

CROWN



Maintenance Manual



WP2300S Series

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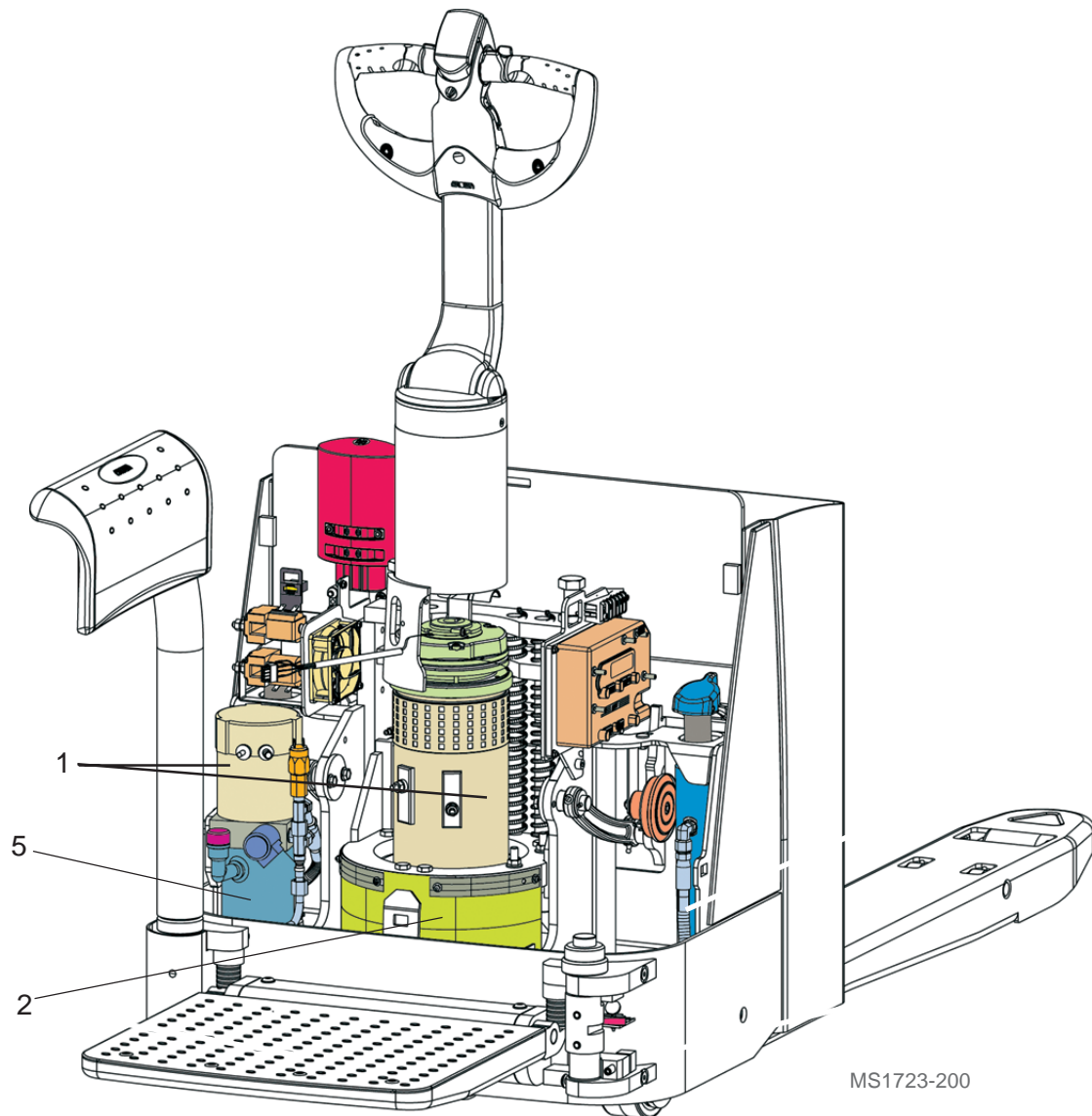
LUBRICATION AND ADJUSTMENT

Grease (multi purpose)	Aralube HLP2 LM-Grease Regulus A2 Beacon EP2 EP2 Mobiluxe EP2 Retinax LX LGWMI	Aral Castrol Century Esso Maxol Mobil Shell SKF	053002-001	B
Low temperature grease	Aralube SKL2 Unirex Lotemp EP	Aral Mobil	053002-005	BB
Hydraulic oil	Vitam GF 32 Hyspin AWS-32 Nuto H32 DTE 24 Tellus 32 Hydran LZ 32 B110	Aral Castrol Esso Mobil Shell Finol Fuchs Minرالölwerke GmbH	053001-003	D
Low temperature hydraulic oil	Deutz Oel HVI 32	Klockner	053001-009	DD
Transmission oil	Hyp 85W90 GX - D 85W90 Mobilube HD85/90 Spirax MB90	Aral Esso Mobil Shell	053002-004	A
Low temperature transmission oil	Mobil SHC 624	Mobil	053002-009	AA

L01_lubricants_wp-GB

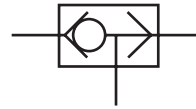
Anti-corrosive agent	Tectyl	Anti-corrosive agent for cold store trucks.	805236-004
Transparent coating	2K Klarlack	Acid resistant transparent coating for traction controllers for cold store applications.	805236-003

L01_adjuvants_WPS-GB





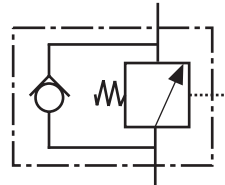
Throttle, fixed



Shuttle valve



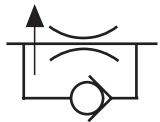
Throttle, adjustable



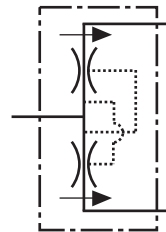
Single counterbalance valve assembly in manifold



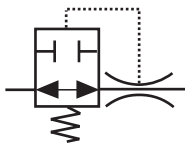
Pressure-compensated flow control, fixed



Pressure-compensated flow control with reverse flow bypass; fixed.



