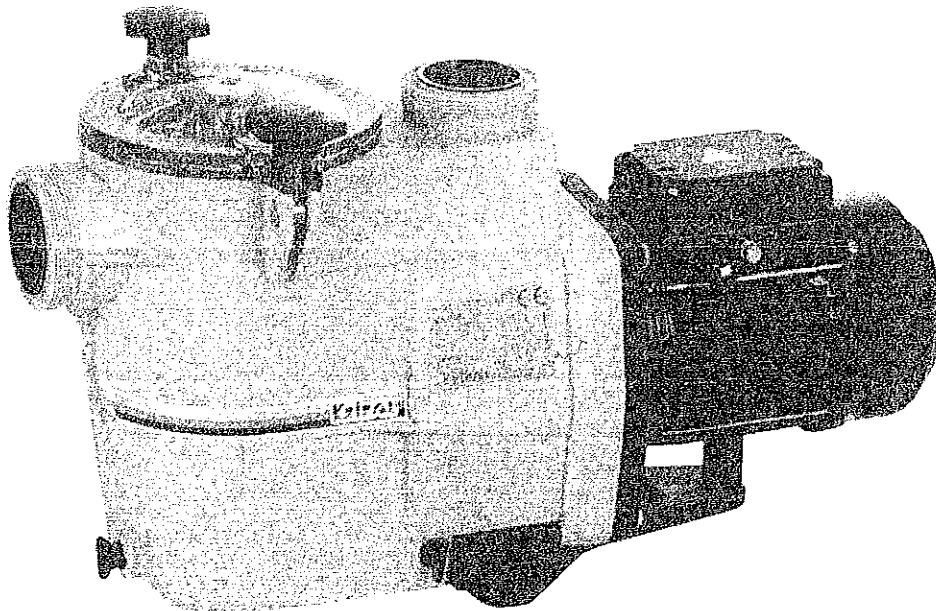


- **MANUAL DE INSTRUCCIONES PARA EL USO Y MANTENIMIENTO**
de las Electrobombas de Piscinas.
- **HANDBOOK FOR USE AND MAINTENANCE**
of Electropumps for Swimming Pools.
- **MANUEL D'INSTRUCTIONS POUR L'UTILISATION ET L'ENTRETIEN**
des Electropompes de Piscines.
- **BETRIEBS-UND WARTUNGSANWEISUNG**
für die Schwimmbad-Elektropumpen.
- **MANUALE D'ISTRUZIONI PER L'UTILIZZO E LA MANUTENZIONE**
delle Elettropompe per Piscina.



Tipo / Type / Type / Modell / Tipo: **KS**

1. DESCRIPTION

1.1 These electropumps have been designed to recirculate lightly treated water in swimming pools and spas, both private and public.

1.2 TECHNICAL CHARACTERISTICS.

Motor:

Power rating: See nameplate ratings on electropump.
Insulation : Class E.
Operation : Continuous.
Protection : IP 55.
Current : Monophase and triphase (see nameplate ratings).
Consumption : See nameplate ratings.
Frequency : See nameplate ratings.
R.P.M. : See nameplate ratings.
Shaft : Stainless steel.
Bearing : Armoured ball bearing.
Atmospheric temperature: Maximum 40°C.

Pump:

Water temperature : Maximum 50°C.
Maximum pressure: 2 bar.
Impeller model : Closed.
Type of seal : Mechanical retainer.
Impeller & diffuser casing : Type KS, synthetic material (PPO).
Pump casing : Type KS, synthetic material (PP).
Filter cover : Type KS, synthetic material (SAM).
Basket : Synthetic material (PP) in type KS.
Aspiration diameter : 2" gas Screw (type KS).
Impelling diameter : 2" gas Screw (type KS).

2. GENERAL

2.0 INTRODUCTION

This Handbook contains the necessary instructions for installation, use and maintenance of the swimming pool electropump. In order to obtain the maximum yield shown by the manufacturer in the Description of Characteristics, it is necessary to fulfil and follow correctly all the recommendations given in this Handbook.

This will allow operation with a safe and long-lasting piece of equipment.

The equipment supplier will furnish the user with complementary information, if required.

2.1 SAFETY SIGNS USED IN THE HANDBOOK.

All instructions referring to possible risks to persons are highlighted by the following symbols:

Danger in general



Standard DIN
4844-W9

Danger of electrocution



Standard DIN
4844-W8

Other instructions in relation to the functioning of the equipment with which non-compliance could cause physical damages are highlighted with the warning:

ATTENTION

2.2 NAMEPLATE RATINGS (EEC 89/392 P.1.7.4.A).

The information given on the nameplate or other instructions affixed by the manufacturer to the unit, must be strictly complied with. The content of these plates can usually be found in this Handbook (Chapter 1.2.).

2.3 LIABILITY.

Failure to comply with the instructions given by the manufacturer in this Handbook, in relation to the choice, handling, installation, starting and maintenance of the unit, shall release the manufacturer or distributor from all liability in respect of accidents suffered by persons or damages caused to other installations and, in addition, shall entail forfeit of the warranty.

2.4 STANDARDS.

Our swimming pool electropumps are manufactured in accordance with the necessary requirements for safety and health set forth in Community Directives 89/392/EEC, 91/368/EEC (assimilated into Spanish Law by Royal Decrees 1435/1992 and 93/44/EEC).

3. GENERAL INSTRUCTIONS IN RELATION TO USER SAFETY

3.1



Safety during operation of the machinery supplied can only be guaranteed if it is used in accordance with the diagrams shown on page 38 "ILLUSTRATIONS". It must never exceed the working conditions and limits given in this Handbook (Chapter 1.2 - Technical Characteristics).

Compliance with the provisions of

Safety Standards in force in each country is mandatory.

3.2



Please ensure that the equipment selected is adequate for the use for which it is intended and that its condition, installation, starting and subsequent use are correct. See chapter 1 (Technical Characteristics).

3.3



Installation, repair and maintenance operations will be carried out in all cases with the equipment disconnected from the mains.

3.4



While the equipment is functioning, it cannot be moved or repositioned. These operations will be carried out at all times with the machine disconnected.

3.5



Pressing of the electrical on/off or safety elements will not be performed where there is damp, and special care must be taken for user's hands to be dry, and also with footwear and surfaces with which the user is in contact.

3.6



Those elements of the equipment which, when functioning, are in movement or which could reach dangerous temperatures, will be protected with cages or casing which will prevent accidental contact with the same.

3.7



Electricity conductors, or parts which could carry current, will be suitably insulated. Other metal parts of the equipment will be correctly earthed.

3.8



Spare parts that may be necessary will be originals from the manufacturer or those recommended by the manufacturer. The use of others, or originals rectified by others, are not permitted and release the manufacturer of distributor from all liability.

4. PACKING, TRANSPORT AND STORAGE

4.1

ATTENTION

The manufacturer supplies the equipment protected in suitable packaging, so that it is not damaged during transport or storage thus preventing its correct installation and/or functioning.

4.2

ATTENTION

The user, upon receipt of the equipment, will immediately check the following points:

- Condition of the outside packaging, if this shows signs of serious deterioration, he shall formally advise the person delivering the equipment.
- He shall also check the condition of the contents; should this show defects which would presumably prevent correct functioning, he shall also formally notify the supplier within a period not exceeding 8 days from the date of delivery.

4.3

ATTENTION

Storage conditions must ensure the optimum preservation of the equipment. Due to its particular relevance, we must stress that very damp atmospheres or others where brusque changes in temperatures (which cause condensation) must be avoided.

5. INSTALLATION AND ASSEMBLY

5.1. LOCATION.

ATTENTION

The place where the electropump is to be located must be dry. In all events, there must be a drain in the floor as a prevention against flooding. If the pump is to be located in a damp place, a ventilation system must be provided in order to prevent the formation of condensation.

In the case of very confined areas, cold air can reach a low temperature which requires a ventilation system whereby the atmospheric temperature does not exceed 40°C.

It is important for there to be sufficient space to permit the motor block to be dismantled horizontally and the air filter vertically (see minimum space diagram in fig. 1, page. 38).

5.2. POSITIONING / INSTALLATION.

ATTENTION

The equipment or set of motor pump, filter and selection valve, will be installed near the swimming pool at a distance of no more than 3 m. from the surface skimmers and preferably at a level of 0.5 m. (never more than 3 m.) below the level of the water, in order to achieve its "under load" functioning. The selection valve junction, and its connection to the nozzle and other accessories incorporated in the swimming pool will preferably be made in PVC casing.

Pipe diameters will depend on flows. The maximum water speed advisable in the pipes will be 1,2 m/s. in aspiration and 2 m/s. on return. In any event, the diameter of the aspiration pipe must not be less than the diameter of the pump nozzle.

The aspiration pipe must be perfectly water-tight and must be installed with a downward inclination, thus avoiding the formation of air pockets.

In permanent installations, with the pump positioned at a higher level than that of the water, it is advisable for the longest stretch of the aspiration pipe to be below the plans mentioned until it reaches the vertical pipe which coincides with the pump aspiration shaft. The aspiration pipe can be either rigid or flexible with a reinforced coil to avoid contraction.

In fixed installations, with the pump below the water level, a shut-off valve will be placed on the aspiration pipe and another on the header pipe.

ATTENTION



When using as a portable pump, suitable electrical protection must be provided and the pump must be assembled on an insulated base.

5.3. CONNECTION TO THE MAINS.

ATTENTION



- In general terms, the electrical installation will fully comply with the Regulations and Complementary Technical provisions applicable and will be performed by an authorised Installer.
 - The supply will have neutral and earth wires.
 - The mains voltage must correspond to that shown on the nameplate rating for the equipment.
 - The earth wire to be used must be sufficient to take, without deterioration, the current absorbed by the equipment (see nameplate).
 - The mains earth wire will be connected electrically to all metal parts of the equipment which should not be under current, but which could accidentally be affected by the same and which are accessible to persons (see figs. 2 - 5, pages. 38 - 40).
- It is obligatory to install a protection and operation switchboard which will contain all necessary and recommended elements. In general terms, it will contain:
- a) General cut-off or unipolar switch.
 - b) Short-circuit and overload protection devices for motors.

c) 30 m.A. differential high sensitivity switch.

d) Others for monitoring and control.

The electrical characteristics of the protection devices and their regulation will comply with those for the motors to be protected and with the service conditions envisaged for these, and the instructions given by the manufacturer must be followed (see nameplate).

- In the case of equipment with triphase motors, the motor winding interconnection bridges must be suitably positioned (see figs. 4 - 5, page 40).

- Conductor inlets and outlets at the bushing box will have stuffings to ensure the absence of damp and dirt, and will therefore have a sealed casing.

- Conductors will have suitable terminals for connection to the bushings.

6. STARTING

6.0. Before connecting the equipment to the mains, the following operations will be carried out:



- Check that the electrical conditions are correct.

- Manually check that the motor pump is not jammed.

6.1. PUMP PRIMING.

ATTENTION

Avoid blind functioning of the electropump.

With the pump in the aspiration position (above the water level of the swimming

pool), before starting, remove the pump casing cover (2) (fig. 6 page 43) and slowly fill with clean water up to the level of the aspiration nozzle. Close the cover (2) again and take care that it is hermetically closed.

ATTENTION



With the pump below the swimming pool water level, always with the cover (2) hermetically closed, fill the pump by slowly opening the aspirations cut-off valve, with the header valve in the open position.

6.2.

ATTENTION

The pump must not be started without the lumps and hair filter (6) (fig. 6 page 43) since this could cause obstruction and would block the system.

6.3. DIRECTION OF ROTATION.

ATTENTION

Ensure that the motor shaft turns freely; do not start the pump if it is blocked. For this purpose, electropumps have a groove at the end of the shaft, on the ventilator side, which permits it to be turned manually using a screwdriver (fig. 1, page 38).

In triphase motors, the impeller (16) can be unscrewed if the motors starts in the opposite direction. Counter-rotation can even damage the mechanical seal.

Start the motor for a few seconds and check that the direction of rotation coincides with that indicated by the arrow on the ventilator cover. Should this not be the case, it is absolutely necessary to advise the authorised installer (invert the phase connection).

6.4.

ATTENTION

Check that the motor does not exceed the amperage indicated on the nameplate rating (36) (fig. 6, page 43); otherwise, regulate using the header valve.

7. MAINTENANCE/CONSERVATION



Before touching, disconnect the electricity supply.

7.1.

ATTENTION

Regularly check and clean the motor filter (6) (page 43).

To remove the pre-filter, place the selection valve, and all other valves, in the "off" position.

Loosen the cover (2) of the pump casing, remove the basket (6) and clean it under running water; "**do not strike**" to avoid its deterioration. To re-place the pre-filter (6), introduce it gently, until it is in its original position.

Correctly place the seal (3) of the cover (2) and grease with vaseline.

The transparente cover (2) must be cleaned with water and neutral soap; "**do not use detergents**". Do not place the filter (6) in chemicals.

Please remember that changes in position of the selection valve will be made at all times with the motor switched off.

7.2.

ATTENTION

If the pump is switched off for long periods of time, should there be a danger of frost, the pump casing (7) should be emptied, by loosening the two emptying outlets (10) along with their O-ring seals (8).

Before starting the pump, replace the outlets (10) and their O-ring seals (8).

Fill the pump chamber with water and check with a screwdriver that the motor is not jammed. If the shaft has seized up, call a qualified technician.

In the event of the motor flooding, do not try to start it; call an electrician to dismount the motor in order to dry it.

8. DISMOUNTING

8.1.

ATTENTION



Before performing any operation, all valves must be in the "off" position; having checked this:

- Disconnect the general electricity switch and the differential switch (this must be done by an authorised specialist).
- Loosen and remove the supply cables on the bushings box (40) (fig. 6, page 43).

- Release the aspiration and return sleeves.
- Empty the pump.

8.2.

ATTENTION

In order to dismount and assemble the electropump, please see the detail drawing.

In order to remove the motor from the hydraulic casing, remove the four screws (21) and lever with two screwdrivers, one opposite the other.

In order to dismount the impeller (16), separate the diffuser (14) and its junction (13), loosen the ventilator cover (35) and remove the ventilator; block the motor shaft with the aid of a clamp, while rotating the impeller (16) anticlockwise with a number 14 pipe wrench, thus releasing the shaft (14). The mobile part of the retainer (17) comes out with the header.

9. ASSEMBLY

ATTENTION

"All parts to be assembled must be clean and in perfect condition for use"

In order to assemble the pump:

- Assemble the mechanical seal (17/18), (page 43), assemble the rotary part of the seal (17) above the back flange of the impeller (16) by pressing until this falls into the space; the retainer will have been lubricated with water beforehand.
- Assemble the impeller (16) on the shaft (25) affixing it with Loctite or

similar int the threaded metal insert. In this way, the two grooves of the mechanical seal are joined (17/18).

- At the junction of the pump with the motor, it must be borne in mind that the diffuser flange (14), and all other connections (13/19), must fit into the correct space.

10. SPARE PARTS

To order any spare parts, indication must be given of the denomination, number shown on the detail drawing (fig. 6 page 43) and nameplate ratings (15 and 36).

ILUSTRACIONES / ILLUSTRATIONS / ILLUSTRATIONS
ABBILDUNGEN / ILLUSTRAZIONI

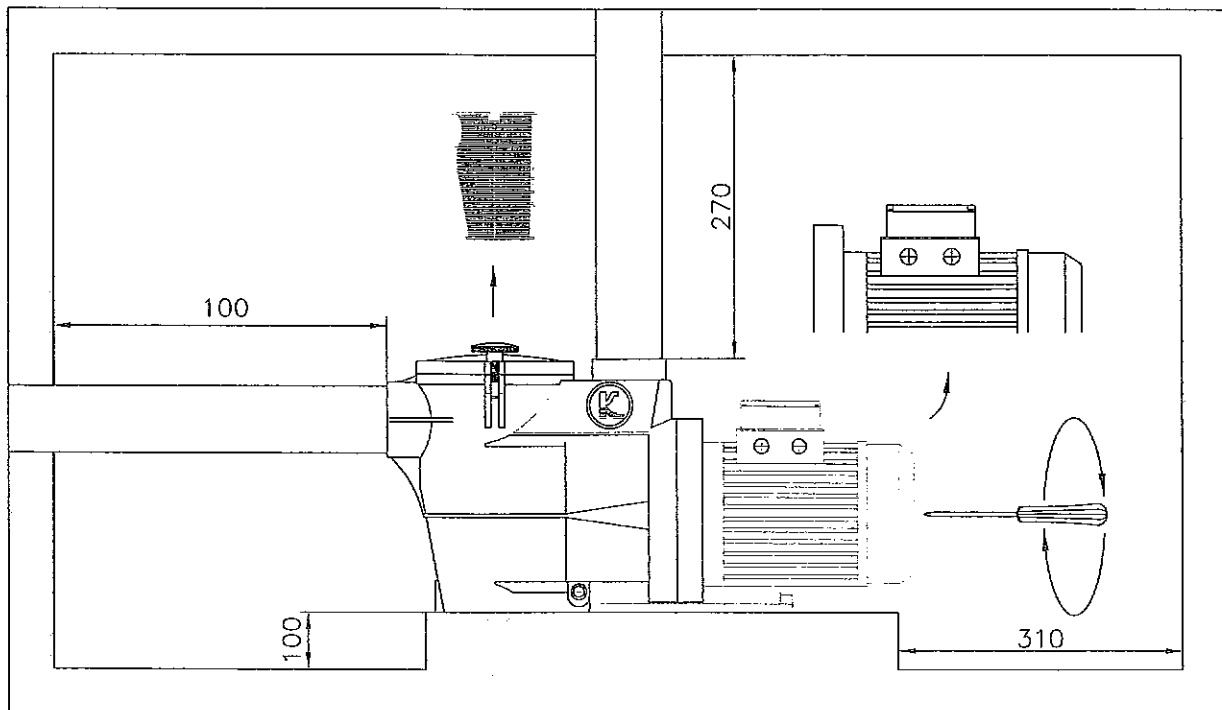


Fig. 1 / Bild 1

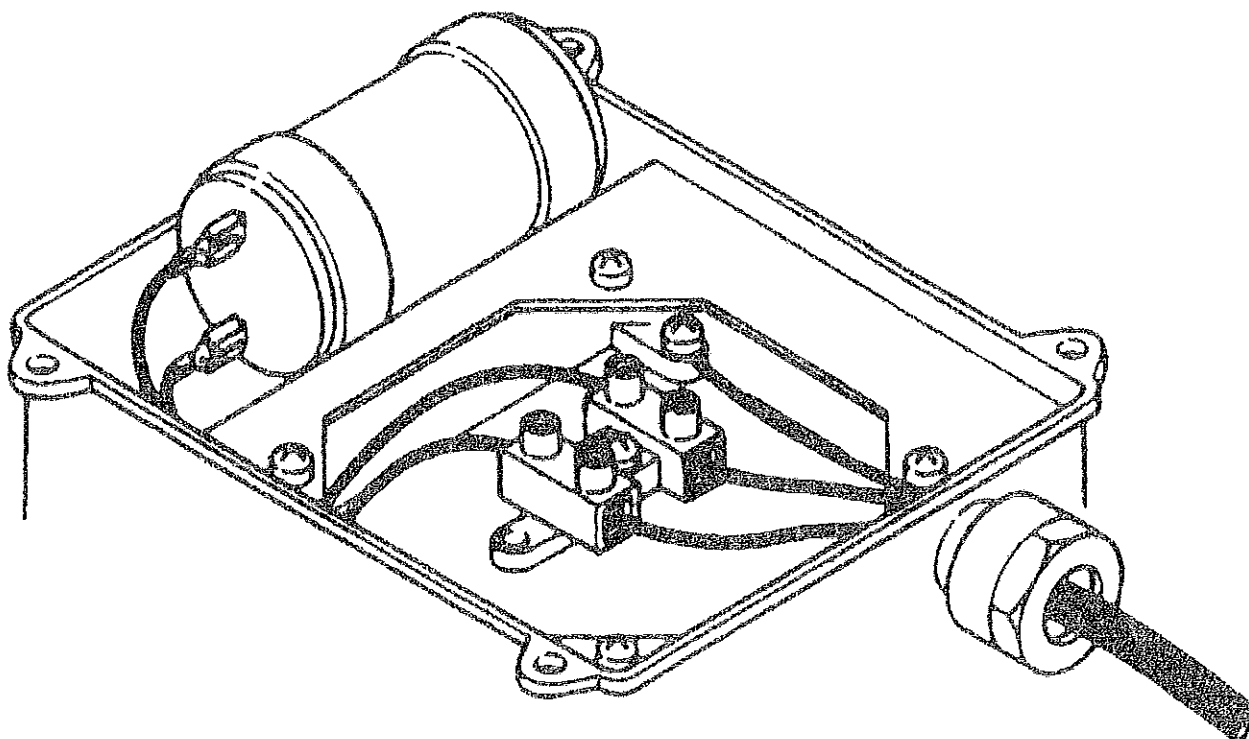


Fig. 2 / Bild 2

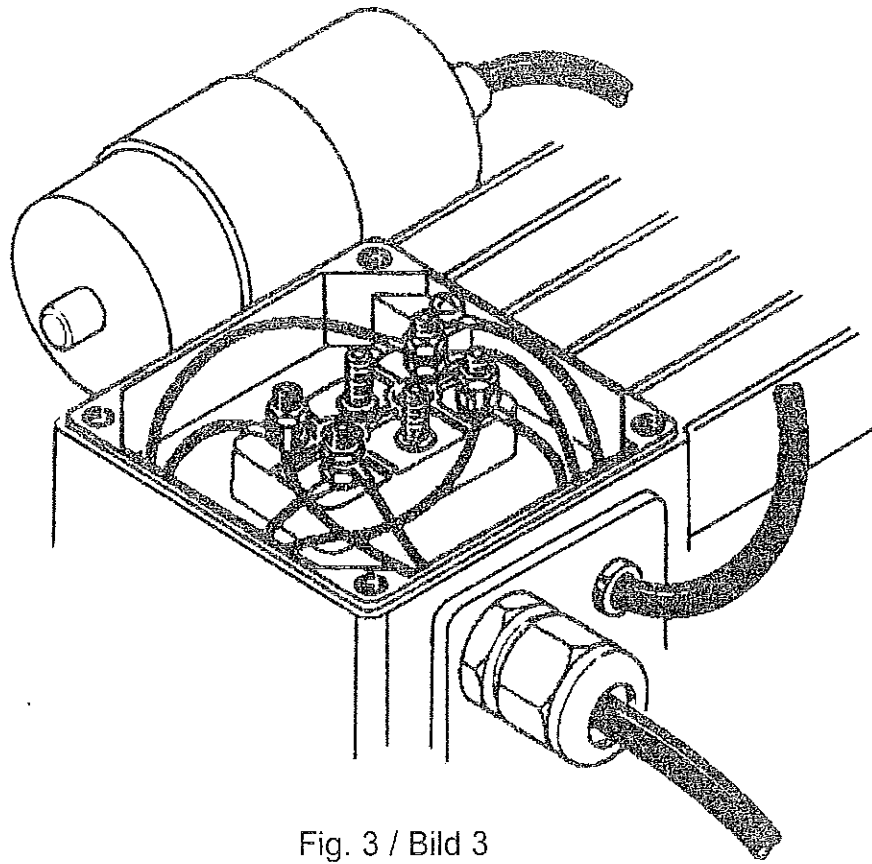


Fig. 3 / Bild 3

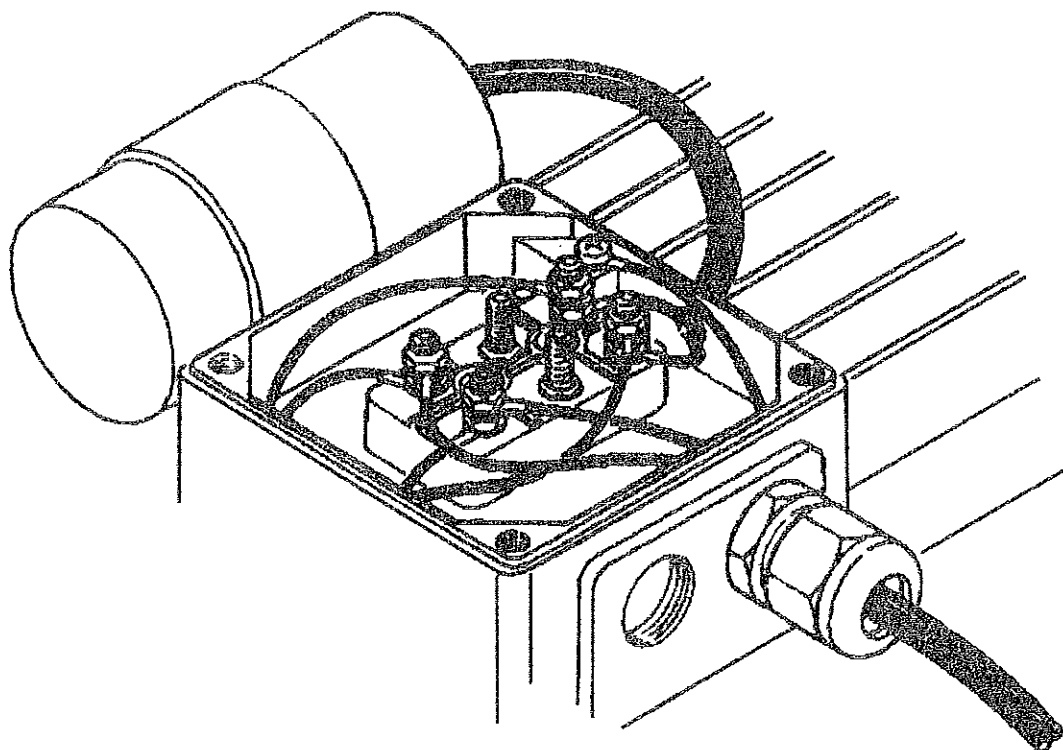


Fig. 3A / Bild 3A

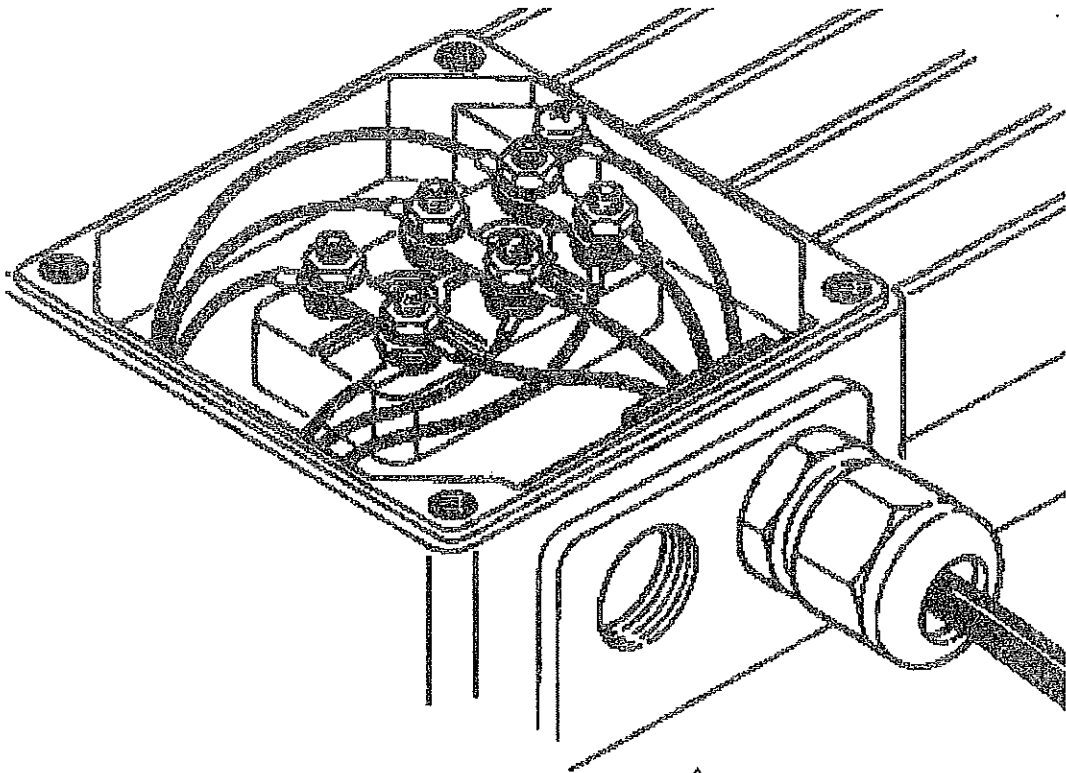


Fig. 4 / Bild 4

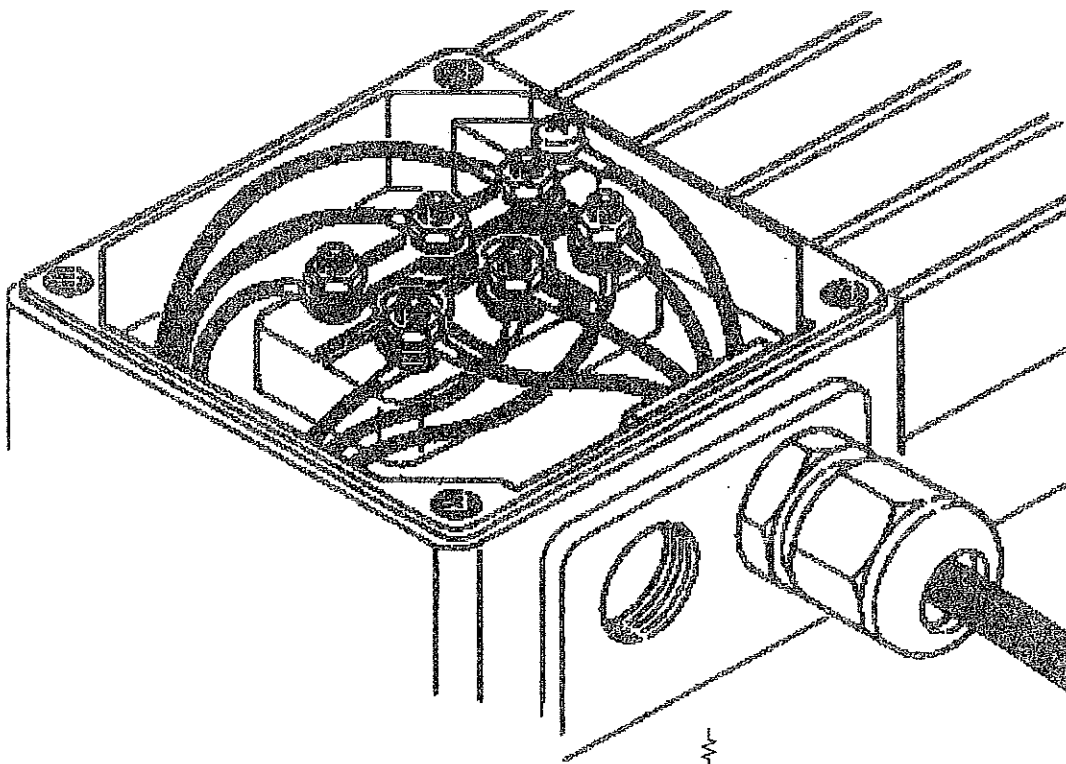
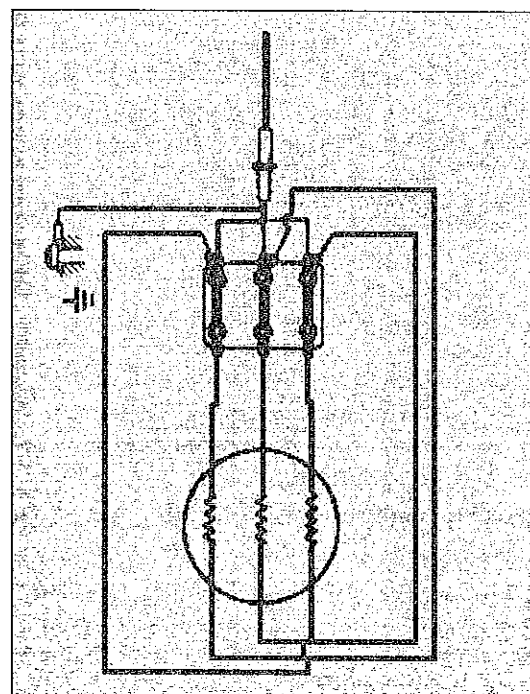
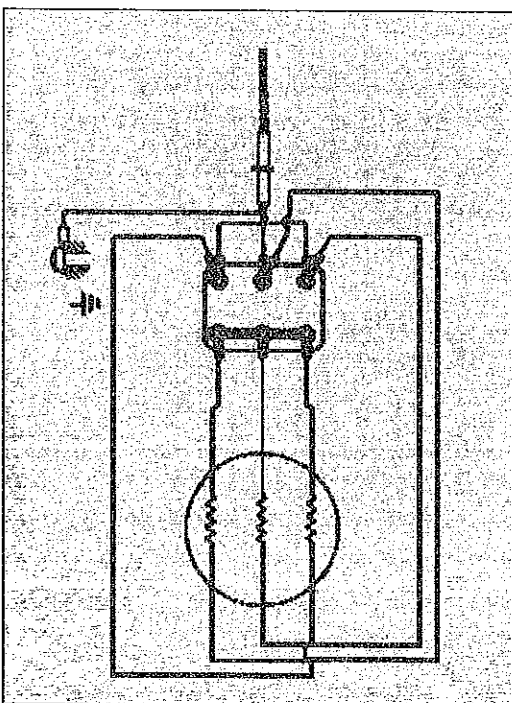
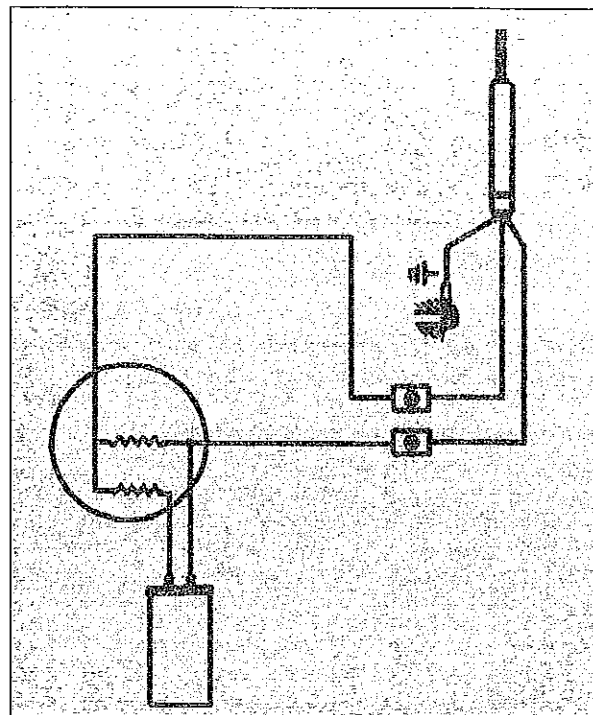
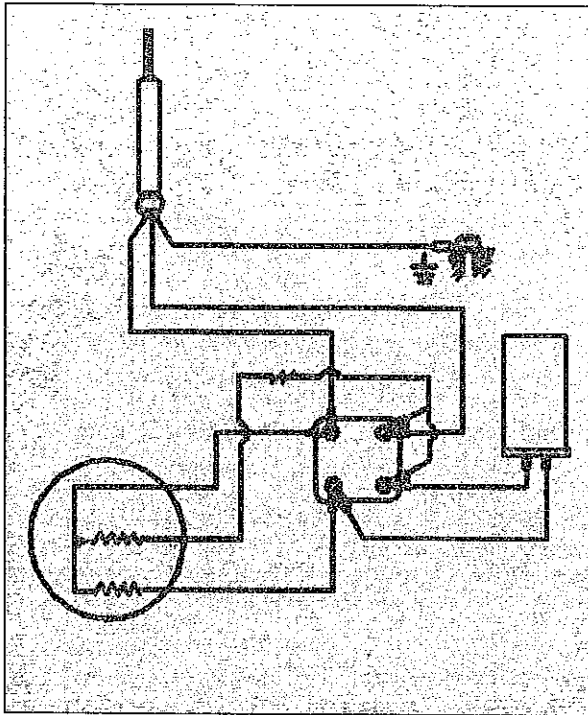


Fig. 5 / Bild 5



ESQUEMAS ELECTRICOS / ELECTRICAL DRAWINGS / SCHEMAS ELECTRIQUES
ELEKTRISCHE ZEICHNUNGEN / SCHEMI ELETTRICI



CONEXION DE ESTRELLA
STAR CONNECTION
CONNEXION EN ETOILE
STERN-SCHALTING
COLLEGAMENTO A STELLA



CONEXION DE TRIANGULO
DELTA CONNECTION
CONNEXION EN TRIANGLE
DREIECK-SCHALTING
COLLEGAMENTO A TRIANGOLO



POS.	DENOMINACION	DESIGNATION	DESIGNATION	BEZEICHNUNG	DENOMINAZIONE	CTD
1	Palomilla	Cover screw	Vis papillon abattable	Füßelschraube	Vite coperchio	2
2	Tapa cuerpo de bomba	Pump lid	Couvercle	Deckel	Coperchio	1
3	Junta tapa	Pump lid O-ring	Joint de couvercle	Deckel O-Ring	Guarnizione o ring coperchio	1
4	Tapón	Plug	Bouchon	Stöpsel	Tappo	1
5	Asa filtro	Handle	Poignée prefiltre	Filtergriff	Maniglia	1
6	Cestillo filtro	Filter basket	Panier prefiltre	Filterkorb	Cestello	1
7	Cuerpo bomba	Pump casing	Corps de pompe	Pumpengehäuse	Corpo pompa	1
8	Junta tapón	O-ring	Joint	Stöpsel O'ring	Guarnizione o ring tappo	2
9	Bujón de palomilla	Pin	Axe vis papillon	Gewindeszapfen	Perno	2
10	Tapón vaclado	Drain plug	Bouchon vidange	Ablassschraube	Tappo svuotamento	2
11	Tornillo soporte	Screw	Vis fixation socle	Sechskantschraube	Vite base appoggio	2
12	Soporte	Motor-pump support	Socle	Socketteil	Base appoggio pompa	1
13	Junta difusor	Diffuser gasket	Joint diffuseur	Dichtring	Guarnizione diffusore	1
14	Difusor	Diffuser	Diffuseur	Leitapparat	Diffusore	1
15	Tarjeta características	Characteristics card	Carte de caractéristiques	Pumpetypenschild	Targhetta caratteristiche	1
16	Turbina	Impeller	Turbine	Laufrad	Girante	1
17	Retén	Mechanical seal	Garniture Mécanique	Wellendichtung	Tenuta meccanica rotante	1
18	Contra retén	Seal seat	Siège de garniture mécanique	Wellendichtung	Tenuta meccanica fissa	1
19	Junta cuerpo de unión	Flange O-ring	Joint bride de raccordement	Flansch O'ring	Guarnizione or flangia	1
20	Cuerpo unión	Flange	Bride de raccordement	Flansch	Flangia	1
21	Tornillo cuerpo de unión	Screw	Vis bride de raccordement	Sechskantschraube	Vite flangia	4
22	Tapa motor lado accionamiento	Motor cover-Pump side	Couvercle du moteur-Côte commande	Motorhaftung	Calotta motore - lato pompa	1
23	Tornillo tapa motor	Screw	Vis de couvercle du moteur	Sechskantschraube	Vite calotta motore	4
25	Rodamiento lado accionamiento	Bearing-Pump side	Roulement-Côte commande	Lager-antriebsseitig	Cuscinetto a sfere - lato pompa	1
26	Brida fijación lado accionamiento	Bearing clamp-Pump side	Bride de fixation roulement-Côte com	Befestigungsflansch	Flangia di fissaggio cuscinetto	1
27	Tirante cierre motor	Tie rod	Tirant de fermeture du moteur	Zugstange	Tirante chiusura motore	4
28	Rotor	Rotor shaft	Rotor	Läuferwelle	Rotore	1
29	Estátor	Casing with stator	Carcasse avec le stator	Statorgehäuse	Statore	1
30	Prensaestopas	Staffing piece	Presse-étoupe	Stöpselbuchse	Passacavo	1
32	Tapa motor lado ventilador	Motor cover-Fan side	Couvercle du moteur-Côte ventilateur	Motorabdeckung - ventilatorseitig	Calotta motore - lato ventola	1
34	Ventilador	Fan	Ventilateur	Ventilator	Ventola	1
35	Tapa ventilador	Fan cover	Couvercle ventilateur	Ventilatorabdeckung	Copriventola	1
36	Placa de características	Characteristics card	Plaque de caractéristiques	Motortypenschild	Targhetta caratteristiche	1
37	Tapa caja conexiones	Board cover	Couvercle des connexions	Anschlußkastendeckel	Coperchio morsettera	1
38	Arandela lado ventilador	Washer-Fan side	Rondelle-côte ventilateur	Unteriagscheibe - ventilatorseitig	Rondeella - lato ventola	1
39	Rodamiento lado ventilador	Bearing-Fan side	Roulement-Côte ventilateur	Lager - ventilatorseitig	Cuscinetto a sfere - lato ventola	1
40	Regleta conexiones	Board	Réglette de connexions	Anschlußklemmleiste	Morsettera	1
42	Condensador	Capacitor	Condensateur	Kondensator	Condensatore	1
43	Suplemento soporte	Plug (s)	Taquet (s)	Ständerzapfen	Tacchetto (i) base appoggio	1-5
44	Paragotero	Drops guard	Paragouttes	Tropfenhalter	Paragocce	1

PLANO DE DESPIECE / DETAIL DRAWING / PLAN DE DEMONTAGE
EXPLOSIONZEICHNUNG / DISEGNO ESPLOSO

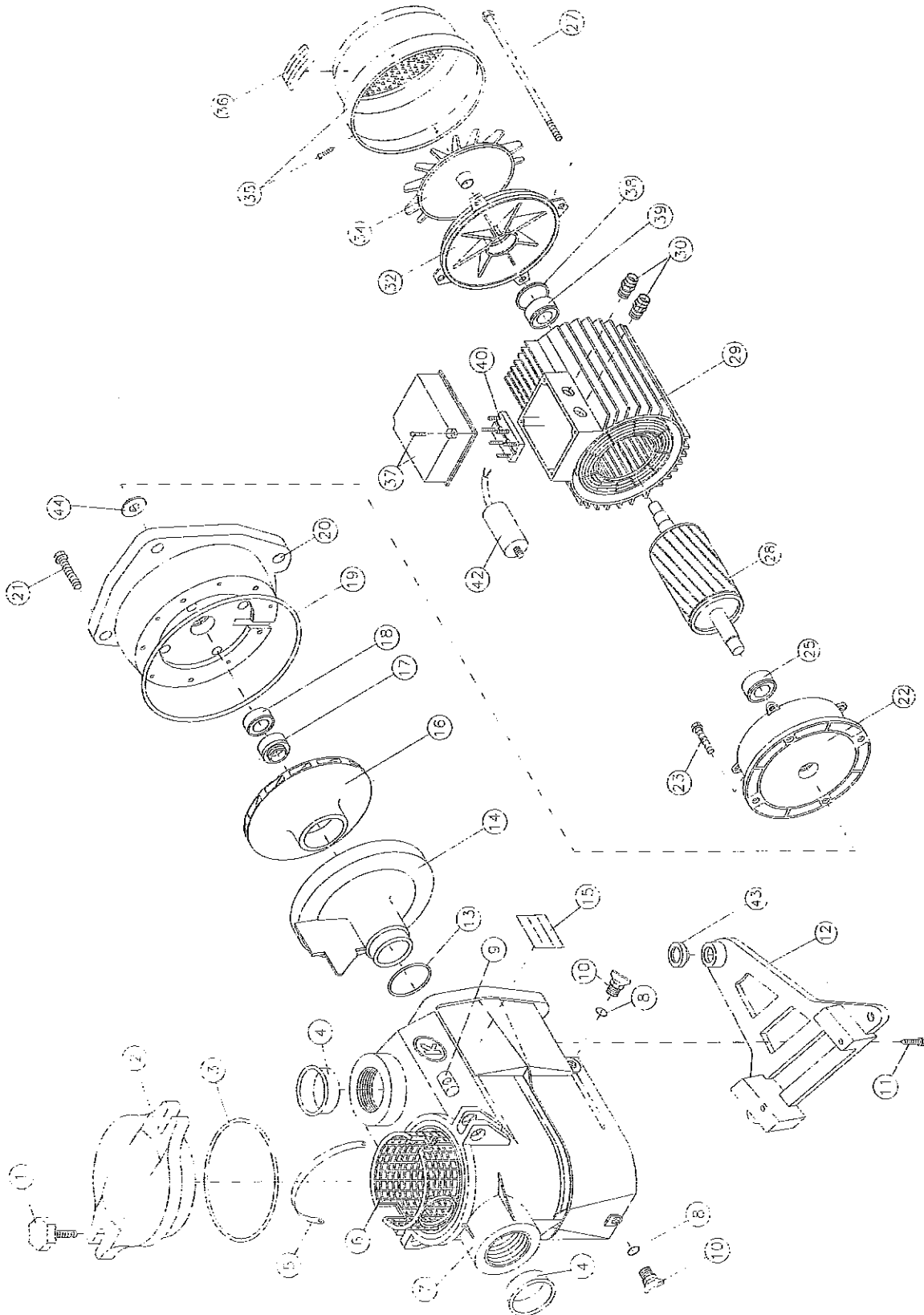
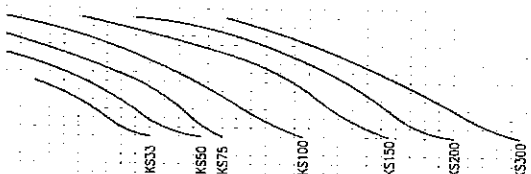


