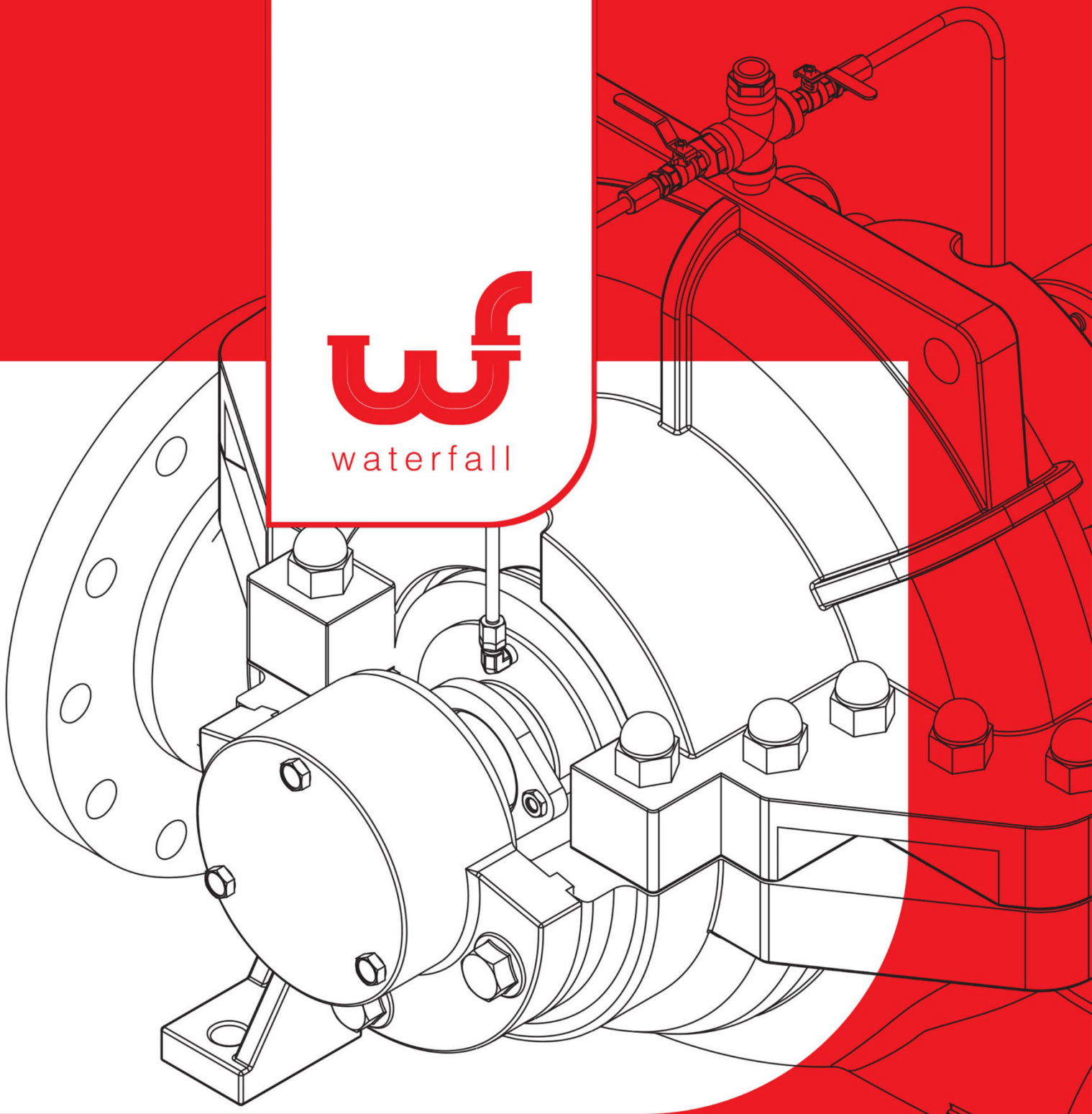
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UL LISTED FM APPROVED NFPA TÜV SÜD TÜV SÜD TÜV SÜD

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VISION

To become the world's premier manufacturer of fire protection pumps.

