

ADT35C & ADT40C



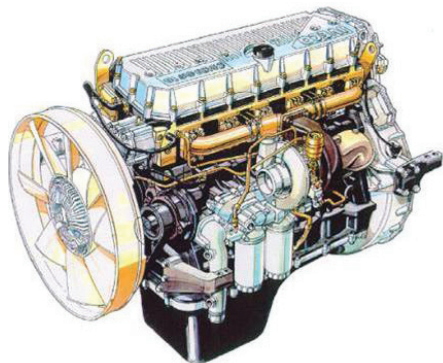
ASTRA
IVECO



BUILT FOR PRODUCTIVITY

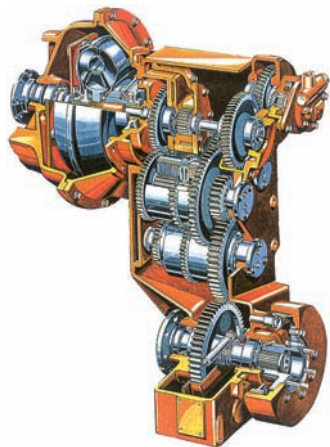
IVECO CURSOR ENGINE

Total electronic control of the pumping unit injectors, mounted at the centre of the combustion chamber, and cross flow intake ducts are the core reason for the extraordinary thermodynamic efficiency and excellent fuel consumption of the IVECO CURSOR engine. Added to this the electronic control of the Variable Geometry Turbo allows the supercharging pressures to be independent of engine rpm for constant torque and power over a wide range of engine rpm. The effectiveness of the decompression engine brake, IVECO Turbo Brake, is exceptional due to the joint control of the brake and VGT.



HIGH CAPACITY COOLING SYSTEM

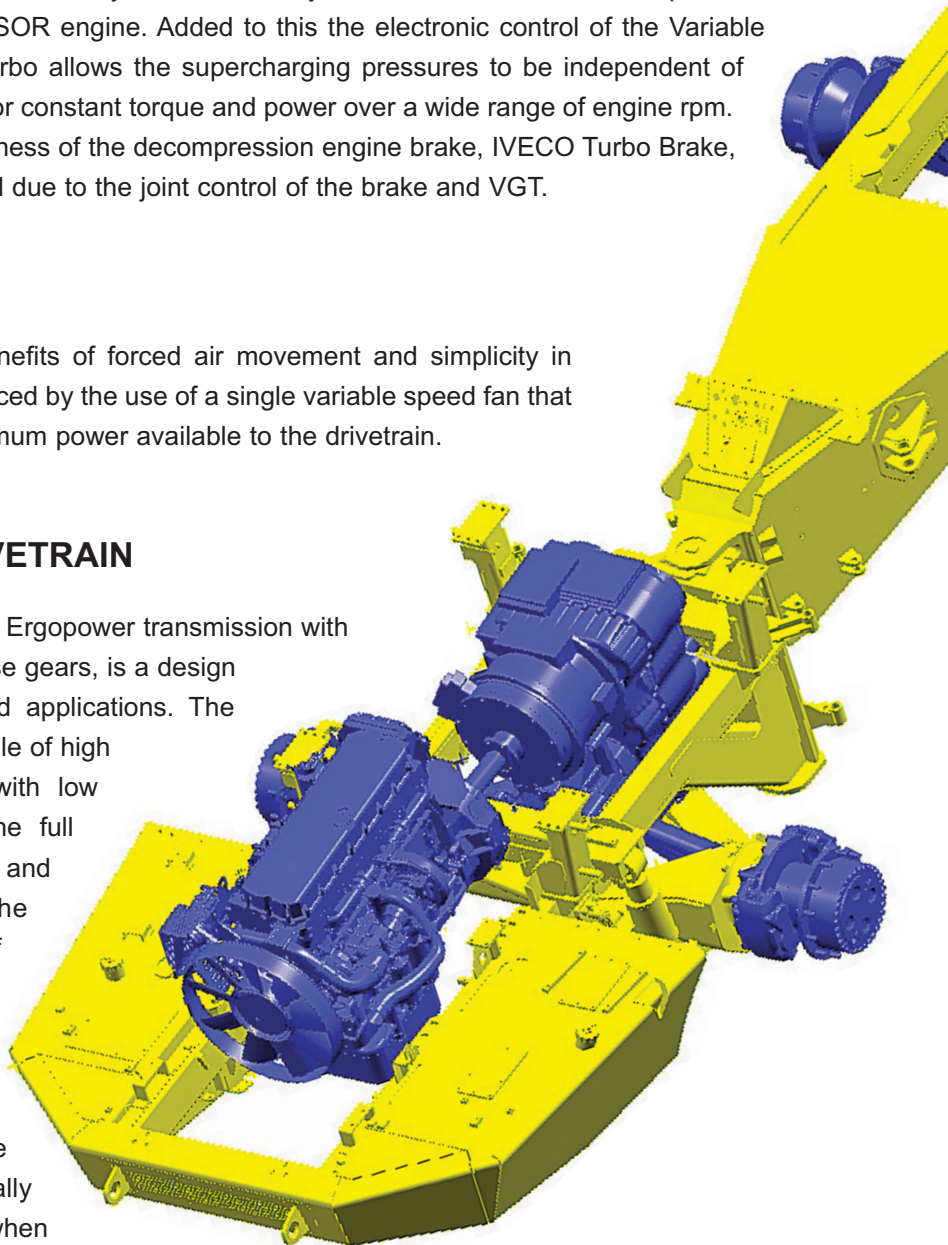
The forward mounted cooling unit provides the benefits of forced air movement and simplicity in design. The efficiency of the cooling system is enhanced by the use of a single variable speed fan that consumes power only when required, allowing maximum power available to the drivetrain.