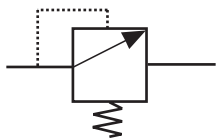
Flow divider/combiner



Velocity fuse



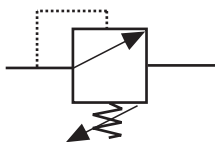
Bypass flow control with controlled flow, pressure-regulated



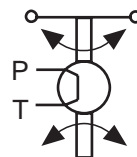
Relief valve, fixed setting



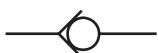
Shut-off valve, manual



Relief valve, adjustable



Torque generator



Check valve



Hydraulic steer unit

CROWN



DRIVE UNIT

Electrics - General

Wire Colour Codes

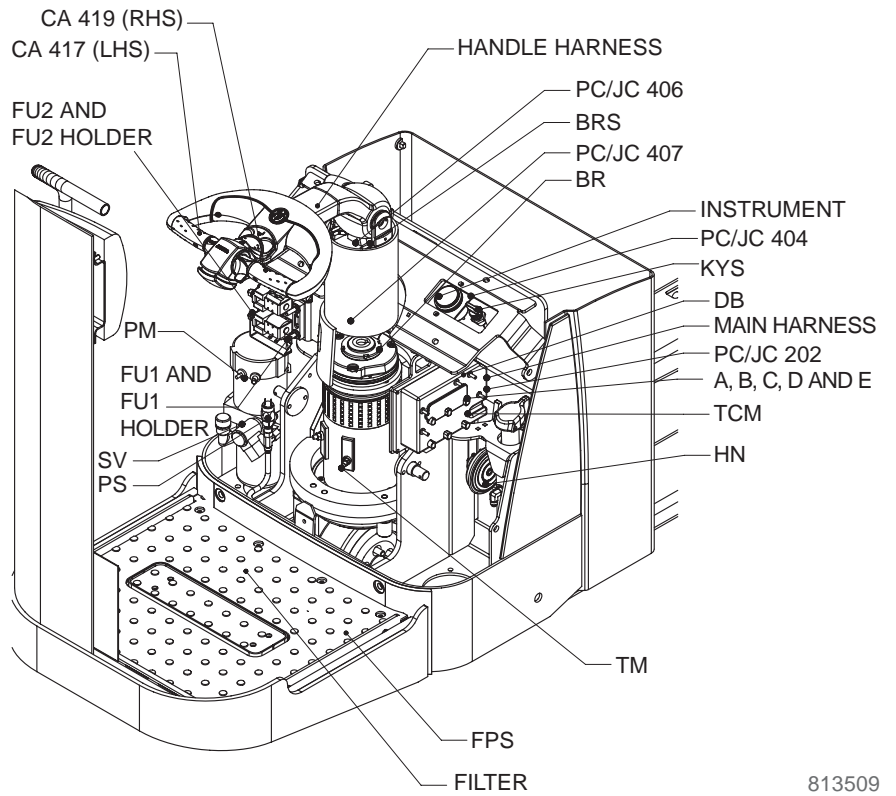
The wires used in the truck are colour-coded and numbered according to their function. The first digit or the first two digits indicate the wire colour while the last two digits are counter numbers.

BLK	Black	0 **	Digital signal
BRN	Brown	1 **	Analog signal
RED	Red	2 **	Positive not connected
ORG	Orange	3 **	+12 V DC converter
YEL	Yellow	4 **	Third DC converter
GRN	Green	5 **	Negative not connected
BLU	Blue	6 **	Insulated negative
VIO	Violet	7 **	+5 V DC converter
GREY	Grey	8 **	Fourth DC converter
WHT	White	9 **	Various
RED/WHT	Red/White	29 **	Positive connected
GRN/WHT	Green/White	59 **	Negative connected

