

Bader Motor Technology's diesel fire pump increases water pressure and flow in firefighting systems, providing reliable fire protection. This technology is particularly beneficial in areas with low or irregular water pressure. Thanks to its energy-saving motor system, it offers high performance while reducing operating costs. Its compact design allows for easy integration into existing water systems. This fire pump maintains constant water pressure during firefighting, enhancing system efficiency and ensuring safety.



FIRE BOOSTER SYSTEM

MAINTENANCE/ASSEMBLY
USER MANUAL



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1 BASIC INFORMATION

Diesel fire pumps, also known as hydrophore pumps, are used to increase the water pressure from sources that do not provide sufficient water pressure for the sprinklers to operate at a specific specification. A fire pump can be connected to a city water network, tank, or reservoir/pond for firefighting purposes. The reliability of the fire protection system depends on the pump's operation.

The manual should be considered as part of the equipment and kept together with the equipment.

This manual contains information for the correct operation and maintenance of the diesel fire hydrophore. (Refer to general safety instructions)

This manual covers the installation, operation, and maintenance of specific diesel fire hydrophore models.

Bader Motor Technologies Inc. reserves the right to make changes at any time without any obligation.

1.1 Areas of Use

Diesel Fire Hydrophores are generally used for firefighting purposes in industrial and touristic facilities, schools, hotels, hospitals, industrial facilities, detached buildings, and residential complexes.

1.2 Places Not to Be Used

The use of VDP-F Series hydrophore pumps is not suitable for liquids containing abrasives, liquids containing solid and fibrous objects, and flammable and explosive liquids.

If the conditions are not complied with, our company cannot be held responsible for any negativity that may occur, and in the event of any malfunction, the pump will be out of the guarantee coverage.



Fire booster pumps cannot be connected to any other installation outside of the fire installation and cannot be used for the purpose of supplying clean water.

1.3 Service Life

The product has a service life of 10 years as published in the communiqué regarding the "After-Sales Services Regulation" of the Ministry of Trade of the Republic of Turkey.

2 USER MANUAL

2.1 Warnings

Please read this guide carefully before starting to install the product. The use and operation of the product must comply with TSE safety standards. Therefore, the necessary procedures must be carried out with precision and expertise. Pay attention to commissioning and installation procedures. Follow all safety, maintenance, and security instructions. Read the guarantee terms carefully. Be careful to select a pump type with features suitable for your needs and be sure to consult our technical department.

2.2 General Instructions

Before making any repairs, read all safety precautions and warnings. This guide contains general safety precautions that must be followed to ensure personal safety.

- ❖ Before manually starting, walk around and warn all personnel in the area that the equipment will start operating.
- ❖ Do not operate faulty or damaged equipment. Ensure that all hoses, pipe connections, clamps, and guards are in place and securely fixed. Electrical components should be kept in good working condition and repaired immediately by qualified personnel.
- ❖ After maintenance, remove all tools and foreign objects, reattach all guards, covers, and protective devices, and securely fasten them.

- ❖ Exposed treadmill clamps can cause serious personal injury or entanglement. Before operating, make sure that the guards are in place and securely fixed.
- ❖ Rotating drive shafts can tear, shatter, or cause entanglement. Always keep your hands, body parts, long hair, or loose clothing away.
- ❖ Never attempt to clean manually while the machine is running or in standby mode.
- ❖ Never open ports in tanks or pipes while the engine is running. (Contact with pressurized substances can cause serious personal injury)
- ❖ Before disconnecting any line, connection, or related part, release all pressure in the air, oil, and cooling systems.
- ❖ When in contact with electrical sparks or flame sources, the engine fuel becomes flammable. Remove all spark or flame sources from the work area.
- ❖ When replacing connecting elements, always use the same connecting element part number (or equivalent).

The purpose of this user manual is to provide information to the responsible personnel about the installation, maintenance, and possible malfunctions of the Fire Hydrant System; to explain the transportation, storage, and guarantee conditions.



In order to prevent misuse of the hydrants, the instructions given in this manual should be carefully examined and followed. Operation and maintenance should be carried out by authorized and qualified personnel. It should be known that repairs or modifications made by unauthorized persons will not be covered by the guarantee.

3 TRANSPORTATION

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3.1 Transportation

Equipment with sufficient lifting capacity should be used for the Fire Hydrant System. The lifting operation should be performed by authorized personnel. Since the system consists of multiple discrete parts, care should be taken during transportation. The following rules should be followed during transportation. (Figure 3.1)

- ❖ The hydrant group should always be lifted and transported vertically.
- ❖ Hydrants should be transported packaged and secured with screws on wooden pallets.
- ❖ Large hydrant groups, being unpackaged, should be lifted from the main chassis with the help of support equipment.
- ❖ Absolutely, one should not stand under or beside the lifted load.
- ❖ The load should not be kept lifted for longer than the necessary time.
- ❖ Acceleration and braking operations during lifting should be performed in a way that does not pose a danger to individuals.

3.1.1 Warnings

- ❖ Strictly adhere to the rules in the workplace to prevent any accidents.
- ❖ Use gloves, steel-toed shoes, and a helmet during transportation and installation work.
- ❖ Depending on the volume, weight, and structure, use a forklift, crane, or lifting ropes to unload wooden crates, packaging, boxes, or containers.

Before lifting and transporting the pump or the pump and motor group on a common chassis, determine the following points.

- ✓ Total weight and center of gravity,
- ✓ Largest outer dimensions,
- ✓ Locations of lifting points
- ❖ The load lifting capacity should be suitable for the weight of the pump or pump group.
- ❖ The pump or pump group should be lifted as shown below to avoid any damage.