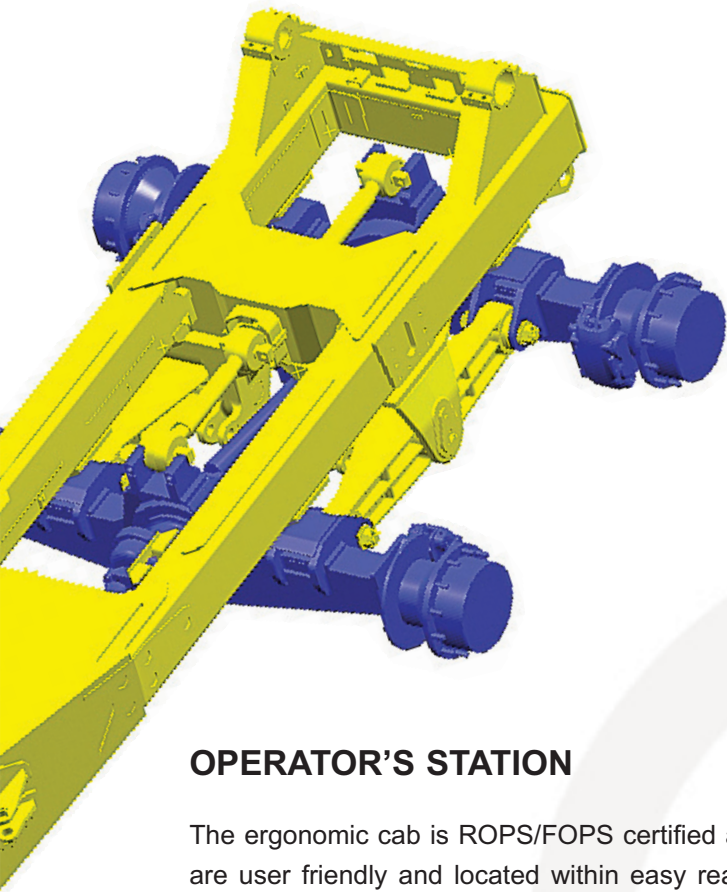


EFFICIENT DRIVETRAIN

The fully automatic ZF Ergopower transmission with 6 forward and 3 reverse gears, is a design used in many off-road applications. The robust design is capable of high torque transmission with low power losses over the full range of engine rpm and ground speeds. The automatic control of the transmission and

electronic communication with the Engine Control Unit, ensures optimal shift timing and uninterrupted torque transmission to the driving wheels. The result is optimum tractive effort, low cycle times and extreme operator comfort. Automatically engaged Limited Slip Differentials are engaged only when required and while on the move. This feature complements the simple operation of the transmission and guarantees continuous drive, even while transitioning over varying terrain.





CHASSIS & LOAD BODY

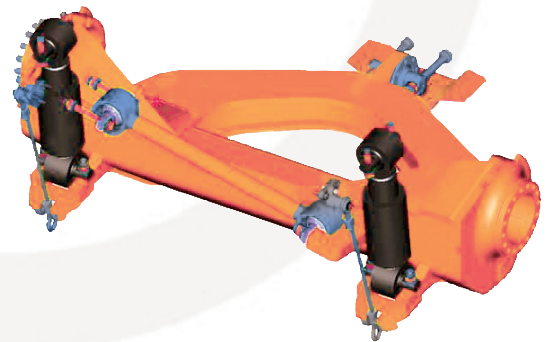
The front and rear frames consist of oversized chassis members manufactured from high strength specialised steel, extruded rectangular sections, cross braced for torsional rigidity. The high strength chassis design concept accommodates the largest payloads without compromising structural integrity. The large capacity body has a wide base to lower the centre of gravity in the laden condition, and a steep scow angle to retain larger loads during the haul. It's a ribless design, manufactured from high abrasion steel that withstands extreme impact loading and wear. The highest body clearance makes it possible to dump in any situation or application.

