

GT & HP Power Unit Technical Bulletin

12/2019 Ver. 1

What has changed?

For all non-diesel models of GT and HP Power Units, a shipping cap will be installed over the breather valve of the hydraulic oil tank.



This shipping cap and attached warning tag must be removed before using the power unit. Failure to remove this cap may cause catastrophic power unit damage.

CAUTION

Pump damage can occur if action is not taken! Remove the attached shipping cap and tag before using this power unit. Failure to remove the shipping cap could cause catastrophic damage.

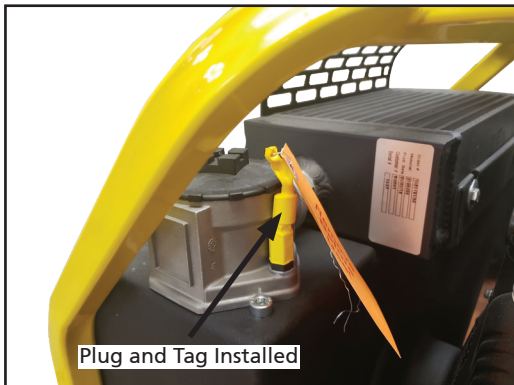
Why has the change taken place?

During shipping, it is possible for hydraulic oil to escape the hydraulic oil reservoir through the breather valve. In order to eliminate hydraulic oil spillage, STANLEY will install a cap over the breather valve before the power unit is shipped.

How to Remove the Shipping Cap

1. Unpack the power unit.
2. Locate the shipping cap installed over the breather valve.

Note: The shipping cap will be connected to a large information tag.



3. Grasp the base of the cap and pull it off of the breather valve and discard it.

Note: If your power unit breather valve does not have a cap installed, you may use the power unit normally.

STANLEY®

HP TWIN8

HYDRAULIC POWER UNIT



USER MANUAL

Safety, Operation and Maintenance



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New Britain, CT 06053
U.S.A.
72464 1/2020 Ver. 16



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IMPORTANT

To fill out a product warranty validation form, and for information on your warranty, visit www.stanleyinfrastructure.com and select the Company tab > Warranty.

Note: The warranty validation record must be submitted to validate the warranty.

SERVICING: This manual contains safety, operation and routine maintenance instructions. STANLEY Infrastructure 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 certified dealer, call STANLEY Infrastructure at (503) 659-5660 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.



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



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



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



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



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



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 tool and hose.

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 in this manual.

The HP TWIN8 Hydraulic 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 tool and hoses before operation. 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 protection, breathing protection, 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 or improperly adjusted power unit.
- Do not wear loose clothing or unbound long hair when operating the tool. Loose items can become entangled with the tool and cause serious injury.
- 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.
- Do not operate the machine on excessive slopes or unstable terrain where "tip over" is a hazard.
- Do not exceed the rated limits of the equipment or use the equipment for applications beyond its design capacity.
- Be aware of surrounding hazards. Noise created by the power unit and the tools it operates may mask early indications of approaching hazards. **Warning:** Hydraulic fluid under pressure could cause skin injection injury. If you are injured by hydraulic fluid, get medical attention immediately.
- Be observant of the hydraulic hoses lying about the work area, they can be a tripping hazard.
- Use proper lifting techniques when handling the power unit and do not over-reach.
- Only use the power unit in well-ventilated areas. **DO NOT** operate in explosive atmospheres, in closed environments or near flammable substances.
- Always be well-rested and mentally alert when operating the power unit and tools. **DO NOT** operate

SAFETY PRECAUTIONS

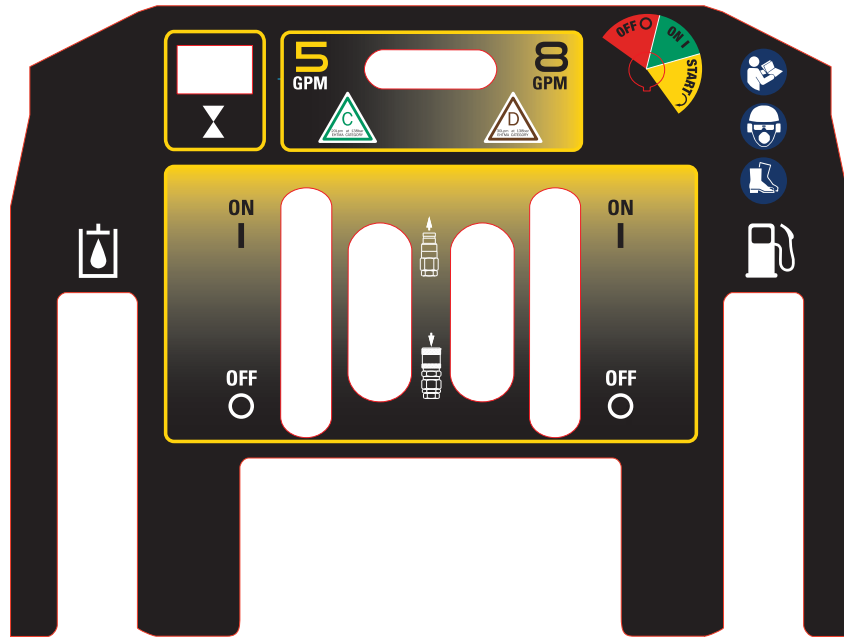
if affected by medications, drugs or alcohol.

- Keep clear of hot engine parts and exhaust.
- Do not operate tools if oil temperature exceeds 140 °F/60 °C. Operation at high temperatures can cause operator discomfort or injury.
- Disconnect battery before servicing electrical components. Electrocutation or burns could result from improper contact.
- Loading and unloading of the power unit is dangerous. Never attempt to load or unload the power unit without loading ramps, loading dock or an over head crane. Loading ramps must be strong enough, have a low angle and correct height. Load and unload the power unit on a level surface. Never attempt to load or unload the power unit if the ramp incline exceeds 15 degrees. Failure to follow these instructions may result in serious injury or death.
- **Warning:** Use of this tool on certain materials could generate dust potentially containing a variety of hazardous substances such as asbestos, silica or lead. Inhalation of dust containing these or other hazardous substances could result in serious injury, cancer or death. Protect yourself and those around you. Research and understand the materials you are cutting. Follow correct safety procedures and comply with all applicable national, state or provisional health and safety regulations relating to them, including, if appropriate arranging for the safe disposal of the materials by a qualified person.
- **Warning:** When using pressure cleaning equipment, do not aim the jet directly at electrical component parts and insulating material. Do not place the water jet directly in the air intake ports. Blow the unit dry before operating.

TOOLSTICKERS

LOGO, TWIN8 DECAL P/N-74771

STANLEY



DASH, TWIN8, DECAL P/N-205043

STANLEY® STANLEY®

STANLEY, HYD TANK, DECAL P/N-74770
YELLOW ON CLEAR BACKGROUND

STANLEY, FUEL TANK DECAL P/N-74706

HP TWIN8

LOGO TWIN8, HYD TANK DECAL P/N-205046

HP TWIN8

LOGO, TWIN8, FUEL TANK DECAL P/N-205045



SAFETY, TWIN8, DECAL P/N-205047

HOSE TYPES

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.*

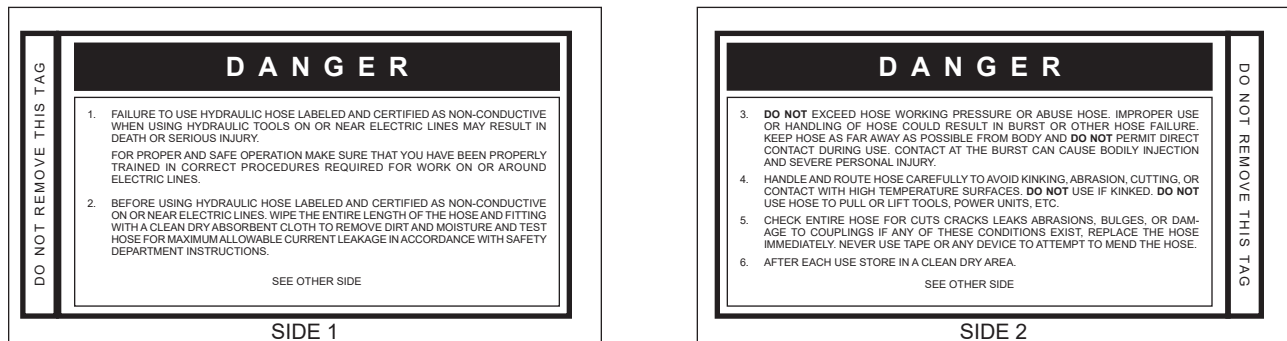
Fabric-braided (not certified or labeled non-conductive) — constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover. *This hose is **not certified non-conductive** and must never be used near electrical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

HOSE SAFETY TAGS

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

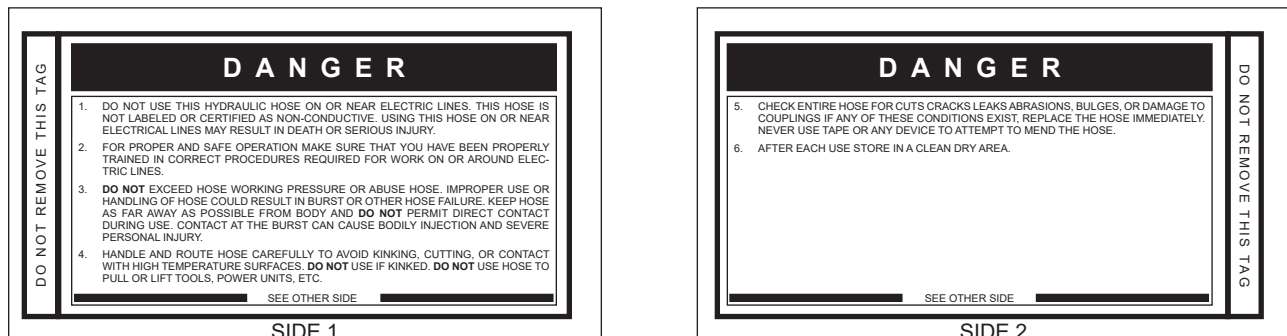
If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained from your STANLEY Distributor.

