



Operation, Maintenance and Parts Manual

6-inch Trash Pump

EPT5-150HA, EPT5-150YD

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Please read and save this Manual. Read this manual carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. The Safety Instructions are contained in the General Operating Instructions. Failure to comply with the safety instructions accompanying this product could result in personal injury and/or property damage! Retain instructions for future reference. TSURUMI PUMP reserves the right to discontinue any model or change specifications at any time without incurring any obligation. ©2011 Tsurumi (America), Inc. 1625 Fullerton Court, Glendale Heights, IL 60139. All Rights Reserved.

Periodic maintenance and inspection is required on all pumps to insure proper operation. Unit must be clear of debris and sediment. Inspect for leaks and loose bolts. Failure to do so voids warranty.

6" Trash Pump

DESCRIPTION

This trash pump is heavy duty, centrifugal, engine driven, self-priming (to 20 ft. lift), and transportable unit. Pump is equipped with precision lapped mechanical shaft seal to reduce the likelihood of leakage, and a clog resistant impeller capable of handling solids up to 3" in spherical diameter. Units are used to handle water containing stones, sticks, mud, and other solids (up to 20% by volume). O-ring sealed flange connection to provide leak-free low maintenance operation. Suction flange male NPT threaded for direct coupling to a standard NPS hose connector with rubber gasket. Liquid temperature range is 40° to 180° F (4° to 82° C). Maximum casing pressure if used in a flooded suction application is 50 psi. For use with nonflammable liquids that are compatible with pump component materials.

All models come equipped with a 12V electric starting system (battery not included). A fully plumbed fuel tank is standard. Gas engine units are equipped with a 12 gallon marine grade plastic tank and diesel engine units have an 18 gallon aluminum tank. All units equipped with a digital tachometer/hour meter.

Pump and engine are mounted on an easy maintenance sliding frame assembly. Frame can be equipped with pneumatic tires, lighting system, support jacks, and a 2" diameter ball mount tongue hitch. A lunette ring is optional.

Tires, wheels, and lighting system meet DOT requirements and are supplied with certificate of origin and serial number. Check state and local requirements to register trailer/pump for highway towing.

SPECIFICATIONS

Suction Inlet.....	6" NPT (male)
Discharge Outlet.....	6" NPT (female)
Dimensions (overall)	
Trailer Mounted.....	.9'L x 4'W x 5'H
Frame Mounted.....	.6'L x 3'W x 3'3"H
Engine.....	B&S Vanguard
.....	Honda 660/670
.....	Daihatsu/Vanguard
.....	Yanmar 3TNM72-ASA

BASIC CONSTRUCTION

Cast aluminum with cast iron volute, stainless steel impeller, suction flange and discharge manifold. Viton silicon carbide shaft seal, Buna O-rings, Buna/Neoprene suction check valve.

UNPACKING

Refer to Repair Parts Illustration and Repair Parts List to aid in identifying parts. Unpack and separate all pump components from shipping/package materials, making sure all parts are accounted for. Retain all manuals for reference.

Package should contain:

1. Pump and engine completely assembled and mounted to frame.
2. Tongue packaged alone (not attached to frame).
3. Tail lights, side lights, wiring packaged alone.
4. Manuals included: Specifications information and repair parts manual, Operating Instructions/maintenance manual, tachometer/hour meter instructions, engine instruction/owner's manual.

ASSEMBLY

Trailer Mounted Pump Tongue Assembly Instructions

1. Remove four mounting bolts and nuts inserted into tongue

mounting holes.

2. Position tongue under frame. Line up tongue mounting holes with holes in frame front and middle cross members.
3. Secure tongue to frame by installing four (4) mounting bolts and nuts. Torque to 15-18 ft. lbs.

Light Kit Assembly Instructions

1. Position wiring harness under tongue, "Y" branch of harness should be under front tongue to frame connection.
2. Feed each branch wiring harness through hole in end of frame cross member and support loops at fender mounting bolts. Green/brown wire harness left side (looking from tongue end to pump end) yellow/brown wire harness right side. Pull harness snug (towards pump end of frame) while keeping "Y" at tongue connection.
3. Remove support loops from tongue. Clip loops over plug end of wire harness. Install loops back into position supporting wire harness. Plug end should be free under coupler end of tongue. Install grounding eye under screw holding loop closest to tongue ball coupler.
4. Clip support loops over harness branches past "Y". Position loops on exposed end of tongue mounting bolts. Secure with a flange nut.
5. Install side lights onto frame side rails. Connect side light wire (wire may be inside lens) with brown wire in each branch harness. Secure connection with splice fitting or wire nut.
6. Feed taillight wires through middle hole of three holes on each end of pump end cross member.
7. Make taillight connections by pushing exposed stranded wire into appropriate hole in rear of taillight. Make certain taillight with license plate light is on the right side (looking from tongue).
8. Clip a support loop over the end of each wire harness.
9. Install license plate holder on right taillight studs. Install both taillight studs thru rear cross member holes. Position support clip on outer taillight stud. Secure taillights with flange nuts.

Frame Mounted Pump:

1. Unit shipped fully assembled.

NOTE: Follow all recommendations in General Operating Instruction and Maintenance Manual provided with this pump. In addition, follow the specific recommendations that follow.

INSTALLATION

Trailer Mounted Pump

▲ CAUTION

To avoid trailer tipping, set rear trailer stabilizer jacks before removing trailer from vehicle hitch.

1. Always set trailer tongue stand and rear trailer stabilizer jacks before unhooking trailer hitch from vehicle tow ball.

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2. Make sure pump and trailer are level and trailer wheels are blocked to prevent movement during operation.

Frame Mounted Pump

1. Pump frame must be supported on a level firm surface. Anchoring pump frame to support surface is required to prevent movement or tipping during operation. Mounting holes are provided on bottom flange of frame side rails. Allow sufficient clearance around pump frame to perform routine maintenance.

All Installations:

1. Suction line should be as short and direct as possible, have a constant slope up to the pump's suction port, and line diameter must match suction port diameter. Use only reinforced non-collapsible hose on pump suction.
2. Check condition of suction hose gaskets before installation. Weak, worn, leaking gaskets will allow an air leak at suction connection. If suction connection leaks air, the pump will not prime.
3. Supports must be used to carry the weight of the suction and discharge lines. The pump should not be used to support the entire weight of the suction and discharge lines. Damage/breakage of pump ports may occur if lines are not supported.
4. If a check valve or collapsible hose is used on discharge, a means of venting air from the pump discharge manifold is required during the priming cycle. If air cannot escape from casing, the pump will not prime.

Lifting Bail

Pump frame is equipped with a lifting bail.

Lifting bail provides a convenient lifting point if positioning pump with a crane or similar equipment is necessary. Bail and lifting bolt assembly will support only the weight of frame/trailer, pump and driver.

▲ WARNING

Periodically re-torque lifting bolt assembly to 100 ft. lbs.

▲ WARNING

Remove suction and discharge lines and drain all liquid from pump before lifting.

▲ WARNING

Lift pump assembly and trailer only. Do not load piping, hoses or other equipment on trailer during lifting.

OPERATION

Starting Unit

1. Fill engine with oil according to engine manufacturer's specifications listed in engine manual supplied.
2. Fill fuel tank with appropriate fuel for engine. Do not fill tank to the top allow at least an inch of airspace.
3. Fill pump casing with water through discharge manifold priming port. Casing must be full of water or pump will not prime.

▲ CAUTION

Do not run pump dry as permanent damage to the mechanical seal will result.

4. Start the engine, following instructions in engine manual.
5. Run engine at full throttle during priming cycle. Tachometer should indicate 3500 rpm or greater.
6. After pump has primed and is producing full flow, engine speed should be regulated to produce desired pump performance level. Under high lift and/or low discharge head conditions, engine speed should be decreased to retard cavitation. This will extend pump, seal, and engine service life.
7. Yanmar diesel engine: Maximum operating speed, after full prime, is 3200 rpm.

▲ CAUTION

Do not operate pump unattended. Shaft seal damage will occur if prime is lost or if flow is insufficient to keep the shaft seal cool.

Refueling Tank

1. Allow unit to cool before adding fuel to tank.
2. Remove tank cap.
3. Add fuel through fill neck. Watch fuel level gauge during filling and stop adding fuel when the gauge indicates full. Do not overfill tank, allow an inch or two of airspace from fuel level to top of tank.
4. Install tank cap. Rotate clockwise until it hits internal stop indicating that it is sealed.

Pump End Drain

Pump end is equipped with an NPT drain port. The port is located on the pump adapter plate (Ref. No. C28) at the 6 o'clock position. The elbow (Ref. No. C30) is installed in the port to direct the liquid down through frame. The indented hex pipe plug (Ref. No. C31) is installed in elbow. Use a 9/16" L-hex wrench to remove plug. A ball valve and length of pipe or hose (not supplied) may be installed to direct the drain liquid away from the pump.

ALWAYS DRAIN LIQUID:

1. After pumping operation is complete if freezing temperatures may be experienced.
2. Before transporting pump.
3. Before lifting pump.

