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Water Ride Maintenance Manual

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1 Commitment to Ride Safety & Performance

ProSlide® is committed to safety. This commitment encompasses all phases of ProSlide's business from design and engineering through product quality control. ProSlide strives to provide the safest and easiest to maintain water rides possible. This Water Ride Maintenance Manual is being supplied to you as part of ProSlide's continuing commitment to rider safety and ride performance.

ProSlide's goal is to provide the rider with the safest and most enjoyable experience possible. The proper use of this Water Ride Maintenance Manual will help ensure the realization of the highest levels of both rider and operational experience.

2 This Maintenance Manual

Water Ride Maintenance is an important responsibility that is not to be overlooked by the Owner/Operator. Proper and routine ride inspection and preventative maintenance is an important function to ensure the ride continues to operate consistently, and to maintain the structural integrity and appearance of the water ride.

The purpose of this Water Ride Maintenance Manual is to provide the Owner/Operators with the recommended inspection and preventative maintenance activities and frequencies for ProSlide water ride(s). This Water Ride Maintenance Manual is to be used in conjunction with all other manuals or documents provided to you by ProSlide with respect to the water ride, as outlined in **Section 3**, and all relevant industry standards, guidelines and regulations as incorporated by your local venue, including State and other jurisdictions, to form the overall Water Ride Maintenance Program and Standard Operating Procedure (SOP).

The inspection and maintenance activities outlined in this Water Ride Maintenance Manual must be combined with on-site training for your specific water ride to form a complete operational and maintenance training program. Review and update the procedures continually to reflect the knowledge and experience you gain with your continued operation and maintenance of this and other water ride equipment. All operating procedures, including maintenance and inspections, should be following industry standards, regulations and guidelines as recognized and adopted by your venue.

This Water Ride Maintenance Manual is intended for Owner/Operators of their ProSlide water ride(s). It references and encompasses:

- Associated Documents
- Definitions
- Roles and Responsibilities
- Inspections and Frequencies
- Preventative Maintenance Instructions
- General Repair Instructions
- Identification of the proper Tools, Materials, and PPE for each task
- Recommended Maintenance Documentation

3 Associated Documents

Documents associated with this Water Ride Maintenance Manual contain additional and referenced information and shall be read in conjunction with this manual.

Sample Maintenance Log (Refer to Appendix – A): Sample form to log maintenance work.

ProSlide Recommended Products, Tools, and Equipment (Refer to Appendix – B): Includes a list of products, tools, and equipment to carry out the maintenance and repair procedures outlined in this manual.

Ride Support & Tower Systems Maintenance Manual (Refer to Appendix – C, if applicable): Includes inspection and maintenance requirements for ride support & tower systems. This manual will come from ProSlide only if ride supports and/or towers are included in ProSlide's scope of supply.

Ride-Specific Maintenance Manual (Refer to Appendix – D, if applicable): Includes ride-specific inspection and maintenance requirements and information such as spare parts and winterization instructions.

Water Ride Operations Manual: Ride-specific document that provides great detail on ProSlide's recommended operational procedures for each individual water ride.

Water Ride Assembly Manual: Site/Project specific assembly drawings for the water ride that includes overall part layout and ride specific installation details for the water ride.

Water Ride Mechanical Electrical Package (MEP): Site/Project specific engineering drawings that include design water flows (supply and removal) and pressures, valve and flow meter requirements, and other important mechanical and electrical requirements for the water ride.

Note: the water ride settings are summarized in the Water Ride Verification Summary Report.

Water Ride Vehicle Maintenance & Inspection Guide (applicable if ride vehicles are supplied by ProSlide): This document provides basic maintenance and inspection procedures specific for the ride vehicle.

Scale Operation and Maintenance Manual (if applicable): This document is prepared by the scale original equipment manufacturer and provides the operations and maintenance procedures for the scale equipment.

Conveyor Operation & Maintenance Manual (if applicable): This document is prepared by the conveyor original equipment manufacturer and provides the operations and maintenance procedures for the conveyor equipment.

Red Light / Green Light Manual (if applicable): This document is prepared by the red light / green light original equipment manufacturer and provides the operations and maintenance procedures for the equipment.

Mat Timer Racer System (if applicable): This document is prepared by the mat timer racer system original equipment manufacturer and provides the operations and maintenance procedures for the equipment.

4 Definitions

Assess: Routine check performed by park maintenance staff that identifies an item that may require further inspection

Inspect: Closely examine for faults, errors, or identified damage by park maintenance staff

Routine Inspection: Daily inspection by the park maintenance staff intended to identify obvious hazards that can occur (from vandalism, use, excessive wear, weather conditions etc.), foreign bodies, damage and structural integrity before starting operation.

Periodic Inspection: Monthly, quarterly, or yearly visual inspection by park maintenance staff that is more detailed than the routine visual inspection intended to assess the operation and stability of the equipment, and identify damage, wear, corrosion etc.

Thorough Inspection: Detailed visual inspection by a competent professional at defined periodic intervals to check all components for signs of wear, structural degradation, corrosion (internal and external) or cracking. May be supplemented by non-destructive testing if deemed necessary by the professional.

Structural Inspection: Detailed assessment where damage, distress or deterioration is suspected or known to exist based on the recommendations of a detailed visual inspection by a competent professional. The purpose of this assessment is to determine if the structure or component being investigated is structurally adequate.

Check: Physically view, test or measure the condition or tolerance of a requirement by park maintenance staff

Confirm: Prove that something is true

Ensure: Check for a condition, and remedy deficient where necessary

Record: Preserve information in writing

Shall: Indicates a mandatory requirement

Should: Indicates a recommended requirement

5 Water Ride Owner/Operator Roles & Responsibilities for Maintenance & Safe Ride Performance.

WARNING: FAILURE TO ADHERE TO THE INSPECTION & MAINTENANCE RECOMMENDATIONS OF THE RIDE MAY RESULT IN SERIOUS INJURY OR DEATH

5.1 Owner/Operator

The Owner / Operator is responsible to operate and maintain the water ride in accordance with their Standard Operating Procedures (SOP) to ensure consistent and safe ride performance. This includes, but is not limited to, ensuring the staff that operate and maintain the ride are trained and are fulfilling their responsibilities. Training shall not be limited to the recommended inspection and preventative maintenance activities and frequencies for ProSlide water ride(s), but must also include identification of hazards associated with the maintenance and inspection activities, including but not limited to; working at heights procedures, education on Personal Protective Equipment (PPE) requirements, Safety Data Sheet (SDS) training,

Please note: It is important that the water ride Owner/Operator use their knowledge, experience, and any information provided by aquatic consultants to establish a complete water ride maintenance program. Failure to follow and maintain documented records of the inspection and preventative maintenance activities and frequencies outlined in this Water Ride Maintenance Manual will void the warranty of the ProSlide water ride(s).

