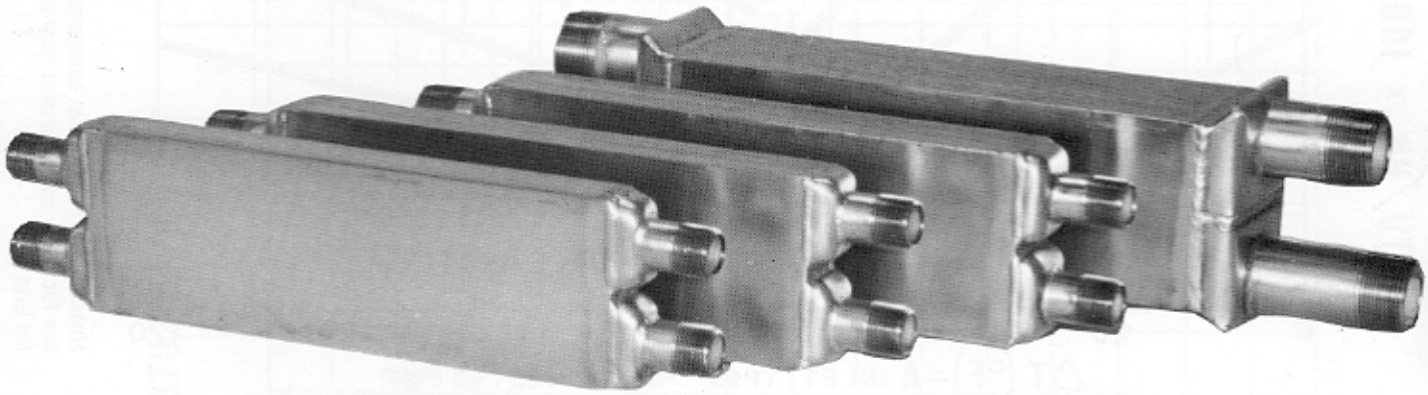
CARLSON HEAT EXCHANGERS

—UNIQUE PARALLEL PLATE CONSTRUCTION—
—HIGH PERFORMANCE—
—ALL STAINLESS STEEL—



MODELS PICTURED LEFT TO RIGHT HE 2.0, HE 3.5, HE 5.0, HE 10.0

MATERIAL: 304 STAINLESS STEEL (STANDARD)
316 STAINLESS STEEL (OPTIONAL)

FABRICATION: ALL T.I.G. WELDED

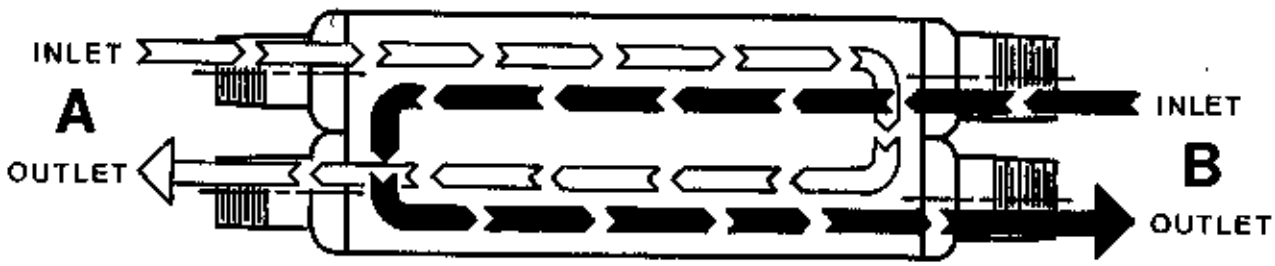
MAXIMUM OPERATING TEMPERATURE: 500°F*

MAXIMUM WORKING PRESSURE: 150 PSI*

USE WHEREVER HEAT TRANSFER BETWEEN FLUIDS IS REQUIRED

DESIGN FEATURES

Carlson Heat Exchangers are a compact unit designed to maximize the heat transfer area between the fluid from heat source and the fluid to be heated. This is achieved through unique parallel plate construction which narrows flow path of both fluids down to boundary layer thickness of the fluids (eliminating wasted center core of fluid that is pumped through but not heated in standard tube and shell heat exchangers). Model number 2.0, 3.5, 5.0, and 10.0 of the Carlson Heat Exchanger indicates the square feet of surface to which the fluid to be heated contacts. Also, full counter flow of fluids is achieved — see path of fluids in schematic below.



