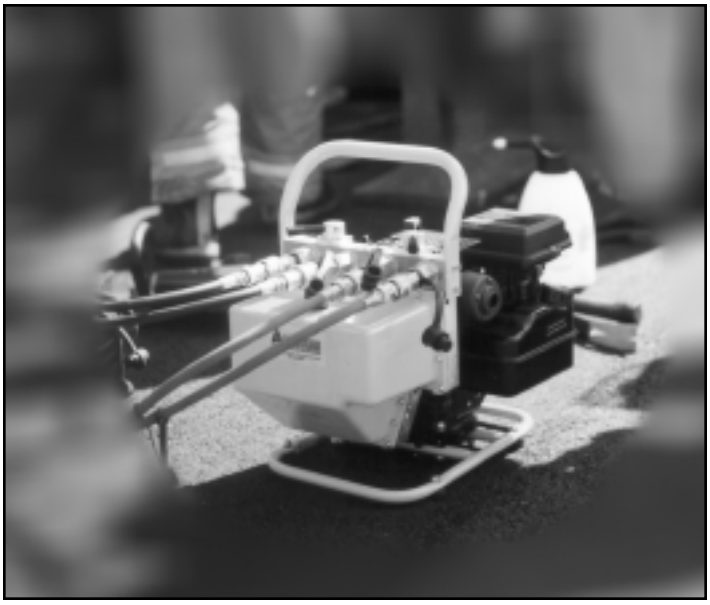
Mach III Mini Simo
Briggs & Stratton
ART.059.991.3B

Mach III Mini Simo
Honda
ART.059.991.3H

Mach III Mini Simo
Electric
ART.059.991.3E

IIIMACH SERIES

USERS GUIDE



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Thank you for choosing equipment from **American Rescue Technology**. We strive to give our customers the latest technology available in rescue products; from the newest lightweight alloys, to the most innovative designs in the industry. We continually update and refine our products in order to offer the highest quality equipment at a reasonable price. **The Mach III Power Unit** is third party tested, **ISO 9001 Quality Assurance Certified and NFPA 1936 Compliant**. At **American Rescue Technology** we feel we offer the highest quality rescue equipment available; so do our customers! Thank you again for choosing **American Rescue Technology**.

Read Before Operating

Read and follow this manual and safety regulations prior to operation.

- Only trained and qualified personnel are authorized to use this power unit.
- Operator must wear protective clothing, helmet, eye protection and gloves.
- No modifications in shape or performance is allowed. Changing the pressure relief valve of the hydraulic power unit is not allowed.
- This power unit is designed for the use described in this manual. Other applications are not permitted.
- Before operating the power unit, all by-standers must be removed from area.
- This power unit should never be connected or disconnected to hydraulic hoses if pressure is present in the hoses.

Applications

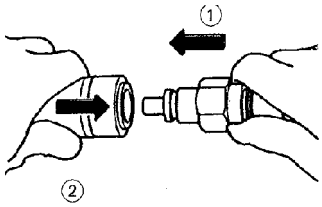
This power unit is designed to operate rescue tools with a "maximum operating pressure" of 10,000 psi or higher and use mineral base hydraulic fluid.

Connecting the Hoses

Remove the protective caps from the male (1) and female (2) coupler.

Connecting

Grasp the male coupling in one hand and with the other grasp the female coupler and draw back the sleeve, be sure the pin and slot are aligned. Bring the ends together and press. Release and turn the sleeve to ensure couplers are connected.

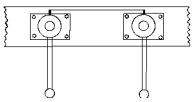


Disconnecting

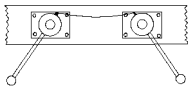
Grasp the coupler pair and draw back on the sleeve of the female coupler. Make sure the pin and slot are aligned and the coupler will disconnect. A few drops of fluid may be expelled. This is normal.

Operating Power Unit

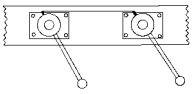
It is very important to read and understand how the pump valves work. This will prevent future problems. The Mach III Mini Simo power unit comes with a unique **"overdrive"** feature. (This will be discussed in the **"overdrive"** section.) The following diagrams show the different positions of the pump control valves.



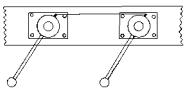
Neutral Position: Used when starting or stopping the engine, or when changing tools.



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



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.

The pump valves can also be set to operate one tool. By putting one side in the "on" position and one side in the "neutral" position, one tool can be operated and one tool can be changed.

Starting the Pump

1. Check for adequate hydraulic fluid level.
2. Put pump valves in neutral position.
3. Start engine. (According to Engine Manual) Hoses can be connected before or after starting engine.

Operating in Simo Position

After attaching tools to the hoses the pump valves can be switched to the Simo position or the single tool position. Operate the tools as specified in their manual. When changing a tool, switch the pump valve to the neutral position before disconnecting.

Operating in Overdrive Position

The Mach III Mini Simo power unit has a special overdrive feature. This allows the user to give added fluid flow to one tool. This allows the tool to operate faster giving it more power. This is useful when a difficult piece of material is encountered and extra power is needed to move or cut it.

By moving both levers to the right, the right side will operate in overdrive mode. The safety cable connecting the valves together allows the left lever to switch the pump to the overdrive mode on the right side, and vice-versa. When using one tool in overdrive, the tool on the other side can be changed.

