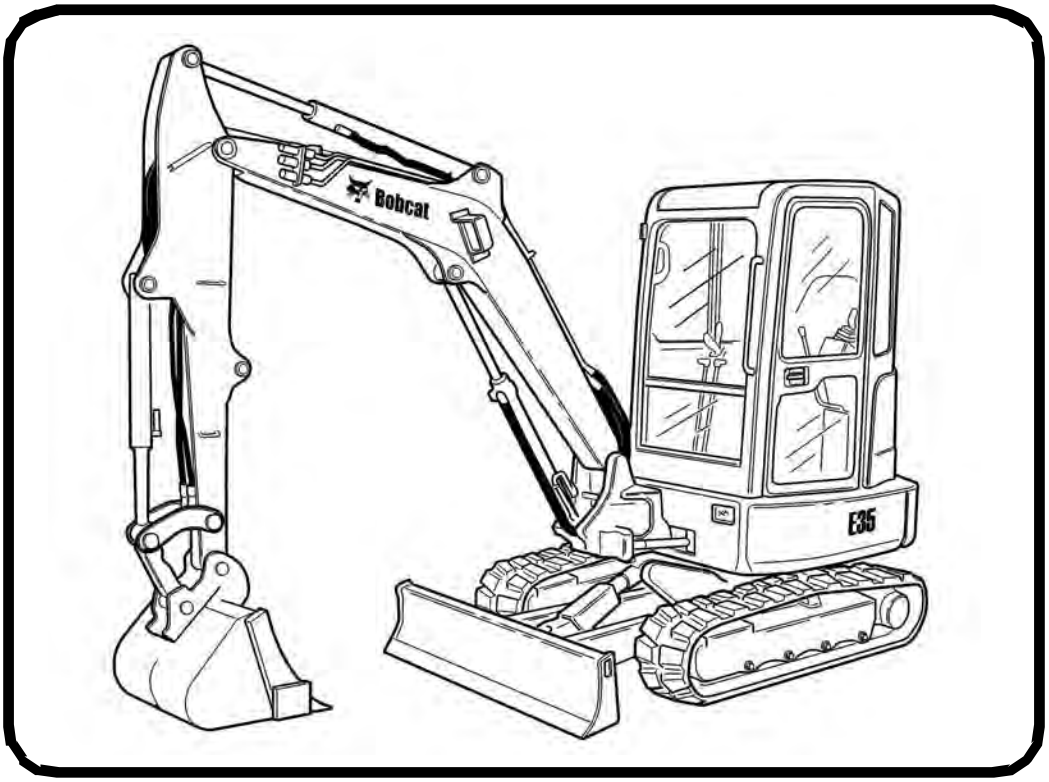
Operation & Maintenance Manual
E35 Compact Excavator

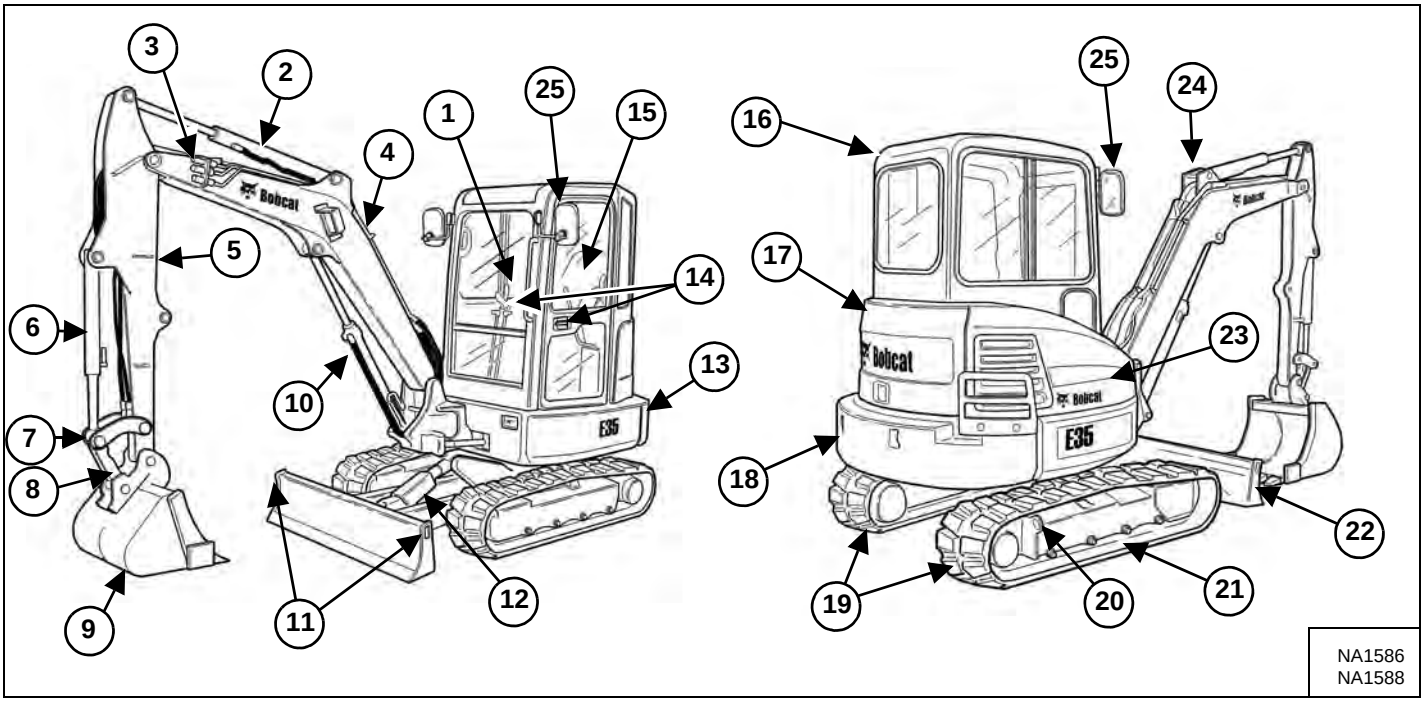
S/N B3K811001 & Above



7254733enUS (06-15) (0)

Printed in U.S.A.

