TULMAR ENGINEERED FOR PROTECTION

USER MANUAL
SINGLE LANE
TRAINING SLIDES

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REVISION HISTORY

This revision history is to serve as a record of the changes to this manual. The record includes the revision letter, the date of the revision, the page(s) affected, and a brief description of the change.

Rev	Date	Pages Affected	Brief Description
A	2018-07-31	All	Original release

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1 TRAINING SLIDE OVERVIEW

Tulmar Safety Systems' single lane training slides are designed to simulate an OEM evacuation slide by replicating the user experience essential for training and which meets the requirements of the various civil aviation regulatory authorities.

They are available in nominal lengths between 4.1m and 7.1m to enable proper installation on most heights of trainer platforms. Side rails provide increased safety and reduce buckling of the slide during descents.

The slides are constructed from robust materials suitable to meet the demanding needs of a training environment. The sliding surface is made from the same low conductivity material as that used for OEM evacuation slides. The sliding surface is removable, designed for easy replacement as this is the component most subject to wear.

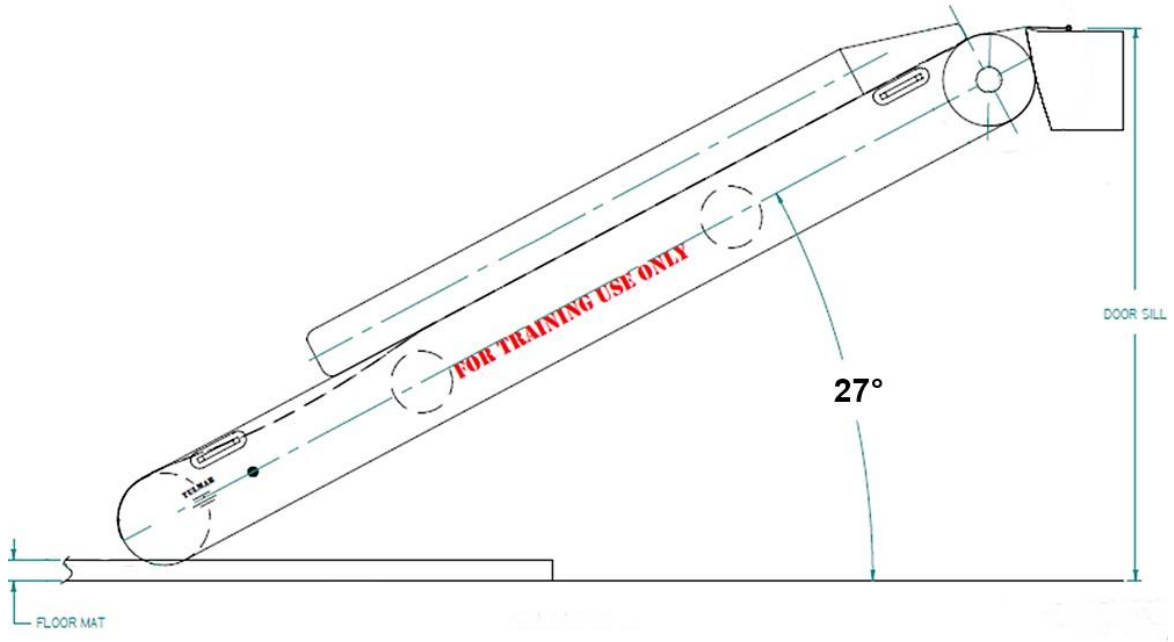
Tulmar's single lane slides are fitted with a custom sized girt to accommodate each individual customer's trainer installation. The girt is also removable, designed for easy replacement if the need arises.

Several additional features are available to enhance the user's training experience or to accommodate installation. Some features are functional and can be used as part of the physical exercises while others are only meant to be demonstrative for show and tell purposes.

2 TRAINING SLIDE FEATURES AND EQUIPMENT

2.1 STANDARD FEATURES

All Tulmar single lane training slides are derived from the same basic form, the only difference being variations in length in increments of 500mm. All have side rail chambers ending 1.2m from the foot end, cross-tubes for structural stability, a permanently attached sub-floor (non-sliding) with a dip at the foot end to help rotate the evacuee out of the slide. The length of the slide is determined by considering the trainer floor height, the thickness of floor mats used at the facility and targets an optimum slide angle between 26° and 28°.



The standard features outlined below are included with the basic slide.

2.1.1 Replaceable Sliding Surface

All training slides come equipped with a replaceable sliding surface made of the same low conductivity material used on OEM slides. The sliding surface is attached to the sub-floor by means of Velcro®. Deceleration strips are located at the foot end of the sliding surface to reduce the exit speed and aid rotation out of the slide. Flaps and shingles at the girt end overlap onto the top of the sliding surface to eliminate a potential tripping hazard.

2.1.2 Replaceable Girt

The slide's two point girt is used to attach the slide to the trainer platform. It is custom designed to fit to a slide angle of 27°±1, which in turn is a function of the measurements taken of the facility. It is important that the initial set-up parameters be maintained. For instance, while reducing the floor mat thickness will increase the angle of the slide, if this is desired; it may also add undue stress on the top panel of the girt. The owner should contact TULMAR SAFETY SYSTEMS if a major change in set-up is required post installation. Most likely a new girt can be configured for the modified installation without having to modify the slide. The girt is designed for the slide chamber to sit approximately 25mm to 50mm (1"-2") below the trainer floor, therefore it should not interfere with opening simulator doors.

The standard width of the girt is 510mm (20") but a narrower girt can be provided if necessary. At the design stage, the girt bar sleeve is designed to accommodate the customer's specific girt bar size (diameter). Tulmar strongly recommends a round girt bar to maximize service life of the girt, but the girt bar can also be square or rectangular shaped, provided it has rounded edges.

