AR 274 G AXLE AND DIFFERENTIAL UNIT

FOR FORKLIFT TRUCKS

FASE 60 - 70 - 80
DI 50CH - DI 60C - DI 70C - DI 80C

60424118

I ED. 09/2001 (Rev. 01-11/2003)

UPDATING FORM

FOLLOWING PAGES MUST BE CONSIDERED AS AN UPDATE OF SHOP MANUAL
PLEASE INSERT IT IN THE MANUAL AND IF IT IS NECESSARY, REPLACE OLD ONES FURTHER INFORMATION
WILL BE GIVEN AFTER MANUAL DELIVETY

KEEP ALWAYS THIS IN THE FRONT!

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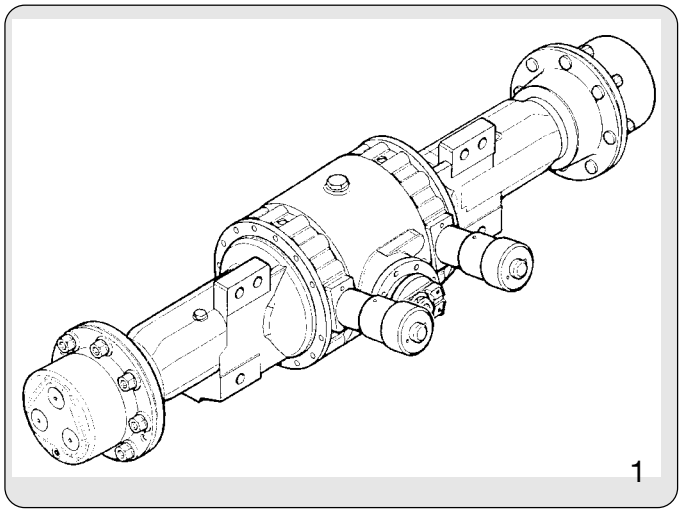
FRONTESPIECE (09/2001)	FRONTESPIECE (Rev.01-11/2003)		BRAKE OIO COOLANT CIRCUIT DIAGRAM (REV.01-11/2003)
			HYDRAULIC AND BRAKE CIRCUIT DIAGRAM (REV.01-11/2003)
			HYDRAULIC CIRCUIT - LIFTING UNIT POWER STEERING - DIAGRAM (REV.01-11/2003)
			BRAKE CIRCUIT DIAGRAM (REV.01-11/2003)

FUNCTIONING



The drive is transmitted from a transmission shaft coming from the gearbox to a spiral bevel gear pair and then to the axle shafts. The unit also contains a differential gear unit and oil cooled brakes.

The speed is further reduced inside the wheel hubs by an epicyclic reduction gear.

The spiral bevel gear pair guarantees high-performance, smooth functioning and reduced noise at high operating speeds. The two gears are mounted on tapered roller bearings. The setting of these determine the correct engagement of the gears. The pinion bearings are set by means of a spacer of the correct thickness selected when the unit is assembled.

The bearings of the bevel gear are adjusted during assembly by a ring nut which also determines the correct engagement of the gear pair.

All the gears in the differential unit are assembled with relative clearance adjustments to prevent seizure and ensure long life and proper functioning.

The brake unit consists of a series of oil cooled disks. The only maintenance they require is regular replacement of the fluid and adjustment when necessary.

A sun pinion is keyed onto the axle shaft inside the wheel hub. The sun pinion turns three planet gears and these are in turn connected to a fixed ring gear.

Each of the three planet gears is mounted on a series of roller bearings set round a casehardened and machined journal.

The three journals are fixed to the planet gear cage which transmits the drive to the hub of the wheel.