EXCAVATOR IDENTIFICATION



ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	Operator's Handbook	**16**	Cab (ROPS / TOPS) **[2]**
2	Arm Cylinder	**17**	Tailgate
3	Auxiliary Quick Couplers	**18**	Counterweight
4	Boom	**19**	Tracks **[3]**
5	Arm	**20**	Tie Downs (Both Sides)
6	Bucket Cylinder	**21**	Track Frames
7	Bucket Link	**22**	Blade
8	X-CHANGE™	**23**	Right Side Cover
9	Bucket **[1]**	**24**	Lift Point
10	Boom Cylinder	**25**	Mirrors (If Equipped)
11	Tie Downs / Lift Points		
12	Blade Cylinder		
13	Upperstructure		
14	Control Levers (Joysticks)		
15	Operator's Seat with Seat Belt		

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

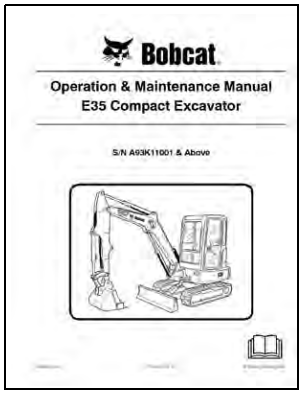
[2] ROPS / TOPS - (Roll-Over Protective Structure / Tip-Over Protective Structure) as standard equipment. The ROPS / TOPS meets ISO 12117-2:2008, ISO 12117: 2000 and EN13531:2001.

[3] TRACKS - Optional tracks are available.

PUBLICATIONS AND TRAINING RESOURCES

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

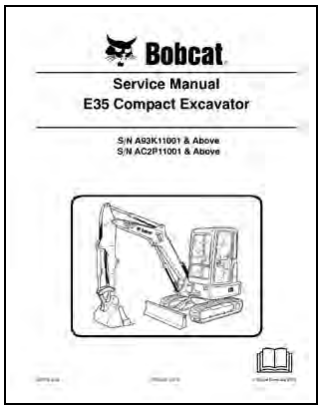
For the latest information on Bobcat products and the Bobcat Company, visit our web site at **www.bobcat.com**; you can also order Operator and Service Training materials online through **www.bobcatstore.com**



OPERATION & MAINTENANCE MANUAL

7254733enUS

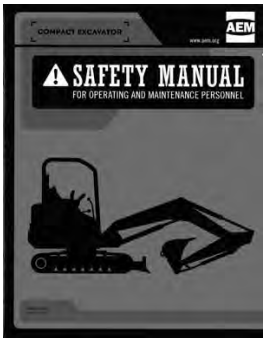
- Complete instructions on the correct operation and the routine maintenance of the BOBCAT excavator.



SERVICE MANUAL

6987276enUS

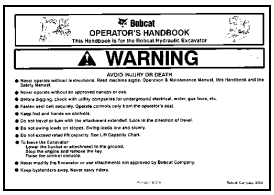
- Complete maintenance instructions for your BOBCAT excavator.



SAFETY MANUAL (English & Spanish)

6901951

- Provide basic safety procedures and warnings for your BOBCAT excavator in both English and Spanish.



OPERATOR'S HANDBOOK

6990434enUS

Gives basic operation instructions and safety warnings.

COMPACT EXCAVATOR OPERATOR TRAINING COURSE

6903186

Introduces operator to step-by-step basics of compact excavator operation. Also available in Spanish P/N 6903228.

EXCAVATOR SERVICE SAFETY COURSE

6900916

Introduces Service Technicians to step-by-step basics of proper and safe excavator maintenance and servicing procedures.

OPERATOR SAFETY DVD

6904762

Provides basic safety instructions contained in all Bobcat Safety Videos in both English and Spanish.

EXCAVATOR SAFETY VIDEO

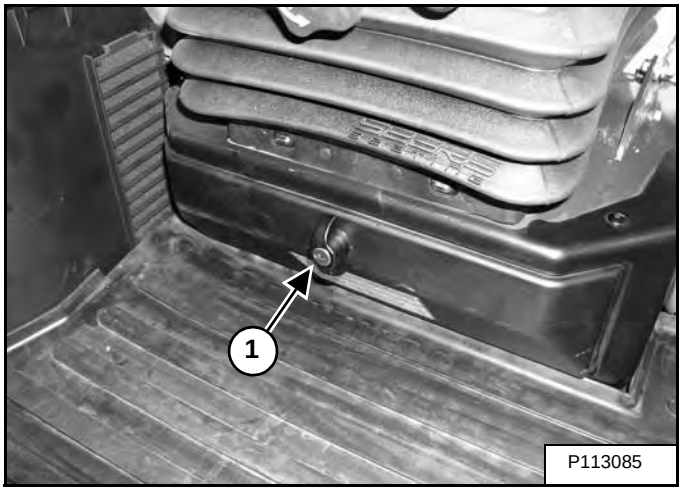
(Mobile device with quick response code application required)

Scan the code above to watch the excavator safety video or view at **www.training.bobcat.com**.

STD / ISO Selector Valve

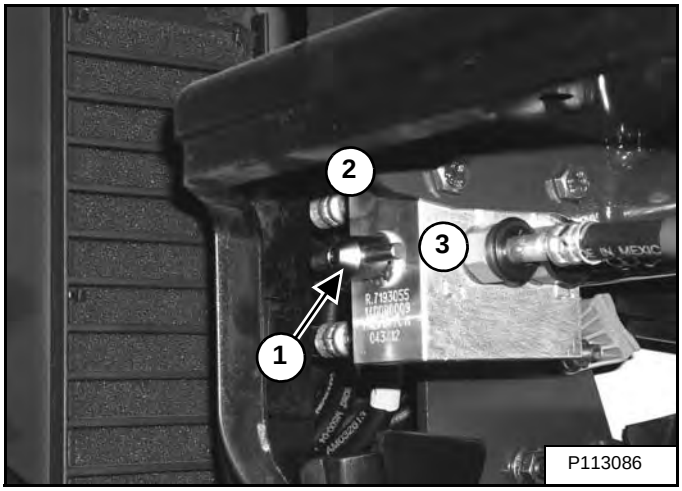
The STD / ISO selector valve is located below the operator's seat, inside the tool box.

Figure 17



From below the operator's seat, open the tool box cover (Item 1) **[Figure 17]**.

Figure 18



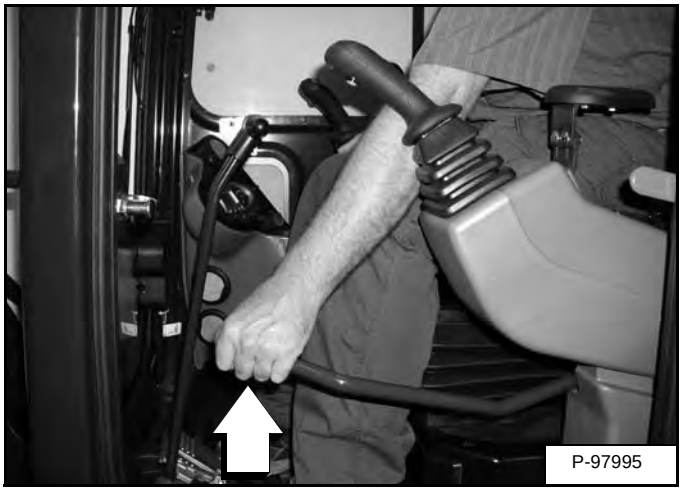
The joystick hydraulic function can be switched from Standard control pattern to ISO control pattern.