Seal Wash Ports

These units are equipped with provisions for the addition of a seal wash hose. To extend seal life or when pumping water containing abrasive sediment or when a buildup of material on the shaft seal is encountered, a seal wash may increase seal life. The pump adapter plate is equipped with two 1/8" NPT tapped ports; one at the (high pressure volute discharge) 10 o'clock position on adapter face and one on top of the locating boss (low pressure seal cavity).

NOTE: Fittings and hose must be compatible with liquid pumped, liquid temperature, and rated for maximum discharge pressure in the installation.

NOTE: Addition of seal wash hose may affect priming performance. After installing seal wash hose monitor length of time required to reach full prime.

Standard Installation:

Remove 1/8" NPT plugs (Ref. No. C29). Install appropriate fittings and hose between the two ports.

Abrasive Installation:

Remove 1/8" NPT plugs. Install appropriate fittings and hose between the two ports. The installation of an in-line abrasives separator is recommended. Contact appropriate manufacturer for details.

Clean Water Injection Installation:

Remove 1/8" NPT pipe plug from low pressure port. Connect external clean water source line to low pressure port of adapter with appropriate hose and fitting. Incoming pressure must be at least 10 psi greater than seal cavity pressure. A check valve is recommended to prevent back flow.

Transport Trailer

Pump supplied with trailer gear is for off road use only as shipped. Trailer registration for use on public roads is the responsibility of the owner. A Manufacturer's Certificate of Origin listing the Vehicle Identification Number (VIN) is included with the trailer. Trailer registration requirements are regulated by each state and local government. Contact your State Department of Motor Vehicles or Department of Transportation for information and guidance on licensing or titling the trailer/pump for towing on public roads in your state.

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Ball Coupling Adjustment:

1. Install coupling over correct size trailer hitch mating ball and push down on handle until trigger locks in slot.
2. Pull up and down on tongue to ensure ball fits snug in coupler. There should be no play between coupler and ball.
3. Tighten adjustment nut, located on bottom of coupler opposite the handle, to take up any excessive play.

NOTE: If nut is too tight, the handle will not lock into position.

Towing Safety and Operational Guidelines:

▲ CAUTION

Follow all safety and operational rules listed in the following section:

1. Make sure vehicle is capable of towing the load. Make sure vehicle hitch is rated for the load.
2. Make sure the trailer coupler and hitch ball are the same sizes and rated for the load.
3. Make sure trailer coupler is correctly and safely connected to hitch ball. Coupler handle trigger must be positively locked. Install lock pin (not provided) to ensure trigger stays locked during towing.
4. Be sure to use safety chains supplied with trailer. Safety chains should be attached to towing vehicle at the same length on both sides and should not drag on the ground.
5. Never overload trailer. Trailer is rated to carry pump, pump frame and a full load of fuel. Loading other items on the trailer may cause GVW to exceed trailer rating.

▲ CAUTION

Maximum safe highway towing speed is 45 mph. Never allow passengers on the trailer.

6. Check all lights for proper operation before each use.
7. Check tires for wear and proper inflation before each use. Inflate to psi rating on tire.
8. Check safety chains for wear and solid connection to trailer frame.

MAINTENANCE

Sliding Engine Sled Operation

Refer to Repair Parts pages.

▲ WARNING

Disconnect spark plug wires and battery to prevent accidental starting.

NOTE: Drain pump casing (Ref. No. C5) by removing plug (Ref. No. C31). Also drain discharge line, and suction line of all liquid before sliding engine sled.

1. Loosen six 1/2-13 nuts (Ref. No. C47) that are pressing clamp angle to sled.

To access impeller/seal plate area:

2. Remove three 1/2-13x1-3/4" cap screws (Ref. No. E19) holding bearing housing to pump adapter.
3. Grasp sled (Ref. No. S2) cross member and slide engine/sled assembly back from pump adapter. Slide far enough to access impeller approximately 10" to 12".

NOTE: If engine/sled assembly will not slide back easily, the seal plate (Ref. No. E11) may be stuck in pump adapter. Remove two 1/2"-13 x 1" bolts (Ref. No. E12) from bearing housing. Insert two 1/2"-13 x 1-3/4" bolts and tighten evenly and slowly until seal plate loosens from pump adapter.

4. Tighten 1/2-13 nuts to prevent engine/sled from moving during maintenance procedure.

To access pump volute and inside of casing:

5. Loosen four 5/8-11 x 6-1/2" hex bolts (Ref. No. C12) holding casing to adapter. Slide 5/8" bolt -washer-nut from casing and adapter ear four total bolts.
6. Grasp sled cross member and slide engine/sled assembly back from pump casing. Slide far enough to access volute (Ref. No. C24 approximately 10" to 12").
7. Tighten 1/2-13 nuts to prevent engine/sled from moving during maintenance procedure.

▲ WARNING

Make certain that unit is disconnected from power source before attempting to service or remove any components!

MECHANICAL SEAL REPLACEMENT

NOTE: Always replace the mechanical seal parts (Ref. No. E6 & E7) as an assembly (Ref. No. E5) to ensure proper mating of mechanical components.

NOTE: Always inspect impeller stub shaft ball bearing (Ref. No. E14) during seal replacement. The bearing may have been damaged by leaking water. Refer to IMPELLER STUB SHAFT BEARING REPLACEMENT section.

1. Access impeller/seal plate area as described in SLIDING ENGINE SLED OPERATION section.
 2. Unscrew impeller (Ref. No. E2) from the impeller stub shaft (Ref. No. E15). Use a rubber mallet or soft block of wood and hammer to loosen impeller. Remove any impeller shims (Ref. No. E3), shaft sleeve and seal head (Ref. E6) from impeller stub shaft.
 3. Remove two 1/2-13x1" cap screws (Ref. No. E12) holding seal plate (Ref. No. E11) to bearing housing (Ref. No. E17 or E18). Remove seal plate from bearing housing.
 4. Remove impeller shaft washer (Ref. No. E13) and inspect impeller stub shaft ball bearing for water damage or wear. Replace shaft washer with flat surface toward impeller.
 5. Push seal seat from the seat plate recess with a screwdriver.
 6. Clean the seal plate recess before inserting a new seal seat.
 7. Carefully wipe the polished surface of the seal seat with a clean cloth.
 8. Wet the rubber portion of the seal seat with a light coating of soapy water.
 9. Press the new seal seat squarely into the cavity in the seal plate. If the seal seat does not press squarely into the cavity, it can be adjusted in place by pushing on it with a piece of pipe. Always use a piece of cardboard between the pipe and the seal seat to avoid scratching the seal seat. (This is a lapped surface and must be handled very carefully).
 10. After the seal seat is in place, ensure that it is clean and has not been scratched or cracked.
 11. Using a clean cloth, wipe the impeller stub shaft and make certain that it is clean.
 12. Install seal plate and secure to bearing housing adapter face with two 1/2-13x1 cap screws.
 13. Apply a light coating of soapy water to the inside rubber portion of seal head and slide onto the shaft sleeve. Slip the shaft sleeve and seal head onto the impeller stub shaft with seal head lapped surface towards seal seat lapped surface.
 14. Replace any impeller shims removed during disassembly.
 15. Screw the impeller back in place tightening until it is seated against shims and shaft sleeve.
- NOTE:** Make sure seal spring retainer is not pinched between impeller/shims and end of shaft sleeve.
16. Refer to section entitled Shim Adjustment at this time if shaft sleeve or any other parts listed therein have been replaced.
 17. Check seal plate O-ring (Ref. No. C37), make sure it is not damaged or worn and is in position on seal plate.

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NOTE: Always inspect O-ring seals. Replace when cracked or worn. Wet the O-ring with soapy water for ease of assembly.

18. Slide engine/sled back into position aligning lead diameter on seal plate with adapter inside diameter. Replace three 1/2-13x1-3/4 cap screws. Tighten six 1/2-13 hex nuts clamping sled to casing frame.
19. Remount any other parts and reconnect spark plug wires and battery.

SHIM ADJUSTMENT

Manual Method:

1. When installing a replacement impeller, shaft sleeve, bearing housing, seal plate, or volute (Ref. No. C24), it may be necessary to vary the number of impeller shims that will be required. This is done by adding one shim more than was removed and reassembling the pump as described in Mechanical Seal Replacement section.
2. Ensure that volute, adapter, seal plate and bearing housing are fitted firmly. Check tightness of all fasteners.
3. Remove spark plug wires and bump engine over slightly with electric starter. If engine does not turn freely or interference between impeller and volute can be heard, disassemble pump and remove one shim.

NOTE: When adding or removing shims, it is best to proceed with a 0.020" increment each time. If engine does not turn freely, add shims until it does strike, then remove a 0.020" shim. This will ensure maximum performance.

