

IAS-ANZ



Designed and manufactured in Australia

# SINGLE ROPE TECHNIQUE EQUIPMENT (SRTE)

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## SRTE Pulleys

Thankyou for selecting SRTE Pulleys 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 Pulleys and SRTE Specialised Pulleys were originally developed to fill the gap left by other manufacturers that did not make pulleys small and strong enough for personal equipment kits. From such small beginnings SRTE now has the largest range on the market through a combination of Single, Double or Triple Sheaves, Single or Double Becket (karabiner hole), Aluminium or Stainless steel Sheaves or Cheeks, Sintered/Brass, Ball or Roller Bearing.

All SRTE Pulleys and SRTE Specialised Pulleys are permanently stamped with MAX Load and SWL at both the Pulley and Cam (if applicable). When using Specialised Pulleys in a System only use the SWL at the Cam. The SWL at the Pulley can only be used if Cam is disengaged.

All SRTE Pulleys have swivel cheeks that extend beyond the surface of the rope to protect the rope from abrasion if pressed against an object. This Swivel Cheek also allows you to put the rope in the pulley at any point. Sheaves have sintered bronze bearings or ball bearings with stainless steel axles. Most SRTE Pulleys (excluding a few specialised pulleys – which have been bolted and Loctite applied) are permanently riveted for your protection, deterring untrained personnel from tampering with them.

By combining SRTE Pulleys and SRTE Specialised Pulleys together you can increase the mechanical advantage making your systems as unique and specialised as your situation. Alternately, SRTE have extrication kits available (i.e., VED [Rescuemate] and RED [Riggersmate]) which incorporate the Rescuemate or Riggersmate with Pulley(s), Ascender(s), Karabiner(s), Harness(es), Equipment Pack(s) and Rope (cut to required length).

### HOW TO USE YOUR SRTE PULLEYS AND SRTE SPECIALISED PULLEYS

This instruction sheet is not a fully comprehensive instruction manual.

Contact TRAC INTERNATIONAL on (611) 0418 674 678 for information on SRTE approved Training Courses.

The purpose for using SRTE Pulleys and/or SRTE Specialised Pulleys will govern the type(s) of pulley(s) you use. Additional SRTE Pulleys may be used in to increase mechanical advantage.

**! It is your responsibility to ensure that you do not exceed the safe working load of any component in the system.**

#### A – BEFORE YOU START

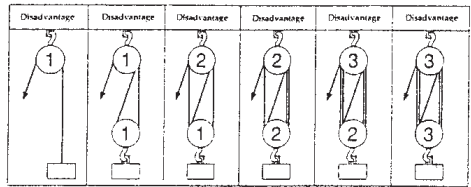
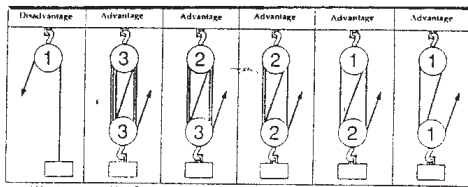
- Swivel the Pulley's Cheeks open.
- Insert the Rope.
- Swivel the Pulley's Cheeks closed.
- Using a screw gate karabiner, lock all cheeks closed. This will ensure that the rope will not slip out while in use.
- Attach the Pulley to the anchor point (i.e., tripod or a beam).
- Warning** – Never use a swivel cheek pulley in the open position: all Karabiner Holes must be aligned and locked closed with a Screw Gate karabiner. For more detailed instructions on Specialised Pulleys refer to individual instruction sheets.

#### B – MAINTENANCE

- WASH – in clean water (or Kerosene if gritty). The Cheeks, Sheaves and Cam will be stiff and hard to pivot if gritty.
- After washing oil Axle, Bearing, Cam Spring and Catch Spring (Allow to stand so excess oil may drip out before being put back into service).
- Worn Teeth on Cam may interfere with proper operation of Auto Lock Pulleys. Return to the manufacturer for cam replacement.
- Discard an SRTE Pulley or SRTE Specialised Pulley if the Karabiner Hole or Axle appears stressed.
- Your Quality Systems may require items to be returned to the manufacturer for periodic service. SRTE requires Auto Lock Pulleys to be returned at least annually for service. Please contact our Customer Service staff before returning your SRTE Pulley or SRTE Specialised Pulley for service.

