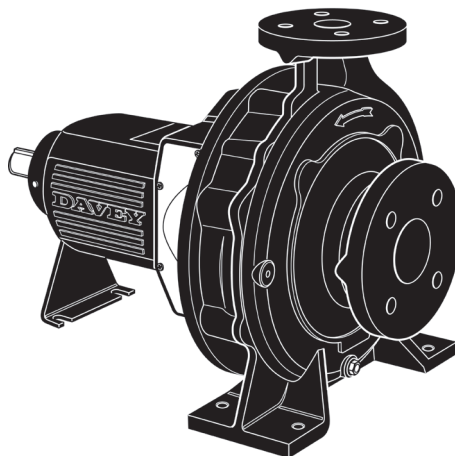


DEPEND ON  
**DAVEY**

WATER PRODUCTS

# INSTALLATION AND OPERATING INSTRUCTIONS

**ISO** <sup>DAVEY</sup>*spec*<sup>®</sup>



## CF Series ISO2858 Heavy Duty Industrial Centrifugal Pump



Please pass these instructions on to the operator of this equipment.

## Introduction

Thank you for purchasing a quality Davey product. It is our commitment to satisfy our customers by offering our very best service.

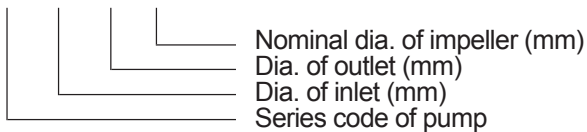
This manual contains instruction for installation, operation and maintenance of ISOspec® CF bareshaft, single stage, non-self priming, centrifugal pumps. Therefore, please read it carefully before use to obtain a long satisfying service life of the purchased unit.

Davey ISOspec® CF bareshaft centrifugal pumps are designed with high efficiency and low maintenance features.

## Specifications

Model designation (example) :-

CF 200×150-500



## Inspection of Pump

Always check on receipt of delivery you have received the correct pump unit. To identify, see above specifications and label below. Check correct motor kW & speed on motor nameplate (attached to motor) prior to installation.

<b>ISOspec</b>		<b>DAVEY</b>	
MODEL NO		DEPEND ON	
SERIAL NO		DAVEY	
IMP DIA		WATER PRODUCTS	
MAX SPEED		RPM	MAX PRESS
DAVEY PRODUCTS Pty. Ltd. Melbourne, Australia.			

## Driving Options

Your ISOspec® pump can be driven by a variety of means. The best option is to direct drive via a suitable coupling. If you must belt drive your ISOspec® pump, lower speed (rpm). Limits may apply - see below:

Pump Size	Direct	Belt
50x32-160	3600	2900
65x50-160	3600	2900
80x65-160	3600	2900
100x80-160	3600	2850
50x32-200	3600	2900
65x40-200	3600	2900
80x50-200	3600	2900
100x65-200	3600	2250
125x100-200	3600	2060
65x40-250	3600	2480
80x50-250	3600	2050
100x65-250	3600	2180
125x100-250	3000	1620
150x125-250	2350	1440
65x40-315	3000	1800
80x50-315	3000	1800
100x65-315	3000	1450
125x100-315	3000	1380
150x125-315	2350	1420
200x150-315	1800	1150
250x200-315	1800	920
125x80-400	2350	1450
125x100-400	2350	1240
150x125-400	2350	1060
200x150-400	1800	920
125x100-500	1800	1240
150x125-500	1800	1060
200x150-500	1800	920
250x200-400	1800	920

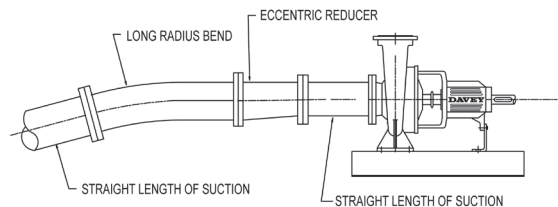
## Installation Location

It is important to select a site as close to the liquid source as possible. When a suction lift is unavoidable, install the pump as near to the water level as possible (see suction piping). You should always check the maximum permissible lift of the pump from its performance curve.

## Foundations

The pump unit should be mounted on a foundation that is substantial enough to withstand the weight of the unit & large enough to accommodate all mounting feet so they can be securely fixed to avoid movement.

## Suction Piping



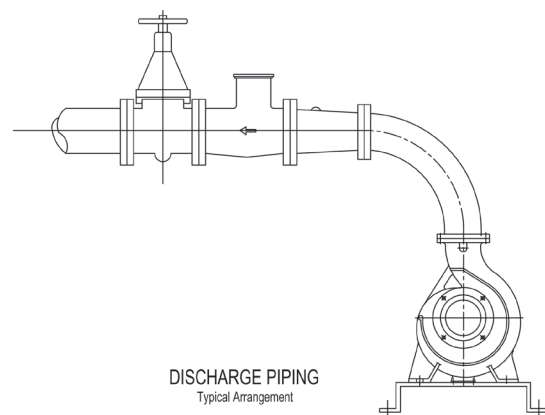
PREFERRED ARRANGEMENT FOR SUCTION LIFTS

All fittings & suction piping should be free of air leaks.

When a suction lift or long suction lengths are unavoidable, consideration should be given to oversizing the suction line to reduce suction losses. On suction lifts a foot valve will be required, sized equal to the suction line size. For applications on creek beds or dams, please install a foot valve & strainer, well submerged below the surface, to reduce whirlpools & air inclusion. Air inclusion can result in cavitation reducing the pump performance & eventually destroying the pump or its components.

Long radius bends should be installed & a straight length of piping equal to 2.5, the impeller diameter, should be observed. Supporters should be equipped to the inlet pipeline and outlet pipeline to avoid the pump flange bearing too much tension force.

## Discharge Piping



Discharge piping must be selected of a size that would equal the discharge of the pump. For long discharge lengths, consideration should be given to oversize to minimize discharge losses reducing flow.

Talk to your nearest Davey dealer to calculate all system losses. To avoid air pockets in discharge lines at high points, vent cocks may be required to release air blocks accumulated within the system. Air pockets may affect the performance of the pump. A throttling valve should be installed in the discharge line to ensure the pump works within the performance curve.

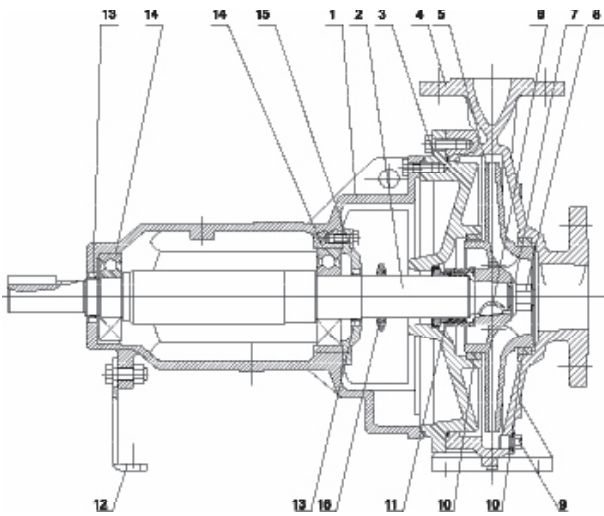
## Starting



**Caution: Do not attempt to run pump if it has not been filled with water ( primed). Severe damage will result to shaft seal.**

- 1) Ensure the suction line & pump casing is full of water open suction valve if fitted.
- 2) Check power is off & rotate the pump shaft slowly to release any trapped air within the pump casing.
- 3) Close the discharge valve.
- 4) Check the direction of rotation on the pump casing or motor cover.
- 5) If this is correct you may now start the pump, when it reaches full speed you will see the pressure in the discharge line rise. Slowly open the discharge valve until the pump adjusts to maintain its duty point.

## Structural Representation



- |                           |                          |
|---------------------------|--------------------------|
| 1. Bearing housing        | 2. Shaft                 |
| 3. Rear casing cover      | 4. Pump casing           |
| 5. Impeller               | 6. Impeller key          |
| 7. Impeller washer        | 8. Impeller nut          |
| 9. Volute drain plug      | 10. Bronze wear ring     |
| 11. Mechanical shaft seal | 12. Bearing housing foot |
| 13. Bearing lip seal      | 14. Bearing              |
| 15. Bearing cap           | 16. Water slinger        |



**In accordance with AS 3350.2.41 we are obliged to inform you that this pump is not to be used by children or infirm persons and must not be used as a toy by children.**

## Trouble Shooting

**Pump is running but failing to deliver water or desired pressure.**

- 1) Turn the unit off.
- 2) Check suction line is free of debris or blockages & check that the pump has not lost its prime. If so, remove blockage & repeat Starting at step 1).
- 3) Check that the suction valve is open.
- 4) Check that the discharge valve is open.
- 5) Check for air leaks. These may not always be visible to the naked eye unless pressure is applied to the suction line.
- 6) Check that the suction line is not too long.
- 7) Is suction line to pump excessive?
- 8) Is the foot valve stuck open or undersized?
- 9) Is speed too slow?
- 10) Check motor direction rotation.
- 11) Check for possible clogging in impeller vanes
- 12) Is the discharge piping undersized for applications.

### Excessive Vibration

- 1) Turn unit off
- 2) Check motor is rotating in correct direction
- 3) Check both motor feet & pump feet are secured properly.
- 4) Check coupling rubbers are not worn
- 5) Check drive couplings are secured tightly to the pump & drive shafts.
- 6) Check pump & motor bearings are OK
- 7) If so, alignment will need to be performed
- 8) Impeller could be partially blocked causing imbalance

### Noisy Operation

- 1) Turn unit off
- 2) Check pump or motor bearings
- 3) Check pump is primed
- 4) Check suction line is not damaged causing insufficient supply & resulting in cavitation
- 5) Check you are not pumping solids

### High Power Consumption

- 1) Check direction of rotation
- 2) Check operating speed on the motor matches the intended performance curve speed.
- 3) Check that the estimated head is correct as pump may be running down on its curve producing high flow but drawing more power. Throttle the pump back on to its curve via discharge gate valve or reduce impeller diameter.
- 4) The Specific Gravity or Density of the liquid is greater than 1kg/litre affecting power draw.
- 5) Check impeller diameter for the correct size to establish maximum power requirement at duty point.

## Lubrication

Pump bearings are greased for life.

Motor bearings refer to Motor manufacturers recommendations.

# Davey® Repair or Replacement Guarantee

In the unlikely event in Australia or New Zealand that this Davey product develops any malfunction within one year of the date of original purchase due to faulty materials or manufacture, Davey will at our option repair or replace it for you free of charge, subject to the conditions below.

Should you experience any difficulties with your Davey product, we suggest in the first instance that you contact the Davey Dealer from which you purchased the Davey product. Alternatively you can phone our Customer Service line on 1300 367 866 in Australia, or 0800 654 333 in New Zealand, or send a written letter to Davey at the address listed below. On receipt of your claim, Davey will seek to resolve your difficulties or, if the product is faulty or defective, advise you on how to have your Davey product repaired, obtain a replacement or a refund.

Your Davey One Year Guarantee naturally does not cover normal wear or tear, replacement of product consumables (i.e. mechanical seals, bearings or capacitors), loss or damage resulting from misuse or negligent handling, improper use for which the product was not designed or advertised, failure to properly follow the provided installation and operating instructions, failure to carry out maintenance, corrosive or abrasive water or other liquid, lightning or high voltage spikes, or unauthorized persons attempting repairs. Where applicable, your Davey product must only be connected to the voltage shown on the nameplate.

Your Davey One Year Guarantee does not cover freight or any other costs incurred in making a claim. Please retain your receipt as proof of purchase; you **MUST** provide evidence of the date of original purchase when claiming under the Davey One Year Guarantee.

Davey shall not be liable for any loss of profits or any consequential, indirect or special loss, damage or injury of any kind whatsoever arising directly or indirectly from Davey products. This limitation does not apply to any liability of Davey for failure to comply with a consumer guarantee applicable to your Davey product under the Australian or New Zealand legislation and does not affect any rights or remedies that may be available to you under the Australian or New Zealand Consumer Legislation.

In Australia, you are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Should your Davey product require repair or service after the guarantee period; contact your nearest Davey Dealer or phone the Davey Customer Service Centre on the number listed below.

For a complete list of Davey Dealers visit our website ([davey.com.au](http://davey.com.au)) or call:



Davey Water Products Pty Ltd  
Member of the GUD Group  
ABN 18 066 327 517

## AUSTRALIA

**Customer Service Centre**  
6 Lakeview Drive,  
Scoresby, Australia 3179  
Ph: 1300 367 866  
Fax: 1300 369 119  
Website: [davey.com.au](http://davey.com.au)

## NEW ZEALAND

**Customer Service Centre**  
7 Rockridge Avenue,  
Penrose, Auckland 1061  
Ph: 0800 654 333  
Fax: 09 527 7654  
Website: [daveynz.co.nz](http://daveynz.co.nz)

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P/N 49719-4 supersedes P/N 49719-3

\* Installation and operating instructions are included with the product when purchased new. They may also be found on our website.