STANLEY®

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Stanleyrailwayproducts

HYDRAULIC POWER UNIT

SAFETY, OPERATION AND MAINTENANCE USER MANUAL

New Britain, CT 06053
U.S.A.
65114 5/2013 Ver. 9

NOTES

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IMPORTANT

To fill out a Product Warranty Recording form, and for information on your warranty, visit Stanleyhydraulic.com and select the Warranty tab.
(**NOTE:** The warranty recording form must be submitted to validate the warranty).

SERVICING: This manual contains safety, operation, and routine maintenance instructions. Stanley Hydraulic Tools recommends that servicing of hydraulic tools, other than routine maintenance, must be performed by an authorized and certified dealer. Please read the following warning.

⚠ WARNING

SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS TOOL.

REPAIRS AND / OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

For the nearest authorized and certified dealer, call Stanley Hydraulic Tools at the number listed on the back of this manual and ask for a Customer Service Representative.

SAFETY SYMBOLS

Safety symbols and signal words, as shown below, are used to emphasize all operator, maintenance and repair actions which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to equipment.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER — This safety alert and signal word indicate an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING — This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION — This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION — This signal word indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE — This signal word indicates a situation which, if not avoided, will result in damage to the equipment.

IMPORTANT — This signal word indicates a situation which, if not avoided, may result in damage to the equipment.

Always observe safety symbols. They are included for your safety and for the protection of the tool.

LOCAL SAFETY REGULATIONS

Enter any local safety regulations here. Keep these instructions in an area accessible to the operator and maintenance personnel.

SAFETY PRECAUTIONS

Tool operators and maintenance personnel must always comply with the safety precautions given in this manual and on the stickers and tags attached to the equipment.

These safety precautions are given for your safety. Review them carefully before operating the tool and before performing general maintenance or repairs.

Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided on page 4.

In addition to this manual, read and understand safety and operating instructions in the Engine Operation Manual furnished with the power unit.

This power unit will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual and any stickers and tags attached to the Power Unit. Failure to do so could result in personal injury or equipment damage.

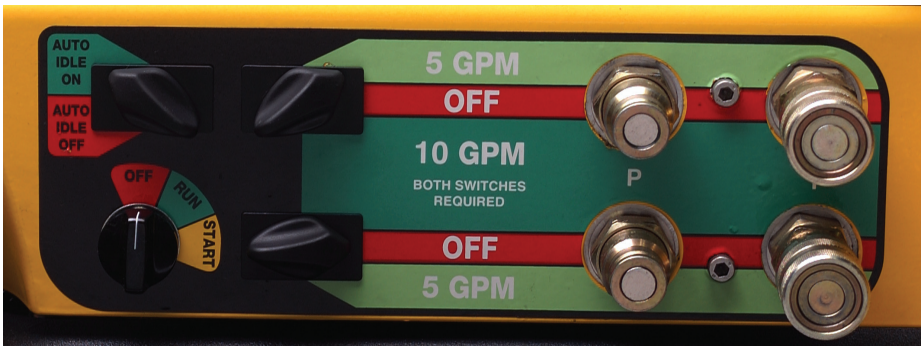
- Operator must start in a work area without bystanders. The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Establish a training program for all operators to ensure safe operation.
- Do not operate the power unit unless thoroughly trained or under the supervision of an instructor.
- Always wear safety equipment such as goggles, ear, head protection, and safety shoes at all times when operating the power unit and a hydraulic tool.
- Do not inspect or clean the power unit while it is running. Accidental engagement of the unit can cause serious injury.
- Always use hoses and fittings rated at 2500 psi/172 bar with a 4 to 1 safety factor. Be sure all hose connections are tight.
- Be sure all hoses are connected for correct flow direction to and from the tool being used.
- Do not inspect hoses and fittings for leaks by using bare hands. “Pin-hole” leaks can penetrate the skin.
- NEVER OPERATE THE POWER UNIT IN A CLOSED SPACE. Inhalation of engine exhaust can be fatal.
- Do not operate a damaged, improperly adjusted power unit.
- Never wear loose clothing that can get entangled in the working parts of the power unit.
- Keep all parts of your body away from the working parts of the power unit.
- Keep clear of hot engine exhaust.
- Do not add fuel to the power unit while the power unit is running or is still hot.
- Do not operate the power unit if gasoline odor is present.
- Do not use flammable solvents around the power unit engine.
- Do not operate the power unit within 3.3 ft/1 m of buildings, obstructions or flammable objects.
- Do not reverse tool rotation direction by changing fluid flow direction.
- Allow power unit engine to cool before storing in an enclosed space.
- Always keep critical tool markings, such as labels and warning stickers legible.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.

TOOL STICKERS

59126
Power Unit Dash Decal

59125
Dual Circuit Decal

59126 DASH RR DECAL



59125 DUAL CIRCUIT CECAL

HYDRAULIC HOSE REQUIREMENTS

The rated working pressure of the hydraulic hose must be equal to or higher than the relief valve setting on the hydraulic system. There are three types of hydraulic hose that meet this requirement and are authorized for use with Stanley Hydraulic Tools. They are:

Certified non-conductive — constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover. *Hose labeled **certified non-conductive** is the only hose authorized for use near electrical conductors.*

Wire-braided (conductive) — constructed of synthetic rubber inner tube, single or double wire braid reinforcement, and weather resistant synthetic rubber cover. *This hose is **conductive** and must never be used near electrical conductors.*

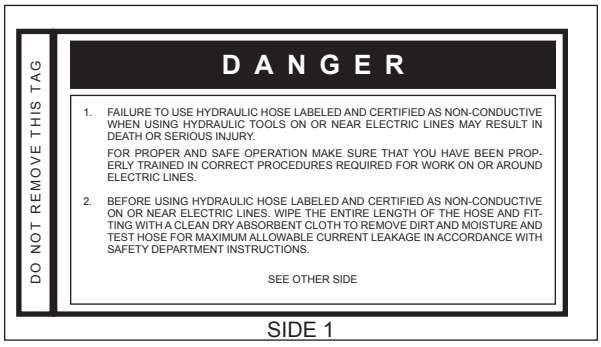
Fabric-braided (not certified or labeled non-conductive) — constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover. *This hose is **not certified non-conductive** and must never be used near electrical conductors.*

HOSE SAFETY TAGS

To help ensure your safety, the following DANGER tags are attached to all hose purchased from Stanley Hydraulic Tools. DO NOT REMOVE THESE TAGS.

If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained from your Stanley Distributor.

THE TAG SHOWN BELOW IS ATTACHED TO "CERTIFIED NON-CONDUCTIVE" HOSE

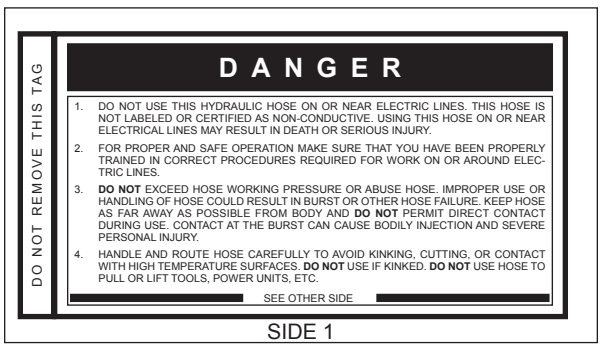


SIDE 1

SIDE 2

(Shown smaller than actual size)

THE TAG SHOWN BELOW IS ATTACHED TO "CONDUCTIVE" HOSE.



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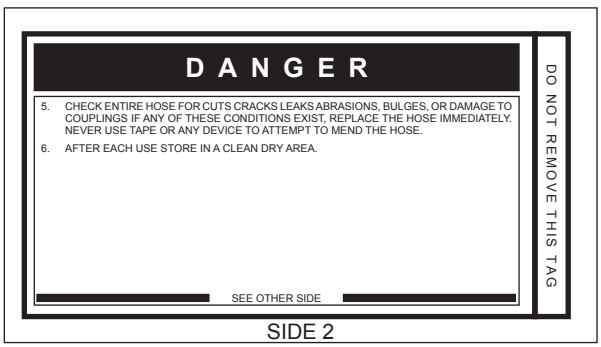

SIDE 2

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Tool to Hydraulic Circuit Hose Recommendations

The chart to the right shows recommended minimum hose diameters for various hose lengths based on gallons per minute (gpm)/ liters per minute (lpm). These recommendations are intended to keep return line pressure (back pressure) to a minimum acceptable level to ensure maximum tool performance.

This chart is intended to be used for hydraulic tool applications only based on Stanley Hydraulic Tools tool operating requirements and should not be used for any other applications.

All hydraulic hose must have at least a rated minimum working pressure equal to the maximum hydraulic system relief valve setting.

All hydraulic hose must meet or exceed specifications as set forth by SAE J517.

