



# Bobcat®

## Operation & Maintenance Manual

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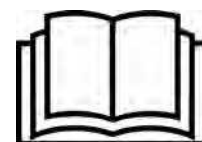


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### E27

## Compact Excavator

S/N B4BA11001 & Above



# OPERATOR SAFETY WARNING



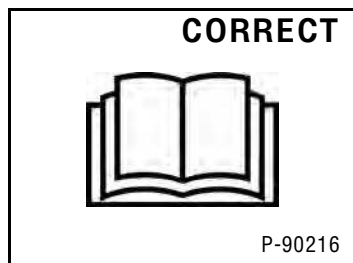
## WARNING

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

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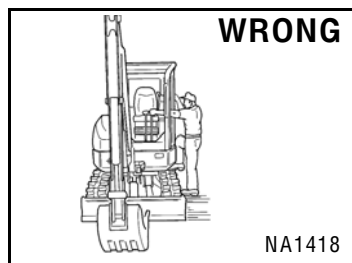


**Safety Alert Symbol:** This symbol with a warning statement, means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.



⚠ Never operate without instructions.

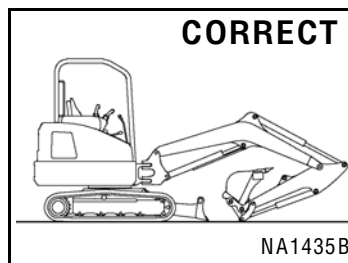
⚠ Read machine signs, and Operation & Maintenance Manual, and Operator's Handbook.



⚠ Do not grasp control handles when entering cab / canopy.

⚠ Be sure controls are in neutral before starting.

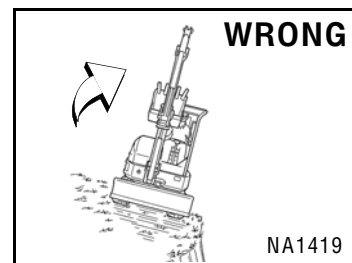
⚠ Sound horn and check behind machine before starting.



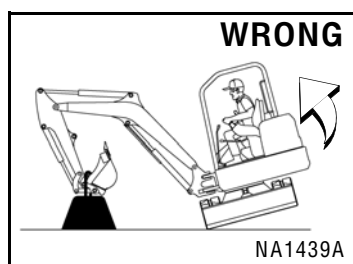
⚠ Never operate without approved cab / canopy.

⚠ Never modify equipment.

⚠ Never use attachments not approved by Bobcat Company.

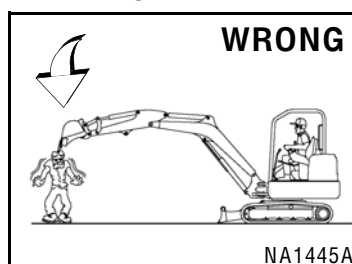


⚠ Avoid steep areas or banks that could break away.



⚠ Use caution to avoid tipping - do not swing heavy load over side of track.

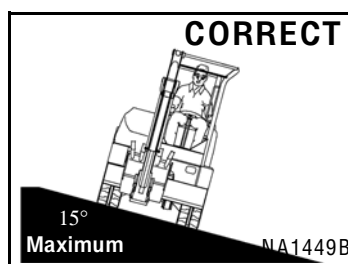
⚠ Operate on flat, level ground.



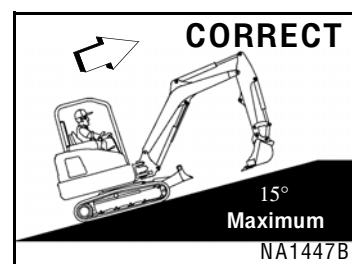
⚠ Keep bystanders out of maximum reach area.

⚠ Do not travel or turn with bucket extended.

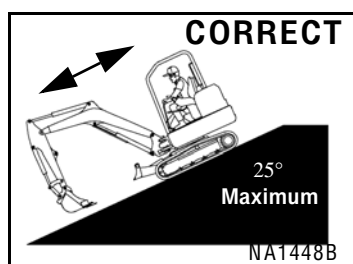
⚠ Never carry riders.



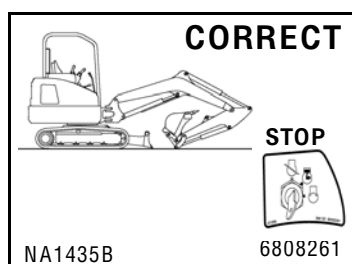
⚠ Never exceed a 15° slope to the side.



⚠ Never travel up a slope that exceeds 15°.

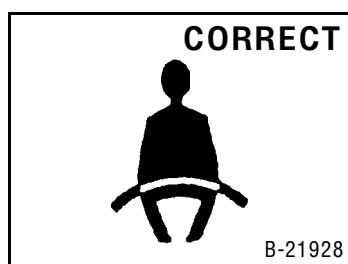


⚠ Never exceed 25° when going down or backing up a slope.



