HOMA™
PUMP TECHNOLOGY

Submersible A Series
Wastewater Pumps
AMX, AV and AK Hydraulic Ranges



High Performance in Wastewater Pumping



HOMA submersible water and wastewater pumps operate worldwide in numerous domestic, municipal and industrial applications. Over 60 years of experience in the design and manufacturing of submersible pumps, plus uncompromising attention to quality with our ISO9001 compliance, ensure the utmost reliability and long service life of all HOMA products.

By combining the highest quality materials in an efficient and robust design, HOMA optimizes service life while reducing cost of ownership. Premium motor efficiencies and optimized hydraulic components minimize clogging and maximize overall efficiency. Additional reliability is assured with a wide range of automated pump monitoring options. Shaft seal condition, motor and bearing temperature, moisture detection and vibration can be monitored with results automatically transferred to various monitors or alarm systems.

Pumps are available in various configurations from a wide range of products that can be designed specifically for any demanding application or installation. With three different hydraulic configurations, six motor speeds, wet pit and dry pit cooling options, fully trimable impellers and multiple mounting configurations, HOMA has the pump for your application.



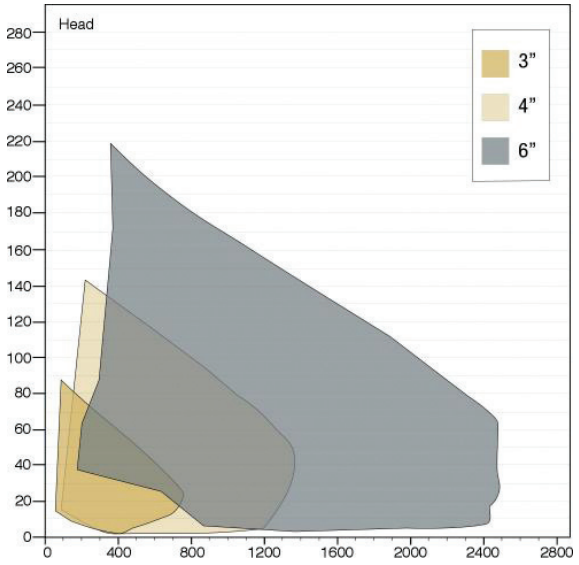




Hydraulic Selection

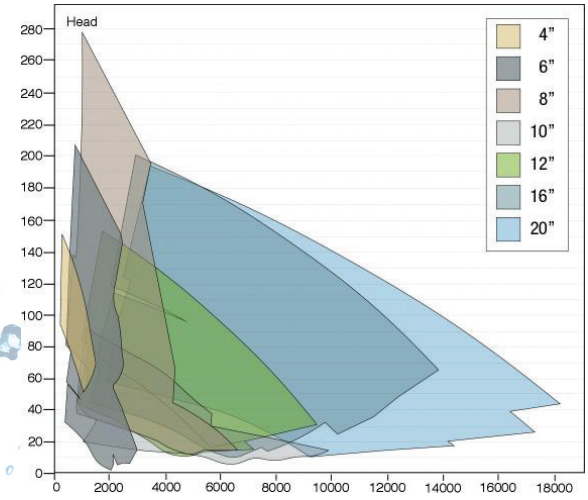


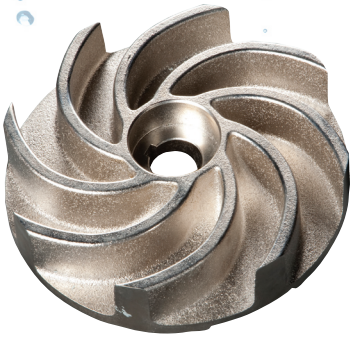
The AMX series hydraulics utilize a single (asymmetrical) concave vane with a smooth, spherical passageway for superior non-clog performance. Enhanced efficiency is achieved without sacrificing solids handling capability (particularly in smaller impeller sizes). The 3" and smaller 4"pumps have a 3"spherical solids passage and the larger 4" and 6" pumps have a 4"spherical solids passage. Available hydraulic ranges include 870, 1160 & 1750 RPM motor speeds.



