

RECOVERY PRODUCTS OVERVIEW

INTRODUCTION

The following training material is provided for instructional, educational and sales support purposes, focussing only on products that Outback Armour currently stock in its recovery range.

Whilst all care has been taken for material accuracy and correct product application guidance, suggested improvements based on partner experience are welcomed for consideration and inclusion.

Please note this training material does not constitute a registered training program in off-road vehicle recovery for which Outback Armour recommends all industry professionals and participants complete.

Following is a short video showing just about everything that can be done wrong with off-road recovery.



CATEGORY	DEFINITION & EXAMPLES
Dynamic Straps	<ul style="list-style-type: none"> ● Defn: Characterised by constant change, activity or energy stored due to a force that is applied to the system. ● Snatch straps are classed as "dynamic straps" due to the potential energy that is built up in them as they stretch under load which is then released as kinetic energy as the strap recoils, freeing the stranded vehicle. ● Dynamic straps are generally made from nylon material.
Static straps	<ul style="list-style-type: none"> ● Defn: Characterised by showing little or no movement, action or change, exerting force by weight alone without motion or stored energy. ● Winch extension straps, tree trunk protector straps, equaliser straps and tow straps are all static straps. They are fixed length and do not store energy during use. ● Static straps are generally made from polyester material.
Winch Lines & Cables	<p>Winch Lines & Cables Winch lines and cable are categorised separately from recovery straps as different safety considerations apply during use.</p> <ul style="list-style-type: none"> ● Steel cable – stores energy under load during use similar to dynamic straps. ● Synthetic cable – stores little or no energy under load during use similar to static straps.

CATEGORY	DEFINITION & EXAMPLES
Recovery Hardware	<p>Recovery Hardware Recovery situations generally require a vehicle to be connected to one or more other vehicles, trees or anchor points. It is important to use correctly rated hardware for your application.</p> <ul style="list-style-type: none"> ● Recovery hardware includes: bow shackles, recovery hitches & snatch blocks.
Safety Equipment	<p>Safety Equipment Safety is fundamental for vehicle recovery.</p> <ul style="list-style-type: none"> ● Recovery blankets (or dampers) reduce the risk of damage or injury by controlling the forces that are generated by dynamic straps and winch lines or cables in the event of product or anchor point failures. ● Recovery gloves protect your hands from potential cuts, abrasion and burns.



DYNAMIC STRAPS (SNATCH STRAPS)

Snatch Straps are made from high tenacity nylon webbing that provides a factor of elongation (stretch) under load that recoils almost back to its original length. This combination of elongation and recoil assists a stranded vehicle to be recovered by transferring energy from the momentum of a leading recovery vehicle to the stranded vehicle (a technique known as “snatching”). Extreme forces are generated during use and therefore correct attachment to each vehicle using appropriately rated attachments and recovery points are imperative for vehicle, driver and bystander safety.

Always adhere to safe operating procedures and guidelines. When used in accordance with proper guidelines and best practice, vehicles may be recovered with minimal risk of injury to people or damage to vehicles and equipment. Dynamic recovery snatch straps are not designed for, and should not be used for lifting or conventional towing.

Dynamic snatch straps are a frequently utilised item of recovery kit, possibly over-used due to their effectiveness in recovery. Outback Armour recommends that static recovery straps should be considered for use as a first option wherever possible to reduce the risk of damage to vehicles, recovery points, equipment and people.



PRODUCT FEATURES & IDENTIFICATION








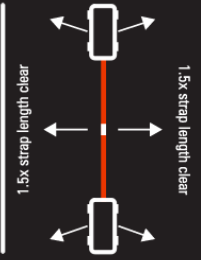
Outback Armour branded dynamic snatch straps feature the following:

FEATURE	DETAILS
Material	100% high tenacity nylon webbing
Stretch	Minimum 20% stretch at rated capacity
Strap Eyes	Cordura reinforced for durability and abrasion resistance
Stitch Guard	Stitch Guard Neoprene stitch guard to protect stitching and label tag from damage due to abrasion against vehicle during use. Quickly identifies strap type and rating.
Identification Tag	<p>Identification Tag Identification tag clearly displays:</p> <ul style="list-style-type: none">● Product identification● Company identification● Country of origin● Official ACCC product warnings● Strap MBS (rating), width and length● Serial number● Recommended GVM range● Recovery safety zone● General instruction for use● Interactive QR code linking to product information and correct use media.

