

SAFE USE PLAN GUIDANCE



Genie[®]
A TEREX BRAND

TAKING YOU **HIGHER**[™]

MOBILE ELEVATING WORK PLATFORM SAFE USE PLAN OVERVIEW

The operation of any Mobile Elevating Work Platform (MEWP) is subject to certain hazards that can be protected against only by the exercise of intelligence, care and common sense, and not by any device. It is essential to have persons who are medically and physically fit for the task selected to be trained and qualified in the intended use, safe operation, maintenance, and service of this type of equipment.

It is critical to ensure that good job management, safety control and the application of sound principles of safety, training, inspection, maintenance, repair, application and operation are strictly adhered to at all times.

All available information regarding the parameters of intended use and the expected work environment must be taken into consideration. Decisions on the use and operation of MEWPs must always be made with due consideration for the fact that the MEWP will be carrying persons whose safety is dependent on those decisions, as well as others in the operating vicinity.

With all of that taken into account, a safe use program specific to MEWPs must be developed by the user and must include, but not be limited to, the following:

- Performing a site risk assessment to identify hazards, evaluate risk, develop control measures and communicate with everyone affected;
- Planning of the operation, including rescue plans for the safe recovery of persons and/or the MEWP in the event of an emergency;
- The selection, provision and use of an appropriate MEWP for the task as well as any work equipment associated with it;

- Access, preparation and maintenance of the site, as required, to include an assessment that the support surface is adequate to support the weight of the MEWP;
- MEWP maintenance, including inspection(s) and repairs as required by the applicable standards and by the manufacturer;
- Allowing only trained and authorized personnel to operate and/or occupy the MEWP;
- Ensuring that the authorized MEWP operators have been familiarized with the specific MEWP to be used;
- Ensuring that the operators are informed of local site requirements and has been warned and provided the means to protect against identified hazards in the areas where the MEWP will be operated;
- Having a trained and qualified supervisor monitor the performance and the work of the operator to ensure compliance with provisions of the applicable standards;
- Prevention of unauthorized use of the MEWP;
- The safety of persons not involved in the operation of the MEWP; and
- Proper documentation and record retention.

Please Note:

This document is designed to provide guidance on the above requirements and is only to be used as such. It does not constitute a safe use plan.

Specific information on the requirements can be found in the ANSI A92.22-2018 Safe Use Standard (United States) and the CSA B354.7:17 Standard for Safety Principles, Inspection, Maintenance and Operation (Canada).

MOBILE ELEVATING WORK PLATFORM SAFE USE PLAN OVERVIEW

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MOBILE ELEVATING WORK PLATFORMS WORKPLACE RISK ASSESSMENT

Risk assessments are a critical element of jobsite and worker safety. The risks associated with the task specific to MEWP operations must be identified before the work begins.

These might be associated with the location where the work is to be carried out, the nature of the MEWP, or the personnel, materials and equipment to be carried.

This involves visiting the location where the work is to be performed, preferably with site personnel or their representatives who can identify the hazards associated with the area and the ground on which the MEWP will be required to operate.

Once the hazards and risks involved in the task have been identified, the procedures and measures required to eliminate or mitigate them must be identified and implemented.

The risk assessment results are used to plan safe work procedures, including any contingencies required, in carrying out the identified tasks.

Rescue planning is a necessary component of a risk assessment when working at height. There are situations that require prior planning to ensure a safe and timely rescue. For more information, please refer to the Genie® Rescue Plan Overview document.

The user, which is most commonly the employer, is responsible for communicating the results of the risk assessment to everyone involved in the operation.

Before a job starts and periodically throughout a long-term job, the risk assessment must be reviewed to determine if any components of the tasks or the work environment have changed and the effect that it could have on the safety of the operation. If any modifications to the risk assessment are required, these must be communicated to everyone involved prior to resuming the job.

PARTIAL SAMPLE OF A RISK ASSESSMENT:

Company Name: Genie, a Terex Brand Date: 02/10/2019

Jobsite Location: 6464 185th Ave, Redmond WA 98052

Primary Risk Assessor(s) Scott Owyen

Does this risk assessment replace a previous assessment? No Yes

If yes, date of previous assessment: _____

HAZARD	RISK	CONTROL MEASURE
Periods of high wind in the work area	Tip-Over	<ul style="list-style-type: none"> Use an anemometer to determine wind speed. Do not operate the MEWP if wind speed or gusts are expected to exceed 28 mph.
Power lines in the vicinity of the work area	Electrocution	<ul style="list-style-type: none"> Review the appropriate operator's manual. Maintain safe distance from the power lines in accordance with the Required Clearance chart.
Overhead obstructions where the MEWP needs to operate	Collision/Crushing	<ul style="list-style-type: none"> Always look in the direction you are moving Use extreme care and slow speeds Wear personal protective equipment as required
Some areas of the work location may exceed the maximum slope rating for the MEWP	Tip-Over	<ul style="list-style-type: none"> Do not operate the MEWP on a slope that exceeds the manufacturer's recommendation. Elevate only on a firm, level surface. If alarm sounds, follow the instructions in the operator's manual to lower the MEWP safely

MOBILE ELEVATING WORK PLATFORMS WORKPLACE RISK ASSESSMENT

Before any operation begins and during the use of the MEWP, it is critical that the user ensures that the operator performs a workplace inspection in the area in which the MEWP is to be used.

The workplace inspection should be performed prior to moving the machine to the workplace.

The site must be walked and checked for all possible hazards, such as, but not limited to:

- Drop-offs or holes, including those concealed by water, ice, mud, etc.
- Slopes
- Bumps, floor obstructions and electric cables
- Confined spaces
- Debris
- Overhead obstructions
- Electrical conductors
- Hazardous atmospheres and/or hazardous locations
- Surfaces inadequate to sustain the ground-bearing pressures imposed by the MEWP in all operating configurations
- Wind and bad weather conditions
- Traffic hazards
- The presence of personnel (authorized and unauthorized) and other mobile equipment

An important aspect of MEWP operation is the safety of workers and the general public who can be exposed to potential hazards in the work area. Always maintain a controlled area below and around the MEWP to prevent persons and objects from being struck-by the MEWP itself or objects that may fall from the elevated platform.

