



Operation & Maintenance Manual



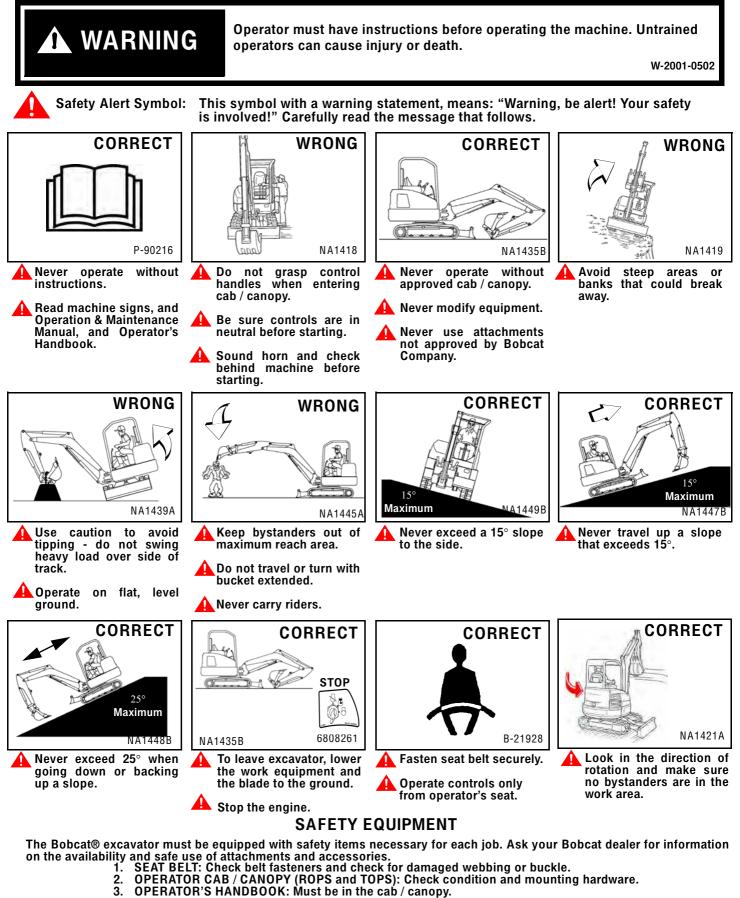


Compact Excavator

S/N B4PF11001 & Above



OPERATOR SAFETY WARNING



- 3.
- LEFT HAND CONSOLE: When raised must deactivate the travel and hydraulic functions. 4
- SAFETY SIGNS (DECALS): Replace if damaged. 5.
- 6. GRAB HANDLES: Replace if damaged.
- INTEGRATED SLEW LOCK BRAKE. 7.
- 8. SAFETY TREAD.: Replace if damaged.

OSW66-EN-0117

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REFERENCE INFORMATION

Write the correct information for YOUR Bobcat excavator in the spaces below. Always use these numbers when referring to your Bobcat excavator.

Excavator Serial Number	
Engine Serial Number	

NOTES:

YOUR BOBCAT DEALER:

ADDRESS:

PHONE:

Bobcat Company P.O. Box 128 Gwinner, ND 58040-0128 UNITED STATES OF AMERICA

CE

Doosan Bobcat EMEA s.r.o. U Kodetky 1810 263 12 Dobris CZECH REPUBLIC

FOREWORD

This Operation & Maintenance Manual was written to give the owner / operator instructions on the safe operation and maintenance of the Bobcat excavator. READ AND UNDERSTAND THIS OPERATION & MAINTENANCE MANUAL BEFORE OPERATING YOUR BOBCAT EXCAVATOR. If you have any questions, see your Bobcat dealer. This manual may illustrate options and accessories not installed on your excavator.

