

# Installation instructions for washers

## HS-6040/HS-6057/HS-6110

## EH090/EH130/EH255

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## EN

### Installation

## HS-6040/57/110

## EH090/130/255

Model	From serial #
<b>HS-6040</b>	2150001
<b>EH090</b>	1500001
<b>HS-6057</b>	2160001
<b>EH130</b>	1510001
<b>HS-6110</b>	2170001
<b>EH255</b>	1520001

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## SAFETY INSTRUCTIONS

**WARNING!****TRANSPORT, INSTALLATION, INSPECTION, MAINTENANCE, REPAIR OR MODIFICATION ROUTINES ON GIRBAU EQUIPMENT**

1. The actions described in these instructions are strictly reserved for contractually **AUTHORISED TECHNICAL SERVICES (ATS)** and personnel who have successfully completed training by Girbau SA.
2. The company responsible for the Authorised Technical Service accepts full liability for the work done and any possible consequences that may derive from it.
3. Any actions carried out by personnel who are not authorised by the manufacturer will be considered to be improper and will result in the automatic voiding of the machine's warranty.
4. The manufacturer will not accept responsibility for any physical and/or material damage caused by actions performed on the machine undertaken by unauthorised personnel.
5. Do not store or install the machine in areas exposed to the ELEMENTS or where it may be splashed by water.
6. The room where the machine is located **MUST** comply with the environmental conditions (air venting, temperature, humidity, etc.) specified in the technical specifications table. **NEVER INSTALL THE MACHINE IN ENVIRONMENTS** where it will be splashed with water or where there is a very high level of humidity in the atmosphere.
7. All installations required for the proper operation of the machine **MUST** be carried out by a duly accredited Registered Installation Contractors, in compliance with the legal regulations applicable in the country of use.
8. Once the corresponding operation has been performed, the ATS staff must perform the final machine inspection.
9. Avoid carrying out any action on the machine without having first read and understood the machine's Installation and Operating Manuals, paying special attention to the Safety Instructions.
10. In any action that modifies the values of the machine's specifications plate, it should be borne in mind that:
  - It is the responsibility of the ATS to check that the external installation for the machine has been modified and adapted to the new requirements, particularly to those regarding ducting and electrical protection.
  - It is the responsibility of the ATS to update the specifications plate, in accordance with the new operation conditions, once the final machine inspection has been performed.
11. Carrying out transport, installation, inspection routines, adjustments, maintenance, repairs, cleaning or any work on the machines without applying safety measures or having the necessary technical know-how can lead to **ELECTRICAL SHOCK OR SERIOUS ACCIDENTS**.
12. When tools designed for specific transport, installation, maintenance and repair routines are available, their use is compulsory in order to avoid unnecessary risks.
13. Before carrying out any procedures on machines fitted with pneumatic or hydraulic circuits:
  - Make the machines **COMPLETELY SAFE** by following the instructions set out in the corresponding Manuals or by wedging them with wooden blocks where necessary.
  - Bear in mind that working on a component without having previously understood the role that it performs in the circuit as a whole involves a high risk of suffering a **SERIOUS ACCIDENT**.
14. **BEFORE CARRYING OUT ANY** inspection routine, adjustment, maintenance, repairs, cleaning or any work on the machine, **DISCONNECT IT FROM ALL THE ENERGY SOURCES**.
  - **COMPLETELY** disconnect the machine from the power supply and prevent the possibility of accidental reconnection by mechanically locking the automatic external switch and/or the switch breaker. Stopping the machine with the **NORMAL STOP** key or push-button is not enough.
  - Disconnect the electrical connection of any circuit external to the machine; for example external dosing equipment, external vending units, folders or ironer feeders. These circuits are independent of the supply to the machine.

- Before beginning any procedure on machines equipped with an inverter or equipment with capacitive loads, wait for at least five minutes (10 minutes on equipment with a power rating greater than 25 kW) after the electrical disconnection, to eliminate risk of residual voltage.
  - Close and mechanically lock the manual WATER, GAS, STEAM, THERMAL OIL, COMPRESSED AIR, etc. supply valves.
  - Check that the water bath has **COMPLETELY** drained, that no part of the machine is at an excessively high temperature and that no parts are in movement through inertia.
15. **DANGER!** Some fault localisation procedures require checking at different points of the electric circuit with the machine connected to the power supply and other supply sources. When carrying out these procedures, respect the following instructions:
- The appropriate checks must be carried out by **ONLY ONE PERSON**.
  - During these procedures, **ONLY** remove the protective covers from the electric circuit and/or the inverter. Never remove the covers protecting the moving parts of the machine.
16. **THE MANUFACTURER ACCEPTS NO RESPONSIBILITY IF THESE SAFETY INSTRUCTIONS AND ALL THE INFORMATION IN THE CORRESPONDING MANUALS ARE NOT FOLLOWED. KEEP THESE INSTRUCTIONS IN A SAFE PLACE.**

**SYMBOLS USED IN MACHINE LABELLING**

	<p><b>Electrical risk</b> Protective guard for elements carrying an electric current.</p>		<p><b>High temperature risk</b> Handle with caution. Use adequate protection.</p>
	<p><b>Mechanical risk</b> Protective guard for moving parts.</p>		<p><b>Risk of inhaling harmful or irritant vapours</b> Keep the doors/covers closed. Use adequate protection.</p>
	<p><b>Flame risk</b> (only on some machines) Protective guard for flame.</p>		<p><b>Risk of falling</b> Use proper access and safety methods.</p>
	<p><b>Access prohibited</b></p>		<p><b>Refer to instruction manual/booklet</b></p>

**SYMBOLS USED IN THIS MANUAL**

	<p>Symbol used to highlight a possible HAZARD, WARNING or NOTE.</p>		<p>This symbol is used to emphasise a particular explanation.</p>
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**TRANSLATION OF ORIGINAL MANUAL**

## 1. TECHNICAL SPECIFICATIONS

Justification of the Design regulation.

HS-6040, HS-6057, HS-6110 models. As they have a net drum volume higher than 150 l, they must follow EN 60204-1 standard.

### 1.1. Tools needed for installation

#### HS-6040; HS-6057; EH090; EH130

- Shipping restraints ..... open end wrench 7/8 in. (22mm)
- Shipping restraints ..... offset ring wrench 7/8 in. (22mm)
- Covers fixing ..... wrench 1/2 inch. (13mm)
- Covers fixing ..... TORX T20 screwdriver.
- Water inlet pipes ..... adjustable wrench or slip-joint pliers; 1.5 in. (36 mm) opening.
- Water and steam inlet filters ..... adjustable wrench or slip-joint pliers; 1.8 in. (45mm) opening.

#### HS-6110; EH255

- Shipping restraints ..... open end wrench 15/16 inch. (24mm)
- Shipping restraints ..... offset ring wrench 15/16 in. (24mm)
- Covers fixing ..... wrench 3/8 in. (10mm); 1/2 in. (13mm)
- Covers fixing ..... TORX T20 screwdriver.
- Water inlet pipes ..... adjustable wrench or slip-joint pliers; 2.5-2.8 in. (65-70 mm) opening.
- Water and steam inlet filters ..... adjustable wrench or slip-joint pliers; 2.5-2.8 in. (65-70 mm) opening.

#### Common to all models

- Clamps ..... nut driver 7mm
- Electrical requirements ..... Phillips 2 screwdriver. (#2)
- External dosing connection ..... slotted-head screwdriver 3mm.

### 1.2. Accessories in machine

Keep all machine instructions in a safe place.

ACCESSORIES	QUANTITY	NOTES
Drain hose <b>(1)</b> .....	1 <b>(2)</b>	<b>(1)</b> not available USA/Canada machines
Drain clamp <b>(1)</b> .....	1 <b>(2)</b>	<b>(2)</b> machines with double drain: 2 units
Water inlet hose <b>(1)</b> .....	1 <b>(2)</b>	<b>(3)</b> machines with third water inlet: 3 units
Set of water inlet hose filter .....	2 <b>(3)</b>	<b>(4)</b> machines no USA/Canada with third water inlet: 6 units
Water inlet hose seals <b>(1)</b> .....	4 <b>(4)</b>	<b>(5)</b> steam connection accessories in TILT machines: refer to section 3.4.
Steam outlet elbow.....	1	<b>(6)</b> only machines in USA / Canada NO TILT with steam heating Steam connection accessories in TILT machines: refer to section 3.4.
Steam outlet elbow clamp .....	1	<b>(7)</b> depending on model and voltage
Steam inlet valve and filter <b>(5)</b> .....	1	<b>(8)</b> depending on target country
Steam inlet coupling <b>(6)</b> .....	1	
Fuses.....	<b>(7)</b>	
Installation Instructions.....	1	
Operation Instructions .....	1	
Parts handbook <b>(1)</b> .....	1	
Other documentation .....	<b>(8)</b>	

### 1.3. Declaration of conformity

#### HS-6040 model

#### EC DECLARATION OF CONFORMITY

Manufacturer: GIRBAU S.A.

Address: Ctra. de Manlleu, km 1, 08500 Vic, Barcelona, SPAIN

Identification of the machine

Generic denomination:	Function:	Type:
Washer extractor Lavadora-centrifugadora Wasch- und Schleudermaschine Laveuse-essoreuse Lavatrice-centrifugatrice Rentadora-centrifugadora	Washing in a water bath and extracting textiles Lavar en baño de agua y centrifugar géneros textiles Das Waschen im Waschbad und das Ausschleudern von Textilien Laver en bain d'eau et essorer textiles Lavare in bagno d'acqua e centrifugare tessuti Rentar en bany d'aigua i centrifugar teixits	Front loading Carga frontal Frontladung Chargement frontal Carico frontale Càrrega frontal

#### Model: HS-6040

The manufacturer declares under its sole responsibility that the specified equipment has been manufactured in compliance with the following Directives:

El fabricante declara bajo su exclusiva responsabilidad que el producto especificado se ha fabricado conforme a las siguientes Directivas:

Der Hersteller bestätigt, dass das vorstehend bezeichnete Produkt gemäß den folgenden Richtlinien hergestellt wurde:

Le fabricant déclare, sous sa seule responsabilité, que le produit spécifié a été fabriqué conformément aux Directives suivantes:

Il fabbricante dichiara, sotto la sua esclusiva responsabilità, che il prodotto specificato é fabbricato secondo le seguenti Direttive:

El fabricant declara, sota la seva exclusiva responsabilitat, que el producte especificat s'ha fabricat conforme a les següents Directives:

#### 2006/42/EC Machine Safety Directive

Main harmonized standards: EN ISO 10472-1:2008, EN ISO 10472-2:2008, EN 12100:2010, EN 13849-1:2015

#### 2014/35/EU Low Voltage Directive

Main harmonized standards: EN 60204-1:2006

#### 2014/30/EU Electromagnetic Compatibility Directive

Main harmonized standards: EN 61000-3-11:2000, EN 61000-6-3:2007

N.B.: LGAI Technological Center S.A. Number: 0370. N.B. Declaration. Certificate: 0370-EMC-0005

#### 2011/65/EU Hazardous Substances in Electrical and Electronic Equipment Directive

Main harmonized standards: EN 50581

#### 2012/19/EU Waste Electrical and Electronic Equipment Directive (not a CE Marking Directive)



#### ATTENTION

#### Compliance with Directive of Electromagnetic Compatibility.

**Professional equipment.** This equipment is for professional, commercial and industrial use and it is not to be sold for domestic use.

The connection of this equipment to a public low voltage power supply is conditional to the power supply connection requirements established by the distribution power supplier.



## HS-6057 model

### EC DECLARATION OF CONFORMITY

Manufacturer: GIRBAU S.A.

Address: Ctra. de Manlleu, km 1, 08500 Vic, Barcelona, SPAIN

Identification of the machine

Generic denomination:	Function:	Type:
Washer extractor Lavadora-centrifugadora Wasch- und Schleudermaschine Laveuse-essoreuse Lavatrice-centrifugatrice Rentadora-centrifugadora	Washing in a water bath and extracting textiles Lavar en baño de agua y centrifugar géneros textiles Das Waschen im Waschbad und das Ausschleudern von Textilien Laver en bain d'eau et essorer textiles Lavare in bagno d'acqua e centrifugare tessuti Rentar en bany d'aigua i centrifugar teixits	Front loading Carga frontal Frontladung Chargement frontal Carico frontale Càrrega frontal

### Model: HS-6057

The manufacturer declares under its sole responsibility that the specified equipment has been manufactured in compliance with the following Directives:

El fabricante declara bajo su exclusiva responsabilidad que el producto especificado se ha fabricado conforme a las siguientes Directivas:

Der Hersteller bestätigt, dass das vorstehend bezeichnete Produkt gemäß den folgenden Richtlinien hergestellt wurde:

Le fabricant déclare, sous sa seule responsabilité, que le produit spécifié a été fabriqué conformément aux Directives suivantes:

Il fabbricante dichiara, sotto la sua esclusiva responsabilità, che il prodotto specificato é fabbricato secondo le seguenti Direttive:

El fabricant declara, sota la seva exclusiva responsabilitat, que el producte especificat s'ha fabricat conforme a les següents Directives:

#### 2006/42/EC Machine Safety Directive

Main harmonized standards: EN ISO 10472-1:2008, EN ISO 10472-2:2008, EN 12100:2010, EN 13849-1:2015

#### 2014/35/EU Low Voltage Directive

Main harmonized standards: EN 60204-1:2006

#### 2014/30/EU Electromagnetic Compatibility Directive

Main harmonized standards: EN 61000-6-4:2007

N.B.: LGAI Technological Center S.A. Number: 0370. N.B. Declaration. Certificate: 0370-EMC-0005

#### 2011/65/EU Hazardous Substances in Electrical and Electronic Equipment Directive

Main harmonized standards: EN 50581

#### 2012/19/EU Waste Electrical and Electronic Equipment Directive (not a CE Marking Directive)



### ATTENTION

#### Compliance with Directive of Electromagnetic Compatibility

**This equipment is for industrial use.** In a domestic environment this equipment may cause interferences.

**HS-6110 model****EC DECLARATION OF CONFORMITY**

Manufacturer: GIRBAU S.A.

Address: Ctra. de Manlleu, km 1, 08500 Vic, Barcelona, SPAIN

Identification of the machine

Generic denomination:	Function:	Type:
Washer extractor Lavadora-centrifugadora Wasch- und Schleudermaschine Laveuse-essoreuse Lavatrice-centrifugatrice Rentadora-centrifugadora	Washing in a water bath and extracting textiles Lavar en baño de agua y centrifugar géneros textiles Das Waschen im Waschbad und das Ausschleudern von Textilien Laver en bain d'eau et essorer textiles Lavare in bagno d'acqua e centrifugare tessuti Rentar en bany d'aigua i centrifugar teixits	Front loading Carga frontal Frontladung Chargement frontal Carico frontale Càrrega frontal

**Model: HS-6110**

The manufacturer declares under its sole responsibility that the specified equipment has been manufactured in compliance with the following Directives:

El fabricante declara bajo su exclusiva responsabilidad que el producto especificado se ha fabricado conforme a las siguientes Directivas:

Der Hersteller bestätigt, dass das vorstehend bezeichnete Produkt gemäß den folgenden Richtlinien hergestellt wurde:

Le fabricant déclare, sous sa seule responsabilité, que le produit spécifié a été fabriqué conformément aux Directives suivantes:

Il fabbricante dichiara, sotto la sua esclusiva responsabilità, che il prodotto specificato é fabbricato secondo le seguenti Direttive:

El fabricant declara, sota la seva exclusiva responsabilitat, que el producte especificat s'ha fabricat conforme a les següents Directives:

**2006/42/EC Machine Safety Directive**

Main harmonized standards: EN ISO 10472-1:2008, EN ISO 10472-2:2008, EN 12100:2010, EN 13849-1:2015

**2014/35/EU Low Voltage Directive**

Main harmonized standards: EN 60204-1:2006

**2014/30/EU Electromagnetic Compatibility Directive**

Main harmonized standards: EN 61000-6-4:2007, EN 55014-2:2015

N.B.: LGAI Technological Center S.A. Number: 0370. N.B. Declaration. Certificate: 0370-EMC-0005

