

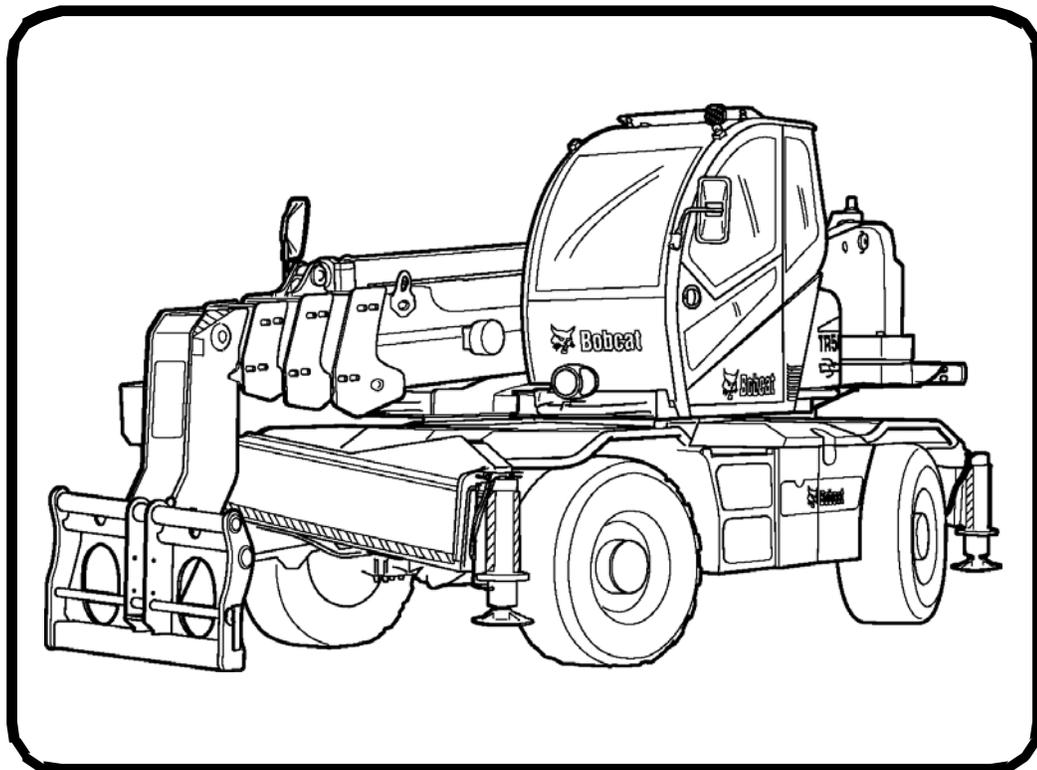


Bobcat®

Service Manual

TR35160, TR45190, TR50210, TR40250 Telescopic Handler

TR35160 - S/N LLM1590000 & Above
TR45190 - S/N HVL1540000 & Above
TR50210 - S/N HVL1550000 & Above
TR40250 - S/N HVL1560000 & Above



Sample of manual. Download All 695 pages at:

<https://www.arepairmanual.com/downloads/2010-bobcat-tr35160tr45190tr50210tr40250-telescopic-handler-service-repair-workshop-manual/>

Product: 2010 Bobcat TR35160,TR45190,TR50210,TR40250 Telescopic Handler Service Repair Workshop Manual
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MAINTENANCE SAFETY



WARNING

Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

W-2003-0807

CORRECT



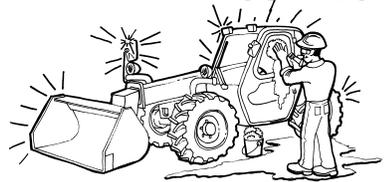
P-90216

- ⚠ Never service the Bobcat telescopic handler without instructions.



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

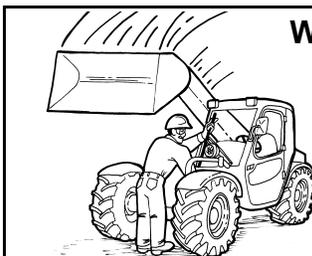
CORRECT



B-16082

- ⚠ Cleaning and maintenance are required daily.

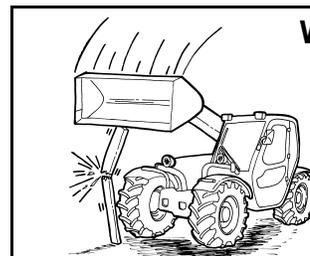
WRONG



B-16080

- ⚠ Disconnecting or loosening any hydraulic tubeline, hose, fitting, component or a part failure can cause boom to drop. Do not go under boom when raised unless supported by an approved boom stop. Replace if damaged.

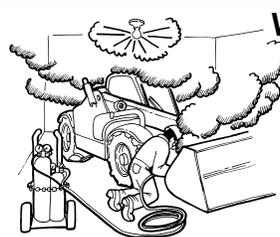
WRONG



B-16079

- ⚠ Never work on telescopic handler with boom up unless boom is held by an approved boom stop. Replace if damaged.
- ⚠ Never modify equipment or add attachments not approved by Bobcat Company.

WRONG



B-16081

- ⚠ Have good ventilation when welding or grinding painted parts.
- ⚠ Wear dust mask when grinding painted parts. Toxic dust and gas can be produced.
- ⚠ Avoid exhaust fume leaks which can kill without warning. Exhaust system must be tightly sealed.

WRONG



B-16078

- ⚠ Keep body, jewelry and clothing away from moving parts, electrical contact, hot parts and exhaust.
- ⚠ Wear eye protection to guard from battery acid, compressed springs, fluids under pressure and flying debris when engines are running or tools are used. Use eye protection approved for type of welding.

WRONG



B-6589

- ⚠ Lead-acid batteries produce flammable and explosive gases.
- ⚠ Keep arcs, sparks, flames and lighted tobacco away from batteries.
- ⚠ Batteries contain acid which burns eyes or skin on contact. Wear protective clothing. If acid contacts body, flush well with water. For eye contact flush well and get immediate medical attention.

Maintenance procedures which are given in the Operation & Maintenance Manual can be performed by the owner/operator without any specific technical training. Maintenance procedures which are **not** in the Operation & Maintenance Manual must be performed **ONLY BY QUALIFIED BOBCAT SERVICE PERSONNEL**. Always use **genuine Bobcat replacement parts**.

MSW12-0409



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Bobcat®

FOREWORD

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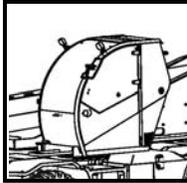
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FOREWORD

This manual is for the Bobcat telescopic handler mechanic. It provides necessary servicing and adjustment procedures for the Bobcat telescopic handler and its component parts and systems. Refer to the Operation & Maintenance Manual for operating instructions, starting procedure, daily checks, etc.

A general inspection of the following items must be made after the telescopic handler has had service or repair:

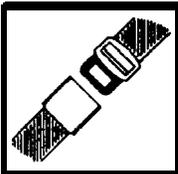
1. Check that ROPS/FOPS (including right side window) is in good condition and is not modified.



