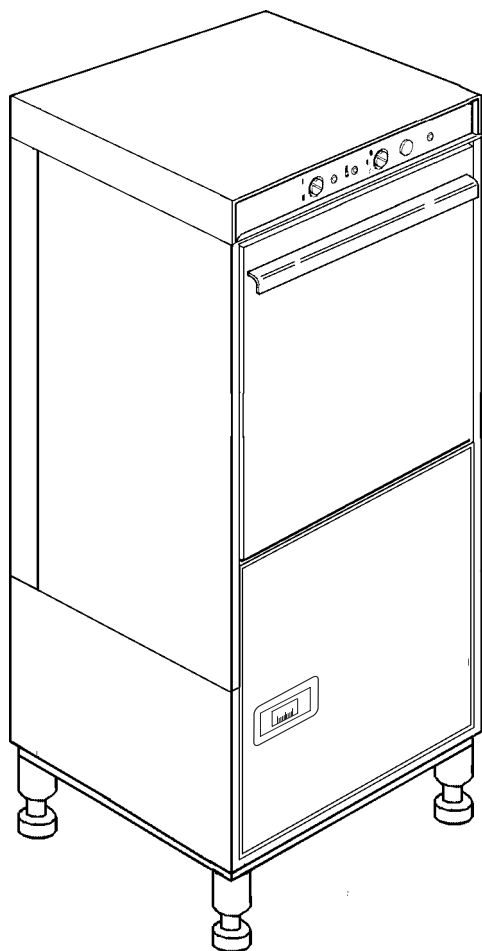


HOONVED®



C 90

LO 50

Istruzioni per l'uso e la manutenzione
Instructions for use and maintenance
Mode d'emploi et entretien
Gebrauchs - und Wartungsanweisungen
Instrucciones para el uso y el mantenimiento



Ed. 10/2003

**DICHIARAZIONE DI CONFORMITA' - DECLARATION OF CONFORMITY
DECLARATION DE CONFORMITE - KONFORMITÄTS ERKLÄRUNG**

Noi - The undersigned- Nous soussignés - Die Unterzeichnete Fa:

HOONVED S.r.L.

via Ugo Foscolo, 1 - 21040 Venegono Superiore - (VA - ITALIA)

**dichiariamo sotto la nostra esclusiva responsabilità che il prodotto
hereby declares under full responsibility that the following product
attestons sous notre entière responsabilité que le produit suivant
erklärt unter eigener Verantwortung, dass folgende Produkte**

LVAOGGETTI - LAVE OBJETS - UTENSIL WASHERS - SPÜLMASCHINE

(descrizione del prodotto - product description - description du produit - Produktbeschreibung)

C 90 -LO 50

(tipo modello - type model - type modèle - Typ Modell)

**al quale questa dichiarazione si riferisce è conforme alle seguenti norme:
to which this declaration refers, is conform with the following standards:
auquel se référé cette déclaration, est conforme aux normes suivantes:
auf welche sich diese Erklärung bezieht, folgendem Standard entsprechen:**

EN 60335-1 (1988) + A2, A5, A6, A51, A52, A53, A54, A55.

Sicurezza degli apparecchi elettrici d'uso domestico e similare. Norme generali.
Safety of household and similar electrical appliances - General requirements.

EN 60335-2-58 (1993)

Sicurezza degli apparecchi elettrici d'uso domestico e similare. Parte 2°: Norme particolari lavastoviglie per uso collettivo.
Safety of machine - Basic concept general for design - Technical principles and specifications.

EN 55014 (1993)

Limiti e metodi di misura caratteristiche di radiodisturbo degli apparecchi elettrodom. , utensili portatili ed apparecchi elettrici simili.
Limits and methods of measurement of radio disturbance characteristic of motor-operated and thermal appliances for household and similar purposes.

EN 55104 (1995)

Requisiti di immunità per apparecchi elettrodomestici, utensili e degli apparecchi elettrici similari.
Immunity requirement for household appliances, tools and similar apparatus and purposes.

**in base a quanto prescritto dalle Direttive:
on the basis of what is foreseen by the Directives:
selon ce qui est prévu par les Directives:
aufgrund der vorgesehenen Richtlinien:**

73/23/CEE, 93/68/CEE (LVD)

**89/392/CEE, 92/368/CEE, 93/68/CEE (MACHINERY)
89/336/CEE, 92/31/CEE, 93/68/CEE (EMC)**

**Decliniamo ogni responsabilità per sinistri a persone o a cose derivanti da manomissioni da parte di terzi o da carenze di manutenzione o riparazione.
We decline any responsibility for injuries or damage derived from machine misuse, abuse by others or improper machine maintenance or repairs.
Nous déclinons toute responsabilité pour sinistres à personnes ou à objet qui derivent de l'invention de la part de tiers non spécialistes ou de carences de manutention ou réparation.
Wir lehnen jegliche Verantwortung für Schäden an Personen oder Dingen ab, die auf fehlerhaftes Eingreifen Dritter oder auf mangelhafte Wartung oder Reparatur zurückzuführen sind.**

2003

- Data emissione -
- date of issue -
- Date d' emission -
- Ausgabedatum -

Consigliere D' Amministrazione

Joakim Granfors

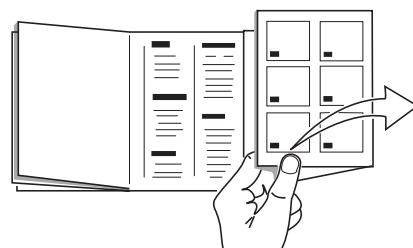


**LAVASTOVIGLIE
DISHWASHING MACHINE
LAVE-VAISSELLE
GESCHIRRSPÜLER
LAVAVAJILLAS**

Mod.

C 90

LO 50



Le figure relative alle istruzioni sono riportate sulle ultime pagine.

The illustrations concerning these instructions are on the inside of the back cover

Les figures concernant les notices d'utilisation sont groupées sur les dernières pages.

Die Bilder zur Gebrauchsanweisung sind auf den letzten Seiten des Umschlages.

Las figuras correspondientes a las instrucciones se encuentran en las últimas paginas.

ITA

AVVERTENZA

Prima di procedere all'installazione, alla messa in funzione, alla regolazione e alle operazioni di manutenzione della lavastoviglie Mod. C 90-LO 50, leggere attentamente il presente manuale.

In caso di guasto o cattivo funzionamento della macchina rivolgersi esclusivamente ad un centro tecnico autorizzato o direttamente alla ditta HOONVED.

GBR

IMPORTANT

Become thoroughly familiar with the contents of thi manual before installing, setting up, adjusting and servicing dishwasher machine Mod. C 90-LO 50 .

Only contact an authorized technical center or HOONVED in the event of breakdowns or faulty machine operation.

FRA

IMPORTANT

Lisez attentivement cette notice avant la mise en place, la mise en service, le réglage et les opérations d'entretien de la machine lave-vaisselle Mod. C 90 .

En cas de panne franche ou de dysfonctionnement de la machine, adressez-vous exclusivement à un service technique agréé ou directement à la société HOONVED.

DEU

HINWEIS

Bevor man den Geschirrspüler Mod. C 90-LO 50 installiert, in Betrieb nimmt, einstellt oder Wartungsarbeiten daran vornimmt, ist dieses Handbuch aufmerksam durchzulesen.

Bei Störungen oder Fehlbetrieb der Maschine wenden Sie sich bitte ausschließlich an einen autorisierte Servicestelle oder direkt an HOONVED.

SPA

ATENCION

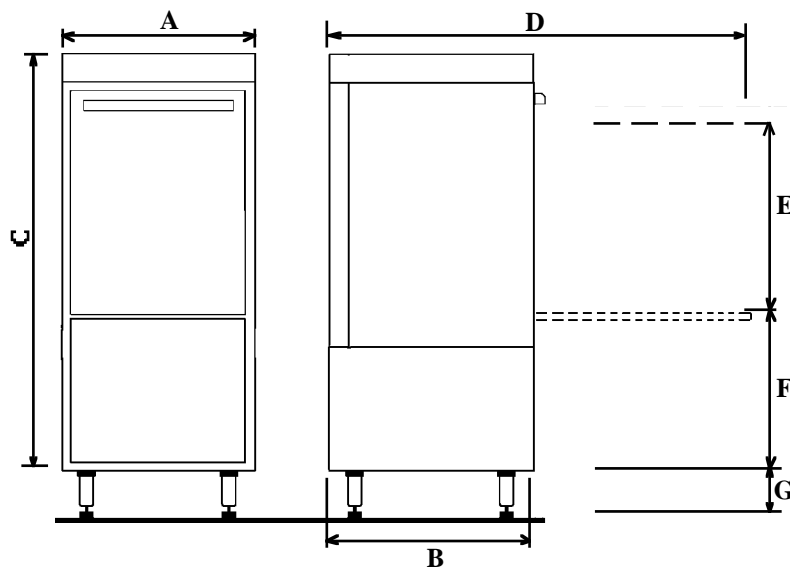
Antes de realizar la instalación, la puesta en marcha, los ajustes y las operaciones de mantenimiento de la máquina lavavasos Mod. C 90-LO 50, lea atentamente este manual.

En caso de avería o de mal funcionamiento se dirija exclusivamente a un centro técnico autorizado o directamente a la empresa HOONVED.

INDICE-INDEX

Avvertenza	pag. 4
Important	
Important	
Hinweis	
Atencion	
Dimensioni d'ingombro	pag. 6
Overall dimensions	
Dimensions d'encombrement	
Platzbedarfmasse	
Dimensiones	
Dati tecnici	pag. 6
Technical data	
Données techniques	
Technischen daten	
Nociones praticas	
Descrizione comandi	pag. 8
Decription of the controls	
Description des commandes	
Beschreibung der Bedienvorrichtungen	
Descripcion de los mandos	
ITALIANO	Pagina10
ENGLISH	Page 16
FRANÇAIS	Page 21
DEUTSCH	Seite 26
ESPAÑOL	Página 32

**DIMENSIONI DI INGOMBRO - OVERALL DIMENSIONS - DIMENSIONS D'ENCOMBREMENT
PLATZBEDARFSMASSE - DIMENSIÓNES**



Modello <i>Model</i>	A	B	C	D	E	F	G
C 90 - LO 50	620	735	1230	1325	500	540	145 ÷ 180

