

THERMATIC® FANS – Installation Instructions

SUITABLE FOR DAVIES, CRAIG 8", 9", 10", 11", 12", 14", 14HP", 16" FANS

BEFORE COMMENCING, READ THESE INSTALLATION INSTRUCTIONS- ENSURE YOU HAVE A FULL UNDERSTANDING OF THE WORK AHEAD AND YOU HAVE ALL THE TOOLS AND COMPONENTS REQUIRED FOR COMPLETION OF YOUR THERMATIC FANS

1. PREAMBLE

Congratulations on purchasing a Davies, Craig Thermatic® Fan. This Fan is suitable for mounting on air-conditioning condensers, engine radiators as well as transmission oil cooling cores (if applicable). We trust you've selected the most suitable model for your application. If you have any questions please contact Davies, Craig, (03) 9369-1234; info@daviescraig.com.au or check out our website, www.daviescraig.com.au

2. REQUIREMENTS

Your Thermatic® Fan includes four mounting feet. A **Universal Fan Hardware Kit** (part #1000 12v or part #1001 24v) will be required if you wish to mount this fan to your vehicle's A/C condenser or radiator. You may also require one of Davies, Craig's **Thermatic® Switches**, Part: #0401 or #0444 from either your retailer or the Davies, Craig website, www.daviescraig.com.au If you wish to cool both radiator and condenser cores you should purchase the Digital Electronic Switch #0444 or the Thermatic Switch & Relay Kit part #0404 which contains the Thermatic Switch, part #0401 with a wiring loom and extra relay.

3. FAN ORIENTATION

With the exception of the 11" & 14" Brushless Fans (part #0120 & #0140), all Davies Craig fans are reversible and may be mounted either **upstream** (in front of radiator/condenser) or **downstream** (on the engine side of the radiator/ condenser).

If there is insufficient space in front of the radiator/condenser, the fan may be mounted downstream, provided four steps are taken before mounting.

NOTE: ALL THERMATIC FANS ARE FACTORY ASSEMBLED TO BE MOUNTED UPSTREAM (in front of radiator/condenser)

For **downstream** mounting (**Except 11" & 14" Brushless Fans**)

- (i) Remove the clip or undo the hex nut from the centre of the fan blade.
- (ii) Remove the fan blade from the motor shaft, turn it over and replace. In every case the instruction, printed on the blade, 'this side must face front of vehicle' or 'this side must face rear of vehicle' must be followed.
- (iii) Re-secure the fan blade
- (iv) Before mounting the fan to the face of the radiator/condenser, note the direction of the arrow on the fan blade and when wiring, ensure the fan rotates in the direction of the arrow in all cases.

Optimum Thermatic Fan performance (forced air flow) will be achieved by mounting the fan directly to the surface of the respective condenser and radiator core.

If you are having your fan fitted by a professional, please ask that these instructions are read in full and understood before installation.

Vehicles used for towing caravans and large trailers may need to retain the standard belt-driven fan, at least in summer, with the electric fans fitted in the upstream position.

Air-conditioned cars should be fitted with a condenser fan such as the 9" or 10" if one is not already fitted. The 12" and 14" are suitable for cooling condensers on large sedans and wagons and the 14"HP or 16" is suitable for condenser cooling on large commercial vehicles.

4. INSTALLATION OF FANS

There are four stages involved in the installation of your Davies, Craig Fan(s).

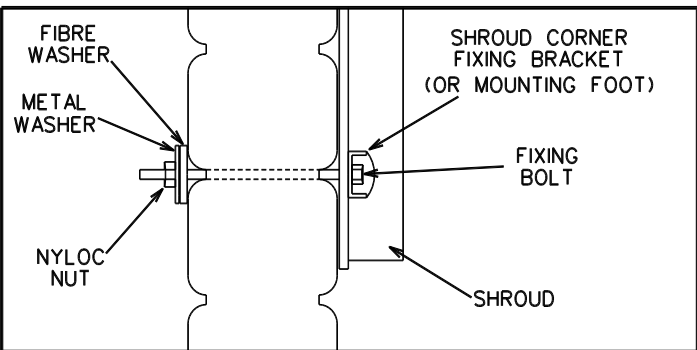
- a) Mounting the fan assembly.
- b) Installation of the Thermatic Switch.
- c) Wiring.
- d) Setting the Thermatic Switch.

e) CONDENSER COOLING ONLY

1. If you've purchased the Thermatic Fan to cool the A/C condenser, it should be mounted **upstream**.

RADIATOR COOLING

2. Remove the original belt driven fan and shroud. After removing fan from the pulley, replace the bolts in the water pump hub. You may need washers (not provided) to replace the thickness of the belt driven fan.
3. Decide which surface of the radiator you wish to mount the fan(s). If you are fitting two fans it may be necessary to fit the larger of the two upstream and the smaller downstream, with as little overlap as possible.
4. Pay particular attention to the markings/arrows on the fan hub regarding the direction the fan should face. These instructions must be followed closely, whether you choose upstream or downstream mounting. **Please note;** the direction of rotation is indicated by the arrow on the fan hub. Once the fan has been installed the arrow may not be visible.
5. Position the fan(s) directly on the surface of the radiator/condenser. Take care that the fan and shroud does not foul any struts, engine pulleys, bonnet latches etc., including when the bonnet is closed.
6. For 8", 9", 10" and 12" fans, check that the wires exit the motor downwards (i.e.: at 6 o'clock), to ensure any condensation formed in the motor can drain.
7. You may require part #1000 or 1001 universal hardware kit for your installation.



(Components show in the above figure not supplied)

Before wiring, spin the fan by hand to ensure free and unobstructed rotation.

THERMATIC SWITCHES

Davies Craig offers four Thermatic Switches to suit various Thermatic Fan applications;

Premium Thermatic Switch Part #0455



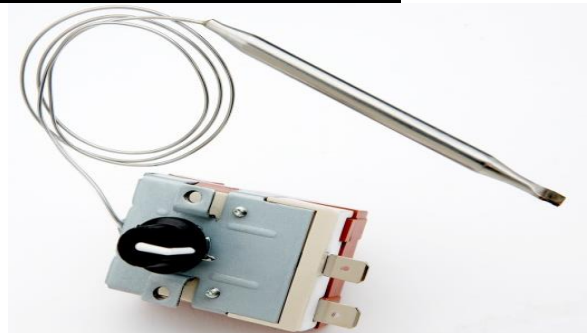
This Switch will operate two Thermatic Fans, either twin fans mounted to your engine's radiator core or one for the radiator and one for the fan on the condenser core. **(suits 12v & 24v)**

The Digital Electronic Thermatic Switch

Part #0444. This Switch will operate two Thermatic Fans, either twin fans mounted to your engine's radiator core or one for the radiator and one for the fan on the condenser core. **(suits 12v & 24v)**



The Mechanical Thermatic Switch
Part #0401 - Suits 12v & 24v



Mechanical Thematic Switch Combo Kit Part #0400



Thermal Switch & Relay kit #0404



WARNING: Do not use the vehicle's engine management system or wiring connected to the management system as an ignition source as it may cause failure of the management system and/or the electrical system. The ignition source must be a steady positive supply of 12 or 24V DC.

If in doubt about any aspect of these instructions consult your retailer or Davies, Craig P/L direct on:

(03)9369-1234 or e-mail info@daviescraig.com.au

IMPORTANT NOTES All brushless fans (11" & 14" – Part # 0120 / 0140) are not reversible & must not change the polarity of the wires.

Part # 0120

Red wire – 12V Positive Supply

Black wire – 12V Negative Supply

Part # 0140

Blue wire – 12V Positive Supply

Black wire – 12V Negative Supply

Four Wheel Drives - monitor engine temperature closely when using off-road at low forward speeds in hot weather. If you wish, supplement cooling with the Davies, Craig EWP – Electric Water Pumps.

Towing of heavy boats and caravans can cause overheating. Thematic fans can help to solve this, particularly if mounted in front of the radiator and, if necessary, used in conjunction with the standard belt driven fan, or an EWP.

Air-conditioned vehicles normally require a condenser fan in conjunction with the standard belt driven fan.

It is possible to eliminate the belt driven fan all together by using a combination of Thematic Fans suitable to your vehicle, as set out on the 'Model Selection Guide', with an air-conditioner condenser fan. This will give you all the benefits of electric cooling.

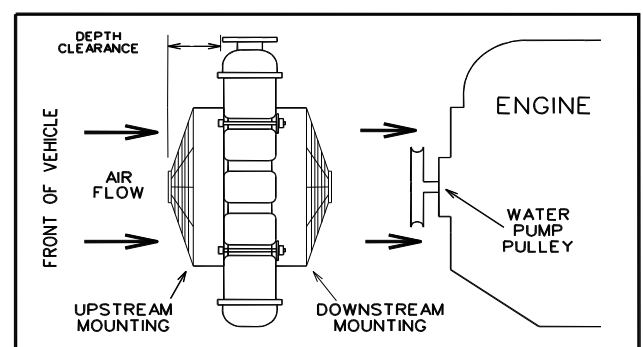
If overheating persists there may not be enough coolant flow. The Davies Craig EWP (Electric Water Pump) will solve the problem. More details are on our website. www.daviescraig.com.au.

TROUBLE SHOOTING:

The following notes are designed to help you overcome the most common problems experienced by customers with Thematic fans:

- FAN RUNS NORMALLY BUT ENGINE OVERHEATS, CHECK:**
 - Correct model is fitted
 - Thermal Switch is set correctly
 - Fan blade facing the right way and rotating in direction of the arrows and in accordance with chart.
 - Fan/s connected to full 12V or 24V power source.
 - Fan too far from face of radiator
 - Other cooling system problems
- FAN RUNS WHEN CAR TRAVELLING AT MEDIUM TO HIGH SPEEDS, CHECK:**
 - Adjustment of thermal switch
 - Is the vehicle towing?
 - Other cooling system faults
- FAN DOES NOT RUN OR RUNS SLOWLY, CHECK:**
 - Fuses
 - Adjustment of thermal switch –set too high!
 - Wiring integrity
 - Connect motor(s) directly to battery then trace wiring towards switch if motor(s) runs.
 - Check earth connections.

FAN ROTATION AND POLARITY



Your Davies Craig Thematic fan must face the correct direction and rotate in the correct direction. The instruction on the hub of the fan blade "This side must face front of vehicle" must be complied with in all cases – mounting upstream (front of radiator) and downstream (behind radiator). When your fan leaves our factory it is configured to be mounted upstream. If you are mounting downstream, remove the blade, turn it over and reinstall on the motor shaft.

Make a temporary connection of the two wires from the motor to power and earth. Run the fan, and if it turns in the direction of the arrow on the hub, make the connections permanent. If the fan turns in the wrong direction, swap the leads and make the connection permanent.

The two terminals on the thermal switch (#0400, #0401 & #0404) are equivalent. It does not matter which goes to ignition and which goes to the relay. When the switch closes it just connects the two terminals.

These installation instructions will suit most applications but there are circumstances surrounding some engine designs, environments, and the nature of system involved, which may require other installation arrangements not outlined here. Frequently Asked Questions are listed on our website www.daviescraig.com.au Davies Craig Pty Ltd appreciates customer feedback. Emails can be directed to info@daviescraig.com.au or Telephone +61 (0) 3 9369 1234.

WARRANTY

We warrant that for a period of two years or 2000 hours continuous running (whichever is the lesser) from the date of purchase, we shall carry out, free of cost, any repairs that are reasonably necessary to correct any fault in the operation of your Davies, Craig product provided that such a fault is directly attributable to a defect in the workmanship or materials used in the manufacture of the part(s) and is not due to installation other than described in these instructions. Labour and consequential costs are excluded.

DAVIES, CRAIG PTY. LTD.

REGISTER YOUR WARRANTY AT:

www.daviescraig.com.au

The screenshot shows the Davies Craig website homepage. At the top left is the Davies Craig logo with the tagline "World's best auto cooling". To the right are social media icons for Facebook, Twitter, and LinkedIn, and a search bar. Below the header is a navigation menu with links: HOME, ABOUT US, PRODUCT INFO, BUY ONLINE, DISTRIBUTORS, AUTHORISED FITTERS, DC TUBE, BLOG, and SUPPORT. The main banner features a blue-tinted image of a car's engine and cooling system, with the text "AUTOMOTIVE COOLING SPECIALIST" and "AUTOMOTIVE ORIGINAL EQUIPMENT AND AFTERMARKET SUPPLIERS FOR OVER 40 YEARS". Below the banner are three product categories: "ELECTRIC WATER PUMPS" (with an image of a pump and a digital display), "ELECTRIC BOOSTER PUMPS" (with an image of a pump and a blue hose), and "THERMATIC FANS" (with an image of a fan).