


# DC Fuel Transfer Pump

## User's Manual



 **WARNING:** Read carefully and understand all **INSTRUCTIONS** before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

**Model No. 17530560, 17530561, 17530700,**

**17530562, 17530563, 17530701**

# 1. DECLARATION OF CONFORMITY

## DECLARATION OF CONFORMITY

IN CONFORMANCE WITH THE DIRECTIVES  
98/37/EEC (MACHINERY)  
73/23/EEC (PRESSURE VESSELS)  
89/336/EEC (ELECTOR-MAGNETIC COMPATIBILITY)

**THE MANUFACTURER**  
**INTRADIN (SHANGHAI) MACHINERY**  
**118 DUHUI ROAD, MINHANG DISTRICT, SHANGHAI, 201109 CHINA**

DECLARES THAT THE FOLLOWING PUMP MODELS:**17530560, 17530561, 17530700,**  
**17530562, 17530563, 17530701**

CONFORMS TO THE FOLLOWING EUROPEAN REGULATIONS:

**EN292-1-92** – Safety of Machinery – General Concepts, basic principles for design – terminology, basic methodology

**EN292-2-92** – Safety of Machinery – General Concepts, basic principles for design – specifications and technical principles

**EN294-93** – Safety of Machinery – safe distances to prevent the operator's upper limbs from reaching dangerous areas

**EN60034-1-2000** – Rotating electrical Machinery – nominal and functional specifications

**EN60034-5-2001** – Classification of grades of protection for the housings of rotating electrical machinery

**EN61000-6-3** – Electro – magnetic compatibility – generic emission standards

**EN61000-6-1** – Electro – magnetic compatibility – generic immunity standards

**EN55014-1-00(A1/99-A2/99)** –Limits and methods for measuring radio disturbance characteristics

**EN55014-2-97** – Electrical motor – operated and thermal appliances for household and similar purposes, electric tools and similar electrical apparatus

**EN60204-1-98** –Safety of machinery – electrical equipment of machines

## 2. MACHINE DESCRIPTION

**PUMP: Electric self-priming rotary vane pump, equipped with by-pass valve, built-in filter**

**MOTOR: Duty cycle: 30 Min., closed type (Protection class IP55)**

## 3. TECHNICAL SPECIFICATIONS

Description	Europe			America		
	17530560	17530561	17530700	17530562	17530563	17530701
<b>Voltage</b>	12V	24V	12/24V	12V	24V	12/24V
<b>Current</b>	35A	30A	30A	35A	30A	30A
<b>Flow Rate</b>	56LPM	56LPM	35/70LPM	15GPM	15GPM	9/18GPM
<b>Pressure</b>	1.2bar	1.2bar	1.5/2.5bar	17PSI	17PSI	22/30PSI
<b>Inlet/Outlet</b>	1"BSP	1"BSP	1"BSP	1"NPT	1"NPT	1"NPT
<b>Rated Speed</b>	3000RPM	3000RPM	1800/3600RPM	3000RPM	3000RPM	1800/3600RPM

## 4. OPERATING CONDITIONS

### 4.1 Environmental Conditions

**Temperature:** Min -20°C / Max +60°C

**Relative Humidity:** max90%

#### ATTENTION

The temperature limits shown apply to the pump components and must be respected to avoid possible damage or malfunction.

### 4.2 Electrical Power Supply

Depending on the model, the AC pump must be supplied by a single-phase alternating current line whose nominal values are shown in the table in Paragraph 3 pump Electrical specification. The maximum acceptable variations from the electrical parameters are:

**Voltage:**  $\pm 5\%$  of the nominal value

**Frequency:**  $\pm 2\%$  of the nominal value

#### ATTENTION

Power from lines with values outside the indicated limits can damage the electrical components.

### 4.3 Working Cycle

#### ATTENTION!

Extreme operating conditions with working cycles longer than 30 minutes can cause the motor temperature to rise, thus damaging the motor itself.

Each 30-minute working cycle should always be followed by a 30-minute power-off cooling phase.

#### ATTENTION

Functioning under by-pass conditions is only allowed for brief periods of time (2 minutes maximum).

### 4.3 Fluids permitted / Fluids not permitted

#### PERMITTED:

Diesel fuel at a viscosity of from 2 to 5 cST (at a temperature of 37°C)

Minimum Flash point (PM): 55°C

<b>NOT PERMITTED</b>	<b>RELATED DANGER</b>
Gasoline (Petrol)	Fire - explosion
Inflammable liquids with PM < 55°C	Fire - explosion
Liquids with viscosity > 20 Cst	Motor overload
Water	Oxidation of the pump
Liquid food products	Contamination of same
Corrosive Chemicals	Corrosion of the pump Injury to people
Solvents	Fire – explosion Damage to gasket seals

## **5. INSTALATION**

### **5.1 Preliminary Inspection**

- Check that the machine has not suffered any damager during transport or storage.
- Clean the inlet and outlet openings, removing any dust or residual packing material.
- Make sure that the motor shaft turns freely.
- Check that the electrical specifications correspond to those shown on the identification plate

### **5.2 Positioning the pump**

- The pump can be installed in any position (pump axis vertical or horizontal)
- Attach the pump using screws of adequate diameter for the attachment holes provided in the base of the pump.

