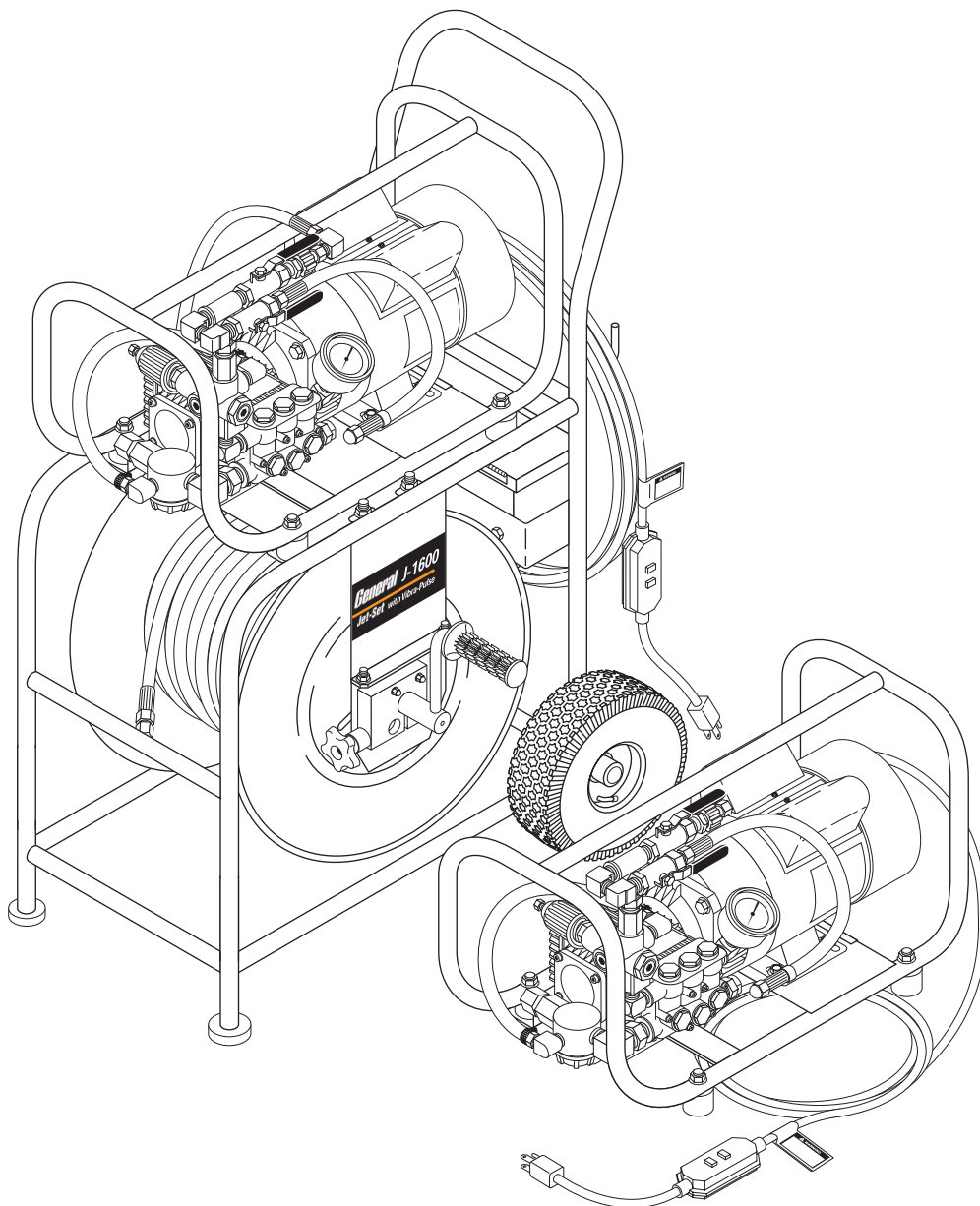


# *General's* JET SET™

## OPERATOR'S MANUAL *J-1400 and J-1600*



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**General Wire Spring Co ■ USA ■ 1-412-771-6300 or 1-800-245-6200**

Any alteration to equipment without prior written approval of the manufacturer will cancel any warranty or liability extended to the purchaser by manufacturer. For approval or assistance contact General Wire Spring Co.

8.914-322.0 / 97-6115

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Model Number _____
Serial Number _____
Date of Purchase _____
The model and serial numbers will be found on a decal attached to the machine. You should record both serial number and date of purchase and keep in a safe place for future reference.

## INTRODUCTION

Thank you for purchasing a General's Jet Set™.

This manual covers the operation and maintenance of models J-1400 and J-1600. All information in this manual is based on the latest product information available at the time of printing.

General Wire Spring Co. reserves the right to make changes at any time without incurring any obligation.

### Owner/User Responsibility:

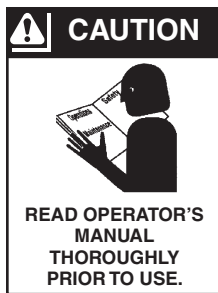
The owner and/or user must have an understanding of the manufacturer's operating instructions and warnings before using this General's Jet Set. Warning information should be emphasized and understood. If the operator is not fluent in English, the manufacturer's instructions and warnings shall be read to and discussed with the operator in the operator's native language by the purchaser/owner, making sure that the operator comprehends its contents.

Owner and/or user must study and maintain for future reference the manufacturers' instructions.

**This manual should be considered a permanent part of the machine and should remain with it if machine is resold.**

**When ordering parts, please specify model and serial number.**

## MACHINE SAFETY



**CAUTION:** To reduce the risk of injury, read operating instructions carefully before using.

1. Read the owner's manual thoroughly. Failure to follow instructions could cause malfunction of the unit and result in death, serious bodily injury and/or property damage.
2. All installations must comply with local codes. Contact your electrician, plumber, utility company or the selling distributor for specific details. To comply with the National Electrical code (NFPA 70) and provide additional protection from risk of electric shock, the machines are equipped with a UL approved ground fault circuit interrupter (GFCI) power cord.



**WARNING:** Flammable liquids can create fumes which can ignite causing property damage or severe injury.

**WARNING:** Risk of explosion -- do not spray flammable liquids.

3. Risk of explosion - do not spray flammable liquids or operate in an area where flammable or explosive materials are used or stored.



**WARNING:** Keep water spray away from electric wiring or fatal electric shock may result.

4. To protect the operator from electrical shock. The machine is equipped with a Ground Fault Circuit Interrupter (GFCI). The use of an additional extension cord by the operator should not be used as it will not provide protection to the operator of electrical shock. The machine must be electrically grounded. It is the responsibility of the owner to connect this machine to a UL grounded receptacle of proper voltage and amperage ratings. Do not spray water on or near electrical components. Do not touch machine with wet hands or while standing in water. Always disconnect power before servicing.
5. Grip cleaning wand or hose securely with both hands before starting the cleaner. Failure to do this could result in injury from a whipping wand or hose.



**WARNING:** High pressure stream of fluid that this equipment can produce can pierce skin and its underlying tissues, leading to serious injury and possible amputation.

6. High pressure developed by these machines will cause personal injury or equipment damage. Use caution when operating. Do not direct discharge stream at people, or severe injury or death will result.
7. Never make adjustments on machine while in operation.



**WARNING:** High pressure spray can cause paint chips or other particles to become airborne and fly at high speeds.

8. Eye safety devices, foot protection and protective clothing must be worn when using this equipment.
9. Do not operate with the valve in the off position for extensive periods of time as this may cause damage to the pump.
10. The best insurance against an accident is precaution and knowledge of the machine.

11. General Wire Spring Co. will not be liable for any changes made to our standard machines or any components not purchased from General Wire Spring Co.
12. Be certain all fittings are secured before using pressure washer.
13. Never run pump dry.
14. Inlet water supply must be cold and clean fresh water.
15. Do not allow children to operate the General's Jet Set™ at any time.
16. Protect from freezing.
17. When the machine is working, do not cover or place in a closed space where ventilation is insufficient.

## ASSEMBLY

Upon arrival, inspect the shipping crate for damages. Uncrate and examine all parts. Note any damage to machine or components for claims against freight carrier.

Jets have antifreeze in the pump to protect it from freezing conditions during shipment and storage. If machine will be stored and operated in a cold climate, follow Freeze Protection instructions on page 9.

## PRE-OPERATION CHECK

- Pump oil (SAE 30W non-detergent oil)
- Cold clean fresh water supply (6 gpm • 5/8" (15.875 mm) • 20 psi)
- Hose, nozzle
- Water filter (intact, non-restrictive)

## SET-UP PROCEDURES

These machines are meant to be used at or near the working area and under operator supervision. If machine must be located out of sight of the operator, special controls may be required for proper machine operation and operator safety.