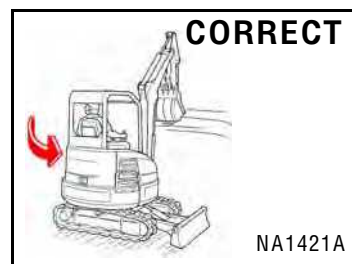
⚠ To leave excavator, lower the work equipment and the blade to the ground.

⚠ Stop the engine.



⚠ Fasten seat belt securely.

⚠ Operate controls only from operator's seat.



⚠ Look in the direction of rotation and make sure no bystanders are in the work area.

## SAFETY EQUIPMENT

The Bobcat® excavator must be equipped with safety items necessary for each job. Ask your Bobcat dealer for information on the availability and safe use of attachments and accessories.

1. SEAT BELT: Check belt fasteners and check for damaged webbing or buckle.
2. OPERATOR CAB / CANOPY (ROPS and TOPS): Check condition and mounting hardware.
3. OPERATOR'S HANDBOOK: Must be in the cab / canopy.
4. LEFT HAND CONSOLE: When raised must deactivate the travel and hydraulic functions.
5. SAFETY SIGNS (DECALS): Replace if damaged.
6. GRAB HANDLES: Replace if damaged.
7. INTEGRATED SLEW LOCK BRAKE.
8. SAFETY TREAD.: Replace if damaged.

OSW66-EN-0117

## CONTENTS

CONTENTS .....	1
FOREWORD .....	2
SAFETY AND TRAINING RESOURCES .....	11
OPERATING INSTRUCTIONS .....	24
PREVENTIVE MAINTENANCE .....	102
SYSTEM SETUP AND ANALYSIS .....	149
SPECIFICATIONS .....	157
WARRANTY .....	168
ALPHABETICAL INDEX .....	170

### 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

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.

DECLARATION OF CONFORMITY .....	3
For Model E27 .....	3
BOBCAT COMPANY IS ISO 9001 CERTIFIED .....	5
REGULAR MAINTENANCE ITEMS .....	5
LUBRICANTS AND FLUIDS .....	6
SERIAL NUMBER LOCATION .....	7
Excavator Serial Number .....	7
Engine Serial Number .....	7
DELIVERY REPORT .....	7
EXCAVATOR IDENTIFICATION .....	8
FEATURES, ACCESSORIES AND ATTACHMENTS .....	9
Standard Items .....	9
Options And Accessories .....	9
Attachments .....	9
Buckets Available .....	9
Falling-Object Guards (FOGS) (Canopy Model) .....	10
Falling-Object Protective Structure (FOPS) (Cab Model) .....	10
Special Applications Kit .....	10
Special Applications Kit Inspection And Maintenance .....	10

## DECLARATION OF CONFORMITY

For Model E27

### 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 Conformity is supplied in a separate document.

#### Manufacturer



Bobcat Company  
World Headquarters  
250 East Beaton Drive  
West Fargo, ND 58078-6000  
UNITED STATES OF AMERICA

#### Technical Documentation

Homologation Manager  
Doosan Bobcat EMEA s.r.o.  
U Kodetky 1810  
26312 Dobříš  
CZECH REPUBLIC

**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.

1020-090-022395

#### Conformity Assessment Procedure(s)

2000/14/EC, Annex VIII, Full Quality Assurance

#### Sound Power Levels [Lw(A)]

Measured Sound Power	<b>94dBA</b>
Guaranteed Sound Power	<b>94dBA</b>

#### Description of Equipment

Type of Equipment: Excavator  
Model Name: E27  
Model Code: B4BA

Engine Manufacturer: Kubota  
Engine Model: D1305-EF04  
Engine Power: 18,2 kW @ 2400 RPM

#### Equipment conforms to CE Directive(s) Listed Below

2006/42/EC: Machinery Directive  
2014/30/EC: Electromagnetic Compatibility Directive

#### Declaration of Conformance

This equipment conforms to the requirements specified in all the EC Directives listed in this declaration.

#### Effective From:

11 September 2018

## DECLARATION OF CONFORMITY (CONT'D)



Homologation Manager  
Doosan Bobcat Engineering s.r.o.  
U Kodetky 1978  
26312 Dobris  
Czech Republic

### Declaration of conformity with Article 14 of Regulation (EU) No 517/2014 of the European Parliament and of the Council

We Doosan Bobcat EMEA s.r.o. with VAT number CZ26489201, acting in its capacity as EU only representative for the import of goods from Doosan Infracore Co., Ltd with its address at Doosan Tower, 275, Jangchungdan-ro, Jung-gu, Seoul, 100-730, Korea, declare under our sole responsibility that when placing on the market pre-charged equipment, which we import to or manufacture in the Union, the hydrofluorocarbons contained in that equipment are accounted for within the quota system referred to in Chapter IV of Regulation (EU) No 517/2014 as:

☒ A. we hold authorisation(s) issued in accordance with Article 18(2) of Regulation (EU) No 517/2014 and registered in the registry referred to in Article 17 of that Regulation, at the time of release for free circulation to use the quota of a producer or importer of hydrofluorocarbons subject to Article 15 of Regulation (EU) No 517/2014 that cover(s) the quantity of hydrofluorocarbons contained in the equipment.