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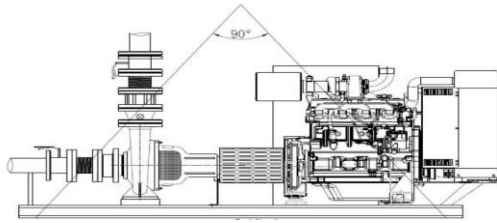


Figure 3.1 Moving the Diesel Hydrophore

4 STORAGE

- ❖ If the pump group is not to be immediately mounted, it should be stored in a clean, dry place without the danger of freezing and with little change in ambient temperature.
- ❖ If the pump bearings are of the type with grease injection, extra grease should be injected into the bearings to prevent moisture from entering around the shaft.
- ❖ Necessary measures should be taken to protect the pump group from moisture, dust, dirt, and foreign substances.

5 INSTALLATION

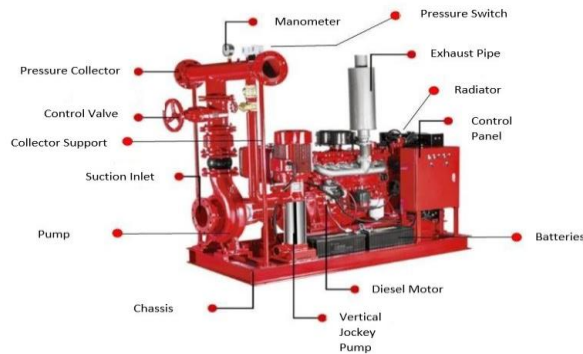


Figure 5.1 Diesel Fire Booster



The installation of the pump group, bringing it to balance, necessary connections, and adjustments should be carried out by service personnel. Incorrect installation and/or pump base can cause malfunctions. **These situations are not covered by the guarantee.**

During assembly;

- *Correct lifting equipment should be used,*
- *One should not work alone,*
- *Protective equipment (helmet, goggles, gloves, etc.) should be used.*
- *All measures to prevent the risk of accidents should be taken at the assembly site.*

5.1 Assembly Location and Placement

- ❖ The pump unit should be mounted in a dry place with no risk of freezing or explosion and very good ventilation.
- ❖ Suitable equipment should be placed in the pump room and pump station to ensure continuous temperature between +10 °C and maximum +40 °C.
- ❖ If the installation of the Fire Hydrant System will be done in a closed area, the room should be sufficiently wide for easy access to the inlet and outlet.
- ❖ If the room is below ground level, a ladder should be built to allow easy access for maintenance (It is very important to intervene in case of malfunctions as soon as possible).
- ❖ The room should have adequate lighting and an adequate number of sockets.
- ❖ In the pump room, emergency lighting should be provided around the working area of devices requiring service, inspection, and adjustment.
- ❖ There should be sufficient space around the installed pump or pump groups to move around comfortably and perform maintenance, and there should be sufficient clearance on top of the pump to lift the pump when necessary.
- ❖ Pumps or pump groups should be placed as close as possible to the water tank or reservoir. A location should be selected where the suction pipe will be connected with minimal bends or elbows.

- ❖ Pipe connections (collectors, suction line, discharge line); inputs and outputs should be arranged in a way that does not prevent access to emergency accessible parts and control panels.
- ❖ When installing pump groups, it should be considered that the motor and/or pump group can be disassembled and taken out in case of a malfunction. (Pipe and collector connections, other boiler room equipment should not prevent the disassembly and removal of the pump and/or motor.)
- ❖ The floor should be sloped for sufficient capacity water drainage. If the group room is at a lower level, accumulated water should be discharged using a submersible pump.
- ❖ If there is a possibility of water flooding the room, electronic control panels should be mounted as high as possible from the floor. If necessary, they should be moved to a section where there is no possibility of water flooding.

5.2 Outdoor Use

The pump unit is suitable for outdoor use. In addition to the general instructions, the following additional requirements must be met:

- ❖ Ensure that there is sufficient space around the air inlet for the motor to draw in as much air as possible.
- ❖ Ensure that there is sufficient space around the hot air outlet (leave at least 2 meters of space). Avoid dusty conditions and places where corrosion or erosion may occur.

5.3 Indoor Use

In addition to the general instructions, the following additional requirements must be met:

- ❖ Ensure that the area has sufficient ventilation.
- ❖ Ensure that exhaust gases are being expelled outside.
- ❖ Make sure there is enough space around the air inlet for the motor to take in as much air as possible.
- ❖ Prevent high ambient temperature and humidity. Avoid dusty conditions and places where corrosion is present.

5.4 Float (Level Switch) Installation

The float tap is used to fill the water tank in the system as it empties. The purpose of the level switch is to control the water level in the tank and to automatically stop the operation of the hydrofor when the water in the tank falls below a certain level, preventing the pumps from running dry. When enough water is filled into the tank, the level switch automatically restarts the hydrofor. The filling line is connected to the city water network or other water sources. (Figure 5.2)

In packaged hydrofor systems, the float is integrated into the system. It is of great importance for the proper operation of the hydrofor that the level switch is adjusted and suspended into the tank in such a way that the adjustment is not disturbed during use. For this, the level switch should be adjusted and suspended into the tank approximately 10-15 cm above the water inlet and outlet connected to the tank, which is also connected to the hydrofor. To prevent the cable from floating freely in the water and to achieve a more regular installation, it is useful to first pass the cable through a pipe and then suspend it inside the tank with this pipe.

