



Volvo Construction Equipment

# G930C, G940C, G946C, G960C

VOLVO MOTOR GRADERS 16.1 - 18.1 t 217-275 hp



# Control in comfort.

The industry-leading Volvo ROPS/FOPS cab has been designed with the operator in mind – providing a spacious, safe and comfortable environment that enables optimized productivity. With all-around visibility, ergonomically placed controls, excellent noise insulation and a powerful heating and air conditioning system, step inside and see the difference this premium working environment will make to your performance.

## Priority steering wheel

In terms of machine direction, the steering wheel has priority and can override the joystick system. This allows the operator to quickly correct the steering – providing increased safety and control.



## Contronics

Volvo Contronics continuously monitor and record machine operation and performance in real-time. This information is relayed to the operator in the cab. Integrated with Volvo's MATRIS tracking system, Contronics facilitates ease of operation by providing the operator with all the necessary information and diagnostics for optimal performance.

## Touch screen

For ease of operation, the operator can create user profiles and customize the joystick system to meet their specific needs via the touch screen. As well as being able to select which buttons and rollers control specific functions, the screen also displays diagnostic information.



## Stop-at-center articulation

The joystick system features a built-in stop-at-center articulation feature which uses sensors to accurately return the motor grader's articulation to the center. For ease of operation, the operator simply presses a roller to perform this task.



### Joystick

The optional Volvo joystick controls simplify machine operation by providing proportional response for hydraulic functions, articulation, steering and attachment performance. The ergonomic design of the easy-to-operate-system increases operator comfort and reduces fatigue.



**Circle, moldboard and drawbar.**

The powerful and durable design of the circle, moldboard and drawbar system allows the operator to place and maintain the blade exactly where it's needed – even in the toughest ground conditions.

# Built strong.

Volvo motor graders have been built to last. The heavy-duty design provides a stable grading platform in the toughest applications. Whether you're operating in gravel, heavy clay or any other material, these durable machines have been built to maintain peak operation whatever the task at hand.

## **Duramide™ bearings.**

Volvo's long-lasting, self-lubricating upper circle support bearings are made with Duramide™. The heavy-duty material lasts for 5,000 hours before replacement is needed and has been designed exclusively for Volvo motor graders.



## **Heavy-duty circle support.**

The heavy duty moldboard circle is powered by Volvo's unique twin pinion drive and supported by over 700 square inches of Duramide bearing. The design gives the operator the ability to turn the blade under heavy loads

## **Bolted and offset drawbar.**

For precise grading results, the smart design of the Volvo drawbar system ensures that the moldboard stays parallel to the ground when rotating. The ball stud is offset and bolts to the drawbar – accommodating changes to tire size or cutting edges and ensuring that no cutting or welding is required during servicing.



## **Circle turn system.**

The exterior teeth provide a large rotation circle enabling the system to develop higher torque. This allows the operator to move and hold the blade under heavier loads. Exterior mounted gear teeth eliminate the possibility of material build-up and tooth damage.

# Designed for precision.

The Volvo C-series motor graders have been designed with precision in mind. Whether you're working in a fine grading application or earthmoving, these machines will efficiently spread and shape material with precise control to increase your productivity.

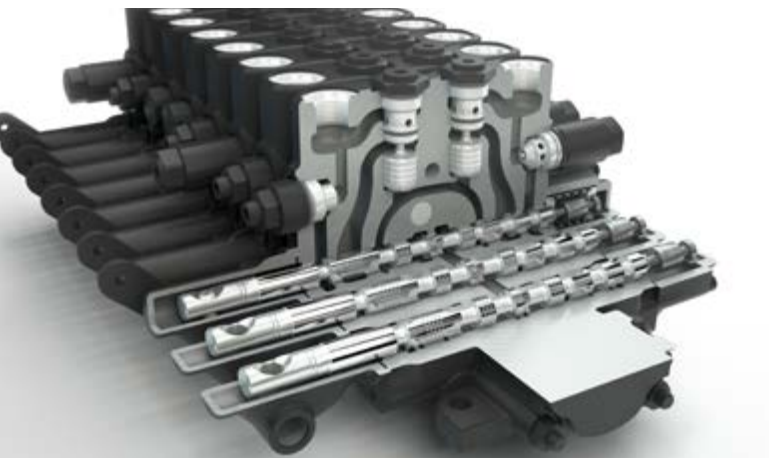
## Creep Mode.

The all-wheel drive system includes Creep Mode which provides ultimate precision at low speeds by using the hydrostatically-powered front wheel drive only. This mode is useful in fine grading applications as the rear tandem wheels roll freely behind the grader – preventing damage to the freshly graded surface.



## Technology ready kit.

Volvo engineers have worked with the world's leading suppliers of grade control systems to develop a common interface and installation package. This option allows joystick-equipped machines to easily be fitted with a third-party grade control system – increasing productivity and precision in fine grading applications.



## Custom designed spools and load-sensing hydraulics.

The load-sensing hydraulic system balances flow to all grading functions. It is optimized through the use of custom designed spools in the main control valve – permitting precise blade control, fast response and smooth operation at all speeds.



## Moldboard slide bearing.

The new design of the heavy-duty moldboard slide bearing holds the blade steady – even at full extension. The system facilitates precise results in fine grading applications.



**Precise blade control.**

For the best possible ground finish, the hydraulic system accurately maneuvers the blade to the correct position and maintains superior precision for enhanced productivity.



**Transmission.**

The redesigned Volvo transmission has been purpose built specifically for Volvo motor graders – ensuring optimum performance and high productivity. Select either 8 forward and 4 reverse gears or, for the most efficient operation, 11 forward and 6 reverse gears.

# Drive your productivity up.

With state-of-the-art technology and a redesigned, industry-leading transmission, Volvo C-Series motor graders deliver high productivity with maximum performance. Whether you're working in low-speed fine grading applications or high-speed snow plowing, the 11-speed transmission is the perfect choice for optimal operation. Experience smooth shifts and increased productivity with Volvo.

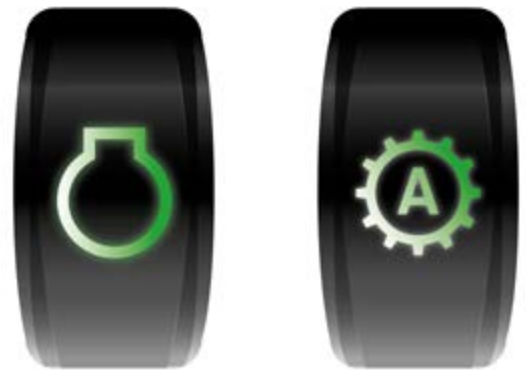
## Unrestricted shuttle shift.

For effortless control and increased productivity, the operator can quickly change between any forward and reverse gear without using the brakes or inching pedal. Simply pre-program the unrestricted shuttle shift to go from one gear to another when the gearstick is moved forward or backwards.



## Anti-stall.

The V-ECU prevents the operator from stalling the engine by automatically shifting the transmission into neutral if there is a risk of stalling. To re-engage the transmission, the operator simply presses and releases the inching pedal.



## Smooth shifting gears.

The redesigned transmission has improved cooling capacity and is automatically calibrated by the V-ECU for smooth gear shifting and improved productivity.

## Three shift modes.

For optimized productivity there are two pre-programmable automatic gear shifting modes – travel and automatic – as well as a manual shift mode. By simply pressing a button, travel mode is programmed to upshift through the gears quickly to reach maximum speed while automatic mode delivers maximum power when grading.



## 11-speed transmission.

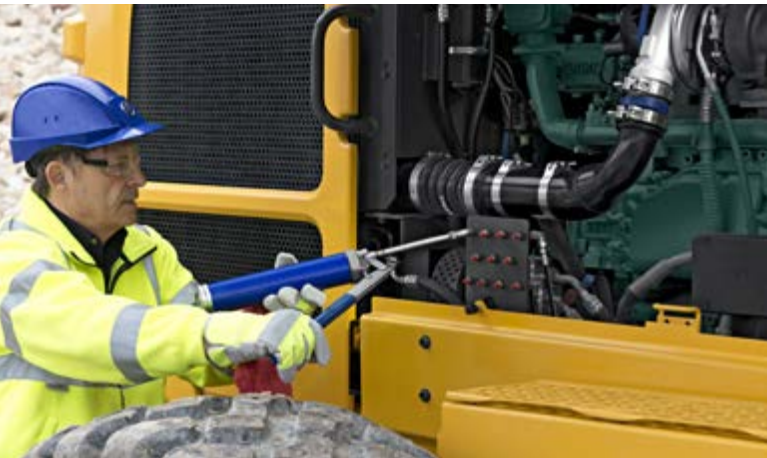
Volvo's redesigned, unique 11-speed transmission is equipped with 11 forward and 6 reverse gears – providing more gears in both the work and travel range. With an increased and industry-leading number of gears, the operator can select the most fuel efficient gear for the task at hand.

# Superior service access.

At Volvo, we want you to get the most out of your machine every day. That's why we've made maintenance simple and built serviceability in to the C-Series motor graders. With tool-less ground level service access, regular checks will be carried out quickly and you'll experience new levels of uptime.

## Ground level access.

For safe and easy access, all fuel filling and service check points are accessible from ground level.



## Reversible cooling fan.

The hydraulically-driven, electronically controlled cooling fan regulates the temperature of the vital components. It automatically activates only when it's needed – reducing fuel consumption and noise. The optional reversible functionality – which blows air in the opposite direction – allows for self-cleaning of the cooling units.



## Fluid checks.

For easy maintenance, all hydraulic components are equipped with visual sight checks or electronic sensors which allow levels to be checked from the cab.



## Engine Compartment Light.

For more visibility and increased safety, the engine compartment light is compact and powerful. The heavy duty lamp is equipped with four bulbs and covers a wide angled scope for excellent visual coverage. It allows the operator to direct light anywhere required in and around the engine compartment.



## Lifetime frame warranty.

For increased peace of mind, Volvo offers an optional, initial user, lifetime warranty on the front and rear frame.



**Tool-less service access.**

For quick and easy service checks, tools are not needed to access Volvo motor grader daily service points. Fluid levels can be checked visually or electronically from the operator's seat and cab air filters are serviced outside from ground level.

# The perfect match.

Increase your versatility and effectively perform a variety of tasks with a Volvo motor grader and Volvo attachments. Whether you're ripping, scarifying or blading, optimize your performance with the right attachment for the job. Maximize your productivity and profitability and get the most out of your machine with Volvo.



## Perfectly matched attachments.

Volvo's wide range of durable attachments have been purpose-built as an integrated part of the motor grader for which they're intended – forming one solid, reliable unit. With functions and performance ideally matched, you'll experience precise control and superior productivity.

## Dozer blade.

The front-mounted dozer blade moves material including gravel piles and rock, removes small stumps and can be used on a range of jobs where access with the grader moldboard could be difficult. The robust design provides excellent visibility over and around the dozer blade for ease of operation and maximum efficiency.





**Rear ripper/scarifier.**

This rear frame mounted tool can easily rip-up or scarify hard packed materials, asphalt and ice as well as remove rocks and tree roots and loosen packed road surfaces. It is equipped with the Volvo Tooth System and shanks and can hold up to five ripper teeth or nine scarifier teeth.



**Mid mounted scarifier.**

Mounted behind the front axle and designed to break-up compact material and facilitate grading, the mid mount scarifier design ensures optimum cutting capability and excellent attachment visibility.



**Front mounted scarifier.**

Mounted to the grader's nose plate, the front mounted scarifier is designed to break-up compact material, asphalt and rocky subgrade. The design simplifies scarifying operations against curbs, walls and other obstacles.

# Maximum power, performance and reliability.



## Joystick.

The optional Volvo joystick controls simplify machine operation by providing proportional response for hydraulic functions, articulation, steering and attachment performance.

## Technology ready kit.

This option allows joystick-equipped machines to easily be fitted with a third-party grade control system – increasing productivity and facilitating precision in fine grading applications.

## Purpose built frames.

There are five distinct frame designs built for Volvo motor graders. For optimized performance, each frame is tailored to match the weight and horsepower of the machine.



## Circle, moldboard and drawbar.

The powerful and durable design of the circle, moldboard and drawbar system allows the operator to place and maintain the blade exactly where it's needed.

## All-wheel drive.

In all-wheel drive mode, Volvo motor graders reach top speeds of 37kph – ideal for snow removal and other high speed applications.



## Precise blade control.

For the best possible ground finish, the hydraulic system accurately maneuvers the blade to the correct position and maintains superior precision for enhanced productivity.



## Transmission.

The redesigned Volvo transmission has been purpose built specifically for Volvo motor graders – ensuring optimum performance and high productivity.





**Volvo engine.**

Featuring proven, advanced technology, Volvo's powerful Tier 4 Final/Stage IV engine delivers the ultimate combination of high performance and low fuel consumption.

**Diesel Exhaust Fluid (DEF).**

Volvo offers a total DEF solution that is quality assured, cost efficient and easily accessible. Contact your Volvo dealer for more information.

**Centralized fill points and eco drains.**

For quick and easy service access, fluid filling points are centralized at ground level. To avoid spillage, most drainage points have quick coupler-type drain valves.

**Attachments.**

Volvo's durable attachments have been purpose-built to deliver maximum productivity and long service life in combination with Volvo machines.



**Tool-less service access.**

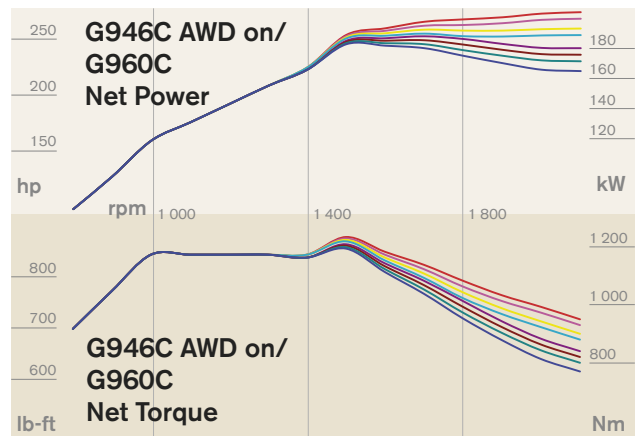
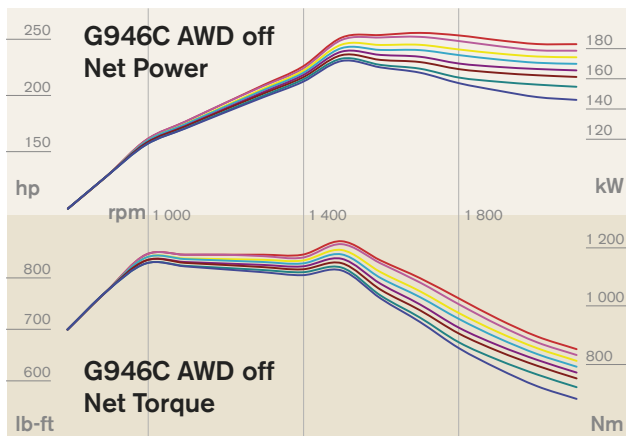
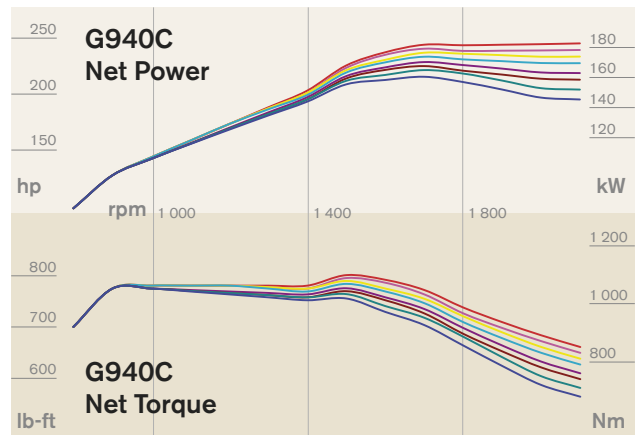
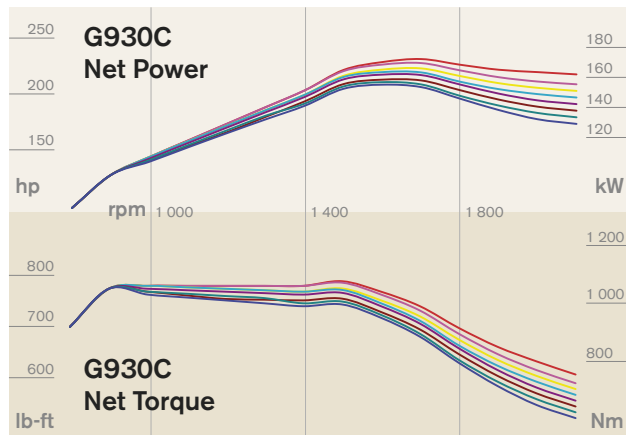
For quick and easy service checks, tools are not needed to access Volvo motor grader daily service points.

**Hydraulic brake system.**

The dedicated hydraulic brake circuit ensures minimal pedal effort is required to achieve the desired braking force – improving stopping power.

# Volvo G930C, G940C, G946C, G960C in detail.

			G930C		G940C		G946C		G960C	
<b>Base operating weight*</b>										
Base - Total	kg	lb	16 066	35,420	16 977	37,427	17 469	38,512	18 069	39,834
On front wheels	kg	lb	4 468	9,850	4 643	10,236	4 924	10,856	5 001	11,025
On rear wheels	kg	lb	11 598	25,570	12 334	27,191	12 545	27,656	13 068	28,809
<b>Typical operating weight**</b>										
Typical - Total	kg	lb	19 250	42,437	20 160	44,445	20 570	45,350	21 252	46,852
On front wheels	kg	lb	4 968	10,953	5 144	11,340	5 409	11,925	5 502	12,128
On rear wheels	kg	lb	14 282	31,484	15 016	33,105	15 161	33,425	15 750	34,724
<b>Maximum operating weight</b>										
Maximum - Total	kg	lb	24 325	53,630	24 325	53,630	24 325	53,630	24 325	53,630
Note that adding weight and attachments to the base grader may necessitate a tire upgrade as maximum weight capacity of tire may be exceeded.										
<b>Productivity</b>										
Blade pull at Base Operating Weight	kg	lb	10 438	23,013	11 100	24,472	15 145	33,391	11 761	25,928
Blade pull at Typical Operating Weight	kg	lb	12 854	28,336	13 515	29,795	17 500	38,852	14 175	31,251
Blade down force at Base Operating Weight***	kg	lb	7 783	17,133	8 033	17,681	8 519	18,751	8 652	19,044
Blade down force at Typical Operating Weight***	kg	lb	8 641	19,051	8 884	19,586	9 343	20,597	9 502	20,948
<b>Engine data</b>										
Model			Volvo D8J		Volvo D8J		Volvo D8J		Volvo D8J	
Turbocharged, aftercooled with replaceable wet-type cylinder liners										
No. of cylinders	in line		6		6		6		6	
Bore & stroke	mm	in	110 x 136	4,331 x 5,354	110 x 136	4,331 x 5,354	110 x 136	4,331 x 5,354	110 x 136	4,331 x 5,354
Displacement	l cu. in		7.8 476		7.8 476		7.8 476		7.8 476	
Torque Rise - Low			%		%		%		%	
- Medium			%		%		%		%	
- High			%		%		%		%	
Engine exhaust emission standards certified to	US EPA Tier 4 Final / EU Stage IV									
<b>Electrical system</b>										
Alternator			volt		24		24		24	
			amp		120		120		120	
Batteries (two 12 volt) maintenance free, heavy duty CCA (RC)1570 CCA (240 RC) batteries available optionally.			760 (170)		760 (170)		1 125 (195)		760 (170)	
*approximate weights shown include enclosed low profile cab with ROPS, all operating fluids, operator and standard equipment.										
**typically equipped operating weight is calculated with push block, rear ripper, 17.5 tires with single-piece (SP) rims, heavy duty circle support, 14' moldboard, full fuel tank, and standard operator.										
***Blade down force is the maximum downward force which may be applied at the cutting edge.										



			G930C		G940C		G946C AWD off		G960C/G946C AWD on	
<b>3 range power control (8 speed transmission)</b>										
<b>Base range power - (F1-F2)</b>										
Net engine power	kW	hp	129	173	146	196	146	196	166	222
Net peak torque	Nm	lb. ft	1 010	745	1 012	746	1 107	816	1 171	863
<b>Mid range power - (F3 - F5)</b>										
Net engine power	kW	hp	147	197	163	219	163	219	186	249
Net peak torque	Nm	lb. ft	1 022	754	1 036	764	1 146	845	1 186	874
<b>High range power - (F6 - F8)</b>										
Net engine power	kW	hp	162	217	183	245	183	245	205	275
Net peak torque	Nm	lb. ft	1 051	775	1 071	790	1 196	882	1 211	893
<b>8 range power control (11 speed transmission)</b>										
<b>Power Range for F1-F4</b>										
Net engine power	kW	hp	129	173	146	196	146	196	166	222
Net peak torque	Nm	lb. ft	1 008	743	1 012	746	1 107	816	1 171	863
<b>Power Range for F5</b>										
Net engine power	kW	hp	133	179	152	204	155	208	172	231
Net peak torque	Nm	lb. ft	1 008	743	1 012	746	1 107	816	1 176	867
<b>Power Range for F6</b>										
Net engine power	kW	hp	138	185	159	213	161	216	177	237
Net peak torque	Nm	lb. ft	1 008	743	1 016	749	1 121	826	1 181	871
<b>Power Range for F7</b>										
Net engine power	kW	hp	142	191	163	219	166	222	181	243
Net peak torque	Nm	lb. ft	1 012	746	1 026	756	1 136	838	1 186	874
<b>Power Range for F8</b>										
Net engine power	kW	hp	147	197	170	228	170	228	190	255
Net peak torque	Nm	lb. ft	1 022	754	1 041	767	1 151	849	1 196	882
<b>Power Range for F9</b>										
Net engine power	kW	hp	151	203	174	233	175	234	194	261
Net peak torque	Nm	lb. ft	1 026	756	1 051	775	1 166	860	1 201	885
<b>Power Range for F10</b>										
Net engine power	kW	hp	155	208	179	239	179	239	201	269
Net peak torque	Nm	lb. ft	1 046	771	1 061	782	1 186	874	1 206	889
<b>Power Range for F11</b>										
Net engine power	kW	hp	162	217	183	245	183	245	205	275
Net peak torque	Nm	lb. ft	1 051	775	1 071	790	1 196	882	1 211	893
Rated net horsepower SAE J1349/ISO 9249										

### 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 HTE1160S has automatic shifting and travel mode as standard equipment.  
Approximate values - ground speeds may vary based upon tire brand and size.

Transmission	HTE840S 8-Speed				HTE1160S 11-Speed				
	14:00		17.5		14:00		17.5		
Tire Size	km/h	mph	km/h	mph	Gear @ RPM	km/h	mph	km/h	mph
F1 @ 2 100	4.1	2.6	4.1	2.5	F1 @ 2,100	3.2	2.0	3.2	2.0
F2 @ 2 100	5.8	3.6	5.7	3.6	F2 @ 2,100	4.2	2.6	4.1	2.6
F3 @ 2 100	8.1	5.0	8.0	5.0	F3 @ 2,100	5.6	3.5	5.5	3.4
F4 @ 2 100	11.3	7.0	11.1	7.0	F4 @ 2,100	7.2	4.5	7.1	4.5
F5 @ 2 100	16.0	10.0	15.8	9.9	F5 @ 2,100	9.4	5.9	9.3	5.8
F6 @ 2 100	22.4	14.0	22.1	13.8	F6 @ 2,100	12.2	7.7	12.2	7.6
F7 @ 2 100	31.4	19.6	31.0	19.4	F7 @ 2,100	16.2	10.1	16.0	10.0
F8 @ 2 100	43.8	27.4	43.3	27.1	F8 @ 2,100	21.6	13.5	21.4	13.3
					F9 @ 2,100	28.1	17.5	27.7	17.3
					F10 @ 2,100	36.8	23.0	36.5	22.7
					F11 @ 2,100	47.6	29.8	47.0	29.4
R1 @ 2 100	4.1	2.5	4.0	2.5	R1 @ 2,100	3.2	2.0	3.1	2.0
R2 @ 2 100	7.9	5.0	7.8	4.9	R2 @ 2,100	5.5	3.4	5.4	3.4
R3 @ 2 100	15.8	9.9	15.6	9.7	R3 @ 2,100	9.3	5.8	9.2	5.7
R4 @ 2 100	30.9	19.3	30.5	19.0	R4 @ 2,100	12.3	7.7	12.2	7.6
					R5 @ 2,100	21.3	13.3	21.0	13.1
					R6 @ 2,100	36.2	22.6	35.7	22.3

Transmission gear	Volvo HTE840S		Volvo HTE1160S		
	Engine Power Range				
Base Range	F1, F2	R1	1st Range	F1-F4	R1
Mid Range	F3 - F5	R2, R3	2nd Range	F5	R2
High Range	F6 - F8	R4	3rd Range	F6	R3
			4th Range	F7	R4
			5th Range	F8	R5
			6th Range	F9	R6
			7th Range	F10	
			8th Range	F11	

Note: For additional fuel savings, the RPM's can be capped at 1,900 rpm in gears F1-F5 (11 spd) and F1-F2 (8 spd) through VCADS

# Specifications.

				G930C		G940C		G946C		G960C		
<b>Tandems</b>												
Depth	mm	in	226.5	8.9	226.5	8.9	226.5	8.9	226.5	8.9		
Height	mm	in	616	24.25	616	24.25	616	24.25	616	24.25		
Thickness	inner wall		mm	in	25	1	25	1	25	1	25	1
	outer wall		mm	in	20	78	20	78	20	78	20	78
Center distance	mm	in	1 550	61	1 550	61	1 550	61	1 550	61		
Drive chain pitch	mm	in	51	2	51	2	51	2	51	2		
Oscillation			degrees ±		15		15		15		15	
<b>Differential / final drive</b>												
Model	Volvo				APR70							
Type	Planetary final reduction with an operator controlled wet multiple disc lock/unlock differential											
<b>Wheels &amp; tires (Standard equipment)</b>												
Tire size				14:00 x 24, G-2		14:00 x 24, G-2		14:00 x 24, G-2		14:00 x 24, G-2		
Ply rating (PR)				12		12		12		12		
Rim size	mm	in	223	9	223	9	254	10	254	10		
	One piece rim				•		•		•		•	
Three piece rim								•				
Bolt-on rims interchangeable between front and rear			Yes		Yes		No		Yes			
<b>Front axle and articulation</b>												
Wheel lean	degrees R & L		18		18		18		18			
Oscillation	degrees up & down		16		16		16		16			
Ground clearance	mm	in	610	24	610	24	610	24	610	24		
Minimum turning radius using front axle steering, articulation, wheel lean and unlocked differential			mm	ft	7 265	23' 10"	7 265	23' 10"	7 265	23' 10"	7 265	23' 10"
Steering arc	degrees		50		50		50		50			
Frame articulation angle	degrees		23		23		23		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, EN12643:1997 with optional secondary steering												
<b>Brakes</b>												
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.												

			<b>G930C</b>		<b>G940C</b>		<b>G946C</b>		<b>G960C</b>	
<b>Front frame</b>										
Minimum dimensions of box section	mm	in	265 x 340	10.5 x 13.5	265 x 340	10.5 x 13.5	265 x 340	10.5 x 13.5	265 x 340	10.5 x 13.5
Plate thickness sides, top & bottom	mm	in	20	0.79	20	0.79	20	0.79	20	0.79
Vertical section modulus at arch	cm <sup>3</sup>	cu. in	1 950	119	1 950	119	1 950	119	1 950	119
minimum	cm <sup>3</sup>	cu. in	1 663	101	1 663	101	1 663	101	1 663	101
maximum	cm <sup>3</sup>	cu. in	3 474	212	3 474	212	3 474	212	3 474	212
<b>Rear frame - full perimeter type</b>										
Minimum dimensions of side rail	mm	in	254 x 100	10 x 4	254 x 100	10 x 4	254 x 100	10 x 4	254 x 100	10 x 4
Side plate thickness	mm	in	9.5	0.37	12.7	0.5	12.7	0.5	25	0.98
<b>Moldboard</b>										
Standard moldboard with replaceable end bits	mm	in	22 x 635 x 3 658	0.87 x 25 x 12'	22 x 635 x 3 658	0.87 x 25 x 12'	22 x 635 x 3 658	0.87 x 25 x 12'	22 x 635 x 3 658	0.87 x 25 x 12'
Moldboard material	SAE 1050 high carbon steel									
Edge: through hardened boron steel	mm	in	152 x 16	6 x 5/8	152 x 16	6 x 5/8	152 x 16	6 x 5/8	152 x 16	6 x 5/8
Bolt spacing	mm	in	152	6	152	6	152	6	152	6
Bolt size	mm	in	16	5/8	16	5/8	16	5/8	16	5/8
Slide rails supported by Duramide™ bearings				YES	YES	YES	YES	YES	YES	YES
<b>Moldboard range: moveable blade control system (dimensions shown with standard 14:00 tires and moldboard)</b>										
			Left/Right		Left/Right		Left/Right		Left/Right	
Reach outside tires - articulated frame	mm	in	3 048/3 035	120/119.5	3 048/3 035	120/119.5	3 048/3 035	120/119.5	3 048/3 035	120/119.5
Reach outside tires - straight frame	mm	in	2 020/2 010	80/79	2 020/2 010	80/79	2 020/2 010	80/79	2 020/2 010	80/79
Moldboard slide left - right	mm	in	673/673	26.5/26.5	673/673	26.5/26.5	673/673	26.5/26.5	673/673	26.5/26.5
Circle side shift left - right	mm	in	775/749	30.5/29.5	775/749	30.5/29.5	775/749	30.5/29.5	775/749	30.5/29.5
Maximum bank sloping angle, left - right	degrees		90/90		90/90		90/90		90/90	
7 Position Blade Control system linkage				YES	YES	YES	YES	YES	YES	YES
Moldboard ground clearance	mm	in	445	17.5	445	17.5	445	17.5	445	17.5
Moldboard cutting depth	mm	in	790	31	790	31	790	31	790	31
Moldboard tilt range	degrees forward		47		47		45		45	
	degrees back		5		6		6		6	
Superior moldboard mobility permits steep ditch cutting angles and back sloping outside overall machine width										

# Specifications.

			G930C		G940C		G946C		G960C	
<b>Circle</b>										
Pitch diameter	mm	in	1 626	64	1 626	64	1 626	64	1 626	64
Thickness	mm	in	32	1.25	32	1.25	32	1.25	32	1.25
Adjustable circle wear plates - standard / optional			3 / 5		3 / 5		3 / 5		3 / 5	
Duramide™ wear plates prevents metal-to-metal contact and provides maximum service life.										
<b>Circle drive</b>										
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		360		360		360	
<b>Drawbar</b>										
Dimensions of box section	mm	in	165 x 165	6.5 x 6.5	165 x 165	6.5 x 6.5	165 x 165	6.5 x 6.5	165 x 165	6.5 x 6.5
Plate thickness	mm	in	25 & 19	1 & 0.75	25 & 19	1 & 0.75	25 & 19	1 & 0.75	25 & 19	1 & 0.75
<b>Cab &amp; controls</b>										
High profile cab with ROPS/FOPS Interior height	mm	in	1 855	73	1 855	73	1 855	73	1 855	73
Low profile cab with ROPS/FOPS Interior height	mm	in	1 620	64	1 620	64	1 620	64	1 620	64
All Volvo Grader cabs and canopies are designed to meet or exceed EN/ISO 3471:2008 and EN/ISO 3449:2008 Level 2 FOPS requirements										
The retractable seat belt is 76 mm (3") 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)										
<b>Hydraulics</b>										
Circuit type	Closed center, load sense Proportional Demand Flow (PDF) Hydraulic System, with O-ring face seal hose connections.									
Main hydraulic pump type	Axial piston type									
Maximum pressure	bar	psi	207	3,000	207	3,000	207	3,000	207	3,000
Output at 2,100 rpm	L/min	gal./min	208	55	208	55	208	55	208	55
Stand by pressure	bar	psi	24	350	24	350	24	350	24	350
Aux Flow	L/min	gal./min	76	20	76	20	76	20	76	20
<b>Hydraulic fan drive pump</b>										
Type	Separate axial piston pump dedicated to the variable speed cooling fan.									
<b>Capacities</b>										
Fuel tank	L	gal.	340	90	390	100	390	100	390	100
Transmission	L	gal.	61	16	61	16	61	16	61	16
Final drive	L	gal.	22.7	6	22.7	6	22.7	6	22.7	6
Tandems (each)	L	gal.	100	26.4	100	26.4	100	26.4	100	26.4
Hydraulic oil tank	L	gal.	91	24	91	24	144	38	91	24
Coolant antifreeze protection to -50° C (-58° F) approx	L	gal.	37.8	10	37.8	10	41.6	11	41.6	11
Engine oil	L	gal.	21.5	5.7	21.5	5.7	21.5	5.7	21.5	5.7
DEF/AdBlue	L	gal.	31	8.2	31	8.2	31	8.2	31	8.2

				G930C		G940C		G946C		G960C	
<b>Attachments (optional unless otherwise stated as standard equipment)</b>											
Push Block	kg	lb	515	1,138	515	1,138	515	1,138	515	1,138	
Ripper incl. rear frame arch support and links	kg	lb	1 495	3,295	1 495	3,295	1 495	3,295	1 495	3,295	
- Width of cut	mm	in	2 240	88.2"	2 240	88.2"	2 240	88.2"	2 240	88.2"	
- Number of scarifier teeth	up to									9	
- Max. scarifying depth	mm	in	295	11.6"	295	11.6"	295	11.6"	295	11.6"	
- Number of ripper teeth	up to									5	
- Max. ripping depth	mm	in	440	17.3"	440	17.3"	440	17.3"	440	17.3"	
Mid Mount Scarifier	kg	lb	905	1,995	905	1,995	905	1,995	905	1,995	
- Width of cut	mm	in	1 328	52.3"	1 328	52.3"	1 328	52.3"	1 328	52.3"	
- Number of teeth	up to									11	
- Penetration	mm	in	300	11.8"	300	11.8"	300	11.8"	300	11.8"	
Front Mount Scarifier	kg	lb	715	1,575	715	1,575	715	1,575	715	1,575	
- Width of cut	mm	in	1 248	49"	1 248	49"	1 248	49"	1 248	49"	
- Number of teeth	up to									11	
- Penetration	mm	in	260	10.2"	260	10.2"	260	10.2"	260	10.2"	
Dozer 2.4 m (8')	kg	lb	1 080	2,380	1 080	2,380	1 080	2,380	1 080	2,380	
- Width	m	ft	2.44	8	2.44	8	2.44	8	2.44	8	
Dozer 2.7 m (9')	kg	lb	1 140	2,515	1 140	2,515	1 140	2,515	1 140	2,515	
- Width	m	ft	2.74	9	2.74	9	2.74	9	2.74	9	

#### All wheel drive

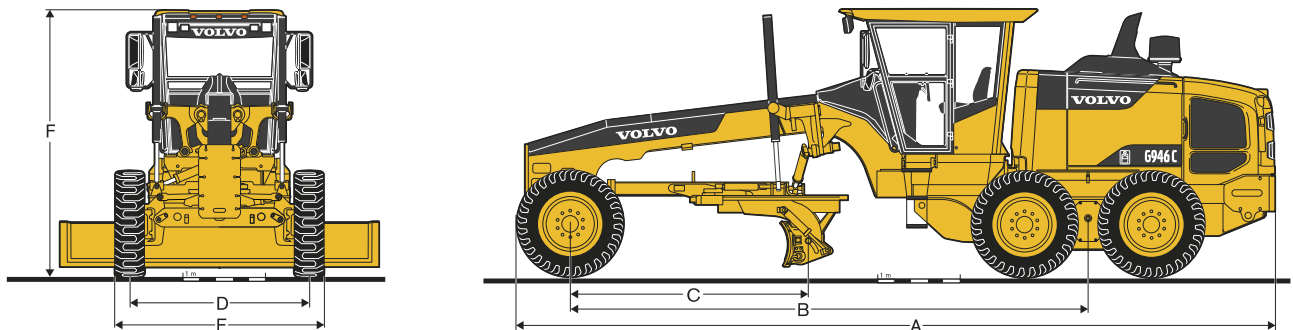
Maximum operating pressure	bar	psi	345	5,000	345	5,000	345	5,000	345	5,000
Minimum operating pressure	bar	psi	34	500	34	500	34	500	34	500
Top speed with AWD engaged (Approx.)	km/h	mph	30	18	30	18	30	18	30	18
Maximum rim pull	kg	lb	3 855	8,500	3 855	8,500	3 855	8,500	3 855	8,500

When equipped with the HTE840S transmission, the Volvo high torque All Wheel Drive System operates in forward gears 1-7 and reverse gears 1-4.

When equipped with the HTE1160S transmission, the Volvo high torque All Wheel Drive System operates in forward gears 1-10 and reverse gears 1-6.

System provides the operator with the ability to fine grade in Creep Mode using only hydrostatic front wheel drive, between 0 - 4 km/h (0 - 2.5 mph).

Dimensions (all dimensions are approximate)				G930C		G940C		G946C		G960C		
A	Overall length	mm	in	8 930	352	9 150	360	9 150	360	9 150	360	
B	Wheelbase	mm	in	6 280	247	6 280	247	6 280	247	6 280	247	
C	Bladebase per ISO 7134	mm	in	2 675	105	2 650	104	2 650	104	2 650	104	
D	Width - front tire center lines	mm	in	2 076	82	2 076	82	2 076	82	2 076	82	
E	Width - outside tires	14:00 STD	mm	in	2 537	100	2 537	100	2 537	100	2 537	100
		17.5	mm	in	2 717	107	2 717	107	2 717	107	2 717	107
F	Overall height with low profile cab, add 217 mm (8.5") for full height cab	mm	in	3 225	127	3 225	127	3 225	127	3 225	127	



# Equipment.

## STANDARD EQUIPMENT

	G930C	G940C	G946C	G960C
<b>Safety</b>				
Dual brake crossover circuit and reserve power assist	•	•	•	•
ROPS/ FOPS protected cab	•	•	•	•
Hazard lights	•	•	•	•
Horn	•	•	•	•
Left and right outside dual rear view mirrors	•	•	•	•
Retractable 3-inch safety belt	•	•	•	•
Front windshield wiper and washer	•	•	•	•
Handrails on steps and platforms	•	•	•	•
<b>Comfort</b>				
Independently adjustable pedestal and steering wheel with controls	•	•	•	•
Cab heater - 50,000 BTU with cab pressurizer and replaceable filters, 10 outlets	•	•	•	•
Overhead console for radio	•	•	•	•
Tinted glass	•	•	•	•
Cup holder / Tray for small items or lunch box	•	•	•	•
Ashtray	•	•	•	•
Space for lunch cooler	•	•	•	•
Overhead storage compartment	•	•	•	•
<b>Engine</b>				
Direct injected, electronically controlled	•	•	•	•
Turbocharged, inter-cooled	•	•	•	•
Remote oil drain	•	•	•	•
Cold start pre-heater	•	•	•	•
<b>Electrical system</b>				
Cab mounted headlights with dimmer switch (N/A on CE units)	•	•	•	•
Backup alarm 112 dB(A)	•	•	•	•
2,880 watt (120 amp) alternator	•	•	•	•
Battery disconnect switch	•	•	•	•
24 V socket	•	•	•	•
<b>Lights</b>				
Headlights	•	•	•	•
Parking lights	•	•	•	•
Direction indicators	•	•	•	•
Rear lights	•	•	•	•
Back-up lights	•	•	•	•
Brake lights	•	•	•	•

	G930C	G940C	G946C	G960C
<b>Operator information interface</b>				
Gauges for coolant temperature, urea level, and fuel level	•	•	•	•
Speedometer	•	•	•	•
Tachometer	•	•	•	•
<b>Warning lights grouped and easy to read</b>				
Central warning (3 levels) for all vital functions	•	•	•	•
Centrally positioned information display	•	•	•	•
Automatic pre-start checks	•	•	•	•
Troubleshooting diagnostics	•	•	•	•
Hour meter	•	•	•	•
Clock	•	•	•	•
<b>Drivetrain</b>				
Rear axle, operator controlled, lock/unlock differential with planetary final reduction	•	•	•	•
Electronic hand throttle with RPM hold and resume functions	•	•	•	•
Direct drive, power shift Volvo HTE840S transmission with 8 forward and 4 reverse gears	•	•	•	•
Single transmission control lever	•	•	•	•
Electronic over speed protection	•	•	•	•
Advanced memory shift	•	•	•	•
Hinged transmission guard	•	•	•	•
Direct Forward to Reverse shuttle shift capability without using the Inching pedal	•	•	•	•
<b>Brakes</b>				
4 wheel wet disc braking system with crossover dual circuits and reserve power assist	•	•	•	•
Spring applied wet multiple disc park brake with operator warning alarm and indicator	•	•	•	•
<b>Other</b>				
Tool box	•	•	•	•

## OPTIONAL EQUIPMENT

	G930C	G940C	G946C	G960C
<b>Comfort</b>				
Rear view camera (standard with CE specs)	•	•	•	•
Sliding side windows	•	•	•	•
Opening front lower windows	•	•	•	•
Sun visor	•	•	•	•
Adjustable air suspended seat	•	•	•	•
Air conditioner - 35,000 BTU HFC-134a (non-CFC refrigerant) with cab heater	•	•	•	•

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.

## OPTIONAL EQUIPMENT

	G930C	G940C	G946C	G960C
<b>Drivetrain</b>				
Autoshift transmission	•	•	•	•
Volvo HTE1160S Transmission - 11 speeds forward 6 speeds reverse - includes Autoshift	•	•	•	•
Reversible cooling fan - manual or automatic modes	•	•	•	•
<b>Electrical System</b>				
LED light options	•	•	•	•
Moldboards work lights - 2 or 4	•	•	•	•
Rear work lights - 2 or 4	•	•	•	•
Corner cab work lights - left or right - 2	•	•	•	•
Rear and front lower windows wipers/washers	•	•	•	•
Intermittent function for all specified wipers	•	•	•	•
24 volt to 12 volt converter - 600 or 1,440 watt (30 or 60 amp)	•	•	•	•
<b>Productivity</b>				
Heavy duty circle support system	•	•	•	•
Metallic lower moldboard slide bearing	•	•	•	•
Belly protection plate	•	•	•	•
Front fenders/lean and steer with front wheels - plastic	•	•	•	•
Rear fenders - oscillate with tandem	•	•	•	•
Tires 17.5 x 25	•	•	•	•
Moldboard 13' x 25" x 7/8"	•	•	•	•
Moldboard 14' x 25" x 7/8"	•	•	•	•

	G930C	G940C	G946C	G960C
<b>Hydraulics and controls</b>				
Joystick controls with steering wheel	•	•	•	•
Blade Lift Float Control	•	•	•	•
Front attachment float control	•	•	•	•
Up to 7 additional hydraulic circuits for attachments	•	•	•	•
Secondary steering (power assisted) - standard with CE specs	•	•	•	•
Radio with CD player	•	•	•	•
<b>Other</b>				
First user lifetime frame warranty - includes articulation pins and bearings	•	•	•	•
Low ambient fluids for extreme cold conditions below -10° C (-14° F)	•	•	•	•
Sound reduction packages (Standard with CE kit)	•	•	•	•
Front and Rear licence plate brackets	•	•	•	•
Air compressor - engine driven with tank capable of operating hand tools	•	•	•	•
Volvo CareTrack - remote monitoring system	•	•	•	•

## SELECTION OF VOLVO OPTIONAL EQUIPMENT

### LED lights



### Auto idle shutdown



### Engine compartment light



### Tires



### Moldboards



### High or low cab



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Ref. No. VOE2210009348  
Printed in USA, 09/2014  
Volvo, Shippensburg  
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