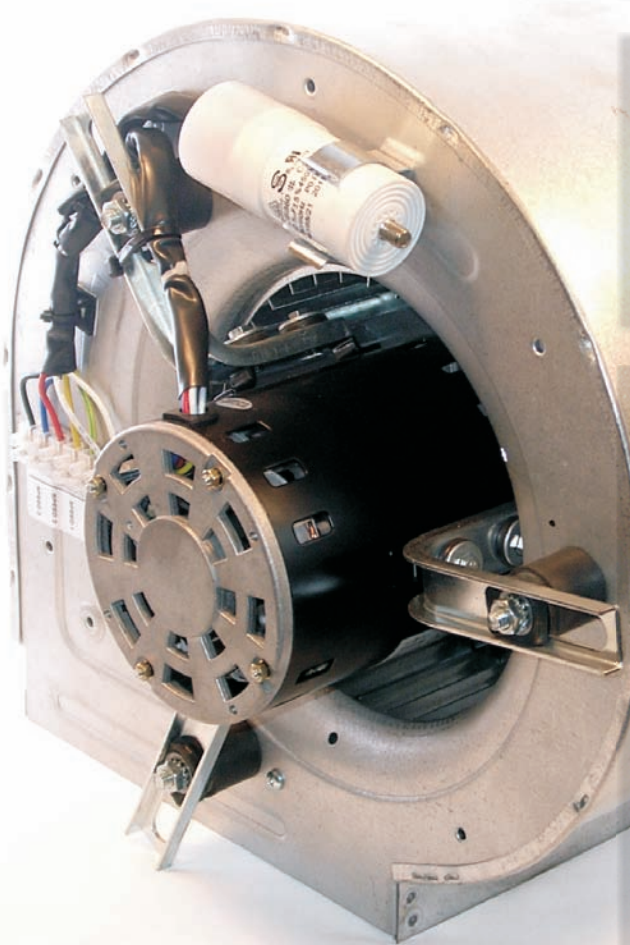


# fan refurbishment



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## Who we are...

Pole Star Products Ltd is proud to be one of the very few remaining British owned electric motor suppliers. We are one of the UK's leading suppliers of fractional horsepower motors, we supply direct to manufacturers, wholesalers and direct to the trade.

Until 2012 Pole Star owned 50% of Elco UK, the years of running both businesses side by side means that we have unrivalled product knowledge. Over the years we have built up a substantial cross reference database of many motor manufacturers, we can often offer replacement parts based solely on the original part number provided.

## Where are we...

We are based in a 30,000 sq ft warehouse in Lincolnshire, and have stocks of over £1million which enables us to offer replacements for most jobs we come across. We have good connections with parcel and pallet couriers so our central location means we can service the whole country with ease.

## What do we do...

We operate in many different markets such as refrigeration, air conditioning, ventilation, catering, heating, etc. Most of the industry is looking at reducing stock levels and having most items on a made to order basis; we however have a different approach. Most of our items are kept on stock which we are adding to on a daily basis. This vast stock of electric motors, impellers, fans and blowers means that we can service orders both large and small in a very short turnaround period most parts orders are sent on a next day service.

## What facilities do we have...

We have all the machinery needed to offer fast, consistent high quality units. We have pneumatic guillotines, fly presses, milling machines, lathes, sheet metal folders and most importantly years of experience.

## How can I order...

If you have an account with us orders can be emailed, faxed or taken verbally over the phone. If you don't have an account it is a quick and painless process to open one with us, alternatively if you wish you can place orders purely on a pro-forma basis with card payments.

Pole Star is always pleased to visit customers and discuss their requirements. We can help you to identify old and obsolete patterns of motors at your premises, or on site with a mutually agreed appointment.

**Why not ask our Sales Engineer to call next time  
he is in your area to give you some help?**

## Energy Saving Motor **VS** Capacitor Motor

### **PSC (Permanent Split Capacitor)**

PSC motors have been used for many years. They are very reliable and have been running in many buildings for years – some well maintained units have had the same motors running for up to 30 years!! This type of motor has the disadvantage of running quite hot which puts strain on the windings, insulation and bearings. The average efficiency of the PSC motors is around 40% efficiency.

