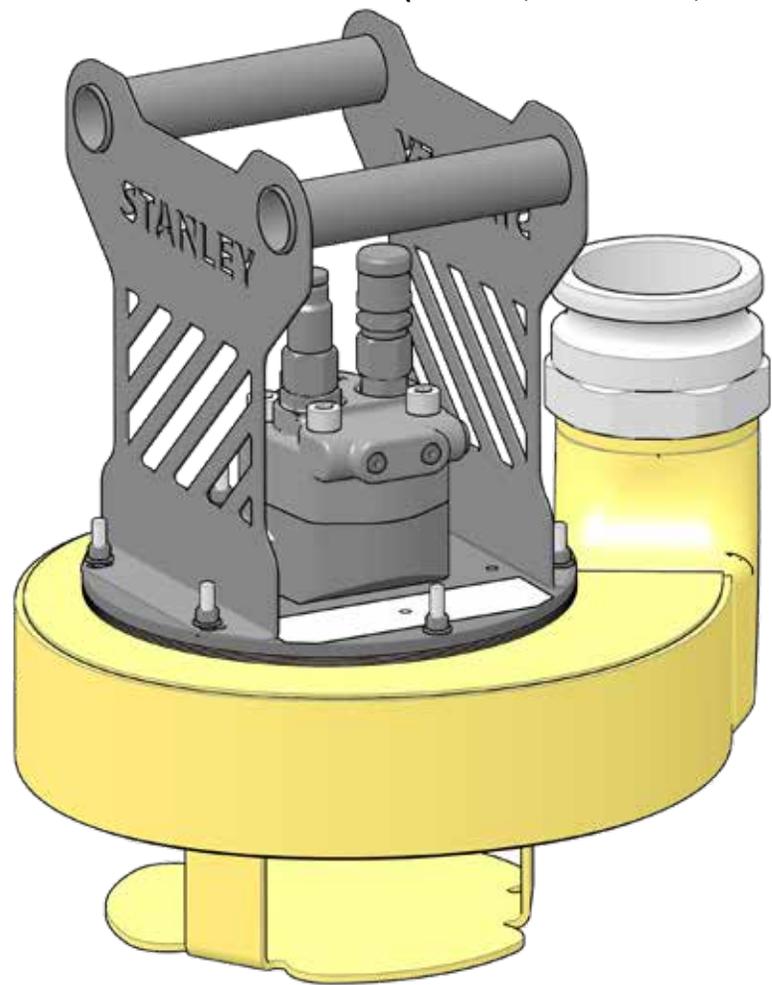


# STANLEY®

# TP08 HYDRAULIC TRASH PUMP

(TP0813, TP08013H, TP08013W)



## USER MANUAL

Safety, Operation and Maintenance



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Milwaukie, OR 97267 U.S.A.  
66364 4/2024 Ver. 28

# DECLARATIONS OF CONFORMITY

DECLARATION OF CONFORMITY  
ÜBEREINSTIMMUNGS-ERKLÄRUNG  
DECLARATION DE CONFORMITE CEE  
DECLARACION DE CONFORMIDAD  
DICHIARAZIONE DI CONFORMITA

**STANLEY**



I, the undersigned:  
Ich, der Unterzeichnende:  
Je soussigné:  
El abajo firmante:  
Io sottoscritto:

**Vervier, Patrick**

Surname and First names/Familienname und Vornamen/Nom et prénom/Nombre y apellido/Cognome e nome

hereby declare that the equipment specified hereunder:  
bestätige hiermit, daß erklaren Produkt genannten Werk oder Gerät:  
déclare que l'équipement visé ci-dessous:  
Por la presente declaro que el equipo se especifica a continuación:  
Dichiaro che le apparecchiature specificate di seguito:

- Category: **Trash Pump, Hydraulic**  
Kategorie:  
Catégorie:  
Categoria:  
Categoria:
- Make/Marke/Marque/Marca/Marca **STANLEY**
- Type/Typ/Type/Tipo/Tipo: **TP08013, TP08013H, TP08013B, TP08013W**
- Serial number of equipment:  
Seriennummer des Geräts:  
Numéro de série de l'équipement:  
Numero de serie del equipo:  
Matricola dell'attrezzatura: **All**

Has been manufactured in conformity with  
Wurde hergestellt in Übereinstimmung mit  
Est fabriqué conformément  
Ha sido fabricado de acuerdo con  
E' stata costruita in conformità con

Directive/Standards Richtlinie/Standards Directives/Normes Directriz/Los Normas Direttiva/Norme	No. Nr Numéro No n.	Approved body Prüfung durch Organisme agréé Aprobado Collaudato
EN Machinery Directive	809:1998/A1:2009 2006/42/EC:2006	Self Self

