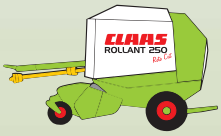
CLAAS



ROLLANT 240
ROLLANT 250

ROLLANT 240 with UNIWRAP
ROLLANT 250 with UNIWRAP

Technical Systems

Electric System

SERVICE & PARTS

Key to diagram:

A23	ROLLANT 240/250 Standard module	Wiring loom A – part 2
XD	CAN bus socket (7 pin)	Wiring loom A – part 2

Pin assignment in modules

Rollant 240

Rollant 250

UNIWRAP

1b

Main power supply

Rollant 250 Comfort

1d

Main power supply

UNIWRAP

Description of function:

Circulation shut-off valve
Use **with** UNIWRAP bale wrapper

To be able to build up the working pressure necessary for many hydraulic control systems, the neutral hydraulic circulation must be blocked (see chapter "Hydraulic system").
In this case, the circulation shut-off valve solenoid coil Y77-2 (UNIWRAP) on the bale wrapper is actuated by module A 23-1 in parallel to the respective function.

When used with the bale wrapper, the bale wrapper module A 22 **permanently** actuates the circulation shut-off valve solenoid coil Y77-1 (Rollant 250). The circulation shut-off valve solenoid coil Y77-1 is additionally blocked by mechanical means (see Operator's Manual).

Circulation shut-off valve
Use **without** UNIWRAP bale wrapper

To be able to build up the working pressure necessary for many hydraulic control systems, the neutral hydraulic circulation must be blocked (see chapter "Hydraulic system").
In this case, the circulation shut-off valve solenoid coil Y77-1 (ROLLANT 250) is actuated by module A 23-1 in parallel to the respective function.

When used without the bale wrapper, a blind plug is mounted on X30. This provides the connection between module A 23-1 and the circulation shut-off valve solenoid coil Y77-1 (see note a). For further modification measures refer to the respective chapter in the Operator's Manual.

5b

Terminal

Rollant 250 Comfort for UNIWRAP

Description of function:

Performance data

Connector XD serves for diagnosis with the Claas Diagnosis System CDS.

The performance data (total number of bales, operating hours, ...) are saved in modules A 23-1 and A 23-2.
Each of these modules takes over a defined part of the functions required for baling (see diagram).

Important: Module A 23-1 is connected to the same wiring loom as diagnosis connector XD.

Task assignment of modules

Function	Module 1	Module 2
Tailgate control	✓	
Circulation shut-off valve	✓	
Pick-up		✓
Twine, net wrapping	✓	
Rotocut knives (ON/OFF)		✓
Reverse rotor		✓

✓ Option

CAN bus
(Controller Area Network)

Data exchange between electronic components via a serial network.

- Measured value table CAN bus

CAN high (U_{eff})	CAN low (U_{eff})	Diagnosis
2.52 V ± 0.1 V	2.49 V ± 0.1 V	System OK
2.50 V	2.50 V	Short circuit CAN high to CAN low
12 V	>2.50 V	Short circuit CAN high to +12 Volt
0 V	<2.5 V	Short circuit CAN high to earth
>2.50 V	12 V	Short circuit CAN low to +12 Volt
<2.50 V	0 V	Short circuit CAN low to earth

6d

CAN bus, module power supply

UNIWRAP up to serial no. 72900130

Description of function:

Function pre-selection	The Rotocut position is pre-selected by means of main switch ON / OFF - ROTOCUT ON / OFF S75 (S75 closed = ROTOCUT ON). For ROTOCUT operation, module A 23 controls the corresponding solenoid coils Y 54/Y55.
ROTOCUT ON	When the ROTOCUT knives ON solenoid coil Y55 is actuated and the pick-up is raised, the knives swing in - ROTOCUT ON.
ROTOCUT OFF	When the ROTOCUT knives OFF solenoid coil Y54 is actuated and the pick-up is lowerd, the knives are forced out by the baled material - ROTOCUT OFF.