OPERATOR'S STATION

The ergonomic cab is ROPS/FOPS certified and designed with safety and productivity in mind. The simple controls are user friendly and located within easy reach. The operator seat features universal adjustments and pneumatic suspension for ultimate comfort. The operators station is positioned high for maximum visibility over the machine and the climate control system and lowest noise levels (71 db) enhance overall operator comfort.

SUSPENSION

The front suspension is a three point mounting arrangement that allows independent front wheel movement. The A-frame configuration is suspended by hydro-pneumatic suspension cylinders to provide the most comfortable ride over the harshest terrain. The simplified rear bogie suspension without Panhard links and a reduced number of central reaction bars allows free movement of the rear wheels while providing unparalleled stability of the load.



ECONOMIC BY DESIGN

RETARDATION

The effectiveness of the decompression exhaust brake, IVECO Turbo Brake, is as a result of joint control of the brake and the Variable Geometry Turbocharger. The constant electronic monitoring of the environmental conditions and machine operation ensure constant top level performance and optimal retardation. Where fitted, the integral transmission retarder works in conjunction with the IVECO Turbo Brake, to produce continuous class leading retardation performance over the entire rpm range and ultimately fastest downhill cycle times. The exceptional retardation system ensures minimal use of the service brakes and hence extended life and low maintenance cost of the brake system.

LOW FUEL BURN

The inherent thermodynamic efficiency of the IVECO Cursor engine is derived from the modern configuration which operates on the principal of Millar valve timing in concurrence with the electronically managed intake manifold pressures. Coupled with the Electronic Unit Injectors, these features ensure the highest torque levels throughout the rpm range with minimal expense of fuel burn. Intelligent transmission control, with the option of Power and Economy modes, is the basis of the low power loss drive train. The transmission with integral transfer case and simple downstream drive train components enables maximum useable torque to reach the driving wheels, thus reducing the fuel energy requirements.



EASE OF OPERATION

Fully automatic transmission control, electronically controlled retardation and automatically engaged differential locks are among the features that make the ASTRA articulated dump truck the simplest to operate. The operator has the ability to concentrate on optimising productivity and at the same time safe operation of the unit. Less experienced operators are able to maximise productivity of the ASTRA in comparison to far more complex ADT's that require high skill levels and increase driver fatigue.

EXTENDED SERVICE INTERVALS

No daily service requirements and extended scheduled maintenance intervals amount to higher machine availability. Service points are easily accessed by way of the hydraulically actuated engine hood and access panels enabling maintenance to be carried out quickly and efficiently with minimal disturbance to productivity. The automatic greasing system eliminates the costs associated with frequent lubrication.

SIMPLE ROBUST DESIGN

Mechanical availability of the machine is fundamentally a result of the inherent sturdiness in the design. The robust structures, simplified vehicle systems and uncomplicated power train maximises machine uptime in harsh conditions and demanding applications. The durability of the ASTRA ADT not only improves the cost effectiveness of the machine during initial ownership but also ensures that owners are able to capitalise on the residual value.



Articulated Dumper ADT 35C & ADT 40C



ENGINE

6-cylinder in-line, electronically-controlled direct injection pump injectors, turbocharger with intercooler, variable geometry turbine.

Emissions - EPA - CARB/OFF ROAD TIER 3

Make and type: IVECO CURSOR 13

Bore x stroke: 135 x 150mm

Total displacement: 12800cm³

Max power: **ADT 35C:** 302 kW (410 HP) @ 2100 rpm

ADT 40C: 335 kW (455 HP) @ 2100 rpm

Max torque: **ADT 35C:** 1850Nm @ 1400 rpm

ADT 40C: 2000Nm @ 1400 rpm

Cold start - 25°C



PERFORMANCE

ADT 35C with standard 26.5R25 tyres

ADT 40C with standard 29.5R25 tyres

gear	gear ratio	speed (km/h)	
		ADT35C	ADT40C
1°	5,350	5,5	5,9
2°	3,455	8,6	9,1
3°	2,206	13,4	14,3
4°	1,421	20,9	22,2
5°	0,969	30,6	32,6
6°	0,624	47,5	50,6
1°RM	5,350	5,5	5,9
2°RM	2,206	13,4	14,3
3°RM	0,969	30,6	32,6



TRANSMISSION

Automatic ergopower ZF 6WG310 drive transmission with 6 gears forward and 3 reverse.

Hydraulic torque converter, multiplication ratio(stall torque): 1:1,84

Lock-up clutch in all gears.

Torque proportioning interaxle differential lockable from drivers seat.

Torque to front axle: 33.3%

Torque to rear axles: 66.7%

ECO (energy saving) and POWER (performance boosting) selectable modes.

Front integrated self-locking differential.



AXLES

Permanent 6x6 drive configuration.

Double reduction: central with bevel gear and epicyclic gears in wheel hubs.

Automatic slip differentials.

Floating front axle with epicyclic gears in wheel hubs and differential close coupled to transmission.

Intermediate axle with interaxle differential lockable from drivers seat.