- Special Provisions: **None**  
Spezielle Bestimmungen:  
Dispositions particulières:  
Provisiones especiales:  
Disposizioni speciali:
- Representative in the Union: **Patrick Vervier, Dubuis 17-19, rue Jules Berthonneau- CS 73406 41034 Blois CEDEX, France.**  
Vertreter in der Union/Représentant dans l'union/Representante en la Union/Rappresentante presso l'Unione

Done at/Ort/Fait à/Dado en/Fatto a STANLEY, Milwaukie, Oregon USA Date/Datum/le/Fecha/Data 11/08/2022

Signature/Unterschrift/Signature/Firma/Firma

Position/Position/Fonction/Cargo/Posizione Engineering Manager

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## IMPORTANT

To fill out a product warranty validation form, and for information on your warranty, visit [www.stanleyinfrastructure.com](http://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 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 at (503) 659-5660 and ask for a Customer Service Representative.



# 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 precautions are given for your safety. Review them carefully before operating the tool and before performing maintenance.

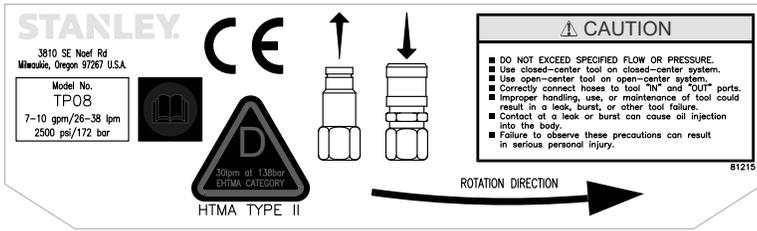
Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. Place the added precautions in the space provided

The models TP08 Hydraulic Trash Pump 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 operations.
- Do not operate the tool unless thoroughly trained or under the supervision of an instructor.
- Always wear safety equipment such as goggles, head protection, and safety shoes at all times when operating the tool.
- Do not inspect or clean the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.
- Do not install or remove this tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.
- Never operate the tool near energized transmission lines. Know the location of buried or covered services before starting work.
- Do not wear loose fitting clothing when operating the tool. Loose fitting clothing can become entangled with the tool and cause serious injury.
- Supply hoses must have a minimum working pressure rating of 2500 psi/175 bar.
- Be sure all hose connections are tight.
- The hydraulic circuit control valve must be in the "OFF" position when coupling or uncoupling the tool. Wipe all couplers clean before connecting. Failure to do so may result in damage to the quick couplers and cause overheating. Use only lint-free cloths.
- Do not operate the tool at oil temperatures above 140 °F/60 °C. Operation at higher oil temperatures can cause operator discomfort and may cause damage to the tool.
- Do not operate a damaged, improperly adjusted or incompletely assembled tool.
- 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 exceed the rated limits of the tool or use the tool for applications beyond its design capacity.
- Always keep critical tool markings, such as labels and warning stickers, legible.
- Always replace parts with replacement parts recommended by STANLEY.
- Check fastener tightness often and before each use daily.
- Do not put your hands or any other body part under the volute while the trash pump is running.
- Do not lift the trash pump by pulling on the hydraulic hoses. Use a suitable line fastened to the trash pump handle.
- Do not point water discharge toward bystanders.

# TOOL STICKERS & TAGS



81215  
TOOL NAME TAG



88345  
IMPORT NAME TAG (CE MODELS)

## NOTE:

THE INFORMATION LISTED ON THE STICKERS SHOWN, MUST BE LEGIBLE AT ALL TIMES. REPLACE DECALS IF THEY BECOME WORN OR DAMAGED. REPLACEMENTS ARE AVAILABLE FROM YOUR LOCAL STANLEY DISTRIBUTOR.

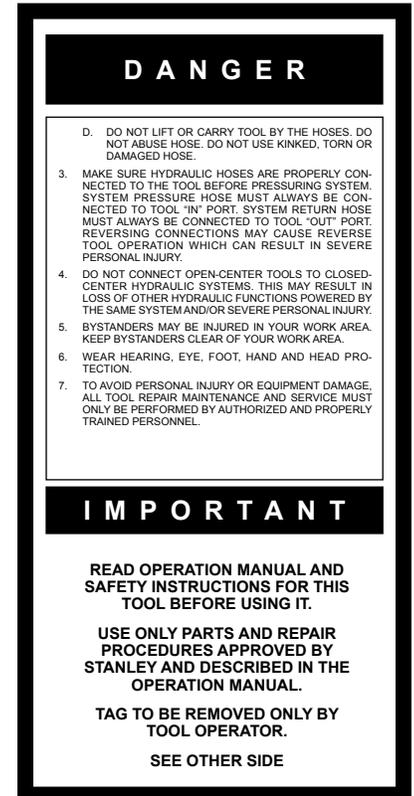
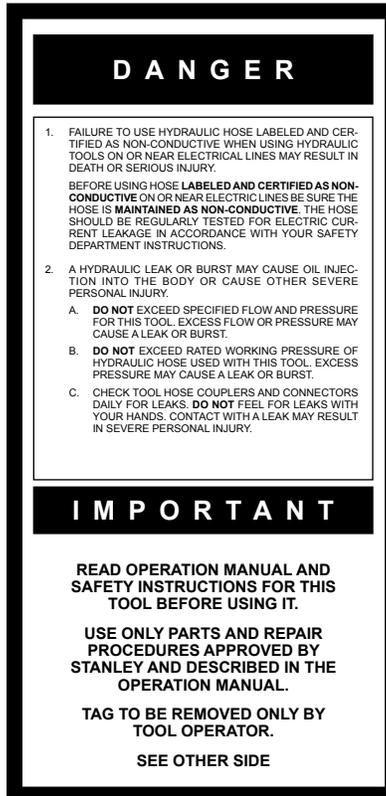
The safety tags (P/N 15875 and 88346) at right and below are attached to the tool when shipped from the factory. Read and understand the safety instructions listed on this tag before removal. We suggest you retain this tag and attach it to the tool when not in use.



