

# UpRight



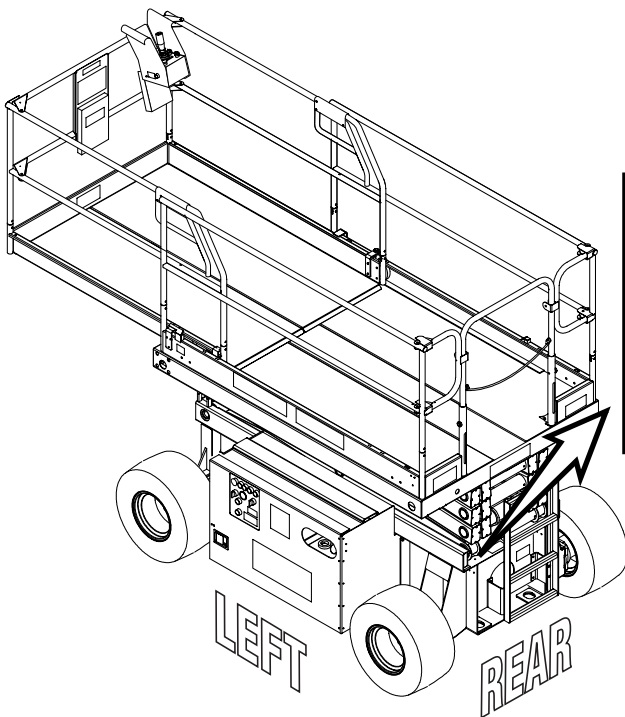
## Service & Parts Manual

P/N 066899-001

# SERVICE & PARTS MANUAL

## XRT27 & XRT33 Aerial Work Platform Serial Numbers 2300 - Current

When contacting UpRight for service or parts information, be sure to include the MODEL and SERIAL NUMBERS from the equipment nameplate. Should the nameplate be missing, the SERIAL NUMBER is also stamped on top of the chassis above the front axle pivot.



### UpRight, Inc.

1775 PARK ST.

SELMA, CA 93662 USA

MODEL NO.  MAX. PLATFORM HEIGHT

SERIAL NO.  BATTERY VOLTAGE

MAX. DISTRIBUTED LOAD

CAUTION: CONSULT OPERATOR'S MANUAL BEFORE USE.

THIS PLATFORM IS NOT ELECTRICALLY INSULATED

P/N 61205-000-00

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# FORWARD

## HOW TO USE THIS MANUAL

This manual is divided into 6 sections.

### SECTION 1 INTRODUCTION & SPECIFICATIONS

General description and machine specifications.

### SECTION 2 MACHINE PREPARATION & OPERATION

Information on how to operate the work platform and how to prepare it for operation.

### SECTION 3 MAINTENANCE

Preventative maintenance and service information.

### SECTION 4 TROUBLESHOOTING

Causes and solutions to typical problems.

### SECTION 5 SCHEMATICS

Schematics and valve block diagram with description and location of components. Large schematic drawings may be located in the back of the manual.

### SECTION 6 ILLUSTRATED PARTS BREAKDOWN

Complete parts lists with illustrations. Large parts drawings may be located in the back of the manual.

## SPECIAL INFORMATION

### **DANGER**

Indicates the hazard or unsafe practice ***will*** result in ***severe injury or death***.

### **WARNING**

Indicates the hazard or unsafe practice ***could*** result in ***severe injury or death***.

### **CAUTION**

Indicates the hazard or unsafe practice ***could*** result in ***minor injury or property damage***.

**NOTE:** Gives helpful information.

## WORKSHOP PROCEDURES

All information contained in this manual is based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice. No part of this publication may be reproduced, stored in retrieval system, or transmitted, in any form by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. This includes text, figures and tables.

### **CAUTION**

*Detailed descriptions of standard workshop procedures, safety principles and service operations are not included. Please note that this manual does contain warnings and cautions against some specific service methods which could cause personal injury, or could damage a machine or make it unsafe. Please understand that these warnings cannot cover all conceivable ways in which service, whether or not recommended by UpRight, Inc., might be done, or of the possible hazardous consequences of each conceivable way, nor could UpRight Inc. investigate all such ways. Anyone using service procedures or tools, whether or not recommended by UpRight Inc., must satisfy themselves thoroughly that neither personal safety nor machine safety will be jeopardized.*



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# INTRODUCTION AND SPECIFICATIONS

## 1.1 INTRODUCTION

### PURPOSE

The purpose of this service and parts manual is to provide instructions and illustrations for the operation and maintenance of the XRT Work Platform manufactured by UpRight, Inc. of Selma, California.

### SCOPE

The manual includes procedures for proper operation, maintenance, adjustment, and repair of this product as well as recommended maintenance schedules and troubleshooting.

## 1.2 GENERAL DESCRIPTION

The XRT Work Platform consists of the platform, controller, elevating assembly, power module, control module, and chassis.

### PLATFORM

The platform has a reinforced steel floor, 44 inch (1.11 m) high guardrails with midrail, 6 inch (152 mm) toeboards and an entrance gate at the rear of the platform. The guardrails can be folded down for access through doors or for shipment.

### **W A R N I N G**

*DO NOT use the maintenance platform without guardrails properly assembled and in place.*

### CONTROLLER

The controller contains the controls to operate the machine. It should be hung on the front, left, or right guardrail, but may be hand held if necessary. To operate the machine, the interlock lever must be depressed to operate any function. A complete explanation of control functions can be found in Section 2.

### ELEVATING ASSEMBLY

The platform is raised and lowered by the elevating assembly;

**XRT27:** a four section scissor assembly powered by one single stage lift cylinder

**XRT33:** a five section scissor assembly powered by two single stage lift cylinders.

The hydraulic pump, driven by the engine, powers the cylinder(s). Solenoid operated valves control raising and lowering.

### POWER MODULE

The power module contains the engine, hydraulic pump, and starter solenoid.

## CONTROL MODULE

The control module contains the fuel tank, hydraulic reservoir, hydraulic valve manifold, horn/alarms, volt/hour meter, electrical terminal strips, and chassis control panel. A complete explanation of the chassis control functions is found in Section 2.

## ROLL-OUT TRAY

All models have a roll-out tray which contains the battery, and the LP fuel tank (dual fuel models).

## CHASSIS

The chassis is a structural frame that supports all the components of the XRT Work Platform.

## PURPOSE OF EQUIPMENT

The objective of the XRT Work Platform is to provide a quickly deployable, self propelled, variable height work platform to elevate personnel and materials to overhead work areas. 4WD models can be driven over rough terrain.

## SPECIAL LIMITATIONS

Travel with the platform raised is limited to a creep speed range.

Elevating of the Work Platform is limited to firm, level surfaces only. Any degree of slope greater than 3° will lockout the elevating circuits and sound a warning alarm.



*The elevating function shall ONLY be used when the work platform is level and on a firm surface. The work platform is NOT intended to be driven over uneven, rough or soft terrain when elevated.*

# OPERATION AND SPECIFICATIONS

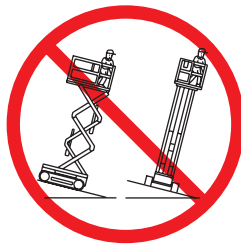
## **WARNING**

**All personnel shall carefully read, understand and follow all safety rules, operating instructions, and the Scaffold Industry Association's *Manual of Responsibilities (ANSI A92.9)* before operating or performing maintenance on any UpRight Aerial Work Platform.**

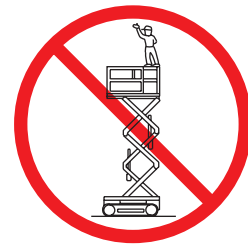
## Safety Rules



**NEVER** operate the machine within ten feet of power lines.  
**THIS MACHINE IS NOT INSULATED**



**NEVER** elevate the platform or drive the machine while elevated unless the machine is on firm level surface.



**NEVER** sit, stand or climb on guardrail or midrail.

**Never** exceed maximum platform load

**Never** operate the machine without first surveying the work area for surface hazards such as holes, drop-offs, bumps and debris.

**Never** operate the machine if all guardrails are not properly in place and secured with all fasteners properly installed.

**Secure** and lock gate after mounting platform.

**Never** exit or enter the platform while elevated.

**Never** use ladders or scaffolding on the platform.

**Never** attach overhanging loads or increase platform size.

**Maintain** tire pressure at 65 psi (unless foam filled). Check daily.

**Look up**, down and around for overhead obstructions and electrical conductors.

**Distribute** all loads evenly on the platform. See the back cover for maximum platform load.

Operate machine only on surfaces capable of supporting wheel loads.

**Never** elevate the machine when wind speeds exceed 28 mph (12.5 m/sec.).

**In Case Of Emergency** push emergency stop button to deactivate all powered functions.

**Never** use damaged equipment. (Contact UpRight for instructions. See toll-free phone number on back cover.)

**If Alarm Sounds** while platform is elevated, STOP, carefully and lower platform. Move machine to a firm, level surface.

**Never** change operating or safety systems.

**Inspect** the machine thoroughly for cracked welds, loose hardware, hydraulic leaks, damaged control cable, loose wire connections and wheel bolts.

**Never** climb down elevating assembly with the platform elevated.

**Never** perform service on machine while platform is elevated without blocking elevating assembly.

**Never** recharge battery near sparks or open flame; batteries that are being charged emit highly explosive hydrogen gas.

**Never** tow the machine. Transport by truck or trailer only.

**After Use** secure the work platform against unauthorized use by turning key switch off and removing key.

**Never** replace any component or part with anything other than original UpRight replacement parts without the manufacturer's consent.

### **California Proposition 65 Warning**

Gasoline and diesel engine exhaust and some of their constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

## 2.1 INTRODUCTION

This manual covers all models of the XRT Series Work Platforms.

## 2.2 PRE-OPERATION AND SAFETY INSPECTION

*Reference:* • “2.8 Specifications” on Page 2-15

- “ Battery Maintenance” on Page 2-11
- “ ” on Page 2-4

Carefully read, understand and follow all safety rules, labels, and operating instructions, then perform the following steps each day before use.

1. Open modules and inspect for damage, oil leaks or missing parts.
2. Check the hydraulic oil level sight gauge on the hydraulic tank with the platform fully lowered. Add hydraulic oil if necessary.
3. Check that fluid level in the battery is correct.
4. Check the engine oil level and fuel level.
5. Check that all guardrails are in place, the slide out deck extension is secured with the pin and all fasteners are properly tightened.
6. XRT 27/33 (unless foam filled): Check tire pressure; 65 psi (4,5 bar).
7. Carefully inspect the entire work platform for damage such as cracked welds or structural members, loose or missing parts, oil leaks, damaged cables or hoses, loose connections and tire damage.
8. Move machine, if necessary, to unobstructed area to allow for full elevation.
9. Place chassis and platform emergency stop switches in the ON position by pulling the buttons out.
10. Verify platform/chassis switch is on platform.

**NOTE:** When using LP gas, use clean, water free liquid petroleum gas, preferably from a bulk storage tank. Follow the instructions located on the power module tray for filling the tank.

11. Gasoline / Propane Models: set dual fuel selector to desired position. Set to the center position to purge the system when switching fuels. If the machine is to be operated on propane, open the supply valve on the tank.
12. While the engine is cool check the engine coolant level.

### **W A R N I N G**

*If you smell propane, close the supply valve on the tank immediately until you have located and corrected the leak*

### **C A U T I O N**

*DO NOT check coolant when engine or radiator is hot, hot coolant can cause severe burns.*

## SYSTEM FUNCTION INSPECTION

### **W A R N I N G**

*STAND CLEAR of the work platform while performing the following checks.*

*Before operating the work platform survey the work area for surface hazards such as holes, drop-offs, bumps and debris.*

*Check in ALL directions, including above the work platform, for obstructions and electrical conductors.*

*Protect control console cable from possible damage while performing checks.*

1. Unhook controller from front guardrail. Firmly grasp controller hanger in such a manner that the interlock lever can be depressed, while performing the following checks from the ground.
2. Turn controller key switch clockwise to ON.

**NOTE:** If the engine is cold, on dual fuel models, depress and hold the choke button in while starting the engine. On diesel models, depress and hold the glow plug button for 6 seconds to engage the glow plugs.

3. Turn fully clockwise to start engine, releasing the key once the engine starts.
4. 3. Position drive/lift switch to DRIVE position.

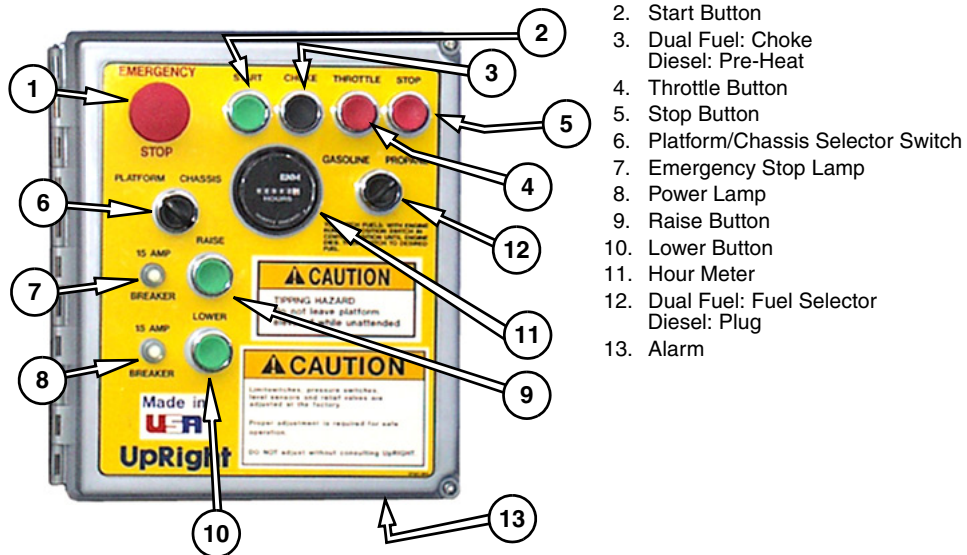
**NOTE:** On 4-wheel drive machines, the Speed Range Switch has three positions; HIGH TORQUE, Middle Position (not labeled), and HIGH SPEED. Perform step 4 for each speed.

5. With the speed range switch first in HIGH TORQUE and then again in HIGH SPEED depress the interlock lever and slowly push the control lever to FORWARD then REVERSE positions to check for speed and directional control. The farther you push or pull the control lever the faster the machine will travel.
6. Push steering switch RIGHT then LEFT to check for steering control.
7. Re-hook controller on front guardrail.
8. Turn the platform/chassis switch to Chassis.
9. Push the throttle button in. Push chassis raise button to elevate platform while pushing the tilt sensor off of level. The platform should only partially elevate and the tilt alarm should sound. If the platform continues to elevate and/or there is no alarm STOP and remove the machine from service until it is repaired.
10. Release the tilt sensor and fully elevate platform.
11. Visually inspect the elevating assembly, lift cylinder, cables and hoses for damage or erratic operation. Check for missing or loose parts.
12. Lower the platform partially by pushing in on the chassis lower switch, and check operation of the audible lowering alarm.
13. XRT27; open the chassis emergency lowering valve to check for proper operation by pulling and holding the knob out. Once the platform is fully lowered, close the valve by releasing the knob.
14. XRT33; operate Emergency down system by holding control valve in closed position then pumping up pressure to release cylinder valves. Release control valve to stop lowering.
15. Turn the platform/chassis switch to platform.
16. Mount the platform making sure the gate is latched.
17. Position drive/lift switch to LIFT.

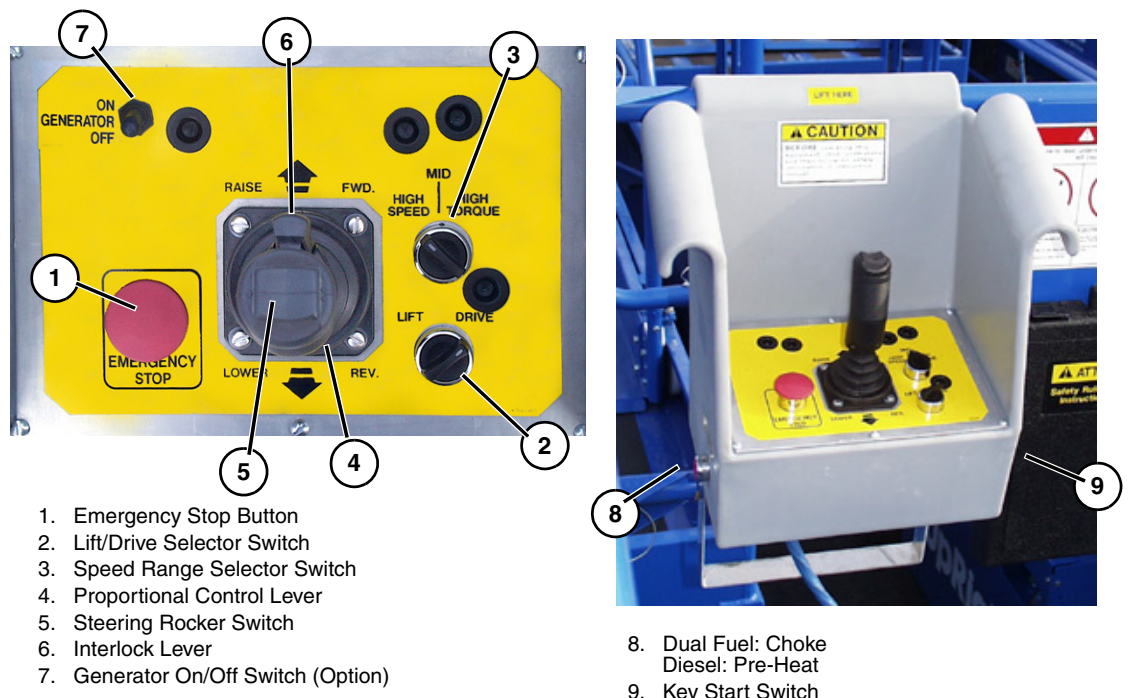
18. Depress the interlock lever and slowly push the control lever to RAISE to raise the platform, fully actuate the control lever to check proportional lift speed. Elevate the platform to 12 feet (3.7 m).
19. Slowly pull control lever to DOWN position to lower platform. Check that lowering alarm sounds.
20. Turn controller key switch to OFF, push the emergency stop button and dismount the platform.
21. Close and secure module covers.

Figure 2-1: Controls and Indicators

### Chassis Controls



### Platform Controls





## 2.3 OPERATION

Before operating work platform, ensure that the pre-operation and safety inspection has been completed, any deficiencies have been corrected and the operator has been thoroughly trained on this machine.

### TRAVEL WITH PLATFORM LOWERED

**NOTE:** If the drive enable indicator is off, verify that the platform is fully lowered.

1. Verify chassis emergency stop switch is in the ON position (turn counterclockwise), the drive enable indicator is on, and that the platform/chassis switch is on platform.
2. After mounting platform, secure the chain, . Check that guardrails are in position and properly assembled with fasteners properly torqued.
3. Check that route is clear of persons, obstructions, holes and drop-offs and is capable of supporting the wheel loads.
4. Check clearances above, below and to the sides of the platform.
5. Pull controller emergency stop button out to ON position.

**NOTE:** If the engine is cold, on dual fuel models, depress and hold the choke button in while starting the engine. On diesel models, depress and hold the glow plug button for 6 seconds to engage the glow plugs.

6. Turn controller key switch fully clockwise to start engine, releasing the key once the engine starts.
7. Set the drive speed range switch to;
  - 2-wheel drive - HIGH TORQUE
  - 4-wheel drive - Middle Position.
8. Grasp the control lever so the interlock lever is depressed (releasing the interlock lever cuts power to controller). Slowly push or pull the control lever to forward or REVERSE to travel in the desired direction. The farther you push or pull the control lever from center the faster the machine will travel.
9. While moving, push the drive/lift speed range switch to HIGH SPEED for travel on level surfaces or to high TORQUE for climbing grades or traveling in confined areas.
10. On 4-wheel drive machines, use HIGH TORQUE position for steep grades or muddy conditions where more torque is required.

### STEERING

**NOTE:** Steering is not self-centering. Wheels must be returned to the straight ahead position by operating the steering switch.

1. Push the steering switch RIGHT or LEFT to turn the wheels. Observe the tires while maneuvering to insure proper direction.

### RAISING AND LOWERING THE PLATFORM

1. Position the drive/lift switch to LIFT.
2. While holding the control lever so the interlock lever is depressed, push the control lever slowly to UP to raise the platform. Pushing the control lever farther increases the lift speed.
3. When the work task is completed, position the drive/lift switch to LIFT and lower the platform by pulling back on the control lever until the platform is fully lowered.

## TRAVEL WITH WORK PLATFORM ELEVATED

**NOTE:** The work platform will travel at reduced speed when in the elevated position.

Travel with platform elevated ONLY on firm and level surfaces.

1. Check that the route is clear of persons, obstructions, holes and drop-offs, is level and capable of supporting the wheel loads.
2. Check clearances above, below and to the sides of platform.
3. Position the drive/lift switch to the DRIVE position.
4. Push the control lever to FORWARD or REVERSE for the desired direction of travel.

## ! CAUTION !

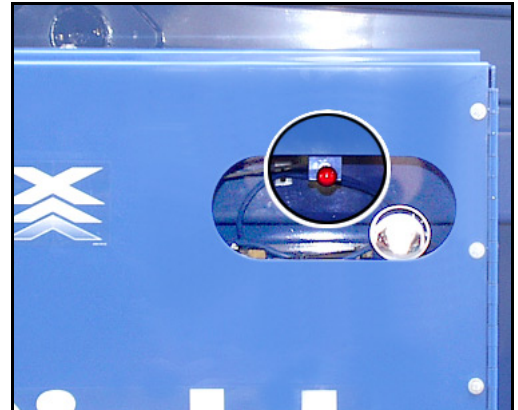
*If the machine quits driving and the tilt alarm sounds, immediately lower the platform and move the machine to a level location before re-elevating the platform.*

## EMERGENCY LOWERING - XRT27

**Figure 2-2:** Emergency Lowering Valve Knob, XRT27

The emergency lowering control is located in the control module and is accessible through the fuel tank access window.

1. Open the emergency lowering valve by pulling on the knob and holding it..
2. Once the platform is fully lowered, release the knob to close the valve.

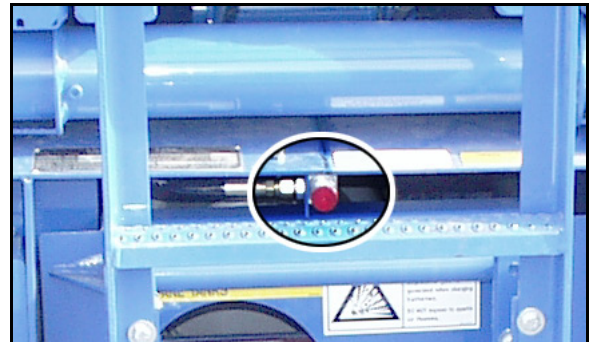


## EMERGENCY LOWERING - XRT33

**Figure 2-3:** Emergency Lowering Valve Knob, XRT33

The emergency lowering control is located at the rear of the machine at the base of the scissor assembly.

1. Open the emergency lowering valve by pulling on the knob and holding it..
2. Once the platform is fully lowered, release the knob to close the valve.



## SWITCHING FUELS (DUAL FUEL ONLY)

1. With engine running turn the fuel selector switch to the center position.
2. After the engine has quit running select the appropriate fuel supply.
3. Restart the engine.

**AFTER USE EACH DAY**

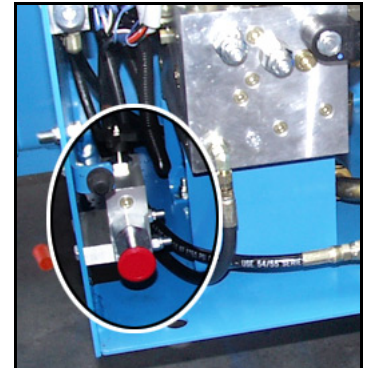
1. Ensure that the platform is fully lowered.
2. Park the machine on level ground, preferably under cover, secure against vandals, children or unauthorized operation.
3. Turn the key switch to OFF and remove the key to prevent unauthorized operation.

## PARKING BRAKE RELEASE

Perform the following only when the machine will not operate under its own power and it is necessary to move the machine or when winching onto a trailer to transport.

**Figure 2-4:** Parking Brake Release Pump

1. Close the needle valve by turning the knob clockwise.
2. Pump the brake release pump until the parking brakes release and the wheels can be turned.
3. The machine will now roll when pushed or pulled.
4. Be sure to open the needle valve and verify that the parking brakes have engaged before the machine is operated.



## ! WARNING !

*Never operate work platform with the parking brakes released. Serious injury or damage could result.*

## FOLD DOWN GUARDRAILS

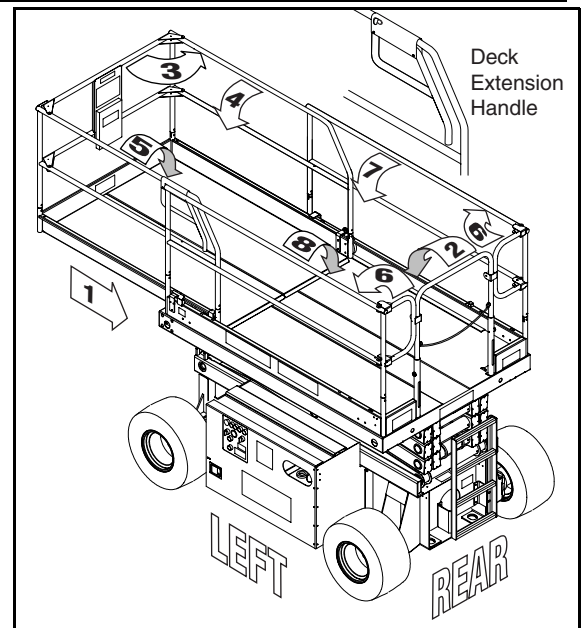
**NOTE:**When performing the following procedures retain all fasteners.

This procedure is only for passing through doorways. Guardrails must be returned to proper position before using the machine.

**Figure 2-5:** Fold Down Guardrails

### FOLD DOWN PROCEDURE

1. Ensure that the slide out deck extension is fully retracted and deck pin is locked. Place the controller on the platform.
2. Pull the pins on the two end gate arms. Lower the rear gate to the floor. Replace the pins.
3. Pull the pins (2) on the left side of the front rail and swing the front rail back against the right handrail. Insert pins into right handrail.
4. Lift the right handrail up, then lower it to the extension deck floor.
5. Push the deck extension handle into locked position. Lift the left handrail up, then lower it on top of the right handrail.
6. Rotate the arms in against handrails.
7. Lift the right main handrail and lower to the floor.
8. Lift the left main handrail and lower it on top of right hand rail.



**ERECTION PROCEDURE**

1. Reverse the fold down procedure.
2. Hang the controller from front guardrail.
3. Before operating the work platform, check that all fasteners are in place.

**! WARNING !**

*Before operating machine, guardrails must be securely fastened in their proper position.*

**2.4 TRANSPORTING WORK PLATFORM**

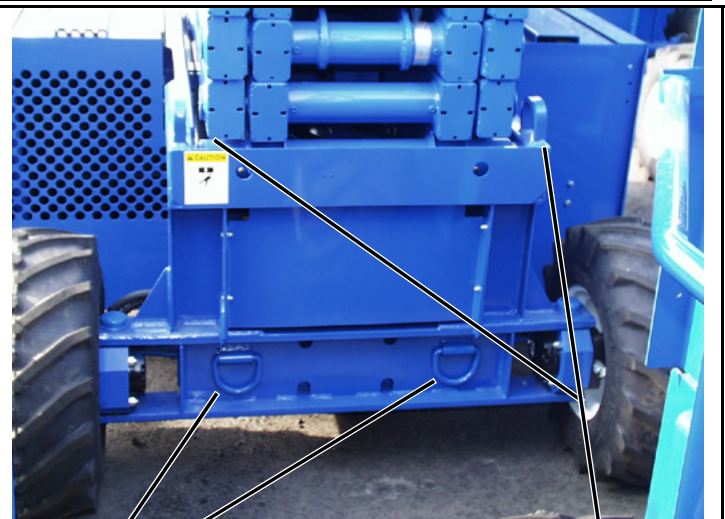
**Figure 2-6:** Transporting the Work Platform

**BY CRANE**

1. Secure straps to chassis tie downs and lifting lugs only.

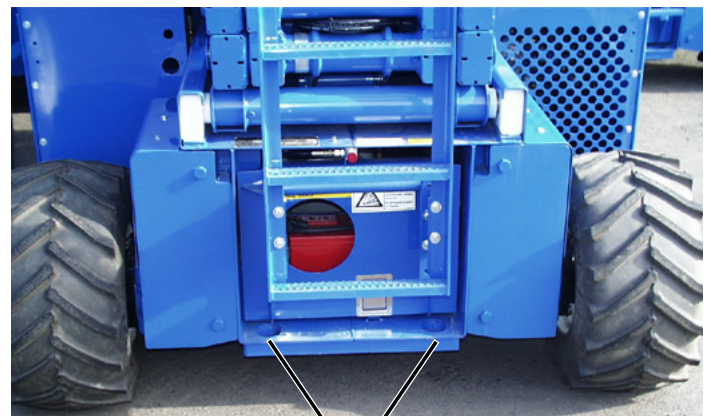
**BY TRUCK**

1. Maneuver the work platform into transport position and chock wheels.
2. Secure the work platform to the transport vehicle with chains or straps of adequate load capacity attached to the chassis tie down/lifting lugs.



Front Tie Downs

Lifting Lugs



Rear Tie Downs

**! CAUTION !**

*Overtightening of chains or straps through tie down lugs may result in damage to work platform.*



## 2.5 MAINTENANCE

### ! WARNING !

*Never perform service on the work platform in the elevating assembly area while platform is elevated without first blocking the elevating assembly.  
DO NOT stand in elevating assembly area while deploying or storing brace.*

**Figure 2-7:** Supporting the Elevating Assembly

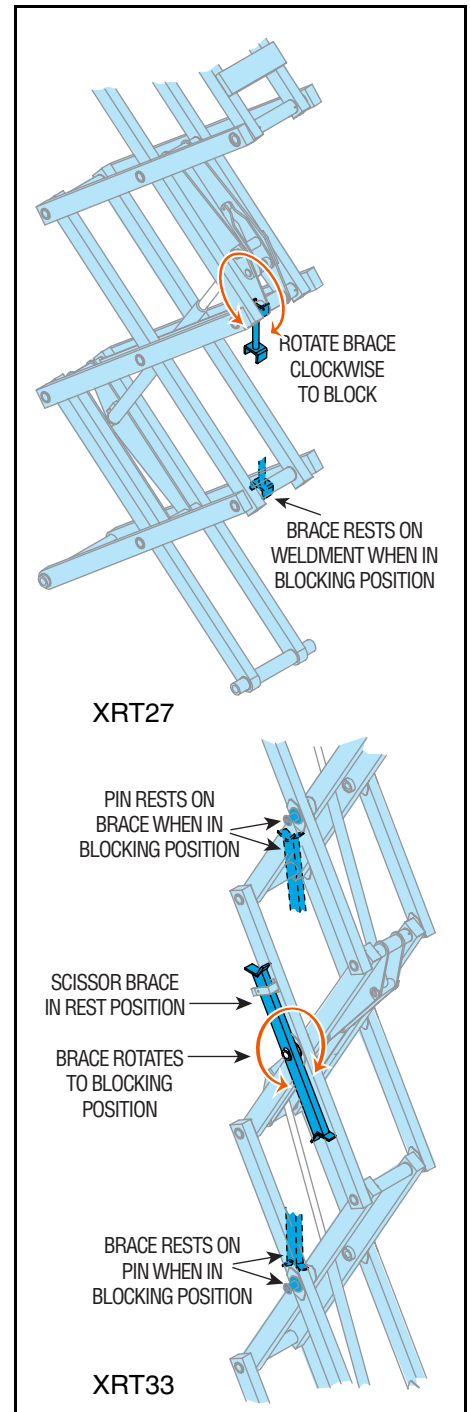
### SUPPORTING ELEVATING ASSEMBLY

#### INSTALLATION

1. Park the work platform on firm level ground.
2. Verify platform emergency stop switch is ON.
3. Turn platform/chassis switch to CHASSIS.
4. Start the engine using the chassis controls.
5. Push the throttle button in, the button will stay in and the engine speed will increase. Using the raise button, elevate platform until the scissors brace can be rotated to the vertical position.
6. XRT33-From the left side of the machine, disengage the locking pin securing the brace. Rotate the scissor brace counterclockwise until it is vertical and between the two scissor center pivots.
7. XRT27-From rear of machine, lift the scissor brace from its stowed position. Rotate upward and outward then down until it is hanging vertical below its attachment point.
8. Push lower button and gradually lower platform until brace is supporting the platform.
9. Disengage throttle by pushing throttle button in again, the button will retract and the engine will come to idle speed.

#### REMOVAL

1. Using chassis controls, gradually raise platform until the scissors brace clears the two scissor center pivots.
2. XRT33-Rotate scissors brace clockwise until the locking pin engages.
3. XRT27- Rotate scissor brace outward and upward over its mounting point until it rests in the stowed position.
4. Push lower button to completely lower platform.
5. Make sure the throttle button is disengaged and platform/chassis switch is on platform.





**BATTERY MAINTENANCE****! WARNING !**

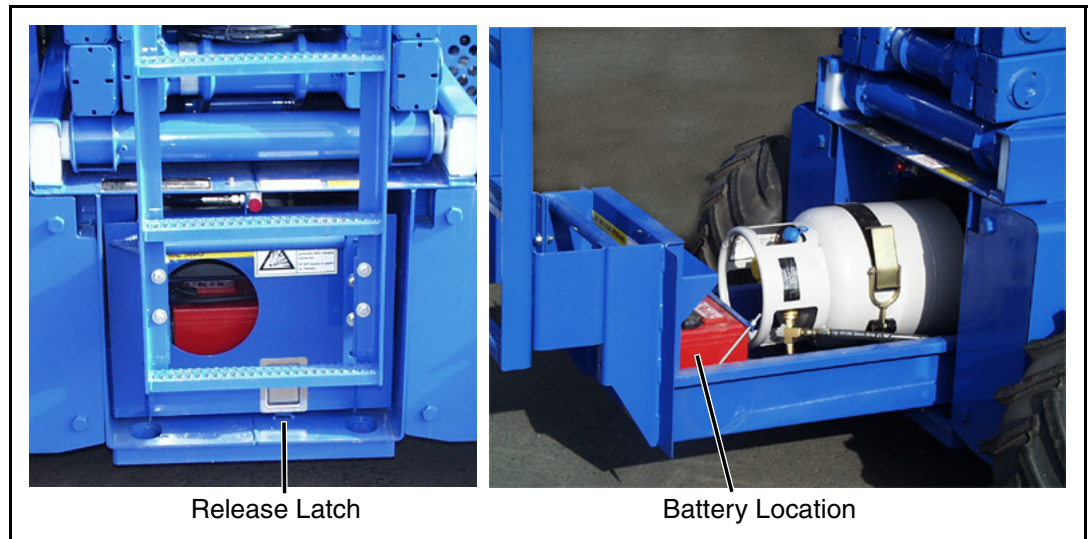
*Hazard of explosive gas mixture. Keep sparks, flame and smoking materials away from batteries.*

*Always wear safety glasses when working with batteries.*

*Battery fluid is highly corrosive. Rinse away any spilled fluid thoroughly with clean water.*

*Always replace batteries with UpRight batteries or manufacturer approved replacements weighing 62 lbs. (28 kg) each.*

**Figure 2-8: Access to Battery**



The battery is located in the slide out tray. The slide out tray is located at the rear of the machine. Reach through the ladder to pull the release latch, then pull the tray towards you.

Check battery fluid level daily, especially if work platform is being used in a warm, dry climate.

If electrolyte level is lower than 3/8 in. (10 mm) above plates add distilled water only. DO NOT use tap water with high mineral content. It will shorten battery life.

Keep terminals and tops of batteries clean.

## 2.6 PREVENTATIVE MAINTENANCE

The Complete inspection consists of periodic visual and operational checks, together with all necessary minor adjustments to assure proper performance. Daily inspection will prevent abnormal wear and prolong the life of all systems. The inspection and maintenance schedule is to be performed at regular intervals. Inspection and maintenance shall be performed by personnel who are trained and familiar with mechanical and electrical procedures.

### **W A R N I N G**

*Before performing preventative maintenance, familiarize yourself with the operation of the machine.*

*Always block the elevating assembly whenever it is necessary to enter the scissor assembly to perform maintenance while the platform is elevated.*

The preventative maintenance table has been designed to be used primarily for machine service and maintenance repair. Please photocopy the following page and use the table as a checklist when inspecting the machine for service.

**Table 2-1:** Preventative Maintenance Checklist**PREVENTATIVE MAINTENANCE KEY**

Interval

Daily=each shift or every day

50h/30d=every 50 hours or 30 days

250h/6m=every 250 hours or 6 months

1000h/2y=every 1000 hours or 2 years

Y=Yes/Acceptable N=No/Not Acceptable

R=Repaired/Acceptable

Service Interval:

COMPONENT	INSPECTION OR SERVICES	INTERVAL	Y	N	R
Battery	Check electrolyte level	6m			
	Check specific gravity	6m			
	Clean exterior	6m			
	Check battery cable condition	Daily			
	Clean terminals	6m			
Engine Oil and Filter	Check level and condition	Daily			
	Check for leaks	Daily			
	Change oil filter	200h			
Engine Fuel System	Check fuel level	Daily			
	Check for leaks	Daily			
	Replace fuel filter	400h/6m			
	Check air cleaner	Daily			
	Replace air cleaner element (Diesel)	Yearly			
Engine Coolant	Check Intake Air Line (Diesel)	200h			
	Check coolant level (with engine cold)	Daily			
Hydraulic Oil	Replace coolant	3m			
	Check Hoses and Clamps	200h			
	Check oil level	Daily			
Hydraulic System	Change filter	6m			
	Drain and replace oil	2y			
	Check for leaks	Daily			
Emergency Hydraulic System	Check hose connections	30d			
	Check hoses for exterior wear	30d			
	Operate the emergency lowering valve and check for serviceability	Daily			
Controller	Check switch operation	Daily			
Control Cable	Check the exterior of the cable for pinching, binding or wear	Daily			
Platform Deck and Rails	Check fasteners for proper torque	Daily			
	Check welds for cracks	Daily			
	Check condition of deck	Daily			

**PREVENTATIVE MAINTENANCE REPORT**

Date: \_\_\_\_\_

Owner: \_\_\_\_\_

Model No: \_\_\_\_\_

Serial No: \_\_\_\_\_

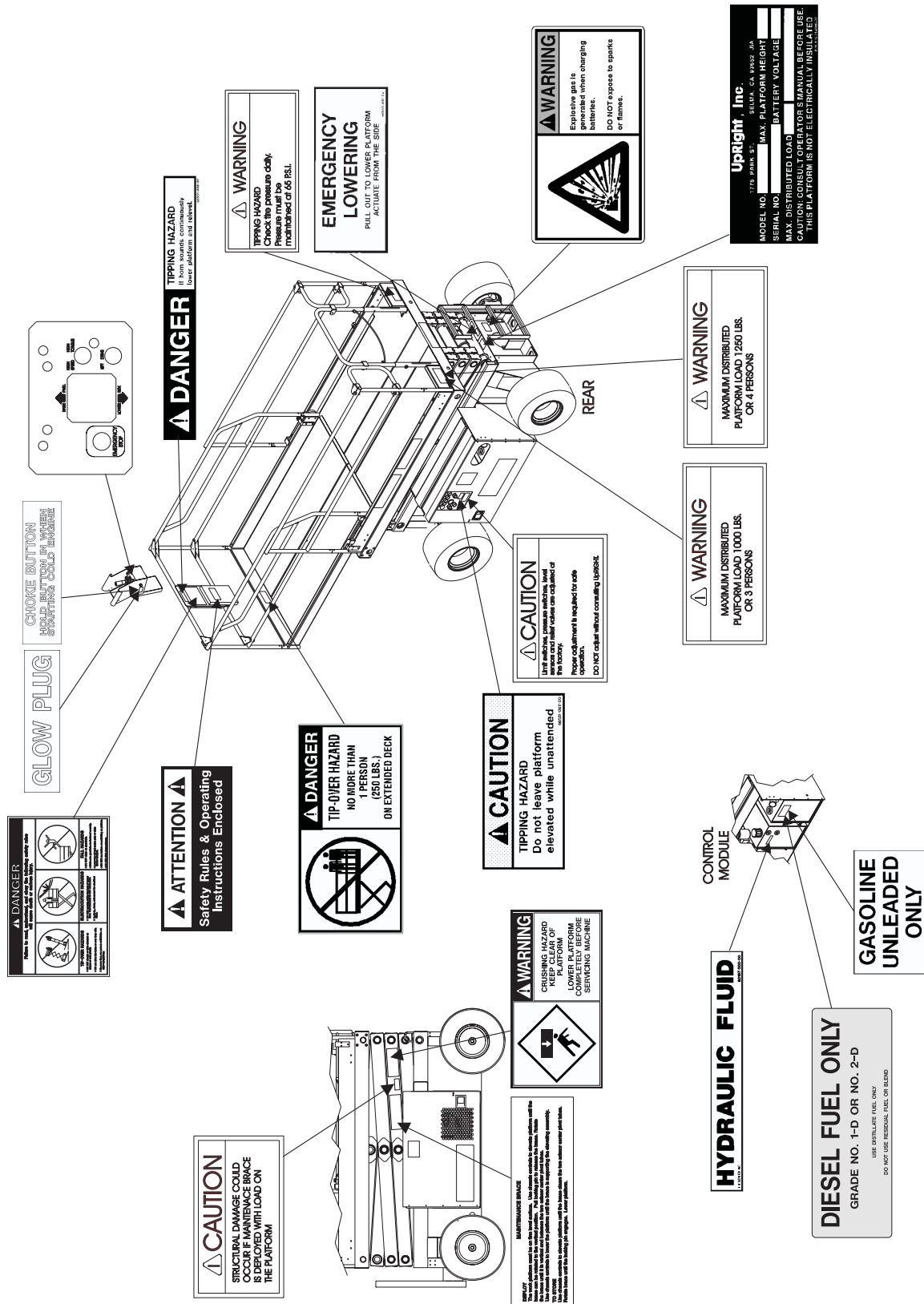
Serviced By: \_\_\_\_\_

COMPONENT	INSPECTION OR SERVICES	INTERVAL	Y	N	R
Tires	Check for damage	Daily			
	Check lug nuts (torque to 90 ft. lbs.)	30d			
Hydraulic Pump	Wipe clean	30d			
	Check for leaks at mating surfaces	30d			
	Check for hose fitting leaks	Daily			
	Check mounting bolts for proper torque	30d			
	Check for operation and leaks	Daily			
Steering System	Check hardware & fittings for proper torque	6m			
	Grease pivot pins	30d			
	Oil king pins	30d			
	Check steering cylinder for leaks	30d			
Elevating Assembly	Inspect for structural cracks	Daily			
	Check pivot points for wear	30d			
	Check mounting pin pivot bolts for proper torque	30d			
	Check elevating arms for bending	6m			
Chassis	Check hoses for pinch or rubbing points	Daily			
	Check component mounting for proper torque	6m			
	Check welds for cracks	Daily			
Lift Cylinder	Check the cylinder rod for wear	30d			
	Check mounting pin pivot bolts for proper torque	30d			
	Check seals for leaks	30d			
	Inspect pivot points for wear	30d			
	Check fittings for proper torque	30d			
Entire Unit	Check for and repair collision damage	Daily			
	Check fasteners for proper torque	3m			
	Check for corrosion-remove and repaint	6m			
	Lubricate	30d			
Labels	Check for peeling, missing, or unreadable labels & replace	Daily			

## 2.7 LABELS

## XRT SERIES LABEL INSTALLATION:

These Labels Shall Be Present And In Good Condition Before Operating The Work Platform. Be Sure To Read, Understand And Follow These Labels When Operating The Work Platform.



## 2.8 SPECIFICATIONS

Specifications are subject to change without notice

Meets or exceeds all applicable requirements of OSHA and ANSI A92.6-1999

ITEM	XRT27	XRT33
Platform Size (Outside)		
Standard	58 in. x 90.5 in. [1,47 m x 2,34 m]	58 in. x 90.5 in. [1,47 m x 2,34 m]
Slide Out Deck Extended	58 in. x 103.5 in. [1,47 m x 2,62 m]	58 in. x 103.5 in. [1,47 m x 2,62 m]
Max. Platform Capacity		
Standard	1,250 lbs. [567 kg]	1,000 lbs. [454 kg]
w/ Extension	1,250 lbs. [567 kg]	1,000 lbs. [454 kg]
on Extension	250 lbs. [113 kg]	250 lbs. [113 kg]
Max. No. of occupants		
Standard	4 people	3 people
on Extension	1 people	1 people
Height		
Working Height	33 ft. [10,1 m]	39 ft. [12 m]
Max. Platform Height	27 ft. [8,2 m]	33 ft. [10,1 m]
Max. Drive Height	27 ft. [8,2 m]	33 ft. [10,1 m]
Dimensions		
Weight, Standard	7,000 lbs. [3175 kg]	8,167 lbs. [3704 kg]
Overall Width	69in. [1,75 m]	69 in. [1,75 m]
Overall Height (Rails Up)	98.5[2,5 m]	105 in. [2,7 m]
Overall Height (Rails Folded)	69.5 in. [1,8 m]	76 in. [1,9 m]
Overall Length, Standard	106 in. [2,72 m]	106 in. [2,72 m]
Driveable Height	27 ft. [8,2 m]	33 ft. [11,1 m]
Surface Speed		
Platform Lowered	0 to 6.4 mph [0 to 4,0 km/h]	0 to 6.4 mph [0 to 4,0 km/h]
Platform Raised	0 to 0.45 mph [0 to 0,73 km/h]	0 to 0.45 mph [0 to 0,73 km/h]
System Voltage	12 Volt DC	12 Volt DC
Hydraulic Tank Capacity	16.25 US Gallons [74 l]	16.25 US Gallons [74 l]
Maximum Hydraulic System Pressure	3200 psi [220,7 bar]	3200 psi [220,7 bar]
Hydraulic Fluid		
Normal use: Above 32° F [0° C]	ISO #46	ISO #46
Low Temp. use: Below 32° F [0° C]	ISO #32	ISO #32
Below 0° F [-17° C]	ISO #15	ISO #15
Lift System	One Single Stage Lift Cylinder	Two Single Stage Lift Cylinders
Lift Speed	Raise, 30 sec./Lower, 31 sec.	Raise, 35 sec./Lower, 31 sec.
Power Source	Kubota D905E Diesel	Kubota D905E Diesel
	Kohler Gasoline	Kohler Gasoline
Drive Control - Horizontal Drive	Proportional	Proportional
2wd:	2 Hyd. Wheel Motors	2 Hyd. Wheel Motors
4wd:	4 Hyd. Wheel Motors	4 Hyd. Wheel Motors
Air Filled Tires (except European, foam filled tires)	26 X 12-10 ply, 65 psi [4,5 bar]	26 X 12-10 ply, 65 psi [4,5 bar]
Parking Brakes	Spring Applied, Hydraulic Release, Multiple Disc	Spring Applied, Hydraulic Release, Multiple Disc
Turning Radius (inside)	68 in. [1,7 m]	68 in. [1,7 m]
Maximum Gradeability		
2wd:	30% [16,7°]	30% [16,7°]
4wd:	40% [21,9°]	35% [19,2°]
Ground Clearance	7.6 in [194 mm]	7.6 in [194 mm]
Wheel Base	78 3/8 in. [2 m]	78 3/8 in. [2 m]
Guardrails	44 in. [1,1 m] high, Fold Down with gate.	44 in. [1,1 m] high, Fold Down with gate.

NOTES:

---



# MAINTENANCE

## 3.1 INTRODUCTION

*Reference:* • Section 2 for recommended maintenance intervals.

### **WARNING**

*Be sure to read, understand and follow all information in the Operation Section of this manual before attempting to operate or perform service on any Work Platform.*

**NOTE:** For Information on the engine refer to your local engine dealer.

This section contains instructions for the maintenance of the Work Platform. Procedures for the operation inspection, adjustment, scheduled maintenance, and repair/removal are included.

Referring to Section 2 will aid in understanding the operation and function of the various components and systems of the work platform, and help in diagnosing and repair of the machine.

### TERMINOLOGY

- TERMINAL BLOCKS** Located in upper and lower control boxes. Designated by TB##. (##) designates the number of the block which is written on the terminal block. "R" right or "L" may follow the number.
- WIRE COLOR** Indicated by color/color. First color refers to insulation color and second color indicates stripe. If second color is not given there is no stripe.
- FORWARD** Front of machine indicated by yellow arrows on chassis.
- AFT** Rear of machine indicated by orange arrows on machine.

### GENERAL PROCEDURES

- CONTACT BLOCKS** Removed by inserting a flat screwdriver into the slot at either end of block and prying outward. Installed by pressing into an empty slot.
- SWITCH MOUNT BASE** Assembled to back of switch actuator. Removed by rotating the small black lever counterclockwise and lifting off base.
- TERMINAL BLOCKS** Remove wires by inserting a small flat bladed screwdriver into square beside wire. Install wires by stripping ½" of insulation, inserting screwdriver in square and inserting wire. Be sure no strands are bend backwards. Replace wires with same rating and type.

## 3.2 DATE CODE IDENTIFICATION ON HOSES

**GATES** uses a five digit code: Year, Month, Day.  
i.e.: 6 11 29 - means 1996, month 11 (November), day 29.

**PARKER** uses a ten digit code: Plant, Year, Month, Day.  
i.e.: XXXX 6 11 29 - means Plant XXXX, 1996, month 11 (November), day 29.

**DAYCO** stamps month, day and year on each hose.

### 3.3 SPECIAL TOOLS

The following is a list of special tools which may be required to perform certain maintenance procedures on the work platform.

- 0-1000 psi (0-69 bar) Hydraulic Pressure Gauge with Adapter Fittings
- 0-3000 psi (0-207 bar) Hydraulic Pressure Gauge with Adapter Fittings
- 0-6000 psi (0-414 bar) Hydraulic Pressure Gauge with Adapter Fittings
- Small Deutsch Connector Field Kit (UpRight P/N 030899-000)
- Large Deutsch Connector Field Kit (UpRight P/N 030898-000)
- Inclinator

### 3.4 DEUTSCH CONNECTORS

Deutsch connectors are designed so that connector parts, contacts or electrical cables may be replaced without replacing the entire connector.

**Figure 3-1:** Deutsch Connector Kits

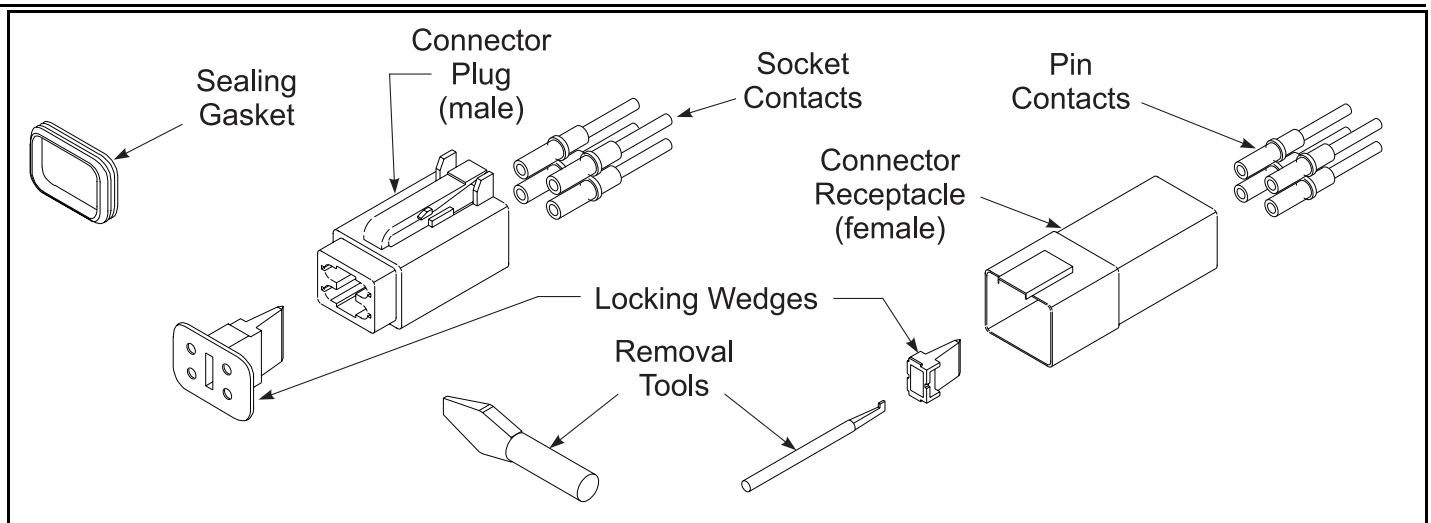


**Small Kit**



**Large Kit**

**Figure 3-2:** Plugs and Receptacles, Deutsch Connectors



## MALE CONNECTOR (PLUG)

1. Disconnect the male connector (plug) from the female connector (receptacle).
2. Using the flat end of the Removal Tool (or flat blade screwdriver), pry the Locking Wedge from the Male Connector. Care should be taken that the Silicon Gasket is not damaged during this procedure.
3. Check all parts for damage. Replace all parts which are damaged or worn.
4. Replace or recrimp the wires and contacts. Refer to "Crimping" procedure.

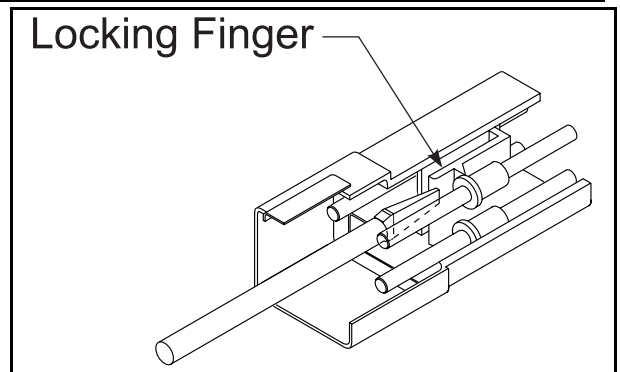
## FEMALE CONNECTOR (RECEPTACLE)

1. Disconnect the male connector (plug) from the female connector (receptacle).
2. Using the notched end of the Removal Tool (or a wire hook), pull the Locking Wedge from the Female Connector.
3. Check all parts for damage. Replace all parts which are damaged or worn.
4. Replace or recrimp the wires and contacts. Refer to "Crimping" procedure.

## RELEASING LOCKING FINGERS

**Figure 3-3:** Locking Finger, Deutsch Connector

1. The Locking Fingers can be released following the removal of the Locking Wedge of either the male or female connector.
2. Use the removal tool (or flat bladed screwdriver) to push the Locking Fingers aside. This will release the grip on the contact.
3. Pull the wire and contact out of the connector.



## CRIMPING

1. Strip ¼" (6 mm) from the wire.

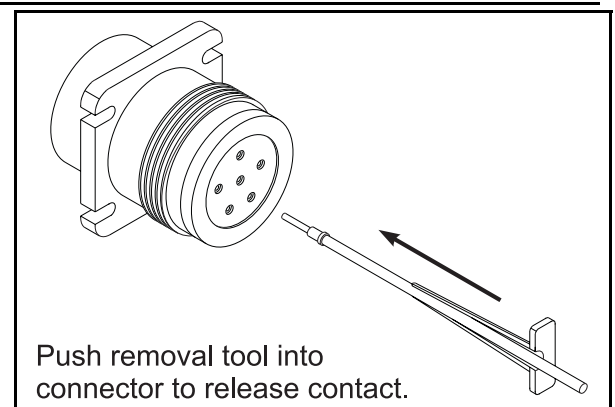
**NOTE:** Complete crimping instructions are included in each Field Kit.

2. Insert the contact into the crimping tool.
3. Insert the stripped wire into the contact. Copper strands should be visible in the bleed hole of the contact and no copper strands should be loose (outside) of the contact barrel.
4. Completely close the handles of the crimping tool. Release the handles of the crimping tool and remove the crimped contact.
5. Inspect the crimped contact to ensure that all strands are secure in the crimp barrel.

## REMOVING CONTACT FROM HEAVY DUTY PLUG

**Figure 3-4:** Heavy Duty Deutsch Connector

1. Slip the removal tool along the wire to be replaced.
2. Push the removal tool into the connector until the contact is released.
3. Pull the wire and contact out of the plug.



## 3.5 SUPPORTING ELEVATING ASSEMBLY

### ! WARNING !

*Never perform service on the work platform in the elevating assembly area while platform is elevated without first blocking the elevating assembly.  
DO NOT stand in elevating assembly area while deploying or storing brace.*

**Figure 3-5:** Supporting the Elevating Assembly

1. Park the work platform on firm level ground.
2. Verify both Emergency Stop Switches are ON.
3. Turn Chassis Key Switch to CHASSIS.
4. Position Chassis Lift Switch to UP and elevate platform approximately 9 feet (2,7 m).

### XRT27 BRACE INSTALLATION

1. Rotate the Scissors Brace so that it hangs vertically.
2. Push Chassis Lift Switch to DOWN position and gradually lower platform until the Scissors Brace rests on the weldment cross member.

### XRT27 BRACE REMOVAL

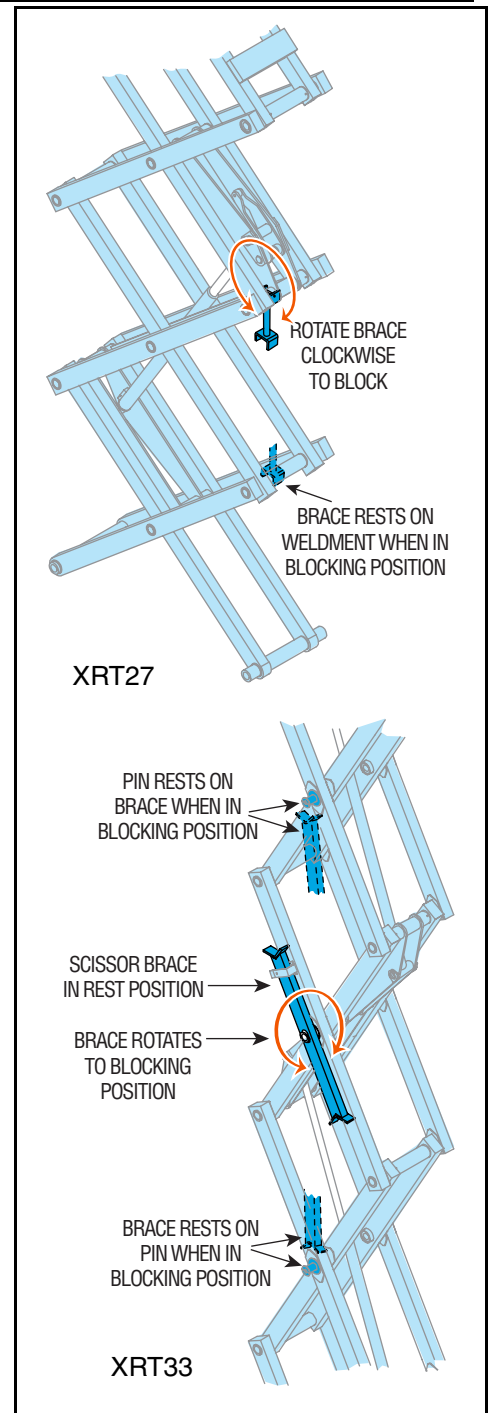
1. Push Chassis Lift Switch to UP position and gradually raise platform until the Scissors Brace is clear.
2. Rotate the Scissors Brace until it rests on the weldment.
3. Push Chassis Lift Switch to DOWN position and completely lower platform.

### XRT33 BRACE INSTALLATION

1. Pull out on the retaining pin and rotate the Scissors Brace into vertical position.
2. Push Chassis Lift Switch to DOWN position and gradually lower platform until the upper and lower pivot pins rest on the Scissors Brace.

### XRT33 BRACE REMOVAL

1. Push Chassis Lift Switch to UP position and gradually raise platform until the Scissors Brace is clear.
2. Rotate the Scissors Brace until it locks into position parallel with the scissor arm.
3. Push Chassis Lift Switch to DOWN position and completely lower platform.



## 3.6 BATTERY MAINTENANCE

Reference: • See Section 2 for battery access instructions

### **W A R N I N G**

*Hazard of explosive gas mixture. Keep sparks, flame, and smoking material away from battery.*

*Always wear safety glasses when working with batteries.*

*Battery fluid is highly corrosive. Thoroughly rinse away any spilled fluid with clean water.*

### **BATTERY INSPECTION AND CLEANING**

The battery is located in the roll-out tray at the rear of the machine.

Check battery fluid level daily, especially if work platform is being used in a warm, dry climate. If required, add distilled water ONLY. Use of tap water with high mineral content will shorten battery life.

The battery and cables should be inspected regularly for signs of cracks in the case, electrolyte leakage and corrosion of the terminals. Inspect cables for worn spots or breaks in the insulation and for broken cable terminals.

Clean the battery when it shows signs of corrosion at the terminals or when electrolyte has overflowed during charging. Use a baking soda solution to clean the battery, taking care not to get the solution inside the cells. Rinse thoroughly with clean water. Clean battery and cable contact surfaces to a bright metal finish whenever a cable is removed.

### **W A R N I N G**

*Before disconnecting the battery negative (-) lead, make sure all switches are OFF. If ON, a spark will occur at the ground terminal which could cause an explosion if hydrogen gas or fuel vapors are present.*

### **BATTERY CHARGING**

#### **CHARGE BATTERY AS FOLLOWS:**

1. Check the fluid level. If the electrolyte level is lower than 3/8 in. (10mm) above the plates, add clean, distilled water only.

**NOTE:** Use a charger which turns off automatically when the batteries are fully charged.

2. Connect the charger plug to a properly grounded outlet of the proper voltage and frequency.

### **W A R N I N G**

*Charge the battery only in a well ventilated area.*

*Do not charge the battery when the work platform is in an area containing sparks or flames.*

*Permanent damage will result if the battery is not immediately recharged after discharging.*

*Never leave the charger unattended for more than two days.*

*Never disconnect the cables from the battery when the charger is operating.*

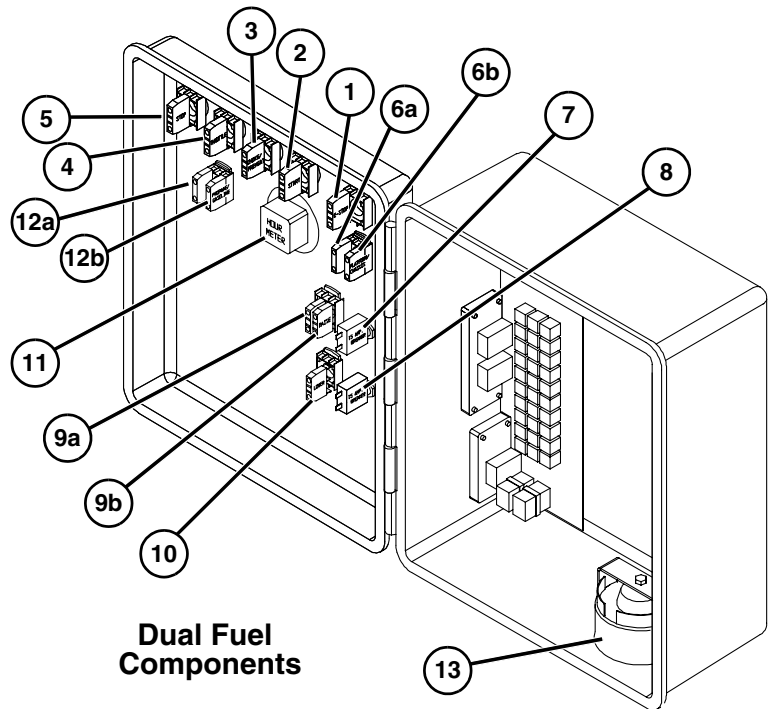
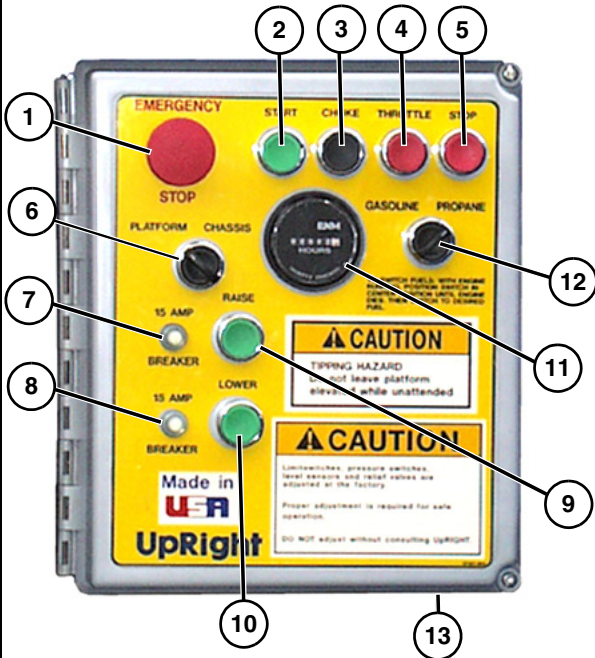
*Keep the charger dry.*



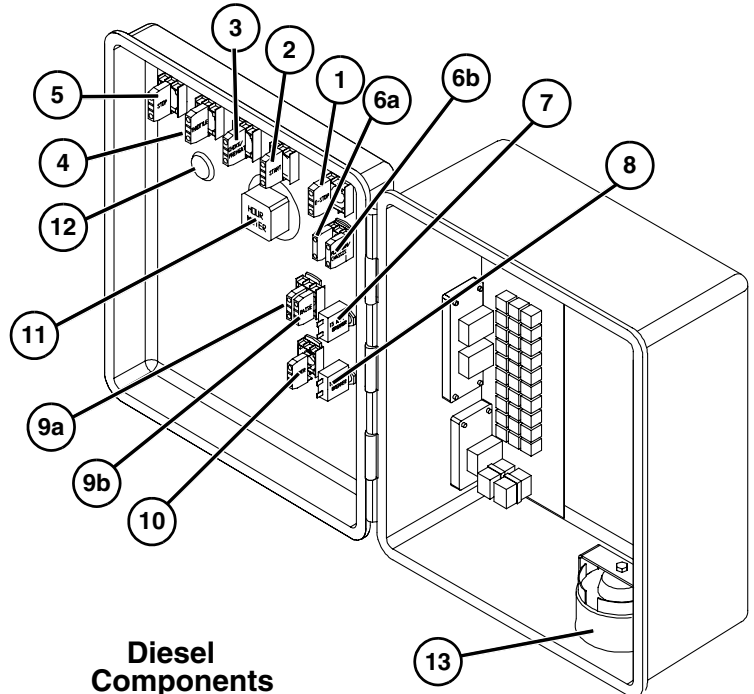
## 3.7 LOWER CONTROLS

Reference: • See Section 5 for wiring diagram.

Figure 3-6: Lower Controls - Switches and Components



Dual Fuel Components



Diesel Components

1. Emergency Stop Switch  
- Normally Closed Contact
2. Start Button - Normally Open Contact
3. **Dual Fuel:** Choke | **Diesel:** Pre-Heat  
- Normally Open Contact
4. Throttle Button - Normally Open Contact
5. Stop Button - Normally Closed Contact
6. Platform/Chassis Selector Switch
  - a. Normally Open Contact
  - b. Normally Closed Contact
7. Emergency Stop Lamp - 15 AMP Breaker
8. Power Lamp - 15 AMP Breaker
9. Raise Button
  - a. Normally Open Contact
  - b. Normally Open Contact
10. Lower Button - Normally Open Contact
11. Hour Meter
12. **Dual Fuel:** Fuel Selector | **Diesel:** Plug
  - a. Normally Open Contact
  - b. Normally Closed Contact
13. Alarm

## 3.8 UPPER CONTROLS

### PROPORTIONAL CONTROL ADJUSTMENT

**NOTE:** Do not steer the wheels during speed test, insure that the front wheels are straight prior to this operation. Allow the machine to rise to full speed, and mark time from second that the Front Wheels cross the starting line, until the second that the Front Wheels cross the finish line.

Lay out a twenty foot course, on level ground, free from potholes or other obstructions. Mark a starting line and finish line visible from the platform of the machine.

Potentiometers are sealed to protect sensitive adjustments from vibrations, or from tampering. Remove sealant prior to adjustment, and replace after.

Use a small screwdriver or special adjustment tool to set adjustment pots. Pots can be easily damaged.

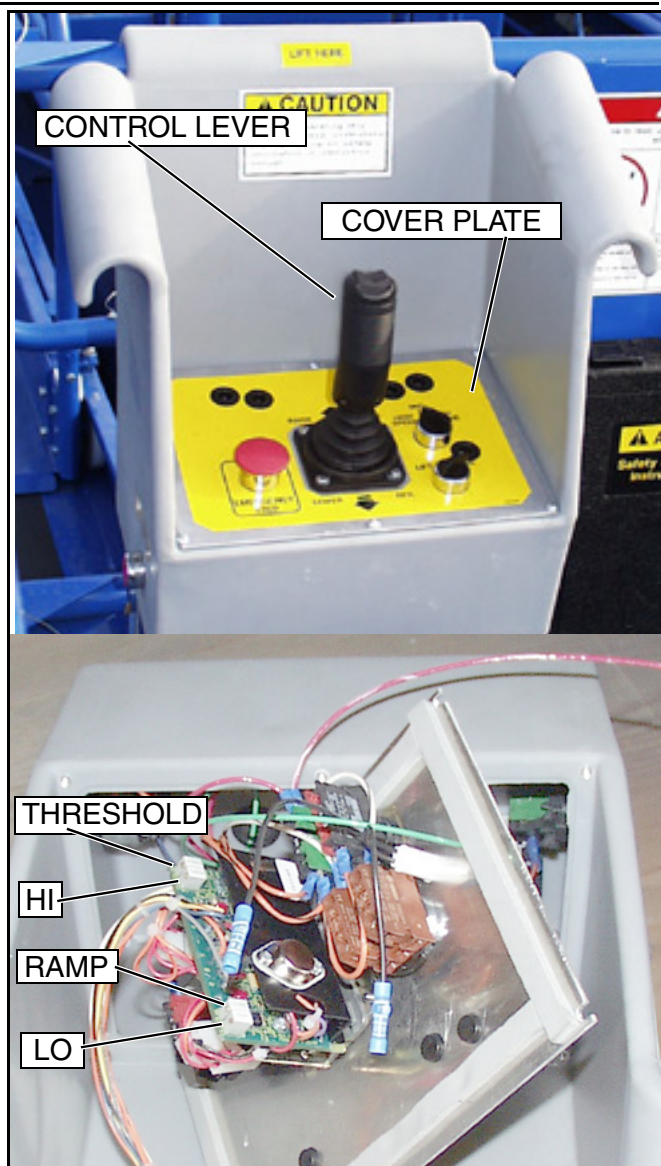
**Figure 3-7:** Proportional Controller

Pots have 15 turns of adjustment, more than one turn will often be required to complete the adjustment. If pots have been previously set, reset by turning no more than One turn at a time. If they have not been previously set, preset to about mid range and start from there.

- Turn pot clockwise (CW) to increase settings.
- Turn pot counterclockwise (CCW) to decrease settings.
- Adjust pots only in sequence as outlined in this procedure.

#### PROCEDURE

1. Lower machine fully to insure that controller is in high speed range.
2. Turn Ramp Trimpot fully counterclockwise until a click is heard with each revolution.
3. Push Control Handle slightly forward, just enough to illuminate the red L.E.D. on the P.C.B.
4. Adjust the Threshold Trimpot so that the machine just begins to move.
5. Push the Control Handle fully forward and drive the machine over the 20 ft. (6 m) course.
6. Adjust the Hi Trimpot to the proper high speed.
7. Elevate the platform enough to put the machine into low speed range.
8. Push the Control Handle fully forward and drive the machine over the 20 ft. (6 m) course.
9. Adjust the Lo Trimpot to the proper low speed.
10. Lower the machine fully and turn the Ramp Trimpot 8 to 10 turns clockwise. Adjust for smooth acceleration.
11. Recheck speeds to insure proper adjustment. Reset as necessary.





## 3.9 POWER

The XRT is powered by an internal combustion engine mounted on a swing-out tray inside the power module. There are two possible engine configurations; Diesel, or Dual Fuel (Liquefied Petroleum Gas/Gasoline).

For detailed service information, refer to the engine manufacturer's manual supplied with your UpRight work platform.

### 3.10 ENGINE SAFETY ISSUES

#### ROTATING PARTS



*Rotating parts can cause severe injury.*

Keep hands, feet, hair and clothing away from all moving parts to prevent injury. Never operate the engine with covers, shrouds or guards removed.

#### ELECTRICAL SHOCK



*Electrical shock can occur if you touch wires while engine is running.*

Never touch electrical wires or components while the engine is running. Electrical shock can occur.

#### HOT PARTS



*Hot parts can cause severe burns.*

Never touch engine components while engine is running, or immediately after shut-down. Hot surfaces can cause severe burns. Never operate the engine with heat shields or guards removed.

#### ACCIDENTAL STARTING



*Accidental starts can cause severe death or injury.*

*Disconnect and ground spark plug leads before servicing.*

## DISABLE ENGINE - LPG/GASOLINE

To avoid accidental starting, disable engine before servicing.

1. Disconnect the spark plug leads.
2. Remove battery cables

**IMPORTANT:** Before disconnecting the negative (-) lead, make sure all switches are OFF. If ON, a spark will occur at the ground terminal which could cause an explosion if hydrogen gas or fuel vapors are present.

- a. remove negative lead first
- b. reconnect negative lead last when reconnecting the battery.

## FUEL

### **W A R N I N G**

*Stop engine before filling fuel tank.*

*Explosive Fuel can cause fires and severe burns.*

Fuel is extremely flammable. vapors settle in low areas where a spark or flame can ignite the gas. Spilled gasoline can ignite if it comes in contact with hot parts or sparks.

- Do not start or operate the engine in a poorly ventilated area.
- Do not fill the fuel tank while the engine is hot or running.
- Do not start engine near spilled fuel.

**DIESEL:** Do not mix gasoline or alcohol with diesel fuel. The mixture can cause a fire.

Do not allow the fuel tank to empty, or it may be necessary to bleed the fuel system.

Do not bleed the fuel system when the engine is hot.

**LPG:** Installation and repair of LPG systems should be performed by qualified technicians. Improperly maintained or installed LPG components can cause components to malfunction and/or leak.

## EXHAUST

### **W A R N I N G**

*Carbon Monoxide can cause severe nausea, fainting or death.*

*Do not operate engine in a closed or confined area.*

Engine exhaust gases contain poisonous carbon monoxide, an odorless, colorless gas which can cause death. Avoid inhaling exhaust fumes. Never run the engine in a closed building or confined area.

**RADIATOR****! WARNING !**

*Never remove the radiator cap while the engine is hot. Severe burns can occur.*

Check coolant level before operating equipment. Insufficient coolant can cause the engine to overheat.

- Do not stop an engine suddenly. Allow a hot engine to idle for five (5) minutes.
- Do not remove the radiator cap from a hot radiator. Rushing steam can result in severe burns.
- Allow the radiator to cool for 30 minutes before removing radiator cap. Rotate cap to first stop to allow pressure to escape, then remove cap.

## KUBOTA DIESEL

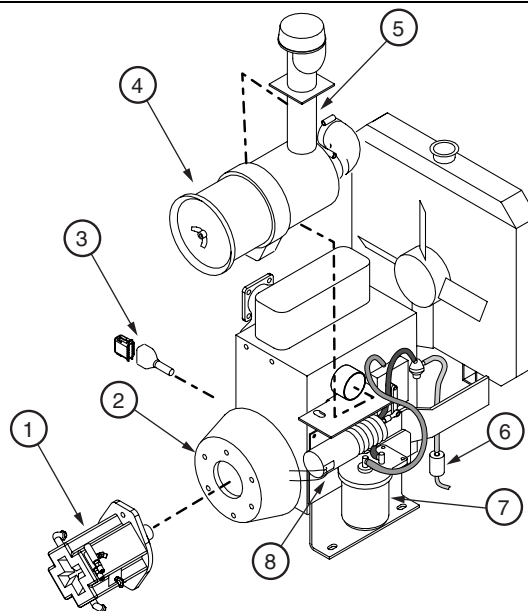
**Figure 3-8:** Kubota Diesel Engine

### MAINTENANCE

Refer to the Engine Service Manual included with your UpRight Work Platform for detailed Maintenance instructions.

### FUEL SYSTEM

If the fuel supply is allowed to empty, air may be introduced into the fuel system, and bleeding of the system will be required.



- |                          |                         |
|--------------------------|-------------------------|
| 1. Hydraulic Pump        | 5. Snorkel              |
| 2. Bell Housing          | 6. Fuel Filter, Inline  |
| 3. Wire Harness          | 7. Fuel Filter, Spin on |
| 4. Air Breather Canister | 8. Throttle Solenoid    |

**Table 3-1:** Engine Maintenance, Kubota Diesel

INTERVAL	ITEM
DAILY	Check Engine Oil
	Check Engine Coolant
50 HOURS	Check Fuel Pipes
100 HOURS	Clean Air Filter
	Clean Fuel Filter
	Check Fan Belts
200 HOURS	Check Radiator Hoses and Clamps
	Replace Engine Oil & Filter
	Check Air Intake Line
400 HOURS	Replace Fuel Filter Cartridge
500 HOURS	Remove Sediment from Fuel Tank
	Clean Radiator
	Replace Fan Belt

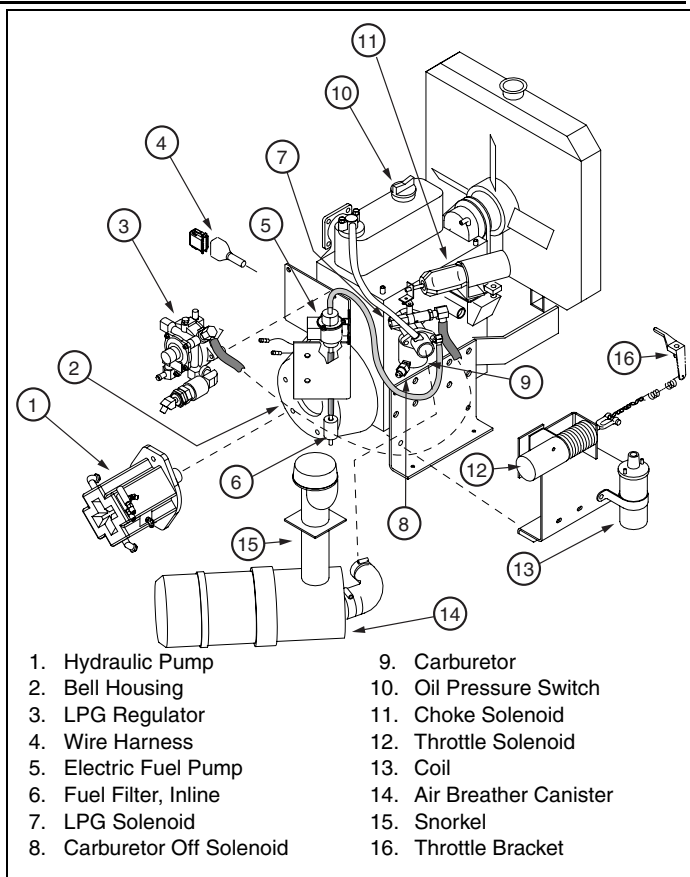
INTERVAL	ITEM
800 HOURS	Check Valve Clearance
1500 HOURS	Check Fuel Injection Nozzle Pressure
3000 HOURS	Check Fuel Injection Pump
	Check Fuel Injection Timer
	Replace Air Cleaner Element
YEARLY	Check Electrical Wiring
	Replace Radiator Coolant
2 YEARS	Replace Radiator Hoses and Clamps
	Replace Fuel Pipes and Clamps
	Replace Intake Air Line

## KUBOTA DUAL FUEL

**Figure 3-9:** Kubota Dual Fuel

### MAINTENANCE

Refer to the Engine Service Manual included with your UpRight Work Platform for detailed maintenance instructions.



**Table 3-2:** Engine Maintenance, Kubota Dual Fuel

INTERVAL	ITEM
DAILY	Check Engine Oil
	Check Engine Coolant
	Check LPG Carburetor & Line Connections
	Check LPG Regulator Connections
50 HOURS	Check Air Cleaner Element
	Check LPG Tank Connection for Leakage
	Check Gasoline Lines & Clamps
	Check Spark Arrestor
100 HOURS	Change Engine Oil
	Clean/Adjust Spark Plugs
	Clean Gasoline Fuel Line
	Check LPG Fuel to Filter Connection
	Check Fan Belts
	Check Radiator Hoses and Clamps
200 HOURS	Replace Engine Oil & Filter
	Check LPG Fuel Tank Settings
	Clean Radiator
500 HOURS	Replace Fan Belt

INTERVAL	ITEM
800 HOURS	Change Spark Plugs
	Check LPG Regulator Hot Water Lines
	Check LPG Regulator Vacuum Lock Pipe
	Check Valve Clearance
	Clean Cylinder Head
	Check/Relap Valve Seats
	Replace Air Cleaner Element
YEARLY	Change Fuel Filter (Gasoline & LPG)
	Clean Fuel Tank (Gasoline)
	Change Gasoline Line & Clamps
	Change Radiator Coolant
	Clean Radiator
	Change Ignition Wires
2 YEARS	Change Air Intake Pipe & Clamps
	Change LPG Line & Clamps
	Inspect LPG Regulator (internal parts)
	Replace Radiator Hoses and Clamps

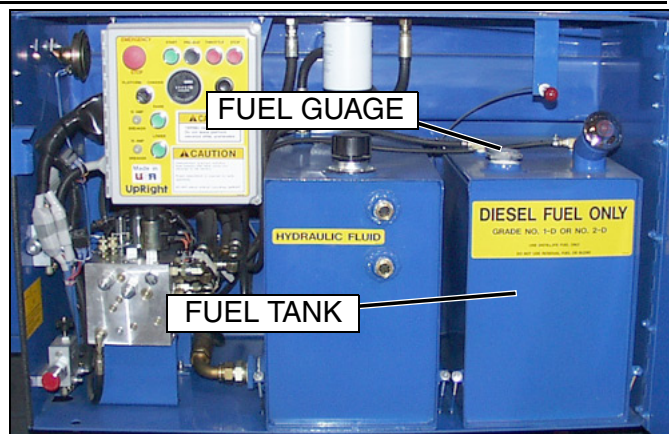
## 3.11 FUEL SUPPLY

### DIESEL OR GASOLINE

The fuel tank for Gasoline or Diesel is located in the Control Module.

