

# Flex-a-lite® Fan Assist Heavy Duty Remote Oil Cooler

## INSTALLATION INSTRUCTIONS for 4590\_ and 4595\_ Oil coolers

### PARTS INCLUDED

Model 4590_	QTY	Model 4595_	QTY
Fan-Assist HD Cooler	(1)	GatorClip mounting clamp	(9)
Nylon Push Nut	(4)	1/4-20 x 2.5" bolt	(3)
Nylon Mounting Bolt	(4)	1/4-20 Nylok nut	(3)
Rubber Spacer	(4)	Stake connector	(1)
		Control knob	(1)

### ADDITIONAL PARTS REQUIRED

DESCRIPTION	QTY
1/2"* Oil Hose; 300 p.s.i., 300°F rating (min.)	(2)
Adapter Fittings as req'd for both ends of both hoses	(2)
Sandwich Adapter w/O-Ring**	(1)
#16 wire, length as required	(1)
Wire connectors	as required

\* 3/8" hose OK for use with 3/8" or #6 fittings, as a transmission cooler ONLY.  
\*\* Not required for Tranny Oil Cooler installation

## INSTALLING AS AN ENGINE OIL COOLER

Instructions for installing these coolers as transmission oil coolers can be found on the opposite side of this sheet.

### CAUTIONS:

- Read these instructions carefully before installing your Heavy Duty Oil Cooler.
- Use at least a #8 fitting for engine oil cooler applications. For high performance applications, a #10 or larger fitting is recommended.
- Do NOT mix AN type fittings (S.A.E. 37°) and S.A.E. 45° fittings; they will thread, but will not provide a reliable seal.
- Before installing the sandwich adapter, make sure there is enough clearance to remove the oil filter with the sandwich adapter installed. In many cases, shorter filters are available that will solve clearance problems.
- Some oil filters have o-rings that are flush with rim of the filter. These filters may not seat properly on a sandwich adapter. Select a filter with an o-ring that protrudes beyond the filter rim.
- Do not locate the cooler in areas exposed to thrown gravel, water, ice or road grime, or next to exhaust components. Failure to follow these instructions may lead to serious personal injury and/or damage to the vehicle and fan assembly.

### LOCATE & MOUNT OIL COOLER

These coolers are designed so they do not need to be in the ram air flow at the grille. They are best located away from other sources of heat (including the radiator and A/C condenser), where fresh air can circulate.

After choosing a mounting location, confirm that hoses are the correct length (allowing for all the bends and turns required, avoiding the exhaust system).

1) Install hose adapter fittings (if required) to oil cooler fittings using Teflon tape or automotive thread sealer. Flex-a-lite's standard oil cooler fittings are 1/2" NPT. Plain-end hoses require barbed adapter fittings; hoses with threaded end fittings require matching adapter fittings added to the cooler. Flex-a-lite Hose Kits #3941 and #3942 are supplied with the necessary hose adapter fittings for both ends of the hose. Select a mounting method below (2a or 2b) depending on the hardware kit you have.

2a) **Mount Cooler- Using Nylon Bolts:** Slide a nylon bolt through each of the four holes in the oil cooler, and secure to straps or brackets (not incl.) using nylon push nuts. FIG. 1. Cut off excess bolt, leaving 1/4" sticking through push nut. Metal mounting screws may be used, providing that they are secured with locknuts or lock washers. Try to incorporate the rubber spacers into the installation. Do NOT mount the cooler tight against any solid surface; air flow would be reduced to the point of rendering the cooler ineffective.

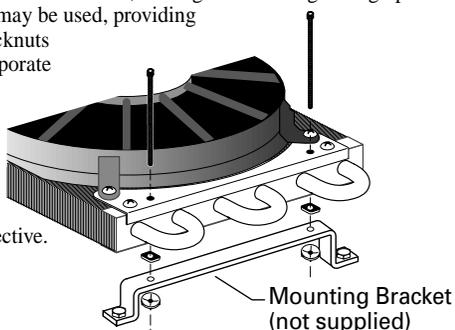


FIGURE 1

2b) **Mount Cooler- Using GatorClips:** Snap three GatorClips to your cooler as shown in FIG. 2A. Position cooler over brackets or panel to which cooler is to be attached. Transfer centers of holes onto brackets or sheet metal, and drill 5/16" holes.

