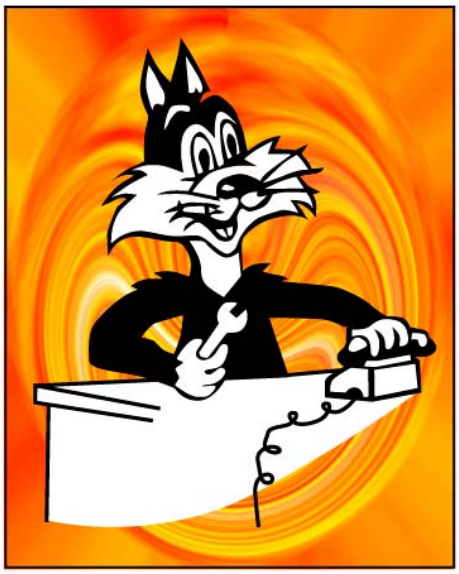
Model MARK II

Transmission Oil Cooler Flusher

OPERATING INSTRUCTIONS

HECAT, INC.



THE ORIGINAL

PULSATING FLUSHER

Hecat, Inc. 2910 Ridge Court. Cumming, GA. 30041 (800)380-9501

www.hecatinc.com

HECAT, INC.

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TRANS COOLER FLUSHER - SAFETY WARNINGS

- **Please read and understand entire manual and all the instructions before beginning use of the flusher.**

- **A compressed air filter must be used in line before the flusher. Moisture should not be introduced into the flusher. Drain filter before each use. The use of non-filtered air will void warranty.**

- **Wear protective equipment, including safety goggles and gloves, when working with chemicals and solvents. Chemicals and solvents can cause injuries.**

- **Only qualified professionals must operate equipment. Operator must be familiar with the chemicals and solvents being used, and the dangers of working with pressurized air systems and components.**

- **Operator is responsible for complying with any and all applicable laws and regulations governing the use of this equipment, as well as the disposal of used solvents, waste oils, the equipment, and any of its components.**

- **Call Manufacturer's Tech Line (1-800-380-9501) before attempting any repair. Repairs are to be performed by trained and approved service technicians ONLY.**

- **This equipment should only be used in locations with mechanical ventilation.**

TRANSMISSION RETURN LINE ID CHART

MANUFACTURER	TRANSMISSION MODELS	THE TRANS RETURN PORT IS:
General Motors	TH125 / TH125C / 3T40	Top
General Motors	TH180	Rear
General Motors	TH200 / TH200-4R	Bottom
General Motors	TH325 / TH325-4L / TH350 / TH350C	Top
General Motors	TH400 / 3L80 / 3L80H	Top
General Motors	440-T4 / 4T60 / 4T60E	Horizontal Fitting
General Motors	700-R4 / 4L60 / 4L60E / ST300	Top
General Motors	4T80E	Main case
General Motors	4L80E	Lower front
General Motors	TH425	Outer, farthest from Torq. Conv.
General Motors	MX17 / A130L / F3A	Bottom
General Motors	Aluminum Powerglide	Top
Ford	A4LD / AXOD / AOD-E / 4R70W	Top
Ford	FMX / C3 / C4 / C5 / C6 / E40D	Rear
Ford	AOD / FIOD / AXOD-E / A4XN / A4XS	Bottom
Ford	CD4E / F4EAT / ATX	Nearest Pump
Chrysler	TF904 / TF727 / A500 / 518 / 618 / AW4	Rear
Chrysler	A404 / 413 / 470 / 670 / 42LE	Top
Chrysler	A604 / 41TE	Front
Chrysler	(Mitsubishi) KM170-KM175 / F4A / W4A	Farthest from differential
Honda	2, 3, & 4 speed	Nearest to differential
Honda	L4 / ML4A	Case (not bellhousing)
Mercedes	4 bolt pan	Drivers side
Mercedes	6 bolt pan	Passenger side
Renault	4139 / MJ / ML1 / MB	Bottom
Subaru	4EAT	Rear
Subaru	ECVT	Below and right of pump
Subaru	M41A	Case
Isuzu	AW55 / AW30-80LE / 4L30E / JF403E / NPR300	Rear
Isuzu	RL3F01A / RN3F01A	Bottom
Mazda	F3A	Bottom nearest pump
Mazda	F4A-EL / 4A-EL / G4AX-EL / L4A-EL	Nearest Pump
Mazda	3N71B / L3N71B / JM600	Rear
Mazda	N4A-EL / R4A-EL / R4AX-EL	Rear
Nissan	RN3-F01A /RL3F01A	Bottom
Nissan	RL4-F02A / RE4F02	Rear
Nissan	RE4-F03A / RE4F04A	Rear
Nissan	3M71B / 4N71B	Rear
Saturn	All	Near filter
Toyota	All rear wheel drive	Rear
Toyota	A55 / A55F	Rear
Toyota	All front wheel drive except above	Bottom
ZF	3HP22	Passenger side
ZF	4HP22 / 4HP24	Bottom

