Tempe Fire Department Policies and Procedures
Hydraulic Extrication Tools
405.08
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POWER UNITS; MODEL JL-4GBS (Hurst)

Characteristics

Engine: 4 cycle, Briggs & Stratton or Tecumseh.
Size: 5 hp.
Fuel: Unleaded gasoline, one-half gallon capacity. DO NOT mix with oil.
Weight: 61 lbs.
Lubricant: SAE 30W motor oil, 21 oz. (1-1/4 pints) capacity.
Hydraulic Fluid: Hurst hydraulic oil, six quart capacity.

MODEL ML-SI Mini-Mate Simo (Hurst)

Characteristics

Engine: 4 cycle Honda (GX 160)
Size: 3 hp.
Fuel: Unleaded one-half gallon capacity. DO NOT mix with oil.
Weight: 60.4 lbs.
Reservoir capacity: .92 gallons of Hurst hydraulic oil.
Lubricant: SAE 30W motor oil.
Power unit operates two tools at the same time with no need for a manifold.
Operating pressure: 5,000 psi.

Model Mach III Mini Simo (Genesis)

Characteristics

Engine: Honda 4 cycle
Size: 5.5 hp.
Fuel: Unleaded one half gallon capacity. DO NOT mix with oil.
Weight: 64 lbs.
Reservoir capacity: 1 gallon of mineral oil.
Lubricant: SAE 30w motor oil.
Power unit operates two tools at the same time. Has double speed option for one tool.
Operating pressure: 10,500 psi.
NFPA compliant

Model JL-AC-SI Full Size Electric Simo (SQ 278 Only)

Characteristics

Engine: 220V AC Electric, 60Hz.
Size: 3hp.
Power supply: 220 electric.
Weight: 88 lbs.
Reservoir capacity: 2 gals.
Power unit operates two tools at the same time.
Hydraulic fluid: Synthetic, fire resistant, electrically non conductive, non corrosive.

Personnel Protection
The hydraulic oil used in these units are a slight skin irritant, much like kerosene.
However, it is a SEVERE EYE IRRITANT. Wear full eye protection (goggles or SCBA facepiece helmet faceshields are NOT approved) whenever unit is started and hydraulic oil is under pressure.

Never fill the fuel tank with the engine running or hot. When filling fuel tank, fill to within one-half (1/2") inch of top of the tank, to allow for expansion.

Starting Procedure
1. Move black by-pass valve to "dump" position (away from direction of flow).
2. Move throttle lever to start ("choke") position.
3. Pull starter cord until engine starts.
4. Move throttle lever to run position.
5. Connect the couplings from the tool to the Bruning couplings from the power unit.
6. Move black by-pass valve to "pressure" position (toward direction of flow).
7. Tool is now ready to operate.

Shut Down Procedure
1. Move throttle lever to stop position.
2. Move black by-pass valve to "dump" position (away from direction of flow).
3. Disconnect couplings from power unit to tool.
4. Re-connect couplings in the stored position.

Caution: When disconnecting couplings, be aware that there may be a small spurt of hydraulic oil.
When connecting or disconnecting couplings, keep them free from dust or dirt.
Note: If couplings must be disconnected prior to engine shut-down (changing tools for example) position the black by-pass valve to the "dump" position (away from the direction of flow). This will relieve the pressure in the hydraulic lines.
If some pressure remains in the hose and connection cannot be made, place a rag around the male end and strike against a hard surface. This will release the pressure at the nipple valve and the rag will protect it and limit fluid spray.

SPREADERS;

Model ML-28 Defender (Hurst)
Characteristics
Weight: 49 lbs.
Opening distance: 28 inches
Spreading force: 44,000 lbs.
Pulling force: 6,969 lbs.
Operating pressure: 5,000 lbs.

Model S49XL (Genesis)
Characteristics
Weight: 45 lbs.
Opening distance: 28 inches.
Spreading force: 74,250 lbs.
Pulling force: 12,375 lbs.
Operating pressure: 10,500 lbs.

Operation of Thumb Control
Move the thumb controls to the left to open or spread the arms of the tool. If the controls do not operate the arms in this manner, the hoses have been connected incorrectly on either the tool or

the power unit. (Genesis tools are single line connection only eliminating the possibility of this happening)

Check the color coding on both and correct. (Turn by-pass valve on the power unit "OFF" before breaking
hose connections).

Attaching Chain Shackles
Use the top hole in the pre-attached automotive tips. Secure by use of the long retaining pin.
Using the Chains
Make sure both hooks are facing the same direction, up or down. Attach the chains from the same direction (side) to prevent the arms from twisting.

Caution: Don't allow anyone (other than victim[s]) to be "in-line" with a chain when under tension.

CUTTERS;
Cutter Model #JL-150 (Hurst)
Characteristics
Weight: 36 lbs.
Length: 32 inches.
Cutting Force (at blade center): 25,000 lbs.
Cutting Force (at notch): 70,000 lbs.
Maximum Opening at Tip: 7.25 inches.

Cutter Model JL MOC II (Hurst)
Characteristics
Weight: 47 lbs.
Length: 30.9 inches
Cutting force: 152,870 lbs.
Maximum Opening at tip: 7 inches.

Cutter Model C 165 (Genesis)
Characteristics
Weight: 37 lbs.
Length: 29 inches.
Cutting force: 144,000 lbs.
Maximum Opening at tip: 7.1 inches.
Operating pressure: 10,500 lbs.

Operation of Thumb Control
Similar to the "Jaws."
Caution: After using this tool ALWAYS inspect the cutting blades for any nicks or cracks. Damage should be reported to the Senior Fire Mechanic for evaluation. Periodic maintenance includes having the attaching nut for the blades torqued or tightened annually or as needed per usage.

RAMS;
RAMS MODEL JL-60B (Hurst)
Characteristics
Weight: 41 lbs.
Length Closed: 35 inches.
Length Open: 60 inches.
Opening Force: 15,000 lbs.
Closing Force: 6,000 lbs.

RAM MODEL JL-30B (Hurst)
Characteristics
Weight: 27 lbs. 4 oz.
Length Closed: 22 1/4"
Length Open: 36"
Opening Force: 15,000 lbs.
Closing Force: 6,000 lbs.

RAM MODEL 23/45 (Genesis)
Characteristics
Weight: 33.3 lbs.
Length closed: 21.3 inches.
Length open: 44 inches.
Opening force: 42,615 lbs.
Closing force: 22,275 lbs.