



Brake Tester

Maintenance Guide (Inc. Fault codes)

1 General cleaning

NEVER use pressure or steam washers on the roller set

Daily

- Isolate the electrical supply and padlock to prevent accidental re-connection.
- Using appropriate personal protective equipment remove any contamination from the roller surface I.E mud, oil etc.
- Remove any debris from around the sides of the roller set.

Weekly

- Inspect all moving parts for damage
- Inspect structural components for cracks and damage
- Check all bolts and screws are tight
- Lubricate the chain drive using heavy oil
- Check the weight values are reading correctly

2 Roller set adjustment

These bolts should be adjusted to leave a .5mm gap to the pit wall and then locked in position. If the bolts touch the pit wall the weight readings will be affected.

3 Calibration

3.1 Reset Load Cell

- Go to config F8
- Calibration
- Brake tester (hit F12)
- Hold 0 button on the control box (near the power on switch)
- F2 appears in the menu on the left on the pc
- Press F2
- Now the rollers will start to spin up and go through a testing process
- Once this finishes release the 0 button and close the program restart the pc and brake tester (switch the brake tester off at the wall)

3.2 Electronic Calibration

Be aware that the brake force must be within 60 units of each other i.e. if the left brake force is reading 120 then the right needs to be within 60 units of 120.

- Go to config F8
- Calibration
- Brake tester (hit F12)
- Now get somebody to stand on each corner of the brake tester and see if the brakeforce reads the same in each corner, if not then a load cell could be faulty.
- Press F5 to calibrate the left
- Press F8 to calibrate the right
- Press F9 to move to the next option
- Press F5 & F8 again and then F9 (repeat this for Brake Force, reference value, weight and reference value)
- Once all the values have been updated exit the electronic calibration menu by hitting esc and then press F4 to save the new values, get the user to then do a test.

3.2 Physical Calibration

The Physical Calibration must be carried out by an approved person using the correct calibration equipment. Service agreements are available, contact Crypton Sales for more information

0844 665 7613

sales@cryptontechnology.com

4 Manual testing

The brake tester is supplied with an Infra-red handset to enable manual testing, this puts control of the rollers with the operator.

This feature can be used to make a quick check of an individual braking component of the vehicle, or to test one element of the MOT test manually, i.e. handbrake can be tested against individual wheels manually, rather than per axle as in automatic mode.

4.1 Remote Handset



The following buttons are required to carry out manual testing:

- F6: start left roller
- F7: start right roller
- F8: start and stop both rollers
- F4: to carry on in manual mode after stopping rollers
- F3: selects handbrake application on second axle

Note: No other buttons need to be used for carrying out a manual brake test.

5 Error Messages

Some errors are produced due to a 'one-off' event during a test (i.e. vehicle vacated rollers during test).

5.1 Error Codes - General

Error code 00 05 *

During the zero balance adjustment, the left or right touch roller limit switch was closed. Cause:

- Vehicle in roller set during zero balance adjustment.
- Connecting line between inductive sensor and wiring box defective
- Inductive sensor defective

Possible Fix:

Remove the Vehicle from the brake tester and do a hard reset of the brake tester (switch the brake tester off at the wall and reboot the PC) if the error does not clear then arrange an engineer.

Error code 00 10 *

Test stand is set to RH/LH running operating mode and the speed switch to 5 km/h. This mode of operation is only permissible for 2.5 km/h, since this is an uncontrolled RH/LH running which must not be used for passenger cars (5 km/h).

Error code 00 11 *

During self-test 1 hardware components are initialised and the CPU control card A 1 is initialised.

Possible Fix:

Control card A1 defective, replace the EPO board part number **A2C89006800**.

Error code 00 20 *

If the brake force for cars > 15.5 Kgf and for trucks is > 76.5 Kgf within the last 2 seconds before the measurement final values then the braking action was too fast and the measurement is not correct.

