



User Instructions Manual

skyTECH M24 Trolley

SKY-M24-S1, SKY-M24-P1

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V 1.0

Revision History

Revision	Sections Affected	Changes	Date
0.0	-	Original Publication	10 July, 2024
1.0	2.8, 8.0, 9.0, Appendix A&B	Braking position, wording, maintenance instructions, lifespan, inspection forms.	26 February, 2025





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Warnings and Important Notices

You will find on this page, and throughout this user instructions manual, many warnings and important notices that must be considered seriously when operating this system. It is imperative to understand the meaning of the warnings and potential hazards.



WARNING Neodymium / Rare Earth Magnets are extremely strong and can cause permanent damage to electronics if they are brought too close; this includes medical devices such as pacemakers. Due to the strength of these magnets, they also pose a pinching hazard. Keep magnets separated and away from ferromagnetic materials. The magnets are brittle and can crack if they snap together with ferromagnetic materials or other magnets.



It is the responsibility of the operator to document and maintain a product use, inspection and maintenance logbook. Skyline Ziplines supplies inspection criteria and guidelines, forms and log sheets specific to all manufactured systems and equipment. It is the responsibility of the operator to follow all guidelines, intervals, and criteria set forth by these documents.



WARNING: This product is designed for zip line operations only. The operator(s) must read and understand the instructions in this manual before using this product. Manufacturer's instructions must be followed for the proper use and maintenance of the system and provided equipment. Alterations or misuse of this equipment, or failure to follow instructions, may result in serious injury or death.



This document does not replace a complete training necessary for the use of this product. Knowledge by the user of all appropriate techniques and risks is required.



This manual contains information and instructions specific to skyTECH M24 Trolley and associated equipment manufactured by Skyline Ziplines Ltd. Make sure this User Instructions Manual is the latest version available. Contact Skyline Ziplines to obtain the latest document revisions, important Updates and other notices.



Products and systems manufactured by Skyline Ziplines are intended for use by professionals trained and experienced in the use, inspection, and maintenance of these products, or for use by persons under the direct visual surveillance of competent and responsible persons.



Before using this equipment, record the product identification information from the ID label in the inspection and maintenance log at the end of this document. Make sure this User Instructions Manual is readily available with the product. Contact Skyline Ziplines Ltd to obtain additional copies of this manual.

1.0 Description

1.1 Applications

Skyline trolleys are to be used as personal equipment for zipline amusement rides only

1.2 Standards

Refer to local, provincial/state and federal laws and regulations pertaining to the installation and use of this type of equipment

The M24 Trolley is compliant with the following standards and regulations:

- DOSH
- ASTM F-2291
- ASTM F-1193

The M24 Trolley is rated at a max static load of 22kN

1.3 Description of Rocket Seated

1.3.1 M24 Seated Trolley with Crossbar

Product Code: SKY-M24-S1

Specifications:

- 100mm Polyurethane Sheaves with CNC-Machined Hubs
- 6061 Anodized Aluminum Construction
- 24x N52 Neodymium Magnets
- Sealed SKF Bearings
- 4-Piece Spreader Bar
- Compatible with 3/4" and 7/8" Cable Diameters
- Stainless Steel Hardware
- Compatible with skyTECH Launcher, Rocket E-Launcher, Wheeled Catch Block and Catch Block
- Designed for Use with skyTECH Twin Harness

1.4 Description of Rocket Prone

1.4.1 M24 Prone Trolley

Product Code: SKY-M24-P1

Specifications:

- 100mm Polyurethane Sheaves
- 6061 Anodized Aluminum Construction
- 24x N52 Neodymium Magnets
- Sealed SKF Bearings
- Compatible with 3/4" and 7/8" Cable Diameters
- Compatible with skyTECH Launcher, Rocket E-Launcher, Wheeled Catch Block and Catch Block
- Designed for Use with skyTECH Prone (Superman) Harness

1.5 Magnetic Eddy-Current Trim Brake Technology

skyTECH™ M24 Trolleys are designed to provide frictionless resistance to achieve slower speeds for operations experiencing overspeed events, consistent high wind events, and larger weight riders. The trim brake utilizes Eddy Current Braking technology through the addition of specially designed and CNC-machined wheels. In testing, Skyline Ziplines has seen reduction in speed of up to 80% when compared to the skyTECH™ Rocket Trolley. The trim ratio decreases as weight increases and is still susceptible to environmental factors. The magnetic braking mechanism is fitted from the factory or can be ordered as a retro-fit kit for existing trolleys and completed at an approved location that is more convenient for the operating site.

WARNING



Testing MUST be conducted with dead weights to determine the correct configuration of magnets to adequately accommodate a site's line profile, rider weight range, and braking speeds. Please contact Skyline Ziplines for more information on the testing procedures and parameters.

2.0 Limitations

Consider the following application limitations before using this equipment:

2.1 Capacity and Working Load Limit

Not to be used in operations exceeding 300 lb. riders

Not to be used in operations exceeding 60 mph line speeds

Not to be used in operations exceeding 40 mph brake impact speeds

2.2 Medical Restrictions

Pregnant women, persons with heart condition or persons with previous neck or back injuries may not use this equipment. Users should have full use of their arms, legs, and hands

2.3 Dress for Safety

Users of this equipment must be dressed appropriately with close-fitting clothes and must not wear jewelry, scarves or other accessories that could get caught in the zip line equipment. Users must be wearing appropriate closed-toe footwear to mitigate potential hazards and injuries.

2.4 Environmental Hazards

Use of this equipment in areas with environmental hazards may require additional precautions to prevent injury to the user or damage to the equipment. Hazards may include, but are not limited to: heat, chemicals, corrosive environments, electrical fields and wires, gases and sharp edges.