5.1.1 Water Quality

The Owner / Operator is responsible to ensure the quality of water used on the ride meets applicable standards, regulations, codes, guidelines, and laws. Inadequate water quality may stain the surface of the water ride and may affect the ride performance and appearance. Additionally, water quality may affect the pumps, piping, water filtration system, the air quality in the ride and water park, and corrosion of structural components of the water ride.

The most commonly used indicator to prevent scale and corrosion is the Langelier Saturation Index (LSI). This index accounts for pH, calcium hardness, alkalinity, temperature and total dissolved solids (TDS) to determine the tendency of the water to form scale or corrode. Values above 0 indicate a tendency to scale and values below 0 indicate a tendency to corrode. According to section A7.5 of the ANSI/APSP-11 2009 standard, this index should be maintained between -0.3 and +0.5 to avoid scaling and corrosion issues.

In addition to maintaining correct LSI levels, high chlorine levels must be avoided. Section 5.7.3.1.1.5 of the 2018 Model Aquatic Health Code (MAHC) defines an upper limit of 10ppm (mg/L) of free available chlorine (FAC) anytime an aquatic venue is open for bathers. Anything above that will result in bleaching of the gelcoat surface. For this reason, it is critical that the water supply to the ride be shut-off before any pool shock treatments.

Please note: Water ride's that operate with water quality levels outside ProSlide's recommended water quality levels will void the warranty of the ProSlide water ride(s). This includes:

- Water quality outside the ranges defined in ANSI/APSP-11 2009 standard (section A7.5)
- Visible debris (e.g. sand, rocks, stones, gravel etc.) in the water or on the ride surface
- Free available chlorine (FAC) levels above the maximum defined in the 2018 MAHC

Water quality measurements (including the LSI and FAC levels) must be recorded at minimum on a monthly basis by qualified personnel in accordance with local regulations. Measurements are also required after any pool shock treatments to confirm the water quality levels are within the correct limits before returning the ride to operation. These water quality records (monthly and after shock treatments) must be documented and maintained. They may be requested by ProSlide for any warranty claims to be considered.

5.2 Water Ride Maintenance Team

The Water Ride maintenance team is responsible for all water ride inspections and preventative maintenance activities and frequencies outlined in this Water Ride Maintenance Manual, including but not limited to:

- Daily Pre-Opening Inspections – Summarized in **Section 6**
- Ensuring the satisfactory completion of all pre-opening inspections and tests are completed before the ride is opened for operation
- Monitoring water flows and water levels continuously throughout operations to ensure they are within the correct limits – **Refer to the Ride Operations Manual for critical locations that require continuous monitoring**
- Confirming that the minimum lighting and ventilation requirements are met – **Refer to the Ride Operations Manual**
- Daily Closing Inspections – **Refer to the Ride Operations Manual**
- Daily, Monthly, Seasonal, and Annual, Inspections & Maintenance Procedures – **Refer to Section 7**
- Winterization Procedures (as applicable) – **Refer to Section 9**

5.3 Water Ride Operations Team

The Water Ride operations team is responsible for operating the water ride in accordance with the procedures outlined in the Water Ride Operations Manual.

6 Ride Vehicle Maintenance

Ride vehicles play an integral part within this water ride. To maintain ride performance it is important that ride vehicles are inspected and maintained.

6.1 Vehicle Storage

Vehicle storage effects the overall lifecycle of ride vehicles. It is important to store ride vehicles using the general recommendations below:

- Do not store vehicles in a location with prolonged periods of direct sunlight
- Do not store vehicles in a location with direct exposure to prolonged rain or humidity. Keep storage area ventilated and dry.
- Monitor storage area for pests that could damage the vehicles
- Do not store vehicles in a location with direct exposure to high temperatures
- Do not store vehicles in a location with direct exposure to cold temperatures
- Do not store vehicles if they are still wet or are retaining water. Empty any water that is remaining in the vehicle and allow vehicles to thoroughly dry.
- Do not tightly vacuum inflatable vehicles for storage
- Do not tightly roll or fold inflatable vehicles for storage

7 Pre-Opening Inspection Procedures

1. Prior to operating each day, every individual flume should be inspected by qualified personnel. This inspection should be performed just prior to turning on the water ride's water supply. Refer to **Section 7.1** for inspection checklist.
    a. Visually check the flume for damage or any foreign matter that may be present within the flume trough.
    b. Visually examine all surfaces that a rider could make contact with for chips, cracks, or any other condition, that could injure a rider.
    c. Visually examine the joints of the flume; look for caulk deterioration, excessive gaping, or alignment problems.
    d. Report any problems to the proper authority and do not use the deficient flume until the problem(s) have been corrected.
2. Upon completion of the flume inspection, a visual inspection of the water ride tower and its deck, walkways, and handrails, should be performed:
    a. Visually check for defective steps, deck surfaces, and handrails.
    b. Visually check all surfaces a rider could make contact with for splinters, chipped paint, or any other condition, that is a potential hazard.
    c. Bring problem areas to the attention of the appropriate authority. The deficient facility should remain closed until the appropriate repairs have been completed.
3. A general visual inspection of the outer portion of the water ride system for any noticeable damage or deficiency should be performed by Water Ride Maintenance personnel, as defined in **Section 7.1**.
4. Once all checks are completed, turn on the water to all areas of the water ride.
5. If the water ride is equipped with sprinkler systems, check for any visible dry spots due to any possible blockage of the sprinkler nozzles. Should there be blockage causing dry spots, the nozzles must then be flushed and cleaned of debris. Should this be required you must:

a. Turn off the pump and open the clean out valves on the drop pipes and allow the water to flow until the water is clear.
b. Close the clean out valves on the end of the sprinkler pipes.
c. Turn on the water to the sprinkler pipe, note any jets which are not functioning properly.
d. Clean the nozzles by removing the tips, cleaning and replacing them and placing them back into the nozzle neck.
e. Once cleaned, the system is now ready for use.