**FUEL LEVEL** The fuel gauge is located on top of the fuel tank.

**Figure 3-10:** Fuel Tank



### LIQUEFIED PETROLEUM GAS (DUAL FUEL)

The LPG tank is located in the roll-out tray behind the ladder in the rear of the machine.

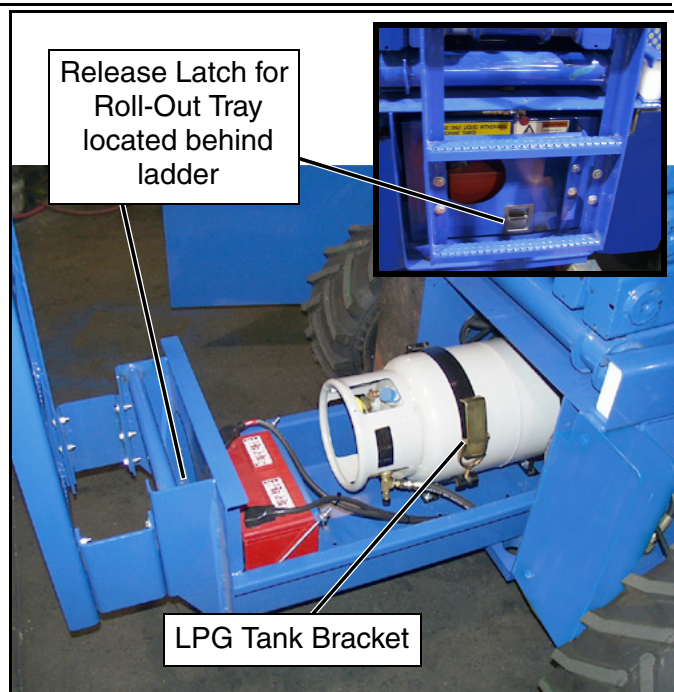
**Figure 3-11:** LPG Tank

#### ACCESS ROLL-OUT TRAY

Facing the rear of the machine, look through the lower rungs of the ladder to locate the release latch (see Figure ). Pull the latch with one hand, and pull the tray towards you with the other hand.

#### REMOVE & REPLACE LPG TANK

1. Open the roll-out tray.
2. Close the valve on the LPG tank.
3. Carefully disconnect the fuel supply line.
4. Release the latches on the LPG tank brackets.
5. Carefully lift the LPG tank from the roll-out tray.
6. Installation is reverse of removal.



## HYDRAULIC PUMP

The Hydraulic Pump is located in the Power Module, and is mounted on the rear of the engine.

### REMOVAL

**NOTE:** If the hydraulic tank has not been drained, suitable means for plugging the hoses should be provided to prevent excessive fluid loss.

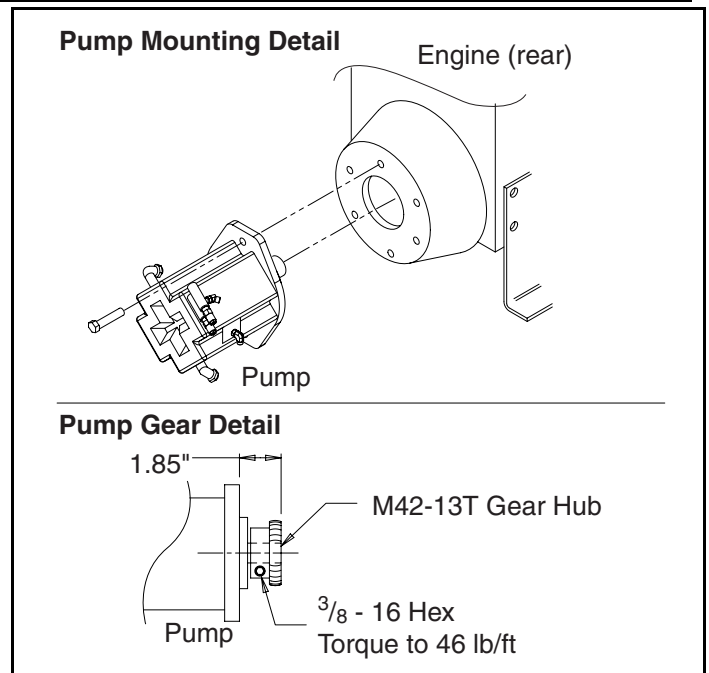
1. Mark, disconnect and plug the hose assemblies.
2. Loosen the capscrews and remove the pump assembly from the engine.

### INSTALLATION

1. Torque each capscrew a little at a time until both capscrews are torqued to 20 ft. lbs. (27 N-m).
2. Unplug and reconnect the hydraulic hoses.
3. Fill the pump completely with clean hydraulic oil by pouring it into the drain line cavity.
4. Check the oil level in the hydraulic tank before operating the work platform.

**NOTE:** Hydraulic pump pressure is factory set. Adjusting pump pressure may cause damage to hydraulic components.

**Figure 3-12:** Hydraulic Pump





## HYDRAULIC OIL TANK

The Hydraulic Oil Tank is located in the center of the Control Module

**FLUID LEVEL** With the platform *fully lowered*, check sight gauge. Oil should be visible through top sight gauge.

## HYDRAULIC OIL AND FILTER REPLACEMENT

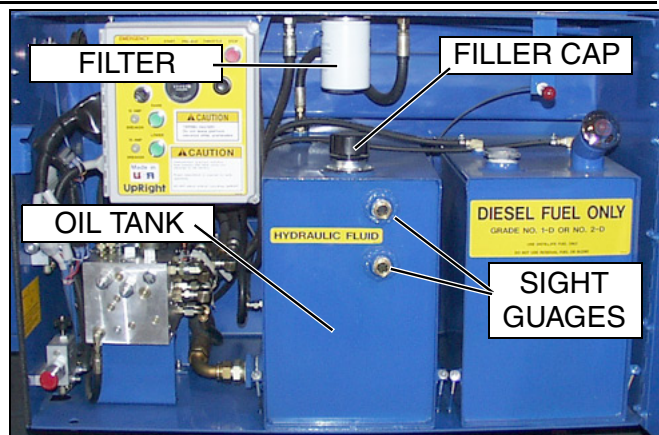
1. Operate the work platform for 10-15 minutes to bring the hydraulic oil up to normal operating temperature.

### CAUTION

*The hydraulic oil may be hot enough to cause burns. Wear safety gloves and safety glasses when handling hot oil.*

**Figure 3-13:** Hydraulic Oil Filter Replacement

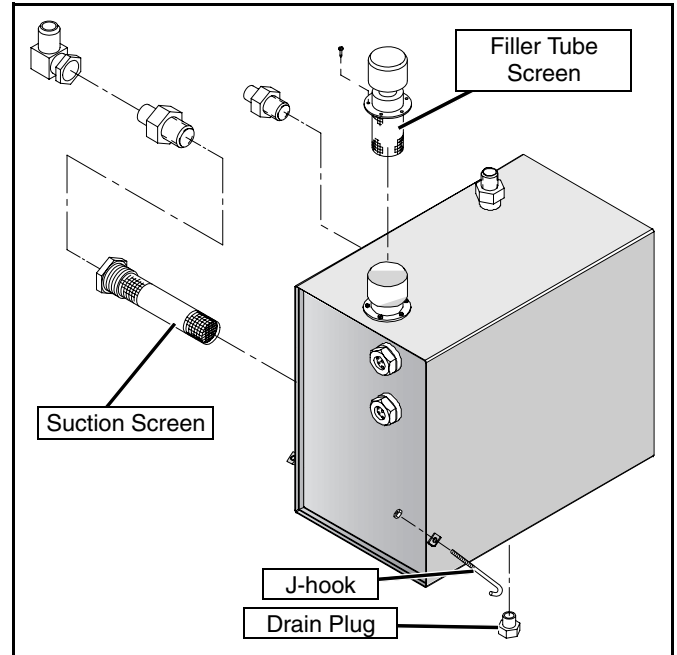
2. Provide a suitable container to catch the drained oil. The hydraulic tank has a capacity of 16.25 U.S. gal (74 liters).
3. Open the module door.
4. Remove the magnetic drain plug and allow all oil to drain into the container, be sure to dispose of oil properly.
5. Clean and reinstall the drain plug.
6. Unscrew the filter from the filter assembly.
7. Apply a thin film of clean hydraulic oil to the gasket of the replacement filter.
8. Screw the replacement filter onto the filter head until the gasket makes contact, then rotate the filter  $\frac{3}{4}$  of a turn further.
9. Fill the hydraulic reservoir with the appropriate hydraulic oil until the oil is visible through the top sight gauge.



## CLEAN/REPLACE HYDRAULIC TANK AND SCREENS

**Figure 3-14:** Hydraulic Tank Oil Screens

1. Perform steps 1-4 from "Hydraulic Oil and Filter replacement".
2. Mark, disconnect, and plug the hydraulic hoses.
3. Remove the locknuts from the J-hooks.
4. Remove the tank from the control module.
5. Remove the six screws around the filler tube and remove the filler tube and screen.
6. Unscrew and remove the suction screen.
7. Flush the tank with a suitable solvent. Dispose of solvent properly.
8. Clean or replace the filler tube screen as necessary, and reinstall.
9. Clean or replace the suction screen as necessary, and reinstall.
10. Clean and reinstall the drain plug.
11. Place the clean tank into the control module and reinstall the J-hooks and locknuts.
12. Connect the hydraulic hoses.
13. Fill the hydraulic reservoir with the appropriate hydraulic oil until the oil is visible through the top sight gauge.



## MAIN HYDRAULIC MANIFOLD

*Reference:* • “Figure 3-15: Hydraulic Manifold, Exploded View” on Page 3-18

Though it is not necessary to remove the manifold to perform all maintenance procedures, a determination should be made prior to beginning as to whether or not the manifold should be removed before maintenance procedures begin.

### REMOVAL

1. Disconnect the battery ground cable.
2. Unplug valve block wiring harness.
3. Tag, disconnect and plug hydraulic hoses.
4. Remove the bolts that hold the manifold mounting bracket to the module floor.
5. Remove manifold block.

### DISASSEMBLY

*Reference:* • (see Figure 3-15).

**NOTE:** Mark all components as they are removed so as not to confuse their location during assembly.

1. Remove coils from solenoid valves.
2. Remove spool valve cover and spool valve.
3. Remove solenoid valves, lift relief valve, counter- balance valves and divider combiner valve.
4. Remove fittings, plugs, springs, balls and orifices.

### CLEANING AND INSPECTION

1. Wash the manifold in cleaning solvent to remove built up contaminants and then blow out all passages with clean compressed air.
2. Inspect the manifold for cracks, thread damage and scoring where O-rings seal against internal and external surfaces.
3. Wash and dry each component and check for thread damage, torn or cracked O-rings and proper operation.
4. Replace parts and O-rings found unserviceable.

### ASSEMBLY

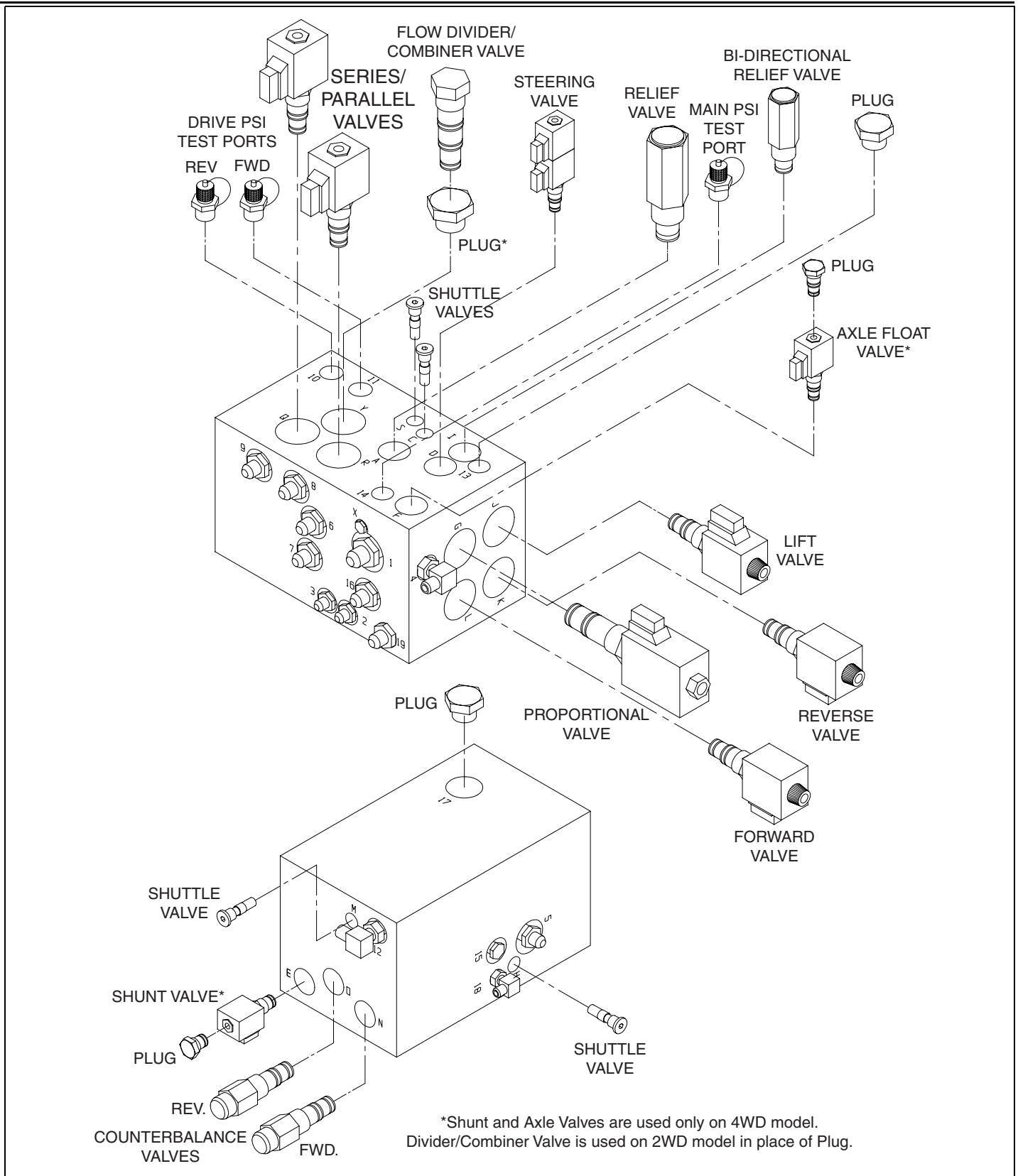
**NOTE:** Lubricate all O-rings before installation to prevent damage to O-rings. Seat all balls in manifold block by lightly tapping on the ball with a brass drift punch.

1. Install fittings, plugs, springs, balls and orifices. Use one drop of Loctite #242 on each screw-in orifice.
2. Install solenoid valves, lift relief valve, counter balance valves, divider combiner valve, and spool valve.
3. Install coils on solenoid valves.

### INSTALLATION

1. Attach manifold assembly to module floor with bolts.
2. Plug in the valve block wiring harness.
3. Operate each hydraulic function and check for proper operation and leaks.

Figure 3-15: Hydraulic Manifold, Exploded View



## SETTING HYDRAULIC PRESSURES

Reference: • Figure 3-15

**NOTE:** Follow Pump Set - Up procedure whenever Pump has been replaced, or when testing performance to isolate possible failure.

### LIFT RELIEF VALVE

1. Operate the hydraulic system 10 to 15 minutes to warm the oil.
2. Remove the cap or loosen the locknut on the Lift Relief Valve.
3. Turn the Lift Relief Valve adjustment screw counterclockwise two full turns.
4. Place rated load on the platform (Refer to specifications).
5. Depress the Throttle Button, and the Raise Button to lift the platform.
6. Slowly turn the Lift Relief Valve adjustment screw clockwise until the platform begins to rise.
7. Replace the cap, or tighten the locknut on the Lift Relief Valve, and remove the load from the platform

### COUNTERBALANCE VALVES

1. Operate the hydraulic system 10 to 15 minutes to warm the oil.

**NOTE:-** 2WD - drive wheels are in front  
- 4WD - all wheels are drive wheels

2. Elevate the Drive Wheels to allow them to spin freely, and place on jackstands suitable to support the weight of the machine.
3. Remove the Green/White wire from terminal 7 in the Control Panel Assembly.
4. Install a 0-1000 psi (0-69 bar) pressure gauge at the Forward Drive Pressure Test Port.
5. Loosen the locknut on the Reverse Counterbalance Valve, push the control handle forward, and adjust the valve until the gauge reads 800 psi (55 bar) (CW to decrease psi, CCW to increase psi) Tighten the locknut.
6. Install a 0-1000 psi (0-69 bar) pressure gauge at the Reverse Drive Pressure Test Port.
7. Loosen the locknut on the Forward Counterbalance Valve, push the control handle reverse, and adjust the valve until the gauge reads 800 psi (55 bar).
  - a. **Sterling valves;** CCW to decrease psi, CW to increase psi.
  - b. **Compact Valves;** CW to decrease psi, CCW to increase psi.
8. Tighten the locknut on the Forward Counterbalance Valve.
9. Recheck the pressures and adjust as necessary.
10. Remove the gauge and replace the cap. Replace the Green/White wire to terminal. Lower the machine off of the jackstands.

### STEERING RELIEF VALVES

1. Operate the hydraulic system 10 to 15 minutes to warm the oil.
2. Install a 0-3000 psi (207 bar) gauge at the Main Pressure Test Port.
3. Loosen the locknut or remove the cap on the Steer Relief Valve.
4. Turn the adjustment screw two full turns counterclockwise.
5. Press the Steering Switch to the left and hold until the system bypasses.
6. Turn the Steering Relief Valve adjustment screw clockwise until the gauge reads 1400 psi (96,5 bar).
7. Tighten locknut or replace cap on Left Steering Relief Valve.
8. Press the steering switch to the right and hold to check pressure in that direction.

## SERIES PARALLEL VALVE BODIES

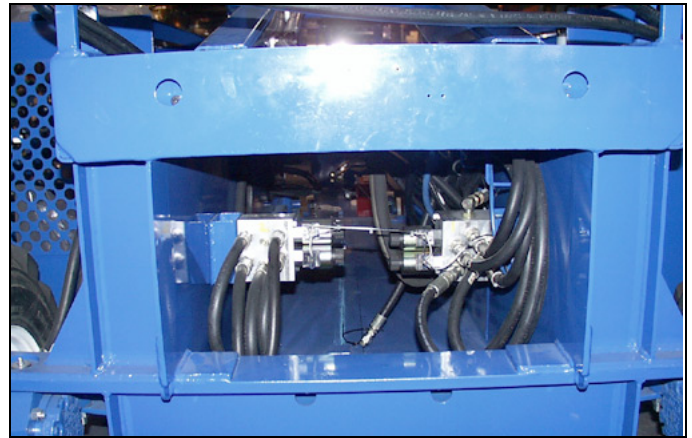
The Series Parallel Valve Bodies are located inside the chassis toward the front of the machine

**Figure 3-16:** Valve Bodies

### BRAKE PRESSURE REDUCING VALVE

#### ADJUSTMENT

1. 2 WHEEL DRIVE - Using two 1-ton jack stands and a 2-ton jack, jack the work platform up to raise the rear wheels off the ground and block the machine securely.  
4 WHEEL DRIVE - Using four 1-ton jack stands and a 2-ton jack, jack the work platform up to raise all four wheels off the ground.
2. Remove the outlet hose from the backside of the Brake Release Pump and install a 0-600 psi (41.4 bar) gauge assembly in-line with a tee fitting.
3. Remove the plug on the end of the Brake Relief Valve.
4. With the engine running, position the Control Lever to **REVERSE** and hold.
5. While holding the Control Lever in **REVERSE**, set the pressure to 800 psi (55 bar) maximum by slowly turning the adjusting screw, clockwise to increase pressure.
6. Replace the valve plug.
7. Remove the gauge and tee fitting and reinstall the hose.
8. Remove the jack stands and lower the machine.



## 3.12 CYLINDER REPAIR

### **W A R N I N G**

*Cylinders may be very heavy. Support heavy cylinders before removing pins which secure cylinder to machine.*

### REMOVAL

**NOTE:** Refer to “Illustrated Parts Section” for location of cylinder and list of parts which secure cylinder.

1. Remove cylinder from machine.
2. Mark and disconnect hoses and IMMEDIATELY cap the openings to prevent contamination.

### DISASSEMBLY

1. Remove head from cylinder body.
2. Carefully slide rod assembly out of cylinder.
3. Remove seal kit components (wipers, rod seals, o-rings and backup rings) from head and piston.
4. Inspect parts for scratches, pits or polishing. Check seal grooves and sealing surfaces. Scratches or pits deep enough to catch the fingernail are unacceptable; replace the cylinder. Polishing is a sign of uneven loading. When this occurs, the surface should be checked for roundness. Cylinders not round within .007” (0,18 mm) should be replaced.

### ASSEMBLY

**NOTE:** •To avoid cutting the seals, do not use sharp edged tools during seal replacement. After installing seals allow at least one hour for the seals to elastically restore to their original shape before assembling cylinder.

•Torque all hardware to torques according to Table 3-3, “Torque Specifications for Hydraulic Components,” on Page 3-33 unless otherwise specified.

1. Lubricate all components with clean hydraulic fluid.
2. Install new seal kit components.
3. Lubricate rod wiper and seal with hydraulic fluid and slide head onto rod.
4. Lubricate seals on piston and head.
5. Carefully slide rod assembly into cylinder.
6. Secure head into cylinder.

### INSTALLATION

1. Installation is reverse of removal.
2. Carefully remove elevating assembly support.
3. Slowly cycle cylinder several times to remove air from the hydraulic system.
4. Check for proper cylinder operation. Check hydraulic connections for leaks.



## STEERING CYLINDER

**Figure 3-17:** Steering Cylinder Removal & Installation

### REMOVAL

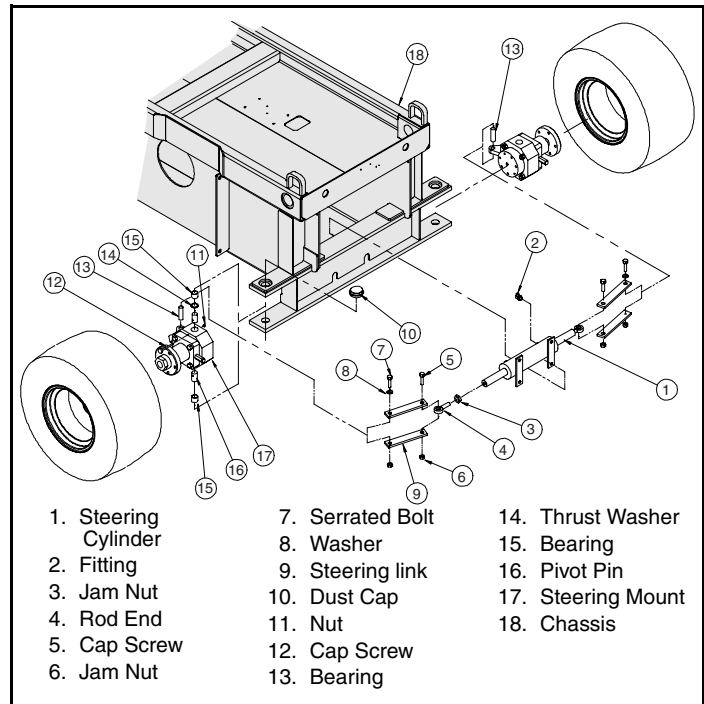
1. Remove the capscrews securing the rod ends to the steering linkage.
2. Remove the capscrews and locknuts that fasten the cylinder assembly to the chassis.
3. Remove the cylinder from the chassis.

### REPAIR

Reference: • "3.12 Cylinder Repair" on Page 3-21.

### INSTALLATION

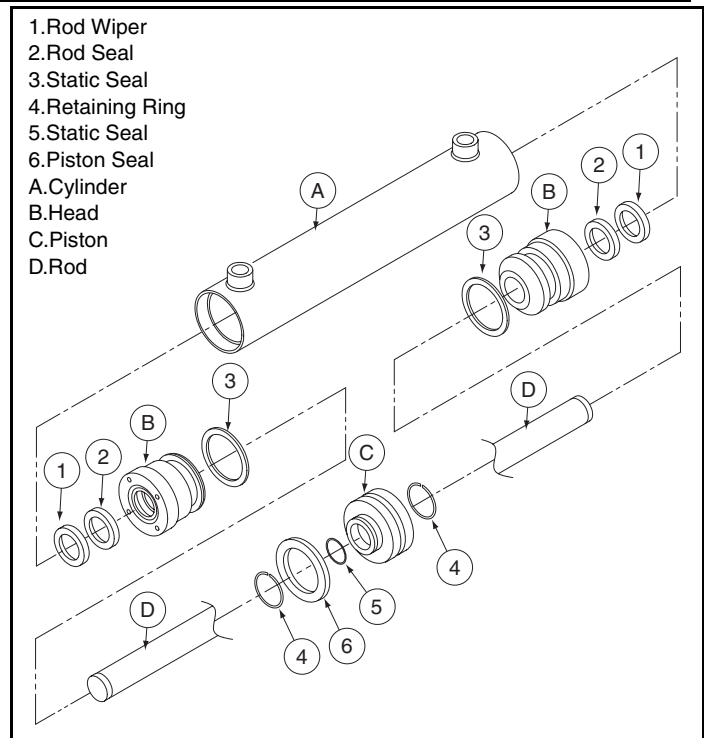
1. Install jam nut on rod end, then thread onto steering cylinder. Do not tighten jam nut.
2. Position the cylinder assembly in the chassis and install with fasteners and locknuts.
3. Adjust the cylinder rod ends in or out to line up with holes in the steering links. Then tighten jam nut to lock rod end into position.
4. Connect the hose assemblies to the fittings.
5. Operate the steering circuit several times throughout its entire range of travel to expel trapped air and check for leaks.



**Figure 3-18:** Steering Cylinder Seal Kit

### STEERING ADJUSTMENT

1. Disconnect the cylinder rod ends (if connected).
2. Operate steering so that both ends of the cylinder rod are equal length (1/32 in. [0,8 mm]).
3. Position both tires so they are parallel with the frame and with each other.
4. Adjust the rod ends until they align with the holes on the steering linkage bars.
5. Reinstall the bolts through the steering linkage bars and rod ends. Tighten the jam nuts on the rod ends and all hardware.
6. When properly adjusted, the wheels must turn the same amount in each direction.



## LIFT CYLINDERS

### REMOVAL

1. Elevate platform and install brace.
2. Remove Emergency Lowering Valve Cable and Down Valve wires from the Emergency Lowering/Down Valve.
3. Remove retaining rings securing Lift Cylinder Pivot Pins. On XRT27 machines remove the left roll pin in the Upper Pivot Pin.
4. Remove lower Pivot Pin by driving pin towards locking pin side. Lower cylinder to rest on chassis.
5. Attach a suitable hoisting device and sling to the cylinder and remove upper Pivot Pin.
6. Carefully remove cylinder.

### REPAIR

*Reference:* • “3.12 Cylinder Repair” on Page 3-21.

### INSTALLATION

1. Attach a suitable hoisting device and sling to the cylinder. Carefully position cylinder in the Elevating Assembly and install the upper Pivot Pin.
2. Make sure the Locking Pin fully engages the pivot and pin and install the retaining ring.
3. Install a new roll pin (if equipped).
4. Carefully lift the cylinder and align the lower mount and install the Pivot Pin. Make sure Locking Pin is properly installed then install the retaining ring.
5. Connect the Emergency Lowering Valve cable and Down Valve wires.
6. Unplug hydraulic hoses and attach to the cylinder.
7. Replace hydraulic fluid removed from Lift Cylinder.
8. Test with weight at rated platform load to check system operation. Check for leaks and level of fluid.

## 3.13 DRIVE MOTORS & BRAKES

### REMOVAL

Reference: • Figure

- Figure
- Figure .

### **CAUTION**

*ONLY use a wheel puller to remove the hub. Using any other method of removal may damage the drive motor housing and void the warranty.*

*Clean all fittings before disconnecting the hose assemblies.*

*Plug all port holes and hose assemblies IMMEDIATELY to prevent contamination from dust and debris.*

1. Park the work platform on firm level ground and block the wheels to prevent the work platform from rolling.
2. Loosen the wheel lug bolts on the motor to be removed.
3. Raise the work platform using a 2-ton jack.
4. Position two 1-ton jack stands under the axle to prevent the work platform from falling if the jack fails.
5. Remove the wheel lug bolts and wheel.
6. Remove the cotter pin, nut, hub, and shaft key.
7. Tag and disconnect the hose assemblies.
8. Remove the capscrews and nuts and then remove the drive motor from the motor mount.

### INSTALLATION

1. Position the drive motor into the motor mount and secure with capscrews and nuts.
2. Reinstall the hose assemblies.
3. Reinstall the shaft key, hub, and nut. Torque each wheel hub nut to 350 ft. lbs. (475 N-m). Align the slot in the nut with the hole in the shaft and insert the cotter pin. DO NOT back off the nut to align.
4. Reinstall the wheel and lug bolts onto the hub. Torque the lug bolts to 90 ft. lbs. (122 N-m).
5. Remove the jack stands used to block the wheels. Lower the jack and remove.
6. Operate the drive system to check for leaks.
7. FRONT: Adjust steering. See "Steering Adjustment" on Page 3-22.

## FRONT AXLE

**Figure 3-19:** Front Motor, All Models

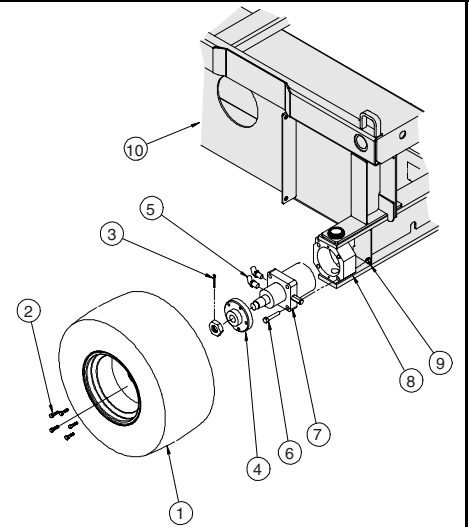
### MOTOR ASSEMBLIES

The front motor assemblies are common to all XRT models.

### REMOVE AND REPLACE

*Reference:* • “3.13 Drive Motors & Brakes” on Page 3-24

1. Wheel & Tire Assembly
2. Wheel Bolts
3. Cotter Pin
4. Hub
5. Hose Fittings
6. Mounting Screw
7. Drive Motor
8. Steering Mount
9. Nut
10. Chassis



## REAR AXLE

### 2 WHEEL DRIVE - BRAKE ASSEMBLIES

Two wheel drive models are equipped with brake assemblies in the rear.

#### REMOVE AND REPLACE

Reference: • “3.13 Drive Motors & Brakes” on Page 3-24

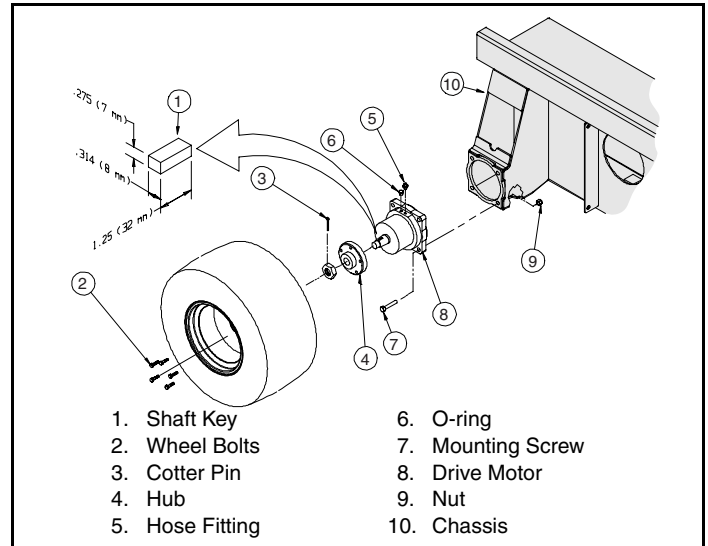
**Figure 3-20:** Rear Brake Assembly

### 4 WHEEL DRIVE - REAR MOTOR ASSEMBLIES

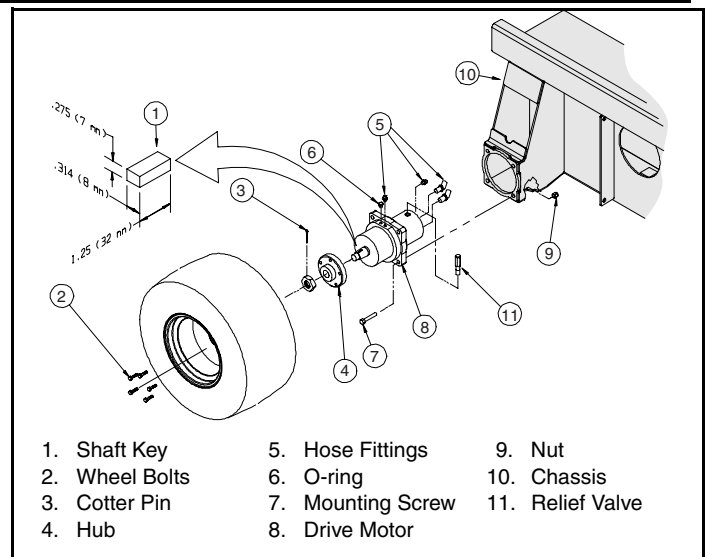
Four wheel drive models are equipped with brake/drive motor assemblies in the rear, and drive motors in the front.

#### REMOVE AND REPLACE

Reference: • “3.13 Drive Motors & Brakes” on Page 3-24



**Figure 3-21:** Rear Motor and Brake Assembly



## 3.14 ELEVATING ASSEMBLY

Reference: • “Lift Cylinders” on Page 3-23 for cylinder repair instructions.

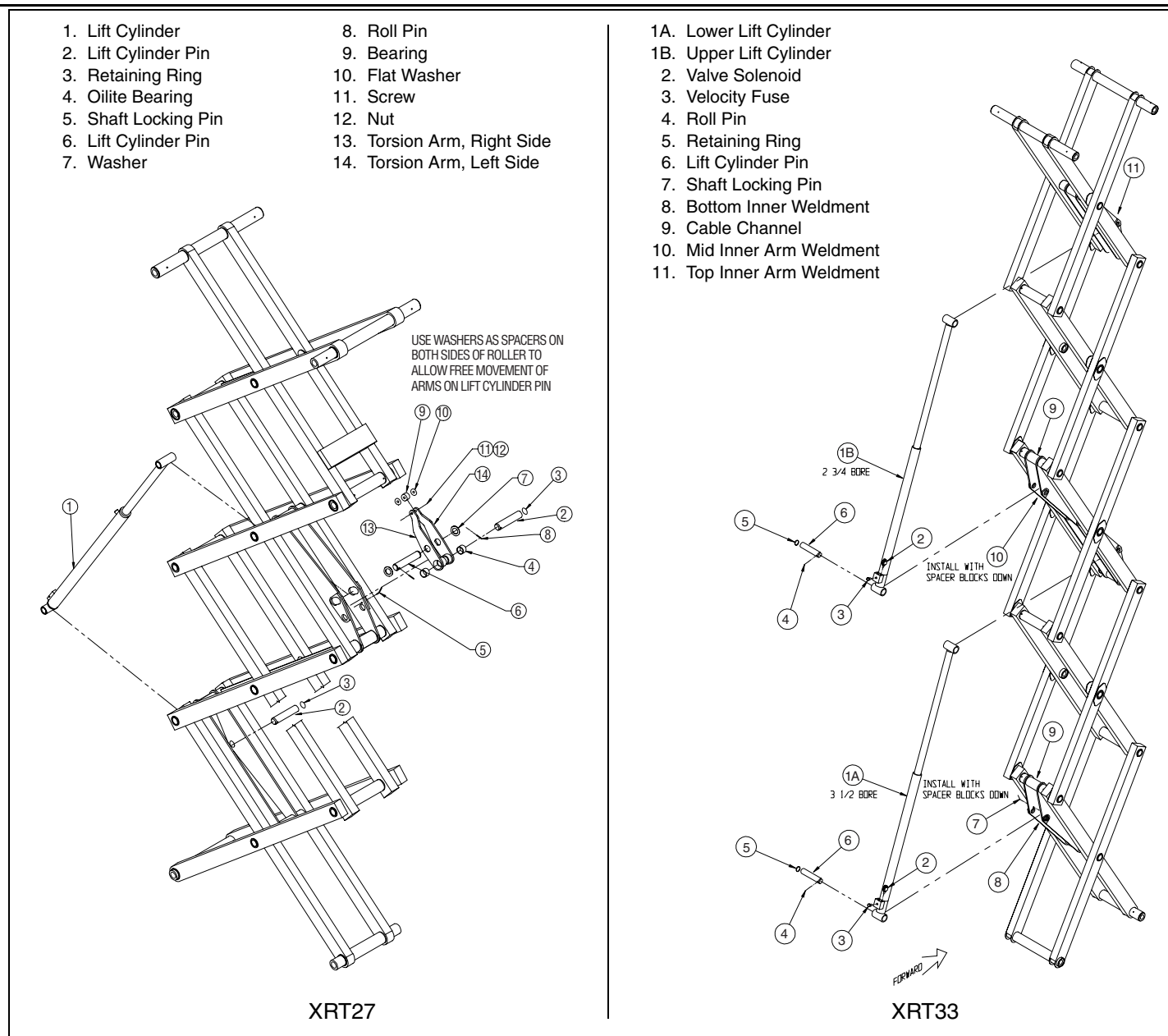
### XRT27

The XRT27 is equipped with a four section scissor assembly, and one Lift Cylinder.

### XRT33

The XRT33 is equipped with a five section scissor assembly and two Lift Cylinders.

**Figure 3-22:** Lift Cylinder Remove and Replace



**! DANGER !**

Use a suitable maintenance stand to access the upper Lift Cylinder on the XRT33. DO NOT stand on the Elevating Assembly

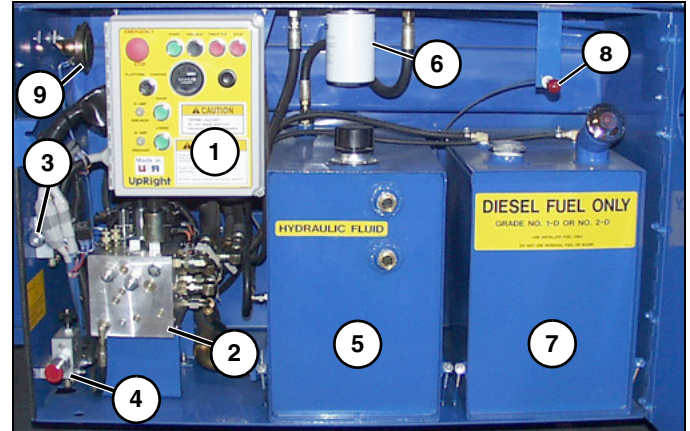
## 3.15 CHASSIS

### CONTROL MODULE

**Figure 3-23: Control Module**

The Control module is located on the left side of the machine, and contains the following;

1. Lower Controls
2. Main Hydraulic Manifold
3. Pressure Reducing Valve (see “Brake Pressure Reducing Valve” on Page 3-20)
4. Brake Release Pump
5. Hydraulic Oil Tank (see “Hydraulic Oil Tank” on Page 3-15)
6. Hydraulic Oil Filter (see “Hydraulic Oil and Filter Replacement” on Page 3-15)
7. Fuel tank (see “Fuel Supply” on Page 3-13)
8. Emergency Down Control
9. Horn (Optional)

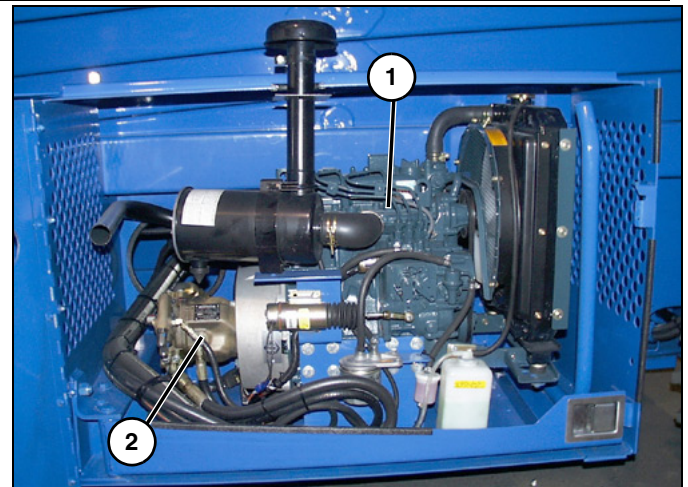


### POWER MODULE

**Figure 3-24: Power Module**

The Power Module is located on the right side of the machine, and contains the following;

1. Engine (see “Power” on Page 3-8)
2. Hydraulic Pump



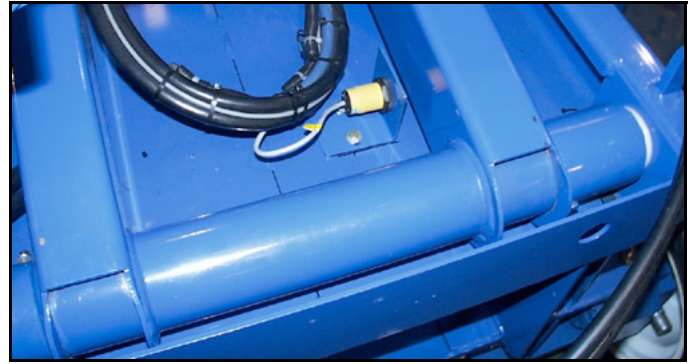


## PLATFORM DOWN LIMIT SWITCH

**Figure 3-25:** Platform Down Limit Switch

The Platform Down Switch closes the circuit to

- the Cutout Relay, bypassing the Tilt Sensor when the platform is lowered;
- and to the Platform Down Relay, which provides power to the Drive Relay, Proportional Controller high speed circuit, and Series/Parallel Relay.

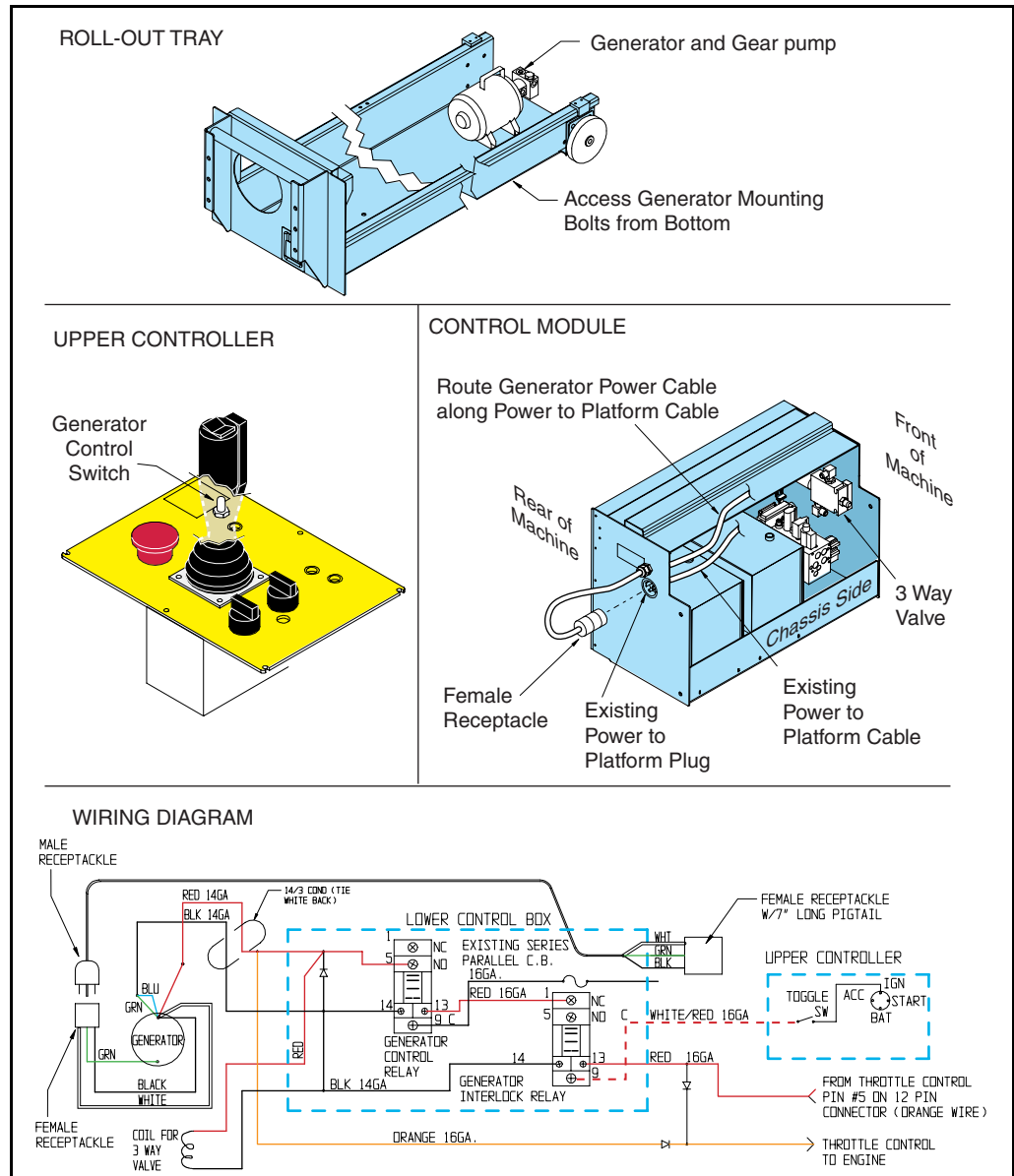


### **! WARNING !**

*DO NOT attempt to adjust Limit Switches without first blocking the elevating assembly (see section 2).*

## 3.16 GENERATOR OPTION

**Figure 3-26:** Generator Option

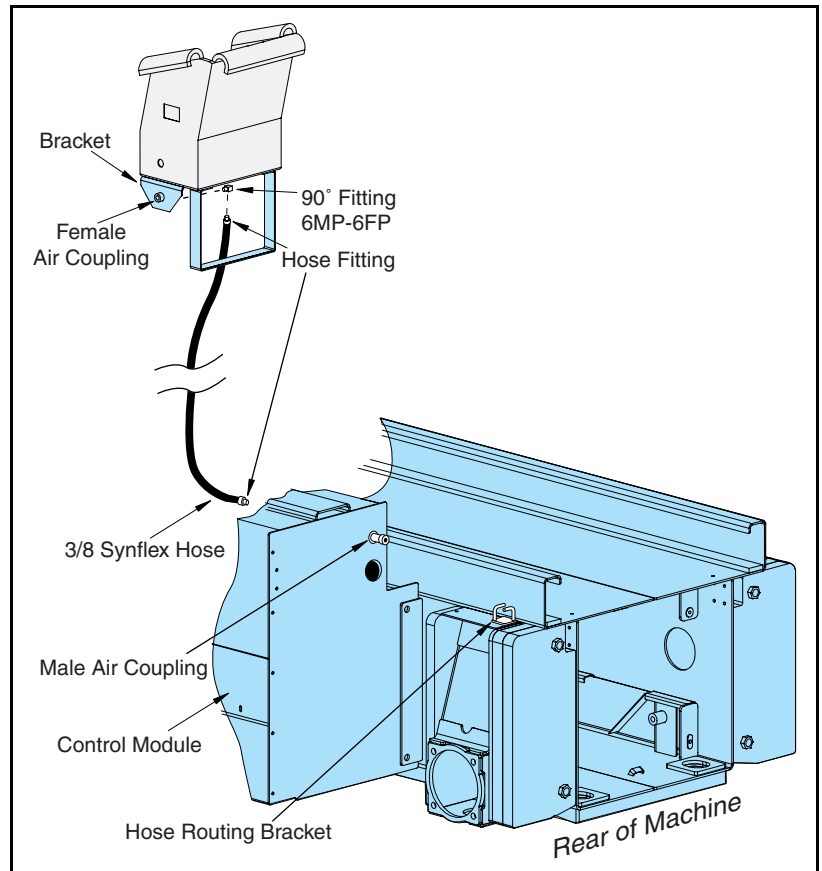


The generator option includes;

1. 2000 Watt Generator and Gear Pump.  
Mounted inside the roll-out tray.
2. Generator Control Switch.  
Mounted on the Upper Controller.
3. Three way Valve.  
Mounted inside the Control Module.
4. Power Cable.  
Three conductor 14 gauge wire.
5. Hose Kit.  
Refer to *Section 6 - Hose Kit, Generator Option*.

## 3.17 AIR TO PLATFORM OPTION

**Figure 3-27:** Air to Platform Option



**NOTE:** The Air to Platform Option is not compatible with the Removable Controller Option.

Route the air line along the control cable line. The air line is attached to a bracket at the bottom of the upper controller.

Attach an external air supply hose to the male coupler on the rear of the Control Module. Route the external air supply hose through the Hose Routing Bracket on the chassis.

When facing the controller, there is a female air coupling on the right side of the Upper Controller. Attach an air supply line for air driven power tools there.

## 3.18 LONG TERM STORAGE

**NOTE:** Do not drain the hydraulic system prior to long term storage.

If the work platform is to be placed in long term storage (dead storage) follow these recommended preservation procedures.

### PRESERVATION

1. Clean painted surfaces. If paint is damaged, repaint.

**IMPORTANT:** Do not fill the hydraulic tank while the platform is elevated.

2. Fill the hydraulic tank to operating level. Fluid will be visible at the sight gauge.
3. Coat exposed portions of cylinder rods with a preservative such as multipurpose grease and wrap with a barrier material.
4. Coat all exposed unpainted metal surfaces with preservative.
5. Service the engine according to the manufacturers recommendations.
6. Remove the battery and place in alternative service.

## 3.19 TORQUE SPECIFICATIONS

### HYDRAULIC COMPONENTS

**NOTE:** Always lubricate threads with clean hydraulic oil prior to installation

Use the following values to torque hydraulic components used on UpRight Work Platforms.

**Table 3-3:** Torque Specifications for Hydraulic Components

Type: SAE Part Series	Cartridge Poppet		Fittings		Hoses	
	Ft/Lbs	Nm	Ft/Lbs	Nm	Ft/Lbs	Nm
#4	N/A	N/A	N/A	N/A	135-145	15-16
#6	N/A	N/A	10-20	14-27	215-245	24-28
#8	25-30	34-41	25-30	34-41	430-470	49-53
#10	35-40	47-54	35-40	47-54	680-750	77-85
#12	85-90	115-122	85-90	115-122	950-1050	107-119
#16	130-140	176-190	130-140	176-190	1300-1368	147-155

### FASTENERS

This standard applies to the preloading of fasteners measured by installation torque.

**NOTE:** For other preloading methods or fasteners consult UpRight Engineering Department.





This general standard applies to all SAE and Metric fasteners unless otherwise specified.

#### THREAD CONDITION



- For lubed or zinc plated fasteners use  $K = .15$
- For dry unplated fasteners use  $K = .20$

#### TORQUE TABLES


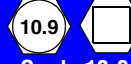

**Table 3-4:** Torque Specifications for SAE Fasteners

		 SAE J429 Grade 5			 SAE J429 Grade 8		
Nominal Thread Size		Clamp Load	Tightening Torque		Clamp Load	Tightening Torque	
			K=.15	K=.20		K=.15	K=.20
		lbs.	in-lbs.	in-lbs.	lbs.	in-lbs.	in-lbs.
Unified Coarse Thread Series	1/4 -20	2,000	75	100	2850	107	143
	5/16 -18	3,350	157	210	4700	220	305
		lbs.	ft-lbs.	ft-lbs.	lbs.	ft-lbs.	ft-lbs.
	3/8-16	4,950	23	31	6950	32.5	44
	7/16-14	6,800	37	50	9600	53	70
	1/2-13	9,050	57	75	12800	80	107
	9/16-12	11,600	82	109	16400	115	154
	5/8-11	14,500	113	151	20300	159	211
	3/4-10	21,300	200	266	30100	282	376
	7/8-9	29,435	321	430	41550	454	606
	1-8	38,600	483	640	54540	680	900
		 SAE J429 Grade 5			 SAE J429 Grade 8		
Nominal Thread Size		Clamp Load	Tightening Torque		Clamp Load	Tightening Torque	
			K=.15	K=.20		K=.15	K=.20
		lbs.	in-lbs.	in-lbs.	lbs.	in-lbs.	in-lbs.
Unified Fine Thread Series	1/4 -28	2,300	85	115	3250	120	163
	5/16-24	3,700	173	230	5200	245	325
		lbs.	ft-lbs.	ft-lbs.	lbs.	ft-lbs.	ft-lbs.
	3/8-24	5,600	26	35	7900	37	50
	7/16-20	7,550	42	55	10700	59	78
	1/2-20	10,200	64	85	14400	90	120
	9/16-18	13,000	92	122	18300	129	172
	5/8-18	16,300	128	170	23000	180	240
	3/4-16	23,800	223	298	33600	315	420
	7/8-14	32,480	355	473	45855	500	668
	1-12	42,270	528	704	59670	745	995

**Table 3-5:** Torque Specifications for Metric Fasteners, U.S. Customary Units

Nomin al Thread Size	 <b>Grade 8.8</b>			 <b>Grade 10.9</b>			 <b>Grade 12.9</b>		
	Clamp Load	Tightening Torque		Clamp Load	Tightening Torque		Clamp Load	Tightening Torque	
		K = .15	K = .20		K = .15	K = .20		K = .15	K = .20
mm	lbs.	in-lbs.	in-lbs.	lbs.	in-lbs.	in-lbs.	lbs.	in-lbs.	in-lbs.
3	-	-	-	-	-	-	823	14.6	19.5
3.5	-	-	-	-	-	-	1,109	22.9	30.5
4	-	-	-	-	-	-	1,436	33.9	45.2
5	1,389	41.0	19.5	1,987	58.7	19.5	2,322	68.6	91.2
6	1,966	69.7	28.3	2,813	100.0	28.3	3,287	116.8	155.8
7	2,826	116.8	37.2	4,044	167.3	37.2	4,727	195.6	260.2
		ft-lbs.	ft-lbs.		ft-lbs.	ft-lbs.		ft-lbs.	ft-lbs.
8	3,579	14.1	18.8	5,122	20.1	26.9	5,986	23.6	31.4
10	11,742	27.9	37.2	8,117	39.9	53.3	9,486	46.7	62.3
12	8,244	48.7	64.9	11,797	69.7	92.2	13,787	81.1	108.4
14	11,246	77.4	103.3	16,093	110.6	147.5	18,808	129.1	172.6
16	15,883	125.4	166.7	21,971	173.3	230.9	25,677	202.1	269.2
18	19,424	171.9	229.4	26,869	238.2	317.2	31,401	278.1	371.0
20	2,304	243.4	325.3	34,286	337.8	449.9	40,070	394.6	525.9
22	30,653	331.9	442.5	42,403	458.8	612.2	49,556	536.2	715.4
24	35,711	420.4	562.0	49,400	583.4	778.1	57,733	682.2	909.4
27	46,435	617.3	84.8	64,235	853.4	1138.1	75,069	997.2	1329.8
30	56,753	837.9	1117.4	78,509	1159.4	1545.2	91,751	1354.9	1807.0
33	70,208	1140.3	1520.1	97,121	1576.9	2102.8	113,503	1843.9	2457.5
36	82,651	1464.1	1952.3	114,334	2025.3	2700.9	133,620	2367.6	3156.0

**Table 3-6:** Torque Specifications for Metric Fasteners, SI Units

Nomin al Thread Size	 <b>Grade 8.8</b>			 <b>Grade 10.9</b>			 <b>Grade 12.9</b>		
	Clamp Load	Tightening Torque		Clamp Load	Tightening Torque		Clamp Load	Tightening Torque	
		K = .15	K = .20		K = .15	K = .20		K = .15	K = .20
mm	N	N-m	N-m	N	N-m	N-m	N	N-m	N-m
3	-	-	-	-	-	-	3,660	1.65	2.2
3.5	-	-	-	-	-	-	4,932	2.59	3.45
4	-	-	-	-	-	-	6,387	3.83	5.11
5	6,177	4.63	2.2	8,840	6.63	2.2	10,330	7.75	10.3
6	8,743	7.87	3.2	12,512	11.3	3.2	14,623	13.2	17.6
7	12,570	13.2	4.2	17,990	18.9	4.2	21,025	22.1	29.4
8	15,921	19.1	25.5	22,784	27.3	36.5	26,626	32	42.6
10	52,230	37.8	50.5	36,105	54.1	72.2	42,195	63.3	84.4
12	36,670	66	88	52,475	94.5	125	61,328	110	147
14	50,025	105	140	71,587	150	200	83,663	175	234
16	70,650	170	226	97,732	235	313	114,218	274	365
18	86,400	233	311	119,520	323	430	139,680	377	503
20	10,250	330	441	152,513	458	610	178,238	535	713
22	136,350	450	600	188,618	622	830	220,433	727	970
24	158,850	570	762	219,743	791	1055	256,808	925	1233
27	206,550	837	115	285,728	1157	1543	333,923	1352	1803
30	252,450	1136	1515	349,223	1572	2095	408,128	1837	2450
33	312,300	1546	2061	432,015	2138	2851	504,885	2500	3332
36	367,650	1985	2647	508,582	2746	3662	594,368	3210	4279

# TROUBLESHOOTING

## 4.1 INTRODUCTION

The following section on troubleshooting provides guidelines on the types of problems users may encounter in the field, helps determine the cause of problems, and suggests proper corrective action.

Careful inspection and accurate analysis of the symptoms listed in the Troubleshooting Guide will localize the trouble more quickly than any other method. This manual cannot cover all possible problems that may occur. If a specific problem is not covered in this manual, call our toll free number for service assistance.

Referring to Section 2.0 and 5.0 will aid in understanding the operation and function of the various components and systems of the Work Platform and help in diagnosing and repair of the machine.

### GENERAL PROCEDURE

Thoroughly study hydraulic and electronic schematics in **Section 5**. Check for loose connections and short circuits. Check/repair/replace each component in the Truth Table which is listed under each machine function which does not operate properly.

Use the charts on the following pages to help determine the cause of a fault in your UpRight Work Platform.

**NOTE:** Spike protection diodes at components have been left out of the charts to eliminate confusion.

## **W A R N I N G**

*When troubleshooting, ensure that the work platform is resting on a firm, level surface.*

*Unplug the machine or disconnect the battery when replacing or testing the continuity of any electrical component.*

**UPRIGHT USA**      Tel: 1-559-891-5200  
                               FAX: 1-559-896-9244

**UPRIGHT EUROPE**    Tel: +31-10-238-0000  
                               FAX: +31-10-238-0001



## 4.2 TROUBLESHOOTING

1. Verify your problem.
  - Do a full function test from both platform controls and chassis controls and note all functions that are not operating correctly.
2. Narrow the possible causes of the malfunction.
  - Use the troubleshooting guide to determine which components are common to all circuits that are not functioning correctly.
3. Identify the problem component.
  - Test components that are common to all circuits that are not functioning correctly. Remember to check wires and terminals between suspect components. Be sure to check connections to battery negative.
4. Repair or replace component found to be faulty.
5. Verify that repair is complete.
  - Do a full function test from both platform and chassis controls to verify that all functions are operating correctly and machine is performing to specified values

### SPECIAL TOOLS

Following is a list of tools which may be required to perform certain maintenance procedures on the UpRight Work Platform.

- Flow Meter with Pressure Gauge  
(UpRight P/N 067040-000)
- 0-1000 PSI Hydraulic Pressure Gauge with Adapter Fittings (UpRight P/N 014124-010)
- 0-3000 PSI Hydraulic Pressure Gauge with Adapter Fittings (UpRight P/N 014124-030)
- Adapter Fitting (UpRight P/N 063965-002)
- Inclinator (UpRight P/N 010119-000)
- SuperFlex Optimizer (UpRight P/N 100329-000)
- Crimping Tool (UpRight P/N 028800-009)
- Terminal Removal Tool  
(UpRight P/N 028800-006)

### ADJUSTMENT PROCEDURES

Hydraulic settings must be checked whenever a component is repaired or replaced.

Remove counter balance valves and “bench test” them if they are suspect.

Connect a pressure meter of appropriate range to the test port located on the hydraulic manifold.

Correct pressure settings are listed in the hydraulic schematic.

Refer to SuperFlex Optimizer settings listed in SuperFlex manual supplied with Optimizer.

### CHECKING PUMP PRESSURES

Remove hose from pump port and connect pressure tester.

**NOTES:**

---

# 4.3 ELECTRIC SCHEMATICS

## TWO WHEEL DRIVE, DUAL FUEL

**Table 4-1:** Electrical Trouble Shooting, 2WD - Dual Fuel

	FUNCTION	UPPER CONTROL FUNCTIONS	LOWER CONTROL FUNCTIONS	LIFT	DRIVE FORWARD	CREEP	STEER LEFT	STEER RIGHT	BATTERY CHARGE	DOWN	DRIVE REVERSE	BRAKES	ENGINE START	ENGINE RUN	TILT WARNING CUTOFF
ALM	Alarm			OPT	OPT	OPT				X	OPT				X
ALT	Alternator								X						
BAT	Battery	X	X										X	X	
C/D	Coil/Distributor												X	X	
D1	Diode, Upper Controller	X			X	X					X				
D2	Diode, Coil/Distributor												X	X	
D3	Diode, Throttle Solenoid												X	X	
D4	Diode, Throttle Relay												X	X	
F1	Emergency Stop Circuit Breaker	X	X	X	X	X	X	X		X	X	X	X	X	X
F2	Power Circuit Breaker	X	X	X	X	X	X	X		X	X	X	X	X	X
MOT1	Starter and Solenoid												X		
MOT2	Fuel Pump												X	X	
PS1	Oil Pressure Switch												X	X	
R1	Throttle Relay												X	X	
R2	Down Relay									X					
R3	Ignition Relay												X	X	
S1	Controller Micro Switch, Upper Controls	X		X	X	X					X				
S2	Reverse Micro Switch, Upper Controls									X	X				
S3	Forward Micro Switch, Upper Controls			X	X										
S4	Interlock Micro Switch, Upper Controls	X		X	X	X	X	X		X	X				
S5	Steering Micro Switch, Upper Controls						X	X							
S6	Drive Switch, Upper Controls				X	X					X				
S7	Lift Switch, Upper Controls			X						X					
S8	Torque Switch, Upper Controls				X						X				
S9	Ignition Switch, Upper Controls												X	X	
S10	Choke Switch, Upper Controls												X	X	
S11	Emergency Stop Switch, Upper Controls	X	X	X	X	X	X	X		X	X		X	X	X
S12	Starter Switch, Lower Controls												X	X	
S13	Choke Switch, Lower Controls												X	X	
S14	Engine Stop Switch, Lower Controls												X	X	
S15	Emergency Stop Switch, Lower Controls	X	X	X	X	X	X	X		X	X		X	X	X
S16	Chassis Platform Switch, Lower Controls	X	X												
S17	Down Switch, Lower Controls		X							X					
S18	Lift Switch, Lower Controls		X	X											
S19	Gasoline Switch, Lower Controls												X	X	
S20	Propane Switch, Lower Controls												X	X	
S21	Throttle Switch, Lower Controls												X	X	
S22	Proximity Switch				X	X					X				
S23	Up Limit Switch			X											
SEN	Level Sensor	X	X	X	X	X	X	X			X				X
SOL1	Throttle Solenoid, Power Module												X	X	

**Table 4-1:** Electrical Trouble Shooting, 2WD - Dual Fuel (Continued)

	COMPONENT	FUNCTION	UPPER CONTROL FUNCTIONS	LOWER CONTROL FUNCTIONS	LIFT	DRIVE FORWARD	CREEP	STEER LEFT	STEER RIGHT	BATTERY CHARGE	DOWN	DRIVE REVERSE	BRAKES	ENGINE START	ENGINE RUN	TILT WARNING CUTOFF
SOL2	LP Shutoff Solenoid, Power Module													X	X	
SOL3	LP Valve Solenoid, Power Module													X	X	
SOL4	Gasoline Solenoid, Power Module													X	X	
SOL5	Choke Solenoid, Power Module													X	X	
SOL6	Proportional Solenoid, Valve Block	X			X	X	X					X				
SOL7	Forward Solenoid, Valve Block					X										
SOL8	Reverse Solenoid, Valve Block											X				
SOL9	Lift Solenoid, Valve Block				X											
SOL10	Series Parallel Solenoid, Valve Block					X	X							X		
SOL11	Series Parallel Solenoid, Valve Block					X	X							X		
SOL12	Down Solenoid, Lift Cylinder										X					
SOL13	Steer Right Solenoid, Valve Block								X							
SOL14	Steer Left Solenoid, Valve Block							X								

# FOUR WHEEL DRIVE, DUAL FUEL

**Table 4-2:** Electronic Truth Table - Four Drive Wheel, Dual Fuel

	COMPONENT	FUNCTION	UPPER CONTROL FUNCTIONS	LOWER CONTROL FUNCTIONS	LIFT	DRIVE FORWARD	CREEP	STEER LEFT	STEER RIGHT	BATTERY CHARGE	DOWN	DRIVE REVERSE	BRAKES	ENGINE START	ENGINE RUN	TILT WARNING CUTOFF
ALM	Alarm				OPT	OPT	OPT				X	OPT				X
ALT	Alternator									X						
BAT	Battery	X	X											X	X	
C/D	Coil/Distributor													X	X	
D1	Diode, Upper Controller	X			X	X						X				
D2	Diode, Coil/Distributor													X	X	
D3	Diode, Throttle Solenoid													X	X	
D4	Diode, Throttle Relay													X	X	
F1	Emergency Stop Circuit Breaker	X	X	X	X	X	X	X	X		X	X	X	X	X	X
F2	Power Circuit Breaker	X	X	X	X	X	X	X	X		X	X	X	X	X	X
F3	Series Parallel Circuit Breaker				X							X				
MOT1	Starter and Solenoid													X		
MOT2	Fuel Pump													X	X	
PS1	Oil Pressure Switch													X	X	
R1	Throttle Relay													X	X	
R2	Down Relay										X					
R3	Ignition Relay													X	X	
R5	Time Delay Relay				X							X				
R6	Series Parallel Relay				X	X						X				
S1	Controller Micro Switch, Upper Controls	X		X	X	X						X				
S2	Reverse Micro Switch, Upper Controls										X	X				
S3	Forward Micro Switch, Upper Controls			X	X											
S4	Interlock Micro Switch, Upper Controls	X		X	X	X	X	X			X	X				
S5	Steering Micro Switch, Upper Controls						X	X								
S6	Drive Switch, Upper Controls				X	X						X				
S7	Lift Switch, Upper Controls			X							X					
S8	Torque Switch, Upper Controls				X							X				
S9	Ignition Switch, Upper Controls													X	X	
S10	Choke Switch, Upper Controls													X	X	
S11	Emergency Stop Switch, Upper Controls	X	X	X	X	X	X	X			X	X		X	X	X
S12	Starter Switch, Lower Controls													X	X	
S13	Choke Switch, Lower Controls													X	X	
S14	Engine Stop Switch, Lower Controls													X	X	
S15	Emergency Stop Switch, Lower Controls	X	X	X	X	X	X	X			X	X		X	X	X
S16	Chassis Platform Switch, Lower Controls	X	X													
S17	Down Switch, Lower Controls		X								X					
S18	Lift Switch, Lower Controls		X	X												
S19	Gasoline Switch, Lower Controls													X	X	
S20	Propane Switch, Lower Controls													X	X	
S21	Throttle Switch, Lower Controls													X	X	
S22	Proximity Switch				X	X						X				
S23	Up Limit Switch			X												
SEN	Level Sensor	X	X	X	X	X	X	X				X				X

**Table 4-2:** Electronic Truth Table - Four Drive Wheel, Dual Fuel (Continued)

	COMPONENT	FUNCTION	UPPER CONTROL FUNCTIONS	LOWER CONTROL FUNCTIONS	LIFT	DRIVE FORWARD	CREEP	STEER LEFT	STEER RIGHT	BATTERY CHARGE	DOWN	DRIVE REVERSE	BRAKES	ENGINE START	ENGINE RUN	TILT WARNING CUTOFF
SOL1	Throttle Solenoid, Power Module													X	X	
SOL2	LP Shutoff Solenoid, Power Module													X	X	
SOL3	LP Valve Solenoid, Power Module													X	X	
SOL4	Gasoline Solenoid, Power Module													X	X	
SOL5	Choke Solenoid, Power Module													X	X	
SOL6	Proportional Solenoid, Valve Block	X		X	X	X						X				
SOL7	Forward Solenoid, Valve Block				X											
SOL8	Reverse Solenoid, Valve Block											X				
SOL9	Lift Solenoid, Valve Block			X												
SOL10	Series Parallel Solenoid, Valve Block				X	X								X		
SOL11	Series Parallel Solenoid, Valve Block				X	X								X		
SOL12	Down Solenoid, Lift Cylinder										X					
SOL13	Steer Right Solenoid, Valve Block								X							
SOL14	Steer Left Solenoid, Valve Block							X								
SOL15	Shunt Solenoid, Valve Block				X	X						X				
SOL16	Series Parallel Solenoid, Front Valve Block				X	X						X				
SOL17	Series Parallel Solenoid, Front Valve Block				X	X						X				
SOL18	Series Parallel Solenoid, Rear Valve Block				X	X						X				
SOL19	Series Parallel Solenoid, Rear Valve Block				X	X						X				

## TWO WHEEL DRIVE, DIESEL

**Table 4-3:** Electronic Truth Table - Two Wheel Drive, Diesel

	COMPONENT	FUNCTION	UPPER CONTROL FUNCTIONS	LOWER CONTROL FUNCTIONS	LIFT	DRIVE FORWARD	CREEP	STEER LEFT	STEER RIGHT	BATTERY CHARGE	DOWN	DRIVE REVERSE	BRAKES	ENGINE START	ENGINE RUN	TILT WARNING CUTOFF
ALM	Alarm				OPT	OPT	OPT				X	OPT				X
ALT	Alternator									X						
BAT	Battery		X	X										X	X	
D1	Diode, Upper Controller		X			X	X					X				
D2	Diode, Glow Plug Relay													X	X	
D3	Diode, Throttle Solenoid													X	X	
D4	Diode, Throttle Relay													X	X	
D5	Diode, Glow Plug Power													X	X	
F1	Emergency Stop Circuit Breaker		X	X	X	X	X	X	X		X	X	X	X	X	X
F2	Power Circuit Breaker		X	X	X	X	X	X	X		X	X	X	X	X	X
F3	Series Parallel Circuit Breaker					X						X				
MOT1	Starter and Solenoid													X		
MOT2	Fuel Pump													X	X	
PS1	Oil Pressure Switch													X	X	
R1	Throttle Relay													X	X	
R2	Down Relay										X					
R3	Ignition Relay													X	X	
R4	Glow Plug Relay													X	X	
RES1	Glow Plug													X	X	
S1	Controller Micro Switch, Upper Controls		X		X	X	X					X				
S2	Reverse Micro Switch, Upper Controls										X	X				
S3	Forward Micro Switch, Upper Controls				X	X										
S4	Interlock Micro Switch, Upper Controls		X		X	X	X	X	X		X	X				
S5	Steering Micro Switch, Upper Controls							X	X							
S6	Drive Switch, Upper Controls					X	X					X				
S7	Lift Switch, Upper Controls				X						X					
S8	Torque Switch, Upper Controls					X						X				
S9	Ignition Switch, Upper Controls													X	X	
S10	Glow Plug Switch, Upper Controls													X	X	
S11	Emergency Stop Switch, Upper Controls		X	X	X	X	X	X	X		X	X		X	X	X
S12	Starter Switch, Lower Controls													X	X	
S13	Glow Plug Switch, Lower Controls													X	X	
S14	Engine Stop Switch, Lower Controls													X	X	
S15	Emergency Stop Switch, Lower Controls		X	X	X	X	X	X	X		X	X		X	X	X
S16	Chassis Platform Switch, Lower Controls		X	X												
S17	Down Switch, Lower Controls			X							X					
S18	Lift Switch, Lower Controls			X	X											
S19	Gasoline Switch, Lower Controls													X	X	
S20	Propane Switch, Lower Controls													X	X	
S21	Throttle Switch, Lower Controls													X	X	
S22	Proximity Switch					X	X					X				
SEN	Level Sensor		X	X	X	X	X	X	X			X				X
SOL1	Throttle Solenoid, Power Module													X	X	



**Table 4-3:** Electronic Truth Table - Two Wheel Drive, Diesel (Continued)

	COMPONENT	FUNCTION	UPPER CONTROL FUNCTIONS	LOWER CONTROL FUNCTIONS	LIFT	DRIVE FORWARD	CREEP	STEER LEFT	STEER RIGHT	BATTERY CHARGE	DOWN	DRIVE REVERSE	BRAKES	ENGINE START	ENGINE RUN	TILT WARNING CUTOFF
SOL5	Glow Plug Solenoid, Power Module													X	X	
SOL6	Proportional Solenoid, Valve Block	X		X	X	X						X				
SOL7	Forward Solenoid, Valve Block				X											
SOL8	Reverse Solenoid, Valve Block											X				
SOL9	Lift Solenoid, Valve Block			X												
SOL10	Series Parallel Solenoid, Valve Block				X	X								X		
SOL11	Series Parallel Solenoid, Valve Block				X	X								X		
SOL12	Down Solenoid, Lift Cylinder										X					
SOL13	Steer Right Solenoid, Valve Block								X							
SOL14	Steer Left Solenoid, Valve Block							X								

# FOUR WHEEL DRIVE, DIESEL

**Table 4-4:** Electronic Truth Table - Four Wheel Drive, Diesel

	COMPONENT	FUNCTION	UPPER CONTROL FUNCTIONS	LOWER CONTROL FUNCTIONS	LIFT	DRIVE FORWARD	CREEP	STEER LEFT	STEER RIGHT	BATTERY CHARGE	DOWN	DRIVE REVERSE	BRAKES	ENGINE START	ENGINE RUN	TILT WARNING CUTOFF
ALM	Alarm				OPT	OPT	OPT				X	OPT				X
ALT	Alternator									X						
BAT	Battery		X	X										X	X	
C/D	Coil/Distributor													X	X	
D1	Diode, Upper Controller		X			X	X					X				
D2	Diode, Glow Plug Relay													X	X	
D3	Diode, Throttle Solenoid													X	X	
D4	Diode, Throttle Relay													X	X	
D5	Diode, Glow Plug Power													X	X	
F1	Emergency Stop Circuit Breaker		X	X	X	X	X	X	X		X	X	X	X	X	X
F2	Power Circuit Breaker		X	X	X	X	X	X	X		X	X	X	X	X	X
F3	Series Parallel Circuit Breaker					X						X				
MOT1	Starter and Solenoid													X		
MOT2	Fuel Pump													X	X	
PS1	Oil Pressure Switch													X	X	
R1	Throttle Relay													X	X	
R2	Down Relay										X					
R3	Ignition Relay													X	X	
R5	Time Delay Relay					X						X				
R6	Series Parallel Relay					X	X					X				
S1	Controller Micro Switch, Upper Controls		X		X	X	X					X				
S2	Reverse Micro Switch, Upper Controls										X	X				
S3	Forward Micro Switch, Upper Controls				X	X										
S4	Interlock Micro Switch, Upper Controls		X		X	X	X	X	X		X	X				
S5	Steering Micro Switch, Upper Controls							X	X							
S6	Drive Switch, Upper Controls					X	X					X				
S7	Lift Switch, Upper Controls				X						X					
S8	Torque Switch, Upper Controls					X						X				
S9	Ignition Switch, Upper Controls													X	X	
S10	Glow Plug Switch, Upper Controls													X	X	
S11	Emergency Stop Switch, Upper Controls		X	X	X	X	X	X	X		X	X		X	X	X
S12	Starter Switch, Lower Controls													X	X	
S13	Glow Plug Switch, Lower Controls													X	X	
S14	Engine Stop Switch, Lower Controls													X	X	
S15	Emergency Stop Switch, Lower Controls		X	X	X	X	X	X	X		X	X		X	X	X
S16	Chassis Platform Switch, Lower Controls		X	X												
S17	Down Switch, Lower Controls			X							X					
S18	Lift Switch, Lower Controls			X	X											
S21	Throttle Switch, Lower Controls													X	X	
S22	Proximity Switch					X	X					X				
S23	Up Limit Switch				X											
SEN	Level Sensor		X	X	X	X	X	X	X			X				X
SOL1	Throttle Solenoid, Power Module													X	X	

**Table 4-4:** Electronic Truth Table - Four Wheel Drive, Diesel (Continued)

	COMPONENT	FUNCTION	UPPER CONTROL FUNCTIONS	LOWER CONTROL FUNCTIONS	LIFT	DRIVE FORWARD	CREEP	STEER LEFT	STEER RIGHT	BATTERY CHARGE	DOWN	DRIVE REVERSE	BRAKES	ENGINE START	ENGINE RUN	TILT WARNING CUTOFF
SOL5	Glow Plug Solenoid, Power Module													X	X	
SOL6	Proportional Solenoid, Valve Block	X		X	X	X						X				
SOL7	Forward Solenoid, Valve Block				X											
SOL8	Reverse Solenoid, Valve Block											X				
SOL9	Lift Solenoid, Valve Block			X												
SOL10	Series Parallel Solenoid, Valve Block				X	X								X		
SOL11	Series Parallel Solenoid, Valve Block				X	X								X		
SOL12	Down Solenoid, Lift Cylinder										X					
SOL13	Steer Right Solenoid, Valve Block								X							
SOL14	Steer Left Solenoid, Valve Block							X								
SOL15	Shunt Solenoid, Valve Block				X	X						X				
SOL16	Series Parallel Solenoid, Front Valve Block				X	X						X				
SOL17	Series Parallel Solenoid, Front Valve Block				X	X						X				
SOL18	Series Parallel Solenoid, Rear Valve Block				X	X						X				
SOL19	Series Parallel Solenoid, Rear Valve Block				X	X						X				

## 4.4 HYDRAULIC SCHEMATICS

### XRT27, Two Wheel Drive

**Table 4-5:** Hydraulic Truth Table - XRT27, Two Wheel Drive

COMPONENT		FUNCTION	LIFT	DRIVE FORWARD	DRIVE REVERSE	CREEP	STEER LEFT	STEER RIGHT	DOWN	BRAKES
CV	Check Valve			X	X	X				
CYL1	Steering Cylinder						X	X		
CYL2	Lift Cylinder		X						X	
CYL4, 5	Brakes									X
M1	Front Drive Motor, Left Side			X	X	X				
M2	Front Drive Motor, Right Side			X	X	X				
ORF1	Steering Orifice						X	X		
ORF2	Down Orifice								X	
ORF4	Brake Orifice									X
P1	Hydraulic Pump		X	X	X	X	X	X		X
P2	Brake Release Pump									X
RV1	Steer Relief Valve						X	X		
RV2	Lift Relief Valve		X							
RV3	Motor Relief Valve, Left Front			X	X	X				
RV4	Motor Relief Valve, Right Front			X	X	X				
RV7	Pressure Reducing Valve									X
SV1	Shuttle Valve		X	X	X	X	X	X		
SV2	Shuttle Valve		X	X	X	X	X	X		
SV3	Steering Shuttle Valve						X	X		
SV4	Brake Shuttle Valve									X
V1	Steering Valve						X	X		
V2	Emergency Down Valve								X	
V3	Proportional Valve		X	X	X	X				
V4	Lift Valve		X							
V5	Forward valve			X		X				
V6	Reverse valve				X	X				
V7	Reverse Counter Balance Valve				X	X				
V8	Forward Counter Balance Valve			X		X				
V9	Series Parallel Valve			X	X	X				
V10	Series Parallel Valve			X	X	X				
V18	Down Valve, Lower Cylinder								X	

## XRT33, Two Wheel Drive

**Table 4-6:** Hydraulic Truth Table - XRT33, Two Wheel Drive

FUNCTION		LIFT	DRIVE FORWARD	DRIVE REVERSE	CREEP	STEER LEFT	STEER RIGHT	DOWN	BRAKES
COMPONENT									
CV	Check Valve		X	X	X				
CYL1	Steering Cylinder					X	X		
CYL2	Lower Lift Cylinder	X						X	
CYL3	Upper Lift Cylinder	X						X	
CYL4, 5	Brakes								X
M1	Front Drive Motor, Left Side		X	X	X				
M2	Front Drive Motor, Right Side		X	X	X				
ORF1	Steering Orifice					X	X		
ORF2, 3	Down Orifice							X	
ORF4	Brake Orifice								X
P1	Hydraulic Pump	X	X	X	X	X	X		X
P2	Brake Release Pump								X
RV1	Steer Relief Valve					X	X		
RV2	Lift Relief Valve	X							
RV3	Motor Relief Valve, Left Front		X	X	X				
RV4	Motor Relief Valve, Right Front		X	X	X				
RV7	Pressure Reducing Valve								X
SV1	Shuttle Valve	X	X	X	X	X	X		
SV2	Shuttle Valve	X	X	X	X	X	X		
SV3	Steering Shuttle Valve					X	X		
SV4	Brake Shuttle Valve								X
V1	Steering Valve					X	X		
V2	Emergency Down Valve							X	
V3	Proportional Valve	X	X	X	X				
V4	Lift Valve	X							
V5	Forward valve		X		X				
V6	Reverse valve			X	X				
V7	Reverse Counter Balance Valve			X	X				
V8	Forward Counter Balance Valve		X		X				
V9	Series Parallel Valve		X	X	X				
V10	Series Parallel Valve		X	X	X				
V18	Down Valve, Lower Cylinder							X	
V19	Down Valve, Upper Cylinder							X	
V20	Velocity Fuse, Lower Cylinder	X						X	
V21	Velocity Fuse, Upper Cylinder	X						X	

# XRT27, FOUR WHEEL DRIVE

**Table 4-7:** Hydraulic Truth Table - XRT27, Four Wheel Drive

	COMPONENT	FUNCTION	LIFT	DRIVE FORWARD	DRIVE REVERSE	CREEP	STEER LEFT	STEER RIGHT	DOWN	BRAKES
CV	Check Valve			X	X	X				
CYL1	Steering Cylinder						X	X		
CYL2	Lift Cylinder		X						X	
CYL4, 5	Brakes									X
FD1	Flow Divider, Main Valve Block			X	X	X				
FD2	Flow Divider, Front Valve Block			X	X	X				
FD3	Flow Divider, Rear Valve Block			X	X	X				
M1	Front Drive Motor, Left Side			X	X	X				
M2	Front Drive Motor, Right Side			X	X	X				
M3	Rear Drive Motor, Left Side			X	X	X				
M4	Rear Drive Motor, Right Side			X	X	X				
ORF1	Steering Orifice						X	X		
ORF2	Down Orifice								X	
ORF4	Brake Orifice									X
ORF5	Slip Orifice, Front			X	X	X				
ORF6	Slip Orifice, Rear			X	X	X				
P1	Hydraulic Pump		X	X	X	X	X	X		X
P2	Brake Release Pump									X
RV1	Steer Relief Valve						X	X		
RV2	Lift Relief Valve		X							
RV3	Motor Relief Valve, Left Front			X	X	X				
RV4	Motor Relief Valve, Right Front			X	X	X				
RV5	Motor Relief Valve, Left Rear			X	X	X				
RV6	Motor Relief Valve, Right Rear			X	X	X				
RV7	Pressure Reducing Valve									X
SV1	Shuttle Valve		X	X	X	X	X	X		
SV2	Shuttle Valve		X	X	X	X	X	X		
SV3	Steering Shuttle Valve						X	X		
SV4	Brake Shuttle Valve									X
V1	Steering Valve						X	X		
V2	Emergency Down Valve							X		
V3	Proportional Valve		X	X	X	X				
V4	Lift Valve		X							
V5	Forward valve			X		X				
V6	Reverse valve				X	X				
V7	Reverse Counter Balance Valve				X	X				
V8	Forward Counter Balance Valve			X		X				
V9	Series Parallel Valve			X	X	X				
V10	Series Parallel Valve			X	X	X				
V11	Shunt Valve			X	X	X				
V12, 13	Series Parallel Valves, Front			X	X	X				
V14, 15	Diverter Valves, Rear			X	X	X				
V16, 17	Series Parallel Valves, Rear			X	X	X				
V18	Down Valve, Lower Cylinder								X	

**NOTES:**

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# XRT33, FOUR WHEEL DRIVE

**Table 4-8:** Hydraulic Truth Table - XRT33, Four Wheel Drive

COMPONENT		FUNCTION	LIFT	DRIVE FORWARD	DRIVE REVERSE	CREEP	STEER LEFT	STEER RIGHT	DOWN	BRAKES
CV	Check Valve			X	X	X				
CYL1	Steering Cylinder						X	X		
CYL2	Lower Lift Cylinder		X						X	
CYL3	Upper Lift Cylinder		X						X	
CYL4, 5	Brakes									X
FD1	Flow Divider, Main Valve Block			X	X	X				
FD2	Flow Divider, Front Valve Block			X	X	X				
FD3	Flow Divider, Rear Valve Block			X	X	X				
M1	Front Drive Motor, Left Side			X	X	X				
M2	Front Drive Motor, Right Side			X	X	X				
M3	Rear Drive Motor, Left Side			X	X	X				
M4	Rear Drive Motor, Right Side			X	X	X				
ORF1	Steering Orifice						X	X		
ORF2, 3	Down Orifice								X	
ORF4	Brake Orifice									X
ORF5	Slip Orifice, Front			X	X	X				
ORF6	Slip Orifice, Rear			X	X	X				
P1	Hydraulic Pump		X	X	X	X	X	X		X
P2	Brake Release Pump									X
RV1	Steer Relief Valve						X	X		
RV2	Lift Relief Valve		X							
RV3	Motor Relief Valve, Left Front			X	X	X				
RV4	Motor Relief Valve, Right Front			X	X	X				
RV5	Motor Relief Valve, Left Rear			X	X	X				
RV6	Motor Relief Valve, Right Rear			X	X	X				
RV7	Pressure Reducing Valve									X
SV1	Shuttle Valve		X	X	X	X	X	X		
SV2	Shuttle Valve		X	X	X	X	X	X		
SV3	Steering Shuttle Valve						X	X		
SV4	Brake Shuttle Valve									X
V1	Steering Valve						X	X		
V2	Emergency Down Valve								X	
V3	Proportional Valve		X	X	X	X				
V4	Lift Valve		X							
V5	Forward valve			X		X				
V6	Reverse valve				X	X				
V7	Reverse Counter Balance Valve				X					
V8	Forward Counter Balance Valve			X						
V9	Series Parallel Valve			X	X	X				
V10	Series Parallel Valve			X	X	X				
V11	Shunt Valve			X	X	X				
V12, 13	Series Parallel Valves, Front			X	X	X				
V14, 15	Diverter Valves, Rear			X	X	X				
V16, 17	Series Parallel Valves, Rear			X	X	X				

**Table 4-8:** Hydraulic Truth Table - XRT33, Four Wheel Drive (Continued)

COMPONENT		FUNCTION	LIFT	DRIVE FORWARD	DRIVE REVERSE	CREEP	STEER LEFT	STEER RIGHT	DOWN	BRAKES
V18	Down Valve, Lower Cylinder								X	
V19	Down Valve, Upper Cylinder								X	
V20	Velocity Fuse, Lower Cylinder		X						X	
V21	Velocity Fuse, Upper Cylinder		X						X	

**NOTES:**

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# SCHEMATICS

## 5.1 INTRODUCTION

This section contains electrical and hydraulic power schematics and associated information for maintenance purposes.

