Technical Data

Measurements

Machine dimensions (mm)	HA30/HA30A	HA45/HA45A
Total length	9515	10590
Total width (with standard tyres)	2990	3475
Total width (with optional tyres)	2976	3475
Total height	3604	3850
Overhang, front	2605	2775
Overhang, rear	1024	1410
Wheelbase	1771	1960
Body upper height (rear edge)	2946	3355
Body floor height (rear edge)	2100	2390
Total height, raised body	5885	6680
Ground clearance, raised body	610	763
Ground clearance	567	643
Min. ground clearance, loaded	549	606
Turning radius (ISO 7457)	7680	8420
Body tipping angle	70°	70°
Steering angle, both sides	45°	45°
Standard tyre dimension	23.5 R25	29.5 R25
Tyre load/speed index	195A/185B (2 stars)	216A2/200B (2 star)
Machine weights (kg)		
Empty weight	23200	30100
Gross weight	51200	71100
Maximum payload	28000	41000
Weight distribution (kg)		
Front axle empty	12650	14200
Rear axle empty	10350	15900
Body capacity (m^3)		
Loaded (with / without tailgate)	14.2/13.6	20.4/19.6
Heaped, SAE 2:1 (with / without tailgate)	17.8/16.8	26/24.4
Machine speed (km/h)		
Forward speeds (1/2/3/4/5/6/7/8)	6/8/11/16/23/32/45/55/	6/9/12/17/24/34/48/55
Reverse speeds (1/2/3/4)	6/8/11/16	6/9/12/17
Towing load on hooks (kN)		
Front	100 (each)	100 (each)
Rear	200	200
Sound power level, dB (A)		
According to ISO 6395 (external)	107	107
Sound pressure level, dB (A)		
According to ISO 6396 (in cab)	72	72
Ambient operating temperature (°C)		
Min. (-)	- 25	- 25
Max. (+)	+45	+45

The measurements are valid for a standard, unloaded machine if nothing else is given.

Engine

1 kW = hp / 1,36

Water cooled, unit injected (T2) and extra high pressure injection (T4F) diesel engine with turbo charger and air to air intercooler.

Engine	HA30/HA30A - T2F/T4F/ Stage V	HA45/HA45A - T2F // T4F/ Stage V	HA45 T3
Type	Scania DC09 074A/DC09 086A/ DC09 313A	Scania DC13 074A//DC13 085A/ DC13 313A	Scania DC13 076A
Cylinder volume	9.3 liters	12.7 liters	
Bore x stroke	130 x 140 mm	130 x 160 mm	
No. of cylinders	5 (in line)	6 (in line)	
Power rating (ISO3046)	276 kW (375hp)	368 kW (500hp)	331 kW (450hp)
Power rating (ISO9249)	270 kW (367hp)	360 kW (489hp)	322 kW (438hp)
Max. torque (Nm)	1873/1876 (StageV)	2373/2476 (StageV)	2007
Engine speed, low idle	Set to 720 rpm ±20		
Engine speed, high idle	Set to 2280 rpm ±20		
Max. allowed engine speed	2400 rpm		
Oil capacity	33,5 liters	45 liters	
Oil pressure Normal with the warm engine, operating speed	3-6 bar		
Oil pressure Normal with the warm engine, minimum permitted at idling speed	Min. 0,7	Min. 1.0 bar	
Specific oil consumption	<0.3 g/kWh		
Coolant volume	45 liters (approx.)	50 liters (approx.)	
Normal temperature	70-90°C	70-93°C	
Thermostat	83°C	83°C	
Max. system pressure	0.5 bar		
Compression ratio	16:1(T2) / 17:1(T4) / 19:1(StageV)	17,3:1(T2/T3) / 21,3:1(T4/StageV)	
Firing order	1-2-4-5-3	1-5-3-6-2-4	
Engine rotation, seen from rear	Counter clockwise		
Valve clearance (cold engine)	0.45 mm, inlet valves 0.70 mm, exhaust valves		

Transmission

Automatic transmission. Integrated in the gearbox: torque converter, automatic lock-up clutch, retarder brake and lockable inter axle differential.

Transmission	HA30/HA30A	HA45/HA45A
Type	ZF 8EP-320	ZF 8EP-420
No. of forward gears	8	
No. of reverse gears	4	
Oil capacity	67 liters	68 liters
Normal temperature	50-105°C	
Max. permitted temp. when using retarder brake	125°C (short period only)	
Lock -up clutch	In all gears	
Lock-up in/out	Depending on the engaged mode	
Inter axle diff. distribution	1/3 to front axle, 2/3 to rear axle, lockable	

Hydraulic system

HA30/HA30A - HA45/HA45A

The system has one variable displacement piston pump. Pump supplies steering, tilting, fan and brakes system, where the steering circuit has priority.

The main and emergency steering pumps are installed on the transmission.

Hydraulic system	**HA30/HA30A**	**HA45/HA45A**
Tank capacity	63 ± 8 l	63 ± 8 l
Normal oil temperature	40-90°C	
Filter	One return flow filter	
Pump	1 variable displacement axial piston pump	
Steering/tipping	308 l/min at 2200rpm	
Emergency steering pump	Piston pump, ground driven, speed dependent	
Pump delivery	Max. 50 l/min	
Pressure settings - main safety valves		
Tipping circuit- up (pump setting)	280 bar	
Tipping circuit- down (pump setting)		
Shock valves in the tip circuit	300 bar (up), 80 bar (down)	
Steering circuit	210 bar	
Tipping cylinders	2 x Single stage, double acting	
Steering cylinders	2 x Single stage, double acting	
Steering wheel turns	Approx. 5	

Tire pressures

Basic pressure for cold tires (based on max. load and max. speed):

Model	Type	Front (bar {psi})	Rear (bar {psi})
		max. 50 km/h	max. 50 km/h
HA30/HA30A(23.5)	Bridgestone VLT/VLTS	4.75 {68.9}	5.00 {72.5}
	Continental (EM Master)	4.75 {68.9}	5.00 {72.5}
	Goodyear (TL-3A/GP-4D)	4.00 {58}	4.50 {65.3}
	Michelin (XADAN)	4.50 {65.3}	4.75 {68.9}
	Michelin (Xtra Defend)	4.00 {58}	4.30 {62.4}
	Techking (ETLT/ETADT/ET6A/PROADT)	4.50 {65.3}	5.25 {76.1}
HA30/ HA30A(750/65)	Bridgestone (VLT/VLTS)	3.75 {54.4}	4.00 {58}
	Goodyear (TL-3A/GP-4D)	3.25 {47.1}	3.50 {50.8}
	Michelin (XAD65)	3.00 {43.5}	3.25 {47.1}
	Techking (ETADT)	4.75 {68.9}	4.75 {68.9}
HA45/HA45A(29.5)	Bridgestone VLT/VLTS	3.75 {54.4}	4.50 {65.3}
	Continental (EM Master)	3.75 {54.4}	4.50 {65.3}
	Goodyear (TL-3A/GP-4D)	3.75 {54.4}	4.75 {68.9}
	Michelin (XADAN/X Super Terrain-)	3.75 {54.4}	4.40 {63.8}
	Michelin (Xtra Defend)	3.30 {47,9}	4.00 {58}
	Techking (ETLT/ETADT/ET6A/PROADT)	4.50 {65.3}	5.25 {76.1}
HA45/ HA45A(875/65)	Bridgestone VLT/VLTS	3.00 {43.5}	3.75 {54.4}
	Goodyear (TL-3A/GP-4D)	2.75 {39.9}	3.25 {47.1}
	Michelin (XAD65)	2.50 {36.3}	3.00 {43.5}
	Techking (ETADT)	4.75 {68.9}	4.75 {68.9}

Regarding Tire pressure: Contact your Hyundai Dealer or Tire supplier to get further information.

Electrical System

Voltage

The truck has a 24V system. The battery ÷ is used as ground connection.

Supply

Two batteries, each 12V/140Ah, are connected together in serial connection to provide the system with 24V. The batteries are located on the left hand side of the fender. A 28V/100A alternator is used to charge the batteries. The alternator is located on the front of the engine.

Battery main switch

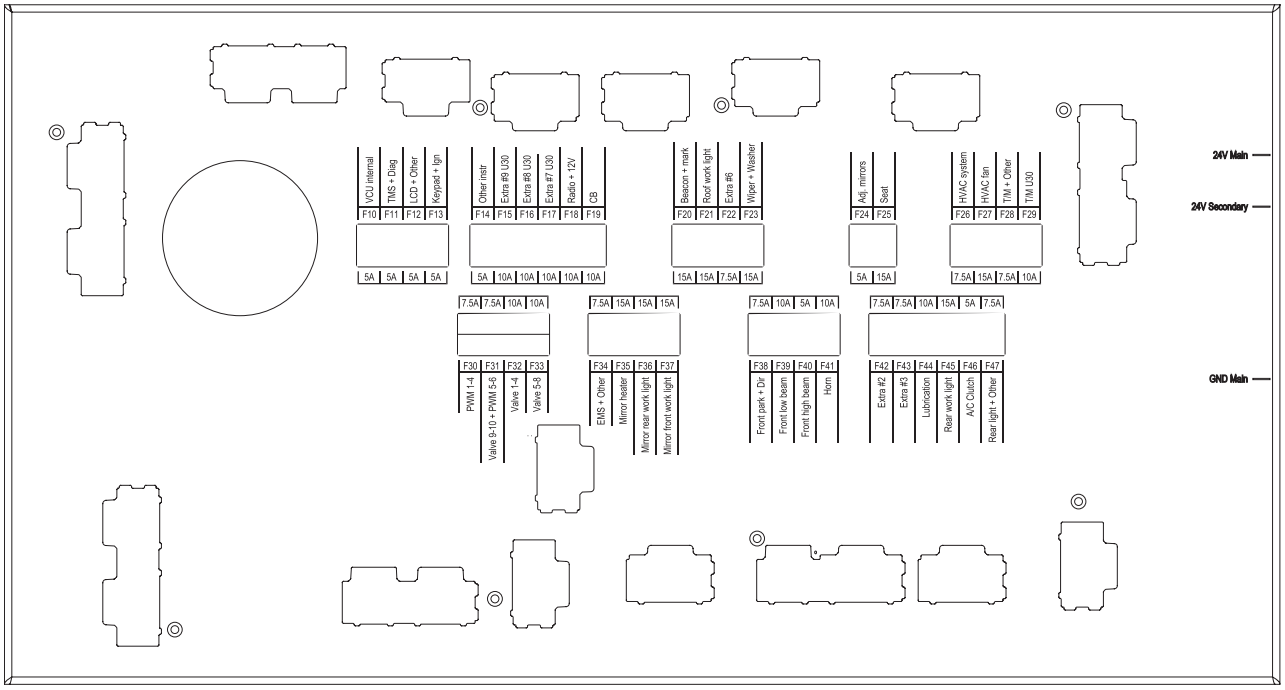
A main switch is connected to the battery + supply cabel. The battery main switch is located in the left hand side fender.