6. Following the flume and sprinkler pipe inspection, the pumps should be turned on and water allowed to flow down all water rides which are going to be used. The correct flow rate and water levels must be achieved and maintained prior to allowing anyone to enter the start position.
7. It is recommended that the initial riders be a Lifeguard or Water Ride Attendant. This will act as a final check that the water ride is ready to be ridden by the general public.
8. All communication, lifesaving, and emergency, equipment should be checked to ensure it is present and in working order.
9. All Lifeguards and Water Ride Attendants must be in position prior to allowing the general public to ride.

8 Inspection Checklists

NOTE: Any and all attached equipment and/or structures completing the ride system must be maintained according to their manufacturers' recommendations. This Water Ride Maintenance Manual is intended to be the base maintenance manual for the water ride and is focused on the fiberglass flume, flume joints, leaks, fiberglass connection to the yokes, and the yoke connection to the support structure. Reference the associated documents listed under **Section 3** for inspections related to additional elements of the ride system such as ride support system, tower, conveyor, etc. The entire ride system must be checked on a daily or scheduled basis according to those recommendations prior to use. The following is a generic checklist and does not supersede the specific recommendations of any manufacturer.

8.1 Routine Inspection Checklist

The following checklist shall be completed on a daily basis prior to operation.

Daily Inspections:	Criteria	Checked? (Y/N)	Pass/Fail (P/F)
Interior of Ride Checks:			
1. Condition of Fiberglass (interior)	Inspect the flume's entire length		
	Check for cracked, damaged, worn, or deteriorated, riding surface		
	Check for chips, cracks, or damage to the gelcoat		
2. Condition of Joints (interior)	Check the alignment of fiberglass joints		
	Check for loose, cracked, or missing sealant		
3. Water Flow Rate Into Ride	Check water flows are present at all water injection points of the ride (start of ride, feature sprinklers, flume/feature injectors)		
	Confirm that all water flows in the ride are within the correct limits (confirm against RV documentation)		
4. Water Levels in Ride	Check the water levels at all critical locations of the ride (start of ride, end of ride runout or ProSPLASH, and catch pool as applicable)		
	Confirm that water levels in the ride are within the correct limits (confirm against RV documentation)		
Exterior of Ride Checks:			
5. Exterior of Flume	Inspect the outer circumference of ride for signs of deformation (i.e.: buckling or opening of joints)		
	Section to section flange ends shall be secure and all fasteners are present		
	Check for any external damage to the flume system		
	Check for leaks from the water ride		
6. Condition of Joints	Check for deformed connection plates		

7. Water Levels in Pool (if applicable)	Confirm the Operating Pool Water Level is within the correct limits		
8. Condition of Pool (if applicable)	Check sides of pool for signs of deterioration or damage		
	Check for cracked or spalled concrete, leaks, bulges, or other signs of deformation		
	Check for presence of all gratings, light lenses, drain and return covers, to ensure they are properly installed and secured		
	Check to ensure all handrails are in place and secured		
	Ensure the end flume section is secured to pool		
9. Scale System (if applicable)	Confirm the scale is turned on and check that it is properly calibrated		
(if applicable)	Confirm the go/no-go (red light / green light) system is operational		
10. Lighting System (if applicable)	Confirm the lighting system is providing adequate light to all areas of the ride		
11. CCTV System (if applicable)	Confirm all cameras are on and pointed in the appropriate areas of the ride		
	Confirm the monitor is on and the critical areas of the ride are visible to the operator		
12. Ventilation System (if applicable)	Confirm the ventilation system is venting trapped air from enclosed features		
13. Condition of Piping, Joints, Unions *	Check the condition of water supply and water removal piping to and from the ride		
	Ensure the pipes are secure and there is no visible damage		
14. Leakage of Water Piping *	With the water on, check for any leaks from the water supply and water removal piping		
15. Sprinkler System (if applicable)	Confirm proper flow (if flow meter present)		
	Inspect the nozzles for blockages or misaligned spray		
Walkway Stairs and Tower Decks:			
1.	Inspect walkway stairs and tower decks for slippery surfaces		
	Check the condition of anti-slip surfaces on walkways, stairs, and ramps		

COMMENTS

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Inspected By:_____ By:_____

*** All items indicated are covered by other regulations or suppliers. These regulations or suppliers' recommendations should be followed and respected.**

8.2 Periodic (Monthly) Inspection Checklist:

Note: Monthly inspections are not intended to replace daily inspections. They should be performed in addition to these more frequent inspections. If the item or component is difficult to access, the frequency of inspection may be reduced to quarterly.

Monthly Inspections:	**Criteria**	**Checked? (Y/N)**	**Pass/Fail (P/F)**
Concrete:			
1. Tower and Ride Support Foundations*	Check for cracks, damaged, missing concrete/grout and visually noticeable differential settlements		
	Note: Damaged foundations should be repaired, and verified by competent professional for quality of materials and workmanship.		
Steel: (see Appendix C for Maintenance Procedures)			
2. Base Plates and Fasteners	Check for loose attachment bolts and for missing fasteners		
	Check condition of base plates and grout		
3. Ride Supports Columns and Arms	Check for damaged or missing components		
	Check for signs of deterioration of all members.		
	Insp1ect for signs of corrosion to schedule and carry-out periodic rust mitigation		
	Inspect the condition of welds. Look for cracks or sign of deterioration and corrosion		
4. Tower Columns	Check for damaged or missing components		
	Check for signs of deterioration of all members.		
	Inspect for signs of corrosion to schedule and carry-out periodic rust mitigation		
	Assess the condition of welds. Look for cracks or sign of deterioration and corrosion		
5. Tower Connections, Gussets, Bracing and Cross Members	Check for damaged or missing components		
	Check for signs of deterioration of all members		
	Inspect for signs of corrosion to schedule and carry-out periodic rust mitigation		
	Assess the condition of welds. Look for cracks or sign of deterioration and corrosion		
6. Yoke Plates	Check for deformed or rusted plates		
7. Triodetic	Check for damaged or missing components		
	Check for signs of deterioration of all members		

8. Coating (where applicable)	Check for signs of damage or imperfections on the steel coating (see Appendix C for repairs)		
Ride Egress:			
9. Tower Platform	Check the condition of walking surfaces		
	Check the condition of side protection / guardrails		
	Ensure start pool is secured to platform (if required)		
	Check for loose or missing fasteners on all members		
	Check for signs of deterioration of all members and welds		
	Inspect for signs of corrosion to schedule and carry-out periodic rust mitigation		
	Inspect the condition of welds. Look for cracks or sign of deterioration and corrosion		
10. Stairways and Ramps	Look for deteriorated, damaged, or loose, components		
	Check the condition and tightness of fasteners		
	Look for sharp or protruding objects		
	Check the condition of handrails		
	Check to ensure sidewall protection is in place and no gaps exist		
	Check the condition of anti-slip surfaces on walkways, stairs, and ramps		
Miscellaneous:			
11. Piping Supports/Hangers *	Check that pipe supports and hangers are securely connected to their support points		
	Check that there is no missing or loose hardware		
12. Sprinkler System	Inspect the sprinkler system plumbing for water leaks		
	Inspect and clean the filter of the sprinkler system		
Ride Vehicle Dimensional Measurement			
Measure Ride Vehicles	Measure all ride vehicles and confirm that the measurements taken conform to provided Vehicle Specification.		