SAFETY TAG, FRENCH P/N 88346 (Shown smaller than actual size, French translation of 15875)



SAFETY TAG P/N 15875 (Shown smaller than actual size)



# 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.*

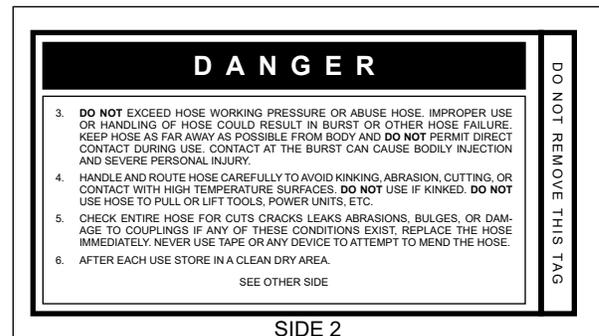
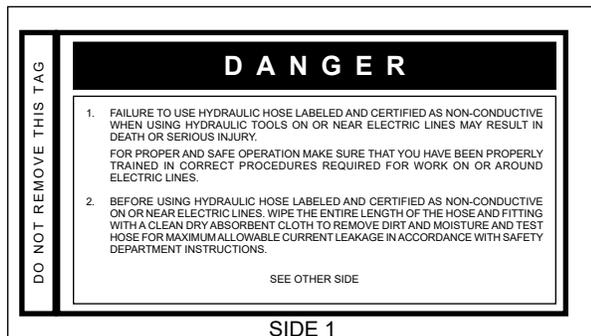
**Fabric-braided** (not certified or labeled non-conductive) — constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover. *This hose is **not certified non-conductive** and must never be used near electrical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

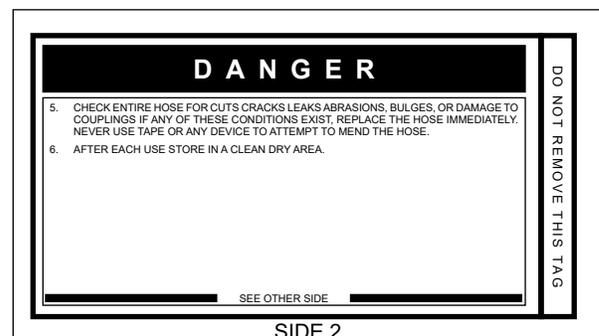
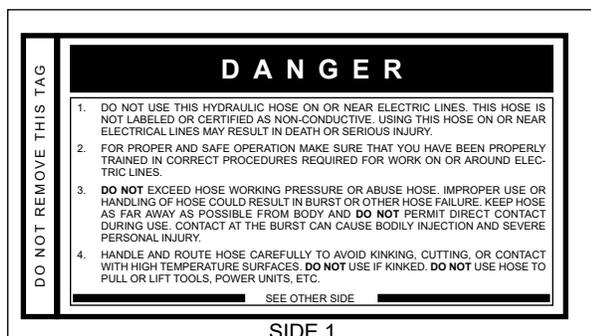
If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained from your STANLEY Distributor.

### 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)

# HOSE RECOMMENDATIONS

## 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
<b>Certified Non-Conductive Hose - Fiber Braid - for Utility Bucket Trucks</b>								
4-9	15-34	up to 10	up to 3	3/8	10	Both	2250	155
<b>Conductive Hose - Wire Braid or Fiber Braid - DO NOT USE NEAR ELECTRICAL CONDUCTORS</b>								
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	3/4	19	Pressure	2500	175
13-16	49-60	up to 25	up to 8	1	25.4	Return	2500	175
13-16	49-60	26-100	8-30	5/8	16	Pressure	2500	175
				3/4	19	Return	2500	175
				3/4	19	Pressure	2500	175
				1	25.4	Return	2500	175