Possible Fix:

Restart the test and follow the on screen instruction as per normal

Error code 00 21 *

Checksum Error

- Flashing not completed or interrupted
- EPO flash device broken

Possible Fix:

Try flashing the EPO board with the software again failing that the EPO board will need to be replaced part number **A2C89006800**.

Error code 00 22

When switching on an error on the EEPROM is determined.

Cause:

- There are no values in the EEPROM after changing PCB
- Software settings not set correctly.

Possible Fix:

Flash the EPO board and reinstall the brake tester software.

Error code 00 23 *

Mistake when reading the EPROM.

Cause:

- No EPPROM fitted
- EEPROM defective
- Control board A1 defective

Possible Fix:

The EPO board will need to be replaced part number **A2C89006800**

Error code 00 24 *

Mistake on writing the EPROM. Cause:

- No EPPROM fitted
- EEPROM defective.
- Control board A1 defective

Possible Fix:

The EPO board will need to be replaced part number **A2C89006800**

Error code 00 25 *

User problem with the remote control. Wrong values have been entered.

Possible Fix:

Restart the test and re-enter the correct values when testing

Error code 00 27 *

Timeout when writing the EPROM.

Cause:

- No EPROM fitted
- EPROM defective.
- Control board A1 defective

Possible Fix:

The EPO board will need to be replaced part number **A2C89006800**

Error code 00 29

System failure

Possible Fix:

Remove the vehicle from the brake tester and do a hard reset of the brake tester (switch the brake tester off at the wall and reboot the PC). If the error does not clear, then arrange an engineer.

Error code 00 30 *

The measuring value has exceeded a maximum permissible measuring value in the measuring range "passenger car". If this value is exceeded, the roller set is deactivated for safety reasons.

Possible Fix:

Inspection of a truck in the passenger car mode, please select the correct working mode.

Error code 01 01 *

Weight varies by more than 3%

Possible Fix:

Check that the weight cell values are correct and perform a electronic calibration if required, if that doesn't fix the issue then an engineer will need to be called.

Error code 05 00 *

Start-up locking protection or no turning signal from touch roller when activating the motors.

Possible Fix:

- Vehicle brake not released
- Inductive sensor defective replace with part number **A2C88458500**
- Printed circuit board A1 defective replace with part number **A2C89006800**

Error code 05 30 *

When switching on the unit, the left/right touch roller limit switch was closed.

Cause:

Vehicle in roller set when switching on.

Possible Fix:

Remove Vehicle from the brake tester, reboot the brake tester and start the test again.

Error code 10 05

When switching on the test stand the STOP button was pressed at the same time.

Possible Fix:

Remove Vehicle from the brake tester, reboot the brake tester and start the test again.

Error code 10 15 *

When switching on the configurations menu did not recognise the printer.

Cause:

- Printer has not been configured properly
- Defective printer cable
- No printer installed
- Defective printer

Possible Fix:

- Check the printer is installed in windows under start > control panel > device and printers
- Check that the printer is selected in the brake tester program Config (password = crypton) > settings > print out, printer under select printer drop down select the printer you wish to use then press F12 to continue and save.

5.2 Error Codes - Problems with the weighing scales

Error code 10 30 *

No signal from the left weighing sensor.

Cause:

- Weighing scales are activated in the configuration menu but are not installed.
- Break in the sensor wires.
- Defective weighing scales on the left side is probably not the case as there are four sensors on the left side which produce an overall signal.

Possible Fix:

Arrange an engineer to find the defective sensor.

Error code 10 31 *

When switching on there is no Cal-Check function on the left side of the scales.

Cause:

- Sensor leads are defective
- Cal-Check leads are damaged or broken

Possible Fix:

Arrange an engineer to find the defective lead /sensor.

Error code 10 32 *

Scales left are not calibrated.

Possible Fix:

Calibrate the brake tester

Error code 10 35 *

On switching on the Zero point of the left scales according to the EEPROM is compared to the actual physical weight. If the difference is too high, this error code will appear.

