

HYDRO PUMPS

THE RIGHT PRESSURE FOR
COMMERCIAL BUILDINGS AND HIGH RISES.



SHAKTI

THE POWER OF INNOVATION, EFFICIENCY & TECHNOLOGY.



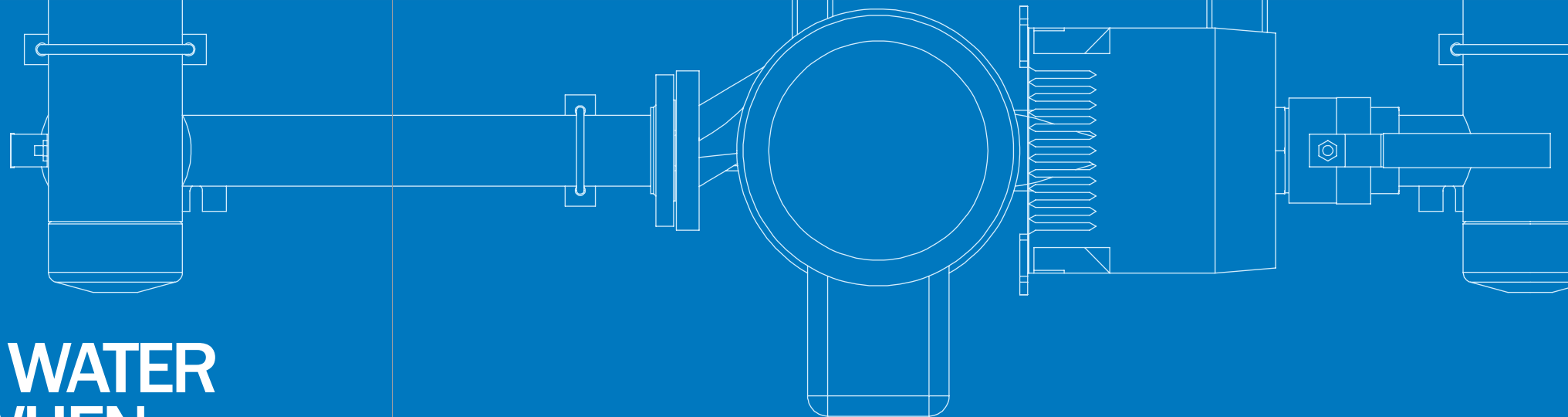
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CONSIDER THE CHALLENGES OF WATER MANAGEMENT, WHEN SELECTING HYDRO PNEUMATIC SYSTEM FOR YOUR BUILDING.

Taller & Commercial Zone buildings, hotels, hospitals, military barracks and communities need pressure to move water to upper floors, while water usage vary greatly at different times of the day and with constant pressure.

Frequently, the public water system is not sufficient to meet both quantity and pressure parameters, especially in peak hours, forcing users to find independent ways to draw and store water and then redirect it to distribution at the various use points through the use of a pump. These arrangements to meet expected needs at the times of greatest water use, with a large energy use are not ideal in times of low consumption.

This is why it is best to install a booster system consisting of a several pumps with divided power, which start operating depending on water usage, while maintaining constant pressure. This can guarantee near total operations and significant savings in terms of electricity usage.

TO ADDRESS THESE CHALLENGES, YOU NEED HYDRO PNEUMATIC SYSTEM THAT:

Maintains system pressure in accordance with demand at any time.

Saves energy by shutting up the pumps when there is zero flow.

