



# SM20 HYDRAULIC SUMP PUMP



## SAFETY, OPERATION AND MAINTENANCE USER'S MANUAL



Read the Manual



Wear your PPE



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USER/MAINT USA  
Printed in U.S.A.  
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**SERVICING THE STANLEY HYDRAULIC Sump Pump.** This manual contains safety, operation, and routine maintenance instructions. Stanley Hydraulic Tools recommends that servicing of hydraulic tools, other than routine maintenance, be performed by an authorized and certified dealer. Please read the following warning.



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

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

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

# CERTIFICATE OF CONFORMITY

CERTIFICATE OF CONFORMITY  
 ÜBEREINSTIMMUNGS-ZERTIFIKAT  
 CERTIFICAT DE CONFORMITE CEE  
 CERTIFICADO DE CONFORMIDAD  
 CERTIFICATO DI CONFORMITA



Hydraulic Tools

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

**Piert, Charlie**

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

hereby certify that the construction plant or equipment specified hereunder:  
 bestätige hiermit, daß das im folgenden genannten Werk oder Gerät:  
 certifies par ceci que l'usine ou l'équipement de construction indiqué cidessous:  
 por el presente certifico que la fabrica o el equipo especificado a continuacion:  
 certifico che l'impianto o l'attrezzatura sotto specificata:

- Category: Submersible Pump, Hydraulic  
 Kategorie:  
 Catégorie:  
 Categoria:  
 Categoria:
- Make/Ausführung/Marque/Marca/Marca **Stanley**
- Type/Typ/Type/Tipo/Tipo: SM2043101, SM2043107, SM2052101, SM2053101

- Serial number of equipment:  
 Seriennummer des Geräts:  
 Numéro de série de l'équipement:  
 Numero de serie del equipo:  
 Matricola dell'attrezzatura:

**All**

- Year of manufacture/Baujahr/année de fabrication/Año de fabricacion/Anno di fabbricazione **Beginning 2002**

Has been manufactured in conformity with - EEC Type examination as shown.  
 Wurde hergestellt in Übereinstimmung mit - EEC Typ-Prüfung nach.  
 Est fabriqué conformément - au(x) type(s) examiné(s) comme indiqué dans le tableau ci-après.  
 Ha sido fabricado de acuerdo con - tipo examen EEC como dice.  
 E' stata costruita in conformità con - le norme CEE come illustrato.

| Examen CEE de type  |                                 |  |   |  |
|---|---------------------------------|--|---|--|
| Directive<br>Richtlinie<br>Directives particulières<br>Directriz<br>Direttiva | No.<br>Nr<br>Numéro<br>No<br>n. | Date<br>Datum<br>Date<br>Fecha<br>Data | Approved body<br>Prüfung durch<br>Organisme agréé<br>Aprobado<br>Collaudato | Date of expiry<br>Ablaufdatum<br>Date d'expiration<br>Fecha de caducidad<br>Data di scadenza |
| EN<br>Machinery directive   | 809<br>98/37/EC                 | 1995<br>1998                           | Self<br>Self  | NA<br>NA   |

- Special Provisions: None  
 Spezielle Bestimmungen:  
 Dispositions particulières:  
 Provisiones especiales:  
 Disposizioni speciali:

- Representative in the Union: Stanley Dubuis 17-19, rue Jules Berthonneau-BP 3406 41034 Blois Cedex, France.

Done at/Ort/Fait à/Dado en/Fatto a Stanley Hydraulic Tools, Milwaukie, Oregon USA Date/Datum/le/Fecha/Data 7/30/2002

Signature/Unterschrift/Signature/Firma/Firma

Position/Position/Fonction/Puesto/Posizione Quality Assurance Manager

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# SAFETY SYMBOLS

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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 indicate an imminently hazardous situation which, if not avoided, will result in death or serious injury.



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



This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, may result in minor or moderate 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.

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# SAFETY PRECAUTIONS

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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 models SM20 Hydraulic 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 pump 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 operate this tool without first reading the Operating Instructions.
- 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 get 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.
- Do not put hand under volute while the pump is running.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be

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# SAFETY PRECAUTIONS

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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 Hydraulic Tools.
- Check fastener tightness often and before each use daily.
- Do not point water discharge at bystanders.