The assembly water tank described above is valid for applications (positive suction systems) where the tank is at the same level or higher than the hydrofor. In applications where the water tank is lower than the hydrofor and the hydrofor operates by suction, the cable of the level switch should be fixed on top of the suction pipe, and the level switch should be adjusted to hang 15–20 cm above the suction valve. If the water in the tank falls below the set switch level, the operation of the hydrofor is automatically stopped.

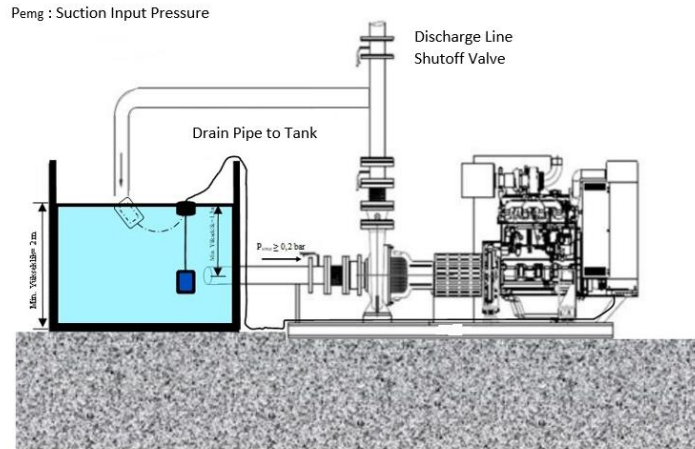


Figure 5.3 Flator connection of the fire extinguishing system

5.5 Placement of Control Panels

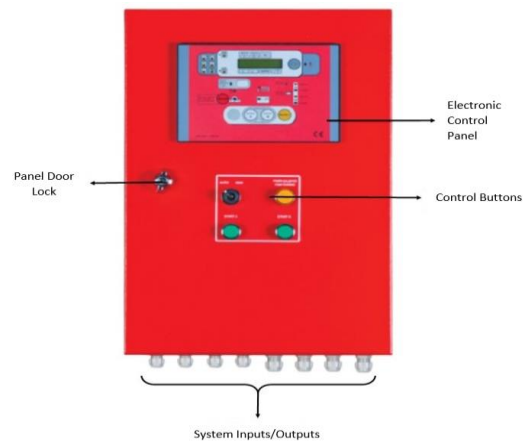


Figure 5.4 External appearance of the diesel engine control panel

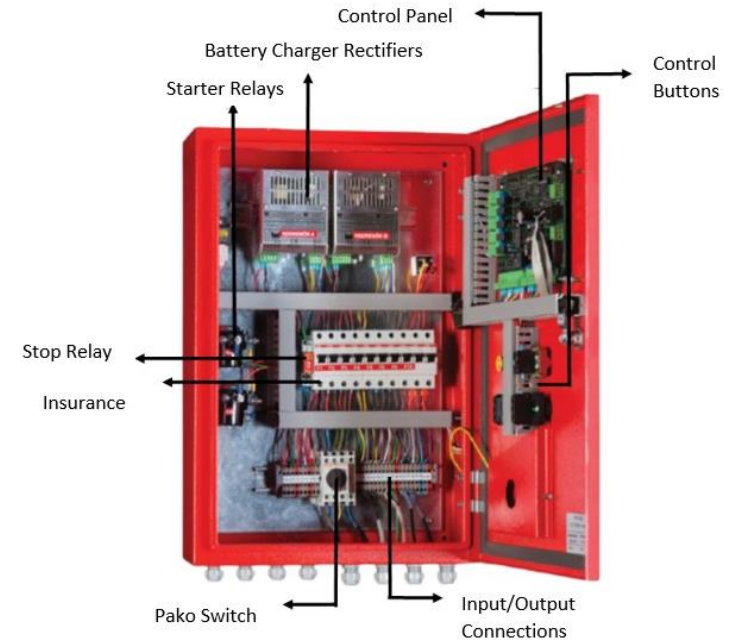


Figure 5.5 Diesel engine control panel (inside view)

- ❖ If the control panels are on the pump group chassis, the control panel should be mounted in a way that is easily accessible and the cover can be fully opened (for maintenance and repair).
- ❖ If the control panels are separate from the pump group chassis, the control panel should be mounted in a place that is easily accessible and, if possible, the front panel should be visible directly when entering the room.
- ❖ Pipes and fittings (check valve, valve) that prevent clogging should be used.
- ❖ It should not be forgotten that the pump will be out of operation in case of power cuts.

5.6 Chassis of Pump Group

- ❖ Great care should be taken in the preparation of the foundation of the pump group and in the assembly of the pump group. (Incorrect and careless assembly causes early wear of the pump and pump parts and leads to pump failures)
- ❖ The pump base should be heavy enough to dampen vibration, and strong enough to prevent bending and misalignment. The base concrete of the pump group must be completely solidified and resistant before the assembly of the pump.
- ❖ The top surface of the concrete should be completely horizontal and smooth.

5.7 Jockey Pump (Leakage Discharge) Pump

Due to leaks in the system or expansion within the system, a smaller "jockey pump" is usually installed to support small pressure changes and small volumes of water. This is set to come into operation before the main pump. Additionally, the jockey pump has a pressure sensing device that can be adjusted in the field.

