

VOLVO MOTOR GRADERS

G930



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SPECIFICATIONS

G930

Base operating weight - approximate

Weights shown include full cab with ROPS, all operating fluids, operator and standard equipment.

Base - Total	lb (kg)	34,830 (15 800)
On front wheels	lb (kg)	10,360 (4 700)
On rear wheels	lb (kg)	24,470 (11 100)
Maximum combined capacity	lb (kg)	42,500 (19 280)
Maximum weight - front	lb (kg)	16,700 (7 570)
Maximum weight - rear	lb (kg)	31,400 (14 240)

Note that adding weight and attachments to the base grader may necessitate a tire upgrade as maximum weight capacity of tire may be exceeded.

Productivity (Standard equipment)

Blade pull at base weight (0.9 traction co-efficient)	lb (kg)	22,023 (9 990)
Blade pull at maximum base weight (0.9 traction co-efficient)	lb (kg)	28,260 (12 816)
Blade down force capability	lb (kg)	18,021 (8 188)

Blade down force is the maximum downward force which may be applied at the cutting edge.

Engine data

Model		Volvo D7E
Type		Turbocharged, Aftercooled
No. of cylinders		In Line 6
Bore & stroke	in (mm)	4.25 x 5.12 (108 x 130)
Displacement	cu in (l)	436 (7,2)

Engine complies to EPA Tier 3, EU Stage IIIA exhaust emission standards.

Electrical system		24 volt - 80 amp (1920 watt) alternator
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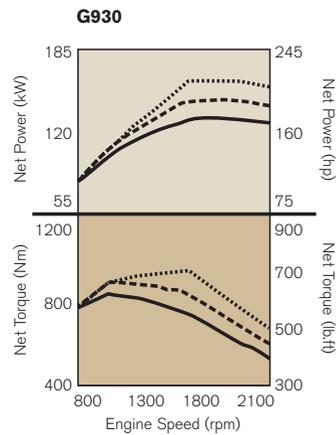
Batteries (two 12 volt) maintenance free		660 CCA 96 AH
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Two 12 volt 1300 CCA (231 AH) batteries available optionally

Engine performance curve

Legend

.....	High Range
-----	Mid Range
—————	Low Range
	Engine Power
	Engine Torque



G930

3 Range engine power control

Low range power

Rated net brake horsepower @ 2100 RPM [§]	hp (kW)	155 (115)
Torque	lb.ft (N.m)	668 (906) @1200

Mid range power

Rated net brake horsepower @ 2100 RPM [§]	hp (kW)	175 (130)
Torque	lb.ft (N.m)	675 (915) @1400

High range power

Rated net brake horsepower @ 2100 RPM [§]	hp (kW)	195 (145)
Maximum net horsepower @ 1800 RPM	hp (kW)	204 (154)
Torque	lb.ft (N.m)	684 (928) @1550

No engine derating required up to 9,800 ft (3 000 m) altitude. Rated net horsepower SAE J1349/ISO 9249.

[§]Rating is @ 2100 RPM except for EU which is rated @ 1900 RPM in low and mid ranges.

Transmission

Fully sequential, direct drive, Volvo powershift transmission. Engine cannot be started if transmission is in gear. Single lever electronic transmission controller provides self-diagnostics and overspeed protection. Optional HTE1160 has automatic shifting and travel mode as standard equipment.

Ground speeds at 2100 RPM with 14:00 tires.

		G930	
Transmission model		HTE840	HTE1160
Gear			
F1	mph (km/h)	2.7 (4,3)	2.1 (3,3)
F2	mph (km/h)	3.7 (6,0)	2.7 (4,3)
F3	mph (km/h)	5.2 (8,4)	3.6 (5,8)
F4	mph (km/h)	7.3 (11,7)	4.7 (7,5)
F5	mph (km/h)	10.4 (16,6)	6.1 (9,8)
F6	mph (km/h)	14.5 (23,2)	7.9 (12,7)
F7	mph (km/h)	20.3 (32,5)	10.5 (16,8)
F8	mph (km/h)	28.4 (45,4)	14.0 (22,4)
F9	mph (km/h)		18.2 (29,0)
F10	mph (km/h)		23.8 (38,1)
F11	mph (km/h)		30.8 (49,3)
R1	mph (km/h)	2.6 (4,2)	2.1 (3,3)
R2	mph (km/h)	5.1 (8,2)	3.5 (5,7)
R3	mph (km/h)	10.2 (16,3)	6.0 (9,6)
R4	mph (km/h)	20.0 (32,0)	8.0 (12,8)
R5	mph (km/h)		13.8 (22,0)
R6	mph (km/h)		23.4 (37,5)

Engine Power Range	Transmission Gear	
	Volvo HTE840	Volvo HTE1160
Low	F1, F2 R1	F1, F2, F3 R1, R2
Mid	F3, F4, F5 R2, R3	F4, F5, F6, F7 R3, R4
High	F6, F7, F8 R4	F8, F9, F10, F11 R5, R6

G930**Tandems**

Depth	in (mm)	8.9 (226,5)
Height	in (mm)	24.25 (616)
Thickness		
inner wall	in (mm)	1 (25)
outer wall	in (mm)	.78 (20)
Center distance	in (mm)	61 (1 550)
Drive chain pitch	in (mm)	2 (51)
Oscillation	degrees ±	15°

Differential / Final drive

Model	Volvo APR70	
Planetary final reduction with an operator controlled wet multiple disc lock/unlock differential.		

Wheels & tires (Standard equipment)

Tire size	14:00 x 24, G-2	
Ply rating (PR)	12	
Rim size	in (mm)	9 (223) One piece rim
Bolt-on rims interchangeable between front and rear	Yes	

Front axle and articulation

Wheel lean	degrees R & L	18°
Oscillation	degrees up & down	16°
Ground clearance	in (mm)	24 (610)
Minimum turning radius using front axle steering, articulation, wheel lean and unlocked differential	ft (mm)	23'10" (7 265)
Steering arc	degrees	50°
Frame articulation angle	degrees	23°

Anti-drift lock valve ensures stable operation. Articulation lock standard.

Hydrostatic power steering of front wheels incorporating two steering cylinders. Meets SAE J1511 FEB. 94, ISO 5010:1992 with optional secondary steering.

Brakes

Service Brakes: Foot operated

Fade resistant, hydraulically actuated, wet multiple disc service brakes located at the 4 tandem drive wheels are fully sealed and maintenance free. System features crossover dual braking circuits for uniform braking on both sides of the grader. Includes reserve power assist and operator warning system (visual and audible).

Parking Brake

Spring applied hydraulically released enclosed wet multiple disc type parking brake in final drive. Effective on all 4 tandem drive wheels.

Transmission cannot be engaged with park brake on.

Braking systems comply to SAE J/EN ISO 3450:1996.

Volvo uses asbestos free brake components.

G930**Frame**

Front

Minimum dimensions of box section	in (mm)	10.5 x 13.5 (265 x 340)
Plate thickness	in (mm)	.79 (20)
Vertical section modulus at arch	cu in (cm ³)	119 (1 950)
minimum	cu in (cm ³)	101 (1 663)
maximum	cu in (cm ³)	212 (3 474)

Rear

Minimum dimensions	in (mm)	10 x 4 (254 x 100)
Plate thickness	in (mm)	.38 (9,6)

Optional first user lifetime warranty on frame, includes maintenance free articulation pins and bearings.

Moldboard

Standard moldboard with replaceable end bits	in (mm)	.87 x 25 x 12' (22 x 635 x 3 658)
Moldboard material		SAE 1050 high carbon steel
Edge: through hardened	in (mm)	6 x 5/8 (152 x 16) boron steel
Bolt spacing	in (mm)	6 (152)
Bolt size	in (mm)	5/8 (16)
Slide rails supported by Duramide™ bearings		

Moldboard range: Moveable Blade Control System

(Dimensions shown with 14:00 tires and standard moldboard)

		Left/Right
Reach outside tires - articulated frame	in (mm)	120/119,5 (3 048/3 035)
Reach outside tires - straight frame	in (mm)	80/79 (2 020/2 010)
Moldboard slide	in (mm)	26.5/26.5 (673/673)
Circle side shift	in (mm)	30.5/29.5 (775/749)
Maximum bank sloping angle, left - right	degrees	90°/90°
Moldboard ground clearance	in (mm)	17.5 (445)
Moldboard cutting depth	in (mm)	31 (790)
Moldboard tilt range	degrees forward degrees back	47° 5°

Superior moldboard mobility permits steep ditch cutting angles and back sloping outside overall machine width.

G930**Circle**

Pitch diameter	in (mm)	64 (1 626)
Thickness	in (mm)	1.25 (32)
Adjustable guide shoes - standard / optional		3 / 5
Adjustable clamp plates - standard / optional		3 / 5
Upper circle wear plates - standard / optional		3 / 5

Circle to drawbar support is provided by Duramide™ wear plates and bearings at the clamp and guide shoes. Duramide™ prevents metal-to-metal contact and provides maximum service life.

Circle drive

The Volvo dual gear Circle Drive System uses direct acting hydraulic power for exceptional turning and holding capability under full load. Circle Drive System uses two hardened drive pinions and is protected against impact damage by an overload relief valve as standard equipment.

Rotation	degrees	360°
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Drawbar

Dimensions of box section	in (mm)	6.5 x 6.5 (165 x 165)
Plate thickness	in (mm)	1 & .75 (25 & 19)

Cab & controls

Low profile cab with ROPS/FOPS

Interior height	in (mm)	64 (1 620)
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An optional full height cab is available with an inside height of 72.5" (1 837 mm).

All Volvo Grader cabs and canopies are designed to meet or exceed SAE J/ISO 3471-1:2004 and EN 13510:2000 ROPS requirements and SAE J/pr EN ISO 3449:2002 Level 2 FOPS requirements.

The retractable seatbelt is 3" (76 mm) wide and meets SAE J386 NOV. 97 and EN ISO 6683:1999. Industry standardized control lever arrangement.

Interior operator noise levels average 72 dB(A) per ISO 6394:1998 (enclosed cab).

Implement hydraulics

Circuit type: Closed center, load sense Proportional Demand Flow (PDF) Hydraulic System, with O-ring face seal hose connections.

Main implement pump type		Axial piston type
Maximum pressure	psi (Bar)	3,000 (207)
Output 2100 RPM	gpm (lpm)	55 (208)
Stand by pressure	psi (Bar)	350 (24)

Filtration

Large capacity, replaceable in-tank filter. Filters both system and re-fill oil. With low level and high temperature operator warning.

Hydraulic fan drive pump

Type

Axial piston pump dedicated to the variable speed cooling fan. Reversible cooling fan optionally available.

G930

Capacities

Fuel tank	U.S. Gal. (l)	92 (348)
Transmission	U.S. Gal. (l)	16 (61)
Final drive	U.S. Gal. (l)	3.5 (13,2)
Tandems (each)	U.S. Gal. (l)	26.4 (100)
Hydraulic oil tank	U.S. Gal. (l)	24 (91)
Coolant antifreeze protection to -58° F (-50° C) approx	U.S. Gal. (l)	8.2 (31)
Engine oil	U.S. Gal. (l)	5.7 (21,5)

Attachments

(Optional unless otherwise stated as standard equipment)

Push Block	lb (kg)	1,110 (504)
Ripper includes rear frame arch support and links	lb (kg)	2,600 (1 175)
Mid Mount Scarifier	lb (kg)	1,900 (850)
Front Mount Scarifier	lb (kg)	1,552 (704)
Dozer: 8' (2,4 m)	lb (kg)	2,300 (1 045)
9' (2,7 m)	lb (kg)	2,360 (1 070)

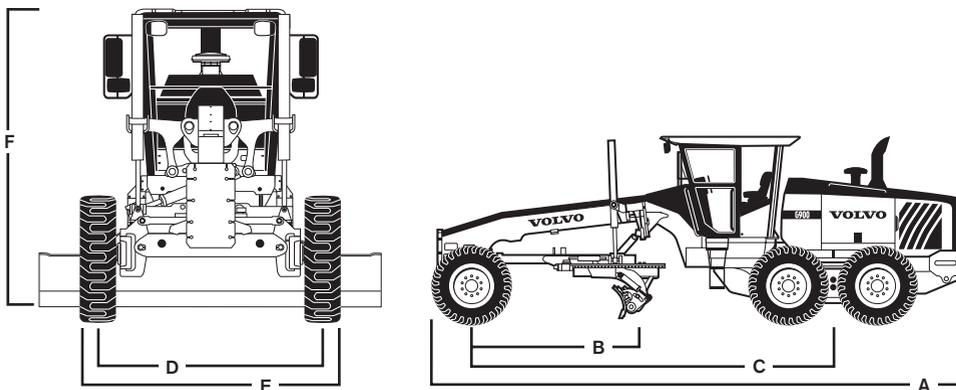
Dimensions

All dimensions are approximate.

Legend

- A = Overall length
- B = Bladebase per ISO 7134
- C = Wheelbase
- D = Width - Front tire center lines
- E = Width - Outside tires
- F = Overall height with Low Profile Cab
Add 8.5" (217 mm) for full height cab

A	in (mm)	352 (8 930)
B	in (mm)	105 (2 675)
C	in (mm)	247 (6 280)
D	in (mm)	82 (2 076)
E	in (mm)	100 (2 537)
F	in (mm)	127 (3 225)



STANDARD FEATURES / OPTIONAL EQUIPMENT

Model (S - Standard / O - Optional)	G930	G940	G946	G960	G970	G976	G990
Powertrain							
Volvo engines meets off-road Tier 3 / Stage IIIA emission criteria - 3 power curves	S	S	S	S	S	S	S
Rear axle, operator controlled, lock/unlock differential with planetary final reduction	S	S	S	S	S	S	S
4 wheel wet disc braking system with crossover dual circuits and reserve power assist	S	S	S	S	S	S	S
Spring applied wet multiple disc park brake with operator warning alarm and indicator	S	S	S	S	S	S	S
Electronic hand throttle with RPM hold and resume functions	S	S	S	S	S	S	S
Operator controlled Power/Speed engine mode	S	S	S	S	S	S	S
Direct drive, power shift Volvo HTE840 transmission with 8 forward and 4 reverse gears	S	S	S	S	S	S	S
Transmission guard	S	S	S	S	S	S	S
Single transmission control lever, with electronic over speed protection, advanced memory shift and park position lockout	S	S	S	S	S	S	S
Transmission Autoshift and Travel functions	O	O	O	O	O	O	O
Direct Forward to Reverse shuttle shift capability without using the Inching pedal	S	S	S	S	S	S	S
Volvo HTE1160 Transmission - 11 speeds forward 6 speeds reverse includes Autoshift and travel functions	O	O	O	O	O	O	O
Reversible cooling fan - manual or automatic modes	O	O	O	O	O	O	O
Automatic engine protection lowers engine torque and speed if critical conditions occur	S	S	S	S	S	S	S
Electrical							
Cab mounted headlights with dimmer switch	S	S	S	S	S	S	S
Lights; backup, tail, stop and directional	S	S	S	S	S	S	S
Backup alarm 112 dB(A)	S	S	S	S	S	S	S
Moldboards work lights - 2 or 4	O	O	O	O	O	O	O
Rear work lights - 2 or 4	O	O	O	O	O	O	O
Corner cab work lights - left or right - 2	O	O	O	O	O	O	O
Maintenance free batteries	S	S	S	S	S	S	S
110 amp (2460 watt) alternator	O	O	O	O	O	O	O
24 volt to 12 volt converter - 30 or 60 amp (600 or 1440 watt) with power point	O	O	O	O	O	O	O
Productivity							
7 position Blade Control System for optimum blade mobility	S	S	S	S	S	S	S
Twin gear direct drive circle turn system with impact protection	S	S	S	S	S	S	S
Duramide™ wear strips prevent metal-to-metal contact for maximum service life	S	S	S	S	S	S	S
Heavy duty circle support system	O	O	O	O	O	O	S
Hinged cooling module fan door for easy trash clean out	S	S	S	S	S	S	S
Ground level fueling	S	S	S	S	S	S	S
Lockable tool box with storage space for scarifier shanks	S	S	S	S	S	S	S
Moldboards: 12' x 25" x 7/8" (3 658 x 635 x 22 mm)	S	S	S	S			
13' x 25" x 7/8" (3 962 x 635 x 22 mm)	O	O	O	O			
14' x 25" x 7/8" (4 267 x 635 x 22 mm)	O	O	O	O			
12' x 29" x 1" (3 658 x 737 x 25 mm)					S	S	
13' x 29" x 1" (3 962 x 737 x 25 mm)					O	O	
14' x 29" x 1" (4 267 x 737 x 25 mm)					O	O	
14' x 31" x 1" (4 267 x 787 x 25 mm)							S
16' x 31" x 1" (4 877 x 787 x 25 mm)							O
Moldboard extensions RIGHT or LEFT - 2' (610 mm)	O	O	O	O	O	O	O
Moldboard edges - carbide 3/4" x 5" (19 x 127 mm) or 1" x 8" (25 x 203 mm) harden steel	O	O	O	O	O	O	O
Brackets for Automatic Blade Control System installation	O	O	O	O	O	O	O
Metallic lower moldboard slide bearing	O	O	O	O	O	O	S
Tires							
Consult your Volvo dealer for full offering							
Tires: 14:00 X 24 - G2	S	S	S	S	S	S	
17:5 x 25, 12 PR, G-2	O	O	O	O	O	O	
16:00 X 24					O	O	S
20:5 X 25					O		O

Model (S - Standard / O - Optional)	G930	G940	G946	G960	G970	G976	G990
Hydraulics							
Proportional Demand Flow hydraulic system with short throw, low effort control levers	S	S	S	S	S	S	S
10 section hydraulic control valve - includes two spare sections with levers	S	S	S	S	S	S	S
Circle turn relief located integral with main manifold	S	S	S	S	S	S	S
Hydraulic oil level monitor via Contronics	S	S	S	S	S	S	S
Blade Lift Float Control, independent right and left detent style	O	O	O	O	O	O	O
Front attachment float control, detent style, independent of other float valves	O	O	O	O	O	O	O
Several remote valve locations for attachments	O	O	O	O	O	O	O
Secondary steering (power assisted)	O	O	O	O	O	O	O
Operator Cab							
Illuminated entry when cab doors are opened - enclosed cab only	S	S	S	S	S	S	S
Adjustable steering control pedestal with tilt head for maximum operator comfort	S	S	S	S	S	S	S
Gauges include: coolant temperature, engine oil pressure, fuel level, hourmeter, articulation angle indicator	S	S	S	S	S	S	S
Multi-function Volvo Contronic Monitoring System with visual and audible warnings	S	S	S	S	S	S	S
Deluxe, cloth covered, fully adjustable suspension seat when grader is equipped with an enclosed cab - 3" (75 mm) retractable seatbelt	S	S	S	S	S	S	S
Deluxe air suspension, cloth covered, fully adjustable suspension seat - 3" (75 mm) retractable seatbelt	O	O	O	O	O	O	O
Left and right outside dual rear view mirrors	S	S	S	S	S	S	S
Fold-away left and right outside dual rear view mirrors	O	O	O	O	O	O	O
Dual interior rear view mirrors	S	S	S	S	S	S	S
Enclosed Low Profile Cab with ROPS and FOPS – left and right cab door with steps	S	S	S	S	S	S	S
Enclosed High Profile Cab with ROPS and FOPS – left and right cab door with steps	O	O	O	O	O	O	O
Low Profile canopy shell (SPLIT) with ROPS – left and right entry with steps	O	O	O	O	O	O	O
Cab heater - 50,000 BTU with cab pressurizer and replaceable filters, 10 outlets	S	S	S	S	S	S	S
Air conditioner - 35,000 BTU • HFC-134a (non-CFC refrigerant) with cab heater	O	O	O	O	O	O	O
Defroster fan with multiple outlets	O	O	O	O	O	O	O
Radio/CD player with 4 speakers	O	O	O	O	O	O	O
Single arm front cab wiper and washer, enclosed cab	S	S	S	S	S	S	S
Single arm wiper and washer - rear window	O	O	O	O	O	O	O
Single arm wiper and washer - lower windows front left & right	O	O	O	O	O	O	O
Dual arm front windshield, increased coverage, Low Profile Cab only	O	O	O	O	O	O	O
Intermittent wipers on all wipers ordered	O	O	O	O	O	O	O
Window - lower front - opening	O	O	O	O	O	O	O
Window - left/right side - opening sliders with multiple position openings	O	O	O	O	O	O	O
Lower cab shield, encloses bottom of cab to frame	O	O	O	O	O	O	O
Attachments							
Fenders front or rear	O	O	O	O	O	O	O
Dozer Blade: 8' (2.5 m)	O	O	O	O	O	O	O
9' (2.7 m)	O	O	O	O	O	O	O
10' (3.0 m)	O	O	O	O	O	O	O
Front Mounted Scarifier with 5 scarifier teeth	O	O	O	O	O	O	O
Mid Mount Scarifier with 5 scarifier teeth	O	O	O	O	O	O	O
Push Block	O	O	O	O	O	O	O
Ripper/Scarifier, rear with 3 ripper shanks	O	O	O	O	O	O	O
Other							
Painted high gloss Volvo yellow and grey	S	S	S	S	S	S	S
First user lifetime frame warranty – includes articulation pins and bearings	O	O	O	O	O	O	O
Paint - custom colors	O	O	O	O	O	O	O
Low ambient fluids for extreme cold conditions below -14° F (-10° C)	O	O	O	O	O	O	O
Tool kit	O	O	O	O	O	O	O
Sound reduction packages (Standard in EU markets)	O	O	O	O	O	O	O
Rear licence plate bracket	O	O	O	O	O	O	O
Air compressor - engine driven with tank	O	O	O	O	O	O	O
Volvo CareTrack – remote monitoring system	O	O	O	O	O	O	O

Partial listing of available options. Certain features may be standard or not available within specific market. Consult your Volvo Motor Grader distributor for more information.



Volvo Construction Equipment is different. It's designed, built and supported in a different way. That difference comes from an engineering heritage of over 170 years. A heritage of thinking first about the people who actually use the machines. About how to help them be safer, more comfortable, more productive. About the environment we all share. The result of that thinking is a growing range of machines and a global support network dedicated to helping you do more. People around the world are proud to use Volvo. And we're proud of what makes Volvo different – **More care. Built in.**



All products are not 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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