

DEVELON

Articulated Dump Truck

DA45-5



Engine

Make	Scania
Model	DC13
Number of cylinders	6
Rated power, gross (hp per SAE J1995)	500 hp (372 kW) @ 2100 rpm
Rated power, net (hp per SAE J1995)	483 hp (360 kW) @ 2100 rpm
Max. torque, gross (SAE J1995)	1750 ft.-lb. (2372 Nm) @ 1300 rpm
Piston displacement	775 in. ³ (12.7 L)
Bore and stroke	5.1 in. x 6.3 in (130 mm x 160 mm)
Starter	24 V, 8 hp (6 kW)
Battery (qty 2)	2 x 12 V, 105 AH
Alternator	24 V, 100 amp
Air cleaner	Double elements

Hydraulics

Main pumps	77.7 gpm (294 L/min.)
Relief pressure (main)	4061 psi (286 kg/cm ²)
Emergency steer pump	13.2 gpm (50 L/min.)
System pressure (steering)	3046 psi (214 kg/cm ²)

Travel Speeds

Travel speed – forward (8)	3.7 / 5.6 / 7.5 / 10.6 / 14.9 / 21.1 / 29.8 / 34.2 mph (6 / 9 / 12 / 17 / 24 / 34 / 48 / 55 km/h)
Travel speed – reverse (4)	3.7 / 5.6 / 7.5 / 10.6 mph (6 / 9 / 12 / 17 km/h)

Environment

Sound level (2000/14/EC)	107 dB(A)
Cabin sound level (ISO 6396)	71 dB(A)

Refill Capacities

Fuel tank	140 gal. (530 L/min.)
DEF tank	18.5 gal. (70 L/min.)
Cooling system (radiator capacity)	13.2 gal. (50 L/min.)
Engine oil	11.9 gal. (45 L/min.)
Transmission	18.2 gal. (69 L/min.)
Front differential	2.5 gal. (9.4 L/min.)
Rear differential	Included in tandem
Front hub (2)	2.5 gal. (9.6 L/min.)
Tandem housing (2)	60.2 gal. (228 L/min.)
Rear hub (4)	Included in tandem
Hydraulic system	26.4 gal. (100 L/min.)

Body

Body volume (2:1)		34.0 yd³ (26.0 m³)
Body dumping time		Up: 10 / Down: 10
Level capacity	with tailgate	26.7 yd³ (20.4 m³)
	without tailgate	25.6 yd³ (19.6 m³)
Heaped capacity	with tailgate	34 yd³ (26 m³)
	without tailgate	31.9 yd³ (24.4 m³)
Density index		2834 lb./yd³ (1680 kg/m³)

Hydraulic Cylinders

Body tilt (2) bore x stroke	4.9 in. x 102.9 in. (125 mm x 2614 mm)
Steering (2) bore x stroke	4.5 in. x 21.7 in. (115 mm x 550 mm)

The piston rods and cylinder bodies are made of high-strength steel. A shock-absorbing mechanism is fitted in at the base and rod end of the lift and bucket cylinders and the rod end of the steering cylinders to ensure shock-free operation and extended piston life.

NOTE: Where applicable, dimensions are in accordance with Society of Automotive Engineers (SAE) and ISO standards. Specifications and design are subject to change without notice. All dimensions are given for DEVELON articulated dump trucks equipped with standard tracks and the standard front as listed. Pictures of DEVELON articulated dump trucks may show other than standard equipment. All dimensions are shown in inches. Respective metric dimensions are enclosed by parentheses. DEVELON equipment is manufactured with a Quality Management System that is in compliance with ISO 9001:2008.

Features

DA45-5

Suspension

- Front: semi-independent, self-leveling hydro-gas suspension
- Rear: free-swinging tandem housing

Articulation Hinge and Steering

- Articulation hinge with forward-mounted turning ring
- Steering cylinders (two): double-acting
- Steering approved according to ISO 5010
- Maximum steering angle: 45°
- Ground-driven emergency steering pump

Driveline

- Full-time 6×6 drive: two transverse differentials, one longitudinal
- Front and rear axle transverse differential: limited-slip diff lock with 45% locking ratio
- Inter-axle longitudinal differential:
 - Torque-proportioning differential: integrated into ZF transmission
 - Torque distribution: 1/3 to the front axle, 2/3 to the rear axle, 100% lockable
- Tandem housing: gear driven, free-swinging
Provides equal drive to rear wheels and ensures the best possible ground contact – whatever the ground conditions.

