**Configuration:** Articulated frame

**Engine model:** Volvo D7D G CE2

**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**

**Contronic 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**
**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 23.12 PR, L-2 tires on 14" (356 mm) rims and 14" x 29.9" x 1" (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)

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: 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 D7DGC E2
- **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 (7134 mm)
- **Maximum net engine output**: 2200 Rpm
- **Rated gross brake horsepower**:
  - Forward: @ 2200 RPM
    - Gears forward 1, 2 and 
      - Gears forward 1, 2 and breath
    - Gears forward 2-4 and
      - Gears forward 2-4 and
    - Gears forward 5 and
      - Gears forward 5 and
    - Gears forward 6 and
      - Gears forward 6 and
    - Torque @ 1100 RPM: 664 lb-ft (900 Nm)
    - Torque @ 1400 RPM: 774 lb-ft (1050 Nm)
    - Torque rise: 33.2%
  - Reverse: @ 2200 RPM
    - Gears reverse 1, 2 and
    - Gears reverse 3-8 and
    - Gears reverse 2-4 and
    - Gears reverse 1 and
    - Torque @ 1100 RPM: 196 lb (148 kW)
    - Torque rise: 33.2%
    - Torque @ 1400 RPM: 221 lb (165 kW)
    - Transmission guard is standard equipment and is hinged for easy access.
    - Transmission guard is standard equipment and is hinged for easy access.

**Engine performance curve**

- **Torque** vs Engine Speed
- **Legend**: high power, low power, economic working range

---

**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**:
  - Forward: 1, 2, and
  - Reverse: 1, 2, and

**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.

---

**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 J 1473 OCT. 90, and J 1152 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 (P.R.): 12
- Rim size: 10.0" (254 mm)
- One piece 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: 18° 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" (7772 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)
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 22º 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 .................... 1.0" (25 mm)
- Adjustable guide shoes .................... 3
- Adjustable clamp plates .................... 3
- Upper circle wear plates .................... 3

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 ............................... 360º

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" (3 158 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)

<table>
<thead>
<tr>
<th>LEFT</th>
<th>RIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reach outside tires - articulated frame .......... 120.0&quot; (3 048 mm)</td>
<td>119.5&quot; (3 035 mm)</td>
</tr>
<tr>
<td>Reach outside tires - straight frame .......... 79.0&quot; (2 019 mm)</td>
<td>79.0&quot; (2 007 mm)</td>
</tr>
<tr>
<td>Blade slide .......... 26.5&quot; (673 mm)</td>
<td>26.5&quot; (673 mm)</td>
</tr>
<tr>
<td>Circle side shift .................... 30.5&quot; (775 mm)</td>
<td>29.5&quot; (749 mm)</td>
</tr>
</tbody>
</table>

Maximum bank
- Sloping angle ................................ 90º
- Blade ground clearance .................... 17.5" (445 mm)
- Blade cutting depth .................... 32.0" (813 mm)
- Blade tilt range .......................... 44º forward, 6.5º back
Superior blade mobility permits steep ditch cutting angles and bank sloping outside overall machine width.

Cab & controls

All controls are located in a 90º 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 adjustment versus 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

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

<table>
<thead>
<tr>
<th>U.S. Gal.</th>
<th>Litres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel tank</td>
<td>100.0</td>
</tr>
<tr>
<td>Transmission</td>
<td>10.0</td>
</tr>
<tr>
<td>Final drive</td>
<td>6.0</td>
</tr>
<tr>
<td>Tandems (each)</td>
<td>26.4</td>
</tr>
<tr>
<td>Hydraulic oil tank</td>
<td>35.4</td>
</tr>
<tr>
<td>Coolant antifreeze protection to -58º F (-50º C) approx</td>
<td>7.4</td>
</tr>
<tr>
<td>Engine oil</td>
<td>8.45</td>
</tr>
</tbody>
</table>

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)
B - Overall width ....... 8'4" (2 540 mm)
C - Overall height ....... 11'2" (3 404 mm)
D - Wheelbase .......... 20'0" (6 096 mm)
E - Bladebase .......... 8'6" (2 591 mm)
F - Width – Tire centre lines .... 6'10" (2 083 mm)

Profile Cab .......... 10'2" (3 099 mm)
• with Low

ISO 7134 ........ 8'6" (2 591 mm)

STANDARD FEATURES

Operator controlled, lock/unlock differential final drive
4 wheel, crossover, dual braking system with reserve power assist
Park brake with operator warning alarm and indicator
Fully sequential, direct drive, powershift 8400 transmission, with transmission guard
13.5" (343 mm) diameter, 5 plate, oil cooled and lubricated master clutch
Moveable Blade Control System for optimum blade mobility
Full front and rear frame sections designed to withstand shock loading of attachments
Circle drive counter-balance valve protects against impact damage
Hardened circle teeth cut on outside of circle for maximum leverage and minimum wear
Hardened circle drive pinions for maximum wear resistance
Isolated mounted cab, transmission and engine for reduced noise and vibration
Adjustable steering control pedestal with tilt head for maximum operator comfort
Gauges include: coolant temperature, engine oil pressure, fuel level, hourmeter, air cleaner service indicator, articulation angle indicator, multi-function Coolant Monitoring System with visual and audible warnings
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
Feathering type controls for precise blade adjustments
Deluxe, cloth covered, fully adjustable suspension seat
Isolation mounted cab, transmission and engine for maximum mobility and noise reduction
Amplified, power assist<br>Drive
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
Feathering type controls for precise blade adjustments
Deluxe, cloth covered, fully adjustable suspension seat
Isolation mounted cab, transmission and engine for maximum mobility and noise reduction
Amplified, power assist

OPTIONAL EQUIPMENT

<table>
<thead>
<tr>
<th>lb</th>
<th>kg</th>
<th>lb</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulators - blade lift (2)</td>
<td>122</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Accumulators - sideshift</td>
<td>50</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Air conditioner - 35,000 BTU</td>
<td>130</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>• HFC-134a (non-CFC refrigerant)</td>
<td>40</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Brush guards</td>
<td>80</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>• Canopy shell with ROPS - deduct</td>
<td>400</td>
<td>182</td>
<td></td>
</tr>
<tr>
<td>• FOPS protection for ROPS cabs</td>
<td>220</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>• Low Profile Cab</td>
<td>256</td>
<td>116</td>
<td></td>
</tr>
<tr>
<td>with ROPS - deduct</td>
<td>219</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>• Cab heater - 50,000 BTU with cab pressurizer and replaceable filter</td>
<td>60</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>• Defroster fans</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>• Engine block heater</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>• Engine preheater - Turbo II</td>
<td>6</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>• First user lifetime frame warranty</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Float control, right and left detent style</td>
<td>15</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>• Front attachment float control, detent style, independent of other float valves</td>
<td>15</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>• Hydraulic tank heater</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>• 24 volt radio/cassette player</td>
<td>6</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>• Lights</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• • Beacon (amber or blue)</td>
<td>10</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>• • Clearance lights front &amp; rear</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>• • Front mounted plow lights - 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• • high mount</td>
<td>120</td>
<td>54</td>
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</tr>
<tr>
<td>• • low mount</td>
<td>100</td>
<td>45</td>
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</tr>
<tr>
<td>• Headlights with dimmer switch</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>• Moldboards lights - 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Rear flood lights - 2</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>• Snow wing lights - 2</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>• Fenders</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Front</td>
<td>80</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>• Rear</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Moldboards</td>
<td>400</td>
<td>182</td>
<td></td>
</tr>
<tr>
<td>• • 13' x 25' x 7/8&quot;</td>
<td>110</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>• • (3 962 x 635 x 22 mm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• • 14' x 25' x 7/8&quot;</td>
<td>219</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>• • (4 267 x 635 x 22 mm)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>• • 12' x 29&quot; x 1&quot;</td>
<td>256</td>
<td>116</td>
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<tr>
<td>• • (3 658 x 737 x 25 mm)</td>
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</tr>
<tr>
<td>• • 13' x 29&quot; x 1&quot;</td>
<td>389</td>
<td>176</td>
<td></td>
</tr>
<tr>
<td>• • (3 962 x 737 x 25 mm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• • 14' x 29&quot; x 1&quot;</td>
<td>516</td>
<td>234</td>
<td></td>
</tr>
<tr>
<td>• • (4 267 x 737 x 25 mm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moldboard extensions R or L - 2' (610 mm)</td>
<td>190</td>
<td>86</td>
<td></td>
</tr>
<tr>
<td>Moldboard edges - carbide 3/4&quot; x 5&quot;</td>
<td>(19 x 127 mm)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100 amp alternator</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Paint - custom colors</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Polar protection</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Reflectors - side</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remote valve for attachments</td>
<td>3 or 5 bank</td>
<td>25</td>
</tr>
</tbody>
</table>

DURAMIDE™ wear strips on circle clamp plates and guide shoes prevent metal-to-metal contact for maximum service life
Hinged cooling module doors for easy trash clean out
Lights; backup, tail, stop and directional
Backup alarm with automatic volume levels
Painted high gloss Volvo yellow and gray
Lockable tool box with storage space for scarifier shanks
Engine side panels complete with locks
Left and right outside rear view mirrors
Interior rear view mirror
Exhaust aspirated air cleaner
Front cab wiper and washer standard when grader is equipped with an enclosed cab
VHP - variable horsepower

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

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