5.8 Diesel Engine Mounting Instructions

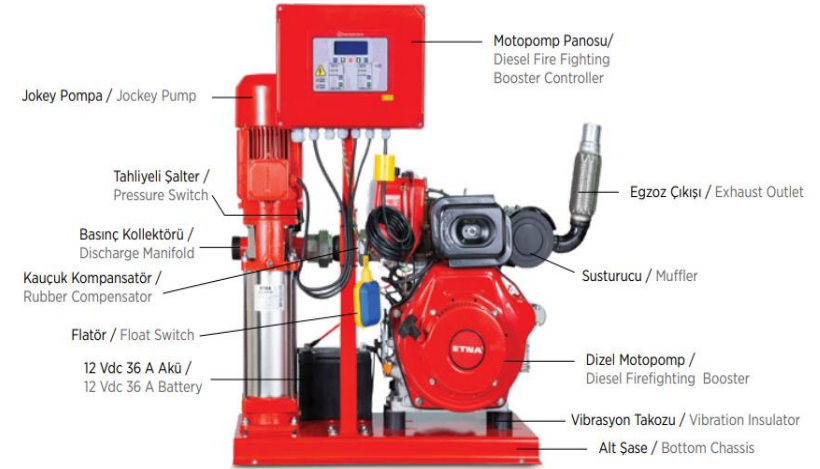


Figure 5.6 Diesel Fire Hydrant

When the engine and its parts will be operated in a confined space, a comfortable area should be left around it for the disassembly and assembly of the listed parts, along with routine maintenance.

Diesel Engine Parts;

- ❖ Cylinder Heads
- ❖ Fuel Tank
- ❖ Circulation Pump
- ❖ Exhaust Pipe
- ❖ Crankcase
- ❖ Foot Gearbox
- ❖ Starter Motor, Charging Dynamo, and Flexible Connection

Parts Subject to Routine Maintenance;

- ❖ Oil Filters
- ❖ Air Filters

- ❖ Fuel Filters
- ❖ Block Ventilation
- ❖ Oil Dipstick
- ❖ Radiator

5.9 Diesel Engine Mounting Instructions

- ❖ Galvanized material, including plastic and unsuitable materials, should not be used in fuel pipes and connections.
- ❖ Fuel pipes should be kept as far away from the exhaust system as possible.
- ❖ Batteries should be placed in a separate compartment with ventilation (if possible) and easy maintenance, but the battery cable lengths should be kept as short as possible.
- ❖ A suitable arrangement should be made for oil drainage from the sump, and a drip tray should be placed under the sump.
- ❖ All rotating parts should be protected for operational safety.
- ❖ The room for the machine installation should be sufficiently large and the base should be suitable for the loads generated by the machine's weight.
- ❖ The ventilation system should be suitable for cooling and intake air.
- ❖ Fuel level should be checked.
- ❖ Permissible exhaust and back pressure values should be discharged into the atmosphere.

The location of air filters and exhaust silencers outside the room can cause power loss in the engine. Therefore, the size of the room should also take into account these components.

- ❖ If an existing room is to be used, the construction work for air intake and discharge louvers should not be affected by the structural stress of the building.

6 VENTILATION OF THE ENGINE ROOM

The most basic principle in ventilation is to remove hot air from the room and bring in the ambient temperature with minimal circulation. The air circulation in the room with

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water-cooled or air-cooled diesel engines should be very well provided. The aim here is to draw air from as low a point as possible, expel it from the radiator matrix, and discharge it outside the building as much as possible.

It is not sufficient to bring the radiator close to the air throw wall. In this case, the air escaping between the radiator and the wall returns to the radiator fan. This leads to insufficient cooling and causes engine movement problems.

The radiator flange should be flexibly connected with a hood made of metal and canvas around the shutter. If the machine is mounted on vibration wedges, it is especially important to have a flexible connection. (Figure 6.1)

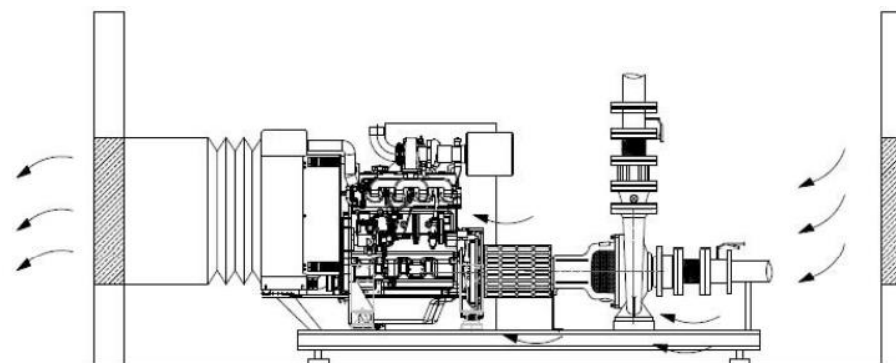


Figure 6.1 Position of the Diesel Hydrant inside the room

7 EXHAUST

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- ❖ The main goal in designing the exhaust system is to create back pressure. (Excessive back pressure in the exhaust system reduces engine power and increases operating temperature)
- ❖ The exhaust system should be connected to the engine exhaust outlet through a flexible connection (steel compensator or suspension). The exhaust pipe should be best supported, and its weight and vibration should not be transferred to the engine exhaust system (manifold, turbocharger).
- ❖ The shortest and least twisted path should be chosen for the exhaust pipes to prevent an increase in back pressure.
- ❖ Where elbows are required in the exhaust system, the radius of the elbow should be 1.5 times the inner radius of the pipe to prevent an increase in back pressure.
- ❖ A rain cap that moves with the exhaust pressure should be made for vertical exhaust pipes.
- ❖ There should be a water drainage hole at the lowest point of any horizontal or vertical exhaust extension pipe. This way, water cannot reach either the silencer or the engine.

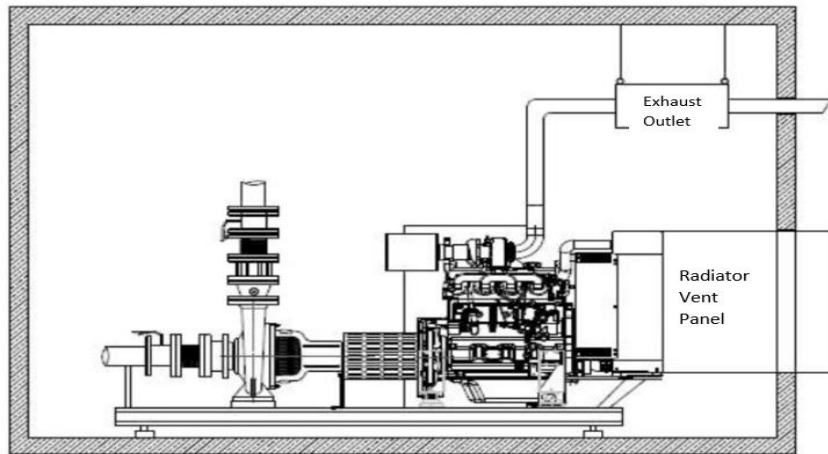


Figure 7.1 Exhaust and radiator installation of the diesel hydrophore

- ❖ The pump group or pump groups should be placed on the concrete base in accordance with the issues described in the assembly and placement section of the pump group.
- ❖ Pump groups should be fixed to the concrete base using vibration wedge anchor equipment suitable for the total weight of the pump group.
- ❖ The pump group should never be used as a support point or carrier for the pipe equipment.
- ❖ It should be checked whether the stress and contractions in the pipe system and the weight of the system affect the pump. For this, after the assembly of the pipe equipment is completed, it should be checked whether the bolts of the pump's suction and discharge flanges are loosened to apply any stress on the pump.
- ❖ The nominal diameters of the suction and discharge flanges of the pump group are definitely not an indicator of the correct sizes of the suction and discharge. The nominal diameter of the pipes and accessories used must be equal to or larger than the suction and discharge connection mouth diameters of the pump group. **Pipes and accessories with a smaller diameter than the suction mouth diameters of the pump group should never be used.** Especially elements such as foot valve, strainer dirt trap filter, and check valve with a large free space area should be preferred.
- ❖ **Generally, flow rates should not exceed 3m/s in the suction pipe.** High speeds cause high pressure drops, which in turn causes **cavitation** in the suction pipes.
- ❖ Pipe connections should be made with flanges. Flange gaskets should be made of suitable material and in the appropriate size.
- ❖ During the manufacturing of the pipe equipment, welding slag, metal particles, sand, scale, and similar materials that may occur can remain in the pipe and damage the pump. In order to prevent such materials from entering the pump during assembly, suction and discharge flanges should be sealed with seamless gaskets. At the end of the assembly, all pipe parts should be disassembled, cleaned, painted, and then reassembled.

8 PIPE EQUIPMENT ASSEMBLY

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8.1 Suction Pipe

- ❖ The water suction pipe must be absolutely leak-proof and should not be arranged in a way that causes the formation of air pockets. Therefore, if the pump is fed from a tank located higher than itself (Positive Suction), the suction pipe should be slightly inclined towards the pump; if the pump is fed from a tank located lower than itself (negative suction), the suction pipe should be slightly inclined towards the pump.
- ❖ Sharp elbows should not be used to keep friction losses as small as possible, abrupt changes in direction and cross-section should be avoided, and the suction pipe should be made as short as possible within the possibilities. If a cross-section change is made in a horizontal suction pipe, an eccentric conical intermediate part with a straight edge at the top should be used.
- ❖ A dirt collector filter should be installed in the suction line and connected to the tank filling pipe to ensure that the water to be sucked by the pump is clean.
- ❖ If the water reserve source is at the same or higher level as the tank with the pump, installation should be done considering **Figure 8-1**. Otherwise, if the water reserve source is at a lower level than the pump, such as a pool, well, or stream, appropriate installation should be done according to the pictures in **Figure 8.2**.

8.2 Discharge Pipe

- ❖ During the installation of the discharge line, if necessary (malfunction, maintenance), a discharge line shut-off valve that can isolate the water in the line should be used.
- ❖ The weight of the discharge line should be secured using suspension equipment, and then water should be pumped into the facility. Pump groups should not be used as load-bearing.
- ❖ If a common discharge manifold will be made for multiple pump groups;
 - ✓ The inner diameter of the pipe should be suitable for the total flow rate of the pumps.
 - ✓ The manifold should be supported with carrying feet, and the load should be taken on the pumps.

8.3 Installation Pictures

8.3.1 Positive Suction

Hydrophore systems are generally used as positive suction. This type of connection (positive suction operation) is the most suitable connection for the proper operation of the hydrophore system. In the positive suction hydrophore system, damages that may occur due to the pump running dry are minimal. The diameter of the positive suction pipe line is equal to or larger than the hydrophore suction diameter. The connection of the positive suction pipe line to the water tank should be at least 15-20 cm above the tank base. The tank should be filled with water to a sufficient level (at least 1.5 m higher than the pump suction axis). The height of the water tank should be at least 2 m above the base of the tank. This is due to the fact that the positive pump suction pipe should have an inlet connection pressure of 0.2 bar. Connections and pipe lengths should be made in accordance with the standards.