Locate equipment on a solid level area with slopes for drainage. Avoid areas where water can be sprayed at machine. Before using the jet, make sure there are no impurities in the incoming water supply. Turn the water source on for at least 15 seconds, to remove any possible debris in the water before connecting hose to water inlet swivel.

The inlet screen located inside the filter should be cleaned before each use. To clean the inlet screen, unscrew cap beneath the filter, remove the screen and rinse thoroughly with water. Then replace screen.

Connect one end of a garden hose (not included) to the water faucet — water supply not to exceed 100 psi (6.9 Bar) and the other end to the water inlet of the jet machine. (See component identification drawings on next pages.) Use heavy duty 3/4" hose of no more than 50 ft.

(15m) in length. If run without an adequate water supply, the pump will cavitate. Cavitation causes the pump to vibrate, causing damage to the pump. **Note:** Lack of water supply can lead to seal damage, causing a loss of pressure and will void the warranty to the pump.

Maximum temperature from water source should not exceed 140°F (60°C). Using water hotter than 140°F (60°C) can cause damage to pump and void the warranty. If jet is being used to clear ice blockages, see instructions on page 8.

Remove oil plug on top of pump and replace with dipstick supplied.

## Hose Selection Guide

Select the proper hose diameter for the line to be cleaned. When using new hose, run water through it to clean it out before attaching the nozzle.

Hose Size (ID)*	Pipe Size	Typical Applications
3/8" or 5/16" (9.925mm to 7.938mm)	4" to 8" (102mm to 203mm)	Floor drains, septic lines, long runs
1/4" (6.350mm)	2" to 4" (51mm to 102mm)	Kitchen sinks, laundry drains, clean outs
1/8" (3.175mm)	1-1/2" to 2" (38mm to 51mm)	Small lines, bathroom sinks, tight bends

\*Inside Diameter

When selecting hose size, consider that pressure is lost as the water travels down the length of the hose. As the length increases, the pressure decreases. In addition, the smaller the diameter of the hose, the greater the loss of pressure per foot will be. As an example, at 2 GPM (.13L/sec) a 1/4" (6.350 mm) hose will lose 180 lbs. (12.4 bar) of pressure over 100 ft. (30.5m) of hose, yet a 3/8" (9.925mm) hose will only lose 25 lbs. (1.7 bar) of pressure over the same length and at the same flow rate. At 4 GPM, a 3/8" hose will lose 90 lbs. (6.2 bar) of pressure over a 100 ft. (30.5m) length. The gauge reflects pressure from the pump only, not pressure at the end of the hose. It is important to select the largest possible hose size in order to have as much pressure as possible at the end of the hose.

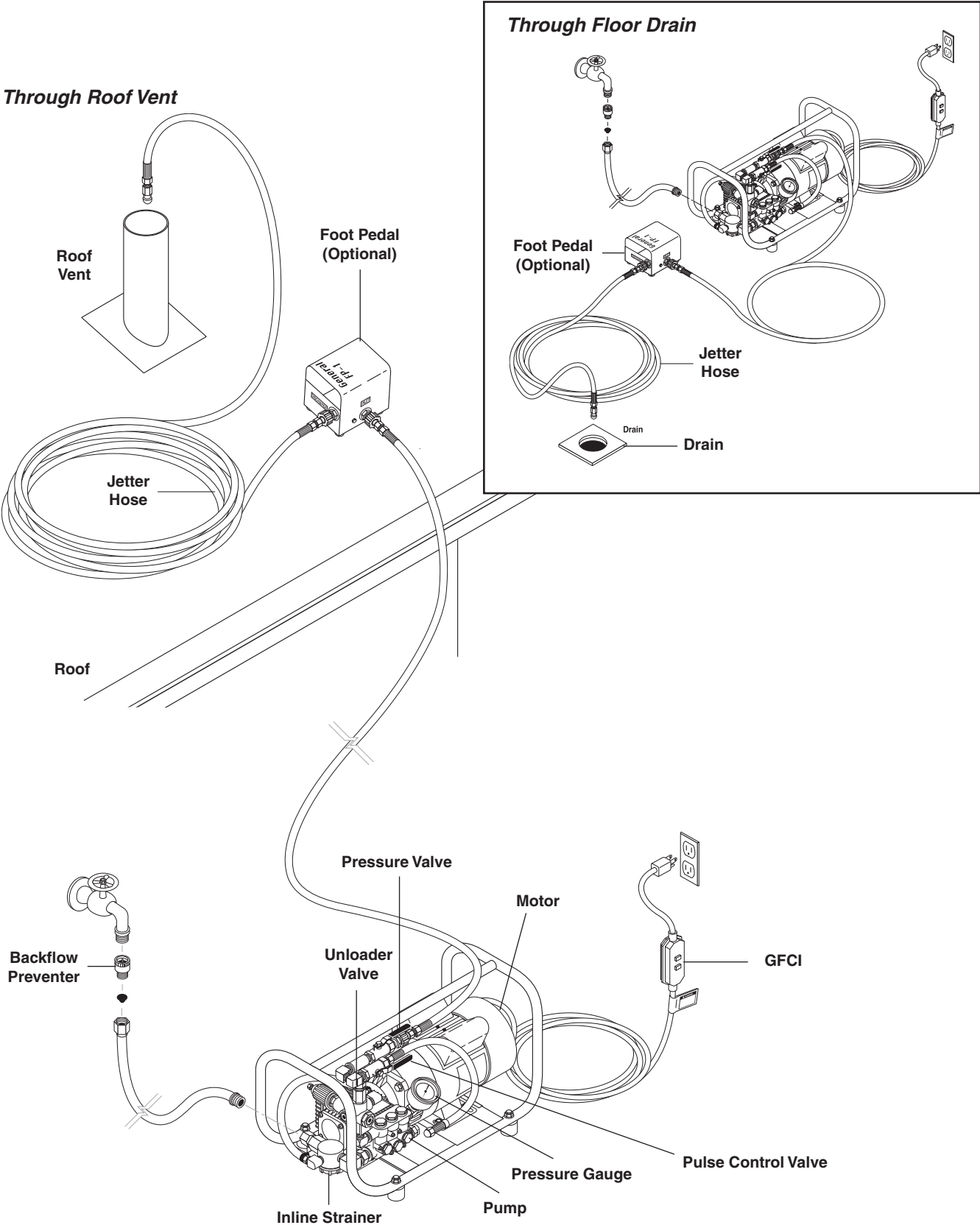
Hoses of the same diameter may be coupled together using the CC-1 coupling, but it is not recommended for use in lines smaller than 8" (203mm) in diameter. The long length of the hose connectors and coupling together can get caught in bends in the line.

Coupling two different size hoses can be done through the spray wand trigger or foot pedal.

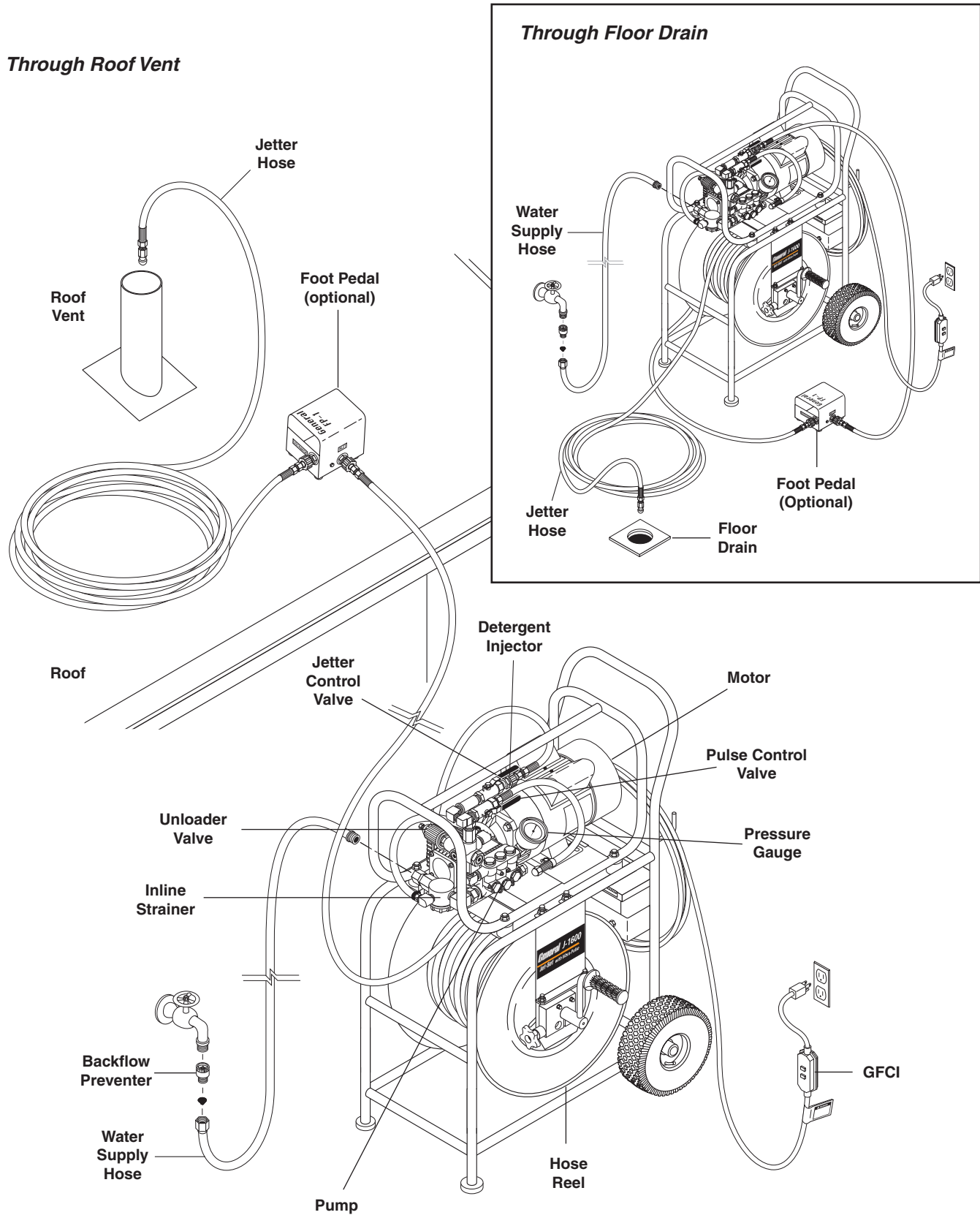
It is not advisable to have two different hose sizes coupled in a drain line. There is a tremendous loss of pressure when combined, aside from the difficulty of getting around bends.

