HARDKORR

RECOVERY GEAR GUIDE

> **NOTE:** The minimum breaking strength **(MBS)** of the recovery implement should be between 2 and 3 times the gross vehicle mass **(GVM)** of any vehicle it is used with. The strap must be suited to the gross vehicle mass **(GVM)** of the lighter of the 2 vehicles used in the recovery process.

IMPORTANT, RETAIN FOR FUTURE REFERENCE
READ CAREFULLY

- Persons intending to use this recovery rope should consider completing a nationally recognised four-wheel drive training course, or contact a four-wheel driving club for comprehensive advice on the proper selection and use of the recovery rope.
- This recovery rope must not be used for lifting or conventional towing.
- Persons intending to use this recovery rope must ensure that the product is not damaged and is in a usable condition.
- The recovery rope's strength and stretch are reduced when the product is saturated with water.
- A recovery rope dampening pad, heavy bag or blanket must be draped over the rope during use to reduce any unintentional rebound of the rope.
- Before attempting the vehicle recovery, passengers involved must exit the vehicles, stand as far away from the vehicles as possible, and avoid standing in the path of the vehicles performing the recovery.
- Ensure both drivers can remain in constant communication before, during and after the recovery, ideally with a two-way radio system. Alternatively, establish some distinct signals by which you can communicate with each other.
- Prepare the path of recovery as much as possible before performing the manoeuvre. Consider digging around the wheels and using recovery traction pads if in loose ground.
- Perform a thorough assessment of the vehicle's position, the area in the direction the vehicle will be recovered, and any other obstacles that may be present in the terrain.

USING YOUR GEAR - 3M/10M KINETIC ROPE

MINIMUM BREAKING STRENGTH: 12,000KG

Kinetic recovery ropes are an evolution of the concept of traditional snatch straps. They allow for a longer elongation, creating a smoother recovery. To set up your kinetic rope on the vehicles, follow the steps below:

1. Connect a recovery rope to the stuck vehicle at a rated recovery point using a soft shackle (if appropriate, as some recovery points have sharp edges which may not be suited to rope).
2. Lay the rope on the ground towards the pulling vehicle with an S-shaped curve to ensure enough slack. The curve should use around 1/3 of the length of the rope. You should now be able to position the pulling vehicle at the appropriate distance.
3. Connect the other end of the recovery rope to the pulling vehicle at a rated recovery point using another soft shackle.
4. Lay a recovery rope dampening pad, heavy bag or blanket over the rope half-way between the stuck vehicle and pulling vehicle to help divert the direction of force applied to the rope in the event of a breakage.
5. Ensure all passengers and bystanders are clear of the area, and ensure both drivers are aware of the plan to recover. If a vehicle is being recovered from the rear of the vehicle, ensure the stuck vehicle is set in reverse to assist with the manoeuvre.

Please note that the energy stored in the kinetic rope when under tension is exponentially proportionate to the speed at which the force is being applied. Doubling the speed that the recovery vehicle is pulling will result in a quadrupling of the energy being stored in the kinetic rope.

USING YOUR GEAR - 3M STATIC ROPE

MINIMUM BREAKING STRENGTH: 15,000KG

The 3m Static Rope is not to be used directly for kinetic recoveries. It must only be used indirectly as a bridle for distributing loads between recovery points across a vehicle, or in some cases as a tree trunk protector.

When acting as a bridle, static ropes can help reduce the point load on recovery points. They do not halve the load, but instead equally distribute the load between the two points when the load is applied in a straight line.

To use the static rope as a bridle, attach the rope to two recovery points on your vehicle equidistant from the centre using soft shackles. You can either pass the static rope through the eye of the kinetic or winch rope, or use another soft shackle to connect the two ropes together.

Consider whether the recovery points you intend to attach the rope to are rated not only for in-line pulling but also significant inward force. The forces applied to your recovery points depend on the distance between the two recovery points and the length of rope you use as a bridle. Consult the table below for forces applied on a 3m static rope.

Recovery point distance (pair)	Pulling force	Recovery point tension	Inward force
500mm	3000kg	1521kg	254kg
750mm	3000kg	1549kg	387kg
1000mm	3000kg	1590kg	530kg

This table only accounts for a direct 3000kg load, and does not reflect any other possible dynamic forces experienced in a recovery.

We recommend only using the 3m static rope for recovering smaller, lighter vehicles or vehicles with recovery points mounted with a distance of

WARNING
INCORRECT USE MAY RESULT IN INJURY OR DEATH!

Vehicle **OCCUPANTS** and **BYSTANDERS** have been **KILLED** by flying projectiles (such as tow balls) when recovery straps have been attached incorrectly.
NEVER attach recovery straps to vehicle fittings such as tow balls, tow bars, tie-down points or tow hooks.
ONLY attach recovery straps to an **APPROVED** recovery point/device that is suitably rated for use with the strap.
BEFORE attempting a vehicle recovery all passengers must exit the vehicles and stand as far away as possible.

