

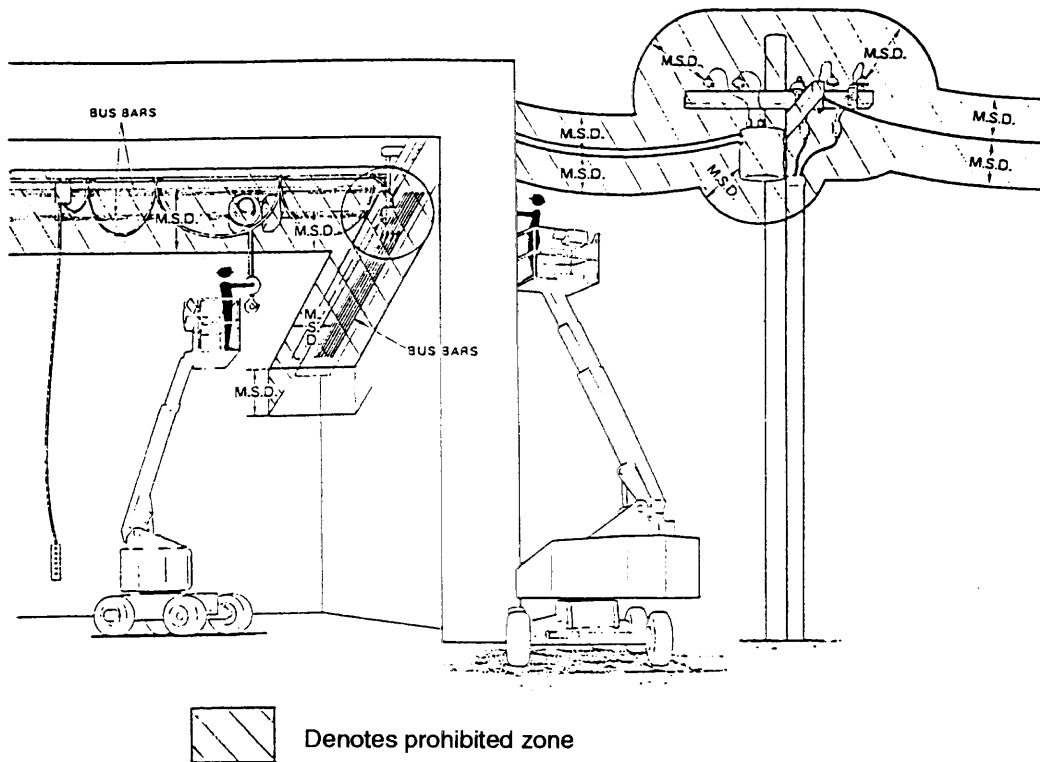
DANGER

ELECTRICAL HAZARD

The TB42/50 is an all metal boom, NOT ELECTRICALLY INSULATED, aerial work platform. Do not operate it near ELECTRICAL conductors. Regard all conductors as being energized. Use the table and illustration below to determine safe clearance from electrical conductors. Table 1 and Figure 3 are reprinted courtesy of Scaffold Industry Association, ANSI/SIA A92.5 page 23.

Table 1 - Minimum safe approach distance (M.S.A.D.)
to energized (exposed or insulated power lines

Voltage range (phase to phase)	Minimum safe approach distance	
	(Feet)	(Meters)
0 to 300V	Avoid contact	
Over 300V to 50KV	10	3.05
Over 50KV to 200KV	15	4.60
Over 200KV to 350KV	20	6.10
Over 350KV to 500KV	25	7.62
Over 500KV to 750KV	35	10.67
Over 750KV to 1000KV	45	13.72



- Danger:** - Do not allow machine personnel or conductive materials inside prohibited zone.
- Maintain M.S.A.D. from all energized lines and parts as well as those shown.
 - Assume all electrical parts and wires are energized unless known otherwise.

Caution: - Diagrams shown are only for purposes of illustrating M.S.A.D. work positions, not all work positions.

Figure 3 - Minimum Safe Approach Distance (M.S.A.D.)

DANGER

ELECTRICAL HAZARD

THE TB42/50 AERIAL WORK PLATFORM IS NOT ELECTRICALLY INSULATED.

If the platform, booms, or any other conductive part of a TB42/50 contacts a high-voltage electrical conductor, the result can be **SERIOUS INJURY** or **DEATH** for persons on or near the machine.

GO NO CLOSER THAN THE MINIMUM SAFE APPROACH DISTANCES ON THE OPPOSITE PAGE.

Be sure to allow for sag and sway in the wires and the work platform.

If a TB42/50 comes in contact with a live electrical conductor, the entire machine can be charged. If that happens, you should remain on the machine and not contact any other structure or object within reach. That includes the ground, adjacent buildings, poles, and any object not a part of the TB42/50. Such contact could make your body a conductor to the other object creating an electrical shock hazard resulting in **SERIOUS INJURY** or **DEATH**. Do not attempt to enter or leave the TB42/50 until you are sure the electricity has been turned off.

If a TB42/50 is in contact with a live conductor, the platform operator **MUST** warn others on the ground in the vicinity of the TB42/50 to **STAY AWAY** from the machine, since their bodies can also form a path for electricity to ground thus creating an electrical shock hazard with possible **ELECTROCUTION** and **DEATH**.

Do not attempt to operate the TB42/50 ground controls when the platform, booms, or any other conducting part of a TB42/50 is in contact with electrical wires or if there is an immediate danger of such contact.

Regard all conductors as energized.

Personnel working on or near a TB42/50 must be continuously aware of electrical hazards, recognizing that **SERIOUS INJURY** or **DEATH** can result if contact with an electrical wire does occur.

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The most important chapter in this manual is “1. SAFETY.” Take time, now, to study it closely. The information in that chapter might save your life or prevent serious injury.

■ TB42/50

This manual explains how to safely use a TB42 and a TB50. From an operator’s point of view the TB42 and the TB50 are nearly identical. Throughout this manual the term “**TB42/50**” is used to identify information that applies equally to all three models. Any data or procedures that do not apply to all three models will be clearly marked.

■ SIGNS

The following two conventions are used throughout this manual.

1. This sign



means: **Attention! Become alert! Your safety is involved.**

2. This sign



means one of two things: (1) an action, about to be performed, is potentially hazardous and might result in minor personal injury if not done correctly, or (2) an action, about to be performed, can damage the TB42/50 if not done correctly.

■ QUALIFIED OPERATORS

The TB42/50 aerial platform has built-in safety features and has been factory tested for compliance with Snorkel specifications and industry standards. However, any personnel-lifting device can be potentially dangerous in the hands of untrained or careless operators.

Training is essential and must be performed by a qualified person. Become proficient in knowledge and actual operation before using the aerial platform on the job. You must be trained and authorized to perform any functions

of the aerial platform. Operation of the aerial platform must be within the scope of the machine specifications.

The operator bears ultimate responsibility for following all manufacturer’s instructions and warnings, regulations and safety rules of their employer and/or any state or federal law.

Before operating the TB42/50 you must read and understand the operating instructions in this manual as well as the decals, warnings, and instructions on the machine itself.

Before operating the TB42/50 you must be **AUTHORIZED** by the person in charge to do so.

The following rules will help ensure the safety of personnel and help prevent needless downtime because of damaged equipment.

1. Only **TRAINED** and **AUTHORIZED** operators shall be permitted to operate the equipment.
2. All manufacturer’s operating instructions and safety rules and all employers’ safety rules and all OSHA and other government safety rules must be strictly adhered to.
3. Repairs and adjustments shall be made only by **QUALIFIED TRAINED** maintenance personnel.
4. No modification shall be made to the equipment without prior written consent of Snorkel.
5. You must make a pre-start inspection of the TB42/50 at the beginning of each shift. A malfunctioning machine must not be used.
6. You must make an inspection of the work place to locate possible hazards before operating the TB42/50.



Misuse of this machine can result in DEATH or SERIOUS INJURY.

Do not operate this equipment unless you are TRAINED and AUTHORIZED and have read and thoroughly understand all information given in this Operator’s Manual and on all DANGER and CAUTION signs on the machine.

■ MAINTENANCE

Every person who maintains, inspects, tests, or repairs these machines, and every person supervising any of these functions, must be properly trained.

This Operator's Manual provides a daily inspection procedure that will help you keep your TB42/50 in good operating condition. Do not perform other maintenance unless you are a TRAINED mechanic, QUALIFIED to work on the TB42/50. Call QUALIFIED maintenance personnel if you find problems or malfunctions.

Information contained in this manual concerns only current TB42/50's, and the right is reserved to make changes at any time without obligation.

■ RESPONSIBILITIES OF PARTIES

It is imperative that all owners and users of the TB42/50 read, understand, and conform to all applicable regulations. Ultimate compliance to OSHA regulations is the responsibility of the employer using the equipment.

ANSI Standard A92.5 identifies requirements of all parties who might be involved with Boom-Supported Elevating Work Platforms.

A reprint of the "Manual of Responsibilities for Dealers, Owners, Users, Operators, Lessors and Lessees of ANSI/SIA A92.5-1992 Boom-Supported Elevating Work Platforms" is available from Snorkel dealers or from the factory upon request.

Copies are also available from:

Scaffold Industry Association
20335 Ventura Blvd. Suite 310
Woodland Hills, CA 91364-2471 USA

■ ADDITIONAL INFORMATION

For additional information contact your local dealer or Snorkel at:

Snorkel International, Inc.
P.O. Box 1160
St. Joseph, MO 64502-1160 USA
816-364-0317

<http://www.snorkelusa.com>

■ SAFE OPERATION

The following safety information is vitally important for safe operation of the TB42/50. Failure to follow these instructions can result in personal injury or DEATH.

□ Pre-start Inspection

Prior to each shift, the TB42/50 shall be given a visual inspection and function test. See the “DAILY INSPECTION & MAINTENANCE” chapter in this manual for a list of items to inspect and test.

Do not operate the TB42/50 unless you are trained and authorized, understand the operation characteristics of the TB42/50, and have inspected and tested all functions to be sure they are in proper working order. See the “DAILY INSPECTION & MAINTENANCE” chapter.

□ Work Place Inspection and Practices

Do not use the TB42/50 as a ground for welding. Ground to the work piece.

Before the TB42/50 is used, and during use, check the area in which the TB42/50 is to be used for possible hazards such as, but not limited to:

- drop-offs or holes,
- side slopes,
- bumps and floor obstructions,
- debris,
- overhead obstructions and electrical conductors,
- hazardous locations,
- inadequate surface and support to withstand all load forces imposed by the aerial platform in all operating configurations,
- wind and weather conditions,
- presence of unauthorized persons,
- other possible unsafe conditions.

Before using the aerial platform in any hazardous (classified) location, make certain it is approved and of the type required by ANSI/NFPA 505 for use in that particular location.

A recommended safety practice is to have personnel that are trained in the operation of the emergency controls working in the immediate area of the TB42/50 to assist the platform operator in the event of an emergency.

When moving the platform, check the clearance around the TB42/50 to avoid contact with structures or other hazards. Always look in the direction of motion.

Keep ground personnel from under the platform when the platform is raised.

Secure all accessories, containers, tools, and other materials in the platform to prevent them from accidentally falling or being kicked off the platform.

Do not engage in any form of “horseplay” or “stunt driving” while operating the TB42/50.

Do not permit riders on the machine anyplace other than on the platform.

Remove all loose objects stored in or on the machine, particularly in the platform. Remove all objects which do not belong in or on the machine.

When other moving equipment is in the area, take special precautions to comply with local regulations regarding warnings.

Never steady the platform by positioning it against another platform.

Do not operate a TB42/50 that is not functioning properly, or has been damaged, until the machine has been repaired by a qualified maintenance person.

Do not operate a TB42/50 that does not have all its decals and placards attached and legible.

Drive the machine with care and at speeds compatible with conditions. Use extra caution when driving over rough ground, on slopes, and when turning.

Know and understand the job site traffic-flow patterns and obey the flagmen, road signs, and signals.

Watch for bystanders and never allow anyone to be under, or to reach through, the machine and its equipment while operating.

1. SAFETY

❑ Electrocution

The TB42/50 is an all-metal boom, NON-INSULATED, aerial work-platform. Do not operate it near ELECTRICAL conductors. Regard all conductors as being energized.

Do not operate outside during a thunderstorm.

❑ Tipover & Falling Hazards

Do not operate a TB42/50 from a position on trucks, trailers, railway cars, floating vessels, scaffolds, or similar equipment unless the application is approved in writing by Snorkel.

If the platform or elevating assembly becomes caught, snagged, or otherwise prevented from normal motion by an adjacent structure or other obstacles such that control reversal does not free the platform, remove all personnel from the platform before attempts are made to free the platform using ground controls.

It is best not to transfer from the platform to another structure or from the structure to the platform, unless that is the safest way to do the job. Judge each situation separately taking the work environment into account. If it is necessary to transfer from the platform to another structure the following guidelines apply:

- Where possible, place the platform over a roof or walking structure to do the transfer.
- Transfer your anchorage from one structure to the other before stepping across.
- Remember that you might be transferring to a structure where *personal fall arrest* is required.
- Use the platform entrance, do not climb over the guardrails.

All platform occupants **MUST** wear a fall restraint device connected to a lanyard anchor point.

Do not exceed the unrestricted platform capacity as indicated on the capacity placards at the platform and ground-control panel.

Do not raise the boom if the TB42/50 is on soft ground. Operate the boom only on a firm surface capable of withstanding all load forces imposed by the aerial platform in all operating conditions.

Do not carry loads from any point outside of the platform.

Care shall be taken to prevent rope, electric cords, and hoses, etc., from becoming entangled in the aerial platform,

Raise the platform only when the TB42/50 is on level ground.

Maintain a firm footing on the platform floor. Climbing on the guardrails is prohibited.

Do not use ladders, planks, or other devices to extend or increase your work position from the platform.

Do not jerk the controls. Move the controls slowly and deliberately to avoid jerky and erratic operation. Always stop the controls in the neutral, off, position before going in the opposite direction.

Do not use the boom for any purpose other than to position personnel, their tools, and materials.

Do not use the TB42/50 as a crane, hoist, or jack.

Do not operate the TB42/50 in winds, or wind gusts, of 28 mph (45 km/hr) or more.

Do not add anything to the TB42/50 that will increase the wind loading (billboards, banners, flags, etc).

❑ Crushing

Always look in the direction of travel. Avoid overhead obstructions.

Never cover the floor grating or otherwise obstruct your view below.

Make sure the area below the platform is free of personnel before lowering.

■ GENERAL SAFETY PRECAUTIONS

❑ Personnel Precautions

If you encounter any suspected malfunction of the aerial platform, or any hazard or potentially unsafe condition relating to capacity, intended use, or safe operation, cease operation and seek assistance from management.

❑ Operator General Precautions

Make sure that all protective guards, cowlings, and doors are in place and secure.

Be sure the guardrail system, including the gate, is in place and secure.

❑ Mounting & Dismounting Precautions

Use three points of support when getting on or off the platform (two hands and one foot or a similar set of points). Keep the platform clean.

Do not jump off the machine.

Do not dismount while the machine is in motion.

❑ Starting and Stopping Precautions

Do not start until all personnel are clearly away from the machine.

Before leaving the operator's station, place the machine in the stowed position.

When leaving the machine parked or unattended, remove the starter key from the **MASTER** key switch, set the **BATTERY** switch to OFF, then lock the **BATTERY** switch closed.

❑ Operating Precautions

Do not modify the TB42/50 in any way.

When parts or components are replaced, they shall be identical or equivalent to original Snorkel parts or components.

Do not override any of the safety features of the TB42/50.

Limit travel speeds according to conditions. Take into account: grade, surface, congestion, visibility, side slope, location of personnel, and other hazards.

❑ Operator Maintenance Precautions

Do not use your hand to search for hydraulic oil leaks. High pressure hydraulic oil can easily cut and penetrate your skin — a very serious injury that requires immediate attention by a medical specialist trained in that type of injury. Use a piece of cardboard or wood to search for hydraulic oil leaks.

Do not attempt repairs unless you are trained. Refer to manuals and experienced repair personnel for help.

Charge batteries in a well-ventilated area free of flame, sparks, or other hazards that might cause fire or explosion.

Use extreme caution when removing radiator caps. Park the machine and let it cool down before opening a pressurized compartment.

❑ Fuel Handling Precautions

Do not smoke or permit open flames while fueling or near fueling operations.

Never remove the fuel cap or refuel a gasoline engine while the engine is running or hot. Never allow fuel to spill on hot machine components.

Maintain control of the fuel filler nozzle when filling the tank.

Do not fill the fuel tank to capacity. Allow room for expansion.

Clean up spilled fuel immediately.

Tighten the fuel tank cap securely. If the fuel cap is lost, replace it with an approved cap from Snorkel. Use of a non-approved cap without proper venting may result in pressurization of the tank.

Never use fuel for cleaning purposes.

For diesel engines, use the correct fuel grade for the operating season.

■ SAFETY DECALS & PLACARDS

There are several safety decals and placards on the TB42/50. Their locations and descriptions are shown in this section. Take time to study them.

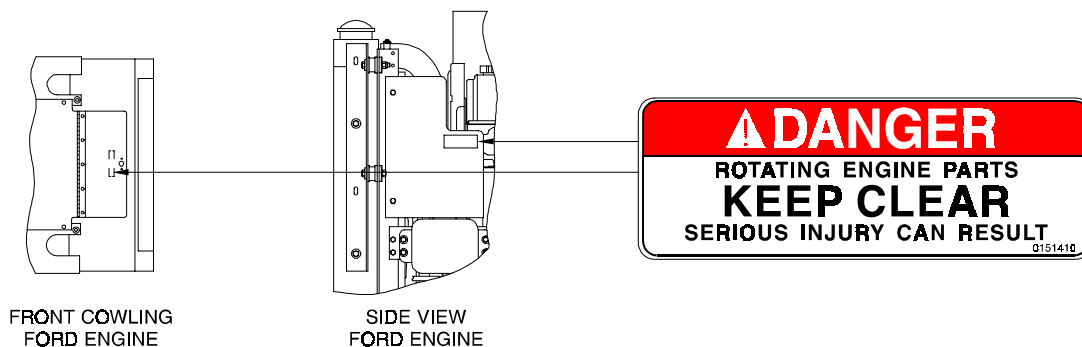
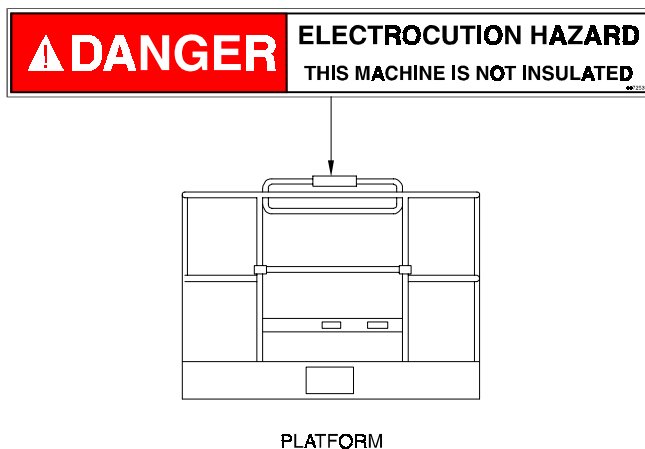
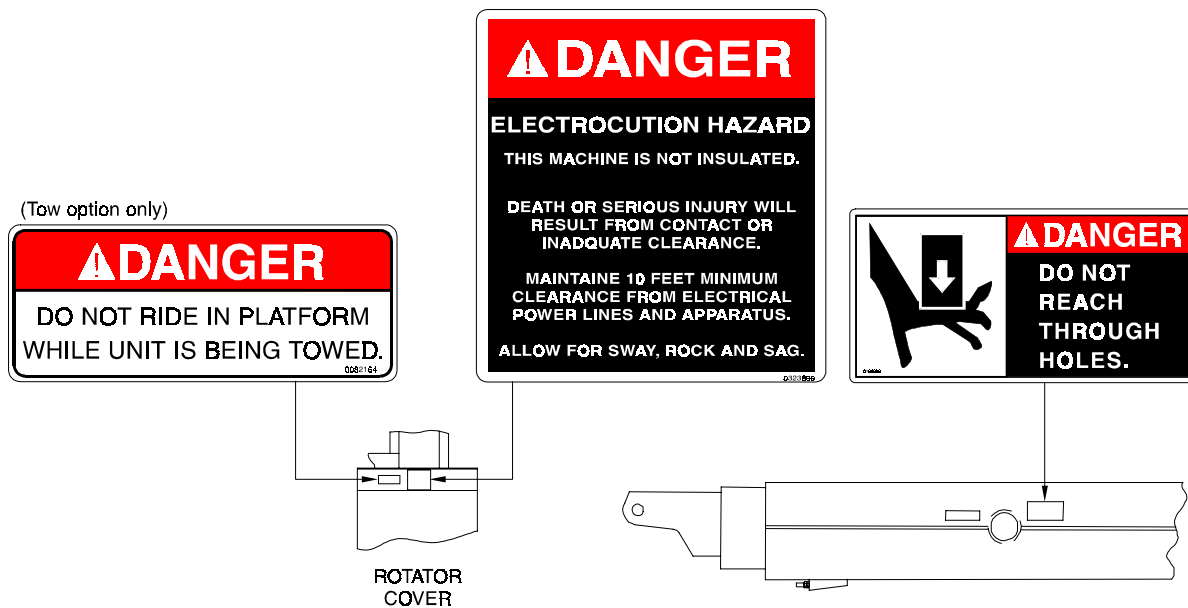
Be sure that all the safety decals and placards on the TB42/50 are legible. Clean or replace them if you cannot read the words or see the pictures. Clean with soap & water and a soft cloth. Do not use solvents.

You must replace a decal or placard if it is damaged, missing, or cannot be read. If it is on a part that is replaced, make sure a new decal or placard is installed on the replaced part. See your Snorkel dealer for new decals and placards.

Refer to PLACARDS AND DECALS INSPECTION CHART and DRAWING in the "DAILY INSPECTION AND MAINTENANCE" chapter for part numbers, location, and required quantities of all placards and decals.

1. SAFETY

Refer to **PLACARDS AND DECALS INSPECTION CHART** and **DRAWING** in the “**DAILY INSPECTION AND MAINTENANCE**” chapter for part numbers, locations, and required quantities of all placards and decals.



⚠ CAUTION**DO NOT USE BOOM TO LIFT OR PUSH MACHINE**

0073855

⚠ DANGER

- **DO NOT OPERATE** THIS UNIT UNLESS YOU ARE A QUALIFIED OPERATOR AND HAVE READ AND THOROUGHLY UNDERSTAND ALL INFORMATION GIVEN IN THE OPERATOR'S MANUAL AND ON DANGER AND CAUTION PLACARDS ON THIS UNIT.
- **DO NOT OPERATE** THIS UNIT IN CLOSE PROXIMITY TO POWER LINES OR ELECTRICAL INSTALLATIONS UNIT IS NOT INSULATED.
- **DO NOT EXCEED** THE UNRESTRICTED PLATFORM CAPACITY STAMPED ON THE SNORKELIFT SERIAL NUMBER PLACARD.
- **DO NOT OPERATE** THIS UNIT ON SOFT OR UNSTABLE GROUND.
- **OPERATE** THIS UNIT ONLY ON A FLAT LEVEL SURFACE.

0073144

⚠ CAUTION

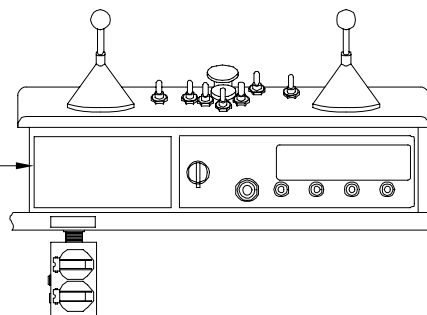
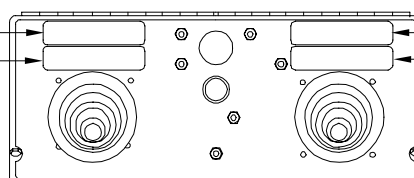
- MOVE CONTROL HANDLE SLOWLY AND DELIBERATELY TO AVOID JERKY AND ERRATIC PLATFORM MOVEMENT.
- **IN CASE OF EMERGENCY DEPRESS** EMERGENCY STOP BUTTON, PULL OUT TO RESET.

0181803

⚠ DANGER

- Perform the **DAILY INSPECTION & MAINTENANCE**, listed in the Operator's Manual, prior to each work shift.
- All platform occupants **MUST** wear fall restraint attached to lanyard anchor points provided.

0181804



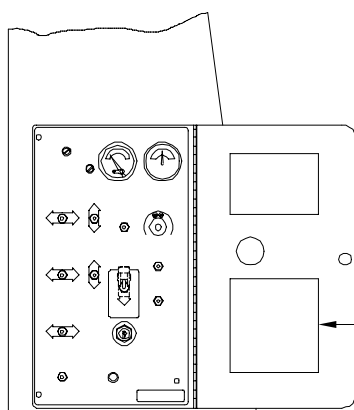
PLATFORM CONTROL BOX

⚠ DANGER**ELECTROCUTION HAZARD**

THIS MACHINE IS NOT INSULATED

MAINTAIN SAFE CLEARANCES FROM ELECTRICAL POWER LINES AND APPARATUS. YOU MUST ALLOW FOR PLATFORM SWAY, ROCK, OR SAG. THIS AERIAL DEVICE DOES NOT PROVIDE PROTECTION FROM CONTACT WITH OR PROXIMITY TO AN ELECTRICALLY CHARGED CONDUCTOR. DEATH OR SERIOUS INJURY WILL RESULT FROM SUCH CONTACT OR INADEQUATE CLEARANCE.

0073144

GROUND CONTROL DOOR
SHOWN OPEN**⚠ DANGER**

FAILURE TO COMPLY WITH THE FOLLOWING INSTRUCTIONS WILL RESULT IN DEATH OR SERIOUS INJURY

ELECTROCUTION HAZARD

- **DO NOT OPERATE** THIS UNIT UNLESS YOU ARE A QUALIFIED OPERATOR AND HAVE READ AND THOROUGHLY UNDERSTAND ALL INFORMATION GIVEN IN THE OPERATIONS MANUAL AND ON DANGER AND CAUTION PLACARDS ON THIS UNIT.
- **DO NOT OPERATE** THIS UNIT IN CLOSE PROXIMITY TO POWER LINES OR ELECTRICAL INSTALLATIONS. UNIT IS NOT INSULATED. SEE MSD CHART IN MANUAL.

TIPPING & FALLING HAZARD

- **DO NOT EXCEED** THE UNRESTRICTED PLATFORM CAPACITY STAMPED ON THE SNORKELIFT SERIAL NUMBER PLACARD.
- **DO NOT OPERATE** THIS UNIT ON SOFT OR UNSTABLE GROUND.
- **ONLY OPERATE** THIS UNIT ON FLAT LEVEL GROUND.
- **DO NOT USE** MACHINE AS A CRANE, HOIST, OR JACK, AND **DO NOT** POSITION MACHINE AGAINST ANOTHER OBJECT TO STEADY THE PLATFORM.
- **DO NOT USE** MACHINE IF NOT FUNCTIONING PROPERLY OR DAMAGED IN ANY WAY.
- **DO NOT MODIFY OR ALTER** UNIT.

0074115

1. SAFETY

(Tow option only)

⚠ DANGER

A "RUNAWAY" SNORKELIFT CAN CAUSE **DEATH OR SERIOUS INJURY**. CHECK WITH TOW VEHICLE MANUFACTURER OR MANUFACTURER'S LITERATURE TO SEE THAT TOW VEHICLE CAN SAFELY TOW AND STOP TOTAL WEIGHT OF SNORKELIFT ON THE STEEPEST GRADE YOU WILL ENCOUNTER. REMEMBER, SNORKELIFT DOES NOT HAVE BRAKES WHEN IT IS TOWED.

BE CERTAIN TOW VEHICLE BRAKES ARE SET AND TOW BAR IS CONNECTED TO BOTH TOW VEHICLE AND SNORKELIFT BEFORE YOU TURN SNORKELIFT DISCONNECT-PLATES OVER.

AT THE END OF THE TOW, BEFORE YOU DISCONNECT THE SNORKELIFT FROM THE TOWING VEHICLE, TURN THE DISCONNECT-PLATES BACK OVER SO THE NIPPLES ARE OUT. THAT WILL PREVENT THE MACHINE FROM ROLLING WHEN YOU DISCONNECT IT FROM THE TOW VEHICLE.

DO NOT EXCEED 10 MPH (16 KM/HR) WHEN TOWING. AVOID SHARP TURNS.

008180

(LPG option only)

⚠ CAUTION

THIS MACHINE IS EQUIPPED WITH

LIQUID WITHDRAWAL

L.P. GAS SYSTEM

- LIQUID OR VAPOR WITHDRAWAL L.P.-GAS CYLINDER MAY BE USED.
- ALWAYS KEEP L.P.-GAS CYLINDER SHUT-OFF VALVE CLOSED WHEN NOT USING L.P.-GAS SYSTEM.

008144

⚠ DANGER

Using incorrect parts can cause cylinder failure. Death or serious injury may result.

Use only:



0074311

Snorkelift

MODEL NO. SERIAL NO.

UNRESTRICTED PLATFORM CAPACITY LBS.
UNIT ON FIRM AND LEVEL SURFACE KG
BOOM IN ANY POSITION

PLATFORM REACH - MAXIMUM FT.
 M

PLATFORM HEIGHT - MAXIMUM FT.
 M

⚠ CAUTION

PROPER STABILITY OF UNIT IS BASED ON FOLLOWING.

PLATFORM SIZE.

AXLE WEIGHTS WITH UNIT IN STOWED-TRAVEL POSITION.

STEER AXLE LBS.
DRIVE AXLE LBS.

DO NOT REMOVE ANY WEIGHT FROM UNIT.
ANY WEIGHT ADDED TO UNIT MUST BE DISTRIBUTED EQUALLY ON EACH AXLE.

Snorkel ST JOSEPH, MISSOURI
U.S.A. 001890

⚠ DANGER

- THIS UNIT IS EQUIPPED WITH FOAM FILLED TIRES. WHEEL WEIGHT IS CRITICAL FOR UNIT STABILITY.
- REPLACE WITH FACTORY APPROVED FOAM FILLED TIRES ONLY.
- DO NOT ATTEMPT TO INFLATE.

001890

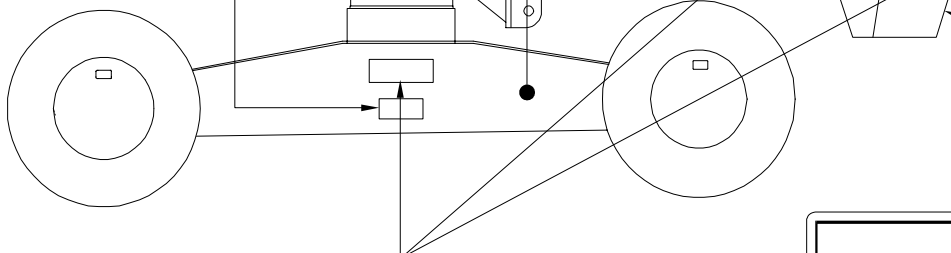
⚠ DANGER

YOU MUST NOT OPERATE THIS DEVICE UNLESS:

1. YOU HAVE BEEN TRAINED IN THE SAFE OPERATION OF THIS DEVICE AND
2. YOU KNOW AND FOLLOW THE SAFETY AND OPERATING RECOMMENDATIONS CONTAINED IN THE MANUFACTURER'S MANUALS, YOUR EMPLOYER'S WORK RULES, AND APPLICABLE GOVERNMENTAL REGULATIONS.

AN UNTRAINED OPERATOR SUBJECTS HIMSELF AND OTHERS TO DEATH OR SERIOUS INJURY.

001890

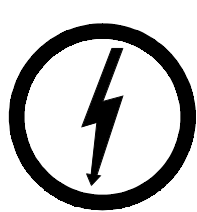


⚠ DANGER

ELECTROCUTION HAZARD

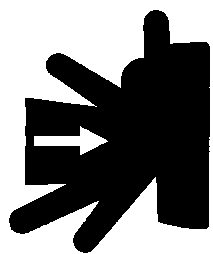
KEEP CLEAR

DEATH OR SERIOUS INJURY CAN RESULT FROM CONTACT WITH THIS EQUIPMENT OR VEHICLE IF IT SHOULD BE ELECTRICALLY CHARGED.



001890

⚠ DANGER



CRUSHING HAZARD

DEATH OR SERIOUS INJURY CAN RESULT FROM BEING CRUSHED BETWEEN COUNTERWEIGHT AND TOW VEHICLE.

DO NOT ATTEMPT TO ATTACH TOW BAR TO TOW VEHICLE UNLESS SNORKELIFT COUNTERWEIGHT IS TO SIDE OF CHASSIS.

001890

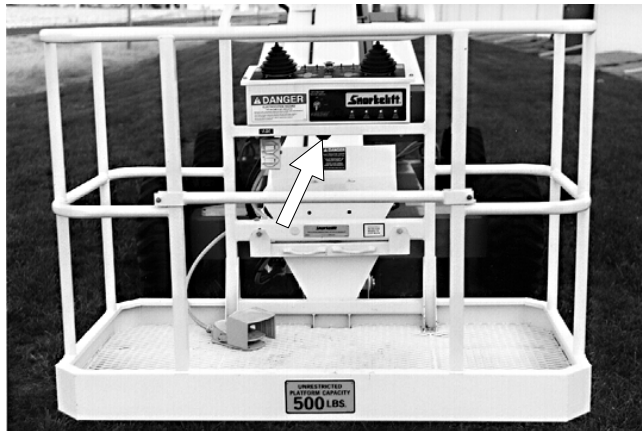
(Tow option only)

2. SAFETY DEVICES

For emergency-operation controls and procedures, see the “EMERGENCY OPERATION” chapter in this manual.

The devices listed in this chapter are safety devices. They are on a TB42/50 to increase safety in the work place for both the operator and other people near a TB42/50. Do not by-pass, disable, modify, or ignore any of these devices. Check them carefully at the start of each work shift to see that they are in working order (see “DAILY INSPECTION & MAINTENANCE” chapter). If any is found to be defective, remove the TB42/50 from service immediately until a qualified service technician can make repairs.

■ TILT ALARM & LEVEL SENSOR



The tilt alarm siren on a TB42/50 is located under the platform-control box.

The siren will emit a two-toned sound (high-low-high-low...) if the TB42/50 is tilted more than 5° and the booms are not completely retracted and completely down. After the siren begins to sound, if the tilt continues to increase, the TB42/50 can turn over.

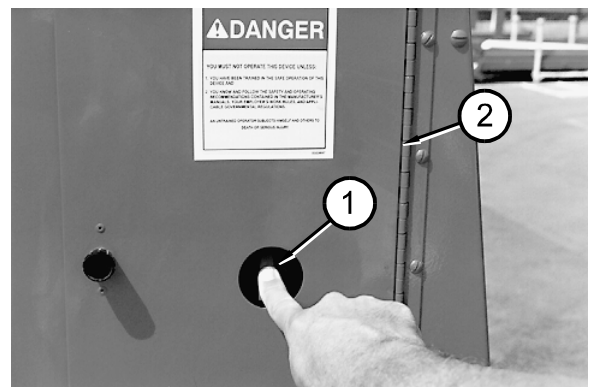
When you are in control of a TB42/50 and you hear its two-toned siren, you should immediately:

1. Stop using the **DRIVE** controller stick on the platform-control box.
2. Completely retract and completely lower the booms.
3. Use the **DRIVE** controller to move the TB42/50 to a level surface or more firm ground before extending or raising the booms again.

■ EMERGENCY STOP SWITCHES



At the ground-control panel: Press the red **EMERGENCY STOP** cover down, at any time, under any conditions, and the entire machine stops, the engine turns off, the brakes set, and nothing moves. This switch must be up for anything on the TB42/50 to work.



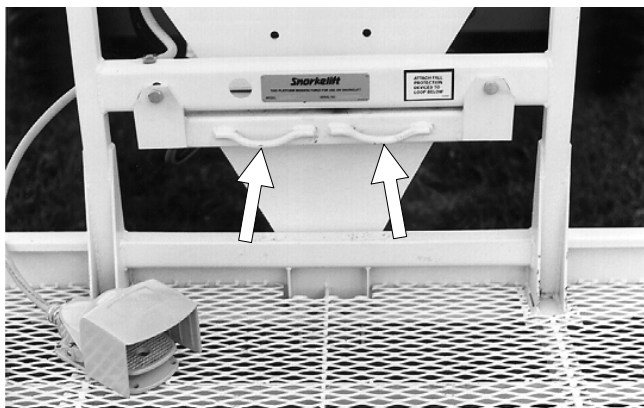
The ground-control panel **EMERGENCY STOP** switch (1) can also be used with the door (2) closed.

2. SAFETY DEVICES



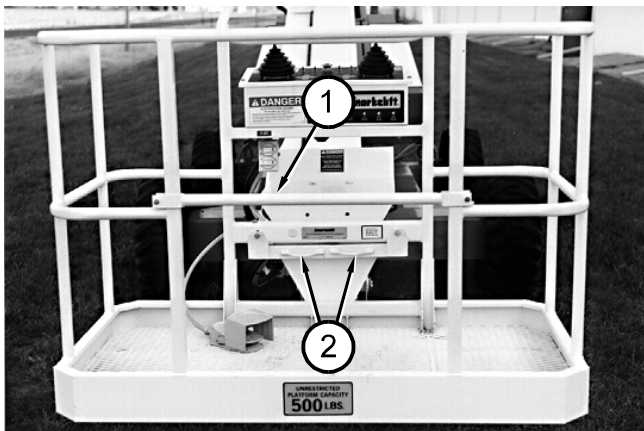
At the platform-control box: Press the large red **EMERGENCY STOP** button down and the entire machine stops, the engine turns off, the brakes set, and nothing moves. This switch must be pulled to its up (or out) position to control the TB42/50 from the platform.

■ LANYARD ANCHOR POINTS



All personnel on the platform should attach their fall restraint lanyards to one of the lanyard anchor points.

■ GRAVITY GATE



The gravity gate (1) is the place in the platform guardrail system where you should enter and

leave the platform. Raise the gate and step under it onto the platform. Once you have entered the platform and attached your fall restraint lanyard to an anchor point (2), check to see that the gravity gate (1) has fallen back into place.

■ FOOT SWITCH

! DANGER

Serious injury can result from sudden stops. To avoid sudden stops, do not remove your foot from the foot switch while the TB42/50 is in motion.



The foot switch prevents the platform from moving if something accidentally pushes one of the platform-moving controls on the platform-control box. (Stepping on the foot switch is an action that must be performed, at the same time as another action, to make the platform move.)

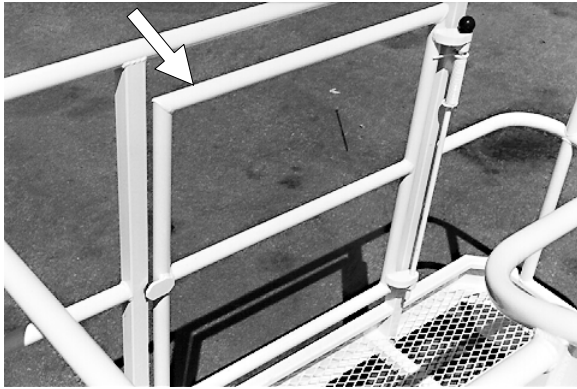
■ GROUND OPERATION SWITCH



The **GROUND OPERATION** switch prevents the platform from moving if something accidentally

pushes one of the platform-moving switches at the ground-control panel. (Pushing the **GROUND OPERATION** switch is an action that must be performed, at the same time as another action, to make the platform move.)

■ SELF-CLOSING GATE (option)



The self-closing gate is designed to automatically close after you enter or leave the platform. It helps prevent people from falling off the platform.

■ OPERATOR HORN (option)



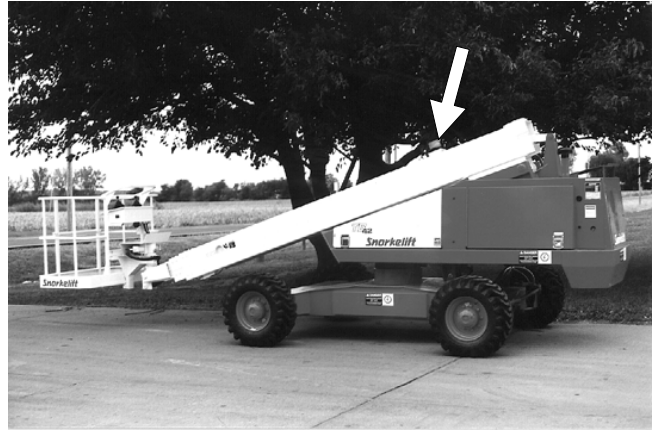
The operator **HORN** button is on the right side of the platform-control box. It is used primarily to get the attention of people on the ground when you are working aloft. The horn itself is located under the wiring box, inside the turntable. For the horn to work the **BATTERY** switch must be ON and the following switches, on the ground-control panel, must be set as indicated:

SELECTOR SWITCHPLATFORM

EMERGENCY STOPpulled out

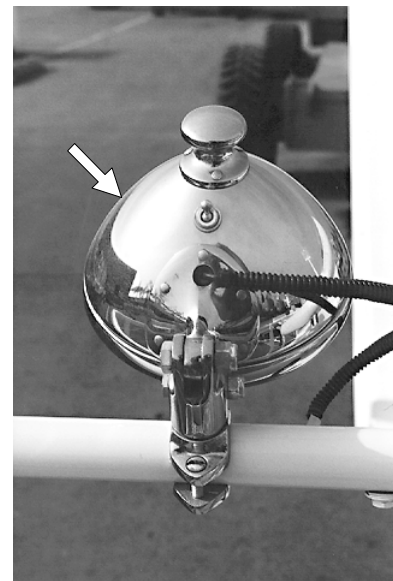
MASTERON

■ FLASHING LIGHT (option)



The flashing light alerts people that the TB42/50 is present. The light flashes at about one flash per second any time the engine is running. There is no ON/OFF switch for the flashing light.

■ PLATFORM WORK LIGHTS (option)



The platform work lights are located on top the platform guardrail. Use the lights to improve visibility when you are working aloft in dimly lit areas. Do not use the platform work lights to drive on public thoroughfares.

For more information about platform work lights see the "OPTIONS" chapter.

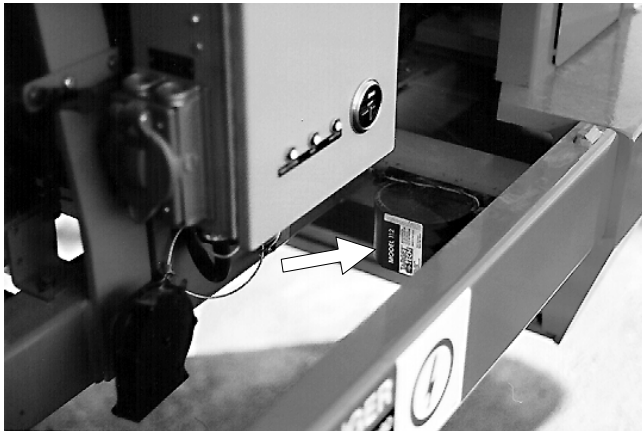
2. SAFETY DEVICES

■ DRIVING LIGHTS (option)

Two 30 watt headlights are located on top of the front cowlings, two 25 watt blinking taillights are on the sides of the rear cowlings. Driving lights help improve your visibility and help others see you when you are driving on dimly lit work sites. Driving lights are not for driving on public thoroughfares.

For more information about driving lights see the “OPTIONS” chapter.

■ MOTION WARNING ALARM (option)



The motion warning alarm emits a loud beeping sound at ground level anytime the **DRIVE** controller is in FORWARD or REVERSE. This alarm alerts people on the ground that the TB42/50 is traveling along the ground.

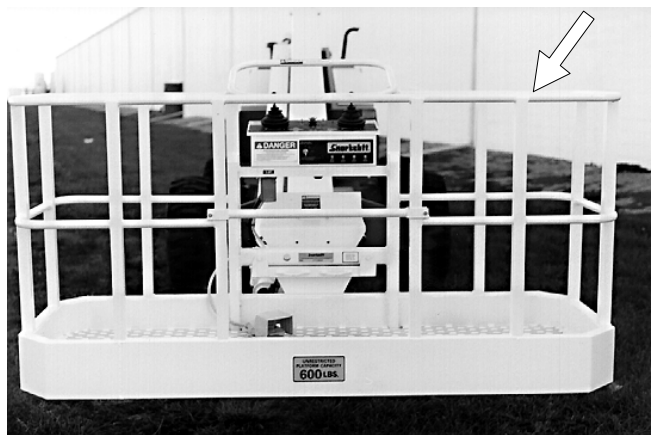
■ GFCI OUTLET (option)



The GFCI (ground fault circuit interrupt) is located under the platform-control box. The GFCI protects against short circuits to ground. When there is a short to ground the GFCI automatically shuts off power the way a circuit breaker would.

For more information about the GFCI see the “OPTIONS” chapter.

■ GUARDRAILS



The guardrails help protect you from falling off the platform. Be sure the guardrails are properly installed and that the gate is in place.

3. SPECIFICATIONS

The Snorkelift TB42/50 is a boom-supported elevating work-platform built to conform to the following standards:

OSHA Paragraph 1910.67 Title 29, C.F.R.
Vehicle-Mounted Elevating and Rotating Work Platforms - Labor.

OSHA Paragraph 1926.556 Title 29, C.F.R Aerial Lifts - Construction.

ANSI Standard A92.5-1992 Boom-Supported Elevating Work Platforms.

CSA Standard CAN3-B354.4-M82, Boom-type Elevating Work Platforms.

■ GENERAL SPECIFICATIONS: TB 42

Working height (nominal) 48 ft - 0 in (14.6 m)
Platform height (maximum) 42 ft - 0 in (12.8 m)
Platform reach (maximum) 33 ft - 0 in (10.1 m)
Length
(booms down and retracted) ... 23 ft - 6.3 in (7.2 m)
Width..... 7 ft - 11.5 in (2.4 m)
Height
(booms down and retraced) 7 ft - 9.5 in (2.4 m)
Wheelbase 8 ft - 0 in (2.4 m)
Ground clearance..... 10 in (25 cm)
Weight (approximate) 10,500 lbs (4,763 kg)
Ground bearing strength 54 psi (373 kPa)
Wheel loading, single, max. 5,500 lbs (2,495 kg)
Boom elevation +75°/-18° to horizontal
Gradeability 25%

Travel speeds:

booms down and retracted ... 3.0 mph (4.8 km/hr)
booms up and/or extended 1 mph (1.6 km/hr)

Turning radius, inside..... 5 ft - 2 in (1.6 m)

Tires..... 12 x 16.5 (30.5 x 42 cm), 10 ply

Electrical system... 12 V dc (neg. chassis ground)

Environmental operating ranges:

ambient air temperature 0°F to +110°F
..... (-18°C to +43°C)
wind speed (maximum gust
or continuous) 28 mph (45 km/hr)

Fuel tank capacity:

standard gasoline
or diesel 20 gal USA (75.7 liters)
optional LPG 43.5 lbs USA (20 kg)

Hydraulic oil tank capacity 16 gal USA (60 liters)

Maximum hydraulic oil temperature
(at tank) 200°F (93°C)

Hydraulic oil system

capacity 25 gal USA (94.6 liters)

Hydraulic fluid recommended

Above 10°F (-13°C) Mobil DTE-13M (ISO VG32)
Below 10°F (-13°C) Mobil DTE-11M (ISO VG15)

Hydraulic system

maximum pressure 2,500 psi (17,250 kPa)

Boom movement times

(complete range of movement):

Turntable Swing

CW or CCW (360°): 100 - 110 seconds

Platform Rotation

CW or CCW (180°): 16 - 20 seconds

Main Boom Elevation

UP:..... 40 - 45 seconds

DOWN: 40 - 45 seconds

Boom Extension

OUT:..... 40 - 45 seconds

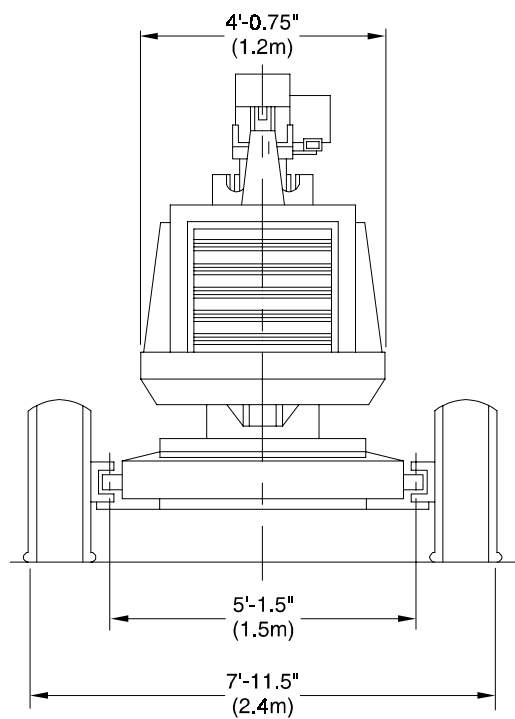
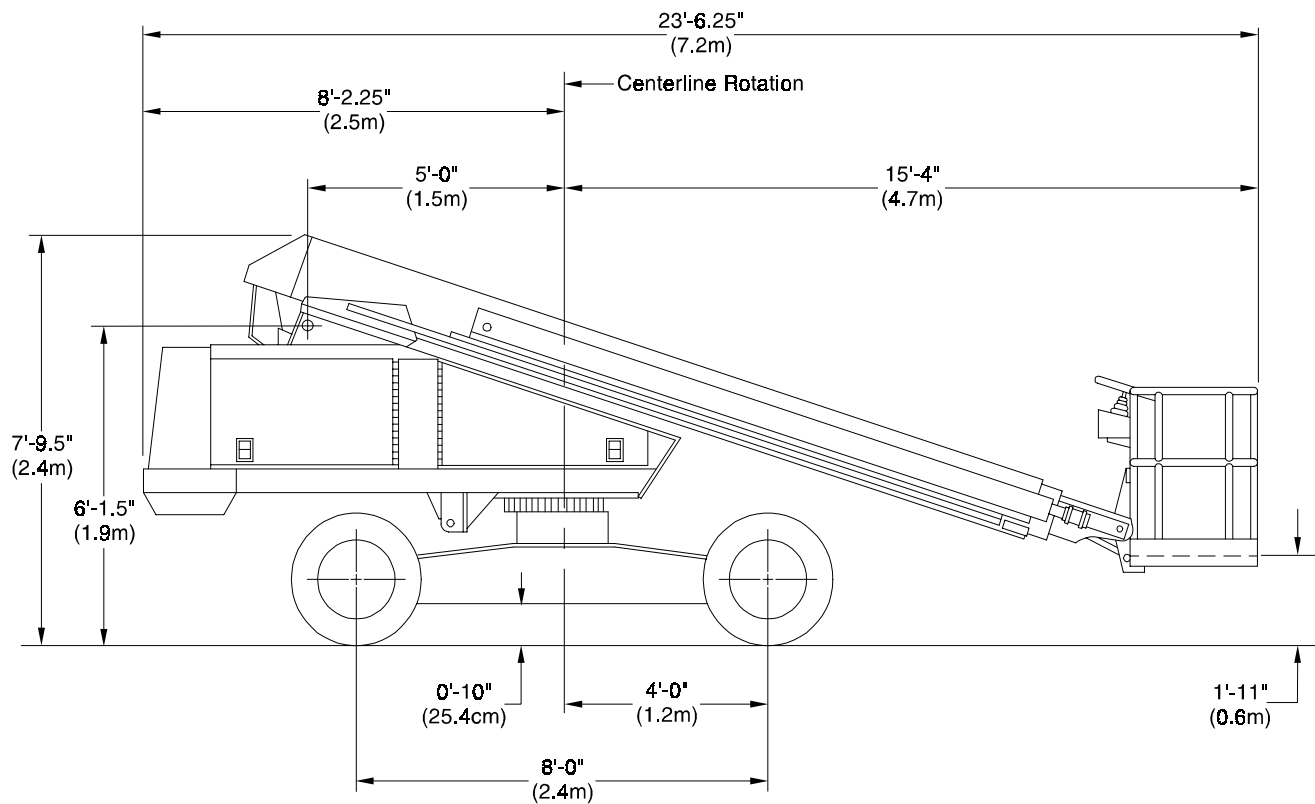
IN:..... 25 - 30 seconds

■ PLATFORM SPECIFICATIONS: TB 42

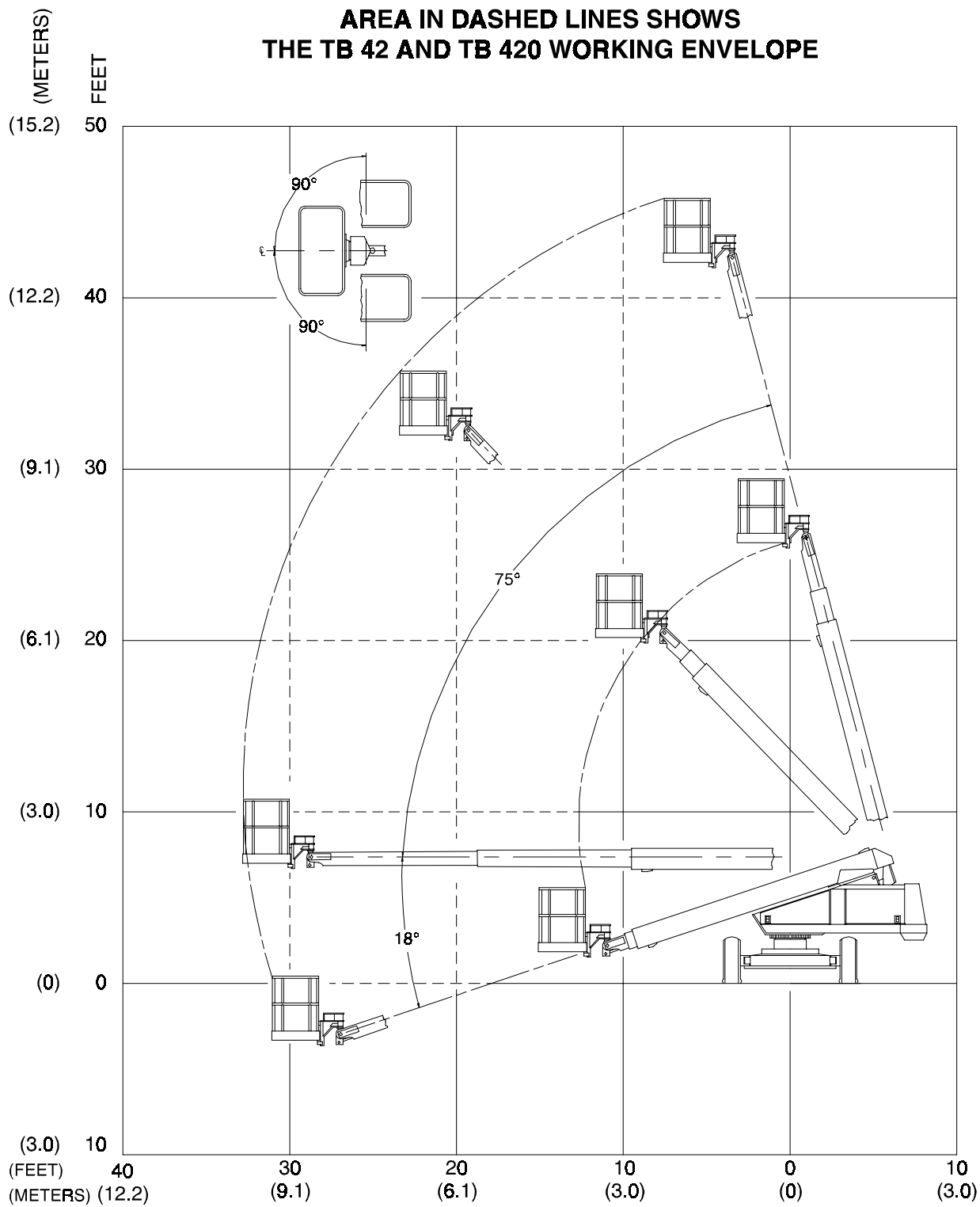
PLATFORM	SIZE inches (cm)	Unrestricted rated work load (total weight of personnel, tools, and materials that the platform is designed to carry above its floor -- same as UNRESTRICTED PLATFORM CAPACITY)
standard steel	30 x 60 (76 x 152)	Rated work load: 500 lbs (227 kg) Rated number of occupants: 2 people
standard aluminum	30 x 60 (76 x 152)	Rated work load: 700 lbs (318 kg) Rated number of occupants: 2 people
optional aluminum	30 x 92 (76 x 233)	Rated work load: 500 lbs (227 kg) Rated number of occupants: 2 people
optional steel	30 x 92 (76 x 233)	Rated work load: 500 lbs (227 kg) Rated number of occupants: 2 people

