

STANLEY®

SK58 HYDRAULIC SINKER DRILL



USER MANUAL Safety, Operation and Maintenance



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New Britain, CT 06053
U.S.A.
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IMPORTANT

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

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

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

WARNING

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

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

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

SAFETY SYMBOLS

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



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



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



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



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



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



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



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

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

LOCAL SAFETY REGULATIONS

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

SAFETY PRECAUTIONS

Tool operators and maintenance personnel must 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 general maintenance or repairs.

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

The SK58 Hydraulic Sinker 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 hoses before operation. Failure to do so could result in personal injury or equipment damage.



- Operator must start in a work area without bystanders. The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Establish a training program for all operators to ensure safe operation.
- Do not operate the tool unless thoroughly trained or under the supervision of an instructor.
- Always wear safety equipment such as goggles, ear, 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.
- 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. Use only lint-free cloths. Failure to do so may result in damage to the quick couplers and cause overheating of the hydraulic system.
- Do not operate the tool at oil temperatures above 140 °F/60 °C. Operation at higher oil temperatures can cause operator discomfort and may damage the

tool.

- Do not operate a damaged, improperly adjusted or incompletely assembled tool.
- Do not weld, cut with an acetylene torch or hardface the tool bit.
- 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 operate the tool if underground utilities are present.
- Do not wear loose fitting clothing when operating the tool.
- **WARNING:** Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
 - Lead from lead-based paints,
 - crystalline silica from bricks and cement and other masonry products, and
 - arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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

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
GPM Sticker

STANLEY Stanley Hydraulic Tools
3810 SE Naef Rd
Milwaukie, Oregon 97267 U.S.A.

Model No.: SK58

04796
SK58 Name Tag

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

- 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.
 - DO NOT EXCEED SPECIFIED FLOW AND PRESSURE FOR THIS TOOL. EXCESS FLOW OR PRESSURE MAY CAUSE A LEAK OR BURST.
 - DO NOT EXCEED RATED WORKING PRESSURE OF HYDRAULIC HOSE USED WITH THIS TOOL. EXCESS PRESSURE MAY CAUSE A LEAK OR BURST.
 - 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

- 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.
- WEAR HEARING, EYE, FOOT, HAND AND HEAD PROTECTION.
- 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 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.*

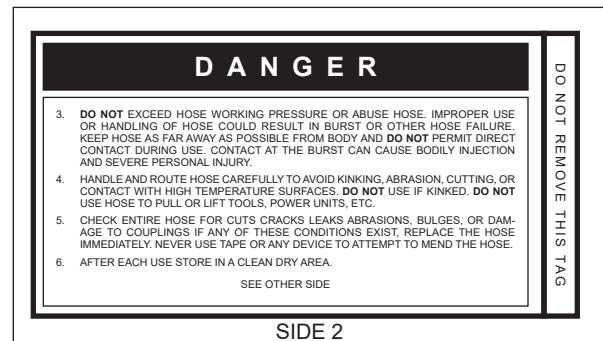
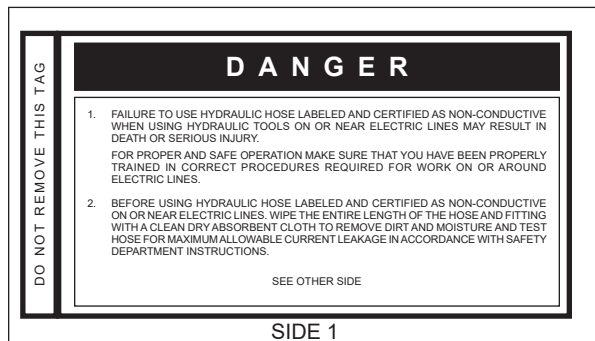
Fabric-braided (not certified or labeled non-conductive) — constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover. *This hose is **not certified non-conductive** and must never be used near electrical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

