



### Chassis Dimensions mm <sup>1)</sup>

|      |   | Tipper |      |
|------|---|--------|------|
| A    | Wheelbase .....   | 5100   | 5600 |
| TWB  | Theoretical wheelbase .....   | 4788   | 5288 |
| B    | Centre of rear axle to back of cab .....                                  | 4274   | 4774 |
| C    | Overall Chassis Length .....  | 8562   | 9062 |
| DMin | Rear Overhang (Min) .....   | 715    | 715  |
| DMax | Rear Overhang (Max) .....   | 715    | 715  |
| TP   | Tipper hinge position .....   | 615    | 615  |
|      | Largest possible fuel tank RHS with frame mounted catalyst (litres) ..... | 415    | 545  |

### Chassis Weights kg <sup>2)</sup>

|                   |      |      |
|-------------------|------|------|
| Front Axle .....  | 6700 | 6720 |
| Rear Bogie .....  | 3040 | 3050 |
| Kerb Weight ..... | 9740 | 9770 |

### Turning Diameter mm

|  |       |       |
|--|-------|-------|
| Turning Circle Diameter Kerb to Kerb ..... | 20500 | 22100 |
| Turning Circle Diameter Wall to Wall ..... | 22100 | 23700 |

### Plated Weights kg <sup>3)</sup>

|                          | Plated | Design |
|--------------------------|--------|--------|
| Gross Vehicle Weight     | 32000  | 37000  |
| Gross Combination Weight | 35500  | 40500  |
| Front Axle 1             | 7100   | 8000   |
| Front Axle 2             | 7100   | 8000   |
| Drive Axle 1             | 9500   | 10500  |
| Drive Axle 2             | 9500   | 10500  |

### Important Notes

#### 1) Chassis Dimensions

Cab Height: +96mm for sleeper cab L2H1, +533mm for Globetrotter L2H2.

**Front axle to back of cab intake: +434mm for sleeper and Globetrotter cab.**

Height can vary ± 20 mm for leaf suspension.

All dimensions are for unladen chassis.

Rear overhang used for vehicle weight calculation is the maximum rear overhang (D Max) for selected wheelbase.

#### 2) Chassis Weights

Chassis weight includes oil, water, 70 litres fuel, without Adblue and without driver. Weights can vary ± 2% and vary depending on options chosen.

#### 3) Plated Weights

To obtain 8000kg front axles 315/80R22.5 tyres must be specified.

For more detailed weight information, including optional equipment weights, ask your Volvo sales contact to enter your specification into the Volvo Weight Information system (WIS).

Weights and dimensions are based upon the following tyres -

Front: 12R22.5

Rear: 12R22.5

Do NOT use this drawing for bodybuilding.

Refer to Volvo Bodybuilder Instructions and chassis drawings

<http://vbi.truck.volvo.com>

# FM 360 - 480 8x4 B Ride High Tipper - Euro 4/5

## Driveline

### Key

- Standard equipment
- Factory mounted optional equipment

### ENGINE D13A

In-line 6-cylinder 12.8 litre diesel engine with turbo-charger and intercooler. Single piece cylinder head with overhead camshaft. Four valves per cylinder and electronically controlled unit injectors. Exhaust pressure regulator and viscous cooling fan standard. Electronic Diesel Control includes top speed limiter & cruise control functions.

Net output according to: ISO 1585.

- **D13A360** - max power 360hp (264kW)\*  
Torque 1800Nm (1326lb.ft) @ 950-1400rpm
- **D13A400** - max power 400hp (294kW)\*  
Torque 2000Nm (1474lb.ft) @ 1050-1400rpm
- **D13A440** - max power 440hp (324kW)\*  
Torque 2200Nm (1620lb.ft) @ 1050-1400rpm
- **D13A480** - max power 480hp (353kW)\*  
Torque 2400Nm (1767lb.ft) @ 1050-1400rpm
- \* Maximum power delivered @ 1400-1800rpm
- Economy rev range ..... 1050-1600rpm
- Bore & Stroke ..... 131 x 158mm
- Compression ratio ..... 18.1:1
- Oil change volume including filter ..... 33litres
- Cooling volume ..... 38litres
- Maximum engine speed ..... 1900 rpm
- Euro 4 with selective catalytic reduction  
D13A360 only available at Euro 4
- Euro 5 with selective catalytic reduction
- Closed crankcase ventilation
- Inlet preheat for temperatures below -15°C
- Engine driven pto with flange or hydraulic drive, torque 650Nm on the move & 900Nm stationary..