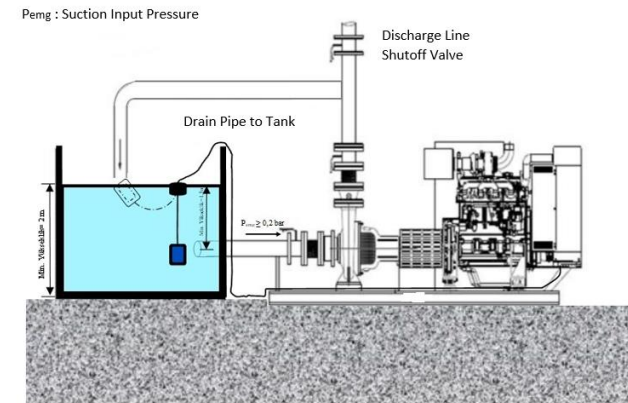


Figure 8.1 Positive suction fire Hydrophore system

8.3.2 Negative Suction

A hole of 5-6 mm in diameter is drilled in the flap of the pump groups to be subjected to negative suction. The purpose of this hole is to keep the suction pipe full of pressurized water from passing through the hole in the suction flap in case the suction flap leaks for any reason. Thus, the formation of air in the suction pipe is prevented, ensuring healthy suction of the pump each time. Failures that may occur as a result of air operation are minimized.

- ❖ The **Suction Flap** used should be able to withstand the operating pressure of the pump group.
- ❖ The weight of the suction pipe should be taken by using supporting brackets, and the weight should not be given to the pump group. (Figure 8.3)

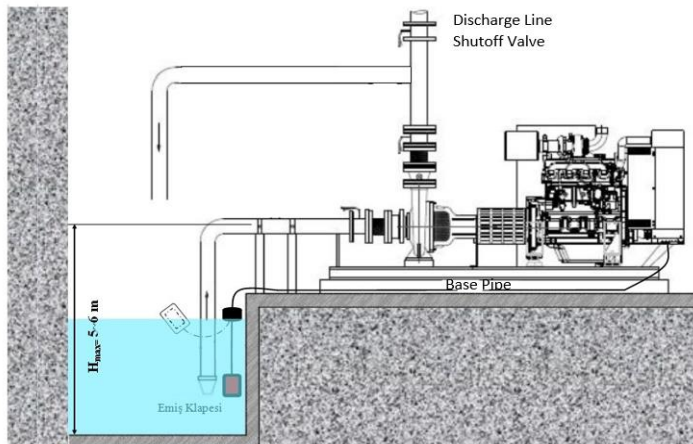


Figure 8.2 Negative suction fire Hydropower system

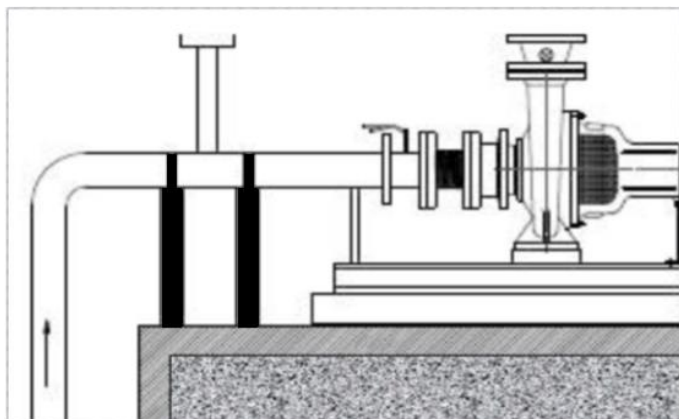


Figure 8.3 Use of Supporting Bracket

9 ELECTRICAL CONNECTIONS (ASSEMBLY)



Before making electrical connections, the following warnings must be followed.

- *Electrical connections should only be made by authorized personnel.*
- *The safety measures provided in the safety instructions section must be applied.*
- *All energy connections (fuse, switch) must be cut off before any work is started.*
- *Energy cables must be laid in such a way that they do not touch the pipework, pump and motor bodies and do not prevent maintenance and dismantling operations.*

- ❖ If the control panel is mounted on the chassis of the pump group, the installation cables of the diesel engine must be connected to the panel.
- ❖ The length of the installation cables of the diesel engine should not be too long due to voltage drop.
- ❖ If the control panel is mounted on a carrier leg independent of the pump group or mounted on the wall, the panel should be mounted closest to the engine by paying attention to this issue.

9.1 Connecting and Disconnecting Battery Terminals

- ❖ First connect the battery (+) terminal. Then connect the (-) terminal.
- ❖ Start disassembly from the battery (-) terminal. Then disconnect the (+) pole connection.

10 First Start-up and Operating Instructions

The starting (and commissioning) sequence of the diesel engine must be done according to the following steps.

Make the hose connections between the diesel engine and the fuel tank.

- ❖ Fill the fuel tank of the diesel engine.
- ❖ Check the diesel engine oil level.
- ❖ Check the radiator water level of the diesel engine.
- ❖ Check the thermostat setting of the block water heater.
- ❖ Check the exhaust connections.
- ❖ Check the pump coupling adjustment.
- ❖ Check all bolt, union looseness.
- ❖ Check the battery terminals for looseness.
- ❖ Check the electrical panel and cable connections.
- ❖ Pump diesel oil with the fuel hand pump on the diesel engine.
- ❖ Bleed the fuel system.
- ❖ Check the water level in the water reserve source.
- ❖ Open the suction valve.
- ❖ Bleed the pump.