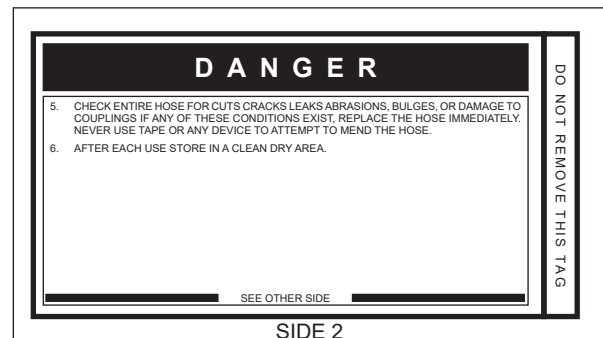
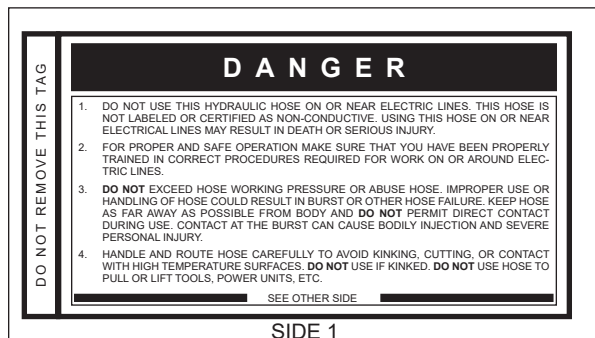
If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained from your STANLEY Distributor.

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
Certified Non-Conductive Hose - Fiber Braid - for Utility Bucket Trucks								
4-9	15-34	up to 10	up to 3	3/8	10	Both	2250	155
Conductive Hose - Wire Braid or Fiber Braid - DO NOT USE NEAR ELECTRICAL CONDUCTORS								
4-6	15-23	up to 25	up to 7.5	3/8	10	Both	2500	175
4-6	15-23	26-100	7.5-30	1/2	13	Both	2500	175
5-10.5	19-40	up to 50	up to 15	1/2	13	Both	2500	175
5-10.5	19-40	51-100	15-30	5/8	16	Both	2500	175
5-10.5	19-40	100-300	30-90	5/8	16	Pressure	2500	175
10-13	38-49	up to 50	up to 15	3/4	19	Return	2500	175
10-13	38-49	51-100	15-30	5/8	16	Both	2500	175
10-13	38-49	100-200	30-60	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

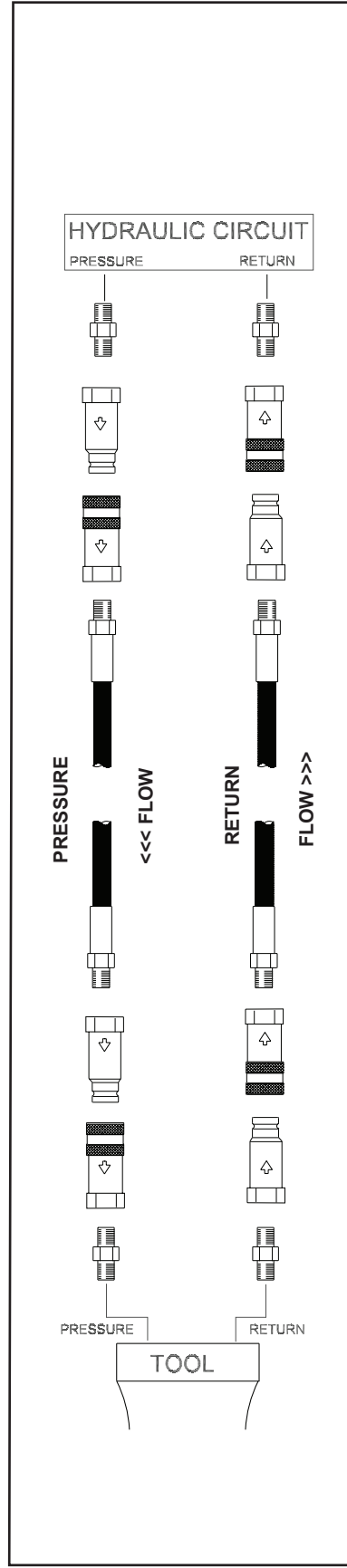


Figure 1. Typical Hose Connections






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)
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 Sized for flow of at least: (For cold temp startup and maximum dirt-holding capacity)	25 microns 30 GPM (114 LPM)	25 microns 30 GPM (114 LPM)	25 microns 30 GPM (114 LPM)	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)
Note: When choosing hydraulic fluid, the expected oil temperature extremes that will be experienced in service determine the most suitable temperature viscosity characteristics. Hydraulic fluids with a viscosity index over 140 will meet the requirements over a wide range of operating temperatures.				
*SSU = Saybolt Seconds Universal				

CLASSIFICATION

EHTMA HYDRAULIC SYSTEM REQUIREMENTS					
Flow range	3.5-4.3 GPM (13.5-16.5 LPM)	4.7-5.8 GPM (18-22 LPM)	7.1-8.7 GPM (27-33 LPM)	9.5-11.6 GPM (36-44 LPM)	11.8-14.5 GPM (45-55 LPM)
Nominal operating pressure (At the power supply outlet)	1870 psi (129 bar)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)
System relief valve setting (At the power supply outlet)	2495 psi (172 bar)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)

Note: These are general hydraulic system requirements. See tool specification page for tool specific requirements.