Brake System

- Dual circuit braking system acting on all six wheels
- Approved according to ISO 3450
- All hydraulic-operated brakes with enclosed oil-cooled wet multiple discs on four hubs (braking force distributed to two hubs by tandem gear wheels)
- Spring actuated hydraulic released parking brake, mounted on driveline shaft
- Maximum gradient, parking brake: 15°
- Automatic transmission retarder as standard

Cab

- Approved to ROPS/FOPS standards (ISO 3471/ISO 3449)
- Low interior sound level: 71 dB(A) (ISO 6395)
- External sound level: 108 dB(A) (ISO 6396)
- Cab centrally located on rubber mountings
- Hand and arm vibrations less than 2.5 ms² (ISO 5349-2)
- Whole body vibration less than 0.5 ms² (ISO 2631-1)
- Superior visibility – for safer operation
- Superior operating controls location
- Adjustable suspended operator seat
- Adjustable steering column
- Climate control – heater and air conditioning
- Tilting for service access
- All-around hand rails



Technical Specifications

Dimensions

Gross weight		156749 lb. (71100 kg)
Net weight		66359 lb. (30100 kg)
Payload		90390 lb. (41000 kg)
Empty weight distribution	front axle	31306 lb. (14200 kg)
	rear axle	35053 lb. (15900 kg)
	front/rear	47% / 53%
Loaded weight distribution	front axle	48592 lb. (22041 kg)
	rear axle	108157 lb. (49059 kg)
	front/rear	31% / 69%

Ground Pressures

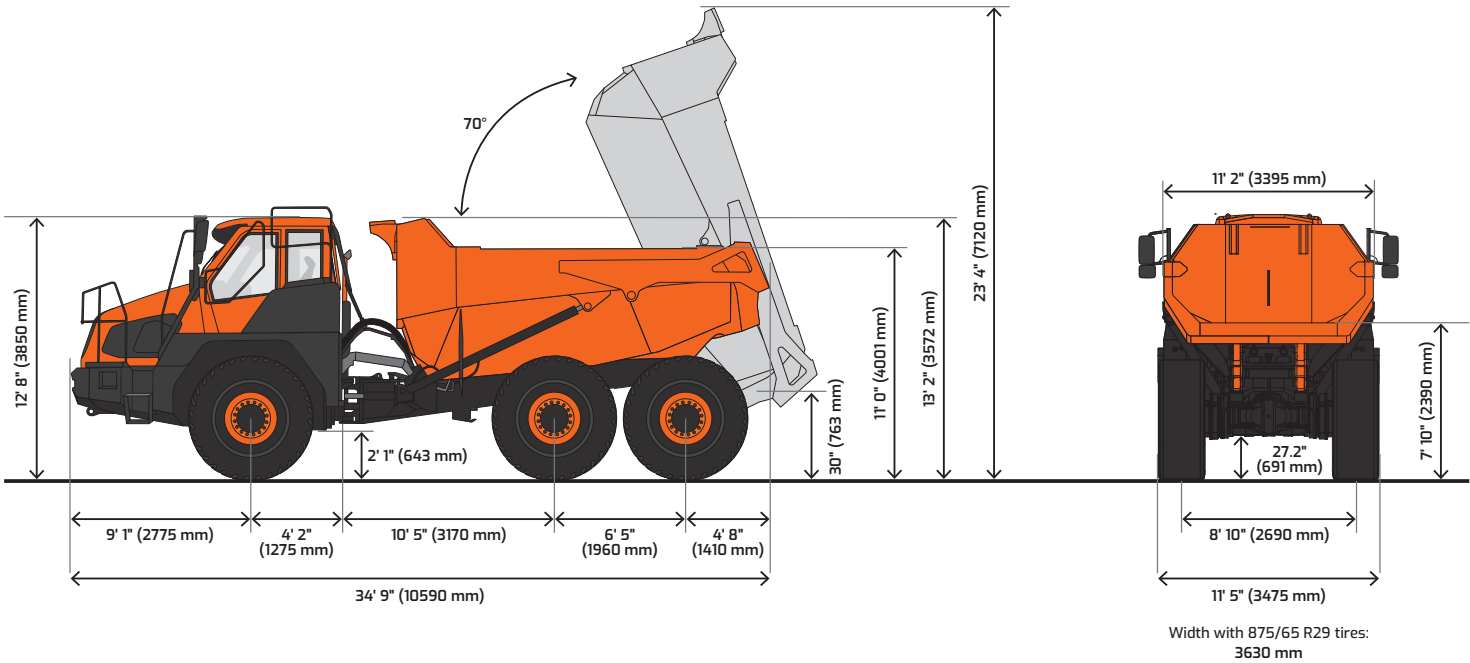
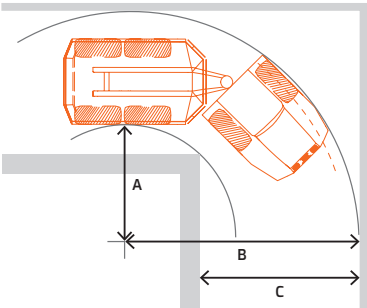
Empty	front axle	12.4 psi (0.87 kg/cm ²)
	rear axle	7.1 psi (0.5 kg/cm ²)
Loaded	front axle	19.2 psi (1.35 kg/cm ²)
	rear axle	22.0 psi (1.55 kg/cm ²)

