

V O L V O



Volvo Rigid Haulers 65.0 t 772 hp

R70

Volvo Construction Equipment

R70

The R70 rigid hauler thrives on quarrying and mining sites, where it moves large quantity of material at high speed over long distances, reliably and cost efficiently.



Productivity



- 65 tonnes payload, 42.4 m³ volume
- V-shape body for optimum load retention
- Fast body-tipping system
- High drive axle multiplication: excellent tractive effort and incline performance
- 61 km/h top speed
- 10/10/20 payload policy, supported by On-Board Weighing system (option)
- A match to EC950F and L350H
- Design promotes excellent stability and maneuverability

Fuel efficiency



- Dynamic Shift Control: automatic adaptive gear selection
- Selectable Eco mode
- Auto engine idle shut down
- Include payload sensitive shifting (when connected to optional on-board weighing system)
- HVO compliant

Driving profits forward

Big on productivity but low on cost of operation, the R70 is the perfect partner for quarrying and mining duties. This Volvo Rigid Hauler delivers outstanding performance, reliability and serviceability – not to mention safety and comfort.



Comfort

- Cab access from both sides
- Outstanding visibility: large windscreen, low raked dashboard, left-positioned operator station, optional 360° Volvo Smart View
- Independent suspension and viscous mounted cab
- Adjustable air-suspended seat and steering wheel
- Effortless ergonomic control layout
- Powerful Heating, Ventilation and Air-Conditioning system
- Bluetooth, ample storage space
- Operator cab with pressurized properties
- Independent suspension and viscous mounted cab - reduces vibrations and impacts while harmonizing noise



Safety

- ROPS/FOPS-certified cab with pressurized properties
- Anti-slip steps, secure walkways
- Selectable transmission retarder, Gear dependent speed control
- Transmission overspeed protection
- Fail-safe braking and secondary steering
- Neutral coast inhibitor
- Ground level tag out switch
- Emergency shutdown switch
- Body up movement limiter
- Adaptable top speed restriction



Serviceability and uptime

- Maximized component lifecycles
- 500 hr service intervals
- On-board diagnostics
- Straightforward service access
- Common-sized bearings
- CareTrack telematics system for remote monitoring
- Grouped service points
- Aspirated engine air cleaners
- Magnetic hydraulic suction filters
- Pressure filters on the main hydraulic circuits
- Machine operational safety inhibitors

Volvo R70 in detail

Engine

Model	CumminsQSK 19, CAC, (EU Stage V) (EPA Tier4 f) , 567 kW	
Type	Electronic control, four cycle, direct injection, turbo charged and charge air cooled, high-speed electronic control module (ECM) isolated from detrimental vibration loading, fully sealed wiring harness, with fail-safe connectors integrates the ECM with engine sensors for optimised engine performance, monitoring and protection. DEF and SCR emission control	
Cylinder/configuration	In line 6 cylinder	
Displacement	l	19
Bore x Stroke	mm	159
Max. power at	r/min	2 100
Gross power (SAE J1995)	kW	567
	hp	772
Net power	kW	526
	hp	715
Max. torque at	r/min	1 500
Gross torque	Nm	3 084
Engine emissions	USA EPA Tier 4f and EU Stage V emissions standards	
Electrical	24 V negative ground, Two 12 volt 170 Ah batteries	

Steering System

Primary steering pressure is supplied by a pressure compensating piston pump supported by an independant nitrogen charged hydraulic accumulator. The accumulator circuit provides instant, uniformed steering response regardless of engine speed. Pilot operated remote mounted orbitrol control valve delivers light, responsive steering control. Secondary steering is provided by an independant nitrogen charged hydraulic accumulator.

SAE turning radius	mm	20 400
Clearing radius	mm	22 500

Axles

The rear wheels are driven through single reduction drive axle. Torque multiplication takes place through the beveled gear differential, then transmitted through fully floating shafts to the planetary reduction gears in the wheel hubs.