# TOOL STICKERS & TAGS



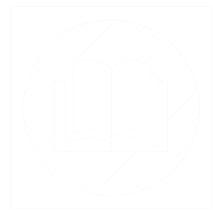
28323  
CE Decal (CE Only)



11207  
Circuit Type C Decal (CE Only)



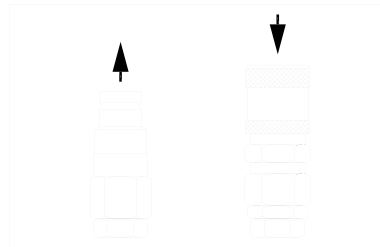
11206  
Circuit Type D Decal (CE Only)  
(SM2052101 Only)



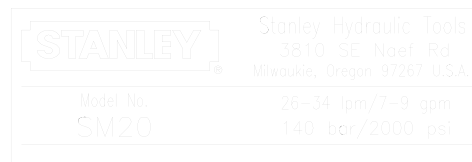
28788  
fManual Decal



28785  
Model Decal (SM2052101 Only)



28786  
Coupler Decal



28784  
Model Decal

The safety tag (p/n 15875) at right is 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.

**DANGER**

- FAILURE TO USE HYDRAULIC HOSE LABELED AND CERTIFIED AS NON-CONDUCTIVE WHEN USING HYDRAULIC TOOLS ON OR NEAR ELECTRICAL LINES MAY RESULT IN DEATH OR SERIOUS INJURY.  
  
BEFORE USING HOSE LABELED AND CERTIFIED AS NON-CONDUCTIVE ON OR NEAR ELECTRICAL LINES BE SURE THE HOSE IS MAINTAINED AS NON-CONDUCTIVE. THE HOSE SHOULD BE REGULARLY TESTED FOR ELECTRIC CURRENT LEAKAGE IN ACCORDANCE WITH YOUR SAFETY DEPARTMENT INSTRUCTIONS.
- A HYDRAULIC LEAK OR BURST MAY CAUSE OIL INJECTION INTO THE BODY OR CAUSE OTHER SEVERE PERSONAL INJURY.  
  
A DO NOT EXCEED SPECIFIED FLOW AND PRESSURE FOR

**IMPORTANT**

READ OPERATION MANUAL AND SAFETY INSTRUCTIONS FOR THIS TOOL BEFORE USING IT.

USE ONLY PARTS AND REPAIR PROCEDURES APPROVED BY STANLEY AND DESCRIBED IN THE OPERATION MANUAL.

TAG TO BE REMOVED ONLY BY TOOL OPERATOR.

**DANGER**

- DO NOT LIFT OR CARRY TOOL BY THE HOSES. DO NOT ABUSE HOSE. DO NOT USE KINKED, TORN OR DAMAGED HOSE.
- MAKE SURE HYDRAULIC HOSES ARE PROPERLY CONNECTED TO THE TOOL BEFORE PRESSURING SYSTEM. SYSTEM PRESSURE HOSE MUST ALWAYS BE CONNECTED TO TOOL "IN" PORT. SYSTEM RETURN HOSE MUST ALWAYS BE CONNECTED TO TOOL "OUT" PORT. REVERSING CONNECTIONS MAY CAUSE REVERSE TOOL OPERATION WHICH CAN RESULT IN SEVERE PERSONAL INJURY.
- DO NOT CONNECT OPEN-CENTER TOOLS TO CLOSED-CENTER HYDRAULIC SYSTEMS. THIS MAY RESULT IN LOSS OF OTHER HYDRAULIC FUNCTIONS POWERED BY THE SAME SYSTEM AND/OR SEVERE PERSONAL INJURY.
- BYSTANDERS MAY BE INJURED IN YOUR WORK AREA. KEEP BYSTANDERS CLEAR OF YOUR WORK AREA.

**IMPORTANT**

READ OPERATION MANUAL AND SAFETY INSTRUCTIONS FOR THIS TOOL BEFORE USING IT.

USE ONLY PARTS AND REPAIR PROCEDURES APPROVED BY STANLEY AND DESCRIBED IN THE OPERATION MANUAL.

TAG TO BE REMOVED ONLY BY TOOL OPERATOR.