The diagrams are to be used in conjunction with the ***Troubleshooting Truth Tables*** in **Section 4**. They allow understanding of the makeup and functions of the systems for checking, tracing, and faultfinding during troubleshooting analysis.

The components that comprise the electrical and hydraulic systems are given a reference designation and are explained as to function and location in the following tables.

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**NOTES:**

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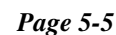
## 5.2 066946-001 #1 - XRT 27 & 33 2-WHEEL DRIVE, DUAL FUEL

**Legend:** Electric Schematic, 2-Wheel Drive Dual Fuel

Reference Designation	Name	Function	Location
ALM	Alarm	Warning Sound	Lower Control Box
ALT	Alternator	Maintain Current	Power Module
BAT	Battery	Starting Power	
C/D	Coil/Distributor	Provide Spark to Engine	Power Module
D1	Diode	Power to Upper Controller PC Board	Upper Controls
D2	Diode	Power to Coil/Distributor	Power Module
D3	Diode	Power to Throttle Solenoid	Power Module
D4	Diode	Power to Throttle Relay	Power Module
DC1	Deutsch Connector	Connect Upper Controller to Circuit Board	Upper Controls
DC2	Deutsch Connector	Connect Upper Controller, Valve Block and Chassis to Circuit Board	Circuit Board
DC3	Deutsch Connector	Connect Valve Block and Chassis to Circuit Board	Control Module
DC4	Deutsch Connector	Connect Power Module to Circuit Board	Circuit Board
DC5	Deutsch Connector	Connect Power Module to Circuit Board	Power Module
F1	Emergency Stop Circuit Breaker	Power to Upper Control Ignition Switch	Lower Controls
F2	Power Circuit Breaker	Power to all function solenoids	Lower Controls
L1	Drive Enable Light	Indicates Drive Enabled	Upper Controls
J1	Jumper	Axle Float Setting	Circuit Board
J2	Jumper	8 Meter Limit Setting	Circuit Board
J3	Jumper	Outrigger Option	Circuit Board
J4	Jumper	Outrigger Option	Circuit Board
MOT1	Starter and Solenoid	Start Engine	Power Module
MOT2	Fuel Pump	Supplies Gasoline to Engine	Power Module
MTR	Hour Meter	Displays Operating Time	Lower Controls
PC1	Pin Connector	Connect Lower Controls to Circuit Board	Circuit Board
PC2	Pin Connector	Connect Lower Controls to Circuit Board	Lower Controls
PC3	Pin Connector	Connect Lower Controls to Circuit Board	Circuit Board
PC4	Pin Connector	Connect Lower Controls to Circuit Board	Lower Controls
PS1	Oil Pressure Switch	Cut Power to Engine when Oil Pressure Too Low	Power Module
R1	Throttle Relay	Power to Throttle Solenoid	Power Module
R2	Down Relay	Power to Down Solenoid	Control Module
R3	Ignition Relay	Enable Engine Start	Upper Controls
S1	Micro Switch	Power to Controller	Upper Controls
S2	Reverse Micro Switch	Power to Drive/Lift Relay, Reverse/Down Contacts	Upper Controls
S3	Forward Micro Switch	Power to Drive/Lift Relay, Forward/Up Contacts	Upper Controls
S4	Interlock Micro Switch	Interrupts Power to Controller when Not Engaged	Upper Controls, In Joystick Handle
S5	Steering Micro Switch	Power to Left and Right Steer Relays	Upper Controls, In Joystick Handle
S6	Drive Switch	Power to S5 (Drive)	Upper Controls
S7	Lift Switch	Power to Drive/Lift Relay	Upper Controls
S8	Torque Switch	Power to Series Parallel Relay	Upper Controls
S9	Ignition Switch	Power to Upper Controls, Engine and Starter Motor	Upper Controls
S10	Choke Switch	Power to Choke Relay	Upper Controls
S11	Emergency Stop Switch	Cut Power to Upper Controls and Engine	Upper Controls
S12	Starter Switch	Power to Starter Motor	Lower Controls

Reference Designation	Name	Function	Location
S13	Choke Switch	Power to Choke Relay	Lower Controls
S14	Engine Stop Switch	Cut Power to Power Relay	Lower Controls
S15	Emergency Stop Switch	Cut Power to Lower Controls and Engine	Lower Controls
S16	Chassis Platform Switch	Power to Either Upper or Lower Controls	Lower Controls
S17	Down Switch	Power to Down Relay	Lower Controls
S18	Lift Switch	Power to Up Relay	Lower Controls
S19	Gasoline Switch	Power to Fuel Pump Solenoid	Lower Controls
S20	Propane Switch	Power to Propane Valve Solenoids	Lower Controls
S21	Throttle Switch	Power to Throttle Relay	Lower Controls
S22	Proximity Switch	Limits Drive Height to Eight Meters	Chassis
S23	Up Limit Switch	Prevents Full Extension of Lift Cylinders	Chassis
SEN	Level Sensor	Power to Cutout Relay when Machine is Level	Chassis
SOL1	Throttle Solenoid	Control Engine Speed	Power Module
SOL2	LP Shutoff Solenoid	Control Propane Valve	Power Module
SOL3	LP Valve Solenoid	Control Propane Valve	Power Module
SOL4	Gasoline Solenoid	Control Gasoline Valve	Power Module
SOL5	Choke Solenoid	Control Choke	Power Module
SOL6	Proportional Solenoid	Control Proportional Valve	Valve Block
SOL7	Forward Solenoid	Control Forward Valve	Valve Block
SOL8	Reverse Solenoid	Control Reverse Valve	Valve Block
SOL9	Lift Solenoid	Control Lift Valve	Valve Block
SOL10, 11	Series/Parallel Solenoid	Control Series/Parallel Valves	Valve Block
SOL12	Down Solenoid	Control Down Valve	Lift Cylinder
SOL13	Steer Right Solenoid	Control Steering Valve	Valve Block
SOL14	Steer Left Solenoid	Control Steering Valve	Valve Block

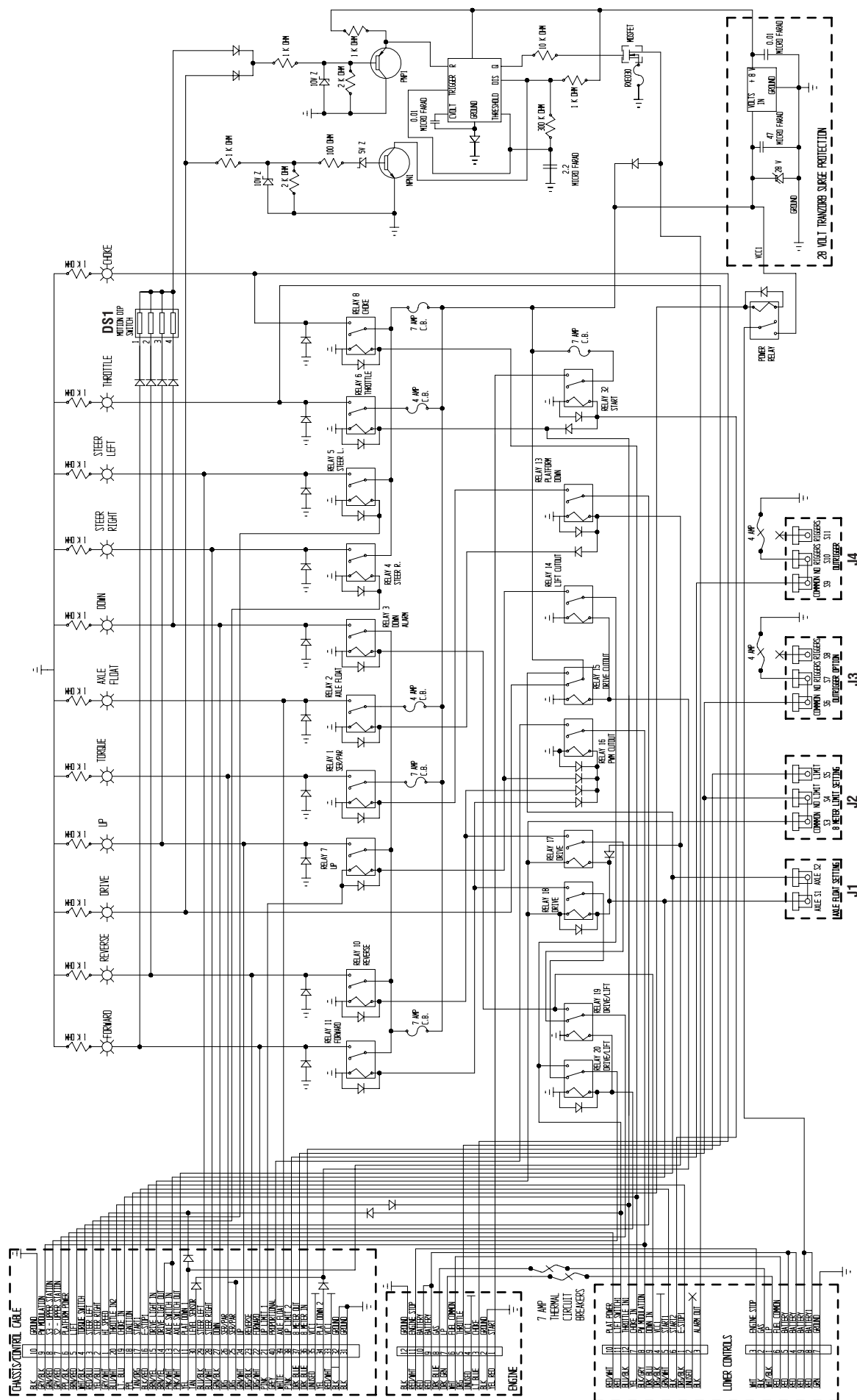




## 5.3 066946-001 #2 - XRT 27 & 33 2-WHEEL DRIVE, DUAL FUEL

**Legend:** Printed Circuit Board, 2-Wheel Drive Dual Fuel

Reference Designation	Name	Function
DS1	Dip Switch	Configure Circuit Board for proper operation
J1	Jumper - Axle Float Setting	Configure Circuit Board for Axle Float
J2	Jumper - 8 Meter Limit Setting	Configure Circuit Board for 8 Meter Limit Switch
J3	Jumper - Outtrigger Option	Configure Circuit Board for Outtrigger Option
J4	Jumper - Outriggers	Configure Circuit Board for Outtrigger Functions

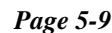


## 5.4 066946-002 #1 - XRT 27 & 33 2-WHEEL DRIVE, DIESEL

**Legend:** Electrical Schematic, 2-Wheel Drive Diesel

Reference Designation	Name	Function	Location
ALM	Alarm	Warning Sound	Lower Control Box
ALT	Alternator	Maintain Current	Power Module
BAT	Battery	Starting Power	
D1	Diode	Power to Upper Controller PC Board	Upper Controls
D2	Diode	Power to Glow Plug Relay	Power Module
D3	Diode	Power to Throttle Solenoid	Power Module
D4	Diode	Power to Throttle Relay	Power Module
D5	Diode	Power to Glow Plug	Power Module
DC1	Deutsch Connector	Connect Upper Controller to Circuit Board	Upper Controls
DC2	Deutsch Connector	Connect Upper Controller, Valve Block and Chassis to Circuit Board	Circuit Board
DC3	Deutsch Connector	Connect Valve Block and Chassis to Circuit Board	Control Module
DC4	Deutsch Connector	Connect Power Module to Circuit Board	Circuit Board
DC5	Deutsch Connector	Connect Power Module to Circuit Board	Power Module
F1	Emergency Stop Circuit Breaker	Power to Upper Control Ignition Switch	Lower Controls
F2	Power Circuit Breaker	Power to all function solenoids	Lower Controls
L1	Drive Enable Light	Indicates Drive Enabled	Upper Controls
J1	Jumper	Axle Float Setting	Circuit Board
J2	Jumper	8 Meter Limit Setting	Circuit Board
J3	Jumper	Outtrigger Option	Circuit Board
J4	Jumper	Outtrigger Option	Circuit Board
MOT1	Starter and Solenoid	Start Engine	Power Module
MTR	Hour Meter	Displays Operating Time	Lower Controls
PC1	Pin Connector	Connect Lower Controls to Circuit Board	Circuit Board
PC2	Pin Connector	Connect Lower Controls to Circuit Board	Lower Controls
PC3	Pin Connector	Connect Lower Controls to Circuit Board	Circuit Board
PC4	Pin Connector	Connect Lower Controls to Circuit Board	Lower Controls
PS1	Oil Pressure Switch	Cut Power to Engine when Oil Pressure Too Low	Power Module
R1	Throttle Relay	Power to Throttle Solenoid	Power Module
R2	Down Relay	Power to Down Solenoid	Control Module
R3	Ignition Relay	Enable Engine Start	Upper Controls
R4	Glow Plug Relay	Power to Glow Plug	Power Module
RES1	Glow Plug	Heat to Start Engine	Engine
S1	Micro Switch	Power to Controller	Upper Controls
S2	Reverse Micro Switch	Power to Drive/Lift Relay, Reverse/Down Contacts	Upper Controls
S3	Forward Micro Switch	Power to Drive/Lift Relay, Forward/Up Contacts	Upper Controls
S4	Interlock Micro Switch	Interrupts Power to Controller when Not Engaged	Upper Controls, In Joystick Handle
S5	Steering Micro Switch	Power to Left and Right Steer Relays	Upper Controls, In Joystick Handle
S6	Drive Switch	Power to S5 (Drive)	Upper Controls
S7	Lift Switch	Power to Drive/Lift Relay	Upper Controls
S8	Torque Switch	Power to Series Parallel Relay	Upper Controls
S9	Ignition Switch	Power to Upper Controls, Engine and Starter Motor	Upper Controls
S10	Glow Plug Switch	Power to Glow Plug Relay	Upper Controls
S11	Emergency Stop Switch	Cut Power to Upper Controls and Engine	Upper Controls

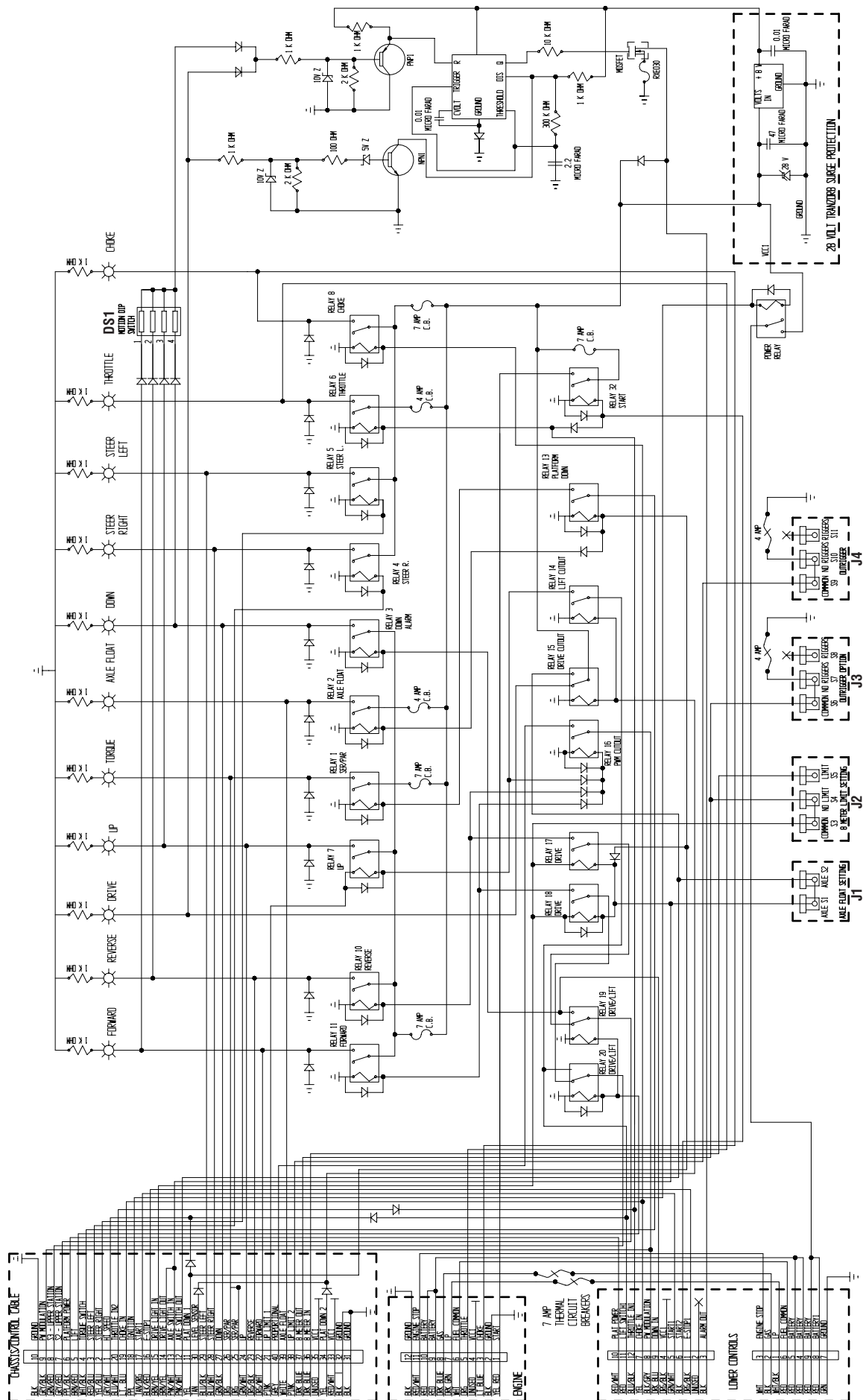
Reference Designation	Name	Function	Location
S12	Starter Switch	Power to Starter Motor	Lower Controls
S13	Glow Plug Switch	Power to Glow Plug Relay	Lower Controls
S14	Engine Stop Switch	Cut Power to Power Relay	Lower Controls
S15	Emergency Stop Switch	Cut Power to Lower Controls and Engine	Lower Controls
S16	Chassis Platform Switch	Power to Either Upper or Lower Controls	Lower Controls
S17	Down Switch	Power to Down Relay	Lower Controls
S18	Lift Switch	Power to Up Relay	Lower Controls
S21	Throttle Switch	Power to Throttle Relay	Lower Controls
S22	Proximity Switch	Limits Drive Height to Eight Meters	Chassis
S23	Up Limit Switch	Prevents Full Extension of Lift Cylinders	Chassis
SEN	Level Sensor	Power to Cutout Relay when Machine is Level	Chassis
SOL1	Throttle Solenoid	Control Engine Speed	Power Module
SOL5	Run Solenoid	Allows Engine to Run with Proper Oil Pressure	Power Module
SOL6	Proportional Solenoid	Control Proportional Valve	Valve Block
SOL7	Forward Solenoid	Control Forward Valve	Valve Block
SOL8	Reverse Solenoid	Control Reverse Valve	Valve Block
SOL9	Lift Solenoid	Control Lift Valve	Valve Block
SOL10, 11	Series/Parallel Solenoid	Control Series/Parallel Valves	Valve Block
SOL12	Down Solenoid	Control Down Valve	Lift Cylinder
SOL13	Steer Right Solenoid	Control Steering Valve	Valve Block
SOL14	Steer Left Solenoid	Control Steering Valve	Valve Block



## 5.5 066946-002 #2 - XRT 27 & 33 2-WHEEL DRIVE, DIESEL

**Legend:** Printed Circuit Board, 2-Wheel Drive Diesel

Reference Designation	Name	Function
DS1	Dip Switch	
J1	Jumper - Axle Float Setting	
J2	Jumper - 8 Meter Limit Setting	
J3	Jumper - Outrigger Option	
J4	Jumper - Outriggers	



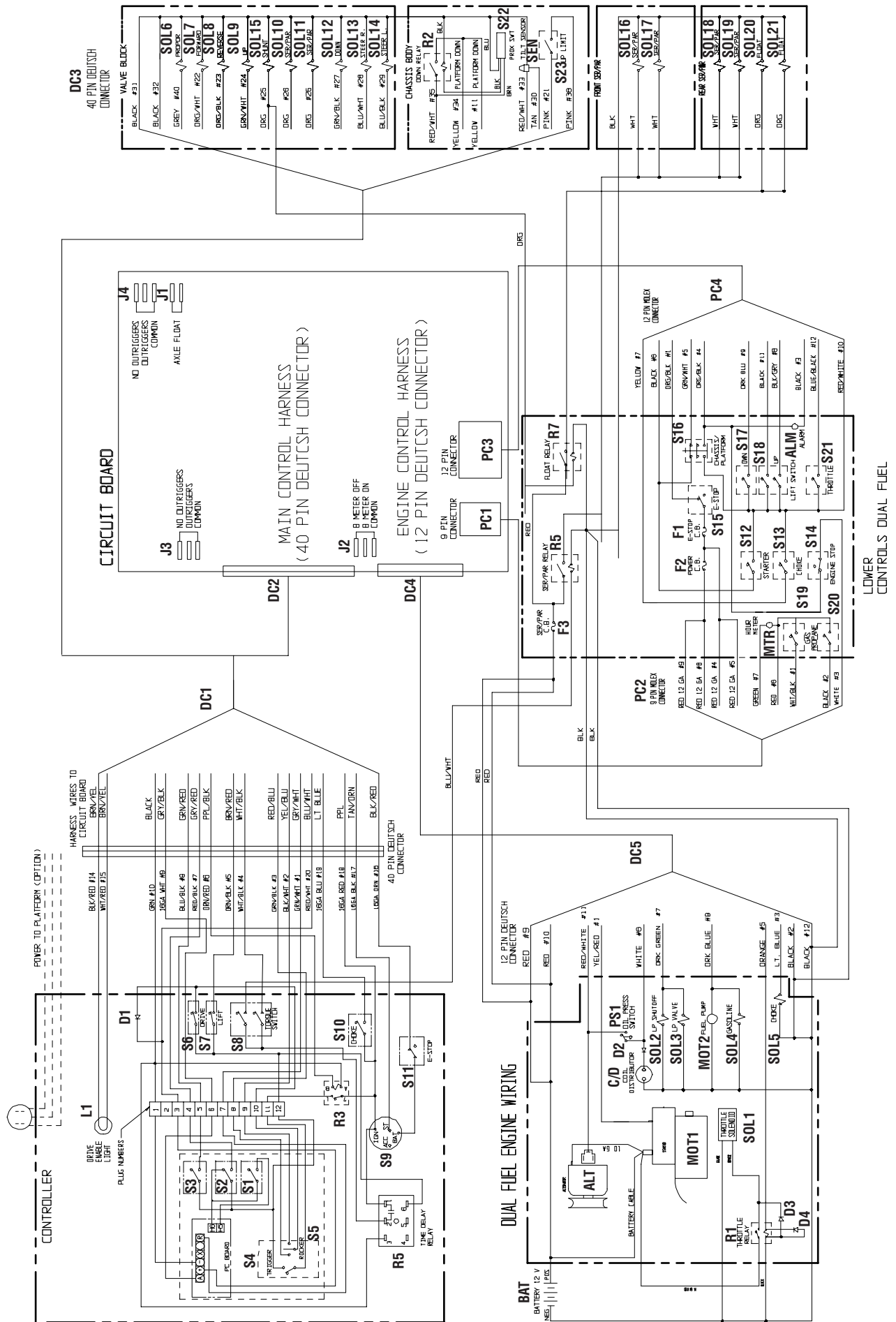
## 5.6 066946-003 #1 - XRT 27 & 33 4-WHEEL DRIVE, DUAL FUEL

**Legend:** Electrical Schematic, 4-Wheel Drive, Dual Fuel

Reference Designation	Name	Function	Location
ALM	Alarm	Warning Sound	Lower Control Box
ALT	Alternator	Maintain Current	Power Module
BAT	Battery	Starting Power	
C/D	Coil/Distributor	Provide Spark to Engine	Power Module
D1	Diode	Power to Upper Controller PC Board	Upper Controls
D2	Diode	Power to Coil/Distributor	Power Module
D3	Diode	Power to Throttle Solenoid	Power Module
D4	Diode	Power to Throttle Relay	Power Module
DC1	Deutsch Connector	Connect Upper Controller to Circuit Board	Upper Controls
DC2	Deutsch Connector	Connect Upper Controller, Valve Block and Chassis to Circuit Board	Circuit Board
DC3	Deutsch Connector	Connect Valve Block and Chassis to Circuit Board	Control Module
DC4	Deutsch Connector	Connect Power Module to Circuit Board	Circuit Board
DC5	Deutsch Connector	Connect Power Module to Circuit Board	Power Module
F1	Emergency Stop Circuit Breaker	Power to Upper Control Ignition Switch	Lower Controls
F2	Power Circuit Breaker	Power to all function solenoids	Lower Controls
F3	Series Parallel Circuit Breaker	Power to Series Parallel Relay	Lower Controls
L1	Drive Enable Light	Indicates Drive Enabled	Upper Controls
J1	Jumper	Axle Float Setting	Circuit Board
J2	Jumper	8 Meter Limit Setting	Circuit Board
J3	Jumper	Outrigger Option	Circuit Board
J4	Jumper	Outrigger Option	Circuit Board
MOT1	Starter and Solenoid	Start Engine	Power Module
MOT2	Fuel Pump	Supplies Gasoline to Engine	Power Module
MTR	Hour Meter	Displays Operating Time	Lower Controls
PC1	Pin Connector	Connect Lower Controls to Circuit Board	Circuit Board
PC2	Pin Connector	Connect Lower Controls to Circuit Board	Lower Controls
PC3	Pin Connector	Connect Lower Controls to Circuit Board	Circuit Board
PC4	Pin Connector	Connect Lower Controls to Circuit Board	Lower Controls
PS1	Oil Pressure Switch	Cut Power to Engine when Oil Pressure Too Low	Power Module
R1	Throttle Relay	Power to Throttle Solenoid	Power Module
R2	Down Relay	Power to Down Solenoid	Control Module
R3	Ignition Relay	Enable Engine Start	Upper Controls
R5	Time Delay relay		Upper Controls
R6	Series Parallel Relay	Power to Series Parallel Solenoids	Lower Controls
S1	Micro Switch	Power to Controller	Upper Controls
S2	Reverse Micro Switch	Power to Drive/Lift Relay, Reverse/Down Contacts	Upper Controls
S3	Forward Micro Switch	Power to Drive/Lift Relay, Forward/Up Contacts	Upper Controls
S4	Interlock Micro Switch	Interrupts Power to Controller when Not Engaged	Upper Controls, In Joystick Handle
S5	Steering Micro Switch	Power to Left and Right Steer Relays	Upper Controls, In Joystick Handle
S6	Drive Switch	Power to S5 (Drive)	Upper Controls
S7	Lift Switch	Power to Drive/Lift Relay	Upper Controls
S8	Torque Switch	Power to Series Parallel Relay	Upper Controls

Reference Designation	Name	Function	Location
S9	Ignition Switch	Power to Upper Controls, Engine and Starter Motor	Upper Controls
S10	Choke Switch	Power to Choke Relay	Upper Controls
S11	Emergency Stop Switch	Cut Power to Upper Controls and Engine	Upper Controls
S12	Starter Switch	Power to Starter Motor	Lower Controls
S13	Choke Switch	Power to Choke Relay	Lower Controls
S14	Engine Stop Switch	Cut Power to Power Relay	Lower Controls
S15	Emergency Stop Switch	Cut Power to Lower Controls and Engine	Lower Controls
S16	Chassis Platform Switch	Power to Either Upper or Lower Controls	Lower Controls
S17	Down Switch	Power to Down Relay	Lower Controls
S18	Lift Switch	Power to Up Relay	Lower Controls
S19	Gasoline Switch	Power to Fuel Pump Solenoid	Lower Controls
S20	Propane Switch	Power to Propane Valve Solenoids	Lower Controls
S21	Throttle Switch	Power to Throttle Relay	Lower Controls
S22	Proximity Switch	Limits Drive Height to Eight Meters	Chassis
S23	Up Limit Switch	Prevents Full Extension of Lift Cylinders	Chassis
SEN	Level Sensor	Power to Cutout Relay when Machine is Level	Chassis
SOL1	Throttle Solenoid	Control Engine Speed	Power Module
SOL2	LP Shutoff Solenoid	Control Propane Valve	Power Module
SOL3	LP Valve Solenoid	Control Propane Valve	Power Module
SOL4	Gasoline Solenoid	Control Gasoline Valve	Power Module
SOL5	Choke Solenoid	Control Choke	Power Module
SOL6	Proportional Solenoid	Control Proportional Valve	Valve Block
SOL7	Forward Solenoid	Control Forward Valve	Valve Block
SOL8	Reverse Solenoid	Control Reverse Valve	Valve Block
SOL9	Lift Solenoid	Control Lift Valve	Valve Block
SOL10, 11	Series/Parallel Solenoids	Control Series/Parallel Valves	Valve Block
SOL12	Down Solenoid	Control Down Valve	Lift Cylinder
SOL13	Steer Right Solenoid	Control Steering Valve	Valve Block
SOL14	Steer Left Solenoid	Control Steering Valve	Valve Block
SOL15	Shunt Solenoid		Valve Block
SOL16, 17	Series Parallel Solenoids	Control Front Series/Parallel Valves	Front Series Parallel Valve Block
SOL18, 19	Series Parallel Solenoids	Control rear Series/Parallel Valves	Rear Series Parallel Valve Block
SOL20, 21	Axle Float Solenoids	Control Axle Float Valves	Rear Series Parallel Valve Block

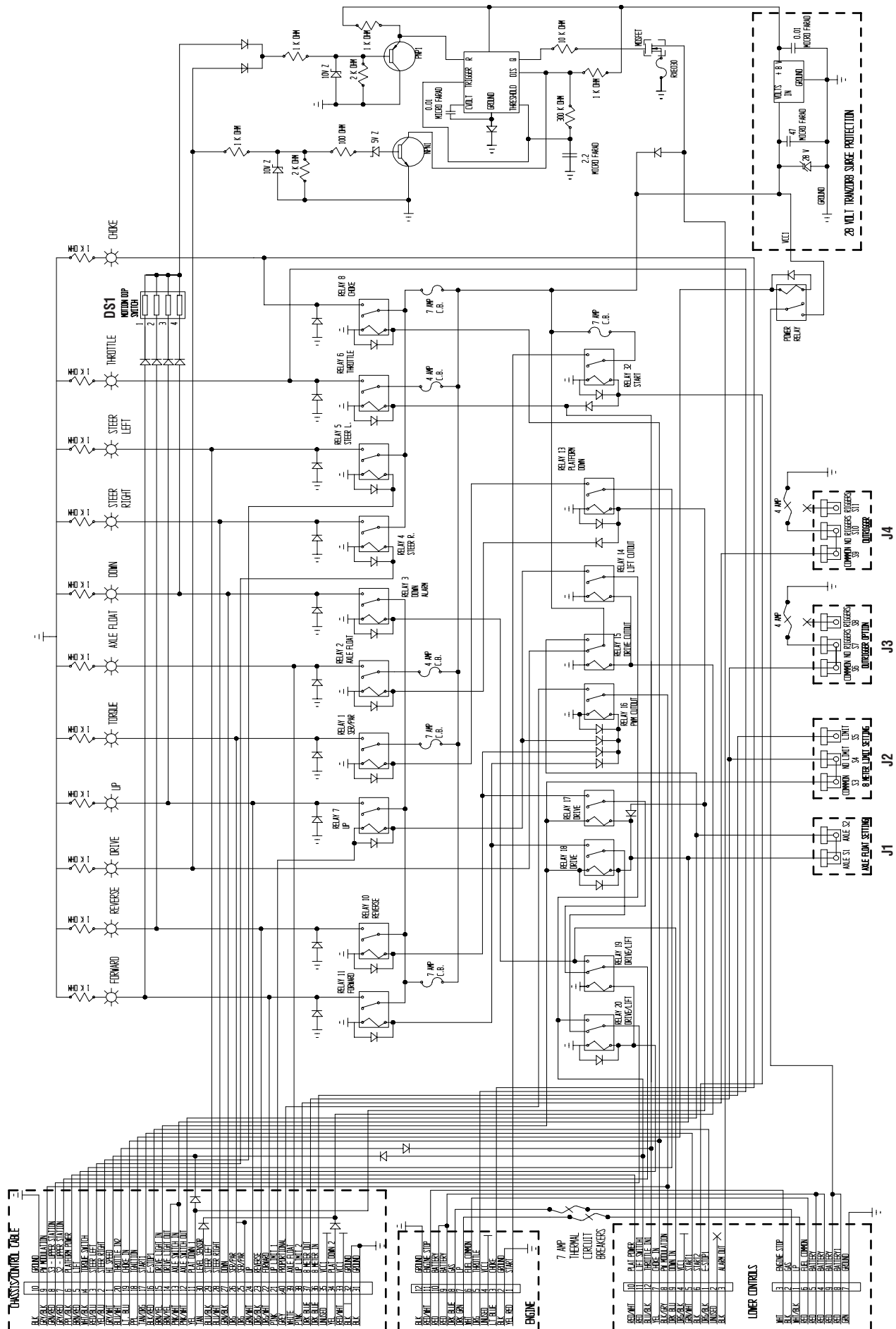




## 5.7 066946-003 #2 - XRT 27 & 33 4-WHEEL DRIVE, DUAL FUEL

**Legend:** Printed Circuit Board, 4-Wheel Drive, Dual Fuel

Reference Designation	Name	Function
DS1	Dip Switch	
J1	Jumper - Axle Float Setting	
J2	Jumper - 8 Meter Limit Setting	
J3	Jumper - Outrigger Option	
J4	Jumper - Outriggers	

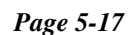


## 5.8 066946-004 #1 - XRT 27 & 33 4-WHEEL DRIVE, DIESEL

**Legend:** Electrical Schematic, 4-Wheel Drive Diesel

Reference Designation	Name	Function	Location
ALM	Alarm	Warning Sound	Lower Control Box
ALT	Alternator	Maintain Current	Power Module
BAT	Battery	Starting Power	
D1	Diode	Power to Upper Controller PC Board	Upper Controls
D2	Diode	Power to Glow Plug Relay	Power Module
D3	Diode	Power to Throttle Solenoid	Power Module
D4	Diode	Power to Throttle Relay	Power Module
D5	Diode	Power to Glow Plug	Power Module
DC1	Deutsch Connector	Connect Upper Controller to Circuit Board	Upper Controls
DC2	Deutsch Connector	Connect Upper Controller, Valve Block and Chassis to Circuit Board	Circuit Board
DC3	Deutsch Connector	Connect Valve Block and Chassis to Circuit Board	Control Module
DC4	Deutsch Connector	Connect Power Module to Circuit Board	Circuit Board
DC5	Deutsch Connector	Connect Power Module to Circuit Board	Power Module
F1	Emergency Stop Circuit Breaker	Power to Upper Control Ignition Switch	Lower Controls
F2	Power Circuit Breaker	Power to all function Solenoids	Lower Controls
F3	Series Parallel Circuit Breaker	Power to Series Parallel Solenoids	Lower Controls
L1	Drive Enable Light	Indicates Drive Enabled	Upper Controls
J1	Jumper	Axle Float Setting	Circuit Board
J2	Jumper	8 Meter Limit Setting	Circuit Board
J3	Jumper	Outrigger Option	Circuit Board
J4	Jumper	Outrigger Option	Circuit Board
MOT1	Starter and Solenoid	Start Engine	Power Module
MTR	Hour Meter	Displays Operating Time	Lower Controls
PC1	Pin Connector	Connect Lower Controls to Circuit Board	Circuit Board
PC2	Pin Connector	Connect Lower Controls to Circuit Board	Lower Controls
PC3	Pin Connector	Connect Lower Controls to Circuit Board	Circuit Board
PC4	Pin Connector	Connect Lower Controls to Circuit Board	Lower Controls
PS1	Oil Pressure Switch	Cut Power to Engine when Oil Pressure Too Low	Power Module
R1	Throttle Relay	Power to Throttle Solenoid	Power Module
R2	Down Relay	Power to Down Solenoid	Control Module
R3	Ignition Relay	Enable Engine Start	Upper Controls
R4	Glow Plug Relay	Power to Glow Plug	Power Module
R5	Time Delay Relay		Upper Controls
R6	Series Parallel Relay	Power to Series Parallel Solenoids	Lower Controls
RES1	Glow Plug	Heat to Start Engine	Engine
S1	Micro Switch	Power to Controller	Upper Controls
S2	Reverse Micro Switch	Power to Drive/Lift Relay, Reverse/Down Contacts	Upper Controls
S3	Forward Micro Switch	Power to Drive/Lift Relay, Forward/Up Contacts	Upper Controls
S4	Interlock Micro Switch	Interrupts Power to Controller when Not Engaged	Upper Controls, In Joystick Handle
S5	Steering Micro Switch	Power to Left and Right Steer Relays	Upper Controls, In Joystick Handle
S6	Drive Switch	Power to S5 (Drive)	Upper Controls
S7	Lift Switch	Power to Drive/Lift Relay	Upper Controls
S8	Torque Switch	Power to Series Parallel Relay	Upper Controls

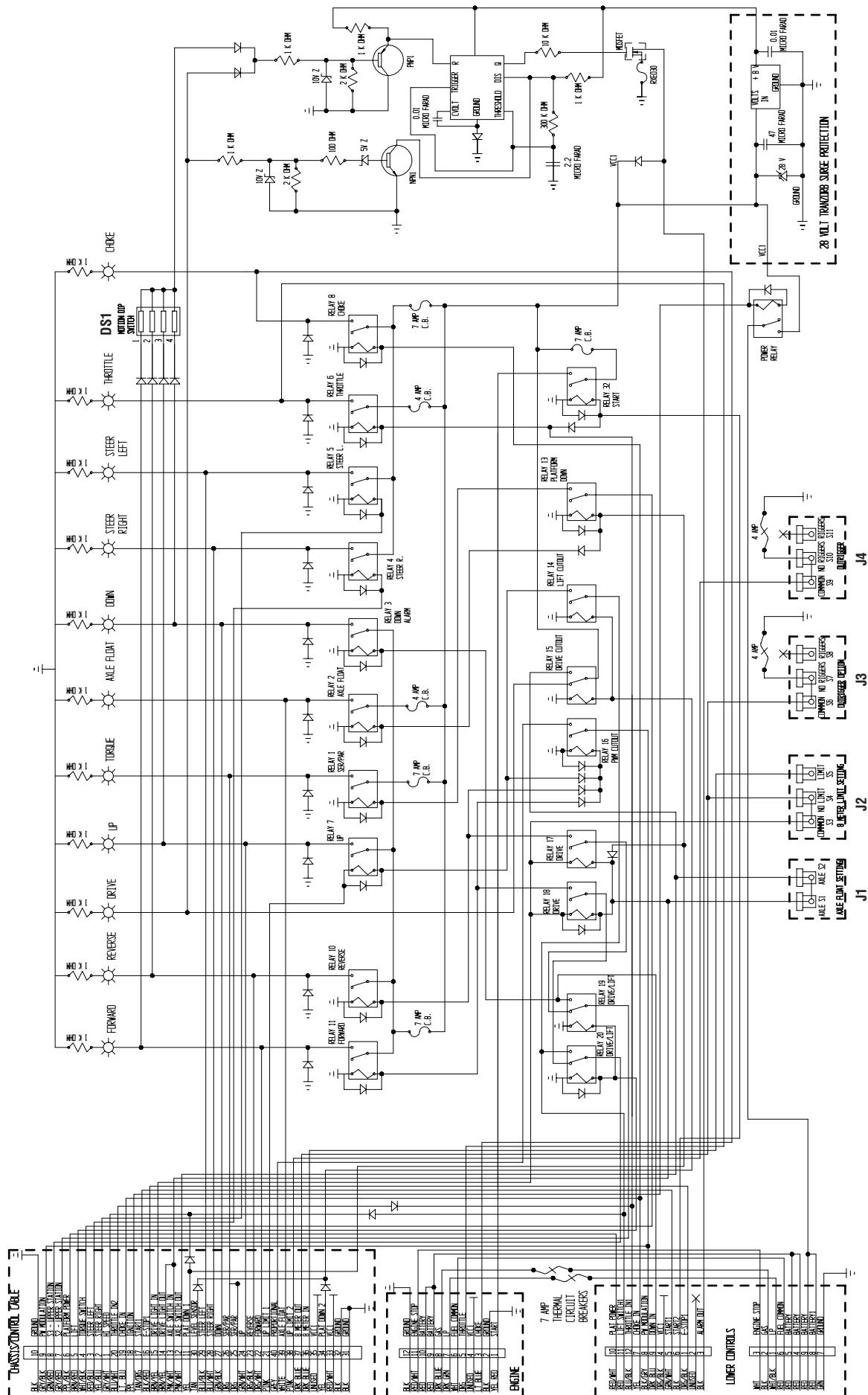
Reference Designation	Name	Function	Location
S9	Ignition Switch	Power to Upper Controls, Engine and Starter Motor	Upper Controls
S10	Glow Plug Switch	Power to Glow Plug Relay	Upper Controls
S11	Emergency Stop Switch	Cut Power to Upper Controls and Engine	Upper Controls
S12	Starter Switch	Power to Starter Motor	Lower Controls
S13	Glow Plug Switch	Power to Glow Plug Relay	Lower Controls
S14	Engine Stop Switch	Cut Power to Power Relay	Lower Controls
S15	Emergency Stop Switch	Cut Power to Lower Controls and Engine	Lower Controls
S16	Chassis Platform Switch	Power to Either Upper or Lower Controls	Lower Controls
S17	Down Switch	Power to Down Relay	Lower Controls
S18	Lift Switch	Power to Up Relay	Lower Controls
S21	Throttle Switch	Power to Throttle Relay	Lower Controls
S22	Proximity Switch	Limits Drive Height to Eight Meters	Chassis
S23	Up Limit Switch	Prevents Full Extension of Lift Cylinders	Chassis
SEN	Level Sensor	Power to Cutout Relay when Machine is Level	Chassis
SOL1	Throttle Solenoid	Control Engine Speed	Power Module
SOL5	Run Solenoid	Allows Engine to Run with Proper Oil Pressure	Power Module
SOL6	Proportional Solenoid	Control Proportional Valve	Valve Block
SOL7	Forward Solenoid	Control Forward Valve	Valve Block
SOL8	Reverse Solenoid	Control Reverse Valve	Valve Block
SOL9	Lift Solenoid	Control Lift Valve	Valve Block
SOL10, 11	Series/Parallel Solenoids	Control Series/Parallel Valves	Valve Block
SOL12	Down Solenoid	Control Down Valve	Lift Cylinder
SOL13	Steer Right Solenoid	Control Steering Valve	Valve Block
SOL14	Steer Left Solenoid	Control Steering Valve	Valve Block
SOL15	Shunt Solenoid		Valve Block
SOL16, 17	Series Parallel Solenoids	Control Front Series/Parallel Valves	Front Series Parallel Valve Block
SOL18, 19	Series Parallel Solenoids	Control rear Series/Parallel Valves	Rear Series Parallel Valve Block
SOL20, 21	Axle Float Solenoids	Control Axle Float Valves	Rear Series Parallel Valve Block



## 5.9 066946-004-2 - XRT 27 & 33 4-WHEEL DRIVE, DIESEL

**Legend:** Printed Circuit Board, 4-Wheel Drive Diesel

Reference Designation	Name	Function
DS1	Dip Switch	
J1	Jumper - Axle Float Setting	
J2	Jumper - 8 Meter Limit Setting	
J3	Jumper - Outrigger Option	
J4	Jumper - Outriggers	

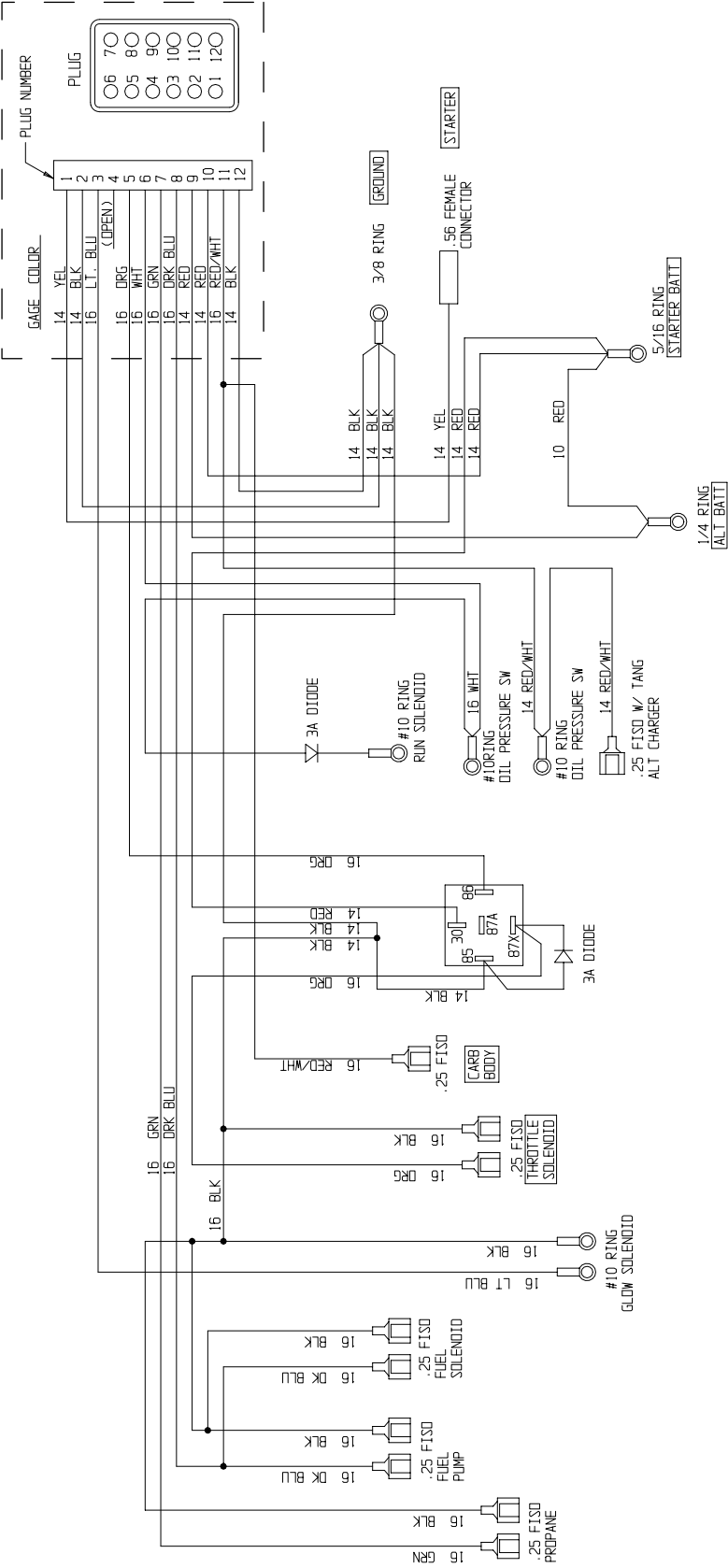


## 5.10 066947-001 #2 - ENGINE WIRING DIAGRAM - KUBOTA DIESEL

**Legend:** Kubota Diesel Wiring Harness

PIN	GAUGE	COLOR	FUNCTION
1	14	Yellow / Red	Start
2	14	Black	Ground
3	16	Light Blue	Glow Plug
4	OPEN		
5	16	Orange	Throttle
6	16	White	Oil Pressure
7	16	Green	Alternator / Fuel
8	16	Dark Blue	Fuel Pump
9	14	Red	Alternator / Battery
10	14	Red	Power
11	14	Red / White	Oil Pressure Switch
12	14	Black	Ground





## 5.11 066947-002 #2 - ENGINE WIRING DIAGRAM - KUBOTA DUAL FUEL

**Legend:** Kubota Dual Fuel Wiring Harnes

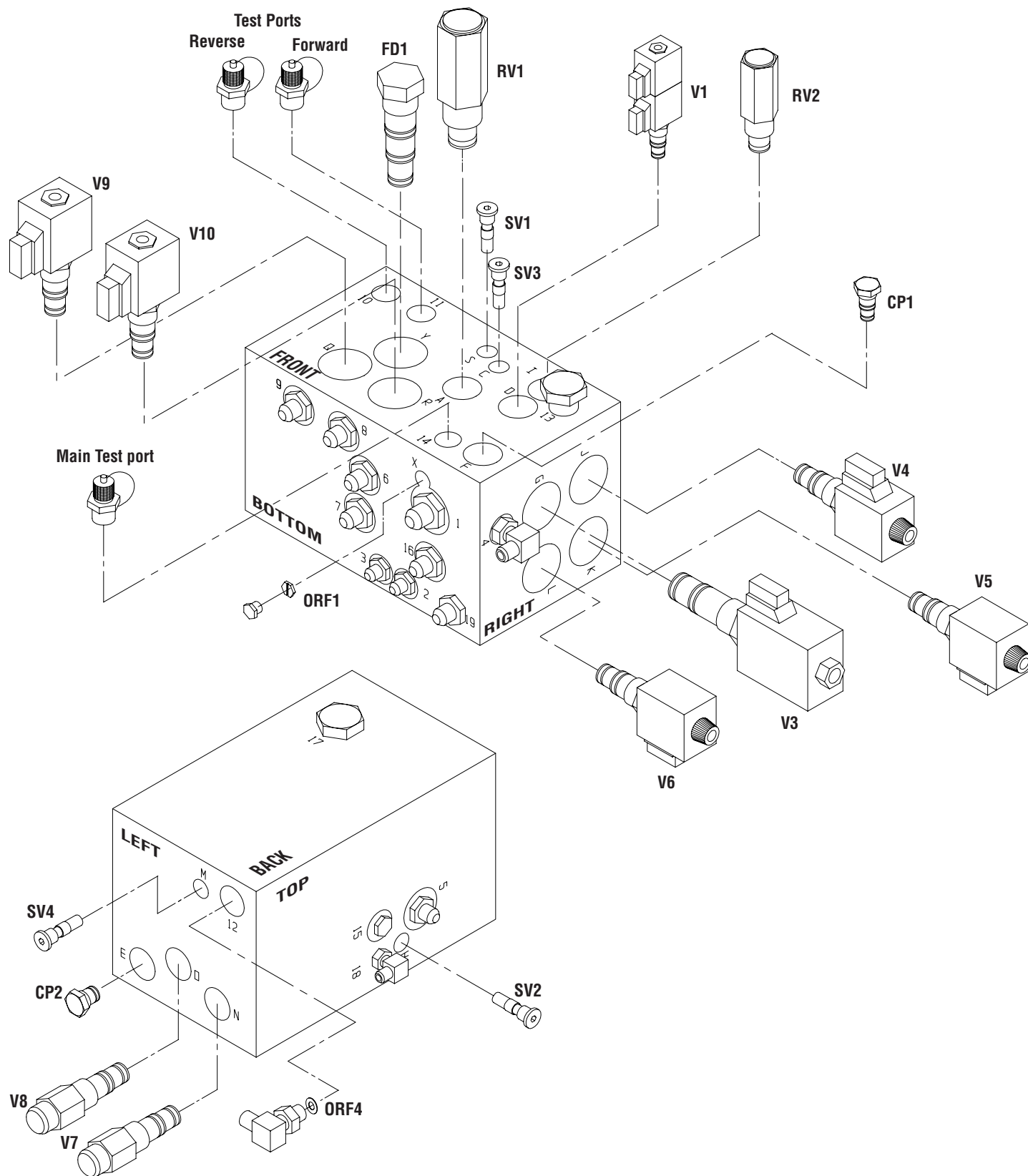
PIN	GUAGE	COLOR	FUNCTION
1	14	Yellow / Red	Start
2	14	Black	Ground
3	16	Light Blue	Choke
4	OPEN		
5	16	Orange	Throttle
6	16	White	Oil Pressure
7	16	Green	Alternator / Fuel
8	16	Dark Blue	Fuel Pump
9	14	Red	Alternator / Battery
10	14	Red	Power
11	14	Red / White	Oil Pressure Switch
12	14	Black	Ground

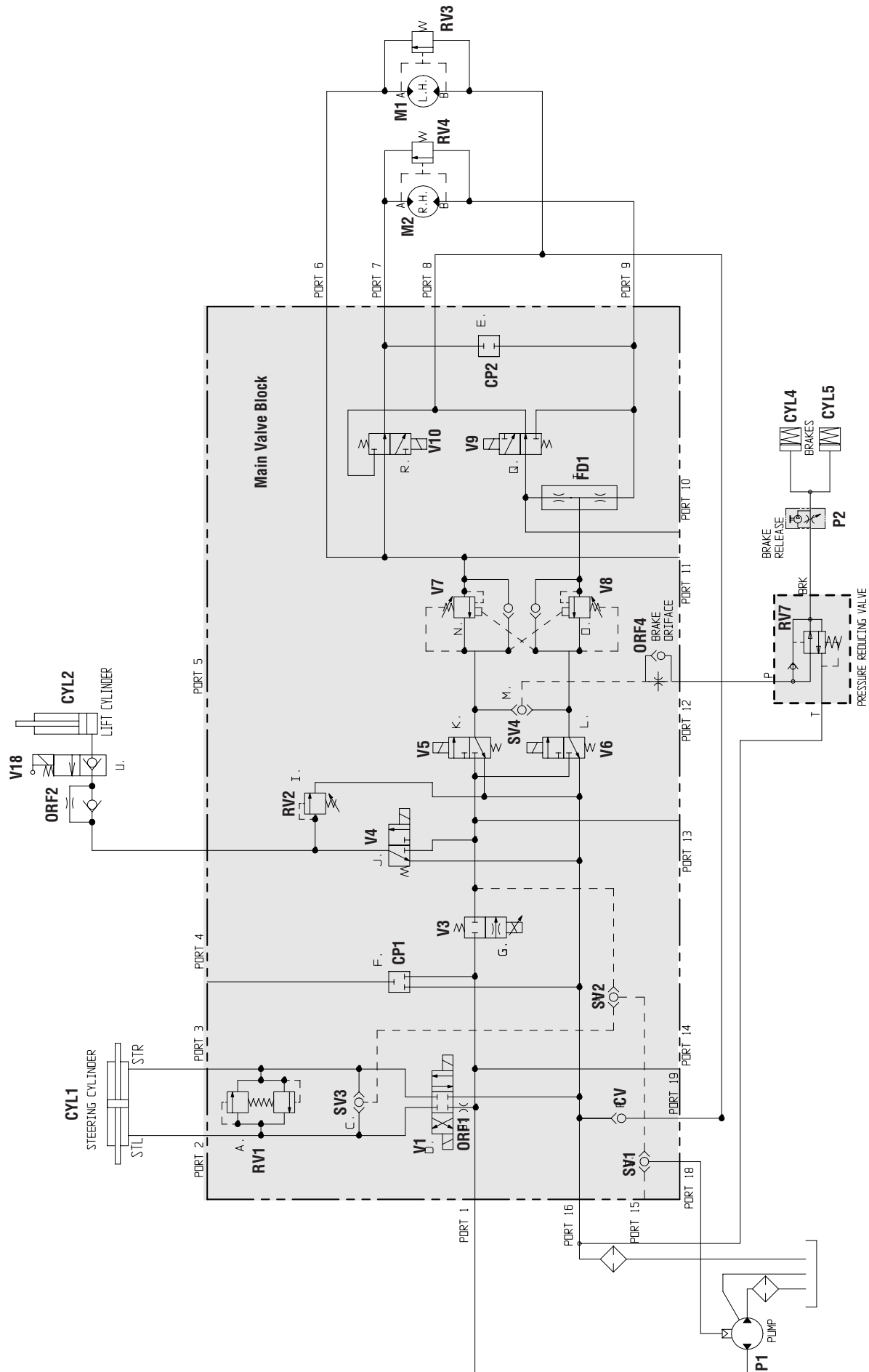


## 5.12 066945-000, XRT27 HYDRAULIC 2-WHEEL DRIVE

**Legend:** Hydraulics, XRT27 - 2-Wheel Drive

Reference Designation	Name	Function	Location
CV	Check Valve	Prevent Cavitation of Downstream Motors	Valve Block
CP1	Cavity Plug	Plug unused Port	Main Valve Block, Port F
CP2	Cavity Plug	Plug unused Port	Main Valve Block, Port E
CYL1	Steering Cylinder	Steer Machine	Front Axle Assembly
CYL2	Lift Cylinder	Lift Platform	Scissor Assembly
CYL4, 5	Brakes	Parking Brakes	Rear Axle Assembly
M1, 2	Front Drive Motors	Drive Front Wheels	Front Axle Assembly
ORF1	Steering Orifice	Limit Oil Flow to Steering Cylinder	Main Valve Block, Port T
ORF2	Down Orifice	Limit Platform Descent Speed	Under Down Valves
ORF4	Brake Orifice	Control Oil Flow from Brakes	Main Valve Block Port 12
P1	Hydraulic Pump	Provide Fluid Power for Hydraulic System	Power Module, Engine Assembly
P2	Brake Release Pump	Manual Brake Release	Control Module
RV1	Steer Relief Valve	Pressure Protection for Steering Components	Main Valve Block
RV2	Lift Relief Valve	Limit Load of Elevating Assembly	Main Valve Block
RV3, 4	Motor Relief Valve	Pressure Protection for Drive Motor	Front of Each Front Drive Motor
RV7	Pressure Reducing Valve	Pressure Protection for Brake Assemblies	Control Module
SV1	Shuttle Valve	Sense Line Shuttle	Main Valve Block, Port S
SV2	Shuttle Valve	Sense Line Shuttle	Main Valve Block, Port H
SV3	Steering Shuttle Valve	Allow Pilot Pressure to Pump Sense Line form Steering	Main Valve Block, Port C
SV4	Brake Shuttle Valve	Allow Oil Pressure from Drive to Release Brakes	Main Valve Block, Port M
V1	Steering Valve	Control Oil Flow to Steering Cylinder	Main Valve Block, Port D
V2	Emergency Down Valve	Emergency Lowering	Rear of Chassis
V3	Proportional Valve	Regulates Drive and Lift Speed	Main Valve Block, Port G
V4	Lift Valve	Allow Oil Flow to Lift Cylinders	Main Valve Block, Port J
V5	Forward Valve	Control Oil Flow for Forward Drive System	Main Valve Block, Port K
V6	Reverse Valve	Control Oil Flow for Reverse Drive System	Main Valve Block, Port L
V7	Reverse Counter Balance Valve	Provide Dynamic braking for Machine in Forward	Main Valve Block, Port N
V8	Forward Counter Balance Valve	Provide Dynamic braking for Machine in Reverse	Main Valve Block, Port O
V9, 10	Series Parallel Valves	Directs Oil Flow to Drive Motors in either Series or Parallel Configuration	Main Valve Block, Ports Q and R
V18	Down Valve	Lower Cylinder	Base of Cylinder





**NOTES:**

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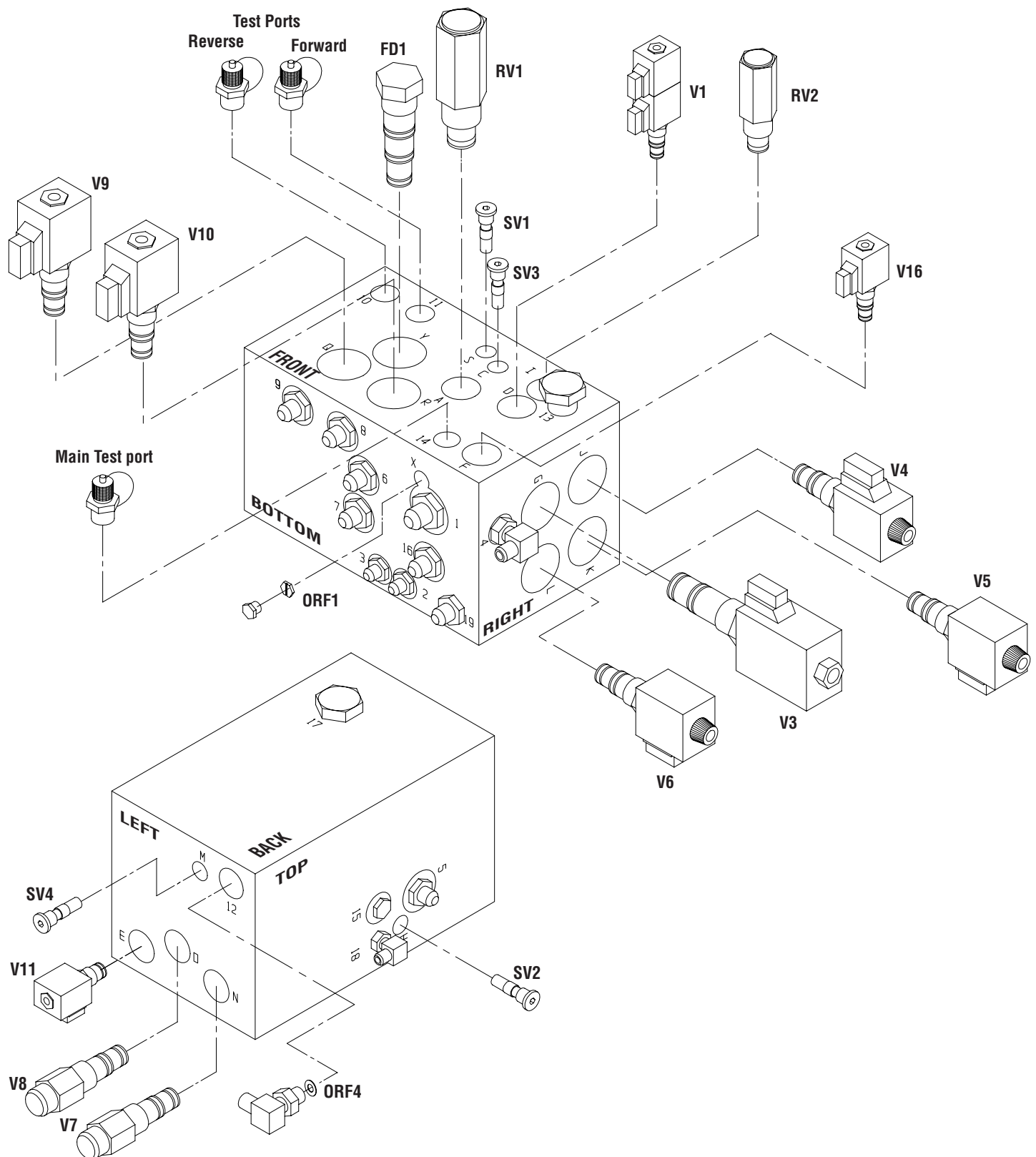
## 5.13 066945-001, XRT27 HYDRAULIC 4-WHEEL DRIVE

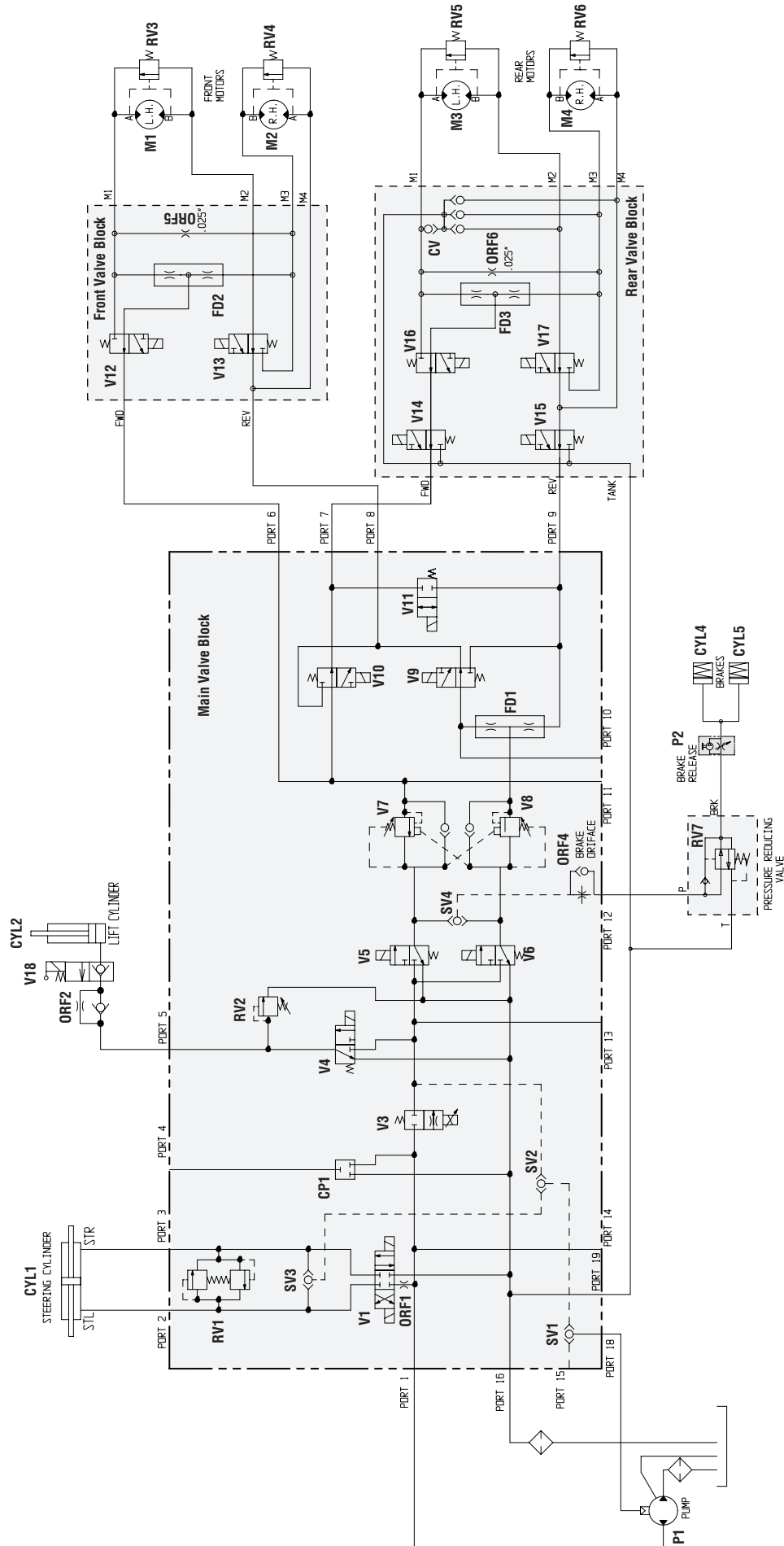
**Legend:** Hydraulics, XRT27 - 4-Wheel Drive

Reference Designation	Name	Function	Location
CV	Check Valves	Prevent Cavitation of Downstream Motors	Rear Valve Block
CP1	Cavity Plug	Plug unused Port	Main Valve Block, Port F
CYL1	Steering Cylinder	Steer Machine	Front Axle Assembly
CYL2	Lift Cylinder	Lift Platform	Scissor Assembly
CYL4, 5	Brakes	Parking Brakes	Rear Axle Assembly
FD1	Flow Divider	Limited Slip Drive	Main Valve Block
FD2	Flow Divider	Limited Slip Drive	Series Parallel Block, Front
FD3	Flow Divider	Limited Slip Drive	Series Parallel Block, Rear
M1, 2	Front Drive Motors	Drive Front Wheels	Front Axle Assembly
M3, 4	Rear Drive Motors	Drive rear Wheels	Rear Axle Assembly
ORF1	Steering Orifice	Limit Oil Flow to Steering Cylinder	Main Valve Block, Port T
ORF2, 3	Down Orifice	Limit Platform Descent Speed	Under Down Valves
ORF4	Brake Orifice	Control Oil Flow from Brakes	Main Valve Block Port 12
ORF5	Slip Orifice	Allow Slippage for Turning	Front Valve Block
ORF6	Slip Orifice	Allow Slippage for Turning	Rear Valve Block
P1	Hydraulic Pump	Provide Fluid Power for Hydraulic System	Power Module, Engine Assembly
P2	Brake Release Pump	Manual Brake Release	Control Module
RV1	Steer Relief Valve	Pressure Protection for Steering Components	Main Valve Block
RV2	Lift Relief Valve	Limit Load of Elevating Assembly	Main Valve Block
RV3, 4	Motor Relief Valve	Pressure Protection for Drive Motor	Front of Each Front Drive Motor
RV5, 6	Motor Relief Valve	Pressure Protection for Drive Motor	Beneath Each Rear Drive Motor
RV7	Pressure Reducing Valve	Pressure Protection for Brake Assemblies	Control Module
SV1	Shuttle Valve	Sense Line Shuttle	Main Valve Block, Port S
SV2	Shuttle Valve	Sense Line Shuttle	Main Valve Block, Port H
SV3	Steering Shuttle Valve	Allow Pilot Pressure to Pump Sense Line form Steering	Main Valve Block, Port C
SV4	Brake Shuttle Valve	Allow Oil Pressure from Drive to Release Brakes	Main Valve Block, Port M
V1	Steering Valve	Control Oil Flow to Steering Cylinder	Main Valve Block, Port D
V2	Emergency Down Valve	Emergency Lowering	Rear of Chassis
V3	Proportional Valve	Regulates Drive and Lift Speed	Main Valve Block, Port G
V4	Lift Valve	Allow Oil Flow to Lift Cylinders	Main Valve Block, Port J
V5	Forward Valve	Control Oil Flow for Forward Drive System	Main Valve Block, Port K
V6	Reverse Valve	Control Oil Flow for Reverse Drive System	Main Valve Block, Port L
V7	Reverse Counter Balance Valve	Provide Dynamic braking for Machine in Forward	Main Valve Block, Port N
V8	Forward Counter Balance Valve	Provide Dynamic braking for Machine in Reverse	Main Valve Block, Port O
V9, 10	Series Parallel Valves	Directs Oil Flow to Drive Motors in either Series or Parallel Configuration	Main Valve Block, Ports Q and R

Reference Designation	Name	Function	Location
V11	Shunt Valve	Allows oil Flow Past Rear Drive Motors During High Speed Travel	Main Valve Block, Port E
V12, 13	Series Parallel Valves	Directs Oil Flow to Front Drive Motors in either Series of Parallel Configuration	Front Valve Block
V14, 15	Diverter Valves	Float Rear Motors in High Speed	Rear Valve Block
V16, 17	Series Parallel Valves	Directs Oil Flow to Rear Drive Motors in either Series of Parallel Configuration	Rear Valve Block
V18	Down Valve	Lower Cylinders	Base of Cylinders
V20	Velocity Fuse Valve	Lock Cylinder if Hose Breaks	Inside Lift Cylinders







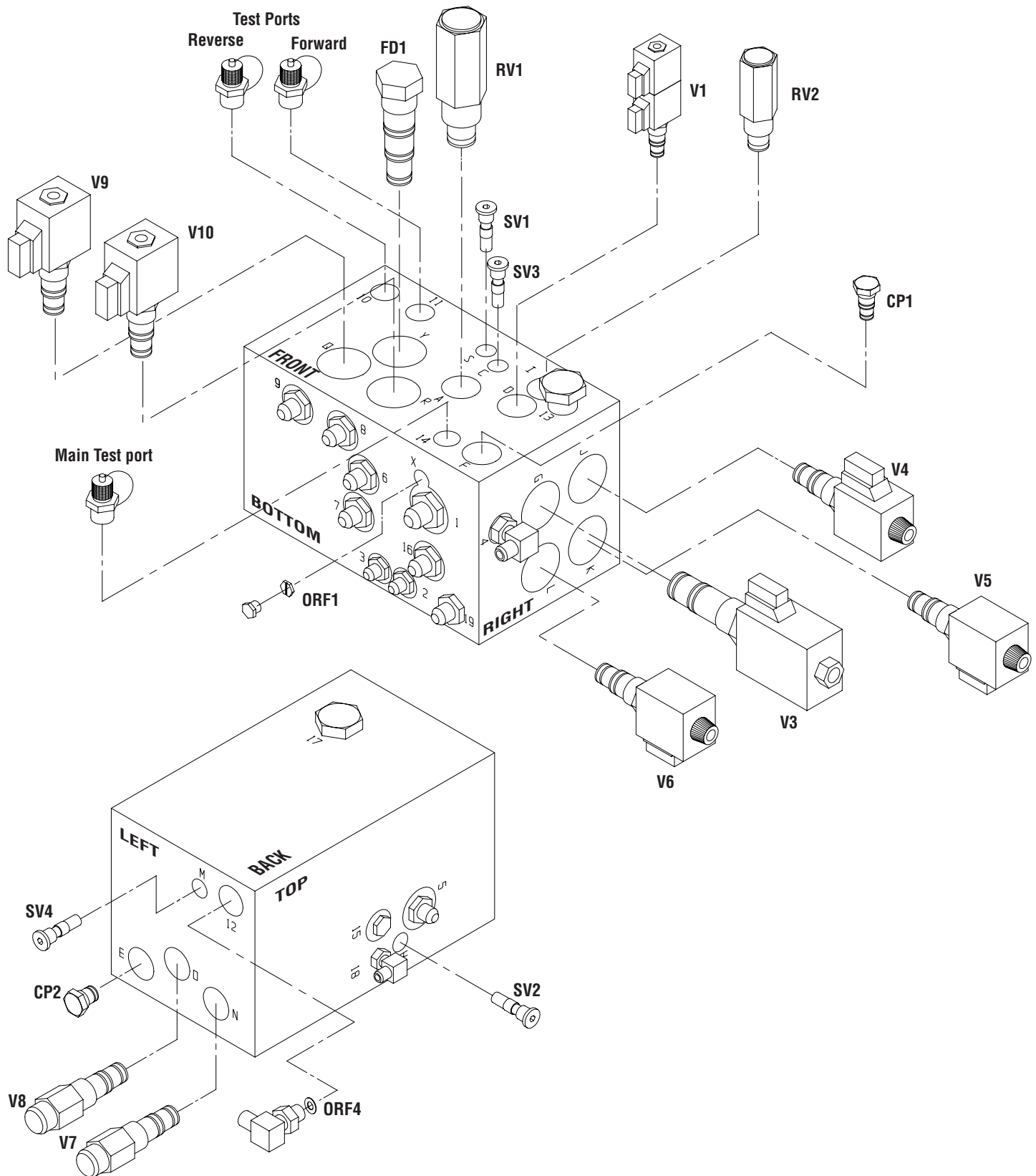
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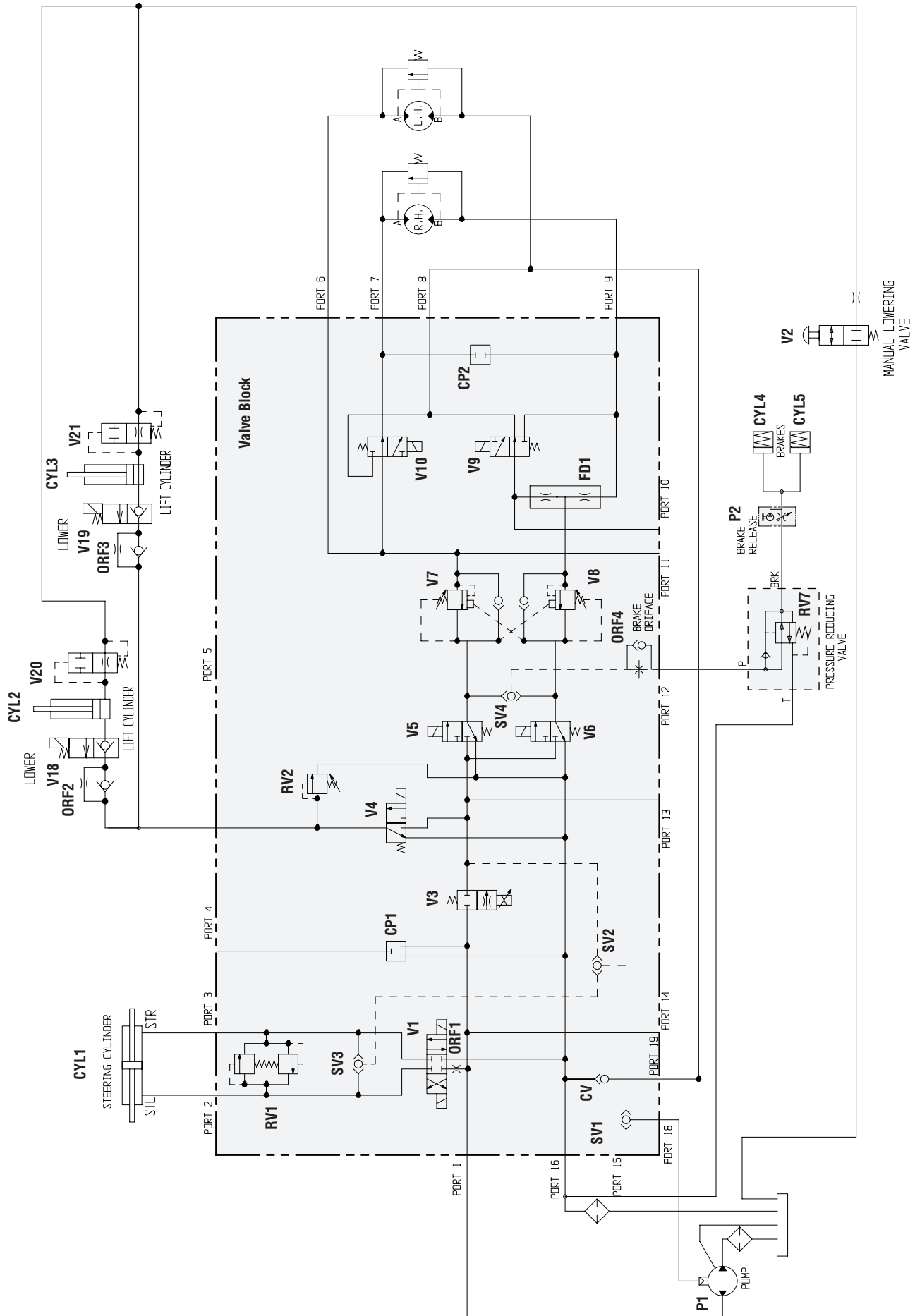
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## 5.14 066945-002 - XRT33 HYDRAULIC 2-WHEEL DRIVE