OPERATION

The recommended hose size is .500 inch/12 mm I.D., up to 50 ft/15 m long and .625 inch/16 mm I.D. minimum, up to 100 ft/30 m.

PRE-OPERATION PROCEDURES

CHECK POWER SOURCE

1. Using a calibrated flow meter and pressure gauge, 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 the hydraulic power source is equipped with a relief valve set to open at 2100-2250 psi/145-155 bar maximum.

INSTALL DRILL STEEL & ROCK BIT

Use standard 4-1/4 inch shank × 1 inch hex drill steel for SK58110, SK58120 and SK58310 models and 4-1/4 inch shank × 7/8 inch hex drill steel for the SK58130 model.

Drill steels are available in a variety of lengths. Start with a short length so that the tool may be operated at a normal standing position. The tool handles should never exceed chest height during operation.

1. Thread a rock bit onto the drill steel.
2. Rotate the latch (61) out and up.
3. Slide the drill steel into the tool.
4. Rotate the latch down being careful not to pinch your fingers. When correctly installed, the collar on the drill steel should be above the bottom of the latch.

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 tool fittings or quick disconnects. It is a good practice to connect return hoses first and disconnect them last to minimize or avoid trapped pressure within the tool.
3. Observe flow indicators stamped on hose couplers to ensure that fluid flow is in the proper direction. The female coupler on the tool hose is the inlet coupler.
4. Move the hydraulic circuit control valve to the ON position to operate the tool.

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

5. Connect the hose from the air supply to the hose on the tool.

NOTICE

The air supply must be minimum 30 cfm at 120 psi. Supplying less than these specifications may result in inadequate extraction of rock cuttings; cause cuttings to migrate up the drill steel and into the tool and result in tool damage; diminish drilling time; and cause premature wear of the drill bit.

OPERATION PROCEDURES

1. Observe all safety precautions.
2. Install the appropriate tool bit for the job.
3. Start the hydraulic supply and turn the circuit control valve to the ON position.
4. Open the air valve on the tool just enough to permit a small amount of air flow from the tool bit.

Note: Air flow must be continuous during drilling to avoid clogging of the air passages and/or back-flushing of waste products into the drill.

5. Place the bit firmly on the surface to be drilled.
6. Open the hydraulic valve lever slightly to start the tool at a slow speed. Adequate down pressure is very important.
7. Ensure the rock bit is rotating at a moderate speed (not too fast, not too slow). When starting the hole, it is best to start at a slow impact and rotation speed until the rock bit has carved out a depression in the material being drilled. If the rock bit is not rotating open the hydraulic valve lever further. If the rock bit still does not rotate adjust the motor control knob until rotation is achieved.
8. After the rock bit has carved out a depression in the material being drilled, open the hydraulic valve lever fully. Readjust the motor control knob to obtain a good drilling speed. Adjust the air valve to ensure the cuttings are being extracted from the drill hole.
9. When the bottom of the tool comes within 6 inches of the drill hole, it is time to either add another section of drill steel or replace the existing drill steel with a longer section. Close the hydraulic valve lever but leave the air valve "ON" and then lift the tool with drill steel and rock bit out of the hole. Leaving the air valve "ON" helps prevent cuttings from falling around the bit while the bit is lifted from the hole.
10. When the tool, drill steel and bit have been removed from the drill hole, turn the valve lever "OFF" and

OPERATION

turn the hydraulic supply circuit control valve “OFF” before changing the drill steel or rock bit.

COLD WEATHER OPERATION

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

Damage to the hydraulic system or breaker can result from use with fluid that is too 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 couples 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. Rapid failure of the internal seals may result. See Specifications in this manual for correct flow rate and model number.
- Always keep critical tool markings, such as warning stickers and tags, legible.
- Keep tool bit sharp for maximum drilling performance. Make sure that tool bits are not chipped or rounded on the striking end.
- Never operate a hammer drill without a tool bit or without holding it against the work surface.
- 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