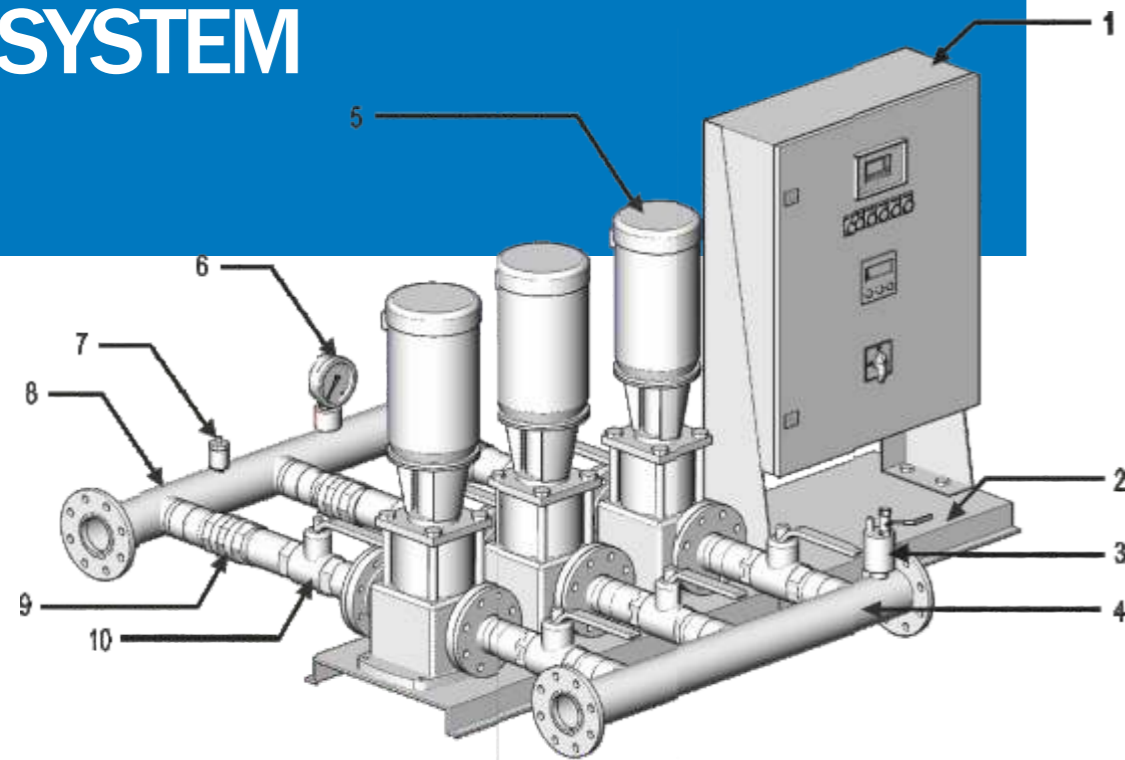
Meets smooth start-and-stop and ensures the life of the pumping system.

Refills the piping network at controlled rate, avoiding water hammer and allowing trapped water to escape.

Shakti Pumps booster systems are designed to address the challenges of the building and commercial sectors. Each booster combines high efficiency vertical multistage pumps with modern fixed and variable speed controls to create a complete solution that lower energy cost, reduce water consumption and minimize maintenance cost, which result in a product of unquestionable quality and functionality.



COMPOSITION OF THE STANDARD HYDRO PNEUMATIC SYSTEM



1. One electrical control panel & pump protection, electronically operated
2. All mounted on epoxy / powder coated MS skid
3. Pressure transmitter
4. Suction Header
5. Two to four electrical pumps, on a horizontal or vertical axis
6. One or more pressure gauges
7. Port for Pressure Vessel
8. Discharge Header
9. Non return valve (one per pump)
10. Gate valves (two per pump)

SP CONTROLLER

Shakti Pumps designed SP Controller for automation of booster pumps, for every type of unit and each of these contains at least four essential features:

CYCLICAL INVERSION OF THE START-UP ORDER OF THE PUMPS

Serves to allocate the start-up equally and therefore prevent excessive wear and tear of the pumps.

PROTECTION AGAINST DRY OPERATION

Serves to prevent the pumps from operating without water and breaking down.

PUMP STOP TIMER

Serves to prevent dangerous water hammers that can occur when water stops being drawn and significantly limits the number of start-up of the pumps and the volumes of pressurized water.

SEQUENTIAL START UP CONTROL

Serves to prevent the pumps from starting up simultaneously, therefore limiting the power used by the starter.

The SP controller is inside the control panel, mounted on the finger connector and includes all the signals necessary for constant control of the unit, identifying the operating status of the pumps, any abnormalities on them and the related cause. A manual operating system

makes it possible to work on the SP controller, or completely replace it, without the unit suffering downtime.