<1000mm between them. Additionally, only use the static rope as a bridle if the recovery points being used are rated for high inward force. Failure to consider these factors can result in damage, injury or death.

USING YOUR GEAR - WINCH EXTENSION ROPE

MINIMUM BREAKING STRENGTH: 9,500KG

The winch extension rope is perfect for situations where you might need extra length to reach a suitable anchor for your winch, or if you're undertaking a more complex winching setup like a double-line pull.

Simply attach the winch extension rope to your existing synthetic winch rope or cable by threading a soft shackle through the eyes of both ropes.

USING YOUR GEAR - SOFT SHACKLES

HEAVY DUTY SOFT SHACKLE MBS: 14,000KG

EXTRA LONG SOFT SHACKLE MBS: 10,000KG

Soft shackles are a lighter and safer alternative to the traditional steel bow-shackle. They provide the same function, but being made of a synthetic fibre rope rather than steel, in the unlikely event of failure, the soft shackle is going to do far less damage to the vehicle, and to the driver.

As there is still the potential for injury, treat the soft shackle the same as any with regard to keeping bystanders clear of the area and maintaining sufficient safety protocols.

One shortcoming of soft shackles is their sensitivity to abrasion. You must not use a soft shackle on a rated recovery point that has sharp edges without a machined radius to them. The point load experienced by the shackle can sever the fibres against a sharp edge and compromise the integrity of the shackle.

1. Check your soft shackle for wear or damage. If any rope fibres are severed, do not use the shackle as its strength could be compromised.
2. If the shackle is already closed, loosen the eye end of the shackle and free the knot end from the eye.
3. To prepare the soft shackle for attachment, make the eye of the shackle larger by pushing the divided rope further down the solid rope section.
4. Pinch the enlarged eye to flatten it and pass it through a point of attachment you wish to utilise:
   - The eye of a kinetic rope, static rope, winch or winch extension rope.
   - A rated recovery point on the vehicle. *(Please note, not all rated recovery points are appropriate for soft recovery equipment due to the presence of sharp edges)*
5. Pass the eye over the knot end of the shackle.
6. Tighten the eye end again so that the eye tightly conforms to the rope it is now surrounding behind the knot.
7. Position the shackle so that the knot and eye are closest to your chosen attachment point. This provides the most compression on the shackle closure to help eliminate slipping or detachment.

USING YOUR GEAR - RECOVERY RING

HEAVY DUTY SOFT SHACKLE MBS: 14,000KG

WORKING LOAD LIMIT (RING): 10,000KG

The primary use of the recovery ring is to redirect pulling forces, either in a different direction when a recovery vehicle cannot be in-line with a stuck vehicle, or back on itself in the case of a double-line winch recovery.

When used in a double-line winch recovery, you gain the mechanical advantage of the ring being used as a pulley, effectively halving the load on your winch, allowing an otherwise possibly underpowered winch to be capable enough to get you unstuck.

The recovery ring should only be secured to an anchor point using a soft shackle to allow the ring to rotate freely. To use the recovery ring, follow the same steps for the soft shackle, but instead also thread the soft shackle through the eye of the recovery ring.

From here, you can then pass your winch rope or winch extension rope around the recovery ring, ensuring it rotates freely.

USING YOUR GEAR - RECOVERY HITCH

HEAVY DUTY SOFT SHACKLE MBS: 14,000KG

WORKING LOAD LIMIT (HITCH): 5,000KG

The recovery hitch allows you to add a rated recovery point to the rear of your vehicle at the 50mm² hitch receiver. To use the recovery hitch, simply slide the hitch into the receiver and insert the locking pin.

The recovery hitch should only be used in tandem with a soft shackle. There are two ways to orient the hitch, based on the direction in which the forces will be applied to the soft shackle.

- For recoveries performed where there is an elevation gain/drop, the hitch should be inserted so the hole is oriented horizontally, to allow the soft shackle the most free movement up or down.
- For recoveries performed where the recovery vehicle and stuck vehicle are not in-line with each other or are angled differently, the hitch should be inserted so the hole is oriented vertically, to allow the soft shackle the most free movement horizontally.

CARING FOR YOUR GEAR

- Take care in keeping your soft recovery equipment out of sand, dirt or mud where possible when not in use.
- To clean your soft recovery equipment, we recommend hand washing only in a bucket or tub, using a mild detergent if necessary.
- Work along the rope from one end to the other, gently squeezing and pushing the braid to free any trapped sand, dirt or debris while moving the rope under the water.
- Rinse the rope thoroughly until the water runoff is clear.
- Leave to air dry in the shade (not direct sunlight) thoroughly before storing the equipment.

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