


Replacing Tram Countershaft - (Front/Rear - LH or RH)

Function

Remove and replace the front or rear tram countershaft.

Tools Needed

- Machine Service Manual and Parts Book
- Combination Wrenches (SAE and Metric) & Torque Wrench
- Allen Wrenches (SAE and Metric)
- Socket Wrench Drives and Extensions
- Nylon Slings for component lifting
- Hammer, Snap Ring Pliers, and Pry Bars
- Select and Use  Before Starting Job

Parts Needed

NOTE: * Consult parts book specific to serial number of machine being serviced to verify correct part numbers.

PART #	DESCRIPTION	QTY
*34008	Countershaft	1
*40202	Countershaft Bearing (Inside)	1
*145389	Countershaft Bearing (Outside)	1
*275511	Spacer Kit	1
*25044	Connecting Master Link - (RC 120 chain)	1
*34901	Connecting Master Link - (RC 180 chain)	1
*24099	Snap Ring	2
*20063	1 /2"-13X1 1/2" H.H.C.S. (Grade 8 Zinc Plated)	4

*20084	1 /2"-13X2" H.H.C.S. (Grade 8 Zinc Plated)	4
*22011	Lockwasher 1 /2"	8
*120826	Lug Nuts for Wheel	12

Machine Setup

1. Locate the machine in a safe working area, under permanent roof support and outby the working face.
2. Raise all four wheels of machine up off the floor with stab jacks so that underneath access to countershaft and drive chains are available.
3. Use blocking to support chassis of machine.
4. Remove power to the machine at the power center by locking out and tagging out the machine power cable.
5. Remove wheel and tire assembly for tram countershaft being replaced.
6. Remove cover plates as required to access countershaft area.

DANGER

Replacing the front or rear tram drive countershaft requires disconnection of the tram countershaft drive chains for one wheel. Do not disconnect the tram countershaft drive chains for both wheels on one side of the machine at the same time when machine wheels are on the mine floor. In this condition, the disconnected side of the machine would be free to move in either direction.

Serious injury or death can occur as a result of machine moving in an uncontrolled (tram drive chains disconnected) state.

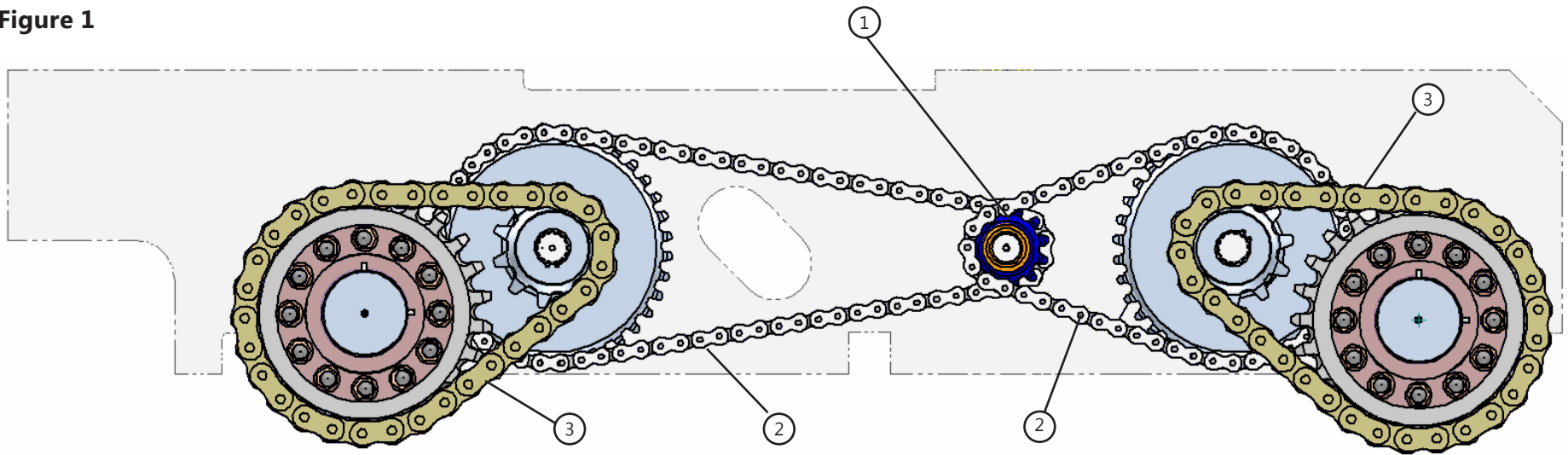
Removal Procedure

1. Remove the inside countershaft drive chain from the tram motor's dual motor sprocket after breaking chain at master link (see figure 1).
2. Remove the outside wheel hub drive chain from the countershaft outer sprocket to the wheel hub sprocket after breaking chain at master link.
3. *Take note of the location and thickness of spacers on countershaft that are used to align sprocket with tram motor and wheel hub. (Re-use spacers removed or use Spacer Kit #275511)*
4. Loosen shaft set screws on inside and outside countershaft bearings (see figure 2).
5. Remove snap ring from each end of countershaft.
6. Remove outside sprocket and spacer from countershaft.
7. Use rated lifting device and nylon sling attached to inside sprocket and position for holding weight of sprocket when countershaft is removed.
8. Use hammer and drive tool to drive countershaft inward or outward in order to remove inside sprocket and spacers from countershaft.
9. Remove inside and outside bearings from chassis side plates by unbolting four bolts from each bearing.
9. Restore power to the machine.
10. Use chassis stab jacks to raise machine and remove blocking.
11. Lower machine to mine floor.
12. Re-install removed cover plates.
13. Test for proper operation.

Installation Procedure

1. Install new inside and outside countershaft bearings using four new bolts each with lockwashers. Torque bolts to 95 LBf-FT (130Nm).
2. Install new countershaft and inside sprocket using same thickness spacers as was removed using nylon sling and rated lifting device to support weight of sprocket.
3. Install snap ring on inside of countershaft.
4. Install outside spacer, sprocket and snap ring on countershaft.
5. Tighten bearing set screws to countershaft
6. Re-install the inside countershaft drive chain from the tram motor dual sprocket using a new master link.
7. Re-install the outside wheel hub drive chain using a new master link.
8. Re-install wheel and tire assembly using new lug nuts and torque to 650-750 LBf-FT (880-1016 Nm). (Refer to service manual according to serial number of machine)

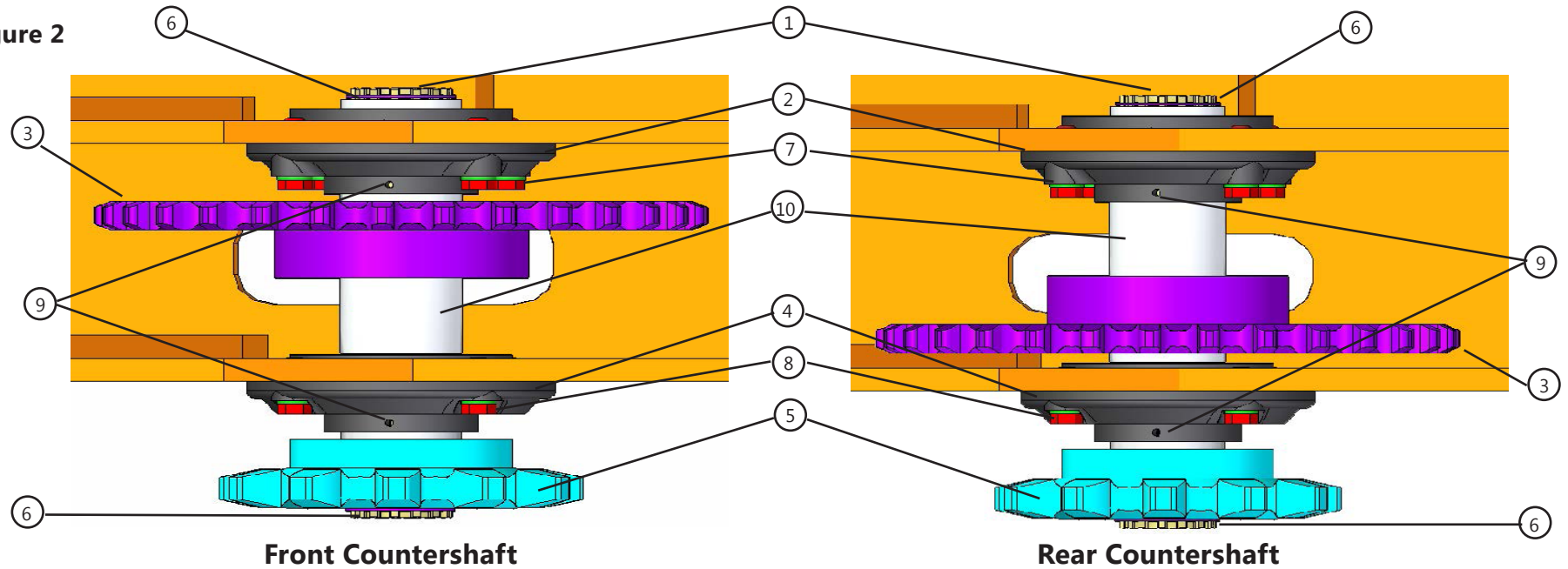
Figure 1



Component Parts (Fig. 1)

ITEM	DESCRIPTION	QTY
1	Dual Motor Sprocket w/Brake Disc (brake disc not shown)	1
2	Countershaft Drive Chain	2
3	Wheel Hub Drive Chain	2

Figure 2



Component Parts (Fig. 2) - Qty listed per Countershaft

ITEM	DESCRIPTION	QTY
1	Countershaft	1
2	Bearing (Inside)	1
3	Sprocket (Tram Motor)	1
4	Bearing (Outside)	1
5	Sprocket (Wheel Hub)	1
6	Snap Ring	2
7	H.H.C.S. w/Lockwasher	4
8	H.H.C.S. w/Lockwahser	4
9	Set Screw	2
10	Spacer Kit	1

27511 SPACER KIT MADE OF:
 4- 21859 1/2"
 2- 21790 2-7/16"
 4- 21707 1/4"
 2- 21815 1-1/2"
 2- 21876 1-1/4"
 4- 21713 1/16"
 4- 21711 1/8"