PRODUCT FEATURES & IDENTIFICATION



Outback Armour branded dynamic snatch strap labels:

LABEL FRONT	LABEL BACK
<div data-bbox="421 311 743 1322"><h2 data-bbox="459 439 701 486">SNATCH STRAP</h2><p data-bbox="479 501 681 604">minimum breaking strength of this strap should be between 2-3 times the gross vehicle mass (GVM) of the lightest vehicle used in the recovery</p><div data-bbox="465 625 695 686"> WARNING STRAP NOT CERTIFIED FOR LIFTING</div><div data-bbox="459 708 701 918"><p>MINIMUM BREAKING STRENGTH 8,000 KG</p><p>STRAP LENGTH 9 M</p><p>STRAP WIDTH 60 MM</p></div><p data-bbox="479 932 681 953">INTERACTIVE CONTENT</p><div data-bbox="465 1100 695 1222"><p>SERIAL NUMBER</p><p>1301</p><p>PART #: OASS8T9M</p></div><p data-bbox="508 1243 653 1296">MADE IN TAIWAN to outback armour design specifications</p></div>	<div data-bbox="1184 311 1506 1322"><div data-bbox="1232 439 1462 486"> WARNING</div><p data-bbox="1222 504 1470 818">always follow product instructions. it is important to correctly attach the motor vehicle recovery strap to a motor vehicle. a standard tow ball or vehicle tie-down point is not designed for this purpose and may result in the strap or a vehicle component detaching from a motor vehicle and striking and seriously injuring or killing a person. only attach the strap to a vehicle recovery point or device that is suitably rated for use with the strap. incorrect use has previously resulted in serious injury and death.</p><div data-bbox="1222 825 1462 1125"><p>RECOVERY SAFETY ZONE</p><p>1.5x strap length clear</p></div><ul data-bbox="1222 1139 1462 1310" style="list-style-type: none">• keep recovery safety zone clear during operation• do not exceed minimum breaking strength of strap• use shackles of equal or greater capacity of strap• drape a recovery blanket over centre of strap during operation for air brake</div>

ACCC - CONSUMER PRODUCT SAFETY WARNING



The following consumer product safety warning is required to be permanently displayed on all motor vehicle recovery snatch straps sold in Australia after July 2010 by the Australian Competition & Consumer Commission (ACCC). www.productsafety.gov.au Any recovery snatch strap not displaying this warning or the other mandatory identifiers should be returned to the manufacturer, should be recalled and in no circumstances sold to or used by an end user. All Outback Armour recovery straps carry this product safety warning on the labels permanently affixed to the product and in the instructions provided with the products.

WARNING – Always follow product instructions. It is important to correctly attach the strap to a vehicle. A standard tow ball or vehicle tie-down point is not designed for this purpose and may result in the strap or a vehicle component detaching from a vehicle and striking and seriously injuring or killing a person. Only attach the strap to a vehicle recovery point or device that is suitably rated for use with the motor vehicle recovery strap. Incorrect use has previously resulted in serious injury and death.

SELECTING THE RIGHT DYNAMIC RECOVERY STRAP

It is very important that a correctly rated and selected snatch strap is used in a recovery. Ensure that the minimum breaking strength (MBS) of the strap is between 2-3 times the GVM of the lightest vehicle in the recovery. A correctly selected strap will be less likely to break and will have sufficient elongation under load, reducing potential risk of damage or harm to vehicles, equipment and people. A “too light” strap may break under load and a “too heavy” strap will not elongate enough and may potentially cause damage to vehicles, recovery points and attachments, or injury to people.

