



(\*) unloaded


**DIMENSIONS (mm)** (Tyres 13R22,5 156/150G)

X	K	G (1)		H		A (*)		E (1)		F (1)		TURNING DIAMETER	
		std	unloaded	loaded	unloaded	loaded	std	std	std	std	sidewalks	walls	
3500	7275	300	1252	1189	1572	1509	2670	2170	15700	17400	16700	18300	
3800	7575												

(1) Standard fifth wheel position. In case of different positioning needs, the quote may change in relation with the technical GVW of the vehicle. Values to be confirmed in combination with the semitrailer.

(\*) With swivelling fifth wheel + 100 mm


**WEIGHT (kg)**

Distribution net weight				Max technical weight					
X	1 <sup>st</sup> axle	2 <sup>nd</sup> + 3 <sup>rd</sup> axle	NET WEIGHT (*)	1 <sup>st</sup> axle		2 <sup>nd</sup> + 3 <sup>rd</sup> axle	Max weight on fifth wheel	Tractor	Gross combination
				8000	9000				
3500	5705	5630	11335	8000	9000	32000	28665	40000 (3)	104000
3800	5755	5610	11365	8500 (1)	(2)		28635		

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

 (1) With tyres 1<sup>st</sup> axle 385/65R22,5 160 J. Other tyres available, subject to the Astra technical office approval.

 (2) With tyres 1<sup>st</sup> axle 385/65R22,5 160 J and reinforced springs (OPT). Other tyres available, subject to the Astra technical office approval.

(3) Only at max speed of 70 Kph with Continental/Michelin tyres. Higher speeds are allowed with load reductions subject to the Astra Technical office approval.



## ENGINES

CURSOR 13 turbo intercooler 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 cm<sup>3</sup>. Bore for stroke: 135 x 150 mm. Water cooling. Viscostatic cooling fan. Dry air filter with safety cartridge. Vertical muffler. Emissions according to €5 regulation norms SCR (Selective Catalytic Reduction) system composed of catalytic muffler, AdBlue-tank, injection and control system.

	66.41T	66.44T	66.48T	66.52T	66.56T
Model	IVECO F3B E3681D	IVECO F3B E3681G	IVECO F3B E3681F	IVECO F3B E3681E	IVECO F3B E3681A
Max Power (CEE)	302 kW (410 HP)	324 kW (440 HP)	353 kW (480 HP)	382 kW (520 HP)	412 kW (560 HP)
Corresponding rpm	1900				
Max Torque (CEE)	1900 Nm (194 kgm)	2200 Nm (224 kgm)	2300 Nm (234 kgm)	2400 Nm (245 kgm)	2500 Nm (255 kgm)
Corresponding rpm	1000-1440				1000-1690
Turbine	WG Waste Gate	VGT Variable Geometry Turbine			



