Conversions By

HEARTLAND BOWLING SUPPLY

Made In USA

Westinghouse Combo

Motor Gearbox Conversion Kit

Installation Guide

Stator Disassembly

1

Using a 5/16 nut driver, remove four (4) through bolts and carefully lift *Stator* from *Gear Box Assy*.

2

Stator is now removed and can be set aside.

3

When re-using power plug for your new *Combo Conversion Motor*, remove the two screws securing the receptacle to the *End Bell*.

4

Remove plug leads from terminal board.

5

Removal of the old power receptacle from *Stator* is complete.

Westinghouse Combo - Gearbox Disassembly

Most *Rotor Worm shaft Assemblies* can be easily extracted after removing the four 5/16” hex head screws from seal-cap then gently pulling-up entire *Rotor Worm shaft Assembly*.

When resistance to removal of *Rotor Worm shaft Assembly* is encountered, you will have to break down your gearbox by removal of other assemblies as is shown in the steps below.

1

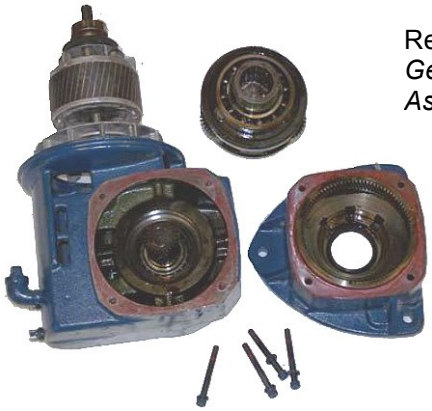
Drain all oil from gearbox.

Using a 3/16” Allen wrench, remove the four (4) cap screws.

2

Using a soft blow hammer, gently tap *Flange Cover* and carefully pry from *Flanged Cover Ring Gear Assembly*.

3



Remove *Gear Cage Assembly*.

4

Turn gearbox over and remove the four cap screws from *Back Wheel Side Cover*.

Gently pry the *Back Wheel Side Cover,* at the tabs, to remove from *Gearbox Housing*.

5

Removal of the *Back Wheel Side Cover* exposes the *Sun Gear Assembly*.

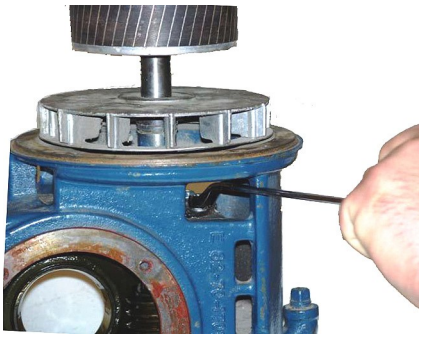
6

Remove *Sun Gear Assembly* from *Gearbox Housing*.

Westinghouse Combo - Gearbox Disassembly - Continued

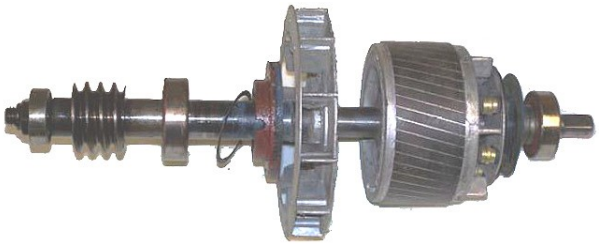
7

Remove four (4) cap screws from *Seal Cap* and extract *Rotor/Worm Shaft Assembly* from *Gearbox. Housing*.



8

Rotor/Worm Shaft Assembly removed.



Reusing original worm shaft parts.

Use a bearing puller to remove two bearings, spacers, shims, worm, drive key, and keeper-nut to reuse on *Worm Shaft Conversion.*

Inspect all parts for wear - replace as needed.

Completed *Worm Shaft Conversion.*

Re-install all bearings, spacers, worm, drive key, and keeper nut onto the new *Worm Shaft Conversion* in the same way as positioned on the old assembly.

Inspection of gearbox parts

Before gearbox re-assembly, now is the perfect time to inspect and replace any worn or broken parts.

Gear Cage Assembly - Check planetary gears for signs of excessive wear, broken or chipped teeth. Replace *Gear Cage Assembly* as needed.

Gear Cage Assembly - Check splines for wear, inspect bearings for excessive play.
Replace *Gear Cage Assembly* as needed.

Sun Gear Assembly - Inspect assembly for worn or chipped teeth, inspect bearings for excessive wear. Replace *Sun Gear Assembly* as needed.

Flange Cover/Ring Gear Assembly. Check *Ring Gear* for chipped or worn teeth.
Replace *Flange Cover/Ring Gear Assembly* as needed.

Westinghouse Combo - Gearbox Worm Shaft Assembly

To keep future gearbox maintenance to a minimum, inspect and replace any damaged worn or cracked seals, shims, and gaskets during re-assembly.

1

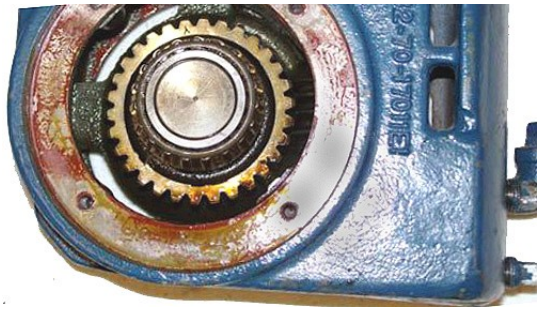
Install the new conversion worm shaft assembly into housing. Take care to properly 'seat' bearings.

2

Once seated, install the new replacement seal cap over worm shaft assembly and secure the four hex bolts into housing.

3

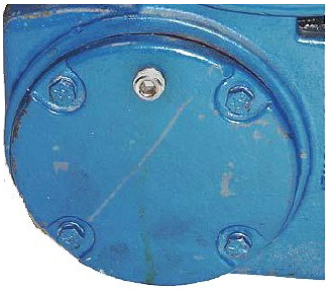
Install *Sun Gear Assembly*.



4

Seal and install cap with four cap screws.

Check *Sun Gear Assembly* for proper shim tolerance before firmly securing bolts.

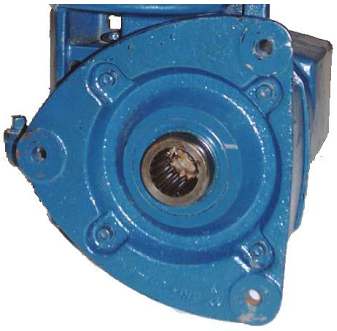


5

Install *Gear Cage Assembly.*

6

Seal and install *Flange Cover* onto *Ring Gear Assy* using four hex cap screws.



Install drain plugs.

Fill with recommended 1 pint of oil.

Installing Gearbox Conversion Adaptor Plate

Install the gearbox conversion *Adaptor Plate* to the register assembly with the four supplied hex head cap screws.

Align the three motor mount holes in the pattern of least resistance to the plug receptacle for plugging in and out.

Installation of your combo motor is all that is left.

When using another brand of motor (other than a *Leeson Combo Conversion Motor*) you have to reverse the rotation of your motor.

GE/ Westinghouse & AO Smith Combos run the opposite direction of a standard *National-Style* motor.

Completed Westinghouse Combo Motor/Gearbox Conversion

Fill gearbox with recommended, 1 pint, 150W oil before installing onto pinspotter