

SLAYER®

User Manual
Version 3
Revision 3

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Warranty Information

Slayer offers a 15-month limited warranty on all electrical and mechanical parts. Wearable parts (including but not limited to rubber seals, gaskets, and o-rings) are not covered under warranty, nor are labor or shipping charges.

Due to the nature and characteristics of wood(s) used on Slayer machines, cracking, shrinking, and/or warping of this wood is not covered under warranty.

Damage to or failure of your Slayer machine due to inadequately treated water is not covered under warranty. Read "Water Treatment Requirements" on page 6 for information about water-related issues.

Important Safety Advisory

This guide includes important instructions about safe espresso machine installation, operation, and maintenance. Read this manual completely before installing and operating your Slayer espresso machine. Incorrect installation and operation may result in damage to the equipment, personal injury, or even death. Disregarding the instructions contained herein indemnifies Slayer from all resulting damages and may void the machine's warranty.

Shipping is coordinated by the customer and performed by a third party. Slayer is not responsible for damage incurred during transport. Upon receiving your machine, carefully inspect all packaging, equipment, and accessories for visible damage. Photograph any visible damage and immediately contact your shipping company representative. Comply with shipping company regulations. Do not connect your machine to power, water, or drainage until all issues have been resolved or your Slayer representative or reseller instructs you to do so. Failure to resolve issues before using equipment may result in further damage or injury.

Installation should be performed by qualified personnel only and must comply with all regulations and requirements of the authorities in your area. If guidance is needed to safely install your machine, contact your Slayer representative or reseller.

It is critical that an appropriately-rated and grounded electrical plug is used to supply your machine with power. This is essential for the safe operation and use of the equipment. Contact your Slayer representative or reseller with questions about this requirement. If you are unsure about the safety of the electrical configuration, do not attempt to install your machine.

Your Slayer espresso machine should only be used for the functions it was designed to perform. Using your machine outside of its defined functionality – as it is described in the "Using Slayer" section on page 23 of this guide – may be a safety hazard, resulting in property damage, physical injury, or even death, and will immediately void the warranty.

Slayer espresso machines are electrical appliances that should be used in a safe manner appropriate to devices of their kind:

- Do not connect your Slayer espresso machine to electrical power through an extension cord. The machine must be directly connected to an appropriately-rated and grounded power source.
- Do not position the power cord in walkways or other areas with high foot traffic.
- Slayer espresso machines are designed to be used indoors. When using your machine outdoors, take precautionary measures to protect it from moisture, humidity, and other natural elements.
- Before performing service on your machine, disconnect power source.

Water Treatment Requirements

Improper water treatment is the most frequent cause of espresso machine damage. Water is complex and varies significantly between regions, so take great care to test the water quality at your location and adjust as necessary. Employ the help of a reliable company (Slayer recommends [OptiPure](#) and [BWT](#)) to evaluate your water and recommend and administer treatments.

When evaluating water quality, the two most important factors to consider are calcium carbonate and chloride:

Calcium Carbonate: dissolved mineral that determines the "hardness" or "softness" of water.

The desirable range of hardness is 4-6 grains. Over time, calcium carbonate accumulates as a hard substance, called "scale", and will inhibit the flow of water. Machines subjected to "harder" water (greater than 6 grains) will accumulate scale faster and require maintenance sooner.

Chloride: chlorine combined with an electron from a negatively charged ion.

There are many types of chlorides, including calcium chloride, magnesium chloride, sodium chloride, etc. Chlorides produce salts that impart a strong taste, which alters the flavor of the espresso. Chlorides also encourage pitting corrosion, which causes damage to the machine.

Your water filtration company will create a treatment plan based on your water needs. Choose a filtration company that has solutions for addressing issues related to both calcium carbonate and chloride.

Common treatment options include carbon filtration, ion exchange and reverse osmosis:

Carbon Filtration: process by which water passes through the granular activated carbon, which attracts and retains many chemicals in the water that have an unpleasant taste or odor.

Carbon filtration is necessary for all Slayers. For water with 4-6 grains of hardness, carbon filtration is likely the only necessary water treatment.

Ion Exchange: process by which water passes through an ion exchange system, where where undesirable mineral components are retained and more desirable substances such as sodium are released.

An ion exchange system should be used in combination with a carbon filtration system and is especially beneficial for water in the range of 6-9 grains of hardness. This system is relatively inexpensive and effective in

removing inorganic substances. It does not, however, remove organic substances, such as bacteria.

Reverse Osmosis with Blend-Back Valve (or Remineralized RO): process by which water is forced through a semi-permeable membrane with selective pore sizes at high pressure, then blended with the appropriate amount of desired minerals.

Reverse osmosis may be a good solution for water in the range of 6-9 grains of hardness, but is mandatory for water above 9 grains. When blending minerals with the filtered water, target a TDS (total dissolved solids) value of 75-125 ppm. Experiment with various TDS levels to determine what is ideal.

IMPORTANT: All Slayer espresso machines need to be connected to a carbon water filter to remove chlorine, sediments, odor, and undesirable tastes from the water. This requirement is in addition to any other necessary water filtration systems.

Filtration requirements may vary seasonally. Water should be tested during each season to determine the best filtration plan. Once a filtration method has been selected, take note of the filter's peak capabilities. Contact the equipment vendor to inquire about the life expectancy of the filters, then schedule replacement and re-installation accordingly.

Every time a new water filter is installed, thoroughly rinse the filter before attaching it to your machine or pump. Run water from the supply line through the filter and down a drain for at least 2 minutes. Skipping this step will damage your machine. Damage to or failure of your machine due to inadequately treated water is not covered under warranty.

Recommended Tools & Accessories

To properly use and maintain your espresso machine, Slayer recommends owning an assortment of tools and accessories. These can each be organized in two categories: Beverage Preparation and Equipment Care & Maintenance. Specific requirements accompany each recommendation.

Beverage Preparation

- Espresso grinder
 - Adjustable grind setting
 - Capability for grinding very fine: espresso-to-Turkish
- Gram scale
 - Low resolution: 0.1-gram (1/10-gram) increments
- Shot glass
- Soft towel
- Steaming pitcher
 - Narrow spout
- Tamper
 - 58mm base diameter
- Thermometer

Equipment Care & Maintenance

Tools

- Allen key
- Crescent wrench
- Flat-head screwdriver
- Grouphead brush
- Needle-nose pliers
- Phillips-head screwdriver
- Pick or awl
- Pliers
- Socket wrench (9/16")
- Wrench

Supplies

- Approved espresso machine cleaner
- Approved espresso machine steam wand cleaner
- Non-abrasive surface cleaner
- Slayer lubricant
- Teflon tape
- Tung oil

Parts

See list of recommended spare parts on page

Installing Your Machine

Only qualified service personnel should install Slayer espresso machines. Incorrect installation may result in injury and/or damage to the equipment. Please read the "Important Safety Information" section on page 5 before beginning installation.

Install your Slayer espresso machine with the following ordered steps:

1. Prepare Site
2. Unpack Equipment
3. Connect Drain Hose
- 4A-C. Connect Water Line
5. Connect Pump
6. Connect Machine to Power
7. Fill Tanks
8. Turn On Heating Elements

