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547 365 EN (03/2005)

# **ACCESS PLATFORM 150 AET2**

**REPAIRS MANUAL**

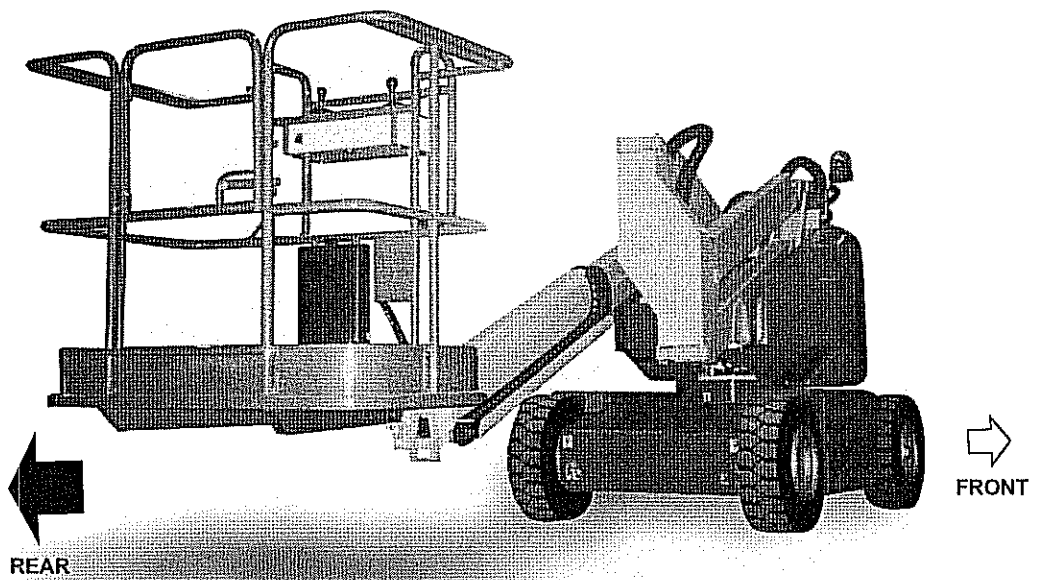
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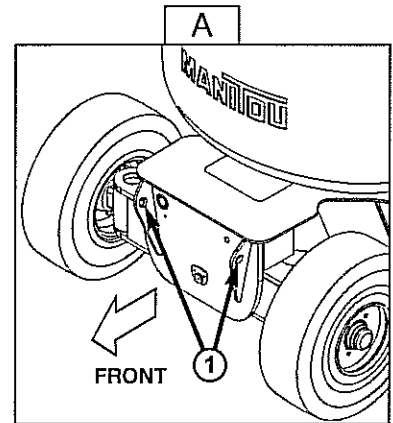


## ADJUSTING THE PARALLELISM

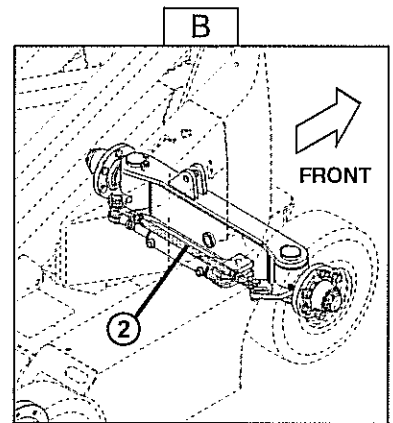


*This operation must be carried out when a component is changed or the steering system is removed.*

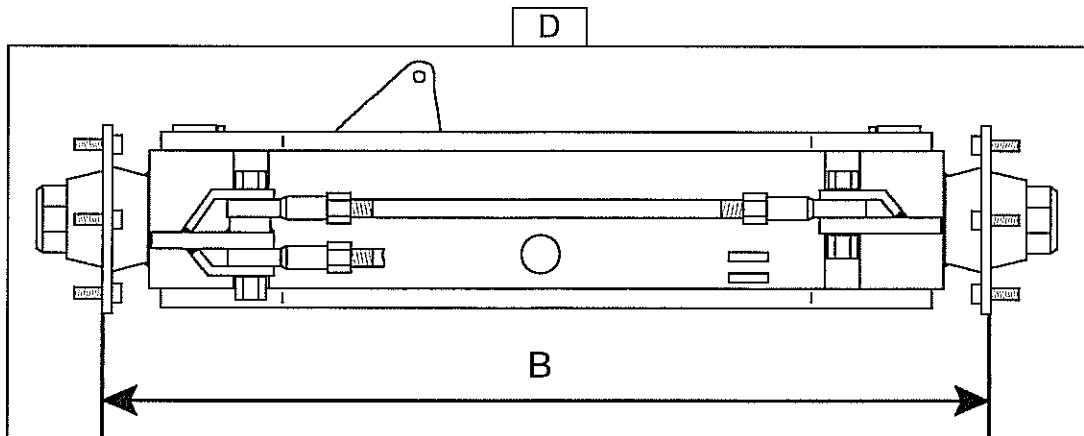
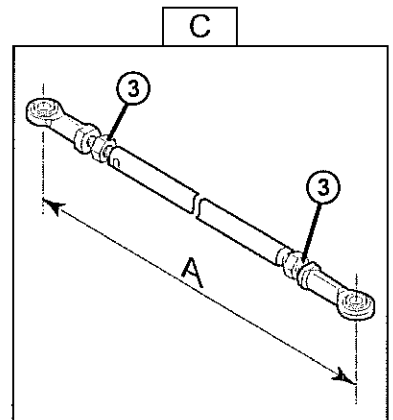
- Set the lifting platform on a horizontal surface.
- Switch off the voltage to the lifting platform using the battery cut-out.
- Raise the front of the lifting platform a few centimetres using a winch, a sling and the shackles in the gusset plates 1 (Fig. A) and then place wedges under the chassis to prevent the front wheels from touching the ground.
- Remove the wheel fasteners (12 nuts, No. 19 spanner) and remove the two front wheels.
- Remove the steering connecting rod 2 (Fig. B) (2 bolts, No. 30 spanner).



30-B-51-M.77



- Loosen the two counter-nuts 3 (Fig. C) (No. 30 spanner).
- Screw the ball joints on each side the same number of turns so that side A (Fig. C) equals 1044mm.
- Re-install the assembly and check that side B (Fig. D) between the external faces of the wheel hubs equals 1232mm ( $\pm 2$ mm).
- Adjust this side as necessary by turning the connecting rod.
- Tighten the counter-nuts 3 (Fig. C).
- Fit the wheels and remove the wedges from under the chassis.
- Switch on the voltage to the lifting platform using the battery cut-out and proceed to test the translation and the steering.



