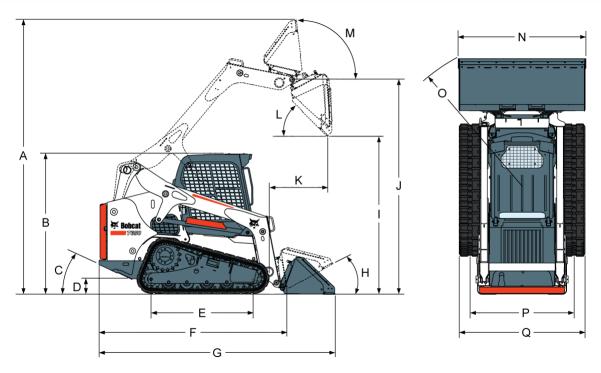


T650 Compact Track Loaders A3P1 11001 — A3P1 99999

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10/03/2010

Dimensions



(A) Operating height	4026 mm
(B) Height with operator cab	2065 mm
(C) Angle of Departure	31°
(D) Ground clearance	406 mm
(E) Ground contact length	1499 mm
(F) Length without attachment	2754 mm
(G) Length with standard bucket	3474 mm
(H) Rollback at ground position	30°
(I) Dump height with standard bucket	2447 mm
(J) Height to bucket hinge pin	3149 mm
(K) Dump reach at maximum height	870 mm
(L) Dump angle at maximum height	42°
(M) Rollback fully raised at maximum height	97°
(N) Bucket width, 74–inch	1880 mm
(O) Turning radius with standard bucket	2228 mm
(P) Track, 320 mm tracks	1532 mm
(Q) Width over tracks, 320 mm tracks	1851 mm

Machine Rating

Lift breakout force 2847 daN
Tilt breakout force 2447 daN
Ground pressure, 320 mm track 0.040 MPa
Rated operating capacity (no more than 35% 1166 kg

of Tipping Load)

Push force 2847 daN Tipping load 3331 kg

Cycle Times

Raise lift arms3.9 sLower lift arms2.6 sBucket rollback1.7 sBucket dump2.3 s

Weights

Operating weight 4282 kg Shipping weight 4055 kg

Engine

Make / Model Kubota / V3307-DI-TE3

Fuel Diesel
Cooling Liquid
Power at 2400 RPM 55.4 kW
Rated speed (SAE JI 995) 2400 RPM
Torque at 1600 RPM (SAE JI 995 Gross) 264 Nm
Number of cylinders 4
Displacement 3331 cm³
Rore 94 mm

Bore 94 mm
Stroke 120 mm
Lubrication Gear pur

LubricationGear pump pressureCrankcase ventilationClosed Breathing

Air filter Dry replaceable cartridge with safety element

Ignition Diesel-compression

Starting aid Glow plugs

Electrical

Alternator Belt driven — 90 A — open

Battery 12 V — 1000 cold cranking A at -18°C — 180 min reserve capacity

Starter 12 V — gear reduction type — 3.0 kW

Hydraulic System

Pump type

Pump capacity(@ 91% efficiency) at

3294 RPM

Pump capacity (@ 91% efficiency with

highflow option) at 3294 RPM

System relief at Quick Couplers

Control valve

Hydraulic filter

Fluid lines

115.5 L/min

87.1 L/min

23.8-24.5 MPa

Three-spool, open-centre type with float detent on lift and electrically

controlled auxiliary spool

Engine driven, gear type

Full-flow replaceable — 10 µm synthetic media element

SAE standard tubelines, hoses, and fittings

Hydraulic Cylinders

Lift cylinder (2)

Lift cylinder bore

Lift cylinder rod

Lift cylinder stroke

Double-acting

76.2 mm

44.5 mm

633.2 mm

Tilt cylinder (2) Double-acting with cushioning feature on dump and rollback

Tilt cylinder bore 76.2 mm
Tilt cylinder rod 41.4 mm
Tilt cylinder stroke 355 mm

Drive System

Transmission Infinitely variable tandem hydrostatic piston pumps, driving two fully

reversing hydrostatic motors

Tracks 320 mm width. Tension-grease cylinder and triple-flange spring

rollers

Main drive Fully hydrostatic, rubber track drive

Traction

Tracks 320 mm wide, rubber

Max. travel speed 10.6 km/h

Fluid Capacities

Cooling system capacity with heater	11.7 l
Cooling system capacity without heater	11.4 l
Engine oil with filter capacity	11.4 l
Fuel tank capacity	103.3 l
Hydraulic reservoir capacity	10.2 l
Hydraulic / Hydrostatic system capacity	45.0 I

Fluid Specifications

Engine coolant

Engine oil

Propylene glycol/water mix (53% - 47%) with freeze protection to -37° C

5 I can - 6904844A, 25 I container - 6904844B, 209 I drum - 6904844C, 1000 I tank - 6904844D

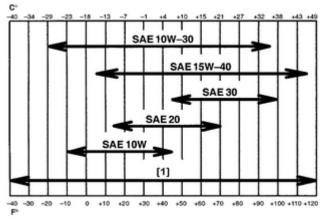
Propylene glycol concentrate coolant

5 I can - 6987646A, 25 I container - 6987646B, 209 I drum -

6987646C, 1000 I tank - 6987646D

Oil must meet API Service Classification of CL4 or better.

Recommended SAE viscosity number for anticipated temperature range.



Hydraulic fluid

* Can be used only when available with appropriate diesel rating. For synthetic oil use the recommendation from the oil manufacturer. Bobcat Superior SH, 5 I can - 6904842A, 25 I container - 6904842B, 209 I drum - 6904842C, 1000 I tank - 6904842D

Bobcat Bio Hydraulic, 5 I can - 6904843A, 25 I container - 6904843B, 209 I drum - 6904843C, 1000 I tank - 6904843D

Motor oil is not an acceptable alternative fluid.

Controls

Service brake

Parking brake Vehicle steering

Secondary brake

Loader hydraulics tilt and lift

Auxiliary pressure release

Engine Hand lever throttle

Starting Key-type starter switch and shutdown. Glow plugs automatically

activated by Standard or Deluxe instrument panel.

Front auxiliary (standard) Electrical switch on right-hand steering lever Rear auxiliary (optional) Electrical switch on left-hand steering lever

Separate foot pedals or optional Advanced Control System (ACS),

Advanced Hand Control (AHS) or Selectable Joystick Control (SJC)

Two independent hydrostatic systems controlled by two hand-

operated steering levers

One of the hydrostatic transmissions

Mechanical disc, hand operated rocker-switch on dash panel

Direction and speed controlled by two hand levers

Pressure is relieved through the coupler block. Push in and hold for

5 s.

Instrumentation

The following loader functions are monitored by a combination of gauges and warning lights in the operator's line of sight. The system alerts the operator of monitored loader malfunctions by way of audible alarm and visual warning lights.

Standard Instrument Panel

- Gauges
 - o Engine temperature
 - o Fuel
- Indicators
 - Bobcat Interlock Control System
 - Engine preheat
 - Two speed
 - o Turn signals
- Warning lights
 - Engine temperature
 - Fuel level
 - o General warning
 - o Seat belt
 - Seatbar down
 - o Engine malfunction
 - Hydraulic system malfunction
 - o Lift and tilt valve, hydraulics lock-out
 - o Parking brake
 - Hydraulic oil temperature
 - o Engine oil pressure
 - Hydraulic oil pressure
- Buttons
 - Work lights and road lights
 - o High flow auxiliary hydraulics
 - Auxiliary hydraulics
 - o Information
 - Hour meter (default)
 - o Engine rpm
 - Battery voltage
 - Service codes
 - Service reminder (maintenance clock)
 - o Traction lock override
 - Press to operate loader
- Rocker switch
 - Parking brake
- Alarm
 - Beep when error, warning or shutdown condition exists