MISSION

To create an innovative fire protection product that brings high quality services, valued solutions and recognized as client's first choice.



OVERVIEW

Waterfall Pumps Manufacturing is an innovative and technology based centrifugal fire protection pump manufacturer committed to protect lives and properties by offering wide range of reliable and high-quality centrifugal fire pumps and packages according to the market needs.

Fire pump is the heart of any water-based fire protection system. It is the component responsible for supplying water at adequate pressure to any water-based fire suppression system in order to control and suppress fire. At Waterfall Pumps Manufacturing, we manufacture fire pumps with utmost precision and quality to meet the extreme conditions in case of fire.

All our fire pumps are manufactured in a fully equipped ISO 9001, ISO 14001, ISO 45001 certified factory environment backed with a highly skilled, trained and experienced team. Our fully automated and advanced fire pump test facility is equipped with high accuracy & precisely calibrated equipment to ensure that the pumps tested meets or exceeds the requirements of the most demanding performance, quality standards and industry specifications such as UL, FM and NFPA 20. Our fire pumps are listed by Under-writers Laboratories (UL) and approved by Factory Mutual (FM). Other major approvals includes SETSCO and SASO-SABER. The complete range includes the Horizontal Split Case, Horizontal End Suction and Vertical Turbine fire protection pumps. These fire pumps are available in electric motor and diesel engine driven configuration.

Waterfall Pumps Manufacturing also offers a containerized fire pump system, WF Fire Pump House (Pre-packaged fire pump system), which can be designed and built as per the site requirements or client's specific preferences while complying to the standard requirements.

Intensive research and developments ensure that our products are continuously improved to meet the latest technical demands and introducing newer products that will bring valuable solutions to the fire protection industry.

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HORIZONTAL SPLIT CASE FIRE PUMP

Horizontal Split Case Fire Pumps are rugged, heavy-duty construction coupled with superior design features make this type of pumps very reliable and higher efficiency while requiring low maintenance. Fully enclosed double suction impellers practically eliminate axial thrust while radial load is equally shared by the bearings located at each end of the shaft. The simplicity of design allows service without disturbing piping at site. It can be driven by either an electric motor (50Hz / 60Hz) or a diesel engine with a full range of options and accessories available to comply NFPA standard requirements. Heavy fabricated steel base plates are used to mount the pump and driver along with flexible coupling which connects driver to pump. Horizontal Split Case Fire Pumps are ideal when the source of water is located above the ground as it provides a positive suction pressure to the pump throughout the performance point. Horizontal split case fire pumps are available for wide range of applications in different materials of construction.

PUMP PERFORMANCE RANGE

- Flow ranges from 300 GPM up to 5000 GPM
- Pressure ratings from 81 PSI up to 345 PSI

