



**EFO Semi-Open Impeller
Stainless Steel
Centrifugal Pump**

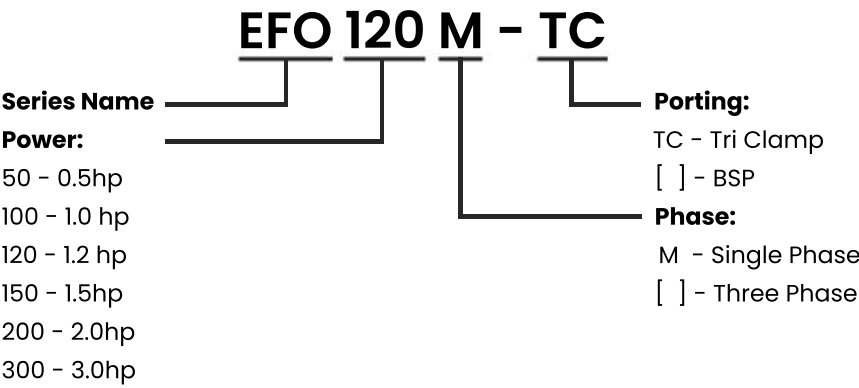
USER MANUAL

Enviroflex Limited
Please read manual carefully before using the pump
www.enviroflexpumps.com

1. Applications and Limits

EFO semi-open impeller pumps are crafted from AISI 304 stainless steel sheets using advanced stamping and welding techniques. This manufacturing process ensures a lightweight design, elegant appearance, efficient material usage, and high performance. These pumps are ideal for transporting clean water and non-aggressive industrial media compatible with AISI 304 stainless steel. Typical applications include boiler feed systems, water lifting, tank and reservoir filling or emptying, as well as gardening and irrigation. They operate within a liquid temperature range of -50°C to +80°C and withstand a working pressure of up to 8 bar.

2. Pump Matrix



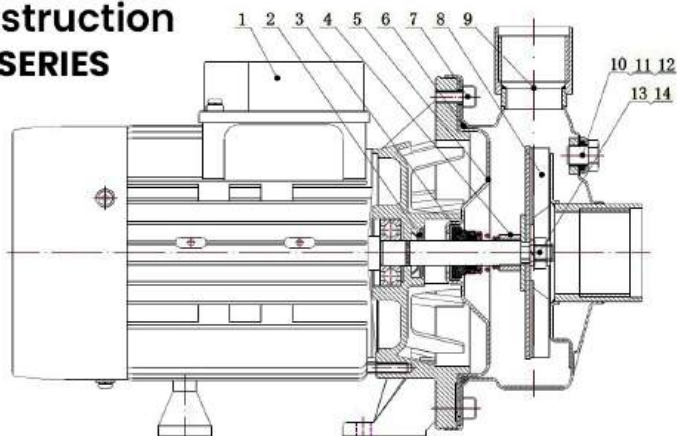
3. Performance Data

Performance data for 50Hz version (at 2900 rpm, water test temperature 20°C)

Model		Power		Capacity													
Single Phase 50Hz	Three Phase 50Hz	kW	hp	m³/h	1.2	2.4	3.6	4.8	6.0	12	18	24	33	42	48	57	66
				L/min	20	40	60	80	100	200	300	400	550	700	800	950	1100
				Head (m)													
EFO50M	EFO50	0.37	0.50		11.6	10.5	9.7	8.7	7.5								
EFO100M	EFO100	0.75	1.00						8	7	5						
EFO120M	EFO120	0.90	1.20						11	10	9						
EFO150M	EFO150	1.10	1.50						9.5	8.8	7.8	6.7	5				
EFO200M	EFO200	1.50	2.00						12.7	12	11.2	10	8.3	6.5			
EFO300M	EFO300	2.20	3.00						15	14	13.5	12.7	11.2	9.8	8.9	7.5	
*****	EFO400	3.00	4.00						17.5	16.8	16	15.2	14	12.5	11.5	9.7	7.5