2.1.3 D-Ring Patches

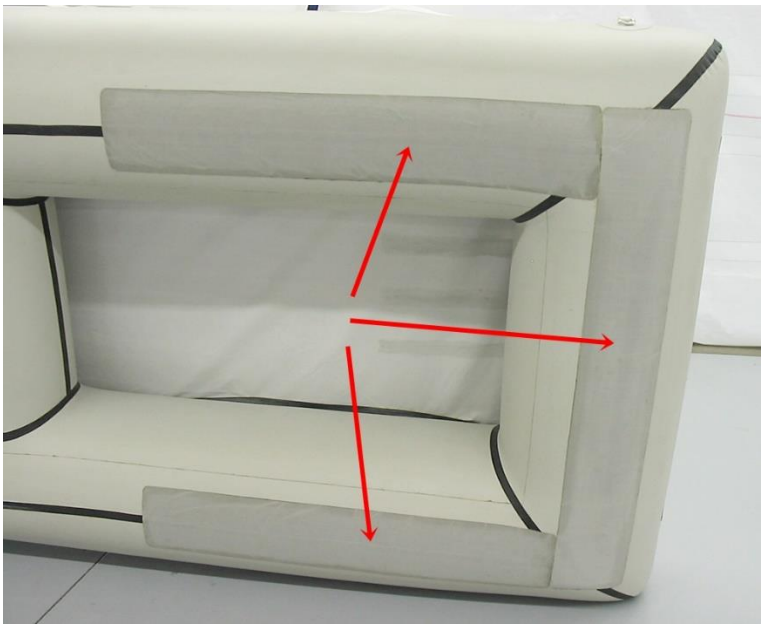
D-rings are placed at each corner of the slide. These are used to loosely tether the training slide and add stability during training if the customer so desires. It is recommended that bungee cords be used to allow full mobility of the slide during training sessions without placing undue stress on the d-ring patches.

2.1.4 Carrying Handles

Carrying handles are installed at the foot end of the single lane training slide for ease of manipulation and carriage.

2.1.5 Chafing Patches (neoprene slides only)

Training slides constructed of neoprene (rubber) are more prone to grip onto other surfaces, increasing frictional wear at contact points. To prevent premature wear on this type of slide, chafing patches are added at the girt and foot ends.

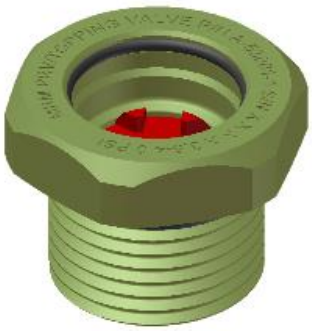


2.1.6 Ports

The basic single lane training slide comes with three ports; one inflate/deflate valve (top-up valve), one pressure relief valve and one maintenance plug. The same base flange is used for all three ports, making them interchangeable.

Inflate/Deflate Valve (top-up valve):

Used for temporary connection to inflate, deflate or pressure monitoring.
An adapter is also provided to enable connection between shop air supply (1/4" NPT) and the valve.



Pressure Relief Valve:
Overpressure protection; opens automatically to prevent the slide from being inflated above 2.6 psig.

Maintenance port:
A removable plug allows connection of other devices such as a permanently attached air supply or a pressure gauge. The universal flange thread is 1-1/16-12UN.

2.1.7 Socket Tool

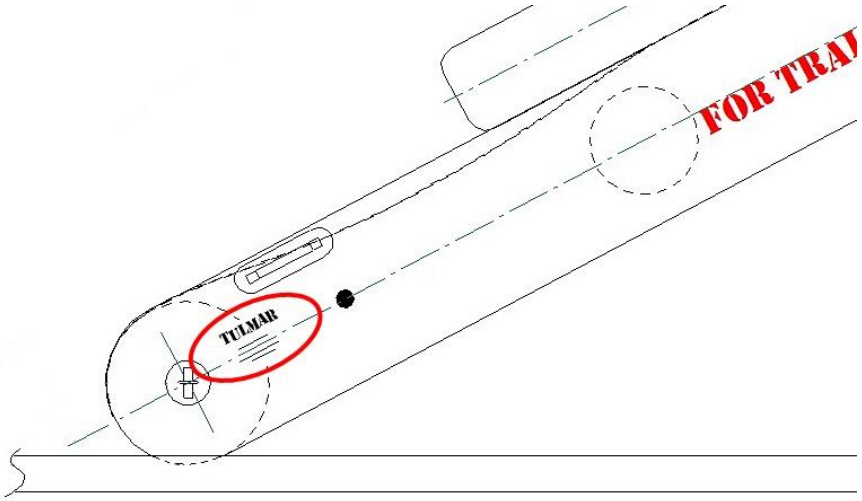
The Socket tool is used to remove and install the valves and plug shown in 2.1.6.

2.1.8 Stencilling

The warning **"FOR TRAINING USE ONLY"** is stencilled on each side of slide in 76mm (3") high red text.

2.1.9 TULMAR ID

The serial number is stencilled on the outside of the slide.



2.2 OPTIONAL EQUIPMENT

Tulmar single lane slides can be configured with additional features and accessories. Optional features are outlined below.

2.2.1 Spare Replaceable Sliding Surface

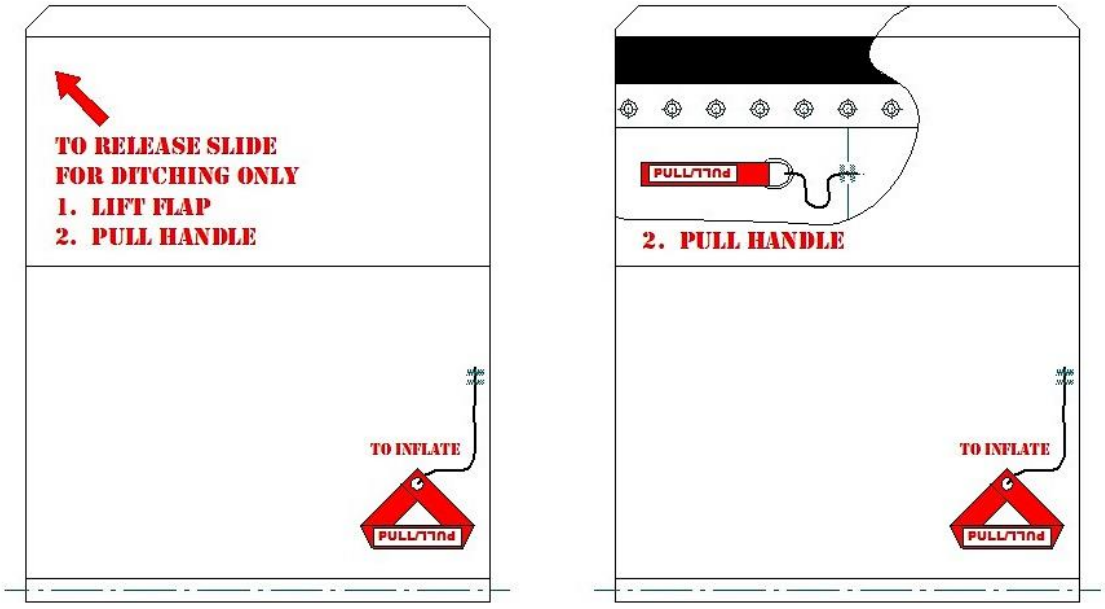
The p/n of the sliding surface can be found on the underside of the sliding surface near the girt end. Alternately, the p/n can be determined by Tulmar Safety Systems by tracing back the serial number in paragraph 2.1.9.