## GEARBOX

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

**ZF16S2220TO:** HD9 66.41T/HD9 66.44T

**ZF16S2520TO:** HD9 66.48T/HD9 66.52T/HD9 66.56T.

**On request:**

**ZF16S2320TD:** HD9 66.41T/HD9 66.44T/HD9 66.48T

**ASTRONIC ZF 16AS2630TO:** from 440HP

		Speed [kph] calculated at maximum power rpm																			
		Gears																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	RM1	RM2		
<b>T BOX = 1</b>	<b>ZF 16S2220TO ZF 16S2520TO</b>	<b>Gear ratios</b>	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	
		<b>Rear axle ratio</b>	3.793	7.5	8.9	10.9	13.0	15.8	18.9	22.5	27.0	34.1	40.7	49.5	59.2	72.0	85.9	103.0	122.7	8.0	9.5
			4.229	6.7	8.0	9.7	11.7	14.2	16.9	20.2	24.2	30.6	36.5	44.4	53.1	64.6	77.0	92.4	110.0	7.2	8.6
			5.009	5.7	6.8	8.2	9.8	11.9	14.3	17.1	20.4	25.8	30.8	37.5	44.8	54.6	65.0	78.0	92.9	6.0	7.2
			5.558	5.1	6.1	7.4	8.9	10.8	12.9	15.4	18.4	23.3	27.8	33.8	40.4	49.2	58.6	70.3	83.7	5.4	6.5
			6.095	4.6	5.6	6.8	8.1	9.8	11.7	14.0	16.8	21.2	25.3	30.8	36.8	44.8	53.4	64.1	76.3	5.0	5.9
			6.588	4.3	5.1	6.3	7.5	9.1	10.9	13.0	15.5	19.6	23.4	28.5	34.1	41.5	49.4	59.3	70.6	4.6	5.5
<b>T BOX = 1,6</b>	<b>ZF 16S2220TO ZF 16S2520TO</b>	<b>Gear ratios</b>	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	
		<b>Rear axle ratio</b>	3.793	4.7	5.6	6.8	8.1	9.9	11.8	14.1	16.9	21.3	25.5	31.0	37.0	45.0	53.7	64.4	76.7	5.0	6.0
			4.229	4.2	5.0	6.1	7.3	8.8	10.6	12.6	15.1	19.1	22.8	27.8	33.2	40.4	48.1	57.8	68.8	4.5	5.3
			5.009	3.5	4.2	5.1	6.1	7.5	8.9	10.7	12.8	16.1	19.3	23.4	28.0	34.1	40.6	48.8	58.0	3.8	4.5
			5.558	3.2	3.8	4.6	5.5	6.7	8.0	9.6	11.5	14.6	17.4	21.1	25.3	30.7	36.6	43.9	52.3	3.4	4.1
			6.095	2.9	3.5	4.2	5.1	6.1	7.3	8.8	10.5	13.3	15.8	19.3	23.0	28.0	33.4	40.1	47.7	3.1	3.7
			6.588	2.7	3.2	3.9	4.7	5.7	6.8	8.1	9.7	12.3	14.7	17.8	21.3	25.9	30.9	37.1	44.1	2.9	3.4



## P.T.O.

**On request:**

Gearbox	ZF 16S2220TO-ZF 16S2520TO	Max Torque	Application
P.T.O.	Ratio	Nm	
ZF NH/ 1b	0,91/ 1,09:1	1000	For tipping semitrailer pumps, crane, pumps, etc...
ZF NH/ 1c	0,91/ 1,09:1	1000	For tipping semitrailer pumps, crane, pumps, etc...
ZF NH/ 4c	1,17/ 1,40:1	430	For tipping semitrailer pumps, crane, pumps, etc...

## CLUTCH

Single dry plate, diameter 17". Pull type engagement with diaphragm spring. Hydro-pneumatic power steering engagement control, with driven disk 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 shafts, engaged with each other. Differential lockable by pneumatic control.

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

Front/rear torque distribution ratio: 1:4,0

## AXLES

### FRONT

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

#### **On request:**

Differential lockable by pneumatic control from driver's seat.

Reinforced Kessler front axle:

Vehicle	Load 1 <sup>st</sup> axle	Available axle ratio	Pneus
HD9 6x6T_K	8t @ 90 Km/h	5,01; 5,47; 5,96; 6,28	13 R22.5; 12.00 R20 14.00 R20

### REAR

Two drive axles in tandem. Double reduction: central with bevelled pair, final in the wheel hubs by means of epicyclical assembly. 2<sup>nd</sup> axle with distributor which distributes the torque between the two axles. Differential lockable by pneumatic control from driver's seat. Tandem assembled to the chassis by reaction rods with silentblock.

#### **On request:**

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, 4 leaves 24x90 mm, with hydraulic shock absorbers and standard stabilizer bar.

#### **On request:**

Extra-reinforced parabolic springs, n° 5 leaves 24x90 mm.

### REAR

Parabolic springs, swivelling on central pin: 4 leaves 40x100 mm, supplemented by torque bars and stiffening brackets.

#### **On request:**

Stabilizer bar on 2<sup>nd</sup> axle.

Stabilizer bar on 3<sup>rd</sup> axle.

Extra-reinforced conventional springs, n° 10 leaves 25x100 mm.

## STEERING

Hydraulic power steering ZF 8098 with variable ratio 1:22.2/1:26.2. Hydraulic pump with gears flanged to engine. Steering linkage with self lubricating floating joints. Steering column adjustable in height and angle.

## TYRES

**FRONT:** 13R22,5 156/150 G Single tubeless

**REAR:** 13R22,5 156/150 G Twin tubeless

Spare wheel on the chassis.

#### **Other Possible combinations:**

TYRES	ASSEMBLY	
	FRONT	REAR
12 00 R 20 156/150G	S	D
315/80 R 22,5 156/150G		
385/65 R 22,5 158K (*)	S	
315/80 R 22,5 156/150G		D
395/85 R 20 168G (*)	S	
525/65 R 20,5 173 F		S
16 00 R 20 173 G (**)	S	S
395/85 R 20 168 G (**)	S	S

S single

D double

(\*) Mandatory with 9 ton front axle load

(\*\*) Available with Individual Vehicle Approval tests

Other tyres available, subject to Astra technical office approval.