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For Model E17z

Contents of EC Declaration of Conformity				
This information is provided in the operators manual to comply with clause 1.7.4.2(c) of Annex I of Machinery Directive 2006/42/EC.				
The official EC Declaration of Conform	ity is supplied in a separate document.			
Manufacturer Bobcat Company World Headquarters 250 East Beaton Drive West Fargo, ND 58078-6000 UNITED STATES OF AMERICA	Directive 2000/14/EC: Noise Emission in the Environment by Equipment For Use Outdoors Notified Body Technical and Test Institute for Construction Prague Czech Republic Notified Body Number: 1020 EC Certificate No.			
Technical Documentation Homologation Manager Doosan Bobcat Engineering s.r.o. U Kodetky 1810 26312 Dobříš CZECH REPUBLIC	1020-090-022395 Conformity Assessment Procedure(s) 2000/14/EC, Annex VIII, Full Quality Assurance Sound Power Levels [Lw(A)] Measured Sound Power 93dBA Guaranteed Sound Power 93dBA			
Description of Equipment Type of Equipment: Excavator Model Name: E17Z Model Code: B4PF Engine Manufacturer: Kubota Engine Model: D722-EF11 Engine Power: 10,2 kW @ 2500 RPM	Equipment conforms to CE Directive(s) Listed Below 2006/42/EC: Machinery Directive 2014/30/EU: Electromagnetic Compatibility Directive			
Declaration of Conformance This equipment conforms to the requirements specified in all the EC Directives listed in this declaration.				
Effective From:				
31 October 2018				

BOBCAT COMPANY IS IS0 9001 CERTIFIED



ISO 9001 is an international standard that specifies requirements for a quality management system that controls the processes and procedures which we use to design, develop, manufacture and distribute Bobcat products.

British Standards Institute (**BSI**) is the Certified Registrar Bobcat Company chose to assess the company's compliance with the ISO 9001 at Bobcat's manufacturing facilities in Gwinner, North Dakota (U.S.A.), Pontchâteau (France), and the Bobcat corporate offices (Gwinner, Bismarck, and West Fargo) in North Dakota. **TÜV Rheinland** is the Certified Registrar Bobcat Company chose to assess the company's compliance with the ISO 9001 at Bobcat's manufacturing facility in Dobris (Czech Republic). Only certified assessors, like BSI and TÜV Rheinland, can grant registrations.

ISO 9001 means that as a company we say what we do and do what we say. In other words, we have established procedures and policies, and we provide evidence that the procedures and policies are followed.

REGULAR MAINTENANCE ITEMS

	ENGINE OIL FILTER 6671057		BATTERY 6670251
	FUEL FILTER 6667352 FUEL FILTER - Pre-Filter 7247169		HYDRAULIC FILL / BREATHER CAP 6692836
Ce of	AIR FILTER, Outer 6673752	0	RADIATOR CAP 7257434
	AIR FILTER, Inner 6673753		
	PRIMARY HYDRAULIC FILTER 6661248		

NOTE: Always verify Part Numbers with your Bobcat dealer.

REGULAR MAINTENANCE ITEMS (CONT'D)

Fluids, Lubricants, And Fuel

The fluids, lubricants and fuel described below are those used in the factory and apply to operating conditions in European temperate climate areas. Please see your Bobcat dealer for requirements in other climate areas.

Read and understand the preventive maintenance required before adding or replacing any fluids or lubricants.

ENGINE SYSTEMS					
Machine Components	Fluids And Lubricants	T° Range	Packaging**	Part Number	
Engine	- Bobcat Engine Power SAE 10W30 CJ4 / ACEA E9	-25°C – +30°C	A, B, C, D	6987818*	
Engine	- Bobcat Engine Power SAE 15W40 CJ4 / ACEA E9	-20°C – +40C	A, B, C, D	6987819	
Cooling Circuit	- Bobcat PG Coolant Concentrated	-36°C	B, C, D	6987803*	
	- Bobcat PG Coolant 4 Seasons	-36°C	A, B, C, D	6987793	
Fuel Tank	- High-quality diesel fuel that meets EN590	-	-	*	

HYDRAULIC / HYDROSTATIC SYSTEMS				
Machine Components	Fluids And Lubricants	T° Range	Packaging**	Part Number
Hydraulic Oil Tank	- Bobcat Superior SH Hydraulic / Hydrostatic	-35°C – +50°C	A, B, C, D	6987791*
	- Bobcat Biodegradable Hydraulic / Hydrostatic	-35°C – +50°C	A, B, C, D	6987792

MECHANICAL SYSTEMS				
Machine Components	Fluids And Lubricants	Drop Point	Packaging**	Part Number
	- Bobcat Multipurpose Grease	From 260°C	E	6987888*
All Mechanical Systems	- Bobcat Supreme HD Grease	From 280°C	E	6987889
	- Bobcat Extreme HP Grease	From 260°C	E	6987890

(*) Factory Filled Fluids And Lubricants

(**) Packaging Available:

A = 5 L Can

B = 25 L Container

C = 209 L Drum

D = 1000 L Tank

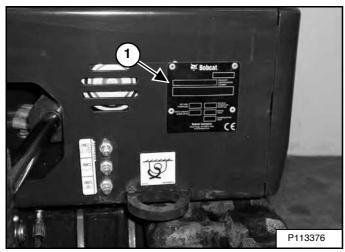
E = 400 g Tube

SERIAL NUMBER LOCATIONS

Always use the serial number of the excavator when requesting service information or when ordering parts. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use a different procedure in doing a specific service operation.

Excavator Serial Number

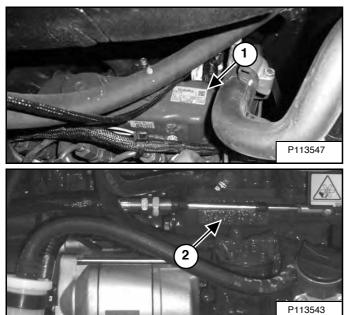
Figure 1



The excavator serial number plate (Item 1) [Figure 1] is located on the frame of the machine in the location shown.

Engine Serial Number

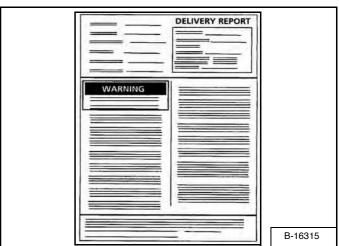
Figure 2



The engine serial number is located on the top cover (Item 1) or on the side of the engine block (Item 2) **[Figure 2]** above the fuel pump.

DELIVERY REPORT

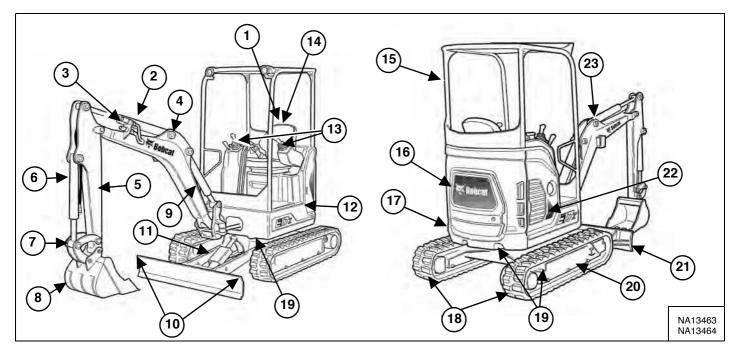
Figure 3



The delivery report **[Figure 3]** contains a list of items that must be explained or shown to the owner or operator by the dealer when the Bobcat excavator is delivered.

The delivery report must be reviewed and signed by the owner or operator and the dealer.

EXCAVATOR IDENTIFICATION



ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	Operator's Handbook	15	Cab / Canopy (ROPS / TOPS) [C]
2	Arm Cylinder	16	Rear Cover
3	Auxiliary Quick Couplers	17	Counterweight
4	Boom	18	Tracks
5	Arm	19	Tie Downs (Both Sides)
6	Bucket Cylinder	20	Track Frames
7	Bucket Link / Attachment Coupler (If Equipped) [A]	21	Blade
8	Bucket [B]	22	Right Side Cover
9	Boom Cylinder	23	Lift Point
10	Tie Downs / Lift Points		
11	Blade Cylinder		
12	Upperstructure		
13	Control Levers (Joysticks)		
14	Operator's Seat with Seat Belt		

[A] ATTACMENT COUPLERS - Optional attachment couplers are available.

[B] BUCKET - Several different buckets and other attachments are available for the Bobcat excavator.

[C] ROPS, TOPS - (Roll-Over Protective Structure / Tip-Over Protective Structure) as standard equipment. The ROPS / TOPS meets ISO 12117-2 AND ISO 12117.

Standard Items

Model E17z Bobcat excavators are equipped with the following standard items:

- Canopy with ROPS / TOPS / FOPS Approval
- Rubber Tracks 230 mm (9.0 in)
- Dozer Blade 1354 mm (53.3 in) (Including extensions)
- Auxiliary Hydraulics On Boom (Double Acting)
- Hydraulic Joystick Controls
- Engine Speed Control Lever
- Hydraulic and Travel Control Lockouts
- Hydraulic Retractable Undercarriage (1360 mm to 980 mm)
- Track Retraction Expansion Valve / Switch
- Two-Speed Travel
- · Engine with Shut Down
- Work Light Boom Mounted
- Horn
- Stationary Seat
- Retractable Seat Belt
- Spark Arrester Muffler
- Advanced Diagnostics
- Counterweight
- Battery Kill Switch
- Upperstructure with Four Point Tie Down
- Fuel Filter Sediment Bowl

Options And Accessories

Below is a list of some equipment available from your Bobcat excavator dealer as Dealer and / or Factory Installed Accessories and Factory Installed Options. See your Bobcat dealer for other available options, accessories and attachments.

- Auxiliary Hydraulics On Arm
- Enclosed Cab With Heater (ROPS / TOPS)
- Suspension Seat
- Travel Motion Alarm
- Keyless Start
- Long Dozer Blade
- Top Guard Kit (FOGS)
- Special Application Kit
- Attachment Quick Coupler (Klac)
- Attachment Quick Coupler, German Style Quick Coupler
- Object Handling Certified (boom / arm load holding valves, overload warning and lift eye)
- Load Holding Valve Boom
- Load Holding Valve Arm
- Lift Eye
- Strobe Light
- Side Mirror
- Fire Extinguisher
- Radio
- Demolition Kit
- Hose Air Bleed Kit
- Beacon
- Antenna And Speakers Kit
- Muffler Purifier Kit
- Overload Warning Device

Specifications subject to change without notice and standard items can vary.

Attachments

These and other attachments are approved for use on this model Bobcat excavator. Do not use unapproved attachments. Attachments not manufactured by Bobcat can not be approved.

The versatile Bobcat excavator quickly turns into a multijob machine with a variety of attachments.

See your Bobcat dealer for information about approved attachments and attachment Operation & Maintenance Manuals.

- Auger
- Breaker
- Laser Receiver
- Reverse Coupler
- Tilt Bucket
- Hydraulic Clamp

Buckets Available

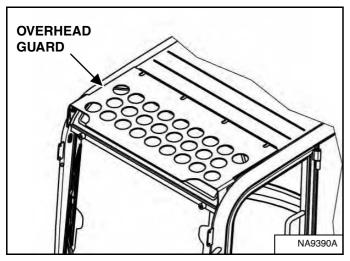
Increase the versatility of your Bobcat excavator with a variety of bucket sizes.

Many bucket styles, widths and different capacities are available for a variety of different applications. They include Trenching, Digging, Grading, Tilt, to name a few. See your Bobcat dealer for the correct bucket for your Bobcat excavator and application.

FEATURES, ACCESSORIES, AND ATTACHMENTS (CONT'D)

Falling-Object Guards (FOGS)

Figure 4



Available for special applications that require protection from smaller objects that can fall on the canopy or restrict material from entering canopy openings **[Figure 4]** and **[Figure 5]**.

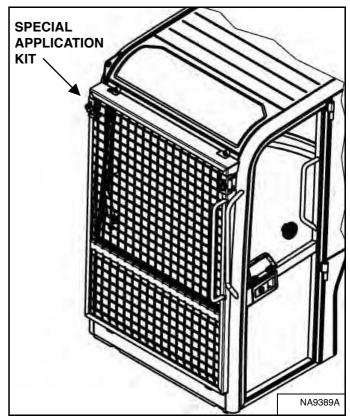
The excavator must have the overhead guard [Figure 4] installed to meet the top guard requirements in ISO 10262.

See your Bobcat dealer for more information.

NOTE: The Falling-Object Guard is factory installed on the canopy.

Special Applications Kit





Available for special applications that require protection from objects entering the front of the excavator.

The excavator must have the special applications kit **[Figure 5]** installed to meet the front guard requirements in ISO 10262 - Level 1.

Kit includes an upper and lower screen guard.

See your Bobcat dealer for more information.

Special Applications Kit Inspection And Maintenance

The Special Applications Kit must be regularly inspected and maintained. Inspect the screen for damage. Replace parts as necessary.

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SAFETY INSTRUCTIONS

Before Operation

Carefully follow the operating and maintenance instructions in this manual.

The Bobcat excavator is highly manoeuvrable and compact. It is rugged and useful under a wide variety of conditions. This presents an operator with hazards associated with off motorway, rough terrain applications, common with Bobcat excavator usage.

The Bobcat excavator has an internal combustion engine with resultant heat and exhaust. All exhaust gases can kill or cause illness so use the excavator with adequate ventilation.

The dealer explains the capabilities and restrictions of the Bobcat excavator and attachment for each application. The dealer demonstrates the safe operation according to Bobcat instructional materials, which are also available to operators. The dealer can also identify unsafe modifications or use of unapproved attachments. The attachments and buckets are designed for a Rated Lift Capacity. They are designed for secure fastening to the Bobcat excavator. The user must check with the dealer, or Bobcat literature, to determine safe loads of materials of specified densities for the machine attachment combination.

The following publications and training materials provide information on the safe use and maintenance of the Bobcat machine and attachments:

- The Delivery Report is used to assure that complete instructions have been given to the new owner and that the machine and attachment is in safe operating condition.
- The Operation & Maintenance Manual delivered with the machine or attachment gives operating information as well as routine maintenance and service procedures. It is a part of the machine and can be stored in a container provided on the machine. Replacement Operation & Maintenance Manuals can be ordered from your Bobcat dealer.
- Machine signs (decals) instruct on the safe operation and care of your Bobcat machine or attachment. The signs and their locations are shown in the Operation & Maintenance Manual. Replacement signs are available from your Bobcat dealer.
- An Operator's Handbook is fastened to the operator cab of the excavator. Its brief instructions are convenient to the operator. See your Bobcat dealer for more information on translated versions.

The dealer and owner / operator review the recommended uses of the product when delivered. If the owner / operator will be using the machine for a different application(s) he or she must ask the dealer for recommendations on the new use.

SAFETY INSTRUCTIONS (CONT'D)

Safe Operation Is The Operator's Responsibility

Safety Alert Symbol

This symbol with a warning statement means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.

Operator must have instructions before operating the machine. Untrained operators can cause injury or death.

W-2001-0502

IMPORTANT

This notice identifies procedures which must be followed to avoid damage to the machine.

I-2019-0284

DANGER

The signal word DANGER on the machine and in the manuals indicates a hazardous situation which, if not avoided, will result in death or serious injury.

D-1002-1107

The signal word WARNING on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

W-2044-1107

The Bobcat excavator and attachment must be in good operating condition before use.

Check all of the items on the Bobcat Service Schedule Decal under the 8-10 hour column or as shown in the Operation & Maintenance Manual.

Safe Operation Needs A Qualified Operator

For an operator to be qualified, he or she must not use drugs or alcoholic drinks which impair alertness or coordination while working. An operator who is taking prescription drugs must get medical advice to determine if he or she can safely operate a machine.

A Qualified Operator Must Do The Following:

Understand the Written Instructions, Rules and Regulations

- The written instructions from Bobcat Company include the Delivery Report, Operation & Maintenance Manual, Operator's Handbook, and machine signs (decals).
- Check the rules and regulations at your location. The rules may include an employer's work safety requirements. For driving on public roads, the machine must be equipped as stipulated by the local regulations authorising operation on public roads in your specific country. Regulations may identify a hazard such as a utility line.

Have Training with Actual Operation

- Operator training must consist of a demonstration and verbal instruction. This training is given by your Bobcat dealer before the product is delivered.
- The new operator must start in an area without bystanders and use all the controls until he or she can operate the machine and attachment safely under all conditions of the work area. Always fasten seat belt before operating.

Know the Work Conditions

- Know the weight of the materials being handled. Avoid exceeding the Rated Lift Capacity of the machine. Material which is very dense will be heavier than the same volume of less dense material. Reduce the size of load if handling dense material.
- The operator must know any prohibited uses or work areas, for example, he or she needs to know about excessive slopes.
- Know the location of any underground lines.
- Wear tight fitting clothing. Always wear safety glasses when doing maintenance or service. Safety glasses, respiratory equipment, hearing protection or Special Applications Kits are required for some work. See your Bobcat dealer about Bobcat Safety Equipment for your model.

SAFETY INSTRUCTIONS (CONT'D)

Avoid Silica Dust



Cutting or drilling concrete containing sand or rock containing quartz may result in exposure to silica dust. Use a respirator, water spray or other means to control dust.

FIRE PREVENTION



Maintenance

The machine and some attachments have components that are at high temperatures under normal operating conditions. The primary source of high temperatures is the engine and exhaust system. The electrical system, if damaged or incorrectly maintained, can be a source of arcs or sparks.

Flammable debris (leaves, straw, etc.) must be removed regularly. If flammable debris is allowed to accumulate, it can cause a fire hazard. Clean often to avoid this accumulation. Flammable debris in the engine compartment is a potential fire hazard.

The operator's area, engine compartment and engine cooling system must be inspected every day and cleaned if necessary to prevent fire hazards and overheating.

All fuels, most lubricants and some coolants mixtures are flammable. Flammable fluids that are leaking or spilled onto hot surfaces or onto electrical components can cause a fire.

Operation

Do not use the machine where exhaust, arcs, sparks or hot components can contact flammable material, explosive dust or gases.

Electrical



Check all electrical wiring and connections for damage. Keep the battery terminals clean and tight. Repair or replace any damaged part or wires that are loose or frayed.

Battery gas can explode and cause serious injury. Use the procedure in the Operation & Maintenance Manual for connecting the battery and for jump starting. Do not jump start or charge a frozen or damaged battery. Keep any open flames or sparks away from batteries. Do not smoke in battery charging area.

FIRE PREVENTION (CONT'D)

Hydraulic System

Check hydraulic tubes, hoses and fittings for damage and leakage. Never use open flame or bare skin to check for leaks. Hydraulic tubes and hoses must be properly routed and have adequate support and secure clamps. Tighten or replace any parts that show leakage.

Always clean fluid spills. Do not use petrol or diesel fuel for cleaning parts. Use commercial non-flammable solvents.

Fueling



Stop the engine and let it cool before adding fuel. No smoking! Do not refuel a machine near open flames or sparks. Fill the fuel tank outdoors.

Ultra Low Sulfur Diesel (ULSD) poses a greater static ignition hazard than earlier diesel formulations with higher Sulfur content. Avoid death or serious injury from fire or explosion. Consult with your fuel or fuel system supplier to ensure the delivery system is in compliance with fueling standards for proper grounding and bonding practices.

Starting

Do not use ether or starting fluids on any engine that has glow plugs. These starting aids can cause explosion and injure you or bystanders.

Use the procedure in the Operation & Maintenance Manual for connecting the battery and for jump starting.

Spark Arrester Exhaust System

The spark arrester exhaust system is designed to control the emission of hot particles from the engine and exhaust system, but the muffler and the exhaust gases are still hot.

Check the spark arrester exhaust system regularly to make sure it is maintained and working properly. Use the procedure in the Operation & Maintenance Manual for cleaning the spark arrester muffler (if equipped).

Welding And Grinding

Always clean the machine and attachment, disconnect the battery, and disconnect the wiring from the Bobcat controllers before welding. Cover rubber hoses, battery and all other flammable parts. Keep a fire extinguisher near the machine when welding.

Have good ventilation when grinding or welding painted parts. Wear dust mask when grinding painted parts. Toxic dust or gas can be produced.

Dust generated from repairing non-metallic parts such as hoods, fenders or covers can be flammable or explosive. Repair such components in a well ventilated area away from open flames or sparks.

Fire Extinguishers

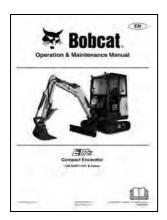


Know where fire extinguishers and first aid kits are located and how to use them. Inspect the fire extinguisher and service the fire extinguisher regularly. Obey the recommendations on the instructions plate.

PUBLICATIONS AND TRAINING RESOURCES

The following publications are also available for your Bobcat excavator. You can order them from your Bobcat dealer.

For the latest information on Bobcat products and the Bobcat Company, visit our visit our Website at **Bobcat.com/training** or **Bobcat.com**.



OPERATION & MAINTENANCE MANUAL

7349193enGB

SERVICE

MANUAL

7314142enUS



OPERATOR'S HANDBOOK

7255186enGB

Gives basic operation instructions and safety warnings.

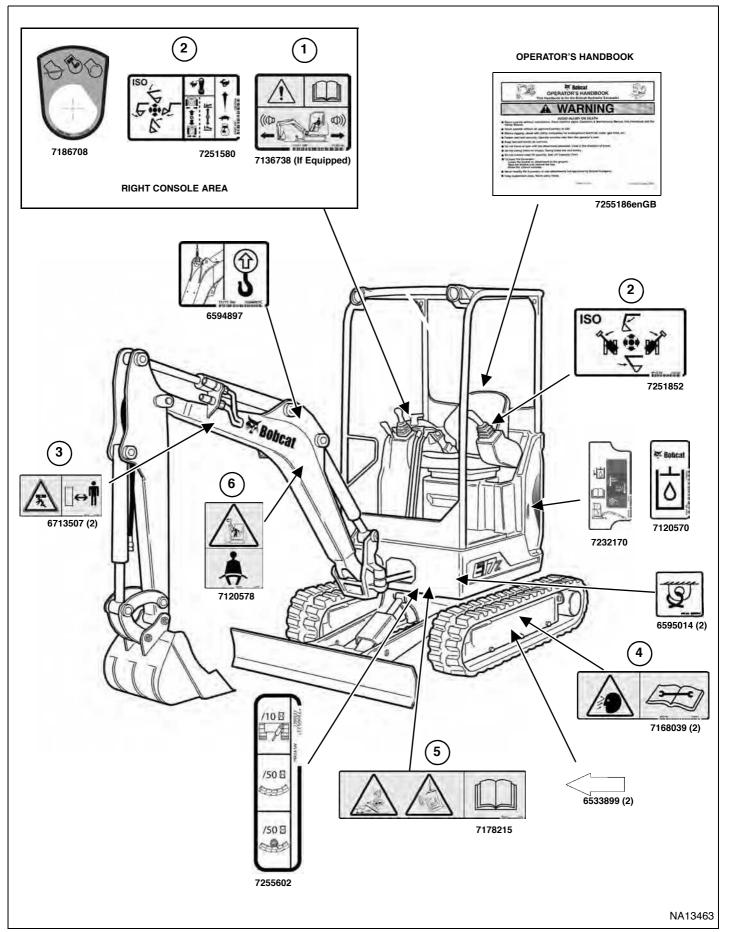
Complete instructions on the correct operation and the routine maintenance of the Bobcat excavator.



Complete maintenance instructions for your Bobcat excavator.

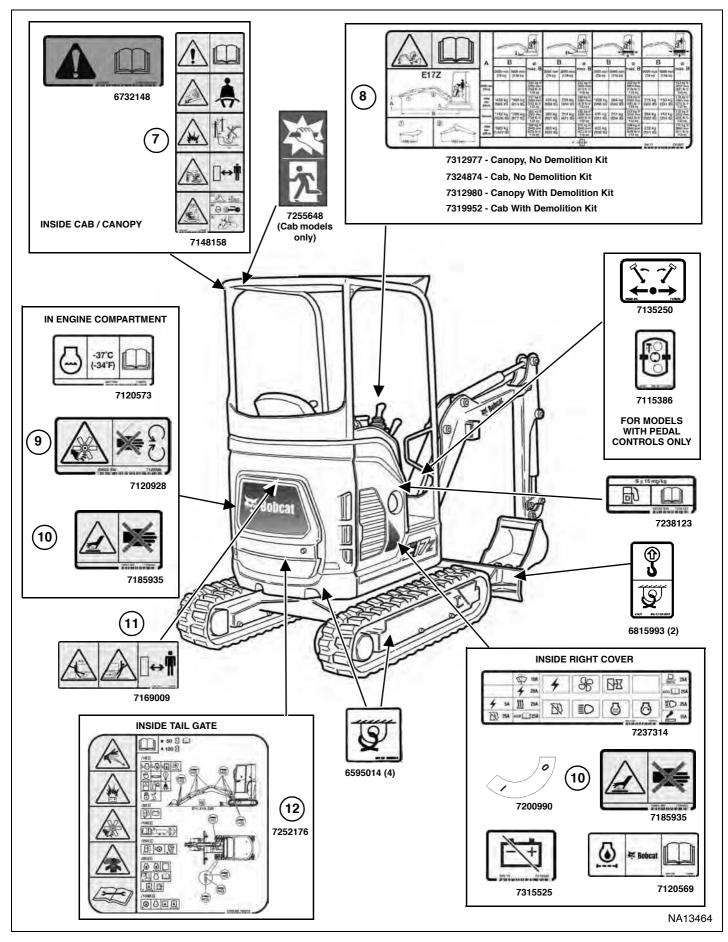
MACHINE SIGNS (DECALS)

Follow the instructions on all the Machine Signs (Decals) that are on the excavator. Replace any damaged machine signs and be sure they are in the correct locations. Machine signs are available from your Bobcat excavator dealer.



MACHINE SIGNS (DECALS) (CONT'D)

Follow the instructions on all the Machine Signs (Decals) that are on the excavator. Replace any damaged machine signs and be sure they are in the correct locations. Machine signs are available from your Bobcat excavator dealer.

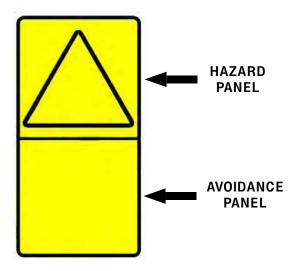


MACHINE SIGNS (DECALS) (CONT'D)

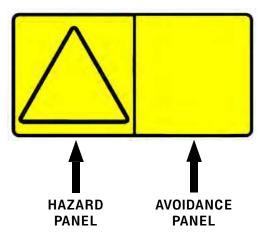
Pictorial Only Safety Signs

Safety signs are used to alert the equipment operator or maintenance person to hazards that may be encountered in the use and maintenance of the equipment. The location and description of the safety signs are detailed in this section. Please become familiarised with all safety signs installed on the excavator.

Vertical Configuration



Horizontal Configuration



The format consists of the hazard panel(s) and the avoidance panel(s):

Hazard panels depict a potential hazard enclosed in a safety alert triangle.

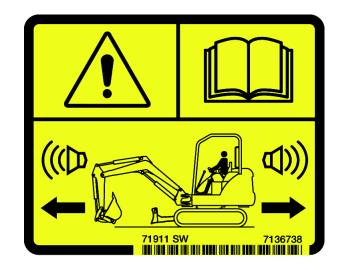
Avoidance panels depict actions required to avoid the hazards.

A safety sign may contain more than one hazard panel and more than one avoidance panel.

NOTE: See the numbered MACHINE SIGNS (DECALS) on Page 16 and Machine Signs (Decals) (Cont'd) on Page 17 for the machine location of each corresponding numbered pictorial only decals as shown below.

1. Motion Alarm (7136738)

This safety sign is located on the right window (cab models), rear crossmember (canopy models).



L WARNING

This machine is equipped with a motion alarm. ALARM MUST SOUND! when operating <u>forward</u> or <u>backward.</u>

Failure to maintain a clear view in the direction of travel could result in serious injury or death.

The operator is responsible for the safe operation of this machine.

W-2786-0309

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