#### **ATTENTION!**

**The motors are not of an anti-explosive type.**

Do not install them where inflammable vapors can be present.

### **5.3 Connecting the hose**

- Before connection, make sure that the hoses and the suction tank are free of dirt and thread residue that could damage the pump and it's accessories.
- Before connecting the delivery hose, partially fill the pump body with diesel fuel to facilitate priming.

#### **Suction Hose**

- Minimum recommended nominal diameter: 1"
- Nominal recommended pressure: 10 bar / 145PSI
- Use hose suitable for functioning under suction pressure

#### **Delivery Hose**

- Minimum recommended nominal diameter: 3/4"
- Nominal recommended pressure: 10 bar / 145PSI

#### **ATTENTION**

It is the installer's responsibility to use tubing with adequate characteristics.

The use of tubing unsuitable for use with Diesel fuel can damage the pump, injure persons

and cause pollution.

Loosening of the connections (threaded connections, flanging, gasket seals) can cause serious ecological and safety problems.

Check all the connections after the initial installation and on a daily basis after that. Tighten the connections, if necessary.

### **5.3 Considerations regarding delivery and suction lines**

#### **DELIVERY**

The choice of pump model must be made keeping the characteristics of the system in mind.

The combination of the length of the tubing, the diameter of the tubing, the flow rate of the diesel fuel and the line accessories installed can create back pressure greater than the maximums anticipated such as to cause the (partial) opening of the pump by-pass with the consequent noticeable reduction of the flow rate supplied.

In such cases, to allow correct functioning of the pump, it is necessary to reduce system resistance, using shorter tubing and/or of wider diameter and line accessories with less resistance (e.g., an automatic dispensing nozzle for greater flow rates).

#### **SUCTION**

The pumps are self-priming and characterized by good suction capacity.

During the start-up phase, with an empty suction tube and the pump wetted with fluid, the electric pump unit is capable of suctioning the liquid with a maximum difference in height of 2 meters. It is important to point out that the priming time can be as long as one minute and the presence of an automatic dispensing nozzle on the delivery line prevents the evacuation of air from the installation, and therefore, prevents proper priming.

For this reason, it is always advisable to prime the pump without an automatic delivery nozzle, verifying the proper wetting of the pump. The installation of a foot valve is recommended to prevent the emptying of the suction tube and keep the pump wet. In this way, the pump will subsequently always start up immediately.

When the system is functioning, the pump can work with pressure at the inlet as high as 0.5 bar, beyond which cavitation phenomena can begin, with a consequent loss of flow rate and increase of system noise.

It is very important to keep the suction filters clean because, once clogged, they increase system resistance.

The difference in height between the pump and the fluid level must be kept as small as possible and, at any rate, within the 2 meters anticipated for the priming phase.

If this height is exceeded, it will always be necessary to install a foot valve to allow for the filling of the suction tube and provide tubing of wider diameter. It is recommended that the pump not be installed at a difference in height greater than 3 meters.

## ATTENTION

In the case that the suction tank is higher than the pump, it is advisable to install an anti-siphon valve to prevent accidental diesel fuel leaks.

Dimension the installation in order to control the back pressure due to water hammering.

## 6. Daily Use

- If using flexible tubing, attach the ends of the tubing to the tanks. In the absence of an appropriate slot, solidly grasp the delivery tube before beginning dispensing.
- Before starting the pump make sure that the delivery valve is closed (dispensing nozzle or line valve).
- Turn the ON/OFF switch to ON. The by-pass valve allows functioning with the delivery closed for only brief periods.
- Open the delivery valve, solidly grasping the end of the tubing.
- Close the delivery valve to stop dispensing.
- When dispensing is finished, turn off the pump.

## ATTENTION

Functioning with the delivery closed is only allowed for brief periods (2-3 minutes maximum). After use, make sure the pump is turned off.