**DATI TECNICI - TECHNICAL DATA - DONNÉE TECHNIQUES
TECHNISCHE DATEN - DATOS TECNICOS**

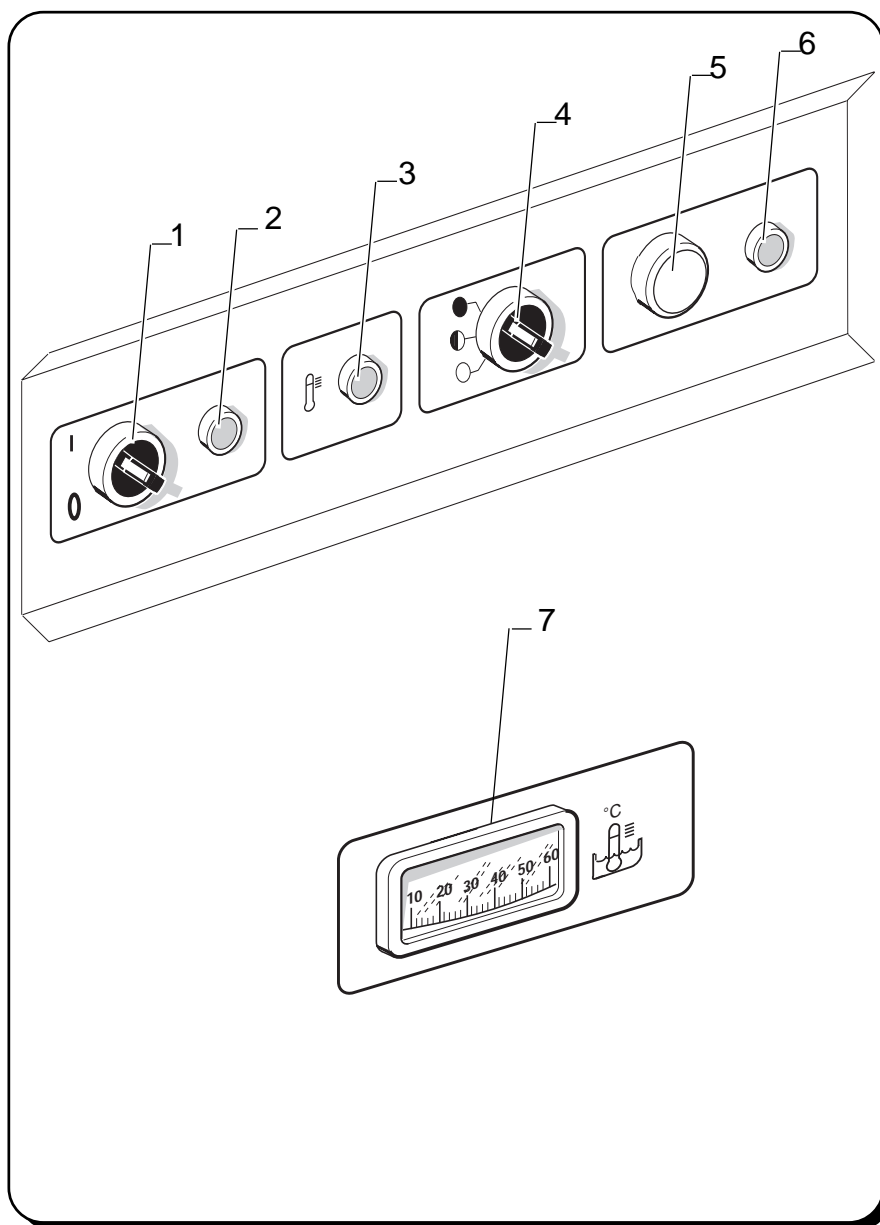
	Produzione cestelli/ora Baskets output p/h Débit paniers/h Produktion korbe/stunde Producción canastos/hora	Allacciamento elettrico <i>Electric supply</i> Raccordement électrique <i>Stromversorgung</i> <i>Alimentación electrica</i>	Potenza totale <i>Total power</i> Puissance totale <i>Gesamtleistung</i> <i>Enlace total</i>	Resistenza boiler <i>Boiler heating element</i> Résistance chauffe-eau <i>Boilerheizwiderstand</i> <i>Resistencia hervidor</i>	Resistenza vasca <i>Tank heating element</i> Résistance cuve <i>Wannenheizwiderstand</i> <i>Resistencia tina</i>	Pompa lavaggio <i>Wash pump</i> Pompe de lavage <i>Spülpumpe</i> <i>Bomba de lavado</i>
C 90-LO 50	30/15/10	400V3 N~50Hz 230V3~50 Hz 230/240V1~50 Hz 440V3 ~60Hz	7620 W 11620 W	6000 W 10000 W	3000 W 3000W (60Hz)	1620 W (2,2 Hp) 1620 W(60Hz)

	Capacità vasca <i>Tank capacity</i> Capacité de la cuve <i>Wannenkapazität</i> <i>Capacidad tina</i>	Capacità boiler <i>Boiler capacity</i> Capacité du chauffe-eau <i>Boilerkapazität</i> <i>Capacidad hervidor</i>	Alimentazione idrica <i>Mains supply of water</i> Alimentation en eau <i>Wasserverschluss</i> <i>Alimentación idrica</i>	Consumo acqua per ciclo <i>Water consumption cycle</i> Consom; d'eau par cycle <i>Wasserverbr; pro Zyklus</i> <i>Cons. agua por ciclo</i>	Durata ciclo <i>Cycle length</i> Durée du cycle <i>Zyklusdauer</i> <i>Duración del ciclo</i>	Dimensioni cestello <i>Basket dimensions</i> Dimensions du panier <i>Korbgröße</i> <i>Dimensiones cubeta</i>
C 90-LO 50	35 l	8,5 l	2 ÷ 4 bar. Ø 3/4" G.	4 l	120/240/360 s	511 x 616 mm

C 90-LO 50

	Raccordo di scarico <i>Drain pipe fitting</i> Raccord de vidange <i>Abwasseranschluß</i> <i>Enlace de descarga</i>	Peso netto <i>Net weight</i> Poids net <i>Reingewicht</i> <i>Peso netto</i>	Peso macchina imballata <i>Gross weight</i> Poids de la machine emballée <i>Gewicht der verpackten Maschine</i> <i>Peso de la maquina embalada</i>	Temperatura di funzionamento e stoccaggio <i>Environmental temperature min/max.</i> Température de fonctionnement et stockage <i>Betriebs- und Lagertemperatur</i> <i>Temperatura de funcionamiento</i>	Umidità relativa <i>Environmental humidity min/max</i> Humidité relative <i>Relative Feuchte</i> <i>Humedad relativa</i>	Temperatura lavaggio <i>Wash temperature</i> Température de lavage <i>Spültemperatur</i> <i>Temperatura de lavado</i>
C 90-LO 50	Ø 31 mm	110 kg	135 kg	5° ÷ 40° C	20 ÷ 90 %	50° ÷ 60° C
	Temperatura risciacquo <i>Rinse temperature</i> Température de rinçage <i>Klarspültemperatur</i> <i>Temperatura de aclarado</i>	Livello pressione acustica <i>Noise level</i> Niveau de pression sonore <i>Schalldruckpegel</i> <i>Nivel de presion acustica</i>				
C 90-LO 50	80° ÷ 90° C	> 70 dB (A)				

**CRUSCOTTO COMANDI - CONTROL PANEL - PANNEAU DES COMMANDES
SCHALTBLLENDE - PANEL DE MANDOS - PAINEL DE CONTROLE**



LEGENDA

- 1) Selettore linea
- 2) Lampada linea
- 3) Lampada temperatura raggiunta
- 4) Selettore tempi lavaggio
- 5) Pulsante START/SCARICO
- 6) Lampada ciclo
- 7) Termometro vasca

KEY

- 1) Line selector
- 2) Mains warning light
- 3) Temperature reached warning light
- 4) Washing time selector
- 5) START/DRAIN button
- 6) Cycle light
- 7) Tank thermometer

LEGENDE

- 1) Sélecteur de ligne
- 2) Lampe de mise sous tension
- 3) Lampe de température
- 4) Sélecteur des temps de lavage
- 5) Bouton de marche/Vidange
- 6) Lampe de cycle
- 7) Thermomètre cuve

ZEICHENERKLÄRUNG

- 1) Wahlschalter Leitung
- 2) Kontrolleuchte Netz ein
- 3) Kontrolleuchte Temperatur erreicht
- 4) Wahlschalter Spülzeiten
- 5) START-taste/Entleeren
- 6) Kontrolleuchte Zyklus
- 7) Thermometer Behälter

LEYENDA

- 1) Selector línea
- 2) Piloto línea
- 3) Piloto temperatura alcanzada
- 4) Selector tiempos de lavado
- 5) Tecla START/DESAGÜE
- 6) Piloto ciclo
- 7) Termómetro tanque

ITA

DESCRIZIONE COMANDI

- **Selettore di linea (1)**
Ruotato in posizione "I" ON abilita il funzionamento normale della macchina; ruotato in posizione "0" OFF disabilita tutte le funzioni della macchina.
Condizione di scarico in automatico (optional) (solo su macchine con pompa di scarico)
Entra in funzione durante l'immersione dell'acqua di risciacquo.
Condizione di scarico in manuale (optional)
Vedere pagina 13 punto 3.3.e.
- **Lampada linea (2)**
Illuminata indica linea inserita.
- **Lampada Temperatura raggiunta (3)**
Lampeggia mentre è attivo il riscaldamento dell'acqua della vasca, si illumina fissa al raggiungimento della stessa.
- **Selettore tempi lavaggio (4)**
Ruotato nelle varie posizioni imposta il tempo di lavaggio programmato.
- **Pulsante START (5)**
Premuto, avvia il ciclo di lavaggio; la fine del ciclo è indicata dallo spegnimento della lampada (6)
- **Lampada ciclo (6)**
Illuminata indica il funzionamento del ciclo.
- **Termometro vasca (7)**
Indica la temperatura dell'acqua contenuta nella vasca di lavaggio.

GBR

DESCRIPTION OF CONTROLS

- **Line selector (1)**
Turned on position "I" ON, this enables normal machine operation; turned to position "0" OFF, it disables all machine functions.
- **Drain condition in automatic (optional)**
(only on machines with drain pump)
It works only during rinsing water inlet.
- **Drain condition in manual (optional)**
See page 19 point 3.3.e.
- **Mains warning light (2)**
When on, indicates that the power source is connected.
- **"Temperature reached" warning light (3)**
Flashed whilst the water in the tub is being heated. Remains permanently on once the set temperature has been reached.
- **Washing time selector (4)**
Turned to the various positions, this is used to set the programmed washing time.
- **Start /Drain button (5)**
When pressed, this activates the normal washing cycle. The light (6) goes out once the cycle has terminated.
- **Cycle light (6)**
When on, indicates that the cycle is operating.
- **Tank thermometer (7)**
Indicated the temperature of the water in the washing tank.

DEU

BESCHREIBUNG DER BEDIENVORRICHTUNGEN

- **Wahlschalter Leitung (1)**
Auf die Position "I" ON gedreht, wird der normale Maschinenbetrieb freigegeben. Wenn der Wahlschalter auf die Stellung "0" OFF gedreht wird, sind alle Funktionen der Maschine gesperrt.
- **Automatische Ablauf (freigestellt)**
(nur auf Maschine mit Ablaufpumpe)
Es läuft während Nachspülwasser-einlaß.
- **Manuel Ablauf (freigestellt)**
Sehen Seite 31 punkt 3.3.e.
- **Kontrolleuchte Netz ein (2)**
Leuchtet auf, wenn die Maschine ans Netz angeschlossen ist.
- **Kontrolleuchte Temperatur erreicht (3)**
Blinkt auf, während das Wasser im Behälter aufgeheizt wird, leuchtet mit Konstantlicht, wenn die vorgegebene Temperatur erreicht ist.
- **Wahlschalter Spülzeiten (4)**
Wenn man diesen Wahlschalter auf die verschiedenen Stellungen dreht, erhält man die programmierte Spülzeit.
- **START-taste/Entleeren (5)**
Zyklus wird durch das Verlöschen der Kontrolleuchte (6) gemeldet.
- **Kontrolleuchte Zyklus (6)**
Leuchtet auf, um anzuzeigen, daß der Zyklus abläuft.
- **Thermometer Behälter (7)**
Zeigt die Temperatur des Wassers an, das im Spülbehälter vorhanden ist.