Central reduction ratio: 1:3,5

Final reduction ratio: 1:6,353

Total reduction ratio: 1.22,24



TYRES

ADT 35C Tubeless tyres 26,5 R25 Radial Earthmovers

ADT 40C Tubeless tyres, 29,5 R25 Radial Earthmovers



STEERING

Complies with ISO 5010, SAE J53

Hydrostatic steering with hydraulic flow amplifier

Integrated with two double-acting cylinders operating on an articulation joint between the frames.

Variable displacement axial piston pump.

Pump delivery: 331l/min. @ 2300 rpm

Max. working pressure: 250 bars (25 Mpa)

Ground driven radial piston emergency steering pump

Articulation angle: +45°



SUSPENSION

Front: semi-independent, "A" frame mount with PANHARD crossbar and oil-nitrogen suspension cylinders.

Rear: semi-independent pivot beam, connected to axles by flexible joints with central reaction bars.





BRAKES

Independent circuit complies with ISO 3450 e SAE J 1473

ADT35C Hydraulically activated dry disc brakes, powered by dedicated engine mounted gear pump and pressure accumulators.

ADT40C Hydraulically activated oil immersed multi disc brakes, powered by dedicated engine mounted gear pump and pressure accumulators.

Service brake: Dual Circuit, hydraulic activation
 Park & Emergency: Spring applied, air released, drive line mounted
 Auxiliary Brake: Automatic operation, electronically controlled integrated engine brake and transmission retarder.



ELECTRICAL SYSTEM

Two batteries: 12 V / 170 Ah
 Voltage: 24 V
 Alternator: 90 A
 Starter motor: 5 kW

All wires are number coded and protected by heavy duty sheaths. CAN bus Multiplex system allows communication between Engine Control Unit, Transmission Control Unit and Body Computer.



CHASSIS

Both front and rear chassis are made of high strength steel (ST 52.3) extruded (non-welded) rectangular section and linked by bracing crossmembers.

Chassis joined by articulation joint with double ball crown and double lip seal ball joints.



HYDRAULIC SYSTEM

Transmission mounted variable displacement axial piston pump powers the steering and tipping circuit.



GREASING SYSTEM

The greaseable joints are lubricated through a centralised automatic greasing system which can be programmed by the operator.



BODY

Walls and bottom in high abrasion strength steel
 Hardness: HB 400
 Yield index: 1000 N/mm²
 UTS: 1250 N/mm²
 Bottom thickness: 15mm 0.590 in
 Side wall thickness: 12mm 0.472 in
 Front wall thickness: 10mm 0.934 in
 Hoist by two double-acting hydraulic cylinders, installed inside chassis members.
 Tipping angle 68°
 Tipping time: 11 sec
 Lowering time: 13 sec

Capacity:
 Struck: **ADT 35C:** 15m³, 19,62 yd³
ADT 40C: 17m³, 22,2 yd³

Heaped: **ADT 35C:** 20m³, 26,6 yd³
ADT 40C: 22m³, 28,7 yd³



Articulated Dumper ADT 35C & ADT 40C



CAB

Complies with ROPS SAE J1040, ISO 3471/FOPS SAE J231, ISO 3449

- Soundproofed and centrally mounted;
- Reverse gear alarm;
- Automatic climate control with pollen filter;
- Engine hood and cab with hydraulic hoist to facilitate the operations of extraordinary maintenance;
- Side mudguard with gullwing action for supplementary service access;
- Door with glazing in the lower part to give maximum visibility;
- Central driver's seat with universal adjustment and pneumatic suspension;
- Adjustable Steering column/steering wheel;
- Instructor's seat;
- Cab suspension system with rubber cab mounts;
- Standard instruments and accessories;
- Beacon lights;
- Sun Visor.



INSTRUMENTS

Onboard computer for managing all vehicle operational data (levels, overheat warning lights, unit anomalies, etc).
External level gauges on fuel, hydraulic oil and brake cooling oil tanks.



FLUID CAPACITIES

Refer to the use and maintenance manual for fluids specifications.

Engine oil:	35l	9.2 US Gals
Gearbox oil:	35,5l	9.4 US Gals
Fuel tank:	400l	105.7 US Gals
Front differential:	14l	3.7 US Gals
Intermediate axle:	34l	9.0 US Gals
Rear axle:	33l	8.7 US Gals
Hydraulic circuit:	240l	63.4 US Gals
Oil hub (per hub):	9l	2.4 US Gals
Cooling circuit:	47l	12.4 US Gals



WEIGHT kg

	Kg TARE (*)		lb		Kg PAYLOAD		lb		Kg TOTAL WEIGHT		lb	
	ADT35C	ADT40C	ADT35C	ADT40C	ADT35C	ADT40C	ADT35C	ADT40C	ADT35C	ADT40C	ADT35C	ADT40C
Front axle	14.100	14.340	31.085	31.614	4.100	4.960	9.039	10.935	18.200	19.300	40.124	42.549
Rear axles (tandem)	14.400	14.660	31.746	32.320	27.400	32.040	60.406	70.636	41.800	46.700	92.153	102.956
Total	28.500	29.000	62.832	63.934	31.500	37.000	69.446	81.570	60.000	66.000	132.277	145.505

