

IAS-ANZ

Designed and manufactured in Australia

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**SRTE Riggers Mate™** patented

Thankyou for selecting SRTE **Riggers Mate™** to complement your system. We at SRTE are confident that you will be happy with your acquisition. If you have any questions or product suggestions, relating to this or any other product in our range please do not hesitate to contact our Customer Service Centre at the above address.

SRTE **Riggers Mates™** were originally developed for retrieval work by industrial personnel, and are widely accepted by rescue personnel for use in access work.

The ingenious design of the SRTE **Riggers Mate™** incorporates an 80mm diameter ratchet (trigger) style sheave, with an ascender cam. It is the cam that actually suspends (supports) the load between hauling (raising or lowering) operations. Excessive speed activates the Fall Arrest System on the SRTE **Riggers Mate™** suspending the load. After a fall the SRTE **Riggers Mate™** may quickly and easily be reversed by manually pulling down on the haul line approximately 100mm (or until you can feel the tension release) therefore enabling the load (or person) to be raised (and/or lowered) to safety or to continue with the job. The SRTE **Riggers Mate™** may also be used as a conventional pulley by disengaging (or bypassing) the braking cam. Disengaging the cam being the preferred method as the cam can be re-engaged quickly and simply. SRTE **Riggers Mate™** with the CAM in the ENGAGED position the maximum load at CAM 1:1 – 900kg. SRTE **Riggers Mate™** with CAM in the DISENGAGED position the maximum load at PULLEY 1:1 – 5000kg. SRTE **Riggers Mates™** are permanently marked with MAX Load and SWL at both Pulley and Cam. When using SRTE **Riggers Mate™** in a system only use the SWL at Cam, SWL at pulley only to be used if the SRTE **Riggers Mate™** is used as a conventional pulley with the CAM disengaged.

The body of the SRTE **Riggers Mate™** is machined from extruded aluminium. The cheeks extend beyond the surface of the rope to protect the rope from abrasion. The 80mm stainless sheave encases the ratchet (trigger for the fall arrest system) and the two 60mm aluminium sheaves aid mechanical advantage. **Note:** the option is available to have all sheaves in the same material, i.e., aluminium or stainless. The axles, cam, catch and springs, etc., are stainless steel and although for maintenance purposes the unit is not riveted, lock nuts are used to deter untrained personnel from tampering with the unit. You may combine the SRTE **Riggers Mate™** with conventional pulleys to increase the mechanical advantage and/or lifting capacity (i.e., 4:1 25kg effort required to lift a load of 100kg – 4:1 a maximum load of 3500kg can be lifted as the additional pulleys reduce the load back to 900kg at Cam). Alternatively the SRTE RED Kit (Riggers Extrication Device) comes complete with SRTE **Riggers Mate™**, SRTE Pulley, Ascender, Harnesses, Slings, Karabiners, SRTE Equipment Pack and Rope (cut to required length) **Caution:** Mechanical advantages produce incredible lifting power – reducing the amount of effort required to lift a load. The SRTE **Riggers Mate™** can be maintained and/or re-rigged in the field, unlike sealed units with hidden internal mechanisms.

HOW TO USE YOUR SRTE RIGGERS MATE™

This instruction sheet is not a fully comprehensive instruction manual.

Contact TRAC INTERNATIONAL on (61) 0418 674 678 for information on SRTE approved Training Courses.

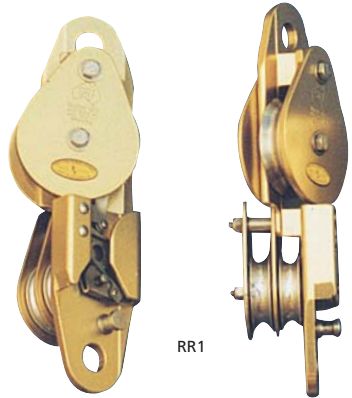
The Mechanical Advantage you require will govern the type of SRTE Pulley you use in conjunction with the SRTE **Riggers Mate™**.

BELAY and/or RETRIEVAL (Set Up – Instructions follow)

Person 1 – THE OPERATOR – Controls all working operations of the RED Kit, may assist (backup) the worker if required. The operator must maintain verbal and/or visual contact with the worker at all times.
Person 2 – THE WORKER – Guides the operator, enabling the operator to position the worker correctly, so the worker can perform the tasks efficiently. The worker must maintain verbal and/or visual contact with the operator at all times.