☐ B. *[for importers of equipment only]* the hydrofluorocarbons contained in the equipment have been placed on the market in the Union, subsequently exported and charged into the equipment outside the Union, and the undertaking that placed the hydrofluorocarbons on the market made a declaration stating that the quantity of hydrofluorocarbons has been or will be reported as placed on the market in the Union and that it has not been and will not be reported as direct supply for export in the meaning of Article 15(2)(c) of Regulation (EU) No 517/2014 pursuant to Article 19 of Regulation (EU) No 517/2014 and Section 5C of the Annex to Commission Implementing Regulation (EU) No 1191/2014 <sup>(2)</sup>.

☒ C. *[for equipment manufactured in the Union only]* the hydrofluorocarbons charged into the equipment were placed on the market by a producer or importer of hydrofluorocarbons subject to Article 15 of Regulation (EU) No 517/2014.

Dobroslav Rak

30th January, 2017

Doosan Bobcat EMEA s.r.o. | Identification No. 264 89 201 | Prague Commercial Register Section C, Entry 85459



## BOBCAT COMPANY IS ISO 9001 CERTIFIED








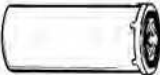



**ISO 9001** is an international standard that specifies requirements for a quality management system that controls the processes and procedures which we use to design, develop, manufacture, and distribute Bobcat products.

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.


























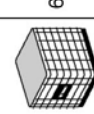
ISO 9001 means that as a company we say what we do and do what we say. In other words, we have established procedures and policies, and we provide evidence that the procedures and policies are followed.

### REGULAR MAINTENANCE ITEMS

 <p>ENGINE OIL FILTER 6657635</p>	 <p>FRESH AIR FILTER 7176099 RECIRCULATION FILTER 7222791</p>
 <p>FUEL FILTER 6667352</p>	 <p>BATTERY 7304126</p>
 <p>AIR FILTER, Outer 6673752</p>  <p>AIR FILTER, Inner 6673753</p>	 <p>HYDRAULIC FILL / BREATHER CAP 7024201</p>
 <p>PRIMARY HYDRAULIC FILTER 6661248 CASE DRAIN HYDRAULIC FILTER 7009365</p>	 <p>RADIATOR CAP 7348260</p>

**NOTE:** Always verify Part Numbers with your Bobcat dealer.

# LUBRICANTS AND FLUIDS

Bobcat Equipment															Only for Wheeled EXC and AL		
		ENGINE / LOADER TRANSMISSION						HYDRAULIC/ HYDROSTATIC		ANTIFREEZE COOLANT				AXLE / TRANSMISSION		BRAKE FLUID	
																	
Packaging	Lineart	Bobcat Engine Power SAE 0W30	Bobcat Engine Power SAE 10W30	Bobcat Engine Power SAE 10W30 CJ4	Bobcat Engine Power SAE 15W40 CJ4	Bobcat Engine Power SAE 15W40	Bobcat Engine Power SAE 20W50	Bobcat Superior SH Hydraulic/Hydrostatic	Bobcat Bio Hydraulic Hydraulic/Hydrostatic	Bobcat PG Coolant Concentrated	Bobcat PG Coolant 4 Seasons	Bobcat EG Coolant Concentrated	Bobcat EG Coolant Premixed	Bobcat Axle / Transmission oil SAE 85W90 LS	Bobcat Axle / Transmission Oil ISO 100	Bobcat Brake Fluid LHM	
																	
5 L Can		6987796A	6987789A	6987818A	6987819A	6987790A	6987797A	6987791A	6987792A		6987793A	6987803A	6987804A	6987805A	6987794A	6987795A	
25 L Container		6987796B	6987789B	6987818B	6987819B	6987790B	6987797B	6987791B	6987792B	6987813B	6987793B	6987803B	6987804B	6987805B	6987794B		
209 L Drum		6987796C	6987789C	6987818C	6987819C	6987790C	6987797C	6987791C	6987792C	6987813C	6987793C	6987803C	6987804C	6987805C	6987794C		
1000 L Tank		6987796D	6987789D	6987818D	6987819D	6987790D	6987797D	6987791D	6987792D	6987813D	6987793D	6987803D	6987804D	6987805D			
400 gr Grease		Bobcat Multi-Purpose Grease						Bobcat Multi-Purpose Grease		6987888							
		Bobcat Supreme HD Grease						Bobcat Supreme HD Grease		6987889							
		Bobcat Extreme HP Grease						Bobcat Extreme HP Grease		6987890							
4700300-EN (06-13)																	