Oil Flow		Hose Lengths		Inside Diameter		USE	Min. Working Pressure	
GPM	LPM	FEET	METERS	INCH	MM	(Press/Return)	PSI	BAR
Certified Non-Conductive Hose - Fiber Braid - for Utility Bucket Trucks								
4-9	15-34	up to 10	up to 3	3/8	10	Both	2250	155
Conductive Hose - Wire Braid or Fiber Braid -DO NOT USE NEAR ELECTRICAL CONDUCTORS								
4-6	15-23	up to 25	up to 7.5	3/8	10	Both	2500	175
4-6	15-23	26-100	7.5-30	1/2	13	Both	2500	175
5-10.5	19-40	up to 50	up to 15	1/2	13	Both	2500	175
5-10.5	19-40	51-100	15-30	5/8	16	Both	2500	175
5-10.5	19-40	100-300	30-90	5/8	16	Pressure	2500	175
				3/4	19	Return	2500	175
10-13	38-49	up to 50	up to 15	5/8	16	Both	2500	175
10-13	38-49	51-100	15-30	5/8	16	Pressure	2500	175
				3/4	19	Return	2500	175
10-13	38-49	100-200	30-60	3/4	19	Pressure	2500	175
				1	25.4	Return	2500	175
13-16	49-60	up to 25	up to 8	5/8	16	Pressure	2500	175
				3/4	19	Return	2500	175
13-16	49-60	26-100	8-30	3/4	19	Pressure	2500	175
				1	25.4	Return	2500	175

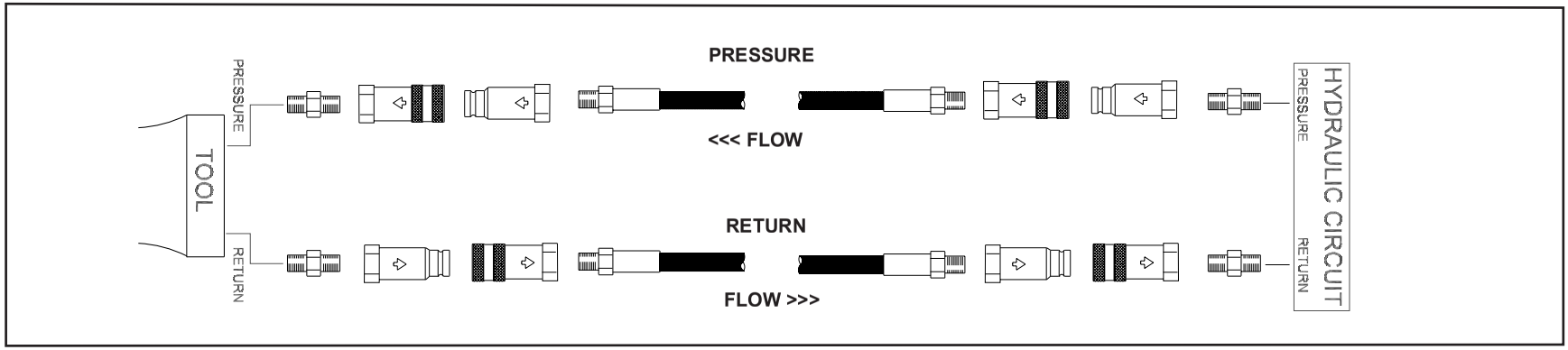


Figure 1. Typical Hose Connections

HTMA / EHTMA REQUIREMENTS

HTMA HYDRAULIC SYSTEM REQUIREMENTS	TOOL TYPE TYPE I	TYPE II	TYPE RR	TYPE III
Flow Range	4-6 gpm (15-23 lpm)	7-9 gpm (26-34 lpm)	9-10.5 gpm (34-40 lpm)	11-13 gpm (42-49 lpm)
Nominal Operating Pressure (at the power supply outlet)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)
System relief valve setting (at the power supply outlet)	2100-2250 psi (145-155 bar)	2100-2250 psi (145-155 bar)	2200-2300 psi (152-159 bar)	2100-2250 psi (145-155 bar)
Maximum back pressure (at tool end of the return hose)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)
Measured at a max. fluid viscosity of: (at min. operating temperature)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)
Temperature: Sufficient heat rejection capacity to limit max. fluid temperature to: (at max. expected ambient temperature)	140° F (60° C)	140° F (60° C)	140° F (60° C)	140° F (60° C)
Min. cooling capacity at a temperature difference of between ambient and fluid temps	3 hp (2.24 kW) 40° F (22° C)	5 hp (3.73 kW) 40° F (22° C)	6 hp (5.22 kW) 40° F (22° C)	7 hp (4.47 kW) 40° F (22° C)
NOTE: Do not operate the tool at oil temperatures above 140° F (60° C). Operation at higher temperatures can cause operator discomfort at the tool.				
Filter Min. full-flow filtration Sized for flow of at least: (For cold temp. startup and max. dirt-holding capacity)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)
Hydraulic fluid Petroleum based (premium grade, anti-wear, non-conductive) Viscosity (at min. and max. operating temps)	100-400 ssu*	100-400 ssu* (20-82 centistokes)	100-400 ssu*	100-400 ssu*
NOTE: When choosing hydraulic fluid, the expected oil temperature extremes that will be experienced in service determine the most suitable temperature viscosity characteristics. Hydraulic fluids with a viscosity index over 140 will meet the requirements over a wide range of operating temperatures.				
*SSU = Saybolt Seconds Universal				

EHTMA HYDRAULIC SYSTEM REQUIREMENTS	CLASSIFICATION B (15Lpm at 138bar EHTMA CATEGORY)	C (20Lpm at 138bar EHTMA CATEGORY)	D (30Lpm at 138bar EHTMA CATEGORY)	E (40Lpm at 138bar EHTMA CATEGORY)	F (60Lpm at 138bar EHTMA CATEGORY)
Flow Range	3.5-4.3 gpm (13.5-16.5 lpm)	4.7-5.8 gpm (18-22 lpm)	7.1-8.7 gpm (27-33 lpm)	9.5-11.6 gpm (36-44 lpm)	11.8-14.5 gpm (45-55 lpm)
Nominal Operating Pressure (at the power supply outlet)	1870 psi (129 bar)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)
System relief valve setting (at the power supply outlet)	2495 psi (172 bar)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)

NOTE: These are general hydraulic system requirements. See tool specification page for tool specific requirements

PREPARATION FOR USE

Do not operate the power unit until you have read the *engine* operating and maintenance instructions manual furnished with the unit.

1. ENGINE CRANKCASE OIL LEVEL

Always check the oil level before starting the engine. Make sure the oil level is at the FULL MARK on the dipstick. Do not overfill. Use detergent oil classified "For Service SE, SF, SG" as specified in the engine operating and maintenance manual. See engine manual for oil viscosity grade.

2. SPARK PLUG

On power units equipped with Briggs & Stratton Engines, ONLY Champion RC12YC or equivalent can be used

For power units equipped with Honda Engines, ONLY Denso J16CR-U or equivalent can be used.
Incorrect type spark plugs can produce radio frequency interference that will corrupt and damage the controller. Failure to use the correct spark plug could result in a warranty that will not be considered.

3. ENGINE FUEL LEVEL

Check the fuel level. If low, fill with un-leaded gasoline with a minimum of 85 octane.

4. HYDRAULIC FLUID

Check the dip stick in the hydraulic fluid reservoir for the proper fiuid level. Use fluids meeting the following specifications.

VISCOSITY (FLUID THICKNESS)

U.S.	METRIC
50°F 450 SSU Maximum	10°C 95 C.S.
100°F 130-200 SSU	38°C 27-42 C.S.
140°F 85 SSU Minimum	60°C 16.5 C.S. Min

Pour Point -10°F/-23°C Minimum (for cold startup)

Viscosity Index (ASTM D-2220) 140 Minimum

Demulsibility (ASTM D-1401) 30 Minutes Maximum

Flash Point (ASTM D-92) 340°F/171°C Minimum

Rust Inhibition (ASTM D-665 A & B) Pass

Oxidation (ASTM D-943) 1000 Hours Minimum

Pump Wear Test (ASTM D-2882) 60 mg Maximum

The following fluids work well over a wide temperature range, allow moisture to settle out and resist biological growth that may occur in cool operating hydraulic circuits. These fluids are recommended by Stanley. Other fluids that meet or exceed the specifications of these fluids may also be used.

Chevron AW-MV-32

Exxon "Univis" J-26

Mobil D.T.E. 13

Gulf "Harmony" AW-HVI-150-32

Shell "Tellus" T-32

Texaco "Rando" HD-AZ

Union "Unax" AW-WR-32

Terresolve EnviroLogic 132

5. HYDRAULIC CONNECTIONS

The recommended hose length is 25 ft/8 m with a 1/2 inch/12.7 mm inside diameter. The hoses must have a working pressure rating of at least 2500 psi/175 bar. Each hose end must have male thread ends compatible with H.T.M.A. (HYDRAULIC TOOL MANUFACTURERS ASSOCIATION) quick disconnect fittings (NPT type threads). (See Figure 2.)

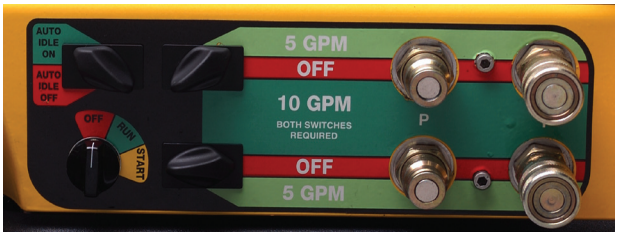


Figure 1. Control Panel

Facing the control panel, the 2 left male quick disconnect fittings are the PRESSURE FLUID OUT fittings. The 2 right female quick disconnect fittings are the RETURN FLUID IN fittings.

QUICK DISCONNECT COUPLERS

H.T.M.A. approved quick disconnect couplings are installed to hydraulic hoses so that the direction of oil flow is always

from the male to the female quick disconnect as shown in figure 2. Quick disconnect couplings and hose fittings are selected so that additional fittings such as reducer or adapter fittings are not required.

If adapter fittings are used, they must be approved steel hydraulic fittings meeting a minimum operating pressure rating of 2500 psi/172 bar. Do not use galvanized pipe fittings or black pipe fittings.

Use thread tape or pipe joint compound when installing quick disconnect couplings to hose or tool fittings. Follow the instructions furnished with the selected thread sealant. DO NOT OVERTIGHTEN THE FITTINGS.

6. BATTERY

The supplied 12 Volt DC battery is a non-spillable, maintenance-free battery and is fully charged.

Make sure the battery cables are tight and charging circuit functions are operating properly.

NOTICE

Do not charge the battery with a standard automotive battery charger. This type of charger produces a charging amperage higher than 2 amps. Charging the battery at higher than 2 amps will damage the battery.

NOTICE

If the engine runs out of gas or dies during operation and the ignition switch is left in the ON or RUN position, this could drain the battery. Make sure the ignition switch is returned to the OFF position.

