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RISK ASSESSMENT

For

Bobcat Excavator

Models: M Series



Version 4

Bobcat
Australia

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Applicability

Standards referenced in the preparation of this document

Risk Assessment sheets

APPLICABILITY

The following Risk Assessment document is applicable to the Bobcat M Series Excavator models:

- E26
- E32
- E35
- E42
- E45
- E50
- E55
- E60
- E80
- E85

STANDARDS REFERENCED

The following Standards, Acts and Regulations were referenced in the preparation of this Risk Assessment.

- NOHSC: 1010 (1994) - National Standard for Plant
- WHS Act 2011
- WHS Regulation 2011
- AS2359.6 (1995) – Powered Industrial Trucks – Safety Code
- AS/ISO31000 (2009) – Risk Management
- ISO/WD 3691-1 (1999) – Industrial Trucks – Safety Requirements and Verification
- EN1459 (1999) – Safety of Industrial Trucks

RISK ASSESSMENT - Bobcat Excavator

Subject: Bobcat Excavator, M Series

	HAZARD	RISK Detail	LEVEL	CONTROL
1	Overload excavator causing tip over	Strike injury	Med High	Rating Plate checked by Licensed Operator re: O&M Manual.
2	Excavator too large for required work	Property damage		Always size the project up before commencement of work
3	Excavator too small for required work	Machine damage, operator frustration	Low	Always size the project up before commencement of work
4	Bystanders impacted by boom arm/bucket	Impact injury - serious	Med High	Bystanders to be kept well clear at all times. Motion alarm, mirrors and beacon light fitted
5	Work too close to other machines - machine clashes	Strike injury to operator	Med High	Ensure adequate clearance between equipment
6	Work on soft/unstable ground - tipover	Strike injury to operator	High	Ensure ground is prepared properly, stable and able to support excavator, before commencement
7	'Climbing' the excavator and tipover	Strike injury to operator	Med High	Do not 'climb' steep or unstable inclines
8	Tipover due to travelling on gradients incorrectly	Tip over causing operator strike injury	Med High	Follow proper procedures for travelling on slope re: O&M Manual.
9	Tipover due to turn on gradients unsafely	Tip over cause operator strike injury	Med High	Do not turn on an incline re: O&M Manual.
10	Pull machine over	Strike injury to operator	Medium	Always setup on stable ground, do not exceed the lift capacity of the excavator
11	Operator fall off when accessing cabin	Fall / strike injury	Medium	Always use 3 points of contact. Park machine square to appropriately use access steps.
12	Fall off machine when checking oil	Fall / strike injury	Med High	Tread plate installed. Always use 3 points of contact when accessing.
13	Boom left in air - fall onto operator/bystander	Impact injury	Low	Load lock blocks installed to prevent boom drop
14	Bucket teeth penetrate operator cabin when crowd bucket	Operator impaled	Low	Always use genuine attachments
15	Bystander runover	Crush injury or death	High	Bystanders to be kept well clear at all times. Motion alarm, mirrors and beacon light fitted
16	Engine cover falls on operator/maintenance when check oil	Strike injury	Medium	Ensure engine cover is latched open correctly
17	Bystander/maintenance caught in closing cylinder	Hand crush injury	Medium	Keep well clear when machine in operation
18	Maintenance staff in engine bay when machine started	Dismemberment	High	Ensure appropriate tag-out system used when accessing machine
19	Hose splits and sprays hot oil	Burns to operator	Low	Operator protected by cabin and/or 'burst bags' from spray. Never check for leaks with hands.
20	Drop items being carried - onto bystander	Strike injury to bystander	Med High	Bystanders to be kept well clear at all times. Motion alarm, mirrors and beacon light fitted
21	Drop items being carried - onto operator cabin	Strike injury to operator	Medium	Cabin fitted with safety glass at front and sides. Do not lift over cabin
22	Lift/lower people in bucket - fall out	Fall injury	High	Never lift people - excavator not designed to lift/lower people
23	Noise - hearing damage	Permanent hearing damage	Low	Machine low noise, especially in cabin
24	Vibration	Vibration injury to operator	Low	Padded suspension seat fitted, Machine operated stationary. Controls pilot oil controlled
25	Fire occurs - operator has impeded egress	Burns to operator	Low	2 exits, one in different direction to engine compartment
26	Operating environment temperature very hot	Operator dehydration/fatigue	Low	Cabin fitted with air conditioning
27	Operating in dusty environment	Operator lung damage	Low	Fully enclosed cabin with filtered air conditioning
28	Exhaust pipe exposed	Burn leg	Med High	Use caution around exhaust pipe. Some guardign provided by engine cover
29	Control system fails	Machine uncontrolled - strike injury to op	Low	Turn key off immediately
30	Radiator fan spinning	Hand caught in radiator - tear injury	Low	Fan guarded
31	Object falls onto cabin	Operator impact injury	Medium	Cabin not designed to withstand falling loads
32	Unauthorised starting/operation of machine	Death to operator or bystander	Medium	Locks fitted, key start fitted, password start capable.
33	Operator not qualified/authorised	Death to operator or bystander	Med High	Operator must be authorised to operate. May require licence by state Statutory body e.g. Workcover
34	Poor work method/practices	Operator or bystander death	Medium	OHS Acts require all operators to be trained in correct practices
35	Untrained in operation and safe work procedures	Operator or bystander death or injury	High	All operators of this excavator require excavator licence - otherwise breach of OHS Act
36	Buildup of explosive gas when recharging batteries	Explosion - loss of life	High	Charging MUST ALWAYS be in a clear and well vented area to reduce the buildup of Hydrogen gas
37	Buildup of exhaust gases in restricted workspace operation	Death to operator or bystander	High	Excavator not designed for restricted workspaces
38	Battery fluid reservoir leak	Corrosive - burns	Low	Conduct daily inspection re: O&M Manual. Stand machine down if batteries are leaking at all
39	Inadequate lighting causing impact with bystander	Bystander crush injury	Low	Worklights provided on all excavators
40	Rain causing slippery operating conditions	Slip off forklift when exiting	Low	Foot step has non-slip tread
41	Smoking whilst recharging/changing batteries	Fire/explosion - burns to Operator	Medium	Do not recharge batteries while smoking or when near open flame or sparks.
42	Slabbing of counterweight	Overload excavator, load loss, injure bystander	Low	Unauthorised modification of counterweight is not permitted.
43	Cabin structure failure	Operator crush/strike injury	Medium	Workplace Hazard Analysis - Machine should not be operated in such conditions.
44	Petrochemicals used for lubrication	Poisoning of skin (maintenance staff)	Low	Materials Safety Data Sheets available
45	Non-spark proof design used in explosive zones	Operator and bystander death	Low	Machine is not designed for such purposes
46	Grab incorrect lever-load loss	Load loss - strike injury to bystander	Medium	Levers ergonomically desgned. Bystanders should not be close by when loading & unloading.
47	Inadvertantly operate wrong lever-load loss	Load loss - strike injury to bystander	Medium	Operator is required to be aware of the correct operation of the excavator
48	Inadvertantly accelerate-injury to bystander	Bystander crush injury	Medium	Pedal layout ergonomically designed, also spring return (ie remove foot)
49	Poor maintenance on excavator	Failure of structure - death	Med High	Ensure correct maintenance is undertaken and recorded

50	Safety decals missing	Staff not aware of dangers - injury	Medium	Ensure maintenance staff replace any missing or unreadable safety decals
51	Impact high voltage service lines (above or below)	Electrocution	High	Dial 1100 Before You Dig - always ensure adequate clearance in workarea
52	Leave open windows unsecured	Window moves in operation and impact op	Medium	Latch window correctly
53	Maintenance staff open cylinder without bleeding pressure	Cylinder retract, oil spray, possible crush	Medium	Always use appropriate maintenance practices. Refer to Operator and Maintenance Manuals
54	Adjust tracks tensioner incorrectly	Crush injury	Medium	Always use appropriate maintenance practices. Refer to Operator and Maintenance Manuals
55	Open radiator cap when hot	Burns	Med High	Always use appropriate maintenance practices. Refer to Operator and Maintenance Manuals
56	Stand on engine hood	Slip and fall off excavator - fall injury	Med High	Never stand on engine hood
57	Stand near swing area	Impacted on swinging	Medium	Bystanders to be kept well clear at all times. Beacon light fitted
58	Operate machine with guards missing	Tear injury	Medium	Never operate excavator with guard not in place
59	Operate machine when using mobile phone/MP3 etc	Impact bystander, roll machine - impact injury	High	Never operate excavator while distracted.
60	Under or overcut in operation	Machine falls or major impact on cabin - crush	Medium	NEVER under, or over-cut

Hierarchy of Control

1. Elimination
2. Substitution
3. Isolation
4. Engineering Control
5. Administrative Control
6. PPE

Risk scores listed as HIGH need action taken to minimise the risk