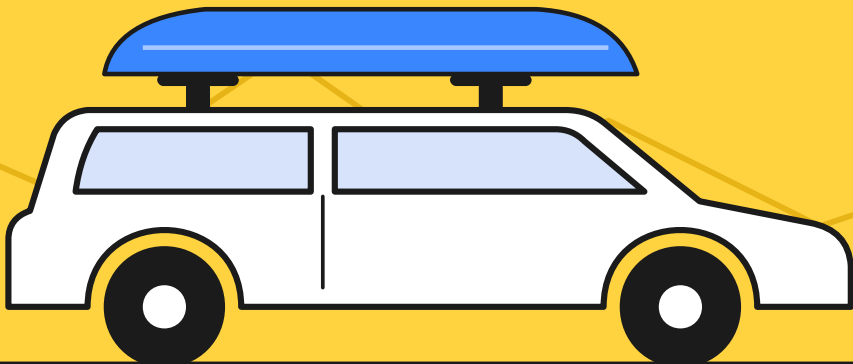


FIELD GUIDE · FIRST EDITION

Cargo Box Guide

Choose it. Fit it. Pack it. Lock it. Keep it working
for years.



ROOFTOP BOXES · ANY VEHICLE

BY THE RACK SPECIALISTS AT PACIFIC RACK

Contents

01	Start here	3
02	Box, bag, basket, or hitch?	4
03	Choosing the size	5
04	Will it fit your car?	6
05	Mounting it right	8
06	Packing it	9
07	Driving with a box	10
08	Locks and keys	11
09	Off-season storage	12
10	Maintenance schedule	13
11	Troubleshooting	14
12	Step-by-step repairs	15
13	Parts that wear out	16
14	Buying used	17
15	Checklists and glossary	18

Cargo Box Guide, first edition, 2026. © 2026 Pacific Rack Outfitters LLC. All rights reserved.

This guide is general advice for cargo box owners. It is not a substitute for the instructions, load ratings, and warnings from your vehicle, rack, and box makers. When their numbers differ from anything here, theirs win. Brand names are used for identification only; this guide is independent and not endorsed by any manufacturer.

01

Start here

A cargo box is the easiest way to add space. Get four things right and it just works.

300–610 L

Typical box volume, about 11–21 cubic feet

~165 lb

A common box load limit (75 kg). Check yours

30–50 lb

What the empty box itself weighs

24–32 in

Crossbar spread most boxes are built around

Ranges from published box specs (Thule, Yakima). Your box's label and manual come first.

Six rules to live by

1 Length beats volume

Buy for the longest thing you carry. Volume is easy to fill; length is the hard limit.

2 The lowest limit wins

Roof, rack, and box each have a limit. Box plus cargo must stay under the smallest one.

3 Heavy goes in the middle

Dense items low and between the bars. Light, bulky stuff at the ends.

4 Clamps must really grip

A knob can feel tight while the clamp isn't seated. Try to slide the box after tightening.

5 Close it before you lock it

Lid even all the way round first. Never force a key.

6 Know your height

Garages and drive-throughs are where boxes get wrecked.

FIELD NOTE

Before you buy, open your rear hatch all the way and look up. That space is what the box has to clear.

Pro tip!

02

Box, bag, basket, or hitch?

A roof box isn't the only answer. Pick by what you carry and how often.

	Roof box	Roof bag	Basket	Hitch box
Weather protection	Good	Fair	None	Good
Security	Lockable	Low	Low	Lockable
Long items (skis)	Yes	Some	Yes	No
Wind noise, fuel	Low	Medium	High	Low
Storage off the car	Bulky	Folds flat	Bulky	Bulky
Easy to reach	Reach up	Reach up	Reach up	Waist height
Cost	Higher	Low	Medium	Medium

Pick by how you travel

If you...	Go with
Ski or snowboard often	A long roof box
Take a few road trips a year and have little storage space	A roof bag
Haul odd shapes, coolers, firewood, or dirty gear	A basket with a cargo net
Can't lift onto a tall roof, or need the roof for bikes or boats	A hitch box or hitch tray
Want weatherproof, lockable space all season	A roof box



Images: AI-generated illustrations and schematics; hardware varies by model.