## CHASSIS

In steel with high elastic limit consisting of two flat parallel side members (width 820 mm.) with C section (320x90x10 mm) and cross members riveted to the frame. R.B.M. (Rail Bending Moment): 202.020 Nm (20.593 Kgm.).

Front bumpers in steel with headlamp protection grids, front manoeuvring hook, rear underrun bar, steel fuel tank, capacity 300 litres, fifth wheel helper frame, rubber mudguards on 2<sup>nd</sup> and 3<sup>rd</sup> axles, toolbox.

#### **On request:**

Rapid attachment for compressed air for tyres' inflation.

Rear manoeuvring hook.

Fixed 3½" fifth wheel.

Side windlass for spare wheel.

Swivelling 3½" fifth 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 + 1 with 20 litres.

ABS system and EBL (Electronic Brake Limiter).

## BRAKES

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

Total net braking surface 9.276 cm<sup>2</sup>. ABS.

**Service brake:** Pedal controlled air brake, acting on all wheels, three independent circuits, one for 1<sup>st</sup> axle, one for 2<sup>nd</sup> and 3<sup>rd</sup> axle and another for the semi-trailer.

**Emergency brake:** Incorporated in service brake.

**Parking brake:** Manual spring-type with pneumatic control acting on 2<sup>nd</sup> and 3<sup>rd</sup> axle wheels.

**IVECO BRAKE TURBO engine brake:**

HD9 410 braking power 200 kW (272 cv)

HD9 440/480/520/560 braking power 295 kW (408 HP)

#### **On request:**

Hydraulic intarder (66.44T/ 66.48T/ 66.52T/ 66.56T).

1<sup>st</sup> axle immobiliser system.

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



## ELECTRICAL SYSTEM

Voltage: 24 V

Alternator generator 90 A - 28 V (2520 W).

Accumulators: 2 in series, 170 Ah.

Starter motor 24 V 5,5 kW.

Mechanically controlled main circuit breaker.

ABS wheel anti-lock system with 4-conduits and 4-electric valves control unit.

Phonic wheels and sensors on 1<sup>st</sup> and 2<sup>nd</sup> axle.

1 electrical joint 7-pole (ISO 7638) for semi-trailer ABS.

1 electrical joint 15-pole (ISO 12089-4091) for semi-trailer lighting.

Offset trim lights.

Electrical provision for outfitters.

Provision for diagnostics.

Provision for radio/cb (without speakers)

Glow plug for cold start.

### On request:

170 Ah tropicalized accumulators;

Reverse alarm;

Electrically controlled main circuit breaker;

220 Ah accumulators.



## SERVICE DATA(I)

Engine oil sump and filters .....	28
Gearbox oil: ZF 16S2220TO/ZF 16S2520TO .....	13
Power steering oil.....	8,5
Cab tipping oil .....	1
Clutch circuit oil.....	0,5
Transfer oil 66.41-66.44-66.48 .....	6,5
Transfer oil 66.52-66.56.....	10
Front axle with final red. oil.....	6,5
Intermediate axle with final red. oil.....	27
Rear axle with final red. oil .....	16
Cooling system water.....	33
Diesel.....	300
AD Blue .....	45



## CAB

White cab built in galvanized 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. Internal panels completely washable and fireproof. Compressed air quick coupling for cab cleaning. 4-speed ventilation and heating system with air recirculation system. Air suspended 3-way adjustable driver seat with seat belts. Mechanical passenger seat with seat belts.

### On request:

Air conditioning with anti-pollen filter

Cab rear window.

Car radio RDS, CD.

Car radio RDS, CD with steering wheel controls

Car radio RDS, CD, MP3 Bluetooth technology.

External sun visor.

Heated and electric powered rear view mirrors.

Remote controlled and centralized closing of doors.

Roof hatch.

Rotating lights on top of the cab.

White engine hood with central mask in IC575 colour.



## INSTRUMENTATION

Trip Computer multifunction display. Multiplex electronic system for fundamental information for the driver: average speed, consumption and general information about the main components for ideal use of the vehicle.

**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, semi-trailer turn indicators, rotating lights, cab lifted, axles differential locked, differential lock, front brakes air pressure low, rear brakes air pressure low, semi-trailer brakes air pressure low, 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), tractor ABS, semi-trailer ABS, main steering circuit failure, steering auxiliary circuit failure, low urea level.

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### DEALER

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