**2011/65/EU Hazardous Substances in Electrical and Electronic Equipment Directive**

Main harmonized standards: EN 50581

**2012/19/EU Waste Electrical and Electronic Equipment Directive (not a CE Marking Directive)****ATTENTION**

**Compliance with Directive of Electromagnetic Compatibility.**



**This equipment is for industrial use.** In a domestic environment this equipment may cause interferences.

## 1.4. Installation specifications

### General specifications

	UNITS	HS-6040 / EH090	HS-6057 / EH130	HS-6110 / EH255
DRUM VOLUME	dm <sup>3</sup> (cu. ft)	395 (13.9)	569 (20.1)	1100 (38.8)
DRY LINEN CAPACITY	kg 1/10 (lbs.)	39.5 (87.1)	57 (125.7)	110 (242.5)
SPIN	r.p.m. (G factor)	300 / 870 (45 / 381)	275 / 800 (46 / 387)	250/725 (46/386)
WASHING SPEED (max.)	r.p.m.	40	36	32
STATIC FORCE TRANSMITTED	kg (lb.)	1609 (3547)	2217 (4888)	4435 (9778)
DYNAMIC FORCE TRANSMITTED	kg (lb.)	252 (556)	314 (692)	672 (1482)
FREQUENCY DYNAMIC FORCE	Hz	14.5	13.3	12.1
KINETIC ENERGY	N*m	169973	280487	694513
MAXIMUM THERMAL SHOCK	°C (F)	90 (194)	90 (194)	90 (194)
MAXIMUM SOUND LEVEL	dbA	< 70	< 70	< 70
PROTECTION INDEX	IP	21C	21C	21C

### Dimensions & weights



		UNITS	WITH CRATING		
			HS-6040 / EH090	HS-6057 / EH130	HS-6110 / EH255
WITH CRATING	H	mm (in)	2030 (79.9)	2160 (85.0)	2245 (88.4)
	L	mm (in)	1520 (59.8)	1690 (66.5)	1950 (76.8)
	P	mm (in)	1580 (62.2)	1646 (64.8)	2120 (83.5)
	WEIGHT	kg (lbs)	1544 (3405)	2103 (4636)	4108 (9056)
WITHOUT CRATING	H	mm (in)	1798 (70.8)	1925 (75.8)	2068 (81.4)
	L	mm (in)	1390 (54.7)	1570 (61.8)	1770 (69.7)
	P	mm (in)	1455 (57.3)	1493 (58.8)	1939 (76.3)
	M	mm (in)	659 (25.9)	812 (32.0)	807 (31.8)
	 CdG K	mm (in)	820 (32.3)	910 (35.8)	1090 (42.9)
	 CdG J	mm (in)	668 (26.3)	630 (24.8)	836 (32.9)
	WEIGHT	kg (lbs)	1409 (3106)	1932 (4260)	3885 (8566)

### Connections

		UNITS	A		
			HS-6040 / EH090	HS-6057 / EH130	HS-6110 / EH255
A	CONNECTION	B.S.P thread (NH)	2 x 1 (*1)	2 x 1 (*1)	2 x 2 (*1)
	H	mm (in)	1680 (66.1)	1785 (70.3)	1955 (77.0)
	MIN/MAX PRESSURE	bar (P.S.I.)	0.5-6 (7-87)	0.5-6 (7-87)	0.5-6 (7-87)
	RECOMM. PRESSURE	bar (P.S.I.)	2-4 (30-60)	2-4 (30-60)	2-4 (30-60)
	FLOW (4 bar)	l/min (Usgal/min)	100 (26)	100 (26)	220 (58)
	MAXIMUM TEMPERATURE	°C (°F)	80 (176)	80 (176)	80 (176)
D	OUTLET HOSE	Ø mm (in)	80 (3)	80 (3)	125 (5)
	H	mm (in)	249 (9.8)	260 (10.2)	344 (13.5)
	N	mm (in)	0	0	382 (15.0)
	N (2D)	mm (in)	320 (12.6)	230 (9.1)	32 (1.3)
	P	mm (in)	250 (10)	250 (10)	250 (10)
	DRAIN BOX DIMENSIONS (L,P,H)	mm (in)	300 x 300 x 250 (12 x 12 x 10)	300 x 300 x 250 (12 x 12 x 10)	400 x 400 x 300 (16 x 16 x 12)
	DRAIN BOX PIPE	Ø mm (in)	150 (6)	150 (6)	200 (8)
E	INLET FASTENING	Ø mm (in)	37 (1 1/2)	37 (1 1/2)	37 (1 1/2)
	H	mm (in)	1656 (65.2)	1798 (70.8)	1890 (74.4)
	N	mm (in)	640 (25.2)	726 (28.6)	825 (32.5)
Ed	INLET FASTENING	Ø mm (in)	16 (0.6)	16 (0.6)	16 (0.6)
	H	mm (in)	1593 (62.7)	1742 (68.6)	1960 (77.2)
	N	mm (in)	652 (25.7)	738 (29.1)	825 (32.5)
	MAXIMUM VOLTAGE	V	240	240	240
	MAXIMUM CURRENT	A	0.05 (* 2)	0.05 (* 2)	0.05 (* 2)
d	CONNECTION	mm (in)	8 x diam. 10 (3/8) 1 x diam. 12 (1/2)	8 x diam. 10 (3/8) 1 x diam. 12 (1/2)	8 x diam. 10 (3/8) 1 x diam. 12 (1/2)
	H	mm (in)	1138(44.8)	1270 (50.0)	1305 (51.4)
	N	mm (in)	589 (23.2)	673 (26.5)	775 (30.5)
V	CONNECTION	B.S.P thread (in)	3/4	3/4	1
	H	mm (in)	1034 (40.7)	1155 (45.5)	1102 (43.4)
	N	mm (in)	490 (19.3)	362 (14.3)	605 (23.8)
	PRESSURE (MIN/MAX)	bar (P.S.I)	2-6 (29 / 87)	2-6 (29 / 87)	2-4 (29-60)
	FLOW	kg/h (lbs/h.)	180 (397)	180 (397)	360 (794)
AC	CONNECTION	B.S.P thread, (in)	-----	-----	10 (3/8)
	H	mm (in)	-----	-----	957 (37.3)
	N	mm (in.)	-----	-----	568 (22.4)
	MIN/MAX PRESSURE	bar (P.S.I)	-----	-----	6-7 (87/100)
	FLOW	l/min (Usgal/min.)	-----	-----	20 (5.3)
	FLOW (Steam heating)	l/min (Usgal/min.)	-----	-----	290 (77)

	UNITS	HS-6040 / EH090 TILT	HS-6057 / EH130 TILT	HS-6110 / EH255 TILT
DRUM VOLUME	dm <sup>3</sup> (cu. ft)	395 (13.9)	569 (20.1)	1100 (38.8)
DRY LINEN CAPACITY	kg 1/10 (lbs.)	39.5 (87.1)	57 (125.7)	110 (242.5)
SPIN	r.p.m. (G factor)	300 / 870 (45 / 381)	275 / 800 (46/387)	250/725 (46/386)
WASHING SPEED (max.)	r.p.m.	40	36	32
STATIC FORCE TRANSMITTED	kg (lbs.)	1925 (4244)	2537 (5594)	4787 (10555)
DYNAMIC FORCE TRANSMITTED	kg (lbs.)	252 (556)	314 (692)	672 (1482)
FREQUENCY DYNAMIC FORCE	Hz	14.5	13.3	12.1
KINETIC ENERGY	N · m	169973	280487	694513
MAXIMUM THERMAL SHOCK	°C (F)	90 (194)	90 (194)	90 (194)
MAXIMUM SOUND LEVEL	dbA	< 70	< 70	< 70
PROTECTION INDEX	IP	21C	21C	21C

## Dimensions & weights


		H	L	P	WEIGHT
WITH CRATING	H	mm (in)	2030 (79.9)	2160 (85.0)	2245 (88.4)
	L	mm (in)	1520 (59.8)	1690 (66.5)	1950 (76.8)
	P	mm (in)	1580 (62.2)	1646 (64.8)	2120 (83.5)
	WEIGHT	kg (lbs)	1954 (4308)	2517 (5549)	4580 (10098)
WITHOUT CRATING	H	mm (in)	1988 (78.3)	2115 (83.3)	2256 (88.8)
	L	mm (in)	1470 (57.9)	1650 (65.0)	1838 (72.4)
	P	mm (in)	1575 (62.0)	1613 (63.5)	2058 (810)
	M	mm (in)	849 (33.4)	1002 (39.4)	995 (39.2)
	 CdG K	mm (in)	820 (32.3)	910 (35.8)	1090 (42.9)
	 CdG J	mm (in)	668 (26.3)	630 (24.8)	836 (32.9)
	WEIGHT	kg (lbs)	1725 (3803)	2252 (4965)	4238 (9343)

## Connections

A	CONNECTION	B.S.P thread (NH)	2 x 1 (*1)	2 x 1 (*1)	2 x 2 (*1)
	H	mm (in)	1870 (73.6)	1975 (77.8)	2143 (84.4)
	MIN/MAX PRESSURE	bar (P.S.I)	0.5-6 (7-87)	0.5-6 (7-87)	0.5-6 (7-87)
	RECOMM. PRESSURE	bar (P.S.I)	2-4 (30-60)	2-4 (30-60)	2-4 (30-60)
	FLOW (4 bar)	l/min (Usgal/min)	100 (26)	100 (26)	220 (58)
	MAXIMUM TEMPERATURE	°C (°F)	80 (176)	80 (176)	80 (176)
D	OUTLET HOSE	∅ mm (in)	80 (3)	80 (3)	125 (5)
	H	mm (in)	439 (17.3)	450 (17.7)	532 (20.9)
	N	mm (in)	0	0	382 (15.0)
	N (2D)		320 (12.6)	230 (9.1)	32 (1.3)
	P	mm (in)	250 (10)	250 (10)	250 (10)
	DRAIN BOX DIMENSIONS (L,P,H)	mm in	300 x 300 x 250 (12 x 12 x 10)	300 x 300 x 250 (12 x 12 x 10)	400 x 400 x 300 (16 x 16 x 12)
	DRAIN BOX PIPE	∅ mm (in)	150 (6)	150 (6)	200 (8)
E	INLET FASTENING	∅ mm (in)	37 (1 1/2)	37 (1 1/2)	37 (1 1/2)
	H	mm (in)	1846 (72.7)	1995 (78.5)	2078 (81.8)
	N	mm (in)	640 (25.2)	726 (28.6)	825 (32.5)
Ed	INLET FASTENING	∅ mm (in)	16 (0.6)	16 (0.6)	16 (0.6)
	H	mm (in)	1783 (70.2)	1932 (76.1)	2150 (84.6)
	N	mm (in)	652 (25.7)	738 (29.1)	825 (32.5)
	MAXIMUM VOLTAGE	V	240	240	240
	MAXIMUM CURRENT	A	0.05 (* 2)	0.05 (* 2)	0.05 (* 2)
d	CONNECTION	mm (in)	8 x diam. 10 (3/8) 1 x diam. 12 (1/2)	8 x diam. 10 (3/8) 1 x diam. 12 (1/2)	8 x diam. 10 (3/8) 1 x diam. 12 (1/2)
	H	mm (in)	1328 (52.3)	1460 (57.6)	1493 (58.8)
	N	mm (in)	589 (23.2)	673 (26.5)	775 (30.5)
V	CONNECTION	B.S.P thread (in)	3/4	3/4	1
	H	mm (in)	1224 (48.2)	1345 (53.0)	1290 (50.8)
	N	mm (in)	490 (19.3)	362 (14.3)	605 (23.8)
	PRESSURE (MIN/MAX)	bar (P.S.I)	2-6 (29 / 87)	2-6 (29 / 87)	2-4 (29-60)
	FLOW	kg/h (lbs/h.)	180 (397)	180 (397)	360 (794)
AC	CONNECTION	mm (in)	diam. 10 (3/8)	diam. 10 (3/8)	diam. 10 (3/8)
	H	mm (in)	930 (36.6)	845 (33.3)	1145 (45.1)
	N	mm (in)	515 (20.3)	600 (23.6)	568 (22.4)
	PRESSURE (MIN/MAX)	bar (P.S.I)	6-7 (87/100)	6-7 (87/100)	6-7 (87/100)
	FLOW	l/min (Usgal/min)	200 (53)	200 (53)	290 (77)

**Legend**

CONNECTIONS	
A	Water supply
D	Drain
2D	Second drain
E	Electrical connection inlet
Ed	Electrical connection inlet external dosing
d	Product inlets external dosing
V	Steam inlet connection
* 1	Option of 3 water inlets
* 2	Origin of the external dosing signal to the washer 1A maximum current

DIMENSIONS (Figures 1, 2)	
H	Height from the machine base
N	Distance from the centre of symmetry of the unit
P	Depth
M	Height to door bottom
	Gravity centre (GC)

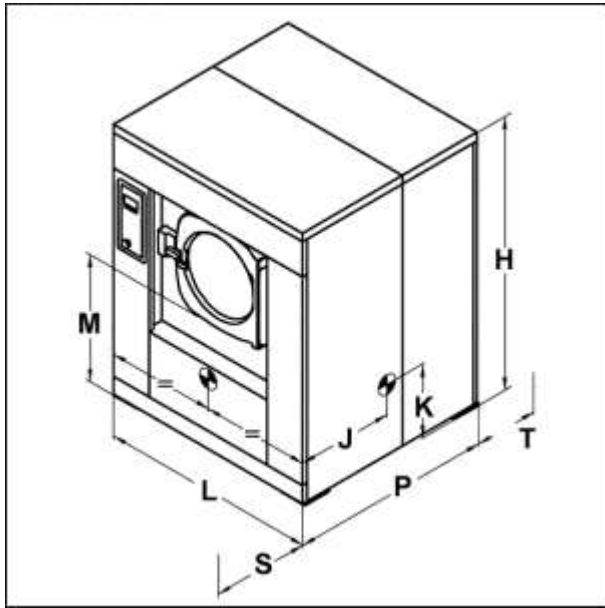


Fig. 1.1

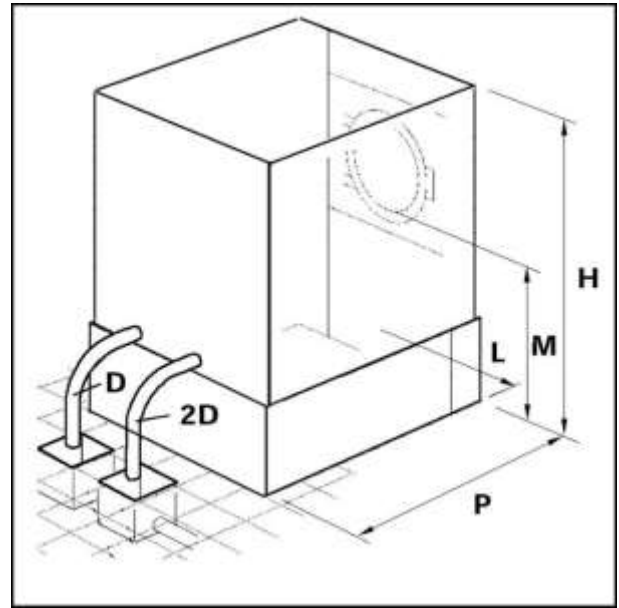


Fig. 1.2

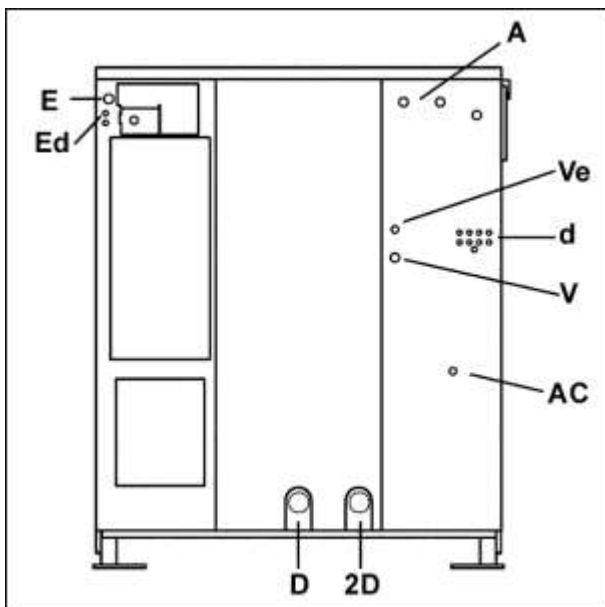


Fig. 1.3

### Environment and positioning conditions

MAXIMUM TEMPERATURE		1	+41 (+104)
MINIMUM TEMPERATURE		°C (°F)	+5 (+40)
LIGHTING		Lux	300
VENTING OPENING		cm <sup>2</sup> (sq.ft.)	300 (0.4)
MAXIMUM RELATIVE HUMIDITY		%	90
<b>S</b>	WORKING AREA	mm (in)	1000 (39.4)
<b>T</b>	REAR MAINTENANCE AREA	mm (in)	900 (35.4)

If the installation calls for more than one washer, please refer to the corresponding dimensions in section 2.4 and Figure 2.6

### 1.5. Connection table explanation

Connection table explanation and symbols of section 1.6.

(*1) HEATING		
<b>H</b>	Without heating	
<b>V</b>	Steam heating	
<b>E</b>	Electric heating	
	<b>red.</b>	reduced power
	<b>norm.</b>	normal power

(*2) EXPLANATION OF WIRE VALUES	
<b>A</b> x <b>B</b> + <b>N</b> +	Wire details in mm2
<b>(A</b> x <b>B</b> + <b>GND</b> )	(USA/CANADA: wire details in AWG)
A x <b>B</b> + <b>N</b> +	Wire number
A x B + <b>N</b> +	Neutral wire
A x B + <b>N</b> +	Ground
(A x B + <b>GND</b> )	(USA/CANADA: ground wire)
<b>USE COPPER CONDUCTORS ONLY</b>	

**1.6. Electrical requirements**


Check table explanation in section 1.5.



In brackets: USA / CANADA specific values

**HS-6040 / EH090**

VOLTAGE	HEATING (*1)	TOTAL POWER	TOTAL CONSUMP.	SWITCH CURRENT	WIRE (*2)	
		kW	A	A	mm <sup>2</sup> (AWG)	
200V 3ph	H / V	4.8	13.9	16	2,5 x 3 +	
	E	red.	10.2	29.4	40	6 x 3 +
		norm.	18.9	54.5	80	16 x 3 +
208V 3ph	H / V	4.8	13.3	16	2,5 x 3 +	
		(4.8)	(13.3)	(16)	(12 x 3 + GND)	
	E	red.	10.9	30.3	40	6 x 3 +
		norm.	20.3	56.4	80	16 x 3 +
		(18.6)	(51.6)	(80)	(6 x 3 + GND)	
220V 3ph	H / V	4.8	12.6	16	2,5 x 3 +	
	E	red.	12.0	31.5	40	6 x 3 +
		norm.	22.5	59.2	80	16 x 3 +
230V 3ph	H / V	4.8	12.0	16	2,5 x 3 +	
	E	red.	13.0	32.6	40	6 x 3 +
		norm.	24.5	61.5	80	16 x 3 +
240V 3ph	H / V	4.8	11.5	16	2,5 x 3 +	
		(4.8)	(11.5)	(16)	(12 x 3 + GND)	
	E	red.	12.9	31.1	40	6 x 3 +
		norm.	24.2	58.3	80	16 x 3 +
		(24.2)	(58.3)	(80)	(6 x 3 + GND)	
380V 3ph	H / V	4.8	7.3	10	2,5 x 3 +	
	E	red.	12.0	18.3	25	4 x 3 +
		norm.	22.5	34.3	40	10 x 3 +
400V 3ph	H / V	4.8	6.9	10	2,5 x 3 +	
	E	red.	13.0	18.8	25	4 x 3 +
		norm.	24.5	35.4	40	10 x 3 +
415V 3ph	H / V	4.8	6.7	10	2,5 x 3 +	
	E	red.	12.9	18.0	25	4 x 3 +
		norm.	24.2	33.7	40	10 x 3 +
440V 3ph	H / V	4.8	6.3	10	2,5 x 3 +	
		(4.8)	(6.3)	(10)	(12 x 3 + GND)	
480V 3ph	H / V	4.8	5.8	10	2,5 x 3 +	
		(4.8)	(5.8)	(10)	(12 x 3 + GND)	



Check table explanation in section 1.5.

In brackets: USA / CANADA specific values

**HS-6057 / EH130**

VOLTAGE	HEATING (*1)		TOTAL POWER	TOTAL CONSUMP.	SWITCH CURRENT	WIRE (*2)	
			kW	A	A	mm <sup>2</sup> (AWG)	
200V 3ph	H / V		7.3	21.1	25	6 x 3 +	
	E	red.	15.3	44.1	63	10 x 3 +	
		norm.	27.8	80.1	100	25 x 3 +	
208V 3ph	H / V		7.3	20.3	25	6 x 3 +	
			(7.3)	(20.3)	(25)	(10 x 3 + GND)	
	E		16.3	45.2	63	10 x 3 +	
			29.8	82.7	100	26 x 3 +	
			(27.9)	(76.6)	(100)	(2 x 3 + GND)	
220V 3ph	H / V		7.3	19.2	25	6 x 3 +	
	E	red.	17.9	47.0	63	10 x 3 +	
		norm.	33.0	86.6	125	25 x 3 +	
230V 3ph	H / V		7.3	18.3	25	6 x 3 +	
	E	red.	19.3	48.4	63	10 x 3 +	
		norm.	35.8	89.9	125	25 x 3 +	
240V 3ph	H / V		7.3	17.6	25	6 x 3 +	
			(7.3)	(17.6)	(25)	(10 x 3 + GND)	
	E	red.	19.3	46.4	63	10 x 3 +	
		norm.		35.8	86.1	125	25 x 3 +
				(35.8)	(86.1)	(125)	(2 x 3 + GND)
380V 3ph	H / V		7.3	11.1	16	4 x 3 +	
	E	red.	16.7	25.3	32	6 x 3 +	
		norm.	33.0	50.1	63	16 x 3 +	
400V 3ph	H / V		7.3	10.5	16	4 x 3 +	
	E	red.	19.3	27.9	32	6 x 3 +	
		norm.	35.8	51.7	63	16 x 3 +	
415V 3ph	H / V		7.3	10.2	16	4 x 3 +	
	E	red.	19.3	26.9	32	6 x 3 +	
		norm.	35.8	49.8	63	16 x 3 +	
440V 3ph	H / V		7.3	9.6	16	4 x 3 +	
			(7.3)	(9.6)	(16)	(8 x 3 + GND)	
480V 3ph	H / V		7.3	8.8	16	4 x 3 +	
			(7.3)	(8.8)	(16)	(8 x 3 + GND)	





Check table explanation in section 1.5.



In brackets: USA / CANADA specific values

**HS-6110 / EH255**

VOLTAGE	HEATING (*1)	TOTAL POWER	TOTAL CONSUMP.	SWITCH CURRENT	WIRE (*2)
		kW	A	A	mm <sup>2</sup> (AWG)
200V 3ph	H/V	11	31.8	40	10 x 3 +
208V 3ph	H/V	11	30.5	40	10 x 3 +
		(11)	30.5	40	8 x 3 + GND
220V 3ph	H/V	11	28.9	40	10 x 3 +
230V 3ph	H/V	11	27.6	40	10 x 3 +
240V 3ph	H/V	11	26.5	40	10 x 3 +
		11	26.5	40	8 x 3 + GND
380V 3ph	H/V	11	16.7	25	6 x 3 +
400V 3ph	H/V	11	15.9	25	6 x 3 +
415V 3ph	H/V	11	15.3	25	6 x 3 +
440V 3ph	H/V	11	14.4	20	6 x 3 +
		11	14.4	20	10 x 3 + GND
480V 3ph	H/V	11	13.2	20	6 x 3 +
		11	13.2	20	10 x 3 + GND

**2. RECEIPT, TRANSPORT AND LOCATION**

**2.1. Receipt**

The following should be checked on accepting delivery of the washer:

- Check that the product has not suffered any damage in transit. (Any damage caused in this way will not be attributable to the manufacturer, and the appropriate claim should be made against the party responsible for transporting the product.)
- Check that the delivered machine fulfils the requirements requested in the order: **MODEL, VOLTAGE, FREQUENCY, TYPE OF HEATING AND TYPE OF PADDING.**

**THE MACHINE'S PACKAGING MUST BE DISPOSED OF IN ACCORDANCE WITH THE ENVIRONMENTAL REGULATIONS IN FORCE IN THE COUNTRY OR AREA IN WHICH THE MACHINE IS TO BE USED.**

**2.2. Transport of the machine**



**IT IS BOUND THAT ALL MANOEUVRES ARE CARRIED OUT BY STAFF SPECIALISED IN TRANSPORT.**

**ALWAYS USE TRANSPORT METHODS WHICH ARE SUITABLE FOR THE WEIGHT AND VOLUME OF THE WASHER. CHECK THE VALUES ON THE PACKAGING AND THE INSTALLATION SPECS (SECTION 1.4) OF THIS MANUAL.**

**THE WEIGHT AND VOLUME OF THESE WASHERS IS IMPORTANT. TAKE SPECIAL CARE DURING THE TRANSPORTATION OF THE MACHINE.**

- Before moving the washer, check the instructions of the packaging pictograms.
- Unit must be transported in the upright position.
- Protect the machine from rain and dampness.
- Avoid blows and shocks.
- It is preferable to transport the washer with its packaging using a forklift and by lifting it from its base. Never move the machine by pushing on the sides of the packaging.
- Position the washer with crating as near as possible to the final location.

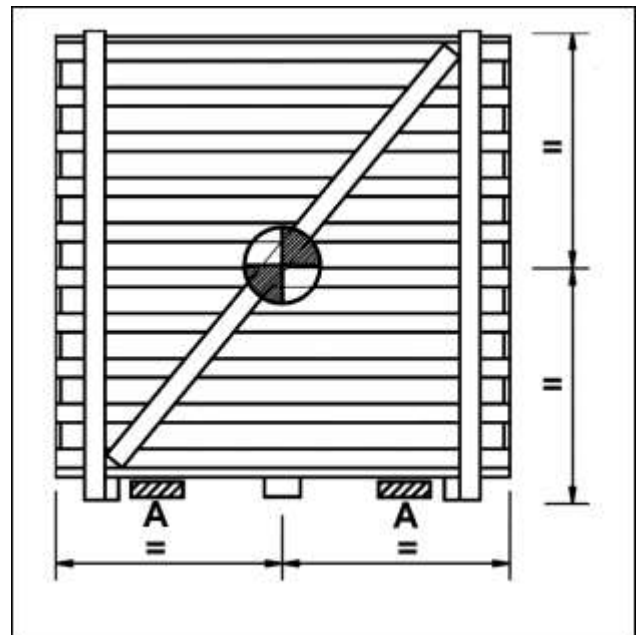


Fig. 2.1

**Transporting crated machines**

To move the machine when crated (Fig. 2.1) use best a forklifts, introducing the forks (A) in the space between the base of the packaging and the floor, using the maximum width permitted by the crating. In those cases in which this transport method is not possible and the machine must be lifted by a crane:

**HS-6040, HS-6057, EH090, EH130:**  
Place the slings under the crating.

**⚠ ATTENTION!**  
**THE POSITIONING OF THE SLINGS MUST BE DONE AS SHOWN IN FIG. 2.2. OTHERWISE THE CRATING AND THE WASHER COULD BE DAMAGED.**

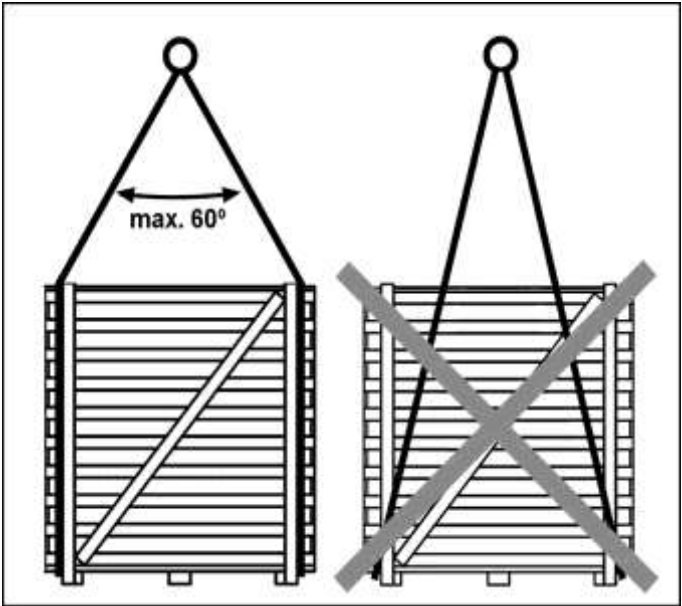


Fig. 2.2

**HS-6110, EH255**

Remove the two small covers located in the upper part of the washer (Fig. 2.3). The transport handles are visible and accessible through the crating.

**Once this operation is over, replace and lock the covers correctly.**

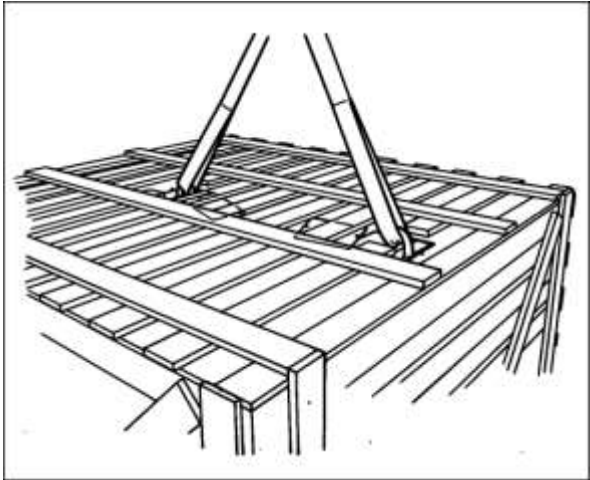


Fig. 2.3

## Transporte de la maquina sin embalaje

Unpacking the machine, mainly separating from the wooden base, must be done as closely as possible to the final location. This way you will avoid damaging the base of the machine as well as the floor.

Once you have separated the wooden base from the packaging, the easiest way to transport the washers is to lifting with a crane, using the transport handles as fastening points which are located at the top of the frame (Fig. 2.4).

To access these fastening points:

- **HS-6040, HS-6057, EH090, EH130:** Detach the fixing screws of the two top covers and remove them.
- **HS-6110, EH255:** Detach the two small covers located in the top covers, front and centre part of the washer. The transport handles are visible and accessible.

**Once this operation is over, replace and lock the covers correctly.**

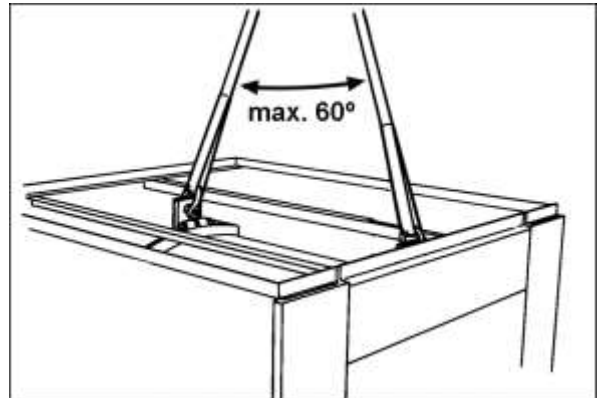


Fig. 2.4

When there is no possible way to lift the machines in place by a crane, they must be moved by forklifts or by means of metallic rollers placed in the base of the washer (attention to the weight of the washers). The length of these rollers must be 8 in (200 mm) bigger than the base of the washer.

## 2.3. Releasing the security lock

To open the door in case of power failure, completely insert a rod of a diameter of 0.2 in (3 mm) and an approximate length of 4 in (100 mm) into the bottom side of the safety lock cover, and at the same time turn the knob downwards, (Fig. 2.5).



**WARNING!**

**MANUAL OPENING OF THE SAFETY LOCK MUST ONLY BE USED BEFORE THE START-UP OF THE MACHINE. ONCE THE WASHER IS IN SERVICE, NEVER USE THE MANUAL OPENING OF THE LOCK AS A USUAL WAY TO OPEN THE DOOR.**

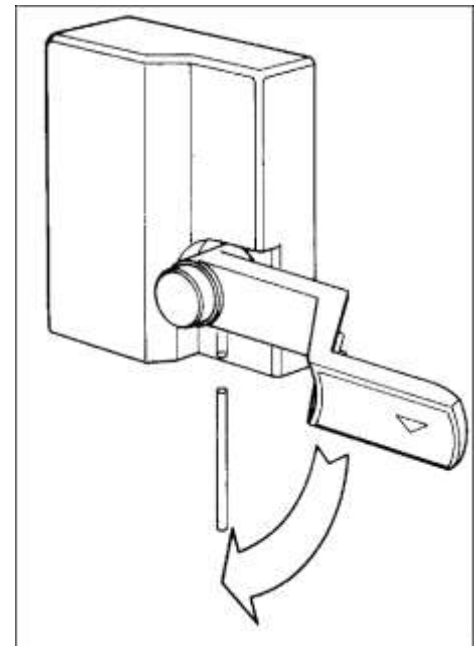


Fig. 2.5

## 2.4.

## 2.4. Washer location Conditions



### ATTENTION!

HS-6 / EH6 WASHERS ARE SOFT-MOUNTED MACHINES AND THE STRESS TRANSMITTED TO THE FLOOR IS LOW. HOWEVER, THEIR WEIGHT IS CONSIDERABLE. INSTALL THE WASHER ON A SECURE BASE CAPABLE OF SUSTAINING THE WASHER'S WEIGHT. REFER TO STRENGTH REQUIREMENTS TABLE (section 3.3).  
RECOMMENDED MINIMUM RESISTANCE OF THE FLOORING: 250kg/cm<sup>2</sup> (4000 P.S.I).



### INSTALLATION ON UPPER FLOORS

Never install washing machines on suspended floors or above ground level without obtaining approval from the appropriate qualified technician (structural engineer for building safety and noise transmission).

See floor static & dynamic strength requirements on INSTALLATION SPECIFICATIONS (section 1.4).

In these installations, the manufacturer declines all responsibility for possible damages caused by vibrations in the building structures.

The floor of the washer location must be a flat surface (refer to the indications on the INSTALLATION SPECS, section 1.4),

Respect the **ENVIRONMENTAL CONDITIONS** indicated on the INSTALLATION SPECS (section 1.4). Also, respect the work and maintenance areas; these are necessary for the safe use and appropriate maintenance of the washing machine.

Do not install the washer in improper vented areas. The products used can produce steam and gas products emissions, which in high concentrations can be very dangerous to health.

**TO REDUCE VIBRATION AND SOUND AND TO ENSURE THAT THE MACHINE IS CORRECTLY BALANCED, IT IS ESSENTIAL THAT THE FOUR BASE LEGS OF THE WASHING MACHINE REST UNIFORMLY UPON THE FLOOR. DO NOT PLACE ANY TYPE OF ANTI-VIBRATORY DEVICE BETWEEN THE WASHER AND THE FLOOR.**

**NEVER INSTALL THE WASHER OVER AREAS BUILT WITH COMBUSTIBLE MATERIAL.**

**IF WASHERS ARE INSTALLED ON METALLIC SURFACES, AN ELECTRICAL CONDUCTOR INDEPENDENT TO THE WASHER GROUND MUST GROUND THESE SURFACES.**



Specific warning for appliances installed IN THE USA /CANADA.

To reduce the risk of fire, this appliance must be fastened or otherwise secured to an uncovered concrete floor.



### DANGER!

Due to design requirements, the dosing dispenser of the washer is located at a height of more than 60 in (1500 mm).

When introducing the chemical washing products in the dispenser, there is a risk, increased for users of low height, to receive spattering.

As protection, it is essential to install an auxiliary platform to provide easy access and with a non-slip surface.

**2.5. Installing more than one washer**

If the installation calls for more than one washer, align them with each other.

The minimum distance between adjacent machines and the user and maintenance areas (values **I**, **S** and **T** of **Figure 2.6**) are specified on the table below.

Check the dimensions of the drain box and the drain pipe on the table below.

**Positioning conditions** (Fig. 2.6)

<b>I</b>	<b>DISTANCE BETWEEN MACHINES (MINIMUM)</b>		mm (in)	700 (27.6)
<b>S</b>	<b>WORKING AREA</b>		mm (in)	1000 (39.4)
<b>T</b>	<b>REAR MAINTENANCE AREA</b>		mm (in)	750 (29.5)
<b>A</b>	<b>DRAIN BOX</b>	HS-6040; HS-6057 EH090; EH130	mm (in)	300 x 300 x 250 (H) (12 x 12 x 10 H)
		HS-6110 EH255	mm (in)	400 x 400 x 300 (H) (16 x 16 x 12 H)
∅	<b>DRAIN PIPE</b> (∅x1; ∅x2; ∅x3)	HS-6040; HS-6057 EH090; EH130	∅ mm (in)	150; 180; 200 (6; 7; 8)
		HS-6110 EH255	∅ mm (in)	180; 250; 360 (7; 10; 14)

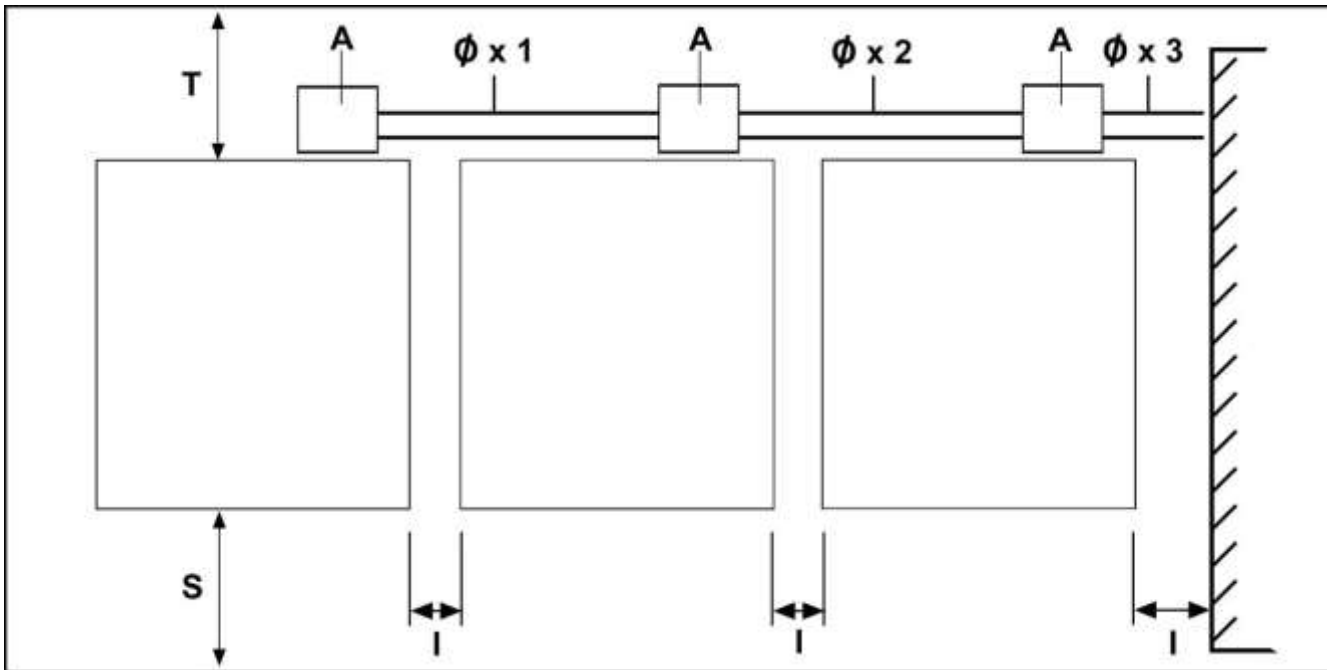


Fig. 2.6

## 2.6. Removal of shipping braces



**THIS OPERATION MUST BE CARRIED OUT BY THE AUTHORIZED TECHNICAL SERVICE.**

**DO NOT REMOVE THE SHIPPING RESTRAINTS BEFORE PLACING THE WASHER IN ITS DEFINITIVE POSITION.**

**NEVER START THE MACHINE UP WITHOUT FIRST REMOVING THE SHIPPING RESTRAINTS. INCOMPLIANCE WITH THIS PRECAUTION MAY CAUSE SERIOUS PHYSICAL DAMAGES TO PEOPLE AND IRREPARABLE DAMAGES TO THE WASHER. THE WARRANTY DOES NOT COVER THIS INCIDENT.**

### TILT MODELS

**THE TILT SYSTEM ACCESSORIES MUST BE INSTALLED AFTER HAVING REMOVED THE WASHER COVERS AND BEFORE REMOVING THE TRANSPORT RESTRAINTS. (Refer to chapter 4)**

**ONCE THE TRANSPORT RESTRAINTS ARE REMOVED, REPLACE AND PROPERLY LOCKED ALL WASHER COVERS. NEVER START THE MACHINE UP OR USE IT UNTIL ALL THE COVERS HAVE BEEN REPLACED AND PROPERLY LOCKED.**

### 2.6.1. HS-6040, HS-6057, EH090, EH130 models

- Remove the screws (Fig.2.7/A) holding the lower front cover and loosen the three screws (Fig. 2.7/B) holding the base of the chassis.
- Separate the rubber profile (Fig. 2.7/C) at the two small side guards and remove the front cover (Fig. 2.7).
- Remove the screws holding the rear cover and remove it.

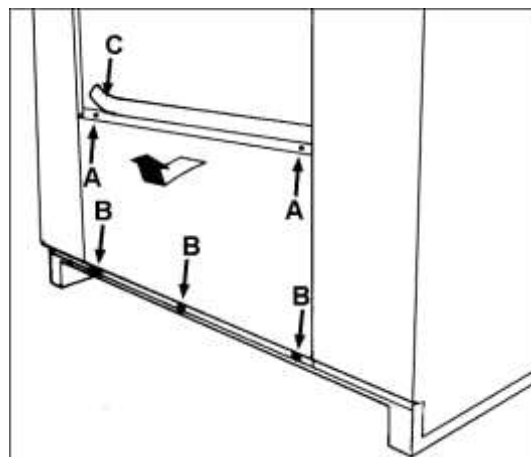


Fig. 2.7

- Locate on the chassis base the two yellow fixing profiles and dismantle them. The profiles are secured with screws (Fig. 2.8)
- Assemble the rear cover.
- Assemble the front cover and place the rubber profile at the small side guards.
- **TILT** models. Assemble all the guards of the tilt system (section 5.7.).



**ATTENTION!**

**The rubber profile is a protection against cutting and catching. Check that it is properly fixed on the front cover and side covers.**

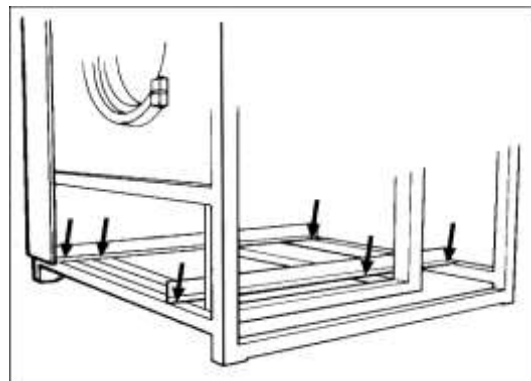


Fig. 2.8

- Assemble the toe plate (Fig. 2.9).
- Fit the perforated metal plate onto the lower aperture at the back of the machine.
- Both protections are dispatched dismantled from the rest of the machine, and the securing screws are screwed into the respective securing points.
- TILT models. Assemble all the guards of the tilt system (section 5.7.)

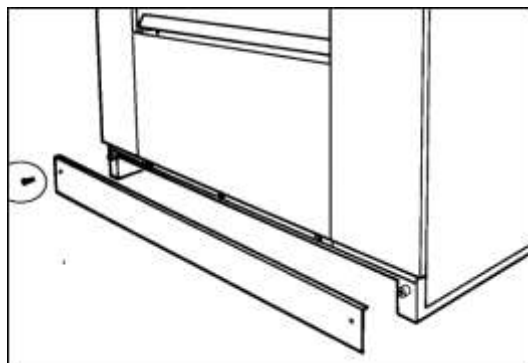


Fig. 2.9

## 2.6.2. HS-6110, EH255 models

- Remove the screws securing the side guards at the top. Loosen the screws holding the lower guard and separate them from the machine (Fig. 2.10/A. B).

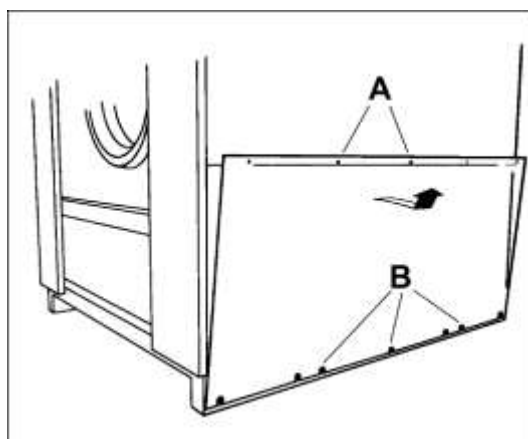


Fig. 2.10

- Locate the four yellow fixing angles (Fig.2.11/A) and disassemble them.

(In order to avoid the movement of the floating chassis during transport, the 8 fixing screws are firmly tightened. Use appropriate tools)

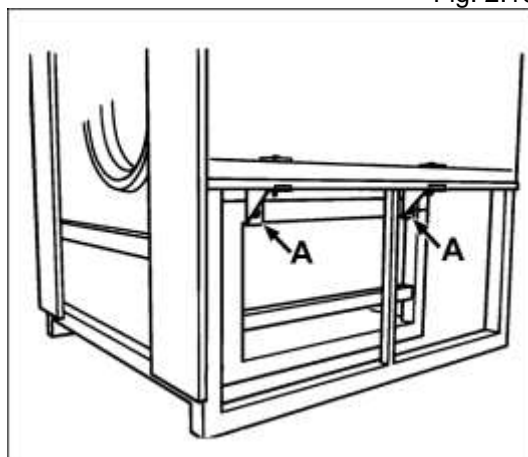


Fig. 2.11

- Assemble the side covers
- Assemble the toe plate (Fig. 2.12).
- Fit the perforated metal plate onto the lower aperture at the back of the machine.
- Both protections are dispatched dismantled from the rest of the machine, and the securing screws are screwed into the respective securing points.
- **TILT** models. Assemble all the guards of the tilt system (section 5.7.)

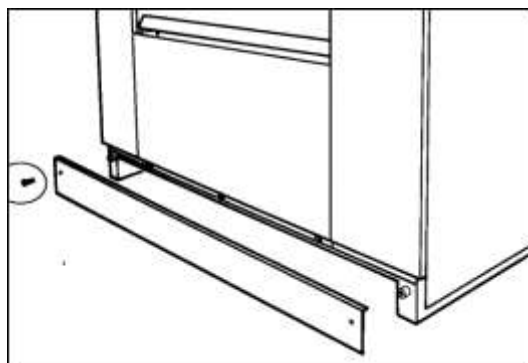


Fig. 2.12



### 3. INSTALLATION



ALL CONNECTIONS FOR ELECTRICAL POWER AND PLUMBING MUST COMPLY WITH THE STATUTORY SAFETY STANDARDS APPLICABLE TO EACH COUNTRY, AND BE MADE BY AUTHORISED INSTALLATION CONTRACTORS ONLY.  
ALL THE WASHER CONNECTIONS MUST BE CARRIED OUT BY THE AUTHORIZED TECHNICAL SERVICE.

#### 3.1. Drain



##### OBSERVATIONS REGARDING THE DRAIN PIPE.

Always fit the drain pipe supplied by the manufacturer.

HS-6040, HS-6057, EH090, EH130 models

As a safety measure, the drain elbow pipe must not be modified.

HS-6110, EH250 models.

In those installations where the length of the drain pipe delivered by the manufacturer must be modified, the minimum length must always be greater than 850mm (34 in.)

Choose one of the following options depending on the possibilities for installation and the regulations in force in the country where the installation is being carried out.

##### 3.1.1. Drain to the drain box

Build a drain box (Fig. 3.1) following the specifications indicated in the INSTALLATION SPECS, section 1.4.

Connect the drain elbow to the drain outlet. Secure it with the corresponding clamp (Fig. 3.2)

Do not sink the free end of the drain elbow in the drain box:

- To prevent dirty water siphoning to the washing machine.
- To facilitate the water drain.
- To detect water leaks through the drain.
- To prevent dirty water from coming into contact with the washer.

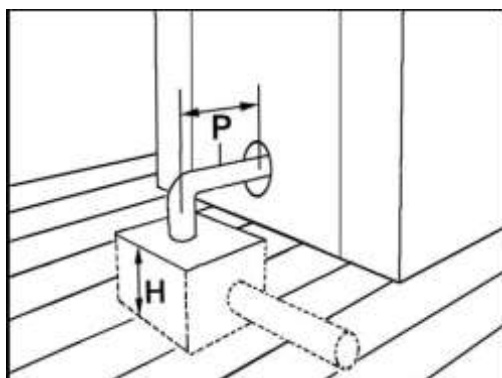


Fig. 3.1

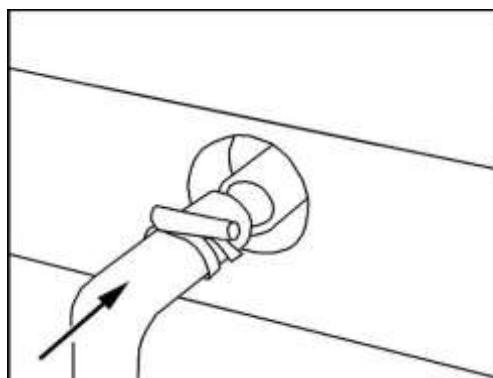


Fig. 3.2

**3.1.2. Direct connection of the washer drain to the manifold**

Facilities preferring this option to the open box option (recommended option) must respect the following precautions:

Provide next to the connection point of each machine to the manifold, with a manifold ventilation outlet **A** reaching the outside, set at a height of 60 in. (1500mm) and of a diameter of 2 in. (50mm).

Diameter of B manifold: refer to table on section 2.4 and Figure 2.6.

The emptying of the drain trap to the sewer system is done through an open drain box (Fig. 3.3/B and C) which prevents variations in pressure and backflow to the drain. **The end of the drain trap must not be sunk in the box.**

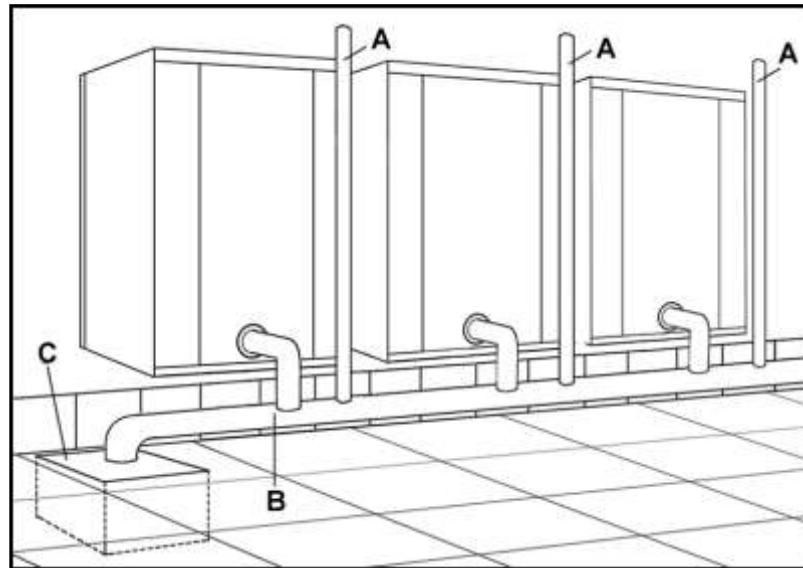


Fig. 3.3



**TILT MODELS**

After the starting-up of the washer, check that the loading and unloading movements don't no move the drain outlet hose out of the sewer drain box.

In installation with the connection directly to the sewer, the connections of both ends of the drain hose must be fastened.

### 3.2. Water supply



#### **IMPORTANT!**

The local or national regulations concerning the water supply system in the country where the washing machine is installed must be followed.

Hoses and pipes should be flushed through before being connected to the machine.

Install at each water supply and in an accessible location, a mechanically interlocked water valve. In those premises using water containing impurities, it is recommended to install a filter at the main water supply inlet.

Refer to technical specifications on the INSTALLATION SPECS, section 1.4.



#### **IMPORTANT!**

##### **PROTECTION AGAINST OVERPRESSURE**

**IF THE FEEDING PRESSURE IS HIGH AND FLUID HAMMERS OCCUR WHEN CLOSING THE VALVES, IT IS REQUIRED TO INSTALL A SMALL AIR LUNG OR ANTI-FLUID-HAMMER DEVICE TO PREVENT PREMATURE DAMAGE OF MEMBRANES.**

#### **Assembling the filters and their connection (Fig. 3.4)**

Directly assemble the supplied filters to the machine water inlets.

Assure they are watertight by means of a suitable product.

The arrow of the filter shows the direction of water flow.

Connect the hoses to the filters. Do not forget the seals.

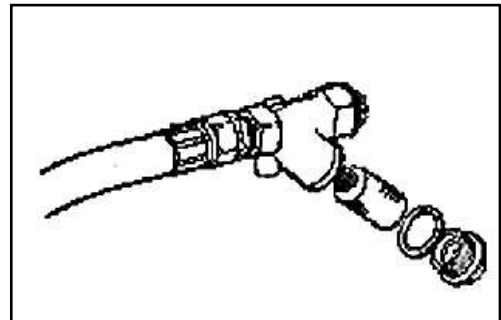


Fig. 3.4



#### **IMPORTANT!**

HS-6040, HS-6057 and HS-6110 models EC certified.

##### **SIPHONAGE CONTAMINATION PREVENTION**

If the washer extractor is directly connected to the water supply, an antisiphon device must be connected either to the external supply inlet or prior to every connection.



#### **IMPORTANT!**

**DO NOT CONNECT THE HOT WATER TO INLET 1. THIS INLET DOES NOT HAVE A TEMPERATURE CONTROL SYSTEM.**

**DO NOT CONNECT THE HOT WATER TO INLET 3 IF IT IS NOT CONFIGURED AS A DUAL HOT WATER INLET FLOW.**

**INCOMPLIANCE OF THIS PRECAUTION CAN CAUSE FABRIC DAMAGE.**



For a correct operation of the washing machine, the hot and cold water inlets must receive an uninterrupted supply at all times.




If there is no hot water supply, connect cold water or cold softened water to inlet 2.

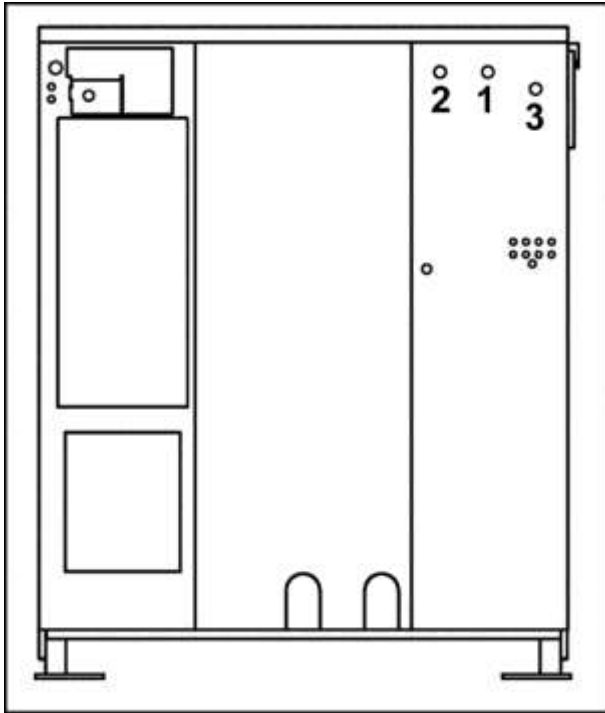
**ADAPT THE WASHER CONFIGURATION to operating with cold water.**

**Arrangement of the hoses**

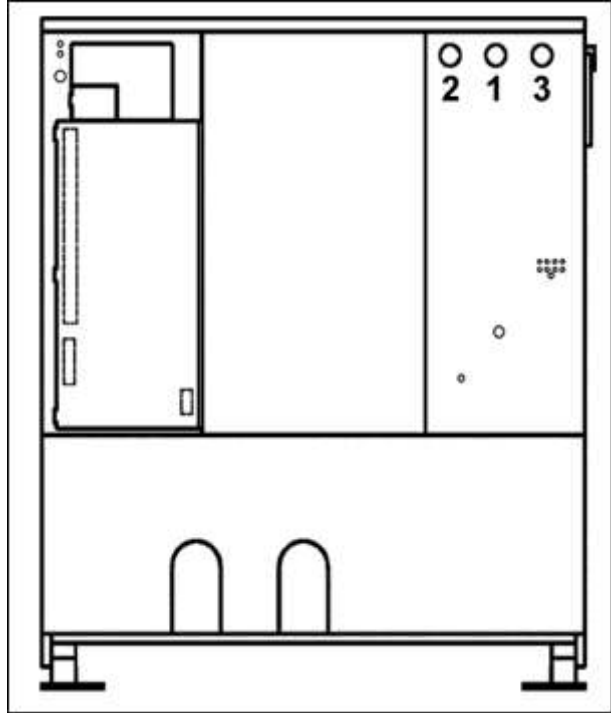
The inlets are identified by the label posted at each inlet (Fig. 3.5).

The washer mixes hot and cold water according to the temperature programmed. The use of hot/cold water allows the machine to gain time and effectiveness in its washing programs.

- Inlet 1.**  **1** Connect cold water.
- Inlet 2.**  **2** Connect hot water.
- Inlet 3.**  **3** Connect cold or hot water according to the washer configuration.



HS-6040; HS-6057; EH090; EH133



HS-6110; EH255

Fig. 3.5



**TILT MODELS**

The location of the water supply must allow that hoses accommodate the washer's movements during loading and unloading operations. Refer to section 4.5.

### Assembling the connection couplings for AUSTRALIA

#### IMPORTANT

20mm dual check valve supplied with machine must be installed on the cold water inlet to the machine. This valve is designed to prevent cross connection (back siphonage) and complies with AS/NZS Standard 2845.1 (Watermark).

- Fit the non-return valve A to the cold water water inlet connection of the machine considering the flow direction marked on the valve.
- Fit the coupling B downstream the valve.
- Fit the water inlet hoses downstream the valve.

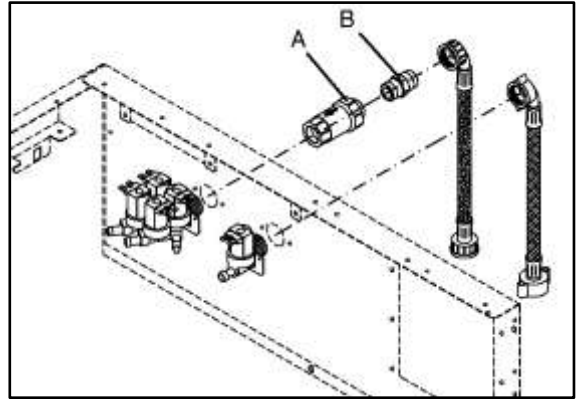


Fig. 3.6

### 3.3. Electrical connection

#### 3.3.1. Previous requirements



**CHECK THAT THE POWER AND FREQUENCY OF THE ELECTRICAL SUPPLY CORRESPONDS TO THOSE OF THE WASHER.** Check the nameplate posted on the back panel of the machine.



**ALL THE MATERIALS USED IN THE ELECTRICAL INSTALLATION MUST COMPLY WITH THE STATUTORY SAFETY STANDARDS APPLICABLE TO EACH COUNTRY.**



**ALWAYS CONNECT THE GROUND EXTERNAL PROTECTION CIRCUIT. THIS UNIT MUST BE CONNECTED TO THE GROUND INSTALLATION WITH A CONDUCTOR CONNECTED TO THE EQUIPMENT GROUNDING TERMINAL.**



**Specific warning for appliances installed IN THE USA /CANADA.**

**GROUNDING INSTRUCTIONS** This appliance must be connected to a grounded metal, permanent wiring system, or an equipment grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal on the appliance.

#### 3.3.2. Installation characteristics

Refer to specific characteristics on the ELECTRICAL CONNECTION table (section 1.6)

##### **Conductor:**

- The data referring to conductors are based on a multi-wire copper conductor.
- The length of the conductor from the safety switch to the washer must not be longer than 10m.
- If using single-wire conductors, these must be encased within a safety conduit.
- The conductor must be affixed to the inlet opening of the machine using a secure connection appropriate for the type of conductor or safety conduit.
- The conductor must be secured against any pulling, crushing or rubbing.
- Additional specifications for the conductor: must comply with the statutory regulations of the country in which it is to be installed.



##### **TILT MODELS**

**Electrical conductors must be flexible, capable of accommodating the washer movements during the loading and unloading operations and secured at their ends. Refer to section 4.5.**

**Circuit breaker.** Install an earth-leakage protected circuit breaker.

Characteristics:

- installed in an easily accessible place.
- number of poles and intensity: consult ELECTRICAL CONNECTION table (section 1.6)
- A type
- Protected against pulse currents, harmonics, the presence of continuous components, etc. (consult manufacturer specifications).

**Safety switch.** Install an Automatic on/off Switch, outside the washer, with individual protection for each machine.

Characteristics:

- number of poles and intensity: consult ELECTRICAL CONNECTION table (section 1.6)
- C type with top opening at 0.12 in (3 mm)
- Must isolate electrical source phases and the N cable.
- mechanically lockable.
- installed in an easily accessible place.

**⚠ ATTENTION!**  
**In machines with ETL mark, the SAFETY SWITCH must be UL489 approved.**

**3.3.3. Machine electrical connection**

- Disconnect and mechanically lock the external automatic switch.

**! FOR A CORRECT CONNECTION, FOLLOW THE INDICATIONS OF THE TABLE BELOW**

- Disconnect and mechanically lock the external automatic switch.
- Open machine terminal box at the rear panel. Remove the support cover of the entry switch to the washer.
- On the entry hole of the electrical supply (**E** identified in Figure 1.3) install a lock mechanism (not supplied with the washer) to fasten the cable or cable pipe protector, depending on the cable and pipe protector used. Refer to dimensions and connection diameter in INSTALLATION SPECS, section 1.4.

- Connect the wires directly to the switch breaker.
- The wire connection sequence to the main switch varies according to the machine connection and the power supply. This connection is indicated on the label posted next to the main switch.


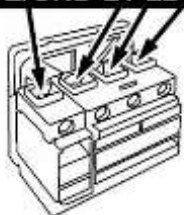
LABEL	SUPPLY LINE	CONNECTION
<b>PE/GND</b> <b>L1</b> <b>L2</b> <b>L3</b>	 <b>L1</b> <b>L2</b> <b>L3</b>	<div style="background-color: black; color: white; padding: 2px; font-weight: bold; margin-bottom: 5px;">PE/GND-L1-L2-L3</div> 

Fig. 3.7

**3.4. Steam connection**

**Installation characteristics**

Before connecting the installation to the solenoid valve, purge the pipe conduits.  
Place a mechanically lockable flow valve in the steam inlet in an accessible place.  
Check dimensions and connection diameters in the Installation specs (section 1.4).

**Models HS-6040, EH090, HS-6057, EH130.**

(Models **TILT HS-6040, EH090, HS-6057, EH130**, see section 3.4.1.)

Generally the body of the steam solenoid valve and the filter are shipped disassembled from the electric installation. The coil is connected to the end of the electrical installation.

**Assembly and solenoid valve connection**

Make sure the coil has been previously removed from its transport position.

The electrical wiring must be fastened to the cut out **VE** on the rear cover (see Fig. 1.3 and section 2.4).

Place the solenoid valve on the end of the steam inlet pipe of the machine.

**Machines USA/Canada:** place the small steam inlet hose (**A**, Fig. 3.8) to the filter inlet, (The end with **NPT** thread must be assembled to the steam conduits; the end with **GAS** thread must be connected to the filter).

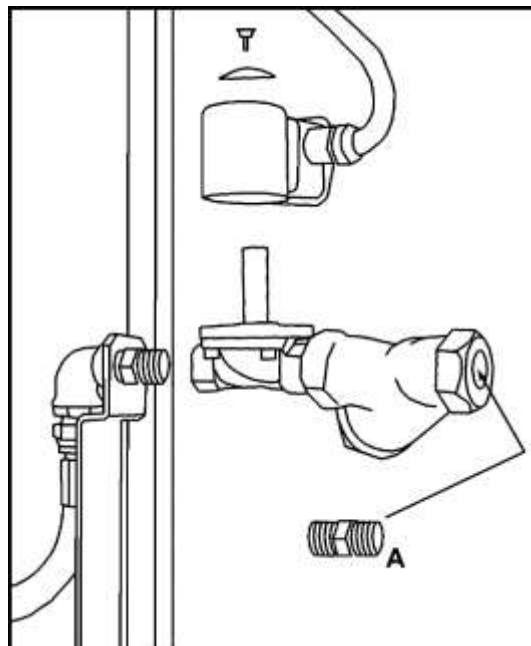


Fig. 3.8

Respect the steam circulation direction indicated by an arrow on each part.

Connect the steam supply of the installation to the washer inlet. Safeguard the installation against accidental contact. It is advisable to insulate the installation to prevent heat loss.

Place the coil on the solenoid valve body and fasten it with the core end screw.

Open the manual valve and check for leaks in the installation.

**⚠️ SEAL ALL THREADED UNIONS WITH A PRODUCT WHICH IS APPROPRIATE FOR STEAM PIPE CONDUITS.**

**HS-6110, EH255 models**

(**TILT** models, refer to section 3.4.1.)

Assemble the steam filter to the pneumatic valve inlet. Respect the steam's circulation direction indicated by an arrow in the filter's body.

Machines in **USA/Canada:** assemble the steam inlet hose to the filter inlet.

**⚠️ ATTENTION!**

**HS-6110 & EH055 MODELS ONLY.**

The admission of steam in the bath causes strong vibrations that can damage the inner drum bottom.

To avoid them, the machine has a pneumatic injector device (Fig- 3.9). To ensure its correct operation, it is **VERY IMPORTANT** to perform the following operations:

- Check that the steam inlet pressure does not exceed 4 bar (60 PSI).
- Check that the compressed air feeding pressure is between 6 and 7bar (87-100 PSI).
- Adjust the compressed air injection regulator (Fig. 3.9), during the steam intake, until noise and vibration are reduced to a minimum.
- Tighten **A** locknut to fasten the regulator position.



