CHIERICI TITO s.r.l.

Via L. B. Alberti, 4 - 42048 Rubiera (RE)

CT – TRANSFER KIT
(220 V – 12 V)

OPERATING INSTRUCTIONS

Machine Directive 2006/42/CE

Rev 2 dated 19/01/2010

READ ALL THE INFORMATION CONTAINED IN THIS MANUAL BEFORE USING THE MACHINE AND CAREFULLY FOLLOW THE INSTRUCTIONS.

SUMMARY

1 DESCRIPTION CT – TRANSFER KIT

The CT-TRANSFER KIT is produced in 5 different models and comprises the following main parts:

⇒ Electropump (electric motor + pump) (please refer to the user manual in the pack)

⇒ Litre-counter

⇒ Dispensing gun

⇒ Accessories (diesel oil pipe, clamps, suction filter)

1.1 MODELS AND CHARACTERISTICS

CT-TRANSFER KIT - TURTLE - 220V - 60 l/min

Part no.	Type of Casing	Weight
15.0500.26	Closed	17000 g

Volt	220
Delivery	60 l/min
Electropump	PANTHER 56
Gun	Automatic 60 l/min
Black rubber hose for diesel oil	4 m
Suction filter	Brass with non-return valve
Accessories	3 hose connections + 4 clamps

Note: Supplied only with the 60/min automatic gun

CT-TRANSFER KIT 220V Movable - 60 l/min

Part no.	Type of Casing	Type of Gun	Weight
15.0500.01	Movable	PAL80 alum.	15700 g
15.0500.05	Movable	Automatic 60 l/min	16700 g

Volt	220
Delivery	60 l/min
Electropump	PANTHER 56
Black rubber hose for diesel oil	4 m
Suction filter	Brass with non-return valve
Accessories	3 hose connections + 4 clamps

Note: Supplied with guns: Gun PAL80 in aluminium - Automatic gun 60l/min

CT-TRANSFER KIT 220V Wall mounted - 60 l/min

Part no.	Type of Casing	Weight
15.0500.04	Wall mounted	13700 g

Volt	220
Delivery	60 l/min
Electropump	PANTHER 56
Gun	PAL80 alum.
Black rubber hose for diesel oil	4 m
Suction filter	Brass with non-return valve
Accessories	3 hose connections + 4 clamps

Note: Supplied only with gun PAL80 in aluminium

CT-TRANSFER KIT 12V Movable - 40 l/min

Part no.	Type of Casing	Weight
15.0550.01	Movable	12200 g

Volt	12
Delivery	40 l/min
Electropump	BY PASS 2000
Gun	PAL80 alum.
Black rubber hose for diesel oil	4 m
Suction filter	Brass with non-return valve
Accessories	3 hose connections + 4 clamps

Note: Supplied only with gun PAL80 in aluminium

CT-TRANSFER KIT 12V Wall mounted - 40 l/min

Part no.	Type of Casing	Weight
15.0550.02	Wall mounted	10200 g

Volt	12
Delivery	40 l/min
Electropump	BY PASS 2000
Gun	PAL80 alum.
Black rubber hose for diesel oil	4 m
Suction filter	Brass with non-return valve
Accessories	3 hose connections + 4 clamps

Note: Supplied only with gun PAL80 in aluminium

Consult the operating instructions before using the CT-TRANSFER KIT

1.2 EC DIRECTIVES AND MARKING

The CT – TRANSFER KIT is manufactured in conformity with the provisions of:

⇒ Machine Directive **2006/42/CE** ;

it also complies with the following directives:

⇒ Low Voltage Directive (220 V models only): 2006/95/CE

⇒ EMC Directive: 2004/108/CE

The CT – TRANSFER KIT is provided with "CE" marking in conformity with Machine Directive **2006/42/CE** , par. 1.7.3 Annex 1 and Annex 3. The information and marks given on the dataplate are as follows.

- Mark CE
- Manufacturer's details and address
- Type of machine
- Serial no.
- Year of construction

Do not tamper with or make modifications to CT-TRANSFER KIT. Such modifications can invalidate the "CE" marking and the declaration of conformity.