3. SPECIFICATIONS

OVERALL DIMENSIONS: TB 42



■ WORKING ENVELOPE: TB 42



3. SPECIFICATIONS

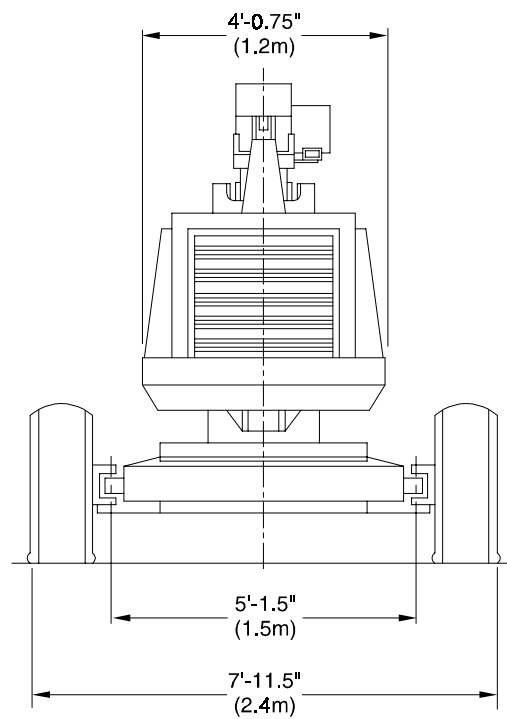
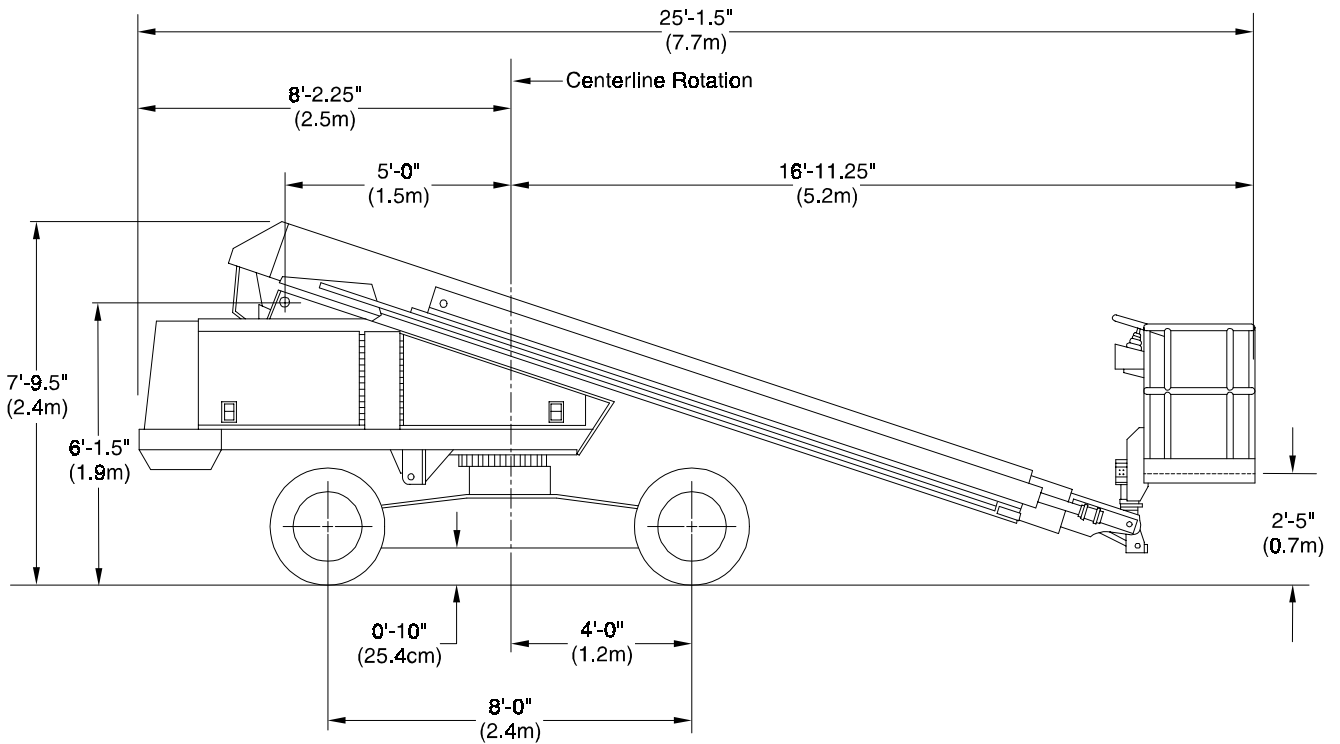
■ GENERAL SPECIFICATIONS: TB 50

Working height (nominal) 56 ft - 0 in (17.2 m)
Platform height (maximum) 50 ft - 5 in (15.4 m)
Platform reach (maximum)..... 39 ft - 1 in (11.9 m)
Length
(booms down and retracted) ... 25 ft - 1.5 in (7.7 m)
Width 7 ft - 11.5 in (2.4 m)
Height
(booms down and retracted) 7 ft - 9.5 in (2.4 m)
Wheelbase 8 ft - 0 in (2.4 m)
Ground clearance 10 in (25 cm)
Weight (approximate) 12,550 lbs (5,693 kg)
Ground bearing strength 64 psi (442 kPa)
Wheel loading, single, max. 6,525 lbs (2,960 kg)
Boom elevation +75°/-18° to horizontal
Gradeability 25%
Travel speeds:
booms down and retracted ... 3.0 mph (4.8 km/hr)
booms up and/or extended 1 mph (1.6 km/hr)
Turning radius, inside 5 ft - 2 in (1.6 m)
Tires 12 x 16.5 (30.5 x 42 cm), 10 ply
Electrical system... 12 V dc (neg. chassis ground)
Environmental operating ranges:
ambient air temperature 0°F to +110°F
..... (-18°C to +43°C)
wind speed (maximum gust
or continuous) 28 mph (45 km/hr)

Fuel tank capacity:
standard gasoline
or diesel 20 gal USA (75.7 liters)
optional LPG 43.5 lbs USA (20 kg)
Hydraulic oil tank capacity 16 gal USA (60 liters)
Maximum hydraulic oil temperature
(at tank) 200°F (93°C)
Hydraulic oil system
capacity 25 gal USA (94.6 liters)
Hydraulic fluid recommended
Above 10°F (-13°C) Mobil DTE-13M (ISO VG32)
Below 10°F (-13°C) Mobil DTE-11M (ISO VG15)
Hydraulic system
maximum pressure 2,500 psi (17,250 kPa)
Boom movement times
(complete range of movement):
Turntable Swing
CW or CCW (360°): 100 - 110 seconds
Platform Rotation
CW or CCW (180°): 16 - 20 seconds
Main Boom Elevation
UP: 40 - 45 seconds
DOWN: 40 - 45 seconds
Boom Extension
OUT: 40 - 45 seconds
IN: 25 - 30 seconds

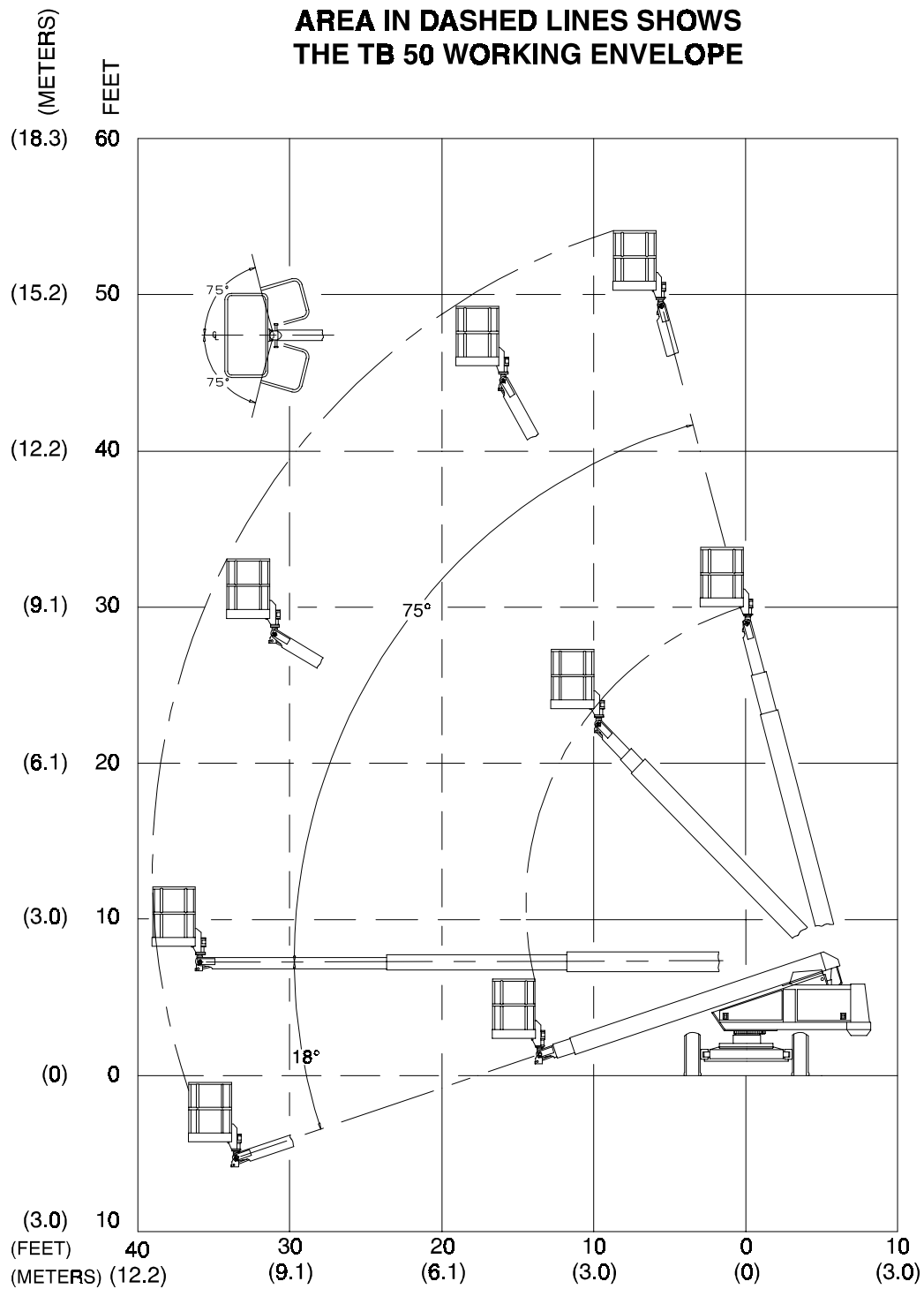
■ PLATFORM SPECIFICATIONS: TB 50

PLATFORM	SIZE inches (cm)	Unrestricted rated work load (total weight of personnel, tools, and materials that the platform is designed to carry above its floor -- same as UNRESTRICTED PLATFORM CAPACITY)
standard aluminum	30 x 60 (76 x 152)	Rated work load: 500 lbs (227 kg) Rated number of occupants: 2 people
optional aluminum	30 x 92 (76 x 233)	Rated work load: 450 lbs (204 kg) Rated number of occupants: 2 people



3. SPECIFICATIONS

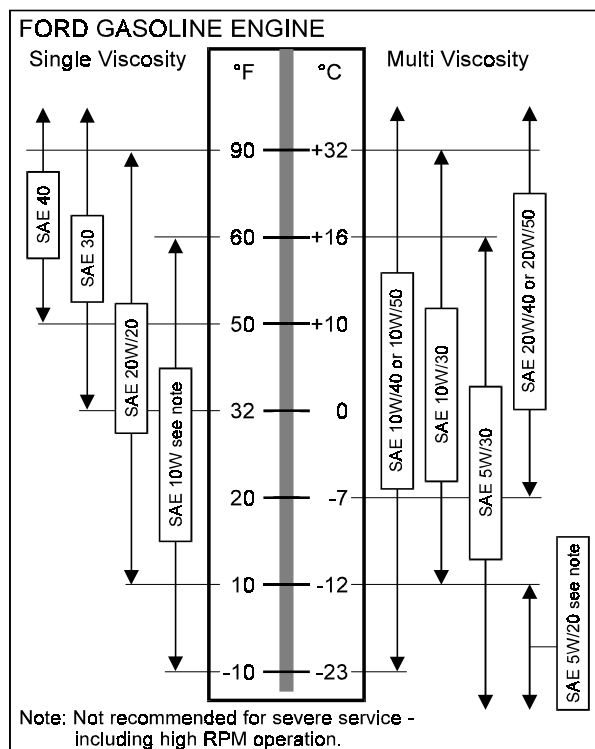
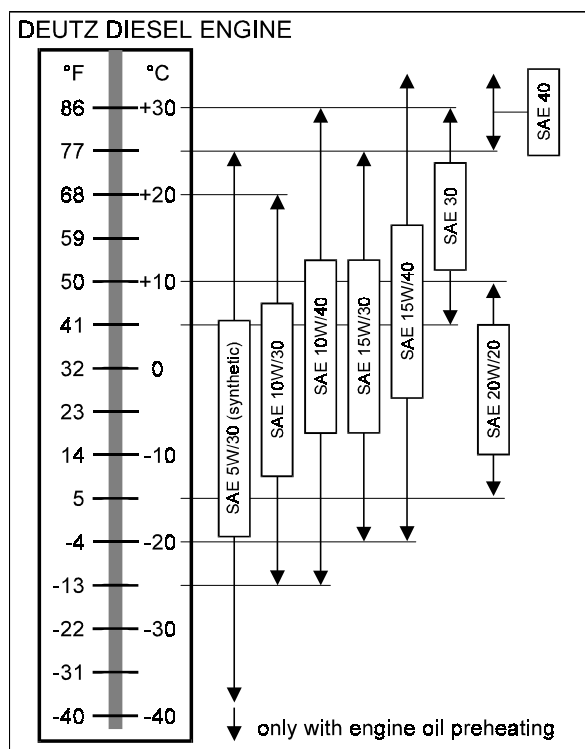
■ WORKING ENVELOPE: TB 50



■ ENGINE DATA: TB42/50

ENGINE MAKE	DEUTZ	FORD (gasoline)	FORD (LPG)
MODEL	F3L-1011F	VSG-411	
COOLANT	air	50% water + 50% ethylene glycol	
FUEL	diesel	gasoline	LPG (liquefied petroleum gas)
FUEL GRADE	DIN 51 601. BS 2869: A1 and A2. ASTM D 975-81: 1-D and 2-D. W-F-800C: DF-A, DF-1, and DF-2.	unleaded 87 octane (motor method).	HD5 Gas Processors Association Standard 2140. Category: special duty propane.
OPERATING TEMPERATURE	172°F - 203°F (78°C - 95°C)	160°F - 190°F (71°C - 88°C)	
OIL SUMP CAPACITY	5.5 qt USA (5.2 liters)	3 qt USA (2.8 liters)	
OIL FILTER CAPACITY	0.5 qt USA (0.5 liters)	0.5 qt USA (0.5 liters)	
OIL GRADE	API: CC/SE CC/SF CD/SE CD/SF CE/SF CE/SG	API: SG, SG/CC, or SG/CD	
OIL WEIGHT	see chart below	see chart below	
RUNNING TIME (one tank fuel)	Any tank of fuel (regardless of whether it is LPG, gasoline, or diesel) will last an entire eight hour shift, under normal working conditions.		

■ ENGINE OIL CHARTS



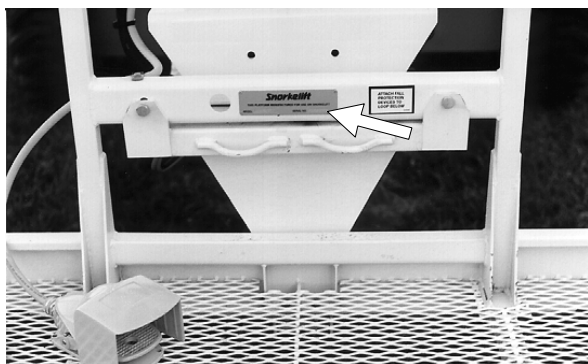
3. SPECIFICATIONS

■ TB42/50 SERIAL-NUMBER LOCATIONS

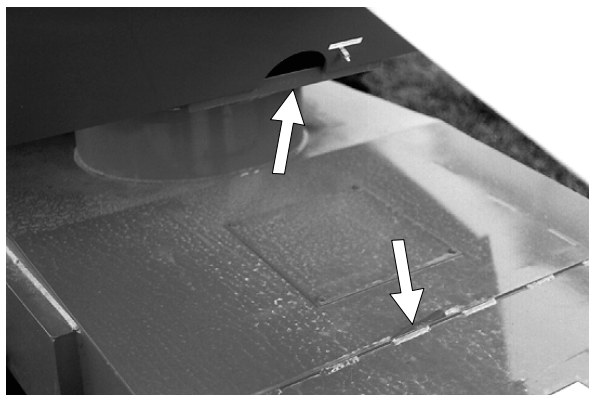
Serial Numbers are located in five places.



1. Above the ground-control panel on a placard.
(The last four digits are month and year shipped.)
2. On the back-right of the counterweight.

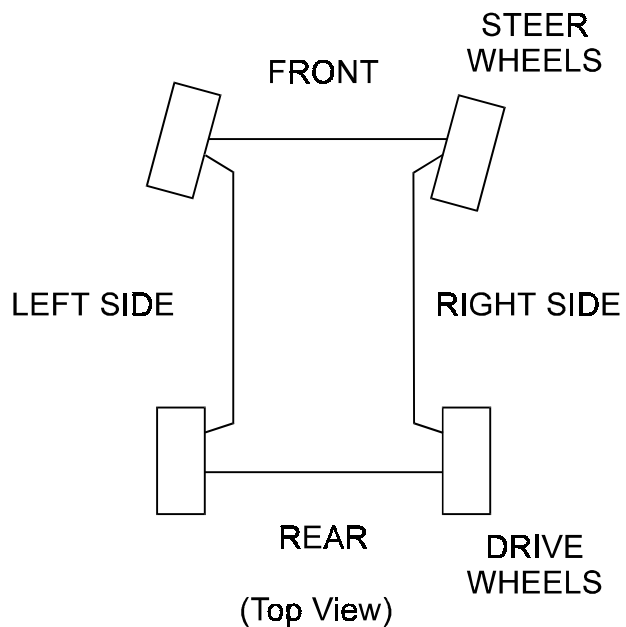


3. Above the lanyard anchor points on a placard.
Last four digits are mo. and yr. shipped.)

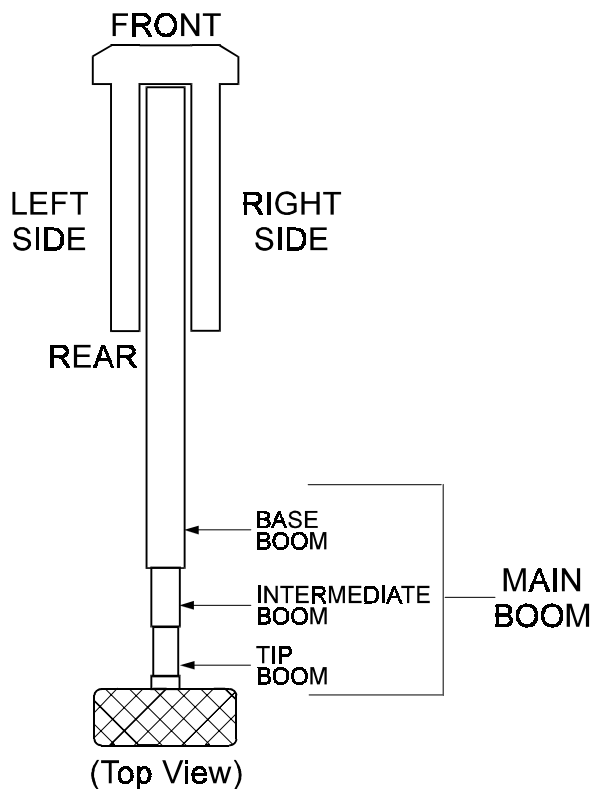


4. Below the drain hole in the turntable.
5. At the weld on the rear of the chassis.

■ CHASSIS NOMENCLATURE



■ TURNTABLE AND BOOM NOMENCLATURE

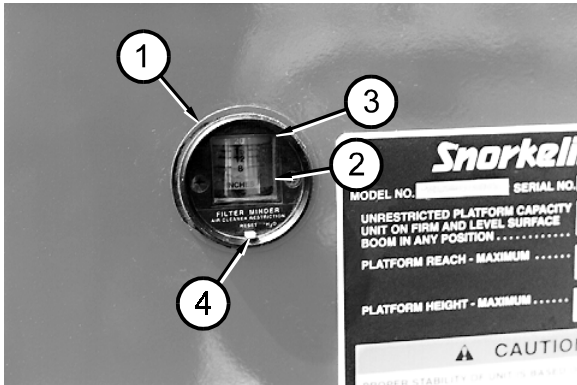


NOTE: If the turntable is rotated 180° its
FRONT is above the REAR of the chassis.

4. GAUGES & CIRCUIT BREAKERS

■ GAUGES

□ FILTER MINDER



The air filter gauge (1) (**FILTER MINDER**) is located just above the ground-control panel. The gauge measures the vacuum (air pressure) between the intake manifold and the air filter. As the filter clogs, the vacuum increases (pressure drops). As the vacuum increases, the yellow indicator disk (2) raises toward the red area (3) of the sight glass. When the yellow disk reaches the red, it's time to change the air filter.

The indicator disk (2) stays at its highest setting, it does not go to the bottom of the sight glass when the engine is turned off. After the filter is changed, press the small **RESET** button (4) to reset the indicator disk to the bottom of the sight glass.

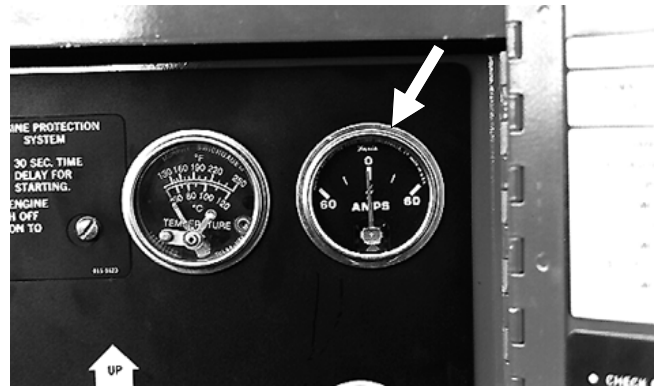
□ TEMPERATURE



The **TEMPERATURE** gauge is located at the top of the ground-control panel. For Ford engines it shows the temperature of the water-antifreeze mixture in the engine block. The typical operating-temperature range for Ford engines is 160°F to 190°F (71°C to 88°C).

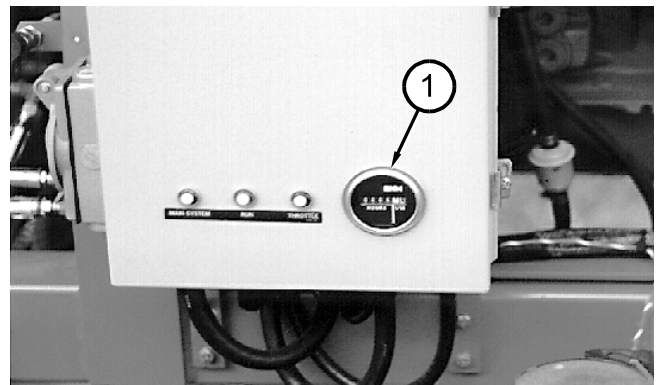
The **TEMPERATURE** gauge for Deutz engines shows the temperature of the engine oil as the oil leaves the oil filter. The typical operating-temperature range for a Deutz engine is 172°F to 203°F (78°C to 95°C).

□ AMPS



The **AMPS** gauge shows the electric current from the alternator to the battery(ies). When the engine is running, the needle in the **AMPS** gauge should not be to the left of "0." Under normal operating conditions, after the engine has been running for a few minutes, this gauge should read "0."

□ HOURS



The **HOURS** gauge (1) is located on the wiring box, to the left of the ground-control panel (behind the cowling door). The **HOURS** gauge is basically an electric clock. It accumulates time when:

BATTERYON
SELECTOR SWITCH..... GROUND
EMERGENCY STOP (ground)ON
MASTERON.

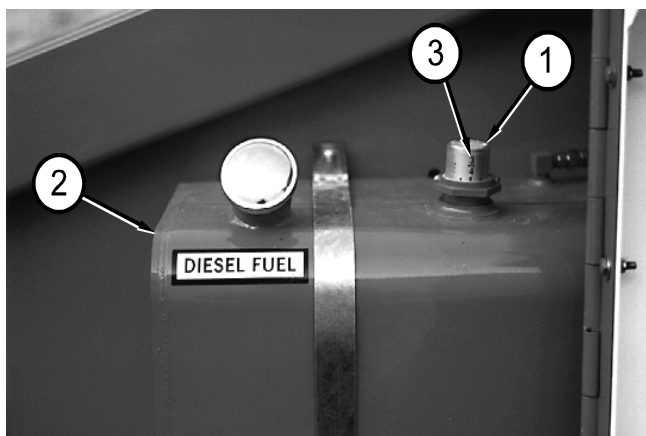
4. GAUGES & CIRCUIT BREAKERS

The **HOURS** gauge also accumulates time when:

BATTERY ON
SELECTOR SWITCH PLATFORM
EMERGENCY STOP (ground)..... ON
MASTER..... ON
EMERGENCY STOP (platform)..... ON
ANTI-RESTART MASTER SWITCH ..ON

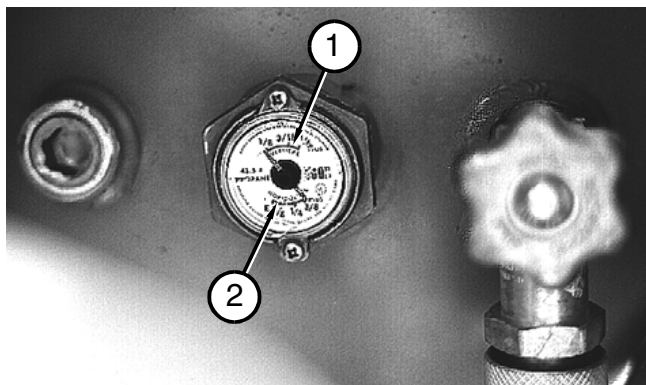
The **HOURS** gauge cannot be reset. Use it to tell when it is time for 150 hour or 500 hour maintenance.

❑ Fuel



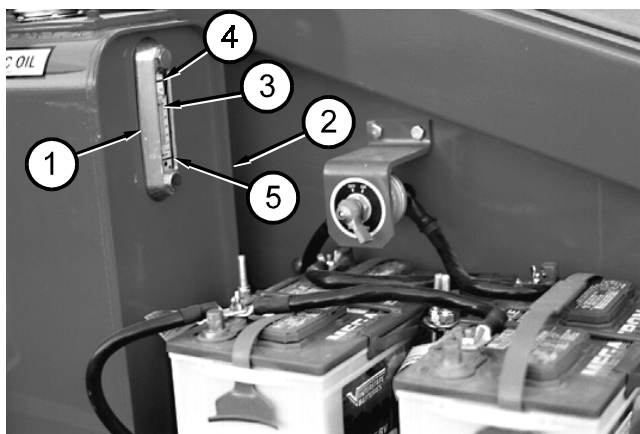
The fuel gauge (1) is located on top of the gasoline or diesel fuel tank (2). Read it at the line (3) in the clear plastic window. It reads in fractions-of-a-full-tank.

NOTE: Do not run a diesel fuel tank dry. Air in the fuel line makes a diesel engine hard to start.



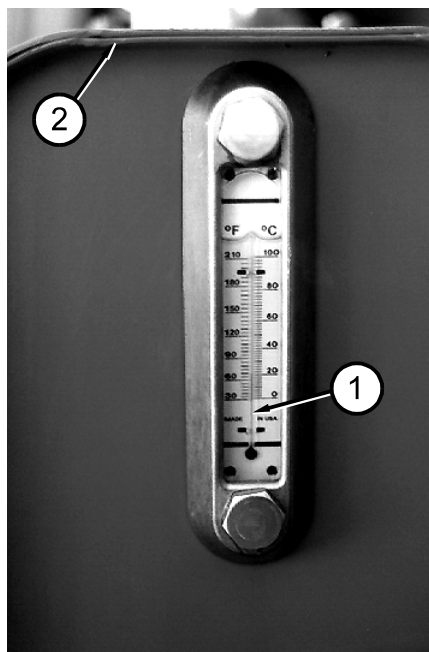
(OPTION - LPG) LPG tanks have two fuel gauges (1) (2) on top. One measures correctly when the tank is standing on end (**VERTICAL**) the other measures correctly when the tank is laying down (**HORIZONTAL**). Both read in fractions-of- a-full-tank. Tanks on TB42/50's are mounted horizontally. Therefore, you should read the **HORIZONTAL** scale (2).

❑ Hydraulic Oil Level



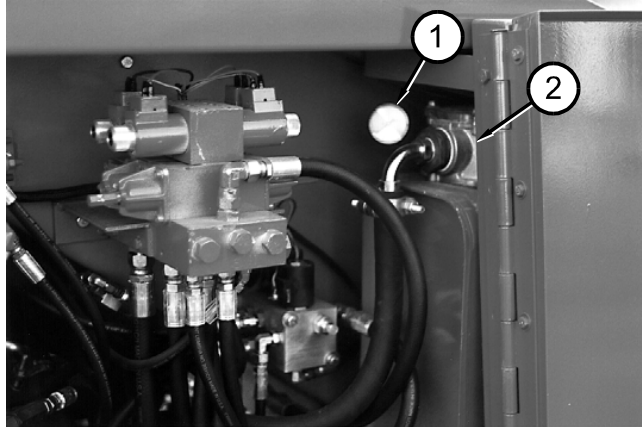
The hydraulic-oil level gauge (1) is on the end of the hydraulic oil tank (2). It shows the actual level of oil inside the tank. Read it only when the booms are completely down and completely retracted. Otherwise, the lift and/or extend cylinders become large reservoirs for hydraulic oil and the oil level in the tank will be low. The oil level (3) should be between the **HIGH** mark (4) and **LOW** mark (5).

❑ Hydraulic Oil Temperature



The hydraulic-oil *temperature* gauge (1) is located inside the hydraulic-oil level gauge. It measures the temperature of the oil in the tank (2). The temperature should not exceed 200°F (93°C). If it does, reduce your driving speed or stop the TB42/50 to let the hydraulic oil cool.

Hydraulic Oil Filter

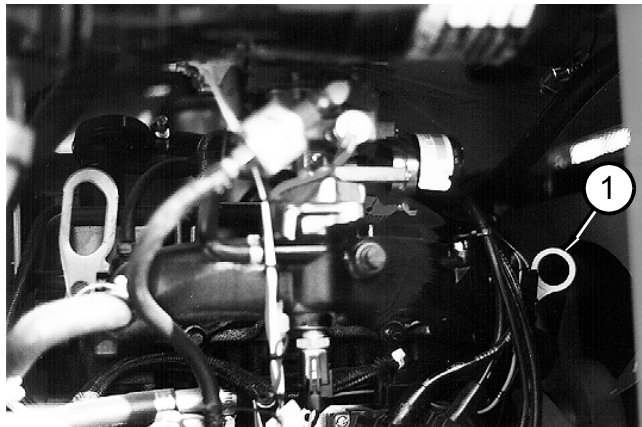


The hydraulic-oil filter gauge (1) is located at the hydraulic-oil filter (2) input on top of the hydraulic oil tank. The gauge measures pressure into the filter. As the filter clogs, the pressure goes up.

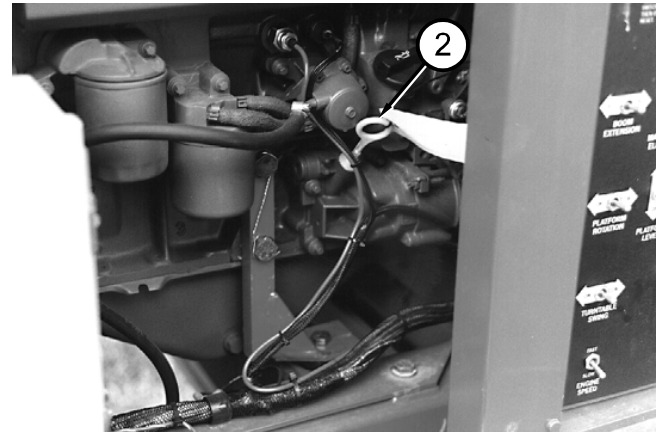
The hydraulic oil filter gauge should only be read by qualified trained maintenance personnel. An accurate reading requires very special conditions and should not be attempted by operators.

Engine Oil

FORD



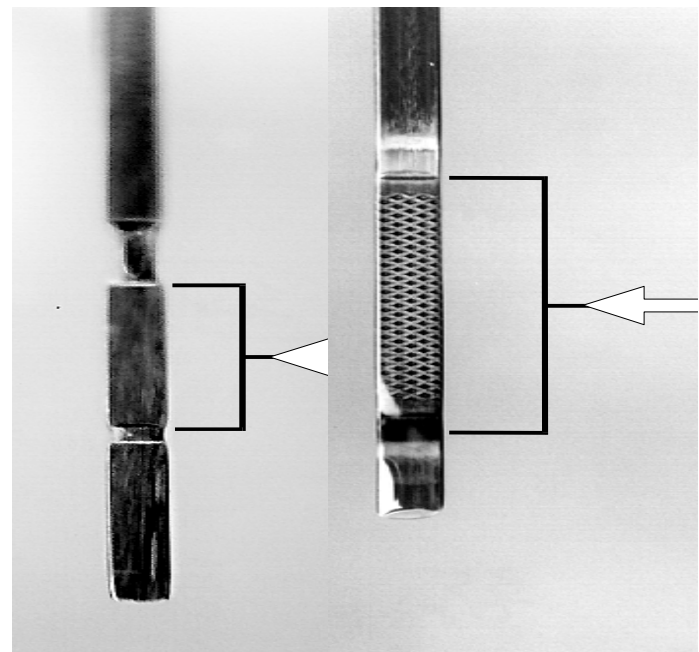
DEUTZ



Engine oil level is measured with a dipstick (1) (2). Oil sump and oil filter capacities given in the "SPECIFICATIONS" chapter are approximate. True values may vary from machine to machine due to slight variations or modifications during production. The oil dipstick is the only way to accurately gauge if the engine oil level is correct

FORD

DEUTZ



Engine oil level should always be in the area indicated on the dipsticks above — never above or below.

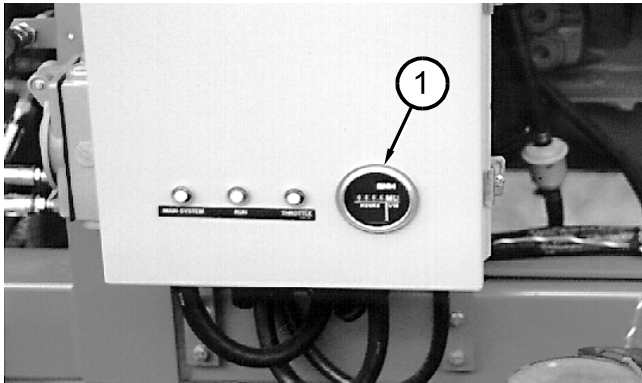
4. GAUGES & CIRCUIT BREAKERS

■ CIRCUIT BREAKERS

There are seven circuit breakers on a TB42/50. Their purpose is to protect electrical circuits from electrical overloads



Four are on the platform-control box.



Three are on the wiring box.

If any of these circuit breakers pops out, as shown here,



push it back in. If it pops out again, there is a problem in its electrical circuit and the TB42/50 should be removed from service immediately and remain out of service until it is repaired by a qualified service technician.

5. SIRENS & AUTOMATIC SHUT-OFFS

■ SIRENS

In addition to the tilt alarm siren (described in “SAFETY DEVICES”), the TB42/50 emits other alarm sounds under certain conditions.

There is a mini-siren on a TB42/50.



It is located on the platform-control box. It emits a single continuous tone if any of the following conditions occur:

- the engine temperature gets dangerously high,
- there is no alternator current,
- the **MASTER** switch or the **ANTI-RESTART MASTER SWITCH** is turned ON just prior to starting the engine.

When you hear a single continuous tone, if the engine is running, shut the engine off and check the engine temperature and alternator drive-belt. Correct the problem before returning the TB42/50 to service.

If the engine is off when you hear the single continuous tone, someone (maybe you) has turned the **MASTER** switch or **ANTI-RESTART MASTER SWITCH** to ON and is about to start a TB42/50. Be alert and watch for machine movement.

■ AUTOMATIC SHUT-OFFS

If the coolant in a Ford engine exceeds 220°F (104°C) the engine will automatically stop and cannot be restarted until it cools. A single continuous tone will be emitted by the mini-siren prior to shut-off.

If the oil in a Deutz engine exceeds 230°F (110°C) the engine will automatically stop and cannot be restarted until it cools. A single continuous tone will be emitted by the mini-siren prior to shut-off.

If a Deutz engine starts and runs for 30 seconds without producing any alternator current, the engine will automatically stop. This feature protects the engine temperature in the event the fan/alternator drive-belt breaks. A single continuous tone will be emitted by the mini-siren prior to shut-off.

This chapter explains what each control does.
This chapter does not explain how to use the controls to produce useful work: refer to the “OPERATION” chapter for that, after you have read this chapter.

The only optional equipment discussed in this chapter is the control for dual-fuel. For other optional equipment controls, see the “OPTIONS” chapter.

The TB42/50 can be controlled from either of two places:

- the GROUND-CONTROL PANEL (1),
- the PLATFORM-CONTROL BOX (2).



6. CONTROLS

■ GROUND-CONTROL PANEL

Switches for operating the TB42/50 from the ground are located on the right side of the machine behind the small door.

NOTE: The number of each switch below corresponds to the switch's call-out on the next page.

1. **EMERGENCY STOP:** Press the red cover down, at any time, under any conditions, and the entire machine stops — the engine turns off, the brakes set, and nothing moves. This switch must be up for anything on the machine to work.
2. **EMERGENCY POWER:** If the engine stops and cannot be restarted, continuously holding this switch down activates a small, battery-powered hydraulic-pump that supplies emergency hydraulic power for the machine. Boom movements will be slow and have long lag times under EMERGENCY POWER.
3. **SELECTOR SWITCH:** Must be in the GROUND position for the ground-control panel to work. Must be in the PLATFORM position for the platform controls to work.
4. **GROUND OPERATION:** You must manually hold this switch up any time you use one of the five platform-moving switches (see box at right) to move the platform. Holding the switch up increases the engine speed and activates the platform-moving switches in preparation to do work.
5. **MASTER:** This switch works like an automobile ignition switch. Hold it at START until the engine starts then release it to ON. If the engine dies in ON, the key must be turned to OFF before it will go back to START.

NOTE: On some machines you might have to pause about three seconds in the ON position before going to START so the starter can engage.

Turn the MASTER switch to OFF if the platform is to stay in a particular position for a long time. That will turn the engine off and save fuel.

6. **ENGINE SPEED:** Leave the switch set on SLOW unless you need to warm the engine and hydraulic oil up FAST. Return to SLOW after warm-up.

7 through 11 are the platform-moving switches. Each is a three position, momentary contact, normally-off switch.

7. **TURNTABLE SWING:** CW rotates the entire turntable clockwise (as seen from above). CCW rotates the turntable counterclockwise.

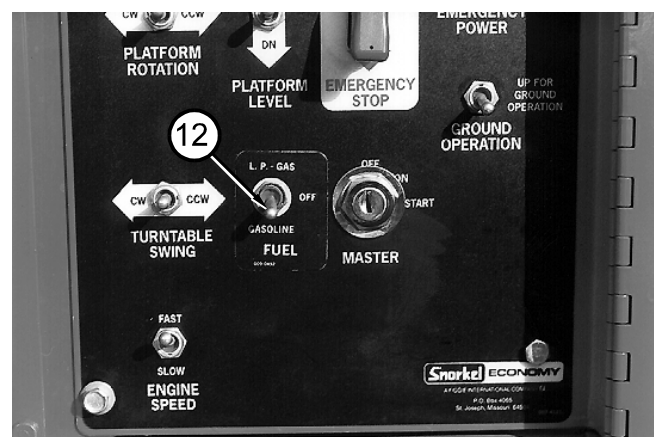
8. **PLATFORM ROTATION:** CW rotates the platform clockwise (as seen from above) relative to the end of the tip-boom. CCW rotates the platform counterclockwise.

9. **PLATFORM LEVEL:** UP rotates the platform up relative to the end of the tip-boom. DN (down) rotates the platform down.

10. **BOOM EXTENSION:** OUT extends the booms. IN retracts the booms.

11. **MAIN BOOM ELEVATION:** UP raises the base-boom. DN (down) lowers the base-boom.

12 (OPTION - FUEL): Before starting the engine set the FUEL switch to GASOLINE or L.P.-GAS depending on which you want to use. If you select L.P.-GAS be sure to open the valve on top the LP gas tank. To switch fuels with the engine running, see the DUAL FUEL SYSTEM decal on the inside of the ground-control panel door.





6. CONTROLS

■ PLATFORM-CONTROL BOX

Controls for operating the TB42/50 from the platform are located on the platform-control box, with the exception of the yellow foot switch which is on the platform floor.

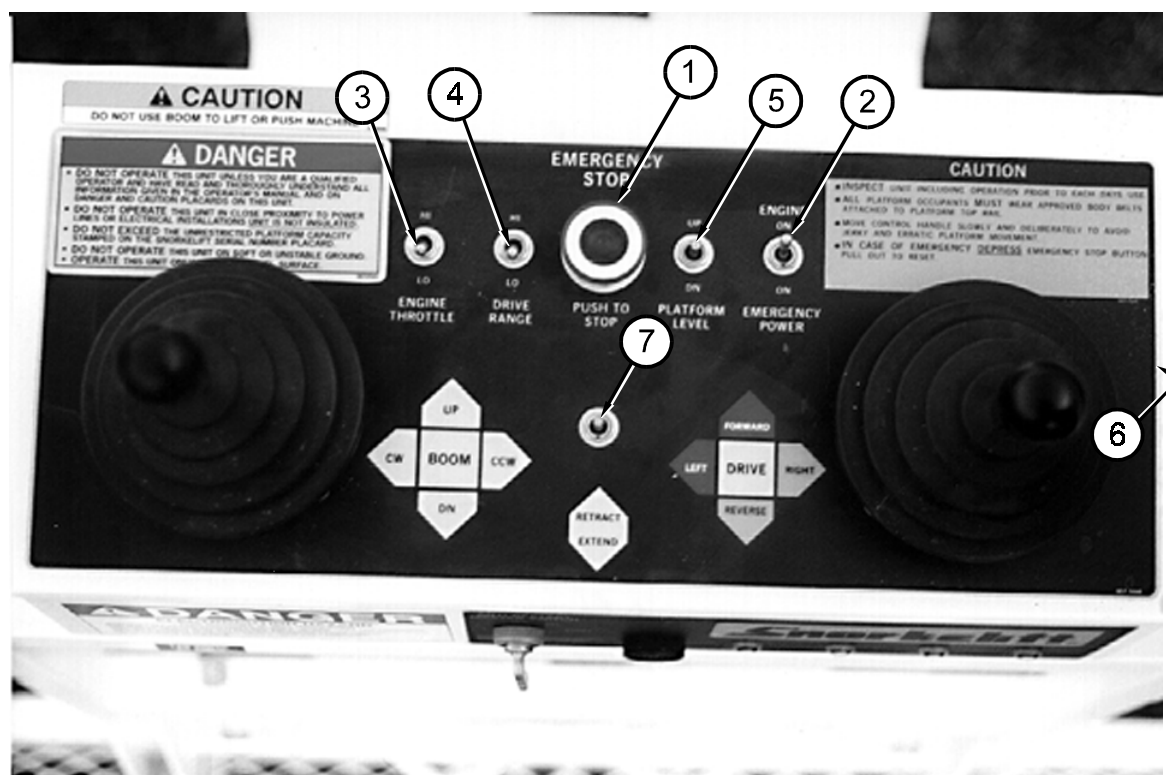
1. **EMERGENCY STOP:** Press the large red cap down at any time, under any conditions, and the entire machine stops — the engine turns off, the brakes set, and nothing moves. This switch must be pulled to its up (or out) position if the TB42/50 is to be controlled from the platform.
2. **EMERGENCY POWER:** If the engine stops and cannot be restarted, hold the switch toward you and a small, battery-powered hydraulic-pump comes on to supply power for the machine. Boom movements will be slow and have long lag times under EMERGENCY POWER.
3. **ENGINE THROTTLE:** Leave this switch set on LO unless you want to drive at maximum speed (see DRIVE RANGE below).
4. **DRIVE RANGE:** In LO the TB42/50 will only travel 1 mph (1.6 km/hr). In HI the TB42/50 will travel 3 mph (4.8 km/hr) if the booms are down and retracted and ENGINE THROTTLE is set to HI. If the booms are up or extended the TB42/50 will only travel 1 mph (1.6 km/hr) regardless of this switch setting.

Switching from LO to HI changes the driving conditions from low speed and high torque to the wheels to high speed and low torque to the wheels.

! CAUTION

Prolonged driving in HI (3 mph, 4.8 km/hr) heats the hydraulic oil. Periodically check the thermometer at the hydraulic-oil tank sight-glass. Do not let the oil exceed 200°F (93°C). Stop the engine and let the oil cool if necessary.

5. **PLATFORM LEVEL:** UP rotates the platform up relative to the end of the tip-boom. DN (down) rotates the platform down.
6. **PLATFORM ROTATOR:** (Mounted on the right side of the platform-control box.) CW rotates the platform clockwise (as seen from above) relative to the end of the tip-boom. CCW rotates the platform counterclockwise.
7. **RETRACT/EXTEND:** RETRACT causes the tip and intermediate-booms to move into the base-boom. EXTEND causes the tip and intermediate-booms to move out of the base-boom.

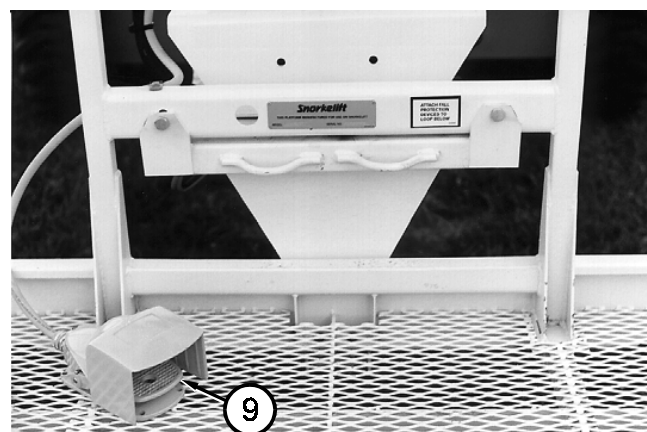


8. ANTI-RESTART MASTER SWITCH: This switch works like an automobile ignition switch. Hold it at START until the engine starts then release it to ON. If the engine dies in ON, the key must be turned to OFF before it will go back to START. Turn the switch to OFF if the platform is to stay in a particular position for a long time. This will turn the engine off and save fuel.



NOTE: On some machines you might have to pause about three seconds in the ON position before going to START so the starter can engage.

9. Foot Switch: You must step down on the foot switch, and hold it down, any time you use any platform control that will move the platform. Stepping on the foot switch increases the engine speed and activates other switches/controls in preparation to do work. (The foot switch is to the platform what the GROUND OPERATION switch is to the ground-control panel.)



NOTE: Do not step on the foot switch while you are trying to start the engine.

6. CONTROLS

10. DRIVE

FORWARD: Slowly push the DRIVE controller forward and the TB42/50 moves forward. The further forward you push the controller the faster the TB42/50 goes (max. 3 mph, 4.8 km/hr).

REVERSE: Same as FORWARD except the TB42/50 moves backward.

RIGHT: Push the DRIVE controller to the right and the front wheels move in the direction for a right hand turn. The longer you hold the controller to the right the further the wheels turn.

LEFT: Works the same as RIGHT only for a left hand turn.

NOTE: The wheels stay the direction you turn them, they do not automatically return to center the way automobile wheels do.

NOTE: There are blue and yellow arrows on top of the chassis. The blue arrows point to the FORWARD end of the chassis and to the LEFT side of the TB42/50. The yellow arrows point to the REVERSE end of the chassis and to the RIGHT side of the TB42/50. The **DRIVE** controller is color coded to match the arrows. The color coding is designed to keep you from becoming disoriented when you are aloft and the platform is rotated with respect to the chassis.

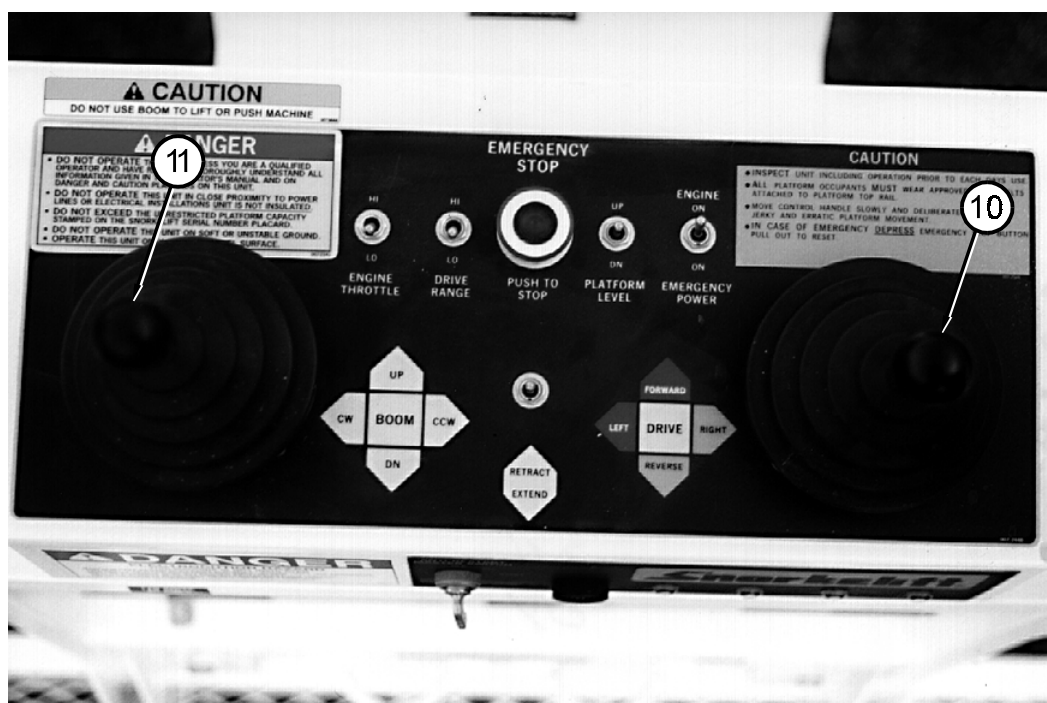
11. BOOM

UP: Slowly push the BOOM controller forward and the main-boom raises. The further forward you push the controller the faster the main-boom raises.

DN: Same as UP only the main-boom goes down.

CW: Slowly push the BOOM controller to the left and the turntable swings clockwise (from above). The further left you push the controller the faster the turntable swings.

CCW: Same as CW only the turntable swings counterclockwise.



Read and understand all the previous chapters in this manual before you begin to operate a TB42/50.

Dual-fuel is the only optional equipment discussed in this chapter. For operation of other optional equipment, see the “OPTIONS” chapter.

■ CONTROL STATIONS

A TB42/50 can be operated from the ground-control panel or from the platform-control box. There are basically two differences between ground-control and platform-control operations, both are safety related:

1. The ground-control panel can override the platform-control box at any time. If a person operating the machine from the platform becomes incapacitated, a person on the ground can always take over machine control.

! DANGER

Do not attempt to operate the TB42/50 ground controls when the platform, booms, or any other conducting part of an TB42/50 is in contact with energized electrical wires or if there is an immediate danger of such contact.

2. The TB42/50 can only be *driven* from the platform-control box. The wheels cannot be made to move from the ground-control panel. This prevents ground-control operators from running over themselves.

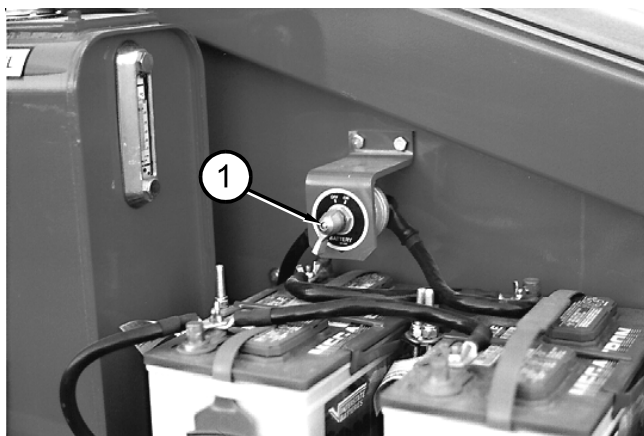
■ STARTING FROM THE GROUND-CONTROL PANEL

Before you begin to operate the TB42/50 a qualified operator must perform the “DAILY INSPECTION & MAINTENANCE” described in the chapter by that name in this manual.

□ Pre-start Conditions

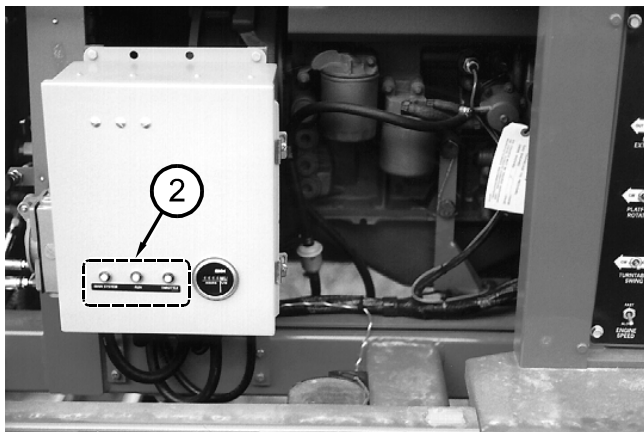
After the DAILY INSPECTION & MAINTENANCE has been performed, put the TB42/50 into its pre-start conditions. Pre-start conditions for operation from the ground-control panel are:

1. Set the **BATTERY** switch (1) to ON (close the battery-compartment door).



2. Check the circuit breakers (2) to see that none has popped out (close the engine-compartment door).

NOTE: You do not need to check the circuit breakers on the platform-control box.



3. Set the **SELECTOR SWITCH** (3) to GROUND.
4. Flip the red cover (8) up then set the **EMERGENCY STOP** toggle switch (4) to UP FOR RUN.

7. OPERATION

5. Set the **ENGINE SPEED** switch (5) to SLOW.



6. (OPTION - DUAL FUEL) For machines set up to run both gasoline and LP gas: Set the **FUEL** switch (7) to GASOLINE or L.P.-GAS depending on which you want to use. If you select L.P.-GAS, open the valve on top the LP gas tank.



□ Starting (from the ground)

Do not attempt to start a TB42/50 until the actions in the previous subsection (Pre-start Conditions) have been completed.

1. Insert the key (1) into the **MASTER** switch (2). Turn the key (1) to ON and pause there a few seconds while a siren sounds to alert others that the TB42/50 is about to start.

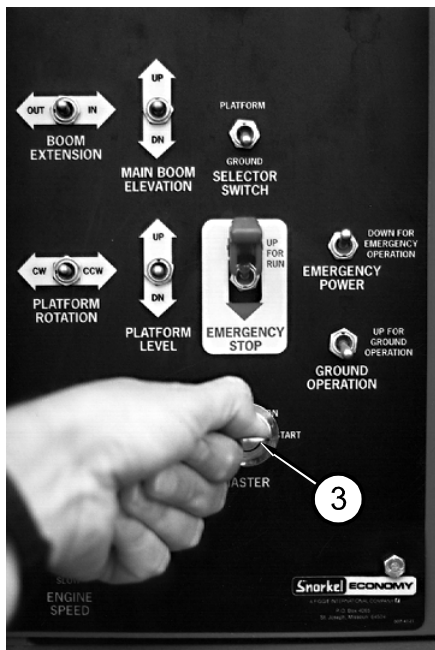


NOTE: If you pause 30 seconds or more an automatic protection feature will prevent the TB42/50 from starting. If that happens, turn the key (1) to OFF and try again.

CAUTION

If the engine fails to start (at the next step) in 20 seconds, turn the key to OFF and wait 60 seconds before turning the key to START again.

2. Turn the key (3) to START and hold it there until the engine starts (or for a maximum of 20 seconds) then release the key to ON.



The engine should now be running.

NOTE: If you want to move the platform from the ground-control station, skip the next section and go to **MOVING THE PLATFORM**.

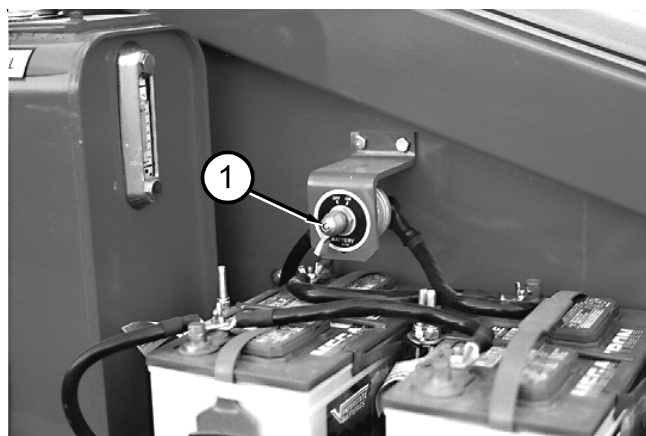
STARTING FROM THE PLATFORM-CONTROL BOX

Before you begin to operate the TB42/50 a qualified operator must perform the "DAILY INSPECTION & MAINTENANCE" described in the chapter by that name in this manual.

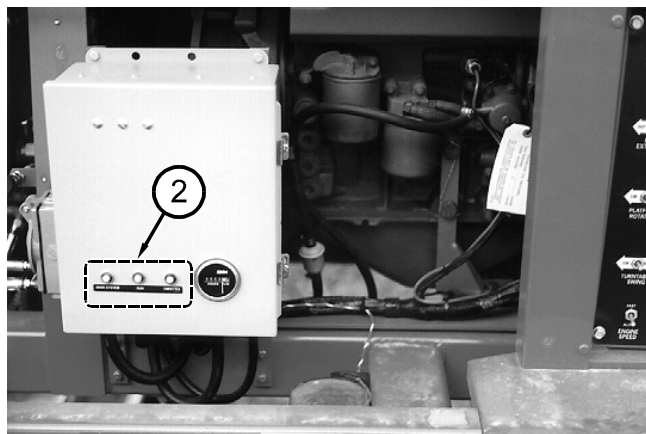
Pre-start Conditions

After the DAILY INSPECTION & MAINTENANCE has been performed, put the TB42/50 into its pre-start conditions. Pre-start conditions for operation from the platform-control box are:

1. Set the **BATTERY** switch (1) to ON (close the battery-compartment door).



2. Check the circuit breakers (2) to see that none has popped out (close the engine-compartment door).



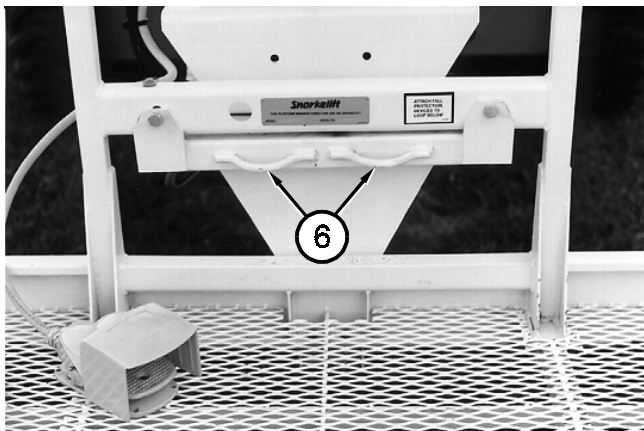
7. OPERATION

- At the ground-control panel, set the **SELECTOR SWITCH** (3) to PLATFORM.
- At the ground-control panel, set the **EMERGENCY STOP** switch (4) to UP FOR RUN.
- At the ground-control panel, insert the key into the **MASTER** switch (5) and turn it to ON (close the ground-control door).

NOTE: Because you set the **SELECTOR SWITCH** to PLATFORM, no “start-up” siren will sound when you set the **MASTER** switch to ON (unless both the **EMERGENCY STOP** and **ANTI-RESTART MASTER SWITCH**, at the platform-control box, are on).



- Put on a personnel fall-restraint device.
- Enter the platform, close the gate, and attach the lanyard of your fall restraint to one of the lanyard anchor points (6).



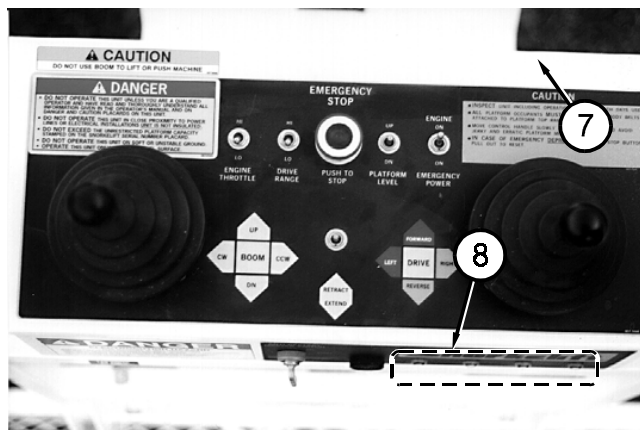
- At the platform-control box (7) set the following:

ENGINE THROTTLE LO

DRIVE RANGE LO

EMERGENCY STOP up

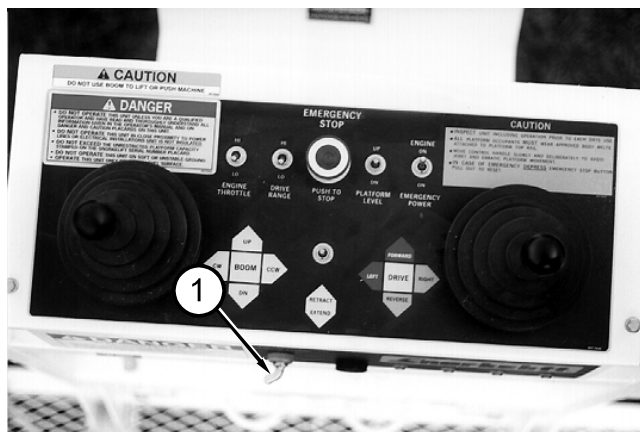
- Check the platform-control box circuit breakers (8) to see that none has popped out.



□ Starting (from the platform)

Do not attempt to start a TB42/50 until the actions in the previous subsection (Pre-start Conditions) have been completed

- Turn the **ANTI-RESTART MASTER SWITCH** (1) to ON and pause there a few seconds while a siren sounds to alert others that the TB42/50 is about to start.



NOTE: If you pause 30 seconds or more an automatic protection feature will prevent the TB42/50 from starting. If that happens, turn the **ANTI-RESTART MASTER SWITCH** to OFF and try again.

! CAUTION

If the engine fails to start (at the next step) in 20 seconds, turn the **ANTI-RESTART MASTER SWITCH** to OFF and wait 60 seconds before turning the switch to START again.

2. Turn the **ANTI-RESTART MASTER SWITCH** (2) to START and hold it there until the engine starts (or for a maximum of 20 seconds) then release the switch to ON.

NOTE: Do not step on the foot switch while you are trying to start the engine.



The engine should now be running.

■ MOVING THE PLATFORM

The engine should already be running (as described earlier in this chapter) before you start this section

! DANGER

Be certain that the space into which you are about to move the platform, boom, turntable, and chassis is free of obstructions. Always look in the direction of movement.

Be careful when operating a TB42/50 within 132 feet (40 meters) of an overhead electric-power line.

! DANGER

If you operate from the platform-control box be sure that the lanyard of your safety belt or harness is attached to one of the lanyard anchor points on the platform mount. Also, be sure the gate is closed behind you.

Each of the ways the platform can move is shown in the following two-page spread. The photos show the switches and controllers to use to move the platform. The switch and controller call-out numbers (on the left-hand page) correspond to the illustration numbers on the right-hand page.

NOTE: At the end of each work day the TB42/50 should be returned to the STOWED POSITION as described under STOWING in the "STOWING & TRANSPORTING" chapter.

7. OPERATION

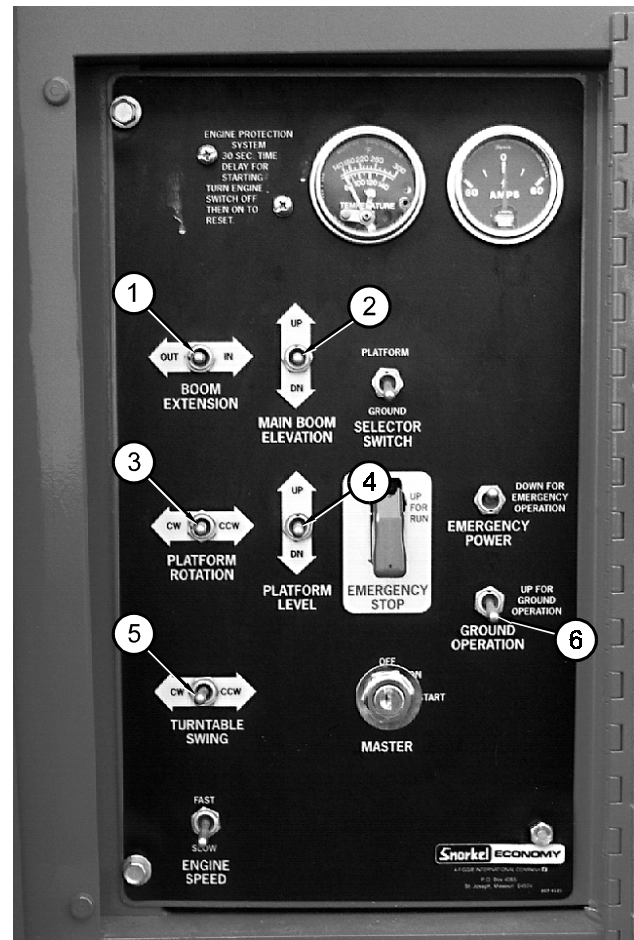
IMPORTANT

Ground-control panel operation: You must hold the **GROUND OPERATION** switch (6) up when you use any of the platform-moving switches (1 through 5) to move the platform. This is a safety feature to prevent the platform from moving if a single platform-moving switch is accidentally pushed.

IMPORTANT

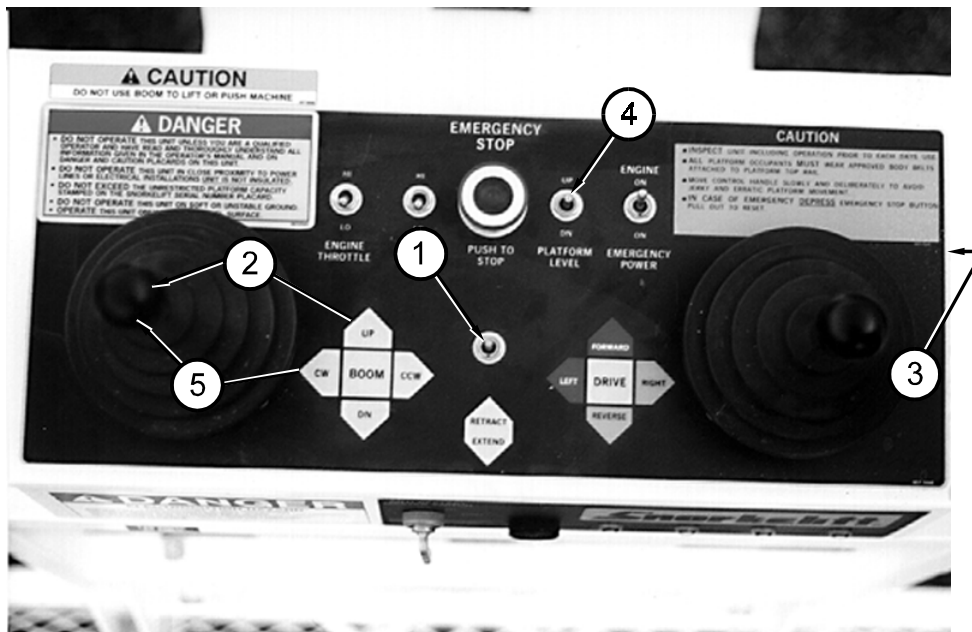
Platform-control box operation: You must be stepping on the foot switch (7) when you use any of the platform-moving switches or controllers (1 through 5) to move the platform. The foot switch is a safety feature to prevent the platform from moving if a single platform-moving switch or controller is accidentally pushed.

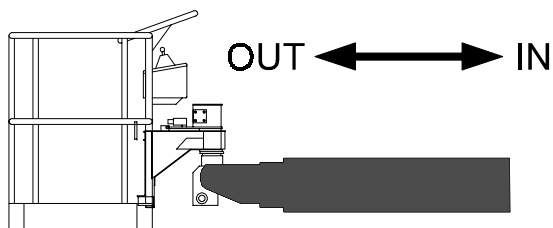
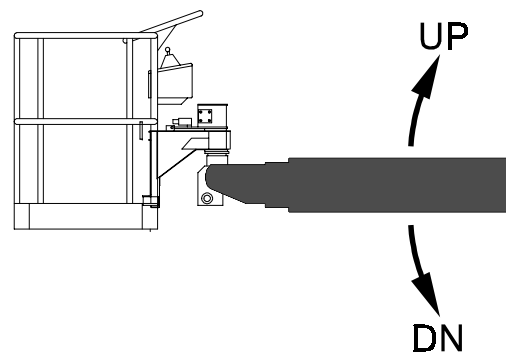
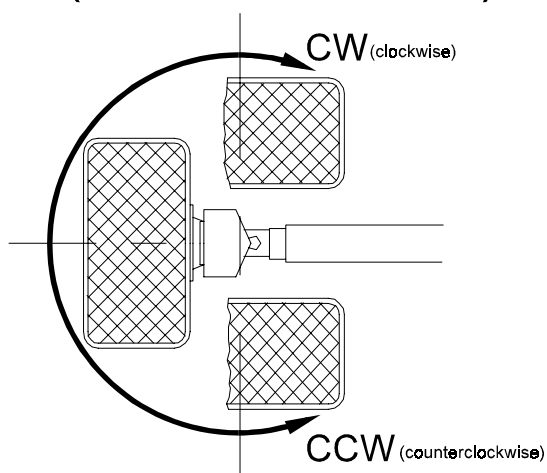
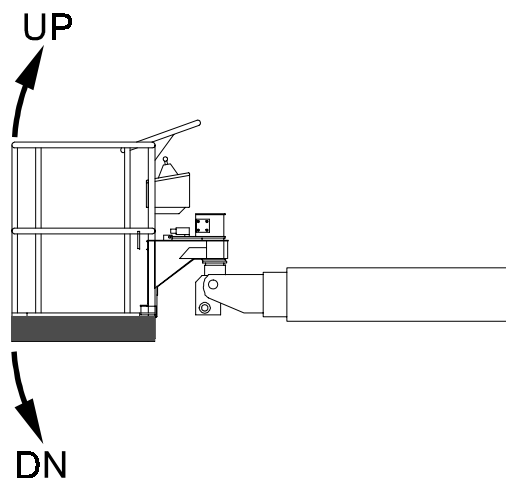
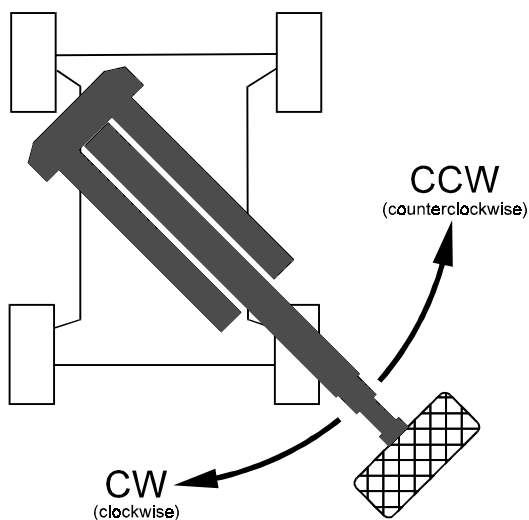
FOOT SWITCH



GROUND CONTROL PANEL

PLATFORM CONTROL BOX



**① BOOM EXTENSION
(RETRACT/EXTEND)****② MAIN BOOM ELEVATION
(BOOM)****③ PLATFORM ROTATION
(PLATFORM ROTATOR)****④ PLATFORM LEVEL****⑤ TURNTABLE SWING
(BOOM)**

7. OPERATION

MOVING THE TB42/50

There is a blue arrow on the FORWARD end of the chassis and a yellow arrow on the REVERSE end of the chassis. Pushing the **DRIVE** controller to FORWARD causes the chassis to move in the direction of the blue arrow on the end of the chassis. Pushing the **DRIVE** controller to REVERSE causes the chassis to move in the direction of the yellow arrow on the opposite end of the chassis.

NOTE: You must be stepping on the foot switch for the **DRIVE** controller to work.



STEERING

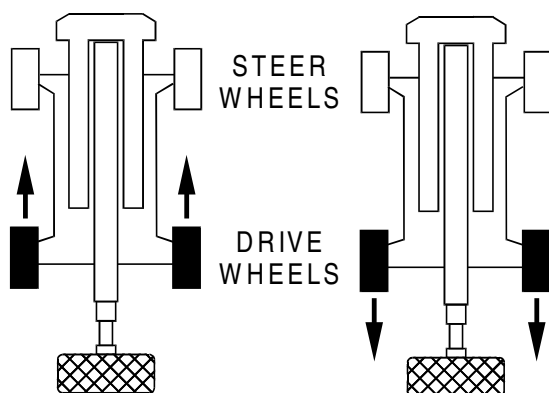
There are two blue arrows on the LEFT side of the chassis and two yellow arrows on the RIGHT side of the chassis. Pushing the **DRIVE** controller to the LEFT causes the front wheels to turn for a left turn. Pushing the **DRIVE** controller to the RIGHT causes the front wheels to turn for a right turn.

NOTE: You must be stepping on the foot switch.

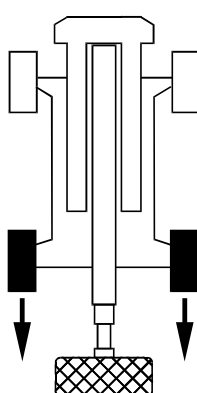
NOTE: When you release the **DRIVE** controller the wheels stay where you set them. The wheels do not return to the "straight ahead" position.



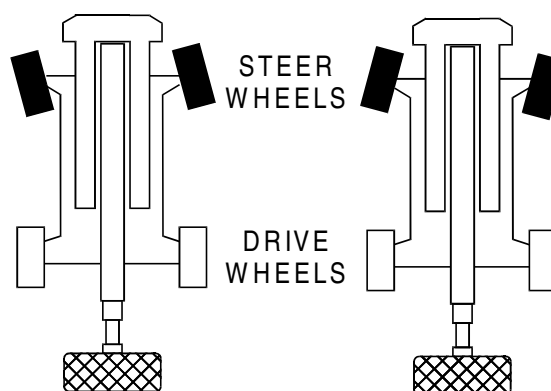
DRIVE
(FORWARD)



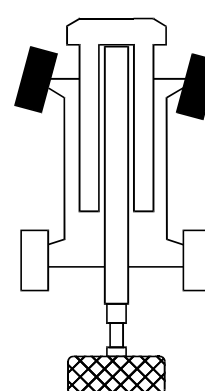
DRIVE
(REVERSE)



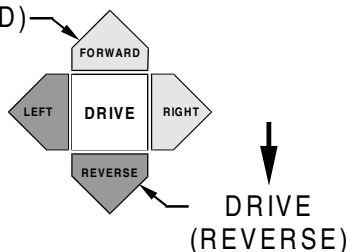
DRIVE
(LEFT)



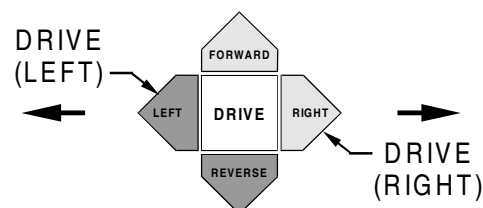
DRIVE
(RIGHT)



DRIVE
(FORWARD)



DRIVE
(LEFT)



DRIVE
(RIGHT)

■ 125 V AC OUTLET AT THE PLATFORM

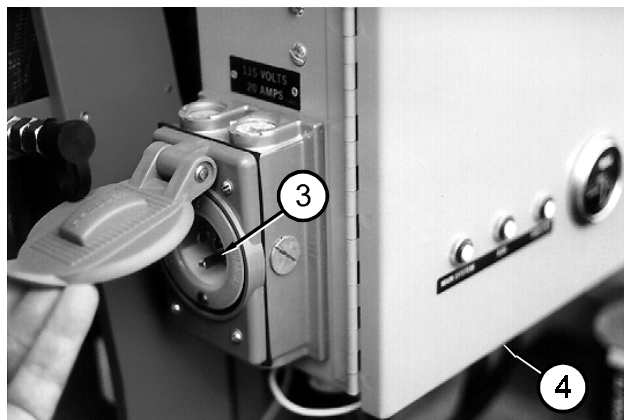
The electrical box (1) has two 3-prong, 125 V ac electrical connectors. Their combined output is limited by a 20 A, slow-blow circuit breaker (2).



The power-input connector (3) for the electrical box (1) is on the side of the wiring box (4). Plug a source of power into the power-input connector (3) if you intend to use the electrical box (1) to power equipment.

! CAUTION

Unplug the source of power before you move the TB42/50.



8. EMERGENCY OPERATION

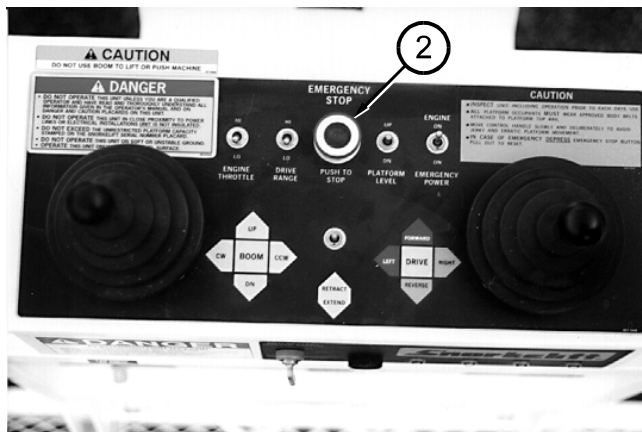
There are three forms of emergency operation for the TB42/50: emergency stop, emergency power, and emergency bleed-down. Each is covered as a separate section below.

■ EMERGENCY STOP

There are two **EMERGENCY STOP** switches on the TB42/50.



One (1) is located on the ground-control panel.



One (2) is located on the platform-control box.



The **EMERGENCY STOP** switch (3) on the ground-control panel can be used with the door open or with the door closed, as shown.

Push either **EMERGENCY STOP** switch down, at any time, and the entire machine stops, the engine turns off, the brakes set, and nothing moves.

Functionally, the **EMERGENCY STOP** switches do the same thing as turning the **MASTER** switch or the **ANTI-RESTART MASTER SWITCH** to OFF. The **EMERGENCY STOP** switches are designed to be easier to find and faster to use than key switches.

To reset the **EMERGENCY STOP** switches, pull or push them up. The TB42/50 engine can then be restarted in the normal way.

■ EMERGENCY POWER

Use **EMERGENCY POWER** when the platform must be lowered or retracted but the TB42/50 engine will not start.

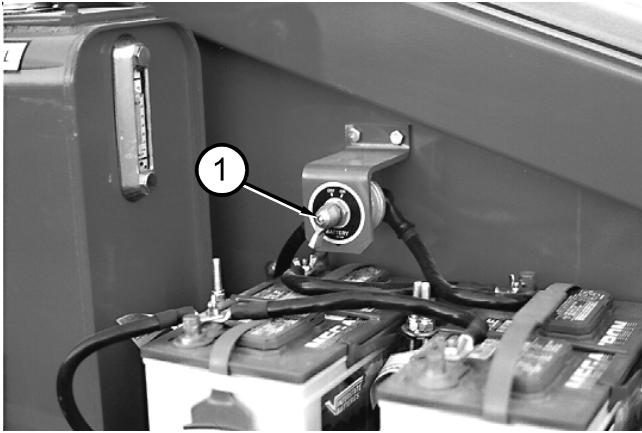
! CAUTION

Limit the use of **EMERGENCY POWER** to ten minutes to keep the emergency pump and motor from overheating. Let the pump and motor cool at least 15 minutes before reuse.

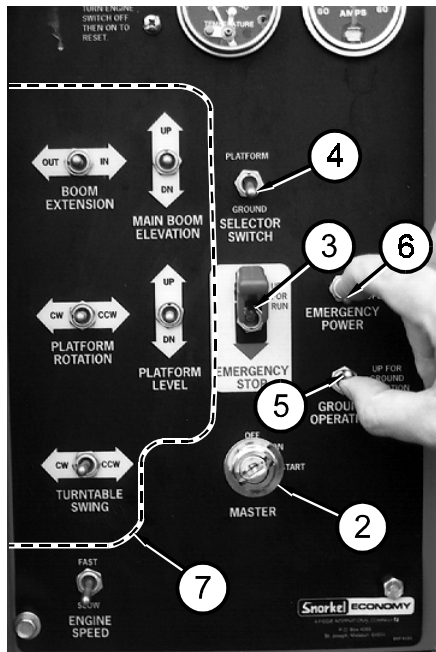
NOTE: Boom movements will be slow and have long lag times under **EMERGENCY POWER**.

8. EMERGENCY OPERATION

❑ Used From the Ground-Control Panel



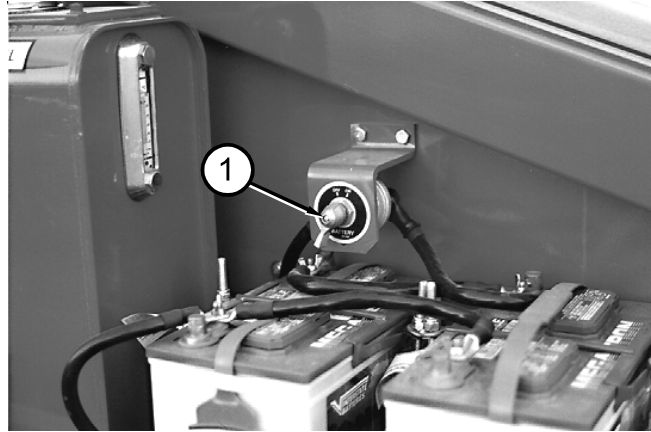
1. Set the **BATTERY** switch (1) to ON.



2. Set the **MASTER** switch (2) to ON.
3. Set the **EMERGENCY STOP** switch (3) to UP FOR RUN.
4. Set the **SELECTOR SWITCH** (4) to GROUND.
5. Push and continue to hold the **GROUND OPERATION** switch (5) up.
6. Move a platform-moving switch (7) the way you want the platform to move.
7. Push and continue to hold the **EMERGENCY POWER** switch (6) down.
8. When the platform is safely retrieved, release the switches and turn the **MASTER** switch (2) to OFF.

❑ Used From the Platform-Control Box

For **EMERGENCY POWER** to be used from the platform-control box, certain switch settings must exist at the ground-control panel and in the battery compartment. The switch settings are:

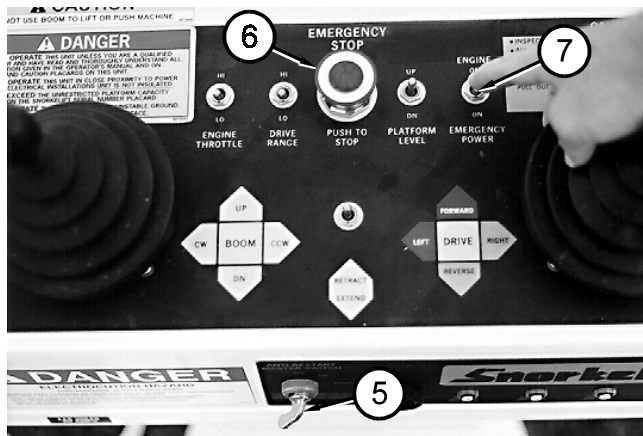


1. **BATTERY** switch (1) must be ON.



2. **MASTER** switch (2) must be ON.
3. **EMERGENCY STOP** (3) must be UP FOR RUN.
4. **SELECTOR SWITCH** (4) must be set to PLATFORM.

EMERGENCY POWER can now be used from the platform-control box by doing the following:



5. Set the **ANTI-RESTART MASTER SWITCH** (5) to ON.
6. Pull **EMERGENCY STOP** (6) up.
7. Step on the foot switch.
8. Hold a switch or controller (on the platform-control box) the way you want the platform to move.
9. Push and continue to hold **EMERGENCY POWER** (7) to ON.
10. When the platform is safely retrieved, set the **MASTER** switch (2) to OFF.

■ EMERGENCY BLEED-DOWN

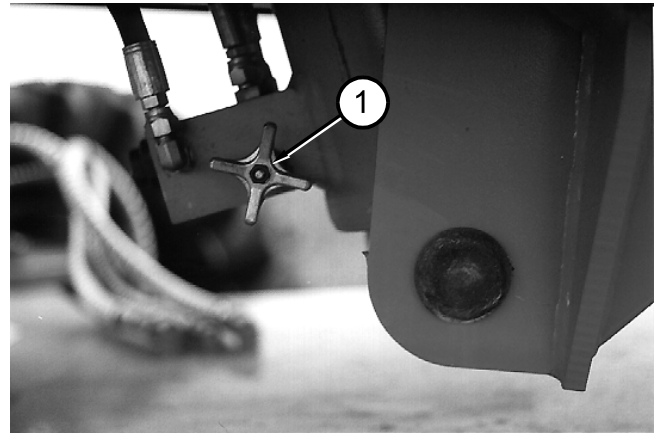
Use the emergency bleed-down valve when all three of the following conditions exist simultaneously:

- the platform needs to be lowered,
- the TB42/50 engine will not start,
- **EMERGENCY POWER** does not work (dead batteries or other cause).

! DANGER

Do not lower the platform or booms onto electrical wires, people, or other obstructions.

NOTE: If the main-boom is allowed to drop below the horizontal, the platform will not remain level.



The emergency bleed-down valve (1) is located under the left side of the turntable. To use the valve:

1. Very slowly open the bleed-down valve (1). The further it is opened, the faster the booms come down.

! DANGER

Be certain you close the emergency bleed-down valve (1) at the next step. Failure to do so prevents the main boom from remaining stationary in an elevated position.

2. Close the emergency bleed-down valve (1) when the main-boom is horizontal.

■ STOWING

At the end of each work day (or in preparation for transporting, lifting, towing, or storage) a qualified operator should put the TB42/50 into its **STOWED POSITION** then lock it.

The correct **STOWED POSITION** is shown here.



To bring the TB42/50 into the **STOWED POSITION** use the controls on the ground-control panel to:

1. Fully retract the main boom.
2. Fully lower the main boom.
3. Center the main boom between the rear wheels.

To lock the TB42/50:

1. If the engine has just been under load and is hot, set the **ENGINE SPEED** to **SLOW** and let the engine idle for five minutes.
2. Set the **MASTER** switch to **OFF**, remove the key, and close the ground-control panel door.
3. Set the **BATTERY** switch to **OFF**.
4. Close and lock the door to the battery compartment.
5. (OPTION - LPG) For machines equipped with LPG, close the valve on the LPG-tank (completely screwed in).
6. Close and latch all other doors.

■ TRANSPORTING

The user assumes all responsibility for choosing the proper method of transportation, and the proper selection and use of transportation and tie-down devices, making sure the equipment used is capable of supporting the weight of the aerial platform and that all manufacturer's instructions and warnings, regulations and safety rules of their employer, the DOT and/or any other state or federal law are followed.

❑ Trailering

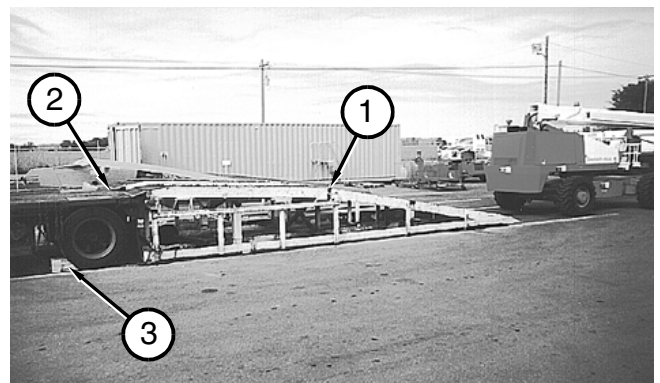
! DANGER

A TB42/50 weighs approximately 12,550 pounds (5,693 kg). Loading ramps must be able to support that weight. Transport trailers must be able to safely transport that weight.

! DANGER

Do not load a TB42/50 on grades over 25%; or with the turntable rotated with respect to the chassis; or on ramps with poor traction, uneven surfaces, or steps.

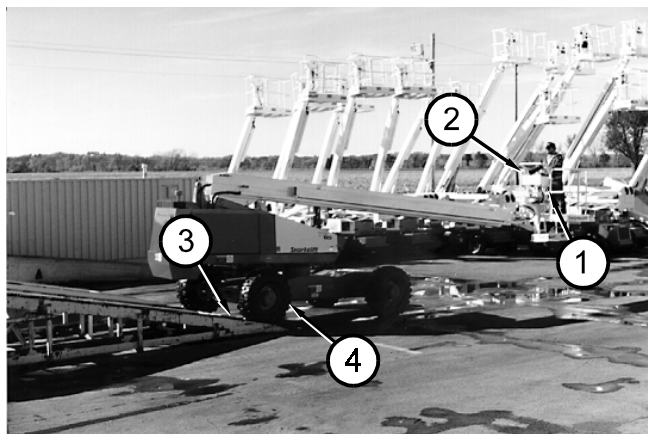
A TB42/50 can be safely driven onto a transport vehicle. To do so:



1. Visually inspect the alignment of the loading ramp (1) and the truck or trailer (2). They should both be on the same straight line.

2. Chock (3) the wheels of the truck or trailer so it cannot roll away from the loading ramp (1) while the TB42/50 is being loaded.

9. STOWING & TRANSPORTING



3. Enter the platform and attach the lanyard of your fall restraint to a lanyard anchor point (1) on the platform.

4. Use the controls of the platform-control box (2) to raise the main-boom to its horizontal position.

5. Use the platform controls to bring the TB42/50 into the STOWED POSITION (except main-boom horizontal) at the foot of the loading ramp (3) with the steering wheels (4) nearest the ramp (3).

6. Visually check (from the platform) to be sure the TB42/50 is aligned with the ramp and the ramp is still aligned with the truck or trailer. All should be in a straight line.

DANGER

Always set the DRIVE RANGE switch to LO anytime you drive up or down a grade.

7. Set the **DRIVE RANGE** switch to LO.

8. Use **TURNTABLE SWING** to move the platform slightly to the side so you are aligned with the wheels and can see them better.

9. Use the **DRIVE** controller to slowly drive the TB42/50 straight onto the ramp and trailer.

10. Use **TURNTABLE SWING** to align the base boom between the rear wheels.

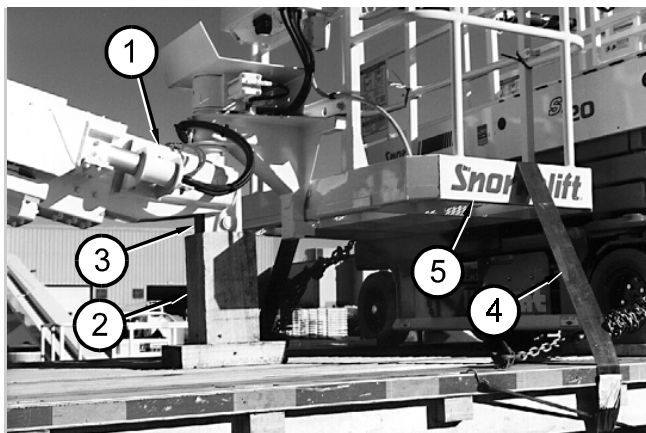
11. Completely lower the main-boom, then turn the **ANTI-RESTART MASTER SWITCH** to OFF.

12. Turn the ground-control panel **MASTER** switch OFF.

13. Chock the TB42/50 wheels.

❑ Securing to a Transport Vehicle

This procedure assumes that the TB42/50 is in its STOWED POSITION, and that its wheels are chocked.



1. Use **MAIN BOOM ELEVATION**, at the ground-control panel, to raise the-boom (1) a few inches.

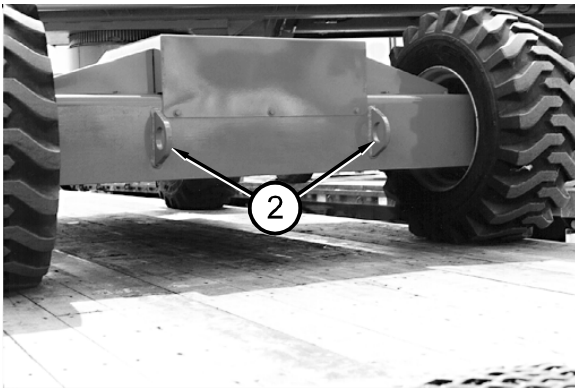
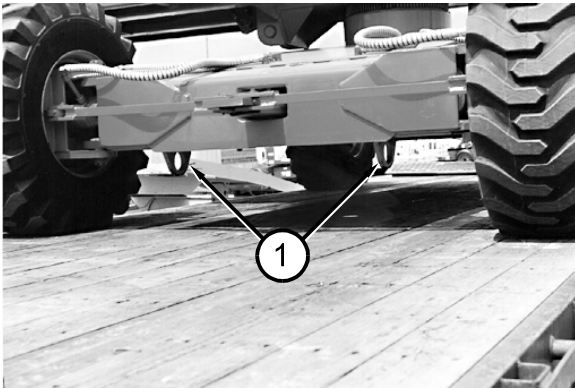
2. Place a large wood block (2) under the rotator pylon (3) and use **MAIN BOOM ELEVATION** to lower the rotator pylon (3) back onto the block (2).

3. Set the **MASTER** switch to OFF, remove the key, and close the ground-control panel door.

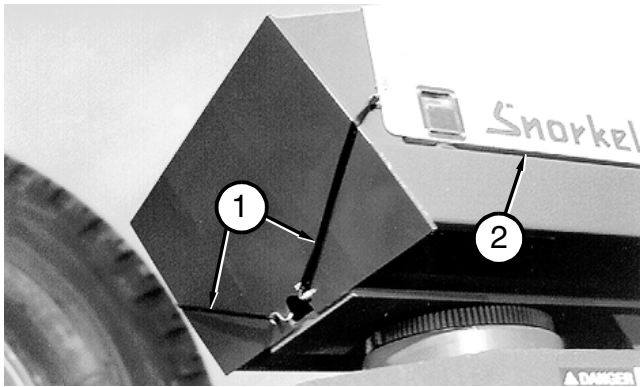
4. Set the **BATTERY** switch to OFF.

5. (OPTION - LPG) For machines equipped with LPG, close the valve on the LPG tank (completely screwed in).

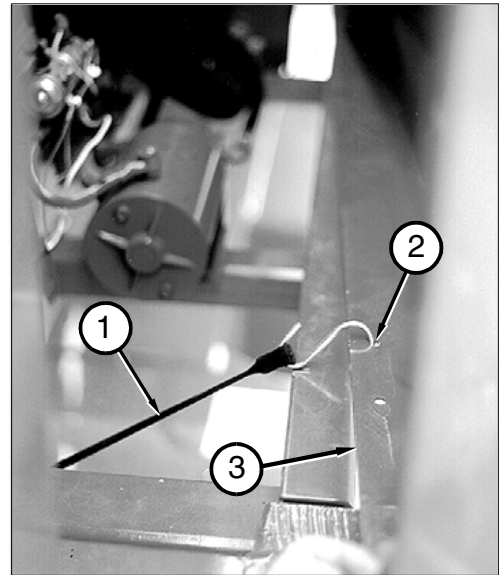
6. Use a nylon strap (4) to secure the platform (5) to the trailer as shown. (This will stop the end of the booms and the platform from moving during transport.)



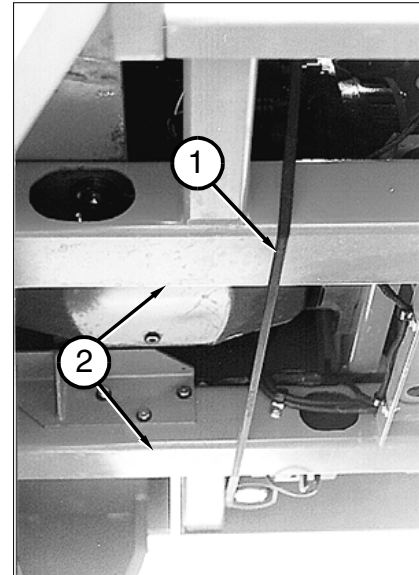
7. Attach chains to the front (1) and back (2) tie-down lugs. Chocks may be removed at this time, though it is a good idea to leave them in place.



8. Use rubber straps (1), as shown, to keep the rear cowling doors (2) from opening during transport.

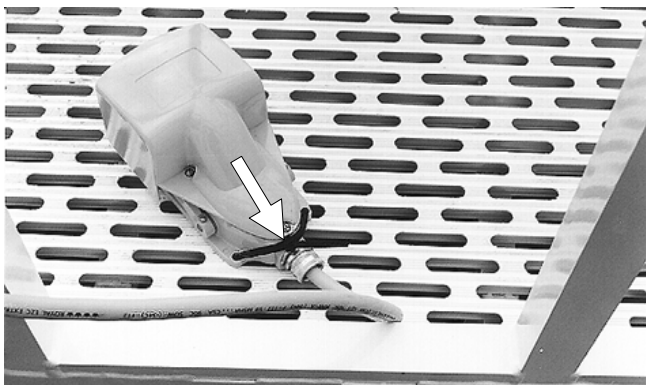


9. Hook a long rubber strap (1) through one of the holes (2) in the inside of one of the front cowling doors (3).

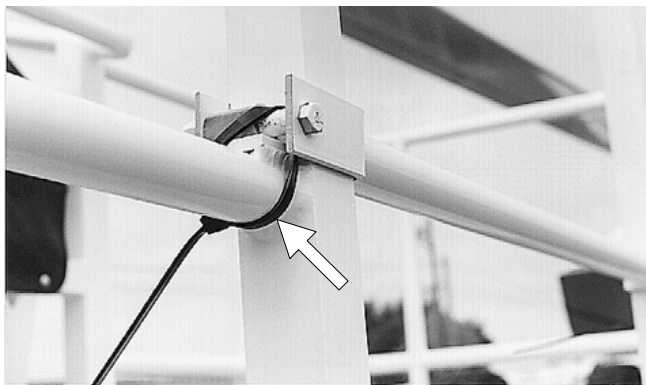


10. Stretch the rubber strap (1) under the turntable (2) to a similar hole in the opposite front cowling door. (This prevents the front doors from opening during transport.)

9. STOWING & TRANSPORTING



11. Use a wire-tie, as shown, to keep the foot switch from bouncing around the platform.



12. Use a wire-tie on each end of the gravity gate to keep it from bouncing around.

☐ Towing

Do not tow a TB42/50 unless it is equipped with the optional tow package. See the “OPTIONS” chapter.

10. DAILY INSPECTION & MAINTENANCE

At the start of each work day (or 8 hour shift) a TB42/50 qualified operator must perform the DAILY INSPECTION AND MAINTENANCE listed in the table below.

The purpose of the daily inspection and maintenance is to keep the TB42/50 in proper working condition and to detect signs of malfunction at the earliest possible time.

DANGER

Do not operate a TB42/50 that is known to be damaged or malfunctioning. Defective parts or equipment malfunctions jeopardize the safety of the operator and other personnel, and can cause damage to the machine.

DAILY INSPECTION AND MAINTENANCE

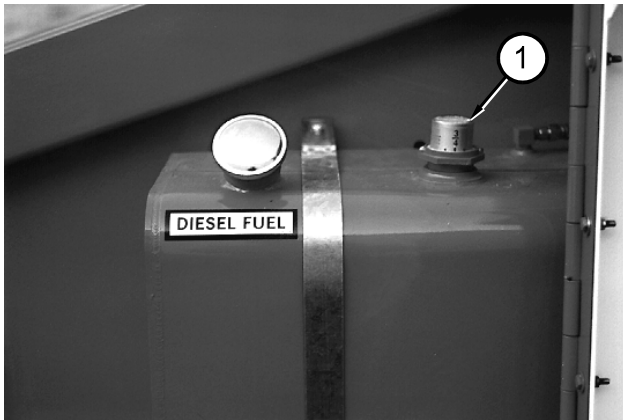
(Set the **MASTER** switch to OFF before you begin this inspection.)

ITEM	SERVICE REQUIRED
1. Engine fuel level	Check fuel gauge (full)
2. Fuel tank cap	Visually inspect (installation)
3. Engine oil	Check oil level (between dipstick lines)
4. Fuel leaks	Visually inspect (hoses, connections, etc.)
5. Engine coolant	Check fluid level and radiator hoses
6. Wiring harnesses	Visually inspect (installation, condition)
7. Battery terminals	Visually inspect (corrosion)
8. Battery fluid level	Check fluid level (in contact with filler neck)
9. Hydraulic oil	Check oil level (between lines on gauge)
10. Hydraulic oil leaks	Visually inspect (hoses, tubes)
11. Tires	Visually inspect (condition)
12. Bolts and fasteners	Visually inspect (looseness)
13. Structural damage & welds	Visually inspect (weld cracks, dents)
14. Guardrails	Visually check condition
15. Platform gravity gate	Visually inspect (operation)
16. Self-closing gate (option)	Actuate and visually check condition
17. Lanyard anchor points	Visually check condition
18. Emergency power motor/pump	Check operation (causes correct motion)
19. Air filter	Check condition (gauge)
20. Charging system	Visually inspect (gauge)
21. Ground-control panel switches and alarms	Actuate and visually check for operation
22. Level sensor	Actuate and listen for alarm to sound
23. Platform-control box switches and alarms	Actuate and visually check for operation
24. GFCI (ground fault circuit interrupt) (option)	Actuate and visually check for operation
25. Placards and decals	Visually inspect (installation, condition)
26. Platform work lights (option)	Turn them on to see that they work
27. Flashing light (option)	Turn it on to see that it works
28. Driving lights (option)	Turn them on to see that they work
29. Slide pads	Visually inspect (installation, boom-wear marks)
30. Wire ropes	Visually inspect (condition)

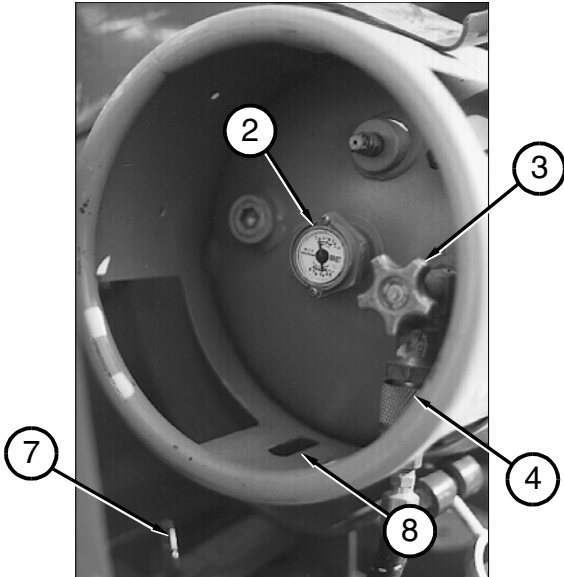
10. DAILY INSPECTION & MAINTENANCE

The rest of this chapter shows how to perform the SERVICE REQUIRED for each ITEM in the DAILY INSPECTION AND MAINTENANCE table.

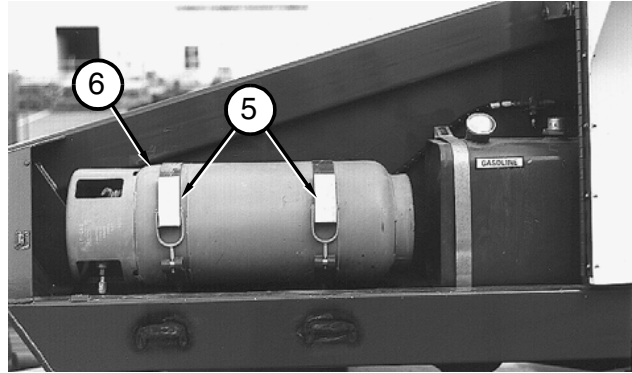
1. Engine fuel level



Visually check to see that the gasoline or diesel tank is full (1) — this one is not.



(OPTION - LPG) Visually check to see that the LPG tank is full (2).



To replace an LPG tank:

Close the valve (3).

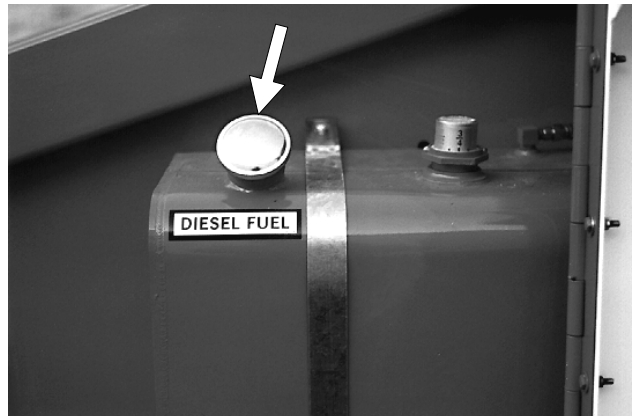
Manually disconnect the fuel hose at the knurled ring (4).

Open the straps (5).

Manually lift the tank (6) out.

NOTE: Notice the positioning pin (7). At re-installation be sure the slot (8) in the top of the LPG tank aligns with the pin (7).

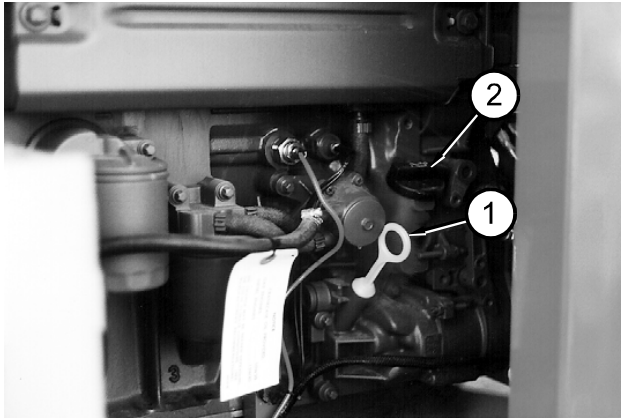
2. Fuel tank cap



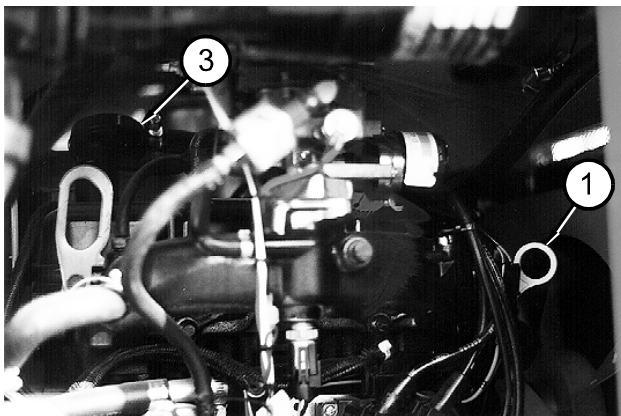
Check to see that the tank cap is in place and is tight.

3. Engine oil

DEUTZ DIESEL ENGINE



FORD GASOLINE ENGINE



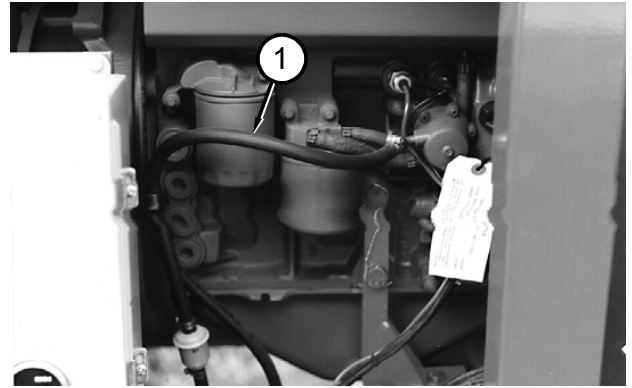
Keep the oil level between the marks on the dipstick (1).

The distance between the top and bottom dipstick marks corresponds to about 1 qt US (one liter). Add oil, if needed, at the filler cap (2) for Deutz engines or on top the engine (3) for Ford engines.

NOTE: See the "SPECIFICATIONS" chapter for the correct engine-oil grade and weight.

4. Fuel leaks

DEUTZ DIESEL ENGINE



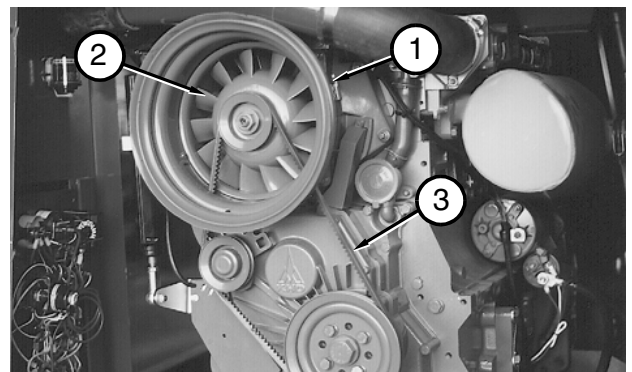
FORD GASOLINE ENGINE



Visually inspect the entire length of the fuel line (1), from the engine to the fuel tank, for leaks.

5. Engine coolant

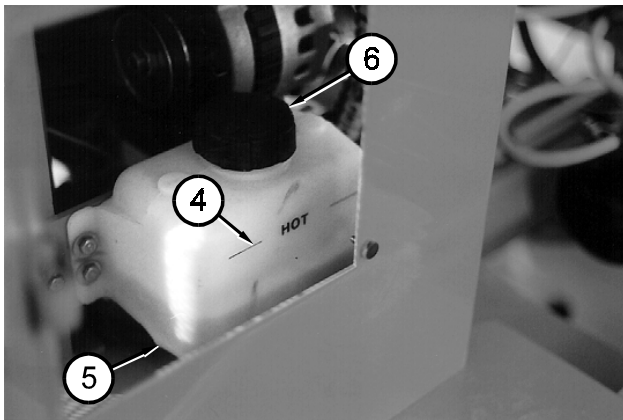
DEUTZ DIESEL ENGINE



Deutz engines are air cooled. Visually inspect the air intake (1) and fan (2) to be sure they are free of obstructions that could stop or slow the flow of air through the cylinder cowling. Visually check the fan belt (3) to see that it is in place and not cracked.

10. DAILY INSPECTION & MAINTENANCE

FORD GASOLINE ENGINES



Ford engines are liquid cooled. When Ford engines are at operating temperature, 160°F - 190°F (71°C - 88°C), the coolant should be at the HOT level (4). When Ford engines are cold, there should be about 1 inch (2.5 cm) of coolant in the bottom of the reservoir (5).

The coolant in Ford engines is half water and half ethylene glycol.

To add coolant:

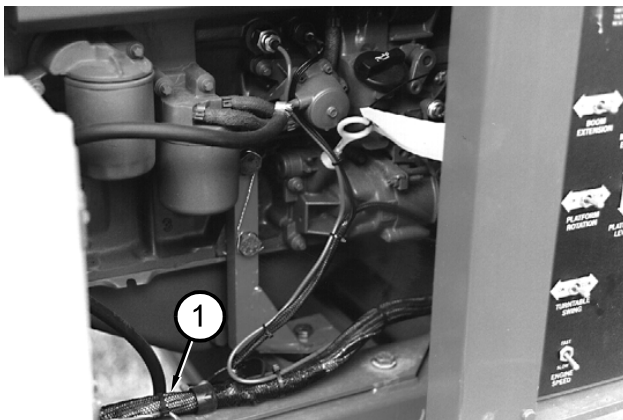
Turn the engine OFF at the ground-control panel **MASTER** switch.

Remove the cap (6).

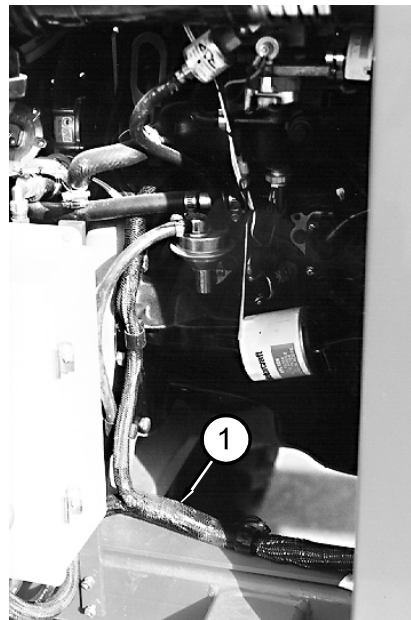
Add coolant and replace the cap (6).

6. Wiring harnesses

DEUTZ DIESEL ENGINE



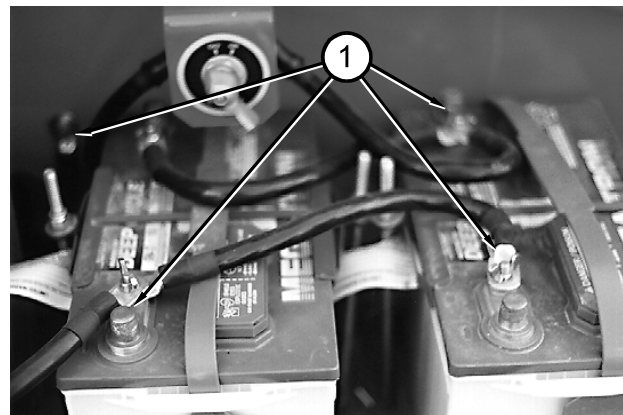
FORD GASOLINE ENGINE



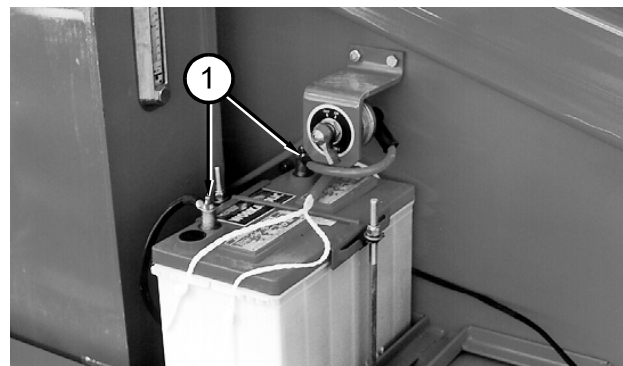
Inspect the wiring harness (1), on both sides of the machine, for loose connections, broken wires, and frayed insulation.

7. Battery terminals

DEUTZ DIESEL ENGINE

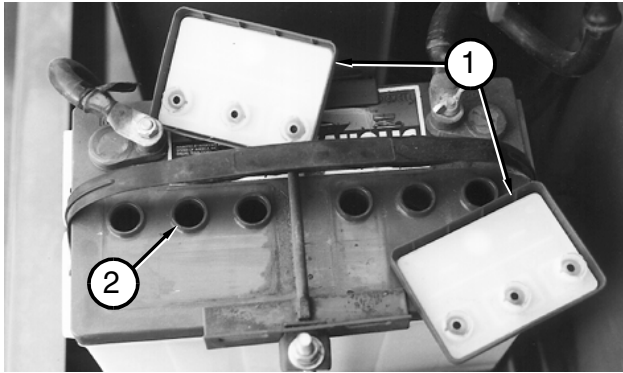


FORD GASOLINE ENGINE



Battery terminals (1) should be clean and free of corrosion.

8. Battery fluid level

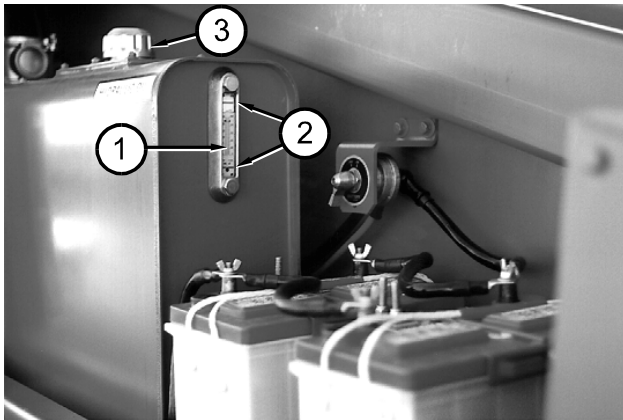


! DANGER

Batteries emit hydrogen and oxygen, elements that can combine explosively. Do not smoke or permit open flames or sparks when checking batteries.

Remove the caps (1) and visually check to see that the battery fluid is in contact with the bottom of the filler neck (2) inside each hole.

9. Hydraulic oil



To check the hydraulic oil level:

Completely lower and completely retract the booms.

The hydraulic oil temperature (1) should be less than 200°F (93°C).

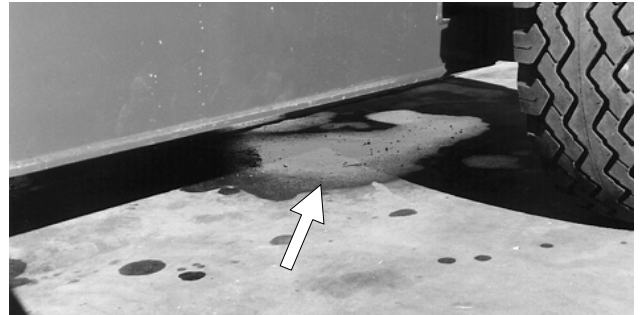
The hydraulic oil level should be between the two marks on the sight-glass gauge (2).

If necessary, add hydraulic oil at the filler cap (3). See the "SPECIFICATIONS" chapter for type and grade of hydraulic oil.

10. Hydraulic oil leaks

! DANGER

Leaking hydraulic oil can cause burns, fires, falls (slipping), cuts, and puncture wounds (if under high pressure). Have a qualified trained maintenance person repair all hydraulic fluid leaks before you operate a TB42/50.

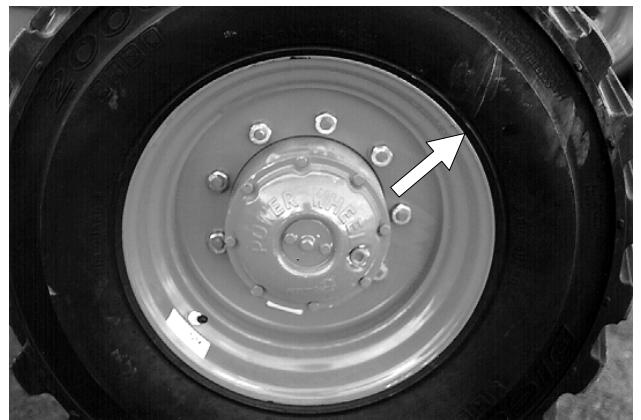


Hydraulic oil leaks are easily visible and can show up anywhere. Visually inspect the entire machine for hydraulic oil. Check the ground under the machine for leaked oil. Check the platform end of each boom - oil can run down the inside of a boom and drip out the end.

11. Tires

! DANGER

Death or serious injury can result if a TB42/50 tips over. An air-filled tire that has an air leak or blow-out is a tip over hazard. Do not raise the platform if any tire has an air leak or is in such condition that a blow-out could occur.

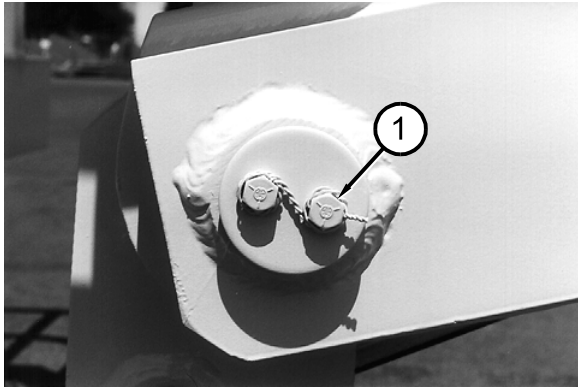


TB42/50 tires are air-filled. Air-filled tires should be visually checked several times a day to see that they are properly inflated. Air-filled tires should be checked very carefully for imbedded material, cuts, punctures, abraded areas, or excessive wear.

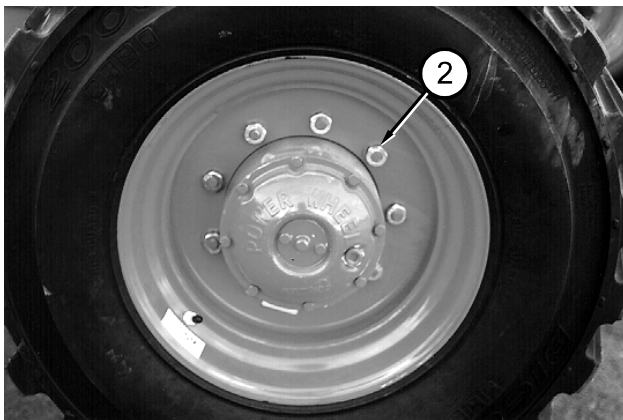
10. DAILY INSPECTION & MAINTENANCE

12. Bolts & fasteners

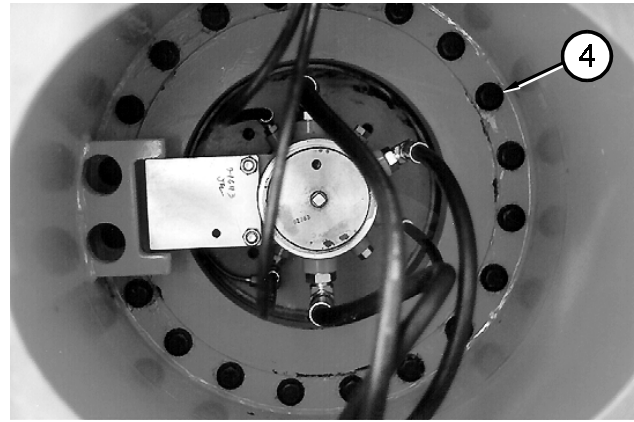
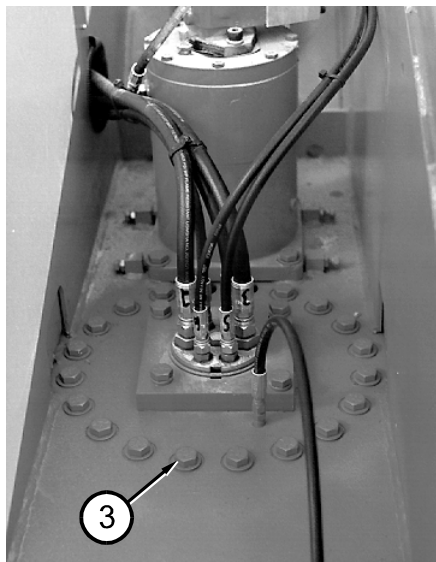
Visually inspect all fasteners to see that none is missing or obviously loose.



Pay particular attention to all of the safety-wired bolts (1). Neither the wire nor the bolt heads should be damaged in any way. (Check the turntable end of the boom and the end of the lift cylinder for other safety-wired bolts. Check both sides of the machine.)



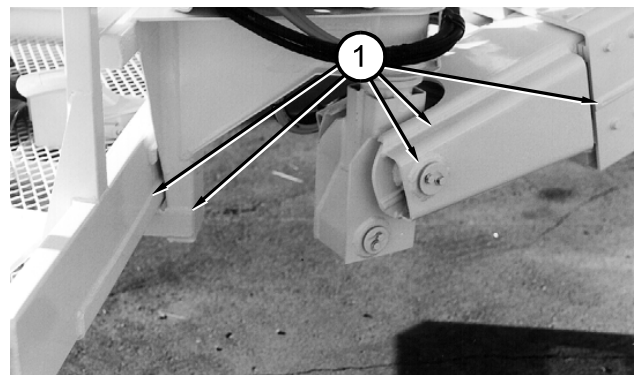
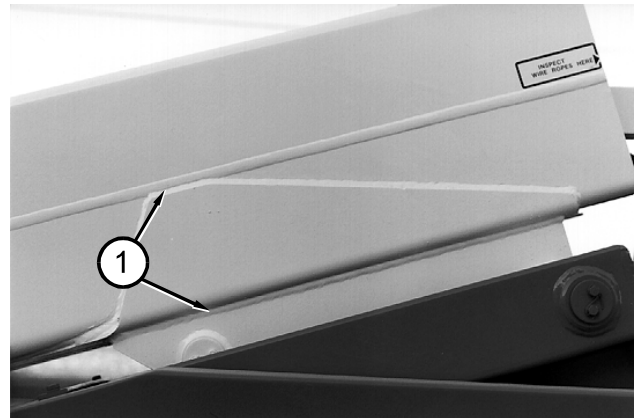
Pay particular attention to all of the wheel nuts (2). None should be visibly loose, missing, or deformed.



Pay particular attention to all of the upper (3) and all of the lower (4) (view from under the machine) rotation-bearing bolts. None should be visibly loose, missing, or have broken heads.

13. Structural damage & welds

Visually inspect all welds for cracks, all structural members for deformity, and all sheet metal for dents that could interfere with machine operation.



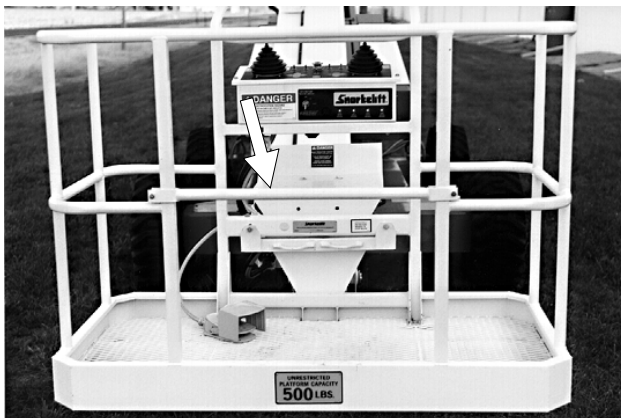
Pay particular attention to all boom and platform welds (1). Closely inspect boom and platform welds (1), all the way around, for cracks.

14. Guardrails



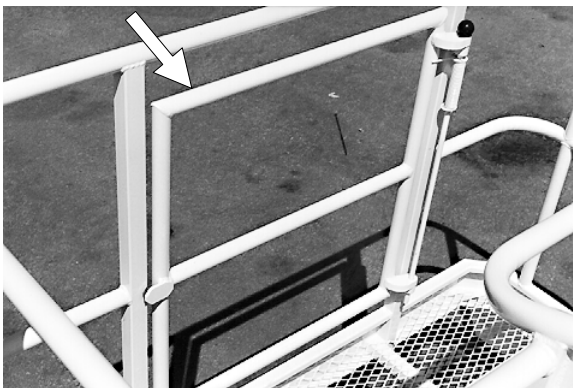
Visually inspect the guardrails to see that none of the tubing has been cut out, removed, nor deformed in any way. Visually check the guardrail welds to see that none is cracked nor ground down.

15. Platform gravity gate



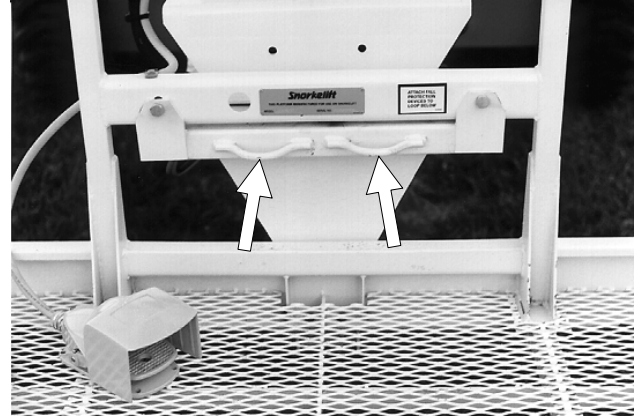
Inspect the gate to be sure it is present and moves freely.

16. Self-closing gate (option)



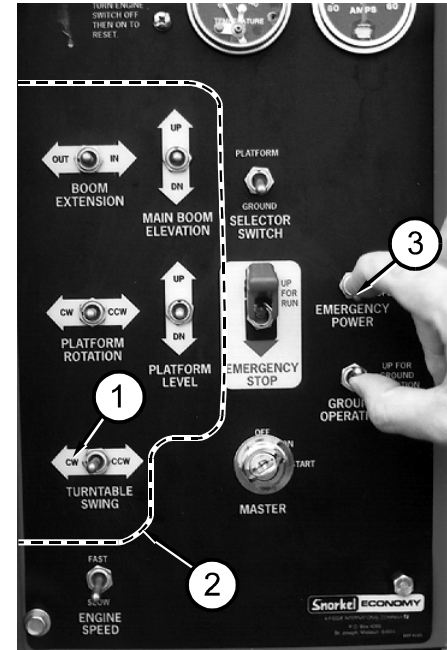
Inspect the self-closing gate, at the platform entrance, to see that it swings freely, latches securely, and is not deformed in any way.

17. Lanyard anchor points



Neither lanyard anchor point should be visibly deformed, cut, nor worn. The welds should not be cracked nor ground down.

18. Emergency power motor/pump



! DANGER

When the turntable rotates clockwise (CW) it will move directly toward you. When you check **TURNABLE SWING** at CW (1) be sure you have room to step backward.

Check each of the five boom-moving switches (2), using **EMERGENCY POWER** (3), to see that they work correctly. Check both positions of each switch (2). (For correct emergency power operating procedures see the "EMERGENCY OPERATION" chapter.)

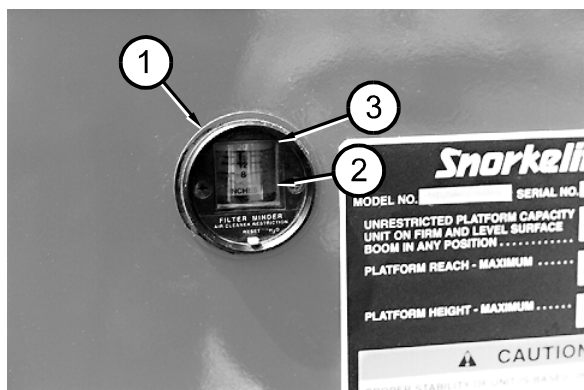
10. DAILY INSPECTION & MAINTENANCE



Check each of the boom-movement functions from the platform-control box (4), using **EMERGENCY POWER** (5). Check all positions of each control. (For correct emergency power operating procedures see the “EMERGENCY OPERATION” chapter.)

19. Air filter

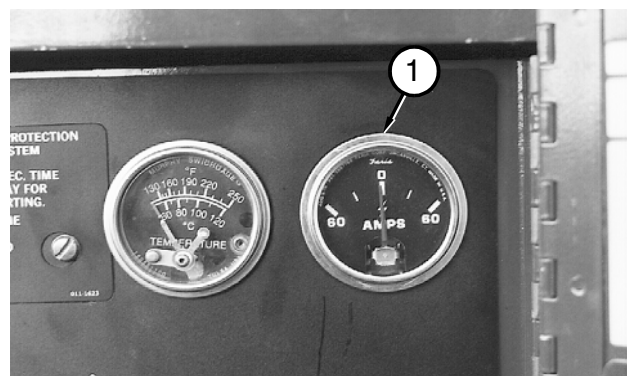
Start the engine from the ground-control panel.



The **FILTER MINDER** gauge (1) has a yellow disk in it (2). As the air filter clogs the yellow disk raises toward the red area (3) of the sight glass. If the yellow disk is in the red, after the engine has been running for 30 seconds, the air filter needs to be replaced. (For further explanation of the **FILTER MINDER** gauge, see the “GAUGES & CIRCUIT BREAKERS” chapter.)

NOTE: Leave the engine running for the next step.

20. Charging system



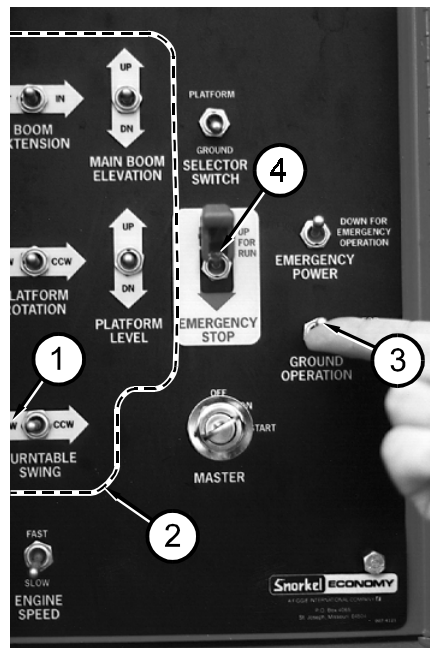
With the engine running, the needle in the **AMPS** gauge should not be to the left of “0” (left of “0” is discharging).

NOTE: Leave the engine running for the next step.

21. Ground-control panel switches and alarms

! DANGER

When you check **TURNTABLE SWING** at CW (1) the turntable will move directly toward you. Be sure you have room to step backward.



Check each of the five platform-moving switches (2) using **GROUND OPERATION** (3) to see that they cause the TB42/50 to move the way it should. Check both positions of each switch. (For correct operating procedures see the “OPERATION” chapter.)

Pay particular attention to the **EMERGENCY STOP** switch (4) to see that it turns the TB42/50 engine off when struck.

Listen for the start-up alarm when the **MASTER** switch (5) is first turned ON.

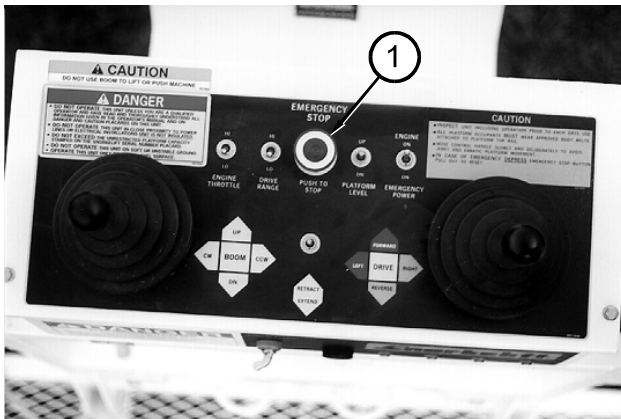
NOTE: Leave the engine running for the next step.

22. Level sensor



With the TB42/50 engine running and the main boom extended five to ten feet (2 - 3 m), pull the level sensor to the side as far as possible. The level sensor alarm should sound. (The level sensor is located in the left side of the turntable, behind the rear cowling door.)

23. Platform-control box switches and alarms



Check all of the platform-moving, drive, and steering functions from the platform-control box to see that they cause the TB42/50 to move the way it should. (For correct operating procedures see the "OPERATION" chapter.)

Pay particular attention to the **EMERGENCY STOP** switch (1) to see that it turns the TB42/50 engine off when struck.

Press the operator horn (if the machine has that option) to see that the horn works.

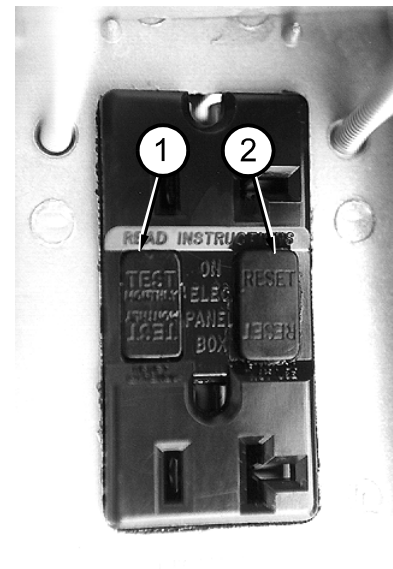
Listen for the motion alarm (if the TB42/50 has that option) as you drive forward and backward. Listen for the start-up alarm when the **ANTI-RESTART** switch is first turned ON.



Pay particular attention to the foot switch to see that it deactivates the platform-moving switches when the foot switch is not stepped on.

24. GFCI (ground fault circuit interrupt) (option)

If the TB42/50 has the ac generator option, set the **MACHINE/GENERATOR** switch (on front of platform-control box) to GENERATOR (engine running). If the TB42/50 does not have the ac generator option, connect a source of 125 V ac power to the power plug inside the right-front of the turntable.



Push the **TEST** button (1) in on the GFCI. The **RESET** button (2) should pop out. Press the **RESET** button (2) back in (then set the **MACHINE/GENERATOR** switch to MACHINE, if so equipped or disconnect the source of power).

10. DAILY INSPECTION & MAINTENANCE

25. Placards and decals

Look to see that all placards and decal are in place and legible. Replace any missing or illegible placards or decals before placing the TB42/50 into service for the daily work shift.

The **OPTIONAL PLACARDS AND DECALS**, listed below on this page, are only installed on machines that have the corresponding options.

Placard and decal kits for the TB42/50 are available from Snorkel dealers.

PLACARDS AND DECALS INSPECTION CHART

NO	PART #	DESCRIPTION	REQ
1	0070421	Tire pressure 65 PSI	4
2	0323896	Danger - electrocution hazard	5
3	0070420	Emergency bleed down	1
4	0070418	Snorkelift logo	4
5	0323897	Danger - you must not operate	1
6	0074209	Pre-start instruction	1
7	0090589	TB-42/50 platform capacity 500 lb	1
	0324133	TB-420 platform capacity 700 lb	1
8	0323899	Danger - electrocution hazard	1
9	0070540	Yellow arrow	3
10	0070541	Blue arrow	3
11	0070901	Caution - serial number	1
12	0072530	Danger - electrocution hazard	1
13	0071425	Platform identification	1
14	0071927	Hydraulic oil	1
15	0072446	Platform control box top	1
16	0180846	Platform control box front	1
17	0073491	Safe operating information	1
18	0074283	TB-42 logo	2
	0074285	TB-50 logo	2
	0074284	TB-420 logo	2
19	0150448	Attach fall restraint device	1
20	0073668	Caution - do not use boom	1
21	0181654	Danger - inspect unit	1
22	0181655	Caution - move control handle slowly	1
23	0072531	Danger - electrocution hazard	1
24	0190989	Danger - do not reach through holes	1
25	0070921	125 volt 20 amp power	2
26	0074210	Danger - electrocution/tipping hazard	1
27	0111735	Main system/run/throttle	1
28	0074121	Ground controls	1
29	0073043	Manual holder	1
30	0073224	Notice manual re-order	1
31	0072541	Danger - do not operate	1
32	0073492	Rotate while greasing	1
33	0073585	Made in USA	2
34	0181562	ANSI A92.5-1992	1
35	0073667	Inspect wire ropes	2
36	7030003	Lube Recommendations	1
37	0074311	Danger - cylinder failure	5

NO	PART #	DESCRIPTION	REQ
38	0073098	Battery disconnect switch	1
39	0070922	Platform rotator	1

Additional decals found on **Diesel** machines

NO	PART #	DESCRIPTION	REQ
60	0071926	Diesel fuel	1

Additional decals found on **Gasoline** machines

NO	PART #	DESCRIPTION	REQ
70	0071925	Gasoline fuel	1
71	0151410	Danger - rotating engine parts	2

Additional decals found on **4x2** machines

NO	PART #	DESCRIPTION	REQ
80	0072276	Lug nut torque 450-500 ft lb	2
81	0072277	Lug nut torque 200-225 ft lb	2

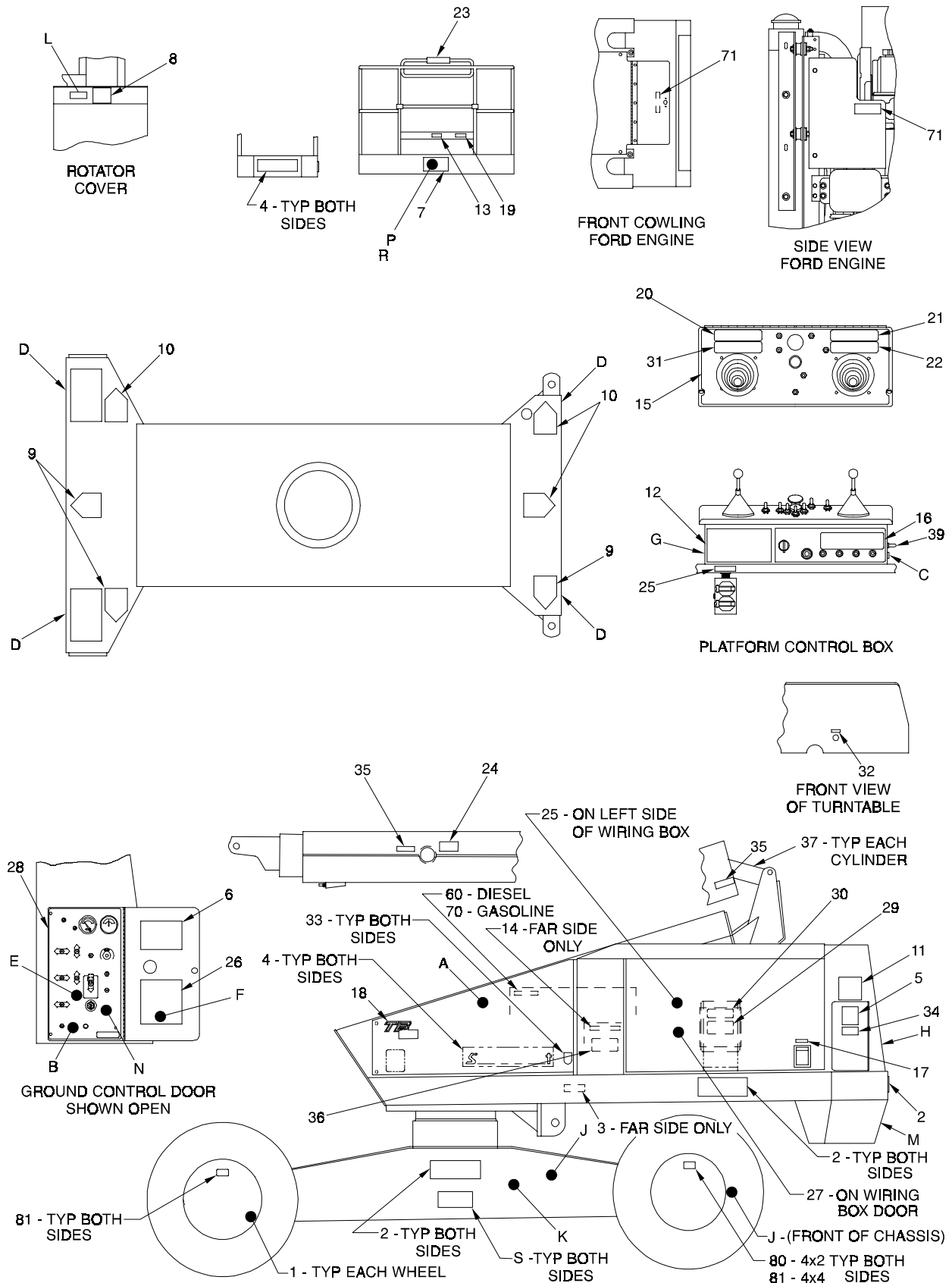
Additional decals found on **4x4** machines

NO	PART #	DESCRIPTION	REQ
81	0072277	Lug nut torque 200-225 ft lb	4

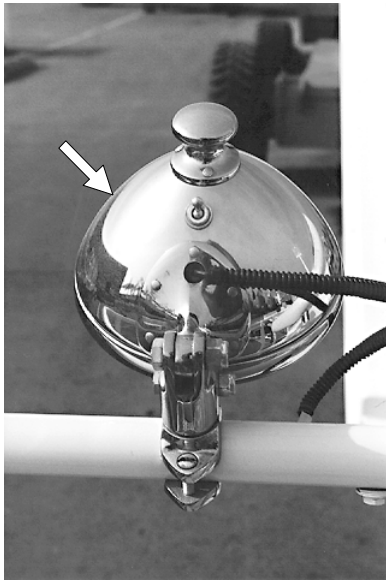
OPTIONAL PLACARDS AND DECALS

NO	PART #	DESCRIPTION	REQ
A	0081441	Caution - liquid withdrawal	1
B	0082064	Manifold heater instructions	1
C	0071269	Horn	1
D	0080650	Lift	4
E	0090492	Dual fuel switch	1
F	0090493	Dual fuel instructions	1
G	0151459	AC generator switch	1
H	0100172	Snorkelift logo	1
J	0072203	Towing instructions	2
K	0082160	Danger - do not exceed	1
L	0082164	Danger - do not ride...	1
M	0082203	Danger - crushing hazard	1
N	0181634	Engine block heater	1
P	0072318	Platform capacity 450 lb	1
R	0073085	Platform capacity 650 lb	1
S	0073298	Danger - foam filled tires	2

PLACARDS AND DECALS INSPECTION DRAWING



26. Platform work lights (option)



While the engine is running, momentarily turn each work light on (use the switch on the back of each light) to see that they work.

27. Flashing light (option)

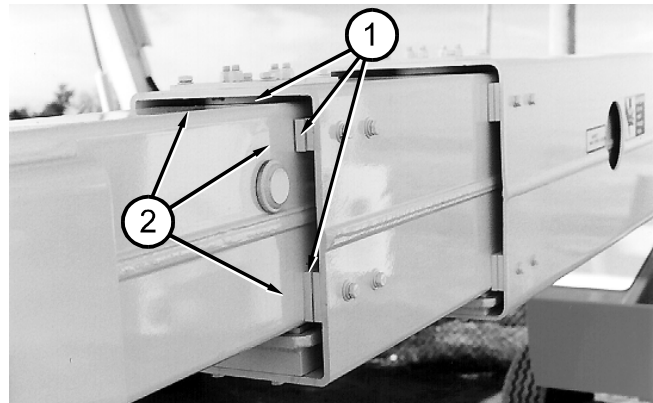


Visually check to see that the light flashes at approximately one flash per second when the engine is running.

28. Driving lights (option)

While the engine is running, momentarily turn the driving lights on to see that they work.

29. Slide pads

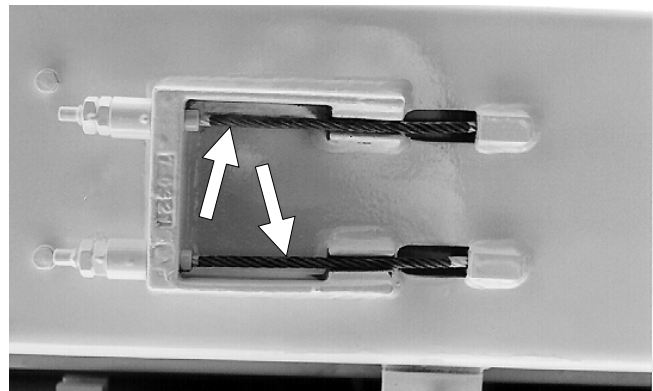
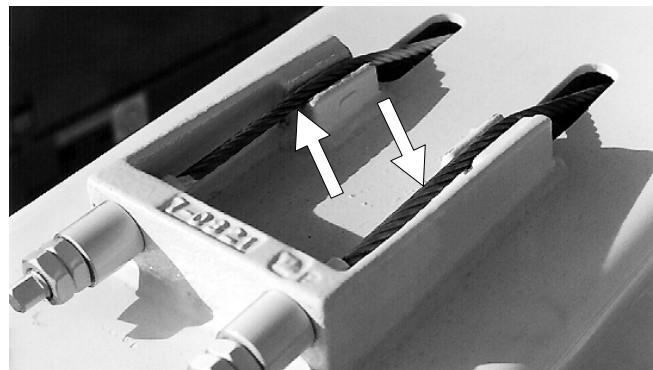


With the engine running, use the ground-control panel to extend the booms about 3 feet (one meter). Visually inspect to see that all 12 slide pads (1 typ.) are in place.

Look at the surfaces (2 typ.) that slide on each slide pad — the paint should still be in place and there should not be any signs of bare metal gouging.

Completely retract the booms then turn the engine OFF at the ground-control panel **MASTER** switch.

30. Wire ropes



Check the condition of the wire ropes outside both ends of the base-boom. The wire ropes should not have any broken strands nor be deformed in any way.

11. TROUBLESHOOTING

All of the actions described in this chapter may be performed by a TB42/50 *operator* — a trained and qualified service technician is not required. Any problem that cannot be fixed by actions listed below should be referred to a trained and qualified TB42/50 *service technician*.

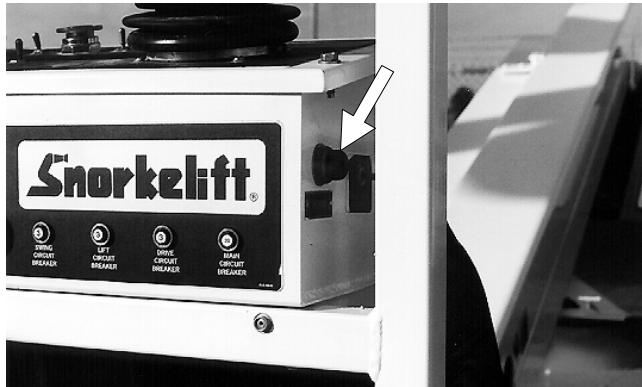
The first column, of the following chart, lists some common problems encountered by TB42/50 operators. The second column lists some of the causes for each problem. The third column lists remedies.

TB42/50 OPERATOR'S TROUBLESHOOTING CHART		
PROBLEM	CAUSE	REMEDY
Engine will not start from the <u>ground-control panel</u> .	1. Switches are set wrong. (Engine will not crank.)	A. Set BATTERY switch to ON. <u>At the <i>ground-control panel</i>:</u> B. Set MASTER switch to OFF. C. Set EMERGENCY STOP to UP FOR RUN. D. Set SELECTOR SWITCH to GROUND. E. Set MASTER switch to ON for 5 seconds then turn MASTER switch to START.
	2. The MAIN SYSTEM circuit breaker, on the wiring box, has tripped. (Engine will not crank.)	Push the MAIN SYSTEM (25) button back in. If the button pops out again, refer the problem to a qualified service technician.
	3. Out of fuel. (Engine cranks but will not start.)	Add fuel to tank then alternately crank engine for 20 seconds and let starter motor cool for 60 seconds (20 on / 60 off).
	4. LPG OPTION. FUEL switch on ground-control panel is set wrong. (Engine cranks but will not start.)	A. Set FUEL switch (ground-control panel) to L.P.-GAS or GASOLINE. B. Check the fuel gauge, on top of the tank, to see if there is fuel in tank. C. For L.P.-GAS only: Check to see that fuel valve, on top L.P. tank, is open. D. Alternately crank engine for 20 seconds then let starter motor cool for 60 seconds.
Engine will not start from the <u>platform-control box</u> .	1. Stepping on foot switch. (Engine will not crank.)	Be sure you are not stepping on the foot switch, or that the foot switch is not "blocked" in any way, while you are trying to start the engine.
	2. Switches are set wrong. (Engine will not crank.)	A. Set the BATTERY switch to ON. <u>At the <i>ground-control panel</i>:</u> B. Set the EMERGENCY STOP switch to UP FOR RUN. C. Set the SELECTOR SWITCH to PLATFORM. D. Set the MASTER switch to ON. <u>At the <i>platform-control box</i>:</u> E. Set the ANTI-RESTART MASTER SWITCH to OFF. F. Pull the EMERGENCY STOP switch up. G. Turn the ANTI-RESTART MASTER SWITCH to ON. H. Turn the ANTI-RESTART MASTER SWITCH to START.

11. TROUBLESHOOTING

TB42/50 OPERATOR'S TROUBLESHOOTING CHART (continued)		
PROBLEM	CAUSE	REMEDY
Engine will not start from the <u>platform-control box</u> . (Continued)	3. The MAIN CIRCUIT BREAKER , on the platform-control box, and/or the MAIN SYSTEM circuit breaker, on the wiring box, has tripped, (Engine will not crank.)	Push the circuit breaker button(s) in. If the button pops out again, refer the problem to a qualified service technician.
	4. Out of fuel. (Engine cranks but will not start.)	Add fuel to tank then alternately crank engine for 20 seconds and let starter motor cool for 60 seconds.
	5. LPG OPTION. FUEL switch on the ground-control panel is set wrong. (Engine cranks but will not start.)	A. Set FUEL switch (ground-control panel) to L.P.-GAS or GASOLINE. B. Check the fuel gauge, on top of the tank, to see if there is fuel in tank. C. For L.P.-GAS only: Check to see that fuel valve, on top L.P. tank, is open. D. Alternately crank engine for 20 seconds then let starter motor cool for 60 seconds.
Jerky platform movement during extension.	Loose wire-ropes.	Report problem to a trained and qualified service technician.
Cannot attain maximum speed (3 mph, 4.8 km/hr).	Booms are not completely down and completely retracted.	Completely lower and completely retract the booms.
Tilt alarm does not work.	Booms are completely down and completely retracted. (Tilt alarm is not designed to work under these conditions as a convenience to personnel loading and unloading TB42/50's onto/from transport vehicles.)	Extend and raise the booms a little.
Boom raises but will not stay elevated.	EMERGENCY BLEED-DOWN valve is open.	Close the EMERGENCY BLEED-DOWN valve.
For machines with <u>tow option only</u> : Front wheels do not turn when using DRIVE controller LEFT or RIGHT.	FLOAT VALVE is open.	Twist FLOAT VALVE handle until pin on shaft drops into detent.

■ OPERATOR HORN



The operator **HORN** button is on the right side of the platform-control box. For the **HORN** to work the **BATTERY** switch must be ON and the following switches, on the ground-control panel, must be set as indicated:

SELECTOR SWITCH PLATFORM
EMERGENCY STOP (ground) ON
MASTER ON

The operator **HORN** is used primarily to get the attention of people on the ground when you are working aloft.

■ PLATFORM WORK LIGHTS



The platform work lights are located on top the platform guardrail. For the lights to work the **BATTERY** switch must be ON and the following switches, on the ground-control panel, must be set as indicated:

SELECTOR SWITCH PLATFORM
EMERGENCY STOP (ground) ON
MASTER ON

The toggle switch on the back of a light turns it on.

If you want to change the direction a light points, use two 1/2" box-end wrenches to loosen the clamp immediately below the light, point the light where you want it, then retighten the clamp.

! CAUTION

Incandescent lights draw three amperes (35 watts) each. Halogen lights draw four amperes (50 watts) each. If you work with the lights turned on and the engine turned off, the battery(ies) can get discharged to the point it will not start the engine nor run the **EMERGENCY POWER** hydraulic pump. If you cannot leave the engine running while the lights are on, start and run the engine at least 15 minutes in each hour.

■ DRIVING LIGHTS

! CAUTION

Together the four lights draw seven amperes. If you work with the lights turned on and the engine turned off, the battery(ies) can get discharged to the point it will not start the engine nor run the **EMERGENCY POWER** hydraulic pump. If you cannot leave the engine running while the lights are on, start and run the engine at least 15 minutes in each hour.

Driving lights are for driving on dimly lit construction sites, they are not for driving on public thoroughfares. Two 30 watt headlights are located on top of the front cowlings, two 25 watt blinking taillights are on the sides of the rear cowlings. Each headlight has a toggle switch to turn it on and off. Both blinking taillights are controlled by a switch just in front of the right taillight. For any of the lights to work both the **BATTERY** switch and the **MASTER** switch must be ON.

■ COLD WEATHER START KIT

□ Deutz Engine

! DANGER

Do not use ether to start a Deutz engine that has a COLD WEATHER START KIT installed. The glow plug in the KIT can ignite the ether and cause an explosion.

The COLD WEATHER START KIT in a Deutz engine is a glow-plug type air-inlet-heater. The glow plug is located at the front of the air intake manifold. Use the heater to start the engine when the engine temperature is below 32°F (0°C). To use the heater:

1. Set the **BATTERY** switch to ON
2. **EMERGENCY STOP ... UP FOR RUN**
3. **MASTER** OFF
4. **ENGINE SPEED** SLOW
5. **SELECTOR SWITCH**... GROUND

NOTE: If the engine fails to start (at the next step) in 20 seconds, turn the **MASTER** switch to OFF and wait 60 seconds before turning the **MASTER** switch to START again.

6. Hold the **MANIFOLD HEATER** switch ON for about 60 seconds then turn and hold the **MASTER** switch to START until the engine starts (or for 20 seconds, whichever comes first).

NOTE: Do not release the **MANIFOLD HEATER** switch until the engine starts, even if you have to pause 60 seconds between starting attempts.

□ Ford Engine

! CAUTION

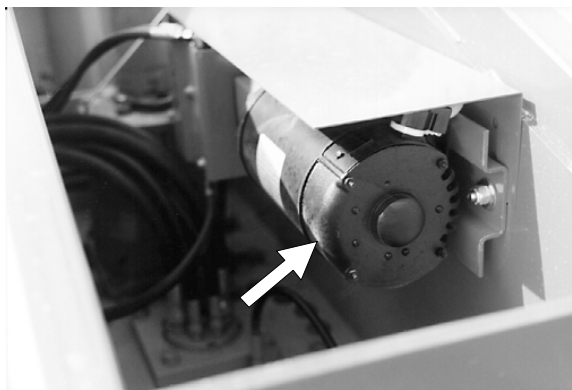
Unplug the heater just before starting the engine. That will keep you from driving off while the heater is still plugged in.

The COLD WEATHER START KIT in Ford engines is a freeze-plug type block-heater. The engine is heated by convection of water that is warmed by the heater. The heater is located in a freeze-plug hole just below the engine exhaust manifold. If the engine starting temperature is expected to be 32°F (0°C) or below, plug the power cord from the heater into 125 V ac, 600 watt source eight hours before starting the engine.

■ AC GENERATOR

! CAUTION

Do not use the AC GENERATOR unless the hydraulic oil is over 70°F (21°C). The output voltage of the generator depends on the temperature of the hydraulic oil. Temperature below 70°F (21°C) will cause dangerously low output voltages that can burn out some kinds of electrical equipment.



The hydraulically powered, 120 V ac generator can be used anytime the TB42/50 engine is running and the TB42/50 is completely stationary. Turning the generator on stops all machine movement.



Set the **MACHINE/GENERATOR** switch, on the platform-control box, to **GENERATOR** and a total of 2 kW, continuous duty, 120 V ac power is available from the two electrical outlets under the platform-control box and the one electrical outlet on the end of the generator housing.

NOTE: To energize the platform electrical outlets, the power cord from the generator must be plugged into the receptacle on the side of the turntable wiring box.

■ MOTION WARNING ALARM

The motion warning alarm emits a loud ...beep...beep...beep..., at ground level, anytime the **DRIVE** controller is in **FORWARD** or **REVERSE**. This alarm alerts people on the ground that the TB42/50 is moving along the ground.

■ AIR LINE TO PLATFORM

The input to the air line is on the bottom left-rear of the turntable. The outlet is on the platform mounting frame. The maximum safe working pressure for the air line is 250 psi (1725 kPa).

⚠ CAUTION

Water or anti-freeze solution in the air line might damage some air tools. If you use the air line to conduct water or anti-freeze solution be sure to drain and blow out the air line before attaching air tools.

The air line can be used to conduct air, water, or anti-freeze solution. If you want to conduct other substances, contact the Snorkel Engineering Department for compatibility information.

To drain the air line:

1. Close the turntable end of the air line.
2. Open the platform end of the air line.
3. Raise the main boom slightly above the horizontal.
4. Open the turntable end of the air line.

■ GFCI OUTLET



The GFCI (ground fault circuit interrupt) is located under the platform-control box. To use the outlet, connect a source of 125 V ac power to the power plug on the side of the wiring box (or start the engine and set the **MACHINE/GENERATOR** switch to **GENERATOR** if an ac generator is installed).

The GFCI protects against short circuits to ground. When there is a short to ground the GFCI shuts off power to the electrical outlets.

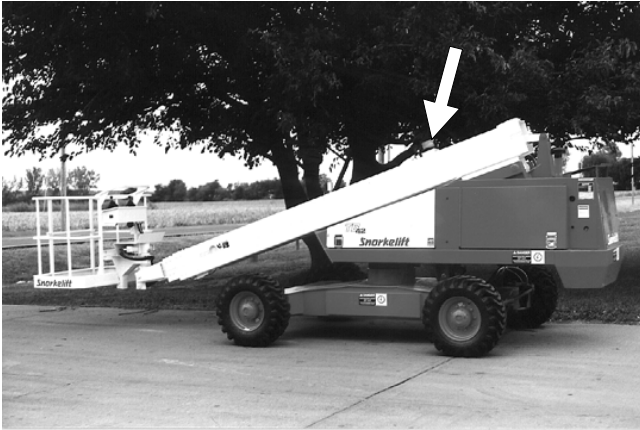
To reset the outlets:

Unplug the equipment being used.

Press the **RESET** button on the GFCI.

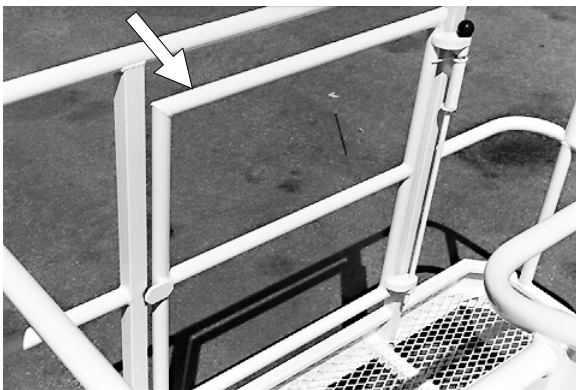
This should restore power to the outlets. If it does not, disconnect the source of power (or set the **MACHINE/GENERATOR** switch to **MACHINE** if equipped with an ac generator) and refer the problem to a trained service technician.

■ FLASHING LIGHT



The flashing light alerts people that the TB42/50 is present. The light flashes at about one flash per second any time the engine is running. There is no ON/OFF switch for the flashing light.

■ SELF-CLOSING GATE



The self-closing gate is designed to automatically close after you enter or leave the platform. It helps prevent people from falling off the platform.

■ SPARK ARRESTOR

The spark arrestor prevents incandescent carbon particles from coming out the tail pipe. The spark arrestor slows the flow of particles through the exhaust system. The additional time spent in the exhaust system lets the carbon completely burn before it comes out the tail pipe.

■ LIFTING LUGS

A TB42/50 can be safely lifted. However, only a trained qualified service technician should perform lifting.

■ TOW KIT

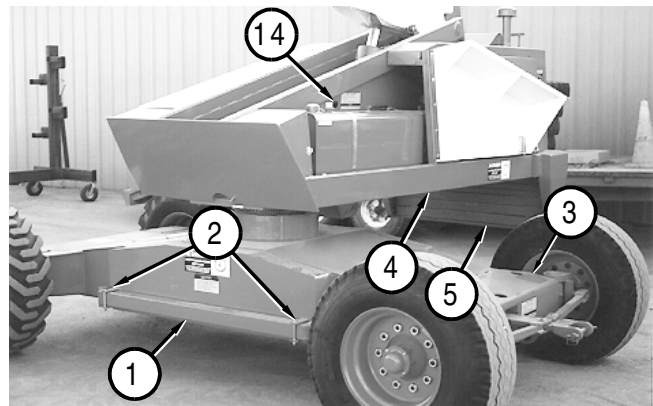
! DANGER

Improper towing can cause a TB42/50 to break away from the towing vehicle. A “runaway” TB42/50 can cause death or serious injury.

Do not tow a TB42/50 faster than 10 mph (16 km/hr). A TB42/50 can behave erratically above 10 mph (16 km/hr).

Check with the tow vehicle manufacture or manufacturer's literature to be sure the towing vehicle can safely tow and stop a 12,550 pound (5,693 kg) TB42/50 on the steepest grade and type of surface you will encounter. Remember, the TB42/50 does not have brakes when it is towed.

When you tow the TB42/50 around a corner or a curve do not turn so sharply that the side of the steering arm contacts the inside of the hole in the front of the chassis. If the steering arm contacts the chassis the steering mechanism might be damaged or the tow vehicle and TB42/50 might jackknife.

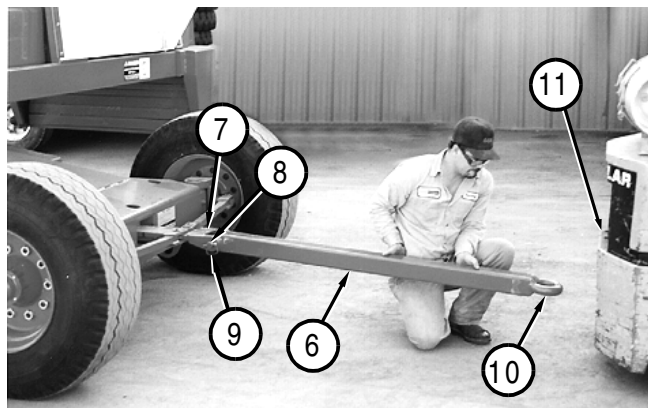


1. Remove the tow bar (1) from the storage cradles (2) and lay the tow bar (1) near the front of the chassis (3).

2. Rotate the turntable (4) until the counterweight (5) is to the side of the chassis (3).

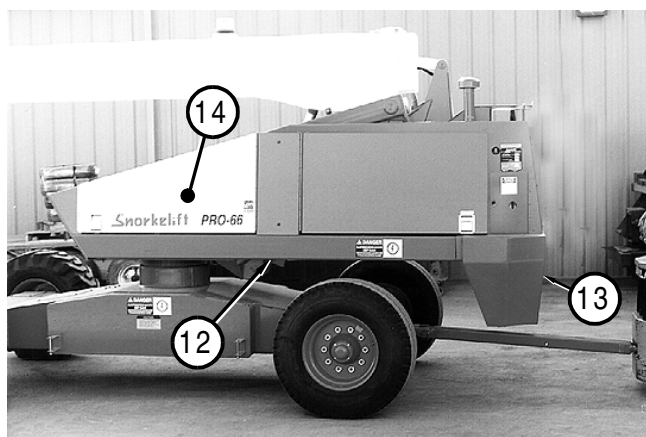
! DANGER

Death or serious injury can result from being crushed between the counterweight and tow vehicle. Do not attempt to attach the tow bar to the tow vehicle unless the counterweight is to the side.



3. Attach the tow bar (6) to the steering arm (7) with the tow pin (8) and snap pin (9).

4. Attach the ring-end (10) of the tow bar (6) to the tow vehicle (11).

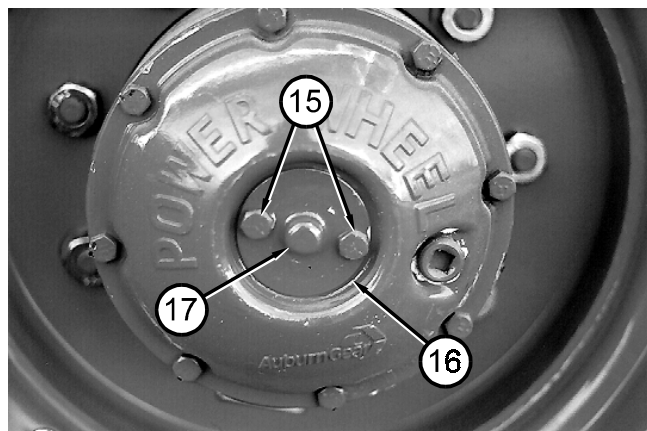


5. Rotate the turntable (12) until the counterweight (13) is to the front then raise the platform about three feet (one meter) above the ground.

6. Pull the **STEERING FLOAT VALVE** knob (14) out.

! DANGER

A “runaway” TB42/50 can cause death or serious injury. Disconnecting the disconnect-plates will allow the TB42/50 drive wheels to turn freely. Before proceeding, be certain the tow bar is installed and connected to a towing vehicle that can safely control both itself and the 12,550 pound (5,693 kg) TB42/50. Be certain the tow vehicle brakes are set.



7. Remove the two bolts (15) that hold each drive-wheel disconnect-plate (16).

8. Turn each disconnect-plate (16) over so that the nipple (17) points inward, then reinstall and tighten the bolts (15).

! DANGER

At the end of the tow, before you disconnect the TB42/50 from the towing vehicle, turn the disconnect-plates back over so the nipples are out. This will prevent the TB42/50 from rolling when you disconnect it from the tow vehicle.

9. Reverse the above procedure at the end of the tow.

13. FIRE FIGHTING & HAZARDOUS CHEMICAL CONTAINMENT

A TB42/50 contains the following materials and objects that potentially could become significant fire or environmental hazards during the lifetime of a TB42/50:

- Anti-freeze (ethylene glycol)
- Battery, lead/acid
- Diesel fuel
- Foam in tires
- Gasoline
- Hydraulic oil
- Liquefied petroleum gas
- Motor oil

The rest of this chapter lists manufacturers' information you will need if you ever have to control any of the above items during an upset or emergency.

■ ANTIFREEZE (UN 1993)

Fire extinguishing media: Dry Chemical, foam, or CO₂.

Special fire fighting procedures: Water spray may be ineffective on fire but can protect fire fighters and cool closed containers. Use fog nozzles if water is used. Do not enter confined fire-space without full bunker gear. (Helmet with face shield, bunker coats, gloves & rubber boots). Use a NIOSH approved positive pressure self-contained breathing apparatus. Keep container tightly closed. Isolate from oxidizers, heat & open flame.

Spill or leak: Small - mop up with absorbent material & transfer to hood.

Waste disposal method: Small - evaporate until all vapors are gone. Dispose of remainder by legally applicable methods.

■ BATTERY, LEAD/ACID (UN 2794)

Extinguishing media: Dry chemical, foam, or CO₂.

Special fire fighting procedures: Use positive pressure, self-contained breathing apparatus.

Unusual fire and explosion hazards: Hydrogen and oxygen gases are produced in the cells during normal battery operation

(hydrogen is flammable and oxygen supports combustion). These gases enter the air through the vent caps. To avoid the chance of a fire or explosion, keep sparks and other sources of ignition away from the battery.

Spill or leak: Remove combustible materials and all sources of ignition. Contain spill by diking with soda ash (sodium carbonate) or quicklime (calcium oxide). Cover spill with either chemical.

Mix well. Make certain mixture is neutral then collect residue and place in a drum or other suitable container. Dispose of as hazardous waste.

Wear acid resistant boots, face shield, chemical splash goggles, and acid resistant gloves. DO NOT RELEASE UNNEUTRALIZED ACID!

Waste disposal method - Sulfuric Acid:

Neutralize as above for a spill, collect residue, and place in a drum or suitable container. Dispose of as hazardous waste.

DO NOT FLUSH LEAD CONTAMINATED ACID TO SEWER.

Waste disposal method - Batteries: Send to lead smelter for reclamation following applicable federal, state, and local regulations.

■ DIESEL FUEL (NA 1993)

Extinguishing media: Use water spray, dry chemical, foam, or CO₂.

Special fire fighting procedures: Use water to keep fire-exposed containers cool. If leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for personnel attempting to stop a leak. Water spray may be used to flush spills away from exposures.

Unusual fire and explosion hazards: Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

Spill or leak: Contain spill immediately in smallest area possible. Recover as much of the product itself as possible by such methods as vacuuming, followed by soaking up of residual fluids by use of absorbent materials. Remove contaminated items including contaminated soil and place in proper containers for disposal. Avoid washing, draining, or directing material to storm or sanitary sewers.

Waste disposal method: Recycle as much of the recoverable product as possible. Dispose of nonrecyclable material as a RCRA hazardous waste by such methods as incineration, complying with federal, state, and local regulations.

■ FOAM IN TIRES

Extinguishing media: Water, dry chemical, foam, or CO₂.

Special fire fighting procedures: Evacuate non emergency personnel to a safe area.

13. FIRE FIGHTING

Unusual fire and explosion hazards: Fire fighters should use self-contained breathing apparatus. Avoid breathing smoke, fumes, and decomposition products. Use water spray to drench smoldering elastomer. Product may melt, after ignition, to form flammable liquid. Burning produces intense heat, dense smoke, and toxic gases, such as carbon monoxide, oxides of nitrogen, and traces of hydrogen cyanide.

Spill or leak: Pick up and handle as any other inert solid material.

Waste disposal method: Not considered a hazardous material. Dispose of material according to any local, state, and federal regulations.

■ GASOLINE (UN 1203)

Extinguishing media: Dry chemical, foam, or CO₂.

Special fire fighting procedures: Water may be ineffective to extinguish, but water should be used to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Water spray may be used to flush spills away from areas of potential ignition.

Unusual fire and explosion hazards: Highly Flammable. Products of combustion may contain carbon monoxide, carbon dioxide and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

Spill or leak: Review fire and explosion hazards before proceeding with clean up. Use appropriate personal protective equipment during clean up. Dike spill. Prevent liquid from entering sewers, waterways, or low areas. Soak up with sawdust, sand, oil dry or other absorbent material. Shovel or sweep up.

Remove source of heat, sparks, flame, impact, friction or electricity including internal combustion engines and power tools. If equipment is used for spill cleanup, it must be explosion proof and suitable for flammable liquid and vapor.

NOTE: Vapors released from the spill may create an explosive atmosphere.

Waste disposal method: Treatment, storage, transportation and disposal must be in accordance with applicable federal, state, provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

By itself, the liquid is expected to be a RCRA ignitable hazardous waste.

■ HYDRAULIC OIL (UN 1270)

Extinguishing media: Use water spray, dry chemical, foam, or CO₂.

Special fire fighting procedures: Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unusual fire and explosion hazards: Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

Spill or leak: Contain spill immediately in smallest area possible. Recover as much of the product itself as possible by such methods as vacuuming, followed by soaking up of residual fluids by use of absorbent materials. Remove contaminated items including contaminated soil and place in proper containers for disposal. Avoid washing, draining or directing material to storm or sanitary sewers .

Waste disposal method: Recycle as much of the recoverable product as possible. Dispose of nonrecyclable material as a RCRA hazardous waste by such methods as incineration, complying with federal, state, and local regulations.

■ LIQUEFIED PETROLEUM GAS (UN 1075)

Extinguishing media: Water spray. Class A-B-C or BC fire extinguishers.

Special fire fighting procedures: Stop flow of gas. Use water to keep fire-exposed containers cool. Use water spray to disperse unignited gas or vapor. If ignition has occurred and no water available, tank metal may weaken from overheating. Evacuate area. If gas has not ignited, LP-gas liquid or vapor may be dispersed by water spray or flooding.

Spill or leak: Keep public away. Shut off supply of gas. Eliminate sources of ignition. Ventilate the area. Disperse with water spray. Contact between skin and these gases in liquid form can cause freezing of tissue causing injury similar to thermal burn.

Waste disposal method: Controlled burning.

■ MOTOR OIL (UN 1270) See HYDRAULIC OIL (UN 1270) above.

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LIMITED WARRANTY

Snorkel warrants each new machine manufactured and sold by it to be free from defects in material and workmanship for a period of one (1) year from date of delivery to a Customer or for one year after the machine has been placed in first service in a Dealer rental fleet, whichever comes first. Any part or parts which, upon examination by the Snorkel Service Department, are found to be defective, will be replaced or repaired, at the sole discretion of Snorkel, through its local Authorized Dealer at no charge.

Snorkel further warrants the structural components; specifically, the mainframe chassis, turntable, booms and scissor arms, of each new machine manufactured by it to be free from defects in material and workmanship for an additional period of four (4) years. Any such part or parts which, upon examination by the Snorkel Service Department, are found to be defective will be replaced or repaired by Snorkel through its local Authorized Dealer at no charge; however, any labor charges incurred as a result of such replacement or repair will be the responsibility of the Customer or Dealer.

The Snorkel Service Department must be notified within forty-eight (48) hours of any possible warranty situation during the applicable warranty period. Personnel performing warranty repair or replacement must obtain specific approval by Snorkel Service Department prior to performing any warranty repair or replacement.

Customer and Dealer shall not be entitled to the benefits of this warranty and Snorkel shall have no obligations hereunder unless the "Pre-Delivery and Inspection Report" has been properly completed and returned to the Snorkel Service Department within ten (10) days after delivery of the Snorkel product to Customer or Dealer's rental fleet. Snorkel must be notified, in writing, within ten (10) days, of any machine sold to a Customer from a Dealer's rental fleet during the warranty period.

At the direction of the Snorkel Service Department, any component part(s) of Snorkel products to be replaced or repaired under this warranty program must be returned freight prepaid to the Snorkel Service Department for inspection. All warranty replacement parts will be shipped freight prepaid (standard ground) from the Snorkel Service Department or from Snorkel's Vendor to Dealer or Customer.

REPLACEMENT PARTS WARRANTY

Any replacement or service part made or sold by Snorkel is not subject to the preceding **Limited Warranty** beyond the normal warranty period of the machine upon which the part was installed.

THIS WARRANTY EXCLUDES AND SNORKEL DOES NOT WARRANT:

1. Engines, motors, tires and batteries which are manufactured by suppliers to Snorkel, who furnish their own warranty. Snorkel will, however, to the extent permitted, pass through any such warranty protection to the Customer or Dealer.
2. Any Snorkel product which has been modified or altered outside Snorkel's factory without Snorkel's written approval, if such modification or alteration, in the sole judgment of Snorkel's Engineering and/or Service Departments, adversely affects the stability, reliability or service life of the Snorkel product or any component thereof.
3. Any Snorkel product which has been subject to misuse, improper maintenance or accident. "Misuse" includes but is not limited to operation beyond the factory-rated load capacity and speeds. "Improper maintenance" includes but is not limited to failure to follow the recommendations contained in the Snorkel Operation, Maintenance, Repair Parts Manuals. Snorkel is not responsible for normal maintenance, service adjustments and replacements, including but not limited to hydraulic fluid, filters and lubrication.
4. Normal wear of any Snorkel component part(s). Normal wear of component parts may vary with the type application or type of environment in which the machine may be used; such as, but not limited to sandblasting applications.
5. Any Snorkel product that has come in direct contact with any chemical or abrasive material.
6. Incidental or consequential expenses, losses, or damages related to any part or equipment failure, including but not limited to freight cost to transport the machine to a repair facility, downtime of the machine, lost time for workers, lost orders, lost rental revenue, lost profits or increased cost.

This warranty is expressly in lieu of all other warranties, representations or liabilities of Snorkel, either expressed or implied, unless otherwise amended in writing by Snorkel's President, Vice President-Engineering, Vice President-Sales or Vice President-Marketing.

SNORKEL MAKES NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION OF THIS LIMITED WARRANTY. SNORKEL MAKES NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND DISCLAIMS ALL LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO INJURY TO PERSONS OR PROPERTY.

The Customer shall make all warranty claims through its local Authorized Dealer and should contact the Dealer from whom the Snorkel product was purchased for warranty service. Or, if unable to contact the Dealer, contact the Snorkel Service Department for further assistance.

CALIFORNIA
Proposition 65 Warning

Battery posts, terminals and related accessories contain lead and lead components, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

CALIFORNIA
Proposition 65 Warning

Diesel and gasoline engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects or other reproductive harm.