MARK II

TRANSMISSION COOLER FLUSHER

FLUSHER OPERATION

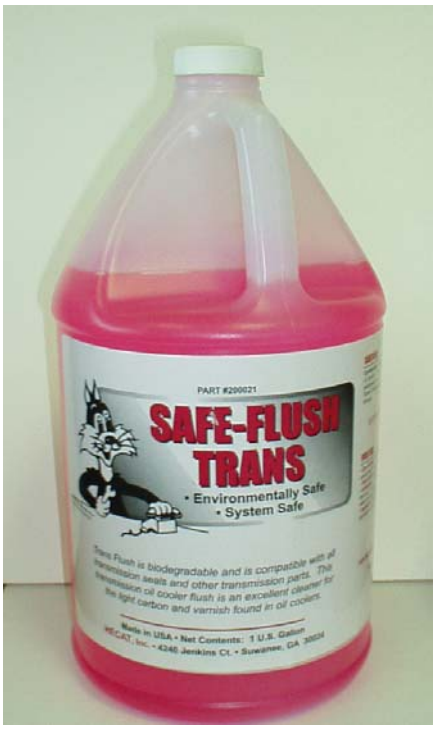
1. Remove filler cap and fill the flush tank with 2 gal. of clean flush. DO NOT OVERFILL. An air space must be left above the flush level in order for the flusher to perform as designed. Replace the filler cap hand tight. Wrench tightening of the cap is not required.
2. Select or make up the proper adapters and attach to the transmission cooler or lines. Do not over tighten.
3. Attach quick couplers on the flush hose and clear return hose to the transmission cooler or line adapters. Connect lines so first flush is in opposite direction of normal oil flow.
4. Be sure solvent flush valve is in the off position.
5. CAUTION: Be sure flush and return lines are connected to cooler or storage fitting before attaching air line.
6. Attach clean and dry (filtered, 60 PSI minimum) shop air to inlet quick coupler nipple. Air regulator is preset at 60 psi and should not be adjusted.
7. Open the flush valve to begin first flush (in the opposite direction of normal oil flow).
8. A restriction or no flow will not allow the flusher to pulsate properly and may indicate a hard blockage that may require additional attention or a cooler replacement. Use the free flowing storage fitting to verify flusher performance. Continued flushing efforts may show improved results, if not we recommend the cooler be replaced.
9. If a good pulse is present, this will confirm adequate flow and no other flow verification test is required. The combined volume of flush and air when pulsing properly is equal to one gallon per minute.
10. When the initial flow of contaminated oil is seen in the return line, flush for approximately 60-75 seconds. Pay attention to the contamination observed in the T-Strainer, clean T-Strainer and flush longer if you feel it is necessary.
11. Close the solvent flush valve and disconnect the air line. Allow a moment for system pressures to equalize.
12. Swap the flush and return hoses at the transmission cooler line quick coupler connections.
13. Reconnect the air line; open the flush valve to now flush in the same direction as normal oil flow, for approximately another 60-75 seconds using up the remainder of the 2 gallons of solvent.
14. Be sure to monitor the T-strainer for cleanliness of returning flush. If no additional debris is present, and because of the effectiveness of the impacting action of the pulsating flusher, we now know the cooler is clean.
15. If additional flushing is necessary, use only filtered or fresh fluid. Do Not put used solvent back in the flush tank.
16. Turn flush valve off to allow for a 5 minute air purge.
17. Disconnect air line and flush and return hoses. Flushing is now completed.
18. Always clean the return line T-strainer after every flush.
19. To drain the recovery tank, pour the contaminated fluid out of the recovery tank.
20. If you do not have means to recycle or filter solvents then the flush cannot be reused.
21. Please, always dispose of contaminated fluids in the proper manner.