* Tare includes fuel, lubricants and driver (70 kg)



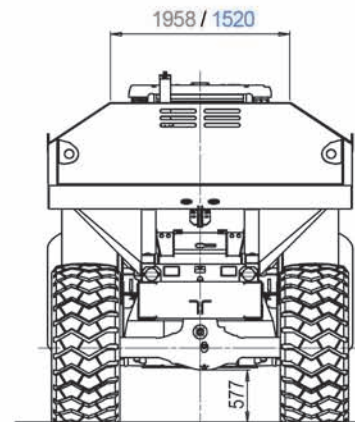
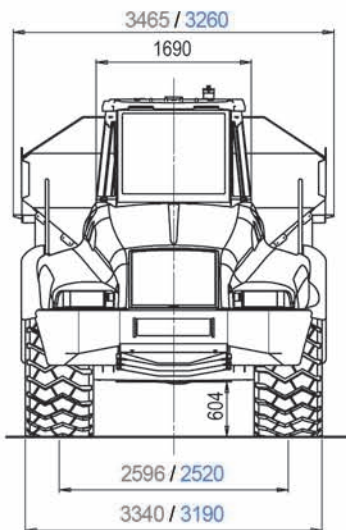
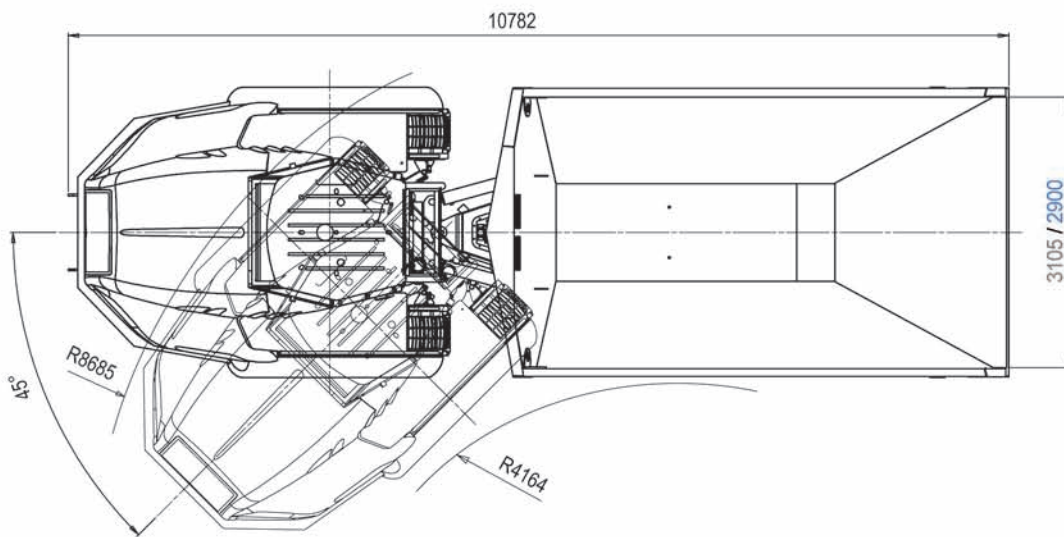
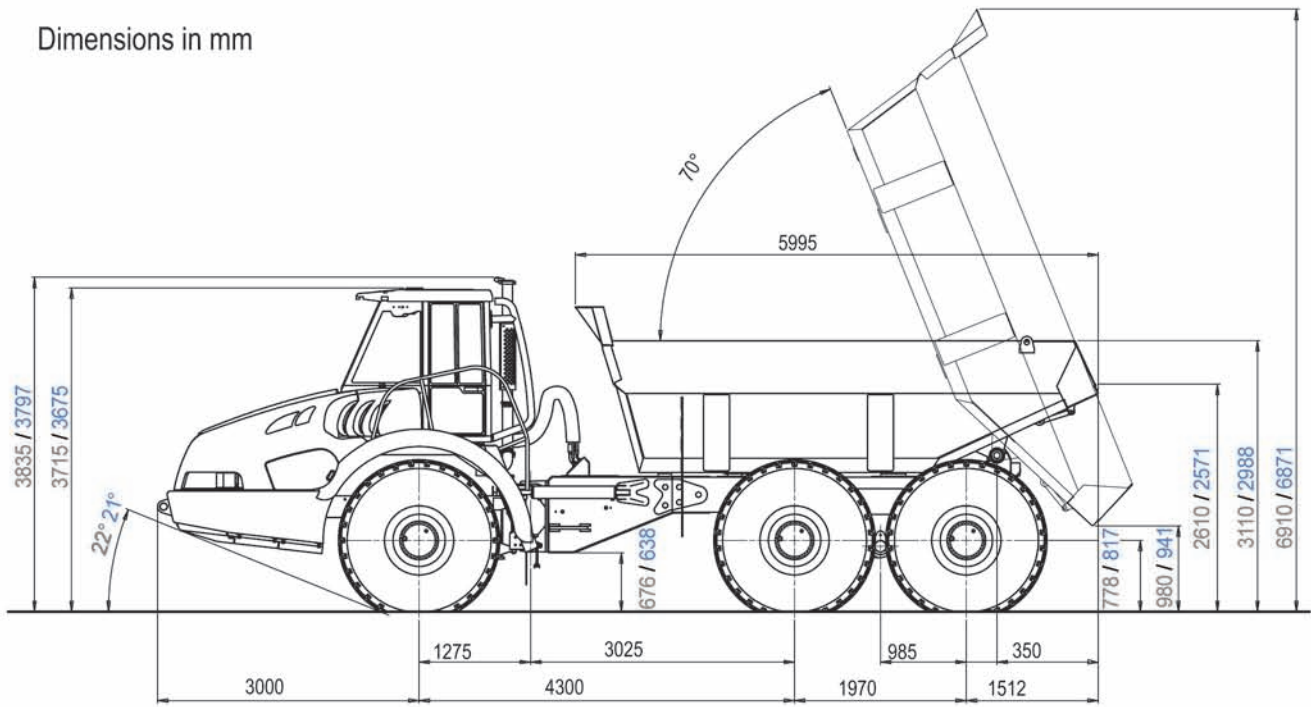
OPTIONS:

- Mechanically activated rear opening body tailgate.
- Body heating connection kit.
- Work lights
- CD Player



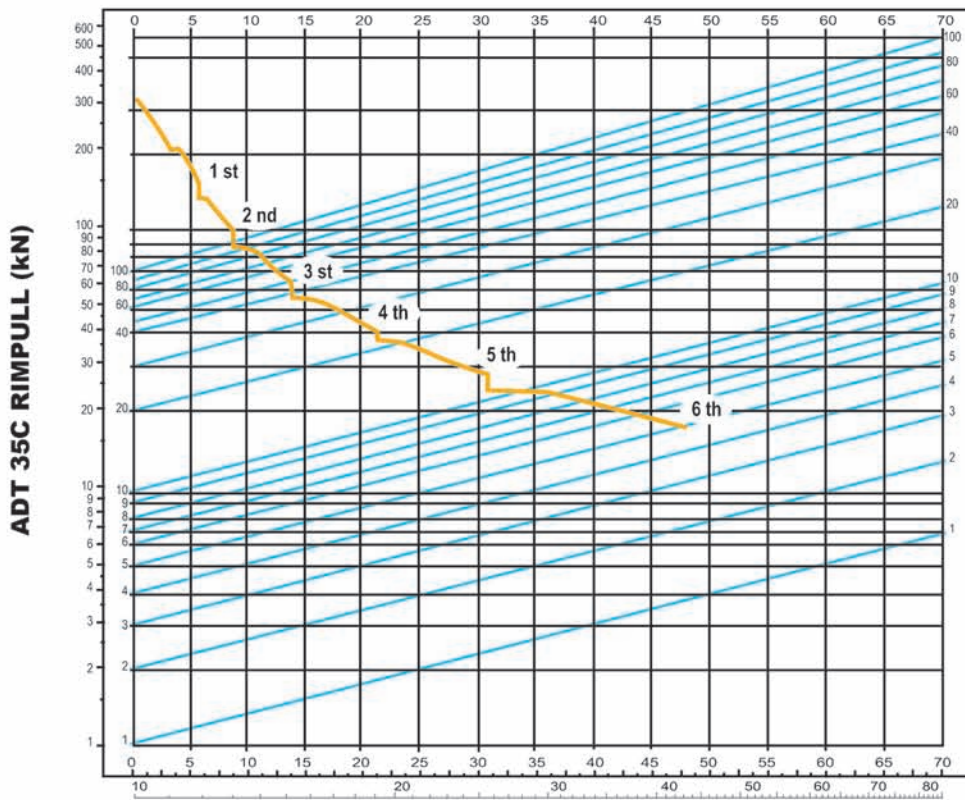
Articulated Dumper ADT 35C & ADT 40C

Dimensions in mm

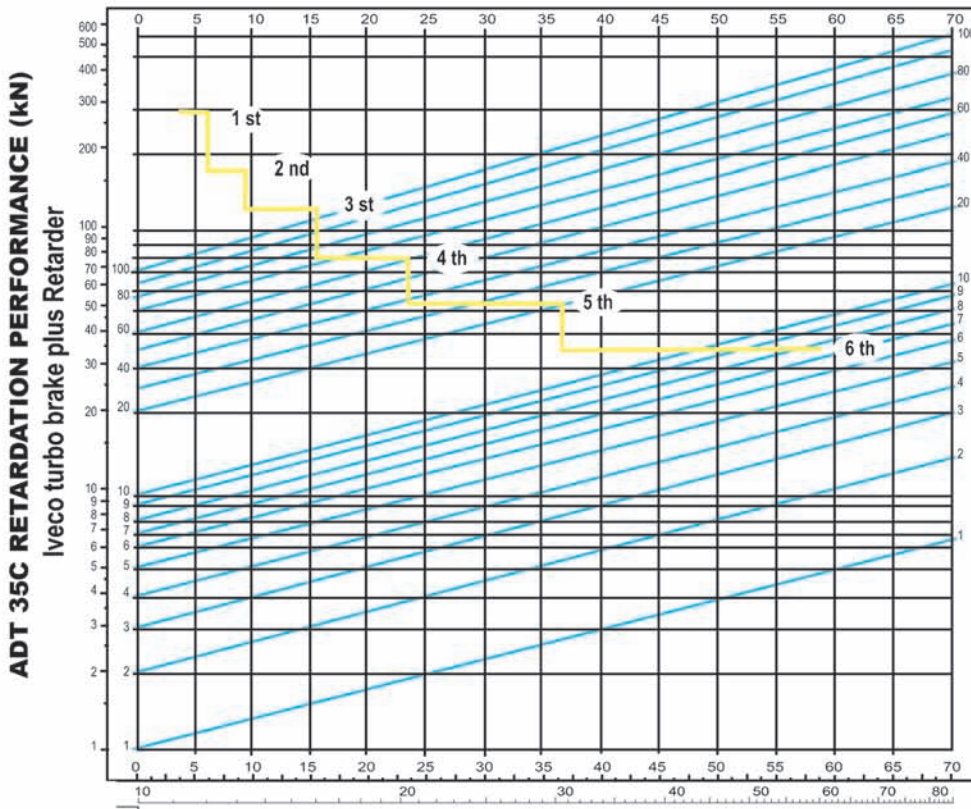


- ADT 35C 26.5 R25 Tyres
- ADT 40C 29.5 R25 Tyres

ADT 35C PERFORMANCE CURVES