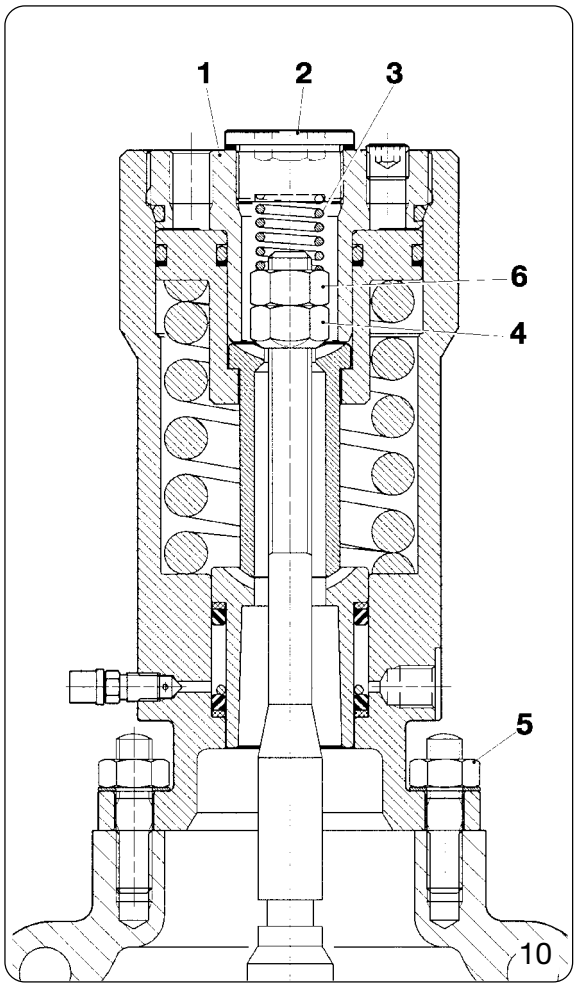
All moving parts are immersed in the oil.

Handling

Appropriate means must be used to lift and transport the differential and axle unit.

The AR 274 G axle and differential unit weighs approximately 440 kg.

Dismantling brake cylinder



Brake cylinder

- Position a bowl under the cylinder and disconnect all the tubes.

Note: do not allow fluid to spill on the ground. Do not discharge used fluid freely into the environment, but deliver it to the authorities responsible for disposing of used fluid.

- Unscrew the plug, Pos. 2 (Fig. 10), and remove the spring, Pos. 3.
- Completely unscrew counter-nut pos. 6 and nut pos. 4 by using the special wrench (tool number 2 at page UK-36).
- Unscrew the two nuts, Pos. 5, that hold the brakecylinder and remove the cylinder in one piece.
- In order to gain access to internal components, unscrew the cylinder lid, Pos. 1, using the special spanner (tool No 3, page UK-36) and remove all the internal components.

⚠ **WARNING** ⚠

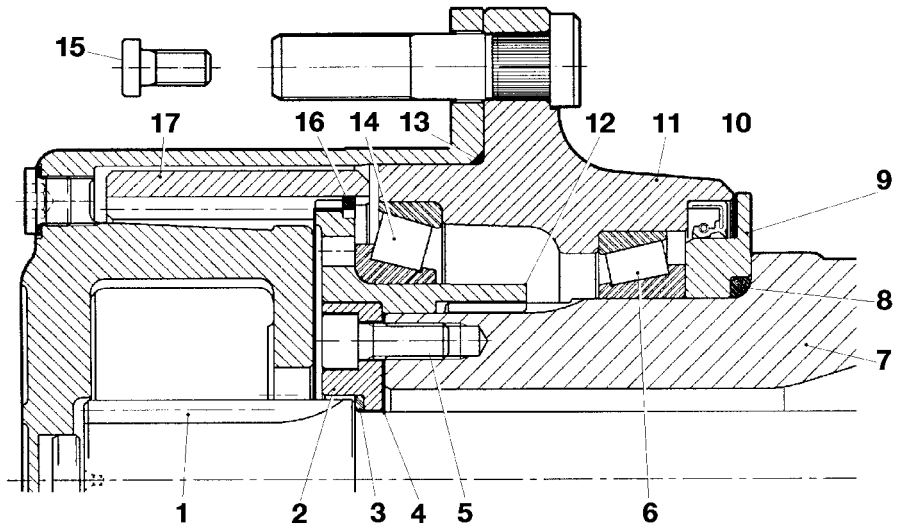
Proceed with caution.
Use proper equipment.
Stand to the side of the cylinder:
NOT IN FRONT OF IT
and make sure that the spring or other parts do not jam in cylinder.

