



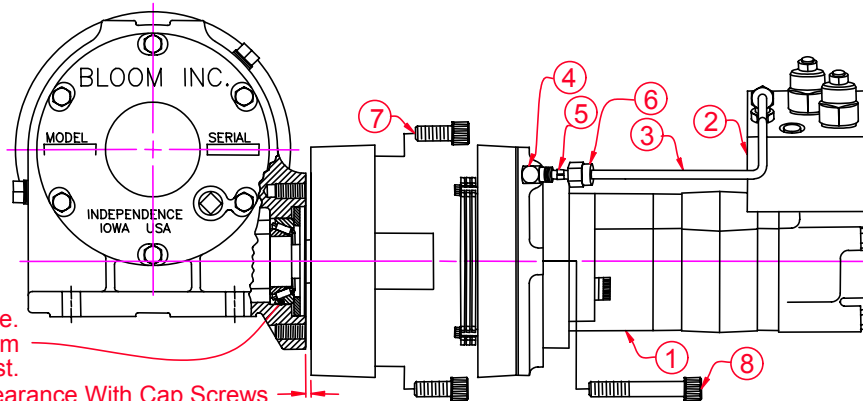
- 1) Drain oil from gear case.
- 2) **Without Brake:**
  - a) Loosen and remove (2) 7/16" X 1-1/2" (2000 series motor) or (2) 7/16" X 1-1/4" ("H" series motor) hex head cap screws. Remove motor from gear case.
- With Brake:**
  - a) Loosen jam nuts and locking nuts to remove brake line.
  - b) Remove (3) 3/8" X 2-1/2" (2000 motor) socket head cap screws or (4) 5/16" X 3" (AM motor) hex head cap screws. Remove counterbalance valve.
  - c) Loosen and remove (2) 1/2" X 1-1/2" (2000 motor) or (2) 1/2" X 1-1/4" (AM motor) socket head cap screws. Remove motor from back of brake unit.
  - d) Loosen and remove (2) 1/2" X 3" socket head cap screws from back of brake housing. Split brake unit into 2 parts.
  - e) Loosen and remove (2) 7/16" X 1" socket head cap screws and remove brake housing 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:

- No prefix designates 1000 series speed reducer with 1-1/4" shaft
- Prefix "10" designates 1000 series speed reducer with 1-1/2" shaft
- Prefix "27" designates 1000 series speed reducer with 1-1/2" shaft and old style 27:1 ratio gears
- Prefix "11" designates 1100 series speed reducer with 1-1/2" shaft

- ① Motor
- ② Counterbalance Valve
- ③ Hydraulic Tube
- ④ Elbow
- ⑤ Tapered Split Ring
- ⑥ Nut
- ⑦ Socket Head Cap Screw
- ⑧ Socket Head Cap Screw



Note The Location of The Cup & Cone.  
The Cone Is Installed Onto The Worm  
Shaft First.

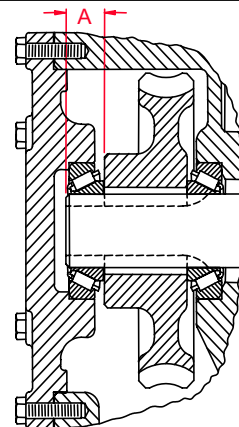
Measure Clearance With Cap Screws  
Tightened Lightly

## Assembly Instructions

## 1000, 1000K & 1100 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.

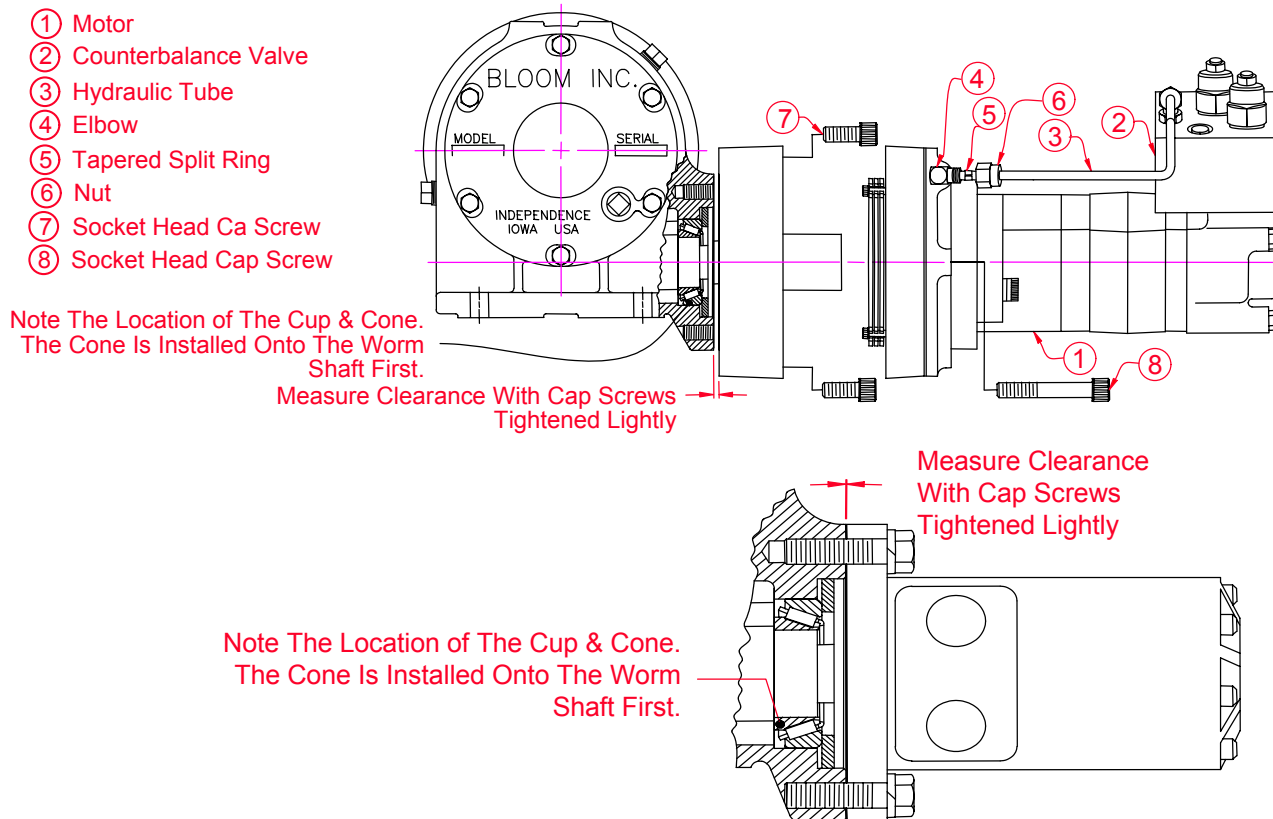
A DIM.	SHAFT DIA.
21/32	1-1/4
3/4	1-1/2



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

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.**



- 6) **Without Brake:**
  - a) 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.
- With Brake:**
  - a) Install round head woodruff key into brake output shaft. Make sure thrust spacer is against bearing. Bolt front brake housing to gear case without shim gaskets with (2) 7/16" X 1" socket head cap screws. Tighten the screws lightly and evenly. Measure clearance with a feeler gage and remove front brake housing (Section B). For proper bearing pre-load, install shim gaskets (red - .002", blue - .005", brown .010") as required with a thickness that is .003" - .005" less than the measurement. Re-bolt front brake housing securely.
  - b) Bolt back half of brake housing to front half with the (2) 1/2" X 3" socket head cap screws.
  - c) Install square head woodruff key into motor shaft and bolt motor to back of brake using (1) (W-239) brown motor gasket and (2) 1/2" X 1-1/2" (2000 motor) or (2) 1/2" X 1-1/4" (AM motor) socket head cap screws.
  - d) Bolt double counterbalance valve to motor manifold bearing end cap using O'Rings provided and (3) 3/8" X 2- 1/2" (2000 motor) socket head cap screws or (4) 5/16" X 3" (AM motor) hex head cap screws.
  - e) Install brake line into 7/16" male elbows on counterbalance valve and brake (If installing a new brake line it may be necessary to cut brake line to fit). Tighten jam nuts on male elbows to hold in place. Tighten locking nuts on elbows to hold brake line in place. Turn nut only until tapered split ring starts to come through the back side or the brake line side of the nut.
- 7) **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.