03

Choosing the size

Inside length decides what fits. Width and height decide what else fits on the roof.

Size	Inside length	Volume	Max ski	Best for
Short	127–135 cm 50–53 in	300–360 L 11–13 ft³	None	Luggage and camp gear; short roofs; tight hatches
Medium	160–170 cm 63–67 in	400–450 L 14–16 ft³	155–160 cm	Family trips, kids' skis, most compact SUVs
Large	180–200 cm 71–79 in	450–500 L 16–18 ft³	180–200 cm	Adult skis and boards; the all-rounder
Long / Alpine	210–228 cm 83–90 in	400–610 L 14–21 ft³	205–220 cm	Long skis, longer roofs; narrow ones leave room for a bike

Ranges from Thule's published fit chart (inside length, volume, max ski length). Confirm the exact model.

Width and height trade-offs

Choose	You gain	You give up
Narrow box	Room beside it for a bike or kayak carrier	Some volume
Wide box	Bulky items: chairs, duffels, strollers	All the side space on the bars
Low-profile box	Less wind noise; fits garages more easily	Tall items won't fit
Tall box	More volume	More height, wind, and fuel use
Opens both sides	Load from either side of the car	Usually costs more

FIELD NOTE

Measure your longest item, then add a few inches. Ski tips, boots, and bindings need real inside length, not the outside length on the box label.

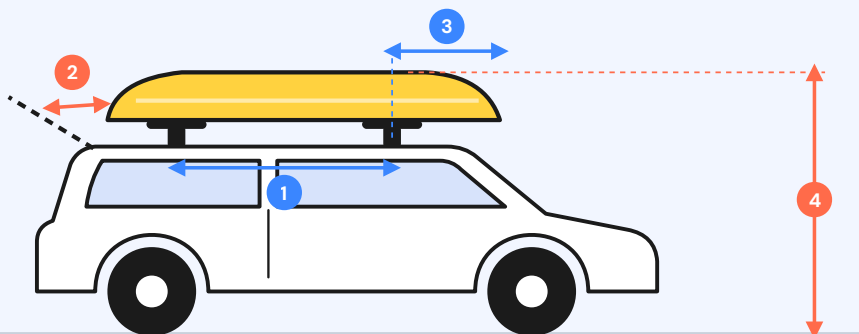
Pro tip!

04

Will it fit your car?

Four measurements and one weight check. Do them before buying.

Measure these four



1 Crossbar spread

Center to center. Must fall inside the box's mounting range.

2 Hatch clearance

Open the hatch all the way. The box must clear it.

3 Front overhang

Box past the front bar. Shorter is quieter.

4 Loaded height

Ground to box top. Put it on a dash sticker.

Do the weight math

Example using a 165 lb roof rating. Swap in your numbers.

Line	Example	Yours
Lowest roof limit (vehicle or rack)	165 lb	
Minus: rack weight	- 15 lb	
Minus: empty box weight	- 45 lb	
Cargo you can carry on the roof	105 lb	
Also check: the box's own load limit	165 lb	
Your cargo limit is the smaller of the two	105 lb	

Rack and box weights here are examples. A large box can weigh around 46 lb empty (Thule Motion XT XL spec).

Other fit checks

Check	Why
Box mounting range vs. your bar spread	Clamps must land on the bars, inside their adjustment range
Bar shape and size	Some clamps don't fit thick or oddly shaped factory bars
Sunroof and antenna	The box or clamps must clear both
Room for other carriers	Leave space if you also carry bikes or boats
Reaching the lid	On tall vehicles, can you open it and reach inside?

05

Mounting it right

Most boxes mount in minutes. The details are what keep them on.