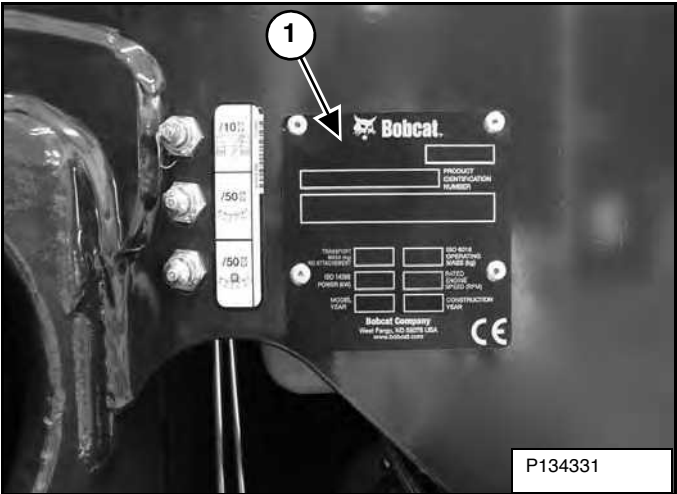


SERIAL NUMBER LOCATION

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

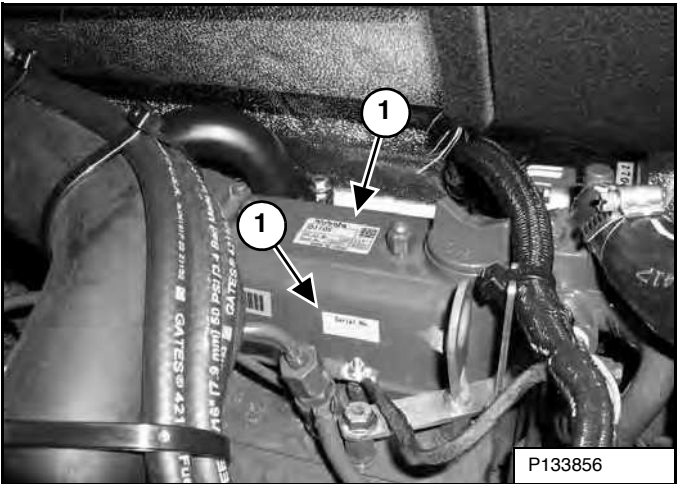
Figure 1



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

Engine Serial Number

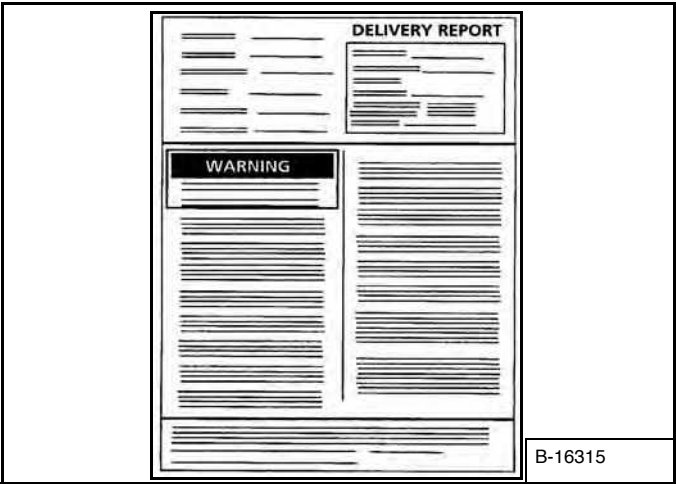
Figure 2



The engine serial number is located on the top cover (two locations) (Item 1) [Figure 2].

