

A tiered kit list plus a WLL/MBS cheat sheet, spec-sourced to WARN, ARB, MAXTRAX, Bubba Rope, Factor 55, Crosby, and ASME. No prices shown, no signup required. Full citations and the complete guides: riggingops.com/overland-recovery-kit-checklist/ and riggingops.com/wll-vs-mbs/

Tiers are additive: Tier 2 carries everything in Tier 1 plus its own items, Tier 3 carries Tiers 1 and 2 plus its own. Buy for your actual gross vehicle weight, not your dream build. Where a manufacturer's manual differs from anything here, the manual wins.

T1 Tier 1: Every Off-Pavement Vehicle

START HERE

- ☐ **SAFETY** Heavy leather gloves whenever you handle winch rope (*WARN*); worth wearing for straps and shackles too
- ☐ **RECOVERY** A rated recovery point, front and/or rear — a factory tow hook is not one (*ARB*)
- ☐ **TOOLS** A shovel (*Overland Expo*)
- ☐ **TIRE** Pressure gauge plus a way to air back up (*Overland Expo*)
- ☐ **SAFETY** Basic first-aid kit and a way to call for help where cell service will not reach

T2 Tier 2: Self-Recovery, No Winch

ADDS TO TIER 1

- ☐ **TRACTION** A pair of traction boards. Wedge firmly against the tread, angled not flat. Never spin the wheels — heat melts the board and voids warranty (*MAXTRAX*)
- ☐ **ROPE** A kinetic rope or snatch strap sized to your vehicle (see sizing panel) (*ARB* / *Bubba Rope*)
- ☐ **HARDWARE** Rated shackles, 3.25 tons minimum. Never substitute an unrated bolt, chain link, or clevis (*ARB*)
- ☐ **SAFETY** A recovery damper, fitted to the middle of the strap or winch line to restrict whip on failure. Style and attachment vary by maker — follow your damper's own instructions (*ARB*)

T3 Tier 3: Winch Kit for Remote Travel

ADDS TO TIERS 1-2

- ☐ **WINCH** A winch sized to the vehicle, never exceeding the winch or rope rating. Clutch/freespool differs by brand — check your manual (*WARN*)
- ☐ **RIGGING** A snatch block when the pull needs more than the winch alone. More line under tension means more stored energy (*WARN*)
- ☐ **SAFETY** Stand clear of the rope and load on EVERY pull, and keep bystanders away (*WARN*)
- ☐ **WINCH** Keep minimum wraps on the drum at all times: 5 wraps steel, 10 wraps synthetic (*WARN*)
- ☐ **HARDWARE** Shackles and hardware matched to the winch line, not just the strap. For scale, ARB rates its own recovery points for 4.75-ton shackles and 17,600 lb snatch straps (*ARB*)

Sizing cheat sheet.

Winch: 1.5x GVW minimum (*WARN*), never exceeding the winch or rope's own rating.

Snatch strap: 2-3x GVW (*ARB*). Use the lighter vehicle's GVW in a two-vehicle recovery.

Kinetic rope: 3-4x vehicle weight (*Bubba Rope*). A different multiplier than ARB's strap rule — do not mix the two products' sizing logic.

Shackles: 3.25 tons minimum (*ARB*), also checked against the strap or winch line's own rated capacity.

What to skip. A second winch for most builds. Chains or ratchet straps as recovery gear — not engineered or rated for shock loading. A tow ball as a recovery point: a hazard, not an option.

$$\text{WLL} = \text{MBS} \div \text{design factor}$$

The four terms

WLL (Working Load Limit) — the maximum load the gear is rated for in normal, in-line use. A ceiling for service, not a target.

MBS (Minimum Breaking Strength) — the load at which it actually fails in controlled destructive testing. The *lowest* value across tested samples, not an average. Never a number to approach in service. Also written MBL or MBF; all three mean the same measurement.

SWL (Safe Working Load) — an older term, generally treated as synonymous with WLL in current rigging usage.

Design factor — the ratio separating the two. 5:1 means the gear is rated to hold one-fifth of what it takes to break it.

MBS is where it breaks. WLL is what you are allowed to load it to. Confusing the two, or trusting a WLL stamp without knowing the design factor behind it, is how gear fails under load.

Published design factors

HARDWARE	FACTOR	PER
Shackles, to 150 tons	5:1 min	ASME B30.26 Ch 26-1
Rigging blocks	4:1 min	ASME B30.26 Ch 26-5
Wire rope slings	5:1 min	ASME B30.9
Alloy chain slings	4:1 min	ASME B30.9
Crosby eye-hook shackles	5:1	Crosby
Crosby large alloy / shank / swivel	4.5:1	Crosby

Worked example

Factor 55 Extreme Duty Soft Shackle, 3/8 in x 10 in: **8,700 lb WLL** against **43,500 lb MBS**. Divide them out and you get exactly **5:1**. Both figures come straight from the manufacturer's product page.

Off-road gear has no equivalent mandate. There is no universal testing standard governing 4x4 recovery gear ratings. Manufacturers borrow the words (WLL, MBS, rated capacity) without the standard behind them. A WLL from a brand that also publishes its MBS is worth more than the identical number from a brand that publishes neither.

WARN, ARB, MAXTRAX, Bubba Rope, Factor 55, and Crosby are trademarks of their respective owners; RiggingOps is not affiliated with or endorsed by any of them.

Per-chapter ASME factors are attributed to manufacturers citing the standard (for example WARN attributing 4:1 to B30.26 on its own block); ASME's paywalled section text was not read verbatim. RiggingOps is not a licensed rigger, certified instructor, or engineering authority, and performs no hands-on testing. Verify against the linked source, your own gear's manual, and a qualified professional before any real-risk decision.