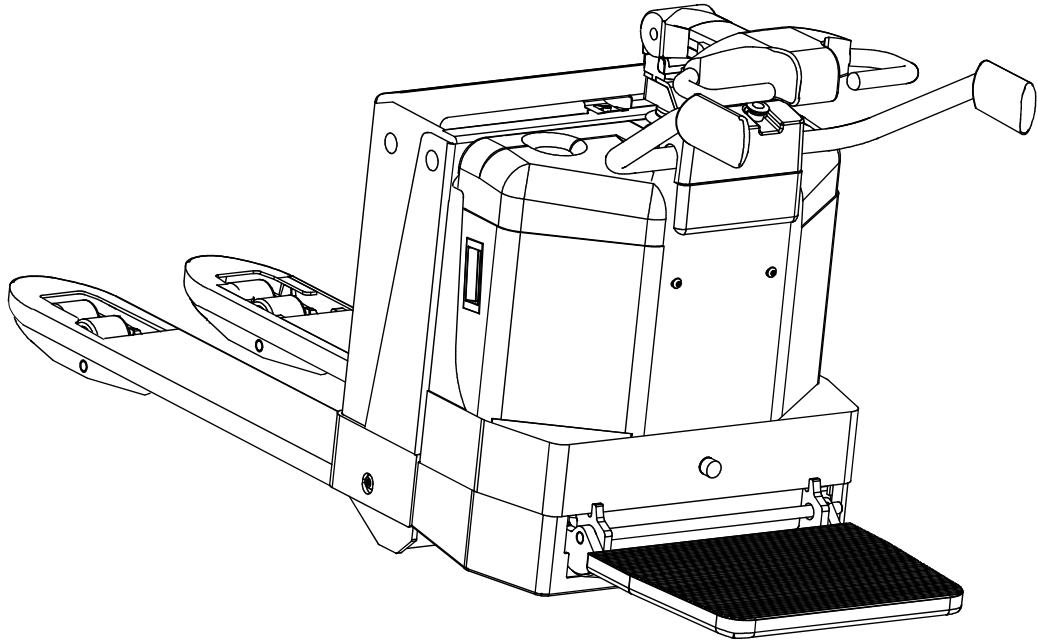


# Service Manual

## en



## 7PM18, 7PM20, 7PML20

Valid from serial number: 723984-

Order number: 222995-040

Issued: 2005-10-28 ITS

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: [www.heydownloads.com](http://www.heydownloads.com) by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

Order number	Date	Valid from serial number	T-code
222995-040	2005-10-28	723984-	677, 678, 679

## 3-Introduction Maintenance – P1

All points in the service program should be carried out to attain the highest safety and the least possible downtime. The service intervals are only a guide and do not need to be followed to the letter. The operator may adapt them to local conditions, but it is important that the intervals comply with TOYOTA's minimum requirements.

The service intervals are based on the running times and can be adapted to most normal 8 hour shifts. The service interval may be shortened if the truck is used more frequently or in more demanding situations, e.g cold store, dusty or corrosive situations. The following running times have been used when calculating the intervals:

- Day time:08.00-17.00 (20 hr./week)
- 2-shifts:06.00-14.00, 14.00-22.00 (40 hr./week)
- 3-shifts:06.00-14.00, 14.00-22.00,22.00-06.00 (60 hr./week)

Ensure the truck is given a regular maintenance service after every 500 driving hours. The truck's safety, efficiency and service life is dependent on the service and maintenance it is given.

Only use TOYOTA approved spare parts when service and repair work are carried out.

### 3.1 Safety regulations with maintenance work

Only personnel that have been trained in the service and repair of this type of truck are authorised to carry out service and repair work.

