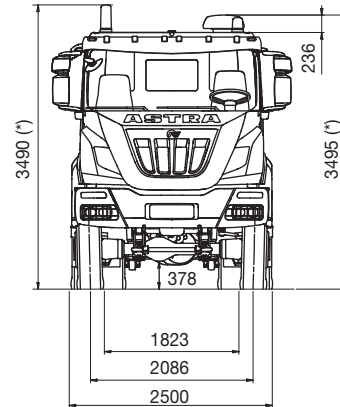
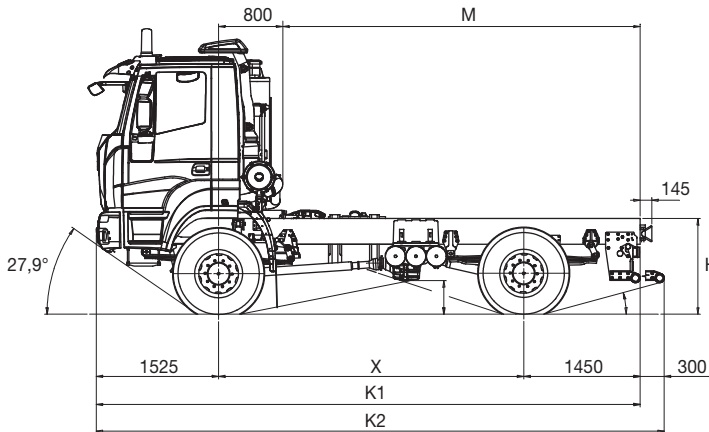


HD9

chassis 4x4
44.38 / 44.42 / 44.44 / 44.48


ON REQUEST
 ■ RHD VERSION


DIMENSIONS (mm) (Tyres 315/80R22.5 156/150K)

| X | K1 | K2 | M (*) | S | H | | TURNING DIAMETER | |
|------|------|------|-------|------|----------|--------|-------------------|--------------|
| | | | | | unloaded | loaded | between sidewalks | wall to wall |
| 3800 | 6775 | 7075 | 4450 | 1450 | 1226 | 1148 | 14400 | 16000 |
| 4200 | 7575 | 7875 | 5250 | 1850 | | | 15700 | 17300 |
| 4600 | 8375 | 8675 | 6050 | 2250 | | | 17000 | 18600 |
| 5100 | 8875 | 9175 | 6550 | 2250 | | | 18600 | 20200 |

(*) M max.: indicative value to be confirmed by bodybuilder


WEIGHT (kg)

| Distribution net weight (*) | | | | Max technical weight | | | | |
|-----------------------------|----------------------|----------------------|------------|----------------------|------------------|----------------------|----------------------|--------------------------|
| X | 1 st axle | 2 nd axle | NET WEIGHT | 1 st axle | | 2 nd axle | Gross Vehicle Weight | Gross Combination Weight |
| 3800 | 5233 | 2509 | 7742 | 8000 | 8500 9000 (1) | 13000 | 21000 (2) | 55000 |
| 4200 | 5224 | 2567 | 7791 | | | | | |
| 4600 | 5225 | 2636 | 7861 | | | | | |
| 5100 | 5261 | 2633 | 7894 | | | | | |

(*) Weight including oil, fuel, spare wheel, driver Kg.75

 (1) With tyres 1st axle 385/65R22,5160J or 365/85R20164G. Other tyres available, subject to the Astra technical office approval.

(2) HD9 44.48 only at max speed 50 km/h. Michelin/Pirelli tyres. Higher speeds/loads are allowed with load/speed reductions subject to the Astra Technical office approval.



ENGINES

CURSOR 13 F3B turbo intercooler **euro 3** diesel injection/cycle with electronic unit injection pumps. 6 in-line cylinders. Single block head, four valves per cylinder, light alloy pistons. Total displacement: 12.882 cm³. Bore for stroke: 135 x 150 mm. Water cooling. Viscostatic cooling fan. Dry air filter with safety cartridge. Vertical muffler.

| | 44.38 | 44.42 | 44.44 | 44.48 |
|-------------------|----------------------|-------------------|-----------------------|-------------------|
| Model | IVECO F3B | IVECO F3B | IVECO F3B | IVECO F3B |
| Max power | 280 kW (380 cv) | 309 kW (420 cv) | 324 kW (440 cv) | 353 kW (480 cv) |
| Corresponding rpm | 1900 giri/min | | | |
| Max torque | 1800 Nm (184 kgm) | 1900 Nm (194 kgm) | 2100 Nm (214 kgm) | 2200 Nm (220 kgm) |
| Corresponding rpm | 1.000-1.440 giri/min | | | |
| Turbine | WG Waste Gate | | VGT variable geometry | |