Cause:

- Scales are not calibrated
- Vehicle is on the test bench or in the left rollers

Possible Fix:

- Check that the user is not switching the CBT with the cover plates still on
- Haven't tightened the brake roller bolts (user may of tightened the bolts thinking the rollers were loose)
- Make sure the user hasn't wedged any thing on the side of the roller as this will also cause this error to flag up
- Try an electronic calibration/load cell 0, this should clear the error (see above for instructions on how to do an electronic calibration)

Error code 10 40 *

No signal from the right weighing sensors.

Cause:

- Scales are activated in the configuration menu but physically not installed.
- Damaged sensor lead
- Right scales are defective which is probably not the case as there are four sensors on the left side which produce an overall signal.

Possible Fix:

Arrange an engineer to find the defective sensor/Lead.

Error code 10 41 *

On switching on there is no Cal-check function on the right scales.

Cause:

- Defective sensor lead.
- Cal-Check lead is damaged

Possible Fix:

Arrange an engineer to find the defective sensor/lead and to recalibrate the brake tester

Error code 10 42 *

Right scales are not calibrated.

Possible Fix:

Arrange an engineer to calibrate the brake tester

Error code 10 45 *

On switching on the Zero point of the right scales according to the EEPROM is compared to the actual physical weight. If the difference is too high, this error code will appear.

Cause:

- Scales are not calibrated
- Vehicle is on the test bench or in the right rollers

Possible Fix:

- Check that the user is not switching the CBT with the cover plates still on
- Haven't tightened the brake roller bolts (user may of tightened the bolts thinking the rollers were loose)
- Make sure the user hasn't wedged any thing on the side of the roller as this will also cause this error to flag up
- Try an electronic calibration/load cell 0, this should clear the error (see above for instructions on how to do an electronic calibration)

5.3 Error Codes - Problems with the Inductive sensor

Error code 11 00 *

No signal from the left touch roller

Cause:

- Roller set is activated in the configuration menu but physically not installed.
- Inductive sensor is defective
- Sensor leads are damaged or broken
- The gap between the induction sensor and the touch roller is >3mm

Possible Fix:

Arrange an engineer to find the defective sensor/lead and to recalibrate the brake tester.

Error code 11 05

No signal from the left switch

Cause:

- Roller set is activated in the configuration menu but physically not installed.
- Inductive sensor is defective
- Sensor leads are defective
- The gap between the inductive sensor and the cam switch is >3mm

Possible Fix:

Arrange an engineer to find the defective sensor/lead and to recalibrate the brake tester

Error code 11 10 *

No signal from the right touch roller.

Cause:

- Roller set is activated in the configuration menu but physically not installed.
- Inductive sensor is defective
- Sensor leads are damaged or broken
- The gap between the induction sensor and the touch roller is >3mm

Possible Fix:

Arrange an engineer to find the defective sensor/lead and to recalibrate the brake tester

Error code 11 15

No signal from the right switch.

Cause:

- Roller set is activated in the configuration menu but physically not installed.
- Inductive sensor is defective
- Sensor leads are defective
- The gap between the inductive sensor and the cam switch is >3mm

Possible Fix:

Arrange an engineer to find the defective sensor/lead and to recalibrate the brake tester.

Error code 11 16

The safety blocking device for the roller set has been activated 3 times in succession.

Cause:

- Vehicle is on the rollers with blocked brakes.
- The inductive sensor is defective: check the switch gap and the wiring.

Possible Fix:

Remove the Vehicle from the brake tester, reboot the brake tester and start the test again, if the error doesn't clear arrange an engineer to check the inductive sensor

Error code 11 40

No signal from the left roller rot. speed sensor.

Cause:

Break in the cable

Possible Fix:

Engineer to check the cabling for the brake tester

Error code 11 45

No signal from the right roller rot. speed sensor.

Cause:

Break in the cable

Possible Fix:

Engineer to check the cabling for the brake tester

5.4 Error Codes - Problems with the radio control sensors

Error code 14 10 *

No RC communication to the receiver on the control board A8.