Rotate the lever (Item 1) counterclockwise (Item 2) to select STANDARD Control Pattern. Rotate the lever clockwise (Item 3) to select ISO Control Pattern **[Figure 18]**.

Raising And Lowering The Console

Raise the console before exiting the cab.

Figure 19



Pull up on the release handle **[Figure 19]**. The lift spring will assist in raising the console.

Lower the console before operating the excavator.

Push down on the lever **[Figure 19]** until the latch is engaged.

NOTE: When the console is raised, the hydraulic and traction system functions are locked and will not operate.

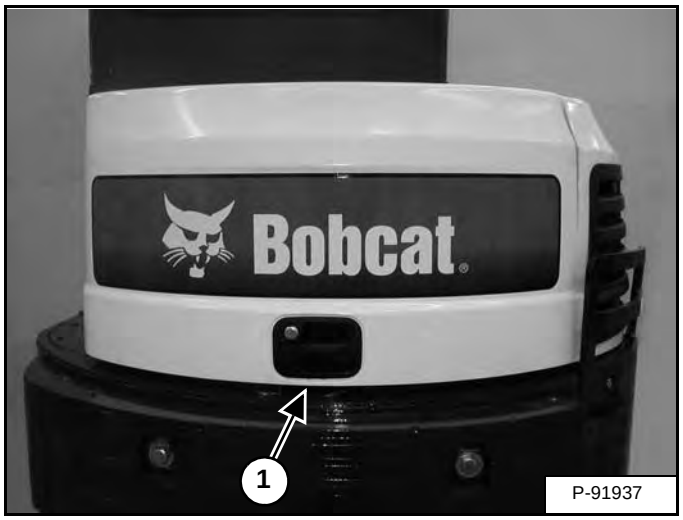
If the engine stops, the boom / bucket (attachments) can be lowered to the ground using hydraulic pressure in the accumulator.

The control console must be in the locked down position, and the key switch in the ON position.

MOTION ALARM SYSTEM

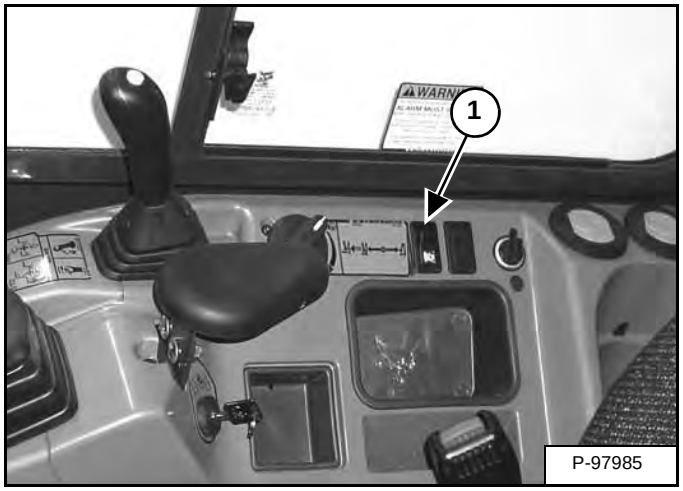
Operation

Figure 42



This excavator may be equipped with a motion alarm system. The motion alarm (Item 1) **[Figure 42]** is located inside the rear of the excavator.

Figure 43



The motion alarm can be temporarily disabled by pressing the motion alarm switch (Item 1) **[Figure 43]** while the machine is moving. As soon as the travel levers are returned to the NEUTRAL position, the motion alarm will be enabled.

⚠ WARNING

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

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

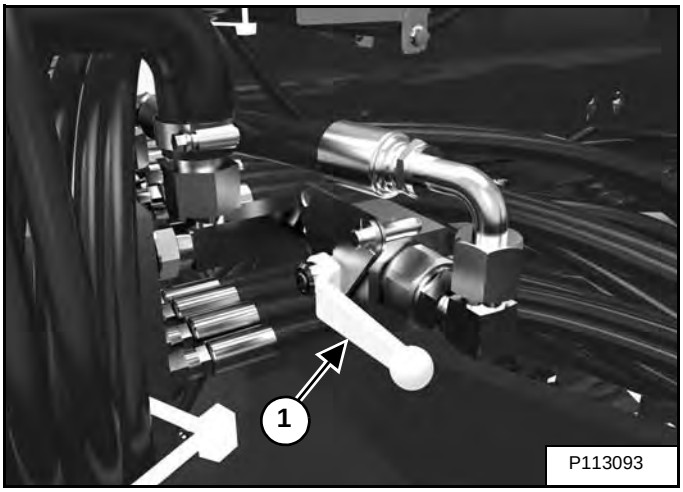
The motion alarm will sound when the operator moves the travel control levers (Item 1) **[Figure 44]** in either the forward or reverse direction.

If alarm does not sound or for adjustment instructions, see inspection and maintenance instructions for the motion alarm system in the preventive maintenance section of this manual. (See MOTION ALARM SYSTEM on Page 111.)

Return To Tank Valve

The return to tank valve is located under the right side cover at the front of the control valve (if Equipped).

Figure 66

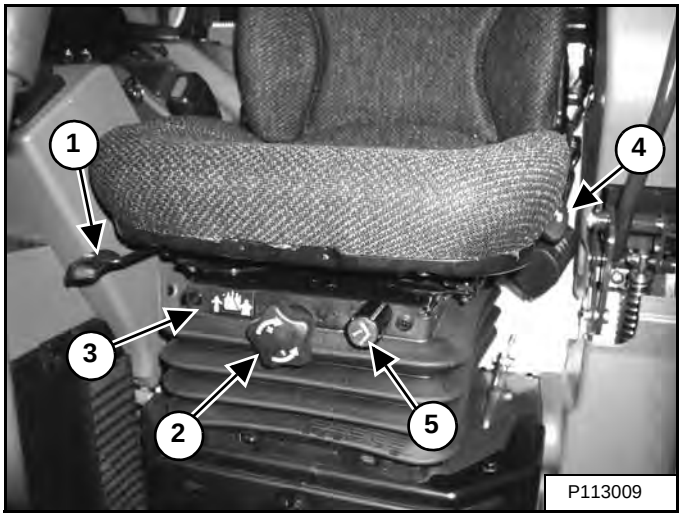


Rotate the lever (Item 1) **[Figure 66]** clockwise to direct auxiliary return hydraulic fluid to the reservoir.