Differential ratio	3.73:1	
Planetary reduction	5.8:1	
Overall drivetrain reduction	21.63:1	

Frame

Fabricated from box-section steel rails with high strength steel castings in key stress locations absorbing the worksite impacts for long durable life cycles. The closed "horse collar" allows for flexibility in the frame to dissipate twists and loads while incorporating a reserve of structural strength well in excess of that required to absorb the stresses imposed by impact loading when travelling on uneven, high rolling resistance applications. Fuel and hydraulic tanks suspended mounts off the frame.

Body

V-shaped that provides excellent centre of gravity for load profile stability on all hauling conditions. Manufactured from high abrasion resistant steel (Hardox 400) for superior lifecycles. Horizontal side stiffeners dissipate shock loads across the entire side plate. Mounted on floating pins for minimal structural stress during empty and full transportation.
NB: Hardox 400 specification
Body steel 360-440 BHN
Body yeils strength 1000 Mpa
Body tensile strenght 1,250 N/mm²

Plate thickness

Floor	mm	19
Sides	mm	10
Front	mm	10

Body volume

Stuck	m ³	31.6
Heaped 2:1 (SAE)	m ³	42.5

Tires and Rims

Tires type	24:00-35	
Rims	17	

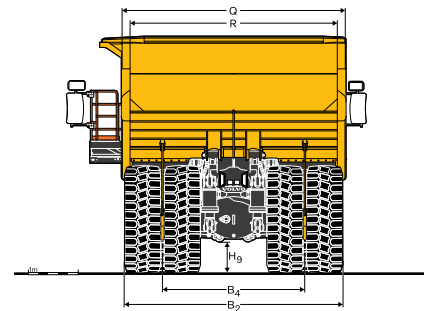
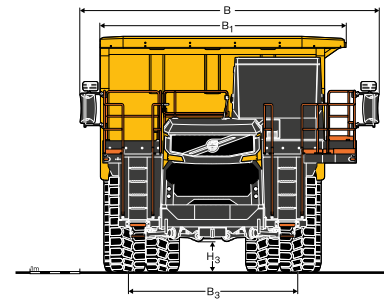
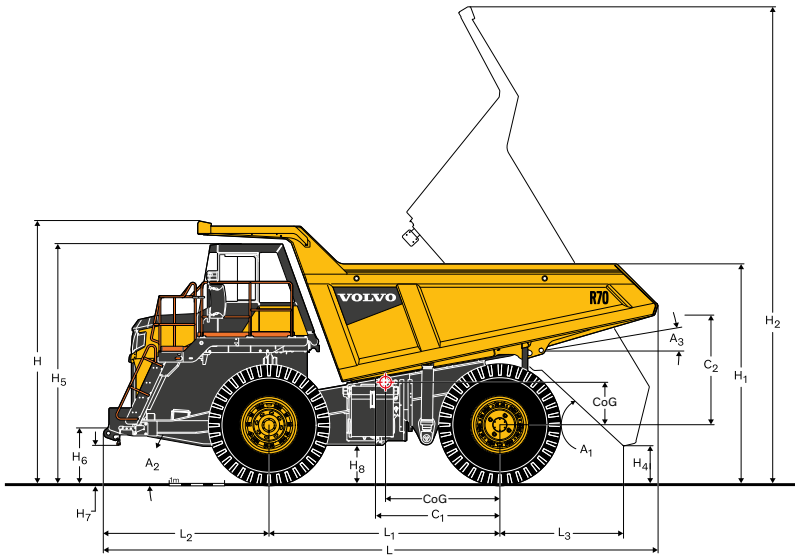
Sound Level

