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1. DEFINITION OF BALER MODELS

DESCRIPTION / BALER MODEL	4860 D1010	4860CC 4860S D1010CC D1010S	4880CC 4880 D1210CC D1210
Continuous charging	yes	-	-
Intermittent charging	-	Yes	Yes
Manual bale density adjustment	yes	-	-
Automatic bale density adjustment	-	yes	yes
Bale extractor	option**	option*	option*
Automatic chain lubrication*	option	yes	yes
Automatic knotter lubrication*	option	yes	yes
Hydraulic braking system	yes	yes	yes
Pneumatic braking system*	option std for D, A, I	option std for D, A, I	option std for D, A, I
Over-size tyres*	option	option	option

* = Factory-fitted

** = Not factory-fitted

cc = CropCutter™ (D1010/4860: packer cutter
D1210/4880: rotor cutter)

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TORQUE TABLE FOR STANDARD METRIC HARDWARE

Nominal diameter (mm)	TORQUES (daNm) ON NUT OR HEAD OF HARDWARE							
	CLASS 5.8				CLASS 8.8			
	Standard nut		Serrated nut		Standard nut		Serrated nut	
	Min	Max	Min	Max	Min	Max	Min	Max
M 4	–	–	–	–	0.2	0.3	–	–
M 5	–	–	0.7	0.7	0.5	0.6	1.0	1.3
M 6	0.6	0.7	1.3	1.6	0.9	1.1	1.5	1.9
M 7	1.0	1.2	–	–	1.6	1.8	–	–
M 8	1.5	1.7	1.8	2.3	2.3	2.6	3.0	3.7
M 10	3.0	3.4	3.4	4.3	4.6	5.2	5.5	7.0
M 12	5.2	5.9	8.0	10.2	8.0	9.0	13.7	17.3
M 14	8.5	9.3	10.6	13.4	12.7	14.5	20.0	20.2
M 16	12.7	14.5	17.8	22.5	20.0	22.1	26.0	33.0
M 18	17.8	20.0	–	–	28.5	32.0	–	–
M 20	25.5	28.5	–	–	40.0	45.0	–	–
M 22	34.4	36.7	–	–	54.5	61.2	–	–
M 24	43.8	49.3	–	–	68.8	77.7	–	–
M 30	–	–	–	–	137.3	154.3	–	–
M 36	–	–	–	–	240.1	270.0	–	–

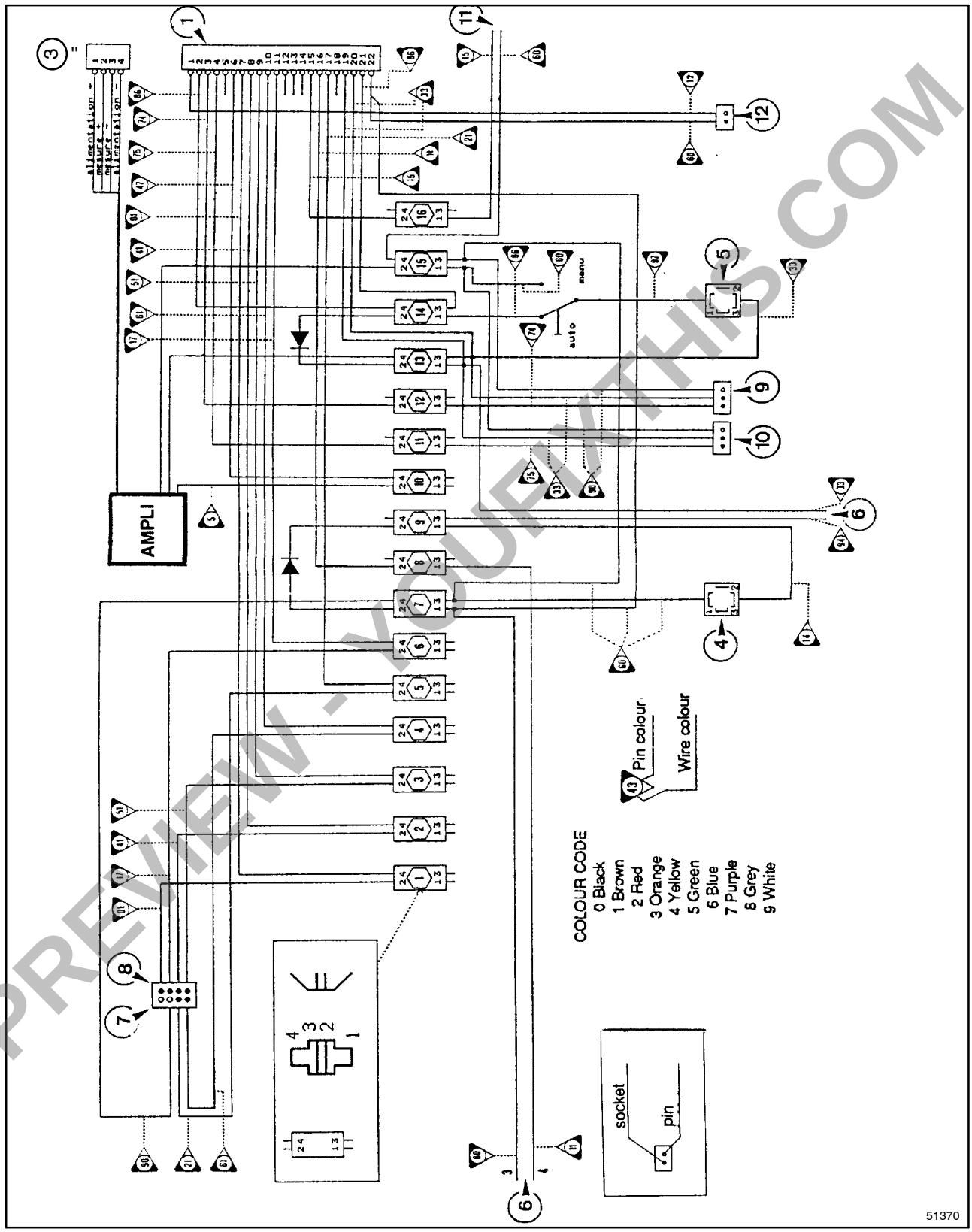
NOTE : The above-mentioned values apply to galvanized hardware, installed without grease.

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12. ELECTRICAL WIRING DIAGRAM JUNCTION BOX

Before season '97 4860S/D1010 Silage



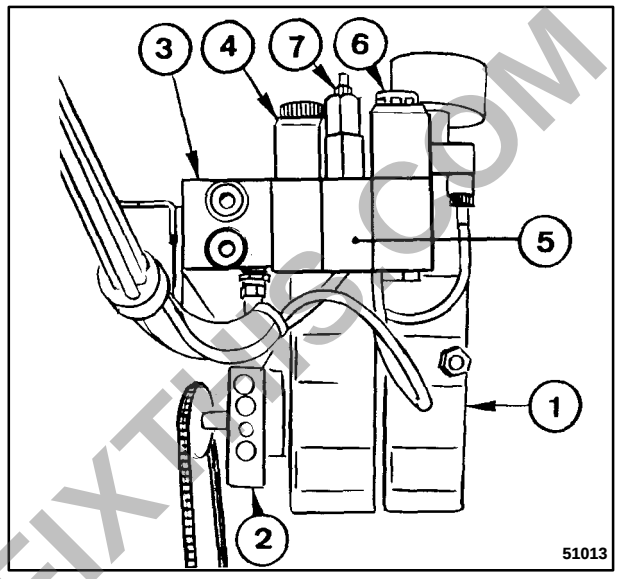
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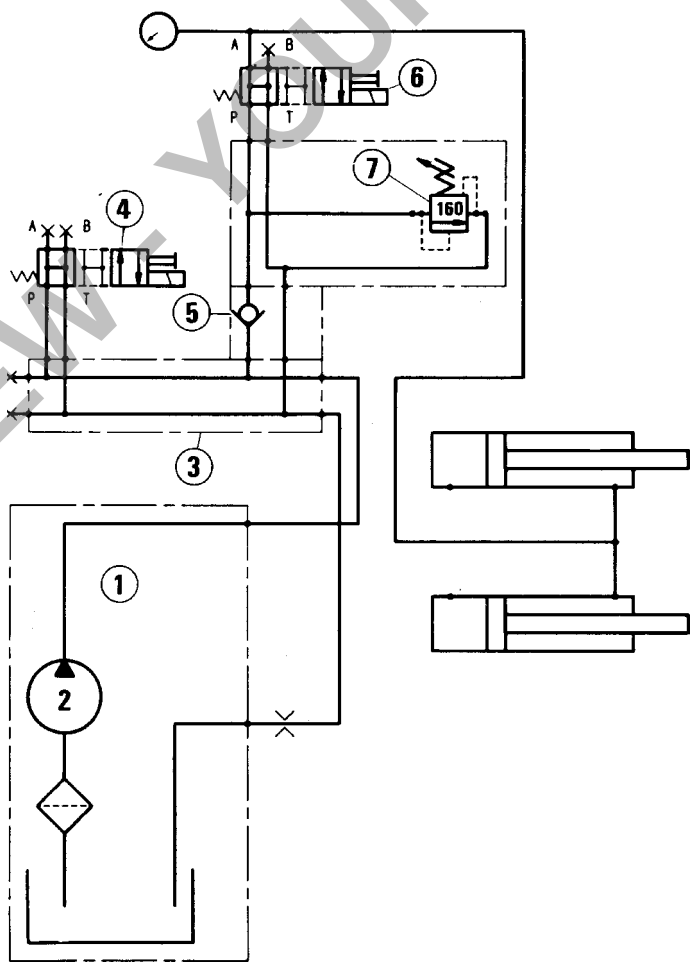
1. HYDRAULIC POWER PACKDESCRIPTION

1. Reservoir (built-in filter)
2. Pump
3. Valve manifold block
4. Solenoid by-pass valve
5. Non-return valve
6. Solenoid control valve
7. Safety valve

NOTE:
Fig. 113 is a rear view of the hydraulic power pack. By-pass valve (4) is located up front; control valve (6) at the rear in this rear view picture.



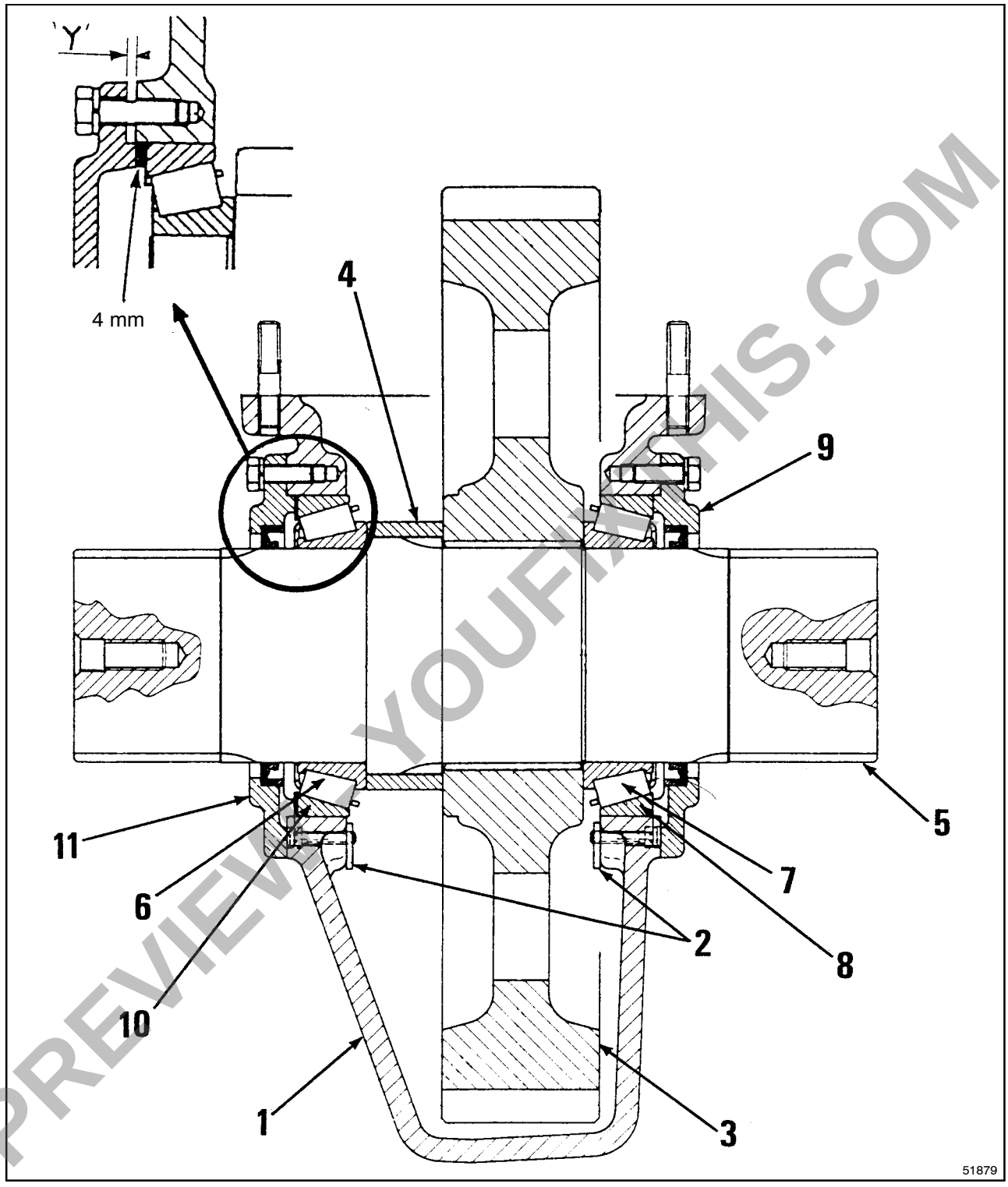
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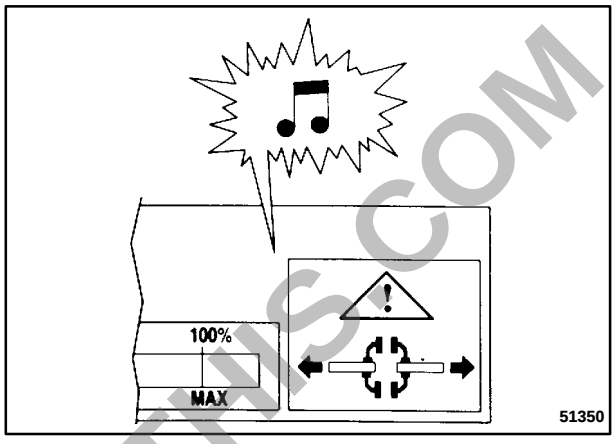
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5. BALER OPERATING FAULTS

Any baler operating fault that occurs in the functions described below is shown on the graphic display panel as a specific warning.

Faults can be divided into minor faults which do not prevent the baler from continuing to operate (these warnings can be considered as operator assistance), and major faults which are displayed with “STOP” and accompanied by a continuous audible warning, and which require the baler to be stopped immediately so that the fault can be rectified.



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Minor faults

1. Slipping of the packer safety slip clutch

   When this clutch slips for more than 6% for longer than 2 seconds, the warning symbol is displayed on the screen, accompanied by an intermittent audible warning.

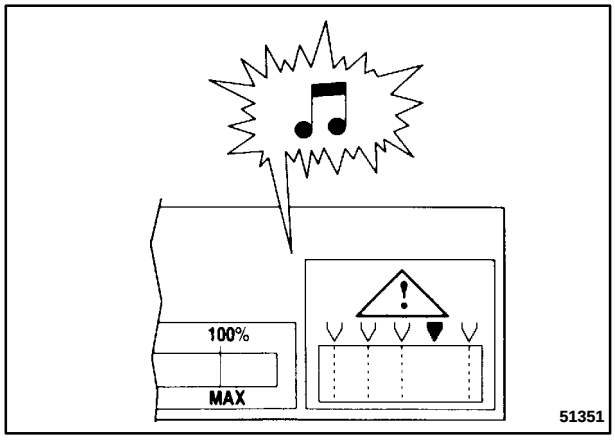
   Once this fault has stopped, the warning display and the audible beeps will continue for 4 seconds.

   NOTE:
   This warning signal is interrupted by the knotter display.

2. Knotter mistie

   When a knotter mistie occurs on one of the 4 or 5 knotters, the warning symbol is displayed on the screen accompanied by an intermittent audible warning. The warning remains displayed on the screen until the fault is corrected.

   NOTE:
   - This warning display does not take account of knotter misties due to a knot sticking on the bill hook. This warning is only activated by a missing or broken twine.
   - When a knotter mistie occurs on only one knotter, the bale that has been produced is counted by the control system.



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5. TROUBLESHOOTING

AUTOMATIC LUBRICATION SYSTEM

CONCERN	POSSIBLE CAUSE	REMEDY
Low oil consumption	Oil pressure is too low.	1. Pump is difficult to activate: seized up because of dust or earth. Clean the pump. 2. Pump is not adjusted to deliver enough oil. Adjust the pump displacement. 3. Check valves in pump are not properly or completely seated. Dismantle, clean or replace the pump.
	Oil too thick.	Replace oil with thinner oil.
	Dirt into the circuit.	Replace all metering units.
Excessive oil consumption.	Main oil way is damaged.	Repair or replace.
	Oil too thin.	1. Fill up the system with thicker oil. 2. Reduce pump displacement.
Bearings run dry.	No oil pressure.	1. Squeezed line. Repair. 2. Pump does not operate. Repair, adjust or replace pump. 3. Main oil way is damaged. Repair or replace. 4. No oil in reservoir. Fill up. 5. Air in the circuit, purge. 6. High rate of impurities. Clean the system and replace the metering units.

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GEARBOX ASSEMBLY PROCEDURE 4860-D1010/4880-D1210

Upper half box – Figure 21

1. Place the upper case 1 in a vertical position, with its flat side upwards.

2. Install both lubrication shells 2 inside the case, using 2 Allen screws + lock thread compound (Loctite^{R} 242) for each shell - Torque to 2.5 daNm.

3. Present the crown gear 3 so that the machined side of its hub as well as the spacer are directed towards the curved side of the case.

4. Place the case in horizontal position, curved side upwards; install spacer 4 in between gear hub and case.

5. Press the bearing cone 6 onto the cross shaft 5 and slide the shaft into the case, through spacer 4 and gear 3.

6. With the case being in the vertical position, fit the bearing cone 7 onto the opposite side of shaft 5 and outside face 8 of the bearing.

   NOTE:
   Using a hot air generator, heat up the bearing cone to facilitate its installation. Coat the contacting surface of cap 9 with oil-proof compound (Loctite^{R} 510) and install this cap, taking care to match the lubrication grooves of cap and case and after having wrapped a protection tape around the shaft spines, to prevent the lip seal from any damage.

7. Apply a lock thread compound (Loctite^{R} 242) on all 8 screws and torque these hex screws to 9 daNm.

8. Place the case in horizontal position, curved side upwards. Then install bearing cup 10.

9. Place a shim pack “X” of 4 mm on the outside edge of cup 10.

   Install cap 11 momentarily, using 4 hex screws placed equally around the cap and torque gradually to 0.4 daNm.

   Spin the shaft in both directions while hitting its end with a mallet (this is to test the bearings). Then re-torque to 0.4 daNm.

10. Using a feeler gauge set, measure the space “Y” between cap 11 and the case in several places. Make record of the average space value.
    The final shim pack “E” to be installed under cap 11 will be:

    E = “X” – “Y” + 0.1 mm

11. Remove cap 11 and all shims; then install the amount of shims equal to thickness E. Coat the contacting surface of cap 11 with oil-proof compound (Loctite^{R} 510) and install the cap, taking care to match the lubrication grooves.

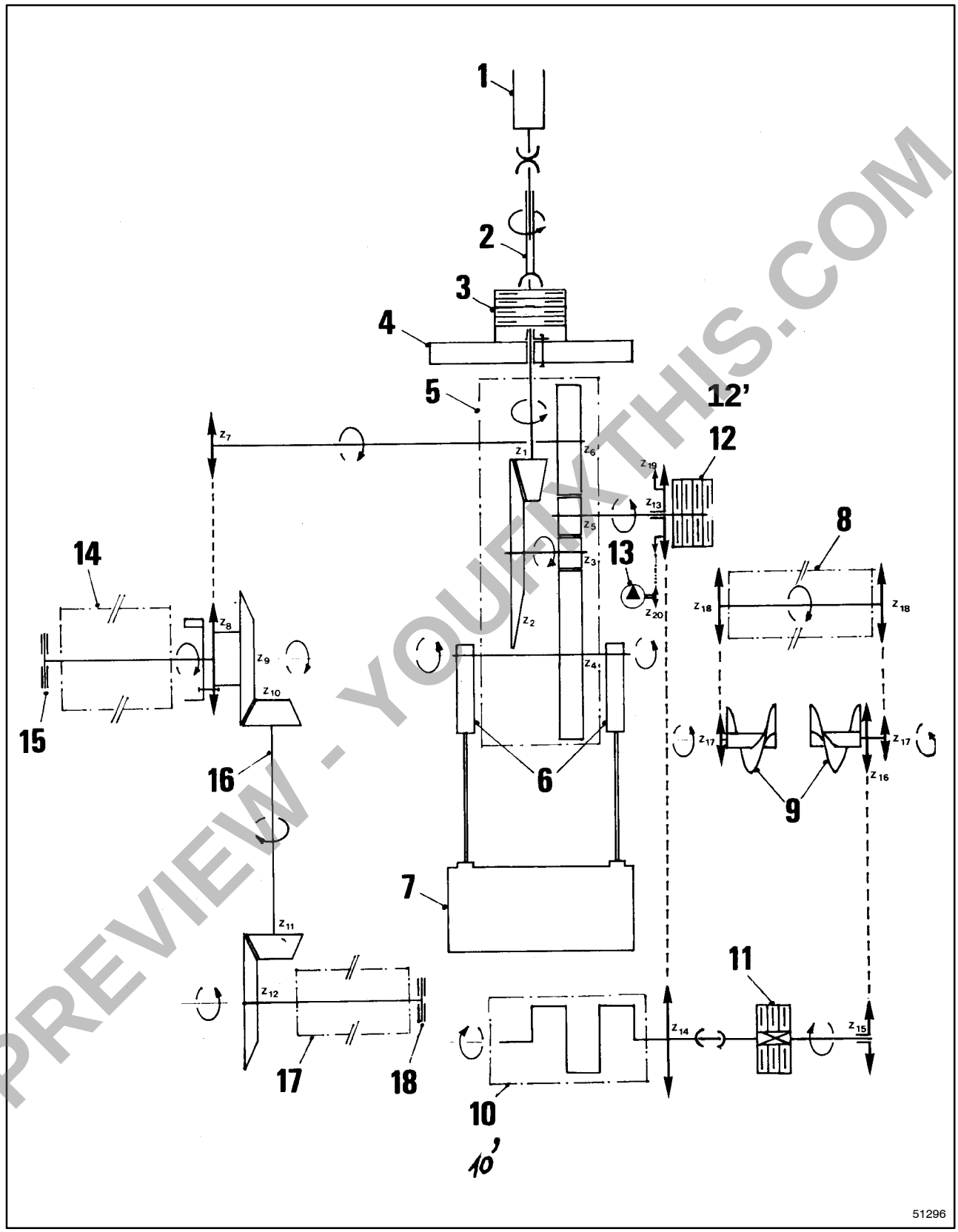
    Apply a lock thread compound (Loctite^{R} 242) on all 8 cap screws and torque to 9 daNm.

12. Check the crown gear for free rotation, the bearings being slightly loaded.

    Check that the studs are properly tightened in the upper case (use (Loctite^{R} 270).

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Checking and adjusting the backlash

The backlash at points (7) must be checked and adjusted periodically, initially after the first 400 bales, and then every 2,000 bales.

Incorrect backlash can cause the following damage:

- Excessively tight assembly of the components of the knotter stack will lead to excessive wear on the cam gear hub faces and of the flat face of the drive pinions;

- Excessive end float will lead to accelerated gear tooth wear, with a high risk of gear tooth or cam plate breakage. Furthermore, knotting misties may occur due to incorrect twine disc operation.

NOTE:
The “O” ring (zero-line) on Fig. 79 runs along the inside edge (righthand side) of circlip 10.

Assembly instructions (after major overhaul)

1. Commence stacking from the lefthand side. Install the control cam (5) against the circlips (10).

2. Install cam gear N_ 1:
   a) Adjust backlash (7) to 0.15 - 0.40 mm using thin shims at position “Y”.
   b) Locate the knotter cam gear at a distance of 217 mm using the expanding ring set (1) protected by a thick spacer at position “X”.

3. Install the remaining cam gears using the same procedure as above, taking care to observe the knotter stack dimensions shown in the diagram.
   a) The fine shims (Y) are used to set the backlash to 0.15 - 0.40 mm.
   b) The spacers (X) are thicker and are used to set the correct stack dimensions and also to protect adjacent components.
   c) The expanding ring set (2) in the centre, sets the position of the N_ 3 cam gear. It is protected by a spacer.

      Shim thicknesses:

      Shim thickness = 0.25 mm
      Shim thickness = 0.80 mm
      Protective spacer (X) thickness = 1.80 mm

4. Install the last expanding ring set (3) such that it is at mid-travel. Use shims as necessary.

5. Adjust the preload of the knotter stack assembly by means of the expanding ring set (3):
   a) Ensure that all components of the knotter stack assembly are in contact.
   b) Each knotter head should swing upwards when a load of 7 to 10 kgf is applied.

6. Recheck all the stack dimensions and the backlash.

7. Secure the expanding ring sets (1, 2, 3) with iron wire. Grease all components. The knotter stack assembly is ready to be reinstalled on the chassis. Ensure that the 53 mm dimension is observed when the stack assembly is reinstalled, then tighten the eccentric lock collars of the left- and righthand bearings.

   NOTE:
   To locate the stack assembly in the cradle, use dimensions 53 + 217 = 270 from the 1st cam gear to the outside of the cradle bearing mount.
   This dimension can be varied slightly to ensure that the control cams 5 match properly with the rollers on the twine finger and tucker arm control shafts.
   The position of the tucker arm control shaft is determined by the tucker arms well centered in the needle slots.

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