### **EC (Electronically commutated) or BLDC (Brushless Direct Current)**

EC motors are a relatively new technology designed to give much better energy consumption and more controllability to fan motors. These motors can give excellent energy efficiency of up to 70% and have the advantage of running very cool.

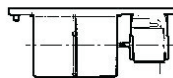
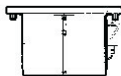
As the technology is still being developed and improved many variations are available. As with most new technologies these are more expensive than the PSC motors but prices are coming down. These motors require building management or separate electronic controllers to operate; we do keep a few controllers for you to choose from.

If you are unsure which style of motor you require or have any questions relating to the different design please feel free to speak to our office.

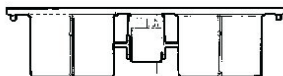


# fan deck – new manufacture

Our speciality is being able to manufacture new fan decks of any quantity to your specification. Our facilities enable us to replace old and obsolete decks which otherwise would require a complete new system installation.

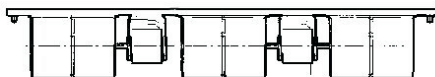
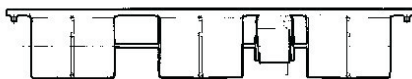


When looking at having a fan deck manufactured there are several different versions from a single scroll unit with an internal motor to a quadruple scroll with two external motors or even four internal motors. Here are examples of the most common variations.



In order for us to manufacture a deck to your specifications you can either fill in your dimensions online at

<http://psp.uk.com/refurbishment> or ask our sales staff to fax or email over a template form. Once we have a completed form we can price up the job depending on the sizes and motor choices you have given.



If you are unsure what motor power you need please ask and we can advise you as to the “standard” performances used for particular applications by many other manufacturers.



There are many different control options available for fan decks. You can either request one of our available options or simply use your existing controls.

**For prices please contact the office who will be more than pleased to send through a current price list.**

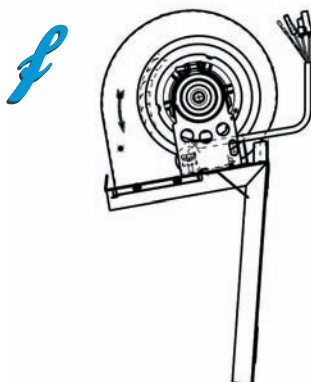
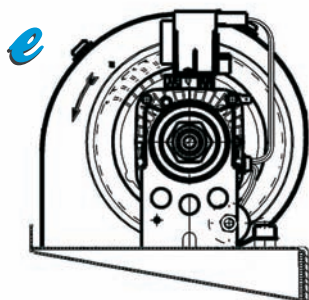
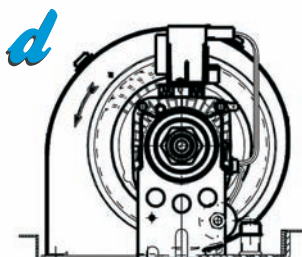
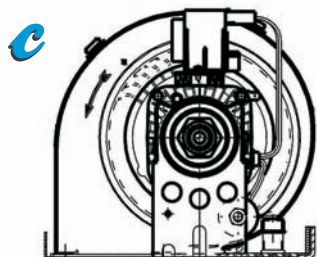
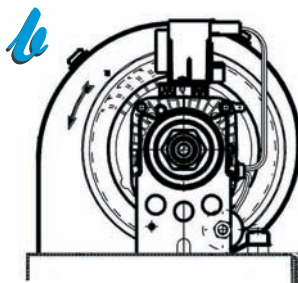
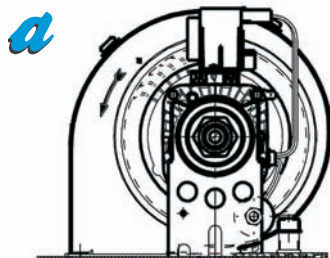




# four fan deck – tray profiles

Along with the different scroll and motor combinations there is also the choice of different tray profiles. Open or closed end, single tray flap, double tray flap.

Below are a few examples of the different tray profiles:-



Pole Star Products Limited is able to offer a selection of the most commonly used controls for fan decks. The available accessories give you the choice to control your fan unit with simple manual switches or via a selection of thermostats to obtain a more automatic control.