Rotate the lever (Item 1) **[Figure 66]** counterclockwise for two way hydraulic auxiliary flow operation.

Seat Adjustment

Figure 84



Release the seat lever (Item 1) **[Figure 84]** to adjust the seat forward or back.

Turn the handle (Item 2) to change the adjustment for operator weight. Turn the handle until the operator's weight is shown in the window (Item 3) **[Figure 84]**.

Release the lever (Item 4) **[Figure 84]** to change the incline of the seat back.

Sit in the seat and turn the knob (Item 5) **[Figure 84]** to adjust the height of the seat.

Seat Belt

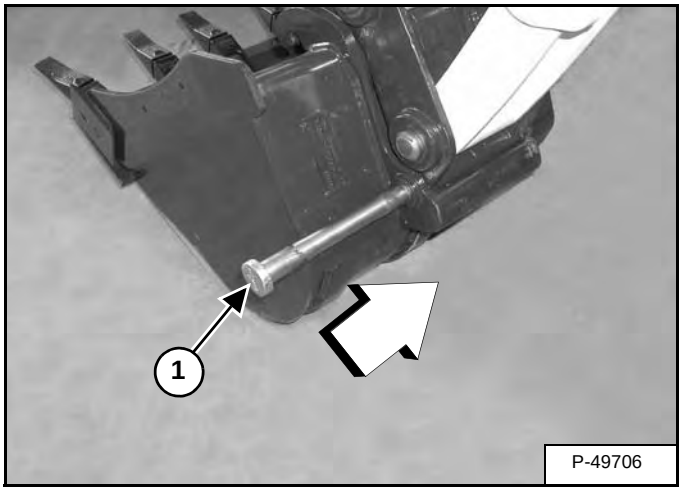
Figure 85

Fasten the seat belt **[Figure 85]**.

Installing And Removing The Attachment (Pin-On X-Change) (Cont'd)

Installation (Cont'd)

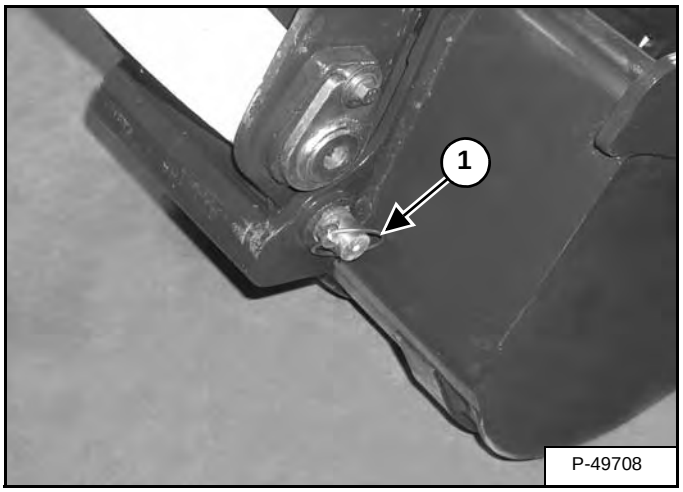
Figure 105



Stop the engine. Turn the start key to the ON position and move both hydraulic control levers to relieve hydraulic pressure.

Drive the pin (Item 1) **[Figure 105]** through the bucket mount and X-Change.

Figure 106



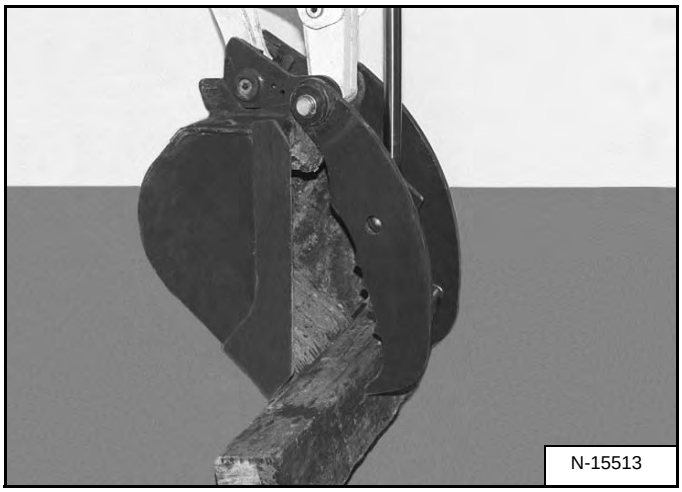
Install the retainer pin (Item 1) **[Figure 106]**.

Check for proper installation.

Lift the attachment and fully extend and retract the bucket cylinder.

Using The Clamp (If Equipped)

Figure 121



The optional lifting clamp attachment gives the excavator a wider range of use and mobility for debris removal **[Figure 121]**.

The lifting clamp cylinder must be fully retracted when the machine is being used for excavating.

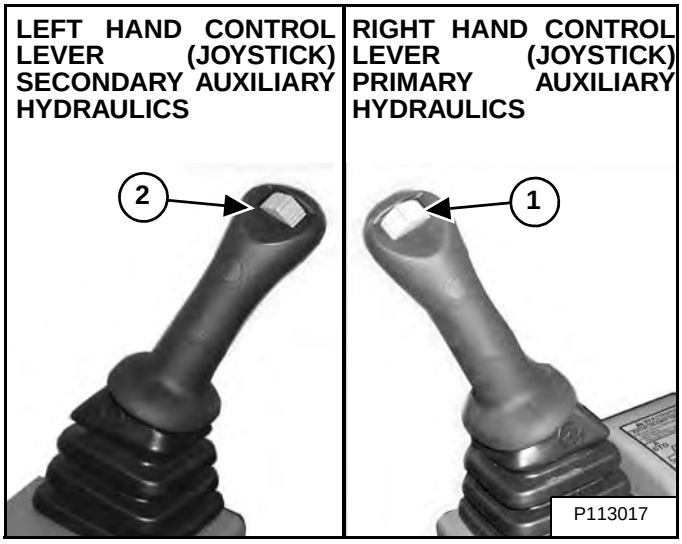
The lift capacities are reduced by 122 kg (270 lb) if the excavator is equipped with the optional lifting clamp.

NOTE: Use care when operating the bucket and clamp functions on machines equipped with an X-Change and without a bucket or attachment installed. Cylinder damage can occur due to contact between the X-Change and the clamp when both cylinders are fully extended.

