STANLEY®

HD45
HYDRAULIC HAMMER DRILL

USER MANUAL
Safety, Operation and Maintenance

© 2017 STANLEY Black & Decker, Inc.
New Britain, CT 06053
U.S.A.
66301 12/2017 Ver. 11

DECLARATION OF CONFORMITY

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

STANLEY

CE

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

Weisbeck, Andy

Surname and First names/Familiennname 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:

1. Category:
   Kategorie:
   Catégorie:
   Categoria:
   Categoria: **Hammer Drill, Hydraulic**
2. Make/Marke/Marque/Marca/Marca **STANLEY**
3. Type/Typ/Type/Tipo/Tipo: **HD4511001, HD4531001, HD4511001B**
4. 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 conformitá 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 ISO	12100-1:2010	Self
EN ISO	28927-10:2011	Self
EN ISO	3744:2010	Self
ISOISO	11148-5:2011	Self
Machinery Directive	2006/42/EC:2006	Self

5. Special Provisions: **None**
   Spezielle Bestimmungen:
   Dispositions particulières:
   Provisiones especiales:
   Disposizioni speciali:

6. Representative in the Union: **Patrick Vervier**, **Stanley Dubuis 17-19, rue Jules Berthonneau-BP 3406 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 Infrastructure, Milwaukie, Oregon USA Date/Datum/le/Fecha/Data 1-4-11

Signature/Unterschrift/Signature/Firma/Firma Andy Weisbeck

Position/Position/Fonction/Cargo/Posizione Director of Product Development

STANLEY

TABLE OF CONTENTS

SAFETY SYMBOLS 4
SAFETY PRECAUTIONS 5
TOOL STICKERS & TAGS 6
HOSE TYPES 7
HOSE RECOMMENDATIONS 8
HTMA / EHTMA REQUIREMENTS 9
OPERATION 10
CHARGING THE ACCUMULATOR 11
TOOL PROTECTION & CARE 13
TROUBLESHOOTING 14
ACCESSORIES 15
SERVICE TOOLS 15
SPECIFICATIONS 15
HD45 PARTS ILLUSTRATION 16
HD45 PARTS LIST 17
UNDERWATER TOOLS DEPTH GUIDELINE 18

IMPORTANT

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

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

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

⚠WARNING

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

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

For the nearest certified dealer, call STANLEY Infrastructure at (503) 659-5660 and ask for a Customer Service Representative.

SAFETY SYMBOLS

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

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

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

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

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

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

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

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

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

LOCAL SAFETY REGULATIONS

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

SAFETY PRECAUTIONS

Tool operators and maintenance personnel must always comply with the safety precautions given in this manual and on the stickers and tags attached to the 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 model HD45 Hydraulic Hammer Drill 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 hose before operation. Failure to do so could result in personal injury or equipment damage.

- The operator must start in a work area without bystanders. Flying debris can cause serious injury.
- Do not operate the tool unless thoroughly trained or under the supervision of an instructor. Establish a training program for all operators to ensure safe operation.
- Always wear safety equipment such as goggles, ear and head protection and safety shoes at all times when operating the tool. Use gloves and aprons when necessary.
- The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Do not inspect, clean or replace any parts if the hydraulic power source is connected. Do not inspect or clean the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.
- Always connect hoses to the tool hose couplers before energizing the hydraulic power source. Be sure all hose connections are tight and are in good condition.
- Do not operate the tool at oil temperatures above 140 °F/60 °C. Operation at higher temperatures can cause higher than normal temperatures at the tool which can result in operator discomfort.
- Do not operate a damaged, improperly adjusted or incompletely assembled hammer drill.
- Never wear loose clothing that can become entangled in the working parts of the tool.
- Keep all parts of your body away from the drill. Maintain proper footing and balance at all times.
- When working near electrical conductors, always assume that all conductors are energized and that insulation, clothing and hoses can conduct electricity. Stay a safe distance away from electrical conductors.
- If the hydraulic power supply has been interrupted, place the hammer drill in the OFF position before restarting the hydraulic power supply.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.
- Never rest the tool on your foot.
- Never allow your face to come close to the tool.
- Never start the tool while it is lying on the ground.
- **Warning:** Use of this tool on certain materials could generate dust potentially containing a variety of hazardous substances such as asbestos, silica or lead. Inhalation of dust containing these or other hazardous substances could result in serious injury, cancer or death. Protect yourself and those around you. Research and understand the materials you are cutting. Follow correct safety procedures and comply with all applicable national, state or provisional health and safety regulations relating to them, including, if appropriate arranging for the safe disposal of the materials by a qualified person.