Cause:

- The RC module is activated in the configuration menu but is not connected
- Wrong DIP switch position on the control board A2 S1
- The control board A8 is defective

Possible Fix:

Arrange an engineer to check the settings / connection of the RC module on the EPO board, possibly the RC module is defective and needs to be replaced part number **A2C89133600**

Error code 14 20 *

No signal from the pressure sensor Pm (RC version) during the measurement.

Cause:

- Pressure sensor Pm is activated in the configuration menu but is not installed.
- Pressure sensor is defective
- Accu is discharged

Possible Fix:

Engineer to check the pressure sensor for the brake tester and replace if necessary

Error code 14 30 *

No signal from the pressure sensor Pz (RC version) during the measurement.

Cause:

- Pressure sensor Pz is activated in the configuration menu but is not installed.
- Pressure sensor is defective
- Accu is discharged

Possible Fix:

Engineer to check the pressure sensor for the brake tester and replace if necessary

Error code 14 40 *

No signal from the brake force meter (RC version) during the measurement.

Cause:

- Brake force meter (RC version) is activated in the configuration menu but is not installed.
- Brake force meter is defective
- Accu is discharged

Possible Fix:

Engineer to check the force meter for the brake tester and replace if necessary

5.5 Error Codes - Problems with pressure sensors (cable version)

Error Code 15 01 *

After switching on the unit the pressure sensor pm (cable version) compares the actual pressure with that from the e prom. The error will occur If the difference between these two readings is greater than 0,15.

Cause:

- Pressure sensor pm (cable version) is activated in the configuration menu but is not connected
- Pressure sensor pm (cable version) is not calibrated
- Pressure sensor pm (cable version) is charged while switching on

Possible Fix:

Engineer to check the pressure sensor settings for the brake tester and replace if necessary

Error code 15 02 *

No signal from the pressure sensor pm (cable version).

Cause:

- Pressure sensor pm (cable version) is activated in the configuration menu but is not connected
- Pressure sensor is defective
- Sensor leads are defective

Possible Fix:

Engineer to check the pressure sensor for the brake tester and replace if necessary

Error code 15 03 *

Pressure sensor Pm (cable version) not calibrated.

Possible Fix:

Engineer visit required to calibrate the Pressure sensor/ brake tester

Error code 15 06 *

After switching on the unit the pressure sensor pz (cable version) compares the actual pressure with that from the e prom. The error will occur If the difference between these two readings is greater than 0,15.

Cause:

- Pressure sensor pz (cable version) is activated in the configuration menu but is not connected
- Pressure sensor pz (cable version) is not calibrated
- Pressure sensor pz (cable version) is charged while switching on

Possible Fix:

Engineer to check the pressure sensor settings for the brake tester and replace if necessary

Error code 15 07 *

No signal from the pressure sensor pm (cable version).

Cause:

- Pressure sensor pm (cable version) is activated in the configuration menu but is not connected
- Pressure sensor is defective
- Sensor leads are defective

Possible Fix:

Engineer to check the pressure sensor for the brake tester and replace if necessary

Error code 15 08 *

Pressure sensor Pz (cable version) not calibrated.

Possible Fix:

Engineer visit required to calibrate the Pressure sensor/ brake tester

5.6 Error Codes - Problems with the control board

Error code 19 00

Power supply of 12V DC for sensors is not available

Cause:

- Control board A1 is defective.
- Short circuit in the sensor connections

Possible Fix:

Engineer visit required to replace the EPO board part number **A2C89006800**

Error code 19 10

Reference voltage VREF is not available for the control board A1. This voltage is necessary for the AD converter to work properly.

Cause:

Control board A1 defective.

Possible Fix:

Engineer visit required to replace the EPO board part number **A2C89006800**

Error code 19 20

24V AC for the contactor control is not available.

Cause:

- Control board A1 defective.
- Fuse F2 defective
- Transformer T1 defective A1 Z5003 A.

Possible Fix:

Engineer visit required and possibly replace the EPO board part number **A2C89006800**

Error code 19 30 *

No CAN-Bus communication under the control boards is possible.

