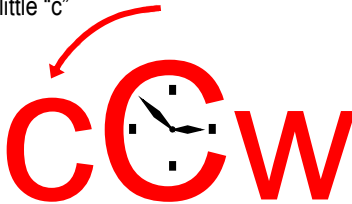


Be Clock Wise!

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

Counterclockwise Left

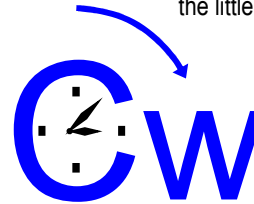
Move left to the little "c"



Imagine "C" is the clock and the little "c" stands for "counter."

Clockwise Right

Move right to the little "w"



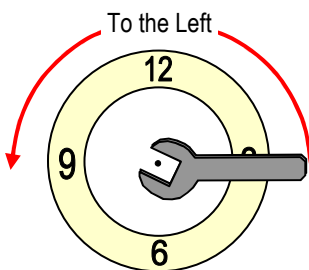
"Wise" rhymes with "Right" so ClockWise = ClockRight.



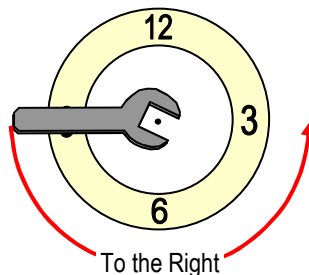
Imagine "C" is the clock and the little "w" stands for "wise."

Left-Right Paradox

The general rule is cCw moves left and Cw moves right, but at the bottom of the clock, you move in the *opposite* direction!

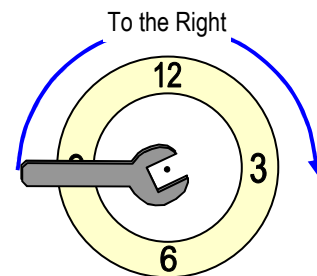


cCw

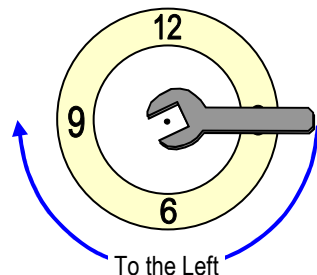


Face
CLOCK
...
Rotate
through
TOP!

No matter which hour you start from, imagine passing through 12 o'clock to determine left or right rotation.



Cw



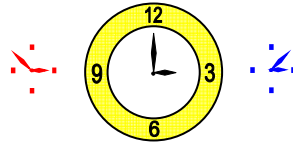
Standard Tool Rotation

 *RightTop to Tighten, LeftTop to Loosen!*

LeftTop to Loosen (cCw)



The traditional saying is "Left to Loosen."
"LeftTop" reminds you to rotate *left* through the *top* of the clock.

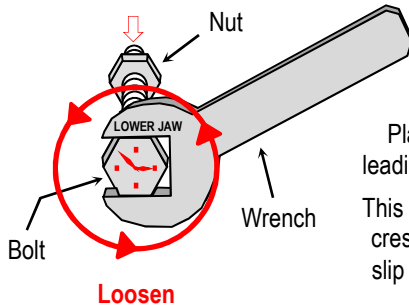


Imagine tiny clocks painted on bolt, screw, and valve heads.

RightTop to Tighten (Cw)

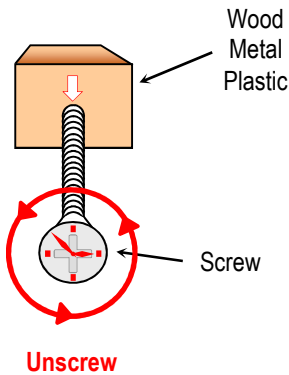
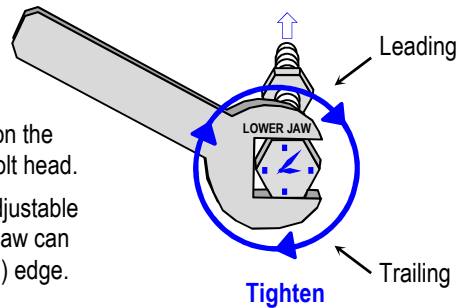


The traditional saying is "Right to Tighten."
"RightTop" reminds you to rotate *right* through the *top* of the clock.



