

V O L V O



Volvo Rigid Haulers 65.0 t / 143,300 lb 761 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.

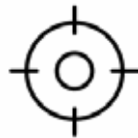


Productivity



- 65 tonnes (71.6 ton) payload, 42.4 m³ (55.46 yd³) 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 (37.9 mph) 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

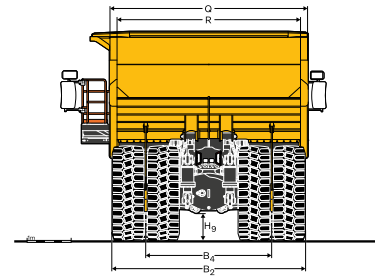
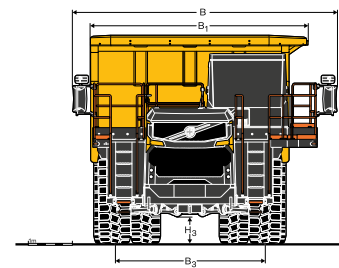
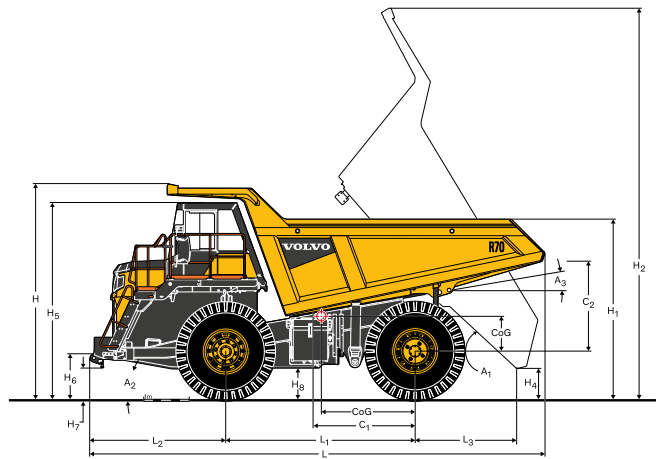
- Maximized component lifecycles
- 500 hr service intervals
- On-board diagnostics
- Straightforward service access
- Common-sized bearings
- CareTrack telematics system for remote monitoring
- Grouped service points
- Aspirated engine air cleaners
- Magnetic hydraulic suction filters
- Pressure filters 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 (in³)	19 (1,159)
Bore x Stroke	mm (in)	159 (6.25)
Max. power at	r/min (r/s)	2,100 (35)
Gross power (SAE J1995)	kW (hp)	567 (761)
Net power	kW (hp)	526 (705)
Max. torque at	r/min (r/s)	1,500 (23.3)
Gross torque	Nm (ft lbf)	3,084 (2,275)
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 (ft in)	20,400 (66.9)
Clearing radius	mm (ft in)	22,500 (73.8)
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 accross 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 (in)	19 (0.74)
Sides	mm (in)	10 (0.39)
Front	mm (in)	10 (0.39)
Body volume		
Stuck	m³ (yd³)	31.6 (41.2)
Heaped 2:1 (SAE)	m³ (yd³)	42.5 (55.6)
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 (mi/h)	11 / 7 (6.8 / 4.3)
2nd gear	km/h (mi/h)	15 / 11 (9.3 / 6.8)
3rd gear	km/h (mi/h)	20 (12.4)
4th gear	km/h (mi/h)	30 (18.6)
5th gear	km/h (mi/h)	41 (25.4)
6th gear	km/h (mi/h)	59 (36.6)
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 (in)	242 (9.5)
Maximum rear strut stroke	mm (in)	140 (5.5)
Brake system		
Fulfills ISO 3450:2011, Braking - Wheeled or High-Speed Rubber Tracked Machinery		
Front brakes type	Independent hydraulic apply, dry single caliper, Incorporating independent nitrogen/hydraulic pressure accumulator for instant response and reserve pressure.	
Front brake diameter	mm (in)	711 (28)
Front brakes lining area	cm² (in²)	1,395 (216) ()
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	cm² (in²)	67,390 (10,445)
Hoist		
Fulfills ISO 4413:2010, Fluid Power Systems - Safety - Hydraulics		
System relief pressure	MPa (psi)	19 (2,755)
Pump output flow rate	l/min (gal/min)	336 (88.8)
at	r/min (r/s)	2,100 (35)
Body raise time	s	11
Body lower time	s	14
Service Refill		
Engine crankcase and filters	l (gal)	65 (17.1)
Transmission and filters	l (gal)	90 (23.7)
Cooling system	l (gal)	160 (42.2)
Fuel tank	l (gal)	770 (203)
DEF/AdBlue® tank	l (gal)	57 (15)
Steering hydraulic tank	l (gal)	302 (79.7)
Steering hydraulic system (total)	l (gal)	380 (100)
Planetaries (total)	l (gal)	58 (15.3)
Differential	l (gal)	95 (25)
Front ride strut (each)	l (gal)	12.4 (3.2)
Rear ride strut (each)	l (gal)	7.2 (1.9)
Power take off	l (gal)	2 (0.79)
Weights		
Chassis with hoists	kg (lb)	35,608 (78,502)
Body standard	kg (lb)	11,016 (24,286)
Net weight	kg (lb)	46,624 (102,788)
Maximum payload	kg (lb)	65,000 (143,300)
Maximum gross weight*	kg (lb)	111,624 (246,089)
- Empty	%	48 / 52
- Loaded	%	32 / 68

Specifications



DIMENSIONS

Description		Unit		R70	
H	Overall height	mm	ft in	4,734	15'6"
H ₁	Loading height	mm	ft in	3,975	13'0"
H ₂	Raise height	mm	ft in	8,617	28'3"
H ₃	Front axle ground clearance	mm	ft in	662	2'2"
H ₄	Tail clearance	mm	ft in	667	2'2"
H ₅	Cab height	mm	ft in	4,315	14'2"
H ₆	Bumper ground clearance (no TH)	mm	ft in	971	3'2"
H ₇	Ladder ground clearance	mm	ft in	417	1'4"
H ₈	Frame ground clearance (hoist)	mm	ft in	690	2'3"
H ₉	Rear axle ground clearance	mm	ft in	665	2'2"
B	Overall width (outside of mirrors)	mm	ft in	5,921	19'5"
B ₁	Body width	mm	ft in	4,506	14'9"
B ₂	Rear over tires	mm	ft in	4,381	14'4"
B ₃	Front track	mm	ft in	3,384	11'1"
B ₄	Rear track	mm	ft in	2,856	9'4"
L	Overall length	mm	ft in	10,005	32'10"
L ₁	Wheel base	mm	ft in	4,170	13'8"
L ₂	Center front axle to bumper	mm	ft in	2,986	9'10"
L ₃	Center rear axle to tipped tail	mm	ft in	2,426	8'0"
SAE _{TR}	SAE turning radius	mm	ft in	20,400	66'11"
C _{TR}	Clearance turning radius	mm	ft in	22,500	73'10"
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	ft in	2,065	6'9"
C of G	from the centre of the rear axle, unladen - vertical	mm	ft in	779	2'7"
C of G	from the centre of the rear axle, laden (2:1 heaped) - horizontal	mm	ft in	1,310	4'4"
C of G	from the centre of the rear axle, laden (2:1 heaped) - vertical	mm	ft in	1,770	5'10"

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 - independent front and rear systems
Emergency SAHR brake
Battery disconnect switch (tag lock out)
Engine disconnect 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

OPTIONAL EQUIPMENT
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





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