## **Manual Switches**

These enable the user to change the fan motor speed when used in conjunction with a multi speed fan motor or an autotransformer. We keep a variety of rocker switches and a more robust rotary type switch ranging from a simple on/off to multiple speed selection.

## **Speed Control**

We currently have 2 types of autotransformer for use with any single phase fan motor up to 75watt or 100watt output. These units allow up to seven speeds to be used on a standard single speed motor. They are usually used in conjunction with the manual type switches above or the thermostatic controls below.

## **Thermostatic Type Controls**

### **Pipe Thermostat**

These are designed to clip onto the pipes that feed the fan coil. The pipe thermostat acts as a switch and prevents the fan motor from starting until the pipes become hot (around 50°C) thus preventing cold air from being blown into the room. They are usually used in conjunction with the capillary action thermostats below.

### **Capillary Action Thermostat**

The capillary action thermostat can be used in a number of ways but is usually used as a stand alone control to switch the fan deck off when a user set temperature is reached. They can also be wired in series to automatically control the speed of a fan unit. When a room is cold the thermostat will select a high speed to blow warm air quickly into the room, once the room has reached a user set temperature the thermostat will switch the fan motor automatically to a slower speed giving a more gentle background heat. The second thermostat switches the fan unit off when a user set temperature is reached.

### **Variable Speed Controls**

This type of control gives stepless speed variation to a motor but must be used with care. The controller works by reducing the input power to the motor and if turned down too low will cause it to overheat and burn out or drastically reduce the life of the motor. It is also very important to select the correct amp rating for your motor when purchasing these controls, if you are unsure please speak to a member of the sales team.

# fan deck - refurbishment

In many buildings as fan coils have been running for 20-30 years the bearing and motors start to fail and the moving part of the fan deck reaches the end of its life. When a deck starts to reach the end of its life many sites and engineers look at the options of refurbishing the units. In most situations the tray, scrolls and wheels are in perfectly good condition and it is just the motor that has failed, as a result refurbishment is often a far cheaper and quicker option than manufacturing complete new units.

With our vast stocks of fan coil motors there are very few units which we are unable to refurbish. We ensure all fan decks are refurbished to the highest standard to ensure they retain their original performance.

In some sites where there is a need for instant fan deck replacement such as hotels, we are able to provide pattern fan decks to be used as a buffer stock on site for fast servicing.

For prices please call the office who will be more than pleased to send through a current price list.





# fan deck - refurbishment process

We receive a wide range of fan decks from a vast range of different applications; they all arrive to us in varying conditions. Some appear in pristine condition apart from a failed motor, whilst others require a little more care and attention to bring them back to their original condition.

Here are some of the cleaning processes which we use in order to refurbish the fan decks.

## **Chemically dipped**

We use an industrial cleaning chemical to dip the complete trays in overnight, this helps “lift” the baked on dirt, grime and grease which makes the next stage easier.

## **Pressure washing**

Using an industrial pressure washer we spray down every deck. Again we use a cleaning fluid to clean trays, scrolls & wheels to remove any dirt that could hinder the performance whilst also making the deck more aesthetically appealing.

## **Scrubbing**

If after the chemical dip and pressure washer some dirt remains we use our dip tray cleaner to scrub the units down. This is the final stage of cleaning.

Once cleaned the decks are then dried off from which point they can be re-sprayed if requested. They are then re-assembled complete with new motor and new wheels/scrolls if they needed replacing. The fan units can then be re-wired and fitted with any additional controls such as pipestats or thermostats.

We have no minimum or maximum quantities, we can match old designs and offer a full warranty on all the units we refurbish.



# direct drive & belt drive

As well as bespoke fan deck/fan convector tray manufacture we also are able to manufacture direct driven and belt driven blower units.

## Direct Drive

We keep on stock a large range of fan housings (From 7/5 up to 15/15) and depending upon your needs can assemble a complete unit based on requirements.

Units can be tailor made to customer's specifications.