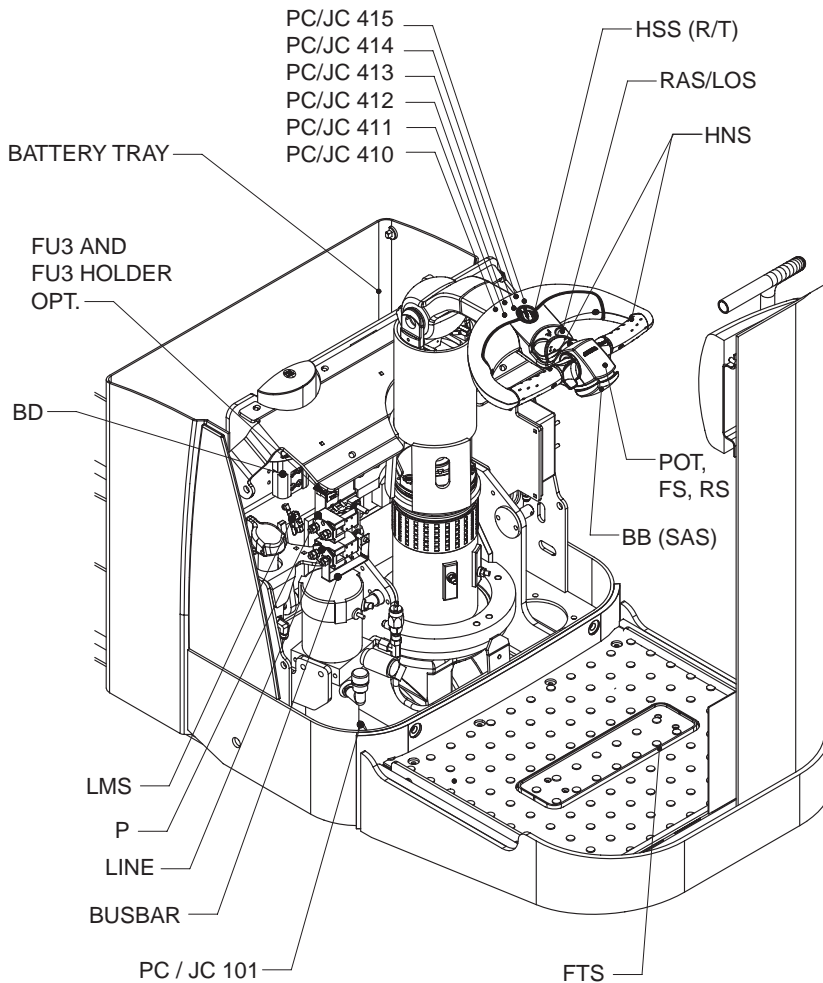
** Numbers 01 to 99

E01-gb

WP2340S



813509



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Programmer

The programmer is connected to the controller by a cable, thus powered by the controller.

General

The optional programmer enables programming, testing and diagnostics for the controller.

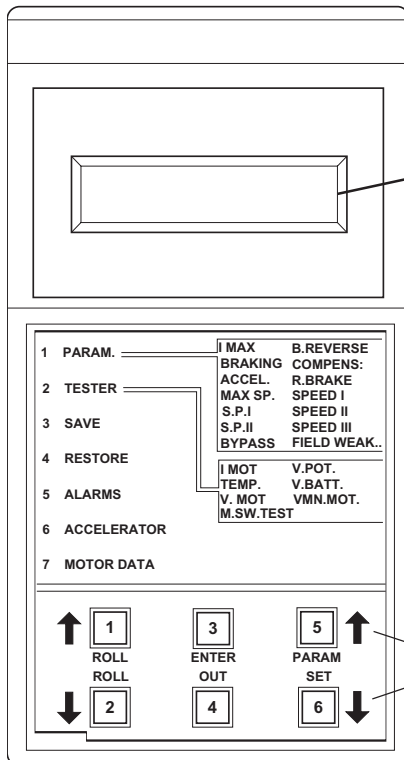
CAUTION



Only connect / disconnect the programmer to the controller when the truck is switched off.



M0271-neu



Display Window

- Alpha-numeric LCD display
- 2 lines @ 16 characters

Operating Keys

M0274d

ALARMS Menu

The traction controller can collect and store operational faults during operation. The last 5 error messages are stored together with the following information:

- Type of error
- Error frequency
- Hourmeter status
- Power part temperature

The ALARMS menu can be used to call up and read the respective fault codes.

Error Message	Description	Possible Cause
LOGIC FAILURE #1	Main contactor drive test error during auto-diagnostic function on truck power-up.	Control logic error. Replace logic system.
WATCH-DOG	Error in auto-diagnostic function performed during truck power-up, when parked and during travel.	Watchdog circuit (hardware) or program (software) faulty. Replace logic system.
EEPROM KO	Error in non-volatile memory area where hourmeter, error message and truck parameter data is stored.	Turn key switch off and on again. If the error persists, replace the logic system. If the error is removed, make sure that all the stored data is deleted and reset to a default value.
INCORRECT START	Start sequence incorrect. The following sequence must be maintained: Override switch (by moving the multitask handle from idle to travel position), followed by travel switch (by pressing the butterfly switch).	<ul style="list-style-type: none"> - Travel direction switch (FS/RS) or multitask handle switch jammed. - Wiring error. - Incorrect start sequence entered by user.
FORW + BACK	Test is performed constantly and checks whether both travel directions are applied simultaneously.	<ul style="list-style-type: none"> - Wiring error. - Travel direction switch jammed. - Incorrect start sequence entered by user. - Tiller main board faulty.
CAPACITOR CHARGE	Test during auto-diagnostic function on power-up. If the capacitors have not started to charge 500 metres after turning the key switch, an error message appears and the main contactor does not close.	<ul style="list-style-type: none"> - Armature power cable wiring error - Faulty controller.

E08-GB

Pump Motor Maintenance

Access to brushes



M1522

- Disconnect the battery
- Prevent the truck from rolling away.
- Remove the hydraulic unit as described in CHAPTER 2.
- Unscrew the commutator bearing lid and remove the insulating protective cap.