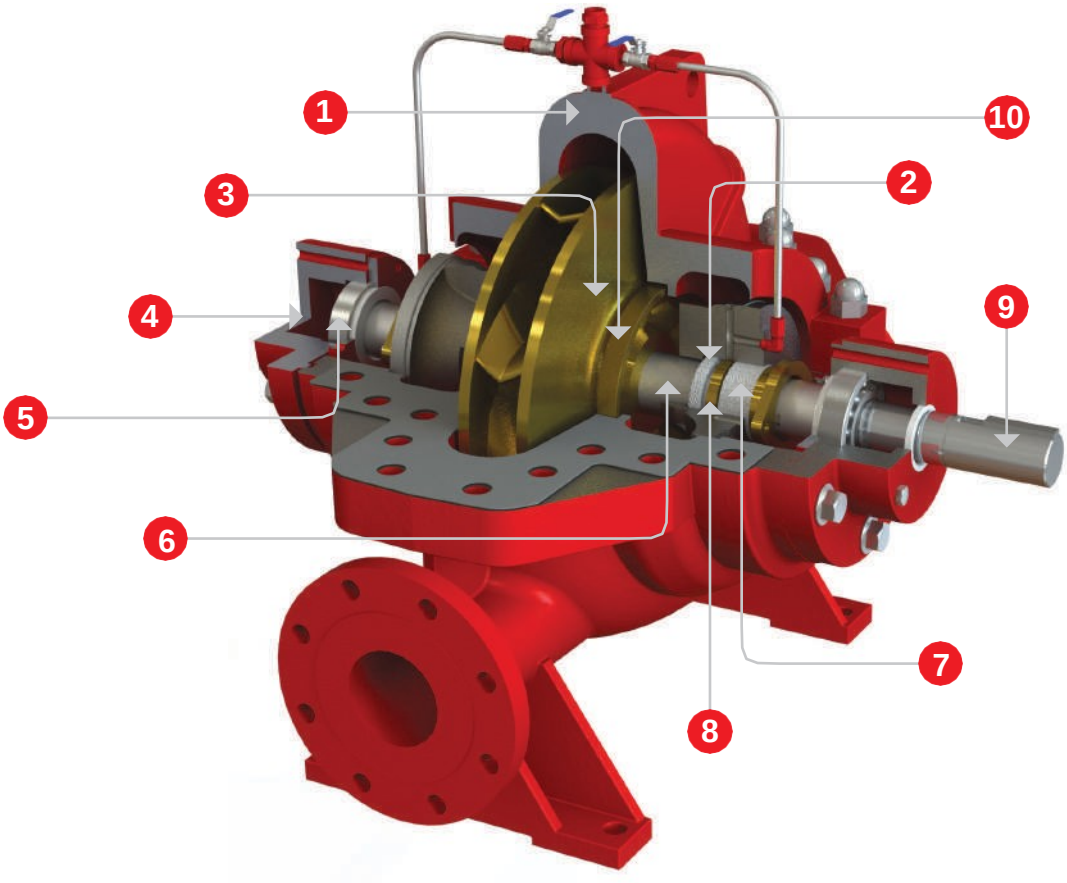
REFERENCE STANDARDS

- Underwriters Laboratories (UL) - 448
- Factory Mutual (FM) - 1311
- NFPA 20



CONSTRUCTION DETAILS:

1. **PUMP CASING:** Rugged heavy duty, volute type, compact casing split horizontally along the centerline of the shaft. Supporting feet integrally cast with flanged suction and discharge connections located in the lower half casing allows inspection and maintenance without disturbing piping.
2. **STUFFING BOX:** Designed to accommodate a minimum of five packing rings with a lantern ring. Provided with internal passages to allow water for cooling and lubrication.
3. **IMPELLER:** Double suction, fully enclosed, cast in one piece, dynamically balanced prior to the assembly. Impellers are firmly keyed and locked to the shaft.
4. **BEARING HOUSING:** Rigid bearing housings provided with grease inlets and drains and protected by seals to keep contaminants out of bearings. Designed to allow bearing to be replaced without disturbing any other part of the rotating assembly.
5. **BEARING:** Grease lubricated steel bearings maintains impeller in their central position. Bearings are selected to offer very high operating life.
6. **SHAFT SLEEVE:** Centrifugally cast renewable stainless steel-shaft sleeves that are accurately positioned, sealed and locked in place protects the shaft against packing wear, corrosion and leakage.
7. **GLAND PACKING:** Graphite packing rings selected to offer maximum tightness while allowing smooth and friction free running of the shaft.
8. **LANTERN RING:** Perforated hollow ring made of corrosion resistant material designed to allow flow of cooling water uniformly around the shaft to provide lubrication and cooling.
9. **SHAFT:** Made of high strength alloy steel, accurately machined and polished to a smooth surface. Sized with a liberal safety factor to transmit full driver horsepower while offering minimum deflection in full range operation.
10. **CASING WEAR RING:** Renewable casing wear ring sized to minimize pressure leakage from discharge toward suction.



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HORIZONTAL END SUCTION FIRE PUMP

End Suction Fire Pumps are engineered to last long with a precision-cast, dynamically balanced and enclosed impeller that minimizes the vibration and maximizes bearing life. Due to its back-pull-out design, the complete bearing assembly including impeller and casing cover can be dismantled without removing the volute casing from the pipe system. It can be driven by either an electric motor (50Hz / 60Hz) or diesel engine with a full range of options and accessories available to complete the NFPA-compliant fire pump. Heavy fabricated steel base is available to mount the pump and driver along with flexible coupling connects driver to pump. End Suction Fire Pumps are ideal when the source of water is located above the ground as it provides a positive suction pressure to the pump throughout the performance point. Horizontal End suction fire pumps are available for wide range of applications in different materials of construction.