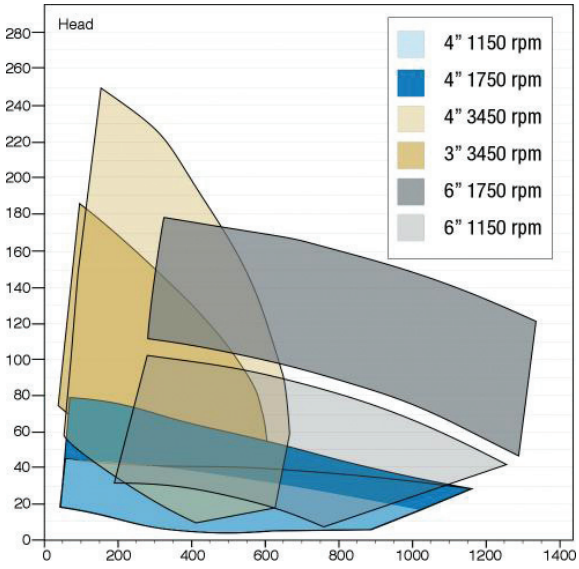


The AK series hydraulic designs utilize either a 2 or 3 vane configuration, depending upon pump size. These impellers also offer a solids passage range from full 3"solids passage on the smaller size pumps and up to a 6"solids passage on the largest pumps for superior non-clog performance. Available hydraulic ranges include 580, 700, 870, 1160 & 1750 RPM motor speeds.