**Legend:** Hydraulics, XRT33 - 2-Wheel Drive

Reference Designation	Name	Function	Location
CV	Check Valves	Prevent Cavitation of Downstream Motors	Main Valve Block
CP1	Cavity Plug	Plug unused Port	Main Valve Block, Port F
CYL1	Steering Cylinder	Steer Machine	Front Axle Assembly
CYL2, 3	Lift Cylinder	Lift Platform	Scissor Assembly
CYL4, 5	Brakes	Parking Brakes	Rear Axle Assembly
FD1	Flow Divider	Limited Slip Drive	Main Valve Block
M1, 2	Front Drive Motors	Drive Front Wheels	Front Axle Assembly
ORF1	Steering Orifice	Limit Oil Flow to Steering Cylinder	Main Valve Block, Port T
ORF2, 3	Down Orifice	Limit Platform Descent Speed	Under Down Valves
ORF4	Brake Orifice	Control Oil Flow from Brakes	Main Valve Block Port 12
ORF5	Slip Orifice	Allow Slippage for Turning	Front Valve Block
ORF6	Slip Orifice	Allow Slippage for Turning	Rear Valve Block
P1	Hydraulic Pump	Provide Fluid Power for Hydraulic System	Power Module, Engine Assembly
P2	Brake Release Pump	Manual Brake Release	Control Module
RV1	Steer Relief Valve	Pressure Protection for Steering Components	Main Valve Block
RV2	Lift Relief Valve	Limit Load of Elevating Assembly	Main Valve Block
RV3, 4	Motor Relief Valve	Pressure Protection for Drive Motor	Front of Each Front Drive Motor
RV7	Pressure Reducing Valve	Pressure Protection for Brake Assemblies	Control Module
SV1	Shuttle Valve	Sense Line Shuttle	Main Valve Block, Port S
SV2	Shuttle Valve	Sense Line Shuttle	Main Valve Block, Port H
SV3	Steering Shuttle Valve	Allow Pilot Pressure to Pump Sense Line form Steering	Main Valve Block, Port C
SV4	Brake Shuttle Valve	Allow Oil Pressure from Drive to Release Brakes	Main Valve Block, Port M
V1	Steering Valve	Control Oil Flow to Steering Cylinder	Main Valve Block, Port D
V2	Emergency Down Valve	Emergency Lowering	Rear of Chassis
V3	Proportional Valve	Regulates Drive and Lift Speed	Main Valve Block, Port G
V4	Lift Valve	Allow Oil Flow to Lift Cylinders	Main Valve Block, Port J
V5	Forward Valve	Control Oil Flow for Forward Drive System	Main Valve Block, Port K
V6	Reverse Valve	Control Oil Flow for Reverse Drive System	Main Valve Block, Port L
V7	Reverse Counter Balance Valve	Provide Dynamic braking for Machine in Forward	Main Valve Block, Port N
V8	Forward Counter Balance Valve	Provide Dynamic braking for Machine in Reverse	Main Valve Block, Port O
V9, 10	Series Parallel Valves	Directs Oil Flow to Drive Motors in either Series or Parallel Configuration	Main Valve Block, Ports Q and R
V18, 19	Down Valve	Lower Cylinders	Base of Cylinders
V20, 21	Velocity Fuse Valve	Lock Cylinder if Hose Breaks	Inside Lift Cylinders





**NOTES:**

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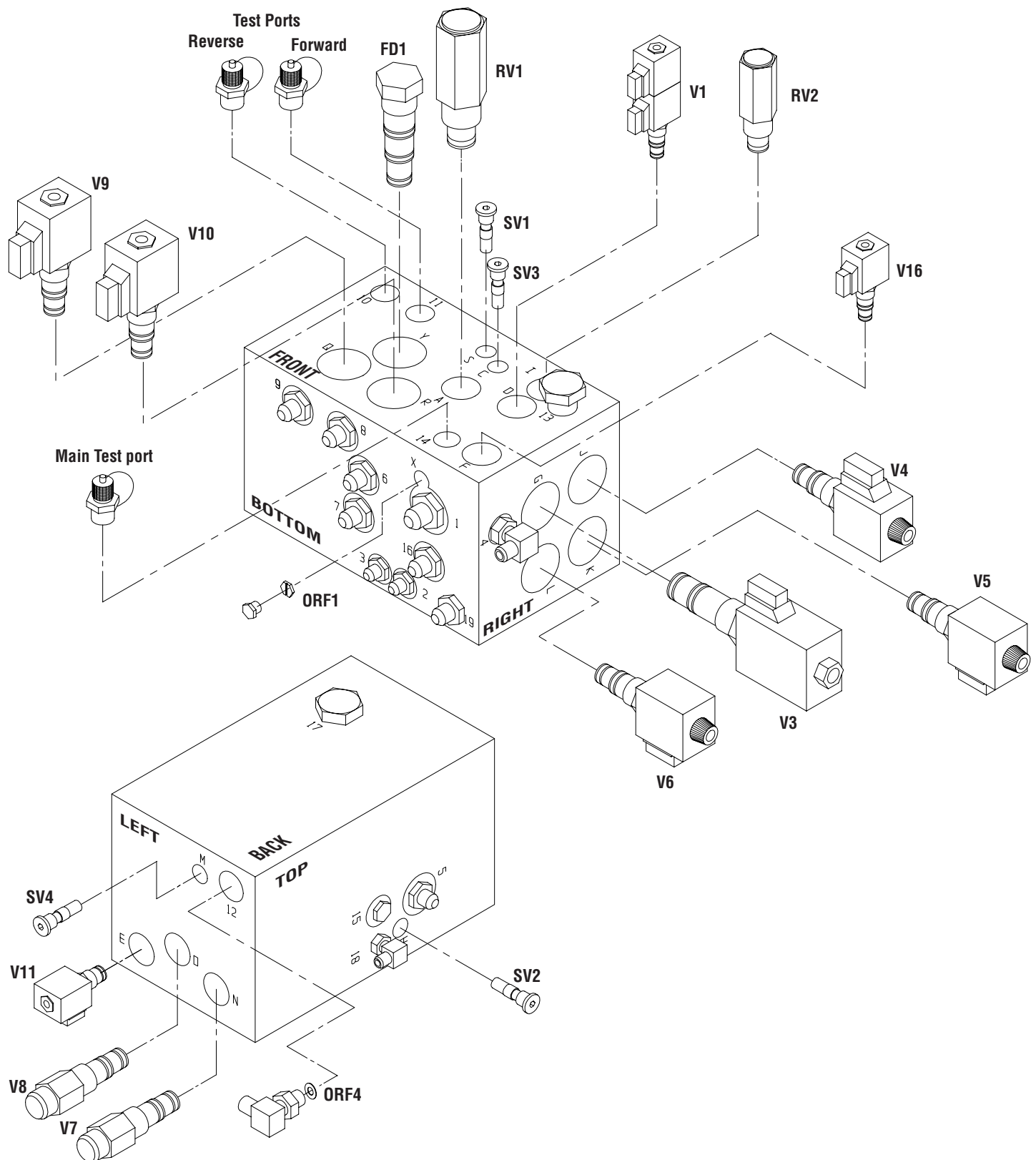
## 5.15 066945-003 - XRT33 HYDRAULIC 4-WHEEL DRIVE

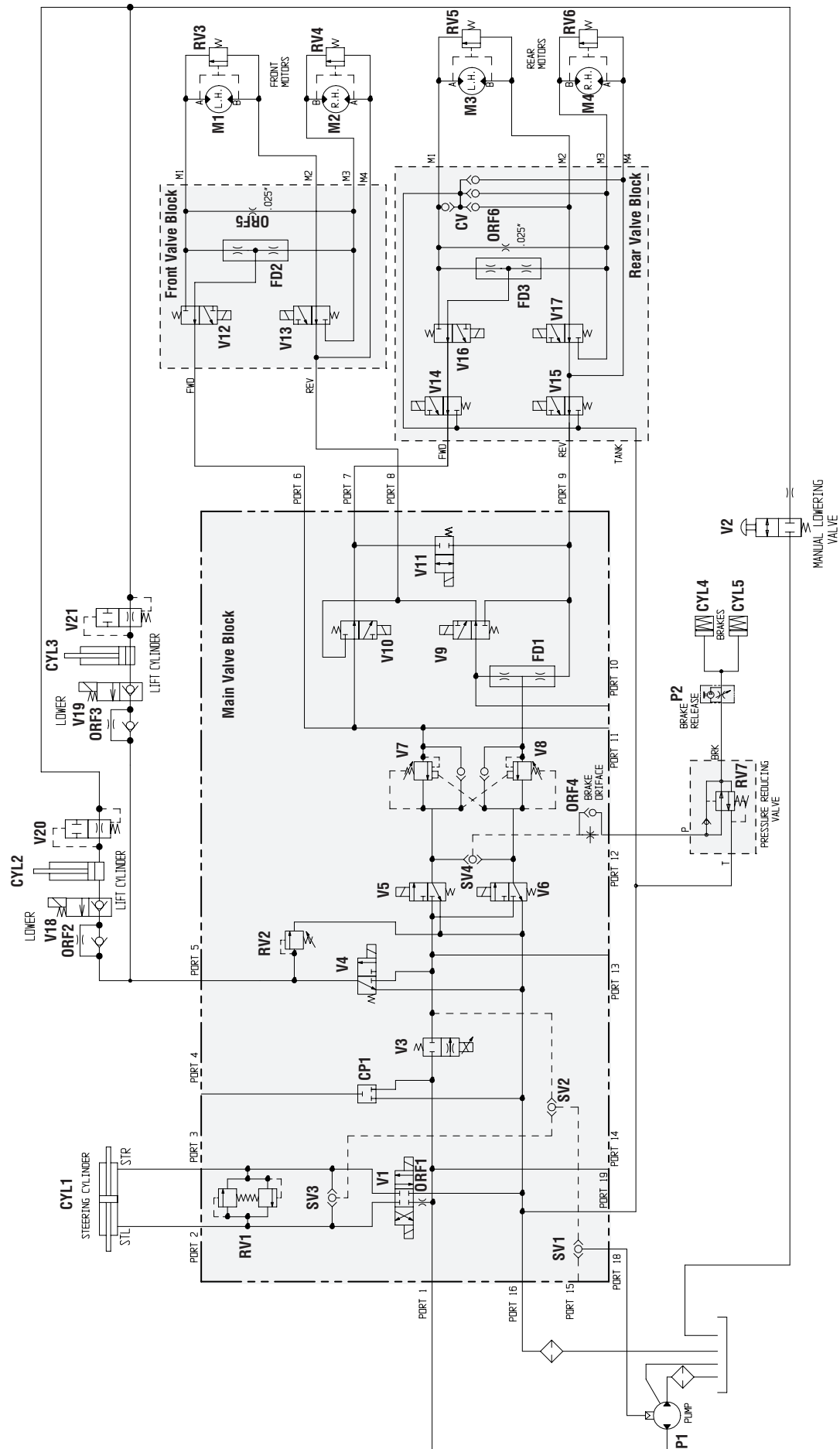
**Legend:** Hydraulics, XRT33 - 4-Wheel Drive

Reference Designation	Name	Function	Location
CV	Check Valves	Prevent Cavitation of Downstream Motors	Rear Valve Block
CP1	Cavity Plug	Plug unused Port	Main Valve Block, Port F
CYL1	Steering Cylinder	Steer Machine	Front Axle Assembly
CYL2, 3	Lift Cylinder	Lift Platform	Scissor Assembly
CYL4, 5	Brakes	Parking Brakes	Rear Axle Assembly
FD1	Flow Divider	Limited Slip Drive	Main Valve Block
FD2	Flow Divider	Limited Slip Drive	Series Parallel Block, Front
FD3	Flow Divider	Limited Slip Drive	Series Parallel Block, Rear
M1, 2	Front Drive Motors	Drive Front Wheels	Front Axle Assembly
M3, 4	Rear Drive Motors	Drive rear Wheels	Rear Axle Assembly
ORF1	Steering Orifice	Limit Oil Flow to Steering Cylinder	Main Valve Block, Port T
ORF2, 3	Down Orifice	Limit Platform Descent Speed	Under Down Valves
ORF4	Brake Orifice	Control Oil Flow from Brakes	Main Valve Block Port 12
ORF5	Slip Orifice	Allow Slippage for Turning	Front Valve Block
ORF6	Slip Orifice	Allow Slippage for Turning	Rear Valve Block
P1	Hydraulic Pump	Provide Fluid Power for Hydraulic System	Power Module, Engine Assembly
P2	Brake Release Pump	Manual Brake Release	Control Module
RV1	Steer Relief Valve	Pressure Protection for Steering Components	Main Valve Block
RV2	Lift Relief Valve	Limit Load of Elevating Assembly	Main Valve Block
RV3, 4	Motor Relief Valve	Pressure Protection for Drive Motor	Front of Each Front Drive Motor
RV5, 6	Motor Relief Valve	Pressure Protection for Drive Motor	Beneath Each Rear Drive Motor
RV7	Pressure Reducing Valve	Pressure Protection for Brake Assemblies	Control Module
SV1	Shuttle Valve	Sense Line Shuttle	Main Valve Block, Port S
SV2	Shuttle Valve	Sense Line Shuttle	Main Valve Block, Port H
SV3	Steering Shuttle Valve	Allow Pilot Pressure to Pump Sense Line form Steering	Main Valve Block, Port C
SV4	Brake Shuttle Valve	Allow Oil Pressure from Drive to Release Brakes	Main Valve Block, Port M
V1	Steering Valve	Control Oil Flow to Steering Cylinder	Main Valve Block, Port D
V2	Emergency Down Valve	Emergency Lowering	Rear of Chassis
V3	Proportional Valve	Regulates Drive and Lift Speed	Main Valve Block, Port G
V4	Lift Valve	Allow Oil Flow to Lift Cylinders	Main Valve Block, Port J
V5	Forward Valve	Control Oil Flow for Forward Drive System	Main Valve Block, Port K
V6	Reverse Valve	Control Oil Flow for Reverse Drive System	Main Valve Block, Port L
V7	Reverse Counter Balance Valve	Provide Dynamic braking for Machine in Forward	Main Valve Block, Port N
V8	Forward Counter Balance Valve	Provide Dynamic braking for Machine in Reverse	Main Valve Block, Port O
V9, 10	Series Parallel Valves	Directs Oil Flow to Drive Motors in either Series or Parallel Configuration	Main Valve Block, Ports Q and R

Reference Designation	Name	Function	Location
V11	Shunt Valve	Allows oil Flow Past Rear Drive Motors During High Speed Travel	Main Valve Block, Port E
V12, 13	Series Parallel Valves	Directs Oil Flow to Front Drive Motors in either Series of Parallel Configuration	Front Valve Block
V14, 15	Diverter Valves	Float Rear Motors in High Speed	Rear Valve Block
V16, 17	Series Parallel Valves	Directs Oil Flow to Rear Drive Motors in either Series of Parallel Configuration	Rear Valve Block
V18, 19	Down Valve	Lower Cylinders	Base of Cylinders
V20, 21	Velocity Fuse Valve	Lock Cylinder if Hose Breaks	Inside Lift Cylinders





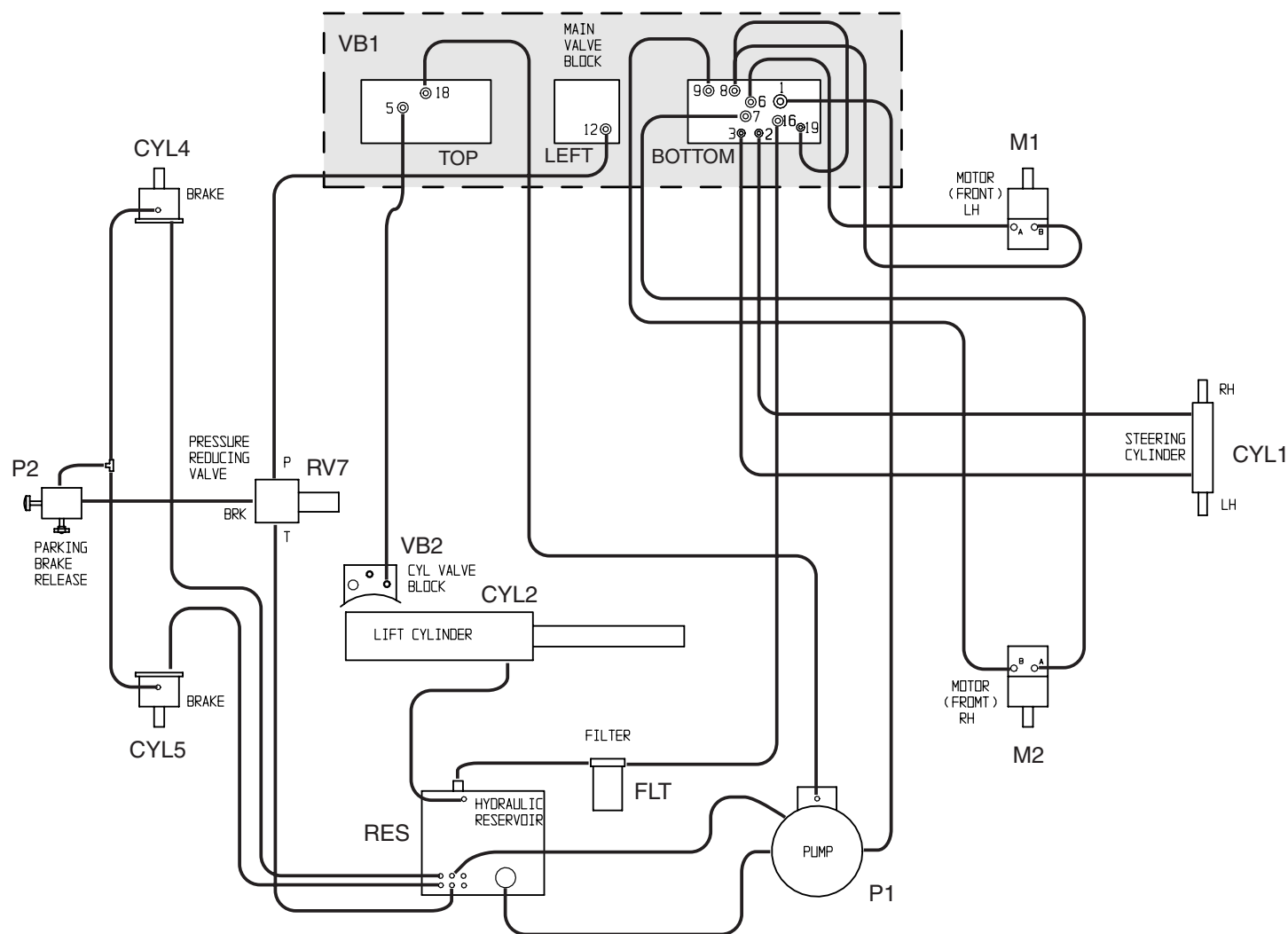


## 5.16 066941-000 HOSE ROUTING - XRT27 2-WHEEL DRIVE

**Legend:** Hose Routing, XRT27 2-Wheel Drive

Reference Designation	Name
CYL1	Steering Cylinder
CYL2	Lift Cylinder
CYL4	Brake Cylinder, Right Side
CYL5	Brake Cylinder, Left Side
FLT	Hydraulic Oil Filter
M1	Drive Motor, Left Front
M2	Drive Motor, Right Front

Reference Designation	Name
P1	Hydraulic Pump
P2	Manual Brake Release Pump
RES	Hydraulic Reservoir
RV7	Pressure Reducing Valve, Brakes
VB1	Main Valve Block
VB2	Lift Cylinder Valve Block

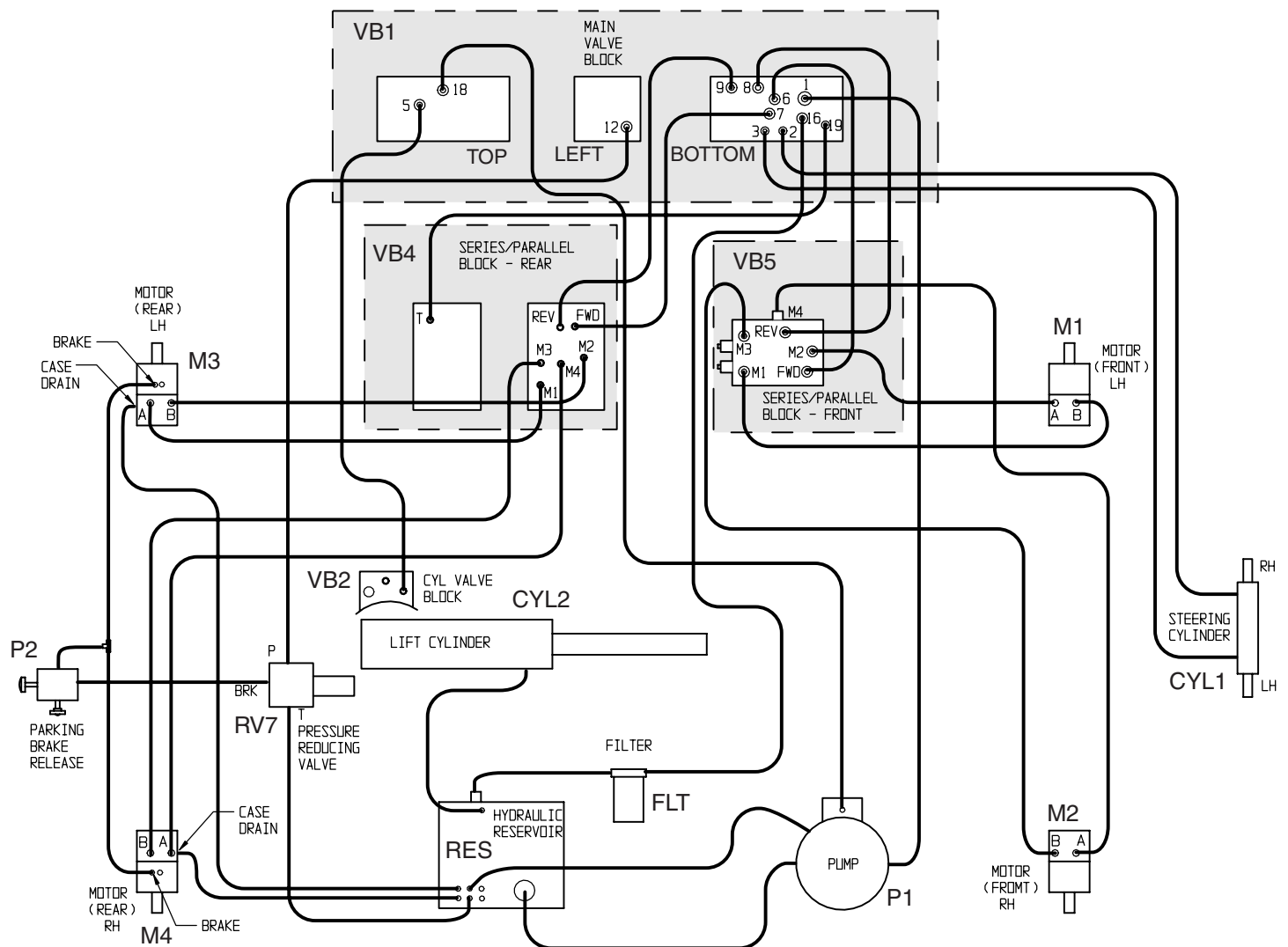


## 5.17 066941-001 - HOSE ROUTING - XRT27 4-WHEEL DRIVE

**Legend:** Hose Routing, XRT27 4-Wheel Drive

Reference Designation	Name
CYL1	Steering Cylinder
CYL2	Lift Cylinder
FLT	Hydraulic Oil Filter
M1	Drive Motor, Left Front
M2	Drive Motor, Right Front
M3	Drive Motor, Left Rear
M4	Drive Motor, Right Rear
P1	Hydraulic Pump

Reference Designation	Name
P2	Manual Brake Release Pump
RES	Hydraulic Reservoir
RV7	Pressure Reducing Valve, Brakes
VB1	Main Valve Block
VB2	Lift Cylinder Valve Block
VB4	Series Parallel Valve Block, Rear
VB5	Series Parallel Valve Block, Front

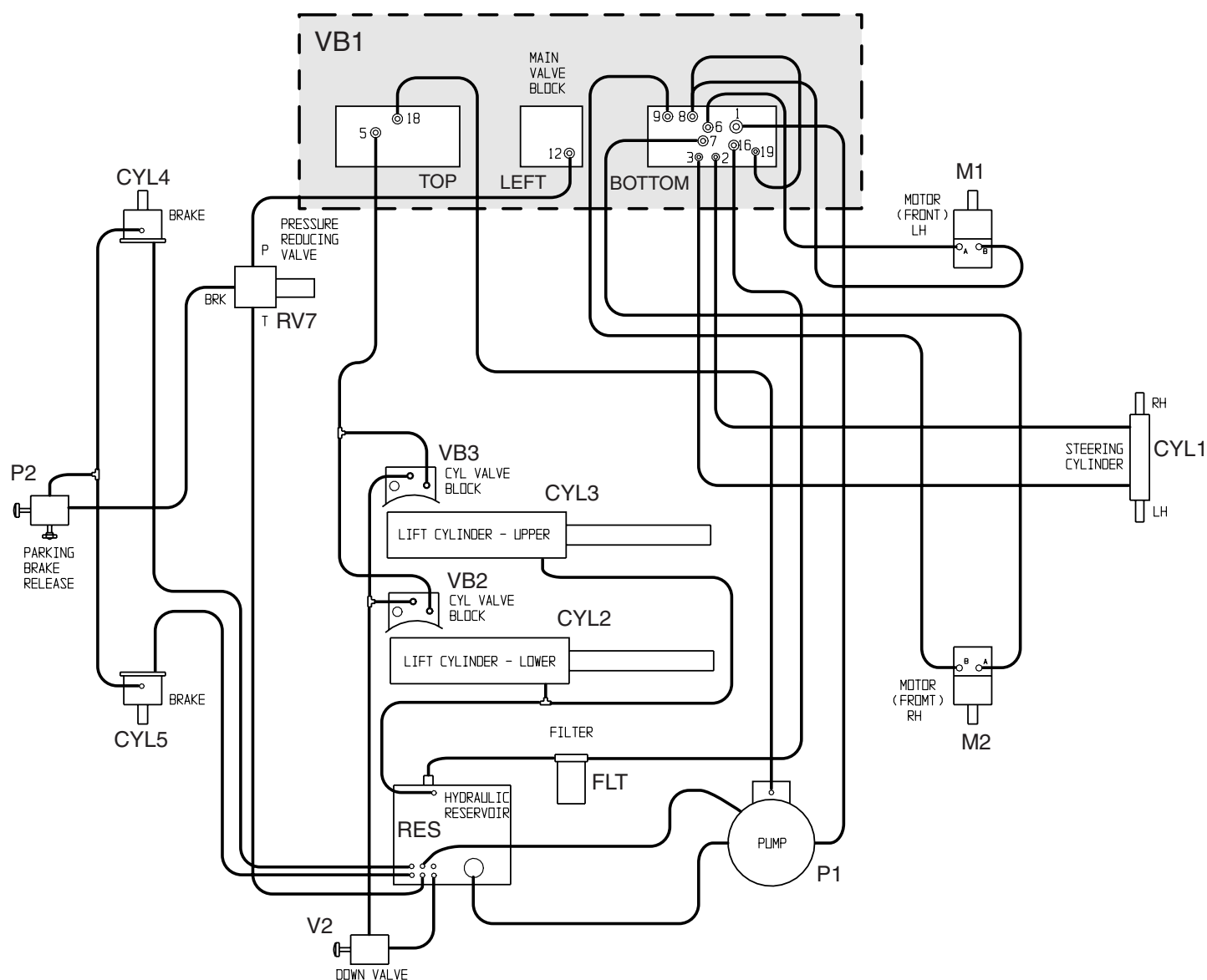


## 5.18 066941-002 - HOSE ROUTING - XRT33 2-WHEEL DRIVE

**Legend:** Hose Routing, XRT33 2-Wheel Drive

Reference Designation	Name
CYL1	Steering Cylinder
CYL2	Lift Cylinder, Lower
CYL3	Lift Cylinder, Upper
CYL4	Brake Cylinder, Right Side
CYL5	Brake Cylinder, Left Side
FLT	Hydraulic Oil Filter
M1	Drive Motor, Left Front
M2	Drive Motor, Right Front
P1	Hydraulic Pump

Reference Designation	Name
P2	Manual Brake Release Pump
RES	Hydraulic Reservoir
RV7	Pressure Reducing Valve, Brakes
V2	Down Valve
VB1	Main Valve Block
VB2	Lift Cylinder Valve Block, Lower
VB3	Lift Cylinder Valve Block, Upper

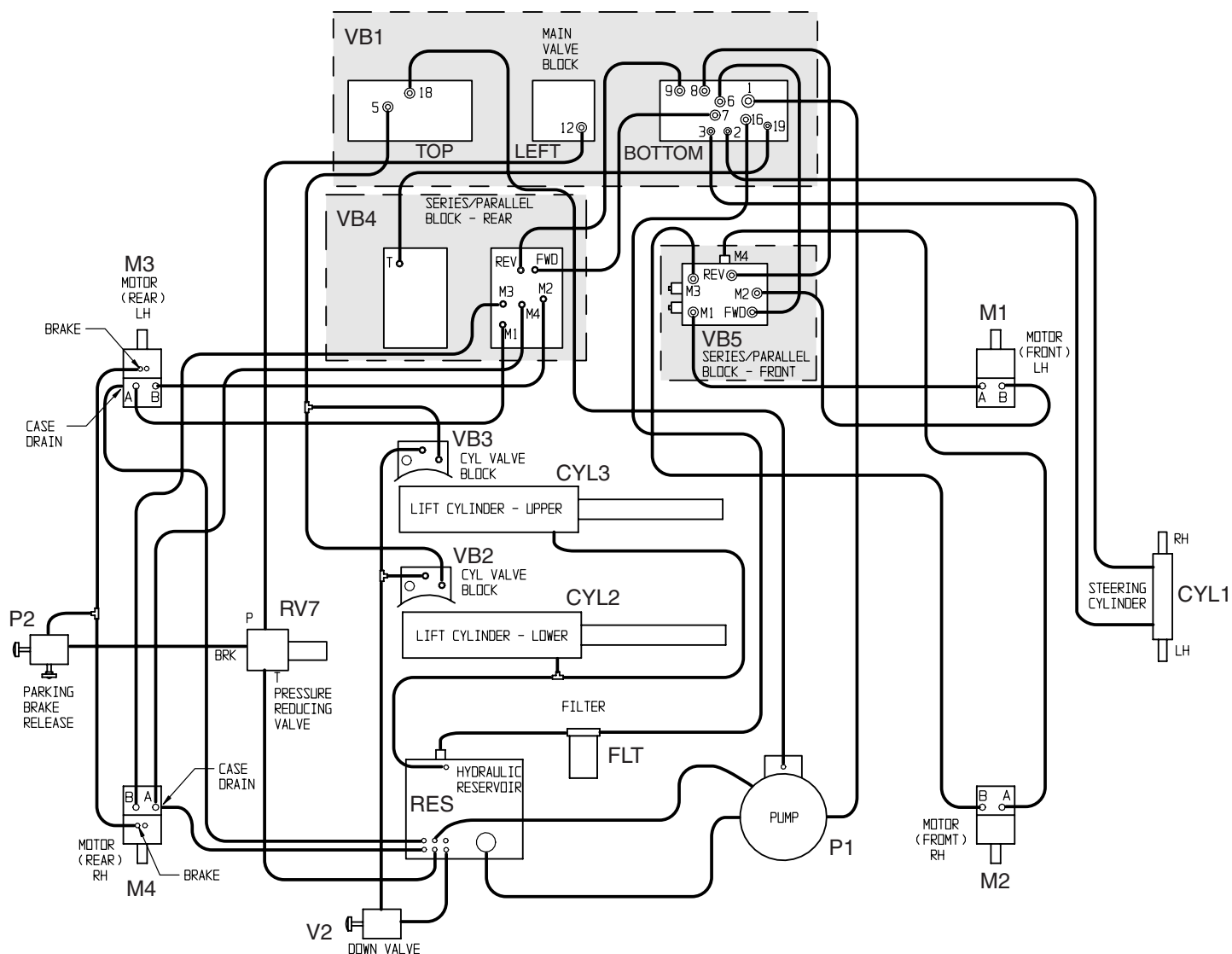


## 5.19 066941-003 - HOSE ROUTING - XRT33 4-WHEEL DRIVE

**Legend:** Hose Routing, XRT33 4-Wheel Drive

Reference Designation	Name
CYL1	Steering Cylinder
CYL2	Lift Cylinder, Lower
CYL3	Lift Cylinder, Upper
FLT	Hydraulic Oil Filter
M1	Drive Motor, Left Front
M2	Drive Motor, Right Front
M3	Drive Motor, Left Rear
M4	Drive Motor, Right Rear
P1	Hydraulic Pump
P2	Manual Brake Release Pump

Reference Designation	Name
RES	Hydraulic Reservoir
RV7	Pressure Reducing Valve, Brakes
V2	Down Valve
VB1	Main Valve Block
VB2	Lift Cylinder Valve Block, Lower
VB3	Lift Cylinder Valve Block, Upper
VB4	Series Parallel Valve Block, Rear
VB5	Series Parallel Valve Block, Front



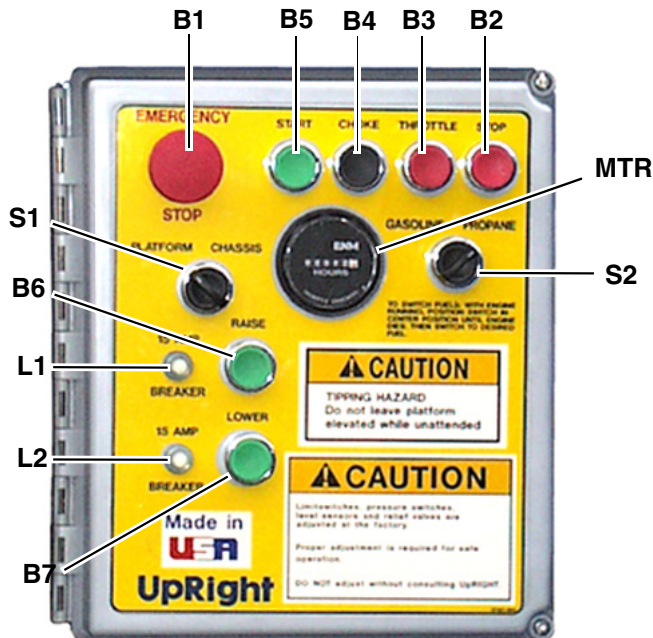
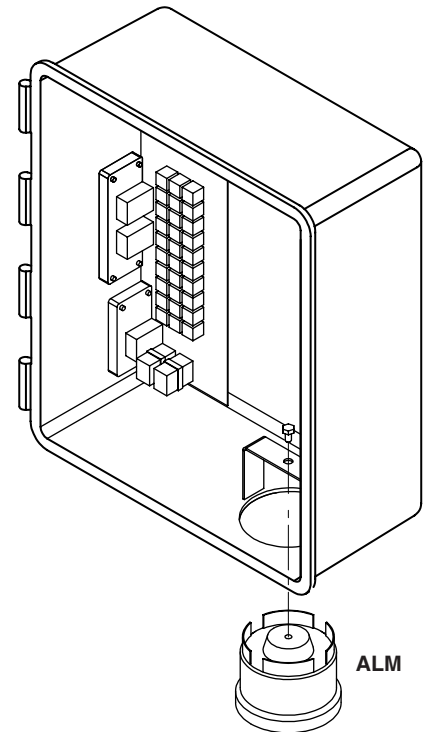
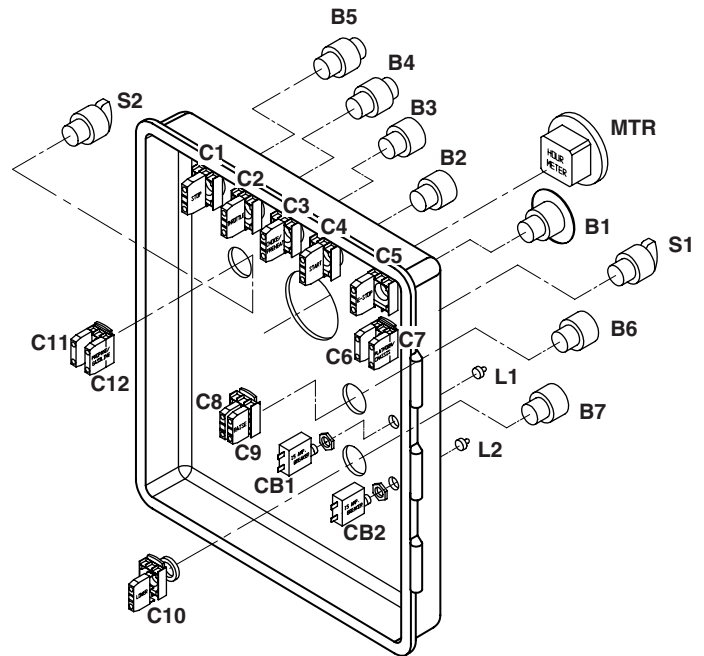
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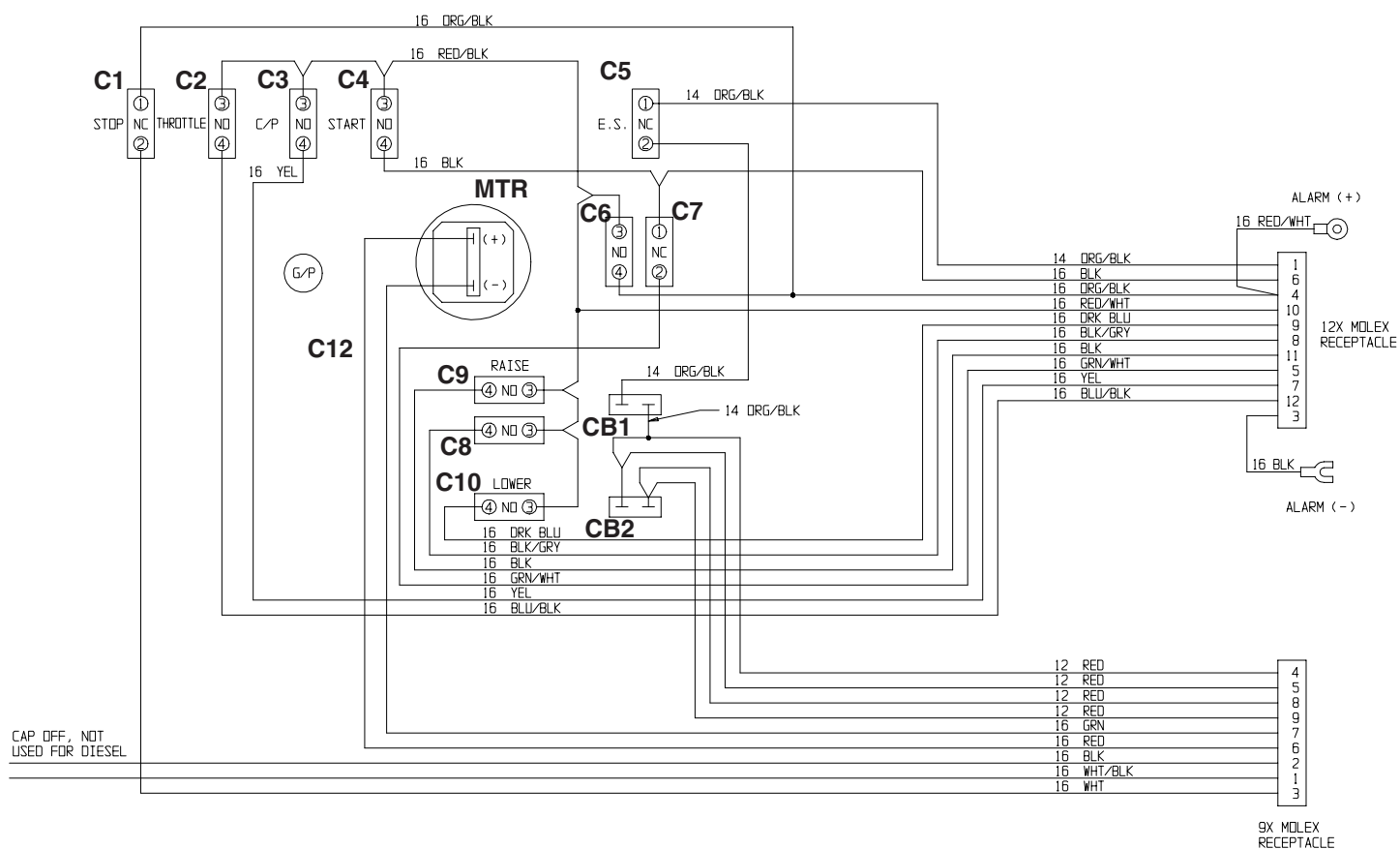
## 5.20 067941-001 - LOWER CONTROL BOX COMPONENTS - DUAL FUEL

**Legend:** Lower Control Box Components, Dual Fuel

Reference Designation	Name
ALM	Alarm
B1	Emergency Stop Button
B2	Start Engine Button
B3	Pre-Heat (glow plug) Button
B4	Throttle Button
B5	Stop Engine Button
B6	Raise Platform Button
B7	Lower Platform Button
C1	Start Engine Contact, Normally Closed
C2	Throttle Contact, Normally Open
C3	Pre-Heat (glow plug) Contact, Normally Open
C4	Start Engine Contact, Normally Open
C5	Emergency Stop Contact, Normally Closed
C6	Platform/Chassis Selector Contact, Normally Open
C7	Platform/Chassis Selector Contact, Normally Closed
C8&9	Raise Platform Contact, Normally Open
C10	Lower Platform Contact, Normally Open
C11	Fuel Selector Contact, Normally Open
C12	Fuel Selector Contact, Normally Closed
CB1	Emergency Stop Lamp Circuit Breaker
CB2	Power Lamp Circuit Breaker
L1	Emergency Stop Lamp
L2	Power Lamp
MTR	Hour Meter
S1	Platform/Chassis Selector Switch
S2	Fuel Selector Switch



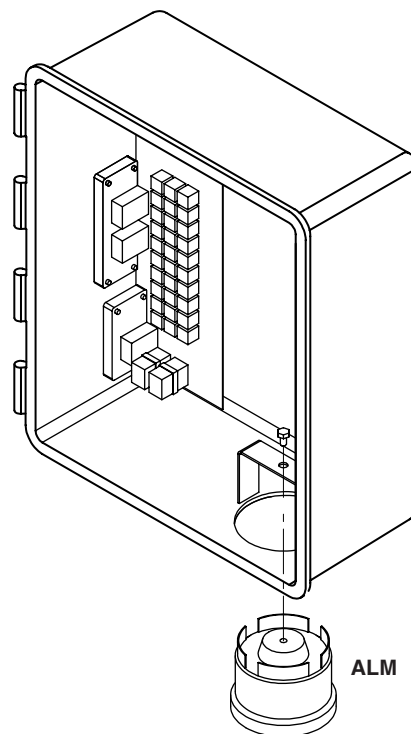
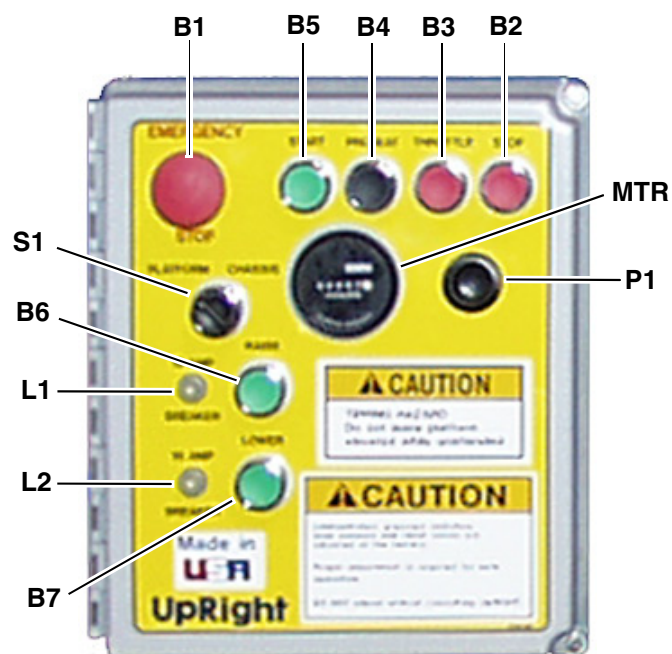
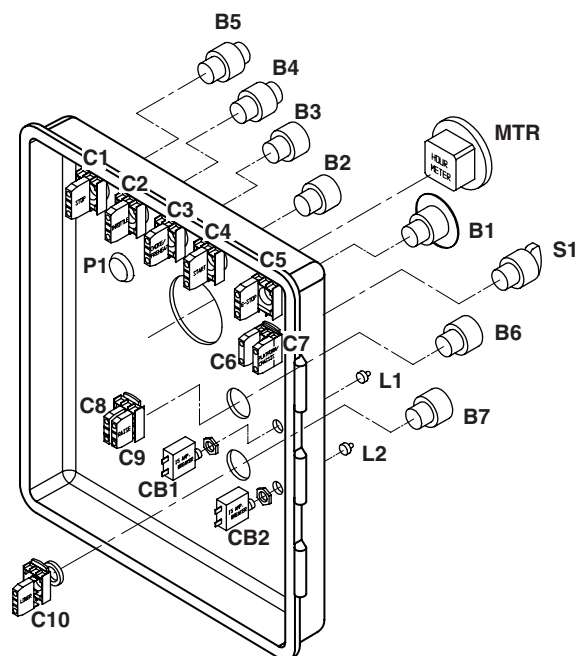


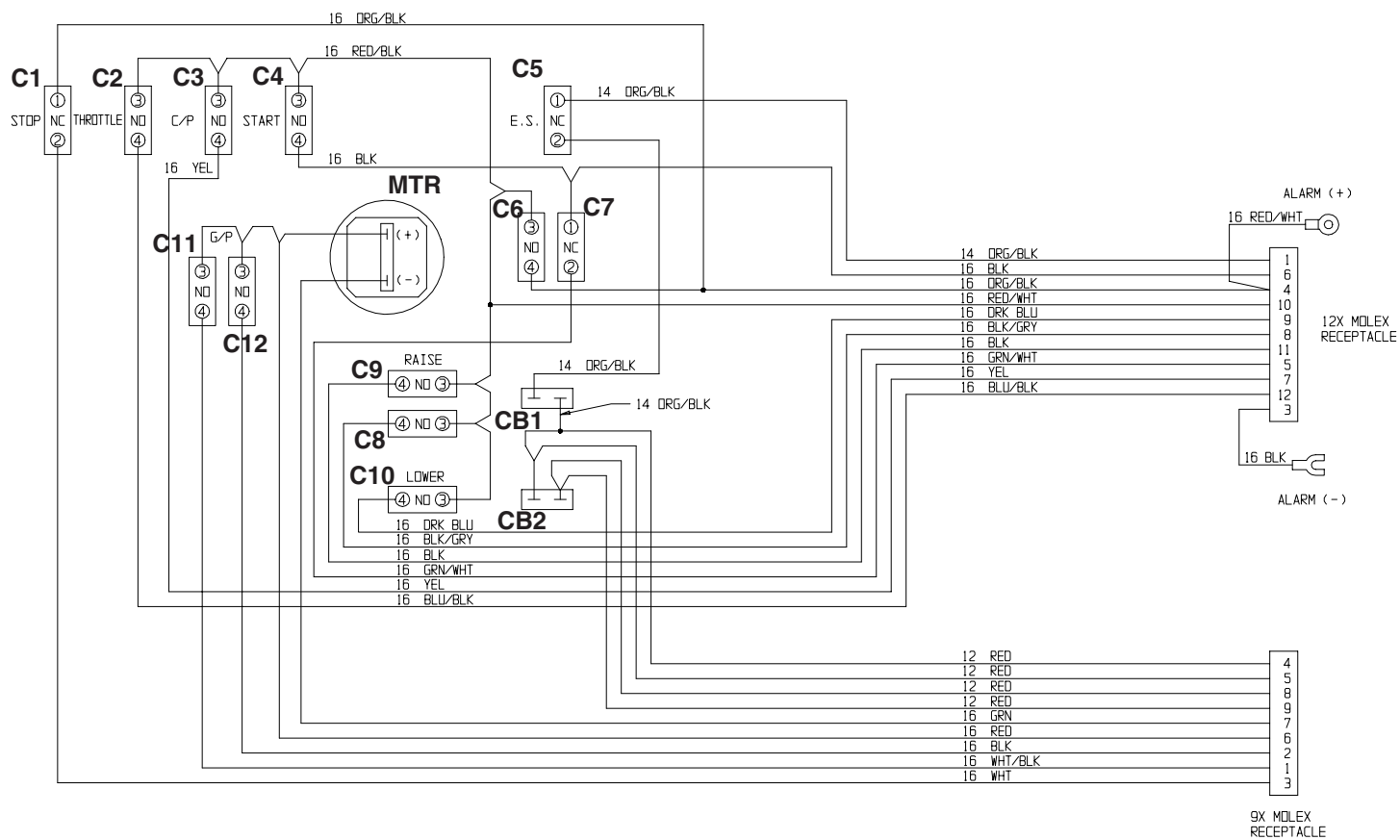


## 5.21 067941-002 - LOWER CONTROL BOX COMPONENTS - DIESEL

**Legend:** Lower Control Box Components, Diesel

Reference Designation	Name
ALM	Alarm
B1	Emergency Stop Button
B2	Start Engine Button
B3	Pre-Heat Button
B4	Throttle Button
B5	Stop Engine Button
B6	Raise Platform Button
B7	Lower Platform Button
C1	Start Engine Contact, Normally Closed
C2	Throttle Contact, Normally Open
C3	Pre-Heat Contact, Normally Open
C4	Start Engine Contact, Normally Open
C5	Emergency Stop Contact, Normally Closed
C6	Platform/Chassis Selector Contact, Normally Open
C7	Platform/Chassis Selector Contact, Normally Closed
C8&9	Raise Platform Contact, Normally Open
C10	Lower Platform Contact, Normally Open
CB1	Emergency Stop Lamp Circuit Breaker
CB2	Power Lamp Circuit Breaker
L1	Emergency Stop Lamp
L2	Power Lamp
MTR	Hour Meter
P1	Plug (to fill unused hole)
S1	Platform/Chassis Selector Switch

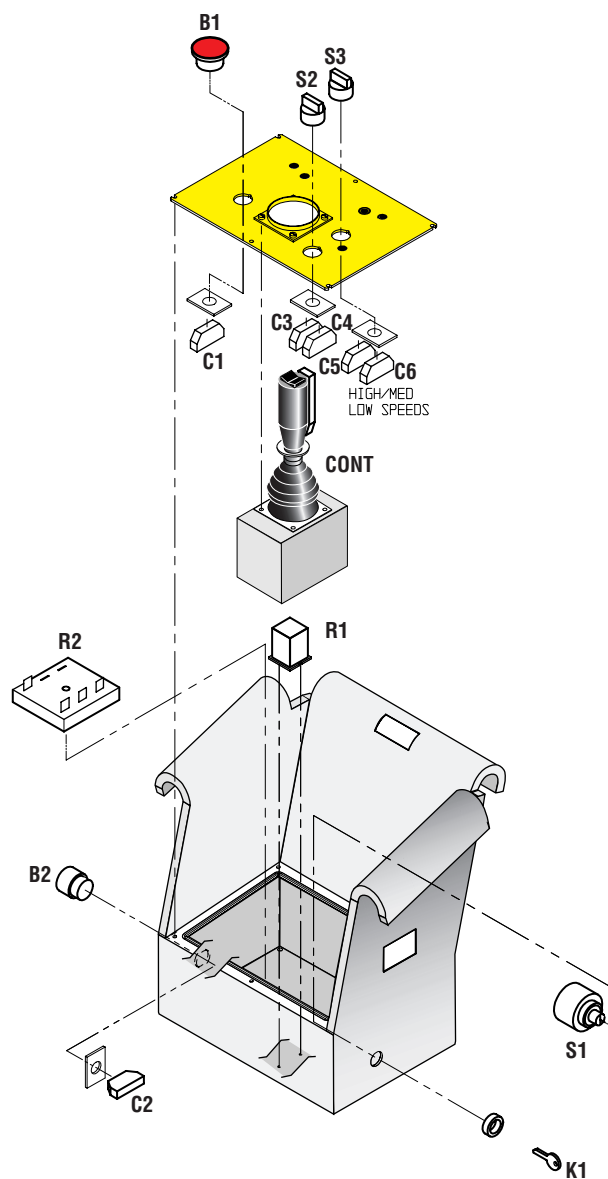


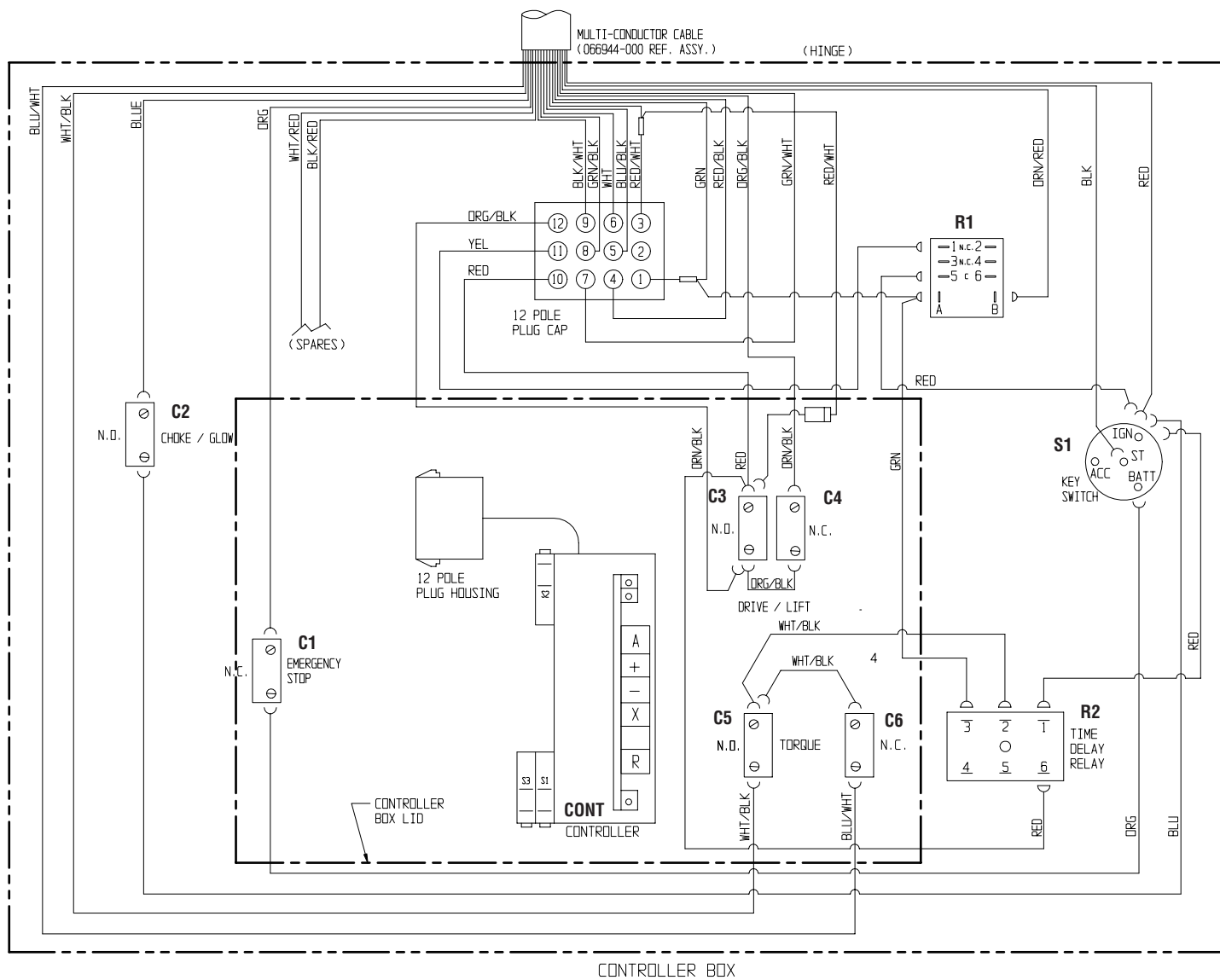


## 5.22 066942-001 - UPPER CONTROL BOX COMPONENT LOCATION

**Legend:** Upper Control Box Components

Reference Designation	Name
B1	Emergency Stop Button
B2	Choke/Pre-heat Button
C1	Emergency Stop Contact
C2	Choke/Pre-heat Contact
C3	Drive/Lift Contact, Normally Open
C4	Drive/Lift Contact, Normally Closed
C5	Torque Contact, Normally Open
C6	Torque Contact, Normally Closed
CONT	Proportional Controller (Joystick)
K1	Key
R1	Relay
R2	Time Relay (067194-000)
S1	Key Switch
S2	Lift/Drive Selector Switch
S3	Speed Selector Switch





**NOTES:**

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# ILLUSTRATED PARTS BREAKDOWN

## 6.1 INTRODUCTION

This section lists and illustrates the replaceable assemblies and parts of this product, as manufactured by UpRight, Inc.

Each parts list contains the component parts for that assembly.

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## Illustrated Parts Breakdown - 6.1 - Introduction

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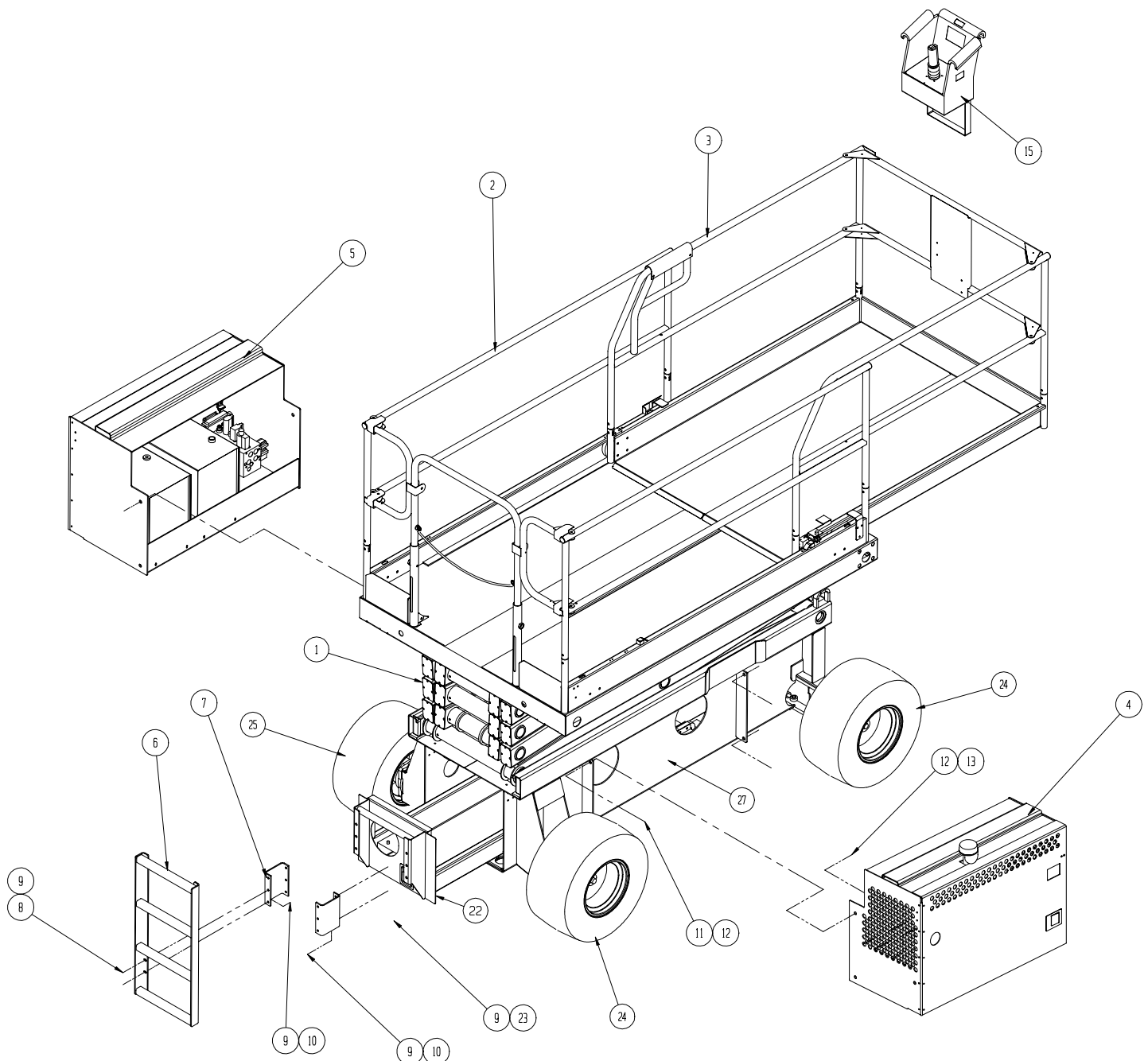


# Final Assembly XRT27 2WD Diesel Kubota

066901-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066927-000	SCISSOR/PLATFORM INSTALLATION, XRT-27	1
2	066938-000	GUARD RAIL INSTALLATION	1
3	066939-000	EXTENSION PLATFORM INSTALLATION	1
4	066937-001	POWER MODULE	1
5	066935-001	CONTROL MODULE	1
6	066964-000	WELDMENT, LADDER	1
7	067259-000	BRACKET, LADDER STANDOFF	2
8	011254-008	SCREW HHC 3/8-16 x 1	8
9	011240-006	WASHER 3/8 FLAT	16
10	011248-006	NUT 3/8-16 HEX ESNA	8
11	011256-008	SCREW HHC 1/2-13 x 1	8
12	011240-008	WASHER 1/2 FLAT	16

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
13	011248-008	NUT 1/2-13 HEX ESNA	8
15	066942-000	CONTROLLER ASSEMBLY	1
16	066944-000	CONTROL CABLE ASSEMBLY	1
17	066940-001	LABEL KIT / INSTALLATION	1
18	066941-000	HOSE KIT / INSTALLATION	1
20	066946-00?	ELECTRICAL SCHEMATIC	REF
21	066945-000	HYDRAULIC SCHEMATIC	REF
22	066936-001	ROLL-OUT TRAY INSTALLATION	1
24	064054-010	TIRE/WHEEL ASSY RH-TRAC SEAL	2
25	064054-011	TIRE/WHEEL ASSY LH-TRAC SEAL	2
27	066932-000	CHASSIS ASSEMBLY	1

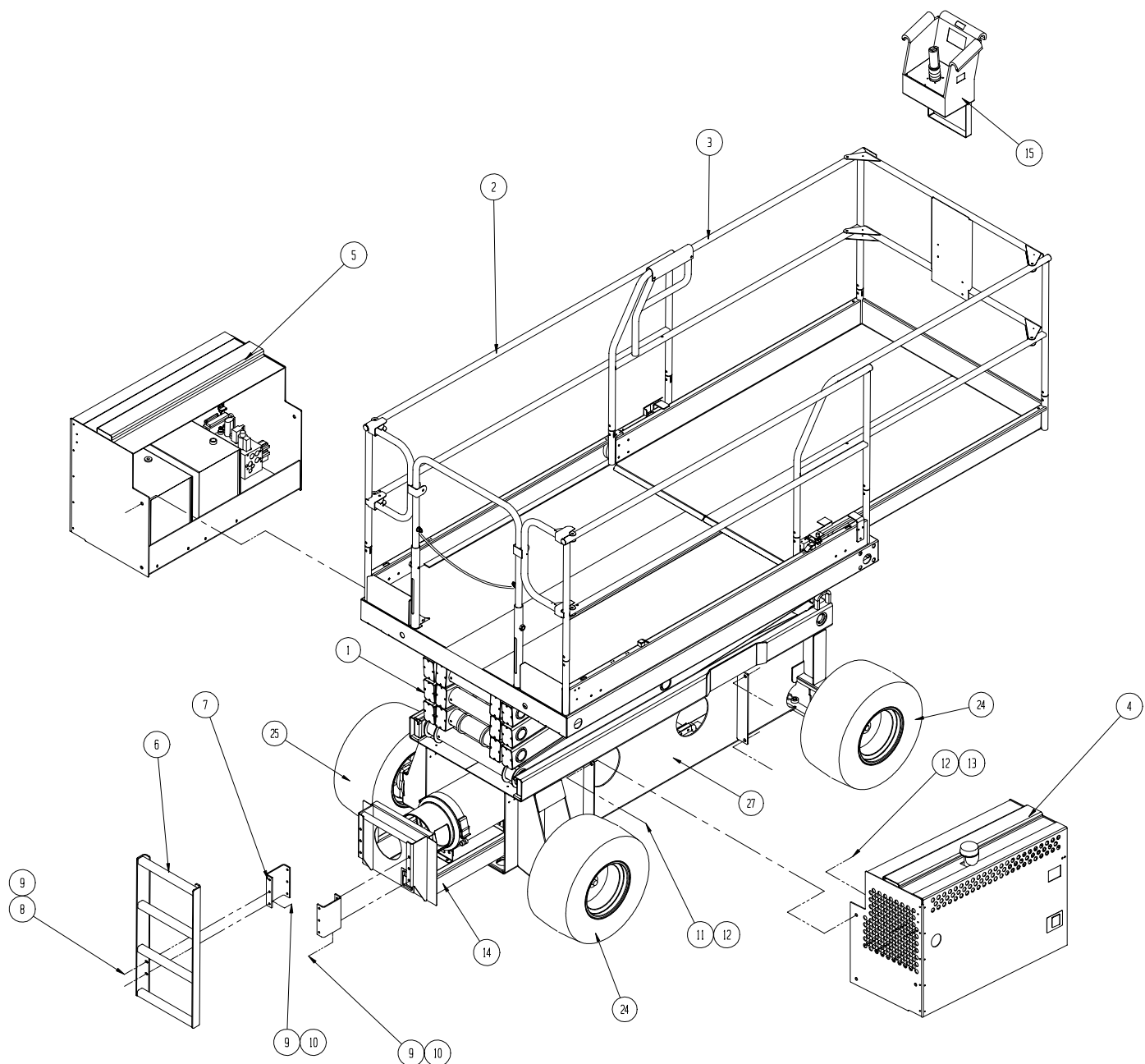


## Final Assembly XRT27 2WD Dual Fuel Kubota

066902-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066927-000	SCISSOR/PLATFORM INSTALLATION, XRT-27	1
2	066938-000	GUARD RAIL INSTALLATION	1
3	066939-000	EXTENSION PLATFORM INSTALLATION	1
4	066937-002	POWER MODULE	1
5	066935-000	CONTROL MODULE	1
6	066964-000	WELDMENT, LADDER	1
7	067259-000	BRACKET, LADDER STANDOFF	2
8	011254-008	SCREW HHC 3/8-16 x 1	8
9	011240-006	WASHER 3/8 FLAT	16
10	011248-006	NUT 3/8-16 HEX ESNA	8
11	011256-008	SCREW HHC 1/2-13 x 1	8
12	011240-008	WASHER 1/2 FLAT	16

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
13	011248-008	NUT 1/2-13 HEX ESNA	8
14	066936-000	ROLL-OUT TRAY INSTALLATION	1
15	066942-000	CONTROLLER ASSEMBLY	1
16	066944-000	CONTROL CABLE ASSEMBLY	1
17	066940-003	LABEL KIT / INSTALLATION	1
18	066941-000	HOSE KIT / INSTALLATION	1
20	066946-00?	ELECTRICAL SCHEMATIC	REF
21	066945-000	HYDRAULIC SCHEMATIC	REF
24	064054-010	TIRE/WHEEL ASSY RH-TRAC SEAL	2
25	064054-011	TIRE/WHEEL ASSY LH-TRAC SEAL	2
27	066932-000	CHASSIS ASSEMBLY, XRT-27	1

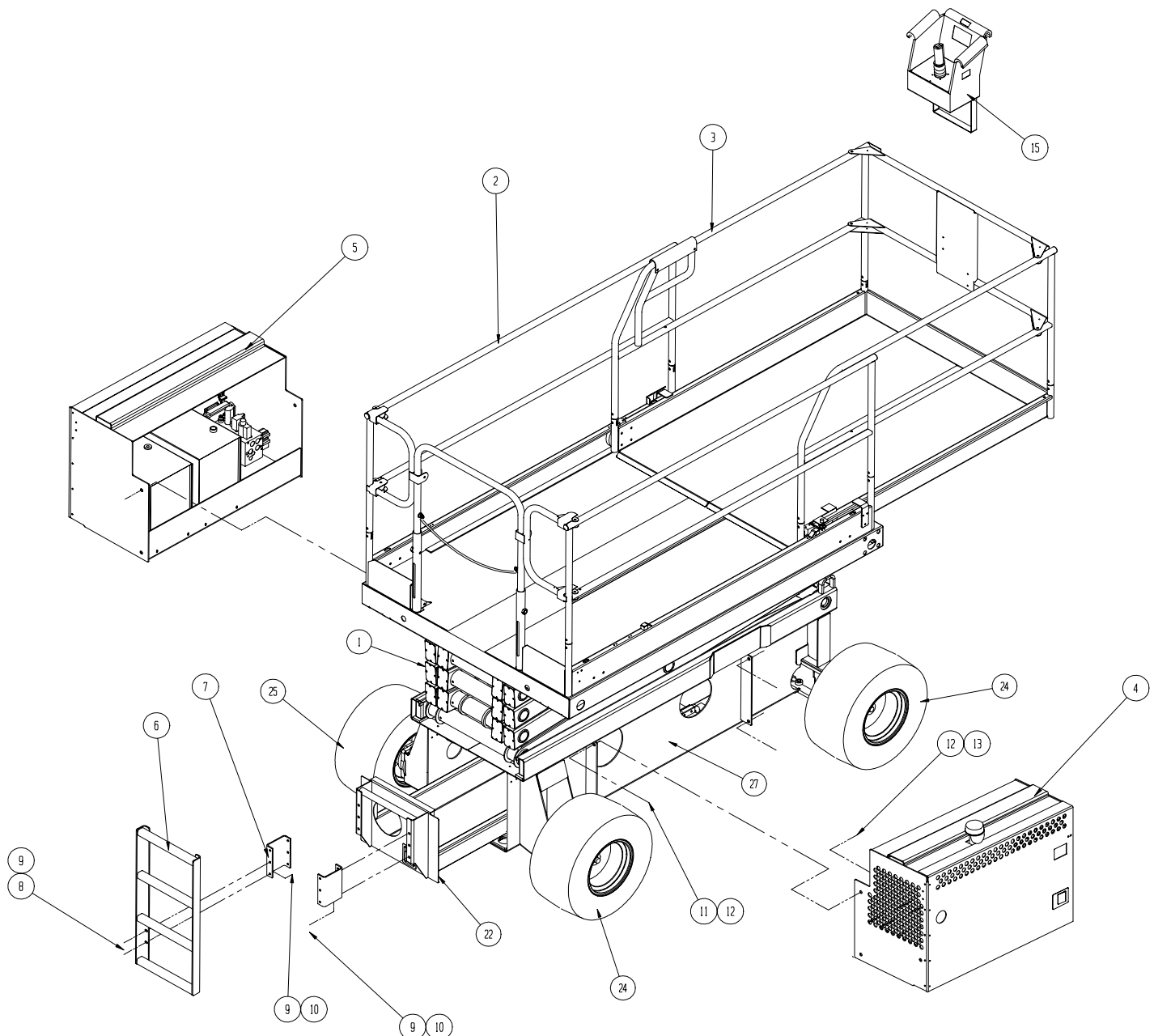


# Final Assembly XRT27 4WD Diesel Kubota

066907-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066927-000	SCISSOR/PLATFORM INSTALLATION, XRT-27	1
2	066938-000	GUARD RAIL INSTALLATION	1
3	066939-000	EXTENSION PLATFORM INSTALLATION	1
4	066937-001	POWER MODULE	1
5	066935-003	CONTROL MODULE	1
6	066964-000	WELDMNT, LADDER	1
7	067259-000	BRACKET, LADDER STANDOFF	2
8	011254-008	SCREW HHC 3/8-16 x 1	8
9	011240-006	WASHER 3/8 FLAT	16
10	011248-006	NUT 3/8-16 HEX ESNA	8
11	011256-008	SCREW HHC 1/2-13 x 1	8
12	011240-008	WASHER 1/2 FLAT	16

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
13	011248-008	NUT 1/2-13 HEX ESNA	8
15	066942-001	CONTROLLER ASSEMBLY	1
16	066944-000	CONTROL CABLE ASSEMBLY	1
17	066940-005	LABEL KIT / INSTALLATION	1
18	066941-001	HOSE KIT / INSTALLATION	1
20	066946-004	ELECTRICAL SCHEMATIC	REF
21	066945-001	HYDRAULIC SCHEMATIC	REF
22	066936-001	ROLL-OUT TRAY INSTALLATION	1
24	064054-010	TIRE/WHEEL ASSY RH-TRAC SEAL	2
25	064054-011	TIRE/WHEEL ASSY LH-TRAC SEAL	2
27	066932-001	CHASSIS ASSEMBLY, XRT	1

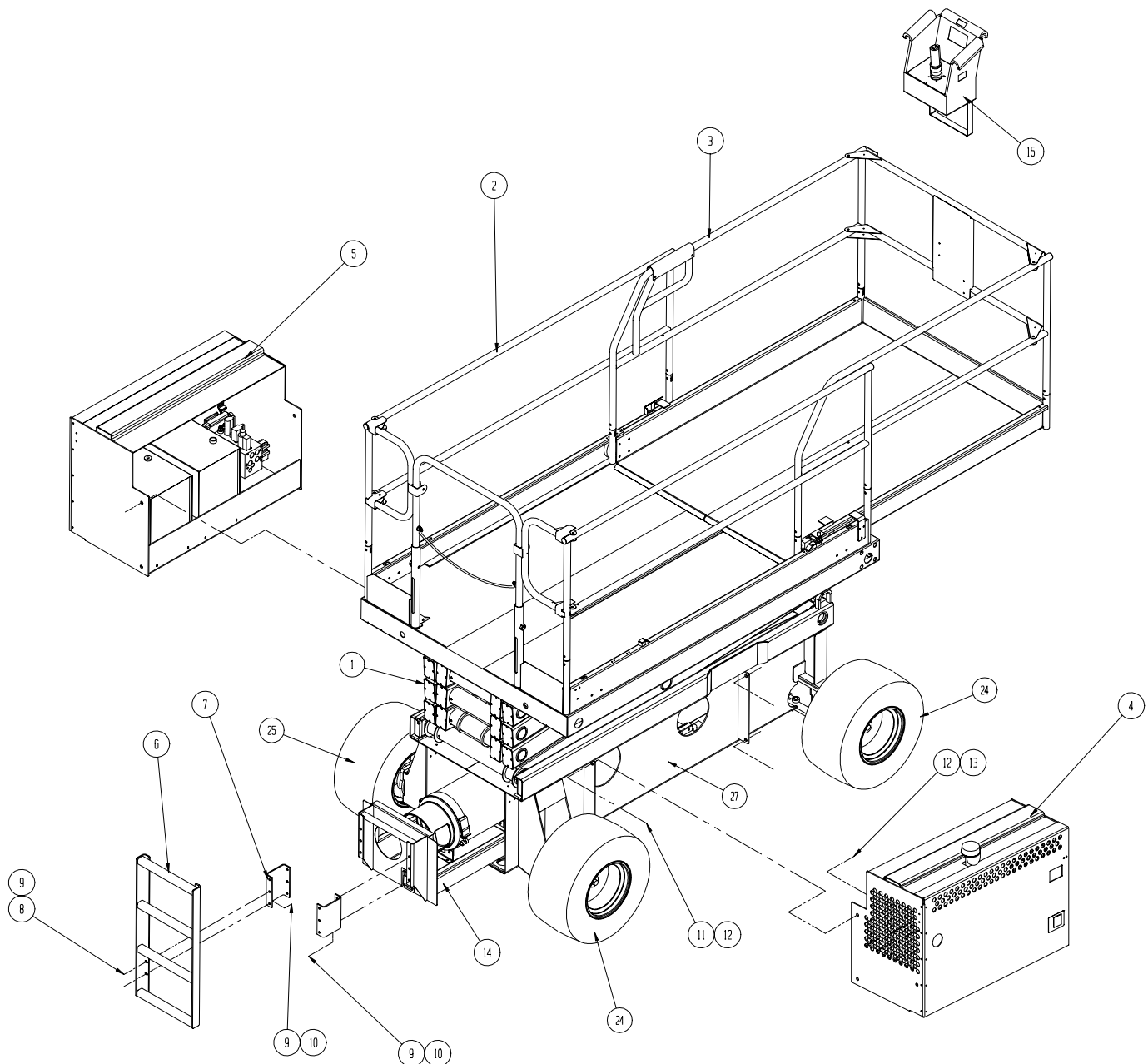


## Final Assembly XRT27 4WD Dual Fuel Kubota

066908-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066927-000	SCISSOR/PLATFORM INSTALLATION, XRT-27	1
2	066938-000	GUARD RAIL INSTALLATION	1
3	066939-000	EXTENSION PLATFORM INSTALLATION	1
4	066937-002	POWER MODULE	1
5	066935-002	CONTROL MODULE	1
6	066964-000	WELDMENT, LADDER	1
7	067259-000	BRACKET, LADDER STANDOFF	2
8	011254-008	SCREW HHC 3/8-16 x 1	8
9	011240-006	WASHER 3/8 FLAT	16
10	011248-006	NUT 3/8-16 HEX ESNA	8
11	011256-008	SCREW HHC 1/2-13 x 1	8
12	011240-008	WASHER 1/2 FLAT	16

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
13	011248-008	NUT 1/2-13 HEX ESNA	8
14	066936-000	ROLL-OUT TRAY INSTALLATION	1
15	066942-001	CONTROLLER ASSEMBLY	1
16	066944-000	CONTROL CABLE ASSEMBLY	1
17	066940-007	LABEL KIT / INSTALLATION	1
18	066941-001	HOSE KIT / INSTALLATION	1
20	066946-003	ELECTRICAL SCHEMATIC	REF
21	066945-001	HYDRAULIC SCHEMATIC	REF
24	064054-010	TIRE/WHEEL ASSY RH-TRAC SEAL	2
25	064054-011	TIRE/WHEEL ASSY LH-TRAC SEAL	2
27	066932-001	CHASSIS ASSEMBLY, XRT-27	1

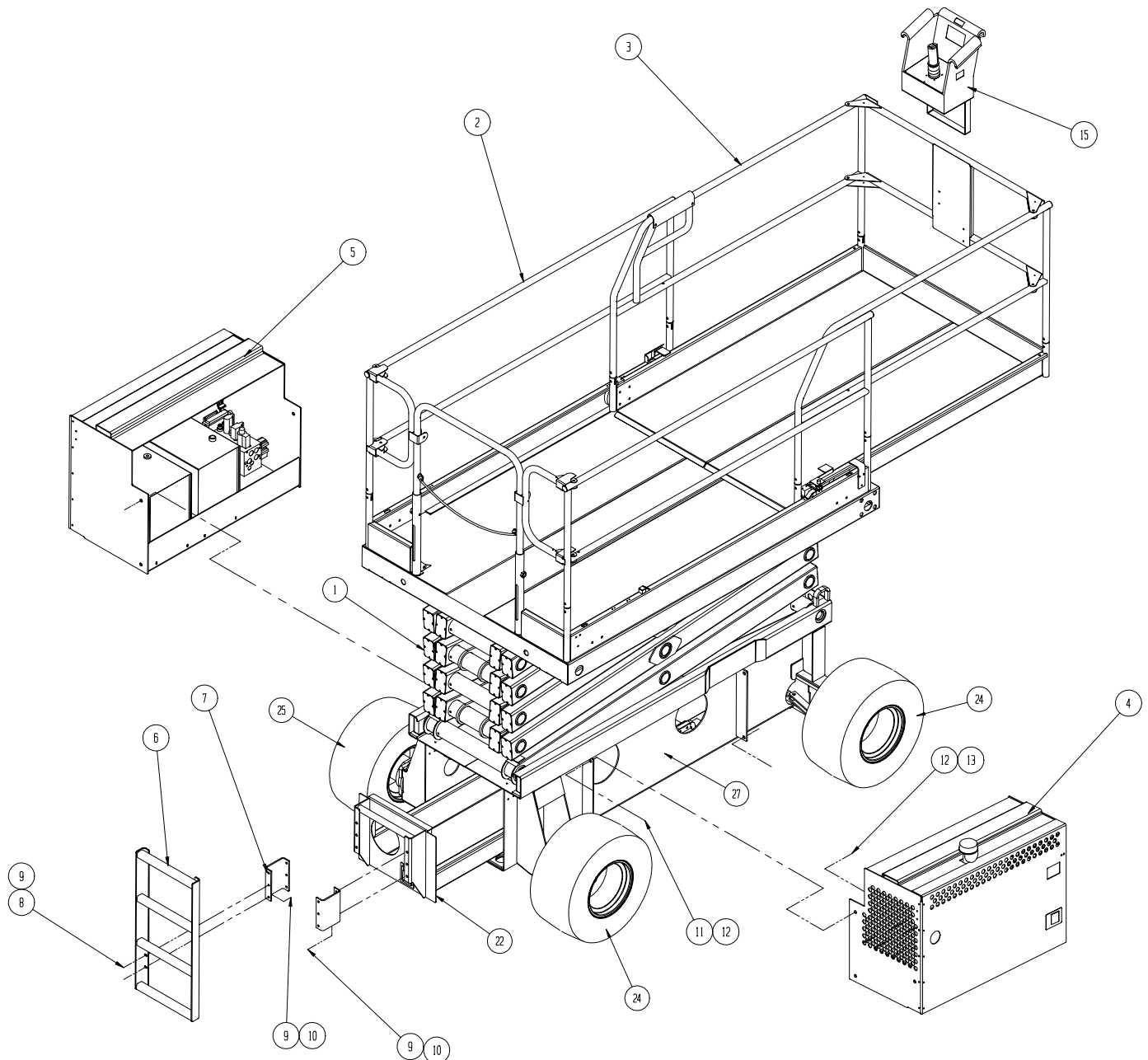


## Final Assembly XRT33 2WD Diesel Kubota

066913-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066929-000	SCISSOR/PLATFORM INSTALLATION, XRT-33	1
2	066938-000	GUARD RAIL INSTALLATION	1
3	066939-000	EXTENSION PLATFORM INSTALLATION	1
4	066937-001	POWER MODULE	1
5	066935-001	CONTROL MODULE	1
6	066964-000	WELDMNT, LADDER	1
7	067259-000	BRACKET, LADDER STANDOFF	2
8	011254-008	SCREW HHC 3/8-16 x 1	8
9	011240-006	WASHER 3/8 FLAT	16
10	011248-006	NUT 3/8-16 HEX ESNA	8
11	011256-008	SCREW HHC 1/2-13 x 1	8
12	011240-008	WASHER 1/2 FLAT	16

