**Safe Work Requirement**

Working At Height Rescue Plan

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| Purpose The purpose of working at height rescue plan is to prevent prolonged suspension, perform rescue and treatment as quickly as possible and to identify and cure suspension trauma signs and symptoms. Suspension Trauma The medical effect of immobilisation in a vertical position is called Suspension Trauma. Medical term of suspension trauma is ‘Orthostatic Incompetence’. It presents an immediate threat of death to anyone immobilised in a vertical position for example hanging still in harness. Suspension trauma can only affect someone who is immobile specifically not using their leg muscles to any great extent. It does not normally affect people who wear a harness but who are actively moving about (climbing, caving, etc), suspended for only a minute or two (parachutists). The danger is when someone is unable to move, or forgets to bother.  **2.1 General Signs and Symptoms of Suspension Trauma**  Signs and symptoms of suspension trauma include:   1. General feelings of uneasiness 2. Dizzy, sweaty and other signs of shock 3. Increased pulse and breathing rates 4. Then a sudden drop in pulse & Blood Pressure 5. Instant loss of consciousness   If not rescued, death is certain from suffocation due to a closed airway, or from lack of blood flow and oxygen to the brain. Rescue Plan Rescue plan includes formulation of rescue team, equipment used during rescue and the steps of rescue procedure. Rescue Team Rescue team consists of the following members:   1. Rig Manager as Man in Charge of the whole operation. 2. On duty Tool Pusher as Leader of rescue team. 3. Two Designated Floor man as Rescue Team 4. Rig Medic 5. Crane Operator（if required）  Equipment involved  1. Basket Stretcher 2. Man-riding 3. Cutter (to Cut the Lanyard if Required) 4. Crane 5. Tag lines 6. Rollgliss Rescue Kit   **Kit Components**  This rescue kit is a system for performing a rescue of someone suspended at height.  The kit includes the following components:   1. Rollgliss Block :side plates, drum, shaft/Axle, Rope guide & protective edge cap 2. Pulleys: Side Plates, Pulley wheel and shaft 3. Rope Control Device: Body, jaw and Stop 4. Carabiners 5. Securing straps: Webbing, Buckle and thread 6. Anchoring sling: webbing and thread 7. Rope system: Rope and thimble 8. Carrying bag  Rescue Procedure **Option 1: Using basket stretcher (when crane/winch and rescue team can easy to reach and operate, especially when injury on the monkey board)**   1. First of all event is communicated to all concerned. 2. Rig Manager and WSL or client’s representative will inform their respective base camps about the event for any emergency help. 3. Rig Medic will stand by along with Emergency Kit. 4. Tool Pusher will act as rescue team leader and supervise all rescue activities. 5. Driller will stop the operations 6. Crane operator will be called 7. Basket stretcher will be brought to rig floor or catwalk for the purpose of rescue 8. Floor man will connect the Basket stretcher with the Air winch or crane (Which ever option is feasible) and rescue team of two designated floor man with required equipment will go up to the point where victim is in hanging position. 9. Rescue team will release the victim from fall arrester equipment, then put the victim in the basket stretcher and fix the victim well, and considering the signs and effects of suspension trauma, then bring him down to the rig floor. 10. Victim will be brought down to the ground through crane with the help of tag lines and transferred to the clinic for the further treatment. 11. Rig medic will be ready to give him first aid. 12. If Victim Condition is serious then he will be taken to hospital through ambulance.   **Option2: Apply Rollgliss Rescue Kit(when any condition)**  The Rogliss R350 rescue system is a modular ascending and descending rope rescue system. The device is used to rescue an individual by either raising or lowering the victim to the ground or next level. The device is anchored over the victim, once anchored, a rescuer can lower him or herself down and attaches to the victim (picking them). The rescuer then raises both up slightly to relieve the pressure from the victim’s primary fall protection system in order to detach it. Once detached, the rescuer can then either lower or raise him/herself and the victim to a safe working location. After a safe rescue, the system is simply removed and stored in the carrying bag for future use.  Follow up Usage Instructions   1. Prior to completing the rescue: Seek medical assistance/support – 2. Once someone has taken a fall and is suspended, complete an immediate mental risk assessment. 3. Even if the person is not injured or is not unconscious, it is recommended medical attention/assistance be immediately sought. 4. Follow your site rescue plan and notify appropriate personnel that if required, you are going to perform a rescue. 5. If fall protection equipment is the only option, the rescuer must be a suitably trained/competent person to work at height. 6. They should put on an approved full body safety harness, ensuring it is correctly adjusted, and commence the climb/descent to the location. 7. The rescuer shall remain fully protected from a fall at all times using the appropriate combination of twin lanyards, SRLs lifelines or other suitable equipment. 8. The second person should wait at the bottom of the work area to assist with the descent and/or instruct and direct medical support when it arrives, or to administer first aid. 9. Communication - Keep verbal contact with the person suspended at all times. Ongoing communication will enable you to maintain an understanding of their physical condition and to determine if they are deteriorating. 10. Try to get them to remain as calm as possible but to keep moving their legs while trying to move into a position that is as comfortable as possible.  Using the Kit  1. **Before Use**   Before each use of this or any rescue or personnel riding system equipment, carefully inspect it to assure that it is in serviceable condition. Check for worn or damaged parts. Ensure all screws are present and secure. Inspect the rope for cuts, fraying, burns, etc. Refer to section 5.0 for further inspection details. Do not use if inspection reveals an unsafe condition.   1. **Planning**   Plan your rescue or personnel riding system and how it will be used before starting your work. Take into consideration factors that affect your safety before, during, and after a fall. The following list gives some important points to consider when planning your system:  **Anchorage:** The anchorage location must be carefully selected to reduce possible swing impact hazards and to avoid striking an object during a fall. Do not work above the Rollgliss R350 anchorage point. Anchorages selected for rescue or work positioning systems shall have a strength capable of sustaining static loads applied in the directions permitted by the Rollgliss R350 of at least 2,500 lbs. for rescue or 3,000 lbs. for work positioning  **Swing Impact:** Swing impacts may occur when a suspended worker uses some means to move their seat or sling from directly beneath their anchor point. The force of striking an object in a swing may cause serious injury or death. Minimize swing impacts by working as close or directly below the anchorage point as possible. Do not permit a swing if injury could occur. Swinging will significantly increase the clearance required when a self retracting lifeline or other variable length connecting subsystem is used for the backup fall arrest system. **See Figure 1**    Figure 1 Swing Impact  **Total Fall Distance:** Should the suspended user release the line while using the system, the user will descend until the web securing strap (connection between the user and the rope gripping handle) becomes taut. Therefore the minimum clearance below the suspended user must be greater then the total fall distance. The total fall distance is the distance measured from the onset of a fall to the point where the fall is arrested. A number of factors can influence the total fall distance including; user's weight, anchorage location relative to the fall (swing impact), body support with a sliding D-ring, etc. With the anchorage located directly overhead, it is recommended that at least 2 ft. of clearance be maintained between the work level and the nearest obstruction in the fall path. See back-up fall arrest system instructions for clearance requirements relating to that equipment  **Sharp Edges:** Avoid working where the rope will be in contact with or abrade against sharp edges. If working with this equipment around sharp edges is unavoidable, provide protection by using a heavy pad over the exposed sharp edge.  **Rescue:** Should a fall occur, the employer must have a rescue plan and the means at hand to implement it.   1. **BODY SUPPORT:**   When using DBI/SALA Rollgliss R350, it is recommended that a full body harness also be worn for connection to the independent personal fall protection system. The D-ring on the back between the shoulders (dorsal D-ring) should be used to connect the back-up fall protection system.    Figure 2 Full Body Harness   1. **SET UP AND INSTALLATION**   The anchor may be a tripod, building structure or other suitable anchoring point. See section 3.4.2 for anchorage strength requirements.   1. Attachment can be made directly through the top loop in the Rollgliss R350 housing using the connection carabiner provided or with a connection sling. **See Figure 3**     Figure 3 Anchoring   1. Rig the Rollgliss R350 system directly overhead of the intended working area. If the Rollgliss R350 is not rigged directly overhead, a swing impact situation could occur. Swing impacts occur when a worker swings and strikes an immovable object. **See section 3.4.2 and Figure 1** 2. **NTERCHANGEABLE PULLEY SYSTEM** **MODELS:**   Depending on your needs, the ratio of the Rollgliss R350 system can be changed on the interchangeable pulley systems. As the ratio is changed the available travel distance of the system is also affected. When changing the system ratio, make certain the travel distance is acceptable for your application. Make sure the ratio is applicable to your application and the operator is capable of performing the necessary work. **See figure 4 and table 1.