Changing Tools While Pump is Operating

Tools can be changed while the pump is operating. Move the pump lever to the neutral position and disconnect the tool. Attach different tool and move lever to "on" position. Tool will be ready to use.

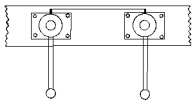
When Finished Using Power Unit

When finished using the tools, they should be in the retracted or closed position. Move pump valve levers to the neutral position and shut off engine. Store the unit with the valves in the neutral position.

Set-Up Procedure

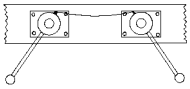
The following is a step-by-step set-up procedure for the Mach III Mini Simo power unit. Please read and understand all of the steps before proceeding.

1. Remove power unit from box.
2. Remove any packing material from power unit and clean.
3. Fill hydraulic reservoir with hydraulic fluid provided. Use of phosphate ester or ethylene glycol based hydraulic fluids will void warranty and ruin the hydraulic pump assembly.
4. Add engine oil. (If applicable) See Engine Manual.
5. Add clean unleaded gasoline to fuel tank. (If applicable)
6. Attach plug to units with electric motors. Turn switch to "OFF" position and plug into 220 VAC circuit.
7. Attach hoses to pump and connect ends together.
8. Put pump valves in "NEUTRAL" position. (See diagram)



NEUTRAL POSITION

9. Start engine. **(Read engine manual before starting)**
10. Switch pump valves to the simo position. This will circulate hydraulic fluid through the hoses and remove any air. Add hydraulic fluid to the reservoir as needed. Do not allow hydraulic fluid level to get too low. Allow fluid to circulate for about two minutes. **Note: A 100' hose will need approximately 1 gallon of hydraulic fluid.**



SIMO POSITION

11. Switch pump valves back to "NEUTRAL" position.
12. Shut off engine. Pump and hoses are ready for use.

Specifications

	Honda 4.0	Honda 5.5	Briggs 3.5	Electric 1.5
Length (in/mm)	17.5/445	17.5/445	17.0/432	17.5/445
Width (in/mm)	14.0/356	14.5/368	14.5/368	12.0/305
Height (in/mm)	18.5/470	18.5/470	18.5/470	15.5/398
Weight (lbs/kg)	65/29.5	71/32.3	65/29.5	70/31.8
Voltage (VAC)	NA	NA	NA	220
Amperage (No Load)	NA	NA	NA	4.5
Amperage (Full Load)	NA	NA	NA	8.0
Hyd. Fluid Cap. (gal/litre)	1.0/4.0	1.0/4.0	1.0/4.0	1.0/4.0
Op. Press. (max. psi/bar)	10,000/700	10,000/700	10,000/700	10,000/700
Fuel Capacity (gal/litre)	.66/2.6	.95/3.8	.48/1.9	NA
Part Number	ART.059.991.3H	ART.059.991.3H5	ART.059.991.3B	ART.059.991.3E

General Maintenance

Following are the recommended service intervals for your new rescue equipment. By following these guidelines you will be assured many years of reliable service.

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

We recommend running the power unit weekly and doing the following checks.

- 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

Yearly Maintenance

We recommend having a yearly inspection and service done by a qualified American Rescue Technology technician.

- Cleaning and inspection of power unit
- Change hydraulic fluid and pressure test
- Adjust pressure if necessary
- Service engine or motor according to manual
- Replace any damaged parts

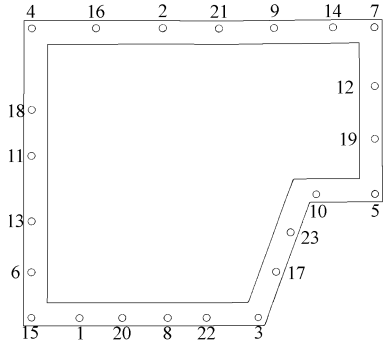
Cleaning the Couplers

Below is a photo of a dirty female coupler. 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) These are available in sprays and are well suited for field use.

Clean dirty couplers with hydraulic fluid or a light penetrating oil like WD-40.

Tightening Reservoir Bolts

Tighten reservoir bolts to **65-70 in-lbs**. in the pattern below. Insert bolts and hand tighten. Use a torque wrench for final tightening. Uneven tightening could cause warpage on the reservoir bolt flange.



Troubleshooting

Problem	Possible Cause	Action
Power unit fails to build pressure.	External leak in system. Internal leak in pump or valve. Internal leak in system component.	Check all connections and components. Contact dealer or American Rescue Technology. Repair or replace leaking component.
Rescue tool will not open or close.	Valve not in pressure position. Load exceeds tool rating. Flow blocked by loose coupler connection. Fluid level too low. Filter screens clogged. Pump or valve failure	Move valve lever into pressure position. Decrease load or use higher capacity tool. Release pressure and check coupler connections. Fill reservoir to proper level. Remove reservoir. Clean or replace filter screens. Contact dealer or American Rescue Technology.
Rescue tool opens and closes erratically.	Air in fluid. External hydraulic leak Relief valve failure Pump worn or damaged Sequencing valve failure	Tighten connections. Purge air from system. Repair or replace damaged components. Purge air. Contact dealer or American Rescue Technology. Contact dealer or American Rescue Technology.

Parts and service are available through your local dealer or contact American Rescue Technology, Inc.
Before disassembling the power unit contact your local dealer or American Rescue Technology, Inc.

The Mach III Mini Simo is made in Austria by Weber Hydraulik GmbH