Lead With Lower

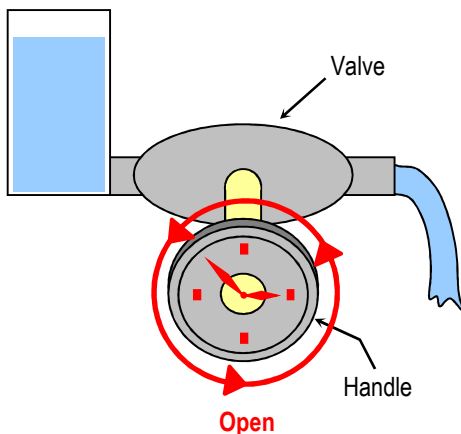
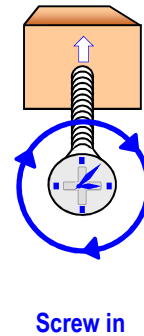
Place the lower jaw of the wrench on the leading (leads the way) edge of the bolt head. This is especially important with an adjustable crescent wrench whose loose lower jaw can slip if placed on the trailing (following) edge.



Drill Pilot Hole

To make it easier to insert a screw the first time, drill a pilot hole into the object slightly smaller than the screw diameter.

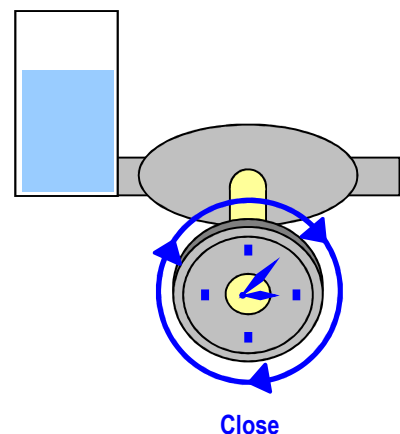
Then, if available, attach a screwdriver-bit to the drill and slowly drill Cw to insert the screw and cCw to remove it.




Close An Eighth

If you leave a valve open *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" and break it.

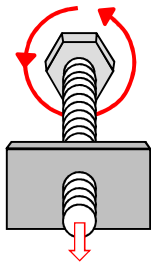
To avoid this, after you open a valve all the way, close it slightly, about 1/8 turn. That way anyone attempting to "open" it can turn it a bit and realize it's already open.



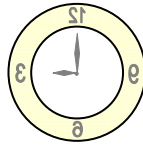
Reverse Tool Rotation

 From Back of Clock, RightTop to Remove, LeftTop to Lock!

LeftTop to Lock (cCw)



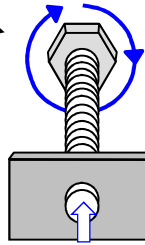
This is equivalent to "RightTop to Tighten" when viewing bolt face.



A clock on the far side of the bolt head would be reversed from your point of view.

When turning a device while viewing its "back" side, you must reverse the standard direction of rotation.

RightTop to Remove (Cw)



This is equivalent to "LeftTop to Loosen" when viewing bolt face.

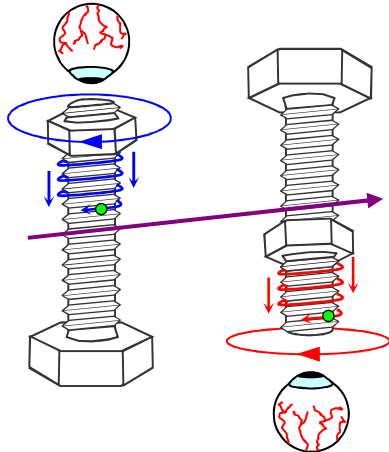
Standard vs. Reverse Threads

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


RightTop to Tighten; LeftTop to Loosen

Facing the tip of the bolt, the nut+ball move Cw towards the bolt head (right-tight).



