

DESCRIPTION

The SPIRAM PCSW Mobile Pumping Unit is a flexible pumping device developed through SPIRAM's research and development, tailored to meet specific customer requirements.

At the heart of the mobile pumping unit is the SPIRAM centrifugal pump, powered by a diesel engine, featuring a screw impeller designed for maximum spherical passage of solid materials. This design allows these pumps to achieve up to 100% impeller passage of the discharge flange diameter. The SPIRAM pump offers three key benefits: a high level of free passage, great hydraulic efficiency, and low energy consumption. In addition to the SPIRAM pump, the pumping unit consists of a self-priming system and a base frame.

The design allows for easy operation and maintenance of all pumping unit parts. Depending on customer requirements, the unit can be mounted on a homologated trailer, placed in a portable container, or soundproofed.

APPLICATION

- developed for the most demanding projects and applications, suitable for use in harsh operating conditions
- pumping of media with high solids content (e.g. wastewater)
- for intervention units (fire and rescue services)
- deal for handling emergencies (pumping, dewatering of flooded areas)
- provides mobility for various industrial applications
- for wastewater applications (reconstruction of pumping stations, inlet sections at WWTPs (bypass))
- pumping out sedimentation tanks during their reconstruction at WWTPs
- sewer redirection
- temporary pumping at sludge recirculation
- and many others

BENEFITS

SPIRAM Pump

High efficiency: Average hydraulic efficiency of 80.4%.

High solid particle passage: Handles particles ranging from 50 to 300 mm, minimizing the risk of clogging.

Quality materials

All pump components are made from highly durable alloys and noble metals, ensuring a long life cycle.

The eco-friendly motor features a STAGE V-compliant engine with low emissions.

Height adjustable drawbar allowing the unit to be transported behind a car, truck, or tractor.

Compact design - the entire diesel unit, including the fuel tank, is mounted on a single chassis and enclosed in a compact casing, with the option for soundproofing.

Self-priming system - allows automatic priming upon activation. The system is based on a diaphragm vacuum pump that creates a vacuum in the suction line. Automatic disengagement of the vacuum pump after priming is controlled by a priming device with sensors and an electromagnetic clutch. During the automatic priming cycle, the pump runs temporarily "dry" – an oil-lubricated seal protects the pump from damage during this period.

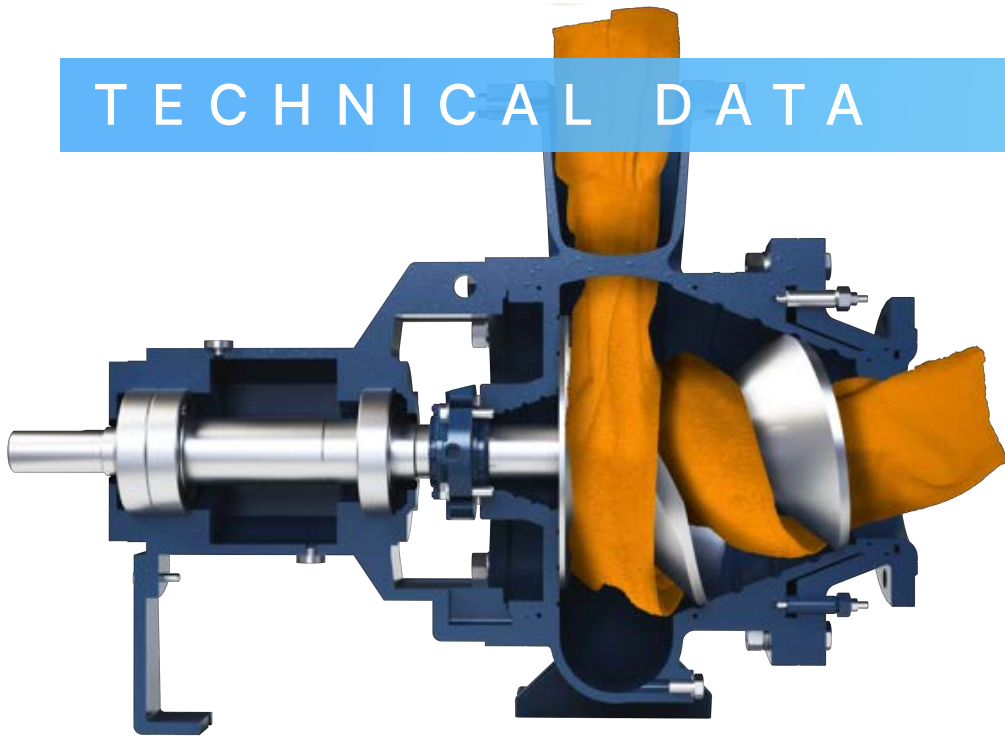
Clutch system - allows for motor disconnection from the pump for maintenance, especially in backup units.