- Do not carry out any maintenance work on the truck unless you have the correct training and knowledge to do so
- Keep the area where you carry out the service clean. Oil or water makes the floor slippery
- Never wear loose objects or jewellery when working on the truck



#### **WARNING!**

##### ***Short-circuiting/Burns.***

***When working with the truck's electrical system, short-circuiting/ burns can occur if a metal object comes into contact with live electrical connections.***

***Remove watches, rings or other types of metal jewellery.***

- Always disconnect the battery by pulling out the battery isolator when carrying out maintenance work on the truck unless otherwise stated in this Service Manual
- Always switch off the truck's power supply before opening the covers on the drive unit or electrical system
- Relieve the system pressure slowly before starting work on the truck's hydraulic system

## Oil and grease specification – P3

<b>Order number</b> 222995-040	<b>Date</b> 2005-10-28	<b>Valid from serial number</b> 723984-	<b>T-code</b> 677, 678, 679
-----------------------------------	---------------------------	--	--------------------------------

## 5-Oil and grease specification – P3

Pos.	Type of lubricant	Specification		Application
		> -15° C	< -15° C	
A	Grease	26777 (Spray)	26777 (Spray)	Bearings and bushes
B	Hydraulic oil	ISO-L-HM32	ISO-L-VG 32	Hydraulic system
C	Transmission oil	Hypoid oil SAE 80W/90	Hypoid oil SAE 75W	Gears
D	Grease	Staburags NBU 8EP	Staburags NBU 8EP	Guide bearing
E	Grease	73942XX5 TOTAL N3942	73942XX5 TOTAL N3942	Lubricating nipples, Contact pressure spring

