

4WD RECOVERY & TOWING STRAPS

AL AUSTLIFT®

GUIDELINES FOR SAFE USE

CODE	MBS (T)	PLY	WIDTH (mm)	LENGTH (M)	NET WEIGHT (KG)	EYELET LENGTH (mm)
204390	10	1	75	9	3.3	300
204391	16	2	60	9	5.58	380
204392	30	4	60	9	9.1	400
204394	40	4	100	9	11.1	500
204404	40	4	100	15	18.8	500
204396	60	4	125	9	18	550
204406	60	4	125	15	31	550
204398	80	4	150	9	22.5	600
204408	80	4	150	12	28.5	600
204399	100	4	250	12	42	900
204599	100	4	250	20	54.5	900



GENERAL INFORMATION

Austlift snatch straps are 100% nylon and can stretch up to 20% then spring back to almost its original length. The combination of the recovery vehicle pulling and the tension in the strap creates a snatching effect that can pull a bogged vehicle free from obstruction. When used correctly this recovery method is quick and an effective way of recovering stranded vehicles.



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SAFETY RECOMMENDATIONS

- Check the strap and shackles have a minimum breaking strength (MBS) rating.
- The recommended MBS of the strap should be between 2-3 times the Gross Vehicle Mass (GVM).
- The strap must be suited to the lighter of the two vehicles.
- A nationally recognised 4WD training course is recommended for all parties involved in the recovery process.
- The strap must not be used for lifting or conventional towing.
- Check the strap to ensure it is not damaged or frayed and in a useable condition.
- An object such as a recovery damper, heavy bag or blanket must be draped over the strap during use to reduce any unintentional rebound of the strap.
- Before attempting the vehicle recovery, passengers of the vehicles involved must exit the vehicles, stand as far away from the vehicles as possible, and avoid standing in the path of the vehicle performing the recovery.
- The strap's strength and stretch are reduced when the strap is saturated with water.
- Always follow the product instructions. It is important to correctly attach the strap to the vehicle, a standard tie down point or Tow ball is not designed for this purpose and may result in the strap or a vehicle component detaching from the vehicle and striking, seriously injuring or killing a person. Only attach the strap to a vehicle recovery point or device that has a suitable rating for the recovery intention. Incorrect use has previously resulted in serious injury and death.



IMPORTANT

- Never attempt to recover a vehicle without all the necessary equipment.
- Only use equipment that is properly rated for the particular situation. If in doubt, don't use it.
- Never exceed the Minimum Breaking Strength (MBS) of the strap or the Working Load Limit (WLL) of shackles.

TAKE NOTICE OF YOUR SURROUNDINGS

- Check if the vehicle is on a lean Left or Right or evenly balanced
- Are there any obstructions in the way of the bogged vehicle?
- Is the front of the vehicle clear or embedded?
- Check your terrain, as this adds or subtracts breaking strain to your strap

TERRAIN	0° SLOPE	10° SLOPE	20° SLOPE	30° SLOPE
LOOSE ROCK	20%	40%	55%	70%
SAND	75%	95%	110%	125%
CLAY	80%	100%	115%	130%
MUD	85%	105%	120%	135%

TERRAIN INCLINE OR DECLINE AS A PERCENTAGE DEPENDING ON ANGLE TO BE ADDED TO THE SNATCH STRAP CALCULATION OF CHOICE

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CHOOSING THE RIGHT STRAP FOR THE APPLICATION

The Snatch Strap must be suited to the GVM (gross vehicle mass) of the lighter of the two vehicles used in the recovery / towing operation.

Vehicle recovery and towing involve forces which are often difficult to quantify and are dynamic. Please see below a Snatch Strap Recovery Chart to assist in choosing snatch strap size, together with estimated vehicle weights for different bogged scenarios. Keep in mind the calculations listed below are for 4x4 and large Industrial vehicles.

SNATCH STRAP RECOVERY REFERENCE CHART	10t Min Break Strength	16t Min Break Strength	30t Min Break Strength	40t Min Break Strength	60t Min Break Strength	80t Min Break Strength	100t Min Break Strength
Recover light/medium bogged vehicle Approximate resistance 50% of GVM (Gross Vehicle Mass)	4T to 5T Vehicle	8T to 10T Vehicle	12T to 16T Vehicle	18T to 20T Vehicle	20T to 30T Vehicle	3T to 40T Vehicle	40T to 50T Vehicle
Recover a severely bogged vehicle Approximate resistance 75% of GVM (Gross Vehicle Mass)	2T to 3T Vehicle	5T to 6T Vehicle	8T to 10T Vehicle	12T to 14T vehicle	14T to 20T Vehicle	20T to 30T Vehicle	30T to 35T Vehicle
Recover a totally bogged vehicle Approximate resistance 100% of GVM (Gross Vehicle Mass)	1T to 1.5T Vehicle	2.5T to 3T Vehicle	4T to 5T Vehicle	6T to 7T Vehicle	7T to 10T Vehicle	10T to 16T Vehicle	16T to 18T Vehicle

RECOVER LIGHT/MEDIUM BOGGED VEHICLE 50% RESISTANCE OF GVM (Gross Vehicle Mass).