4. Proper running clearance is 0.020" to 0.040"
5. Follow the above procedure until proper clearance is obtained.

Measurement Method:

1. When installing a replacement impeller, shaft sleeve, bearing adapter, seal plate or volute, it may be necessary to vary the number of impeller shims that will be required. This can be accomplished by measurement with a suitable size depth micrometer or similar measuring instrument.
2. Measure depth from pump adapter-seal plate mounting surface to impeller face of volute. Measurement should be close to 5.960".
3. Add or remove impeller shims until height of impeller face to seal plate pump adapter mounting surface measures 0.020" to 0.040" shorter than depth measured in previous step.
4. Slide engine/sled back into position aligning lead diameter on seal plate with adapter inside diameter. Replace three 1/2-13x1-3/4 cap screws. Tighten six 1/2-13 hex nuts clamping side rails to frame rails.
5. Remove spark plug wires and bump engine over slightly with electric starter. If engine does not turn freely or interference between impeller and volute can be heard, disassemble pump and remove one shim. Rotate engine again. Engine must rotate freely.

IMPELLER AND VOLUTE REPLACEMENT

Impeller and volute are subject to wear only by abrasive sand or sediment laden liquids. If badly worn, all these parts can be replaced and the pump thus restored to full efficiency.

NOTE: When the clearance between the impeller and the volute exceeds 1/16" at the face of the impeller or 1/8" on the outside diameter of the impeller, it may be necessary to take corrective action. The increased clearance can cause lengthened priming times and reduce pumping capacity. If both the priming and capacity of your unit are satisfactory for your application, it is recommended that no corrective maintenance be performed regardless of what clearances on your unit may have developed, since the increased clearances in themselves are not generally harmful to your pump. Normally, new pump clearances can be restored by simply shimming behind the

impeller. If the impeller is badly worn, it is recommended that the impeller be replaced. This is usually all that is required since only on unusually abrasive services does the cast iron volute show deterioration. Occasionally a stone or hard object might get caught in the impeller and cause damage to the volute/cutwater. In these cases, follow the instructions below for replacement.

1. Refer to "Sliding Engine Sled Operation" section for procedure to access the volute and inside of the casing.
2. Remove casing O-ring (Ref. No. C35) from outside diameter of volute (Ref. No. C24) flange.

▲ CAUTION

A mechanical means of supporting the volute during this procedure is recommended. The volute casting weighs 50 lbs.

3. Remove three 1/2-13 x 1-1/4" cap screws holding volute to pump adapter (Ref. No. 28). Slide volute out of adapter machined pocket.
 4. Replace worn parts as necessary.
- NOTE:** When replacing volute, attach a new volute gasket (Ref. No. C36) to new volute with fasteners.
- NOTE:** Before installing new parts, clean all mating surfaces thoroughly.
5. Install volute aligning flange outside diameter with adapter machined pocket. Replace three 1/2-13 cap screws. Check for interference between impeller face and volute by slowly rotating engine shaft. See SHIM ADJUSTMENT section for procedure to set impeller clearance.
 6. Inspect casing O-ring for cracks or tears, replace if necessary. Install O-ring on outside diameter of volute flange.
 7. Slide engine sled and engine assembly into casing, align outside diameter of volute flange with casing machined inside diameter, do not pinch casing O-ring. Install four 5/8-11 hex bolts and nuts. Tighten six 1/2-13 hex nuts clamping engine sled in position.

IMPELLER STUB SHAFT BEARING REPLACEMENT

Gas engine units are equipped with a permanently lubricated impeller shaft ball bearing (Ref. No. E14). Diesel engine units are equipped with two bearings. These bearings support the radial and axial loads produced by the impeller reducing the load on the engine crankshaft bearings. The bearing does not require lubrication but should be inspected periodically for wear or water damage from a leaking shaft seal. As part of a maintenance schedule, the bearing should be replaced periodically.

1. Refer to "Sliding Engine Sled Operation" section. Access impeller as described.
2. Refer to MECHANICAL SEAL REPLACEMENT section. Follow steps 1 through 3; remove impeller, impeller shims, shaft sleeve, seal and seal plate.
3. Remove shaft washer.
4. Remove cap screws (Ref. No. E20 or E21) fastening bearing housing to engine (Ref. No. E38). Diesel engine units: Loosen set screw in impeller stub shaft. Remove bearing housing assembly from engine by sliding away from engine. Gas engine and Vanguard diesel units: disengaging engine PTO shaft from impeller stub shaft. Do not lose shaft key (Ref. No. E16). Yanmar diesel engine units: disengaging flywheel drive hub attached to impeller stub shaft from flywheel drive plate and flywheel bearing.
5. On appropriate bearing press, press stub shaft and bearing from bearing housing adapter. Remove bearing from stub shaft.
6. Replace bearing with equivalent ball bearing. Reassemble bearing, stub shaft and bearing adapter.
7. Gas engine and Vanguard diesel engine units: insert shaft key into engine PTO shaft. Align shaft key with stub shaft key way, slide stub shaft, bearing adapter assembly onto engine

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and secure with fasteners. Yanmar diesel units: align flywheel drive hub with flywheel drive plate and align end of impeller stub shaft with bearing in flywheel. Slide assembly in until bearing housing seats on engine bell housing. Secure with fasteners.

NOTE: Apply a light coating of anti-seize compound to shaft to prevent corrosion and galling.

8. Replace shaft washer onto stub shaft. Flat surface of shaft washer must face impeller.
9. Replace seal plate, shaft sleeve, seal, impeller shims and impeller, turn clockwise to tighten. Refer to MECHANICAL SEAL REPLACEMENT section; follow step 12 and steps 14 through 19 for reassembly procedure.

These units are designed so that for most cleanout or clogging problems it should not be necessary to remove hoses or piping. The suction area can be reached by removing two threaded handles (Ref. No. C10) and removing suction cleanout cover plate (Ref. No. C11) and O-ring (Ref. No. C34). To reach the impeller chamber or casing discharge areas, follow procedures described in SLIDING ENGINE SLED OPERATION.

NOTE: When replacing cleanout cover plate, carefully wipe clean all surfaces on which the O-ring has contact. Also make sure the O-ring is in position in its groove.

1. For information pertaining to the engine, engine service and engine parts, consult the Engine Manual or contact the nearest authorized service representative or the engine manufacturer.
2. Follow engine manufacturer's operating and maintenance procedures and recommendations covered in the engine manual.
3. Use tachometer-hour meter installed on the engine to log operating hours. See tachometer-hour meter instruction sheet included for operating information. Perform engine maintenance according to recommended hour intervals listed in engine manual.
4. An engine oil drain extender has been installed in the engine oil drain port to assist in changing the engine oil. Adding longer piping, hose, or a valve to fit each individual's maintenance requirements is left to the discretion of the operator.
5. Consult engine manual for engine warranty information needed. Any warranty issues concerning the engine must be address through the engine manufacturer. Warranty contact phone number, website, Authorized Service Representative listing and warranty directions are listed in the engine manual.

Yanmar 3TNM72

1. Use the engine fuel system hand primer to prime the engine with fuel on initial start-up or whenever the fuel system has been drained. See engine manual for details. Do not use the engine starter to crank the engine until the fuel system is primed.
2. Maximum ambient air temperature during engine operation is 45°C (113°F). Engine may not cool itself effectively if operated when ambient air temperature exceeds this limit. If pump is used below 0°C (32°F) do not allow water to freeze inside the pump. Damage to the pump components will occur if water freezes inside pump.
3. Engine speed may be set at 3600 rpm during the priming cycle. Once pump is fully primed engine speed must be reduced to a maximum speed of 3200 rpm. Damage to engine or pump end may result if operated for an extended period of time at speeds greater than 3200 rpm.

TRAILER GEAR

Routine Maintenance:

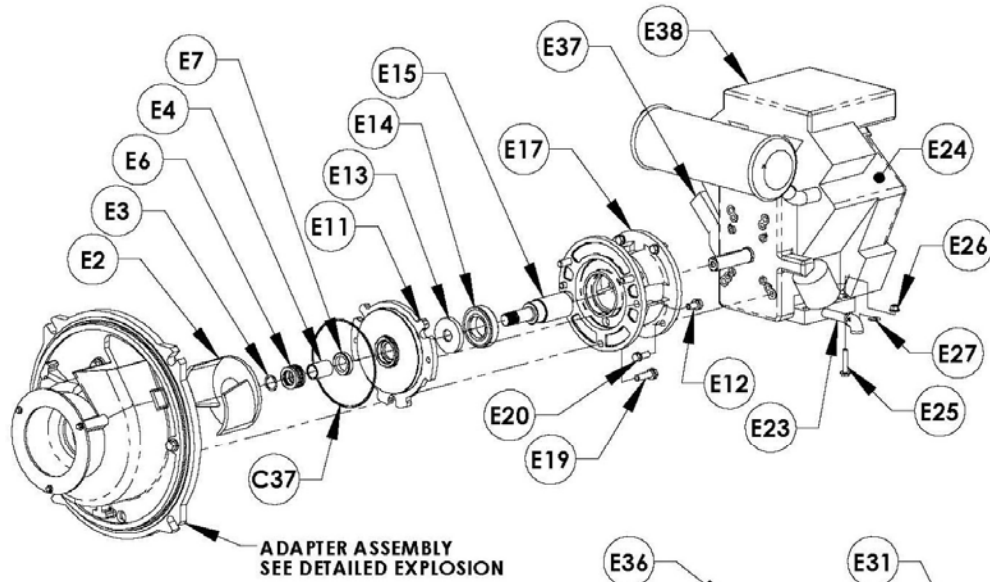
Routine maintenance is required on trailer equipment. Follow guidelines listed.