- Motor power 50W up to 2200W
- Phase supply, single or three phase
- Motor run speed (RPM) 4 pole (1300RPM) or 6 pole (900RPM)
- Variable or single speed (3 or 1 speed)
- Body enclosure (Extruded shell, totally enclosed, ventilated)
- Fixing arrangement (feet or flange mount)

## Belt Drive

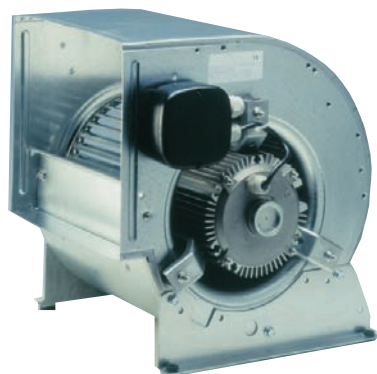
We keep belt driven units on stock from 7/7 up to 15/15. We are also able to produce reinforced shells or even multiple units such as double and treble units. Our belt drives are made from galvanised steel with hermetically sealed, pre-greased and self aligning bearings.

For prices please call the office who will be more than pleased to send through a current price list.

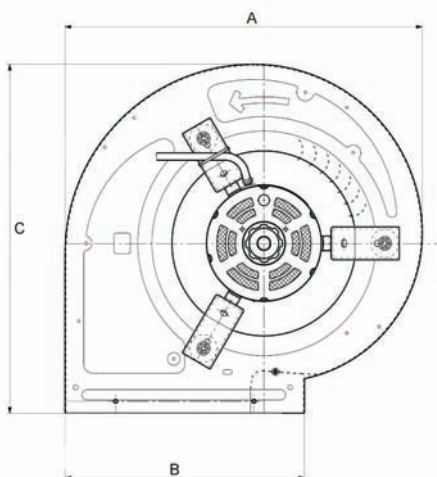


Our high efficiency low noise direct driven blowers are a popular unit which can deliver capacities from 400m<sup>3</sup>/h to 7,000 m<sup>3</sup>/h.

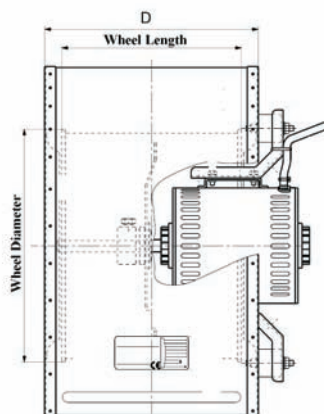
Our units have to be installed in weather protected environments to operate powder free air and with room temperatures of -30°C to +40°C.



View from side



View from above



DD Blower	Dimensions (mm)				Wheel Size	
Size	C	D	A	B	Diameter	Length
<b>DD7/5</b>	317	168	325	208	200	120
<b>DD7/7</b>	317	232	325	208	200	176
<b>DD9/7</b>	385	232	400	262	240	180
<b>DD9/9</b>	385	298	400	262	240	245
<b>DD10/8</b>	440	265	460	289	280	205
<b>DD10/10</b>	440	331	460	289	280	270
<b>DD12/9</b>	495	309	535	342	330	242
<b>DD12/12</b>	495	395	535	342	330	321

## direct drive - refurbishment

As with fan decks, the motor often fails but the scroll and wheel are still in a serviceable condition. In which case we would recommend our refurbishment service.

In most cases we can replace the original OEM fan motor with a Pole Star unit from our vast stocks held in Lincolnshire or you may wish to put a larger or smaller motor in your blower unit giving more air or less noise? We are also able to offer a range of energy efficient brushless DC motors.

Belt drives often need refurbishing when the shaft is worn or the wheel has become unbalanced or broken; again this is something we are able to remedy in our in-house workshop.

**For prices please call the office who will be more than pleased to send through a current price list.**



# spare parts

As many sites have their own engineers we are able to offer good technical advice and replacement component parts for most makes of fan deck.

With our extensive cross reference database your engineer can simply call our sales team with the details you have and where possible we will offer from stock a replacement motor. We hold in stock motors from 1W up to 2200W at our 30,000sq ft warehouse in Lincolnshire and most are available on a next day delivery service.