PROBLEM	CAUSE	REMEDY
Tool does not run.	Power unit not functioning.	Check power unit for proper flow and pressure (7–9 GPM/26–34 LPM, 1500–2000 psi/105–140 bar)
	Couplers or hoses blocked.	Remove restriction.
	Pressure and return line hoses reversed at ports.	Be sure hoses are connected to their proper ports.
	Mechanical failure of piston or automatic valve.	Disassemble breaker and inspect for damaged parts.
Tool 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/105-140 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.
	Fluid too hot (above 140.°F/60.°C).	Provide cooler to maintain proper fluid temperature (130 °F/55 °C).
	Insufficient air or water.	20 cfm minimum.
Tool operates slow.	Low GPM supply from power unit.	Check power unit for proper flow (7–9 GPM/26–34 LPM).
	High back-pressure.	Check hydraulic system for excessive back-pressure (over 250 psi/17 bar).
	Couplers or hoses blocked.	Remove restriction.
	Orifice plug blocked.	Remove restriction.
	Fluid too hot (above 140 °F/60 °C) or too cold (below 60 °F/16 °C).	Check power unit for proper fluid temperature. Bypass cooler to warm the fluid or provide cooler to maintain proper temperature.
	Relief valve set too low.	Adjust relief valve to 2100–2250 psi/145–155 bar.
Tool gets hot.	Hot fluid going through tool.	Check power unit. Be sure flow rate is not too high causing part of the fluid to go through the relief valve. Provide cooler to maintain proper fluid temperature (140 °F/60 °C max). Check the relief valve setting.
Fluid leakage on drill steel.	Lower piston or drive hex seal failure.	Replace seals.
Fluid leakage through charge valve cap.	Upper piston seal failure, accumulator O-ring failure or accumulator charge loss or failure.	Replace seals, recharge or replace accumulator diaphragm.
Fluid leakage around trigger.	Valve spool seal failure.	Replace seals.
Low rotation torque.	Motor not completely broken in.	Continue operation to break in motor.
	Excessive oil temperature causes operating pressure loss.	Provide cooler to maintain oil temperature (under 140 °F).
	Damage to motor clearances.	Repair as required.
	Insufficient air or water.	20 cfm minimum.
	Mechanical binding during drilling.	Take care to guide drill straight.

MAINTENANCE

ACCUMULATOR TESTING PROCEDURE

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

31254 Charge Kit: which includes the following: (Shown in Figure 2 on the next page.)

- Accumulator Tester (Part Number 02835).
 - Charging Assembly (P/N 15304) Includes a liquid filled gauge w/snub valve, hose and charge fitting.
 - NITROGEN bottle with a 800 psi/56 bar minimum charge. (Not included in 31254 Charge Kit.)
1. Remove the valve cap assembly from the sinker drill.
 2. Remove the protective cap and loosen the 5/8-inch hex locking nut on the tool charging valve 1-1/2 turns.
 3. Holding the chuck end of Accumulator Tester (P/N 02835) turn the gauge fully counterclockwise to ensure that the stem inside the chuck is completely retracted.
 4. Thread the tester onto the accumulator charging valve. Do not advance the gauge-end into the chuck. Turn as a unit. Seat the chuck on the accumulator charging valve and hand tighten only.
 5. 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 600-700 psi/42-48 bar).
 6. 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.

7. Tighten the 5/8-inch hex locking nut on the tool charging valve. Be careful not to overtighten. Install the protective cap and 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, if preferred, 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.
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. Tighten the 5/8-inch hex locking nut on the tool charging valve and replace the protective cap.
8. Replace the valve cap assembly.