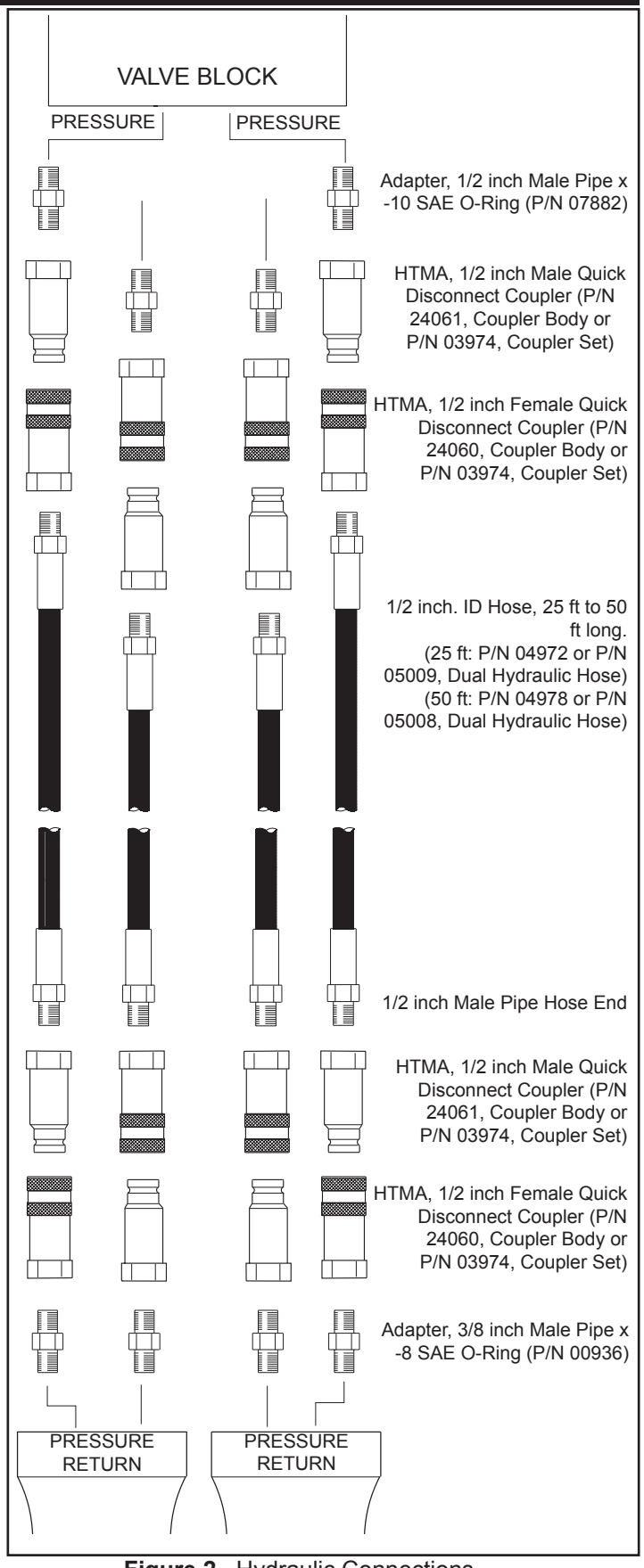


Figure 2. Hydraulic Connections

OPERATION

CONTROLS

This unit is equipped with an advanced proportional engine control system. It provides a means of controlling engine speed by adjusting the fuel control lever with an actuator. The Power Unit provides two 5 gpm/19 lpm up to 2000 psi/140 bar circuits or one 10 gpm/37.8 lpm up to 2000 psi/140 bar circuit.

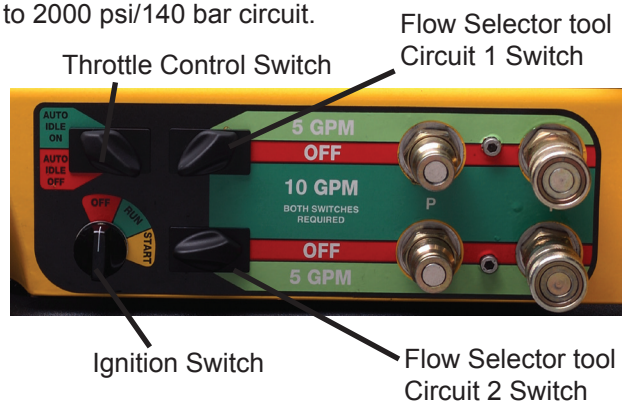


Figure 3. Panel Control Valve

Two 5 gpm hydraulic tools can be connected to the tool circuit or one 10 gpm tool. The circuit is activated by turning one or both flow selector switches to 5 or both switches to 10 gpm. If both are at 10 gpm, 10 gpm can be had by connecting to either coupler set.

THROTTLE CONTROL

The throttle control permits the operator to select one of 2 operating modes after the engine has warmed up. When starting the engine, make sure the flow selector switch is in the OFF position. The throttle control switch can be set in either the AUTO-IDLE-ON or AUTO-IDLE-OFF positions.

AUTO-ON

When the throttle control switch is in the "AUTO-ON" position, the oil flow is regulated automatically when the trigger on the tool activated. When the tool is not being used the engine will return to idle automatically, after a 10 second delay.

This setting will produce one or two 5 gpm/19 lpm circuits or one 10 gpm/37.8 lpm circuit depending on which postion the operator has selected with the flow selector switch.

AUTO-OFF

When the throttle control switch is in the "AUTO-OFF" position, the engine speed is held to maintain 5 gpm/19 lpm or 10 gpm/37.8 lpm depending on which position the operator has selected with the flow selector switch. When a tool is not being used the engine will not return to idle until either the flow selector switch is turned to the off position or the throttle control switch is turned to auto-on.

Note: It may be necessary to reset the Controller.

At times it may be neccessary to reset the controller. This could happen if a fault occurs in the controller. For example, excessive engine speed. If a fault does occur the power unit will return to an idle and the operator will have no control of the unit. To reset the controller, simply turn off the power unit and restart it.

USING THE 12 VOLT DC OUTLET

A 12 VDC outlet is on specific models. The DC outlet is ON at all times.

IMPORTANT

The accessories (if left on) that are plugged into this outlet could drain the battery.

STARTUP

Before starting the engine make sure the flow selector switches are in the OFF position.

Note: The power unit will not start if the flow selector switches are not in the "OFF" position.

Pull choke knob out and move the Throttle Control Switch to the auto-idle-off or the auto-idle-on position, whichever mode of operation the operator prefers. Ensure the flow selector switch is in the OFF position.

Turn the Ignition Switch to the START position. After the engine starts, release the switch.

Gradually push in the choke knob as the engine begins to idle smoothly.

Allow the engine to warm up.

Connect hoses and the tool as desrcribed on pages 7 and 8.

FOR 5 GPM OPERATION

For 5 gpm operation, select mode of operation with the Throttle Control switch, either auto-idle-on or the auto-idle-off position. Move the flow selector switch to the 5 gpm position.

Note:

If operating both 5 gpm circuits move both flow selector switches to the 5 gpm position. Both 5 gpm circuits are independent from each other and can be operated on its own.

When finished operating the tool, move one or both flow selector switches to the OFF position.

FOR 10 GPM OPERATION

For 10 gpm operation, select mode of operation with the Throttle Control Switch, either auto-idle-on or the auto-idle-off position. Move both flow selector switches to the 10 gpm position.

When finished operating the tool, move both flow selector switches to the OFF position.

Note:

Either set of couplers can be used for the 10 gpm circuit, but DO NOT use two separate tools when in the 10 gpm operation mode.

COLD WEATHER STARTUP

1. Use the procedures described under "STARTUP" and then follow the procedure below.

2. Hydraulic fluids are thicker in cold weather. Therefore, it is recommended that the engine be run at low idle long enough to bring the fluid temperature up to a minimum of 50°F/10°C.

3. If the tools and tool hoses are cold, it is recommended to allow hydraulic fluid to circulate through the tool hoses until warm before using the tool.

SHUTDOWN

1. Ensure the flow selector switches are in the OFF position (center position).

2. Unless already at idle the power unit should return to idle. This may take a few seconds for the unit to react due to a built-in program delay.

3. Allow the engine to idle for approximately one minute and move the Ignition Switch to the OFF position.

ROUTINE MAINTENANCE

ENGINE MAINTENANCE

Follow the maintenance schedule and general maintenance instructions in the engine maintenance and operation manual furnished with the power unit.

SPARK PLUG

On power units equipped with Briggs & Stratton Engines, ONLY Champion RC12YC or equivalent can be used.

For power units equipped with Honda Engines, ONLY Denso J16CR-U or equivalent can be used.

Incorrect type spark plugs can produce radio frequency interference that will corrupt and damage the controller. Failure to use the correct spark plug could result in a warranty that will not be considered.

HYDRAULIC SYSTEM MAINTENANCE

• Check hydraulic fluid level daily. Add fluid per specifications in this manual. (See "HYDRAULIC FLUID" under the section titled "OPERATING INSTRUCTIONS".

• Remove condensed moisture from the hydraulic

fluid by pumping the hydraulic fluid into a 5 gal/20 l container through the pressure hose. Make sure the engine is at idle when performing this procedure. When the hydraulic reservoir is empty turn the engine off immediately.

• Allow the fluid to sit long enough for the water to settle to the bottom of the container. Slowly pour the fluid back into the hydraulic tank, avoiding the water at the bottom of the container.

• Each day, check hydraulic lines and fittings for leaks, kinks, etc. Do not use your hand to perform this check.

• Change the hydraulic filter element every 200 hours of operation. Change more often if cold, moist or dusty conditions exist.

• Check oil cooler for debris. Remove debris with air pressure.

STORAGE

• Clean the unit thoroughly before storage. Do not use water pressure.

• Always store the unit in a clean and dry facility.

• If the unit will be stored for a prolonged period (over 30 days), add a fuel additive to the fuel tank to prevent the fuel from gumming. Run engine for a short period to circulate the additive.

• Replace crankcase oil with new oil.