The 3/8" (9.925 mm) and 1/4" (6.350 mm) hoses may be attached to the fitting in the core of the hose reel

**J-1400 COMPONENT IDENTIFICATION AND USE  
DRAIN CLEANING**



## 1600 COMPONENT IDENTIFICATION AND USE DRAIN CLEANING



using the swivel at one end of the hose. The 3/8" hose may also be attached directly to the accessory outlet by using a twist connect. The 1/4" and 1/8" (3.175mm) hoses may be connected directly to the accessory outlet if an adapter fitting (AD-1 or AD-2) is used between the hose and quick connect. Adapters may be ordered separately.

Often, the 1/8" hose is used in conjunction with the spray wand trigger to give the operator finger tip control. Remove the spray wand from the trigger and attach the 1/8" hose using the AD-3 adapter.

A foot pedal FP-1 valve is available that can be used as a safety shut-off valve for all hose sizes. See foot pedal section for installation and operating instructions.

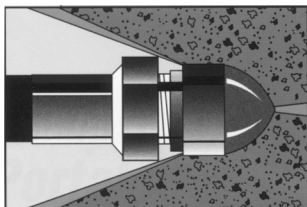
**Nozzles**

A number of types of nozzles are available for drain cleaning. Each has a different spray pattern. Some nozzles may have a hole in the front to cut through the stoppage. All will have holes in the back to drive the hose down the line and clean the walls of the pipe. A tight spray pattern (15°) has more driving power for long runs, a wide spray pattern (40°) does a better job of cutting the grease off the walls of the pipe. A combination of nozzles may be required to clear a line. Always turn off the machine and shut off valve before changing nozzles.

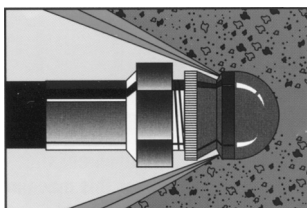
Make sure the nozzle you are using matches the pump size. A 3000 psi (207 bar) pump requires a different nozzle orifice than a 1500 psi (104 bar) pump. Mismatching nozzles with pump size will either cause too little pressure which may not clear the drain, or too much pressure which may damage the machine.

Check nozzles before and after each use for clogged holes which can cause pressure to increase to dangerously high levels and damage the pump. A clogged hole can be cleared by simply using the NCT Nozzle Cleaning Tool.

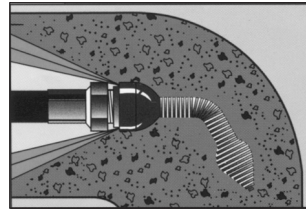
Use the nozzle selection guide to determine what nozzle you will need for various applications. Example: If a nozzle is stamped #22, it is a JN-22, 15° rearjets, 2 GPM (.13L/Sec) @ 1500 PSI (104 Bar) with a forward cutting



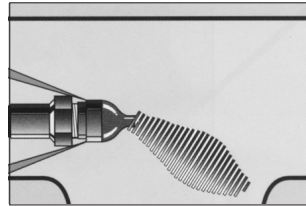
**Powerful penetrating nozzle cuts through grease and ice.**



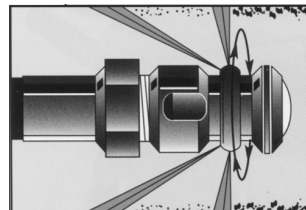
**Wide spray flushing nozzle cleans inside of pipe thoroughly.**



**Spring leader nozzle gets hose around tight bends and P-traps**



**Optional: Downhead nozzle takes hose down Tee's and around difficult corners.**



**Optional: Rotary nozzle scours walls of pipe crystal clear**

jet. Spring leader nozzles and down head nozzles are special nozzles to help aid hose travel through the pipe when there are alot of curves and bends.

**Rotary Nozzles**

Rotary nozzles are useful as a finishing tool. After the line has been cleared, you may switch to the rotary nozzle to more thoroughly clean the walls of the pipe. Use these nozzles only in a predominantly straight run since they are longer than regular nozzles and may get caught in tight bends.

**Pre-Operation Checklist**

NOZZLE SELECTION GUIDE			
	1/8"	1/4"	3/8"
15° No Forward Jet	31	41	51
15° w/Forward Jet	32	42	52
30° No Forward Jet	33	-	-
40° No Forward Jet	-	44	54
Spring Leader (JNSL)	4	5	6
Rotary Nozzle	-	4	-

\* Rotary Nozzles can be adapted to 1/8" and 3/8" hose using AD-3 or AD-4 adapters

- \_\_\_ Be sure you understand all safety precautions and have been trained to use the machine.
- \_\_\_ Wear goggles or a face shield to protect your eyes from spray or from any product of the spray.
- \_\_\_ Wear gloves, rubber boots and other protective clothing as required.
- \_\_\_ Be sure you understand all safety precautions for the detergent use.

- \_\_\_ Check the labels of any substance you will spray. If the label recommends any antidote or treatment, be ready to use it.
- \_\_\_ Check that all lines and hoses are clear.
- \_\_\_ Check that the machine is connected to an adequate water supply and that the water supply is on.
- \_\_\_ Check that traffic has not made the hose weak, worn or damaged. Check the hose for pinching or kinking. Replace any damaged hose.
- \_\_\_ Tighten all fluid connections securely.

## OPERATING INSTRUCTIONS

- Check all hoses for wear and damage. Tighten all connections securely.
- Check oil level of pump.
- To begin, turn the water faucet on fully and purge air from system.
- Insert end of the jet hose 2 to 3 feet into the drain line. Then open Jetter control valve.

**Warning:** *Never point the end of the jet hose at a person while operating.*

### Start-Up

1. Make sure that the Jetter control valve is turned on and water is flowing through the nozzle.
2. Plug in GFCI power cord to proper receptacle and voltage. **CAUTION:** Do not use additional extension cord with machine to avoid electrical shock to the operator.
3. Hold Jetter hose firmly to prevent it from whipping around.
4. Turn motor switch on.

### Vibra-Pulse

Pulsation makes the hose vibrate, helping the jet go longer distances and around tight bends easier.

The pulse control valve is located on the front of the pump. Simply turn the valve on to engage the pulse.

The pulse causes a pressure drop when it's engaged. The pulse is most effective in a 1/8" hose. You'll note less vibration with a 1/4" hose and almost none with a 3/8" hose. However the pulse is still effective, causing the water to burst from the nozzle hundreds of times per second.

If you are still having difficulty getting a hose around a tight bend, switch to a smaller diameter hose.

Turn the pulse off before turning machine off.

### Shut Down Instructions

After drain cleaning or spray washing is completed, run clear water through the system. Always leave Jetter control valve in open position when turning off motor. Turn off water supply and drain as much water from pump as possible. Remove water supply hose from inlet. If you are in a cold climate, see Freeze Protection.

### Handy-Reel (Optional) HR-200

Position the reel at the drain site. Connect the jet machine to the inlet on the reel. Select and attach a nozzle to the hose on the reel. Put the hose 2 to 3 feet into the drain. Open the ball valve on the reel. Follow the start up procedures.

### Foot Pedal (Optional) FP-1

The foot pedal is used with any jet manufactured by General (see page 5 or 6). It interrupts the flow of water between the pump and the nozzle while leaving both hands free to guide the hose. The pump will continue to run in by-pass mode. Do not leave pump in by-pass for more than a few minutes or the pump can be damaged. (See Regulating Pressure Unloader on Page 9).

The foot pedal may be hooked up either at the machine or remotely at the drain site. To use the foot pedal at the machine, remove the hose going to the swivel on the hose reel and attach it to the inlet side of the foot pedal. Then, connect the accessory hose (6AHW) between the outlet of the pedal and the swivel on the hose reel. Some jet models may need the added length of the accessory hose on the inlet side of the pedal.

For remote hookup, pull the hose from the hose reel to the drain site. Attach the hose to the inlet of the pedal. The pedal is designed for 3/8" hose fittings. If using a 1/4" hose, use the AD-1 as well. Then attach the smaller hose (1/8" or 1/4") to the outlet side of the pedal. Use the smaller hose to clear the drain line.

### Spray Wand (Optional) SWA-1500

Follow the same procedures listed previously for safety, set-up, operation and maintenance. To operate the spray wand, connect the high pressure hose and trigger to the machine. Turn on the water supply, then squeeze the trigger to purge air from the system. Continue to squeeze trigger as you start the machine.

Use caution when pressure washing. Wear goggles and rubber gloves and boots. Do not point spray at anyone including yourself. Do not put your hand in front of water spray. It can penetrate the skin and cause a need for amputation. Direct spray at close range can be powerful enough to cause damage.

**NOTE:** Typical industry standard stipulates you hold the high pressure spray nozzle approximately 6-8" from the



surface to be cleaned. When cleaning with a detergent, apply from bottom up with an even left to right movement. Rinse from top down with a similar motion. This will help reduce potential streaking.

## Detergent Injector (Optional) CMA-1

Refer to Component Identification for placement of injector. The detergent injector is an option with the J-1400 and J-1600.

To use the detergent injector, attach one end of siphon hose to the injector and put the filter end in the detergent solution. Be sure the end of the hose is at the bottom of the container or bucket. Some models have adjustable valves to control the amount of detergent drawn through the hose. Turn the nozzle on the end of the wand counterclockwise.

**Remember: Do not use corrosive material. See warning previously listed.**

## Adjusting Pressure Unloader Valve

The machine is equipped with an adjustable pressure unloader to prevent pressure overload in the event that the nozzle is plugged or the Jetter control valve or trigger gun is shut off. When the machine is in the by-pass mode, the pump will continue to run. However running in by-pass mode for extended periods will cause damage to the pump; no more than 5 minutes with the J-1400 and J-1600 pump. Excessive temperatures will damage the pump and void the warranty.

The machine also comes with thermal overload protection. When water temperature in pump increases to 140°F (60°C), the thermal relief valve will release hot water and allow cool water to enter pump from fresh water supply.

To adjust pressure unloader turn the knob clockwise to increase pressure and counterclockwise to decrease pressure. **Caution:** Do not exceed operating pressure.

## Ice Blockages

High pressure water can be used to clear an ice blockage. A 3000 psi (207 bar) gas Jetter can clear a 4" (102mm) line at an approximate rate of one foot per minute. The smaller electric jet will take twice as long. Ambient air temperature will effect these times. Use a 15° nozzle with a forward jet. DO NOT allow the incoming water supply to exceed 140°F (60°C) or it could cause damage to the pump. Remember to follow the cold weather precautions found in the freeze protection section.

## Freeze Protection

To protect your machine from severe damage caused by water freezing inside the components, it is important to winterize it whenever it is subjected to freezing temperatures.

The best way to protect the system is to keep it out of the cold. Barring that, the next best way is to flush the system with anti-freeze. To do so, simply attach a short garden hose (not to exceed four feet) to inlet on the pump and put other end into the anti-freeze container. Be sure to remove the nozzle from the hose. Turn the machine on to draw anti-freeze into the system. When anti-freeze flows out of the end of the hose, turn the machine off. With optional spray wand and trigger gun follow above procedure. Cycle trigger on/off so that the anti-freeze will flow into unloader and detergent injector section of machine.

When preparing to operate equipment the next time, remove the anti-freeze. To do so, reconnect water source, turn pump on and direct flow of anti-freeze back into container. Be careful not to dilute anti-freeze with incoming water supply. Anti-freeze, if kept relatively undiluted can be used again and again.

Hoses can also be protected from freezing by using compressed air to clear them of residual water. Remember to remove nozzle from jet hose and hold trigger of spray wand in open position.

## MAINTENANCE

Regular inspection is the key to preventing breakdowns and prolonging the life of the equipment. Follow this simple procedure religiously.

### DAILY

Check that the water supply is adequate.

Check that the nozzle on the spray wand is not clogged or worn out.

Check that the PUMP OIL LEVEL is within operating range on dipstick or sight glass.

Check the INLET FILTER.

Check GFCI function.

### WEEKLY

Check PRESSURE HOSE for wear and damage. Damaged hose can be repaired at a local service dealer or by your equipment dealer.

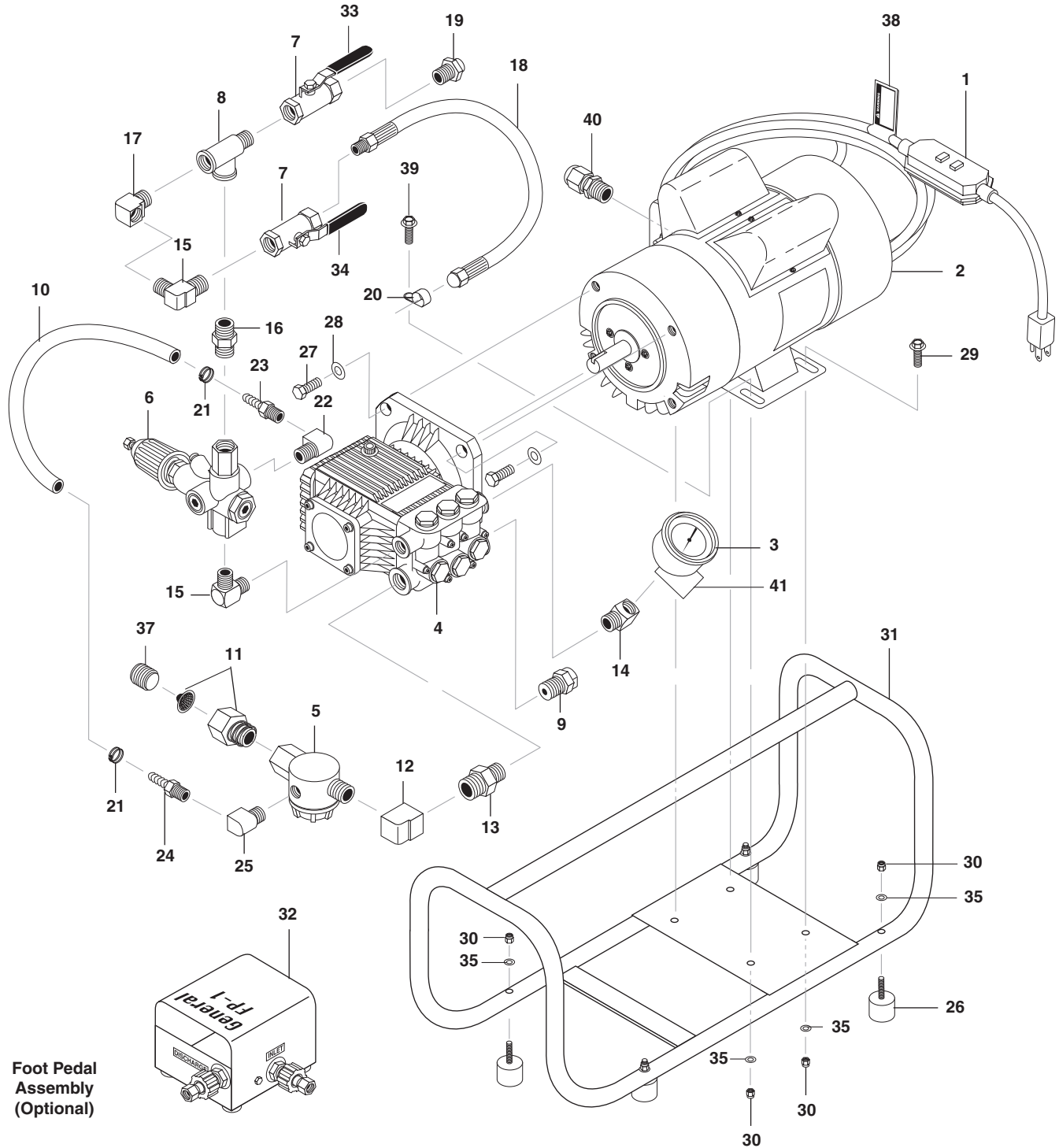
## Maintenance Schedule

Use the following maintenance schedule at the stated intervals or when your routine turns up a problem.

**Pump Crankcase Oil Change:** Service after the 1st month or after 50 Hours. Then service every year or 500 hours. Use SAE 30W Non-Detergent Pump Oil to full mark on dipstick or to center of sight glass.

**EXPLODED VIEW**

**J-1400**



Foot Pedal Assembly (Optional)

## EXPLODED VIEW PARTS LIST

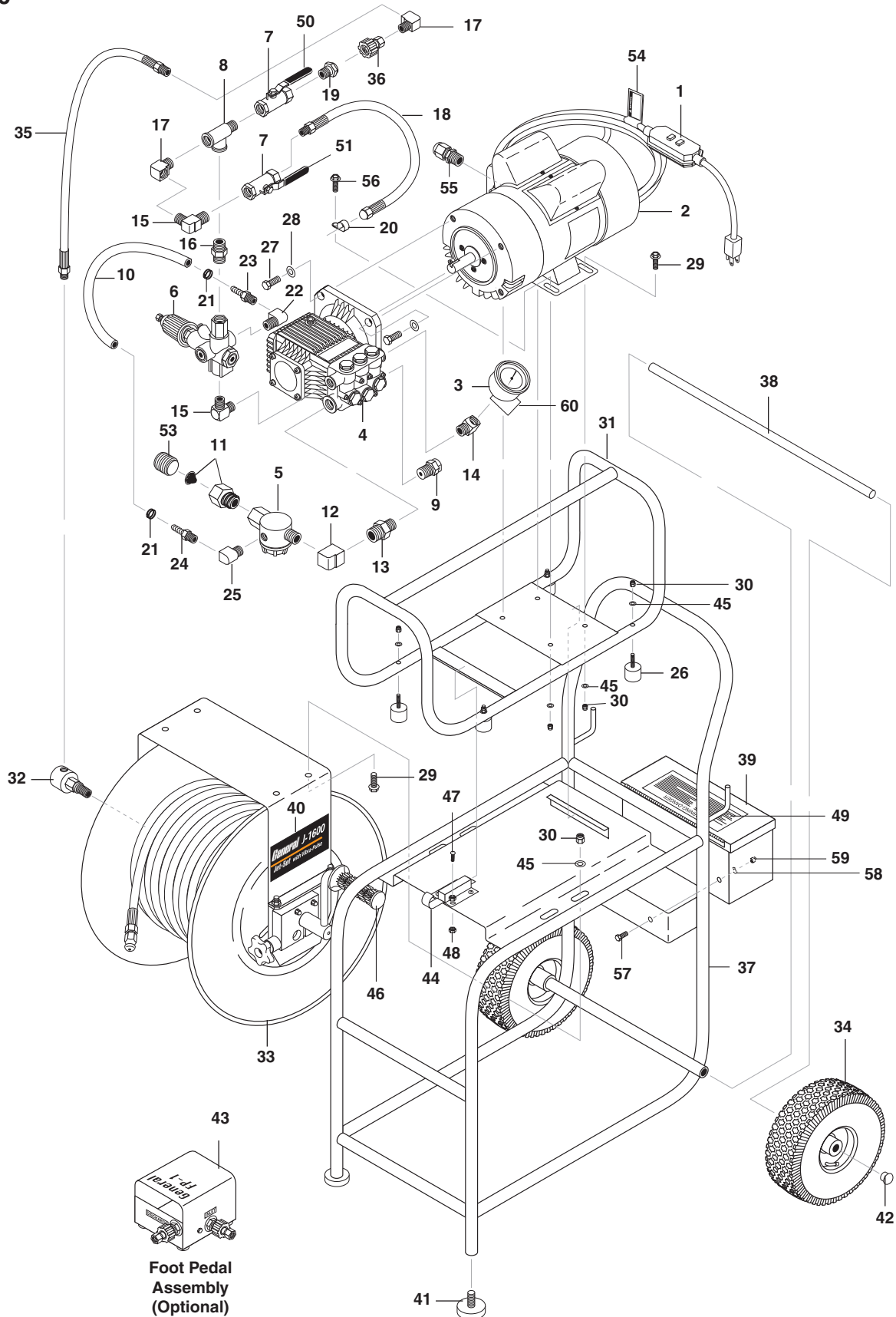
### J-1400

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	6-010621	GFCI, 120V 15A W/36' 12-3 Cord	1	20	2-9016	Clip, Round, 0.56 I.D.	1
2	5-1004M	Motor, 1.5 HP 1 PH 1725 RPM, Magnetek TEFC	1	21	2-9002	Clamp, Screw, #6	2
3	4-05001	Gauge, Pressure Panel Mount, 0-2000 PSI	1	22	2-1023	Elbow, 3/8" Street	1
4	5-2248	Pump, AR XTA2G15EBA-F8, Elect 1725 RPM	1	23	2-008801	Hose Barb, 1/2" Barb x 3/8" MNPT, Steel	1
5	2-1908	Strainer, 1/2" Inline	1	24	2-008802	Hose Barb, 1/2" Barb x 1/4" MNPT, Steel	1
6	5-3210	Unloader, AL605, 7.8 GPM @1500 PSI	1	25	2-1022	Elbow, 1/4" Street	1
7	2-30026	Valve, 3/8" Ball, Brass, General Wire	2	26	2-01015	Bumper, Rubber 1" w/Bolt, 5/16" x 1-1/4"	4
8	2-0045	Tee, 3/8" Street	1	27	90-1017	Bolt, 3/8" x 1", NC HH	4
9	2-30082	Pump Protector, 1/2" 140°	1	28	90-4009	Washer, 3/8", Lock, Split Ring	4
10	4-02110000	Hose, 1/2" Push-On	13"	29	90-19713	Screw, 5/16" x 3/4" Whiz Loc	3
11	2-10942	Swivel, 1/2" MP x 3/4" GHF w/Strainer	1	30	90-2001	Nut, 5/16" Flange, Whiz Loc	8
	2-30062	▲ Valve, Anti-Siphon	1	31	95-07103120	Frame, Welded Assy, J-1400	1
12	2-1020	Elbow, 1/2" Female, Brass	1	32	26-FP-1	Foot Pedal	1
13	2-1007	Nipple, 1/2" Hex	1	33	2-01207	Cap, Orange, On/Off	1
14	2-00272	Elbow, 3/8" MNPT x 1/4" FNPT, Steel	1	34	2-01208	Cap, Orange, Vibra-Pulse, On/Off	1
15	2-00270	Elbow, 3/8", Male Pipe	2	35	90-4001	Washer, 5/16" Flat	8
16	2-0006	Nipple, 3/8" Hex Steel	1	36	96-6115	▲ Manual, General Jet Set, J-1400/J1600	1
17	2-0031	Elbow, 3/8" Street	1	37	2-01442	Plug, Garden Hose Adapter	1
18	4-02157725	Hose, Pulsation, 24"	1	38	10-08018	Label, Warning, Service Cord	1
19	2-2115	Plug, QDISC 3/8" M x 22 mm	1	39	90-19716	Screw, 5/16" x 1", Whiz Loc	1
				40	6-05152	Strain Relief, Small	1
				41	11-3104	Tag, Water Temp to Pump	1

▲ Not Shown

**EXPLODED VIEW**

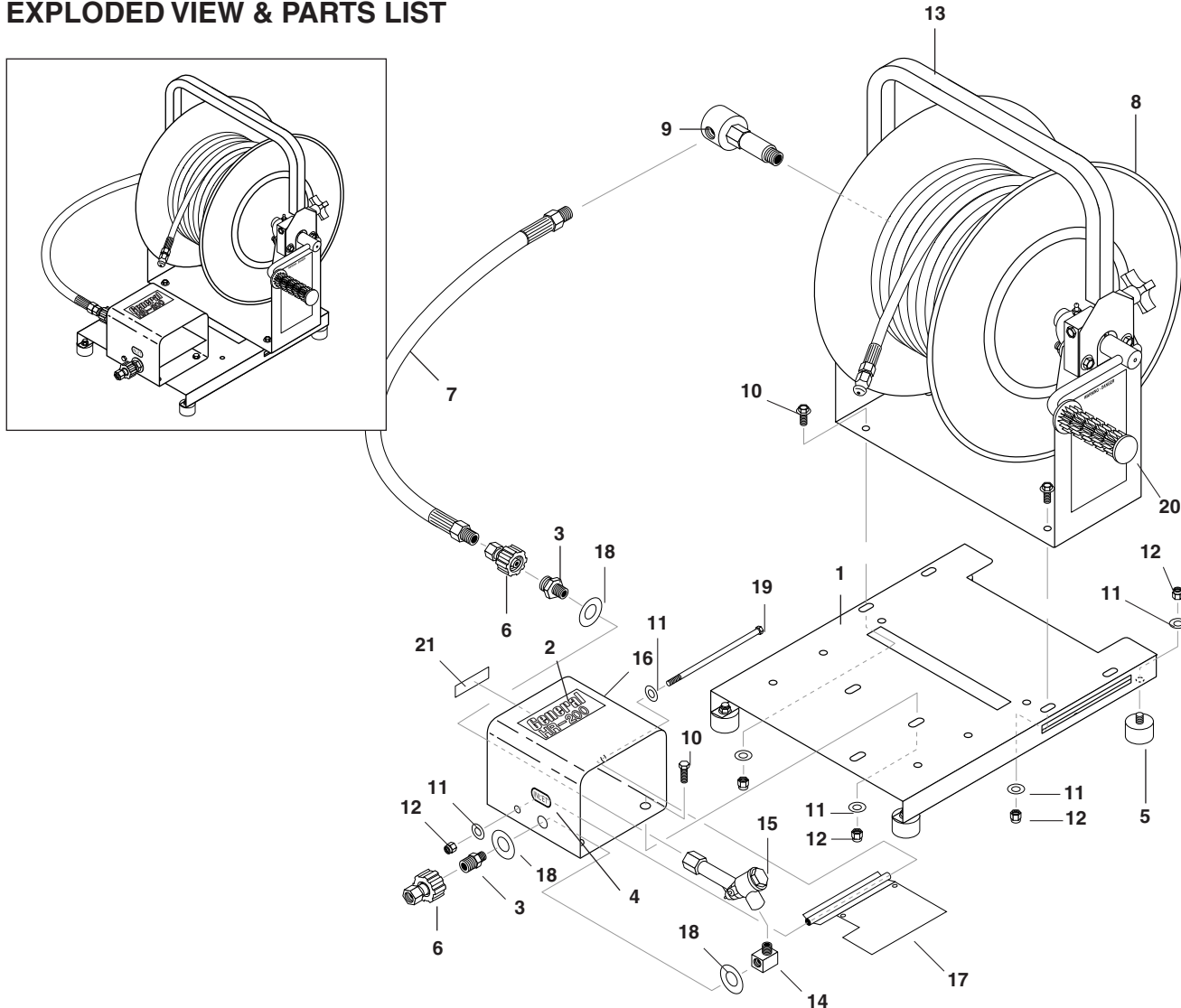
**J-1600**



## EXPLODED VIEW PARTS LIST J-1600

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	6-010621	GFCI, 120V 15A W/36' 12-3 Cord1		28	90-4009	Washer, 3/8", Lock, Split Ring	4
2	5-1004M	Motor, 1.5 HP 1 PH 1725 RPM, Magnetek TEFC	1	29	90-19713	Screw, 5/16" x 3/4" Whiz Loc	7
3	4-05001	Gauge, Pressure Panel Mount, 0-2000 PSI	1	30	90-2001	Nut, 5/16", ESNA	12
4	5-2248	Pump, AR XTA2G15EBA-F8, Electric 1725 RPM	1	31	95-07103120	Frame, Welded Assy, J-1400	1
5	2-1908	Strainer, General	1	32	4-027510281	Swivel, 3/8" x 3/8"	1
6	5-3210	Unloader, AL605, 7.8 GPM @1500 PSI	1	33	4-02751016	Hose Reel, 13", General Wire	1
7	2-30026	Valve, 3/8" Ball, Brass, General Wire	2	34	4-0303	Wheel & Tire Assy, 4" Tubeless, Silver Rim, 5/8" HUB	2
8	2-0045	Tee, 3/8" Street	1	35	4-02037828	Hose, 3/8" x 28", 1 Wire, 3/8" MPT x 3" MPTS	1
9	2-30082	Pump Protector, 1/2" 140°	1	36	2-2113	Coupler, 3/8" Female Screw-Type 7640	1
10	4-02110000	Hose, 1/2" Push-On	13"	37	95-07103160	Assy, Frame, J-1600	1
11	2-10942	Swivel, 1/2" MP x 3/4" GHF w/Strainer	1	38	95-07103161	Axle, 21.75", J-1600	1
	2-30062	▲ Valve, Anti-Siphon	1	39	95-07103208	Assy, Tool Box, Orange, General Wire	1
12	2-1020	Elbow, 1/2" Female, Brass	1	40	11-201600	Label, J-1600 w/Vibra Pulse	1
13	2-1007	Nipple, 1/2" Hex	1	41	2-01019	Foot, Rubber (Crutch)	2
14	2-00272	Elbow, 3/8 MNPT x 1/4 FNPT, Steel	1	42	90-200420	Cap, 5/8" Axle	2
15	2-00270	Elbow, 3/8", Male Pipe	2	43	26-FP-1	Foot Pedal	1
16	2-0006	Nipple, 3/8" Hex Steel	1	44	90-50041	Latch, Finger	1
17	2-0031	Elbow, 3/8" Street	2	45	90-4001	Washer, 5/16", Flat	12
18	4-02157725	Hose, Pulsation	2 ft.	46	2-01101	Grip, 1", Handle (Waffle)	1
19	2-2115	Plug, Q-Disc, 3/8" x 22mm	1	47	90-10001	Screw, 10/32" x 1/2", Slot	4
20	2-9016	Clip, Round, 0.56 I.D.	1	48	90-200470	Nut, 10/32", ESNA, SS	4
21	2-9002	Clamp. Screw, #6	2	49	11-0112	Label, JSE, Warn Danger	1
22	2-1023	Elbow, 3/8" Street	1	50	2-01207	Cap, Orange, On/Off	1
23	2-008801	Hose Barb, 1/2" Barb x 3/8" MNPT, Steel	1	51	2-01208	Cap, Orange, Vibra-Pulse, On/Off	1
24	2-008802	Hose Barb, 1/2" Barb x 1/4" MNPT, Steel	1	52	8.914-322.0 / 97-6115	▲ Manual, General Jet Set	1
25	2-1022	Elbow, 1/4" Street	1			J-1400/J-1600	1
26	2-01015	Bumper, Rubber 1" w/Bolt, 5/16" x 1-1/4"	4	53	2-01442	Plug, Garden Hose Adapter	1
27	90-1017	Bolt, 3/8" x 1-1/4", NC HH	4	54	10-08018	Label, Warning, Service Cord	1
				55	6-05152	Strain Relief, Small	1
				56	90-19716	Screw, 5/16" x 1", Whiz-Loc	1
				57	90-19711	Screw, 1/4" x 1/2" HH, NC, Whiz Loc	2
				58	90-4000	Washer, 1/4" Flat, SAE	2
				59	90-2000	Nut, 1/4" Esna, NC	2
				60	11-3104	Tag, Water Temp to Pump	1

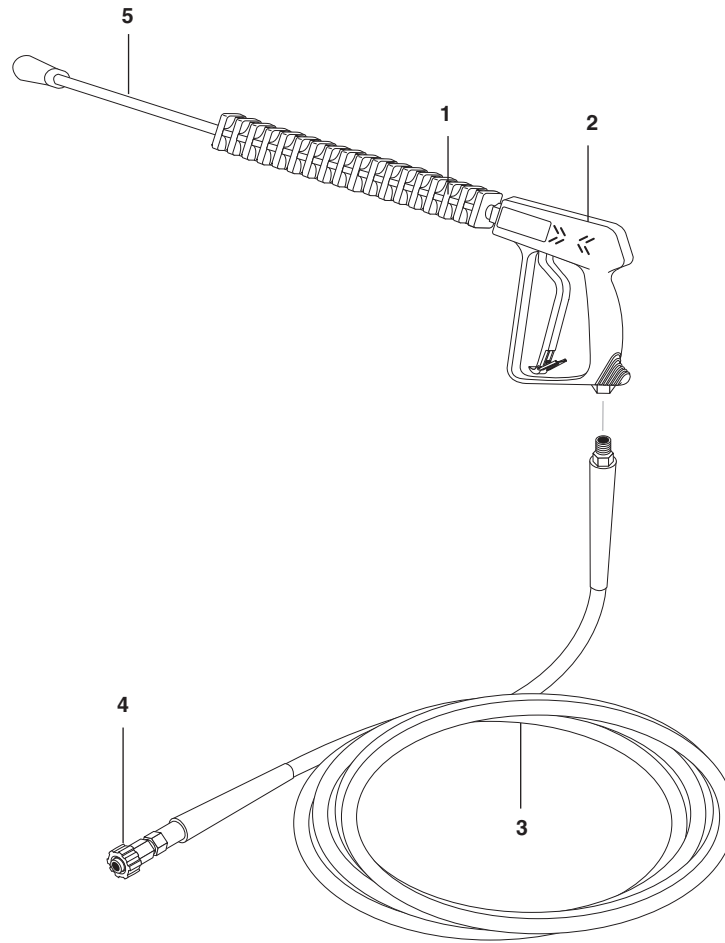
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**OPTIONAL HR-200W HANDY-REEL WITH FOOT PEDAL  
EXPLODED VIEW & PARTS LIST**

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	95-07103106	Bracket, Hose Reel Mount	1	12	90-2001	Nut, 5/16" ESNA	12
2	11-20200	Label, HR-200	1	13	95-07103105	Hose Reel Guard	1
3	2-2116	Nipple, 1/4" x M22, Twist	2	14	2-1022	Elbow, 1/4" Street	1
4	11-1019	Label, Inlet	1	15	83-21008	Valve Assy, Complete	1
5	2-01022	Foot, Rubber	4	16	95-07103180	Cover, Welded Assy. Foot Valve	1
6	2-2113	Coupler, 3/8" Female Screw Type 7640	2	17	95-07103181	Plate, Fott Valve Assy	1
7	4-02037817	Hose, 3/8" x 17.5", 1 Wire, 3/8" MNPT(SLD) x 3/8" MNPT(SWL)	1	18	90-3096	Washer, 1/2" Flat	3
8	4-02751016	Hose Reel, 13" General Wire	1	19	90-10124	Bolt, 5/16" x 6-1/2" HH, NC	1
9	4-027510281	Swivel, 3/8" x 3/8"	1	20	2-01101	Grip, 1" Handle, Waffle	1
10	90-19713	Screw, 5/16" x 3/4" Whiz Loc	7	21	11-1010	Label, Discharge	1
11	90-4001	Washer, 5/16"	13				

## HOSE AND SPRAY GUN ASSEMBLY (OPTIONAL)

J-1400 & J-1600 SWA-1500

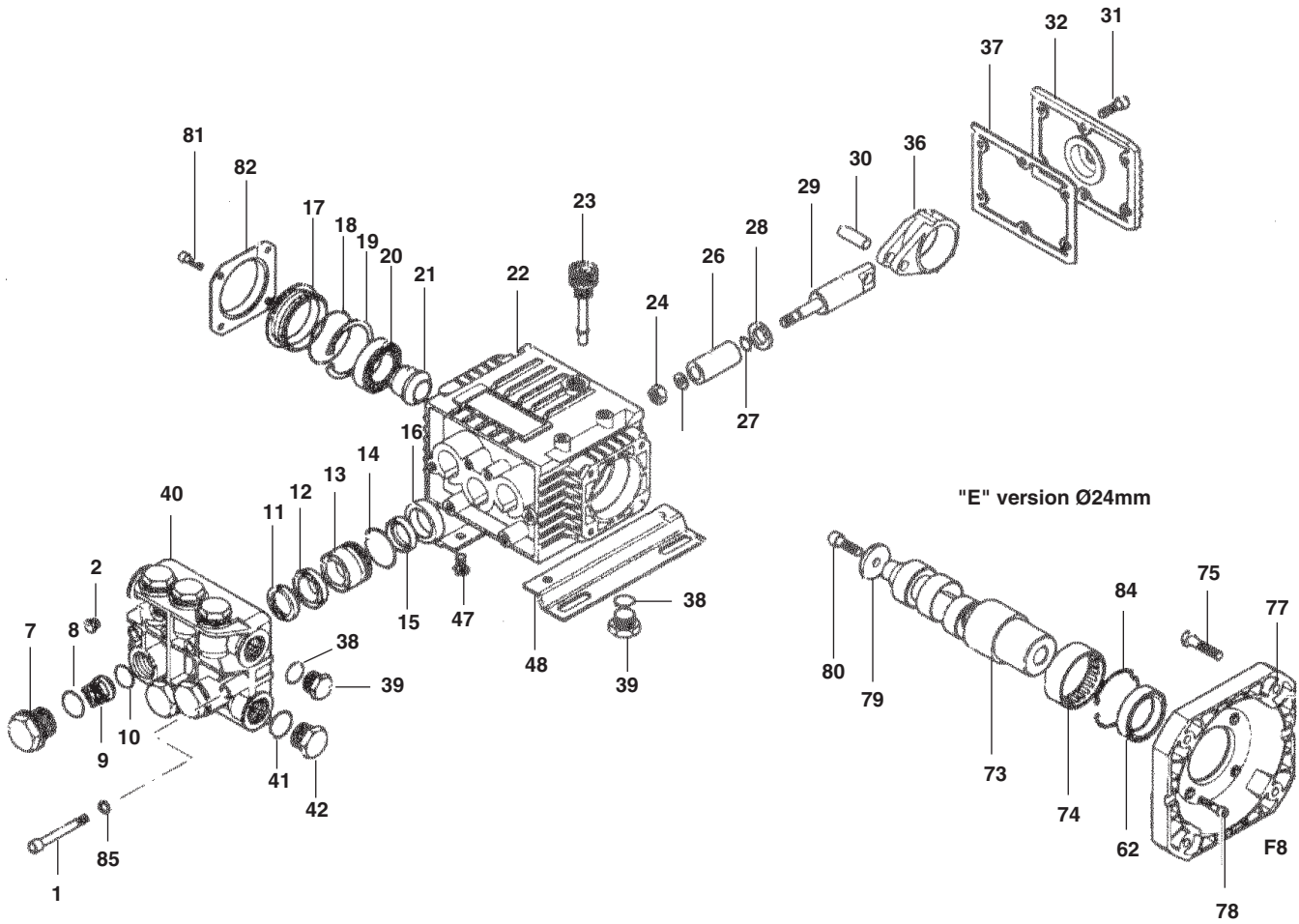


ITEM	PART NO.	DESCRIPTION	QTY
1	4-011148	Lance, 18" Molded Grip AL-3929.11	1
2	4-01246	Spray Gun, Shut-Off AP 1000	1
3	8.739-030.0	Hose, 3/8" x 25', 1 Wire, TS, Legacy 50 x SW	1

ITEM	PART NO.	DESCRIPTION	QTY
4	2-2113	Coupler, 3/8" Female Screw Type 7640	1
5	4-2005	Nozzle Holder, Adjustable AL-TR9-4701.12	1
	4-01402515	▲ Nozzle Only, SA 1/4", MEG 1502.5	1

▲ Not Shown

## PUMP MODEL NO. AR XTVA2G15EBA-F8 JET SET MODEL J-1400 & J-1600 PART #5-2248





## PUMP MODEL NO. AR XTVA2G15EBA-F8 JET SET MODEL J-1400 & J-1600 PART #5-2248

ITEM	PART NO.	DESCRIPTION	QTY
1	83-680570	Head Bolt TCEI M6x60 Brass	6
2	83-620301	Tap Plug 1/8" G (Optional)	1
7	83-1260160	Valve Cap	6
8	83-960160	O-Ring Ø17.86 x 2.62	6
9	83-1269050	Complete Valve	6
10	83-880830	O-Ring Ø15.54 x 2.62	6
11	83-1260140	Support Ring Ø15	3
12	83-1260130	Packaging Gasket Ø15	3
13	83-1260151	Piston Guide Ø15	3
14	83-1260420	O-Ring Ø26.70 x 1.78	3
15	83-1260440	Packaging Seal Gasket Ø15	3
16	83-1260460	Piston Oil Seal 15 x 24 x 5	3
17	83-1320320	Shaft Side Plug	1
18	83-1320360	O-Ring Ø47.35 x 1.78	1
19	83-1260790	Circlip Ø <sub>1</sub> 52	1
20	83-1320370	Bearing 25 x 52 x 15 6205	1
21	83-1320330	Bushing	1
22	83-1320010	Pump Body	1
23	83-880130	Dip Stick	1
24	83-1260110	Screw M83	1
25	83-1260100	Copper Washer 8 x 13 x 0.5	3
26	83-1260120	Piston Ø15	3
27	83-480480	O-Ring Ø4.48 x 1.78	3
28	83-1260091	Disc Separator	3
29	83-1260070	Piston Guide	3
30	83-1260080	Piston Pin Ø <sub>E</sub> 7 x 24	3
31	83-1260760	Screw TCEI M5 x 20	6
32	83-1321030	Rear Cover, Low	1

ITEM	PART NO.	DESCRIPTION	QTY
36	83-1320140	Con Rod, Bronze	3
37	83-1260040	Rear Gasket Cover	1
38	83-740290	O-Ring Ø14 x 178	3
39	83-880530	Oil Drain Tap Bolt 3/8" G	2
40	83-1320020	Pump Head-Without Hole, 18mm Brass	1
41	83-180101	O-Ring Ø17.5 x 2	1
42	83-820360	Head Tap Bolt 1/2"G	1
47	83-1260470	Mounting TE M8 x 10	4
48	83-1263890	Base Plate	2
81	83-1321780	Bolt TCEI M6 x 12	4
82	83-1321420	Side Cover	1
83	83-1260790	Circlip Ø <sub>1</sub> 52	1

**Crankcase Oil Capacity, 14 oz.**

***E VERSION:***

ITEM	PART NO.	DESCRIPTION	QTY
62	83-480671	Seal Ring 40 x 52 x 7	1
73	83-1321110	Shaft 2 GPM Ø5/8"	1
74	83-1321190	Ring Bearing HK 4516	1
75	83-650610	Bolt, 3/8" 16 UNC x 1"	4
77	83-1320060	Type F8 Flange, Nema C	1
78	83-1200430	Bolt/Flange-Motor TCEI M6 x 16	4
79	83-780230	Washer Ø <sub>1</sub> 6.5 x 28 x 4	1
80	83-780060	Bolt TCEI M6 x 25	1
84	83-1321080	Snap Ring	1

KIT 83-1860 OIL SEALS (E Ver.)		KIT 83-1864 VALVES		KIT 83-1866 WATER SEALS		KIT 83-1866 OIL SEALS	
Pos.	Qty.	Pos.	Qty.	Pos.	Qty.	Pos.	Qty.
16	3	9	6	11	3	16	3
18	1	10	6	12	3	18	1
37	1			14	3	37	1
62	1			15	3	46	1

## TROUBLESHOOTING

These troubleshooting procedures cover pump malfunctions, delivery problems and charge system malfunction.

**Warning: Before attempting any repairs or maintenance, make sure machine is shut off.**

PROBLEM	POSSIBLE CAUSE	REPAIR
<b>LOW PRESSURE</b>	Worn or oversized nozzle	Replace worn nozzle. Check nozzle size.
	Clogged water supply hose, inlet strainer or kinked hose	Clean or replace strainers.
	Worn or damaged piston cups	Replace piston cups.
	Worn or damaged inlet or discharge valve	Replace worn valve poppets or valve springs.
	Improper adjustment of unloader valve	Adjust as necessary.
	Dirt or foreign particles in valve assembly	Remove any dirt particles
	Pulse valve on	Turn off pulse valve.
	Air leak in inlet plumbing or inaccurate gauge	Locate air leak. Re-seal connection or replace damaged valve.
<b>ROUGH OPERATION WITH LOSS OF PRESSURE</b>	Restricted inlet plumbing or air leak in inlet plumbing	Replace clogged inlet fittings. Check supply hose and ensure adequate water supply.
	Damaged piston, cup or pump valve	Replace any damaged pump parts and clean out any foreign particles.
	Clogged nozzles	Clean or replace nozzles.
<b>WATER LEAKAGE AT INTAKE MANIFOLD OR CRANKCASE</b>	Worn manifold seals, pistons or O-rings. Or condensation inside crankcase	Replace seals, sleeves or O-rings. Change oil at regular intervals.
<b>OIL LEAKS</b>	Worn pistons and/or leaking crank seals, crankcase cover seal or drain plugs	Replace seals, sleeves or O-Rings.
<b>SHORT PISTON CUP LIFE</b>	Scored cylinders from pumping acids	Replace cylinders. <b>DO NOT PUMP ACID SOLUTIONS.</b> For acid application, ask your dealer for a Pump Saver Injector.
	Abrasive particles in fluid being pumped	Replace water and detergent strainers if damaged or missing. Install additional filter if fine abrasives are still evident.
	Operator(s) running pump without water supply	do not allow washer to be run without proper water supply.
	Hot water in pump	Do not run in bypass for more than 5 minutes. Do not let water supply exceed 140°F (60°C)

**TROUBLESHOOTING**  
**Detergent System Malfunction**

<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>REPAIR</b>
<b>WASHER FAILS TO DRAW DETERGENT</b>	Detergent metering valve close, clogged or defective	Open detergent metering valve, following procedure in operating instructions.
	Back pressure in hose (when using additional lengths of pressure hose)	Contact dealer for proper injector size when adding lengths of hose.
	Back pressure in pressure hose (when using dual lance wand)	Use proper sized detergent nozzle in dual lance wand (refer to parts breakdown).
	Suction tube not below liquid surface	Completely submerge suction tube and strainer in detergent solution.
<b>DETERGENT SOLUTION TOO WEAK</b>	Clogged detergent strainer	Clean or replace strainer.
	Air leak in detergent suction tube or inlet plumbing	Find air leak and clean or replace parts as necessary.
	Clogged or damaged suction strainer	Clean or replace strainer.
<b>DETERGENT SOLUTION TOO CONCENTRATED</b>	Original detergent too concentrated	Dilute product as necessary to achieve proper concentration.
<b>DETERGENT IN RINSE CYCLE</b>	Dual lance wand or adjustable nozzle holder in open position or detergent metering valve open	Close dual lance wand adjustable lance holder to achieve high pressure. Close detergent metering valve.
<b>DILUTION OF DETERGENT CONCENTRATE DURING CYCLE</b>	Worn or defective internal check valve	Repair or replace check valve or injector parts as necessary.
	Defective check valve in detergent tank	Replace parts as necessary

**TROUBLESHOOTING**  
**Unloader Valve Malfunction**

<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>REPAIR</b>
<b>UNLOADER CYCLES</b>	Fitting leaking downstream	Tighten/replace fitting.
	Piston or valve spring broken or worn	Replace parts as necessary.
	Clogged nozzle	Clean or replace.
<b>FLUID LEAKING FROM BODY</b>	O-ring worn or cut	Replace part as necessary.
<b>UNLOADER WILL NOT COME TO PRESSURE</b>	Foreign particle in valve	Replace or clean.
	Nozzle worn or wrong size	Replace part as necessary.
	Piston or valve worn	Replace part as necessary.
<b>EXTREME PRESSURE SPIKES</b>	Adjusting nut turned completely into unloader	Back off adjusting nut.
	Clogged nozzle	Clean or replace



## **General Wire Spring Co. LIMITED ONE YEAR WARRANTY**

General Wire products are warranted by General Wire Spring Co. to be free of defects in material and workmanship under normal use for the periods specified below.

General Wire machines carry a one year limited warranty against defect or breakage except as noted below. Should any part break or fail to work properly in the year following purchase, it will be repaired or replaced at our discretion at no charge. Some parts, such as hoses and nozzles, are subject to severe wear and are replaced within a year only if a flaw in the material causes breakage. No adjustment can be made on kinked hoses, since a kink is evidence of abuse. Also, no adjustment can be made where there is considerable wear at the point of the break.

Warranty on service/wear items, replacement parts and electrical components is limited to 90 days.

All parts replaced under warranty must be original General Wire Spring Co. replacement parts. Under no circumstances will General Wire reimburse a service center for parts that are not General Wire parts.

**Damage due to negligence, rust, exposure to corrosive chemicals, abnormal usage, accidents or alteration from original design is not covered by this warranty.**

### **Warranty Does Not Cover:**

1. Certain items not manufactured by General Wire but used as components such as engines and motors are guaranteed by their respective manufacturer service centers.
2. Items subject to normal wear such as seals, valves, hoses, spray guns, wands, couplings, nozzles, belts, swivels, filters or any part subject to direct physical contact by the public.
3. Replacement of any fluids such as oil or chemicals, nor does it cover cleaning of any parts.
4. General Wire products are only warranted to the original purchaser, there is no continuation of warranty on used products.
5. Products damaged in transit. (A claim should be filed with the carrier in the event a product is damaged in shipment.)
6. Damage caused by the use of caustic or corrosive liquids.
7. Operating the pump under conditions that cause or contribute to cavitation.
8. Damage caused by contaminated fuel or oil.
9. Heat damage within the pumping system, whether introduced with the water supply or generated within the system.
10. Damage caused by accident, fire, flood, wind storm, freeze up or other acts of nature.
11. Damage caused by improper installation or power supply.
12. Cost of transportation to authorized service center.
13. Freight costs are the responsibility of purchaser/dealer.
14. Cost incurred for telephone communications.
15. Travel costs or mileage and/or time.
16. Failure to follow recommended maintenance or operating procedures outlined in the operators manual.
17. Loss of running time, income or any other loss due to down time.
18. Use of unauthorized/substandard accessories or attachments.

### **In order to obtain warranty service the original purchaser is responsible for:**

1. Providing proof of purchase (original invoice or bill of sale).
2. Informing your wholesaler of the defect(s) or problem(s) and making the product available for repair. They will direct you to the nearest authorized Service Center. (Charges for pick-up or delivery, service calls and mileage are not covered under warranty.)

**This warranty is made in place of all other warranties, express, statutory or implied, including those of merchantability and of fitness for purpose.**

This warranty gives you specific legal rights and you may also have other rights that vary from state to state. Some states do not allow the exclusion of limitation of incidental or consequential damages, so these limitations may not apply to you.

**General** / **General Wire Spring Co.**  
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Web Site: [www.drainbrain.com](http://www.drainbrain.com)