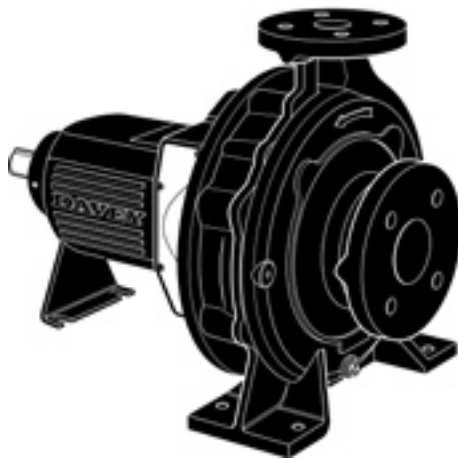


DEPEND ON
DAVEY

WATER PRODUCTS

INSTALLATION AND OPERATING INSTRUCTIONS

ISO ^{DAVEY}*spec*[®]



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.

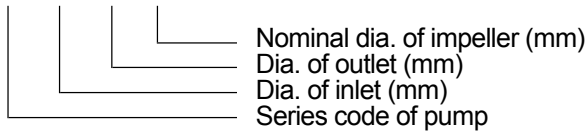
This manual contains instruction for installation, operation and maintenance of ISOspec® CF bareshaft, single stage, non-self priming, centrifugal pumps. Therefore, please read it carefully before use to obtain a long satisfying service life of the purchased unit.

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.



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

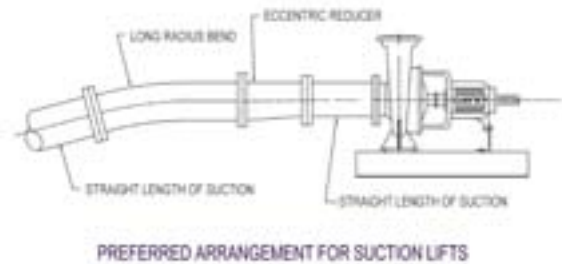
Installation Location

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

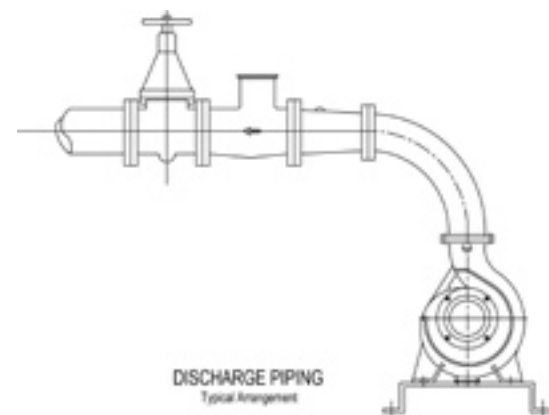


All fittings & suction piping should be free of air leaks.

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.

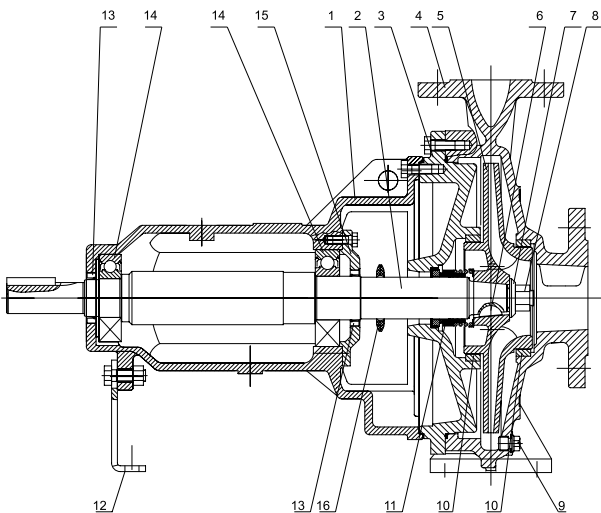
Starting



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 PRODUCT GUARANTEE FOR AUSTRALIA & NEW ZEALAND

This Davey product is guaranteed to be free of material or manufacturing defects at the time of original purchase. Should any part fail as a result of such defects within twelve months of original purchase, the product will be repaired free of charge.

TERMS AND CONDITIONS

1. This guarantee applies to all states and territories of Australia and New Zealand only and is subject to the provisions of the Trade Practices Act (Aust.), the Goods and Consumer Protection Legislation of the various Australian states and the Consumers Guarantee Act 1993 (NZ) as applicable.
2. The guarantee period commences on the date of original purchase of the equipment. Evidence of this date of original purchase must be provided when claiming repairs under guarantee. It is recommended you retain all receipts in a safe place.
3. This guarantee covers parts and workshop labour only. Goods should be forwarded, with proof of date of original purchase, to an Authorised Davey Service Centre freight paid.
4. This guarantee is subject to due compliance by the original purchaser with all directions and conditions set out in the Installation and Operating Instructions. Failure to comply with these instructions, damage or breakdown caused by fair wear and tear, negligence, misuse, incorrect installation, chemical or additives in the water, inadequate protection against freezing, rain or other adverse weather conditions, corrosive or abrasive water, lightning or high voltage spikes or through unauthorised persons attempting repairs are not covered under guarantee. The product must only be connected to the voltage shown on the nameplate.
5. Continuous operation or operation with impure water or with abrasive materials in the water will accelerate wear and reduce the life of the product. Failure from these causes is excluded from repair under guarantee.
6. Without limiting the original purchaser's entitlements under the Trade Practices Act (Aust.), the Goods & Consumer Protection Legislation of the various Australian states, or the Consumers Guarantee Act 1993 (NZ), 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 the product or any defect.
7. Where the Trade Practices Act (Aust.), the Goods and Consumer Protection Legislation of the various Australian states and the Consumers Guarantee Act 1993 (NZ) does not apply, Davey shall not be liable for any loss of profits or any consequential, indirect or special loss, damage or injury of any kind whatsoever suffered by the purchaser arising directly or indirectly from the product or any defect and the purchaser shall indemnify Davey against any claim by any other person whatsoever in respect of any such loss, damage or injury.
8. Nothing in this guarantee is intended to have the effect of contracting out of the provisions of the Trade Practices Act (Aust.), the Goods and Consumer Protection Legislation of the various Australian states and Consumers Guarantee Act 1993 (NZ) except to the extent permitted by the various Acts and this guarantee is to be modified to the extent necessary to give effect to that intention.
9. Davey may be collecting personal information from you in order to provide you with a service. Davey Pty Ltd promises only to use this information in accordance with the Provisions of the Privacy Act 1988 (Cth) and the Privacy Policy of Davey Pty Ltd which is available at davey.com.au.

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