1.3 INTENDED USE

The CT-TRANSFER KIT is intended for transferring diesel oil, normally from a fixed container (cistern) to a movable one (tank).

FLUIDS ALLOWED:

DIESEL OIL with VISCOSITY of 2 to 5.35 cSt (at temperature 37.8°C), with min. flash point (PM): 55°C

FLUIDS NOT ALLOWED:

 **FLUIDS NOT ALLOWED**	 **RELATED RISKS**
PETROL	FIRE – EXPLOSION
FLAMMABLE LIQUIDS with min. flash point PM < 55°C	FIRE – EXPLOSION
FLUIDS WITH VISCOSITY > 20 cSt	MOTOR OVERLOAD
WATER	PUMP OXIDATION
LIQUID FOODS	THEIR CONTAMINATION
CORROSIVE CHEMICAL PRODUCTS	PUMP CORROSION HARM TO PEOPLE
SOLVENTS	FIRE – EXPLOSION DAMAGE TO THE GASKETS

2 HANDLING AND TRANSPORT

Given the limited weight and size of the pumps (par. 1.1) lifting equipment is not required for handling the CT TRANSFER KIT. The KIT is carefully packed before shipment. Check the packing on receipt and store in a dry place.

3 INSTALLATION

3.1 PRELIMINARY CHECKS

Check that the KIT was not damaged during transport or storage.
Carefully clean the inlets and outlets, removing any dust or residual packing material.
Make sure the motor shaft turns freely.
Check that the electrical data matches that given on the dataplate.

Important! The motors are not the flameproof type. Do not install in places where flammable vapours may be present.

3.2 CONNECTING THE PIPES

Before connecting, make sure the pipes and suction tank are free of scale or threading residuals which could damage the pump and accessories. Before connecting the delivery pipe partly fill the pump chamber with diesel oil to facilitate priming.
In case of connection pipes with taper thread, use an appropriate tightening force to avoid damaging the threaded inlets/outlets of the pumps.

SUCTION PIPE	DELIVERY PIPE
Recommended min. nominal diameters: ¾ ”	Recommended nominal diameters: ¾ ”
Recommended nominal pressure: 10 bar	Recommended nominal pressure: 10 bar
Use pipes suitable for operation in negative pressure	

IMPORTANT!
Only use pipes having suitable characteristics. The use of pipes unsuitable for diesel oil can cause pollution as well as damage to the pump and people.
Loosening of the connections (threaded connections, flanges, gaskets) can cause serious safety and ecological problems. Check all the connections after initial installation and then daily. Tighten all the connections if necessary.

3.3 ELECTRIC POWER PUMP USE

before starting the electric power pump, please refer to the user manual in the pack.

4 MECHANICAL LITRE-COUNTER CT-80

4.1 OPERATION

The CT-80 is a mechanical litre-counter with wobble plate, designed for accurate measuring in transferring diesel oil and other liquids compatible with the construction material.

TECHNICAL DATA

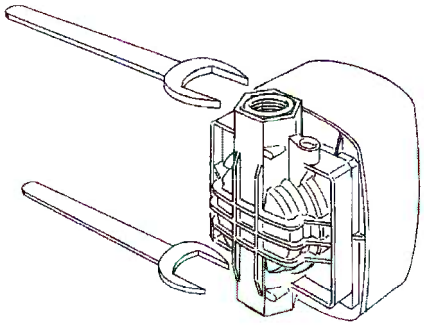
Mechanism	Wobble Plate
Delivery	From 20 to 80 (5+21 GpM) litres/min
Operating pressure	From 0.1 to 3.5 (1.45+50 psi) bar
Working temperature	-10 + 50 (+14 + 122'F) °C
Pressure loss (at 80 l/min diesel oil)	0.3 (4.3S psi) bar
Accuracy after setting	1 %
Partial indicator	Max 999 (99.9 / 10 Gal.) litres
Totaliser indicator	Max 999999 (99999.9 / 10 Gal.) litres
Precision	0.1 (0.1 / 10 Gal.) litres
Connections	1", (BSp/NpT)* %" (BSp/NpT)
Weight	1" 1.3S -3/4, 1.45 Kg
Packing dimens. (Vert. version)	210x141x146 mm
Packing dimens. (Horiz. version)	210x190x140 mm

USE

It can be used in gravitational systems and in circuits with electric or manual pumps equipped with bypass. Once installed and set (if necessary), the litre-counter is ready for use. To zero-set the partial counter, turn the reset knob clockwise. The totaliser indicator cannot be reset in any way. It is inadvisable to use the CI80 in areas where temperatures higher than those recommended can occur due to their exposure to the sun. For correct operation of the litre-counter its use together with a filter is recommended.

INSTALLATION

Built to work at maximum pressures of 3.5 bar (50 psi), it must be fitted so that it does not suck unfiltered liquids or air. The flow of liquid to be transferred must follow the direction of the two arrows in relief on the back of the litre-counter. As shown in figure 1, the inlet can be turned to the most suitable position, after undoing the 4 set screws (N' 20 exploded view). Overpressures may be generated in the system; therefore it is advisable to fit an overpressure valve set to 4 bar (57 psi) on the pump. In case of systems working without pumps, i.e. gravitational, for correct operation a height difference of at least 1 metre between the tank outlet and the PAL80 or PMP80 type gun is necessary.



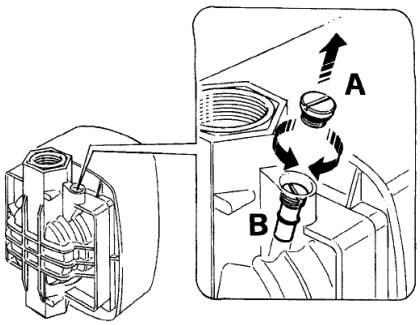
N.B. = To avoid damage and breakage in the plastic hexagonal body containing the inlet and outlet unions, only use a CH44 SPANNER. (See Figure opposite).

SETTING

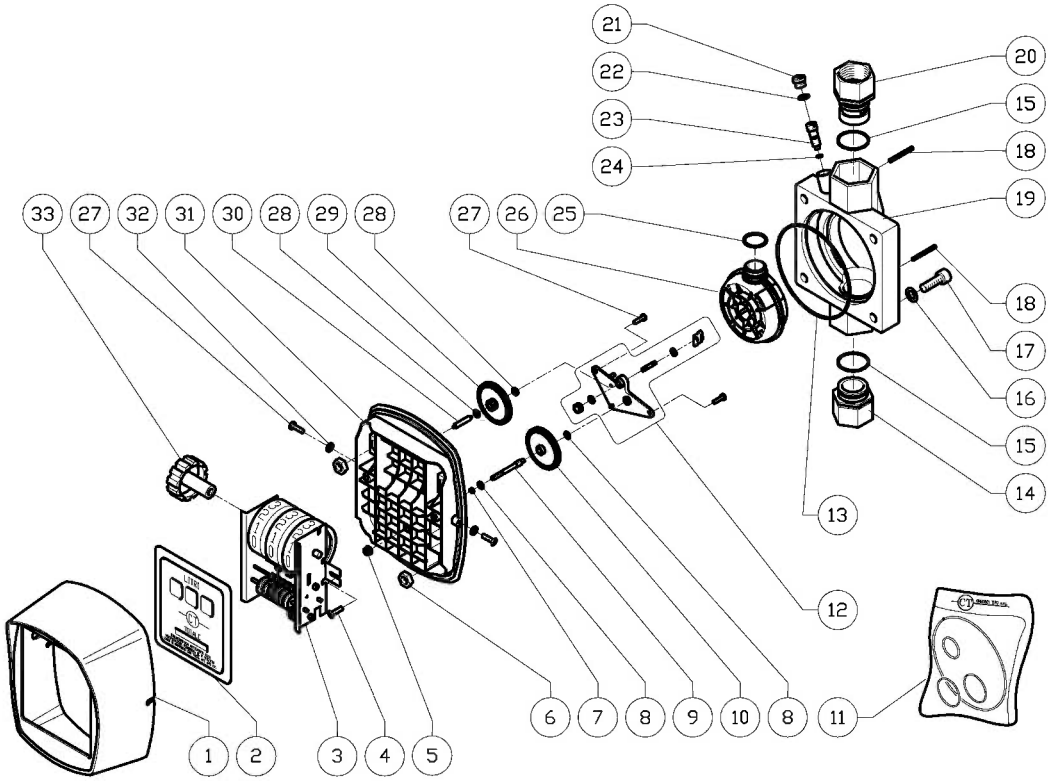
The litre-counter is factory-set to a pressure of 1.5 Bar (21 PSI) transferring diesel oil with a delivery of approx. 70l/min (18.49 GPM). As the operating pressure is an important factor for the reading mechanism, setting must be repeated when using different pressures and/or liquids. Resetting is necessary every time the litre-counter is disassembled for maintenance or used for liquids different from diesel oil.