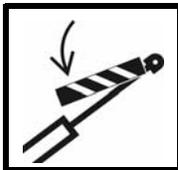
2. Check that ROPS mounting hardware is tightened and is Bobcat approved.



3. The seat belt must be correctly installed, functional and in good condition.



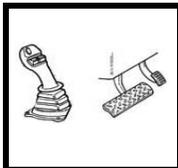
4. Check boom stop, replace if damaged.



5. Machine signs (decals) must be legible and in the correct location.



6. Joystick control lever and foot pedals must return to neutral.



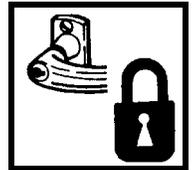
7. Check for correct function of the work lights.



8. The parking brake must function correctly.



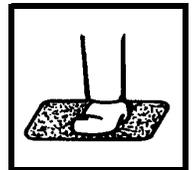
9. Enclosure door latches must open and close freely.



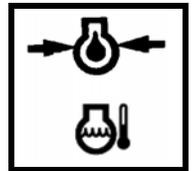
10. Attachment locking pins must function correctly and be in good condition. Bob-Tach wedges and linkages (if equipped) must function correctly and be in good condition.



11. Safety treads must be in good condition.



12. Check for correct function of indicator lamps and gauges.



13. Check hydraulic fluid level, engine oil level and fuel supply.



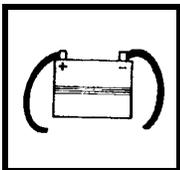
14. Inspect for fuel, oil or hydraulic fluid leaks.



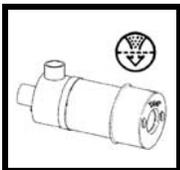
15. Lubricate the telescopic handler.



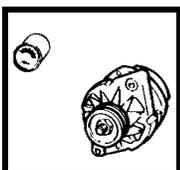
16. Check the condition of the battery and cables.



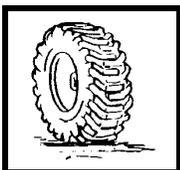
17. Inspect the air cleaner for damage or leaks. Check the condition of the element.



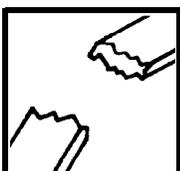
18. Check the electrical charging system.



19. Check tyres for wear and pressure. Use only approved tyres.



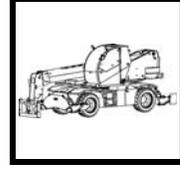
20. Inspect for loose or broken parts or connections.



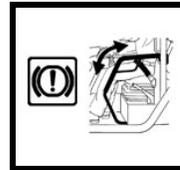
20. Check for any field modification not completed.



20. Operate the machine and check all functions.



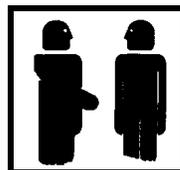
21. Check for correct function of the Lateral Operator Restraint System (LORS) if equipped.



22. Check function or condition of all equipped options and accessories (examples: back-up alarm, fire extinguisher, rotating beacon, front stabilisers, etc.).



23. Recommend to the owner that all necessary corrections be made before the machine is returned to service.



SAFETY INSTRUCTIONS



Safety Alert Symbol

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



WARNING

Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

W-2003-0807

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 following publications 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 is in safe operating condition.
- The Operation & Maintenance Manual delivered with the machine or attachment contains 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 fastened to the operator cab. It's brief instructions are convenient to the operator. The handbook is available from your dealer in an English edition or one of many other languages. See your Bobcat dealer for more information on translated versions.
- The AEM Safety Manual delivered with the machine gives general safety information.
- The Service Manual and Parts Manual are available from your dealer for use by mechanics to do shop-type service and repair work.
- The Telescopic Handler Operator Training Course is available through your local dealer or at www.training.bobcat.com or www.bobcat.com. This course is intended to provide rules and practices of correct operation of the telescopic handler.
- The telescopic handler Safety Video is available from your Bobcat dealer or at www.training.bobcat.com or www.bobcat.com.

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.

SI VH EMEA-0409 SM

SAFETY INSTRUCTIONS (CONT'D)



Cutting or drilling concrete containing sand or rock containing quartz can 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.

SI VH EMEA-0409 SM

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.

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).

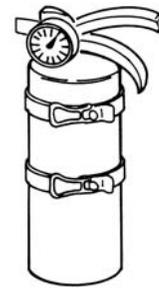
Welding And Grinding

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.

SERIAL NUMBER LOCATIONS

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

Telescopic Handler Serial Numbers

Figure 1-1

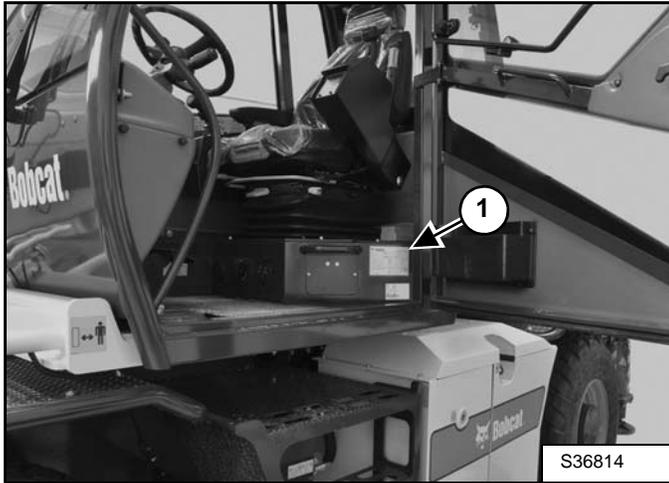


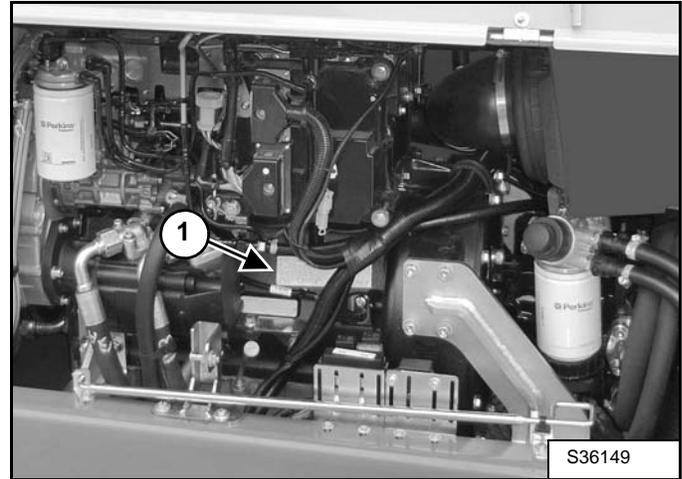
Figure 1-2



The telescopic handler serial number plates (Item 1) [Figure 1-1] and (Item 1) [Figure 1-2] are located on the left side below the seat, in the operator cab and outside the machine on the left side of the front stabilisers.

