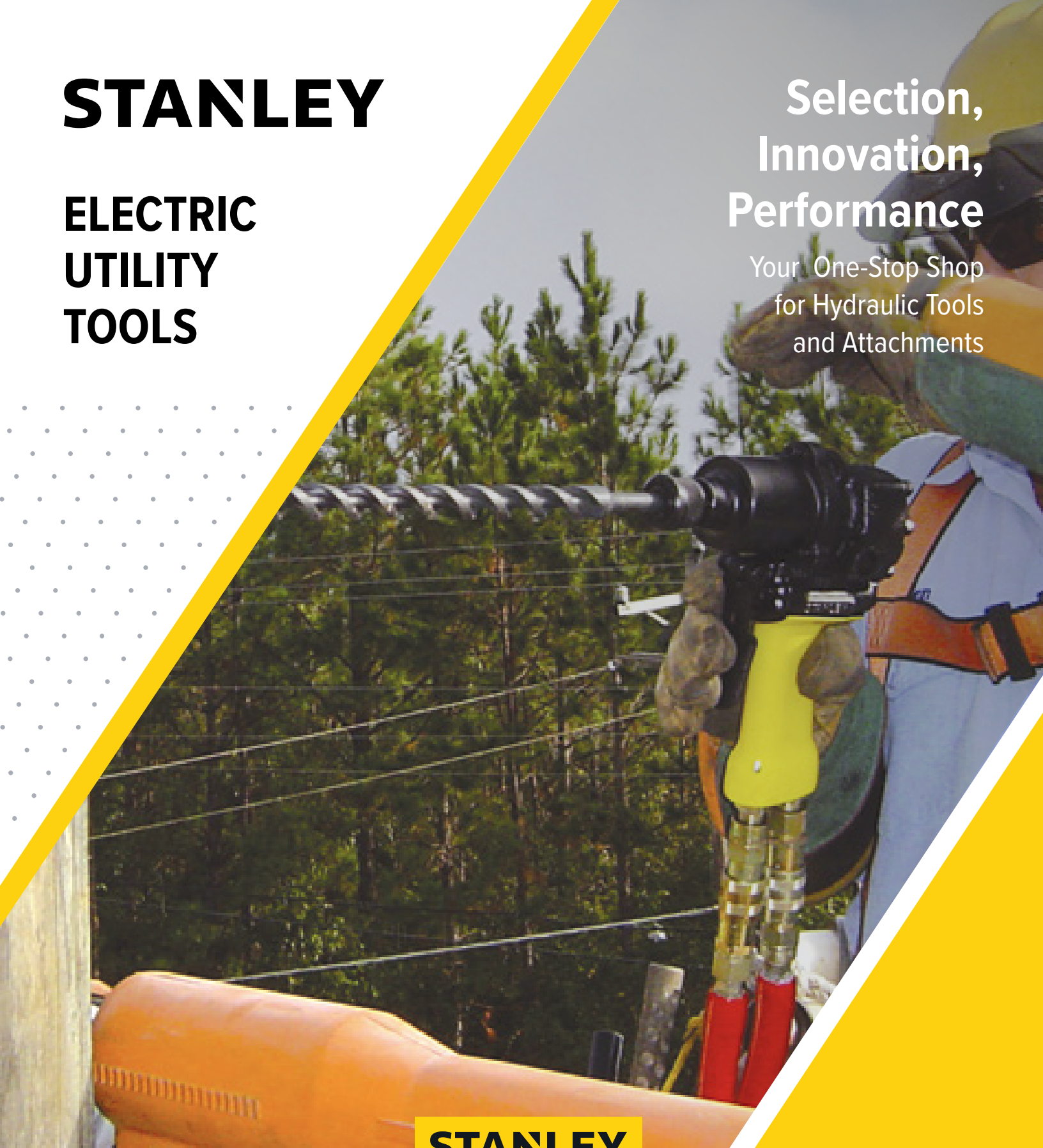


STANLEY

ELECTRIC UTILITY TOOLS

Selection, Innovation, Performance

Your One-Stop Shop
for Hydraulic Tools
and Attachments



STANLEY
Infrastructure

INDUSTRIAL TOOLS & ATTACHMENTS

 PALADIN. **STANLEY.** **LABOUNTY.**  **PENGO.**

ELECTRIC UTILITY TOOLS COMPANY OVERVIEW

STANLEY
Infrastructure



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. As a proud member of STANLEY Black & Decker, a 175 year old company committed to the manufacture and distribution of quality tools for the professional, industrial, and consumer, we at Stanley Infrastructure are dedicated to providing our customers with innovative customer-driven product designs, world class quality, unmatched product support, and superior value.

GLOBAL REPRESENTATION

STANLEY Infrastructure 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 Infrastructure 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. We are for those who make the world move.

CATALOG INDEX

| | |
|-------------------------------------|-------|
| Hydraulic Crimper | 4 |
| Drill & Sinker Drill | 5 |
| Impact Drill | 6-7 |
| Drivers & Power Units | 8 |
| Sump Pumps | 9 |
| Breakers | 10-11 |
| Cutting & Trimming | 12-13 |
| Tampers | 14 |
| Accessories | 15 |
| Hydraulic System Requirements | 18-24 |

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

STANLEY
Infrastructure

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 |

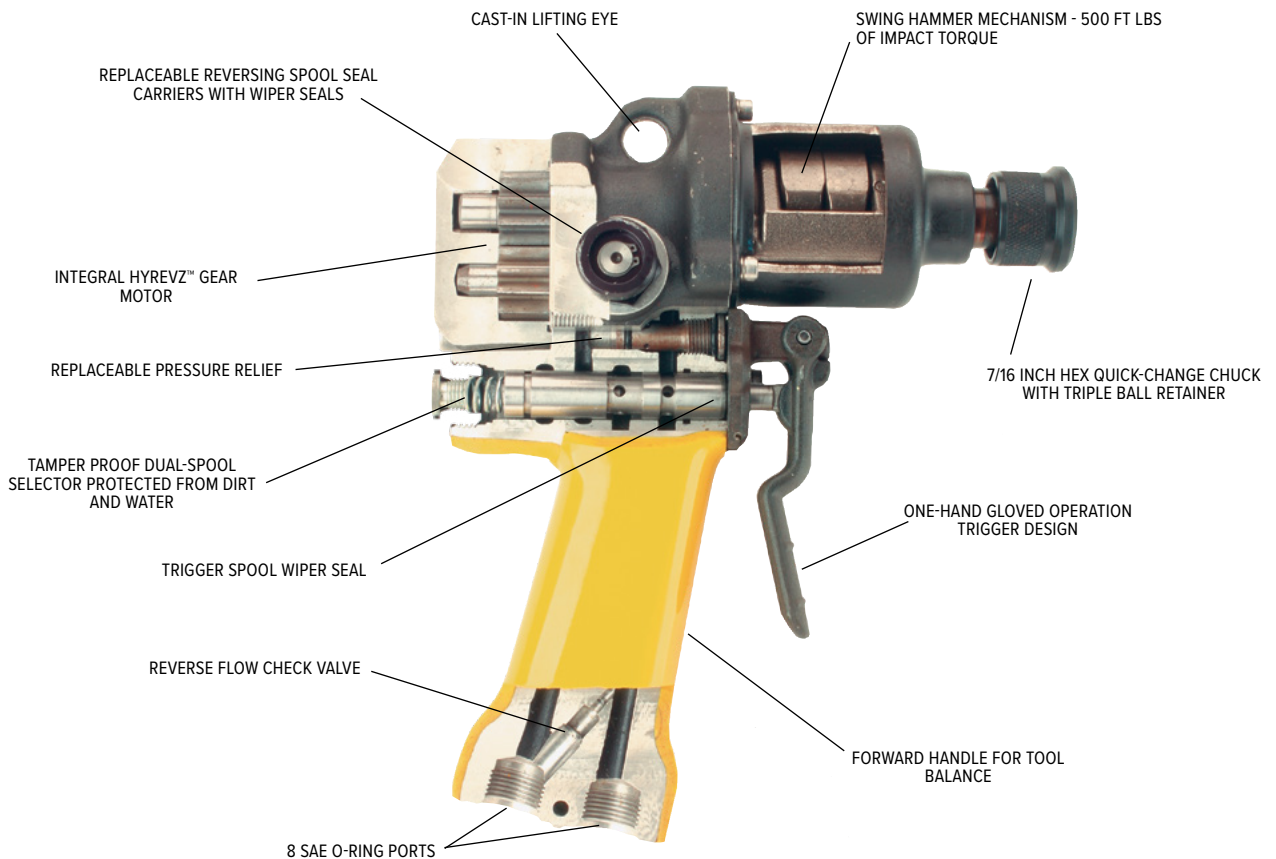
WORLDWIDE IMPACT

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. |
| 7/16 HEX SHANK POLE BITS | |
| 81461 | 9/16 X 24 X 29 |
| 81501 | 9/16 X 12 X 17 |
| 81505 | 13/16 X 12 X 17 |
| 81507 | 15/16 X 12 X 17 |
| 81453 | 13/16 X 15 X 18 |
| 81454 | 15/16 X 15 X 18 |
| 81456 | 11/16 X 21 X 24 |
| 81459 | 1-1/16 X 21 X 24 |

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 |

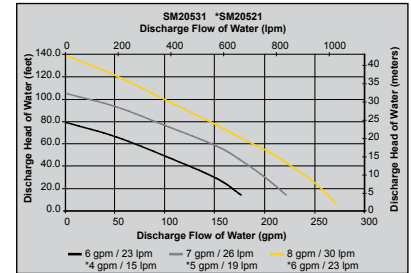
ACCESSORIES

| 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.

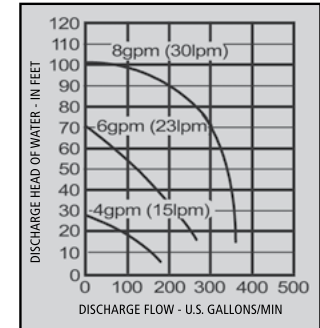


Sump Pump Model SM21



SM21

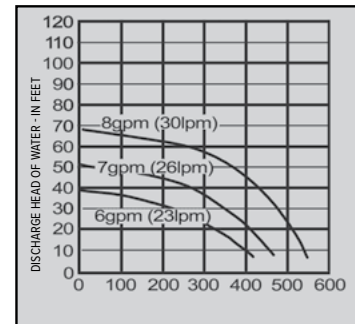
The SM21 is the ideal pump for areas of confined space and small openings. The SM21 pumps up to 300 gpm / 1125 lpm at a 50-foot head. The cast iron impeller is within 3/4 of an inch of the base allowing the pump to remove more liquids than other pumps. The SM21 features a lifting eye, 2.5 in. NPTF discharge, 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 IN. 