Fig. 3.9



**3.4.1. Steam connection in TILT models**

**⚠ ATTENTION!**

The end of the steam supply pipe end must be located in the same vertical plane as the steam inlet (V) of the washing machine. Otherwise the tilted movements cause torsion effects that can loosen the threaded couplings.

The value **N** of Figure 3.10 allows to locate the vertical plane of the steam inlet regarding to the centre of the washer. Refer to dimensions in Installation specifications (section 1.4.)

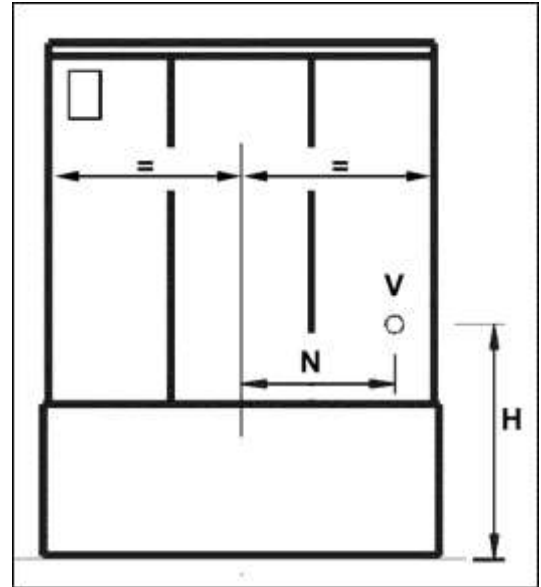


Fig. 3.10

**Connection of the machine to the steam installation (Fig. 3.11)**

Accessories for the steam connection to TILT washers (some accessories can be assembled as a single set)

- A** .. steam inlet filter
  - B** .. threaded coupling
  - C** .. connection flexible pipe. Long.: 59 in. (1500 mm)
  - D** .. threaded coupling
- HS models: **B** and **D** parts are the same; the thread at both sides is **GAS** type.  
 Threaded coupling **D** in EH models: assemble part **D** end with **NPT** thread to the steam conduits; the end with **GAS** thread must be connected to the flexible pipe **C**.

Assemble the steam filter **A** and the coupling **B** to the washers steam inlet.  
 Assemble the threaded coupling **D** to the steam supply pipe.  
 Join both couplings by means of flexible hose **C**. Assemble the offset end to the washer.

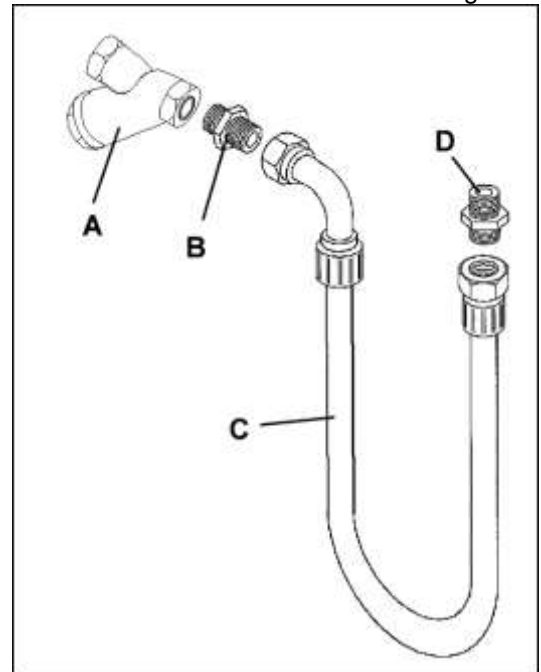


Fig. 3.11

Tighten the flexible pipe connectors firmly.

**⚠ ATTENTION!**  
**DURING THIS OPERATION, HOLD THE ENDS OF THE FLEXIBLE PIPE TO PREVENT IT FROM REMAINING TWISTED (Fig. 3.12)**

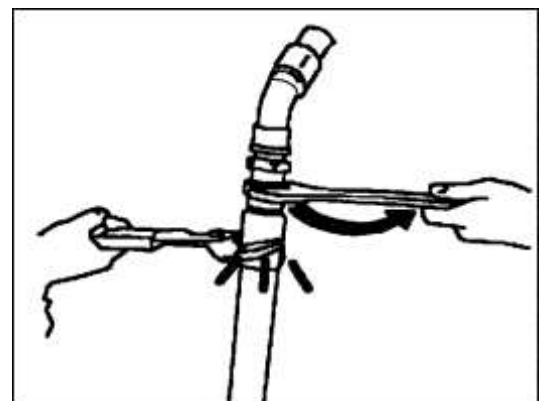


Fig. 3.12

### 3.5. Compressed air connection (Figure 3.13)

Models HS-6040 TILT; EH090 TILT; HS-6057 TILT; EH130 TILT; HS-6110; EH255

- Assemble the pressure gauge **A** and seal the thread with Teflon or other sealing component.
- Pressure (min-max.): **6-7 bar, (87-100 PSI)**. The machine is provided with a filter and pressure regulator.
- The Compressed Air inlet connection to the machine must be done with a flexible tube of 10 mm of inner diameter, secured to the connection adapter **B** with a clamp.
- See Installation specifications (section 1.4) of the corresponding model for sections, dimensions and **CA** connection flow.
- Insert in the supply pipe and in an accessible place a **MECHANICALLY LOCKABLE MANUAL SHUT-OFF VALVE**, to ease general maintenance operations or to be used during long periods of non operation of the washer.

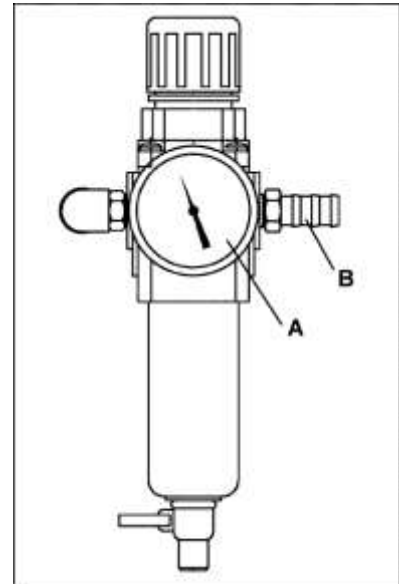


Fig. 3.13



#### **VERY IMPORTANT!**

**Although the machine is provided with a filter at the Compressed Air inlet connection, it is of vital importance to supply to the machine a completely dry air.**



#### **TILT MODELS**

**Air connection hoses to the machine must be flexible, capable of accommodating the washer movements during the loading and unloading operations and secured at their ends.**

### 3.6. External dosing (option)

The washer can communicate with external dosing equipment via electrical signals produced by the closure of relay contacts during wash cycle.

The relay contacts close the circuit between a **COMMON** input in and each one of the outputs corresponding to each one of the dosing that the washer program runs.

According to the characteristics of the external dosing equipment, two different connections can be used:

- **Dry contacts.** Origin of the dosing signals: these proceed from an external supply source of the washer (normally it is a signal coming from the external dosing equipment). The relay contacts act as dry contacts.  
Maximum values for the electricity supply: **240 V, 50/60 Hz; 1A.**
- **Contacts powered from the washer control circuit.** The external dosing control board incorporates a connection point allowing to generate dosing signals from the washer control circuit.  
Supply voltage: **200...240 V; 50/60 Hz** depending on the washer.  
Maximum connection intensity: **0.05 A.**

#### 3.6.1. External dosing equipment connection to the washer

Refer to the washer electrical diagram to locate the connection points.

##### **Steps prior to connection:**

- Disconnect and mechanically lock the external automatic switch.
- Open the terminal box **A**, (Figures 26 and 29) located on the back of the machine.
- On the entry hole of the external dosing electrical supply (**Ed** identified in Figures 3.14 and 3.17) install a lock mechanism (not supplied with the washer) to fasten the cable or cable pipe protector, depending on the cable and pipe protector used. Refer to dimensions and connection diameter in **INSTALLATION SPECS**, section **1.4**.

##### **Signal conductor**

- Characteristics of the signal conductor cable: 0,75 mm<sup>2</sup> (#16-18 AWG), 400 V.
- If using single-wire conductors, these must be encased within a safety conduit.
- The conductor must be affixed to the inlet opening of the machine using a secure connection appropriate for the type of conductor.
- The conductor must be protected against traction, crushing and friction.
- Additional specifications for the conductor: must comply with the statutory regulations of the country in which it is to be installed.



**TILT MODELS**

Electrical conductors must be flexible and capable of accommodating the washer movements during the loading and unloading operations and secured at their ends.

**3.6.2. HS-6040, HS-6057, EH090, EH130 models**

The connection of the external dosing electrical signals takes place on the terminals of **A8** board, located in the electrical connection box (box which contains the switch breaker) Fig. 3.14.

Remove protection cover **A** of the connection box.  
Insert the conductor in **Ed** and secure it with the fixing device.

Once the conductor connection is done, **REPLACE LOCK THE COVERS CORRECTLY.**

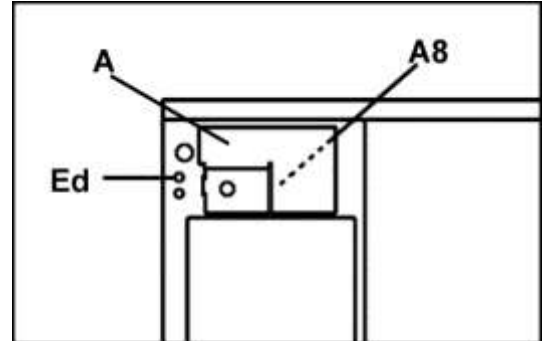


Fig. 3.14

**POTENTIAL FREE RELAY CONTACTS**

Connect the cables between the washer and the dosing unit to **A8** board in the order indicated in the table in section 3.6.4. (Figure 3.15).

Connect the common dosing cable to the terminal identified as **COM**.



**IMPORTANT**

This connection allows for the maximum strength at each of the 1A outputs.  
The dosing signals **ARE NOT PROTECTED** by the washer fuses.

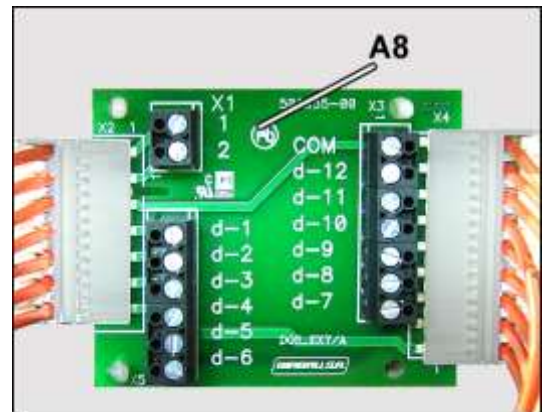


Fig. 3.15

**RELAY CONTACTS POWERED FROM THE WASHER CONTROL CIRCUIT.**

- Supply terminal identified as **COM** from terminal **X1-1** of **A8** board (cable not supplied), Fig. 3.16.
- Supply common phase of the signal outputs from terminal **X1-2** of **A8** board.
- Dosing outputs to the dosing unit: connect in the order mentioned in the table in section 3.6.4.

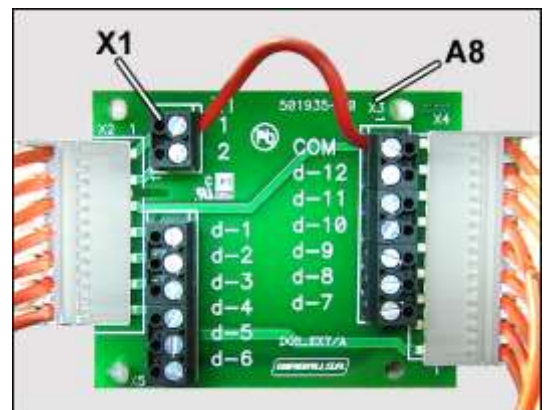


Fig. 3.16



**IMPORTANT**

This connection allows for the maximum strength at each of the 50mA outputs. Higher consumption can prevent the washer from functioning correctly.  
This connection can aggravate any problems produced by a fault in the grounding connection, both of the washer itself and of the external dosing equipment.

**3.6.3. HS-6110, EH255 models**

The connection of the external dosing electrical signals takes place on the terminals of **A4** and **A6** boards, located at the lower part of the washer electrical box (Fig. 3.17).  
 If you use dosing signals coming from **A-4** and **A-6** board, you must link the **COM** terminal of each board (X6-1 and X3-1) by means of an electric insulation conductor of 0.75 mm<sup>2</sup> and 400V.

- Remove protection cover **A** of the connection box.
- Insert the conductor in **Ed** and secure it with the fixing device.
- Remove protection cover **B** of the electric panel.
- Pass the conductor through the cable ducting **C**

**Once the conductor connection is done, REPLACE LOCK THE COVERS CORRECTLY.**

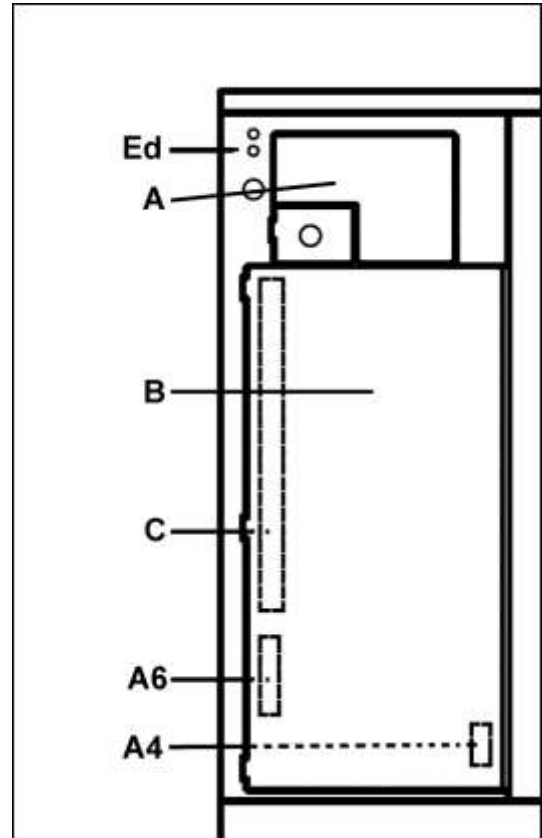


Fig. 3.17

**POTENTIAL FREE RELAY CONTACTS**

**Use of four dosing signals**

The dosing signals from 1 to 4 are originated in **A4** board.

- Connect the common dosing cable to the terminal identified as **COM**.
- Connect the cables between the washer and the dosing unit to **A4** board in the order indicated in the table in section 3.6.4. (Figure 3.18).



**IMPORTANT**

**This connection allows for the maximum strength at each of the 1A outputs.  
 The dosing signals ARE NOT PROTECTED by the washer fuses.**

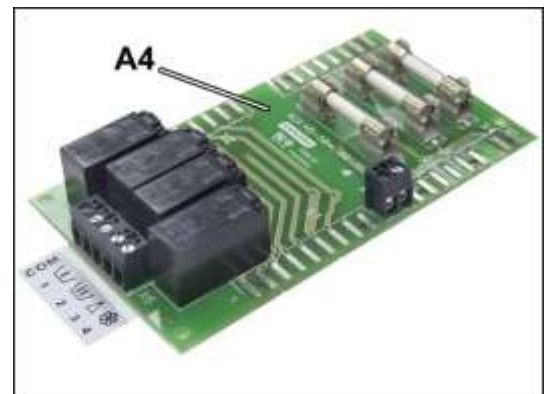


Fig. 3.18

**RELAY CONTACTS POWERED FROM THE WASHER CONTROL CIRCUIT.  
Use of four dosing signals**

The dosing signals from 1 to 4 originate from the board.

- Supply terminal **COM** from terminal **X0-A** of the board **A4**, (cable not supplied) Figure 3.19.
- Supply the common phase of the signal outputs from **X0-B** of **A4** board.
- Dosing outputs: connect in the order mentioned in the table in section 3.6.4.



**IMPORTANT**

This connection allows for the maximum strength at each of the 50mA outputs. Higher consumption can prevent the washer from functioning correctly. This connection can aggravate any problems produced by a fault in the grounding connection, both of the washer itself and of the external dosing equipment.

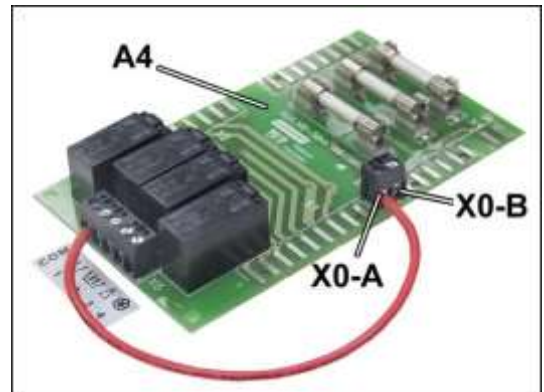


Fig. 3.19

**USE OF MORE THAN FOUR DOSING SIGNALS  
Applicable in both options, for dry contacts or relay contacts supplied from the machine itself.**

The dosing signals from 5 to 12 are originated in **A6** board (Fig. 3.20)

- Supply terminal **COM** of **A6** board from terminal **X0-A** of **A4** board (cable not supplied).
- Dosing outputs: connect in the order mentioned in the table in section 3.6.4.

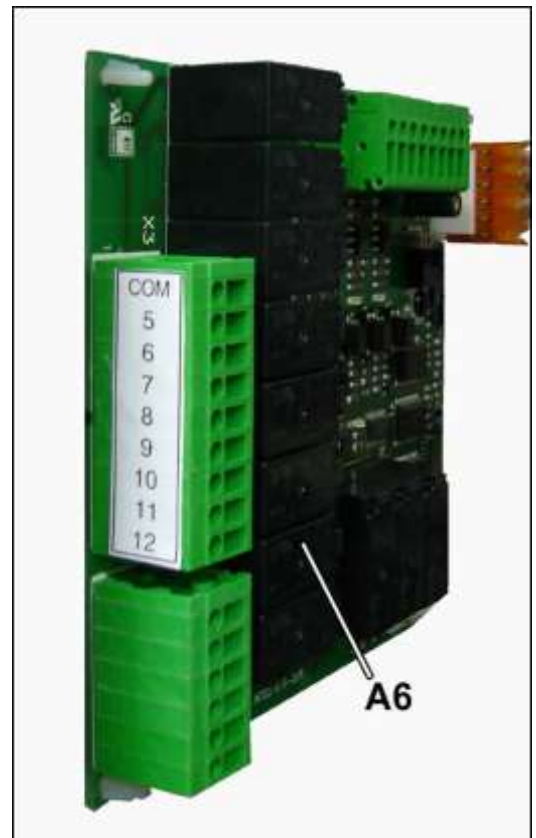


Fig. 3.20

### 3.6.4. Connection order of the dosing signals (according to the different machine models)

HS-6040, HS-6057 EH90, EH130			HS-6110, EH255		
Dosing signal	BOARD	TERMINAL	Dosing signal	BOARD	TERMINAL
<b>COMMON A8</b>	<b>A8</b>	<b>COM</b>	<b>COMMON A4</b>	<b>A4</b>	<b>COM</b>
1	A8	d-1	1	A4	1
2	A8	d-2	2	A4	2
3	A8	d-3	3	A4	3
4	A8	d-4	4	A4	4
5	A8	d-5	5	A6	5
6	A8	d-6	6	A6	6
7	A8	d-7	7	A6	7
8	A8	d-8	8	A6	8
9	A8	d-9	9	A6	9
10	A8	d-10	10	A6	10
11	A8	d-11	11	A6	11
12	A8	d-12	12	A6	12
			<b>COMMON A6</b>	<b>A6</b>	<b>COM</b>

**3.6.5. External dosing hoses connection**

The washer is supplied with a manifold with (A, fig. 3.21):

- 8 inlets with an outside diameter of 3/8 in (10 mm).
- 1 inlet with an outside diameter of 1/2 in (12 mm).

Check dimensions of the dosing inlets in **INSTALLATION SPECIFICATIONS**, section **1.4**.

To connect the product cables:

- Locate the dosing inlets in the back of the machine.
- Remove the tube caps and save them.
- Connect the hoses to the nipples of the manifold.
- Fasten the dosing hoses to the washing machine with the appropriate clamps.

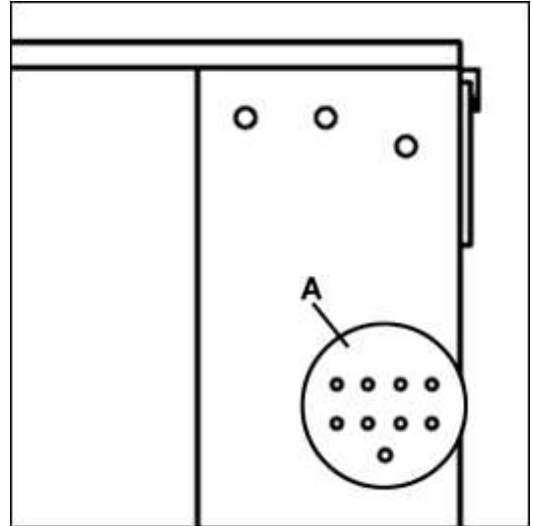


Fig. 3.21

**! TILT MODELS**

**Electrical conductors must be flexible and capable of accommodating the washer movements during the loading and unloading operations and secured at their ends.**

**! ATTENTION!**

To avoid that non dissolved chemical products drip inside the washer, install the external dosing pumps (**Fig. 3.22/A**) and the chemical products conduction hoses (**Fig. 3.22/B**) below the dosing injection point (**Fig. 3.22/C**) to the washer. A simple bend of the conduction hoses below the level is not enough to avoid the dripping.

Omission of following this instruction can cause damage to the washer and void warranty.

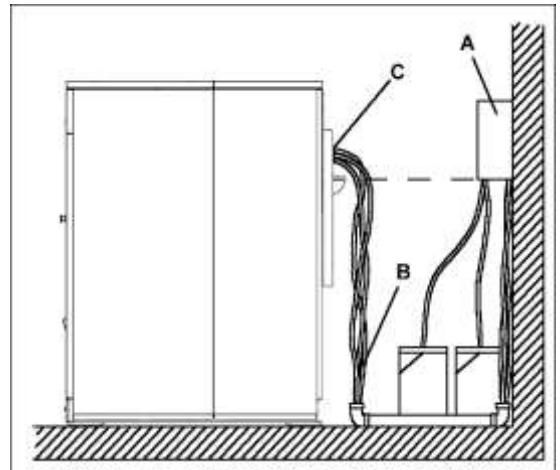


Fig. 3.22

**3.6.6. Busy dosing unit signal**

Most dosing units that supply several washing machines simultaneously may issue a command to pause a washing program being run on one of the washers connected to this unit.

The aim of this pause is to send the washing chemicals at the right moment in each machine's washing cycle.

**Busy dosing unit signal connection**

Refer to the washer electrical diagram to locate the connection points.

The busy dosing unit signal must be a signal between 5 and 35V.DC. in terminals X2,2(+) and X2,1(-) on the A6 board.

While such voltage is present, the microprocessor stops the program from continuing.

The duration of the signal will depend on the dosing unit.

See Inteli control Operation Manual for further information.

### 3.7. External signal Connection

External signal It is possible to use an order from the washing machine control to issue an end of program or alarm warning.

See Inteli control Operation Manual for further information.

#### External signal specifications.

Free voltage contact between terminals X4-5 and X4-6 on the A6 board.

Maximum intensity allowed: 1A.

Maximum voltage: 240V.AC.

### 3.8. Initial start-up



**THE WASHER MUST BE PUT INTO SERVICE BY AN AUTHORIZED TECHNICAL SERVICE. BEFORE THE STARTING-UP OF THE WASHER, BEAR IN MIND ALL THE SAFETY INSTRUCTIONS AT THE BEGINNING SECTION OF THIS MANUAL.**

Before the initial START-UP, make sure that you accomplish the following points:

- Remove all packing materials. (Break them down in order to appropriately recycle them).
- Remove all tools used during the installation.
- Verify that all accessories have been removed from the drum interior.
- Assemble the protective elbow at the steam exhaust facing upwards and fastened with the flange (Fig. 3.23)
- Verify the correct installation of all the accessories necessary for the washer operation.
- Check that the electrical installation corresponds with the voltage and the frequency of the machine.
- Verify that the four washer feet come in contact with the floor.
- Verify that all the shipping restraints are removed and that all the covers are properly locked.
- Connect all the water, steam (steam heated washers), power and air compressed inlets (following machine model), according to technical specifications.
- Open the manual water inlet valves (steam and compressed air, following the models) and check for any leaks around the manual flow valves and connection couplings.
- Connect the electricity supply.
- Check the operation (it is recommended to use the TEST program).
- Keep the manual in a safe place and in good condition for its possible consultation.
- Before washing clothes for the first time we recommend to run a complete cycle with detergent (1/4 the normal recommended amount).

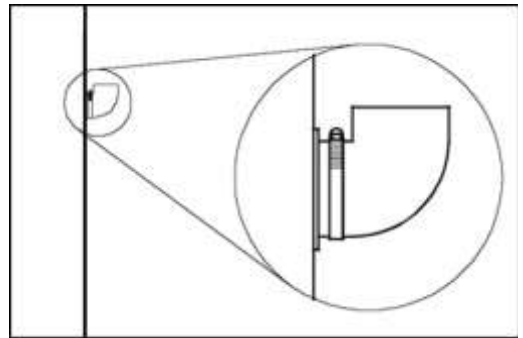


Fig. 3.23

#### Specific verification of TILT models

Before starting the TILT system verification, refer to the Safety precautions specific for TILT models, at the beginning of chapter 4.

Open the washer door and activate the tilt system. Verify the following points.

- Machine movements in the loading and unloading positions. The connections must allow the movement of the machine without damage or forced loops.
- Loading and unloading movements mustn't place the drain outlet hose outside the drain box or drain manifold.
- Tilt system limit switches must prevent the movement of the machine's rear supports while front supports are not in the rest position and vice versa.
- The tilt supplement guards must always prevent the access to the machine base.



### 3.9. Emergency stop in coin-op installations



**IN ACCORDANCE WITH SAFETY REQUIREMENTS FOR INDUSTRIAL MACHINERY STANDARD (UNE-EN ISO 10472-1,5-2) AND OTHER SAFETY REQUIREMENTS, THE LAUNDRY OWNER / USER IS RESPONSIBLE FOR INSTALLING A REMOTE LOCATED EMERGENCY STOP DEVICE, CONNECTED TO EACH MACHINE.**

#### **Device conditions**

To be located in a visible place, separated from all machines and easily accessible.

To break the electrical supply for all machines.

To safely isolate all machines at maximum consumption.

To require a RUN order for a new connection for the whole installation once the Emergency Stop button is unlocked.

## 4. TILT MODELS



### ATTENTION!

#### 4.1. Tilt models specific safety instructions

During the assembling and operation verification of the TILT system strictly follow the safety precautions indicated at the beginning of this manual.

The transport and assembling operations of tilt components must be carried out by the Authorised Technical Service.

Due to mass weight, be specially careful when carrying out these operations. Remember that weights and measures of TILT models can be found in the Installation specifications, section 1.4.

The TILT SYSTEM has JUST been designed as a system to facilitate the washer's loading and unloading operations. **USING THE TILTING SYSTEM FOR ANY OTHER PURPOSE AND SPECIALLY FOR MAINTENANCE OPERATIONS IS STRICTLY PROHIBITED.**

To avoid any risk during the operation verification of the TILT SYSTEM follow these instructions:

- Keep away of the rear of the washer during the tilt movement. **Because of the washer's tilting movement, there is crushing and shearing hazard between the tilting elements and the building elements.**
- **The TILT SYSTEM has JUST been designed to facilitate the washer's loading and unloading operations.**
- **DO NOT USE the washer until all the guards are properly located and adjusted**
- **In particular take special care to the tilt hinge guards.**
- **DO NOT MISLEAD NOR CANCEL THE POSITION DETECTORS located on the machine brackets.**
- **DO NOT MISLEAD NOR CANCEL THE PUSH-BUTTON that activate the drum's rotation with the door open.**
- **The pressure of the pneumatic circuit specific for tilting is controlled by a pressure regulator located on the electrical panel, with a fixed adjustment, DO NOT MODIFY NOR MANIPULATE THIS REGULATOR.**
- **Because of the facility of rotating the drum with door open, during loading and unloading operations NEVER MORE THAN ONE PERSON WILL OPERATE WITH THE MACHINE.**
- **The washer is protected against possible incorrect handling, so machine must be in horizontal position before selecting a tilting movement or starting a wash program.**

#### 4.2. TILT system description

Set of components that, using the strength of two pneumatic actuators, permit a double tilt movement for the whole of the machine, forwards and backwards to easily load and unload the washer.

Four position detectors, one at each washer's supports, ensure the correct operation of the tilt system, and a balanced position during the wash cycle.

The washer's electrical control permits the drum's rotation and reverse by two hold-to-run push-buttons and the fabric soaking when loaded to reduce the volume.

The bath used to soaking the linen is not kept inside the washer when the wash cycle starts.

#### 4.3. TILT system specific protection elements

- **Fixed guards:** Covers at the machine sides. Protect the user from the contact with dangerous points and spattering.
- **Moving guards:** Front and side covers that permit the washer tilting. Protect the user from the contact with dangerous points and spattering.
- **Pneumatic actuator limit switches.** Prevent the excessive expansion of actuators and the excessive tilting of the washer.
- **Position detector microswitches.** Control the position of the tilt system.
- **Pneumatic actuator pressure regulators.** Limit the air pressure of pneumatic actuators. Adjustment value: 5 kg/cm<sup>2</sup> (71 PSI). **DO NOT MODIFY NOR MANIPULATE THIS REGULATOR.**

#### 4.4. Washer location

To determine the washer location bear in mind the machine's tilting movements. Refer to movement values on figure 4.2 (section 4.5)

**4.5. Water inlet installation proposal**

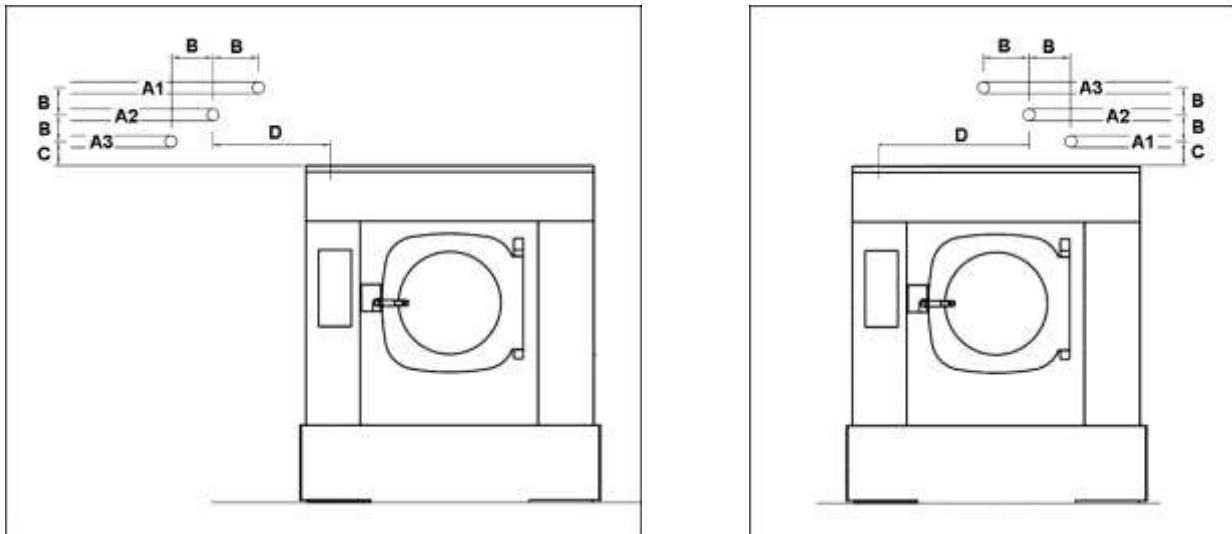


Fig. 4.1

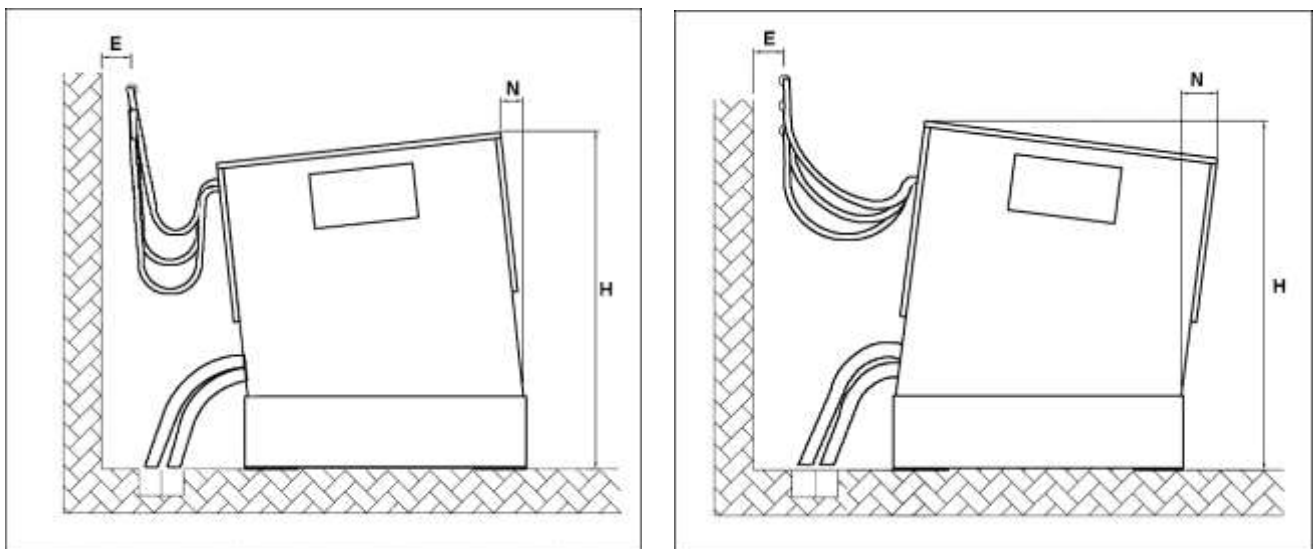


Fig. 4.2

Values and symbols corresponding to the figures

MODEL		B	C	D	E	H (max.)	N (max.)
HS-6040 (EH090)	mm (in)	200 (7.9)	100 (3.9)	650 (25.6)	300 (11.8)	2143 (45.0)	269 (10.6)
HS-6057 (EH130)	mm (in)	200 (7.9)	100 (3.9)	650 (25.6)	300 (11.8)	2256 (88.8)	296 (11.7)
HS-6110 (EH255)	mm (in)	200 (7.9)	100 (3.9)	650 (25.6)	300 (11.8)	2438 (96.0)	274 (10.8)

Symbols corresponding to the figures

- A1:** A1 connection (cold water)
- A2:** A2 connection (hold or cold water 2)
- A3:** Independent third inlet connection (option)

## 5. ASSEMBLY INSTRUCTIONS FOR THE TILT SYSTEM ACCESSORIES



### DANGER!

To assemble the TILT SYSTEM elements, machine must be moved.  
Take special care as this machine's weight and volume is considerable.

### 5.1. Parts of the tilt system assembly

<u>DESCRIPTION</u>	<u>QUANTITY</u>
<b>Hinge assembly to the frame base (Figure 39)</b>	
Tilt hinge .....	4
Screw M14x55 .....	16
M14 Self-blocking nuts .....	16
ø 15 washers .....	32
Levelling supplement .....	6
<b>Hold down base assembly (Figure 40)</b>	
Hold down base .....	2
Hold down base .....	2
ø 16 mm metallic stud .....	12
ø 13 x 34 Washers .....	12
<b>HS-6057, EH130. Beam assembly to the frame (Figures 41/42)</b>	
Pneumatic actuator, fixing plates, beams set .....	2
M12x90 screw .....	8
M12 Self-blocking nuts .....	8
ø 13 washers .....	16
<b>HS-6110, EH255. Beam assembly to the frame (Figures 41/42)</b>	
Pneumatic actuator, fixing plates, beams set .....	2
M14x130 screws .....	8
M14 Self-blocking nuts .....	8
ø 15 washers .....	16
<b>Tilt system guards (Figure 44)</b>	
Front guard .....	1
Rear guard .....	1
Side guard .....	2

### 5.2. Tools to assemble the tilt system

To assemble the tilt supplement accessories, a part from the tools indicated in section 1.2, the following tools are required:

- flat spanner 7/8 in (22 mm)
- offset ring wrench 7/8 in (22 mm )
- flat spanner 3/4 in (19 mm) (only HS-6057, EH130 models)
- offset ring wrench 3/4 in (19 mm) (only HS-6057, EH130 models)
- drill for base holding down: 0.67 in. (17 mm) diameter.

**5.3. Tilt hinge assembly**

Lift the washer and remove the crating (refer to chapter 2 about machine's transport).

Place the machine on wooden pieces (**B**/Fig. 4.3) so the four supporting bases stay free and separated from the floor: value **A**: 8 inch (200 mm) minimum. This clearance will permit the tilt hinges assembly.

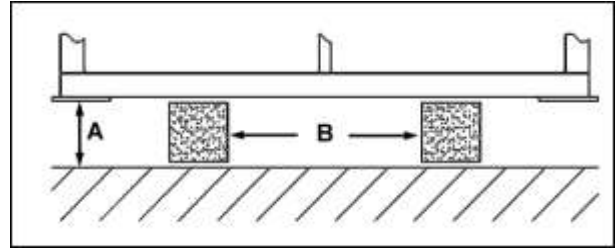


Fig. 4.3

Figure 4.4 shows a front view of the machine's front right support.

- Connect each of the four hinges **A** to each of the machine supports **B**. The four hinges are identical. Mounting screws **D** **M14x55**. When assembling, each wheel's shaft **C** remain in cross position.
- Take special care in aligning the hinges edges with machine supports edges.
- If machine needs being levelled to compensate the floor irregularities, install the levelling supplement parts **E** between the hinge and the machine support.

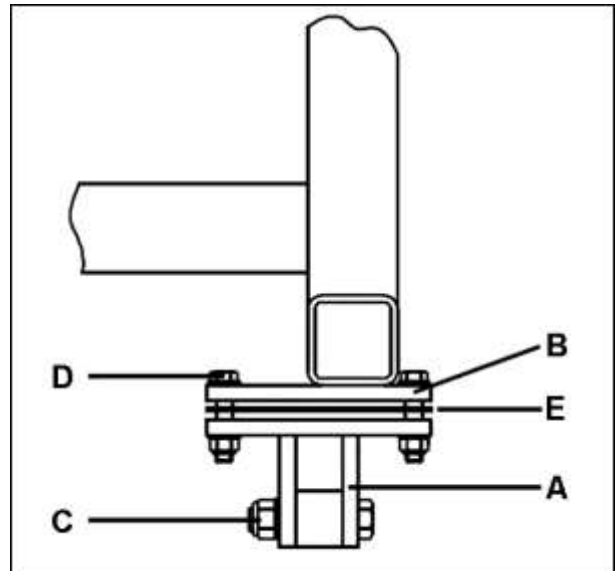


Fig. 4.4

**5.4. Hold down base securing** (Figure 4.5)

The arrow indicates the front of the machine.

- Place the holding down bases **A** and **B** on the floor where the machine is to be installed. The holding down bases are equal two against two and are matched in **X** form. To determine each of the four bases position, take as a reference the tilt guards supports **C**.
- Once the machine is placed on these four bases, without moving it, drill holes in the bases for hold-down metallic studs; three per base. Metallic studs external diameter; **17 mm**. The holes must be perpendicular to the floor.
- Replace the metallic studs washers by the furnished washers: **13 x 34 mm**. Secure the bases to the floor with the metallic studs.

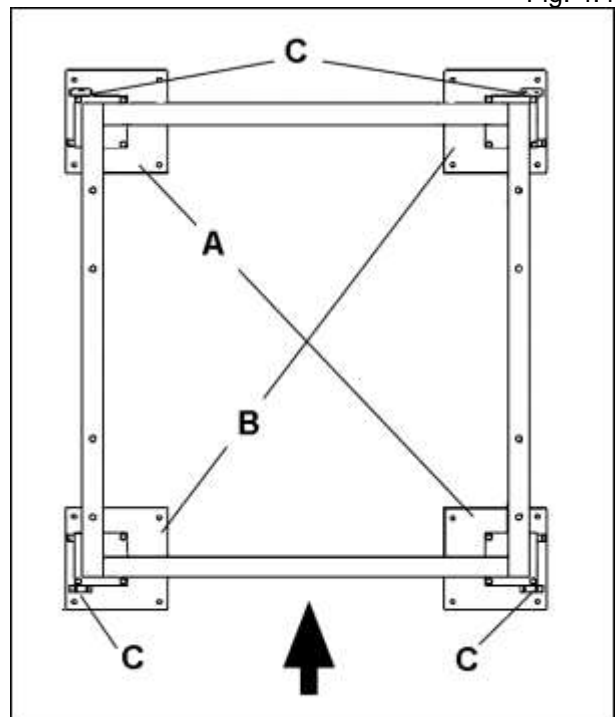


Fig. 4.5

**5.5. Pneumatic actuators assembly** (Figure 4.6)

The arrow indicates the front of the machine.

The pneumatic actuators, together with the supporting plates and the beams are delivered mounted in two equal assemblies **A**.

Steps to assemble them to the washer:

- To determinate the position of each of the two beams/actuator assemblies, take as a reference the two pneumatic actuator limit switches **B**.
- Place both assemblies of beams and actuators under the machine; before doing so, disassemble the two actuator limit switches **B**. Before disassembly, note position of the screws, separators, washers and nuts.
- Assemble the beams and the fixed frame. Position of screws in Figure 4.7. Use both central screws on the left side to also secure the support plates **D** of the electrical installation.
- Connect the nylon pipes to the pneumatic fittings **E**. The fittings may be oriented to facilitate connection.

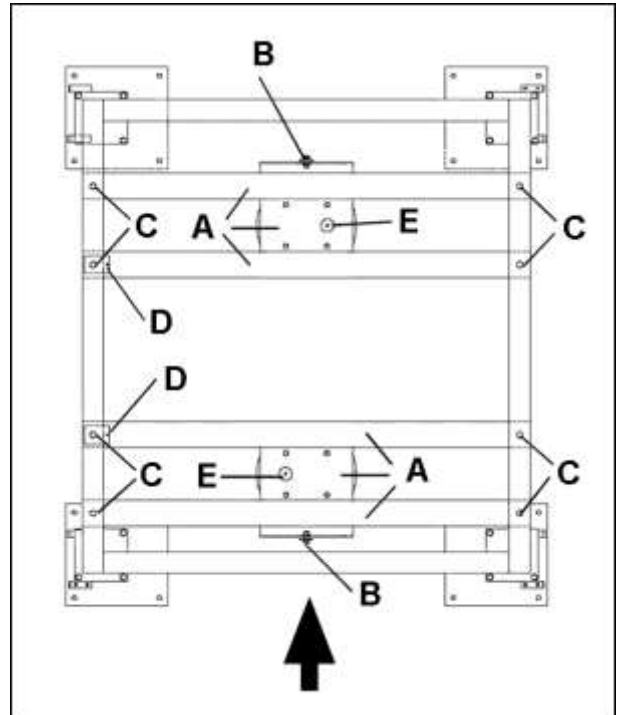


Fig. 4.6

Position of mounting screws of the pneumatic actuators to the fixed frame (side view).

Elements of Figure 4.7.

- A:** Side of fixed frame
- B:** Support beams
- C:** Screw
- D:** Nut
- E:** Washers

**Important!**

The nominal tightening torque of screws M14 is 434lb. in. (5 kg.m.). If this pressure is exceeded beams may be deformed.

Re-assemble the pneumatic actuator limit switches **B** (Figure 4.8).

**ATTENTION!**

Limit switches are safety devices. Check that they are properly assembled.

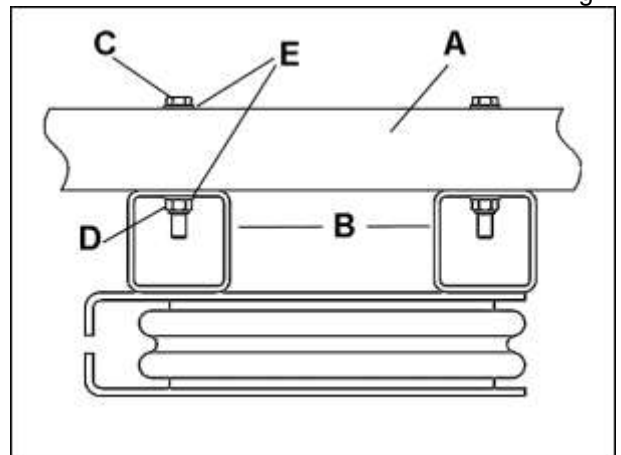


Fig. 4.7

**5.6. Position detectors assembly and adjustment**

(Figure 4.8).

The position detectors **A** are disassembled to prevent them from being damaged during transportation. Secure them to the supports, refer to Figure 4.8. Mounting screws: **M6x15**.

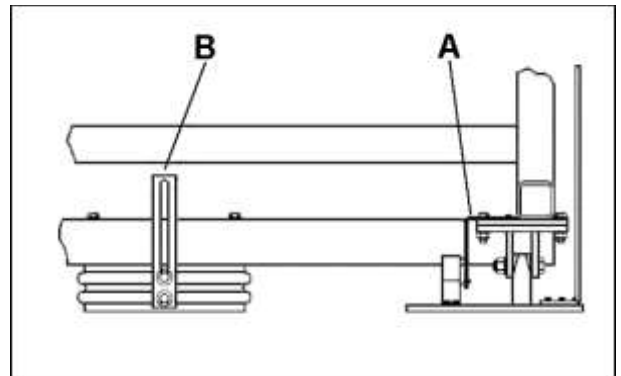


Fig. 4.8

**Adjustment of position detectors actuators** (Figure 4.9).  
The actuators **C** are secured to the bases through slots permitting their movement. To adjust their position:

- The machine must be in the rest position.
- Loosen mounting screws **D** of actuators **C** of position detectors.
- Move completely the actuators to the washer's outside until the microswitch disconnection «click» is heard. The wheel support lever **E** will remain in horizontal position.
- Move the actuators **C** towards the position detectors until the microswitch connection «click» is heard and secure them in this position. (The contacts change of position is easily heard).
- The actuator must move the lever wheel from the position detector upwards (refer to figure).
- More information in the complementary schematic of **TILT** supplement. The schematic shows the machine in rest position.
- Once the position detectors actuators adjustment continue removing the transport restraints, assembling the covers and installing the machine power supplies (section 2.5).

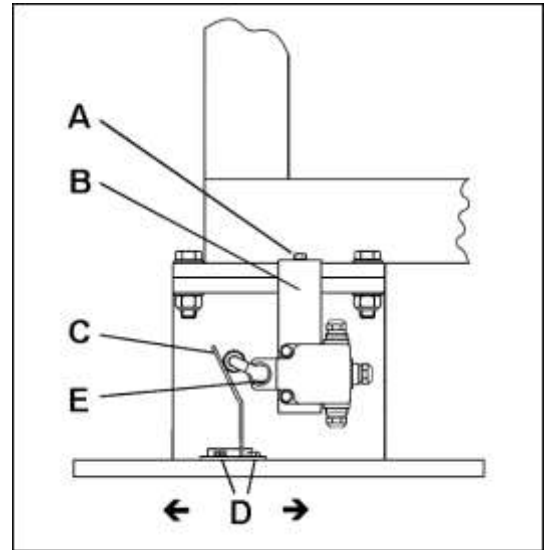


Fig. 4.9

**5.7. Assembling Tilt system guards**(Figure 4.10)

- The arrow indicates the front of the machine.
- Position the rear and front guards. They can be easily identified as the corners are folded. The rear guard is distinguished by the drain hose groove.
  - remove screws, washers and sleeves screwed in the hinges **A** from the guards, and secured to each of the four bases. Put the sleeves in the holes at the guards corners. Secure them using screws and washers. The sleeves must permit the guards movement. Rectify supports position if required, by loosening the mounting screws **B** and move them in the appropriate direction.
  - Engage the springs **C** between the base brackets and the guards brackets (two springs for each bracket).
  - Place the side guards between the side brackets and the folded corners of the front and rear guards.
  - Place them so that the holes match with the threaded holes at the side brackets **D**. Secure them with screws (M6x10). Fasten it with the screws (M6x10).

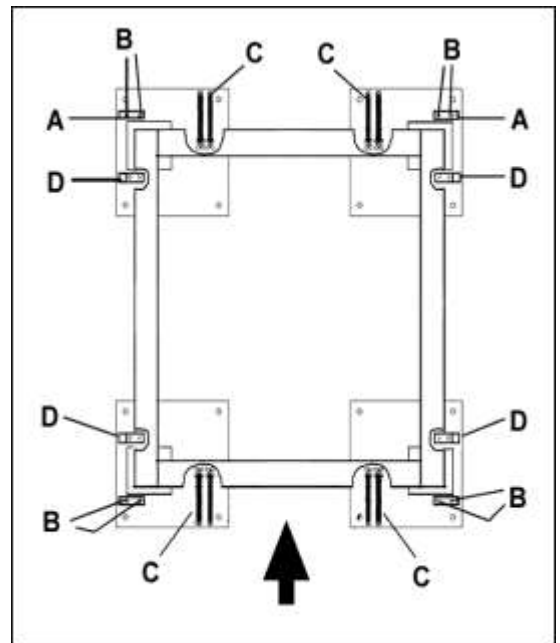


Fig. 4.10

**⚠ ATTENTION!**

**Never start the machine up or use it until all the covers have been replaced and properly locked.**