TOOL STICKERS & TAGS

STANLEY
Stanley Hydraulic tools
Division of the Stanley Works
3810 SE Naef Road
Milwaukie, OR 97267

05152
Stanley Decal
28376
Stanley Decal (CE Models)

28409
Composite Decal (CE Models)

HD45 HAMMER DRILL

WEIGHT: 22 KG/48 LB
FLOW: 34 LPM/9 GPM
PRESSURE: 140 BAR/2000 PSI

29689
Name Tag

Lwa
114

66297
Sound Power Decal

CAUTION

7-9 GPM / 26-34 LPM
DO NOT EXCEED 2000 PSI / 140 BAR

DO NOT EXCEED SPECIFIED FLOW OR PRESSURE USE CLOSED-CENTER TOOL ON CLOSED-CENTER SYSTEM. USE OPEN-CENTER TOOL ON OPEN-CENTER SYSTEM. CORRECTLY CONNECT HOSES TO TOOL "IN" AND "OUT" PORTS. IMPROPER HANDLING, USE OR OTHER MAINTENANCE OF TOOL COULD RESULT IN A LEAK, BURST OR OTHER TOOL FAILURE. CONTACT AT A LEAK OR BURST CAN CAUSE OIL INJECTION INTO THE BODY. FAILURE TO OBSERVE THESE PRECAUTIONS CAN RESULT IN SERIOUS PERSONAL INJURY.

03786
HD45 GPM Decal

CE

28322
CE Decal (CE Models Only)

11207
Circuit Type D Decal

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 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

1. 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 ELECTRIC 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.

2. 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 THIS TOOL. EXCESS FLOW OR PRESSURE MAY CAUSE A LEAK OR BURST.
   B. **DO NOT** EXCEED RATED WORKING PRESSURE OF HYDRAULIC HOSE USED WITH THIS TOOL. EXCESS PRESSURE MAY CAUSE A LEAK OR BURST.
   C. CHECK TOOL HOSE COUPLERS AND CONNECTORS DAILY FOR LEAKS. **DO NOT** FEEL FOR LEAKS WITH YOUR HANDS. CONTACT WITH A LEAK MAY RESULT IN SEVERE PERSONAL INJURY.

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.

SEE OTHER SIDE

DANGER

D. DO NOT LIFT OR CARRY TOOL BY THE HOSES. DO NOT ABUSE HOSE. DO NOT USE KINKED, TORN OR DAMAGED HOSE.

3. 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.
4. 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.
5. BYSTANDERS MAY BE INJURED IN YOUR WORK AREA. KEEP BYSTANDERS CLEAR OF YOUR WORK AREA.
6. WEAR HEARING, EYE, FOOT, HAND AND HEAD PROTECTION.
7. TO AVOID PERSONAL INJURY OR EQUIPMENT DAMAGE, ALL TOOL REPAIR MAINTENANCE AND SERVICE MUST ONLY BE PERFORMED BY AUTHORIZED AND PROPERLY TRAINED PERSONNEL.

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.

SEE OTHER SIDE

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

STANLEY

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.*

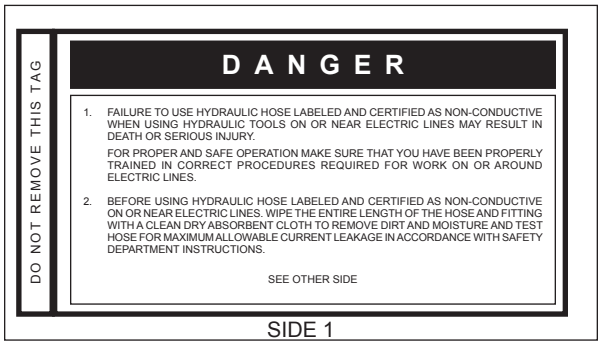
Fabric-braided (not certified or labeled non-conductive) — constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover. *This hose is **not certified non-conductive** and must never be used near electrical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