Cause:

- A PCB board is defective.
- CAN load resistor is not installed.
- CAN leads are defective.

Possible Fix:

Engineer visit required to check the PCB /CAN

Error code 19 40 *

Battery cell on the control board A1 is not installed or discharged.

Possible Fix:

Engineer visit required and possibly replace the EPO board part number **A2C89006800**

5.7 Error Codes - User Problems

Error code 20 20 *

A single limit switch on one of the rollers has been pressed longer than 5 seconds.

Cause:

- Vehicle is not correctly situated on both rollers.
- One of the limit switches is defective

Possible Fix:

Remove the vehicle from the brake tester and then reboot the brake tester. If this doesn't clear the error then engineer visit is required to check the limit switch

Error code 20 25

When the equipment was switched on, the function SET UP >0< was pressed

Possible Fix:

Remove the vehicle from the brake tester and then reboot the brake tester. If this doesn't clear the error then engineer visit is required

5.8 Error Codes - Problems with the Brake Force Sensor

Error code 25 00 *

No signal from the left brake force sensor.

Cause:

- Roller set configurations menu is activated but it is not connected
- Left brake force sensor is defective
- Sensor lead is defective

Possible Fix:

Engineer visit is required to replace force sensor/ force sensor lead

Error code 25 01 *

When switching on there is no Cal-Check function of the brake force sensor on the left side.

Cause:

- Roller set is activated in the configurations menu but is not installed.
- Sensor leads are damaged or broken.
- Cal-Check connections (leads) are broken

Possible Fix:

Engineer visit is required to replace force sensor/ force sensor lead

Error code 25 02 *

Left brake force sensor is not calibrated.

Possible Fix:-

Engineer visit is required to calibrate the brake tester

Error code 25 05 *

After switching on the equipment the zero point for the left side brake force on the e prom is compared with the actual existent brake force. The error code appears when the difference is too high.

Cause:

- The roller set is activated in the configurations menu but is not connected
- The left brake force sensor is not calibrated
- While switching on the equipment the left brake force sensor was activated

Possible Fix:

Hard reset the brake tester and reboot the PC, if this doesn't fix the issue then an engineers visit is required to calibrate the brake tester.

Error code 25 10 *

No signal from right hand brake force sensor.

Cause:

- The roller set is activated in the configuration menu but is not connected
- The right brake force sensor is defective
- The sensor leads are defective

Possible Fix:

Hard reset the brake tester and reboot the PC, if this doesn't fix the issue then an engineers visit is required to calibrate the brake tester

Error code 25 11 *

When switching on there is no Cal-Check function of the brake force sensor on the right side.

Cause:

- Roller set is activated in the configurations menu but is not installed.
- Sensor leads are damaged or broken.
- Cal-Check connections (leads) are broken

Possible Fix:

Hard reset the brake tester and reboot the PC, if this doesn't fix the issue then an engineers visit is required to calibrate the brake tester

Error code 25 12 *

Brake force sensors are not calibrated.

Possible Fix:

Engineers visit required to calibrate the brake tester.

Error code 25 15 *

After switching on the equipment the zero point for right side brake force on the e prom is compared with the actual existent brake force. The error code appears when the difference is too high.

Cause:

- The roller set is activated in the configurations menu but is not connected
- The right brake force sensor is not calibrated
- While switching on the equipment the right brake force sensor was activated




Possible Fix:

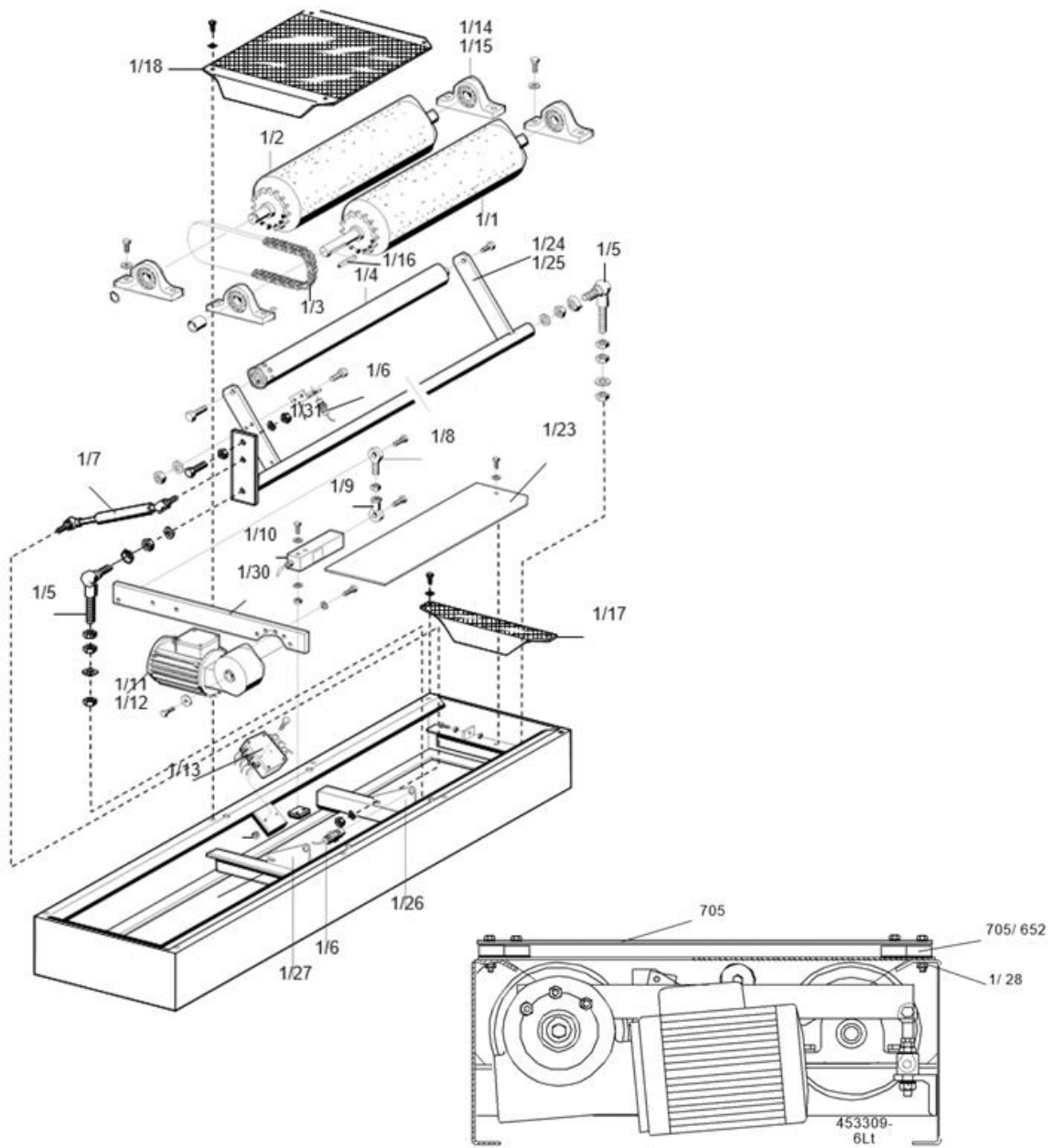
Hard reset the brake tester and reboot the PC, if this doesn't fix the issue then an engineers visit is required to calibrate the brake tester

6 Specifications of the Brake Tester

	CBT041 (Class IV)	CBT070 (Class VII)
Maximum axle weight	4000kg	4000kg
Max brake force per wheel	600kgf	1250kgf
Test speed	5km/h	2.62km/h
Roller diameter	182mm	200mm
Roller length	700mm	1000mm
Roller surface	plastic/emery coating	plastic/emery coating
Width of axle to be tested	800 - 2200mm	800 - 2200mm
Supply fuse	25 AT	25 AT
Electrical connection	3 phase 400/50 V/Hz	3 phase 400/50 V/Hz
Maximum distance between roller set and control box	12m	12m