Mount types

Mount	Why people like it	Fits	Watch for
Quick-grip claws	Seconds, no tools	Most bars	Knob feels tight before the claw is seated
Twist and click mounts	Fast, shows when tight	Most bars	A worn clutch stops clicking at the right point
U-bolts and plates	Fits odd bar shapes	Check legs	Too short for thick aero bars
T-slot bolts	Clean, low profile	Slot bars	Bolt head must match the slot exactly

Fit it in 6 steps



1 Check the box's mounting range against your bar spread.



2 Slide it forward until the hatch opens fully, and no farther.



3 Center it, or offset it on purpose so you can reach the lid.



4 Seat every clamp fully and tighten it as designed.



5 Try to slide the box forward, back, and sideways.



6 Measure loaded height. Recheck clamps after the first drive.

WATCH OUT

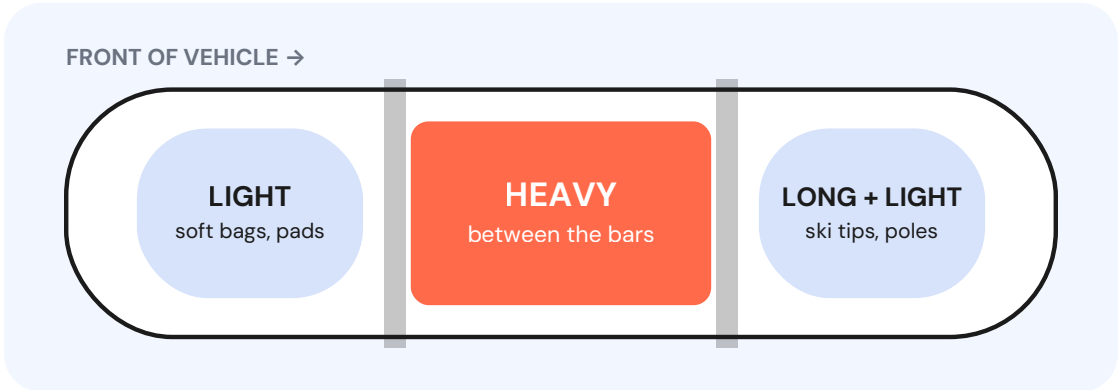
Look at the box floor around each mount every season. Cracks, enlarged slots, or pulled-through hardware mean fix it before the next trip.

Images: AI-generated illustrations and schematics; hardware varies by model.

06 Packing it

Weight low and in the middle. Everything strapped. Nothing that leaks.

Where things go



Good in the box, better in the car

Pack in the box	Keep in the vehicle
Sleeping bags, pillows, clothes	Coolers, water, and food containers
Skis, boards, poles	Fuel, propane, or anything that can leak
Camp chairs, tents, pads	Loose metal tools and heavy hardware
Duffels and soft luggage	Electronics and valuables

Packing tips

- **Use the inside straps** if the box has them. They stop the load sliding forward when braking.
- **Pack in dry bags.** Boxes are weather resistant, not waterproof. Long rain finds the seams and mounting slots.
- **Don't overstuff.** A bulging lid is the top cause of locks that won't turn.
- **Weigh heavy bags** on a bathroom scale. It's easy to go over without noticing.

07

Driving with a box

Taller, a bit more wind, a little more fuel. Mostly it's about remembering it's there.

Situation	What changes	What to do
Garages and drive-throughs	Loaded height is taller	Height sticker on the dash
Highway speeds	More wind noise and fuel use	Keep the box closed and aimed straight; remove it when not needed
Crosswinds	More push from the side	Slow down a little
Car washes	Brushes can catch the box	Remove it, or hand wash
Whistling or humming	Box too far forward or open bar slots	See troubleshooting

Before every drive

- ☐ Lid closed and locked on every latch point
- ☐ Key out of the lock
- ☐ Clamps tight: push test
- ☐ Nothing loose on the roof
- ☐ Height sticker in view



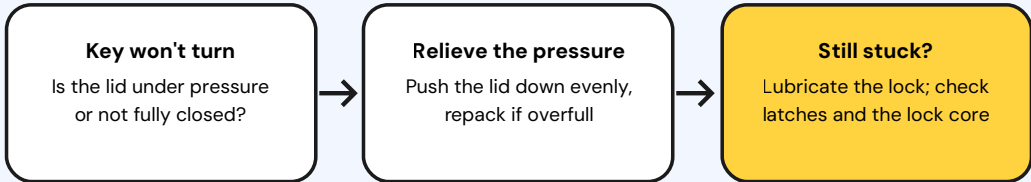
Images: AI-generated illustrations and schematics; hardware varies by model.