This is generally noted when the vehicle is bogged to just under the axle point.

RECOVER SEVERELY BOGGED VEHICLE 75% RESISTANCE OF GVM (Gross Vehicle Mass).

This is generally noted when the vehicle is bogged over the axle point but under the chassis.

RECOVER TOTALLY BOGGED VEHICLE 75% RESISTANCE OF GVM (Gross Vehicle Mass).

This is generally noted when the vehicle is fully bogged to the chassis or up to the bottom door seals and a vacuum or stuck force is added.

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Agricultural machinery such as combined harvesters or rear drive tractors needs to allow extra calculations to be added such as wheels sizes front and rear, single or double treads, drive axle's location front or back, attached machinery such as balers, tillers or seed drill hoppers and product loads. We can use a formula to determine the correct snatch strap to use.

Formula

Weight of Vehicle (kg) + Slope/Vehicle Angle Resistance (kg) + Vacuum/Stuck Force Resistance (kg) = Total Resistance (kg)

Descriptions

Weight of Vehicle (kg): The Gross Vehicle Mass (GVM) of the bogged Vehicle

Slope/Vehicle Angle Resistance (kg): Figure calculated using the Terrain and Slope resistance table and this total is the % from the table x The Gross Vehicle Mass (GVM)

Vacuum/Stuck Force Resistance (kg): Figure calculated using Light/Medium Bogged (50% GVM), Severely Bogged (75% GVM) or Totally Bogged (100% GVM)

Example of Bogged Vehicle

Scenario 1: If a tractor weighing 18t operational was bogged at the rear up to the chassis in mud on a 10-Degree slope/Angle from the front wheels to the larger double rear tyres, this requires us to consider the vacuum or stuck force of the mud on the axle, differential, suspension, gearbox and frame and would create an approximate resistance of 1 x the tractors weight then a **100t snatch strap would be recommended.**

Calculating The total Resistance of Scenario 1 as a Formula

$$\begin{array}{l} \text{Weight of Vehicle (kg)} + \text{Slope/Vehicle Angle Resistance (kg)} + \text{Vacuum/Stuck Force Resistance} = \text{Total Resistance} \\ 18000\text{kg} \quad (18000 \times 105\%) \quad 18900\text{kg} \quad (\text{Totally Bogged } 100\% \text{ GVM}) \quad 18000\text{kg} \quad (18000\text{kg} + 18900\text{kg} + 18000\text{kg}) = 54900\text{kg} \end{array}$$

This means that it requires **54,900kg** of force are required to become un-bogged x 2 Times safety Factor = 100t snatch strap

To choose a snatch strap the MOTOR VEHICLE RECOVERY STANDARD 2017 FOR RECOVERY STRAPS tells us that your calculations should allow for 2 times the total resistance as a recommended safety factor and therefore an 80T minimum at 1.5 times the safety factor or 100T at 2 times the safety factor snatch strap would be required for Scenario 1.

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AGRICULTURAL MACHINERY

Scenario 2: If the same tractor was bogged up to the bottom door seals and all four wheels were submerged in mud and still on a 10-Degree slope, then in this case it would be 2 x the tractors weight.

Calculating The total Resistance of Scenario 2 as a Formula

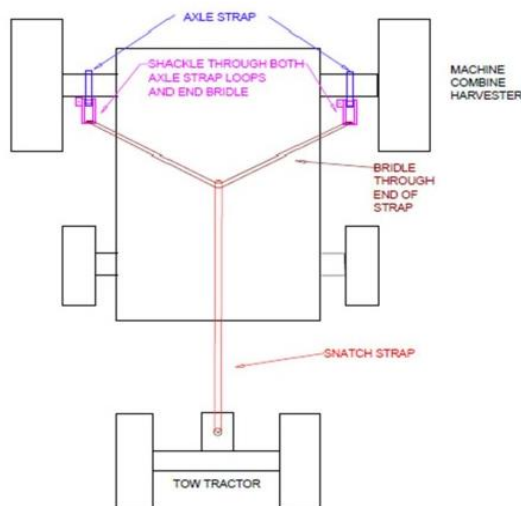
$$\begin{array}{r} \text{Weight of Vehicle (kg)} + \text{Slope/Vehicle Angle Resistance (kg)} + \text{Vacuum/Stuck Force Resistance} = \text{Total Resistance} \\ 18000\text{kg} \quad (18000 \times 105\%) \quad 18900\text{kg} \quad (\text{Totally Bogged } 100\% \text{ GVM}) \quad 2 \times 18000\text{kg} \quad (18000\text{kg} + 18900\text{kg} + 36000\text{kg}) \quad 72900\text{kg} \end{array}$$

To choose a snatch strap the MOTOR VEHICLE RECOVERY STANDARD 2017 FOR RECOVERY STRAPS tells us that your calculations should allow for 2 times the total resistance as a recommended safety factor and therefore a 100T minimum at 1.5 times safety factor or a 150T snatch strap at 2 times safety factor would be required for Scenario 2.

