

HEAT EXCHANGER VALUES & COOLING COMPARISON CHART

TECHNICAL SECTION

EARL'S HEAT EXCHANGER VALUES

BTU RATING/HOUR

0.55 GPM/TUBE @ 55MPH

ROWS	Narrow Cooler P/N: 2XXXX 16 BTU/Min/Tube 960 BTU/HR	Wide Cooler P/N: 4XXXX 38 BTU/Min/Tube 2280 BTU/HR	Extra-Wide Cooler P/N: 8XXXX 49 BTU/Min/Tube 2940 BTU/HR
7	6720	15960	20508
10	9600	22800	29400
13	12480	29640	38220
16	15360	36480	47040
19	18240	43320	55860
25	24000	57000	73500
34	32640	74520	99960
42	40320	95760	123480
50	48000	114000	147000
60	57600	136800	176400

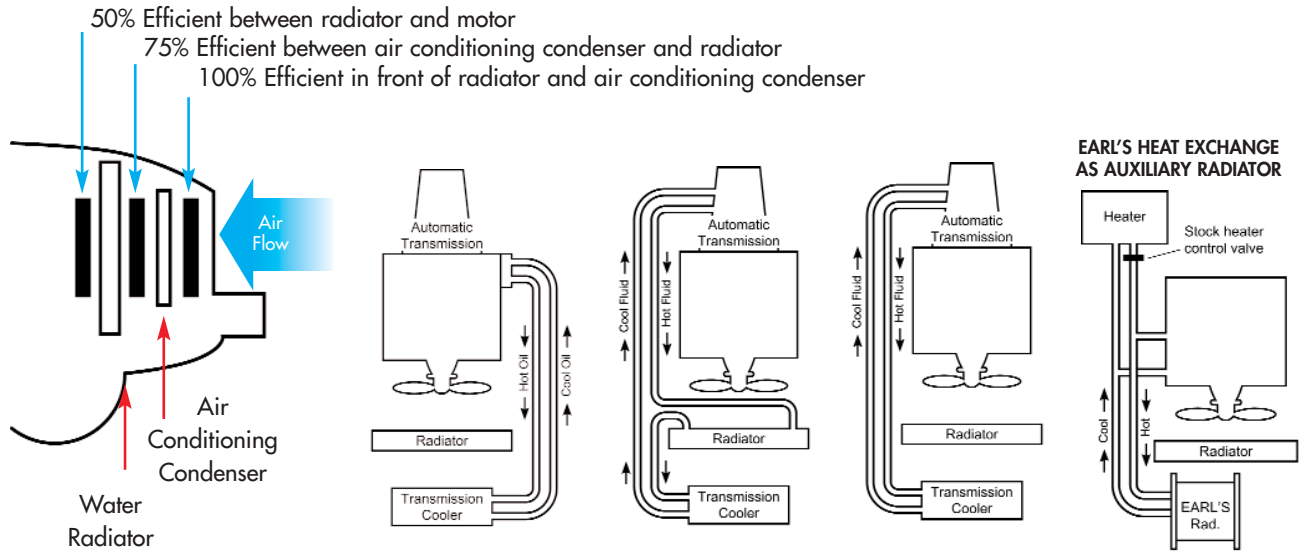
We tested our coolers against a leading tube & fin stack plate design on a high performance engine dyno. The test compared the pressure drop between the oil inlet and outlet of each cooler and the temperature drop during the test. The heat exchangers were plumbed with -10AN Pro-Lite 350™ hose to a Chevrolet 355 cubic inch Holley carbureted engine with headers. The test engine was mounted inside an engine dyno test cell. The tests were conducted with engine water temperature stabilized at 180° Fahrenheit and engine oil temperature stabilized at 227° Fahrenheit. Test cell ambient temperature was 94° Fahrenheit. All testing was done with engine speed at 2800 RPM. To simulate road speed, a cooling fan was erected to force air through the coolers at approximately 60ft/sec (41 mph).

Part #	41310	Tube/Fin
Surface Area(In ²)	34	67.5
Engine Water Temp. (F°)	177	180
Oil Temp - In (F°)	227	221
Oil Temp - Out (F°)	207	203
Oil Temp Difference	-20	-18
Oil Pressure - In (PSI)	58.6	59
Oil Pressure - Out (PSI)	57.6	56
Oil Pressure Difference	-1.0	-3.0
Engine Speed (RPM)	2800	2800

Conclusion:

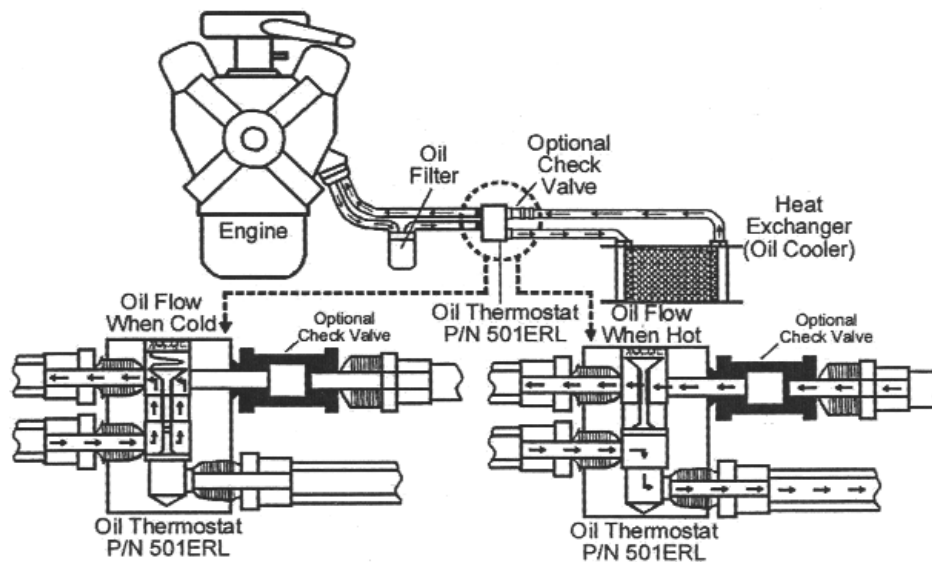
Tube style & fin style cooler needed to be twice the size in surface area for the same heat rejection compared to the Earl's oil cooler.

TYPICAL PLUMBING OF COOLER



The outstanding heat transfer characteristic of our Tep-A-Cure™ Oil Coolers is achieved in part by using very thin aluminum sheets for the oil tubes. Every cooler is tested to 175 psi at our plant. Burst tests indicate pressures of up to 350 psi are tolerated before cooler failure.

Stomping on the accelerator while the engine is still cold with a sticky bypass valve on your engine can combine to create a pressure spike far exceeding 350 psi. If you can't break the "throttle stomping while the engine is still cold" habit, you must install a check valve (FCV) and a thermostat (P/N 501ERL) in your oil system, as shown in the diagram.



1. Place the flapper Check Valve (FCV) in the return line **FROM** the cooler **TO** the thermostat.
2. The direction of free flow through the FCV **MUST** be **towards** the thermostat.
3. See the drawing for the location of the thermostat. The port marked "INLET" on the thermostat is the inlet from the engine. Be sure to plumb the thermostat according to the drawing