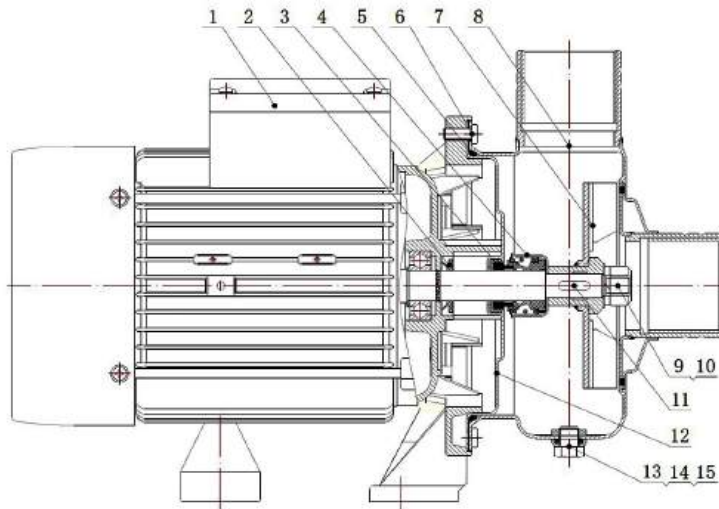
4. Construction

EFO50 SERIES



- | | | | |
|-------------------|--------------|--------------------|-----------------|
| 1. Motor | 2. V slinger | 3. Mechanical Seal | 4. Shaft sleeve |
| 5. Back Cover | 6. O ring | 7. Bolt | 8. Impeller |
| 9. Casing | 10. O ring | 11. L washer | 12. Bolt |
| 13. Spring washer | 14. Impeller | | |

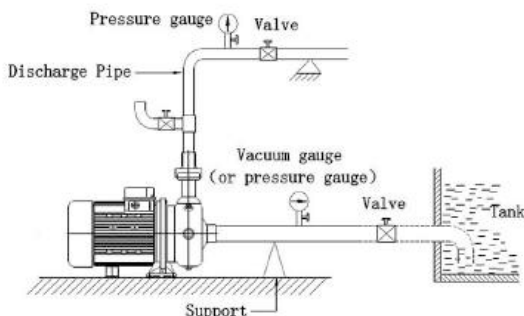
EFO100~EF400 SERIES



- | | | | |
|-----------------|------------------|--------------------|-----------------------|
| 1. Motor | 2. V slinger | 3. Mechanical Seal | 4. Mech. Seal Carrier |
| 5. O ring | 6. Bolt | 7. Impeller | 8. Casing |
| 9. Spring Water | 10. Impeller nut | 11. Key | 12. Back Cover |
| 13. O ring | 14. L washer | 15. Bolt | |

5. Installation

- 5.1** The pump must be installed on a level surface, as close as possible to the water source, minimising the length of piping to ensure optimal suction performance.



- 5.2** For safety reasons, the pump must be installed in a dry, well-ventilated location, with an ambient temperature not exceeding 40°C.
- 5.3** Position the pump where it is to be installed and secure it using bolts and nuts to fix it firmly in place.
- 5.4** All connections on the suction piping must be fully sealed.
- 5.5** To reduce discharge pressure loss, minimise the use of elbow connections on the discharge piping and keep the piping as short as possible.
- 5.6** All piping must be independently supported. The pump must not bear any weight or force from the piping.
- 5.7** It is recommended to install a pressure gauge on the discharge pipe and a vacuum gauge on the suction pipe to monitor the pump's operating conditions.

6. Electrical Connection

- 6.1** Check that the voltage, frequency, and phase of the power supply match the specifications on the pump nameplate.
- 6.2** A wiring diagram is provided inside the terminal box cover. The pump must be properly earthed in accordance with local electrical regulations. It is recommended to use an earth-leakage protection device, such as a residual current circuit breaker.