Fuses

The fuses are located on the VCU3 inside the cab, behind the cover on the back wall + “junction” box in front left fender.

VCU (Control unit)

The VCU powers the control panel and the HVAC unit. It can also activate the A/C compressor clutch when the control panel signals this and both pressure and evaporator temperature allow it.



For the parts please use the spare parts catalogue.

For more specific technical informations please refer to Shop Manual

Metering conversion table

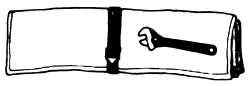
Length:	1 m	=	1.094 yd	=	3.281 ft	=	39.37 in
	1 km	=	1000 m	=	0.621 mile		
Volume:	1 dm^3	=	1 litre	=	0.264 gal (US)	=	0.220 gal (UK)
	1 dm^3	=	0.0353 ft^3	=	61.02 in^3		
	1 m^3	=	35.32 ft^3				
Weight:	1 kg	=	2.20 lb	=	35.27 oz		
	1000 kg	=	1 ton (metric)	=	0.984 ton (UK)	=	0.902 ton (US)
Power:	1 kW	=	1.34 hp (British)				
		=	1.36 hp (Metric)				
Torque:	10 Nm	=	1.02 kpm	=	7.38 lbf ft (pound-force foot)		
Pressure:	1 bar	=	1.02 kp/cm^2	=	14.5 p.s.i.	=	100 kPa
Temperature:	°C	=	5/9 x (°F- 32)				
	°F	=	(9/5 x °C)+32				
Speed:	1 km/h	=	0.62 mph				

Tool kit content (standard)

- Operation manual
- Safety support (tiltable body)
- Draining hose
- Basic driving instruction
- Parts catalogue and Operation Manual USB
- Lever for lifting cab

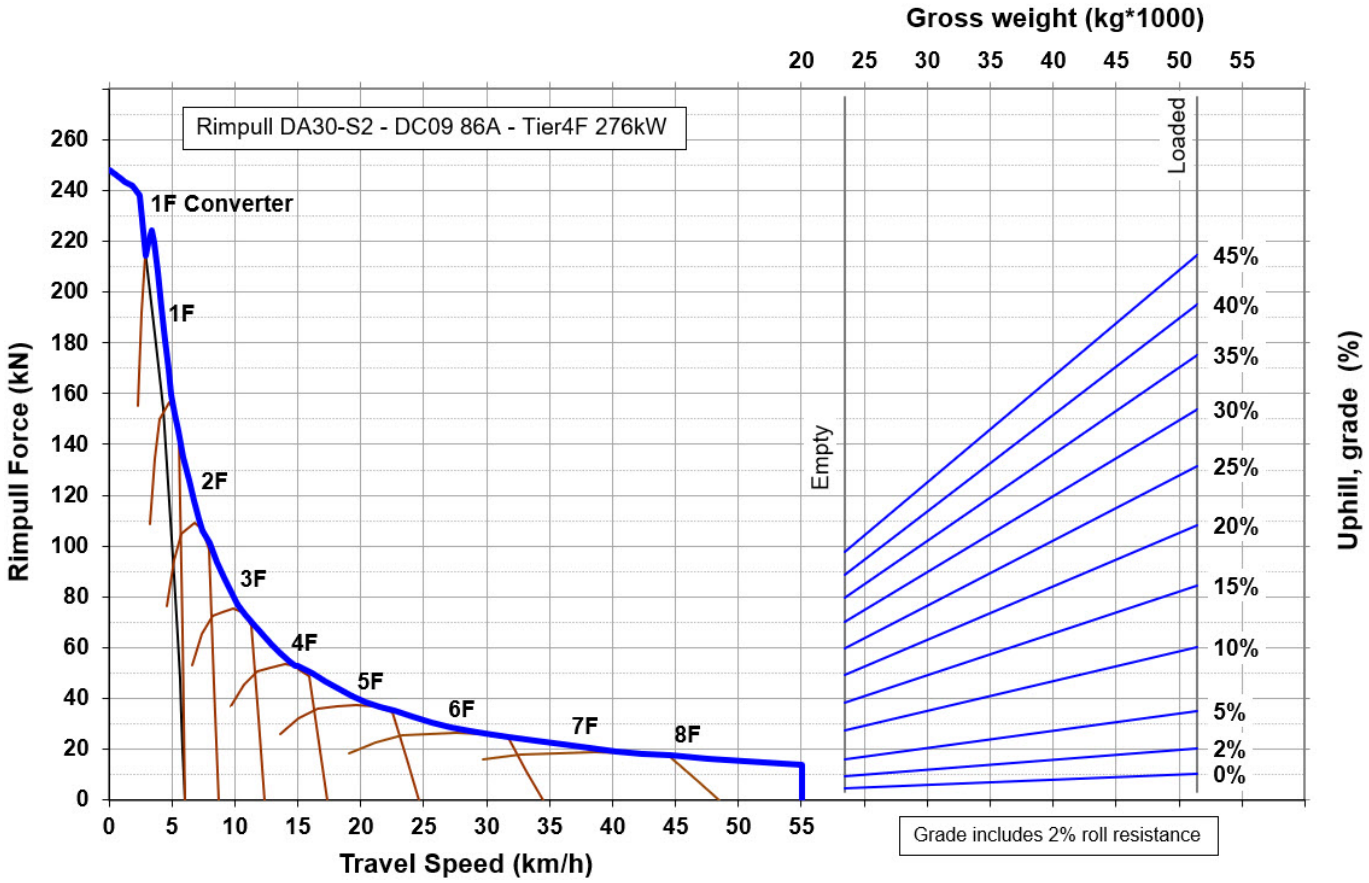
Tool kit content (optional)

- Hex. sockets 10,12,17,22 mm
- Socket 30 mm
- Long socket 32 mm
- Grease gun
- Extension arm 200 mm
- Extension arm 470 mm
- Handle 510 mm
- Toggle joint