2.2.2 Spare Girt

The p/n of the girt can be found on the underside of the top lacing strip panel. Alternately, the p/n can be determined by Tulmar Safety Systems by tracing back the serial number in paragraph 2.1.9.

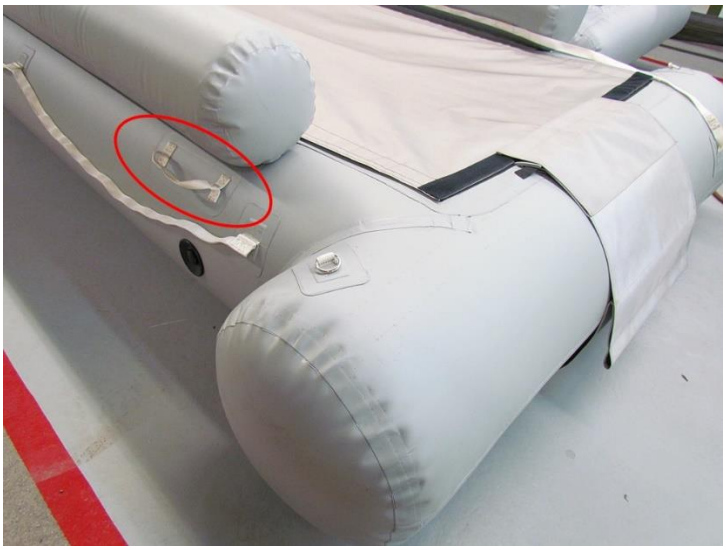
2.2.3 Girt Accessories

Optionally, a non-functioning pull handle can be added to the girt to simulate the action to manually inflate the slide. A second non-functional handle simulates the action to ditch or release the slide from the aircraft. Placement of the handles and associated markings are shown below.



2.2.4 Additional Carrying Handles

The basic slide includes two carrying handles at the foot end of the slide. Optionally, two more carrying handles can be added to the girt end of slide when ordering the slide. These additional handles may be desirable on a longer single lane slide if it is displaced often.



2.2.5 Life Lines

Life lines can be installed on each side of the single lane slide. While the life lines are demonstrative in the case of evacuation training, they are nonetheless designed and constructed to cover about 80% of the slide length and meet the strength requirements of TSO C-69c 4.30.

2.2.6 Re-entry line

The re-entry line is a strap installed on the slide enabling crew members to climb back onboard the aircraft if necessary. Tulmar's re-entry line is a functional option that can be used as part of training exercises. It is attached to the girt end of the slide and is routed along the right side of the slide (looking down). When not in use, the re-entry line is secured to the side rail by means of Velcro® patches, away from the glide path.

2.2.7 Additional Ports

Additional ports can be added at the foot end of the slide during construction. This allows access to chamber inflation pressure from ground level. Two ports are provided; one on each side. These two ports can be paired with a top-up valve, maintenance plug or pressure relief valve.

Tulmar also offers a pressure gauge option which includes a 0-5 psig gauge and an adapter plug with ¼" NPT (monitor port).

The adapter plug can also be used for permanent and regulated air supply.

2.2.8 Aspirator Flange

An aspirator adapter flange is another option offered. The standard flange is made to fit a 4.5" OD aspirator. The training facility may wish to install a plug or "dummy" aspirator for demonstrative rather than functional training. The flange is mounted on the girt end chamber, left side.

3 GENERAL OPERATION

CAUTION: Always work in a clean area, smooth and free from sharp objects, splinters, abrasive and corrosive materials.

3.1 INFLATION

- Unpack the slide and roll it out to its full length. Ensure there are no sharp foreign objects underneath or near the slide.
- As mentioned in paragraph 2.1.6, the top-up, maintenance and relief valves may be interchanged by unscrewing and re-tightening them using the socket wrench. It is critical that a Pressure Relief Valve (PRV) be installed on the air chamber to protect it from overpressure.

- Inflate the slide through the top-up valve, flange with valve removed, flange with a monitor port (1/4" NPT) or an aspirator. Inflation must be achieved using clean, dry air from a compressor or industrial blower until the slide is fully extended. The air source must be free from moisture.
- Inflate the slide to approximately 2.1 psig (operating pressure is 2.0 psig minimum). If the slide is over pressurized, the pressure relief valve will open once the pressure has reached between 2.3 and 2.5 psig and will subsequently close at approximately 2.0 psig.
- For a permanent installation, it is preferable to attach compressed air regulated at 2.1 psig to the slide using a monitor port (1/4" NPT).
- Do not inflate the slide beyond 3.0 psig.

3.2 INSTALLATION GUIDELINES

Warning: It is safest to have several people assisting with the installation of the slide because the weight and size of the slide makes it awkward to manipulate. Appropriate safety measures need to be taken when working at heights over 2.4m (8 ft).