Reassembly of the wheel hub

- Fit the gasket, Pos. 8 (Fig. 25), on the axle casing, Pos. 7, and apply a line of grease to the gasket itself.
- Insert the oil seal track, Pos. 9.
- Fit the tapered bearing, Pos. 6 and the oil seal, Pos. 10 on the wheel hub, Pos. 11.
- Insert the wheel hub, thus assembled, on the axle casing, Pos. 7, until it buts against it, taking care not to ruin the oil seal of the hub, Pos. 10.
- Fit the ring gear, Pos. 17, on its seating, Pos. 12, and lock it in place with the snap ring, Pos. 16.
- Fit the bearing, Pos. 14, on the ring gear seating, Pos. 12, and insert the ring gear seating in the axle casing.
- Position the wheel bearing adjustment spacers and the flange, Pos. 2, and then use the screws, Pos. 5, to lock the flange in position.
- Tighten the screws, Pos. 5, to the specified torque (see page UK-35) and check that the tapered bearings of the wheel are correctly adjusted.

  If the bearings are correctly adjusted then resistance to turning of hub will be approximately 4 Nm. To obtain the correct setting adjust the spacers, Pos. 4, until the correct resistance is obtained. If resistance to turning is too low, reduce the number of spacers and vice versa if it is too high.
- Fit the spacer, Pos. 3, on the axle shaft, Pos. 1, and fully insert the axle shaft.
- Fit the gasket, Pos. 13, on the hub, applying a line of grease to it, and insert the wheel hub on the planet gear cage previously assembled (see "*ASSEMBLY OF THE PLANET GEAR CAGE*", page UK-28).
- Lock the planet gear cage in place with the two fixing screws, Pos. 15.

Repeat the operations for the other side of the axle.



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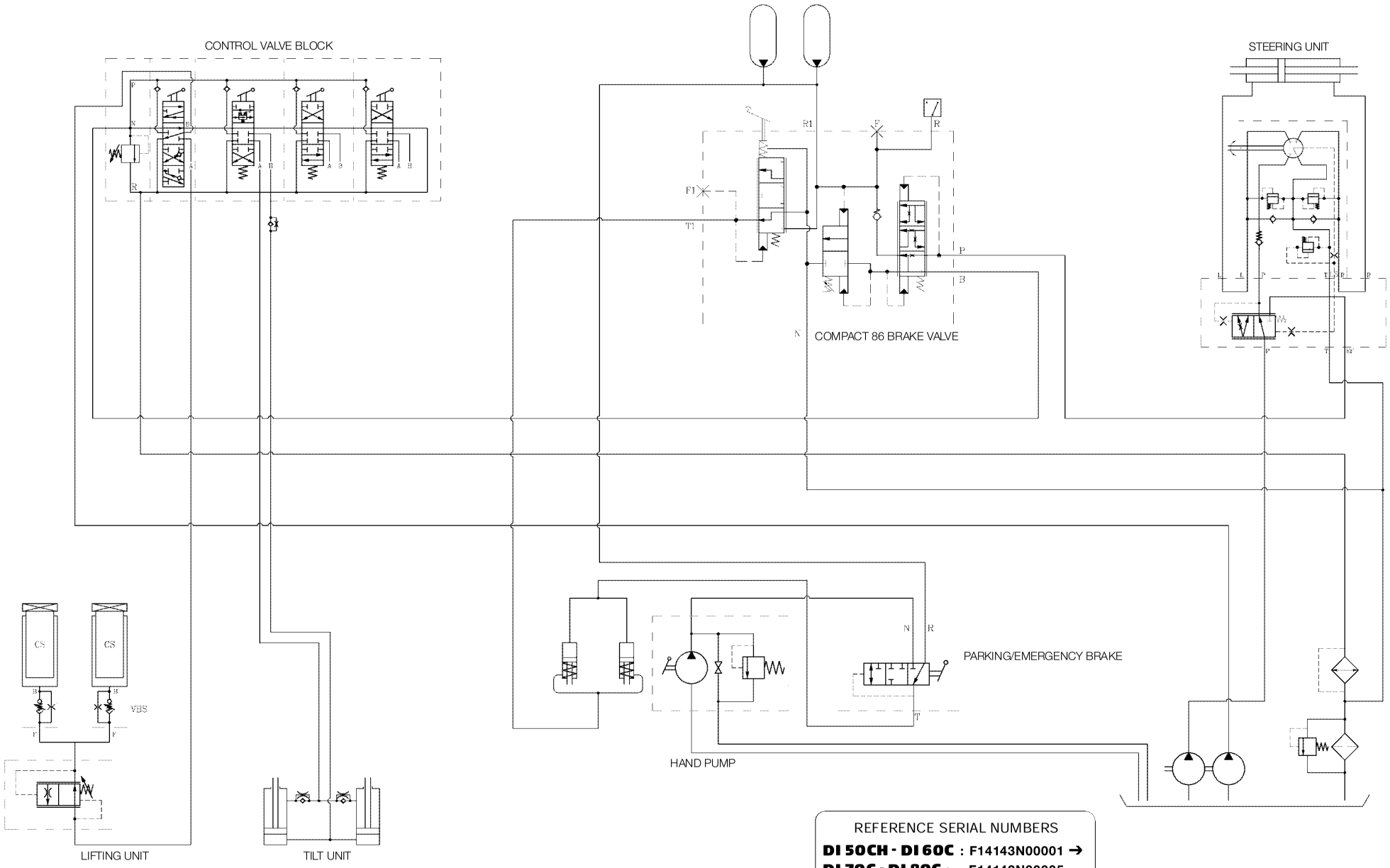
Wheel hub and reducer

Key to hydraulic and brake circuit diagram FASE 60-70-80

C1.	Tilt cylinders
CCLS.	Sideways slide cylinders
I.	Powered steering
ACC.	Accumulators
FR.	Negative/parking brake
PM.	Negative brake release pump
VBS.	Lifting stop valves
CS.	Lifting cylinders
F.	Oil filter
S.	Tank
M.	Pump motor
P1.	Oil pump
E.V.P.	Lowering/lifting solenoid
S.P.F.	Lifting pressure sensor
B.P.1.	Lowering emergency button
E.V.A.C.C.	Accumulator solenoid
S.P.A.	Accumulator pressure sensor
E.V.F.R.	Negative brake solenoid
E.V.L.D.	Right slide solenoid
E.V.L.S.	Left slide solenoid
E.V.B.A.	Forward tilt solenoid
E.V.B.I.	Backward tilt solenoid
V.B.B.	Stop valve
V.S.1.	Filter pressure relief valve
V.S.2.	Pressure relief valve
E.V.4A.	Optional solenoid
E.V.4B.	Optional solenoid
E.V.5A.	Optional solenoid
E.V.5B.	Optional solenoid
C.C.S.	Steering cylinder
P.F.	Brake cylinder
S.F.	Brake oil tank (IDRAULICAR AP31)
S.P.	Proximity sensor for cock
R.	Cock
V.S.F.R.	Parking brake control valve

• Batteria	Battery
• Inverter	Inverter
• Elettronica comando e controllo	Electronic commands and controls
• Joystick	Joystick