SETTING PROCEDURE:

1. Unscrew the setting plug (plug A in fig. 2).
2. Stop the flow by closing the dispensing gun without stopping the pump.
3. Reset the partial indicator.
4. Dispense at a flowrate for obtaining the required accuracy, transferring into a calibrated recipient of not less than 20 litres (5 Gallons) capacity. Compare the value indicated by the partial totaliser with that of the recipient (real value): turn the adjustment screw (N" 26 exploded view) clockwise if lower and clockwise if higher.
5. Repeat operation 4 until the measurement is satisfactory.
6. Tighten the setting plug.



4.2 SPARE PARTS - MECHANICAL LITRE-COUNTER CT-80



POS	PART No.	DESCRIPTION	Q
1	13.0005.01	FRONT COVER	1
2	13.0005.06	FRONT SCREEN CTL "CT"	1
2	13.0005.18	FRONT SCREEN CTL NEUTRAL	1
2	13.0005.37	FRONT SCREEN CT. US. Gal.	1
3	15.0005.70	COUNTER	1
4	2.0100.31	SELF-TAP. SCREW PHILLIPS 4.5x16 ZB	2
5	13.0005.11	BEVEL GEAR Z 14	1
6	2.0100.07	HEX. NUT. MEDIUM 6S M8x6.5 ZB	4
6	2.0100.09	HEX. NUT. MEDIUM M8x6.5 S/STEEL A2	4
7	2.0060.23	O-RING 1.78X3.69 VI 75	1
7	2.0060.69	O-RING 1.78X3.69 NBR 70	1
8	2.0020.29	CHAMFERED WASHER AISI 304 D.4.2x9x0.5	2
9	12.0050.09	SHAFT FOR TOOTHED WHEEL Z 84	1
10	13.0005.13	TOOTHED WHEEL Z 84	1
10	13.0005.35	TOOTHED WHEEL Z 72 US. Gal.	1
11	99.0005.03	VITON SEAL KIT	1
11	99.0005.20	NBR SEAL KIT	1
12	99.0005.24	BRACKET KIT WITH GEARS AND CAM	1
13	2.0060.47	O-RING 3.53X98.02 VI 75	1
13	2.0060.68	O-RING 3.53X98.02 NBR 70	1
14	12.0020.12	INLET BUSH 1" GAS BRASS	1
14	12.0020.13	INLET BUSH 1" NPT BRASS	1
14	13.0005.27	INLET BUSH 1" GAS PLASTIC	1
14	12.0020.16	INLET BUSH 1" GAS S/STEEL	1
14	12.0020.08	INLET BUSH 3/4" GAS BRASS	1
14	12.0020.09	INLET BUSH 3/4" NPT BRASS	1
14	13.0005.25	INLET BUSH 3/4" GAS PLASTIC	1
14	13.0005.33	INLET BUSH 3/4" NPT PLASTIC	1
15	2.0060.46	O-RING 2.62X25.07 VI 75	2
15	2.0060.17	O-RING 2.62X25.07 NBR 70	2

POS	PART No.	DESCRIPTION	Q
16	2.0020.28	CHAMFERED WASHER D. 8.4x15x1.5 FE ZB	4
16	2.0020.43	CHAMFERED WASHER D. 8.4x15x1.5 S/STEEL A2	4
17	2.0100.91	SCREW TCEI UNI 5931 8G M8x25 ZB	4
17	2.0100.93	SCREW TCEI UNI 5931 M8x25 S/STEEL A2	4
18	2.0020.16	SPLIT PIN 3X32 S/STEEL	2
19	13.0005.03	LITRE-COUNTER BODY	1
20	12.0020.14	OUTLET BUSH 1" GAS BRASS	1
20	12.0020.15	OUTLET BUSH 1" NPT BRASS	1
20	13.0005.28	OUTLET BUSH 1" GAS PLASTIC	1
20	12.0020.17	OUTLET BUSH 1" GAS S/STEEL	1
20	12.0020.10	OUTLET BUSH 3/4" GAS BRASS	1
20	12.0020.11	OUTLET BUSH 3/4" NPT BRASS	1
20	13.0005.26	OUTLET BUSH 3/4" GAS PLASTIC	1
20	13.0005.34	OUTLET BUSH 3/4" NPT PLASTIC	1
21	12.0100.02	BRASS CAP ON ADJUST. SCREW	1
21	12.0100.04	S/STEEL CAP ON ADJUST. SCREW	1
22	2.0060.48	O-RING 1.78X9.25 VI 75	1
22	2.0060.14	O-RING 1.78X9.25 NBR 70	1
23	12.0100.01	ADJUST. SCREW BRASS	1
23	12.0100.03	ADJUST. SCREW S/STEEL	1
24	2.0060.04	O-RING 1.78X5.28 VI 75	1
24	2.0060.05	O-RING 1.78X5.28 NBR 70	1
25	2.0060.49	O-RING 2.62X20.29 VI 75	1
25	2.0060.70	O-RING 2.62X20.29 NBR 70	1
26	99.0005.16	VOLUMETRIC CHAMBER UNIT	1
27	2.0100.33	SELF- TAP. SCREW PHILLIPS 3.5x13 S/STEEL	4
28	2.0020.30	CHAMFERED WASHER AISI303 D.2x5x0.35	2
29	13.0005.14	DOUBLE TOOTHED WHEEL Z10 – Z67	1
29	13.0005.36	DOUBLE TOOTHED WHEEL US. Gal.	1
30	2.0020.11	PARALLEL PIN S/STEEL 2x18 UNI1707	1
31	13.0005.04	LITRE-COUNTER MIDDLE FLANGE	1
32	2.0020.31	WASHER UNI 6592 4.3x9x0.8 ZB	2
33	13.0005.05	LITRE-COUNTER RESET KNOB	1

Always specify the spare part position no. with the product no.

5 AUTOMATIC GUN – OPERATION

MODELS

Mod. 2.0370.01	Automatic gun G60 l/min with 1”F swivel union
Model 2.0370.02	Automatic gun F60 l/min 3/4” F inlet

INSTALLATION
This automatic gun is supplied ready for use.
It is necessary to apply a thin layer of sealant on the inlet union. It is advisable to install a filter with filtering capacity of 50 MESH on the system.

METHOD OF USE
The closing mechanism is activated when the fuel level covers the inside hole of the nozzle at the end of the gun. To activate the closing mechanism a pressure of at least 0.5 bar is necessary and in any case not higher than 2 bar. This gun can be used with all the electropumps available on the market.

TRANSFER MAX 60 L/MIN.

6 MAINTENANCE

6.1 ELECTROPUMP MAINTENANCE

The electropumps require minimum maintenance.

