(Rev 1)

Tech Bulletin
Adjusting Chain Slack

Summary of Bulletin

Based on experience gained over several site installations and with input from system installation contractors, Globe Composite Solutions has revised the chain slack adjustment procedure accordingly over time in an attempt to provide a repeatable and more objective procedure for adjusting chain slack.

To that extent some of the earlier site installations used more subjective procedures for adjusting chain slack. Moving forward all sites should use the procedures outlined in this Tech Bulletin, which are also outlined in the Generic Maintenance Manual posted on the GCS Web Site.

It is important to note that the desired end result of this procedure is to remove the slack in the chain, NOT to put tension on the chain. Putting the chain in tension could cause damage and/or reduce the life expectancy of the chain.

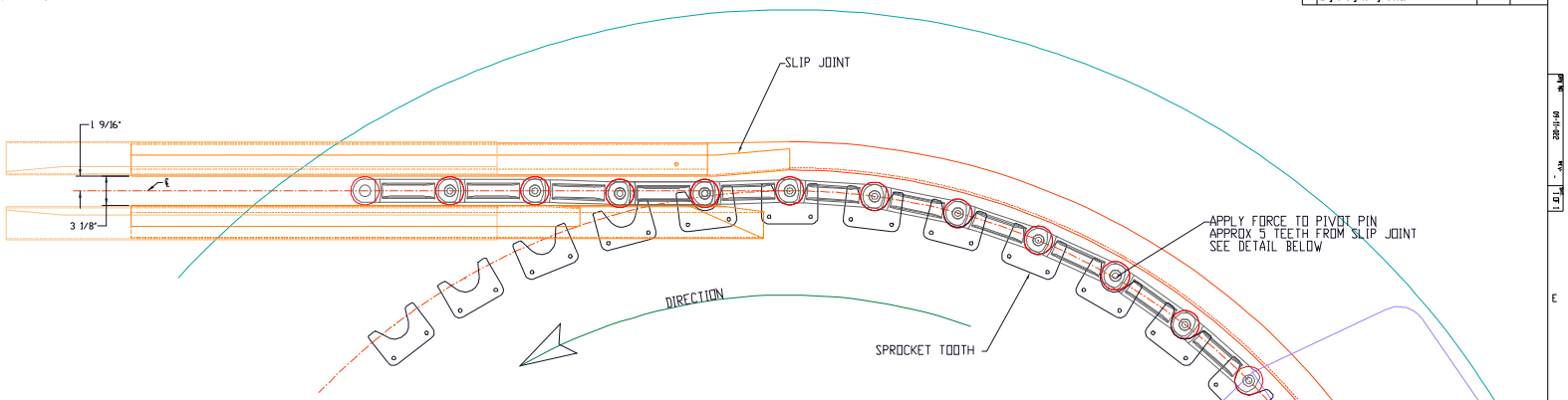
What you need:

1. Two Maintenance Techs (It is generally easier with two Techs, one to pull to load, the other to measure the chain deflection)
2. 100lb Dynamometer - GCS P/N 01-11-0122 (Salter Model 235 110lb Mechanical Dynamometer)
3. Tensioning Fixture - GCS P/N 01-11-0123
4. The Procedures outlined on the following page

Notes:

- Although this Tech Bulletin for adjusting chain slack has attempted to make this procedure more objective, it is still important to run the system at line speed (once adjusted) and to watch the chain on the exit side of the Bull Gear, to see if excessive slack is present. This requires a trained and experienced person who is familiar with Chain and Sprocket Drives. When chains have too much slack, they tend to stay wrapped on the chain sprocket at the point of tangency (exit). When properly adjusted the chain should come off the sprocket cleanly (straight) at the point of tangency.
- After 8 hours of initial run time repeat the chain slack adjustment procedures outlined below.
- Over the course of the first few weeks monitor the chain slack daily at the exit of the bull gear, and adjust chain slack if necessary in accordance with the outlined procedures.
- Review chain slack at a minimum monthly after the initial 2 week time period.

Chain Slack Adjustment Procedure

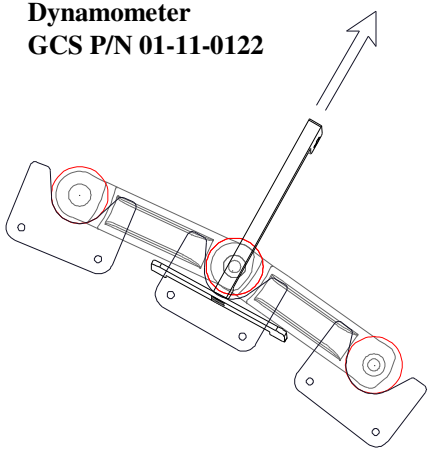


Bottom View of Bull Gear At Exit Side Slip Joint
(LEFT HAND SHOWN, RIGHT HAND IS OPPOSITE)

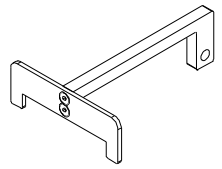
PROCEDURE:

1. THIS PROCEDURE IS CONDUCTED WHILE THE BULL GEAR IS STOPPED, TURNED OFF, AND LOCKED OUT.
2. USE A CALIBRATED 100-200LB. DYNAMOMETER (01-11-0122 OR EQUIVALENT) AND CHAIN TENSIONING FIXTURE 01-11-0123.
3. MEASURE CHAIN SLACK AT THE EXIT SIDE OF THE BULL GEARS SLIP SLIP JOINT, APPROX 5 TO 6 TEETH BACK. THIS POSITION ENSURES THAT THE CHAIN IS IN CONTACT WITH THE SPROCKET TEETH AND TENSION IS PRESENT.
4. ATTACH DYNAMOMETER TO TENSIONING FIXTURE.
5. APPLY TENSION TO THE CHAIN USING THE TENSIONING FIXTURE (01-11-0123 SHOWN BELOW) UNTIL A 45-50 lbf IS OBTAINED. WITH THE CHAIN TENSIONED PROPERLY, THIS WILL MOVE THE CHAIN WHEEL 3/16" TO 1/4" AWAY FROM THE SPROCKET TOOTH.
6. RUN SORTER FOR 8hrs AND REPEAT STEPS 3 TO 5.

Dynamometer
GCS P/N 01-11-0122



GCS P/N 01-11-0123



CHAIN TENSIONING FIXTURE 01-11-0123

DETAIL - A

CONFIRMING PROPER CHAIN SLACK USING A STROBE/TACHOMETER:

This procedure should be used after completing steps 1 through 5 (above) and is based on observing the chain engagement to the sprocket teeth by standing under the bull-gear and aiming the strobe at a particular sprocket tooth while running the sorter at line speed.

Adjust the strobe speed to give several pulses of the same sprocket tooth. The strobe speed should be set to 3 to 5 times the actual speed of the passing sprocket teeth. *(Each individual may prefer different speeds in order to get the best stop action of the chain engagement.)*

The first 3 to 4 teeth at the entrance side will be in full engagement as they are the main load carrying teeth.

If any chain slack is present, as you move from the entrance side of the Bull Gear around towards the exit side of the Bull Gear, the sprocket teeth/chain wheel engagement points will show a gap of approximately ¼" to 3/8" of space. (Special attention should be paid to BG exit where chain re-enters track.)

Move the strobe to different positions around the bull-gear to get an average reading. *(The same tooth will not have a gap present each time due to small variations of the chain pitch or sprocket pitch.)*

A properly adjusted chain should show some space at various locations. If no space is observed, then this is an indication that the chain is in tension which is undesirable and could cause damage and/or reduced chain life.

At no time should the sprocket tooth/ chain wheel gap exceed ½".

If excessive gap is present, the drive should be moved in not more than ½' increments until the proper chain slack is accomplished.

REV	DESCRIPTION	DATE	APPROVED
-	Original Engineering Release	9/15/04	FPD

NOTES: UNLESS OTHERWISE SPECIFIED

Globe Composite Solutions, Ltd.

CHAIN SLACK ADJUSTMENT ILLUSTRATION

DWG NO. 09-11-0022 REV E