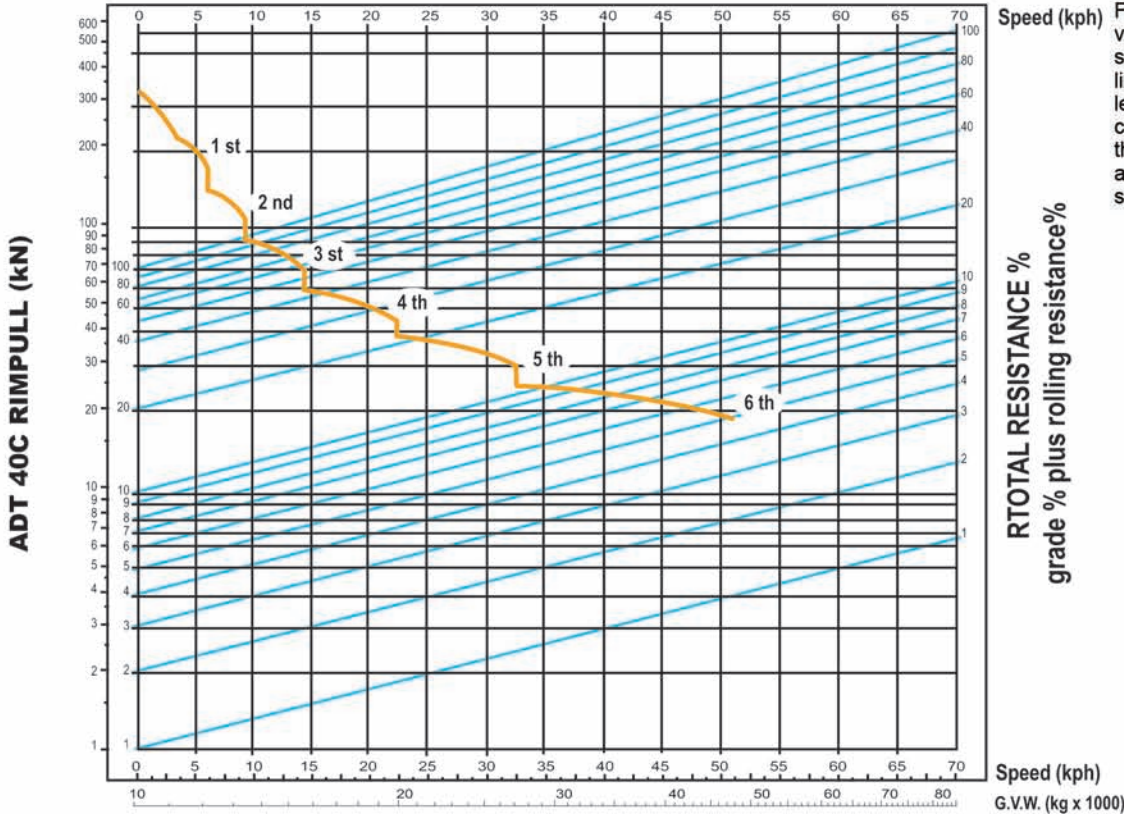
From the intersection of the vertical G.V.M. line and the selected inclined rolling resistance line, draw a horizontal line to the left until it intersects the rim pull curve. Drop a vertical line from that point down to the speed scale and read off the maximum vehicle speed.