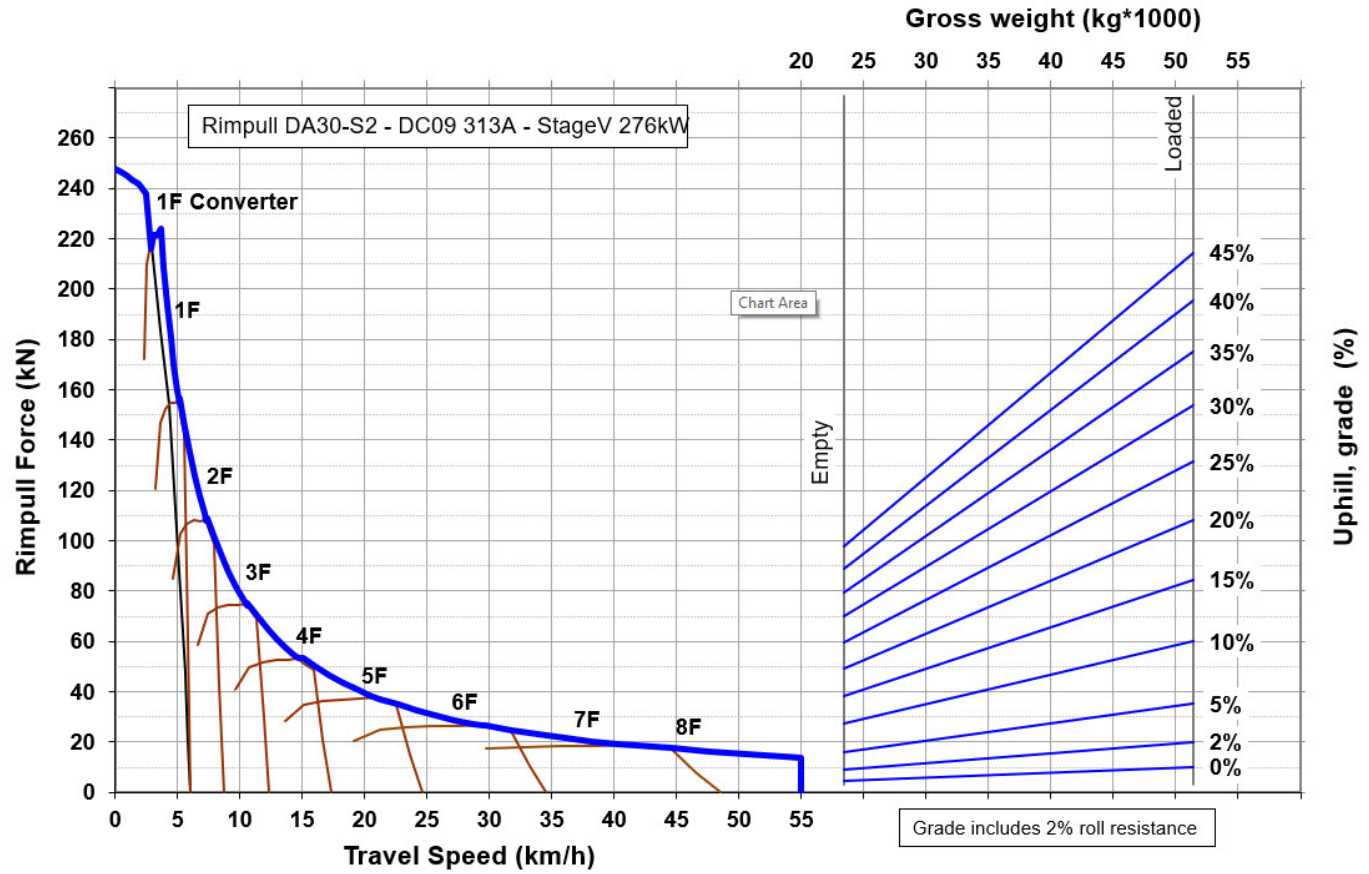


Rimpull Performance

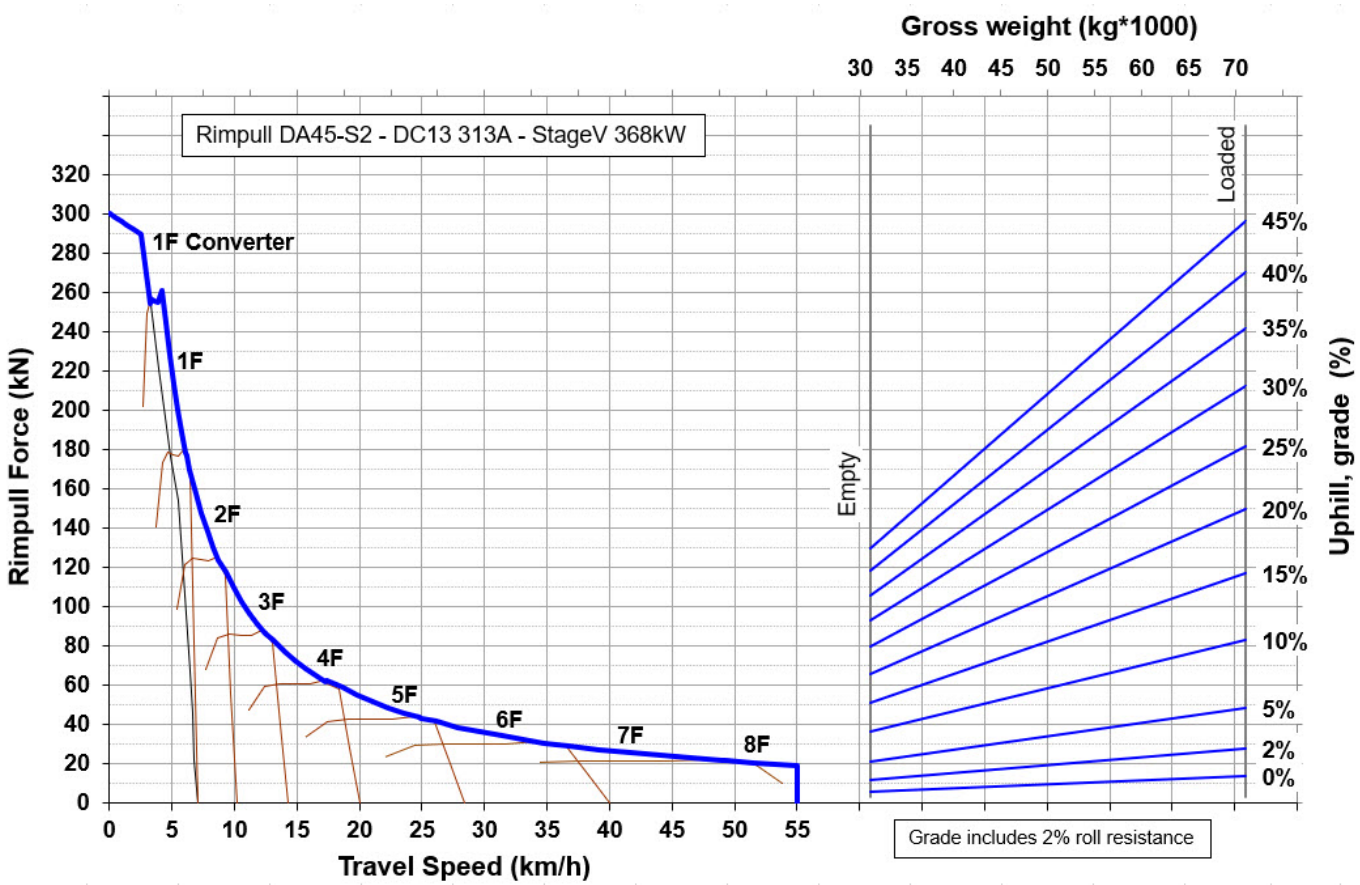
HA30



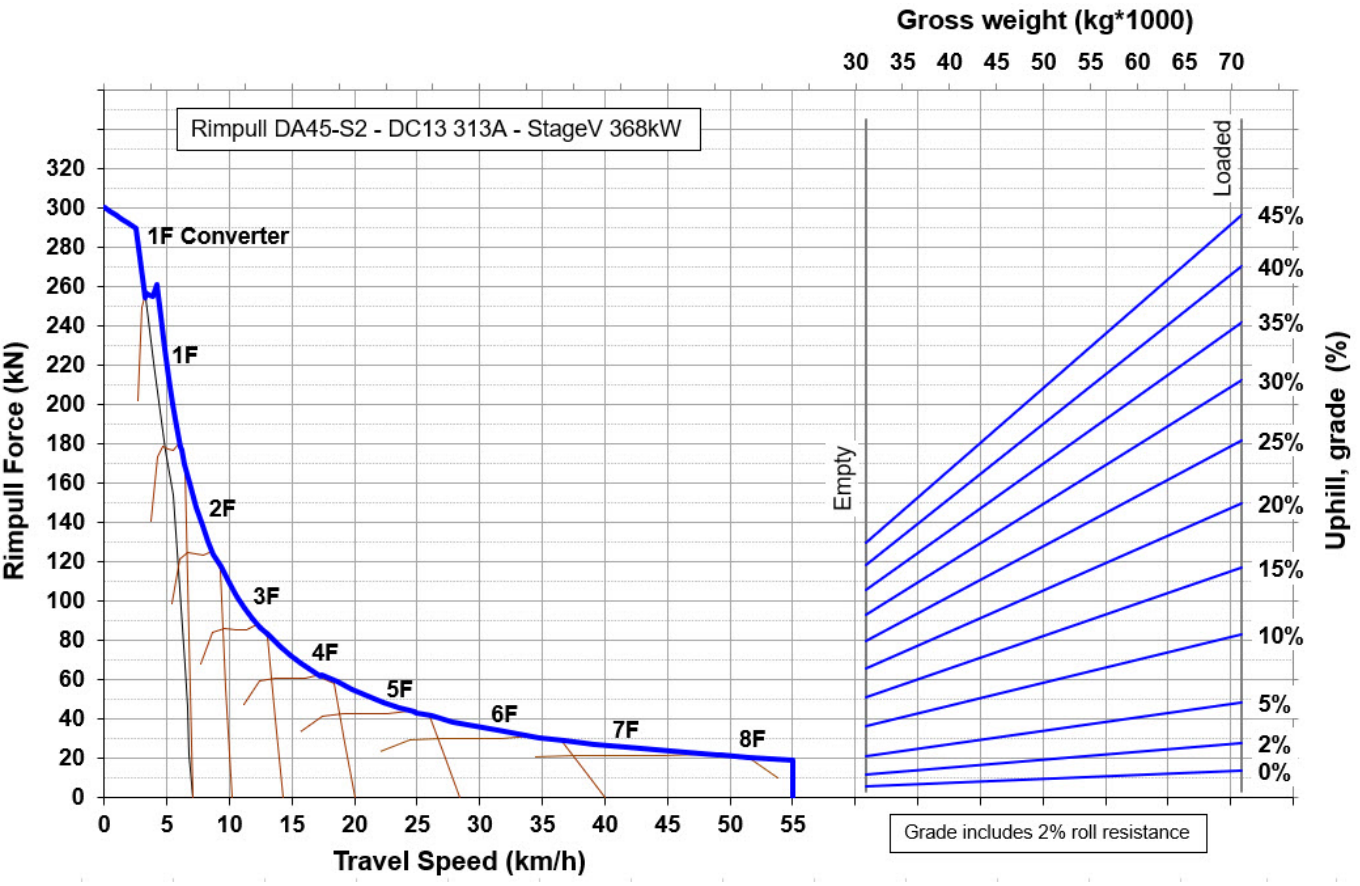
HA30A



HA45

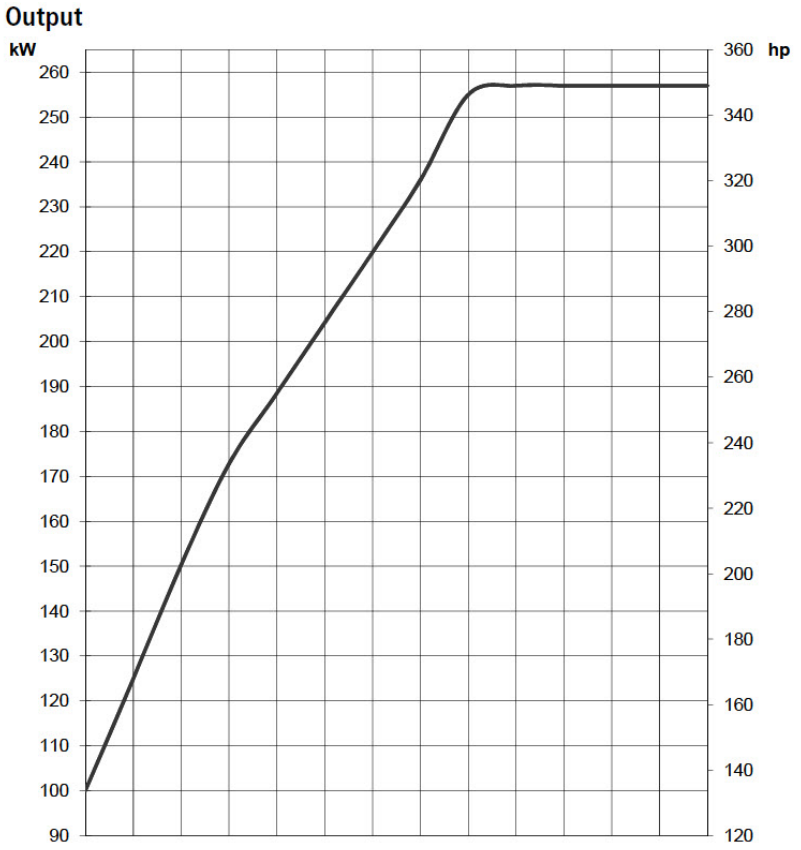

Gross weight (kg*1000)
30 35 40 45 50 55 60 65 70
Rimpull DA45-S2 - DC13 313A - StageV 368kW
Rimpull Force (kN)
320 300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0
1F Converter
1F
2F
3F
4F
5F
6F
7F
8F
0 5 10 15 20 25 30 35 40 45 50 55
Travel Speed (km/h)
Empty
Loaded
45%
40%
35%
30%
25%
20%
15%
10%
5%
2%
0%
Uphill, grade (%)
Grade includes 2% roll resistance