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
13	011248-008	NUT 1/2-13 HEX ESNA	8
15	066942-000	CONTROLLER ASSEMBLY	1
16	066944-001	CONTROL CABLE ASSEMBLY	1
17	066940-009	LABEL KIT / INSTALLATION	1
18	066941-002	HOSE KIT / INSTALLATION	1
20	066946-002	ELECTRICAL SCHEMATIC	REF
21	066945-001	HYDRAULIC SCHEMATIC	REF
22	066936-002	ROLL-OUT TRAY INSTALLATION	1
24	064054-010	TIRE/WHEEL ASSY RH-TRAC SEAL	2
25	064054-011	TIRE/WHEEL ASSY LH-TRAC SEAL	2
27	066932-002	CHASSIS ASSEMBLY, XRT-33	1

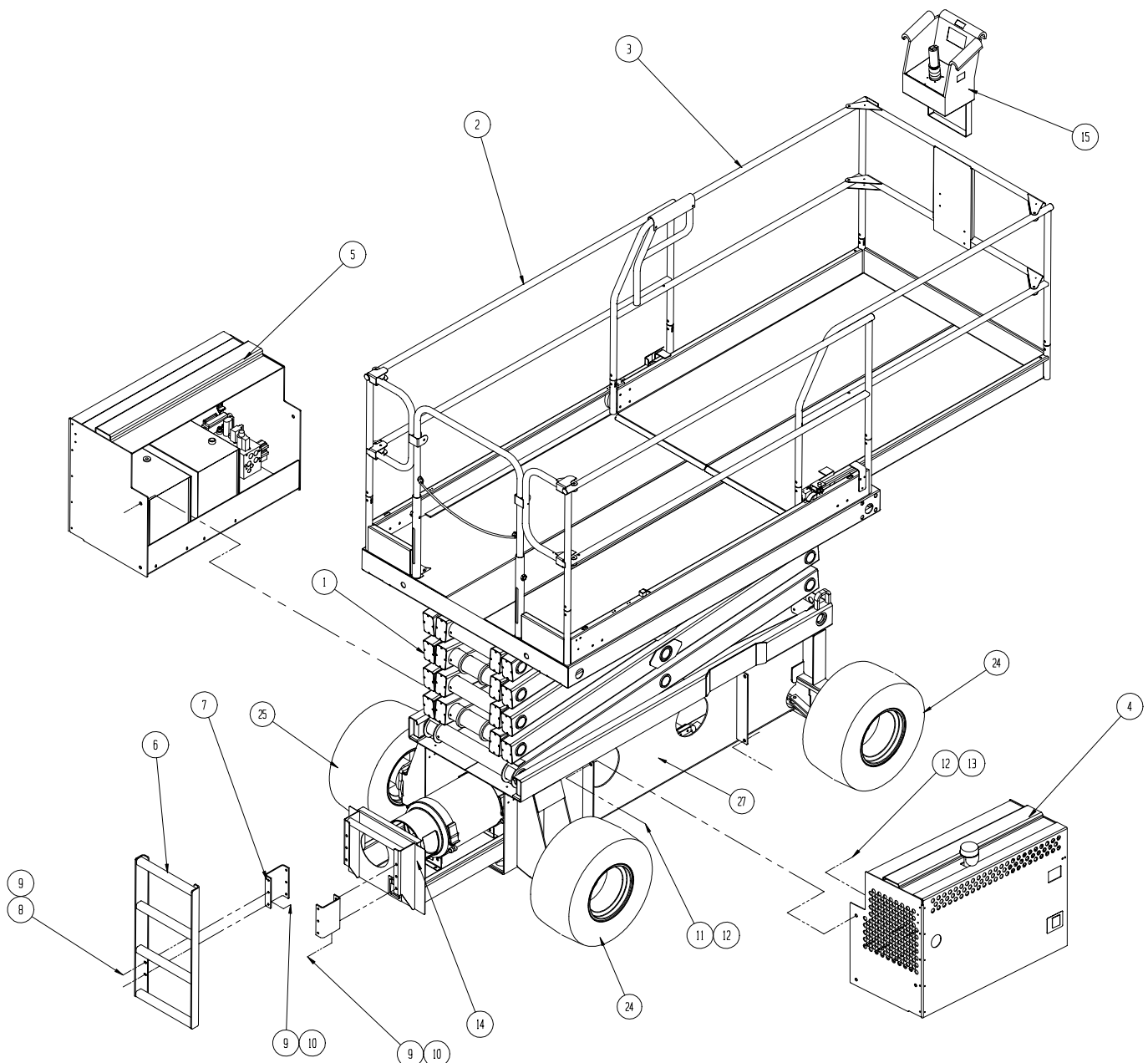


## Final Assembly XRT33 2WD Dual Fuel Kubota

066914-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066929-000	SCISSOR/PLATFORM INST., XRT-33	1
2	066938-000	GUARD RAIL INSTALLATION	1
3	066939-000	EXTENSION PLATFORM INSTALLATION	1
4	066937-002	POWER MODULE	1
5	066935-000	CONTROL MODULE	1
6	066964-000	WELDMENT, LADDER	1
7	067259-000	BRACKET, LADDER STANDOFF	2
8	011254-008	SCREW HHC 3/8-16 x 1	8
9	011240-006	WASHER 3/8 FLAT	16
10	011248-006	NUT 3/8-16 HEX ESNA	8
11	011256-008	SCREW HHC 1/2-13 x 1	8
12	011240-008	WASHER 1/2 FLAT	16

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
13	011248-008	NUT 1/2-13 HEX ESNA	8
14	066936-000	ROLL-OUT TRAY INSTALLATION	1
15	066942-000	CONTROLLER ASSEMBLY	1
16	066944-001	CONTROL CABLE ASSEMBLY	1
17	066940-011	LABEL KIT / INSTALLATION	1
18	066941-002	HOSE KIT / INSTALLATION	1
20	066946-003	ELECTRICAL SCHEMATIC	REF
21	066945-002	HYDRAULIC SCHEMATIC	REF
24	064054-010	TIRE/WHEEL ASSY RH-TRAC SEAL	2
25	064054-011	TIRE/WHEEL ASSY LH-TRAC SEAL	2
27	066932-002	CHASSIS ASSEMBLY, XRT-33	1



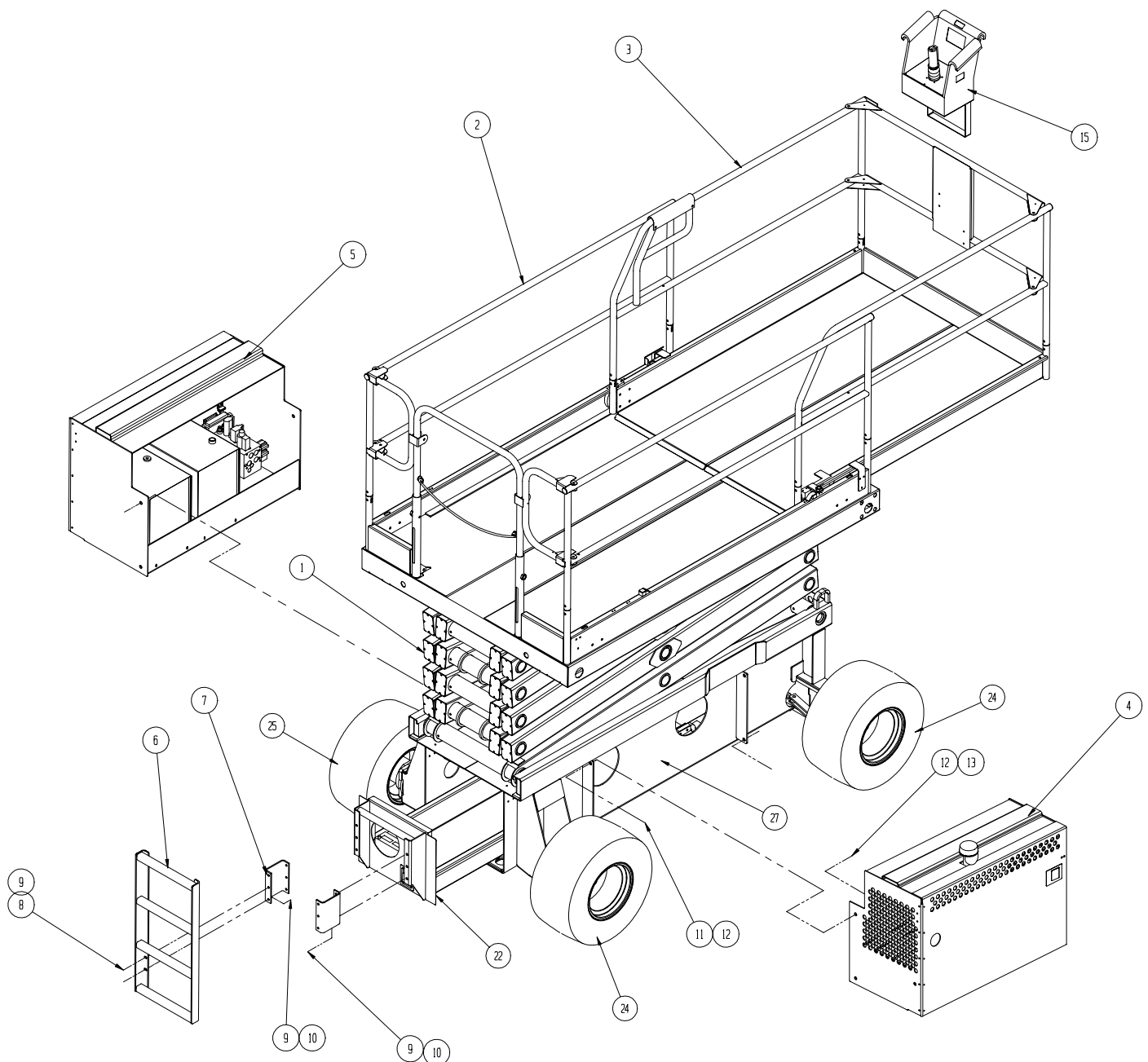


# Final Assembly XRT33 4WD Diesel Kubota

066919-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066929-000	SCISSOR/PLATFORM INSTAL., XRT-33	1
2	066938-000	GUARD RAIL INSTALLATION	1
3	066939-000	EXTENSION PLATFORM INSTALLATION	1
4	066937-001	POWER MODULE	1
5	066935-003	CONTROL MODULE	1
6	066964-000	WELDMENT, LADDER	1
7	067259-000	BRACKET, LADDER STANDOFF	2
8	011254-008	SCREW HHC 3/8-16 x 1	8
9	011240-006	WASHER 3/8 FLAT	16
10	011248-006	NUT 3/8-16 HEX ESNA	8
11	011256-008	SCREW HHC 1/2-13 x 1	8
12	011240-008	WASHER 1/2 FLAT	16

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
13	011248-008	NUT 1/2-13 HEX ESNA	8
15	066942-001	CONTROLLER ASSEMBLY	1
16	066944-001	CONTROL CABLE ASSEMBLY	1
17	066940-013	LABEL KIT / INSTALLATION	1
18	067941-003	HOSE KIT / INSTALLATION	1
20	066946-004	ELECTRICAL SCHEMATIC	REF
21	066945-003	HYDRAULIC SCHEMATIC	REF
22	066936-001	ROLL-OUT TRAY INSTALLATION	1
24	064054-010	TIRE/WHEEL ASSY RH-TRAC SEAL	2
25	064054-011	TIRE/WHEEL ASSY LH-TRAC SEAL	2
27	066932-003	CHASSIS ASSEMBLY, XRT-33	1

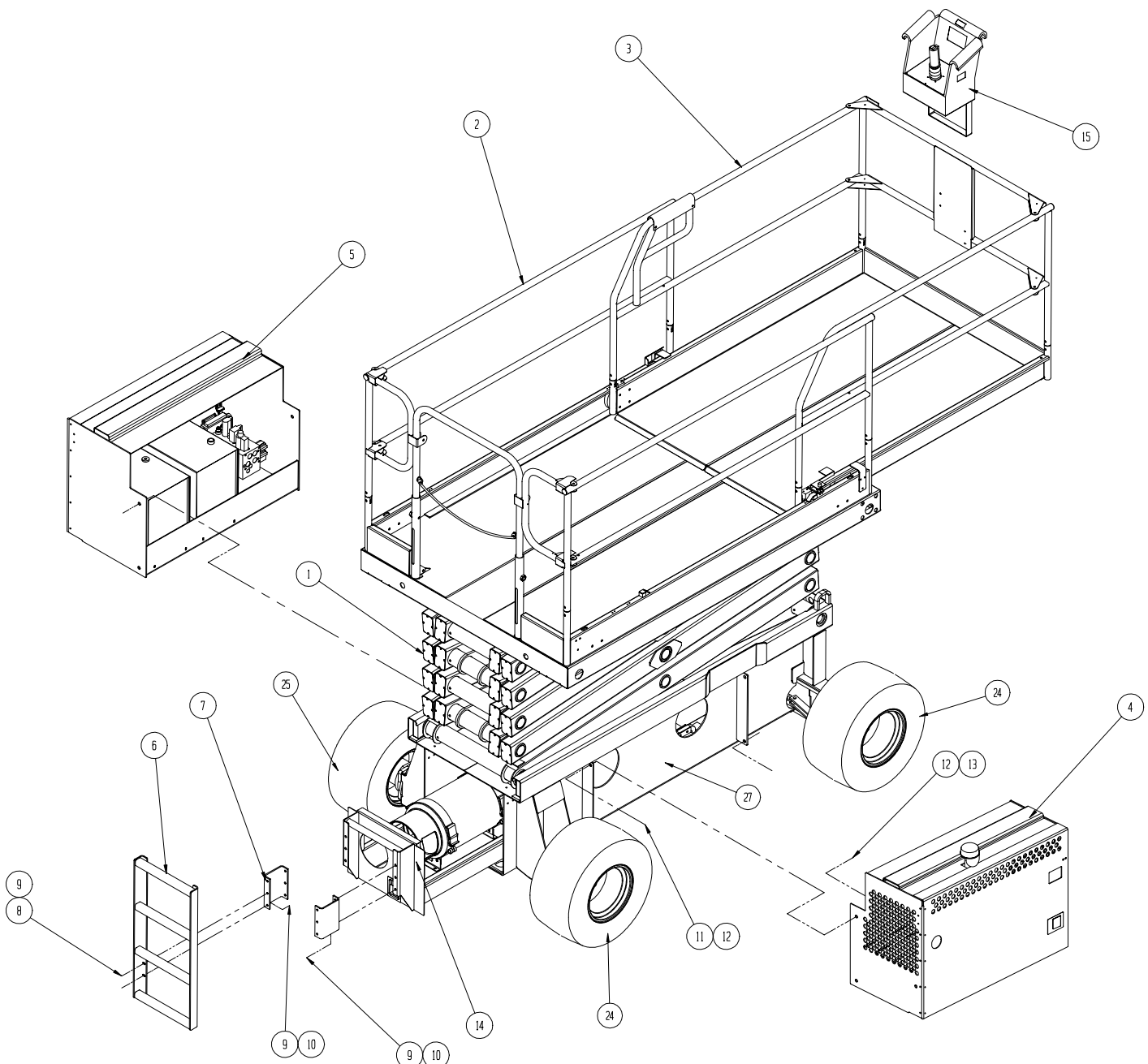


## Final Assembly XRT33 4WD Dual Fuel Kubota

066920-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066929-000	SCISSOR/PLATFORM INSTAL., XRT-33	1
2	066938-000	GUARD RAIL INSTALLATION	1
3	066939-000	EXTENSION PLATFORM INSTALLATION	1
4	066937-002	POWER MODULE	1
5	066935-002	CONTROL MODULE	1
6	066964-000	WELDMNT, LADDER	1
7	067259-000	BRACKET, LADDER STANDOFF	2
8	011254-008	SCREW HHC 3/8-16 x 1	8
9	011240-006	WASHER 3/8 FLAT	16
10	011248-006	NUT 3/8-16 HEX ESNA	8
11	011256-008	SCREW HHC 1/2-13 x 1	8
12	011240-008	WASHER 1/2 FLAT	16

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
13	011248-008	NUT 1/2-13 HEX ESNA	8
14	066936-000	ROLL-OUT TRAY INSTALLATION	1
15	066942-001	CONTROLLER ASSEMBLY	1
16	066944-001	CONTROL CABLE ASSEMBLY	1
17	066940-015	LABEL KIT / INSTALLATION	1
18	066941-003	HOSE KIT / INSTALLATION	1
20	066946-003	ELECTRICAL SCHEMATIC	REF
21	066945-003	HYDRAULIC SCHEMATIC	REF
24	064054-010	TIRE/WHEEL ASSY RH-TRAC SEAL	2
25	064054-011	TIRE/WHEEL ASSY LH-TRAC SEAL	2
27	066932-003	CHASSIS ASSEMBLY, XRT-33	1



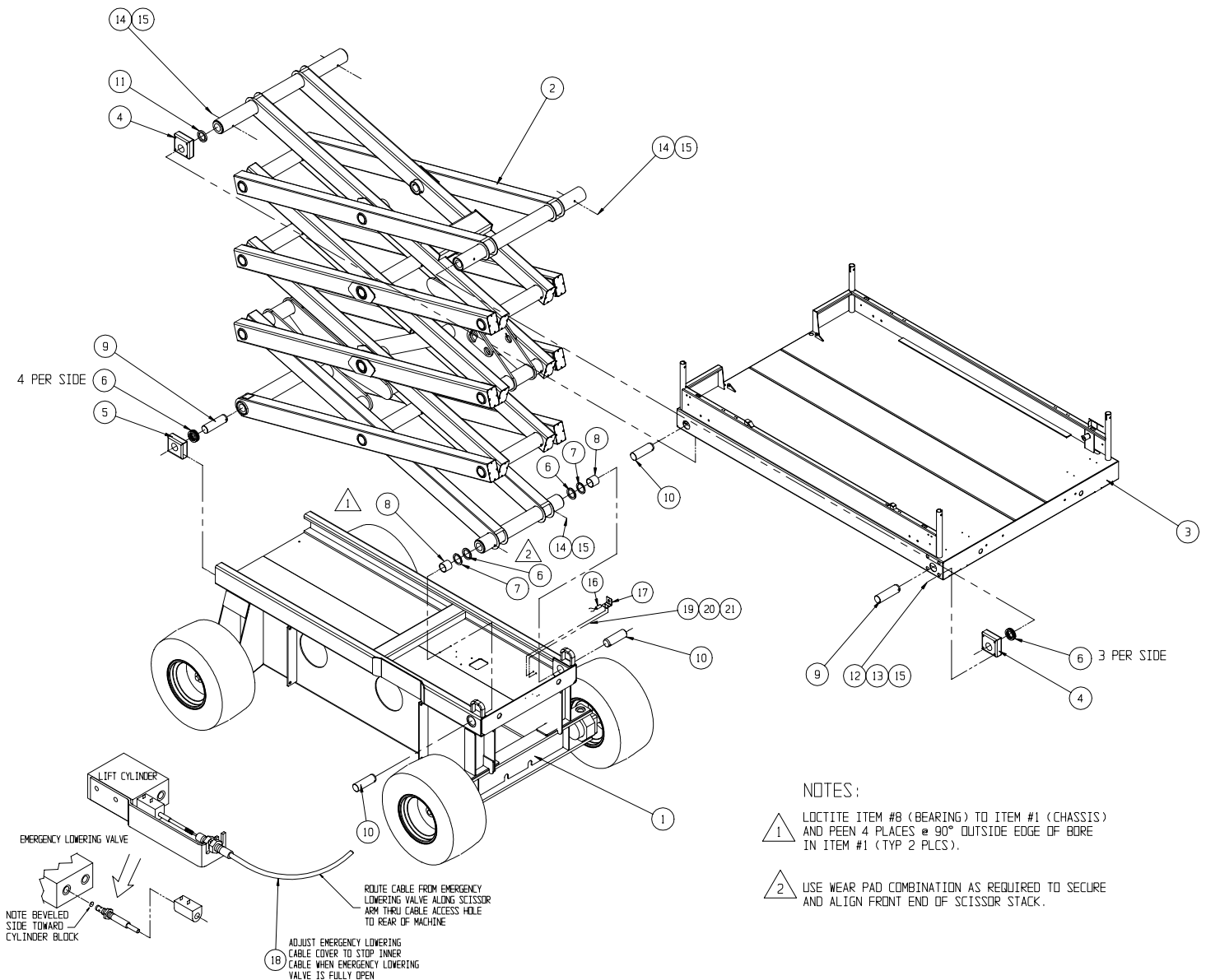


## Scissor / Platform Installation XRT27

066927-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066932-000	CHASSIS ASSEMBLY 2WD 27FT	REF
2	066933-000	SCISSOR ASSEMBLY	1
3	066954-000	PLATFORM WELDMENT	1
4	066191-000	SLIDE BLOCK	4
5	066191-001	SLIDE BLOCK - BOTTOM	2
6	066189-000	WEAR PAD 1/4	16
7	066189-004	WEAR PAD 1/8	2
8	066183-001	BEARING EAGLE Picher #323632	2
9	066222-001	MOUNTING PIN	4
10	066222-002	MOUNTING PIN	4
11	066189-001	WEAR PAD 3/8	2

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
12	011254-032	SCREW HHC 3/8-16 x 4 LG	8
13	011240-006	WASHER 3/8 FLAT	8
14	011287-032	SCREW SOC HD CAP 3/8-16 x 4 LG	8
15	011248-006	NUT 3/8-16 UNC ESNA	16
16	067193-000	PROXIMITY SWITCH	1
17	067318-000	SWITCH BRACKET	1
18	065754-001	CABLE ASSEMBLY-EMERGENCY LOWERING	1
19	011253-006	SCREW, HHC 5/16 X 3/4	2
20	011240-005	WASHER, 5/16 FLAT	2
21	011248-005	NUT, 5/16-18 UNC ESNA	2



ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066932-002	CHASSIS ASSEMBLY 2WD 33FT	REF
2	066934-000	SCISSOR ASSEMBLY	1
3	066954-000	PLATFORM WELDMENT	1
4	066191-000	SLIDE BLOCK	4
5	066191-001	SLIDE BLOCK - BOTTOM	2
6	066189-000	WEAR PAD 1/4	16
7	066189-004	WEAR PAD 1/8	2
8	066183-001	BEARING EAGLE PICHER #323632	2
9	066222-001	MOUNTING PIN	4
10	066222-002	MOUNTING PIN	4
11	066189-001	WEAR PAD 3/8	2

## XRT Work Platform

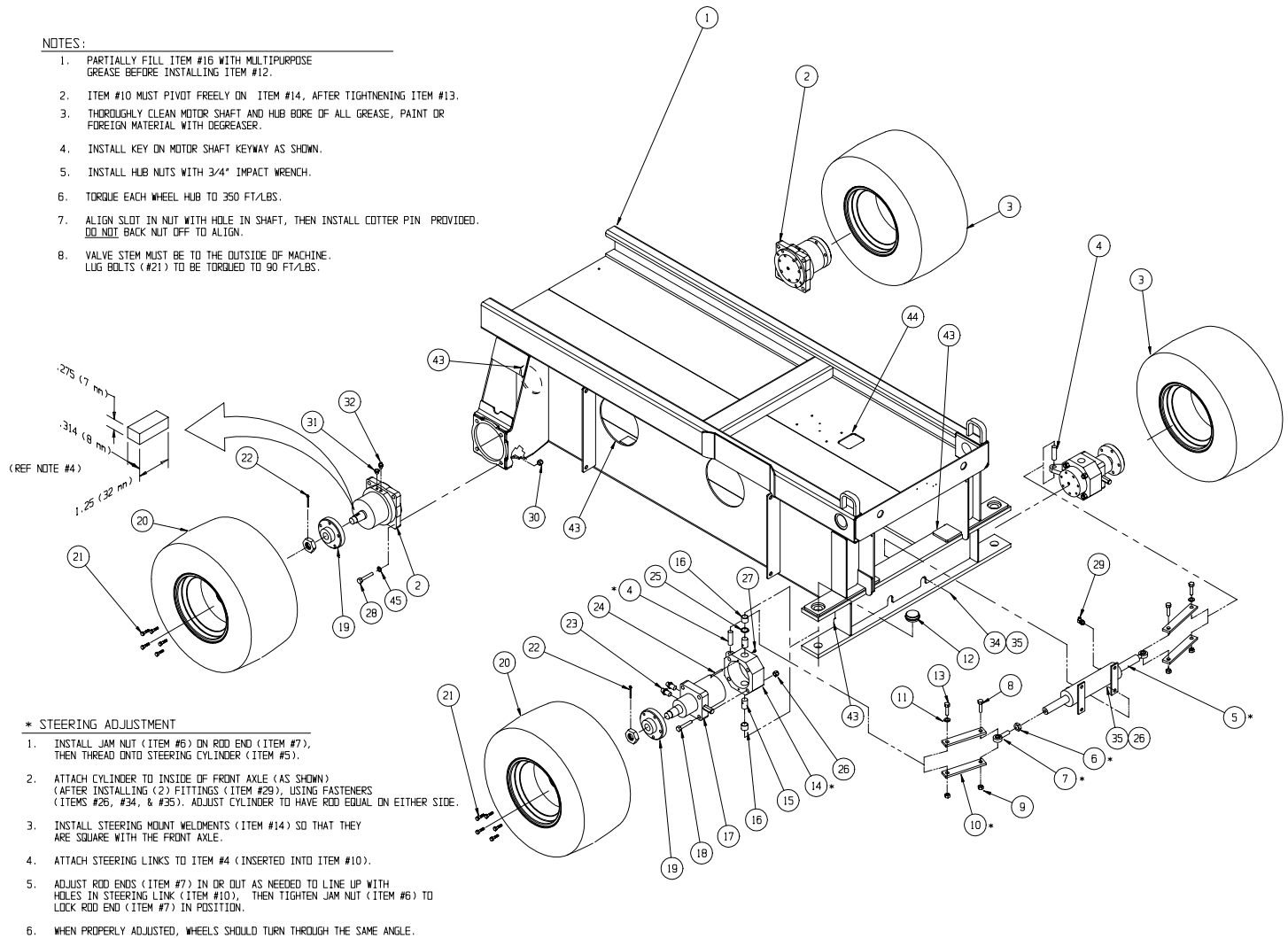
# Chassis Assembly XRT27 2wd

066932-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY	ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066950-005	CHASSIS WEIGHT INST'L 27' XRT WELDMENT	1	20	064054-010	WHEEL & TIRE ASSY T/S (RH)	REF
2	067171-000	REAR BRAKE (2WD)	2	21	014122-001	WHEEL BOLT, 1/2-20UNF 90° X 1" LG	20
3	064054-011	WHEEL & TIRE ASSY T/S (LH)	REF	22	011754-012	COTTER PIN 5/32 DIA X 1 1/2	4
4	062642-001	BEARING	2	23	011941-014	FITTING, STR 10MB-8MJ	4
5	067168-000	CYLINDER - STEERING	1	24	011252-024	SCREW HHC GR5 1/4-20UNC X 3	4
6	020495-010	NUT, HEX JAM 5/8-18 UNF	2	25	011782-001	BEARING, THRUST WASHER	2
7	063927-001	ROD END 5/8-18 UNF	2	26	011248-008	NUT, HEX ESNA 1/2-13UNC	8
8	011257-024	SCREW HHC GR5 5/8-11UNC X 3	2	27	011248-004	NUT, HEX ESNA 1/4-20UNC	4
9	011248-010	NUT HEX ESNA 5/8-11UNC	4	28	011257-014	SCREW HHC GR5 5/8-11UNC X 1-3/4	8
10	067221-000	STEERING LINK	4	29	011934-004	FITTING 90° 4MB-4MJ	2
11	011240-010	WASHER, FLAT STD 5/8 DIA.	2	30	011248-010	NUT HEX ESNA 5/8-11UNC	8
12	005078-000	CAP, DUST	2	31	020021-004	PLUG, O-RING -4	2
13	064150-000	SERRATED BOLT	2	32	011941-001	FITTING, 4MB-4MJ	2
14	064030-001	STEERING MOUNT WELDMENT	2	34	011256-008	SCREW, HHC GR5 1/2-13UNC X 1	4
15	064034-001	PIVOT PIN	4	35	011239-008	WASHER, ASTM FLAT 1/2"	8
16	067606-013	BEARING, GARLOCK #020DXR012	4	37	067313-000	COVER, FRONT CHASSIS	1
17	067169-000	FRONT DRIVE MOTOR	2	43	067805-099	GROMMET, TRIM	14.25 Ft
18	011256-040	SCREW, HHC GR5 1/2-13UNC X 5	8	44	061692-099	GROMMET, TRIM	1.25 Ft
19	064029-001	HUB, DRIVE MOTOR	4				

## NOTES:

- PARTIALLY FILL ITEM #16 WITH MULTIPURPOSE GREASE BEFORE INSTALLING ITEM #12.
- ITEM #10 MUST PIVOT FREELY ON ITEM #14, AFTER TIGHTENING ITEM #13.
- THOROUGHLY CLEAN MOTOR SHAFT AND HUB BORE OF ALL GREASE, PAINT OR FOREIGN MATERIAL WITH DEGREASER.
- INSTALL KEY ON MOTOR SHAFT KEYWAY AS SHOWN.
- INSTALL HUB NUTS WITH 3/4" IMPACT WRENCH.
- TORQUE EACH WHEEL HUB TO 350 FT/LBS.
- ALIGN SLOT IN NUT WITH HOLE IN SHAFT, THEN INSTALL COTTER PIN PROVIDED. **DO NOT** BACK NUT OFF TO ALIGN.
- VALVE STEM MUST BE TO THE OUTSIDE OF MACHINE. LUG BOLTS (#21) TO BE TORQUED TO 90 FT/LBS.



## Chassis Assembly XRT27 4WD

066932-001

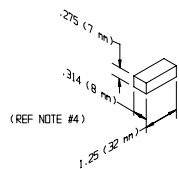
ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066950-005	CHASSIS WEIGHT INST'L 27" XRT WELDMENT	1
2	067184-000	REAR DRIVE MOTOR W/BRAKE	2
3	064054-011	WHEEL & TIRE ASSY T/S (LH)	REF
4	062642-001	BEARING	2
5	067168-000	CYLINDER - STEERING	1
6	020495-010	NUT, HEX JAM 5/8-18 UNF	2
7	063927-001	ROD END 5/8-18 UNF	2
8	011257-024	SCREW HHC GR5 5/8-11UNC X 3	2
9	011248-010	NUT HEX ESNA 5/8-11UNC	4
10	067221-000	STEERING LINK	4
11	011240-010	WASHER, FLAT STD 5/8 DIA.	2
12	005078-000	CAP, DUST	2
13	064150-000	SERRATED BOLT	2
14	064030-001	STEERING MOUNT WELDMENT	2
15	064034-001	PIVOT PIN	4
16	067606-013	BEARING, GARLOCK #020DXR012	4
17	067169-000	FRONT DRIVE MOTOR	2
18	011256-040	SCREW, HHC GR5 1/2-13UNC X 5	8
19	064029-001	HUB, DRIVE MOTOR	4
20	064054-010	WHEEL & TIRE ASSY T/S (RH)	REF
21	014122-001	WHEEL BOLT, 1/2-20UNF 90° X 1" LG	20
22	011754-012	COTTER PIN 5/32 DIA X 1 1/2	4
23	011941-014	FITTING, STR 10MB-8MJ	4
24	011252-024	SCREW HHC GR5 1/4-20UNC X 3	4
25	011782-001	BEARING, THRUST WASHER	2

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
26	011248-008	NUT, HEX ESNA 1/2-13UNC	8
27	011248-004	NUT, HEX ESNA 1/4-20UNC	4
28	011257-014	SCREW HHC GR5 5/8-11UNC X 1-3/4	8
29	011934-004	FITTING 90° 4MB-4MJ	2
30	011248-010	NUT HEX ESNA 5/8-11UNC	8
31	020021-004	PLUG, O-RING -4	2
32	011941-001	FITTING, 4MB-4MJ	2
33	011941-014	FITTING, 10MB-8MJ	4
34	011256-008	SCREW, HHC GR5 1/2-13UNC X 1	4
35	011239-008	WASHER, ASTM FLAT 1/2"	8
36	011934-001	FITTING, 90° 4MB-4MJ	2
37	067183-000	SERIES PARALLEL VALVE BLOCK	1
38	067183-001	SERIES PARALLEL VALVE BLOCK	1
39	011254-044	SCREW, HHC GR5 3/8 X 5"	4
40	011941-010	FITTING, 8MB-8MJ	10
41	011940-015	FITTING, 8MB-8MJ, 90°	2
42	067313-000	COVER, FRONT CHASSIS	1
43	067805-099	GROMMET, TRIM	FT. 14.25
44	061692-099	GROMMET, TRIM	FT. 1.25
45	011239-010	WASHER, ASTM FLAT 5/8"	8
46	067307-000	REAR WEIGHT COVER	2
48	011252-008	SCREW HHC 1/4-20 X 1	4
49	011240-004	WASHER, 1/4 FLAT STD	4

## NOTES:

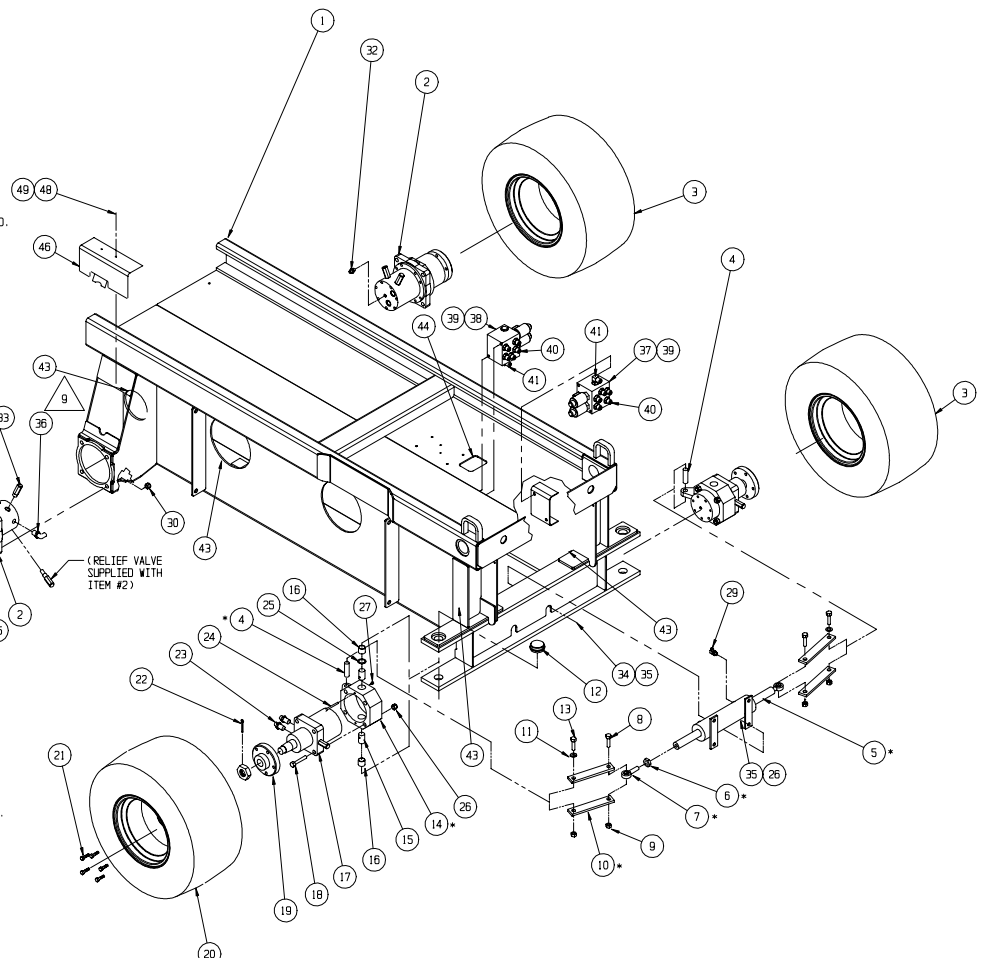
- PARTIALLY FILL ITEM #16 WITH MULTIPURPOSE GREASE BEFORE INSTALLING ITEM #12.
- ITEM #10 MUST PIVOT FREELY ON ITEM #14, AFTER TIGHTENING ITEM #13.
- THOROUGHLY CLEAN MOTOR SHAFT AND HUB BORE OF ALL GREASE, PAINT OR FOREIGN MATERIAL WITH DEGREASER.
- INSTALL KEY ON MOTOR SHAFT KEYWAY AS SHOWN.
- INSTALL HUB NUTS WITH 3/4" IMPACT WRENCH.
- TORQUE EACH WHEEL HUB TO 350 FT/LBS.
- ALIGN SLOT IN NUT WITH HOLE IN SHAFT, THEN INSTALL COTTER PIN PROVIDED. DO NOT BACK NUT OFF TO ALIGN.
- VALVE STEM MUST BE TO THE OUTSIDE OF MACHINE. LUG BOLTS (#21) TO BE TORQUED TO 90 FT/LBS.

9 COUNTER WEIGHTS ON REAR REMOVED FOR CLARITY.



## \* STEERING ADJUSTMENT

- INSTALL JAM NUT (ITEM #6) ON ROD END (ITEM #7), THEN THREAD ONTO STEERING CYLINDER (ITEM #5).
- ATTACH CYLINDER TO INSIDE OF FRONT AXLE (AS SHOWN) (AFTER INSTALLING (2) FITTINGS (ITEM #29), USING FASTENERS (ITEMS #26, #34, & #35). ADJUST CYLINDER TO HAVE ROD EQUAL ON EITHER SIDE.
- INSTALL STEERING MOUNT WELDMENTS (ITEM #14) SO THAT THEY ARE SQUARE WITH THE FRONT AXLE.
- ATTACH STEERING LINKS TO ITEM #4 (INSERTED INTO ITEM #10).
- ADJUST ROD ENDS (ITEM #7) IN OR OUT AS NEEDED TO LINE UP WITH HOLES IN STEERING LINK (ITEM #10). THEN TIGHTEN JAM NUT (ITEM #6) TO LOCK ROD END (ITEM #7) IN POSITION.
- WHEN PROPERLY ADJUSTED, WHEELS SHOULD TURN THROUGH THE SAME ANGLE.



## Chassis Assembly XRT33 2WD

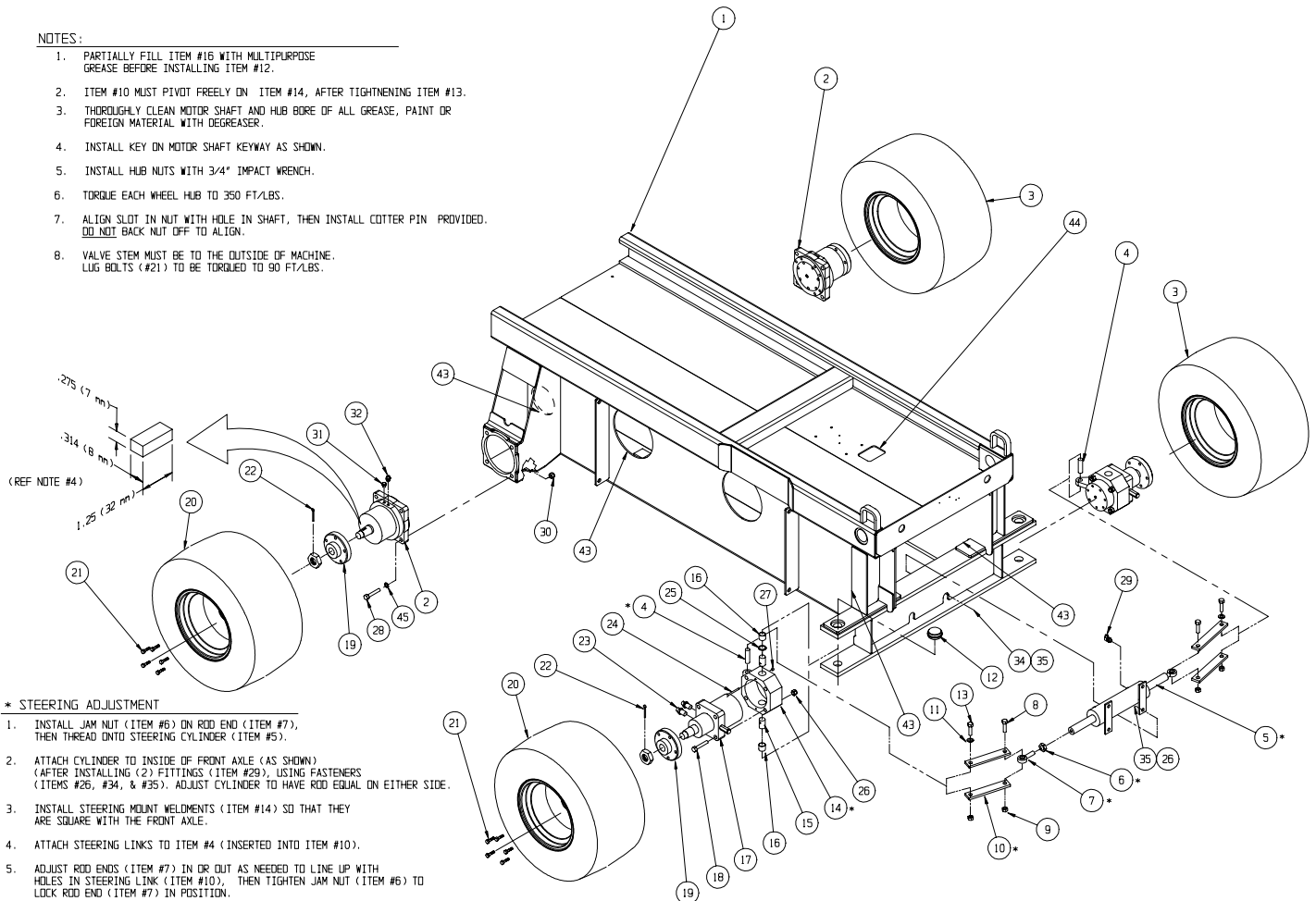
066932-002

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066950-007	CHASSIS WEIGHT INST'L 33' XRT WELDMENT	1
2	067171-000	REAR BRAKE (2WD)	2
3	064054-011	WHEEL & TIRE ASSY T/S (LH)	REF
4	062642-001	BEARING	2
5	067168-000	CYLINDER - STEERING	1
6	020495-010	NUT, HEX JAM 5/8-18 UNF	2
7	063927-001	ROD END 5/8-18 UNF	2
8	011257-024	SCREW HHC GR5 5/8-11UNC X 3	2
9	011248-010	NUT HEX ESNA 5/8-11UNC	4
10	067221-000	STEERING LINK	4
11	011240-010	WASHER, FLAT STD 5/8 DIA.	2
12	005078-000	CAP, DUST	2
13	064150-000	SERRATED BOLT	2
14	064030-001	STEERING MOUNT WELDMENT	2
15	064034-001	PIVOT PIN	4
16	067606-013	BEARING, GARLOCK #020DXR012	4
17	067169-000	FRONT DRIVE MOTOR	2
18	011256-040	SCREW, HHC GR5 1/2-13UNC X 5	8
19	064029-001	HUB, DRIVE MOTOR	4
20	064054-010	WHEEL & TIRE ASSY T/S (RH)	REF

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
21	014122-001	WHEEL BOLT, 1/2-20UNF 90° X 1" LG	20
22	011754-012	COTTER PIN 5/32 DIA X 1 1/2	4
23	011941-014	FITTING, STR 10MB-8MJ	4
24	011252-024	SCREW HHC GR5 1/4-20UNC X 3	4
25	011782-001	BEARING, THRUST WASHER	2
26	011248-008	NUT, HEX ESNA 1/2-13UNC	8
27	011248-004	NUT, HEX ESNA 1/4-20UNC	4
28	011257-014	SCREW HHC GR5 5/8-11UNC X 1-3/4	8
29	011934-004	FITTING 90° 4MB-4MJ	2
30	011248-010	NUT HEX ESNA 5/8-11UNC	8
31	020021-004	PLUG, O-RING -4	2
32	011941-001	FITTING, 4MB-4MJ	2
34	011256-008	SCREW, HHC GR5 1/2-13UNC X 1	4
35	011239-008	WASHER, ASTM FLAT 1/2"	8
36	067313-000	COVER, FRONT CHASSIS	1
43	067805-099	GROMMET, TRIM	14.25 FT.
44	061692-099	GROMMET, TRIM	1.25 FT.
45	011239-010	WASHER, ASTM FLAT 5/8"	8

## NOTES:

- PARTIALLY FILL ITEM #16 WITH MULTIPURPOSE GREASE BEFORE INSTALLING ITEM #12.
- ITEM #10 MUST PIVOT FREELY ON ITEM #14, AFTER TIGHTENING ITEM #13.
- THOROUGHLY CLEAN MOTOR SHAFT AND HUB BORE OF ALL GREASE, PAINT OR FOREIGN MATERIAL WITH DEGREASER.
- INSTALL KEY ON MOTOR SHAFT KEYWAY AS SHOWN.
- INSTALL HUB NUTS WITH 3/4" IMPACT WRENCH.
- TORQUE EACH WHEEL HUB TO 350 FT/LBS.
- ALIGN SLOT IN NUT WITH HOLE IN SHAFT, THEN INSTALL COTTER PIN PROVIDED. DO NOT BACK NUT OFF TO ALIGN.
- VALVE STEM MUST BE TO THE OUTSIDE OF MACHINE. LUG BOLTS (#21) TO BE TORQUED TO 90 FT/LBS.



## \* STEERING ADJUSTMENT

- INSTALL JAM NUT (ITEM #6) ON ROD END (ITEM #7), THEN THREAD ONTO STEERING CYLINDER (ITEM #5).
- ATTACH CYLINDER TO INSIDE OF FRONT AXLE (AS SHOWN) (AFTER INSTALLING (2) FITTINGS (ITEM #29), USING FASTENERS (ITEMS #26, #34, & #35). ADJUST CYLINDER TO HAVE ROD EQUAL ON EITHER SIDE.
- INSTALL STEERING MOUNT WELDMENTS (ITEM #14) SO THAT THEY ARE SQUARE WITH THE FRONT AXLE.
- ATTACH STEERING LINKS TO ITEM #4 (INSERTED INTO ITEM #10).
- ADJUST ROD ENDS (ITEM #7) IN OR OUT AS NEEDED TO LINE UP WITH HOLES IN STEERING LINK (ITEM #10), THEN TIGHTEN JAM NUT (ITEM #6) TO LOCK ROD END (ITEM #7) IN POSITION.
- WHEN PROPERLY ADJUSTED, WHEELS SHOULD TURN THROUGH THE SAME ANGLE.



## Chassis Assembly XRT33 4WD

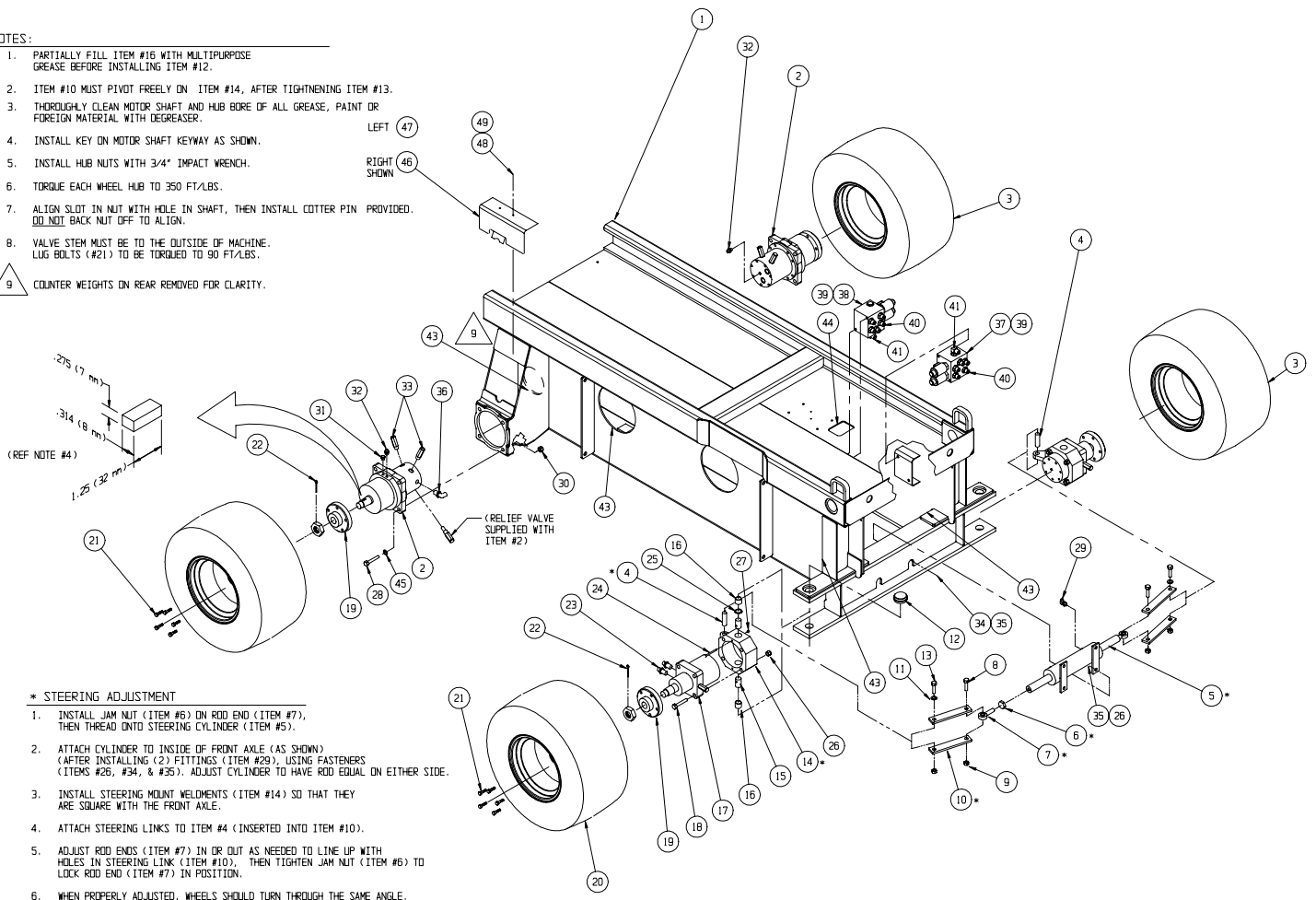
066932-003

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066950-007	CHASSIS WEIGHT INSTALLMENT - 33XRT	1
2	067184-000	REAR DRIVE MOTOR W/BRAKE	2
3	064054-011	WHEEL & TIRE ASSY T/S (LH)	REF
4	062642-001	BEARING	2
5	067168-000	CYLINDER - STEERING	1
6	020495-010	NUT, HEX JAM 5/8-18 UNF	2
7	063927-001	ROD END 5/8-18 UNF	2
8	011257-024	SCREW HHC GR5 5/8-11UNC X 3	2
9	011248-010	NUT HEX ESNA 5/8-11UNC	4
10	067221-000	STEERING LINK	4
11	011240-010	WASHER, FLAT STD 5/8 DIA.	2
12	005078-000	CAP, DUST	2
13	064150-000	SERRATED BOLT	2
14	064030-001	STEERING MOUNT WELDMENT	2
15	064034-001	PIVOT PIN	4
16	067606-013	BEARING, GARLOCK #020DXR012	4
17	067169-000	FRONT DRIVE MOTOR 2-13UNC X 5	2
18	011256-040	SCREW, HHC GR5 1/2-13UNC X 5	8
19	064029-001	HUB, DRIVE MOTOR	4
20	064054-010	WHEEL & TIRE ASSY T/S (RH)	REF
21	014122-001	WHEEL BOLT, 1/2-20UNF 90° X 1" LG	20
22	011754-012	COTTER PIN 5/32 DIA X 1 1/2	4
23	011941-014	FITTING, STR 10MB-8MJ	4
24	011252-024	SCREW HHC GR5 1/4-20UNC X 3	4
25	011782-001	BEARING, THRUST WASHER	2

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
26	011248-008	NUT, HEX ESNA 1/2-13UNC	8
27	011248-004	NUT, HEX ESNA 1/4-20UNC	4
28	011257-014	SCREW HHC GR5 5/8-11UNC X 1-3/4	8
29	011934-004	FITTING 90° 4MB-4MJ	2
30	011248-010	NUT HEX ESNA 5/8-11UNC	8
31	020021-004	PLUG, O-RING -4	2
32	011941-001	FITTING, 4MB-4MJ	2
33	011941-014	FITTING, 10MB-8MJ	4
34	011256-008	SCREW, HHC GR5 1/2-13UNC X 1	4
35	011239-008	WASHER, ASTM FLAT 1/2"	8
36	011934-001	FITTING, 90° 4MB-4MJ	2
37	067183-000	SERIES PARALLEL VALVEBLOCK	1
38	067183-001	SERIES PARALLEL VALVEBLOCK	1
39	011254-044	SCREW, HHC GR5 3/8 X 5"	4
40	011941-010	FITTING, 8MB-8MJ	10
41	011940-015	FITTING, 8MB-8MJ, 90°	2
42	067313-000	COVER, FRONT CHASSIS	1
43	067805-099	GROMMET, TRIM	14.25 FT.
44	067805-099	GROMMET, TRIM	1.25 FT.
45	011239-010	WASHER, ASTM FLAT 5/8"	8
46	067307-000	REAR WEIGHT COVER RIGHT	1
47	067306-000	REAR WEIGHT COVER LEFT	1
48	011252-008	SCREW HHC 1/4-20 X 1	4
49	011240-004	WASHER, 1/4 FLAT STD	4

## NOTES:

- PARTIALLY FILL ITEM #16 WITH MULTIPURPOSE GREASE BEFORE INSTALLING ITEM #12.
- ITEM #10 MUST PIVOT FREELY ON ITEM #14, AFTER TIGHTENING ITEM #13.
- THOROUGHLY CLEAN MOTOR SHAFT AND HUB BORE OF ALL GREASE, PAINT OR FOREIGN MATERIAL WITH DEGREASER.
- INSTALL KEY ON MOTOR SHAFT KEYWAY AS SHOWN.
- INSTALL HUB NUTS WITH 3/4" IMPACT WRENCH.
- TORQUE EACH WHEEL HUB TO 350 FT/LBS.
- ALIGN SLOT IN NUT WITH HOLE IN SHAFT, THEN INSTALL COTTER PIN PROVIDED. DO NOT BACK NUT OFF TO ALIGN.
- VALVE STEM MUST BE TO THE OUTSIDE OF MACHINE. LUG BOLTS (#21) TO BE TORQUED TO 90 FT/LBS.
- COUNTER WEIGHTS ON REAR REMOVED FOR CLARITY.



# Chassis Assembly XRT33 2WD P/F

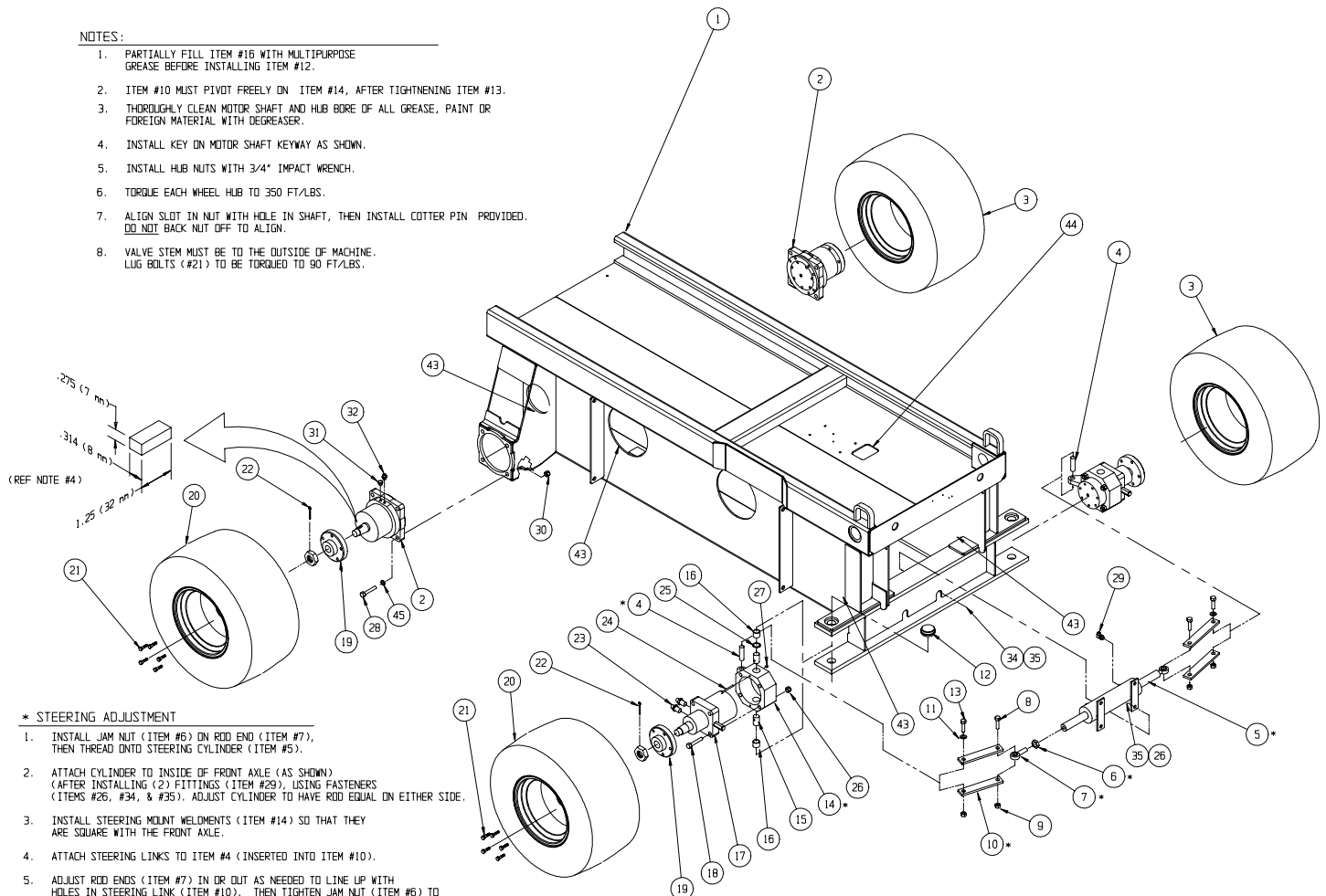
066932-004

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066950-008	CHASSIS WEIGHT INST'L 27" XRT P/F WELDMENT	1
2	067171-000	REAR BRAKE (2WD)	2
3	064187-011	WHEEL & TIRE ASSY POLYFILL (LH)	REF
4	062642-001	BEARING	2
5	067168-000	CYLINDER - STEERING	1
6	020495-010	NUT, HEX JAM 5/8-18 UNF	2
7	063927-001	ROD END 5/8-18 UNF	2
8	011257-024	SCREW HHC GR5 5/8-11UNC X 3	2
9	011248-010	NUT HEX ESNA 5/8-11UNC	4
10	067221-000	STEERING LINK	4
11	011240-010	WASHER, FLAT STD 5/8 DIA.	2
12	005078-000	CAP, DUST	2
13	064150-000	SERRATED BOLT	2
14	064030-001	STEERING MOUNT WELDMENT	2
15	064034-001	PIVOT PIN	4
16	067606-013	BEARING, GARLOCK #020DXR012	4
17	067169-000	FRONT DRIVE MOTOR	2
18	011256-040	SCREW, HHC GR5 1/2-13UNC X 5	8
19	064029-001	HUB, DRIVE MOTOR	4
20	064187-010	WHEEL & TIRE ASSY POLYFILL (RH)	REF

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
21	014122-001	WHEEL BOLT, 1/2-20UNF 90° X 1" LG	20
22	011754-012	COTTER PIN 5/32 DIA X 1 1/2	4
23	011941-014	FITTING, STR 10MB-8MJ	4
24	011252-024	SCREW HHC GR5 1/4-20UNC X 3	4
25	011782-001	BEARING, THRUST WASHER	2
26	011248-008	NUT, HEX ESNA 1/2-13UNC	8
27	011248-004	NUT, HEX ESNA 1/4-20UNC X 1-3/4	4
28	011257-014	SCREW HHC GR5 5/8-11UNC X 1-3/4	8
29	011934-004	FITTING 90° 4MB-4MJ	2
30	011248-010	NUT HEX ESNA 5/8-11UNC	8
31	020021-004	PLUG, O-RING -4	2
32	011941-001	FITTING, 4MB-4MJ	2
34	011256-008	SCREW, HHC GR5 1/2-13UNC X 1	4
35	011239-008	WASHER, ASTM FLAT 1/2"	8
36	067313-000	COVER, FRONT CHASSIS	1
43	067805-099	GROMMET, TRIM	14.25 FT.
44	061692-099	GROMMET, TRIM	1.25 FT.
45	011238-010	WASHER, FLAT ASTM 5/8"	8

## NOTES:

- PARTIALLY FILL ITEM #16 WITH MULTIPURPOSE GREASE BEFORE INSTALLING ITEM #12.
- ITEM #10 MUST PIVOT FREELY ON ITEM #14, AFTER TIGHTENING ITEM #13.
- THOROUGHLY CLEAN MOTOR SHAFT AND HUB BORE OF ALL GREASE, PAINT OR FOREIGN MATERIAL WITH DEGREASER.
- INSTALL KEY ON MOTOR SHAFT KEYWAY AS SHOWN.
- INSTALL HUB NUTS WITH 3/4" IMPACT WRENCH.
- TORQUE EACH WHEEL HUB TO 350 FT/LBS.
- ALIGN SLOT IN NUT WITH HOLE IN SHAFT, THEN INSTALL COTTER PIN PROVIDED. DO NOT BACK NUT OFF TO ALIGN.
- VALVE STEM MUST BE TO THE OUTSIDE OF MACHINE. LUG BOLTS (#21) TO BE TORQUED TO 90 FT/LBS.



## \* STEERING ADJUSTMENT

- INSTALL JAM NUT (ITEM #6) ON ROD END (ITEM #7), THEN THREAD ONTO STEERING CYLINDER (ITEM #5).
- ATTACH CYLINDER TO INSIDE OF FRONT AXLE (AS SHOWN) (AFTER INSTALLING (2) FITTINGS (ITEM #29), USING FASTENERS (ITEMS #26, #34, & #35). ADJUST CYLINDER TO HAVE ROD EQUAL ON EITHER SIDE.
- INSTALL STEERING MOUNT WELDMENTS (ITEM #14) SO THAT THEY ARE SQUARE WITH THE FRONT AXLE.
- ATTACH STEERING LINKS TO ITEM #4 (INSERTED INTO ITEM #10).
- ADJUST ROD ENDS (ITEM #7) IN OR OUT AS NEEDED TO LINE UP WITH HOLES IN STEERING LINK (ITEM #10), THEN TIGHTEN JAM NUT (ITEM #6) TO LOCK ROD END (ITEM #7) IN POSITION.
- WHEN PROPERLY ADJUSTED, WHEELS SHOULD TURN THROUGH THE SAME ANGLE.

# Chassis Assembly XRT33 4WD P/F

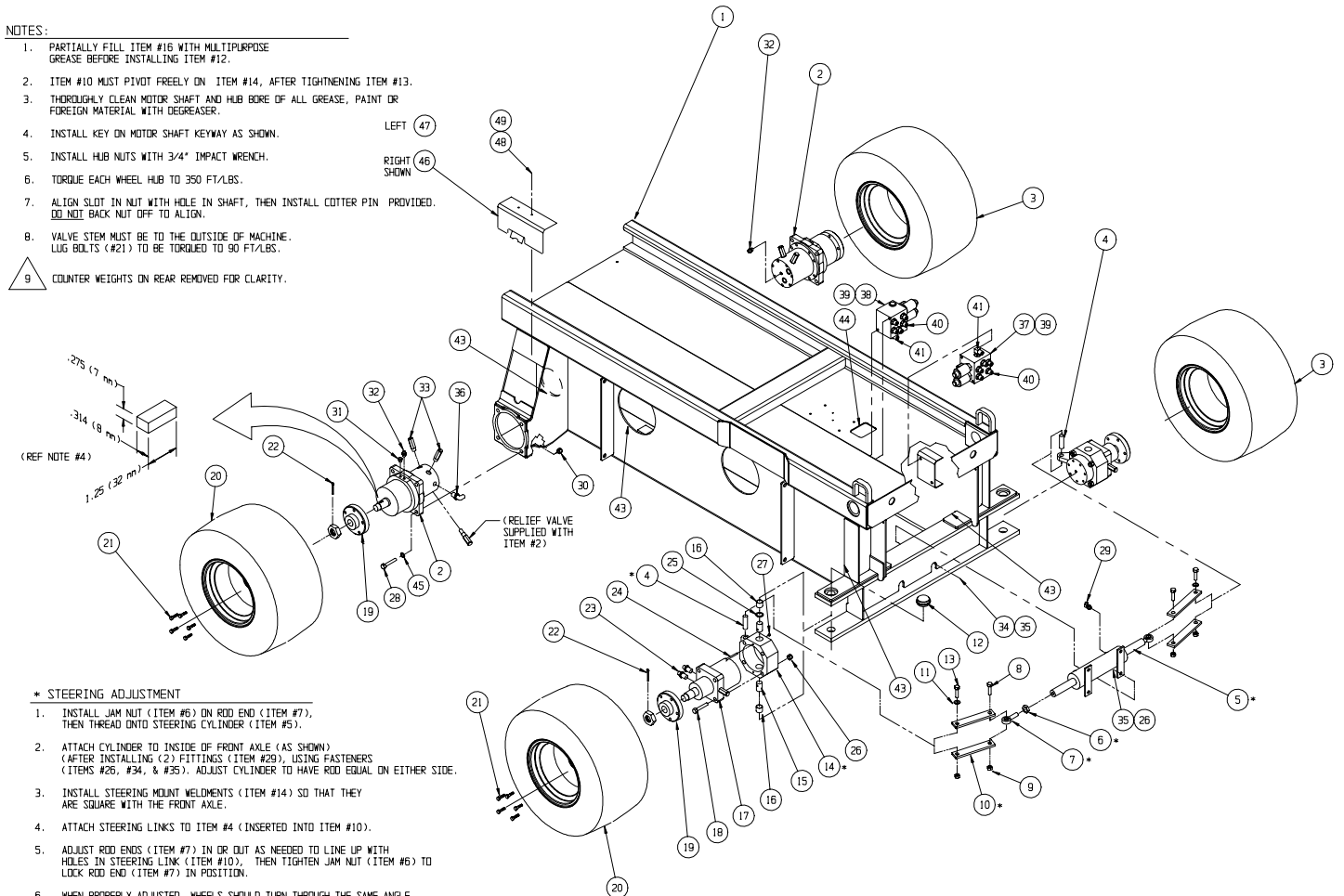
066932-005

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066950-008	CHASSIS WEIGHT INST'L 33 X-RT P/F WELDMT	1
2	067184-000	REAR DRIVE MOTOR W/BRAKE	2
3	064187-011	WHEEL & TIRE ASSY POLYFILL (LH)	REF
4	062642-001	BEARING	2
5	067168-000	CYLINDER - STEERING	1
6	020495-010	NUT, HEX JAM 5/8-18 UNF	2
7	063927-001	ROD END 5/8-18 UNF	2
8	011257-024	SCREW HHC GR5 5/8-11UNC X 3	2
9	011248-010	NUT HEX ESNA 5/8-11UNC	4
10	067221-000	STEERING LINK	4
11	011240-010	WASHER, FLAT STD 5/8 DIA.	2
12	005078-000	CAP, DUST	2
13	064150-000	SERRATED BOLT	2
14	064030-001	STEERING MOUNT WELDMENT	2
15	064034-001	PIVOT PIN	4
16	067606-013	BEARING, GARLOCK #020DXR012	4
17	067169-000	FRONT DRIVE MOTOR	2
18	011256-040	SCREW, HHC GR5 1/2-13UNC X 5	8
19	064029-001	HUB, DRIVE MOTOR	4
20	064187-010	WHEEL & TIRE ASSY POLYFILL (RH)	REF
21	014122-001	WHEEL BOLT, 1/2-20UNF 90° X 1" LG	20
22	011754-012	COTTER PIN 5/32 DIA X 1 1/2	4
23	011941-014	FITTING, STR 10MB-8MJ	4
24	011252-024	SCREW HHC GR5 1/4-20UNC X 3	4
25	011782-001	BEARING, THRUST WASHER	2

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
26	011248-008	NUT, HEX ESNA 1/2-13UNC	8
27	011248-004	NUT, HEX ESNA 1/4-20UNC	4
28	011257-014	SCREW HHC GR5 5/8-11UNC X 1-3/4	8
29	011934-004	FITTING 90° 4MB-4MJ	2
30	011248-010	NUT HEX ESNA 5/8-11UNC	8
31	020021-004	PLUG, O-RING -4	2
32	011941-001	FITTING, 4MB-4MJ	2
33	011941-014	FITTING, 10MB-8MJ	4
34	011256-008	SCREW, HHC GR5 1/2-13UNC X 1	4
35	011239-008	WASHER, ASTM FLAT 1/2"	8
36	011934-001	FITTING, 90° 4MB-4MJ	2
37	067183-000	SERIES PARALLEL VALVE BLOCK	1
38	067183-001	SERIES PARALLEL VALVE BLOCK	1
39	011254-044	SCREW, HHC GR5 3/8 X 5"	4
40	011941-010	FITTING, 8MB-8MJ	10
41	011940-015	FITTING, 8MB-8MJ, 90°	2
42	067313-000	COVER, FRONT CHASSIS	1
43	067805-099	GROMMET, TRIM	14.25 FT.
44	061692-099	GROMMET, TRIM	1.25 FT.
45	011239-010	WASHER, FLAT ASTM 5/8"	8
46	067307-000	REAR WEIGHT COVER RIGHT	1
47	067306-000	REAR WEIGHT COVER LEFT	1
48	011252-008	SCREW HHC 1/4-20 X 1	4
49	011240-004	WASHER, 1/4 FLAT STD	4

## NOTES:

- PARTIALLY FILL ITEM #16 WITH MULTIPURPOSE GREASE BEFORE INSTALLING ITEM #12.
- ITEM #10 MUST PIVOT FREELY ON ITEM #14, AFTER TIGHTENING ITEM #13.
- THOROUGHLY CLEAN MOTOR SHAFT AND HUB BORE OF ALL GREASE, PAINT OR FOREIGN MATERIAL WITH DEGREASER.
- INSTALL KEY ON MOTOR SHAFT KEYWAY AS SHOWN.
- INSTALL HUB NUTS WITH 3/4" IMPACT WRENCH.
- TORQUE EACH WHEEL HUB TO 350 FT/LBS.
- ALIGN SLOT IN NUT WITH HOLE IN SHAFT, THEN INSTALL COTTER PIN PROVIDED. DO NOT BACK NUT OFF TO ALIGN.
- VALVE STEM MUST BE TO THE OUTSIDE OF MACHINE. LUG BOLTS (#21) TO BE TORQUED TO 90 FT/LBS.
- COUNTER WEIGHTS ON REAR REMOVED FOR CLARITY.



## \* STEERING ADJUSTMENT

- INSTALL JAM NUT (ITEM #6) ON ROD END (ITEM #7), THEN THREAD ONTO STEERING CYLINDER (ITEM #5).
- ATTACH CYLINDER TO INSIDE OF FRONT AXLE (AS SHOWN) (AFTER INSTALLING (2) FITTINGS (ITEM #29), USING FASTENERS (ITEMS #26, #34, & #35). ADJUST CYLINDER TO HAVE ROD EQUAL ON EITHER SIDE.
- INSTALL STEERING MOUNT WELDMENTS (ITEM #14) SO THAT THEY ARE SQUARE WITH THE FRONT AXLE.
- ATTACH STEERING LINKS TO ITEM #4 (INSERTED INTO ITEM #10).
- ADJUST ROD ENDS (ITEM #7) IN OR OUT AS NEEDED TO LINE UP WITH HOLES IN STEERING LINK (ITEM #10), THEN TIGHTEN JAM NUT (ITEM #6) TO LOCK ROD END (ITEM #7) IN POSITION.
- WHEN PROPERLY ADJUSTED, WHEELS SHOULD TURN THROUGH THE SAME ANGLE.



# Chassis Assembly XRT27 2WD P/F

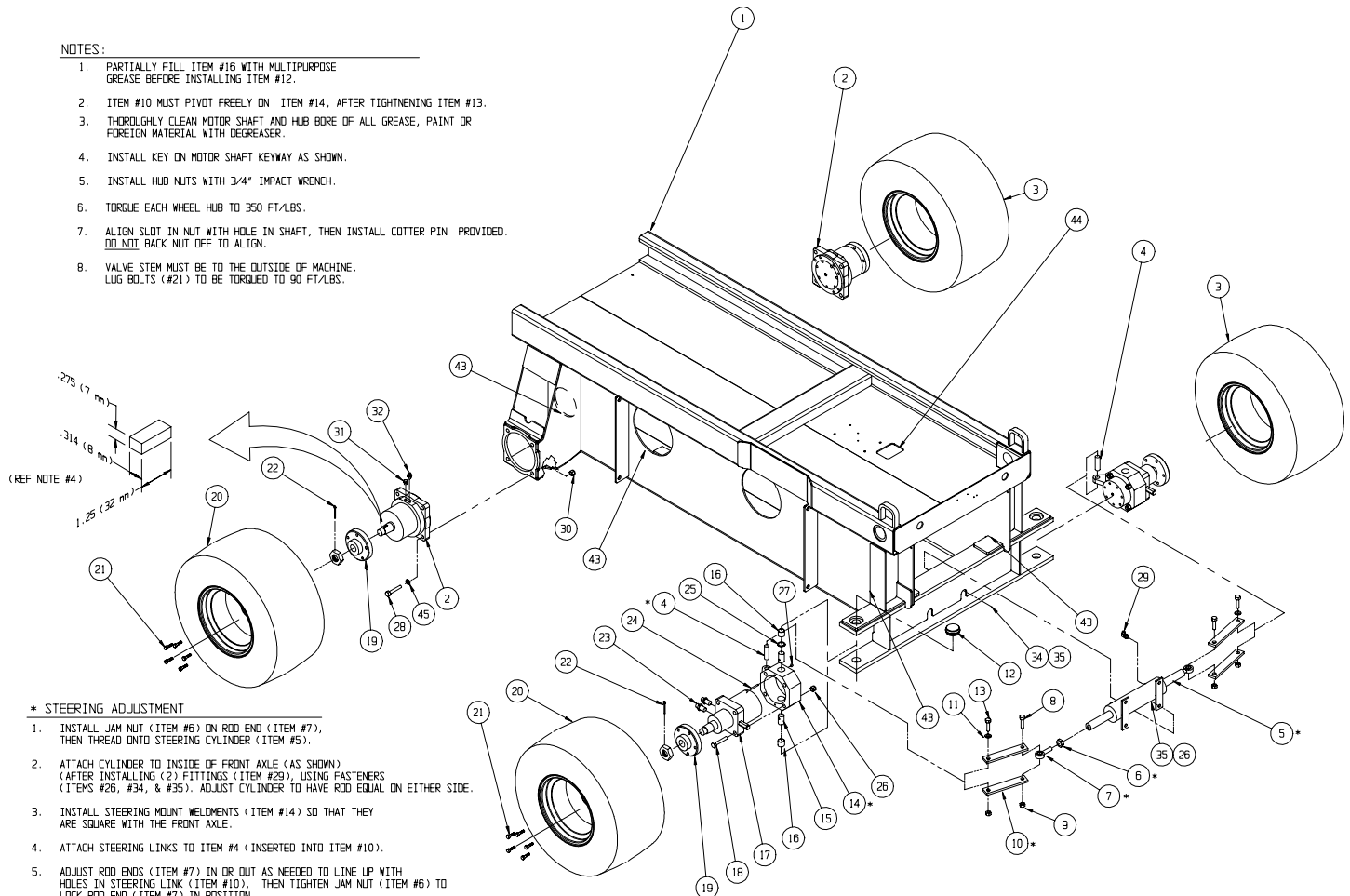
066932-006

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066950-006	CHASSIS WEIGHT INST'L 27"XRT P/F WELDMENT	1
2	067171-000	REAR BRAKE (2WD)	2
3	064187-011	WHEEL & TIRE ASSY POLYFILL (LH)	REF
4	062642-001	BEARING	2
5	067168-000	CYLINDER - STEERING	1
6	020495-010	NUT, HEX JAM 5/8-18 UNF	2
7	063927-001	ROD END 5/8-18 UNF	2
8	011257-024	SCREW HHC GR5 5/8-11UNC X 3	2
9	011248-010	NUT HEX ESNA 5/8-11UNC	4
10	067221-000	STEERING LINK	4
11	011240-010	WASHER, FLAT STD 5/8 DIA.	2
12	005078-000	CAP, DUST	2
13	064150-000	SERRATED BOLT	2
14	064030-001	STEERING MOUNT WELDMENT	2
15	064034-001	PIVOT PIN	4
16	067606-013	BEARING, GARLOCK #020DXR012	4
17	067169-000	FRONT DRIVE MOTOR	2
18	011256-040	SCREW, HHC GR5 1/2-13UNC X 5	8
19	064029-001	HUB, DRIVE MOTOR	4
20	064187-010	WHEEL & TIRE ASSY POLYFILL (RH)	REF

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
21	014122-001	WHEEL BOLT, 1/2-20UNF 90° X 1" LG	20
22	011754-012	COTTER PIN 5/32 DIA X 1 1/2	4
23	011941-014	FITTING, STR 10MB-8MJ	4
24	011252-024	SCREW HHC GR5 1/4-20UNC X 3	4
25	011782-001	BEARING, THRUST WASHER	2
26	011248-008	NUT, HEX ESNA 1/2-13UNC	8
27	011248-004	NUT, HEX ESNA 1/4-20UNC	4
28	011257-014	SCREW HHC GR5 5/8-11UNC X 1-3/4	8
29	011934-004	FITTING 90° 4MB-4MJ	2
30	011248-010	NUT HEX ESNA 5/8-11UNC	8
31	020021-004	PLUG, O-RING -4	2
32	011941-001	FITTING, 4MB-4MJ	2
34	011256-008	SCREW, HHC GR5 1/2-13UNC X 1	4
35	011239-008	WASHER, ASTM FLAT 1/2"	8
37	067313-000	COVER, FRONT CHASSIS	1
43	067805-099	GROMMET, TRIM	14.25 Ft.
44	061692-099	GROMMET, TRIM	1.25 ft.
45	011239-010	WASHER, FLAT ASTM 5/8"	8

## NOTES:

- PARTIALLY FILL ITEM #16 WITH MULTIPURPOSE GREASE BEFORE INSTALLING ITEM #12.
- ITEM #10 MUST PIVOT FREELY ON ITEM #14, AFTER TIGHTENING ITEM #13.
- THOROUGHLY CLEAN MOTOR SHAFT AND HUB BORE OF ALL GREASE, PAINT OR FOREIGN MATERIAL WITH DEGREASER.
- INSTALL KEY ON MOTOR SHAFT KEYWAY AS SHOWN.
- INSTALL HUB NUTS WITH 3/4" IMPACT WRENCH.
- TORQUE EACH WHEEL HUB TO 350 FT/LBS.
- ALIGN SLOT IN NUT WITH HOLE IN SHAFT, THEN INSTALL COTTER PIN PROVIDED. **DO NOT** BACK NUT OFF TO ALIGN.
- VALVE STEM MUST BE TO THE OUTSIDE OF MACHINE. LUG BOLTS (#21) TO BE TORQUED TO 90 FT/LBS.



## \* STEERING ADJUSTMENT

- INSTALL JAM NUT (ITEM #6) ON ROD END (ITEM #7), THEN THREAD INTO STEERING CYLINDER (ITEM #5).
- ATTACH CYLINDER TO INSIDE OF FRONT AXLE (AS SHOWN) (AFTER INSTALLING (2) FITTINGS (ITEM #29), USING FASTENERS (ITEMS #26, #34, & #35). ADJUST CYLINDER TO HAVE ROD EQUAL ON EITHER SIDE.
- INSTALL STEERING MOUNT WELDMENTS (ITEM #14) SO THAT THEY ARE SQUARE WITH THE FRONT AXLE.
- ATTACH STEERING LINKS TO ITEM #4 (INSERTED INTO ITEM #10).
- ADJUST ROD ENDS (ITEM #7) IN OR OUT AS NEEDED TO LINE UP WITH HOLES IN STEERING LINK (ITEM #10), THEN TIGHTEN JAM NUT (ITEM #6) TO LOCK ROD END (ITEM #7) IN POSITION.
- WHEN PROPERLY ADJUSTED, WHEELS SHOULD TURN THROUGH THE SAME ANGLE.