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



(Shown smaller than actual size)

THE TAG SHOWN BELOW IS ATTACHED TO “CONDUCTIVE” HOSE.



(Shown smaller than actual size)

HOSERECOMMENDATIONS

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 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 (Press/Return) | Min. Working Pressure | |
|--|-------|--------------|-----------|-----------------|------|-----------------------|-----------------------|-----|
| | | | | | | | | |
| GPM | LPM | FEET | METERS | INCH | MM | | 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 |
| 10-13 | 38-49 | up to 50 | up to 15 | 3/4 | 19 | Return | 2500 | 175 |
| 10-13 | 38-49 | 51-100 | 15-30 | 5/8 | 16 | Both | 2500 | 175 |
| 10-13 | 38-49 | 100-200 | 30-60 | 5/8 | 16 | Pressure | 2500 | 175 |
| 13-16 | 49-60 | up to 25 | up to 8 | 3/4 | 19 | Return | 2500 | 175 |
| 13-16 | 49-60 | 26-100 | 8-30 | 3/4 | 19 | Pressure | 2500 | 175 |
| 13-16 | 49-60 | 100-200 | 30-60 | 1 | 25.4 | Return | 2500 | 175 |
| 13-16 | 49-60 | 26-100 | 8-30 | 5/8 | 16 | Pressure | 2500 | 175 |
| 13-16 | 49-60 | 100-200 | 30-60 | 3/4 | 19 | Return | 2500 | 175 |
| 13-16 | 49-60 | 26-100 | 8-30 | 3/4 | 19 | Pressure | 2500 | 175 |
| 13-16 | 49-60 | 100-200 | 30-60 | 1 | 25.4 | Return | 2500 | 175 |

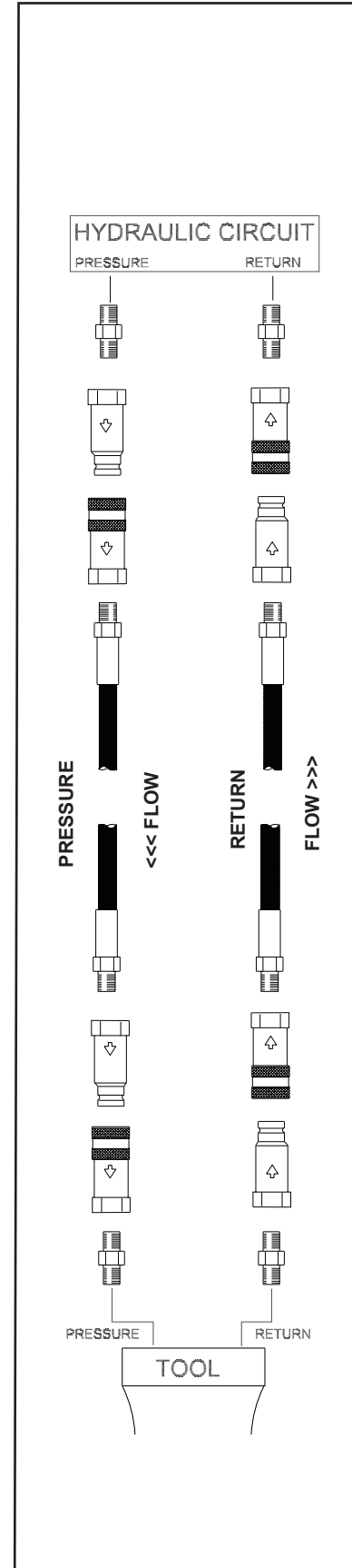


Figure 1. Typical Hose Connections

HTMA/EHTMA REQUIREMENTS

HTMA / EHTMA REQUIREMENTS

TOOL TYPE

| HTMA HYDRAULIC SYSTEM REQUIREMENTS | 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 minimum 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 maximum fluid temperature to: (At maximum expected ambient temperature) | 140° F (60° C) | 140° F (60° C) | 140° F (60° C) | 140° F (60° C) |
| Minimum 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 minimum full-flow filtration | 25 microns | 25 microns | 25 microns | 25 microns |
| Sized for flow of at least: (For cold temp startup and maximum dirt-holding capacity) | 30 GPM (114 LPM) | 30 GPM (114 LPM) | 30 GPM (114 LPM) | 30 GPM (114 LPM) |
| Hydraulic fluid, petroleum based (premium grade, anti- wear, non-conductive) Viscosity (at minimum and maximum operating temps) | 100-400 ssu (20-82 centistokes) | 100-400 ssu (20-82 centistokes) | 100-400 ssu (20-82 centistokes) | 100-400 ssu (20-82 centistokes) |
| 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 | | | | |

CLASSIFICATION

| EHTMA HYDRAULIC SYSTEM REQUIREMENTS | | | | | |
|---|--------------------------------|----------------------------|----------------------------|-----------------------------|------------------------------|
| 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.

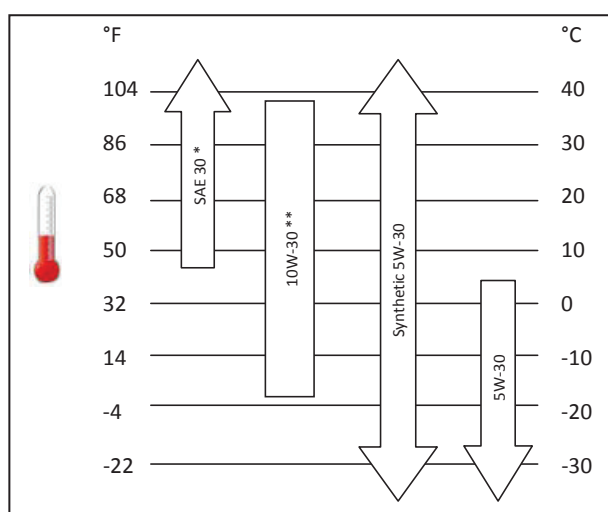
PREPARATION FOR USE

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 SF, SG, SH, SJ or higher" as specified in the engine operators manual. Do not use special additives. Outdoor temperatures determine the proper oil viscosity for the engine. Use the chart to select the best viscosity for the outdoor temperature range expected.



* Below 40°F (4°C) the use of SAE 30 will result in hard starting.

** Above 80°F (27°C) the use of 10W-30 may cause increased oil consumption. Check oil level more frequently.

2. ENGINE FUEL LEVEL

Check the fuel level. If low, fill with clean, fresh unleaded gasoline with a minimum of 87 octane. Gasoline with up to 10% ethanol (gasohol) is acceptable.

3. 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 HTMA (Hydraulic Tool Manufacturers Associations) quick disconnect fittings (NPT type threads).

QUICK DISCONNECT COUPLERS

HTMA-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 on "Hose Recommendations" on page 10. 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.**

3. HYDRAULIC FLUID

RECOMMENDED HYDRAULIC OILS

Below is a list of recommended oils by brand.

| Brand | Biodegradable | Description |
|-----------------|---------------|-------------------|
| CITGO | No | Hydurance AW32 |
| AMS Oil | No | HVH 32 |
| Exxon Mobil | No | Univis HVI26* |
| Exxon Mobil | No | DTE 10 Excel |
| Shell | No | S2 V 32 |
| Chevron | No | Rando HDZ 32 |
| Conoco Phillips | No | Unax AW-WR-32 |
| Clarion (CITGO) | Yes | Green Bio 32 |
| Exxon Mobil | Yes | EAL 224H |
| Chevron | Yes | Clarity AW32 |
| Terresolve | Yes | Envirologic 132 |
| Shell | Yes | Naturelle HF-E-32 |

*Recommended for extreme cold temperatures

OPERATION

5. BATTERY

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

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

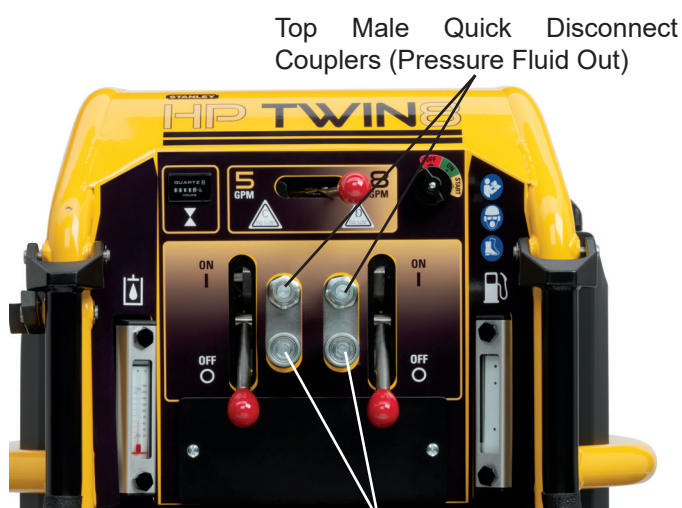
NOTICE

A fully charged battery should read 12.8V -13.0V. Overcharging can harm your battery beyond recovery. When using an automatic charger, refer to the charger manufacturer's instructions.

NOTICE

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

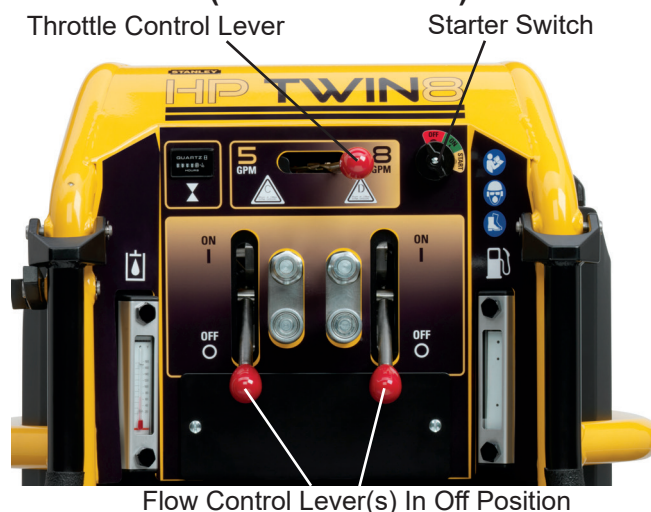
COUPLERS (HOSE CONNECTIONS)



Bottom Female Quick Disconnect Couplers (Return Fluid In)

Facing the control panel, the top (2) male couplers are the PRESSURE FLUID OUT fittings. The bottom (2) female quick disconnect couplers are the RETURN FLUID IN. Their are two independent circuits, one on the left and one on the right, each controlled by the adjacent lever.

CONTROLS (DUAL CIRCUIT)



Flow Control Lever(s) In Off Position

When the throttle control lever is in the far left position, it will produce 5 GPM to both circuits. With the lever in the far right position will produce 8 GPM to both circuits. This allows two tools that can run simultaneously at 5 or 8 GPM.

The flow control levers, when turned "ON" (up position), turns on flow.

STARTUP

1. Before starting the engine, check the engine oil and hydraulic fluid level.
2. Check to make sure the flow Control levers are in the OFF position (Down). The power unit will not start if the levers are in the "UP" position (ON).
3. Connect hoses and the tool as described in "Hose Recommendations" on page 10.
4. It is not necessary to choke the engine. The engine is equipped with an electronic fuel management system and does not have a manual choke.
5. Set the throttle control lever to the left (5-GPM) setting. Once the unit starts and is warmed-up the lever can be moved to the 8-GPM setting if desired.
6. Turn the Ignition Switch to the START position. After the engine starts, release the switch.
7. Allow the engine to warm up.
8. Turn on the flow to the tool by lifting the flow control levers up into the "ON" position, lift both levers if running two circuits.

SHUTDOWN

1. Ensure the flow control levers are in the OFF position (Down).
2. Move the Ignition Switch to the OFF position.

MAINTENANCE

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.

ENGINE MAINTENANCE

Follow the maintenance schedule and general maintenance instructions and emissions control maintenance in the engine operators manual furnished with the power unit.

Fuel system emissions maintenance:

- Check the fuel system emissions components once a year to verify that the components are in good condition and do not show signs of leakage. If leakage is found, replace part.
- Check fuel lines, tank, cap and fittings frequently for cracks or leaks. Replace if necessary.
- Clean the fuel cap area of dirt and debris.
- Replacement parts must be the same and installed in the same position as the original parts.

HYDRAULIC SYSTEM MAINTENANCE

- Check hydraulic fluid level daily. Add fluid per specifications in this manual. (See “3. HYDRAULIC FLUID” on page 12.)
- 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.

BATTERY MAINTENANCE

- If the power unit is not in use for two or more months, check the battery once a month and charge if the battery voltage is below 12.5V. Charge at 1.3A for 5-10 hours.
- If the battery voltage is below 12.0V, charge at 1.3A for 12-18 hours, let the battery sit for 1-2 hours and check the voltage. If the voltage is not 12.5V or greater, replace the battery.
- Always charge using a charger as rated as close to 1.3A as possible.
- Checking battery voltage and charging can be done through the 12V marine plug on the battery cover when using an appropriate adapter.

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 2 minutes to circulate the additive throughout the fuel system.

WARNING

When storing fuel or equipment with fuel in the tank, store away from appliances that have pilot lights or other ignition sources as they can ignite fuel vapors.

- 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” on page 14).
- Disconnect tool hoses.

MAINTENANCE

Standard Maintenance Schedule

| | Hours | Daily | 5 | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 |
|------------|--|-------|---|----|----|----|-----|-----|-----|-----|-----|
| Engine | Foam Air Pre-Cleaner | | | C | I | I | R | I | I | I | R |
| | Paper Air Filter | | | C | | | R | | | | R |
| | In-line Fuel Filter | | | | | | | | | | R |
| | Spark Plugs (Gap-0.030 in (0.76 mm)) | | | | | | R | | | | R |
| | Engine Oil Filter | | R | | R | | R | | R | | R |
| | Engine Oil | | R | | R | | R | | R | | R |
| | Engine Oil Level | I | | | | | | | | | |
| | Remove Dirt & Debris With Brush | I | | | | | | | | | |
| | Clean Air Cooling System (don't use water) | | | | | | C | | | | C |
| Hydraulics | Hydraulic Fluid Level | I | | | | | | | | | |
| | Hydraulic Fluid | | | | | | | | | | R |
| | Remove Condensed Moisture | | | | | | R | | | | R |
| | Check For Leaks, Kinks, etc. | I | | | | | | | | | |
| | Hydraulic Fluid Filter | | | | I | | I | | I | | R |
| | Clean Hydraulic Fluid Cooler | | | | | | C | | | | C |
| | Relief Valve Settings | | | | I | | I | | I | | I |

Heavy Duty Maintenance Schedule

| | Hours | Daily | 5 | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 |
|------------|--|-------|---|----|----|----|-----|-----|-----|-----|-----|
| Engine | Foam Air Pre-Cleaner | | | C* | R | I | R | I | R | I | R |
| | Paper Air Filter | | | C* | R | | R | | R | | R |
| | In-line Fuel Filter | | | | | | | | | | R |
| | Spark Plugs (Gap-0.030 in (0.76 mm)) | | | | R | | R | | R | | R |
| | Engine Oil Filter | | R | R | R | R | R | R | R | R | R |
| | Engine Oil | | R | R | R | R | R | R | R | R | R |
| | Engine Oil Level | I | | | | | | | | | |
| | Remove Dirt & Debris With Brush | I | | | | | | | | | |
| | Clean Air Cooling System (don't use water) | | | | C | | C | | C | | C |
| Hydraulics | Hydraulic Fluid Level | I | | | | | | | | | |
| | Hydraulic Fluid | | | | | | | | | | R |
| | Remove Condensed Moisture | | | | R | | R | | R | | R |
| | Check For Leaks, Kinks, etc. | I | | | | | | | | | |
| | Hydraulic Fluid Filter | | | | I | | R | | I | | R |
| | Clean Hydraulic Fluid Cooler | ** | | | C | | C | | C | | C |
| | Relief Valve Settings | | | | I | | I | | I | | I |

C Clean (* In dusty conditions or when airborne debris is present, clean more often).

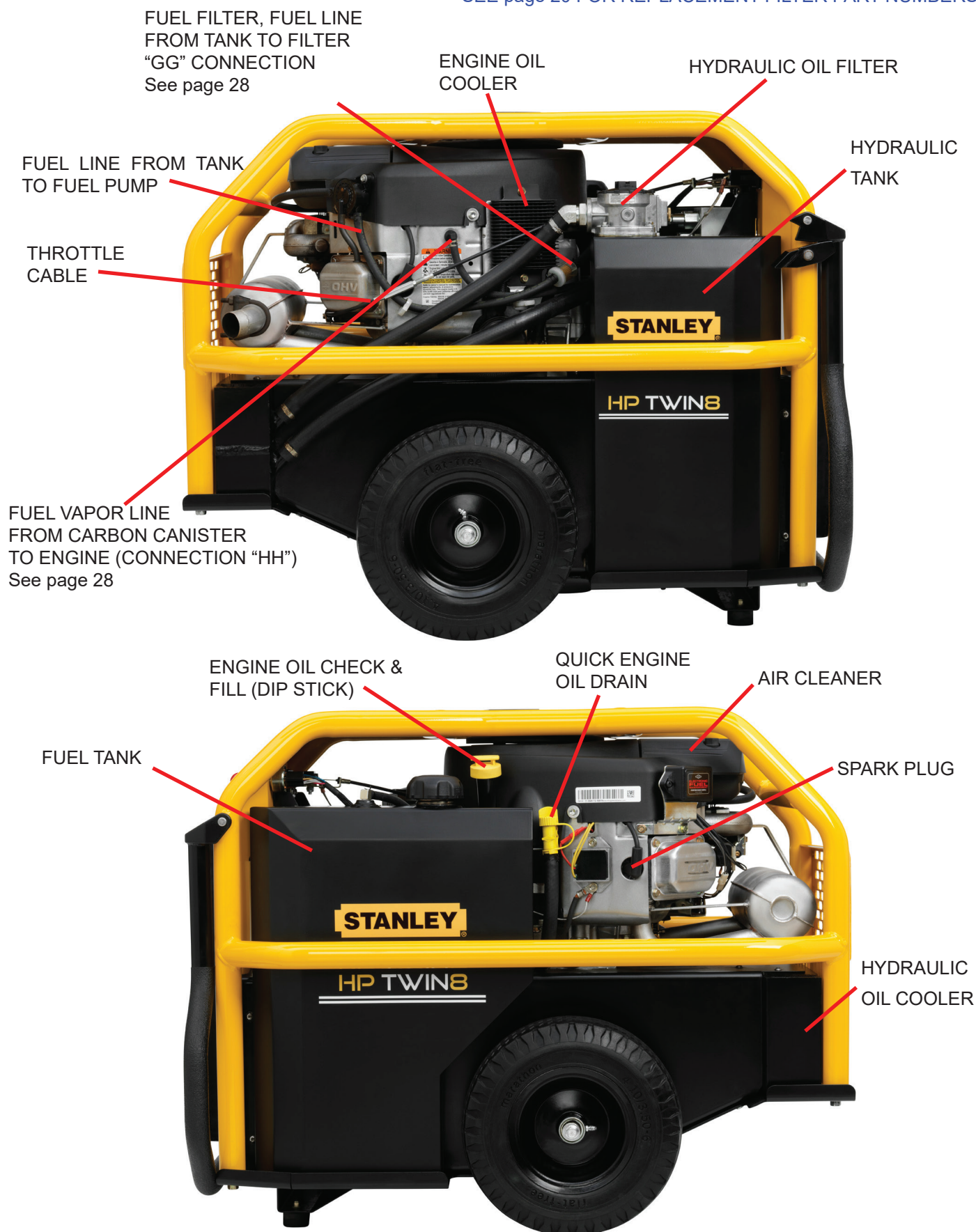
I Inspect (** In dusty conditions or when airborne debris is present, inspect the back side of cooler often).

R Replace

For additional maintenance information see the Briggs & Stratton engine operator's manual that was supplied with the power unit.

MAINTENANCE

SEE page 20 FOR REPLACEMENT FILTER PART NUMBERS



CIRCUIT TESTING

GENERAL

Tests and adjustments should be performed periodically to ensure the power unit is operating at maximum efficiency. Use a calibrated flow and pressure tester. 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 OR 8 GPM CIRCUIT

To test the circuit, proceed as follows:



1. Install a calibrated flow and pressure tester across the two hose ends (where the tool would normally be connected).
2. Set both flow control levers to the OFF (down) position.
3. Set the throttle control lever to the far left for 5 GPM, after the engine is started you can leave the lever in this position if you are testing the 5 GPM circuit or move the lever to the far right to test the 8 GPM circuit.

4. Check that the tester restrictor valve is fully open (counterclockwise) on the flow and pressure tester.
5. Start the engine and allow it to run until warm.
6. With the throttle control in the far left position, the 5-GPM circuit can be tested, or moving the lever to the far right will allow testing the 8-GPM circuit.
 - a. 5-GPM Range 4-6 GPM/15-23 LPM
 - b. 8-GPM Range 7-9 GPM/26.5-34 LPM
7. Slowly turn the restrictor valve clockwise while watching the pressure gauge. The flow rate shown above in step 6 should stay at the selected flow range.
8. When the pressure reaches 2100–2200 psi/145–152 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 (2100-2200) psi, the relief valve must be re-set as follows: The relief valves are located on the control block which is directly behind the couplers on the dash panel (See item 10, page 23) for location. Use a wrench to loosen the nut on the relief valve.
9. Use an Allen wrench to adjust the relief valve. Turn clockwise to raise the pressure and counterclockwise to reduce the pressure. Tighten the nut and retest.
10. Check both the 5 and 8 GPM flow settings and then follow the same procedure to test the other circuit (each circuit has its own relief valve).

TROUBLESHOOTING

| Problem | Cause | Solution |
|--|---|--|
| Engine will not start | 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. |
| | Low Engine Oil | Check Oil Level |
| | Flow Control Levers in the "ON" position. | Move the levers to the off position. |
| 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 control lever(s) not in the (ON) position. | Check that the flow control lever(s) are in the ON position. |
| | 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. |
| | 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. |
| | Tool is defective. | Refer to tool manual. |

SPECIFICATIONS

HP TWIN8 SPECIFICATIONS

| | |
|---|--|
| Engine: | 27 hp OHV, Briggs & Stratton Engine |
| Output Capacity (Dual 5 or Dual 8 Circuits) | Two 5 GPM/20 LPM Circuits or Two 8 GPM/30 LPM Circuits |
| Length: | 37.5 in./95.25 cm |
| Width: | 25.75 in./65.4 cm |
| Height: | 30 in./76.2cm |
| Weight (Wet): | 360 lbs/163 kg |
| Fuel Tank Capacity: | 4.7 gal./17.8 ltr |
| Estimated Gas Consumption Per Hour | 2.5 gal/9.4 ltr |
| Hydraulic Reservoir Capacity: | 3.2 gal./12.1 ltr |
| Relief Valve "Crack" Setting | 2100 psi/145 bar |
| Full Relief Setting | 2500 psi/172 bar |
| Nominal Pressure | 1500 psi/103 bar |
| Max Pressure | 2000 psi/138 bar |
| Circuit Type | Open Center |
| HTMA/EHTMA Category | Type 1 and 2 |



POWER UNITS & 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, modifications, or improper maintenance.

Components covered. The emission-related warranty covers all components whose failure would increase the evaporative emissions. Your emission-related 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&FILTERS

ACCESSORIES

| | |
|--|--------|
| Coupler Male, Parker SAE..... | 72398 |
| Coupler Female, Parker SAE..... | 72397 |
| Coupler Set Male & Female, Parker SAE..... | 72396 |
| Flow and Pressure Tester..... | .04182 |
| Hose Assy, 50 ft., with couplers | 31848 |
| Hose Assy, 25 ft., with couplers | 31972 |

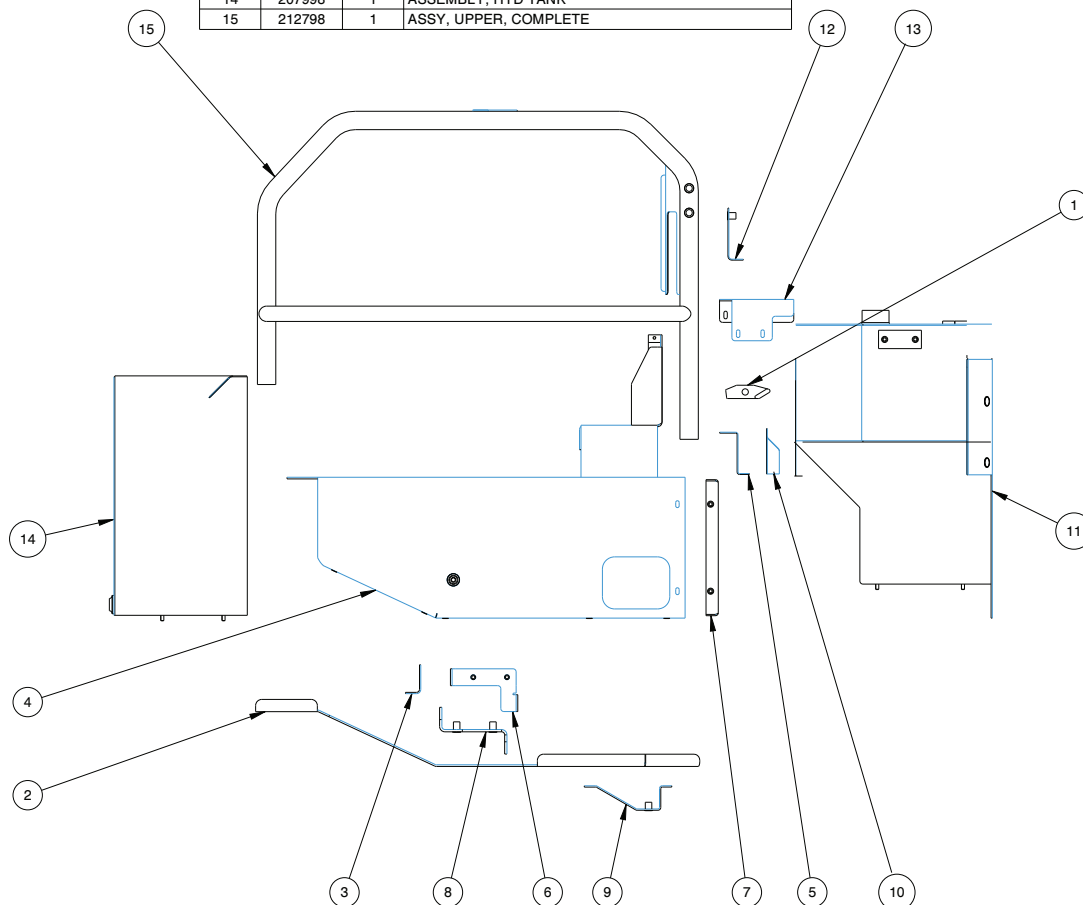
FILTERS

| MODEL | ENGINE | | | HYDRAULIC OIL FILTER |
|---------|------------|------------|-------------|-------------------------|
| | OIL FILTER | AIR FILTER | FUEL FILTER | |
| HP28B02 | 18384 | 205053 | 205057 | 40408 |

KIT, FRAME/ TANKS/BRACKETS (P/N-212797)

**INCLUDES ITEMS
AT RIGHT AND
PICTURED BELOW.**

| ITEM | PART NO | QTY. | DESCRIPTION |
|------|------------|------|--------------------------------|
| 1 | 202717 | 1 | CASTING HANDLE RELEASE |
| 2 | 202725 | 1 | SKID PLATE, POWER UNIT |
| 3 | 202726 | 1 | AXLE BRACE, POWER UNIT |
| 4 | 202731 | 1 | ASSEMBLY, LOWER FRAME |
| 5 | 203034 | 1 | TIEDOWN, BATTERY |
| 6 | 203038 | 1 | ASSY, ROTATION STOP |
| 7 | 203040 | 1 | ASSY, GRILL, AIR INTAKE |
| 8 | 203046 | 1 | ASSY, TORQUE ARM |
| 9 | 203254 | 1 | SUPPORT FOOT ASEMBLY |
| 10 | 204841 | 1 | BATTERY COVER, 12V PLUG |
| 11 | 204842 | 1 | ASSEMBLY, FUEL TANK |
| 12 | 206055 | 1 | ASSY, BRACKET, CARBON CANISTER |
| 13 | 207988 | 1 | BRACKET, TANK MOUNT |
| 14 | 207998 | 1 | ASSEMBLY, HYD TANK |
| 15 | 212798 | 1 | ASSY, UPPER, COMPLETE |



LOWERFRAMEILLUSTRATION

Item 5 pressure switch (not pictured)
mounts next to engine oil filter.

Item 26 control
block, on page
23 ,mounts to
backside of this
plate.

