

DND 2H DOUBLE DRIVE

Comprehensive solutions for mining applications



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The competitive advantages of DnD includes an engine with customizable aspects, capability in absorbing variety of engines such as utilizing Volvo as well as Caterpillar. The material used for the impeller, casing, suction liner and high chrome steel (28-29%) is produced by the proprietary right of GIW® Minerals (ASTM A532 class III). Additionally, the materials characteristic is superior against abrasion and resisting acidic conditions.



Comprehensive solutions for mining applications

After years of intensive research, KSB established innovative design of Dewatering and Dredge Pumpsets (DnD), comprehensive solution for mining applications. The pumpset is acknowledged for its outstanding capacity to lead in severe open-pit mine sites with capability in managing aggressive mine water through slurry conditions, that why it is known as Dewatering and Dredge Pumpsets (DnD). The majority of Indonesian mine sites are categorized as open-pit mine sites, in regard to its topography condition.

Consequently, DnD is suitable for the disposal of solid waste from exhausted mines that are converted to landfills. It functions as a form of water control to prevent the mine pit from becoming a lake. During this phase, the DnD transforms from being a supporting equipment to vital equipment. Our DnD Pumpsets have been already certified for Local Value Addition (TKDN/Tingkat Komponen Dalam Negeri) up to 40.96%.

KSB Indonesia has produced more than 609 units of Dewatering and Dredge Pumpsets (DnD) used in open-pit mines in the past 15 years. Our DnD pumpsets include several models ranging from high to low heights. Starting from DnD 100, DnD 150 & DnD 200 for low head application (H below than 130 m). DnD 150 MHX, DnD 200 MHX & DnD 250 MHX for medium head application (H between 130 ~ 160 m). DnD LSA 2H & DnD LSA 2HF for high head application (H between 160 ~ 200 m).



