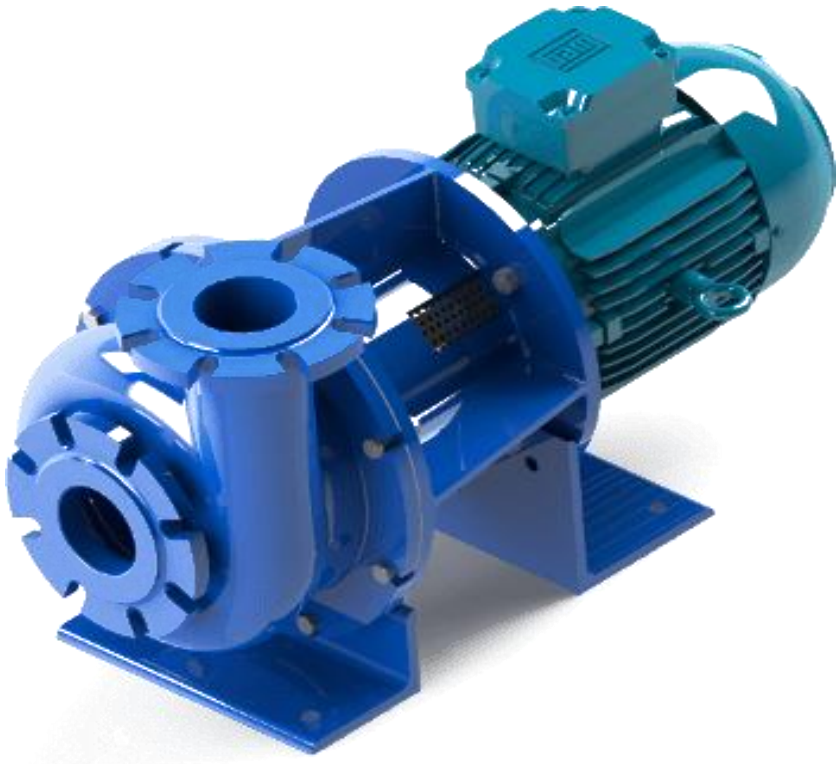
ESP GROUPE

EVA SEIM POMPES GROUPE

OPERATING AND MAINTENANCE NOTICE

PUMP TYPE : HM / HM NH



SUMMARY

INSTRUCTIONS INSTALLATION - SETTING UP

1 - no game being to respect, the installation of the constituent pieces of this pump doesn't present any difficulty. There is place to follow the order of installation representing on our enclosed location plan merely.

2 - the installation of the complete group makes himself through the intermediary of paws of the motor, or of the pump, which must rest on a pedestal in concrete or metallic, perfectly plane

3 - the link of the pump to tubings of repression and aspiration must not inflict any abnormal tensions to bridles foreseen to this effect.

4 - otherwise, he/it is recommended to insert between bridles a sufficiently thick joint in order to absorb shortcomings of surface that can present the raw bridles.

5 - to foresee on the aspiration, a floodgate of isolation to direct passage for disassembly of the pump.

6 - diameters of aspiration and repression must not be reduced.

INSTRUCTIONS STAKE IN SERVICE - REGULATING

1 - to verify that the awning of aspiration has been cleaned well before starting.

2 - to ensure that the pump turns in the common sense of rotation. (view, quoted motor, sense timetable).

3 - the pump must be in charge to the aspiration (positive aspiration pumps over to the of the liquid to see retailed note separated).

4 - the pump must not work on no account to dry (lubrication of the mechanical seal by the transported product.).

5 - in case of watering of the mechanical seal by a clean liquid, the arrival on the tube 8/13 gases must be equipped of an electro - floodgate to enslave to the march of the motor (benefit customer). Debit liquidates watering 50 to 100 l/hs under a pressure superior of 500g to the pressure of sce.

INSTRUCTIONS OF LUBRICATION

ONE PIECE PUMP SET HM: without object
(ROLLING MOTOR GREASES TO LIFE)

INSTRUCTIONS HYGIENE / SECURITY

Concerned elements:

- MOTOR
- SEMI-FLEXING COUPLING

Monthly verifications:

- Fixing of the hood of fan of the motor
- Fixing grills protects semi-flexing coupling

Cleaning:

Authorized – Products: compressed air
Forbidden – Products: all liquids

INCIDENTS AND MAIN REASONS

CORRECTIVE MAINTENANCE AND RESEARCH OF BREAKDOWNS

The pump turns but doesn't drive back : The pump turns, but doesn't discharge :	-The impeller is dismounted. -The discharge pipe is obturated. The THD is superior as rated.
The motor switch :	-The impeller is blocked. -The THD is less as rated. -The motor turns in thewrong direction. -The speed of rotation of the motor is not good. -The liquid density is superior as rated.
The pump vibrates abnormally :	-The impeller is unbalanced. -The discharge pipe clamps the pump. -The THD is less as rated.
The pump makes an abnormal noise :	-The motor ventilator is in friction with the guard. -A bearing is broken. -The impeller rubs in the pump casing.
The pump doesn't qive a good performance :	-The THD is superior as rated. -The viscosity of the product is superior as rated. -The discharge pipe is obturated. -The speed motor is not good. The diameter of the impeller or the valves are not correct.

NOTE INTERVIEW MAINTENANCE PREVENTION

The interview of pumps vertical EVA HM type set limits itself to:

A) – Verification of the state of the semi-flexing coupling

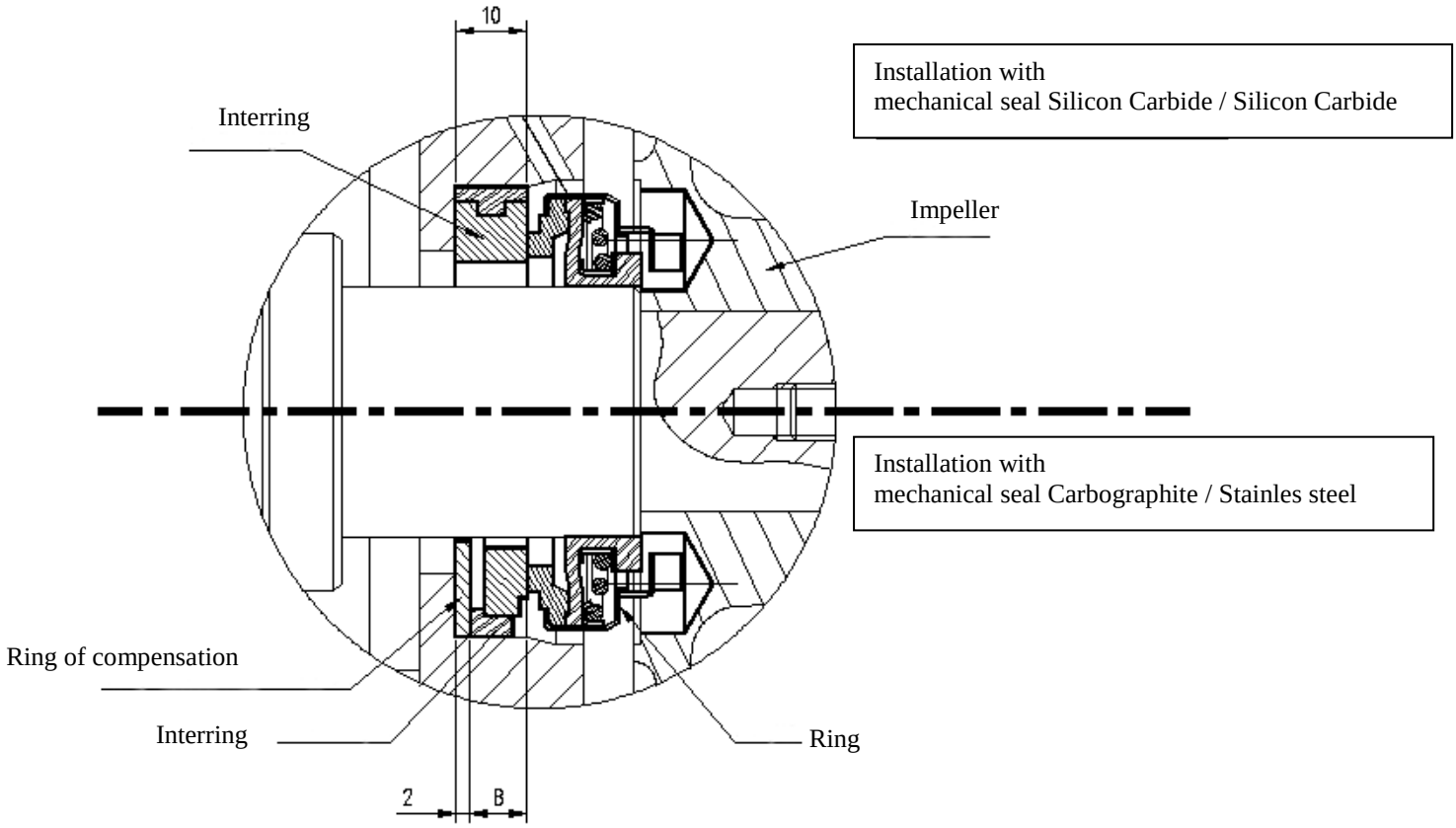
B) – Verification of the state of the impeller.

PERIODICITY

A: Annual
C: variable according to the nature of products transported.
No abrasive liquids: half-yearly
Abrasive liquids: quarterly

REMARKS: As soon as features of the pump decrease,
There is place to verify the state of the impeller.

INSTALLATION OF A MECHANICAL SEAL



REMARKS: In the 2 cases ergots of practice
some seal must be correctly placed in
the 2 holes foreseen to this effect in the rear face of the impeller

REMARKS: For pumps HM Ni - Hard not of compensation ring.

NOTE INTERVIEW FOR MOTORS

Use and installation

Motors must be used according to their protective degree defined by the norm DIN VDE 0530 paragraph 5 / in 60034 paragraph 5 and according to their shape of construction also defined by the norm DIN IEC 34 paragraph 7.
Openings of aspiration and evacuation as well as interstices between ribs of cooling must be maintained clean in order to avoid all obstruction.
The air of cooling must be inhaled and cooled without hindrance and must not be immediately re - aspirate. The distance between the entry of air and the nearest partition must be less equal to the height of axis of the motor and must mate to the driven machine.
The driven machine and the mass of the influential motor strongly on the frequency of resonance.

Holes of evacuation of condensation water

It is necessary to especially look after what holes of evacuation of condensation waters are, when they exist, in the lowest part of the motor. He/it must be maintained clean. For motors in IP55 protection, for which holes of evacuation of condensation water are plugged he/it is necessary to open them to regular intervals.

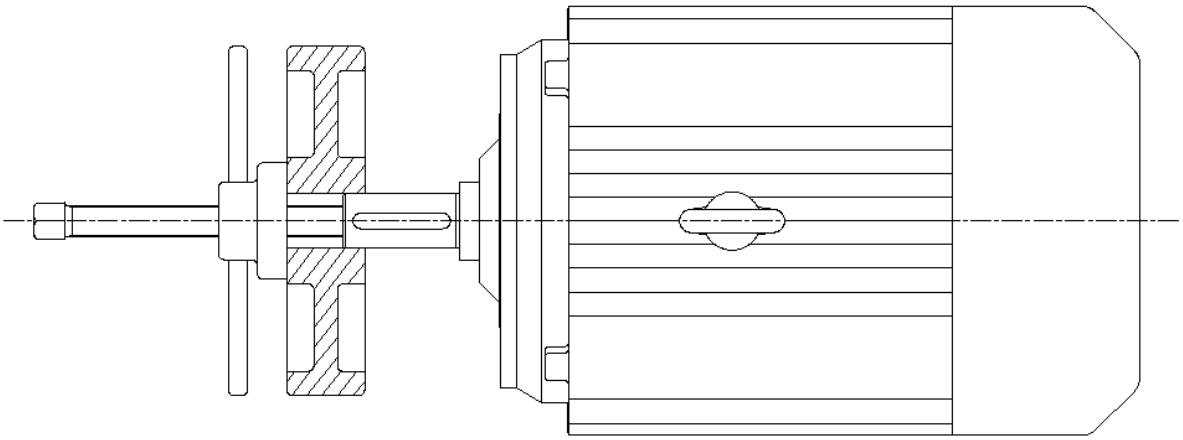
Security of transportation

In order to avoid a deterioration of landings during the transportation, motors equipped of rolling to rollers cylindrical sides practice, possesses a device of security; this last must be suppressed to the stake in service. For a transportation after intermediate installation, re to block the tree, even when the motor is mated.

Transmission elements

Pulleys, matings gables must be etc. balanced without pin, on smooth mandrel, free groove. Before the installation of the transmission system, to clean the tree of the motor with a solvent (f.ex. alcohol), to eliminate the anticorrosive sealer, and to grease it.
To use tools appropriated for the installation and the disassembly.
One must not proceed on no account to the installation with the help of a hammer, because it would damage landings.

Installation of the transmission system



Fixing

To fix the motor on a plane support surface. Shortcomings of flatness would entail a warping of this one.

Choice of semi-flexing coupling.

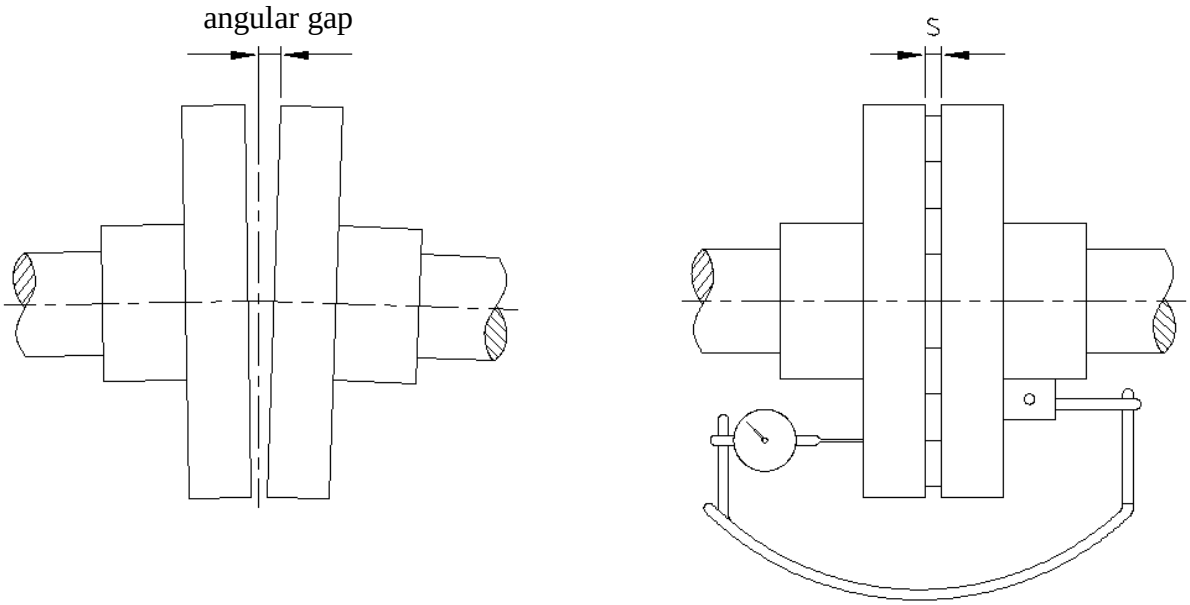
To only use some of semi-flexing coupling. in torsion in the longitudinal sense and permitting to compensate gaps of crankiness as well as the angular gaps.
The rigid matings cannot be used put to part of the exceptional cases,
To know:

1) if the solicitation in bending of the tree is not important and situated in the accepted limits
2) if the longitudinal dilation of the motor tree is not antagonized.
3) if the tolerance of centering of the tree, to temperature of service, remain in limits of the landing game
For the transmission element implementation dragging some axial or radial efforts on the motor shaft (f.ex. pulley, gables, etc.), it is necessary to ask and to take account of admissible load diagrams.

Alignment

For a direct semi-flexing coupling the bringed out the center and the angular gap of shafts must be verified with the help of a comparator to dial and an arm of control fixed by screw.
Values of gaps indicated here after must not be passed:
bringed out the center (radial measure) 0.03 mms for motors 2 poles, 0.05 mms for motors 4 poles and to the over.
(the device of control indicates the double value of the gap).
Angular gap (axial measure) 0.10 mms. Axial game between the semi-flexing coupling = 3 to 4 mms.
To control the alignment to the temperature of service of the whole.

Position of the comparator to measure the angular g



Protection

For the protection in short circuit (blockage), in overcharge or in working on 2 phases there is place to foresee the following devices by choice:

1) cutout protective motor with release bimetal.
2) AEG THERMISTORSCHUTZ: protection to thermistances inserted in winding stator and AEG release TMA type. Some motors (necessary demand)
are not protected to walk in short circuit: to possibly foresee a supplementary motor protective cutout.
A possible control of the electric continuity of probes cannot be done that with the help of a bridge of measure.

3) the thermal probes to bimetal to opening or closing inserted in winding stator don't protect in case of short circuit, it is necessary to foresee therefore, if the case arises, a supplementary motor cutout.

Fuses often protect only the network and the power supply but not the motor.

Position of the terminal box.

Adjustable to 90° or 180°. To close entries of cables non-used.

Branching of the motor

To see page 17 and 18 diagrams of threephase motor branching to rotor to cage or rings, as well as of the single-phase motor. Diagrams of branching particular are in the lid of the box to boundary-mark or are delivered with the motor.
Adjusting of the protective thread:

Sense of rotation

For a branching of phases in the L1, L2, L3 order to boundary-marks of the motor U1, V1, W1,
The sense of rotation is on the right, while looking at the tip of tree, on the right or in top and on the left, if the box to boundary-marks is on the left side.
(For motors to 2 tips of tree it is necessary to observe the tip of tree of the side opposed of the fan).
Inversion of the rotation sense:
To reverse 2 sons of food. All motors - to some exceptions near - are appropriated for the two senses of rotation.
For motors to only one sense of rotation (with a fan to sense of rotation defined), the sense of rotation is indicated by an arrow and the indication supplementary " nur " (only). the order in which the L1, L2,L3S phases must be joined to the limit the motor U1,V1,W1, and indicated also (f.ex. for a position of the box to boundary-mark on the right: U1,V1,W1 for a rotation on the right or V1,U1,W1 for rotation on the left).

Interview of landings

Rolling to permanent lubrication. Lasted of maintenance-free working in the conditions normal of service: For motors 2 poles: about 10.000 hours, For motor to a larger number of poles, about 20.000 hours.
Maximal length: 4ans. It is then necessary to clean rolling. To fill half of grease cavities between balls and surfaces of slip as well as boxes to grease. To lubricate the passage of the tree of covers and flasks.
The insulated rolling greased to life (2RS and 2Z) cannot be cleaned nor greased, they must be replaced.

Rolling equipped of a device of lubrication and measure of grease

Frequencies of lubrication and the necessary grease quantities are indicated on the descriptive plate of the motor.
After 12 lubrications it is necessary to clean rolling and covers (to gas or the benzene).

Then, it is necessary to introduce the grease by the oiler, while turning the rotor slowly, the necessary time so that the space between balls and surfaces of slip filled themselves of grease, the outside cover of the landing being open and the screwed interior cover

Lubricating

Grease to the lithium K 3 N according to DIN 51825 (behavior to water according to DIN 51807 paragraph 1, level appreciation 0 or 1). For lubrication, to only use an equivalent grease (p. ex. Esso Unirex N3, Shell-Alvania R3, Esso-Beacon 3, etc.).

Interview of motors stocked

To store motors in a dry, clean place, safe from jolts or vibrations. For motors equipped of rolling to cylindrical rollers, to let securities of transportation in the blocked position.
If during their period of storage motors have been exposed during a long enough time lapse to the humidity, it is necessary to measure the resistance of coil insulation in relation to the carcass with a magneto to crank (tension continuous maximal 500 V). If the resistance is lower to 30 MW for a temperature of coils of 25°C or lower to 1 MW for a temperature of 75°C the motor must be dried (the temperature of coils not having to pass 80°C).
For the closed motors, to disassemble a flabby in order to make circulate air. If coils are dried by a branching low tension, to ask for instructions to the manufacturer of the motor.
After a drying or after more of 4 years of storage a revision of rolling imposes itself (to see paragraph " interview of rolling "). For motors equipped of an oiler a lubrication with a double quantity of grease is sufficient.

MOTORS FOR WORKING IN EXPLODING AMBIANCE

Use

For the installation and the working, to take account of regimentations according to the DIN norm VDE 0165. In case of doubt on the degree and the importance of the explosion risk it is the authority concerned, responsible of the site, that decides.

Protection of motors

They must be protected following upon against all non-admissible warming-up an overcharge by a motor protective cutout correspond to requirements of the VDE 0660, or to all other equivalent system capable to protect each of poles. The power of cut of the motor cutout must be superior informed of Ia starting of the motor (current of control according to DIN VDE 0660 for tests of engagement and starting point).

Regimentation for motor EEx e

Releases of current temporized as well as relays are to adjust according to the nominal current of the motor. Besides, it is necessary that they are chosen so that the motor is protected thermally in case of service in short circuit, that is to say blocked rotor. It is considered like being achieved when the time of starting point given by the curve of starting point for the Ia/In report is not superior in the time of warming-up tE (indicated on the descriptive plate of the motor) to reach the temperature corresponding to the class of temperature (initial temperature: 20°C).

It is necessary to plan for all speeds of motors to commutable poles, releases of current temporized, or relays can be locked, between them.
Motors cannot be used that for permanent service without frequent startings and for which startings are not the reason of an appreciable warming-up.

Adjusting

Presses tows planned to balance efforts of traction or torsion must be used in a compliant manner. After having loosened screws or nuts, to terminal box.
Extremities denuded of thread, must fill the total length of boundary-marks, but must however pass it. To verify the good position of thread then screwed screws or nuts.
To join the protective thread with the terminal box of neuter being inside the box to boundary-marks or in the case of earth separated, to join this last to the boundary-mark of earth.

Repairs

All modifications or repairs of motors protected against explosions must be exclusively executed by shops authorized AEG, or of shops recognized like experts by the local competent administration. Of restorations having no influence on the anti - exploding devices of the motor Eex e cannot be executed without calling on an authorized organism. These restorations understand the maintenance works and the mechanical repairs, f.ex. change of boundary-marks, change of rolling, repair of the fan and the hood of fan, broken paw soldering and change of tightness small discs. for the important piece change one must use spare parts of origin solely.

MOTOR TO ROTOR TO RINGS COLLECTORS

Installation

For the stake in service of motors equipped in series of brooms, it is necessary that the following conditions are respected:
The atmosphere must not be aggressive, for motors in degree protective IP23, it must not have a presence there important of dust. The humidity of air must be sufficient (about 8 to 25 g/m3). Attention: dust hygroscopic absorbs the humidity to the ambient and reduced air his/her/its rate of as much! The real power must be to the minimum of 70% to 100% of the nominal power to nominal speed.
The failure to respect of one of these conditions entails a wear premature of brooms and the formation of streaks on rings.

Opening of the collector's surrounding wall

For the control or the interview, the opening of the collector's surrounding wall must not take place that when the machine is stopped. It is important to redo the tightness of this part after having done work. If one cannot stop the motor, to eliminate the effect of breath of the outside fan while covering his/her/its hood (for motors to ventilated carcass). The cooling being reduced, not to close up the hood more than 10 minutes to the maximum.

Control of brooms

Intervals of control are next one:

After 10 hours of service, to look after what there is not exaggerated wear. After 100 hours of services, to control wear (normal 1,2 mm maximum for 100 hours of services). rings must present in the width of brooms a dark hue (patina). For conditions of constant ambiance and normal wear of brooms, to repeat the control after 500 hours and then every 1000 hours of services.

Replacement of brooms

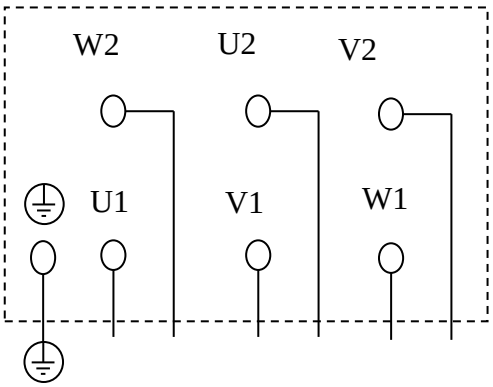
The remaining length of one broom must not be lower to about ¼ of the origin length. to Break in the new brooms with the canvas of emery so that all the surface carries.

Cleaning

To eliminate all trace of dust of broom of the part collector every 1000 hours of service and before a new game of brooms. To inhale the dust of brooms (to avoid that she/it is blown in the winding). traces of dust remaining will be removed with the help of a rag.
If the surface of rings is damaged by small burns (pittings) or greatly oxidized, it is necessary to retake it from the tour (false circle maximum 0,05 mm).
If the surface of ring slip doesn't pass the isolation that of about 0,5 mm this operation is not more possible.

Diagrams of branching for the threephase motor to rotor to cage.

Branching triangle

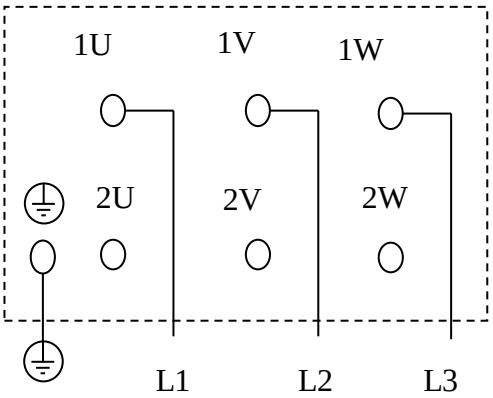


Branching with star - triangle button

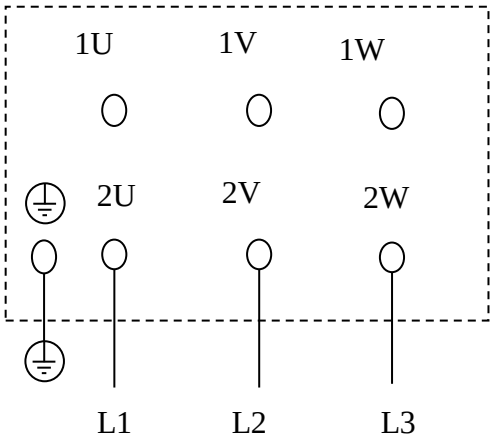
Diagrams of branching for the threephase motor to pole commutable

Motor to 2 speeds to separated winding:

In the designation of the type, the least important pole number = the big speed is mentioned in first (f.ex. AM 280. 4/8)



Small speed



Big speed

CONDITIONS OF GUARANTEES

Our pumps are guaranteed pieces and manpower recognized deficient by our post-sale service (materials returned in our shops).

Except:
- Case of abnormal march.
- Service another one that the one foreseen to the order.
- Lack of control and maintenance.
- Piece of wear.

Pieces of wear:
-Impeller
-Mechanical - seal

CE

DECLARATION OF CONFORMITY TO THE GUIDELINE " MACHINES "

(Modified guideline 98/37/CE) and to regimentations holds for its transposition

MATERIAL SUBMITTED TO AUTO CERTIFICATION

The constructor :

14 Avenue des Vieux Moulins
Z.I de Vovray
74000 ANNECY (France)
Tél. +33 (0)4 50 10 10 40

declare that the machine nominee below:

PUMP **HM / HM NH**

Model **EHA / EHF**

- is compliant to arrangements of guideline " MACHINES " (modified Guideline 89/392/CEE) and to the national legislations transposing it,
- Est compliant to arrangements of Norms Europeans Harmonized following:
CEN / TC 197 / SC1 N 36 ES (PR IN 809)
Transposed in right French by the law N° 91 1414 (N°92-765 decrees ?92-766 and 92-767 of the 29.07.1992).

Makes to ANNECY, date: 04/09/2023

Name of the signatory: S.CHENAL

Signature :