The GVM should be stated on the vehicle compliance plate or in the manufacturers documentation.

STATIC STRAPS

(EQUALISER, TREE TRUNK PROTECTOR & WINCH EXTENSION)

Static straps are made from high strength polyester webbing that does not stretch and does not store energy under load. All energy in the system is passed directly through the strap during use making them safer to use than dynamic recovery straps.

Outback Armour's range of static straps including the equaliser strap, tree trunk protector strap and winch extension strap are all rated at 10 tonnes. This consistency of strap rating provides the user with a range of options where the recovery setup requires different strap lengths.

Although energy is not stored in the strap, energy is still passed through the strap during use and therefore the use of recovery blankets to dampen forces in the event of failure and correct attachment to vehicles and hardware using appropriately rated attachments and recovery points are imperative for vehicle, driver and bystander safety. Always adhere to safe operating procedures and guidelines.

Outback Armour recommends that static recovery straps should be considered for use as a first option wherever possible (over dynamic snatch straps) to reduce the risk of damage to vehicles, recovery points, equipment and people.

PRODUCT FEATURES & IDENTIFICATION



Outback Armour branded static straps feature the following:

FEATURE	DETAILS
Material	100% high strength polyester webbing
Rating & Size	Standardised 10 tonne rating for all 75mm static straps
Strap Eyes	Cordura reinforced for durability and abrasion resistance
Stitch Guard	Stitch Guard Neoprene stitch guard to protect stitching and label tag from damage due to abrasion against vehicle during use. Quickly identifies strap type and rating.
Identification Tag	<p>Identification Tag Identification tag clearly displays:</p> <ul style="list-style-type: none">● Product identification● Company identification● Country of origin● Official ACCC product warnings● Strap MBS (rating), width and length● Serial number● Recovery safety zone● General instruction for use● Interactive QR code linking to product information and correct use media.

EQUALISER STRAP



An equaliser strap (connected to two vehicle recovery points with properly rated shackles and passing through the eye of the snatch strap) should be used where possible to distribute the load between two recovery points on separate chassis rails of the vehicle, reducing the chance of damage to the vehicle from impact and twisting under load.

In addition to the cordura wrapped eyes, neoprene stitch guards and velcro keeper straps, the Outback Armour equaliser strap features a sliding polyester guard to protect the strap webbing from abrasion and allow free movement of the snatch strap during operation to suit the changing angle of recovery.

In order to gain a mechanical advantage with an equaliser strap, the shortest distance from the vehicle to the centre of the attached equaliser strap should be longer than the distance between the 2 recovery points that the equaliser strap is attached to. Rated at 10 tonnes, the Outback Armour equaliser strap is 3 metres in length which will provide the required mechanical advantage required on all standard 4WD vehicles.

Equaliser straps are an ideal utility strap for use in a variety of recovery setups including:

- As a joiner strap between snatch blocks in multiple winch recoveries
- As an extension strap for snatch block redirections in winching
- As a secondary tree trunk protector strap
- As a substitute for a drag chain when moving fallen trees.
- As a safety failover strap to catch a broken recovery point.



TREE TRUNK PROTECTOR STRAP



As 4WDers we all appreciate our obligation to look after the environment, avoiding unnecessary disruption and damage to tracks, waterways and flora. Specifically, we rely on established trees for anchor points in winch recoveries and as such care should be taken to ensure that those trees are protected as best as possible with a tree trunk protector strap.

Outback Armour tree trunk protector straps feature cordura wrapped eyes, neoprene stitch guards and velcro keeper straps. Rated at 10 tonnes and measuring 5 meters in length, the Outback Armour tree trunk protector strap is long enough to wrap around the largest of trees or a clump of bushes in the event that no suitably sized trees are available for the recovery setup.