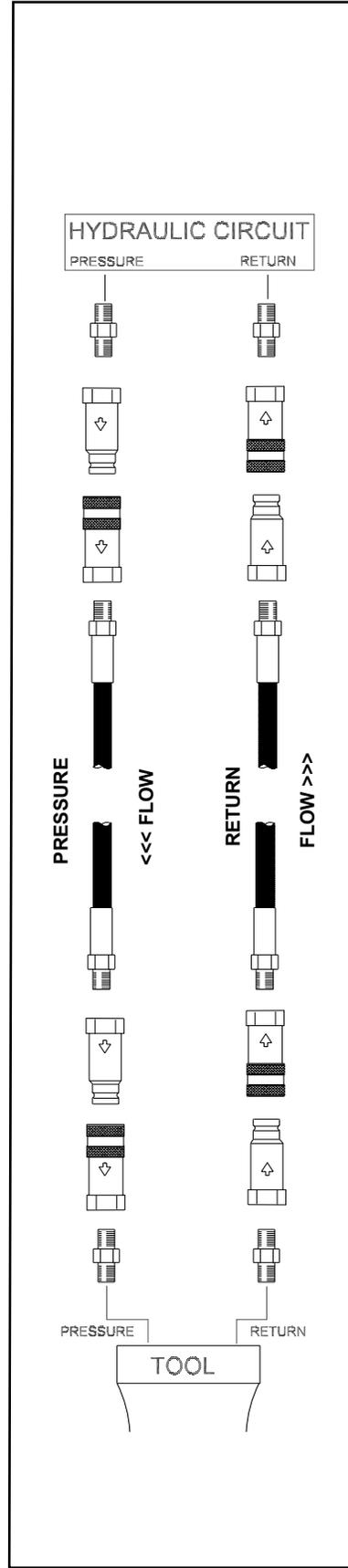


Figure 1. Typical Hose Connections

# 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)
<b>Note:</b> 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 Sized for flow of at least: (For cold temp startup and maximum dirt-holding capacity)	25 microns 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)
<b>Note:</b> 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.

# OPERATION

## PREPARATION PROCEDURES

### CHECK POWER SOURCE

1. Using a calibrated flow meter and pressure gauge, make sure the hydraulic power source develops a flow of 7-10 GPM/26-38 LPM at 2000 psi/140 bar.
2. Make certain that the power source is equipped with a relief valve set to open at 2100-2250 psi/145-155 bar maximum.
3. Make certain that the power source return pressure does not exceed 250 psi/17 bar.
4. Make sure the trash pump inlet is clear of debris. Remove any obstruction before operating.

### CONNECT HOSES

1. Wipe all hose couplers with a clean lint free cloth before making connections.

## IMPORTANT

Do not connect pressure to the return port.  
Motor shaft seal limit is 250 psi/17 bar.

2. Connect the hoses from the hydraulic power source to the couplers on the trash pump or trash pump hoses. Connect the return hose first and disconnect it last to minimize or avoid trapped pressure within the trash pump motor.

**Note: If uncoupled hoses are left in the sun, pressure increase inside the hoses might make them difficult to connect. Whenever possible, connect the free ends of the hoses together.**

3. Observe the arrow on the couplers to ensure that the flow is in the proper direction. The female coupler on the trash pump is the inlet (pressure) coupler.

## PUMP OPERATION

1. Observe all safety precautions.
2. Attach a 4-inch/102 mm diameter fire hose to the trash pump outlet. For best performance, keep the fire hose as short as possible and lay it out to avoid sharp bends or kinks.

Do not attach a nozzle to the outlet end of the fire hose. For high-pressure water pumping, use a STANLEY SM20 or SM50 and nozzle. The TP08 is designed for high GPM water flow at low water pressure (head).

3. Attach a rope or cable to the trash pump's handle. Lower the trash pump into the liquid to be pumped.

Do not raise or lower the trash pump by its hoses or couplers.

## IMPORTANT

Never point the hose at bystanders.

4. Turn on the hydraulic power source. Watch for solids in the liquid being pumped. If solids are excessive, the discharge flow might decrease. If this happens, stop the trash pump and check for the cause of the problem.

Under some conditions, the liquid being pumped might be slowed enough so it can no longer push particles in the liquid. If this happens, particles can accumulate in the pumping chamber, causing further restriction. The impeller then acts as a "grinding wheel" which causes accelerated trash pump wear. Reduced liquid flow can be caused by the following:

- The trash pump sinks into solids at the bottom of the hole.
- The end of the outlet hose is too high, causing an excessive lift height for the column of liquid being pushed by the trash pump. This slows the flow of liquid to a level where it can no longer carry solids.
- The flow and pressure of hydraulic fluid to the trash pump is too low, which reduces impeller speed. A 20 percent decrease in hydraulic fluid flow can reduce pump performance by 50 percent. When operating at reduced hydraulic flow and pressure, the end of the outlet hose should not be more than 30 ft/9 m above the liquid.

**Note: It will not damage the pump to operate it "dry."**

5. When pumping is complete, set the hydraulic control valve to the "OFF" position. Lift the trash pump from the work area using the rope or cable to avoid damage to the hoses or couplers.

## IMPORTANT

Observe the following for trash pump protection and care.

6. The trash pump must maintain a minimum impeller speed in order to move solid particles through the pump. While pumping liquids containing large solids, monitor the flow from the outlet of the fire hose. If it

# OPERATION

begins to slow, turn off the hydraulic power source and lift the trash pump from the work area. Disconnect the hydraulic hoses and clean at the water hose and the pumping chamber.

## IMPORTANT

Pumping liquids with a solids-to liquid ratio greater than 30 percent will cause impeller wear.

7. To maintain optimum performance, it is good practice to periodically inspect the impeller for wear or damage. This is especially important following the pumping of liquids containing sharp, abrasive solids.

## COLD WEATHER OPERATION

If the trash pump is to be used during cold weather, preheat the hydraulic fluid at low power source speed. When using recommended fluids, fluid should be at or above 50 °F/10 °C (400 ssu/82 centistokes) before use.

Damage to the hydraulic system or pump motor seals can result if the fluid is too viscous or thick.

# TOOL PROTECTION & CARE

## NOTICE

In addition to the safety precautions found in this manual, observe the following for equipment protection and care.

- Make sure all couplers are wiped clean before connection.
- The hydraulic circuit control valve must be in the “OFF” position when coupling or uncoupling hydraulic tools. Failure to do so may result in damage to the quick couplers and cause overheating of the hydraulic system.
- Always store the tool in a clean dry space, safe from damage or pilferage.
- Make sure the circuit PRESSURE hose (with male quick disconnect) is connected to the “IN” port. The circuit RETURN hose (with female quick disconnect) is connected to the opposite port. Do not reverse circuit flow. This can cause damage to internal seals.
- Always replace hoses, couplings and other parts with replacement parts recommended by STANLEY. Supply hoses must have a minimum working pressure rating of 2500 psi/172 bar.
- Do not exceed the rated flow or pressure (refer to “Specifications” on page 14 for correct flow rate and pressure). If specifications are exceeded, rapid failure of the internal seals may result.
- Always keep critical tool markings, such as warning stickers and tags, legible.
- Tool repair should be performed by experienced personnel only.
- Make certain that the recommended relief valves are installed in the pressure side of the system.
- Do not use the tool for applications for which it was not intended.

# TROUBLESHOOTING

If symptoms of poor performance develop, the following chart can be used as a guide to correct the problem.

When diagnosing faults in operation of the tool, always make sure the hydraulic power source is supplying the correct hydraulic flow and pressure as listed in the table. Use a flowmeter know to be accurate. Check the flow with the hydraulic fluid temperature at least 80 °F/27 °C.

PROBLEM	CAUSE	SOLUTION
Pump will not start.	No hydraulic fluid flow or pressure.	Turn on power unit and check that 7–10 GPM/26-38 LPM at 2000 psi/140 bar is available at the trash pump.
	Defective couplers.	Check the couplers by connecting them together with the hydraulic power supply operating and with the control valve in the “ON” position. The power supply should operate without “loading” from the couplers.
	Impeller jammed with debris.	Clean the pumping chamber.
	Impeller rubbing against wear plates.	Check and adjust the impeller clearance.
	Defective power module.	Repair or replace the power module.
Poor pump performance.	Hydraulic flow reversed.	Check that the hoses are correctly connected to the pump motor ports. The female coupler should be connected to the “IN” port. The return fluid must never flow through a reversing valve.
	Improper hydraulic fluid flow.	Check that 7–10 GPM/26–38 LPM at 2000 psi/140 bar is available at the trash pump. A 20% decrease in flow can result in a 50% decrease in pump performance. 8 GPM/30 LPM is the optimum circuit flow.
	Trash pump submersed in sediment.	Lift the pump from the bottom of the hole or chamber. Use a flat support under the pump if necessary.
	Trash pump inlet restricted.	Remove restriction and clean thoroughly.
	Discharge hose kinked or restricted.	Straighten the hoses. If the hose must bend at the top of the hole, use a piece of split rigid conduit with large diameter of the expanded hose. This keeps the hose from kinking. Use a 90° 4-inch pipe elbow on the trash pump outlet if necessary.
	Discharge hose too small.	Use a 4-inch diameter fire hose.
	Water lift too high.	Lower the outlet end of the discharge hose.
	Impeller worn or damaged.	Check impeller for damage and excessive wear. Replace if necessary.
	Wear plates worn or damaged.	Check wear plates for damage and excessive wear. Replace if necessary.
Hydraulic fluid in discharge flow.	Motor shaft seal failure.	Replace the motor shaft seal. Ensure power unit is delivering 7-10 GPM/26-38 LPM

# SPECIFICATIONS

Capacity.....	800 GPM/3028 LPM
Weight .....	59 lbs/26.7 kg
Height (over handle).....	16.5 in./42 cm
Length.....	19 in./48.3 cm
Width .....	15 in./38.1 cm
Pressure .....	2000 psi/140 bar
Flow Range .....	7–10 GPM/26–38 LPM
Maximum Flow .....	10 GPM/38 LPM
Porting .....	#10 SAE (pressure) #12 SAE (return)
Connect Size and Type .....	1/2 in. Male Pipe (pressure) 1/2 in. Male Pipe (return)
Discharge Diameter.....	4 in./100 mm Camlock
Inlet Diameter .....	4 in./100 mm

## ACCESSORIES

Description	Part No.
Male Adapter / Female THD 4-8 NPT.....	21967
Lay-Flat Discharge Hose Blue, 4 in. × 25 ft with Camlock Fittings.....	65624

## MAINTENANCE

	Daily	As Needed	Hours
<b>Grease motor (Item 16, page &lt;?&gt;) with 2 Strokes of Underwater Grease</b>			100
<b>Volute Intake (Clean)</b>		<b>C</b>	
<b>Check Fasteners for Tightness</b>	<b>I</b>		

**C** Clean.

**I** Inspect.

### CLEANING THE PUMPING CHAMBER

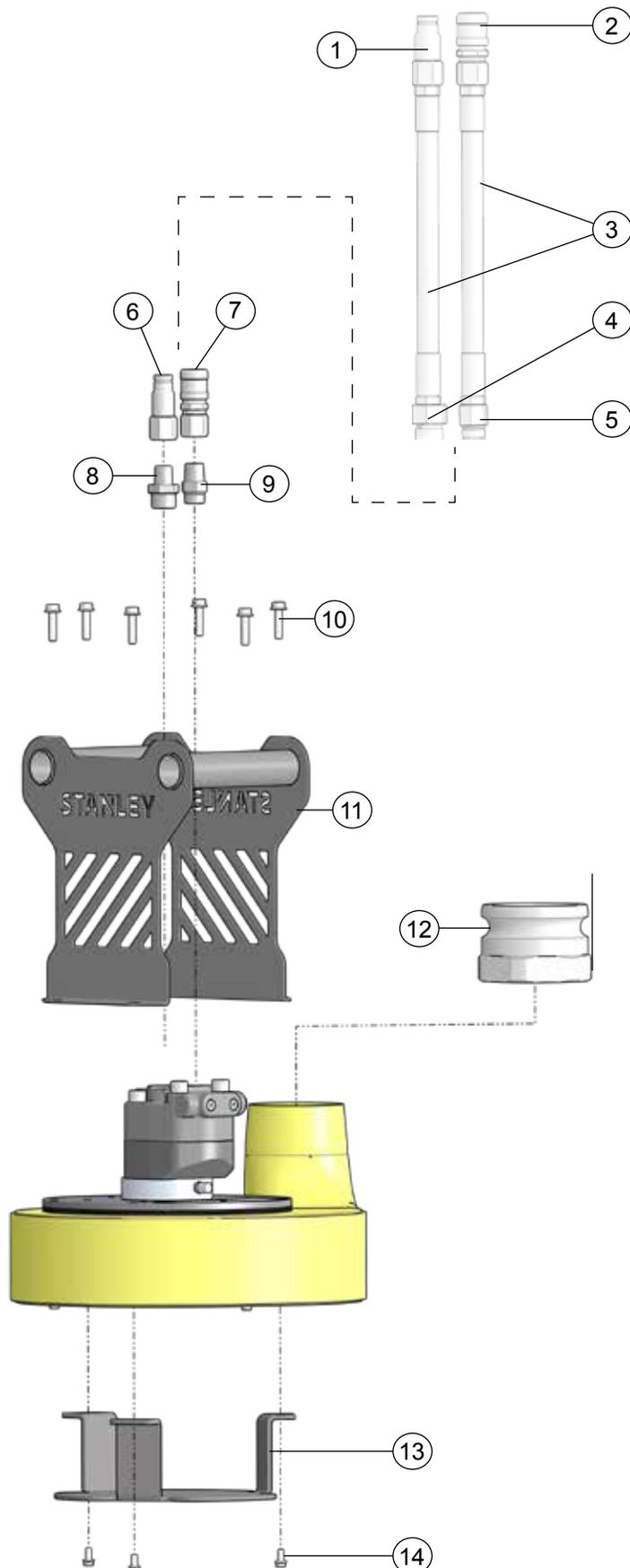
Debris such as weeds, sand and other solids may become trapped in the water hose and pumping chamber.

This can reduce pump performance. It is important that the pumping chamber be kept clean at all times.

The chamber can be cleaned as follows:

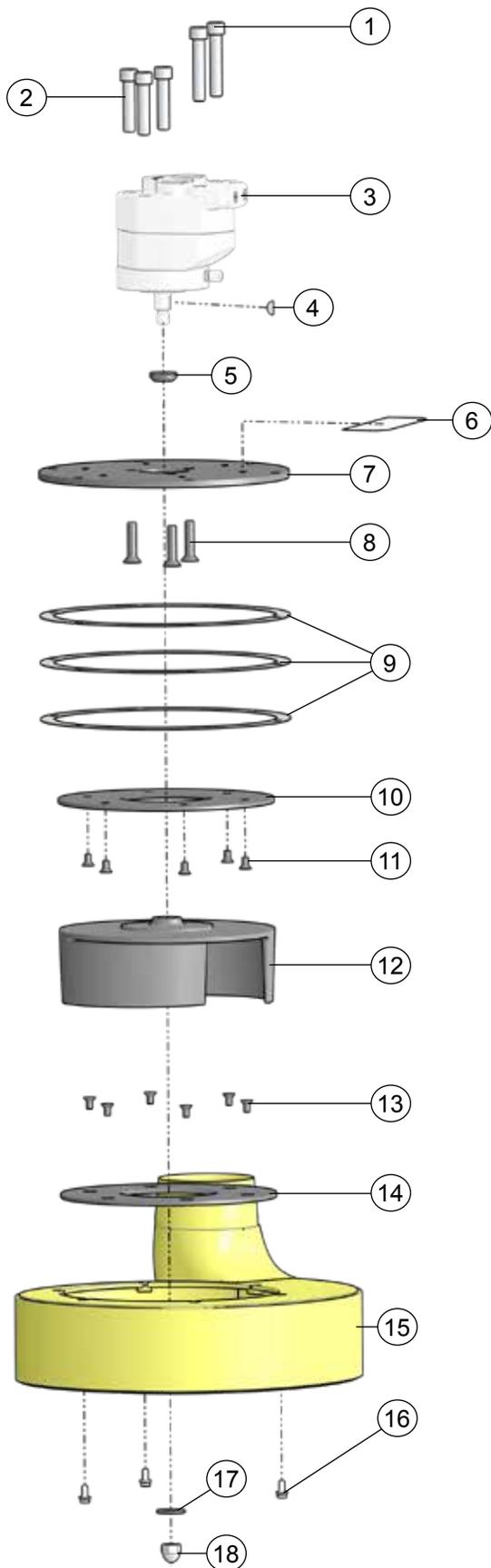
1. Remove wear plate by removing the six capscrews.
2. Remove all debris from the volute area.
3. Thoroughly clean the volute and impeller. Do not remove the impeller unless necessary for repair or replacement or to remove trapped debris.
4. Re-assemble and clean the capscrews and lubricate the threads with underwater grease before installation.
5. Remove all debris from the hose. Otherwise, solids will backfill the pump.

# TP08 BODY ILLUSTRATION



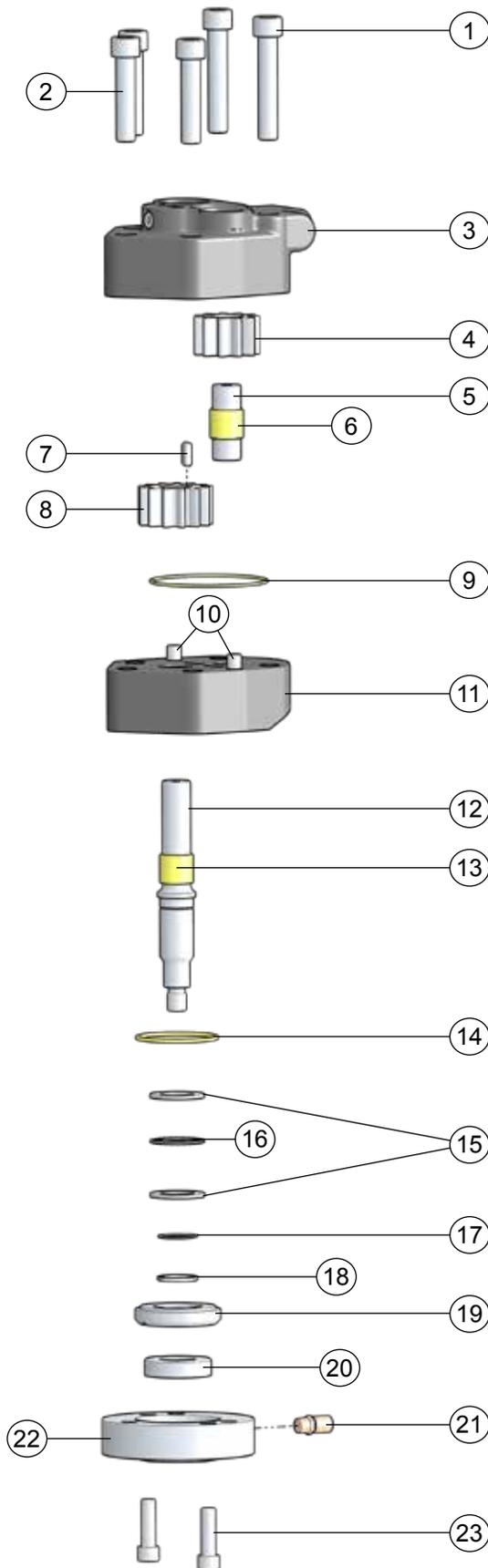
ITEM	P/N	QTY	DESCRIPTION
1	09579	1	Coupler (Model TP08013W)
2	09578	1	Coupler (Model TP08013W)
3	01652	2	Hose (Model TP08013W)
4	82533	1	Fitting (Model TP08013W)
5	82532	1	Fitting (Model TP08013W)
6	03976	1	Male Coupler
7	03975	1	Female Coupler
8	06264	1	Adapter
9	07882	1	Adapter
10	81261	6	Cap Screw
11	81212	1	Handle
12	21967	1	Camlock Coupler
13	81210	1	Volute Foot
14	59074	1	Cap Screw

# TP08 IMPELLER ILLUSTRATION



ITEM	P/N	QTY	DESCRIPTION
1	21987	2	Cap Screw
2	21986	3	Cap Screw
3	31505	1	Motor Assembly (See page 17)
4	00600	1	Woodruff Key
5	06311	1	V-Ring
6	81215	1	TP08 Sticker
	82525	1	TP08 Sticker (Model TP08013L11)
7	81132	1	Motor Adapter Plate
8	21978	3	Cap Screw
9	81133	3	Spacers
10	81260	1	Wear Plate
11	21989	6	Cap Screw
12	21979	1	Impeller
13	21989	6	Cap Screw
14	81260	1	Wear Plate
15	82522	1	Volute (Yellow)
	82523	1	Volute (Black -Model TP08013B)
16	59074	3	Cap Screw
17	03827	1	Washer
18	21988	1	Acorn Nut

# TP08 MOTOR ILLUSTRATION



ITEM	P/N	QTY	DESCRIPTION
1	21987	2	Cap Screw
2	21986	3	Cap Screw
3	82595	1	Motor Cap Assembly
4	21982	1	Idler Gear
5	21984	1	Idler Shaft
6	19793	1	Bushing
7	82602	1	Key
8	21974	1	Drive Gear
9	15385	1	O-ring
10	22065	2	Dowel Pin
11	20672	1	Bearing Carrier
12	21971	1	Motor Shaft
13	19793	1	Bushing
14	01872	1	O-ring
15	20680	1	Bearing Washer
16	08020	1	Thrust Bearing
17	26812	1	Retaining Ring
18	73064	1	Quad Ring
19	73059	1	Seal Carrier
20	21981	1	Seal Anvil
21	01220	1	Grease Fitting
22	21976	1	Housing
23	10793	2	Cap Screw
GA	21983	1	Idler Gear Assembly (Includes Item # 4 and # 6)

# UNDERWATER TOOLS DEPTH GUIDELINE

## UNDERWATER MODELS ONLY

### **⚠ CAUTION**

Do not use hydraulic tools underwater that are not designated as an “underwater” model, or this will result in damage to the tool.

For underwater hydraulic tools the applications are broken down into four quadrants depending on type of tool and method of operation.

The types of tools are percussive and rotational, each with different characteristics allowing for different depth operation. With percussive tools, the nitrogen accumulator PSI must counter the increase in ambient pressure found at lower depths. Since there is a maximum PSI for percussive tools they are limited to certain depths. Rotational tools do not have accumulators and thus are capable of deeper depths.

The methods are broken into diver operated or remote operated vehicle (ROV). ROV's can reach lower depths and with an onboard hydraulic power source that is depth compensated, can operate hydraulic tools at depths of thousands of feet. ROV operation is still limited to the tool, for example a percussive tool has the same depth limitation whether ROV or diver operated.

## OPERATION OVERVIEW

	PERCUSSIVE	ROTATIONAL
DIVER	Tools: Breakers, Hammer Drills and Chipping Hammers  Max Depth: 500' - limitations due to accumulator PSI max (increase 40 PSI for every 100')	Tools: Grinders, Saws, Chain Saws  Max Depth: 1000' - Reference hose sizing guide below
ROV	Tools: Breakers, Hammer Drills and Chipping Hammers  Max Depth: 500' - limitations due to accumulator PSI max (increase 40 PSI for every 100')	Tools: Grinders, Saws, Chain Saws  Max Depth: 1000' - Reference hose sizing guide below

## RECOMMENDED HOSE DIAMETERS

DEPTH (FT)	8 GPM	12 GPM
100	5/8"	5/8"
300	3/4"	1"
600	1"	1"
1000	1"	1-1/4"





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