1. Lubricate ball coupling mechanism as required to ensure smooth positive action.
2. Apply light coating of lubricating grease to tow ball coupler.
3. Inspect safety chains for wear; replace if required. Check safety chain mounting bolt, torque to 20-25 ft. lbs. if required.
4. Torque lug nuts to 85-90 ft. lbs. after initial use then after every 250 miles.
5. Torque tongue to frame mounting bolts (4 total) to 15-18 ft. lbs. every 250 miles or monthly.
6. Torque axle spring hanger to frame mounting bolts (4 total) to 45-50 ft. lbs. every 500 miles or yearly.
7. Torque axle U-bolts to 30-35 ft. lbs. every 500 miles or yearly.
8. Repack wheel bearing with NLGI Grade-2 wheel bearing grease (Pennzoil 302 EP or equivalent) every 1000 miles or yearly.

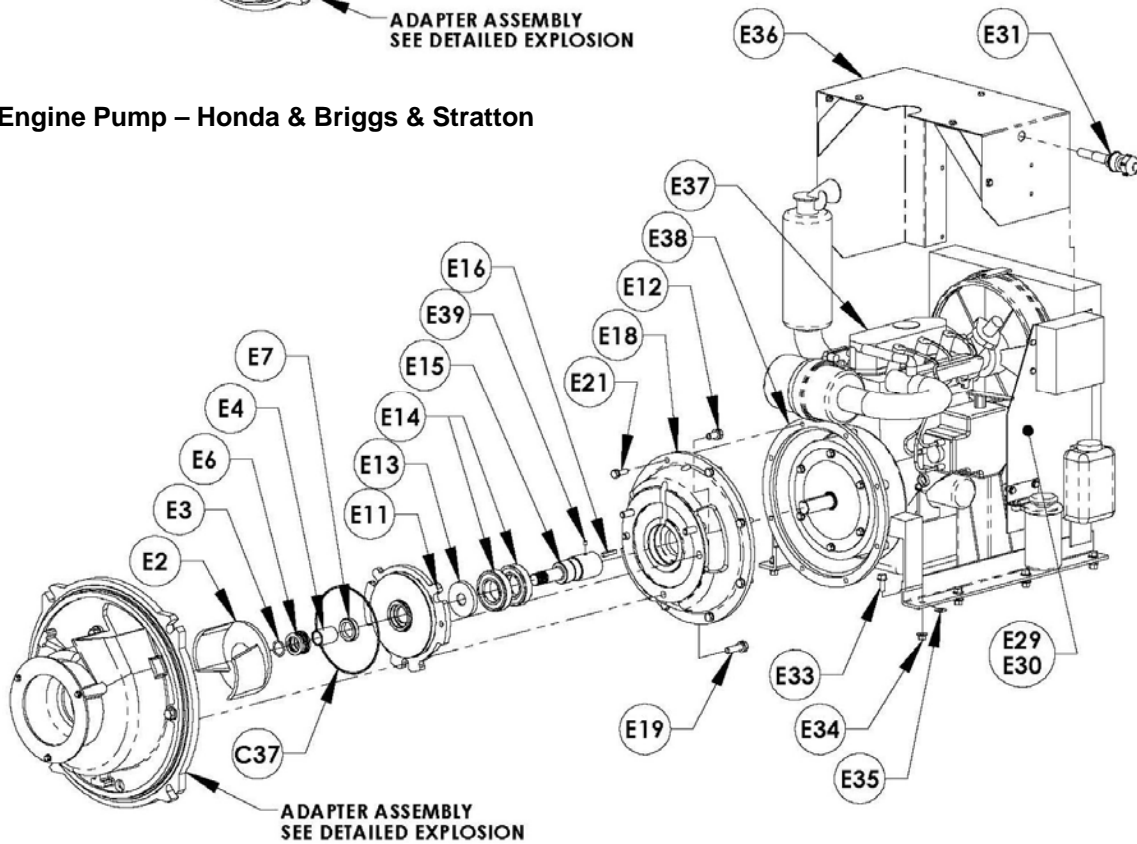
For Repair Parts contact dealer where pump was purchased.

Please provide following information:

- Model Number
- Serial Number (if any)
- Part description and number as shown in parts list



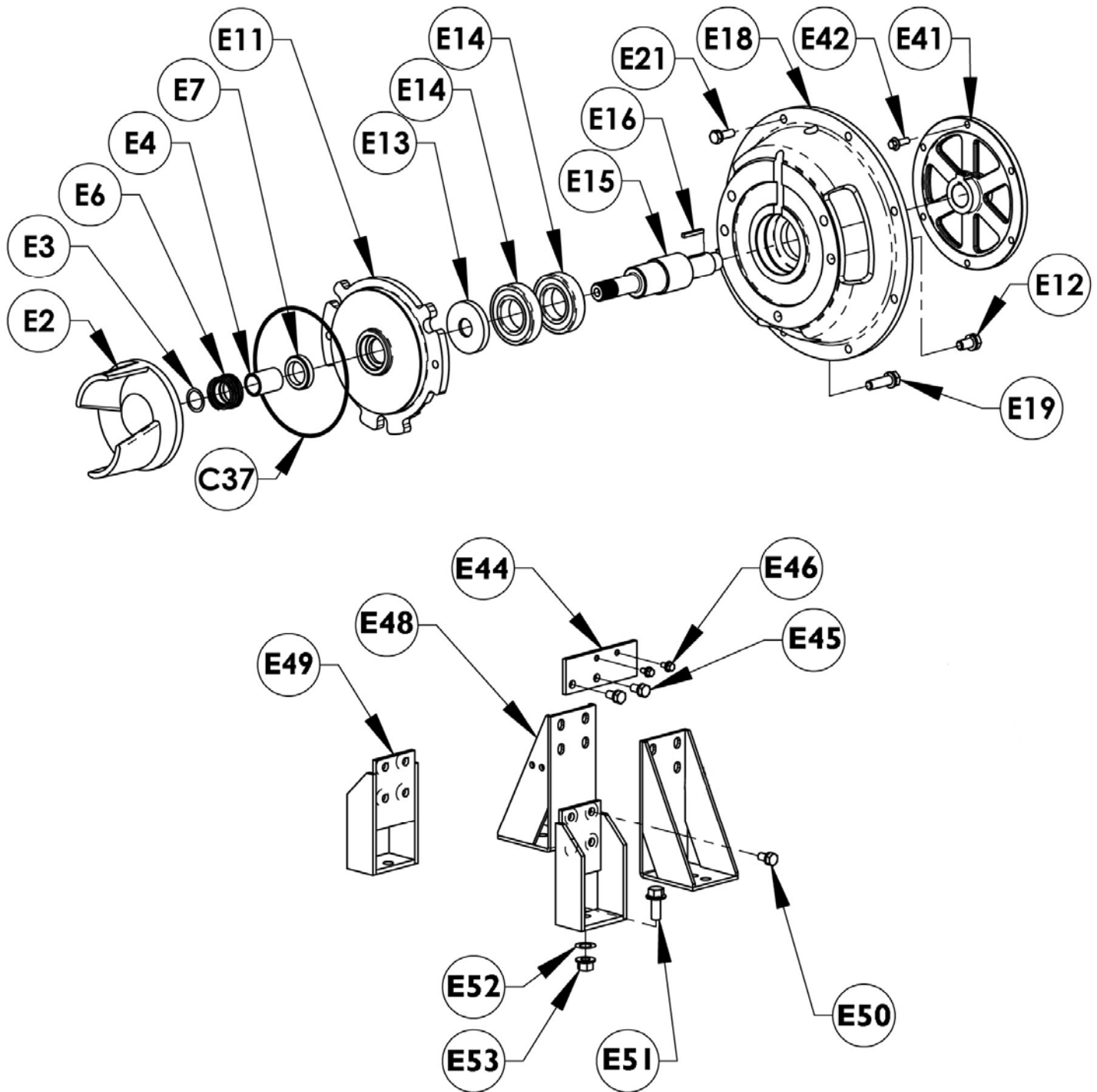
Gas Engine Pump – Honda & Briggs & Stratton



For Repair Parts contact dealer where pump was purchased.