⇒ Every week, check that the pipe joints are not loose, to avoid possible leaks.
⇒ Check the pump body every month and keep it clean of any impurities.
⇒ Check the pump filter every month and keep it and any other filters installed clean.
⇒ Every month, check that the power supply cables and the plug socket are in good condition.
⇒ 12 V electropump: every month, check the presence of grease on the surfaces of contact between the cover and terminal block body.

6.2 TROUBLESHOOTING - ELECTROPUMPS

Problems	Possible cause	Corrective action
The motor does not turn	No power	Check the electrical connections and safety systems
	Rotor blocked	Check for possible damage or obstructions to rotating parts
	Thermal protector tripped	Wait until the motor has cooled, check restarting, look for the cause of overtemperature
	Motor trouble	Contact the After-Sales Service
The motor turns slowly in the starting stage	Low supply voltage	Bring the voltage within the required limits
Low or no delivery	Low level in suction tank	Fill the tank
	Foot valve blocked	Clean and/or replace the valve
	Filter clogged	Clean the filter
	Excessive negative suction pressure	Lower the pump with respect to the tank level or increase the section of pipes
	High circuit pressure losses (operation with bypass open)	Use shorter or larger diameter pipes
	Blocked bypass valve	Dismantle the valve, clean and/or replace it
	Air entering the pump or suction pipe	Check the seal of connections
	Constriction in suction pipe	Use a pipe suitable for working in negative pressure
	Low rotation speed	Check the voltage at the pump, adjust the voltage and/or use cables of larger section
	The suction pipe rests on the bottom of the tank	Lift the pipe
Pump very noisy	Presence of cavitation	Decrease the negative pressure in suction
	Irregular operation of bypass	Dispense until venting the air in the circuit
	Air in the diesel oil	Check the suction connections
Leaks from pump body	Damaged seal	Check and if necessary replace the mechanical seal

6.3 LITRE-COUNTER CT-80 MAINTENANCE

Correct installation and use make routine maintenance unnecessary.

Whenever filtering upstream of the litre-counter is insufficient, the measuring chamber may become clogged or worn, to the detriment of accuracy. In case of this problem, disassemble the measuring chamber (to be carried out by a qualified technician) after making sure that all the liquid has come out of the litre-counter and connected pipes. In case of removal and opening of the litre-counter, when reassembling it make sure the cam of the bracket kit with gears and cam (pos. 12) does not clash with the pin of the volumetric chamber unit (pos. 26).

After cleaning and possible replacement of parts, reset the litre-counter.

Litre-counter disassembly operations must be carried out after removing it from the system.

PROBLEMS CAUSES CURES

Unsatisfactory accuracy	Incorrect setting	Repeat setting
	Measuring chamber dirty/clogged	Clean the measuring chamber
	Air in the fluid	Identify and eliminate leaks in suction lines or add a foot valve
Low delivery	Measuring chamber dirty/clogged	Clean the measuring chamber
	Filter clogged / dirty	Clean the filter

6.4 GUN MAINTENANCE

The gun does not require any maintenance.
It is advisable to periodically check the filter and if necessary clean it every 1000 liters transferred.

The possible causes of malfunction are mainly due to three factors:

⇒ Gun dirty in the hole inside the nozzle at the end of the gun.

⇒ Pressure below 0.5 bar in the liquid to be transferred (e.g. transfer of liquids by gravity).

⇒ Flowrate too high (max 60 l/min).

7 DISPOSAL

In case of demolition, entrust the various parts of the KIT to firms specialised in the disposal and recycling of industrial waste.

Refer to the local regulations for their correct disposal.

The metal parts, also painted, can normally be recovered by specialised firms in the scrap metal sector.

Other parts, such as pipes, rubber seals and plastic parts should be entrusted to firms specialised in the specific disposal sector.

7.1 DISPOSAL FOR THE ELECTRIC PUMP

the producer of the electric power pump "PIUSI" code reg. AEE IT 08020000000721
the producer complies with a collective system for disposal called "Consorzio REMEDIA" with information which can be consulted on the web site: www.consorzioremedia.it .

In case of machine maintenance or demolition, do not disperse pollutant parts in the environment.