7 Spare parts

		Brake tester EPO board A2C89006800
		Class 4 load cell A2C88736700 Class 7 load cell A2C88903000
		Class 4 force cell A2C88587100 Class 7 force cell A2C89444000
		Brake tester serial cable 15meters A2C88126100



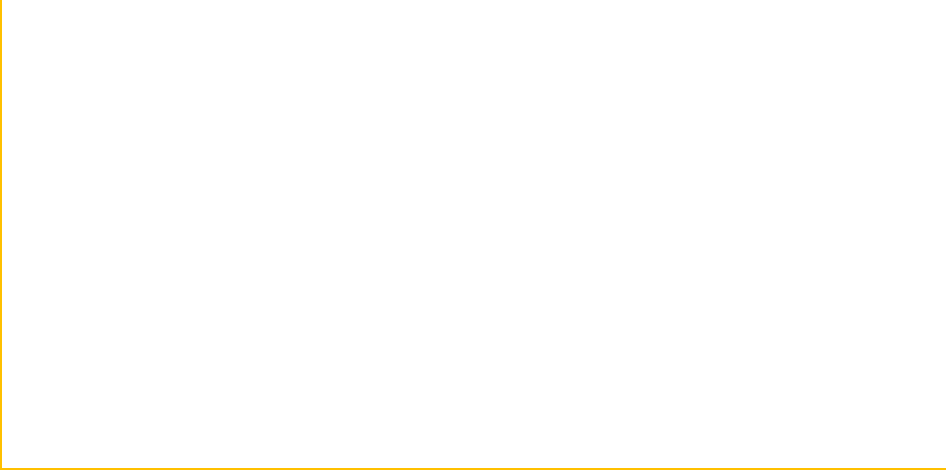
< = Wear part + = Part not shown

ITEM		PART NUMBER	DESCRIPTION
1/1		See Table B	ROLLER
1/2		See Table B	ROLLER
1/3	<	A2C88389900	ROLLER CHAIN
1/4			SENSING ROLLER
1/5			SWIVEL HEAD
1/6		A2C88458500	INDUCTIVE PULSE GENERATOR
1/7	<	A2C89391000	GAS SPRING
1/8			SWIVEL HEAD
1/9			SWIVEL HEAD
1/10		See Table B	FORCE PICKUP
1/11		See Table B	GEAR MOTOR
1/12		See Table B	GEAR MOTOR
1/13		A2C88528400	TERMINAL BOX
1/14		A2C88106900	BEARING
1/15			BEARING
1/16			PARALLEL
1/17			GUARD PLATE
1/18			GUARD PLATE
1/19	+	A2C88903000	FORCE PICKUP
1/20	+		BASE PLATE
1/21	+		PRESSURE PLATE
1/22	+		THRUST MEMBER
1/23			GUARD PLATE
1/24			SENSOR JACK
1/25			SENSOR JACK
1/26			HOLDING PLATE
1/27			HOLDING PLATE
1/28			CAGE NUT
1/29			CAGE NUT
1/30		See Table B	TORQUE ARM
1/31			HOLDING BRACKET
705			GUARD PLATE
705/65 2			FIXING-PARTS SET

Table B

	CBT040
Motor Left	A2C89047600
Motor Right	
Roller (Drive)	
Roller (Slave)	
Load (Weight) Cell	A2C88736700
Force Cell	A2C88587100
Torque Lever	A2C89991000
	CBT041
Motor Left	A2C89047600
Motor Right	
Roller (Drive)	
Roller (Slave)	
Load (Weight) Cell	A2C88736700
Force Cell	A2C88587100
Torque Lever	
	CBT070
Motor Left	
Motor Right	
Roller (Drive)	A2C89444000
Roller (Slave)	
Load (Weight) Cell	A2C88903000
Force Cell	A2C89444000
Torque Lever	

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