FRA

DESCRIPTION DES COMMANDES

- **Sélecteur de ligne (1)**
Tourné sur la position "I" ON il valide le fonctionnement normal de la machine; tourné sur la position "0" OFF il exclut toutes les fonctions de la machine.
- **Condition de vidange en automatique (optional)**
(seulement sur machines avec pompe de vidange)
Il entre en fonction pendant l'introduction de l'eau de vidange.
- **Condition de vidange en manuel (optional)**
Voir page 25 point 3.3.e.
- **Lampe de mise sous tension (2)**
Indique la mise sous tension de la machine.
- **Lampe de température (3)**
Clignotante pendant le chauffage de l'eau dans la cuve. Allumée de manière fixe quand la température programmée est obtenue.
- **Sélecteur des temps de lavage (4)**
Tourné dans les différentes positions, il détermine la durée de lavage programmée.
- **Bouton de marche/Vidange (5)**
Enfoncé, il met en marche le cycle normal de lavage; la fin du cycle est indiquée par le voyant (6) qui s'éteint.
- **Lampe de cycle (6)**
Elle s'allume pour indiquer le cycle en cours d'exécution.
- **Thermomètre cuve (7)**
Indique la température de l'eau contenue dans la cuve de lavage.

ESP

DESCRIPCION DE LOS MANDOS

- **Selector de línea (1)**
Si se gira hacia la posición "I" ON se habilita el funcionamiento normal de la máquina; por el contrario, si se gira hacia la posición "0" OFF se deshabilitan todas las funciones de la máquina.
- **Condición de descarga en automático (optional)**
(solo en las máquinas con la bomba descarga)
Funciona durante la introducción de agua de aclarado.
- **Condición de descarga en manual (optional)**
Ver página 37 punto 3.3.e.
- **Piloto línea (2)**
Iluminada indica línea conectada.
- **Piloto Temperatura alcanzada (3)**
Centellea mientras que se está calentando el agua en la pila y la luz permanece fija cuando alcanza la temperatura.
- **Selector tiempos de lavado (4)**
Si se gira en las distintas posiciones, se programa el tiempo de lavado deseado.
- **Tecla START/DESAGÜE (5)**
Presionada pone en marcha el ciclo normal de lavado; cuando el indicador (6) se apague, significará que el ciclo ha finalizado.
- **Piloto ciclo (6)**
Encendida, indica el funcionamiento del ciclo.
- **Termómetro tanque (7)**
Indica la temperatura del agua que se halla en la pila de lavado.

PARTICULAR RECOMMENDATIONS FOR THE OPERATOR

- Do not operate the machine without having become fully familiar with the contents of this manual and without having acquired a comprehensive knowledge of the specific techniques and machine controls.
- Check that the area in which the machine is to be installed is compatible with the dimensions of the machine itself before installing this latter.
- Only use lifting and handling means as are adequate to the weight of the machine when this must be installed or removed either completely or in part.
- Never allow unauthorized or unqualified personnel to start, adjust, operate or repair the machine. Always refer to this manual for the necessary operations.
- The mechanical parts and electrical/electronic components situated inside the machine are protected by entirely closed panels.
- **Always ensure that the main switch has been set to the "OFF" position** before cleaning and/or servicing the machine and before removing any guard. This will disconnect the power source during the operator's intervention.
- The electrical powering system must be equipped with an automatic release system prior to the main machine switch and with a suitable grounding system that complies with all the requisites established by industrial provisions for the prevention of accidents.
- Always disconnect the power source if work must be carried out on the main switch or in its vicinity.
- All inspections and maintenance operations requiring removal of the safety guards are carried out under the complete responsibility of the users. These operations should therefore only be carried out by specialized and authorized technical personnel.
- Check that none of the accident preventing safety devices (barriers, guards, casings, microswitches, etc.) have been tampered with and that they are all perfectly functional before operating. These devices should be repaired if this is not the case.
- **Never remove the safety devices.**
- To prevent personal risks, only use power tools that are correctly connected to the grounding tap and that conform to the national safety regulations.
- Never ever tamper with the electrical system or with any other mechanism.
- **Never ever use the hands** or unsuitable instruments to locate leaks from pipes. Air, fluids under pressure or irritants could cause serious damage to both persons and/or property.
- Never use the hands instead of adequate tools when operating the machine.
- Never use the hands or other objects to stop moving parts.
- **PAY THE UTMOST ATTENTION TO THE DATA PLATES AFFIXED TO THE MACHINE WHENEVER WORKING ON THIS OR ON THEIR NEAR VICINITY.**
- The user is obliged to keep all the data plates and stickers in a legible condition.
- It is essential for the user to replace all data plates and stickers as may have deteriorated for any reason or as are not clearly visible, ordering new ones from the Spares Service of **HOONVED**.
- Contact the person in charge of maintenance in the event of malfunctions or damage to the machine components without proceeding with further repairs.
- It is absolutely forbidden for anyone to use the machine for purposes other than those explicitly established and documented. The machine must always be used in the ways, times and places established by common sense, the laws in force in each nation, even when there are no specific provisions to govern the sector in the specific country of use.
- **HOONVED declines all responsibility for accidents or damage to either persons or property as may arise following failure to comply with either the relative safety provisions or the instructions herein.**
- **These instructions, together with the provisions governing machine installation and electrical connections form an integral part of the Accident Preventing Industrial regulations in force in each individual country.**
- **THESE SAFETY PROVISIONS INTEGRATE AND DO NOT SUBSTITUTE THE SAFETY PROVISIONS LOCALLY IN FORCE.**
- **NEVER ever make hurried or inaccurate repairs as could jeopardize the correct operation of the machine.**
- **ALWAYS ASK FOR HELP FROM SPECIALIZED PERSONNEL IN CASE OF DOUBT.**
- **ANY TAMPERING BY THE USER RELIEVES THE MANUFACTURER FROM ALL LIABILITY, THE USER BEING IN THIS CASE SOLELY RESPONSIBLE TOWARDS THE COMPETENT ACCIDENT PREVENTION AUTHORITIES.**

1.1 GENERAL DESCRIPTION

The dishwasher of the C 90/LO 50 give an excellent idea of the know-how achieved by Hoonved in the field of machines for catering sector.

1.2 TYPE OF USE AND IMPROPER USE

These machines have been designed and built to wash object in special baskets and using detergent and rinsing agent.

- Use of specific detergents and rinsing agents for industrial purposes normally available in the shops is permitted.



ATTENTION

Any improper use of the machine relieves the manufacturer from all and every responsibility for accidents or damage to persons and property, also voiding all conditions of guarantee.

1.3 TRANSPORT, SHIPMENT AND STORAGE (Fig. 2)

- The machine is normally shipped in a cardboard box closed by straps.
- When transporting the packed machine, use a lift truck or transpallet, positioning the box on the relative forks.



ATTENTION

The machine must be sheltered from the weather when shipped and stored.



ATTENTION

Before installing the machine, control the rotation way of the motor (Fig. A).

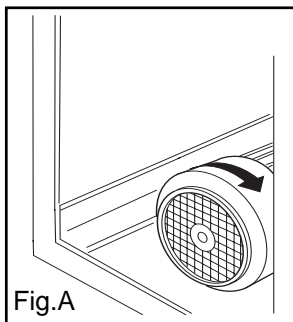


Fig.A

1.4 INSPECTIONS ON ARRIVAL

When the machine arrives, check that the packaging is in a perfect condition and that there is no visible damage. If everything is in order, remove the packaging (unless other instructions have been received from the manufacturer) and check that the machine is free from damage caused by transport. Now check whether there has been any damage to the

structure, crushing or breakages.

If damage or imperfections are discovered:

- 1 - Immediately notify the haulage contractor both by phone and in writing by registered letter with return receipt attached;
- 2 - Inform the manufacturer by registered letter (with return receipt attached).



IMPORTANT

Notification of damage or faults must be immediate, in any case **within 3 days** from the date on which the machine is received.

1.5 UNPACKING (Figs 2-3-)

Proceed in the following way in order to remove the packing:

1. Cut the straps (7) that hold the cardboard in place.
2. Remove the box (8) by lifting it upwards.
3. Remove the protective film from the machine.
4. Remove the machine from the base by lifting it from the lower part of the casing.
5. All packing must be collected and not left within children's reach since it could become a source of danger. The packing can be disposed of in the same way as solid urban waste.

Lift the machine by raising the lower part of the casing using a lift truck or transpallet.

1.6 MACHINE IDENTIFICATION (Fig. 4)

- The serial number and machine data are stamped on the data plate (9) affixed to the rear part of the machine itself.



IMPORTANT

Always state the model and serial number of the machine when requesting technical assistance or ordering spare parts.

1.7 DESCRIPTION OF THE SAFETY DEVICES

- Models **C 90/LO 50** are equipped with a safety microswitch that blocks the washing pump if the tub access door is accidentally opened, and of other electronic safety devices.
- The electrical parts are enclosed by panels locked by screws.
- The machine is fitted with an equipotential ground conductor (10 Fig. 6).
- Safety overflow to prevent water from spilling.

1.8 REFERENCE STANDARD

- The machine and its safety devices has been built in compliance with the following standards:
- Essential safety requisites pursuant to Directive 73/23 EEC Annex 1 modified by Directive 93/68 EEC, Directive 89/336 CEE, 89/392/CEE, 92/368/CEE,93/68/CEE.

Part 2: For the qualified technician

2.1 INSTALLATION (Fig. 5)

- After having removed the packing, check that the machine is in a perfect condition and that all the parts have been included.
- Position the machine in the required setting and level it by means of the feet (11).

2.1.a Drain pipe connection (Fig. 5)

- Connect one end of the drain pipe to the overflow (12) and the other to an already prepared drain trap.

IMPORTANT

It is essential to ensure that the drain pipe runs along the floor and that it is not throttled in any part.

2.1.b Connection to the water main (Figs. 5-6)

- Connect one end of the supplied inlet pipe (13) to the solenoid valve (14) and the other end (13) to a 3/4" G threaded cock, installing the filter (15 Fig. 6) in between.

ATTENTION

It is essential to connect the cold water delivery pipe to a throttle cock in order to separate the water main from the machine itself. Also check that there are no sharp bends.

If there is sand in the water main, it will be necessary to install a filter between the water main and the machine. If the water main is without, it is advisable to install a decalcifier prior to the machine with a setting of min. 4 and max. 8 French degrees.

The manufacturer declines all responsibility for damage to the machines caused by failure to comply with the above listed provisions.

2.1.c Electrical connection (Fig. 5-6)

DANGER

- **Before connecting to the electricity main, always check that the data pertaining to the power source correspond to those indicated on the identification plate (9 Fig. 4) and that the main electric power switch installed prior to the machine is disconnected "0" OFF.**
- **An appropriately sized omnipolar circuit-breaker with a minimum 3 mm gap between its contacts must be installed between the power supply main and the machine.**
- **The manufacturer declines all responsibility for accidents or damage to persons or property caused by failure to comply with the above listed provisions.**
- Connect the electrical power cable (16) to the main switch installed prior to the machine.
- Connect the equipotential ground conductor to the terminal (10).

Part 3: For the technician and operator

3.1 DETERGENT DISPENSER (Optional) (Fig. 7)

The machine is equipped with an automatic detergent dispenser.

- Insert the red supply tube (17) into the cannister (18).

ATTENTION

Always wash the hands under running water if they come into contact with detergent, or comply with the specific indications pertaining to the utilized type of detergent.

- Proceed with a few no-load cycles until the intake and delivery tubes have filled.

To adjust the dispenser, refer to the relative enclosed manual and to the utilized type of detergent.

3.2 FILLING THE RINSING AGENT DISPENSER (Fig. 7)

- Insert the transparent tube (19) into the cannister (20) containing rinsing agent. (Refer to the specific instructions given with the rinsing agent itself).
- Start the machine as described in paragraph 3.3. The dispenser will suck about 3 cm of liquid from the cannister.
- Fill during the cycle by opening (slightly) and closing the door until the tube has completely filled.