# Engine suspension– 0450

Component parts

Order number  
222995-040

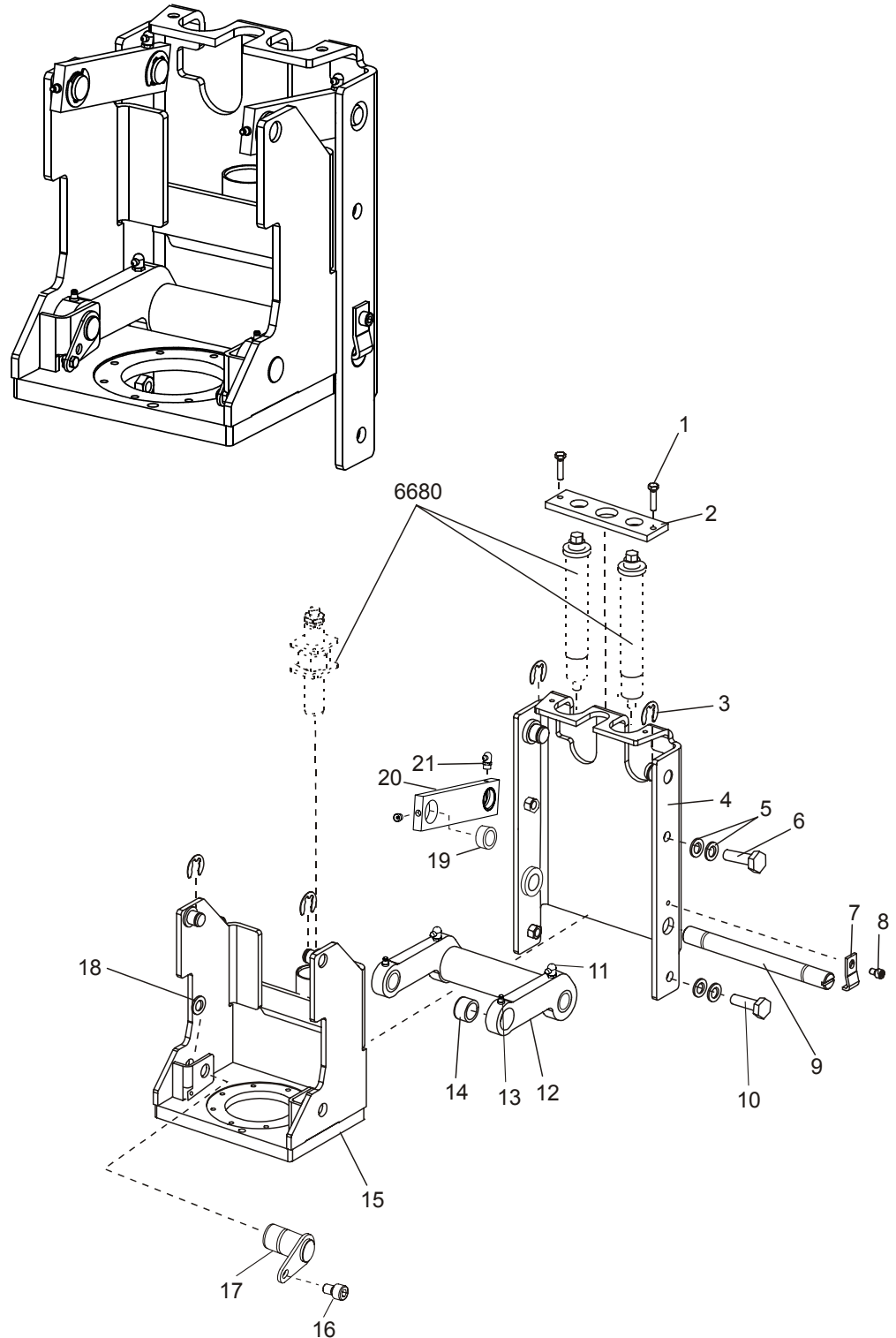
Date  
2005-10-28

Valid from serial number  
723984-

T-code  
677, 678, 679

## 8-Engine suspension– 0450

### 8.1 Component parts



# Mechanical drive gear unit – 2550

Component parts

**Order number**  
222995-040

**Date**  
2005-10-28

**Valid from serial number**  
723984-

**T-code**  
677, 678, 679

Pos	Description	Note
23	Gasket	
24	Gear wheel	Motor gear
25	Washer	
26	Nut	Tightening torque 30 Nm Locked with punch mark Lock with Loctite 603
27	Screw	Motor and gear housing
28	Nut	Tightening torque 26.6 Nm Lock with Loctite 242
29	Conical roller bearing	
30	Shims	
31	Seal	
32	Drive shaft	

## 10.1.1 Technical data

Type of truck	7PM18, 7PM20, 7PML20-6	7PML20-8
Type of gear	2-step angle gear	2-step angle gear
Gear ratio	19,14:1	16,29:1
Oil volume, litres	1,0	1,0
Oil type	Hypoid oil	Hypoid oil
Viscosity, normal temperature	SAE 80W/90	SAE 80W/90
Viscosity, <-15°C	SAE 75W	SAE 75W