08

Locks and keys

Most "broken locks" are a lid problem. Most lost keys are a five-minute fix.

Key won't turn?



Never force the key or use it as a lever. Keys are cheaper than locks, and locks are cheaper than lids.

Lost your key?

- 1 Find the key number. It's often stamped on the key, and sometimes on the lock face.
- 2 With the number, a replacement key can usually be ordered.
- 3 No number? Many boxes use replaceable lock cores. Swap the core and get new keys.
- 4 Write the number down today, and photograph it with your phone.

Lock care

Problem	Fix
Stiff lock	Use a dry lock lubricant; avoid oily sprays that collect grit
Frozen lock	De-icer made for locks; never force the key
Key turns but lid won't open	Push down on the lid while turning; check the latch rods
Worn or broken key	Order a new key by number before it snaps off in the lock

FIELD NOTE

Matching lock cores let one key open your box, bike rack, and crossbars. One key on the ring instead of four.

Pro tip!

09

Off-season storage

Boxes are big. A storage plan is what makes taking one off realistic.

Option	Good for	Watch out for
Leave it mounted	Year-round use	UV fading, fuel use, garage height
Garage ceiling hoist	One-person removal; saves floor space	Hoist and ceiling must be rated for the box
Wall hooks or rack	Storing on its side	Support the box evenly; don't hang it by the lid
Flat on shelves or the floor	Cheapest	Keep it off damp concrete; don't stack weight on it

Store it right



1 Empty it and wipe the inside dry.



2 Rinse road salt off mounts and hinges.



3 Close it, but leave it unlocked so the lock doesn't seize.



4 Keep the mounting hardware and keys together, labeled.

Images: AI-generated illustrations and schematics; hardware varies by model.

10

Maintenance schedule

A few minutes a season keeps a box working for a decade.

How often	Task	Time
Every trip	Push test the clamps; check every latch engages	2 min
Every few trips	Wipe out dirt and grit; check inside straps	5 min
Each season	Inspect the box floor around mounts for cracks	5 min
Each season	Lubricate the lock and latches with dry lube	5 min
Each season	Check lid lifters or hinges for wear	5 min
Yearly	Wash with mild soap; a plastic UV protectant helps slow fading	20 min



Images: AI-generated illustrations and schematics; hardware varies by model.

11

Trouble-shooting

Most box problems have a simple cause. Start with the easy fix.

Problem	Likely cause	Fix	Difficulty
Won't lock	Lid under pressure, bag across the edge, or a hinge off track	Unload, check the lid sits even, then try the key	Easy
Key turns, lid won't open	Latch rod bent or disconnected	Push down on lid while turning; inspect latch rods	Medium
Box shifts on the bars	Clamp bottomed out, or wrong clamp for the bar shape	Re-seat each clamp; check fit on aero bars	Medium
Hatch hits the box	Box too far back, or too long for the roof	Slide forward within the range; or go shorter	Easy
Water inside	Seams, mounting slots, lid edge in long rain	Pack in dry bags; check the lid seal	Easy
Whistle or hum	Box too far forward, open bar slots, loose strap	Move it back slightly; fill bar slots	Easy
Lid won't stay open	Worn lid lifter or hinge	Replace the lifter or hinge	Medium
Crack in the shell	Impact, cold, UV, or overload at a mount	Small crack in sound plastic: repair. At a mount: replace	Judge it

FIELD NOTE

Keys are cheaper than lock mechanisms, and lock mechanisms are cheaper than lids. Never use the key as a lever.

Pro tip!

12

Step-by-step repairs

Three repairs most owners can do at home.

Repair a small crack



- 1 Check both ends. Cracks run farther than they look.



- 2 Clean the area inside and out.



- 3 Reinforce the inside with waterproof repair tape.



- 4 Bond the outside with a plastic-bonding epoxy.



- 5 Wipe off excess and let it cure fully.



- 6 If it keeps growing, the plastic is done. Replace the box.