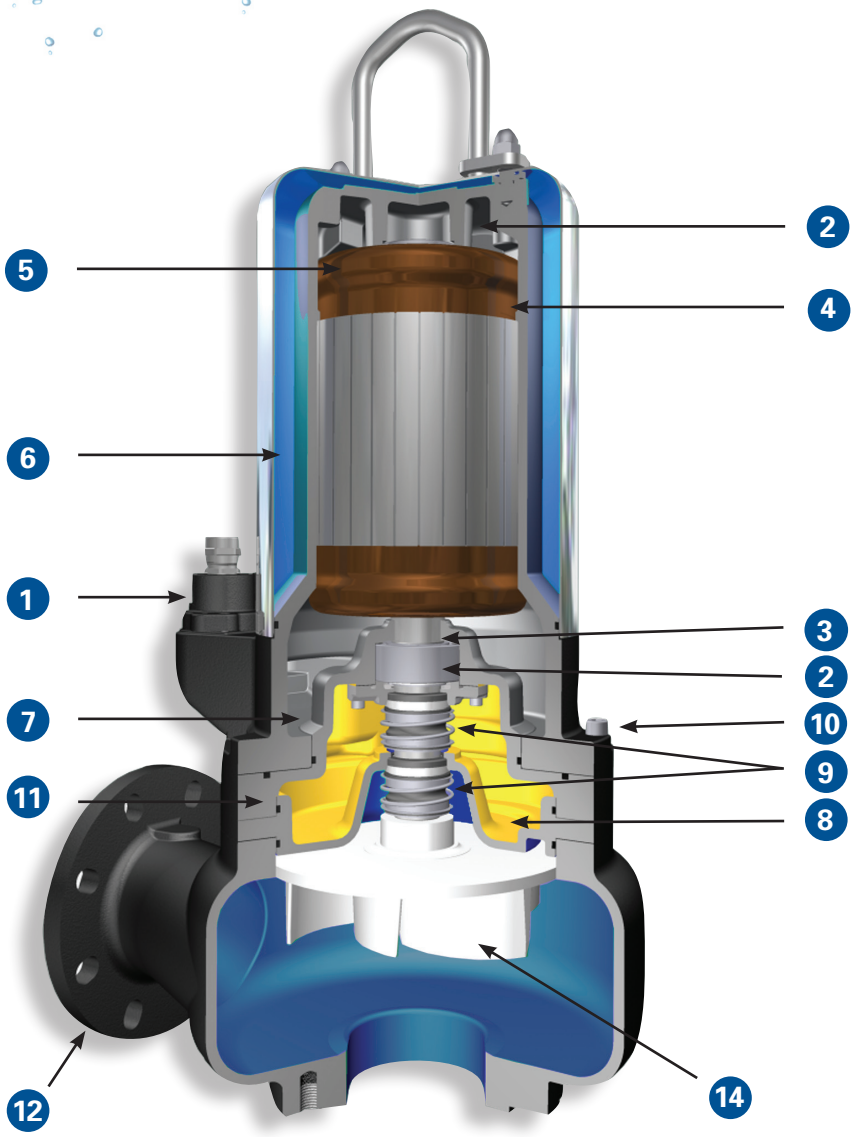


The AV series hydraulics are offered in recessed and semi-recessed vortex impeller designs to provide smooth, clog free operation in the most demanding applications.These enhanced efficiency, multi vane impellers are specifically suited for high solids concentration pumping, and to reliably pass large masses of stringy and fibrous materials. Available hydraulic ranges include 870, 1160, 1750 & 3450 RPM motor speeds.



Small Motor

Range 3 to19 HP



1 Cable Entry Gland
Rugged bolt in design provides easy cable change. Positive, watertight seal to 65' submergence and protection against rough handling.

2 Motor Bearings
Premium grade, permanently lubricated with high temp grease, and oversized for maximum B·10 rated life. Insulated or roller bearing designs available for special requirements.

3 Shaft
One piece, dynamically balanced, 430F SS shaft with precision machined shoulders to positively support bearings and impeller. Short overhang, large diameter shaft for extremely low deflection and minimal vibration for superior seal and bearing life.

4 Stator
High efficiency, VFD duty motor windings with Class H insulation and 1.15 service factor. Options include; IE3 Premium Efficient motor rating, NEMA MG-1 Part 31 VFD specific windings, VPI (Vacuum Pressure Impregnation) Insulation to 99% Fill Factor and Explosion Proof Motors for Class I, Division 1, Group C & D area classifications with FM or ATEX approvals.

5 Motor Winding Protection
Stator winding temperature continously monitored by thermal switches embedded in each phase offering protection from high temperature upset conditions. Optional RTD sensors are available for continuous readout of stator temperature for special applications

6 Motor Cooling
Standard wet pit submergence-cooled or jacket-cooled options are available for all dry pit, partially submerged or special applications.

7 Moisture Monitoring
Immediate indication of water intrusion is provided by an optional stator moisture monitor and/or junction box moisture monitor. Early detection minimizes mechanical damage and downtime needed for repair.

8 Oil Chamber
Generously sized oil chamber provides positive lubrication and cooling of mechanical seals and lower bearings to assure long service life. Oil chamber is continuously monitored for water intrusion with standard internal seal probe.

Large Motor

Range 3 to 650 HP

9 Mechanical Seals
Two independent mechanical seals in tandem arrangement, provided as standard with hard silicon carbide seal faces to provide superior abrasion and temperature resistance. Optional Tungsten Carbide seal faces and/or Viton elastomers are available for special applications.