Engine Serial Number

Figure 1-3



The engine serial number plate is located on the engine (Item 1) [Figure 1-3].

Other Serial Numbers

Other components can also have serial numbers and an identification plate. Always use these serial numbers when ordering parts.

DELIVERY REPORT

Figure 1-4

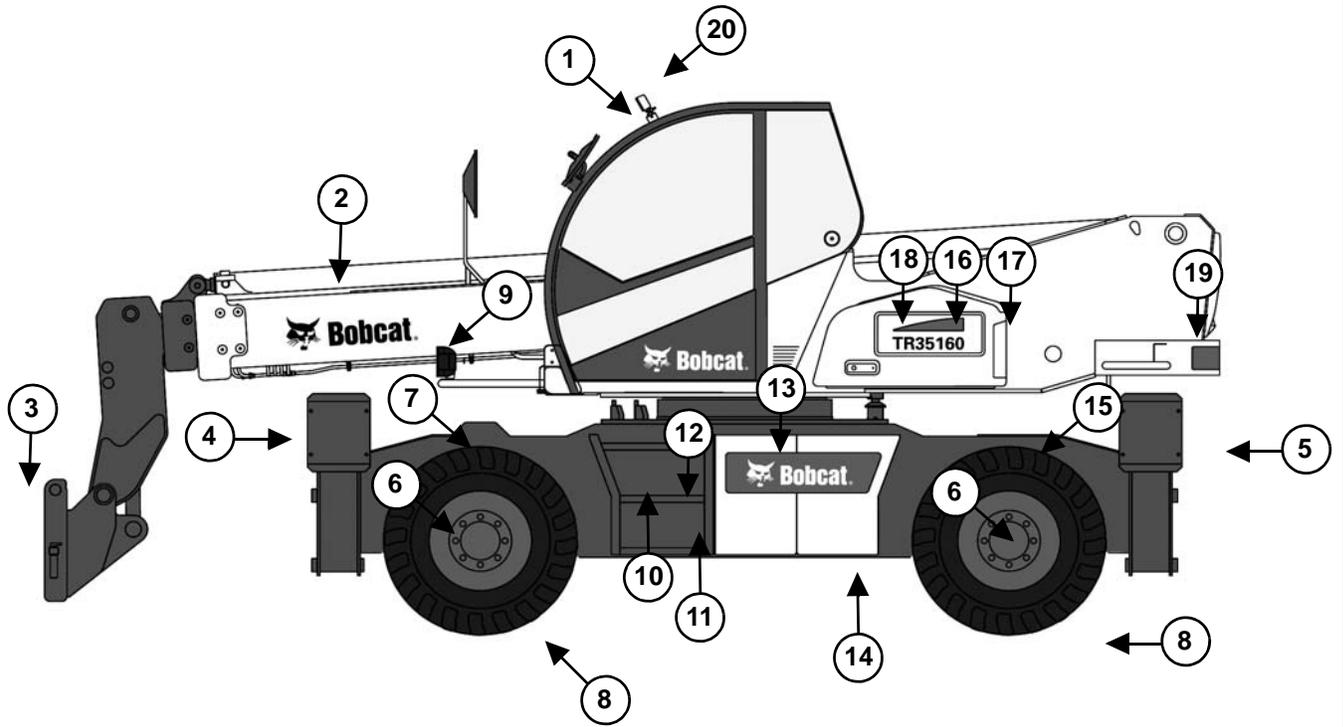
A black and white image of a delivery report form. The form is titled 'DELIVERY REPORT' and contains several sections with horizontal lines for text entry. A prominent section is labeled 'WARNING'. The form is designed for completion by the dealer and signature by the owner or operator. A small box in the bottom right corner of the image contains the text 'B-16315'.

The delivery report [Figure 1-4] must be completed by the dealer and signed by the owner or operator when the Bobcat telescopic handler is delivered. An explanation of the form must be given to the owner. Make sure it is complete.

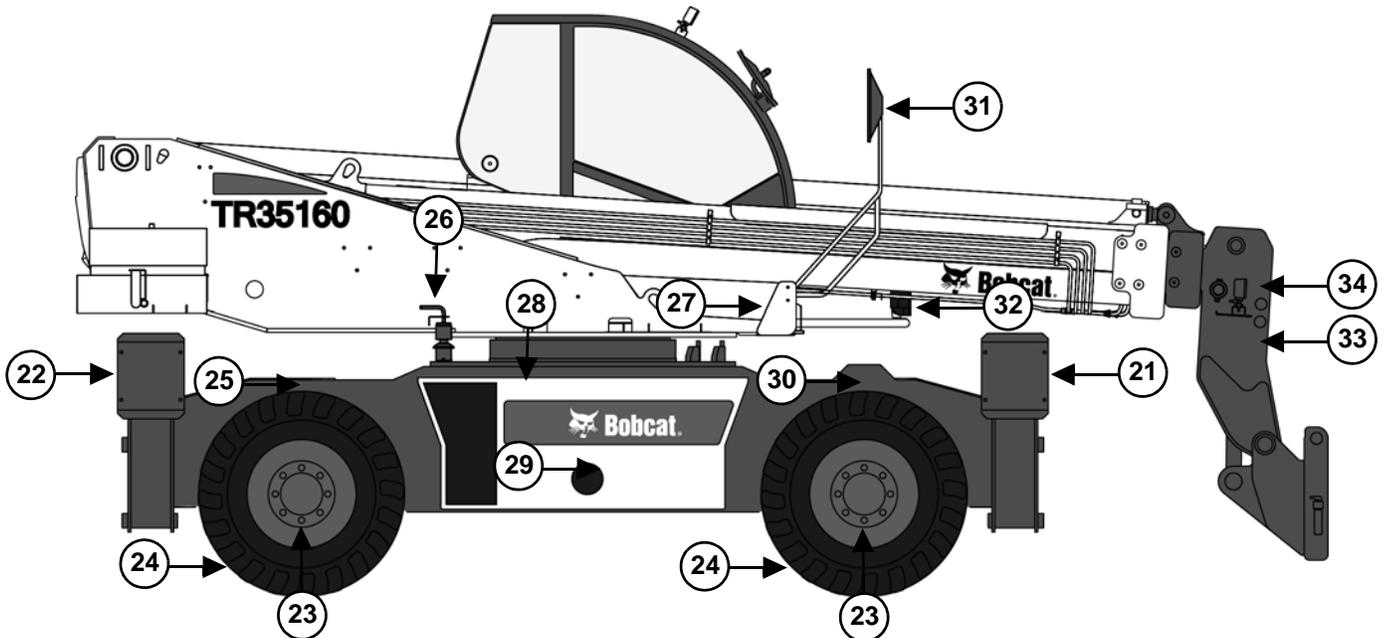
BOBCAT TELESCOPIC HANDLER IDENTIFICATION