7. Starting, Operating, and Stopping

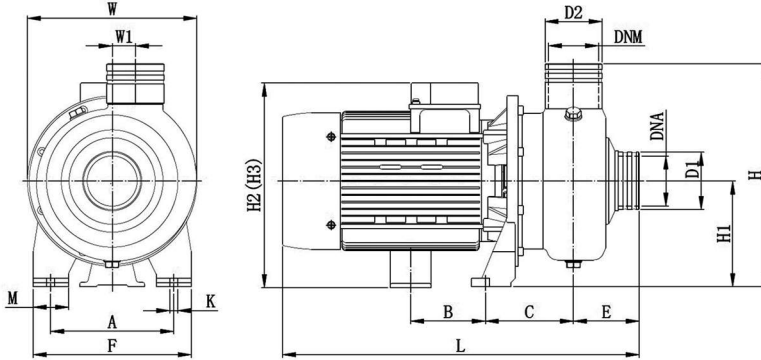
- 7.1** Before using a new pump, manually rotate the motor fan to check that it moves freely and quietly.
- 7.2** Start the pump briefly to check the rotational direction. The correct rotation is always anti-clockwise when viewed from the motor fan end.
- 7.3** Close the discharge valve and open the suction valve. Unscrew the filling plug on top of the pump body and fill it with water until it overflows. Then, securely refit the plug and start the pump.
- 7.4** Adjust the discharge valve to control capacity and outlet pressure to achieve the required duty point.
- 7.5** Before shutting down, close the discharge valve and then switch off the power supply.

8. Maintenance

- 8.1** To prevent internal damage, never operate the pump without water inside the pump body.
- 8.2** Avoid frequent starting and stopping of the pump. If the power supply is interrupted, switch off the pump.
- 8.3** Do not regulate capacity by adjusting the suction pipe valve, as this may cause performance issues.
- 8.4** Switch off the power if the water supply is interrupted or there is a shortage of water.
- 8.5** If the pump emits unusual noises, stop operation immediately and investigate the cause.
- 8.6** If the pump is to remain inactive for an extended period, drain the water by unscrewing the draining and filling plugs. Flush the pump body with clean water and ensure it is completely drained to prevent freezing damage during winter.

9. Outline Diagram and Dimensions

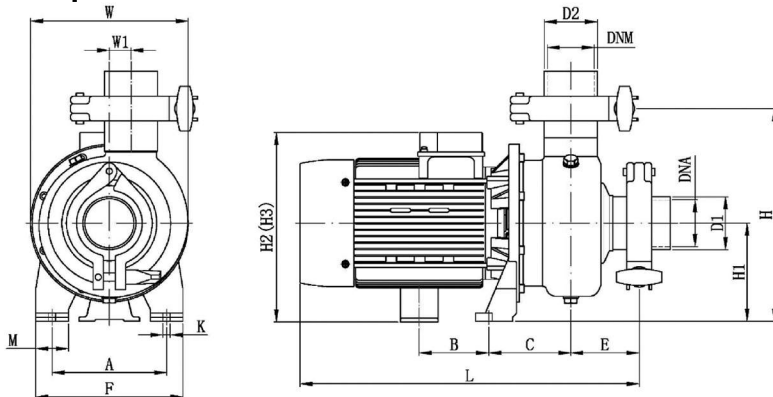
BSP Model:



Model		A	B	C	D1 Ø	D2 Ø	E	F	H	H1	H2	H3	K	L	M	W	W1	DNA	DNM	Weight (Kg)
EFO50M	EFO50	100	85	80	46.6	37	52	130	191	88	182	181	9	300	40	170	0	G 1 1/4"	G 1"	6.2
EFO100M	EFO100	120	90	84	52	52	75	160	226	108	211	210	9	358	40	170	20	G 1 1/2"	G 1 1/2"	10.5
EFO120M	EFO120	120	90	84	52	52	75	160	226	108	211	210	9	358	40	170	20	G 1 1/2"	G 1 1/2"	11
EFO150M	EFO150	140	75	101	63	63	82	180	253	120	260	230	9	403	40	193	20	G 2"	G 2"	15
EFO200M	EFO200	140	75	101	63	63	82	180	253	120	260	230	9	403	40	193	20	G 2"	G 2"	16
EFO300M	EFO300	140	90	101	80	63	82	180	253	120	268	240	9	435	40	193	20	G 2 1/2"	G 2"	22
-----	EFO400	140	90	101	80	63	82	180	253	120	---	240	9	435	40	193	20	G 2 1/2"	G 2"	24

H2: Single phase motors H3: Three phase motors

Tri-Clamp Model:



Model		A	B	C	D1 Ø	D2 Ø	E	F	H	H1	H2	H3	K	L	M	W	W1	DNA	DNM	Weight (Kg)
EFO50M-TC	EFO50-TC	100	85	80	46.6	37	52	130	191	88	182	181	9	300	40	170	0	G 1 1/4"	G 1"	6.2
EFO100M-TC	EFO100-TC	120	90	84	52	52	75	160	226	108	211	210	9	358	40	170	20	G 1 1/2"	G 1 1/2"	10.5
EFO120M-TC	EFO120-TC	120	90	84	52	52	75	160	226	108	211	210	9	358	40	170	20	G 1 1/2"	G 1 1/2"	11
EFO150M-TC	EFO150-TC	140	75	101	63	63	82	180	253	120	260	230	9	403	40	193	20	G 2"	G 2"	15
EFO200M-TC	EFO200-TC	140	75	101	63	63	82	180	253	120	260	230	9	403	40	193	20	G 2"	G 2"	16
EFO300M-TC	EFO300-TC	140	90	101	80	63	82	180	253	120	268	240	9	435	40	193	20	G 2 1/2"	G 2"	22
-----	EFO400-TC	140	90	101	80	63	82	180	253	120	---	240	9	435	40	193	20	G 2 1/2"	G 2"	24

H2: Single phase motors H3: Three phase motors

10. Troubleshooting

Problem	Possible Causes	Solutions
No water is pumped	Suction/discharge pipe or impeller is blocked.	Clean Pipes and the volute.
	Pipe connection leakage.	Seal the connections.
	Abstraction level is too low.	Reinstall the pump to reduce the suction lift.
Insufficient capacity	Damaged or corroded impeller.	Replace the impeller
	Damaged or corroded seal ring.	Replace the seal ring.
	Motor runs at low speed	Check the input voltage.
Head too low	Wrong rotational direction.	Correct the electrical connections (3 phase motor).
	Air cavity occurring.	Lower the temperature and fill the pump body with water.
	Damaged Impeller.	Replace the impeller.
Overloaded – motor gets hot	Capacity is too large – pump is operating beyond its performance limits.	Check that you have the correct pump model for your requirements. Or Set the discharge valve so that the pump is operating within its performance limits.
	Mechanical friction.	Locate the parts that are causing the friction and clean.
	Input voltage too low or motor fan damaged.	Increase the input voltage or replace the motor fan.

Troubleshooting Continued...

Problem	Possible Causes	Solutions
Pump Leakage	Damaged mechanical seal.	Replace mechanical seal.
	Damaged O Ring.	Replace O Ring.
Motor vibrates causing noise or shaft to become hot	Motor bearings damaged or lack of lubrication.	Adjust the concentricity between motor and pump body, replace or clean bearings and lubricate with grease.
	Base not firmly secured.	Place motor on the level and tighten up each screw on the base.
Pump makes excess noise	Air cavity occurring due to excessive capacity.	Check that you have the correct pump model for your requirements. Or Set the discharge valve so that the pump is operating within its performance limits.
	Screws loose.	Tighten up the screws.

Attention: to avoid electrical shock, make sure power supply is cut off before opening terminal box or uninstalling your pump.