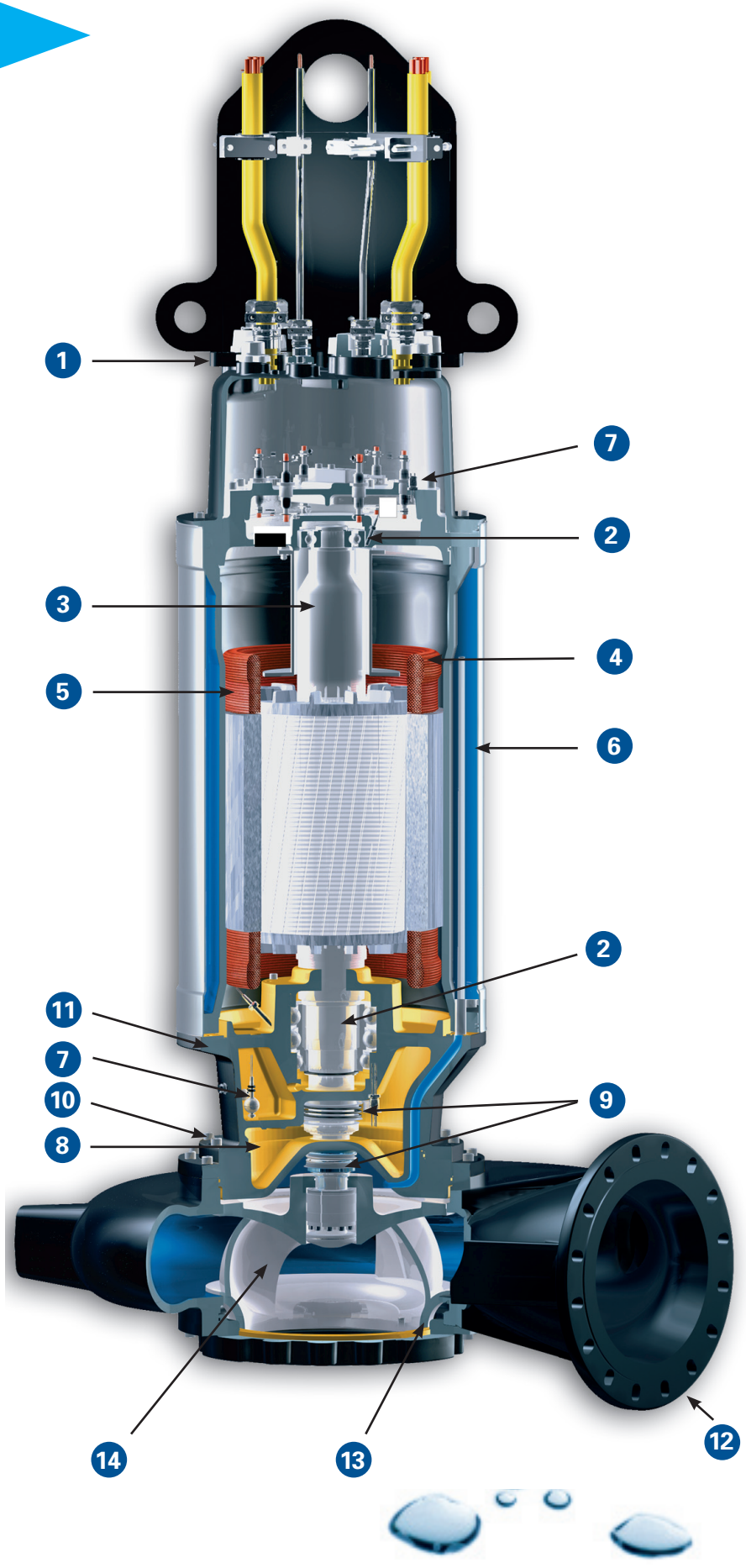
10 Hardware
All exposed fasteners are 304 Stainless Steel for ease of disassembly after years of service. Optional 316 Stainless Steel hardware available when requested.

11 Housing
All major castings are ASTM A48 Class 40 Cast Iron, epoxy coated against corrosion, and sealed with fully captured O rings. Various stainless steel and duplex stainless steel alloys are available for special applications.

12 Volute
Centerline discharge pump housing with ANSI B16.1/Class 125 dimensioned discharge flange in sizes from 3"to 20" Cleanout port is available for ease of inspection and maintenance of dry pit pumps.

13 Wear Ring
Replaceable bronze volute ring maintains hydraulic efficiency and is easily replaceable as required. Optional wear ring designs are available such as matched 400 Series SS impeller vs. volute wear rings, heat treated to min. 50 Bhn. hardness difference. Various combinations of 316SS. Hardened Stainless Steel and bronze materials are also available for specific applications.

14 Non-Clog Impellers
Dynamically balanced, trim-able high efficiency single vane (AMX), multi vane (AK) and vortex (AV) designs are available with generously sized solids passages for superior non-clog performance. Full diameter impeller shrouds are maintained to reduce solids from entering the mechanical seal and wear ring area. Standard ASTM A48 Class 40 Cast Iron impellers provide excellent service life in typical wastewater applications. Optional materials include Ductile Iron, Bronze, 316SS, Duplex Stainless Steel and High Chrome Iron (vortex) along with surface hardening treatments and various coatings for more aggressive services.



