

From the Wurlitzer instruction booklet

Care of Wurlitzer Roll Changer

June 1, 1925

Courtesy of Art Reblitz

The following two and one-half pages are excerpted from the June 1, 1925, Wurlitzer booklet entitled: *Care of Wurlitzer Roll Changer*. These pages are included here, as part of the Mechanical Music Press's Registry section, to emphasize the importance of keeping the Direct Drive Gear Standard properly lubricated, as deKleist and Wurlitzer no doubt painfully learned firsthand early on via many disappointed and possibly irate customers.

The happy 1906 inauguration of the Direct Drive Gear was probably welcomed by a lot of people, who were thoroughly exasperated and tired of dealing with the flat belt and counter-shaft drive system. Unfortunately, trouble was soon to follow. It is probably safe to say that the genesis of these few pages grew out of some ugly desperation when a tidal wave of severe worm gear failure problems began to surface in September of 1906, and that were faithfully recorded in the deKleist Journals. Wurlitzer's reaction was to eventually redesign the worm gear standard, and by 1912 a new fully enclosed and "self-oiling" design was introduced and available for installation. The unit illustrated on the next page is the latest gear standard to be manufactured, the model SA-BB, with ball bearings on the worm shaft.

A Few Useful Instructions

HOW TO OIL DIRECT DRIVE GEAR

The vertical shaft 167-X should be oiled at the bearings in the bracket 155-X, and the wooden bearing at its lower end, and the bearing of the horizontal shaft 166-X in the right-hand end should also be oiled occasionally.

It is impossible to say how often these parts should be oiled, as this depends entirely upon the use of the instrument.

The new style standard is self-oiling. A small bottle of oil is sent in the cash box of each instrument. Upon the arrival of the instrument, this oil should be emptied into the casting which protrudes under the crank shaft in the standard, there being a hole in the bottom of this which allows the oil to run down to the oil well at the bottom of the standard. Care should be taken in putting in the oil that the gear is not filled any higher than half the diameter of the small tube with the sleeve, which is about one inch from the bottom of the standard and extends outward. If too much oil is put in it will simply overflow at this point, and if allowed to drip down on the bellows will soon ruin them.

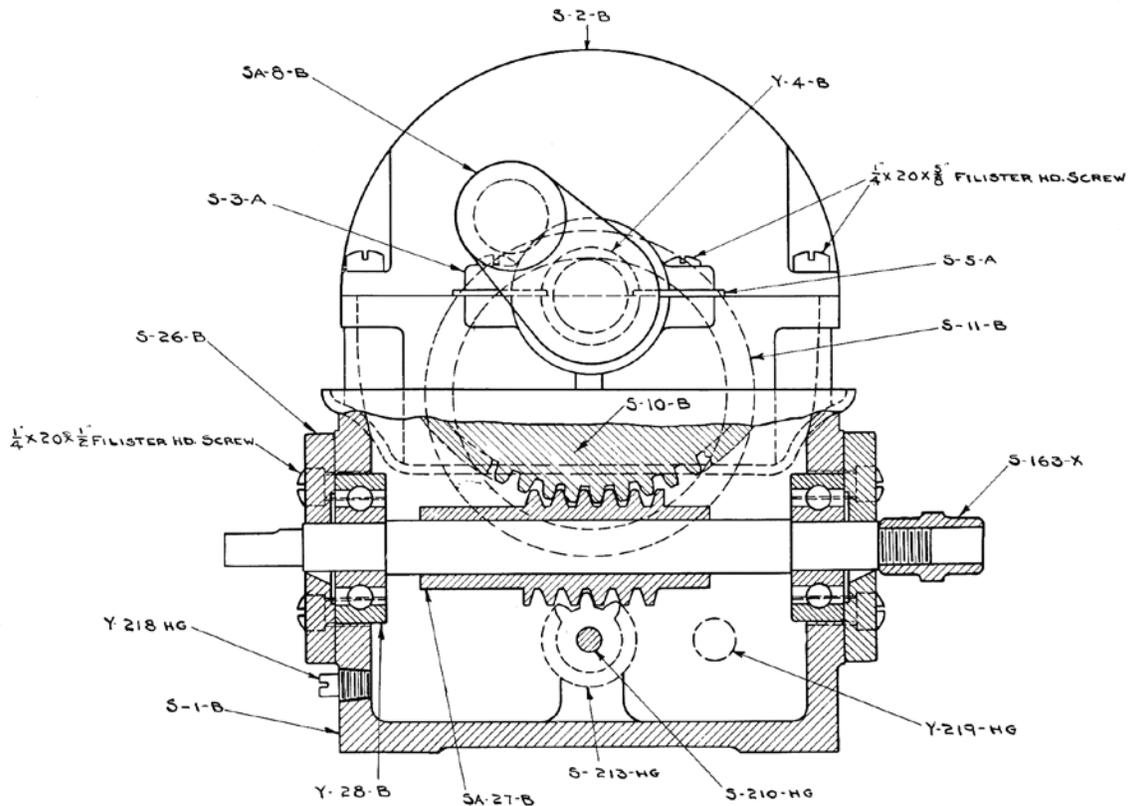
Care should be taken, however, to see that there is always sufficient oil in the standards so that it shows in the little gauge referred to above, as the worm gear is operating at 1200 R. P. M. under considerable strain, and must have proper lubrication if trouble is to be avoided.

INSTRUCTIONS FOR CARE OF STYLE B GEAR

It is absolutely essential that this gear standard is properly lubricated. This gear standard is constructed so that it is self-oiling, by means of the splash oiler system.

USE ONLY THE BEST GRADE OF LIGHT LUBRICATING OIL ON THIS GEAR. NEVER USE HEAVY GREASE AND DO NOT, UNDER ANY CIRCUMSTANCES, MIX GRAPHITE OR ANY OTHER LUBRICATING SUBSTANCE WITH THE OIL, AS THIS WILL PUT THE SPLASH SYSTEM OUT OF ORDER IN A SHORT TIME AND WILL RESULT IN SERIOUS TROUBLE.

The oil should be emptied into the casting which protrudes under the crank shaft in the standard, there being a hole in the bottom of this which allows the oil to run down to the oil well at the bottom of the standard. You can determine the amount of oil to put in the gear standard by means of the oil gauge on the side of the gear. Always have enough oil in the gear so that it shows in the oil gauge Y-219-HG. Care should be taken in putting in the oil, that it is not filled any higher than half the diameter of this gauge, or it will overflow at this point, and if allowed to get down on the bellows will soon ruin them.



Cross Section Drawing of The Style B Gear—(Showing Parts with Numbers)

To Put in New Crank and Fiber Gear

In case you should have trouble and the gear should strip and have to be renewed, proceed as follows: Loosen up the screws and remove the upper gear cover S-2-B. Also loosen up the cap screws, remove the bearing caps S-3-A, liners S-5-A and bearings Y-4-B and remove the crank SA-8-B.

Disconnect the motor from the worm shaft SA-27-B. Remove the filister head screws from the end plates at each end of the gear, and take off the end plates. You will then be able to take out the worm shaft SA-27-B together with the ball bearings Y-28-B.

Then clean out the lower part of the gear standard thoroughly so that no dirt or broken parts of the fiber gear remain in the bottom of the standard. Now replace the lower crank bearing Y-4-B and put in your new crank shaft and fiber gear SA-8-B, which is supplied to you assembled. Then put on the bearing liners S5-A and be sure that one end projects in between the bearings Y-4-B as shown in the print. Put on the upper bearings, replace the bearing caps S-3-A and put in the cap screws and tighten them up. Now try the crank and see if the crank moves freely in the bearings. If it moves very hard it is evidence it is binding. To remedy this, tap the bearing caps S-3-A on each side with a hammer. This will often free the crank so that it runs freely in the bearings. If this fails to free it, remove the cap screws and bearing caps and put in one or two thicknesses of ordinary letter paper between the liner and the upper bearing caps. Then replace the caps, and tighten up the cap screws. You will probably find that the crank works freely in the bearings now. If not, add more paper, but REMEMBER, that while the crank must work freely in the bearings, THERE MUST NOT BE ANY SURPLUS PLAY.

After you have adjusted the crank so that it works freely you will have to remove it again in order to replace the worm shaft and ball bearings in the gear standard. Be sure that these are put in in the same position as they were before being removed. Now, replace the end plates S-26-B and put in the filister head screws.

Now replace the crank and fiber gear in exactly the same manner as when you first put it in and properly adjusted it. Then put on the upper cover S-2-B and tighten up the bolts. Connect the motor properly with the worm shaft and put in the correct amount of good lubricating oil and your gear standard is ready for duty.

The above instructions must be followed exactly as given when putting in a new crank and gear, in order to obtain the best results.

LIST OF PARTS FOR STYLE B GEAR

S-1-B	Gear case.	S-11-B	Oil ring.
S-2-B	Cover for gear standard.	Y-24-B	Name plate.
S-3-A	Small cap.	Y-26-B	End plate.
Y-4-B	Crank bushings (die cast).	Y-28-B	Ball bearing.
S-5-A	Liners.	S-210-HG	Pin for fiber star oilers.
SA-27-B	Shaft and worm complete.	S-213-HG	Fiber star oilers, 10-tooth.
S-8-B	Crank shaft.	Y-219-HG	Nickel-plated oil gauge.
S-9-B	Iron washer for crank.	S-163-X	Worm shaft coupling.
S-10-A	Fiber gear for crank.		

ASSEMBLY NUMBERS FOR "B" GEAR PARTS

SA-8-B Includes parts S-8-B crank shaft and S-10-A fiber gear.

SA-27-B Includes worm shaft and worm complete.

These parts cannot be sent separately, and should always be ordered by the proper assembly number.