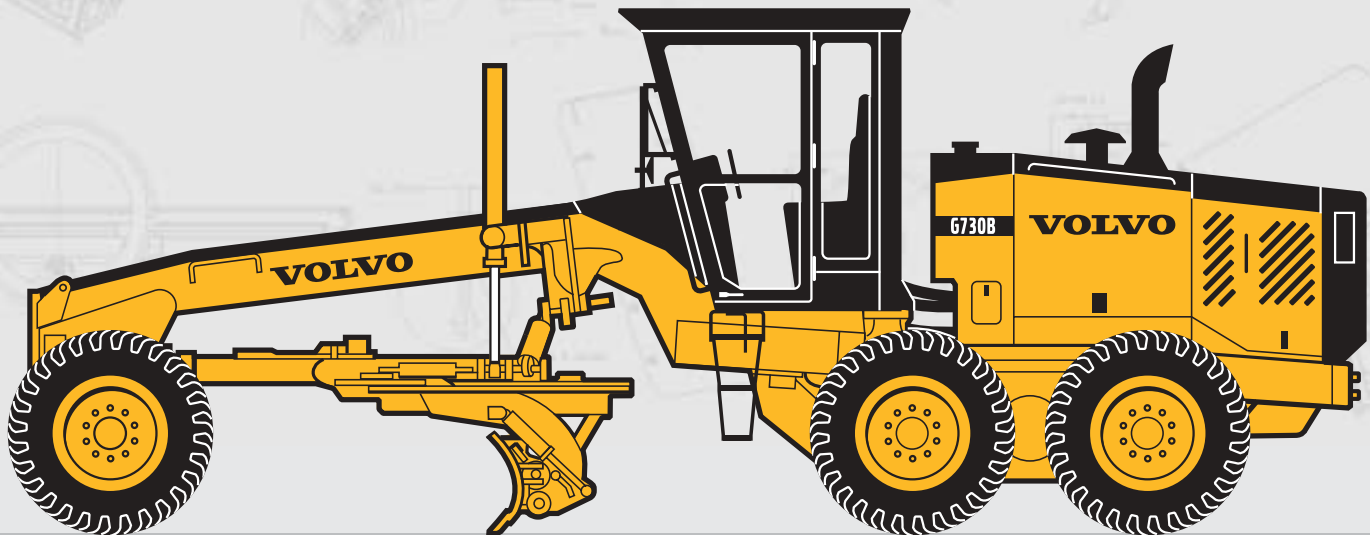


VOLVO MOTOR GRADER G730B

TANDEM DRIVE



- **Configuration:** Articulated frame
- **Engine model:** Volvo D7DGCE2
- **Maximum net engine output @2200 RPM (per SAE J1349):** 198 - 221 hp (148 - 165 kW)
- **Base weight:** 35,500 lb (16 103 kg)
- **Blade down force:** 17,904 lb (8 121 kg)
- **Blade pull:** 22,685 lb (10 290 kg)
- 8400 fully sequential direct drive powershift transmission
- Choice of fully enclosed, ROPS cab in full height or low profile configuration, or ROPS canopy
- Moveable Blade Control System
- Load sensing, Closed Center Hydraulic System
- Fully adjustable control pedestal with low effort hydraulic controls
- Full front and rear frame sections designed for attachment mounting
- Engine cooling module with efficient, variable speed, hydraulically driven cooling fan
- Single lever "Smart Shifter" transmission control with gear memory feature
- Hydraulically Boosted Dual Crossover Braking System with reserve power assist
- Heavy duty lock/unlock differential
- Contrinsic Monitoring System for all machine functions
- Full range of front and rear mounted attachments
- Equipped with the fuel efficient, long life Volvo engine that complies to the EPA Tier II, EU Stage II emission standards

VOLVO



Operating weight (Standard equipment)

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

Base

Total 35,500 lb (16 103 kg)
On front wheels 10,295 lb (4 670 kg)
On rear wheels 25,205 lb (11 433 kg)

Typically equipped operating weight:

includes 17.5 x 25, 12 PR, L-2 tires on 14" (356 mm) rims and 14' x 29" x 1" (4 267 x 737 x 25 mm) moldboard and scarifier.

G730B 38,653 lb (17 533 kg)
Maximum combined capacity . 47,500 lb (21 546 kg)
Maximum weight - front . . . 16,700 lb (7 575 kg)
Maximum weight - rear 31,400 lb (14 243 kg)

Weight adjustments for various options are listed at the rear of the brochure.

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



Productivity (Standard equipment)

Blade pull at base weight (no wheel slip, 0.9 traction co-efficient) 22,685 lb (10 290 kg)
Blade down force
• cutting capability
(ISO 7134) 17,904 lb (8 121 kg)

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



Engine data

G730B

Make/Model Volvo D7DGCE2
Type 4 Cycle, Turbocharged, Aftercooled
No. of cylinders In Line 6
Bore & stroke 4.25" x 5.11" (108 x 130 mm)
Displacement 436 cu in (7,1 l)

Maximum net engine output @ 2200 RPM
(per SAE J1349) 198-221 hp (148-165 kW)

Rated gross brake horsepower @ 2200 RPM

• Gears forward 1, 2 and
Reverse 1 206 hp (153 kW)

• Gears forward 3-8 and
Reverse 2-4 228 hp (170 kW)

Rated net brake horsepower @ 2200 RPM

• Gears forward 1, 2 and
Reverse 1 198 hp (148 kW)

Torque @ 1100 RPM 664 lb.ft (900 N.m)

Torque rise 33.2%

• Gears forward 3-8 and
Reverse 2-4 221 hp (165 kW)

Torque @ 1400 RPM 774 lb.ft (1050 N.m)

Torque rise 42.0%

Performance: Rated net brake horsepower

SAE standard J1349/ISO 3046-2 conditions

with water pump, lubricating oil pump, fuel

system, air cleaner, muffler, alternator and

cooling fan.

Engine complies to EPA Tier II, EU Stage II

exhaust emission standard.

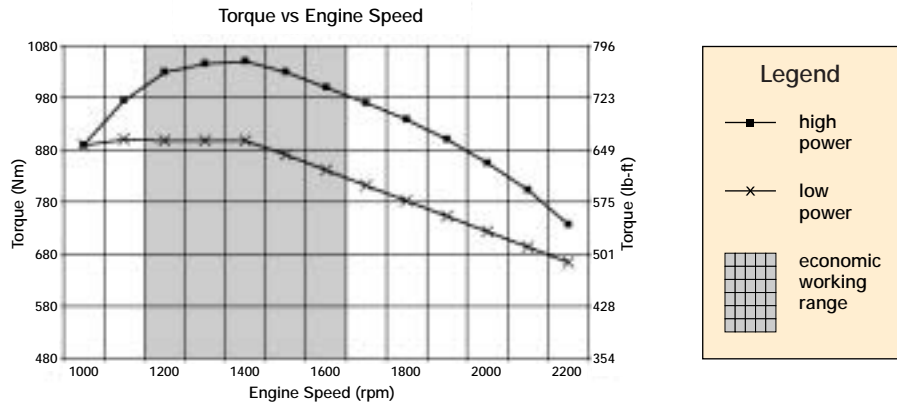
Engine cooling system designed with singular

cooler installations, and utilizes a highly

efficient, variable speed, hydraulically driven

cooling fan.

Engine performance curve



Engine data (continued)

Engine equipped with a two stage, dual element, dry type air cleaner with exhaust aspirator and service indicator. 24 volt starting and electrical system with 80 amp (1920 watt) brushless alternator with internal voltage regulator. Two heavy duty 12 volt maintenance free batteries with 660 cold cranking amps (CCA) and 160 minutes reserve capacity per battery. 1300 CCA batteries available optionally. System includes battery disconnect.



Transmission

Make/Model Volvo 8400

Fully sequential, direct drive, powershift transmission. Engine cannot be started if transmission is in gear. Single lever "Smart Shifter" electronic transmission controller provides self-diagnostics. The flywheel mounted, multi-disc master clutch is oil cooled and lubricated for long life.

Ground speeds at 2200 RPM with standard tires:

Forward		Reverse	
Gears	mph / km/h	Gears	mph / km/h
1	2.8 / 4.4	1	2.8 / 4.4
2	3.9 / 6.2	2	5.3 / 8.5
3	5.3 / 8.5	3	10.5 / 16.9
4	7.5 / 11.9	4	20.4 / 32.7
5	10.5 / 16.9	5	28.5 / 45.7
6	14.7 / 23.6		
7	20.4 / 32.7		
8	28.5 / 45.7		

Transmission guard is standard equipment and is hinged for easy access.

Perma Lube U joints on the input/output drive shafts.



Differential / Final drive

Make/Model Volvo SR40

Single reduction final drive with an operator controlled lock/unlock differential. Rear axles are induction hardened, supported on double row spherical roller bearings.



Tandems

Robotically welded, tandem case with internal gusseting for maximum torsional strength. Field proven split ring/flanged sleeve tandem mounting and 1" (25 mm) thick inner wall resists flexing from side loading during severe applications.

Depth 24.50" (622 mm)

Width 8.25" (210 mm)

Thickness • inner wall 1.00" (25 mm)

• outer wall 0.75" (19 mm)

Center distance 61.50" (1 562 mm)

Drive chain pitch 2.00" (51 mm)

Oscillation ±15°



Brakes

Service Brakes: Foot operated


Fade resistant, hydraulically actuated, wet multiple disc service brakes located at the 4 tandem drive wheels are self-adjusting, 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 hydraulic release independent, disc type parking brake on transmission output shaft and effective on all 4 tandem drive wheels. Includes visual and audible operator warning system for parking brake on, transmission in gear condition. Transmission will not engage with park brake on.

Braking systems comply to SAE Recommended Practice J1473 OCT. 90, and J1152 APR. 80; ISO 3450-1993-01-28. Volvo uses asbestos free brake components.



 **Wheels & tires
(Standard equipment)**

Tire size 14.00 x 24, G-2
 Ply rating (PR) 12
 Rim size 10.0" (254 mm) One piece rim
 Bolt-on rims are interchangeable between front and rear. Multiple piece rims available.

 **Front axle**

Type: Robotically welded steel truss, gusseted for torsional strength, oscillates on a single 3.15" (80 mm) diameter center pivot pin.
 Wheel lean 18° R & L
 Oscillation 16° up and down
 Ground clearance 24.0" (610 mm)
 Twin 3" (76 mm) diameter wheel lean cylinders with lock valve are standard equipment.

 **Steering**

Hydrostatic power steering of front wheels incorporating two steering cylinders. Meets SAE J1511 OCT. 90 with optional secondary steering.
 Minimum turning radius using articulation, front axle steering, wheel lean and unlocked differential 25'6" (7 772 mm)
 Steering arc 72°
 Frame articulation angle 22°
 Articulation lock standard.



Frame

Full front and rear frame sections.

Front: Robotically welded box section. Dual sloped front frame provides excellent forward visibility.

Minimum dimensions of

box section 10.5" x 14.0" **(267 x 356 mm)**

Plate thickness • top & bottom 1.25" **(32 mm)**

• sides 1.0" **(25 mm)**

Vertical section modulus

at arch 163 cu in **(2 676 cm³)**

minimum 137.7 cu in **(2 256 cm³)**

maximum 283.9 cu in **(4 652 cm³)**

Linear weight - minimum-maximum

148.7 - 244.2 lb/ft **(221.3 - 363.4 kg/m)**

Rear: Full perimeter rear frame permits modular powertrain mounting for ease of service and is ideal for attachment mounting. Optional first user lifetime warranty on frame and articulation joint.

Minimum dimensions of

rear frame 4.0" x 11.0" **(102 x 279 mm)**

Plate thickness 1.0" **(25 mm)**



Articulation

Twin 4.5" **(114 mm)** hydraulic cylinders articulate the frame 22° right and left. Anti-drift lock valve ensures stable operation.



Circle

Hardened teeth, cut on the outside of the circle for maximum leverage and minimum wear.

Circle to drawbar support is provided at 9 points. Three upper circle wear plates, three adjustable clamp plates and three adjustable guide shoes combine to ensure optimum circle support and load distribution. DURAMIDE™ wear plates and bearings at the clamp and guide shoes prevent metal-to-metal contact and provide maximum service life.

DURAMIDE™ is a synthetic bearing material that provides long service life and reduces circle system maintenance requirements.

Diameter 66.25" **(1 683 mm)**

Thickness 1.25" **(32 mm)**

Adjustable guide shoes 3

Adjustable clamp plates 3

Upper circle wear plates 3



Circle drive

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

Hydraulic drive cylinders 2

Points of leverage 2

Rotation 360°



Drawbar

Fully welded box section. Narrow "T" design permits optimum visibility to the work area. Drawbar ball stud provides an adjustment to compensate for different tire sizes. Blade lift cylinder anchors are straddle mounted on drawbar to provide maximum strength and support.

Dimensions of

box section 6.5" x 6.5" **(165 x 165 mm)**

Plate thickness 1.0" & 0.75" **(25 & 19 mm)**



Moldboard

Standard moldboard with

replaceable end bits 12' x 25" x 7/8"

(3 658 x 635 x 22 mm)

Blade material SAE 1050 high carbon steel

Edge through hardened 6" x 5/8" boron steel

(152 x 16 mm)

Bolt spacing 6" **(152 mm)**

• bolt size 5/8" **(16 mm)**

Slide rails supported by DURAMIDE™ bearings.



Blade range: Moveable Blade Control System

(Dimensions shown with standard moldboard)

LEFT

RIGHT

Reach outside tires - articulated

frame 120.0" **(3 048 mm)** . . . 119.5" **(3 035 mm)**

Reach outside tires - straight

frame 79.5" **(2 019 mm)** . . . 79.0" **(2 007 mm)**

Blade slide . . . 26.5" **(673 mm)** . . . 26.5" **(673 mm)**

Circle side

shift 30.5" **(775 mm)** . . . 29.5" **(749 mm)**

Maximum bank

sloping angle 90° 90°

Blade ground clearance 17.5" **(445 mm)**

Blade cutting depth 32.0" **(813 mm)**

Blade tilt range 44° forward 6.5° back

Superior blade mobility permits steep ditch cutting angles and bank sloping outside overall machine width.



Cab & controls



All controls are located in a 90° arc forward and to the right of the operator. Enclosed cab has a fully adjustable, cloth covered suspension seat as standard and comes with a 3" **(76 mm)** seat belt. Located forward of the operator are the engine oil pressure, coolant temperature and fuel level gauges, transmission gear indicator and a multi-function Contronic monitoring display. Located in the fully adjustable steering pedestal are the following switches: differential lock/unlock, hazard lights, independent moldboard floats (optional) and combination turn signal, horn and high beam headlight. Heater and wiper/washer controls (if equipped), lighting and accessory switches are grouped in the operator's right hand console. This console also contains the ignition key and access to the circuit breaker and fuse panel. An accelerator/decelerator foot pedal and slider type hand throttle are standard equipment. Outside mounted rear view mirrors (L&R) and a convex interior mirror are standard. Interior operator noise levels average 75 dB(A) per ISO 6394 (enclosed cab).

Cab options

- High capacity heater/air conditioner c/w adjustable vents, temperature control and variable speed fan

- Lower opening front windows

- Rear windshield wipers and washers

- Lower front window wipers and washers

- Modular, 24 volt radio and cassette player

- Operator Convenience Package included with air conditioner option (lunch box, steel vacuum bottle, cup holder and ashtray)

- 24 volt to 12 volt converter for electrical accessories or two way radio installations 25 or 60 amp available

- Bubble type slope meter

- Transmission and hydraulic filter restriction warning

- Low hydraulic oil and hydraulic oil temperature indicator

- Speedometer/odometer

Full height cab with ROPS

Inside dimensions

Height 74.0" **(1 880 mm)**

Width @ controls 56.0" **(1 422 mm)**

Depth @ controls 55.5" **(1 410 mm)**

An optional Low Profile Cab is available with an inside height of 62" **(1 575 mm)**. All Volvo Grader cabs and canopies are designed to meet or exceed SAE J1040 APR. 88, ISO 3471/1-1986(E), and 86/295/EEC ROPS requirements. The seatbelt is 3" **(76 mm)** wide and meets SAE J386 JUNE 93; ISO 6683-1981(E).



Load sensing hydraulics

Closed Center Hydraulic System senses load requirements and maintains system pressure 350 psi (**24 Bar**) above the load pressure.

System features industry standard control arrangement complete with low effort, feathering type, short throw levers located on a fully adjustable steering pedestal.

System incorporates lock valves to prevent cylinder drift under load in the following circuits: blade lift, moldboard tilt, circle shift, wheel lean, circle turn and articulation.

Hydraulic system features include axial piston pump, pressure and flow compensated, variable displacement with high output for smooth multi-functioning.

The pump drive shaft is equipped with Perma Lube U joints.

Maximum pressure 2,700 psi (**186 Bar**)
Output 2200 RPM. 0-75 U.S. gpm (**0-284 lpm**)
Filtration 10 micron spin-on type



Capacities

	U.S.Gal.	Litres
Fuel tank	100.0	378.5
Transmission.	10.0	38.0
Final drive.	6.0	23.0
Tandems (each)	26.4	100.0
Hydraulic oil tank	35.4	134.0
Coolant antifreeze protection to -58° F (-50° C) approx	7.4	28.0
Engine oil	8.45	32.0



Attachments

(Optional unless otherwise stated as standard equipment)

Snow

Hydraulic Wing	
• high bench	4,800 lb (2 177 kg)
• low bench	4,000 lb (1 814 kg)
One Way Snow Plow	2,350 lb (1 065 kg)
"V" Snow Plow	
• 9' (2 743 mm)	2,500 lb (1 134 kg)
• 10' (3 042 mm)	2,650 lb (1 202 kg)

Earth

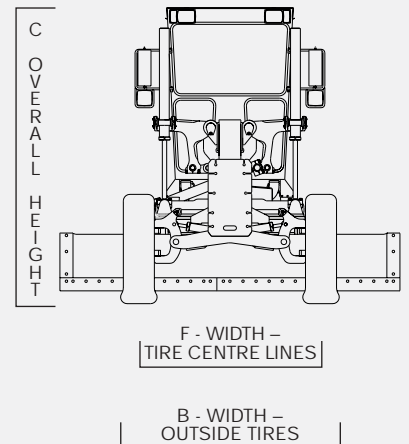
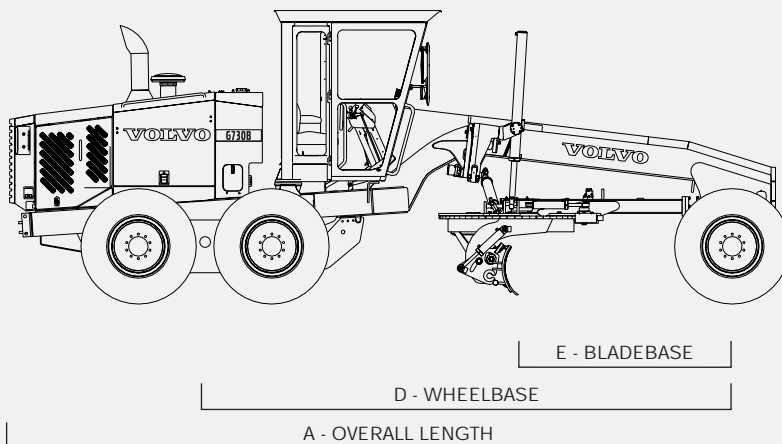
Dozer Blade	
• 8' (2 438 mm)	2,620 lb (1 188 kg)
• 9' (2 743 mm)	2,870 lb (1 302 kg)
Front Mounted Scarifier.	1,780 lb (807 kg)
Mid-mount Scarifier	1,725 lb (782 kg)
Push Block.	1,125 lb (510 kg)
Ripper/Scarifier, rear	2,880 lb (1 306 kg)

Dimensions with standard equipment

All dimensions are approximate

- A Overall length 29'11" (**9 119 mm**)
- D Wheelbase 20'0" (**6 096 mm**)
- E Bladebase
- ISO 7134 8'6" (**2 591 mm**)

- B Overall width 8'4" (**2 540 mm**)
- C Overall height. 11'2" (**3 404 mm**)
- with Low Profile Cab 10'2" (**3 099 mm**)
- F Width – Tire centre lines 6'10" (**2 083 mm**)



STANDARD FEATURES

Operator controlled, lock/unlock differential final drive	Isolation mounted cab, transmission and engine for reduced noise and vibration	DURAMIDE™ wear strips on circle clamp plates and guide shoes prevent metal-to-metal contact for maximum service life
4 wheel, crossover, dual braking system with reserve power assist	Adjustable steering control pedestal with tilt head for maximum operator comfort	Hinged cooling module doors for easy trash clean out
Park brake with operator warning alarm and indicator	Gauges include: coolant temperature, engine oil pressure, fuel level, hourmeter, air cleaner service indicator, articulation angle indicator, multi-function Contronic Monitoring System with visual and audible warnings	Lights: backup, tail, stop and directional
Fully sequential, direct drive, powershift 8400 transmission, with transmission guard	Load sensing, Closed Center Hydraulic System with short throw, low effort control levers. Hydraulically operated blade lift, circle turn, moldboard slide and tilt, circle shift, wheel lean functions and articulation	Backup alarm with automatic volume levels
13.5" (343 mm) diameter, 5 plate, oil cooled and lubricated master clutch	Feathering type controls for precise blade adjustments	Painted high gloss Volvo yellow and gray
Moveable Blade Control System for optimum blade mobility	Deluxe, cloth covered, fully adjustable suspension seat when grader is equipped with an enclosed cab	Lockable tool box with storage space for scarifier shanks
Full front and rear frame sections designed to withstand shock loading of attachments	100 U.S. gallon (378.5 l) fuel tank capacity	Engine side panels complete with locks
Circle drive counter-balance valve protects against impact damage	Dual leaning wheel cylinders	Left and right outside rear view mirrors
Hardened circle teeth cut on outside of circle for maximum leverage and minimum wear		Interior rear view mirror
Hardened circle drive pinions for maximum wear resistance		Exhaust aspirated air cleaner
		Front cab wiper and washer standard when grader is equipped with an enclosed cab
		VHP - variable horsepower

OPTIONAL EQUIPMENT

	lb	kg		lb	kg		lb	kg
Accumulators - blade lift (2)	122	55	• Headlights with dimmer switch	0	0	Secondary steering (power assisted)	61	28
Accumulators - sideshift	50	23	• Moldboards lights - 2	2	1	Tie down brackets	100	45
Air conditioner - 35,000 BTU			• Rear flood lights - 2	2	1	Tires		
• HFC-134a (non-CFC refrigerant)	130	59	• Snow wing lights - 2	2	1	• 14.00 x 24, 12 PR, G-2,		
Brush guards	40	18	Fenders			10" (254 mm) multi-piece rims	390	177
Cab			• Front	80	36	• 17.5 x 25,12 PR, L-2,		
• Canopy shell with ROPS - deduct	(625)	(284)	• Rear	400	182	14" (356 mm) rims	825	374
• FOPS protection for ROPS cabs	220	100	Moldboards			• Consult your Volvo dealer for full		
• Low Profile Cab			• 13' x 25" x 7/8"			range of tire and wheel options		
with ROPS - deduct	(270)	(122)	(3 962 x 635 x 22 mm)	110	50	Tool kit	-	-
Cab heater - 50,000 BTU with cab			• 14' x 25" x 7/8"			Transmission sump heater	-	-
pressurizer and replaceable filter	60	27	(4 267 x 635 x 22 mm)	219	99	Low ambient fluids	-	-
Defroster fans	3	1	• 12' x 29" x 1"			Vandalism protection	8	4
Engine block heater	3	1	(3 658 x 737 x 25 mm)	256	116	Wheel weights front or rear - each	250	113
Engine precleaner - Turbo II	6	3	• 13' x 29" x 1"			Window - opening - lower front	-	-
First user lifetime frame warranty	0	0	(3 962 x 737 x 25 mm)	389	176	Window - opening sliders - left/right	-	-
Float control, right and left detent style			• 14' x 29" x 1"			Wiper and washer - rear	-	-
independent	15	7	(4 267 x 737 x 25 mm)	516	234	Wiper and washer - lower front	-	-
Front attachment float control, detent style,			Moldboard extensions			Rear tailgate guard	200	90
independent of other float valves	15	7	R or L - 2' (610 mm)	190	86	Intermittent wipers, front and rear	-	-
Hydraulic tank heater	3	1	Moldboard edges - carbide 3/4" x 5"					
24 volt radio/cassette player	6	3	(19 x 127 mm)	-	-			
Lights			100 amp alternator	0	0			
• Beacon (amber or blue)	10	4	Paint - custom colors	-	-			
• Clearance lights front & rear	2	1	Polar protection	0	0			
• Front mounted plow lights - 2			Reflectors - side	-	-			
• high mount	120	54	Remote valve for attachments					
• low mount	100	45	• 3 or 5 bank	25	11			

Your safety and the safety of those around you depends on using care and judgement when operating and servicing your grader. Do not operate the grader until you read and understand the warnings and instructions in the operator's manual. Volvo Motor Graders Limited is an ISO 9001 and 14001 registered company. www.volvo.com

Under our policy of continuous product development and 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.

Consult your Volvo dealer for recommended option and attachment selection.

VOLVO

Construction Equipment

Ref. No. 21 6 434 1006 English
Printed in Canada 2005.01-1 GRD
Volvo, Goderich