3.2.a Adjusting the dose (Fig. 7)

- Start the machine as described in paragraph 3.3 and hold a glass up to the light at the end of the cycle.
- The drops of water on the glass will indicate insufficient dosage while, the streaking or spotting will indicate, instead, an excessive dosage.
- Regulate by means of the plug (21), turning clockwise to decrease the quantity or anticlockwise to increase it.

IMPORTANT

These data are indicative and not binding since they may vary according to the hardness of the water or the utilized type of detergent and rinsing agent.

ATTENTION

If the utilized product (detergent or rinsing agent) is changed, it is advisable to flush out the dosing system with water and to then proceed by filling the dispensers.

3.3 PREPARING THE MACHINE AND THE WASHING OPERATIONS

3.3.a Preparing the machine (Fig. 8)

1. Turn on the main power switch prior to the machine.
2. Open the water supply cock.
3. Check that the cannister of detergent (Optional) and rinsing agent contain sufficient product for daily needs.

4. Turn the mains selector (1) and the lamp (2) lights. The washing tub will immediately begin to fill. Once the correct level has been reached, the water will automatically begin to heat. This is indicated by a flashing light (3). Wait until the preset temperature has been reached and the light (3) becomes fixed. The machine will be ready to start the washing cycle when the temperature in the tank (indicated by thermometer 7 Fig. 1 on the panel) reaches at least 50°C.
5. Open the door and pour the quantity of detergent indicated by the manufacturer directly into the tub. This operation need not be carried out when the machine is equipped with the optional dispenser.
6. Choose the cycle length by means of the selector (4).

3.3.b Washing operations (Fig 8)

1. Load the dirty crockery into the basket (as indicated in Fig. 10).
2. Press the START button (5), and the washing and rinsing cycle will automatically begin and the warning light (6) will come on.
3. The light (6) will go out to indicate that the cycle has terminated. Now open the door and remove the basket.
4. Add a half of coffee cup of detergent after every 5/6 washes. This operation need not be carried out if the machine is equipped with the optional dispenser. The doses are indicative and not binding since they vary according to the hardness of the water and utilized type of detergent.

3.3.c Changing the water (Fig. 9)

This operation must be carried out after every 10 cycles or so, according to the amount of accumulated dirt.

1. Remove the tub filters (22).
2. Switch off the machine as indicated in paragraph 3.3.d, then lift the overflow (23) and allow the tub to completely drain.
3. Refit the overflow (23) and the filters (22) in its housing and repeat the machine preparation operations as indicated in paragraph 3.3.a.

3.3.d Switch-off (Fig. 9)

At the end of the work day, set the line switch (1) to position "0" OFF, disconnect the main switch installed prior to the machine and turn off the water delivery cock.



ATTENTION

Disconnect the main circuit-breaker prior to the machine and turn off the water delivery cocks if the dishwasher is faulty or operates badly.

Only allow the manufacturer's authorized after-sales service center to make repairs.

3.3.e Manual drain timing (Fig. 1) **(on machine with drain pump only)**

To manually empty the water from the tub, switch off the line button (6) Fig. 1 and push the START/DRAIN button (1) for a determined time.

Repeat the doove mentioned operations till when the tank is completely empty.

3.3.f Alarms (Fig. 8)

The machine will set to the alarm status in the following cases:

- **Tub refilling timeout.**
If tank filling fails to terminate within 20 minutes, the machine will set to the alarm status. This is indicated by fast flashing warning light (6). Switch off the machine by turning selector (1) to 0 "OFF" to reset the alarm.
- **No water in the tub.**
When the safety level probe detects insufficient water, the function in progress will abort, the tub and boiler heating function will be inhibited and the machine will set to the alarm status. This is indicated by fast flashing warning light (6). Switch off the machine by turning selector (1) to 0 "OFF" to reset the alarm.
- **Overheating.**
If the temperature of the water in the boiler or tub exceeds 98°C, the machine will set to the alarm status, inhibiting all functions and any cycle in progress. The alarm status is indicated by fast flashing warning light (3). The alarm automatically disactivates when the temperature drops below 90°C. Failing this, switch off the machine by turning selector (1) to 0 "OFF" to reset.
- **Heating timeout.**
The machine will set to the alarm status if, after 20 minutes continuous boiler heating, the temperature remains less than 45°C. This is indicated by fast flashing warning light (3). Switch off the machine by turning selector (1) to 0 "OFF" to reset.



ATTENTION

Contact the after-sales service center if the alarm continuously activates.

4. CLEANING (Fig. 9)

4.1 General information

Strict compliance with the maintenance instructions in this section will keep your machine in a good working condition and will notably reduce the need for repairs.



If any machine component becomes faulty, **FIRST CHECK** that all the instructions given in the previous paragraphs have been complied with during use.

Repairs must be carried out immediately, as soon as the fault occurs. This will prevent the trouble from becoming worse and damaging other parts.

4.2 Daily cleaning (Fig. 9)



Daily operations to carry out when work has ended, with the machine off, the main circuit-breaker disconnected, the water cocks off and the washing tub empty.

1. Remove the filters (22) on top of the tube.
2. Lift the overflow pipe (23) to completely drain the water from the tub.
3. Thoroughly clean the inside parts of the machine.
4. Remove the pump safety filter (24).
5. Wash the filters under running water and fit them correctly back in their housings.



Never ever clean the outside parts of the machine with jets of water.

Never use corrosive or acid cleaning products, wire wool or steel brushes since these could damage the machine.

5. PREVENTION MAINTENANCE (Fig. 9)



The preventive maintenance operations must be carried out with the machine off, the main circuit-breaker disconnected, the water delivery cocks off and the washing tub empty.

5.1 Checking and cleaning the spray arms and nozzles (Fig. 9)

Periodically check to make sure that the spray arm (25), the rinsing arm (26) and the relative nozzles are not clogged.

Cleaning the unit:

1. Unscrew the ring nut (27) and lift the spray arms (25) and (26).
2. Wash the washing and rinsing spray arms.
Clean the nozzles if they are clogged and then fit the parts exactly back in their original positions.
3. Remount all parts by complying with the above instructions in reverse.

6. DESCALING

Where hard water is present lime scale deposits will form in the machine and on dishes, which must, for reasons of hygiene, be removed by descaling.

Advice on operation procedures and frequency for this treatment are generally given by the detergent supplier, who can provide suitable products.

In order to avoid damaging the machine, do not exceed recommended doses, follow the detergent producer's directions scrupulously and, having finished operations, rinse thoroughly

7. TEMPORARY STOPPAGE

If the machine is to be left inactive for a period of some weeks, it is advisable beforehand to load the tank and run a few empty cycles with clean water then drain, so as to avoid the formation of unpleasant odours.

If necessary, repeat the process several times until the water is still clean after washing.

If the stoppage is to be very long, it is advisable to drain the water from the boiler and from the electric pump.

8. DEMOLITION and DISPOSAL.

When the machine is to be scrapped, drain the water from the tank and from the boiler, as indicated in the points above, and disconnect the machine from the water and electricity supply networks, then dispose of the components according to current regulations, respecting national and local ecological and environmental legislation, and taking care to separate the parts as follows:

- metallic parts: body work, surfaces, panels, filters;
- electrical parts: motors, remote switches, micro-switches, cabling;
- plastic parts: connectors, baskets;
- rubber parts: tubes, couplings

The producer declines all responsibility for any printing errors contained in this booklet.

The instructions, drawings, tables and everything else in this manual are of a confidential technical nature. For this reason, none of the information may be either completely or partially duplicated or disclosed to third parties without prior written authorization from HOONVED which is the sole proprietor and which reserves the right to make any modifications as may be considered necessary without advance warning.

TROUBLESHOOTING

PROBLEMS	CAUSES	SOLUTIONS
The machine fails to turn on.	Main switch disconnected.	Turn on the switch.
The machine does not fill with water.	Water cock shut. Dirty fill pipe filter. Rinsing nozzle clogged. Overflow pipe not well connected.	Turn on the clock. Detach the fill pipe (13 Fig. 6) and clean the filter (15). Unscrew and clean the nozzles (A Fig. 9) under running water. Check the right connection of the overflow pipe (23 Fig. 9)
Insufficient washing.	Wrong pump rotation direction. Clogged washing nozzles. Dirty washing filter. Clogged washing blade. No detergent. Machine not in temperature (Green light (3) Fig. 8)	Call the technician to reverse 2 of the 3 wires on the main switch. Clean the washing blade (25 Fig. 9). Clean the filters (22 e 24 Fig. 9). Remove and clean the blade (25 Fig. 9) Add detergent and fill the dispenser. Wait the green fixed light (3) Fig. 8.
Insufficient rinse.	Insufficient washing conditions. Clogged rinsing nozzles. Clogged boiler by limestone. Low main pressure (less than 2 bar. - 200 Kpa). Insufficient temperature. Bad location of the nozzles or damaged nozzles.	Check the correct washing phase. Unscrew and clean the nozzles (A Fig. 9) under running water. Call after-sales service. Wait pressure recovery or purchase a new pressure pump. Call after-sales service. Check the right location of the nozzles and replace damaged ones.



La ditta costruttrice si riserva il diritto di apportare modifiche che si renderanno utili ai propri prodotti senza comprometterne le caratteristiche essenziali.

The manufacturer reserves the right to modify its products, whenever necessary, without affecting their main features.

Le constructeur se réserve le droit de modifier ses produits sans en compromettre les caractéristiques essentielles.

Der Hersteller behält sich das Recht vor, seine Produkte abzuändern, falls es notwendig sei, ohne die haupteigenschaften des Gerät zu wechseln.

La Firma constructora se reserva el derecho de modificar sus productos sin comprometerne las características esenciales.