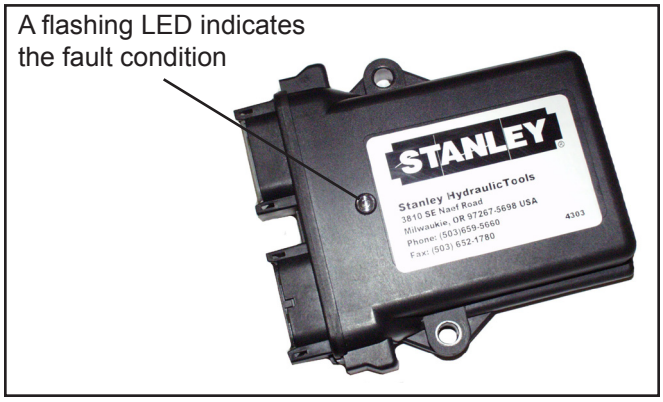
• Remove spark plugs and pour approximately 1 ounce (30 ml) of engine oil into each cylinder. Replace spark plugs and crank the engine slowly to distribute the oil.

• Check hydraulic reservoir for water. If water is found, change the oil and circulate it through the tool hose and tool. (See "HYDRAULIC SYSTEM MAINTENANCE" earlier in this section).

• Disconnect tool hoses.

The Stanley programmable controller is an electronic engine governor that provides a means of controlling and limiting engine speed by adjusting the fuel control lever with a proportional actuator.

The controller is factory preset and has no manual adjustments.



TROUBLESHOOTING GUIDELINES

Please follow the checklist below to troubleshoot your Stanley controller.

1. Check battery voltage for stability and correct value. The LED will turn on for one second when the controller 4500 is first powered up.

2. Check the actuator linkage for binding and backlash.

CHECKING PERFORMANCE CONTROL™ (ELECTRONIC GOVERNOR-STATIC CHECK)

To determine whether a governor problem is being caused by the actuator or the control module, perform the following static check exactly in order shown.

A pair of jumper wires and a known good 12-volt battery is required.

1. Disconnect red and green wires from the control module to actuator.

2. Attach jumper wires from battery to RED and GREEN wires to actuator.

a. Attach 12 volt + (positive) to RED wire.

b. Attach 12 volt – (negative) to GREEN wire.

3. Actuator should move throttle lever to wide open position.

a. If actuator does not move it is defective. (Replace).

b. If actuator moves throttle to wide-open position, the module is defective or there is a wiring problem. (Replace).

FAULT CODES

The Stanley controller is capable of identifying certain fault conditions and alerting the user to them. A flashing LED indicates the fault conditions. The current fault code list is shown on the following page. Please note the following:

1. When power is first applied to the controller, the LED will flash just once for one second to indicate that the LED is working.

2. If there are multiple faults, the LED will flash them all in sequence. Count the flash codes to determine the fault conditions or connect the Calibration Tool to observe the fault conditions. (Use the “Display Faults” option under the Monitor Menu.)

3. If there are no faults, the LED will flash once at reset and from then on indicate the detection of engine speed. A continuous ON LED indicates that a valid engine speed is being sensed.

4. The controller will attempt to shut down for some faults and will not permit starting after reset with faults 1, 5 and 8.

FAULT CODES

FLASH CODE	FAULT	ENGINE SHUTDOWN	CORRECTIVE ACTION
1	APECS unit not calibrated	yes	Calibrate APECS unit.
2	Engine speed excessive	yes	Check parameter settings. Over speed criteria may be too sensitive. Check for electrical noise entering controller. Check wiring and connections. Check case ground. Make sure linkage moves freely, without backlash. Check tip of speed sensor.
3	Engine speed unusually low	yes	Check parameter settings. Check linkage and the actuator travel. Ensure that load is not greater than engine capacity.
4	Engine shutdown due to engine protection input	yes	Check parameter settings. Check what may have triggered the protection input.
5	Factory settings lost	yes	If calibration file is available, download the file and cycle power again. If controller still does not work or if no calibration file is available, consult factory.
6	External pot out-of-range	no	Verify that pot is wired correctly. Recalibrate external pot.
7	Accelerator position / idle switch conflict	no	Verify that signals are working and synchronized.
8	Controller unit failed	yes	Electrical noise may be entering the controller. Check wiring, shielding and connections to controller. Cycle power to engine. If controller still does not work, consult factory.
9	Limiting excessive actuator current	no	Check actuator for short to ground or low resistance. Check parameter settings. Check linkage and actuator travel. Ensure that load is not greater than engine capacity.
10	Engine speed input signal missing	no	(Active only in Auto crank mode). Check speed sensor wiring. Check starter motor.
11	Auto crank unable to start engine	no	Check fuel.
12	Auxiliary output is shorted	no	Check the lamp or relay hooked to the output. If fault is still present, consult factory.
13	Auxiliary output #2 is shorted	no	Check the lamp or relay hooked to the output. If fault is still present, consult factory.
14	Actuator disconnected or open circuit	no	Check actuator wiring and actuator resistance. Resistance should be less than 10 ohms.

GENERAL

Tests and adjustments should be performed periodically to ensure the power unit is operating at maximum efficiency. Stanley Circuit Tester (part number 04182) is recommended. This tester can be used to isolate problems in both the engine and hydraulic system prior to any power unit disassembly.

TESTING THE HYDRAULIC CIRCUIT

The following tests can be performed to ensure that the hydraulic pump is supplying the correct flow and pressure and that the system relief valve is operating properly.

During these tests, make sure the engine is warm and operating smoothly. If test results are not as specified, refer to the troubleshooting table in this section for possible causes.

TESTING THE 5 GPM OR 10 GPM CIRCUIT

To test the circuit, proceed as follows:

1. Set the flow selector switches to the OFF (center) position.

2. Set the throttle control switch to AUTO-OFF position.

3. Connect the Stanley Circuit Tester across two hose ends (where the tool would normally be connected).

4. Fully open the tester restrictor valve (counterclockwise).

5. Start the engine and allow it to run until warm.

6. Switch the flow selector switch to 5 or 10 gpm depending on which flow you are testing.

7. With the engine at the programed speed, the test flow gauge should read 4-6 gpm/15-23 lpm or 9-11 gpm/34-41.6 lpm.

8. Slowly turn the restrictor valve clockwise while watching the pressure gauge. The flow rate should stay at 4-6 gpm/15-23 lpm or 9-11 gpm/34-41.6 lpm as the pressure gauge reaches 2100-2200 psi/148-155 bar.

9. At 2100-2200 psi/148-155 bar, the relief valve should begin to open. The pressure at which the relief valve just begins to open is commonly referred to as the "cracking pressure". At the "cracking pressure," the flow rate should start to drop because the relief valve is allowing fluid to bypass to the hydraulic reservoir. The "cracking pressure" is preset at the factory and if it is not within the above range, the relief valve must be re-set as follows:

a. The relief valve is located on the right side of the unit just behind the dash panel. It putrudes out from the manifold assembly. Use a open end or box end wrench to loosen the nut on the relief valve.

b. Use an Allen wrench to adjust the relief valve. Turn clockwise to raise the pressure and counterclockwise to reduce the pressure.

c. Tighten the nut and retest.

TROUBLESHOOTING

PROBLEM	CAUSE	REMEDY
Engine will not start.	Flow selector switch not in the OFF position.	Make sure both flow selector switches are in the OFF position when starting.
	Battery not connected.	Attach battery cables, check wires.
	Weak battery.	Test battery, charge or replace.
	No fuel.	Add Fuel.
	Fuel filter plugged.	Replace fuel filter.
	Defective spark plugs.	Remove plugs, check gap, clean or replace.
Fluid blowing out of fluid reservoir vent.	Hydraulic tank overfilled.	Correct the fluid level.
	Pump suction leak.	Check suction connections. Tighten if necessary.
Hydraulic tool won't operate.	Flow selector switch not switched ON.	Check that the flow selector switch is set to 5 or 10 gpm.
	Incorrect hose connection to tool.	Make sure the tool hose circuit goes from left (pressure) fitting to tool and back to the right fitting (return). Fluid always flows from the male to female fittings.
	Quick disconnect fittings defective.	Detach from hose, connect set together and check for free flow.
	Hydraulic fluid level low.	Check for correct fluid level. Fill using the recommended fluid.
	Pump coupling defective.	With the engine not running. Check the coupling between the pump and engine that it is engaged and is not damaged. Caution: Keep hands clear of rotating objects.
	Relief valve stuck open.	Adjust or replace valve.
	Suction hose kinked.	Make sure suction hose from fluid reservoir to pump inlet has a smooth curve.
	Solenoid not working.	Check solenoid operation and electrical connections.
	Tool is defective.	Refer to tool manual.

Engine: ..... 18 hp Briggs / 20 hp Honda

Capacity (Flow)..... Two 5 gpm/19 lpm Circuits or One 10 gpm/37.8 lpm Circuit

Length:..... 36 in. / 91.4 cm

Width: ..... 23 in: / 58.4 cm

Height: ..... 29.5 in. / 74.9cm

Weight (Wet): Dual Circuit Briggs ..... 334 lbs / 151.5 kg

Weight (Wet): Dual Circuit Honda ..... 352 lbs / 159.6 kg

Fuel Tank Capacity: ..... 5.5 gal. / 20.8 ltr

Estimated Gas Consumption Per Hour ..... 1.3 gal / 4 ltr

Hydraulic Reservor Capacity: ..... 3 gal. / 11 ltr

Nominal Operating Pressure ..... 1500 psi / 103 bar

Relief Valve "crack" setting ..... 2100 psi / 145 bar

Full relief setting ..... 2500 psi / 172 bar

EHTMA Category..... "C" (19 lpm @ 103 bar) or "E" (37.8 lpm @ 103 bar)

HTMA Category....."Type 1" (4-6 gpm /15-23 lpm @ 103 bar) or "Type RR" (9-10.5 gpm / 34-40 lpm @ 103 bar)

EMISSIONS

POWER UNITS,TRACHORSE & GAS/FUEL DRIVEN EQUIPMENT:

A1. Federal Emission Component Compliance 40CFR part 1060.120 Stanley warrants all fuel system emission components for 2 years from the date of original purchase provided there has been no abuse, neglect, modifi cations, or improper maintenance.

