



MANUFACTURERS OF VERTICAL TURBINE PUMPS FROM 4 " - 18 "

MANUFACTURERS OF SUBMERSIBLE PUMPS FROM 4 " - 12 "

3KM OF ARGOS - STERNAS NATIONAL ROAD , 21 200, ARGOS, GREECE.

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Instructions and Assembly Description for the Pump

(Columns are Joined using Threaded Couplings in all Cases)

Bowl Unit Selection

The bowl assembly has to be selected to produce the required head at the design capacity and the operating speed as indicated. The materials to be used shall be as listed in the appropriate section, but many times the composition of the elements may vary slightly, depending on the supplier. To select the correct bowl, one should refer to the section "Performance Curves" Located in the catalogue. The performance curves indicate the Total Head value, the m^3/h value, the Efficiency value and the Brake Horse power in hp. The total Brake horse power, and Head will be calculated depending on the number of stages required.

Bowl Assembly

The Pump bowls shall have either a bronze or a rubber bearing, to be used for the shaft alignment at each stage. The water passages are curved and are designed to produce the maximum output and achieve a high efficiency number. The top side of the bowl shall be bored to accept the impeller with minimum practical clearance. The bore shall be of sufficient depth such that, in conjunction with the impeller design, there will be sufficient lateral for proper operation. The connection of the bowls shall be threaded or flanged, depending on the type of the Bowl. Flanged bowls are the ones of the type 10KHKB, 12HKB, and 14KHKB. The impellers are semiclosed or closed, depending of the application. Closed impellers give a greater efficiency and produce more output. Impellers are cast in one piece, and statically balanced. They shall be securely locked to the shaft by tapered (conical) lock collets, such that they can be removed after long periods of service for maintenance operations. The impeller shall have two independent

faces perpendicular to its axis to decrease the amount of back flow around the impeller and optimize efficiency. The outside diameter of the impeller shall also be of the angle and width to produce the performance conditions at the proper operating speed, as specified. The bowl shaft shall be heat straightened before machining, threaded, and then faced to ensure that the butting face will be perpendicular to the axis of the threads.

Column Assembly

The pipe wall thickness shall be as specified in the "Description Section" for each type of column in order to withstand the pressure produced by the bowl assembly and the total weight of all elements suspended from the discharge head. The thread of the pipe shall be of 8 threads per inch in a length of 42mm for the 2.5", 3", 4" and 5" and 50mm for the 6", 8" and 10". The ends shall be faced parallel to each other and perpendicular to the axis of the threads. **The pipe shall be fastened together by threaded sleeve type couplings, in all cases.** The coupling threads shall be straight to allow the pipe faces to seat against each face of a drop-in type centering spider for proper alignment.

The couplings are to be made from solid bar stock material and shall be bored and threaded in one chucking. The alternative method of producing the couplings is from a hollow tube.

The ends shall be faced parallel to each other and perpendicular to the axis of the threads. The total length of one complete tube is 3038mm, the length of the coupling pipe is 100mm and the shaft's length is 3050mm. The threads of the shaft are 12 teeth per inch

for the 1", 7/8" and 1 3/16", 16 teeth per inch in the 1 1/2", and 10 teeth per inch for the 1 11/16", 1 15/16" and 1 1/2" shafts. The length of the thread in all cases shall be 40mm.



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Discharge Head

The discharge head may be either cast or fabricated with an ANSI class discharge flange rated for the expected pressure. The flanges shall extend beyond the head base such that the pump can be removed without disturbing adjacent piping. The discharge head shall include the head shaft, which extends through the pump driver. The head shaft shall terminate above the packing assembly, so that the driver can be removed without lifting it

over the shaft. The adjustment of the height of the impellers will be done by the adjusting nut situate on the discharge head.

The shaft shall be sealed in the discharge head by a packing assembly. The packing box shall contain a long, cast iron throttle bearing. The packing shall be compressed by a two-piece split gland. The split gland shall be removable in a manner that does not require any other parts to be disturbed to change the shaft packing.

Power

The power required to operate the bowl assembly is to be calculated depending on the number of stages of the pump.