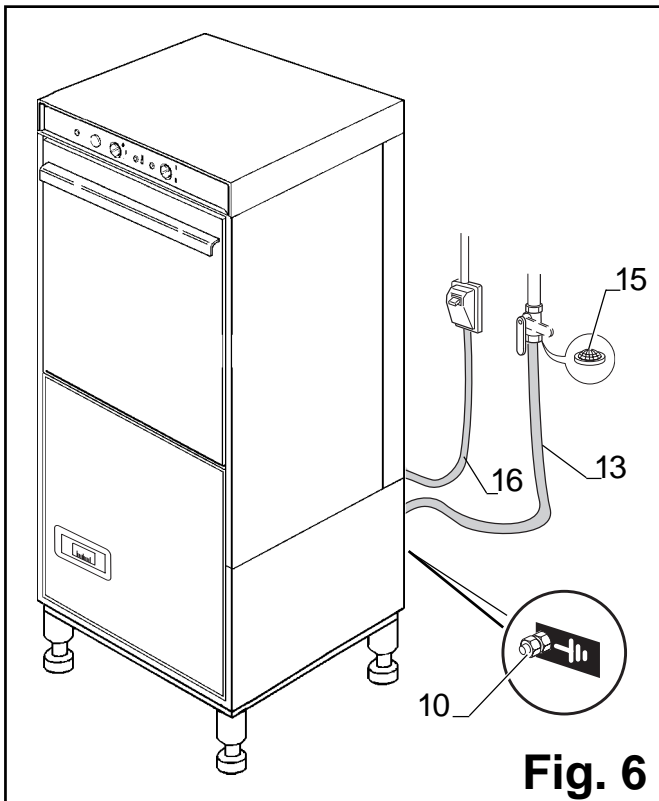


Fig. 6

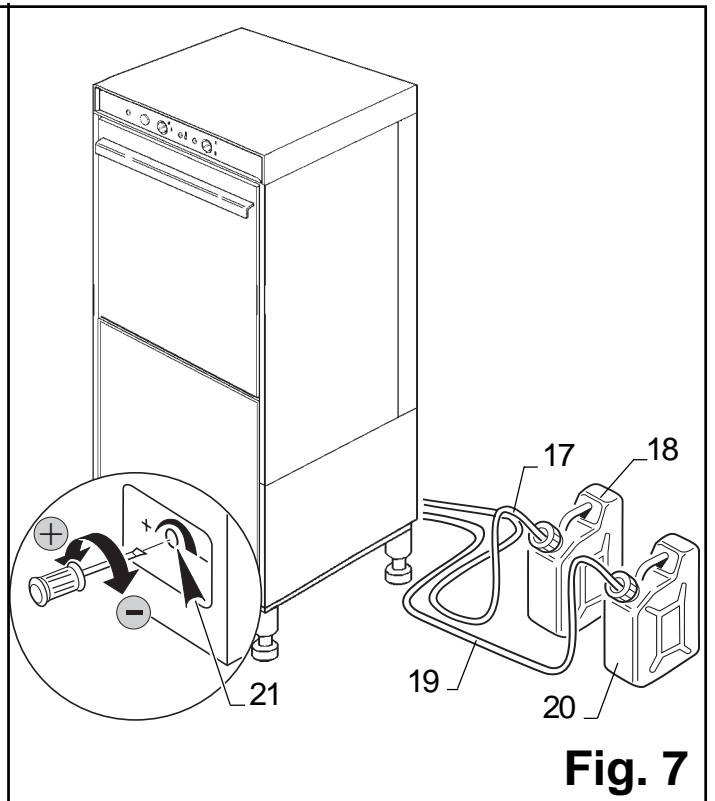


Fig. 7

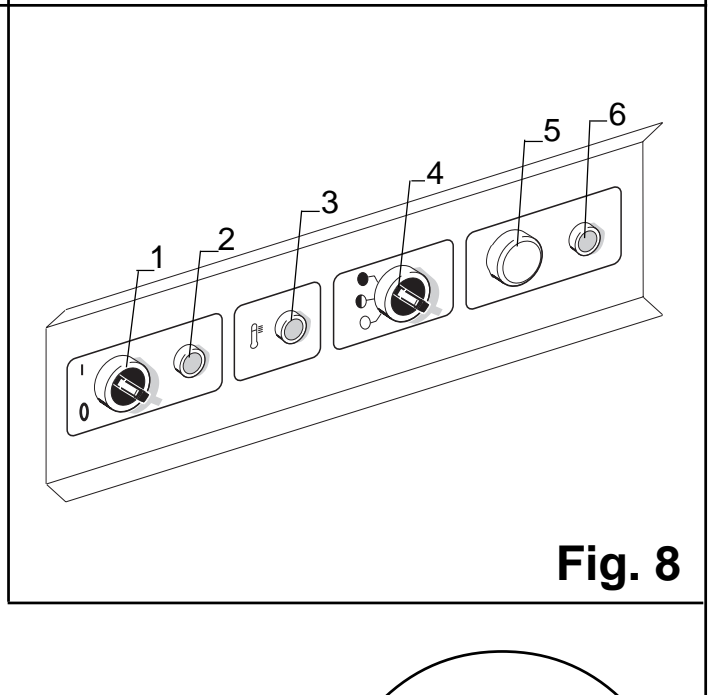
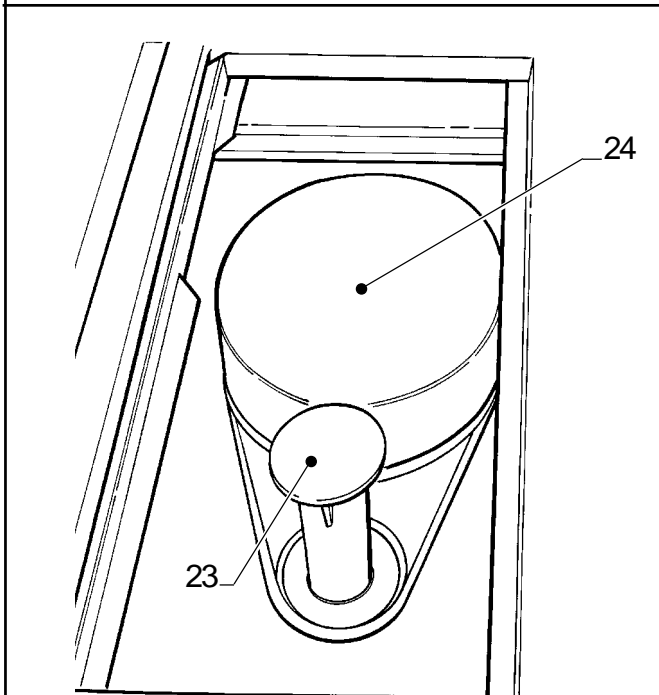


Fig. 8

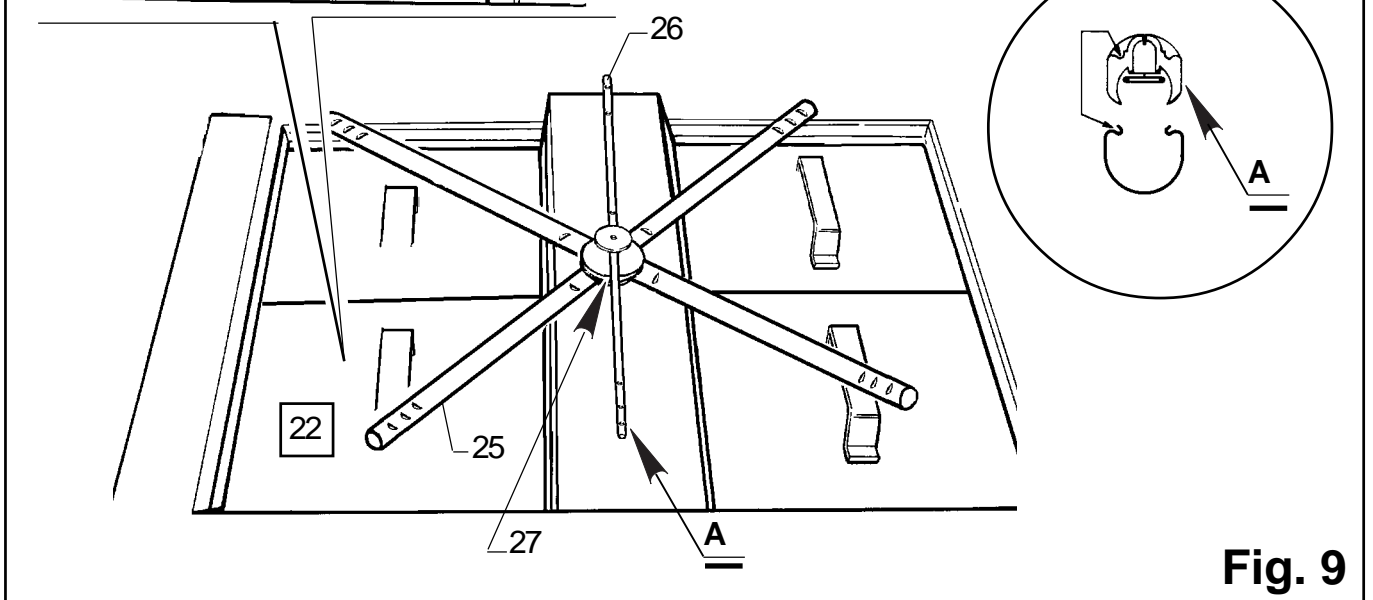
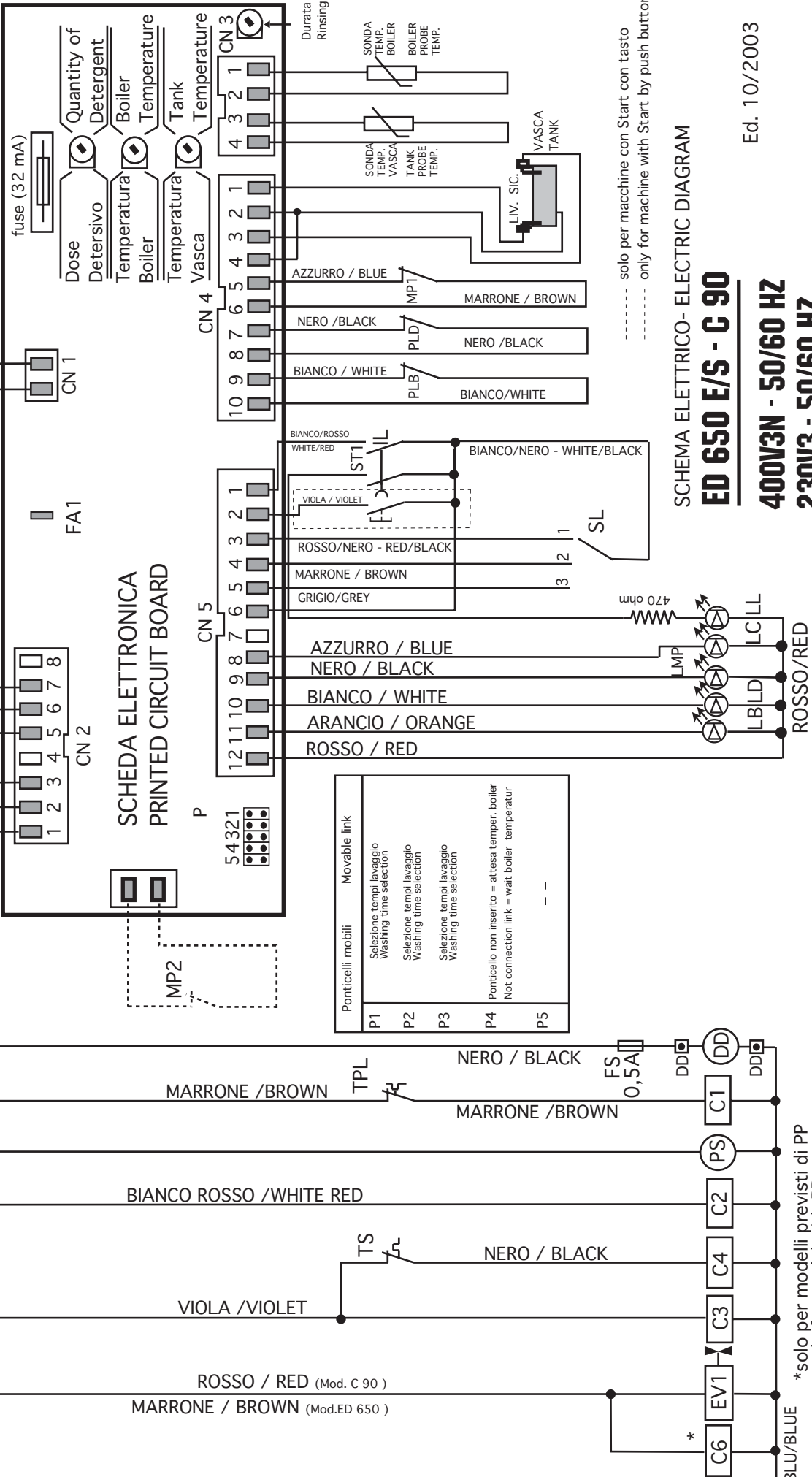
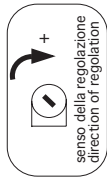


Fig. 9

230 V~50/60 Hz



----- solo per macchine con Start con tasto
 ----- only for machine with Start by push button

SCHEMA ELETTRICO- ELECTRIC DIAGRAM

ED 650 E/S - C 90

400V3N - 50/60 HZ

230V3 - 50/60 HZ

Ed. 10/2003

Ponticelli mobili	Movable link
P1	Selezione tempi lavaggio Washing time selection
P2	Selezione tempi lavaggio Washing time selection
P3	Selezione tempi lavaggio Washing time selection
P4	Ponticello non inserito = attesa temper. boiler Not connection link = wait boiler. temperatur
P5	--