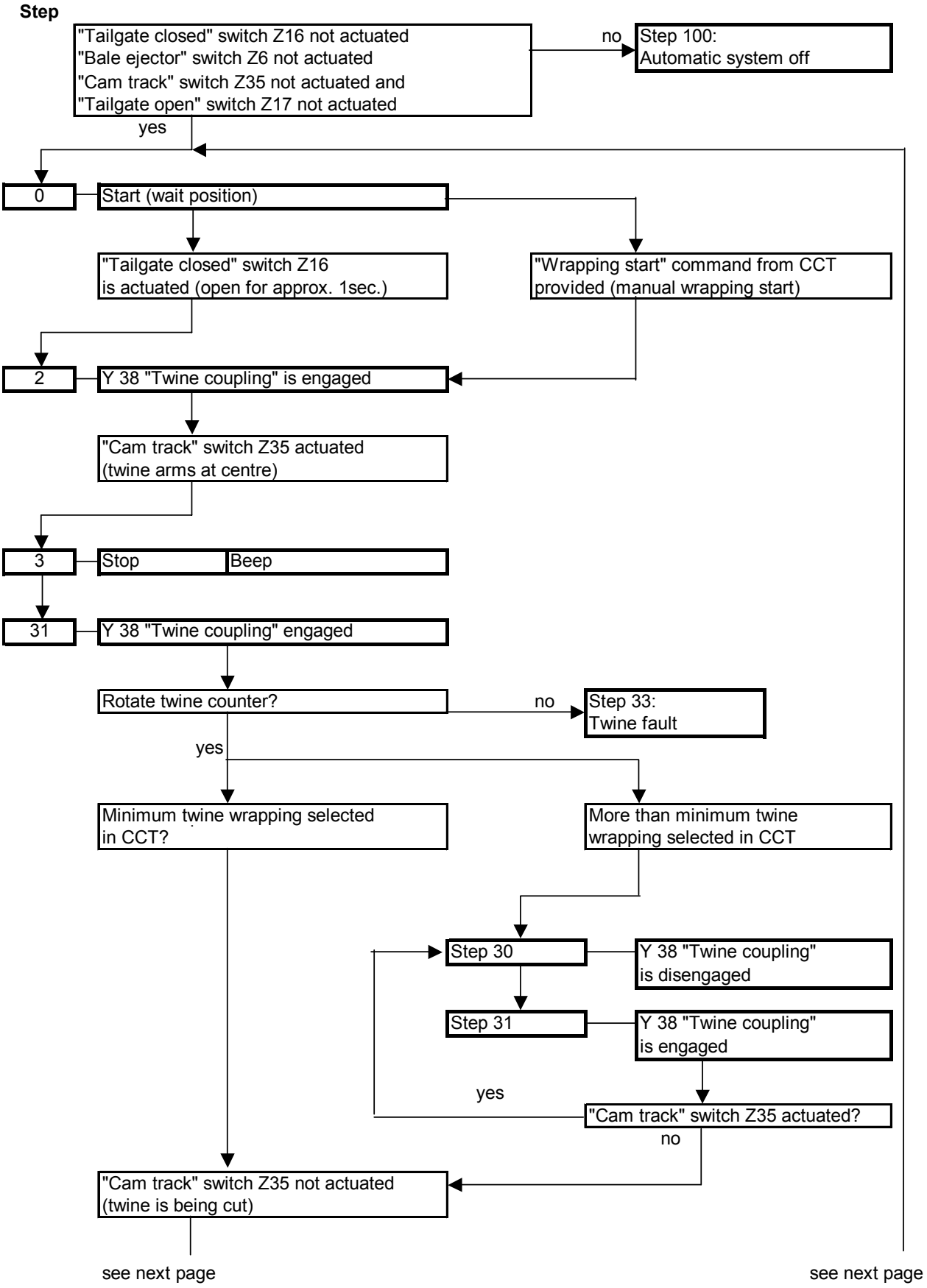
Description of function:

Operational readiness	The machine is ready for automatic wrapping when signal light H3 lights up. Fast blinking of signal light H3 means that the machine is **not** ready for operation. In this case, the bale ejector actual value switch Z6, the tailgate closed switch Z16 and / or the cam track switch Z35 are actuated (see sequence diagram).
Selection of wrapping type	The wrapping type (net / twine) is pre-selected using switch S 74. After this, further modifications must be carried out (see Operator's Manual).
Automatic wrapping release	A completely filled bale chamber makes the baler reach the pre-set hydraulic baling pressure. The tailgate is pushed open by approx. 5 cm. Signal light H3 starts blinking slowly. The wrapping process is started automatically (see sequence diagram).
Early wrapping release	When actuating the wrapping release switch (manual) S77, the start of the wrapping process may be released early.
Wrapping process delay	When actuating the wrapping delay switch (manual) S76, the start of the wrapping process may be delayed. The wrapping process will start automatically only after switch S76 has been released.

Settings:

- Bale ejector actual value switch Z6	Set the switch so that it can be pushed 5 mm max. (for functional check see sequence diagram).
- Tailgate closed actual value switch Z16	Open the tailgate to 30 ± 5 mm. The gap at the elevation of the centre of rotation of roller no. 5 shall serve as measuring point. Adjust the adjusting screw on the tailgate so that the switch changes its signal at this position and that wrapping is started. Adjust the mechanical limit so that the switch can be pushed 5 mm max.
- Cam track actual value switch Z35	Set the switch so that it can be pushed 5 mm max. (for functional check see sequence diagram).