When Using Primary Auxiliary Hydraulics To Activate Clamp

Engage the auxiliary hydraulics and toggle to the Aux2 setting. (See Auxiliary Hydraulics - Standard Instrument Panel on Page 55.) or (See Auxiliary Hydraulics - Deluxe Instrument Panel on Page 56.)

Figure 122



Move the switch (Item 1) **[Figure 122]** on the right control lever to the right to open the clamp. Move the switch to the left to close the clamp.

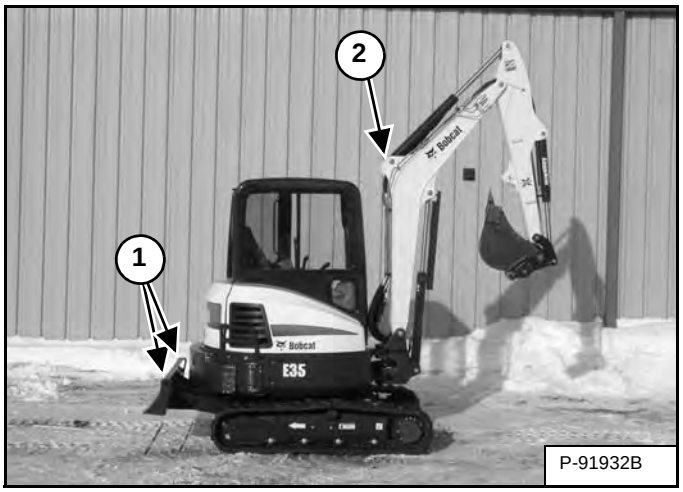
When Using Secondary Auxiliary Hydraulics To Activate Clamp

Move the switch (Item 2) **[Figure 122]** on the left control lever to the left open the clamp. Move the switch to the right to close the clamp.

LIFTING THE EXCAVATOR

Procedure

Figure 145



Fully extend the cylinders of the bucket, arm, and boom so that the excavator is in the position as shown **[Figure 145]**.

Raise the blade all the way.

Put all the control levers in NEUTRAL.

NOTE: For machines equipped with angle blade feature, make sure the blade is in the straight position prior to lifting.

WARNING

AVOID INJURY OR DEATH

- **Use chains and lifting equipment with sufficient capacity for the weight of the excavator plus any added attachments.**
- **Maintain center of gravity and balance when lifting.**
- **Do not swing boom or upperstructure. Engage the upperstructure slew lock.**
- **Never lift with operator on machine.**
- **Never lift with the blade angled (if equipped).**

W-2580-0607

Figure 146

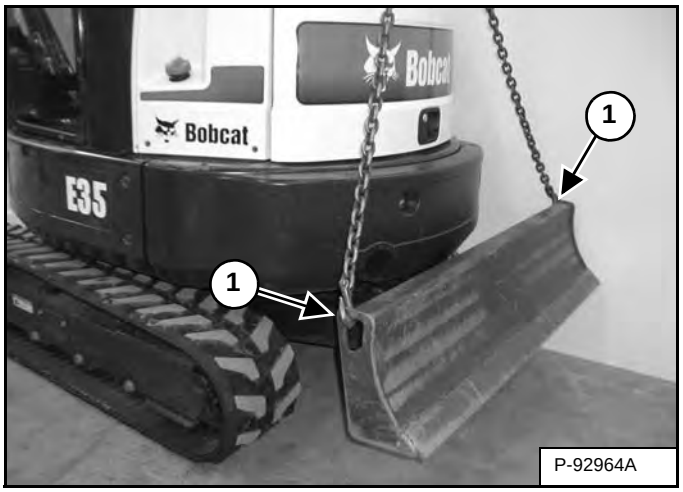
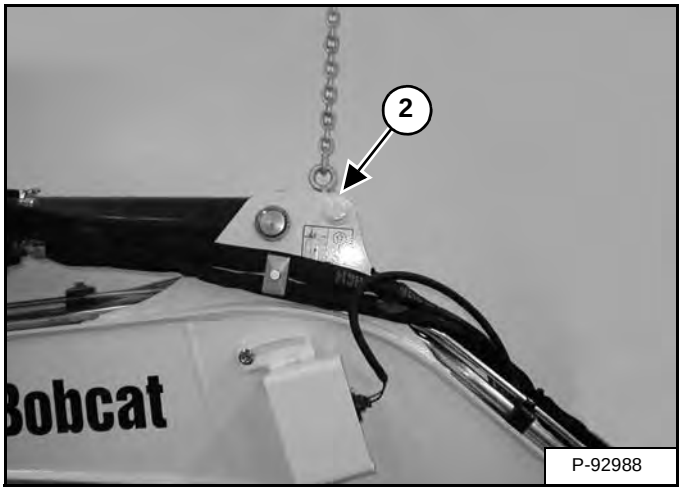


Figure 147



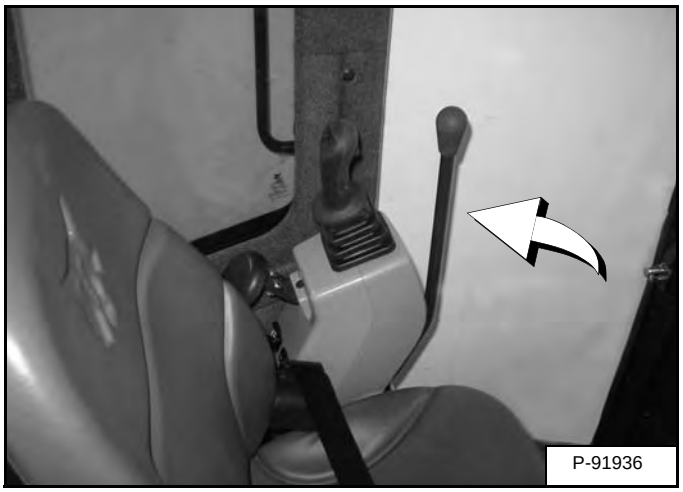
Fasten chains to the ends of the blade (Item 1) **[Figure 145]** and **[Figure 146]** and up to a lifting fixture above the canopy / cab. The lifting fixture must extend over the sides of the canopy / cab to prevent the chains from hitting the ROPS / TOPS.

Fasten a chain (Item 2) **[Figure 147]** from the rod to the lift fixture.

CONTROL CONSOLE LOCKOUTS

Inspection And Maintenance

Figure 151



When the left console is raised **[Figure 151]**, the hydraulic control levers (joysticks) and traction system must not function.

Sit in the operator's seat, fasten the seat belt and start the engine.

Raise the left console **[Figure 151]**.