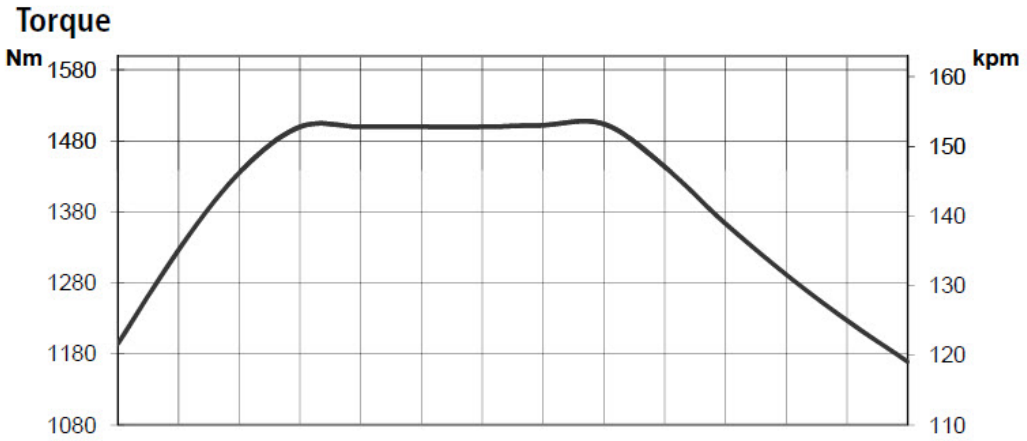
HA45

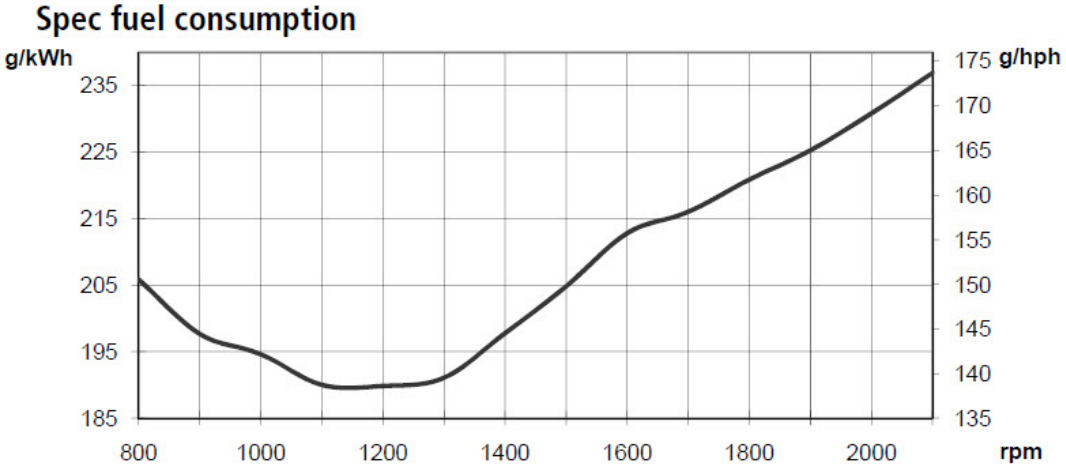

Gross weight (kg*1000)
30 35 40 45 50 55 60 65 70
Rimpull DA45-S2 - DC13 313A - StageV 368kW
Rimpull Force (kN)
320 300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0
1F Converter
1F
2F
3F
4F
5F
6F
7F
8F
0 5 10 15 20 25 30 35 40 45 50 55
Travel Speed (km/h)
Empty
Loaded
45%
40%
35%
30%
25%
20%
15%
10%
5%
2%
0%
Uphill, grade (%)
Grade includes 2% roll resistance