Twine wrapping sequence diagram: 1/2



Description of function:

Bale transfer	After opening the tailgate, the bale rolls into the tipping cradle.
Bale in tipping cradle	The Bale in tipping cradle sensor B102 detects that the bale is in the tipping cradle (magnet in front of sensor). If the bale has not been detected in the tipping cradle 1.5 seconds after tailgate opening, the “Err : Bale bench” message is displayed in terminal A30-1 and the automatic sequence is interrupted.
Tipping cradle transports bale on wrapping table	After the bale has been detected in the tipping cradle, the Raise tipping cradle solenoid coil Y138 is actuated. Detection of the Tailgate open switch Z17 is a pre-condition for this. If this pre-condition is not met, the “Err : Tailgate” message is displayed in terminal A30-1 and the automatic sequence is interrupted.
Bale on wrapping table	When the bale is on the wrapping table, the Bale on wrapping table switch Z92 is actuated. The bale must have been detected on the wrapping table 1.5 seconds after actuation of the Raise tipping cradle solenoid coil Y138. Otherwise the “Err : Bale table” message is displayed in terminal A30-1 and the automatic sequence is interrupted.
Lower tipping cradle	After transferring the bale to the wrapping table, the Lower tipping cradle solenoid coil Y135 is actuated. Detection of the Tailgate open switch Z17 is a pre-condition for this. If this pre-condition is not met, the “Err : Tailgate” is displayed in terminal A30-1 and the automatic sequence is interrupted.
Tipping cradle down Close tailgate	After the first of 3 magnets has been detected by the Tipping cradle down sensor B103, the tailgate closes. Manual tailgate closing also requires that the Tipping cradle down sensor B103 be detected. Otherwise, the “Err : Tailgate” message will appear in terminal A30-1 and the tailgate cannot be closed.
Wrapping table up	The wrapping table at top sensor B105 detects if the wrapping table is in its top position (solenoid in front of sensor). Otherwise the “Err : Wrapping table” message is displaye din terminal A30-1 and the automatic sequence is interrupted.

Sensor settings

- HALL sensor (B102, B103, B105)	The sensors B102, B103, B105 should be set to a clearance of 6 - 7 mm from the magnet upon detecting the signal (magnet in front of sensor = 0 → I, see Wiring loom L).
- Bale on wrapping table actual value switch Z92	The Bale on wrapping table switch Z92 should change its signal after a mechanical actuation from approx. 6.5 - 9.5 mm (0 → I) (see also "Sensor test" chapter in Operator's Manual).

21a

Wrapping arm rotation

UNIWRAP

Description of function:

Opening and closing of film cutters	To open and close the film cutters, the Open film cutters solenoid coil Y139 and Close film cutters solenoid coil Y140 are actuated. The Wrapping table raise solenoid coil (Y138) is actuated in parallel with this function. This is required in order to transmit a load pressure signal to the input pressure balance and to actuate the latter (see also "Hydraulic System" chapter).
Film break monitoring	Rotation of the film rolls is monitored during the wrapping process under the pre-condition that the wrapping arm is accelerated and rotates with a min. speed of 20 rpm. It is also necessary to activate the film break monitoring via terminal A30 or A30-1 (see also relevant chapter in Operator's Manual).
Sensor signals	At the top end of the stretch rolls, 4 magnets rotate below the Film break sensors B109-1 and B109-2. According to the speed and the clearance to the magnets, the sensors generate an alternating current. The Film break monitoring transmitters V11-1 and V11-2 convert this alternating current into a corresponding magnetic field.
Signal detection	At each rotation of the wrapping arm, the Film break monitoring receiver V12 detects the Film break monitoring transmitters V11-1 and V11-2. When a transmitter has not been detected, the wrapping process is stopped and the film break message is displayed in terminal A30 / A30-1.
Sensor setting	On the pre-stretcher units, the film break sensors B109-1/109-2 should be set to a clearance of 2-3 mm from the magnets (see Wiring loom M). The clearance from the Film break monitoring transmitter V11-1/V11-2 to the Film break monitoring receiver V12 should be approx. 10 – 12 mm if the components cover each other up (see Wiring loom M).

