

Be Clock Wise!

Clockwise and Counterclockwise are commonly used to specify which direction to rotate a tool or valve, but they are easily mixed up!

Counterclockwise (CCW)

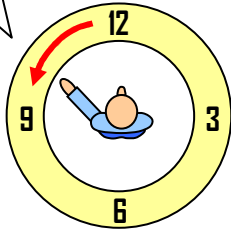


Wise rhymes with *Right*.
Counter Clock *Right* is
 Clock *Left*.

cCw

Imagine
 moving
LEFT
 from
C to **c**.

12 to 9
LEFT
 behind!



Clockwise (CW)

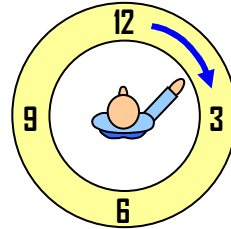


Wise rhymes with *Right*.
 Clock *Wise* is
 Clock *Right*.

Cw

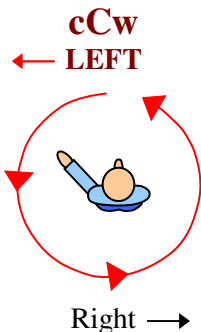
Imagine
 moving
RIGHT
 from
C to **w**.

12 to 3
RIGHT
 by me!



Clock Circle Paradox

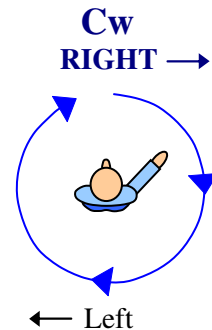
At the bottom of the clock circle, you must move exactly *opposite* the direction you move at the top.
RIGHT (Cw) and **LEFT** (cCw) refer to the **TOP** of the clock circle as you **FACE** it.



No matter where you
 are on a clock circle,
 use the rhyme:



Face the
CLOCK
 and move
 from the
TOP!



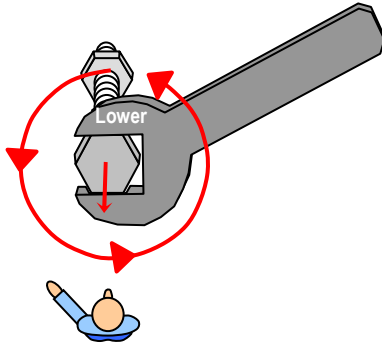
Tools: Facing Clock

“Right to Tighten; Left to Loosen”

Use the above saying when you're working with tools and able to face an item.

Left to Loosen (CCW)

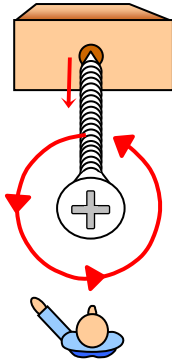
Loosen a bolt from a nut.



Tip

When you turn a bolt with a wrench, place the upper jaw on the trailing (coming from behind) surface and the *lower* jaw on the *leading* surface (as shown in both cases). This is especially important with an adjustable crescent wrench which has a moveable lower jaw that can slip off a trailing edge.

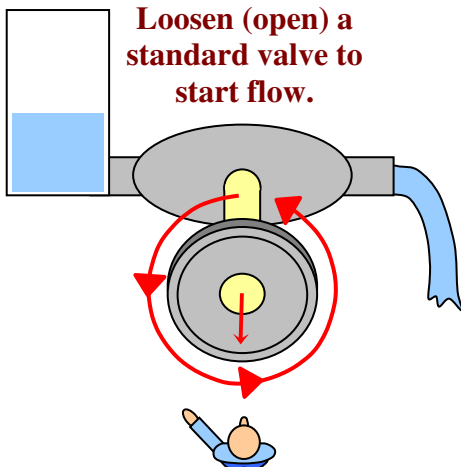
Loosen a screw from an object.



Tip

To make it easier to insert a screw into wood, use an electric drill to drill a pilot hole slightly smaller than the screw diameter. Then, if available, attach a screwdriver bit to the drill and slowly drill clockwise to insert the screw. To remove the screw, slowly drill counterclockwise.

Loosen (open) a standard valve to start flow.

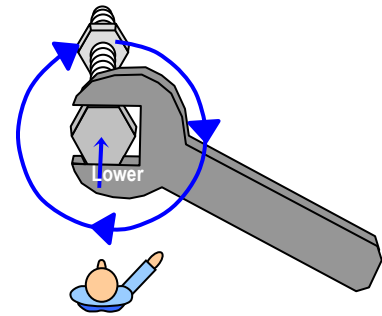


TRAP!

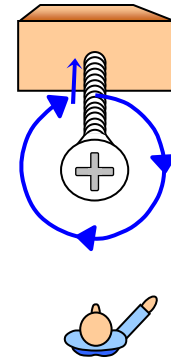
If you open a valve all the way, there is a danger that someone, not knowing it's already open, may think it's stuck and try to force it open. **Escape:** After you open a valve all the way, close it slightly, about 1/8 turn. That way anyone attempting to "open" it can turn it a bit and realize it's already open.

