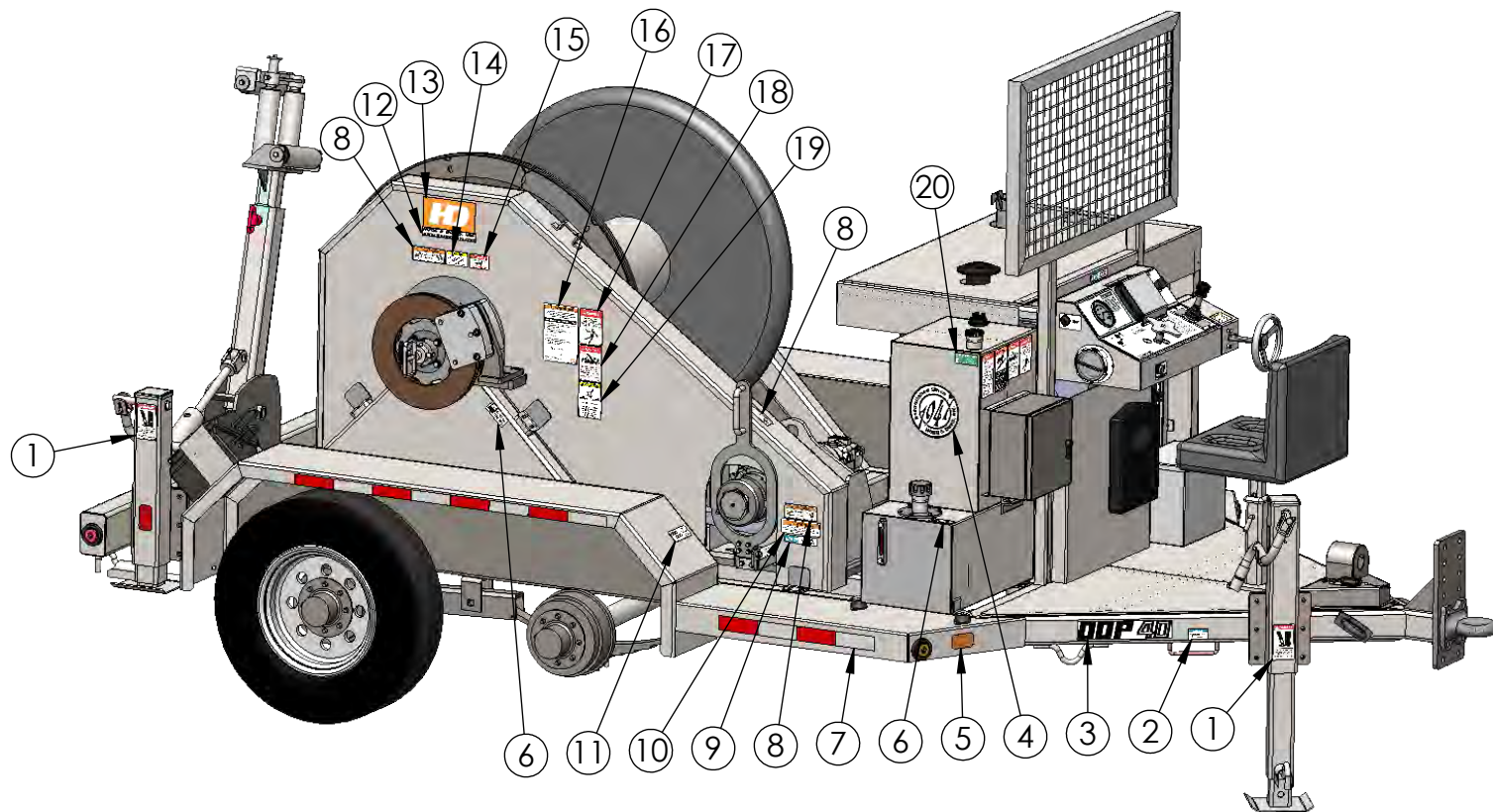
R09043
(4)