Tree trunk protector straps are an ideal utility strap for use in a variety of recovery setups including:

- As a joiner strap between snatch blocks in multiple winch recoveries
- As an extension strap for snatch block redirections in winching
- As a secondary equaliser strap
- As a substitute for a drag chain when moving fallen trees.
- As an extension strap for dynamic snatch strap recoveries.



WINCH EXTENSION STRAP



Winches are generally shipped standard with approximately 25-30 meters of cable or line wrapped onto the drum. In many cases, a winch extension strap will be required to reach a suitable anchor point, especially in remote areas, over sand dunes, or in sparsely populated scrub.

Outback Armour winch extension straps feature cordura wrapped eyes, neoprene stitch guards and velcro keeper straps. Rated at 10 tonnes and measuring 20 meters in length, the Outback Armour winch extension strap is long enough to almost double the reach of a winch recovery setup.

The 10 tonne rating of all Outback Armour static straps ensure that they are stronger than common 4WD winches that normally stall at between 4 and 5 tonnes, making them a very reliable part of the recovery kit.

Winch extension straps are an ideal utility strap for use in a variety of recovery setups including:

- As an anchor strap for recovery vehicles.
- As an extension strap for dynamic snatch strap recoveries.



RECOIL TOW STRAP



Outback Armour recoil tow straps are a static strap designed for off-road vehicle recovery only as towing vehicles on-road with a strap is not legal in Australia.

The recoil tow strap features cordura wrapped eyes and neoprene stitch guards for protection and the eyes can be attached to the vehicle recovery or tow points using rated bow shackles or hooks as required.

Rated at 4 tonnes and measuring 6 meters in length when extended, the product features an internal elastic cord that retracts the strap to 3 meters in length when slack. This recoil feature reduces the risk of the tow strap becoming tangled around wheels during use and helps to avoid abrasion from track surfaces and debris.

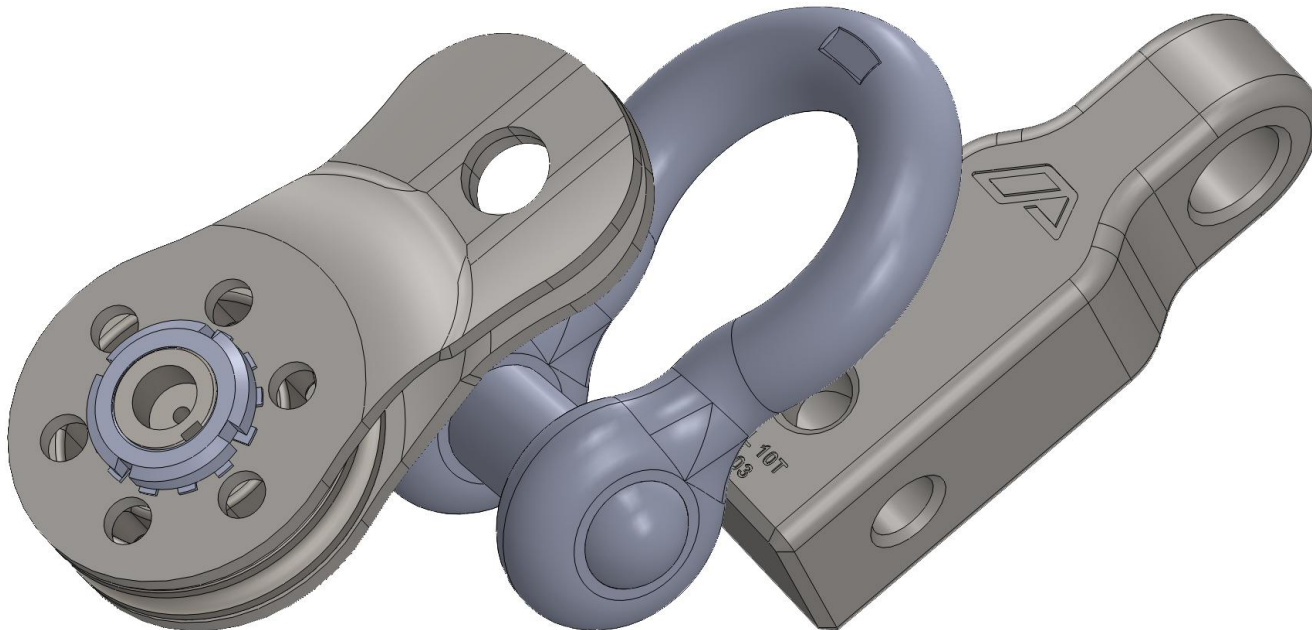


RECOVERY HARDWARE & ATTACHMENTS

Using appropriately rated hardware such as bow shackles, snatch blocks and recovery hitches is important for the safety of the vehicles and bystanders in recovery operations. Broken hardware can often become projectile objects causing significant damage or harm.

All Outback Armour hardware are engineered in 3D CAD software, manufactured to the highest standards and are then subjected to independent testing and certification for rating.

These independent testing results and rating certifications are available online from the outbackarmour.com.au website.



RATED RECOVERY BOW SHACKLES



Bow shackles are the most common item to be found in a recovery kit, being used to attach straps, winch lines and other hardware to vehicles, other hardware and anchor points in almost all recovery setups.

To achieve proper rating certification in Australia, bow shackles must be tested to 5x WLL specification and still maintain proper working order. A 4.75t WLL bow shackle must be tested to 23.75 tonnes and the 5.75t WLL variant tested to 28.75 tonnes. It is very important that only properly rated bow shackles are used for safety reasons, and not exceeding the working load limit of the bow shackle as specified by the manufacturer.

A properly rated bow shackle must show:

- the Working Load Limit (WLL), otherwise known as the “rating”.
- the measurement or size of the bows cross section
- the type of bow shackle that it is (“S” for screw type)
- the company or manufacturers identifying mark (OA)
- a batch number for traceability and recall management should such an event occur.

Outback Armour designed and engineered bow shackles conform to all of the above criteria and further:

- are painted in a durable high-visibility orange.
 - include a domed pin head for ease of location into recovery points.
 - feature a matching batch number on the pin (as the bow) to ensure effective tracking and recall if required.
- Once a pin without batch number markings is removed from a bow, the entire bow shackle assembly cannot be considered as rated any more as the origin and safety of the pin cannot be guaranteed. Outback Armour supply the only bow shackles in the market with this design feature and level of safety making them the only choice for OHS compliant applications.



RATED RECOVERY SNATCH BLOCK



Snatch blocks are an essential item to have in a winch recovery kit due to their versatility in redirecting a winch line or acting as a pulley to gain leverage in a recovery situation, reducing load and wear on the winch.

To achieve proper rating certification in Australia for 4WD applications, snatch blocks must be tested to 1x WLL specification and still maintain proper working order. For lifting applications the testing criteria is lifted to 1.5x WLL to provide a greater margin of safety due to the risk involved with falling objects in the event of failure. The Outback Armour snatch block is marked with a WLL rating of 10 tonnes, however it is independently tested, certified and rated to 15 tonnes WLL for 4WD purposes. Outback Armour chose to adopt the 1.5x WLL certification criteria across the board to suit all 4WD and general lifting applications for user safety.

The Outback Armour recovery snatch block features:

- Cold rolled, press formed 6mm steel side plates.
- CNC machined solid steel pulley wheel.
- Military specification nut assembly (avoids destruction under side loading common to circlip style designs).
- Serviceable grease nipple with internal brass bush including a spiral cut grease flow path.
- Batch stamped for traceability and recall management should such an event occur.