#### MECHANICAL ADVANTAGE (MA) – Disadvantage and Advantage

The following diagrams indicate the types of equipment required to obtain particular mechanical advantage. You can see that when operating the system (controlling the tail end of the rope) from the top, the last sheave only acts as a redirectional 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 that you use 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



## SRTE SPECIALISED PULLEYS

**Multiple Sheave Pulleys** – These pulleys were designed to be used to increase the mechanical advantage in systems.

**Double Ended Pulleys (Double Becket Pulleys)** – These pulleys were designed to be used as either part of a system or as a conventional pulley. The karabiner hole (becket) at the bottom of the pulley can be used for additional rigging, e.g., additional pulleys may be linked underneath.

**Short Cheek Pulleys** – These pulleys were designed to be used as either diversion sheaves or as conventional pulleys. Here, mallion rapides maybe used instead of karabiners to cut down on slack.

**Long Cheek Pulleys** – These pulleys were designed to be used as either a jockey wheels or as conventional pulleys. Here, the karabiner hole within the cheek (centre of cheek) can be used for additional rigging, e.g., additional pulleys may be linked underneath to control the speed or direction of the pulley, or to act as a backup anchor point for the load.

**Wide Sheave Pulleys** – These pulleys were designed to be used as either large rope pulleys or as conventional pulleys, e.g., with 16mm+, kernmantle or three strand, synthetic or natural material.

**Knot Passing Pulleys** – These pulleys were designed to be used as either knot passing pulleys, large rope pulleys or conventional pulleys. These are similar to wide sheave pulleys; however, they have extra karabiner holes for additional rigging and they have longer cheeks.

**Static Pulleys (Friction Pulleys)** – These pulleys were designed to be used as belay devices only. Although not a true pulley, static pulleys (belay pulleys) increase the friction between the operator and the worker giving the operator more control. Sport or industrial versions are available with or without auto braking. They are usually used as the secondary safety device.

**Rollers (Edge and Ground Rollers)** – These pulleys were designed as a rope protector on edges on both man-made (buildings, etc.) and natural surfaces (cliffs, etc.). Ideally, a minimum of two bays of rollers should be used over an edge. Rollers are often stereotyped for edges only, whereas they can be used in the same fashion as wide sheave pulleys to keep multiple lines from tangling. For safety reasons, rollers should be anchored to prevent movement.

**Prusik Minding Pulleys** – These pulleys were designed to be used either as a prusik minding pulley or as a conventional pulley. The prusik knots act as a brake, preventing the load from falling between hauling operations.

**Rescuemates** – These pulleys were designed to be used either as auto lock pulleys or as conventional pulleys. They support the load between hauling operations by combining an ascender cam with a pulley sheave. They are similar to prusik minding pulleys; however, rather than relying on the prusik knot, the cam acts as the brake.

**Riggersmates** – These pulleys were designed to be used either as auto lock pulleys or as conventional pulleys. They arrest a load (worker) if anything happens to either the operator or the worker they are activated by excessive speed. They are similar to Rescuemates; however, they incorporate a fall arrest system and comes standard as a triple block. By simply adding one additional SRTE Pulley a mechanical advantage 7:1 is easily achieved without impinging on head clearance in a tripod situation.

**Tyrolean Sheaves (Flying Fox Pulleys)** – These pulleys were designed to be used as tyrolean sheaves; some models may also be used as conventional pulleys preventing your lines from tangling. These pulleys have extra karabiners holes for additional rigging, e.g., to control the speed and/or direction of the pulley, to act as a backup anchor point for the load.

### PRODUCT SPECIFICATIONS AND TEST DATA

**Construction** – Only the highest grade of stainless steel and extruded aluminium are used. SRTE Pulleys will not twist or damage the rope in any way under normal use, giving your rope a much longer life. Refer to individual pulley notes for specifications.

**Test Data** – 11mm Kinnears rope was threaded through the sheave and a karabiner inserted into the karabiner hole (becket). The load was gradually increased until the unit failed. **Comments** – The karabiner hole 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 any pulley more than is marked. The listed SWL factors are for lifting equipment (5:1 ratio) – when lifting people, halve the marked figures (10:1 ratio).

All cheeks are stamped with **Max Load** and **SWL**.

All pulleys have swivel cheeks and sintered bearings.

