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## Auto Extrication

This section is intended to give the firefighter the basic information for the operation and normal maintenance of the Genesis Auto Extrication tools and accessories.


The Genesis Auto Extrication tools are carried by all Ladder companies and the Heavy Rescue Squads. The tools carried by the Ladder companies are used to supplement the Rescue Squads and allows a Ladder company to act as a stand alone company at an extrication scene in case of an emergency.

## Mach III Simo Power Unit

The Mach III unit is powered by a 4 HP Honda motor. The motor is a standard 4 cycle motor which uses regular unleaded gas. Some of the features of the power unit are:

1. Gas shutoff switch, unit will run for quite some time with gas off.
2. "Low oil shutoff". With low oil it won't start or when running it will stop if the level gets to low.
3. Choke, used when the engine is cold for starting and is moved to the run position when started. While being stored on the apparatus these units should not be left in the full choke position. This will prevent flooding of the engine prior to use.
4. On / off switch located on the front of the engine near the pull start.
5. Throttle lever located under air cleaner. This should be in the "rabbit" or full throttle position.



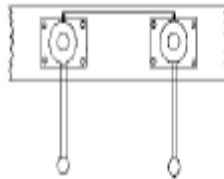
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The Mach III power unit has a dual pump hydraulic system integrated into the unit. The hydraulic pump operates at 10,000psi. Any size leak can be dangerous at that pressure!! If a leak is detected, stop the motor or place the fluid selector lever in neutral immediately.

The hydraulic fluid in this tool is vegetable based oil. The unit holds 1 gallon of fluid.

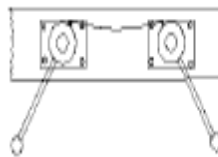
One or two tools can be connected and operated independently of each other. The hydraulic unit has two separate internal pumps.

When the selector handles are in the straight out or neutral position tools or hoses can be connected or disconnected.



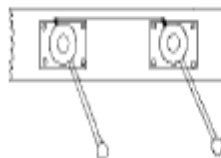
**Neutral Position:** Used when starting or stopping the engine, or when changing tools.

When the selector handles are in the operator or turned out position two tools can be operated. Note: the tools can be switched from neutral to operate independently of each other.

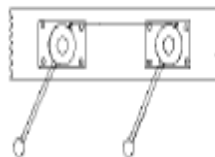


**Simo Position:** Allows operation of two tools at the same time.


Over-drive, the separate internal pumps can be internally connected and will operate one tool. This gives the tool twice the flow at the same pressure. The tool will operate faster (open and lose) but will NOT be more powerful.



**Overdrive Right Side:** Allows one tool to be used on the right hose with added speed.



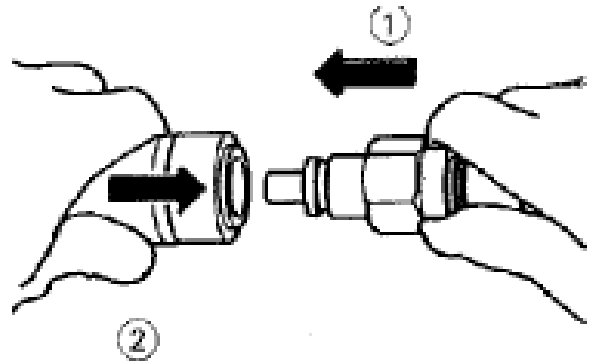
**Overdrive Left Side:** Allows one tool to be used on the left hose with added speed.

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## Hydraulic Hose

Ladder companies carry 2 – 25’ sections of hydraulic hose.

When connecting hoses connectors will turn from the open or unlock position to the lock position. At one end of the rotation there is a small pin that will line up with a notch in the connector. This lineup will allow for the connector to open. After connecting any tool be sure to turn the connector to prevent disconnection when the coupling is dragged across the ground.



All Genesis hoses have a pressure relief built into the male end. If the uncoupled hose is pressurized or if a hose becomes uncoupled during operation hydraulic fluid will flow out of the male coupler end. This is normal and all the operator needs to do is place the power unit selector for that hose in neutral and re-couple the hose.


## General Maintenance

### Daily and After Each Use

- Wipe down all equipment to remove debris
- Clean male and female couplers
- Check hydraulic fluid level
- Check engine fluid levels (See Engine Manual)

### Weekly Inspection & Maintenance

- Run the power unit
- Check all couplers and fittings for tightness
- Run each tool and build full pressure
- Check handles and guards, tighten if necessary
- Check tightness of reservoir bolts

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## Cleaning the Couplers

Dirty couplers allow dirt to get into the hydraulic system requiring more frequent fluid changes. Dirty couplers are difficult to connect and lead to further complications. To clean a coupler, we recommend immersing it in hydraulic fluid and agitating it until the dirt is removed. Petroleum based penetrating oil will also work. (WD-40).