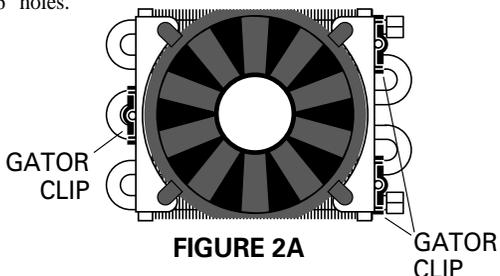


FIGURE 2A

Fit remaining GatorClips to cooler per FIG. 2B (three per location), and bolt to panel or brackets using bolts and lock nuts provided.

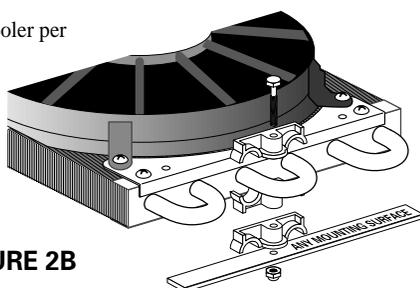


FIGURE 2B

### INSTALL SANDWICH ADAPTER

3) Wrap 3/8" hose adapter fittings (not incl.) with Teflon tape, or coat with automotive thread sealer, and screw them into the sandwich adapter. FIG. 3.

4) Remove oil filter and clean the oil filter landing on the engine block.

5) Apply a light coat of oil to rubber o-ring and fit to groove in sandwich adapter. Fasten sandwich adapter to the engine block using the appropriate mounting nut, with o-ring facing engine block. FIG. 3. Point fittings toward hose route; tighten mounting nut. Do not overtighten.

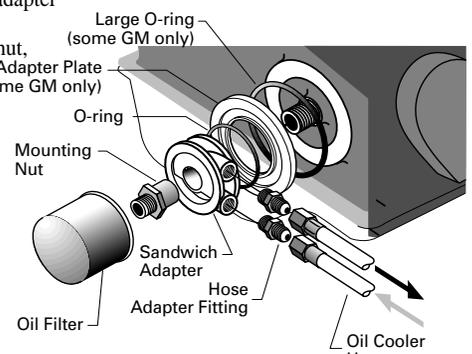


FIGURE 3 Sandwich Adapter Installation

6) Run hoses from sandwich adapter to cooler. IMPORTANT: If installing a 4595\_ remote cooler, the hot (supply) hose from the sandwich adapter must connect to the fitting on the thermostat side of the cooler. Otherwise, the thermostat will not function properly.

When running oil hose, avoid kinks and sharp or moving objects. Allow a little extra when calculating hose lengths. Route hoses away from exhaust pipes, etc. Attach hoses to fittings, but don't tighten yet.

If using threaded fittings, use Teflon tape or thread sealer on threads. Secure hoses to prevent damage from moving or hot objects. Once hoses are in their final position, tighten hose fittings. Use a back-up wrench on the cooler fittings to prevent damage to the thin walls of the oil cooler tubes. Do not overtighten.

7) Replace oil filter.

### WIRING RECOMMENDATIONS

NOTE: Modern automotive electrical systems can be very complex. If you are unsure of the proper wiring procedure, consult a qualified automotive electrical specialist.

BEFORE STARTING: Disconnect battery before beginning installation.

CAUTION! Electric fans can start without warning. Keep fingers and tools away from fan blades AT ALL TIMES!

#### 4590\_ ONLY:

8) Flex-a-lite recommends that this unit be wired into an ON-OFF switch (Flex-a-lite Manual Switch #31148, not included) and an electrical relay. For proper fan rotation, wire the POS (+) lead to a 12V source, and the NEG (-) lead to GROUND. The circuit should be protected with a 15A slow-blow fuse. When finished, reconnect battery.

#### 4595\_ ONLY:

8) Plug the BLACK (+) motor lead into the single connector at arrow 1 on FIG. 4. Run another wire from an ignition switched 15A POS (+) power source to either of the two connectors at arrow 2. Connect the RED (-) lead to ground. An electrical relay and a 15A slow-blow fuse are recommended on the POS (+) side. Press control knob in place. When finished, reconnect battery.

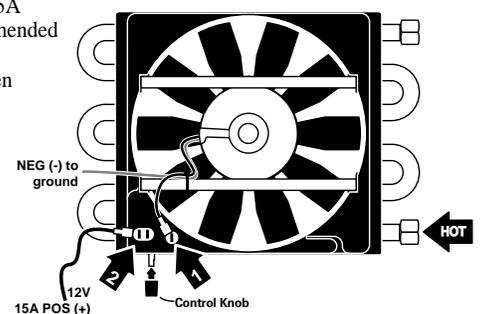
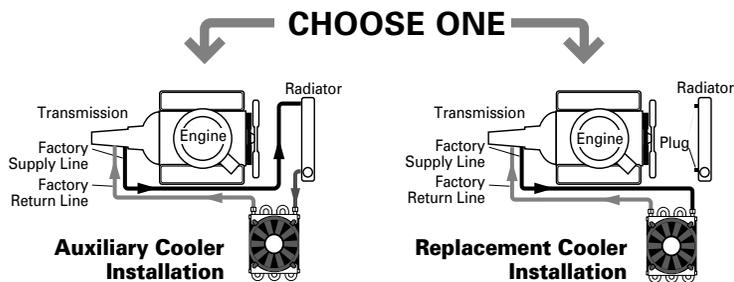


FIGURE 4: 4595\_ wiring only

9) Replace oil filter. Start engine and check oil pressure. If oil pressure does not reach normal within 5-10 seconds, shut off engine; oil is not flowing. Review instructions and correct the installation. If pressure is OK, let engine run until it reaches normal operating temp. Check that both ends of cooler are warm. If not, oil is not flowing through cooler. Shut off engine and correct the installation.

9a) **4595\_ only:** Adjust control knob until fan engages at desired temperature. Turning knob clockwise will increase the temperature at which the fan engages. Fine adjustments may be made as/when desired.

10) Inspect for leaks and fix any leaks found. Top off oil, if necessary. Periodically inspect all fittings during the first 100 miles of driving.



Instructions for installing these coolers as engine oil coolers can be found on the opposite side of this sheet.

### CAUTIONS:

- Read these instructions carefully before installing your Heavy Duty Oil Cooler.
- Do NOT mix AN type fittings (S.A.E. 37°) and S.A.E. 45° fittings; they will thread, but will not provide a reliable seal.
- Do not locate the cooler in areas exposed to thrown gravel, water, ice or road grime, or next to exhaust components. Failure to follow these instructions may lead to serious personal injury and/or damage to the vehicle and fan assembly.

### LOCATE & MOUNT OIL COOLER

These coolers are designed so they do not need to be in the ram air flow at the grille. They are best located away from other sources of heat (including the radiator and A/C condenser), where fresh air can circulate.

After choosing a mounting location, confirm that hoses are the correct length (allowing for all the bends and turns required, avoiding the exhaust system).

1) Install hose adapter fittings (if required) to oil cooler fittings using Teflon tape or automotive thread sealer. Flex-a-lite's standard oil cooler fittings are 1/2" NPT. Plain-end hoses require barbed adapter fittings; hoses with threaded end fittings require matching adapter fittings added to the cooler. Flex-a-lite Hose Kits #3941 and #3942 are supplied with the necessary hose adapter fittings for both ends of the hose. Select a mounting method below (2a or 2b) depending on the hardware kit you have.

2a) Mount Cooler- Using Nylon Bolts: Slide a nylon bolt through each of the four holes in the oil cooler, and secure to straps or brackets (not incl.) using nylon push nuts. FIG. 1. Cut off excess bolt, leaving 1/4" sticking through push nut. Metal mounting screws may be used, providing that they are secured with locknuts or lock washers. Try to incorporate the rubber spacers into the installation. Do NOT mount the cooler tight against any solid surface; air flow would be reduced to the point of rendering the cooler ineffective.

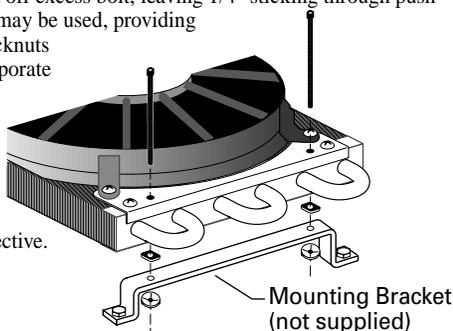


FIGURE 1

2b) Mount Cooler- Using GatorClips: Snap three GatorClips to your cooler as shown in FIG. 2A. Position cooler over brackets or panel to which cooler is to be attached. Transfer centers of holes onto brackets or sheet metal, and drill 5/16" holes.

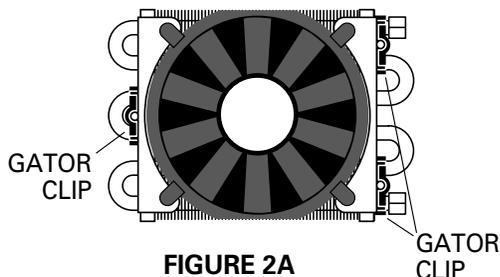


FIGURE 2A

Fit remaining GatorClips to cooler per FIG. 2B, and bolt to panel or brackets using bolts and lock nuts provided.

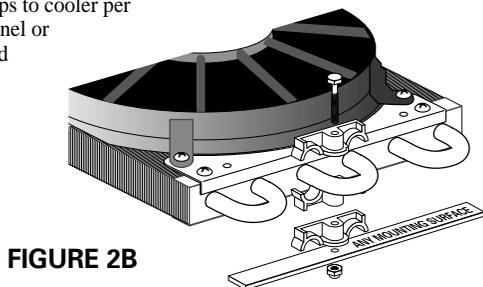


FIGURE 2B

### CAUTIONS:

- Do NOT mix AN type fittings (S.A.E. 37°) with S.A.E. 45° fittings; they will thread, but will not provide a reliable seal.
- Do not overtighten hose clamps, if applicable.
- Secure hoses to prevent damage from vibration or contact with other objects.
- Hoses should be free of sharp bends and kinks.
- Before driving, let vehicle run for 10 minutes while inspecting for leaks. Fix any leaks before putting vehicle back into service.

### Auxiliary Coolers only:

3) Disconnect the transmission oil *return* line at the radiator. FIG. 3. The return line will be cooler to the touch than the supply line. Be ready to catch oil draining from the loose line and the radiator. Do NOT disturb the oil *supply* line to the radiator. You may shorten the factory return line to obtain the shortest distance between cooler and transmission, providing you have the tools to do so. When shortening the line for use with plain-end hose, you must flare the tube end and use a pipe clamp to secure the hose.

4) Run a length of hose from the factory return line to one of the fittings on the oil cooler. Run a second hose from the radiator to the other fitting on the cooler. **IMPORTANT:** If installing a 4595\_ remote cooler, the hot (supply) hose from the radiator must connect to the fitting on the *thermostat side* of the cooler. Otherwise, the thermostat will not function properly. Do not overtighten. You will need hose adapter fittings at the radiator and at the factory return line that will match your hose and/or hose end fittings. Avoid kinks and sharp or moving objects. Allow a little extra when calculating hose lengths. Route hoses away from exhaust pipes, etc.

5) Attach hoses to fittings, but don't tighten yet. If using threaded fittings, use Teflon tape or thread sealer on threads. Secure hoses to prevent damage from moving or hot objects. Once hoses are in their final position, tighten fittings. Use a back-up wrench on the cooler fittings to prevent damage to the thin walls of the cooler tubes. Do not overtighten.

6) Top off transmission oil. Before driving, let vehicle run for 10 minutes in PARK while inspecting for leaks. If both ends of the oil cooler are not warm, oil is not flowing. Shut off engine immediately, and review instructions. The installation needs correcting. Fix any leaks before putting vehicle back into service. Recheck transmission oil level, and top off again, if necessary.

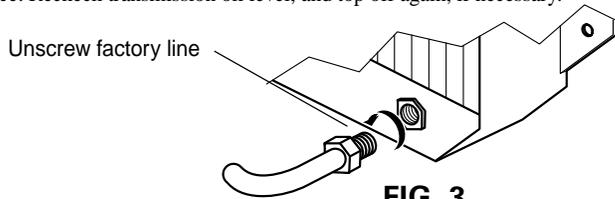


FIG. 3

### Replacement Coolers only:

3) Disconnect both factory transmission oil lines from the radiator (FIG. 3), and screw hose adapter fittings (not incl.) that match your hose ends to factory lines. Be ready to catch oil draining from the loose lines and the radiator. Plug the radiator fittings if they leak. You will not be using them.

You may shorten the factory lines to obtain the shortest distance between cooler and transmission, providing you have the tools to do so. When shortening the lines for use with plain-end hose, you must flare the tubes end and use pipe clamps to secure the hoses.

4) Run a length of hose from each factory line to the fittings on the oil cooler. **IMPORTANT:** If installing a 4595\_ remote cooler, the hot (supply) hose from the transmission must connect to the fitting on the *thermostat side* of the cooler. Otherwise, the thermostat will not function properly. Do not overtighten. Avoid kinks and sharp or moving objects. Allow a little extra when calculating hose lengths. Route hoses away from exhaust pipes, etc.

5) Attach hoses to cooler fittings, but don't tighten yet. If using threaded fittings, use Teflon tape or automotive thread sealer. Secure hoses to prevent damage from moving or hot objects. Once hoses are in their final position, tighten all fittings. Use a back-up wrench on the cooler fittings to prevent damage to the thin coil walls. Do not overtighten.

6) Top off transmission oil. Before driving, let vehicle run for 10 minutes while inspecting for leaks. If both ends of the oil cooler are not warm, oil is not flowing. Shut off engine immediately, and review instructions. The installation needs correcting. Fix any leaks you find before putting vehicle back into service. Recheck transmission oil level, and top off again, if necessary.

### WIRING RECOMMENDATIONS-ALL

Refer to *WIRING RECOMMENDATIONS* on opposite side of this sheet. Follow instructions 8 through 10 for your model fan, paying special attention to the cautions at the beginning of the section.

### OPTIONAL ACCESSORIES

PART#	DESCRIPTION	QTY REQ'D
3910	Cooler Remount Kit (required only if original kit has been used already)	(1)
3915	Tranny Cooler Installation Kit (for use with 3/8" plain-end hose; includes mounting hardware, 4 hose clamps, 1 ea.: 1/4" MPTx3/8" barb fitting, 1 ea.: 1/4" FPTx3/8" barb fitting). You will also need 2 ea., 3/8" barb x 1/2" MPT fittings (not incl.) for use at the oil cooler.	(1)
3909	GatorClips Cooler Mounting Clamps- 3 point mount	(1)

### The Flex-a-lite Limited Warranty

Flex-a-lite Consolidated, 7213-45th St Ct E, Fife, WA 98424, Telephone No. 253/922/2700 warrants to the original purchaser user, all Flex-a-lite products to be free of defects in material and workmanship for a period of 365 days (1 year) from the date of purchase. Flex-a-lite products failing within 365 days (1 year) from date of purchase, may be returned to the factory through the point of purchase, transportation charges prepaid. If, on inspection, cause of failure is determined to be defective material or workmanship and not by misuse, accident, or improper installation, Flex-a-lite will replace the product free of charge, transportation prepaid. **Flex-a-lite will not be responsible for incidental, progressive, or consequential damages.** Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.