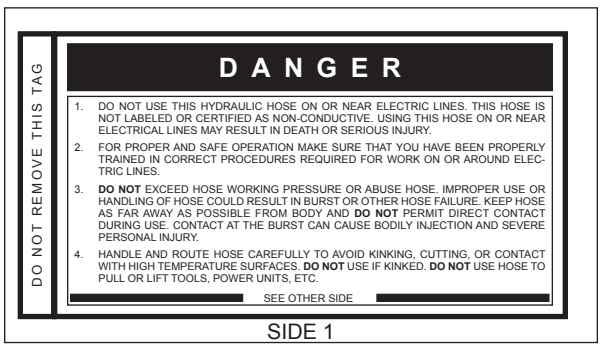


SIDE 1

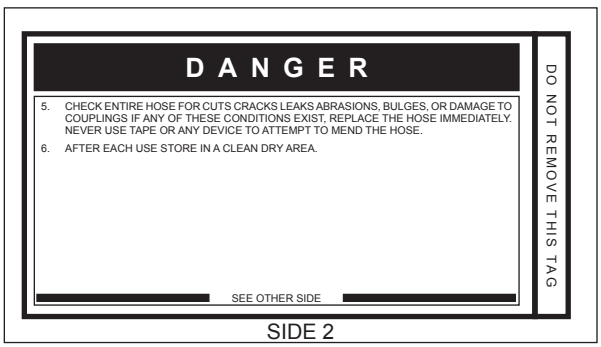
SIDE 2

(Shown smaller than actual size)

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



SIDE 1



SIDE 2

(Shown smaller than actual size)

Tool to Hydraulic Circuit Hose Recommendations

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

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

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

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

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

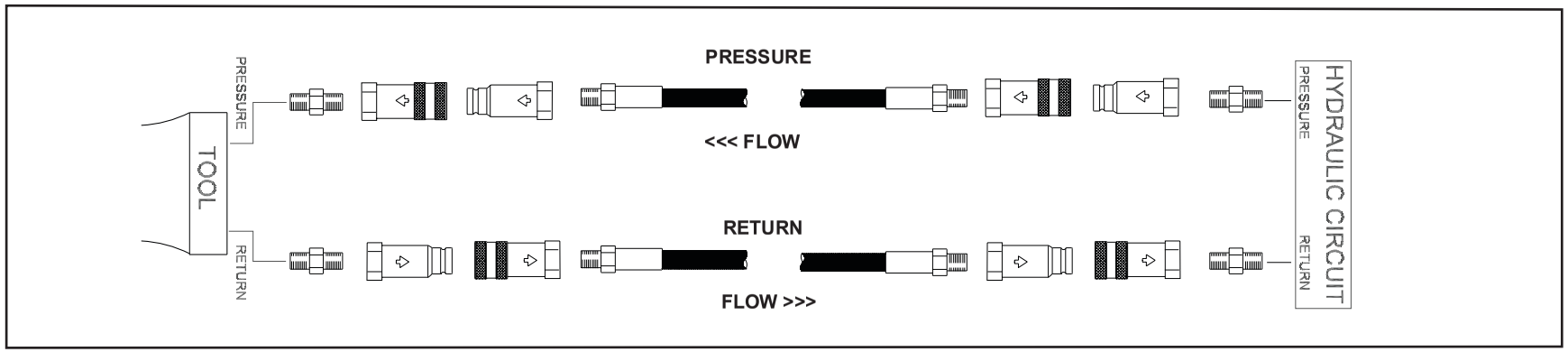
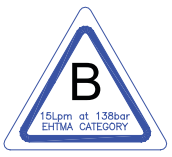
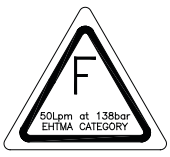


Figure 1. Typical Hose Connections

HTMA / EHTMA REQUIREMENTS

HTMA / EHTMA REQUIREMENTS

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

EHTMA HYDRAULIC SYSTEM REQUIREMENTS	CLASSIFICATION 				
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

PREPERATION PROCEDURES

CHECK POWER SOURCE

1. Using a calibrated flowmeter, check that the hydraulic power source develops a flow of 7-9 GPM/26-34 LPM at 1500-2000 psi/105-140 bar.
2. Make certain that the hydraulic power source is equipped with a relief valve set to open at 2250 psi/155 bar.

CHECK THE TOOL

1. Ensure tool accessories are correctly installed. Failure to install accessories properly can result in damage to the tool or personal injury.
2. There should be no signs of leaks.
3. The tool should be clean and dry with all fittings and fasteners tight.

BIT INSTALLATION

The hammer drill is designed for use with 1-2 inch diameter bits manufactured for Model 736 Skil Hex Hammer Drills.

1. Pull the latch at the foot of the tool so that the bit can be inserted into the drive hex.

⚠WARNING

Do not allow your fingers to come between the latch and drill steel when closing the latch.

2. Push the latch back into the “latched” (vertical) position to lock the bit in place.

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 quick disconnects. Connect the return hose first and disconnect it last to reduce trapped pressure.