In scenario 2, another option may be a **Tow Strap** of over a 150t may be considered.

CHECK LIST BEFORE GOING TO HARVEST OR SOWING

- Check the operation Manual of the equipment to see if there is rated recovery points, all manuals have section on this.
- If there are no recovery points, is the equipment front or rear axle drive, as this will determine what additional recovery equipment might be needed such as
 - Additional axle straps, these can be rated flat slings as they have an 8 to 1 safety factor
 - Bridle sling, these can be a rated round sling.
 - Rated Grade 5 screw pin bow shackle, these are used only to join the axle strap to the joining strap and not to engage the Snatch strap
 - A good shovel, you may need to dig out surrounding mud, sand or gravel to free the tires.
 - An old tire tread to act as a catcher if the strap fails, feed the snatch strap through the tire before hooking it up.



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GUIDELINES FOR SAFE USE

CONNECTING THE RECOVERY STRAP

Carefully inspect the recovery strap to determine it's in useable condition. If the strap is wet, dirty, cut, chuffed or frayed, it will not work properly. A wet strap may be 20% under strength, a damaged strap may break. Avoid contact with sharp edges and hot surfaces.



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Roll out the strap and ensure there are no twists or knots in it, leaving the slack between the two vehicles.



Make Sure, You Use the Correct Recovery Points. Use Either a Rated Shackle, Rated Soft Shackle or Tow Bar recovery adapter or load pin point for tow bar

The joining of straps should be avoided whenever possible. If you need to join two straps together, never use shackles or any metal products these can become a missile if anything let's go. A soft shackle is available to help prevent such accident.

Check both vehicles for correct recovery points or aftermarket recovery points (correctly fitted and rated).

DO NOT CONNECT TO A TOW BALL OR TIE DOWN POINT OR BULL BAR.



After you have attached the recovery strap to the recovery point. To reduce any injuries or damage place a dampening item over the center of the strap. This can be a tire tread or weighted bag as examples.

Check all connections are sound and correct and move all bystanders to a safe distance.

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The only people involved in the recovery are the drivers of each vehicle.

MAKING THE RECOVERY

- Before the recovery operation, drivers must agree on the point to where the stranded vehicle is to be recovered and the signal (radio, hand signal or horn blast) when that point is reached.
- With communications maintained between both vehicles and the recovery strap secure, the recovery vehicle should gently accelerate, taking up the slack and proceed at 10-12kmh. The stranded vehicle should be in 1st gear or 2nd gear low range assisting the recovery approximately 3 seconds prior to full strap extension.
- If the vehicle is not recovered the first time, check for any other obstacles and try again with greater speed (15-20kmh). Excessive speed and continual jerking can lead to damage on drivelines, tow points bull bars and chassis. Snatch straps require time to retract to their original length for optimal performance.
- When the recovered vehicle reaches the agreed point, the driver should advise and then stop, the recovery vehicle can then stop safely behind the first.
- In the event of the snatch strap failing to recover the vehicle other recovery options such as winching should be used.
- Only until both vehicles are stationary and secured can the recovery strap be removed.

ALWAYS ENSURE THE FOLLOWING WHEN USING A RECOVERY STRAP

- Never allow your strap to rub against sharp or hot surfaces.
- Avoid twists, kinks and knots, after washing and when dry. Always coil your strap for storage.
- Wash the strap with mild detergent then allow to dry. Storage, Keep out of direct sunlight.
- Check strap for damage or wear and replace if required.
- Check shackles for damage if the pins are hard to turn the shackle has been overstressed. Must be replaced.
- When choosing your strap always do your calculation first to make sure you do not purchase an overrated strap. The strap must be allowed to stretch the 20% to be effective and perform the Snatch action.

NEVER CHOKE YOUR SNATCH STRAP IT REDUCES IT ABILITY BY 20% AND CAN CAUSE A CONDITION CALLED "BLOW OUT",

THIS IS WHERE THE LOAD FORCE IS PLACED ON THE SIDE OF THE STRAPS CONNECTION EYE AND CAN CAUSE THE EYE TO FRAY TO A POINT OF FAILURE

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Examples of blow out:

60T snatch strap used in a choked position on a sharp edge.



100T snatch strap used on a choked position on a blunt edge



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.

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