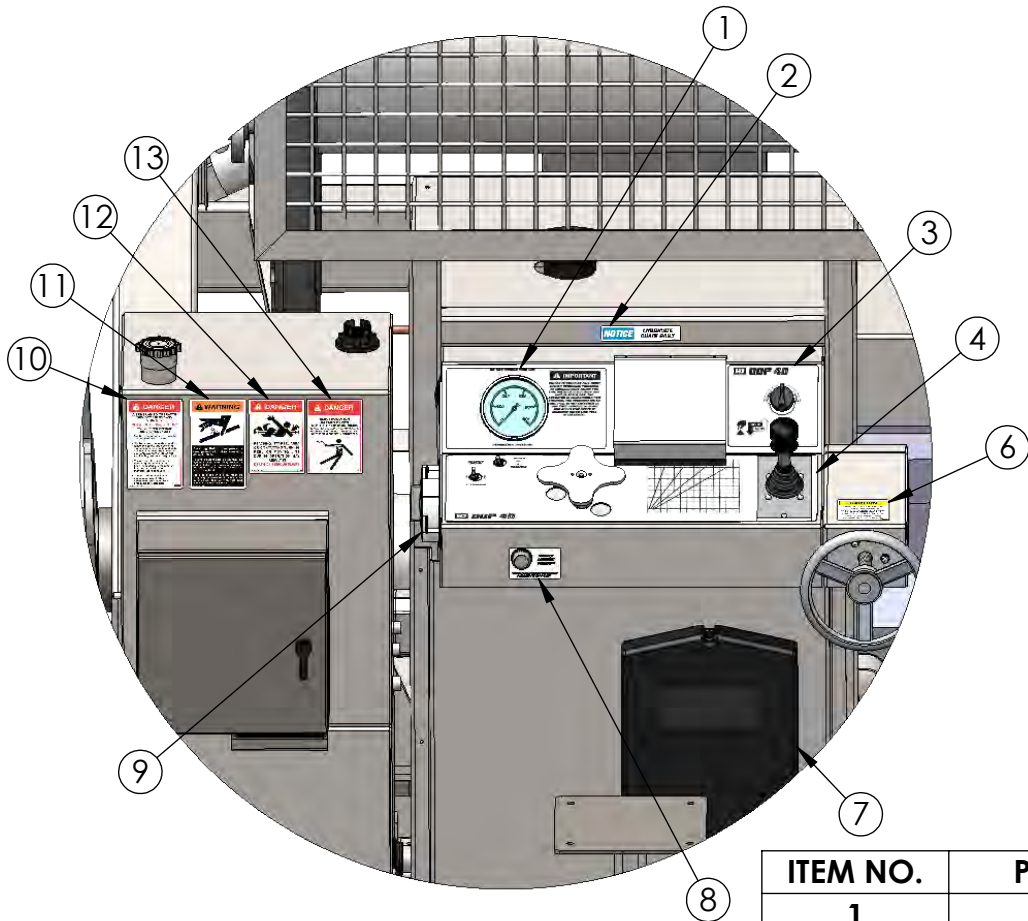
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