

GOST Certified Excavator - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

Designed and validated for the demanding regulatory and environmental conditions of the Russian Federation, Belarus, Kazakhstan, Armenia, and Kyrgyzstan, the GOST R certified excavator series represents a benchmark in cold-climate engineering. Targeting heavy construction, open-pit mining, and large-scale agriculture, this machine family (20t to 50t operating weights) integrates mandatory TR CU 010/2011 (Machinery Safety) and TR CU 032/2013 (Pressure Equipment) compliance with OEM-grade durability. All critical components undergo GOST-certified low-temperature impact testing (down to -40°C / -40°F) and corrosion resistance validation for high-saline soil and road salt environments.

Compared to standard export models, the GOST configuration includes upgraded arctic-grade hydraulic hoses, a battery pack with enhanced cold-cranking amps (CCA 2x standard), an insulated engine bay preheater (110V/230V coolant and oil warmers), and a reinforced cab heating/defrosting system exceeding EN 14533 winterization requirements. The result is a legally importable, site-ready excavator that delivers $\geq 98\%$ mechanical availability during continuous sub-freezing operations without aftermarket modifications or customs compliance delays.



STRUCTURAL INTEGRITY & POWERTRAIN

CHASSIS & UNDERCARRIAGE: The main frame comprises HG785 high-strength low-alloy (HSLA) steel with a minimum yield strength of 785 MPa. All load-bearing weld seams are 100% ultrasonic tested (UT) and certified per GOST R ISO 17635. The track frame integrates a triple-flanged track roller design, induction-hardened chrome-plated pins, and sealed-and-lubricated tractor chain links rated for 12,000 hours of abrasive mining service. A standard heavy-duty belly guard (thickness: 8mm steel, reinforced cross-members) protects the swing gear and hydraulic components from terrain impact.

ENGINE: Powered by a 6-cylinder, turbocharged, air-to-air aftercooled diesel — either the Cummins QSB6.7 or Isuzu GH-6HK1X, both available with GOST-type

approval certificates and TR CU 018/2011 (Wheeled Vehicle Safety) annex for self-propelled machinery. Power ratings range from 168 hp (125 kW) to 354 hp (264 kW). The fuel system includes a dual-primary fuel filtration (10-micron + 5-micron) with a water-in-fuel sensor and an electric fuel priming pump rated for cold-thickened diesel (#1 or winter blends). Optional -40°C arctic package: 1500W block heater + 500W battery blanket + thermal insulation wrap for the exhaust aftertreatment system (DOC/DPF or SCR).

HYDRAULIC SYSTEM: Closed-center, load-sensing, negative-flow control hydraulic architecture with three variable-displacement axial piston pumps. Maximum main pump flow: 2x 210 L/min + 1x 30 L/min pilot pump. System relief pressure is set to 34.3 MPa (350 bar / 5076 psi). Hydraulic oil tank capacity includes a cold-start bypass valve that recirculates oil through a 6kW thermostatically controlled heater until reaching operating viscosity (≥ 12 cSt). All hydraulic hoses meet GOST R 52857-2007 (pressure impulse test) and are wrapped in abrasion-resistant nylon sleeves.

KEY FEATURES & OPERATOR COMFORT

- Arctic-Grade Cab with ROPS/FOPS Level II: The cab structure is certified to ISO 12117-2 (ROPS) and ISO 3449 Level II (FOPS). The operator station includes a heated air-suspension seat (3-stage seat and backrest heating), a dual-pane laminated windshield with high-output electric defroster, and 12 adjustable air

vents providing 650 m³/h of climate-controlled airflow. Noise levels are suppressed to 71 dB(A) (internal) using constrained-layer damping sheets and 25mm acoustic foam.

- 8-Inch Telematics & Control Panel: A sunlight-readable 8" LCD touchscreen displays real-time GOST ERS (ERA-GLONASS) positioning, satellite fleet health metrics, and hydraulic temperature/pressure trends. The panel includes a CANbus 2.0B interface, remote machine lockdown capability, and a 1-touch arctic start sequence that automates glow plug (12 seconds pre-heat), coolant recirculation, and high-idle warm-up (900→1650 rpm).

- Smart Load-Sensing Hydraulic Logic: The valve-block integrated pressure-compensated spools maintain constant flow regardless of load variation (max pressure drop ≤ 1.2 MPa). This reduces parasitic loss by 14% compared to open-center systems and enables simultaneous boom-up, arm-out, and bucket curl without flow starvation. An auto-deceleration function reduces engine speed to idle after 4 seconds of joystick inactivity, saving fuel.

- Large-Capacity Cold-Weather Battery & Starter: Dual 12V/200Ah AGM batteries (800 CCA each, total 1600 CCA) power a 7.5 kW reduction-gear starter. The battery compartment includes a removable thermal blanket, terminal corrosion inhibitor, and a remote disconnect switch compliant with GOST R 52931-2008 for electrical safety.

- Service-Designed Layout with Centralized Checkpoints: All daily service points (engine oil dipstick, hydraulic oil filler, fuel/water separator, coolant reservoir)

are accessible from ground level or a single 600mm-wide anti-slip walkway. The swing-out cooler stack (hydraulic oil cooler, radiator, charge air cooler) tilts open 35 degrees without tooling, allowing debris cleaning and belt inspection within 10 minutes.

COMPLIANCE & SAFETY STANDARDS

The GOST certified excavator holds full Eurasian Conformity (EAC) certification under the Customs Union of the Eurasian Economic Union (EAEU). Mandatory certifications include:

- TR CU 010/2011 (Safety of Machinery) — Full type-examination certificate, including emergency stop systems (complies with ISO 13850), two-hand control logic for auxiliary circuits, and parking brake interlock.
- TR CU 032/2013 (Safety of Pressure Equipment) — Hydraulic accumulators, main pressure lines, and test ports certified for 1.5x working pressure hydrostatic proof test at -40°C.
- TR CU 018/2011 (Safety of Wheeled Vehicles) — Applied for self-propelled tracked machinery over 25 km/h transport speed, including brake performance (GOST R 51709-2001) and lighting/signaling (UNECE R48).
- GOST R ISO 9001:2015 (Quality Management System) — Manufacturing facility certified with regular unannounced audits by Rosakkreditatsiya.
- Environmental compliance: Engine option either EPA Tier 4 Final (USA) / EU

Stage V (Europe) with DPF+SCR, or China Nonroad Stage IV. All fluids meet GOST R 52350-2005 (fire resistance class HFDU for hydraulic fluid in high-risk environments).

Additional safety features include: engine overspeed shutdown (110% of rated governed speed), hydraulic oil temperature shutdown (fixed at 105°C / 221°F), seatbelt sensor interlock (machine won't travel above 3 km/h without fastened belt), and an externally actuated emergency battery disconnect with remote cab pull-handle.

TECHNICAL SPECIFICATIONS

Listed below are verified performance parameters for the 30-ton (standard class) GOST certified excavator model GC300-GOST. Values represent factory test results at -25°C ambient temperature using winter-grade diesel and hydraulic oil ISO VG 32.

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<table border='1' style='border-collapse: collapse; width: 100%;'><tr><th style='padding: 8px; text-align: left; background-color: #f2f2f2;'>Parameter</th><th style='padding: 8px; text-align: left; background-color: #f2f2f2;'>Specification</th></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Engine Model</td><td style='padding: 8px;
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Cummins QSB6.7-C190 (GOST certified) or Isuzu GH-6HK1X	
Engine Power (ISO 9249)	190 hp (142 kW) @ 2050 rpm
Operating Weight (± 3%)	32,100 kg (70,768 lb)
Bucket Capacity (SAE heaped)	1.6 - 2.2 m ³ (2.1 - 2.9 yd ³)
Max Digging Depth	7,350 mm (24 ft 1 in)
Max Dump Height	7,020 mm (23 ft 0 in)
Swing Speed	10.5 rpm
Travel Speed (high/low)	5.2 / 3.1 km/h (3.2 / 1.9 mph)
Main Hydraulic Pressure	34.3 MPa (350 bar / 5076 psi)
Hydraulic Flow (main)	2 x 210 L/min (55.5 gpm)

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each)/td> </tr> <tr> <td style='padding: 8px; border: 1px solid #ddd;'>Fuel  
Tank Capacity</td> <td style='padding: 8px; border: 1px solid #ddd;'>520 L  
(137.4 US gal)</td> </tr> <tr> <td style='padding: 8px; border: 1px solid  
#ddd;'>Cold Start Limit (standard / arctic)</td> <td style='padding: 8px;  
border: 1px solid #ddd;'>-25 °C (-13 °F) / -40 °C (-40 °F)</td> </tr> <tr> <td  
style='padding: 8px; border: 1px solid #ddd;'>Track Shoe Width (triple  
grouser)</td> <td style='padding: 8px; border: 1px solid #ddd;'>600 mm (24  
in)</td> </tr> <tr> <td style='padding: 8px; border: 1px solid #ddd;'>Ground  
Pressure (standard track)</td> <td style='padding: 8px; border: 1px solid  
#ddd;'>54.2 kPa (7.86 psi)</td> </tr> </table>
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