**   1. **CONNECTING STATIONARY PULLEYS:**   The following policy applies in respect of the pulley variations as shown in Figure 4 and section 3.4.5.    Figure 4 Pulleys   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Table 1 Recommended Ratio | | | | | | S/N | Number of people | Ratio | Working Load | Example | | 1 | 1 individual descending | 1:1 | 60-310ibs | Leaving one person down incline for working or rescue position | | 2 | 2 individual descending | 2:1, 3:1, 4:1, 5:1 | Maximum 620ibs | Lowering up to two people for rescue from elevated structure | | 3 | 1 Individual ascending  and descending | 3:1, 4:1,  5:1 | Maximum  310 lbs. | Lifting and lowering one person for personal riding, work positioning or rescue in confined space/general work area. | | 4 | 2 Individuals ascending and descending | 5:1 | Maximum  620 lbs | Lifting or lowering two people for rescue in confined space/general work area.\* | | \*Lifting two people in emergency rescue or life threatening situations should be limited to 6 ft. or less, if possible, when a 3:1 or 4:1 ratio is used | | | | |  1. The appropriate ratio must be selected using Table 1, the length of rope available, and your application requirements. 2. The rope should be prepared in such a way that it is possible to thread it into the prospective pulleys. The rope should be threaded for your selected ratio before it is actually inserted into the pulley. **See Figure 5**. Take note of drum rotation direction.     Figure 5 Assembly   1. Insert the stationary pulley onto the rope. 2. The upper deflector guide (or notch) should be inserted into the fixed bolt on head (Figure 6).     Figure 6   1. The locking bolt should also be loosened by simultaneously depressing the front and rear pin, and pushing to the right against the spring (Figure 6) 2. Insert the deflector guide (or notch) fully allowing the locking bolt to retract and lock into place.     Figure 6   1. To ensure the pulley is locked in position, apply pressure to the pulley by pushing the pulley side to side (**Figure 7**).     Figure 7   1. **CONNECTING TRAVELING PULLEYS:**   The following policy applies in respect to the pulley variations as shown in Figure 4 and section 3.4.5.   1. Rotate or swivel the supporting face plates to expose the roller on the pulley, thus enabling the rope to be threaded through the pulley (**Figure 8)**. Thread rope into pulley. 2. Bring the supporting face plates together, then snap on and lock the carabiners through the holes provided (**Figure 9**).     Figure 8 Figure 9 OPERATION:  1. Don appropriate body support device for your application (example - boatswain’s chair, full body harness). Follow donning instructions furnished with body support. Always contact medical personnel before moving, repositioning, or applying rescue gear to injured personnel. 2. A rope control device must be used to aid in raising or lowering operations and to suspend a user at a work location. Attach the rope control device to the free end of the rope. To attach, pull back and hold the spring loaded stop. To open the jaw, pull back fully. Install the rope into the device, release the jaw and release the stop. See Figure 10. A rope control device must be used with Rollgliss R350 systems.     Figure 10 Raising & Lowering   1. Attach one end of the web-securing strap to the user and one end to the rope control device by choking it off. Adjust the length of the web securing strap (8901000) to keep the rope control device within the user’ s reach. Attach an appropriate body support to the eye of the traveling pulley with a carabiner. Carefully allow the user’ s body weight to be supported by the system. **See Figure 11.**     Figure 11   1. To raise, pull down on the rope control device. Hold the free end of the rope with one hand and slide the rope control device back up the rope. Pull down on the rope control device to further raise. Repeat this procedure until the proper location is reached. **See Figure 12.** 2. **To** lower, grip the free end of the rope with one hand and maintain tension. Pull open the spring loaded jaw and slowly allow the rope to pass through the rope control device. Protective hand wear may be required to prevent hand injury. Always maintain a safe speed. See Figure 12.     Figure 12 Raising & Lowering  **WARNING:** *If rope tension eases during lowering, the person being lowered may have reached a work level or obstruction. Do not continue operation without communicating with the person being lowered. Always maintain tension on the personnel line. Slack line could cause a free fall situation.