### CLUTCHES

- **CS43B-OR** □ **CS43B-O** □ **CD40B-O**
- Disc(s) Single Single Twin
- Diameter 430mm 430mm 400mm
- Total area 2000cm<sup>2</sup> 2000cm<sup>2</sup> 3063cm<sup>2</sup>
- CS43B-O used with I shift gearbox

### MANUAL GEARBOXES

- 9 speed range change ■ V2009 - 360 & 400  
14 speed range and splitter
- V2214 - 360,400 ■ V2214 - 440 ■ V2514 - 480  
14 speed range and splitter with overdrive
- VO2214 - 350,400 & 440 □ VO2514 - 480

### GEARBOX V2009

|                    |         |                    |        |        |
|--------------------|---------|--------------------|--------|--------|
| Gear               | 1       | 2                  | 3      | 4      |
| <b>Low range</b>   | 10.18:1 | 7.16:1             | 5.05:1 | 3.75:1 |
| <b>High range</b>  | 2.72:1  | 1.91:1             | 1.35:1 | 1.00:1 |
| <b>Reverse Low</b> | 16.41:1 | <b>High</b> 4.38:1 |        |        |
| <b>Crawler</b>     | 16.85:1 |                    |        |        |

Oil change volume.....12litres

### GEARBOX V2514 & V2214

|                        |         |                   |        |             |
|------------------------|---------|-------------------|--------|-------------|
| Gear                   | 1       | 2                 | 3      | Reverse     |
| <b>Low range</b>       |         |                   |        |             |
| Low split              | 11.13:1 | 7.16:1            | 4.68:1 | 15.06:1     |
| High split             | 8.92:1  | 5.74:1            | 3.75:1 | 12.09:1     |
| <b>High range</b>      |         |                   |        |             |
| Low split              | 2.97:1  | 1.91:1            | 1.25:1 | 4.02:1      |
| High split             | 2.38:1  | 1.53:1            | 1.00:1 | 3.22:1      |
| <b>Crawler Low</b>     | 16.86:1 | <b>High</b> 13.51 |        |             |
| Oil change volume..... |         |                   |        | 13.5 litres |

### I-SHIFT AUTOMATED GEARBOX

- I-shift - 12 speed auto-mechanical gearbox with three programs to suit different operations
- V2412AT - 400 & 440 □ V2512AT - 480
- VO2512AT hub reduction only

### I-SHIFT PROGRAMS

- Basic □ Long Haul, Fuel and Economy
- Distribution & Construction

### POWERTRONIC AUTOMATIC GEARBOX

- V2506PT** 6 speed automatic gearbox featuring a hydraulic torque converter with automatic lock up.
- Torque converter ratio ..... 2.09:1

|                |                   |                    |          |          |          |
|----------------|-------------------|--------------------|----------|----------|----------|
| <b>Gear 1</b>  | <b>2</b>          | <b>3</b>           | <b>4</b> | <b>5</b> | <b>6</b> |
| 6.15:1         | 4.27:1            | 2.41:1             | 1.68:1   | 1.32:1   | 1.00:1   |
| <b>Reverse</b> | <b>Low</b> 6.64:1 | <b>High</b> 3.84:1 |          |          |          |

- Oil volume with oil cooler aprox. .... 32 litre

## Driveline

### FINAL DRIVE RTS2370A

Tandem bogie with single reduction and cast axles.

High brake chambers-increased ground clearance.

Interaxle and differential locks.

Recommended ratio ..... 3.40:1

Ratios available ..... 3.09,3.78,4.13,4.50:1

Oil capacity ..... 20 litres front, 14.1 litres rear

## Performance at 32tonne

|                        |             |             |             |
|------------------------|-------------|-------------|-------------|
| <b>Rear axle ratio</b> | <b>3.09</b> | <b>3.40</b> | <b>3.78</b> |
| Engine revs at 56mph   | 1455        | 1601        | 1780        |

|                                |             |             |             |
|--------------------------------|-------------|-------------|-------------|
| <b>Startability in first %</b> | <b>3.09</b> | <b>3.40</b> | <b>3.78</b> |
| D13A360                        | 22.5        | 25.9        | 30.2        |
| D13A400                        | 29.4        | 34.8        | 41.0        |
| D13A440                        | 33.8        | 39.7        | 42.5        |
| D13A480                        | 38.3        | 41.2        | 44.5        |

|                            |             |             |             |
|----------------------------|-------------|-------------|-------------|
| <b>Max. grade in top %</b> | <b>3.09</b> | <b>3.40</b> | <b>3.78</b> |
| D13A360                    | 2.1         | 2.5         | 2.9         |
| D13A400                    | 2.6         | 3.0         | 3.5         |
| D13A440                    | 3.0         | 3.4         | 3.9         |
| D13A480                    | 3.3         | 3.8         | 4.4         |

Calculations based on 12R22.5 tyres with V2009-360,400, V2214-440, V2514-480 gearboxes.

## Chassis Features

### FRAME

Constant frame width of 850mm from 1900mm behind front edge. Flange width 90mm.