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



# TOOL HOSE INFORMATION

## 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.*

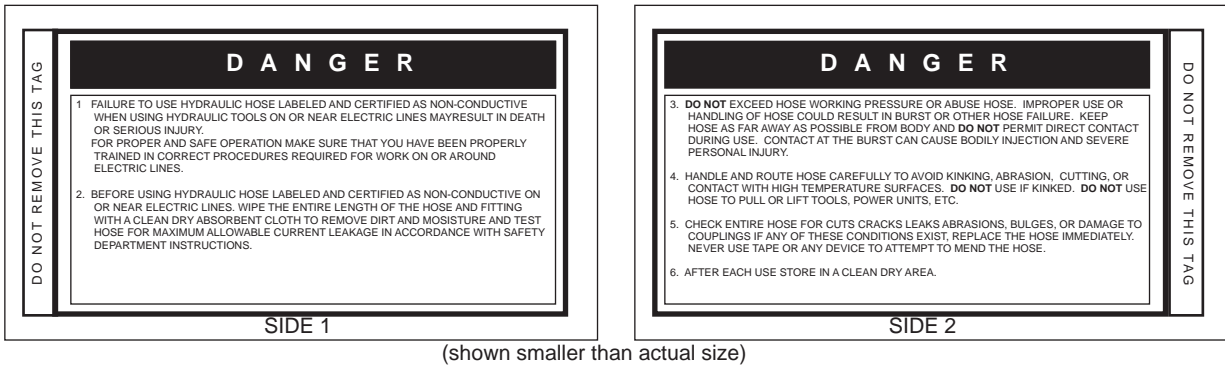
**Fabric-braided** (not certified or labeled non-conductive) - constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover. *This hose is **not certified non-conductive** and must never be used near electrical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

## HOSE SAFETY TAGS

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

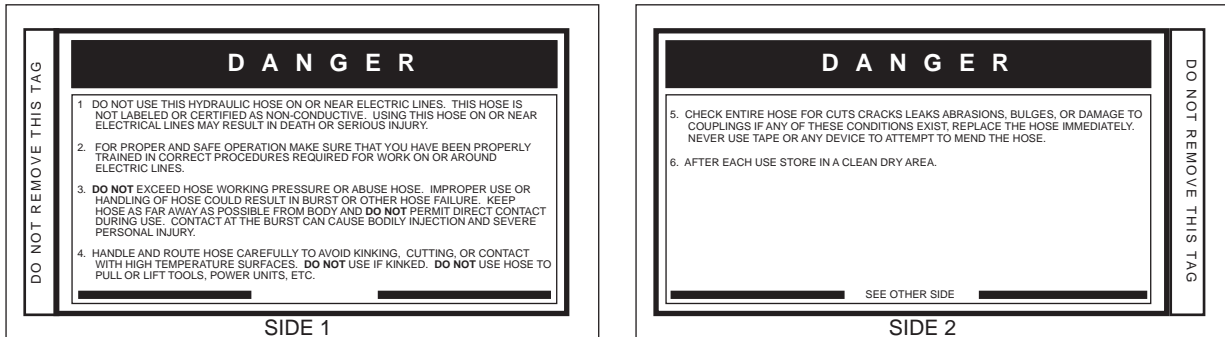
If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained from your Stanley Distributor.

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



(shown smaller than actual size)

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



(shown smaller than actual size)