Output, Torque , fuel consumption

HA30 T2

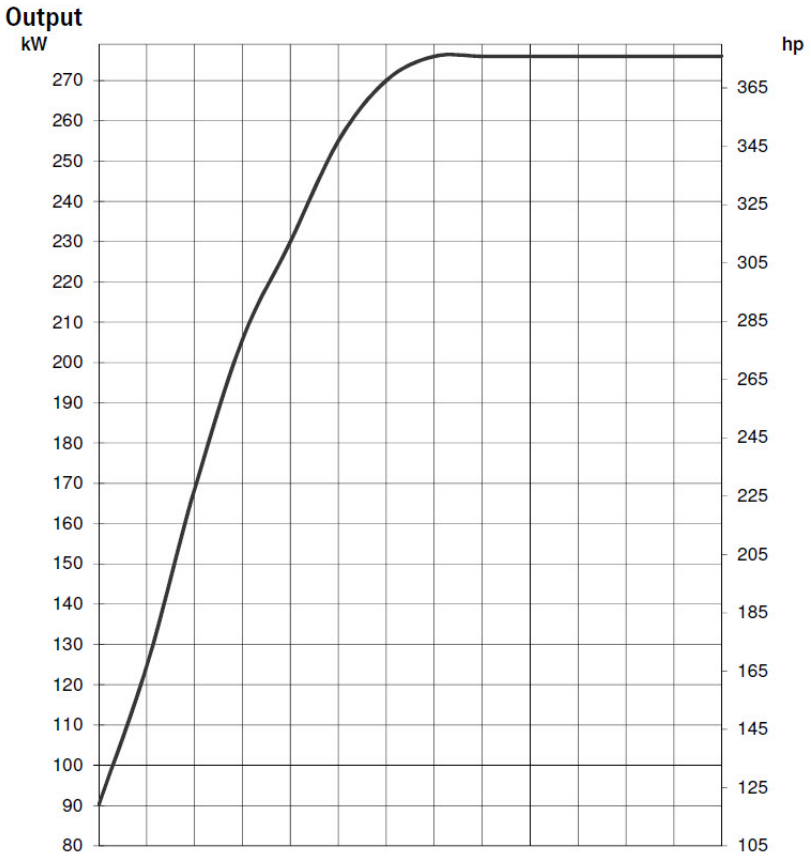


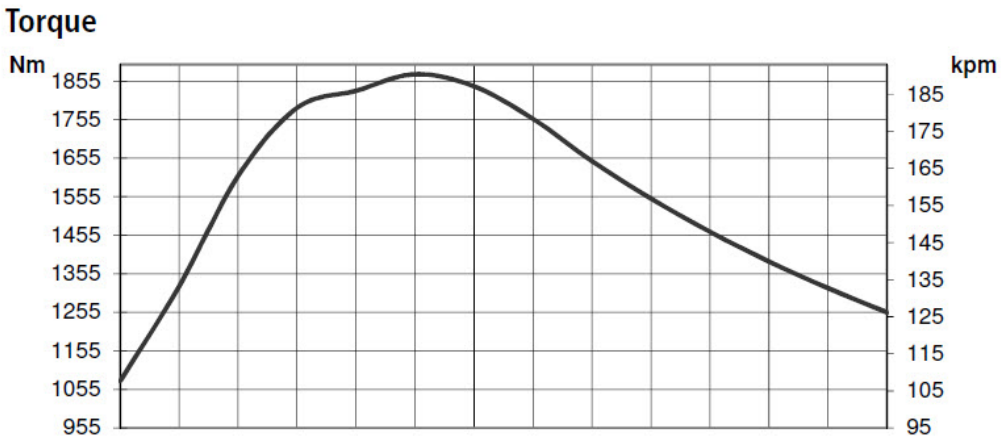


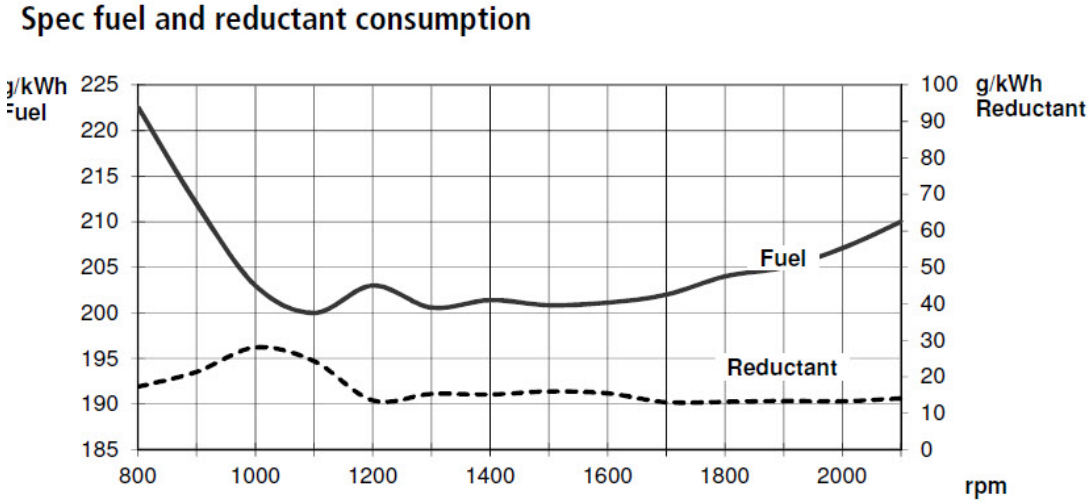


Output, Torque , fuel consumption

HA30 T4F



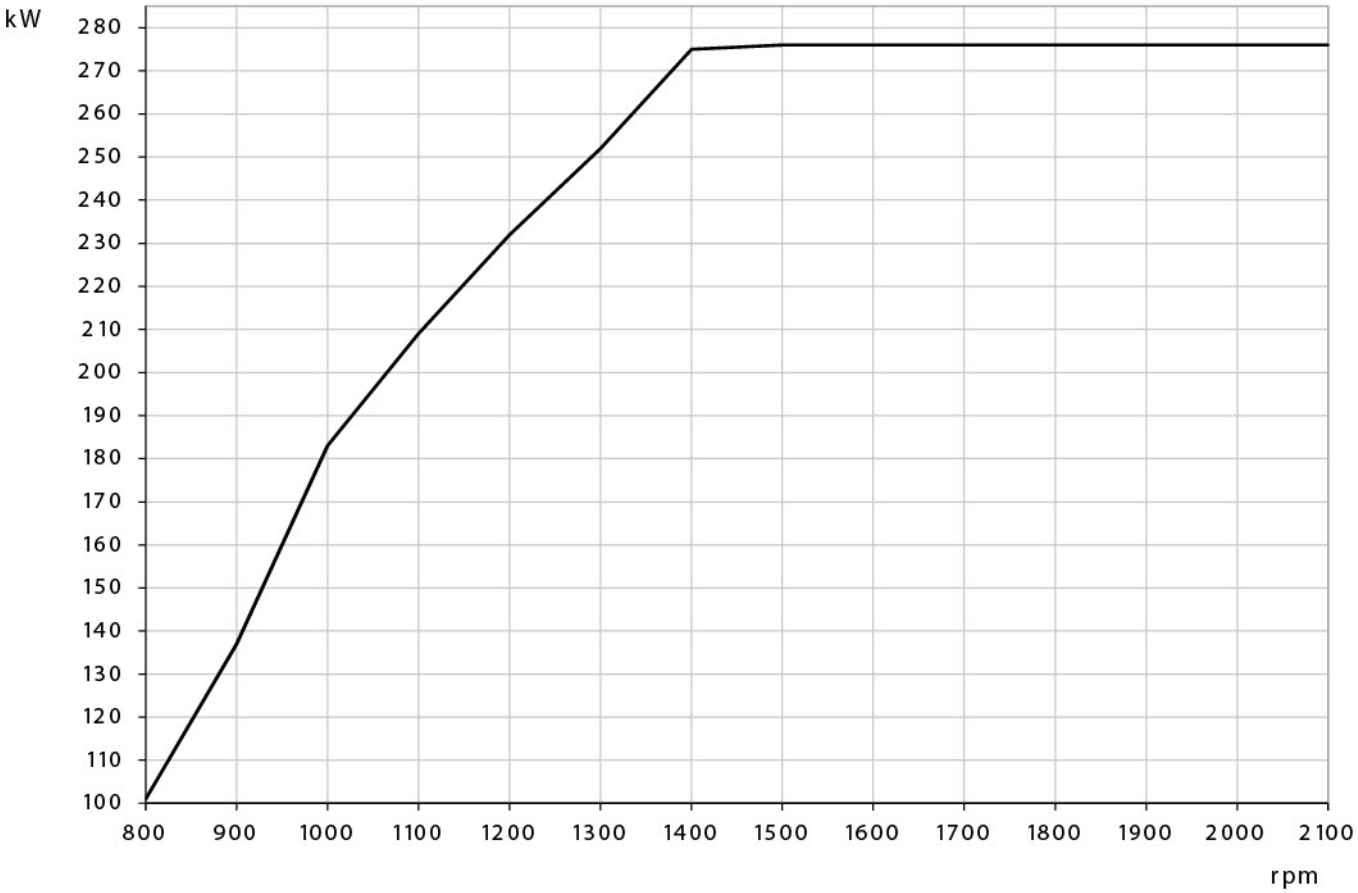




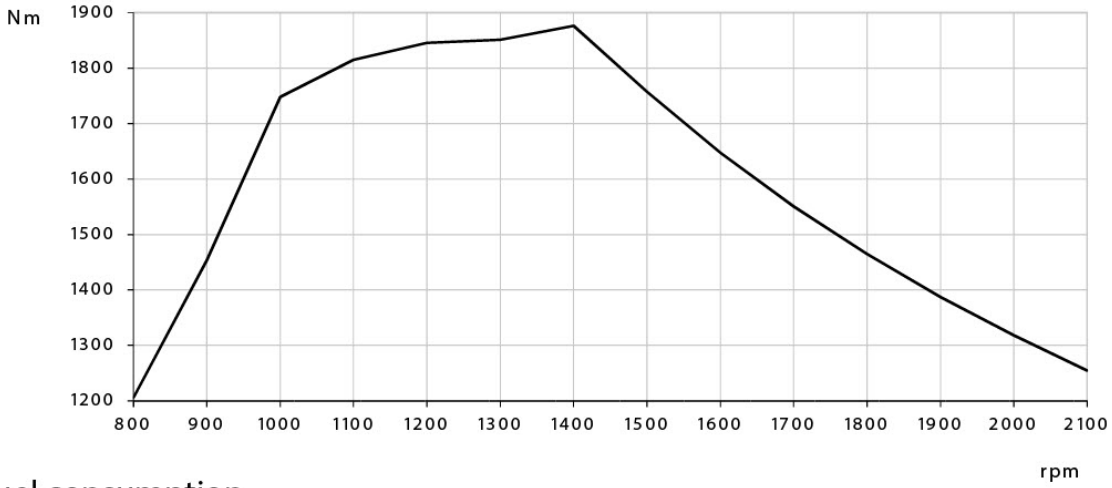
Output, Torque , fuel consumption

HA30 Stage V

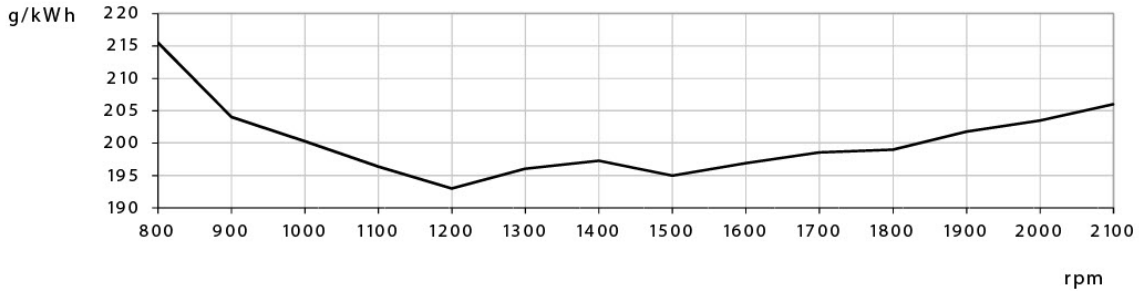
Power



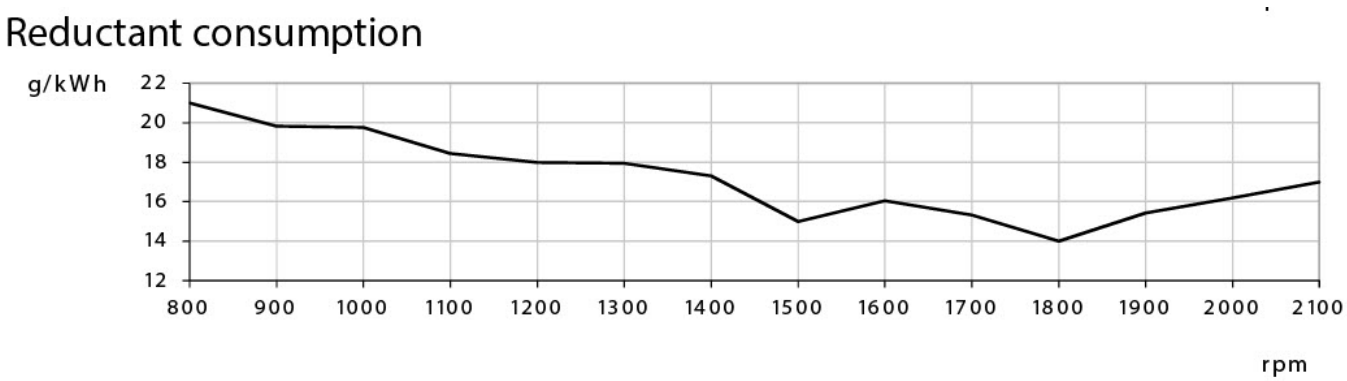
Torque



Fuel consumption



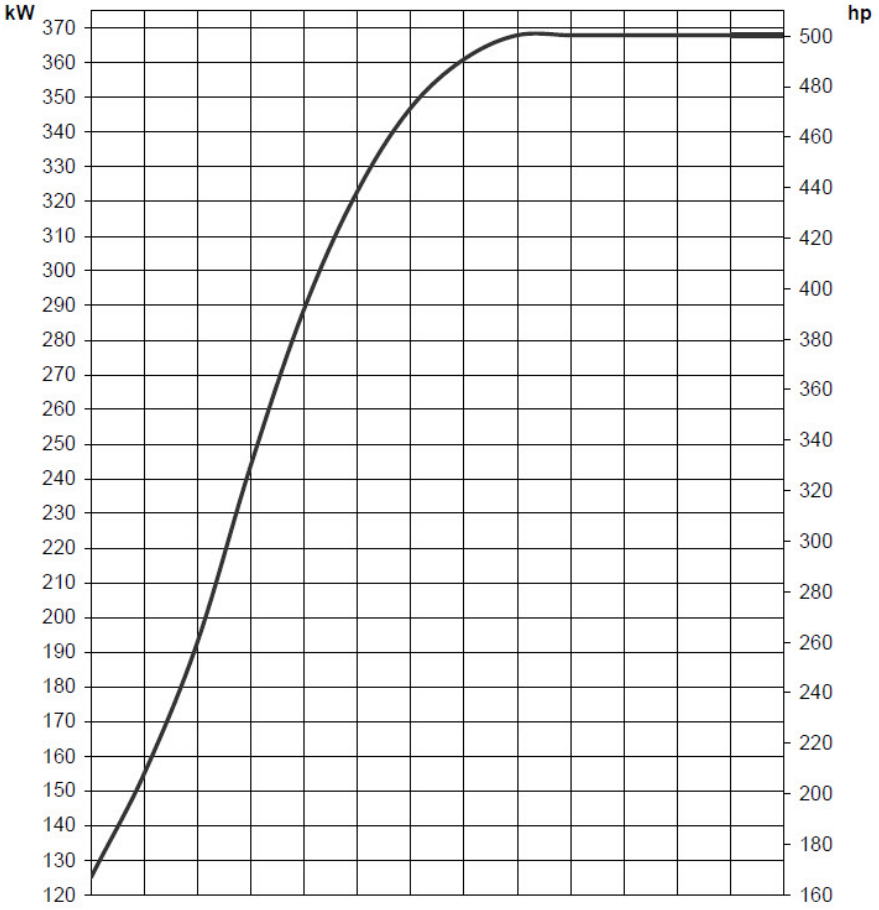
Output, Torque , fuel consumption



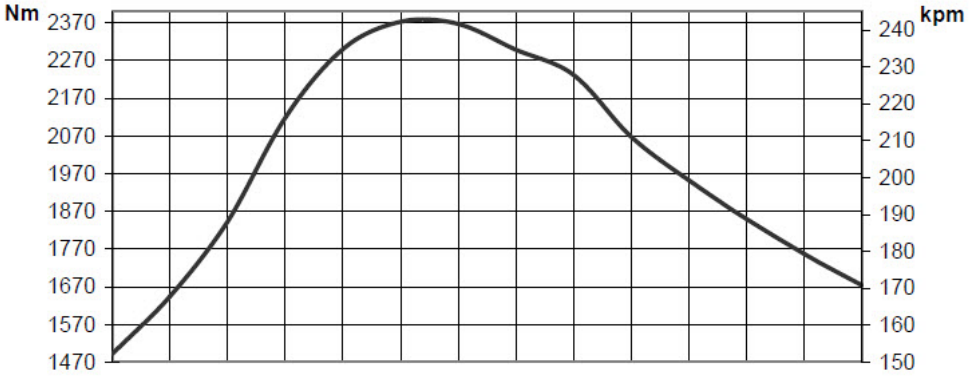
Output, Torque , fuel consumption

HA45 T2/T3

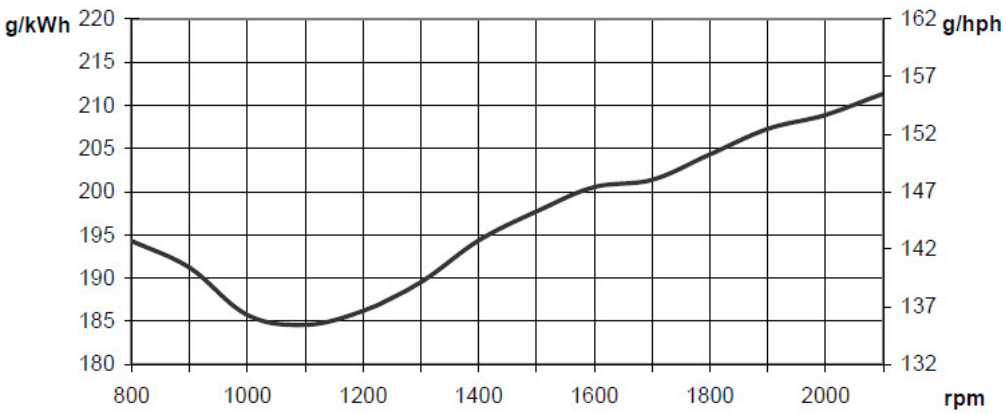
Output



Torque



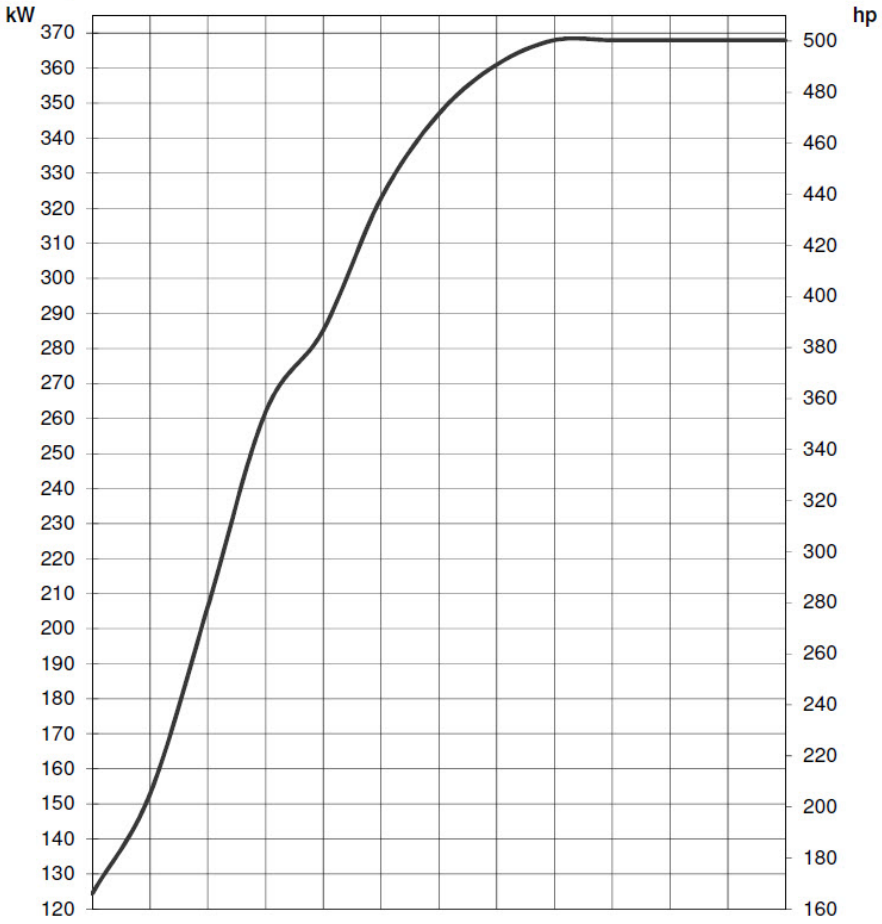
Spec fuel consumption



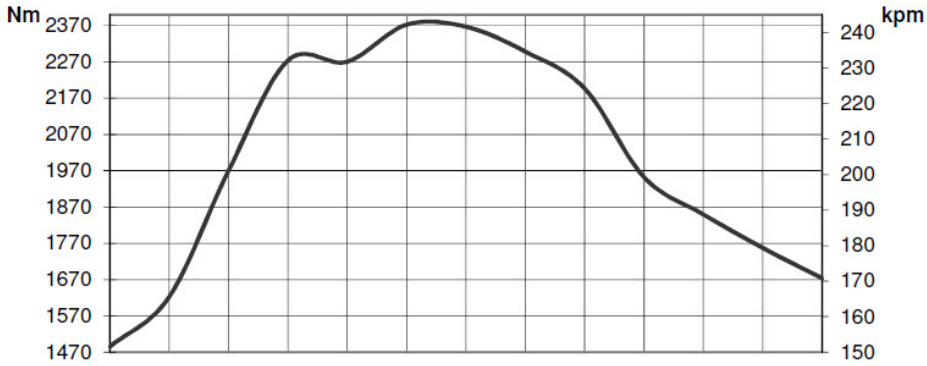
Output, Torque , fuel consumptio

HA45 T4F

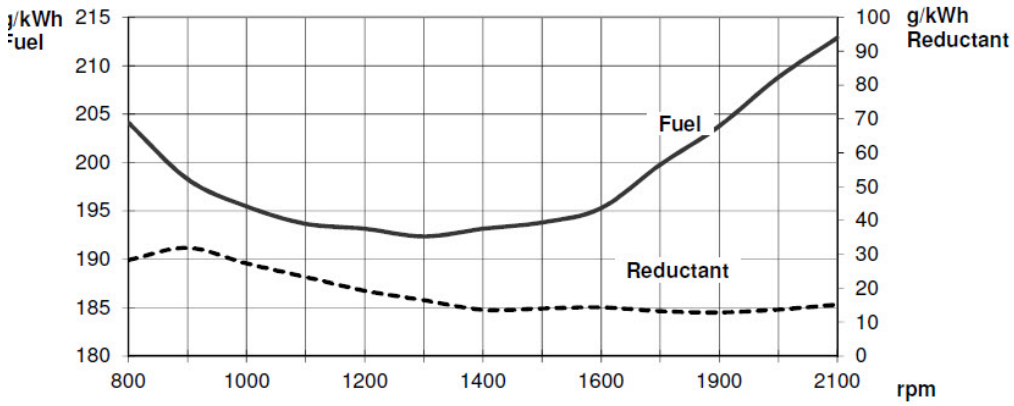
Output



Torque



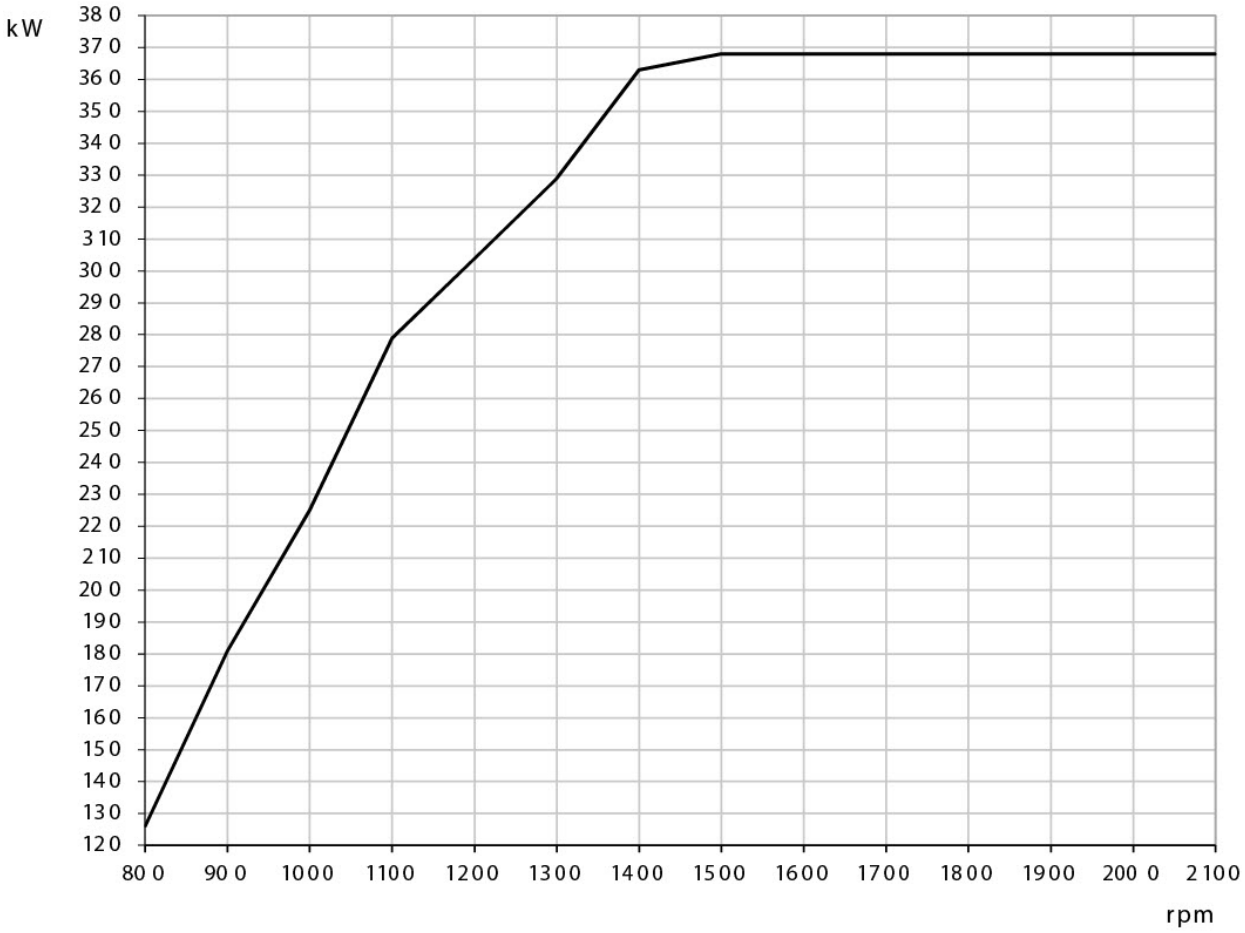