If you have any problems with this unit, please contact the manufacturer for technical assistance directly at 1-800-380-9501 or contact us through our web site at www.hecatinc.com. We will be happy to answer your questions and assist with any problems.

HECAT Safe-Flush Trans

Transmission Oil Cooler Flush

The most common fluid used to flush a transmission cooler circuit with Hecat's Pulsating Flushers has been Mineral Spirits and other similar White Solvents (Varsol, etc.). If you are **NOT** facing restrictions on its use where you live then it is still an acceptable and approved flush for use in the Hecat "Pulsating" Flushers.
The California Air Research Board has identified Mineral Spirits as an excessive VOC emitter. Hecat developed Safe-Flush Trans to address this hazard to the health of automobile technicians. After extensive testing with many different compounds we have found the formula of Hecat Safe-Flush Trans combined with our Patented "Pulsating" Flusher, has the highest cleaning qualities without all the hazards of many other solvents used in the industry. Tested with our "Pulsating" Flushers, Hecat Safe-Flush Trans does not exceed California VOC emission standards.



- Ships UPS Ground (31 lbs)
- Available by the case (4-1gal.).
- Includes 2 **FREE** filters (used on the Mark III and Mark IV Flusher models).
- DOT classification - not regulated.
- Operator safe & friendly.
- Breaks down waxy deposits.
- Breaks down varnishes.
- No noxious fumes or odors.
- No need for special ventilation.
- Miscible (blends) with all transmission fluids so any minor trace residue will fully dissipate into the system without any harm.
- Tested to be compatible with all common transmission materials.
- Easily disposed of with waste oils.
- Any Hecat Flusher that uses Safe-Flush Trans exclusively, Hecat, Inc. offers an extended…

LIFETIME WARRANTY

If you wish to use another flush, your one-year manufacturer's warranty will apply as long as it is an approved flush. If you have any questions about flush approvals contact Hecat, Inc. at 1-800-380-9501. **www.hecat-inc.com**.

Note: It is the Technician's responsibility to research and follow local, state, and federal regulations in regards to the flush chosen for use and the disposal of the used flush and its original containers. Because conditions of use are outside of Hecat's control, we can assume no liability for results obtained or any damages that occur from the use of this product. MSDS is available upon request.