SELF BELAY and/or SELF RETRIEVAL

Person 1 – THE WORKER – Controls all working operations of the RED Kit and performs the tasks efficiently. Person 2 – NON EXISTENT – No assistance (backup) available. **Note:** SRTE RECOMMENDS TO ALWAYS HAVE A MINIMUM OF TWO PEOPLE PER OPERATION (i.e., operator and worker) FOR SAFETY REASONS



RR1

↓ Lowering – Feeding Rope and Lowering Load

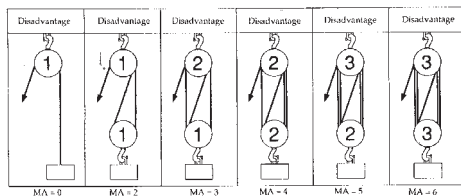
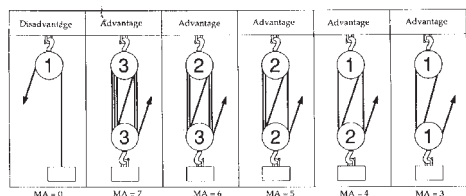
1. Push CAM down with your finger as far as you can.
2. DO NOT TOUCH CATCH – TOUCH CAM ONLY.
3. The ROPE can not come out because the cam will not open completely, the catch prevents that from happening.
4. With cam pushed down this allows the rope to run freely through the ascender – CAM DISENGAGED.
5. Slide Ascenders down the tail end of the rope away from the SRTE Riggers Mate™ approx 1 foot/ 30 cm.
6. Release cam, cam will return to normal position locking rope in place – CAM ENGAGED.
7. Remove slack from lanyard to ascender hence lowering the load.
8. Always use TWO ascenders when lowering and move each ascender in intervals (approx 30cm movement).
9. Repeat steps until desired position reached.

↑ Raising – Retrieving Rope and Raising Load

1. It is not necessary to touch the cam with you finger as you do when you lower the load.
2. Simply slide ascender UP the tail end of the rope towards the SRTE Riggers Mate™ approx 30 cm.
3. Allow the ascender to re-grip rope before pulling the handle of the ascender DOWN (preferably by stepping down on the leg loop) hence raising the load.
4. Always use TWO ascenders when raising and move each ascender in intervals (approx 30 cm movement).
5. Repeat steps until desired position reached.

MECHANICAL ADVANTAGE (MA) – Disadvantage and/or Advantage

The following diagrams indicate the type of equipment required to obtain particular mechanical advantages. After viewing these diagrams you will notice that when OPERATING THE SYSTEM (controlling the tail end of the rope) from the TOP, the last sheave only acts as a re-directional sheave and supports little load (this is called Disadvantage – pulling with gravity); whereas, when OPERATING THE SYSTEM (controlling the tail end of the rope) from the BOTTOM, the last sheave supports the load increasing the mechanical advantage (this is called advantage – pulling against gravity). Although using a system which works in the advantage, increases your mechanical advantage it is not an efficient system for belay, retrieval, self belay or self retrieval when using auto locking pulleys. SRTE recommends having auto lock specialised pulleys at the top of the system and a minimum of two people per operation (i.e., operator and worker) for safety reasons.



PRODUCT SPECIFICATIONS AND TEST DATA

Construction – Only the highest grade Stainless Steel and Extruded Aluminium used. SRTE Riggers Mate™ will not twist or damage the rope in any way under normal use, giving your rope a much longer life. **Test Data** – Body Strength Test – Karabiners were placed at either end of the RR1. Load was gradually increased. Pulley Strength Test – 11mm Kinnears Rope was threaded through the SHEAVE ONLY. Load was gradually increased. CAM Strength Test – 11mm Kinnears Rope was threaded through the CAM ONLY. Load was gradually increased. **Comments** – the karabiner hole (Becket) FAILED in all instances. The sheave and axle were still in working order. Refer to individual pulley notes for results. **Note:** Pulleys have been slightly under rated for your added safety. Do not load pulley for more than it is marked. Listed factors SWL are for lifting EQUIPMENT – if lifting LIFE half marked figures. **Results** – Test 1 – 5000kg karabiner holes (Beckets) failed on SRTE Riggers Mate™. – Test 2 – 5000kg Karabiner Hole (Becket) failed on SRTE Riggers Mate™. The sheave and axle were still in working order. – Test 3 – 900kg cam tore sheath.

Model	Number of Sheaves	Material of Sheaves	Number of Beckets	Material of Cheeks	Outer Dia of Sheave	Inner Dia of Sheave	Rope Size	Length	Width	Thickness	Maximum Load	SWL (5:1)	Weight
RR1	3	1 Stainless 2 Aluminium with Stainless Steel Cam	2	Aluminium	80mm 60mm	69mm 49mm	11mm	300mm	95mm	95mm	5100kg 900kg	1000kg	1.8kg

KIT

RED6 (6:1 Kit)

- 1 x Triple Sheave Riggers Mate (RR1) and Karabiner (5000HT)
- 1 x Hand Ascender (A1 811) with Lanyard (WL700) and Karabiner (Wide6) and Leg Loop (LL1)
- 1 x Anchor Sling (AS5000)

- 1 x Triple Sheave Pulley (P33) and Karabiner (4000HT)
- 1 x Full Body Harness (Fweb-B) for WORKER
- 1 x Sit Harness (Wedge) for OPERATOR
- 1 x Equipment Pack (EB100)

Plus ROPE (refer to F to work out required length)

F – ROPE LENGTH CALCULATIONS

EXAMPLE 1 – Operator controls Workers descent
 $(DL \text{ [Drop Length]} \times MA \text{ [Mechanical Advantage]}) + 3m$ [minimum 3m for knots and Frame Height, etc]
 RED 6:1 with Operator and Worker, 15m drop = 93m
 $(15 \times 6 + 3 = 93)$

this will ensure that the operator has sufficient rope to lower the worker completely to the bottom and also allows for the height of a working frame (i.e., Tripod)

EXAMPLE 2 – The Worker controls descent
 $(DL \text{ [Drop Length]} + 1 \times MA \text{ [Mechanical Advantage]}) + 3m$ [minimum 3m for knots and Frame Height, etc]
 RED 6:1 with Worker only, 15m drop = 108m
 $(15 \times 7 + 3 = 108)$

this will ensure that the worker has sufficient rope to lower themselves completely to the bottom and also allows for the height of a working frame (i.e., Tripod)

Caution: All SRTE **Riggers Mate™** are safe devices if used correctly. However it is the obligation of the operator to determine whether or not each item is suited for its intended use. In no event shall liability extend beyond the replacement cost of any item. However no responsibility is implied or assumed for any accident or injury caused or related to its use correct or otherwise. It is recommended to have a second safety belay when using this equipment and always use two separate anchor points. The manufacturer recommend not to exceed 500kg as different ropes and conditions can reduce rope strength immeasurably.

Guarantee: All products manufactured by SRTE are guaranteed against defects in material and workmanship. Any warranty claims will be assessed and, if appropriate, we will repair or replace at SRTE's discretion. SRTE will not repair merchandise which has been altered in any way.

Note: Warranty void for non-factory approved adjustment and all freight charges in these cases are the responsibility of the customer.

A – BEFORE YOU START

1. **THREAD ROPE** – through SRTE **Riggers Mate™** and SRTE Pulley(s) using the tail end of the rope goes through the 80mm sheave (2nd last) then the cam (last). **ENGAGE CAM**.
2. Lock SRTE **Riggers Mate™** and SRTE Pulley Cheeks closed with a screw gate karabiner.
3. Securely attach to working frame (i.e., tripod, beam, etc.)
4. Test rigging – this ensures all units are in working order and that cam is active.
5. Adjust frame height (i.e., tripod) if appropriate.
6. Operator should securely attach an SRTE Hand Ascender via a SRTE Karabiner and SRTE Lanyard to SRTE Harness – for better control two hand ascenders should be used (this prevents rope burn to hands). To prevent back (lumbar) problems use SRTE Leg Loops – this will ensure that the operator pulls with their lower body and not their upper body.
7. Connect SRTE Ascender to the tail end of the rope – remove all slack between SRTE Ascender and SRTE **Riggers Mate™**.
8. Securely attach load/worker, etc., using a locking karabiner.

B – DESCENDING – LOWERING ↓

1. Ensure CAM is ENGAGED.
2. Hand ASCENDER should be supporting the load – If necessary, the operator should be anchored to the ground, to help control the load/worker, etc.
3. To LOWER slide ascender(s) in intervals (approx 300mm movement) until desired position reached. **Note:** verbal/visual contact should be kept with the worker at all times.
4. If the operator loses control of the tail end of the rope or in the case of a worker climbing down a ladder and the worker slips off the ladder, the SRTE **Riggers Mate™** will automatically suspend the load.
5. To RESET – Pull down on the tail end of the rope approx 10cm or until you can feel the tension release. Worker may continue with job or if injured maybe hauled to safety.

C – ASCENDING – RAISING ↑

1. Ensure CAM is ENGAGED.
2. The CAM on the SRTE **Riggers Mate™** should be supporting the load.
3. To RAISE slide ascender(s) ↑ in intervals (approx 300mm) until desired position reached. **Note:** verbal/visual contact should be kept with the worker at all times.
4. If the operator loses control of the tail end of the rope or in the case of a worker climbing down a ladder and the worker slips from the ladder, the SRTE **Riggers Mate™** will automatically suspend the load.
5. To RESET – Pull down on the tail end of the rope approx 10cm or until you can feel the tension release. Worker may continue with job or if injured maybe hauled to safety.

D – LOCKING OFF – SECURING

1. **LOCKING OFF** – Bring the tail end of the rope up and tie a half hitch around all travelling rope.
2. Alternatively anchor the SRTE Ascender (connected to the tail end of the rope) to the ground.
3. **UNLOCK** – Using a firm grip untie the tail end of the rope or remove anchor on SRTE Ascender. Never remove SRTE Ascender from the tail end of the rope.

E – CHANGE OVERS

Descending to Ascending

- Stop ↑
- Start ↓
- Ascend/RAISE

Ascending to Descending

- Stop ↑
- Start ↓
- Descend/LOWER