NOTE: If uncoupled hoses are left in the sun, pressure increase within the hoses can make them difficult to connect. Connect the free ends of hoses together.

3. Observe the flow indicators stamped on the hose couplers to ensure that the flow is in the proper direction. The female coupler on the tool’s “IN” port is the inlet coupler.
4. Squeeze the drill trigger momentarily. If the drill does not operate, the hoses might be reversed. Verify correct connection of the hoses before continuing.

DRILL OPERATION

1. Observe all safety precautions.
2. Install the appropriate drill bit for the job.

NOTE: Drill bit rotation is reversible. Drill bit speed can be adjusted by rotating the lever on the lower section of the tool. The tool is in neutral when the lever is in the “up” position. The lever can be rotated 90° to the “horizontal” position in each direction. The rotation distance determines the speed of the bit. The horizontal position is the maximum speed.

3. Select the speed of the bit best suited for the material being drilled. Most drilling is best accomplished with the lever halfway between fully “On” and the “Up” position.Do not drill steel or wood.
4. Squeeze the trigger to start the drill. Adequate down pressure is very important.

NOTE: If the trigger is partially depressed, the piston will cycle at a low rate and permit easier starting of the drill bit into the work surface.

5. Periodically pull the drill out of the hole while the bit is still rotating. This will clear the hole and allow more efficient penetration.
6. If the bit binds in the hole, reverse direction of the bit to assist in “backing out” the drill.
7. Keep the drill bit centered in the hole.

COLD WEATHER OPERATION

Preheat the hydraulic fluid at low engine speed. When using the normally recommended fluids, fluid temperature should be at or above 50 °F/10 °C (400 SSU/ 82 centistokes).

Damage to the hydraulic system or drill can result if fluid is too viscous or too thick.

UNDERWATER MODEL PREVENTATIVE MAINTENANCE

After each use, the movable portions of the tool should be flushed with a water displacing oil such as WD40®. Remove any remaining water and debris as follows:

1. Turn the tool upside down (without the tool bit) and spray oil through the drive hex and side holes in the motor assembly to displace any remaining water in the lower piston cavity.
2. Spray oil into the On/Off valve trigger slot area.
3. Dip or spray the entire tool.
4. Cycle the tool hydraulically several times before storing away.

STANLEY

CHARGING THE ACCUMULATOR

ACCUMULATOR TESTING PROCEDURE

To check or charge the accumulator the following equipment is required:

31254 Charge Kit: which includes the following.

Accumulator Tester (Part Number 02835).

Charging Assembly (Part Number 15304).

(P/N 15304 includes a liquid filled gauge with snub valve, hose and fittings.)

NITROGEN bottle with 1000 psi/70 bar (min.) charge.

1. Remove the valve cap assembly from the hammer drill.
2. Holding the chuck end of Accumulator Tester (Part Number 02835) turn the gauge fully counterclockwise to ensure that the stem inside the chuck is completely retracted.
3. Thread the tester onto the accumulator charging valve. Do not advance the gauge-end into the chuck-end. Turn as a unit. Seat the chuck on the accumulator charging valve and hand tighten only.
4. Advance the valve stem of the tester by turning the gauge-end clockwise until a pressure is read on the gauge (charge pressure should be 500-700 psi/34-48 bar).
5. If pressure is OK unscrew the gauge-end from the chuck to retract the stem, then unscrew the entire tester assembly from the accumulator charging valve. If pressure is low, charge the accumulator as described in the following procedure.
6. Install the protective valve cap assembly.

ACCUMULATOR CHARGING

1. Perform steps 1 through 4 of the accumulator testing procedure above.
2. Connect the chuck of the charging assembly to the charging valve on the accumulator tester or remove the tester from the charging valve and connect the charging assembly chuck directly to the charging valve.
3. Adjust the regulator to the charging pressure of 600 psi/42 bar.

NOTE: It may be necessary to set the gauge at 650-700 psi/45-48 bar to overcome any pressure drop through the charging system.

4. Open the valve on the charging assembly hose.

IMPORTANT

If the underwater model is to be used at depths greater than 300 ft/91 m, increase the accumulator charge 40 psi/3 bar for each 100 ft/30 m of depth to offset water pressure.

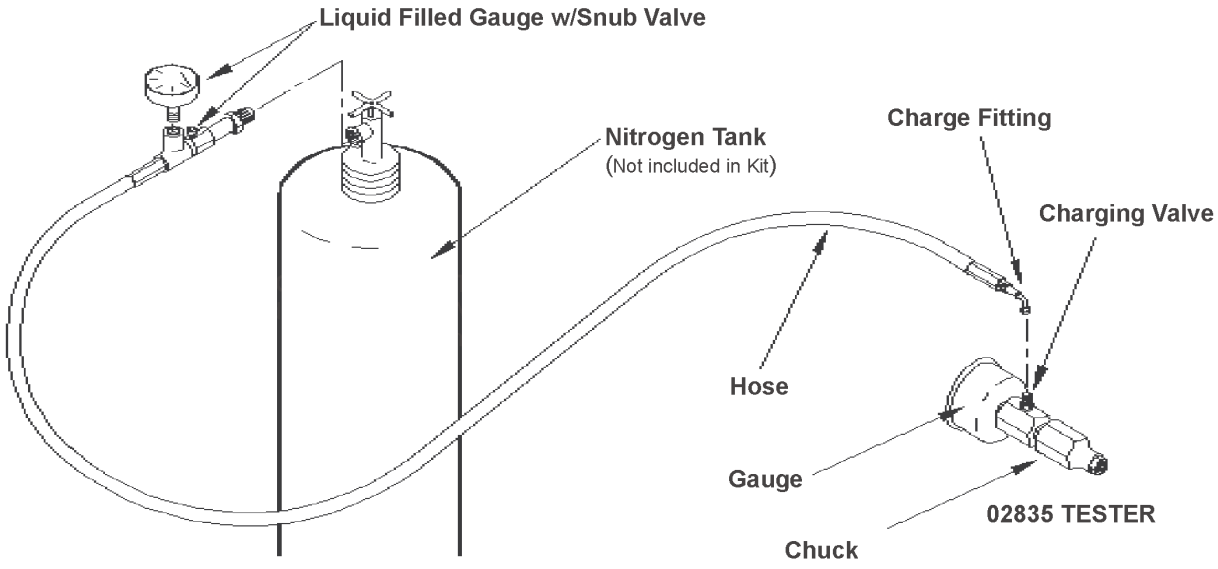
5. When the accumulator is fully charged close the valve on the charging assembly hose and remove the charging assembly chuck from the accumulator tester or tool charging valve.
6. If the accumulator tester has been used, be sure to turn the gauge-end fully counterclockwise before removing the tester from the charging valve of the tool.
7. Replace the valve cap assembly.

GENERAL SERVICE NOTES

1. If the hammer drill is repainted after servicing, be sure to mask off the vent in the valve cap assembly. Do not allow paint to enter the IN and OUT ports or the bore of the motor assembly.
2. If the handle grips need to be replaced.
   a. Remove the old grips and clean the handle.
   b. Wash the new grips and the handle. Push the drive grips on. DO NOT lubricate the parts. The grips will not be secure on the handle if grease or oil is used.

CHARGING THE ACCUMULATOR

31254 Accumulator Charge Kit: Includes Liquid Filled Gauge with Snub Valve, Hose, Charge Fitting, 02835 Tester and Box (not pictured).



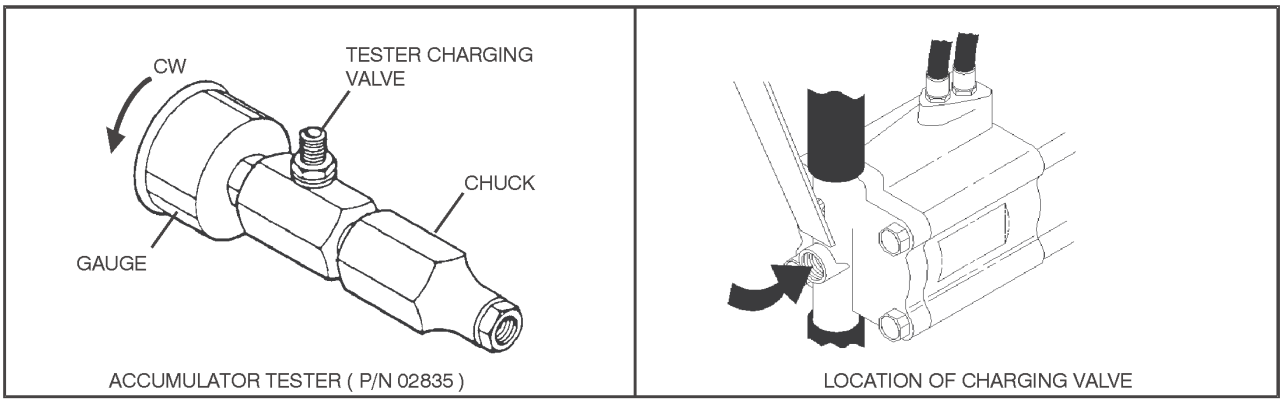


Figure 2. Charging the Accumulator

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. See “Specifications” on page 15) for correct flow rate and model number. 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.
- Never operate a hammer drill without a drill bit or without holding it against the work surface. To do so, places excessive strain on the hammer drill.
- Keep drill bits sharp for maximum tool performance. Make sure the drill bits are not chipped or rounded on the striking end.

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 hammer drill, always check that the hydraulic power source is supplying the correct hydraulic flow and a pressure to the tool 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
Drill does not run.	Power unit not functioning	Check power unit for proper flow and pressure (7–9 GPM/26–34 LPM, 1500–2000 psi/104–140 bar).
	Couplers or hoses blocked.	Remove restriction.
	Flow direction reversed. Pressure and return lined hoses reversed at ports.	Be sure hoses are connected to their proper ports.
	Mechanical failure of piston or automatic valve.	Disassemble drill and inspect for damaged parts.
Does not drill effectively.	Power unit not functioning.	Check power unit for proper flow and pressure (7–9 GPM/26–34 LPM, 1500–2000 psi/104–140 bar).
	Couplers or hoses blocked.	Remove restriction.
	Low accumulator charge (pressure hose will pulse more than normal).	Recharge accumulator. Replace diaphragm if charge loss continues.
	Oil too hot (above 140 °F/60 °C).	Provide cooler to maintain proper oil temperature.
Drill operates slow.	Low flow supply from power unit.	Check power unit for proper flow (7–9 GPM/26–34 LPM).
	High backpressure.	Check hydraulic system for excessive backpressure (over 250 psi/17 bar).
	Couplers or hoses blocked.	Remove restriction.
	Orifice plug or internal passage blocked.	Remove restriction.
	Oil too hot (above 140 °F/60 °C) or too cold (below 60 °F/16 °C).	Check power unit for proper oil temperatures. Bypass cooler to warm oil up or provide cooler to maintain proper temperature.
	Relief valve set too low.	Adjust relief valve to 2100–2250 psi/145–155 bar.
Drill gets hot.	Hot oil going through tool.	Check power unit. Be sure flow rate is not too high causing part of the oil to go through the relief valve. Provide cooler to maintain proper oil temperature (140 °F/60 °C maximum).
		Check relief valve setting.
Oil leakage on drill bit.	Lower piston or drive hex seal failure.	Replace seals.
Oil leakage around trigger.	Valve spool seal failure.	Replace seals.
Low rotation torque.	Motor not completely broken in.	Continued operation or break-in with motor break-in block.
	Damage to motor clearances.	Repair as required.
	Mechanical binding during drilling.	Take care to guide drill straight.

STANLEY

SPECIFICATIONS

Operating Pressure ..... 1500-2000 psi / 105-140 bar
Flow Range ..... 7–9 GPM / 26–34 LPM
Optimum Flow ..... 8 GPM / 30 LPM
Capacity ..... 1 to 2 in. / 25–50 mm Dia. No. 736 Skil Carbide Tipped Drill Bit
Porting ..... 8 SAE O-ring
Connect Size and Type ..... 3/8 in. Male Pipe Hose End
System ..... Open Center, HTMA Type II/ETMA Category D
Rotating Speed ..... 0-300 RPM (Forward or Reverse)
Hose Whips ..... Yes
Weight ..... 45 lb / 20.4 kg
Length ..... 24.5 in. / 62.2 cm
Motor ..... Integral

SOUND POWER AND VIBRATION DECLARATION	
Test conducted on HD45310E, S/N 5606 operated at standard 8 GPM input	
Measured A-weighted sound power level, Lwa (ref. 1pW) in decibels	111 dBA
Uncertainty, Kwa, in decibels	3 dBA
Measured A-weighted sound pressure level, Lpa (ref. 20 µPa) at operator's position, in decibels	98 dBA
Uncertainty, Kpa, in decibels	3 dBA
Values determined according to noise test code given in ISO 15744, using the basic standard ISO 3744. **NOTE: The sum of a measured noise emission value and its associated uncertainty represents an upper boundary of the range of values which is likely to occur in measurements.**	
Declared vibration emission value in accordance with EN 12096	
Measured vibration emission value: a	25.6 m/sec²
Uncertainty: K	8.4 m/sec²
Values determined according to ISO 8662-3	

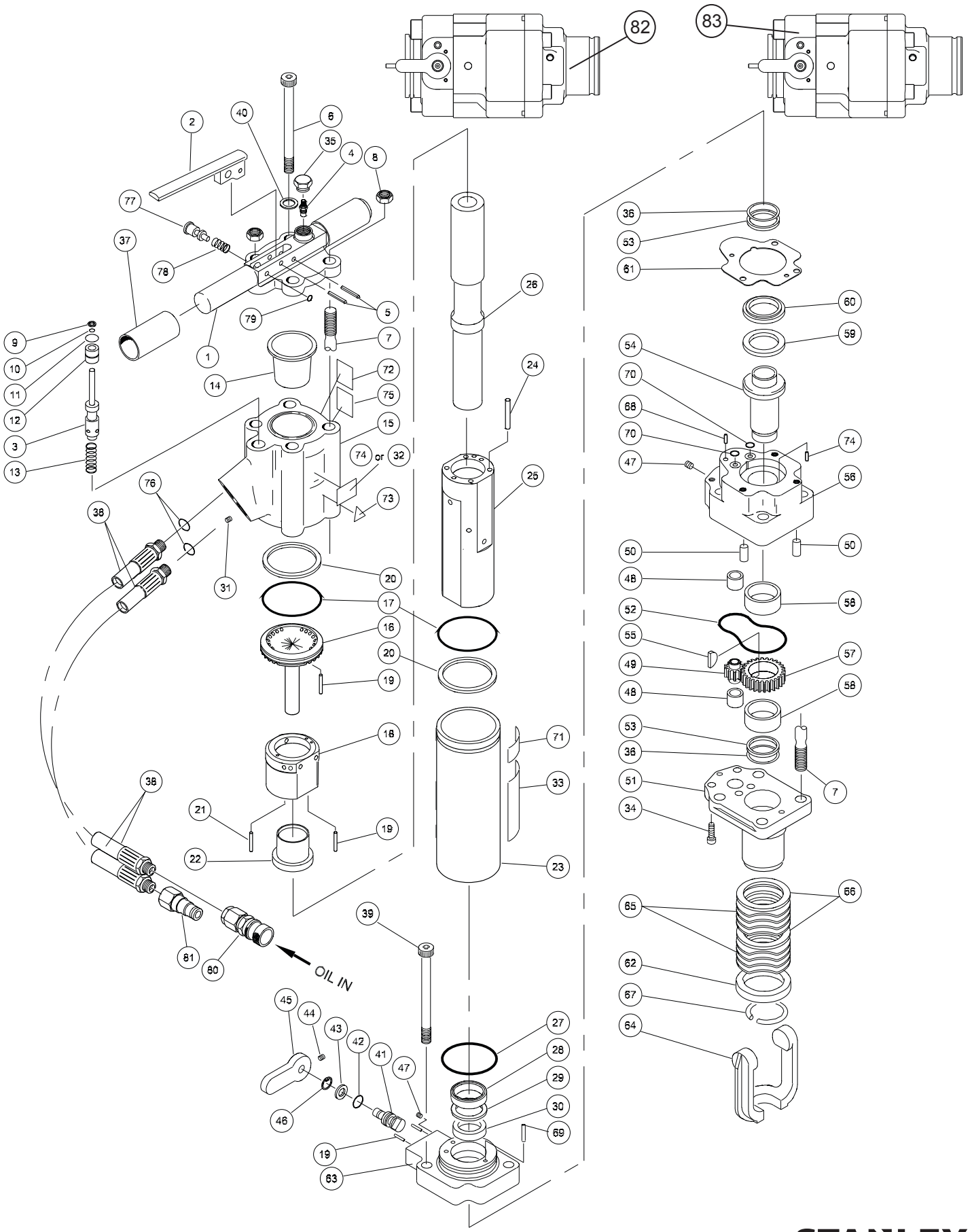
ACCESSORIES

Carbide Bit 1 in. × 24 in. Long (Drills 14-7/8 in. Deep) 02281
Carbide Bit 1-1/4 in. × 24 in. Long (Drills 14-7/8 in. Deep) 02282
Carbide Bit 2 in. × 24 in. Long (Drills 14-3/4 in. Deep) 02283
Carbide Bit 1 in. × 18 in. Long (Drills 8-7/8 in. Deep) 04668
Carbide Bit 1-1/4 in. × 36 in. Long (Drills 29 in. Deep) 04896

SERVICE TOOLS

Tamper Sleeve Tool 01120
Accumulator Tester 02835
Flow and Pressure Tester 04182
O-ring Tool Kit 04337
Flow Sleeve Removal Tube 04910
Flow Sleeve Removal Tool 04919
Bearing Installation Tool 05044
Latch Removal Tool 05045
Bearing Installation Tool 05061
Latch Installation Tool 05062
Accumulator Cylinder Puller 05640
Seal Kit 05839
Latch Installation Tool 05879
Accumulator Charge Kit 31254

HD45 PARTS ILLUSTRATION



STANLEY

HD45 PARTS LIST

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	07483	1	HANDLE
	11358	1	HANDLE (HD4511001, HD4531001 ONLY)
2	04371	1	TRIGGER
3	04077	1	VALVE SPOOL, OC
	04593	1	VALVE SPOOL, CC
4	20499	1	CHARGING VALVE
5	07492	2	SPIROL PIN, 1/4 O.D.× 1.250 LG
6	04372	2	CAPSCREW
7	04932	2	SIDE ROD
8	04374	2	LOCK NUT
9	04056	1	ROD WIPER
10	01362	1	O-RING
11	00293	1	O-RING
12	04057	1	BUSHING
13	04058	1	SPRING
14	07479	1	ACCUMULATOR DIAPHRAGM
15	05988	1	ACCUMULATOR, VALVE BLOCK ASSY
16	04378	1	PORTING BLOCK
17	04379	2	O-RING
18	04380	1	AUTOMATIC VALVE BODY
19	02900	4	ROLL PIN, 1/8 × 1/2
20	04381	2	BACK-UP RING
21	04571	2	PUSH PIN
22	04382	1	AUTOMATIC VALVE
23	04383	1	FLOW SLEEVE TUBE
24	04605	4	PUSH PIN
25	04384	1	FLOW SLEEVE
26	04954	1	PISTON
27	02022	1	O-RING
28	04386	1	CUP SEAL
29	04780	1	WASHER
30	04934	1	CUP SEAL
31	05243	1	ORIFICE PLUG
32	03786	1	GPM DECAL
33	05152	1	STANLEY DECAL
34	00682	2	CAPSCREW
35	07493	1	CHARGE VALVE CAP
36	11197	2	BACK-UP RING
37	02494	2	HANDLE GRIP
38	01652	2	HOSE ASSY
39	04936	2	CAPSCREW
40	25534	2	WASHER
41	04937	1	MOTOR CONTROL VALVE
42	01211	1	O-RING

ITEM NO.	PART NO.	QTY.	DESCRIPTION
43	04938	1	WASHER
44	01607	1	SET SCREW
45	04939	1	LEVER
46	04940	1	RETAINING RING
47	00783	1	PIPE PLUG
48	03826	2	BEARING
49	04033	1	IDLER GEAR
50	00713	2	DOWEL PIN
51	04942	1	MOTOR PLATE
52	01257	1	O-RING
53	11196	2	QUAD RING
54	04944	1	DRIVE HEX (LAND MODEL)
	06678	1	DRIVE HEX (U/W MODEL)
55	04787	1	KEY
56	05976	1	MOTOR CHAMBER
57	05975	1	DRIVE GEAR
58	04947	2	BEARING
59	04948	1	THRUST WASHER
60	04949	1	THRUST BACK-UP WASHER
61	04950	1	GASKET
62	04759	1	SPRING BACK-UP
63	04951	1	DRIVE MOTOR CONTROL BLOCK (LAND MODEL)
	06680	1	DRIVE MOTOR CONTROL BLOCK (U/W MODEL)
64	16445	1	LATCH
65	07063	8	WAVE SPRING
66	04756	2	LATCH WASHER
67	04761	1	RETAINING RING
68	01749	2	ROLL PIN
69	00114	1	ROLL PIN
70	00018	2	O-RING
71	29689	1	NAME TAG (CE ONLY)
72	66297	1	SOUND POWER DECAL (CE ONLY)
73	11207	1	CIRCUIT TYPE D DECAL (CE ONLY)
74	28322	1	CE DECAL (CE ONLY)
75	28409	1	COMPOSITE DECAL (CE ONLY)
76	01605	2	O-RING
77	07594	1	TRIGGER LOCK
78	07593	1	SPRING
79	00224	1	RETAINER RING
80	03972	1	COUPLER, FEMALE
81	03973	1	COUPLER, MALE
82	30649	1	MOTOR ASSEMBLY
83	30650	1	MOTOR ASSEMBLY (U/W MODEL)
	05839	1	SEAL KIT

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”

STANLEY

STANLEY®

STANLEY Infrastructure
6430 SE Lake Road
Portland, Oregon 97222 USA
(503) 659-5660 / Fax (503) 652-1780
www.stanleyinfrastructure.com