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# INSTALLATION GUIDE

PX FORD RANGER/MAZDA BT50  
EXTREME TRANSMISSION COOLER KIT



P/N PW094960K - COMPLETE KIT



ENGINEERING THE UNFAIR ADVANTAGE

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## CONDITIONAL MANUFACTURERS WARRANTY

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PWR Custom Aluminium Radiators, Intercoolers and Oil Coolers along with cores only for these units are warranted to the original purchaser to be free of fault for materials and workmanship for a period of 1 year from the date of purchase and only when used under normal operating conditions. Claims for internal damage to engine or other related components of user's vehicle are not covered by this warranty. The PWR product user is responsible for the monitoring of engine temperature operations and for having the appropriate detection devices in place to warn the user of overheating and other engine related malfunctions. At time of installation an approved coolant must be added to the cooling system. (see important information – Radiator point 3) Responsibility for any damage, injury or loss attributed to any fault in material or workmanship in the above listed products shall be limited by replacing the unit on return of the defective product.

### ***Warranty voids***

If the product is repaired or welded by another party other than PWR Performance Products. \* If any defect is attributable to an accident, abuse or negligence. \* Where the product is used for an application for other than it was intended. \* If any parts or accessories are fitted which adversely affect the product

### ***Warranty does not cover***

Charge relating to removal and replacement to vehicle. \*Internal or external corrosion. \* Any consequential damage. \* Freight cost incurred to send the item back to PWR

## LIMIT OF LIABILITY STATEMENT

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The information contained in this publication was accurate and in effect at the time the publication was approved for printing and is subject to change without notice or liability. PWR Performance Products reserves the right to revise the information presented herein or to discontinue the production of parts described at any time.

# SAFETY PRECAUTIONS

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**STOP**

**CAREFULLY READ THE IMPORTANT SAFETY PRECAUTIONS and WARNINGS BEFORE PROCEEDING WITH THE INSTALLATION!**

Appropriate disassembly, assembly methods and procedures are essential to ensure the personal safety of the individual performing the kit installation. Improper installation due to the failure to correctly follow these instructions could cause personal injury or death. Read each step of the installation manual carefully before starting the installation.

- Always wear safety glasses for eye protection.
- Place the ignition switch in the OFF position.
- Always apply the parking brake when working on the vehicle.
- Block the front and rear tyre surfaces to prevent unexpected vehicle movement.
- Operate the engine only in well-ventilated areas to avoid exposure to carbon monoxide.
- Do not smoke or use flammable items near or around the fuel system.
- Use chemicals and cleaners only in well ventilated areas.
- Batteries can produce explosive hydrogen gas which can cause personal injury. Do not allow flames, sparks or flammable sources to come near the battery.
- Keep hands and any other objects away from the radiator fan blades.
- Keep yourself and your clothing away from moving parts when the engine is running.
- Do not wear loose clothing or jewellery that can be caught in rotating or moving parts.

# IMPORTANT INFORMATION FOR FITTING

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Please read the following before fitting our PWR Performance Product.

## **WARNING**

**WARNING:** Failure to follow this procedure will void your warranty.

- Do not use this product in any other motor vehicle for which it is not designed.
- Do not use any other mounting location / method other than described in this instruction.
- It is advisable to seek assistance of another person when installing this product.
- Do not repair or modify this product and / or its mounting bracket in any way - repair or modification may affect proper operation of the vehicle or cause destruction of property.
- Ensure all torque settings are followed.
- Be sure to clean and remove any loose debris before removing pipe work as debris entering the engine could be detrimental to the engine and or components

### ***Radiators:***

- Before removing the old radiator check the existing coolant for stray current. This is done by connecting a voltmeter between the coolant and the battery ground. The meter should have a range of at least 12 volts (assuming the vehicle have a 12 volt charging system) and a sensitivity of at least one-tenth of a volt. By connecting one test lead to battery ground and placing the other lead into the coolant (DO NOT TOUCH THE METAL CORE OR FILLER NECK) any voltage indicates current passing through the coolant-ELECTROLYSIS.
- If no current found flush cooling system with distilled water to remove the existing coolant/inhibitors. When the entire system has been flushed including the over flow bottles, you can fit the new radiator. DO NOT MIX COOLANTS
- Select a coolant that is recommended by the manufacturer or by PWR. Product must meet the current AS2108 or manufacturer's engine coolant/inhibitor standard and refill system. Bring engine up to temperature and let cool. Re-Check the coolant level and top up if necessary. USE ONLY DISTILLED WATER.
- IMPORTANT- again recheck step 1 for any stray current.
- PLEASE be careful when fitting and make sure all mounting points are tight (to manufacturer's specifications) and there is sufficient clearance so no rubbing occurs.
- PLEASE ensure that all hose clamps are done up.
- Correct cap must be used for each individual system.

### ***Intercoolers:***

- PLEASE be careful when fitting and make sure all mounting points are tight (to manufacturer's specifications) and there is sufficient clearance so no rubbing occurs.
- PLEASE ensure that all hose clamps are done up.

### ***Oil Coolers:***

- PLEASE be careful when fitting and make sure all mounting points are tight (to manufacturer's specifications) and there is sufficient clearance so no rubbing occurs.
- PLEASE ensure that all hose clamps are done up.
- Do not run over 80 psi rating.

### ***Liquid to Air Barrel Intercooler kits:***

- Select a coolant that is recommended by the manufacturer or by PWR. Product must meet the current AS2108 engine coolant/inhibitor standard and refill system. Cycle the fluids through the system to remove air locks. Re-Check the coolant level and top up if necessary. USE ONLY DISTILLED WATER
- PLEASE be careful when fitting and make sure all mounting points are tight (to manufacturer's specifications) and that there is sufficient clearance so no rubbing occurs.
- PLEASE ensure that all hose clamps are done up.
- Pump must be fitted in accordance to fitting instructions supplied and by a qualified auto electrician.

# APPLICATION

Before commencing the procedures outlined please read the guide and verify all parts are present and not damaged. If anything is missing or damaged, please notify PWR Performance Products on 07 5547 1600.

## PACKING LIST

Description	Part Number	Quantity
21 Row Engine Oil Cooler 37mm with -8 Fittings	PWO5931	1
-8 Oil Cooler Screw in Fittings	PWA4972	2
Engine Oil Cooler Rubber O-Rings	N9-910	2
Oil Cooler Bracket LHS	1.94960	1
Oil Cooler Bracket RHS	2.94960	1
Transmission Fitting Bracket	3.94960	1
U Shape 180 Degree Water Hose Adaptor Pipe	4.94960	1
Dash Fitting Female -8 45 Degree to Male 1/2" Barb	15A.01-94960	2
Dash Fitting Female -8 to Male 1/2" Barb	15A.02-94960	2
Dash Fitting Ford 6R Trans Cooler Adaptors	15A.03-94960	2
Oil Hose 1/2" at 2.3 Meters Length	15A.04-94960	2
1/2" Hose Clamps	RML0067	6
M6 x 16mm Hex Head Bolts	MSSSM616Z	6
M6 Flange nuts	FNM6Z	4
M6 Small Washers	EFWM6Z	4
M6 Large Washers	MSFWM6Z	2
Plastic Zip Ties at 300mm Long	73009	5
<b>Warranty Card</b>		
Warranty Card		1

# EQUIPMENT AND SUPPLIES REQUIRED FOR FITMENT

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Access to a Hoist Preferred or Trolley Jack and Jack Stands
Flat Head Screw Driver
1/2" Drive Socket Set
3/8" Drive Socket Set
Vice Clamps x 2
Pointy Nose Pliers
Adjustable Wrench
Side Cutters

# Installation Guide

1. Use a vehicle hoist were possible to begin works or park the truck on a solid clean flat surface and raise the front of the truck with a 4x4 specific jack, and place heavy duty jack stands under vehicle subframe.



2. Wait until vehicle is totally cooled down before beginning works.
3. Remove plastic radiator cover.



4. Under the vehicle remove 3 of the under-body protection guards starting from the front of the vehicle.



5. In the engine bay use the vice grips to crimp and block water flow to the OEM transmission cooler
6. With pointy nose pliers, slide back on the factory hose clamps on the water lines to and from the factory oil cooler that is mounted on the passenger side of the gearbox.
7. Some water will pass out the end of the lines when released.
4. Use the supplied PWR 19mm 180deg water line adaptor pipe to connect the water line back to each other with new hose clamps supplied.



5. Loosen the 3 bolts holding the factory transmission oil cooler to the gearbox
6. Loosen the bolt holding the bracket supporting the hard-line fittings to the gearbox
7. Remove the factory oil cooler and bracket from the side of the gearbox, some small amounts of transmission fluid may come out.



8. Use the supplied fitting adaptors to the factory gearbox.
9. Use the supplied PWR flat bracket to hold the fittings to the gearbox by reusing the factory bolt and tighten





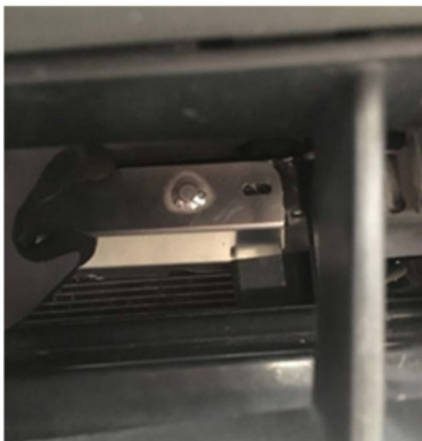
16. From the front of the vehicle feed each oil line separate through beside the air condenser and radiator on the passenger side of the vehicle.



17. Continue to feed the hoses through past the firewall along the passenger side past the back of the engine and start of the gearbox



10. Mount the 2 supplied folded brackets with pin locators to the front crash bar



18. From the front of the vehicle lift up oil cooler into place



11. Remove PWR Oil cooler from the box.
12. Screw in and tighten PWR supplied -8 male adaptors to oil cooler with rubber O-rings
13. Screw on 2 x -8 45deg to 1/2" hose barb fitting to the other oil cooler outlet.
14. Slide on oil lines to the PWR oil cooler
15. Use supplied hose clamps and tighten hose clamps to the oil lines on oil cooler

19. Use the supplied 4 nuts and bolts to fix the oil cooler in place



20. Fix the oil line to the new fittings to the side of the gearbox and secure in place with supplied hose clamps and tighten
21. Use supplied zip ties to secure the oil lines from front to back.
22. Install supplied oil cooler lines plastic covers, secure in place from the gearbox back with supplied zip ties
23. Check all fittings and clamps are tight and securer
24. Top up transmission fluid directly into the gearbox; refer directly to the owner's manual
25. Lower vehicle back to the ground.
26. Start-up vehicle
27. Check for any leaks and retighten if required.
28. Lift vehicle back up to working height as done previously in a safe manner
29. Refit all under tray stone protection guards and tighten.

30. Refit top plastic radiator cover.

31. You are done, enjoy your new PWR Extreme Transmission Oil Cooler kit knowing that your gearbox will stay cool in the harshest conditions.