Note: In all drawings and graphs End designated A is fluid from the heat source, i.e., solar panel or boiler. End designated B is fluid to be heated, i.e., domestic hot water, water for space heating, swimming pool, hot tub or spa water, etc.

CONSTRUCTION

The all stainless steel construction of Carlson Heat Exchangers eliminates normal corrosion problems associated with standard heat exchangers. The end connections are standard pipe thread with inlet and outlet on the same end which simplifies installation. The units are a rectangular shape and easily insulated by adhesive bonding or banding on insulation around the exchanger when in place.

APPLICATIONS

Carlson Heat Exchangers have been widely used in the solar industry for transferring heat from solar collectors to domestic hot water, space heating storage tanks, hot tubs, and swimming pools. They have also been installed on gas and oil fueled boilers. Range of application has been from the model 2.0 used with three 4×8 solar collectors to the model 10.0 handling the output of three 150,000 BTU/HR gas fired boilers. Some heat exchangers have been used for heat removal from cooling fluids in the construction industry.

COST

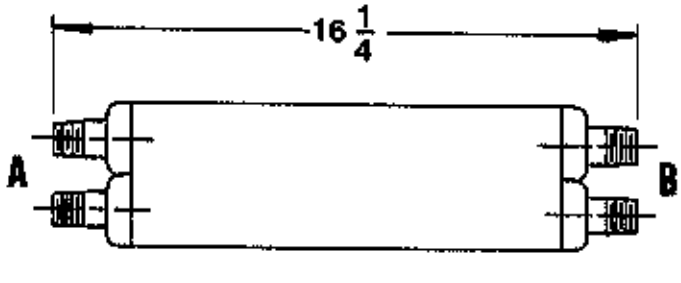
Carlson High Performance Heat Exchangers are priced competitively with any similar size heat exchangers available. 5 year limited warranty on materials and workmanship.

U.S. and Foreign Patents Applied For

CARLSON HEAT EXCHANGERS DISTRIBUTED BY

MODEL HE 2.0

SPECIFICATIONS AND PERFORMANCE CURVES

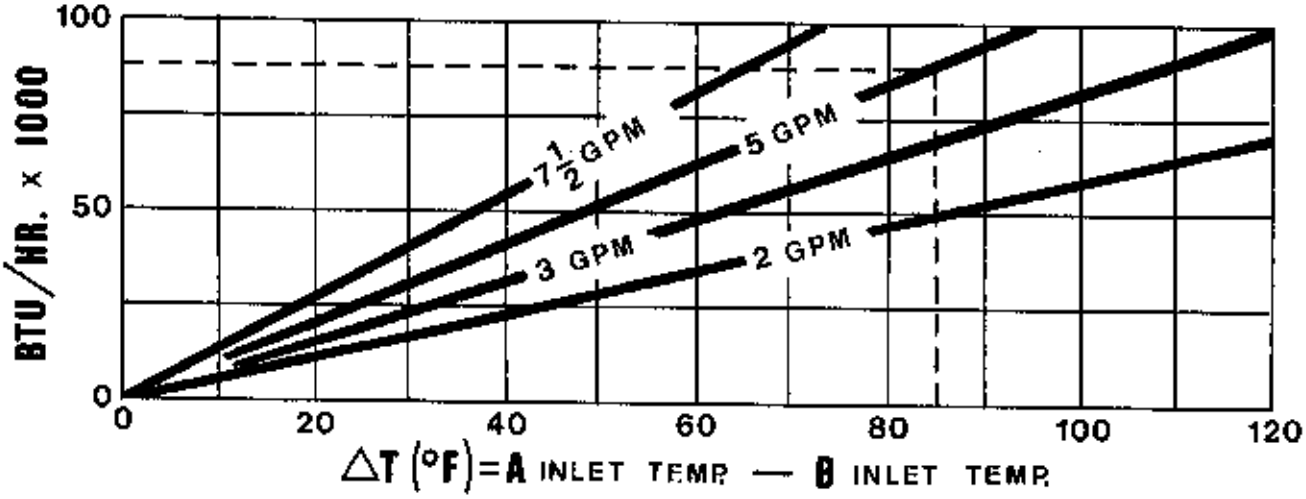


WEIGHT: 10 LBS.

END CONNECTION:

A 3/4 N.P.T.

B 3/4 N.P.T.

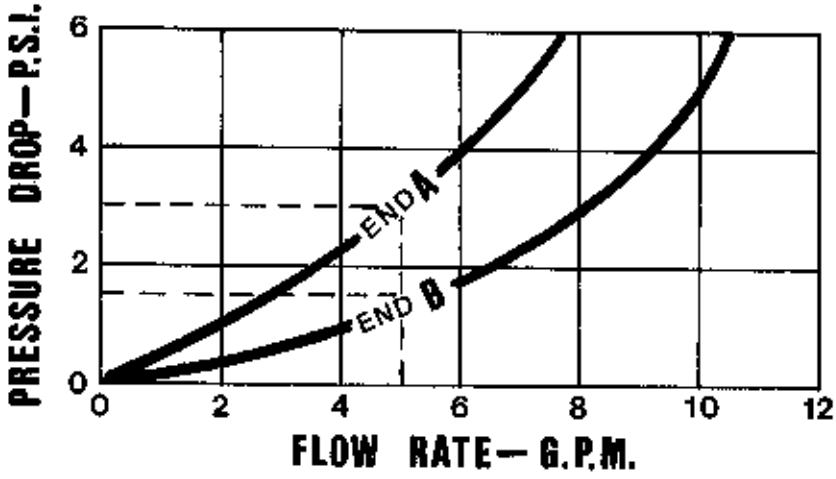


Note: All BTU versus temperature graphs are for water to water and flow rate shown is for End A.

How to Use Graph Example: (Conditions Known)

Flow Rate Through End A = 5 GPM; Inlet Temp End A = 140° F;
Inlet Temp. End B = 55° F

Determine temperature differential by subtracting inlet temp 140° - 55° = 85° F. Locate 85 on bottom of graph and draw a line vertically until it intersects 5 GPM line. Draw a line horizontally from intersection point to left side of graph and read BTU/HR. transferred. For example given this is 90,000 BTU/HR.



Note: When designing system flow rate through End B must be equal to or greater than End A.

How to Use Graph Example: (Conditions Known)

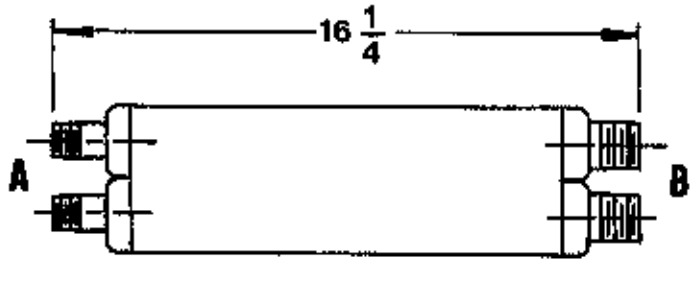
Flow Rate Through End A = 5 GPM; Flow Rate Through End B = 5 GPM

Locate 5 on bottom of graph and draw a line vertically until it intersects End A curve. Draw two lines horizontally from points of intersection with each curve to left side of graph and read pressure drop. For example given:

End A Pressure Drop = 3 P.S.I. — End B Pressure Drop = 1.5 P.S.

MODEL HE3.5

SPECIFICATIONS AND PERFORMANCE CURVES

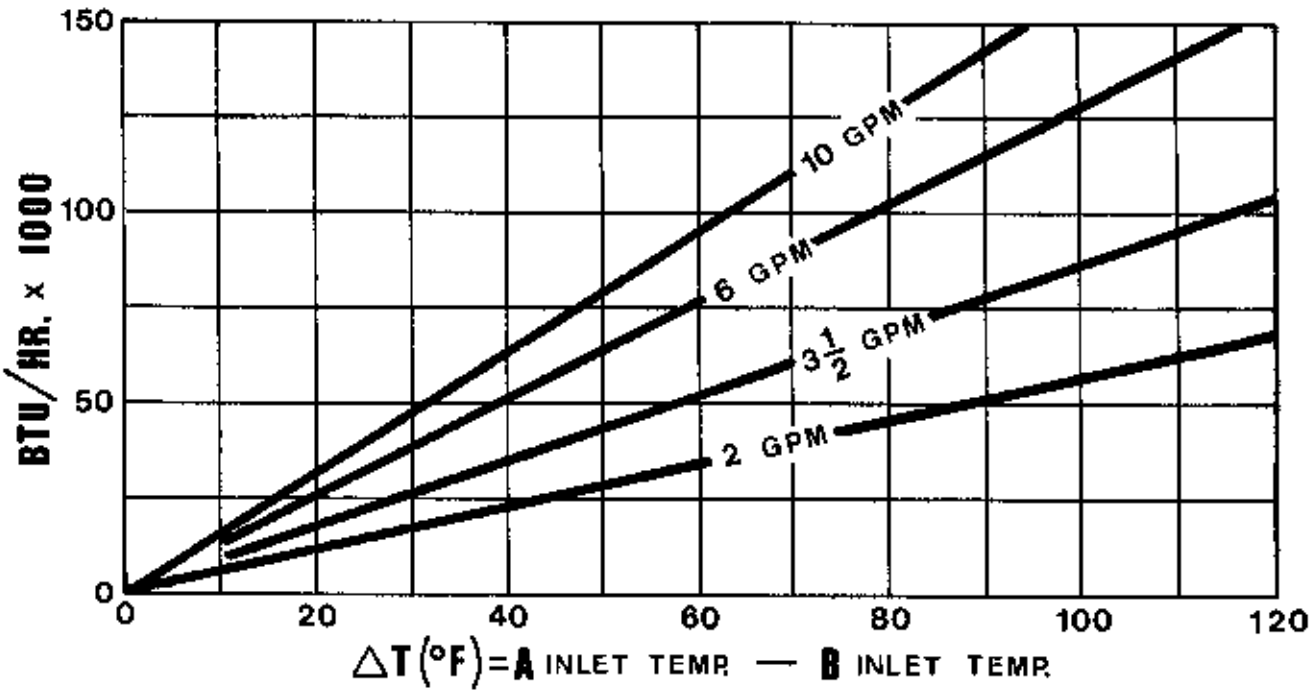


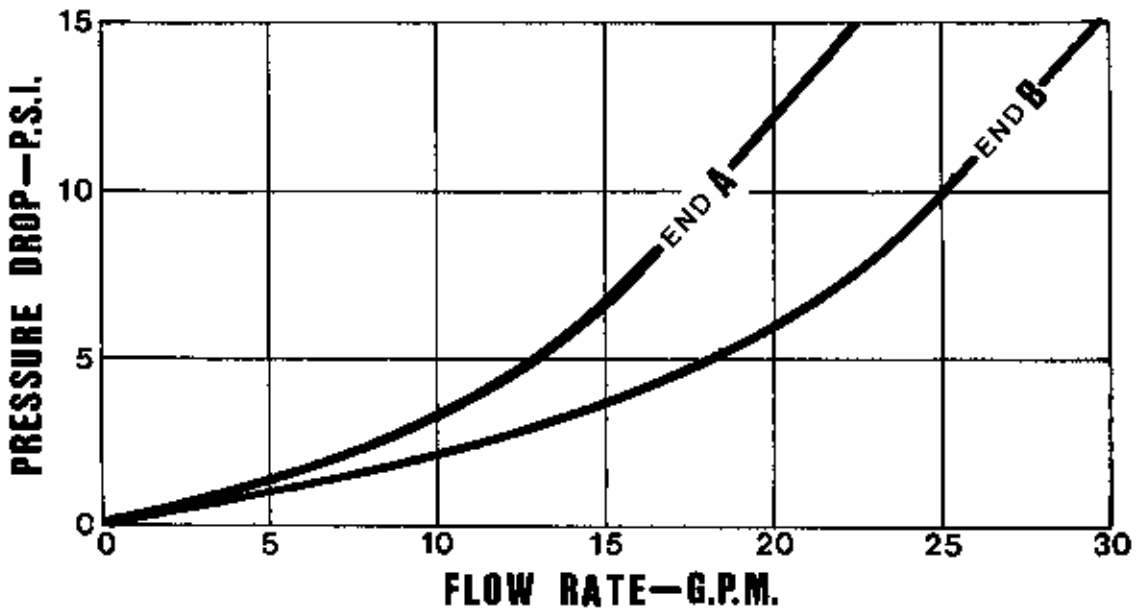
WEIGHT: 12 1/2 LBS.

END CONNECTION:

A 3/4 N.P.T.

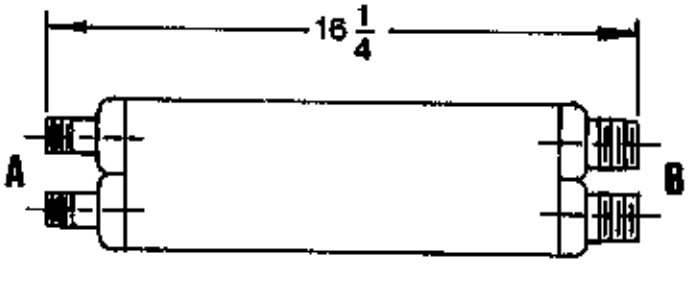
B 1 N.P.T.





MODEL HE 5.0

SPECIFICATIONS AND PERFORMANCE CURVES

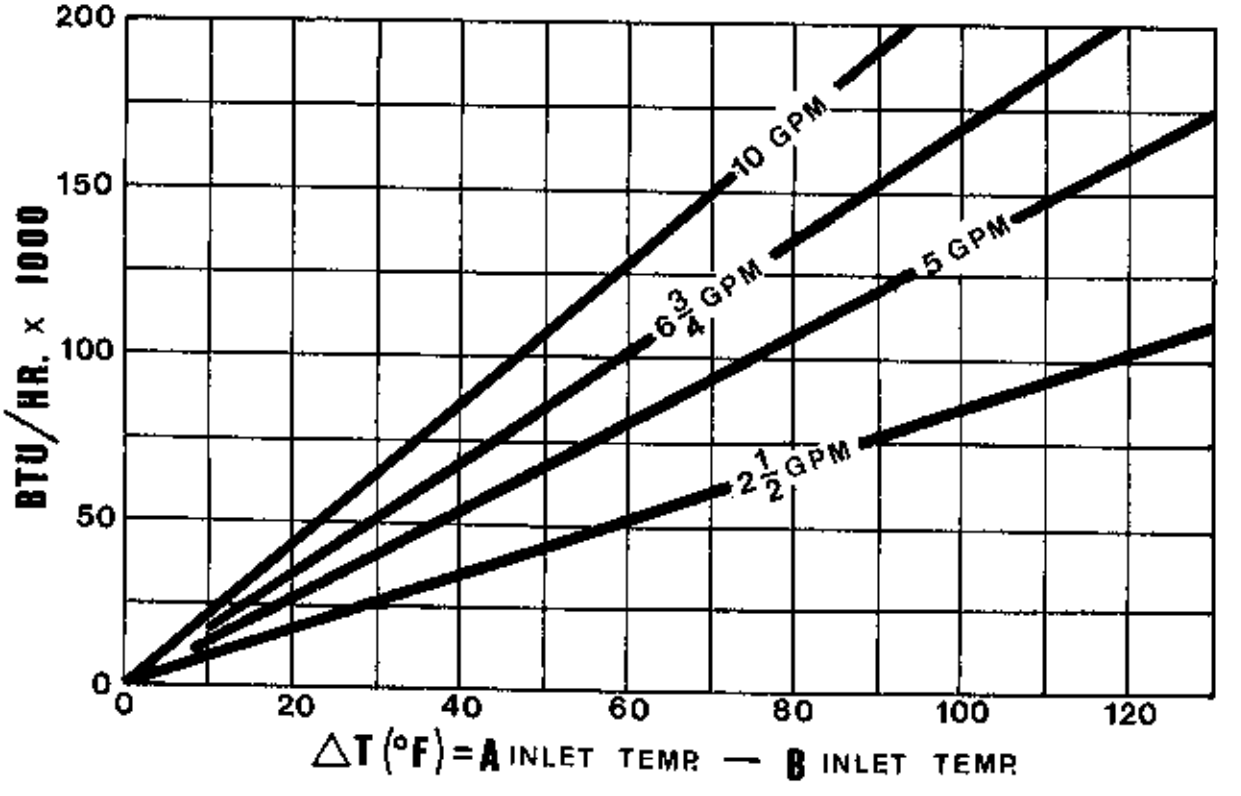


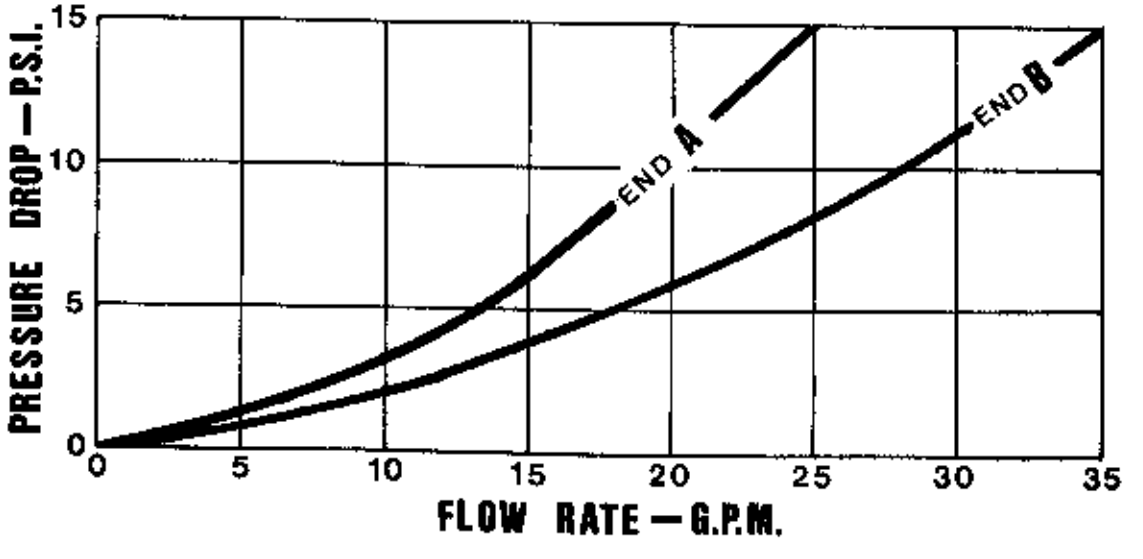
WEIGHT: 14 1/2 LBS

END CONNECTION:

A 3/4 N.P.T.

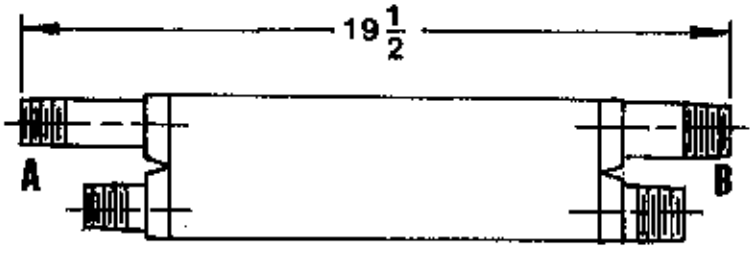
B 1 N.P.T.





MODEL HE10.0

SPECIFICATIONS AND PERFORMANCE CURVES



WEIGHT: 29 LBS.

END CONNECTION:

A 1 1/4 N.P.T.

B 1 1/2 N.P.T.