

DIESEL DRIVEN PUMPUNIT HK700-CAT3412 DITA / C27(1800 rpm)



VAN HECK BV

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n=540r.p.m. ø924mm.	projection 	drawn RS	checked	approved	file 3	project no.	drawing no. 120307-01	rev. D
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PUMPUNIT HK700

PUMP

General

The HK pump is a single-stage mixed-flow centrifugal pump for lifting large quantities of water to medium heads.

The pump is suitable for heavily contaminated and unpurified water.

The pump types HK are not self-priming, but by using the Van Heck priming system and non-return valve, the pump is made self-priming.

Type	: HK-700
Capacity	: see performance curve 280990-02 rev. A
Connections	: suction 900 mm / discharge 700 mm

Pump Casing

A solid circular casing with a tangential discharge nozzle Ø 700 mm, which can be turned 360 degrees in discrete steps.

The pump casing is supported by a cast iron bearing block with 4 integrally casted feet.

Shaft Seal

Sealing is by means of gland packing with grease lubrication.

A stainless steel sleeve in the seal area protects the shaft.

Materials

Pump casing	: cast-iron GG20
Bearing block	: cast-iron GG20
Shaft	: steel (st 50)
Shaft sleeve	: stainless steel 316
Impeller	: cast-iron GG20

GEARBOX

To reduce the engine speed of 1800 rpm to the pump speed of 500 rpm, a gearbox is mounted directly to the bearing block of the pump. This gearbox, type TW-700-G, designed by Van Heck, is sufficient to cope with an input of 700 HP at 1800/500 rpm ($i = 3,57$).

PRIMING SYSTEM

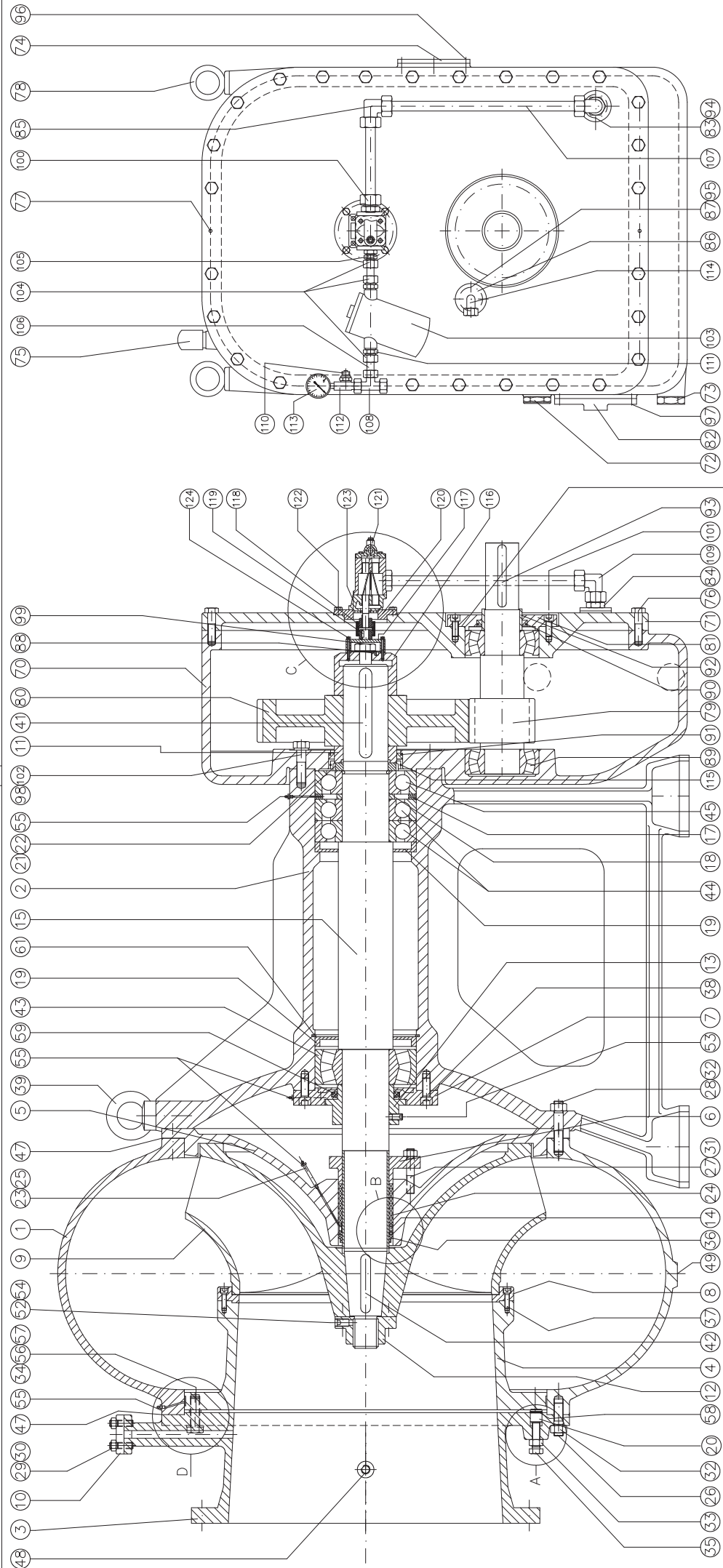
The Van Heck priming system consists of a vacuum pan, which is mounted at the suction nozzle of the pump and a continuously driven air-cooled, oil lubricated vacuum pump.

In combination with a non-return valve on the discharge flange, the pump becomes self-priming.

Make	: Demag Wittig
Type	: SL 15-1 VR

Capacity : 90 m³/hr
Vacuum : 100 mbar (90%)

The vacuum pump is cooled by a radial fan mounted on the rotor shaft and is provided with an automatic lubrication oil pump.

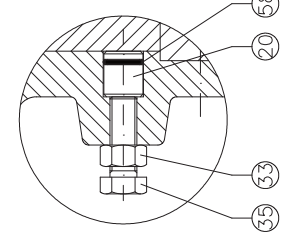


48 3 10 29 30 47 65 54 56 57 52 64 9 1 23 25 47 5 59 55 59 43 19 61 15 2 21 22 55 98 02 11 41 60 70 68 69 75 106 04 109 77 100 65 73 74 96

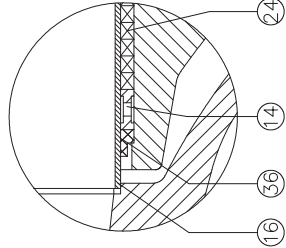
35 33 26 20 58 12 4 42 37 8 49 36 14 24 27 31 6 28 32 53 7 38 13 19 44 18 17 45 15 89 91 79 90 92 81 71 76 84 109 101 93 72 82 97 73 111 103 114 86 87 95 107 83 94

Opm.: speling 0,2-0,3 mm
d.m.v. pakking of afdraaien

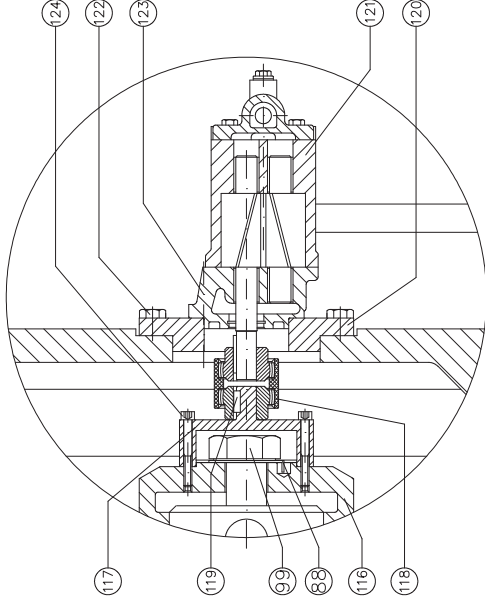
Opm: Bij DPPG 750 Olie-druk-meter aansluiten
Vlgs tek: 251103-33



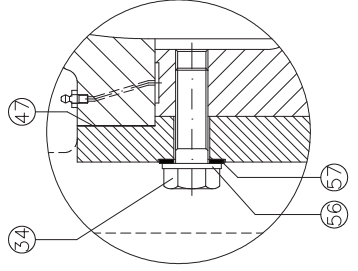
DETAIL A
(Schaal 1:2)



DETAIL B
(Schaal 1:2)



DETAIL C
(Schaal 1:2)



DETAIL D
(Schaal 1:2)

SAMENSTELLING HK700 - TW700G (nieuw)
(Voorzien van nieuwe zuigmond + slijtring)

		P.O. Box 14 8390 AA Noordwolda, Holland Tel. +31 (0)61 - 43179 Telek. +31 (0)61 - 43768	
scale	1:5	checked	1
projection	AB	approved	1
drawing no.	111297-01	rev.	A



C18 ACERT™ Industrial Engine

Tier 3/Stage IIIA
429 bkW/575 bhp @ 2100 rpm

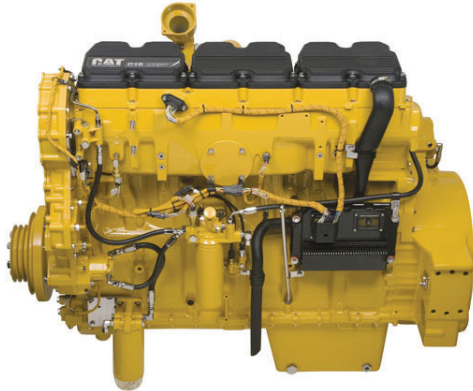


Image shown may not reflect actual engine

CATERPILLAR ENGINE SPECIFICATIONS

I-6, 4-Stroke-Cycle Diesel

Bore.....	145.0 mm (5.71 in)
Stroke.....	183.0 mm (7.2 in)
Displacement.....	18.1 L (1,104.53 in ³)
Aspiration.....	Turbocharged Aftercooled
Compression Ratio.....	16.3:1
Rotation (from flywheel end).....	Counterclockwise
Weight, Net Dry (approximate).....	1769 kg (3900 lb)

FEATURES

Emissions & Regulations

Meets U.S. EPA Tier 3, EU Stage IIIA and China Stage II emissions requirements.

Worldwide Supplier Capability

Caterpillar
- Casts engine blocks, heads, cylinder liners, and flywheel housings
- Machines critical components
- Assembles complete engine
- Factory-designed systems built at Caterpillar ISO 9001:2000 certified facilities
Ownership of these manufacturing processes enables Caterpillar to produce high quality, dependable product.

Testing

Prototype testing on every model:
- proves computer design
- verifies system torsional stability
- functionality tests every model

Every Caterpillar engine is dynamometer tested under full load to ensure proper engine performance.

Full Range of Attachments

Wide range of bolt-on system expansion attachments, factory designed and tested.

Unmatched Product Support Offered Through Worldwide Caterpillar Dealer Network

More than 1,800 dealer outlets
Caterpillar factory-trained dealer technicians service every aspect of your industrial engine
99.7% of parts orders filled within 24 hours worldwide
Caterpillar parts and labor warranty
Preventive maintenance agreements available for repair before failure options

Scheduled Oil Sampling program matches your oil sample against Caterpillar set standards to determine:

- internal engine component condition
- presence of unwanted fluids
- presence of combustion by-products

Web Site

For all your industrial power requirements, visit www.cat-industrial.com.



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STANDARD ENGINE EQUIPMENT

Air Inlet System

Turbocharged Aftercooled -- 429-470 bkW (575-630 bhp)
Twin Turbocharged Aftercooled -- 522-597 bkW (700-800 bhp)
ATAAC

Charging System

Charging alternator 24 volt, 50 amp

Control System

Electronic governing
PTO speed control
Programmable ratings
Cold mode start strategy
Automatic altitude compensation
Power compensation for fuel temperature
Programmable low and high idle and total engine limit
Electronic diagnostics and fault logging
Engine monitoring system
J1939 Broadcast (diagnostic and engine status)
ADEM™ A4

Cooling System

Thermostats and housing, vertical outlet
Jacket water pump, centrifugal
Water pump, inlet

Exhaust System

Exhaust manifold, dry
Optional exhaust outlet

Flywheels and Flywheel Housing

SAE No. 1 Flywheel housing

Fuel System

MEUI injection
Fuel filter, secondary (2 micron high performance)
Fuel transfer pump
Fuel priming pump
ACERT™ Technology

Lube System

Crankcase breather
Oil cooler
Oil filler
Oil filter
Oil pan front sump
Oil dipstick
Oil pump (gear driven)

General

Paint, Caterpillar Yellow
Vibration damper
Lifting eyes



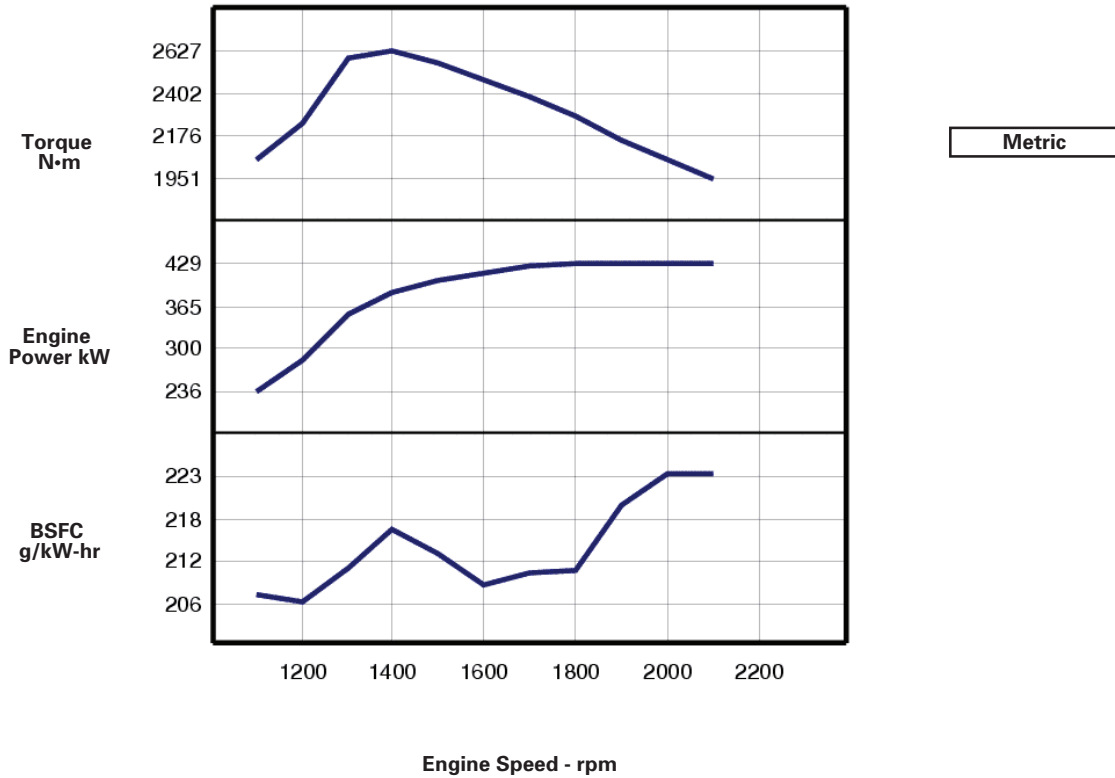
**C18 ACERT™
Industrial Engine**

Tier 3/Stage IIIA

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PERFORMANCE CURVES

IND - A (Continuous) - DM7698-01



Engine Speed rpm	Engine Power kW	Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr
2100	429	1951	223	114.0
2000	429	2048	222.9	114.0
1900	429	2156	218.9	112.0
1800	429	2276	210.6	107.7
1700	424	2382	210.2	106.2
1600	415	2477	208.7	103.2
1500	402	2562	212.9	102.1
1400	385	2627	215.7	99.0
1300	353	2594	210.9	88.8
1200	282	2242	206.5	69.3
1100	236	2047	207.7	58.4



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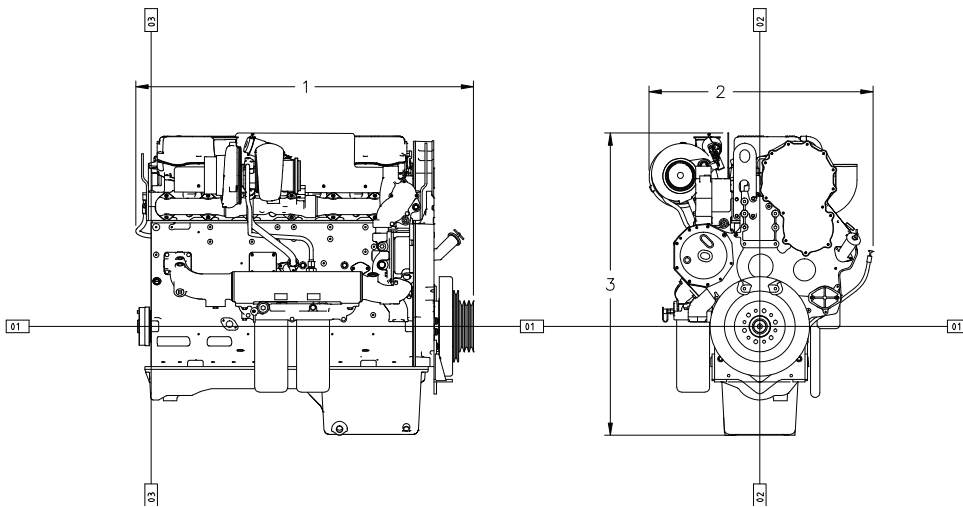
RATINGS AND CONDITIONS

IND - A (Continuous) Continuous heavy duty service where the engine is operated at maximum power and speed up to 100% of the time without interruption or load cycling.

Engine Performance Diesel Engines — 7 liter and higher

All rating conditions are based on SAE J1995, inlet air standard conditions of 99 kPa (29.31 in. Hg) dry barometer and 25°C (77°F) temperature.

Performance measured using a standard fuel with fuel gravity of 35° API having a lower heating value of 42,780 kJ/kg (18,390 btu/lb) when used at 29° C (84.2° F) with a density of 838.9 g/L.



Engine Dimensions	
(1) Length	1388.2 mm
(2) Width	920.7 mm
(3) Height	1242.8 mm

Note: Do not use for installation design. See general dimension drawings for detail (Drawing # 2588747).

Performance Number: DM7698-01

Feature Code: C18DI00 Arr. Number: 2371955

Materials and specifications are subject to change without notice.

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