2.5 Sharp Edges

Avoid using where the zip line equipment or other system components will be in contact with, or abrade against unprotected sharp edges

2.6 Rescue

Should a rescue be required, the user/supervisor/employer must have a rescue plan, the means at hand to implement it, and the necessary training to safely perform the defined rescue plan. Further reading material can be found in the Skyline Ziplines Rescue Procedures Manual. Contact Skyline Ziplines Ltd. for the manual if it has not been provided.

2.7 Training

skyTECH™ Trolleys must only be installed and used by persons trained in their correct application and use (See Section 6)

2.8 Braking Position

When contacting the braking system, the correct braking position must be used by the patron in order to ensure correct ergonomics and minimize the risk of injury during impact and deceleration.

2.8.1 Seated Braking Position

When using a seated trolley, the correct braking position consists of the following:

- Both hands on the crossbar, shoulder width apart.
- Arms extended with elbows locked.
- Chin tucked into the chest.
- Knees bent up and spread apart.

2.8.2 Prone Braking Position

When using a prone trolley, the correct braking position consists of the following:

- Arms crossed across the chest.
- Legs straight.
- Chin tucked into the chest.

3.0 System Requirements

3.1 Compatibility of Components

Skyline equipment is designed for use with the Skyline-approved components and subsystems only. Substitution or replacements made with non-approved components or subsystems may jeopardize compatibility of equipment and may affect the safety and reliability of the complete system.

3.2 Compatibility of Connectors

Connectors are compatible with connecting elements when they have been designed to work together in such a way that their size and shape do not cause their gate mechanism to inadvertently open regardless of how they become oriented.

Connectors used to attach to the skyTECH™ M24 Trolley should meet these specifications

- Minimum break strength of 22.2 kN
- Shape must be designed to attach to middle anchor point on trolley and gate fully close
- Must have a self-locking gate mechanism
- Must be certified by CE, ANSI, CSA, or NFPA
- Recommended Connector: Petzl William Triact

3.3 Making Connections

Use only connectors that are suitable to each application. Ensure all connectors are compatible in size, shape, and strength. Do not use equipment that is not compatible. Ensure all connectors are fully closed and locked.

3.4 Secondary Attachment

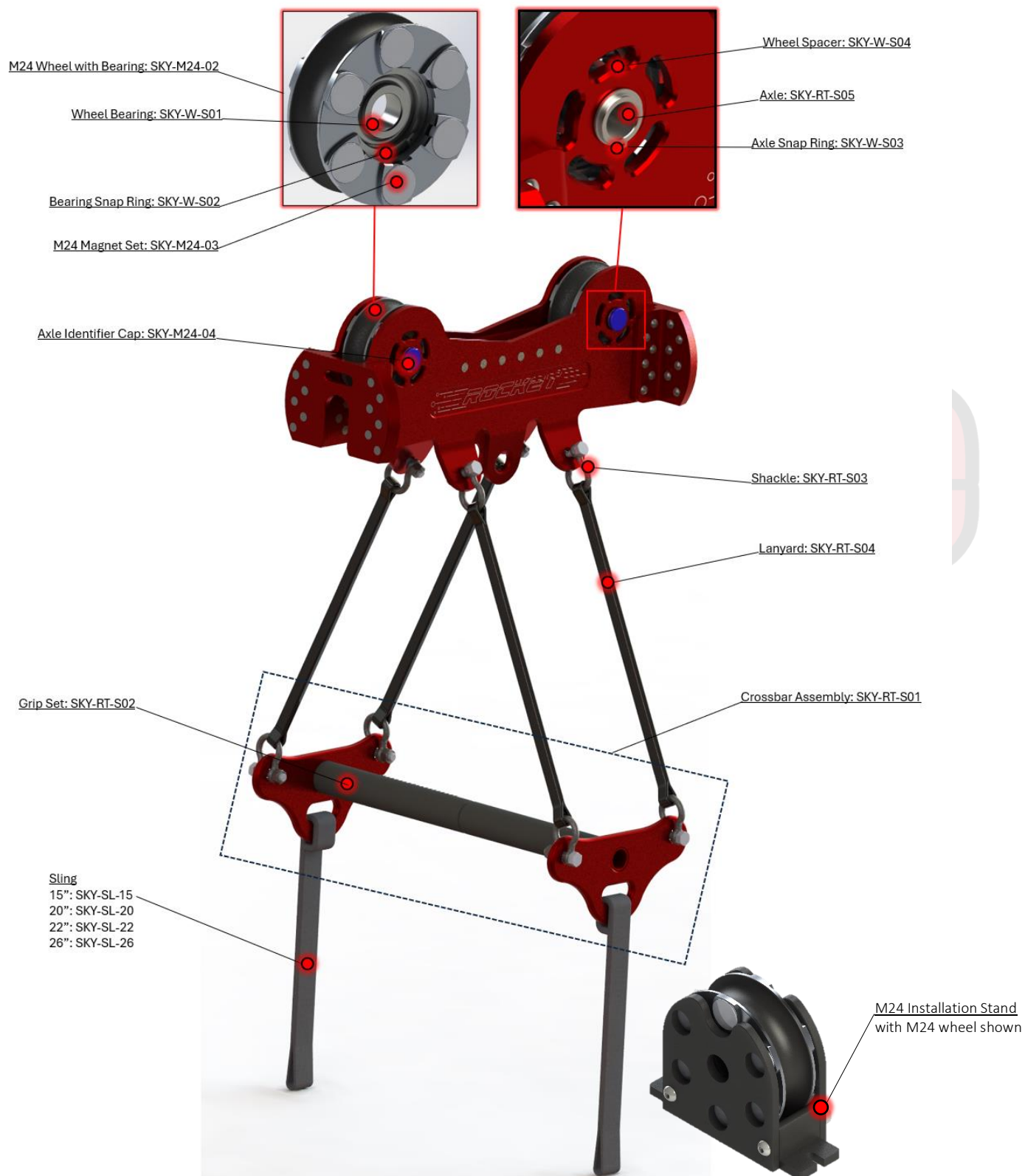
The middle anchor point located on the trolley represents the secondary attachment point on the skyTECH™ Rocket Trolley. The secondary attachment point located on the trolley MUST be used during flight. Failure to use the secondary attachment point may result in derailment, injury or death.