Components covered. The emission-related warranty covers all components whose failure would increase the evaporative emissions. Your emissionrelated warranty does not cover components whose failure would not increase evaporative emissions. Coverage under this warranty extends only to the following parts; fuel tank, fuel cap, fuel hose and vapor hose from the fuel tank to the engine and any connectors that are apart of the fuel system.

The equipment is designed, built, and equipped so it conforms at the time of sale to the ultimate purchaser and each subsequent purchaser and is in compliance with 40 C.F.R. 1060.120 standards. The equipment is free from defects in materials and workmanship that may keep it from meeting these requirements.

ACCESSORIES

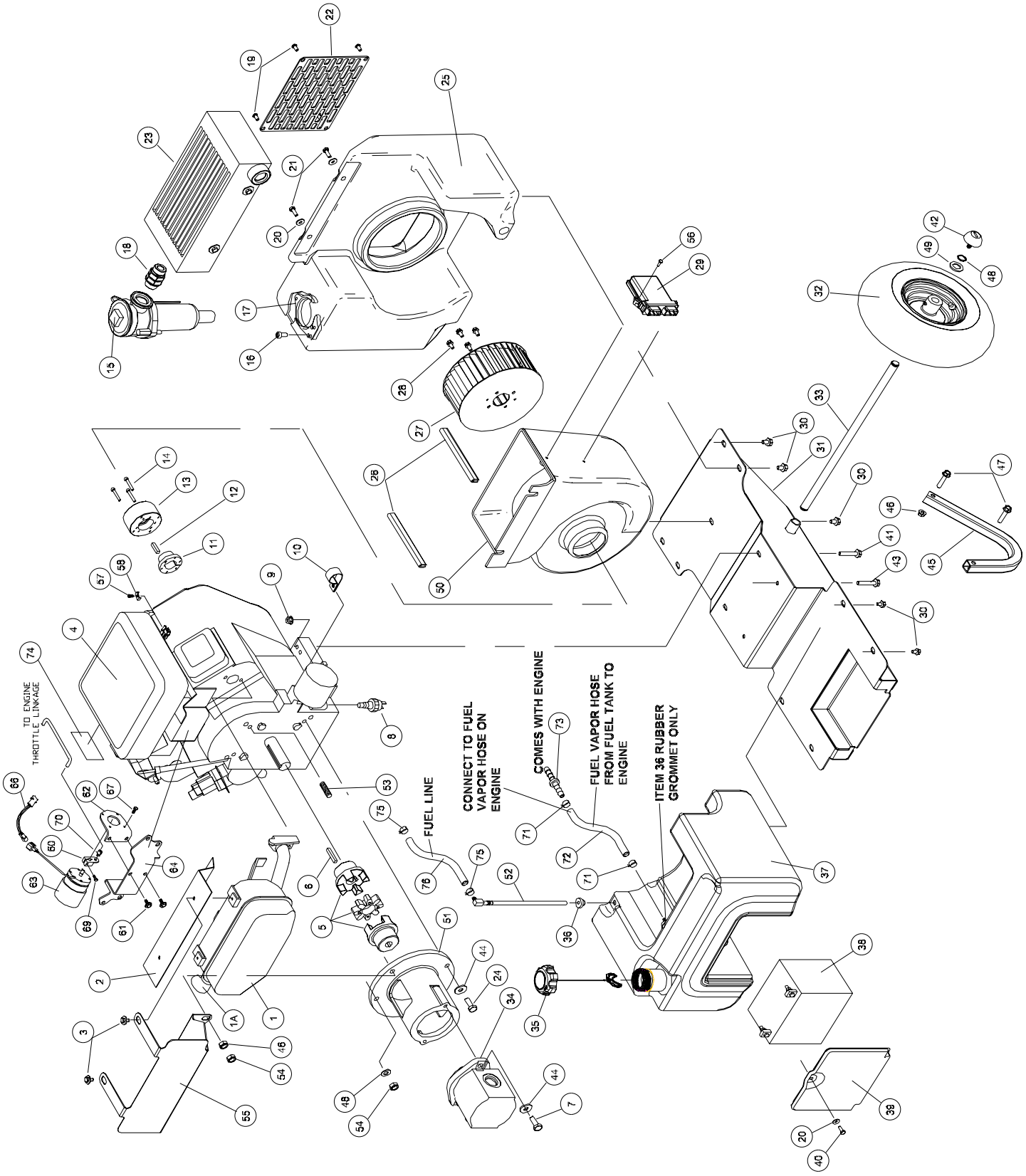
Coupler Male, 3/8 -8 SAE, Parker.....58857
Coupler Female, 3/8 -8 SAE, Parker.....58856
Coupler Male, 3/8 -8 SAE, Aeroquip.....66785
Coupler Female, 3/8 -8 SAE, Aeroquip.....66784

Hose Assy, 50 ft., with couplers (2 wire braid RR) 58448
Hose Assy, 50 ft., with couplers 31848
Hose Assy, 25 ft., with couplers 31972
Hose Assy, 25 ft., with couplers (2 wire braid RR) 58451

FILTERS

MODEL	ENGINE				HYDRAULIC OIL FILTER
	OIL FILTER	AIR FILTER	FUEL FILTER	FOAM AIR FILTER	
GTR20 BRIGGS	18384	18382	19947	18383	40408
GTR20 HONDA	40458	40459	40460	40462	40408

GTR20 BRIGGS ILLUSTRATION



GTR20 BRIGGS PARTS LIST

ITEM	P/N	QTY	DESCRIPTION
1	36150	1	Muffler
2	36151	1	Heat Shield
3	36152	2	Screw, Hex Washer
4	59007	1	Briggs Engine (Includes Items 60 thru 70)
5	56656	1	Coupling
6	07819	1	Square Key
7	07860	2	Capscrew
8	31765	1	Pressure Switch
9	12787	4	Flange Nut
10	24287	1	Clamp
11	59076	1	Bushing
12	20990	1	Key
13	65108	1	Blower Hub
14	00111	3	Capscrew
15	40080	1	Filter Assy
16	43687	1	Capscrew
17	64937	1	Grip Plate
18	51292	1	Std Thread Union
19	17821	4	Button Head HS
20	60945	2	Washer
21	15476	2	Capscrew
22	59080	1	Front Grille
23	59091	1	Cooler
24	07860	2	Capscrew, 3/8
25	59077	1	Hydraulic Tank
26	62296	2	Weather Strip
27	65107	1	Blower Wheel-Brazed
28	59074	4	Hex Flange Bolt
29	72312	1	Engine Controller
30	40433	9	Hex Flange Bolt
31	58897	1	Frame Base Weldment
32	58918	2	Wheel & Tire
33	58917	1	Axle
34	27695	1	Pump, Dual
35	71794	1	Fuel Cap
36	60920	1	Grommet
37	73050	1	Fuel Tank
38	04303	1	Battery
39	60921	1	Battery Cover

ITEM	P/N	QTY	DESCRIPTION
40	15476	1	Capscrew
41	65068	1	Hex Flange Bolt
42	21714	2	Handle Bumper
43	58942	3	Hex Flange Bolt
44	01459	4	Lockwasher
45	58975	2	Foot
46	18893	4	Flang Nut
47	58976	4	Hex Flange Bolt
48	31240	2	Retaining Ring
49	21318	2	Washer, 3/4
50	59083	1	Blower Housing
51	56655	1	Pump Mount
52	60919	1	Fuel Elbow
53	62385	2	Stud
54	371503	1	Nut
55	62324	1	Heat Shield
56	62292	2	Hex Washer Head Screws
57	64991	1	Screw
58	56709	1	Cable Clamp
59	65042	1	Rectifier Wire
60	69374	1	Throttle Lever
61	59074	2	Hex Flange Bolt
62	68675	1	Angle Bracket Weldment
63	68560	1	Rottary Actuator
64	68676	1	Actuator Bracket
66	69401	1	Wire Assembly
67	69281	4	Hex Skt Head Capscrew 6-32
69	69282	1	Hex Skt Head Capscrew 8-32
70	62181	1	Link Retainer
71	72451	3	Spring Hose Clamp
72	72571	1	Fuel Vapor Hose
73	-----	1	Supplied By Eng Manufacturer
75	72317	2	Spring Hose Clamp
76	62289	1	Hose (Fuel)

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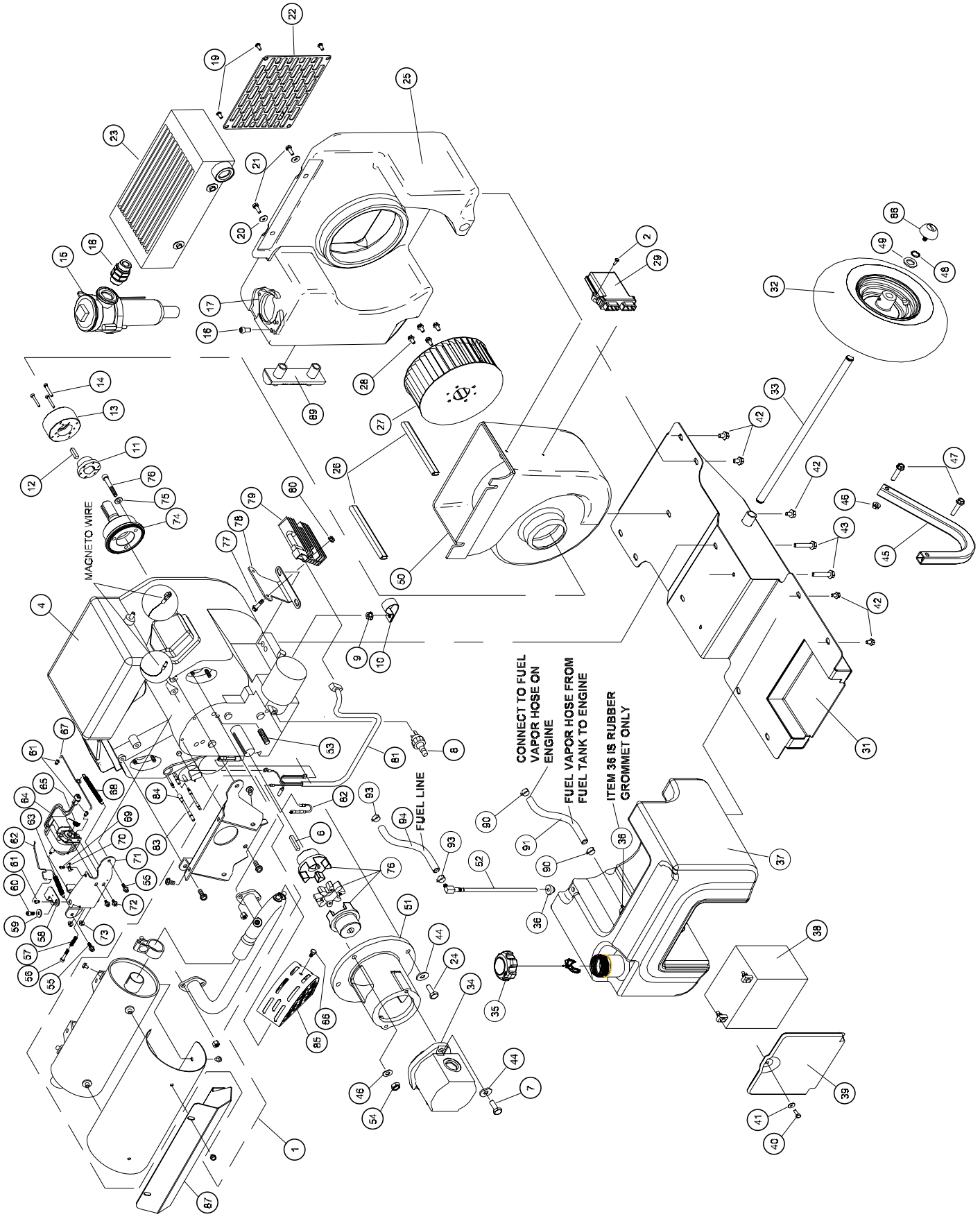
GTR20 HONDA ENGINE ASSEMBLY



GTR20 HONDA PARTS LIST

ITEM	P/N	QTY	DESCRIPTION
1	38577	1	Muffler Kit
2	62292	2	Hex Washer Head Screw
3	---	-	No Item
4	36918	1	Honda Engine
5	56656	1	Coupling
6	07819	1	Square Key
7	07860	2	Capscrew, 3/8-16 x 1-1/4
8	31765	1	Pressure Switch
9	12787	4	Flange Nut, 5/16
10	24287	1	Clamp
11	59076	1	Bushing
12	20990	1	Key
13	65108	1	Blower Hub
14	00111	3	Capscrew, 10-24
15	40080	1	Filter Assy
16	43687	1	Capscrew, M8 x 16
17	64937	1	Grip Plate
18	51292	1	Std Thread Union
19	17821	4	Button Head HS, 1/4 x 20
20	60945	2	Washer, 1/4 in. ID
21	15476	2	Capscrew, 1/2 -20 UNC
22	59080	1	Front Grille
23	59091	1	Cooler
24	07860	2	Capscrew, 3/8-16
25	59077	1	Hydraulic Tank
	66791	1	Hydraulic Tank (For Sight Gage)
26	62296	2	Weather Strip
27	65107	1	Blower Wheel-Brazed
28	59074	4	Hex Flange Bolt, 1/4 -20
29	65482	1	Engine Controller
30	65058	1	Hex Flange Bolt
31	58897	1	Frame Base Weldment
32	58918	2	Wheel & Tire
33	58917	1	Axle
34	27695	1	Pump, Dual
35	71794	1	Fuel Cap
36	60920	1	Grommet
37	73050	1	Fuel Tank
38	04303	1	Battery
39	60921	1	Battery Cover
40	15476	1	Capscrew, 1/4-20
41	60945	1	Washer, 1/4
42	40433	9	Hex Flange Bolt, 5/16
43	58942	4	Hex Flange Bolt, 5/16
44	01459	4	Lockwasher, 3/8
45	58975	2	Foot
46	18893	4	Flang Nut, 3/8-16

ITEM	P/N	QTY	DESCRIPTION
47	58976	4	Hex Flange Bolt, 3/8-16
48	31240	2	Retaining Ring
49	21318	2	Washer, 3/4
50	59083	1	Blower Housing
51	56655	1	Pump Mount
52	60919	1	Fuel Elbow
53	62385	2	Stud
54	371503	1	Nut
55	60972	2	Hex Flange Bolt, M6 x 15
56	49174	1	Screw, M8 x 30
57	62185	1	Spring
58	62179	1	Choke Pivot Weldment
59	60945	1	Washer, 1/4 inch ID
60	60962	1	HSHCS 1/4-20 x 1/2 inch
61	62181	2	Link Retainer
62	62184	1	Choke Link
63	62183	1	Spring
64	62180	1	Rotary Actuator
65	64990	1	Spring, Torsion
66	65072	1	Link Retainer
67	62182	1	Throttle Link
68	-----	--	No Item
69	64991	1	Screw, M8 x 12
70	56709	1	Cable Clamp
71	62177	1	Actuator Weldment
72	60970	2	Hex Flange Bolt, M5 x 10
73	60971	2	Flange Nut, 8-32
74	60948	1	Stub Shaft
75	60949	3	Washer
76	60950	3	HSHCS, M8 x 55
77	60953	2	Hex Flange Bolt, 1/4-20 x 1 inch
78	60957	1	Rectifier Bracket
79	---	1	Rectifier (Part of Engine Assy)
80	59095	2	Flange Nut, 1/4-20
81	37294	1	Wire Harness
82	---	-	No Item
83	62404	1	Mag Kill Wire
84	62405	1	Fuel Shutoff Wire
85	37222	1	Exhaust Shield
86	00899	3	HHCS 1/4-20 UNC x .500
87	62325	1	Heat Shield
88	21714	2	Handle Bumper
89	66788	1	Sight Gage
90	72848	2	Spring Hose Clamp
91	72846	1	Fuel Vapor Hose
93	72317	2	Spring Hose Clamp
94	72242	1	Fuel Hose

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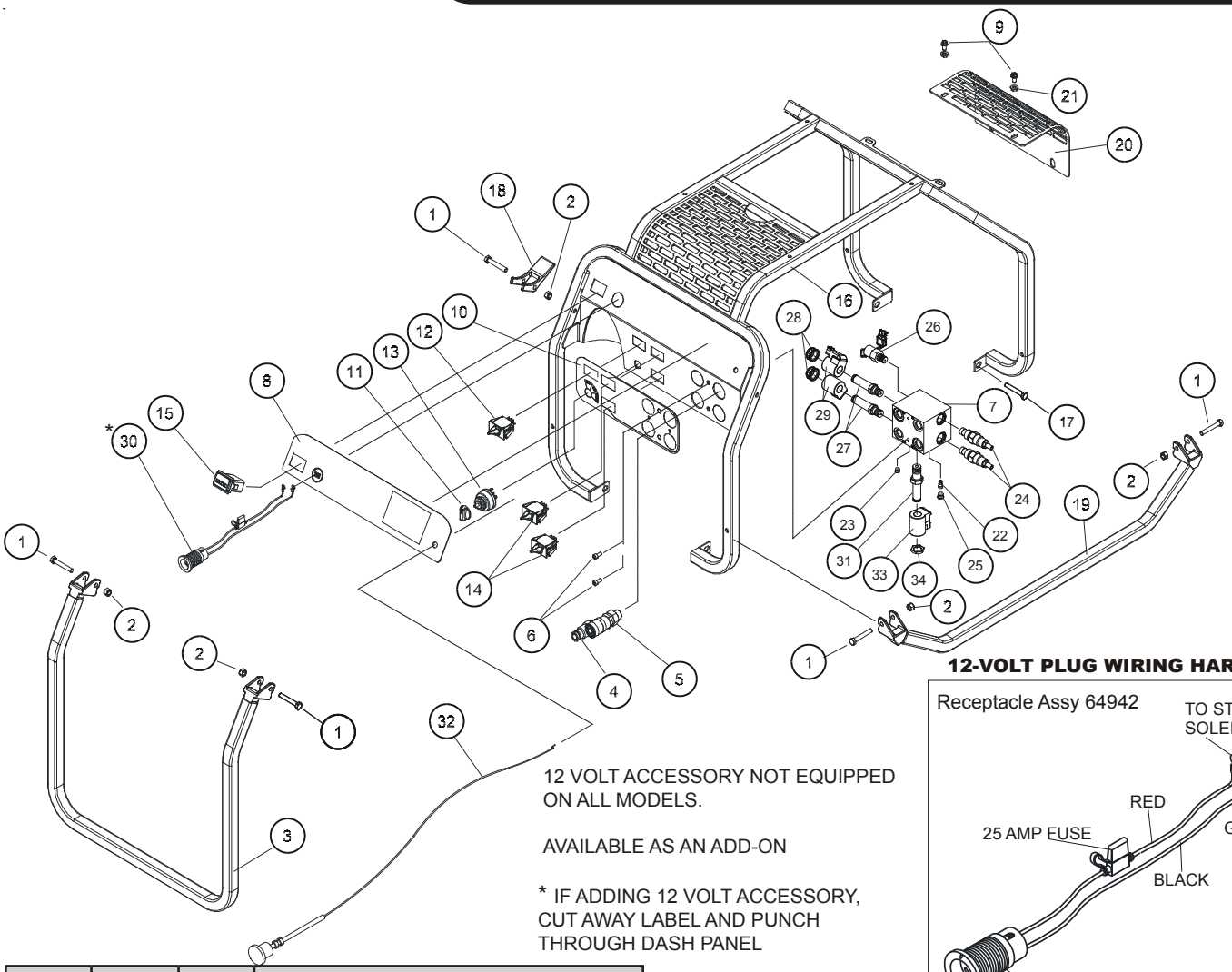
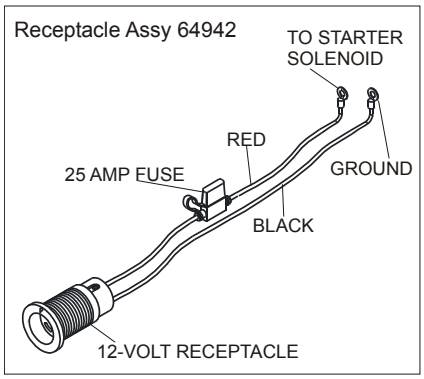


