MULTISTACK®

Originators. Innovators. Never the Imitators.

MULTISTACK has designed the 151A Heat Exchanger Cleaning Kit. This cleaning kit allows the customer to quickly and efficiently clean both the condenser and evaporator (approximately 50 minutes per heat exchanger).

Heat Exchanger

Cleaning Procedures

Cleaning the MULTISTACK stainless steel brazed plate heat exchanger can be done using FlushGun™ with and Acid Flush or Detergent Soak. Each solvent offers an advantage for removing specific types of debris.

Acid Flush	Detergent Soak
• Carbonates	• Dirt and Sand Particles
• Sludge	• Fibrous Materials
• Rust	• Grease
	• Plastics

WARNING: Do not use hydrochloric or sulfuric acid for cleaning any MULTISTACK Heat Exchangers. Make sure any chemicals used are compatible with copper and stainless steel.

The MULTISTACK Heat Exchangers should always be cleaned from the outlet to inlet, by backflushing the particles from the corrugated passages.

1. Victaulic Coupling
2. Remove Condenser Headers
3. Remove Evaporator Headers

PREPARING CHILLER FOR CLEANING

1. Disconnect power to chiller.
2. Isolate Chilled Water Loop by closing the condenser and evaporator isolation valves.
3. Remove end caps and drain the water from the condenser or evaporator (Figure 1).

CAUTION: Be careful not to let the electrical connections get wet. Remove the VICTAULIC COUPLINGS and HEADERS (Figure 1).

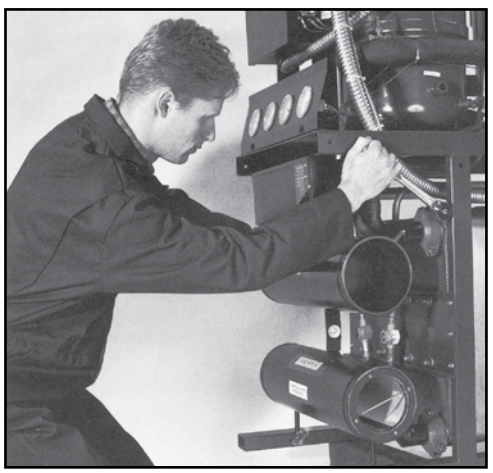


Figure 1, Removing header from heat exchanger.

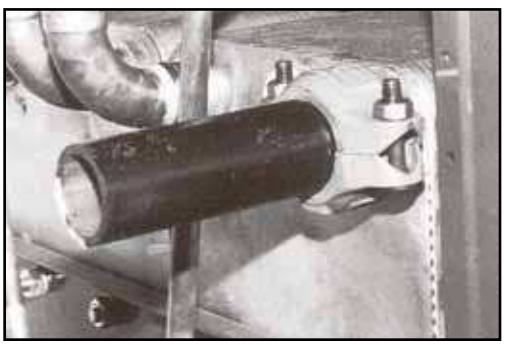


Figure 2, 6" Pipe connection.

NOTE: Install 6" long pipe to condenser or evaporator inlet, using one victaulic coupling and gasket that you removed from unit (Figure 2).

PREPARE SOLVENT

Detergent

Dish soap and hot water (140° F)

CAUTION: When cleaning difficult types of debris (i.e., grease), allow heat exchanger to soak in detergent 1 ½ hours.

Acid

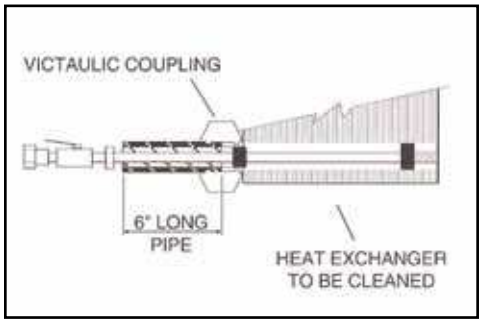
Phosphoric or sulfamic acid such as Nu-Calgon Imperial Grade Scale Remover part number 4360-84. Prepare acid solvent according to the chemical manufacturers' directions. If further assistance is required, call Multistack, Inc.