Move the joystick control levers. There should be no movement of the boom, arm, slew or bucket.

Move the steering control levers. There should be no movement of the excavator tracks.

Service the system if these controls do not deactivate when the left control console is raised. (See your Bobcat dealer for service.)

FUEL SYSTEM

Fuel Specifications

Use only clean, high quality diesel fuel, Grade No. 2 or Grade No. 1.

The following is a suggested blending guideline which should prevent fuel gelling problems during freezing temperature

TEMP. C° (F°)	NO. 2	NO. 1
Above -9° (+15°)	100%	0%
Down to -29° (-20°)	50%	50%
Below -29° (-20°)	0%	100%

At a minimum, low sulfur diesel fuel must be used in this machine. Low sulfur is defined as 500 mg/kg (500 ppm) sulfur maximum.

The following fuels may also be used in this machine:

- Ultra low sulfur diesel fuel. Ultra low sulfur is defined as 15 mg/kg (15 ppm) sulfur maximum.
- Biodiesel blend fuel - Must contain no more than five percent biodiesel mixed with low sulfur or ultra low sulfur petroleum based diesel. This is commonly marketed as B5 blended diesel fuel.

⚠ WARNING

AVOID INJURY OR DEATH

Stop and cool the engine before adding fuel. NO SMOKING! Failure to obey warnings can cause an explosion or fire.

W-2063-0807

⚠ WARNING

AVOID INJURY OR DEATH

Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. Failure to use care around combustibles can cause explosion or fire.

W-2103-0508

Biodiesel Blend Fuel

Biodiesel blend fuel has unique qualities that should be considered before using in this machine:

- Cold weather conditions can lead to plugged fuel system components and hard starting.
- Biodiesel blend fuel is an excellent medium for microbial growth and contamination which can cause corrosion and plugging of fuel system components.
- Use of biodiesel blend fuel may result in premature failure of fuel system components, such as plugged fuel filters and deteriorated fuel lines.
- Shorter maintenance intervals may be required, such as cleaning the fuel system and replacing fuel filters and fuel lines.
- Using biodiesel blended fuels containing more than five percent biodiesel can affect engine life and cause deterioration of hoses, tubelines, injectors, injector pump and seals.

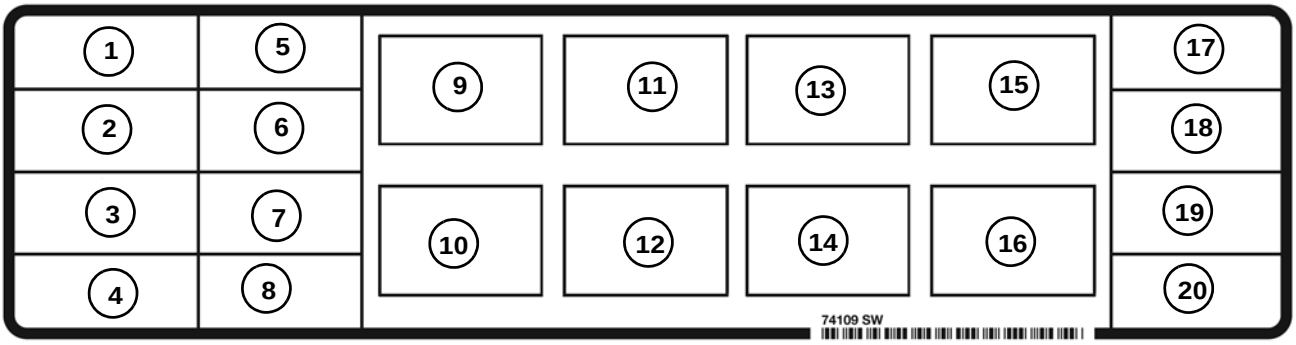
Apply the following guidelines if biodiesel blend fuel is used:

- Ensure the fuel tank is as full as possible at all times to prevent moisture from collecting in the fuel tank.
- Ensure that the fuel tank cap is securely tightened.
- Biodiesel blend fuel can damage painted surfaces, remove all spilled fuel from painted surfaces immediately.
- Drain all water from the fuel filter daily before operating the machine.
- Do not exceed engine oil change interval. Extended oil change intervals can cause engine damage.
- Before vehicle storage; drain the fuel tank, refill with 100% petroleum diesel fuel, add fuel stabilizer and run the engine for at least 30 minutes.

NOTE: Biodiesel blend fuel does not have long term stability and should not be stored for more than three months.

Fuse And Relay Location / Identification (Cont'd)

Figure 192



The location and sizes are shown in the table below and on the decal **[Figure 192]**. Relays are identified by the letter "R" in the AMP column.

REF	ICON	DESCRIPTION	AMP	REF	ICON	DESCRIPTION	AMP	REF	ICON	DESCRIPTION	AMP
1		CONTROLLER	20	**9**		Switched Power	R	**17**		Controller	25
2		HVAC	35	**10**		Fuel Shutoff	R	**18**		ACD	25
3		Start Key	5	**11**		HVAC	R	**19**		LIGHTS	20
4		Fuel Pull	25	**12**		Lights	R	**20**		Power Port	15
5		Wiper / Washer	10	**13**		NOT USED	R				
6		Switched Power	20	**14**		Glow Plugs	R				
7		Alternator Excite / Heater	25	**15**		NOT USED	R				
8		ACD	25	**16**		Starter	R				

Adjusting (Cont'd)

Rubber Track Clearance

Figure 210

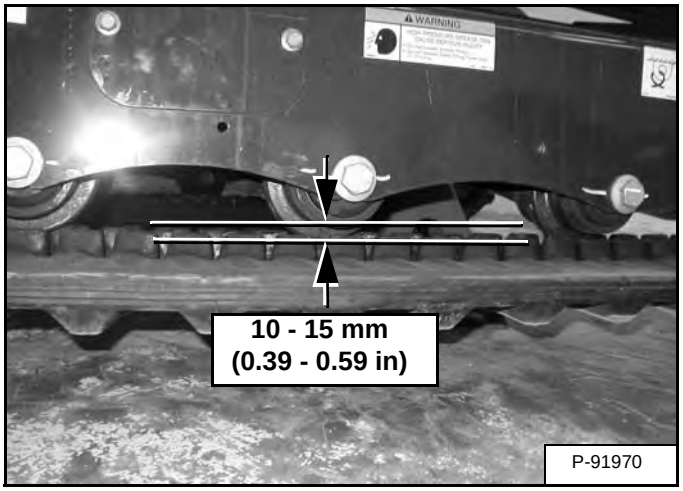
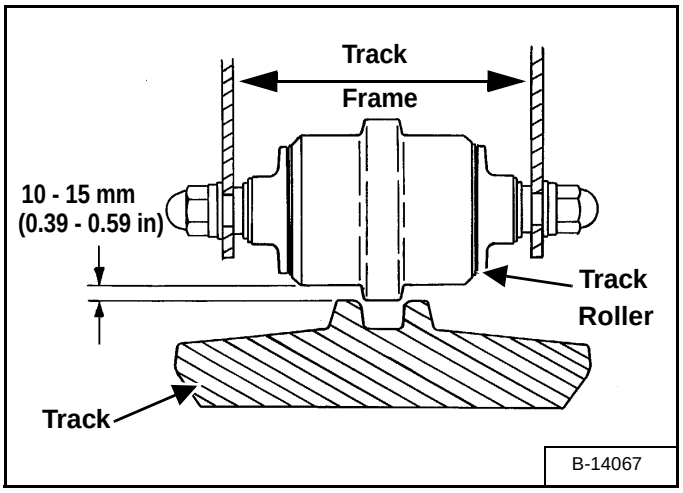


Figure 211

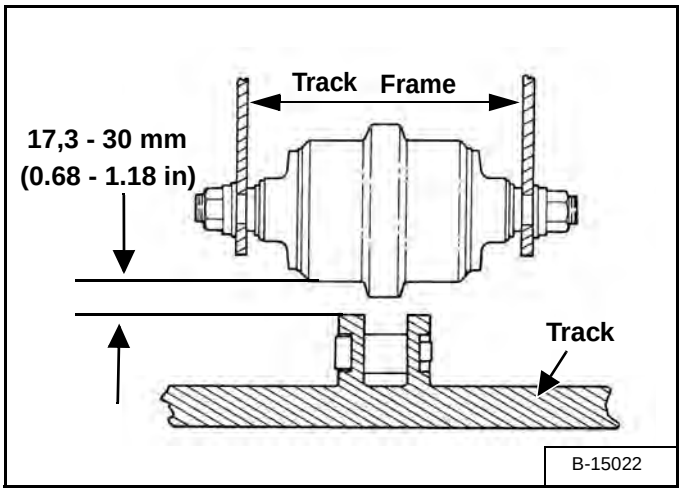


Measure the clearance at the middle track roller. Do not get fingers into pinch points between the track and the track roller. Use a bolt or a dowel of the appropriate size to check the gap between the contact edge of the roller and the top edge of the track guide **[Figure 210]** and **[Figure 211]**.

Rubber Track Clearance - 10 - 15 mm (0.39 - 0.59 in)

Steel Track Clearance

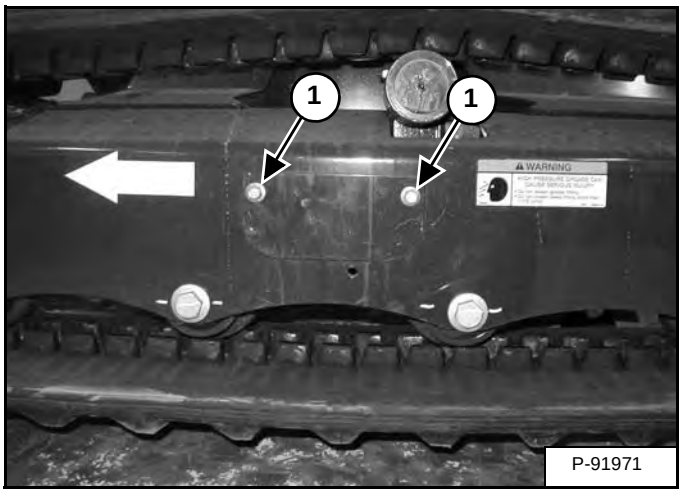
Figure 212



Measure the track clearance at the middle track roller. Do not get fingers into pinch points between the track and the track roller. Us a bolt or dowel of the appropriate size to check the gap between the contact edge of the roller and the top edge of the track guide **[Figure 212]**.

Steel Track Clearance - 17,3 - 30 mm (0.68 - 1.18 in)

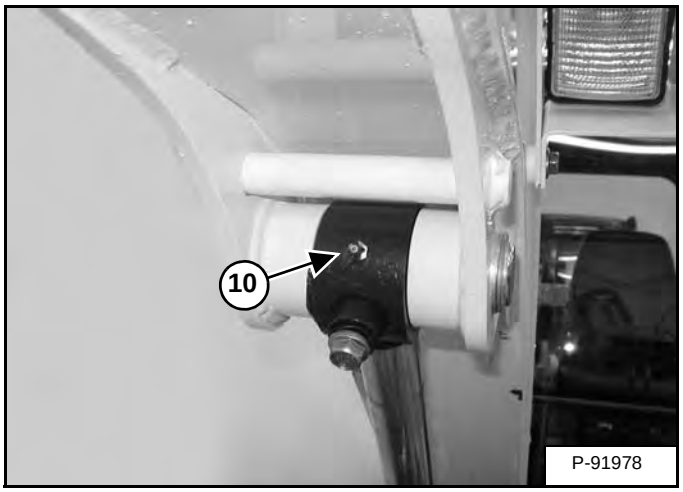
Figure 213



Loosen the two bolts from the cover (Item 1) **[Figure 213]**. Pivot the cover downward.

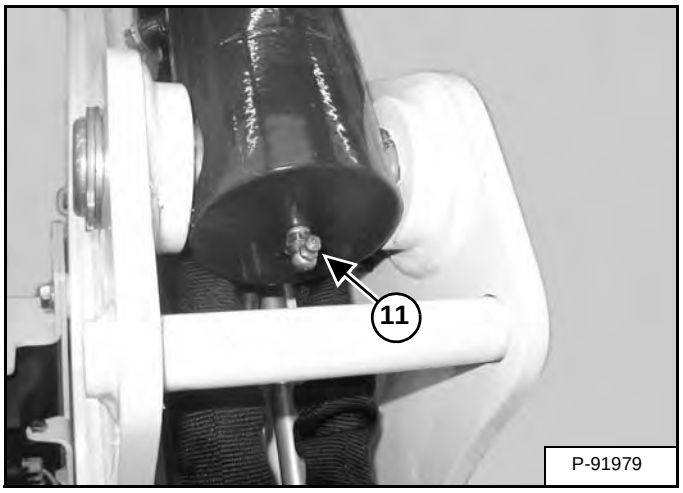
Lubrication Locations (Cont'd)