*solo per modelli previsti di PP
 only for model with PP

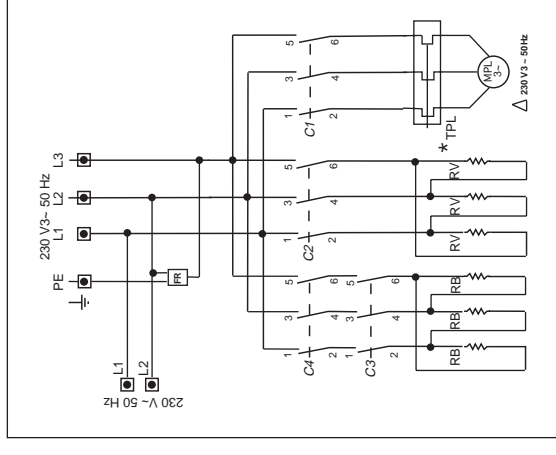
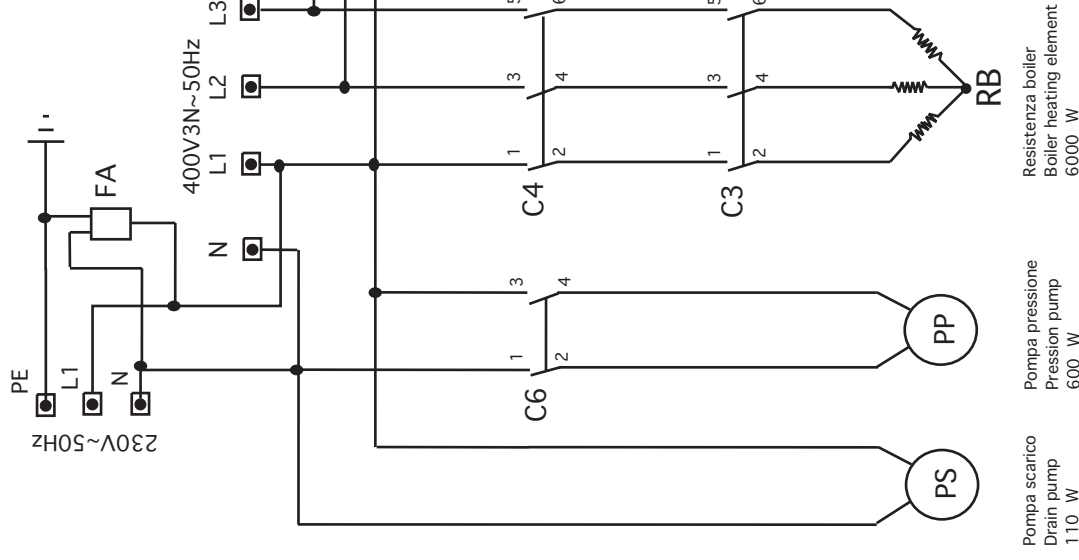
SCHEMA DI POTENZA / DIAGRAM POWER ED 650 E/S - C 90

Ed.10/03

LEGENDA - LEGEND

- FA = Filtro Antidisturbo - Electromagnetic Field Filter
 C1 = Teleruttore pompa lavaggio - Remote Switch for wash pump
 C2 = Teleruttore Vasca - Remote Control Switch for Tank
 C3 = Teleruttore Boiler - Remote Control Switch for Boiler
 C4 = Teleruttore sicurezza - Safety Remote Switch
 C6 = Teleruttore pompa pressione - Remote Switch for pression pump
 TPL = Termica pompa lavaggio - Wash pump thermal
 MPL = Motore Pompa Lavaggio - Wash Pump
 RB = Resistenza Boiler - Boiler heating element
 RV = Resistenza vasca - Tank heating element
 PR = Pulsante Reset - Push Botton Reset
 EV1 = Elettrovalvola - Electrovalve
 PP = Pompa Pressione - Pump Pression
 PS = Pompa Scarico - Drain Pump
 DD = Dosatore Detersivo - Detergent Pump
 MP1 = Microinterruttore porta - Door microswitch
 MP2 = Predisposizione doppio Microinterr. porta - Predisposition doubler Door microswitch
 IL = Interruttore linea - ON/OFF button
 ST 1 = Start - Start
 (solo x macchine con Start con tasto - only for machine with Start by push button)
 SL = Selettore tempi lavaggio - Washing time selector switch
 TS = Termostato sicurezza boiler - Boiler Safety thermostat
 PLB = Pressostato lampada brillantante - Rinside lamp pressure switch
 PLD = Pressostato lampada detersivante - Detergent lamp pressure switch
 LB = Lampada Mancanza Brillantante (solo ED 650) - Lamp Missing Rinside (only ED 650)
 LD = Lampada Mancanza Detersivo (solo ED 650) - Lamp Missing Detergent(only ED 650)
 LMP = Lampada Macchina Pronta - Lamp Ready Machine
 LC = Lampada Ciclo - Cycle Lamp
 LL = Lampada linea - Line lamp
 FS = Fusibile - Fuse

400V3N - 50/60HZ
230V3 - 50/60 HZ



Pompa lavaggio
 Wash pump
 1100 W (ED 650 S)
 900 W (ED 650 E)
 1620 W - 2.2 Hp (C 90)

Resistenza vasca
 Tank heating element
 3000 W

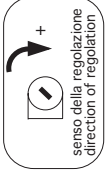
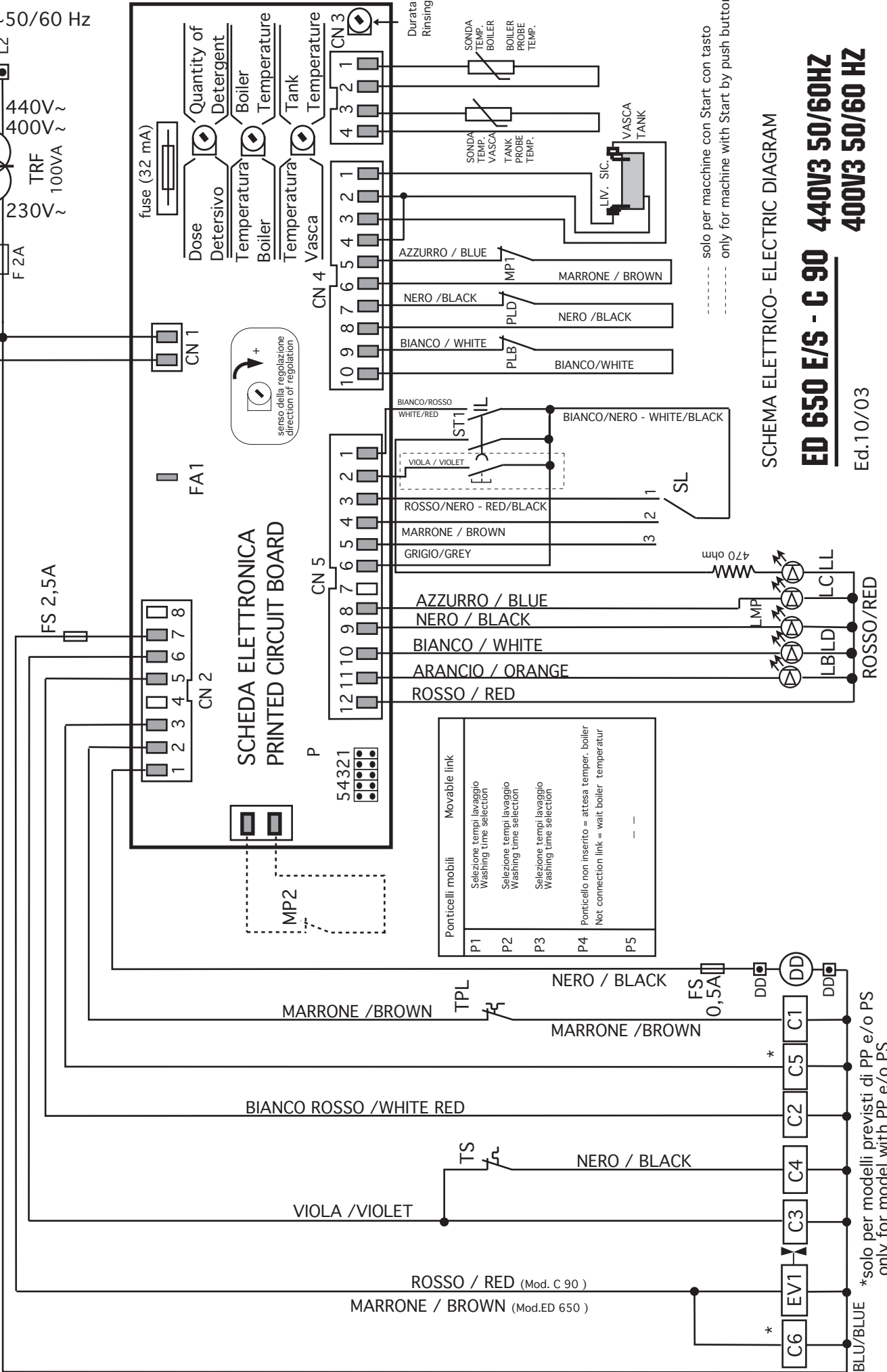
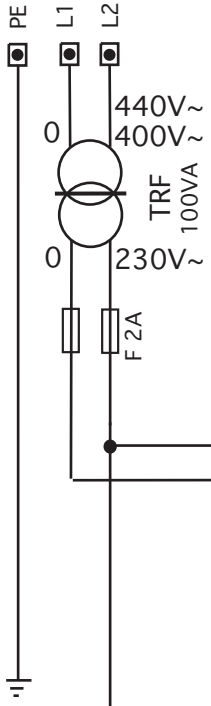
Resistenza boiler
 Boiler heating element
 6000 W

Pompa pressione
 Pression pump
 600 W

Pompa scarico
 Drain pump
 110 W

* solo per modelli ED 650
 only for ED 650 model

400/440 V ~ 50/60 Hz



**SCHEDELETTRONICA
PRINTED CIRCUIT BOARD**

Ponticelli mobili	Movable link
P1	Selezione tempi lavaggio / Washing time selection
P2	Selezione tempi lavaggio / Washing time selection
P3	Selezione tempi lavaggio / Washing time selection
P4	Ponticello non inserito = attesa temper. boiler / Not connection link = wait boiler temperature
P5	--

----- solo per macchine con Start con tasto
----- only for machine with Start by push button

SCHEMA ELETTRICO- ELECTRIC DIAGRAM

ED 650 E/S - C 90 440V3 50/60HZ
400V3 50/60 HZ

Ed.10/03

*solo per modelli previsti di PP e/o PS
*only for model with PP e/o PS

SCHEMA DI POTENZA / DIAGRAM POWER

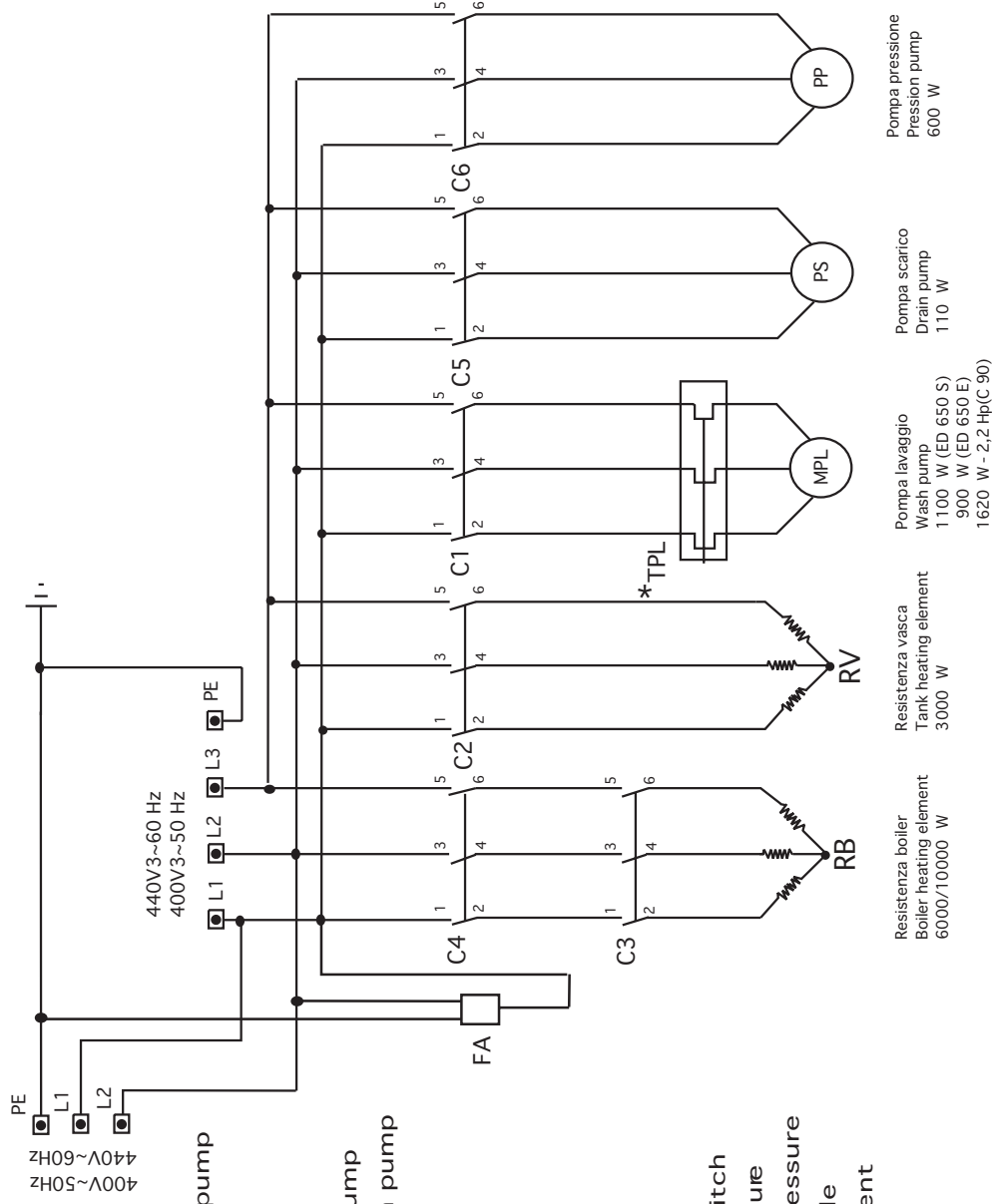
ED 650 E /S - C 90 - 440V3 50/60HZ

400V3 50/60 HZ

Ed. 10/2003

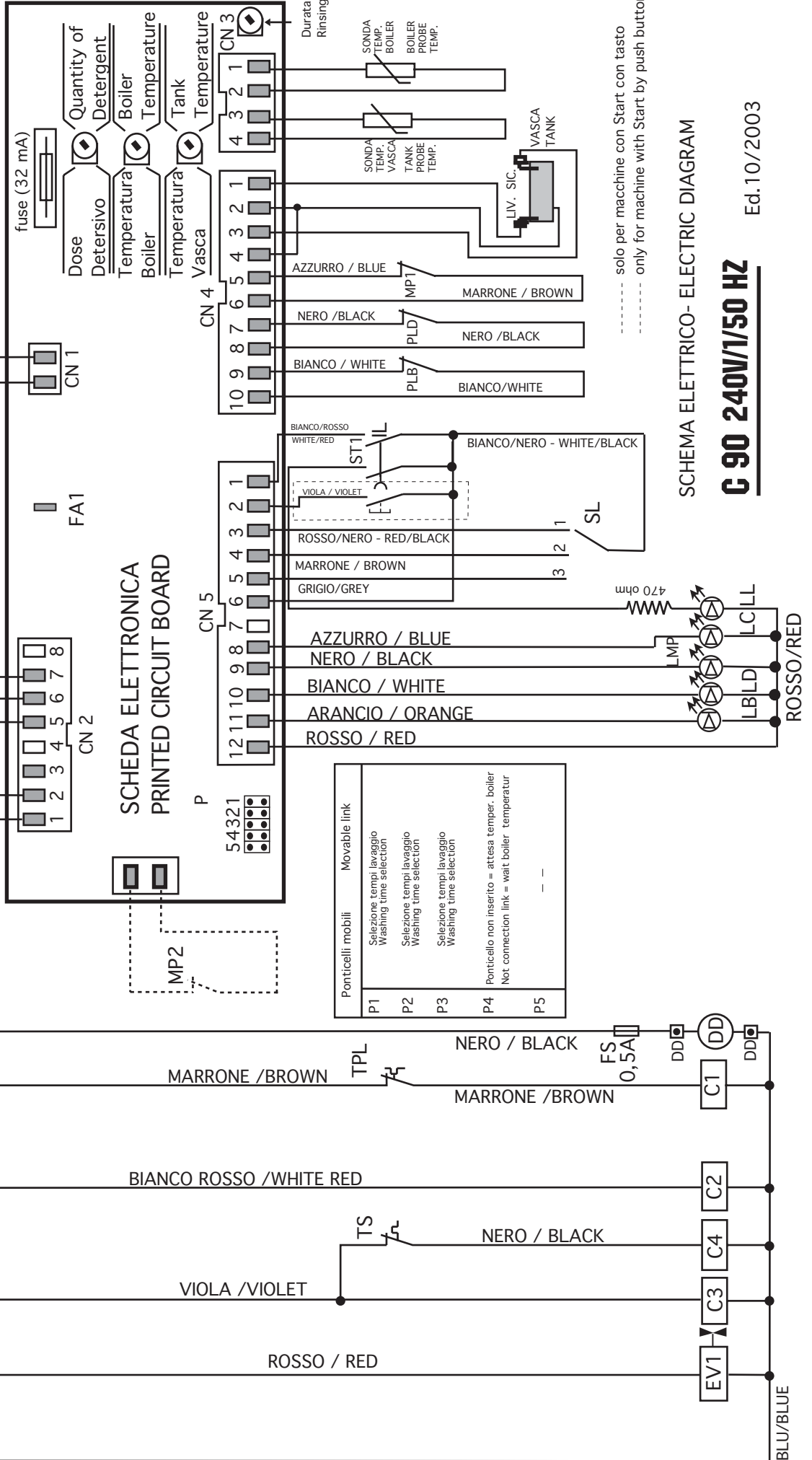
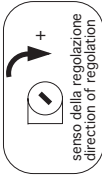
LEGENDA - LEGEND

- FA = Filtro Antidisturbo - Electromagnetic Field Filter
- C1 = Teleruttore pompa lavaggio - Remote Switch for wash pump
- C2 = Teleruttore Vasca - Remote Control Switch for Tank
- C3 = Teleruttore Boiler - Remote Control Switch for Boiler
- C4 = Teleruttore sicurezza - Safety Remote Control Switch
- C5 = Teleruttore pompa scarico - Remote Switch for drain pump
- C6 = Teleruttore pompa pressione - Rem. Switch for pression pump
- TP1 = Termica pompa lavaggio - Wash pump thermal
- MPL = Motore Pompa Lavaggio - Wash Pump
- RB = Resistenza Boiler - Boiler heating element
- RV = Resistenza vasca - Tank heating element
- PR = Pulsante Reset - Push Botton Reset
- EV1 = Elettrovalvola - Electrovalve
- PS = Pompa Scarico - Drain Pump
- PD = Pompa Detersivo - Detergent Pump
- SL = Selettore durata lavaggio - Washing time selector switch
- PLB = Pressostato lampada brillante - Rinside lamp pressure
- PLD = Pressostato lampada detergente - Detergent lamp pressure
- LB = Lampada Mancanza Brillante - Lamp Missing Rinside
- LD = Lampada Mancanza Detersivo - Lamp Missing Detergent
- LMP = Lampada Macchina Pronta - Lamp Ready Machine
- LC = Lampada Ciclo - Cycle Lamp
- LL = Lampada linea - Line lamp
- ST = Starter - Starter
- IL = Interruttore Linea - ON/OFF Button
- MP = Micro Interruttore Porta - Door Microswitch
- TS = Termostato sicurezza boiler - Boiler safety thermostat
- BTS = Bobina teleruttore sicurezza boiler - Boiler safety spool
- BTP = Bobina teleruttore Pompa - Pump control switch spool
- TRF = Trasformatore - Transformer
- F = Fusibile - Fuse



* solo per modelli ED 650
only for ED 650 model

230 V~50 Hz



----- solo per macchine con Start con tasto
 ----- only for machine with Start by push button