# Steering system – 4000

Tiller arm handle

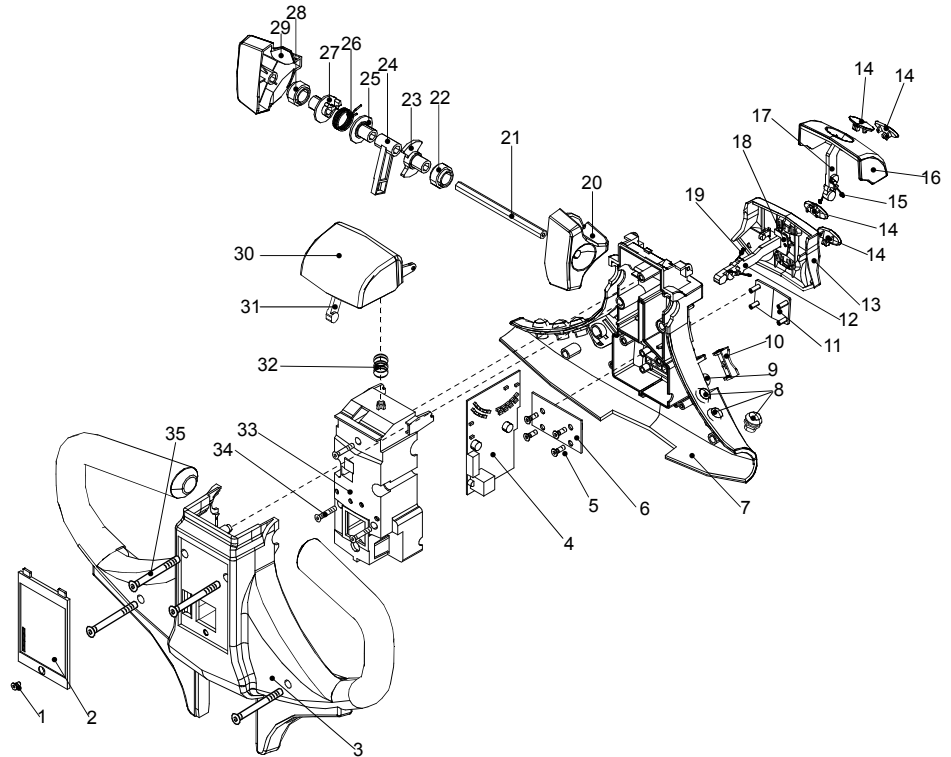
Order number  
222995-040

Date  
2005-10-28

Valid from serial number  
723984-

T-code  
677, 678, 679

## 13.3 Tiller arm handle



Pos	Description	Note
1	Screw	
2	Cover	Keyboard option
3	Handle	
4	Electronic card	
5	Screw	
6	Display card	
7	Top cover	
8	Pushbutton	Option
9	Signal switch	
10	Signal button	
11	Display glass	
12	Arm	
13	Pushbutton	Lift/Lower
14	Plate	
15	Spring	
16	Pushbutton	Not used