Fig. 6 / Bild 6

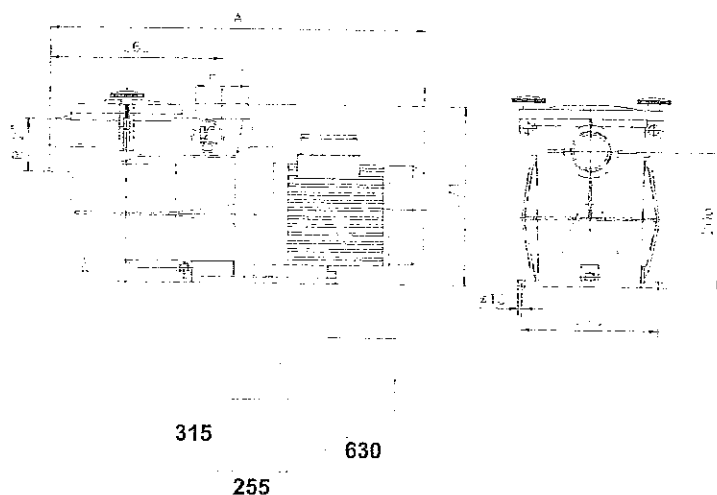
**CARACTERISTICAS Y DIMENSIONES / CHARACTERISTICS AND DIMENSIONS
CARACTERISTIQUES ET DIMENSIONS / KENNZEICHEN UND MASSEN
CARATTERISTICHE E DIMENSIONI**

TIPO TYPE	HP P2	KW P1	Altura en m. / Head in m. / Haut en m. / Höhe in m. / Altezza in m.								
			5	6	8	10	11	12	14	16	18
			Caudal / Capacity / Debit / Leistung / Capacità (m³/h)								
KS 33	0,33	0,45	11	8,9	7	4,8	3	--	--	--	--
KS 50	0,50	0,58	14,5	12	10	7,5	6,5	5	1	--	--
KS 75	0,75	0,75	16	14,5	13,5	11,5	10,2	8,9	5,2	1	--
KS100	1,00	1,00	21,5	19,5	17,5	15,4	14,2	13	10	5,8	1
KS150	1,50	1,60	27,5	25,5	23	21,9	20,8	19,7	16,4	11,8	6,2
KS200	2,00	1,92	32	29,4	27,8	25,7	24,6	23,5	20,5	17	12
KS300	3,00	2,60	36,5	34,5	32	29,5	28,2	26,9	23,9	20	16,2



TIPO TYPE	HP P2	KW P1	Monofase Single-phase			Trifase Single-phase	
			V	A	COND.	V	A
			KS 33	0,33	0,45	230	2,45
KS 50	0,50	0,58	230	3,2	14	230/400	2,45-1,4
KS 75	0,75	0,75	230	3,8	14/16	230/400	3-1,7
KS100	1,00	1,00	230	5	20	230/400	3,4-2,0
KS150	1,50	1,60	230	7,5	25	230/400	5-2,9
KS200	2,00	1,92	230	9	30	230/400	6,1-3,5
KS300	3,00	2,60	-	-	-	230/400	8,3-4,8

TIPO TYPE	A (mm)		PESO / WEIGHT (Kg)	
	MONOF.	TRIF.	MONOF.	TRIF.
KS 33	503	-	11,20	-
KS 50	550	550	12,5	12,0
KS 75	550	550	13,5	13,0
KS100	550	550	14,0	13,5
KS150	580	580	16,5	16,0
KS200	580	580	17,5	17,0
KS300	620	620	-	22,0



Declaración de conformidad

KRIPSOL PISCINAS, S.A., declara bajo su responsabilidad que sus productos **KS** cumplen con la Directiva CE Máquinas, Consejo 89/392 y siguientes modificaciones

Declaration of conformity

We, **KRIPSOL PISCINAS, S.A.**, declare under our own responsibility that our products **KS** comply with the Council Machines Directive 89/392 and following modifications

Déclaration de conformité

KRIPSOL PISCINAS, S.A., déclare sous sa responsabilité que les produits **KS** sont conformes à la Directive Machine Conseil 89/392 et modifications suivantes

Konformitätserklärung

Die Firma **KRIPSOL PISCINAS, S.A.**, erklärt unter ihrer vollen Verantwortlichkeit, daß die Produkte **KS** den Maschinen-Richtlinien 89/392, und späteren Änderungen, entsprechen

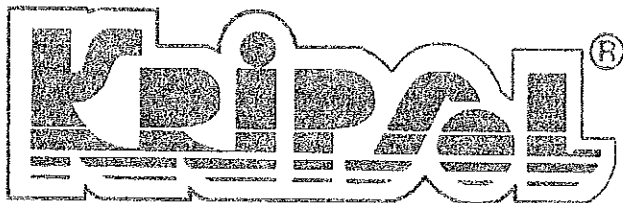
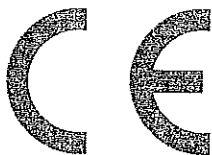
Dichiarazione di conformità

Noi, **KRIPSOL PISCINAS, S.A.**, dichiariamo sotto la Ns. sola responsabilità che nostri prodotti **KS** sono in conformità alla direttiva macchine 89/392 e successive modifiche.

Vicente Almagro
Presidente

Toledo, 30 de Noviembre de 1994

PRODUCTO
PRODUCT
PRODUIT
PRODUKT
PRODOTTO



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