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Inspected By:_____ By:_____

*** All items indicated are covered by other regulations or suppliers. These regulations or suppliers' recommendations should be followed and respected.**

8.3 Periodic (Yearly) Inspections:

Note: Yearly inspections are not intended to replace monthly or daily inspections. They should be performed in addition to these more frequent inspections.

Yearly Inspections:	**Criteria**	**Checked? (Y/N)**	**Pass/Fail (P/F)**
1. Conduit *	Check all condition of all conduit runs		
	Check for damage to the conduit that would compromise its seal		
	Check the conduit connection points to junction boxes		
2. Pool Depth Markings (if applicable) *	Check that all pool depth markings are clearly visible and accurately represent the actual pool depth		
3. Warning Signage*	Check that all warning signage is up to date with the latest issue of the Operations Manual from the OEM		
4. General Signage*	Check that all general signage is up to date with the latest issue of the Operations Manual from the OEM		
5. Guard Station*	Check the condition and location of the guard station(s)		
6. Sprinkler System	Confirm each component of the sprinkler system and ensure there are no loose parts		
	Confirm that each nozzle is aligned properly in order to spray directly at the wall		

COMMENTS

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Inspected By:_____ By:_____

*** All items indicated are covered by other regulations or suppliers. These regulations or suppliers' recommendations should be followed and respected.**

8.4 Detailed or Thorough Visual Inspections (Yearly)

Note: The following inspections should be performed by a qualified professional on a yearly basis to identify damage, cracks, defects, and monitor deterioration that could impact the structural stability and integrity of supporting steel components.

Yearly Inspections:	**Criteria**	**Checked? (Y/N)**	**Pass/Fail (P/F)**
1. All Steel Components	Inspect and evaluate condition of all welds		
	Inspect and evaluate all structural members		
	Inspect and evaluate all structural steel hardware and miscellaneous fasteners		

COMMENTS

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Inspected By:_____ By:_____

9 Fiberglass Maintenance

Note: Always wear required personal protective equipment (PPE) and exercise caution when performing maintenance procedures.

A preventative maintenance program should have an appropriate budget set aside for supplies, material, equipment, and resources. An effective preventative maintenance program also requires having personnel with the appropriate level of training, experience, supervision, and expertise to perform tasks with a high-level of care and attention to detail to optimize the maintenance/repair of the water rides. This is an important responsibility of the Owner/Operator that will help extend the life.of the water ride equipment.

The following are key points to keep in mind for your water ride equipment and accessories:

- A proper preventative maintenance program is the absolute best method to maintain the integrity and appearance of your fiberglass water ride.
- Considering the constant usage of your water rides, small repairs and leaks are inevitable. Proper tools, materials, and repair procedures will yield the best results.

It is our hope that this document will assist water park operators to formulate a routine preventative maintenance program that suits their park best. The table below should be used to help formulate such a program. The tasks listed in the table are discussed in the following sections.

Table 1: Water Ride Maintenance Schedule

	Minimum Intervals	
Task	**Ride Surface**	**Exterior**
Washing	Monthly[1]	Annually[1]
Waxing	Monthly[1]	Annually[1]
Polishing	As required	As required
Wet Sanding	As required	As required
Gelcoat Repair	As required[2]	As required[2]
Leak Repair	As required[2]	As required[2]
Exterior Painting	N/A	As desired

[1] Washing and waxing should coincide with season opening and closing (if park is seasonal). These are best practices recommended by ProSlide to maintain the water ride equipment and maximize the longevity of the appearance of the fiberglass.

[2]Gelcoat and leak repairs should be performed immediately when damage is noticed which may entail closing the ride temporarily, pending the appropriate corrective action, to ensure the ride continues to operate safely.

Note: Refer to Appendix – B for ProSlide's recommended products

9.1 General Fiberglass Maintenance

Various elements such as chemicals from the water, or natural elements such as dirt, snow, leaves, etc., can collect on the water ride surface. When these elements combine with the ride or rainwater they may stain the gelcoat surface. In addition to the elements mentioned above, the chemistry of the water within the water ride system plays a major role in the amount of maintenance required on the fiberglass (see section 5.1.1 for more details). Ultraviolet (UV) light will also discolor the gelcoat surface over time, especially in the absence of regular waxing with a product that contains UV protectant

While staining or discoloration does not affect the structural integrity of the fiberglass, they may have a negative impact on the ride performance and/or overall aesthetics of the water ride. These potentially negative effects can be prevented, and the surface preserved, with routine maintenance and care.

It is important to note that the fiberglass consists of two distinct surfaces: the ride surface (smooth side) and the exterior (textured side). Both sides use the same Gelcoat, but the exterior has an additional clearcoat layer for protection against UV and weathering. The same general maintenance procedures apply to both surfaces, but the maintenance intervals vary (see Table 1 above Ffor details). These maintenance procedures are discussed below.

Note: Be sure to attempt preventative measures such as aligning the water quality within the limits stated in this manual, followed by more gentle surface maintenance procedures such as cleaning and waxing. A scale inhibitor can also be added to the water in the water ride system to prevent and/or remove scale build-up. An abrasive method such as rubbing compounds and wet sanding should only be used as a last resort.

9.1.1 Washing and Waxing

Polyester gel coats are resistant to water and other light chemicals. Be sure not to use aggressive or strong chemicals to wash the fiberglass. Avoid any strong alkaline (such as Trisodium phosphate) or highly acidic cleaners. Bleach and ammonia should also be avoided. These materials, if left in contact with polyester gel coat, can change the color of your water ride significantly. In addition, organic solvents such as acetone should never be used on the fiberglass exterior and only on the riding surface when necessary for gelcoat repairs.

After washing, wax should always be applied to protect the gel coat on the surface of the water ride. There are a number of waxes on the market. Use one that is specifically designed for fiberglass and contains Carnauba or Polytetrafluoroethylene (PTFE, also commonly known as Teflon). For optimal color and gloss preservation, the wax shall also contain a UV protectant.

As long as you maintain water quality and follow your preventative maintenance schedule, washing and waxing should be the only two maintenance processes required.

9.1.1.1 Procedure

Ensure the entire surface of the water ride is clean and free from all contaminants. We recommend the following procedure:

1. When performing any maintenance procedures be sure to exercise caution and initiate all safety measures appropriate for each individual task.
2. With a soft broom remove all debris from the entire water ride.
3. Wash and rinse the entire water ride thoroughly from top to bottom using a non-abrasive cleaning agent such as automotive or marine soap. This should be paired with non-abrasive cleaning tools like soft mops, rags or sponges. A pressure washer can be used for the ride exterior at a pressure less than 2000 psi. Non-skid and walking surfaces can be cleaned with a soft-bristle brush.
4. When the cleaning is complete, the entire ride should be examined for discoloration, stains or damage. Address each issue as needed.
5. Once the ride has been examined, apply a coat of high quality automotive/marine wax with UV protectant. Care must be exercised to follow all manufacturer's instructions when applying the wax.

9.1.2 Buffing/Polishing

This procedure requires the use of a variable speed polisher, polishing pad and rubbing compound. The rubbing compounds come in a variety of grits from very coarse (high stock removal) to very fine (low stock removal). In most cases, very fine to fine grits are all that is needed (without have to resort to wet sanding). This process should always be followed by waxing to protect the gelcoat.

9.1.2.1 Procedure

1. Apply the rubbing compound as per manufacturer's directions using clean pads.
2. Work a small area at a time (9 sq ft/1 m^2). If you are using a variable speed polisher, keep the RPMs between 2000 and 3000 and use only light pressure on the machine otherwise it will cause scratching, pitting, gouging and swirl marks.
3. It is important to not let the pad dry out and to apply more compound as necessary.
4. As a gloss appears, gradually lighten the pressure on the buffer.
5. Apply wax as previously described.

9.1.3 Wet Sanding

The only time you will need to wet sand your water ride is to remove deep groove scratches or significant discoloration that cannot be buffed out with rubbing compound. When considering wet sanding, always be sure to include plenty of water while sanding the gel coat surface as this procedure will also affect the appearance/integrity of the high gloss finish. Wet sanding should always be followed by buffing with a rubbing compound and waxing to protect.

9.1.3.1 Procedure

1. Start with 600 grit waterproof sandpaper.
2. Wet the sandpaper in a small bucket of water and rub the affected area keeping the strokes in the same direction, otherwise swirl marks will appear.
3. Polish with a rubbing compound formulated to remove the scratches left behind by the grit level of the wet sandpaper.
4. After the polishing is complete, rinse and wash the ride.
5. Apply wax to the gelcoat surface.

9.2 Gelcoat Surface Repairs

Note: Gelcoat requires a minimum temperature of 16°C (60°F) in order to cure properly. This includes the ambient, substrate and liquid gelcoat temperatures. In addition, the forecast should be verified to ensure there is no risk of precipitation and that the ambient temperature is at least 3°C above the dew point.

9.2.1 Personal Protective Equipment (PPE) Required

- Safety glasses
- Protective mask
- Gloves / disposable rubber gloves

9.2.2 Tools Required

- Utility knife
- Rotary tool (recommended)
- 1½" (3.8 cm) flexible, disposable putty knife
- stir stick
- Masking tape
- Cardboard or hard reusable surface (several, 1 sq ft/0.1 m^2)
- 2" (50 mm) masking tape
- Methyl Ethyl Ketone Peroxide 50% (M.E.K.P. 50) Liquid Hardener, clear (3 ounces)
- Acetone
- Clean rags
- Sealant (Sikaflex® 1a)

9.2.3 Gel Coat Repair Kit (Supplied by ProSlide)

- 1 quart gel coat putty in the appropriate color
- 220 grit waterproof sandpaper
- 400 grit waterproof sandpaper
- 600 grit waterproof sandpaper
- 1000 grit waterproof sandpaper
- 1-quart polyester enamel in appropriate color for exterior touch ups

9.2.4 Procedure

1. With knife or rotary tool, cut away all ragged edges, any loose fiber and old sealant in or around the repair. Any dirt, grease or sealant will not allow the gel coat to adhere.
2. On repair patches longer than 1" (25 mm), sand the area with 220 grit sandpaper, dry.
3. With a clean rag and Acetone, clear all patches of contaminants.
4. With the 2" (50 mm) masking tape, mask 1/8" (3 mm) away from the edge of each repair and tape off joints/seams.
5. On each individual slide, prepare all repairs of like color before mixing the gel coat.
6. Using a putty knife and hard reusable surface, remove appropriate amount of gel coat putty from the can to cover all repair patches.
7. Remember to close can of gel coat putty. Water or other liquids will ruin the putty and open air will dry it out. Store in a controlled environment.
8. Form small well in the gel coat putty and add proper amount of catalyst. The catalyst required is Methyl Ethyl Ketone Peroxide 50% (M.E.K.P. 50) Use clear liquid only. Mixing is 2% by volume. Imagine areas the size of a golf ball in diameter and ¼" (6 mm) thick. For each of these areas you will need four drops of catalyst. This amount will have to be slightly altered depending on temperature and humidity. If reaction is fast, reduce amount of catalyst. On the other hand, if the reaction time is slow add more, slowly.
9. Carefully mix the gel coat and catalyst making sure they are mixed thoroughly; it will not harden otherwise.

10. Apply mixed paste to all patches, making sure there are no air bubbles. Do not overfill the repair with putty as it will require more sanding when cured.
11. Remove all masking tape, except for a small piece to identify the repair location.
12. When patching on a joint, be sure that the joint is restored after patching. Do not fuse the joint with gel coat. Simply cut the joint with the edge of the putty knife before proceeding to the next patch.
13. If additional gel coat is required, be sure to use a clean putty knife that is free of catalyst to extract the gel coat from the can. If any catalyst gets into the can it will harden the entire can in two days.The overall cure time should be 30 – 45 minutes. If you do your repairs in small batches, they will dry progressively. By the time you've patched a complete flume the first patches should be ready for the next step.
14. The gel coat putty will first become tacky, then rubbery and then hard. Not until it is hard should you begin the next step.
15. With a bucket of water and 220 grit waterproof sandpaper, sand the repair to almost level with the unaffected surface. Use plenty of water while sanding. This will avoid gel coat dust, scratching and keep the paper from clogging.
16. Next, use 400 grit waterproof sandpaper, ascend to 600 and then to 1000 grit to finish off the repair. Do not over sand. If a color change occurs, stop immediately as you are most likely sanding through the gel coat to bare fiberglass. If this occurs, dry the area and repeat at step 9.
17. Rinse all patches with fresh water and let dry.
18. Polish all repairs with an ultrafine rubbing compound.
19. Apply High-quality automotive/marine wax to all repairs.
20. Reapply sealant to all joints where repairs were performed.

9.3 Fiberglass Joint and Leak Repairs

There are several reasons why a water ride might leak. The number one reason is expansion and contraction of the fiberglass due to temperature variance. Fiberglass will expand in heat and contract in the cold. A flexible polyurethane sealant is used to compensate for the movement in the water ride sections. Over time, this will cause voids in the sealant and ultimately cause a leak. There are two methods to repair a leak. The first one we recommend is to repair the leak from the inside of the ride. Secondly, the joint leak can be repaired from the outside of the ride. Using the second method, identifying the origin of the leak must be performed while the ride is in operation.

Before starting any repairs, make sure to check that the stainless-steel joint connection fasteners are all tight at the location of the leak. If the leak continues after this check, you can now start the repair.

9.3.1 Method 1: Repairing a leak from the inside of the water slide

9.3.1.1 Personal Protective Equipment (PPE) Required

- Safety glasses
- Gloves / disposable rubber gloves
- Protective mask

9.3.1.2 Tools/Materials

- 5” angle grinder with a diamond cutting blade (recommended)
- Utility knife
- Sealant (Sikaflex® 1a)
- Primer (Sikaflex® primer)
- Masking or painter’s tape
- 1” Paint brush
- Acetone
- Clean terrycloth towels
- Flexible putty knife

9.3.1.3 Procedure

1. Identify the joint that is leaking.
2. Using the utility knife or angle grinder with a diamond cutting blade, remove all old sealant from the section of the joint where the leak is occurring.
3. Using a clean terrycloth towel with Acetone, clear the joint from debris, dirt and water.
4. Ensure that the joint is thoroughly dried
5. Apply the SikaFlex Primer using the 1” paint brush
6. Apply the new sealant to the clean joint.
7. Using the putty knife, work the new sealant into the joint and reapply more sealant as necessary. Make sure any air pockets have been removed.
8. Remove painter’s tape
9. Remove excess sealant with the putty knife and clean area with minimal Acetone as required
10. Allow 24 hours for the sealant to cure.

9.3.2 Method 2: Repairing a leak from the outside of the water slide

Always use caution and prepare the proper equipment to access the leak repair (i.e. boom lift, scaffolding). Personal Protective Equipment (PPE) such as a fall arrest system, harness, safety glasses, steel toe boots, gloves and hardhat are also mandatory when performing this task.

9.3.2.1 Personal Protective Equipment (PPE) Required

- Safety glasses
- Gloves / disposable rubber gloves
- Protective mask

9.3.2.2 Tools/Materials

- Ratchet wrench
- 9/16” (14 mm) wrench
- 9/16” (14 mm) deep socket
- hammer
- Wood/plastic wedge
- Drill and 3/8” (10mm) drill bit
- 3/8” (10 mm) stainless steel hardware (bolts, washers and nuts)
- Sealant (Sikaflex® 1a) and applicator
- 2” (50 mm) putty knife
- Acetone
- Clean rags
- Utility knife

9.3.2.3 Procedure

1. With the ride in operation, identify where the leak originates. Leaks are usually not located where the water drips from the fiberglass flange.
2. Loosen at least four bolts surrounding the origin of the leak.
3. Using the hammer, insert the wedge between the two flanges, separating them slightly.
4. With the drill and 3/8” (10 mm) drill bit, drill a hole through one of the two flanges you are separating 1.5” (38 mm) down from the riding surface.
5. With the retractable knife, cut the tip of the caulking gun slightly smaller than 3/8” (10 mm) to fit perfectly into the hole you just drilled in the fiberglass flange.
6. Insert the tip of the applicator into the 3/8” (10 mm) hole and begin squeezing sealant generously into the joint.
7. Using the hammer again, remove the wedge from between the flanges.
8. Tighten the 3/8” fasteners with the 9/16” (14 mm) socket and wrench.
9. Remove excess sealant with the putty knife and finish cleaning the area with Acetone and clean rags.

9.4 Fiberglass Exterior Painting

In some cases, it may be desirable to paint the exterior of the fiberglass to restore color and gloss. This is especially true if regular maintenance has not been performed and/or several years have passed. For this purpose, high-quality two-part polyurethane paint should be applied according to the manufacturer's directions. If the exterior fiberglass surface shows any signs of cracking or crazing, an epoxy primer should also be used. Any major cracks, divots or other types of damage should be repaired prior to applying the paint.

In the absence of any surface preparation guidelines from the paint manufacturer, the following can be used:

1. Clean surface with power washer and industrial degreaser (use minimum setting of 2000 psi and make sure nozzle is close to surface)
2. Clean surface with power washer and water only (use minimum setting of 2000 psi and make sure nozzle is close to surface)
3. Sand surface with 100 grit dual-action orbital sander until surface is smooth and free of cracks and/or peeling
4. Clean surface with power washer and water only (use minimum setting of 2000 psi and make sure nozzle is close to surface)
5. Allow to dry
6. Repair any larger cracks or gouges using gelcoat repair putty
7. Apply two-part polyurethane paint (and primer if necessary) as per manufacturer's application instructions

9.5 Riding Surface Resurfacing

Similar to exterior painting, it may be desirable to resurface a riding surface if routine maintenance and controlling water quality has been neglected. This type of work should only be performed by qualified 3rd parties using ProSlide approved gelcoat. Using incorrect methods and materials could seriously affect the ride performance, safety and durability. Resurfacing of the riding surface using the correct methods and materials may still have an impact on ride performance.

Should an Owner/Operator decide to engage a 3rd party to resurface the ride, a new water ride verification/testing process (as outlined in ASTM F2376 Section 9) must be performed and documented to determine the ride performance is acceptable. This testing may be completed by the Owner/Operator themselves or by hiring a 3rd party.

In all cases of resurfacing, ProSlide should be engaged to ensure correct materials and procedures are used.

10 Polycarbonate Maintenance and Cleaning

The following section outlines the general cleaning procedure for polycarbonate windows.

- Gently wash the sheet with a solution of mild soap and lukewarm water, using a soft, grit-free cloth or sponge to loosen any dirt or grime.
- Fresh paint splashes, grease, and smeared glazing compounds can be removed easily before drying by rubbing lightly with a soft cloth using petroleum ether (BP65), hexane or heptane. Afterwards, wash the window using mild soap and lukewarm water.
- Scratches and minor abrasions can be minimized by using a mild automobile polish. We suggest that a test be made on a small area of the polycarbonate window with the polish selected and that the polish manufacturer's instructions be followed, prior to using the polish on the entire sheet.
- Thoroughly rinse with clean water to remove any cleaner residue and dry the surface with a soft cloth to prevent water spotting.

Close attention should be paid to the substances and methods used to clean the polycarbonate sheet. Using incompatible cleaning materials on the polycarbonate sheet can cause structural or surface damage. The table below lists a number **of incompatible** cleaning substances.

Incompatible Polycarbonate Cleaning Methods

Cleaning Method	Examples
Abrasion	Scrubbing with brushes, steel wool, using abrasive cleaners
Highly Alkaline Cleaner	Bleach, ammonia, sodium hydroxide
Aromatic or Halogenated Solvent	Toluene, benzene, gasoline, acetone, carbon tetrachloride
Harsh Solvent	Methyl ethyl ketone (MEK), hydrochloric acid

Additionally, the polycarbonate sheet should not be cleaned in direct sunlight or in high temperatures, as this can lead to staining. Tools with sharp edges such as razorblades or squeegees should not be used to remove deposits on the window, as they will easily scratch and damage the polycarbonate.

11 Special Winterization Checklist

Maintenance Task	Frequency
Wash and wax the ride to remove all debris and particles which could act as an abrasive on the fiberglass.	Winter Shut-Down
Wash exterior of fiberglass. Be sure to clear any debris from drain holes on the top of closed features.	Winter Shut-Down
Check all ride connections and ride supports. Tighten any loose fasteners to snug tight. Refer to structural drawings for more information.	Winter Shut-Down
Drain all pipes, ensuring there is no standing water remaining. If some plumbing lines cannot be drained properly, add plumbing anti-freeze such as Propylene Glycol to the pipes.	Winter Shut-Down
Cover any water ride start pools, water injection, and/or removal points throughout the ride to prevent water infiltration to the pipes.	Winter Shut-Down
Cover the start of ride opening to prevent snow, debris, and ice from building up inside enclosed rides.	Winter Shut-Down
Avoid moderate to heavy snow loads on fiberglass elements. Empty accumulated snow from flumes and top of closed features. Freeze/thaw cycles may loosen hardened snow, causing damage to the ride.	When local knowledge indicates snow depths are unusually high or snow conditions are unusually heavy
Drain any sprinkler lines if the weather will reach near freezing temperatures as freezing water inside the system will break the sprinkler components.	Winter Shut-Down

12 Maintenance Documentation

It is recommended that all conditions requiring attention, whether discovered following an inspection, or at any time during operation, be repaired. At no time allow the ride to operate with any condition that poses a threat to the safety of guests or staff. In addition, it is recommended that all repairs of any kind performed on the ride be documented to provide a complete safety record for the equipment. A sample ride maintenance log form is included in this manual. See Appendix – A.

Appendix – A: Sample Maintenance Log

Maintenance log

Attraction Name:_____ Date:_____

Attraction Serial Number:_____ Technician Name:_____

Description of Work:_____

_____

_____

_____

_____

Part Numbers Used:_____

_____

Description of Materials Used:_____

_____

_____

Photographs:

Technician Signature:_____ Supervisor Signature:_____

Appendix – B: ProSlide Recommended Products, Tools, and Equipment

Category	Recommended Products
UV Waxes	Farécla Polymer UV Wax Turtle Wax ICE® Spray Wax Meguiar's NXT Generation Tech Wax 2.0 3M™ Scotchgard™ Marine Liquid Wax
Rubbing Compounds	Farécla Profile Select Liquid Compound Au-G Sol 200 DuPont #7 3M™ Marine Super Duty Rubbing Compound
Polishing Pads/Sanding	Farécla G Mop Flexible Compounding Foam Farécla G Mop Finishing Foam 3M™ Trizact™ 3M™ Wetordry™
Sealants	Sikaflex®-1a 3M 5200 BASF MasterSeal® NP1
Automotive/Marine Soap	Farécla G3 Pro Wash & Wax Turtle Wax Zip Car Wash & Wax 3M™ Perfect-It™ Boat Wash
Variable Speed Polishers	Farécla G Plus Electric Rotary Polishing Machine DEWALT Variable Speed Polisher with Soft Start Bosch Random Orbit Sander/Polisher Milwaukee Variable Speed Polisher
Two-Part Polyurethane Paint (for fiberglass exterior and metallic structures only)	PPG Pitthane™ PPG Amershield™ POLANE® Polyurethane Enamel Endura EX-2C Sherwin Williams Acrolon™ 218 HS Acrylic Polyurethane
Epoxy Primer (for fiberglass exterior and metallic structures only)	PPG DPLF Epoxy Primer Sherwin Williams Macropoxy®
Industrial Degreaser (for steel and Triodetic structures)	Resolve (Dustbane Products Ltd) Zep® Industrial Purple Degreaser

Appendix – C: Ride Support & Tower Systems Maintenance

Ride Support & Tower Systems Maintenance Schedule

Task	Minimum Interval
Cleaning	Monthly
Scale Removal	As required
Painting	As required

Note: If during routine inspections any structural problems are noticed, the park should immediately inform ProSlide and the Engineer of Record (EoR). The instructions below are for routine preventative maintenance and aesthetic repairs.

Note: The below instructions and material specifications are intended to be used when none have been provided by the original paint supplier. Always follow the instructions provided by the original paint supplier when possible.

General Cleaning

The ride supports and tower systems can be cleaned using a pressure washer and mild industrial degreaser.

Scale Removal

In some instances, additional cleaning will be necessary if scale (mineral deposits) start to build up. Proceed as follows to remove mineral deposits.

Warning: Wear protective clothing and goggles during the entire de-scaling operation.

Caution: Never use abrasive materials or wire brushes to remove scale as this will damage the paint. Make sure muriatic acid does not come in contact with bare aluminum. Muriatic acid will blacken aluminum surface and cause deterioration of the metal.

1. Be sure all surfaces are dry.
2. Prepare a mixture of 80% muriatic acid and 20% water.
3. Spray muriatic acid mixture on surfaced to be cleaned.
4. Thoroughly rinse the structure with fresh water and a pressure washer to remove all acid from the structure. (Note: Any acid left standing overtime can cause damage to the structure.)

Seasonal Shutdown/Winterization

In climates where the water ride must be shut down for seasonal harsh weather, the water ride must be properly prepared against freezing, snow, and ice damage.

The end of the season is also an ideal time for maintenance activities. If new parts are required, they can be ordered and will arrive well before the following seasonal opening.

Proceed with seasonal shut-down of ride supports and tower systems as follows.

1. Clean painted metal surfaces including decorative elements, structural elements and railings

2. Visually inspect towers and support foundations for cracks, missing concrete, cracks in concrete, missing or loose fasteners, or any other signs of damage or deterioration. Make sure grout is in good condition.
3. Check base plates for missing or loose fasteners and components.
4. Check the surface of metal components such as supports, columns, tower connections, gussets, bracing, and cross members for rusting or coating failure where painted (which can lead to future rusting). Check for missing or loose fasteners and components.
5. Check side protection and guardrails for damaged or loose components. Confirm that all fasteners are tight. Look for sharp or protruding objects which could injure riders or damage clothing.
6. Check piping supports and hangers. Ensure that pipes are secure and that supports and hangers are in good condition.
7. Check that all fasteners that may have been missed in other inspection points are secure.

Fasteners

There may be different grades and sizes of fasteners used across the water ride system. When replacing fasteners, always refer to the assembly manual. Always be sure that any replacement is the same size and material grade as the fastener being replaced. All fasteners must be in place. Missing hardware could lead to a leaking joint or serious structural issue.

Triodetic

The following are recommendations to extend the service life of the Triodetic tubular space frame, or in the case of aluminum structures to enhance the anodized finish.

It is recommended the tubular space frames be cleaned a minimum of once a year, preferably twice a year. Cleaning should be undertaken within the period running from late spring to early fall. The ideal cleaning solvent is one that is water soluble and contains a degreaser concentrate. See Appendix B for recommended products.

To carry out the cleaning, apply the working solution and rinsing liquid by means of a pressure sprayer delivering a spray of 800 to 1,000 psi. When use of spray equipment is impractical or hazardous, use a sponge or cloth. Follow directions as set out on degreaser manufacturer's container label.

Tower Walking and Non-Skid Surfaces

The tower walking and non-skid surfaces should be inspected daily to ensure they are clean and safe to walk on. The frequency of cleaning required is dependent on the frequency of use and environmental conditions. It may be necessary to clean high traffic areas on a daily basis. To clean these surfaces, a soft bristle brush should be used in combination with an automotive soap (on fiberglass surfaces) or industrial degreaser (on steel or aluminum surfaces). Ensure that the surface is rinsed adequately and dried before use.

Painting

If damage to the paint is found in routine inspections, it must be repaired to avoid corrosion of the underlying steel. This must be done no later than one (1) month after the defect is identified. Prior to the repair, the damaged area must be inspected to determine which of the following conditions has occurred.

1) Superficial Damage

If the primer is intact, the repair is a matter of aesthetics and may take place when convenient. Monitor the damaged area to ensure that no rust develops. To carry out the repair, simply mix a small batch of touch-up paint. Fill the scratch with touch-up paint and allow it to dry.

2) Non-Superficial Damage

If metal is exposed, the area must be primed and painted using good commercial practices, within one week to prevent structural damage caused by corrosion. See below for painting procedure.

Tools and Materials

- Epoxy Primer
- Colour Coat: Two-Part Polyurethane
- Top Coat: Two-Part Polyurethane (if necessary)
- Scrapers for removing damaged paint.
- Sand paper (120 – 180 grit) for providing a suitable surface for primer and paint bonding.
- A wire brush for removing rust.
- Pure bristle paintbrushes in a variety of sizes.
- Spray paint equipment for large areas.

Procedure

1. Paint must be applied to clean, dry surfaces, at a temperature of between 10°C and 29°C (50°F and 85°F). Paint cures slowly at cooler temperatures and more quickly at higher temperatures. Mid-range temperatures work best.

   Note: Mixing ratios must be accurately measured to achieve a durable coating.

   Note: Use paint within one hour of being mixed. Small batches of paint are recommended to ensure it is used shortly after mixing.
2. Remove scale (mineral deposits) if present. See above section on scale removal for procedure.
3. Scrape off any bubbled or loose paint from around the damaged area. Paint may appear normal around edges of damaged area but may not be properly bonded to the primer coat. Make sure unbounded paint is removed.
4. Scrape off damaged primer if required.
5. Remove additional material with a wire brush if required.
6. Lightly sand exposed area.

7. If bare metal is exposed, remove all signs of rust and corrosion.
8. Make sure damaged surfaces and surrounding area are clean and dry.
9. Wash with a mild cleaner such as ammonia-based window cleaner or dish detergent.
10. Wipe area dry with a rag.
11. Use a tack cloth to remove dirt and other small particles.
12. If heavy corrosion is present that cannot be removed easily, apply rust inhibitor paint to the corroded areas. Allow coating to dry before proceeding to the next step.
13. If bare metal is exposed, apply a layer of epoxy primer:
14. Apply primer to bare metal with a paint brush.
15. Allow coating to dry before proceeding to the next step (typically about 1 hour at 21°C/70°F).
16. Select polyurethane paint to match colour of repair area.
17. Mix polyurethane paint as per manufacturer's directions.
18. Apply a layer of polyurethane enamel paint to the repair area. Allow coating to dry before proceeding to the next step. Additional coats may be necessary to ensure repaired area is flush with surrounding area.
19. Allow polyurethane enamel paint to dry for at least 12 hours at 21°C/70°F after final coat for a complete cure (or as per manufacturer's directions).

Appendix – D: Ride-Specific Maintenance Manual

This page is intentionally left blank. Any ride-specific maintenance procedures will be affixed to this manual.

Appendix – E: Project-Specific Requirements

This page is intentionally left blank. Any project specific requirements will be affixed to this manual.