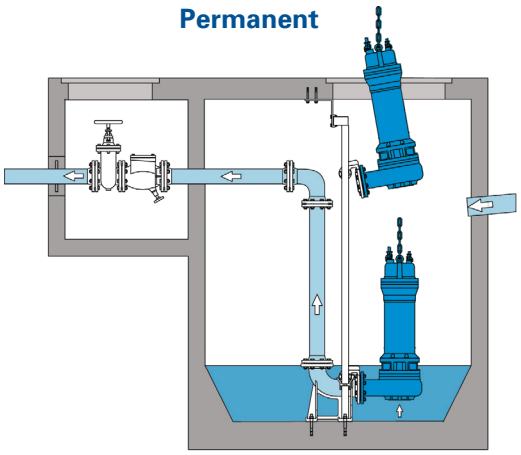
Wet Pit Installations

HOMA submersible pumps are designed to operate in most water and wastewater applications. Permanent wastewater installations, frequently in the municipal collections systems, utilize a wet pit installation requiring these pumps to operate either fully or partially submerged, yet removable without need to enter the wetwell. For this application, HOMA provides pumps mounted on an auto-coupling rail system providing leak-free operation with safe and easy pump removal.

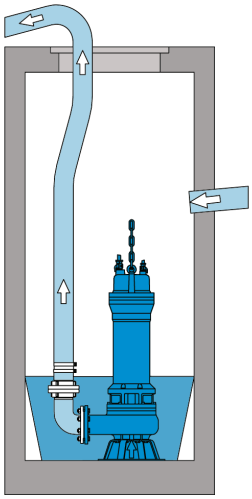
For temporary or transportable installations, HOMA pumps are supplied with a sturdy Ring Stand to support the pump at the proper clearance from the sump floor. Optional discharge configurations are available for this type of installation for both rigid or flexible discharge piping.

Wet Well

Permanent



Transportable

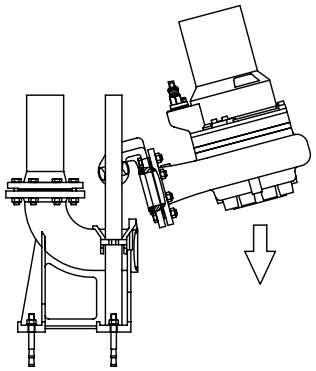


Auto-Coupling System

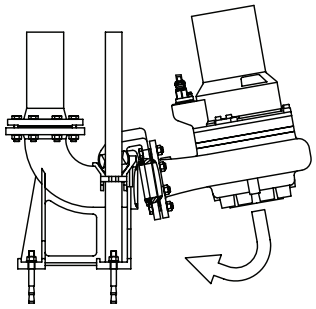
The HOMA Auto-coupling System uses two guide rails and a bolt on guide claw to evenly guide the pump down to the base elbow. The two guide rails are adequately separated to provide stable alignment during the installation and removal process. For special hazardous requirements, the guide claw is also available in a non sparking material.

To assure a reliable, leakproof installation, the HOMA guide claw seals against the base elbow with a replaceable resilient rubber seal. This seal is designed to reliably reseal if the pump is pulled for service, yet it is easily and economically replaceable. When the pump is set, the guide claw positively engages the anchored, sturdy base elbow, which provides a large stable surface for the guide claw. This arrangement keeps the pump firmly mounted to avoid tipping, leakage or errant vibrations, yet provides a clean, reliable release if pump requires removal.

