

STANLEY®

CO23 HYDRAULIC CUTOFF SAW



USER MANUAL Safety, Operation and Maintenance



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New Britain, CT 06053
U.S.A.
72409 4/2018 Ver. 14

DECLARATION OF CONFORMITY

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ÜBEREINSTIMMUNGS-ERKLÄRUNG
DECLARATION DE CONFORMITE CEE
DECLARACION DE CONFORMIDAD
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STANLEY
Infrastructure
CE

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

Nuerenberg, David

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:

- Category: **Cut-Off-Saw, Hydraulic**
Kategorie:
Catégorie:
Categoria:
Categoria:
- Make/Marke/Marque/Marca/Marca **STANLEY**
- Type/Typ/Type/Tipo/Tipo: **CO23341**
- Serial number of equipment:
Seriennummer des Geräts:
Numéro de série de l'équipement:
Numero de serie del equipo:
Matricola dell'attrezzatura: **022212008 and above**

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

Directive/Standards Richtlinie/Standards Directives/Normes Directriz/Los Normas Direttiva/Norme	No. Nr Numéro No n.	Approved body Prüfung durch Organisme agréé Aprobado Collaudato
EN ISO	28927-3	Self
EN ISO	11148-12, Cl. 5.6	Self
EN ISO	11148-12 Cl. 5.5	Self
EN ISO	13732-1	Self
Machinery Directive	2006/42/EC:2006	Self

- Special Provisions: **None**
Spezielle Bestimmungen:
Dispositions particulières:
Provisiones especiales:
Disposizioni speciali:
- 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 2-16-12

Signature/Unterschrift/Signature/Firma/Firma

Position/Position/Fonction/Cargo/Posizione North America Quality Manager

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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

CO23 is designed to provide safe and dependable service if operated according to instructions. Read and understand this manual and any decals attached to the saw before operating. Failure to do so could result in personal injury or equipment damage.



- Operators must start in a work area without bystanders. They must be familiar with all prohibited work areas, such as excessive slopes and dangerous terrain conditions.
- When using tools around energized transmission lines, only hoses labeled and certified non-conductive. Follow all safety practices.
- Know the location of buried or covered services before starting your work.
- Do not inspect or clean the tool with the power source operating or with operating pressure at the tool. Accidental engagement of the tool can cause serious injury.
- Never wear loose clothing that can become entangled in the working end of the tool.
- Do not overreach. Maintain proper footing and balance at all times.
- Always connect hoses to the tool hose couplers before energizing the power source. Be sure that all hose connections are tight.
- 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.
- Hold the tool with both hands. Use a firm grip.
- Keep body parts away from a rotating cutoff wheel.
- Keep the wheel off surfaces when starting the saw.
- Always carry the tool with the wheel stopped.
- Ensure the wheel has stopped before setting down the tool.
- Keep the handles clean and free of oil at all times.
- All service must be performed by experienced service personnel only.
- Always inspect wheels for possible damage before installation.
- Establish a training program for all operators to ensure safe operation.
- Do not operate the tool unless thoroughly trained.
- Never transport or store the tool with the wheel mounted on the saw.
- Do not operate the tool if it is damaged, improperly adjusted or not completely and correctly assembled.
- Never cock, jam or wedge the wheel during the cut.
- Never cause sparks in the vicinity of flammable materials.
- Do not operate the tool with the guard removed.
- Never operate the tool when you are tired or fatigued.
- Do not use a wheel that is cracked or otherwise damaged.
- Do not operate the tool if the wheel does not stop when the throttle trigger is released.
- Do not use the side of the wheel as the cutting surface.
- Never exceed the maximum operating speed marked on the wheel.
- Always use cutoff wheels that conform to the specifications given in "OPERATION" on page 10.
- Always wear safety equipment such as goggles, ear protection, safety shoes, and head protection at all times when operating the tool.
- Do not reverse wheel rotation direction by changing oil flow direction. Obtain a saw designed for the wheel direction that you desire.
- Whenever working near electrical conductors, always assume that all conductors are energized and that insulating devices, clothing and hydraulic hoses may conduct electricity. Always use non-metallic braided hoses and ensure that the hydraulic oil is free of moisture.
- **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. CE   C023 U/W

Spindle: Max RPM:

Wheel Size: Weight:

74824

74824
CO23 Information Sticker

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

Model No.
C023

10-15gpm/38-57 lpm
MAX. 2500 psi/172 bar
NOM. 1500 psi/103 bar
P/N 74822

74822
Name Tag Sticker

 **WARNING**



28788
Manual Sticker

STANLEY.