## Chassis Assembly XRT27 4WD P/F

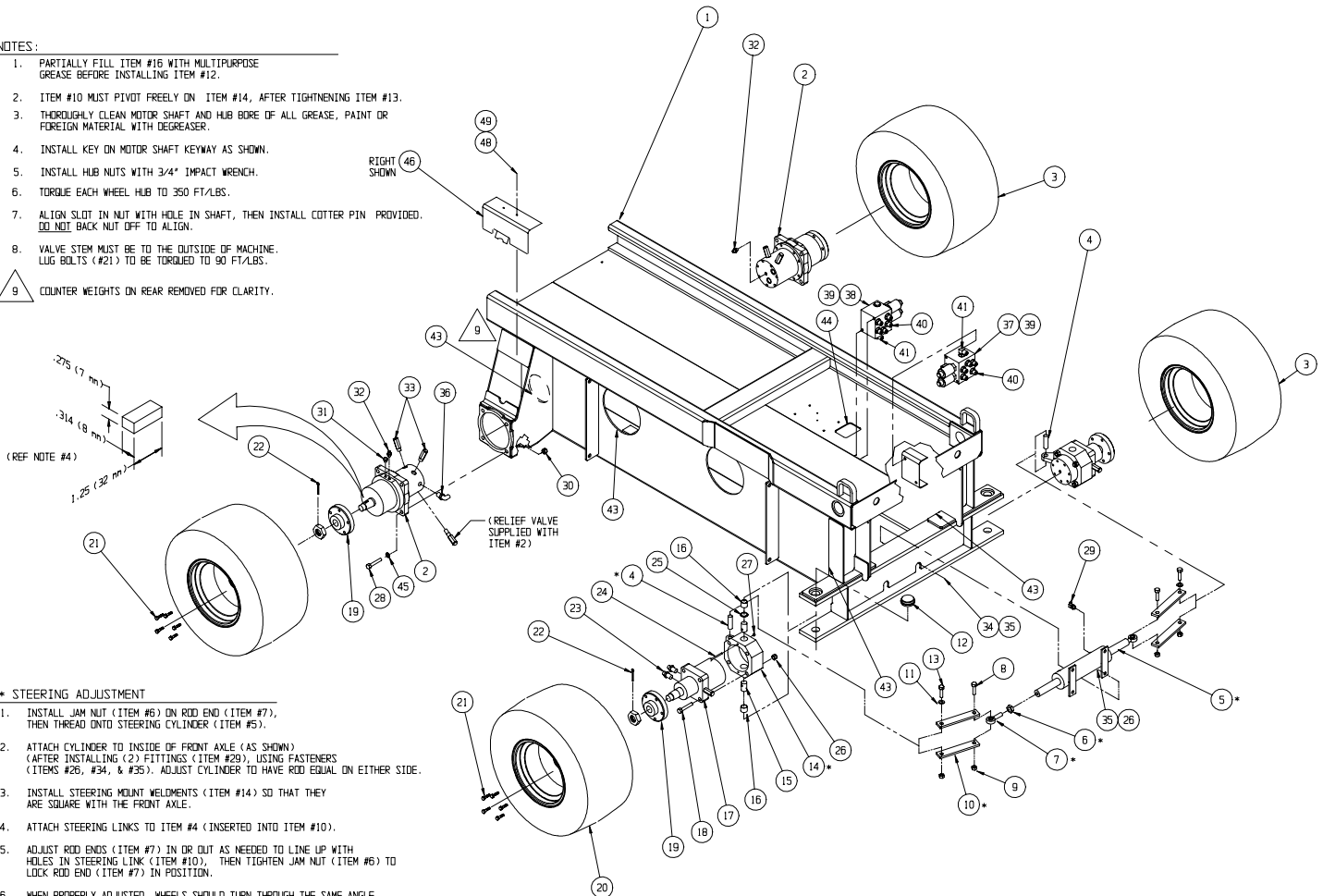
066932-007

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066950-006	CHASSIS WEIGHT INST'L 27' XRT P/F WELDMENT	1
2	067184-000	REAR DRIVE MOTOR W/BRAKE	2
3	064187-011	WHEEL & TIRE ASSY POLYFILL (LH)	REF
4	062642-001	BEARING	2
5	067168-000	CYLINDER - STEERING	1
6	020495-010	NUT, HEX ESNA 5/8-18 UNF	2
7	063927-001	ROD END 5/8-18 UNF	2
8	011257-024	SCREW HHC GR5 5/8-11UNC X 3	2
9	011248-010	NUT HEX ESNA 5/8-11UNC	4
10	067221-000	STEERING LINK	4
11	011240-010	WASHER, FLAT STD 5/8 DIA.	2
12	005078-000	CAP, DUST	2
13	064150-000	SERRATED BOLT	2
14	064030-001	STEERING MOUNT WELDMENT	2
15	064034-001	PIVOT PIN	4
16	067606-013	BEARING, GARLOCK #020DXR012	4
17	067169-000	FRONT DRIVE MOTOR	2
18	011256-040	SCREW, HHC GR5 1/2-13UNC X 5	8
19	064029-001	HUB, DRIVE MOTOR	4
20	064187-010	WHEEL & TIRE ASSY POLYFILL (RH)	REF
21	014122-001	WHEEL BOLT, 1/2-20UNF 90° X 1" LG	20
22	011754-012	COTTER PIN 5/32 DIA X 1 1/2	4
23	011941-014	FITTING, STR 10MB-8MJ	4
24	011252-024	SCREW HHC GR5 1/4-20UNC X 3	4
25	011782-001	BEARING, THRUST WASHER	2

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
26	011248-008	NUT, HEX ESNA 1/2-13UNC	8
27	011248-004	NUT, HEX ESNA 1/4-20UNC	4
28	011257-014	SCREW HHC GR5 5/8-11UNC X 1-3/4	8
29	011934-004	FITTING 90° 4MB-4MJ	2
30	011248-010	NUT HEX ESNA 5/8-11UNC	8
31	020021-004	PLUG, O-RING -4	2
32	011941-001	FITTING, 4MB-4MJ	2
33	011941-014	FITTING, 10MB-8MJ	4
34	011256-008	SCREW, HHC GR5 1/2-13UNC X 1	4
35	011239-008	WASHER, ASTM FLAT 1/2"	8
36	011934-001	FITTING, 90° 4MB-4MJ	2
37	067183-000	SERIES PARALLEL VALVE BLOCK	1
38	067183-001	SERIES PARALLEL VALVE BLOCK	1
39	011254-044	SCREW, HHC GR5 3/8 X 5"	4
40	011941-010	FITTING, 8MB-8MJ	10
41	011940-015	FITTING, 8MB-8MJ, 90°	2
42	067313-000	COVER, FRONT CHASSIS	1
43	067805-099	GROMMET, TRIM	14.25 Ft.
44	061692-099	GROMMET, TRIM	1.25 Ft.
45	011239-010	WASHER, 5/8 ASTM FLAT	8
46	067307-001	REAR WEIGHT COVER	2
48	011252-008	SCREW HHC 1/4-20 X 1	4
49	011240-004	WASHER, 1/4 FLAT STD	4

## NOTES:

- PARTIALLY FILL ITEM #16 WITH MULTIPURPOSE GREASE BEFORE INSTALLING ITEM #12.
- ITEM #10 MUST PIVOT FREELY ON ITEM #14, AFTER TIGHTENING ITEM #13.
- THOROUGHLY CLEAN MOTOR SHAFT AND HUB BORE OF ALL GREASE, PAINT OR FOREIGN MATERIAL WITH DEGREASER.
- INSTALL KEY ON MOTOR SHAFT KEYWAY AS SHOWN.
- INSTALL HUB NUTS WITH 3/4" IMPACT WRENCH.
- TORQUE EACH WHEEL HUB TO 350 FT/LBS.
- ALIGN SLOT IN NUT WITH HOLE IN SHAFT, THEN INSTALL COTTER PIN PROVIDED. DO NOT BACK NUT OFF TO ALIGN.
- VALVE STEM MUST BE TO THE OUTSIDE OF MACHINE. LUG BOLTS (#21) TO BE TORQUED TO 90 FT/LBS.
- COUNTER WEIGHTS ON REAR REMOVED FOR CLARITY.



## \* STEERING ADJUSTMENT

- INSTALL JAM NUT (ITEM #6) ON ROD END (ITEM #7), THEN THREAD ONTO STEERING CYLINDER (ITEM #5).
- ATTACH CYLINDER TO INSIDE OF FRONT AXLE (AS SHOWN) (AFTER INSTALLING (2) FITTINGS (ITEM #29), USING FASTENERS (ITEMS #26, #34, & #35). ADJUST CYLINDER TO HAVE ROD EQUAL ON EITHER SIDE.
- INSTALL STEERING MOUNT WELDMENTS (ITEM #14) SO THAT THEY ARE SQUARE WITH THE FRONT AXLE.
- ATTACH STEERING LINKS TO ITEM #4 (INSERTED INTO ITEM #10).
- ADJUST ROD ENDS (ITEM #7) IN OR OUT AS NEEDED TO LINE UP WITH HOLES IN STEERING LINK (ITEM #10), THEN TIGHTEN JAM NUT (ITEM #6) TO LOCK ROD END (ITEM #7) IN POSITION.
- WHEN PROPERLY ADJUSTED, WHEELS SHOULD TURN THROUGH THE SAME ANGLE.

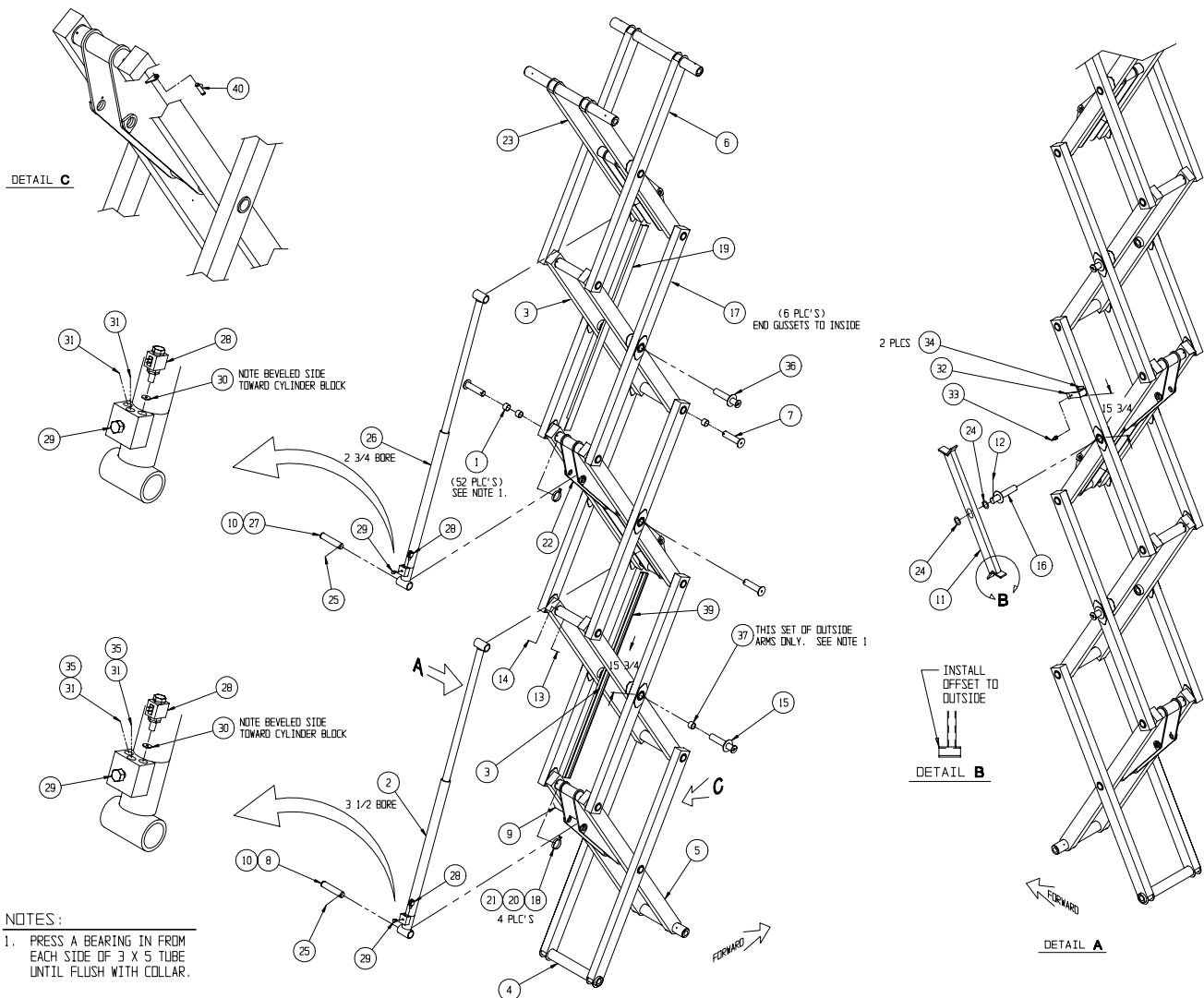


# Linkage Assembly XRT33

066934-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066183-000	BEARING, OILITE #EP3236-24	40
2	066601-000	LIFT CYLINDER 3-1/2" BORE	1
3	066201-001	WELDMENT, MID INNER TUBE 1/8	2
4	066961-000	WELDMENT, BOTTOM OUTER 3/16	1
5	066962-000	WELDMENT, BOTTOM INNER 3/16	1
6	066240-001	WELDMENT, TOP OUTER 3/16	1
7	066210-000	WELDMENT, PIVOT PIN	23
8	066224-000	PIN, LIFT CYLINDER	2
9	066225-000	PIN, SHAFT LOCKING	4
10	011764-032	RET RING TRUARC #5100-200	4
11	067591-000	WELDMENT, SAFETY STAND	1
12	011757-028	COTTER PIN 3/8 DIA X 3-1/2	1
13	011248-005	NUT HEX 5/16-18	26
14	015936-023	SCREW SHOULDER 3/8 X 3 1/2	26
15	066210-010	WELDMENT, PIVOT PIN	1
16	066210-011	WELDMENT, PIVOT PIN	1
17	066211-001	WELDMENT, MID OUTER ARM 1/8	6
18	066199-000	PIPE RING	4
19	066226-000	CHANNEL, CABLE	1
20	011248-004	NUT HEX 1/4-20	4
21	011252-008	SCREW HHC GR5 1/4-20 X 1	4

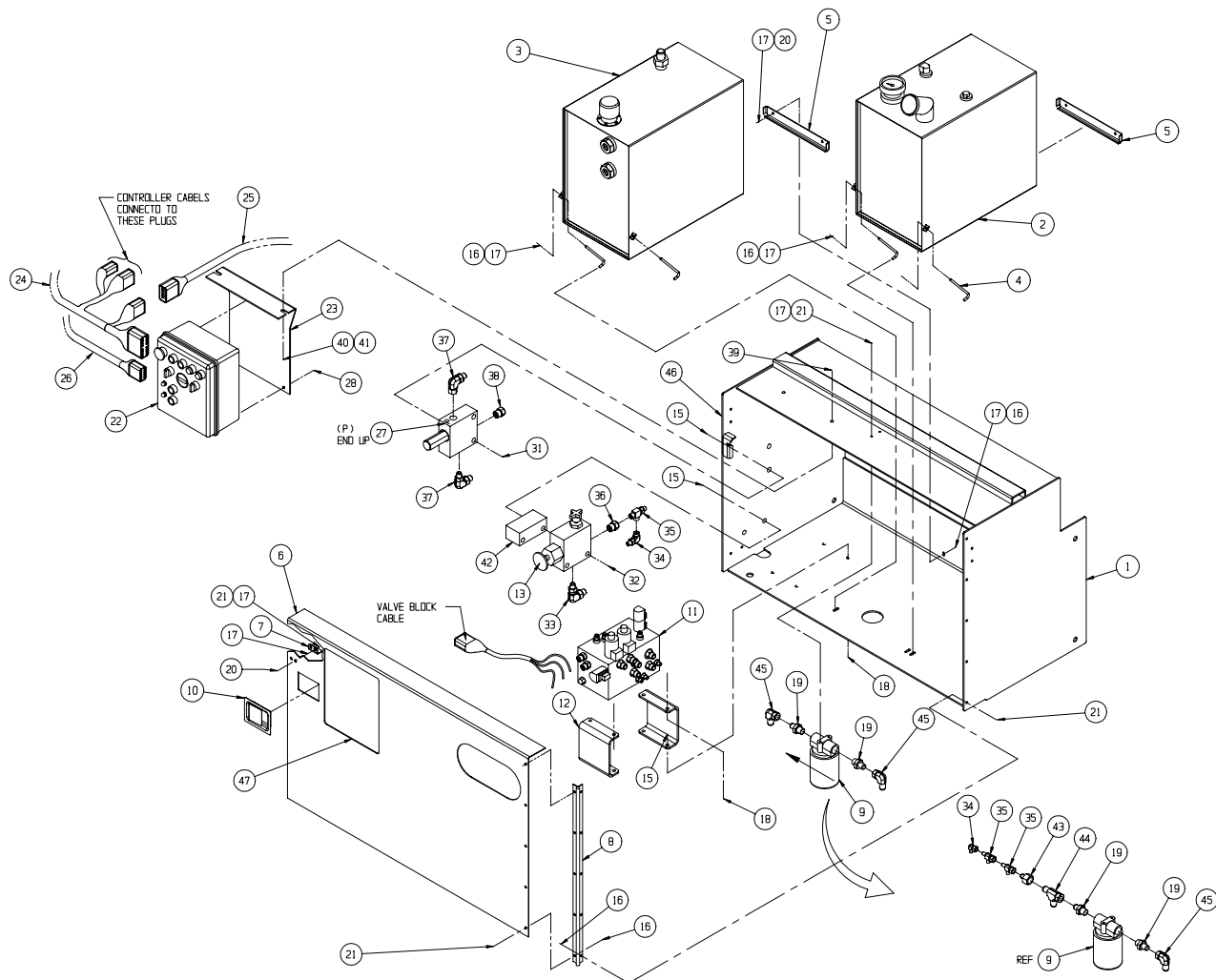
ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
22	066120-011	WELDMENT, MID INNER ARM 1/4	1
23	066121-010	WELDMENT, TOP INNER ARM 1/8	1
24	011786-017	MACHINERY BUSHING 2" ID X 14GA	2
25	011740-024	ROLL PIN 1/2 X 3	2
26	066168-000	LIFT CYLINDER 2-3/4" BORE	1
27	066224-010	PIN LIFT CYLINDER	2
28	066179-001	VALVE SOLENOID - LOWERING	2
29	066811-000	FITTING, VELOCITY FUSE	2
30	063664-008	ORIFICE HYDRFORCE #7051070	2
31	011941-005	FITTING STR 6MB-6MJ	4
32	066814-000	WELDMENT, SCISSOR BRACE	1
33	03570-001	RETAINING RING	1
34	026554-002	RIVET 1/4 POP	2
35	011937-003	FITTING 6FJX-6MJ 90	2
36	066210-012	WELDMENT, PIVOT PIN	1
37	068899-001	BEARING, GAR MAX 3236-24	12
38	067318-000	BRACKET, PLATFORM DOWN SWITCH	1
39	066226-002	HOSE CHANNEL	1
40	066638-000	TEE, BULKHEAD, 6MJ-6MJ-6MJ	1



# Control Module Assembly 2WD Dual Fuel

066935-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY	ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066951-000	WELDMENT, CONTROL MODULE	1	24	067492-010	WIRE HARNESS - MAIN	1
2	066999-000	FUEL TANK ASSY (X-RT) GAS	1	25	067492-002	WIRE HARNESS - VALVE BLOCK (XRT)	1
3	066998-000	HYDRAULIC TANK ASSY (X-RT)	1	26	067492-012	WIRE HARNESS, ENGINE EXTENSION	1
4	067174-000	J- HOOK (X-RT)	4	27	067477-000	PRESSURE REDUCING VALVE	1
5	066960-000	TANK BRACKET, REAR	2	28	011826-006	SCREW, RD HD 10-32UNC X 3/4	4
6	067233-001	DOOR, POWER MODULE (X-RT)	1	31	011254-016	SCREW HHC 3/8UNC X 2"	2
7	067236-000	SUPPORT, DOOR LATCH END	1	32	011254-028	SCREW HHC 3/8UNC X 3 1/2"	2
8	067232-000	HINGE, DOOR	1	33	011934-004	FITTING, 6MB-6MJ, 90°	2
9	005154-001	FILTER, HYDRAULIC W/MOUNT	1	34	011937-001	FITTING, 4FJ-4MJ 90°	2
10	062791-002	LATCH, DOOR	1	35	020733-001	FITTING, TEE, 4MJ-4MJ-4FJ	3
11	067489-000	MAIN VALVE BLOCK ASSEMBLY (LX)	1	36	011941-001	FITTING, 4MB-4MJ	1
12	100267-002	BRACKET, VALVE BLOCK	2	37	011934-003	FITTING, 6MB-4MJ, 90°	2
13	063978-000	BRAKE PUMP	1	38	011941-004	FITTING, 6MB-4MJ	1
14	011254-004	SCREW, HHC 3/8-16 UNC x 1/2	6	39	011253-008	SCREW HHC 5/16-18UNC X 1"	2
15	011248-006	NUT, HEX 3/8-16UNC ESNA	10	40	011248-005	NUT, HEX 5/16-18UNC ESNA	2
16	011248-004	LOCKNUT, HEX 1/4-20UNC	18	41	011240-005	WASHER FLAT STD 5/16	2
17	011240-004	WASHER, STD FLAT 1/4"	10	42	065183-000	BRAKE PUMP SPACER	1
18	011254-008	SCREW, HHC 3/8-16 UNC X 1"	8	43	013969-002	FITTING, REDUCER, 8MJ-4MJ	1
19	011939-019	FITTING, 12MP-8MJ	2	44	020733-003	FITTING, TEE, 8MJ-8MJ-8FJ	1
20	011252-006	SCREW HHC 1/4-20UNC X 3/4"	16	45	011937-004	FITTING, 8FJ-8MJ, 90°	2
21	011248-004	NUT, HEX, ESNA, 1/4-20UNC	2	46	061692-099	GROMMIT, TRIM LOCK	1.67 Ft.
22	067491-001	CONTROL BOX XRT	1	47	100395-099	TRIM SEAL, 3/4 BULB	3.75 Ft.
23	067283-000	MOUNT, LOWER CONTROL BOX	1				



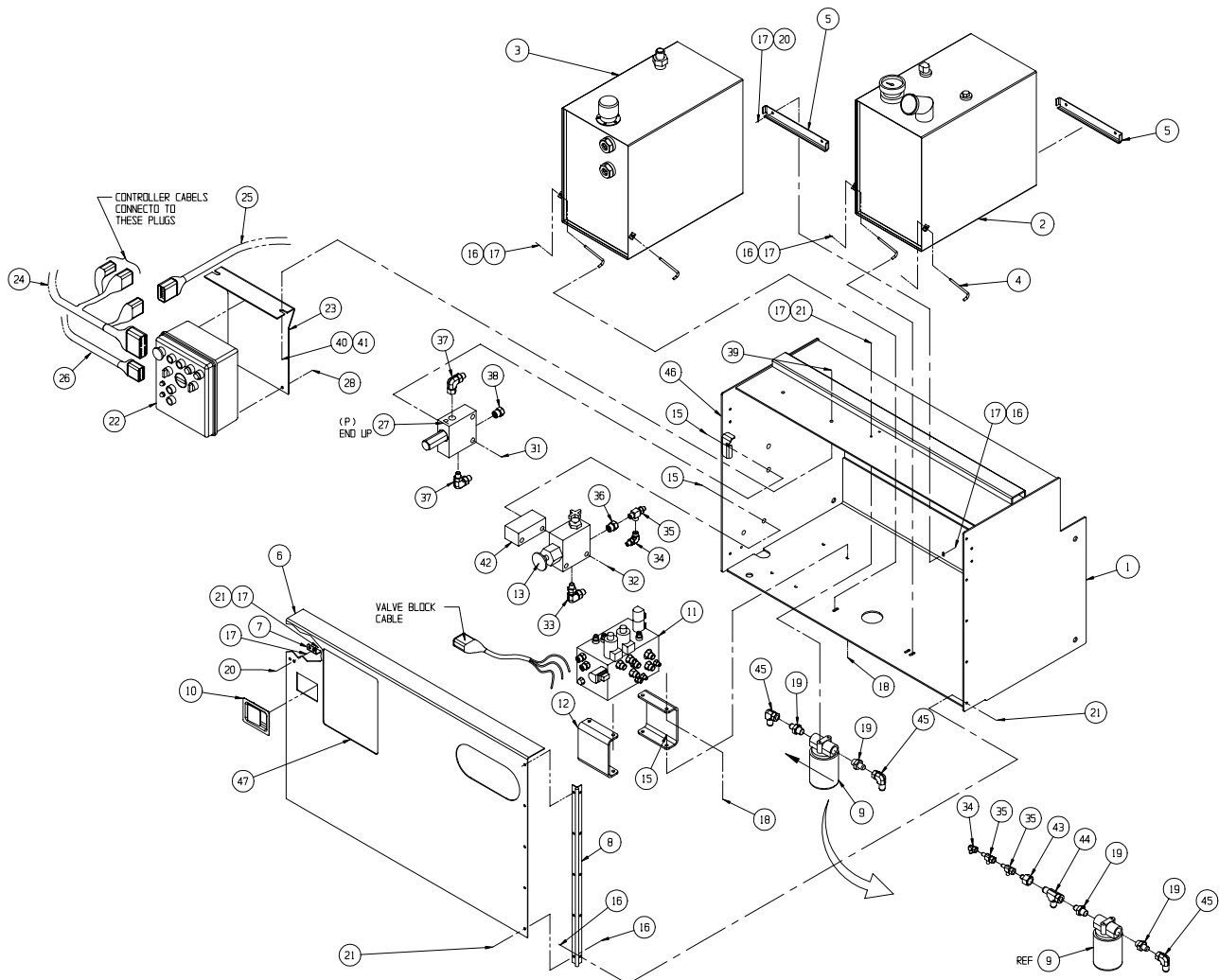


## Control Module Assembly 2WD Diesel

066935-001

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066951-000	WELDMENT, CONTROL MODULE	1
2	066999-001	FUEL TANK ASSY (X-RT) DIESEL	1
3	066998-000	HYDRAULIC TANK ASSY (X-RT)	1
4	067174-000	J- HOOK (X-RT)	4
5	066960-000	TANK BRACKET, REAR	2
6	067233-001	DOOR, POWER MODULE (X-RT)	1
7	067236-000	SUPPORT, DOOR LATCH END	1
8	067232-000	HINGE, DOOR	1
9	005154-001	FILTER, HYDRAULIC W/MOUNT	1
10	062791-002	LATCH, DOOR	1
11	067489-000	MAIN VALVE BLOCK ASSEMBLY	1
12	100267-002	BRACKET, VALVE BLOCK	2
13	063978-000	BRAKE PUMP	1
14	011254-004	SCREW, HHC 3/8-16 UNC x 1/2	6
15	011248-006	NUT, HEX 3/8-16UNC ESNA	6
16	011248-004	LOCKNUT, HEX 1/4-20UNC	18
17	011240-004	WASHER, STD FLAT 1/4"	12
18	011254-008	SCREW, HHC 3/8-16 UNC X 1"	8
19	011939-019	FITTING, 12MP-8MJ	2
20	011252-006	SCREW HHC 1/4-20UNC X 3/4"	6
21	011248-004	NUT, HEX, ESNA, 1/4-20UNC	2
22	067491-002	CONTROL BOX XRT (DIESEL)	1
23	067283-000	MOUNT, LOWER CONTROL BOX	1

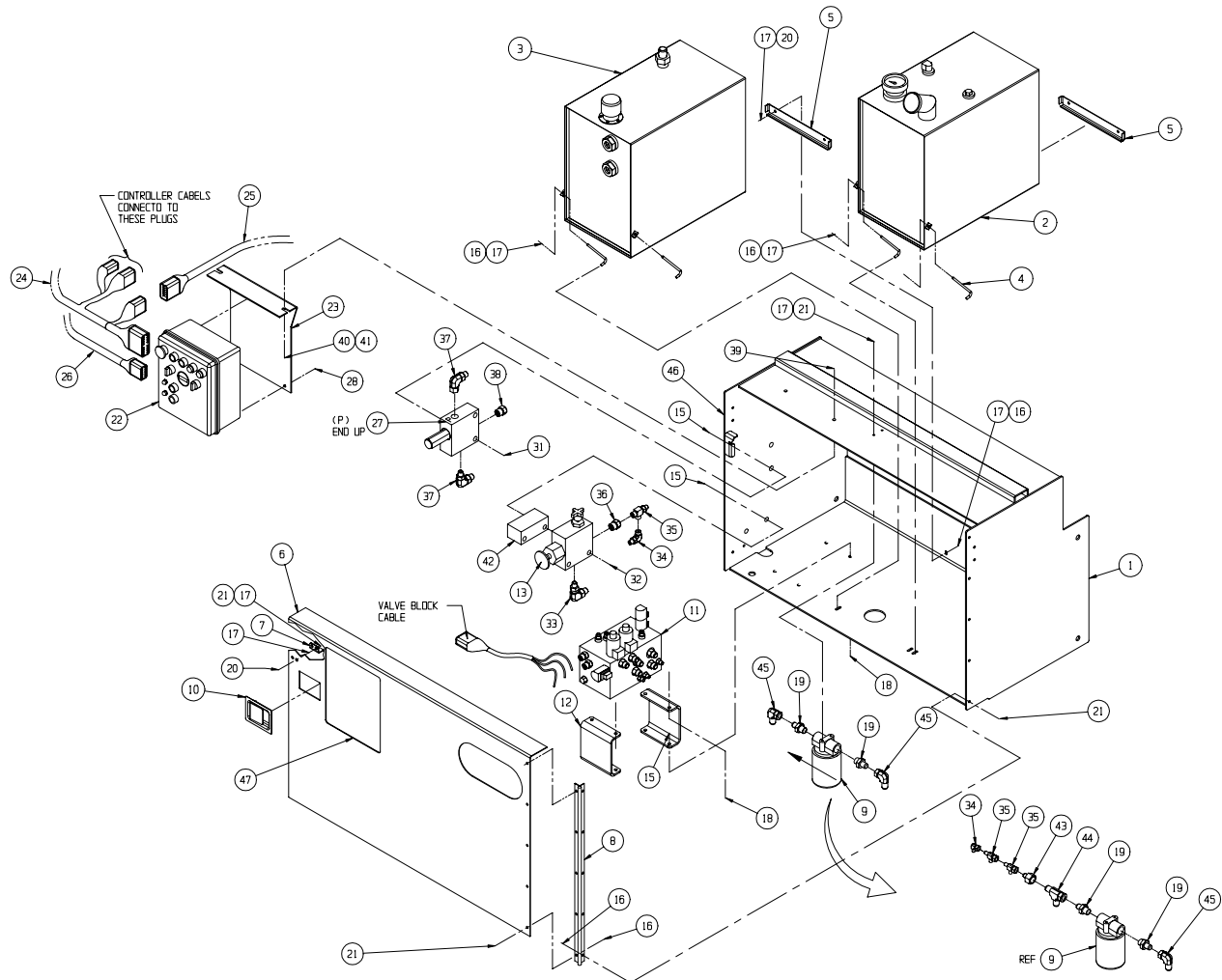
ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
24	067492-010	WIRE HARNESS - MAIN	1
25	067492-002	WIRE HARNESS - VALVE BLOCK (XRT)	1
26	067492-012	WIRE HARNESS, ENGINE EXTENSION	1
27	067477-000	PRESSURE REDUCING VALVE	1
28	01826-006	SCREW, RD HD 10-32UNC X 3/4	4
31	011254-016	SCREW HHC 3/8UNC X 2"	2
32	011254-028	SCREW HHC 3/8UNC X 3 1/2"	2
33	011934-004	FITTING, 6MB-6MJ, 90°	2
34	011937-001	FITTING, 4FJ-4MJ 90°	2
35	020733-001	FITTING, TEE, 4MJ-4MJ-4FJ	3
36	011941-001	FITTING, 4MB-4MJ	1
37	011934-003	FITTING, 6MB-4MJ, 90°	2
38	011941-004	FITTING, 6MB-4MJ	1
39	011253-008	SCREW HHC 5/16-18UNC X 1"	2
40	011248-005	NUT, HEX 5/16-18UNC ESNA	2
41	011240-005	WASHER FLAT STD 5/16	2
42	065183-000	BRAKE PUMP SPACER	1
43	013969-002	FITTING, REDUCER, 8MJ-4MJ	1
44	020733-003	FITTING, TEE, 8MJ-8MJ-8FJ	1
45	011937-004	FITTING, 8FJ-8MJ, 90°	2
46	061692-099	GROMMIT, TRIM LOCK	1.67 Ft.
47	100395-099	TRIM SEAL, 3/4 BULB	3.75 Ft.



# Control Module Assembly 4WD Dual Fuel

066935-002

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY	ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066951-000	WELDMENT, CONTROL MODULE	1	24	067492-010	WIRE HARNESS - MAIN	1
2	066999-000	FUEL TANK ASSY (X-RT) GAS	1	25	067492-002	WIRE HARNESS - VALVE BLOCK (XRT)	1
3	066998-000	HYDRAULIC TANK ASSY (X-RT)	1	26	067492-012	WIRE HARNESS - ENGINE EXTENSION	1
4	067174-000	J- HOOK (X-RT)	4	27	067477-000	PRESSURE REDUCING VALVE	1
5	066960-000	TANK BRACKET, REAR	2	28	011826-006	SCREW RD HD 10-32UNC X 3/4	4
6	067233-001	DOOR, POWER MODULE (X-RT)	1	31	011254-016	SCREW HHC 3/8UNC X 2"	2
7	067236-000	SUPPORT, DOOR LATCH END	1	32	011254-028	SCREW HHC 3/8UNC X 3 1/2"	2
8	067232-000	HINGE, DOOR	1	33	011934-004	FITTING, 6MB-6MJ, 90°	2
9	005154-001	FILTER, HYDRAULIC W/MOUNT	1	34	011937-001	FITTING, 4FJ-4MJ 90°	2
10	062791-002	LATCH, DOOR	1	35	020733-001	FITTING, TEE, 4MJ-4MJ-4FJ	3
11	067489-002	MAIN VALVE BLOCK ASSEMBLY (4WD)	1	36	011941-001	FITTING, 4MB-4MJ	1
12	100267-002	BRACKET, VALVE BLOCK	2	37	011934-003	FITTING, 6MB-4MJ, 90°	2
13	063978-000	BRAKE PUMP - HAND	1	38	011941-004	FITTING, 6MB-4MJ	1
14	011254-004	SCREW, HHC 3/8-16 UNC x 1/2	6	39	011253-008	SCREW HHC 5/16-18UNC X 1"	2
15	011248-006	NUT, HEX 3/8-16UNC ESNA	6	40	011248-005	NUT, HEX 5/16-18UNC ESNA	2
16	011248-004	LOCKNUT, HEX 1/4-20UNC	20	41	011240-005	WASHER FLAT STD 5/16	2
17	011240-004	WASHER, STD FLAT 1/4"	8	42	065183-000	BRAKE PUMP SPACER	1
18	011254-008	SCREW, HHC 3/8-16 UNC X 1"	8	43	013969-002	FITTING, REDUCER, 8MJ-4MJ	1
19	011939-019	FITTING, 12MP-8MJ	2	44	020733-003	FITTING, TEE, 8MJ-8MJ-8FJ	1
20	011252-006	SCREW, HHC 1/4-20UNC X 3/4"	8	45	011937-004	FITTING, 8FJ-8MJ, 90°	2
21	011248-004	NUT, HEX, ESNA, 1/4-20UNC	2	46	061692-099	GROMMIT, TRIM LOCK	1.67 Ft.
22	067491-001	CONTROL BOX XRT (D/F)	1	47	100395-099	TRIM SEAL, 3/4 BULB	3.75 Ft.
23	067283-000	MOUNT, LOWER CONTROL BOX	1				

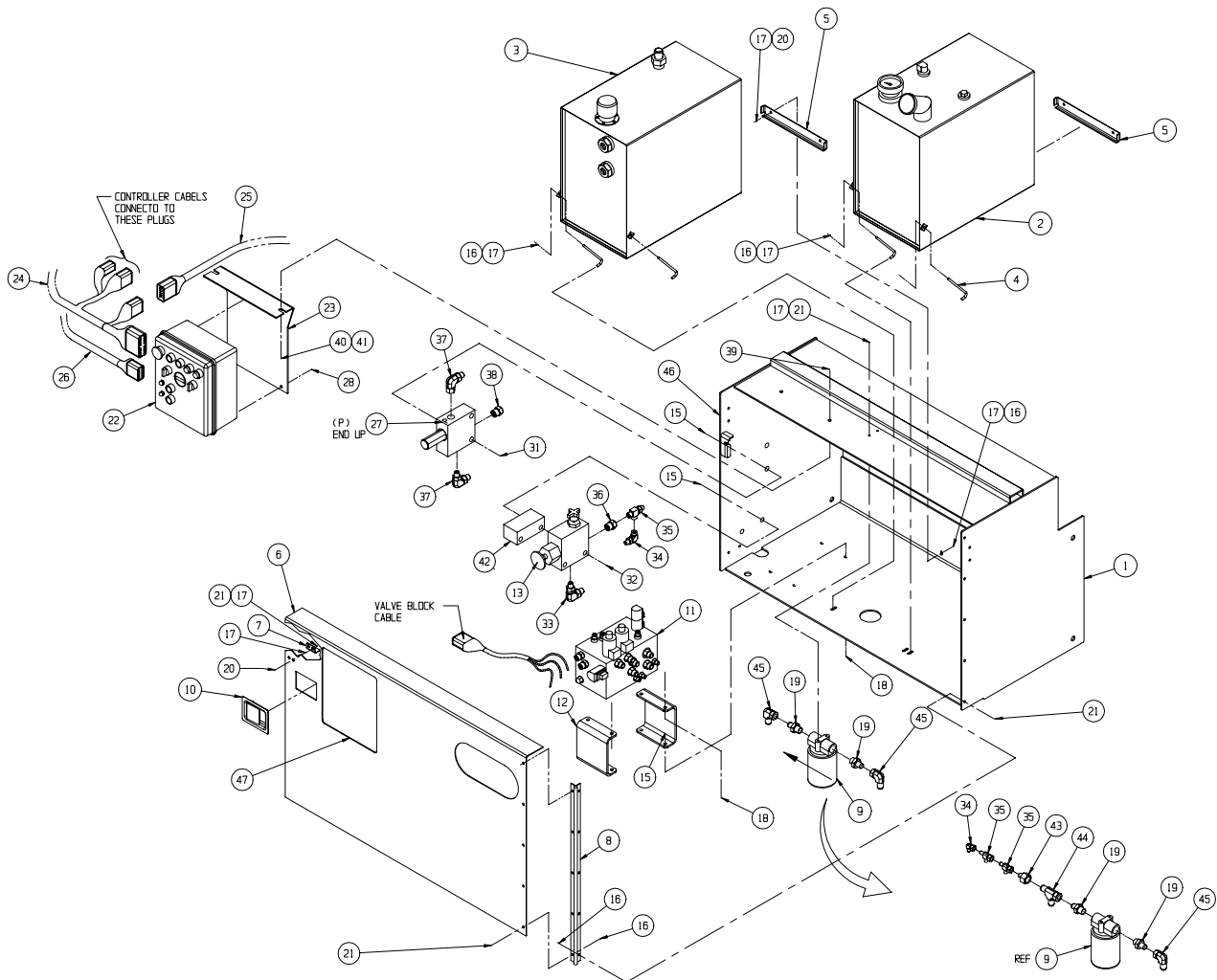


## Control Module Assembly 4WD Diesel

066935-003

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066951-000	WELDMENT, CONTROL MODULE	1
2	066999-001	FUEL TANK ASSY (X-RT) DIESEL	1
3	066998-000	HYDRAULIC TANK ASSY (X-RT)	1
4	067174-000	J- HOOK (X-RT)	4
5	066960-000	TANK BRACKET, REAR	2
6	067233-001	DOOR, POWER MODULE (X-RT)	1
7	067236-000	SUPPORT, DOOR LATCH END	1
8	067232-000	HINGE, DOOR	1
9	005154-001	FILTER, HYDRAULIC W/MOUNT	1
10	062791-002	LATCH, DOOR	1
11	067489-000	MAIN VALVE BLOCK ASSEMBLY	1
12	100267-002	BRACKET, VALVE BLOCK (4WD)	2
13	063978-000	BRAKE PUMP - HAND	1
14	011254-004	SCREW, HHC 3/8-16 UNC x 1/2	6
15	011248-006	NUT, HEX 3/8-16UNC ESNA	6
16	011248-004	LOCKNUT, HEX 1/4-20UNC	20
17	011240-004	WASHER, STD FLAT 1/4"	8
18	011254-008	SCREW, HHC 3/8-16 UNC X 1"	8
19	011939-019	FITTING, 12MP-8MJ	2
20	011252-006	SCREW, HHC 1/4-20UNC X 3/4"	8
21	011248-004	NUT, HEX, ESNA, 1/4-20UNC	2
22	067491-002	CONTROL BOX XRT (DIESEL)	1
23	067283-000	MOUNT, LOWER CONTROL BOX	1

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
24	067492-010	WIRE HARNESS - MAIN	1
25	067492-002	WIRE HARNESS - VALVE BLOCK (XRT)	1
26	067492-012	WIRE HARNESS - ENGINE EXTENSION	1
27	067477-000	PRESSURE REDUCING VALVE	1
28	011826-006	SCREW RD HD 10-32UNC X 3/4	4
31	011254-016	SCREW HHC 3/8UNC X 2"	2
32	011254-028	SCREW HHC 3/8UNC X 3 1/2"	2
33	011934-004	FITTING, 6MB-6MJ, 90°	2
34	011937-001	FITTING, 4FJ-4MJ 90°	2
35	020733-001	FITTING, TEE, 4MJ-4MJ-4FJ	3
36	011941-001	FITTING, 4MB-4MJ	1
37	011934-003	FITTING, 6MB-4MJ, 90°	2
38	011941-004	FITTING, 6MB-4MJ	1
39	011253-008	SCREW HHC 5/16-18UNC X 1"	2
40	011248-005	NUT, HEX 5/16-18UNC ESNA	2
41	011240-005	WASHER FLAT STD 5/16	2
42	065183-000	BRAKE PUMP SPACER	1
43	013969-002	FITTING, REDUCER, 8MJ-4MJ	1
44	020733-003	FITTING, TEE, 8MJ-8MJ-8FJ	1
45	011937-004	FITTING, 8FJ-8MJ, 90°	2
46	061692-099	GROMMIT, TRIM LOCK	1.67 Ft.
47	100395-099	TRIM SEAL, 3/4 BULB	3.75 Ft.



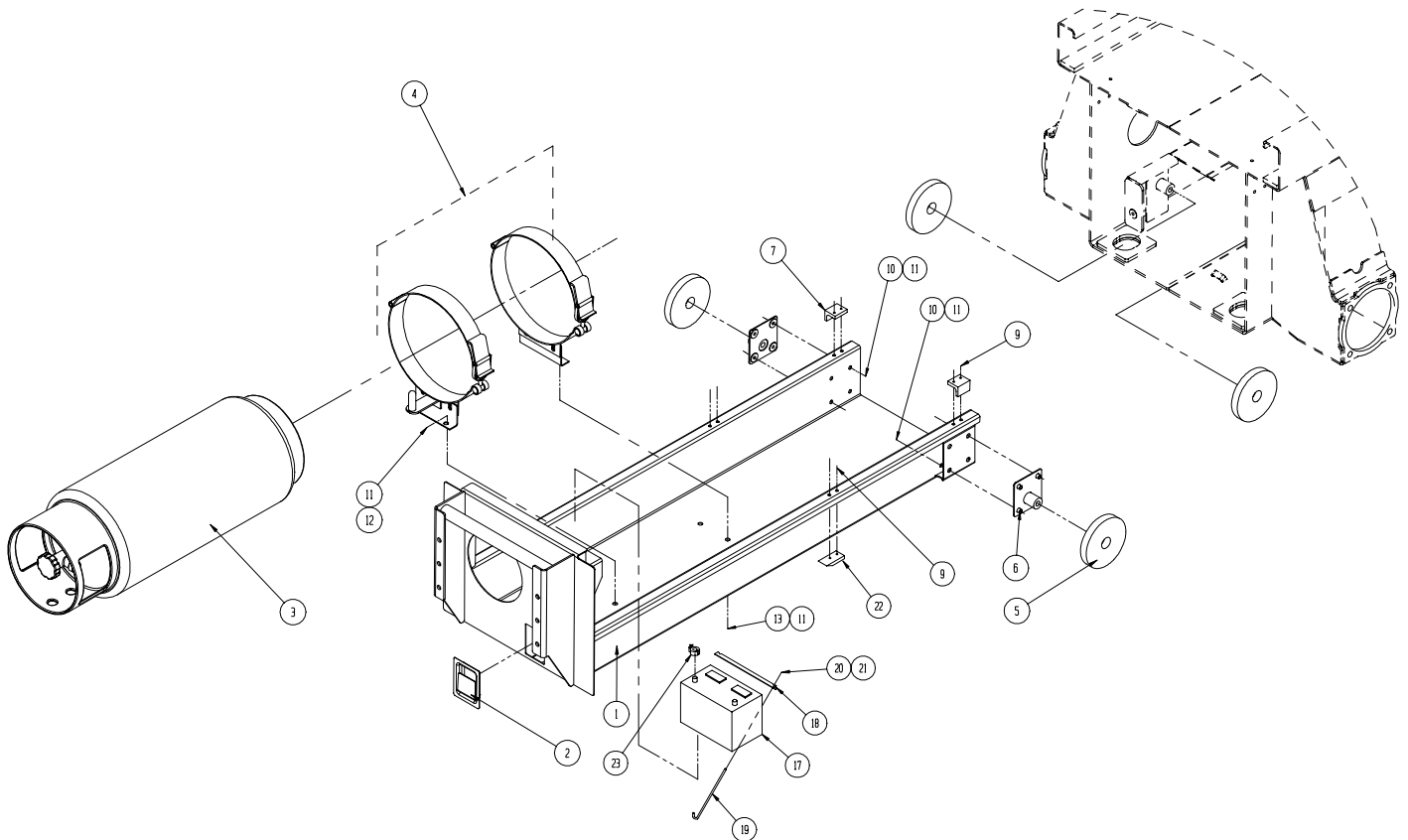


# Roll Out Tray Assembly Dual Fuel

066936-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066963-001	WELDMENT, ROLL-OUT TRAY	1
2	062791-002	LATCH	1
3	027934-009	PROPANE TANK 7 GAL. LIQUID	1
4	027823-000	BRACKET, PROPANE TANK SET	1
5	066195-000	ROLLER	4
6	066256-001	WELDMENT, ROLLER MOUNT	2
7	066170-000	WEAR PAD	2
9	026553-010	RIVET 3/16 DIA. x 5/8 GRIP	8
10	011254-014	SCREW HHC 3/8-16 x 1 3/4	9
11	011240-006	WASHER 3/8 FLAT	16

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
13	011254-008	SCREW HHC 3/8-16 x 1	4
15	011238-006	WASHER 3/8 LOCK	8
17	062292-002	BATTERY 12 VDC GROUP	1
18	064040-000	ANGLE BATTERY HOLD DOWN	1
19	012039-000	ROD BATTERY HOLD DOWN	2
20	011240-005	WASHER FLAT STD 5/16	2
21	011248-005	NUT HEX ESNA 5/16-18UNC	2
22	066193-000	STOP	2
23	144435-001	BATTERY TERMINAL - MARINE STYLE	2

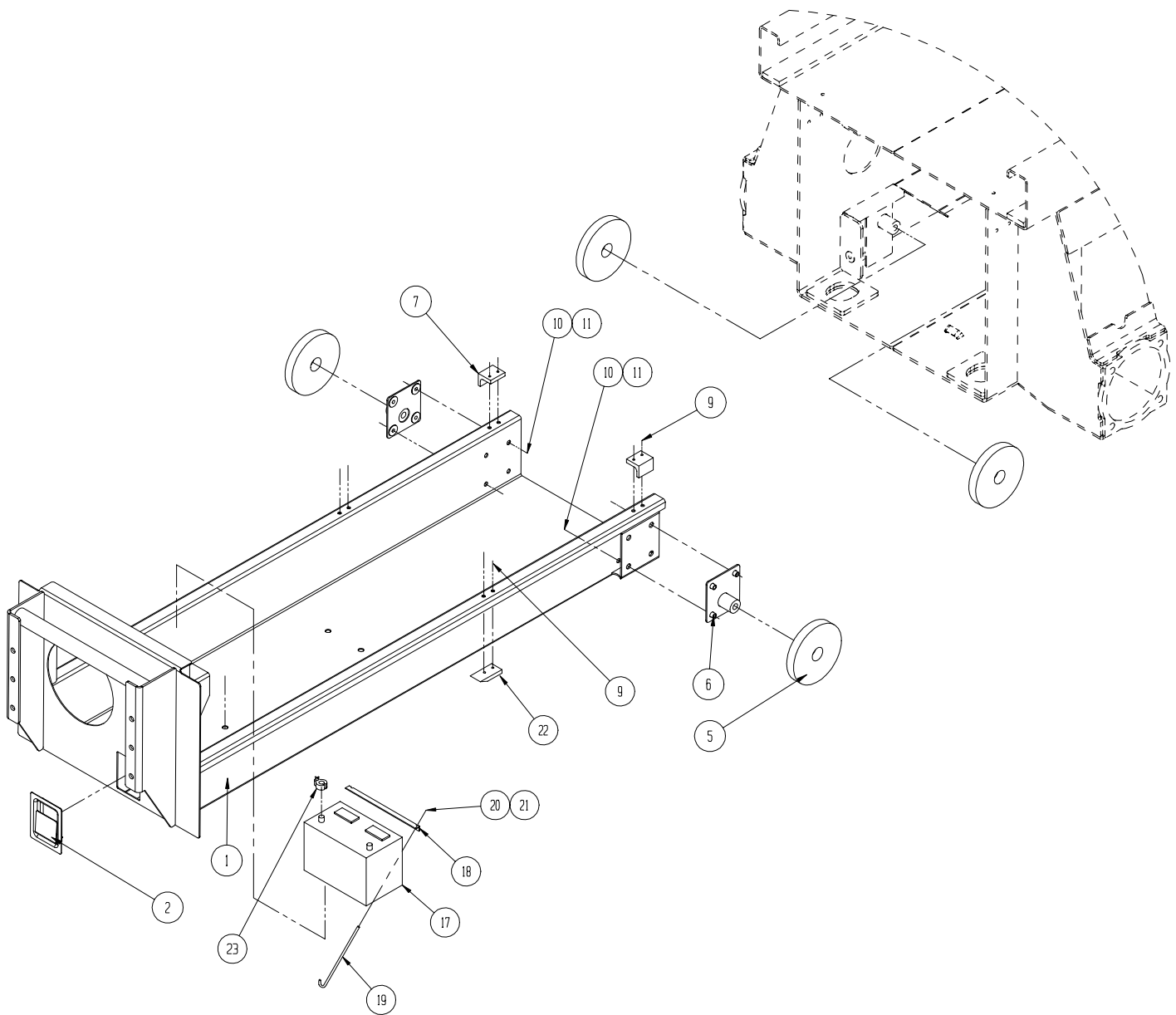


## Roll Out Tray Assembly Diesel

066936-001

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066963-001	WELDMENT, ROLL-OUT TRAY	1
2	062791-002	LATCH	1
5	066195-000	ROLLER	4
6	066256-001	WELDMENT, ROLLER MOUNT	2
7	066170-000	WEAR PAD	2
9	026553-010	RIVET 3/16 DIA. x 5/8 GRIP	8
10	011254-014	SCREW HHC 3/8-16 x 1 3/4	9
11	011240-006	WASHER 3/8 FLAT	8
15	011238-006	WASHER 3/8 LOCK	8

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
17	062292-002	BATTERY 12 VDC GROUP	1
18	064040-000	ANGLE BATTERY HOLD DOWN	1
19	012039-000	ROD BATTERY HOLD DOWN	2
20	011240-005	WASHER FLAT STD 5/16	2
21	011248-005	NUT HEX ESNA 5/16-18UNC	2
22	066193-000	STOP	2
23	144435-001	BATTERY TERMINAL - MARINE STYLE	2

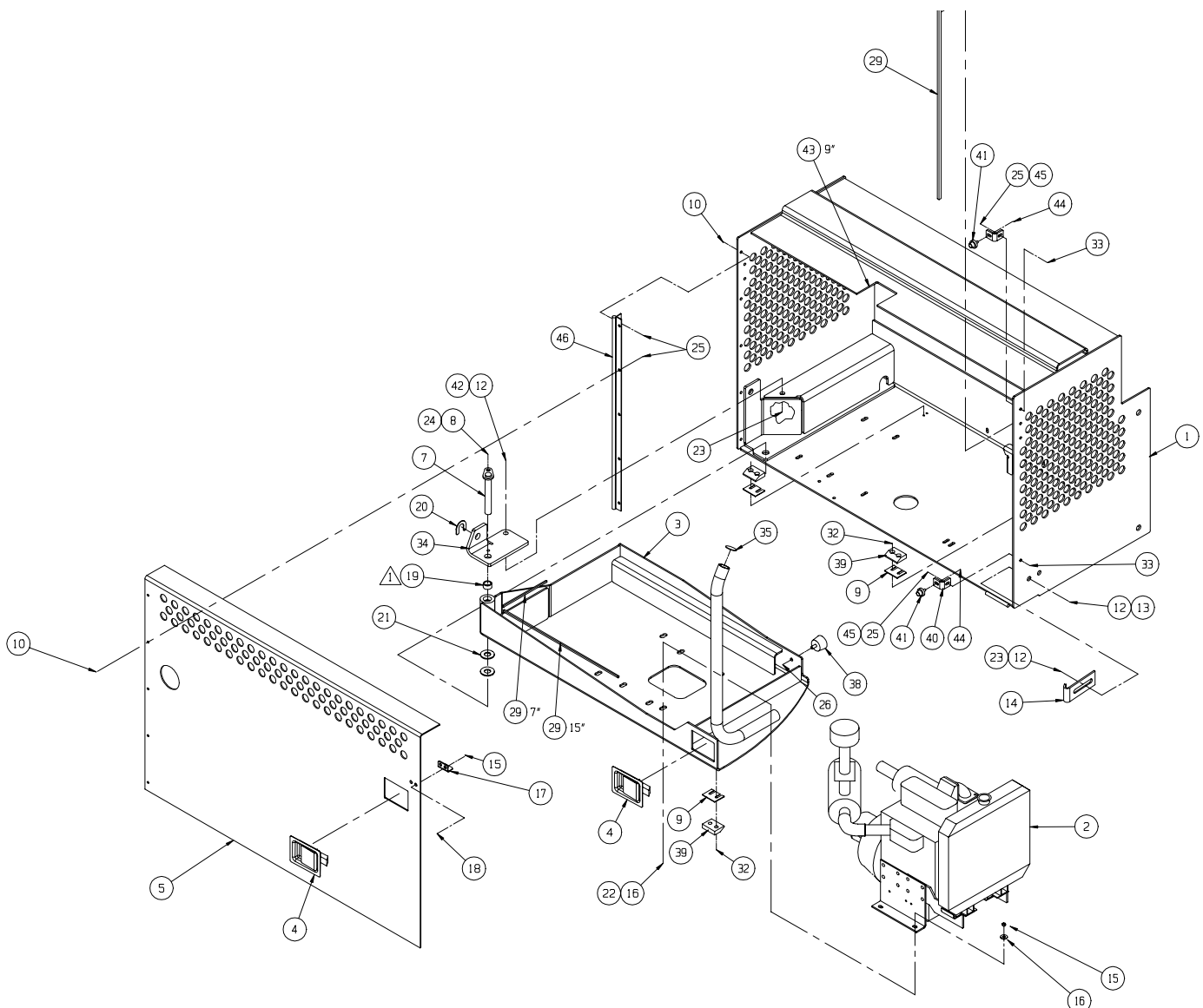


# Power Module Assembly Diesel Kubota

066937-001

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066953-001	POWER MODULE WELDMENT (XRT)	1
2	066947-001	ENGINE ASSY, KUBOTA DIESEL (XRT)	1
3	066948-001	SWING OUT TRAY SUB-WELDMENT (KUBOTA)	1
4	062791-002	SLAM LATCH	2
5	067233-000	DOOR, POWER MODULE XRT	1
7	066958-000	WELDMENT, PIN SWING OUT PIVOT	1
8	011254-006	SCRW HHC GR5 3/8-16UNC X 3/4"LG	1
9	069247-000	SHIM	-
10	011252-004	SCRW HHC 1/4-20UNC X 1/2	10
12	011240-008	WASHER, 1/2" FLAT STD	4
13	011256-008	SCREW, 1/2-13UNC X 1"	2
14	067231-000	PLATE, LATCH	1
15	011248-006	NUT, HEX 3/8-16UNC ESNA	6
16	011240-006	WASHER, 3/8 FLAT STD	12
17	067236-000	SUPPORT, DOOR LATCH END	1
18	011254-004	SCREW, HHC 3/8-16UNC X 1/2	2
19	027931-016	BUSHING, OILITE AA-1049-14	2
20	069247-001	SHIM	-
21	011154-020	THRUST WASHER	2

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
22	011254-010	SCREW, HHC 3/8-16UNC X 1-1/4	4
23	011248-008	NUT HEX 1/2-13UNC ESNA	2
24	011238-006	WASHER, SPLIT LOCK 3/8"	1
25	011248-004	NUT, HEX ESNA 1/4-20UNC	14
26	011248-005	NUT, HEX, ESNA, 5/16-18UNC	4
29	061692-099	GROMMIT, TRIM LOCK	1.83 Ft.
33	011252-006	SCREW, HHC 1/4-20 UNC X 3/4	2
34	067225-001	PIVOT SUPPORT PLATE UPPER	1
35	066516-001	CAP PLUG, 1-3/16 DIA	1
38	069254-000	BUMPER, RUBBER 1 DIA	1
39	069248-000	SLIDE PAD, TRAY SUPPORT	2
40	069246-000	ANGLE SNUBBER MOUNT	2
41	067469-000	BUMPER, RUBBER 1/4 STUD	2
42	011256-012	SCREW, HHC 1/2-13 UNC X 1-1/2	1
43	010070-099	TRIM LOCK, 3/8 BULB	.8 FT.
44	069266-000	SPEED NUT, 1/4 20 UNC	2
45	014996-004	WASHER, 1/4 FLAT	2
46	067232-000	HINGE	1

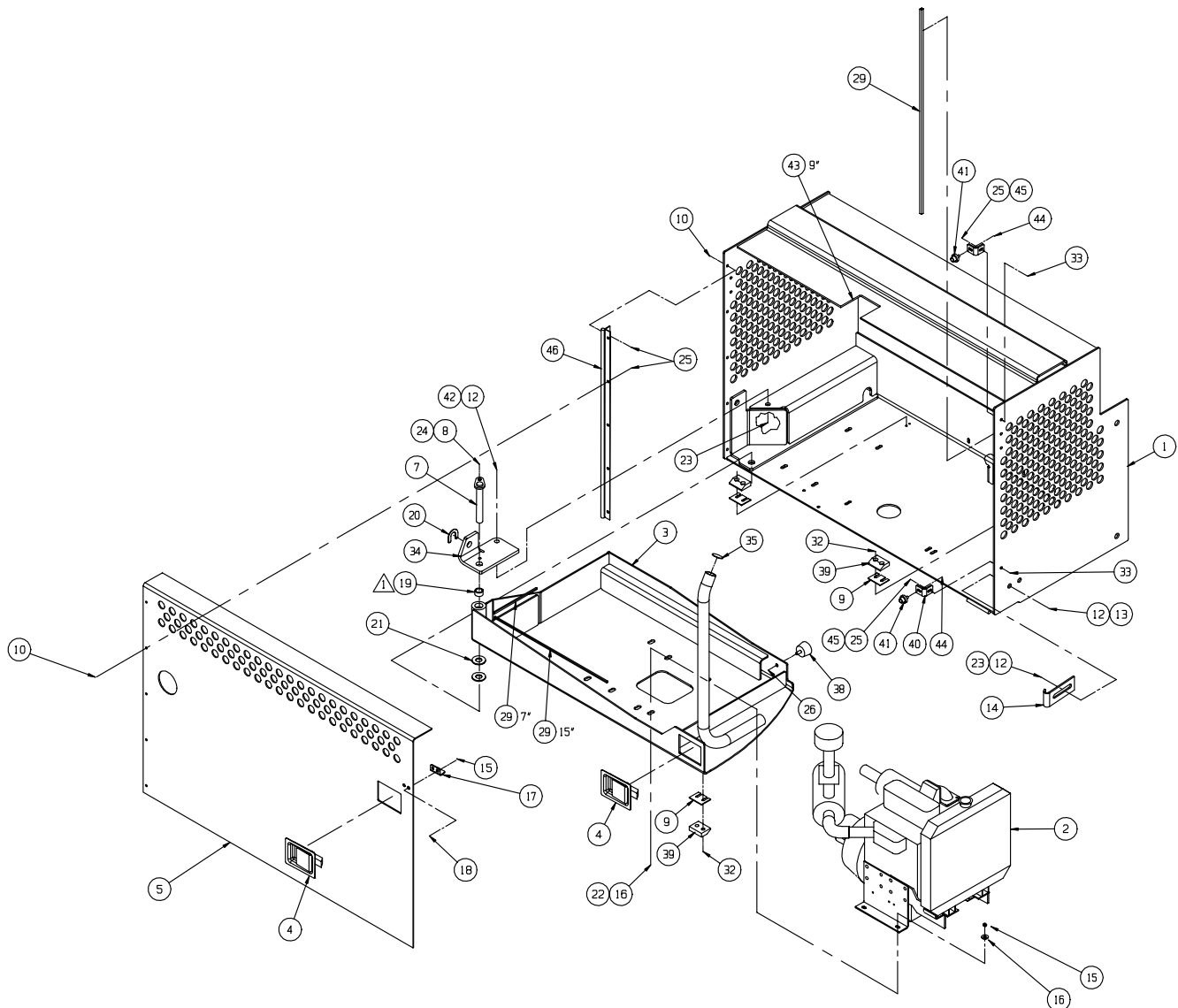


# Power Module Assembly Dual Fuel Kubota

066937-002

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066953-001	POWER MODULE WELDMENT (XRT)	1
2	066947-002	ENGINE ASSY, KUBOTA DF750-E (XRT)	1
3	066948-001	SWING OUT TRAY SUB-WELDMENT (KUBOTA)	1
4	062791-002	SLAM LATCH	2
5	067233-000	DOOR, POWER MODULE XRT	1
7	066958-000	WELDMENT, PIN SWING OUT PIVOT	1
8	011254-006	SCRW HHC GR5 3/8-16UNC X 3/4"LG	1
9	069247-000	SHIM	-
10	011252-004	SCRW HHC 1/4-20UNC X 1/2	10
12	011240-008	WASHER, 1/2" FLAT STD	4
13	011256-008	SCREW, 1/2-13UNC X 1"	2
14	067231-000	PLATE, LATCH	1
15	011248-006	NUT, HEX 3/8-16UNC ESNA	62
16	011240-006	WASHER, 3/8 FLAT STD	12
17	067236-000	SUPPORT, DOOR LATCH END	1
18	011254-004	SCREW, HHC 3/8-16UNC X 1/2	2
19	027931-016	BUSHING, OILITE AA-1049-14	2
20	069247-001	SHIM	-
21	011154-020	THRUST WASHER	2

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
22	011254-010	SCREW, HHC 3/8-16UNC X 1-1/4	4
23	011248-008	NUT HEX 1/2-13UNC ESNA	2
24	011238-006	WASHER, SPLIT LOCK 3/8"	1
25	011248-004	NUT, HEX ESNA 1/4-20UNC	14
26	011248-005	NUT, HEX, ESNA 5/16-18UNC	4
29	061692-099	GROMMIT, TRIM LOCK	1.83 Ft.
33	011252-006	SCREW, HHC 1/4-20 UNC X 3/4	2
34	067225-001	PIVOT SUPPORT PLATE UPPER	1
35	066516-001	CAP PLUG, 1-3/16 DIA	1
38	069254-000	BUMPER, RUBBER 1 DIA	1
39	069248-000	SLIDE PAD, TRAY SUPPORT	2
40	069246-000	ANGLE SNUBBER MOUNT	2
41	067469-000	BUMPER, RUBBER 1/4 STUD	2
42	011256-012	SCREW, HHC 1/2-13 UNC X 1-1/2	1
43	010070-099	TRIM LOCK, 3/8 BULB	.8 FT.
44	069266-000	SPEED NUT, 1/4 20 UNC	2
45	014996-004	WASHER, 1/4 FLAT	2
46	067232-000	HINGE	1

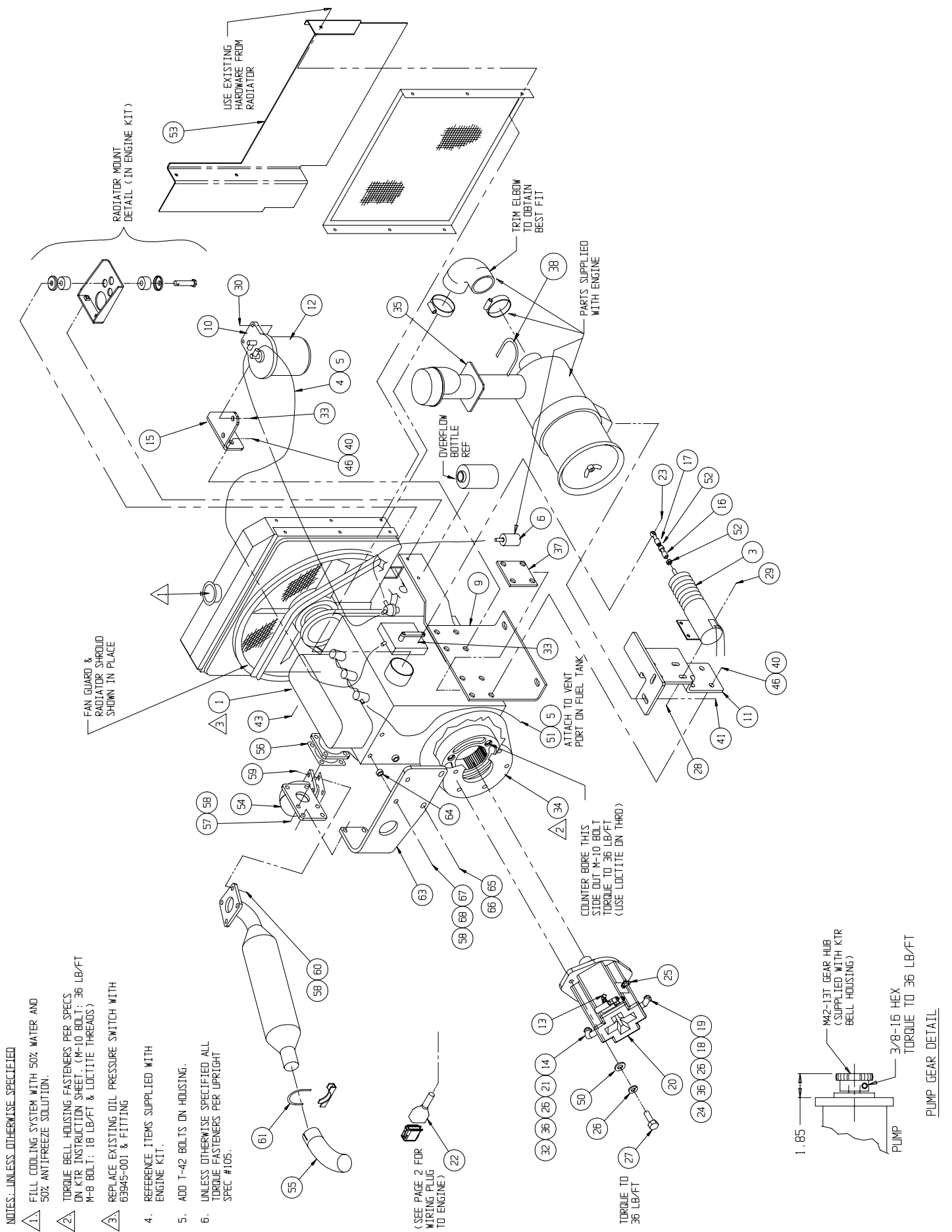


# Engine Assembly Diesel Kubota

066947-001

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	067614-001	ENGINE, KUBOTA DIESEL (S/N 2030 DOWN)	1
	067614-000	ENGINE, KUBOTA DIESEL D905B-0 (S/N 2031 UP)	1
3	067599-000	SOLENOID, THROTTLE	1
4	012733-099	HOSE, FUEL LINE Ø 5/16	10 FT
5	020541-001	HOSE CLAMP	6
6	REF.	FUEL FILTER, INLINE	1
7	063945-001	OIL PRESSURE SWITCH	1
9	064180-001	ENGINE MOUNT BRACKET	2
10	REF	FUEL FILTER MOUNT - SPIN ON	1
11	067859-001	BRACKET, AIR CLEANER	1
12	REF	FUEL FILTER - SPIN ON	1
13	011935-001	FITTING, 4MB-4MJ, 45°	1
14	014338-005	FITTING FLANGE, 16MJ 90°	1
15	067323-000	BRACKET, DIESEL FUEL FILTER	1
16	064423-000	INLINE SWIVEL - 1/4	1
17	011760-004	ROD END BEARING - 1/4-28	1
18	067670-012	SPLIT FLANGE HALF, S12	2
19	015724-012	FITTING FLANGE - 12MJ 45°	1
20	067190-000	PUMP, HYDRAULIC - LOAD SENSE	1
21	067670-016	SPLIT FLANGE HALF, S16	2
22	067492-005	WIRE HARNESS - KUBOTA DIESEL ENGINE	1
23	011252-008	SCREW HHC 1/4-20UNC X 1	1
24	067671-012	O-RING, BUNA-N, S12	1
25	011934-001	FITTING, ADAPTER 4MB-4MJ, 90°	1
26	011238-006	LOCKWASHER, 3/8" SPLIT	10
27	011254-010	SCREW, HHC 3/8-16UNC X 1 1/4"	2
28	011248-004	NUT HEX 1/4-20 UNC ESNA	4
29	011252-006	SCREW HHC 1/4-20UNC X 3/4	4
30	011253-008	SCREW HHC 5/16-18UNC X 1	3
31	011240-004	WASHER FLAT STD 1/4	2
32	067671-016	O-RING, BUNA-N, S16	1
33	011248-005	NUT HEX 5/16 ESNA	3

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
34	067617-010	KTR BELL HOUSING KIT	1
35	067691-003	SNORKEL WELDMENT (XRT DIESEL)	1
37	064183-000	SPACER, ENGINE	2
38	013259-008	U-BOLT BRACKET	1
40	063946-030	SCREW HHC M10 X 1.25 GR5 X 30MM	16
41	REF	SCREW (SUPPLIED W/ AIR CLEANER)	2
42	REF	SCREW MANIFOLD (SUPPLIED W/ ENGINE)	2
43	003142-001	ADAPTER, 2MP-2FP	1
44	029601-039	CONN. RING, 12-10GA., 5/16Ø	1
46	011240-007	WASHER FLAT STD 7/16	12
47	029416-099	WIRE, 12AWG, RED	1 FT
48	029601-020	CONN. RING, 12-10GA., 1/4Ø	1
49	014914-001	CONN. MALE PUSH, 16-14 AWG, .25 TAB	5
50	011239-006	WASHER, FLAT STD A32	2
51	012736-099	HOSE 3/16 I.D.	9FT
52	020495-004	NUT, HEX JAM 1/4-28 UNF	2
53	067319-001	LOWER BAFFEL - DIESEL	1
54	069250-001	EXHAUST ELBOW	1
55	066787-000	EXHAUST TIP - DIESEL	1
56	063936-024	GASKET, EXHAUST	1
57	063961-020	SCREW M8 X 1.25 X 20MM	4
58	011238-005	LOCKWASHER, SPLIT 5/16	10
59	011253-006	SCREW HHC GR5 5/15-18 X 7/8	4
60	011250-005	NUT 5/16-18	4
61	013259-006	U CLAMP, MUFFLER	1
63	069203-001	MANIFOLD SUPPORT BRACKET	1
64	018084-003	BUSHING, .75 OD X .188W X .33 LG.	2
65	011240-006	WASHER, 3/8 FLAT	2
66	063946-045	SCREW, HHC, 10MM-1.25 X 45MM	2
67	063961-030	SCREW, HHC, 8MM-1.25 X 30MM	2
68	011240-005	WASHER, 5/16 FLAT	2





# Engine Assembly Dual Fuel Kubota

066947-002

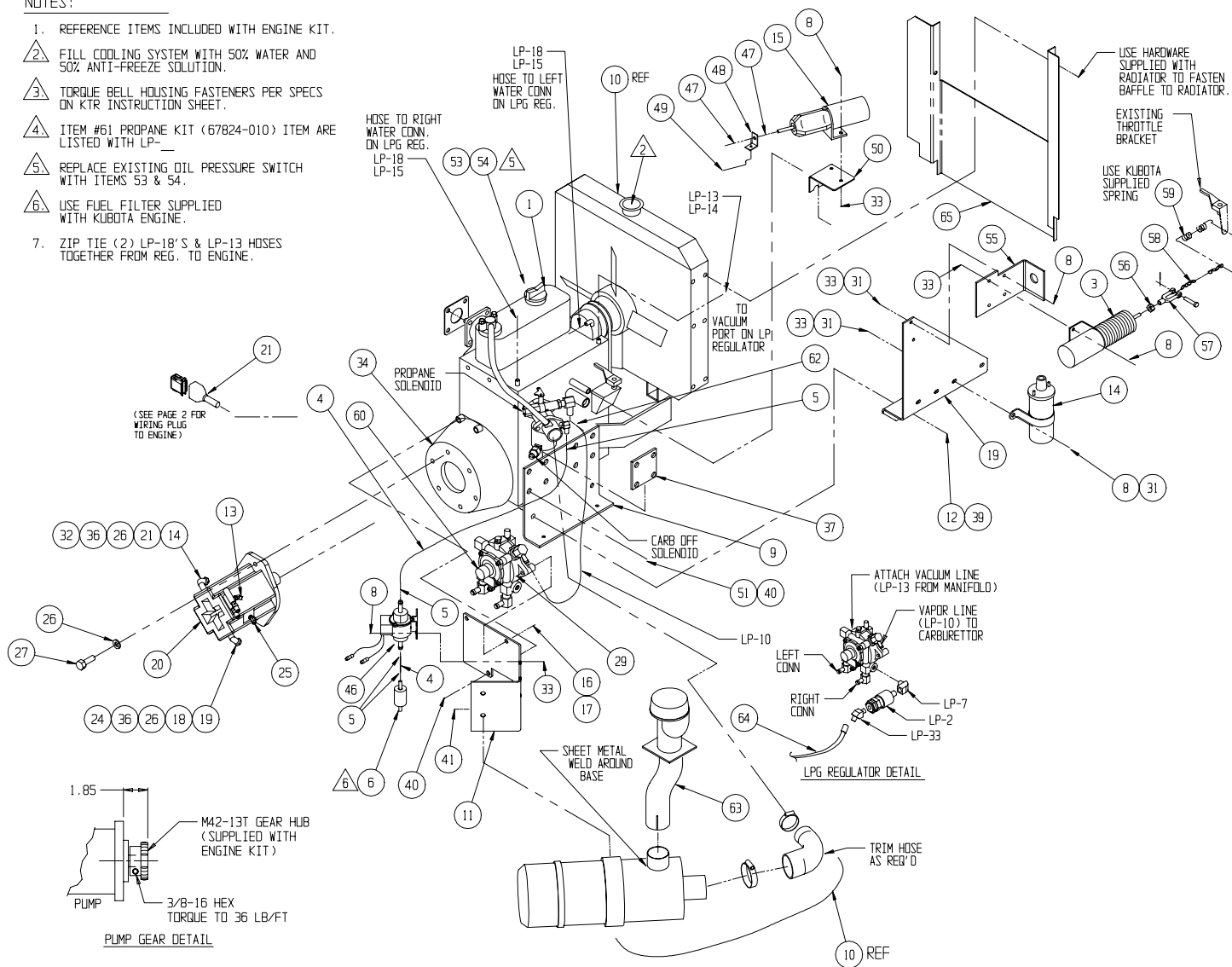
ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	067824-000	ENGINE, KUBOTA DUEL FUEL (D/F750E)	1
3	063941-000	SOLENOID, THROTTLE	1
4	012733-099	HOSE, FUEL LINE Ø 5/16	FT 9
5	020541-001	HOSE CLAMP	6
6	REF	FUEL FILTER, INLINE	1
8	011252-006	SCREW HHC 1/4-20 X 3/4	10
9	067874-000	BRACKET, ENGINE MOUNT GAS	2
10	067615-042	ENGINE ACCESSORY KIT	1
11	067872-001	BRACKET, AIR CLEANER	1
12	011254-008	SCREW HHC 3/8-16 X 1	2
13	011935-001	FITTING, 4MB-4MJ, 45°	1
14	REF	COIL, IGNITION	1
15	067599-000	SOLENOID, CHOKE	1
16	011240-005	WASHER FLAT STD 5/16	2
17	011248-005	NUT HEX 5/16-18 ESNA	2
18	067670-012	SPLIT FLANGE HALF, S12	2
19	067871-000	BRACKET, SOLENOID	1
20	067190-000	PUMP, HYDRAULIC LOAD SENSING	1
21	067492-004	WIRE HARNESS - KUBOTA GAS ENGINE	1
22	014338-0052	FITTING FLANGE, 16MJ 90°	1
23	015724-012	FITTING FLANGE - 12MJ 45°	1
24	067671-012	O-RING, BUNA-N, S12	1
25	011941-028	FITTING, ADAPTER	1
26	011238-006	LOCKWASHER, 3/8" SPLIT	10
27	011254-010	SCREW, HHC 3/8-16UNC X 1 1/4"	2
28	011934-010	FITTING, ADAPTER	1
29	011253-014	SCREW HHC 5/16-18UNC X 1 3/4	2
30	011252-008	SCREW HHC 1/4-20UNC X 1	2
31	011240-004	WASHER FLAT STD 1/4	6
32	011238-004	WASHER SPLIT LOCK 1/2	2
33	011248-004	NUT HEX 1/4-20 ESNA	10
34	067617-020	KTR BELL HOUSING KIT D/F #0034	1

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
35	011256-010	SCREW HHC 1/2-13UNC X 1-1/4	2
36	011254-010	SCREW, HHC, .375-16UNC X 1 1/4	8
37	064183-000	SPACER, ENGINE	2
38	067670-016	SPLIT FLANGE HALF, S16	2
39	011240-006	WASHER FLAT STD 3/8	2
40	063946-030	SCREW HHC M10 X 1.25 GR5 X 30MM	14
41	REF	SCREW (SUPPLIED W/ AIR CLEANER)	2
42	REF	SCREW MANIFOLD (SUPPLIED W/ ENGINE)	2
43	011709-004	SCREW RD HD 10-24UNC X 1/2	2
44	011248-003	NUT HEX ESNA 10-24UNC	2
45	014914-001	CONN. MALE PUSH, 16-14 AWG, .25 TAB	9
46	REF	ELECTRIC FUEL PUMP	1
47	011261-004	SCREW HHC 1/4-28 UNF	2
48	030624-019	CHOKE ANGLE	1
49	030624-020	CHOKE ROD	1
50	067333-000	CHOKE SOLENOID BRACKET	1
51	011240-007	WASHER FLAT STD 7/16	12
52	067671-016	O-RING, BUNA-N, S16	1
53	063945-001	OIL PRESS SWITCH	1
54	003142-001	FITTING 2MP-2FP	1
55	067807-000	SOLENOID BRACKET	1
56	020495-004	NUT HEX JAM 1/4-28UNF	1
57	011847-004	YOKE END	1
58	020731-005	CHAIN 4 LINKS	1
59	REF	SPRING LINKAGE	1
60	REF	LPG REGULATOR	1
61	067824-010	DUAL FUEL KIT (PROPANE)	1
62	020541-004	HOSE CLAMP (#8)	2
63	069240-000	SNORKEL WELDMENT - XRT	1
64	067615-049	HOSE ASSY, PROPANE	1
65	067325-000	BAFFLE, DF XRT	1



NOTES:

1. REFERENCE ITEMS INCLUDED WITH ENGINE KIT.
2. FILL COOLING SYSTEM WITH 50% WATER AND 50% ANTI-FREEZE SOLUTION.
3. TORQUE BELL HOUSING FASTENERS PER SPECS ON KTR INSTRUCTION SHEET.
4. ITEM #61 PROPANE KIT (67824-010) ITEM ARE LISTED WITH LP-\_\_
5. REPLACE EXISTING OIL PRESSURE SWITCH WITH ITEMS 53 & 54.
6. USE FUEL FILTER SUPPLIED WITH KUBOTA ENGINE.
7. ZIP TIE (2) LP-18'S & LP-13 HOSES TOGETHER FROM REG. TO ENGINE.



