

# **VOLVO ARTICULATED HAULERS**



**VOLVO**

# Take the shortest path. Get the lowest cost per tonne



## The concept

The articulated hauler is a modern concept developed by Volvo for transport under difficult conditions. Its mobility is so good that it can take the shortest distance between two points and manoeuvre itself into exactly the right spot to dump its load. All this leads to high efficiency and low cost per ton – which forms the foundation of successful haulage.

The basis of the articulated hauler is the connection between front and rear frame – the rotating frame joint (hitch) and articulated steering. They make it possible for tractor and trailer to move independently of each other, which drastically reduces the stresses on the frame when driving off-road. It makes it possible to transport heavy loads under difficult conditions. Steering is simple and very effective and all the wheels are in contact with the ground in off-road operation.



Without doubt, the most common range of uses is in different forms of earth-moving when building roads and dams, and in other major construction projects. But other applications are increasing more and more. These include work at sand pits and quarries, in waste disposal, coal mining, tunnel construction, open pit mining, various forms of interchangeable loading systems and much more.

Articulated haulers are ideal for rough loading and dumping sites. They can move large volumes of material without access to roads and maintain high average speeds on haul roads.

Articulated haulers feature high availability and utilization and low fuel consumption. They can always take the shortest path between two points and don't need expensive road maintenance.

All together, this gives you the lowest cost per ton and a guarantee of high productivity throughout the year.

## **Fast and easy to handle at both loading and dumping sites**

Articulated steering make it easy to get Volvo haulers in the right loading position. All-wheel drive and 100% diff-lock in all axles eliminate the risk of getting stuck on the loading or dumping site. Being able to dump the load over the edge of a landfill eliminates the need for crawler dozers, which further reduces hauling costs.

Volvo offers a complete range of haulers with 20–36 t payload, all with articulated steering, all-wheel drive, 100% diff-lock on all axles and an operator-friendly comfort cab.

Volvo articulated haulers are fast, with an in-house produced, well-matched drive train, including a fully automatic planetary transmission, that features maximum utilization of the engine power, exceptional reliability, good fuel economy and long service life.

Articulated haulers can handle any kind of job. With unsurpassed off-road qualities and high average speed on poor roads, the articulated haulers are profitable high-production machines. They can always take the shortest path from loading site to dumping site and back, independent of road and weather conditions.

# The articulated steering and rotating frame joint keeps you moving anywhere you want to go

The rotating frame joint is fundamental to the unbeatable off-road performance of Volvo's articulated haulers. Together with the hydromechanical steering system, it makes the hauler easy to steer and permits "duckwalking" which allows you to climb out of deep ruts and keep moving in the worst of conditions.

## Volvo engines

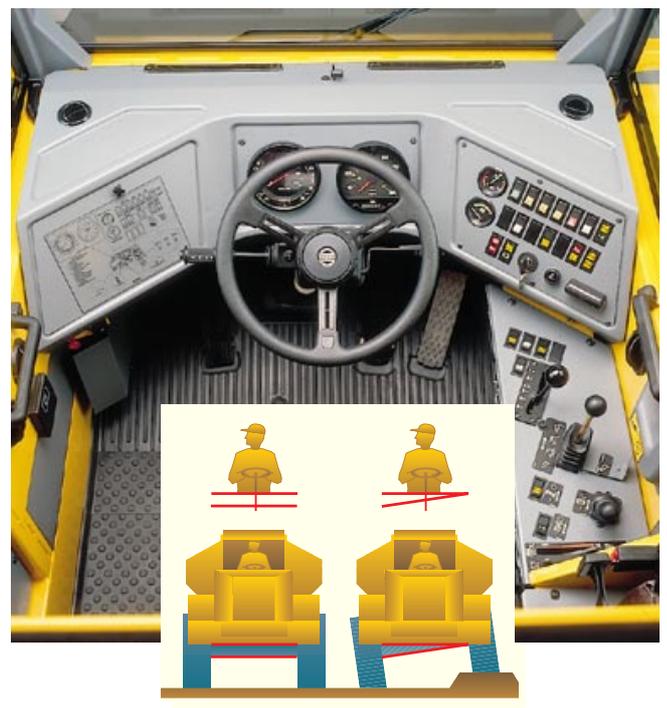
Volvo's in-line six-cylinder direct-injected four-stroke diesel engines with turbocharger and intercooler are the choice for all models. An excellent basic design providing high power outputs, high torques, low emissions and long life.