Refer to section 3.2 for compatible connectors to be used with the secondary attachment point.

4.0 Nomenclature and Assembly

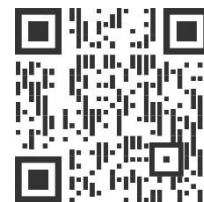
4.1 Description of Part

(Seated Trolley Shown)





SCAN THE QR CODE TO SEE A VIDEO SHOWING TYPICAL ASSEMBLY AND MAINTENANCE INSTRUCTIONS AS WELL AS OTHER INFORMATION.



4.2 Procedure for Assembling M24 Seated (SKY-M24-S1)

Tools Required: ½" Socket (2), Socket Wrench (1), Torque Wrench (1)

- 4.2.1 Assemble the crossbar first, according to the Crossbar Installation Instructions.
- 4.2.2 Face trolley down on table with Serial Number on right side
- 4.2.3 Insert 1 shackle (SKY-RT-S03) into lanyard (SKY-RT-S04) with label of lanyard facing the table and oriented nearest the trolley
- 4.2.4 Connect shackle to trolley tab with nut on the inside of the tab.
- 4.2.5 Using a 1/2" socket on a torque wrench, torque the bolt into the shackle body to 15Nm.
- 4.2.6 While holding the head of the bolt with a socket wrench, thread the nut on the bolt and torque to 15Nm. Ensure the end of the bolt is flush with the nut.
- 4.2.7 Repeat steps 4.2.3-4.2.6 for remaining lanyards (4 total)
- 4.2.8 Orient crossbar (SKY-RT-S01) with male crossbar on the right
- 4.2.9 Insert 1 shackle into lanyard and connect to corresponding hole on crossbar with nut on the inside
- 4.2.10 Torque the bolt into the shackle body to 15Nm.
- 4.2.11 While holding the head of the bolt with a socket wrench, thread the nut on the bolt and torque to 15Nm. Ensure the end of the bolt is flush with the nut.
- 4.2.12 Repeat for remaining lanyards
- 4.2.13 Insert larger loop of the sling (SKY-SL) into the crossbar slot from outside to inside with label facing away from trolley, pass the other end through the larger loop and pull tight
- 4.2.14 Repeat for opposite sling
- 4.2.15 Hold up trolley and check that all shackles, lanyards, slings, and the crossbar are oriented correctly

4.3 Procedure for Assembling M24 Prone (SKY-M24-P1)

- 4.3.1 The M24 Prone requires no additional assembly from the warehouse.



WARNING Neodymium / Rare Earth Magnets are extremely strong and can cause permanent damage to electronics if they are brought too close; this includes medical devices such as pacemakers. Due to the strength of these magnets, they also pose a pinching hazard. Keep magnets separated and away from ferromagnetic materials. The magnets are brittle and can crack if they snap together with ferromagnetic materials or other magnets.

4.4 Procedure for Installing M24 Wheels (SKY-M24-02)

Tools Required: External Retaining Ring Pliers (0.052" Tips), M24 Installation Stand

Note: The M24 wheel is shipped with the magnets uninstalled if purchased separately and installed if purchased with the trolley.

- 4.4.1 Place the wheel in the M24 Installation Stand. If desired, you can insert an axle (SKY-RT-S05) through the wheel and stand to ensure it does not come out of the stand involuntarily.
- 4.4.2 Rotate the wheel so that one of the pockets is aligned with the opening in the top of the stand.
- 4.4.3 With the stack of magnets, insert the first magnet into the exposed pocket of the M24 wheel.
- 4.4.4 Insert a second magnet into the pocket directly across the wheel from the first pocket. The two magnets should attract across the wheel, keeping them firmly in place. If they do not attract, the polarities are improperly aligned and you must remove and flip one of the magnets.
- 4.4.5 Repeat steps 4.4.2-4.4.4 until you have installed the desired number of magnets for your configuration. Check with another magnet that the polarities are all the same on one side of the wheel and all opposing on the other side. Ensure the magnets are all installed in pairs and are radially balanced. See acceptable configurations below.



- 4.4.6 Once the desired magnet configuration is achieved, carefully remove the wheel from the stand and keep it in a vertical position. Install it into the trolley body with a wheel spacer (SKY-W-S04) on either side of the bearing and align it with the trolley body's axle hole.
- 4.4.7 Once in place, install the axle through the body, the two spacers, and the wheel bearing.
- 4.4.8 Using the snap ring pliers, install snap rings (SKY-W-S03) on both sides ensuring a tight fit in the axle retaining ring grooves.
- 4.4.9 Inspect installation for free spinning wheel, less than 2mm of movement of wheel side to side, and no slop of axle in trolley body
- 4.4.10 Repeat for second wheel.
- 4.4.11 Add axle identifier caps to trolley axles that correspond with the newly installed magnet configuration.
- 4.4.12 Inspect and record maintenance in maintenance log (See Appendix B).

5.0 Standard Operating Procedures



Keep M24 trolleys away from small metal particles/materials as well as other magnets as they can get in between the trolley body and wheel, causing damage and possible seizing of the trolley wheel.

The following operating procedures outline only the necessary steps required to complete each process. The procedures do not consider additional safety requirements and additional safety considerations that should be considered for each site. Please consult a qualified person and/or your site-specific manual to ensure all necessary steps are taken to guarantee safety in your operations.