TR35160

MACHINE LEFT SIDE



MACHINE RIGHT SIDE

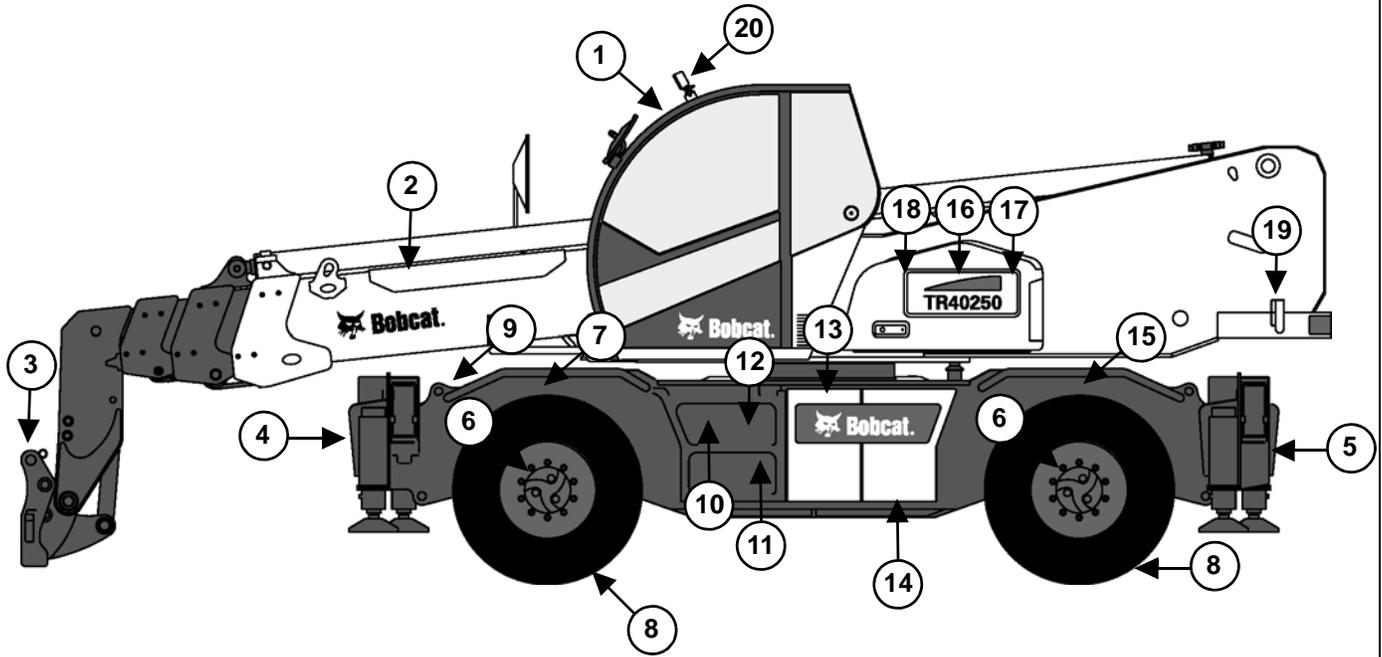


EM5811
EM5812

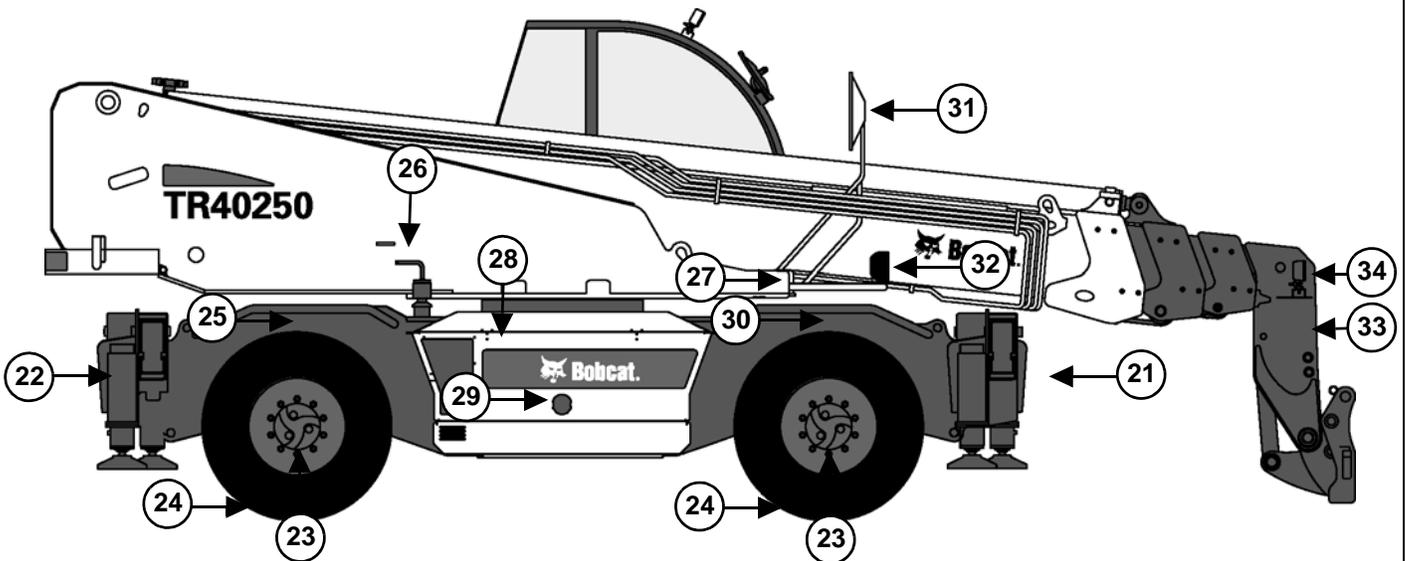
BOBCAT TELESCOPIC HANDLER IDENTIFICATION (CONT'D)

TR45190, TR50210, TR40250

MACHINE LEFT SIDE



MACHINE RIGHT SIDE



EM5813
EM5814

BOBCAT TELESCOPIC HANDLER IDENTIFICATION (CONT'D)

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	Operator cab	18	Timing system
2	Telescopic boom	19	Rear left light
3	Attachment holder plate	20	Front work spotlight on the cab
4	Front left stabiliser	21	Front right stabiliser
5	Rear left stabiliser	22	Rear left stabiliser
6	Epicyclic reduction gear	23	Epicyclic reduction gear
7	Left machine leveling cylinder	24	Wheel
8	Wheel	25	Oscillation lock cylinder
9	Front left light	26	Upperstructure slew lock
10	Battery	27	Approved boom stop
11	Toolbox	28	Engine cover
12	Hydraulic oil filter	29	Engine
13	Hydraulic oil tank	30	Right machine leveling cylinder
14	Fuel tank	31	Right rear-view mirror
15	Oscillation lock cylinder	32	Front right light
16	Control unit and timing system hood	33	Boom head electrical connector
17	Control unit	34	Boom head work spotlight