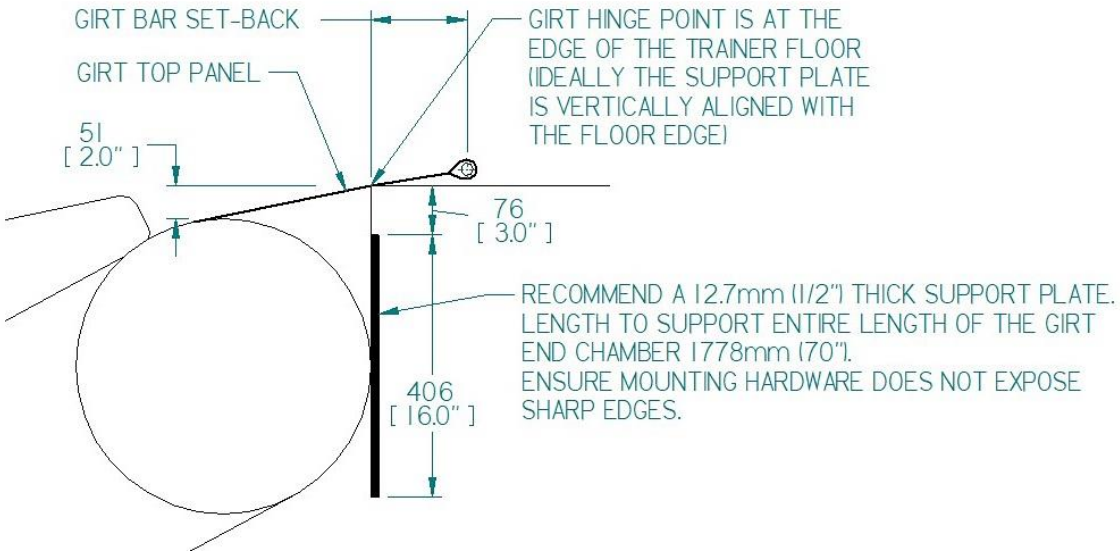
Tip: The installers may find it easier to lift a partially or fully inflated slide as there is less dead weight when the foot end of the slide is resting on the ground.

Tip: Lace a rope or strap in between the girt panels to help lift that end of the slide up to the platform.

Warning: Ensure there is sufficient clear area at the end of the slide for safe exit of the trainees.

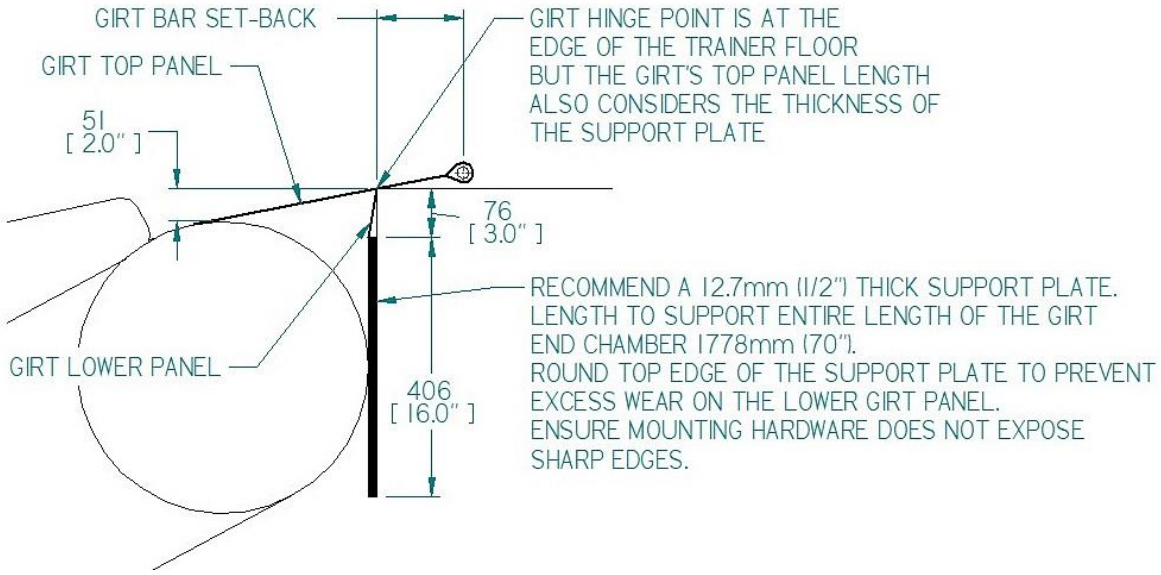
3.2.1 Site Preparation

The slide will require a backboard or support plate upon which to rest against. Placement of the support plate is detailed below. Note the effect on the girt's top panel if the support plate is installed beyond the edge of the trainer floor. The thickness of the support plate needs to be accounted for when designing the girt.



Support plate vertically aligned with the edge of the trainer floor

OR



Support plate installed beyond the edge of the floor trainer

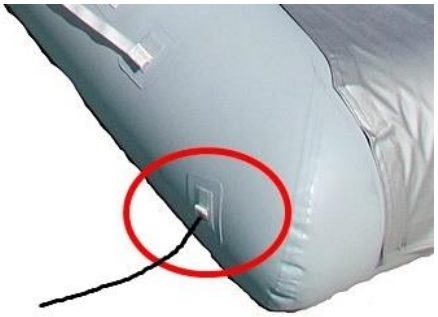
3.2.2 Installation

Lift the girt end of the slide up to the trainer platform. A rope or strap attached through the girt panels to hold the girt end will make this an easier task. While holding the girt close to the cabin crew trainer or trainer platform, attach the slide girt trainer using a standard girt bar, or equivalent. Ensure the girt bar is safely secured.

Tulmar strongly recommends that floor mats or gym pads be placed on the floor from the edge of the trainer to underneath the bottom of the slide and beyond, where trainees will exit the slide. Floor mats are used for safety purposes as well as to prevent excessive wear on the bottom of the slide itself. As mentioned in paragraph 2.1.2, different thicknesses of floor mats can be used to fine tune the slide angle. The training facility should contact Tulmar if a major change in set-up is required, otherwise undesired stresses may be placed on the girt which is designed to be approx. 27°, taking into account the trainer height and mat thickness.

It is recommended that a safety net be installed beneath the slide.

Loosely tether the slide to the trainer and the floor using the D-rings at each corner of the slide. This will add stability to the slide during training. Ensure the attachments to the D-rings allow for full mobility of the slide during all training scenarios, without placing undue stress on the D-ring patches. For this reason, bungee cords, or shock cords are recommended to tether the slide.



When a slide constructed of PVC cloth is installed on a motion training simulator and the simulator is put into motion with the slide fully inflated, there may be a bit of chatter noise caused by the PVC slide rubbing against the PVC floor mat. This can be remedied by applying some Armor All Original Protectant® onto a cloth and rubbing it onto the contact area of the slide. http://www.armorall.com/products/protectants/original-protectant .

Be careful not to not apply Armor All® to the floor mat as this could create a hazardous exit for the evacuees.

3.2.3 Adjusting the Descent Speed

Despite the slide being installed at the proper design angle, if the trainees are coming off the slide too slow or are stopping before the end of the slide, it is possible to make the descent quicker by applying a bit of Armor All Original Protectant® to the sliding surface.