Maintenance

- Apply dry compressed air to the motor.
- Remove all carbon brushes and check them with the armature in accordance with the instructions in "Key Maintenance Instructions".
- A new carbon brush is 20 mm long
- Carbon brush wear limit: 10 mm

Armature

- A new armature has a diameter of 40 mm. The wear limit is 38.3 mm.
- The armature must **not** be overwound. Instead it must be replaced when the wear limit is reached.

Refit the hydraulic unit as described in CHAPTER 2.

Multitask Handle - Springs for Return Function

CAUTION



Pre-tensioned springs!
When removing, take care to avoid injury.

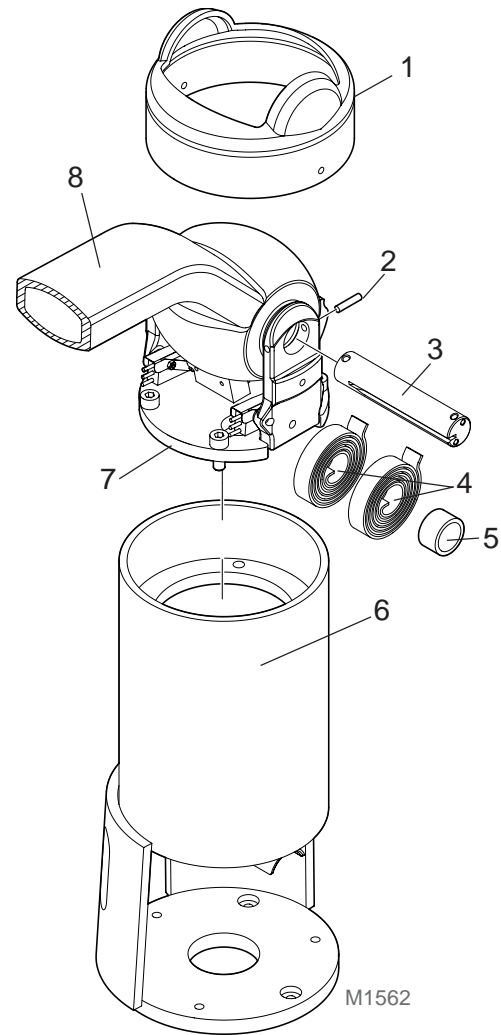
Before carrying out any work on the tiller:

- Remove the battery connector (EMERGENCY STOP).
- Block the truck.

Adjustment

The axle (4) is fitted as standard on the left hand side with a tensioning pin (5). If the spring pressure reduces over time the spring pre-tension (2) can be increased as follows:

- Unscrew the panel (1) and push it up.
- Leave the tiller (8) in the rest position (up).
- Drive out the tensioning pin (2) on the left-hand side.
- Using a face spanner (3) turn the axle (3) as far as necessary. Drive in the tensioning pin (2) on the right-hand side.
- If the spring tension is still not sufficient to keep the tiller up, replace the springs.



Removal

- Unscrew the panel (1) and push it up.
- Bring the tiller (8) to its highest position and keep it there.
- Mark the position of the axle (3).
- Drive out the tensioning pin (2). The relieved springs should now turn the axle.
- Tilt the tiller down to its lowest position.
- If the axle (3) has still not turned, it is clearly fixed in its position and must be moved with the aid of a face spanner. To fully relieve the springs, rotate the axle (3), seen from the left hand side, approx. 20° anticlockwise from the fixed position.

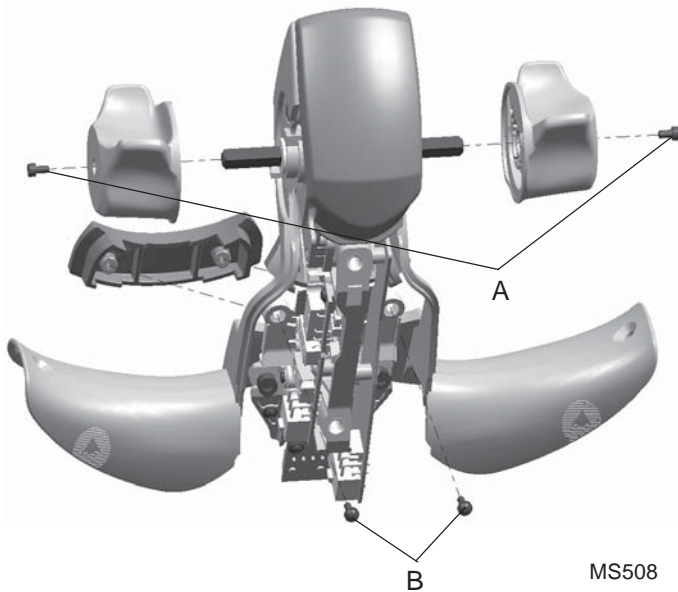
- Drive the axle (3) as far out to the right hand side so that the 2 springs (4) can be removed.

Assembly

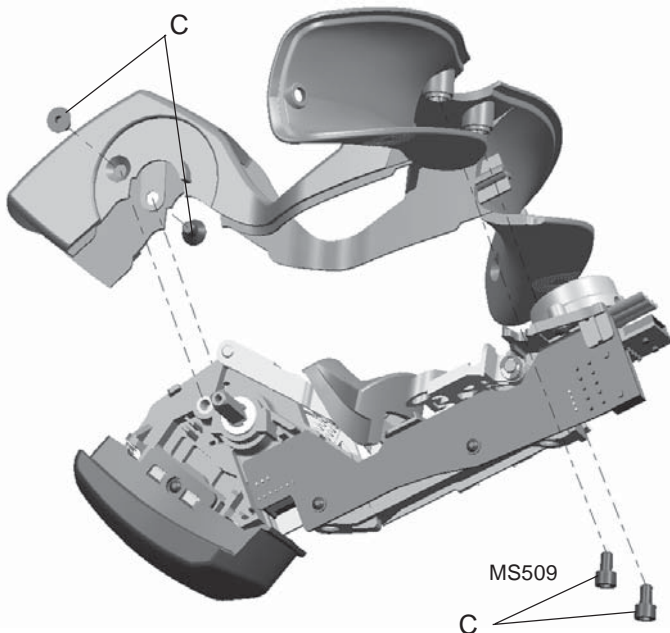
- Push the springs (4) onto the axle (3). The inner, offset end must insert into the axle (3) groove. A strap wrapped around the inner end of the first spring to be inserted can prove useful when inserting the other springs.
- Drive the axle (3) into position.
- Set the tiller (8) to the upper limit.
- Drive in the tensioning pin on the left-hand side (if necessary on the right). Turn the axle as far as necessary. Grease the springs. Fasten the panel. Check the brakes.

Safety Reverse Switch

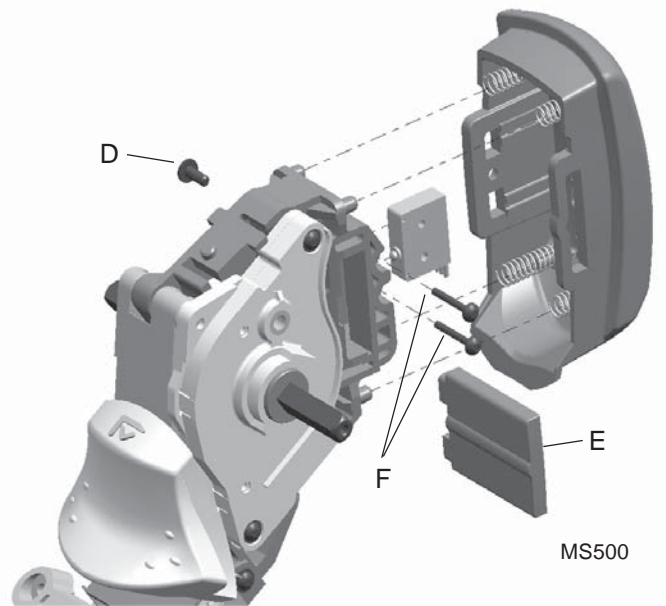
Disassembly



- Remove the switch unit (see SWITCH UNIT section in this chapter).
- Remove the two Torx® screws (A) (see Fig. MS508) from the thumbwheels and disconnect the thumbwheels. Take care not to lose the plastic slide bearings (washers).



- Remove the two Torx® screws (B) holding the orange lowering switch cap. Lift out the switch cap.



- Remove the four Torx® screws shown in Fig. MS509. Remove the switch unit cover.

INFORMATION



The thumbwheels cannot be incorrectly positioned. They will only fit correctly in one position.

- Remove the Torx® screw (item D, Fig. MS500) and pull out the switch bypass (item E).
- Remove the two Torx® screws item F). Disconnect the microswitch from the main PC board.

Assembly

- Assemble the safety reverse switch in the reverse order of disassembly.
- **Before connecting the microswitch to the main PC board: Lubricate the microswitch connector with grease part no. 053002-005. Do not use any other grease.**
- Refit the switch unit (see SWITCH UNIT section in this chapter) and test the operation.

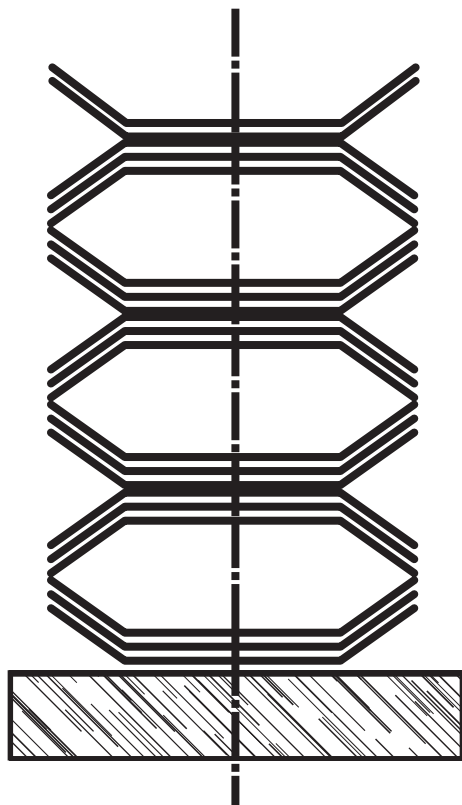


CYLINDERS

Platform Suspension

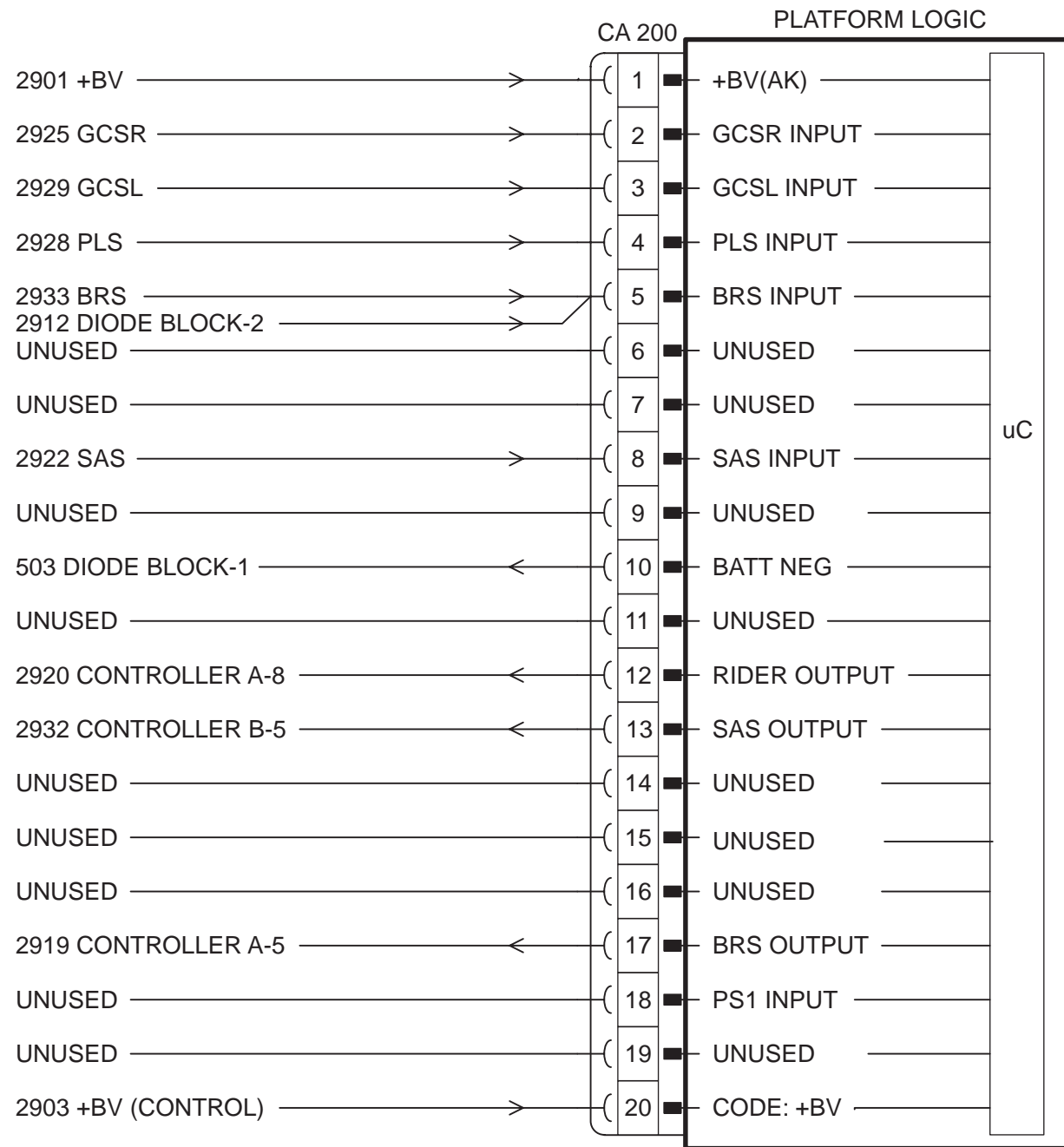
Plate Spring Layers

To achieve optimal lifespan and spring quality of the platform, layer the plate springs with 6 sets of 3 springs and one set of 2 springs.



