

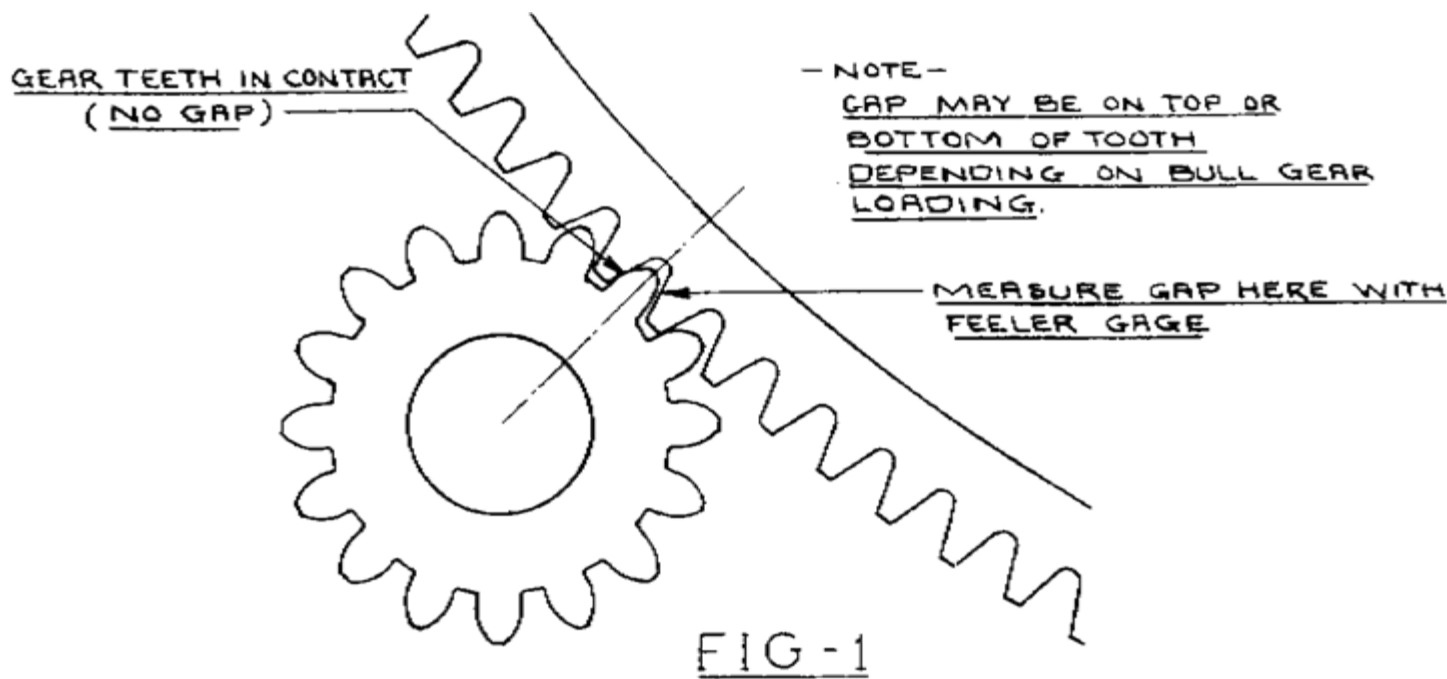
Bull Gear and Pinion Indexing and Replacement Recommendations

WARNING: AT ALL TIMES WHILE WORKING ON THE BULL GEAR AND PINION, THE MACHINE SHOULD BE LOCKED OUT USING APPROPRIATE PROCEDURES.

Step 1. Insure that the bull gear and pinion teeth are free of debris that may be embedded in rust proof coating.

Step 2. Run machine to 1st stop.

Step 3. At the location of maximum gear tooth engagement, place steel feeler gage stock on gap side of the center most tooth (See Figure 1). The gap side may be on the top or bottom depending on bull gear loading. The measured gap from this point forward will be referred to as backlash.



Bull Gear and Pinion Indexing and Replacement Recommendations

A bull gear and pinion backlash of 0.075 inches or greater requires the bull gear to be indexed. Once the bull gear is indexed, repeat the backlash measurement at 1st stop. To achieve optimum life of the bull gear, it is strongly recommended that the pinion be replaced when indexing the bull gear.

The bull gear requires replacement only if all of the following apply:

1. The bull gear has been indexed to all new locations. The bull gear should be indexed by 2 bolt holes. Maintain a record of how many times the bull gear has been indexed.
2. The Pinion gear has been replaced with a new one. (Refer to Service Bulletin 96-5, V3-12 Pinion Shaft Assembly if you have the new pinion locking assembly).
3. If you have rotated the bull gear to a new location and the backlash is still greater than 0.075 inches at 1st stop.