Power to Weight Ratio

Empty	16.31 hp/tn (11.96 kW/t)
Loaded	7.05 hp/tn (5.18 kW/t)

Turning radius according to ISO 7457:
27' 8" (8420 mm)

A = 13' 6" (4120 mm)
B = 29' 1" (8850 mm)
C = 19' 5" (5930 mm)



Standard & Optional Equipment

● Standard ● Optional

Engine

Emissions, T4 (EPA)	●
High-pressure common-rail (HPCR)	●
Cooled exhaust gas recirculation (CEGR)	●
Exhaust brake	●
Selective catalyst reduction (SCR)	●
Diesel exhaust fluid (DEF)	●
Fuel filter with water separator	●
Coolant recovery tank	●
Dual element dry-type air filter with evacuator	●
Electronic engine control (ECU)	●
Cool-down mode	●
Diesel-powered coolant heater	●
Block heater (110 V)	●

Hydraulic

Variable displacement axial piston pump	●
Cooling fan – hydraulic, variable speed	●
Emergency steering pump (ground driven) – variable displacement radial piston	●

Electrical

System voltage – 24 V	●
Alternator – 24 V, 100 amp	●
2 x 12 V batteries, 140 AH reserve capacity	●
Blade-type fuse panel	●
Lights, work (halogen): front & rear	●
Lights, work (LED): front & rear	●
Lights, stop, tail & direction indicators	●
Rotating beacon	●
Hour meter	●
Rearview camera	●
Laptop service port	●
Self-diagnostics system	●
Emergency shutdown switch	●

Controls

Adjustable steering column	●
- Tilting	
- Telescoping	
Throttle pedal (accelerator)	●
Brake pedal	●
Gear selector ("trip-tonic")	●
Body hoist lever	●
Adjustable hydrodynamic retarder lever	●
Switches, console-mounted	●
- Key switch	
- Parking brake	
Buttons & indicator lights, keypad	
- Parking lights	
- Main lights	
- Engine pre-heater	
- Hazard lights	
- Rear axle differential lock	
- Inter-axle differential lock	
- Retarder control	●
- Fuel heater	
- Heated seat	
- Heated mirrors	
- Rear work lights	
- Rotating beacon	
- Work lights	
- Interior cabin light	

Cabin

Steel, all-weather & sound-suppressed	●
ROPS (ISO 3471)	●
FOPS (ISO 3449)	●
Front window with wiper/washer	●
Rear window	●
Tinted safety glass	●
Visor, retractable	●
Adjustable sliding side door window	●
Defrost	●
Lockable doors	●
Seat	●
- Air suspension	
- 2" (51 mm) seat belt	
- Adjustable height & recline	
- Adjustable fore/aft	
- Adjustable armrests	
Seat, heated	●
Instructor's seat, folding	●
Storage for operator's manuals	●
Mirror, interior rearview, exterior (2)	●
Mirror, exterior, heated	●
Fully adjustable HVAC	●
Multi-function LCD player	●
Cigarette lighter	●
AM/FM stereo with CD player & MP3 port	●
Speakers (2)	●
Antenna	●
Space for cooler box	●
Storage	●
Power socket, 12 V	●
Beverage holder	●
Interior light	●
Guard, rear window	●
Cab tilting system	●

Display Monitor & Warnings

Buzzer	●
- Brake system	
- Parking brake	
Gauges	
- Fuel level	- Speedometer
- DEF level	- Transmission gear indicator
- Engine coolant temperature	- Battery voltage
- Transmission oil temperature	- Digital clock
- Retarder oil temperature	- Trip meter
- Payload meter	- Hour meter
- Gradient meter	- Fuel consumption
- Engine rpm	
Warning & indicator lights	
- Seat belt	- Direction signal
- Error code	- Emergency steering
- SCR warning	- Transmission mode
- Check engine	- Transmission lock-up
- Engine oil pressure	- Transmission oil temp
- Engine pre-heat engaged	- Transmission gear indicator
- Radiator coolant level	- Retarder oil temperature
& temperature	- Retarder brake
- Air filter	- Lubrication system
- Fuel level	- Body down
- DEF level	- Parking brake indicator
- Lights (high, main, work, beacon)	- Payload indicator
Payload indicator, external	●

Frame & Suspension

Articulation hinge	●
Steering cylinder, double-acting (2) – cushion, retracting	●
Turning ring, forward-mounted	●
Towing hook, front & rear	●
Sloping rear frame	●
Independent, hydro-gas cylinder with pressure accumulators	●
Tires, radial 29.5 R25 (Techking)	●
Tires, radial 29.5 R25 (various brands)	●
Tires, radial 875/65r25 (various brands)	●
Tire pressure monitoring (certain tires only)	●

Driveline

Transmission, automatic – electronic shift control	●
Torque converter lock-up clutch	●
6x6 drive, full-time	●
Tandem rear bogey – gear-driven, free-swinging	●
Driveline interaxle differential – 1/3 front, 2/3 rear, torque divider, 100% locking ratio	●
Front axle transverse differential – limited-slip, 45% locking ratio	●
Rear axle transverse differential (1) – limited-slip, 45% locking ratio	●
Rear axle transverse differential (1) – clutch-engaged, torque-dependent locking ratio	●
Automatic hydrodynamic transmission retarder	●
Automatic engine brake	●
Braking system, dual circuit	●
Hydraulic, wet multiple discs – 4 (front & mid wheels)	●
Parking brake, spring-applied hydraulic release – driveshaft mounted	●

Body

Body, high-tensile Hb400 steel	●
Body (none)	●
Lifting cylinder, double-acting (2) – cushion, extending	●
Tailgate, scissor type	●
Tailgate (none)	●
Spill guard on front of body	●
Body heating kit	●
Body heating ready	●
Body lining, standard	●
Body lining, full	●
Side extensions	●

Other

Automatic lubrication system	●
Handrails & service steps	●
Skid-resistant steps & service platforms	●
Body lift support	●
Fire extinguisher	●
First aid kit	●
Manuals	●
- Operation & Maintenance	
- Parts	
- AEM Safety Manual	
Machine telematics	●
Vandalism protection	●
- Lockable panels	
- Lockable fluid fill points	
Toolkit	●
Fast fill	●
Mud flaps	●

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DA45-5 Articulated Dump Truck
Printed in the U.S.A.
23900_001_D030823

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