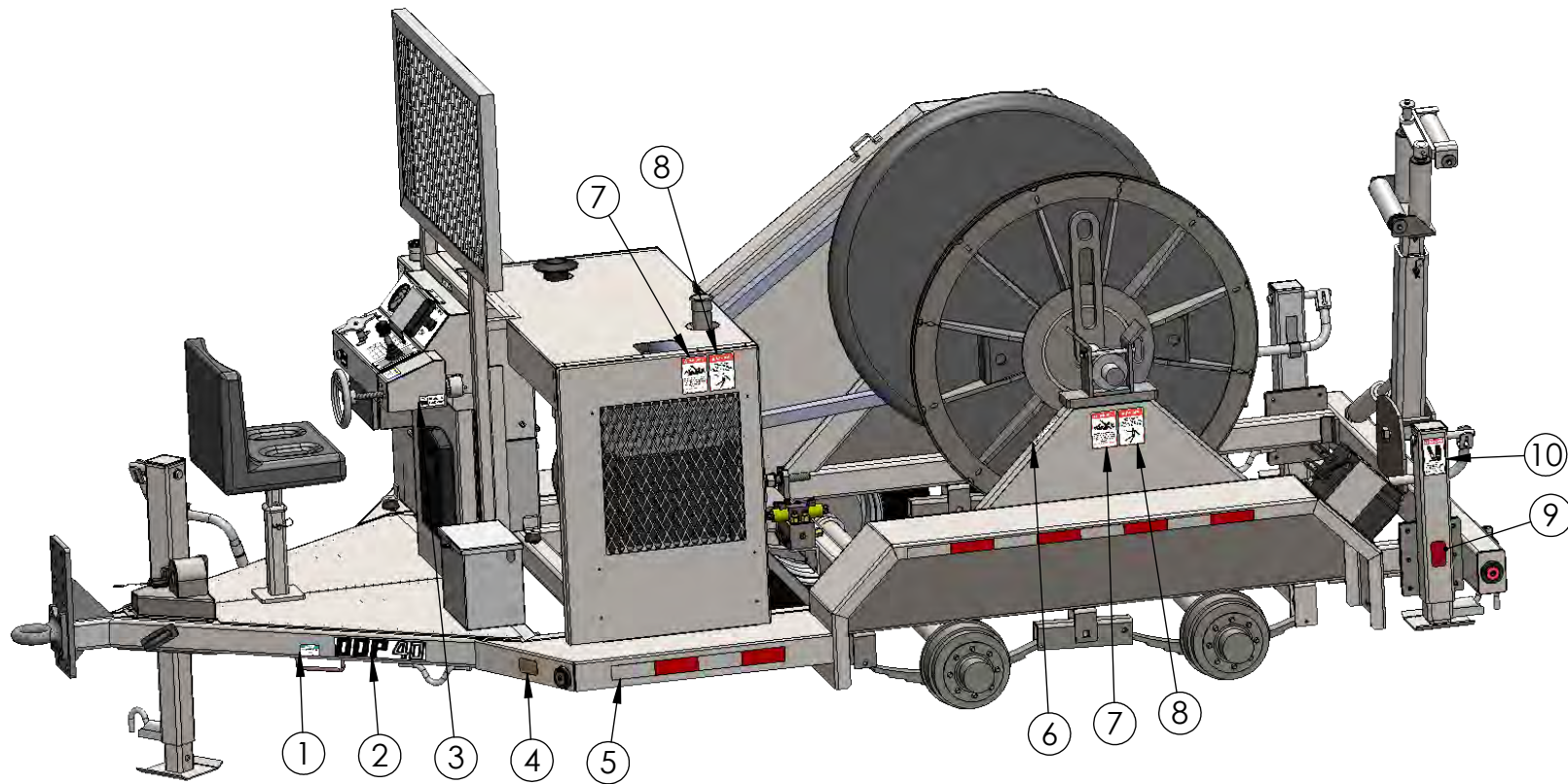
T19001
(12')