Item 19 mounts
inside lower
frame on axles

Item 24 mounts
inside lower
frame using
fasteners item 10
CC above

BB CONNEC-
TION see page
28

AA
CONNECTION
see page 28

LOWERFRAMEPARTSLIST

| ITEM | P/N | QTY | DESCRIPTION |
|------|--------|-----|--|
| 1 | 12470 | 2 | HHCS 10-24UNCX0.875 |
| 2 | 12787 | 4 | FLANGE NUT 5/16-18 |
| 3 | 19534 | 6 | HEX FLANGE BOLT 3/8-16 X 1 |
| 4 | 21713 | 2 | VIBRATION MOUNT |
| 5 | 31765 | 1 | PRESSURE SWITCH |
| 6 | 40369 | 2 | WIRE BOOT |
| 7 | 59074 | 6 | HEX FLANGE BOLT 1/4-20 X 1/2 |
| 8 | 67511 | 2 | RUBBER MOUNT |
| 9 | 71937 | 4 | HEX FLNG BOLT 3/8-16 X 1 |
| 10 | 71939 | 28 | HEX FLANGE BOLT 1/4-20 X 3/4 |
| 11 | 72402 | 1 | STARTER SOLENOID |
| 12 | 72403 | 1 | MUFFLER |
| 13 | 72412 | 1 | CLAMP 2.5 - 3.5 IN |
| 14 | 72413 | 1 | SOLENOID GROUND STRAP |
| 15 | 72448 | 1 | BRIGGS M49 27-HP |
| 16 | 371067 | 2 | WASHER 3/8" I.D. |
| 17 | 208887 | 1 | THROTTLE CABLE ASSY |
| 18 | 202725 | 1 | SKID PLATE, POWER UNIT |
| 19 | 202726 | 1 | AXLE BRACE, POWER UNIT |
| 20 | 202731 | 1 | ASSEMBLY, LOWER FRAME |
| 21 | 203031 | 2 | TIRE/WHEEL 4.10/3.50-6 FF |
| 22 | 203034 | 1 | TIEDOWN, BATTERY |
| 23 | 203036 | 1 | BATTERY, SEALED, 12V, 13AH |
| 24 | 203038 | 1 | ASSY, ROTATION STOP |
| 25 | 203040 | 1 | ASSY, GRILL, AIR INTAKE |
| 26 | 203222 | 4 | CAPSCREW 1/4-20UNCX1/2 |
| 28 | 203254 | 1 | SUPPORT FOOT ASSEMBLY |
| 29 | 203411 | 1 | CLIP NUT 1/4-20 .125-.156 GRIP |
| 30 | 204331 | 2 | WASHER 1/4 NEOPRENE |
| 31 | 204332 | 1 | KNOB, TAPERED, RED |
| 32 | 72439 | 1 | WIRE HARNESS (NOT PICTURED) |
| 33 | 35395 | 1 | WIRE ASSY 6 AWG RED 24 in. NOT SHOWN |
| 34 | 72453 | 1 | WIRE ASSY 6 AWG BLACK 35 in. NOT SHOWN |
| 35 | 72454 | 1 | WIRE ASSY 6 AWG RED 5 in. NOT SHOWN |
| 36 | 212797 | 1 | KIT FRAME/TANK/BRACKETS |

NOTE: Kit, Frame/Tank/Brackets P/N-212797

Includes the Following items:

From page 20 - (Items 18, 19, 20, 22, 24, 25 & 28)

From page 22 - (item 25)

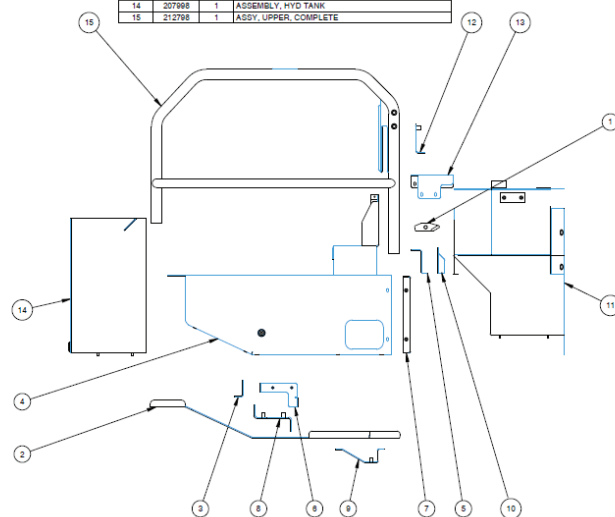
From page 24 - (Item 3, 5 and 7)

From page 26 - (Item 52)

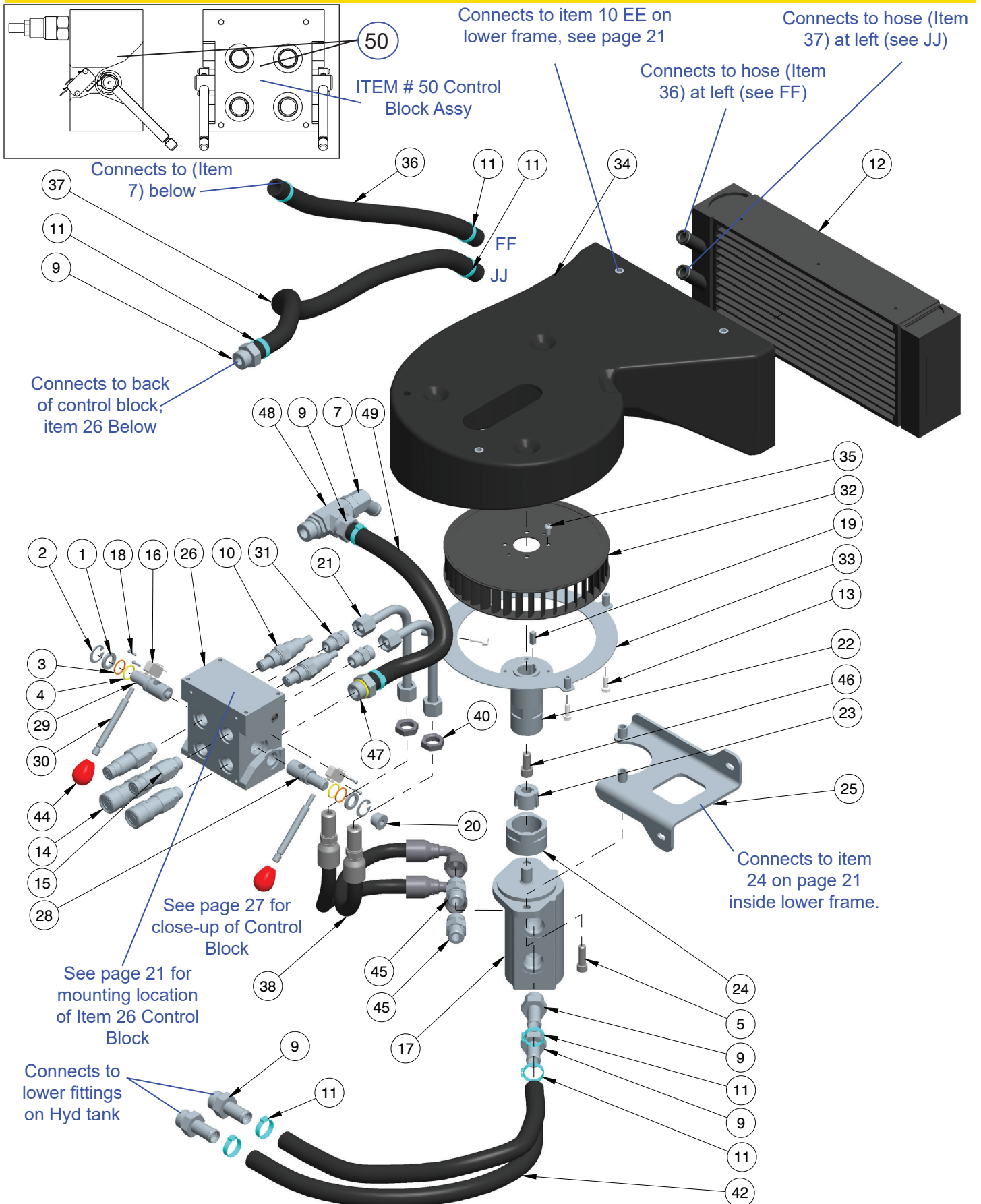
From page 27 - (Items 7, 15, & 18)

**KIT, FRAME/
TANKS/BRKTS
(P/N-212797)
INCLUDES
ITEMS AT RIGHT
AND PICTURED
BELOW.**

| ITEM | PART NO. | QTY. | DESCRIPTION |
|------|----------|------|--------------------------------|
| 1 | 202717 | 1 | CASTING HANDLE RELEASE |
| 2 | 202725 | 1 | SKID PLATE, POWER UNIT |
| 3 | 202726 | 1 | AXLE BRACE, POWER UNIT |
| 4 | 202731 | 1 | ASSEMBLY, LOWER FRAME |
| 5 | 203034 | 1 | TIEDOWN, BATTERY |
| 6 | 203038 | 1 | ASSY, ROTATION STOP |
| 7 | 203040 | 1 | ASSY, GRILL, AIR INTAKE |
| 8 | 203048 | 1 | ASSY, TORQUE ARM |
| 9 | 203254 | 1 | SUPPORT FOOT ASSEMBLY |
| 10 | 204841 | 1 | BATTERY COVER, 12V PLUG |
| 11 | 204842 | 1 | ASSEMBLY, FUEL TANK |
| 12 | 206055 | 1 | ASSY, BRACKET, CARBON CANISTER |
| 13 | 207666 | 1 | BRACKET, TANK MOUNT |
| 14 | 207668 | 1 | ASSEMBLY, FTY TANK |
| 15 | 212798 | 1 | ASSY, UPPER, COMPLETE |