The communication module in SP controller is designed for remote monitoring and smooth operation of the pumping system by using a data enabled GSM model. This ensures remote fault identification.

USER FRIENDLY AND VERY INTERACTIVE SP CONTROLLER.

REED BASED SENSOR FOR PERFECT DRY RUN PROTECTION, ENSURING THAT THE PUMPS DO NOT GET DAMAGED.

BUILT-IN CLOCK FUNCTION WITH WEEKLY PROGRAMMING.

ALL ERRORS ARE DIRECTLY DISPLAYED ON SCREEN OF SP CONTROLLER.

TECHNICAL SPECIFICATION

4 lines x 18 characters per line text display

Backlight green LCD display

4 Customizable keys

120 application pages

512 KB flash memory

Modbus output for BMS

Real time clock

Microprocessor based controller

NEMA 1 enclosures

Digital input- 12(24V), digital output -10(24V),
Analog Input-2(0-10V)

Serial Communication utilizing MODBUS RTU
(RS485) Protocol

Compatible to run for 50 and 60Hz supply



OUR PRODUCTION PROGRAM

Shakti Hydro Pneumatic System - Multiple system types to meet your demand depending on the applications, Shakti Hydro Pneumatic Systems come in different configurations.

ECO - Fixed Speed Type.

HYDRA - Variable Speed Systems with externally Mounted Single Frequency drive in Shakti control Panel e/w Shakti Controller and HMI display.

HYDRA-D - Variable Speed Systems with externally Mounted Frequency drive per pump in Shakti control Panel e/w Shakti Controller and HMI display(Non Standard).

SPIL makes units according to standards that cover most of the market's needs; however, it can also design and realize units not in its catalogue, according to specific customer request.



KEY FEATURES

NO FLOW SHUT DOWN

Senses when there is no requirement in the system and shuts off the pumps. The system can be programmed to run in specific hours. E.g. In commercial establishments it can be kept off at night.

SOFT-FILL

It enables the system to fill the entire plumbing system gradually, prior to actual start-up of system. This saves the components from sudden / plumbing network from sudden water hammer.

SELF-INTELLIGENT

It enables the system to detect pressure need and adjust the pressure set point in proportion which resulting unto 20% energy savings.

ADVANTAGES

SMALLER FOOTPRINT

Our single block units are designed to fit into smaller spaces & hence use minimal floor space.

SILENT OPERATION

The sound pressure level of the pump is lower than the limiting values stated in the EC Council Directive 98/37/EC relating to machinery.

IMPROVED USER COMFORT

The combinations of fixed speed and variable speed systems working with SP controller leads to efficient staging, so the system pressure is always maintained.

HIGHER EFFICIENCIES AND INCREASED ENERGY SAVING

HYPN Systems integrate variable speed technology for optimal pumping efficiency and consume on average 10%-15% less energy.

REDUCED MAINTENANCE COSTS

The SP Controller eliminates pressure spikes & distributes requirements evenly to minimize maintenance requirements.

APPLICATIONS

BUILDING SECTOR

Residential Complexes, Multistoried buildings, Hotels, Hospitals, IT Parks, Commercial Complex, Corporate offices, etc.)

Pressurized Water Distribution- Utility & Flushing.
Landscaping.



MUNICIPAL CORPORATION WATER SUPPLY

Water Supply to Elevated areas
Water Treatment Plant



IRRIGATION

Drip & Sprinkler System

Automation of water supply for green Houses / Nurseries.



AUTOMOBILE SECTOR

Components Washing.



INDUSTRIAL

• Textile • Breweries & Distilleries • Dairy & Food • Cooling Tower • Spray Ponds



PERFORMANCE

Performance	Number of Units		
	2	3	4
MAX. FLOW (m ³ /hr)	120	180	360
MAX. PRESSURE (bar)	20	20	16

Technical data reported in this catalogue

For more information on the technical features and performance of the pumps used in our units, please see the related catalogues.

The photographs, curves and performance tables, size tables and weights reported in this catalogue may not correspond exactly with the finished product. Our sales network can provide confirmation of all technical data at the time the order is placed.