



- 1) Drain oil from gear case.
- 2) Loosen set screw in eccentric collar, then turn collar counter-clockwise with punch to release it from bearing and shaft.
- 3) Remove end housing (direct drive) or clutch housing (clutch drive) assembly from drum shaft.
- 4) Remove retaining ring and drum from shaft.
- 5) Remove phenolic friction block & spring (clutch model) or wear block (direct drive) from gear case.
- 6) **1200 Series with Brake:** Remove hydraulic motor, thrust spacer and bearing from gear case. Remove brake housing cover, brake components and brake housing. Remove bearing, spacer and worm shaft from gear case.
1200 Series without Brake: Remove hydraulic motor, thrust spacer and bearing from gear case. Remove end cap. Remove bearing, spacer and worm shaft from gear case.
- 7) Remove gear case cover.
- 8) Remove bronze gear and drum 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 drum shaft size:

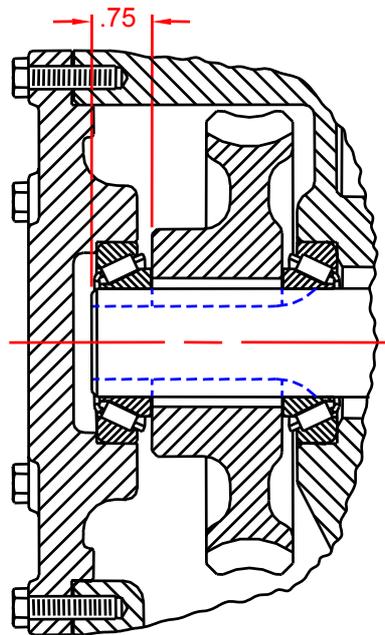
- Prefix "12" designates 1200 series winch with 1-1/2" drum shaft

Assembly Instructions

1200 & 1200C Series Winches

- 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. Locate end of gear hub (the set screw side) 3/4" from the shaft end (Section A).
- 3) If removed install oil seal and bearings. Install drum shaft assembly into gear case carefully to prevent damage to the shaft seal.
- 4) Bolt cover to gear case without shim gaskets. Tighten the screws lightly and evenly. Measure clearance with a feeler gage (Section A) and remove cover. 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 cover securely.

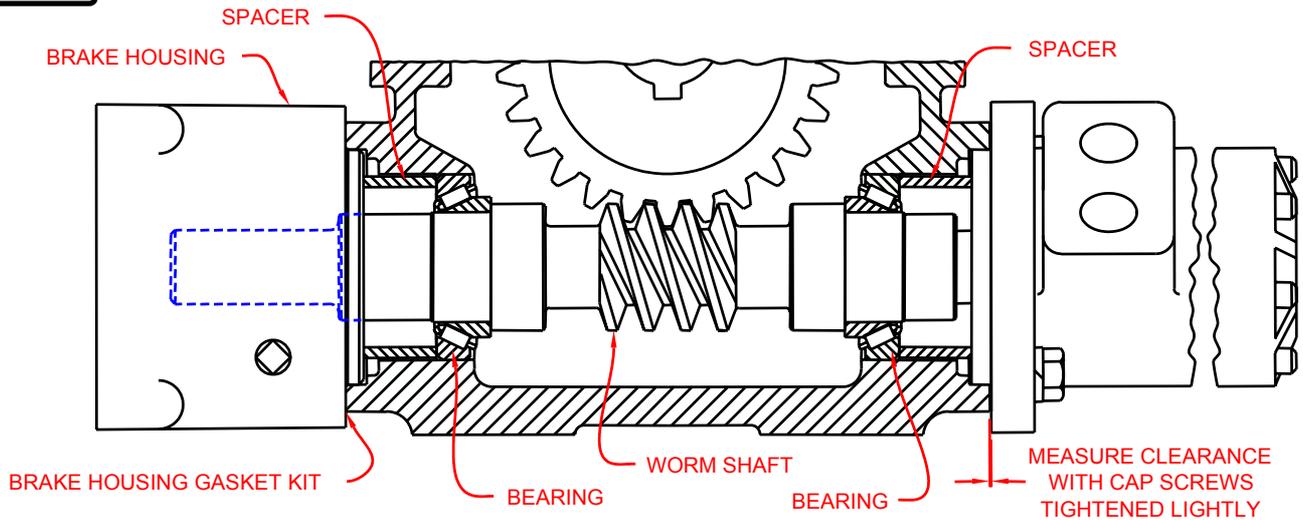
Section A



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

**MEASURE CLEARANCE
WITH CAP SCREWS
TIGHTENED LIGHTLY**

Section B



- 5) **1200 Series with Brake:** Install worm shaft in gear case. Install bearing cones such that the large end of each cone seats against each worm gear shoulder (Section B). Install bearing cups and thrust spacers. Spacer on brake side is 1.06" wide (*For your information: if motor is being replaced, the spacer on the motor side measures 1.06" wide if the motor pilot length is .25". The spacer measures 1.21" wide if the motor pilot length is .11"*). Install brake housing gasket kit (2) .010 brown gaskets) and brake housing using (4) 7/16" X 1" socket head cap screws.
1200 Series without Brake: Install worm shaft in gear case. Install bearing cones such that the large end of each cone seats against each worm shoulder (Section B). Install bearing cups and thrust spacers. Spacer on end cap side is 1.06 wide. Install brake housing gasket kit ((2) .010 brown gaskets) and end cap using (4) 7/16" X 1-1/2" socket head cap screws.
- 6) Bolt motor to gear case without shim gaskets with cap screws and lock washers. Tighten the screws lightly and evenly. Measure clearance 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) **1200 Series with Brake:** Install parts into brake. See "Assembly Instructions - Oil Cooled Adjustable Automatic Safety Brake" page.
- 8) **DIRECT DRIVE:** 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 collar clockwise with punch until bearing and shaft are held tight, then tighten set screw.
CLUTCH DRIVE: Install spring and phenolic friction block in gear case. Grease drum shaft (including splines) with multi-purpose lithium grease or equivalent to assure free operation of drum and clutch dog. Place drum on shaft and install retaining ring to hold drum against friction block. If yoke is not already securely fastened to clutch handle shaft, refer to "Replacement of Clutch Handle and Yoke" page. Grease clutch dog groove and place on drum shaft with spring and washer. Install clutch housing assembly on drum shaft placing yoke in clutch dog groove. Slide end housing 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 collar clockwise with punch until bearing and shaft are held tight, then tighten set screw. The dog is designed to engage fully into the drum when the spring-loaded clutch handle pin is in the hole closest to the drum. Check that the drum turns freely when the clutch handle pin is in the hole farthest from the drum. Refer to "Replacement of Clutch Handle and Yoke" page.
- 9) Remove pipe plug from top of brake housing and gear case.
Base Mounted: Fill gear case with (2) pints (1200 w/o brake) or (3) pints (1200 with brake), **All Other Mounting Positions:** Fill gear case with (3) pints (1200 w/o brake) or (4) pints (1200 with brake) of Bloom ULLTRA-LUBE NO. 601 TRANS-WORM GEAR OIL; available from Bloom in pints or quarts. 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 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. Replace plugs when oil reaches top of brake housing.
- 10) Replace pipe plug in top of brake housing and gear case.

Oil Cooled Adjustable Automatic Safety Brake

1200 and 1200C Series Hydraulic Cable Winches and Speed Reducers

- 1) Install woodruff key and keyed pressure disc onto worm shaft.
- 2) Looking at gear case from the cover side, and with base of winch facing downward, determine which side hydraulic motor is on (left or right).
- 3) Install (2) 1/2" diameter steel balls in slots "A" or "B" of moving pressure disc using hard grease to hold balls in place. Determine which slots to use from table below.

Motor on Right

Looking at gear case from the cover side, determine rotational direction of drum to lower load. If rotational direction is counter-clockwise - use slots "A"; if clockwise - use slots "B".

Motor on Left

Looking at gear case from the cover side, determine rotational direction of drum to lower load. If rotational direction is clockwise - use slots "A"; if counter-clockwise - use slots "B".



- 4) Install moving pressure disc and steel balls. Line up balls with slots in keyed pressure disc (as shown on drawing & ref. 11).
- 5) Install friction plate.
- 6) Install pressure pad with belleville springs and pressure disc in place shown.
- 7) Place (1) copper sealing washer each over (2) 7/16" - 20 x 1-3/4" cap screws. Thread cap screws into brake cover and tighten securely. Thread 1/2" - 20 NF x 2" socket head adjusting screw into brake cover. Slip retaining spring over adjusting screw and install brake cover and gasket, lining up holes in pressure pad with 7/16" cap screws. Secure brake cover with (4) 3/8" - 16 NC x 1-1/4" cap screws.
- 8) Make sure that adjusting screw is loose by rotating counter-clockwise three revolutions. Operate winch in lifting mode with no load for 5 seconds. To set brake, turn adjusting screw clockwise until finger tight., then insert hex key and rotate clockwise 1/4 revolution. Hold hex key and tighten 1/2" - 20 NF nut against sealing washer. For more braking action loosen nut and rotate adjusting screw clockwise in 1/4 turn increments until desired braking is obtained.

Note: Units shipped from the factory have steel balls in slots "B" unless otherwise specified.