Please provide following information:

- Model Number
- Serial Number (if any)
- Part description and number as shown in parts list



Repair Parts List - Engine Explosion

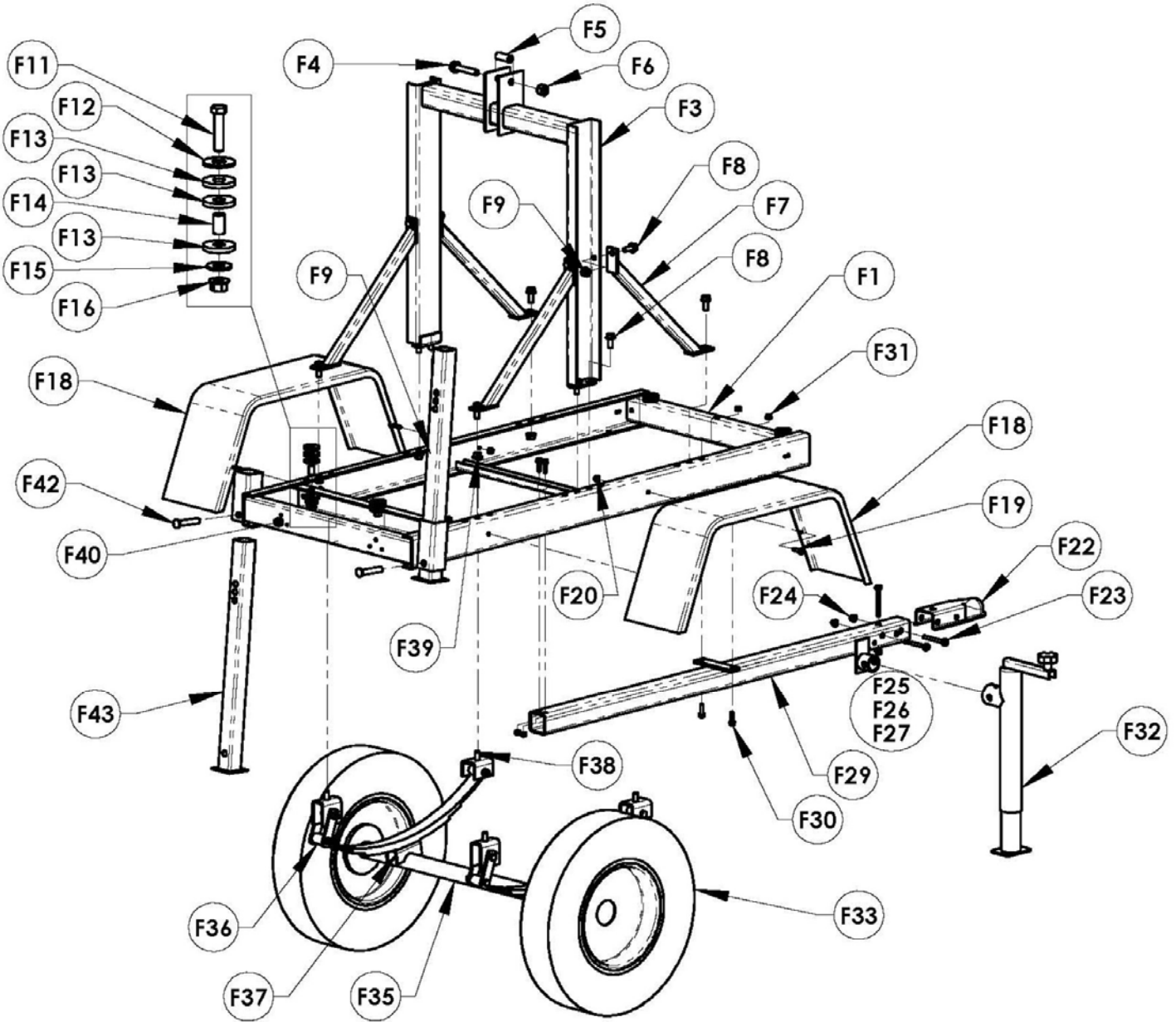
Ref. No.	Description	B & S Vanguard	Part Number for Models:			Qty.
			Honda GX660/GX670	Daihatsu Diesel	Yanmar Diesel	
E1	Impeller Kit (includes Ref. Nos. E2, E3, E4)	5585-010-98	5585-010-98	5585-010-98	5585-010-98	1
E2	Impeller	Incl. w/E1	Incl. w/E1	Incl. w/E1	Incl. w/E1	1
E3	Impeller Shim Package	Incl. w/E1	Incl. w/E1	Incl. w/E1	Incl. w/E1	1
E4	Shaft Sleeve	5585-140-01	5585-140-01	5585-140-01	5585-140-01	1
E5	Mechanical Shaft Seal Kit (includes Ref. Nos. E6, E7)	5585-301-90	5585-301-90	5585-301-90	5585-301-90	1
E6	Shaft Seal Head	Incl. w/E5	Incl. w/E5	Incl. w/E5	Incl. w/E5	1
E7	Shaft Seal Seat	Incl. w/E5	Incl. w/E5	Incl. w/E5	Incl. w/E5	1
E8	Seal Plate/Bearing Housing Kit (includes Ref. Nos. E11 thru E17 or E18, E19, E20 or E21)	5585-090-95	5585-090-95	5585-091-96	5587-090-96	1
E9	Seal Plate Kit (includes Ref. No. E11)	5585-031-95	5585-031-95	5585-031-95	5585-031-95	1
E10	Stub Shaft Kit (includes Ref. Nos. E13, E14, E15, E16)	5585-140-90	5585-140-90	N/A	5587-140-90	1
E10	Stub Shaft Kit (includes Ref. Nos. E13, E14, E15, E16, E39)	N/A	N/A	5585-140-91	N/A	1
E11	Seal Plate	Incl. w/E9	Incl. w/E9	Incl. w/E9	Incl. w/E9	1
E12	1/2-13x1 Hex Screw	Incl. w/E8	Incl. w/E8	Incl. w/E8	Incl. w/E8	2
E13	Stub Shaft Washer	Incl. w/E8	Incl. w/E8	Incl. w/E8	Incl. w/E8	1
E14	Ball Bearing Sealed #6209 (45idx85odx19w)	N/A	N/A	1695-080-00	1695-080-00	2
E15	Stub Shaft	5580-140-00	5580-140-00	5580-140-01	5585-141-00	1
E16	1/4 Square x 1-1/2" Long Drive Key	Incl. w/E10	Incl. w/E10	Incl. w/E10	Incl. w/E10	1
E17	Bearing Housing/Engine Adapter	Incl. w/E8	Incl. w/E8	N/A	N/A	1
E18	Bearing Housing/Bell Housing Adapter	N/A	N/A	Incl. w/E8	Incl. w/E8	1
E19	1/2-13x1-3/4 Hex Screw	Incl. w/E8	Incl. w/E8	Incl. w/E8	Incl. w/E8	3
E20	7/16-14x1-1/4 Hex Screw	Incl. w/E8	Incl. w/E8	N/A	N/A	4
E21	M10x1.5x30mm Hex Screw	N/A	N/A	Incl. w/E8	Incl. w/E8	8
E22	Gasoline engine Mounting Hardware	Incl. w/E22	Incl. w/E22	N/A	N/A	1
E23	Engine Oil Drain Extender	Incl. w/E22	Incl. w/E22	N/A	N/A	1
E24	Tachometer/Hour Meter	Incl. w/E22	Incl. w/E22	N/A	N/A	1
E25	Mounting Bolts	Incl. w/E22	Incl. w/E22	N/A	N/A	4
E26	Mounting Nuts	Incl. w/E22	Incl. w/E22	N/A	N/A	4
E27	Engine Shim Set	Incl. w/E22	Incl. w/E22	N/A	N/A	1
E28	Diesel Engine Hardware Kit	N/A	N/A	5585-420-93	N/A	1
E29	Tachometer/Hour Meter	N/A	N/A	Incl. w/E28	N/A	1
E30	Tachometer Wire Harness	N/A	N/A	Incl. w/E28	N/A	1
E31	Throttle Control (includes Head and Cable)	N/A	N/A	Incl. w/E28	N/A	1
E32	Diesel Engine Mounting Hardware Kit	N/A	N/A	5585-420-92	N/A	1
E33	3/8-16x1 Hex Bolt	N/A	N/A	Incl. w/E32	N/A	8
E34	3/8-16 Hex Flange Nut	N/A	N/A	Incl. w/E32	N/A	8
E35	Mounting Shim Set	N/A	N/A	Incl. w/E32	N/A	1
E36	Fan Guard Assembly	N/A	N/A	5585-420-94	N/A	1
E37	Battery Cable Kit (includes "+" & "-" cables for gas engines)	5585-350-90	5585-350-90	5585-350-90	N/A	1
	Diesel Engine "+" Battery Cable	N/A	N/A	N/A	5587-350-90	1
	Diesel Engine "-" Battery Cable	N/A	N/A	N/A	5587-351-90	1
E38	Engine	1639-011-00	1639-010-00	1639-050-00	1639-057-00	1
E39	1/4-20 x 3/8 Set Screw	N/A	N/A	Incl. w/E10	N/A	1
E40	SAE 6-1/2 Drive Plate Kit (includes Ref. Nos. E41, E42)	N/A	N/A	N/A	5587-400-90	1
E41	SAE 6-1/2 Drive Plate	N/A	N/A	N/A	Incl. w/E40	1
E42	M8x1.25x20 Cap Screw	N/A	N/A	N/A	Incl. w/E40	6
E43	Engine Bracket Kit (includes Ref. Nos. E44 thru E51)	N/A	N/A	N/A	5587-421-90	1
E44	Control Box Bracket Adapter	N/A	N/A	N/A	Incl. w/E43	1
E45	M10x1.5x20 Cap Screw	N/A	N/A	N/A	Incl. w/E43	2
E46	1/4-20x1/2 Hex Screw	N/A	N/A	N/A	Incl. w/E43	4
E47	Engine Mounting Feet Kit (includes Ref. Nos. E53 thru E58)	N/A	N/A	N/A	5587-420-90	1
E48	Engine Block Foot	N/A	N/A	N/A	Incl. w/E52	2
E49	Engine Bell Housing Foot	N/A	N/A	N/A	Incl. w/E52	2
E50	M10x1.5x20 Hex Screw	N/A	N/A	N/A	Incl. w/E52	8
E51	1/2-13x1-1/4 Hex Bolt	N/A	N/A	N/A	Incl. w/E52	4
E52	Shim	N/A	N/A	N/A	Incl. w/E52	8
E53	1/2-13 Hex Nut	N/A	N/A	N/A	Incl. w/E52	4
N/S	Muffler (Honda)	N/A	1639-013-00	N/A	N/A	1
N/S	Throttle Control	N/A	N/A	N/A	5583-403-00	1
N/S	Control Box/Tachometer/Hour Meter	N/A	N/A	N/A	Call for Availability	1