74832
Stanley Logo Sticker



12535
EHTMA "E" Sticker



12536
EHTMA "F" Sticker

 **WARNING**

1. DO NOT USE DAMAGED WHEELS
2. USE FULL-THROTTLE ONLY WHILE CUTTING.
3. USE ONLY WHEELS MARKED HIGH-SPEED REINFORCED THAT MEET REQUIREMENTS OF ANSI B7.1, B7.5.
4. INSPECT WHEEL GUARD & COLLARS FOR DAMAGE AFTER ANY WHEEL BREAKAGE ON THE MACHINE.

72881

72881
Abrasive Wheel Warning Sticker

72893
Rotation Direction Sticker

D A N G E R

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 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.
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.**

I M P O R T A N T

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

D A N G E R

- 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.

I M P O R T A N T

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

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.

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.*

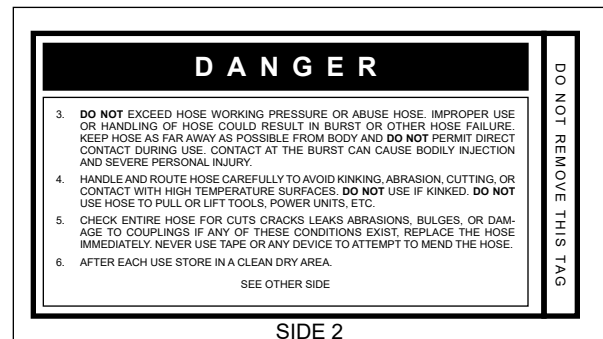
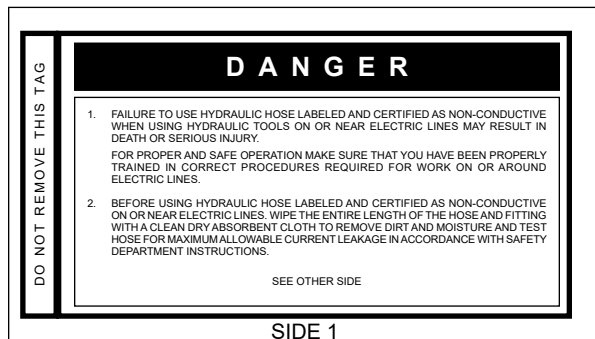
Fabric-braided (not certified or labeled non-conductive) — constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover. *This hose is **not certified non-conductive** and must never be used near electrical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

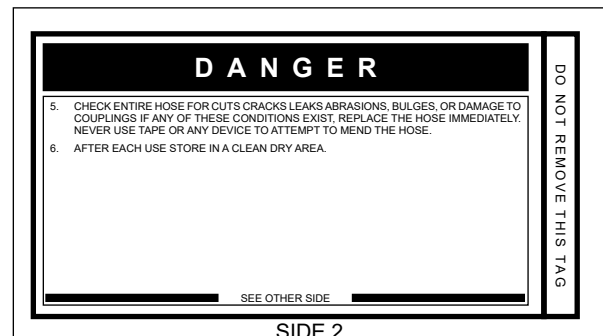
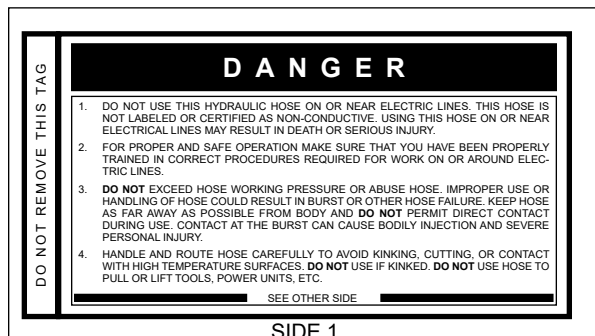
If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained from your STANLEY Distributor.