## Control Cable Assembly XRT27

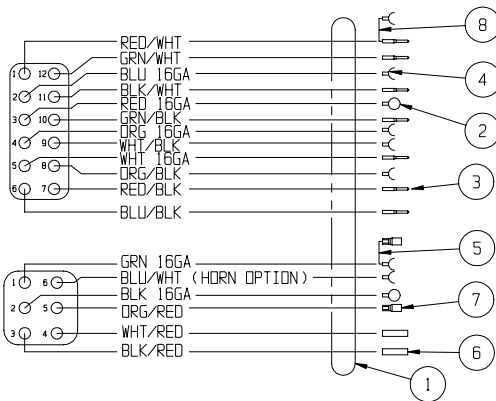
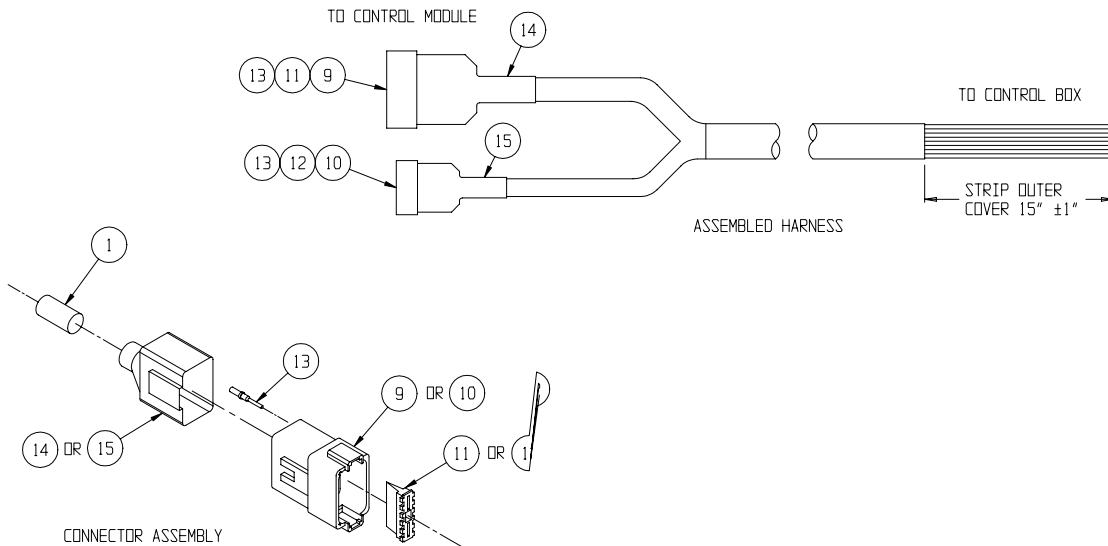
066944-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	067645-099	CABLE, 16/6, 18/12 MULTICONDUCTOR	FT 50
2	029601-013	CONN RING TERM 16-14 GA #10	2
3	063956-002	PIN, CONTACT MALE 20-14 GA	7
4	029610-002	CONN FORK TERM 16-14 GA #8	7
5	029457-099	WIRE, 16GA GRN X 12 IN	FT 1
6	029620-002	CONN, BUTT 16-14GA	2
7	029616-001	CONN, FEMALE PUSH 16-14GA X .188	2
8	029483-099	WIRE 16 GA RD/WHT X 14 IN	FT 1.2
9	068760-001	DT CONNECTOR, RECEPTACLE, # DT04-12P	1
10	067990-001	DT CONNECTOR, RECEPTACLE, # DT04 6P	1
11	068761-000	LOCKING WEDGE, RECEPTACLE, # W12P	1
12	067990-003	LOCKING WEDGE, RECEPTACLE, # W6P	1
13	015790-004	CONTACT PIN, 16-18 AWG	18
14	068908-001	BOOT ELECT. RECEPTACLE, # DT-12-P-BT	1
15	068908-002	BOOT ELECT. RECEPTACLE, # DT-6-P-BT	1

## Control Cable Assembly XRT33

066944-001

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	067645-099	CABLE, 16/6, 18/12 MULTICONDUCTOR	FT 60
2	029601-013	CONN RING TERM 16-14 GA #10	2
3	063956-002	PIN, CONTACT MALE 20-14 GA	7
4	029610-002	CONN FORK TERM 16-14 GA #8	7
5	029457-099	WIRE, 16GA GRN X 12 IN	FT 1
6	029620-002	CONN, BUTT 16-14GA	2
7	029616-001	CONN, FEMALE PUSH 16-14GA X .188	2
8	029483-099	WIRE 16 GA RD/WHT X 14 IN	FT 1.2
9	068760-001	DT CONNECTOR, RECEPTACLE, # DT04-12P	1
10	067990-001	DT CONNECTOR, RECEPTACLE, # DT04 6P	1
11	068761-000	LOCKING WEDGE, RECEPTACLE, # W12P	1
12	067990-003	LOCKING WEDGE, RECEPTACLE, # W6P	1
13	015790-004	CONTACT PIN, 16-18 AWG	18
14	068908-001	BOOT ELECT. RECEPTACLE, # DT-12-P-BT	1
15	068908-002	BOOT ELECT. RECEPTACLE, # DT-6-P-BT	1



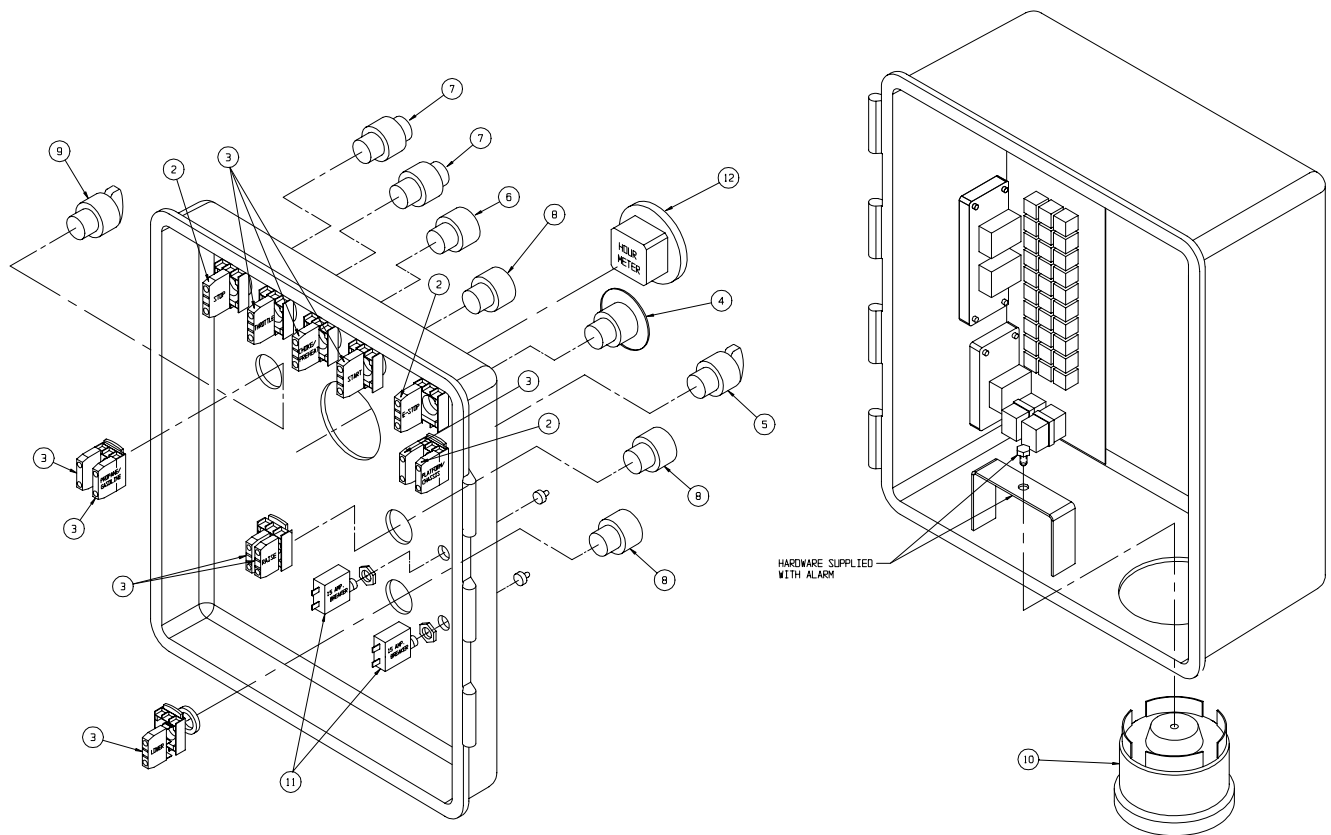
### NOTES: UNLESS OTHERWISE SPECIFIED

1. CRIMP ON PINS AND CONNECTORS ARE INSTALLED AFTER CABLES ARE ROUTED THRU SCISSOR ARMS AND INTO CONTROL BOXES.

## Controller Assembly, Dual Fuel Lower Controls

067491-001#1

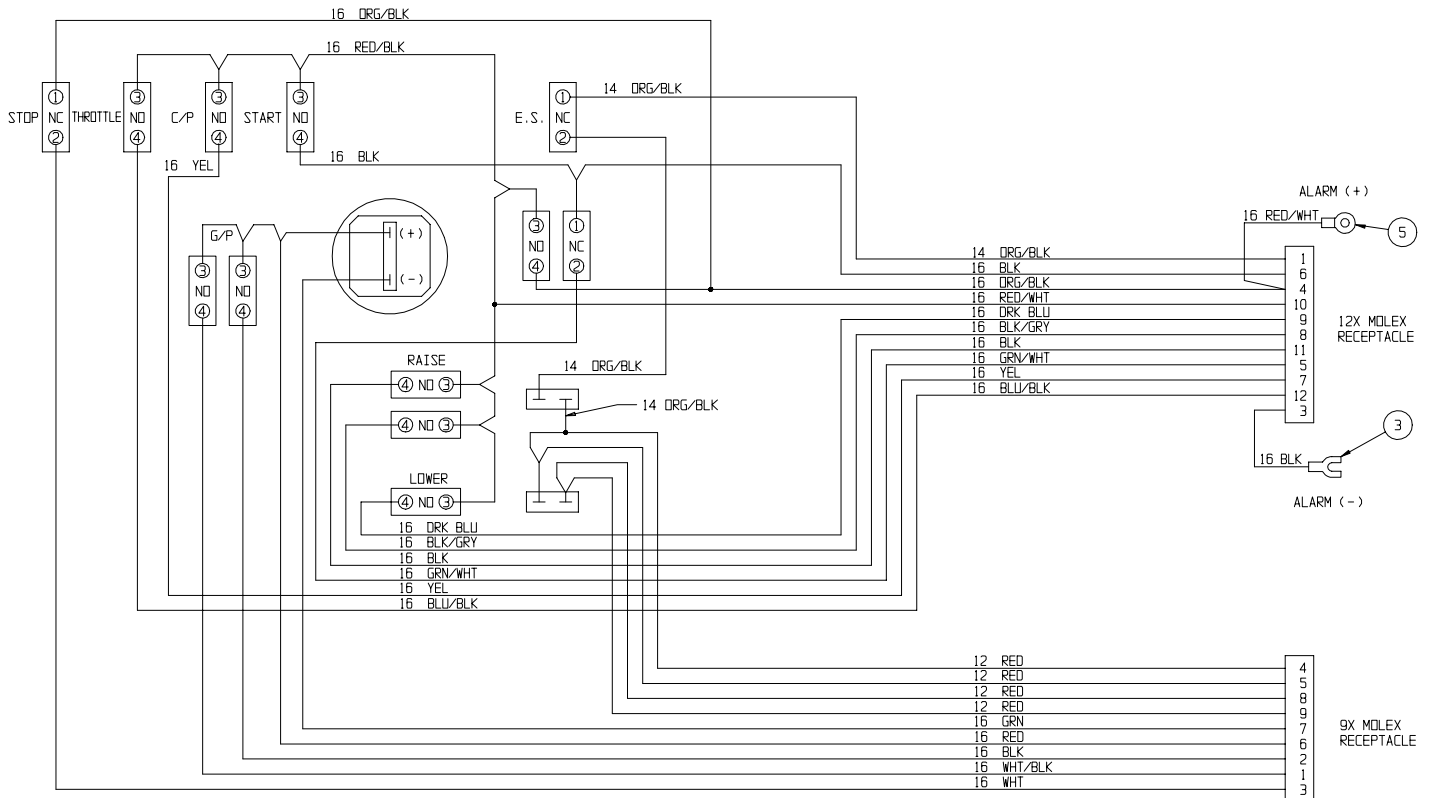
ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	REF	ENCLOSURE	1
2	066805-011	CONTACT BLOCK N.C.	3
3	066805-010	CONTACT BLOCK N.O.	9
4	066805-006	EMERGENCY STOP	1
5	066805-002	2 POSITION SELECTOR SWITCH	1
6	066805-018	BLK STANDARD PUSH BUTTON	1
7	066805-017	RED STANDARD PUSH BUTTON	2
8	066805-016	GRN STANDARD PUSH BUTTON	3
9	066805-003	3 POSITION SELECTOR	1
10	066807-001	ALARM, 107DB	1
11	029868-007	15 AMP-CIRCUIT BREAKER	2
12	015752-000	HOUR-METER	1



## Controller Assembly Wiring, Dual Fuel Lower Controls

067491-001#2

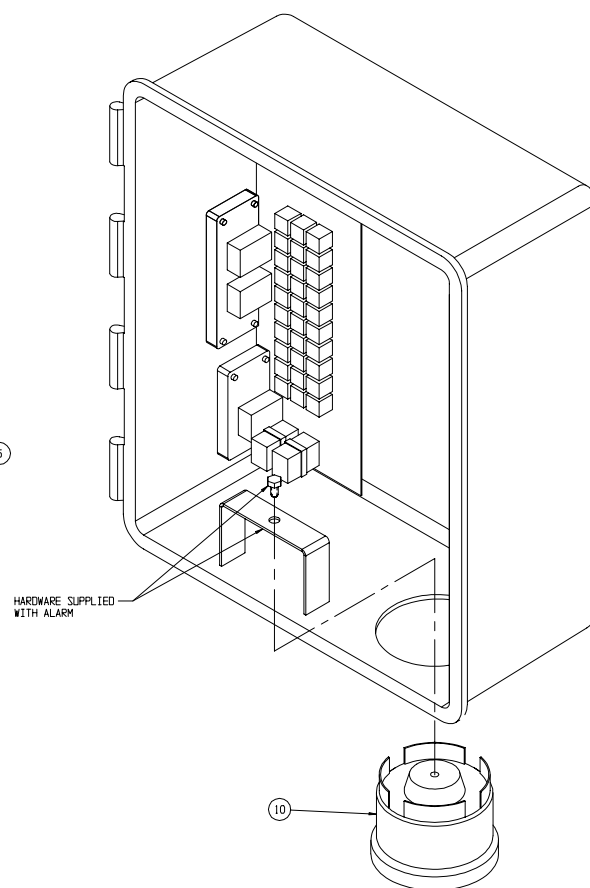
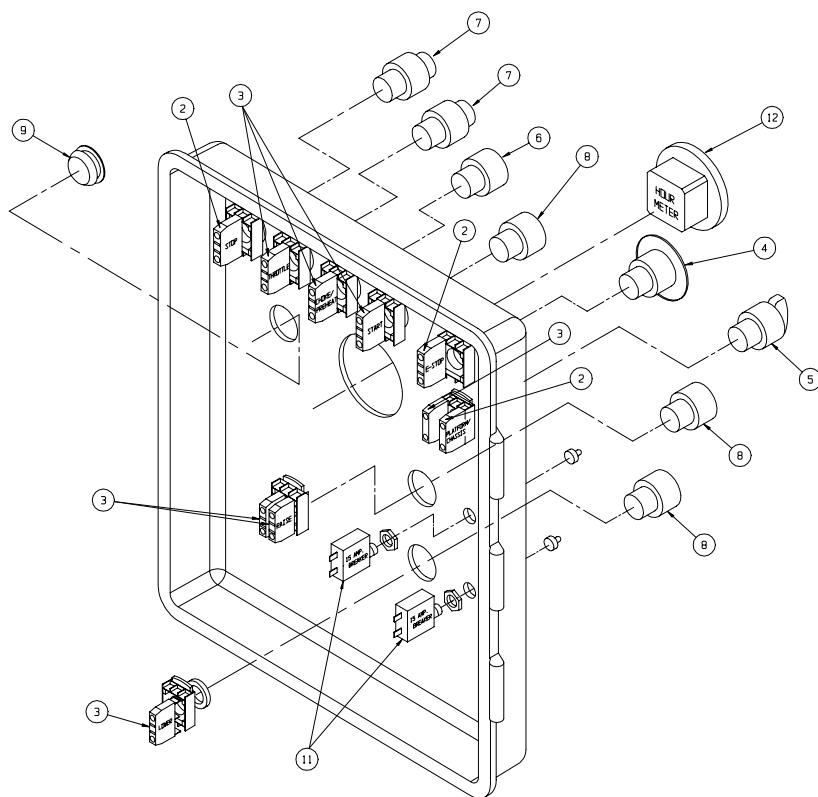
ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	029616-002	CONN. FEMALE PUSH 16-14 .25 TAB	12
2	029616-003	CONN. FEMALE PUSH 10-12 .25 TAB	2
3	029610-002	CONN. FORK 16-14 #8	21
5	029601-012	CONN. RING TERM 16-14 #8	1
6	029470-099	WIRE, 12 AWG RED	5 FT
7	029457-099	WIRE, 16 AWG GREEN	1.5 FT
8	029454-099	WIRE, 16 AWG RED	1.5 FT
9	029452-099	WIRE, 16 AWG BLACK	5 FT
10	029479-099	WIRE, 16 AWG WHITE/BLACK	1.5 FT
11	029451-099	WIRE, 16 AWG WHITE	1.5 FT
12	029352-099	WIRE, 16 AWG RED/WHITE	2.5 FT
13	-	WIRE, 14 AWG ORANGE/BLACK	2.5 FT
14	029450-099	WIRE, 16 AWG DARK BLUE	1.5 FT
15	029477-099	WIRE, 16 AWG ORANGE/BLACK	3 FT
16	-	WIRE, 16 AWG BLACK/GREY	1.5 FT
17	029353-099	WIRE, 16 AWG GREEN/WHITE	1.5 FT
18	029456-099	WIRE, 16 AWG YELLOW	1.5 FT
19	029475-099	WIRE, 16 AWG BLUE/BLACK	1.5 FT



# Controller Assembly, Diesel Lower Controls

067491-002#1

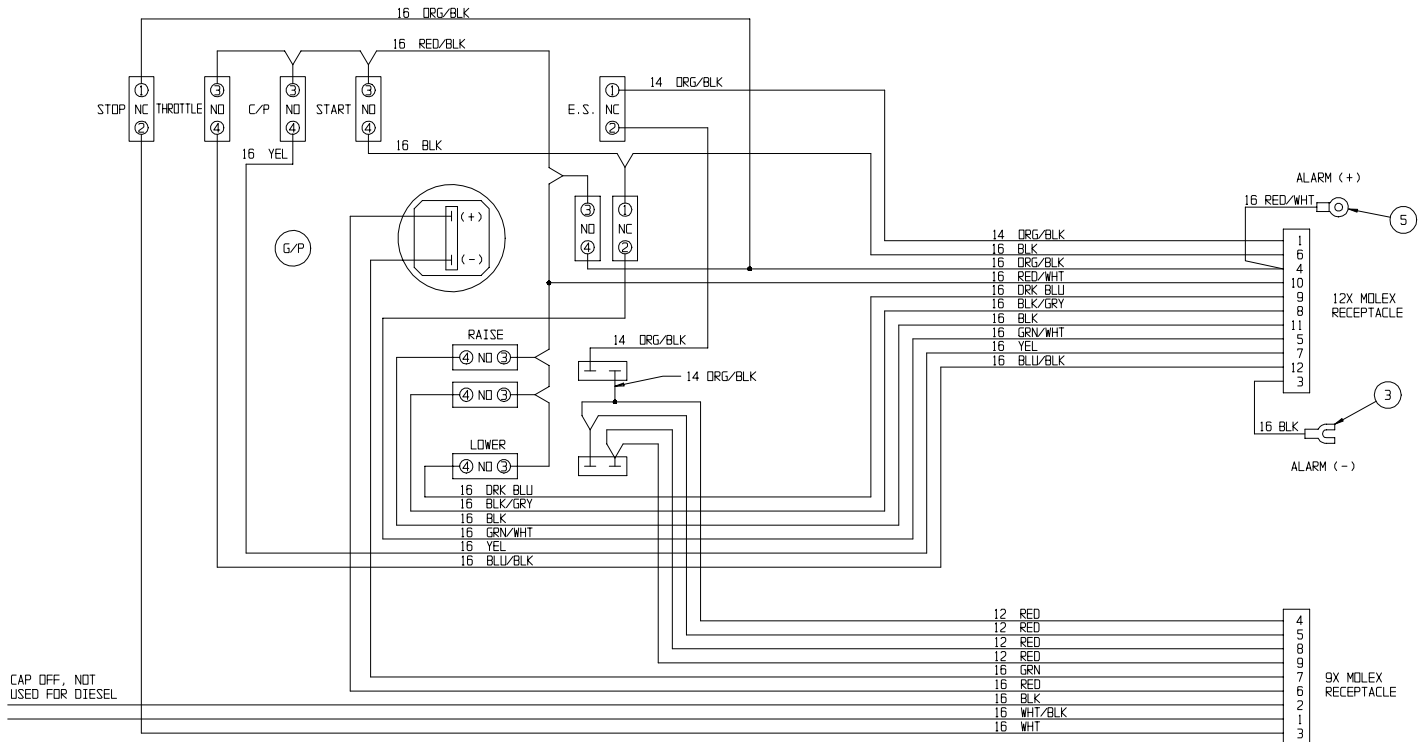
ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
2	066805-011	CONTACT BLOCK N.C.	3
3	066805-010	CONTACT BLOCK N.O.	7
4	066805-006	EMERGENCY STOP	1
5	066805-002	2 POSITION SELECTOR SWITCH	1
6	066805-018	BLK STANDARD PUSH BUTTON	1
7	066805-017	RED STANDARD PUSH BUTTON	2
8	066805-016	GRN STANDARD PUSH BUTTON	3
9	064462-007	CAP PLUG, Ø 7/8	1
10	066807-001	ALARM, 107DB	1
11	029868-007	15 AMP-CIRCUIT BREAKER	2
12	015752-000	HOUR-METER	1



## Controller Assembly Wiring, Diesel Lower Controls

067491-002#1

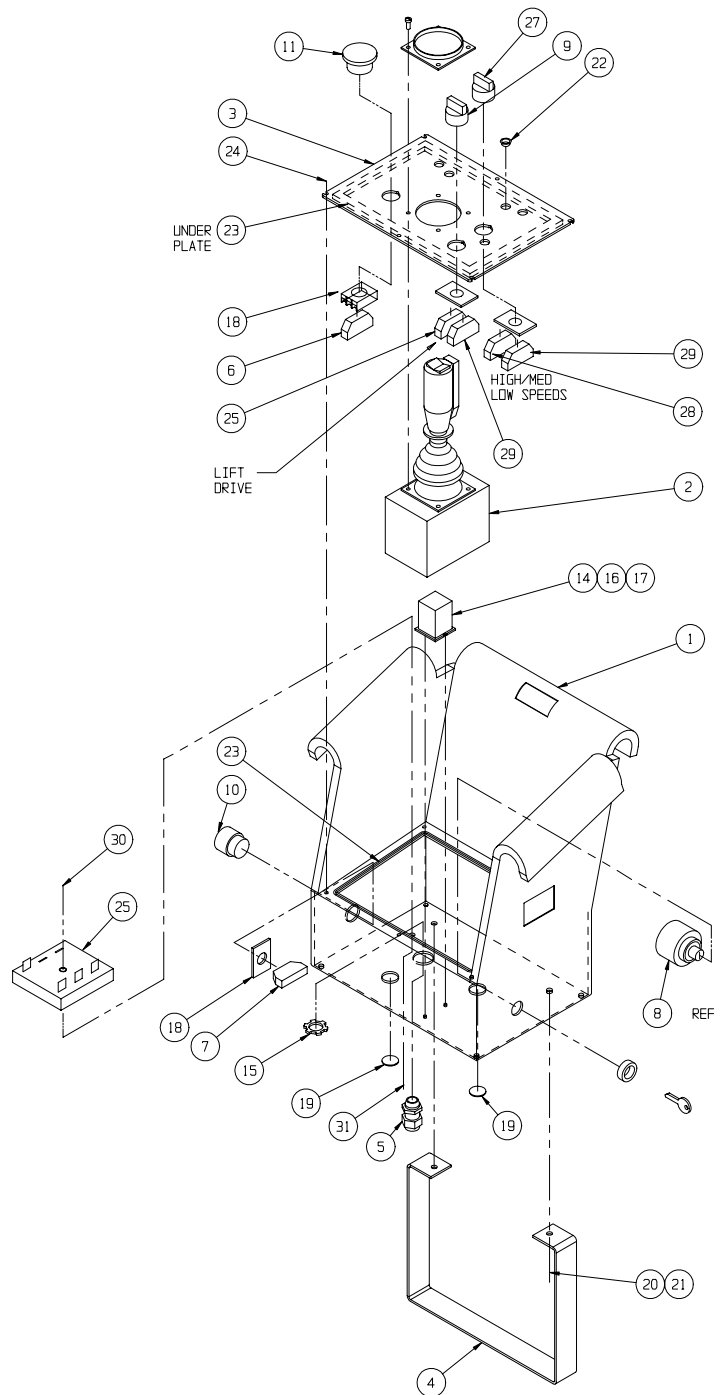
ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	029616-002	CONN. FEMALE PUSH 16-14 .25 TAB	12
2	029616-003	CONN. FEMALE PUSH 10-12 .25 TAB	2
3	029610-002	CONN. FORK 16-14 #8	21
5	029601-012	CONN. RING TERM 16-14 #8	1
6	029470-099	WIRE, 12 AWG RED	5 FT
7	029457-099	WIRE, 16 AWG GREEN	1.5 FT
8	029454-099	WIRE, 16 AWG RED	1.5 FT
9	029452-099	WIRE, 16 AWG BLACK	5 FT
10	029479-099	WIRE, 16 AWG WHITE/BLACK	1.5 FT
11	029451-099	WIRE, 16 AWG WHITE	1.5 FT
12	029352-099	WIRE, 16 AWG RED/WHITE	2.5 FT
13	-	WIRE, 14 AWG ORANGE/BLACK	2.5 FT
14	029450-099	WIRE, 16 AWG DARK BLUE	1.5 FT
15	029477-099	WIRE, 16 AWG ORANGE/BLACK	3 FT
16	-	WIRE, 16 AWG BLACK/GREY	1.5 FT
17	029353-099	WIRE, 16 AWG GREEN/WHITE	1.5 FT
18	029456-099	WIRE, 16 AWG YELLOW	1.5 FT
19	029475-099	WIRE, 16 AWG BLUE/BLACK	1.5 FT



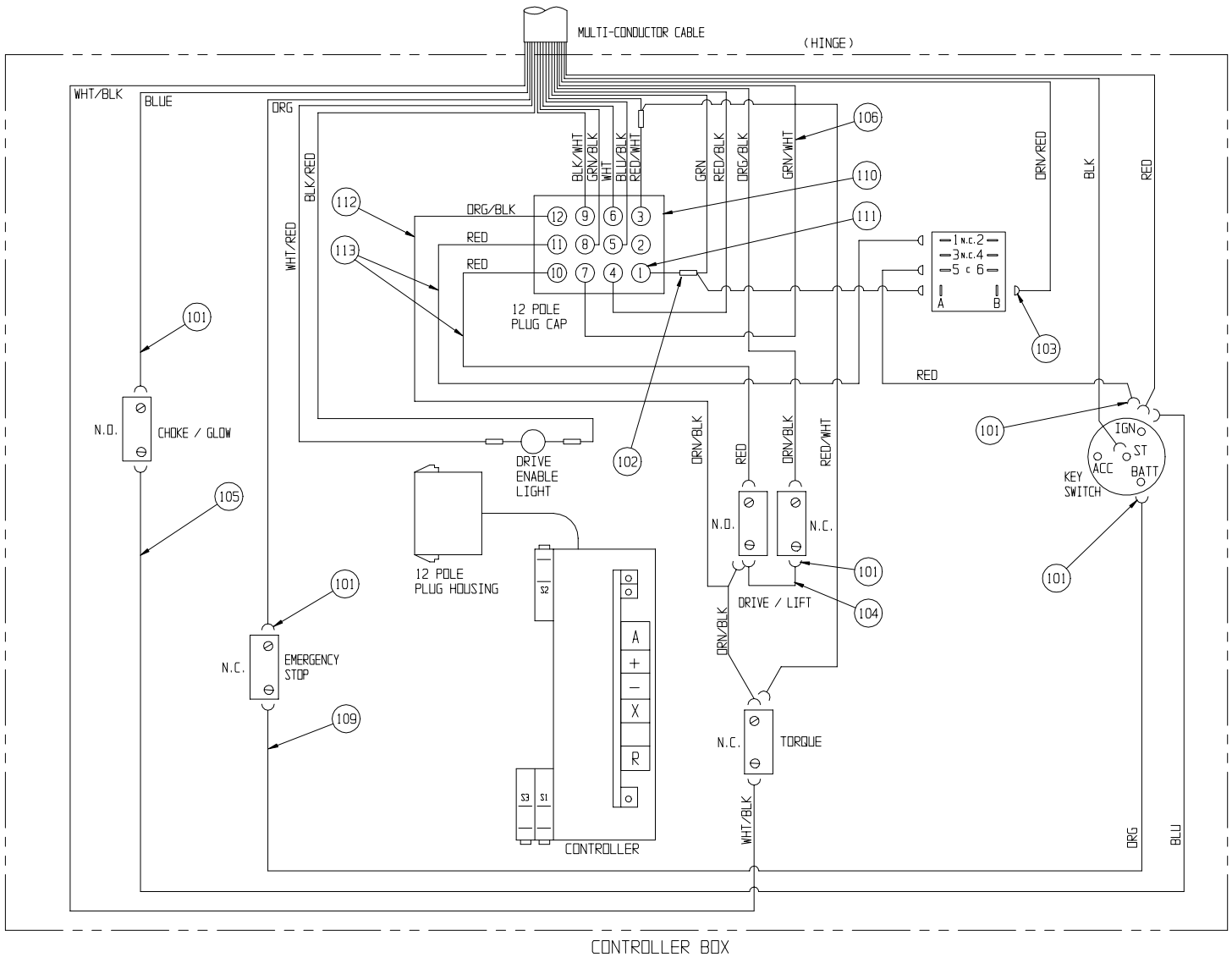
# Controller Assembly Upper Controls

06694-001

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	067487-000	LX CONTROL BOX	1
2	067643-001	CONTROLLER, PROPORTIONAL 12V	1
3	067486-000	COVER PLATE, CONTROLLER BOX	1
4	067483-000	CONTROLLER SUPPORT	1
5	029925-010	CABLE CONNECTOR, 3/4"	1
6	064443-002	CONTACT BLOCK, N.C.	2
7	064443-001	CONTACT BLOCK, N.O.	1
8	064666-000	KEY SWITCH	1
9	066805-002	SELECTOR SWITCH	1
10	067653-000	PUSH BUTTON	1
11	064446-003	MUSHROOM BUTTON	1
12	068133-000	INDICATOR LIGHT	1
13	067806-000	RING, RETAINING	1
14	063951-001	RELAY	1
15	029939-003	CONDUIT NUT, 3/4"	1
16	011248-047	LOCKNUT, #6-32	2
17	011715-004	SCREW, #6-32 X 1/2	2
18	064417-001	MOUNTING LATCH	2
19	064462-007	CAP PLUG Ø 7/8	2
20	011252-006	SCREW, 1/4-20 UNC, HEX HD CAP X 3/4	2
21	011248-004	LOCKNUT, 1/4-20 UNC, HEX	2
22	064462-002	CAP PLUG Ø 1/2"	4
23	68889-099	WEATHERSTRIP 1/2 X 3/16 FOAM	3 FT.
24	010952-004	SCREW, BUTT. HD, TORX, 10-24 UNC X 1/2	6
25	67194-000	TIME RELAY SSAC	1
27	066805-003	SWITCH, 3 POSITION	1
28	066805-010	CONTACT BLOCK N.O.	1
29	066805-011	CONTACT BLOCK N.C.	1
30	011248-004	NUT, HEX 1/4" ESNA	1
31	011252-010	SCREW HHC 1/4-20 X 1 1/4	1
101	029610-004	CONNECTOR FORK TERM 12-10 GA. #10	15
102	029620-002	CONNECTOR BUTT. 16-14 GA.	4
103	029615-002	CONNECTOR FEMALE PUSH 16-14 GA.	4
104	029452-099	WIRE 16 GA. BLACK	1 FT.
105	029450-099	WIRE 16 GA. BLUE	3 FT.
106	029482-099	WIRE 16 GA. GRN/WHT	1 FT.
109	029453-099	WIRE 16 GA. ORG	1 FT.
110	063956-003	PLUG, HOUSING	1
111	063956-010	PIN, CONTACT MALE	11
112	029477-099	WIRE 16 GA. ORG/BLK	1 FT.
113	029454-099	WIRE 16 GA. RED	2 FT.



Drawing # 1 of 2



Drawing # 2 of 2

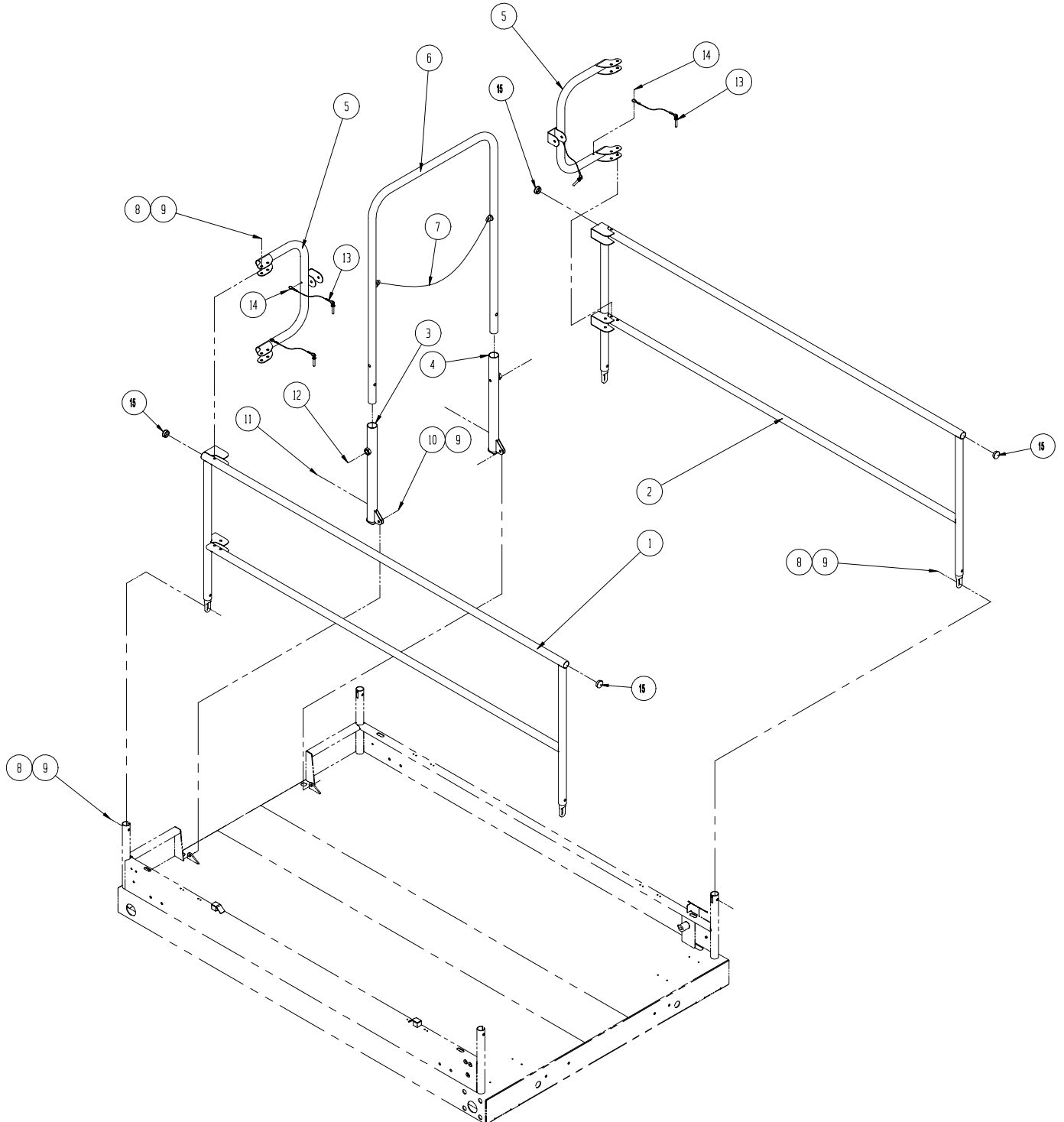


## Guardrail Assembly With Extension Deck

066938-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066967-000	WELDMENT, SIDE RAIL MAIN DECK RH	1
2	066967-001	WELDMENT, SIDE RAIL MAIN DECK LH	1
3	066969-000	WELDMENT, SLIDE TUBE (U.S.) RH	1
4	066969-001	WELDMENT, SLIDE TUBE (U.S.) LH	1
5	066978-000	WELDMENT, REAR SWING TUBE	2
6	066970-000	WELDMENT, SLIDE TUBE U.S.	1
7	063133-000	CHAIN ASSEMBLY	1
8	011254-014	SCREW HHC 3/8-16 x 1 3/4	8

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
9	011248-006	NUT 3/8-16 UNC ESNA	10
10	011254-008	SCREW HHC 3/8-16 x 1	2
11	011287-006	SCRW SOC HD 3/8-16 x 3/4	2
12	003570-000	RETAINING PIN ASSEMBLY	2
13	010414-006	LOCKING PIN ASSEMBLY	4
14	026553-004	RIVET 3/16 DIA. x 1/4 GRIP	4
15	066516-000	PLUG-HEXCO	4

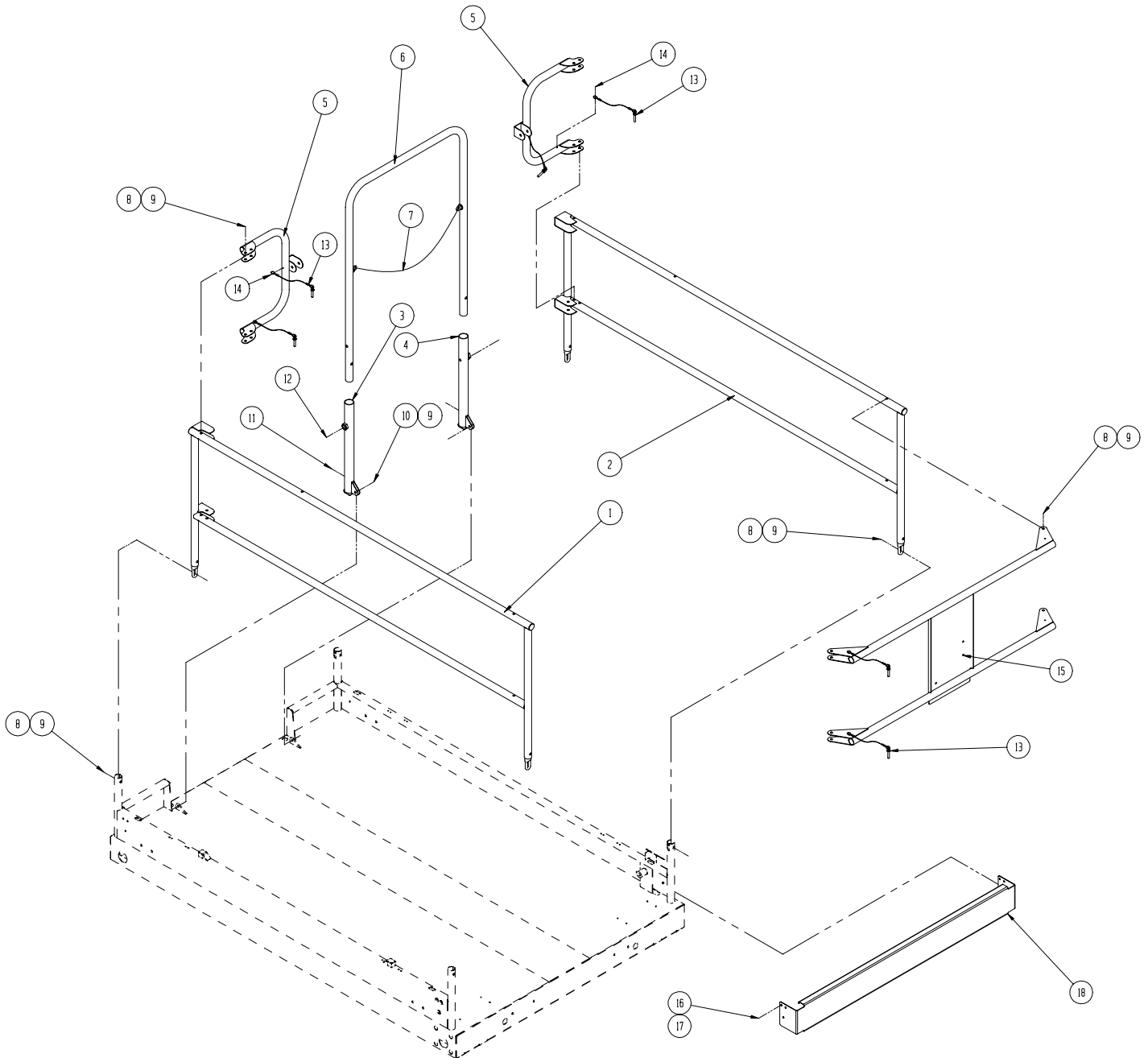


## Guardrail Assembly Without Extension Deck

066938-002

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066967-000	WELDMNT, SIDE RAIL MAIN DECK RH	1
2	066967-001	WELDMNT, SIDE RAIL MAIN DECK LH	1
3	066969-000	WELDMNT, SLIDE TUBE (U.S.) RH	1
4	066969-001	WELDMNT, SLIDE TUBE (U.S.) LH	1
5	066978-000	WELDMNT, REAR SWING TUBE	2
6	066970-000	WELDMNT, SLIDE TUBE U.S.	1
7	063133-000	CHAIN ASSEMBLY	1
8	011254-014	SCREW HHC 3/8-16 x 1 3/4	10
9	011248-006	NUT 3/8-16 UNC ESNA	12
10	011254-008	SCREW HHC 3/8-16 x 1	2

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
11	011287-006	SCREW SOC 3/8-16 x 3/4	2
12	003570-000	RETAINING PIN ASSEMBLY	2
13	010414-006	LOCKING PIN ASSEMBLY	6
14	026553-004	RIVET 3/16 DIA. x 1/4 GRIP	6
15	066966-001	FRONT RAIL, MAIN DECK	1
16	011252-006	SCREW, HHC 1/4-20 x 3/4	6
17	011240-004	WASHER 1/4 FLAT	6
18	066518-012	KICK PLATE	1

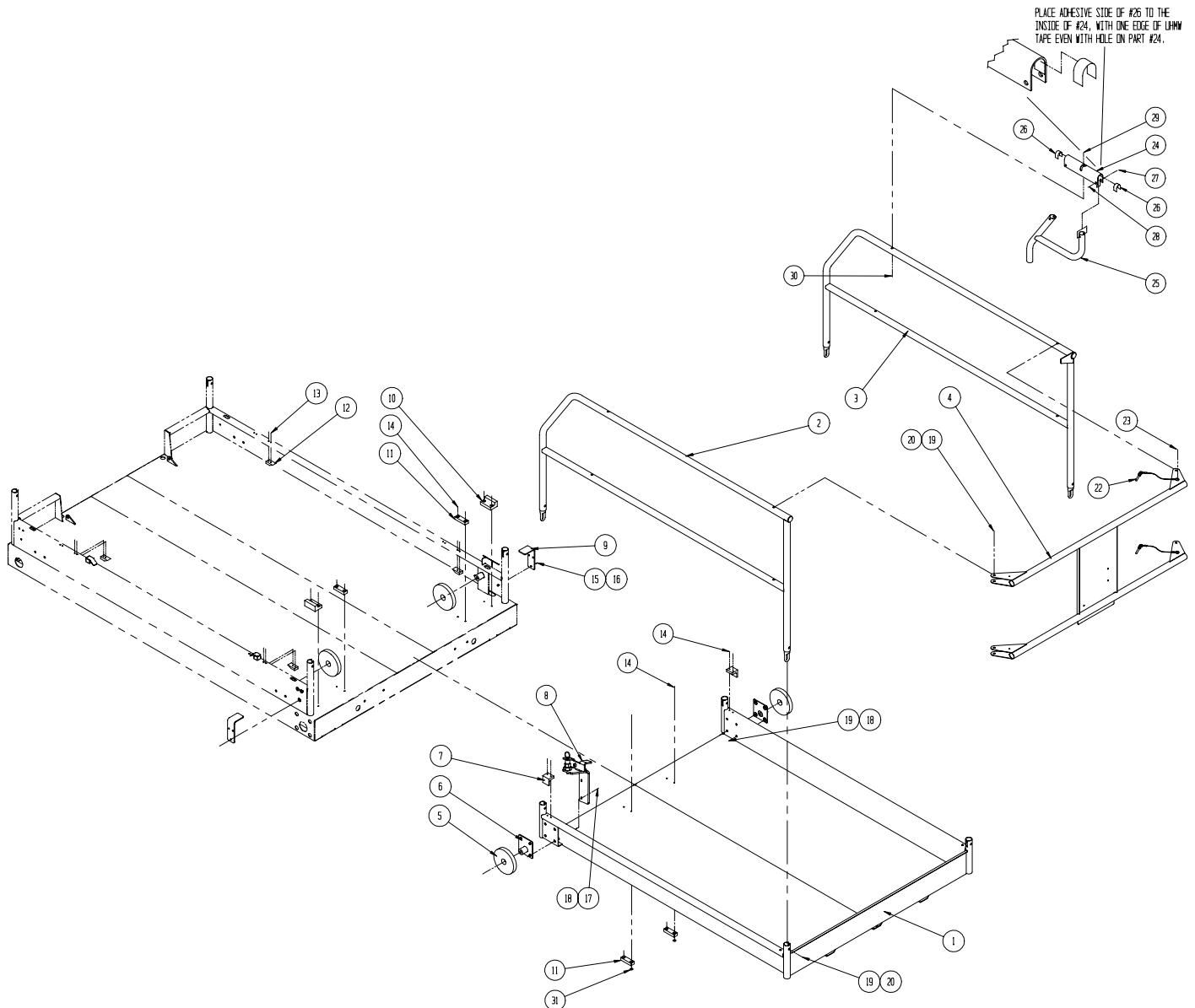


## Roll Out Deck Installation

066939-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	066955-000	EXTENSION DECK WELDMENT	1
2	066965-001	WELDMENT, SIDE RAIL - RIGHT	1
3	066965-000	WELDMENT, SIDE RAIL - LEFT	1
4	066966-000	FRONT GATE, SLIDE OUT DECK	1
5	066195-000	PLATFORM ROLLER	4
6	066127-000	WELDMENT, ROLLER MOUNT	2
7	066170-001	WEAR PAD	2
8	067185-000	DECKLOCK, SLIDE OUT ASSY	1
9	066407-011	BRACKET	2
10	066176-002	WEAR PAD - XRT	2
11	066198-002	WEAR PAD - XRT	4
12	066193-000	STOP	4
13	026553-008	RIVET 3/16 DIA. x 1/2 GRIP	16
14	026553-010	RIVET 3/16 DIA. x 5/8 GRIP	12
15	011252-006	SCREW HHC 1/4-20 x 3/4	6
16	011240-004	WASHER 1/4 FLAT	6

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
17	011254-016	SCREW HHC 3/8-16 x 2	2
18	011238-006	WASHER 3/8 LOCK	8
19	011254-014	SCREW HHC 3/8-16 x 1 3/4	12
20	011248-006	NUT 3/8-16 UNC ESNA	6
22	010414-006	LOCKING PIN ASSEMBLY	2
23	026553-004	RIVET 3/16 DIA. x 1/4 GRIP	2
24	067761-001	PIVOT, PUSH BAR XRT	1
25	067310-000	WELDMENT, HANDLE DECK EXTENTION	1
26	066520-099	TAPE, UHMW 2" WIDE W/ ADHESIVE	FT .75
27	011250-005	NUT, HEX ESNA 5/16-18	2
28	011253-018	SCREW, HHC 5/16-18 X 2-1/4"	2
29	014339-014	SCREW SOC HD SSTL 5/16-18 X 1-3/4"	1
30	011248-005	NUT, HEX ESNA 5/16-18	1
31	002186-000	WASHER, 3/16" SS FLAT	4

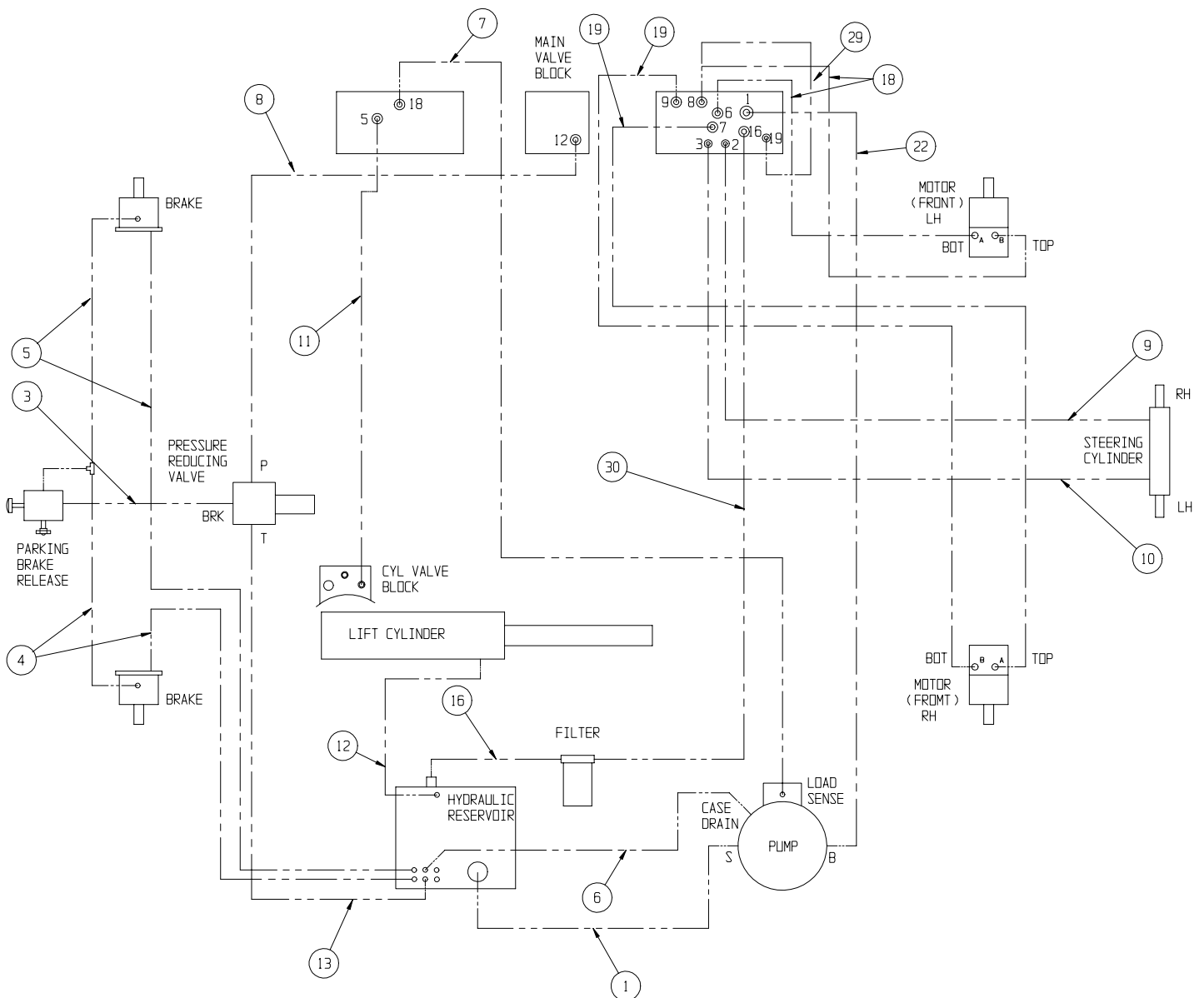


# Hose Kit Installation XRT27 2WD

066941-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	067198-132	1 HOSE ASSY X 132 16FJX-16FJX 90	1
3	068737-023	1/4 HOSE ASSY X 23 4FJX-4FJX	1
4	068737-096	1/4 HOSE ASSY X 96 4FJX-4FJX	2
5	068737-110	1/4 HOSE ASSY X 110 4FJX-4FJX	2
6	068745-136	3/8 HOSE ASSY X 136 6FJX-6FJX	1
7	068737-132	1/4 HOSE ASSY X 132 4FJX-4FJX	1
8	068737-032	1/4 HOSE ASSY X 32 4FJX-4FJX	1
9	068965-068	3/8 HOSE ASSY X 68 6FJX-6FJX 90	1
10	068965-063	3/8 HOSE ASSY X 63 6FJX-6FJX 90	1
11	068745-126	3/8 HOSE ASSY X 156 6FJX-6FJX	1

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
12	068745-130	3/8 HOSE ASSY X 190 6FJX-6FJX	1
13	068737-057	1/4 HOSE ASSY X 57 4FJX-4FJX	1
16	064156-051	1/2 HOSE ASSY X 21 8FJX-8FJX	1
18	067312-084	1/2 HOSE ASSY X 84 8FJX-8FJX90	2
19	067312-093	1/2 HOSE ASSY X 93 8FJX-8FJX90	2
22	067667-132	5/8 HOSE ASSY X 132 12FJX-12FJX90	1
29	064156-039	1/2 HOSE ASSY X 15 8FJX-8FJX	1
30	067682-033	1/2 HOSE ASSY X 33 8FJX-8FJX90°	1

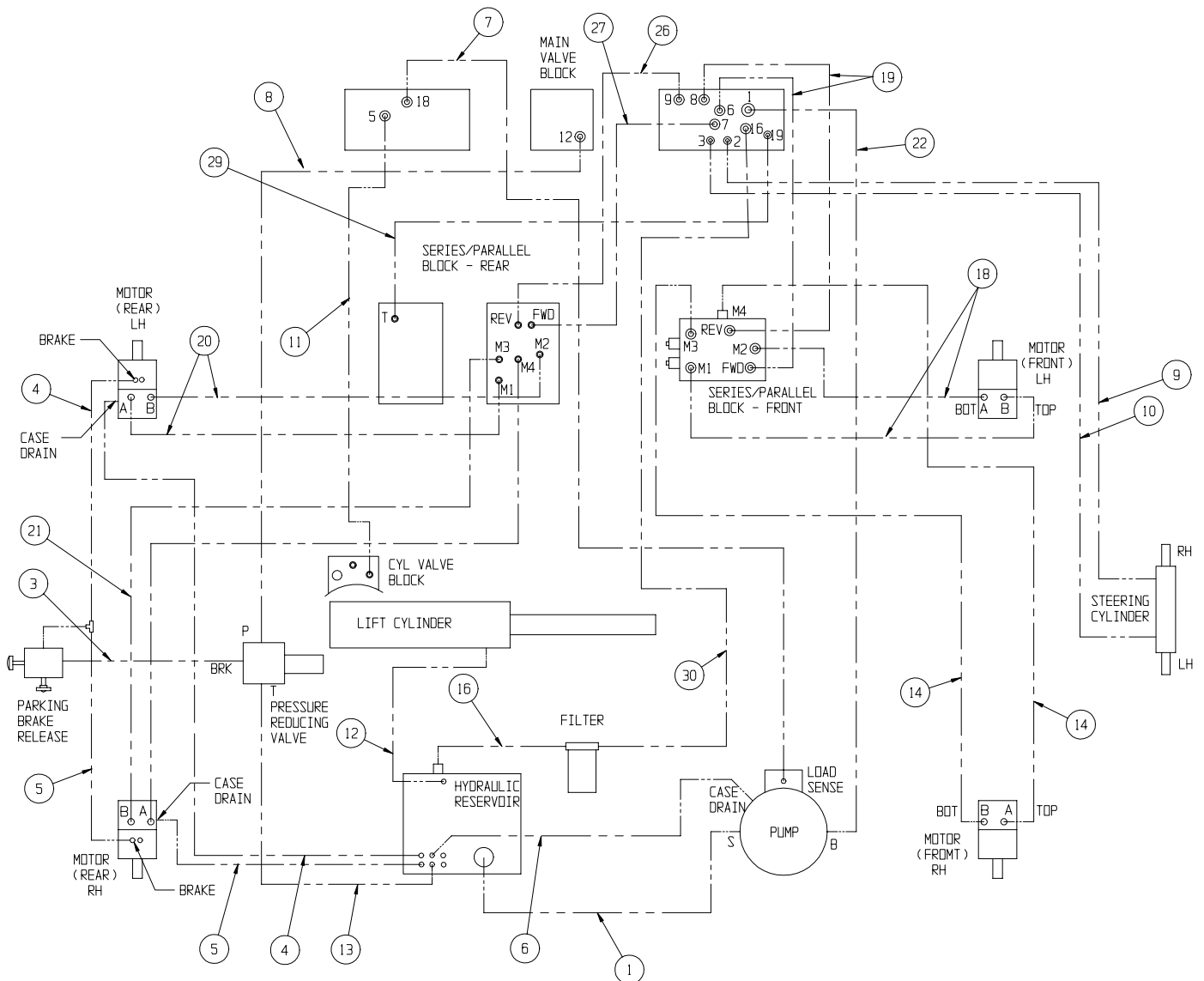


# Hose Kit Installation XRT33 2WD

066941-001

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	067198-132	1 HOSE ASSY X 132 16FJX-16FJX90	1
3	068737-023	1/4 HOSE ASSY X 23 4FJX-4FJX	1
4	068737-096	1/4 HOSE ASSY X 96 4FJX-4FJX	2
5	068737-110	1/4 HOSE ASSY X 110 4FJX-4FJX	2
6	068745-136	3/8 HOSE ASSY X 136 6FJX-6FJX	1
7	068737-132	1/4 HOSE ASSY X 132 4FJX-4FJX	1
8	068737-032	1/4 HOSE ASSY X 32 4FJX-4FJX	1
9	068965-068	3/8 HOSE ASSY X 68 6FJX-6FJX90	1
10	068965-063	3/8 HOSE ASSY X 63 6FJX-6FJX90	1
11	068745-126	3/8 HOSE ASSY X 156 6FJX-6FJX	1
12	068745-130	3/8 HOSE ASSY X 190 6FJX-6FJX	1
13	068737-057	1/4 HOSE ASSY X 57 4FJX-4FJX	1
14	067312-060	1/2 HOSE ASSY X 60 8FJX-8FJX90	2

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
16	064156-051	1/20HOSE ASSY X 21 8FJX-8FJX	1
18	067312-051	1/2 HOSE ASSY X 51 8FJX-8FJX90	2
19	067682-055	1/2 HOSE ASSY X 55 8FJX-8FJX90	2
20	064156-065	1/2 HOSE ASSY X 125 8FJX-8FJX	2
21	064156-069	1/2 HOSE ASSY X 99 8FJX-8FJX	2
22	067667-132	5/8 HOSE ASSY X 132 12FJX-12FJX90	1
24	020032-001	FITTING 4MJ-4MJ TEE	REF
26	067682-088	1/2 HOSE ASSY X 88 8FJX-8FJX90	1
27	067682-078	1/2 HOSE ASSY X 78 8FJX-8FJX90	1
29	064156-021	1/2 HOSE ASSY X 42 8FJX-8FJX	1
30	067682-033	1/2 HOSE ASSY X 33 8FJX-8FJX90	1

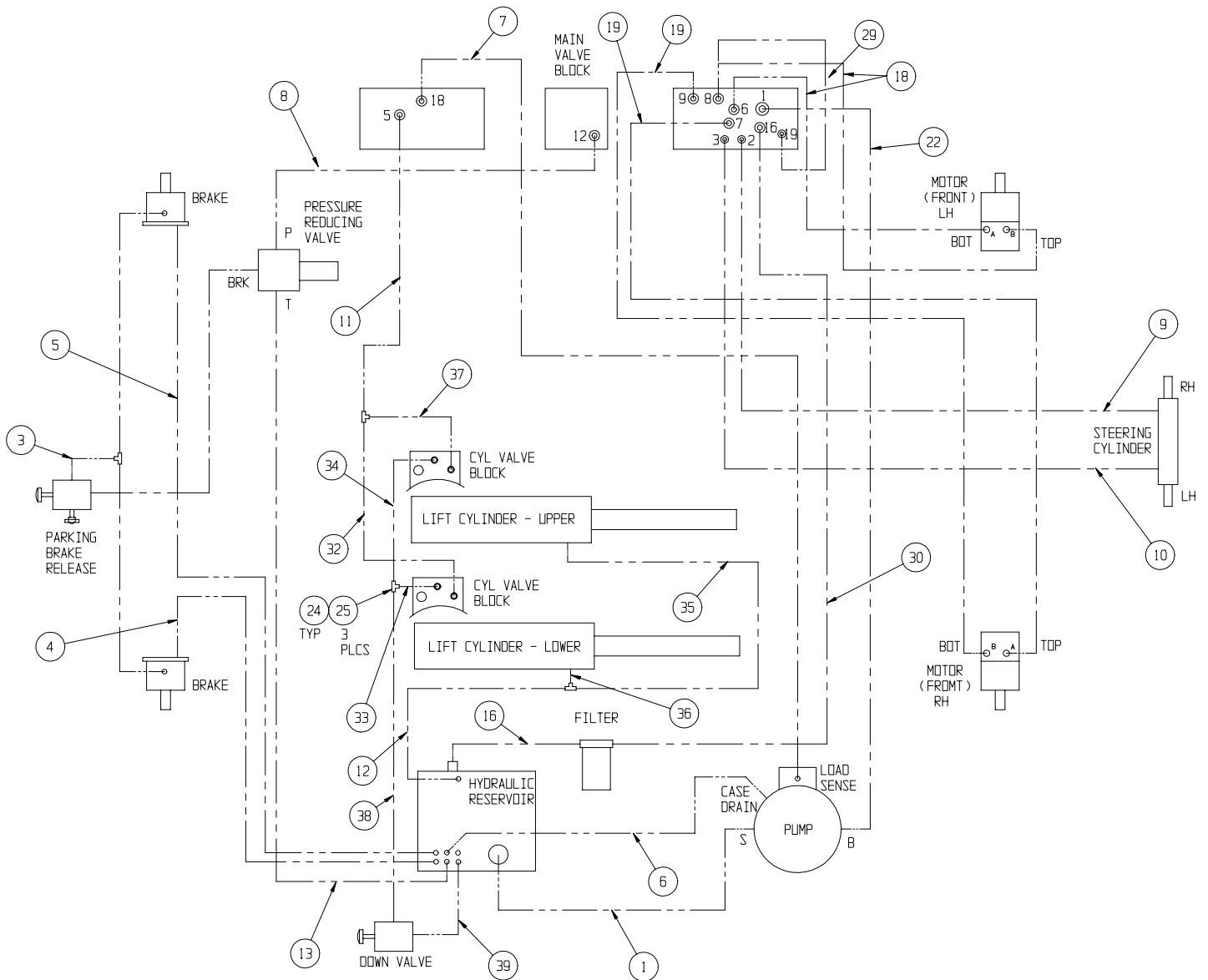


## Hose Kit Installation XRT27 4WD

066941-002

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	067198-132	1 HOSE ASSY X 132 16FJX-16FJX 90	1
3	068737-023	1/4 HOSE ASSY X 23 4FJX-4FJX	1
4	068737-096	1/4 HOSE ASSY X 96 4FJX-4FJX	2
5	068737-110	1/4 HOSE ASSY X 110 4FJX-4FJX	2
6	068745-136	3/8 HOSE ASSY X 136 6FJX-6FJX	1
7	068737-132	1/4 HOSE ASSY X 132 4FJX-4FJX	1
8	068737-032	1/4 HOSE ASSY X 32 4FJX-4FJX	1
9	068965-068	3/8 HOSE ASSY X 68 6FJX-6FJX 90	1
10	068965-063	3/8 HOSE ASSY X 63 6FJX-6FJX 90	1
11	068745-080	3/8 HOSE ASSY X 80 6FJX-6FJX	1
12	066825-015	1/4 HOSE ASSY X 115 6FJX-6FJX	1
13	068737-057	1/4 HOSE ASSY X 57 4FJX-4FJX	1
16	064156-051	1/2 HOSE ASSY X 21 8FJX-8FJX	1
18	067312-084	1/2 HOSE ASSY X 84 8FJX-8FJX90	2
19	067312-093	1/2 HOSE ASSY X 93 8FJX-8FJX90	2

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
22	067667-132	5/8 HOSE ASSY X 132 12FJX-12FJX90	1
24	020032-003	FITTING 6MJ-6MJ-6MJ TEE	REF
25	011937-003	FITTING 90 6FJX - 6MJ	REF
29	064156-039	1/2 HOSE ASSY X 15 8FJX-8FJX	1
30	067682-033	1/2 HOSE ASSY X 33 8FJX-8FJX90	1
32	068965-060	3/8 HOSE ASSY X 60 6JFX-6JFX90	1
33	066822-001	1/4 HOSE ASSY X 51 6JFX-6JFX90	1
34	066825-236	1/4 HOSE ASSY X 236 6FJX-6FJX	1
35	066824-003	1/4 HOSE ASSY X 245 6FJX-6FJX	1
36	066825-007	1/4 HOSE ASSY X 71 6FJX-6FJX	1
37	066825-245	1/4 HOSE ASSY X 245 6FJX-6FJX	1
38	066825-008	1/4 HOSE ASSY X 127 6FJX-6FJX	1
39	066825-014	1/4 HOSE ASSY X 74 6FJX-6FJX	1

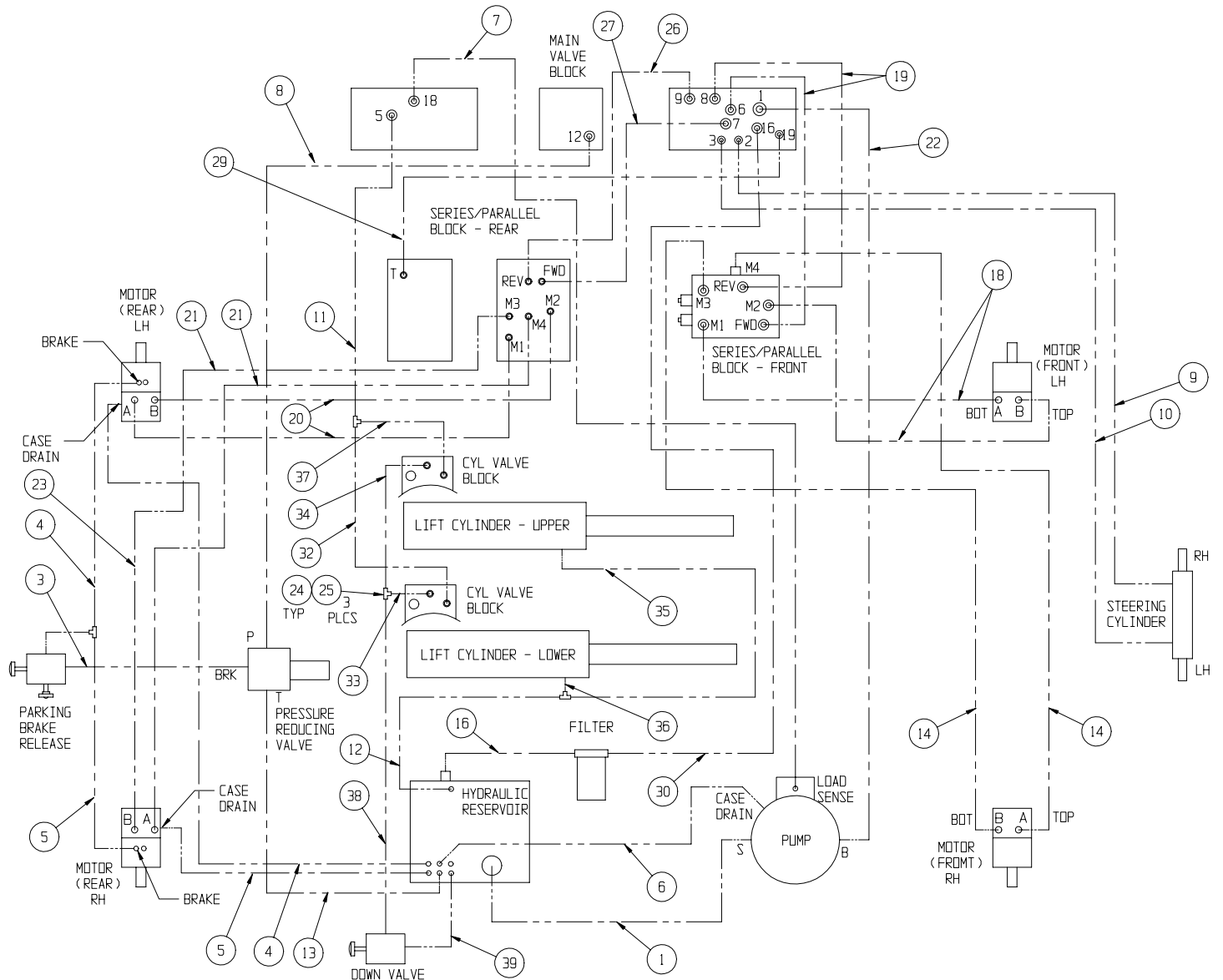


# Hose Kit Installation XRT33 4WD

066941-003

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	067198-132	1 HOSE ASSY X 132 16FJX-16FJX90	1
3	068737-023	1/4 HOSE ASSY X 23 4FJX-4FJX	1
4	068737-096	1/4 HOSE ASSY X 96 4FJX-4FJX	2
5	068737-110	1/4 HOSE ASSY X 110 4FJX-4FJX	2
6	068745-136	3/8 HOSE ASSY X 136 6FJX-6FJX	1
7	068737-132	1/4 HOSE ASSY X 132 4FJX-4FJX	1
8	068737-032	1/4 HOSE ASSY X 32 4FJX-4FJX	1
9	068965-068	3/8 HOSE ASSY X 68 6FJX-6FJX90	1
10	068965-063	3/8 HOSE ASSY X 63 6FJX-6FJX90	1
11	068745-080	3/8 HOSE ASSY X 80 6FJX-6FJX	1
12	066825-015	1/4 HOSE ASSY X 115 6FJX-6FJX	1
13	068737-057	1/4 HOSE ASSY X 57 4FJX-4FJX	1
14	067312-060	1/2 HOSE ASSY X 60 8FJX-8FJX90	2
16	064156-051	1/2 HOSE ASSY X 21 8FJX-8FJX	1
18	067312-051	1/2 HOSE ASSY X 51 8FJX-8FJX90	2
19	067682-055	1/2 HOSE ASSY X 55 8FJX-8FJX90	2
20	064156-065	1/2 HOSE ASSY X 125 8FJX-8FJX	2

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
21	064156-069	1/2 HOSE ASSY X 99 8FJX-8FJX	2
22	067667-132	5/8 HOSE ASSY X 132 12FJX-12FJX90	1
24	020032-003	FITTING 6MJ-6MJ-6MJ TEE	REF
25	011937-003	FITTING 90 6FJX - 6MJ	REF
26	067682-088	1/2 HOSE ASSY X 88 8FJX-8FJX90	1
27	067682-078	1/2 HOSE ASSY X 78 8FJX-8FJX90	1
29	067682-072	1/2 HOSE ASSY X 72 8FJX-8FJX90	1
30	067682-033	1/2 HOSE ASSY X 33 8FJX-8FJX90	1
32	068965-060	3/8 HOSE ASSY X 60 6JFX-6JFX90	1
33	066822-001	1/4 HOSE ASSY X 51 6JFX-6JFX90	1
34	066825-236	1/4 HOSE ASSY X 236 6FJX-6FJX	1
35	066824-003	1/4 HOSE ASSY X 245 6FJX-6FJX	1
36	066825-007	1/4 HOSE ASSY X 71 6FJX-6FJX	1
37	068745-245	1/4 HOSE ASSY X 245 6FJX-6FJX	1
38	066825-008	1/4 HOSE ASSY X 127 6FJX-6FJX	1
39	066825-014	1/4 HOSE ASSY X 74 6FJX-6FJX	1

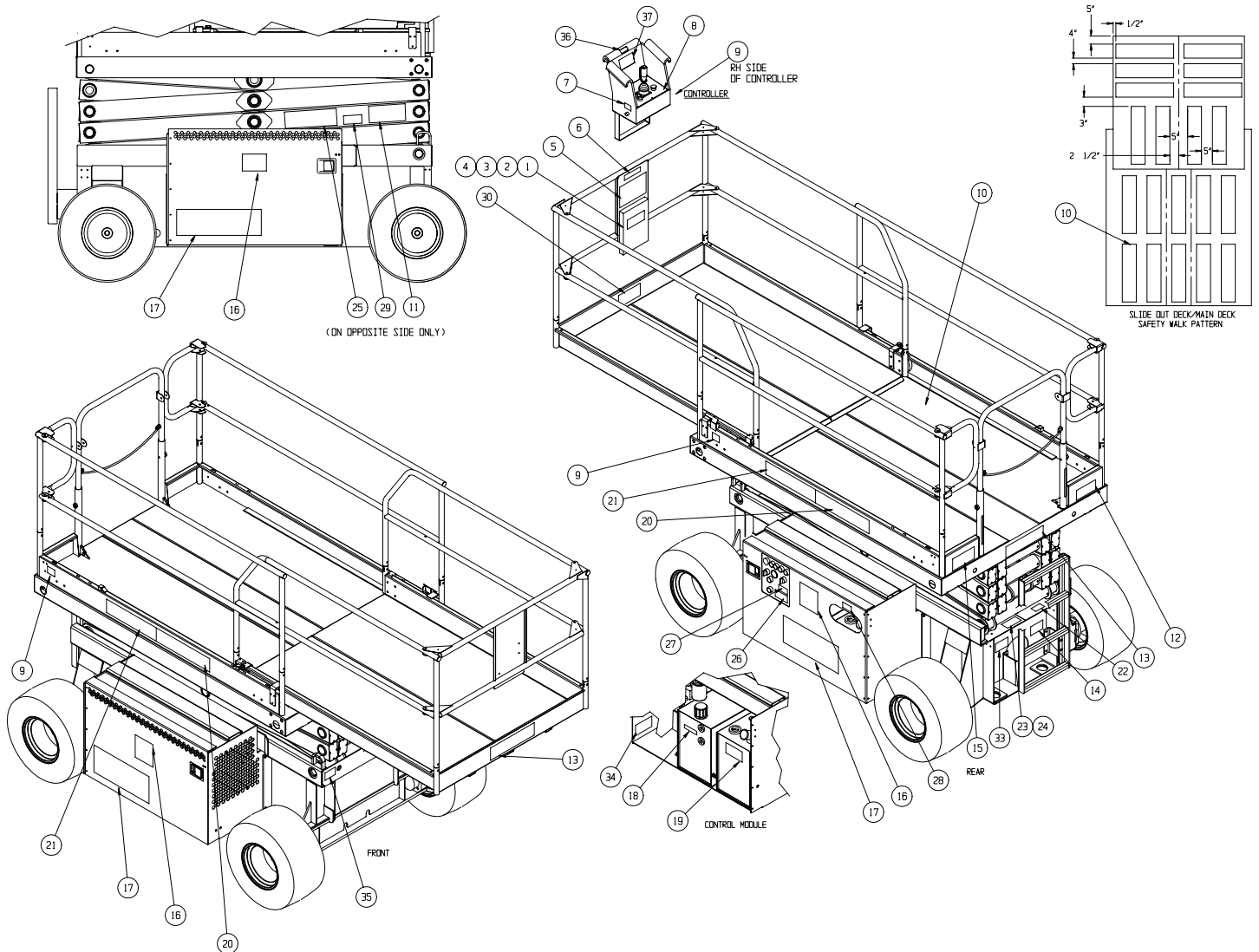


## Label Kit Installation XRT27 Dual Fuel

066940-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	010076-000	MANUAL CASE	1
2	010076-001	LABEL - ATTENTION	1
3	066898-000	USER MANUAL - XRT SERIES (DOMESTIC)	1
4	060577-000	ANSI MANUAL	1
5	066550-009	LABEL - DANGER	1
6	066551-003	LABEL - DANGER TIPPING	1
7	030624-024	LABEL - CHOKE	1
8	067642-003	LABEL - CONTROLLER (XRT)	1
9	064444-000	LABEL - USA	4
10	027966-005	FLEX TREAD (NO SLIP)	20
11	066568-000	LABEL - WARNING CRUSHING HAZARD	2
12	066562-007	LABEL - WARNING TIRE PRESSURE 65 PSI	1
13	061683-013	LABEL - UPRIGHT (4 X 17.69)	2
14	066552-000	LABEL - WARNING BATTERY	1
15	066557-016	LABEL - WARNING MAX LOAD (1250 LBS)	2
16	061684-016	LABEL - X SERIES	2
17	061683-006	LABEL - UPRIGHT (28" LG)	2
18	060197-000	LABEL - HYDRAULIC FLUID	1

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
19	064166-000	LABEL - UNLEADED GAS ONLY	1
20	066957-002	LABEL - XRT 27	2
21	061683-005	LABEL - UPRIGHT (5.5" X 21.63")	2
22	061220-001	LABEL - ANSI -1990	1
23	061205-000	NAME PLATE	1
24	065368-000	TACK	4
25	066561-002	LABEL - SAFETY STAND	1
26	066555-000	LABEL - CAUTION LIMIT SWITCH	1
27	066551-002	LABEL - CAUTION TIPPING	1
28	066558-000	LABEL - EMERGENCY LOWERING	1
29	066561-003	LABEL - CAUTION STRUCTURAL DAMAGE	1
30	066551-000	LABEL - DANGER WEIGHT LIMIT	1
33	064189-001	LABEL - LIQUID WITHDRAWAL	1
34	063423-000	LABEL - BRAKE RELEASE	1
35	066556-000	LABEL - CAUTION DECENDING PLATFORM	1
36	061515-000	LABEL - LIFT HERE	1
37	066554-000	LABEL - CAUTION READ INSTRUCTIONS	1



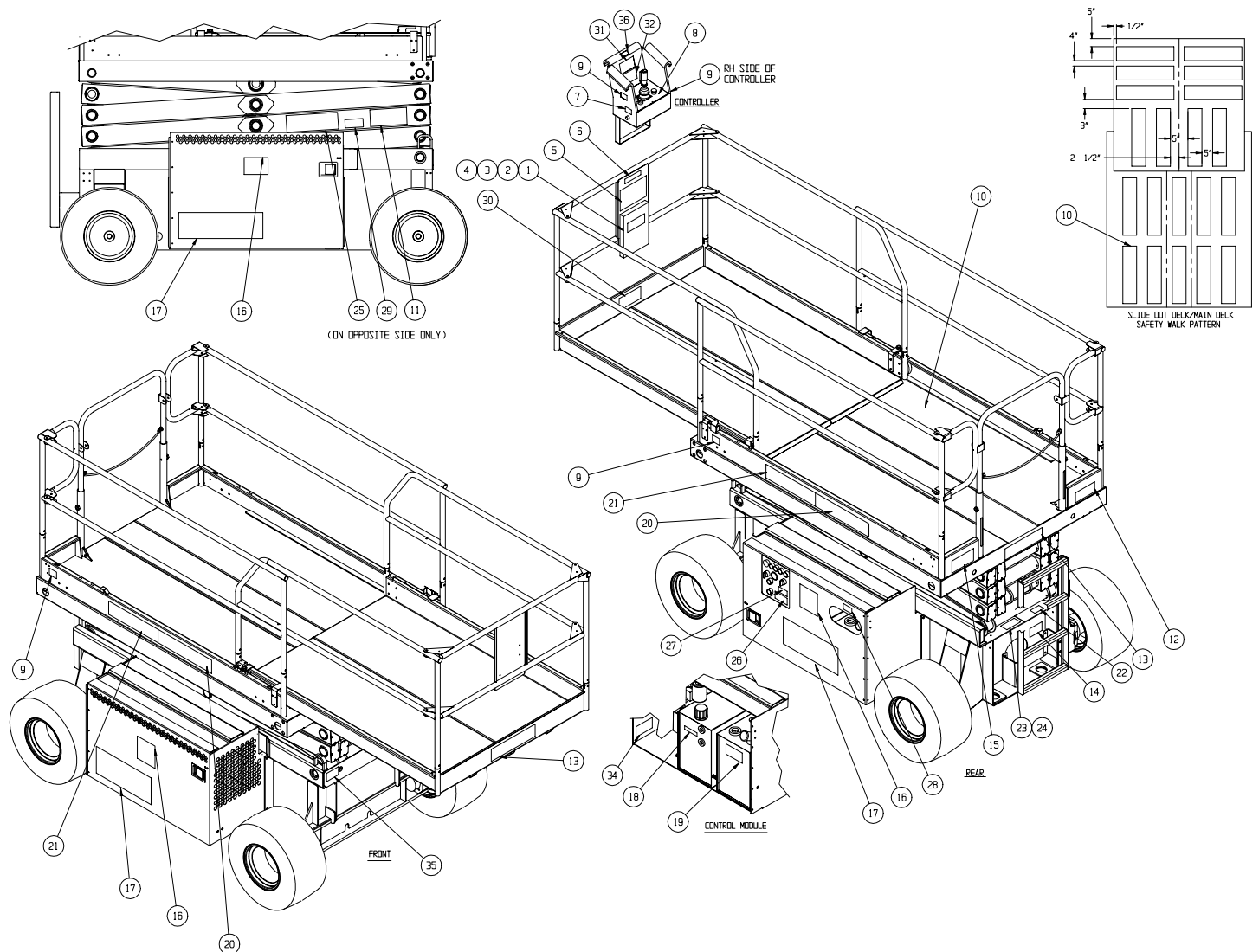


## Label Kit Installation XRT27 Diesel

066940-001

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	010076-000	MANUAL CASE	1
2	010076-001	LABEL - ATTENTION	1
3	066898-000	USER MANUAL - XRT SERIES (DOMESTIC)	1
4	060577-000	ANSI MANUAL	1
5	066550-009	LABEL - DANGER	1
6	066551-003	LABEL - DANGER TIPPING	1
7	067822-000	LABEL - GLOW	1
8	067642-003	LABEL - CONTROLLER (XRT)	1
9	064444-000	LABEL - USA	4
10	027966-005	FLEX TREAD (NO SLIP)	20
11	066568-000	LABEL - WARNING CRUSHING HAZARD	2
12	066562-007	LABEL - WARNING TIRE PRESSURE 65 PSI	1
13	061683-013	LABEL - UPRIGHT (4 X 17.69)	2
14	066552-000	LABEL - WARNING BATTERY	1
15	066557-016	LABEL - WARNING MAX LOAD (1250 LBS)	2
16	061684-016	LABEL - X SERIES	2
17	061683-006	LABEL - UPRIGHT (28" LG)	2
18	060197-000	LABEL - HYDRAULIC FLUID	1