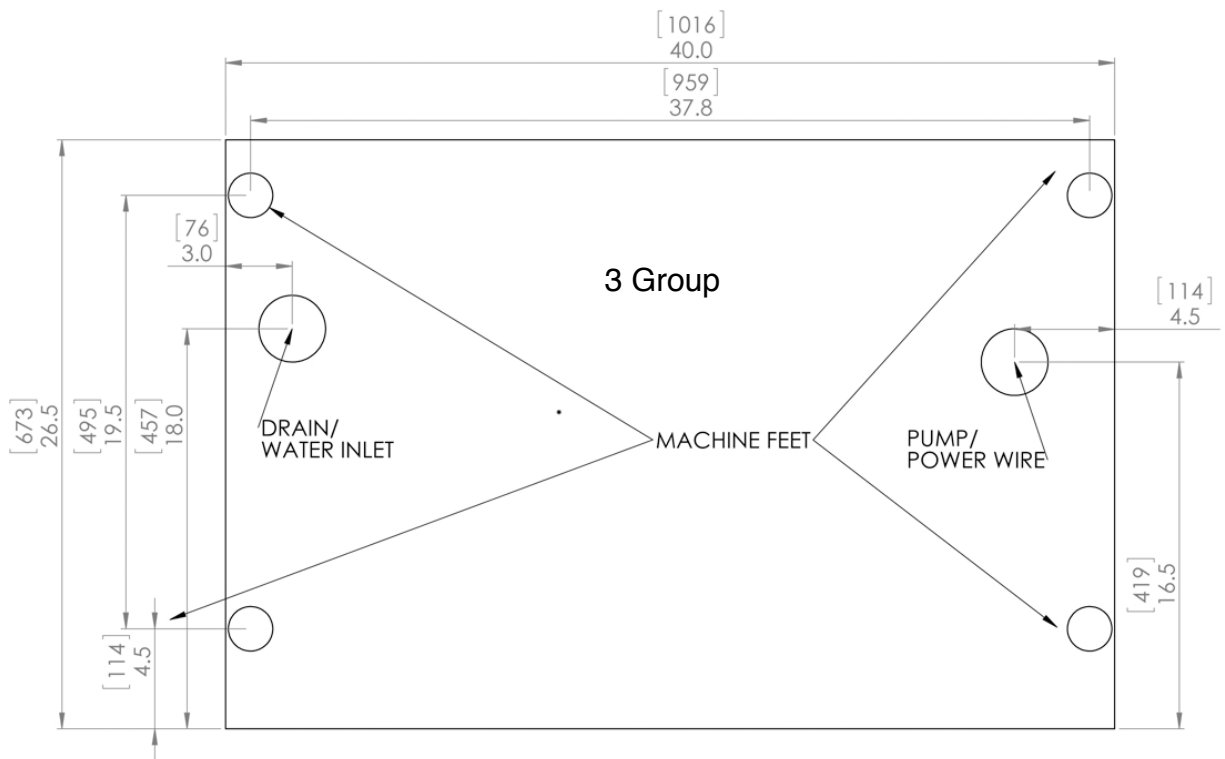
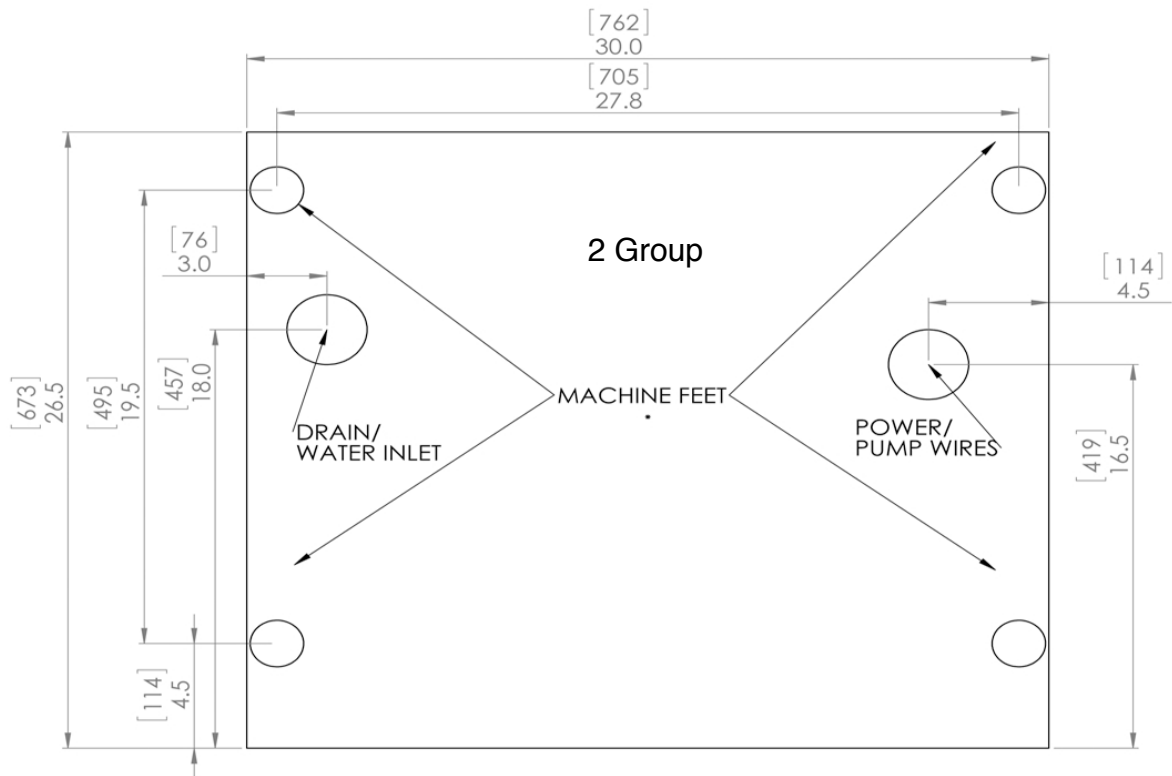
Step 1: Prepare Site

Your installation site will need direct access to power, water, and drainage. Building regulations vary by region, so confirm local requirements prior to connecting your machine.

Using quality, treated water is essential to achieving the best possible results when preparing coffee and may also extend the life of your machine. Read the Water Treatment Advisory on pages 6-7 for information about avoiding and addressing water-related issues.

Your Slayer espresso machine weighs approximately 160 kg (350 lb.) when filled with water and needs to be installed on a structure that is capable of supporting its weight.

Use the following diagram to locate and drill holes in the counter for the water and drain lines. Note that electrical plugs vary in size and a larger hole may be required to accommodate the main power cord.



Step 2: Unpack Equipment

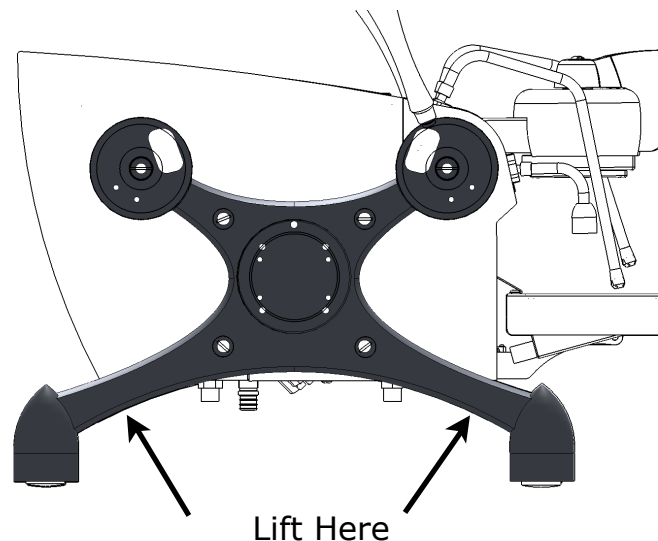
Your Slayer espresso machine will arrive in a lidded wooden crate, bolted to a pallet at the base. Unpack with the following steps.

Parts and tools:

- Phillips-head screwdriver
- Two (2) Rubber feet (included)
- Steam handles (included)
- Drip tray mirror (included)
- Three (3) nuts for drip tray mirror (included)

Procedure:

1. Use a phillips-head screwdriver to loosen and remove the screws (approximately eight [8] screws) located along the lower edge of the crate.
2. Carefully lift the lid from the pallet.
3. Remove all banding and packing material from the machine.
4. Use a phillips-head screwdriver to loosen and remove the screws (approximately two [2] screws) from the base of the pump, then detach it from the pallet.
5. The machine is attached to the pallet with two (2) bolts that are screwed into two (2) of its four (4) legs, one on each side of the machine. Use a socket wrench to loosen and remove the two (2) bolts from the underside of the pallet.
6. Attach the included rubber feet to the bottom of the two (2) legs that were bolted to the pallet.
7. Prepare surface by laying out one or more towels, which will rest under the machine's feet and allow for easy sliding into desired position.
8. Holding the machine by the lower part of the Xs, as shown, employ two (2) or more people to lift the machine up and onto the towels on the prepared surface.
9. Slide machine into desired position, then left legs, one or two at a time, to remove towel(s).
10. Attach the steam handles by threading into place.
11. Attach the drip tray mirror using the three (3) included nuts.
12. Pull both steam actuators forward, into the "on" positions. Leave steam actuators in the "on" positions until "Step 8: Turn on Heating Elements".