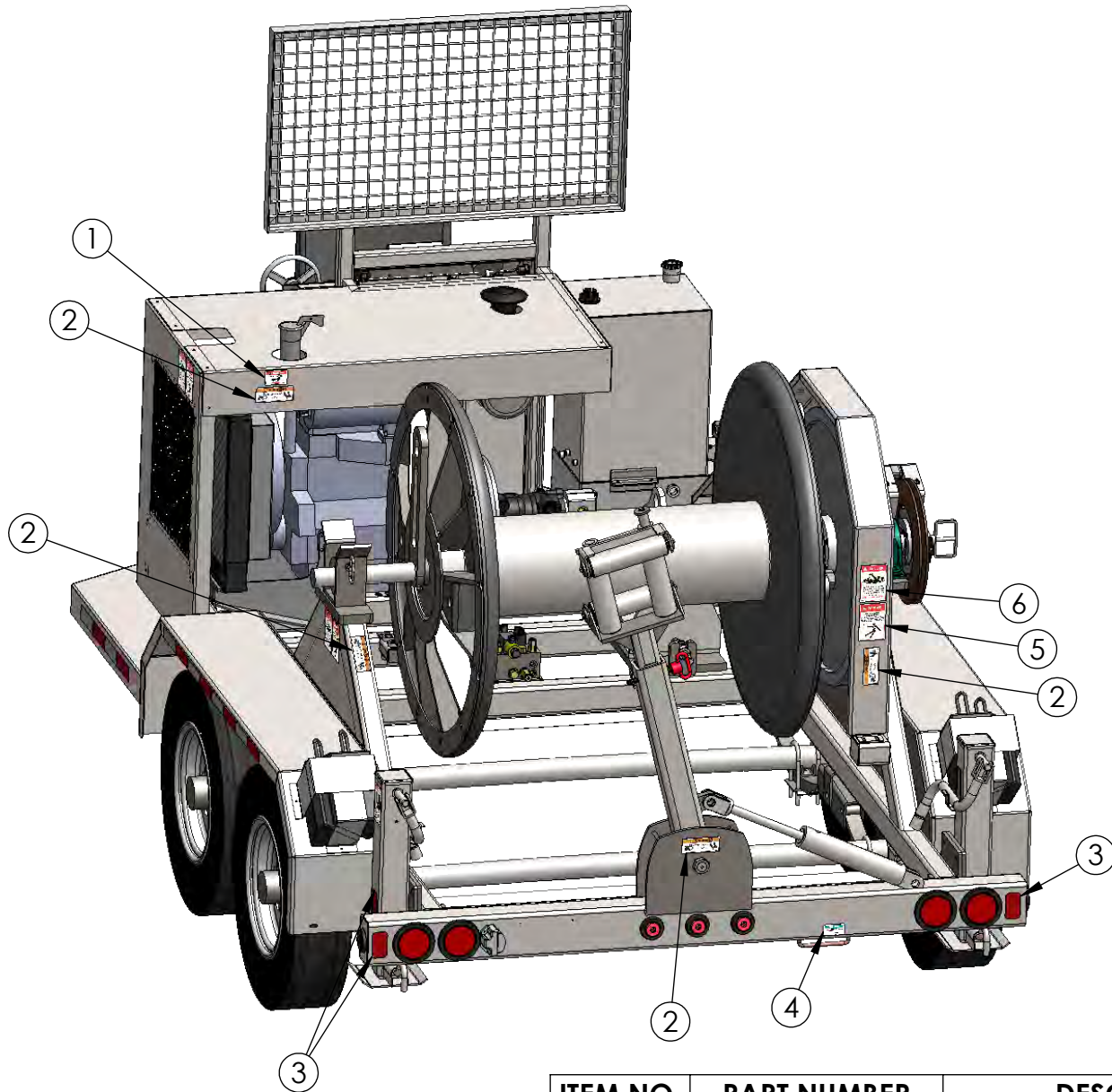
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|------------------------------|------|
| 1 | D30026 | Decal, Danger Stand Clear | 3 |
| 2 | D30034 | Decal, Grounding Lug | 3 |
| 3 | D30077 | Decal, ODP 40 Tongue | 2 |
| 4 | D30128 | Established 1947 | 1 |
| 5 | R09044 | Reflector, Amber 2x3-1/2 | 2 |
| 6 | D30010 | Hydraulic Fluid Only | 3 |
| 7 | T19001 | Red/White Reflective tape | 12 |
| 8 | D30042 | Decal, Keep Hands Clear | 8 |
| 9 | D30069 | Decal, Lubricate Chain Daily | 2 |
| 10 | D30080 | Decal, Caution Drive Dogs | 1 |
| 11 | D30081 | Decal, Reel Drive Dog Engage | 1 |
| 12 | D30018 | Decal, HD 1/2" x 9" | 1 |
| 13 | D30001 | HD Logo 6x9 | 1 |
| 14 | D30067 | Decal, Release Pressure | 2 |
| 15 | D30015 | Decal, Hot Surface | 2 |
| 16 | D30082 | Decal, Reel Loading Inst. | 1 |
| 17 | D30036 | Decal, Electrocution Hazard | 5 |
| 18 | D30028 | Decal, Danger Twisty Man | 5 |
| 19 | D30127 | Decal, Burn Hazard | 1 |
| 20 | D30009 | Decal, Diesel Fuel Only | 1 |



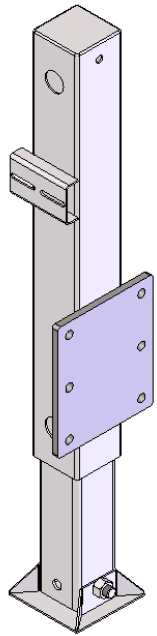
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|-------------------------------|------|
| 1 | D30084 | Decal, Hyd Pressure | 1 |
| 2 | D30069 | Decal, Lubricate Chain Daily | 2 |
| 3 | D30078 | Decal, Upper Control | 1 |
| 4 | D30086 | Decal, Lower Control | 1 |
| 5 | D30127 | Decal, Burn Hazard | 1 |
| 6 | D30067 | Decal, Release Pressure | 2 |
| 7 | H10075 | Holder, Manual | 1 |
| 8 | D30068 | Decal, Payout Lockout Release | 1 |
| 9 | H10020 | Holder, Registration | 1 |
| 10 | D30021 | Decal, Untrained Operator | 1 |
| 11 | D30022 | Decal, Danger Fluid Pressure | 1 |
| 12 | D30028 | Decal, Danger Twisty Man | 5 |
| 13 | D30036 | Decal, Electrocution Hazard | 5 |



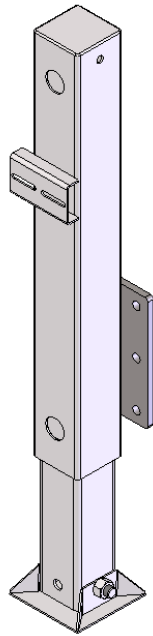
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|-----------------------------|------|
| 1 | D30034 | Decal, Grounding Lug | 3 |
| 2 | D30077 | Decal, ODP 40 Tongue | 2 |
| 3 | D30010 | Decal, Hydraulic Fluid Only | 3 |
| 4 | R09044 | Reflector, Amber 2x3-1/2 | 2 |
| 5 | T19001 | Tape, Red/White Reflective | 12 |
| 6 | D30042 | Decal, Keep Hands Clear | 8 |
| 7 | D30028 | Decal, Danger Twisty Man | 5 |
| 8 | D30036 | Decal, Electrocution Hazard | 5 |
| 9 | R09043 | Reflector, Red 2x3-1/2 | 4 |
| 10 | D30026 | Decal, Danger Stand Clear | 3 |



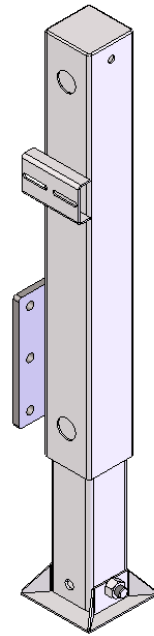
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|-----------------------------|------|
| 1 | D30015 | Decal, Hot Surface | 2 |
| 2 | D30042 | Decal, Keep Hands Clear | 8 |
| 3 | R09043 | Reflector, Red 2x3-1/2 | 4 |
| 4 | D30034 | Decal, Grounding Lug | 3 |
| 5 | D30036 | Decal, Electrocution Hazard | 5 |
| 6 | D30028 | Decal, Danger Twisty Man | 5 |



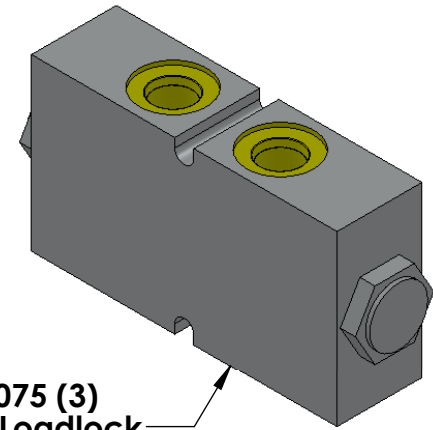
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Curbside



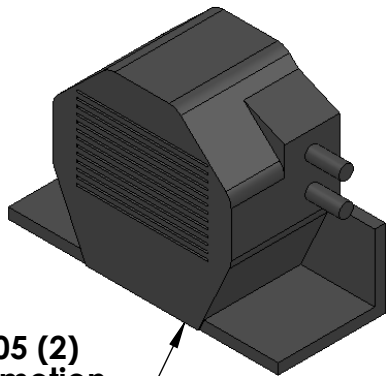
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Streetside



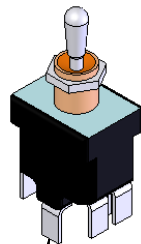
J04033 (1)
Tongue



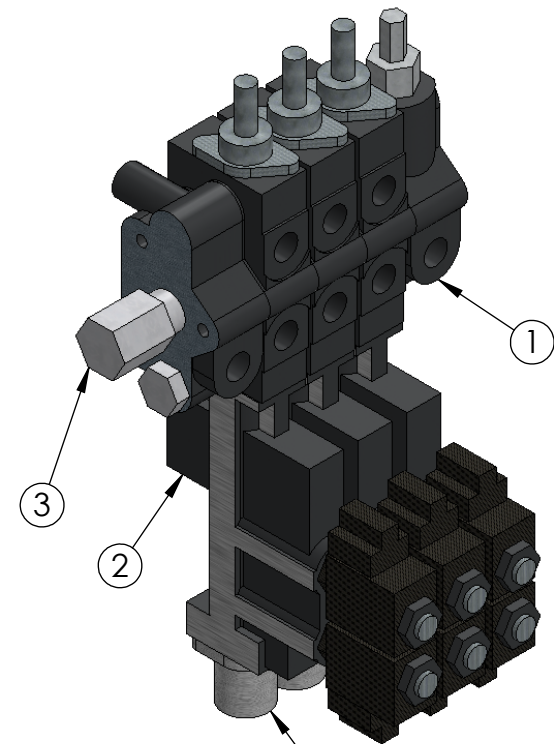
V02075 (3)
Valve, Loadlock



A03005 (2)
Alarm, motion

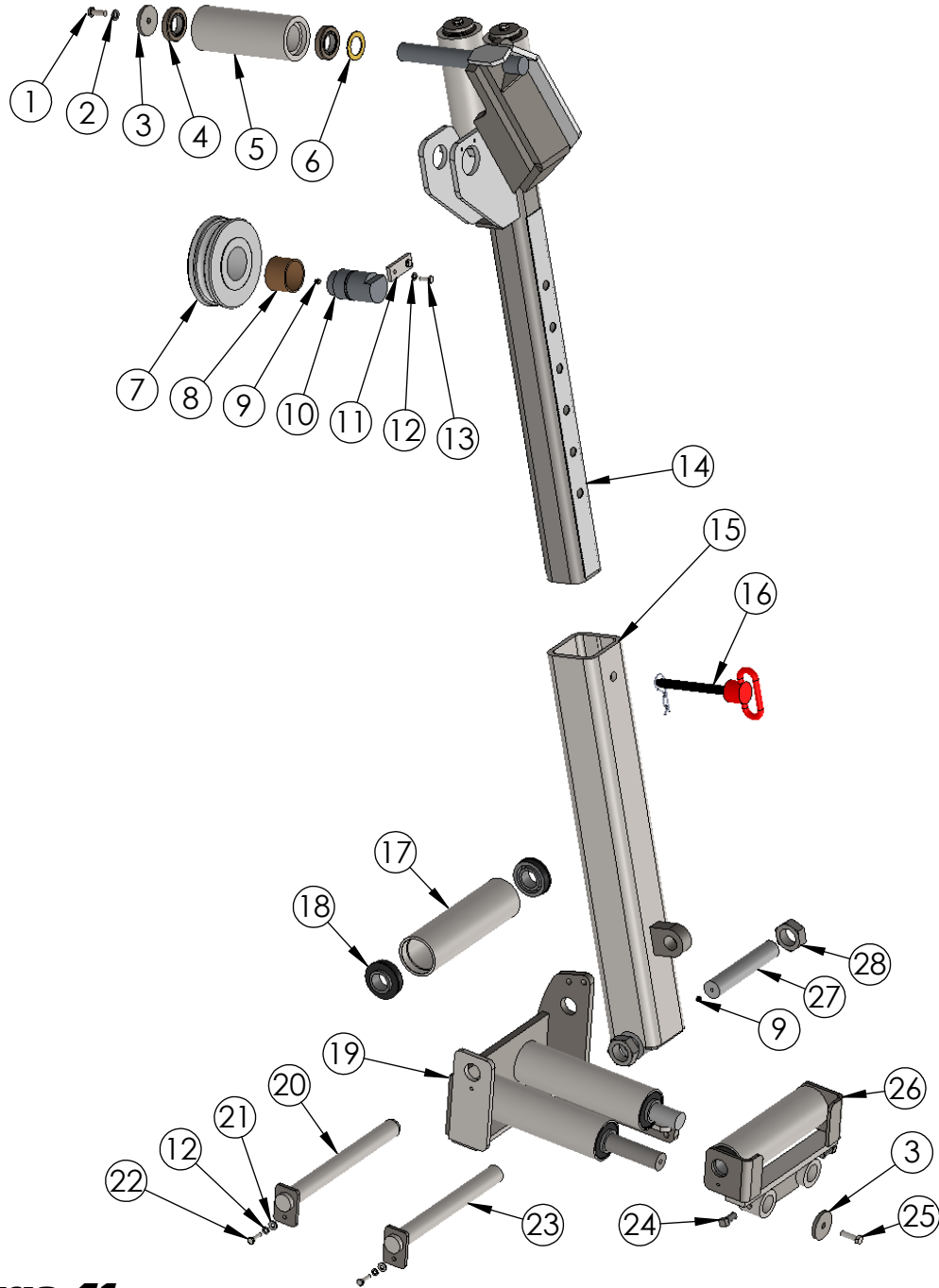