GEARBOX

Manual ZF Ecosplit 4 technology gearbox with servoshift, 16 synchronised forward speeds + 2 reverse:

ZF 16 S 2220 TO: HD9 44.38 / HD9 44.42 / HD9 44.44

ZF 16 S 2520 TO: HD9 44.48

On request:

ZF 16 S 2320 TD

| | | Speed [kph] at maximum power(*) | | | | | | | | | | | | | | | | | | |
|-----------------------------|------------------------|---------------------------------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-----|
| | | Gears | | | | | | | | | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | RM1 | RM2 | |
| ZF16S2320TD | Gear ratios | 16.41 | 13.80 | 11.28 | 9.49 | 7.76 | 6.53 | 5.43 | 4.57 | 3.59 | 3.02 | 2.47 | 2.08 | 1.70 | 1.43 | 1.19 | 1.00 | 15.36 | 12.92 | |
| | Rear axle ratio | 3.793 | 3.8 | 4.5 | 5.5 | 6.6 | 8.1 | 9.6 | 11.5 | 13.7 | 17.4 | 20.7 | 25.3 | 30.1 | 36.8 | 43.7 | 52.6 | 62.6 | 4.1 | 4.8 |
| | | 4.229 | 3.4 | 4.1 | 5.0 | 5.9 | 7.2 | 8.6 | 10.3 | 12.3 | 15.6 | 18.6 | 22.7 | 27.0 | 33.0 | 39.2 | 47.1 | 56.1 | 3.7 | 4.3 |
| | | 5.009 | 2.9 | 3.4 | 4.2 | 5.0 | 6.1 | 7.3 | 8.7 | 10.4 | 13.2 | 15.7 | 19.2 | 22.8 | 27.9 | 33.1 | 39.8 | 47.4 | 3.1 | 3.7 |
| | | 5.558 | 2.6 | 3.1 | 3.8 | 4.5 | 5.5 | 6.5 | 7.9 | 9.3 | 11.9 | 14.1 | 17.3 | 20.5 | 25.1 | 29.9 | 35.9 | 42.7 | 2.8 | 3.3 |
| | | 6.095 | 2.4 | 2.8 | 3.5 | 4.1 | 5.0 | 6.0 | 7.2 | 8.5 | 10.8 | 12.9 | 15.8 | 18.7 | 22.9 | 27.2 | 32.7 | 38.9 | 2.5 | 3.0 |
| 6.588 | 2.2 | 2.6 | 3.2 | 3.8 | 4.6 | 5.5 | 6.6 | 7.9 | 10.0 | 11.9 | 14.6 | 17.3 | 21.2 | 25.2 | 30.3 | 36.0 | 2.3 | 2.8 | | |
| ZF 16S2220TOZF 16S2520TO | Gear ratios | 13.80 | 11.54 | 9.49 | 7.93 | 6.53 | 5.46 | 4.57 | 3.82 | 3.02 | 2.53 | 2.08 | 1.74 | 1.43 | 1.20 | 1.00 | 0.84 | 12.92 | 10.80 | |
| | Rear axle ratio | 3.793 | 4.5 | 5.4 | 6.6 | 7.9 | 9.6 | 11.5 | 13.7 | 16.4 | 20.7 | 24.7 | 30.1 | 35.9 | 43.7 | 52.1 | 62.6 | 74.5 | 4.8 | 5.8 |
| | | 4.229 | 4.1 | 4.9 | 5.9 | 7.1 | 8.6 | 10.3 | 12.3 | 14.7 | 18.6 | 22.2 | 27.0 | 32.2 | 39.2 | 46.8 | 56.1 | 66.8 | 4.3 | 5.2 |
| | | 5.009 | 3.4 | 4.1 | 5.0 | 6.0 | 7.3 | 8.7 | 10.4 | 12.4 | 15.7 | 18.7 | 22.8 | 27.2 | 33.1 | 39.5 | 47.4 | 56.4 | 3.7 | 4.4 |
| | | 5.558 | 3.1 | 3.7 | 4.5 | 5.4 | 6.5 | 7.8 | 9.3 | 11.2 | 14.1 | 16.9 | 20.5 | 24.5 | 29.9 | 35.6 | 42.7 | 50.8 | 3.3 | 4.0 |
| | | 6.095 | 2.8 | 3.4 | 4.1 | 4.9 | 6.0 | 7.1 | 8.5 | 10.2 | 12.9 | 15.4 | 18.7 | 22.4 | 27.2 | 32.4 | 38.9 | 46.3 | 3.0 | 3.6 |
| 6.588 | 2.6 | 3.1 | 3.8 | 4.5 | 5.5 | 6.6 | 7.9 | 9.4 | 11.9 | 14.2 | 17.3 | 20.7 | 25.2 | 30.0 | 36.0 | 42.9 | 2.8 | 3.3 | | |

