



Engineering Flow Solutions

DNA

DIESEL-DRIVEN PUMPING UNITS



DNA. Diesel-Driven Pumping Units



DESCRIPTION

The diesel-driven pumping units of DNA series are intended for handling clean fresh or sea water from surface sources (lakes, rivers, ponds), as well as for pumping wastewater containing solid inclusions from pits, sumps, drainage tanks and other reservoirs.

The DNA unit consists of a centrifugal pump and a diesel engine mounted on the common base frame with a gearbox (for pumps with a speed of 2 900 rpm) or with a power take-off mechanism (for pumps with a speed of 1 500 rpm). The range of engines installed on the unit includes models with power up to 800 kW.

The diesel engine is equipped with an air intake system with an air filter, an exhaust system with silencers, water and oil radiators, a fuel system with a tank and a fuel pre-filter, electrical equipment with a remote control, clutch release lever.

The DNA unit is a rapidly deployed pumping system supplied as a ready-to-use installation with simple operation, control and maintenance. The units apply a wide range of standard pump series for water supply and sewage disposal including the ones with self-priming capability.

The units are usually equipped with serial double-suction pumps, overhung pumps, ring-section multistage pumps, axial flow pumps and others. Upon a customer's request the units are available in stationary, skid-mounted or trailer-mounted versions.

The unit control system provides starting, operation control, automatic rotation speed maintenance function, recharging the batteries and emergency protection of the diesel engine.

APPLICATION

- Emergency and autonomous water supply and sewage disposal systems without access to electricity
- Process water supply and irrigation systems at distant areas in agriculture
- Mine dewatering and groundwater level control units
- High-pressure water jet systems in hydraulic mining

TECHNICAL DATA

Capacity range	12.5 – 3,500 m ³ /h
Pressure head range	35 – 450 m
Motor power range	77 – 800 kW
Ambient temperature	-45 ... +40 °C

PUMPED LIQUID

Viscosity range	up to 36 x 10 ⁻⁶ m ² /s (36 cSt)
Temperature range	274 – 358K (+1... +95 °C)
Solid particles	below 0,05% by mass
Solids size	below 0.2 mm
Microhardness	below 6.5 GPa (650 kgf/mm ²)

Versions & Components

MAIN COMPONENTS

1. Stationary DNA:
 - driving unit of own design, with manual control, based on the diesel engine
 - centrifugal pump
2. DNA-P on skids:
 - driving unit of own design, with manual control, based on the diesel engine
 - centrifugal pump
 - skid
3. DNA-SH on trailer:
 - driving unit of own design, with manual control, based on the diesel engine
 - centrifugal pump
 - trailer



DNA. Stationary version

OPTIONS

1. Stationary DNA unit:
 - engine enclosure cover
 - automatic starting system
 - exhaust gas vacuum unit
 - starting preheater (liquid or electric)
 - valve on the discharge pipe
 - standard suction pipe
 - expansion bellows of exhaust system with counter flanges
2. DNA-P on skids:
 - engine enclosure cover
 - exhaust gas vacuum unit
 - starting preheater (liquid)
 - valve on the discharge pipe
 - standard suction pipe
 - suction pipe lifting device with winch
3. DNA-SH on trailer:
 - engine enclosure cover
 - exhaust gas vacuum unit
 - starting preheater (liquid)
 - valve on the discharge pipe
 - standard suction pipe



DNA-P. Skid-mounted version



DNA-SH. Trailer-mounted version

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