S40150 (3)
Switch, DP/DT Momentary

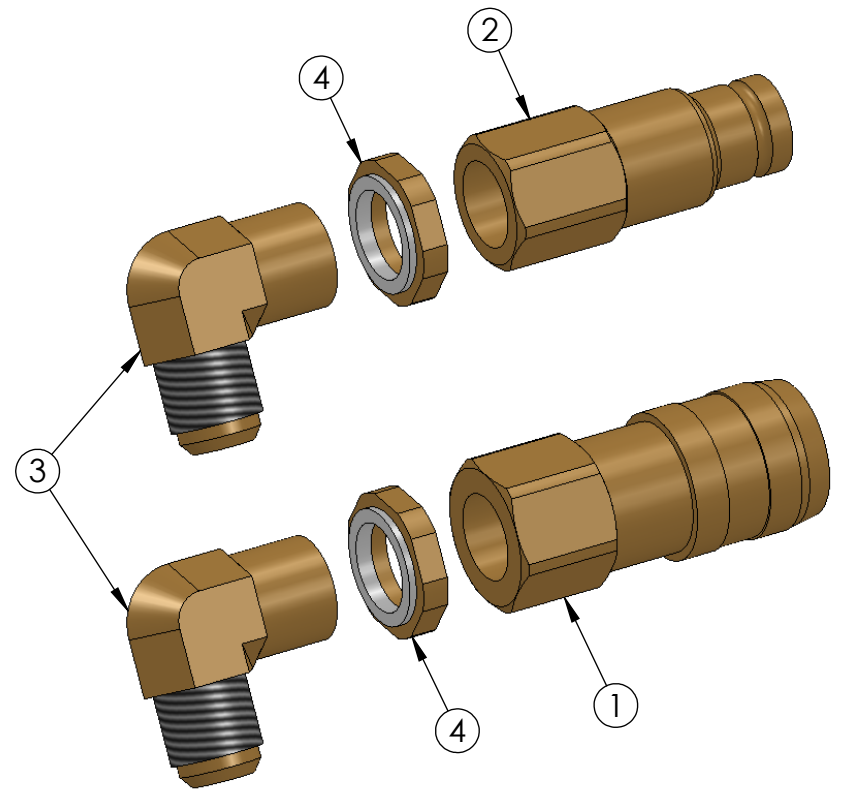
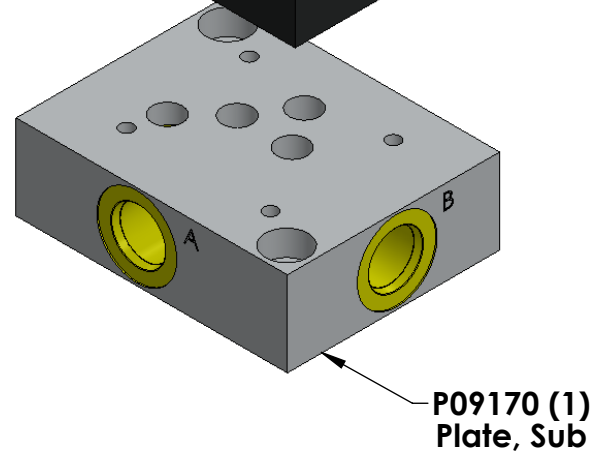
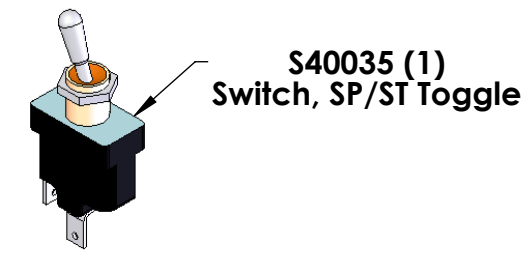