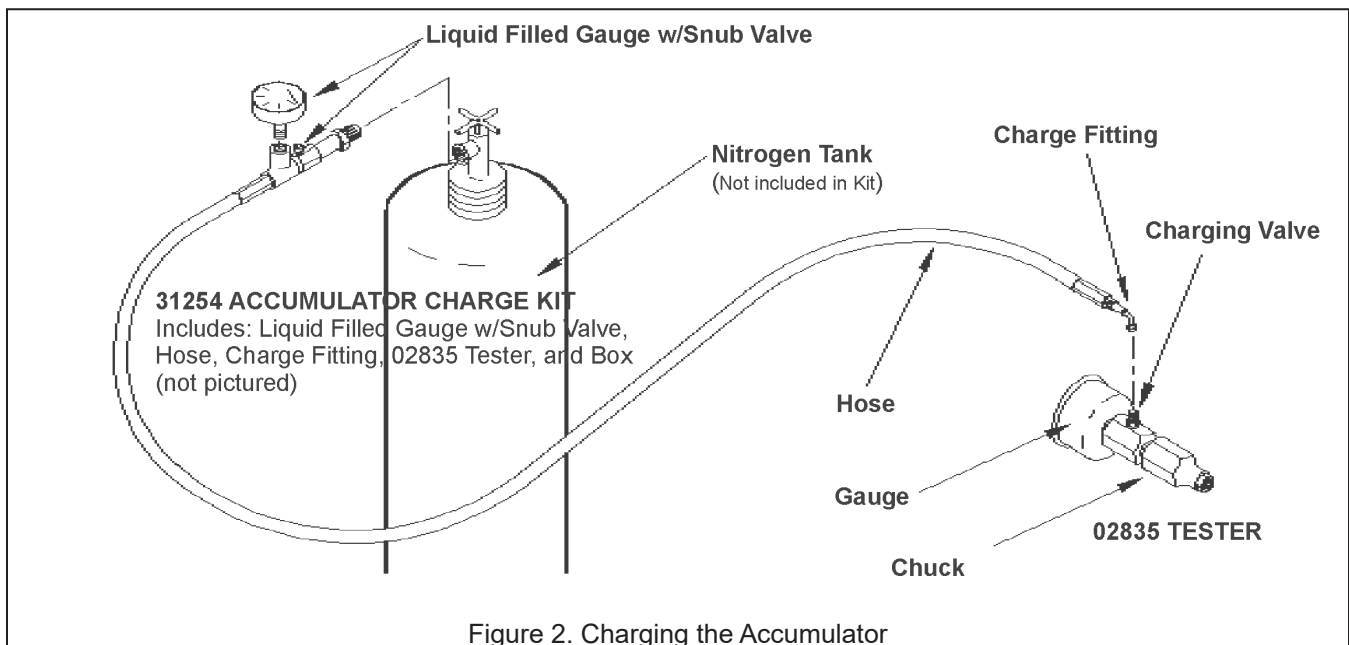


Figure 2. Charging the Accumulator

MAINTENANCE

UNDERWATER MODEL MAINTENANCE

After each use, the movable portions of the tool that were exposed to water should be flushed with a water displacing oil, such as WD40™. Remove water and debris as follows:

1. Turn the tool upside down (without the tool bit) and spray oil through the drive hex and displace any remaining water in the lower cavity.
2. Dip or spray the entire tool.
3. Cycle the tool hydraulically several times before storing away.

GENERAL SERVICE NOTES

1. If the breaker 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 foot 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 clean and dry, simply push or drive the grips on. DO NOT lubricate the parts. The grips will not be secure on the handle if any grease or oil is used.

SPECIFICATIONS

Shank Size (SK58110 Air, SK58120 Water, SK58310 UW Air)	4-1/4 in. × 1 in. Hex
Shank Size (SK58130 Air)	4-1/4 in. × 7/8 in. Hex
Pressure Range	1500–2000 psi/105–140 bar
Flow Range	7-9 GPM / 26-34 LPM
Optimum Flow	8 GPM / 30 LPM
Maximum Back Pressure	250 psi/17 bar
Connect Size & Type	3/8 in. Male Pipe Adapter
Weight	67 lbs / 30 kg
Length	26 in. / 66 cm
Width	18 in. / 46 cm
Hose Whips	Included
Port Size	-8 SAE O-ring
Air Supply	Minimum 30 cfm @ 120 psi

VIBRATION DECLARATION

SK58310 MODELS

DECLARED VIBRATION EMISSION VALUE IN ACCORDANCE WITH ISO-28927-10 2011, EN 12096

MEASURED VIBRATION EMISSION VALUE: 3-AXIS 17.7 M/SEC²

UNCERTAINTY: K 1.4 M/SEC²

MEASURED VIBRATION EMISSION VALUE WITH UNCERTAINTY: 3-AXIS 19.1 M/SEC²

MEASURED VIBRATION EMISSION VALUE: Z-AXIS 16.0 M/SEC²

UNCERTAINTY: K 1.2 M/SEC²

MEASURED VIBRATION EMISSION VALUE WITH UNCERTAINTY: Z-AXIS 17.2 M/SEC²

ACCESSORIES

DRILL STEELS FOR USE WITH AIR

1 in. Hex × 4-1/4 in. H Thread, 24 in. / 61 cm UC	05170
1 in. Hex × 4-1/4 in. H Thread, 36 in. / 91 cm UC	04915
1 in. Hex × 4-1/4 in. H Thread, 48 in. / 122 cm UC	05171
7/8 in. Hex × 4-1/4 in. H Thread, 24 in. / 61 cm UC	05174

CARBIDE ROCK BITS FOR USE WITH AIR (SHOULDER DESIGN)

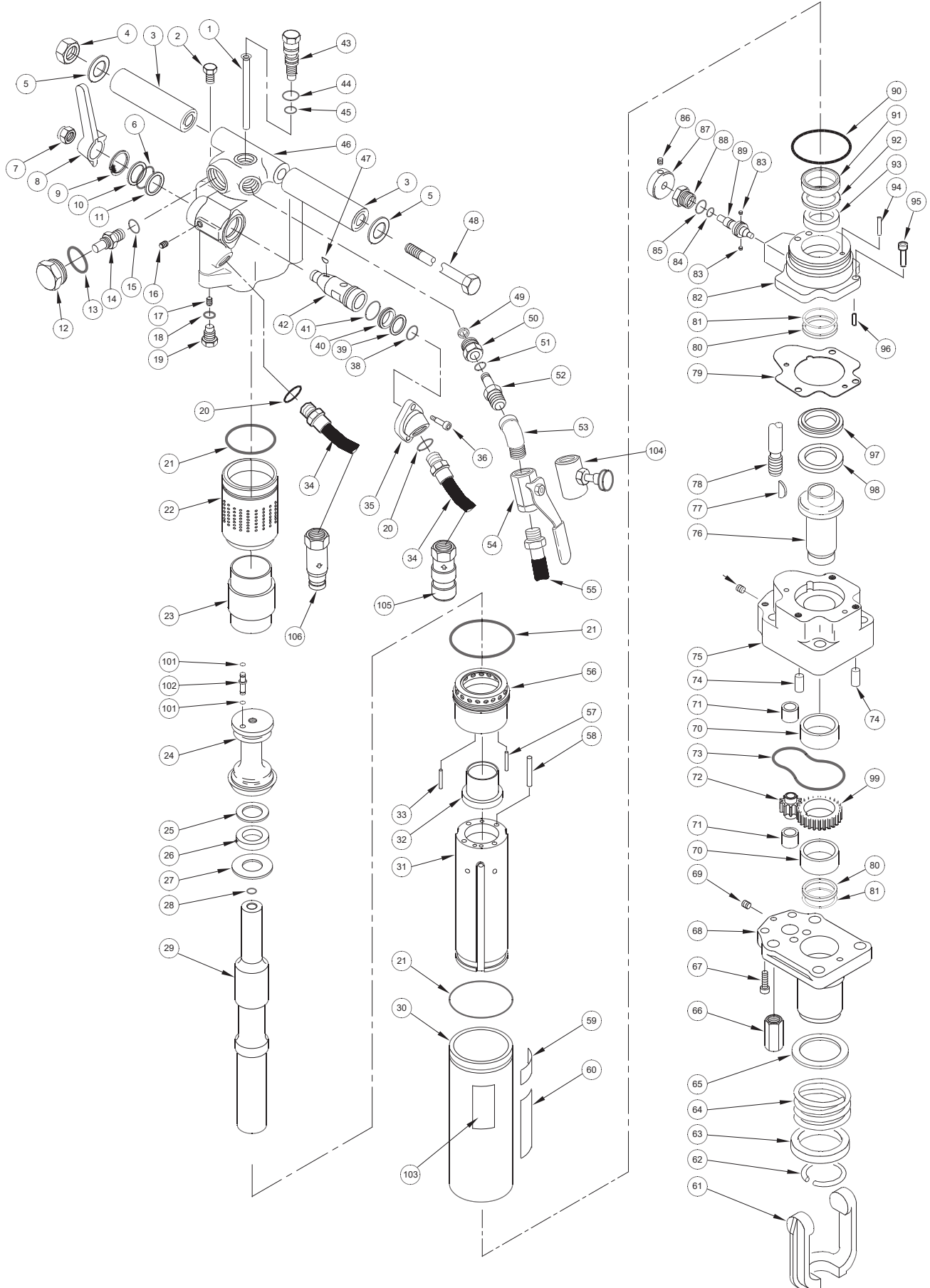
1-3/8 in. Diameter H Thread	05177
1-1/2 in. Diameter H Thread	05178

UC denotes dimension measured from bottom tip of tool to bottom surface of collar.