RATED RECOVERY HITCHES



A recovery hitch should form a standard part of almost all 4WDers recovery kit due to the safety and benefit they provide in distributing the forces generated during a recovery between the chassis rails, reducing the chance of twisting and damage occurring. Due to the extreme forces generated during a vehicle recovery, hitches should only be used in conjunction with a class 4 tow bar.

Outback Armour recovery hitches are designed and engineered in 3D CAD software and CNC machined from a solid block of steel to ensure smooth surface curves are maintained and sharp edge tear points are avoided. Shipping standard with a 5.75 tonne WLL rated recovery bow shackle, the Outback Armour recovery hitch will also accommodate a 4.75 tonne WWL rated bow shackle if required.

To achieve proper rating certification in Australia for 4WD applications, recovery hitches must be tested to 1x WLL specification and still maintain proper working order. The Outback Armour recovery hitch is marked with a WLL rating of 10 tonnes, however it is independently tested, certified and rated to 15 tonnes WLL. Outback Armour chose to adopt a 1.5x WLL certification criteria for user safety.



RECOVERY BLANKET (DAMPER)



A recovery blanket is a critical safety item that should be used wherever possible to effectively dampen the forces generated in dynamic and static recoveries, reducing the risk of recovery points, hardware, recovery straps and winch lines from becoming potentially dangerous projectile objects in the event of any component failure. Recovery blankets also provide a visible warning to bystanders to avoid entering the recovery zone.

Outback Armour recovery blankets exceed competition specifications and features include:

- correct dimensions for width and length (500mm wide x 450mm long when folded)
- internal cut-out easily fits helmets for race applications and general wear for safety.
- external reflective strip provides additional visibility in day and night use.
- product exceeds 1kg in material alone with no added weights that may become projectile objects in the event of failure
- 2 opposing internal pockets providing ample space to add additional weight in sand or loose soil for safety.
- conveniently positioned Velcro fasteners for fast and secure attachment over straps, cables and lines.
- permanently attached hook strap for correct attachment in synthetic winch line applications and for quick positioning changes during use.
- permanently attached user application guide and interactive QR code linking to product information and correct use media.

For best practice, as many recovery blankets should be used as required for the recovery setup.



RECOVERY GLOVES



Outback Armour recovery gloves exceed competition specifications and regulations.

These recovery gloves are leather lined to protect from recovery hazards such as cuts abrasions or burns that may occur during recovery operations.

It is especially important to wear quality recovery gloves when using steel winch cable as the cable is prone to producing sharp protruding wires that can cause significant injury.



JOINER STRAP



A joiner strap is a perfect item to use when a recovery setup requires 2 or more straps to be joined together. The Outback Armour joiner strap has an information tag permanently fixed to it providing users with visual instructions and an interactive QR code linking to product information and correct use media. Simply insert the joiner strap in between the looped straps to stop them from binding together under extreme recovery forces.



RECOVERY BAGS



Recovery equipment should be kept securely and neatly in dedicated recovery bags to ensure that they can be easily accessed when required.

Outback Armour recovery bags are made from extremely durable material and zippers, are water and tear resistant and are innovatively designed for easy access to accessories and storage on floors under foot, behind seats or in the back of utility trays.

Features include:

- heavy duty polyester reinforced PVC material (tear and water resistant)
- high strength integrated polyester lining to provide additional strength and protection
- original YKK heavy duty zippers that will not jam, separate or fail
- 2x integrated bag restraint straps to secure the recovery bag to head-boards, roof racks or cargo areas
- 2x convenient bag sizes available (700mmx200mmx200mm & 600mmx150mmx150mm) to suit different kit configurations with spare space for inclusion of other accessories as required.

The water resistant construction of the Outback Armour recovery bags will effectively contain any sand, dirt or mud picked up during recovery operations and can easily be cleaned with soapy water after use for convenient storage of recovery equipment. In the event that the recovery bag is pierced or cut by foreign objects such as sharp rocks, sticks or metal, the polyester reinforced material will maintain its structural integrity and will not continue to tear past the initial penetration, providing content security and extended product life.