# Electrical System – 5000

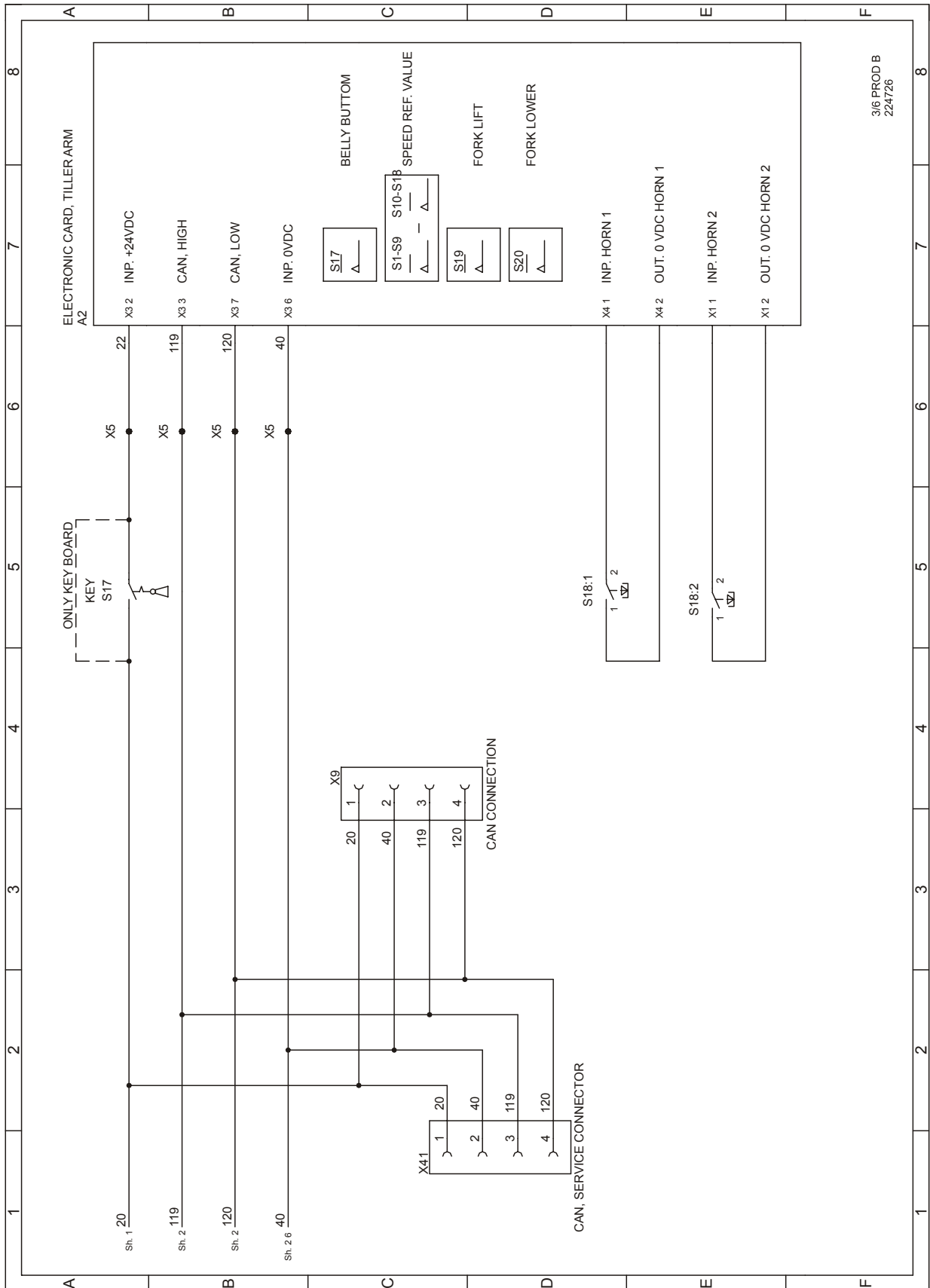
## Symbol List and Wiring Diagram

Order number  
222995-040

Date  
2005-10-28

Valid from serial number  
723984-

T-code  
677, 678, 679



CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: [www.heydownloads.com](http://www.heydownloads.com) by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