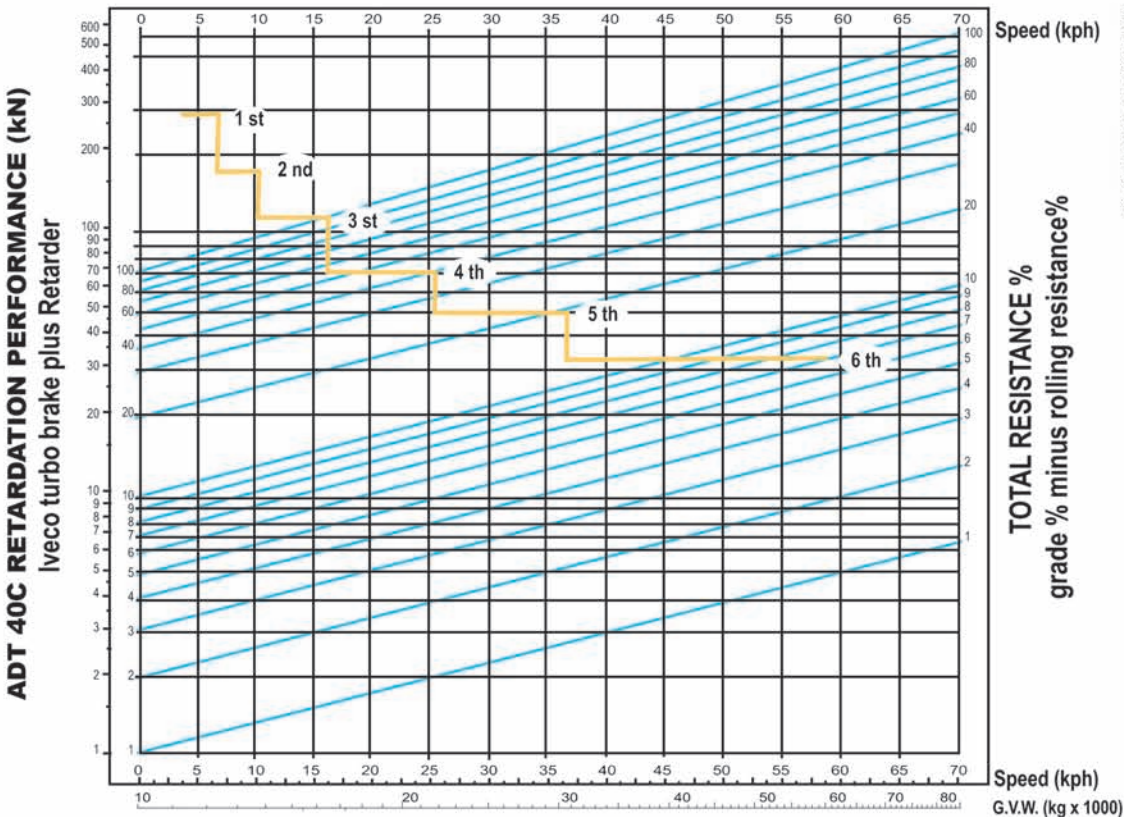
From the intersection of the vertical G.V.M. line and the selected inclined rolling resistance line, draw a horizontal line to the left until it intersects the yellow retardation curve. Drop a vertical line from that point down to the speed scale and read off the maximum vehicle speed.

ROLL RESISTANCE		
Road surface Features	for each t G.V.W.	%
Black top-concrete	15kg	1,5%
Hard packed soil	20kg	2,0%
Excavated not compact	30kg	3,0%
Mud on packed soil	40kg	4,0%
Packed snow	25kg	2,5%
Soft snow	45kg	4,5%
Sand-gravel	100kg	10,0%

ADT 40C PERFORMANCE CURVES



From the intersection of the vertical GVM line and the selected inclined rolling resistance line, draw a horizontal line to the left until it intersects the rim pull curve. Drop a vertical line from that point down to the speed scale and read off the maximum vehicle speed.



From the intersection of the vertical GVM line and the selected inclined rolling resistance line, draw a horizontal line to the left until it intersects the yellow retardation curve. Drop a vertical line from that point down to the speed scale and read off the maximum vehicle speed.

ROLL RESISTANCE		
Road surface Features	for each t G.V.W.	%
Black top-concrete	15kg	1,5%
Hard packed soil	20kg	2,0%
Excavated not compact	30kg	3,0%
Mud on packed soil	40kg	4,0%
Packed snow	25kg	2,5%
Soft snow	45kg	4,5%
Sand-gravel	100kg	10,0%



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