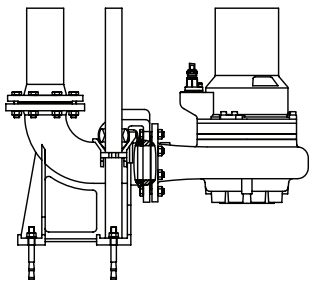
Pump sliding down



Pivoting action



Axial, full face compression

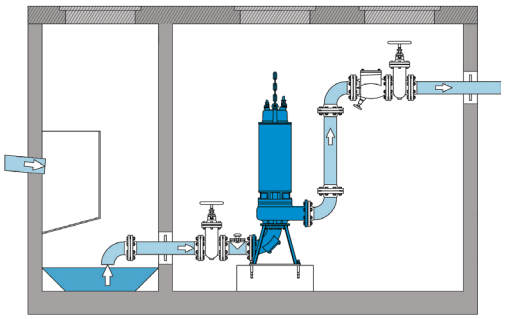


Dry Pit Installation

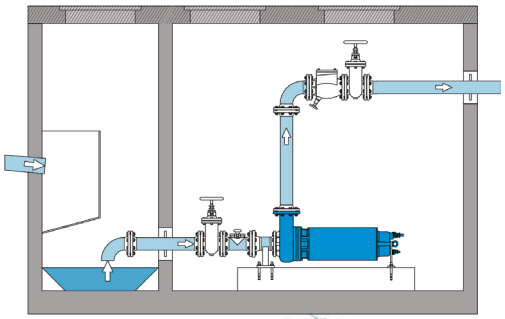
For vertical dry pit installations, HOMA pumps are supplied with a sturdy prefabricated stand and, optionally, with a metal base plate for mounting on concrete piers. Both designs are supplied with a long radius base elbow for easy installation and are available with optional cleanout port. Vertical installation provides the minimum foot print and easy retrofit of existing line shaft pump designs. The horizontal mounting configuration provides optimal suction flow path, maximizing the NPSHa to the pump. Both designs utilize fully submersible motors capable of continuous operation should flooding of the dry well occur.

Permanent Dry Well

Vertical



Horizontal

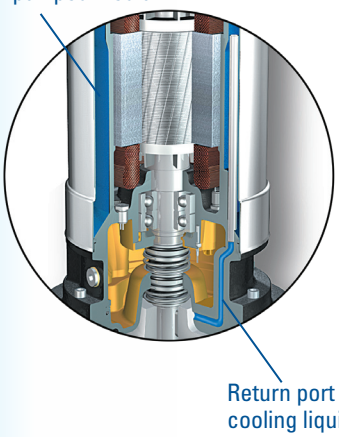


Motor Cooling Options

HOMA submersible motors are offered with an array of cooling options that can be tailored to the specific application and provide the most reliable installation.

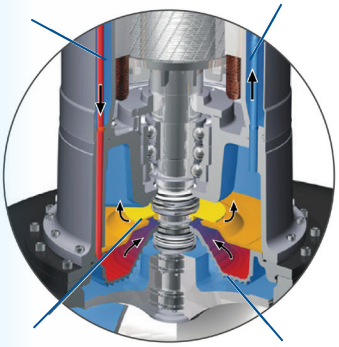
Product-Cooled

This traditional design utilizes the process media to cool the motor housing. Cooling is accomplished by bypassing a stream of ambient pump media through a stainless steel cooling jacket that surrounds the motor housing and returning the warm media back into the pumping chamber. HOMA wastewater impellers maintain a full impeller shroud regardless of vane diameter. This unique feature forms a labyrinth between impeller shouds and volute preventing large contaminates from entering the bypass stream and plugging the motor cooling jacket.



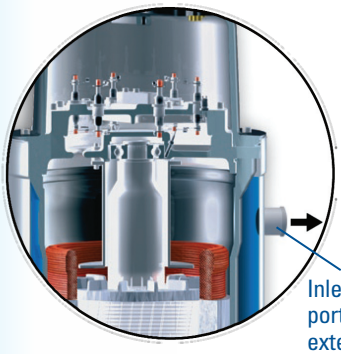
Closed Loop-Cooled

This design uses a sealed coolant circuit that contains a non toxic heat transfer fluid. Cool heat transfer fluid is pumped through a chamber formed by a jacket surrounding the motor housing. Warm liquid is then returned to the internal heat exchange chamber, and the fluid is cooled by passing over a heat exchanger surface located above the impeller. This design does not allow any pumped fluid to enter the cooling jacket.



External-Cooled Options

Various configurations are available that rely on an external source of liquid to cool the motor. Cool liquid flows into the motor jacket through an external jacket port and may be flushed into the pumped liquid or kept isolated and returned to an external point through a second jacket port.





Ring stand mount for all systems



Vertical dry sump stand with cleanout port



Standard auto-coupling arrangment shown in stainless steel



Auto-coupling assembly with 6″ x 8″ reducing guide claw



Vertical dry sump stand with cleanout and reducing elbow



Horizontal dry sump with volute cleanout

Mounting stands and configurations

HOMA offers a variety of mounting systems for permanent or transportable wet-well installations and horizontal or vertical dry-pit installations all with fully submersible motors. Flange connections are DIN/ANSI bolt pattern for easy installation to a new or existing piping systems and all cast components are supplied in ASTM A-48 Class 40 for superior abrasion resistance. For special chemical or seawater applications, complete pumps, individual components and mounting systems are available in 316 or Duplex Stainless Steel.

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FM APPROVED

DNV

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