All pulleys can be made to order with ball bearings, brass bush or roller bearing. All single sheave pulleys can be fixed to be used as static pulleys

Model	No. of Sheaves	Material of Sheaves	No. of Becketts	Material of Cheeks	Outer diam. of Sheaves	Inner diam. of Sheaves	Rope Size	Length	Width	Thickness
<b>Rescuemate</b>										
RM1A	1	Aluminium with Stainless Steel Cam	2	Aluminium	60mm	49mm	13mm	260mm	80mm	40mm
RM12A	2	Aluminium with Stainless Steel Cam	2	Aluminium	60mm	49mm	13mm	260mm	80mm	60mm
RM22A	2	Aluminium with Stainless Steel Cam	2	Aluminium	60mm	49mm	11mm	260mm	80mm	60mm
<b>Riggersmate</b>										
RR1A	3	2 x Aluminium 1 x Stainless Steel with Stainless Steel Cam	2	Aluminium	60mm 80mm	49mm 69mm	11mm	300mm	95mm	95mm

**FLYING FOXES (Tyrolean Sheaves)**

Model	No. of Sheaves	Material of Sheaves	No. of Becketts	Material of Cheeks	Outer diam. of Sheaves	Inner diam. of Sheaves	Rope Size	Length	Width
FF1-60S	2 series	Stainless	5	Aluminium	60mm	49mm	13mm	190mm	245mm
FF1-60A	2 series	Aluminium	5	Aluminium	60mm	49mm	13mm	190mm	245mm
FF1-80S	2 series	Stainless	5	Aluminium	80mm	69mm	13mm	190mm	245mm
FF1-80A	2 series	Aluminium	5	Aluminium	80mm	69mm	13mm	190mm	245mm
FF2-50A	2 series	Aluminium	2	Aluminium	50mm	39mm	13mm	mm	mm
FF2-50S	2 series	Stainless	2	Aluminium	50mm	39mm	13mm	mm	mm
FF3-60S	2 series	Stainless	2	Aluminium	60mm	49mm	13mm	130mm	160mm
FF3-60A	2 series	Aluminium	2	Aluminium	60mm	49mm	13mm	130mm	160mm
FF3-50S	2 series	Stainless	2	Aluminium	50mm	39mm	13mm	mm	mm
FF3-50A	2 series	Aluminium	2	Aluminium	50mm	39mm	13mm	mm	mm

Model	Maximum Load	SWL (5:1)	Weight
<b>Rescuemate</b>			
RM1A CAM	5100kg 900kg	1000kg	700g
RM12A CAM	5100kg 900kg	1000kg	800g
RM22A CAM	5100kg 900kg	1000kg	800g
<b>Riggersmate</b>			
RR1A CAM	5100kg 900kg	1000kg	1.8g

**ROLLERS**

Model	No. of Sheaves	Material of Sheaves	No. of Becketts	Material of Cheeks	Outer diam. of Sheaves	Inner diam. of Sheaves	Rope Size	Length	Width
ER1-Edge	1	Aluminium	6	Aluminium	60mm	49mm	100mm	240mm	150mm
ER2-Ground	5	Aluminium	4	Aluminium	60mm	49mm	100mm	900mm	170mm

**Pulleys Checklist**

Max load is stamped on all pulley cheeks.  
This is a guide only.

P1a	3000kg
P2a	3000kg
P2Ta	5000kg
P3a	4500kg
P3Ta	9000kg
PS3Wa	9000kg
P4Wa	11000kg
P5Wa	11000kg
P6a	11000kg