MS1720-101

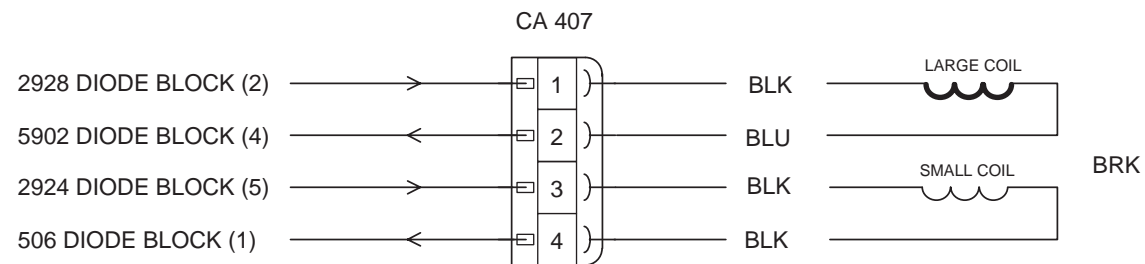
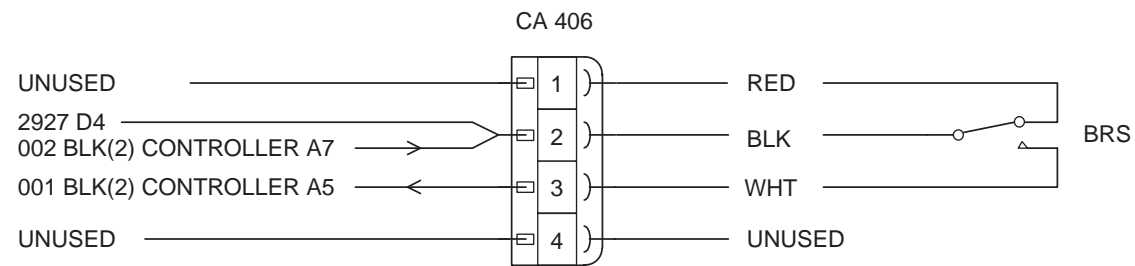
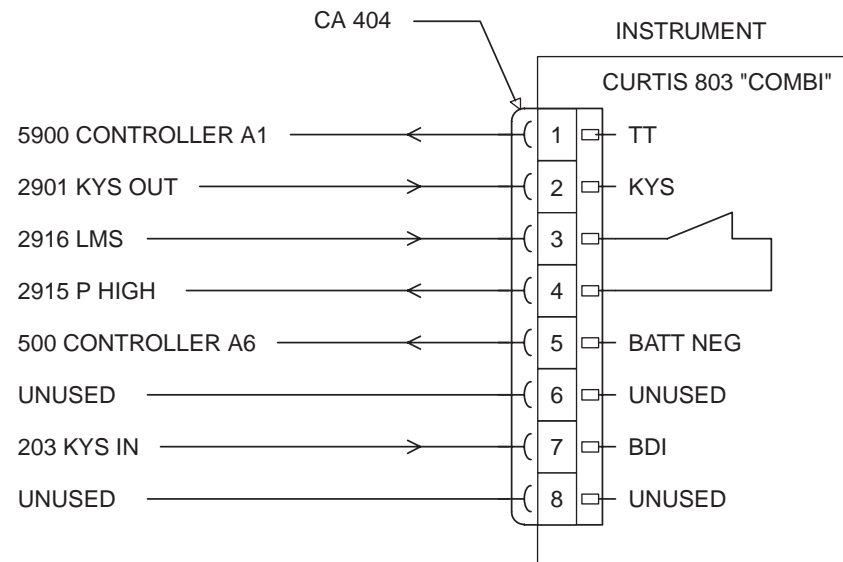
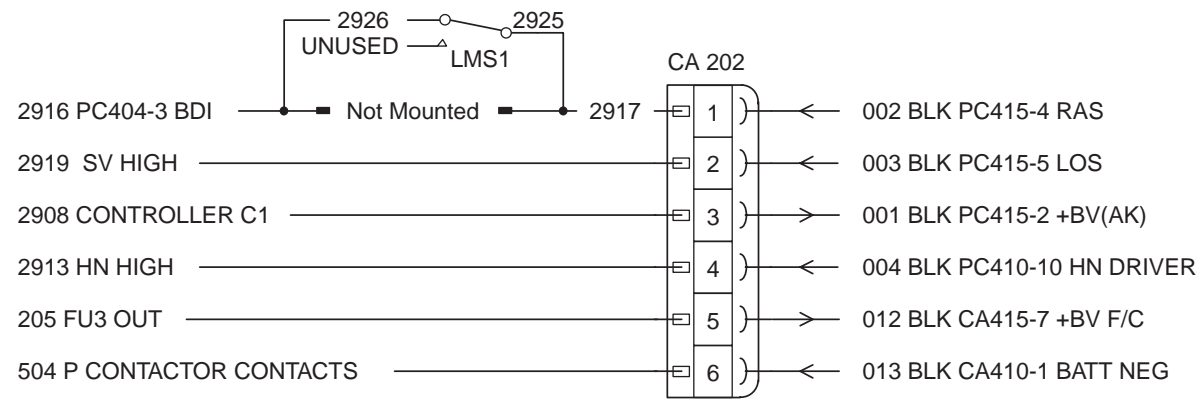
WP2330S STANDARD, FOLDED PLATFORM
PLATFORM LOGIC