DELIVERY REPORT

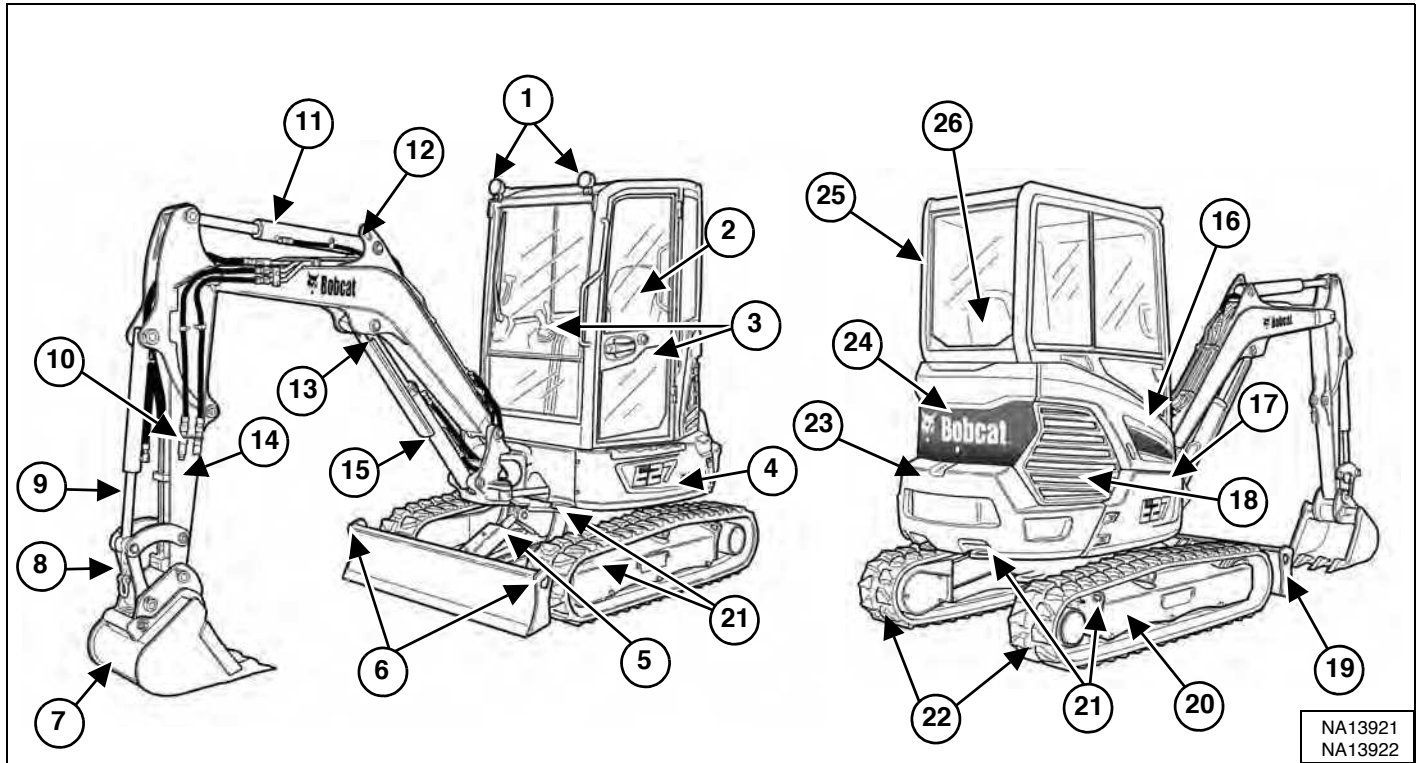
Figure 3



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	LIGHTS (IF EQUIPPED)	16	RIGHT SIDE COVER
2	OPERATOR'S SEAT WITH SEAT BELT	17	RIGHT SIDE PANEL
3	JOYSTICKS	18	REAR SIDE COVER
4	UPPERSTRUCTURE	19	BLADE
5	BLADE CYLINDER	20	TRACK FRAME
6	TIE DOWNS / LIFT POINTS	21	TIE DOWNS (BOTH SIDES)
7	BUCKET [1]	22	TRACKS [3]
8	ATTACHMENT QUICK COUPLER (IF EQUIPPED) [2]	23	COUNTERWEIGHT
9	BUCKET CYLINDER	24	TAILGATE
10	AUXILIARY HYDRAULIC COUPLERS (IF EQUIPPED)	25	CANOPY / CAB (ROPS / TOPS / FOPS) [4]
11	ARM CYLINDER	26	OPERATOR'S HANDBOOK
12	LIFT POINT		
13	BOOM		
14	ARM		
15	BOOM CYLINDER		

- [1] BUCKET - Several different buckets and other attachments are available from the Bobcat excavator.
- [2] ATTACHMENT COUPLER - Optional attachment couplers are available.
- [3] TRACKS - Optional tracks are available.
- [4] ROPS, TOPS - (Roll-Over Protective Structure / Tip-Over Protective Structure) per ISO 12117-2 and ISO 12117.  
FOPS (Fall Object Protective Structure / Top Guard) per ISO 10262 - level 1.

## FEATURES, ACCESSORIES AND ATTACHMENTS

### Standard Items

Model E27 Bobcat excavators are equipped with the following standard items:

- 1550 mm (61.0) Dozer Blade
- Canopy with ROPS / TOPS / FOPS Approval
- 300 mm (11.8 in) Rubber Tracks
- Two-Speed Travel
- Auto Shift Drive Motors
- Engine Speed Control Lever
- Hydraulic and Travel Control Lockouts
- Boom and Frame Mounted Work Lights
- Engine and Hydraulic System Monitor with Shut Down
- Horn
- Hydraulic Joystick Controls
- Basic Seat
- Retractable Seat Belt
- Advanced Diagnostics
- Counterweight
- Fuel Filter with 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.

- Enclosed Cab With Heater
- Engine Speed Control Dial With Auto Idle Feature
- Travel Motion Alarm
- Keyless Start
- Canopy / Cab Mounted Lights
- Auxiliary Hydraulics and Quick Couplers
- Direct to Tank Auxiliary Hydraulics
- Counterweight (Additional)
- Second, Third, and Fourth Auxiliary Hydraulics
- Top Guard Kit (FOGS)
- Special Application Kit (upper and lower guards)
- Load Holding Valve - Boom
- Load Holding Valve - Arm
- Lifting Device
- Travel Hose Protection
- Rotating Beacon Light
- Strobe Light
- Side Mirror
- Radio
- Fire Extinguisher
- Deluxe Electrical Control (7 Pin Harness)
- Attachment Quick Coupler, Klac™ System
- Attachment Quick Coupler, German Style Quick Coupler
- Attachment Quick Coupler, Bobcat Hydraulic Quick Coupler
- Bobcat Hydraulic Pin Grabber Coupler HPG2
- Auxiliary Hydraulic Lines Mounted On Arm\*
- Vinyl or Cloth Suspension Seat
- Steel Tracks
- Overload Warning Device
- Long Blade

***\*This option may influence the availability of other attachments. See your Bobcat Dealer for information about approved attachments for auxiliary hydraulic lines mounted on the arm.***

### Attachments

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

The versatile Bobcat excavator quickly turns into a multi-job machine with a variety of attachments.

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

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

### Buckets Available

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

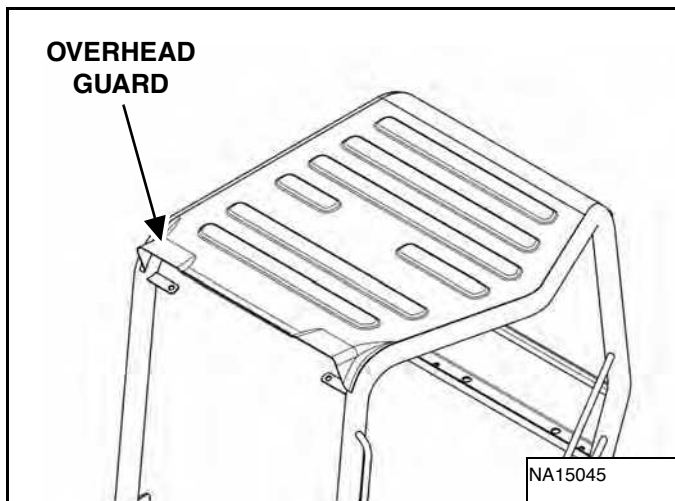
Many bucket styles, widths and different capacities are available for a variety of different applications. They include Trenching, Digging, Grading, Tilt, to name a few. See your Bobcat dealer for the correct bucket for your Bobcat excavator and application.

***Specifications subject to change without notice and standard items may vary.***

## FEATURES, ACCESSORIES AND ATTACHMENTS (CONT'D)

### Falling-Object Guards (FOGS) (Canopy Model)

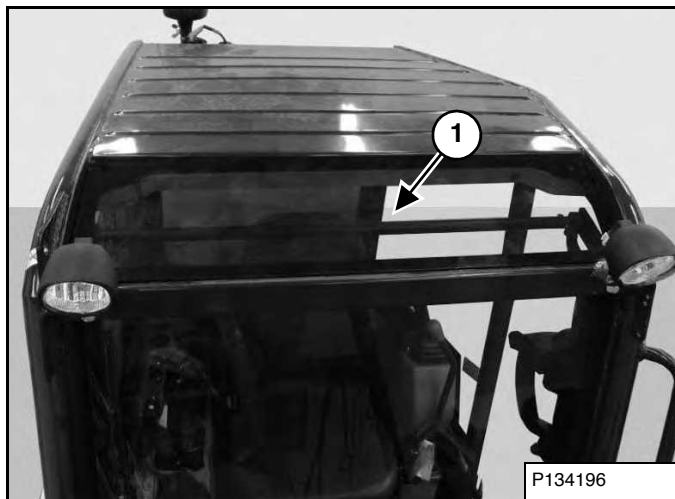
Figure 4



The canopy is equipped with a top guard that offers protection from smaller objects that can fall on the canopy. It also restricts material from entering canopy openings. It meets the top guard requirements in ISO 10262 [Figure 4].

### Falling-Object Protective Structure (FOPS) (Cab Model)

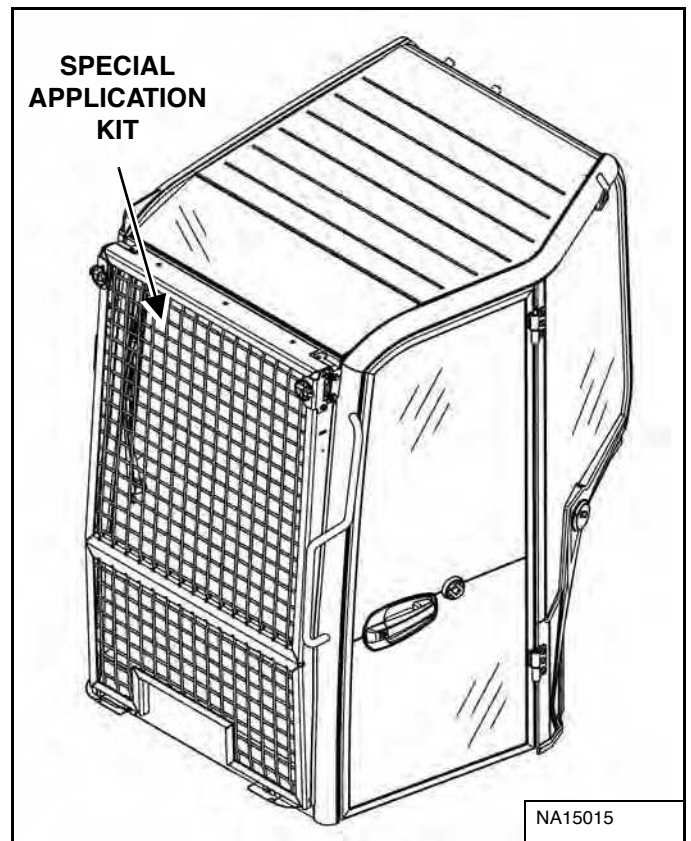
Figure 5



The top window (Item 1) [Figure 5] on cab models is a Falling Object Protective Structure (FOPS) that meets the top guard requirements in ISO 10262.

### Special Applications Kit

Figure 6



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

The excavator must have the special applications kit [Figure 6] installed to meet the front guard requirements in FOGS 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.

## **SAFETY AND TRAINING RESOURCES**

SAFETY INSTRUCTIONS .....	12
Before Operation .....	12
Safe Operation Is The Operator's Responsibility .....	13
Safe Operation Needs A Qualified Operator .....	13
Avoid Silica Dust .....	14
FIRE PREVENTION .....	14
Maintenance .....	14
Operation .....	14
Electrical .....	14
Hydraulic System .....	15
Fueling .....	15
Starting .....	15
Spark Arrester Exhaust System .....	15
Welding And Grinding .....	15
Fire Extinguishers .....	15
PUBLICATIONS AND TRAINING RESOURCES .....	16
MACHINE SIGNS (DECALS) .....	17
Pictorial Only Safety Signs .....	19

## **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.



## WARNING

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



## WARNING

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.

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## 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).

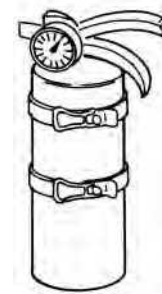
## Welding And Grinding

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.

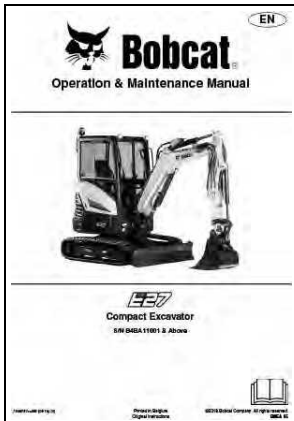
For the latest information on Bobcat products and the Bobcat Company, visit our Website at **Bobcat.com/training** or **Bobcat.com**



### OPERATOR'S HANDBOOK

7350243enGB

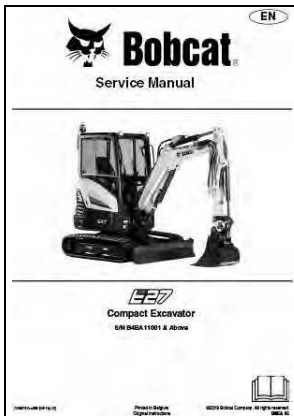
Gives basic operation instructions and safety warnings.



### OPERATION & MAINTENANCE MANUAL

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



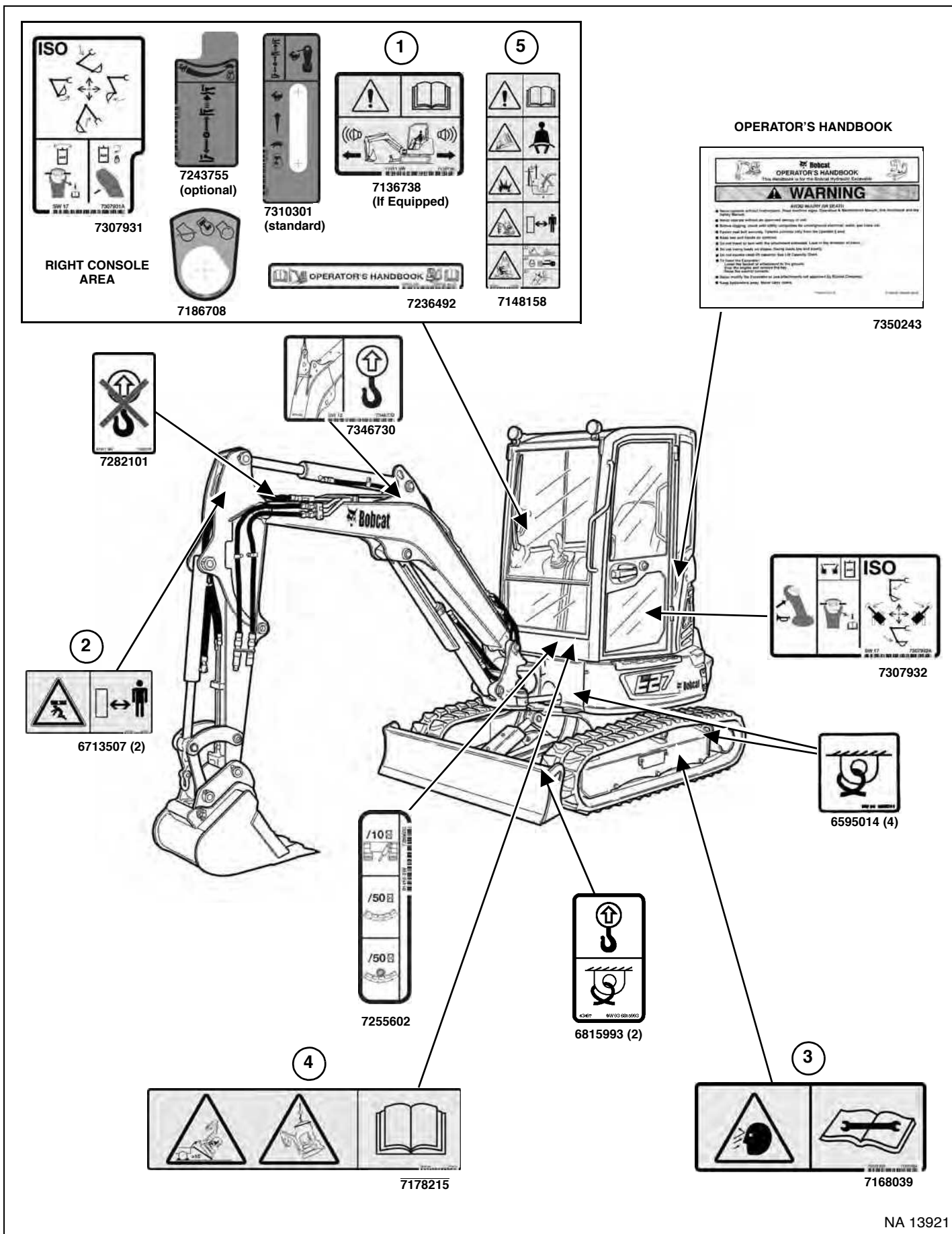
### SERVICE MANUAL

7349758enUS

- Complete maintenance instructions for the Bobcat excavator.

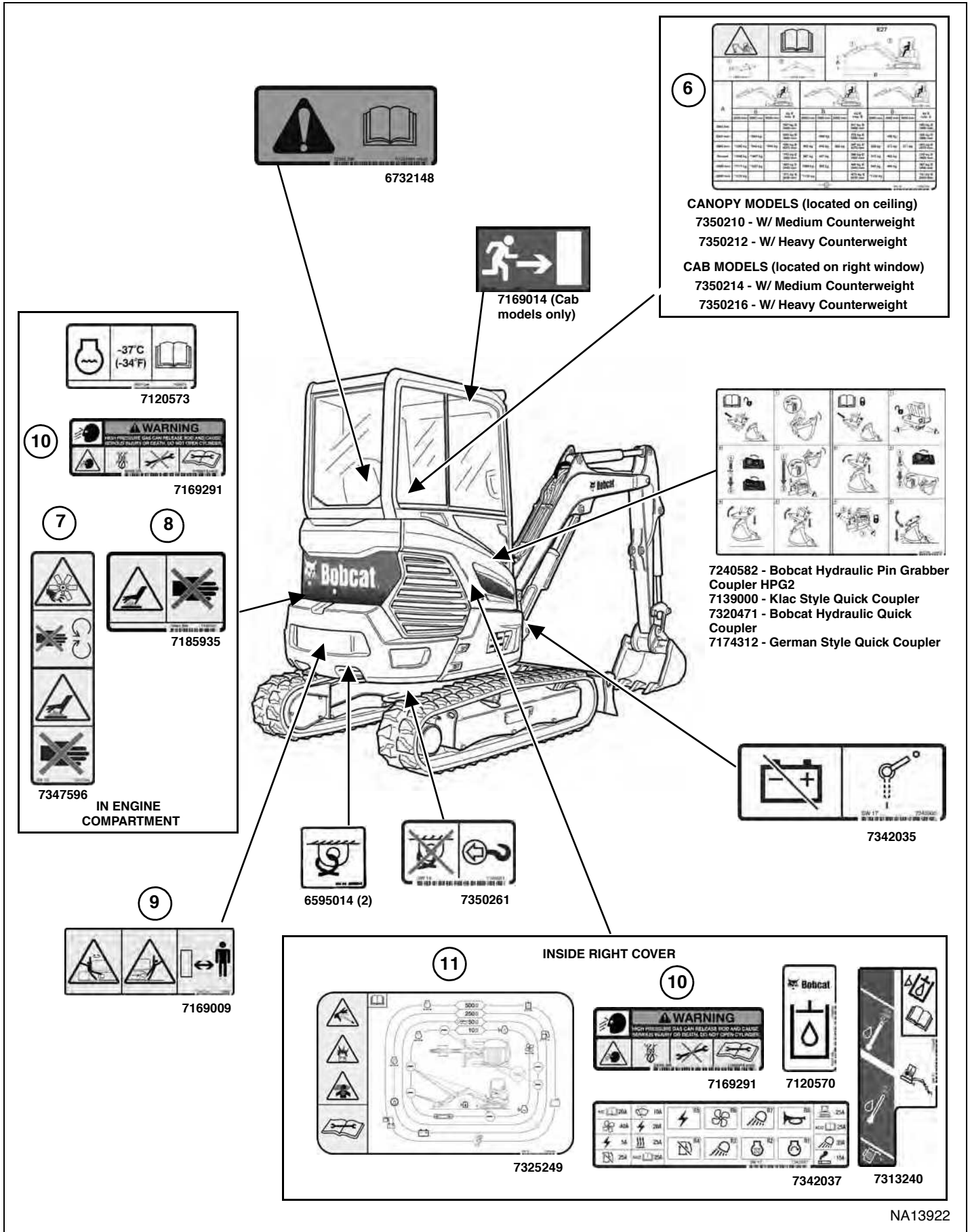
## MACHINE SIGNS (DECALS)

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.



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