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
19	027898-000	LABEL - DIESEL FUEL	1
20	066957-002	LABEL - XRT 27	2
21	061683-005	LABEL - UPRIGHT (5.5" X 21.63")	2
22	061220-001	LABEL - ANSI -1990	1
23	061205-000	NAME PLATE	1
24	065368-000	TACK	4
25	066561-002	LABEL - SAFETY STAND	1
26	066555-000	LABEL - CAUTION LIMIT SWITCH	1
27	066551-002	LABEL - CAUTION TIPPING	1
28	066558-000	LABEL - EMERGENCY LOWERING	1
29	066561-003	LABEL - CAUTION STRUCTURAL DAMAGE	1
30	066551-000	LABEL - DANGER WEIGHT LIMIT	1
31	067822-001	LABEL - GLOW PLUG	1
32	067554-000	LABEL - CAUTION	1
34	063423-000	LABEL - BRAKE RELEASE	1
35	066556-000	LABEL - CAUTION DECENDING PLATFORM	1
36	061515-000	LABEL - LIFT HERE	1

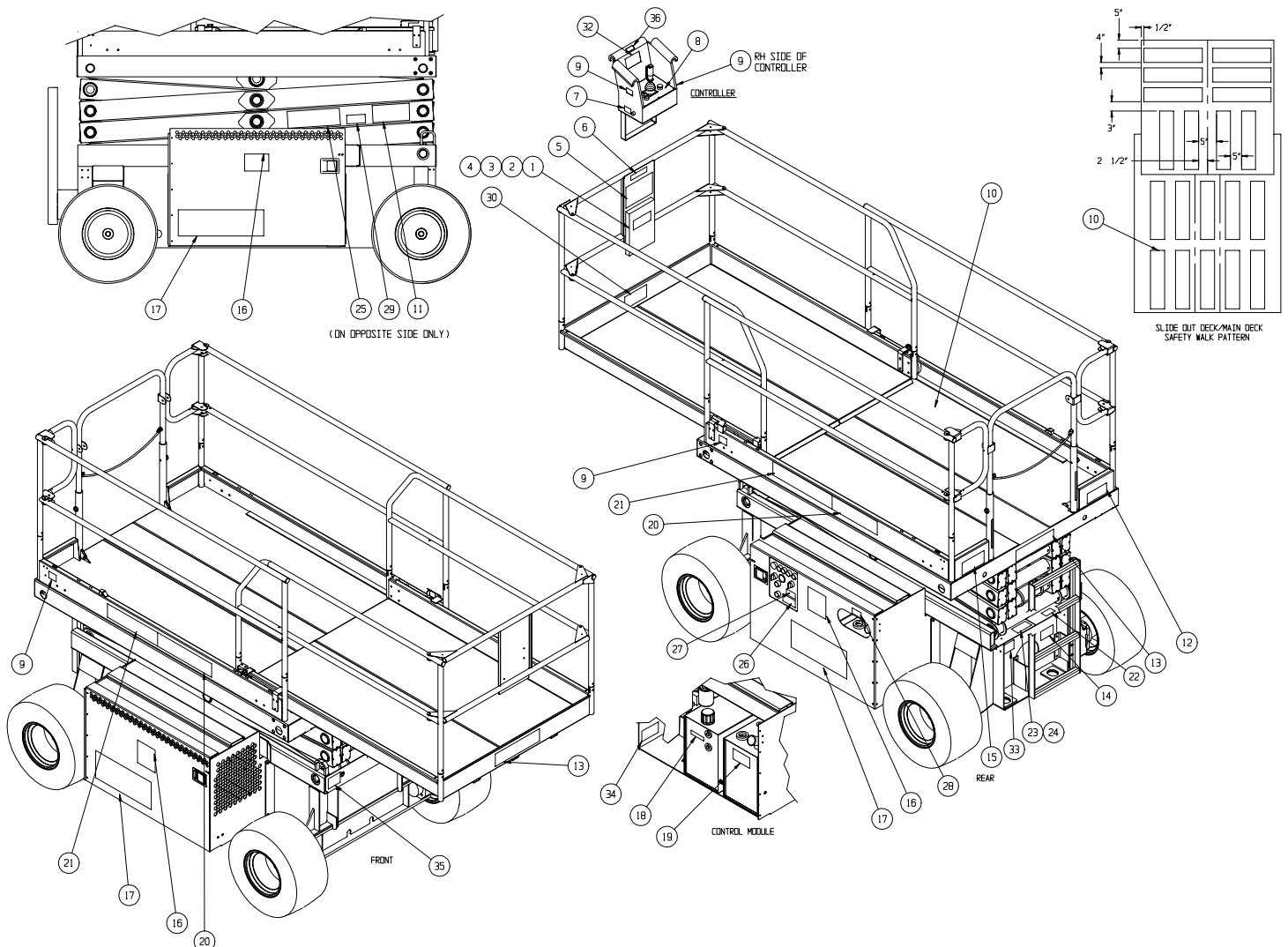


## Label Kit Installation XRT27 4WD Dual Fuel

066940-004

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	010076-000	MANUAL CASERIAL DESCRIPTION	1
2	010076-001	LABEL - ATTENTION	1
3	066898-000	USER MANUAL - XRT SERIES (DOMESTIC)	1
4	060577-000	ANSI MANUAL	1
5	066550-009	LABEL - DANGER	1
6	066551-003	LABEL - DANGER TIPPING	1
7	030624-024	LABEL - CHOKE	1
8	067642-003	LABEL - CONTROLLER (XRT)	1
9	064444-000	LABEL - USA	4
10	027966-005	FLEX TREAD (NO SLIP)	20
11	066568-000	LABEL - WARNING CRUSHING HAZARD	2
12	066562-007	LABEL - WARNING TIRE PRESSURE 65 PSI	1
13	061683-013	LABEL - UPRIGHT (4 X 17.69)	2
14	066552-000	LABEL - WARNING BATTERY	1
15	066557-016	LABEL - WARNING MAX LOAD (1250 LBS)	2
16	061684-016	LABEL - X SERIES	2
17	061683-006	LABEL - UPRIGHT (32.25" LG)	2
18	060197-000	LABEL - HYDRAULIC FLUID	1

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
19	064166-000	LABEL - UNLEADED GAS ONLY	1
20	066957-000	LABEL - XRT 27 4WD	2
21	061683-005	LABEL - UPRIGHT (5.5" X 21.63")	2
22	061220-001	LABEL - ANSI -1990	1
23	061205-000	NAME PLATE	1
24	065368-000	TACK	4
25	066561-002	LABEL - SAFETY STAND	1
26	066555-000	LABEL - CAUTION LIMIT SWITCH	1
27	066551-002	LABEL - CAUTION TIPPING	1
28	066558-000	LABEL - EMERGENCY LOWERING	1
29	066561-003	LABEL - CAUTION STRUCTURAL DAMAGE	1
30	066551-000	LABEL - DANGER WEIGHT LIMIT	1
32	066554-000	LABEL - CAUTION	1
33	064189-001	LABEL - LIQUID WITHDRAWAL	1
34	063432-000	LABEL - BRAKE RELEASE	1
35	066556-000	LABEL - CAUTION DECENDING PLATFORM	1
36	061515-000	LABEL - LIFT HERE	1

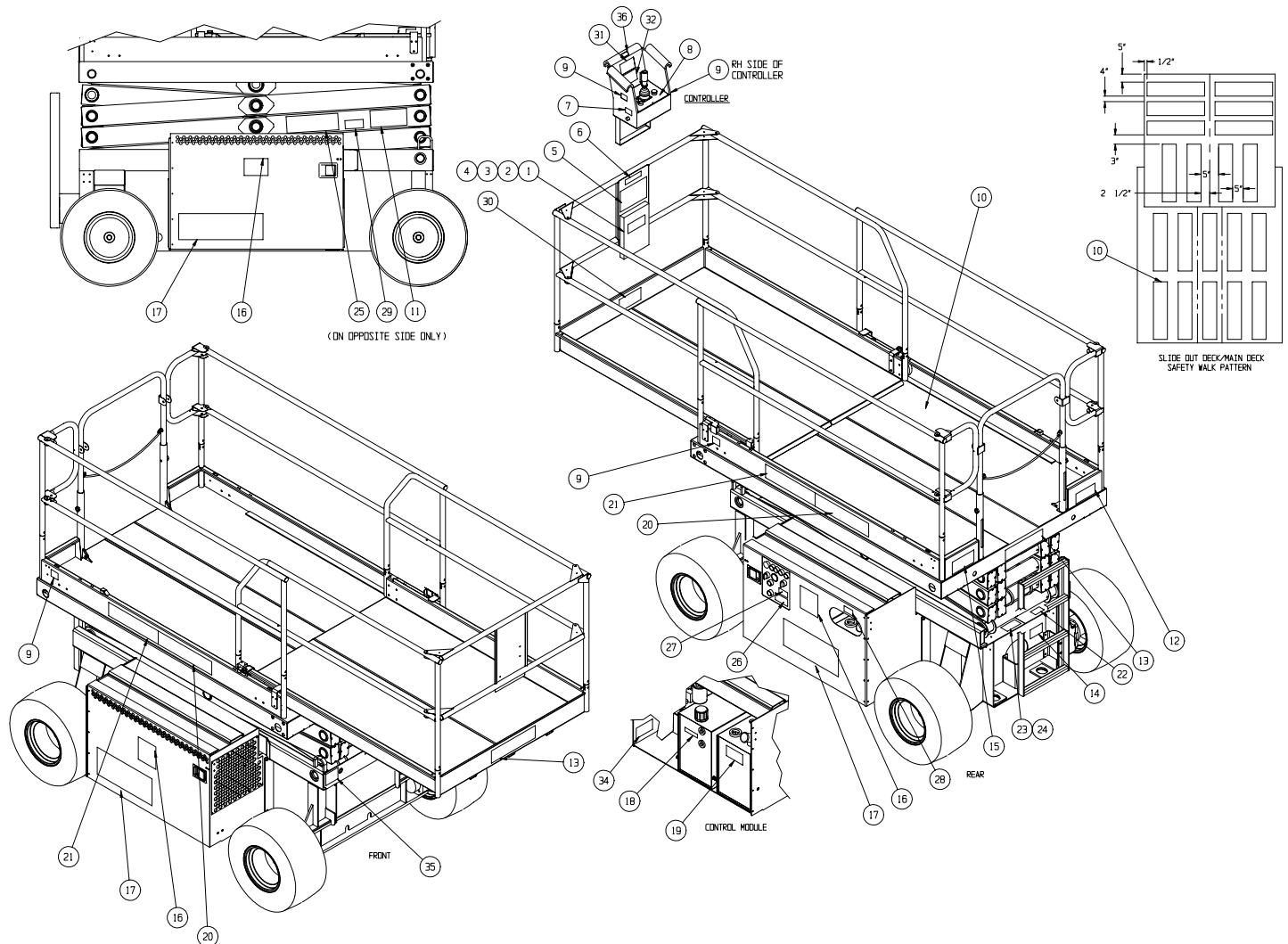


## Label Kit Installation XRT27 4WD Diesel

066940-005

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	010076-000	MANUAL CASE	1
2	010076-001	LABEL - ATTENTIONDESCRIPTION	1
3	066898-000	USER MANUAL - XRT SERIES (DOMESTIC)	1
4	060577-000	ANSI MANUAL	1
5	066550-009	LABEL - DANGER	1
6	066551-003	LABEL - DANGER TIPPING	1
7	067822-000	LABEL - GLOW	1
8	067642-003	LABEL - CONTROLLER (XRT)	1
9	064444-000	LABEL - USA	4
10	027966-005	FLEX TREAD (NO SLIP)	20
11	066568-000	LABEL - WARNING CRUSHING HAZARD	2
12	066562-007	LABEL - WARNING TIRE PRESSURE 65 PSI	1
13	061683-013	LABEL - UPRIGHT (4 X 17.69)	2
14	066552-000	LABEL - WARNING BATTERY	1
15	066557-016	LABEL - WARNING MAX LOAD (1250 LBS)	2
16	061684-016	LABEL - X SERIES	2
17	061683-006	LABEL - UPRIGHT (32.25" LG)	2
18	060197-000	LABEL - HYDRAULIC FLUID	1

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
19	027898-000	LABEL - DIESEL FUEL	1
20	066957-000	LABEL - XRT 27 4WD	2
21	061683-005	LABEL - UPRIGHT (5.5" X 21.63")	2
22	061220-001	LABEL - ANSI -1990	1
23	061205-000	NAME PLATE	1
24	065368-000	TACK	4
25	066561-002	LABEL - SAFETY STAND	1
26	066555-000	LABEL - CAUTION LIMIT SWITCH	1
27	066551-002	LABEL - CAUTION TIPPING	1
28	066558-000	LABEL - EMERGENCY LOWERING	1
29	066561-003	LABEL - CAUTION STRUCTURAL DAMAGE	1
30	066551-000	LABEL - DANGER WEIGHT LIMIT	1
31	067822-001	LABEL - GLOW PLUG	1
32	066554-000	LABEL - CAUTION	1
34	063423-000	LABEL - BRAKE RELEASE	1
35	066556-000	LABEL - CAUTION DECENDING PLATFORM	1
36	061515-000	LABEL - LIFT HERE	1

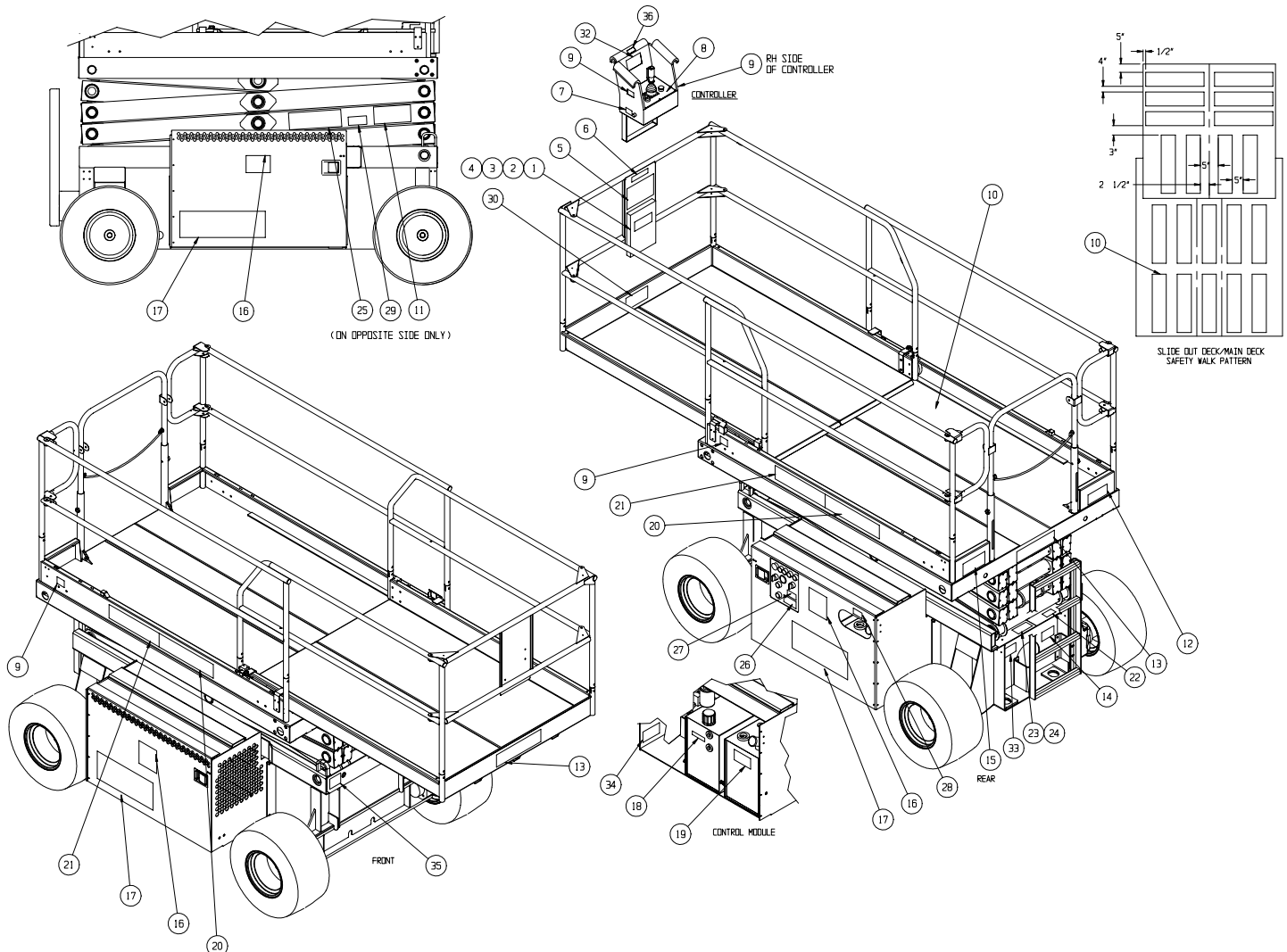


## Label Kit Installation XRT33 Dual Fuel

066940-008

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	010076-000	MANUAL CASE	1
2	010076-001	LABEL - ATTENTION	1
3	066898-000	USER MANUAL - XRT SERIES (DOMESTIC)	1
4	060577-000	ANSI MANUAL	1
5	066550-009	LABEL - DANGER	1
6	066551-003	LABEL - DANGER TIPPING	1
7	030624-024	LABEL - CHOKE	1
8	067642-003	LABEL - CONTROLLER (XRT)	1
9	064444-000	LABEL - USA	4
10	027966-005	FLEX TREAD (NO SLIP)	20
11	066568-000	LABEL - WARNING CRUSHING HAZARD	2
12	066562-007	LABEL - WARNING TIRE PRESSURE 65 PSI	1
13	061683-013	LABEL - UPRIGHT (4 X 17.69)	2
14	066552-000	LABEL - WARNING BATTERY	1
15	066557-017	LABEL - WARNING MAX LOAD (1000 LBS)	2
16	061684-016	LABEL - X SERIES	2
17	061683-006	LABEL - UPRIGHT (32.25" LG)	2
18	060197-000	LABEL - HYDRAULIC FLUID	1

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
19	064166-000	LABEL - UNLEADED GAS ONLY	1
20	066957-003	LABEL - XRT 33	2
21	061683-005	LABEL - UPRIGHT (5.5" X 21.63")	2
22	061220-001	LABEL - ANSI -1990	1
23	061205-000	NAME PLATE	1
24	065368-000	TACK	4
25	066561-002	LABEL - SAFETY STAND	1
26	066555-000	LABEL - CAUTION LIMIT SWITCH	1
27	066551-002	LABEL - CAUTION TIPPING	1
28	066558-000	LABEL - EMERGENCY LOWERING	1
29	066561-003	LABEL - CAUTION STRUCTURAL DAMAGE	1
30	066551-000	LABEL - DANGER WEIGHT LIMIT	1
32	066554-000	LABEL - CAUTION	1
33	064189-001	LABEL - LIQUID WITHDRAWAL	1
34	063423-000	LABEL - BRAKE RELEASE	1
35	066556-000	LABEL - CAUTION DECENDING PLATFORM	1
36	061515-000	LABEL - LIFT HERE	1

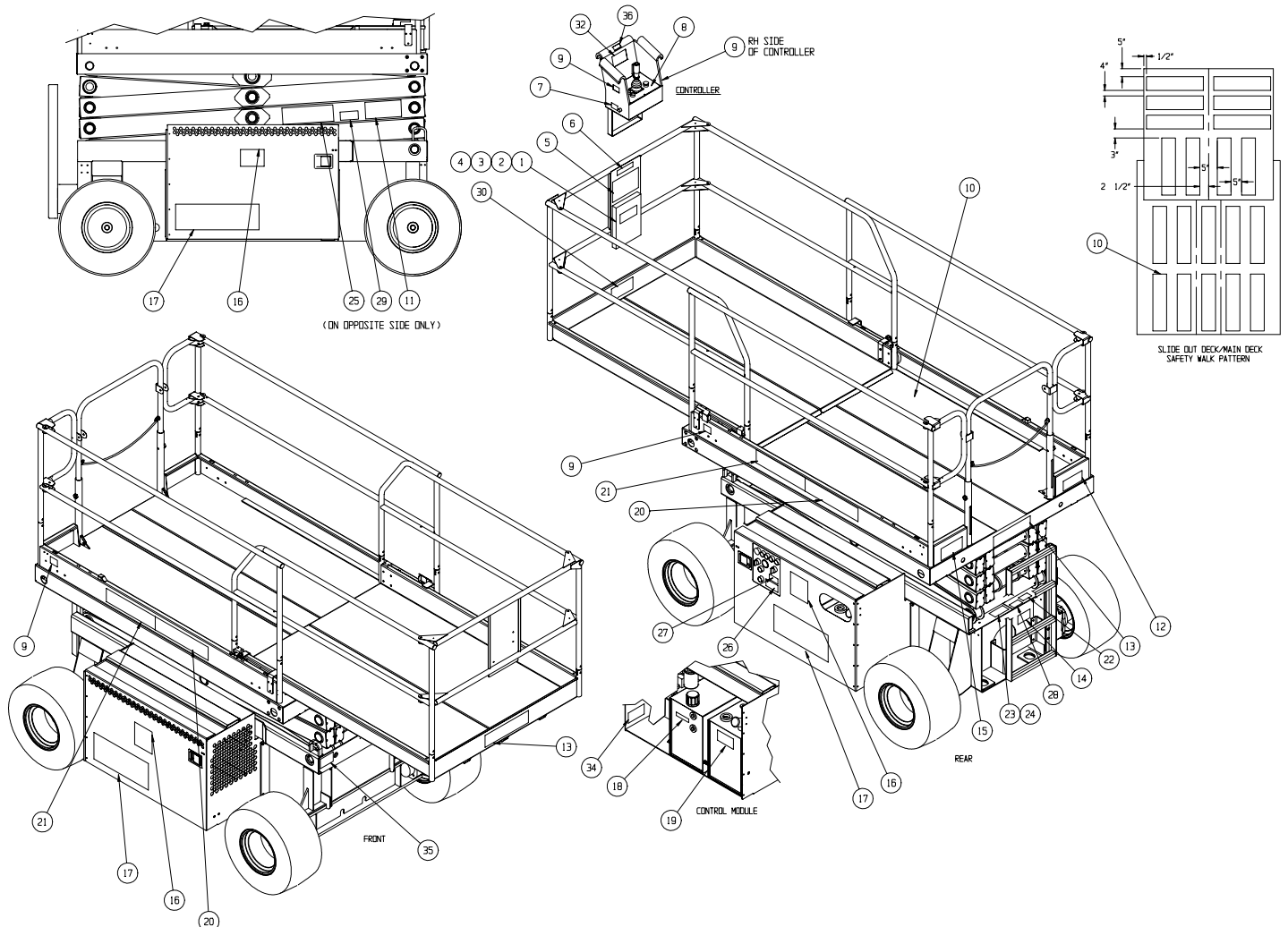


## Label Kit Installation XRT33 Diesel

066940-009

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	010076-000	MANUAL CASE	1
2	010076-001	LABEL - ATTENTION	1
3	066898-000	USER MANUAL - XRT SERIES (DOMESTIC)	1
4	060577-000	ANSI MANUAL	1
5	066550-009	LABEL - DANGER	1
6	066551-003	LABEL - DANGER TIPPING	1
7	067822-000	LABEL - GLOW	1
8	067642-003	LABEL - CONTROLLER (XRT)	1
9	064444-000	LABEL - USA	4
10	027966-005	FLEX TREAD (NO SLIP)	20
11	066568-000	LABEL - WARNING CRUSHING HAZARD	2
12	066562-007	LABEL - WARNING TIRE PRESSURE 65 PSI	1
13	061683-013	LABEL - UPRIGHT (4 X 17.69)	2
14	066552-000	LABEL - WARNING BATTERY	1
15	066557-017	LABEL - WARNING MAX LOAD (1000 LBS)	2
16	061684-016	LABEL - X SERIES	2
17	061683-006	LABEL - UPRIGHT (32.25" LG)	2
18	060197-000	LABEL - HYDRAULIC FLUID	1

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
19	027898-000	LABEL - DIESEL FUEL	1
20	066957-003	LABEL - XRT 33	2
21	061683-005	LABEL - UPRIGHT (5.5" X 21.63")	2
22	061220-001	LABEL - ANSI -1990	1
23	061205-000	NAME PLATE	1
24	065368-000	TACK	4
25	066561-002	LABEL - SAFETY STAND	1
26	066555-000	LABEL - CAUTION LIMIT SWITCH	1
27	066551-002	LABEL - CAUTION TIPPING	1
28	066558-000	LABEL - EMERGENCY LOWERING	1
29	066561-003	LABEL - CAUTION STRUCTURAL DAMAGE	1
30	066551-000	LABEL - DANGER WEIGHT LIMIT	1
32	066554-000	LABEL - CAUTION	1
34	063423-000	LABEL - BRAKE RELEASE	1
35	066556-000	LABEL - CAUTION DESCENDING PLATFORM	1
36	061515-000	LABEL - LIFT HERE	1



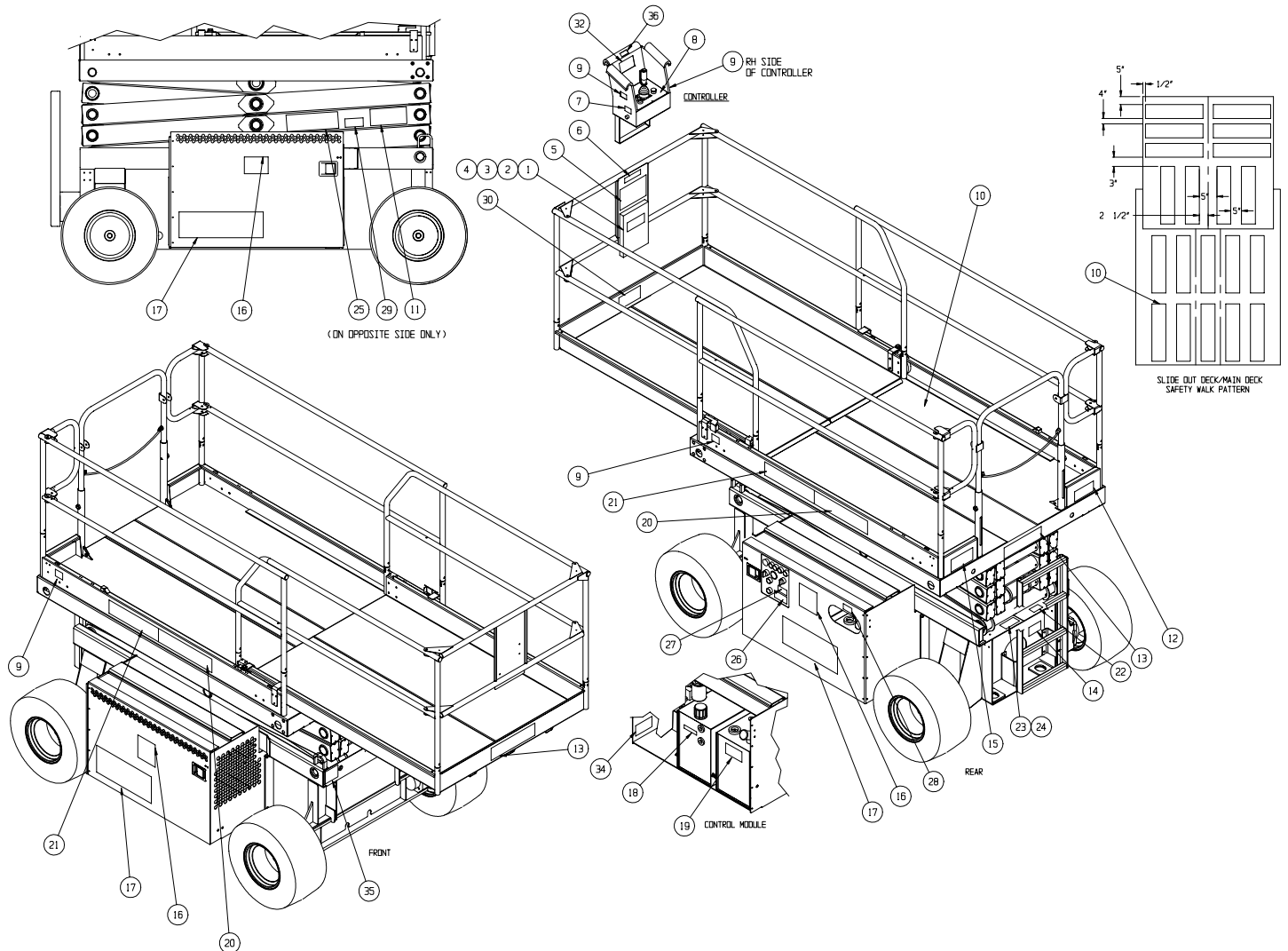


## Label Kit Installation XRT33 4WD Dual Fuel

066940-012

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	010076-000	MANUAL CASE	1
2	010076-001	LABEL - ATTENTION	1
3	066898-000	USER MANUAL - XRT SERIES (DOMESTIC)	1
4	060577-000	ANSI MANUAL	1
5	066550-009	LABEL - DANGER	1
6	066551-003	LABEL - DANGER TIPPING	1
7	030624-024	LABEL - CHOKE	1
8	067642-003	LABEL - CONTROLLER (XRT)	1
9	064444-000	LABEL - USA	4
10	027966-005	FLEX TREAD (NO SLIP)	20
11	066568-000	LABEL - WARNING CRUSHING HAZARD	2
12	066562-007	LABEL - WARNING TIRE PRESSURE 65 PSI	1
13	061683-013	LABEL - UPRIGHT (4 X 17.69)	2
14	066552-000	LABEL - WARNING BATTERY	1
15	066557-017	LABEL - WARNING MAX LOAD (1000 LBS)	2
16	061684-016	LABEL - X SERIES	2
17	061683-006	LABEL - UPRIGHT (32.25" LG)	2
18	060197-000	LABEL - HYDRAULIC FLUID	1

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
19	064166-000	LABEL - UNLEADED GAS ONLY	1
20	066957-001	LABEL - XRT 33 4WD	2
21	061683-005	LABEL - UPRIGHT (5.5" X 21.63")	2
22	061220-001	LABEL - ANSI -1990	1
23	061205-000	NAME PLATE	1
24	065368-000	TACK	4
25	066561-002	LABEL - SAFETY STAND	1
26	066555-000	LABEL - CAUTION LIMIT SWITCH	1
27	066551-002	LABEL - CAUTION TIPPING	1
28	066558-000	LABEL - EMERGENCY LOWERING	1
29	066561-003	LABEL - CAUTION STRUCTURAL DAMAGE	1
30	066551-000	LABEL - DANGER WEIGHT LIMIT	1
32	066554-000	LABEL - CAUTION	1
33	064189-000	LABEL - LIQUID WITHDRAWAL	1
34	063423-000	LABEL - BRAKE RELEASE	1
35	066556-000	LABEL - CAUTION DECENDING PLATFORM	1
36	061515-000	LABEL - LIFT HERE	1

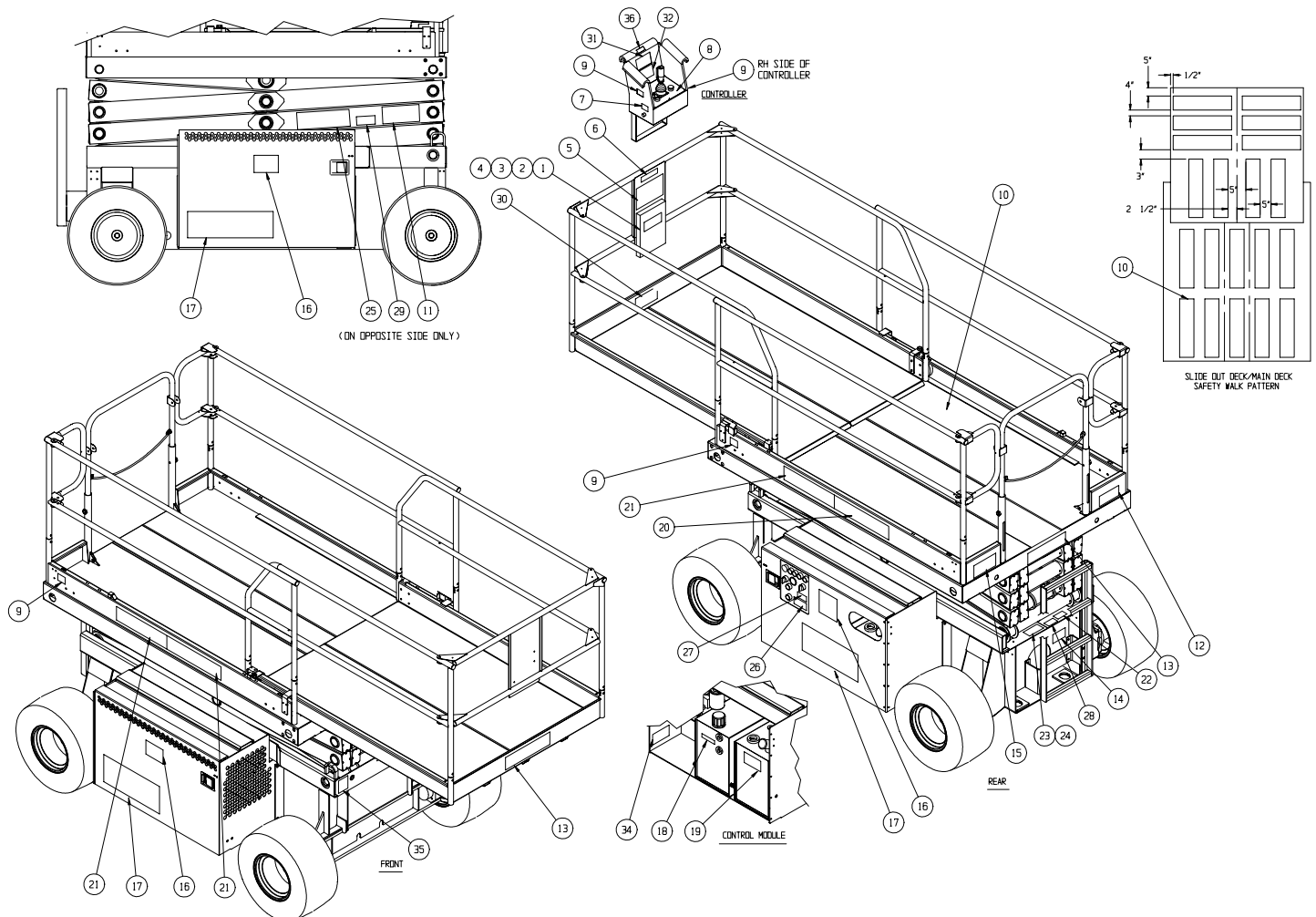


## Label Kit Installation XRT33 4WD Diesel

066940-013

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	010076-000	MANUAL CASE	1
2	010076-001	LABEL - ATTENTION	1
3	066898-000	USER MANUAL - XRT SERIES (DOMESTIC)	1
4	060577-000	ANSI MANUAL	1
5	066550-009	LABEL - DANGER	1
6	066551-003	LABEL - DANGER TIPPING	1
7	067822-000	LABEL - GLOW	1
8	067642-003	LABEL - CONTROLLER (XRT)	1
9	064444-000	LABEL - USA	4
10	027966-005	FLEX TREAD (NO SLIP)	20
11	066568-000	LABEL - WARNING CRUSHING HAZARD	2
12	066562-007	LABEL - WARNING TIRE PRESSURE 65 PSI	1
13	061683-013	LABEL - UPRIGHT (4 X 17.69)	2
14	066552-000	LABEL - WARNING BATTERY	1
15	066557-017	LABEL - WARNING MAX LOAD (1000 LBS)	2
16	061684-016	LABEL - X SERIES	2
17	061683-006	LABEL - UPRIGHT (32.25" LG)	2
18	060197-000	LABEL - HYDRAULIC FLUID	1

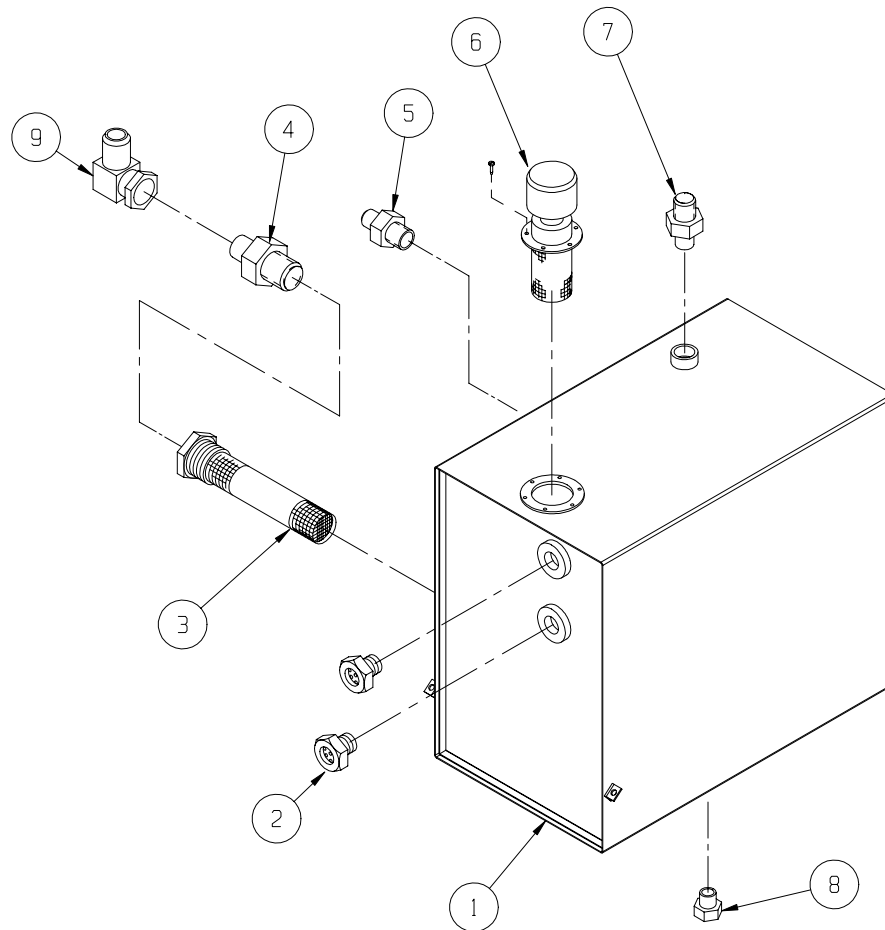
ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
19	027898-000	LABEL - DIESEL FUEL	1
20	066957-001	LABEL - XRT 33 4WD	2
21	061683-005	LABEL - UPRIGHT (5.5" X 21.63")	2
22	061220-001	LABEL - ANSI -1990	1
23	061205-000	NAME PLATE	1
24	065368-000	TACK	4
25	066561-002	LABEL - SAFETY STAND	1
26	066555-000	LABEL - CAUTION LIMIT SWITCH	1
27	066551-002	LABEL - CAUTION TIPPING	1
28	066558-000	LABEL - EMERGENCY LOWERING	1
29	066561-003	LABEL - CAUTION STRUCTURAL DAMAGE	1
30	066551-000	LABEL - DANGER WEIGHT LIMIT	1
31	067822-001	LABEL - GLOW PLUG	1
32	066554-000	LABEL - CAUTION READ INSTRUCTIONS	1
34	063423-000	LABEL - BRAKE RELEASE	1
35	066556-000	LABEL - CAUTION DECENDING PLATFORM	1
36	061515-000	LABEL - LIFT HERE	1



# Hydraulic Tank Assembly

066998-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	067172-000	HYDRAULIC OIL TANK X-RT	1
2	063979-006	SIGHT GLASS	2
3	100286-001	SUCTION SCREEN (32MP)	1
4	011939-029	FITTING, 20MP-16MJ	1
5	011939-010	FITTING, 6MP-6MJ	1
6	068840-000	FILLER BREATHER CAP & SCREEN	1
7	011939-019	FITTING, 12MP-8MJ	1
8	021305-006	PLUG, MAGNETIC (1/2-14NPT)	1
9	011937-008	FITTING, 16FJ-16MJ 90°	1

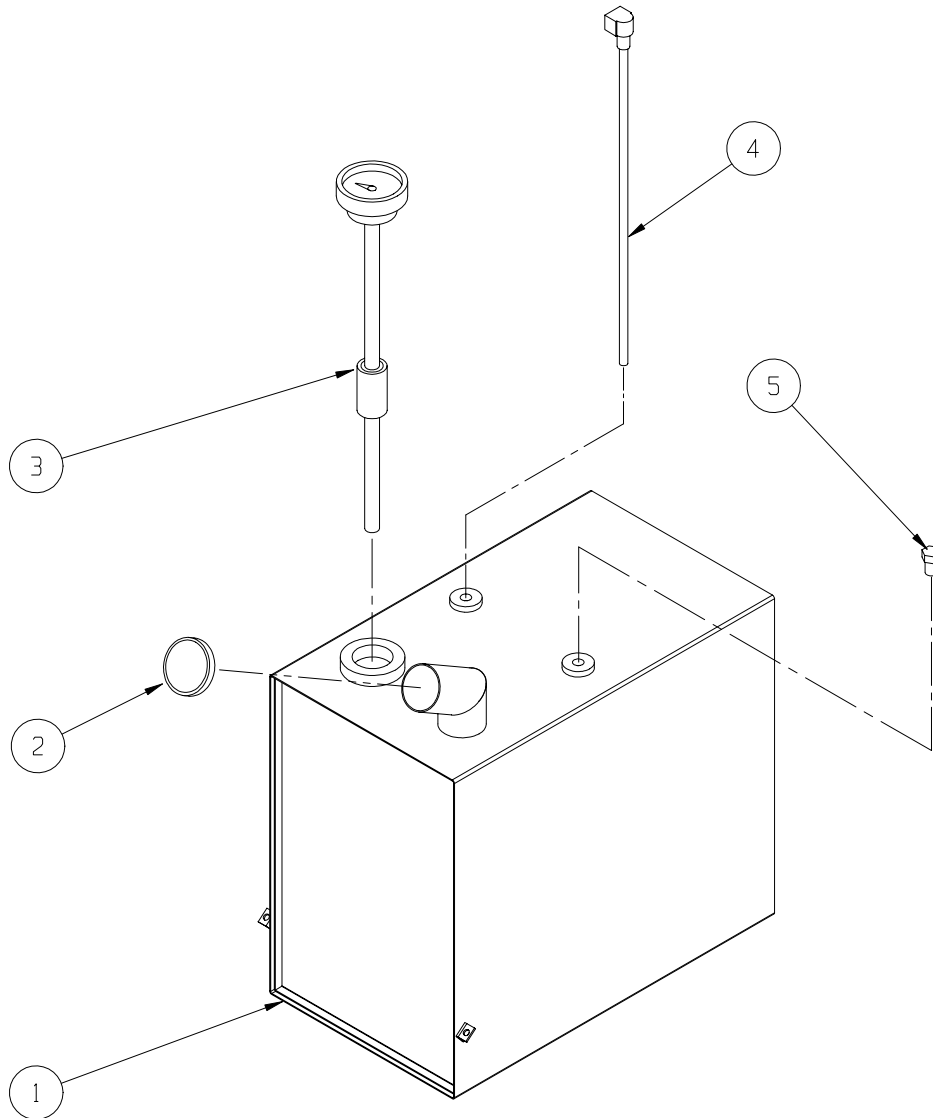




## Fuel Tank Assembly Gasoline

066999-000

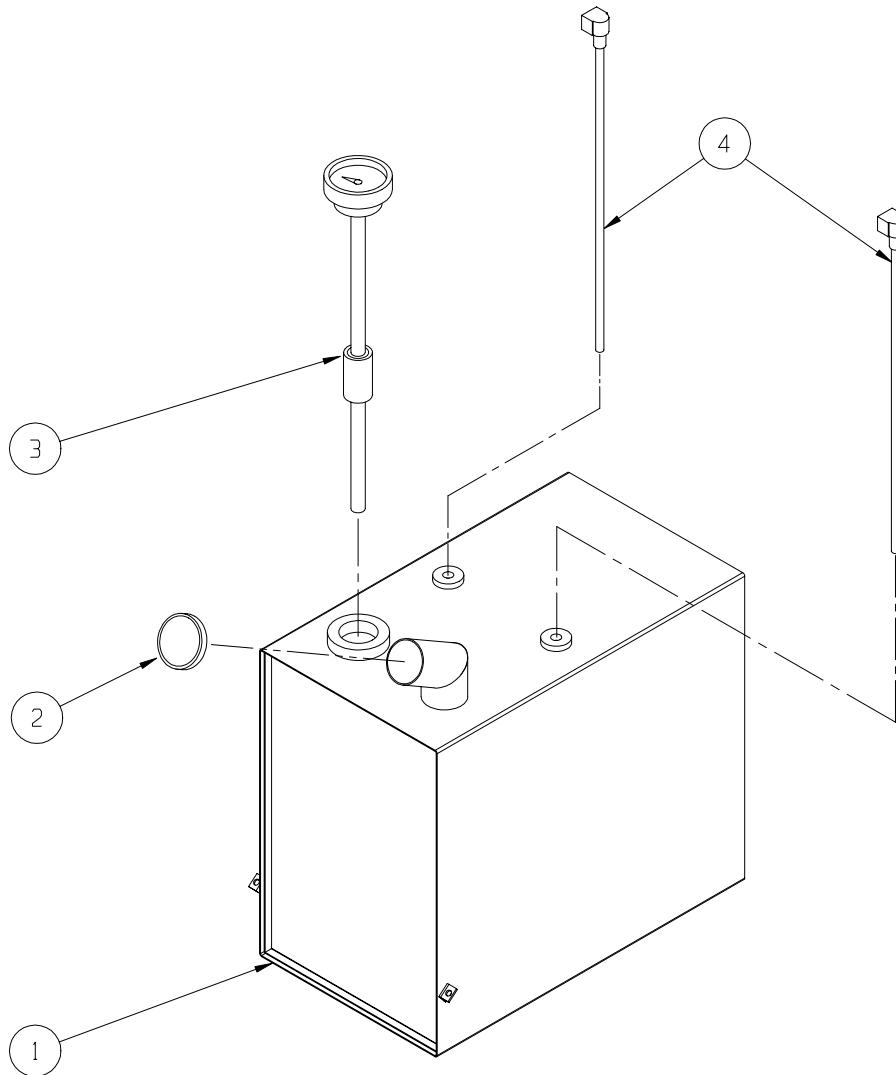
ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	067173-000	TANK, FUEL (STEEL)	1
2	063929-001	GAS CAP	1
3	063982-001	FUEL LEVEL GAUGE	1
4	066971-000	WITHDRAWAL TUBE WELDMENT	1
5	011919-002	FITTING PLUG 4MP	1



## Fuel Tank Assembly Diesel

066999-001

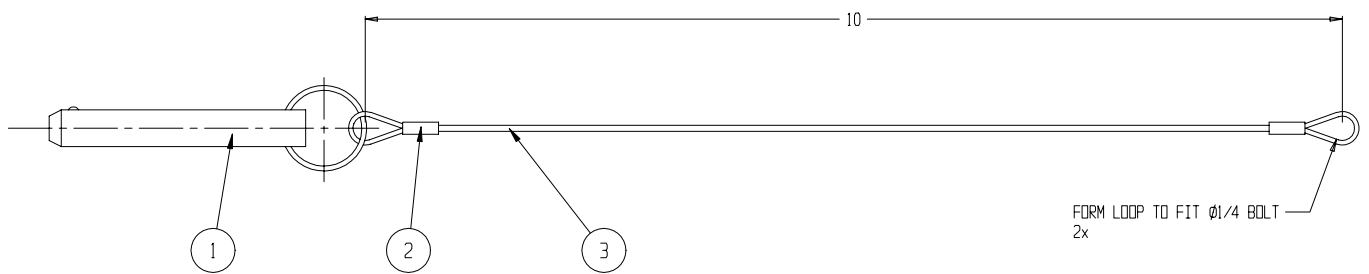
ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	067173-000	TANK, FUEL (STEEL)	1
2	063929-001	FUEL CAP	1
3	063982-001	FUEL LEVEL GAUGE	1
4	066971-000	WITHDRAWAL TUBE WELDMENT	2



# Locking Pin Assembly

010414-006

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	012791-002	PIN BALL DETENT 3/8 DIA. X 2	1
2	03195-000	SLEEVE - NICOPRESS	2
3	03192-099	WIRE CABLE	FT 1.12



## Tire/Wheel Assembly Trac Seal RT/RH

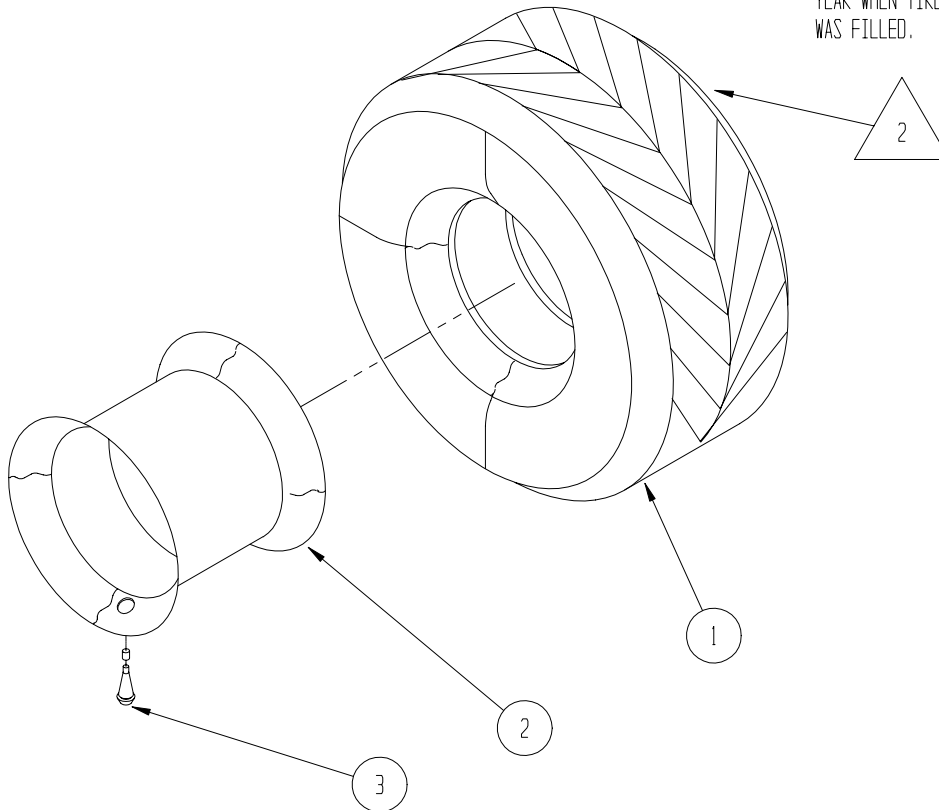
064054-010

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	008596-002	TIRE	1
2	063910-011	WHEEL	1
3	012282-001	VALVE STEM	1

### NOTES:

1. FILL TIRE WHEEL ASSY WITH 60 FL. OZ. OF TRAC SEAL (OR EQUIV.) TIRE SEALANT, & INFLATE TO 65 PSI.  
 -TIRE & WHEEL ASSY DRY WT.= 51 LBS.  
 -TRAC SEAL WEIGHT/GAL = 14 LBS  
 -TRAC SEAL REQ.(WT) = 6.5 LBS (REF)

2. BRAND BACKSIDE OF TIRE/WHEEL ASSY AS FOLLOWS:  
 "UPRIGHT 6KT"  
 SPACE      LAST DIGIT OF YEAR WHEN TIRE WAS FILLED.      TIRE SEALANT  
 LETTER CORRESPONDING TO MONTH: (JAN=A, ETC)



# Tire/Wheel Assembly Trac Seal RT/LH

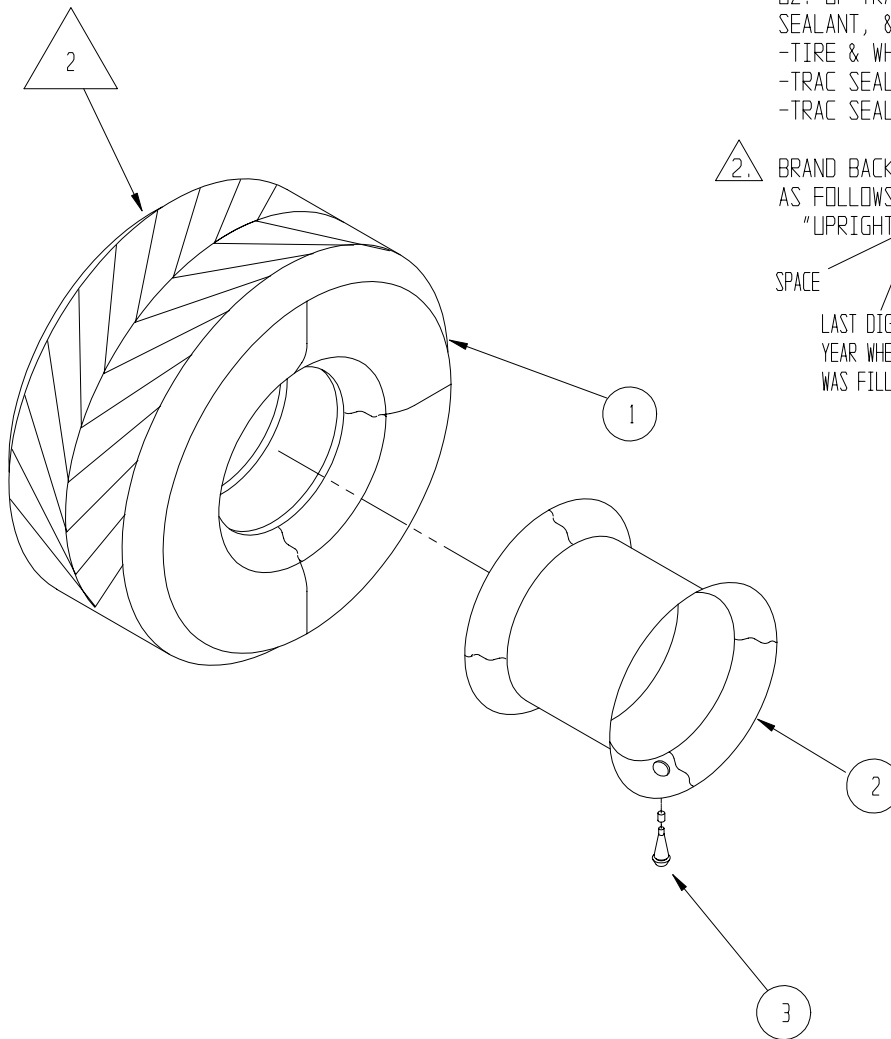
064054-011

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	008596-002	TIRE	1
2	063910-011	WHEEL	1
3	012282-001	VALVE STEM	1

## NOTES:

1. FILL TIRE WHEEL ASSY WITH 60 FL. OZ. OF TRAC SEAL (OR EQUIV.) TIRE SEALANT, & INFLATE TO 65 PSI.  
-TIRE & WHEEL ASSY DRY WT.= 51 LBS.  
-TRAC SEAL WEIGHT/GAL = 14 LBS  
-TRAC SEAL REQ.(WT) = 6.5 LBS (REF)

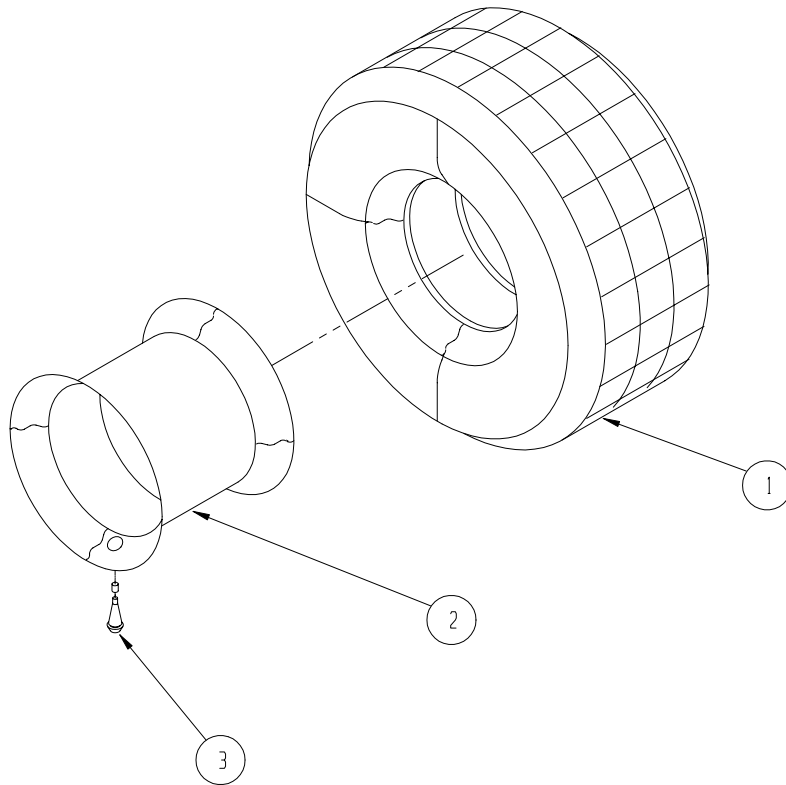
2. BRAND BACKSIDE OF TIRE/WHEEL ASSY AS FOLLOWS:  
"UPRIGHT 6KT"  
SPACE      LAST DIGIT OF YEAR WHEN TIRE WAS FILLED.      TIRE SEALANT  
LETTER CORRESPONDING TO MONTH: (JAN=A, ETC)



## Tire/Wheel Assembly Softrac Polyfill /RH

064186-010

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	060209-000	TIRE	1
2	063910-010	WHEEL	1
3	012282-000	VALVE STEM	1

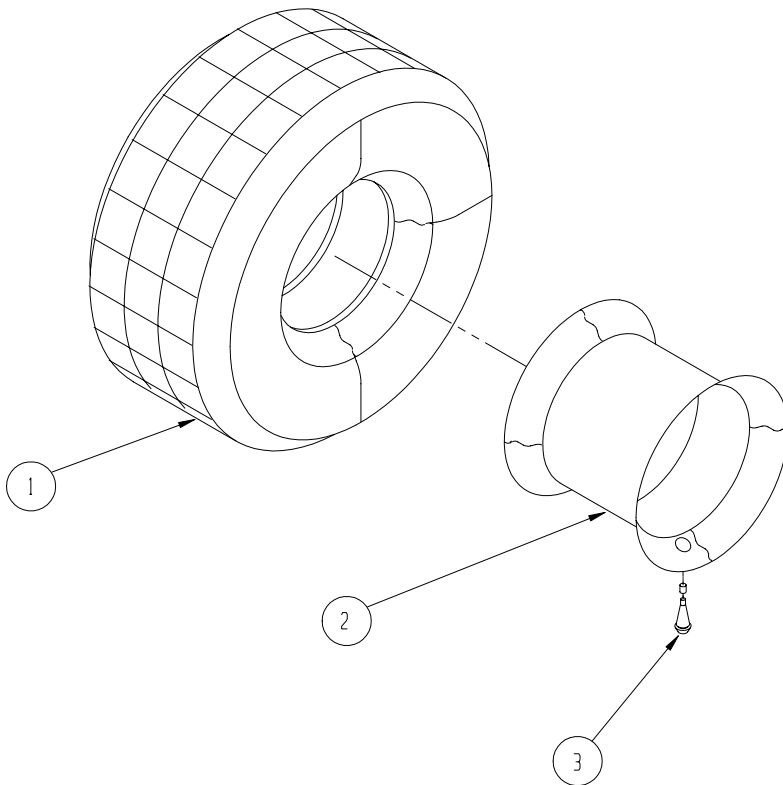


NOTE: AFTER ASSEMBLY FILL TIRE WITH POLYFILL

## Tire/Wheel Assembly Softrac Polyfill /LH

064186-011

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	060209-000	TIRE	1
2	063910-010	WHEEL	1
3	012282-000	VALVE STEM	1

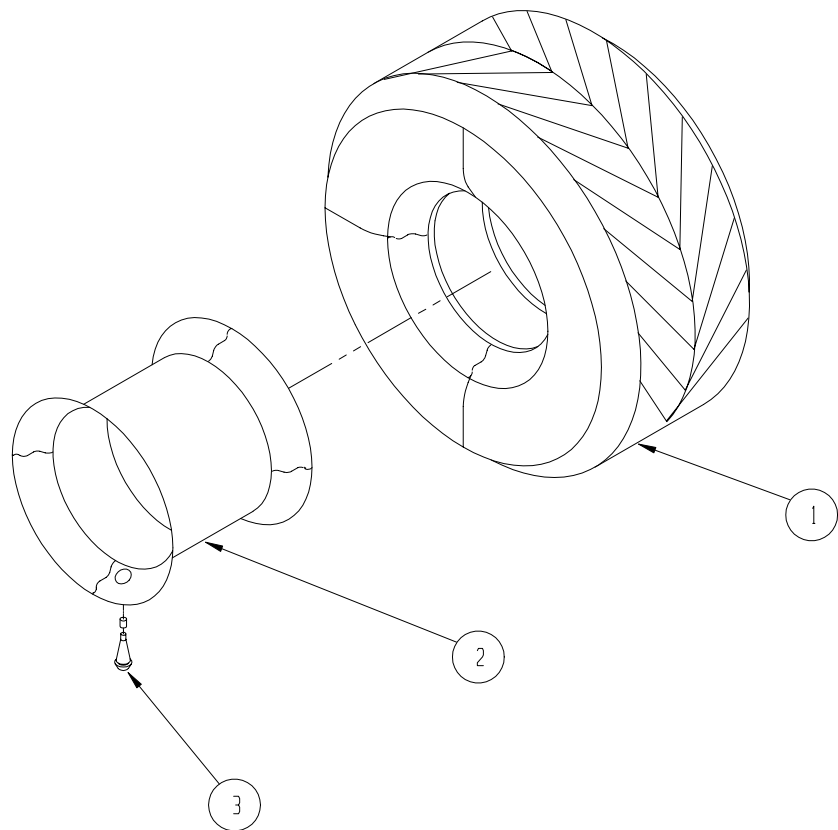


NOTE: AFTER ASSEMBLY FILL TIRE WITH POLYFILL

Tire/Wheel Assembly Polyfill RT/RH

064187-010

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	008596-002	TIRE	1
2	063910-011	WHEEL	1
3	012282-001	VALVE STEM	1



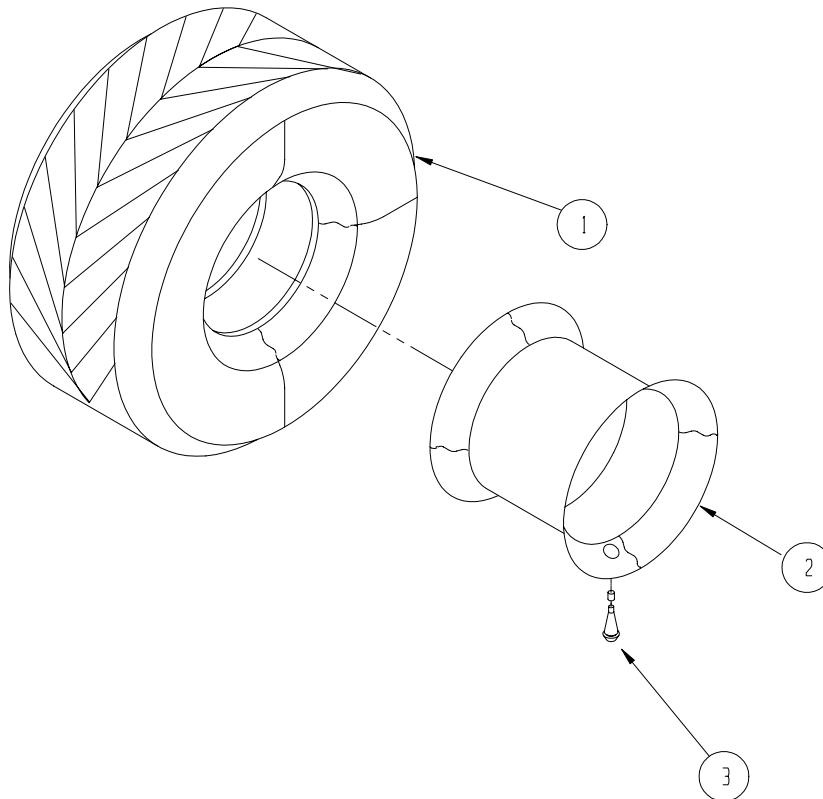
NOTE: AFTER ASSEMBLY FILL TIRE WITH POLYFILL



## Tire/Wheel Assemblym Polyfill RT/LH

064187-011

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	008596-002	TIRE	1
2	063910-011	WHEEL	1
3	012282-001	VALVE STEM	1

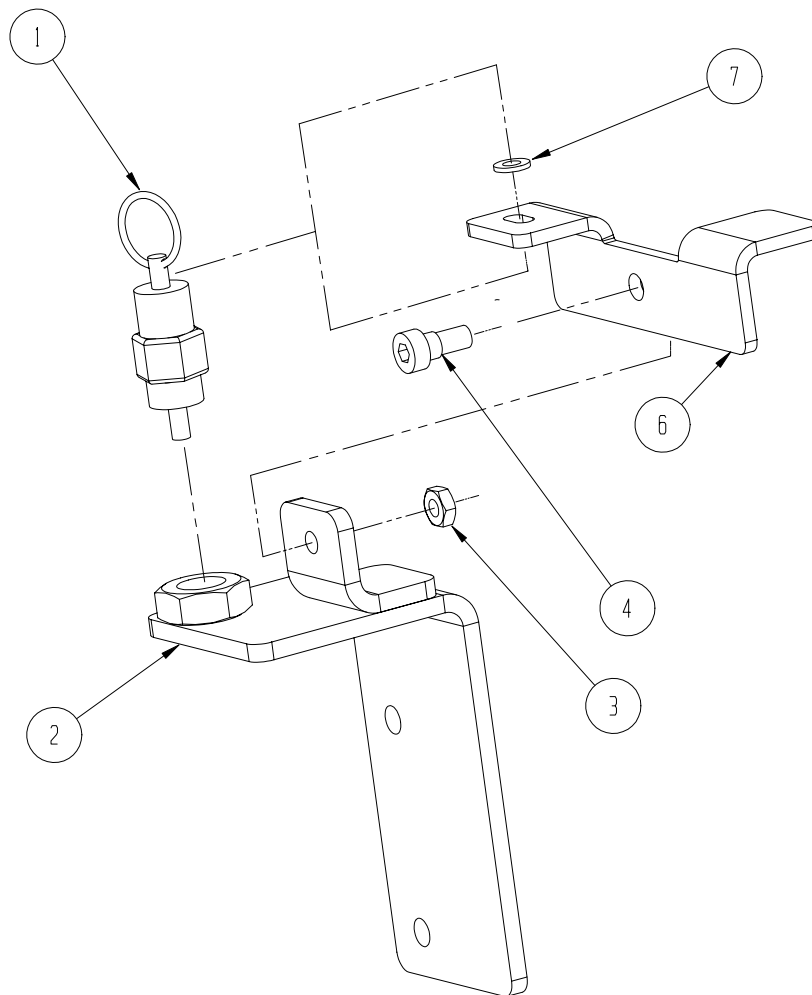


NOTE: AFTER ASSEMBLY FILL TIRE WITH POLYFILL

## Deck Lock Assembly Slideout

067185-000

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	003570-002	RETAINING PIN ASSEMBLY	1
2	067186-000	BRACKET WELDMENT	1
3	011273-005	JAM NUT 5/16-18	1
4	015936-003	SHOULDER SCREW 3/8 X 1/4	1
6	067189-000	LEVER	1
7	014996-005	WASHER 5/16 FLAT	1



## Air to Platform Option, XRT27

067298-000

## Air to Platform Option, XRT33

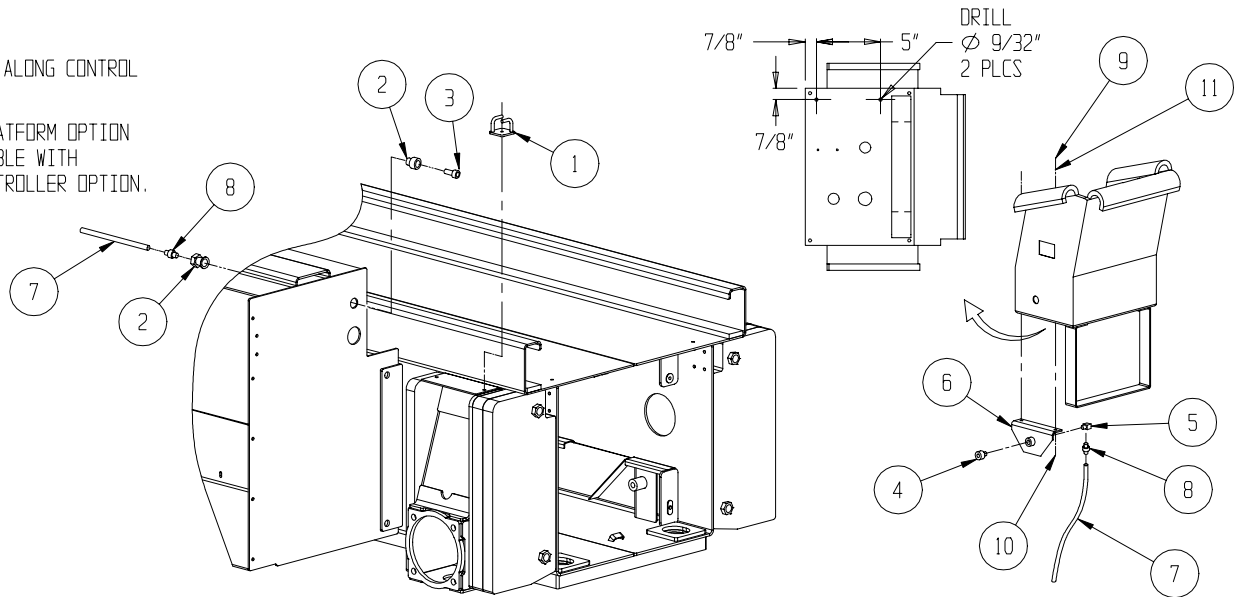
067298-001

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	069242-000	BRACKET, CABLE/HOSE ROUTING	1
2	069245-003	FITTING, BULKHEAD PIPE, 3/8"	1
3	012728-000	COUPLING MALE AIR	1
4	012729-003	COUPLING FEMALE AIR	1
5	011917-007	FITTING 90 6MP-6FP	1
6	063594-002	BRACKET WELDMENT	1
7	015770-099	HOSE 3/8 SYNPLEX 3600-06	54 FT
8	064274-002	FITTING HOSE	2
9	011248-004	NUT HEX ESNA 1/4-20UNC	2
10	011252-006	SCREW, HHC, GR.5 1/4-20UNC X 3/4"	2
11	011240-004	WASHER, 1/4" FLAT STD	2

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	069242-000	BRACKET, CABLE/HOSE ROUTING	1
2	069245-003	FITTING, BULKHEAD PIPE, 3/8"	1
3	012728-000	COUPLING MALE AIR	1
4	012729-003	COUPLING FEMALE AIR	1
5	011917-007	FITTING 90 6MP-6FP	1
6	063594-002	BRACKET WELDMENT	1
7	015770-099	HOSE 3/8 SYNPLEX 3600-06	65 FT
8	064274-002	FITTING HOSE	2
9	011248-004	NUT HEX ESNA 1/4-20UNC	2
10	011252-006	SCREW, HHC, GR.5 1/4-20UNC X 3/4"	2
11	011240-004	WASHER, 1/4" FLAT STD	2

### NOTES:

1. ROUTE AIR LINE ALONG CONTROL CABLE LINE.
2. THIS AIR TO PLATFORM OPTION IS NOT COMPATIBLE WITH REMOVEABLE CONTROLLER OPTION.

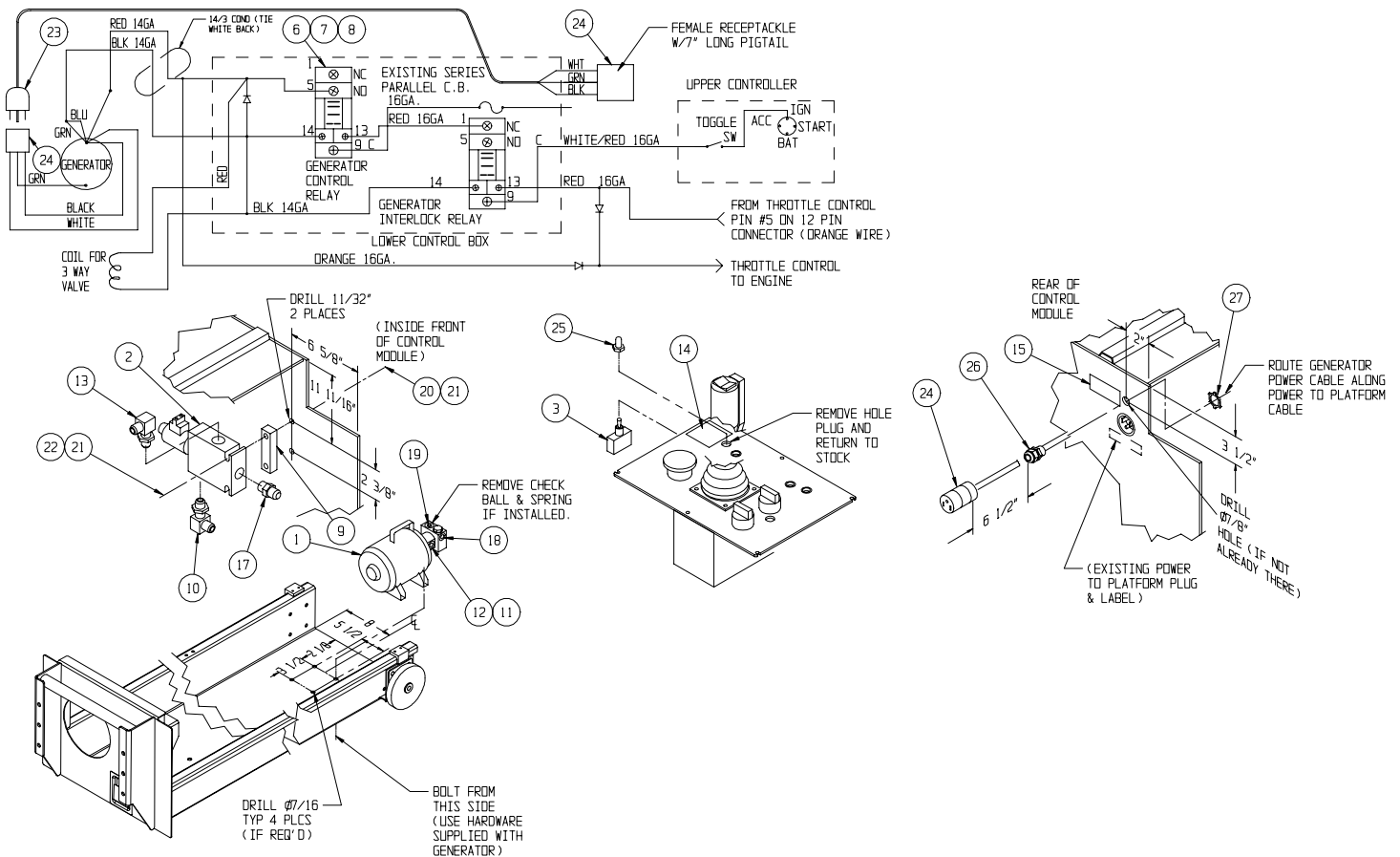


## Generator Option

067299-001

ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
1	069234-000	GENERATOR, 2000 WATT	1
2	067191-000	VALVE, 3 WAY	1
3	012797-000	SWITCH	1
4	029495-099	WIRE, 14GA , 3 CONDUCTOR	FT 60
5	067662-001	SOCKET, RELAY	2
6	067662-005	RETAINER CLIP	2
7	067661-001	RELAY, SPDT	2
9	065183-000	VALVE MOUNT	1
10	011934-010	FITTING, 10MB-8MJ 90°	1
11	011937-004	FITTING, 8FJ-8MJ 90°	1
12	011941-010	FITTING, 8MB-8MJ	1
13	011934-012	FITTING, 10MB-12MJ 90°	2
14	066895-000	LABEL, GENERATOR SWITCH	1
15	066896-000	LABEL, AC GENERATOR	1

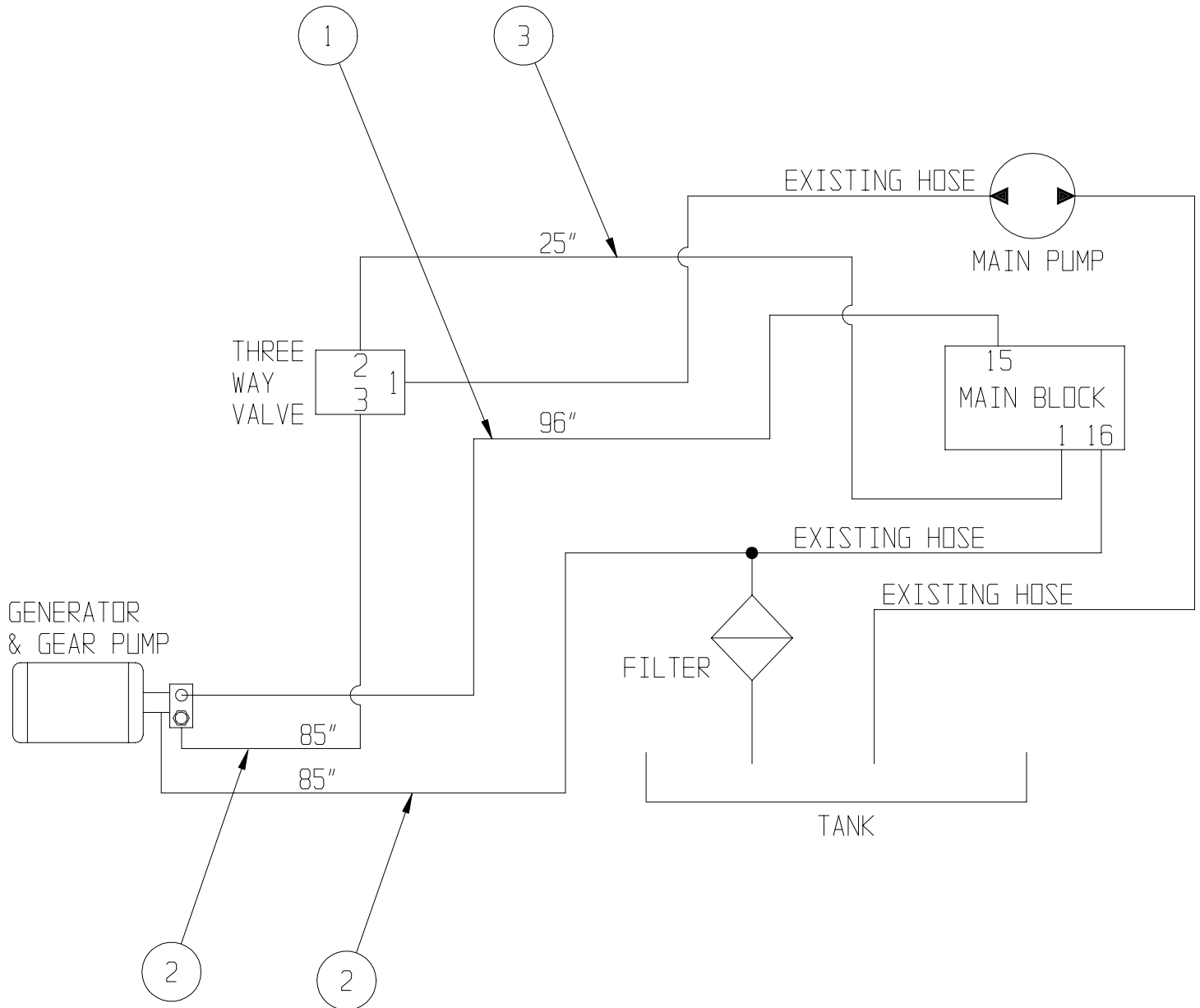
ITEM	PART NO.	PART / MATERIAL DESCRIPTION	QTY
16	069235-000	HOSE KIT, XRT GENERATOR	1
17	011941-016	FITTING, 10MB-12MJ	1
18	011934-008	FITTING, 8MB-8MJ 90°	1
19	011935-001	FITTING, 8MB-8MJ 45° 3-1/2"	1
20	011252-028	SCREW HHC 1/4-20UNC X 3-1/2"	2
21	011240-004	WASHER, FLT STD. 1/4"	4
22	011248-004	NUT, HEX 1/4-20 ESNA	2
23	029938-000	MALE PLUG, 3 PRONG	1
24	026614-000	RECEPTACLE, FEMALE	2
25	029872-000	SWITCH BOOT	1
26	029925-000	1/2" STRAIN RELIEF	1
27	029939-002	LOCKNUT 1/2" NPT	1



# Hose Kit, Generator Option

069235-000

QTY	PART NO	DESCRIPTION	UOM
1	069236-096	HOSE ASSY 1/4" DIA. 4FJX-4FJX X 96"	1
2	069237-085	HOSE ASSY 1/2" DIA. 8FJX-8FJX X 85"	2
3	069238-025	HOSE ASSY 5/8" DIA. 12FJX90°-12FJX X 25"	1



**NOTES:**

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# **UpRight**

Call Toll Free in U.S.A.  
1-800-926-LIFT

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**UpRight, Inc.**

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Madera, California 93637

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FAX: 559-673-6184

PARTS: 1-888-UR-PARTS

PARTS FAX: 1-800-669-9884

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P/N 066899-001

12-02

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