



TTCF-9A

Variable High Flow Heated
Hydraulic Component Flusher

40201409

QUICK START INSTRUCTIONS

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.

CONTROL PANEL OVERVIEW

HEATER:

LED Solid Red = HEATER STATE OFF

A press of the switch will turn the Heater on and change the LED color to Solid Green.

LED Solid Green = HEATER STATE ON

A press of the switch will turn the Heater off and change the LED color to Solid Red.

LED Flashing Red = Low Fluid Level Fault

The first press of the switch will change the LED to solid red only if the low fluid level fault has been corrected.

If the fluid level fault has not been corrected, the LED will remain flashing red.

PUMP:

LED Solid Red = PUMP STATE OFF

A press of the switch will turn the Pump on and change the LED color to Solid Green.

LED Solid Green = PUMP STATE ON

A press of the switch will turn the Pump off and change the LED color to Solid Red.

AUTO AIR AGITATE (if equipped):

LED Solid Red = AIR VALVE DISABLED

A press of the switch will turn the Air valve LED to Solid Green and load in Parameter 1 settings.

LED Solid Green = AIR VALVE PARAMETER 1

A press of this switch will turn the air valve LED to Solid Blue and load in Parameter 2 settings.

LED Solid Blue = AIR VALVE PARAMETER 2

A press of this switch will turn the air valve LED to Solid Red and disable the air valve operation.

LED Off = All Air Valve Functionality Disabled

You can enter and exit this state by holding the switch for 20 seconds.

While in this state the LED will be off, and all other air valve functionality is disabled.

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QUICK START INSTRUCTIONS

FLUSH PROCEDURE

Fill the tank with 10 gallons of hydraulic fluid or until fluid level is halfway in sight glass.

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

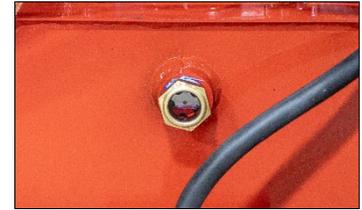
CAUTION: To prevent hydraulic fluid from overflowing during a flush cycle or when air purging, do not run with fluid higher than showing over halfway on the sight glass.

Plug the machine 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.

Move the reverser valve to the bypass (middle) position.

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



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 while connecting the services hoses.



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

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.

Move the **Flow Control Valve** to position 4.

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.

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 audible sound. 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"**.



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 audible sound. The display will show **"FLUSH COMPLETE"** with before and after flush cycle results.

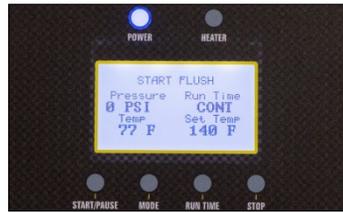
Press the manual air purge button to clean out the lines.

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 between flush cycles. 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.



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 position 3.

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".

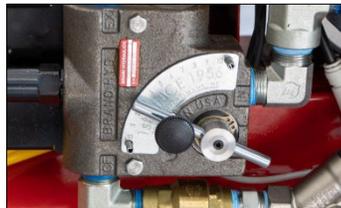
Press the **START/PAUSE** button.

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.

NOTE: There is still approximately one gallon left in the tank. To completely drain, see "Completely Drain for Fluid Type Change" procedure below.



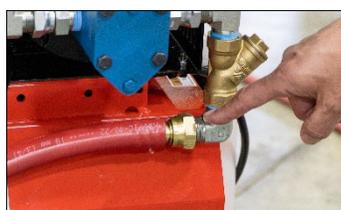
COMPLETELY DRAIN THE TANK FOR FLUID TYPE CHANGE

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.

AIR VALVE PARAMETER SETTINGS

PARAMETER 1:	PARAMETER 2:
# of pulses = 1 Pulse on time = 0.05 seconds Pulse off time = 0.10 seconds Time between = 15 seconds	# of pulses = 2 Pulse on time = 0.05 seconds Pulse off time = 0.10 seconds Time between = 12 seconds

FUSES

20A FUSE - 5 x 20mm - Qty 2

To access the fuses, remove the (2) bolts securing the control panel to the flusher, and remove the (4) screws securing the back of the control panel.

The upper horizontal fuse is for the pump.

The lower vertical fuse is for the heater.

A spare fuse is attached to the inside of the back cover.