It is recommended that the Armor All® be applied onto a clean cloth and then conservatively wiped onto the sliding surface to avoid making the sliding surface too slippery. Armor All® can make the slide very slippery and fast, so you will want to apply small amounts at a time. Test the sliding speed before applying more Armor All®.

To slow down the sliding speed, first, wash any Armor All® off the sliding surface with soap and clean fresh water. Rinse with clean water and let dry. Try the sliding speed.

If a yet slower sliding speed is required, the adhesive in the deceleration strips can be re-activated. Using appropriate safety measures, dampen a rag with Toluene and gently wipe the deceleration strips. Do not rub too hard as you may start to rub off the deceleration strip. Let dry for approx. one hour and try the sliding speed.

Over time the deceleration strips may wear out prior to the sliding surface wearing out. The deceleration strips can be re-applied to the slide floor with neoprene adhesive and ink. Contact TULMAR SAFETY SYSTEMS for more information.

Increasing the thickness of floor mats under the foot end of the slide will decrease the slide angle, also slightly reducing the speed.

3.3 Deflation

- For partial deflation, either insert an unattached adapter, as shown in paragraph 2.1.6 into the inflate/deflate valve or hold the valve open to let air out of the slide.
- To deflate the slide completely, use the socket tool (paragraph 2.1.7) to remove the top-up valve and/or the maintenance plug. Hold on firmly to the valve or the plug upon removal as the internal pressure in the slide will expel it.
- Once the air has been almost completely removed, use a vacuum to remove the remaining air. Re-install all valves and plugs that have been removed.

3.4 Packing

- Remove the girt bar from the slide prior to packing the slide to avoid risk of damaging the slide with sharp edges or corners.
- Once the slide is fully deflated, lay it flat on a clean floor.
- Ensure the slide is completely dry.

- Fold in the two sides of the slide along its length, to an approximate width of 36”

- When folding in the sides of the slide, ensure the flanges and valves lie flat. This will help when folding the slide and avoid possible pinching later when the slide is folded in a more compact shape.

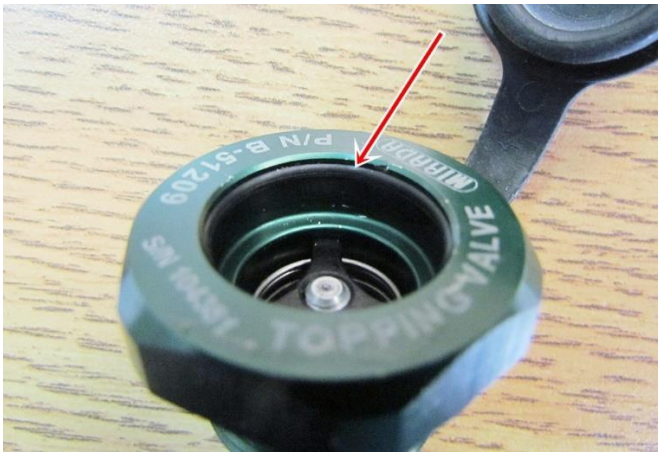
- **<u>Starting from the foot end of the slide</u>**, make a 1st fold about 26" deep. Continue folding the slide upon itself, all the way to the girt end.

- Flatten and square up the folded slide to fit into a container or Tulmar slide valise (optional)

4 CARE AND PERIODIC MAINTENANCE

ALWAYS USE FRESH CLEAN WATER TO CLEAN AND RINSE THE TRAINING SLIDE

- Avoid performing evacuation training exercises with shoes, boots, clothes with sharp objects or snap buttons that could cause damage to the sliding surface. Clean cotton coveralls are recommended.
- Verify the slide is inflated to a minimum of 2.0 psig prior to each training session.
- In a dry training environment, the training area should be kept clean to optimize service life of the training slide. Dust, sand and debris found on the floor in the training area can stick to the slide and cause premature wear.
- Cleaning the slide;
    - When soiled, remove the sliding surface and clean the slide and sliding surface using a mild soap (non-detergent) mixed with clean fresh water. Thoroughly rinse the slide with clean fresh water after washing.
    - Leave the sliding surface off and allow the slide to dry completely. A circulating fan can be used to assist with air drying. Do not used forced air or dry with heat.
    - Re-install the sliding surface once the slide and sliding surface have dried.
- In a wet training environment where the slide is exposed to salt water or chlorinated water, the slide must be thoroughly rinsed using clean fresh water after each day of training. Chlorine and salt water can have a detrimental effect on fabric, gaskets and components and consequently on the unit service life and performance.
- Lubricate the rubber O-ring on the top-up valve when it is difficult to insert the adapter. Dow Corning MolyKote 55 O-ring Grease® is a suitable lubricant.



5 SERVICE INSPECTION PROCEDURES

A service inspection should be performed at least once a year. Service inspection includes a visual inspection, leakage test and a pressure relief valve (PRV) test. The leakage test will uncover any porosity in the cloth or loss of integrity in the inflation chamber seams. A pressure relief valve test may be performed at any time if the operation of the relief valve is questionable.

CAUTION: Ensure the work area is clean, smooth and free from sharp objects, splinters, and abrasive or corrosive materials.

Test conditions:

- Temperature 20 ± 3°C (68 ± 5°F);
- Barometric pressure 101.6 ± 6.8 kPa (28 to 32 inches mercury);
- Relative humidity of 80 % or less;
- Not in direct sunlight;
- Free from drafts;

Equipment and materials required for testing:

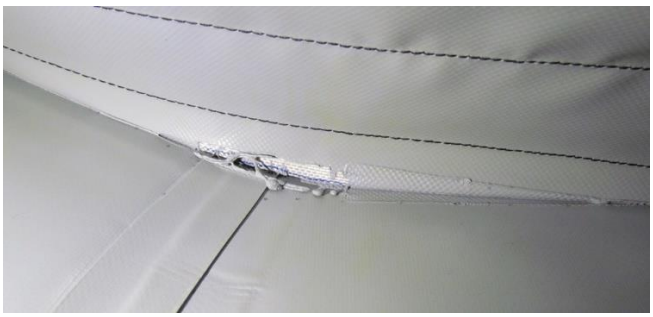
- Calibrated pressure gauge, scale increments not larger than 0.01 psig (0.07 kPA);
- Thermometer, scale increments not larger than 1°C (1.8°F)
- Barometer, scale increments not larger than 0.34 kPA (0.1" Hg)
- Air supply (shop air), free of dust, oil and moisture
- Work horses or table to lift the slide off cold surfaces such as a concrete floor

Equipment needed to troubleshoot:

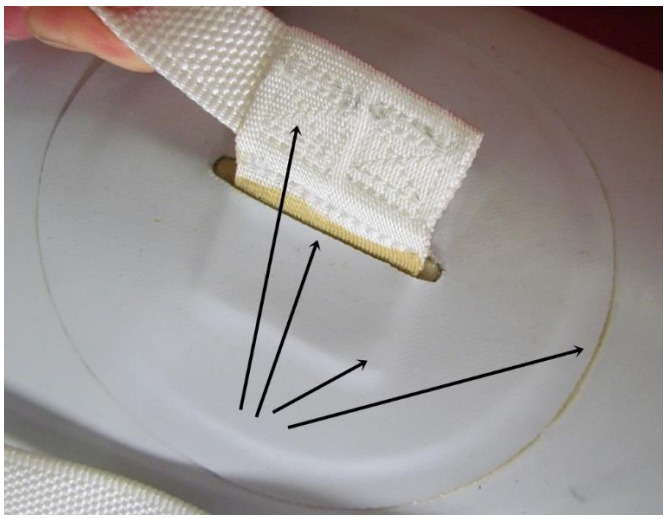
- Soapy water (using mild soap, non-detergent)
- Paint brush
- spray bottle

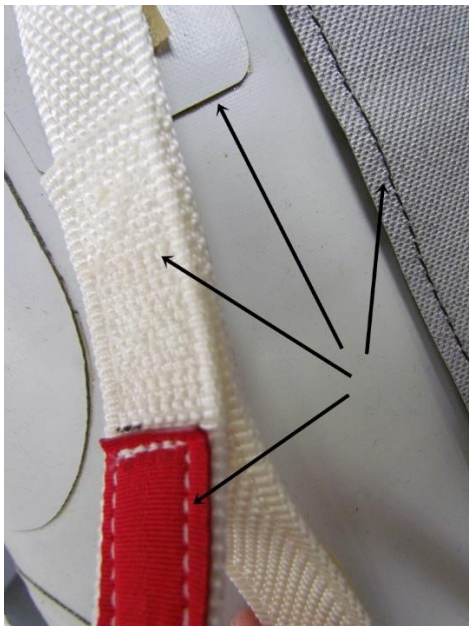
5.1 VISUAL INSPECTION

- Inspect the inflation chambers for tears, holes, abrasion, pigment-peeling.
- Inspect all seams for peeled edges or loose seam tape. Apply soapy water to determine if there is any air leakage where the seam tape has detached.

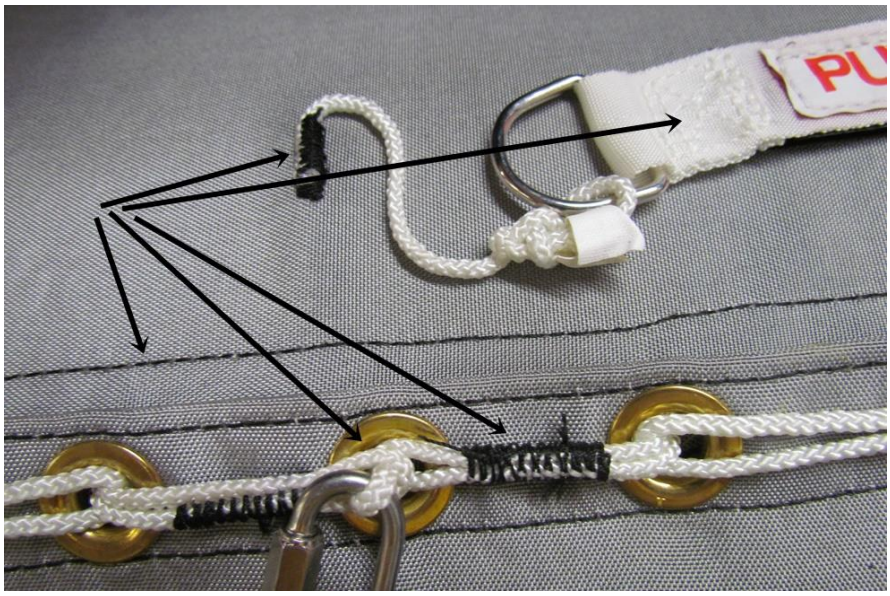


- Inspect the sliding surface and sub-floor for tears, holes, abrasion, loose stitching.
- Inspect all anchor patches (re-entry line, life line) and d-ring patches for peel, inspect webbing for tears, loose stitching, etc.





- Inspect slide hardware, damage to the valves, O-rings, flanges, caps and fittings.
- Inspect girt components, lacing strip, Velcro®.



Any defect or damage found should be fixed in accordance with Section 6, *Repair Procedures*.

5.2 AIR RETENTION TEST

This test measures loss of air pressure (therefore air leakage) from the inflatable chamber over a period of 6 hours. Since changes in temperature and barometric pressure have an effect on the pressure of the chamber, these are factored into the test. The test starts at 2.0 psig and after 6 hours the "corrected" measured pressure needs to be 1.83 psig or greater to pass.

NOTE: The slide should be supported to avoid the chamber temperature being influenced by a cold surface, such as a concrete floor.

1. Inflate the slide chamber to 2.0 psig.

2. Let stabilize for 30 minutes and then re-adjust the air chamber pressure to 2.0 psig.

3. Let stabilize for another 30 minutes (1 hour total). This allows the slide enough time to adjust to the pressure, and allows the air to reach ambient temperature of the room.

4. Re-adjust the air chamber pressure to 2.0 psig and record the room temperature (T1), the barometric pressure $P1_{amb}$, start time and date. The 6-hour test begins now.

5. Allow the slide to stand undisturbed for 6 hours.

6. After 6 hours, record the slide chamber pressure P_{tube}, the room temperature (T2), the barometric pressure $P2_{amb}$, and end time.

7. Calculate and record the "corrected" chamber pressure value, $P_{corrected}$, to compensate for variations in ambient conditions. Use one of the formulas below, depending upon which barometric pressure and temperature units were recorded. The result of either calculation will be in psig.

   Formula 1, where P_{tube} is in psig, T1 and T2 in °F, $P1_{amb}$ and $P2_{amb}$ inches mercury (Hg)

   $$P_{corrected} = P_{tube} + (0.03 \times (T1-T2)) + (0.491 \times (P2_{amb} - P1_{amb}))$$

   OR

   Formula 2, where P_{tube} is in psig, T1 and T2 in °C, $P1_{amb}$ and $P2_{amb}$ in kPa

   $$P_{corrected} = P_{tube} + (0.06 \times (T1-T2)) + (0.145 \times (P2_{amb} - P1_{amb}))$$

8. If $P_{corrected}$ has fallen below 1.83 psig, re-inflate the slide until the pressure relief valve opens and then closes. Check all valves, pressure monitor port, aspirator & aspirator port for leakage by applying soapy water with a paint brush. Check for leaks in the inflatable chamber by spraying the chamber and seams with the soapy water solution.

9. Note the location of any substantial leaks and repair as per the guideline in section 6. If the origin of the leak is a valve, replace the valve. If the leak is from a glued flange, the slide should be returned to Tulmar for repair.

5.3 PRESSURE RELIEF VALVE TEST

Prior to testing the pressure relief valve, a mild non-detergent soap can be applied to the valve surface to aid in detecting the opening of the valve. Bubbles will appear on the valve surface indicating excess pressure is being vented.

1. Inflate the slide and record the valve opening pressure. The relief valve should open at a pressure between 2.3 and 2.5 psig.

2. When the PRV opens, shut off the air supply and continue to observe the relief valve until air stops venting or bubbles cease to form indicating closure of the valve.

3. Record the pressure at the time of closure. The relief valve should close at or above 2.0 psig.

If a relief valve fails to open or close at the specified pressure or pressure interval, remove and replace the relief valve. A non-functioning relief valve could lead to slide damage or higher consumption of air supply.

Warning: Do not inflate the slide beyond 3.0 psig.

6 REPAIR PROCEDURES

6.1 GENERAL

Repairs to evacuation training slides normally consist of patching the damaged area with cloth patches.

When there is a lot of damage in a single location, then part panel replacement or total panel replacement is necessary. For part or whole panel replacement, the slide must be returned to TULMAR SAFETY SYSTEMS.

6.2 REPAIR ASSESSMENT

The area of damage is estimated by the size of the patch required to repair it.

Removal of coating that does not affect the base fabric is treated as an abrasion and can be adequately repaired with tape, or a small patch. If the base cloth is damaged it is treated as a hole.

Deteriorated and/or porous fabric is treated as a hole.

Coated fabric that has been contaminated with a substance which has deteriorated the coating and/or base fabric is treated as a hole. The affected area shall be cut out, cutting 25mm (1") larger than the damaged area. The cut must have rounded corners to avoid creating stress points that can tear further. If contamination exists, the remainder of the slide shall be checked for additional contamination.

Replacement of panels should not be attempted. For part or whole panel replacement, the slide must be returned to TULMAR SAFETY SYSTEMS.

6.3 REPAIR ENVIRONMENT & EQUIPMENT

Repairs are to be carried out in a room with the following characteristics:

- Temperature 20 °C +/-5 °C;
- Barometric pressure between 94.8 and 108.4 kPa (28 to 32 inches of mercury);
- Relative humidity less than 80 %;
- Free from direct sunlight;
- Free from drafts;
- An area with a clean smooth surface, such as a table with a melamine top;
- An area free from projections and having a clean, dry floor;
- Ventilation for eliminating VOC fumes.

It is imperative that tools used for repairs are always clean and free from abrasives. Service personnel should wear rubber or felt-soled footwear to avoid creating static electrical shocks.

Equipment required to perform the repair, **PVC slide**

- TULMAR repair Kit 5513-1758-001 (patches only, kit included with slide)
- Self-curing Vinyl Adhesive/Cement HH-66 or equivalent
- Scissors
- MEK, Toluene or isopropyl alcohol as a degreasing solvent
- Paint Brush used for adhesive application, if not included with adhesive

Equipment required to perform the repair, **neoprene slide**

- TULMAR repair Kit 5513-1406 (patches and #80 grit emery cloth, kit included with slide)
- 2-part self-curing neoprene adhesive
- Scissors
- MEK, Toluene or isopropyl alcohol as a degreasing solvent
- Paint Brush used for adhesive application

6.4 MATERIALS

Repairs must be made with the same materials as the section being repaired. Use the material/patches provided in the appropriate repair kit listed in section 6.3.

Adhesive is not included in the repair kits. Follow the adhesive manufacturer recommendations for application of the adhesive. The pot life of mixed adhesives must be complied with.

Emery cloth, #80-grit, is used for surface preparation prior to applying the adhesive (neoprene slides only).

6.5 SURFACE PREPARATION

Refer to the instruction leaflet included in the appropriate Tulmar repair kit.

For the neoprene slide, light sanding is necessary to rough up the surface of the cloth being bonded. Sanding enables the adhesive to better bond with the cloth. Good sanding is indicated by the removal of the shine on the surface of the cloth, and by the feeling of more drag as you slide a finger across the sanded area. Sanding is not to expose the base fabric of the cloth.

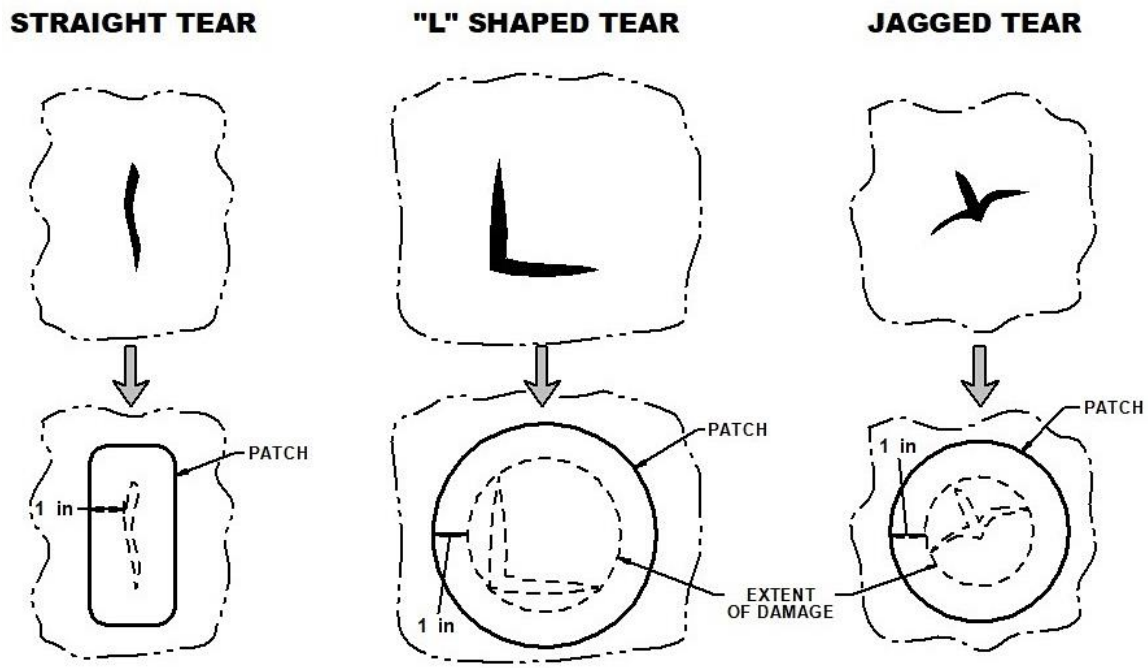
Both surfaces to be bonded are to be sanded (patch and slide chamber). Sanding should run parallel to the seam or to the edges of the cloth. The emery cloth must be checked periodically to ensure it is not worn or filled with sanding debris.

For both the neoprene and PVC slides, the repair patch and the chamber area to be repaired must be thoroughly cleaned using MEK, Toluene or isopropyl alcohol. Clean the surfaces to be joined with a pad wet (not dripping) with the solvent. Make sure there is no sanding dust left on the cloth after cleaning. A clean cloth indicates a properly cleaned surface. Let dry completely.

6.6 REPAIR PROCESS

1) Use the training slide repair kit pre-cut patches. The pre-cut patches can also be trimmed into a different shape or size.

2) The patch is to extend 25mm (1") beyond the damaged area on all sides. The corners of the patch are to be rounded and not square. For example, if there were a slit 6mm (¼") long, the patch would be 57mm (2 ¼") long by 51mm (2") wide, with rounded corners.



3) Use the patch centered over the area to lightly mark the location of the patch.

4) Prepare both the patch and chamber surfaces per section 6.5 above.

5) Apply adhesive as per manufacturer instructions.

6) Apply the patch to the area; start by centering the patch over the area. Then apply pressure to the center of the patch using an object with a smooth flat surface and rounded edges, or a roller with a hard surface. Apply pressure working from the center to the outer edges, removing any bubbles between the two surfaces.

7) To maximize results, allow the adhesive to cure for the time recommended by the manufacturer. Do not use or train on the slide without allowing the adhesive to fully cure.

6.7 ACCESSORY REPAIRS

NO REPAIR SHOULD BE DONE ON ANY ACCESSORIES INSTALLED ON THE SINGLE LANE TRAINING SLIDE. HOWEVER, REPLACEMENT OF SOME COMPONENTS OR PARTS ARE POSSIBLE AS FOLLOWS:

6.7.1 Valves and plugs

- Replace any hardware showing damage or rough edges.
- Replace valves showing damage, leakage issue or rough edges. Refer to the table at the end of the manual for the appropriate part number.
    1) To replace a valve, remove it using the socket tool provided by turning counter clockwise. It is recommended to vent out the slide chamber and let the pressure drop prior to completely removing the valve.
    2) Replace with a new valve, turning clockwise. Tighten with the socket tool, hand tight.
    3) Check the valve for leaks after installation. If there is leaking, re-tighten the valve.

6.7.2 Sliding Surface Replacement

The sliding surface of the training slide has strips of Velcro® installed underside, around the perimeter of the sliding panel.

When the sliding surface requires replacement due to wear or inadvertent damage, a replacement sliding surface should be ordered from TULMAR SAFETY SYSTEMS. The p/n of the sliding surface can be found on the underside of the sliding surface, near the girt end.

After removing the used or damaged sliding surface, install the replacement surface by laying it out over the sub-floor, aligning the Velcro® strips. Press firmly along the perimeter of the sliding surface to firmly secure it.

6.7.3 Girt Replacement

The two-point girt is designed with two lacing strips, making the girt removable and replaceable.

When the slide girt requires replacement due to wear, a replacement girt should be ordered from TULMAR SAFETY SYSTEMS. The p/n of the girt can be found on the underside of the top lacing strip panel. To install a new girt, follow the below procedure;

1) Remove the girt bar from the slide girt and lower the slide to the ground. A rope or strap attached through the girt panels to hold the girt end will make this an easier task.

2) Before undoing the lacing strip, observe how the cord loops are laced one into the next, towards the center loop.

3) Starting with the upper lacing strip, remove the quick link. The lacing strip will come apart easily.

4) Lace the new girt's upper panel onto the lacing strip on the slide. Re-install the quick link. Compare the upper lacing strip attachment with the lower to ensure the cords are looped in the same fashion.

5) Repeat steps 3 and 4 to attach the bottom portion of the girt.

6) The slide is now ready to be re-installed on the trainer as per section 3.2.2.

7 SERVICE PARTS LIST

The following table lists components available for standard single lane training slides. If you are looking to replace a part that is not listed below, please contact TULMAR SAFETY SYSTEMS.

SERVICE PARTS

Description	Tulmar Part No.
Replaceable sliding surface	As marked on the existing sliding surface
Replaceable girt	As marked on the existing girt
Repair Kit, **PVC, FOR WELDED SLIDE** (No adhesive included)	5513-1758-001
Repair Kit, **NEOPRENE, FOR GLUED SLIDE** (No adhesive included)	5513-1406
Top-up valve	63408
Pressure relief valve (PRV)	6348
Maintenance plug	6339
Adapter, universal flange to ¼" NPT	6418
Pressure gauge 0-5psi	6463-001
Socket Tool	6366
Pump adapter top-up	6314
O-Ring, replacement, for top-up valve 63408	3514

Table provided for reference only, information may change without notice.

For pricing, please contact Tulmar Safety Systems Inc.
Tel: 1-613-632-1282
Fax: 1-613-632-2030
aviation@tulmar.com

NOTES: