



Pike Electric, Inc.

**Digger Derrick
Training Manual**



***Terex Digger Derrick
Training Sessions***

***Introduction & Overview
Lesson 1***

Welcome to the Introduction & Overview Lesson

As an individual who operates a Digger Derrick, you will find the information in this training critical to your ongoing safety—as well as to the safety of those around you. Completing this training alone does not qualify you to operate a Digger Derrick but it is an important step towards proper operation. However, it is not the only step required.



All operators must be aware of, and comply with, manufacturer's instructions, applicable OSHA rules, NESC safety guidelines, ANSI standards, and federal, state and local regulations as well as the regulations of your company.

The Operator's Manual includes the contact details for obtaining OSHA rules, NESC guidelines, and ANSI standards.

You must read, understand, and follow the instructions in your Digger Derrick Operator's manual and other manuals pertaining to your vehicle before operation. The Operator's Manuals are designed to provide you with the information required for proper operation

Everyone must use safe work practices in a common-sense manner.

Only trained operators, directed by informed and knowledgeable supervision, operate your Digger Derrick.



It is important to be able to recognize safety information.

When reading documentation and operating your Aerial Device, you will encounter warnings and instructions that have a direct impact on safety. These warnings and instructions are accompanied by the safety alert symbol with which you must become familiar.

This symbol means your safety is involved! Read, Understand, and Follow all danger, warning, and caution decals, and instructions on your Aerial Device and in your operator's manual.

In addition, the decals on your machine will have the Alert Symbol and a Signal word (ie. DANGER, WARNING or CAUTION) to indicate severity of the hazard.

Danger indicates an imminently hazardous situation, which, if not avoided, will result in serious injury or death.



- Warning indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death.



WARNING



CAUTION

- Caution indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

- Caution used without safety alert symbol indicates a situation which, if not avoided, may result in property damage.

CAUTION

These symbols appear on decals on various surfaces across your Aerial Device. Ensure that the decals are legible and in good condition. Replace peeling, illegible, and damaged decals immediately.

Maintenance of your Digger Derrick is an important step towards safe operation before, during, and after a job.

Inspect, maintain, and repair your Digger Derrick and its accessories in accordance with your Maintenance and Operator's Manuals.

Only authorized, qualified personnel with complete knowledge of your Digger Derrick are allowed to perform maintenance.

Never search for leaks with your hands or any other part of your body.

Never drill holes in the platform and never alter the insulated portion of your Digger Derrick.

The Electrical Hazards lesson explains insulation in more detail.



When working from the platform, always use hydraulic tools equipped with orange hoses marked "Non-Conductive", with proper working pressure rating. Keep hoses clean and dry.

If adjustments or repairs have been performed, before operating the vehicle be sure;

- all guards and covers have been installed
- all safety devices have been reactivated
- maintenance equipment has been removed
- boom has been cycled

Fuel or oil spills may require notification of appropriate Federal, State, or Local officials.



You, the operator, impact safety more than anyone or anything else when operating your Digger Derrick.

Study all safety messages. Apply them on the job and always comply with the manufacturers' instructions, current OSHA rule, NESC safety guidelines, and ANSI standards.

Learn to operate your Digger Derrick in a safe manner and use **common sense** to protect yourself and others from injury or death.

Do not start a job, until you are satisfied that it is safe to proceed.



You have completed the Introduction & Overview lesson.

Remember the purpose of training and other actions you must take for safe operation of your Digger Derrick.

Remember the various symbols that may appear in documentation and as decals on your machine.



Most importantly, remember that you impact safety more than anyone or anything else, when operating your Digger Derrick—a well-trained crew is a safe and productive crew!

***Terex Digger Derrick
Training Sessions***

***General Guidelines
Lesson 2***

Welcome to the General Guidelines Lesson

Digger Derrick operations can involve dangers that can not be entirely avoided by mechanical means alone. Exercising care and common sense, will prevent accidents, injuries, and death.

This lesson presents general safety guidelines, to help prevent common dangers from becoming a serious accident.



It is essential that your Digger Derrick is only operated by qualified, competent, and careful operators, who are physically and mentally fit and thoroughly trained in the proper operation.

Learn, understand, and practice the proper use of all equipment, before you begin a job.

All crew personnel must know the proper procedure to follow in case of an emergency.

Make sure that all scheduled maintenance on your Digger Derrick and vehicle has been completed.

Never operate your Digger Derrick, if any interlock or safety device is malfunctioning. Never bypass or remove an interlock or safety device.



All crew personnel must wear a hard hat, of proper fit and classification, and safety glasses.

An OSHA-approved fall protection system is required, if aerial work is to be performed.

Proper footwear, gloves, hearing protection and protective clothing may also be required.

Personnel must wear suitable insulating gloves and sleeves when working around power lines. Do not allow any un-insulated part of your body to come in contact with pole, load, or equipment.



Keep your Digger Derrick control areas free of obstructions that may interfere with the controls or the people who may have to operate them.

Only operate Digger Derrick controls while standing on the vehicle; never while standing on the ground, unless operating with Radio Remote controls where the operator does not touch the vehicle and the ground at the same time.

Never exceed the rated capacity of your Digger Derrick. It is important to know the total weight of the load to be lifted and to stay within the capacity shown on the load chart.


Load charts are located near the controls and communicate valuable information about how much your Digger Derrick can handle given various criteria:

- the zone, in which you are working
- the boom angle, in degrees
- the load radius
- the sheave height

Load charts also provide valuable information regarding:

- the load above which multiple-part lines must be used
- rope capacity
- elongation limits

Read and follow the load chart information carefully before beginning a job. Replacement ropes must also meet these load chart specifications.

