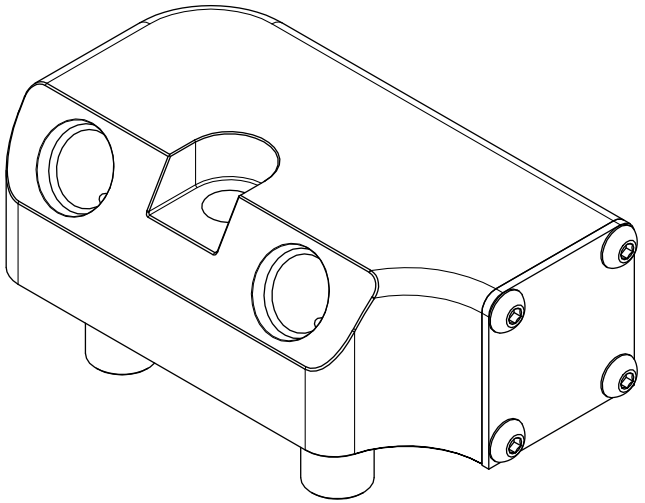
6L, 8L & 10L TRANSMISSION ADAPTER WITH THERMOSTAT

PART NO. TGM-100-TX

MADE IN USA



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

For contact information, visit www.improvedracing.com

Rev 211222

APPLICATIONS

- The TGM-100 Thermostatic Adapter is designed to be used with transmission cooling systems and must be used with a transmission fluid cooler.
- Fits most General Motors 6L, 8L, and 10L series automatic transmissions, including:
  - All 45, 50, 60, 70, 80, 90 variants, and aftermarket performance versions
  - Fits both E and non-E transmission variants
- Applications include:
  - 6L45, 6L50, 6L80 / 6L80-E, 6L90 / 6L90-E, 8L45 / 8L45-E, 8L90 / 8L90-E, 10L80 / 10L80-E, 10L90 / 10L90-E
- **Note:** Has not been verified to fit Allison 10L1000 transmissions (RPO code MGM & MGU)

⚠ **TGM-100 DOES NOT directly connect to factory lines. After market lines or adapter fittings must be used.**