Replace a mounting clamp

- 1 Note the clamp's part number or bring a photo of it installed.

- 2 Remove the old clamp from inside the box, keeping the hardware in order.

- 3 Fit the new clamp in the same slot and orientation.

- 4 Mount the box and push test before driving.

Swap a lock core

- 1 Open the lid. The core usually comes out only with the lid open and the right key or tool.

- 2 Use a core-removal key, if your system has one, to pull the old core.

- 3 Push the new core in until it clicks.

- 4 Test with the new key before closing the lid.

Images: AI-generated illustrations and schematics; hardware varies by model.

13

Parts that wear out

Most box problems are a \$15–60 part, not a new box.

Part	Signs it's going	What to get
Mounting clamps	Won't tighten, cracked, slipping	Replacement clamp for your box model
Lock core and keys	Stiff, worn, or lost key	New key by number, or a replacement core set
Lid lifters and hinges	Lid drops, opens crooked	Model-specific lifter or hinge
Latches and latch rods	One side won't catch	Replacement latch assembly
Inside straps	Frayed or missing	Replacement strap kit
Handles	Cracked or broken	Replacement handle with lock, if fitted

Keep with your box

- ☐ Spare key, with the number written down
- ☐ The mounting hardware bag and any special tool
- ☐ The manual, or a photo of its parts page
- ☐ Your bar spread and loaded height, written down



Images: AI-generated illustrations and schematics; hardware varies by model.

14

Buying used

Used boxes can be great value. Check these before you pay.

Check in person

- ☐ Open and close from both sides
- ☐ Lock and unlock every latch
- ☐ Look at the floor around every mount
- ☐ Look for cracks, especially at corners
- ☐ Check the lid stays up
- ☐ All 4 clamps included and working
- ☐ Key included, and its number

Ask the seller

- ☐ How old is it?
- ☐ Was it stored outside?
- ☐ Any cracks or repairs?
- ☐ What bars was it on?
- ☐ Do you have the manual?
- ☐ Why are you selling it?

Red flags

You see	It means
Chalky, faded, or brittle plastic	UV damage; cracks are coming
Cracks around the mounts	Structural; walk away
No key and no key number	Budget for a lock core swap
Missing clamps	Price the replacements before deciding
Lid sits uneven when closed	Twisted box or bad hinge

FIELD NOTE

A box is only a deal if it fits your car. Check the length and mounting range against your bar spread before driving to see it.

Pro tip!

15

Checklists and glossary

Tear-out lists for the driveway.

Before you buy

- ☐ Longest item measured
- ☐ Bar spread measured
- ☐ Hatch clearance checked
- ☐ Weight math done (chapter 4)
- ☐ Room for other carriers

First install

- ☐ Clamps fully seated
- ☐ Push test passes
- ☐ Hatch opens fully
- ☐ Height measured and noted
- ☐ Recheck after first drive

Pack and go

- ☐ Heavy in the middle
- ☐ Inside straps used
- ☐ Nothing that leaks
- ☐ Lid closes without force
- ☐ Locked; key out

Season end

- ☐ Empty and dry
- ☐ Mounts rinsed
- ☐ Floor checked for cracks
- ☐ Lock lubricated
- ☐ Keys and hardware together

Glossary

Bar spread: Distance between front and rear crossbars, center to center.

Mounting range: The bar spreads a box's clamps can reach.

Inside length: Usable length inside the box. Shorter than the outside length.

Load limit: Most weight the box is rated to carry.

Dynamic roof load: Most weight the roof can carry while driving.

Lock core: The removable cylinder the key turns.

Key number: Code stamped on a key so a copy can be ordered.

Lid lifter: The spring or strut that holds the lid open.

Dual-side opening: A box that opens from either side of the car.

Loaded height: Ground to the top of the box on your vehicle.

THANKS FOR READING

Need a clamp, a key, or a second opinion?

Replacement clamps, lock cores, keys, lid lifters, and crossbars,
from people who work on racks every day.

Lost your key? Send us the key number or a photo of the lock
and we'll find the match.

YOUR READER CODE

XXXX-XXXX

One-time use. Each copy has its own code.

pac-rack.com