Interior sound level according to ISO 6396

L _{pA}	dB	76
L _{WA}	dB	101

Drivetrain		
Transmission		Allison 6620 ORS
Assembly	Planetary gear type transmission with intergral torque convertor and hydraulic fluid retarder. Electronic controlled connected to engine system via CANBUS. Automatic lockup in all ranges. Mounted mid chassis for ease of access and excellent weight distribution.	
Electronic control		CEC5
Maximum speed, forward/reverse		
1st gear	km/h	11 / 7
2nd gear	km/h	15 / 11
3rd gear	km/h	20
4th gear	km/h	30
5th gear	km/h	41
6th gear	km/h	59
Suspension		
Front: Independent self contained Macpherson type, variable rate (Nitrogen/oil) suspension strut with lower wishbone. Widley spaced wheel track for high levels of machine stability and easy machine manoeuverability.		
Rear: Independent self contained variable rate (Nitrogen/oil) suspension struts. The strut is mounted between the chassis and axle. The axle is mounted via trailing A frame and lateral stabilizing bar.		
Maximum front strut stroke	mm	242
Maximum rear strut stroke	mm	140
Brake system		
Fulfills ISO 3450:2011, Braking - Wheeled or High-Speed Rubber Tracked Machinery		
Front brakes type	Independant hydraulic apply, dry single caliper, Incorporating independent nitrogen/hydraulic pressure accumulator for instant response and reserve pressure.	
Front brake diameter	mm	711
Front brakes lining area	cm ²	1 395
Rear brakes type	Independent force cooled, oil emmersed, multi-disc enclosed brakes. Two piston service and park/emergency brakes. Emergency brake spring-applied hydraulic release (SAHR). Service brake is also used for rear brake retardation for safe machine control.	
Rear brake lining area	cm ²	67 390
Hoist		
Fulfills ISO 4413:2010, Fluid Power Systems - Safety - Hydraulics		
System relief pressure	MPa	19
Pump output flow rate	l/min	336
at	r/min	2 100
Body raise time	s	11
Body lower time	s	14
Service Refill		
Engine crankcase and filters	l	65
Transmission and filters	l	90
Cooling system	l	160
Fuel tank	l	770
DEF/AdBlue® tank	l	57
Steering hydraulic tank	l	302
Steering hydraulic system (total)	l	380
Planetaries (total)	l	58
Differential	l	95
Front ride strut (each)	l	12.4
Rear ride strut (each)	l	7.2
Power take off	l	2
Weights		
Chassis with hoists	kg	35 608
Body standard	kg	11 016
Net weight	kg	46 624
Maximum payload	kg	65 000
Maximum gross weight*	kg	111 624
- Empty	%	48 / 52
- Loaded	%	32 / 68

Specifications



DIMENSIONS

	Description	Unit	R70
H	Overall height	mm	4 734
H ₁	Loading height	mm	3 975
H ₂	Raise height	mm	8 617
H ₃	Front axle ground clearance	mm	662
H ₄	Tail clearance	mm	667
H ₅	Cab height	mm	4 315
H ₆	Bumper ground clearance (no TH)	mm	971
H ₇	Ladder ground clearance	mm	417
H ₈	Frame ground clearance (hoist)	mm	690
H ₉	Rear axle ground clearance	mm	665
B	Overall width (outside of mirrors)	mm	5 921
B ₁	Body width	mm	4 506
B ₂	Rear over tires	mm	4 381
B ₃	Front track	mm	3 384
B ₄	Rear track	mm	2 856
L	Overall length	mm	10 005
L ₁	Wheel base	mm	4 170
L ₂	Center front axle to bumper	mm	2 986
L ₃	Center rear axle to tipped tail	mm	2 426
SAE _{TR}	SAE turning radius	mm	20 400
C _{TR}	Clearance turning radius	mm	22 500
A ₁	Body dump angle	°	47
A ₂	Approach angle	°	21 (to guard)
A ₃	Frame angle	°	10
C of G	from the centre of the rear axle, unladen - horizontal	mm	2 065
C of G	from the centre of the rear axle, unladen - vertical	mm	779
C of G	from the centre of the rear axle, laden (2:1 heaped) - horizontal	mm	1 310
C of G	from the centre of the rear axle, laden (2:1 heaped) - vertical	mm	1 770