Right to Tighten (CW)

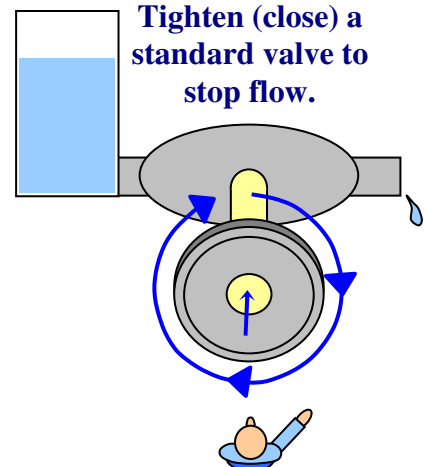
Tighten a bolt into a nut.



Tighten a screw into an object.



Tighten (close) a standard valve to stop flow.

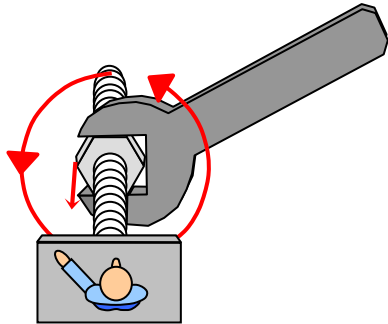


Tools: Not Facing Clock

“From Back of Clock, Right to Remove, Left to Lock!”

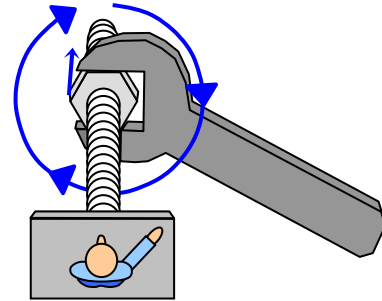
Use the above saying when you're not able to face an item and must view its "back" side.

CCW: Left to Lock



When a nut or other item is seen from its "back" side, you must reverse the normal CW and CCW rotations.

CW: Right to Remove



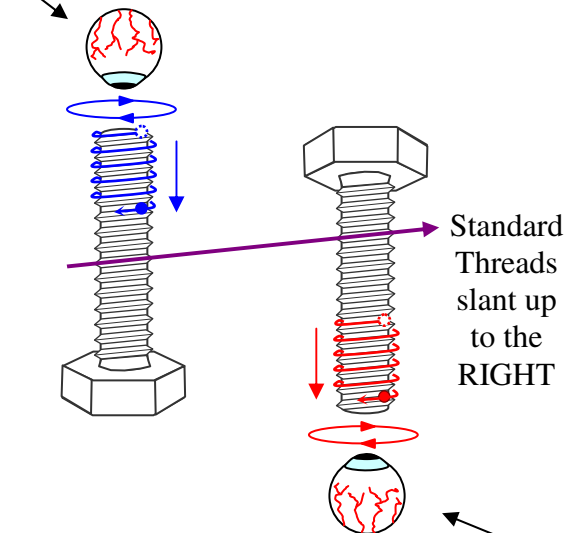
Standard vs. Reverse Threads

A ball rolling down and around the grooves of a bolt's metal threads illustrates how a nut would move when turned in the same direction.

Standard Threads

Right to Tighten; Left to Loosen

As *faced* by your eye, the ball (nut) moves clockwise towards the bolt head.
CW: Right to Tighten.



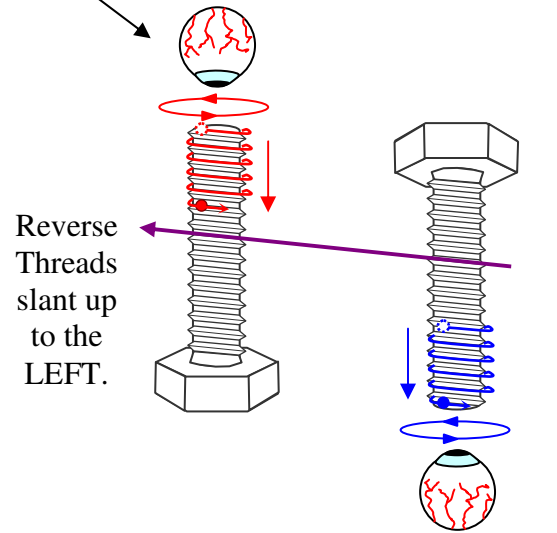
As *faced* by your eye, the ball (nut) moves counterclockwise off the bolt.
CCW: Left to Loosen.

Tip: Get a nut and bolt and experiment to observe how they rotate.

Reverse Threads

Right to Remove; Left to Lock

As *faced* by your eye, the ball (nut) moves counterclockwise towards the bolt head.
CCW: Left to Lock.



As *faced* by your eye, the ball (nut) moves clockwise off the bolt.
CW: Right to Remove.

Reverse-thread examples: Fan shafts (so blades won't spin off). "Designer" valves.

Your Turn!



Match the word number with the example letter that best fits.

- | | |
|-------------------------|--------------------------|
| 1) ___ Clockwise | a. Rotate left from top |
| 2) ___ Counterclockwise | b. Rotate right from top |
| 3) ___ Left to Loosen | c. From back of clock |
| 4) ___ Left to Lock | d. Facing clock |
| 5) ___ Standard threads | e. Right to Remove |
| 6) ___ Reverse threads | f. Right to Tight |

True or False

- 7) _____ In general, face the clock and move from the top.
- 8) _____ Both “back of clock” and “reverse threads” reverse the normal rotation.
- 9) _____ Place the lower wrench jaw on the trailing edge of the bolt head.
- 10) _____ Always close an open valve slightly.

Answers: 1b, 2a, 3d, 4c, 5f, 6e, 7T, 8T, 9F, 10T