NOTE: Dual ball bearing stub shaft kit for 5585-D6 and 5586-D6 added for pumps serial number A35585D6G (0610 date code) and later. All pumps with earlier date code use single bearing stub shaft kit 5585-140-90.

For Repair Parts contact dealer where pump was purchased.

Please provide following information:

- Model Number
- Serial Number (if any)
- Part description and number as shown in parts list



Repair Parts List - Frame Explosion

Ref. No.	Description	Part Number for Models:				Qty.
		B & S Vanguard	Honda GX660/GX670	Daihatsu Diesel	Yanmar Diesel	
F1	Frame Kit	5585-100-90	5585-100-90	5585-100-90	5585-100-90	1
F2	Lifting Bail Kit (includes Ref. Nos. F3 thru F9)	5585-103-90	5585-103-90	5585-103-90	5585-103-90	1
F3	Lifting Bail	Incl. w/F2	Incl. w/F2	Incl. w/F2	Incl. w/F2	1
F4	5/8-11x3-1/2 Heavy Hex Bolt	Incl. w/F2	Incl. w/F2	Incl. w/F2	Incl. w/F2	1
F5	Bolt Spacer	Incl. w/F2	Incl. w/F2	Incl. w/F2	Incl. w/F2	1
F6	5/8-11 Heavy Hex Nut	Incl. w/F2	Incl. w/F2	Incl. w/F2	Incl. w/F2	1
F7	Lifting Support	Incl. w/F2	Incl. w/F2	Incl. w/F2	Incl. w/F2	2
F8	1/2-13x1-1/4 Hex Flange Bolt	Incl. w/F2	Incl. w/F2	Incl. w/F2	Incl. w/F2	8
F9	1/2-13 Hex Flange Nut	Incl. w/F2	Incl. w/F2	Incl. w/F2	Incl. w/F2	8
F10	Vibration Dampener Kit (includes Ref. Nos. F11 thru F16)	5585-111-90	5585-111-90	5585-111-90	5585-111-90	5
F11	1/2-13x2-1/4 Hex Bolt	Incl. w/F10	Incl. w/F10	Incl. w/F10	Incl. w/F10	1
F12	5/8 Washer	Incl. w/F10	Incl. w/F10	Incl. w/F10	Incl. w/F10	1
F13	Rubber Washer	Incl. w/F10	Incl. w/F10	Incl. w/F10	Incl. w/F10	3
F14	Sleeve	Incl. w/F10	Incl. w/F10	Incl. w/F10	Incl. w/F10	1
F15	1/2 Washer	Incl. w/F10	Incl. w/F10	Incl. w/F10	Incl. w/F10	1
F16	1/2-13 Hex Flange Nut	Incl. w/F10	Incl. w/F10	Incl. w/F10	Incl. w/F10	1

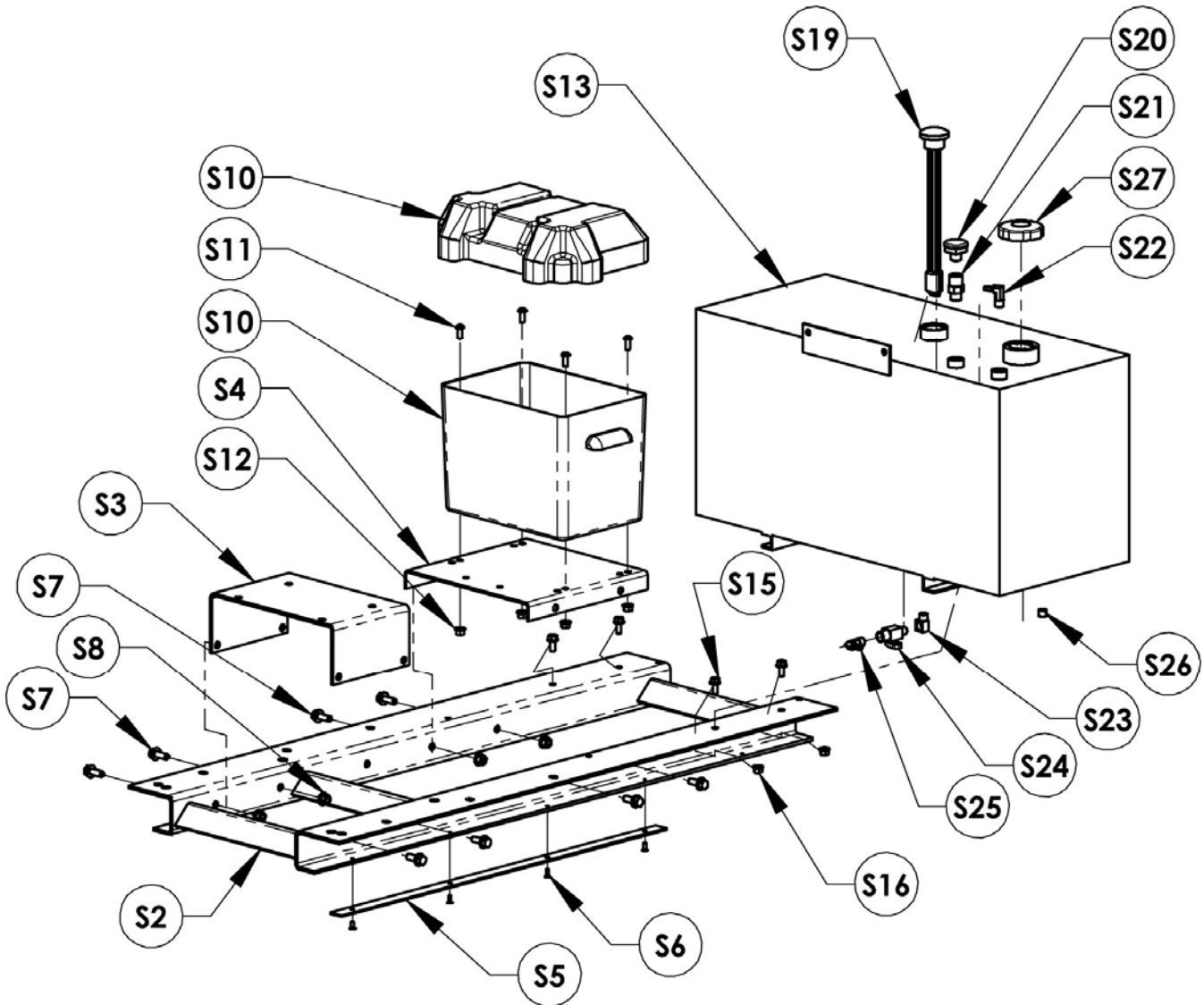
NOTE: Following parts are for trailer mounted units, not included on skid mounted units (5586-B6, 5586-H6, & 5586-D6).