BOOM ANGLES IN DEGREES	FULLY RETRACTED				2ND SECTION EXTENDED				TEREX TELELECT  WARNING: IF DERRICK IS MODIFIED IN ANY WAY OR REMOUNTED, TEREX TELELECT MUST BE NOTIFIED AS CAPACITIES SHOWN MAY BE AFFECTED.	DIGGER DERRICK COMMANDER 4042 PG WINCH Sample		
	LOAD RADIUS IN FEET	SHEAVE HEIGHT IN FEET	LOAD CAPACITIES		LOAD RADIUS IN FEET	SHEAVE HEIGHT IN FEET	LOAD CAPACITIES			LOAD RADIUS IN FEET	SHEAVE HEIGHT IN FEET	LOAD CAPACITIES
			ZONE A	ZONE B			ZONE A	ZONE B				
80	3.6	26.2	21800	21800	5.0	34.0	15890	15890				
75	4.9	25.7	17240	17240	7.0	33.5	12050	12050				
60	8.7	23.8	11420	11420	13.0	30.7	7300	6490				
45	11.8	20.9	9000	7170	17.8	26.5	4680	3720				
30	14.5	17.2	6570	5230	21.4	21.2	3360	2680				
15	15.8	13.1	5630	4480	23.5	15.2	2820	2250				
0	16.0	8.8	5500	4380	24.0	8.8	2720	2160				
-20	14.6	3.3	3410	3410	22.1	0.6	1730	1730				
3RD SEC. EXT. -2ND SEC. RET.				2ND & 3RD SEC. EXTENDED				4TH SEC. EXTENDED				
BOOM ANGLES IN DEGREES	LOAD RADIUS IN FEET	SHEAVE HEIGHT IN FEET	LOAD CAPACITIES		LOAD RADIUS IN FEET	SHEAVE HEIGHT IN FEET	LOAD CAPACITIES		LOAD RADIUS IN FEET	SHEAVE HEIGHT IN FEET	LOAD CAPACITIES	
			ZONE A	ZONE B			ZONE A	ZONE B			ZONE A	ZONE B
80	4.6	34.3	17180	17180	6.0	42.2	13200	13200				
75	6.7	33.8	12810	12810	8.8	41.5	9600	9600				
60	12.8	31.1	7680	6920	16.8	38.1	5490	4370				
45	17.7	27.0	5050	4020	23.4	32.7	3150	2510				
30	21.4	21.8	3690	2940	28.4	25.8	2230	1780				
15	23.7	15.8	3130	2490	31.4	17.9	1850	1470				
0	24.3	9.4	3020	2400	32.3	9.4	1760	1400				
-20	22.5	1.1	2020	2020	30.0	-1.6	1120	1120				
NOT APPLICABLE												
REF: E04F-7712 OPTIONS: FBG HYD 3RD, MKI, AUG 18, TRANS TPP												

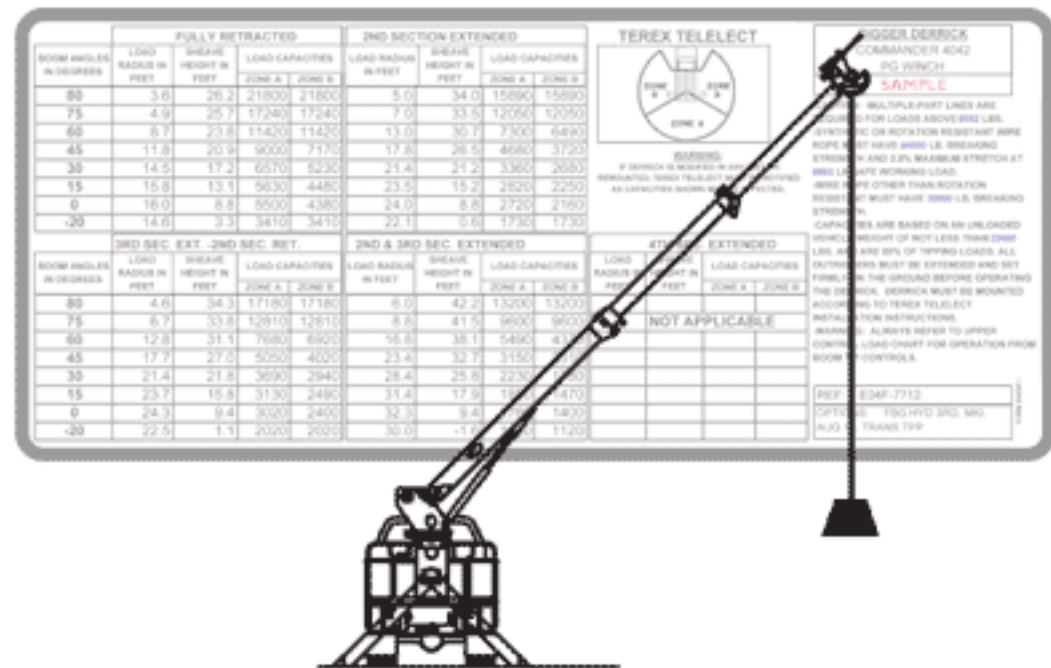
The load chart is composed of five boom configurations:

- fully retracted
- second section extended
- third section extended/second section retracted
- second / third sections extended
- fourth section extended

If your vehicle does not have a fourth section, then that boom configuration area will appear empty.

If the load exceeds the winch line capacity, you must multi-part the winch line.

Since our example illustrates a Digger Derrick with the second and third sections extended, we will focus on that boom configuration.