Other important considerations to improve the bull gear and pinion life:

- ✓ Check air pressure on the main drive Bescodyne for 70 PSI maximum on clutch and 50 PSI maximum on brake.
- ✓ Insure base plate of the machine is properly grouting. Grout must be intact to insure a solid foundation for the machine.
- ✓ Insure debris is not allowed to come in contact with the bull or pinion gear. Take necessary precautions to prevent material from falling onto
- ✓ the gears. No lubricant is used on bull gear & pinion.
- ✓ Maintain recommended clearance for the feed arm shaft roller gap, refer to Besser drawing #490754.

Specific Torque Values:

Bull Gear Bolts = 310lb-ft

Cam Stack Bolts = 1200lb-ft

Bull Gear and Pinion Indexing and Replacement Recommendations

490754

CAM FOLLOWER SHOULD BE SHIMMED TO 0.005 INCH CLEARANCE TO FEEDBOX FORWARD CAM WHILE FEEDBOX BACK CAM FOLLOWER IS IN CONTACT WITH FEEDBOX BACK CAM

| SPECIFICATIONS | | QTY | UOM | PART NO. | DESCRIPTION |
|---------------------------------------|------------|----------|-------|----------|-------------|
| Include wherever specified in drawing | | | | | |
| FINISH/TOLERANCES | FABRICATED | MAQUINED | | | |
| DIMENSIONS | 0.000 | IN | 0.000 | IN | |
| SAFETY FINISH | 0.010 | IN | | | |
| HEAT TREATMENT | | | | | |
| HARDNESS | | | | | |
| STRESS RELIEF | | | | | |
| TUMBL | | | | | |
| PARALLELISM | 0.001 | IN | 0.005 | IN | |
| PERPENDICULARITY | 0.001 | IN | | | |
| CONCENTRICITY | 0.001 | IN | | | |
| RECTIFICATION | | | | | |

| | | | |
|---------------|-----------------|--------------|-----------------|
| DESIGNER | DATE | BY | DATE |
| DRAWN BY: BJK | DATE: 11 MAR 01 | CHKD BY: BJK | DATE: 11 MAR 01 |
| APPD BY: BJK | | | |

| | |
|-----------|--------|
| MODEL | 490754 |
| CAL. C.A. | |
| MACHINES | |

WORLD HEADQUARTERS
ALPENA, MI. - U.S.A.

FOR ALL INFORMATION CONCERNING THIS SERVICE BULLETIN, PLEASE CONTACT THE BULL GEAR AND PINION DEPARTMENT, BULL GEAR DIVISION, BULL GEAR COMPANY, 10000 BULL GEAR ROAD, ALPENA, MI 49707-1000. TEL: 517-335-1000. FAX: 517-335-1001. WWW.BULLGEAR.COM

NAME: INSTRUCTION DRAWING - FEEDBOX SHRPY
ROLLER

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SAFETY BULLETIN

This notice is issued to advise you that some previously accepted shop practices may not be keeping up with changing Federal and State Safety and Health Standards. Your current shop practices may not emphasize the need for proper precautions to insure safe operation and use of machines, tools, automatic loaders and allied equipment and/or warn against the use of certain solvents or other cleaning substances that are now considered unsafe or prohibited by law. Since many shop practices may not reflect current safety practice and procedures, particularly with regard to the safe operation of equipment, it is important that you review your practices to ensure compliance with Federal and State Safety and Health Standards.

IMPORTANT

The operation of any machine or power-operated device can be extremely hazardous unless proper safety precautions are strictly observed. Observe the following safety precautions:

ALWAYS:

- ✓ Be sure proper guarding is in place for all pinch, catch, shear, crush, and nip points.
- ✓ Be sure that all personnel are clear of the equipment before starting it.
- ✓ Be sure the equipment is properly grounded.
- ✓ Turn the main electrical panel off and lock it out in accordance with published lockout/tagout procedures prior to making adjustments, repairs, and maintenance.
- ✓ Wear appropriate protective equipment such as safety glasses, safety shoes, hearing protection, and hard hats.
- ✓ Keep chemical and flammable material away from electrical or operating equipment.
- ✓ Maintain a safe work area that is free from slipping and tripping hazards.
- ✓ Be sure appropriate safety devices are used when providing maintenance and repairs to all equipment.

Bull Gear and Pinion Indexing and Replacement Recommendations

NEVER:

- ✓ Exceed the rated capacity of a machine or tool.
- ✓ Modify machinery in any way without prior written approval of the Besser Engineering Department.
- ✓ Operate equipment unless proper maintenance has been regularly performed.
- ✓ Operate any equipment if unusual or excessive noise or vibration occurs.
- ✓ Operate any equipment while any part of the body is in the proximity of potentially hazardous areas.
- ✓ Use any toxic flammable substance as a solvent cleaner.
- ✓ Allow the operation or repair of equipment by untrained personnel.
- ✓ Climb or stand on equipment when it is in operation.

It is important that you review Federal and State Safety and Health Standards on a continual basis. All shop supervisors, maintenance personnel, machine operators, tool operators, and any other person involved in the setup, operation, maintenance, repair or adjustment of Besser-built equipment should read and understand this bulletin and Federal and State Safety and Health Standards on which this bulletin is based.