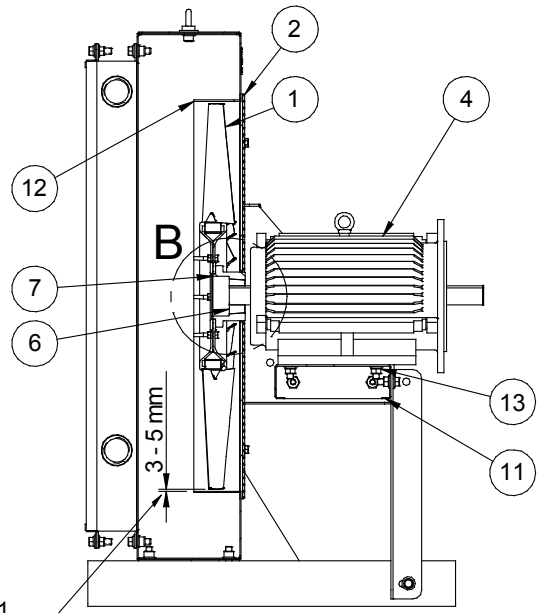
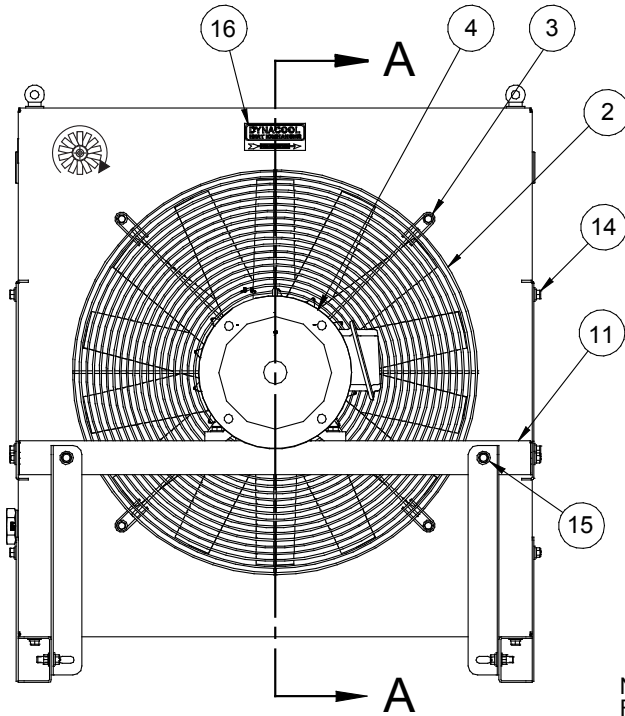
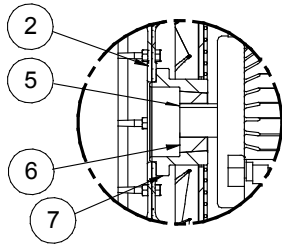


**ASSEMBLY INSTRUCTIONS FOR FIELD ATTACHMENT OF FAN & MOTOR ASSEMBLY**

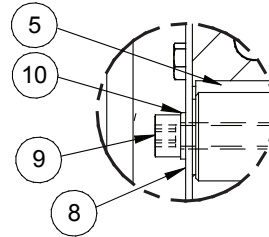


Note 1  
Fan Tip Clearance  
at all positions

**Section A-A**



**DETAIL B**  
Motor Shaft Detail



**DETAIL B**  
Alternate Motor  
Shaft Detail

**Fan Installation Procedure**

The procedure as set out below details the installation of customer supplied motors to the fans for Dynacool no motor model heat exchangers.



Before commencing any work on the heat exchanger, ensure that all site safety procedures are followed.

**Note**

Some earlier model coolers had the fan retained to the motor shaft using a washer and bolt system. The bolt was threaded into a hole in the end of the motor shaft. See Detail B, Alternate Motor Shaft Detail

Later models use a taper lock bush system. See Detail B, Motor Shaft Detail

**Procedure**

1. The heat exchanger is usually supplied with the Fan (1) strapped to the inside of the Fan Guard (2). Remove the fan guard bolt assemblies (3), then remove the Fan Guard, (2) & Fan (1) noting the way the Fan Guard mounting lugs sit flush against the heat exchanger case. Remove any plastic strapping to free fan from guard.
2. Place the customer supplied Electric motor (4) onto a work bench with the motor shaft facing towards the assembler.
3. Remove any imperfections from the shaft of Electric Motor (4). Fit the Shaft Key (5) to the Motor shaft. Coat the Motor Shaft with some grease.
4. Place the Fan Guard (2) over the electric motor shaft with the mounting lugs facing toward the assembler. When assembled, the mounting lugs will sit flush on the heat exchanger case.





