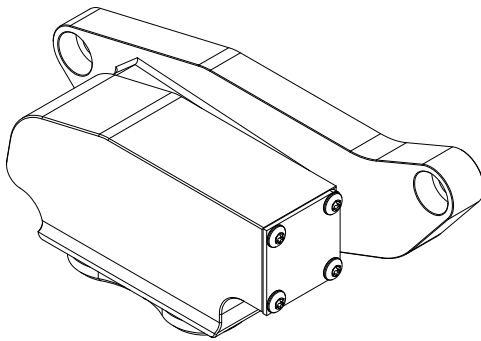




**OIL COOLER ADAPTER WITH
THERMOSTAT FOR BMW N20, N26,
N51, N52, N53, N54, N55, S55**

PART NO. EBW-100

MADE IN USA

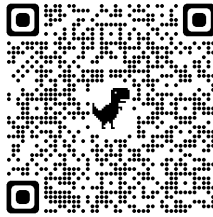


**Important: Read these instructions in their
entirety prior to installation.**

For contact information, visit www.improvedracing.com
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APPLICATIONS

- This product is for adding or upgrading BMW oil coolers on engines such as N20, N26, N51, N52, N53, N54, N55 and S55 variants.
 - Water to oil systems will require additional plumbing fittings to install this part (caps, plugs, unions, etc.).
- This product supports the reuse of factory BMW air to oil cooler lines when optioned with EBW-100-98 factory line adapter kit.
 - Otherwise -10 ORB ports are used to plumb aftermarket coolers.
- Visit the product webpage for a complete list of supported vehicles



PART NUMBER VS TEMPERATURE

Part Number	Activation Temperature	Stabilization Temperature
EBW-100-T4	180°F +/- 2°F (82°C +/- 1°C)	185°F +/- 2°F (85°C +/- 1°C)
EBW-100-T6	200°F +/- 2°F (93°C +/- 1°C)	205°F +/- 2°F (96°C +/- 1°C)
EBW-100-T7	212°F +/- 2°F (100°C +/- 1°C)	215°F +/- 2°F (101°C +/- 1°C)

EBW-100 PARTS LIST

Item	Qty	Part Number	Description
1	1	EBW-100-01-B	Oil Cooler Adapter (Black or Clear)
2	3	HSC-1049	M8 Mounting Screws
3	1	HGA-1300	Replacement BMW Oil Cooler Gasket

OPTIONAL BMW LINE ADAPTER PARTS LIST

Item	Qty	Part Number	Description
1	1	EBW-100-02-A	BMW Oil Cooler Line Adapter (Black or Clear)
2	2	HRG-0910	Line Adapter to EBW-100 O-rings (Larger)
3	2	HRG-1040	Replacement O-rings for BMW Lines (Smaller)

EBW-100 TECH SPECS









Max. Operating Temp.	302°F (150°C)
Min. Operating Temp.	-22°F (-30°C)
Max. Operating Pressure	300 psi (20.68 bar)
Dimensions (W x H x D)	7.1 in x 3.7 in x 2.4 in (180 mm x 93 mm x 62 mm)
Weight	24 oz (680 g)
Ports	-10 SAE Straight Thread O-ring Ports 7/8" -14 UN - 2A
Housing Material	CNC-Machined 6061-T6 Billet Aluminum
Housing Finish	MIL-A-8625, Type II Anodize, Black / Clear
Valve Material	CNC-Machined 6061-T6 Billet Aluminum
Thermal Actuator	Brass Body, Steel Ram, NBR Seal, Paraffin Wax
Valve Spring	304 Stainless Steel, Passivated per ASTM A967
Seals	Viton (FKM) Elastomer
Estimated Service Life	> 10,000 Heat Cycles

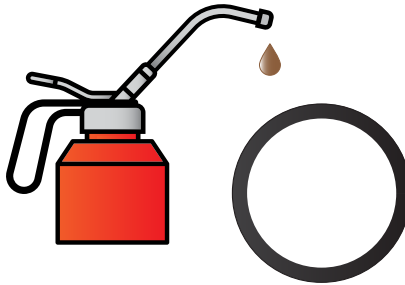
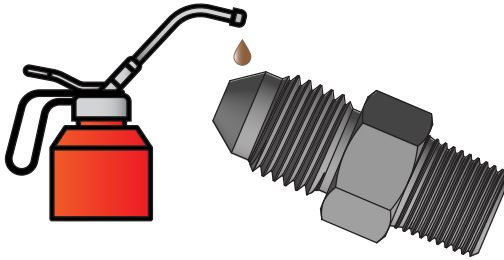
BMW LINE ADAPTER TECH SPECS

Max. Operating Temp.	302°F (150°C)
Min. Operating Temp.	-22°F (-30°C)
Max. Operating Pressure	300 psi (20.68 bar)
Dimensions (W x H x D)	2.8 in x 1.1 in x .45 in (70 mm x 28 mm x 11 mm)
Weight	1 oz (28 g)
Adapter Material	CNC-Machined 6061-T6 Billet Aluminum
Finish	MIL-A-8625 Type II Anodize, Black / Clear
Small O-ring Info	A5568 -015 Size, Viton (FKM) Elastomer
Large O-ring Info	A5568 -910 Size, Viton (FKM) Elastomer

INSTALLATION INSTRUCTIONS

BEFORE YOU BEGIN

-  **WARNING: NEVER work under a vehicle supported only by a jack.**
-  **WARNING: This product should only be installed by a qualified mechanic. Improper installation could result in severe engine damage.**
-  **WARNING: NEVER PLUG THE IN AND OUT PORTS ON EBW-100. Plugging the ports blocks fluid flow and will damage the engine.**
-  Lubricate threads and flares on fittings for a reliable seal.
-  Lubricate every O-ring to prevent damage and ensure a leak-free seal.
-  **Never secure hoses to moving components.**
-  Use zip-ties and P-clamps to stop oil lines from rubbing against the exhaust, engine, suspension components and chassis.
-  Use aluminum tools to avoid damaging fittings.



REMOVING THE BMW PARTS

1. Open the hood and confirm engine parts are cool to the touch.
2. Remove any parts that are blocking access to the oil filter, oil cooler adapter, and oil cooler hoses.
3. Place some rags under the oil cooler adapter.
4. Disconnect the original hoses.
 - a. Engines with air to oil coolers REUSING the factory cooler can simply set the hoses aside, wrapped in a rag to reduce oil drip.
 - b. Engines with air to oil coolers REMOVING the factory cooler must disconnect the hoses at the factory oil cooler to completely remove the hoses and cooler.
 - c. Engines with water to oil coolers must cap, plug or unionize the coolant hoses before installing aftermarket oil coolers.
5. Use an E12 socket to remove all three oil cooler adapter screws.
6. Remove the gasket from the oil filter housing and discard.
7. Clean up the gasket area in preparation for installing EBW-100.

INSTALLING EBW-100: REUSING FACTORY LINES

1. Remove the O-rings from the factory lines and replace them with the small O-rings included in the EBW-100-98 adapter kit.
2. Install HGA-1300 into the oil filter housing.
3. Use a 6 mm hexagon driver to install EBW-100 onto the oil filter housing using HSC-1049 screws.
4. Torque the screws to 13.3 lb-ft (18 N-m).
5. Lubricate all adapter O-rings with grease or engine assembly lube, then reinstall the factory oil cooler lines using the original BMW screw.
6. Torque the original BMW screw to 13.3 lb-ft (18 N-m).
7. Confirm the adapter and O-rings have installed flush onto EBW-100.

INSTALLING EBW-100: AFTERMARKET COOLERS

1. Install HGA-1300 into the oil filter housing.
2. Use a 6 mm hexagon driver to install EBW-100 onto the oil filter housing using HSC-1049 screws.
3. Torque the screws to 13.3 lb-ft (18 N-m).

4. Install the aftermarket oil cooler.
5. Connect and torque -10 ORB adapter fittings between 30 lb-ft (41 N-m) and 35 lb-ft (48 N-m).
6. Connect the system lines and torque the hose fittings to the adapter and oil cooler according to the steps below for your line size.
 - a. Hand tighten the fittings.
 - b. Mark the flats as shown in Figure 1.
 - c. Tighten according to the Figure 2.

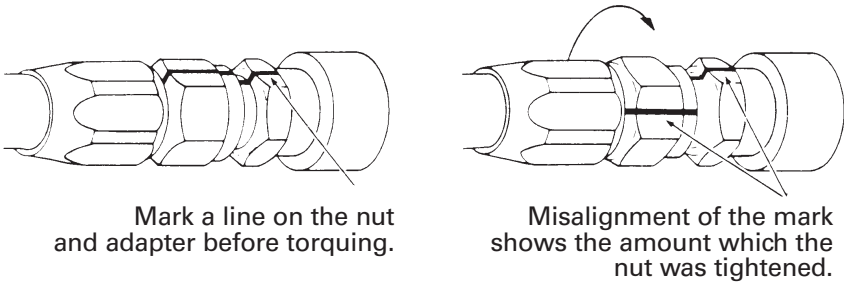



Figure 1 - Marking the Fittings for Correct Tightening

Size	Number of Hex Flat Rotations
-8	1.25 to 1.75
-10	1.25 to 1.75
-12	1 to 1.5

Figure 2 - Hex Flat Rotations vs Line Size

COMPLETING THE INSTALLATION

1. Check the engine oil and add if necessary.
2. Check the engine coolant and add if necessary.
3. Confirm all spilled fluids are wiped up, especially if any oil or coolant got on the serpentine belt.
4. Start the engine and check for leaks.
- 💡 Confirm oil pressure is stable and reading the correct value.
5. Confirm the fluid levels and add more if needed.
6. Inspect all parts for loosening or leaks after one heat cycle and 100 miles of driving.

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