Full-Color Deluxe Instrument Panel (Option)

Same gauges, warning lights and other features as Standard Instrument Panel, plus:

- Gauges
 - o Engine oil pressure / temperature
 - o Hydrostatic charge pressure
 - o Hydraulic oil temperature
 - o Battery
- Additional features
 - Keyless start with password capability
 - o Digital clock, date and time
 - User name and hourmeter
 - Attachment control information
 - o Current job hours
 - o High Flow lockouts
 - o Multi-language display
 - Help screens
 - Diagnostic capability
 - Engine/hydraulic systems shutdown function
 - Password lockout

- Icons
 - o Active warnings
 - o Vitals
 - o engine speed
 - o oil pressure
 - o temperature
 - o system voltage
 - o hydraulic charge pressure
 - $\circ \ \ \text{oil temperature}$
 - o Service
 - o Main screen
 - o Attachments
 - o Security
 - o Display
- Buttons
 - o Left scroll
 - o Enter
 - o Right scroll

Serviceability

Access is available to the following through the rear door/tailgate and rear screen:

- Air filter
- Alternator
- Battery
- · Cooling system (engine oil and hydraulic oil coolers) for cleaning
- Engine oil and fuel filters
- Engine oil drain and dipstick
- Hydraulic oil fill and filter (access at the upper right side of the machine)
- Starter

Axle hubs provide protection for the axle seals

Bob-Tach™ pivots have replaceable wear bushings

Easy access to all lift arm grease points

Rod end of the tilt cylinder has a replaceable bushing

Tailgate has an optional lock for vandal-proofing

Tailgate is equipped with door-stop to hold door open while servicing

Tip-up operator cab gives access to certain hydraulic system components

Standard Features

- Adjustable suspension seat
- Automatically activated glow plugs
- Auxiliary hydraulics: variable flow/maximum flow
- Bob-Tach™ frame
- Bobcat Interlock Control System (BICS)
- Deluxe operator cab*

Includes interior cab foam, side, top and rear windows, Deluxe wire harness, dome light, electrical power port, cup holder, storage compartment and horn

Front door w/ windshield wiper

- Electrically activated proportional front auxiliary hydraulics
- Engine/hydraulics system shutdown
- Hydraulic bucket positioning (including ON/OFF switch)
- Instrumentation
- Lift arm support
- Operating lights, front and rear
- Parking brake
- Seat belt
- Seat bar
- · Turbo-charger with approved spark arrestor
- Tracks rubber 320 mm
- CE certification
- Warranty: 12 months or 2000 hours

* Roll Over Protective Structure (ROPS) – meets requirements of SAE-J1040 and ISO 3471; Falling Object Protective Structure (FOPS) - meets requirements of SAE-J1043 and ISO 3449, Level I

Options

- Factory Options
 - o Deluxe instrument panel
 - Power Bob-Tach™
 - o Cab enclosure with heat
 - o Air conditioning
 - Advanced Control System (ACS)
 - Advanced Hand Controls (AHC)
 - Selectable Joystick Controls (SJC)
 - Roller Suspension™
 - High Flow hydraulics
- Dealer Installed Accessories
 - Special applications front door kit
 - o Block heater kit
 - o Deluxe instrument panel
 - o Lexan rear window kit
 - o Fresh air heater kit
 - o 200/300 lbs counterweight kit
 - o Bucket positioning kit
 - o Plumbing kit for fresh air heater
 - o Back up alarm kit
 - o FOPS kit **
 - o Single-point lift kit
 - o Keyless kit
 - Power Bob-Tach™ kit
 - o Road kit
 - o Rotating beacon kit
 - o Fire extinguisher kit
 - o Catalytic purifier kit
 - o Air conditioning kit
 - o Radio kit
 - o Pre-cleaner HP aspiration kit
 - o 7-pin attachment control kit (standard with T650H)
 - o Four-point lift kit
 - o Rear auxiliary hydraulic kit

^{**} Falling Objects Protective Structure (FOPS) – meets requirements of SAE-J1043 and ISO 3449, Level II

Attachments

For specific model availability, see Bobcat Product Price List.

- Angle broom*†
- Auger
- Backhoe
- Bale forks
- Box blade
- · Brushcat rotary cutter
- Buckets
- Chipper*
- Combination bucket
- Concrete pump*
- Cutter crusher*
- Digger
- Dozer blade*
- Dumping hopper
- Farm grapple
- Flail cutter
- Grader*
- Hydraulic breaker**
- Industrial grapple
- Landplane
- Landscape rake
- Mixing bucket
- Mower
- Pallet fork hydraulic
- Pallet fork standard
- Planer*†

- Rear stabilisers
- Scarifier
- Snow blade
- Snow blower*
- Snow V-blade
- Sod layer*
- Soil conditioner*
- Spreader
- Stump grinder*
- Super scraper
- Sweeper†
- Three-point hitch
- Tiller
- Tilt-Tatch™
- Tracks, steel
- Tree transplanter*
- Trench compactor
- Trencher
- Utility forks
- Utility frame
- Vibratory roller
- Water kit
- Wheel saw*
- Whisker broom

^{*}Attachment control kit required.

^{**}When operating the loader with this attachment, a Special Applications Kit must be used. †Optional water kit.

Environmental

 $\begin{array}{lll} \text{Operator L}_{\text{pA}} & (98/37 \& 474\text{-}1) & 85 \text{ dB(A)} \\ \text{Noise level L}_{\text{WA}} & (\text{EU Directive 2000/14/EC}) & 103 \text{ dB(A)} \\ \text{Whole body vibration (ISO 2631-1)} & 0.54 \\ \text{Hand-arm vibration (ISO 5349-1)} & 1.61 \\ \end{array}$

Safety

Rear window, standard

Bobcat Interlock Control System (BICS),

standard

Requires the operator to be seated in the loader with the seat bar in place and the engine running. After the operator presses the "Press to Operate Loader" button, the loader's hydraulic lift and tilt functions

and traction drive can be operated.

Lift arm bypass control, standard

Used to lower the lift arms in the event that the lift arms cannot be

lowered during normal operating conditions.

Seat belt, standard Should always be worn when operating the loader. Three-point

shoulder belt provides restraint for high range speeds.

Secondary operator restraint, also serves as an arm rest.

Seat bar, standard Secondary operator restraint, also serves as an arm rest.

Operator cab, standard An enclosed operator cab with side screens with a minim

An enclosed operator cab with side screens with a minimal inside cab width of 838 mm. Meets SAE-J1040 and ISO 3471 for Roll Over Protective Structure (ROPS) and SAE-J1043 and ISO 3449 Level I * for Falling Objects Protective Structure (FOPS). Level II ** option is

available.

Lift arm support, standard

Use for servicing when lift arms are raised.

Parking brake, standard

Always set brake when leaving loader.

Grab handles, standard Should always be used when entering/exiting loader.

Safety tread, standard Slip resistant tread on lift arms and main frame to be used when

entering/exiting loader.

Attachment steps, standard Should always be used when entering/exiting loader.

For emergency exit.

Front and rear working lights, standard

Use for indoor and low light operation.

Backup alarm, optional For use in areas with high traffic

Lift kits, optional

Special applications kit, optional

Operator's handbook, standard

Lift kits are available so loader may be lifted into remote areas.

Restricts objects and material from entering cab openings.

Weather-resistant operator handbook attached to the inside of the cab, providing operational instructions and warnings decals with

pictorials and international symbols.

^{*} Level I — Acceptance is intended for protection from falling bricks, small concrete blocks, and hand tools encountered in operations such as highway maintenance, landscaping, and other construction site services.

^{**} Level II — Acceptance is intended for protection from falling trees or rocks for machines involved in site clearing, overhead demolition, or forestry.