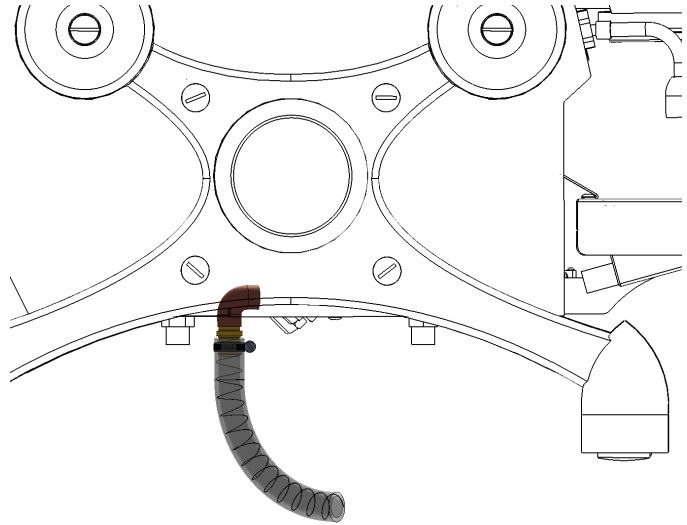
Step 3: Connect Drain Hose

Parts and tools:

- Drain hose (included)
- Hose clamp (included)
- Flat-head screwdriver

Procedure:

1. Use the hose clamp to fasten the drain hose to the drain outlet, as shown.
 - ▶ The drain hose has an inside diameter of 5/8" (1.6cm).
2. Prevent clogging by ensuring that the drain line always goes downwards.
 - ▶ Leave steam actuators in the "on" positions for "Step 8: Turn on Heating Elements".



Step 4A: Connect Water Line

For machines without hot water

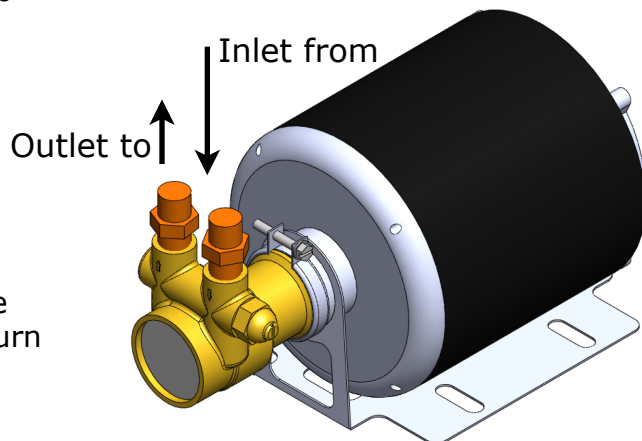
IMPORTANT: Before connecting a water treatment system to your espresso machine, rinse the system by running water through it for at least two (2) minutes. Failure to follow this step will result in equipment damage. Read the Water Treatment Requirements on pages 6-7 for information about avoiding and addressing water-related issues.

Parts and tools:

- 40"x3/8" braided stainless steel hose
- 60"x3/8" braided stainless steel hose (with 90-degree fitting)
- Wrench

Procedure:

1. Use the shorter, 40"x3/8" braided hose to connect the water treatment system outlet to the pump inlet.
2. Use the longer, 60"x3/8" hose to connect the pump outlet to the espresso machine water inlet (located at the bottom-rear of the machine).
 - ▶ The end with the 90-degree fitting should connect to the espresso machine.
 - ▶ Leave steam actuators in the "on" positions for "Step 8: Turn on Heating Elements".



Step 4B: Connect Water Line

For machines with hot water

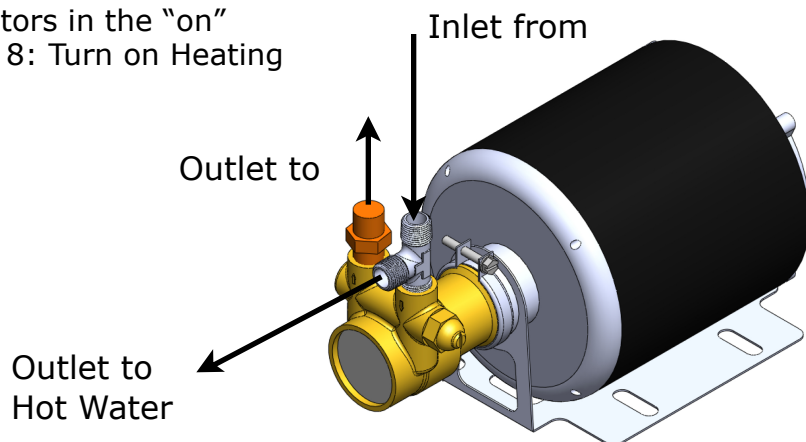
IMPORTANT: Before connecting a water treatment system to your espresso machine, rinse the system by running water through it for at least two (2) minutes. Failure to follow this step will result in equipment damage. Read the Water Treatment Requirements on pages 6-7 for information about avoiding and addressing water-related issues.

Parts and tools:

- 40"x3/8" braided stainless steel hose
- Two (2) 60"x3/8" braided stainless steel hoses (with 90-degree fittings)
- Wrench

Procedure:

1. Use the shorter, 40"x3/8" braided hose to connect the water treatment system outlet to the pump inlet.
2. Use one of the longer, 60"x3/8" hoses to connect the pump outlet to the espresso machine water inlet (located at the bottom-rear of the machine).
 - ▶ The end with the 90-degree fitting should connect to the espresso machine.
3. Use another of the longer, 60"x3/8" braided hoses to connect the T-fitting on the pump to the hot water mix-valve inlet on the espresso machine (located near the drip tray).
 - ▶ The end with the 90-degree fitting should connect to the espresso machine.
 - ▶ Leave steam actuators in the "on" positions for "Step 8: Turn on Heating Elements".



Step 4C: Adjust Hot Water Temperature

For machines with hot water

Parts and tools:

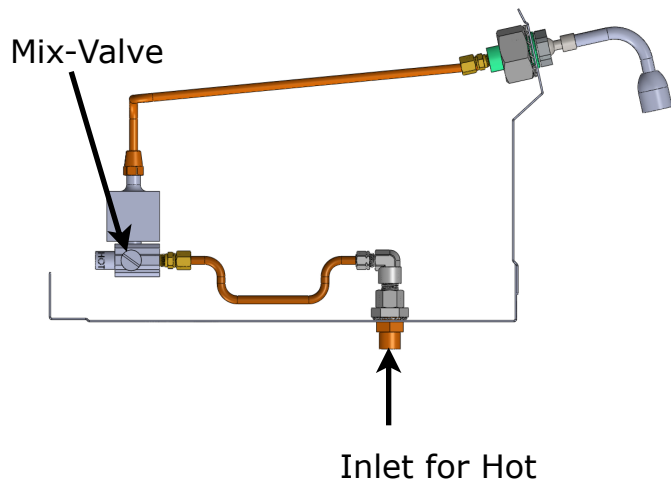
- Flat-head screwdriver

Procedure:

1. Remove the cup tray.
2. Use a large, flathead screwdriver to remove the two top and one lower rear screws from the x-leg, then lift to remove the left rear side panel.
3. Use the adjustment needle-valve to regulate the amount of cold water that mixes with the hot water.
 - ▶ Turn counter-clockwise to increase the amount of cold water and decrease the water temperature.
 - ▶ Turn clockwise to decrease the amount of cold water and increase the water temperature.
 - ▶ Leave steam actuators in the "on" positions for "Step 8: Turn on Heating Elements".

Step 5: Connect Pump

Two (2) electrical cords extend from outside of your Slayer espresso machine. The thinner of these cords has a small, white quick-connect plug. Insert the quick connect plug into the matching plug unit on the pump motor.



Step 6: Connect Machine to Power

IMPORTANT: Before beginning any electrical work on your machine, ensure that both the red power switch and white heating element switch are in the "off" position.

Your espresso machine will ship with the power configuration requested at the time of purchase. Only an electrician or approved technician should wire the power cord into an appropriately-rated plug end. Once the plug end is attached, insert the main power cord into an appropriately-rated and grounded receptacle.

Step 7: Fill Tanks

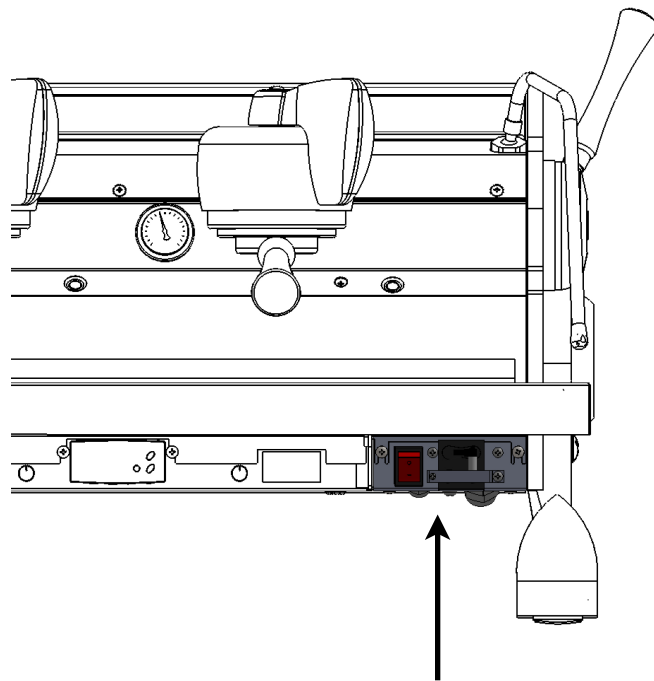
Procedure:

1. Pull one steam actuator forward, into the "on" position, until it stops.
2. Turn on the main water line and red power switch; tanks will begin to fill.
 - ▶ Wait to turn on the white heating element switch.

- ▶ Filling will take approximately and is complete when the pump motor ceases to work and a "click" is heard.
- 3. When Slayer has filled completely, move the brew actuators left, into the "on" positions.
- 4. When water begins to run from the groupheads, return the brew actuator to the "off" position.
 - ▶ Leave steam actuators in the "on" positions for "Step 8: Turn on Heating Elements".

Step 8: Turn On Heating Elements

1. Per step 7, ensure that both steam actuators are pulled forward, into the "on" positions.
2. Move the white heating element switch to the "on" position by flipping it to the left.
3. The machine is heated when steam begins to flow from the steam wand; at this point, move the steam actuators into the "off" positions.
4. Lift to remove cup tray and check the inside of the machine for leaks or collected water.
5. Allow Slayer to fully heat before use.



Factory Settings

Brew Tank Temperature:	93°C (200°F)
Pre-Heat Tank Temperature:	85°C (185°F)
Steam Tank Temperature:	118°C (245°F)
Steam Pressure:	1.5 bar
Flow Rate:	40 grams per 30 seconds
Pump Pressure:	9 bar

Using Slayer

Introductory Brewing Information

Slayer is a unique method for preparing espresso. Familiar processes and variables may need to be altered when using this machine. Consider the following generalizations and guidelines when preparing espresso with Slayer.

Roast Profile

Slayer utilizes flow restriction and multiple extraction sequences to permit “flavor profiling” for individual coffees. Because dark-roasted beans may not exhibit the full potential of your Slayer, nor the flavorful complexity of your coffee, Slayer recommends light and medium roasts.

Ground Particle Size

Due to its slower introduction of water, permitted by a precision needle valve, Slayer is able to brew espresso with coffee that has been ground at extremely fine settings. Smaller particles reveal more of the coffee’s surface area to water, thereby allowing the extraction of more flavor-carrying oils. These oils create a rich, silky mouthfeel, mask bitterness, and increase perceived sweetness. When setting up your grinder, target a setting that achieves the recommended beverage yield with the recommended dose weight in the recommended brew time. Continue reading for recommendations regarding these brewing parameters.

Dose Weight & Basket Size

During its extended “pre-brew” phase, Slayer saturates the ground coffee puck to an extent of thoroughness that no other espresso machine can match. As a result, the coffee puck’s resistance to high pressure and maximum flow is minimal. In order to achieve adequate extraction time, Slayer recommends using 19-21 grams of ground coffee in the included portafilter basket. Lighter doses and/or larger baskets will lead to prohibitively short extraction times and may cause channeling.

Bed Depth & Tamp Pressure

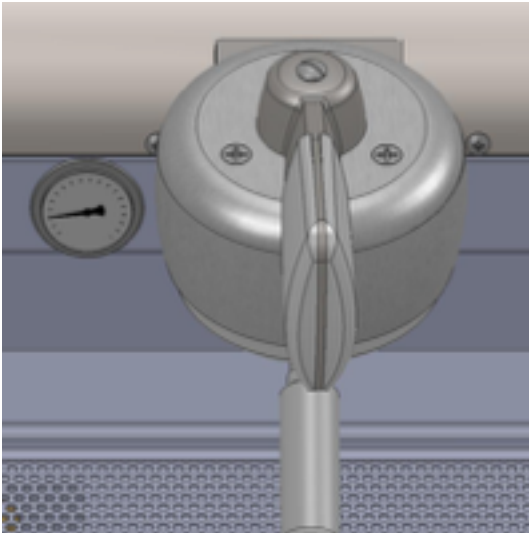
With most espresso machines, firmly tamping ground coffee is essential to forming a puck through which water will evenly flow. Due to its slower introduction of water, Slayer changes the importance of tamping: instead of tamping to a specific pressure (e.g. 30 lb.), Slayer recommends tamping to a specific depth in order to achieve the adequate headspace between the coffee puck and the shower screen. This space allows the coffee to release gas and bloom before brewing. To ensure consistent results, target a tamp depth that levels the top of the tamper piston with the top of the portafilter basket (approximately 10 mm).

Brew Time

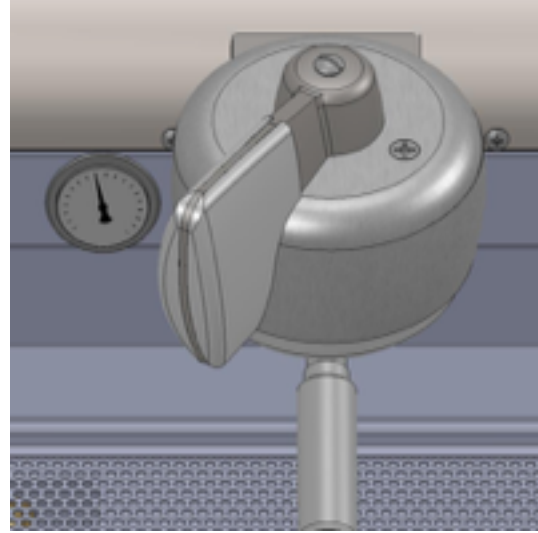
With most espresso machines, extraction should last 25-30 seconds. Due to its slower introduction of water, Slayer may brew espresso in 40 seconds or more. Begin by targeting a 45-second (20s pre-brew + 25s brew) extraction time.

Preparing Espresso

Slayer's brew actuator allows for three positions: "off", "pre-brew", and "full brew". The grouphead is in the "off" position when the brew actuator is moved all the way right. The "pre-brew" setting is activated when the actuator is moved to the middle of the group. "Full brew" is achieved when the actuator is moved all the way left.



Pre-brew position



Full-brew position

The following guidelines represent a good starting point when first using Slayer. Coffee is a complex food item that differs from variety to variety, farm to farm, and even seed to seed. Changes in brewing variables – including grind, dose, temperature, flow rate, time, etc. – affect all coffees uniquely.

Standard Shot

The procedure for brewing a standard shot is similar to that for other espresso machines:

1. Remove the portafilter from the grouphead and wipe the basket with a clean, dry towel.
2. Set the grind to the same degree of coarseness as you would for another espresso machine.
3. Grind and dose 19-21 grams of coffee into the portafilter.
4. Tamp coffee to approximately 30 pounds of pressure, briefly flush group, then lock the portafilter into the grouphead.
5. Move the brew actuator directly to the "full brew" position.
6. Allow the espresso to brew until the preferred extraction has been achieved (when blonding occurs, when the desired beverage yield has dispensed, or when the desired brew time has elapsed), then move the actuator to the "off" position.
7. Remove the portafilter from the grouphead and knock out spent coffee. Wipe the portafilter with a clean towel to remove grounds and oil.

8. Briefly move the brew actuator to the "full brew" position to purge grounds and oil from the dispersion screen. Move the grouphead to the "off" position and return the portafilter.

"Slayer Shot"

To brew a "Slayer shot", ensure that the flow rate is at the desired setting and the grinder is set finer than normal, then:

1. Remove the portafilter from the grouphead and wipe the basket with a clean, dry towel.
2. Grind and dose 19-21 grams of coffee into the portafilter.
3. Tamp the ground coffee to a depth of approximately 10mm, briefly flush group, then lock the portafilter into the grouphead.
4. Move the brew actuator into the center of the grouphead to activate pre-brew.
5. Pre-brew times will vary based on the dose, grind, flow rate, brew temperature, and characteristics of the coffee. The average Slayer pre-brew takes approximately 20 seconds. Watch the bottom of the portafilter basket shot mirror to see when the coffee puck becomes fully saturated.
6. The fully saturated portafilter basket will begin to drip. Immediately before espresso starts to flow consistently, move the brew actuator to the "full brew" position.
7. Allow the espresso to brew until the preferred extraction has been achieved (when blanding occurs, when the desired beverage yield has dispensed, or when the desired brew time has elapsed), then move the actuator to the "off" position.
8. Remove the portafilter from the grouphead and knock out spent coffee. Wipe the portafilter with a clean towel to remove grounds and oil.
9. Briefly move the brew actuator to the "full brew" position to purge grounds and oil from the dispersion screen. Move the grouphead to the "off" position and return the portafilter.

Extended Pre-Brew: Enhancing Sweetness

When espresso lacks sweetness, the pre-brew phase may be extended to extract more of the naturally-sweet oils:

1. Follow "Slayer Shot" steps 1-5 above, but allow the espresso to continue extracting in the "pre-brew" stage until it has dispensed up to 7 grams (0.25 ounces).
2. Move the brew actuator to the "full brew" position, then resume "Slayer Shot" steps 7-9.

Reduced Flow: Muting Acidity

Undesirable acidity can be softened by moving the actuator back to the middle position at the end of the extraction process:

1. Follow "Slayer Shot" steps 1-6.
2. When the machine dispenses approximately two-thirds of the desired volume, return the brew actuator to the middle position, then resume "Slayer Shot" steps 7-9.

"Bumped" Pressure: Increasing Acidity

If more acidity is desired, the full-brew stage can be briefly engaged before pre-brew:

1. Follow "Slayer Shot" steps 1-3.
2. Move the brew actuator to the "full brew" position until the grouphead pressurizes (less than 1 second), then quickly return the actuator to the "pre-brew" position.
 - ▶ Engaging "full brew" for longer than 1 second may cause the puck to choke, extending extraction and resulting in undesirable flavor.
3. Resume "Slayer Shot" steps 4-9, combining instructions for "Enhancing Sweetness" and "Reducing Acidity", if desired.

Steaming Milk

Slayer produces powerful steam by combining high pressure with restricted steam tip holes. Various steam tip options (numbered 0-5) are available to allow the barista to customize their steaming experience and milk texture.

Steam milk with the following steps.

1. Fill a cold pitcher with the desired volume of fresh milk.
2. Immediately before steaming milk, aim the steam wand toward the drip tray or into a towel and pull the steam actuator forward to release steam and purge condensation. Then, turn off the steam wand.
3. Submerge the steam tip in milk and turn on the steam wand.
4. Immediately move the pitcher down to expose the steam tip to the surface of the milk, incorporating fine air bubbles.
5. When the milk reaches body temperature, submerge the steam tip again, then tilt the pitcher to form a gentle whirlpool.
6. When the pitcher feels hot, turn off the steam wand.
 - ▶ The final milk temperature should be 65-68°C (150-155°F).
7. Wipe the steam wand with a damp cloth, removing all milk residue, then briefly turn on the steam wand to purge milk from the wand.

Dispensing Hot Water

Hot water tap included only upon request

The hot water spout is activated with a push button located above the spout. Push the button once to dispense water; push again to turn off water.

Hot water is drawn from the steam tank and mixed with incoming cold water. Frequent or heavy use of the hot water spout may result in reduced steam tank pressure and temperature, causing decreased steaming ability.

Adjust Flow Rates

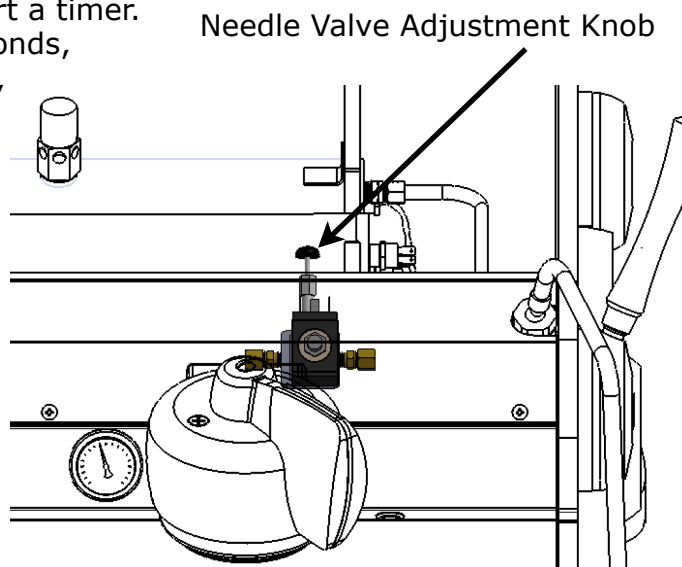
Flow rate is controlled by a precision needle valve, which is located inside of the machine on top of the brew tank. Adjust the flow rate with the following steps.

Parts and tools:

- Empty 8-ounce vessel
- Gram scale
- Timer

Procedure:

1. Ensure that Slayer is fully heated.
2. Remove portafilters from all groupheads and set aside.
3. Begin with one grouphead: briefly move the brew actuator to the "pre-brew" position, then to the "full brew" position for a few seconds before returning the grouphead to the "off" position.
4. Beneath the same grouphead, place a container on a scale and tare the scale to zero.
5. Simultaneously move the brew actuator to the "pre-brew" position and start a timer.
6. When the timer reaches 30 seconds, remove the container and scale, then move the brew actuator to the "off" position.
7. Weigh the container again without taring the scale to determine how much water dispersed in the allotted time.
8. Use this weight to determine flow rate, which is expressed in these terms: *x grams of water per 30 seconds*.
 - ▶ Slayer recommends starting with a flow rate of 40-60 grams of water per 30 seconds. The actual flow rate may be within a range of +/- 2 grams of the desired flow rate.



- ▶ To decrease the flow rate, turn the blue control knob on the needle valve clockwise.
 - ▶ To increase the flow rate, turn the blue control knob on the needle valve counter-clockwise.
9. Repeat all steps for each grouphead.

IMPORTANT: Over-tightening the valve may break the needle inside. Only adjust the flow rate incrementally to avoid damage.

Adjust Brew Tank Temperature

At the Slayer studio, brew tanks are set to 93°C (200°F). Each grouphead has its own PID temperature controller, which can be manipulated independently. Adjust the brew tanks' temperatures with the following steps.

1. Begin with one grouphead: briefly press the corresponding PID controller's green "SEL" button, which will engage the red "SV" light.
 - ▶ The "C2", "AL1", and "AL2" indicators are not used on Slayer.
2. Use the up and down arrow buttons to select the desired temperature.
3. Press "SEL" again to return to normal operation, indicated by the red "SV" light turning off.
 - ▶ The new temperature will be achieved and stable within 10 minutes.
4. Repeat all steps for each grouphead.



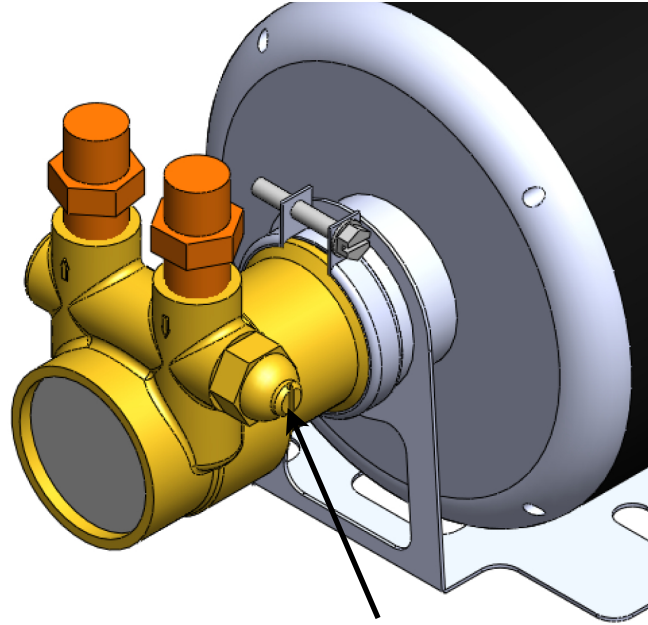
NOTE: Each of the brew tanks' PIDs has an "F" printed on its plastic exterior, which indicates temperature readings in degrees Fahrenheit. However, the actual temperature may read in either Fahrenheit or Celsius, depending on your request at the time of ordering.

Adjust Brew Pump Pressure

At the Slayer studio, the brew pump pressure is set at 9 bar. Actual brew pressure, as indicated by the pressure gauge on the face of your machine, will be influenced by incoming water pressure (line pressure) at your location. Adjust the brew pump pressure with the following steps.

1. Lock a loaded portafilter, blind insert, or Scace device in the grouphead, then move the brew actuator to the "full brew" position.

2. During "full brew", watch the brew pressure gauge and turn the pump screw to adjust the pump pressure.
 - ▶ Turn counter-clockwise to decrease the pump pressure.
 - ▶ Turn clockwise to increase the pump pressure.
3. Reconfigure flow rate per instructions under "Using Slayer > Adjust Flow Rates".



NOTE: Due to the unique method by which Slayer espresso machines read brew pressure, the pressure gauge will read 0 bar unless a loaded portafilter, blind insert, or Scace device provides back-pressure.

Adjust Steam Tank Temperature & Pressure

At the Slayer studio, steam tanks are set to 118°C (245°F). The temperature of the tank is directly related to the steam pressure: increasing the temperature will increase the pressure, while decreasing the temperature will decrease the pressure. The factory-set temperature of the steam tank produces a pressure of 1.5 bar. If the steam is more or less powerful than you prefer, adjust with the following steps.

1. Briefly press the Love Controller's "SET" button and wait for the screen to begin flashing.
2. Press the "SET" button again to access the steam tank set temperature. A red LED will light under "out2".
 - ▶ Use the up and down arrow buttons to select the desired temperature, making only incremental adjustments.
3. Press the "SET" button again to confirm new temperature setting and return to original screen.
4. Pull a steam actuator forward to engage steam, then wait until the Love Controller's "Out 2" red light turns on.
5. Return the steam actuator to the "off" position, then wait until the "Out 2" light turns off.
6. Check the steam pressure gauge inside Slayer to confirm new pressure setting.



NOTE: The steam and pre-heat tanks' Love Controller has an "F" printed on its plastic exterior, which indicates temperature readings in degrees Fahrenheit. However, the actual temperature may read in either Fahrenheit or Celsius, depending on your request at the time of ordering.

Adjust Pre-Brew Timers

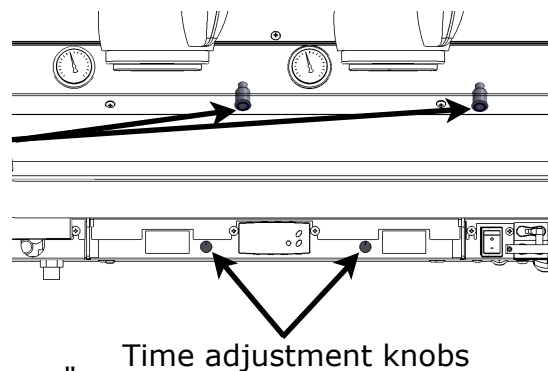
Pre-brew timers included only upon request

The pre-brew timers allows the barista to minimize brew actuator movement while still making use of the pre-brew function. Upon request, each group can be outfitted with its own timer. To prepare espresso with the pre-brew timer, see instructions under "Using Slayer > Using Pre-Brew Timer" on page 25.

The timer is activated with a push button located to the right of the corresponding grouphead. When the button is in the "on" position, all extractions will be regulated by the timer. The timer can be adjusted with a metal knob located beneath the drip tray.

Adjust the pre-brew timer with the following steps.

1. Locate the pre-brew timer push button(s) on the right side of the corresponding grouphead(s). When the button is in the "on" position, all extractions will be regulated by the timer.
2. With the pre-brew timer off, prepare a shot of espresso with your preferred method, using both pre-brew and full brew stages. Time the manual pre-brew stage.
3. Remove the portafilter and use the push button to activate the pre-brew timer functionality.
4. Move the brew actuator left, to the "full brew" position. Though the actuator will be in the "full brew" position, the pre-brew stage will be performed for the stored time before Slayer automatically engages the full-brew stage. Time the automated pre-brew stage.
5. Locate the metal knob(s) underneath the drip tray. Turn as necessary, until the automated pre-brew time in step 4 is equal to the desired pre-brew time noted in step 2.
 - ▶ Turn counter-clockwise to decrease the pre-brew time.
 - ▶ Turn clockwise to increase the pre-brew time.



Using Pre-Brew Timers

The pre-brew timer allows the barista to minimize brew actuator movement while still making use of the pre-brew function. It can be activated, deactivated, and programmed with the corresponding buttons and knobs; see instructions under "Using Slayer > Adjust Pre-Brew Timer" on page 24.

To prepare espresso with the pre-brew timer functionality,

1. Use the push button to activate the pre-brew timer functionality.
2. Grind, dose, and tamp coffee as usual, then lock the portafilter in the grouphead.
3. Move the brew actuator to the "full brew" position to begin extraction. Slayer will automatically initiate the pre-brew and full brew stages.
4. Allow the espresso to brew until the preferred extraction has been achieved (when blonding occurs, when the desired beverage yield has dispensed, or when the desired brew time has elapsed), then move the actuator to the "off" position.
5. Remove the portafilter from the grouphead and knock out spent coffee. Wipe the portafilter with a clean towel to remove grounds and oil.
6. Briefly move the brew actuator to the "full brew" position to purge grounds and oil from the dispersion screen. Move the grouphead to the "off" position and return the portafilter.

Pre-Heat Tank Temperature

At the Slayer studio, brew tanks are set for optimal performance at to 85°C (185°F). *We do not recommend changing the preheat temperature.* Changes to the pre-heat temperature may negatively affect the machine's performance and pose a safety risk. Please contact your Slayer representative, reseller, or technician before changing this setting.

NOTE: The steam and pre-heat tanks' Love Controller has an "F" printed on its plastic exterior, which indicates temperature readings in degrees Fahrenheit. However, the actual temperature may read in either Fahrenheit or Celsius, depending on your request at the time of ordering.

Cleaning & Preventative Maintenance

Keeping your machine clean and properly maintained is essential to ensuring espresso quality and equipment longevity. Espresso machines require both daily cleaning and ongoing periodic maintenance. The frequency with which these tasks should be completed will depend on the location and use of your espresso machine. The follow recommendations assume heavy use in a commercial setting.

Please observe the following preventative maintenance schedule.

CAUTION: Slayer and its parts may be very hot. Please read the Important Safety Information section prior to using Slayer and take the necessary steps to protect yourself and others.

Daily

- *Body*
- *Groupheads*
- *Steam Wands*

Every 1-2 Months

- *Portafilter Gaskets*
- *Dispersion Screens*

Every 6 Months

- *Steam Tank*
- *Steam Valve Pin O-Rings*
- *Shoulder Bolt Shims*
- *Brew Actuator*

Every 12-18 Months

- *Expansion Valve*
- *Anti-Suction Valve*
- *Steam Valve*
- *Water Level Probe*
- *Brew Actuator Bearing*

Wood Care

Daily

Body

Parts and tools:

- Soft, clean towel
- Non-abrasive cleaner, e.g. window cleaner (optional)

Procedure:

Use a soft, clean towel to wipe the surfaces of the machine. Do not use abrasive cleaners. Small amounts of window cleaner may be used on the stainless steel components. If your Slayer has wood panels, please refer to the "Wood Care" section.

Groupheads

Cleaning and backflushing the groupheads prevents the build up of coffee oils. Backflush each group at least twice daily: once with water and once with an approved espresso machine cleaning powder.

To maximize efficiency and lengthen the life of wearable parts, we recommend keeping two (2) sets of dispersion screens and screws on hand. Alternate between sets for each end-of-day backflush (see below).

General Group Cleaning

Recommended as part of every backflush cycle, or as needed

Parts and tools:

- Cleaning brush or towel
- Flat-head screwdriver
- Portafilter with basket removed

Procedure:

1. Begin with one grouphead: use a cleaning brush or towel to scrub the portafilter gasket and loosen oil and coffee grounds.
2. Remove the dispersion screw and screen with a flat-head screwdriver and rinse with clean water.
 - ▶ Ensure that the dispersion screw holes remain clear of coffee grounds, as they may otherwise damage internal parts of the grouphead.
3. Use a clean, damp towel to wipe oil and grounds from the face and sides of the dispersion block, as well as the portafilter body.
4. Return the clean dispersion screw and screen to the grouphead.
5. Thoroughly rinse portafilter with hot water, insert basket, and lock in grouphead.
 - ▶ *CAUTION: failure to reinstall the dispersion screw and screen before next use may cause the grouphead to clog with coffee particles. Do not attempt to brew espresso before the dispersion screw and screen have been correctly installed.*

6. Repeat all steps for each grouphead.

Backflushing with Water Only

Recommended once daily

Parts and tools:

- Cleaning brush or towel
- Flat-head screwdriver
- Blind portafilter insert
- Portafilter

Procedure:

1. Complete "General Group Cleaning" steps 1-4 above.
2. Begin with one grouphead: replace portafilter basket with blind insert and lock in grouphead.
3. Move the brew actuator to the "full brew" position and activate the brew cycle for 10 seconds, then move the actuator back to the "off" position and wait 10 seconds. Repeat 5 times.
4. Repeat steps 1-3 for each grouphead.
5. Remove blind insert from portafilter and use a clean, damp towel to wipe oil and grounds from portafilter body.
6. Thoroughly rinse portafilter with hot water, insert basket, and lock in grouphead.

Backflushing with Espresso Machine Cleaner

Recommended once daily for commercial settings; once weekly for homes

Parts and tools:

- Replacement shower screens (part #46000-50070)
- Replacement dispersion screws (part #46000-50080)
- Cleaning brush or towel
- Flat-head screwdriver
- Approved espresso machine cleaner
- Blind portafilter insert
- Portafilter

Procedure:

1. Complete "General Group Cleaning" steps 1-3 above for all groupheads.
2. Soak dispersion screws and screens overnight in a solution of hot water and approved espresso machine cleaning powder. Later, rinse thoroughly with clean water.
3. Install clean, second sets of dispersion screws and screens.
4. Remove the baskets and portafilter springs from the portafilters and soak overnight with the dispersion screws and screens. Later, rinse thoroughly with clean water.
 - ▶ Do not soak portafilters with wood handles. Exposure to water and/or chemicals may cause wood to crack or warp.

5. Begin with one group: place the included blind insert in a portafilter, add approved espresso machine powder, and lock in grouphead.
6. Move the brew actuator to the "full brew" position and activate the brew cycle for 10 seconds, then move the actuator back to the "off" position and wait 10 seconds. Repeat 5 times.
7. Remove and rinse the portafilter.
8. Repeat steps 6-7 with water only, backflushing 5 times.
9. Repeat steps 5-8 for each group.
10. Remove blind insert from portafilter and use a clean, damp towel to wipe oil and grounds from portafilter body.
11. Thoroughly rinse portafilter with clean, hot water.
12. Later, after soaking, reattach portafilter spring and basket and lock portafilter in grouphead.

Steam Wands

After steaming milk, clean the exterior of the steam wand by wiping it thoroughly with a damp towel, then clear its interior by briefly allowing steam to flow.

If the steam wand tips clog, soak in hot water for several minutes, then briefly engage steam with wand submerged. For tough clogs, use an approved espresso machine steam wand cleaner.

Every 1-2 Months

Replacing Shower Screen

➔ vimeo.com/20084652 (password: prebrewpressure)

The dispersion screen may become bent or damaged and should be replaced periodically. Ideally, the mesh screen will sit firmly against the metal backing. If a gap forms, replace the dispersion screen.

Parts and tools:

- Replacement shower screen (part #46000-50070)
- Flat-head screwdriver

Procedure:

1. Complete steps 1-3 of "General Group Cleaning" under "Grouphead".
2. Discard old dispersion screen.
3. Install new screen and secure with the screw from step 1, taking care not to over-tighten. Tighten the screw with your fingers until it is secure, then rotate an additional 90 degrees (1/4 turn) with the screwdriver.
 - *CAUTION: failure to reinstall the dispersion screw and screen before next use may cause the grouphead to clog with coffee particles. Do not attempt to brew espresso before the dispersion screw and screen have been correctly installed.*

- ▶ *For additional assistance with this procedure, refer to parts diagrams on pages 58-74.*

Replacing Portafilter Gasket

➔ vimeo.com/20084652 (password: prebrewpressure)

The portafilter gasket forms a seal between the portafilter and the grouphead, preventing leaks. Over time, the portafilter gasket will become hard and lose its seal. If it becomes difficult to insert the portafilter or if dripping occurs around the portafilter body while brewing, replace the portafilter gasket.

Parts and tools:

- Replacement 6mm portafilter gasket (part #46000-56091)
- Flat-head screwdriver
- Pick or awl
- Cleaning brush or towel

Procedure:

1. Complete steps 1-3 of "General Group Cleaning" under "Grouphead".
2. Use a pick or awl to remove the old portafilter gasket, pressing the pick into the gasket and pulling downwards. If the gasket breaks into small pieces, continue picking until the entire gasket has been removed.
3. Insert new portafilter gasket in such a way that the flat side touches the grouphead and the round side is visible from the bottom. Gently press the gasket into place, then use a screwdriver, pick, or awl to secure it in place.
4. Return the clean dispersion screw and screen to the grouphead.
 - ▶ *CAUTION: failure to reinstall the dispersion screw and screen before next use may cause the grouphead to clog with coffee particles. Do not attempt to brew espresso before the dispersion screw and screen have been correctly installed.*
 - ▶ *For additional assistance with this procedure, refer to parts diagrams on pages 58-74.*

Every 6 Months

Before Maintenance Procedure

Before starting the 6-month maintenance procedure, make the following preparations.

1. Turn off your machine by moving both the red and white switches to the "off" position.
2. Turn off water supply, either at the source or at the filtration system.
3. Disconnect machine from power source.
4. Lift to remove cup tray assembly.

Draining Steam Tank

➔ vimeo.com/20110440 (password: prebrewpressure)

As steam is produced and exits the wand, minerals in the water are left behind build up inside the boiler. The steam tank needs to be drained periodically to remove these excess minerals. For assistance with this procedure, refer to parts diagrams on pages 58-74.

Parts and tools:

- 1/4" teflon or poly tubing
- Wrench

Procedure:

1. Follow instructions in above video to remove the machine's left side panel.
2. Locate the shutoff valve on the lower left side of the steam boiler. Insert a 1/4" teflon tube into the quick-connect fitting located after the shut-off valve, pressing firmly until the tube clicks into place.
 - ▶ If teflon tubing is not available, poly tubing may be used instead. If using poly tubing, see note under step 7 before beginning step 7.
3. Aim the open end of the 1/4" teflon tube into a sink or bucket, then secure the tube or weigh it down with a heavy object.
4. Use a wrench to open the shut-off valve. The steam in the boiler will push all of the water in the tank through the teflon line and into the drain.
 - ▶ If using poly tubing, do not open the valve fully; high pressure will damage tubing.
5. Allow the tank to drain, then continue with steps 6-. Other maintenance tasks may be performed during this time.
6. Close the shut-off valve and carefully remove the tube from the quick-connect fitting.
7. Reinstall the side panel.
8. Reconnect power and turn on water supply.
9. Move brew and steam actuators to the "on" positions.
10. Engage red power switch to refill tanks.
11. When water begins to flow from groupheads, indicating that the tanks have filled, move brew actuators to the "off" positions. Keep steam actuators in the "on" position.
12. Engage white power switch to turn on heating elements.
13. When steam begins to exit wands, close steam actuators and allow machine to fully heat.

Steam Valve Pin O-Rings

➔ vimeo.com/20114980 (password: prebrewpressure)

When the steam actuator is moved into the "on" position, it pushes a brass pin into the steam valve, which causes the valve to open and allows steam to

flow. The two (2) o-rings on the steam valve pin should be replaced every six (6) months.

[INSERT STEAM VALVE DIAGRAM]

Parts and tools:

- #8 - Part # 5309, Steam Valve Pin O-Rings
- Flat-head screwdriver
- 3/4" socket wrench
- Pliers
- Pick or awl

Procedure:

1. Remove top/side first?
2. While holding the corresponding nut on the machine's interior with a 3/4" socket wrench, use a flat-head screwdriver to loosen and remove the shoulder bolt.
3. Use pliers to remove the steam valve pin (#7).
4. Use a pick or awl to remove the o-rings (#8) from the steam valve pin and discard them. Put the new o-rings on the pin.
5. Rub Slayer lubricant on the pin and return the pin to the steam valve.

Shoulder Bolt Shims

The shoulder bolt's shims create a snug fit between the steam actuator hub and the side panel. Any time the steam actuator is removed, the shims should be replaced.

[INSERT STEAM SHOULDER DIAGRAM]

Parts and tools:

- #12 - Part # 5315, Shoulder Bolt Shim
- Screwdriver

Procedure:

1. Remove the shims from the shoulder bolt and discard them. Place two (2) new shims on the shoulder bolt.
2. Rub Slayer lubricant inside the steam actuator hub.
3. Attach the steam actuator hub and shoulder bolt to the machine, tightening with screwdriver. Confirm fit by wiggling the hub. If the hub does not fit snugly, remove the shoulder bolt and add more shims.
4. Test again and repeat step 3 until hub and panel fit snugly.

Brew Actuator

➔ VIDEO (password: prebrewpressure)

If the brew actuator becomes loose, tighten with the following steps.

Parts and tools:

- Flat-head screwdriver
- Allen key

Procedure:

1. Use a flat-head screwdriver to remove the lock screw from the top of the brew actuator.
2. Tighten the locking nut with an allen key. Test tightness by moving the actuator back and forth.
3. Adjust locking nut until desired tension is achieved.
4. Replace lock screw.

Every 12-18 Months

Begin the 12-18 month preventative maintenance procedure by turning off the machine's white and red power switches, unplugging its power source, disconnecting the main water line, and draining the steam.

After completing the following preventative maintenance tasks, reconnect the machine to power and water, then turn on the red power switch *only*. Once the machine has completely filled with water, turn on the white heating element switch. Use machine only after it has heated fully.

Expansion Valve

➔ vimeo.com/20211342 (password: prebrewpressure)

After 12-18 months, the seal in the expansion valve will wear out, causing water to leak from the valve. This will lead to temperature loss in the pre-heat tank and premature failure of the water filtration system. To diagnose a worn expansion valve, look for leaking water in the expansion valve drain tube and listen for beeping from the Love Controller, which indicates a cold pre-heat tank.

[INSERT DIAGRAM]

Parts and tools:

- #3 - Part # 5011, Expansion Valve
- #20 - Part # 5015, Copper Gasket
- Wrench
- Teflon tape

Procedure:

1. Partially drain pre-heat tank.
2. Disconnect silicone tube from the expansion valve.
3. Use a wrench to remove the expansion valve from the pre-heat tank and discard.
4. Apply teflon tape to the threads of the new expansion valve and slide a new copper gasket in place.
5. Install a new expansion valve, tightening with a wrench.

6. Reconnect the silicone tube.

Anti-Suction Valve

➔ [VIDEO] (password: prebrewpressure)

The anti-suction valve prevents a vacuum from forming in the steam tank, which would suck milk into the steam tank.

[INSERT DIAGRAM]

Parts and tools:

- #5 - Part # 5014, Anti-Vacuum Valve
- #8 - Part # 5015, Copper Gasket
- Teflon tape

1. Drain the steam tank by engaging both steam actuators until steam ceases to flow from the wands.
2. Remove the anti-suction valve and discard it.
3. Apply teflon tape to the threads of a new anti-vacuum valve and slide a new copper gasket into place.
4. Install the new valve, tightening with a wrench.

Steam Valve Seals

➔ vimeo.com/20335705 (password: prebrewpressure)

If steam leaks from either the tip or rotating base of the steam wand, replace the steam valve's rubber seals, o-rings and teflon bushing.

[INSERT DIAGRAM]

Parts and tools:

- #2 - # 5310, Steam Seat Gasket
- #5 - # 5306, Teflon Bushing
- #6 - # 5305, Teflon Busing O-Ring
- #8 - # 5302, Valve Nut O-Ring
- Two (2) large wrenches
- Pick or awl
- Slayer lubricant
- Needle-nose pliers
- Teflon tape

Procedure:

1. Drain the steam tank by engaging both steam actuators until steam ceases to flow from the wands, then return both steam actuators to the "off" position.
2. Remove the tube that connects the steam tank to the steam valve.
3. Loosen and remove the steam wand tip.

4. Use a wrench to loosen the steam wand valve nut, then remove the nut and the steam wand. Watch for the teflon bushing that sits inside the ball joint, ensuring that it doesn't fall out.
5. Use a pick or awl to remove the o-ring (#8) from the inside of the steam wand valve nut.
6. Clean the inside of the nut and insert a new o-ring. Apply Slayer lubricant to the o-ring and inside of the nut.
7. If the teflon bushing (#5) appears dark or flattened, discard it and install a new o-ring. Apply Slayer lubricant to the new o-ring and insert it in the steam wand valve nut.
8. Reattach steam wand.
9. Remove steam actuator hub.
10. Use wrench to secure steam valve body; use second wrench to remove the steam valve's large, brass nut.
11. Remove spring from steam valve body and use needle nose pliers to remove the steam seat from the valve body.
12. Use a pick or awl to separate steam seat gasket (#2) from steam seat. Insert new steam seat gasket in seat.
13. Reinsert steam seat and spring in the steam valve.
14. Apply teflon tape to the threads of the brass nut.
15. Use wrench to secure steam valve body; use second wrench to tighten brass nut.
16. Reconnect the steam tubes to the valve and steam tank.
17. Replace the steam actuator hub.

Water Level Probe

➔ VIDEO (password: prebrewpressure)

Parts and tools:

- Wrench
- Teflon tape
- Replacement probe

Procedure:

1. Drain steam tank.
2. Remove wire from probe and set aside.
3. Use a wrench to secure the larger of the two nuts at the base of the probe, then hold the nut in place and remove probe assembly.
4. Apply teflon tape to the threads of the nuts and add copper gasket.
5. Screw a new probe onto the tank.
6. Reconnect wire to probe.

Brew Actuator Bearing

➔ VIDEO (password: prebrewpressure)

**Replace parts within bearing. (1-3 years)
around 1 million cycles (ever 2-3 years) some parts need to be
replaced - ask Jason**

Wood Care

Keep all wood components dry and away from harsh elements. Use a soft, dry towel to wipe the wood clean. For tougher messes, use a slightly damp towel, then promptly dry the wood. Do not use chemicals or cleaning agents. Moisture and chemicals may cause the wood to warp or crack.

If the wood begins to look aged and dry, rub a small amount of tung oil into the wood with a clean, soft towel. Allow the oil to sink into the wood for at least five minutes, then wipe the remaining oil off with a dry towel.

Troubleshooting

Use this list of common symptoms to diagnose and resolve issues you experience with your espresso machine. Slayer's instructional videos are password-protected, but can be accessed with the code "prebrewpressure".

<i>Symptom</i>	<i>Possible cause(s)</i>	<i>Instructional video</i>
Bent gauges	Needle valve closed	vimeo.com/20345156
Brew tank cold; pre-heat and steam tanks normal	Tripped thermostat or faulty probes and/or PIDs	vimeo.com/20211342
Brew and pre-heat tanks cold; steam tank normal	Faulty expansion valve	vimeo.com/20211342
All tanks cold	Tripped breaker and/or white power switch off	vimeo.com/20219480
High pressure during pre-brew	Coffee ground too fine	vimeo.com/20293720
Hissing from machine's rear-left	Leaking pressure release valve	vimeo.com/20309382
Steam pressure low; brew pressure normal	Faulty check valve	vimeo.com/20208524
Steam pressure low and/or slow refill	Dirty probe	vimeo.com/20303179
Fast flow during pre-brew	Faulty switch and/or bad connection to Molex connector and/or missing magnet	vimeo.com/20296673
Pump runs continuously	Loose switch and/or brew actuator not in "off" position	vimeo.com/20300413
Steam tank overfills	Faulty solenoid valve and/or dirty probe and/or bad connection to probe	vimeo.com/20306832
Dripping group screens	Worn o-rings at valve insert and/or lower valve stem	vimeo.com/19575557
Dripping steam wand	Worn steam cup seal and/or o-rings	vimeo.com/20335705
Leaking group cap and/or bayonet	Worn o-rings at upper valve stem	vimeo.com/20218411

<i>Symptom</i>	<i>Possible cause(s)</i>	<i>Instructional video</i>
Leaking steam actuator hub	Worn steam valve pin o-rings	vimeo.com/20114980
No flow during pre-brew	Needle valve closed	vimeo.com/20220777

Video Guides

Use these videos to learn common procedures for your espresso machine. Slayer's instructional videos are password-protected, but can be accessed with the code "prebrewpressure".

<i>Procedure</i>	<i>Instructional video</i>
Adjusting pre-brew flow rate	vimeo.com/20121811
Replacing grouphead seals and/or screens	vimeo.com/20084652
Replacing steam valve pin	vimeo.com/20114980
Adjusting steam actuator tension	vimeo.com/20114980
Adjusting brew actuator tension	vimeo.com/20216962
Removing body panels	vimeo.com/20110440
Adjusting expansion valve	
Adjusting brew temperature	vimeo.com/20120809
Adjusting pre-heat and steam temperature	vimeo.com/20205234
Auto-tuning PID	vimeo.com/21042015