## Genesis S35 Spreader


The spreader is designed for spreading body parts on vehicles. To displace doors, roofs, door posts, and other obstacles encountered during rescue operations.

### Technical Data:

Weight:	35 lbs
Opening:	24 in
Max spreading force:	25,000 lbs
Max pulling force:	10,000 lbs



The dark tips should be used for most spreading or crushing operations but the serrated edges may be used if needed. The serrations on the inside of the tool arms can be used to crush pipe or any reasonable object that is leaking fluid.

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## Genesis C-130 CUTTER

The cutters are designed for cutting body parts on vehicles. To cut door or roof pillars, door posts, hinges and side impact bars.

### Technical Data:

Weight: 29 lbs  
 Opening: 5.13 inches  
 Max cutting force: 90,000 lbs



The greatest cutting force will always be located at the base of the cutting section, closest to the tool. Always attempt to keep the tool and cutters at 90 deg to any cutting surface. Never allow the blades to rotate around to a position where cut material can become jammed between the cutting blades which could cause them to fracture and fly off injuring firefighter or patient.


## Genesis C-30 MINI CUTTER

### Technical Data:

Weight: 8 lbs  
 Opening: 1.5 in  
 Max cutting force: 30,000 lbs

There is one handle with the control selector located inside. This cutter is designed for very small / tight jobs. Break pedals, steering wheels, gear shifter or other small sized metal parts.



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## 41" PUSH / PULL RAM

### Technical Data:

Weight:	35 lbs
Length closed:	25 in
Length open:	41 in
Max pushing force:	32,000 lbs
Max pulling force:	10,000 lbs



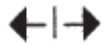
This ram will extend 16 inches. The head on the ram shaft is removable and exchangeable. When pushing, the ram can kick out or slip on the metal of a car, only push as much as needed. Don't push to the end of stroke just to see what will move.

### Hydraulic Tool Operation

The operation of all hydraulic tools is controlled by a pushbutton "dead man" control.

Neutral Position: The push-button is held in the center position when not in use.

**Opening:** Press wedge-end knob (bottom button)- spreader arms open.




**Closing:** Press spherical knob (top button)- spreader arms close.



**Release push-button:** The spreader arms stop moving immediately.

Every Genesis tool has an internal pressure relief, which is located on the handle between the hydraulic hose connections. There is a little hole located between the hoses; this is where the fluid will exit the tool if the system is over pressurized. The fluid leaving the tool exits at very low pressure. It will



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spray around but will not hurt the operator. The main cause of pressure relief is a hose coupling becoming disconnected when the system is charged.


Always keep hands away from moving parts. All these tools can cut off or crush ANY human part that is placed in their path! This includes the firefighter or trapped patient. Always use caution when operating any tool around other people.

ANY ONE CAN SAY **STOP** DURING AN EXTRICATION IF THEY SEE AN UNSAFE ACT OR SEE THE PONTENTIAL FOR INJURY TO FF OR VICTIMS.

## RAM ACCESSORY KIT

Used to extend the reach of a ram.  
The kit includes interchangeable heads for different gripping situations. Use only ONE extension at a time on any ram.



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## ROCKER PANNEL SUPPORT

The support is designed to spread the force of the ram over a wide area of the floor and “B” post. The rocker panel support has three positions so the ram can be adjusted to the correct location. The rocker panel support can be held in place by squeezing it with the spreader.



## QUIK CUT AIR HAMMER / IMPACT SOCKET KIT


### Technical Data:

Length:	10 in
Weight	6 lbs
Blows per minute:	2,200bps
Pressure range:	150-250 psi



Designed to cut sheet metal and through thick bolts. Has seven assorted bits depending on the application or material. When depressing the trigger makes sure that the tip of the tool is against an object. Internal seals can be damaged if the trigger is pressed and there is no resistance against the tip or if the maximum pressure of 250 psi is exceeded.



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## KODIAK VEHICLE STABILIZATION SYSTEM

The Kodiak Vehicle Stabilization System is a tensioned buttress system for stabilizing side lying and overturned vehicles. The Kodiak System is designed for quick deployment and set up.

### Technical Data:

Weight: 50 lbs  
 Two struts, from 27 to 42 inches.  
 Two 15-inch extensions.  
 Two 30-inch extensions.  
 Two ratchet straps with hook.  
 Two end attachments  
 Overall strut extension is from 27 to 87 inches.



Remove strut from bag, add needed extension, set adjustable pin, attach ratchet strap to car, tighten strap and strut is set. The red colored head is designed to grip in frame holes, along flat edges and grip into sheet metal. The system can be setup in less than one minute.