12 VOLT ACCESSORY NOT EQUIPPED ON ALL MODELS.

AVAILABLE AS AN ADD-ON

* IF ADDING 12 VOLT ACCESSORY, CUT AWAY LABEL AND PUNCH THROUGH DASH PANEL

12-VOLT PLUG WIRING HARNESS



ITEM	P/N	QTY	DESCRIPTION
1	370502	7	Capscrew
2	03906	7	Nylock Nut, 5/16 in. -18 UNC
3	62267	1	Handle, Rear Lift
4	58857	2	Coupler, Male, 3/8 in., -8 SAE Parker
	66785	2	Coupler, Male, 3/8 in., -8 SAE Aeroquip
5	58856	2	Coupler, Female, 3/8 in., -8 SAE Parker
	66784	2	Coupler, Female, 3/8 in., -8 SAE Aeroquip
6	60962	2	Capscrew, 1/4 in. -20
7	59084	1	Manifold Dual Circuit
	59085	1	Manifold Assy, Dual Circuit (Incl. 22-29, 31, 33, 34)
8	59126	1	Dash Decal
9	59074	6	Hex Flange Bolt, 1/4 in. -20
10	59125	1	Decal, Dual Circuit
11	67899	1	Knob (part of item 13)
12	60955	1	2-Way Switch
13	67899	1	Rotary Switch
14	60956	2	3-Way Switch
15	60946	1	Hour Meter
16	62269	1	Frame Weldment

ITEM	P/N	QTY	DESCRIPTION
17	23530	2	Hex Flange Bolt, 3/8 in. -16
18	58916	1	Handle Lock
19	62268	2	Lift Handle
20	59079	1	Cooler Guard
21	59095	2	Flange Nut, 1/4 in. -20
22	59127	1	Shuttle Check Valve
23	350041	1	Hollow Hex Plug 4 SAE
24	59131	2	Relief Valve
25	08104	1	Hollow Hex Plug 6 SAE
26	59128	1	Pressure Switch Assy
27	62319	2	Directional Valve
28	--	2	Cap (Included with Item 27)
29	60958	2	Coil
30	64942	1	12 volt Receptacle Assy
31	60960	1	Combiner Valve
32	62298	1	Choke Cable Assy
33	62320	1	Solenoid Coil
34	---	1	Nut, Incl. with Item 31

FUEL TANK & CAP

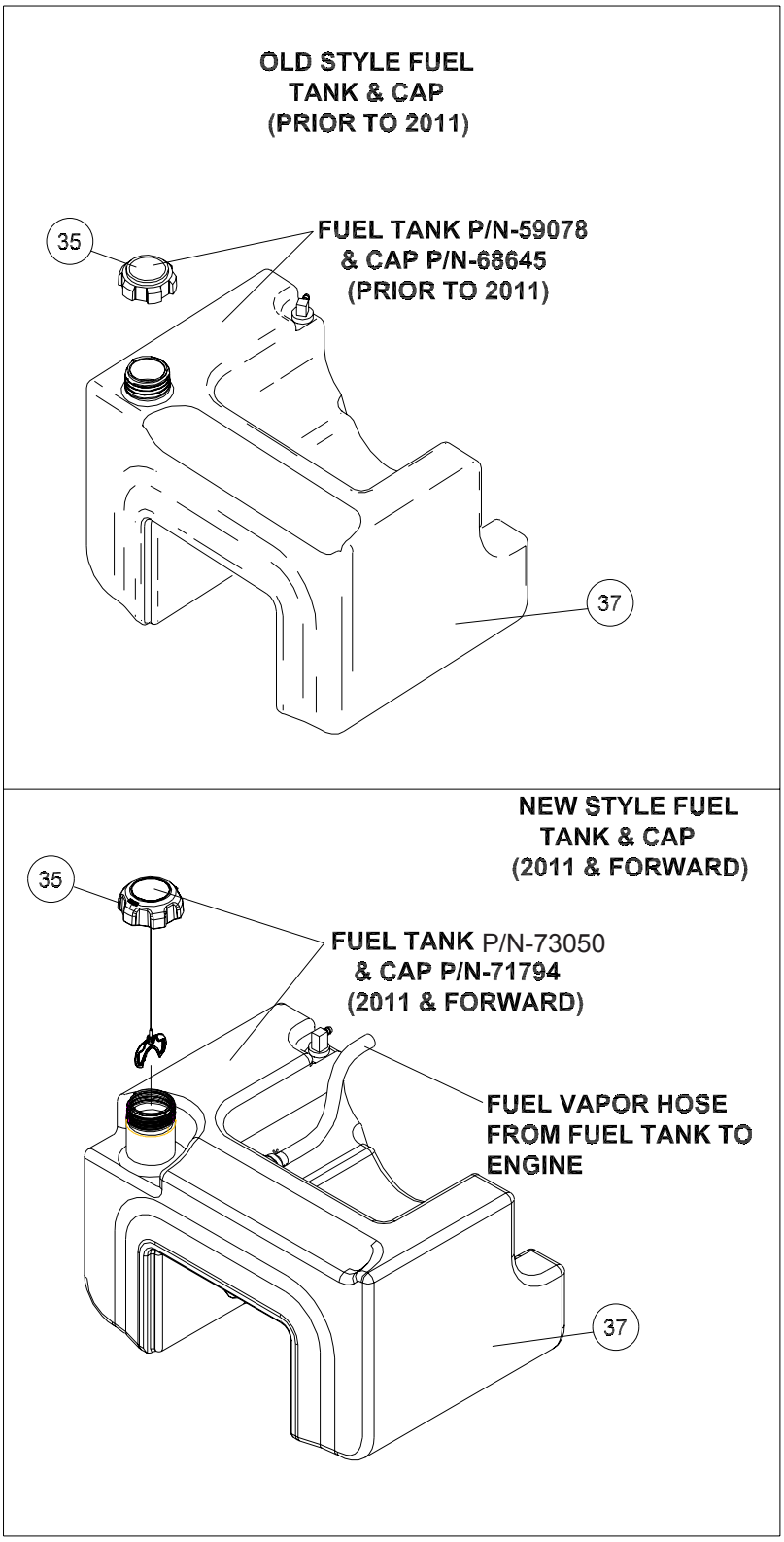
NOTE: When ordering a fuel tank (item 37) or fuel tank cap (item 35) **DO NOT MIX OLD STYLE TANK AND CAP WITH NEW STYLE TANK AND CAP.**

If you have a power unit and it was purchased prior to 2011 and need to replace the fuel tank or fuel tank cap, you must purchase the same tank and cap that came with your unit.

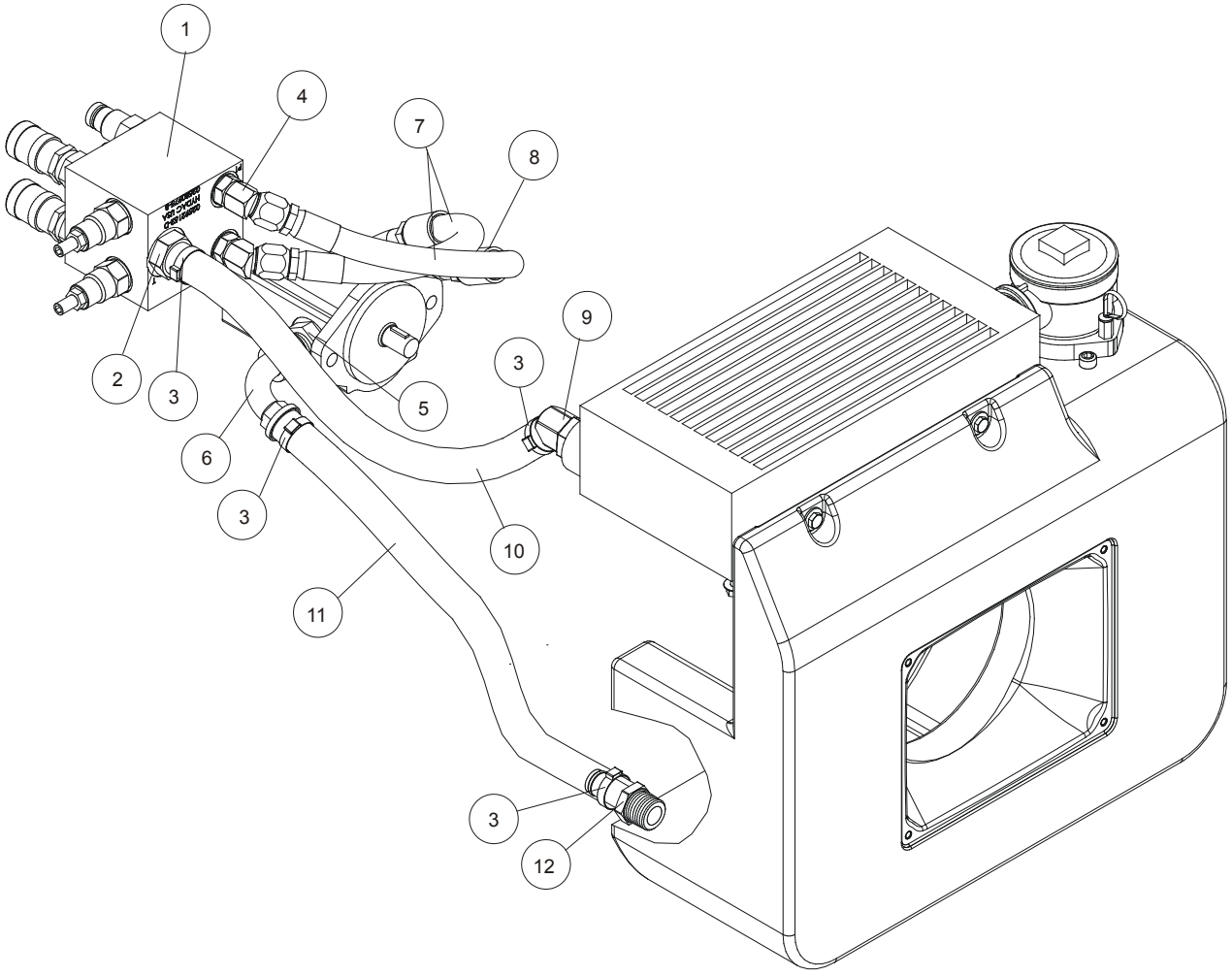
For example if you have a power unit prior to 2011 do not purchase a new style fuel tank, your engine will not be equipped with a fuel vapor fitting.