F17	Fender Kit (includes Ref. Nos. F18 thru F21)	5585-440-90	5585-440-90	5585-440-90	5585-440-90	1
F18	Fender	Incl. w/F17	Incl. w/F17	Incl. w/F17	Incl. w/F17	2
F19	5/16-18x1-1/4 Hex Flange Bolt	Incl. w/F17	Incl. w/F17	Incl. w/F17	Incl. w/F17	4
F20	5/16-18 Hex Flange Nut	Incl. w/F17	Incl. w/F17	Incl. w/F17	Incl. w/F17	4
F21	Coupler/Safety Chain Kit (includes Ref. Nos. F22 thru F27)	5585-441-90	5585-441-90	5585-441-90	5585-441-90	1
F22	2" Ball Coupler	Incl. w/F21	Incl. w/F21	Incl. w/F21	Incl. w/F21	1
F23	1/2-13x3-1/2 Hex Bolt	Incl. w/F21	Incl. w/F21	Incl. w/F21	Incl. w/F21	3
F24	1/2-13 Hex Flange Nut	Incl. w/F21	Incl. w/F21	Incl. w/F21	Incl. w/F21	3
F25	Safety Chain (not shown)	Incl. w/F21	Incl. w/F21	Incl. w/F21	Incl. w/F21	2
F26	3/8-16x4 Hex Bolt (not shown)	Incl. w/F21	Incl. w/F21	Incl. w/F21	Incl. w/F21	1
F27	3/8-16 Hex Nut (not shown)	Incl. w/F21	Incl. w/F21	Incl. w/F21	Incl. w/F21	2
F28	Tongue Kit (includes Ref. Nos. F29 thru F31)	5585-107-90	5585-107-90	5585-107-90	5585-107-90	1
F29	Tongue	Incl. w/F28	Incl. w/F28	Incl. w/F28	Incl. w/F28	1
F30	5/16-18x1-1/4 Hex Flange Bolt	Incl. w/F28	Incl. w/F28	Incl. w/F28	Incl. w/F28	4
F31	5/16-18 Hex Flange Nut	Incl. w/F28	Incl. w/F28	Incl. w/F28	Incl. w/F28	4
F32	Jack	5585-443-00	5585-443-00	5585-443-00	5585-443-00	1
F33	Tire/Wheel Kit	5585-444-00	5585-444-00	5585-444-00	5585-444-00	2
F34	Axle/Spring Kit (includes Ref. Nos. F35 thru F39)	5585-445-90	5585-445-90	5585-445-90	5585-445-90	1
F35	Axle	Incl. w/F34	Incl. w/F34	Incl. w/F34	Incl. w/F34	1
F36	Springs and Hangers	Incl. w/F34	Incl. w/F34	Incl. w/F34	Incl. w/F34	1
F37	U Bolts/Plates/Nuts	Incl. w/F34	Incl. w/F34	Incl. w/F34	Incl. w/F34	1
F38	1/2-13x1-1/4 Hex Flange Bolt	Incl. w/F34	Incl. w/F34	Incl. w/F34	Incl. w/F34	4
F39	1/2-13 Hex Flange Screw	Incl. w/F34	Incl. w/F34	Incl. w/F34	Incl. w/F34	4
F40	Light Kit (includes: tail lights, side lights, protective conduit, & connection plug)	5585-351-90	5585-351-90	5585-351-90	5585-351-90	1
F41	Support Leg Kit (includes Ref. Nos. F42, F43)	5585-108-90	5585-108-90	5585-108-90	5585-108-90	2
F42	5/8x3" Long Pin with Cotter Key	Incl. w/F41	Incl. w/F41	Incl. w/F41	Incl. w/F41	2
F43	Support Leg	Incl. w/F41	Incl. w/F41	Incl. w/F41	Incl. w/F41	2

For Repair Parts contact dealer where pump was purchased.

Please provide following information:

- Model Number
- Serial Number (if any)
- Part description and number as shown in parts list



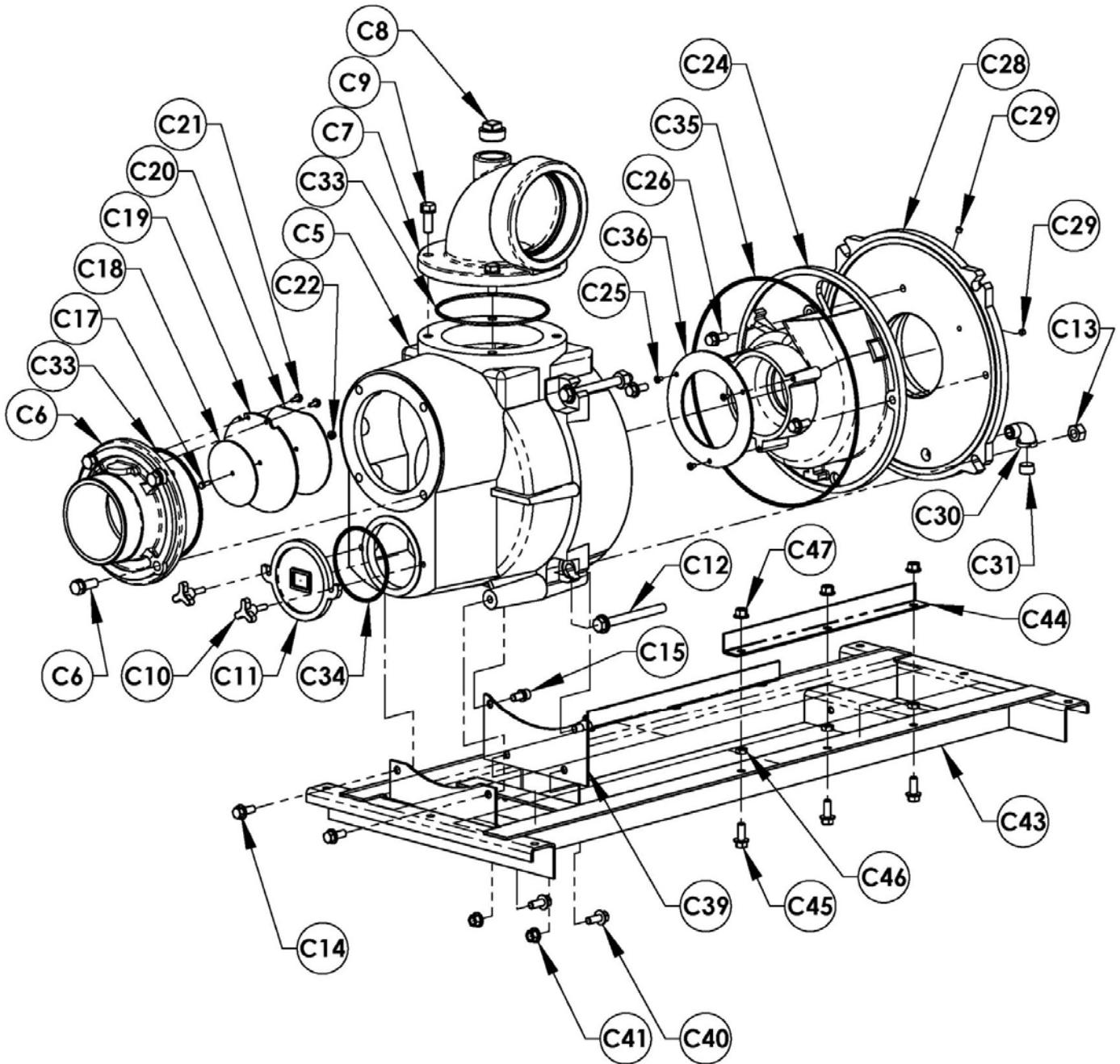
Repair Parts List - Sled Explosion

Ref. No.	Description	Part Number for Models:				Qty.
		B & S Vanguard	Honda GX660/GX670	Daihatsu Diesel	Yanmar Diesel	
S1	Engine Sled Kit (includes Ref. Nos. S2 thru S8)	5585-102-90	5585-102-90	5585-102-91	5585-102-91	1
S2	Sled	Incl. w/S1	Incl. w/S1	Incl. w/S1	Incl. w/S1	1
S3	Engine Mounting Bracket	Incl. w/S1	Incl. w/S1	N/A	N/A	1
S4	Battery Mounting Bracket	Incl. w/S1	Incl. w/S1	Incl. w/S1	Incl. w/S1	1
S5	Slip Strip	Incl. w/S1	Incl. w/S1	Incl. w/S1	Incl. w/S1	2
S6	#10-24X1/2 Flat Head Screw	Incl. w/S1	Incl. w/S1	Incl. w/S1	Incl. w/S1	8
S7	3/8-16x1 Hex Flange Bolt	Incl. w/S1	Incl. w/S1	N/A	N/A	8
S7	3/8-16x1 Hex Flange Bolt	N/A	N/A	Incl. w/S1	Incl. w/S1	4
S8	3/8-16 Hex Flange Nut	Incl. w/S1	Incl. w/S1	N/A	N/A	8
S8	3/8-16 Hex Flange Nut	N/A	N/A	Incl. w/S1	Incl. w/S1	4
S9	Battery Box Kit (includes Ref. Nos. S10 thru S12)	5585-350-91	5585-350-91	5585-350-91	5585-350-91	1
S10	Battery Box	Incl. w/S9	Incl. w/S9	Incl. w/S9	Incl. w/S9	1
S11	5/16-18x3/4 Hex Flange Bolt	Incl. w/S9	Incl. w/S9	Incl. w/S9	Incl. w/S9	4
S12	5/16-18 Hex Flange Nut	Incl. w/S9	Incl. w/S9	Incl. w/S9	Incl. w/S9	4
S13	Fuel Tank	5580-170-00	5580-170-00	5580-171-00	5580-171-00	1
S14	Fuel Tank Mounting Kit (includes Ref. Nos. S15, S16)	5585-171-91	5585-171-91	5585-171-91	5585-171-91	1
S15	5/16-18x3/4 Hex Flange Bolt	Incl. w/S14	Incl. w/S14	Incl. w/S14	Incl. w/S14	4
S16	5/16-18 Hex Flange Nut	Incl. w/S14	Incl. w/S14	Incl. w/S14	Incl. w/S14	4
S17	Fuel Hose and Fitting Kit (Gasoline) (includes (1) 1/4id fuel hose, (2) hose clamps, (all not shown), Ref. Nos. S19, S20, S22, S23, S24, S25, and S26)	5585-171-93	5585-171-93	N/A	N/A	1
S18	Fuel Hose and Fitting Kit (Diesel) (includes (2) 5/16id fuel hose, (1) 1/4id fuel hose, (6) hose clamps, (all not shown), Ref. Nos. S19, S20, S22, S23, S24, S25, and S26)	N/A	N/A	5585-171-92	5587-170-90	1
S19	Fuel Level Gauge	Incl. w/S17	Incl. w/S17	Incl. w/S18	Incl. w/S18	1
S20	Fuel Tank Vent 3/8" NPT	Incl. w/S17	Incl. w/S17	Incl. w/S18	Incl. w/S18	1
S21	Fuel Vent Check Valve 3/8" NPT	N/A	N/A	N/A	N/A	1
S22	1/4" NPT Plug	Incl. w/S17	Incl. w/S17	Incl. w/S18	Incl. w/S18	1
S23	1/4" NPT Street Elbow	Incl. w/S17	Incl. w/S17	Incl. w/S18	Incl. w/S18	1
S24	1/4" NPT Valve	Incl. w/S17	Incl. w/S17	Incl. w/S18	Incl. w/S18	1
S25	1/4" NPT x 1/4" Hose Barbed Fitting	Incl. w/S17	Incl. w/S17	N/A	N/A	1
S25	1/4" NPT x 5/16" Hose Barbed Fitting	N/A	N/A	Incl. w/S18	Incl. w/S18	1
S26	1/4" NPT Plug	Incl. w/S17	Incl. w/S17	N/A	N/A	1
S26	1/4" NPT x 1/4" Hose Barbed Elbow	N/A	N/A	Incl. w/S18	Incl. w/S18	1
S27	Fuel Tank Cap	5585-172-00	5585-172-00	5585-172-00	5585-172-00	1