40a

Additional sockets

Rollant 250 Comfort

40c

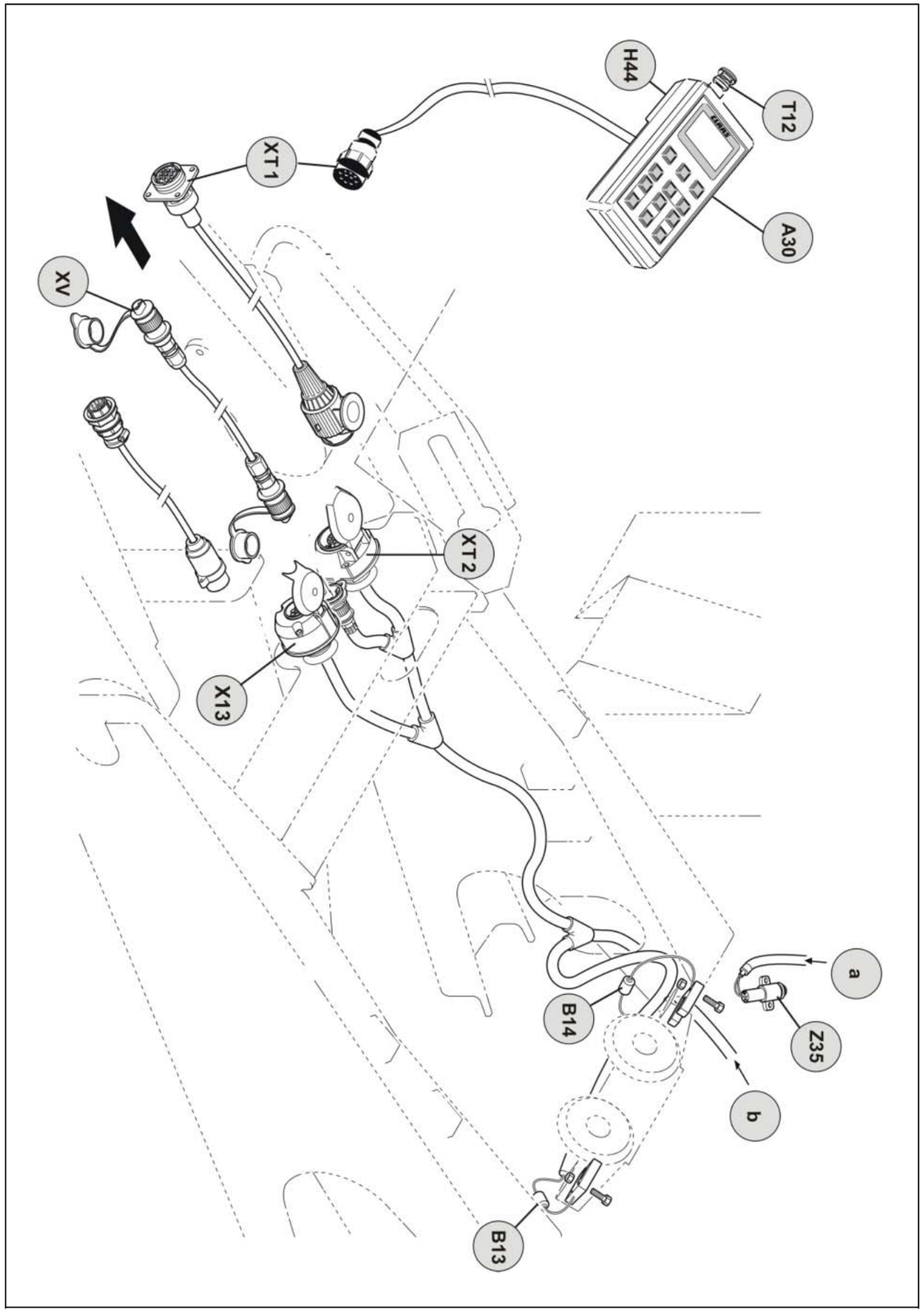
Additional sockets

UNIWRAP up to serial no. 130

Key to diagram:

a	Continued in wiring loom B – part 2	
b	Continued in wiring loom B – part 2	
A30	CCT terminal	5a
B13	Twine roll left rpm sensor	11c
B14	Twine roll left rpm sensor	11c
H44	Buzzer	5a
T12	Main switch	1b, 1c
XT1	Terminal connector	1b, 1c
XT2	Terminal connector	1b, 1c
XV	Power supply connector	1b, 1c
X50	Lighting wiring loom connector	32a
Z35	Cam track actual value switch	11b

Wiring loom B – part 1 (Rollant 250 Comfort / Rollant 250 Comfort for UNIWRAP)



Key to diagram:

U25	EMERGENCY OFF switch	1d
X30	Connector	1d
X36	Connector	19a
X37	Connector	19a
Y77-2	Bale wrapper circulation shut-off valve solenoid coil	4c
Y133	Wrapping arm forward solenoid coil	21a
Y135	Lower tipping cradle solenoid coil	19a
Y136	Raise tipping cradle solenoid coil	19a
Y137	Lower wrapping table solenoid coil	19a
Y138	Raise wrapping table solenoid coil	19a
Y139	Open film cutters solenoid coil	22a
Y140	Close film cutters solenoid coil	22a

Wiring loom K (UNIWRAP)