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

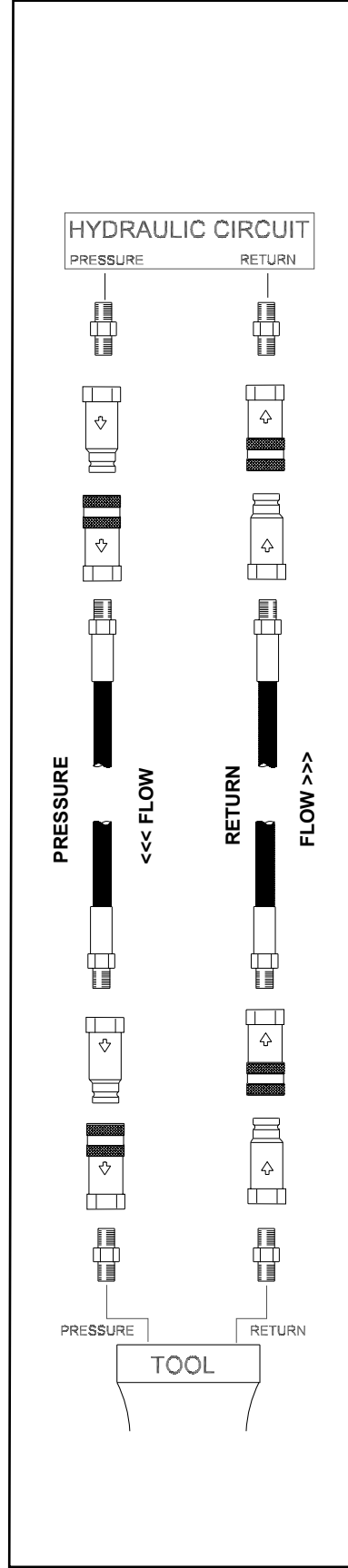


Figure 1. Typical Hose Connections

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

- Always store an idle cutoff saw in a clean dry space safe from damage or pilferage.
 - Replace the cutoff wheel if worn for maximum tool performance. Make sure that the wheel is not chipped or damaged.
 - Always keep critical tool markings, such as labels and warning stickers legible.
 - Always replace hoses, couplings and other parts with replacement parts recommended by STANLEY. Supply hoses must have a minimum working pressure rating of 2000 psi/140 bar.
 - All hoses must have an oil resistant inner surface and an abrasive resistant outer surface. Hoses that conform to SAE100R1A are recommended for most tool applications.
 - Use only cutoff wheels that meet requirements of ANSI 87.5. Wheels should be no larger than 10-inches/25.4 cm in diameter, 5/32-inch/4 mm thick with a 1-inch/25.4 or 22 mm arbor hole. Rated speed must be 5000 rpm minimum.
 - Tool repair should be performed by experienced personnel only.
 - 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.
- The hydraulic system should have a minimum of 25 micron filtration. It is recommended that filter elements be sized for a flow of at least 30 GPM/1131 pm for cold temperature startup and maximum dirt holding capacity.
 - The hydraulic fluid used should have a viscosity between 100 and 400 ssu/20 and 82 centistokes at the maximum and minimum expected operating temperatures. Hydraulic fluids of petroleum base with anti-wear properties and viscosity indexes over 140 will meet the recommended requirements over a wide range of operating temperatures.
 - The recommended hose size is .625 in/ 16 mm 1.0. up to 50 ft/15 m long and .750 in/20 mm 1.0. minimum up to 100 ft/30 m long.

HYDRAULIC SYSTEM REQUIREMENTS

- The hydraulic system should provide a flow of 10-15 GPM/38-57 LPM at an operating pressure of 1500-2000 psi/105-140 bar. Recommended relief valve settings are 2100-2250 psi/145-155 bar.
- The system should have no more than 250 psi/17 bar back pressure measured at the tool end of the operating hoses. The system conditions for measurement are at maximum fluid viscosity or 400 ssu/82 centistokes (minimum operating temperatures).
- The hydraulic system should have sufficient heat rejection capacity to limit the maximum oil temperature to 140 °F/60 °C at the maximum expected ambient temperature. The recommended minimum cooling capacity is 7 hp/5.22 kW at a 40 °F/22 °C difference between ambient temperature and oil temperature.

PREPARATION CHECKOUT PROCEDURES

POWER SOURCE

1. Using a calibrated flowmeter and pressure gauge, check that the hydraulic power source develops a flow of 10-15 GPM/38-57 LPM at 1500-2000 psi/105-140 bar.
2. Make certain that the power source is equipped with a relief valve set to open at 2250 psi/155 bar maximum.
3. Check that all operating controls and indicators are easily accessible.

CUTOFF SAW TRIGGER AND SAFETY CATCH

1. Check that the trigger operates smoothly and is free to travel between the "ON" and "OFF" positions.
2. Check that the trigger is set to disengage the cutoff saw when released.
3. Check that the safety catch on the handle assembly is operating properly. It should prevent engagement of the trigger unless the catch is fully pressed down into the handle slot.

HANDLE

Check that the handle bar is securely fastened to the motor housing and handle bar strut. Remove any oil from the handle bar.

WHEEL GUARD

1. Inspect the wheel guard for cracks and other structural damage.
2. Rotate the guard to ensure that it moves freely on the wheel-arbor center line.

OPERATION

3. Check that the locking mechanism operates properly to hold the guard in a set position.

WHEEL CONDITION

1. Before installing abrasive wheels, “sound” the wheel for possible damage by hanging the wheel vertically by the arbor hole and rapping lightly with a screwdriver handle or similar instrument. Thin, organic bond wheels will produce a low drumming tone if it is physically sound. If the wheel produces a “dead” or “flat” sound, it may be cracked. Cracked or damaged wheels must never be used.
2. Check that the surfaces of the wheel that come in contact with blotters and flanges are free of dirt and other foreign particles.
3. Check that the correct wheel is used for the job.
4. Check that the wheel conforms to the physical requirements listed in the Specification section of this manual. The cutoff wheel shall fit freely on the drive flange and remain free under all cutting conditions. A controlled clearance between the arbor hole and the cutoff saw drive flange is essential to avoid excessive pressure from installation and/or arbor expansion.
5. Check diamond wheels to ensure all segments are intact.

ARBOR AND COLLARS

1. Inspect the drive flange and outer flange prior to installation. Check for burrs. Check that the bearing surfaces are flat and run true when mounted on the drive shaft.
2. Inspect the drive shaft threads.

REDUCING BUSHINGS

1. When a reducing bushing is used in the cutoff wheel mounting hole, check that it does not exceed the thickness of the wheel.
2. Make sure that the reducing bushing does not protrude beyond the surface of the wheel on both sides. Bushings that are too thick will not allow the collars to fit properly against the wheel.
3. Check that reducing bushings are tight in the cutoff wheel mounting hole. Never use bushings that do not fit tightly in the mounting hole. Never use shim stock.

DRIVE SHAFT SPEED CHECK

The speed of the motor output shaft should be checked at least every 100 hours of operation by trained and experienced personnel. A record of the speed checks should be maintained. The maximum rated speed of the

cutoff saw is 3600 rpm. This speed must be equal to or less than the rated speed of the cutting wheel.

Tests should be conducted while operating the normal hydraulic power supply used with the cutoff saw.

Note: Excessive speed may be caused by excessive oil flow to the tool.

OPERATING INSTRUCTIONS

CUTOFF WHEEL INSTALLATION

IMPORTANT

Make sure the wheel has been thoroughly inspected prior to installation.

Note: When mounting the wheel, use blotters at the collars. The blotters should be made from highly compressible material and should not be more than 0.025-inch/.6 mm thick.

1. Install the wheel on the drive flange. Refer to the Specification and Parts List sections of this manual for wheel requirements and parts orientation, respectively.
2. Install the outer flange. (Use the Spirol drive pin on diamond wheels only.)
3. Install and tighten the wheel nut. Tighten the nut only tight enough to prevent slippage of the wheel.
4. Adjust the sole plate assembly for proper depth of cut.

CONNECTING HOSES

1. Wipe all hose couplers with a clean lint-free cloth before making connections.
2. Connect the hoses from the power supply to the tool hoses. It is a good practice to connect return hoses first and disconnect last to minimize or avoid trapped pressure within the tool.
3. If hose couplers are used, observe the arrow on the coupler to ensure that the 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 hose may make them difficult to connect. When possible, connect the free ends of operating hoses together.

OPERATION

TOOL OPERATION

Note: At the beginning of each shift or when a new cutoff wheel has been installed, run the saw at operating speed for at least one minute before starting work. Keep personnel from in front of or in line with the wheel.

GENERAL PROCEDURES

1. Whenever possible, the work should be held down and securely supported on both sides of the cut.
2. Press down the safety catch; then slowly squeeze the trigger. Start the cut with the wheel rotating. Start the work gently, do not “bump” the work.
3. Feed the wheel through the material as fast as possible without allowing the wheel to reduce its speed. Cutting through the material too slowly allows heat expansion and can cause wheel “pinching” in the material. “Pinching” the wheel from heat expansion is one of the most common causes of wheel breakage.

