



- 1) Drain oil from gear case.
- 2) Loosen and remove (2) 7/16" X 1-1/2" socket head cap screws. And remove motor from gear case.
- 3) Remove worm shaft and bearings from gear case.
- 4) Remove gear case cover.
- 5) Remove bronze gear and shaft as a unit being careful not to damage shaft seal.

**Note:** Bronze gear is press fit on shaft. **DO NOT** remove unless absolutely necessary.

Model number prefix (stamped in gear case cover) indicates model series and shaft size.

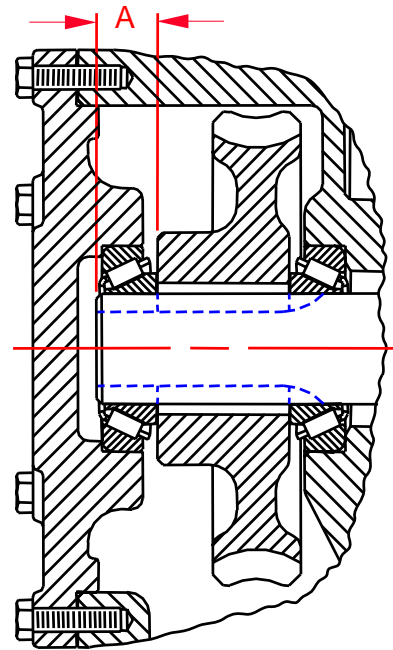
## Assembly Instructions

## 1000H, 1100H Series Speed Reducers

- 1) Clean gear case and all parts thoroughly, inspect oil seal and replace if worn or scored.
- 2) If bronze gear has been removed from shaft, care should be used to press the gear onto the shaft squarely. Press gear and keys onto shaft simultaneously. Locate end of gear hub (the set screw side) 21/32" from the shaft end on 1-1/4" shaft models and 3/4" on 1-1/2" shaft models.
- 3) Install gear and shaft assembly (with bearings) into gear case carefully to prevent damage to the shaft seal.

### Section A

**Do Not  
Use Hammer  
To Install  
Bronze Gear  
Onto Shaft**



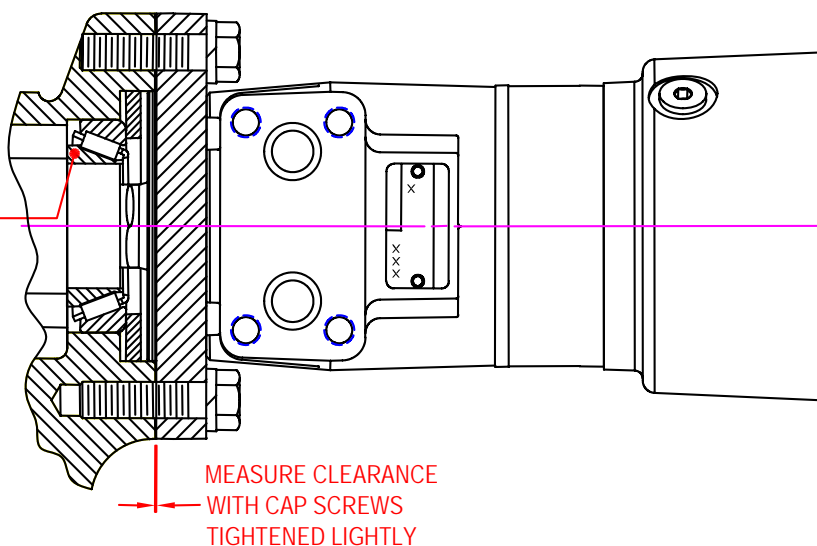
A DIM.	SHAFT DIA.
21/32	1-1/4
3/4	1-1/2

**MEASURE CLEARANCE  
WITH CAP SCREWS  
TIGHTENED LIGHTLY**

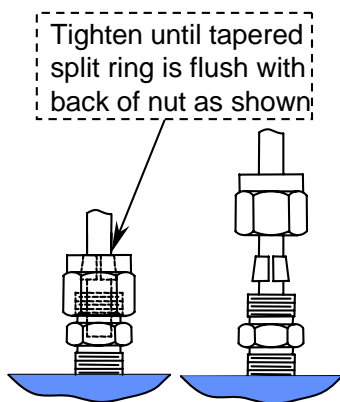
- 4) Bolt cover to gear case without shim gaskets. Tighten the screws lightly and evenly. Measure clearance between cover and gear case with feeler gage and remove cover. For proper bearing pre-load, install shim gaskets (red - .002", blue - .005", brown - .010") onto cover as required with a thickness that is .003" to .005" less than the measurement. Re-bolt cover securely. Check bearing thrust by turning drum shaft. Shaft must turn freely but with just a slight amount of resistance.
- 5) Install bearing cone (.75" diameter inside dimension) into bearing pocket. Install worm shaft. Be sure that the shaft end opposite the motor is seated properly in the bearing cone. Install bearing cone and cup on motor end **being sure large end of bearing cone is seated against worm gear shoulder** (Section B).