The old style fuel cap is a vented cap, while the new style fuel cap is not a vented cap and venting is achieved thru the vapor line.

The old style fuel tank has only one fuel line coming from the tank to the engine. The new style fuel tank has two lines coming from the fuel tank to the engine, one is the fuel line and the other is a fuel vapor line.



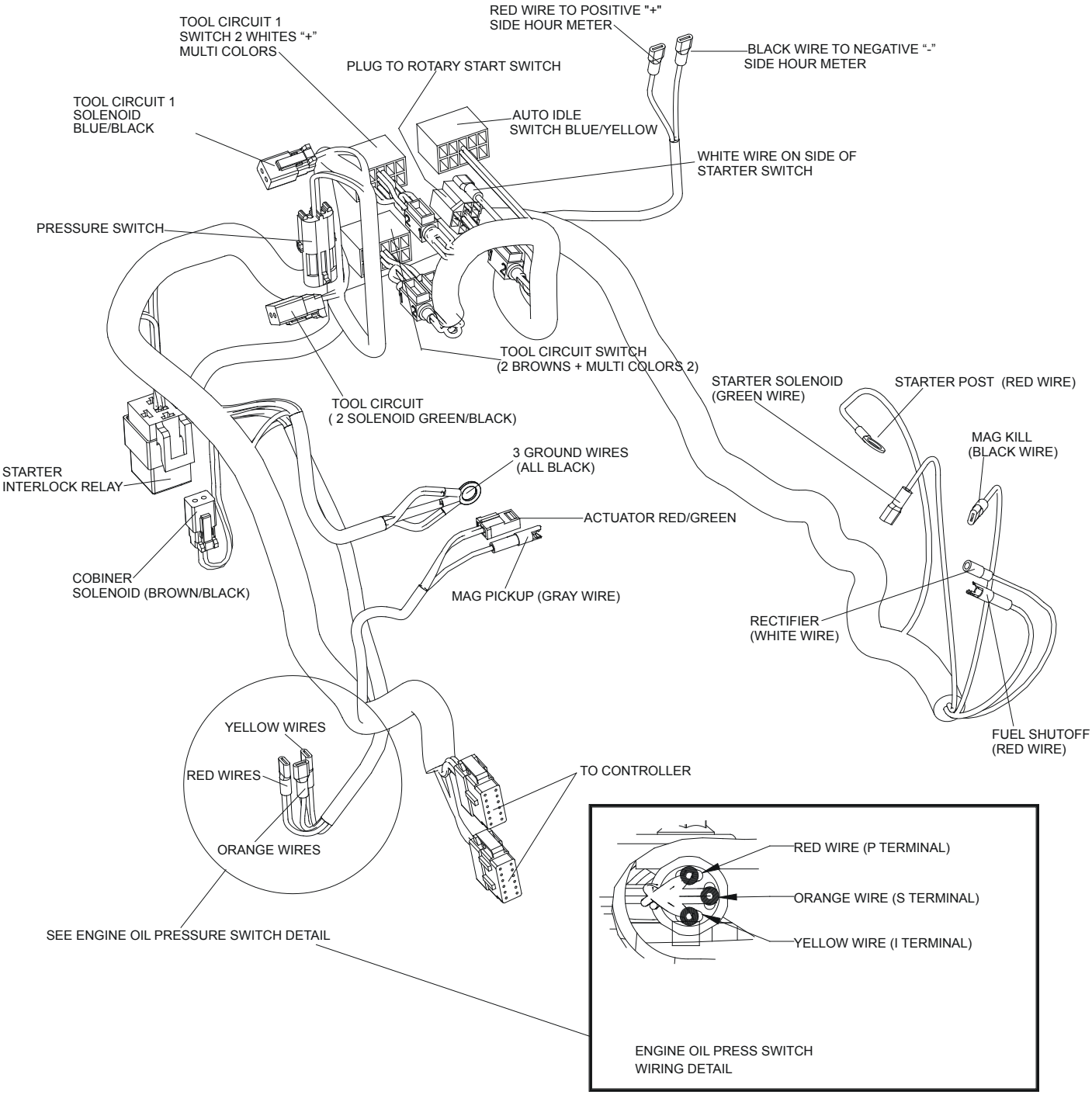
HOSES, FITTINGS & CLAMPS



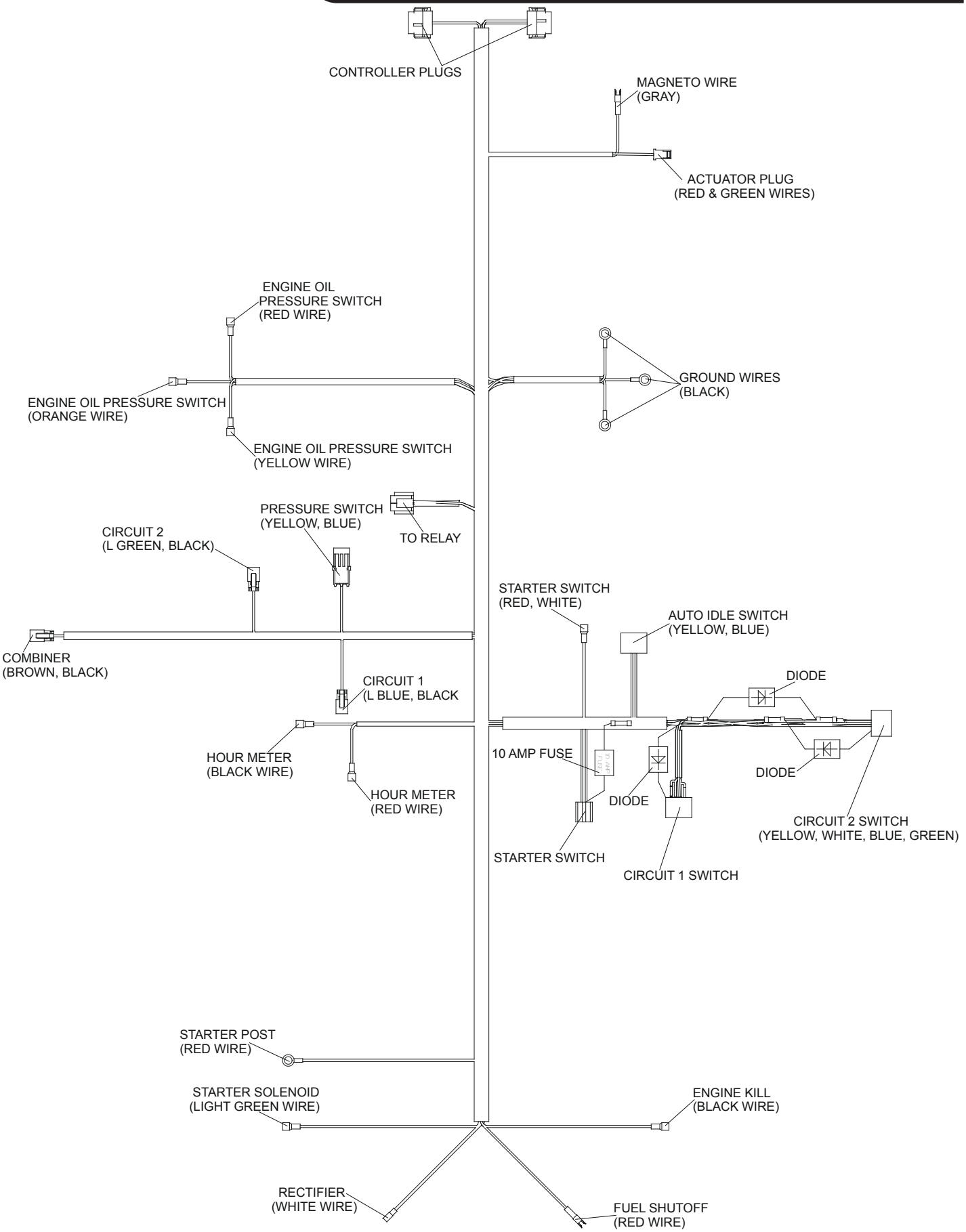
ITEM	P/N	QTY	DESCRIPTION
1	59085	1	Manifold Assy, Dual Circuit
2	59104	1	Hose Barb, 3/4 in. Hose x 3/4 in. Pipe
3	62199	4	Hose Clamp
4	350000	2	Elbow, 45° Straight Thread
5	02773	1	Adapter
6	58569	1	Elbow, 90°
7	58943	2	Hose
8	350104	2	Connector, Straight Thread
9	40364	1	Elbow, 45°
10	59089	1	Hose, Return Briggs Engine
11	59106	1	Hose, Return Honda Engine
12	59105	1	Hose Barb, 3/4 in. Hose x 3/4 in. Pipe

MAIN WIRING HARNESS

HARNESS PART NUMBER 62294



DUAL CIRCUIT WIRE HARNESS



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www.stanleyhydraulic.com

IMPORTANT

To fill out a Product Warranty Recording form, and for information on your warranty, visit Stanleyhydraulic.com and select the Warranty tab.
(**NOTE:** The warranty recording form must be submitted to validate the warranty).