- ❖ Check the front gas pressure of the expansion tank.
- ❖ Check the connections of the expansion tank.
- ❖ Close the discharge line shut-off valve.

In negative suction pump groups;

- ✓ Fill the suction pipe with the help of filling pipe.
- ✓ Bleed the pump by loosening the bleeder tap.
- ✓ Continue filling until water comes out of the bleeder tap.



- **Protect yourself from rotating parts!** (Protect your body and clothing)
- **Protect yourself from moving parts** (can pinch and cut. Make sure all guards are in place)
- **Protect yourself from hot surfaces!** (Do not touch hot surfaces of the diesel engine)
- **Very hot and pressurized water!** (Do not open the radiator cap when it is hot)
- **Protect yourself from poisonous gases!** (Do not start the diesel engine without exhausting the exhaust gas to the outside environment)
- **Even if the diesel engine gives a fault alarm, it will not stop!** (The operating and alarm status information of the diesel engine should be moved to a place that can be under constant control, such as an automation center or security room)



The first operation of the fire extinguishing pump groups must be performed by authorized service.

- ❖ Set the selector switch on the control panel to **MANUAL** position.
- ❖ Turn the starter switch to the **LOCK** position. (**OIL** and **CHARGE** lamps will light up.)
- ❖ Wait for **5 seconds** and press the starter switch until the diesel engine starts, release the starter switch when the engine starts.)
- ❖ Do not crank the engine for more than **10 seconds** (if the engine does not start at the first start, pump diesel fuel with a hand pump and make sure to bleed the fuel system thoroughly.)
- ❖ The **ENGINE RUNNING** lamp will illuminate when the engine starts. Follow the indicators and/or lamps on the control panel.
- ❖ Check whether the pressure gauge rises or not. If the pressure gauge does not rise, make sure to bleed the pump thoroughly and / or close the discharge line shut-off valve thoroughly.
- ❖ Visually check the engine and pump for any problems (too tight and burnt soft seal, diesel oil, oil leaks in the engine body, water leakage to the radiator or connections, loosening of flange connection bolts... etc.).
- ❖ Run the engine for a while and stop it by pressing the **STOP/RESET** button (until the engine stops).
- ❖ Set the selector switch to **AUTOMATIC** position.
- ❖ Open the discharge line shut-off valve about halfway.
- ❖ When the pressure starts to drop and reaches the lower setting level of the pressure switch, the **OIL** and **CHARGE** lamps will light.

- ❖ After **5-10 seconds** of waiting time, the control panel will automatically start the engine.
- ❖ As soon as the engine starts, check whether the cranking process has ended.
- ❖ Keep an eye on the indicators and/or lamps on the control panel.
- ❖ When you see a negative situation on the indicators and/or lamps, stop the engine by pressing the **STOP/RESET** button (until the engine stops).

11 WEEKLY TEST (OPERATION)

The pump must be tested weekly. Weekly test run should be done as follows.

- ❖ Make sure that the selector switch is in **AUTOMATIC** position.
- ❖ Press the (+) (-) buttons of the **PCST-8** relay at the same time.
- ❖ **TEST LAMP** lights up.
- ❖ The solenoid valve is opened and some water is discharged from the pressure adapter.
- ❖ The engine starts to run, the **ENGINE RUNNING** lamp lights up.
- ❖ The solenoid valve closes when the pressure switch contact is closed.
- ❖ The factory setting of the test is 3 minutes. **PCST-8** starts counting 3 minutes.
- ❖ During the weekly test, the **pressure relief valve** discharges the pumped water to the water reserve source so that the pressure does not rise excessively and the water chewed in the pump does not heat up.
- ❖ The motor stops automatically at the end of the time. The pressure relief valve balances the line pressure and closes.

- ❖ Pump group switches to stand-by mode. After the first run of the weekly test, PCST-8 will automatically perform the above operations on the day and time set each week. It is important to be near the pump group during the weekly test in order to detect and/or prevent possible malfunctions.

12 MAINTENANCE INSTRUCTIONS

- ❖ Make sure that the valves between the water supply and the sprinkler system are open (including system bypass valves, if applicable). The valve to the test connection must remain closed for normal operation.
- ❖ Check that the suction side and system side pressure levels are normal.
- ❖ Check that the controller power switch is in the “auto” position and that the power light is on.
- ❖ Check for leaks in any piping.
- ❖ Check that the battery voltages are normal for the battery group.
- ❖ Check that no alarm conditions are noted on the controller or alarm panel, if any, in the pump room.
- ❖ Check the fuel level (must be at least 2/3 full).
- ❖ Check the engine oil level and the operation of the oil heater (if installed).
- ❖ Check the water and fuel hoses for leaks.
- ❖ Observe the water pump and make sure that there is no malfunction.
- ❖ Check the battery water level if it is not closed type.
- ❖ Clean the fuel filter every three months.
- ❖ Change the crankcase breather every three months.
- ❖ Change the oil once a year or every 50 operating hours.
- ❖ Lubricate and inspect the pump bearings and coupling every six months.
- ❖ Check gauge accuracy and pressure switch accuracy annually on both main pump and jockey pump.
- ❖ Tighten the electrical connections once a year.
- ❖ Check the battery charge level monthly.
- ❖ Change the antifreeze once a year.

13 SERVICE

During the guarantee period (2 years), malfunctions occurring within the scope of the guarantee are repaired free of charge by our authorized services.

14 SPARE PART SUPPLY

You can contact our company or authorized services for spare parts supply.

15 GUARANTEE

The guarantee given to the product after sale to the user is non-transferable and, to this extent, the sale, rental, transfer or other disposition and transportation of a diesel fire booster by the end consumer will void the guarantee of the product.

15.1 Guarantee Period

Covers a period of two (2) years from the date of delivery and operation of the fire booster system. Coverage includes travel time and mileage for the first year. It does not cover and is not limited to malfunctions or damage caused by negligence. As such, it is not responsible for transportation damage, improper storage, improper installation, unauthorized modification or lack of maintenance or consequential damages.

15.2 Guarantee Terms

- ❖ The guarantee period starts from the delivery date of the product and is 2 years.
- ❖ All parts of the product, including all parts of the product, are covered by our company's guarantee.
- ❖ If the product malfunctions within the guarantee period, the time spent in repair is added to the guarantee period.
- ❖ The repair period of the product is 20 working days. This period starts from the date of notification to the service station of the product, in the absence of a service station, to the seller, dealer, agent, representative, importer or manufacturer of the product.
- ❖ In the event that the product fails due to material and workmanship defects within the guarantee period, it will be repaired without any charge under the name of labor cost, replaced part cost or any other name.

- ✓ Product; Within one year from the date of delivery, provided that it remains within the guarantee period, more than two repetitions of the same failure or more than four occurrences of different failures as a result of the inability to benefit from the product,
- ✓ Exceeding the maximum time required for repair,
- ✓ In the absence of a service station, if it is determined that it is not possible to repair the malfunction with a report issued by one of the dealer, dealer, agency, representative, importer or manufacturer, respectively, free replacement will be made.
- ❖ Failures caused by the use of the product contrary to the points in the user manual are not covered by the guarantee.
- ❖ For problems that may arise regarding the guarantee certificate, they can apply to the Ministry of Industry and Trade General Directorate for the Protection of Consumers and Competition.

15.3 Out of Guarantee Conditions

15.3.1 Disclaimer of Warranties

Except for the Guarantee given above, which is in lieu of all other express and implied warranties, **CFP EXPRESSLY DISCLAIMS ALL EXPRESS WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS.**

15.3.2 Limitation and exclusion of remedies

Any claim under this Guarantee shall be deemed to be a waiver of the consumer's rights to the product under guarantee if it is not presented to BMT (Bader MotorTechnology) within thirty (30) days of the discovery that a diesel fire pump drive fails to conform to the requirements.

Failures not covered by the guarantee are specified below:

- ❖ Failures that may occur in the Diesel Fire Pump due to accidents, misuse, negligence, improper storage that may occur after the installation of the purchased products is completed or while they are stored without installation
- ❖ Changes or modifications not authorized in writing by the manufacturer,
- ❖ Battery discharge

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- ❖ Failures caused by installation, use and maintenance operations performed without following the rules specified in the User Manual,
- ❖ In case of intentional damage,
- ❖ Damage and malfunctions caused by misuse,
- ❖ Damages and malfunctions caused by faulty installation and incomplete installation,
- ❖ Damages and malfunctions caused by transportation, shaking, storage, physical impacts, chemical factors and environmental conditions,
- ❖ Damages and malfunctions caused by fire, lightning, flood, earthquake, freezing and other natural disasters,
- ❖ Damages and failures due to incorrect fluid selection, transportation of fluids containing solids, or chemical properties and contamination of the fluid,
- ❖ Damages and malfunctions caused by mains voltage drop, rise, phase interruption and imbalances between phases, which should be 220 and 380 Volts,
- ❖ Damage caused by unsuitability or inadequacy of the cables used in the electrical installation,
- ❖ Motor combustion and damage caused by water ingress into electric motors,
- ❖ Damages and malfunctions of pumps caused by running without water.

15.4 Procedure for Defective Products

- ❖ In case of malfunction of the product you have purchased, before sending the product, the company is contacted and preliminary information about the malfunction and the product is given and approval is obtained.
- ❖ The product specified as defective is sent to the service of the importer or manufacturer company, examined and approved.
- ❖ If no fault is detected by the guarantee provider, the product is returned to the customer.
- ❖ If there is a non-guarantee malfunction and it can be repaired, it is repaired against the cost by obtaining approval from the customer.

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- ❖ The product determined by the guarantee provider to be defective and under guarantee is processed for repair. If the product cannot be repaired, a new one is given. If the stock status is not available, the equivalent is offered by deciding with the customer.
- ❖ Products sent for repair and maintenance must be packed in such a way that they will not be damaged in cargo. Unpacked products will not be received.
- ❖ For products sent for repair and maintenance, the shipping fee is paid by the sender.

16 AUTHORIZED DEALERS

Address and contact information will be listed on the website of authorized dealers and resellers.

17 CONTACT

www.badermotor.com

Bader Motor Teknolojileri SAN. TİC. A. Ş.

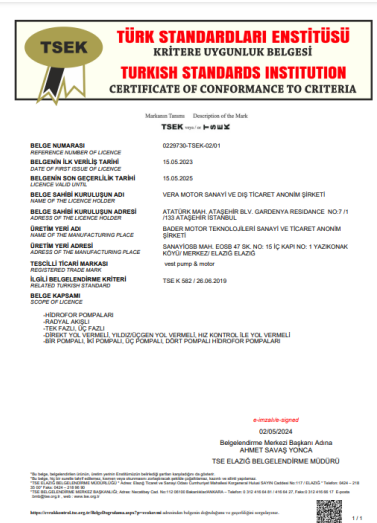
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Mersis No: 0129062228000001

Tax No: Hazar V.D. 129 062 22 80

18 CERTIFICATES



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