# HTMA REQUIREMENTS

## TOOL CATEGORY



## HYDRAULIC SYSTEM REQUIREMENTS

TYPE I

TYPE II

TYPE III

TYPE RR

|   |                                       |                                       |                                       |                                       |
|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| FLOW RATE   | 4-6 gpm<br>(15-23 lpm)                | 7-9 gpm<br>(26-34 lpm)                | 11-13 gpm<br>(42-49 lpm)              | 9-10.5 gpm<br>(34-40 lpm)             |
| TOOL OPERATING PRESSURE<br>(at the power supply outlet)   | 2000 psi<br>(138 bar)                 | 2000 psi<br>(138 bar)                 | 2000 psi<br>(138 bar)                 | 2000 psi<br>(138 bar)                 |
| SYSTEM RELIEF VALVE SETTING<br>(at the power supply outlet)   | 2100-2250 psi<br>(145-155 bar)        | 2100-2250 psi<br>(145-155 bar)        | 2100-2250 psi<br>(145-155 bar)        | 2200-2300 psi<br>(152-159 bar)        |
| MAXIMUM BACK PRESSURE<br>(at tool end of the return hose)   | 250 psi<br>(17 bar)                   | 250 psi<br>(17 bar)                   | 250 psi<br>(17 bar)                   | 250 psi<br>(17 bar)                   |
| Measured at a max. fluid viscosity of:<br>(at min. operating temperature)   | 400 ssu*<br>(82 centistokes)          | 400 ssu*<br>(82 centistokes)          | 400 ssu*<br>(82 centistokes)          | 400 ssu*<br>(82 centistokes)          |
| TEMPERATURE<br>Sufficient heat rejection capacity<br>to limit max. fluid temperature to:<br>(at max. expected ambient temperature)  | 140° F<br>(60° C)                     | 140° F<br>(60° C)                     | 140° F<br>(60° C)                     | 140° F<br>(60° C)                     |
| Min. cooling capacity<br>at a temperature difference of<br>between ambient and fluid temps  | 3 hp<br>(2.24 kW)<br>40° F<br>(22° C) | 5 hp<br>(3.73 kW)<br>40° F<br>(22° C) | 7 hp<br>(4.47 kW)<br>40° F<br>(22° C) | 6 hp<br>(5.22 kW)<br>40° F<br>(22° C) |
| NOTE:<br>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<br>Min. full-flow filtration<br>Sized for flow of at least:<br>(For cold temp. startup and max. dirt-holding capacity)   | 25 microns<br>30 gpm<br>(114 lpm)     | 25 microns<br>30 gpm<br>(114 lpm)     | 25 microns<br>30 gpm<br>(114 lpm)     | 25 microns<br>30 gpm<br>(114 lpm)     |
| HYDRAULIC FLUID<br>Petroleum based<br>(premium grade, anti-wear, non-conductive)<br>VISCOSITY<br>(at min. and max. operating temps)   | 100-400 ssu*                          | 100-400 ssu*<br>(20-82 centistokes)   | 100-400 ssu*                          | 100-400 ssu*                          |
| NOTE:<br>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

### NOTE:

These are general hydraulic system requirements. See tool Specification page for tool specific requirements.

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# OPERATION

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## PREOPERATION PROCEDURES

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### CHECK POWER SOURCE

1. Using a calibrated flow meter and pressure gauge, make sure the hydraulic power source develops a flow of 4-6 gpm/15-23 lpm at 1000-2000 psi/70-140 bar or 7-9 gpm/26-34 lpm at 1000-2000 psi/70/140 bar.
2. Make certain that the power source is equipped with a relief valve set to open at 2100 psi/145 bar maximum.
3. Make certain that the power source return pressure does not exceed 250 psi/17 bar.
4. Make sure the pump inlet screen is clear of debris and the outlet hose is clean. Remove any obstruction before operating. Refer to PUMP CLEANING PROCEDURES.

### CONNECT HOSES

1. Wipe all hose couplers with a clean lint free cloth before making connections.
2. Connect the hoses from the hydraulic power source to the couplers on the sump pump or sump pump hoses. It is a good practice to connect 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 sump pump is the inlet (pressure) coupler.

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## PUMP OPERATION

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1. Observe all safety precautions.

**Note:**

**The SM20 is not designed for use with a suction pipe inlet. The diameter of the suction screen at the bottom of the pump provides maximum pump efficiency. Reducing the size of this inlet will greatly reduce pump performance.**

2. Connect a hose fitted with a 2-1/2 inch/63.5 mm male pipe end to the pump outlet fitting. Make sure the fitting is securely tightened. For best performance, keep the hose as short as possible and lay it out to avoid sharp bends or kinks.

3. Lower the pump into the liquid to be pumped. Locate the outlet end of the discharge hose to disperse the liquid as required. Remove any kinks from the hose to assure maximum water flow.

### 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 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 hose and backup the pumping chamber, causing further restriction. The impeller then acts as a "grinding wheel" which causes accelerated pump wear. Reduced liquid flow can be caused by the following:

- The 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 sump pump. This slows the flow of liquid to a level where it can no longer carry solids out the end of the hose.
- The flow and pressure of hydraulic fluid to the pump is too low, which reduces impeller speed. A 20% decrease in hydraulic fluid flow can reduce pump performance by 50%. When operating at reduced hydraulic flow and pressure, the end of the outlet hose should not be more than 40 ft/12 m above the liquid.

5. When pumping is complete, set the hydraulic control valve to the "OFF" position. Lift the pump from the work area.

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## WHEN PUMPING WATER MIXED WITH SOLIDS

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- Do not use a nozzle.
- Remove all hose kinks before starting the pump.

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# OPERATION

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- Do not lift water mixed with solids over 40 ft/12 m if hydraulic flow from the power source is less than 7 gpm/26 lpm.
- If output flow from the water hose drops during operation, clean out the hose to remove all obstructions. Check for kinks in the hose.

**Note:**

**Always keep water speed as fast as possible during operation. This helps to pump solids through the hose and keeps the pump clean for longer life.**

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## COLD WEATHER OPERATION

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If the sump pump is to be used during cold weather, pre-heat the hydraulic fluid at low power source speed. When using the normally 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 from use with fluid that is too viscous or thick.

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## MAINTENANCE

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### 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 motor and impeller by removing the seven 5/16 -18 capscrews (item 14).
2. Thoroughly clean the volute and impeller. Do not remove the impeller unless necessary for repair or replacement or to remove trapped debris.
3. Remove all debris from the pump screen by removing the four 5/16 -18 capscrews (item 18).
4. Assemble the motor and impeller to the volute. 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.

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# EQUIPMENT PROTECTION & CARE

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## NOTICE

In addition to the Safety Precautions 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 Hydraulic Tools. Supply hoses must have a minimum working pressure rating of 2500 psi/172 bar.
- Do not exceed the rated flow or pressure. Refer to the Specifications in this manual 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.
- Do not use the tool for applications it was not designed for.
- 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, always make sure the hydraulic power source is supplying the correct hydraulic flow and pressure as listed in the table. Use a flowmeter known 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 4-9 gpm/15-34 lpm at 1000-2000 psi/70-140 bar is available at the pump.  |
|  | Defective couplers.   | Check the couplers. Replace if necessary.  |
|  | Impeller jammed with debris.  | Clean the pumping chamber as described in the Maintenance section in this manual.  |
|  | Impeller rubbing against wear plates.   | Check and adjust the impeller clearance as described in the Service Instructions section in this manual.   |
|  | Defective hydraulic motor.  | Repair or replace motor.   |
| 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 4-9 gpm/15-34 lpm at 1000-2000 psi/70-140 bar is available at the trash pump. A 20% decrease in flow can result in a 50% decrease in pump performance.                          |
|  | 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 suction screen and thoroughly clean. Reassemble.  |
|  | Discharge hose kinked or restricted.  | Straighten the hose. 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.          |
|  | Discharge hose too small.   | Use a 2-1/2 inch/63.5 mm diameter fire hose.   |
|  | Water lift too high.  | Lower the outlet end of the discharge hose. Increase hydraulic flow (9 gpm/35 lpm max).  |
|  | Impeller worn or damaged.   | Check impeller for damage and excessive wear. Replace if necessary.  |
|  | Pump not matched to application   | Obtain higher capacity pump.   |
|  | Wear ring worn or damaged.  | Check for wear ring damage or excessive wear. Replace if necessary.  |
|  | Hose used on suction side of pump.  | Remove. Use no plumbing on suction side of pump.   |
| Poor pump performance with excessive wear. | Too many solids in the water. Water speed out of the hose may be too slow, therefore hose and pump load up with solids. | Reduce solids content. Increase pump speed.  |

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# SPECIFICATIONS

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|                             |   |
|-----------------------------|---|
| Capacity.....               | 250 gpm/946 lpm                                     |
| Weight .....                | 13.7 lbs/6.3 kg                                     |
| Length.....                 | 7.5 in./19 cm                                       |
| Width .....                 | 10 in./25.4 cm                                      |
| Pressure .....              | 1000-2000 psi/70-140 bar                            |
| Flow Range .....            | 4-6 gpm/15-23 lpm (SM2052101)                       |
| Flow Range .....            | 7-9 gpm/26-34 lpm (SM2043101, SM2043107, SM2053101) |
| Porting .....               | -8 SAE O-Ring                                       |
| Connect Size and Type ..... | 3/8 in. Flush Face Quick Disconnect Couplers        |
| Discharge Diameter.....     | 2-1/2 in./6.3 cm                                    |

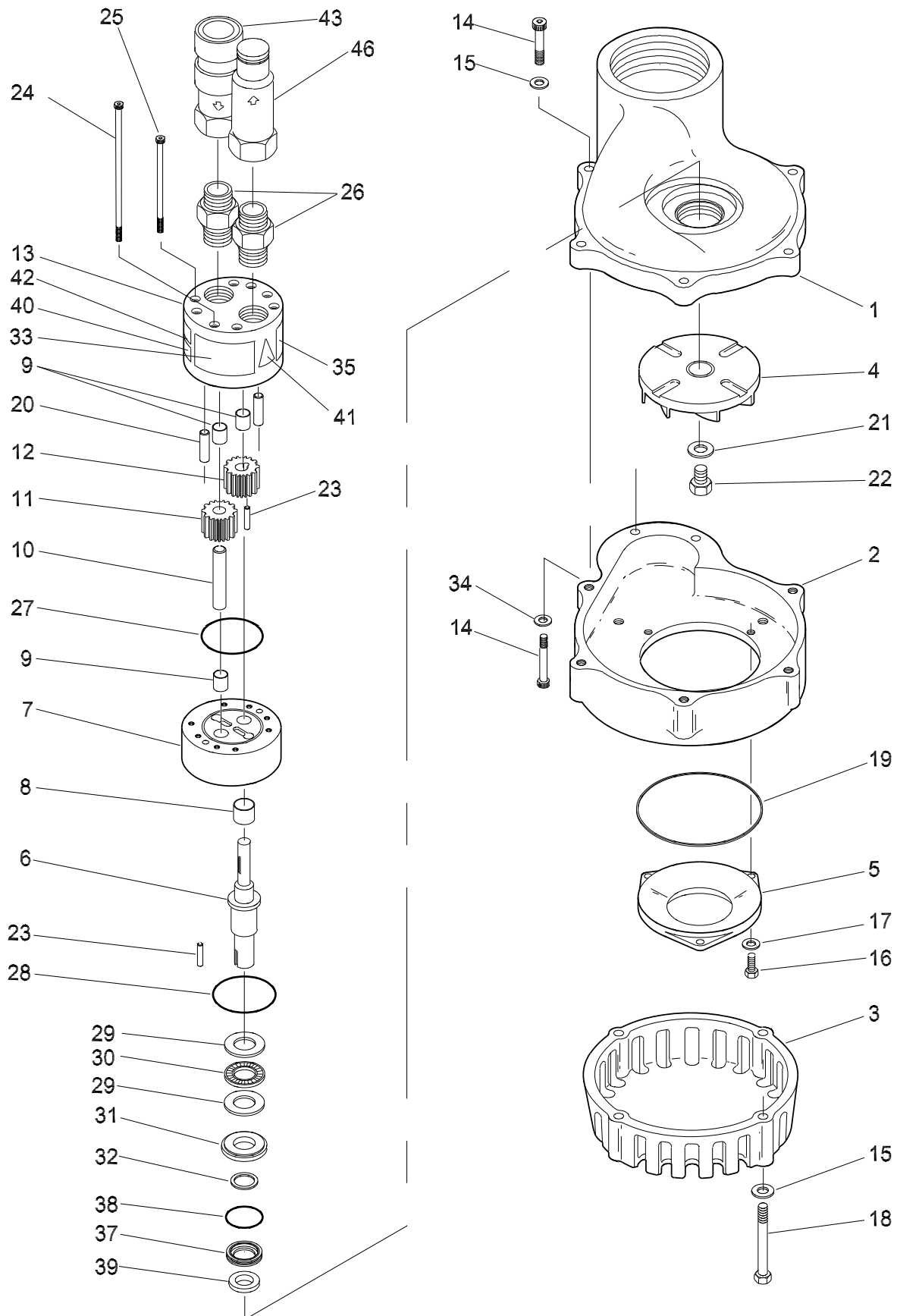
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# ACCESSORIES

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| Description   | Part No. |
|---|----------|
| Fire Hose, 25 ft x 2-1/2 in. Diameter.....                | 02183    |
| Fire Hose, 50 ft x 2-1/2 in. Diameter.....                | 05134    |
| Fire Nozzle, 1 in.....                                    | 02317    |
| Lay Flat Hose with Couplers, 25 ft x 3 in. Diameter ..... | 56761    |
| Thread Adapter for Pump to Fire Hose, 2-1/2 in.....       | 05133    |
| Spanner Wrench for Pin Lug Coupler.....                   | 05135    |
| Adapter 2-1/2 NPT x 3 in. Camlock.....                    | 59101    |

# SM20 PARTS ILLUSTRATION





# SM20 PARTS LIST

| Item No. | Part No. | Qty | Description   |
|----------|----------|-----|---|
| 1        | 19177    | 1   | Volute Top  |
| 2        | 08910    | 1   | Volute Bottom   |
| 3        | 08912    | 1   | Suction Screen  |
| 4        | 08914    | 1   | Impeller  |
|          | 25669    |     | Impeller<br>(SM2043101, SM2043107 Only)                 |
| 5        | 08916    | 1   | Wear Ring   |
| 6        | 19175    | 1   | Main Shaft  |
|          | 21120    | 1   | Main Shaft (SM2052101 Only)                             |
| 7        | 08920    | 1   | Front Bearing Retainer Assy. (Incl<br>Items 7-9)        |
|          | 08919    | 1   | Front Bearing Retainer                                  |
| 8        | 04040    | 1   | DU Bushing, 9/16 ID                                     |
| 9        | 04041    | 3   | DU Bushing, 3/8 ID                                      |
| 10       | 09382    | 1   | Idler Shaft   |
| 11       | 09383    | 1   | Idler Gear  |
|          | 04105    | 1   | Idler Gear (SM2052101 Only)                             |
| 12       | 09384    | 1   | Drive Gear  |
|          | 04106    | 1   | Drive Gear (SM2052101 Only)                             |
| 13       | 09385    | 1   | Gear Housing Assy.<br>(Incl Items 9, 13, 20)            |
|          | 21119    | 1   | Gear Housing Assy. (Incl 9, 13, 20)<br>(SM2052101 Only) |
| 14       | 00230    | 7   | Capscrew  |
| 15       | 00283    | 11  | Lockwasher  |
| 16       | 08937    | 3   | Capscrew  |
| 17       | 01324    | 3   | Lockwasher  |
| 18       | 08925    | 4   | Capscrew  |
| 19       | 08923    | AR  | Shims, .020   |
| 20       | 00289    | 2   | Dowel Pin   |
| 21       | 02259    | 1   | Flat Washer   |
| 22       | 01213    | 1   | Capscrew  |
| 23       | 04044    | 2   | Needle Roller   |
| 24       | 08927    | 4   | Capscrew  |
|          | 21128    | 4   | Capscrew (SM2052101 Only)                               |
| 25       | 09687    | 4   | Capscrew  |
|          | 00786    | 4   | Capscrew (SM2052101 Only)                               |
| 26       | 00936    | 2   | Adapter   |
| 27       | 00020    | 1   | O-Ring  |
| 28       | 00252    | 1   | O-Ring  |
| 29       | 06636    | 2   | Bearing Race  |
| 30       | 06637    | 1   | Thrust Bearing  |
| 31       | 19178    | 1   | Backup Washer   |
| 32       | 30921    | 1   | Quad Ring   |

| Item No. | Part No. | Qty | Description                                  |
|----------|----------|-----|--|
| 33       | 28784    | 1   | SM20 Model Decal                             |
|          | 28785    | 1   | SM20 Model Decal (SM2052101<br>Only)         |
| 34       | 00283    | 2   | Lockwasher                                   |
| 35       | 28788    | 1   | Manual Decal                                 |
| 36       | -----    | --  | No Item                                      |
| 37       | 71327    | 1   | Seal Carrier                                 |
| 38       | 00074    | 1   | O-Ring                                       |
| 39       | 19176    | 1   | Wiper Seal                                   |
| 40       | 28323    | 1   | CE Decal (CE Only)                           |
|          | 11207    | 1   | Circuit Type D (CE Only)                     |
| 41       | 11206    | 1   | Circuit Type C (CE Only) (SM2052101<br>Only) |
|          | 28786    | 1   | Coupler Decal                                |
| 42       | 28786    | 1   | Coupler Decal                                |
| 43       | 03972    | 1   | Female Coupler                               |
| 46       | 03973    | 1   | Male Coupler                                 |
|          | 03971    | 1   | Coupler Set                                  |
|          | 20135    | 1   | REPAIR KIT                                   |
|          | 19937    | 1   | SEAL KIT                                     |

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# WARRANTY

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Stanley Hydraulic Tools (hereinafter called "Stanley"), subject to the exceptions contained below, warrants new hydraulic tools for a period of one year from the date of sale to the first retail purchaser, or for a period of 2 years from the shipping date from Stanley, whichever period expires first, to be free of defects in material and/or workmanship at the time of delivery, and will, at its option, repair or replace any tool or part of a tool, or new part, which is found upon examination by a Stanley authorized service outlet or by Stanley's factory in Milwaukie, Oregon to be DEFECTIVE IN MATERIAL AND/OR WORKMANSHIP.

## EXCEPTIONS FROM WARRANTY

**NEW PARTS:** New parts which are obtained individually are warranted, subject to the exceptions herein, to be free of defects in material and/or workmanship at the time of delivery and for a period of 6 months after the date of first usage. Seals and diaphragms are warranted to be free of defects in material and/or workmanship at the time of delivery and for a period of 6 months after the date of first usage or 2 years after the date of delivery, whichever period expires first. Warranty for new parts is limited to replacement of defective parts only. Labor is not covered.

**FREIGHT COSTS:** Freight costs to return parts to Stanley, if requested by Stanley for the purpose of evaluating a warranty claim for warranty credit, are covered under this policy if the claimed part or parts are approved for warranty credit. Freight costs for any part or parts which are not approved for warranty credit will be the responsibility of the individual.

**SEALS & DIAPHRAGMS:** Seals and diaphragms installed in new tools are warranted to be free of defects in material and/or workmanship for a period of 6 months after the date of first usage, or for a period of 2 years from the shipping date from Stanley, whichever period expires first.

**CUTTING ACCESSORIES:** Cutting accessories such as breaker tool bits are warranted to be free of defects in material and or workmanship at the time of delivery only.

**ITEMS PRODUCED BY OTHER MANUFACTURERS:** Components which are not manufactured by Stanley and are warranted by their respective manufacturers.

- a. Costs incurred to remove a Stanley manufactured component in order to service an item manufactured by other manufacturers.

**ALTERATIONS & MODIFICATIONS:** Alterations or modifications to any tool or part. All obligations under this warranty shall be terminated if the new tool or part is altered or modified in any way.

**NORMAL WEAR:** any failure or performance deficiency attributable to normal wear and tear such as tool bushings, retaining pins, wear plates, bumpers, retaining rings and plugs, rubber bushings, recoil springs, etc.

**INCIDENTAL/CONSEQUENTIAL DAMAGES:** To the fullest extent permitted by applicable law, in no event will STANLEY be liable for any incidental, consequential or special damages and/or expenses.

**FREIGHT DAMAGE:** Damage caused by improper storage or freight handling.

**LOSS TIME:** Loss of operating time to the user while the tool(s) is out of service.

**IMPROPER OPERATION:** Any failure or performance deficiency attributable to a failure to follow the guidelines and/or procedures as outlined in the tool's operation and maintenance manual.

**MAINTENANCE:** Any failure or performance deficiency attributable to not maintaining the tool(s) in good operating condition as outlined in the Operation and Maintenance Manual.

**HYDRAULIC PRESSURE & FLOW, HEAT, TYPE OF FLUID:** Any failure or performance deficiency attributable to excess hydraulic pressure, excess hydraulic back-pressure, excess hydraulic flow, excessive heat, or incorrect hydraulic fluid.

**REPAIRS OR ALTERATIONS:** Any failure or performance deficiency attributable to repairs by anyone which in Stanley's sole judgement caused or contributed to the failure or deficiency.

**MIS-APPLICATION:** Any failure or performance deficiency attributable to mis-application. "Mis-application" is defined as usage of products for which they were not originally intended or usage of products in such a manner which exposes them to abuse or accident, without first obtaining the written consent of Stanley. PERMISSION TO APPLY ANY PRODUCT FOR WHICH IT WAS NOT ORIGINALLY INTENDED CAN ONLY BE OBTAINED FROM STANLEY ENGINEERING.

**WARRANTY REGISTRATION:** STANLEY ASSUMES NO LIABILITY FOR WARRANTY CLAIMS SUBMITTED FOR WHICH NO TOOL REGISTRATION IS ON RECORD. In the event a warranty claim is submitted and no tool registration is on record, no warranty credit will be issued without first receiving documentation which proves the sale of the tool or the tools' first date of usage. The term "DOCUMENTATION" as used in this paragraph is defined as a bill of sale, or letter of intent from the first retail customer. A WARRANTY REGISTRATION FORM THAT IS NOT ALSO ON RECORD WITH STANLEY WILL NOT BE ACCEPTED AS "DOCUMENTATION".

## NO ADDITIONAL WARRANTIES OR REPRESENTATIONS

This limited warranty and the obligation of Stanley thereunder is in lieu of all other warranties, expressed or implied including merchantability or fitness for a particular purpose except for that provided herein. There is no other warranty. This warranty gives the purchaser specific legal rights and other rights may be available which might vary depending upon applicable law.



Stanley Hydraulic Tools  
3810 SE Naef Road  
Milwaukie, Oregon  
503-659-5660 / Fax 503-652-1780  
[www.stanleyhydraulic.com](http://www.stanleyhydraulic.com)

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