When a MEWP is being loaded or unloaded from a transport vehicle on a public road, the users and operators must ensure that appropriate measures are taken to protect everyone in or near the area.

These measures may include, but are not limited to:

- Warning cones or hazard tape
- Signs and signal personnel wearing reflective clothing
- Flag personnel to warn people and other vehicles of the presence of the MEWP and the transport vehicle

This is only an overview. Additional information can be found in the ANSI A92.24-2018 and CSA B354.7:17 Standards. We encourage you to purchase a copy of the standards and read them in their entirety prior to developing your Safe Use Plan.

The ANSI A92.22-2018 Standards can be purchased at: <https://shop.saiaonline.org>

The CSA B354.7:17 Standards can be purchased at: <https://store.csagroup.org>

RESCUE PLANS FOR MOBILE ELEVATING WORK PLATFORMS

WHY ARE RESCUE PLANS CRITICAL WHEN OPERATING MOBILE ELEVATING WORK PLATFORMS (MEWPs)?

MEWPs are designed and manufactured to include fall protection in the form of platform guardrails, and the ANSI A92.22-2018 and CSA B354.7 standards also require personal fall protection equipment (PFPE) on all Group B MEWPs (booms). However, there are situations where an individual may fall or be ejected from the platform, the platform may become entangled, or the machine may experience a breakdown and the operator and any occupants in the platform will require a timely rescue response.

Even a person properly fitted with a full body harness may receive injuries during the fall or begin to experience suspension trauma (blood pooling in their legs) within a very short period of time. Research indicates that suspension in a fall arrest device can result in unconsciousness, followed by death, in less than 30 minutes. According to ANSI Z359.4-6.1, the recommended goal for rescue subject contact is less than six minutes.

In the event of platform entanglement or machine breakdown that would prevent the operator from lowering the platform safely to the ground, it is critical to have a plan in place to ensure a timely rescue.

A rescue plan is a necessary component of a risk assessment when working at height.

Per OSHA 1926.502 [D] [20] and OSHA 1910.66: “The employer shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves.”

ANSI A92.22 and CSA B354.7 standards require employers to have a rescue plan in place and ensure that workers are trained on procedures to follow if they fall and await rescue or witness another worker’s fall. The plan must be put in writing and become part of your company’s training program.

Rescue Plans Should Include the Following:

- Company name and location
- Work site location (if different)
- Identification of fall hazards associated with the operation of the MEWP
- Identification of work procedures to eliminate or mitigate the risk
- Training on:
 - Self-rescue (by the person involved)
 - Assisted rescue (by others in the work area)
 - Technical rescue (be emergency services)

It is critical to ensure that:

- only properly trained, qualified and authorized personnel operate the MEWP;
- all occupants wear the appropriate personal fall protection equipment (PFPE) for the task at hand; and
- all occupants have received instruction on how to properly inspect, don and adjust the PFPE.

Options for Rescue (to be covered in detail on the following pages):

- Use of platform auxiliary controls by the operator
- Use of the primary ground controls by others in the work area
- Use of the auxiliary ground controls by others in the work area in the case of main system malfunction
- Platform-installed self-rescue systems
- Personal self-rescue systems
- Secondary MEWP for mid-air rescue
- Agreement with local authorities to provide technical rescue

RESCUE PLANS FOR MOBILE ELEVATING WORK PLATFORMS

Options for Rescue – Self-Rescue (by the person involved):

Platform Auxiliary Controls

In the case where the primary platform controls stop responding, the operator should first attempt to activate the platform auxiliary controls to lower the machine to the ground.

Platform-Installed Self-Rescue System

In the case where the platform controls are not responding and there are no other workers in the area who can provide assistance, a platform-installed self-rescue system may be employed.

These systems are typically after-market devices that can be mounted in the platform that allow the operator to self-rescue by attaching the system to the front D-ring on their harness, exiting the platform and using the device to lower themselves to the ground.

Operators must receive extensive training on the use of the system and machine manufacturer approval prior to installing the system on the machine.

Whenever an individual is suspended in air, it is critical that they continuously pump their legs (as if riding a bicycle) to minimize the likelihood of suspension trauma injury.

Personal Self-Rescue System

These systems can be used to lower the individual from the platform, or to self-rescue after experiencing a fall or ejection from the platform.

These systems are also after-market devices that can be mounted directly onto the operator's full-body harness. The PFPE lanyard is then attached to the device prior to commencing the work.

The system allows the operator to self-rescue by exiting the platform and activating the device to lower themselves to the ground or to within rescue range from another MEWP.

Operators must receive extensive training on the use of the system and approval from their employer prior to installing the system on their harness.

Suspension Trauma Safety Straps

Another personal self-rescue option that should be a consideration in any rescue plan is a suspension trauma strap system.

These lightweight systems mount onto the side straps of the operator's harness. In the case of fall or ejection from the platform, the operator opens the case to release the straps, connects them at the proper length, and steps into the loop created by the straps.

This allows the operator to stand up in their harness and relieve the pressure being applied to the arteries and veins around the top of the legs until they can be rescued.

RESCUE PLANS FOR MOBILE ELEVATING WORK PLATFORMS

Options for Rescue – Assisted Rescue (by others in the work area):

Please note: Rescue should only be carried out by appropriately trained personnel.

All rescue procedures near electrical conductors must comply with section 6.8.12 of the ANSI A92.22 standards and section 6.1DV.2.6 of the CSA B354.7:17 standards.

Primary Ground Controls

In the case where the operator cannot lower the platform to the ground by means of the primary or auxiliary platform controls, or if the operator has been incapacitated, a person on the ground who has been familiarized on proper use of the controls may use the primary ground controls to lower the machine.

Auxiliary Ground Controls

In the case where the primary ground controls are not responding, the person on the ground should attempt to activate the auxiliary ground controls. If all ground controls are not responding, the ground personnel should immediately contact onsite qualified personnel to assess the situation and provide further guidance.

Use of a Secondary MEWP

- Consideration must always be given to the rescue of MEWP occupants if the machine is unable to be lowered for any reason, such as complete machine malfunction or work platform entanglement.
- In the case of platform entanglement, it is critical for the operator and occupants to be removed from the platform prior to attempts being made to free the platform.
- MEWPs that have tipped beyond their center of gravity must be stabilized and secured before attempting any rescue.

- Rescue using another MEWP should be carried out only after a thorough site review by a qualified person has been performed and a plan has been created. The plan should take into account the following:
 - The rescue machine should be positioned to allow the rescue to be performed without compromising the safety of personnel involved in the rescue;
 - The platforms of both machines shall be adjacent to each other with a minimal gap between them. The power on both machines should be shut off during the transfer;
 - Safeguards should be taken to prevent unintended movement of either platform during the transfer.
- All personnel in the platform, including the person being rescued, must be wearing the proper fall protection equipment and the lanyard(s) must be attached to the anchor points on the rescue machine before the transfer takes place;
- The rescue machine must not be overloaded at any time during the rescue. This could mean making more than one trip to complete the rescue; and
- Always comply with the manufacturer's requirements stated in the operator's manual.

If there is injury, illness or risk of exposure, emergency personnel must immediately be contacted.

RESCUE PLANS FOR MOBILE ELEVATING WORK PLATFORMS

Options for Rescue – Technical Rescue (by emergency personnel):

Technical rescue might also be necessary in the event of illness, injury or risk of exposure.

- Any rescue procedure must take into account the reasons why the platform may be stranded at height and any need for prompt action.
- Although firefighters and other rescue professionals are trained in technical rescue, their response time and the equipment they use may not be the best option to meet the OSHA requirement for prompt rescue after a fall arrest and should be considered to be a last resort.

Per ANSI Z359.2—6.3.1.1 :

“If a professional rescue agency is going to be used, the employer’s competent person or program administrator must contact the rescue agency to review the location of the elevated workplace before starting workplace activities, and shall review with that agency the types of fall protection being used and the environment where the agency may be called to perform a rescue.

The rescue agency must advise the employer in writing of its availability and capability, any limitations on the types of rescue it can perform, and detailed instructions regarding how they are to be called and if they need to be advised when certain activities are planned or certain conditions exist so that they may ensure the fastest possible response.”

RESCUE PLAN EXAMPLE:

Company Name: _____

Worksite Location: _____

Date of Rescue Plan Implementation: _____

	SITUATION	PROPOSED RESPONSE
1	Primary platform controls are not responding	Operator should activate platform auxiliary controls to lower the machine to the ground
2	Auxiliary platform controls are not responding or the operator is incapacitated or unable to function	Person on the ground who is familiar with the machine ground controls should use the primary ground controls to lower the machine.
3	Primary ground controls are not responding	Person on the ground who is familiar with the machine ground controls should use the auxiliary ground controls to lower the machine.
4	All ground controls are not responding	Immediately contact onsite qualified personnel to assess the situation and provide further guidance.

Ground personnel who have received familiarization and are authorized to operate the ground controls:

Name: _____ Location: _____ Phone/Radio/Page: _____

Name: _____ Location: _____ Phone/Radio/Page: _____

Onsite Qualified Personnel:

Name: _____ Location: _____ Phone/Radio/Page: _____

Name: _____ Location: _____ Phone/Radio/Page: _____

MOBILE ELEVATING WORK PLATFORM SELECTION

MEWP is an acronym for Mobile Elevating Work Platforms.

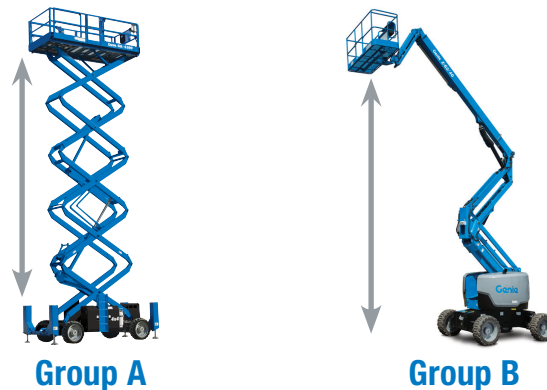
MEWP classifications are made up of a combination of two key distinguishing descriptions:

- a) A MEWP group, which is determined by where the platform location is in reference to the tipping line, and
- b) A MEWP type, which is in reference to traveling.

There are two MEWP Groups: Group A and Group B

A Group A machine has a design that does not allow the main platform to extend beyond the tipping line. In other words, the platform does not go outside of the drive chassis envelope. A perfect example of a Group A would be a scissor lift.

Conversely, a Group B machine has a design that allows the platform to extend beyond the tipping line. A great example of a Group B machine would be an articulating or telescopic boom.



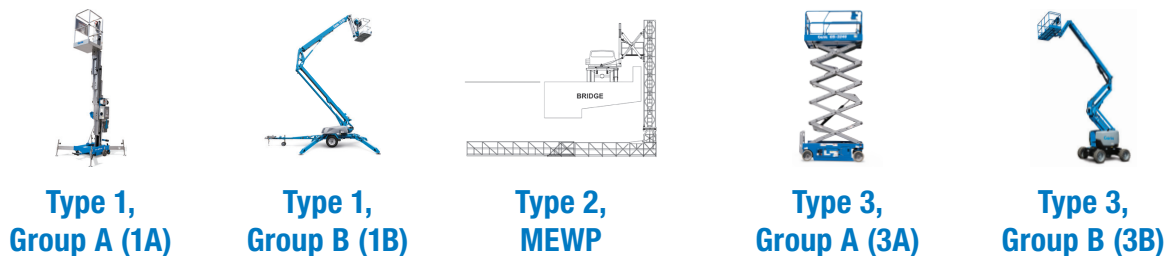
In addition to a MEWP Group, we have a MEWP Type. A MEWP Type is in reference to traveling.