The torque is high even at low engine speeds for quick acceleration response, which is particularly important in difficult off-road conditions. Within the engine's normal working range, the torque increases when the engine speed decreases. This boosts up the tractive force when the hauler meets resistance, for example on an uphill grade. Maximum rpm is relatively low, which leads to lower fuel consumption, less noise and a longer life.

## Operator in the centre – literally

The operator is without doubt one of the most important components in an efficient articulated hauler. An ergonomical and comfortable operator's environment with high safety makes it simple to operate the hauler at a high level of efficiency.

The operator sits straight above the front axle, midway between the wheels. This puts him at the midpoint of the machine, where the cab's movements are minimal. Visibility all around is excellent, steering is precise and the automatic transmission saves more than 150 shifts every hour. Engagement and disengagement of the difflocks and driving wheels is performed logically via ergonomically correct controls.





## Fully automatic Volvo transmission

Volvo's automatic transmission and drop box are especially developed for use in articulated haulers. The transmission is electronically controlled and adapts gear shifting mode according to operating conditions. Together with torque converter and lock-up in all gears this guarantees excellent acceleration, less power loss, lower fuel consumption, reduced heat generation and less operator fatigue. It also incorporates an efficient variable hydraulic retarder as standard.

## Unique maintenance-free three-point suspension

Three-point suspension and Volvo terrain bogie allow independent wheel movement to maintain good ground contact at all times and enable the machines to handle high-speed haulage over rough terrain or on poor roads.

The bogie balances out irregularities on the surface so that the body is kept horizontal and distributes the load equally to all bogie wheels enhancing offroad mobility.

## Diff-locks that engage or disengage on the move

To get superior mobility under the toughest conditions, Volvo articulated haulers have diff-locks with 100 % lock-up in all driving axles. These can be engaged or disengaged on the move and together with the choice between 4- or 6 wheel drive, give a very wide selection of drive combinations to handle any kind of job.



*The six-wheel haulers offer five drive combinations:*

*A. Four-wheel drive without diff-lock is the most economical under good driving conditions.*

*B. Six-wheel drive with longitudinal diff-lock increases off-road accessibility even more, and the hauler remains easy to steer.*

*C. Six-wheel drive with longitudinal diff-lock and diff-lock on the front wheels makes it possible to steer out of deep ruts and maintain maximum traction.*

*D. Six-wheel drive with all diff-locks in operation gives maximum accessibility in rough terrain and the hauler can take itself practically anywhere.*

*E. Four-wheel drive with transverse diff-lock on the front axle increases accessibility and the hauler will maintain steering capability and pull itself forward on slippery and hard ground.*

# Special use machines with all the advantages of the standard model

New types of special use machines are introduced every year. They may be used for forestry, ammunition transport, garbage collection or as trailer-towing tractors. The advantages of building on a Volvo articulated hauler instead of custom-building a vehicle are many:

- the articulated hauler is very powerful and able to withstand huge stresses
- its off-road characteristics are better than those of most special vehicles
- the articulated hauler's reliability is documented
- service and parts are available all over the world
- the articulated hauler has the lowest possible haulage cost per tonne.

At ports and cargo terminals specially-equipped articulated haulers are used for hauling heavy goods and for container handling.

