

Corliss "TWIN CITY" valve setting.

The following is a very simple, accurate, and quick way of setting "Twin-City" Corliss valves, for the best running of the engine, and so exact that the engine will run at the first try.

This method is made possible only through the fact that every engine is so carefully adjusted and marked before leaving our erection floor.

Set eccentric as follows: Loosen the eccentric on the main shaft so it can be turned about the shaft. Lock hook rod latch on hook rod. Set wrist plate exactly central, by marks on wrist plate hub and bracket. Make sure that rocker arm is plumb, and that eccentric is just at center point of its travel.

If the engine is double eccentric, set both wrist plates, rocker arms, and eccentrics as just described.

Every "Twin-City" engine has both main shaft and eccentric distinctly marked with a chisel. When these two marks are exactly together, the eccentric is in the proper position. In some cases the shaft is marked so eccentric can be set to make engine run either over or under.

Turn eccentric around shaft in the direction of motion until the marks are together, and then make it fast there with the set screws. The eccentric is now right and must not be ~~##~~ changed again. If two eccentrics, set both in the same way.

Set exhaust valves as follows: Mark on the crosshead guides the exact position of the crosshead at both dead centers. Mark on guides positions corresponding to 1/10 of stroke from each end. Bring the crosshead exactly to the forward of these last two marks and adjust forward exhaust motion rods so that valve is just closing. Then set crosshead to back one of last two marks and set back valve in same way.

Set steam valves as follows: Hook on both steam valves, and turn the engine over in direction of motion till it is exactly on forward center.

Adjust steam motion rod on front end of cylinder till that steam valve has the proper amount of opening. This amount of opening is called "lead," and is standard for different sizes of engines as follows: Up to and including 18", the lead is $1/32$ "; from there up to and including 24", the lead is $3/64$ "; above 24", the lead is $1/16$ ".

To find the position of a valve, remove the valve bonnets. There will be found marks on the valve coinciding with the working or opening edges of each valve, and marks on the face of each valve chamber coinciding with the working edges of each part.

Turn the engine over in direction of motion to back dead center and set back steam valve exactly as front valve was set.

The steam valves being properly set, the dash pot rods must be properly adjusted to this setting in the following manner: Open hook rod latch and operate valve gear by hand. Change the length of the dashpot rod so that when dash pot and valve are entirely closed (wrist plate being at the extreme travel as shown by marks on hub of wrist plate and on wrist plate bracket there is $1/16$ " clearance between the edge of the knock off plate and the catch block.

This is very important, because if the dashpot rod is too long something will break, and if too short the valve will not hook on.

Never, under any circumstances, adjust the steam motion rods while the engine is running, as this is almost certain to result in an accident to the valve gear and so shut down the engine.

The governor must now be adjusted to give proper cut-off as follows: Raise the governor balls till the crosshead is within $1/4$ " of the top of its travel. Then adjust the length of the governor rods so that the valve corresponding to center on which engine is placed will just trip. (Don't under these sheets.)

See that lock nuts are tightened on all rods and that bonnets are replaced.

Adjust dash pots to a good vacuum by closing the small pet cock at the bottom of the body, and regulate the action of the pot by the air valve stems.

The engine is now ready to run and all that should be necessary to put it in perfect adjustment when tested with an indicator is a slight change of the governor rods.

The above setting applies only to the standard simple engine. Special conditions, such as engines running at high speeds with long range cut-off, engines running condensing, compound engines, or engines running under, will require special settings which will be furnished on application to the Minneapolis Steel and Machinery Company.