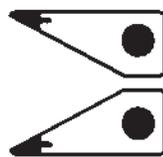


**INSTRUCTION MANUAL**

**TRANSFORMER  
TOOL**



**RESCUE  
TOOLS**

 **HURST**  
**JAWS OF LIFE®**

# PRODUCT SAFETY



# POLICY



Jaws of Life<sup>®</sup> products are designed and manufactured to provide excellent service when used for their intended purpose. Operator safety is a major consideration in the product design and operator manuals are provided to promote their safe usage. Additionally, operator training programs are offered by all authorized Jaws of Life Distributors and this company.

- **Power units and tools should be operated by qualified personnel only.**
- **Proper protective clothing should be worn. (i.e. bunker gear, gloves, helmets, face shields, etc.)**
- **Inspect the equipment for obvious broken or missing parts or damaged hose before and after use.**
- **Keep clear of all moving parts.**
- **When pulling, keep clear of chains.**
- **When lifting, always use cribbing to shore and stabilize the object being lifted.**
- **When storing tool, compensate for possible pressure buildup from thermal expansion of hydraulic fluid by connecting the two short hoses on the tool, completing the circuit. Move trigger in both directions to equalize the pressure on both side of the piston.**

## HYDRAULIC

**FLUID:** *Jaws Of Life*<sup>®</sup> hydraulic fluid\* is a custom blended phosphate ester fluid. In case of skin contact, wash off with soap and water. In case of eye contact, flush with generous amounts of running water. If discomfort persists following flushing, see physician for symptomatic treatment.

**DO NOT OPERATE EQUIPMENT WHEN TIRED, STAY ALERT.**

\*Monsanto product name MCS-2361 - MSDS on file.

Hale Fire Pump Company urges all users of Jaws of Life products to read the Instruction Manual and to seek operating instructions from qualified instructors before attempting to use the products.

Although most safety precautions are addressed in factory authorized training programs, as well as throughout this manual, particular attention is directed to the following:

- **When removing the tool from a multi-tool circuit, be sure the other tools are not in use and the dump valve is in the "closed" position before disconnecting unit.**
- **Be sure to follow all maintenance procedures.**
- **Return your warranty registration card.**
- **Use only factory authorized service parts.**
- **Use only Jaws of Life fire resistant hydraulic fluid.\* Do not substitute other brands of hydraulic fluid because characteristics may differ. Fluid such as brake fluid or automatic transmission fluid will not work in the Jaws of Life system and will damage the equipment.**
- **Ear protection should be worn when operating the 2-cycle and 4-cycle units.**

# ASSEMBLY/STORAGE



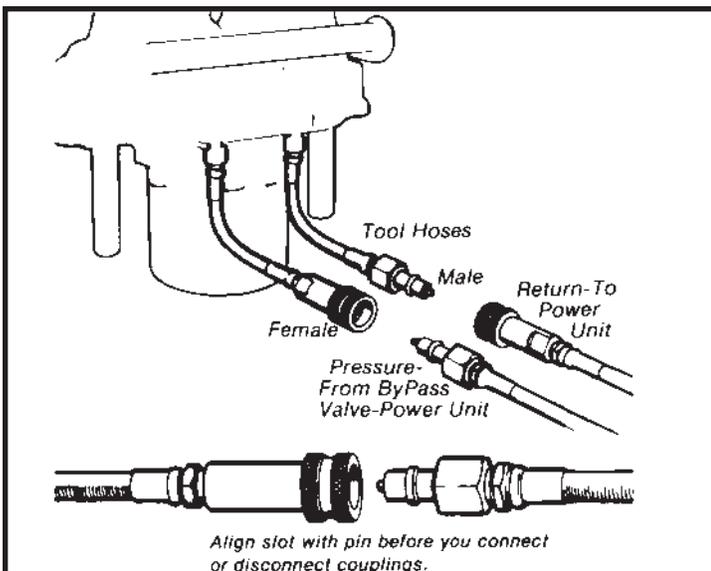
## Transformer



### 1

Remove Rescue Tool from carton; inspect unit and confirm that all bolts and screws are securely fastened, and the unit has not been damaged in shipment.

Attach enclosed jaws to both arms to ensure interchangeability and fit of jaws to the arms of the tool. Attach automotive jaws to the tool and insert jaw retainer pins.



### 2

Before starting the hydraulic power unit, connect the hoses from the power unit to the tool as shown.

# 3

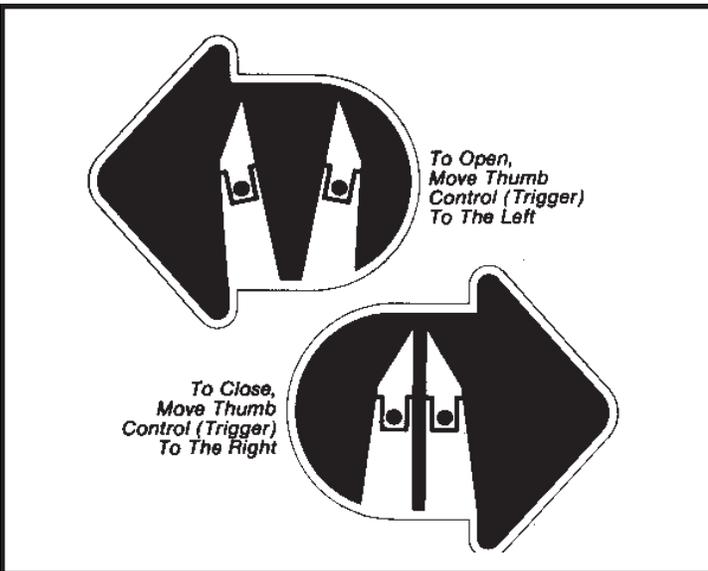
To operate the quick disconnect couplings, align the slot in the sleeve with the pin. Slide the sleeve back to connect or disconnect the coupling. After connecting the coupling, rotate the sleeve  $\frac{1}{4}$  to  $\frac{1}{2}$  turn to lock the coupling.

# 4

Refer to the applicable Power Unit Manual, start the power unit and apply hydraulic pressure to the tool. Operate the tool by moving the trigger on the control valve to the left to open the arms and to the right to close the arms. If the tool does not operate, make sure the quick disconnects are properly connected as per step 3 then, if needed, refer to the troubleshooting section of this Instruction Manual.

# 5

For initial start-up and after service/maintenance, operate the tool open and closed several times to purge air from the system.





# 6

To attach the chain and shackles accessories for pulling operation, slip chain shackle over jaw and insert the long fas pin to lock shackle to arm.

Make sure both hooks are facing the same direction, up or down to prevent the arms from twisting.



# 7

After use, position the arms to a slightly open position for storage. Remove hydraulic pressure from the tool and connect the two short hoses to each other. Move the thumb control in both directions to equalize pressure. Protect the unit from moisture or store in a moisture free location. Secure in adequate storage space to prevent tool damage and kinking of hoses.



# 8

Should you have to contact us about your Rescue Tool, refer to the tool serial number (found on the tool). This identification will expedite any service you may require and will also enable us to keep your records current.



# 9

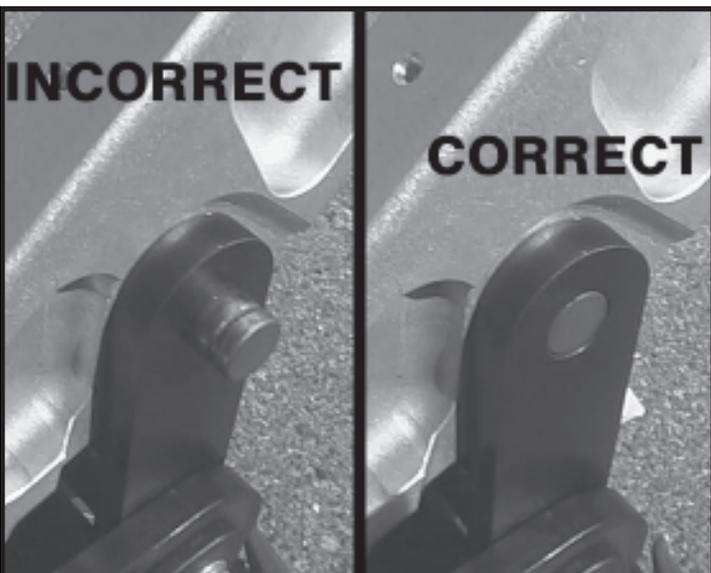
To change arms, place the tool in the fully open position.

Remove four grooved arm pins. Both arms have pins at each pivot point - link and pivot bar. Remove the link pins first, then the pivot pins.



# 10

Remove the arms and replace with another set of arms. Replace the grooved pins in the pivot bar first, then align and insert the pins in the link. All transformer tool grooved pins are the same, and may be inserted into any pin location. If necessary, replace the tips on the arms.



# 11

**CAUTION:**

Make sure the grooved pins are **flush** in each pin location. Any protrusion of the pins may cause improper operation and possible damage to the tool.

# SPREADING/PULLING/



# LIFTING



# Transformer

**NOTE: 40" arms are for SPREADING only, DO NOT attempt pulling operations with these arms.**



## 1

To raise a car roof, insert the jaws of the Rescue Tool between the roof of the automobile and the top of the door; hinge side. Move the operating thumb control to the "open" position, and open the jaws. The tool will open sufficiently to survey the interior of the vehicle.



## 2

Operate the thumb control to open position, opening the jaws only wide enough to grab the front edge of the door. Close jaws and pinch the door edge. Rotate the tool and open the hinge side of the door.



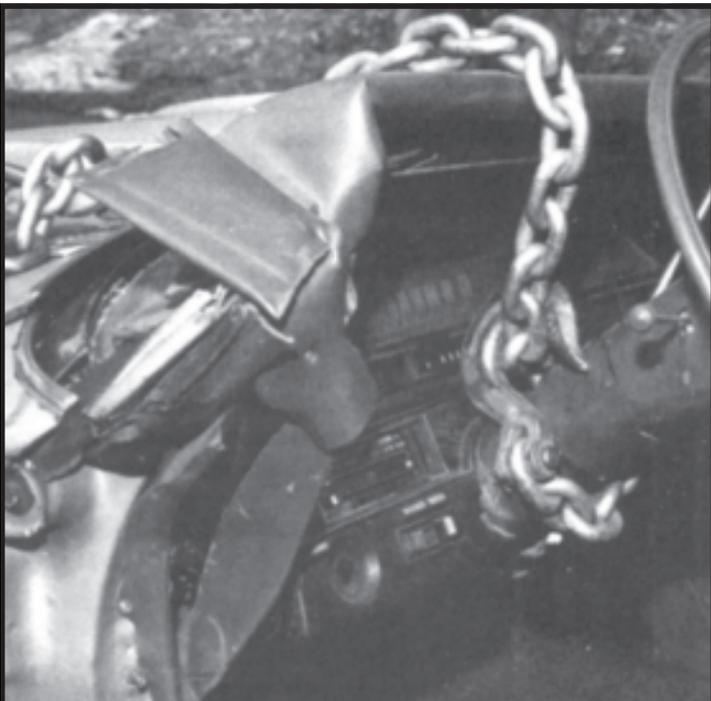
# 3

After creating the opening by pinch-pry operation, insert the jaws between the frame and door (above or below the hinge or lock). Move the operating thumb control to the "open" position. If the opening is not large enough, repeat steps 1 and 2.



# 4

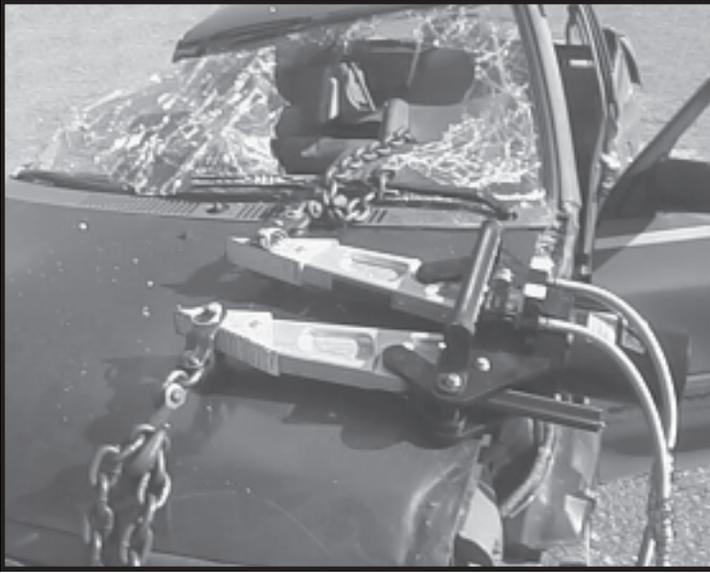
For additional access, push the front seat backward. Insert the jaws of the Rescue Tool between the front door frame and the front edge of the seat and open the arms. Seat contact should be slightly lower than door frame.



# 5

To lift a steering column:

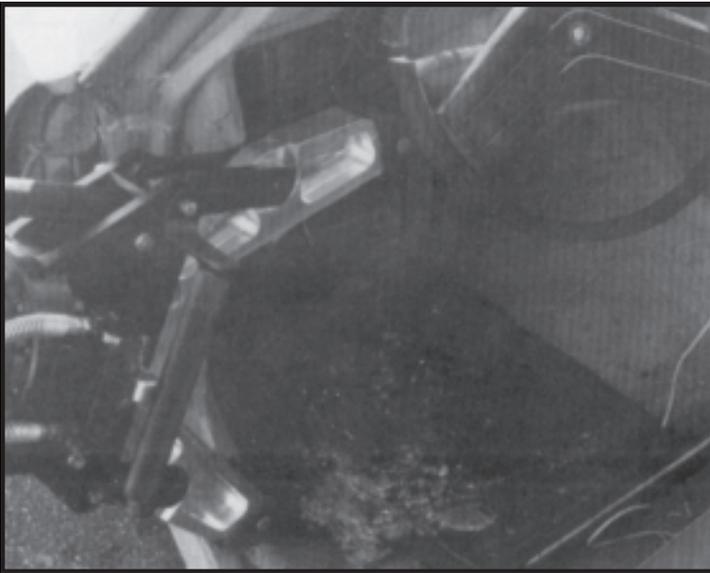
- a. Open tool to maximum spread.
- b. Place shackles over ends of arm. Insert shackle pin through shackles.
- c. Wrap chain around steering column and slip hook over chain. Insert opposite end of chain into hook on tool shackle.
- d. Attach the other chain to body frame of car. Attach opposite end of chain to hook on tool shackle. Make sure both hooks are facing in the same direction to prevent the arms from twisting.
- e. Adjust chain length at grab hooks until all slack is removed from chain and the rescue tool is resting on the car hood.



# 6

**NOTE: 40: arms are for SPREADING only. DO NOT attempt pulling operations with these arms.**

Lift steering column by closing tool. If the steering column has not been pulled far enough from the victim when the jaws have fully closed, open jaws and shorten chain length by adjusting chain at grab hooks until slack has been removed. Close the tool to pull steering column out a greater distance from the victim.



# 7

The steering wheel can be displaced several inches by pushing against the rocker panel and column from the inside.



# 8

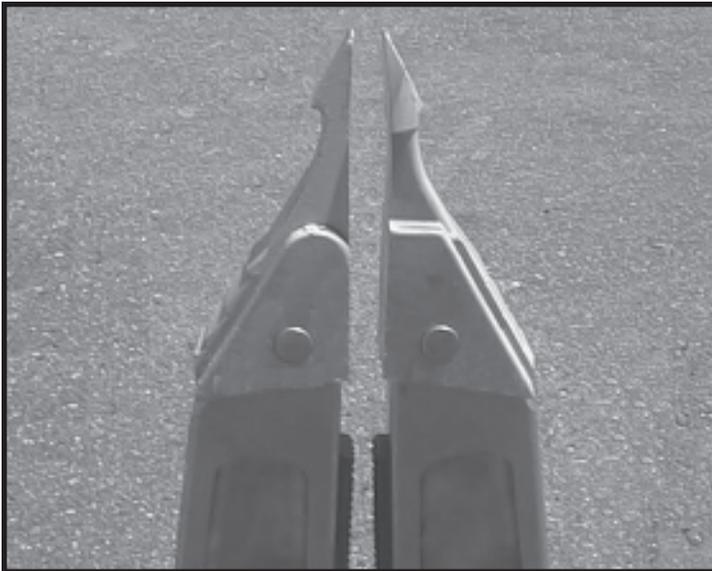
To lift an object or vehicle with a tool, always use cribbing/shoring. Should tool slip or need to be repositioned, weight of object or vehicle will rest on cribbing.

**Remember: Lift and inch - crib an inch.**

# CUTTING



# Transformer



## 1

When cutting an access hole through metal with the Rescue Tool, remove the automotive spreading jaws and attach the cutting jaws. Attach the wide, smooth jaw on one arm and the narrow, concave jaw on the other arm.\* The tool will cut in the direction of the narrow jaw when cutting.

\*Recheck jaw retainer pins' position. The pins must pass through jaws and arms before using tool.



## 2

Use any existing opening to begin cutting with the Rescue Tool. If no opening exists, use the weight of the tool to penetrate the surface. If necessary, any other piercing tool may be used for initial hole.



# 3

Operate the thumb controls to the "open position, spreading the arms of the Rescue Tool and cutting the surface.



# 4

Repeat this cutting procedure, making an "L" shaped cut.



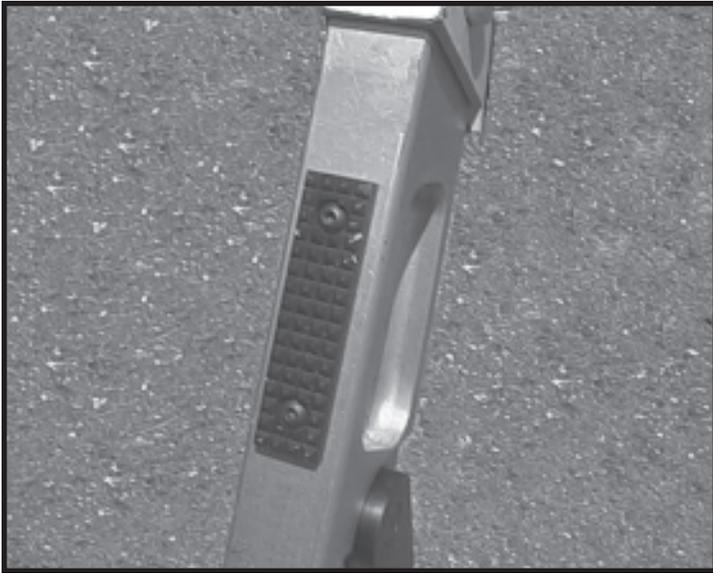
# 5

Remove the narrow cutting jaw, and replace with the other spreading jaw. Pry "open" the resulting flap to allow entry.

# CRUSHING



# Transformer



**1**

32" Transformer spreading arms are equipped with crushing plates on the inside of the arms.



**2**

Crushing plates can be used to crush doors or fenders. This can create additional access for removing doors or for other rescue tools.

# TROUBLESHOOTING

## AND GENERAL MAINTENANCE



# Transformer

## GENERAL MAINTENANCE GUIDE\*

### DAILY MAINTENANCE/INSPECTION

- Inspect carefully for Hydraulic leaks
- Inspect hoses and couplings for wear and damage.
- Check control valve operation for easy operation and free return.
- Check inside frame for dirt and debris.
- Be sure all parts are clean.
- Check Jaws and all pins for damage.
- Check the unit that all nuts, bolts, retainer rings and screws are in place and securely fastened.

### STORAGE

- Protect unit against moisture.
- Store in adequate space to prevent damage to hoses, connectors or tool itself.
- **CAUTION: Before storage, move thumb control in both directions to equalize pressure in system.**

### AFTER USE MAINTENANCE

- Clean and lubricate.
- Check for wear or damage on all parts.
- Check that all nuts, bolts, retainer rings, screws and pins are in place and securely fastened.

### 6 MONTH MAINTENANCE

- Pressure check all valve and internal seals. Replace as required.
- Check Aircraft and Auto Jaws for damage and wear. Replace as required.
- Check hose and couplings for damage. Replace as required.
- Check grooved pins holes in arms for damage. Replace as necessary. Lubricate.
- Check each arm and lick for detent balls in each location ( 8 places total). Replace as necessary.
- Clean tool thoroughly.

### ANNUAL INSPECTION\*

- Pressure check all valve and internal seals. Replace as required.
- Check operating pressure, unloaded through full operating cycle.
- Check Auto and Aircraft Jaws for chips, cracks or other damage.
- Check force output of tool under load in opening and closing modes, at  $18'' \pm 2''$  open at tip of jaws.
- Replace operating decals.
- Replace hoses, couplings and fasteners as required.
- Check grooved pins holes in arms for damage. Replace as necessary. Lubricate.
- Check each arm and lick for detent balls in each location ( 8 places total). Replace as necessary.
- Clean and lubricate.

*\*Call your authorized Jaws of Life Distributor for maintenance and annual inspection care.*

## TROUBLESHOOTING GUIDE\*

### PROBLEM

Tool operates erratically, slowly or fails to operate.

Tool has apparent loss of power

Tool fails to operate

Tool operates in reverse

Jaw Retainer Pin fails to stay in arm

Grooved Pin fails to stay in arm

### CAUSE

- Hydraulic Fluid is low
- Air in Hydraulic System
- Valve thumb control lever is loose

- Leak in valve seals
- Internal "t" Ring seal failure
- Piston failure

- Coupling failure - fails to open internal check when connected
- Pilot operated check valve fails to open
- No flow from Power Unit

- Hoses reversed on power supply
- Hoses reversed on tool

- Detent ball on pin is jammed with dirt or grit
- Spring on detent ball broken

- Detent pin on arm is broken
- Detent pin on link is broken

### REMEDY

- Check fluid level in reservoir and add fluids as required
- Fully open and close tool several times.
- Tighten or replace screw on thumb control lever, or replace thumb control lever assembly as required.

- Replace all "O" Rings in valve and in between valve and D.P.C.V. valve block.
- Remove internal seals and replace with new "T" seals.
- Remove and replace piston.

- Replace coupling

- Replace dual pilot "O" Rings or springs as required.

- Check power unit and repair as required.

- Reconnect hoses properly per Power Unit Instructions.
- Reconnect hoses properly on tool.

- Flush dirt or grit from pin until ball moves freely; replace pin if necessary.
- Replace jaw retainer pin.

- Replace detent spring plunger pin on arm
- Replace detent spring plunger pin on link

*\*Call your authorized Jaws of Life Distributor for maintenance and annual inspection care.*

# ACCESSORIES

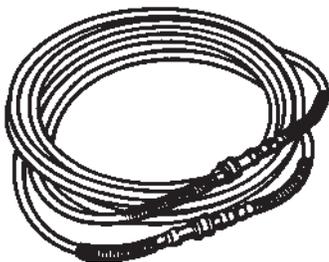
## ENHANCE YOUR SYSTEM WITH THESE ACCESSORIES.

Jaws of Life® leads the industry in innovation-- not just in hydraulic rescue tools, but in a broad range of accessories that complement the industry's most complete line.