For Repair Parts contact dealer where pump was purchased.

Please provide following information:

- Model Number
- Serial Number (if any)
- Part description and number as shown in parts list



Repair Parts List - Casing Mounting Explosion

Ref. No.	Description	Part Number for Models:				Qty.
		B & S Vanguard	Honda GX660/GX670	Daihatsu Diesel	Yanmar Diesel	
C1	Casing Kit (includes Ref. Nos. C5, C12, C13, C14, and C15)	5585-001-96	5585-001-96	5585-001-96	5585-001-96	1
C2	Suction Flange Kit (includes Ref. Nos. C6, and C9)	5585-082-95	5585-082-95	5585-082-95	5585-082-95	1
C3	Discharge Manifold Kit (includes Ref. Nos. C7, C8, and C9)	5585-081-95	5585-081-95	5585-081-95	5585-081-95	1
C4	Clean-out Cover Kit (includes Ref. Nos. C10, and C11)	5585-040-95	5585-040-95	5585-040-95	5585-040-95	1
C5	Casing	Incl. w/C1	Incl. w/C1	Incl. w/C1	Incl. w/C1	1
C6	Suction Flange	Incl. w/C2	Incl. w/C2	Incl. w/C2	Incl. w/C2	1
C7	Discharge Manifold	Incl. w/C3	Incl. w/C3	Incl. w/C3	Incl. w/C3	1
C8	1-1/2" NPT Plug	Incl. w/C3	Incl. w/C3	Incl. w/C3	Incl. w/C3	1
C9	5/8-11x1-3/4 Hex Screw	Incl w/C2 & C3	Incl w/C2 & C3	Incl w/C2 & C3	Incl w/C2 & C3	4
C10	3/8-16x1-1/4 Handle	1601-000-00	1601-000-00	1601-000-00	1601-000-00	2
C11	Clean-out Cover	Incl. w/C4	Incl. w/C4	Incl. w/C4	Incl. w/C4	1
C12	5/8-11x6-1/2 Hex Bolt	Incl. w/C1	Incl. w/C1	Incl. w/C1	Incl. w/C1	4
C13	5/8-11 Heavy Hex Nut	Incl. w/C1	Incl. w/C1	Incl. w/C1	Incl. w/C1	4
C14	1/2-13x1-1/4 Hex Screw	Incl. w/C1	Incl. w/C1	Incl. w/C1	Incl. w/C1	2
C15	1/2-13x1 Cap Screw	Incl. w/C1	Incl. w/C1	Incl. w/C1	Incl. w/C1	2
C16	Flapper/Check Valve Kit (includes Ref. Nos. C17 thru C22)	5585-070-90	5585-070-90	5585-070-90	5585-070-90	1
C17	1/4-20x3/4 Hex Bolt	Incl. w/C16	Incl. w/C16	Incl. w/C16	Incl. w/C16	1
C18	Valve Weight Front	Incl. w/C16	Incl. w/C16	Incl. w/C16	Incl. w/C16	1
C19	Valve	Incl. w/C16	Incl. w/C16	Incl. w/C16	Incl. w/C16	1
C20	Valve Weight Rear	Incl. w/C16	Incl. w/C16	Incl. w/C16	Incl. w/C16	1
C21	1/4-20x1/2 Hex Screw	Incl. w/C16	Incl. w/C16	Incl. w/C16	Incl. w/C16	2
C22	1/4-20 Hex Nut	Incl. w/C16	Incl. w/C16	Incl. w/C16	Incl. w/C16	1
C23	Volute Kit (includes Ref. Nos. C24 thru C26)	5585-150-95	5585-150-95	5585-150-95	5585-150-95	1
C24	Volute	Incl. w/C23	Incl. w/C23	Incl. w/C23	Incl. w/C23	1
C25	1/4-20x1/2 Hex Screw	Incl. w/C23	Incl. w/C23	Incl. w/C23	Incl. w/C23	3
C26	1/2-13x1-1/4 Hex Screw	Incl. w/C23	Incl. w/C23	Incl. w/C23	Incl. w/C23	3
C27	Adapter Kit (includes Ref. Nos. C28 thru C31)	5585-030-96	5585-030-96	5585-030-96	5585-030-96	1
C28	Adapter	Incl. w/C27	Incl. w/C27	Incl. w/C27	Incl. w/C27	1
C29	1/8" NPT Plug	Incl. w/C27	Incl. w/C27	Incl. w/C27	Incl. w/C27	2
C30	3/4" NPT Street Elbow	Incl. w/C27	Incl. w/C27	Incl. w/C27	Incl. w/C27	1
C31	3/4" NPT Plug	Incl. w/C27	Incl. w/C27	Incl. w/C27	Incl. w/C27	1
C32	Seal Kit (includes Ref. Nos. C33 thru C37)	5585-300-90	5585-300-90	5585-300-90	5585-300-90	1
C33	O-ring #369 (3/16x8" id)	Incl. w/C32	Incl. w/C32	Incl. w/C32	Incl. w/C32	2
C34	O-ring #355 (3/16x5-1/4" id)	Incl. w/C32	Incl. w/C32	Incl. w/C32	Incl. w/C32	1
C35	O-ring #386 (3/16x17" id)	Incl. w/C32	Incl. w/C32	Incl. w/C32	Incl. w/C32	1
C36	Volute Gasket	Incl. w/C32	Incl. w/C32	Incl. w/C32	Incl. w/C32	1
C37	O-ring #262 (1/8x7" id)	Incl. w/C32	Incl. w/C32	Incl. w/C32	Incl. w/C32	1
C38	Casing Mounting Kit (includes Ref. Nos. C39 thru C41)	5585-110-90	5585-110-90	5585-110-90	5585-110-90	1
C39	Casing Mounting Plate	Incl. w/C38	Incl. w/C38	Incl. w/C38	Incl. w/C38	1
C40	1/2-13X1-1/4" Hex Bolt	Incl. w/C38	Incl. w/C38	Incl. w/C38	Incl. w/C38	2
C41	1/2-13 Hex Nut	Incl. w/C38	Incl. w/C38	Incl. w/C38	Incl. w/C38	2
C42	Angle Frame Kit (includes Ref. Nos. C43 thru C47)	5585-101-90	5585-101-90	5585-101-90	5585-101-90	1
C43	Angle Frame	Incl. w/C42	Incl. w/C42	Incl. w/C42	Incl. w/C42	1
C44	Clamp Angle	Incl. w/C42	Incl. w/C42	Incl. w/C42	Incl. w/C42	2
C45	1/2-13X1-1/4" Hex Bolt	Incl. w/C42	Incl. w/C42	Incl. w/C42	Incl. w/C42	6
C46	1/2-13 Hex Jam Nut	Incl. w/C42	Incl. w/C42	Incl. w/C42	Incl. w/C42	6
C47	1/2-13 Hex Flange Nut	Incl. w/C42	Incl. w/C42	Incl. w/C42	Incl. w/C42	6