Vehicle measurements assumptions / variables

Measurements to be taken on flat ground

Truck should be unladen

Bridgestone VRLS Tires should be used

Tire pressure should be set as per manual

Suspension should be set at normal operating height



Equipment

STANDARD EQUIPMENT

Engine

Air cleaner with aspirator (vacuum)

Turbocharged and charge air cooler

Direct drive fan

Electronically controlled with Shift Energy Management (SEM)

Engine safe mode

Fuel filter/water separator

Sump guard

Engine idle shut down

Engine enclosures (rubber)

Tires

Standard tires 24:00-35

Drivetrain

Full automatic transmission with manual override

Shift Energy Management

Torque converter with automatic lockup

Volvo Dynamic Shift

Electrical system

Alternator

Batteries

Battery disconnect switch (tag lock out)

Emergency engine shutdown (ground level)

Direction indicators and hazard warning

Lights - side, tail, stop and headlights

LED tail lamps

Power ports - 12V and 24V

Reverse alarm

Reverse lights

ECO mode

Auto retard

Brake system

Hydraulically operated system with independent front and rear control systems

Park brake - electric switch, spring applied hydraulic release

Retardation - finger tip control of transmission retarder or lever mounted on the steering column giving modulated pressure control of the rear oil cooled brakes

Body

Rock ejectors

STANDARD EQUIPMENT

Safety and security

Anti-slip steps and platforms

Body down indicator

Body - operator guard LHS

Body - up locking pins

Body - up reverse to neutral inhibitor

Body - up shift inhibitor

Brakes - independant front and rear systems

Emergency SAHR brake

Battery disconnect switch (tag lock out)

Engine diconnect switch (Tag lock out)

Emergency engine shutdown (ground level)

Cab - ROPS and FOPS

Electro magnetic compatibility

Handrails on steps and platform

Horn

Neutral start inhibitor

Engine overspeed protection

Neutral coast inhibit

Programmable max. travel speed

Operator safety belt

Operator's field of view

Rear view mirrors

Retarder - transmission

Retarder - rear brake

Secondary steering

Instructor's seat with safety belt

Vibration 2002/44/EC

Windscreen washers

Windscreen wipers

Comfort

Air suspended seat

Heating, Ventilation and Air Conditioning - HVAC

Interior lights

Radio - Bluetooth

USB power take-off

Cup holder

Insulation thermal and acoustic

Storage compartments

Sun visor

Tilt/telescopic steering wheel

Tinted glass

Operator information interface

MacPherson type front suspension with lower wishbone

Exterior

Mud flaps

Diagnostic terminal

Front and rear tow points

Service and maintenance

Pressure check points

OPTIONAL EQUIPMENT

Engine

Fast fuel

Inline fuel heater

Tires

Bridgestone

VMTP

VZTS

VRLS

Michelin tires

XDTA-4

XKD1-A

E4RTL

Goodyear

RL4J

23775

Belshina

FBEL 150

BEL 202

BEL 122

Techking

ETDT2

Magna

MAO4A

Drivetrain

Transmission sump guard

Drive line guard

Traction bias differential

Electrical system

Heated and adjustable electrical mirrors

LED headlamps

Forward work lamps

Rear work lamps

Care track telematics

Cab

Amber flashing beacon

HEPA filter

Body

Onboard Weighing System

Pay load indicator lights

Body Exhaust Heating

Spill guard

Body Extensions upon request

Body liner plates (available with full weight or half weight)

RHS canopy extension

Safety and security

Fire suppression system

Smart view (360 degree camera system)

Orange flashing beacon

Service and maintenance

Quick oil drain kit

Central autolube

Service lights

Not all products are available in all markets. Under our policy of continuous improvement, we reserve the right to change specifications and design without prior notice. The illustrations do not necessarily show the standard version of the machine.





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