Facing the tip of the bolt, the nut+ball move cCw away from the bolt head (left-loose).

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

 Standard threads like standard people have "upright" characters.

Standard Threads slant UP to the RIGHT.

Perspective

Cw and cCw depend on your point of view.

In this case, the direction of rotation depends on which side you view the nut from.

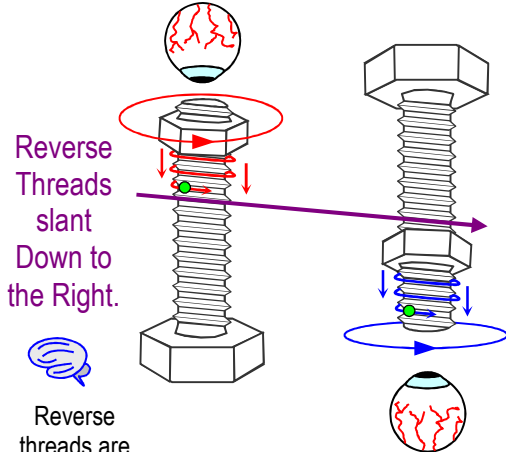
And whichever direction the nut rotates, the bolt "rotates" in the opposite direction.

This all can be a bit mind boggling, so pick one perspective and stick with it.

Reverse Threads

RightTop to Remove; LeftTop to Lock

Facing the tip of the bolt, the nut+ball move cCw towards the bolt head (left-lock).



Reverse Threads slant Down to the Right.

 Reverse threads are "downright" unusual.

Facing the tip of the bolt, the nut+ball move Cw away from the bolt head (right-remove).

A room fan's shaft is typically reverse threaded so the rotating blades won't spin the nut off.

Your Turn!



Match each item with the description that best fits.

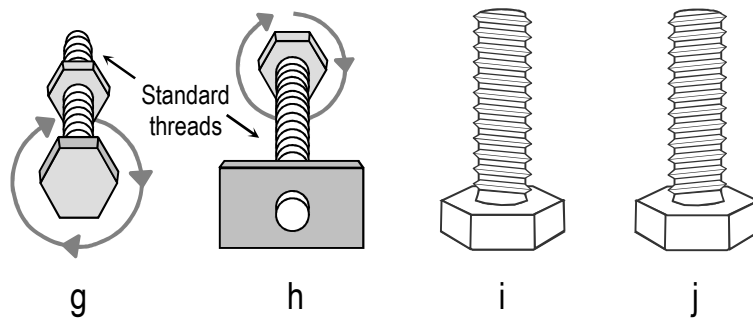
- | | |
|---------------------------------|---|
| 1) ___ Clockwise | a. Rotate left through top of clock |
| 2) ___ Counterclockwise | b. Rotate right through top of clock |
| 3) ___ <i>LeftTop to Loosen</i> | c. Rule for reverse tool rotation |
| 4) ___ <i>LeftTop to Lock</i> | d. Rule for standard tool rotation |
| 5) ___ Standard threads | e. Follow <i>RightTop to Remove</i> rule |
| 6) ___ Reverse threads | f. Follow <i>RightTop to Tighten</i> rule |

True or False

- 7) _____ In general, face the clock and rotate through the top.
- 8) _____ “Back of clock” situations require Reverse Tool Rotation.
- 9) _____ Place the *lower* wrench jaw on the *trailing* edge of the bolt head.
- 10) _____ Always close an open valve slightly to prevent potential damage.

Match each description with the illustration that best fits.

- 11) ___ RightTop to Remove
- 12) ___ RightTop to Tighten
- 13) ___ Standard threads
- 14) ___ Reverse threads



Answers: 1b, 2a, 3d, 4c, 5f, 6e, 7T, 8T, 9F, 10T, 11h, 12g, 13j, 14i