

Winches, Lines, Grinding and Tailing

What we use winches for: Winches provide the mechanical advantage to hoist and trim the sails and running rigging on a sailboat. There are usually no powered winches. Depending on circumstances, there can be thousands of pounds of pressure on a line, so don't be casual when working with lines and winches.

Grinding and tailing: The act of rotating the handle is grinding, pulling on the line being tightened is tailing. Because the winch won't pull the line unless the line is tight on the winch drum, both actions need to occur simultaneously. Sometimes one person does both actions, sometimes it takes one person for each action. Thus the person pulling is the tailer, the person grinding is the grinder. One little joke we do from time to time (but not on races) is to get halfway through a tack and then not pull hard on the line. The grinder just keeps grinding but the sail doesn't come in at all.

Wraps are always clockwise. Every winch you'll ever use will have the wraps going clockwise. If you put the wraps on backwards the line won't move at all and you'll feel really stupid. (Editor note: some port winches on Americas Cup boats wrap CCW, it's a vector thing)

How many wraps are enough? In light air or with light loads, 1 - 2 wraps might be enough. 3 wraps are standard. Do NOT use more than 3 or maybe 4 at the most. Too many wraps can cause severe problems because it takes too long to remove them, or they cause overrides (see below).

When you're putting the wraps on the winch drum, **make sure they're stacked neatly** on top of each other, and not crossed. When a wrap gets crossed (an override) and the grinder is grinding in the line, the crossed wrap gets underneath another wrap, and the line cannot later be released. You usually don't find this out until the next time you tack and the sheet doesn't release from the old winch and doesn't run, and the boat is out of control. You fix an override by unwinding the sheet as far as possible, then leading the sheet backwards counterclockwise to another winch, and grind until you pop the override. An override can also be caused by leading a line incorrectly.

Put the handle back where it belongs when you're done: Every skipper has a place where each winch handle is kept when not in action. It might be a little cubby under the winch, or a special handle pocket. Once you've finished with your task, put the handle back. NEVER leave a handle loose on deck. Losing a handle over the side is guaranteed to make the skipper very unhappy and mark you as an idiot to one and all.

How to grasp the winch handle. Pick the handle up by the shaft with your thumb over the lock at the end away from the grip. This makes it easy to control the handle and insert it in the top of the winch. If you do the intuitive thing and pick it up by the grip (which rotates easily) you can't control it, and assuming you have the line in your other hand, you'll feel very foolish.

Inserting the handle in the winch. Using your thumb to move the locking lever, place the handle in the hole at the top of the winch. Release the thumb lock and **CHECK TO MAKE SURE THE HANDLE IS SEATED AND LOCKED PROPERLY** by jerking it up and down a couple of times. It's easy to ignore that safety check, but you'll find out why it's performed when you're grinding away with all your effort, the handle pops out of the winch, and you land face-first on the nearest hard surface.

How to use self-tailing winches: Self-tailing winches have an assembly on top of the winch where you can put the line in a feeder (called the jaws) and as you're grinding it holds the sheet.

Winches almost always have 2 speeds. Grinding one direction is faster, the other direction is more powerful (easier to turn but brings the line in slower).

Be careful when you're grinding. Watch the end of the line to make sure you're not over-tightening the sail. Be careful with clothing and loose objects when you're grinding. Don't grind your clothing or other loose objects into the wraps. Never wear a scarf or other loose object around your neck.

How to set up the winch: Take your three wraps, look carefully to make sure they're stacked neatly and not crossed. Pull on the line to tighten them up until there's resistance. If it's a self-tailing winch place the line in the jaws. Take the handle from it's home, insert it in the top of the winch and **make SURE it's seated and locked (if it's a locking handle)**. Pull the line while you're grinding in the winch. When you're done tie off the line on the cleat and put the handle back where it lives. (Note: some skippers have their own set-up preferences, some want only one loose turn on the line until just before the tack or jibe, check if in doubt.)

How to ease a line when it's under stress: Frequently lines are under heavy stress. If you want to ease it just a bit (as opposed to releasing it) put the palm of an open hand lightly on the wraps while you ease the line.

How to release a line and make sure it runs: When you're tacking the jib or dropping a halyard make sure the line will run cleanly and not get stuck on other objects, don't stand on a line, make sure a fellow crew member is not standing on a line when released, or clump up and get stuck in the block. Look the line over and shake out any clumps of line or entanglements with other lines. (The cockpit can be a messy place. On racing boats you'll have up to 10 sets of lines in the cockpit, it's a good idea to be tidy with the lines and keep them coiled, flaked or stowed.) Take the handle out of the winch and put it away. Then peel the wraps off the top like you're stirring your coffee. As the line comes off the winch it will begin to run. Let it run through you hands, hold it loosely with no pressure. This will keep kinks from forming and sticking in the block. Don't turn your back on it until it's completely run out. It's your job to make sure it runs cleanly.

Always watch whatever you are adjusting. Stop grinding if a sail hangs up on an object. Do not tear the sails, bend stanchions, damage other gear or injure a fellow crew member. Larger winches can produce several thousand pounds of line tension. If someone says "skirt" this means the sail has hung up and needs to be freed before it can be taken in more. Sail ties sometimes are accidentally left on sails or sails are tied down to the deck to prevent being blown overboard. If a sail is raised without releasing the ties major damage can be done or the sail ruined.

Thanks to George Harvey, Grinder Extraordinaire, who has been a grinder on a succession of pretty good racing boats in Puget Sound for the last 35 years for sharing his knowledge.