### Attachment set

Real-life extrications often require more than standard tips. This handy set increases the capability of your system. The set includes a conical point, base plate, V-block and wedge that mount directly to any of the rams. An adapter permits the base plate to be used with the JL-32B and JL-27 for lifting applications. The components are investment cast tool steel. The set is enclosed in an impact-resistant plastic storage/carrying case, and includes shackle pins.



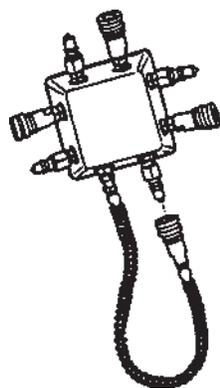
### Hose

Nonconductive thermoplastic twinned-line Jaws of Life hose is lightweight, kink-resistant,

permanently bonded and provides superior flexibility. This distinctive orange hose is completely synthetic and Kevlar reinforced, and meets or exceeds SAE 100R8. It resists deterioration and abrasion, and is easy to clean. Proof-tested to 20,000 psi (1,380 bar), our hose provides a 4:1 operational safety factor, and is available in 100-foot (30.5m), 30-foot (9.15m) and 16-foot (4.9m) lengths with quick disconnects.

### Fire-resistant hydraulic fluid

Jaws of Life synthetic fluid is the best fluid available for hydraulic rescue applications. It is a fire-resistant, noncorrosive, electrically nonconductive, rust preventive lubricant that maintains its viscosity over a wide range of temperatures. Jaws of Life hydraulic fluid resists deterioration over time and has proven itself as the hydraulic fluid of choice for two decades. It is available by the case (7 quarts/6.65 liters per case).



### Multi-tool manifold blocks

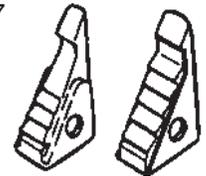
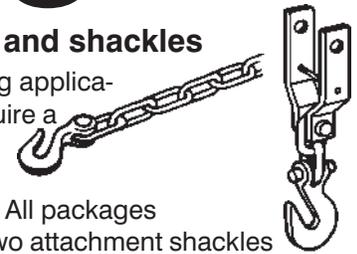
Connect two or three Jaws of Life tools to a single power unit and simplify hydraulic hose layout. These patented multi-tool manifolds allow automatic pressure

change-over to any of the connected tools. Constructed of rugged alloy steel with black oxide finish and high visibility reflector plate. Multi-tool manifolds are available with or without pressure dump valve.

### Chains and shackles

Pulling applications require a chain-and-shackle package. All packages include two attachment shackles and two 6-foot sections of chain with slip hooks. Shackles attach to Jaws of Life tools with quick-release pins.

- Package A: JL-16, JL-24
- Package B: JL-32B, JL-27, rams
- Package C: Extension chain for JL-32B, JL-27



### Entry tips

These tips originally designed for aircraft skin applications are useful in piercing, cutting and slitting sheet metal, wallboard and other panel type barriers such as trains, planes, buses, ship bulkheads and mobile homes. They interchange quickly with standard automotive style tips of JL-32B and JL27.



### 2-cycle additive lubricant

This synthetic lubricating oil comes in convenient 2-ounce bottles designed to mix with 1 gallon of gasoline. Regular use assures proper gasoline mixture for smooth operation and extended life, (24 bottles/case).

### Reels

Available with manual or electric rewind, space-saving reels come with 100 feet (30.5m) of hose to allow quick, efficient operation and orderly hose storage. There is no need to remove the power unit from the vehicle. Electric 12V DC rewind model operates from the emergency vehicle's electrical system. Both units are 18 inches (457mm) high and rest on a 14-inch (356mm) mounting base. The electric rewind model is 17 inches long by 23.25 inches wide (432mm by 590mm); the manual model is 16.5 inches by 18 inches (419mm by 457mm).



# **HALE**

# **IDEX**

**IDEX CORPORATION**

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**HURST Jaws of Life**  
**Hale Products, Inc.**

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