CAUTION: When circulating solutions heated to temperatures above 128° F, the module high pressure switches will open. They will need to reset before starting.

WARNING: Do not use hydrochloric or sulfuric acid for cleaning any MULTISTACK Heat Exchangers. Make sure any chemicals used are compatible with copper and stainless steel.

USING FLUSHGUN TO CLEAN INDIVIDUAL HEAT EXCHANGERS

FlushGun kits must be ordered separately and are available in different styles, depending on the heat exchanger model. To obtain the correct FlushGun kit, simply provide MULTISTACK with the initial purchase order for your modular chiller. The correct kit will be sent to you.



FlushGun A, position mock up.

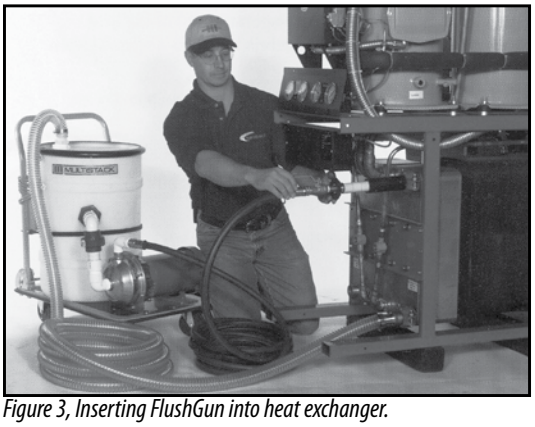


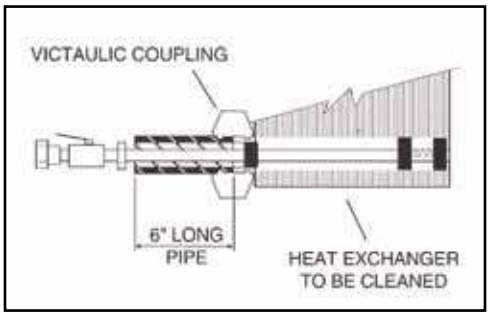
Figure 3, Inserting FlushGun into heat exchanger.

NOTE:FlushGun kits must be purchased separately.

FlushGun A

1. Connect hose to FlushGun A.
2. Insert FlushGun A into the top outlet side opening of the condenser (bottom outlet of the evaporator) until it is against the back plate.
   A. Tightening the compression nut clockwise until the tool cannot be removed. Open the hand valve slowly.
   B. Apply a minimum of 60 psig water pressure for ten full minutes or until all foreign particles have been flushed.

Note: If 60 psig is not available, connect a separate pump to compensate.



FlushGun B, position mock up.

FlushGun B

1. Loosen the compression nut and remove FlushGun A.
2. Change hose connection to FlushGun B.
3. Insert FlushGun B until it is at the back of the heat exchanger (Figure 3).
4. Repeat Steps A & B.

FlushGun B

1. Loosen the compression nut and pull the tool out 1 ¼", measured at the back of the compression nut.
2. Repeat 1 ¼" increments until the entire heat exchanger has been cleaned. The 1 ¼" increments are marked on the FlushGun as 1, 2, 3, and 4.
3. Repeat Steps A & B.

FINAL CLEANING

1. Repeat each of the steps for every heat exchanger until the entire chiller has been flushed.
2. Once the chiller heat exchangers have been cleaned, take a standard garden hose sprayer and insert it into the inlet (condenser bottom/evaporator top) of the heat exchangers and apply full water pressure until all the debris has been dispersed from the plates.
3. Remove CARTRIDGE FILTERS from headers and clean with soap and wire brush.
4. Rinse CARTRIDGE FILTERS thoroughly with clean water.
5. Remove scale from the headers with a wire brush and replace them. Attach VICTAULICS and reinstall CARTRIDGE FILTER.
6. Backflush the entire chiller with clean water to ensure particles do not break free and enter the heat exchangers.

NOTE: See MULTISTACK Maintenance Instructions for information on fouling characteristics.

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