Sudan University of Science and Technology
College of Graduate Studies

Modeling of Hydraulic Control System of Excavator Motion

نمذجة نظام التحكم الهايدروليكي لحركة الحفار

Thesis Submitted In Partial Fulfillment for the Requirements of M.Sc. In Mechatronics Engineering

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MODEL NO: CAT320

Product Description:

Engine Model Cat 3066T

Net Flywheel Power 103 kW

Net Power - SAE J1349 103 k Wet Power - EEC 80/1269 103 kW

Bore 102 mm

Stroke 130 mm

Displacement 6.37 L

Gross Power 107 kW

Weights:

Operating Weight 23000 kg

Operating Weight - Std. Undercarriage 22300 kg

Drive:

Maximum Drawbar Pull 196 kN

Maximum Travel Speed 5.5 km/h

Hydraulic System:

Main Implement System - Maximum Flow (2x) 205L/MIN

Max. Pressure - Equipment 34300 kPa

Max. Pressure - Travel 34300 kPa

Max. Pressure - Swing 25000 kPa

Pilot System - Maximum flow 41 L/min

Pilot System - Maximum pressure 4120 kPa

Boom Cylinder - Bore 120 mm

Boom Cylinder - Stroke 1260 mm

B1 Family Bucket Cylinder - Bore 120 mm

B1 Family Bucket Cylinder - Stroke 1030 mm

Service Refill Capacities:

Fuel Tank Capacity 284 L

Cooling System 30 L

Engine Oil 30 L

Swing Drive 8 L

Final Drive (each) 10 L

Hydraulic System (including tank) 240 L

Swing Mechanism:

Swing Speed 11.5 RPM

Swing Torque 61.8 kN. M

Track:

Standard w/Standard Undercarriage 600 mm

Standard w/Long Undercarriage - Triple Grouser 800mm

Optional 600 mm

Optional 700 mm

Optional 800 mm

Dimensions transport width 3080 mm

CHAPTER FIFE
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CHAPTER ONE
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