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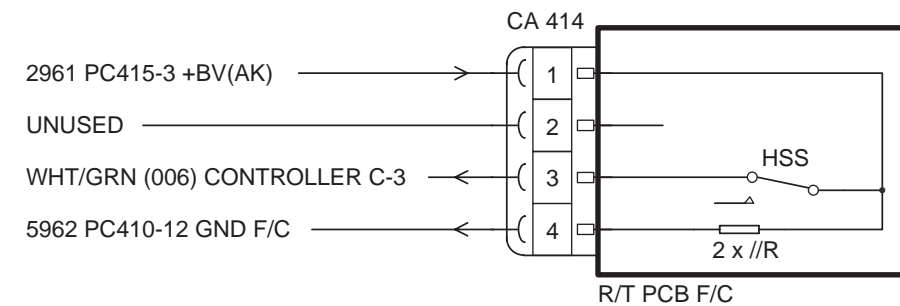
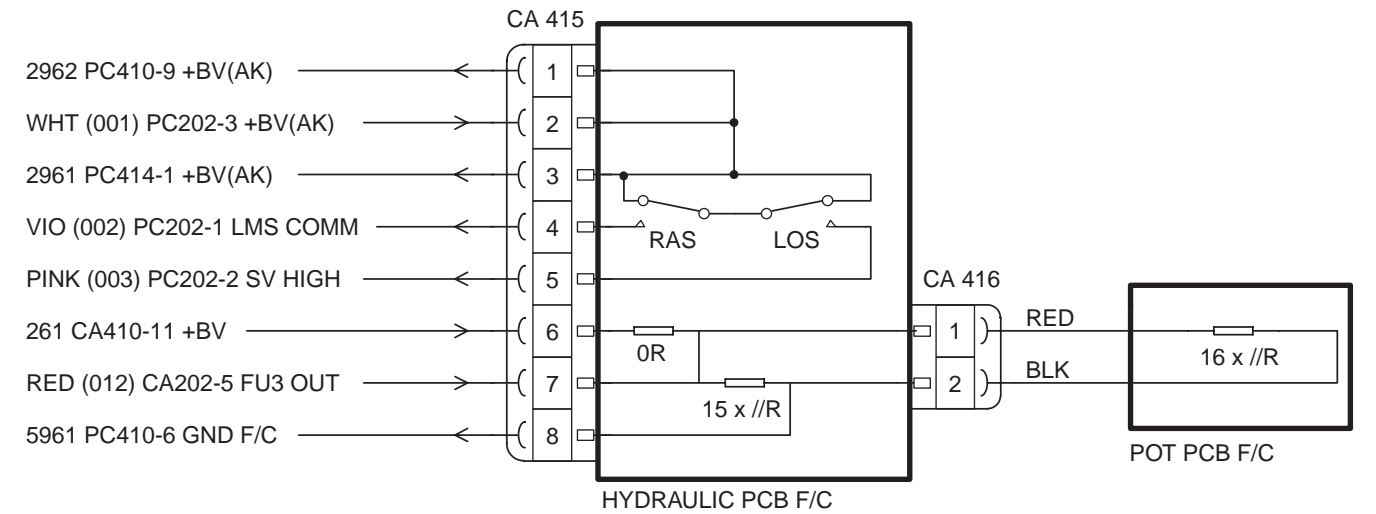
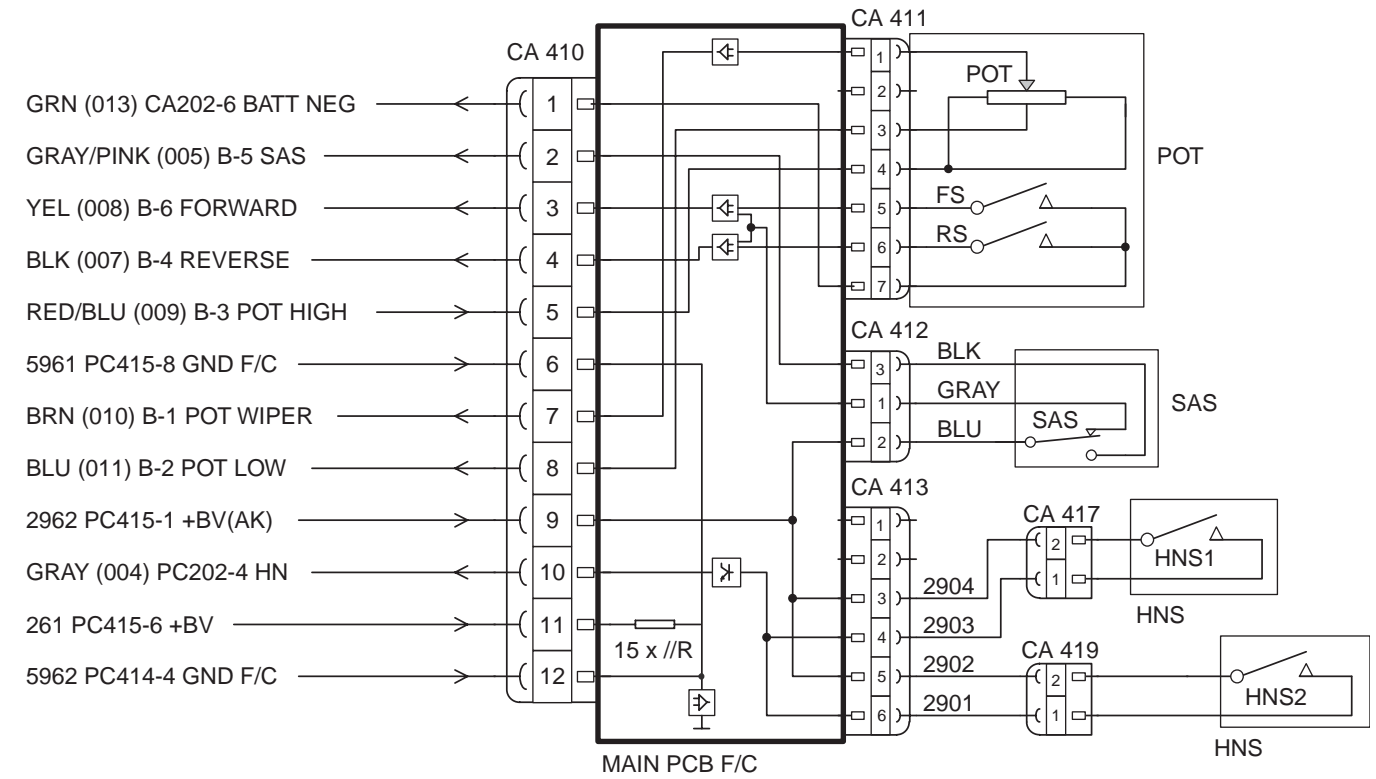
Used from S/No. 5A336576 on, but not on S/No. 5A337937

**WP 2340S OPTIONS, FIXED PLATFORM
POWER UNIT CIRCUIT**



815514-5_2B.pdf

**WP 2340S OPTIONS, FIXED PLATFORM
CONTROL HANDLE CIRCUIT**



815514-6_2B.pdf

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