SERVICE TOOLS

O-ring Tool Kit	04337
Accumulator Disassembly Tool	05508
Accumulator Cylinder Puller	05640
Split Rings	04908
Flow Sleeve Removal Tube	04910
Bearing Installation Tool	05044
Bearing Installation Tool	05061
Latch Removal Tool	05045
Latch Installation Tool	05879
Collet, 7/8 in.	05871
Latch Installation Tool	05062
Flow Sleeve Kit (See page 19 for parts included in kit)	74397

SK58 PARTS ILLUSTRATION



SK58 PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
1	04763	1	AIR TUBE (SK58110/SK58130/SK58310 ONLY)
	04965	1	WATER TUBE (SK58120 ONLY)
2	07064	1	VENT PLUG
3	04964	2	HANDLE GRIP ASSEMBLY
4	01714	1	NUT HEAVY HEX JAM
5	04786	2	WASHER
6	04794	1	O-RING *
7	04147	1	LOCKNUT
8	04718	1	VALVE LEVER
9	04902	1	RETAINING RING
10	04751	1	WASHER
11	04793	1	KAP SEAL *
12	04775	1	CHARGE VALVE CAP
13	04052	1	O-RING *
14	04051	1	CHARGING VALVE (INCLUDES ITEM 15)
17	00955	1	PIPE PLUG
18	01411	1	O-RING *
19	04772	1	ORIFICE PLUG
20	01605	2	O-RING *
21	04054	3	O-RING *
22	04060	1	ACCUMULATOR CYLINDER
23	04059	1	ACCUMULATOR DIAPHRAGM
24	04779	1	ACCUMULATOR CHAMBER
25	04780	1	BACK UP WASHER
26	04386	1	CUP SEAL *
27	04750	1	WASHER
28	06268	1	TUBE SEAL (SK58120 ONLY) *
29	04734	1	PISTON (SK58110 / SK58130)
	06265	1	PISTON (SK58120 / SK58310)
30	04068	1	FLOW SLEEVE TUBE
31	07889	1	FLOW SLEEVE (SEE NOTE PAGE 19)
32	04065	1	AUTOMATIC VALVE
33	07890	1	ROLL PIN
34	01652	2	PIGTAIL HOSE ASSEMBLY
35	04781	1	INLET FLANGE
36	02688	2	CAPSCREW
38	02003	1	O-RING*
39	04771	1	WASHER
40	04791	1	KAP SEAL *
41	04795	1	O-RING *
42	04777	1	THROTTLE VALVE
43	04778	1	BLOWER TUBE NUT
44	00016	1	O-RING *

ITEM	PART NO.	QTY	DESCRIPTION
45	00175	1	O-RING *
46	04660	1	HOUSING
47	00772	1	KEY
48	07291	1	MODIFIED CAPSCREW
49	04512	1	RETAINING RING
50	04764	1	SWIVEL FITTING
51	00106	1	O-RING *
52	04765	1	INLET SWIVEL BODY
53	04767	1	STREET ELBOW 45°
54	05202	1	VALVE-AIR ONLY (SK58110/SK58130/SK58310 ONLY)
55	04801	1	HOSE ASSEMBLY
56	04066	1	AUTOMATIC VALVE BODY
57	04571	2	PUSH PIN
58	04067	4	PUSH PIN
59	03786	1	GPM STICKER
60	05152	1	STANLEY STICKER
61	04721	1	LATCH CASTING
62	04761	1	RETAINING RING
63	04759	1	SPRING BACK-UP
64	04758	1	COIL SPRING
65	04756	1	LATCH WASHER
66	04075	4	SIDE ROD NUT
67	01217	2	CAPSCREW
68	04748	1	MOTOR PLATE
69	00783	1	PIPE PLUG
70	04788	2	DU BEARING
71	03826	2	DU BEARING
72	04033	1	IDLER GEAR
73	01277	1	O-RING *
74	00713	2	DOWEL PIN
75	04744	1	DRIVE MOTOR CHAMBER
76	04784	1	DRIVE HEX (SK58110 ONLY)
	06267	1	DRIVE HEX (SK58120/SK58310 ONLY)
	05195	1	DRIVE HEX (SK58130 ONLY)
77	04787	1	WOODDRUFF KEY
78	04373	4	SIDE ROD
79	04774	1	GASKET *
80	23395	2	QUAD RING *
81	23399	2	BACK-UP RING *
82	04769	1	DRIVE MOTOR CONTROL BLOCK (SK58110/SK58130/SK58310 ONLY)
	06266	1	DRIVE MOTOR CONTROL BLOCK (SK58120 ONLY)
83	00634	2	NYLON CAP LOCK
84	01362	1	O-RING *

SK58 PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
85	01605	1	O-RING *
86	18643	1	SETSCREW
87	04753	1	MOTOR CONTROL KNOB
88	04773	1	VALVE GUIDE
89	04783	1	MOTOR CONTROL VALVE
90	04073	1	O-RING *
91	30890	1	ROD SEAL *
92	04755	1	SEAL WASHER
93	04790	1	CUP SEAL *
94	03009	1	ROLL PIN
95	02688	1	HSHCS
96	03047	2	ROLL PIN
97	04754	1	THRUST BACK-UP WASHER
98	04789	1	THRUST WASHER
99	04752	1	DRIVE GEAR
101	00026	2	O-RING *
102	04776	1	TUBE CONNECTOR
103	04796	1	NAME TAG
104	04768	1	WATER VALVE (SK58120 ONLY)
105	03972	1	COUPLER, FEMALE
106	03973	1	COUPLER, MALE
107	30646	1	MOTOR ASSEMBLY SK58110
108	30647	1	MOTOR ASSEMBLY SK58120
109	30648	1	MOTOR ASSEMBLY SK58130
110	30666	1	MOTOR ASSEMBLY SK58310
SK1	04805	1	SEAL KIT (INCLUDES ITEMS 6, 11, 13, 18, 20-21, 26, 28, 37, 38, 40, 41, 44, 45, 51, 73, 79-81, 84, 85, 90, 91, 93, 100 & 101)
KT1	74397	1	FLowsLEEVE KIT (INCLUDES ITEMS 21, 31, 58 & 90)

SK58110 – 1 INCH × 4-1/4 HEX SHANK AIR
 SK58120 – 1 INCH × 4-1/4 HEX SHANK WATER
 SK58130 – 7/8 INCH × 4-1/4 HEX SHANK AIR
 SK58310 – 1 INCH × 4-1/4 HEX SHANK AIR, UNDER-WATER USE

Note: use part number and part name when ordering.

* DENOTES PART OF SEAL KIT P/N 04805

Note: There is a flow sleeve kit available

P/N-74397 that includes:

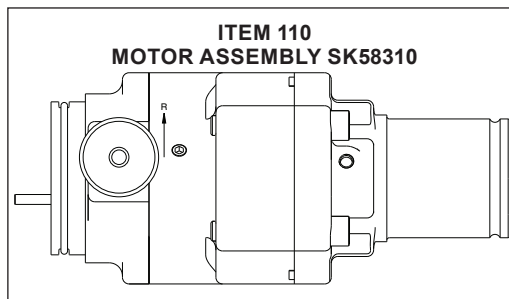
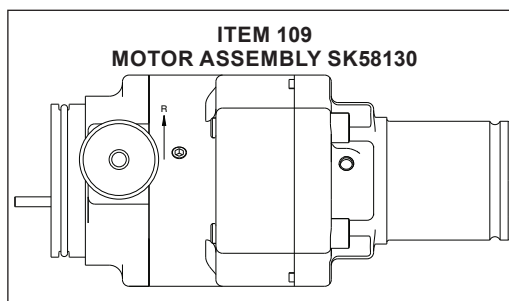
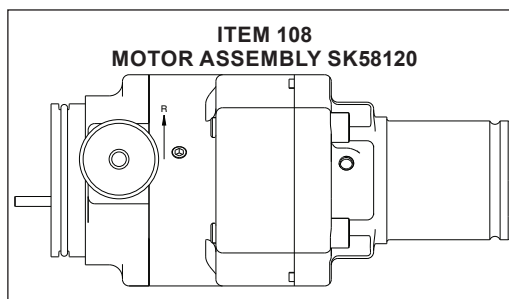
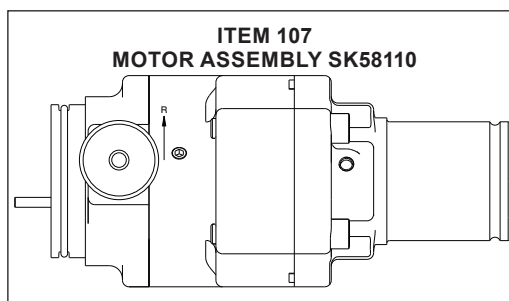
Item # 21 (Qty-2 04054 O-ring)

Item # 58 (qty-4 04067 push pin)

Item # 31 (qty-1 07889 flow sleeve)

Item # 90 (qty-1 04073 O-ring)

and inst sheet 74398



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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