Bobcat®

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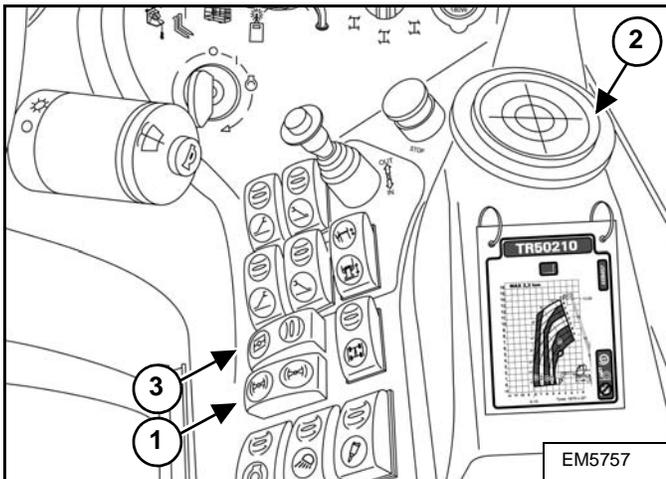
LIFTING AND BLOCKING THE TELESCOPIC HANDLER

Procedure

Perform the front axle leveling and rear axle oscillation locking procedure:

1. Place any loads on the ground.
2. Completely retract and lower the telescopic boom.
3. Place the machine on a flat, solid and level surface.
4. Align the upperstructure with the lower chassis.
5. Lock upperstructure swing with the slew lock (See Operation & Maintenance manual). The leveling device can only be used when the upperstructure swing is locked.

Figure 10-10-1



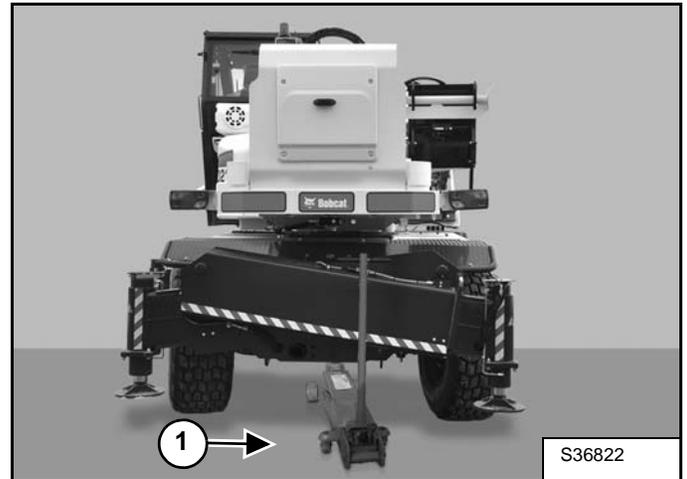
6. Level the machine by acting on the front axle leveling switch (Item 1) [Figure 10-10-1] on the right instrument panel. Press the switch to the left to tilt the frame to the left; press to the right to tilt right.
7. Ensure the machine is levelled correctly by using the spirit level (Item 2) [Figure 10-10-1]. The maximum allowed tilt is 2°.
8. Act on the rear axle oscillation lock switch (Item 3) [Figure 10-10-1] on the right instrument panel.

NOTE: When the switch (Item 3) [Figure 10-10-1] is pressed, the pilot light on the switch lights up as well as the pilot light on the centre indicator and instrument panel.

9. Switch off the engine by turning the ignition key switch to the STOP position and remove the ignition key.
10. Place a 'maintenance work in progress' sign in the cab.

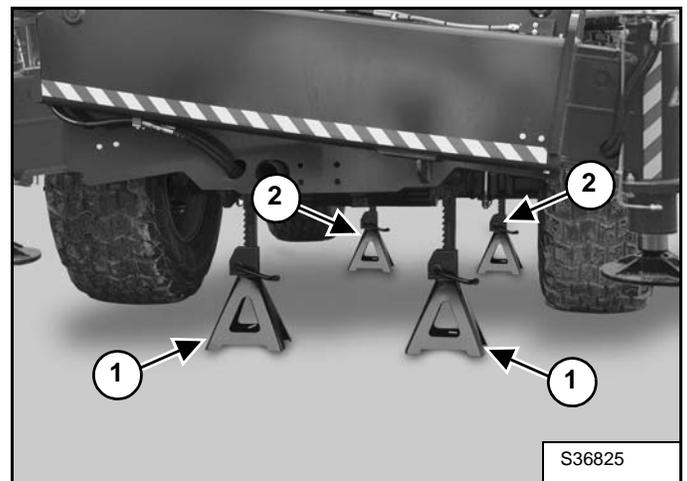
Perform the following procedure to lift the telescopic handler:

Figure 10-10-2



Put the floor jack (Item 1) [Figure 10-10-2] under the centre of the rear axle. Lift the telescopic handler and install jackstands (Item 1) [Figure 10-10-3].

Figure 10-10-3



Put the floor jack under the centre of the front axle. Lift the telescopic handler and install jackstands (Item 2) [Figure 10-10-3].

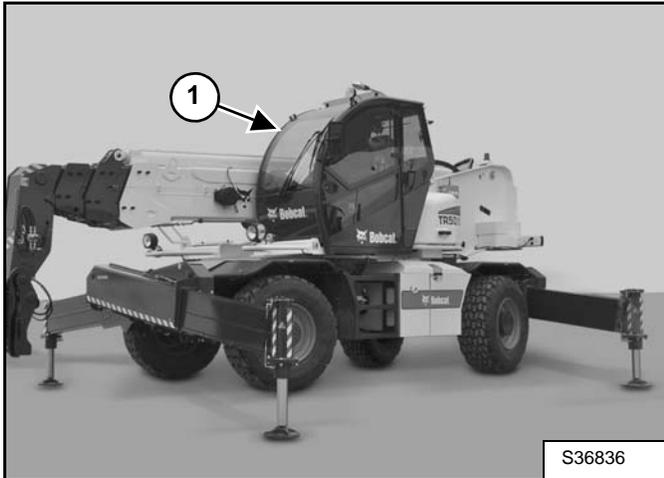


Bobcat®

OPERATOR CAB

Description

Figure 10-20-1



The telescopic handler has an operator cab (ROPS and FOPS) (Item 1) [Figure 10-20-1] to protect the operator from rollover and falling objects. Check with your dealer if the operator cab has been damaged. Never operate without right window. The seat belt must be worn for roll over protection.

ROPS/FOPS - Roll Over Protective Structure per SAE J1040 and ISO 3471, and Falling Object Protective Structure per ISO 3449 (FOPS Level II).

WARNING

Never modify operator cab or canopy by welding, grinding, drilling holes or adding attachments unless instructed to do so by Bobcat. Do not operate without right window. Changes to the cab or canopy can cause loss of operator protection from rollover and falling objects, and result in serious injury or death.