MSDS – HECAT SAFE-FLUSH

EMERGENCY PHONE NUMBER: 1-800-380-9501

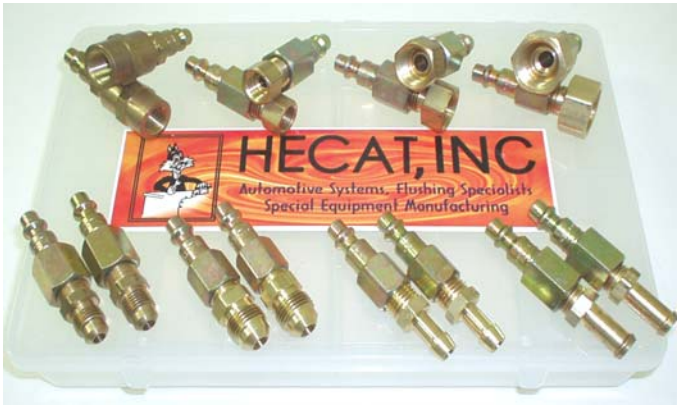
Last Revised: March 2006

SECTION 1	COMPANY IDENTIFICATION AND CHEMICAL
Company Name:	Hecat, Inc
Address:	2910 Ridge Court, Cumming, GA 30041
Phone/Fax:	770-205-5600 / 770-205-5633
Trade name:	Hecat Safe-Flush A/C & Hecat Safe-Flush Trans
Chemical name:	Synthetic Hydrocarbon Cleaner
Composition:	Hydrocarbon Mixture – Cas# 64742-47-8 / P-Menta-1, 8-Diene – Cas# 5989-27-5
Application:	Flushing fluid used with or without Hecat flushing equipment to clean automotive heat exchangers.
SECTION 2	COMPOSITION / INFORMATION ON INGREDIENTS
General:	This product is non-hazardous. The product contains no known Carcinogens. No special warning labels are required Under OSHA 29 CFR 1910-1200.
SECTION 3	HAZARDS IDENTIFICATION
Appearance:	A/C version - Clear liquid / Trans version - Red dye added.
Known hazards:	Contains no known hazardous ingredients
SECTION 4	FIRST AID MEASURES
Eyes:	Flush with clean lukewarm water. Seek physician's assessment if eyes are inflamed
Skin:	Wash affected areas thoroughly with soap and water. Wash contaminated clothing.
Inhalation:	Avoid breathing oil mists. Remove to fresh air. If breathing is difficult, get medical attention.
Ingestion:	Do not induce vomiting. Force fluids. Has a laxative effect.
SECTION 5	FIRE FIGHTING MEASURES
Flash point:	165 - 170 F min.
Flammable limits:	N/A
Auto ignition temp:	N/A
Fire & explosion hazards:	Low fire hazard. Do not cut, drill, or weld empty containers
Extinguishing media:	Dry chemical foam, water spray, and carbon dioxide for small fires.
Fire fighting procedures:	Contain liquid, cover with extinguishing agent; use water to cool fire-exposed containers.
SECTION 6	ACCIDENTAL RELEASE MEASURES
Spill or leak	Contain spill, absorb with commercial absorbents, or by using pumps.
Waste Disposal:	Dispose in approved containers through a licensed waste reclaimer.
SECTION 7	HANDLING AND STORAGE
Storage temp:	<120 F recommended.
Shelf life:	12 months in original closed HDPE container.
Precautions:	Not for internal use. Avoid prolonged contact with skin, eyes, and clothes.
SECTION 8	EXPOSURE CONTROL / PERSONAL PROTECTION
Eye protection:	Chemical goggles if splashing is likely. Normally none required.
Skin protection:	PVC or Nitrile gloves if in direct contact for more than 2 hours. Normally none required.
Respiratory protection:	If mist is present, wear approved organic respirator. Normally none required.
Ventilation:	General ventilation.
Exposure limits:	N/A
SECTION 9	PHYSICAL AND CHEMICAL PROPERTIES
Appearance:	A/C version - Clear liquid / Trans version - Red dye added.
Boiling point:	> 300 degree F
Vapor pressure:	< .4 mm/hg
Specific gravity:	0.83 (water = 1)
Volatiles, % volume:	100%
Odor:	Very slight hydrocarbon odor.
Solubility in water:	Non soluble
Evaporation rate:	< 1 (butyl acetate = 1)
SECTION 10	REACTIVITY
Stability:	Product is stable.
Hazardous polymerization:	Will not occur.
Incompatibilities:	Strong oxidizers and chlorine.
Decomposition products:	Analogous compounds evolve, carbon monoxide, carbon dioxide, and other undefined fragments when burned.
SECTION 11	TOXILOGICAL INFORMATION
General:	Acute LD. >5000mg/Kg (rat: oral) Practically non-toxic. Negative when tested by Ames test.
SECTION 12	ECOLOGICAL INFORMATION
General:	Biodegradable CEC L33T82 > 80% @ 45 days
SECTION 13	DISPOSAL CONSIDERATIONS
Waste disposal:	Used product must be disposed of in according to federal, state, and local environmental regulations.
SECTION 14	TRANSPORTATION INFORMATION
Technical name:	Synthetic hydrocarbon cleaner
DOT hazard class	Not regulated.
U.N./N.A.#:	Not regulated.
Product label:	Hecat Safe-Flush
SECTION 15	REGULATORY INFORMATION
OSHA status:	Non hazardous under 29 CFR 1900 1200
TSCA status:	N/A
RCRA status:	If discarded in its purchased form this product would not be a hazardous waste either by listing or characteristic. However, It is the users responsibility to determine if it is hazardous and the type of disposal. (40 CFR 261.20-24)
SECTION 16	OTHER INFORMATION
General:	This information is furnished without warranty, expressed or implied, except that it is the accurate to the best knowledge of Hecat, Inc. The data on this sheet related only to the specific material designed herein. Hecat, Inc assumes no legal responsibility for the use or reliance upon this data.

HECAT Flushing Adapters
For Transmission Oil Coolers

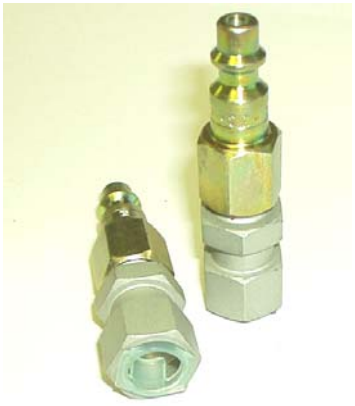
The BASIC Trans Adapter Kit will fit most domestic and import applications. Includes 12 compartment storage box with room to add the OEM quick connects listed below or some of your own creations.

NOTE: The BASIC Kit is included with the Mark II & Mark IV flusher models.

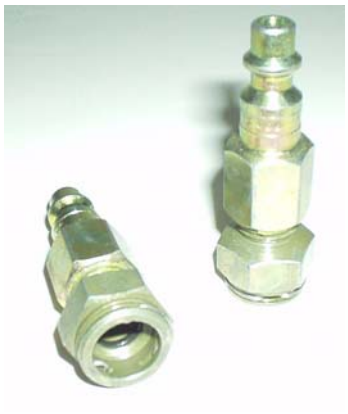


BASIC Kit includes:
(from top left, clockwise)
(2) 14 x 1.5mm female banjo
(2) 5/16" SAE inverted flare fittings
(2) 3/8" SAE inverted flare fittings
(2) 1/2" SAE inverted flare fittings
(2) 3/8" (10mm) beaded barb
(2) 5/16" (8mm) beaded barb
(2) 3/8" SAE male flare fittings
(2) 5/16" SAE male flare fittings
(1) 12 compartment storage case

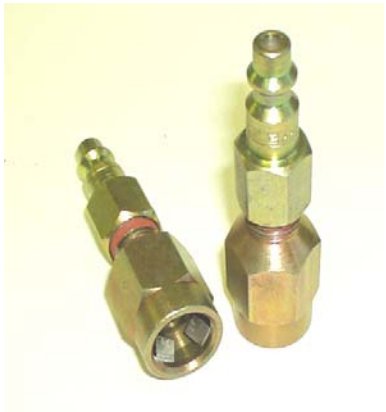
The following OEM quick connect adapter sets are available as an additional purchase.



FORD SET



GM SET



CHRYSLER SET

HECAT, Inc. welcomes the information that will help us identify and develop kits for late model applications. If you have such information or are in need of a specialty kit, then please do not hesitate to call us at 1-800-380-9501 with this information. HECAT, Inc. reserves the right to change design, specs, and materials without notice. See the full line of Hecat products at www.hecatinc.com.

HECAT, INC.

WARRANTY STATEMENT

This warranty covers all models of the patented HECAT Air Operated Pulsating Flushers. (Models: MARK II and IV. FAC-200 and 400)

If you have a problem with this flusher, please do not call the distributor you purchased this item from. They are instructed to direct you to our toll free number, which is 1-800-380-9501 or you, can contact us through our web site at www.hecat-inc.com. Warranties are 100% the responsibility of, and handled directly by, the manufacturer. You must contact Hecat and obtain a return authorization number before returning any unit to the manufacturer.

HECAT, INC. offers to the user of the HECAT Flusher a one-year limited warranty. This warranty covers all manufacturing defects in materials and workmanship for one year from the date of purchase and is offered only to the original purchaser.

HECAT, INC. also offers a LIFETIME EXTENDED WARRANTY at no extra charge. By simply exclusively using the HECAT SAFE-FLUSH and keeping good proof of purchase records. The one year limited warranty will be extended to the original purchaser for lifetime.

This warranty shall not apply to any flusher that has failed due to misuse, neglect, accident, or failure to follow printed instructions.

This warranty shall not apply to any flusher showing evidence of using a non-approved flush. Non-approved flushes are Gasoline, Brake Fluid, Water, Acids, Corrosive liquids, foaming products, and known Ozone depleters.

This warranty shall not apply to any unit repaired by an unauthorized person or shows any evidence of failure to use an in line air filter to supply filtered dry air to operate any flusher.

If returning to the factory is necessary, HECAT, INC. will evaluate warranty claim and then, if approved, repair or replace at its option any unit returned. Units for warranty evaluation must be shipped freight pre-paid to the manufacturer's address provided with the return authorization. Any flusher returned must be accompanied by a letter referencing the return authorization number, outlining the malfunction, proof of purchase with date purchased, proof of original purchase and SAFE-FLUSH purchases if claiming extended warranty, and owner's name, address, and contact information.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the following statement may not apply in your state. Incidental or consequential damages occurring as a result of usage of this flusher are not covered by this manufacturer's warranty.

There are no other warranties implied or stated.