Spec fuel and reductant consumption



Output, Torque , fuel consumption

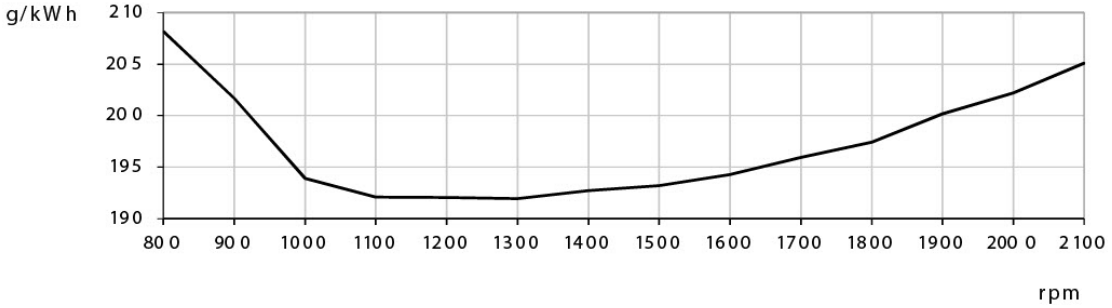
HA45 Stage V

Power



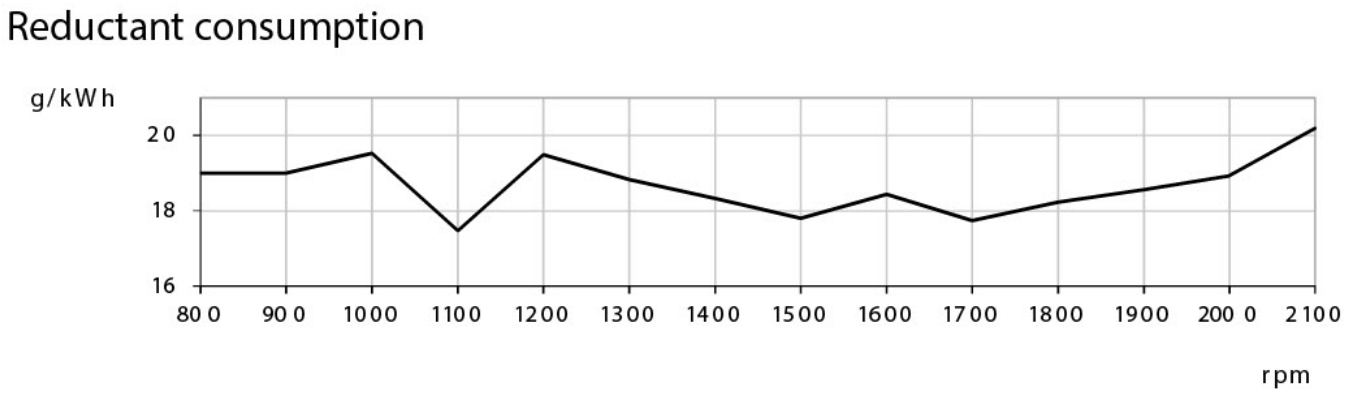
Torque

Fuel consumption



Output, Torque , fuel consumption

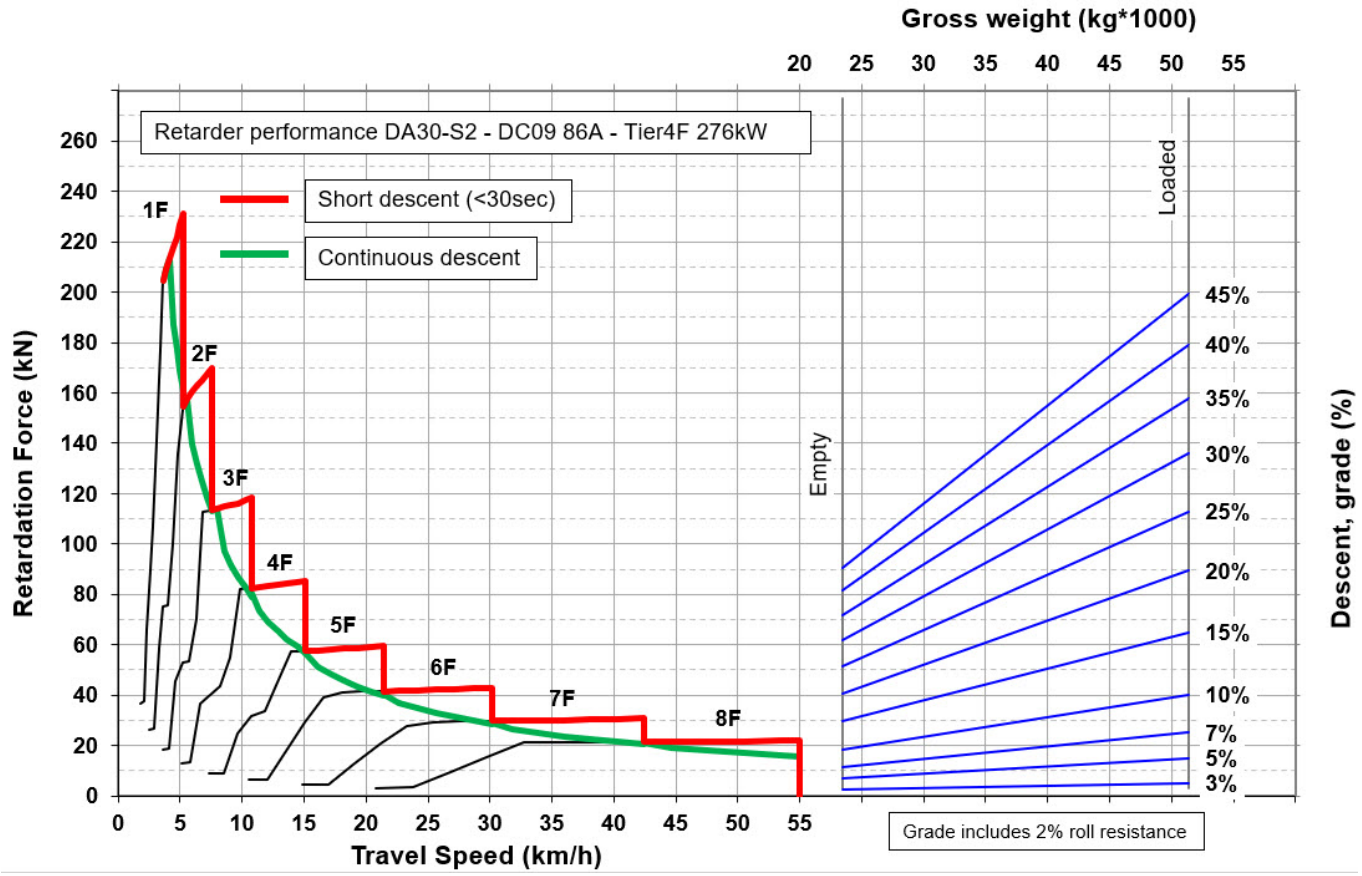
HA45 Stage V



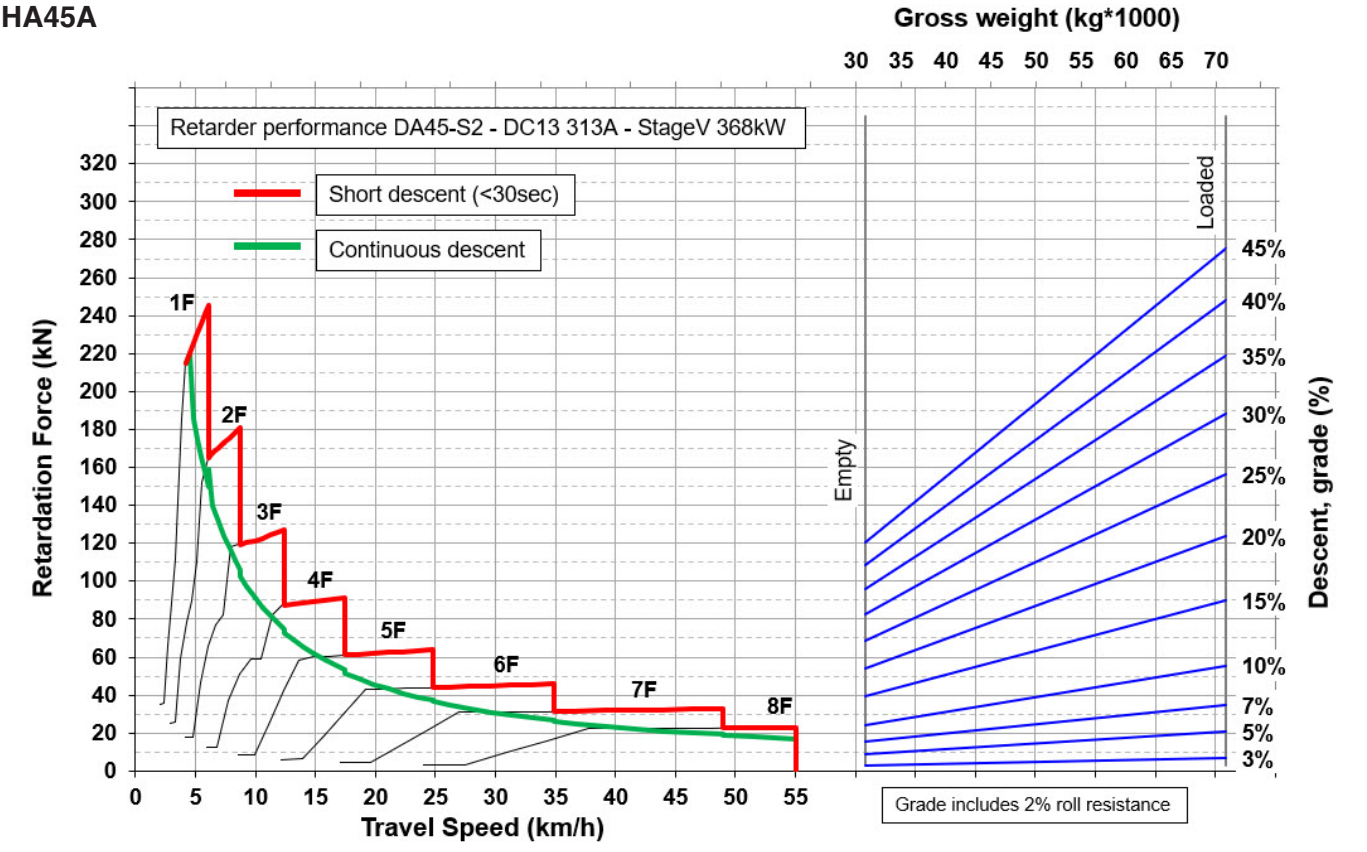
Retarder brake capacity chart

Below diagram gives guidelines for calculation of the dump truck retarder brake performance related to rolling grade. The traction capabilities depend on the ground conditions and surroundings, i.e. available wheel grip (friction), tire pattern, weight on the wheels, etc. If the driving conditions (f.ex curves) requires hard decelerating by using the main brake, driving in a lower gear is advised.

HA30A



HA45A



Torque limits for bolts

This tables indicates standard torque limits in Nm for the various screw and bolt qualities and dimensions. The torques are valid for screws on the outside of the components.