Arborist Pulleys max 18000kg

**RESCUE PULLEYS**

Model	No. of Sheaves	Material of Sheaves	No. of Becketts	Material of Cheeks	Outer diam. of Sheaves	Inner diam. of Sheaves	Rope Size	Length	Width
P1a	1	Aluminium	1	Aluminium	40mm	29mm	13mm	85mm	39mm
P1Pa	1	Aluminium	1	Aluminium	40mm	29mm	13mm	74mm	72mm
P2a	1	Aluminium	1	Aluminium	50mm	39mm	13mm	100mm	57mm
P2s	1	Stainless	1	Aluminium	50mm	39mm	13mm	100mm	57mm
P22a	2	Aluminium	1	Aluminium	50mm	39mm	13mm	100mm	57mm
P22s	2	Stainless	1	Aluminium	50mm	39mm	13mm	100mm	57mm
P2Pa	1	Aluminium	1	Aluminium	50mm	39mm	13mm	120mm	72mm
P2Ps	1	Stainless	1	Aluminium	50mm	39mm	13mm	120mm	72mm
P2Ta	1 wide	Aluminium	1	Aluminium	50mm	36mm	25mm	100mm	57mm
P52a	1	Aluminium	1	Stainless	50mm	39mm	13mm	100mm	57mm
P3a	1	Aluminium	1	Aluminium	60mm	49mm	13mm	140mm	72mm
P3s	1	Aluminium	1	Aluminium	60mm	49mm	13mm	140mm	72mm
P3DEa	1	Aluminium	2	Aluminium	60mm	49mm	13mm	175mm	72mm
P3DEs	1	Stainless	2	Aluminium	60mm	49mm	13mm	175mm	72mm
P3Pa	1	Aluminium	1	Aluminium	60mm	49mm	13mm		
P32a	2	Aluminium	1	Aluminium	60mm	49mm	13mm	150mm	58mm
P32s	2	Stainless	1	Aluminium	60mm	49mm	13mm	150mm	72mm
P32DEa	2	Aluminium	2	Aluminium	60mm	49mm	13mm	197mm	72mm
P32DEs	2	Stainless	2	Aluminium	60mm	49mm	13mm	197mm	72mm
P33a	3	Aluminium	1	Aluminium	60mm	49mm	13mm	140mm	72mm
P33s	3	Stainless	1	Aluminium	60mm	49mm	13mm	140mm	72mm
P33DEa	3	Aluminium	2	Aluminium	60mm	49mm	13mm	180mm	72mm
P33DEs	3	Stainless	2	Aluminium	60mm	49mm	13mm	180mm	72mm
P3La	1	Aluminium	1	Aluminium	60mm	49mm	13mm	180mm	72mm
P3Ls	1	Stainless	1	Aluminium	60mm	49mm	13mm	180mm	72mm
P32La	2	Aluminium	1	Aluminium	60mm	49mm	13mm	180mm	72mm
P32Ls	2	Stainless	1	Aluminium	60mm	49mm	13mm	180mm	72mm
P33La	3	Aluminium	1	Aluminium	60mm	49mm	13mm	180mm	72mm
P33Ls	3	Stainless	1	Aluminium	60mm	49mm	13mm	180mm	72mm
P3Sa	1	Aluminium	1	Aluminium	60mm	49mm	13mm	110mm	72mm
P3Ss	1	Stainless	1	Aluminium	60mm	49mm	13mm	110mm	72mm
P3Wa	1 wide	Aluminium	1	Aluminium	60mm	49mm	33mm	175mm	72mm
P3Ta	1 wide	Aluminium	1	Aluminium	60mm	46mm	25mm	140mm	72mm
P53a	1	Aluminium	1	Stainless	60mm	49mm	13mm	140mm	72mm
P53s	1	Stainless	1	Stainless	60mm	49mm	13mm	140mm	72mm
P53Wa	1 wide	Aluminium	1	Aluminium	60mm	46mm	25mm	140mm	72mm
P4DEa	1	Aluminium	1	Aluminium	80mm	69mm	25mm	230mm	97mm
P42a	2	Aluminium	1	Aluminium	80mm	69mm	25mm	170mm	97mm
P42DEa	2	Aluminium	2	Aluminium	80mm	69mm	25mm	230mm	97mm
P4Ka	1 wide	Aluminium	1	Aluminium	80mm	69mm	58mm	175mm	100mm
P4Sa	1	Aluminium	1	Aluminium	80mm				
P4Wa	1 wide	Aluminium	1	Aluminium	80mm	69mm	25mm	175mm	100mm
P5a	1	Aluminium	1	Aluminium	100mm	89mm	16mm	200mm	120mm
P5Wa	1 wide	Aluminium	1	Aluminium	100mm	89mm	25mm	200mm	120mm
P6Wa	1 wide	Aluminium	1	Aluminium	120mm	110mm	25mm	250mm	150mm
P5	block	Aluminium	1	Aluminium	100mm	90mm	25mm	200mm	120mm
P6	block	Aluminium	1	Aluminium	120mm	110mm	25mm	250mm	150mm
P6Ha	1 wide	Aluminium	1	Aluminium	120mm	110mm	26mm	250mm	150mm