Lack of electric power

A lack of electric power, with the consequent accidental stopping of the pump, can be caused by:

- A safety device tripping
- A drop in line voltage

In either case, act as follows:

- Close the delivery valve
- Attach the end of the delivery to the slot provided on the tank
- Turn the ON/OFF switch to the OFF position

## 7. PROBLEM AND SOLUTIONS

Problem	Possible Cause	Corrective Action
The motor is not turning	Lack of electric power	Check the electrical connections and the safety systems
	Rotor jams	Check for possible damage or obstruction of the rotating components.
	Motor problems	Contact with the service department
Low or no flow rate	Low level in the suction tank	Refill the tank

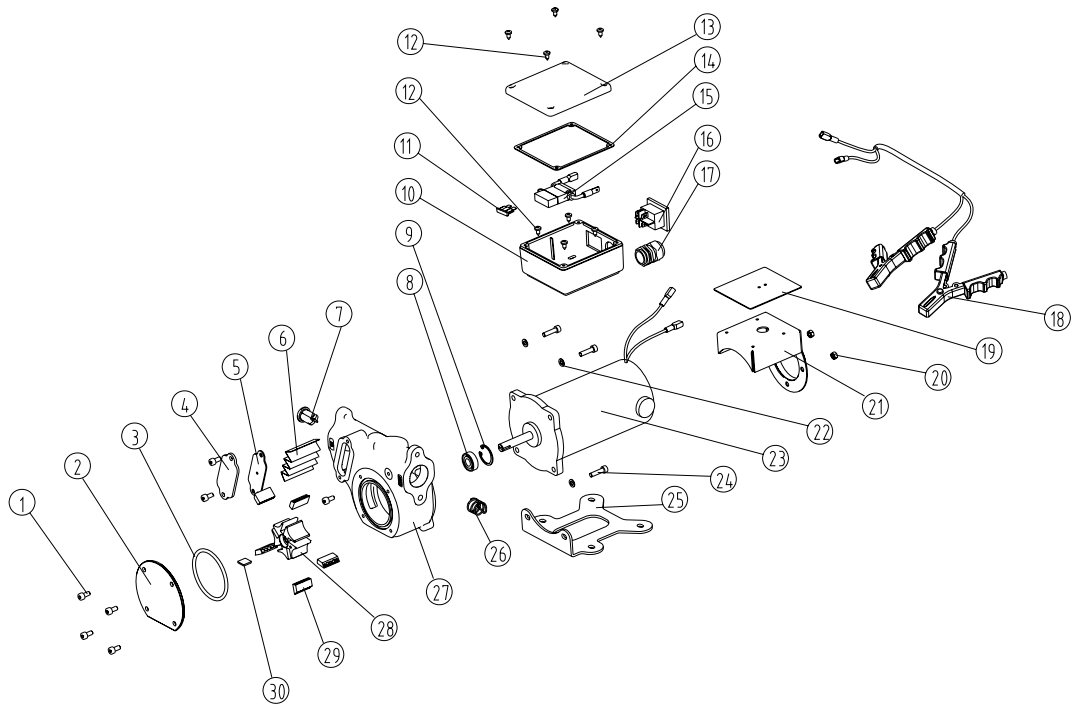
	Foot valve blocked	Clean and/or replace the valve
	Filter clogged	Clean the filter
	Excessive suction pressure	Lower the pump with respect to the level
	High loss of head in the circuit (working with the by-pass open)	Use shorter tubing or of greater diameter
	By-pass valve blocked	Dismantle the valve, clean and/or replace it
	Air entering the pump or the suction tubing	Check the seals of the connections
	A narrowing in the suction tubing	Use tubing suitable for working under suction pressure
	Low rotation speed	Check the voltage at the pump. Adjust the voltage and/or use cables of greater cross-section
	The suction tubing is resting on the bottom of the tank	Raise the tubing
Increased pump noise	Cavitation occurring	Reduce suction pressure
	Irregular functioning of the by-pass	Dispense until the air is purged from the circuit
	Air present in the diesel fuel	Verify the suction connections
Leakage from the pump body	Seal damaged	Check and replace the mechanical seal

## 8. MAINTENANCE

The pumps are designed and constructed to require a minimum of maintenance.

- On a weekly basis, check that the tubing joints have not loosened, to avoid any leakage.
- On a monthly basis, check the pump body and keep it clean of any impurities.
- On a monthly basis, check and keep the pump filter clean and any other filters installed.
- On a monthly basis, check that the electric power supply cables are in good condition.
- Under normal working conditions the noise emission from all models does not exceed the value of 70 db at a distance of 1 meter from the electric pump.

## 10. DIAGRAMS AND PARTS LIST



No.	Description	Qty.
1	SCREW M5x10	7
2	FRONT COVER	1
3	O-RING	1
4	FILTER COVER	1
5	AIRPROOF RUBBER	1
6	FILTER	1
7	BY PASS VALVE	1
8	SEAL	1
9	SPRING COLLAR	1
10	TERMINAL BOARD	1
11	FUSE	1
12	SCREW M4.2X9.5	1
13	TERMINAL COVER	1
14	AIRPROOF RUBBER	1
15	FUSE-CARRIER	1
16	SINGLE-POLE SWITCH	1
17	COMPACTION NUT	1
18	LINE CORD	1
19	AIRPROOF RUBBER	1



20	NUT M5	2
21	BRACKET	1
22	SPRING WASHER	4
23	MOTOR	1
24	SCREW M6X25	4
25	BASE	1
26	BY PASS SPRING	1
27	PUMP BODY	1
28	ROTOR	1
29	BLADE	5
30	KEY	1