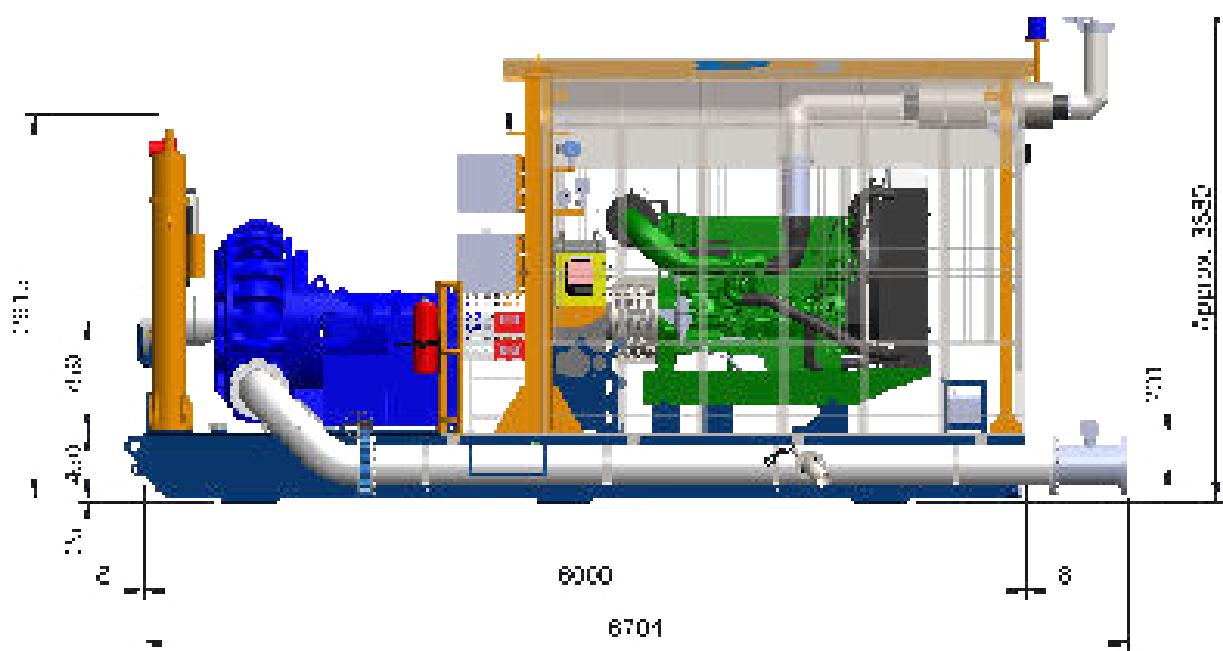
Features

Pump LSA 8x10 	Description: Robust, proven, high-efficiency pump for high heads with pump components made of abrasion-resistant white cast iron.	Specification: • Heavy construction, 16 bar pressure rating • High chrome white iron wet end materials (HARDNESS 600 HBN / 56 HRC) • 45 x 130 mm solid free passage • 8 x 10 inch pump size • Oil lubrication
Double driver 	Description: High horsepower output, reliability, and durability. Efficient fuel consumption, high power to weight ratio, and low maintenance requirements.	Specification: • Coupled by marine gear box dual inputs • Driven by synchronous control panel
Marine Gear Box - Dual Inputs 	Description: Double input gears are applied to combine the output power of 2 diesel engines to drive a single pump shaft. It is controlled by two clutches separately and can work alone or at the same time.	Specification: • Power Output = 650 kW • Speed = 1500 rpm • Completed with flexible coupling SAE#14
Flexible Coupling 	Description: Flexible shaft couplings designed to transmit torque while accommodating misalignment, shock loads, and vibration. commonly used in industrial applications, including pumps, conveyors, compressors, and other rotating equipment.	Specification: • TType = Elastomeric coupling • Speed = 2000 rpm Misalignment: • Parralel = 3.2 mm • Angular = 2°
Synchronous control panel 	Description: Designed to efficiently manage and optimize the operation of multiple pumps running in parallel. It ensures synchronized operation, load balancing, and protection against faults, making it ideal for demanding applications such as mining, dredging, and large-scale dewatering.	Specification: • To synchronized the both engines load Integrated with engine protections

Oil lubrication system 	Description: Provide continuous lubrication to rotating and moving parts.	Specification: • Type = Oil circulation with external cooling • Capacity = 1 liter per minute • Driver = 24 Volt DC • Oil capacity = 20 liter
Priming Vacuum Pump 	Description: High-performance rotary vacuum pump, durability, oil-free operation, and efficient performance, making it suitable for dewatering, dredging.	Specification: • Type = lubricated vane with DC motor • Capacity = 30 m³/hr • Driver = 24 Volt DC • Connection = Flexible coupling • Mount = Base frame
Priming Vacuum Tank 	Description: Designed for efficient air-water separation in vacuum-assisted dewatering and dredging applications.	Specification: • Increase the volume (to stabilize the floating valve) • Improve reliability (avoid the crack on structure/welding)
Flow meter 	Description: Ensuring accurate monitoring and control of fluid movement.	Specification: • Type = Electromagnetic • Pressure = 20 bar • Protection = IP65 • Accuracy = $\pm 0,5\%$ Material: • Body = Cast Iron • Liner = Polyurethane • Probe = Titanium

Bearing temperature 	Description: Ensures smooth operation and reduces friction, Minimizes stress on bearings, helps detect early warning signs.	Spesification: • Type = Resistance Bulb PT100 (3 Wire) • Range = up to 150 °C • Power supply = 24 VDC • Protection = IP 67 Material: • Terminal head = Aluminium • Tube = SS316
Tilt sensor 	Description: Protects sensitive equipment from excessive tilting that can lead to operational failures. Compatible with SCADA, PLC, and IoT-based monitoring systems for remote tracking and automation.	Spesification: • Type = Dual-Axis Tilt Switch • Range = up to 4 ° • Power supply = 24 VDC • Protection = IP 67 Feature: • Zero button to set zero after installation
Water level sensor 	Description: Protects pumps, tanks, and pipelines by detecting low or high water levels.	Spesification: • Type = Turning Fork • Power supply = 12 - 55 VDC • Protection = IP 67 • Pressure = Max. 40 bar Material: • Housing = SS304 • Fork = SS316
Suction line 	Description: Efficient fluid flow, preventing cavitation, and maintaining optimal pump performance in dewatering, dredging.	Spesification: • Suction hose Rubber hose with flange ANSI CL150, 5 meter length • Suction strainer Fabricated stainless steel strainer. • Suction vacuum tank Fabricated stainless steel tank with floating valve.
Discharge line 	Description: Efficient fluid transport, maintaining pressure, and ensuring smooth operation in dewatering, dredging.	Spesification: • Piping Fabricated stainless steel material • Check valve Swing type, stainless steel material • Duty & drain valve Butterfly type with gear/lever actuator • Flow meter Electromagnetic type.

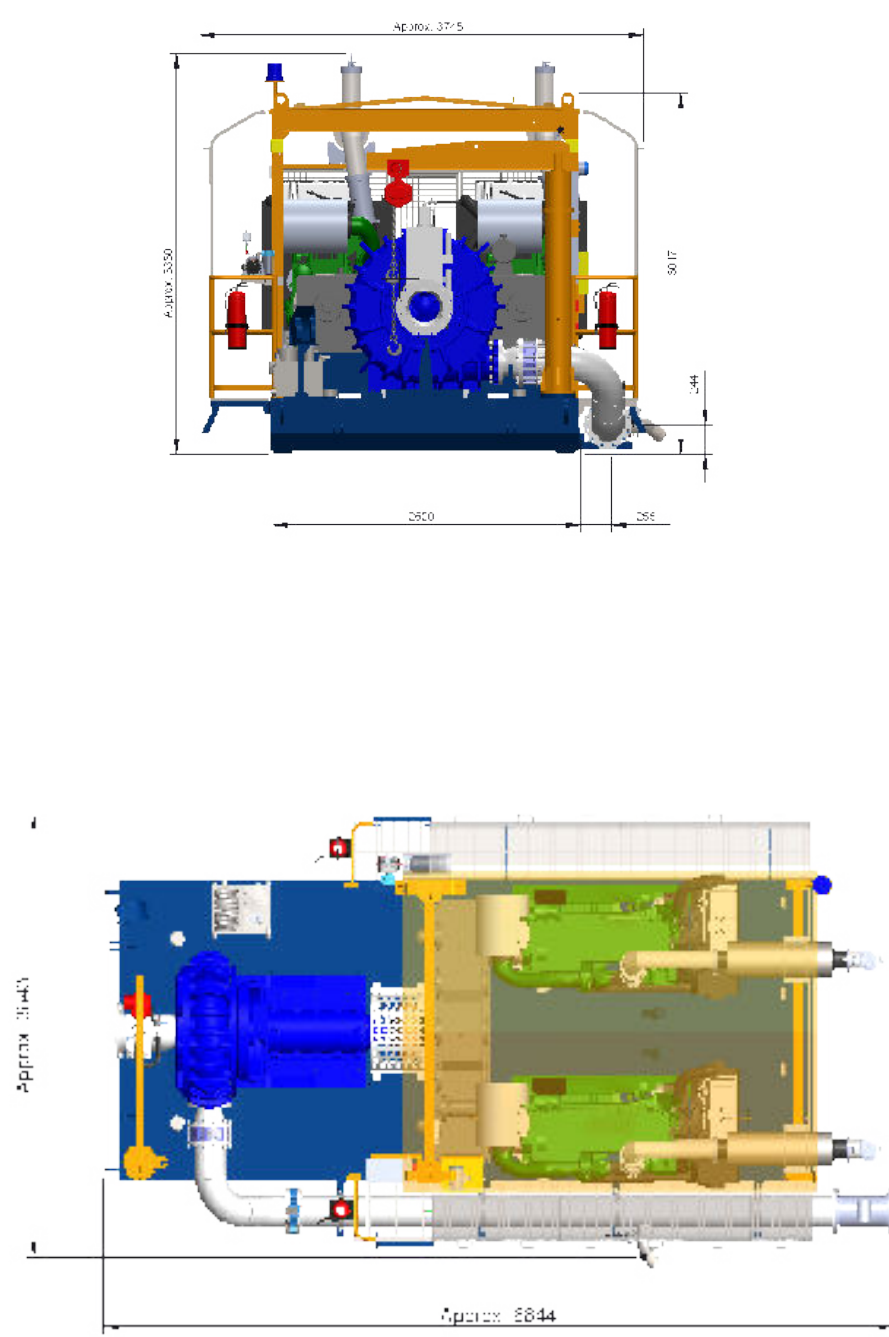
General drawing



Spesification

Pump type	DnD LSA 2H DD
Pump size	8 x 10
Free passage	45 x 130
Material	Super duplex stainless steels

General drawing

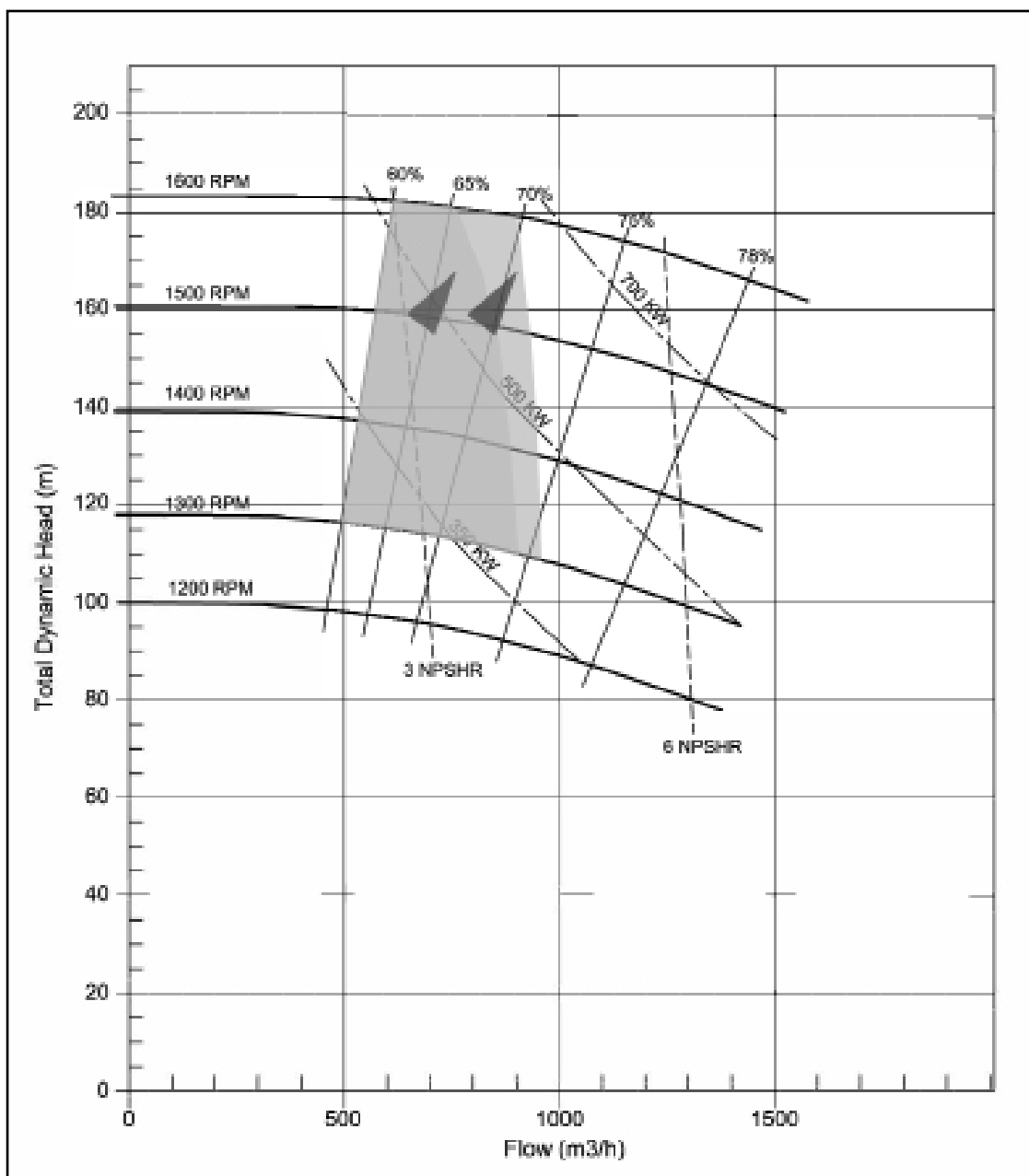


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Performance curve

Curve is valid for clear water only. The effects of specific gravity, viscosity and solids on performance with slurry must be accounted for. Alternate choice for frame size or seal type may also have some effects..



LSA 2H
with Double
Drive Engine
Caterpillar C18

Q= 900 m³/hr
H= 170 mTDH
n= 1550 rpm

SG= 1.03
Pabs= 613 kW

LSA 2H with
Double Drive
Engine Volvo
TAD1343VE

Q= 750 m³/hr
H= 170 mTDH
n= 1550 rpm

SG= 1.03
Pabs= 543 kW

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