**Section B**

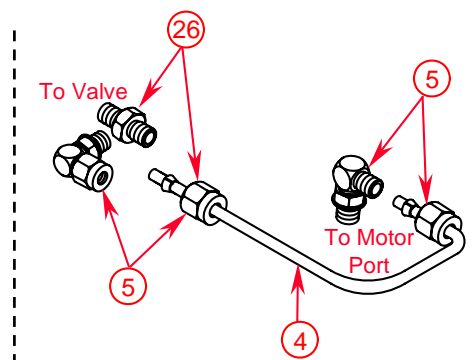
NOTE THE LOCATION OF THE CUP & CONE. THE CONE IS INSTALLED ONTO THE WORM SHAFT FIRST.



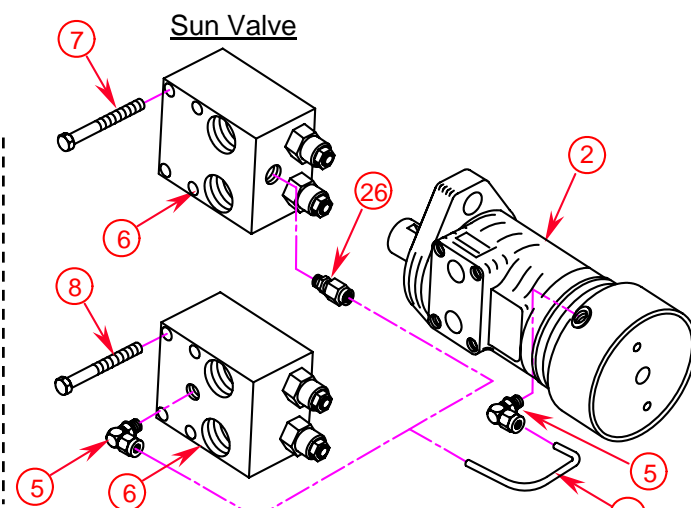
- 6) Place thrust spacer against bearing. Bolt motor to gear case without shim gaskets with cap screws and lock washers. Tighten the screws lightly and evenly. Measure clearance between motor and gear case with a feeler gage (Section B) and remove motor. For proper bearing pre-load, install shim gaskets (red - .002", blue - .005", brown - .010") as required with a thickness that is .003" to .005" less than the measurement. Re-bolt motor securely.
- 7) Grease drum shaft with multi-purpose lithium grease or equivalent and install wear block and drum. Install retaining ring. Place end housing assembly on drum shaft and slide toward drum until there is about 1/16" clearance between housing and drum. Place collar on bearing being sure it is properly seated on bearing eccentric. Turn clockwise with punch until bearing and shaft are held tight, then tighten set screw.
- 8) If removed, align both ends of hydraulic tube ( Ref. 4 ) to the ports ( Ref. 5 & 26 if Sun valve installed ) ( Ref. 5 & 5 if Eaton valve installed ). Push hydraulic tube ( Ref. 4 ) into installed fitting body ( Ref. 5 & 26 or Ref. 5 & 5 ) on motor ( Ref. 2 ) and valve ( Ref. 6 ) until it stops. Fasten nuts and tapered split rings to fittings. Turn nuts hand tight, then with wrench tighten one turn or until rear of tapered split ring is flush with the nut. **Do Not Overtighten.**



**Tapered Split Rings**



**Hydraulic Tube & Fittings**



**Eaton Valve**

- 9) Base Mounted: Fill gear case with (1) pint, All Other Mounting Positions: Fill gear case with (2) pints **Bloom ULLTRA-LUBE NO. 601 TRANS-WORM GEAR OIL**; available from Bloom in pints or quarts. The hardened steel worm shaft must run in oil. For emergency situations when **Bloom ULLTRA-LUBE NO. 601** is not immediately available, use Phillips 66 Company SAE grade 80W90 superior multi-purpose gear oil (Phillips 80W90 SMP) meeting API classification GL-5 or equivalent competing brand. Continuous use of oil other than **Bloom ULLTRA-LUBE NO. 601** or Phillips 80W90 SMP may shorten the life of the gears. **DO NOT** mix **Bloom ULLTRA-LUBE NO. 601** or Phillips 80W90 SMP with more than 50% of any other kind of oil.