Operating manual

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www.dynablast.ca 4/19 rev 4

HV690F-12V

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SAFETY CONSIDERATIONS AND WARNINGS

Please read this manual completely before installing or operating your Dynablast pressure washer or steam cleaner.

 **Professional Service Required**: Incorrect installation or misuse of this equipment could result in server personal injury or death from heavy smoke, fire or explosion.

 **Nocuous gas hazard**: Never run the unit in an enclosed area. Exhaust fumes contain carbon monoxide a poisonous, odorless, tasteless, invisible gas that can lead to loss of life. Always ensure this machine has proper ventilation for both the exhaust gases and the required combustion air.

 **Explosion hazard:** This machine is designed to work with No.1 or No. 2 fuel oil. Never use gasoline, crankcase oil, or any oil that might contain gasoline. An explosive condition could result.

 **Water injection hazard**: High pressure water if directed at any part of your body can tear through skin this can lead to water injection, which is a very dangerous condition that can lead to loss of limb, or even loss of life. Never direct high pressure spray towards persons or animals.

 **Burn hazard:** This machine has the ability to product super heater water (steam). As a result all components downstream of the heater module will be extremely hot. Care needs to be observed when handling parts of this machine, to avoid burns. Always wear protective clothing (gloves, long sleeves and paints, protective eyewear safety shoes…etc)

 **Shock hazard**: Never direct high pressure spray towards any live electrical equipment or outlets. A severe shock and personal injury may result

 **OUTDOOR USE ONLY!**

 **DO NOT USE GASOLINE, CRANKCASE DRAININGS, OR OIL CONTAINING GASOLINE OR SOLVENTS**

 **THIS MACHINE IS NOT TO BE CONNECTED TO A TYPE "B"GAS VENT**

 **WARNING: RISK OF INJECTION OR SEVERE INJURY. KEEP CLEAR OF NOZZLE. DO NOT DIRECT DISCHARGE STREAM AT PERSONS.THIS EQUIPMENT IS TO BE USED BY TRAINED OPERATORS**

PRE-OPERATING INSTRUCTIONS

Arrange with a qualified electrician to install a properly grounded, if negative & positive power wires lengths are extended increase gauge size of wire.

Protect the receptacle from splashes, the recommended high above the ground is a minimum four feet, or as recommended by the local code.

A ground fault circuit interrupter (GFCI) is highly recommended for any electrically power machine that is associated with water.

Ensure that the power requirements of the machine are met. Low or under voltage may lead to premature failure of the burner motor.

IMPORTANT!

Ensure gauge size is correct for 12V DC circuit.

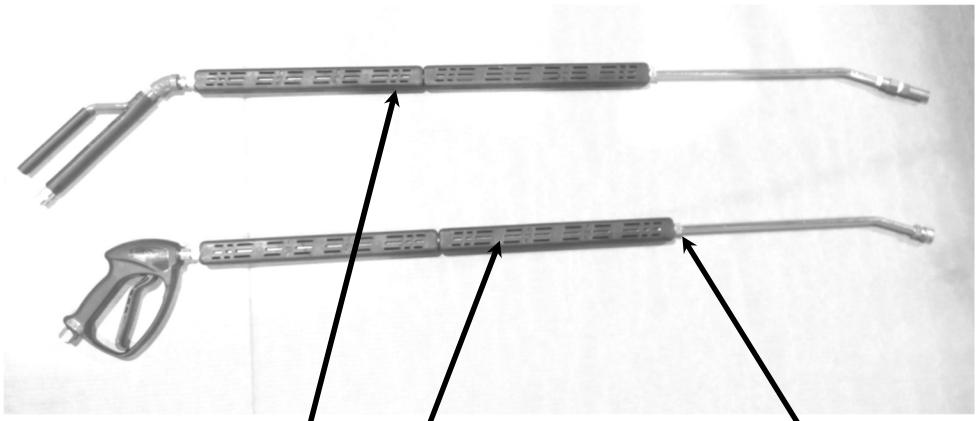
Do not cut off the ground pin. The operator will be exposed to a shock hazard.

Keep electrical cords and connections dry at all times.

Use only #1 or #2 fuel oil with this burner.

Although no accessories are supplied with this heater module, It is imperative that the correct gun be used for the correct application. Below are examples of what should be used and for what purpose.

It is critical that when using steam, there is no trigger or valve that will trap the steam.



High pressure washer gun and lance

Steam gun and lance

The high pressure <u>trigger gun</u> <u>MUST</u> <u>NOT</u> be used when using <u>steam</u>

CONNECTING AND INSTALLATION INSTRUCTIONS

Stationary Installations

Ensure that any required plumbing, electrical, and exhaust venting work is done by authorized trade's people in accordance with local regulations.

Caution: If the heater module is left unused for extended periods in sub-zero temperature, a column of freezing air can build up in the venting system. If the building has a negative pressure condition, some of the freezing air will be drawn over the draft hood, spilling onto the heating coil causing water in the coil to freeze, which may eventually cause coil to rupture. Have installer ensure that correct draft conditions are maintained to prevent this. Or if the heater module is installed on a remote service vehicle steps need to be taken to ensure the heater module if properly winterized at all times when not in use.

Remote piping

If you are installing permanent piping runs from your Dynablast unit to remote wash locations, use only Schedule 80 pipe and heavy duty fittings rated for the operating pressure of your pumping module or use pressure or steam rated reinforced flexible hose suitable for the operating pressure.

Relief Valve

The units come complete with pressure relief valve fitted. The relief valve is extra protection against damage that could be caused by malfunctioning controls or excessive water pressure.

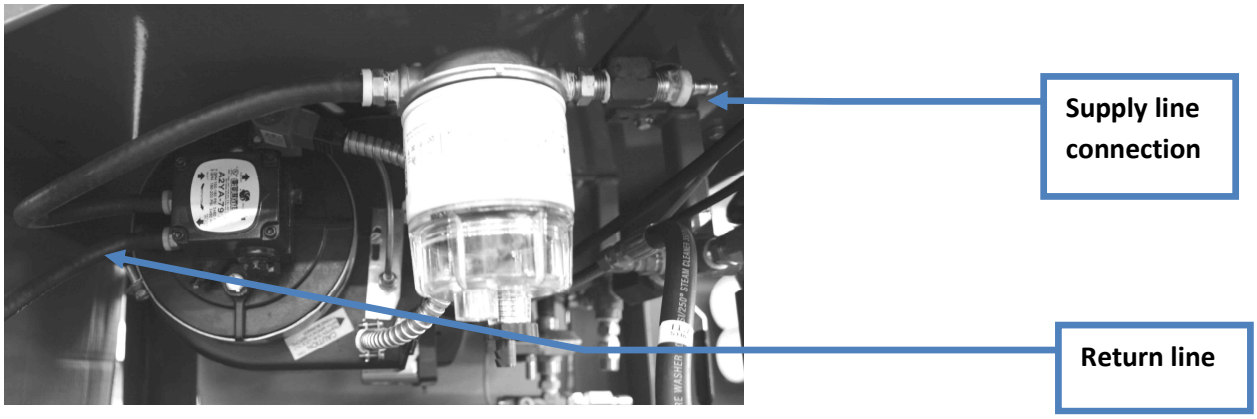
Protection from Freezing

If your unit is likely to be exposed to freezing temperatures, it can be extensively damaged by water freezing inside the machine. Freezing can cause the heat exchanger coil to split. Freezing can cause pump heads to crack. Damage from equipment freeze up is not covered by warranty. The most dependable approach to cold weather protection for your machine is to not expose it to freezing temperatures. If you must risk freezing the unit, it should either have all of the water drained from the complete unit or the complete unit should be filled with a suitable antifreeze solution.