REFERENCE SERIAL NUMBERS

DI 50CH - DI 60C : **F14143N00001 ➔**

DI 70C - DI 80C : **F14142N00005**
F14142N00006
F14142N00010
F14142N00011
F14142N00012
F14142N00014 ➔

DI 50CH - DI 60C
DI 70C - DI 80C

HYDRAULIC AND BRAKE CIRCUIT DIAGRAM

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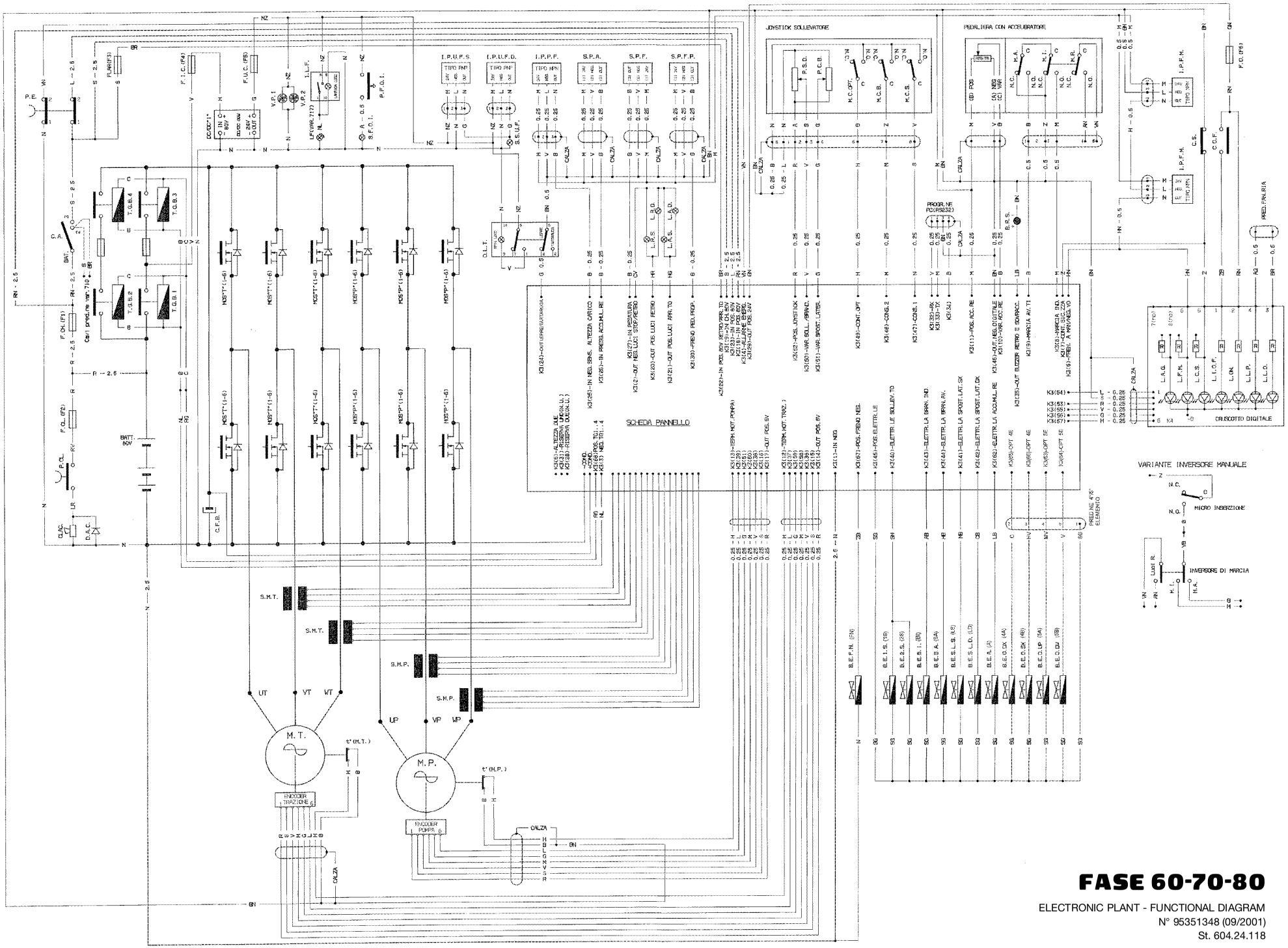

FASE 60-70-80

ELECTRONIC PLANT - FUNCTIONAL DIAGRAM

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