PUMP PERFORMANCE RANGE

- Flow ranges from 50 GPM up to 1000 GPM
- Pressure ratings from 80 psi up to 309 psi

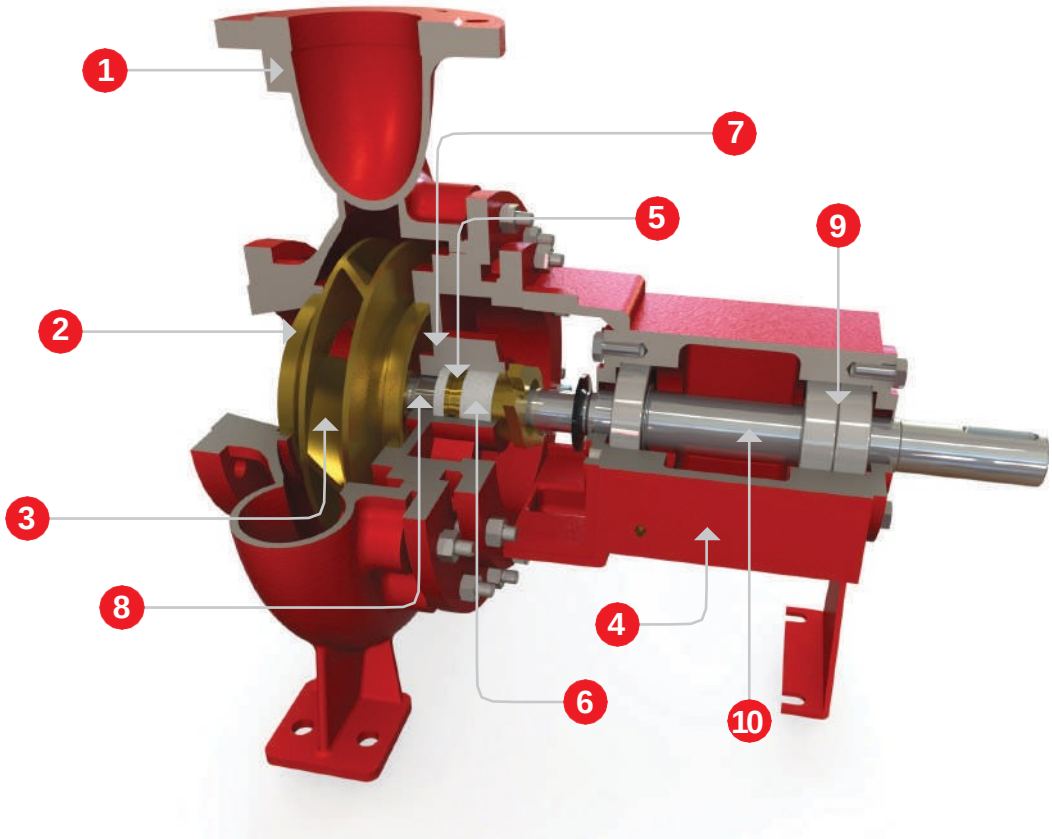
REFERENCE STANDARDS

- Underwriter Laboratories (UL) - 448
- Factory Mutual (FM) - 1319
- NFPA 20



CONSTRUCTION DETAILS :

1. **PUMP CASING:** Rugged heavy duty, integrally cast supports, volute type, centerline discharge and self-venting. O-ring seals between pump casing and casing cover to avoid any leakage.
2. **CASING WEAR RING:** Standard enclosed impellers are designed with integral renewable casing wear rings to reduce end thrust.
3. **IMPELLER:** End suction type, enclosed, dynamically balanced prior to the assembly. Impellers designed with back rings to minimize axial thrust. Impellers are firmly keyed and locked to an accurately finished oversized shaft to absorb all shock loads.
4. **BEARING HOUSING:** Heavy-duty cast bearing housing designed to accommodate bearings and supports the rotor assembly. Both the inboard and outboard bearings are protected by seals to keep contaminants out of bearing and provisions for filling grease.
5. **LANTERN RING:** Perforated hollow ring made of corrosion resistant material designed to allow flow of cooling water uniformly around the shaft to provide lubrication and cooling.
6. **GLAND PACKING:** Graphite packing rings selected to offer maximum tightness while allowing smooth and friction free running of the shaft.
7. **CASING COVER:** Casing cover with integral stuffing box designed for maximum working pressure. Stuffing box sized to house five rings of packing along with lantern ring.
8. **SHAFT SLEEVE:** Centrifugally cast renewable shaft sleeves protect the shaft from corrosion, packing wear and are sealed to prevent leakage. Sleeves are accurately positioned and locked in place.
9. **BEARING:** Grease lubricated steel bearings are selected to carry loads while offering very high operating life.
10. **SHAFT:** Made of high strength alloy steel accurately machined and polished to a smooth surface. Sized with a liberal safety factor to transmit full driver horsepower while offering minimum deflection in full range operation.



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FACTORY VISITS

A program created in order to give our visitors a satisfying experience during their visit where they can observe in our facilities and how our products go through various test and inspections.

FACTORY ACCEPTANCE TESTS

A program that is created to give assurance to our clients that our product works according to their specified requirements and to validate the correct functionality of our product has been delivered. Various testing and inspection will be conducted in witness of client's representative.

For scheduling

Please visit www.wfpumps.com/factory-visit-program

or

e-mail us on customerservice@wfpumps.com



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VERTICAL TURBINE FIRE PUMP

Vertical Turbine Fire Pumps are specially designed to pump from water source located underground or below deck. The flexibility of its design allows the use of a wide range of materials. Vertical Turbine Pumps use multi stage configuration to meet the specific requirements of the user and can be customized according to specific installation requirements. The space saving vertical design minimizes the floor space requirements. It can be driven by either an electric motor (50Hz / 60Hz) or diesel engine with a full range of options and accessories available to complete the NFPA-compliant fire pump. FM approved Right-angled gear drives are provided with the diesel engine driven vertical turbine fire pumps. Waterfall vertical turbine fire pumps are available in a wide range of applications in different materials of construction.



PUMP PERFORMANCE RANGE

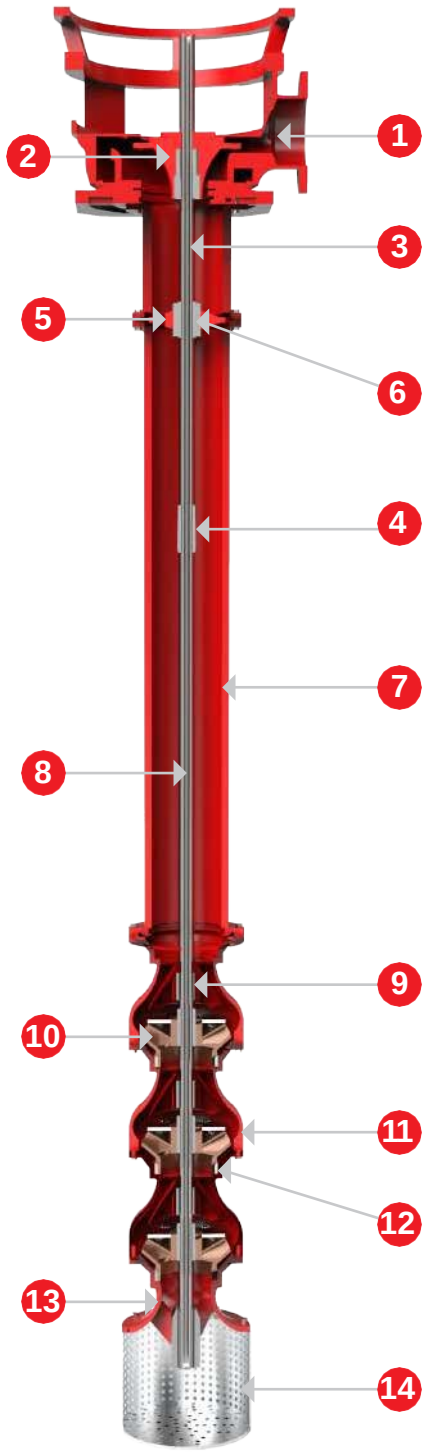
- Flow ranges from 150 GPM up to 2000 GPM
- Pressure ratings from 49 psi up to 402 psi

REFERENCE STANDARDS

- Underwriter Laboratories (UL) - 448
- Factory Mutual (FM) - 1312
- NFPA 20

CONSTRUCTION DETAILS :

1. **DISCHARGE HEAD:** Designed to direct the flow from vertical column pipe towards the system piping while supporting the entire pump and column pipe assembly on the load bearing surface. The top of the discharge head is machined precisely to accommodate hollow shaft motors or right-angle gear drives.
2. **STUFFING BOX:** Stuffing box is provided with bearings to maintain shaft alignment for smooth rotation. Packing rings are provided to seal around the line shaft.
3. **LINE SHAFT:** Stainless steel shaft, precisely machined and threaded at the end for accurate alignment. Shafts are sized and selected with high factor of safety to withstand high thrust and stresses for the entire operating range of the pump.
4. **LINE SHAFT COUPLING:** line shafts are connected using the couplings bored and threaded from precision forged steel bar.
5. **SPIDER:** These are sandwiched within female spigot of column pipes which enables proper shaft alignment and more support & stability to shafts.
6. **SPIDER BEARING:** Water lubricated bearings made of PTFE ensures smooth operation of pumps.
7. **COLUMN PIPE:** Steel column pipes are connected by flanges with flange faces machines for parallel, rabbet fit to ensure accurate alignment.
8. **IMPELLER SHAFT:** Stainless Steel shaft, machined and polished to a smooth surface. Shafts are sized and selected with high factor of safety to withstand high thrust and stresses for the entire operating range of the pump.
9. **BOWL BEARING:** Made of PTFE, Water lubricated type, designed to operate in conjunction with impeller shaft to provide long life and low friction.
10. **IMPELLER:** Fully enclosed, dynamically balanced Impellers designed for high performance and efficiency. Impellers are secured to shaft using collets or keys with plates to ensure the impellers are secured to the shaft and runs smoothly within the bowls.
11. **PUMP BOWL ASSEMBLY:** The pump bowl assembly with multiple diffuser vane design eliminates radial loads and provides down thrust to maintain shaft in tension. This design reduces shaft deflection and vibration. Bowls are also designed to house bearing inserts to ensure alignment and lubrication of the shafts.
12. **CASING BOWL WEAR RING:** Renewable wear rings are fitted in the bowls and designed to minimize the leakage from discharge to suction.
13. **SUCTION BELL:** Provides rigid support of the lower end of the pump shaft and allows smooth entry of liquid into the first stage impeller eye.
14. **STRAINER:** Stainless steel strainers prevents entry of solid particles into the pump. Sized to allow maximum flow without causing obstruction for the entry of the water.



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WF FIRE PUMP HOUSE
(PRE-PACKAGED FIRE PUMP SYSTEM)

WF Fire Pump House (Pre-packaged fire pump system) designed according to the site or client's preferences while complying standard requirements NFPA, UL & FM. Due to its single source responsibility and compact feature, the on-site installation of the system can be completed in as little as 6 hours which reduces the installation cost, labor hours and eliminates potential field installation and interface problems. Components are selected from the most reliable manufacturers across the globe in order to ensure the best functionality of the equipment will be delivered and consists of UL Listed / FM Approved fire pumps, controllers, valves, pressure gauges, flowmeter, fuel tanks etc., wherever applicable. Electrical connection, piping lines and installation of the component is completed in the factory and is ensured to undergo for quality checks and inspections. Complete system is leak tested to eliminate on-site leaks.



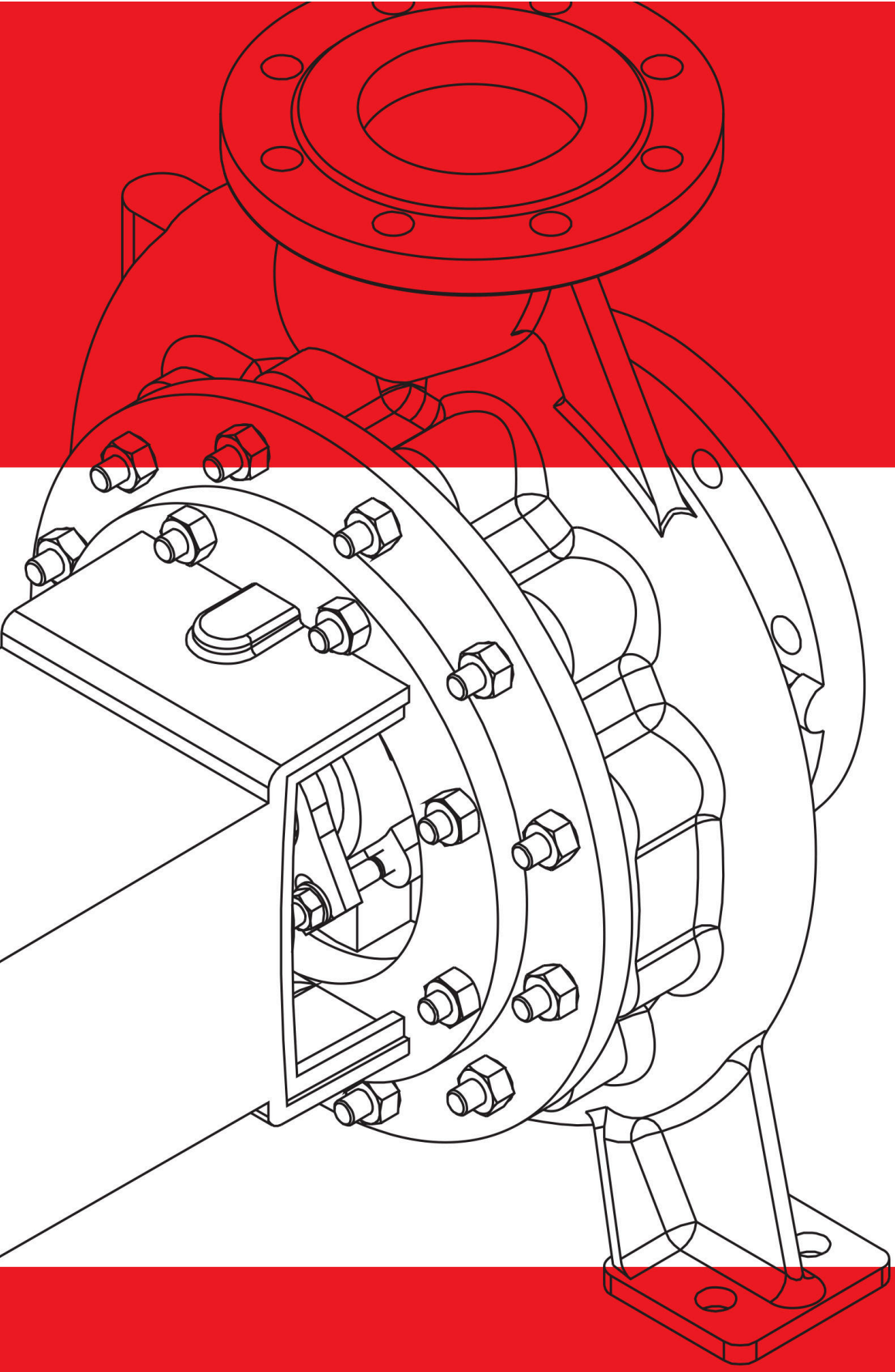
DESIGN FEATURES

- Structural steel frames are designed, modelled and analyzed for all possible load combinations.
- Enclosures are made from wall and roof panels that are fire resistant and weatherproof thermal insulations.
- Pre-piped and pre-wired.
- Fire rated doors, sprinkler provision and Internal lighting and power outlets.
- Louvers and exhaust fans for ventilation.
- Flooring is non-slip checkered mild steel plate.
- Floor and other drains are properly drained towards a common drain pit.
- Easy access for maintenance and service.
- Lifting points for effective handling and easy transportability.




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