Burner Set up

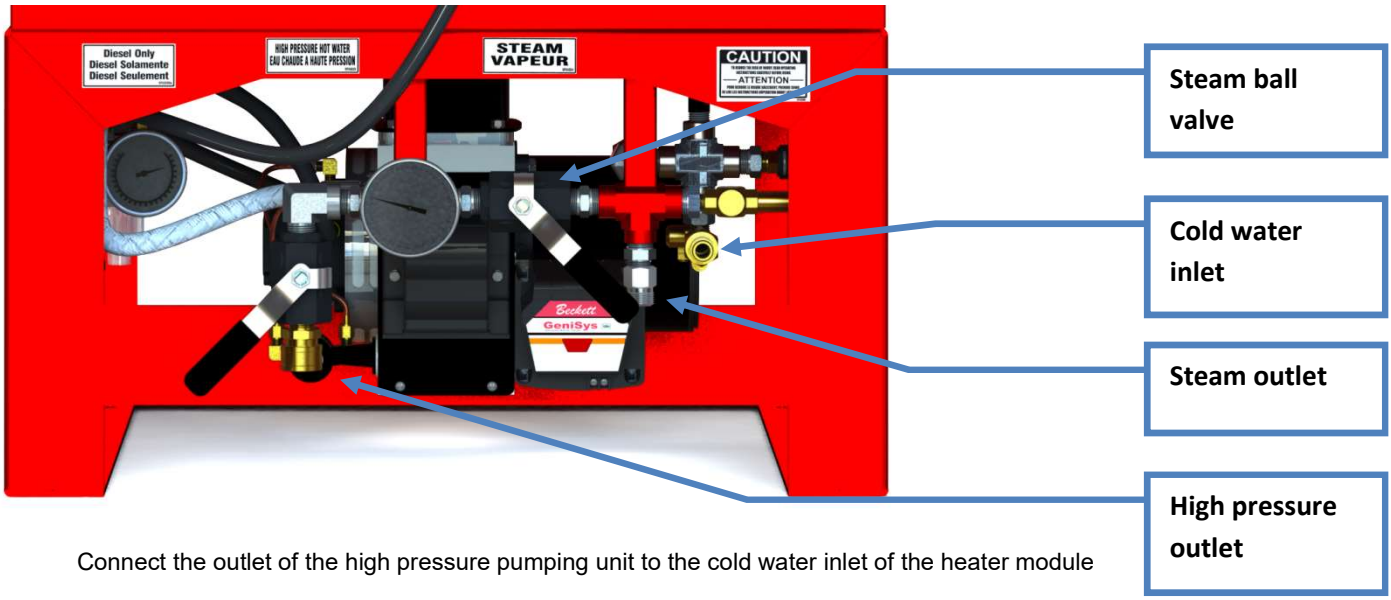
Plan your installation carefully before you begin. Determine how you are going to supply fuel (#1 or #2 fuel oil) and electricity (if applicable) to the unit. The fuel tank for the heater module needs to be located near enough to the module to ensure proper drawing conditions are met for the fuel pump. This module uses a 2 line fuel system (one feed line, one return line). Connect the feed line to the inlet connection of the fuel strainer (as shown below). Connect the return line (that will return fuel back to your fuel supply tank) Fuel line should be a minimum of ¼" inside diameter, flexible hose. The maximum vertical high of the suction line is 6 ft, and a total length of 40 ft. no copper tubing should be used.

Fuel hook up HV690F-12V



If the heater module will be mounted in a remote service vehicle, it must be mounted to a ridged part of the frame to ensure adequate support. Keep in mind the heat exchanger coil is very heavy with a great deal of mass towards to top of the coil.

Water connections for HV690F-12V



Connect the outlet of the high pressure pumping unit to the cold water inlet of the heater module

Connect you high pressure washing hose, or you low pressure high temperature steam hose to the out lets of the heater module as indicated above.

Electrical Requirements.

HV690F-12V

Voltage: 13.5 VDC

Full load amps: 18.75 amps

Recommended wire gauge: as suggested in the chart below

Amperes	0-4 ft.	4-7 ft.	7-10 ft.	10-13 ft.	13-16 ft.	16-19 ft.	19-22
250-300	4-ga.	2-ga.	2-ga.	1/0-ga.	1/0-ga.	1/0-ga.	2/0-ga.
200-250	4-ga.	4-ga.	2-ga.	2-ga.	1/0-ga.	1/0-ga.	1/0-ga.
150-200	6 or 4-ga.	4-ga.	4-ga.	2-ga.	2-ga.	1/0-ga.	1/0-ga.
125-150	8-ga.	6 or 4-ga.	4-ga.	4-ga.	2-ga.	2-ga.	2-ga.
105-125	8-ga.	8-ga.	6 or 4-ga.	4-ga.	4-ga.	4-ga.	2-ga.
85-105	8-ga.	8-ga.	6 or 4-ga.	4-ga.	4-ga.	4-ga.	4-ga.
65-85	10-ga.	8-ga.	8-ga.	6 or 4-ga.	4-ga.	4-ga.	4-ga.
50-65	10-ga.	10-ga.	8-ga.	8-ga.	6 or 4-ga.	6 or 4-ga.	4-ga.
35-50	10-ga.	10-ga.	10-ga.	8-ga.	8-ga.	8-ga.	6 or 4-ga.
20-35	12-ga.	10-ga.	10-ga.	10-ga.	10-ga.	8-ga.	8-ga.
0-20	12-ga.	12-ga.	12-ga.	12-ga.	10-ga.	10-ga.	10-ga.
Length in feet							

Fuel supply:

The supply of fuel for the burner should be uninterupted, or continous. This burner uses a 2 fuel line system, (supply and return). The supply and return lines are to be as short and direct as possible limiting the vertical suction lift (also consider the fuel level of the tank will drop over time). We recommend the vertical lift not to be more that 8'. There is a fuel filter with a water seperator. This should be inspected regualry and maintined. (refer to the maintenance schedule)

OPERATING INSTRUCTIONS

WARNING: IF YOU DO NOT FOLLOW THESE INSTRUCTIONS EXACTLY, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE. DO NOT TAMPER WITH FACTORY INSTALLED CONTROLS.

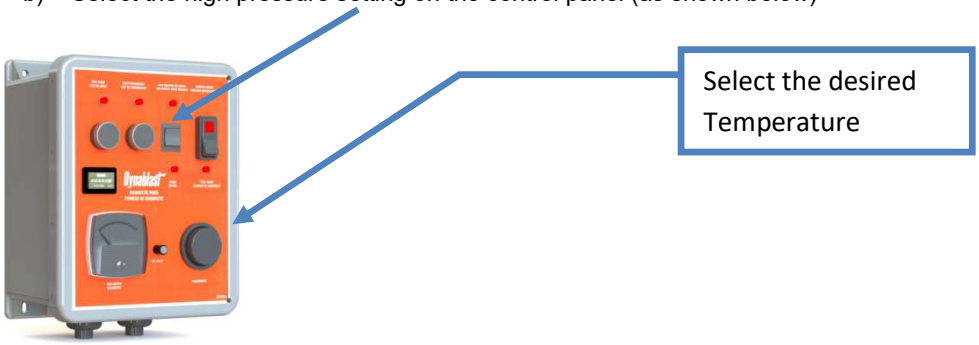
BEFORE YOU TURN ON THE BURNER

Ensure the following; You have an adequate supply of #1 or #2 fuel oil.

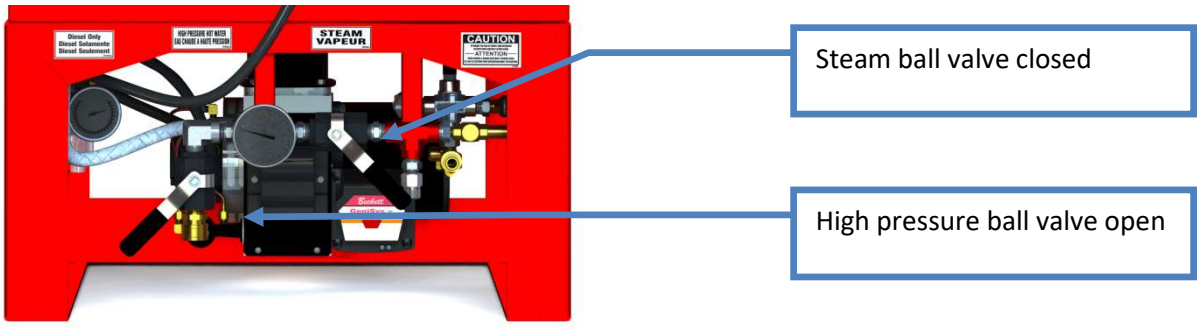
1) Your electrical supply is adequate.
2) Your supply pump is properly hooked up.
3) Your trigger gun or steam gun is hooked up, and you've selected the correct function on the control panel for the type of gun you will be using. (illustrated below)

To operate high pressure hot water system

a) Connect a high pressure hose, gun and lance to the high pressure side of the outlet of the heat exchanger.
b) Select the high pressure setting on the control panel (as shown below)



c) Set the high pressure ball valves into the high pressure mode configuration (closing the steam side valve and opening the high pressure side) as illustrated below.



d) Be sure water can flow to the heater coil before turning on burner switch. Start the pumping unit involved until a steady stream of water is flowing from the spray gun (holding the spray gun open. Turn burner switch to "ON" position. Burner will ignite and remain in operation as long as there is sufficient water flow to satisfy the flow switch and temperature limit control. To shut off main burner, turn burner switch to "OFF".

Holding the gun/wand with both hands, pull the trigger gun open and check for proper operation and then proceed with your cold water washing task.

Shutdown Procedure

- Turn the burner control switch to the “OFF” position and continue to run water through the unit until the heater coil is completely cooled to inlet water temperature. This procedure reduces the tendency of scale to accumulate inside the heat exchanger coil.

If using a trigger gun (only on high pressure mode) after the high pressure pumping unit has been turned off. Pull the trigger of the gun to relieve any trapped high pressure.

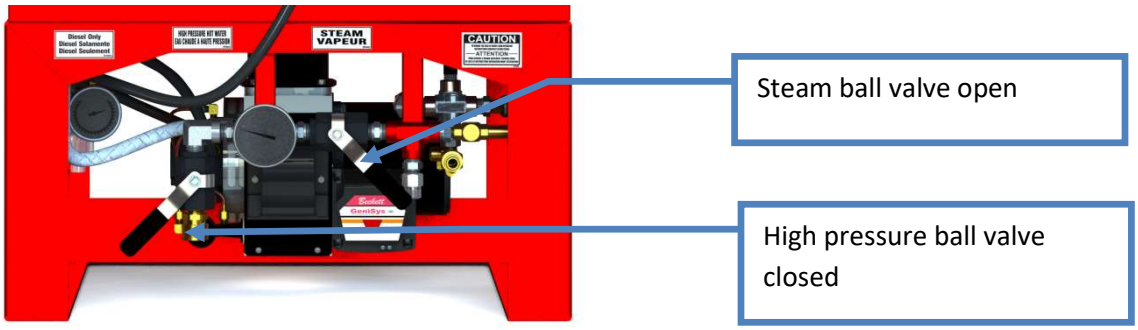
- Disconnect the gun/wand from the outlet hose and drain the water from the gun/wand by holding the trigger gun open and pouring any water out backwards through the gun.

- If you want to wash with hot water or you want to steam clean, turn the burner control switch to the ON position. The burner will only operate if there is water flowing past the flow switch mounted under the heater module.

Using the Steam Option

WARNING: IT IS VERY UNSAFE TO OPERATRE ANY PRESSURE WASH EQUIPMENT IN STEAM MODE WITH A TRIGGER GUN OR ANY OTHER TYPE OF VALVE ON THE OUTLET SIDE OF THE UNIT. ALWAYS INSTALL THE OPEN STEAM WAND BEFORE SETTING THE UNIT TO PRODUCT STEAM.

a) Install a steam rated hose and open flow through gun on only the steam the side of the outlet.
b) Change the valve setting for the steam configuration (as shown)



Steam hose must be rated for steam, and must only be used for steam and not for high pressure washing.

Before adjusting the machine to produce steam output, remove the pressure washer trigger gun/wand and install the open steam clean wand.

After installing the steam wand and Hose, turn the pressure adjustment control down to 350 psi. Using the steam wand with the pressure turned down to 350 psi reduces the volume of water flowing through the heater coil thereby raising the outlet temperature from the coil. A temperature gauge is mounted at the coil outlet.

Steam operation continued.

c) Select the steam setting on the control panel.

d) Set the thermostat for desired steam temperature.
e) Reduce the amount of water inlet flow by adjusting the pressure setting of you high pressure pump. This will allow a higher percentage of water to bypass back to the feed tank.
f) Be sure water can flow to the heater coil before turning on burner switch. Start the pumping unit involved until a steady stream of water is flowing from the steam nozzle. Turn burner switch to "ON" position. The burner will ignite and remain in operation as long as there is sufficient water flow to satisfy the flow switch and temperature limit control.

Shutdown Procedure

Turn thermostat to "OFF" position and then continue to run water through the unit until the heater coil is completely cooled to inlet water temperature. This procedure reduces the tendency of scale to accumulate inside the heat exchanger coil

Note: When replacing the outlet hose on a machine equipped with a combination steam option, always use a factory supplied replacement hose or an acceptable alternative. Failure to use the correct hose could result in hose failure and severe burn injuries.

WARNING: Any metal parts that are exposed to the flow of the superheated water, such as the steam wand and hose couplings, become very hot during steam operation. Exercise extreme caution around these parts **and wear protective clothing.**

Caution: DO NOT attempt to start the burner when excess fuel has accumulated, or when the heat exchanger coil is full of vapors, or when the combustion chamber is hot.

⚠ Vapor-Filled combustion chamber: Allow the unit to cool off and all vapors to dissipate before attempting an- other start

⚠ Oil flooded combustion Chamber: Shut off the electrical power and the oil supply to the burner, then clear all accumulated oil before continuing

When changing nozzles, always cool down water coil then turn off the machine, release high pressure trapped inside, latch the trigger lock on the gun. Always point the nozzle away from you during this process. Never point the nozzle towards any other persons or animals. Ensure the replacement nozzle is firmly secured in it's position before you start washing.

Maintenance

To remove any loose rust or scale which could become loose and clog the outlet nozzle or affect normal pump operation, flush the machine for about two minutes prior to using it for the first time and again if the machine has not been used for a few days. Flush the machine by removing the nozzle from the wand or by removing the complete gun/wand assembly from the output hose and then turning on the pumping module. (It is not necessary to operate the heater while you are flushing the unit.)

High pressure nozzle replacement interval: replace the high pressure nozzle whenever there is a noticeable drop in performance. Use the correct size orifice than matches the out flow rate and pressure of the pumping unit.

High pressure hose maintenance check: visually inspect high pressure hoses dally. Check for any sections of the hose that have signs of abrasion on the out sleeve. Ignoring this could lead to a hose rupture, or high pressure pin hole leak.

Water Hardness and Scale Buildup

Units operated in areas with "hard" or high mineral content water supply are often prone to developing a scale buildup within the heat exchanger coil (similar to deposits seen in electric kettles used to heat "hard" water). The tendency for scale to accumulate can be minimized by completely cooling the coil after each use. Allow water to flow through the coil with the burner turned “OFF” until the coil has cooled to the temperature of the inlet water. When water conditions are such that scale buildup is inevitable, we recommend checking for visible accumulation of scale in the heater coil regularly. If there is any scale visible inside the pipe at the heat exchanger outlet, have the coil de-scaled by a qualified service technician. Refer to the de-scaling procedure outlined later in the appendix.

Check for scale buildup in the coil. Remove the hose from the heat exchanger outlet and look for any visible scale accumulation. Excessive scale build up will reduce the heat transfer from the burner to the water, thus reducing the effectiveness of the heater module.

DESCALING THE COIL

WARNING: ***Coil de-scaling using acid should only be done by qualified personnel.***

The best way to acidize the coil is with a circulating pump capable of handling acids:

1. Fill a plastic container with a suitable acid diluted with water to the desired strength.

2. Connect the discharge from the circulating pump to the hot water outlet on the water heater with a suitable hose. Connect the inlet of the circulating pump to the acid container with the suction hose. Disconnect the water heater inlet hose form the pump module and use it as a return hose to the acid container. Start the pump, circulating the acid solution through the coil and back into the acid container, As the acid dissolves the scale it becomes neutralized, so about every five minutes add more acid to the container until all the scale has been removed from the coil. Flush out coil thoroughly with water after de-scaling.

If no circulating pump is available, another good method can be used:

1. Remove high limit control and piping from coil outlet. Install a standpipe on the outlet of the coil. Disconnect the water heater inlet hose from the pump module and run to a drain or suitable container.

2. Remove cap from standpipe and pour in about 1/2 gallon of acid diluted 50/50 with water. Screw cap back on stand pipe immediately. **Caution:** Do not stand directly over chamber when pouring, as acid may blow back upon contact with scale. After ten minutes, pour more acid into chamber. Repeat same procedure until coil is free of scale. Flush out coil thoroughly with water after cleaning. **Caution**: Never allow acid to remain in coil for long periods of time.