CARE OF ABRASIVE CUTOFF WHEELS

All abrasive cutting-off wheels are breakable and, therefore, care must be exercised during handling and storage to prevent damage.

STORAGE

Thin, organic bonded wheels such as cutting off wheels should be laid horizontally on a flat surface of steel or similar rigid material away from excessive heat or moisture. Wheels should not be stored where they will be exposed to high humidity, water, other liquids, or freezing temperatures. Temperatures low enough to cause condensation on the wheels when moving them from storage to an area of higher temperatures should be avoided.

When used on cutoff saws carried on emergency vehicles, wheels should be removed after use and discarded or carefully stored as described in this section.

If wheels are supplied with blotters attached, suitable separators should be used to preserve flatness.

INVESTIGATION OF WHEEL BREAKAGE

Wheels designed for use with hand-held portable saws are specifically manufactured for this application. They are manufactured to be extremely tough and are difficult to break under normal use.

If a wheel breaks during use, a careful investigation should be conducted by the user to determine the cause of the breakage. The cause must then be corrected as

soon as possible.

If the user is unable to determine the cause of breakage, the wheel manufacturer should be consulted.

COLD WEATHER OPERATION

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

Damage to the hydraulic system or saw can result from use with oil that is too viscous or thick.

UNDERWATER MODEL PREVENTATIVE 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 WD-40™. Remove any remaining water and debris as follows:

1. Spray oil into the On/Off valve trigger slot area.
2. Dip or spray the entire tool.
3. Cycle the tool hydraulically several times before storing away.

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 cutoff saw, always check that the hydraulic power source is supplying the correct hydraulic flow and pressure to the cutoff saw as listed in the table. Use a flow meter known to be accurate. Check the flow with the hydraulic oil temperature at least 80 °F/27 °C.

PROBLEM	CAUSE	REMEDY
Tool does not run.	Power not functioning.	Check power unit for proper flow and pressure (15 GPM at 2000 psi/56 LPM at 140 bar).
	Coupler or hoses blocked.	Remove obstruction.
	Mechanical failure.	Disassemble tool and inspect for damage.
Tool runs backwards.	Pressure and return reversed.	Correct hose connection or flow direction. Motor shafts with right-hand threads rotate counterclockwise, motor shafts with left-hand threads rotate clockwise.
Oil leakage between motor housing and on-off block or motor.	Oil tube O-ring failure.	Replace as required.
	Motor face seal failure.	Replace as required.
On-off trigger is hard to press.	Back pressure too high.	Should not exceed 250 psi at 15 GPM/17 bar at 571 pm measured at the end of the tool operating hoses.
	Pressure and return reversed.	Correct for proper flow direction.
Saw cuts too slow.	Insufficient oil flow or low relief valve setting.	Adjust oil flow to proper GPM. For optimum performance adjust relief valve to 2250 psi/155 bar.
	Wrong wheel for material being cut.	Use correct wheel.
Saw gets hot.	Hot oil or excessive oil flow.	Check power unit for adequate cooling; should maintain fluid at or below 140 °F/60 °C. Power unit may be producing more flow than the saw will accept under the existing cutting conditions. Reduce flow until saw performance starts to drop off.

SPECIFICATIONS

Weight	25 lb./11.3 kg
Length.....	20 1/2 inch/52 cm
Width	11 inch/28 cm
Pressure Range.....	1500–2000 psi/105–140 bar
Flow Range	10–15 GPM/38–57 LPM
Optimum Flow	15 GPM/57 LPM
System Type.....	O.C. or C.C. HTMA TYPE III
Porting	SAE 8 O-ring
Connect Size	1/2 inch male pipe hose end
Cutting Wheel	ANSI B7.5., 10 inch/25.4 cm diameter 5/32-inch/4 mm thick, 1-inch/25.4 or 22 mm arbor hole 5000 RPM minimum rated speed

CO23 Vibration Declaration:

Test conducted on CO23341, operated at optimum flow 15 GPM / 56.7 LPM input

Measured vibration emission value: 3-Axis (Main Handle).....	3.7 m/sec ²
Uncertainty: K.....	.0.9 m/sec ²
Measured vibration emission value: 3-Axis (Support Handle).....	4.1 m/sec ²
Uncertainty: K.....	.0.9 m/sec ²

