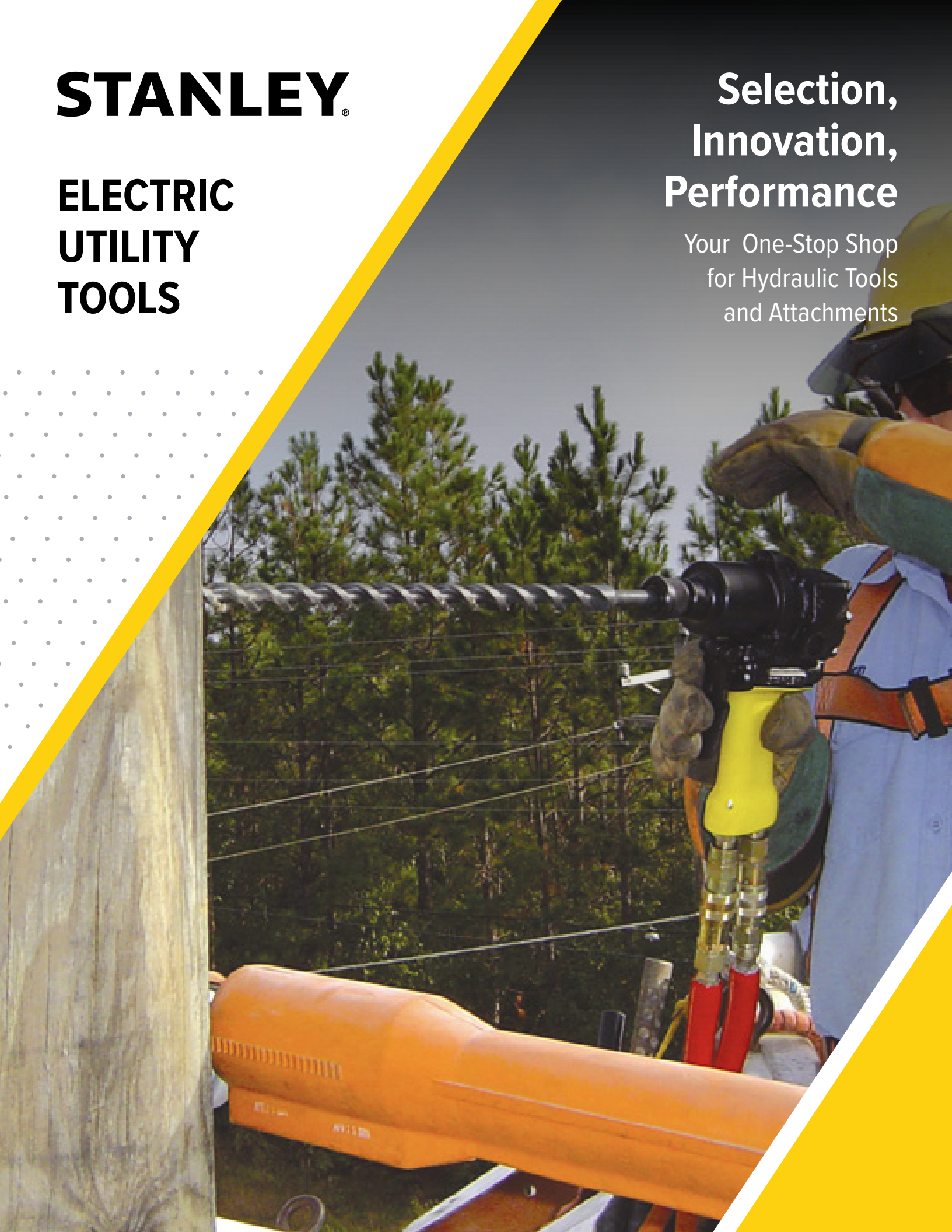


# STANLEY®

## ELECTRIC UTILITY TOOLS

## Selection, Innovation, Performance

Your One-Stop Shop  
for Hydraulic Tools  
and Attachments



# COMPANY OVERVIEW



## GREAT BRAND, GREAT TOOLS

STANLEY has a proud tradition of being a global leader in the development of a wide range of innovative hydraulic products used in a variety of industries and applications throughout the world. We at Stanley are dedicated to providing our customers with innovative customer-driven product designs, world class quality, unmatched product support, and superior value.

## GLOBAL REPRESENTATION

STANLEY produces an extensive line of products for use in construction, demolition, scrap processing, recycling, utilities, municipalities, railroads, industry, landscaping, underwater, construction, and specialty trades. STANLEY Tools has sales offices and distributors throughout North America, Central America, South America, Europe, Asia, Australia, and the Middle East.

## OUR MISSION

STANLEY is committed to providing innovative solutions for infrastructure based applications.

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All STANLEY® tools, accessories, parts and allied equipment are subject to design improvements, specification and price changes at any time without notice and with no obligation to units already sold. Weights, dimensions and operating specifications listed herein are subject to change without notice. Where specifications are critical to your application, please consult the factory.

ELECTRIC UTILITY TOOLS  
**HYDRAULIC  
CRIMPER**

**Hydraulic Crimper** Model CT06



CT06

The CT06 is furnished with a 4-point dieless head and provides a crimping force of 6T/5443kg

**SPECIFICATIONS**

Application: Application: Service entry termination and underground crimping as well as other ANSI C119.4 compliant connections.

Capacity: #10-750 MCM Aluminum and #10-500 MCM Copper

Connection: 3/8 in. male pipe adapter to -8 SAE port

**Hydraulic Crimper** Model CT10



CT10

The CT10 is available in 2 models furnished with one of the following heads: 1.5" C-style head, Kearney style WH3 head w/ 1.5" opening.

Depending on the head type, the CT10 is compatible with industry standard U-type, PH2, or WH3 dies from major manufacturers.

**SPECIFICATIONS**

Application: Hydraulic powered crimping of electrical connections that require 12 tons of crimping force

Length: 22 in. / 57 cm

Width: 7 in. / 18 cm

Connection: 3/8 in. male pipe adapter to -8 SAE port The CT10 is available in 4 models furnished. The CT10 provides a crimping force of 11 or 12 tons / 10,000 or 10,900 kg depending on the model.

Model	Part No.	Weight	Flow Range	Working Pressure	Full Relief Setting	Crimping Force	Capacity	Head Type
CT06	CT06026N	13 LBS / 5.9 KG	3-9 GPM / 11-34 LPM	1650-2000 PSI / 114-140 BAR	2250 PSI / 155 BAR	6 TON / 5443 KG	#10-750 MCM ALUMINUM A#10-500 MCM COPPER	4-POINT DIELESS
CT10	CT10056DH	18.5 LBS / 8.4 KG	3-9 GPM / 11-34 LPM	1650-2000 PSI / 114-140 BAR	2250 PSI / 155 BAR	12 TON / 10900 KG	TENS. FITTING/47726-7 ACSR TERM. THRU 1033/MCM STRAIGHT ALUMINUM	KEARNEY/WH3
	CT10066AN	19 LBS / 8.9 KG	3-9 GPM / 11-34 LPM	1650-2000 PSI / 114-140 BAR	2250 PSI / 155 BAR	12 TON / 10900 KG	750 MCM COPPER/ALUMINUM	1.5" C-STYLE HEAD

**ACCESSORIES**

Model	Part No.	Description
CT10056DH	24787	KEARNEY Y-35 DIE ADAPTER (CT10056DH ONLY)

### Drill Model DL07

The DL07 is a variable speed drill with reverse capability. It features a 1/2 inch keyed chuck, dual position assist handle, dual-spool for open center or closed center operation, trigger guard, and is powered by an integral Hyrevz™ motor.

A reverse-flow check valve prevents operation if tool is plumbed backwards. The DL07 is furnished with flush face quick disconnect couplers.

#### SPECIFICATIONS

Application: Drilling holes in wood, metal, masonry and wood.  
Capacity: 1/2 in. Chuck  
RPM: 350-1,250  
Hyd. Flow: 3-10 gpm / 11-38 lpm  
Weight: 6 lbs / 2.7 kg  
Length: 9 in. / 23 cm  
Width: 4 in. / 10 cm  
Connection: 3/8 in. flush face quick disconnect couplers



DL07

Model	Part No.	Weight	Flow Range	Working Pressure	Full Relief Setting	Performance	Capacity	Misc.
DL07	DL0755201	6 LBS / 2.7 KG	3-10 GPM / 11-38 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	350-1250 RPM	1/2 IN. / 12 MM CHUCK	DUAL-SPOOL

### Sinker Drill Model SK58



SK58

The SK58 is designed for drilling in rock and concrete up to 3 inches / 7.6 cm in diameter and 20 feet / 6 m deep. The sinker drill uses air to clear holes of debris. It features a feathering trigger for easy starts, a direct drive rotation motor adjustable from 0 to 300 rpm, and is furnished with hose whips and flush faced quick disconnect couplers.

#### SPECIFICATIONS

Application: Heavy duty utility construction, blast hole drilling, leak detection for gas utilities and dowel drilling.  
Capacity: 7/8 x 4-1/4 in. or 1 x 4-1/4 in. hex shank steel  
Hyd. Flow: 7-9 gpm / 26-34 lpm  
Weight: 67 lbs / 30 kg  
Length: 26 in. / 66 cm  
Width: 18 in. / 46 cm  
Connection: 3/8 in. flush face quick disconnect couplers

Model	Part No.	Flow Range	Working Pressure	Full Relief Setting	Performance	Capacity	Misc.
SK58	SK58110	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	20 FT HOLE	1 IN. X 4-1/4 IN. HEX SHANK	AIR
	SK58130	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	20 FT HOLE	7/8 IN. X 4-1/4 IN. HEX SHANK	AIR

### ACCESSORIES

Part No.	Description
04914	CARBIDE ROCK BITS FOR USE WITH AIR (ALSO REQUIRES DRILL STEEL) - 2 IN. DIA. H THREAD
05170	DRILL STEELS FOR USE WITH AIR - 1 X 4-1/4 IN. H THREAD, 24 IN. U/C
05171	DRILL STEELS FOR USE WITH AIR - 1 X 4-1/4 IN. H THREAD, 48 IN. U/C

Part No.	Description
05174	DRILL STEELS FOR USE WITH AIR - 7/8 X 4-1/4 IN. H THREAD, 24 IN. U/C
05177	CARBIDE ROCK BITS FOR USE WITH AIR (ALSO REQUIRES DRILL STEEL) - 1-3/8 IN. DIA. H THREAD CLOSEOUT
05178	CARBIDE ROCK BITS FOR USE WITH AIR (ALSO REQUIRES DRILL STEEL) - 1-1/2 IN. DIA. H THREAD

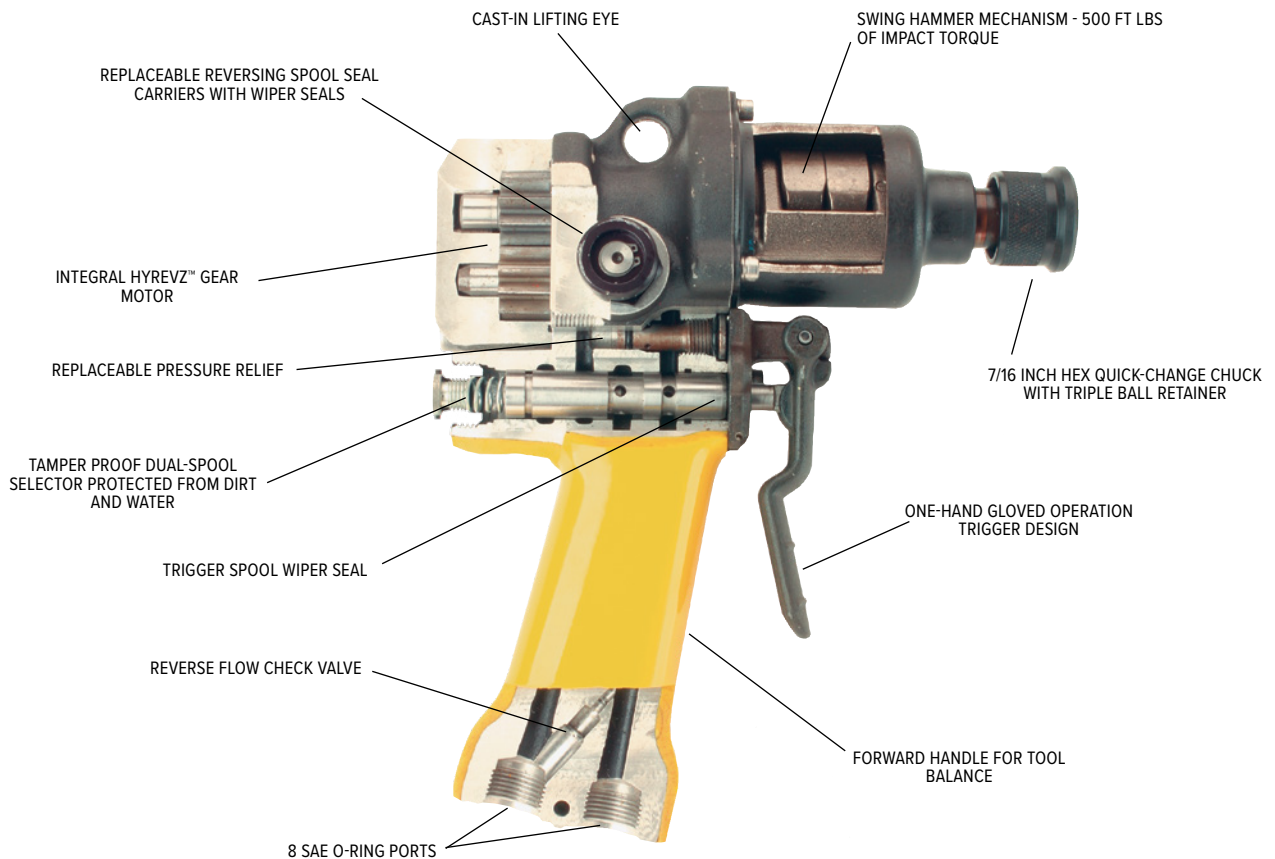
# WORLDWIDE IMPACT

We provide tools to utilities, municipalities, districts, governments and private contractors for construction and maintenance of electric power, telephone service, gas, water, wastewater, and cable TV distribution. And to transportation entities for construction and maintenance of streets, roads, highways and railways.

Hydraulic tools are the perfect match for utility trucks equipped with hydraulic power such as bucket trucks or digger-derrick trucks. Hydraulic tools perform tasks such as setting hardware on utility poles, crimping cable connections, tamping utility poles after setting, pumping utility vaults, and clearing right of ways.

Utility trucks with hydraulic tool circuits or compact power units meeting HTMA standards can operate tools for breaking, drilling and cutting of pavement, railroad cutting and drilling, and many other day-to-day tasks performed by utility workers, road crews, and railway crews.

Our tools are used in cities and towns around the world to help build and maintain their infrastructures.



### Impact Drill/Wrench Model ID07

The ID07 is a high torque impact wrench used for tightening and loosening nuts and driving lag bolts. Because it is an impact drill/wrench, it is used for drilling in hard treated wood and utility poles without torque reaction to the operator.



#### SPECIFICATIONS

Application: Nut and bolt tightening or loosening, lag bolt driving and wood drilling applications.  
 Capacity: 7/16 in. Quick Change or 1/2 in. Square Drive  
 Hyd. Flow: 4-12 gpm / 15-45 lpm  
 Weight: 7.2 lbs / 3.3 kg  
 Length: 9 in. / 23 cm  
 Width: 5 in. / 11 cm  
 Connection: 3/8 in. Male Pipe Adapter to -8 SAE port

#### FEATURES

- 500 ft. lbs. / 675 Nm of impact torque
- Durable Swing-hammer mechanism
- Forward-Reverse spool with heavy duty wiper seals and replaceable seal carriers
- Reverse-flow check valve prevents operation if tool is plumbed backwards
- Cast-in lifting eye
- Built-in selector for Open Center or Closed Center systems
- Replaceable pressure relief valve designed for serviceability
- Available with a 7/16 inch hex quick-change chuck
- With or without a trigger guard

Part No.	Description
05080	ADAPTER, 5/8 IN. HEX X 1/2 IN. SQ. DRIVE
05109	IMPACT SOCKET, 9/16 IN.
05110	IMPACT SOCKET, 5/8 IN.
05111	IMPACT SOCKET, 11/16 IN.
05112	IMPACT SOCKET, 3/4 IN.
05113	IMPACT SOCKET, 13/16 IN.
05114	IMPACT SOCKET, 7/8 IN.
05115	IMPACT SOCKET, 15/16 IN.
05116	IMPACT SOCKET, 1 IN.
05117	ADAPTER, 7/16 IN. HEX MALE X 1/2 IN. SQ. DRIVE
07192	ADAPTER, 1/2 IN. SQ. DR. TO 5/8 QC
33155	LINEMEN'S SOCKET, 13/16 IN. AND 15/16 IN.
33156	LINEMEN'S SOCKET, 1 IN. AND 1-1/8 IN.
<b>7/16 HEX SHANK POLE BITS</b>	
81461	9/16 X 24 X 29 IN.
81501	9/16 X 12 X 17 IN.
81505	13/16 X 12 X 17 IN.
81507	15/16 X 12 X 17 IN.
81453	13/16 X 15 X 18 IN.
81454	15/16 X 15 X 18 IN.
81456	11/16 X 21 X 24 IN.
81459	1-1/16 X 21 X 24 IN.

**Ground Rod Driver** Model GD50

The GD50 drives ground rods with proven hard-hitting “top driving” power and frequency. With two models available, either 1/2 to 5/8 in. or 3/4 to 1 in. ground rod can be driven. A cast-in lifting eye allows the operator to suspend the driver above the rod with ease. The long side handles give the operator control during the driving process. The GD50 contains an interchangeable, deep socket anvil to fit the rod end. All hammering is against the anvil and not the rod. The GD50 is furnished with flush faced quick disconnect couplers, 8-foot hose whips, and dual-spool in-line ON/OFF valve.

**SPECIFICATIONS**

Application: Drives copper bonded and galvanized ground rods  
Capacity: 1/2 to 5/8 in. or 3/4 to 1 in. Ground Rod  
Hyd. Flow: 5-9 gpm / 19-34 lpm  
Weight: 52 lbs / 24 kg  
Length: 25 in. / 65 cm  
Width: 16 in. / 41 cm  
Connection: 3/8 in. flush face quick disconnect couplers



If driving galvanized ground rods, up size to the next capacity GD50 or consult factory.

Model	Part No.	Weight	Flow Range	Working Pressure	Full Relief Setting	Capacity	Misc.
GD50	GD50132RF	52 LBS / 24 KG	5-9 GPM / 19-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1/2 TO 5/8 IN. ROD	IN-LINE VALVE/COUPLERS
	GD50133RF	52 LBS / 24 KG	5-9 GPM / 19-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	3/4 TO 1 IN. ROD	IN-LINE VALVE/COUPLERS

**Power Unit** Model HP8



HP8

The HP8 hydraulic power unit is engineered for continuous professional use and is optimized to deliver ideal flows and pressures to both Type 1 and Type 2 hydraulic tools. Its powerful 18 HP Briggs & Stratton engine and best-in-class cooling system deliver the power and heat rejection pros need to keep tools working uninterrupted all day in all types of conditions. The HP8 features a manual controlled engine idle/throttle selector. Its feature-rich, dependable operation make the HP8 the workhorse of the industry.

**SPECIFICATIONS**

Application: Heavy-duty continuous use hydraulic power supply for both Type 1 & Type 2 tools.  
Connection: flush face quick disconnect couplers

**FEATURES**

- Meets HTMA requirements for Type 1 and Type 2 hydraulic tool circuits
- 5 or 8 gpm / 20 or 30 lpm @ 2,000 psi
- Heat rejection capacity exceeding 5 hp
- Quartz hour meter
- Direct mounted hydraulic pump
- Air-oil cooler
- Lift and latch handle
- Solid tires
- Maintenance-free battery
- Hydraulic and engine oil filter
- Engine oil level shut-down,
- 5.5 gallon / 20 liters fuel capacity
- Flush face quick disconnect couplers

Model	Weight	Length	Width	Height	Engine	Output Flow	Pressure	Auto Throttle
HP8	330 LBS / 150 KG	36 IN. / 90 CM	23 IN. / 58 CM	29 IN. / 74 CM	BRIGGS	5 OR 8 GPM / 20 OR 30 LPM	2000 PSI / 140 BAR	NO

**ACCESSORIES**

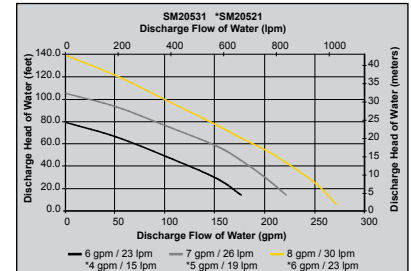
Part No.	Description	Part No.	Description
13360	HP8 HOSE BASKET CONVERSION KIT	64940	HP8 MALE PLUG, 12 VOLT
		64942	12V RECEPTACLE ACCESSORY



## Sump Pump Model SM20



The SM20 is one of the lightest and most durable pumps available. Completely submersible and pumping 250 gpm / 946 lpm at a 10-foot head and moving solids up to 5/16 of an inch makes it ideal for vaults and manholes. It features a cast aluminum inlet, steel or urethane impeller, Hyrevz™ motor, and is furnished with flush face quick disconnect couplers.

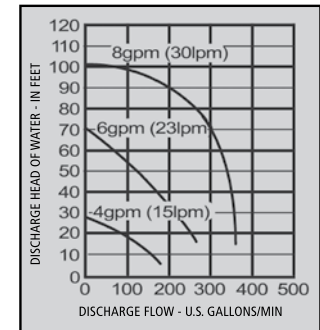


## Sump Pump Model SM21



SM21

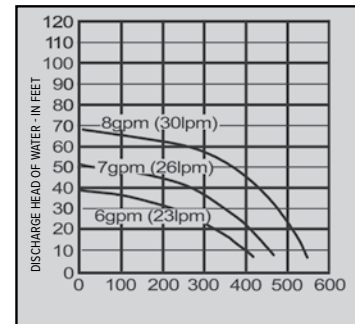
The SM21 is the ideal pump for areas of confined space and small openings. The SM21 pumps up to 300 gpm / 1125 lpm at a 50-foot head. The cast iron impeller is within 3/4 of an inch of the base allowing the pump to remove more liquids than other pumps. The SM21 features a lifting eye, 2.5 in. NPTF discharge, and is furnished with hose whips and flush face quick disconnect couplers. Pump requires no priming and can be run dry.



## Sump Pump Model SM50



The SM50 can pump an impressive 500 gallons per minute / 30,000 gallons per hour. It is completely submersible, can draw water down to a depth of 3.5 inches. It features a cast aluminum inlet, stainless steel impeller, lifting eye, 3 inch Camlock male discharge, and is furnished with flush face quick disconnect couplers. Pump requires no priming and can be run dry.



Model	Part No.	Weight	Flow Range Working	Working Pressure	Full Relief Setting	Output	Discharge
SM20	SM2043101 SM2052101 SM2053101	13.7 LBS	4-9 GPM / 15-34 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	250 GPM / 946 LPM	2.5 IN. / 63.5 MM
SM21	SM2151101	25 LBS / 11.34 KG	4-9 GPM / 15-34 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	300 GPM / 1125 LPM	2.5 IN. / 63.5 MM
SM50	SM50100	21 LBS / 9.5 KG	7-12 GPM / 26-45 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	500 GPM / 1890 LPM	3 IN. / 75 MM

## ACCESSORIES

Part No.	Description
02183	FIRE HOSE, 25 FT. X 2-1/2 IN.
02317	FIRE NOZZLE - 1 IN. OUTPUT
05133	2-1/2 IN. THREAD ADAPTOR FOR SUMP PUMP TO FIRE HOSE
05134	50 FT. FIRE HOSE, 2-1/2 IN. DIA.

Part No.	Description
05135	SPANNER WRENCH FOR PIN LUG COUPLER
15248	ADAPTER, 3 IN. FEMALE CAMLOCK X MALE FIRE HOSE (NH) THREAD
52720	ADAPTER, 3 IN. MALE NPT X 3 IN. MALE CAMLOCK
56761	LAY-FLAT DISCHARGE HOSE, 3 IN. X 25 FT WITH CAMLOCK FITTINGS
59101	ADAPTER, 2-1/2 IN. MALE NPT X 3 IN. MALE CAMLOCK

**Light to Medium Duty Breakers** Model BR45 - 40# Plus Class



BR45

**40 LB**  
2-6" CONCRETE

The BR45 is light to medium duty breakers for work in the 35 to 55 pound class around the globe.

**SPECIFICATIONS**

Application: Light concrete or asphalt breaking or scoring, small rock breaking, ground rod driving, tamping.

Tool Bit Size: See page 8.

Hyd. Flow: 4-6 gpm / 15-24 lpm, 5.5 gpm / 20 lpm or 7-9 gpm / 26-34 lpm. See page 8.

Weight: 37 lbs / 17 kg to 58 lbs / 26 kg

Length: 22.5 in. / 57 cm to 30 in. / 76 cm

Width: 14 in. / 36 cm to 18 in. / 45 cm

Connection: 3/8 in. flush face quick disconnect couplers

**FEATURES**

- Convenient, maneuverable size makes this class a favorite for light to medium sized jobs
- Choose from North American or European models
- BR45550 model designed for operation at 4-6 gpm / 15-24 lpm range
- T-type or Anti-vibration handle (see order information)
- EZ-Ride™ or standard foot (see order information)
- Hose whips and flush-face quick disconnect couplers

**Medium Duty Breakers** Model BR67 - 70# Class



BR67

**70 LB**  
6-8" CONCRETE

The BR67 is a medium to heavy-duty breaker for work in the 70 pound class and above. It is highly productive in construction, street maintenance, repair of water and gas mains, and general contracting jobs.

**SPECIFICATIONS**

Application: Concrete or asphalt breaking or scoring; small rock breaking; ground rod, anchor, & stake driving.

Tool Bit Size: 1-1/8 x 6 in. or 1-1/4 x 6 in.

Hyd. Flow: 7-9 gpm / 26-34 lpm

Weight: 72 lbs / 33 kg-BR67 with T-Handle

Length: 27 in. / 68 cm-BR67 with T-Handle

Width: 16 in. / 41 cm-BR67 with T-Handle

Connection: 3/8 in. flush face quick disconnect couplers

**FEATURES**

- Our original breaker design
- Delivers excellent overall performance
- Provides good balance of power to weight
- T-type or Anti-Vibration handle
- EZ-Ride™ or standard foot
- Strong tie rod design for durability
- Hose whips and flush-face quick disconnect couplers

**Heavy Duty Breakers** Model BR87 - 90# Class



BR87

**90 LB**  
8+" CONCRETE

The BR87 is a heavy-duty breakers for work in the 90 pound class and heavier. With a longer piston stroke, our 90 lb class breakers are our hardest hitting hand held breakers.

**SPECIFICATIONS**

Application: Concrete or asphalt breaking or scoring, small rock breaking, ground rod, anchor, & stake driving.

Tool Bit Size: 1-1/8 x 6 in. or 1-1/4 x 6 in.

(see ordering info)

Hyd. Flow: 7-9 gpm / 26-34 lpm

Weight: 84 lbs / 3 kg

Length: 29 in. / 73.5 cm

Width: 16 in. / 41 cm

Connection: 3/8 in. flush face quick disconnect couplers

**FEATURES**

- Our hardest hitting breaker class, designed for the biggest breaking jobs
- Longer stroke delivers greater impact force
- T-type handle
- EZ-Ride™ or standard foot
- Strong tie rod design for durability
- Hose whips and flush-face quick disconnect couplers

## BREAKERS (NORTH AMERICA)

Model	Part No.	Weight	Length	Width	Flow Range	Working Pressure	Full Relief Setting	Bit Size	Misc.
BR45	BR45110	45 LBS / 20 KG	25 IN. / 65 CM	14 IN. / 36 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	7/8 X 3-1/4 IN. HEX	T HANDLE
	BR45120	51 LBS / 23 KG	25 IN. / 65 CM	14 IN. / 36 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/8 X 6 IN. HEX	T HANDLE
	BR45120E	51 LBS / 23 KG	25 IN. / 65 CM	14 IN. / 36 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/8 X 6 IN. HEX	EZ RIDE FOOT
	BR45125S	55 LBS / 25 KG	28 IN. / 72 CM	17.5 IN. / 45 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/8 X 6 IN. HEX	ANTI VIBRATION
	BR45130	51 LBS / 23 KG	25 IN. / 65 CM	17.5 IN. / 45 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/4 X 6 IN. HEX	T HANDLE
	BR45130E	51 LBS / 23 KG	25 IN. / 65 CM	14 IN. / 36 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/4 X 6 IN. HEX	EZ RIDE FOOT
	BR45135S	55 LBS / 25 KG	28 IN. / 72 CM	17.5 IN. / 45 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/4 X 6 IN. HEX	ANTI VIBRATION
	BR45150	45 LBS / 20 KG	25 IN. / 65 CM	14 IN. / 36 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1 X 4-1/4 IN. HEX	T HANDLE
BR67	BR45550	45 LBS / 20 KG	25 IN. / 65 CM	14 IN. / 36 CM	4-6 GPM / 15-24 LPM	1300-2000 PSI / 90-140 BAR	2250 PSI / 155 BAR	1 X 4-1/4 IN. HEX	T HANDLE
	BR67120	72 LBS / 33 KG	27 IN. / 68 CM	16 IN. / 41 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/8 X 6 IN. HEX	T HANDLE
	BR67120E	72 LBS / 33 KG	27 IN. / 68 CM	16 IN. / 41 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/8 X 6 IN. HEX	EZ RIDE FOOT
	BR67125	78 LBS / 36 KG	29 IN. / 73 CM	18 IN. / 46 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/8 X 6 IN. HEX	ANTI VIBRATION
	BR67130	72 LBS / 33 KG	27 IN. / 68 CM	16 IN. / 41 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/4 X 6 IN. HEX	T HANDLE
	BR67130E	67 LBS / 30 KG	27 IN. / 68 CM	16 IN. / 41 CM	7-9 GPM / 26-34 LPM	11500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/4 X 6 IN. HEX	EZ RIDE FOOT
	BR67135	78 LBS / 36 KG	29 IN. / 73 CM	18 IN. / 46 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/4 X 6 IN. HEX	ANTI VIBRATION
BR87	BR87120	84 LBS / 38 KG	29 IN. / 73.5 CM	16 IN. / 41 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/8 X 6 IN. HEX	T HANDLE
	BR87120E	84 LBS / 38 KG	29 IN. / 73.5 CM	16 IN. / 41 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/8 X 6 IN. HEX	EZ RIDE FOOT
	BR87130	84 LBS / 38 KG	29 IN. / 73.5 CM	16 IN. / 41 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/4 X 6 IN. HEX	T HANDLE
	BR87130E	84 LBS / 38 KG	29 IN. / 73.5 CM	16 IN. / 41 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	1-1/4 X 6 IN. HEX	EZ RIDE FOOT

## ACCESSORIES

Model	Part No.	Description	Model	Part No.	Description
7/8 IN. HEX X 3-1/4 IN.	02328	CLAY SPADE, 16 IN. U/C	1-1/8 IN. HEX X 6 IN.	02331	CLAY SPADE, 5-1/2 IN. BLADE
	02330	3 IN. CHISEL, 14 IN. U/C		02332	ASPHALT CUTTER 5 X 11 IN. U/C
	02339	1 IN. CHISEL, 14 IN. U/C		02333	MOIL POINT 14 IN. U/C
	02341	ASPHALT CUTTER, 5 IN. BLADE X 11 IN. U/C		02334	3 IN. CHISEL, 14 IN. U/C
	04401	MOIL POINT, 18 IN. U/C	03990	CHISEL POINT 14 IN. U/C	
	04961	MOIL POINT, 14 IN. U/C	04176	GROUND ROD DRIVER, 1 IN. ROD	
	05255	ROD DRIVER, 3/4 IN.	08106	ASPHALT WEDGE	
1 IN. HEX X 4-1/4 IN.	07702	MOIL POINT, 14 IN. U/C	08107	KEEN KUT CHISEL	
	07703	NARROW POINT, 14 IN. U/C	02335	ASPHALT CUTTER, 5 IN. BLADE X 11 IN. U/C	
	07704	3 IN. CHISEL, 14 IN. U/C	02336	MOIL POINT, 14 IN. U/C	
	07705	CLAY SPADE, 5-1/2 IN. BLADE	02337	3 IN. CHISEL, 14 IN. U/C	
	07706	ASPHALT WEDGE, 3 IN. WIDE	02338	1 IN. CHISEL WITH HEAVY DUTY 14 IN. U/C	
			04367	GROUND ROD DRIVER, 1 IN. ROD	
1-1/4 IN. HEX X 6 IN.			04404	MOIL POINT HEAVY DUTY 18 IN.	
			04405	CLAY SPADE, 18 IN. BLADE	
			07862	KEEN KUT CHISEL	
			08119	ASPHALT WEDGE	
			09262	CLAY SPADE, 5-1/2 IN. BLADE	
			17782	DETACHABLE SHANK	

**Chainsaw** Model CS05/CS06



**FEATURES**

- Highest power-to-weight ratio of any chain saw on the market today
- Trigger lock
- Hand guard
- Dual spool for Open Center or Closed Center operation
- Low kickback bars and chains
- Inherently low-kickback hydraulic motor
- Automatic chain oiler
- Hyrevz™ motor

**Pole Saw** Model CS25/CS28



**FEATURES**

- Used for trimming and pruning large tree branches
- Ideal for use by right-of-way crews, arborists, utilities, parks departments, grounds keepers, and forest trail maintenance crews
- Fiberglass pole handle
- Hyrevz™ motor
- Dual spool for operation on Open Center or Closed Center systems
- Automatic chain oiling

Model	Part No.	Weight	Overall Length	Width	Flow Range	Working Pressure	Full Relief Setting	Cut Capacity	Misc.
CS05	CS05620	6.25 LBS / 2.8 KG	30 IN. / 76 CM	9 IN. / 23 CM	4-6 GPM / 15-23 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	15 IN. / 38 CM	OC/CC
CS06	CS06620	6.25 LBS / 2.8 KG	30 IN. / 76 CM	9 IN. / 23 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	15 IN. / 38 CM	OC/CC
	CS06630	6.25 LBS / 2.8 KG	35 IN. / 89 CM	9 IN. / 23 CM	7-9 GPM / 26-34 LPM	1500-2000 PSI / 105-140 BAR	2250 PSI / 155 BAR	20 IN. / 51 CM	OC/CC
CS25	CS25811	10.9 LBS / 5 KG*	91 IN. / 231 CM**	4.375 IN. / 11 CM <sup>1</sup>	4-6 GPM / 15-23 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	13 IN. / 33 CM	OC/CC
	CS25812	10.4 LBS / 4.7 KG*	78 IN. / 198 CM**	4.375 IN. / 11 CM <sup>1</sup>	4-6 GPM / 15-23 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	13 IN. / 33 CM	OC/CC
CS28	CS28811	10.9 LBS / 5 KG*	91 IN. / 231 CM**	4.375 IN. / 11 CM <sup>1</sup>	7-9 GPM / 26-34 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	13 IN. / 33 CM	OC/CC
	CS28812	10.4 LBS / 4.7 KG*	78 IN. / 198 CM**	4.375 IN. / 11 CM <sup>1</sup>	7-9 GPM / 26-34 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	13 IN. / 33 CM	OC/CC

<sup>1</sup> Measured at motor end

\* Weight includes bar and chain but not quick couplers.

\*\* Length includes bar and chain but not quick couplers.

**ACCESSORIES**

Model	Part No.	Description
CS05/CS06	07629	RIM SPROCKET, .325P X 7 TOOTH
	07638	15 IN. SAW BAR
	07639	20 IN. SAW BAR
	07641	SAW CHAIN FOR 15 IN. BAR
	07642	SAW CHAIN FOR 20 IN. BAR

Model	Part No.	Description
CS25/28	05144	CHAIN/BAR GUARD
	07616	SPROCKET SPLINE ADAPTER
	07629	RIM SPROCKET, .325P X 7 TOOTH
ALL	08347	12 IN. SAW BAR
	08348	SAW CHAIN FOR 12 IN. BAR
	11464	SCRENCH
	33289	CHAIN SAW FILE

### Circle Saw Model CR27



#### FEATURES

- Used for trimming and pruning tree branches
- Ideal for use by right-of-way crews, arborists, utilities, parks departments, grounds keepers, and forest trail maintenance crews
- Fiberglass pole handle
- Integral Hyrevz™ motor
- Angled head
- Dual spool for operation on Open Center or Closed Center systems
- Double cone-lock blade nut
- Blade brake to reduce coast-down time

Model	Part No.	Weight	Flow Range	Working Pressure	Relief Setting	Cutting Component Included	Couplers
CR27	CR27891	9.6 LBS / 4.4 KG	5-7 GPM / 19-26 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	9 IN. / 22.9 CM SAW BLADE - 24 TOOTH	NO

#### ACCESSORIES

Part No.	Description
34356	9 IN. / 22.9 CM CIRCLE SAW BLADE - 24 TOOTH

### Pruner Model PR41



#### FEATURES

- Used for selective tree limb pruning up a 2-1/4 inch / 5.7 cm cut
- Ideal for use by right-of-way crews, arborists, utilities, parks departments, grounds keepers, and forest trail maintenance crews
- Lightweight head design that provides easy handling
- Full power on both opening and closing cycles
- Improved geometry of knife and hook provides increased cutting efficiency
- Fiberglass pole handle

Model	Part No.	Weight	Length	Flow Range	Working Pressure	Full Relief Setting	Cutting Component (included)	Couplers
PR41	PR41131 (O.C.)	11.5 LBS / 5.2 KG	84 IN. / 213.4 CM	3-9 GPM / 11-34 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	2-1/4 IN. / 5.7 CM CUT KNIFE	NO

#### ACCESSORIES

Model	Part No.	Description
PR41	58649	Knife

**Pole Tamper** Model TA54



TA54603  
WITHOUT VALVE



TA54103 WITH  
VALVE IN HANDLE

**SPECIFICATIONS**

Application: Compacting soil around utility poles, sign and fence posts.

Capacity: Kidney shaped shoe

Connection: -8 SAE Port

**FEATURES**

- Ideal for soil compaction around utility poles, signs and fence posts
- Long stroke keeps the TA54 above the fill
- 1600 blows per minute - 2-1/2 inch stroke
- Available with On/Off valve in handle, remote in-line valve or no valve
- 2 moving parts

Model	Part No.	Weight	Length	Width	Flow Range	Working Pressure	Full Relief Setting	Blows/Minute	Valve	Shoe
	TA54103	39 LBS / 18 KG	71 IN. / 180 CM	4 IN. / 10 CM	3-9 GPM / 11-34 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	1600 BPM	IN HANDLE	KIDNEY
TA54	TA54603	39 LBS / 18 KG	69 IN. / 175 CM	4 IN. / 10 CM	3-9 GPM / 11-34 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	1600 BPM	N/A	KIDNEY
	TA54603A	39 LBS / 18 KG	69 IN. / 175 CM	4 IN. / 10 CM	3-9 GPM / 11-34 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	1600 BPM	IN LINE	KIDNEY

**ACCESSORIES**

Part No.	Description
00833	KIDNEY SHOE
00840	ROUND SHOE, 6 IN. DIA.

Part No.	Description
01070	RECTANGULAR SHOE
72264	IN-LINE VALVE ASSEMBLY, OC/CC

**Vent Fan** Model VF80

**SPECIFICATIONS**

Application: Ventilating large spaces such as vaults.

Capacity: 1,700 scfm / 802 lsec

Hyd. Flow: 4-12 gpm / 15-45 lpm

Weight: 19 lbs / 8.6 kg

Length: 15 in. / 40 cm

Width: 19 in. / 49 cm

Connection: 3/8 in.

**FEATURES**

- Designed for heavy duty service
- Quiet operation
- Centrifugal blower to deliver large volume of air
- High impact plastic case
- Standard 8 inch / 20 cm discharge
- Accepts standard heaters and coolers
- Hyrevz™ motor



Model	Part No.	Weight	Length	Width	Flow Range	Working Pressure	Full Relief Setting	Capacity
VF80	VF8000	19 LBS / 8.6 KG	15 IN. / 40 CM	19 IN. / 49 CM	4-12 GPM / 15-45 LPM	1000-2000 PSI / 70-140 BAR	2250 PSI / 155 BAR	1,700 SCFM / 802 ISEC

## HYDRAULIC HOSES

Part No.	Description
01412	PIGTAIL HOSE WHIP, 3/8 IN. ID X 12 IN., 3/8 IN. MALE PIPE, -6 SAE O-RING.
01652	PIGTAIL HOSE WHIP, 1/2 IN. ID X 12 IN., 3/8 MALE PIPE, -8 SAE O-RING
31848	50 FT. X 1/2 IN. ID WIRE BRAID, DUAL HOSE WITH COUPLERS
31972	25 FT. X 1/2 IN. ID WIRE BRAID, DUAL HOSE WITH COUPLERS
44931	RUBBER HOSE, NON-CONDUCTIVE, 3/8 IN. X 8 FT
47318	RUBBER HOSE, NON-CONDUCTIVE, 3/8 IN. X 10 FT
56797	RUBBER HOSE SET, NON-CONDUCTIVE, 3/8 IN. X 10 FT, WITH COUPLERS
65897	RUBBER HOSE SET, NON-CONDUCTIVE, 3/8 X 14 FT, WITH COUPLERS
58633	TWINNED HOSE, 1/2 IN. X 25 FT, WIRE BRAID, WITH COUPLERS

Part No.	Description
58634	TWINNED HOSE, 1/2 IN. X 50 FT, WIRE BRAID, WITH COUPLERS
58973	RUBBER HOSE SET, NON-CONDUCTIVE, 3/8 IN. X 8 FT, WITH COUPLERS
65617	RUBBER HOSE SET, NON CONDUCTIVE, 3/8 IN. X 10 FT, -8 MALE SAE X 3/8 NPTF MALE

## QUICK DISCONNECT COUPLERS

Part No.	Description
03288	3/8 CAP & PLUG FOR ALL FLUSH FACE SETS
03971	3/8 FLUSH FACE SET (3/8 NPT)

Part No.	Description
03974	3/8 FLUSH FACE SET (1/2 NPT)
58718	3/8 FLUSH FACED COUPLER SET, -8 SAE MALE

## PLUMBING

Part No.	Description
00936	ADAPTER, 1/2 SAE TO 3/8 IN. MALE PIPE
03044	HEX NIPPLE, 3/8 IN. MALE PPPE

## TEST EQUIPMENT

Part No.	Description
02835	ACCUMULATOR TESTER & CHARGER
04182	FLOW AND PRESSURE TESTER

Part No.	Description
29085	FLOW & PRESSURE TESTER
31254	ACCUMULATOR CHARGING KIT (HANDHELD TOOLS ONLY)

# NOTES

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# ELECTRIC UTILITY TOOLS HYDRAULIC SYSTEM REQUIREMENTS

# STANLEY®



Hydraulic systems come in many forms—from those found in the simple hydraulic jack to the more sophisticated systems found in earth moving equipment. The system required to operate most hydraulic tools found in this catalog would require 8 gpm / 30 lpm and be capable of providing system pressure up to 2000 psi / 140 bar. This system is referred to as a Type II, as classified by the Hydraulic Tool Manufacturers Association (HTMA). But there are also 3 other classifications. They are discussed below.

## Hydraulic Tool Manufacturers' Association (HTMA) Requirements

Hydraulic tools fall into 4 classifications, Type I, Type II, Type III, and Type RR as set by HTMA. The system requirements for powering these tools are as follows:

Type I	5	gpm ±10% / 19 lpm
Type II	8	gpm ±10% / 30 lpm
Type III	12	gpm ±10% / 45 lpm
Type RR	10	gpm ±10% / 38 lpm

## OPERATING PRESSURE:

Hydraulic systems should be capable of providing the appropriate operating pressure and flow for the system types noted above when measured across the tool connections. Deviation from the nominal flow rates should be no more than plus or minus 10% at an operating pressure of 2000 psi / 138 bar. This is the pressure that the tools will normally operate at which is not to be confused with the relief pressure.

## RELIEF PRESSURE:

Hydraulic systems should be capable of limiting the maximum pressure by using either a pressure compensating pump or a relief valve with a non-pressure compensating pump. The system pressure limiting component shall begin to control the maximum pressure at no less than 2150 psi. This is commonly known as the "cracking pressure". The system pressure limiting component shall limit the maximum pressure to 2250 psi for a Type I, Type II, or Type III tool. The system pressure limiting component shall limit the maximum pressure to 2500 psi for a Type RR tool.

## Return Pressure:

The hydraulic systems should generate no more than 250 psi / 17 bar return pressure (back pressure) at the tool when operating at maximum flow for the tool type. System conditions for this pressure are at maximum hydraulic fluid viscosity of 400 SUS (SSU) at minimum operating temperature.

## Cooling:

The hydraulic systems should have sufficient heat rejection capacity to limit maximum oil temperature to 140°F/60°C at the maximum expected ambient temperature.

Recommended minimum cooling capacities to dissipate tool-generated heat are:

Type I	3 Horsepower / 2.24 kW
Type II	5 Horsepower / 3.73 kW
Type III	7 Horsepower / 5.22 kW
Type RR	6 Horsepower / 5.22 kW

When determining cooling capacity, the intended duty cycle and the system generated heat must both be considered.

## Filtration:

Systems should have 25 micron nominal filtration for the hydraulic fluid.

Recommended filter element size is at least three times system rated flow to prevent filter bypass under low temperature start-up.

## Fluid:

Hydraulic systems should use hydraulic fluid that has a viscosity of 130-225 SSU / 27-42 cst at 100° F / 38° C. Hydraulic fluids of petroleum base with antiwear properties and high viscosity indexes over 140 will meet recommended hydraulic fluid requirements over a wide range of operating temperatures. They should be demulsifying type to allow water to settle out of the fluid.

## The Basic Principle of Hydraulics for Tool Operation

The basic principle of hydraulics used for tool operation can be compared with a typical household water system.

The typical rotary car-wash brush tool, that is operated from water through a garden hose, is in actuality a hydraulic tool. Water rushing through the garden hose drives a small motor in the car-wash tool which, in turn, rotates the brush. However, it is not just the rushing water that is driving the motor. There is also pressure associated with the rushing water—about 60 pounds per square inch (psi). Without the pressure, the tool would have no power. Without pressure, any force applied to the tool, such as pushing down on the tool, would stall the tool.

Water rushing through the hose (or the flow of water) is measured in gallons per minute (gpm) and results in the speed of the tool (in the case of the car-wash tool, the speed of the brush). Pressure associated with the water provides power to the tool.

The same principle applies in one of our tools. In a breaker, for example, the flow results in the speed of the tool and the resistance to that flow creates a demand for pressure. If the system has the capacity to deliver the pressure, power is transmitted to the tool to do work.

Hydraulic tools actually use less flow (gpm) than that produced through a garden hose. The pressure, however, is considerably higher. Hydraulic tools require pressures up to 2000 psi but only need 5 to 10 gpm to operate effectively. Of course, a typical HTMA hydraulic system returns fluid to a reservoir for re-use as opposed to the household water system that spills fluid to waste.

### Open-Center and Closed-Center Systems

There are two basic types of hydraulic systems — Open-Center and Closed-Center.

#### Open-Center is Constant Flow — Variable Pressure

When a tool valve is in the OFF position, hydraulic oil flows through the ON/OFF valve ports of the tool and back to the reservoir. The system is constantly flowing oil through the tool valve ports and back to the reservoir at no pressure. When the tool valve is ON, oil circulates through the tool causing the tool to operate, and then returns to the reservoir. Pressure is created when resistance to flow is sensed by the system. This occurs when the tool is put to work. Pressure will increase as the tool needs it up to the relief setting in the hydraulic system.

#### Closed-Center is Constant Pressure — Variable Flow

When a tool valve is in the OFF position, hydraulic oil flow stops at the ON/OFF valve port of the tool. The system will build and hold pressure without returning oil to the reservoir. When the tool valve is ON, oil circulates through the tool causing the tool to operate, and then returns to the reservoir. Pressure tends to be constant in the system. Pressure will increase as the tool needs it up to the settings in the hydraulic system. And if pressures higher than the system setting are demanded by the work, flow will decrease.

### Fluid Temperature

The following information will serve to assist those installing hydraulics in mobile applications for handheld tools. While many hydraulic circuits can run upwards to 200°F, temperatures over 110°F / 43°C are uncomfortable to human touch. Our desire is to hold oil temperature to a maximum of 140°F / 43°C.

In almost any hydraulic tool circuit, oil cooling methods will be required except for very short periods of operation or in underwater and extreme cold environments. If you are involved in the design of a hydraulic tool circuit, use the following as guidelines.

### Basic Don'ts for Cool Oil Control

1. DON'T — Rely on a large reservoir to control oil heating. Large reservoirs, even with good air circulation, do not adequately dissipate heat.
2. DON'T — Set relief pressure too low (open-center circuits) for percussion type tools (breakers, hammer drills, etc.). Pressure peaks may run up to 350 PSI over gauge pressure, popping the relief and causing heat as well as low tool performance.
3. DON'T — Pump more oil than the tool should use and avoid flow controls if possible. Instead, size the pump for desired flow volume. Gear type flow dividers can be used to reduce flow more efficiently than valves, reducing heat.
4. DON'T — Use heavy oils such as 30W or 10W30 engine oils. These will cause resistance in lines and add to backpressure and heat.
5. DON'T — Run return oil through control valves or other circuit components, except coolers and return line filters.

### DO THE FOLLOWING TO REDUCE HEAT GENERATION

1. Operate pumps at moderate speed — gear pumps usually generate less heat and are less prone to cavitation at speeds of 1,000-2,000 RPM.
2. Use generous line sizes — Especially on pump suction and return from tool to tank.
3. Use oils in 130-225 SSU at 100° F / 38° C range with high viscosity index. (see hydraulic fluid recommendations at the end of this section)

### PROVIDE GOOD COOLING FOR HYDRAULIC OIL

1. Use an air-to-oil cooler of maximum size for space available. Use a shrouded, high capacity fan. Many vehicles do not cool well when parked with engine at low speed. Do NOT use a "thermal" viscous-drive fan because these fans do not draw air unless the engine is hot.

# ELECTRIC UTILITY TOOLS

## HYDRAULIC SYSTEM REQUIREMENTS



### Flow Controls

- General Notes — To reduce or control flow rate through Stanley Tools, flow control valves are sometimes necessary. All possible effort should be made to avoid use of flow control valves where appropriate pump volume can be used because:
  - Excess oil volume and subsequent pressure drop generates heat.
  - When percussion type tools that generate pressure pulses are used, flow controls may oscillate and cause flow changes which reduce tool performance and add increased heating.
- Flow Control of Open-Center Circuits — Always use a priority type pressure-compensated flow control. This will prevent relief popping and reduce heat build-up. The excess flow should be routed in an unrestricted manner to the reservoir.
- Flow Control of Closed-Center Circuits — Use a two-port, pressure-compensated flow control. Some of these are very compact, in the range of 1-1/4" diameter by 5" long, and can be attached to the tool pressure pigtail. Do not use priority type controls on closed-center circuits, as this will cause the pump to operate at full volume — further heating the oil.

- Always use HTMA recommended quick disconnects that are flush-faced and driplless.

### 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.

### Quick Disconnects

- Only use quick disconnects matching hose diameters. i.e. 1/2 inch port quick disconnect for 1/2 inch inside diameter hose.
- Use as few quick disconnects as possible and avoid using adapter fittings with quick disconnects. Fittings and quick disconnects, while necessary, create flow restriction which causes heat and reduced tool performance.

### Tool To Circuit Hose Recommendations

Oil Flow		Each Hose Length		Inside Diameter		USE	Wire Braid Hose Spec	Working Pressure		Fiber Braid Hose Spec	Operating Pressure	
GPM	LPM	FEET	METERS	INCH	MM			PSI	BAR		PSI	BAR
5-8	19-30	up to 50	up to 15	1/2	13	Both	SAE 100R17-8	3000	230	SAE 100R7-8	2000	140
5-8	19-30	51-100	15-30	5/8	16	Both	SAE 100R17-10	3000	230	SAE 100R8-10	2750	190
5-8	19-30	100-300	30-90	5/8	16	Pressure	SAE 100R2-10	2750	190	SAE 100R8-10	2750	190
				3/4	19	Return	SAE 100R1-12	1250	86	SAE 100R7-12	1250	86

NOTE: SAE 100R16 may be used in place of SAE 100R2

### HTMA Type I Tool Circuit Specifications

- Acceptable flow rate is 4 - 6GPM at 2000 PSI when measured at the tool hose ends.
- Back pressure not to exceed 250 PSI on the return side of the system when measured at the tool hose end.
- Tool circuit system pressure limiting component shall begin to control pressure no less than 2100 PSI and shall limit maximum pressure to no more than 2250 PSI.
- The system shall have sufficient heat rejection capacity to limit the maximum oil temperature to 140° F at the maximum expected ambient temperature. Cooling should be sized for 40° for maximum ambient air temperature.
- System filtration should be 25 micron or better.
- Oil viscosity should be 100 - 400 SSU across the entire operating temperature of 50° - 140° F.

(Reference HTMA - Recommended Standards for Hydraulic Operation for further details.)

### HTMA Type II Tool Circuit Specifications

- Acceptable flow rate is 7 - 9 GPM at 2000 PSI when measured at the tool hose ends.
- Back pressure not to exceed 250 PSI on the return side of the system when measured at the tool hose end.
- Tool circuit system pressure limiting component shall begin to control pressure no less than 2100 PSI and shall limit maximum pressure to no more than 2250 PSI.
- The system shall have sufficient heat rejection capacity to limit the maximum oil temperature to 140° F at the maximum expected ambient temperature. Cooling should be sized for 40° for maximum ambient air temperature.
- System filtration should be 25 micron or better.
- Oil viscosity should be 100 - 400 SSU across the entire operating temperature of 50° - 140° F.

(Reference HTMA - Recommended Standards for Hydraulic Operation for further details.)

### Fluids for Mobile Hydraulic Tool Circuits

The specification listed here will provide good all season operation if your circuit is of proper design and normal maintenance is performed. (Periodic filter change, draining of condensate, etc.)

Item	U.S.A.	Metric
Viscosity (Fluid Thickness)	50° F 450 SSU Max.	10° C 95 Centistokes Max.
Viscosity (Fluid Thickness)	100° F 130-225 SSU	38° C 27-42 Centistokes
Viscosity (Fluid Thickness)	140° F 85 SSE Min.	60° C 16.5 Centistokes Min.
Pour Point (Min. for cold startup)	-10° F	23° C
Viscosity Index	(ASTM D2220)	140 Minimum
Demulsibility	(ASTM D1401)	30 Minutes Max.
Flash Point	(ASTM D92)	340° F Min.
Rust Inhibition	(ASTM D665 A&B)	Pass
Oxidation	(ASTM D943)	1000 Hours Min.
Pump Wear Test	(ASTM D2882)	60 mg Max.
Biodegradability	CEC-L-33-A94	>60%

### Recommended Fluids

The fluids listed here work well over a wide temperature range at start-up, allow moisture to settle out, and resist biological growth likely in cool-operating hydraulic circuits. These fluids are recommended by Stanley Hydraulic Tools for use in our tools. Other fluids that meet or exceed the specifications of these fluids may also be used. Biodegradable fluids listed are compatible with all tool seals and hoses.

Brand	Biodegradable	Description
CITGO	No	Hydurance All Temp
AMS Oil	No	HVH 32
Exxon Mobil	No	Univis HVI26*
Exxon Mobil	No	DTE 10 Excel
Shell	No	S2 V 32
Chevron	No	Rando HDZ 32
Conoco Phillips	No	Unax AW-WR-32
Clarion (CITGO)	Yes	Green Bio 32
Exxon Mobil	Yes	EAL 224H
Chevron	Yes	Clarity AW32
RSC Bio Solutions	Yes	Envirologic 132
Shell	Yes	Naturelle HF-E-32

\*Recommended for extreme cold weather operation.

# HYDRAULIC SYSTEM REQUIREMENTS

## Testing a Hydraulic System for Comparison to HTMA Recommendations

The objective of this test is to determine how your hydraulic system performance compares with HTMA (Hydraulic Tool Manufacturers Association) recommended hydraulic system performance.

To perform these tests, you will need a flow and pressure tester such as our P/N 04182 or P/N 29085 shown below and two thermometers (the P/N 29085 has a built-in thermometer).



STANLEY P/N 04182



STANLEY P/N 29085

## HTMA recommendations for a hydraulic system operating Type I hydraulic tools:

- 5 gpm  $\pm$  10% / .5 gpm at 2000 psi measured at the tool inlet.
- 200 psi or less return pressure at 5.5 gpm—pressure measured at the tool outlet.
- Limit system temperature to 140° F on the hottest expected day. Choosing 100° F as the hottest expected day's temperature, the hydraulic system must maintain a 40 degree temperature difference, air to oil. For example, if the ambient air temperature is 100° F, then the oil temperature should not exceed 140° F.
- To simulate tool-generated heat during operation, HTMA recommends using 3 hp, minimum. A reading of 1030 psi minimum at the flow and pressure tester will achieve the recommended 3 hp, minimum.

## HTMA recommendations for a hydraulic system operating Type II hydraulic tools:

- 8 gpm  $\pm$  10% / .8 gpm at 2000 psi measured at the tool inlet.
- 200 psi or less return pressure at 8.8 gpm, pressure measured at the tool outlet.
- Limit system temperature to 140° F on the hottest expected day. Choosing 100° F as the hottest expected day's temperature, the hydraulic system must maintain a 40 degree temperature difference, air to oil. For example, if the ambient air temperature is 100° F, then the oil temperature should not exceed 140° F.

- To simulate tool-generated heat during operation, HTMA recommends using 5 hp, minimum. A reading of 1100 psi minimum at 8 gpm at the flow and pressure tester will achieve the recommended 5 hp, minimum.

Select an open site where the air is relatively calm. Place one thermometer in the oil reservoir to measure the temperature of the circulating oil (surface mounted tank thermometers do not adequately measure the temperature of the bulk system oil). Hang the other thermometer in still air to measure the ambient air temperature. Connect the flow and pressure tester to the tool hoses. Fully open the load valve on the tester.

Start up the system (with tool circuit control valve OFF) and warm the hydraulic fluid (if necessary) to a minimum of 50° F.

## Low temperature and maximum viscosity back pressure test

Turn ON the tool circuit control valve. Record oil temperature, ambient air temperature, flow rate, and back pressure.

Air: \_\_\_\_\_ ° F  
 Oil: \_\_\_\_\_ ° F  
 Flow rate: \_\_\_\_\_ gpm  
 Back pressure: \_\_\_\_\_ psi

### Hydraulic system's capacity to deliver flow against 2000 psi test

Close the load valve to where the pressure gage reads 2000 psi. Record flow rate, back pressure, and oil temperature.

Flow rate: \_\_\_\_\_ gpm  
 Back pressure: \_\_\_\_\_ psi  
 Oil: \_\_\_\_\_ ° F

### System capacity to control temperature test

Raise the system temperature to 140° F by adjusting the pressure using the load valve on the flow and pressure tester. If it takes more than 1900 psi to get the system temperature to 140° F, adjust the pressure to stabilize the system temperature at some lower temperature, e.g. 120° F.

When the system temperature has remained constant for about 15 minutes, record the flow rate, pressure, back pressure, oil temperature, and air temperature.

Flow rate: \_\_\_\_\_ gpm  
 Pressure: \_\_\_\_\_ psi  
 Back pressure: \_\_\_\_\_ psi  
 Air: \_\_\_\_\_ ° F  
 Oil: \_\_\_\_\_ ° F

### Calculate the tool load hp cooling capacity for an effective 40 degree temperature difference, air to oil using the following formula.

$$\frac{(\text{Pressure} - \text{Back pressure}) \times \text{gpm}}{43 \times (\text{Oil temperature} - \text{Air Temperature})} = \text{hp (horse power)}$$

Example:

Flow rate:	5	gpm
Pressure:	1500	psi
Back pressure:	100	psi
Air:	70	° F
Oil:	120	° F

$$\frac{(1500 - 100) \times 5}{43 \times (120 - 70)} = 3.3 \text{ hp at } 40 \text{ deg F temperature difference}$$

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