

QUADRANT 5300

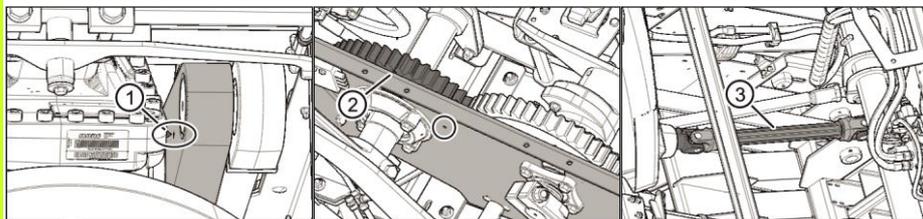
The 10 steps for tying adjustment



This simplified operating manual does not replace the manual supplied with the machine. All the safety guidelines given in this manual must be observed when working with the baler.

The settings described below are for optimal operation of the tying system. Failure to follow them may cause tying errors.

A. Main settings:



Step 1: 1-1 Turn the flywheel in the direction of the arrow to position the piston at front dead center.

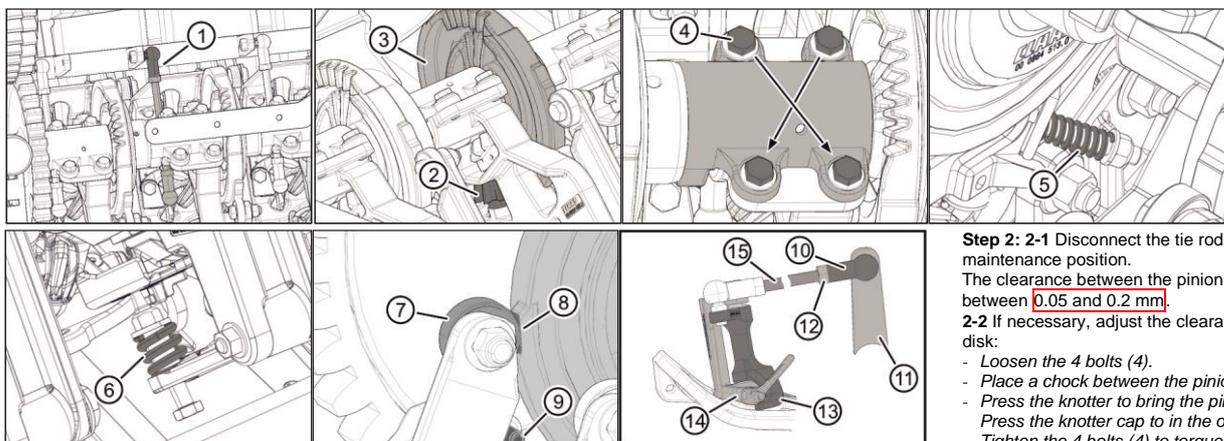
In this position, the identification mark (1) must be centered on the crank hole.

The identification mark (2) on the crank wheel must be across from the hole in the left side plate.

1-2 If necessary, change the position of the driveshaft (3):

- Position the crank wheel and lock it.
- Remove the 2 sides of the driveshaft.
- Put the piston at top dead center and tighten the flywheel brake.
- Look for the best position by turning and repositioning the driveshaft.

B. Knotter settings:



Step 2: 2-1 Disconnect the tie rod (1) and pivot the knotter to maintenance position.

The clearance between the pinion (2) and the disk (3) must be between 0.05 and 0.2 mm.

2-2 If necessary, adjust the clearance between the pinion and the disk:

- Loosen the 4 bolts (4).
- Place a chock between the pinion and the disk.
- Press the knotter to bring the pinion into contact with the chock. Press the knotter cap to in the opposite direction.
- Tighten the 4 bolts (4) to torque of: 63 Nm.
- Remove the chock.
- Pivot the knotter on the shaft; it must turn freely with no sticking points.

Step 3: 3-1 Adjust the knotter nose spring (5): 33^{+1} mm.

3-2 Check that the roller (7) is not in contact with the disk.

Adjust the length of the spring (6) for the twine pincer flange: 28^{+1} mm.

Step 4: 4-1 Put the roller into contact with the excrescent part (8).

4-2 Adjust the roller (7) using its eccentric shaft: The clearance between the roller and the part (8) must be zero. The roller (7) must be difficult to turn by hand. The lever must always be in contact with the pin (9).

4-3 Pivot the knotter into position.

Step 5: - Unclip the ball joints (10) from each knotter.

- Pull the drive shaft (11) backward to capture the clearance.

- Loosen the nut (12) and press the twine guide finger (13) to the stop on the cornet (14).

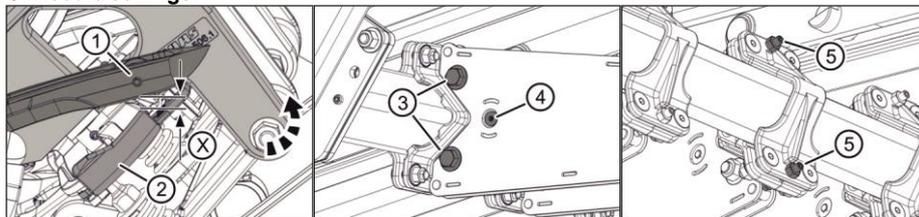
- Screw or unscrew the ball joint (10) until it is across from the ball on the drive shaft (11). (The ball joint must be able to fit onto the ball without displacing either the twine guide finger (13) or the drive shaft (11).)

- Screw the ball joint (10) 1 turn on the connecting rod (15) and lock the ball joint (10) into position with the nut (12).

- Clip the ball joint (10) to the ball of the drive shaft (11).

Note: When using very thick twine, it may be useful to screw the ball joint (10) one extra turn.

C. Needle settings:



Step 6: 6-1 Launch tying manually.

Turn the flywheel in the direction of the arrow to align the wheel axis (1) with the twine pincer flange (2).

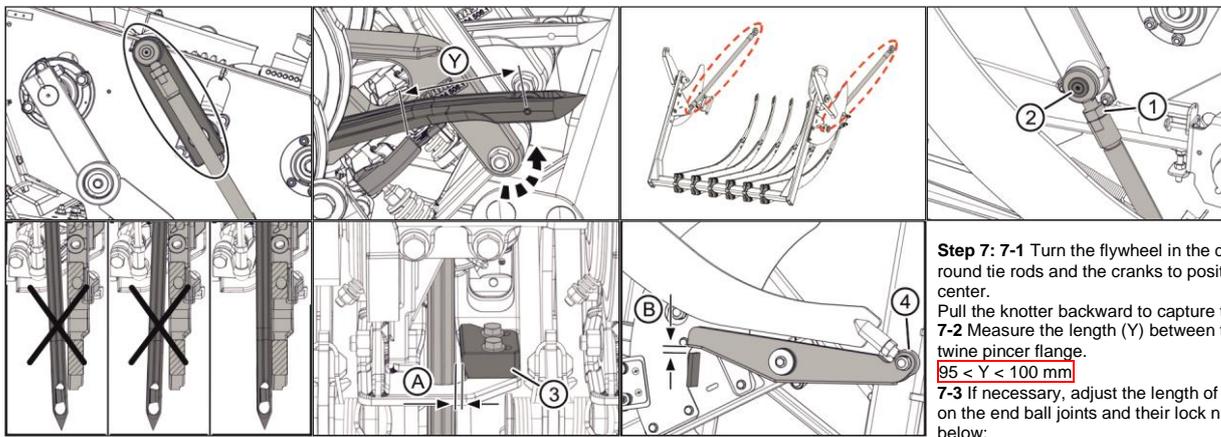
Pull the knotter backward to capture the clearance.

6-2 Measure the distance (X) between the lower edge of the needle and the upper edge of the twine pincer flange:

$X = 8^{+1}$ mm

6-3 If necessary, change the height of the needle:

- Release bolts (3) and (4).
- Change the needle's position using the bolts (5).
- Tighten the bolts (3) to 150 Nm.
- Tighten the bolt (4) to 24.5 Nm.



Step 7: 7-1 Turn the flywheel in the direction of the arrow. Align the round tie rods and the cranks to position the needles at top dead center.
7-2 Measure the length (Y) between the wheel and the rear of each twine pincer flange.
 $95 < Y < 100 \text{ mm}$
7-3 If necessary, adjust the length of the round tie rods while acting on the end ball joints and their lock nut according to the chart below:

	LEFT----->RIGHT						Problem
needle	1	2	3	4	5	6	
1 : case Y=	96	97	96	97	98	97	No problem
2 : case Y=	93	95	96	97	98	99	Sloped leftward
3 : case Y=	99	98	97	96	95	93	Sloped rightward
4 : case Y=	93	93	93	95	93	93	Needles too short
5 : case Y=	102	101	100	100	101	101	Needles too long
6 : case Y=	97	93	97	97	101	97	Needle 2 too short & 5 too long

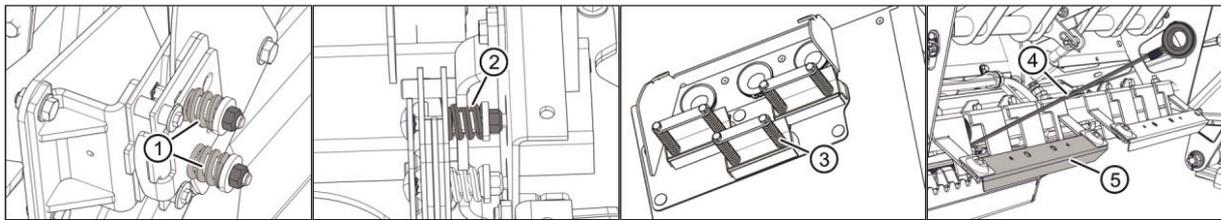
Once the round tie rods are adjusted, they do not need to have the same length.

- Case 1: No adjustment.
 - Case 2: Extend the right tie rod & shorten the left tie rod.
 - Case 3: Extend the left tie rod & shorten the right tie rod.
 - Case 4: Shorten the length of both tie rods.
 - Case 5: Extend the length of both tie rods.
 - Case 6: Checking the knotter positions and the integrity of the needles. If necessary, replace the components.
 - Lock the 4 lock nuts (1).
 - Tighten the 2 bolts (2) to 34 Nm.
 - Finish the tying cycle.
- 7-4** Remove the needles from the baling chamber and launch tying again. Check the height of the needles (X), and readjust them, if necessary. Check the length of the needles (Y), and readjust them, if necessary.

Step 8: Leave the needles at top dead center.

Make sure each needle is in contact and parallel to each knotter body. Check the needle guides (3) to get the clearance in (A): $A=0.3^{+0.2} \text{ mm}$.

Step 9: Adjust the clearance in (B) between the lever and the stop by acting on the ball joint (4) and its lock nut. The distance (B) must be strictly identical on both sides of the baler: $B=8^{+1} \text{ mm}$. Finish the tying cycle.



Step 10: 10-1 Adjust the springs (1) for the brakes for the needle equalizer beams on each side of the machine: 27^{+1} mm .

10-2 Adjust the springs (2) of the needle shaft brake: 27^{+1} mm .

10-3 Adjust the springs (3) of the twine brakes on the twine boxes: 55^{+1} mm .

10-4 Check the twine tension: Install the twine on the machine and launch tying. Measure the distance between the twine tension springs (4) and their bracket (5). It must be 50^{+20} mm , and if necessary, adjust the brake settings on the twine boxes.

If no adjustment can be made, contact the service department. When arriving on the field, do another quick check of all the points above:

Tying problems and solutions

Knot errors are often due to: poor-quality twine, incorrect twine guidance, twine tension errors, bad needle positioning or bad knotter adjustment. To limit errors due to twine quality, use twine recommended by CLAAS.

	Cause and solution	Step		Cause and solution	Step
	The knot is not tight enough, but the two ends of the twine are cut correctly: - Retighten or replace the knotter nose spring. - Check the shape of the knotter nose tongue.	2		The knot is tight, but one of the ends of the twine is broken and fibrous. A piece of twine is under the knotter: - Check the twine pincer flange setting. - Check the status of the pincer flange wheel.	3
	The knot is broken at the short end of the twine, the rest of the twine is kept below the twine pincer flange: - Check the status of the pincer flange wheel. - Check the setting of the twine pincer flange roller. - Use thicker twine.	3 4		The knot is cut at the short end of the twine: - Check the status of the pincer flange wheel. - Check the setting of the twine pincer flange roller. - Adjust the baling pressure. - Use twine of a regular thickness.	3 4
	The twine is wound around the knotter nose and is broken: - Clean, tense or replace the twine tensioner. - Adjust the needle height. - Adjust the needle balancer brake. - Adjust the needle shaft brake.	6 10		There is no knot or the twine is pinched and is no longer held in the needle or retainer. It is cut cleanly, but is dangling in the baling chamber, or it has snagged in the previous bale: - Check the twine routing (align the rear eye of the needle). - Adjust the twine tensioner. - Engage the brakes of the needle equalizer beams and the needle shaft.	10
	The twine is broken after tying: - Check the status of the guidance horn. - Check the adjustment and status of the twine guide finger. - Check the status of the knotter flange. - Use thicker twine.	5		The twine is being held in the retainer, but the end of the twine is damaged lengthwise. - Use twine of a regular thickness. - Check the status of the pincer flange wheel. - Check the setting of the twine pincer flange roller.	3 4
	The twine is broken before the knotter nose and is stuck in the knotter nose: - Loosen the knotter nose spring. - Check the status of the knotter nose and its tongue. - Check the status of the knotter flange. - Use thicker twine. - Check the status of the guidance horn.	2 5		The twine is no longer held by the retainer: - Check the setting of the twine pincer flange roller. - Use twine of a regular thickness. - Reduce the baling pressure. - Check the shape of the swath (it must be wide and regular); if the swath is small, tack to ensure optimal filling of the channel.	4
	The knot has a long twine end and is cut: - Check the clearance between the pinion and the knotter disk. - Check the axial clearance of the small pinion. - Tense the knotter nose spring. - Reduce the baling pressure. - Check the status of the pincer flange wheel. - Check the twine pincer flange setting.	2 3		The twine jumps behind the twine guide finger: - Reduce the baling pressure. A piece of twine is held in the retainer; a piece of twine is in the knotter: - Check the status of the pincer flange wheel. Adjust the spring of the twine pincer flange to its upper tolerance (28 mm) - Use the recommended twine.	