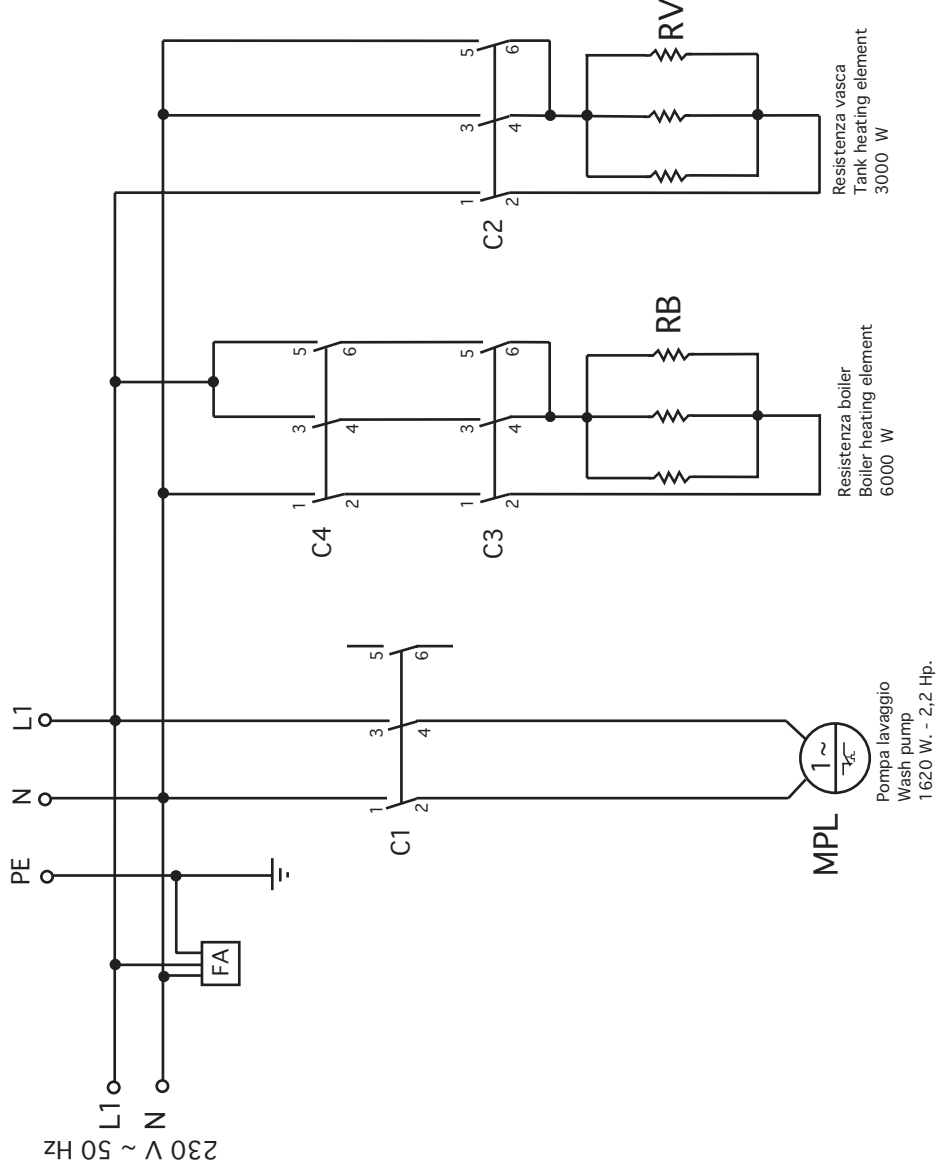
SCHEMA ELETTRICO- ELECTRIC DIAGRAM

C 90 240V/150 HZ

Ed.10/2003

LEGENDA - LEGEND

- FA = Filtro Antidisturbo - Electromagnetic Field Filter
 C1 = Teleruttore pompa lavaggio - Remote Switch for wash pump
 C2 = Teleruttore Vasca - Remote Control Switch for Tank
 C3 = Teleruttore Boiler - Remote Control Switch for Boiler
 C4 = Teleruttore sicurezza - Safety Remote Control Switch
 MPL = Motore Pompa Lavaggio - Wash Pump
 RB = Resistenza Boiler - Boiler heating element
 RV = Resistenza vasca - Tank heating element
 PR = Pulsante Reset - Push Botton Reset
 EV1 = Elettrovalvola - Electrovalve
 PD = Pompa Detersivo - Detergent Pump
 MP = Microinterruttore porta - Door microswitch
 IL = Interruttore linea - ON/OFF button
 ST = Start - Start
 SL = Selettore durata lavaggio - Washing time selector switch
 TS = Termostato sicurezza boiler - Boiler Safety thermostat
 PLB = Pressostato lampada brillante - Rinside lamp pressure switch
 PLD = Pressostato lampada detergente - Detergent lamp pressure switch
 LB = Lampada Mancanza Brillante - Lamp Missing Rinside
 LD = Lampada Mancanza Detersivo - Lamp Missing Detergent
 LMP = Lampada Macchina Pronta - Lamp Ready Machine
 LC = Lampada Ciclo - Cycle Lamp
 LL = Lampada linea - Line lamp



SCHEMA DI POTENZA / DIAGRAM POWER C 90 240V/1/50HZ

Ed. 03/2003

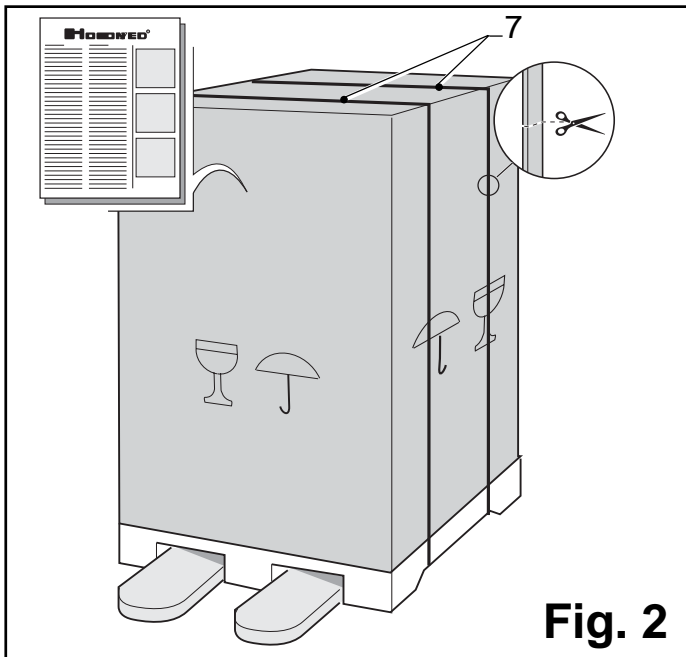


Fig. 2

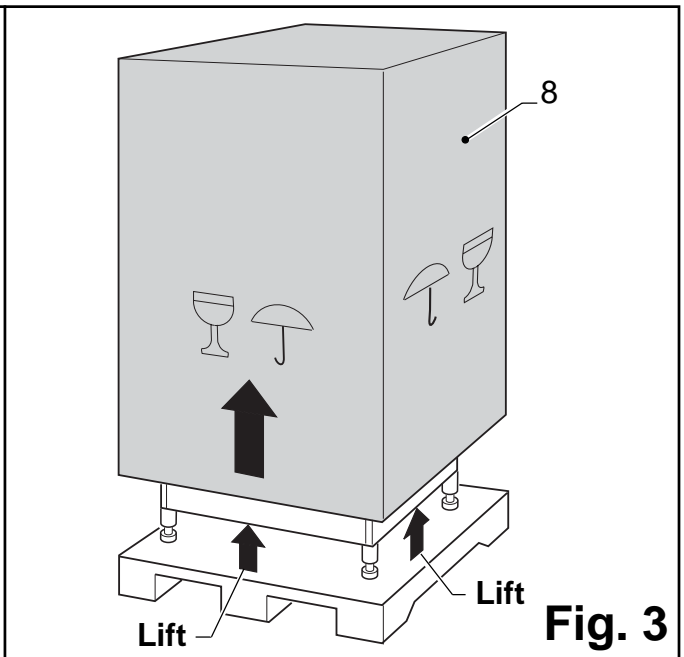


Fig. 3

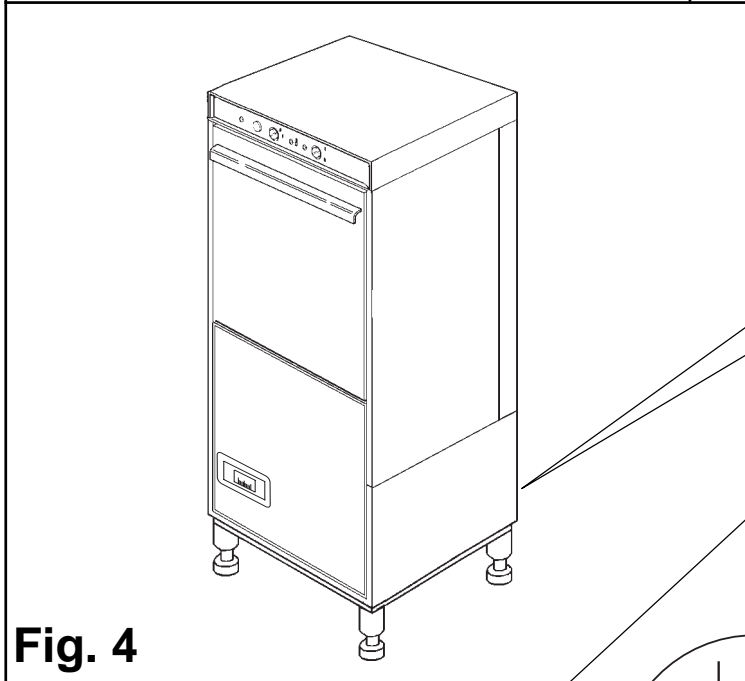
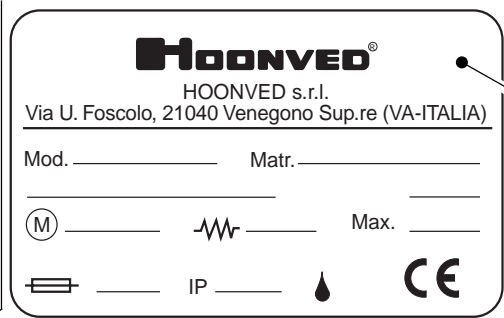


Fig. 4



9

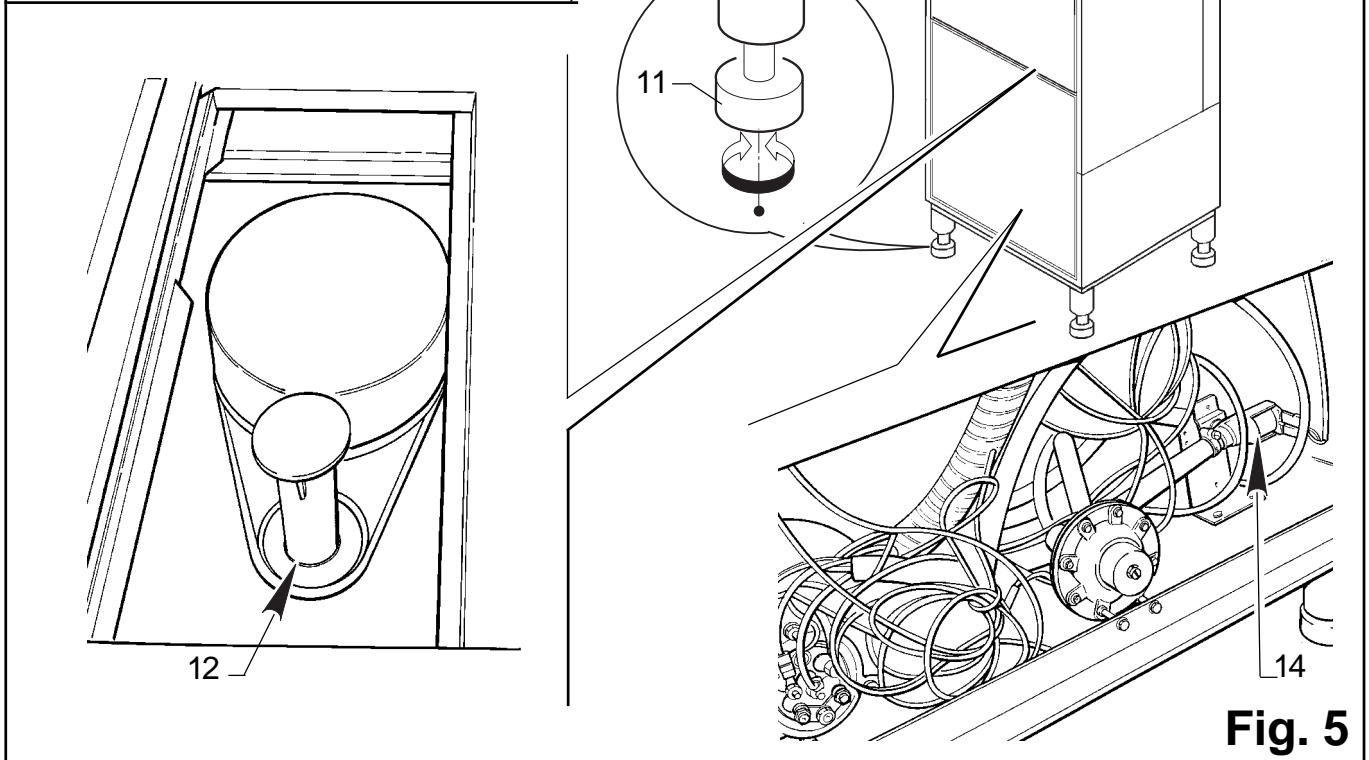


Fig. 5



HOONVED®



HOONVED s.r.l.
Via U. Foscolo, 21040 - Venegono S. (VA) - ITALY
Tel. 0331 - 856111 - Fax. 0331 - 865223
www.hoonved.com