- Thickness 8mm ..... FRAME88 plus 5mm inner liner over rear bogie FIL-FBEF
- Tipper overhang ..... RFL2085
- Section height 300mm ..... FRAMEHIGH
- Steel construction bumper ..... BUMP-SC
- Sump guard only available with steel bumper

### STEERING

Integral power assisted steering with variable ratios and steering wheel lock. Recirculating ball and nut type. Steering angle of 50 degrees.

### AXLES

- Two 8000kg front axles ..... FAL16
- Rear bogie load 21000 kg ..... RAL21
- High ride - straight front axles .... FA-STRAI
- See frame & wheels & tyres section

### SUSPENSION - FRONT

Parabolic leaf spring with stabiliser and shock absorbers.

- Front parabolic springs ..... FST-PAR
- Leaves first axle ..... 2
- Leaves second axle ..... 3

### REAR

- RADD-BR: Non road friendly two spring design with parabolic leaves, shock absorbers and stabiliser. Front and rear spring to axle mounting with rubber cushion. Axle located with 'V' stay and reaction rods.
- 3 leaf rear springs.....RST-PAR1
- Spring length ..... 1380 mm
- Spring width ..... 75 mm

### BRAKES

Compressed air system with separate circuits for front and rear. Load sensing valve on drive axle. Steel air tanks, air drier and brake silencers.

Parking: spring brakes on second steer and first drive axle.

- 1 cylinder compressor (530 l/min)
- 2 cylinder compressor (1080 l/min)
- 1 cartridge air dryer
- Front brake lining width 175 mm
- Rear brake lining width 200 mm
- Brake drum diameter 410mm
- Anti lock brake system
- Disc brakes all round with EBS
- EBS-MED with Traction Control, Hill hold & Brake assistant

### Additional brake systems

- Exhaust brake, max power 160kW (216hp)
- Volvo Engine Brake, max power 300kW at 2300rpm.
- Volvo Engine Brake+ , max power 375kW at 2300rpm.
- Powertronic gearbox retarder, max power 310kW (420 Hp) - n/a with Volvo engine brake

### FUEL TANKS

D shaped tanks mounted on RHS.

Material ■ Aluminium □ Steel

560mm diameter tanks include

- 315litre □ 415litre □ 505 litre

### ADBLUETANK

- 35litre adblue tank on LHS ..... ADTL35

Located between first and second steer axle on the left hand side of the chassis.

Adblue tank on right side available via RTO

### ELECTRICAL

Electronic integrated architecture based on data buses. 24 volt electrical system with main switch.

- Battery .. 2x170 Ah □ Battery 2x225 Ah
- Alternator .... 110A □ Alternator . 120A

- ADR .... ADR-BAS2

### WHEELS & TYRES

- Pressed steel wheels
- Aluminium wheels - matt or polished

|               |      |             |
|---------------|------|-------------|
| Tyre          | Rim  | F/axle load |
| ■ 12R22.5     | 8.25 | 7100kg      |
| □ 315/80R22.5 | 9.00 | 8000kg      |
| □ 295/80R22.5 | 8.25 | 7100kg      |

### SCR EXHAUST CATALYST

Located between first and second steer axle on the right hand side of the chassis.

- Horizontal with right outlet ..... ESH-RIGH

- Horizontal with vertical outlet.....ESH-VERT

### CHASSIS MOUNTED EQUIPMENT

- Low air intake ..... AIRIN-LO
- High air intake ..... AIRIN-HI
- Jack and tools
- Chassis toolbox left side. This option can be limited with some fuel tank options
- One or two wheel chocks are available
- Rear underrun guard
- Sparewheel carrier on left

## Cab<sup>1)</sup>

- Day cab ..... L1EH1
- Sleeper cab ..... L2H1
- Globetrotter sleeper cab ..... L2H2

### Cab packages

- Fleet □ Comfort □ Prestige

### Sleeping package

- 1 person □ 2 person

<sup>1)</sup> For more detailed information, see Cab data sheet.

## Ancillary Equipment

### POWER TAKE OFFS

A full range of Volvo clutch independent and gearbox mounted power take offs together with a choice of hydraulic pumps are available.

## Suggested Applications

### Tipper Applications

#### GBRTP003 and GBRTP004

These applications have been put together to simplify the key variants that make up a tipper the full package is described in VSS. Some variants can be changed to fine tune the exact customer requirement.

|                         |                  |
|-------------------------|------------------|
| Wheelbase .....         | WB5100 or WB5600 |
| Engine .....            | D13A360          |
| Rear axle ratio .....   | 3.40:1           |
| Sump guard .....        | GUARD-EH         |
| Rear frame length ..... | RFL2085          |

See full application recommendations in VSS.