Figure 236



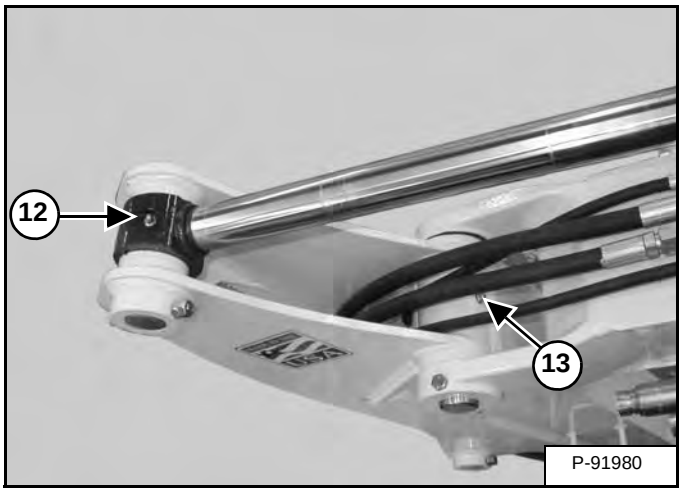
10. Boom Cylinder Rod End (1) **[Figure 236]**

Figure 237



11. Arm Cylinder Base End (1) **[Figure 237]**

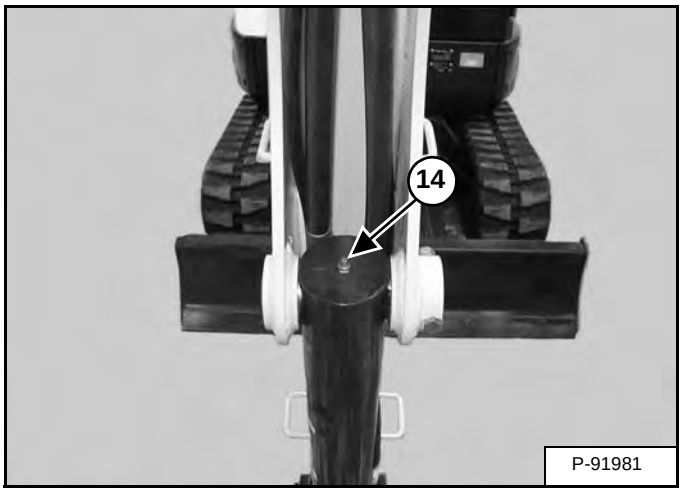
Figure 238



12. Arm Cylinder Rod End (1) **[Figure 238]**

13. Arm Pivot (1) **[Figure 238]**

Figure 239



14. Bucket Cylinder Base End (1) **[Figure 239]**

Panel Setup (Deluxe Instrument Panel)

Icon Identification

Figure 245

ICON	DESCRIPTION
Mon, 17 Mar 3:45 PM	DATE / TIME
MINNY 234.5	USER / USER HOURS
Machine 353.5	MACHINE HOURS (HOURMETER)
	ACTIVE WARNINGS screen icon
	VITALS screen icon
	SERVICE screen icon
	AUTO IDLE Status icon
	ATTACHMENTS screen icon
	MACHINE SETTINGS screen icon
	DISPLAY screen icon
	HOME icon (Return to MAIN screen)
	LEFT SCROLL button RIGHT SCROLL button
ENTER	ENTER button

Vitals

	Press a scroll button (Item 1) repeatedly until the Vitals screen icon (Inset) is highlighted.
	Displays select system operating levels.
You can monitor real-time displays of: **Engine Speed (RPM)** **Engine Coolant Temperature** **System Voltage** **Hydraulic Fluid Temperature**	

The Deluxe Instrument Panel is easy to use. Continue to set your own preferences for operating / monitoring your Bobcat excavator.

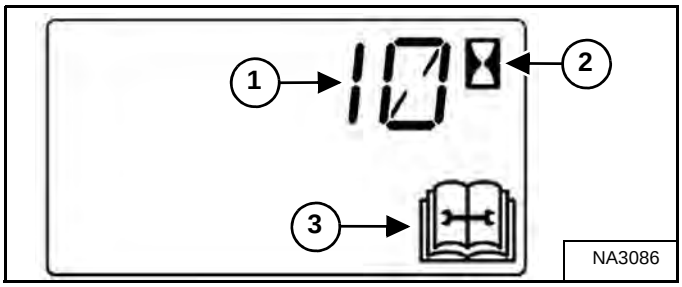
MAINTENANCE CLOCK

Description

The Maintenance Clock alerts the operator when the next service interval is due. *EXAMPLE:* The maintenance clock can be set to a 500 hour interval as a reminder for the next 500 hour planned maintenance.

Standard Instrument Panel

Figure 248



During machine operation, a 2 beep alarm will sound when there are less than 10 hours until the next planned maintenance.

The remaining hours before maintenance is required (Item 1) will appear in the data display for 5 seconds while the service icon (Item 3) and the hourmeter icon (Item 2) **[Figure 248]** flash.

NOTE: The display will show negative numbers after counting down to zero.

The display will revert to the previous display and will appear for 5 seconds every time the machine is started until the maintenance clock is reset.

Setup

See your Bobcat dealer about installation of this feature.

Reset

Figure 249

Press the Information button (Item 2) **[Figure 249]** until the display screen shows the maintenance clock.

Press and hold the Information button (Item 2) for 7 seconds until [RESET] (Item 1) **[Figure 249]** appears in the display screen.

Rated Lift Capacity - Long Arm

A	B		kg @ max. B	B		kg @ max. B	B		kg @ max. B
	3000 mm	4000 mm		3000 mm	4000 mm		3000 mm	4000 mm	
4000 mm			*533 kg @ 3504 mm			*519 kg @ 3504 mm			*511 kg @ 3504 mm
3000 mm		*515 kg	*543 kg @ 4334 mm		*502 kg	420 kg @ 4334 mm		*542 kg	431 kg @ 4334 mm
2000 mm	*630 kg	*600 kg	*583 kg @ 4744 mm	*617 kg	459 kg	338 kg @ 4744 mm	529 kg	460 kg	364 kg @ 4744 mm
1000 mm	*989 kg	*726 kg	*637 kg @ 4867 mm	666 kg	452 kg	308 kg @ 4867 mm	679 kg	422 kg	337 kg @ 4867 mm
Ground	*1269 kg	*878 kg	*714 kg @ 4731 mm	647 kg	461 kg	310 kg @ 4731 mm	624 kg	424 kg	317 kg @ 4731 mm
-1000 mm	*1301 kg	*842 kg	*765 kg @ 4305 mm	586 kg	404 kg	343 kg @ 4305 mm	616 kg	414 kg	357 kg @ 4305 mm

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