Metric Threads

Dim./Class	8.8	10.9	12.9
M8	24	33	40
M10	47	65	79
M12	81	114	136
M14	128	181	217
M16	197	277	333
M18	275	386	463
M20	385	541	649
M22	518	728	874
M24	665	935	1120
M27	961	1350	1620
M30	1310	1840	2210
M33	1770	2480	2980
M36	2280	3210	3850

Fine Metric Threads

Dim./Class	8.8	10.9	12.9
M8 x 1	25	35	42
M10 x 1.25	48	68	81
M10 x 1	49	70	84
M12 x 1.5	83	117	140
M12 x 1.25	85	120	144
M14 x 1.5	135	190	228
M16 x 1.5	204	287	344
M18 x 1.5	294	413	496
M20 x 1.5	408	574	688
M22 x 1.5	546	768	921
M24 x 2	696	979	1170
M27 x 2	1000	1410	1690
M30 x 2	1390	195 0	2340
M33 x 2	1860	2610	3130
M36 x 3	2350	3310	3970

UNF - Threads

Dim./Class	8.8	10.9	12.9
3/8" UNF	41	59	73
7/16" UNF	66	93	115
1/2" UNF	99	141	175
9/16" UNF	142	201	250
5/8" UNF	197	279	347
3/4" UNF	344	486	606
7/8" UNF	547	772	963
1" UNF	814	1150	1430
1 1/8" UNF	1170	1660	2060
1 1/4" UNF	1620	2290	2850
1 3/8" UNF	2170	3070	3820
1 1/2" UNF	2840	4000	5000

Reference information

Machine model:_____ Serial no.:_____

Prod. year:_____ In operation:_____

Engine s/no.:_____ Transm. s/no.:_____

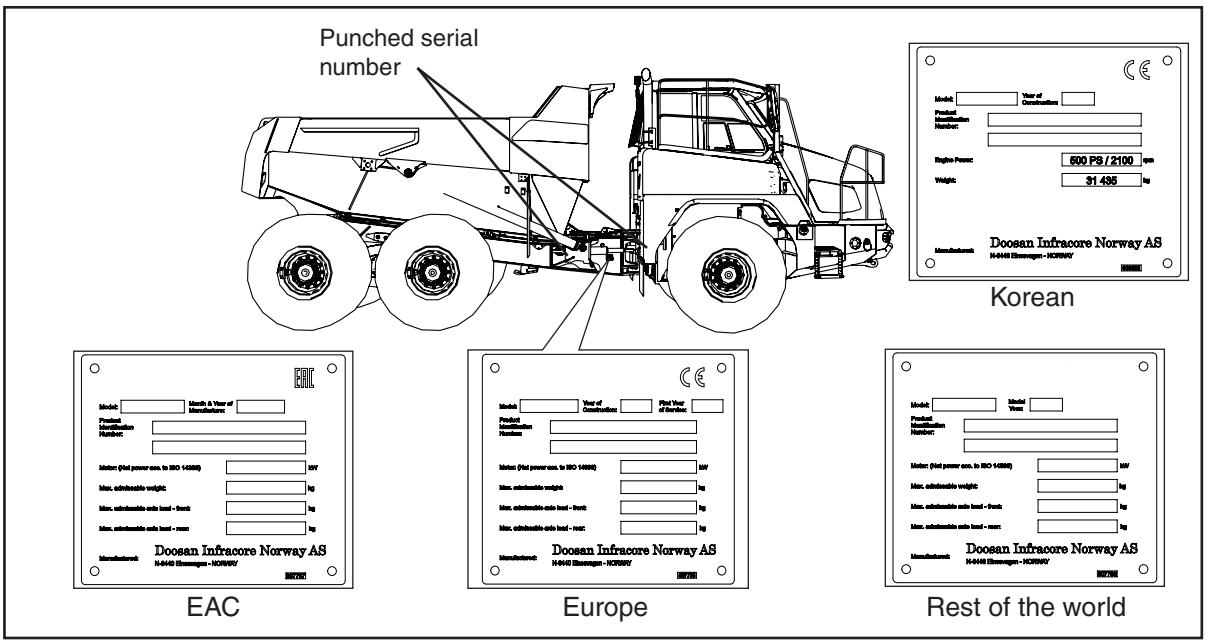
Dealer:_____

_____

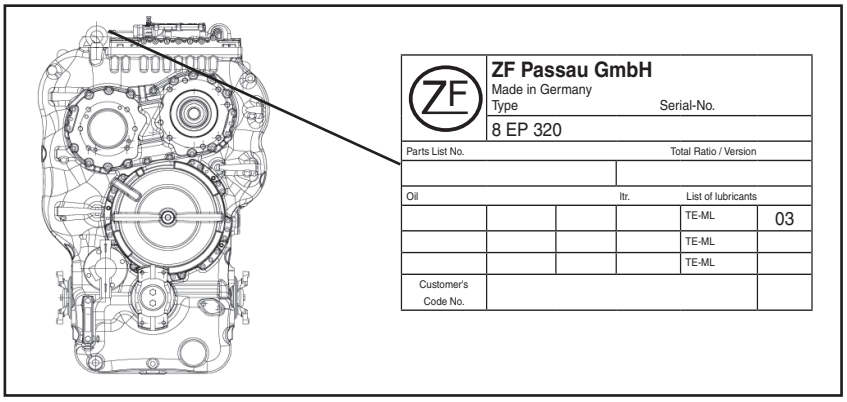
Consumable parts

Part No.	Quantity	Description

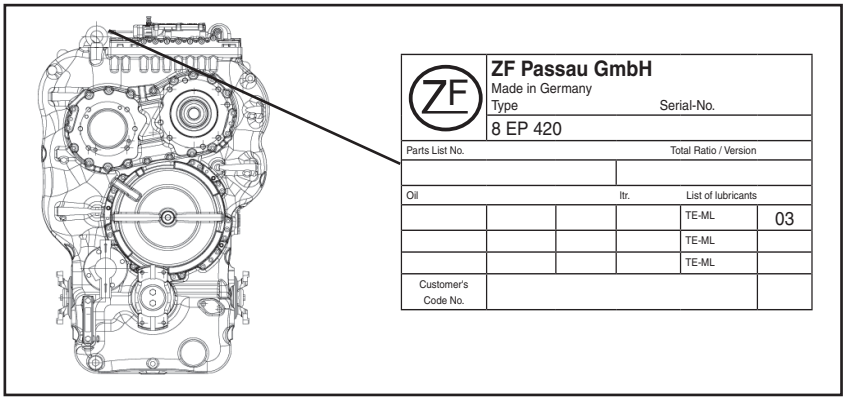
Product signs



Data plate can looks different because of the construction changes.



HA45



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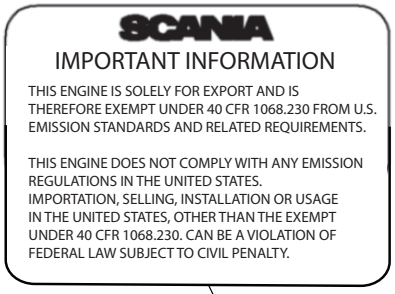

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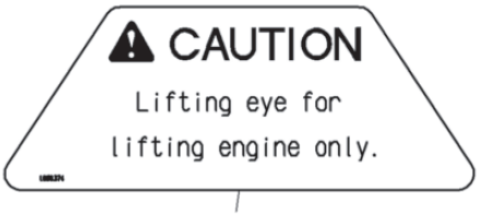

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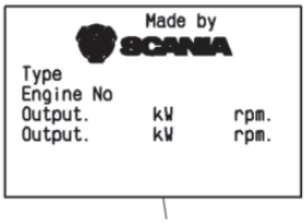

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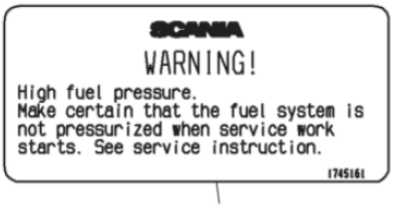

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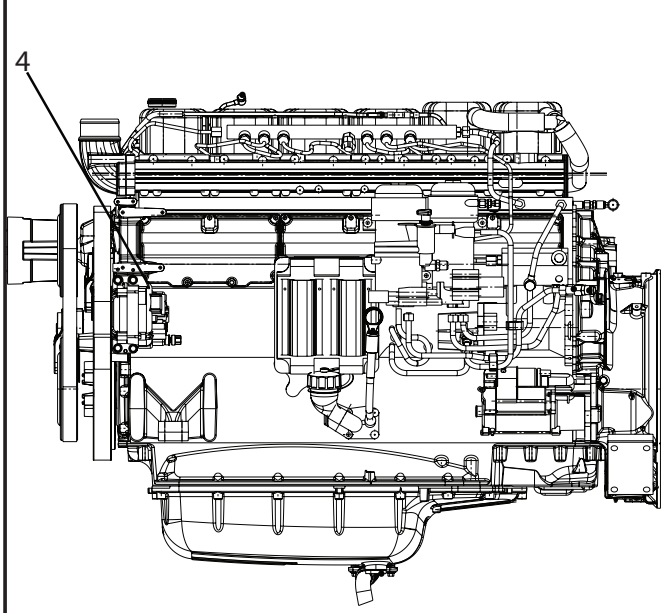
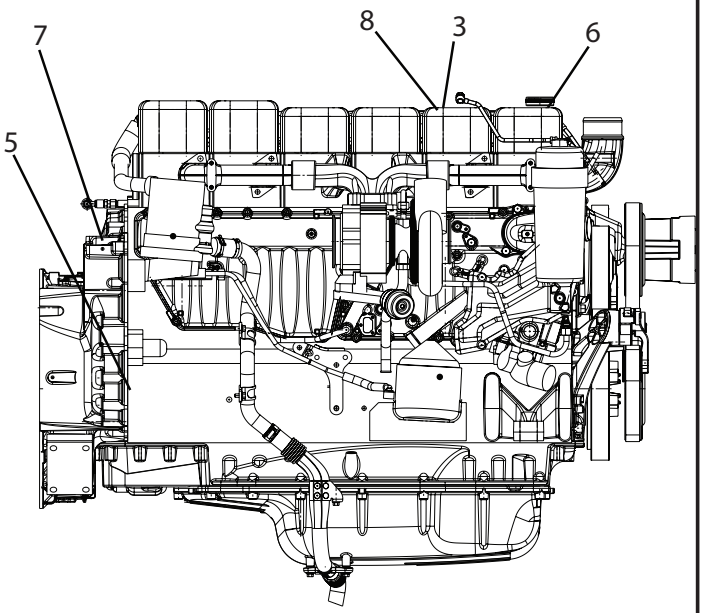


LH side



RH side

Periodic service

Fill in the boxes according to the maintenance performed on the dump truck

serial no.:

DELIVERY **Hrs:** ________ **Date:** ________
Stamp / Sign.:

SERVICE **Hrs:** ________ **Date:** ________
Stamp / Sign.:

SERVICE **Hrs:** ________ **Date:** ________
Stamp / Sign.:

SERVICE **Hrs:** ________ **Date:** ________
Stamp / Sign.:

SERVICE **Hrs:** ________ **Date:** ________
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SERVICE **Hrs:** ________ **Date:** ________
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Stamp / Sign.:

SERVICE **Hrs:** ________ **Date:** ________
Stamp / Sign.:

SERVICE **Hrs:** ________ **Date:** ________
Stamp / Sign.:

DELIVERY **Hrs:** _________ **Date:** _____________
Stamp / Sign.:

Fill in the boxes according to the maintenance performed on the dump truck

serial no.:

SERVICE **Hrs:** ________ **Date:** ______________
Stamp / Sign.:

SERVICE **Hrs:** ________ **Date:** ______________
Stamp / Sign.:

SERVICE **Hrs:** ________ **Date:** ______________
Stamp / Sign.:

SERVICE **Hrs:** ________ **Date:** ______________
Stamp / Sign.:

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Stamp / Sign.:

SERVICE **Hrs:** ________ **Date:** ______________
Stamp / Sign.:

SERVICE **Hrs:** ________ **Date:** ______________
Stamp / Sign.:

DELIVERY **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*	Fill in the boxes according to the maintenance performed on the dump truck serial no.:
SERVICE **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*	**SERVICE** **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*
SERVICE **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*	**SERVICE** **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*
SERVICE **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*	**SERVICE** **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*
SERVICE **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*	**SERVICE** **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*
SERVICE **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*	**SERVICE** **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*
SERVICE **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*	**SERVICE** **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*
SERVICE **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*	**SERVICE** **Hrs:** ________ **Date:** ____________ *Stamp / Sign.:*