HYDRAULIC GROUP ILLUSTRATION



HYDRAULIC GROUP PARTS LIST

| ITEM | P/N | QTY | DESCRIPTION |
|------|--------|-----|--|
| 1 | 04216 | 2 | WASHER |
| 2 | 04313 | 2 | RETAINING RING |
| 3 | 06988 | 2 | BACK-UP RING -018 |
| 4 | 06989 | 2 | O-RING |
| 5 | 10793 | 2 | HSHCS 3/8-16 X 1-1/4 |
| 7 | 40364 | 1 | ELBOW 45 3/4 SAE TO 3/4 BARB |
| 9 | 59104 | 6 | HOSE BARB 12SAE 3/4 HOSE |
| 10 | 59131 | 2 | RELIEF VALVE |
| 11 | 62199 | 10 | HOSE CLAMP |
| 12 | 71908 | 1 | OIL COOLER |
| 13 | | | PARTS NO LONGER USED |
| 14 | 72397 | 2 | COUPLER FEMALE, PARKER |
| 15 | 72398 | 2 | COUPLER MALE, PARKER |
| 16 | 72414 | 2 | MICRO LIMIT SWITCH |
| 17 | 72425 | 1 | HYDRAULIC PUMP, DUAL |
| 18 | 72455 | 4 | CAPSCREW 4-40 x1/2 HSBH |
| 19 | 72521 | 1 | SQUARE KEY-.25 X .75 |
| 20 | 350237 | 1 | HOLLOW HEX PLUG - 8 SAE |
| 21 | 202740 | 2 | ASSY, MANIFOLD TUBE |
| 22 | 207647 | 1 | COUPLER, PUMP/FAN (IF ORDERING COUPLER MUST PURCHASE 207647 WHICH INCLUDES ITEMS 32 & 35) |
| 23 | 203025 | 1 | BUSHING, TAPER LOCK, 5/8" |
| 24 | 203026 | 1 | NUT, COUPLER, PUMP/FAN |
| 25 | 203046 | 1 | ASSY, TORQUE ARM |
| 26 | 203049 | 1 | CONTROL BLOCK, DUAL (SEE NOTE FOR COMPLETE ASSEMBLY) |
| 28 | 203052 | 1 | SPOOL, ON-OFF, RH |
| 29 | 203053 | 1 | SPOOL, ON-OFF, LH |
| 30 | 203054 | 2 | ROD, ON-OFF SPOOL |
| 31 | 203063 | 2 | CONNECTOR, -8 SAE-1/2 ORFS |
| 32 | 207647 | 1 | BLOWER WHEEL, (IF ORDERING BLOWER WHEEL MUST PURCHASE 207647 WHICH INCLUDES ITEMS 22 & 35) |
| 33 | | | PART NO LONGER USED |
| 34 | 203067 | 1 | ASSY, HOUSING, BLOWER, 9" |
| ITEM | P/N | QTY | DESCRIPTION |
| 35 | 203222 | 4 | CAPSCREW 1/4-20UNCX1/2 |

| | | | |
|----|--------|---|---------------------------------|
| 36 | 203232 | 1 | HOSE, COOLER-FILTER 04306X20.25 |
| 37 | 203233 | 1 | HOSE, COOLER-BLOCK 04306X30.00 |
| 38 | 203245 | 2 | HOSE, PRESSURE, PUMP-BLKHD |
| 40 | 203246 | 2 | JAM NUT |
| 42 | 203247 | 2 | HOSE TANK-PUMP 04306X21.00 |
| 44 | 204332 | 2 | KNOB, TAPERED, RED |
| 45 | 204538 | 2 | CONNECTOR, -10 SAE-5/8 |
| 46 | 204539 | 1 | HSHCS 7/16-20 X 1.00 |
| 47 | 204808 | 1 | VALVE ASSY, ATM |
| 48 | 204839 | 1 | TEE, RUN, -12 SAE |
| 49 | 204840 | 1 | HOSE, BLOCK-FILTER 04306X14.5 |
| 50 | 203051 | 1 | CONTROL BLOCK ASSY |

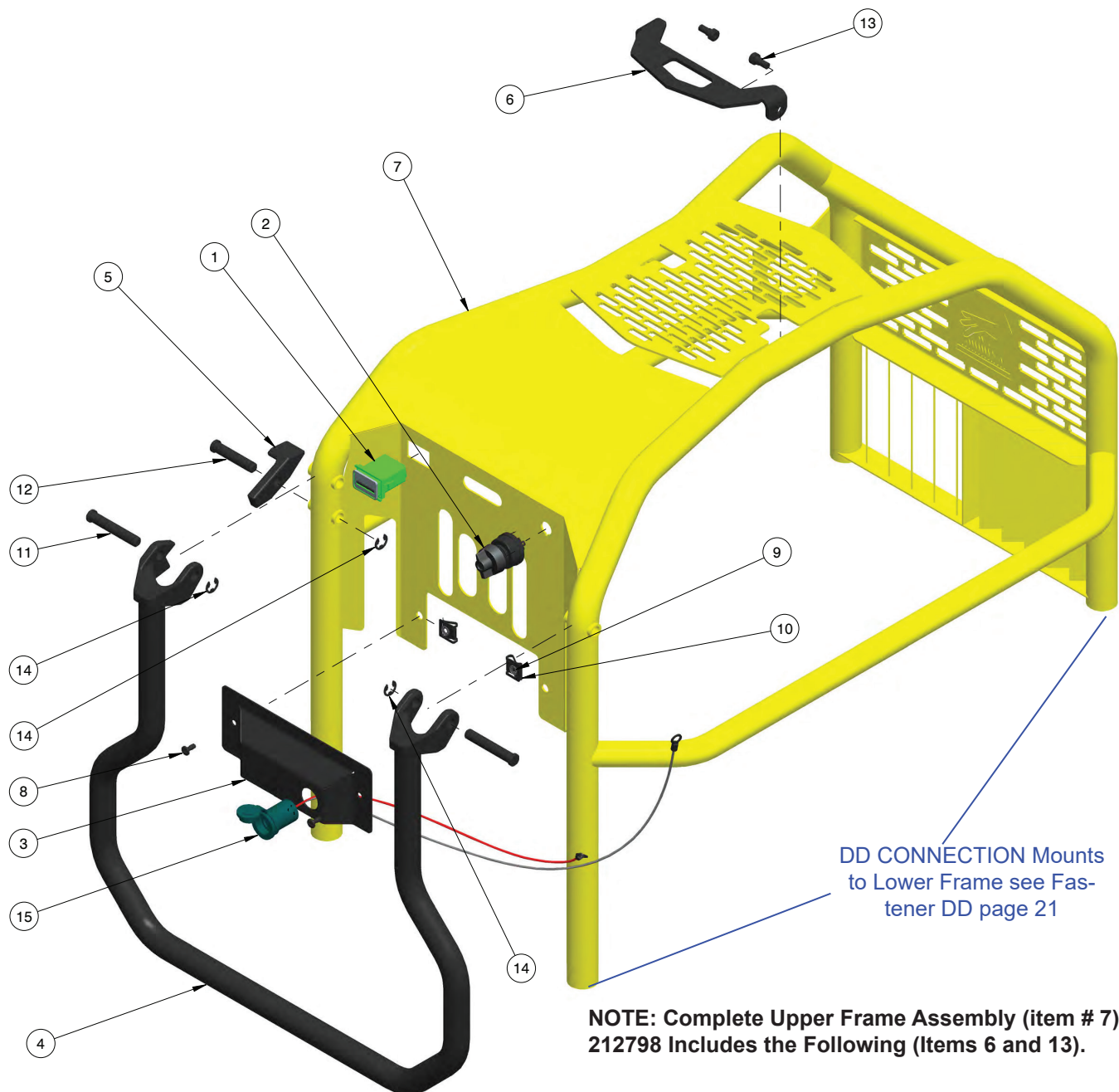
NOTE:

CONTROL BLOCK ASSEMBLY P/N-203051 (INCLUDES THE FOLLOWING)

Item 1 thru 4, 10, 16, 18, 26, 28 thru 30.

COUPLER SET 72396 (INCLUDES MALE AND FEMALE)

