ADVANCE ADAPTERS INC.

P.O. Box 247, 4320 Aerotech Center Way
Paso Robles, CA 93447
Telephone: **(800) 350-2223** Fax: **(805) 238-4201**

P/N: 716693-AA

Page Rev. Date: 07-11-05

1987 & UP JEEP WRANGLER RADIATOR WITH MANUAL TRANSMISSION

KIT CONSISTS OF:

No.	Qty	Part No.	Description
1.	1	716693-BLK	1987 & UP JEEP RADIATOR WITH V8 AND A MANUAL TRANSMISSION

Radiator thickness -	3.000"
Tank height -	18.250"
Overall height -	20.000"
Total width bottom -	21.250"
Total width top -	22.125"
Core width -	17.875"
Core height -	19.500"
Water inlet -	1.500"
on LT & LS engines -	1.375"
Water outlet -	1.750"
on LT & LS engines -	1.500"

Bungs (these are the welded female fittings visible when looking at our radiators. Steam Return bung for LT/LS engine options are 1/4"NPT. Note: The bung for this option is located directly under the filler cap area in the tank, allowing steam to purge out of the cap when necessary. The Temperature Sensor is a 3/8" NPT. It is located in the cold side of tank. This provides an accurate temperature of the fluid as it enters the engine. The Overflow Fitting is a 1/8" NPT. We have includes a plastic fitting to couple a overflow hose to. *NOTE:* In the unfortunate event of something striking the filler neck area, the plastic fitting will break off without causing damage to the filler neck. The plastic can be easily chased out of the threads. The drain is a 1/4" NPT. We have included drain Cock installed on the radiator.

IMPORTANT NOTE: Use only liquid Teflon sealant or grease for all fittings that are threading into the aluminum radiator. Tape sealants can expand a thread size to an oversized dimension. This will cut the aluminum threads resulting in leakage.

To maximize thermal transfer between the dissimilar fluids, the cooler (heat exchanger) has multiple parallel aluminum fins within the inner and outer housing. The fin design increases the contact surface allowing efficient temperature exchange. Another benefit of this heat exchange is to bring the transmission fluid up to a safe operating temperature in colder climates or during winter operation.

SPECIAL NOTE: The components packaged in this kit have been assembled and machined for specific type of conversions. Modifications to any of the components will void any possible warranty or return privileges. If you do not fully understand modifications or changes that will be required to complete your conversion, we strongly recommend that you contact our sales department for more information. This instruction sheet is only to be used for the assembly of Advance Adapter components. We recommend that a service manual pertaining to your vehicle be obtained for specific torque values, wiring diagrams and other related equipment. These manuals are normally available at automotive dealerships and parts stores.

ADVANCE ADAPTERS INC.

P.O. Box 247, 4320 Aerotech Center Way
Paso Robles, CA 93447
Telephone: **(800) 350-2223** Fax: **(805) 238-4201**

P/N: 716693-AA

Page Rev. Date: 07-11-05

1987 & UP JEEP WRANGLER RADIATOR WITH MANUAL TRANSMISSION

Installation Note: This radiator fits 1987 to current Jeep Wrangler models. This radiator will allow sufficient clearance for the steering box on a TJ wrangler without requiring a body lift. On the YJ Wranglers the two mounting flanges will have interference with the head lamp bezels, requiring you to either shim between the flange and core support or cut a small amount off of each flange in order to clear. The photo (right) shows the modification made to the mounting flange. We cut in 3/8" in, and 8" down on both mounting flanges to avoid the interference of the head lamp bezel.

Radiator Features: *1" wide core tubes, *No Epoxies,100% TIG Welded, *16 Fins per inch, *Temperature Sensor Provision, *Air Pressure Tested, *Billet Filler Neck, *Cross Flow Design, *.083" Mounting Flanges.

Inside the radiator, the engine's heated water/coolant flows into the radiator and flows across the numerous tubes. From there the heat is transferred to the fins of the radiator. The fins are air cooled by the airflow of the fan and vehicle speed, which is the only way to dissipate the heat from the fins - thus cooling the water before reentering the engine. Our aluminum radiator with the 1" wide tubes and 16 fins per inch provides excellent heat dissipation.

Our radiator uses a common 3/8" NPT fitting located in the cold side of the tank. This location provides for an accurate temperature reading of the fluid as it enters the engine. Our radiators are air tested a total of 3 times throughout the building process. Air can detect a leak before water.

Our billet filler neck requires a standard GM overflow system style cap (3/4" depth). We recommend a 15 lbs. to 22 lbs. cap pressure. A higher pressure cap increases the boiling point. A higher pressure cap keeps the fluid in the cooling system, not the recovery tank.

We use a cross flow design on our radiators to allow the radiator cap to be on the low-pressure side (cold side or water outlet) of the tank. Water drops in pressure as it is cooled; allowing recovered fluid back into the radiator during normal operation. On a down flow radiator, the top tank is always the hot side and is under constant pressure. Under sustained high RPM, this can force the fluid past the filler cap, out the overflow tube, and into the recovery tank even at normal operating temperatures.

Our radiators use an 0.083" aluminum angle for the mounting flange. This angle is TIG welded to the tanks. The aluminum angle has no mounting bolt holes. The customer determines the mounting pattern and location. This allows height adjustment for the radiator to center up to the water pump with the new engine location. This will also assist a desired height location if a body lift is to be installed. Note: In a Jeep, the core support is sitting on a rubber/poly mount absorbing vibration.

Our radiators are designed to fit standard GM engines. Newer blocks such as the LT1, LS1, and Vortec Gen 3 blocks will require some additional features to be added to the radiator. A steam return option and smaller water inlets and outlets must be incorporated to our radiator when using it to a newer block.

ADVANCE ADAPTERS INC.

P.O. Box 247, 4320 Aerotech Center Way
Paso Robles, CA 93447
Telephone: **(800) 350-2223** Fax: **(805) 238-4201**

P/N: 716693-AA

Page Rev. Date: 07-11-05

1987 & UP JEEP WRANGLER RADIATOR WITH MANUAL TRANSMISSION

Radiator Recovery Can: This canister will accumulate any "overflow" from the radiator cap. The accumulated fluid will then be pulled back into the radiator once the engine has cooled. **P/N 716672**.

Radiator In-Line Temperature Sensor Adapters: We offer three upper radiator hose in-line temperature sensor adapters. These adapters allow you to retain your vehicles stock temperature sending unit and stock gauge. These units are offered in either 1-3/8" or 1-1/2" hose diameter as to fit most block and radiator configurations. The sensor hole is either 3/8" or 1/2" on the 1-3/8 adapters or 1/2" on the 1-1/2" adapter.

P/N 716673 - 1-3/8" with 3/8" sensor hole.
P/N 716673A - 1-3/8" with 1/2" sensor hole.
P/N 716674 - 1-1/2" with 1/2" sensor hole.

Radiator Cap: We offer a new 22 lbs. radiator pressure cap. This cap works on all of our radiators. **P/N 716679**.

Spal Fan Kits: The Spal fans we offer are the high performance curved bladed pusher or puller fans. These 16" fans are 16.3" tall, 15.75" wide, and 3.39" deep at the fan's motor. The fans are rated at 2070 CFM and being that they are pre-shrouded, they are ideal for cooling larger engines. Our fan kits come complete with the needed wiring harness, which is compatible with both positive and negative ground vehicles. The 3/8" pipe thread sending unit is designed to turn the fan on at 185 degrees and off at 170 degrees. The kit comes with a 40 amp relay, a fuse holder, and all other necessary hardware. In addition, our kit also includes mounting brackets for the fan to the radiator. The mounting brackets are designed for our aluminum radiators, however; we can supply you with brackets to fit our copper/brass radiators upon request.

716670 - Puller Fan Kit **716671** - Pusher Fan Kit

SPECIAL NOTE: The components packaged in this kit have been assembled and machined for specific type of conversions. Modifications to any of the components will void any possible warranty or return privileges. If you do not fully understand modifications or changes that will be required to complete your conversion, we strongly recommend that you contact our sales department for more information. This instruction sheet is only to be used for the assembly of Advance Adapter components. We recommend that a service manual pertaining to your vehicle be obtained for specific torque values, wiring diagrams and other related equipment. These manuals are normally available at automotive dealerships and parts stores.