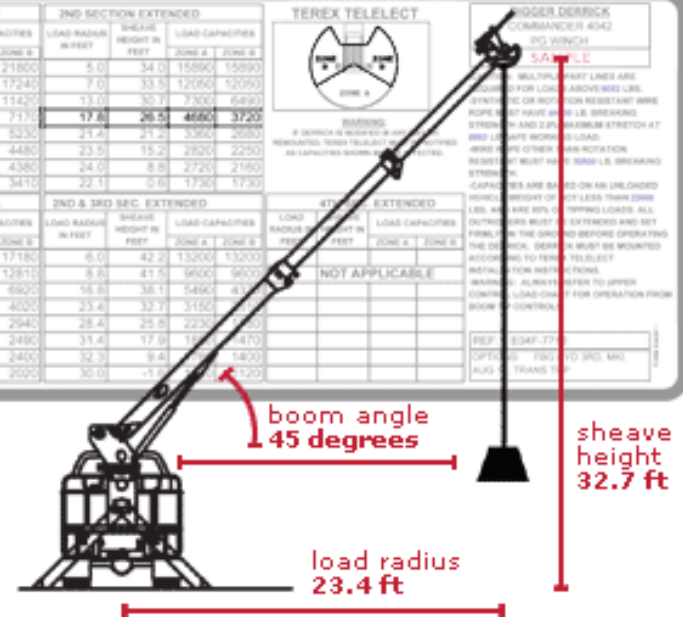
First, determine your boom angle, by looking at the angle indicator on the side of the boom.



The boom angle indicator shows 45 degrees. In the “angle” column locate 45 degrees and follow it across to the “second and third sections extended” boom configuration to determine the load radius and sheave height. In our example, the load radius is 23.4 feet and sheave height is 32.7 feet.

BOOM ANGLE IN DEGREES	FULLY RETRACTED				2ND SECTION EXTENDED				TEREX TELETECT		CROSSER DERRICK COMMANDER 4542 3RD WINCH	
	LOAD RADIUS IN FEET	SHEAVE HEIGHT IN FEET	LOAD CAPACITY TONNE	LOAD CAPACITY ZONE B	LOAD RADIUS IN FEET	SHEAVE HEIGHT IN FEET	LOAD CAPACITY TONNE	LOAD CAPACITY ZONE B	ZONE A	ZONE B	SAFETY	SAFETY
80	3.6	26.2	21800	21800	5.0	34.0	15800	15800				
75	4.9	25.7	17240	17240	7.0	33.5	12050	12050				
60	8.7	23.8	11420	11420	13.0	30.7	7300	6800				
45	11.8	20.9	9000	7100	17.8	26.5	4660	3720				
30	14.5	17.2	6570	5200	21.4	21.2	3360	2680				
15	15.8	13.1	5630	4480	23.5	15.2	2820	2250				
0	16.0	8.8	5500	4380	24.0	8.8	2720	2160				
-20	14.6	3.3	3410	3410	22.1	0.6	1730	1730				

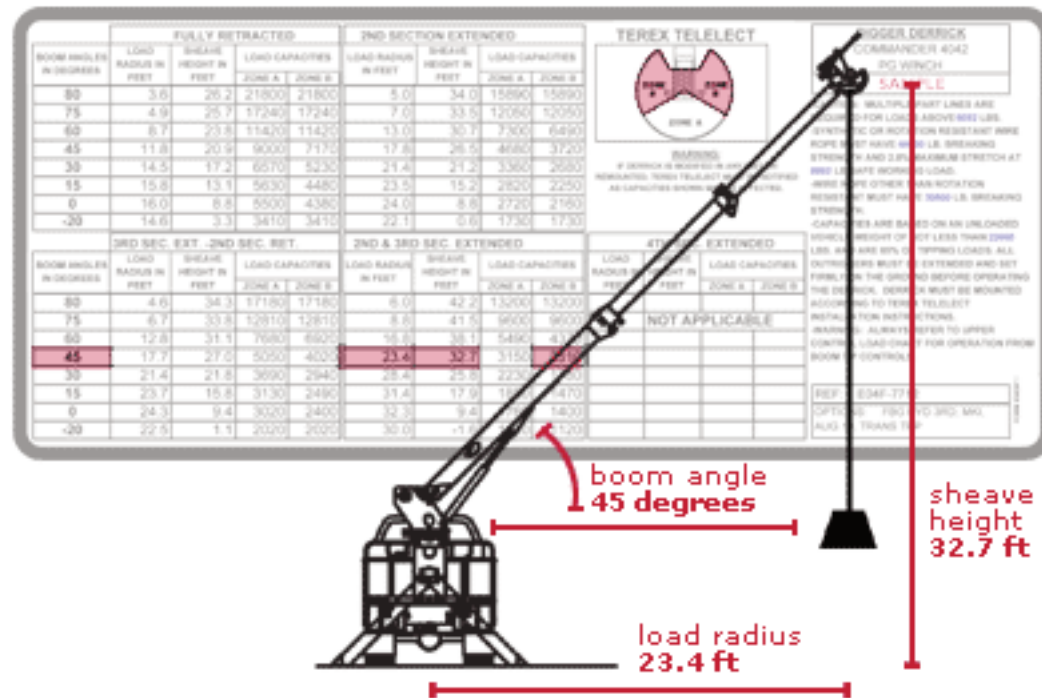
BOOM ANGLE IN DEGREES	3RD SEC. EXT. 2ND SEC. RET.				2ND & 3RD SEC. EXTENDED				4TH SEC. EXTENDED	
	LOAD RADIUS IN FEET	SHEAVE HEIGHT IN FEET	LOAD CAPACITY TONNE	LOAD CAPACITY ZONE B	LOAD RADIUS IN FEET	SHEAVE HEIGHT IN FEET	LOAD CAPACITY TONNE	LOAD CAPACITY ZONE B	LOAD RADIUS IN FEET	LOAD CAPACITY TONNE
80	4.6	34.3	17180	17180	6.0	42.2	13500	13200		
75	6.7	33.8	12810	12810	8.8	41.5	9900	9600		
60	12.8	31.1	7680	6900	16.8	38.1	5480	4300		
45	17.7	27.0	5050	4000	23.4	32.7	3150	2300		
30	21.4	21.8	3690	2940	28.4	25.8	2220	1700		
15	23.7	15.8	3130	2490	31.4	17.9	1900	1470		
0	24.3	9.4	3020	2400	32.3	9.4	1800	1400		
-20	22.5	1.1	2020	2020	30.0	-1.1	1730	1730		



A diagram on the load chart illustrates the zones around the truck, from which load capacities are determined. Since the load is positioned in Zone B, we will look under the “Zone B” column to find that our boom capacity is 2,510 pounds.

Remember that load charts are custom made for each specific Digger Derrick. The load chart shown may be different than yours.

When planning to lift a load, be sure the load chart capacity is sufficient to lift and place the load. You may need to perform a practice run, to ensure the boom movements required do not exceed the load chart capacity.



Before leaving the garage:

Visually inspect your vehicle.

Refer to the vehicle manual for proper fluid levels and maintenance specifications, including tire pressure.

Familiarize yourself with your Digger Derrick's lubrication charts and lubricate as indicated.

With the boom and outriggers fully stored, check the hydraulic oil. Refer to maintenance manual for proper fluids.

Verify the operation of all boom controls.

Check for fluid leak—hydraulic oil is flammable and can create an explosive or conductive mist in the event of a pressurized leak.

Illegible or damaged charts and decals must be replaced.



Safety equipment on your vehicle must include D.O.T. flares, triangles and a properly-charged fire extinguisher.

Your company policies and local regulations may require additional safety equipment. Become familiar with your company policies and ensure that they are followed.

A seat belt is an important component of your vehicle's safety equipment. Whenever the vehicle is in motion, the driver and passengers must wear their seat belt. Adjust the mirrors and seat for optimum view and fit.



Watch your step as you get on and off the truck, when accessing the controls, and when getting in and out of the cab. Be sure of your footing, use the grab handles and steps.

Keep steps and truck free of obstacles.

If you become aware of a dangerous condition or hear unusual noises such as grinding, cracking, or grating sounds, stop in position and do not move or operate your Digger Derrick until the problem has been diagnosed and resolved.

If an electrical storm is approaching or occurring, do not operate your Digger Derrick.



You have completed the General Guidelines lesson.

Remember, that by applying general guidelines including vehicle inspection, the use of personal protective equipment, keeping within load chart capacities, exercising care and common sense, you can help prevent accidents, injuries and death.



***Terex Digger Derrick
Training Sessions***

***Before Operation
Lesson 3***

Welcome to the Before Operation Lesson

Safely operating your Digger Derrick begins before you get behind the controls and begin a job. This lesson outlines steps and precautions you must take before operation to reduce the risk of accident and injury to yourself and to others. These steps and precautions include:

- Perform daily inspections
- Survey work-area conditions
- Park, apply the parking brakes, chock the wheels, and stabilize the vehicle
- Implement traffic control, such as cones, as required
- Conduct a tailgate session
- Ground and barricade the vehicle



Your operator's manual details recommended pre-operational procedures.

Review these procedures before beginning the job. In addition to the fluid and tire pressure checks described in the General Guidelines lesson, you should also conduct daily inspections for:

- pin wear and damaged fasteners
- fiberglass damage on boom or platform(s)
- loose or missing covers
- oil leaks
- loose fittings
- hoses chaffing
- structural damage
- damaged winch lines or hooks
- operation of controls
- all other checks as detailed in the manuals
- Inform your supervisor immediately if you note any condition(s) requiring maintenance or repair.



It is also important to inspect and survey conditions at the job site.

Identify situations such as soft ground, ditches, drop offs, holes, debris, overhead obstructions, electrical conductors, and underground utilities including manholes.

Lift capacity, as shown on the load chart, is based on stability tests performed on level ground. Your Digger Derrick must be setup with the turntable leveled to lift full load chart capacity.

Stability tests as a personnel lift are performed on 5-degree slope. Never operate with vehicle slope exceeding 5 degrees. Slopes exceeding 5 degrees require additional cribbing, blocking or positioning to position vehicle at less than 5 degrees to prevent vehicle overturning.

Be aware of potential interference while rotating.

Do not park on flammable grass or brush.

The truck engine and the exhaust system generate high temperatures. Make sure the fire extinguisher is functional and crew personnel are aware of its location.



Before you start a new job, include all personnel in a tailgate session to communicate the specific details of each job and the hazards involved.

Clear communication is critical among line crew personnel when working on the job site to ensure the job is performed safely.

Be sure to consider:

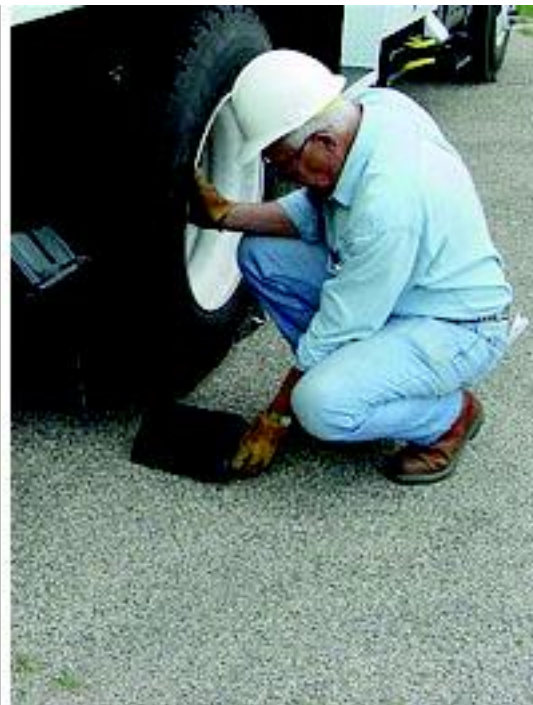
- Weight of load to be lifted.
- Boom side reach.
- Position of load to be lifted.
- Where you plan on placing the load.
- Allowable load from the load chart throughout the planned movement of the boom.
- Personnel protective equipment needed.



Proper lifting may require a practice run to ensure you have sufficient capacity and reach to lift and place the load where desired.

Approach a job site with your warning lighting system on.

Ensure the vehicle is securely parked and set the chassis parking brakes before exiting the cab. Chock the wheels and barricade the vehicle and work area with safety barricades to keep unauthorized personnel from entering the work area.



The operator is responsible for proper setup and must first determine if ground conditions can support the load of your Digger Derrick.

Stabilize the vehicle by setting the outriggers. Ensure the outriggers will all have a flat, firm surface to set on.

When moving the outriggers the operator must be able to observe the outriggers in motion and be sure all personnel are clear.

If the outriggers are set on a curb with the vehicle in the street, the outrigger spread is reduced—which will affect the stability and restrict the load capacity.

Set the outrigger closest to the pedestal first, then lower the remaining outriggers if your vehicle is so equipped. Always use outrigger pads to increase the surface area and to distribute the pressure on the ground. Be sure to center the outriggers on the pads.

In addition to digging out, cribbing, or positioning may be required to achieve full stability and obtain complete contact with the ground.

Vehicle tires should remain on the ground.

When setting up on a slope, set the outriggers on the downhill side first.



Snow and ice conditions require extra caution when operating an Aerial Device and setting the outriggers.

Cold and snow cover does not stop line work. The damage from ice and snowstorms increase the workload and urgency to finish repairs. It also brings in new crews, who work long hours, to help restore power and repair damage from broken poles, downed wires, and fallen trees.

Do not jeopardize your safety by bypassing safe work practices. Safe work practices are even more important to follow when the crews are cold and tired. Your injury, death or equipment damage is not worth the time saved rushing to complete the work.

Operation on snow and ice add an additional problem due to the slippery conditions. Normal traction is greatly reduced. Just as you need to maintain traction to walk and drive, it is required to keep Digger Derricks and Aerial Devices in a stable position.

Rotating and moving the booms may cause the truck to jerk and move. If the unit is not set up securely the truck can slide on ice and snow while operating.

When planning your work remember that driving in snow causes snow dust to be deposited on all surfaces. The outriggers and outrigger pads will get snow covered and slippery. Also, as you put pressure on snow, the snow packs down and turns to ice.

The person setting the unit up for operation has the entire responsibility for a stable position. The person on the site is the only one who can evaluate the conditions and terrain.



Proper set up for Snow and Ice requires:

- Outriggers do not slide on the outrigger pads during use.
- Outrigger pads do not slide on the ground during use.
- Set the parking brakes
- Chock wheels as required, to prevent movement down hill. Evaluate chock location to prevent the truck pivoting around one chock.
- Set units with one set of outriggers so all tires are on the ground.
- Evaluate the terrain to determine the most flat and level set up position.
- Set up truck so if the truck does move slightly, the result isn't catastrophic.
- Follow Operators manual for set up instructions. Do not place outriggers on Ice as slippage may occur regardless of solid footing.



To properly set up you may need to:

- Remove snow and ice down to bare ground to prevent sliding and to evaluate the support available. Don't set outriggers on a manhole cover or the edge of a slope or drop off.
- Move as far as required into the street or road so if the truck does move, the tires and outriggers will not slide into the ditch or other hazards.

Before operating your Digger Derrick, inspect the winch line and hooks.

Check the winch line carefully for damage, cuts, or abrasions prior to lifting any loads.

Only use hooks with a safety latch.

Inspect slings for wear, cuts, abrasions or broken strands.

Report any problems to your supervisor.

The master control switch inside the cab, if your vehicle has one, must be switched ON.

This switch energizes the stop/start system and throttle control options.

The warning light switch, if present, must also be switched ON to provide power to the warning light system.

The Power Take Off (PTO) may be engaged by a pull cable or a switch.

Follow the PTO manufacturer's operating instructions to operate the PTO properly for your vehicle
Note that driving with the PTO engaged may damage both the hydraulic pump and the PTO.



Ground and barricade your vehicle before starting the job.

Your company may have specific policies for grounding which you must follow.

You also need to cover any electrical lines you may contact with cover-up or line hose.



You have completed the Before Operation lesson.

Remember that safety is a concern before you get behind the controls and begin a job.

Some of the steps you can take before starting, include:

- Perform daily inspections
- Survey work-area conditions
- Park, apply the parking brakes, chock the wheels, and stabilize the vehicle
- Implement traffic control, such as cones, as required
- Conduct a tailgate session
- Ground and barricade the vehicle



***Terex Digger Derrick
Training Sessions***

***During Operation
Lesson 4***

Welcome to the During Operation Lesson

Operating your Digger Derrick requires special attention to safety. The operator's manual will have instructions pertaining to your Digger Derrick, including general safety guidelines you should follow when:

- Operating all controls
- Using the boom and lifting loads
- Digging
- Setting poles
- Using an aerial platform
- Traveling



Never operate your Digger Derrick unless you know the location, function, and operation of all the controls, including emergency and accessory operation.

Avoid abrupt starts, stops, and direction reversal.

Operate controls slowly for smooth motion, and never operate while standing on the ground unless using Radio Remote Controls.

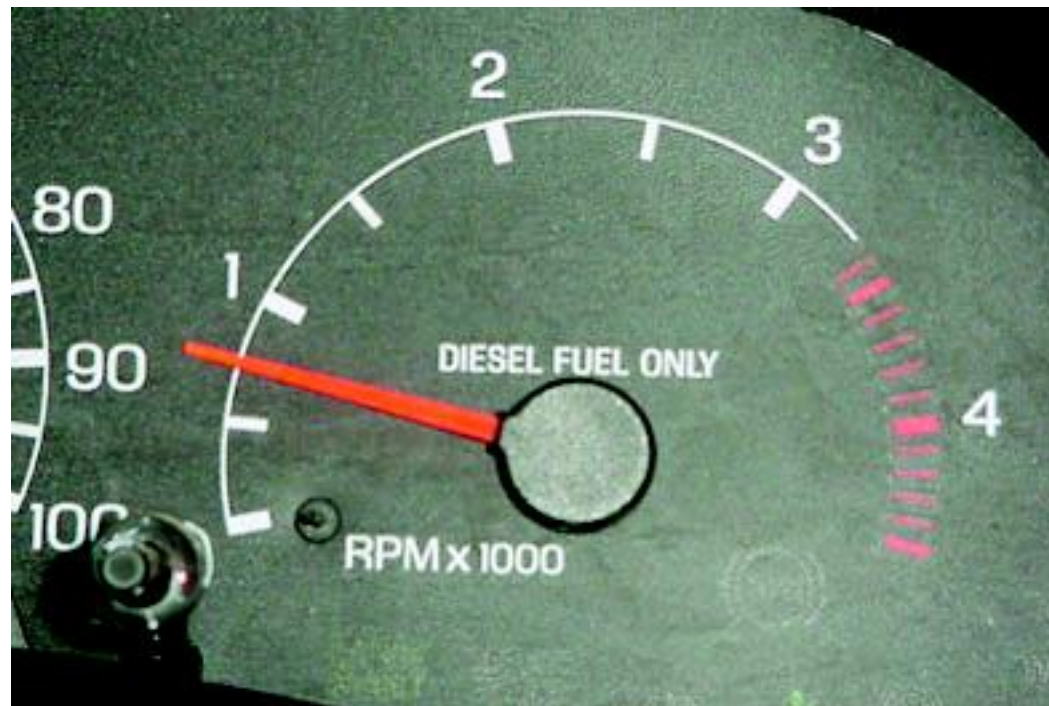
Keep hands off all moving parts to avoid injury.



You should approach the work area at low engine speed, for controlled smooth boom movements and when lifting heavy loads.

High engine RPM can be used when conditions allow for rapid movement of the boom, winch line, or auger.

Running the engine at high engine RPM for extended periods of time can cause the hydraulic oil to over heat.



When lifting loads, you must know and must not exceed capacities for boom extensions, angles, zone and winch line capacity.

Refer to the General Guidelines lesson for a load-chart explanation. To use the load chart correctly, you must know the weight of the load you are lifting.

Do not position the boom in the open traffic lane without first stopping traffic or barricading to divert traffic from the work area. Watch for trees, buildings, and other obstructions in the boom path and maintain clearance from power lines.

Never lift a load over ground personnel or allow ground personnel to walk under a suspended load.

Ground personnel must not be in contact with the load, the vehicle or any attached trailers without proper personal protective equipment.



Keep loads as close to the ground as possible and keep the winch line vertical at all times to ensure proper control of the load you are lifting.

When lifting a load observe the boom tip, load, and winch line to avoid contact with obstructions. Remain at the controls whenever a load is suspended.

If the vehicle is set up on a slope, use extreme caution. Stability may be reduced.

Never pull poles using the winch, boom, boom extension, or outriggers, as this can overload and damage the equipment. Only pull poles with a pole puller.

While lifting, ensure that the winch line is properly spooling on the winch drum in even layers. If a “bird nest” or loop forms, re-spool the winch line evenly on the drum, before lifting a load.



When digging holes the following guidelines must be followed:

- Never begin digging until all the underground utilities, (ie. electrical lines, gas lines and other lines), have been located and marked.
- When not in use, the auger and digger are stored at the side of the main boom section. Inspect the roll-up cable for damage and the auger attachment bolt for proper installation before unstoring the auger.



- Before you unstore or store the digger or auger, be sure to clear the area of all ground personnel. Follow proper procedures to prevent injury resulting from uncontrolled auger movement.
- Store and unstore in low speed if equipped with two speed digger.
- Raise the boom to approximately 45 degrees when storing and unstoring the digger.
- Auger must be fully retracted on Kelly bar before storing.

- When unstored, the digger and auger are attached to the end of the 2nd boom section to allow for adjustments of the digging radius.
- Repin the auger on the auger hex extension shaft when deep holes are required.
- Never allow the auger to corkscrew; the forces may overload your Digger Derrick.

The following important guidelines must be followed, when lifting poles:

- An optional tilting pole claw assembly is only used to guide poles. The tilting pole claw helps to keep the pole steady and plumb. Remember, never lift the pole with the pole claw assembly; only use it to guide the pole.
- To prevent damage to the winch line, do not wrap it around the pole. Always use a suitable sling when lifting a pole. When setting a pole, position the sling to keep the pole slightly butt heavy.
- Adjust the winch line as needed, while extending or retracting the boom.



Units equipped with transferable tilting pole claws allow the pole claws to be attached to the 2nd or the 3rd boom section.

When the tilting pole claws are pinned to the 2nd boom section, the fiberglass 3rd boom section can be extended without the pole claws attached.

By transferring one pin, the tilting pole claws may be extended with the fiberglass 3rd boom section.



Fiberglass, gravity-leveled platforms are available for aerial operations.

Platforms should be securely stored on the vehicle during transport. The platform is attached to the fiberglass 3rd boom section at the jobsite.

During aerial platform operations you must note the following general guidelines:

- You must perform pre-operational daily inspections of the OSHA-approved fall protection system, including lanyard and lanyard attachments.
- Attach the lanyard to the lanyard anchor after entering the platform.
- Do not operate, if the platform leveling device is malfunctioning.
- The platform is not insulated if a liner is not used because of small, unseen cracks that can form in the fiberglass.
- The maximum boom insulation rating for a digger derrick with a fiberglass 3rd boom section, is 46 kVAC.
- The insulated boom only protects the operator from phase-to-ground contact through the boom.
- The fiberglass boom will not provide protection to the operator from phase-to-phase contact or phase-to-neutral contact at the boom tip.

- Personal protective equipment, such as an insulated hard hat, rubber gloves, sleeves, line cover and clearance distance are required for prevention of electrical shock. You must follow OSHA and NESC rules and regulations, when working on structures with energized conductors or when the task requires.
- Never wear climbers while in the platform.
- Keep both feet on floor of the platform at all times. Do not sit or climb onto the edge of the platform or use planks, ladders, or other devices.
- Do not leave the platform to build trestles between it and another support work location, and never move the vehicle when the platform is occupied.
- Ground personnel must wear hard hats and be alert for possible falling objects.





- The operator must know the location, function, and operation of all controls at the platform.
- The operator must know the rated capacity of the aerial platform.
- Do not allow the boom or platform to contact fixed objects.
- Do not tie off to an adjacent structure, a pole or equipment.

- Do not pass tools, equipment, or other objects to other personnel on poles or other platforms.
- Keep the digger and auger in the stored position when personnel are in the platform.
- Store winch line on drum when using as insulated aerial.



Traveling with your Digger Derrick requires attention to safety as well:

Do not travel with the boom(s) elevated. Store the boom(s) properly in the boom rest with all boom sections fully retracted.

If your Digger Derrick comes with a removable aerial platform, remove and store before traveling.

Keep all tools and other items properly stored on the vehicle while traveling. If not, they may fall onto roadway.

Be sure that outriggers are fully retracted and that pads and wheel chocks are properly stored.

Disengage the power take off to prevent damage to the hydraulic pump and PTO.

Follow the vehicle manufacturer's instructions regarding road travel.

Do not ride at the Digger Derrick control locations while traveling, only inside the vehicle at seats designed for passengers.

When traveling remember the overall height of the vehicle.



You have completed the During Operation lesson.

Remember that operating your Digger Derrick requires attention to safety. While your operator's manual will have instructions pertaining to your Digger Derrick, there are general safety guidelines you must follow when:

- Operating all controls
- Using the boom and lifting loads
- Digging
- Setting poles
- Using an aerial platform
- Traveling



***Terex Digger Derrick
Training Sessions***

***Electrical Hazards
Lesson 5***

Welcome to the Electrical Hazards Lesson

Electricity is an ever-present danger, when operating a Digger Derrick and working from a platform. It is imperative that you follow all OSHA, ANSI, state, federal, and company rules and regulations when working on or near energized power lines. The safety rules are not meant to slow down your work, but to ensure your safety. Do not take shortcuts.



When working near energized power lines:

Maintain proper clearances per OSHA tables..

Do not bring the boom, winch line, load, near or contact electric conductors. Maintain proper clearance at all times.

The fiberglass third section must be fully extended.

Do not allow ground personnel to come in contact with your Digger Derrick, vehicle, or vehicle attachments, while operating near energized power lines.

Ground personnel must wear rubber gloves, suitable for the voltage, if they will contact the load line or load while the boom is in area of electrical lines.

When digging holes or setting screw anchors locate all underground utilities before digging to prevent contact with buried electrical lines, gas lines or other underground utilities.



The vehicle must be grounded and barricaded and considered energized.

When lifting loads, digging holes or setting screw anchors know where electrical lines are located and keep boom clear of lines unless proper line cover up prevents contact.

To learn more about grounding, refer to the Before Operation lesson. Your company may have specific policies that you must follow when using your Digger Derrick near energized lines.



Electrical conductors, including neutral or ground, poles, cross arms and guy wires must be covered using the proper cover-up equipment.

Your primary protection from electrical hazards is your personal protective equipment. Protective insulating equipment must be worn when working from the aerial platform. This includes rubber gloves with leather protectors, insulated rubber sleeves, insulated hard hat, hot line tools, eye protection and also insulating line cover-up, such as line hose and blankets.

The boom and operator must be properly insulated from contact with electrical conductors, including neutrals or ground line, poles, cross arms, and guy wires. Use line covers rated for the voltage.

Your Digger Derrick and aerial platform cannot protect you from phase-to-phase or phase-to-ground contact at the boom tip. The boom tip contains conductive materials, such as sheave pins, support structures, etc.

Do not place booms, platforms, or personnel between energized conductors without proper cover-up and personal protective equipment.

Allow for boom sag, sway, or rocking when working near energized power lines.

Only use hydraulic tool hoses that are orange in color marked NON-CONDUCTIVE.



To reduce the risk of injury or death from electrical hazards:

- Do not operate your Digger Derrick in an electrical environment if the fiberglass components are damaged, contaminated by moisture or dirt, or otherwise improperly maintained.
- You must perform a daily inspection and an annual dielectric testing of the fiberglass boom per current ANSI standards.
- Remove rope from sheave and store on drum when using to lift personnel. A synthetic winch line may be conductive, due to contamination, moisture and dirt.
- Digger/auger must be in the stored position when personnel are in the platform.



The fiberglass platform is not insulated.

The fiberglass platform may contain small, unseen cracks that allow electricity to travel into the platform. You must use a tested platform liner if platform insulation is required.

Conductive objects must not protrude over the lip of the platform liner. This allows a conductive path to the operator.

If you contact conductors, neutral or ground, while inside the platform, do not touch the controls or boom tip area unless you have the proper primary protection, such as rubber gloves rated for the voltage being worked.



You have completed the Electrical Hazards Lesson.

Remember that electricity is an ever-present danger when operating a Digger Derrick and working from a platform.

It's important to follow all OSHA, ANSI, NESC, state, federal, and your company rules and regulations, and to follow the general safety guidelines presented in this lesson.



***Terex Digger Derrick
Training Sessions***

***Emergency Operation
Lesson 6***

Welcome to the Emergency Operation Lesson

It is critical to your safety and the safety of those around you that you not only strive to prevent emergencies, but that you know how to respond should an emergency occur.

Become familiar with your Digger Derrick emergency controls and shutoff, before an emergency occurs.

This lesson discusses considerations and guidelines regarding three types of emergencies, including:

- Mechanical failure or structural problems
- Hydraulic and/or fluid leaks
- Downed power lines



Mechanical failure occurs when your Digger Derrick is operated with damaged or broken components, or is operating improperly.

If you become aware of a mechanical problem, dangerous condition or hear unusual noises such as grinding, cracking, or grating sounds, stop in position and do not move or operate your Digger Derrick until the problem has been diagnosed and resolved.

Do not take any action that may make the situation worse, increasing the level of danger.

Do not put yourself and others at risk.

Contact your supervisor or call for assistance.



Hydraulic failures, such as a leak require immediate action, to stop the flow of oil.

When oil/fluid flow is stopped, contact your supervisor or call for assistance. Your company policies and federal/state/local regulations may require you to notify the proper authorities.

Any repairs that are made to the vehicle must be followed by a complete vehicle inspection, to ensure that it is in safe operating condition.



When you perform work in the vicinity of live power lines, an electrical emergency is possible.

Downed power lines represent a dangerous situation:

- Refer to your company's policy regarding downed lines.
- Do not touch the power line. Immediately clear the area of all persons.
- If the downed line is close to the truck and you are on the truck, determine if you can safely exit.
- Live power lines on the ground create what is known as "step potential" and can cause serious injury, even if you are not touching the line directly.
- Having the right equipment on hand is very important. Hot sticks, rubber matting, and personal protective equipment may be required, when dealing with electrical emergencies.



Seconds count in an emergency.

Be certain all crew personnel are well versed in operating the controls. Ensure your path to and from controls is clear and free of clutter or debris.

If an emergency occurs while an operator or operators are in the platform, it is critical that ground members know the proper operating procedures:

- Refer to your company's policy regarding emergency operation.
- Shut off the oil flow to the boom tip, if required, by using the selector at the lower controls, outrigger selector (if equipped), disengage the PTO, or shut off the engine.
- If operational, lower the boom or aerial platform from the lower control station.



Think before you act. Do not make an emergency situation worse.

Do not let yourself become a victim of an emergency.

Never provide assistance if it means you will be injured or killed.

To help your crew personnel, you must be able to move freely, summon help, and carry out the emergency procedures established by your company.



You have completed the Emergency Operation Lesson.

Remember that it is critical to your ongoing safety and the safety of those around you to prevent emergencies, and that you know how to respond should an emergency occur.

Whether the emergency was due to mechanical failure, fluid leaks or downed power lines, remember that it is critical to follow your company's policies.

Remember to keep yourself safe throughout the emergency so that you can most-effectively aid others.



***Terex Digger Derrick
Training Sessions***

Hand Signals

Lesson 7

Welcome to the Hand Signal Lesson.

The pages of this lesson present valuable information about twelve unique hand signals you will find useful when operating and working with either the Digger Derrick or an Aerial Device.

While each organization and locality uses hand signals with varying frequency and consistency, the hand signals you are about to study are universal. Used effectively, they can enhance communication and provide a safer work experience.



Signals for Hoist and Lower

HOIST. With your forearm vertical and your forefinger pointing up, move your hand in a small horizontal circle.



LOWER. With your arm extended downward and your forefinger pointing down, move your hand in a small horizontal circle.

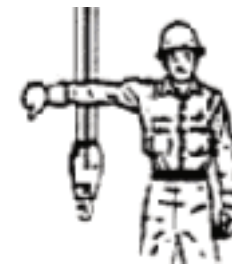


Signals for Raise & Lower Boom

RAISE BOOM. Extend your arm, close your fingers and point your thumb upward.



LOWER BOOM. Extend your arm, close your fingers and point your thumb downward.

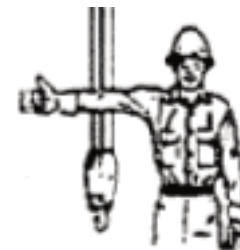


Signals for Move Slowly & Raise Boom and Lower Load

MOVE SLOWLY. Use one hand to give any motion signal and then place the other hand motionless in front of the hand giving the signal.

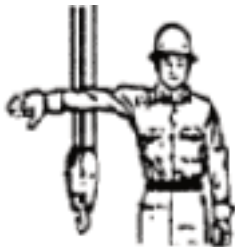


RAISE THE BOOM AND LOWER THE LOAD. Extend your arm, point your thumb up and flex fingers in and out as long as the load movement is desired.



Signals for Lower the Boom & Raise the Load and Swing

LOWER THE BOOM AND RAISE THE LOAD. Extend your arm, point your thumb down and flex your fingers in and out as long as the load movement is desired.



SWING. Extend your arm and point your finger in direction of swing of boom.



Signals for Stop and Emergency Stop

STOP. Extend your arm, place your palm down and move your arm back and forth horizontally.



EMERGENCY STOP. Extend both arms, place your palms down and move your arms back and forth horizontally.



Signals for Extend & Retract Telescoping Booms

EXTEND BOOM (Telescoping Booms). Place both fists in front of your body and point both thumbs away from each other, or outward. .



RETRACT BOOM (Telescoping Booms). Place both fists in front of your body and point both thumbs toward each other, or inward.



This lesson introduced you to the hand signals you will find useful when operating and working with either the Digger Derrick or an Aerial Device.

Remember that each organization or locality uses hand signals with varying frequency and consistency.

Hand signals are effective only when the entire work crew uses them correctly and understands what each signal means.

Get to know how your organization or locality uses hand signals and practice using them.