5.1 Standard Procedure for Loading – M24 Seated with Crossbar

- 5.1.1 Take a trolley from the guest and connect guest to deck safety line.
- 5.1.2 Attach the trolley backup tether to the trolley
- 5.1.3 Detach the trolley handles, by sliding the handle assembly apart
- 5.1.4 Place the guest trolley on the cable
- 5.1.5 Secure the trolley into the trolley release mechanism
- 5.1.6 Slide the trolley handles together to reassemble the handle
- 5.1.7 Attach the Guest safety tether to the center attachment point of the trolley
- 5.1.8 Attach the 2 trolley slings to the 2 carabiners on the guest harness, ensure the carabiners lock
- 5.1.9 Ask the guest to sit down in the harness
- 5.1.10 Remove the trolley safety tether
- 5.1.11 Perform final 2-2-4 check by squeeze checking the main trolley carabiner and the two Austri-Alpin Harness carabiners, check all four adjustable straps
- 5.1.12 Remove the guest deck restraint tether(s)
- 5.1.13 Release the trolley from the trolley launch mechanism

5.2 Standard Procedure for Removal – M24 Seated with Crossbar

- 5.2.1 Bring guest to dismount position and loosen shoulder straps
- 5.2.2 Position ladder at a slight angle to cable and assist guest into position on ladder
- 5.2.3 Guide then climbs other side of ladder and releases secondary tether
- 5.2.4 Release Guest Harness Carabiners
- 5.2.5 Assist guest down ladder and usher guest to designated waiting area
- 5.2.6 Take trolley out of catch block teeth by pulling outwards on teeth
- 5.2.7 Grab brake line under arm
- 5.2.8 Open trolley crossbar
- 5.2.9 Remove trolley from cable

5.3 Standard Procedure for Loading – M24 Prone

- 5.3.1 Instruct the guest to move into position under a cable
- 5.3.2 Take the trolley from the guest and place the trolley on the cable
- 5.3.3 Secure the trolley into the trolley release mechanism
- 5.3.4 Attach the trolley safety tether to the guests' trolley
- 5.3.5 Attach the upper carabiner on the guest harness to the front connection point on trolley
- 5.3.6 Attach the lower carabiner on the guest harness to the rear connection point on the trolley
- 5.3.7 Ask the guest to lean forward, putting weight on the harness, lift their lower body up and adjust strap for desired ride angle
- 5.3.8 Ensure harness straps are properly adjusted
- 5.3.9 Perform final check by checking that both carabiners are attached and locked (gate squeeze check) and both shoulder straps and both cobra lock belts are properly adjusted and secured
- 5.3.10 Remove the guest platform travel restraint tether
- 5.3.11 Remove the trolley travel restraint tether
- 5.3.12 Release the trolley from the launch mechanism

5.4 Standard Procedure for Removal – M24 Prone

- 5.4.1 Bring guest to dismount position and loosen lower strap to full length
- 5.4.2 Position ladder at a slight angle to cable and assist guest into position on ladder
- 5.4.3 Remove lower strap from trolley
- 5.4.4 Guide then climbs other side of ladder and releases secondary tether
- 5.4.5 Have guest stand fully upright and remove upper strap from trolley while stabilizing trolley with one hand
- 5.4.6 Assist guest down ladder and usher guest to designated waiting area
- 5.4.7 Take trolley out of catch block teeth by pulling outwards on teeth
- 5.4.8 Grab brake line under arm
- 5.4.9 Remove trolley from cable

5.5 Standard Procedure for Guide Self Launch – M24 Seated

- 5.5.1 Attach guide platform restraint tether
- 5.5.2 Attach the trolley safety tether to the guide trolley
- 5.5.3 Detach the trolley handles, by sliding the handle assembly apart
- 5.5.4 Place the guides trolley on the cable
- 5.5.5 Secure the trolley into the trolley release mechanism
- 5.5.6 Slide the trolley handles together to reassemble the handle
- 5.5.7 Attach the guide safety rope to the center point on the trolley
- 5.5.8 Attach the trolley slings to the guide harness carabiner, ensure it is locked
- 5.5.9 Sit down in the harness to affirm the harness attachment to the trolley
- 5.5.10 Detach the guide deck travel restraint tether
- 5.5.11 Detach the trolley safety restraint tether
- 5.5.12 Release from the trolley release mechanism

6.0 Training

It is the responsibility of the buyer/user of this equipment to make sure that they understand these instructions and are sufficiently trained in the correct use and care of this equipment. The user must be aware of the operating characteristics, application limits, and the consequences of improper use. Training must be done prior to use and user must be evaluated for his/her competence to use this equipment. Gaining an adequate education in proper techniques and methods of safety is your own responsibility. Training should be done under the supervision of competent persons.

It is recommended that Skyline Ziplines perform a manufacturer's training to cover the material in this document, use with other equipment, and site-specific training.

**Competent Persons: (OSHA) One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are hazardous or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.*

7.0 Inspection

7.1 Frequency

- 7.1.1 The Skyline trolley, slings, and lanyards must be inspected before each use and recorded in the inspection log
- 7.1.2 The Skyline trolley, slings, and lanyards must be inspected by the manufacturer or approved competent person(s) at least once a year (or more frequently if deemed necessary by the frequency and/or conditions of use). The results of this formal inspection must be recorded in the inspection and maintenance log at the end of this manual.

7.2 Inspection Process

The daily pre-use inspection process is included in Appendix A. The forms available in this manual may be used for operations and as a template for site specific forms. It is critical that every item presented on the provided form is inspected and documented.

7.3 Weekly Inspection Process

The weekly inspection process is included in Appendix A. The weekly inspection for the M24 Trolley focuses on wheel degradation and requires the use of a skyTECH Wheel Go-NoGo Gauge. Additional items are included on the weekly inspection. The forms available in this manual may be used for operations and as a template for site specific forms. It is critical that every item presented on the provided form is inspected and documented.

7.4 Documentation Process

Located in Appendix A is a sample Inspection form that Skyline Ziplines recommends using as a template. Located in Appendix B is a sample Maintenance form that Skyline Ziplines recommends using as a template. Located in Appendix C is a flowchart explaining the appropriate process for inspections, maintenance, and documentation. It is important to reference this flowchart for proper Quality Assurance documentation.

7.5 Lock Out, Tag Out

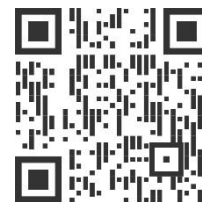
To ensure the highest standard of safety, it is required that all sites produce a Lock Out, Tag Out system. The system/process is designed to identify and prevent the use of all equipment identified through the inspection process as REJECTED (not suitable for use). Below is an example provided by Skyline Ziplines and is also included in the flowchart in Appendix C:

- 7.5.1 Item identified as rejected or failed during inspection by staff member
- 7.5.2 Failure/rejection is noted on inspection log
- 7.5.3 Item is marked with a tag with the following information:
 - 7.5.3.1 Name of staff member
 - 7.5.3.2 Date of inspection
 - 7.5.3.3 Reason for rejection
- 7.5.4 Item is placed in designated Lock Out, Tag Out area. This area must be separate from the operating equipment area to avoid any chance of use

8.0 Maintenance and Storage



SCAN THE QR CODE TO SEE A VIDEO SHOWING TYPICAL ASSEMBLY AND MAINTENANCE INSTRUCTIONS AS WELL AS OTHER INFORMATION.



WARNING Neodymium / Rare Earth Magnets are extremely strong and can cause permanent damage to electronics if they are brought too close; this includes medical devices such as pacemakers. Due to the strength of these magnets, they also pose a pinching hazard. Keep magnets separated and away from ferromagnetic materials. The magnets are brittle and can crack if they snap together with ferromagnetic materials or other magnets.

8.1 Storage

Proper storage of equipment leads to longer equipment life and assurance of the integrity of the product. Follow the below guidelines:

- Store the product in a cool, dry, and clean environment out of direct sunlight
- Avoid areas that vapors may exist
- Keep trolleys away from ferromagnetic materials and small, loose metal objects
- Avoid stacking trolleys on top of each other and metal to metal contact
- Thoroughly inspect all equipment after extended storage
- Keep magnets away from metal objects or electronic devices.

8.2 Replacement Parts and Repairs

All replacement parts must be purchased through Skyline Ziplines Ltd. All equipment repairs must be performed by the following: Skyline Ziplines Ltd, an authorized contractor/vendor of Skyline Ziplines Ltd with approval, or trained and authorized onsite personnel.

8.3 Trolley Maintenance – Cleaning a Trolley

Tools Required: Water, soap, and a rag

- 8.3.1 Rinse trolley unit off with water to remove major debris
- 8.3.2 Mix water and soap in a container, use a rag to clean with mixture
- 8.3.3 Inspect unit and record maintenance in log (Appendix B)

8.4 Trolley Maintenance – Replacing a Wheel, Axle, Snap Ring, Magnets or Axle Spacer

Tools Required: External Retaining Ring Pliers (0.052" Tips), rubber mallet

- 8.4.1 Using snap ring pliers, remove the Snap Rings (SKY-W-S02) from both sides of the axle (SKY-RT-S05)
- 8.4.2 Remove the axle by sliding it out of the trolley body. If it is tight, you can use a rubber mallet gently to remove the axle
- 8.4.3 Remove the wheel and axle spacers (SKY-W-S04). Place the wheel into the M24 installation stand to ensure the magnets do not come out of the wheel. Be very careful with how you handle the wheel/magnets as they are very strong and can crack if they snap to metal or other magnets. Keep the wheel in a vertical orientation while handling.
- 8.4.4 Perform required maintenance, replacements and an in-depth inspection of the unit to address any additional concerns.
- 8.4.5 If you are adding, removing, or replacing magnets, do so one at a time and by using the M24 installation stand. To remove the magnets, use the metal tips of the retaining ring pliers to stick to the magnet. Then, pull the magnet out and set aside in a safe area. To add magnets, refer to the steps in Section 4.4.
- 8.4.6 Insert wheel (SKY-W) axle spacers (SKY-W-S04) together into the wheel slot in the trolley.
- 8.4.7 Align wheel, axle spacers, and axle hole on trolley body
- 8.4.8 Insert axle (SKY-RT-S05) through the trolley, wheel and spacers. You may use a rubber mallet to gently tap the axle through, if required
- 8.4.9 Install retaining rings (SKY-RT-S02) on both sides of the axle ensuring that they settle completely into the retaining ring grooves on the axle.
- 8.4.10 Inspect unit and record maintenance in log (Appendix B)

8.5 Trolley Maintenance – Replacing a Shackle or Lanyard

Tools Required: ½" Socket (2), Socket Wrench (2), Torque Wrench (1)

- 8.5.1 Remove the nylon locking nut from both shackle bolts (SKY-RT-S03) using the two wrenches
- 8.5.2 Remove the two shackle bolts from both ends of the lanyard using one wrench
- 8.5.3 If replacing the lanyard, dispose of or destroy the old lanyard and replace it with a new one. Ensure the new lanyard is not beyond its shelf life.
- 8.5.4 **Skyline recommends replacing the shackles and not reusing the old ones due to possible fatigue.
- 8.5.5 Insert shackle body (SKY-RT-S03) into lanyard (SKY-RT-S04) with label of lanyard facing the same direction as the other lanyards and oriented nearest the trolley
- 8.5.6 Connect shackle to trolley tab with nut on the inside of the tab.
- 8.5.7 Using a 1/2" socket on a torque wrench, torque the bolt into the shackle body to 15Nm.
- 8.5.8 While holding the head of the bolt with a socket wrench, thread the nut on the bolt and torque to 15Nm. Ensure the end of the bolt is flush with the nut.
- 8.5.9 Insert shackle body into the other end of the lanyard and connect to corresponding hole on crossbar with nut on the inside
- 8.5.10 Torque the bolt into the shackle body to 15Nm.
- 8.5.11 While holding the head of the bolt with a socket wrench, thread the nut on the bolt and torque to 15Nm. Ensure the end of the bolt is flush with the nut.
- 8.5.12 Install shackle bolt into shackle, torquing to 15Nm.
- 8.5.13 Install nylon locking nut onto shackle and torque to 15Nm while holding the bolt head with a second wrench.
- 8.5.14 The end of the bolt should be flush with the nut.
- 8.5.15 Inspect unit and record maintenance in the maintenance log (Appendix B)



9.0 Lifetime

The maximum lifetime of a Skyline Ziplines Trolley, sling, or lanyard is 7 years after initial service date (ISD). Should the trolley not be put into service immediately upon receipt by the end user, the products have a shelf life as indicated in the table below. The ISD is defined as the first day of use of the product. The ISD is the commencement date of the 7-year service period and shelf life can no longer be used to extend the life of the product with the exception of proof of complete operational closure, in which case service life can be extended by a maximum period equal to the closure period (at the discretion of Skyline Ziplines). If a service date is not recorded/available, then purchase date is used as the ISD. If purchase date is not available, date of manufacture (DOM) is used as the ISD.

Item	Shelf Life	Service Life
Rocket Trolley – Body Only	No Shelf Life	7 years from ISD
Rocket Wheels	10 years from DOM (as of 2025*)	7 years from ISD (as of 2025*)
Slings and Lanyards	10 years from DOM (as of 2025*)	7 years from ISD (as of 2025*)

*If DOM is 2024 or earlier, shelf life is limited to 7 years and service life is limited to 5 years.

This lifetime is applicable only to equipment that has undergone regular inspections prior to each use without revealing an anomaly. The actual lifetime depends on the intensity and the frequency of use as well as the environment. An exceptional circumstance might limit the product's lifetime to a **single use**. A product that was not inspected at least once per year should be removed from service and replaced.

10.0 Incident and Failure Reporting

In the unfortunate situation that a Skyline trolley, sling or lanyard is involved in an incident or a failure, please notify Skyline Ziplines immediately so that prompt corrective measures can be taken by Skyline Ziplines. Product Safety Alerts are available at request and are sent out to all previous customers via email.

Complete information concerning the incident (date, location, details as to event and consequence, etc.) must be communicated to admin@skylineziplines.ca and/or called into the office at 604-905-4149.

Skyline Ziplines will investigate the incident and if a product recall alert is required, shall notify all known customers and distributors who have purchased the product.



11.0 Warranty

Subject to the following limitations, terms, and conditions, Skyline Ziplines LTD warrants to the original purchaser of each Product that such Products when purchased new, are free of defects in materials and workmanship. This limited warranty may be exercised for a period of up to one year from the date of receipt. This limited warranty does not apply to normal wear and tear, nor to claimed defects, malfunctions or failures that result from abuse, neglect, improper assembly, improper maintenance, alteration, collision, crash, or misuse.

EXCEPT AS EXPRESSLY SET FORTH ABOVE, SKYLINE ZIPLINES LTD DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PURPOSE. SKYLINE ZIPLINES LTD'S RESPONSIBILITY FOR WARRANTY CLAIMS IS LIMITED TO, AT SKYLINE ZIPLINES LTD'S SOLE DISCRETION, REIMBURSEMENT OF THE ORIGINAL PURCHASE PRICE, REPAIR OF THE PRODUCT, OR REPLACEMENT OF THE PRODUCT WITH THE SAME OR SIMILAR PRODUCT. NOTWITHSTANDING anything in THESE TERMS to the contrary, SKYLINE ZIPLINES LTD SHALL NOT be responsible or held liable for punitive, indirect, incidental or consequential damages, including without limitation, liability for loss of use, loss of profits, loss of Product or business interruption however the same may be caused, including fault or negligence of SKYLINE ZIPLINES LTD.

To exercise rights under this limited warranty, Customer must return the affected Product to Skyline Ziplines LTD (unless otherwise instructed by Skyline Ziplines LTD) to:

SKYLINE ZIPLINES LTD
6-1006 LYNHAM ROAD
WHISTLER, BRITISH COLUMBIA, CANADA V8E 0S3

Skyline Ziplines LTD will use reasonable commercial efforts to return all product in a timely manner to the designated location and will be responsible for all shipping costs. Skyline Ziplines LTD reserves the right to modify this limited warranty at any time, in its sole discretion.

Appendix A – Inspection Forms

*Sample files available upon request

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INSPECTION FORM I-02

skyTECH Trolleys



Inspection Information

February 26, 2024

Frequency: Daily Pre-Use

Models: Rocket, M8, M24 and Turbine Trolleys

Performed By: Trained Staff Member

Manufacturer: Skyline Ziplines LTD.

Inspect all matching equipment in accordance with the inspect criteria listed below. At the bottom, record the equipment's disposition by marking the appropriate ID number. If the answer is YES to one or more of the following questions, the unit is deemed UNFIT for service.

1. Body Inspection

- Are there any visual indications of a problem with the trolley body? Cracks, damage, or excessive wear?
- Are any loose or missing hardware / rivets?
- Are there any missing or improperly installed retaining rings?
- Has the product undergone modifications or alterations not performed or authorized by the manufacturer?

2. Sling and Lanyard Inspection

- Have the slings / lanyards been used by a person weighing more than 310 lbs?
- Have the slings / lanyards received forces resulting from a fall or shock loading without a subsequent inspection?
- Have the slings / lanyards been exposed to detrimental chemical products or an intensive source of heat?
- Are there any signs of fraying, loose/torn/pulled stitching, cuts, melting, discoloration, abrasions, or other damage on the slings and/or lanyards?
- Has the unit not been formally inspected within the last year by a competent person?
- Are the slings / lanyards more than 7 years old?
- Inspect the labels on the slings / lanyards; have they gone missing, been removed or altered?

3. Wheel and Component Inspection

- Are there signs of melting, deformation, cracking, or other damage to the tread of the wheel?
- Can the wheel move along the axle more than 2mm side-to-side?
- Metallic components (i.e. carabiners, shackles): Is there any deformation, marks, cracks, wear, corrosion, or other? Missing or loose nuts?
- M24 & M8 – Are there any magnets missing for the designated configuration? Are the magnets seated improperly within the body/wheel?

4. Operation Inspection

- Are there any problems with the wheels spinning freely? Do the bearings vibrate or make any kind of clicking noise?
- TURBINE ONLY – is the spring latch broken or not functioning correctly? Does it get stuck in an open or semi-open position?

Disposition - Circle all line numbers correlating with all units that have PASSED the inspection and are FIT for service

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

Failed Equipment - List all ID numbers for units deemed UNFIT for service. Consult the manual for proper Lock Out, Tag Out Protocol

Notes/Comments

Inspected By:

Date:

INSPECTION FORM I-11

skyTECH Trolleys



Inspection Information

February 26, 2025

Frequency: Weekly

Models: Rocket, M8, M24 and Turbine Trolleys

Performed By: Trained Maintenance Personnel

Manufacturer: Skyline Ziplines LTD.

Inspect all matching equipment in accordance with the inspect criteria listed below. At the bottom, record the equipment's disposition by marking the appropriate ID number. If the answer is YES to one or more of the following questions, the unit is deemed UNFIT for service.

1. Wheel Inspection

- Are there any visual indications of damage to the wheels: cracks, loss of material, excessive wear, deformation?
- Are the bearings showing signs of wear: seizing, rattling, excessive rolling resistance? Are there problems with the wheels spinning freely?

2. Crossbar Inspection (Seated Rocket and Twin Turbine ONLY)

- Are the retaining rings loose, missing, cracked, improperly installed, or showing excessive wear (Turbine)?
- Are the snap ring grooves on the crossbar showing signs of excessive wear, deformation, loss of material, or rounding of edges (Turbine)?
- Are the crossbars loose inside the crossbar endplates (Rocket)?
- Does the crossbar fail to assemble properly (Rocket)?
- Are the crossbar grips torn, cut, or otherwise damaged?

3. Trolley Body Inspection

- Are there any visual indications of damage: cracks, bent components, or excessive wear?
- Can the wheels move side-to-side more than 2mm?

4. Textile Inspection

- Are there any excessive abrasions, cuts, melting, discoloration, or other damage present on the slings / lanyards?
- TWIN TURBINE & SEATED ROCKET: Remove all slings from crossbar to perform in-depth inspection. Is there any damage in this area?

4. Hardware Inspection

- Are there any loose or missing fasteners / rivets or other hardware?
- Is there any deformation, marks, cracks, wear, corrosion, bends, or other issues with hardware components?
- M8 & M24: Are any of the magnets missing, cracked, installed incorrectly, or having an incorrect polarity orientation?

Disposition - Circle all line numbers correlating with all units that have PASSED the inspection and are FIT for service

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

Failed Equipment - List all ID numbers for units deemed UNFIT for service. Consult the manual for proper Lock Out, Tag Out Protocol

Notes/Comments

Inspected By:

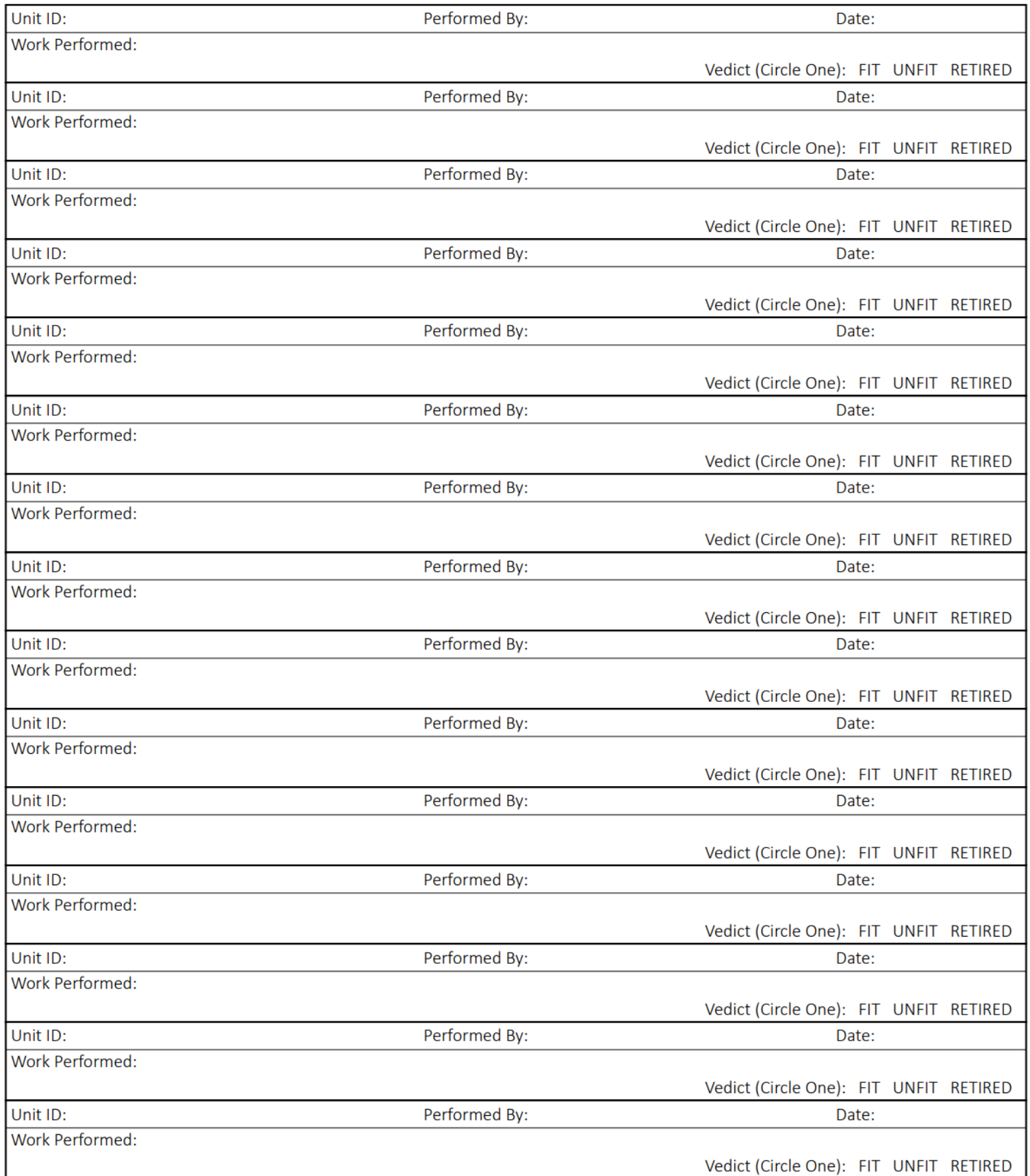
Date:

Appendix B – Maintenance Log

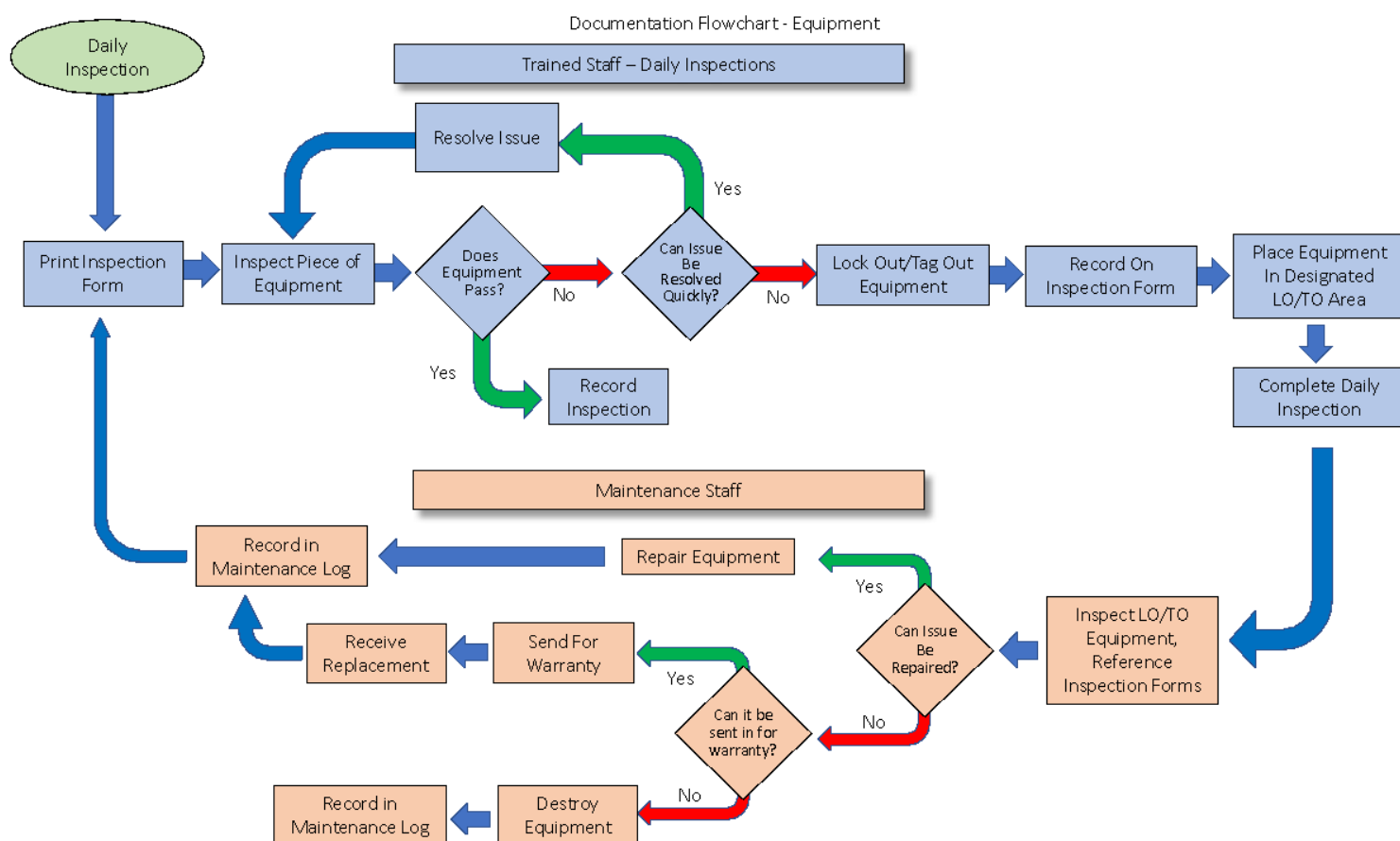
*Sample files available upon request

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skyTECH Trolley



Appendix C – Documentation Process Flowchart





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Whistler, British Columbia
Canada V8E 0S3

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