Prince Valve 3Bank

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|--------------------------|------|
| 1 | V02100 | Prince Inlet | 1 |
| 2 | V02103 | Valve, Prince Elec 4-Way | 3 |
| 3 | V02104 | Prince Outlet | 1 |



| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|----------------------------------|------|
| 1 | B11342 | Bolt, Hx Head 3/8"-16 x 1" | 3 |
| 2 | W01545 | Washer, 3/8" Split Lock | 3 |
| 3 | C06041 | Cap, End | 4 |
| 4 | B07137 | Bearing, Roller | 6 |
| 5 | R20046 | Roller | 3 |
| 6 | W01594 | Washer, Thrust Brass | 3 |
| 7 | P19014 | Pulley | 1 |
| 8 | B07027 | Bushing, Bronze | 1 |
| 9 | F05071 | Fitting, Grease Zerk 1/4"-28 tap | 2 |
| 10 | S43031 | Shaft | 1 |
| 11 | R15006 | Retainer, Shaft | 1 |
| 12 | W01525 | Washer, Split Lock 1/4"zinc | 4 |
| 13 | B11323 | Bolt, Hx Head 1/4"-20 x 3/4" | 2 |
| 14 | A08096 | Arm, Levelwind | 1 |
| 15 | S17000 | Sleeve, Levelwind | 1 |
| 16 | P06027 | Pin, Height Adjust | 1 |
| 17 | R20044 | Roller, Painted Steel | 4 |
| 18 | B07110 | Bearing, Roller | 8 |
| 19 | B15121 | Bracket, Fairlead | 1 |
| 20 | S43073 | Shaft, Roller | 1 |
| 21 | W01205 | Washer, Flat SAE 1/4"zinc | 2 |
| 22 | B11324 | Bolt, Hx Head 1/4"-20 x 1" | 2 |
| 23 | S43135 | Shaft, Roller | 1 |
| 24 | S04475 | Screw, Set Sq Head 1/2" x 1" | 2 |
| 25 | B11343 | Bolt, Hx Head 3/8"-16 x 1-1/4" | 1 |
| 26 | B15899 | Bracket, Top Fairlead | 1 |
| 27 | P06156 | Pin, Levelwind Pivot | 1 |
| 28 | N04097 | Nut, Hx Jam 1-1/4"-12 | 2 |



| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|--------------------------|------|
| 1 | C28061 | Coupler, F quick 1/2 NPT | 1 |
| 2 | C28062 | Coupler, M quick 1/2 NPT | 1 |
| 3 | F05215 | Fitting, 8-8 90° NPT | 2 |
| 4 | F05393 | Fitting 1/2 NPT Jam nut | 2 |

Step 4: Crack fitting to let any trapped air out
not all systems may have a gauge

Step 3: Crack bleeder and pump oil through system until no more air comes out of caliper

Step 5: Pump system up to 500psi and look for leaks. When finished, let the pressure in the system reach zero, then disconnect oil supply.

Step 2: Attach pressurized hydraulic oil source to connector if needed

ISO46 hydraulic oil

Step 1: Back handle all the way out, turn in 1-1/2 turns.

C28072 male quick connect fitting

Pad set - P01012
pads are 3/8" thick