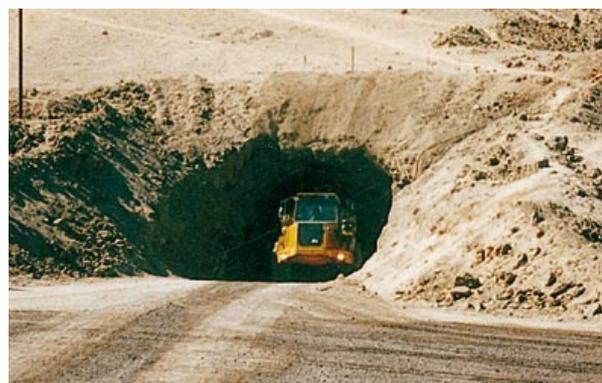
Volvo A25C equipped with a container which hauls relatively light garbage. With its low ground pressure, off-road mobility and manoeuvrability, it can negotiate on the landfill and dump the garbage at the right place.

In the forestry and steel industries, Volvo's articulated haulers are ideally suited for load handling systems or as tractors for train weights of up to 100 tonnes.

## High load capacity – low ground pressure

The A25C Timber Hauler offers added flexibility and productivity between forest and stockpile. The unique combination of high load capacity and speed and low ground pressure permits short cycle times and large loads. The machine's ability to maintain a high speed in terrain also reduces the need for costly road upkeep.

Dark and cramped, with bad air and slopes with a gradient of up to 14%. Plus round-the-clock duty and loads of 22,5 tonnes. The three Volvo A25Cs used in the Chilean copper mine have a tough job. Despite this, availability has been virtually 100%!





#### Volvo A20C 6x6

<b>Engine</b>		Volvo TD 73 KFE	
<b>Rated output</b> , at	r/s (r/min)	40	(2 400)
SAE J1349 gross	kW (hp)	173	(232)
SAE J1349 net	kW (hp)	170	(228)
<b>Max. torque</b> , at	r/s (r/min)	20	(1 200)
SAE J1349 gross	Nm	920	
SAE J1349 net	Nm	910	
<b>Max. speed</b>	km/h	47,0	
<b>Load capacity</b>			
SAE struck	m <sup>3</sup>	9,4	
SAE 2:1 heap	m <sup>3</sup>	12,0	
<b>Payload</b>	t	20,0	
<b>Net weight</b>	t	16,4	
<b>Gross weight</b>	t	36,4	



#### Volvo A25C 4x4

<b>Engine</b>		Volvo TD 73 KCE	
<b>Rated output</b> , at	r/s (r/min)	40	(2 400)
SAE J1349 gross	kW (hp)	190	(255)
SAE J1349 net	kW (hp)	187	(251)
<b>Max. torque</b> , at	r/s (r/min)	20	(1 200)
SAE J1349 gross	Nm	1 090	
SAE J1349 net	Nm	1 080	
<b>Max. speed</b>	km/h	52,0	
<b>Load capacity</b>			
SAE struck	m <sup>3</sup>	10,1	
SAE 2:1 heap	m <sup>3</sup>	13,0	
<b>Payload</b>	t	22,5	
<b>Net weight</b>	t	15,7	
<b>Gross weight</b>	t	38,3	



#### Volvo A25C 6x6

<b>Engine</b>		Volvo TD 73 KCE	
<b>Rated output</b> , at	r/s (r/min)	40	(2 400)
SAE J1349 gross	kW (hp)	190	(255)
SAE J1349 net	kW (hp)	187	(251)
<b>Max. torque</b> , at	r/s (r/min)	20	(1 200)
SAE J1349 gross	Nm	1 090	
SAE J1349 net	Nm	1 080	
<b>Max. speed</b>	km/h	52,0	
<b>Load capacity</b>			
SAE struck	m <sup>3</sup>	10,6	
SAE 2:1 heap	m <sup>3</sup>	13,5	
<b>Payload</b>	t	22,5	
<b>Net weight</b>	t	17,8	
<b>Gross weight</b>	t	40,3	



#### Volvo A30C 6x6

<b>Engine</b>		Volvo TD 104 KAE	
<b>Rated output</b> , at	r/s (r/min)	36,7	(2 200)
SAE J1349 gross	kW (hp)	235	(315)
SAE J1349 net	kW (hp)	232	(311)
<b>Max. torque</b> , at	r/s (r/min)	18,3	(1 100)
SAE J1349 gross	Nm	1 460	
SAE J1349 net	Nm	1 455	
<b>Max. speed</b>	km/h	52,3	
<b>Load capacity</b>			
SAE struck	m <sup>3</sup>	12,9	
SAE 2:1 heap	m <sup>3</sup>	16,5	
<b>Payload</b>	t	27,0	
<b>Net weight</b>	t	21,5	
<b>Gross weight</b>	t	48,5	



#### Volvo A35C 6x6

<b>Engine</b>		Volvo TD 122 KME	
<b>Rated output</b> , at	r/s (r/min)	35	(2 100)
SAE J1349 gross	kW (hp)	267	(358)
SAE J1349 net	kW (hp)	262	(351)
<b>Max. torque</b> , at	r/s (r/min)	18,3	(1 100)
SAE J1349 gross	Nm	1 595	
SAE J1349 net	Nm	1 585	
<b>Max. speed</b>	km/h	54,4	
<b>Load capacity</b>			
SAE struck	m <sup>3</sup>	14,8	
SAE 2:1 heap	m <sup>3</sup>	19,0	
<b>Payload</b>	t	32,0	
<b>Net weight</b>	t	25,7	
<b>Gross weight</b>	t	57,7	



#### Volvo A40 6x6

<b>Engine</b>		Volvo TD 122 KFE	
<b>Rated output</b> , at	r/s (r/min)	35	(2 100)
SAE J1349 gross	kW (hp)	297	(398)
SAE J1349 net	kW (hp)	295	(395)
<b>Max. torque</b> , at	r/s (r/min)	23	(1 380)
SAE J1349 gross	Nm	1 675	
SAE J1349 net	Nm	1 665	
<b>Max. speed</b>	km/h	52,6	
<b>Load capacity</b>			
SAE struck	m <sup>3</sup>	16,3	
SAE 2:1 heap	m <sup>3</sup>	22,0	
<b>Payload</b>	t	36,0	
<b>Net weight</b>	t	30,1	
<b>Gross weight</b>	t	66,1	



#### Volvo A25C Terrain Chassis

<b>Engine</b>		Volvo TD 73 KCE	
<b>Rated output</b> , at	r/s (r/min)	40	(2 400)
SAE J1349 gross	kW (hp)	190	(255)
SAE J1349 net	kW (hp)	187	(251)
<b>Max. torque</b> , at	r/s (r/min)	20	(1 200)
SAE J1349 gross	Nm	1 090	
SAE J1349 net	Nm	1 080	
<b>Max. speed</b>	km/h	52,0	
<b>Load capacity</b>			
<b>Payload</b> ind. superstructure	t	26	
<b>Net weight</b>	t	14,3	
<b>Gross weight</b>	t	40,3	



## Technology on Human Terms

The Volvo Construction Equipment Group is one of the world's leading manufacturers of construction machines, with a product range encompassing wheel loaders, excavators, articulated haulers, motor graders and more.

The tasks they face vary considerably, but they all share one vital feature: technology which helps Man to perform better. Safely, efficiently and with care of the environment. We refer to it as Technology on Human Terms.

The sheer width of the product range means it is always possible to choose exactly the right machine and attachment for the job. Each machine also comes with the quality, continuity and safety which is represented

by the Volvo name. The safety of the service and parts organisation. The safety of always having immediate access to leading-edge research and technical development. A machine from Volvo meets the very highest demands in all kinds of jobs, under all conditions. The world over.

*The Volvo Construction Equipment Group develops, manufactures and markets Volvo, Pel-Job, Mecalac, Champion and Samsung construction equipment. We are a Volvo company with production facilities on three continents and a market presence in over 100 countries.*

For more information please visit our web site: [www.volvo.com](http://www.volvo.com)

*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.*

# VOLVO

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