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OPERATOR CAB (CONT'D)

Cab Door

Figure 10-20-2

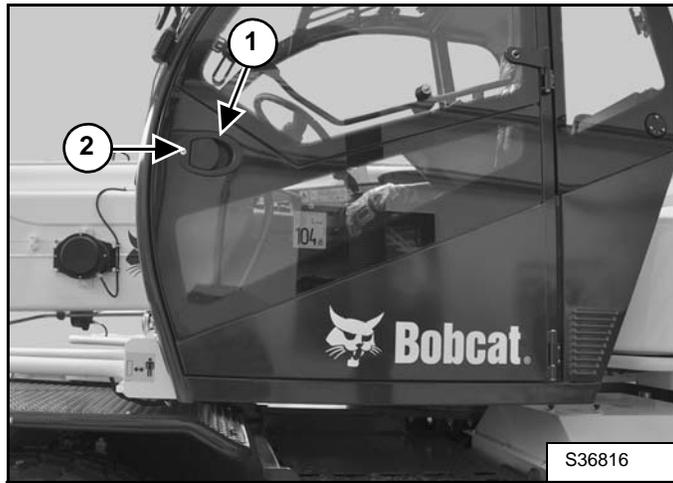


Figure 10-20-3



The cab door can be opened from the outside of the cab using the latch (Item 1) [Figure 10-20-2] and opened from the inside of the cab when you move the handle (Item 1) [Figure 10-20-3] upward (as shown).

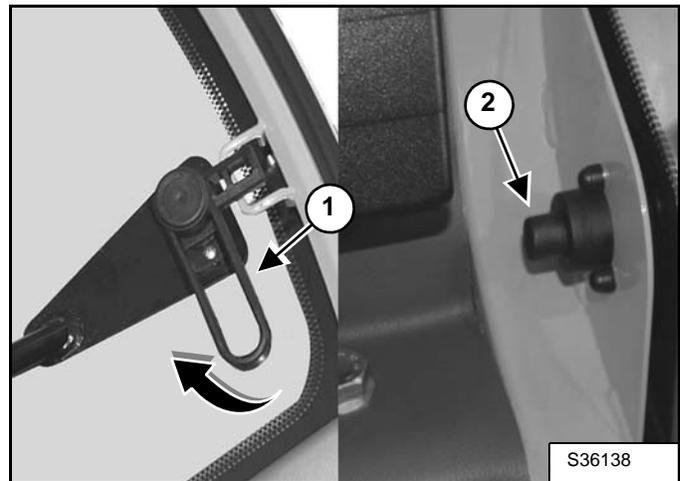
The cab door can be locked (Item 2) [Figure 10-20-2] with the start key.

Cab Door Window

Figure 10-20-4



Figure 10-20-5



To open the window (Item 1) [Figure 10-20-4], turn the handle (Item 1) [Figure 10-20-5] clockwise. Push the window fully open until it latches against the cab (Item 2) [Figure 10-20-4].

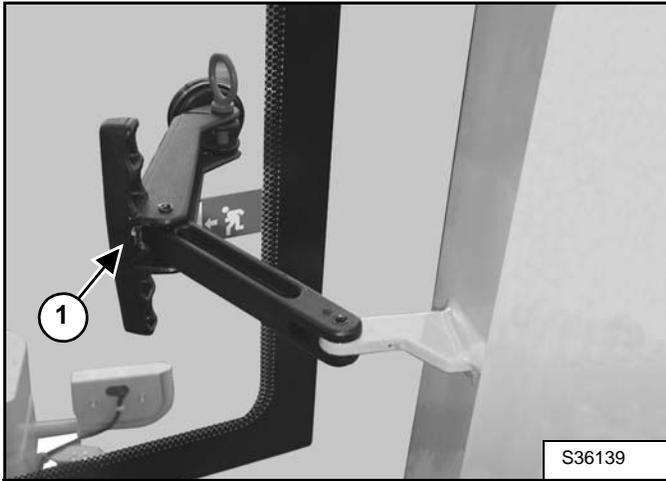
To close the window, push the button (Item 2) [Figure 10-20-5] inside the cab to disengage the latch and pull it toward you.

Turn the handle (Item 1) [Figure 10-20-5] anticlockwise to lock the window in the closed position.

OPERATOR CAB (CONT'D)

Cab Rear Window

Figure 10-20-6



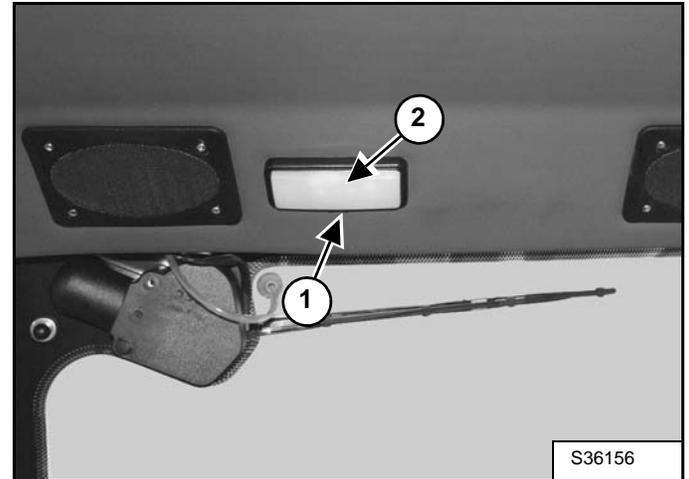
The window can be opened by pushing the handle (Item 1) [Figure 10-20-6] and pushing the window outwards [Figure 10-20-7].

Figure 10-20-7



Cab Light

Figure 10-20-8

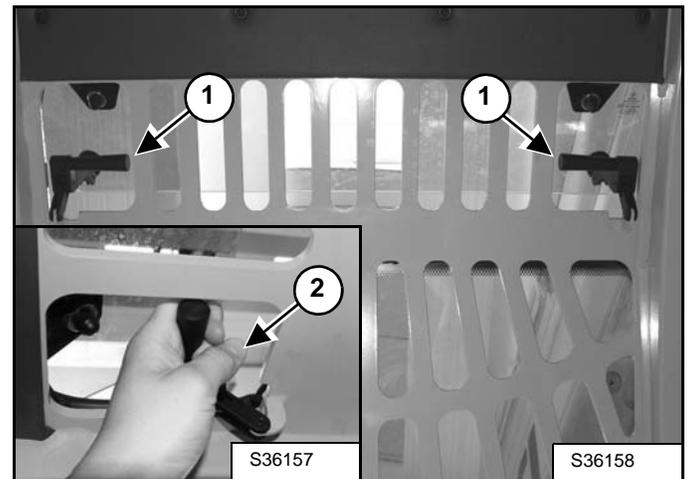


Press the button (Item 1) on the edge of the light (Item 2) [Figure 10-20-8] to switch it on.

Press again to switch off.

Cab Roof

Figure 10-20-9



To open the roof, grip the handles (Item 1) and push them upward (Item 2) [Figure 10-20-9].

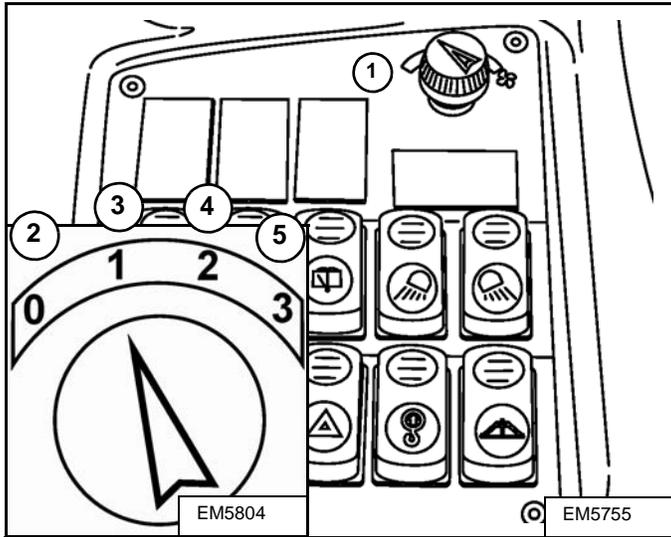
Reverse the procedure to close.

OPERATOR CAB (CONT'D)

Cab Ventilation

Operation

Figure 10-20-10



To enable the fan, turn the selector (Item 1) [Figure 10-20-10] clockwise.

The clicks represent respectively:

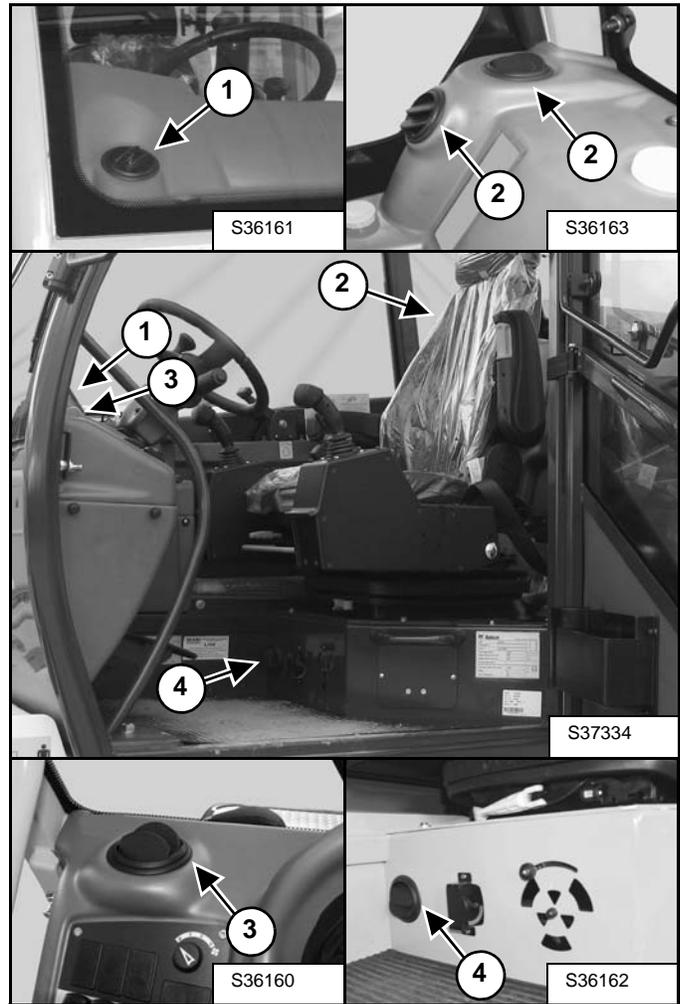
- Off (Item 2) [Figure 10-20-10].
- First speed (Item 3) [Figure 10-20-10].
- Second speed (Item 4) [Figure 10-20-10].
- Third speed (Item 5) [Figure 10-20-10].

To open the air vents (Items 1, 2, 3 and 4) [Figure 10-20-11] press them on one side.

To adjust the direction of the airflow, act on the louvers or turn the air vent itself.

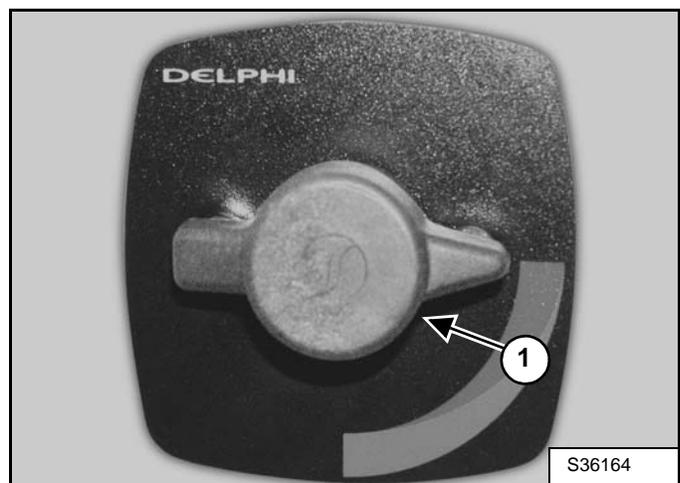
To close the air vents, push the louvers until they are horizontal and closed.

Figure 10-20-11



Air Temperature Adjustment

Figure 10-20-12



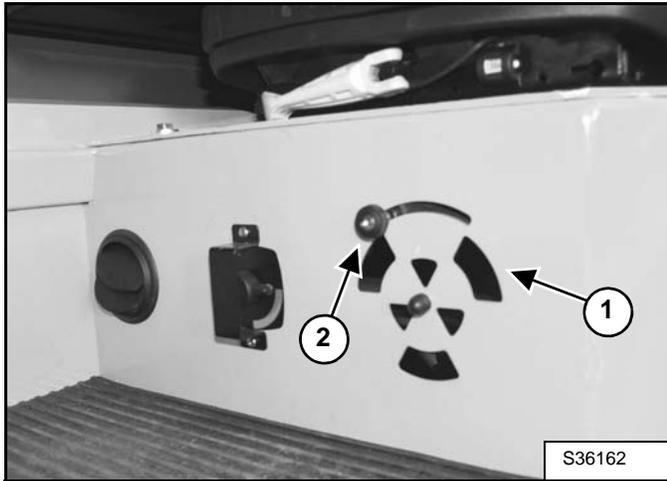
To adjust the temperature of the air issuing from the air vents, turn the knob (Item 1) [Figure 10-20-11].

OPERATOR CAB (CONT'D)

Cab Ventilation (Cont'd)

Air Recirculation

Figure 10-20-13



While the fan in the cab is switched on, it is possible to enable the air recirculation function by acting on the relative vent (Item 1) [Figure 10-20-13].

- Turn the lever (Item 2) [Figure 10-20-13] toward the right side of the machine to enable air recirculation; part of the air will be drawn from inside the cab, reducing the amount of air taken from outdoors.
- Turn the knob on the lever to lock or release the lever.

NOTE: It is advisable to use air recirculation mode when working in very dusty environments.

Rotating Beacon

Figure 10-20-14

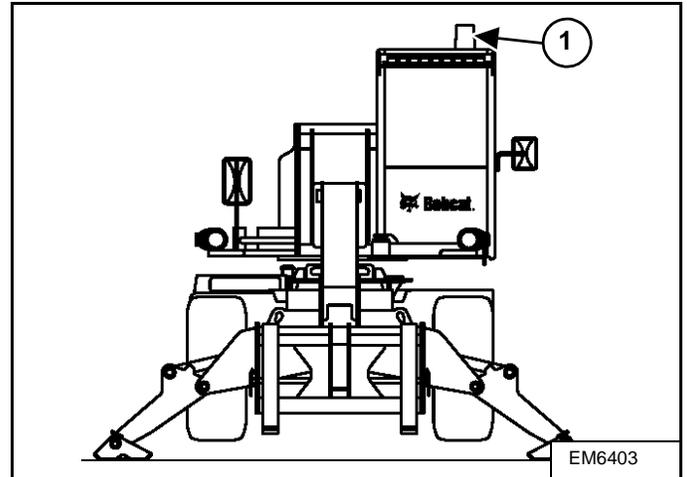
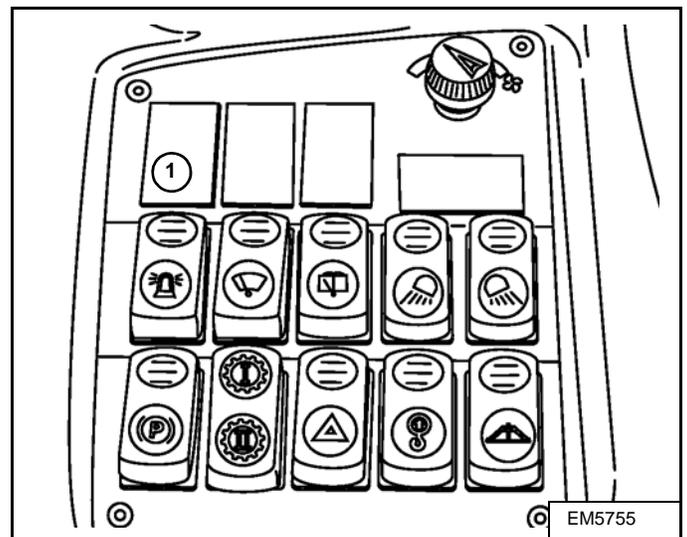


Figure 10-20-15



The rotating beacon must be positioned on top of the operator cab (Item 1) [Figure 10-20-14] and must be switched on during site and road use:

- Position the rotating beacon on the operator cab (Item 1) [Figure 10-20-14].
- Insert the power supply connector in the outlet on the rear of the cab.
- Act on the rotating beacon switch (Item 1) [Figure 10-20-15] to switch the light on. A pilot light will light up on the switch to indicate the rotating beacon is switched on.



Bobcat®

TRANSPORTING THE TELESCOPIC HANDLER

Procedure

- Ensure the rules and regulations of every area the machine will travel through are complied with.
- Remove all attachments.
- Retract and lower the boom fully.
- Ensure there is no grease, ice or other slippery substances on the machine or ramp.
- Load and unload the machine on solid and level ground.
- Load the machine on the means of transport (ensure the ramps are correctly and safely positioned).
- Load the machine parallel to the platform.
- When the machine is in a safe position, engage the parking brake and position the travel direction lever in neutral position.
- Stop the machine.
- Place wedges under the front and rear of the tyres on the machine (Item 1) [Figure 10-30-2].
- Anchor the machine to the means of transport with cables or chains and tighten them. Attach the cables or chains to the towing points of the telescopic handler [Figure 10-30-1] and [Figure 10-30-2].
- Ensure the cables, chains, etc. are in good condition (not worn, broken or twisted).
- Close the windows and lock the cab door.
- Ensure that the capacity of the means of transport is suitable for the weight to handle.

Figure 10-30-1

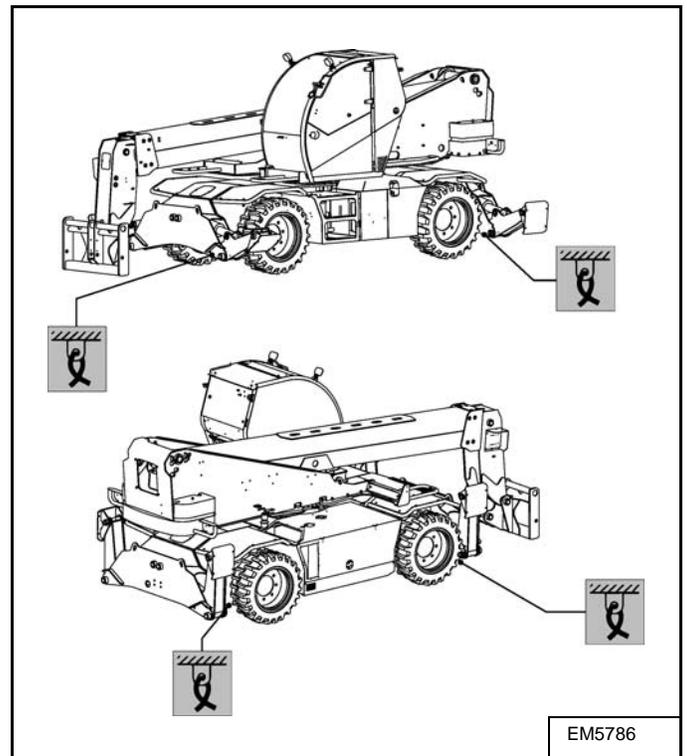
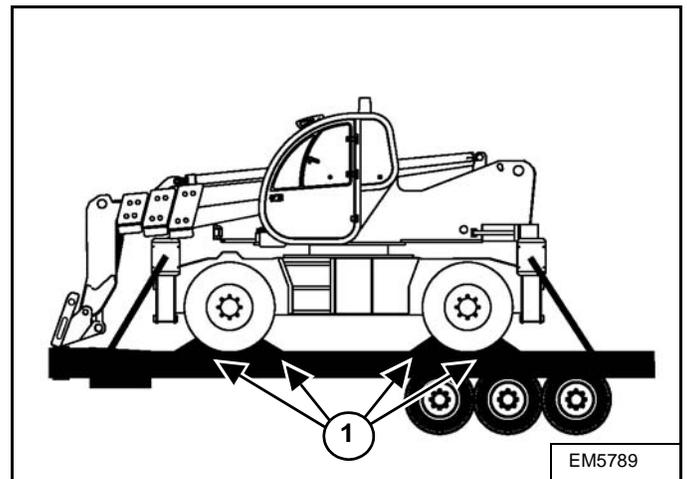


Figure 10-30-2



WARNING

AVOID SERIOUS INJURY OR DEATH

Adequately designed ramps of sufficient strength are needed to support the weight of the machine when loading onto a transport vehicle. Wood ramps can break and cause personal injury.

W-2058-0807

Product: 2010 Bobcat TR35160,TR45190,TR50210,TR40250 Telescopic Handler Service Repair Workshop Manual
Full Download: <https://www.arepairmanual.com/downloads/2010-bobcat-tr35160tr45190tr50210tr40250-telescopic-handler-service-repair-workshop-manual/>



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