(*) Max speed 90 km/h. Other speeds available, subject to the Astra technical office approval



P.T.O.

On request:

| Gearbox | ZF16S2220TO-ZF16S2520TO | Mx. Torque | Application |
|-----------------------|-------------------------|------------|--|
| P.T.O. | Ratio | Nm | |
| ZF NH/1b | 0,91/1,09:1 | 1000 | For tipping unit pumps, pumps for cranes, etc |
| ZF NH/1c | 0,91/1,09:1 | 1000 | For tipping unit pumps, pumps for cranes, unit pumps for concrete, etc |
| ZF NH/4c | 1,17/1,40:1 | 430 | For tipping unit pumps, etc |
| ZF N221/10bpl+N353/1c | 1,75/2,09:1+0,91/1,09:1 | 560+600 | Double PTO for concrete pumps |

Power take off at flywheel (ratio 1,29:1) max available torque 900 Nm for concrete mixers.



CLUTCH

Single dry plate, diameter 17". Pull type engagement with diaphragm spring.

Hydro-pneumatic power steering engagement control, with driven disc wear recovery slave cylinder.

On request: Ceramic clutch 17".



TRANSFER

Mechanical with two ratios. It consists of a series of helical spur gears, mounted on three propeller shafts, engaged with each other.

Differential can be locked by pneumatic control.

Transmission ratio: 1:1 - 1:1,6

Front/rear torque distribution ratio: 1:2,2



AXLES

FRONT

Steering cast iron type; with dual reduction, central by pinion-crown gear, lateral by means of epicycloid assembly in wheel hubs.

On request:

Lockable differential by pneumatic control from driver's seat.

REAR

Driving axle with dual reduction, central with bevel gear pair, final in wheel hubs by means of epicycloid assembly.

Lockable differential with pneumatic control from driver seat.

On request:

Rear-axle ratio 1:3,793

Rear-axle ratio 1:4,229

Rear-axle ratio 1:5,009

Rear-axle ratio 1:5,558

Rear-axle ratio 1:6,095

Rear-axle ratio 1:6,588



SUSPENSIONS

FRONT

Parabolic springs with bushings, n° 4 leaves 24x90 mm, with shock absorbers and stabilizer bar.

On request:

Reinforced parabolic springs, n° 5 leaves 24x90 mm.

REAR

Parabolic springs with bushings° 4 leaves 24x90 mm, + 1 leaf 50x90 mm, with shock absorbers and stabilizer bar.



CHASSIS

Special steel with high elasticity limit, two flat and parallel side members width 820 mm, C section 320x70x8 mm, cross members riveted to the frame.

Steel front bumpers with headlamp protection grids, front manoeuvring hook, rear underrun bar, steel fuel tank capacity 300 litres.

On request:

Rapid attachment for compressed air for tyres 'inflation.

Rear underrun bar in set back position.

Extra long underrun bar for concrete mixer.

Rear manoeuvring hook.

Rear automatic towing hook.

Rubber mudguards on 2nd axle.

Front bumper climbing step.

Side windlass for spare wheel.



PNEUMATIC SYSTEM

Two-cylinder 630 cc compressor , APU (Air Processing Unit) that includes: regulation valve set at 10.3 bar, drier, 4-way safety valve, pressure reduction valve for parking circuit and services. 3 air tanks, capacity 30 litres.

ABS system and EBL (Electronic Brake Limiter)



STEERING

ZF 8098 hydraulic power steering on front axle wheels with variable ratio 1:22.2/1:26.2.

Steering rods with self-lubricating joints.

Height and inclination mechanically adjustable steering wheel.



TYRES

FRONT: 315/80R22,5 156/150 K Single tubeless

REAR: 315/80R22,5 156/150 K Twin tubeless

Spare wheel on the chassis.

Other Possible combinations:

| TYRES | ASSEMBLY | |
|---|----------|------|
| | FRONT | REAR |
| 13 R22.5 156/150G 12.00 R20 156/150G | S | D |
| 385/65 R22.5 160J* | S | |
| 315/80 R22.5 156/150K | | D |
| 365/85 R20 164G* | S | S |
| 395/85 R20 168G* | S | S |
| 525/65 R20.5 173F | | S |

S single

D double

Other tyres available, subject to the Astra technical office approval.

* Mandatory with 9t front axle load.



BRAKES

Front and rear "duo-duplex" self-adjusting wedge type brakes with automatic play take-up.

Total net braking surface 5.874 cm². ABS system.

Service brake: Pedal controlled air brake, acting on all wheels.
Solo vehicles, two independent circuits, one for 1st axle, one for 2nd axle and another for the trailer.

Towing vehicles, three independent circuits, one for 1st axle,

Emergency brake: Incorporated in service brake.

Parking brake: Mechanical spring-type with pneumatic control acting on 2nd axle wheels.

IVECO BRAKE TURBO engine brake:

Braking power HD9 44.38: 255kW (347HP)

Braking power HD9 44.42 / HD9 44.44 / HD9 44.48: 300 kW (401 HP)

On request:

Hydraulic intarder (only for HD9 44.44 and HD9 44.48).

1st axle immobiliser system.

OFF/ROAD button for excluding ABS for speed < 15 kph.

HD9 380/420 cv - Front and rear "simplex" self-adjusting brake system.

No ABS system.

No hydraulic intarder.



ELECTRICAL SYSTEM

Voltage: 24 V
 Alternator generator 90 A - 28 V (2520 W).
 Accumulators: 2 in series, 160 Ah.
 Starter motor 24 V 5,5 kW.
 Mechanically controlled electrical circuit breaker.
 Phonic wheels and sensors on 1st and 2nd axle.
 1 electrical joint 7-pole(ISO 7638) for trailer ABS (if applicable).
 1 electrical joints 15-pole(ISO 12089-4091) for trailer lighting (if applicable).
 Electrical provision for bodybuilders.
 Provision for diagnostics.
 Provision for radio/cb (without speakers)
 Glow plug for cold start.

On request:

160 Ah tropicalised accumulators;
 170 Ah accumulators;
 170 Ah tropicalised accumulators;
 220 Ah accumulators;
 Reverse alarm.



CAB

White cab built in galvanised pressed steel with hydraulic tilting up to 60°. Cab suspension with 4 helical springs with coaxial shock absorbers and integrated dampers, anti-roll bar and end-of-stroke pads. Tinted electric door windows. Mechanical rear wide angle mirrors. Internal panels completely washable and fireproof. Compressed air quick coupling for cab cleaning. 4-speed ventilation and heating system with air recirculation system.
 Collapsible first step. Air suspended 3-way adjustable driver seat with seat belts. Mechanical passenger seat with seat belts.

On request:

Air conditioning;
 Cab rear window;
 Car radio RDS, CD;
 Car radio RDS, CD, MP3, Blue Tooth technology;
 External sun visor.
 Extra colour cab: to be specified in the order;
 Heated and electric powered rear view mirrors;
 Remote controlled and centralised closing of doors.
 Roof hatch;
 Rotating lights on top of the cab.



SERVICE DATA(I)

| | |
|--|-----|
| Engine oil sump and filters | 28 |
| Gearbox oil ZF16S2220TO/ZF16S2520TO: | 13 |
| Power steering oil | 8,5 |
| Cab tipping oil | 1 |
| Clutch circuit oil | 0,5 |
| Transfer oil | 6,5 |
| Rear axle with final red. oil | 16 |
| Cooling system water | 33 |
| Diesel | 300 |



INSTRUMENTATION

Dashboard and ergonomic instrument board contain the function buttons and the identification commands.

Indicator lights: engine oil low pressure, alternator charging low, main beam lights, side lights, engine warm-up, rear fog light, hazard lights, tractor turn indicators, trailer turn indicators (if applicable), rotating lights, cab lifted, axles differential locked, differential lock, front brakes air pressure low, rear brakes air pressure low, trailer brakes air pressure low (if applicable), parking brake engaged, splitter (reduction on), slow speeds (1-4/9-12), power take-off on (if applicable) air filters clogged, power steering oil level low, rear view mirrors heated (if applicable), ABS, trailer ABS (if applicable), main steering circuit failure, steering auxiliary circuit failure.

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DEALER

Characteristics and equipment are subject to changes without prior notice.

Technical data and general specifications - validity to be checked according to each individual country