# DC AIR COOLED HEAT EXCHANGERS

## FAN & HAIGHT PUMP FITTING INSTRUCTIONS



### Taperlock Bush Fan Mounting

- Fit the taper lock bush (6) loosely into the fan hub (7) using the grub screws provided.
- Fit Fan (1) onto the electric motor shaft. DO NOT force Fan (1) on to shaft with a hammer. This should be a hand fit.
- Align the face of the taperlock bush (6) with the end of the motor shaft. Tighten the grub screws evenly.

### Bolt & Washer Fan Mounting

- Fit Fan (1) onto the electric motor shaft. DO NOT force Fan (1) on to shaft with a hammer. This should be a hand fit.
- A plastic bag containing items (8), (9) and (10) was packed attached to Fan Guard (2). Remove the plastic bag and all cable ties from the Fan Guard. Remove the Washer (8) and the SHC Screw and Spring Washer (9 & 10) from the plastic bag.
- Apply a suitable thread locking compound such as LOCTITE 242 to the thread on Bolt (9). Then pass Bolt (9) through spring washer (10) and Washer (8) and attach to the Electric Motor Shaft. Tighten Bolt (9) to the final torque value as per recommended torque table.

**TEST POINT 1.** Hand rotate the fan to ensure that the electric motor rotates freely.

- Using a suitable lifting device, lift the completed Fan/ Motor Assembly carefully onto the Heat Exchanger Motor Base (11) inserting the Fan (1) carefully inside the heat exchanger Fan Ring (12). Re-attach Fan Guard (2) using the fan guard bolt assemblies (3). Tighten fan guard bolts to final torque value as per table below.
- After positioning the Fan/ Motor Assembly on the Motor Base (11) remove the 4 Bolts with Nuts and Washers (13) from the Plastic bag and place one flat washer under the head of the each of the 4 bolts. Fit the bolts to the 4 holes in the motor foot mount and then down through the slots into the Motor Base (11). On the underneath side of the Motor Base (11), fit one flat washer and one spring washer onto each bolt, then screw on a nut to each bolt. Tighten bolts and nuts to finger tightness.
- Position the Fan/ Motor Assembly so that the Fan (1) is positioned centrally in Fan Ring (12). See Note 1 on diagram. Ensure that the Fan (1) clearance is even on each side, adjust position of motor to achieve correct clearance. Also ensure that motor is square to Motor Base. Tighten motor bolt assemblies (13) to final torque. See table below for correct torque value.
- If Fan Tip clearance is not even at top or bottom, the 4 Motor Base Bolts (14) and Motor Support Strut Bolts (15) may be loosened. The Motor Base (11) may be tapped up or down until Fan Tip Clearance is 3 to 5 mm at top and bottom. Then re-tighten the 4 Motor Base Bolts (14) and Motor Support Strut Bolts (15).

**TEST POINT 2.** Hand rotate the Fan (1) inside of Fan Ring (12) to make sure that Fan tips do not interfere with Fan Ring (12). If Fan (1) touches Fan Ring (12) then repeat process 13 or 14 above as required.

### Note

Ensure that the plastic bag and all cable ties are removed from the fan guard.



When connecting the electric motor to the power supply, ensure that fan is rotating in correct direction as per direction arrow (see item 16).

### Recommended Torque Values

Bolt Type	Bolt Thread Size	Torque Nm (Dry)	Torque Nm (Oiled)
M8 SEMS (Hex)	M8 x 1.25	20	15
M10 SEMS (Hex)	M10 x 1.5	30	23
M8 SHCS	M8 x 1.25	35	26
M10 SHCS	M10 x 1.5	70	52

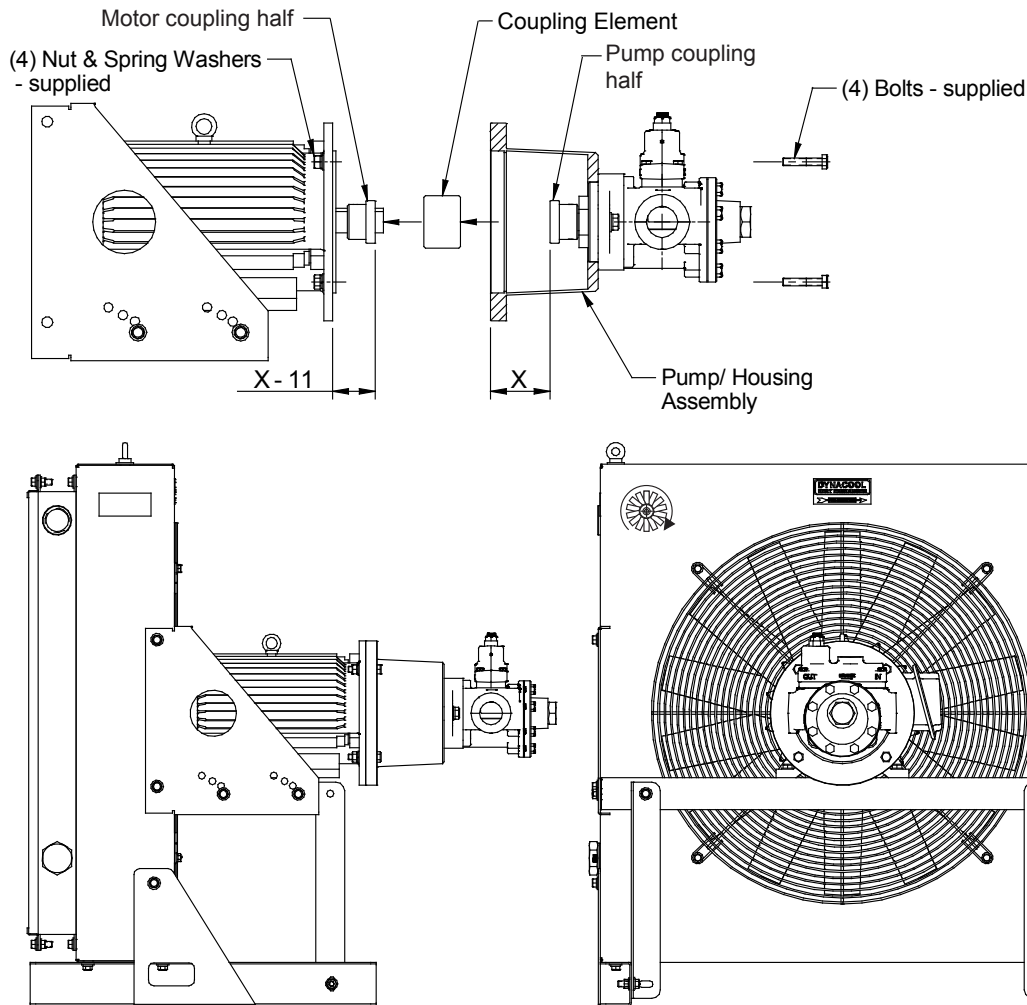
\*\* Above torque values are for zinc plated carbon steel only.



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1. Remove the 4 bolts, nuts & washers and the nylon coupling element from the plastic bag attached to the pump/ housing assembly.
2. Check the mating faces of the electric motor flange and the pump bellhousing for any burrs and imperfections. Remove any burrs and dirt.
3. Using a steel rule and straight edge, measure the distance "X" from the bell housing face to the face of the pump steel coupling half.
4. A steel coupling half for the electric motor should be available, either from a previous installation, a new or replacement supplied part. This coupling half should be mounted to the electric motor drive shaft. Check the motor shaft and the coupling bore and remove any burrs or imperfections. Fit the coupling half onto the motor shaft. This should be a hand fit. DO NOT force the coupling half onto the shaft with a hammer.
5. Set the location of the coupling half by using a steel rule and straight edge. Measure from the motor flange to the end of the coupling half. The correct distance will be "X-11mm". Once the correct distance is achieved, tighten the two grub screws on the coupling half.
6. Fit the nylon coupling element to the motor coupling half until it is located against the shoulder of the element. This should be a hand fit. DO NOT force the element otherwise damage to teeth may occur.
7. Mount the pump/ housing assembly onto the electric motor making sure that the pump coupling half and the coupling element teeth are aligned. DO NOT force the assembly and motor together otherwise damage to the element teeth may occur.
8. Rotate the pump/ housing assembly to align housing and motor flange holes. Normal operational position is with the relief valve at the top and horizontal, but pump will operate at any position. Fit the 4 bolts, nuts and washers into the housing mounting holes and tighten.

**Test Point 3.** Rotate the fan to check that pump assembly can move.