Values determined according to EN ISO 28927-8

ACCESSORIES

Description	Part Number
10-inch diameter Diamond Wheel for Masonry 1-inch Arbor.....	03694
10-inch diameter Abrasive Wheel for Metal 1-inch Arbor Fast Cutting.....	04116
10-inch diameter Abrasive Wheel for Metal 1-inch Arbor-Long Wear.....	04117

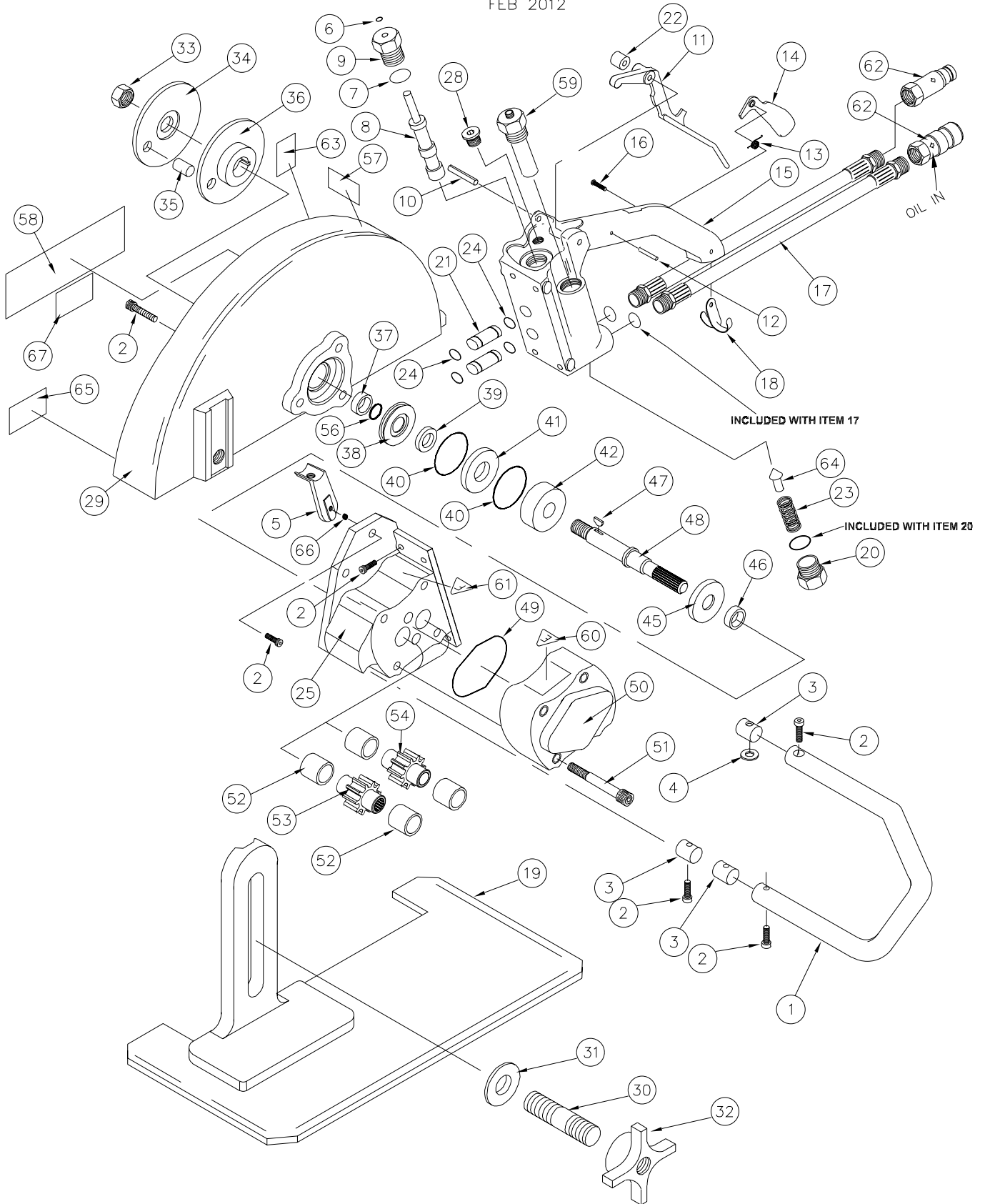
SERVICE TOOLS

Description	Part Number
Bearing Installation Tool	05044

CO23 PARTS ILLUSTRATION

CO23 CUT-OFF SAW

FEB 2012



CO23 PARTS LIST

ITEM NO.	P/N	QTY.	DESCRIPTION
1	70980	1	HANDLE BAR
2	02764	11	CAPSCREW, 5/16-18 x 3/4 HEX SOC HD
3	02649	3	HANDLE BAR RETAINER
4	02643	1	NEOPRENE WASHER
5	20461	1	HANDLE STRUT
6	00112	1	QUAD-RING *
7	01604	1	O-RING, .097 x .755 (90 DURO) *
8	32026	1	VALVE SPOOL
9	02931	1	ON-OFF VALVE CAP
10	31804	1	ROLL PIN, 1/4 x 2 1/2
11	22707	1	TRIGGER
12	74841	1	ROLL PIN, 3/16 x 1 1/4
13	22701	1	TORSION SPRING
14	22704	1	SAFETY CATCH
15	28552	1	VALVE HANDLE ASSEMBLY (PURCHASE WITH P/N 74841)
16	00787	1	CAPSCREW, 1/4-20 x 1-1/4 FL HD
17	06830	2	HOSE ASSEMBLY
18	02911	1	HOSE CLIP
19	03806	1	SOLE PLATE ASSEMBLY
20	31137	1	PORT PLUG
21	00174	2	OIL TUBE
22	02920	1	SPACER
23	02916	1	SPRING
24	00175	4	O-RING, 1/2 x 5/8 x 1/6 *
25	35286	1	MOTOR HOUSING CCW
26	-----	1	NO ITEM
27	-----	1	NO ITEM
28	08104	1	PLUG SAE O-RING
29	04046	1	GRINDING WHEEL GUARD ASSEMBLY
30	03821	1	STUD
31	03827	1	WASHER, 1/2
32	03819	1	KNOB
33	01714	1	HEX NUT, 5/8-11 CCW