Outlet Accessories

Most pressure wash applications are made easier to perform by using the outlet device that best suits the task at hand. The list below summarizes the most common types of outlet devices - consult with your Dynablast dealer for more information.

Standard Pressure Wash Nozzles

The standard pressure wash nozzle that is normally supplied with your Dynablast unit has an orifice sized for the output specifications of your unit. However, there is a wide variety of spray angle patterns available for most orifice sizes. Your Dynablast dealer usually stocks angles ranging from 0° to 40° for common orifice sizes and your dealer can advise you which pattern will work best for your application.

Specialty Nozzles

Consult your dealer for demonstrations of rotary nozzles (intensifiers), foam lances, wet sandblasting attachments, variable spray angle nozzles, water brooms and sewer and pipe cleaning nozzles.

Wands

Wands are available in a wide variety of lengths. Short wands simplify access in confined areas; long wands reach into those awkward spots and minimize ladder movement. Your Dynablast dealer usually stocks a complete range of sizes.

Pressure gauge fuel line

With respect to the pressure gauge fuel line, high pressure fuel line must be used for fuel line going from the burner to the fuel pressure gauge (high pressure side).
Must be rated minimum 200 psi

Fuel nozzle

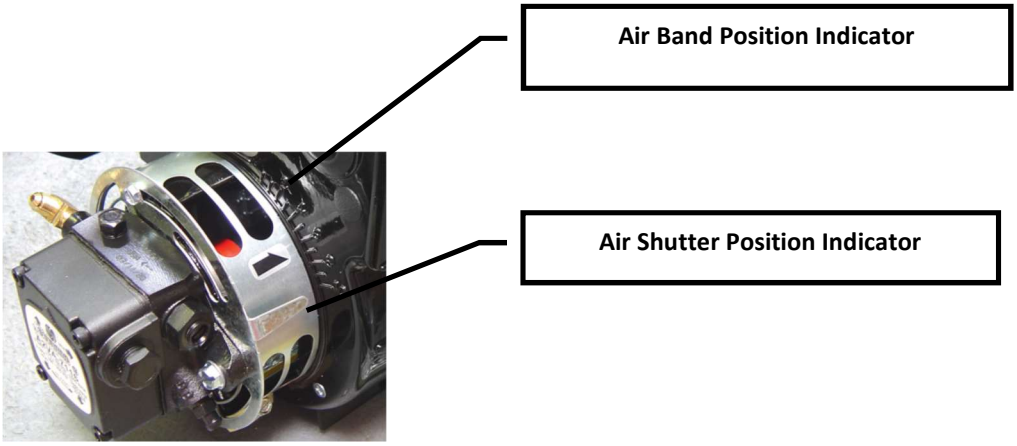
Change fuel nozzle every 6 months.

Specifications

	MODEL	HV690F-12V
SPECIFICATION	MAX PRESSURE (psi)	3500
	HEAT ENERGY (btu)	690,000
	FUEL TYPE	no 1 OR no 2 FUEL OIL
	BURNER VOLTAGE	13.5V DC / 18.75 AMP
BURNER	BRAND	BECKETT
	MODEL NUMBER	SDC
	FIRING RATE (GPH)	4.65
	STACK DIAMETER (IN)	10"
	FUEL PRESSURE (PSI)	135
	FUEL NOZZLE	4 80°A
SAFETY COMPONENETS	THERMOSTAT	STANDARD
	FLOW SWITCH	STANDARD
	HIGH TEMPERATURE LIMIT PROTECTOR	STANDARD
	HIGH PRESSURE BLOW OFF VALVE	STANDARD
FEATURES	PORTABLE	NO
	FINISH	POLYESTER POWDER
	DIMENSIONS (LxWxH) (IN)	26.5 x 26.5 x58
	WEIGHT (LBS)	790
	COIL	3/4" SCH 80 PIPE

Initial factory settings:

HV690F-12V Air band 3 Air shutter 6



Troubleshooting Guide

WARNING: POTENTIAL FOR FIRE, SMOKE AND ASPHYXIATION HAZARDS

Repairs or adjustments to the burner must ONLY be carried out by a professional, qualified oil fired burner Technician. Incorrect installation, adjustment or misuse of this burner could result in death, severe personal injury, or substantial property damage.

TROUBLE	POSSIBLE CAUSE	REMEDY
Blower fan will not turn on	No power	Check 12volt power connections
	Blown Fuse on Primary control	Check and replace fuse.
Burner will not ignite Missing Ferrite around ignition wires	No fuel or contaminated fuel	Fill fuel tank and check fuel filter for water and other contaminants.
	Primary control soft lockout (Refer to guide below)	Reset primary control turn unit off for 5 sec then turn on See controller image below
	Primary control hard lockout (Refer to guide below)	Reset primary control turn unit off for 5 sec then turn on See controller image below
	Faulty thermostat	Replace
	Plugged oil nozzle	Replace (do not clean)
	Electrodes out of alignment	Adjust.
	Electrodes insulator failure	Check for breaks, cracks, or sparks trails-Replace.
	Water flow switch not closing	Adjust, repair or replace.
	Fuel solenoid valve not opening	Clean, repair or replace.
	Weak transformer	Clean and check transformer terminals. Replace if necessary. Check for spark.
	Faulty burner oil pump	Adjust or replace
Burner will ignite and run but flame is lost shortly thereafter	Air trapped in fuel system	Bleed fuel system
	Missing Ferrite	Place ferrite around igniter wires
	Misaligned flame tube	Adjust flame tube to factory setting
	Thermostat set too low	Adjust thermostat
	Faulty thermostat	Replace
	Faulty flow switch/flow switch probe	Replace
	Faulty Primary control	Replace

	(Refer to guide below)	
Surface of Cabinet getting hot	Tear in insulation around coil	Repair or replace
	Gap between coil insulation and top cap	Remove cap and add or adjust insulation to remove gap
	Coil bottom insulation disturbed	Remove coil repair or replace bottom insulation
	Misaligned burner flame tube	Inspect for visual damage to flame tube flange assembly. Adjust, repair or replace flame tube assemblies.
Water leak	Loose fitting(s)	Tighten fitting(s)
	Frozen coil	Repair or Replace.
	Broken fitting(s)	Replace.
	Severe condensation	Check insulation on bottom and around coil. Repair any tears or gaps in insulation.
Burner runs but does not run smooth	Air band open too much or too little	Adjust air band
	Fuel filter/fuel connections loose	Tighten or repair
	Fuel nozzle clogged	Replace fuel nozzle
	Air in fuel system	Bleed Fuel system
Unit Smokes	Improper fuel	Use No. 1 or No. 2 Fuel Oil
	Combustion air insufficient	Adjust air band
	Fuel nozzle interior loose	Replace nozzle
	Electrodes misaligned	Adjust electrodes
	Excessive soot build up on coil	Clean coil
	Fuel filter clogged	Clean fuel filter/replace
	Improper fuel pressure	Fix visible leaks. Check for clogged fuel lines. Service or replace fuel filter and/or fuel pump.
Water temperature lower than normal	Thermostat set too low	Adjust thermostat
	Water inlet temperature lower than normal (50°F)	Not applicable
	Water flow rate higher than normal	Adjust flow rate to machine specifications
	Coil limed up	Descale coil
	Improper combustion	Readjust burner
	Thermostat malfunction	Replace
Blowing Fuses/ breaker	Dead short	Check all wires and connections

	Wrong fuse / breaker	Replace with proper rated fuse / breaker
	Clogged or seized fuel pump	Repair or Replace
	Burner drawing too much current	Replace burner or repair burner components
	Motor seized	Replace burner motor
	Broken blower wheel	Replace blower wheel
	Fuse / breaker trips while calling for heat	Check components on limit circuit and replace malfunctioning component
Burner continues to run after washing is stopped	Faulty flow switch/flow switch probe	Replace flow switch/flow switch probe

NOTE: Use replacement insulation of manufacturer specifications.

Beckett SDC (HV690)Oil Burner with integrated Controller

See Beckett owner's manual for further details of operation.

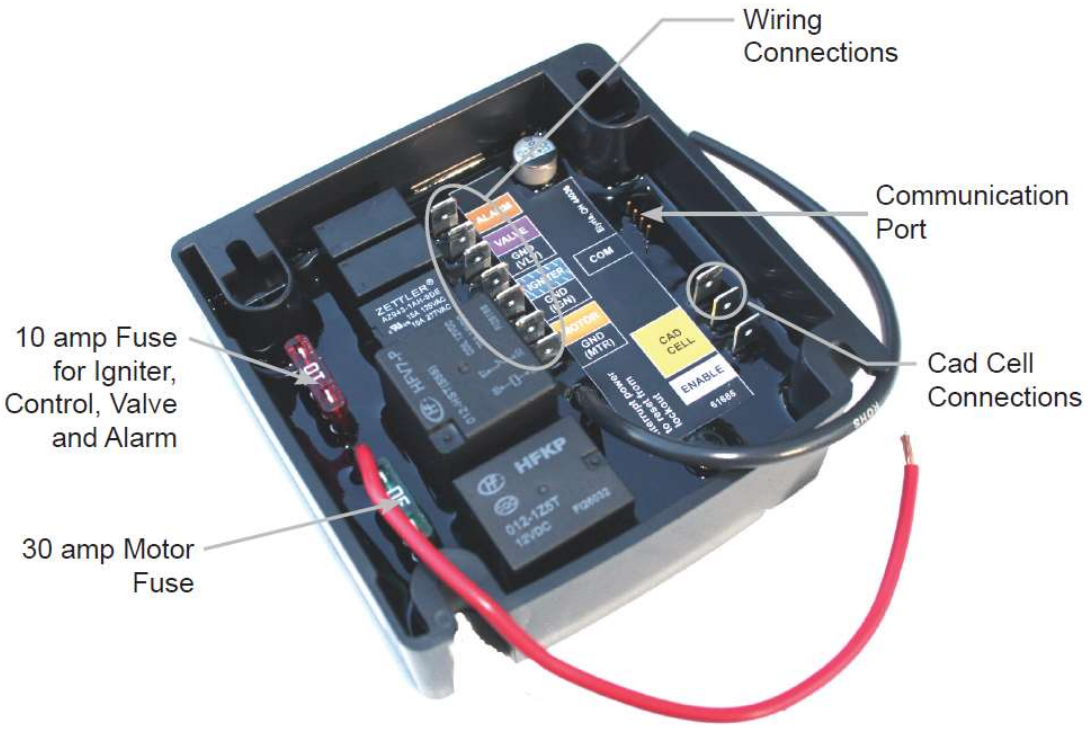
To reset 12V primary control

- Turn power OFF using burner switch
- Leave power OFF for 10 seconds
- Turn power ON using burner switch

Burner Switch

<u>Please note:</u> there are two fuses inside the 12 volt primary control. Take note of what functions they control

Figure 1 – Getting to know the control



Warranty Policy

This product is warranted to be free from defects in materials and workmanship under normal use and service, for a period of one year from the date of purchase, unless stated otherwise below, when operated and maintained in accordance with the Maintenance and Operation Instructions supplied with the unit. The warranty does not cover misuse or negligence.

This warranty is extended only to the original purchaser. Hoses, spray guns, wands and other accessories are warranted for 90 days. Warranty is void if repairs are attempted by anyone other than an Authorized Service Centre.

If a difficulty develops with the product, you should contact the nearest Authorized Repair Centre or DYNABLAST INC. office. Only these locations are authorized to make repairs to the product or replacement of defective parts, which will be done at no charge within a reasonable time after receipt of the product. Units or parts should be returned at the customer's expense to the nearest DYNABLAST location or Authorized Service Centre. Pack unit in a strong carton and pad tightly to avoid damage. Damage in transit is not covered by warranty. Include original purchase receipt with any claim (but keep a copy for your files).

DYNABLAST INC. liability under warranty is limited to repair of the product and/or replacement of parts and is given to the purchaser in lieu of all other remedies including incidental and collateral charges. There are no expressed warranties other than those specified herein.

SPECIAL WARRANTIES	WARRANTY PERIOD
Fabricated Components	1 year parts, 1 year labour
Burner, Transformer, Control Switch, Safety Switch Pressure and Flow Switch	1 year parts and labour
Schedule 80 Heating Coil Limited Warranty *(see below)	3 year parts, 1 year labour
Schedule 40 Heating Coil	2 year parts, 1 year labour

We must receive the coil serial number section of the coil to substantiate the warranty claim.

We will not replace coils under warranty if the coils have been subjected to misuse such as:

1. Freezing 2. Lime Deposit 3. Other foreign material deposit 4. Shock or Vibration

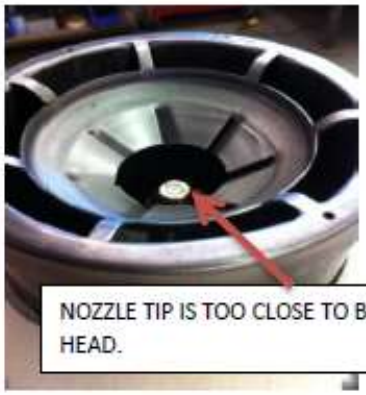
Any replacement during the warranty period will have a warranty of one (1) year, or the balance of the original warranty, whichever is greater.

Contact your dealer for sales and service support. For your nearest dealer, contact Dynablast Inc. Mississauga, Ontario, Canada at 1-888-881-6667

SYMPTOM:

BURNER WILL NOT ESTABLISH A FLAME AND GO IN TO RELIGHT MODE. BURNER WILL CONTINUE TO TRY AND ESTABLISH A FLAME UNTIL IT LOCKS OUT (BURNER CYCLES ON AND OFF UNTILL IT LOCKS OUT).

DIAGNOSIS:



NOZZLE TIP IS TOO CLOSE TO BURNER HEAD.

REPAIR STEP 1.

LOOSEN NUTS TO ALLOW FOR ADJUSTER PLATE TO MOVE

REPAIR STEP 2.

MOVE ELECTRODE ASSEMBLY DOWN BY PULLING GENTLY ON COPPER TUBE NUT. THIS MOVEMENT WILL REPOSITION THE INDICATING LINE UP ONE NOTCH ON THE ADJUSTER PLATE. TIGHTEN NUTS.

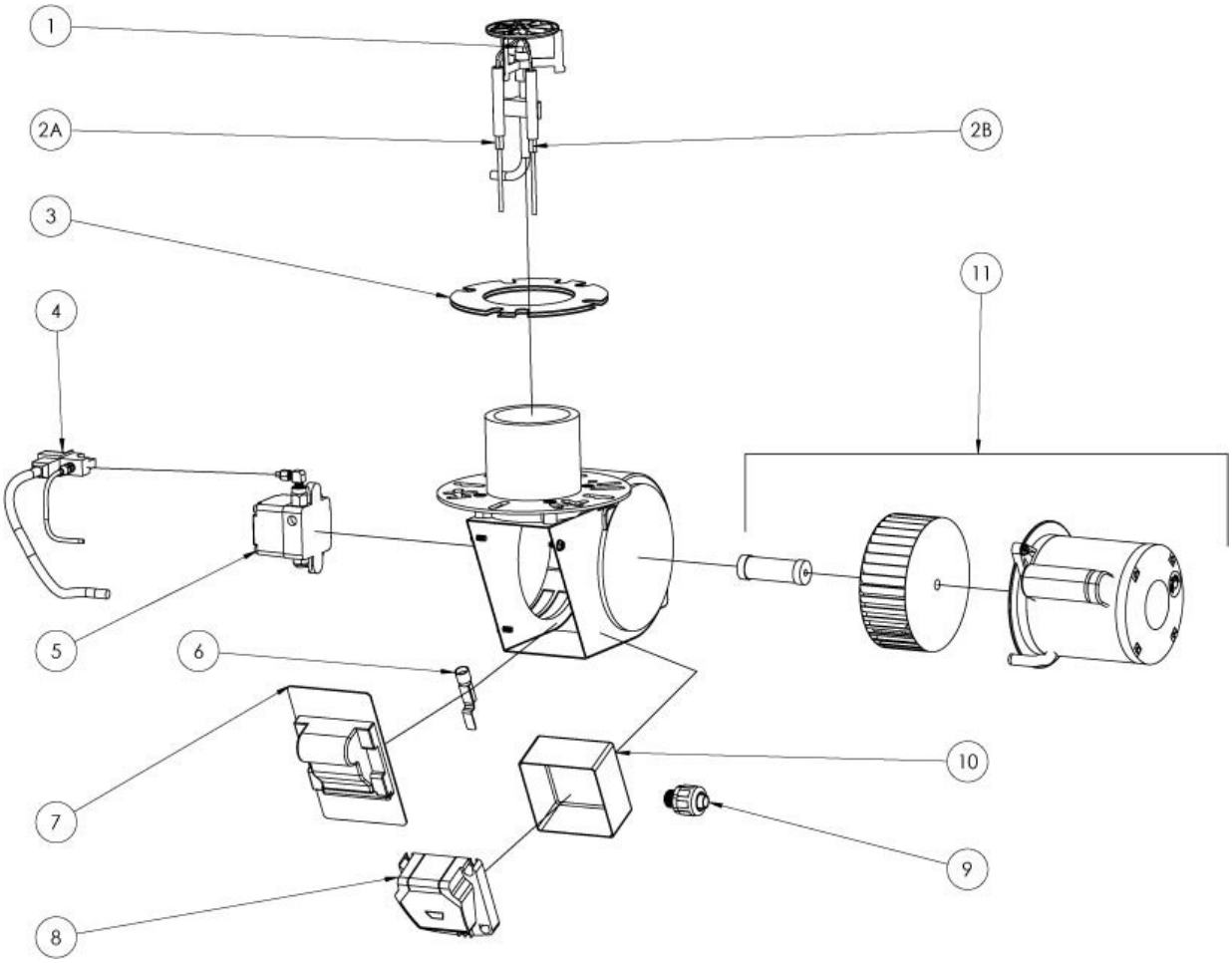
INDICATING LINE

START BURNER NORMALLY AND CONFIRM PROPER OPERATION. REMEMBER BURNER WILL IGNITE AFTER A FIVE SECOND PRE-PURGE DELAY. IF SYMPTOM PERSIST'S, ADD FERRITE TO IGNITER WIRES (SEE IMAGE BELOW).

Contact: Eastern Canada 1-888-881-6667 Western Canada 1-800-527-8592

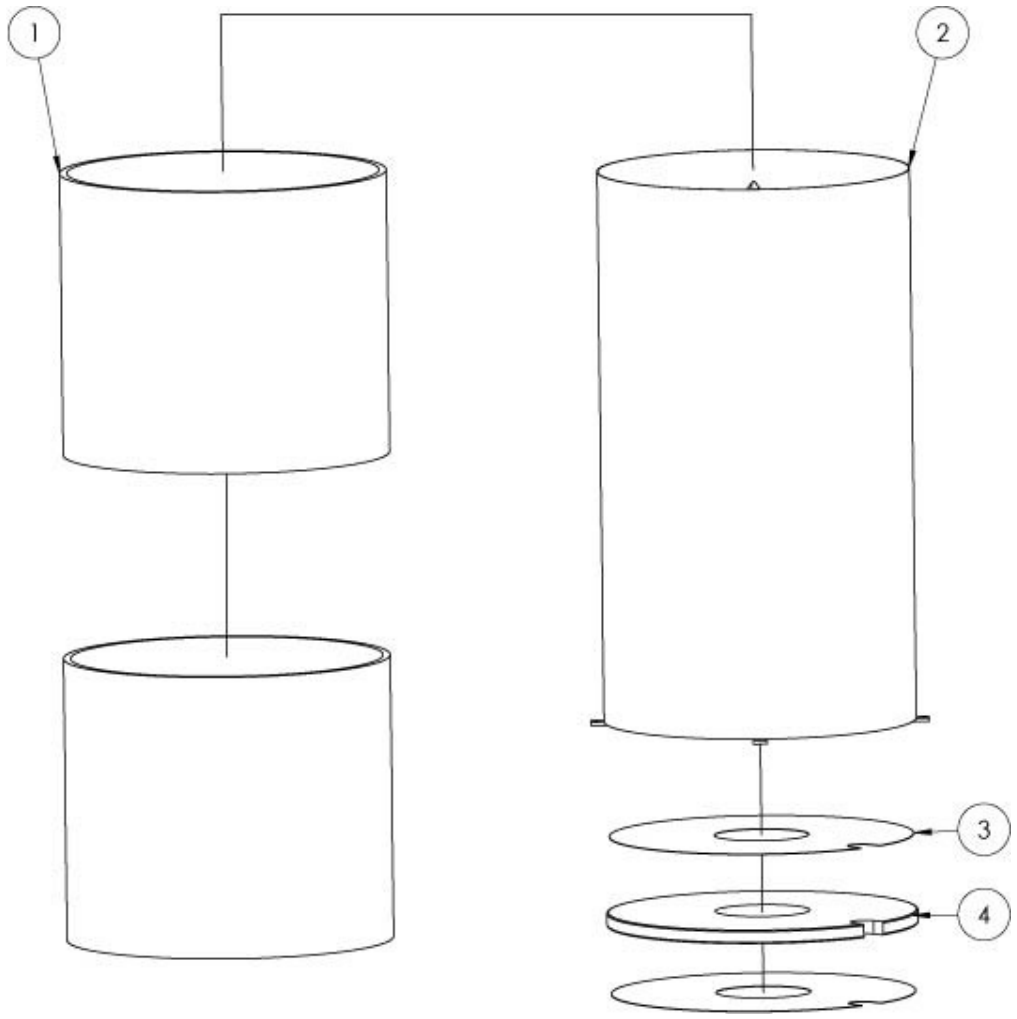
CLIP FERRITE AROUND THE THREE IGNITER WIRES AS CLOSE TO THE IGNITER BODY (WIRE COLOURS BLUE/WHITE, BLACK, WHITE). CLOSE ASSEMBLY AND TIGHTEN.

Parts Breakdown HV690F-12V



Ref No.	Part Number	Description	Quantity
1	HW4.080A	Fuel Nozzle	1
2A	HW5780	Electrode Kit	1
2B			
3	HW3616	Gasket	1
4	HW21441	Oil Solenoid	1
5	HW2591	Fuel Pump	1
6	HW7006U	Cad cell	1
7	HW5218301U	Igniter	1
8	HWHE7556	Primary Control	1
9	HWELHFC3/8	Strain Relief	1
10	HWEP3741	Electrical Box	1
11	HW52146U	Burner Motor Assembly	1

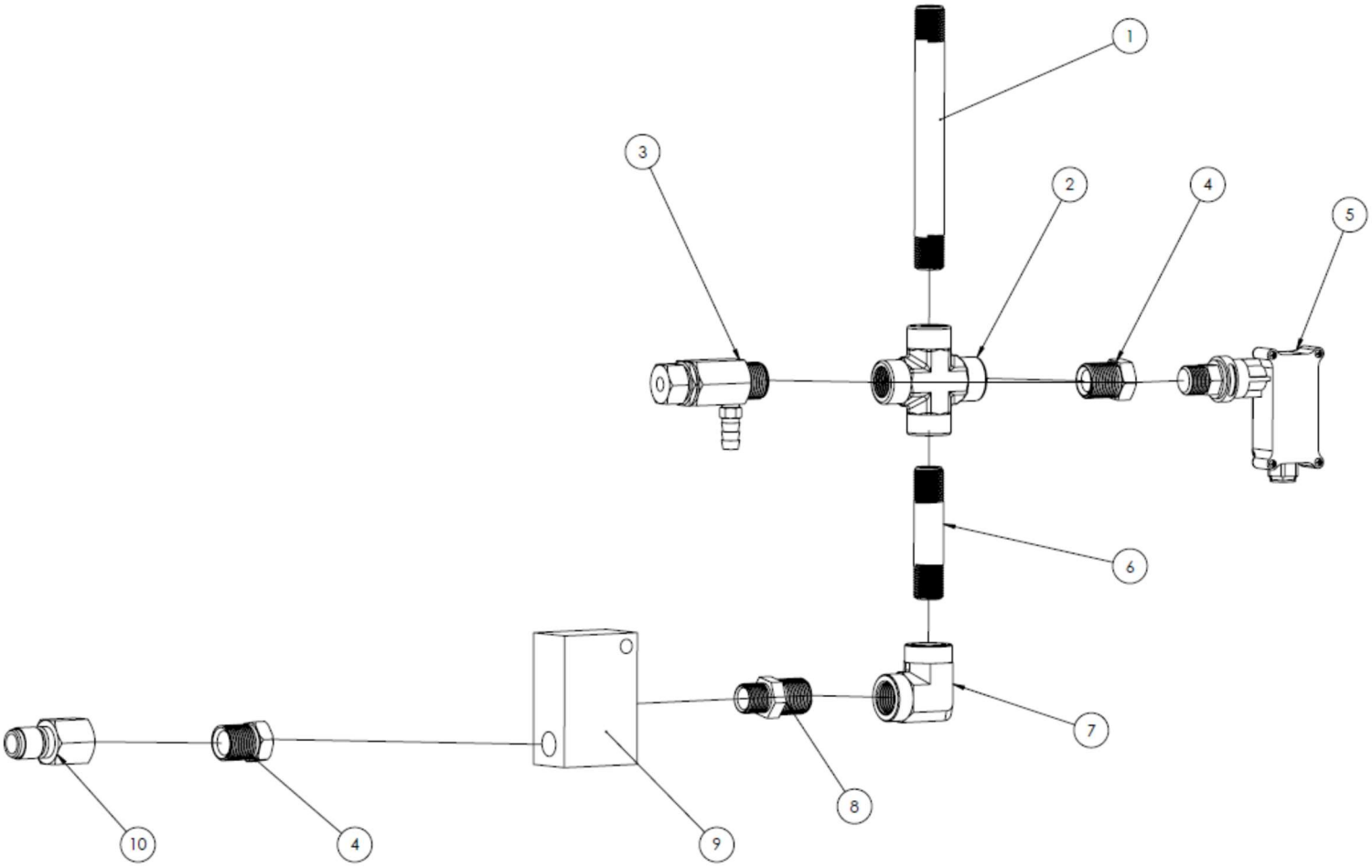
Parts Breakdown HV690F-12V



Ref No	Part Number	Description	Quantity
1	HWHEQ80753	82" X 24" X 1" 607 BLKT	2
2	HW40209	700 Coil	1
3	HWEP27167	Bottom Steel Ring	2
4	HWHEQ80752	Bottom Insulation Ring	1

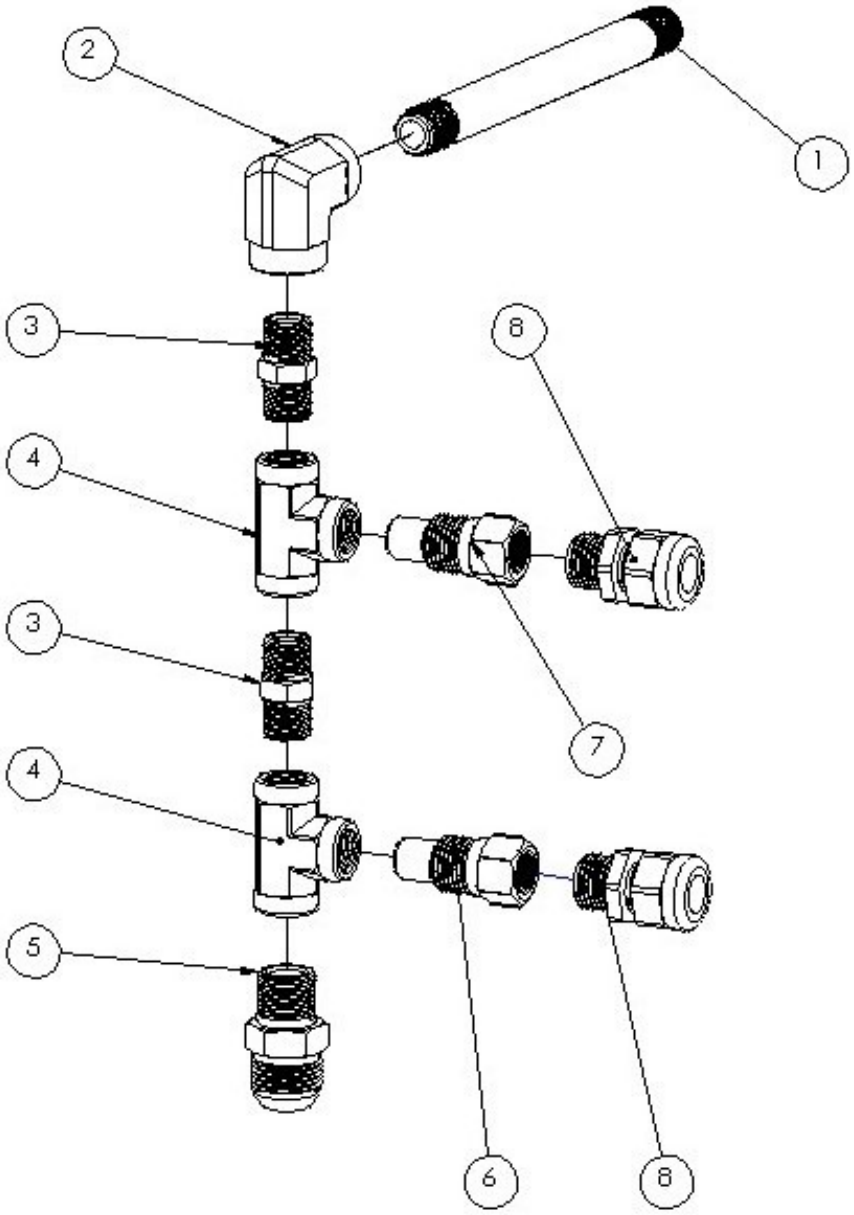
HW40209KIT INSULATION KIT REQUIRED WITH COIL REPLACEMENT

Parts Breakdown HV690F-12V Inlet



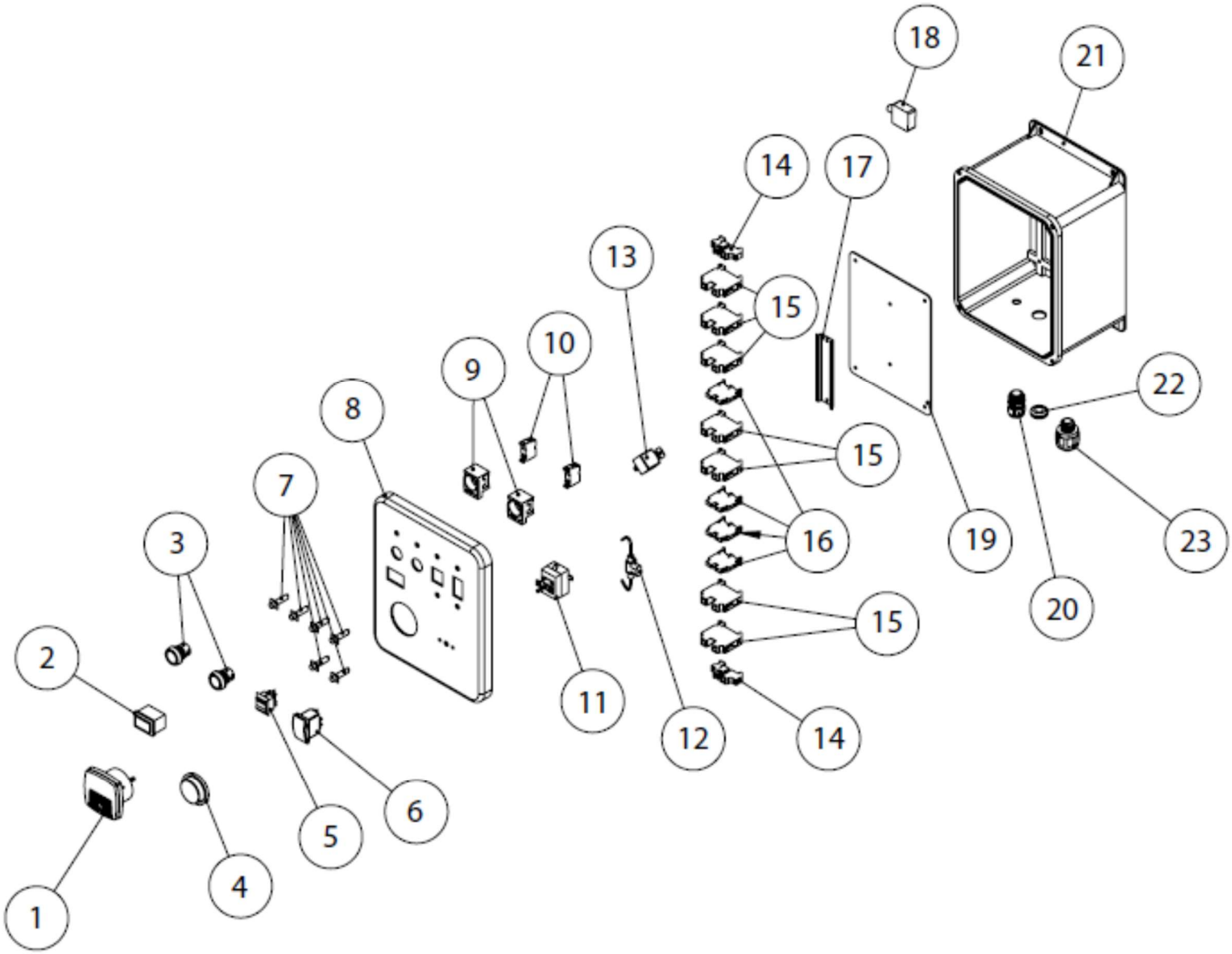
Ref No.	Part Number	Description	Quantity
1	HWFIMP113-D5H160	1/2" X 5" Steel Nipple sch 160	1
2	HWFIS1002-D	1/2" ST Cross	1
3	GP100984	12 GPM Relief Valve	1
4	HWFIS1010-DC	3/8"F X 1/2"M Steel Bushing	2
5	PSW1	Pressure Switch 3 Wire	1
6	HWFIMP113-D41/2H160	1/2" X 4.5" NIPPLE sch 160	1
7	HWFIS1000-D	1/2"F X 1/2"F Steel Elbow	1
8	HWFIS1022-DC	1/2"F X 3/8" MALE NIPPLE	1
9	GP103011	FLOW SWITCH	1
10	HWEP22217FP	QUICK COUPLER	1

Parts Breakdown HV690F-12V outlet



Ref No.	Part Number	Description	Quantity
1	HWFIMP113-D6	1/2" X 6" Steel Nipple	1
2	HWFIS1000-D	1/2" X 1/2" Steel Elbow	1
3	HWFIS1022-D	1/2" X 1/2" Male Coupler	2
4	HWFIS1001-D	1/2" ST Female Tee	2
5	HWFI348-12D	1/2" To 3/4" JIC	1
6	HWT44110NL	Hi Limit (110C)	1
7	HWELT44165	Hi Limit (160C)	1
8	HWEL3200	1/2" liquid tights	1

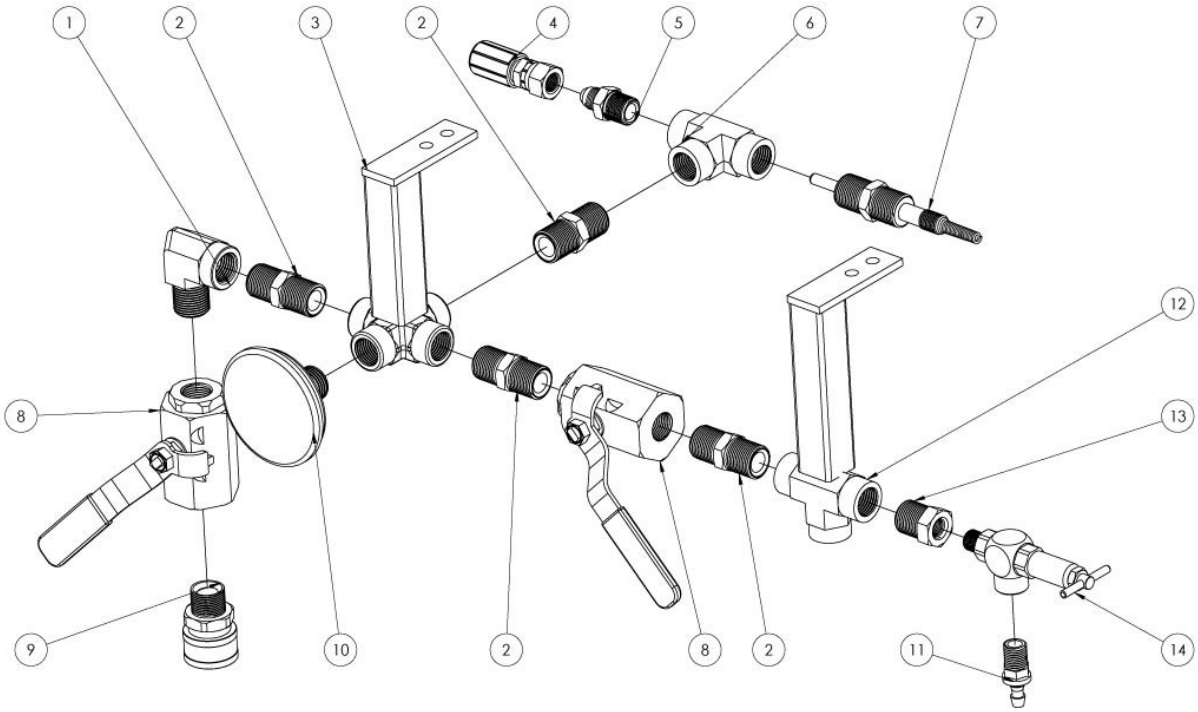
Parts Breakdown HV690F-12V CONTROL BOX



Parts Breakdown HV690F-12V CONTROL BOX

Ref No	Part Number	Description	Quantity
1	HWEL18235-12V	Volt Meter	1
2	HWELT61	Hour Meter	1
3	HWELPBMC	Push Button	2
4	GP100439	Thermometer Knob	1
5	HWEL2504-11E	DPDT Switch 12-250V	1
6	HWELV1DABCOB	Burner Switch	1
7	HWEL2194A1-28V	Pilot Light	6
8	HWELJ100806W	Electrical Box Front Panel	1
9	Included with Part # 3	Button Contacts	2
10	Included with Part # 3	Button Terminal Block	2
11	GP100439	Thermostat Control	1
12	HWEL78J5672	Fuse Relay (REQUIRES 2 AMP FUSE)	1
13	HWEL1174	Relay	1
14	HWEL3022218	OLIPFIX 35 Terminal Block	2
15	HWEL3044199	UT16 Terminal Block	7
16	HWEL3044131	UT6 Terminal Block	4
17	HWEL199-DR9	35mm DIN Rail	1
18	HWELW58XB1A4A-25	25 AMP	1
19	HWELVJ1008SWPL	Metal Box Plate	1
20	HWEL3200	Liquid Tight NPT 1/2	1
21	HWELJ100806W	Electrical Box	1
22	HWFARB224	1/2 Rubber Grommet	1
23	HWELHFC 3/8	Liquid Tight NPT 3/8	1

Parts Breakdown HV690F-12V



Ref No.	Part Number	Description	Quantity
1	HWFIS1015-D	1/2" MF Elbow	1
2	HWFIS1022-D	1/2" Hex Nipple	4
3	HWEP24491	Steam Bracket (Cross)	1
4	HWFI2809-12-48	Steam Hose	1
5	HWFIS348-12D	GIC Fitting	1
6	HWFIS1001-D	1/2" Tee	1
7	HWELATS7799-1IN	Thermocouple Probe	1
8	HWEP39504A	Ball Valve	2
9	HWEP22218 MP	1/2" Snap Coupler	1
10	HWFI30025-250	Thermal Gauge	1
11	HWFI1725-4C	3/8" Barb	1
12	HWEP24490	Steam Bracket (Tee)	1
13	HWFIS1010-DB	1/2" X 3/8" Bushing	1
14	HWSSAA110-318-700	Relief Valve	1

HV690F With Vent Interlock

High limit
switch 230 F
HWT44110

High limit
switch 320 F
HWT44165

Burner Switch
HWELV1DAB601

Push button
HWELPB225FOK

Pilot light
HWEL2194A1-28V

Thermostat
Test

Flow Test

Selector Switch
HWEL2504-11E

Pressure switch
PSW1
Normally Closed

Thermostat
GP100439

Hour Meter
HWELT61

Vent interlock
Switch
Remove jumper between
Terminals 7 & 8

T7

DC Volt Meter
HWEL18235-12V

Relay

25 AMPS

2 AMP
Fuse

Flow
switch

GP103011

Primary Control
HWHE7556

ALARM
VALVE
GND (VLV)
IGNITER
L2 (IGN)
MOTOR
L2 (MTR)
ENABLE

Ignition Transformer
HWEP5218303U

White

Cad Cell
HWHE7006U

Fuel pump / Solenoid valve
HWEP2591U / HWEP21441U

Blower motor
HWEP52146U

PR
BK
OR
RD
YL
BL/WS