Design variability - customers can choose from a wide range of accessories (lighting, trailer, pipes, supports, etc.).

The development, production, and assembly of the units are all carried out in Slovakia.



TECHNICAL DATA



PUMP PARAMETERS

DESIGNATION	SPIRAM 150-A-150-B-D	
CONFIGURATION	Horizontal with diesel drive	
IMPELLER TYPE	Screw	
DIRECTION OF ROTATION	CW	
MAX. OPERATING PRESSURE	[bar]	16
FLANGES	DIN EN 1092-1	
RPM IN BEP	[min ⁻¹]	1450
Q (MIN/MAX)	[l/s]	25,0 - 123,0
H (MIN/MAX)	[m]	3,2/ 27,5
OPERATING TEMPERATURE	[°C]	40
SOLIDS (MAX)	[mm]	100
SUCTION DIAMETER	DN/PN	150/16
DISCHARGE DIAMETER	DN/PN	150/16

PERFORMANCE PARAMETERS OF THE UNIT

MODEL	PCSW 150AB	
FLOW (MIN/MAX)	Q[l/s]	25,0/ 123,0
TOTAL HEAD (MIN/MAX)	H[m]	3,2/ 27,5
SHAFT POWER (MIN/MAX)	P2[kW]	3,5/ 27,0
EFFICIENCY IN BEP	η[%]	80,3

DRIVE

MANUFACTURER	KOHLER
TYPE	KDI1903
PERFORMANCE	42kW @ 2600 RPM
VOLUME / NUMBER OF CYLINDERS	1861 cm ³ / 3
FUEL, EMISSION STANDARD	diesel / EU stage V (E9_EV4/O-V-3004)
EQUIPMENT	electric control, ECU, ERG, DOC, DPF
SPEED CONTROL	continuous electronic control: 1000 - 2600 RPM
CONTROL PANEL	Intel drive (RPM, Operating Hours, Error Messages)

If requested, it is possible to supply an engine from another manufacturer.



MATERIAL CONSTRUCTION

VOLUTE CASING	GGG40 / AISI 316 / SPIROHARD/ AL
IMPELLER	GGG40 / AISI 316 / SPIROHARD
FRONT DISC	GGG40 / AISI 316 / SPIROHARD
BACK PLATE	GGG40 / AISI 316 / SPIROHARD
SUCTION FLANGE	GGG40 / AISI 316 / SPIROHARD
DISCHARGE FLANGE	GGG40 / AISI 316 / SPIROHARD
SUCTION FLANGE INSERT	GGG40 / AISI 316 / SPIROHARD
SHAFT	AISI 316
DRIVE FRAME	Cast iron
SEAL	mechanical seal with oil lubrication for dry operation, SiC/SiC/NBR

MAXIMUM ENCLOSURE DIMENSIONS

L	2300mm	*The specified dimensions are for informational purposes only
B	1100mm	
H	1400mm	

EVACUATION SYSTEM

DIAPHRAGM PUMP	suction capacity 45m ³ /hod
DRIVE	belt from the pump shaft
PRIMING DEVICE	priming sensors float for closing the suction after priming
ELECTROMAGNETIC CLUTCH	disengagement of the vacuum drive after priming
OIL-LUBRICATED MECHANICAL SEAL	allows dry operation during the priming cycle

ACCESSORIES

STANDARD EQUIPMENT

- A priming system consisting of a diaphragm pump, priming device, and electromagnetic clutch for the pump
- Control panel - automatic on/off and manual operation.
- 2 float switches
- Speed control
- Signal lights
- LCD display
- LED lighting (integrated into the container structure for night work)
- Lifting eyes + openings for handling with forklift forks
- 12V battery

OPTIONAL EQUIPMENT

- Suction hoses
- Discharge hoses
- Option for remote control and operation monitoring via a mobile application
- Enlarged fuel tank for 12 hours of continuous operation.
- Aggregate lighting to a minimum distance with height-adjustable LED lights, with the possibility of adjustment in 3 directions
- Box with basic tools
- Flow divider for discharge/suction hoses (for use with more than 1 hose for suction and discharge)
- OPTION 1 - Capotage
- Rigid structure to cover the engine, including soundproofing
- OPTION 2 - Homologated single-axle braked trailer
- Trailer floor made of aluminum sheet
- Height-adjustable drawbar with ball and eyelet
- Registration certificate for registration of the trailer on the DI
- The trailer allows transport on class 1 to 3 roads at a maximum speed of 90 km/h

Many other options are available



UNIT CHARACTERISTICS