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 ¹ | 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 ¹ | 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 ¹ | 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 ¹ | 7-9 GPM / 26-34 LPM | 1000-2000 PSI / 70-140 BAR | 2250 PSI / 155 BAR | 13 IN. / 33 CM | OC/CC |

¹ 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 | Model | Part No. | Description |
|-----------|----------|-------------------------------|---------|----------|-------------------------------|
| CS05/CS06 | 07629 | RIM SPROCKET, .325P X 7 TOOTH | CS25/28 | 05144 | CHAIN/BAR GUARD |
| | 07638 | 15 IN. SAW BAR | | 07616 | SPROCKET SPLINE ADAPTER |
| | 07639 | 20 IN. SAW BAR | | 07629 | RIM SPROCKET, .325P X 7 TOOTH |
| | 07641 | SAW CHAIN FOR 15 IN. BAR | | 08347 | 12 IN. SAW BAR |
| | 07642 | SAW CHAIN FOR 20 IN. BAR | | 08348 | SAW CHAIN FOR 12 IN. BAR |
| | | | ALL | 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) |

ELECTRIC UTILITY TOOLS

HYDRAULIC SYSTEM REQUIREMENTS

STANLEY
Infrastructure



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.

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.

- 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.

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

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

PERFORMANCE. PARTNERSHIP. SELECTION.



STANLEY
Infrastructure

833.723.1843
www.STANLEYinfrastructure.com