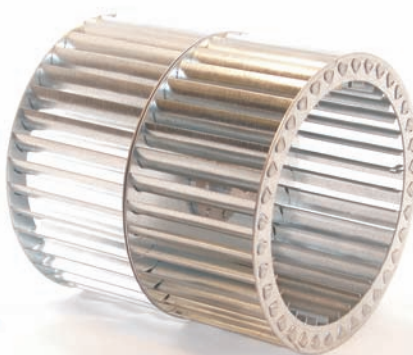
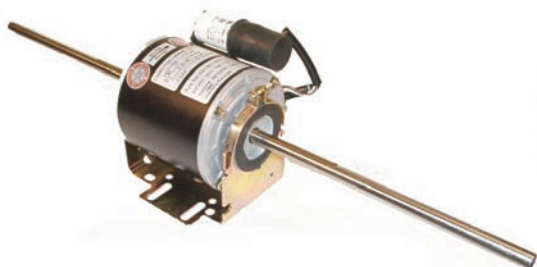
Motors larger than our standard stock items can be sourced but will take a while longer – usually 2-3 days.

Some of our fan deck accessories are:

- **Blower wheel/impeller**
- **Scroll/casing**
- **Speed controllers**
- **Shaft adapters**
- **Autotransformers**
- **Capacitors**
- **Fan blades**
- **Switches**
- **Pipe stats**
- **Mounting brackets**
- **Bearing housings**



Please contact the office who will be more than pleased to send through a current price list or if you cannot find the item you need.





# service & turnaround times

Pole Star is able to offer two levels of service; Express and Standard.

## **Express Service**

Our Express service is our fastest service available, when coupled with a same day collection a small quantity of units can be turned around and redelivered in 1 – 2 days. For larger volumes part shipments can be made or a whole shipment a few days later. Express service jobs “jump the queue” and are priority jobs.

## **Standard Service**

Our standard service, is our economy service, units are turned around in order of approval. A general rule is a turnaround of 5 – 7 working days (from when we receive them). Depending upon workload it could be slightly faster or slightly slower.

For prices please call the office who will be more than happy to send through a current price list.



# delivery & collection options

Customers have a choice of “Express Timed” or “Standard” service for fan deck manufacture or refurbishment.

The units are shipped via two methods, parcel or pallet. The length/size of the units and the quantity influence the type of delivery required. Units sent via parcel may require packaging on site, if this is not available we can send it from here for a minimal cost.

## Same day - Express

We are able to offer a same day collection from mainland UK, price depends on your location so please call for a quote.

The above service is obviously also available for delivery once the units have been refurbished or manufactured.

## Timed next day

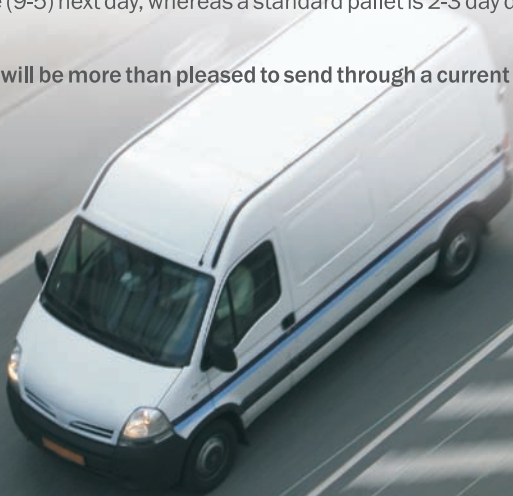
We can offer several different timed deliveries which offer a faster than standard service. Timed deliveries are available to both parcel and pallet shipments.

- 9am delivery
- 10am delivery
- Noon delivery

## Standard delivery

A standard parcel delivery is anytime (9-5) next day, whereas a standard pallet is 2-3 day delivery.

For prices please call the office who will be more than pleased to send through a current price list.



# contact us

The main contacts for our fan deck and blower services are:

**Contact Name:** Adam Pinnell

**Secondary contact:** Mike Cook

**Telephone:** 01526 399711

**Fax:** 01526 39944

**Email:** [sales@psp.uk.com](mailto:sales@psp.uk.com)

**Online quotation page:** <http://psp.uk.com/refurbishment.php>

Should you wish to have a site visit either David Cowood or Adam Pinnell will make arrangements to come on site or to your workshop at a mutually convenient time and date. To make an appointment please call through to the office with your request.



Bardney Airfield | Henry Lane | Bardney  
Nr. Lincoln | Lincolnshire | LN3 5TJ

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