*   1. For long descents, descents with heavy loads, or when multiple descents are required, a optional rope control device with a braking aid is available. After passing the rope through the rope control device, route it alternately over and under the pins on the braking aid. See Figures 13 and 14.     Figure 13 Figure 14   1. To stop at a work location, slowly release the rope control device and allow the web securing strap to become taut.  FIRST AID The person at the bottom of the working platform should now be able to touch the rescue. The second rescuer should grab the rescue’s legs in each hand and ensure they are kept in a bent position. Do not bring the person’s legs together – it will be very uncomfortable for them while still suspended in the harness. TRAINING It is the responsibility of the user to assure they are familiar with these instructions, and are trained in the correct care and use of this equipment. User must also be aware of the operating characteristics, application limits, and the consequences of improper use of this equipment.  **Important:** Training must be conducted without exposing the trainee to a fall hazard. Training should be repeated on a periodic basis INSPECTION **6.1 FREQUENCY:**  Before Each Use: Visually inspect per steps listed in sections 5.2 and 5.3.  **Monthly:** a competent person other than the user should do a formal inspection of the Rollgliss R350. See sections 6.2 and 6.3 for guidelines  **Annual:** It is recommended that the Rollgliss R350 be serviced by a factory authorized service center or the manufacturer. Extreme working conditions may indicate the necessity to increase the frequency. Annual servicing shall include, but not be limited to, an intensive inspection and cleaning of all internal and external components. Failure to provide proper service may considerably shorten product life and could endanger performance. A record of annual service dates can be found on the ID/Warning label of the Rollgliss R350.  **IMPORTANT:** Extreme working conditions (harsh environment, prolonged use, etc.) may require increasing the frequency of inspections.  **6.2 INSPECTION STEPS FOR ROLLGLISS R350:**  Step 1. Inspect for loose screws and bent or damaged parts.  Step 2. Inspect the side plates for distortion, cracks or other damage.  Step 3. Inspect the rope for cuts, severe abrasion, or wear. Check for contact with acids or other chemicals.  Step 4. Inspect to make sure that the rope lies correctly in the pulley.  Step 5. Inspect the contact surface of the drum for any sign of wear or strain. Check for distortion in the top loop.  Step 6. Do not disassemble the Rollgliss R350 block. It is not user serviceable. See section 6.0.  Step 7. With the unit properly mounted from any sturdy structure, test the functional load   1. Make sure that the rope drum locks in the clockwise direction (reverse lock operative) see Figure 21. 2. Make sure that the rope drum rotates freely in the counterclockwise direction (reverse lock not operative) see Figure 15.     Figure 15   1. Make sure the stationary pulleys can be inserted and the locking bolt locked; that the locking pins in the locked state protrude about 5/32 in.   **6.3 INSPECTION STEPS FOR PULLEYS:**  Step 1. Inspect that the pulleys are clean and free from grease.  Step 2. Inspect the contact surface of the pulleys for any sign of wear or strain. Check for distortion in connecting loops.  Step 3. Inspect side plates for distortion, cracks, or other damage.  Step 4. Make sure that the pulley can be rotated freely and without resistance.  If inspection or operation reveals a defective condition, remove the Rollgliss R350 from service immediately and contact an authorized service center for repair.  Inspect other components of your system according to the instructions supplied for that item (i.e. full body harness, self retracting lifeline, etc..). MAINTENANCE - SERVICING - STORAGE  1. Periodically clean the exterior of the Rollgliss R350 with a soft damp cloth without using solvents, acids or alkaline solutions. 2. Clean the rope with water and mild soap detergent solution. Rinse and thoroughly air dry. Do not force dry with heat. Immediately wash entire rope assembly if it has been exposed to acidic vapors 3. Rope replacement, as well as additional maintenance and servicing procedures, must be completed by a factory authorized service center. Both authorization and a return number must be issued by DBI/SALA. Do not attempt to disassemble the Rollgliss R350. See section 6.1 for servicing frequency. NOTE: Do not lubricate any parts. 4. Clean and store the body support and associated system components according to separate instructions provided with that equipment. 5. Store your Rollgliss R350 in cool, dry, and clean environment out of direct sunlight. Avoid areas where chemical vapors may exist. Inspect the Rollgliss R350 after any period of extended storage |