

OPERATION

SAFETY RECOMMENDATIONS

This machine uses hot hydraulic fluid under pressure. Check the security of all hoses and connections before operation.

Only use the same hydraulic fluid as used in the hydraulic system being flushed. DO NOT use mineral spirits, solvents, or any other volatile liquid.

Always wear safety glasses, protective gloves, and proper clothing when operating the flusher.

If hydraulic fluid gets in your eyes or on your skin, rinse with water immediately and seek medical attention if needed.

WARNING: Improper use of this machine can result in burns and other serious injuries. Always wear eye protection, protective clothing, and follow instructions to prevent potential injury.

FLUSH PROCEDURE

Fill the tank until fluid level is halfway in sight glass.

WARNING: DO NOT OVERFILL or run with fluid level higher than halfway in sight glass.

CAUTION: To prevent hydraulic fluid from overflowing during a flush cycle or when air purging, do not run with fluid higher than showing over halfway on the sight glass.

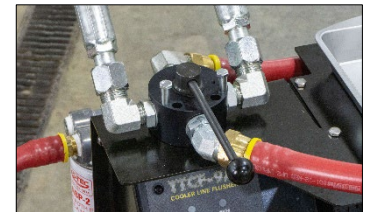
Plug each of the machines into a 20A grounded circuit without anything else plugged in or being used on the circuit. If a dedicated 20A circuit is not available, use two separate and dedicated 15A outlets.

Connect the flusher to 100-125 PSI shop air.

IMPORTANT: Move the **reverser valve** to the bypass (middle) position.

CAUTION: Make sure the reverser valve is in the neutral/bypass position prior to preheating.

Connect the **red** service hose to the cooler inlet line and the **black** service hose to the return line of the cooling system.



Use the **MODE** button to select "**START PREHEAT HEATER & PUMP**" and select "**CONT**" using the **RUN TIME** button.

Check the following:

- Secure fill cap
- Secure filter screen
- Check fluid level
- Check all connections
- Set flow rate
- Set flow direction

Press the **START/PAUSE** button to begin heating the flusher.



Once the unit reaches 140 degrees, press the **STOP** button.

Press the manual air purge button to clean out the lines.

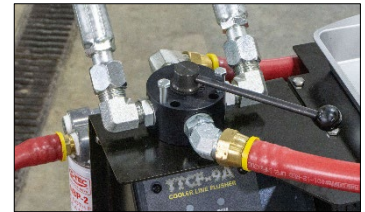
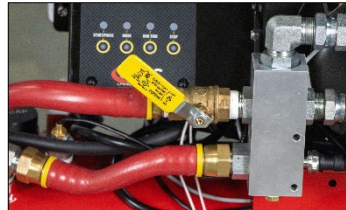
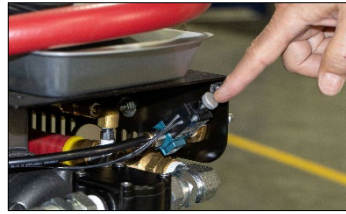
Remove the top half of the filter housing and place the screen filter into a waste bucket/container.

Adjust flow valve to roughly 1/3 open.

Use the **MODE** button to select "**START PURGE**". This will run the initial purge for 7.5 seconds to purge the cooler and line with clean fluid. Repeat until clean fluid is observed.

Clean the screen filter if needed and reassemble the filter housing and hand tighten the T handle to seal securely.

Move the **reverser valve** toward the **black** hose coming from the cooling system's return line. This will backflush the cooling system.



Use the **MODE** button to select "**START FLUSH**". Use the **RUN TIME** button to select the flush cycle time. It is suggested that the initial flush runs for 15 minutes to capture initial contaminants within the cooler system.

Press **START/PAUSE** and check the following:

- Secure fill cap
- Secure filter screen
- Check fluid level
- Check all connections
- Set flow rate
- Set flow direction

Press the **START/PAUSE** button to start the flush cycle.

At the end of a flush cycle, the flusher will stop and signal with an high audible tone. The display will show "**FLUSH COMPLETE**" with before and after flush cycle results.

Press the manual air purge button to clean out the lines.

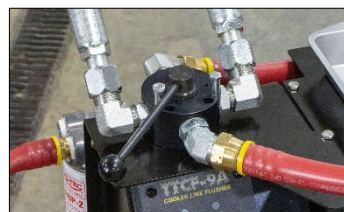
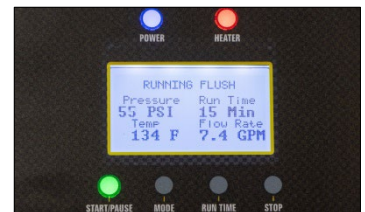
Remove the top half of the filter housing, note debris on filter screen, clean the screen, and reassemble the filter housing.

Repeat flush cycle selecting a desired time using the **RUN TIME** button from 15-120 minutes.

NOTE: With an initial flush completed, you can now run longer flush cycles along with switching the flow direction using the reverser valve between flush cycles.

Move the **reverser valve** toward the **red** service hose.

Use the **MODE** button to select "**START FLUSH**".



TTCF-9A Variable High Flow Heated Hydraulic Component Flusher

QUICK START INSTRUCTIONS

Press **START/PAUSE** and check the following:

- Secure fill cap
- Secure filter screen
- Check fluid level
- Check all connections
- Set flow rate
- Set flow direction

Press the **START/PAUSE** button to start the flush cycle.

At the end of a flush cycle, the flusher will stop and signal with an high audible tone. The display will show "**FLUSH COMPLETE**" with before and after flush cycle results.

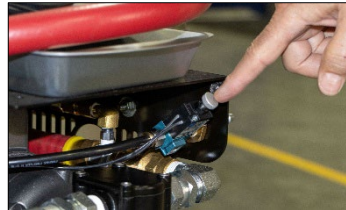
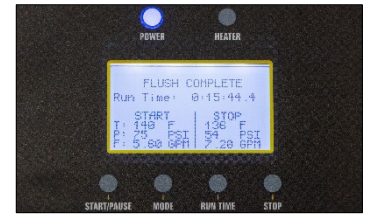
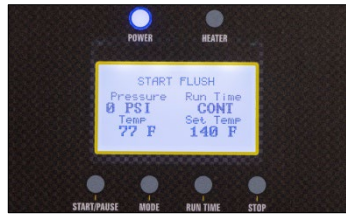
Press the manual air purge button to clean out the lines.

Remove the top half of the filter housing, note debris on filter screen, clean the screen, and reassemble the filter housing.

NOTE: Always use the manual air purge button prior to removing the top portion of the screen filter housing to clean out the cooler system and service hoses.

NOTE: A flush cycle time can be changed anytime by pressing the **RUN TIME** button to select a different flush cycle time.

Switch flow direction by using the reverser valve anytime. Repeat flush cycles until desired system cleanliness is achieved.



After system cleanliness is achieved and to disconnect flusher from system cleaned perform the following:

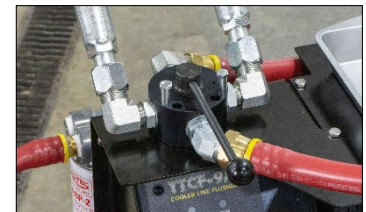
Use the manual air purge button to clean out the cooling system and service lines with the **reverser valve** in either flow direction, then place in **bypass** (middle) position.

Remove the service hoses from the system being cleaned and install service line plugs.

Clean the filter screen and reassemble for the next cleaning.

Move the **Flow Control Valve** to a minimal flow position.

Unplug the flusher and disconnect shop air.



TTCF-9A Variable High Flow Heated Hydraulic Component Flusher

QUICK START INSTRUCTIONS

ADDITIONAL FUNCTIONS

FILL THE TANK

Remove the fill cap and add enough hydraulic fluid to bring the level to the middle of the sight glass.

CAUTION: To prevent hydraulic fluid from overflowing during a flush cycle or when air purging, do not run with fluid higher than showing over halfway on the sight glass.

Replace the fill cap when full level is reached.



DRAIN THE TANK USING OVERRIDE LEVEL SENSOR MODE

CAUTION: To prevent burns, only drain tank when fluid is below 100 degrees.

Connect the drain hose adapter to the **red** banded service hose.

Move the **reverser valve** toward the **red** service hose.

Place the drain hose adapter into a suitable waste container.

Move the **Flow Control Valve** to a low flow position (near full open).

CAUTION: Make sure the flow rate is set to a low level to prevent a high fluid flow into the waste container.

Use the **MODE** button to select "**START OVERRIDE LEVEL SENSOR**".

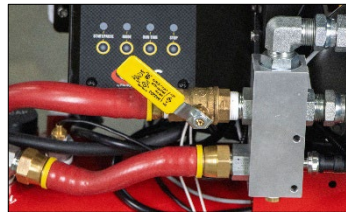
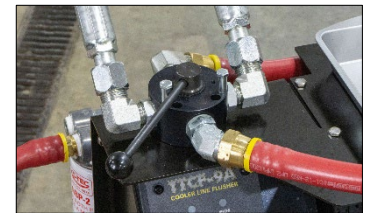
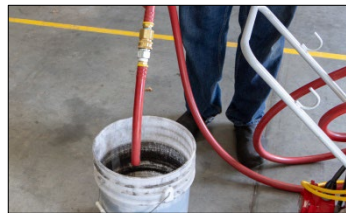
Press the **START/PAUSE** button.

Check the following:

- Secure fill cap
- Secure filter screen
- Check fluid level
- Check all connections
- Set flow rate
- Set flow direction

Press the **START/PAUSE** button to begin draining. The unit will run for 10 seconds. Repeat until the unit is drained.

WARNING: Do not run the pump for an excessive period with no fluid in the tank.



COMPLETELY DRAIN THE TANK FOR FLUID TYPE CHANGE

Perform the "Drain Tank Using Override Level Sensor Mode" procedure above.

Remove pump inlet hose pictured.

Place hose in a suitable waste container to gravity drain remaining fluid in tank.

After draining replace inlet hose.



FLUID LEVEL SENSOR

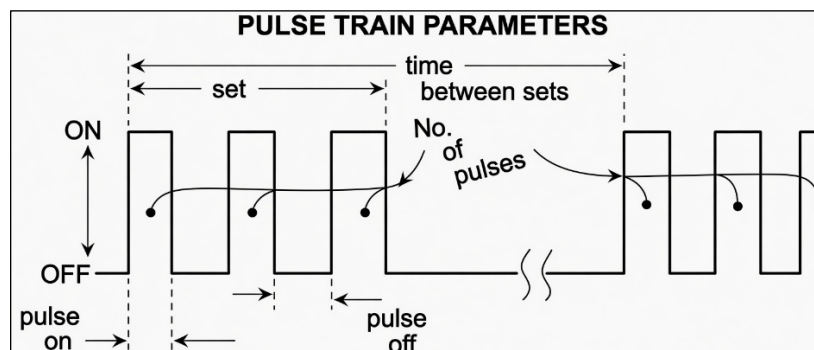
An open state of the fluid level sensor signals low fluid level.

The fluid level sensor if triggered will lock in the fault state and display the fault by flashing the RED HEATER LED on and off.

MACHINE PARAMETER SETTINGS

Access settings by holding the STOP button on the main panel for 5 seconds. There are two configurable parameter settings. Both are set to the same values by default from the factory. Either or both can be changed. The table lists how the individual settings affect the air injection process. This guide defines the configurable parameters for the air injection system. Adjustments should be made based on specific flow requirements.

Setting	Description	Impact of Increasing Value	Available Range
# of Pulses	Total number of air pulses in a single set	Adds more pulses to each cycle	1, 2, or 3 pulses
Pulse On Time	How long each individual air pulse lasts	Each pulses lasts longer (e.g., 2.0s vs 1.0s)	1.0 to 2.0 sec. (0.1s steps)
Pulse Off Time	The short pause between pulses within one set	Increases the gap between consecutive pulses	2.0 to 3.0 sec. (0.1s steps)
Time Between Pulse	The long delay before the entire set repeats	Increases the wait time before the next set of pulses	30 to 900 sec. (1s steps)
Enable Flow Rate	The minimum flow speed needed to start air injection	Requires a higher fluid flow rate before the system activates	Default: 2 GPM
Flow Rate Cutoff	The flow speed that triggers a switch between parameter 1 & 2	Requires faster fluid flow to change machine profiles	Default: 6 GPM
Temperature	Temperature is preset from the factory to 140°. Do not adjust.		



FUSES

Two resettable fuses are located on the left side of the control panel.

The upper fuse is for the pump.

The lower fuse is for the heater.