UPPER FRAME ILLUSTRATION & PARTS LIST

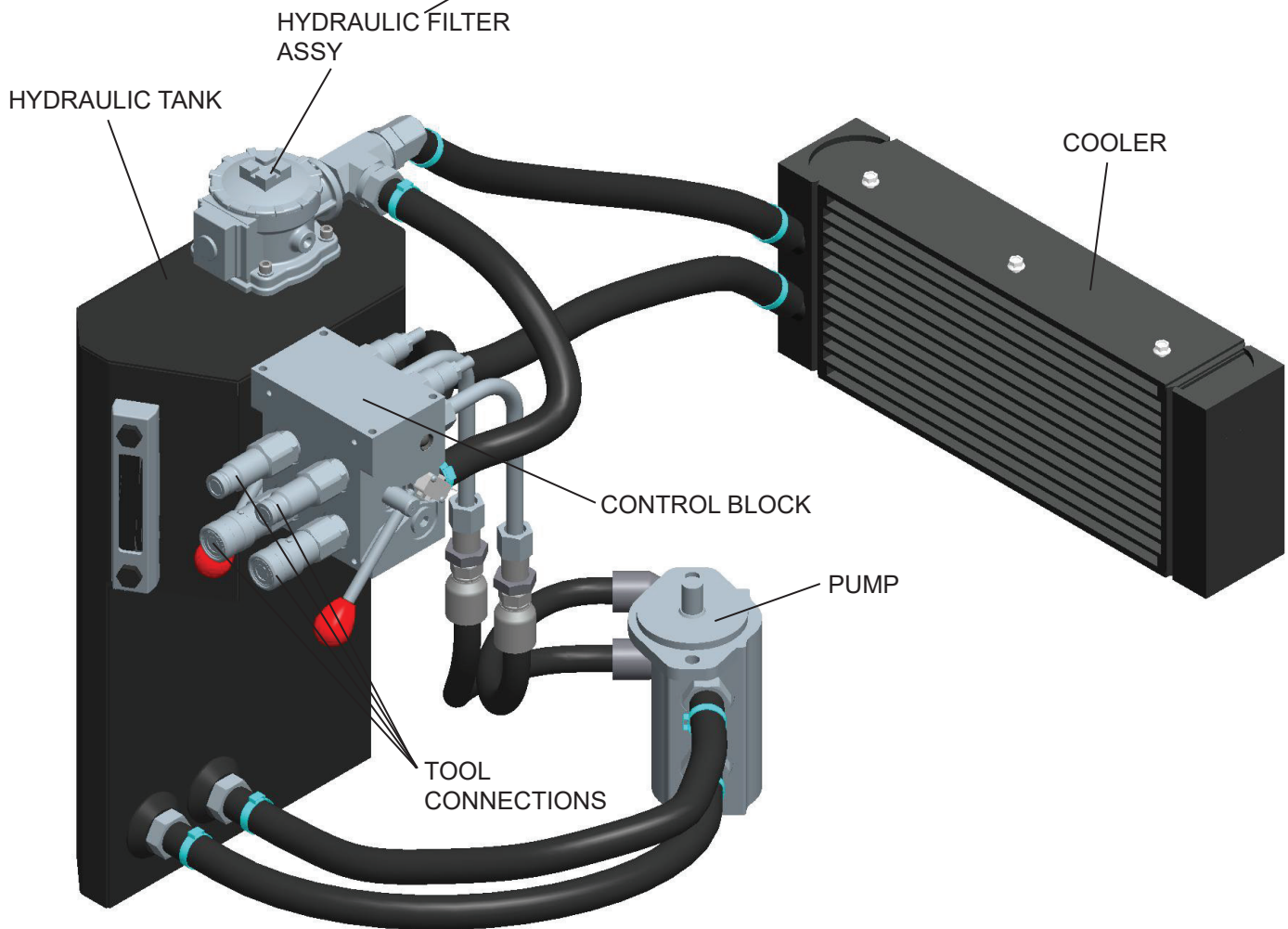


| ITEM | P/N | QTY | DESCRIPTION |
|------|--------|-----|--|
| 1 | 60946 | 1 | HOUR METER |
| 2 | 67899 | 1 | ROTARY SWITCH & KNOB |
| 3 | 204841 | 1 | BATTERY COVER |
| 4 | 202714 | 1 | HANDLE, ASSEMBLY |
| 5 | 202717 | 1 | HANDLE RELEASE |
| 6 | 202723 | 1 | LIFT BRACKET |
| 7 | 212798 | 1 | UPPER FRAME ASSEMBLY Includes the Following (Item 6 and 13). |

| ITEM | P/N | QTY | DESCRIPTION |
|------|--------|-----|-------------------------------|
| 8 | 203228 | 2 | FASTENER, 1/4 TURN, 6MM |
| 9 | 203229 | 2 | RETAINER, 1/4 TURN, 6MM |
| 10 | 203231 | 2 | RECEPTACLE, 1/4 TURN, 6MM |
| 11 | 204328 | 2 | GROOVED CLEVIS PIN .5 X 3.00 |
| 12 | 204329 | 1 | GROOVED CLEVIS PIN .5 X 2.50 |
| 13 | 204330 | 2 | SHSS 3/8 X 1/4 X 1/2 THD LGTH |
| 14 | 204335 | 3 | E-CLIP .500 DIA |
| 15 | 64942 | 1 | 12 VOLT RECEPTACLE ASSY |

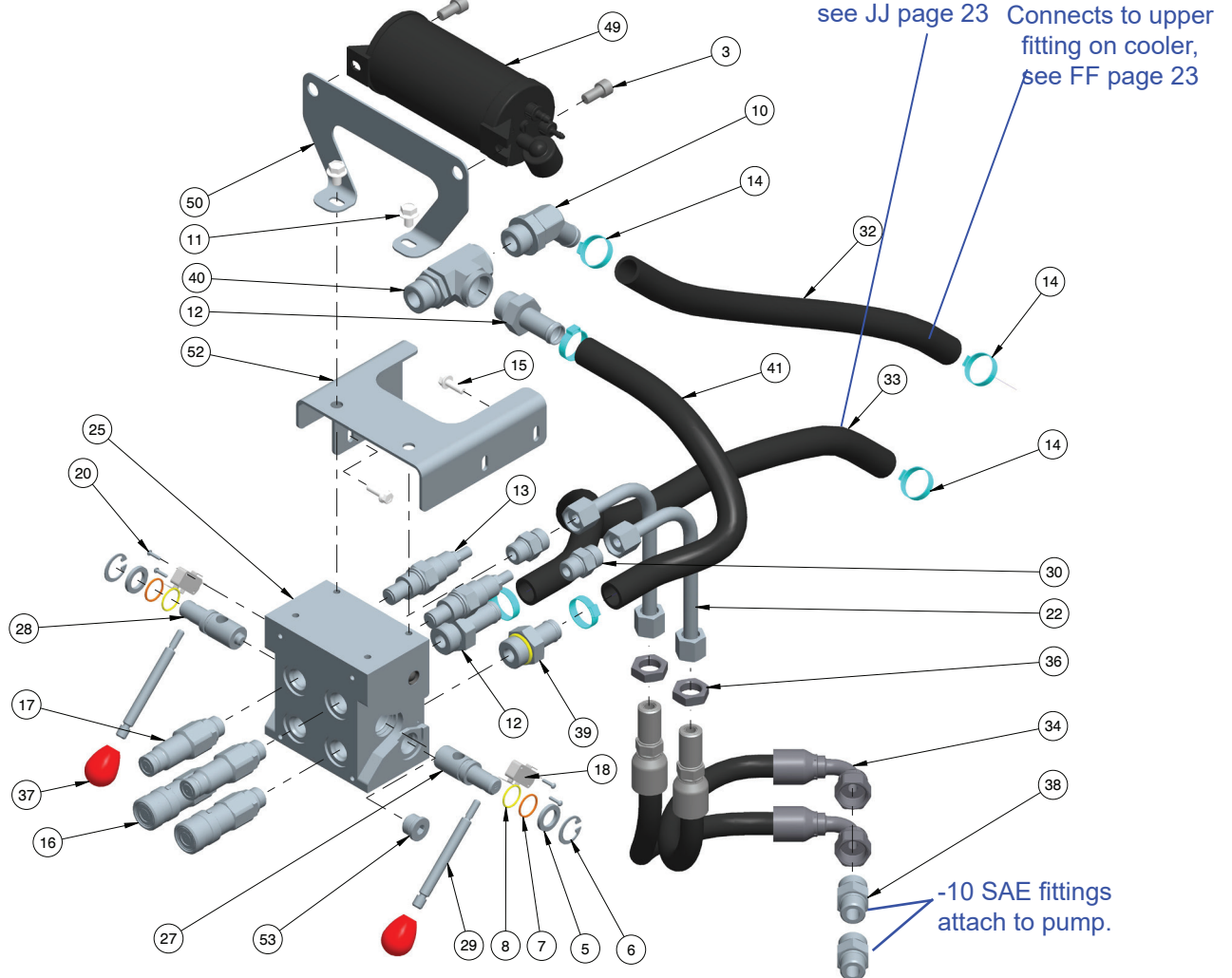
HYDRAULICFLOW

NOTE: The hydraulic filter assembly has a "Filter service kit" available, P/N 43592, and a Seal Kit, P/N 81262.



CONTROL BLOCKDETAIL

CONTROL BLOCK ASSEMBLY P/N-203051 (INCLUDES THE FOLLOWING)
Item 5 through 8, 13, 18, 20, 25, 27 through 29 and 53.



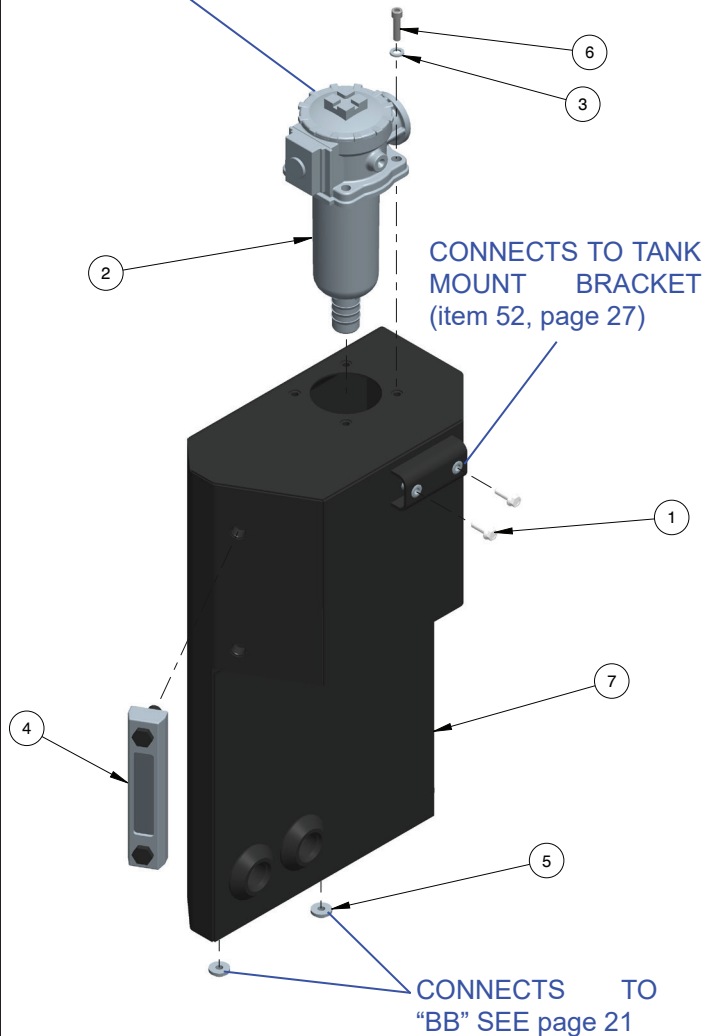
| ITEM | P/N | QTY | DESCRIPTION |
|------|--------|-----|--------------------------|
| 3 | 01525 | 2 | CAPSCREW 3/8-16 X 3/4 |
| 5 | 04216 | 2 | WASHER |
| 6 | 04313 | 2 | RETAINING RING |
| 7 | 06988 | 2 | BACK-UP RING |
| 8 | 06989 | 2 | O-RING |
| 10 | 40364 | 1 | ELBOW |
| 11 | 40433 | 2 | HEX FLANGE BOLT |
| 12 | 59104 | 2 | HOSE BARB 12SAE 3/4 HOSE |
| 13 | 59131 | 2 | RELIEF VALVE |
| 14 | 62199 | 6 | HOSE CLAMP |
| 15 | 71939 | 4 | HEX FLANGE BOLT |
| 16 | 72397 | 2 | COUPLER FEMALE PARKER |
| 17 | 72398 | 2 | COUPLER MALE PARKER |
| 18 | 72414 | 2 | MICRO LIMIT SWITCH |
| 20 | 72455 | 4 | CAPSCREW 4-40 x1/2 HSBH |
| 22 | 202740 | 2 | ASSY, MANIFOLD TUBE |
| 25 | 203049 | 1 | CONTROL BLOCK, DUAL |

| ITEM | P/N | QTY | DESCRIPTION |
|------|--------|-----|-------------------------|
| 27 | 203052 | 1 | SPOOL, ON-OFF, RH |
| 28 | 203053 | 1 | SPOOL, ON-OFF, LH |
| 29 | 203054 | 2 | ROD, ON-OFF SPOOL |
| 30 | 203063 | 2 | CONNECTOR, -8 SAE-1/2 |
| 32 | 203232 | 1 | HOSE, COOLER-FILTER |
| 33 | 203233 | 1 | HOSE, COOLER-BLOCK |
| 34 | 203245 | 2 | HOSE, PRESSURE, PUMP |
| 36 | 203246 | 2 | JAM NUT |
| 37 | 204332 | 2 | KNOB, TAPERED, RED |
| 38 | 204538 | 2 | CONNECTOR, -10 SAE-5/8 |
| 39 | 204808 | 1 | VALVE ASSY, ATM |
| 40 | 204839 | 1 | TEE, RUN, -12 SAE |
| 41 | 204840 | 1 | HOSE, BLOCK-FILTER |
| 49 | 206046 | 1 | CARBON CANISTER, 400CC |
| 50 | 206055 | 1 | BRACKET, CANISTER |
| 52 | 207988 | 1 | BRACKET, TANK MOUNT |
| 53 | 350237 | 1 | HOLLOW HEX PLUG - 8 SAE |

HYDRAULIC&FUEL TANKS

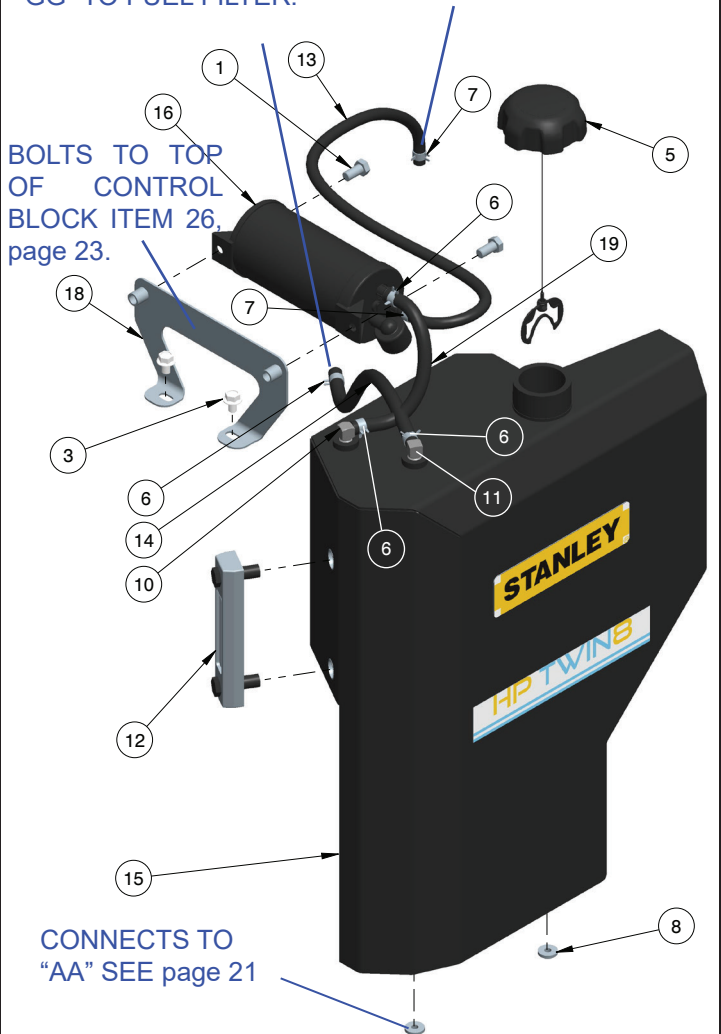
HYDRAULIC TANK

HYDRAULIC OIL FILTER P/N-40408 (NOT PICTURED)



FUEL TANK

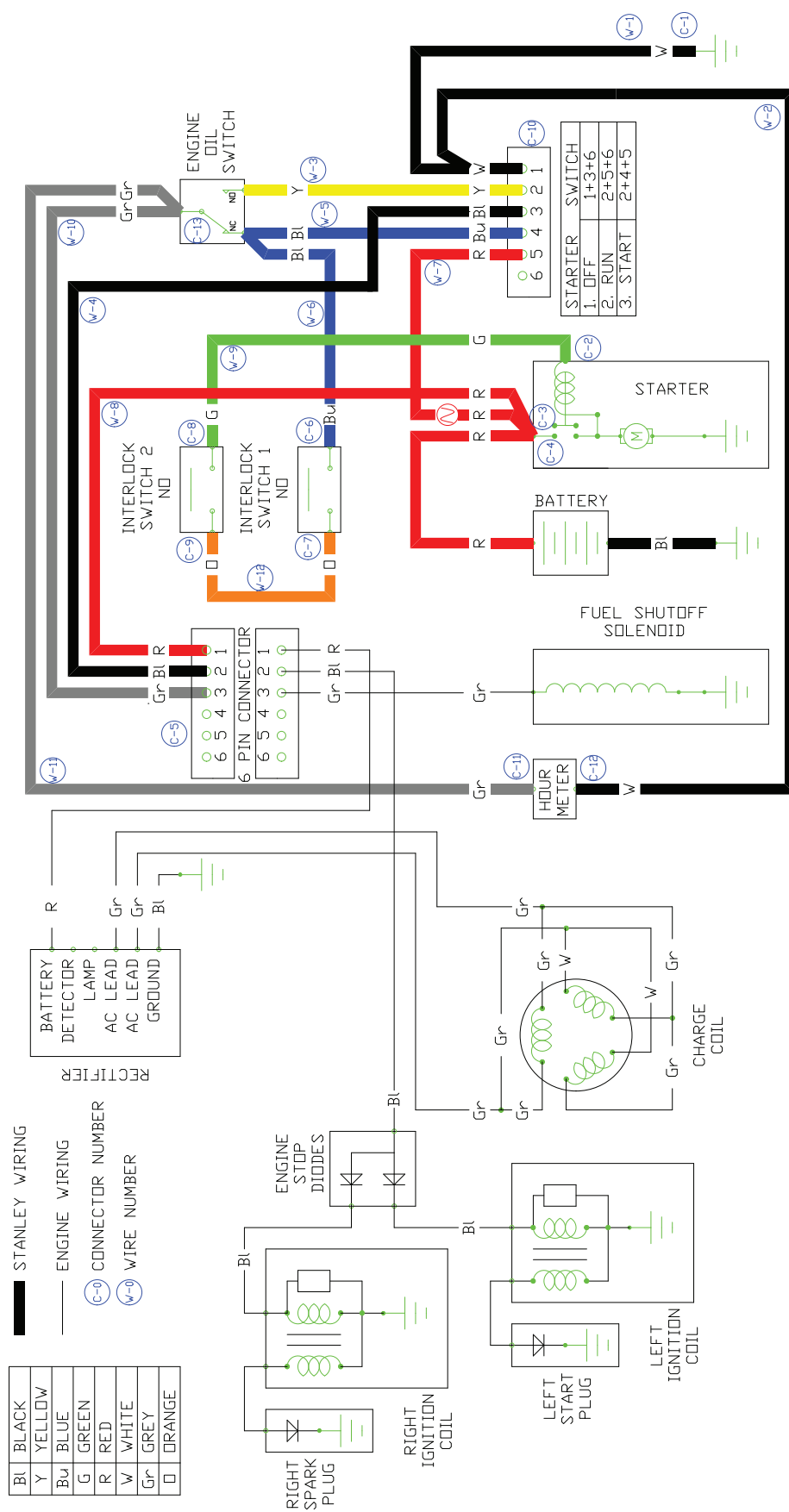
VAPOR LINE CONNECTION "HH" TO ENGINE.
FUEL LINE CONNECTION "GG" TO FUEL FILTER.
"GG" TO FUEL FILTER.



| ITEM | P/N | QTY | DESCRIPTION |
|------|--------|-----|------------------------|
| 1 | 71939 | 4 | HEX FLANGE BOLT |
| 2 | 72405 | 1 | FILTER HOUSING ASSY |
| 3 | 203056 | 4 | WASHER |
| 4 | 203223 | 1 | SIGHT GAUGE, 5" W/TEMP |
| 5 | 203224 | 2 | ISOLATOR, GROMMET |
| 6 | 203253 | 5 | CAPSCREW |
| 7 | 207998 | 1 | ASSEMBLY, HYD TANK |

| ITEM | P/N | QTY | DESCRIPTION |
|------|--------|-----|---------------------------|
| 1 | 01525 | 2 | CAPSCREW 3/8-16 X 3/4 |
| 3 | 40433 | 2 | HEX FLANGE BOLT 5/16-18 |
| 5 | 71794 | 1 | FUEL CAP |
| 6 | 72317 | 4 | 5/16" SPRING HOSE CLAMP |
| 7 | 72451 | 2 | 1/4" SPRING HOSE CLAMP |
| 8 | 203224 | 2 | ISOLATOR, GROMMET |
| 10 | 204458 | 1 | ELBOW, 90, 1/4 NPT |
| 11 | 204459 | 1 | FUEL PICKUP, 21", 1/4 NPT |
| 12 | 204462 | 1 | SIGHT GAUGE, 5", FUEL |
| 13 | 204536 | 1 | HOSE, VAPOR 72441X26.5 |
| 14 | 204537 | 1 | HOSE, FUEL 04308X16 |
| 15 | 204842 | 1 | ASSEMBLY, FUEL TANK |
| 16 | 206046 | 1 | CARBON CANISTER, 400CC |
| 18 | 206055 | 1 | ASSY, BRACKET |
| 19 | 206057 | 1 | HOSE, FUEL 04308X8 |

ELECTRICALS SCHEMATIC



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