MOUNTING LOCATIONS

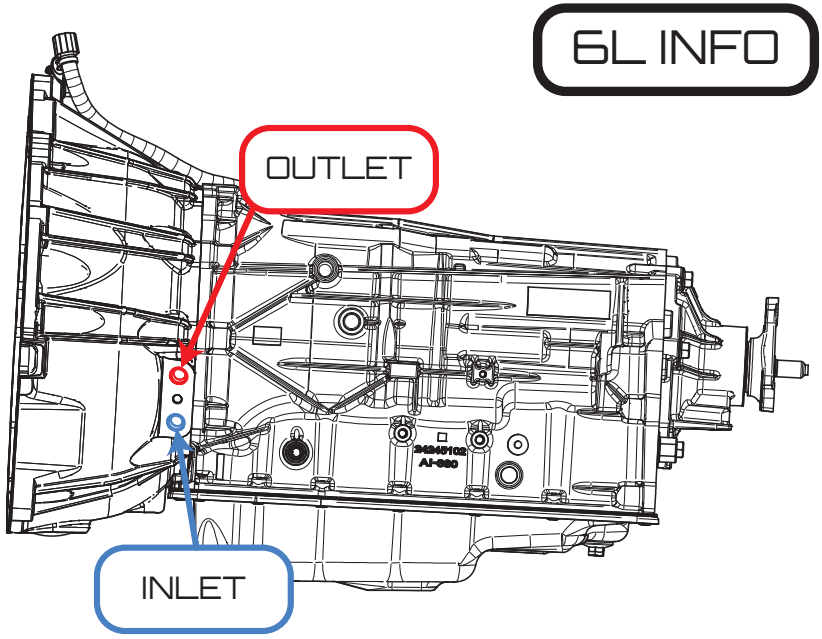


Figure 1 - 6L Transmission Adapter Location & Ports

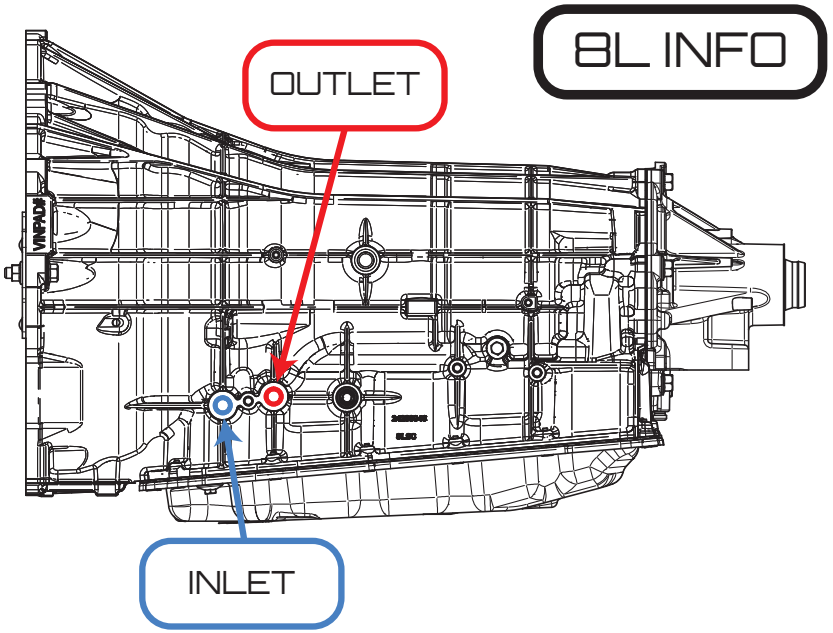


Figure 2 - 8L Transmission Adapter Location & Ports

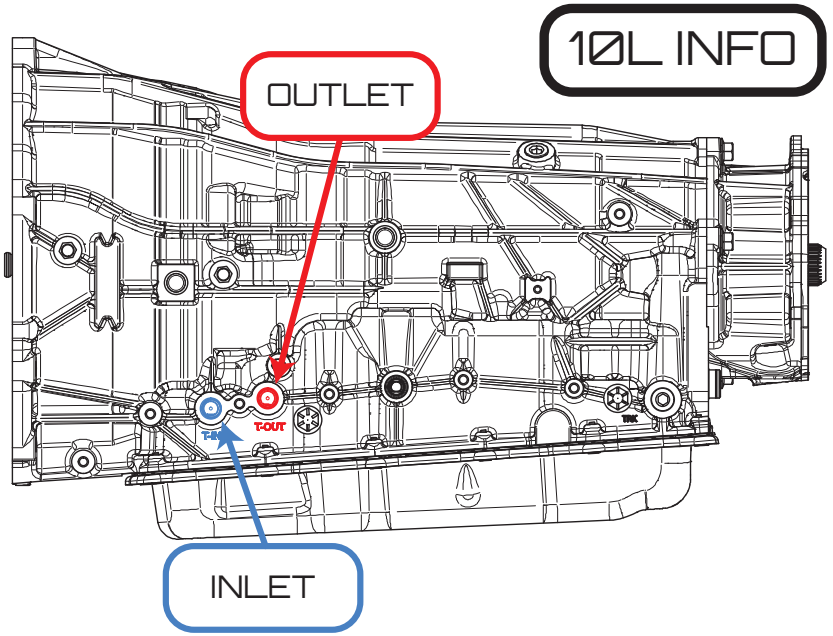


Figure 3 - 10L Transmission Adapter Location & Ports

PARTS LIST

Qty	Part Number	Description
1	TGM-100-TX	6L, 8L & 10L Adapter with Thermostat
1	23135703	Factory Gasket for GM Transmissions
1	HSC-1070	Mounting Screw

TECHNICAL SPECIFICATIONS

Maximum Operating Temperature	302 °F (150 °C)
Minimum Operating Temperature	-22 °F (-30 °C)
Maximum Operating Pressure	300 psi (20.68 bar)
Dimensions (W x H x D)	3.87 inch x 1.98 inch x 1.98 inch (98.3 mm x 50.3 mm x 50.3 mm)
Weight (Adapter Only)	15.6 ounces (443 grams)
Fitting Ports	2 x -6 SAE J1926-1 Straight Thread O-ring Boss Ports
Housing Material	CNC-Machined 6061-T6 Billet Aluminum
Housing Finish	MIL-A-8625 Type II Anodizing, Black
Valve Material	CNC-Machined 6061-T6 Billet Aluminum
Thermal Actuator	Brass Body, Steel Ram, Paraffin Wax > 10,000 Heat Cycles
Valve Spring	304 Stainless Steel, Passivated per ASTM A967
TGM-100 Thermostat Seals	Viton (FKM) Elastomer
Gasket	OEM edge-bonded GM gasket for 6L, 8L & 10L transmissions, GM Part # 23135703

TEMPERATURE SPECIFICATION

Part Number	Activation Temp.	Typ. Stabilization Temp.
T1	140°F +/- 2°F (60°C +/- 1°C)	145°F +/- 2°F (63°C +/- 1°C)
T2	160°F +/- 2°F (71°C +/- 1°C)	165°F +/- 2°F (74°C +/- 1°C)

PRODUCT INFORMATION

- TGM-100 is a late-model GM automatic transmission cooler adapter that has an integrated thermostat.
- The integrated thermostat accelerates warm-up and prevents over-cooling of the fluid by the heat exchanger.
- The thermostat can never fail such that fluid flow is blocked.
- The thermostat is rebuildable using rebuilt kits sold by Improved Racing.

The Rebuild Kits can also be used to change thermostat temperature.

- The fluid temperature exiting TGM-100 and returning to the system will match the Stabilization Temperature in the Temperature Specification Table only when the heat removal capability of the heat exchanger meets (or slightly exceeds) the operational heat load of the system.
    - Operational heat load is a relationship between the percent of total horsepower (heat) you expect to use versus ambient temperature conditions.
    - The Stabilization Temperature is higher when the heat exchanger is undersized for the operational heat load of the system.
    - The Stabilization Temperature might oscillate when the heat exchanger is too large for the operational heat load of the system.