# Electrical System – 5000

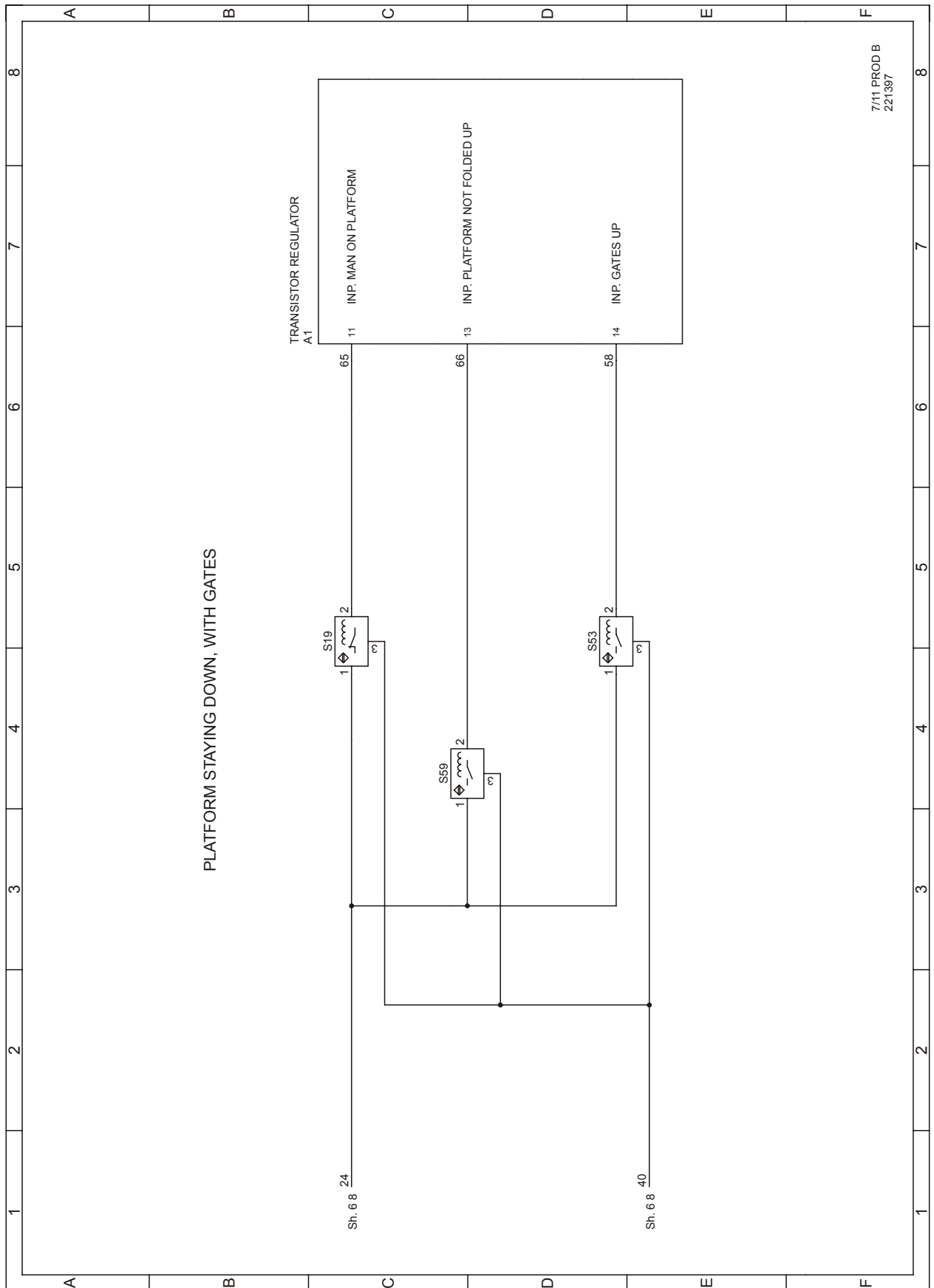
## Symbol List and Wiring Diagram

Order number  
222995-040

Date  
2005-10-28

Valid from serial number  
723984-

T-code  
677, 678, 679





# Electrical System – 5000

## Parameters

<b>Order number</b> 222995-040	<b>Date</b> 2005-10-28	<b>Valid from serial number</b> 723984-	<b>T-code</b> 677, 678, 679
-----------------------------------	---------------------------	--	--------------------------------

Parameter	Description	Unit	Min	Max	Step	Std	Description
10	PIN-code		0	9999	1	1	Facility for specifying up to 10 PIN codes (10 different drivers).
14	Crawling speed		-10	10	1	0	The amount of power the monitor should emit when you reach the first speed sensor can be specified here. -10: low speed for the first speed sensor. 10: high speed for the first speed sensor
15	Non-configurable option 0 to 9	See "Option parameters" on page 39					
16	Configurable option #1	See "Option parameters" on page 39					
17	Configurable option #2						
18	Configurable option #3						
19	Configurable option #4						
20	Hour meter option		1	5	1	2	Select hour meter.
21	Battery size		1	20	1	5	Selection of battery size.
22	Inductive sensor		0	1	1	1	0: Mechanical switch 1: Inductive sensor
25	Service interval	1h	0	2000	50	100	Option for setting service timer
28	Lift button selection		1	3	1	1	Button selection
39	Password		1	12	1	1	States which level of authorization the driver has for the parameters. Odd values specify open driver parameters, even values specify that driver parameters must be opened using the CAN key

---

Order number	Date	Valid from serial number	T-code
222995-040	2005-10-28	723984-	677, 678, 679

---

### Instructions for verifying parameter setting

- Charge up the battery
- Use the truck in its normal application until the battery indicator shows an empty battery (0% on the display).
- Remove the battery from the truck and allow to rest for at least two hours. NB! No charging or discharging during this period.
- Measure the acid weight of the battery at room temperature. If the acid weight is less than  $1.15 \text{ g/cm}^3$ , **the parameter value must** be reduced. If the value significantly exceeds  $1.15 \text{ g/cm}^3$ , the risk of damage to the battery is reduced. At the same time, the operating time of the truck is reduced. If a longer operating time is required, the parameter value can be increased. Maximum one unit.
- Each change must be accompanied by a new verification of the parameter setting.

<b>Order number</b> 222995-040	<b>Date</b> 2005-10-28	<b>Valid from serial number</b> 723984-	<b>T-code</b> 677, 678, 679
-----------------------------------	---------------------------	--	--------------------------------

STATUS LED		Text on hand unit	Explanation	Possible cause
4,3	■■■■■ ■■■■	THERMAL CUT-BACK	Too high/too low temperature reduction.	<ol style="list-style-type: none"> <li>1. Temp. &gt; 85°C or &lt; -25°C</li> <li>2. The truck is overloaded.</li> <li>3. Incorrectly installed transistor regulator.</li> <li>4. Operation under extreme conditions.</li> </ol>

### 14.9.2 Reset error

When you want to clear an error, first turn S17 to the “OFF” position and then “ON” again.