There are three MEWP Types:

Type 1 - Traveling is allowed only with the MEWP in its stowed position. A great example of a Type 1, Group A (1A) MEWP would be manually-propelled vertical lifts, while trailer-mounted booms are perfect examples of a Type 1, Group B (1B) MEWP.

Type 2 - Traveling with the work platform in the elevated position is controlled from a point on the chassis. An example of a Type 2 MEWP would be an under-bridge inspection machine.

Type 3 - Traveling with the work platform in the elevated travel position is controlled from a point on the work platform. A great example of a Type 3, Group A (3A) MEWP would be electric or rough terrain scissor lifts, while articulated and telescopic booms are perfect examples of a Type 3, Group B (3B) MEWP.



MOBILE ELEVATING WORK PLATFORM SELECTION

MEWPs come in a variety of designs, each with its own unique performance characteristics. Understanding what each machine's capabilities are is essential to the selection of the proper MEWP for the work to be performed.

Manually-propelled vertical lifts are classified as Type 1, Group A MEWPs. They are economical and easy to transport, and are often a good alternative to self-propelled vertical lifts.

They're compact. Most models can roll through single or double doorways. They can also go on some elevators, depending on elevator load capacity.

They utilize outriggers so they have some leveling capabilities and they're relatively lightweight so they are ideal for use on floors that can only support limited loads.

They're simple machines that are easy to operate and easy for one person to set up.

They're versatile. Multiple options such as narrow, ultra narrow and insulated platforms, rough terrain tires, and accessories such as tool trays, fluorescent tube caddy and locating laser light are available to customize the lift for every application.

Common applications include indoor construction, contractors, HVAC installation, schools, universities, churches, hospitals and shopping malls. They are also often used for maintenance and cleaning, as well as work in light-floor-load areas such as gymnasiums, theaters and stages.



Trailer-mounted booms are classified as Type 1, Group B MEWPs in many countries. They combine the up-and-over access of an articulating boom with the convenience of a built-in trailer.

A contractor can easily tow one of these units behind a pickup truck or utility vehicle, saving on delivery charges from the rental store.

They provide an excellent working envelope with the ability to reach up and over obstacles, allowing workers to perform tasks faster and more efficiently than smaller manually-propelled products at a significantly lower cost than that of a self-propelled boom.

A variety of hitch coupler options allow these machines to be towed behind pickups or SUVs while hydraulic outriggers with automatic self-leveling allow an operator to quickly set up the machine for maximum productivity.

Common applications include schools, museums, casinos, parks, retail, home construction, tree trimming and lighting, window washing, signs and mechanical and electrical contractors.



MOBILE ELEVATING WORK PLATFORM SELECTION

Single-personnel vertical lifts are classified as Type 3, Group A MEWPs. They are compact, low-weight machines that increase productivity on the job thanks to their ability to fit through doorways and in most passenger elevators.

They are self-propelled and some models can be driven through doorways with the operator on board. A zero inside turning radius and full elevation drive feature also contributes to these models' increased productivity.

Quiet and powerful front wheel drive motors and dual rear wheel brakes provide efficient operation, and some models feature an extension deck which provides a large work space for up to two operators.

Multiple options such as workstation trays, bicycle hooks, motion alarm and flashing beacon make these machines versatile in a variety of applications.

Common applications include warehousing, stock-picking, transporting, inventory management and general maintenance.



Scissor lifts are also classified as Type 3, Group A MEWPS and they are available in electric and rough terrain models.

Scissor lifts offer outstanding maneuverability and productivity-enhancing features. They are self-propelled and most models have the ability to drive while fully elevated.

Scissor lifts offer either zero degree or high angle turning radius for outstanding maneuverability in tight or congested jobsites, and some electric models are lightweight enough to fit in an elevator, depending on the elevator load capacity.

Rough terrain scissor lifts are engine-powered machines with large platforms capable of lifting up to 2,500 lb (1,134 kg) depending upon the model. They are built to handle the rigors of the toughest jobsite, and many can be equipped with automatic self-leveling outriggers.

With platform heights from 12.8 ft (3.9 m) up to 54 ft (16.15 m), these machines are perfect for a variety of applications.

Common applications include HVAC, indoor maintenance and construction, painting and drywall, exterior finishing, rugged worksites, tilt-up construction, warehouse, stock-picking, transporting, inventory management, general maintenance and light-duty construction.



MOBILE ELEVATING WORK PLATFORM SELECTION

Booms are classified as Type 3, Group B MEWPS. They fall into two categories of design: Articulating and Telescopic.

Genie became a pioneer in the aerial industry in 1985 when they developed the world's first self-propelled articulating boom, which allowed workers to access areas inside warehouses and other facilities that were previously inaccessible without the use of ladders or scaffolding.

Articulating Z-booms are MEWPs with multiple boom sections that hinge or articulate, allowing the operator to gain access to work areas over obstacles and barriers.

Also referred to as knuckle booms, or up and over booms, these versatile products are perfect for tight access and hard-to-reach areas, or when reaching over obstacles.

Common applications include indoor construction and maintenance, confined work spaces, outdoor construction, airports, shopping centers and theatres, routine outdoor maintenance, building maintenance, sports arenas and manufacturing plants.

Telescopic S-booms are MEWPs with boom sections that extend telescopically.

They are also commonly known as stick booms because of their straight appearance.

Telescopic booms offer greater horizontal outreach than any other type of MEWP. Perfect for work in areas with limited access, telescopic booms deliver incredible outreach and capacity throughout a full-working envelope for incredible operational accessibility.

Booms with powerful engines, traction-controlled four-wheel drive and active oscillating axles are designed for maximum terrainability and traction.

Some models have a platform capacity up to 1,000 lb (454 m) and can hold up to three occupants, depending upon the application.

Common applications include large construction projects, steel erection, tilt panels, refineries, mechanical and electrical contractors, factories, food processing, manufacturing, maintenance, schools and hospitals.



MOBILE ELEVATING WORK PLATFORM SELECTION

The proper selection of an appropriate MEWP for the task is critical to the safety of the operator, occupants and others in the work area. Using the wrong machine for the job could result in injury or death, damage to the machine itself, or damage to the work location.

To identify the correct machine, a series of questions must be answered:

Who?

- Who will use the equipment?
What trades are they in?
- How many people need to be on the platform at once?
- Will they need operator or familiarization training?

What?

- What kind of work will be performed?
- What are you lifting, and how much does it weigh?
- What are the obstacles on the worksite?
- Are there unusual work conditions or multiple shifts?
- What is your power source preference?

How?

- How will the equipment be used?
- How high do you need to reach or work?
- How far do you need to reach out?
- How will you transport the equipment?

Where?

- Where will the equipment be used?
- Are you working on a single site or multiple sites?
- Is the work indoors, outdoors or a combination?
- What site characteristics influence the lift's use?
- Do you need to drive up or down a ramp?
- Do you need doorway access?
Single, double or larger?
- Is the terrain level?
- Is there a slab, concrete or asphalt floor?
- Will you have narrow or congested access?
- Is it a caustic or hazardous environment?
- Will fuel be readily available?
- Is there access to electricity on site?

When?

- When will the equipment be needed?
- For how long?

MEWPs are used in a variety of work environments. It is important to understand the different applications in order to better understand your equipment needs. The characteristics of the worksite also help determine the type of equipment to select and the appropriate equipment features to include.

There are five primary markets for MEWPs:

- Construction
- Industrial
- Institutional
- Government and Municipalities
- Retail

Let's review each market and most commonly used MEWPs for those applications.

CONSTRUCTION MARKETS

The construction industry is the largest market for MEWPs. After the initial groundwork is completed, there are both indoor and outdoor applications for all types of equipment. Self-propelled telescopic and articulating booms are used outdoors to position personnel and their tools, equipment and materials during the erection of all types of building structures. Rough-terrain features, such as four-wheel drive, oscillating axles and lug tires are designed to provide the rough terrain capability necessary to access difficult construction sites.

Scissor lifts, single-personnel vertical lifts and manually-propelled vertical lifts are used indoors extensively by contractors during the many installation phases of construction. Some examples of construction applications are:

Mechanical contractors, electrical contractors, air conditioning contractors, heat and ventilation contractors, general contractors, painting contractors, plumbing contractors, fire protection contractors, plasterboard installers, carpentry and finishing contractors, high rise construction, overhead door installers, glass installers, insulation installers, acoustical, conveyor system installers, sign installation contractors and road, bridge and overpass construction.

MOBILE ELEVATING WORK PLATFORM SELECTION

INDUSTRIAL MARKETS

Industrial facilities have multiple applications for material lifts, scissor lifts, single-personnel lifts, articulating booms and manually-propelled elevating lifts.

Maintenance is a primary task, although the equipment may also be used to aid personnel in various manufacturing and processing operations. MEWPs are used extensively when industrial facilities are being remodeled and/or retooled.

Most industrial plants are indoor facilities, so solid rubber, non-marking tires and DC electric power are key equipment features. Bi-energy powered machines may also be appropriate for large facilities where the machines need to drive long distances. Industrial markets can actually be divided into two categories: light and heavy industrial. Some examples of each type are:

Light Industrial

Manufacturing facilities, warehousing operations, food processing plants, distribution centers, bottling facilities and breweries, tobacco plants, rubber and plastics production, wineries, automotive plants, textile mills, drug and vitamin facilities and cold stores.

Heavy Industrial

Aircraft facilities, refineries, paper processing plants, chemical plants, rubber and plastic production, ports, shipyards, transportation equipment manufacturers, automotive plants, steel mills, utilities and nuclear plant sites.

INSTITUTIONAL MARKETS

Institutions are heavy users of MEWPs. Their applications are often maintenance in nature, therefore, the equipment is not used on a daily basis. The existence of multiple facilities is also a characteristic of the institutional market, so the ability to easily transport equipment is an important consideration. Examples of institutional customers are:

Schools and universities, public and private, hospitals and medical centers, convention and exposition centers, hotels, resorts and large motels, office buildings, train stations, bus terminals, banks and financial institutions, churches, amusement parks and race tracks, vocational training centers, country clubs and sport clubs, museums, mausoleums, theatres and auditoriums, real estate management companies, airports, terminals and hangars, zoos, professional teams and sports stadiums.

GOVERNMENT AND MUNICIPALITIES

The government and municipality market is similar to that of institutions. Periodic multi-location applications are standard. Portable and easily transportable products are preferred. Smaller self-propelled or manually propelled MEWPs are a good match. Examples of government and municipality customers are:

Legislative buildings, court houses, jails and penitentiaries, road and highway departments, state and veterans hospitals, mental institutions, parks and recreation departments, city maintenance shops, public utility departments, youth and juvenile institutions, incinerator plants, transit authorities, postal facilities, libraries, telephone companies, Air force bases, Army Posts, Navy and Coast Guard, Marines, arsenals and state and national monuments.

MOBILE ELEVATING WORK PLATFORM SELECTION

RETAIL MARKETS

Retail facilities use equipment such as scissor lifts, trailer-mounted booms and manually propelled elevating lifts for cleaning, decorating, lighting and other maintenance purposes. MEWPs are also utilized to access overhead sign and advertising locations. Some examples of retail customers are:

Department stores, shopping malls and centers, bakeries, large retailers, appliance retailers, auto parts stores, office equipment distributors, parcel post courier services, computer sales companies, hardware stores, vending machine companies, beverage distributors, flooring distributors, piano and organ retailers and rental stores.

The following features and options are some of the key factors you should consider before selecting a machine for a job:

MANUALLY-PROPELLED VS. SELF-PROPELLED

Manually-propelled equipment must be physically pushed or pulled to transport it. Self-propelled units are equipped with hydraulic or electric drive systems that allow the machine to be driven to the work area.

POWER OPTIONS

Manual

Manual products do not have power for lifting. The load platform is typically operated by a winch, which is controlled by a hand-crank that moves it up and down to position the load in place. Manually propelled units are typically on wheels or casters, and must be pushed or pulled to move. Some examples would be Genie® material lifts, AWP's and IWP's.

AC Electric/AC Drive

Some MEWPs are available with 110-volt or 220-volt AC power. For example, the Genie® AC drive system combines DC batteries with three-phase AC drive motors for quiet, more energy-efficient operation and longer battery life.

DC Electric

DC electric models are designed primarily for industrial, institutional and retail environments where indoor use is standard, because electric energy is clean and pollution free. Electric-powered aerial work platforms utilize 12-volt, 24-volt or 48-volt systems with a series of deep-cycle batteries that power the hydraulic pumps and electric wheel motors when applicable. These models are equipped with battery chargers that automatically turn off when the battery is fully recharged. Most engine-powered units also include a DC backup system.

Bi-Energy

Bi-energy machines are electrically powered machines with onboard diesel engines that recharge the batteries while the machine is actually in use. These models are designed primarily for indoor applications where a great deal of driving is required, since driving the unit demands significantly more energy than operating the lift functions. Bi-energy is also a valuable feature when multi-duty cycle applications are required and external recharging is difficult.

Internal Combustion (IC)

Internal combustion engine models are designed primarily for construction work where heavy-duty outdoor use is standard. The engines provide the horsepower to produce the hydraulic pressure and flow that is necessary for high performance.

There are two types of IC engines:

Gas/LPG: Most gasoline-fueled models also operate on Liquid Petroleum Gas (LPG) and are referred to as Dual Fuel machines. This feature allows both indoor and outdoor operation with LPG-powered engines. The fuel sources can usually be switched from the ground or platform controls while the engine is running.

Diesel: Diesel-fueled engines are powerful and very durable, making them popular for construction applications. The availability of diesel fuel on construction sites may be another benefit.

MOBILE ELEVATING WORK PLATFORM SELECTION

TIRE/TRACK OPTIONS

Where will you use the lift?
What are the ground conditions?

Non-Marking Tires

Tires without the carbon black found in common tires. They leave no black marks on the floor and are standard on most industrial models. They're most commonly made of hard rubber but are also available in some pneumatic styles. These tires are good for indoor use where marking is a concern.

Foam-Filled Tires

Pneumatic tires that are injected with a polyurethane-type substance that adds rigidity to the tires and prevents flats. These are required on some models to provide necessary stability. These tires are also good for environments with nails and other ground debris that tend to puncture tires.

Rough-Terrain Tires

Tires with an aggressive tread design for improved rough-terrain capability. Standard on rough-terrain models. These tires are best for unimproved sites and muddy, wet ground conditions.

Fixed Tracks

This four-point track system provides extra traction when travelling over mud, sand, gravel and soft-soil conditions while also minimizing damage to grass.

ROUGH TERRAIN OPTIONS

Rough Terrain (RT) Model

Describes a unit designed to travel over unimproved construction site terrain. Some units receive the "RT" designation with only the addition of lug tread tires. Others feature packages that include patented active oscillating axles, more powerful gas/LPG or diesel engines, and two- or four-wheel drive.

Oscillating Axle

Axles that are designed to pivot in the middle to compensate for uneven terrain and keep all tires on the ground. Genie® active oscillating axles feature a patented automatic hydraulic adjustment system that maintains ground contact and a solid four-point stance even while fully elevated.

Full-Time Positive Traction Drive

This option maintains equal hydraulic power to all drive wheels, even if one wheel loses traction in mud, snow or sand.

STEERING OPTIONS

Where will you use the lift? What are the ground conditions? Will you need to maneuver in tight spaces or close to walls?



Two-Wheel Steering

A standard type of steering on most models in which the two front tires steer the machine.



Four-Wheel Steering

A feature on some larger models in which all four wheels can be utilized to steer the machine, making it much more maneuverable. The operator can often select from four steer options, including two-wheel steer front, two-wheel steer rear, crab steer or coordinated steer.



Coordinated Steering

A four-wheel steering option in which the front wheels turn in one direction and the rear wheels are coordinated to turn in the opposite direction, allowing the machine to turn a sharp corner within a minimum amount of space.



Crab Steering

A four-wheel steering feature in which all four wheels turn in the same direction, allowing the machine to be driven diagonally for greater maneuverability.

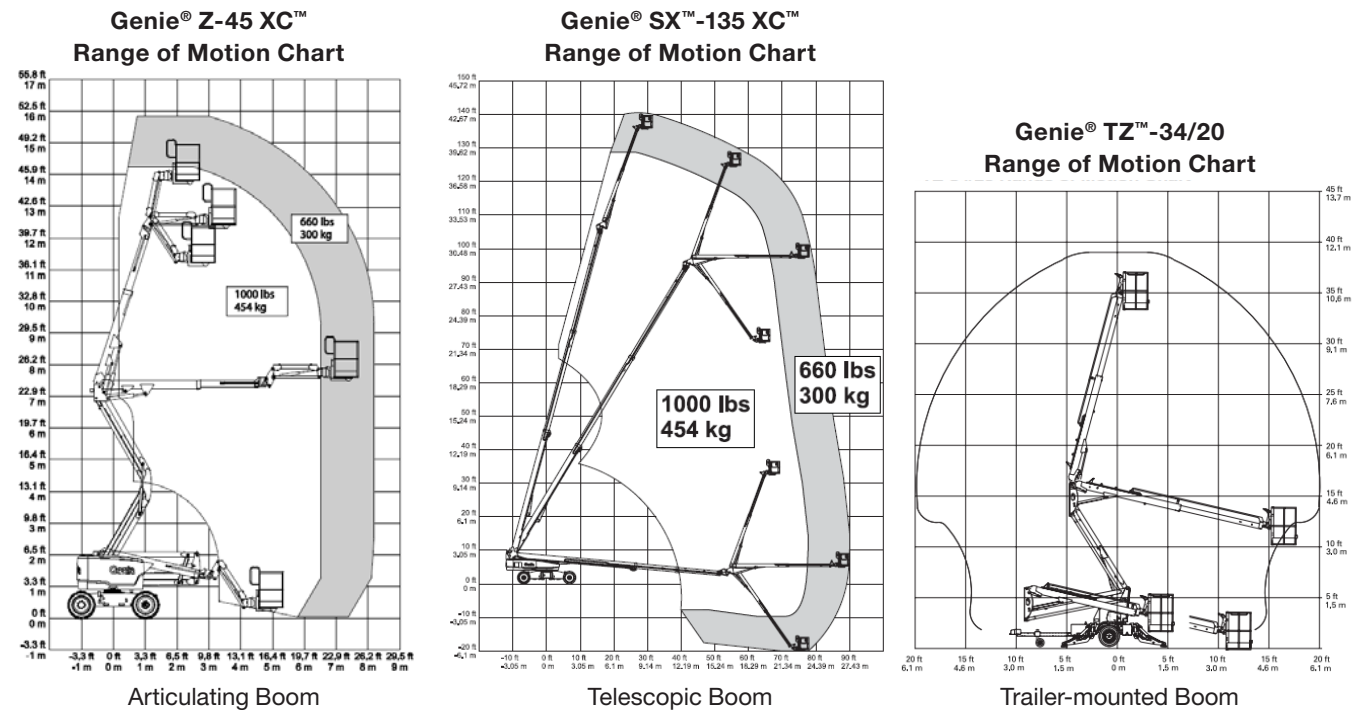
MOBILE ELEVATING WORK PLATFORM SELECTION

RANGE OF MOTION

The Range of Motion chart is an extremely valuable tool for selecting the best MEWP for the application.

Telescopic and articulating booms rotate, elevate and extend multiple boom sections. The work area that each boom model can access is determined by the combination of its vertical height and horizontal outreach capabilities — commonly referred to as its range of motion, or working envelope.

Range of Motion charts are provided with each telescopic and articulating boom model. These charts feature a picture of the arc-like area in which each boom is able to perform, laid over a graph that makes it easy to determine the unit's access capabilities.



Model numbers often reflect the maximum reach capabilities of the machine's platform or deck [e.g., Genie® SX™-135 XC™ designates a 135 ft (41.15 m) stick boom].

Note: The U.S. industry standard for actual working height is six feet higher than platform height (the reach of an average worker standing in the platform with arms stretched overhead), so the working height of a 135 ft boom (41.15 m) is actually 141 ft (43.15 m). The metric equivalent of actual working height adds two meters to platform height.

If you are ever unsure of a specific machine's capabilities, please contact the machine manufacturer or any one of the many quality aerial equipment rental companies in your area.

You can download, free of charge, all specification sheets (including load charts), operator's manuals and additional information for all Genie Mobile Elevating Work Platforms by visiting www.genielift.com.

MOBILE ELEVATING WORK PLATFORM WORKPLACE CHECK SHEET

In order to satisfy the Safe Use Plan requirements outlined in the standards, a workplace check sheet can be utilized. This check sheet should only be used in conjunction with a properly performed jobsite risk assessment and will assist the user, supervisor, operator and occupants with complying with the requirements.

The following is an example of a workplace check sheet:

Company Name: Genie, a Terex Brand Date: February 10th, 2019

Jobsite Location: 6464 185th Ave, Redmond WA 98052

Primary Assessor(s) Scott Owyen

Has a risk assessment been performed? Yes No – If Yes, review the risk assessment before completing this sheet. If No, immediately stop all operations until a proper risk assessment has been performed and documented by a qualified person, and has been communicated to everyone involved on the jobsite.

CHECK ALL THAT APPLY		NOTES
Has the risk assessment been reviewed by everyone involved with the work to be performed, taking into consideration the safety of those not involved with the operation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Risk assessment performed and communicated on 2/4/2019
Have all hazards on the jobsite been identified and the methods to eliminate or mitigate them been documented?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Power lines on the North side must be avoided – area coned off to alert operators to the hazard.
Has an assessment been made to ensure that the support surface can support the weight of the MEWP, occupants and materials?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	One area identified as not adequate – has been roped off and all personnel have been notified
Has a rescue plan been developed and communicated to everyone on the jobsite?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Utilizing self-rescue and assisted rescue methods – everyone on the site has been trained on the plan.
Have all operators been properly trained to the ANSI A92.24-2018 and/or CSA B354.8:17 standards?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	All operators completed updated Genie training, including practical training on 3A and 3B MEWPs
Have operators selected the correct MEWP(s) for the work and been familiarized on the specific MEWP(s) they will be operating?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Operators worked with the supervisor to select correct MEWPs and have been familiarized on all
Have all occupants received instruction on how to work safely on the MEWP?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Operators have been instructed on how to use the laminated Occupant Instruction Sheet in the storage box
Has the operator been informed of local site requirements and provided the means to protect against identified hazards?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Met with site HSE Team to understand site rules and to identify and mitigate or avoid all hazards
Is there a trained and qualified supervisor to monitor the performance and the work of the operator to ensure compliance?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Two supervisors on site have received Genie MEWP Supervisor training and have been assigned
Have all maintenance and inspections been performed on the machine as required? Is the Annual Inspection decal up to date?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Daily maintenance is performed during each pre-operation inspection. Annual decal dated 07/18
Have personnel received instructions on how to prevent unauthorized use of the MEWP?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	Keys are removed and batteries are disconnected and locked out at the end of each shift.

MOBILE ELEVATING WORK PLATFORM WORKPLACE CHECK SHEET

Company Name: _____ Date: _____

Jobsite Location: _____

Primary Assessor(s) _____

Has a risk assessment been performed? Yes No – If Yes, review the risk assessment before completing this sheet. If No, immediately stop all operations until a proper risk assessment has been performed and documented by a qualified person, and has been communicated to everyone involved on the jobsite.

CHECK ALL THAT APPLY		NOTES
Has the risk assessment been reviewed by everyone involved with the work to be performed, taking into consideration the safety of those not involved with the operation?	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
Have all hazards on the jobsite been identified and the methods to eliminate or mitigate them been documented?	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
Has an assessment been made to ensure that the support surface can support the weight of the MEWP, occupants and materials?	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
Has a rescue plan been developed and communicated to everyone on the jobsite?	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
Have all operators been properly trained to the ANSI A92.24-2018 and/or CSA B354.8:17 standards?	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
Have operators selected the correct MEWP(s) for the work and been familiarized on the specific MEWP(s) they will be operating?	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
Have all occupants received instruction on how to work safely on the MEWP?	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
Has the operator been informed of local site requirements and provided the means to protect against identified hazards?	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
Is there a trained and qualified supervisor to monitor the performance and the work of the operator to ensure compliance?	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
Have all maintenance and inspections been performed on the machine as required? Is the Annual Inspection decal up to date?	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
Have personnel received instructions on how to prevent unauthorized use of the MEWP?	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	

Workplace Check Sheet Performed by:

Name (print): _____

Signature: _____

Name (print): _____

Signature: _____

Name (print): _____

Signature: _____

MOBILE ELEVATING WORK PLATFORM WORKPLACE CHECK SHEET

Company Name: _____ Date: _____

Jobsite Location: _____

Primary Assessor(s) _____

Has a risk assessment been performed? Yes No – If Yes, review the risk assessment before completing this sheet. If No, immediately stop all operations until a proper risk assessment has been performed and documented by a qualified person, and has been communicated to everyone involved on the jobsite.

CHECK ALL THAT APPLY		NOTES
	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
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	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	
	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	

Workplace Check Sheet Performed by:

Name (print): _____

Signature: _____

Name (print): _____

Signature: _____

Name (print): _____

Signature: _____

Name (print): _____

Signature: _____

MOBILE ELEVATING WORK PLATFORM OCCUPANT INSTRUCTION

It is your responsibility, as the MEWP operator, to either provide instruction or confirm that all occupants have previously received instruction to achieve a basic level of knowledge to work safely on the MEWP.

This instruction does not give the occupant authorization to operate the controls at any time except in an emergency situation.

Do not take any occupant up in the machine until this document has been thoroughly reviewed and you have confirmed the occupant(s) understanding and agreement.

1) Is Personal Fall Protection Equipment (PFPE) required on this particular model of MEWP or on this jobsite?

No - Explain that the guardrail system on this machine provides fall protection for the occupants in the platform.

Yes - Explain the purpose of the harness and lanyard, ensure that all occupants are properly fitted with the appropriate PFPE, identify the locations of the lanyard attachment points and ensure that all occupants are properly secured.

2) Explain how their actions in the platform could affect the stability of the machine:

- Do not lean over the platform guardrail.
- Maintain a firm footing on the platform floor at all times. Do not climb up on the toe guard, mid rail or top rail.
- Do not jump up and down or shake the platform.
- Do not push off or pull toward any object outside the platform.
- Do not touch the platform controls.

3) Will the occupant(s) be using any accessories on this job (Access Deck, Panel Cradle, Fall Arrest Bar, etc.)?

No – Continue to #4

Yes - Explain the proper and safe use of the accessory, including any hazards that may be associated with its use.

4) Explain any site-specific work procedures the occupants must follow related to the operation of the MEWP.

This will vary from site to site but may include the requirements to use PFPE and other personal protective equipment (PPE) such as hard hat, steel toed boots, gloves, and safety vest; vehicle or pedestrian right of way; driving in the stowed

position only; honking the horn prior to driving the machine, etc.

5) Discuss all hazards related to the task at hand and their avoidance, and include any applicable site risk assessment.

This will also vary from site to site. It is a requirement that a detailed risk assessment be performed prior to bringing the MEWP into the workplace. Have a copy of the most current one, review the entire assessment with the occupants and answer any questions they may have.

6) Review the manufacturer's warnings and instructions for the MEWP being operated.

Remove the Operator's Manual from the weather-resistant storage box on the platform and review the various warnings and instructions identified by the manufacturer. Explain that the Operator's Manual must be kept on the MEWP at all times when not in use by the operator.

7) Review with at least one of the occupants:

- The intended purpose and function of the MEWP platform controls;
- The intended purpose and function of the safety-related items specified by the manufacturer, including secondary guarding systems and emergency shut-down procedures; and
- The intended use and function of the lowering procedures, to the extent required to lower the MEWP safely to the ground or the stowed position.

Please remind the occupant(s) that this does not constitute training. It is only considered to be emergency instruction in the case where, for some reason, the operator has become incapacitated or is otherwise unable to operate the machine.

If you have any questions please contact Genie at 1-800-536-1800 or at AWP.Training@Terex.com

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