OPERATION & FLOW DIAGRAM

This section explains the thermostat operation for TGM-100 during Warm-Up and Full-Flow modes.

The ports on TGM-100 are ambidextrous. Install TGM-100 using the best fitment for your vehicle.

Use Figure1 through Figure 3 to connect the hot and cold sides for your heat exchanger. For a given 6L, 8L or 10L transmission, the inlet and outlet will always be as shown in Figure 1 through Figure 3.

- During warm-up, TGM-100 bypasses the heat exchanger until the fluid reaches the Activation Temperature stated in the Temperature Specification Table.
    - The heat exchanger restriction is greater than bypass restriction, this is why over 90 percent of the fluid bypasses.
    - The slow flow into the heat exchanger also slowly warms the fluid, reducing thermal shock after activation.
- After activation, the internal valve slowly closes and increases hot fluid

flow into the heat exchanger.

  - The slow movement of the valve reduces fluid hammer effects between bypass and full flow modes to protect sensitive systems.

- In full flow mode, the valve completely closes the internal bypass.
  - All fluid is being sent through the heat exchanger.
  - This mode stays active while TGM-100 and the heat exchanger balance the system to the Stabilization Temperature shown on Page 4.

BEFORE YOU BEGIN

WARNING: NEVER PLUG THE COOLER PORTS. This will block fluid flow and result in catastrophic damage.

WARNING: You must loop the lines together to connect the fluid paths if removing the heat exchanger.

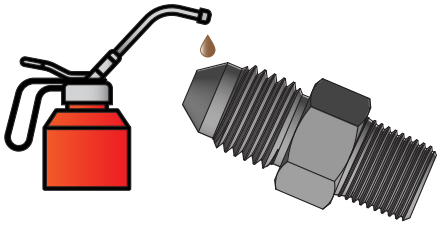
WARNING: This product should only be installed by a qualified mechanic. Improper installation will result in severe engine damage.

WARNING: Do not secure hoses to moving components. Plan for some slack in the fluid lines to allow for movement and avoid leaks.

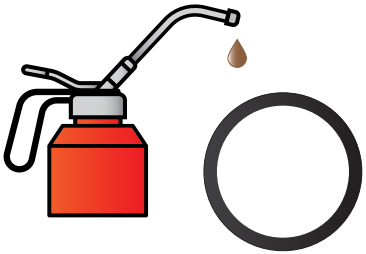
Use zip-ties or clamps to ensure no hoses pinch / rub on the exhaust, engine, suspension components and chassis.

Ensure heat exchangers are isolated from vibration.

Lubricate all 37° flares on the adapter fittings before final tightening.



Lubricate O-rings on adapter fittings prior to installation to prevent damage and ensure a leak-free seal.



- Use aluminum tools to avoid damaging the aluminum fittings.
- Properly clean all fasteners with acetone, then 90+ percent isopropyl alcohol, followed by drying, before using any thread lock.

INSTALLATION INSTRUCTIONS

1. Ensure all parts listed in the standard parts list table are present before proceeding.
2. Remove the red dust caps from the part and set aside.
3. Ensure the provided gasket is damage free prior to installation.
4. Remove the OEM cooling system according the the methods and procedures outlined in the factory service manual for your vehicle/ transmission. -OR- Remove the plugs from your crate transmission and refer to Figure 1 through Figure 3 for plumbing.
5. Install TGM-100 onto the transmission using the provided M8 screw.
6. Use a 6mm hexagon driver to torque the screw to 24 lb-ft (33 N-m).
7. Connect and tighten the system lines according to your line size below
    a. -6 Lines = 13 to 16 lb-ft (18 to 22 N-m).
    b. -8 Lines = 23 to 29 lb-ft (31 to 40 N-m).
    c. Worm Screw Hose Clamps = 25 in-lb (or tight to feel).

DO NOT overtighten.

8. Secure the heat exchanger to the vehicle.
9. Refill all fluids in the system to their specified levels.
10. Prime the system to fill the transmission, lines and heat exchanger with fluid before starting:
    a. Perform the priming procedures outlined in the factory service manual for the transmission, accounting for the added components installed with TGM-100.

It may be necessary to use a fluid preluber to perform the priming procedures.

11. Clean up from the priming procedures.
12. Follow the methods and procedures outlined in the factory service manual to prepare for testing the vehicle / transmission.
13. Start the vehicle and inspect for leaks and proper system functionality.
14. Perform all other required procedures outlined in the factory service manual for your transmission / vehicle while running.
15. Turn-off the vehicle and inspect the fluid level of the system.
16. Add fluid if necessary, while performing all remaining steps outlined in the factory service manual.
17. Inspect the hydraulic lines and fittings for leaks after 10 miles of driving.
18. Inspect the mounting hardware for loosening after 10 miles of driving.

Installation is finished! Thank you for purchasing an Improved Racing product!