Error	Reset when
OVERVOLTAGE	The battery voltage is below 33 V.
THERMAL CUTBACK	The temperature is within the permitted interval.
THROTTLE FAULT 1, 2	The fault has been dealt with.
LOW BATTERY VOLTAGE	When the battery voltage exceeds 16 V.

### 14.9.3 Safety

The regulator is a heavy current component. When it is used on a battery-powered vehicle, all necessary safety measures must be taken. This means, among other things, that the driver must have suitable training, use goggles, avoid loose clothing, take off watches and jewellery and only use insulated tools. It may also be necessary to take other measures.

#### WARNING !



*Risk of short circuiting*

*Remove watches, jewellery and always use insulated tools only.*

Order number  
222995-040

Date  
2005-10-28

Valid from serial number  
723984-

T-code  
677, 678, 679

## 17-Battery charger (Inbuilt) – 8340

### 17.1 General

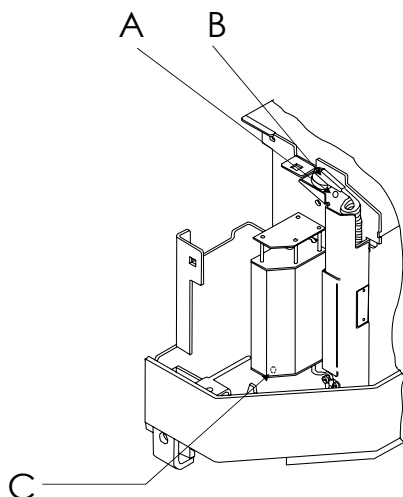
SMCI is a battery charger intended for valve-regulated or freely ventilated lead acid batteries. It is adapted for batteries from about 100 Ah up to 320 Ah.

The charger which uses advanced switch techniques is connected to a normal (grounded 230 V single phase) socket (B) and the built-in micro controller then controls charging following the pre-set charging curve. During charging the charging process is displayed with a status indicator on the standby housing (A).

The micro controller also controls charging with respect to charging time and temperature in the charger so that charging can be limited, e.g. if a fault occurs in some cell in the battery or when there is insufficient cooling of the charger.

SMCI 300 is delivered pre-set for 24 v and with software intended for charging valve-regulated or freely ventilated lead acid batteries.

The size and type of the battery are selected using the switch on the side of the fan(C) which is accessible via a slotted head screwdriver.



### 17.2 Charging

Connect the charger to the mains. When charging starts after a few seconds, the orange status indicator on the standby housing(A) lights up. This indicator remains lit until the battery is fully charged and the indicator turns to green.

Charging time varies depending on the type of battery and the degree of discharge. Normally the charger is started after working hours and the battery is fully charged the next morning. A highly discharged freely ventilated battery of 320 Ah may need up to 14 hours re-charging time, a VR battery even longer.

Some time after charging (depending on, for example, type of battery) SMCI 300 switches to maintenance charging. The green indicator remains lit to show that the battery is fully charged.

When charging is completed, the mains plug is placed in the standby housing.

### 17.3 Troubleshooting and service

First check whether the charger indicates an error. A red, blinking indicator means that the charger cannot detect that any battery is connected. Check the cables, pole terminals and other connections to the batteries. Measure battery voltage.

If the charger still doesn't work, send it to your supplier for repair.

---

Order number	Date	Valid from serial number	T-code
222995-040	2005-10-28	723984-	677, 678, 679

---

### 18.6.5 Emergency downloading (truck with keypad)

E141 will be shown in the truck's display when starting, if for any reason there is no program in the electronics card (interrupted downloading). Communication with the truck via the PC will then be minimised. Use "E141" to download the program in the card.

On some trucks, a counter, which continuously counts up, is displayed.

#### **NOTE!**

*Once programmed, the logic cards in some trucks can only be upgraded with the same basic firmware. In other words, it is not possible to replace the basic firmware (other machine type).*

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: [www.heydownloads.com](http://www.heydownloads.com) by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL