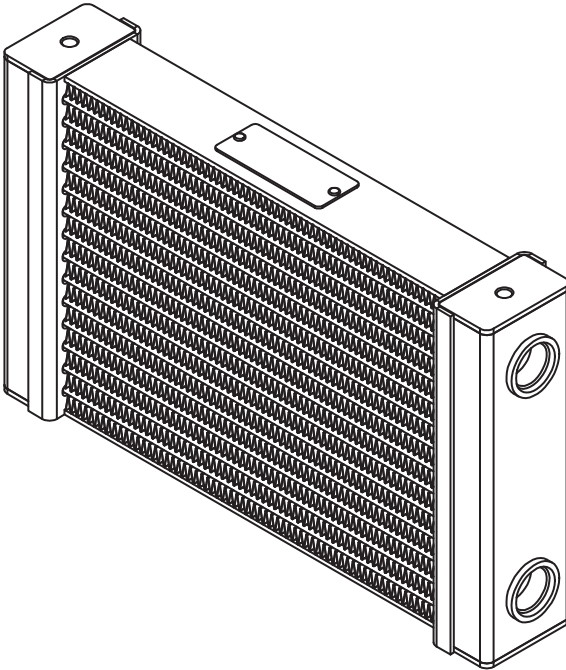




MHX Series High-Efficiency Heat Exchanger

Made in USA



**Important: Read these instructions
in their entirety prior to installation.**

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Applications

- Improved Racing's high-efficiency Motorsport Heat Exchangers (MHX) are suited for fluid cooling applications such as:
 - Engine Oil
 - Transmission and Transaxle Oil
 - Differential and transercase fluid
 - Supercharger Coolant Systems
 - Small-Engine Cooling Systems

⚠ Not for use with highly corrosive fluids.

Dimensions and Capacities

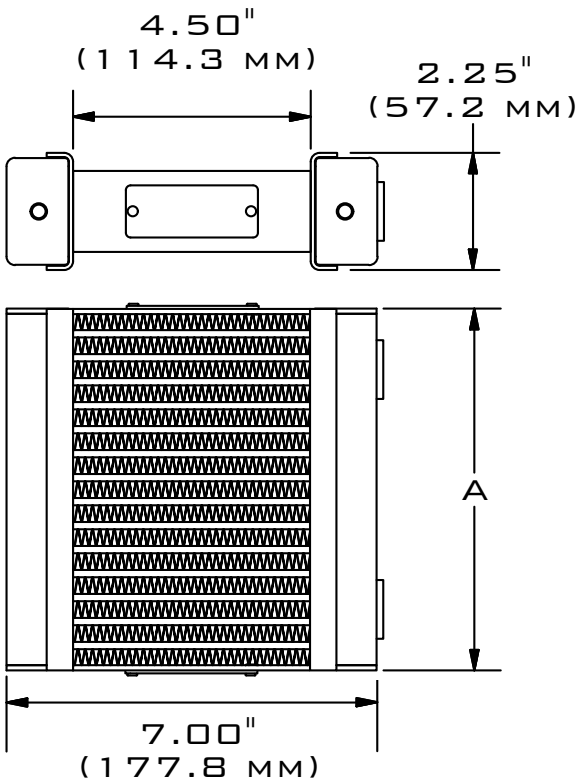


Figure 1 - MHX 200-Series oil cooler dimensions

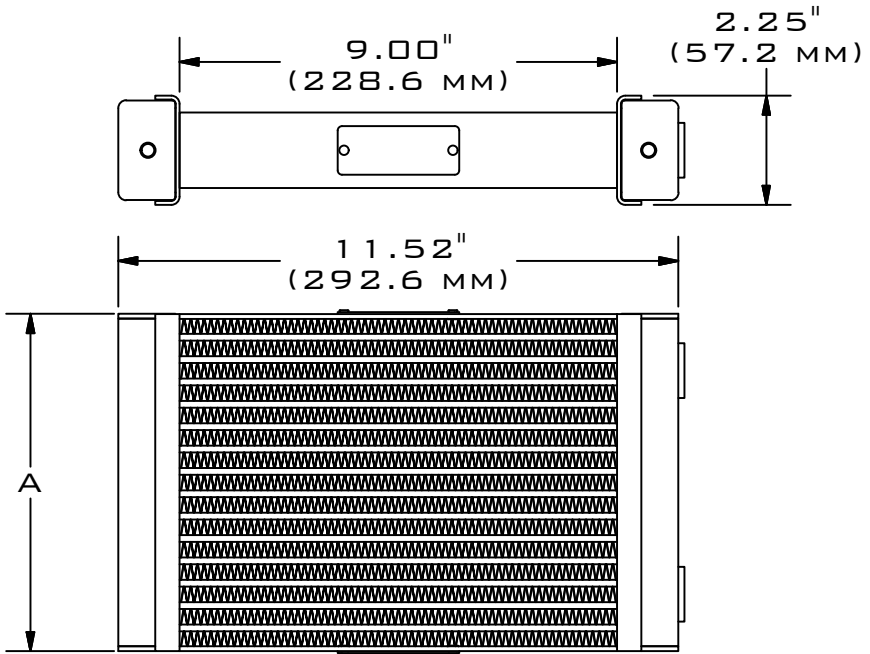



Figure 2 - MHX 500-Series oil cooler dimensions

Part No.	Rows	Passes	Ports	A	Weight	Capacity
MHX-220	14	2	-10AN Female ORB	9.73 in (247.1 mm)	2.9 lbs (1.3 kg)	0.75 Qt (0.71 L)
MHX-245	45	3	-10AN Male JIC	21.2 in (538.48 mm)	5.1 lbs (2.3 kg)	1.94 Qt (1.84 L)
MHX-245C	45	3	-10AN Male JIC	21.2 in (538.48 mm)	5.4 lbs (2.6 kg)	1.94 Qt (1.84 L)
MHX-514	14	2	-10AN Female ORB	6.94 in (176.3 mm)	2.9 lbs (1.3 kg)	0.75 Qt (0.71 L)
MHX-520	20	2	-10AN Female ORB	9.73 in (247.1 mm)	3.8 lbs (1.7 kg)	1.04 Qt (0.98 L)

Technical Specifications

Maximum Operating Temperature	302°F (150°C)
Minimum Operating Temperature	-22°F (-30°C)
Maximum Operating Pressure	150 psi (10.34 bar)
Test Pressure	175 psi (12.07 bar)
Fitting Ports	-10 Straight Thread SAE J1926-1 / MS16142 (ISO 11926-1) O-ring port OR -10 SAE 37° JIC Male
Heat Exchanger Material	Aluminum
Fabrication	Tube and fin core with turbulators, TIG welded tanks, billet CNC-machined end caps
Mounting Screw Hole Size	M8 x 1.25, 12mm depth

Plumbing Orientation

- The preferred plumbing orientations are shown in Figures 3 and 4.
-  Plumbing the heat exchanger with the ports facing down may result in air becoming trapped inside the heat exchanger, which can adversely affect performance.

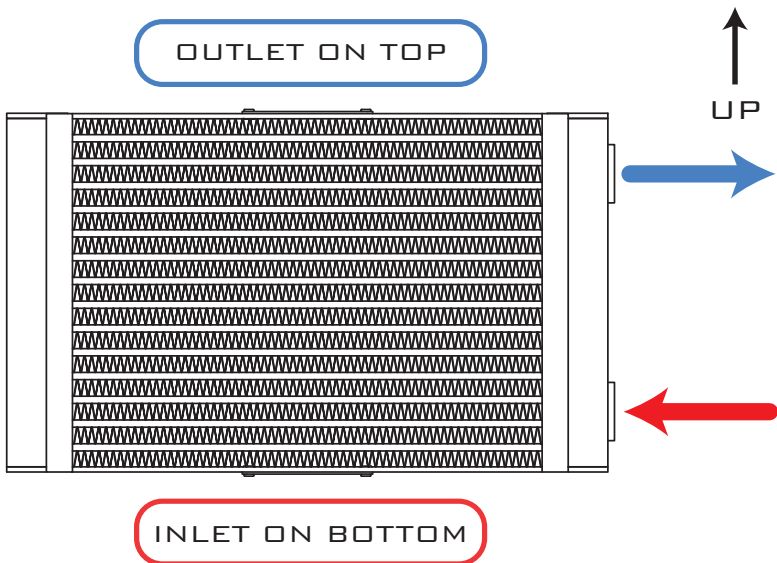


Figure 3 - Horizontal plumbing orientation

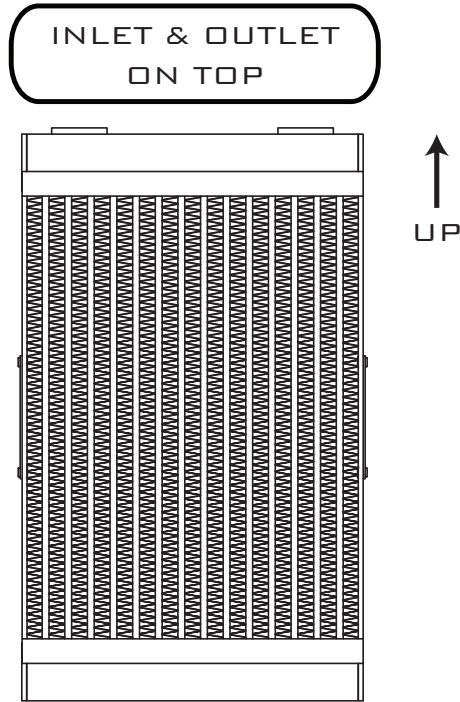


Figure 4 - Vertical plumbing orientation

Mounting the Heat Exchanger

- For maximum performance, install the exchanger where it will receive direct airflow.
 - Push / pull fans may be used where airflow is limited. Peak performance may be affected.
- **⚠ Do not through-mount fans to the core, as this may damage the heat exchanger and will void the warranty.**
- Secure the heat exchanger using only the M8 x 1.25 mounting holes located on each end tank. The maximum allowable screw length is 11mm plus the thickness of the mounting bracket.
- The heat exchanger should be supported by at least three mounting points.
- The heat exchanger must be isolated from vibration and stresses caused by heat expansion and contraction.
- For best results, use Improved Racing's mounting brackets which incorporate vibration isolation.

- **Bracket Part No.** MHX-500 or MHX-100


 **Leaks and failures caused by improper mounting may not be covered by the warranty.**

Installation Instructions

1. Select an installation location for the heat exchanger.

 **Tip:** Ensure the location receives high airflow.

2. If applicable, install the AN adapter fittings to the heat exchanger. Torque to a maximum of 32 lb-ft (43 N-m).

 **Tip:** Lubricate the -AN fitting O-rings with engine oil to prevent O-ring damage.

 **Tip:** Use aluminum fitting wrenches to avoid damaging the fittings.

 **DO NOT exceed fitting torque of 32 lb-ft (43 N-m).**

3. Configure and assemble the lines.

4. If possible, fill the heat exchanger with fluid prior to connecting the lines.

5. Connect the lines to the heat exchanger and fluid source.

6. Tighten all line fittings if applicable. **DO NOT** overtighten.

 **Tip:** Use aluminum fitting wrenches to avoid damaging the fittings.

7. Secure to the vehicle using at least three of the four M8 mounting holes and ensure the product is isolated from vibration.

 **Tip:** For best results, use Improved Racing's mounting brackets.

8. Inspect and top-off the fluids, if necessary.

9. Prime the system with fluid, if applicable. For engine oil, this may be accomplished by removing the fuel pump fuse or disconnecting the ignition circuit, then cranking the engine for several seconds.

10. Test the system and inspect for leaks.

11. Turn-off the system and inspect the fluid level. Add fluid if necessary.

12. Re-inspect the lines and fittings for leaks after 1-2 heat cycles.

Installation is now complete. Thank you for purchasing an Improved Racing product!