34	03802	1	OUTER FLANGE
35	03969	1	SPIROL PIN
36	03803	1	DRIVE FLANGE 1 IN.
37	03810	1	SEAL RACE
38	03811	1	SEAL CARRIER
39	03823	1	SEAL *
40	01262	2	O-RING, 1 3/4 x 1 7/8 x 1/16 *
41	03822	1	SEAL CARRIER WASHER

ITEM NO.	P/N	QTY.	DESCRIPTION
42	03109	1	BEARING
43	-----	--	NO ITEM
44	-----	--	NO ITEM
45	03812	1	SPACER WASHER
46	03824	1	SEAL *
47	00600	1	KEY
48	03813	1	MOTOR SHAFT CCW
49	00253	1	O-RING, 2 1/2 x 2 5/8 x 1/16 *
50	35285	1	MOTOR HOUSING CAP
51	01217	4	CAPSCREW, 3/8-16 x 2 1/2 HEX SOC HD
52	03826	4	BEARING (INCL WITH ITEM # 50 & 25)
53	03818	1	GEAR
54	04033	1	IDLER GEAR
55	00713	2	DOWEL PIN, 1/4 x 1
56	01211	1	O-RING, 5/8 x 3/4 x 1/16 *
57	74824	1	CO23 STICKER
58	74832	1	STANLEY LOGO DECAL
59	72879	1	FLOW CONTROL
60	12535	1	EHTMA "E" DECAL
61	12536	1	EHTMA "F" DECAL
62	03974	1	COUPLER SET (MALE & FEMALE) FOR INDIVIDUAL COUPLERS (P/N-03975 FEMALE / 03976 MALE)
63	28788	1	WARNING MANUAL STICKER
64	31186	1	POPPET
65	72881	1	WHEEL WARNING STICKER
66	01420	1	HELICOIL
67	72893	1	ROTATION DIRECTION STICKER

Note: Use Part Name and Part Number when ordering.

* Denotes Part in Seal Kit.

SEAL KIT DATA

P/N	QTY.	DESCRIPTION
SEAL KIT PART NO. 04120		
00175	4	O-RING
00253	1	O-RING
00112	1	QUAD-RING
01211	1	O-RING
01262	2	O-RING
01362	1	O-RING
01604	2	O-RING
03823	1	SEAL
03824	1	SEAL
01605	2	O-RING

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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