**REMOVING THE HYDRAULIC HOSES,  
PADS AND THE TELESCOPE**

**150 AET2**

**55-2-20-M.71 EN**

55-2-20-M.71

**LOCATION OF THE HYDRAULIC  
COMPONENTS  
150 AET2  
70-7-M.71 EN**

70-7-M.71

10 DC 3

MOTEUR DE ROTATION  
DREHUNG MOTOR  
MOTOR DE ROTACION  
ROTATION MOTOR

POUR MOTEUR  
FÜR MOTOR  
PARA MOTOR  
FOR ENGINE

CIN: 151-0033

POUR MOTEUR  
FÜR MOTOR  
PARA MOTOR  
FOR ENGINE

CIN: M+S HYDRAULIC

- A (x6)
- C (x1)
- D (x1)
- E (x3)
- F (x7)
- G (x1)
- H (x1)
- B (x1)

- A (x6)
- B (x1)
- C (x1)
- D (x1)
- E (x3)
- F (x7)
- G (x1)

ROQUETTE DE JOINTS  
JUEGO DE JUNTAS  
SEAL KIT

ROQUETTE DE JOINTS  
JUEGO DE JUNTAS  
SEAL KIT

POUR MOTEUR  
FÜR MOTOR  
PARA MOTOR  
FOR ENGINE

CIN: M+S HYDRAULIC

POUR MOTEUR  
FÜR MOTOR  
PARA MOTOR  
FOR ENGINE

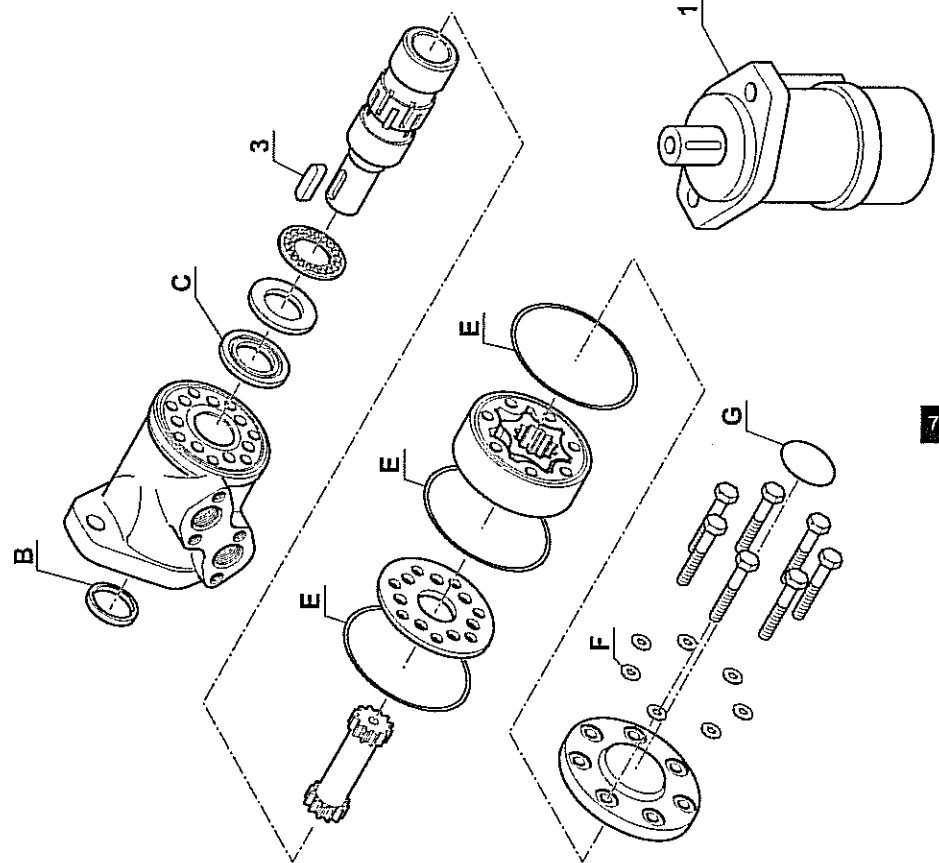
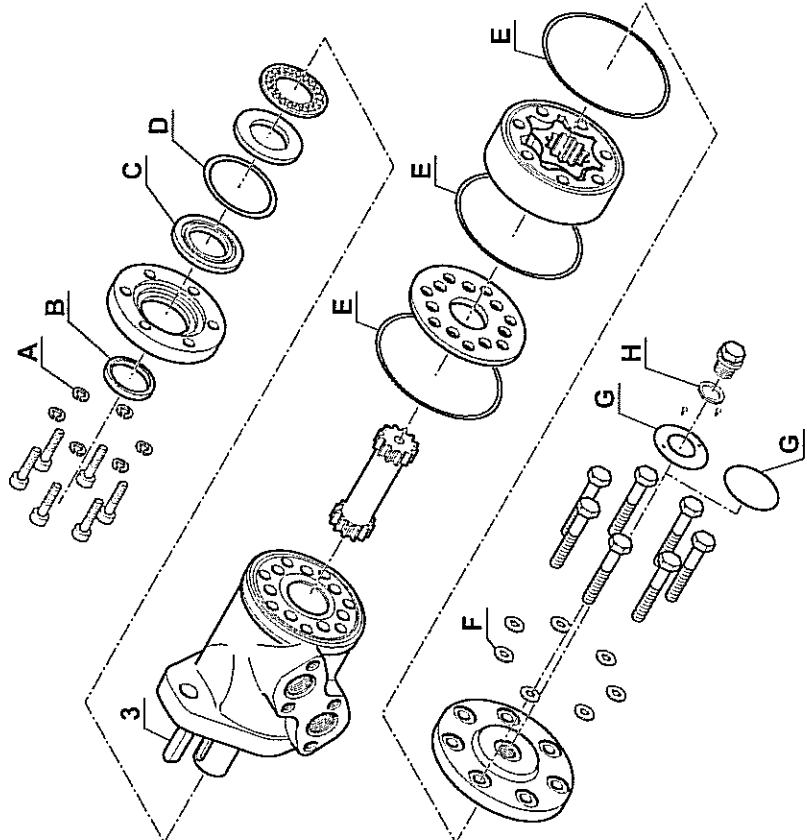
CIN: 151-0857

- A (x6)
- B (x1)
- C (x1)
- D (x1)
- E (x3)
- F (x7)
- G (x1)

ROQUETTE DE JOINTS  
JUEGO DE JUNTAS  
SEAL KIT

POUR MOTEUR  
FÜR MOTOR  
PARA MOTOR  
FOR ENGINE

CIN: 151-0857



150 ATS  
150 / 171 AET  
165 ATJ / ATJS  
150 ATS2 / ATS20

120 TH  
150 AET2  
100/120 AE  
D 80 ER / ERS

**INDEX**

**A - MACHINES FROM NO. 500313 TO NO. 500384 AND FROM NO. 500419 TO NO. 506490 PLUS NO. 506494 :  
ADVANCED MOTORS / BREVINI REDUCERS.....P 2**

**B - MACHINES FROM NO. 506491 EXCEPT FOR NO. 506494 :  
ADVANCED MOTORS / BONFIGLIOLI REDUCERS.....P 3**

70-2-46-M7

## RE-INSTALLATION

- Perform the removal operations in reverse order, checking that the seals are correctly inserted between the elements : *To carry out re-assembly correctly, please refer to the index.*
- Switch on the voltage to the lifting platform using the battery cut-out; test all the movements.
- Check the oil level in the tank and top up if necessary.

70-2-57-M.7

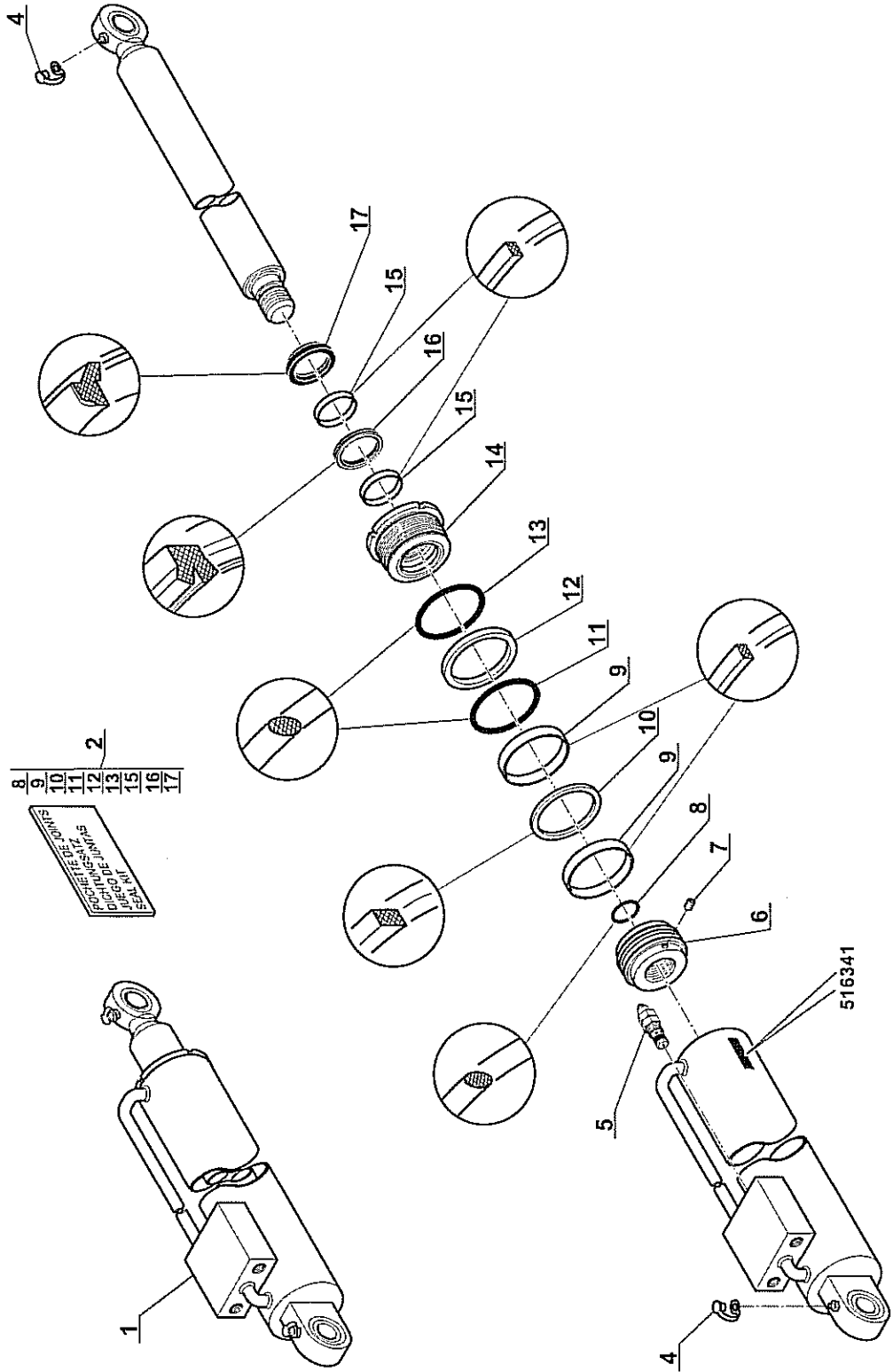
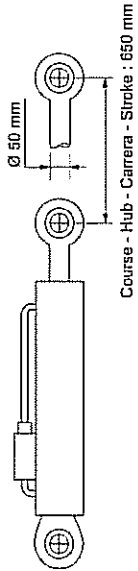
No.	Designation	Hydraulic layout
1	Distributor	
2	End plug fitting	
3	Shutter valve 13.8 b	Rep. 3
4	Main restrictor 160 b	Rep. 4
5	Electro-valve	Rep. 5
6a	Electro-valve	Rep. 6a
6b	Electro-valve	Rep. 6b
7	Pressure reducer 80 b	Rep. 7
8	Shutter valve	
9	Electro-valve	Rep. 9
10	Plate	
11	R/L basket rotation electro-valve	Rep. B
12	R/L steering electro-valve	Rep. C
13	Compensation/tilt electro-valve	Rep. E
14	Threaded rod	
15	Screw	
16	Hood	
17	Hood	
18a	Arm 1 lifting/descent electro-valve	Rep. F
18b	Arm 2 lifting/descent electro-valve	Rep. G
18c	Arm 3 lifting/descent electro-valve	Rep. H
19	R/L turret rotation electro-valve	Rep. I
20	Pressure port	
36	Screw	
37	Telescope extension/retraction electro-valve	Rep. D
38	Manual control T3	
39	Micro manual control	
40	Balancing valve 2'10 b	Rep. 11
41	Overload valve 60 b	Rep. 10
43	Shutter valve	

70-2-57-M7

10 CA 79

HYDRAULIQUE (Vérin de levage)  
HYDRAULIK (Aufwinden zylinder)  
HIDRAULICO (Cilindro de levantamiento)  
HYDRAULIC (Lifting cylinder)

171 AET | 150 AET  
150 AET2



8	9	10	11	12	13	15	16	17
POISSONNETE DE LA POMPE DISCO DE JUNTA JUNTA SEAL RING								

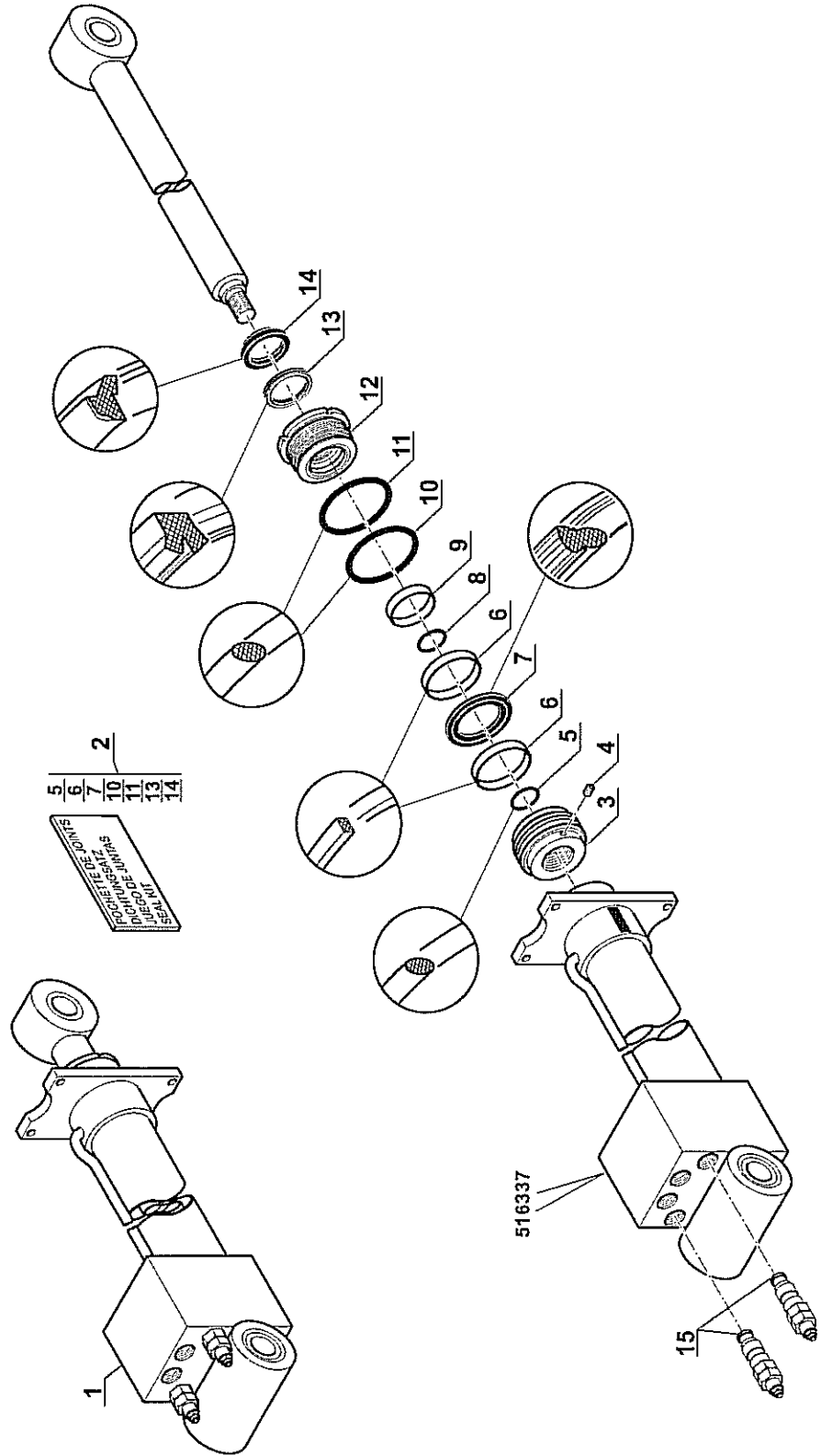
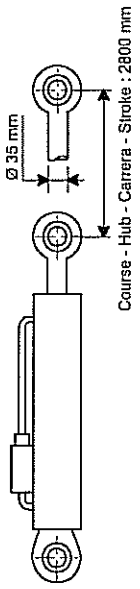
516341



10 CC 45

150 AET  
150 AET2

HYDRAULIQUE (Vérin de télescope)  
HYDRAULIK (Zusammenströhl zylinder)  
HIDRAULICO (Cilindro de telescopaje)  
HYDRAULIC (Telescope cylinder)



**HYDRAULIC LAYOUT**  
**150 AET2**  
**70-6-M.71 EN**

70-6-M.71

**INDEX**

**A - MACHINES UP TO No.505311.....P 2**

**B - MACHINES FROM No.505312, UP TO No.505648 .....P 3**

**C - MACHINES FROM No.505649, UP TO No.505933 .....P 4**

**D - MACHINES FROM No.505934, UP TO No.505937 .....P 5**

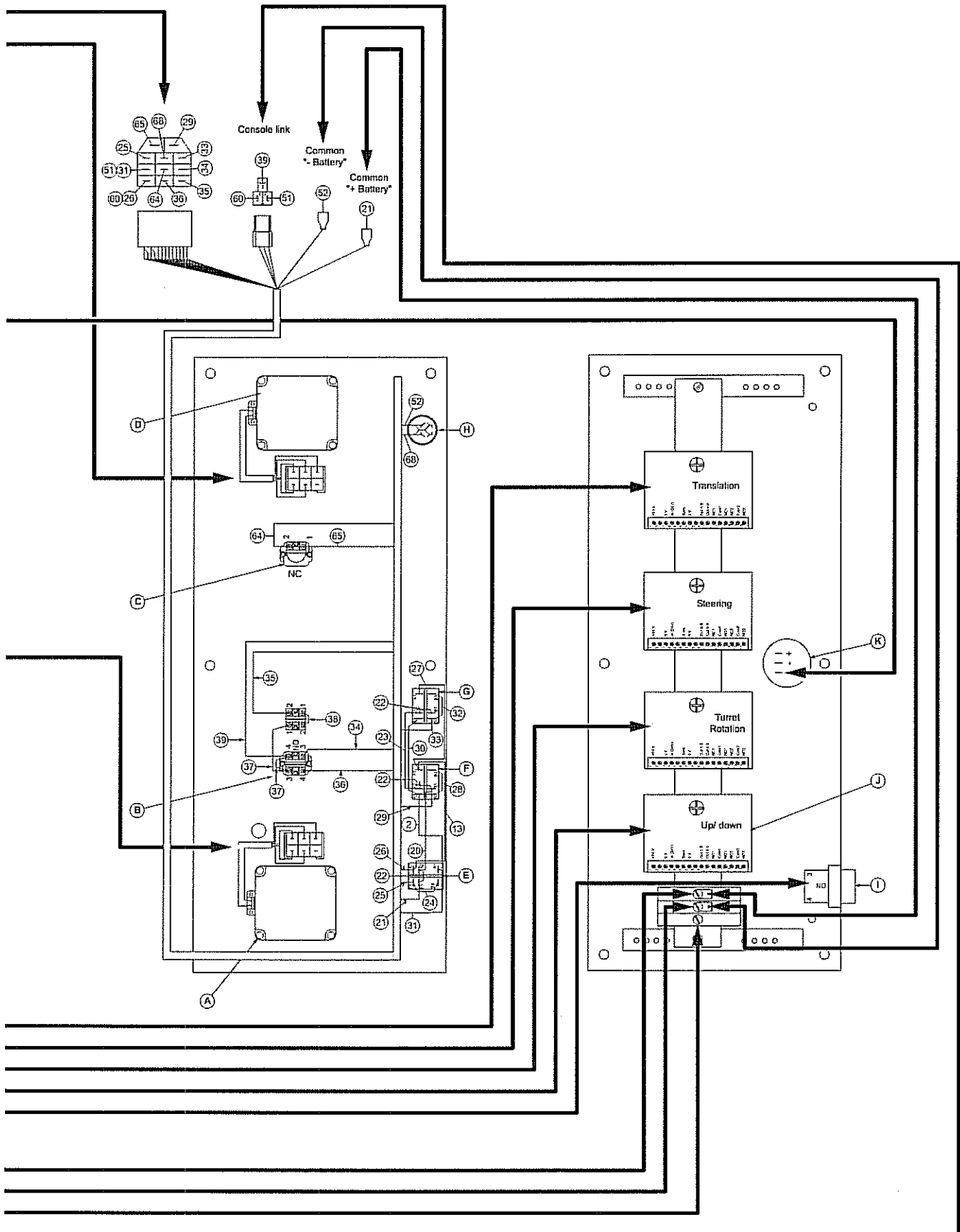
**E - MACHINES FROM No.505938.....P 6**

***REMOVING THE TRACTION BATTERIES***

***150 AET2***

***80-2-12-M.71 EN***

80-2-12-M.71



80-2-13-M.71

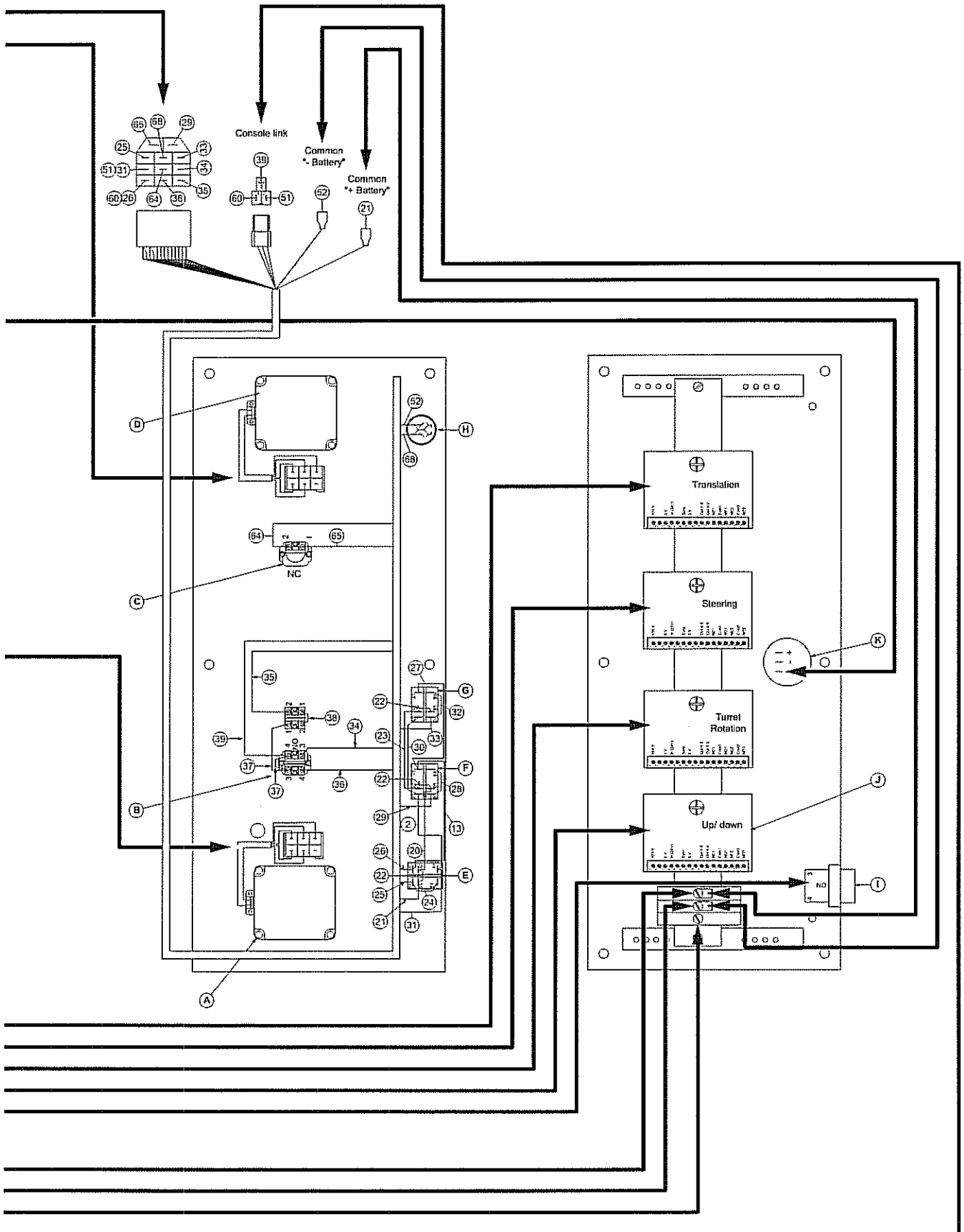
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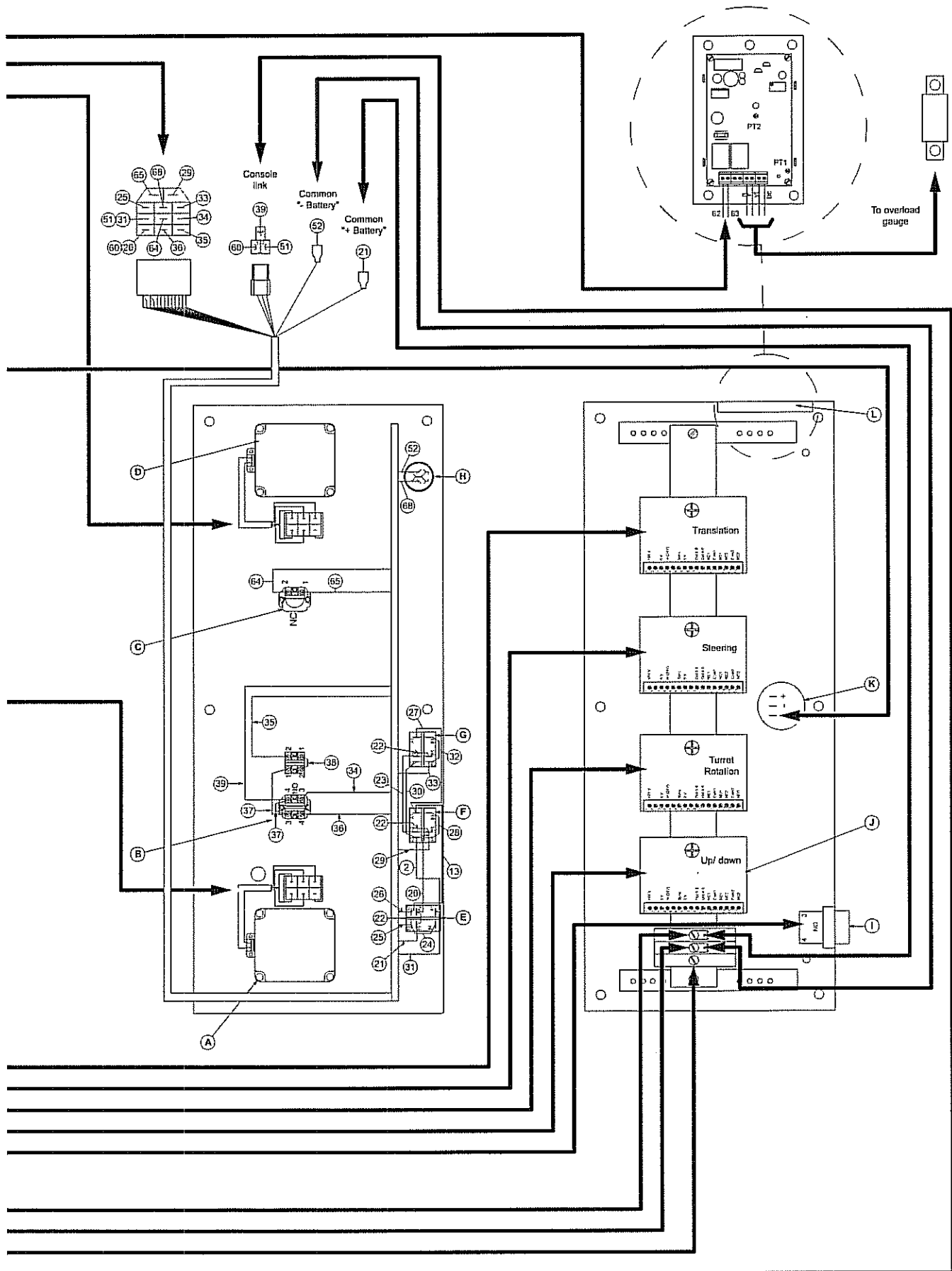


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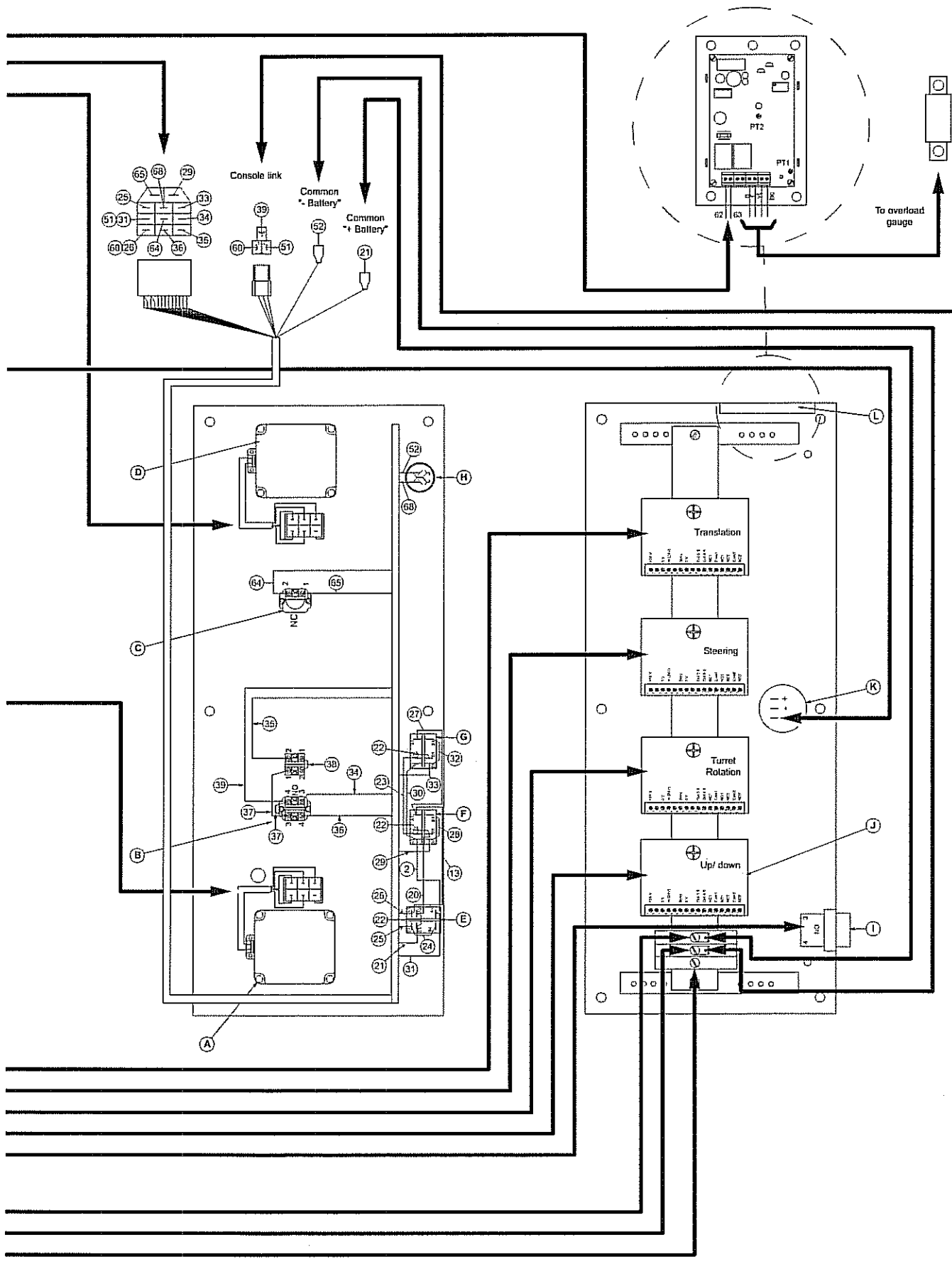
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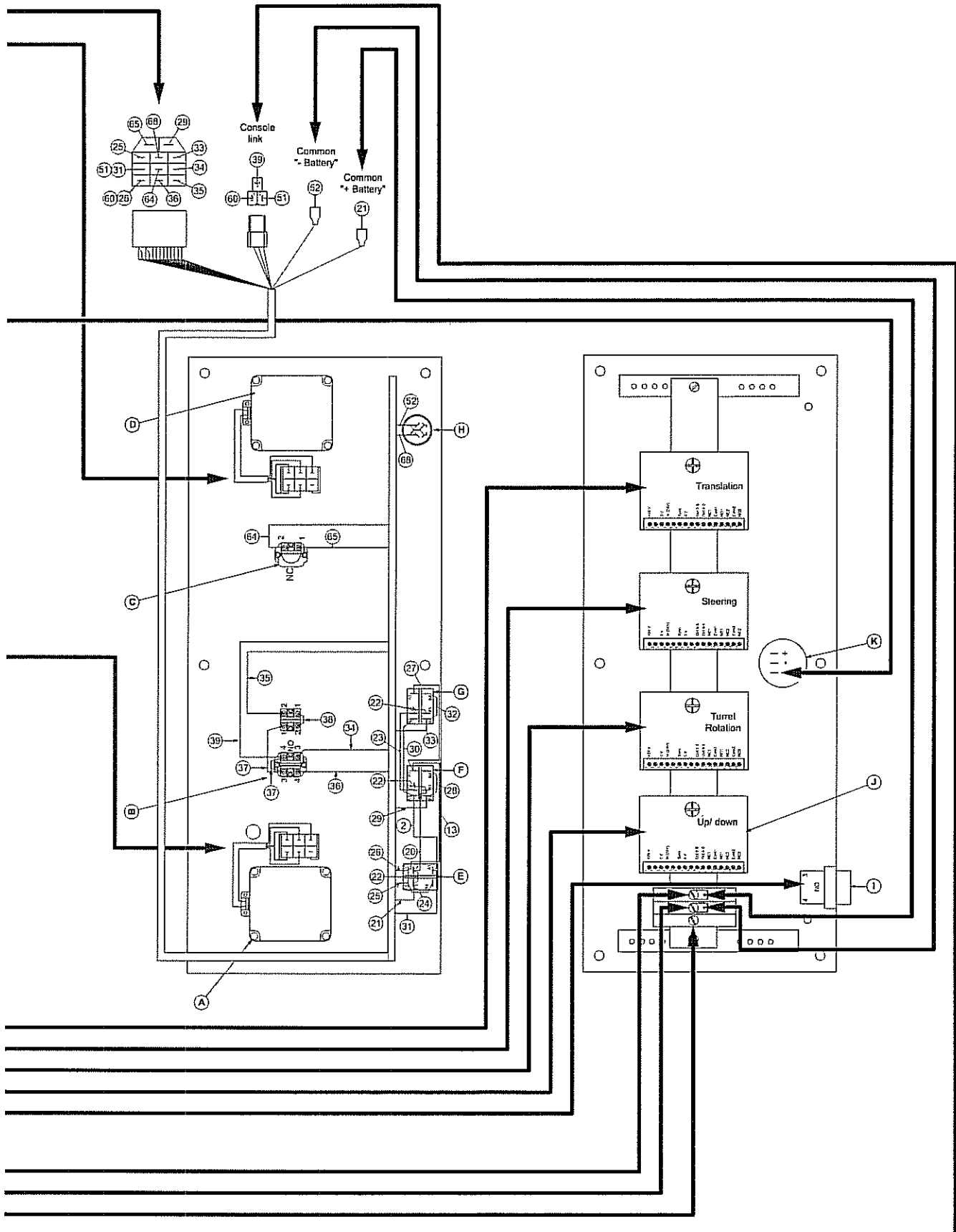
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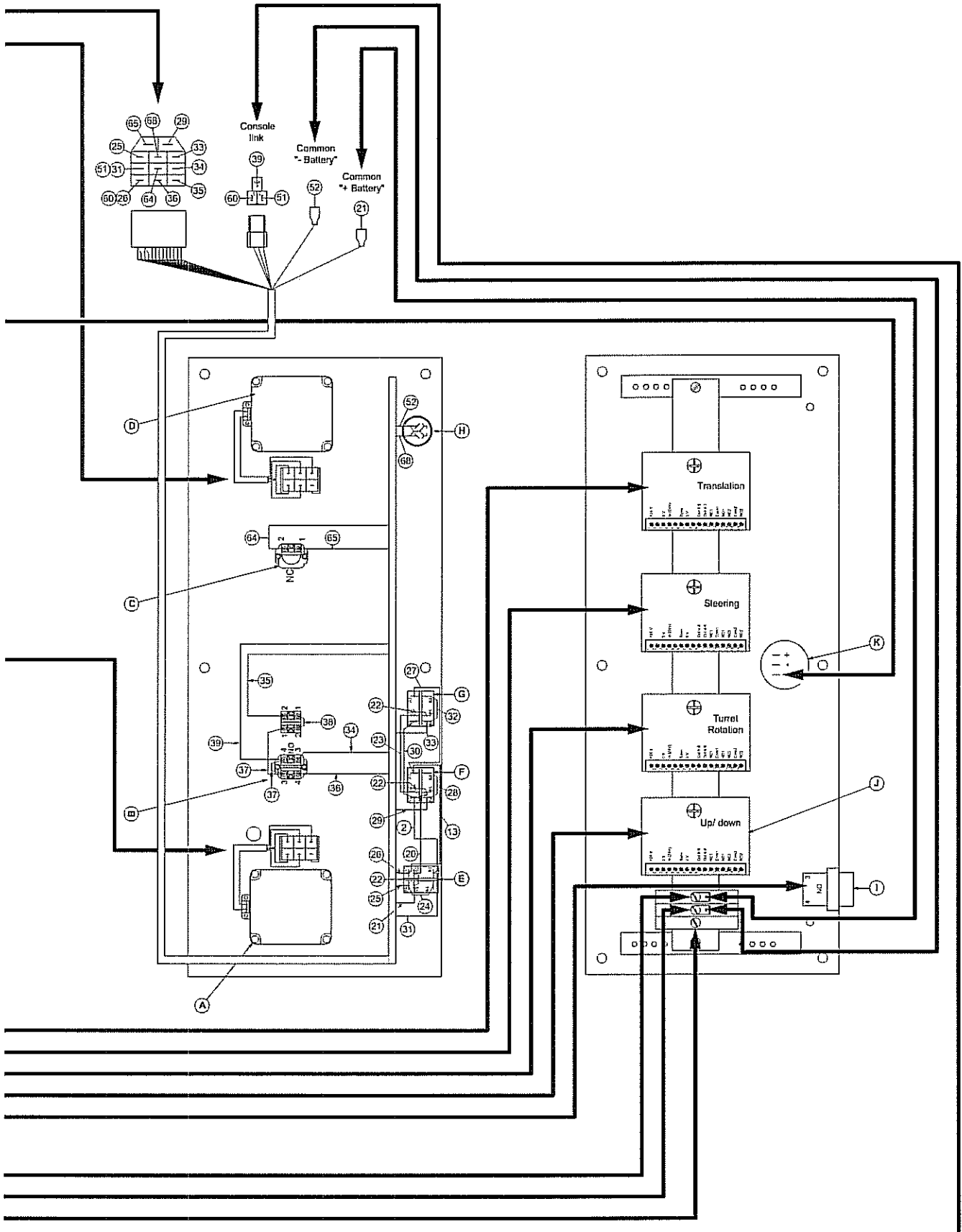
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80-2-13-M.71



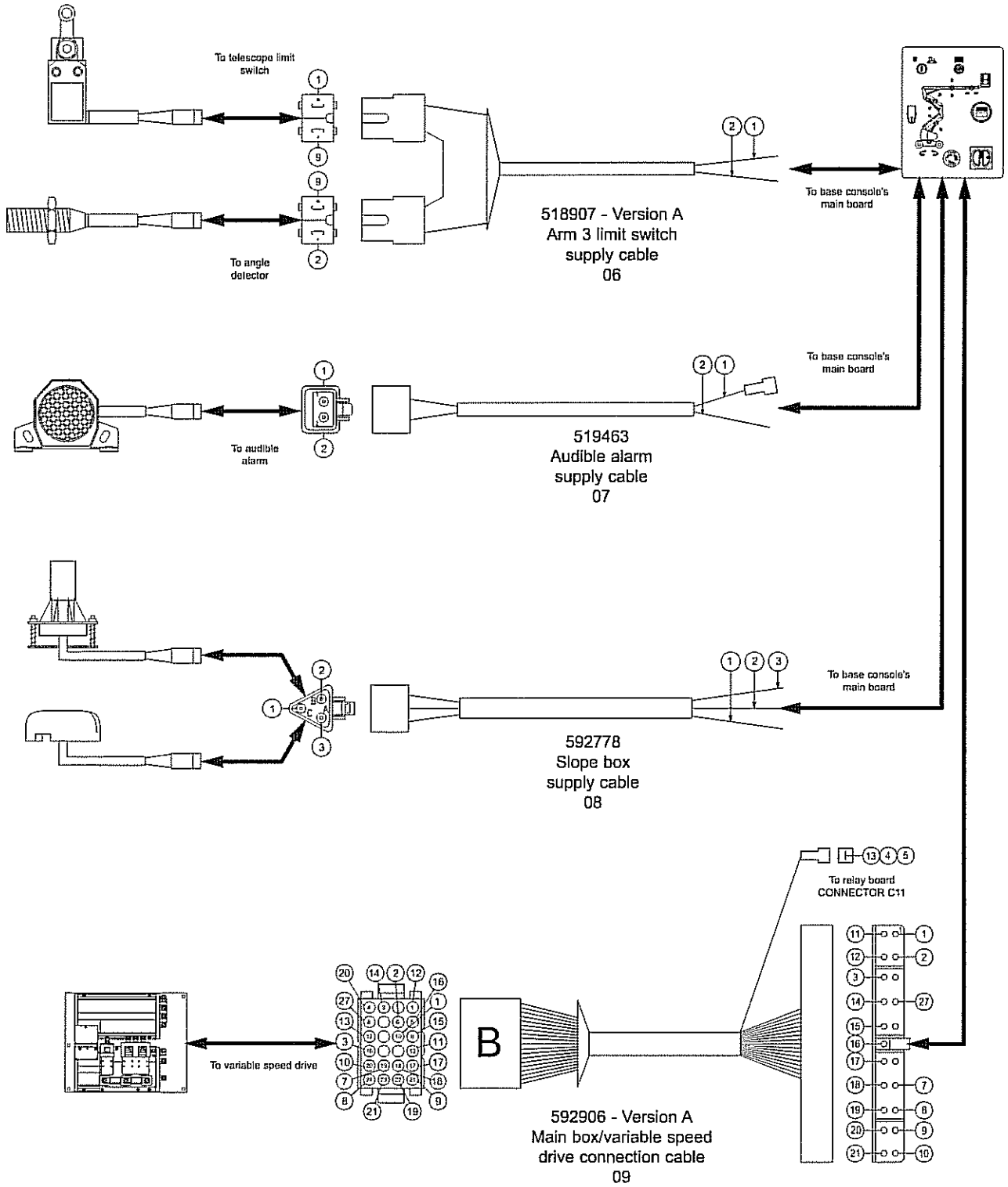
80-2-13-M.71



80-2-13-M.7

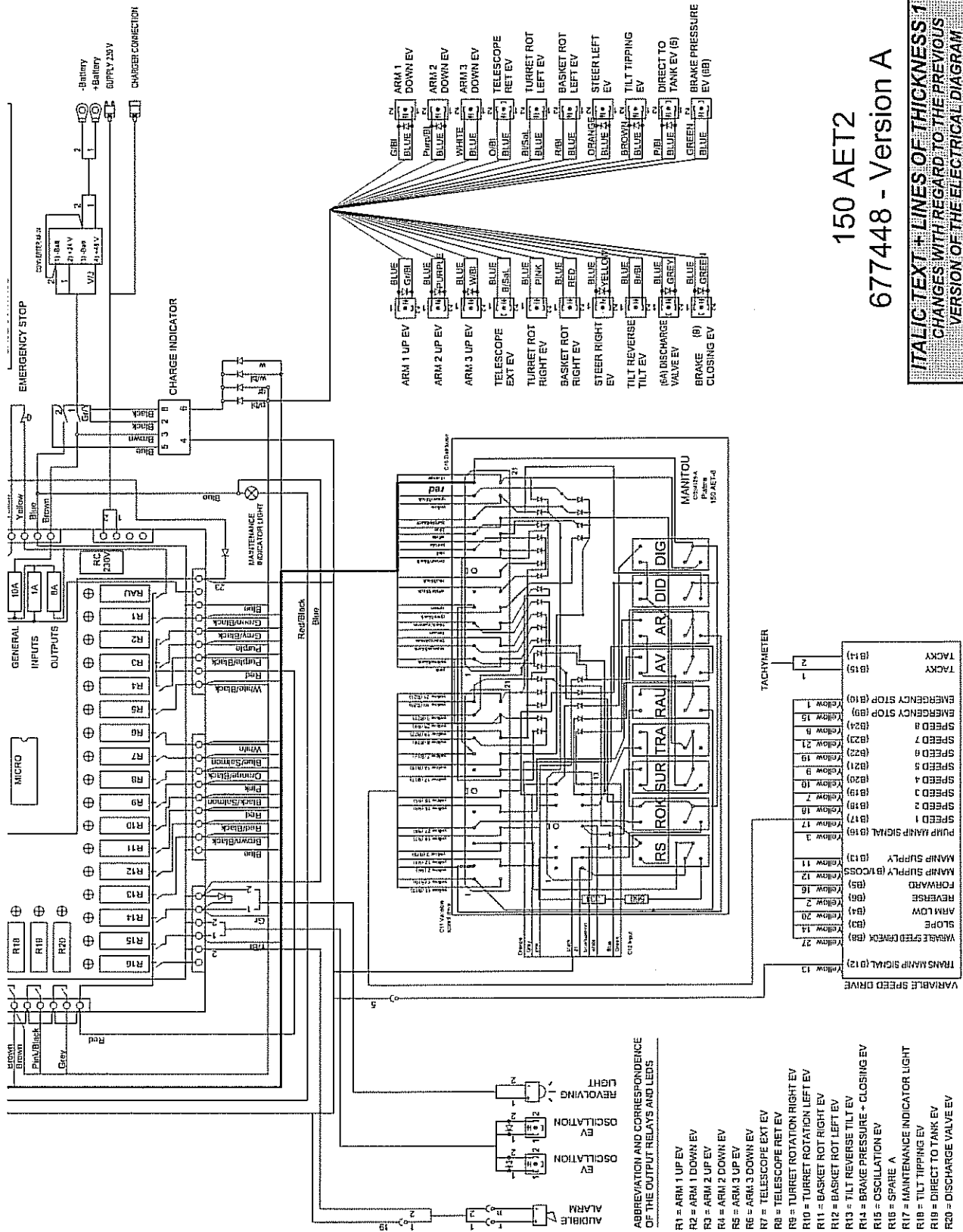
80-2-13-M.71

16 - MISCELLANEOUS CABLE LOOMS - 06, 07, 08 AND 09



80-2-13-M.71





# 150 AET2 677448 - Version A

**ITALIC TEXT - LINES OF THICKNESS 1 = CHANGES WITH REGARD TO THE PREVIOUS VERSION OF THE ELECTRICAL DIAGRAM**

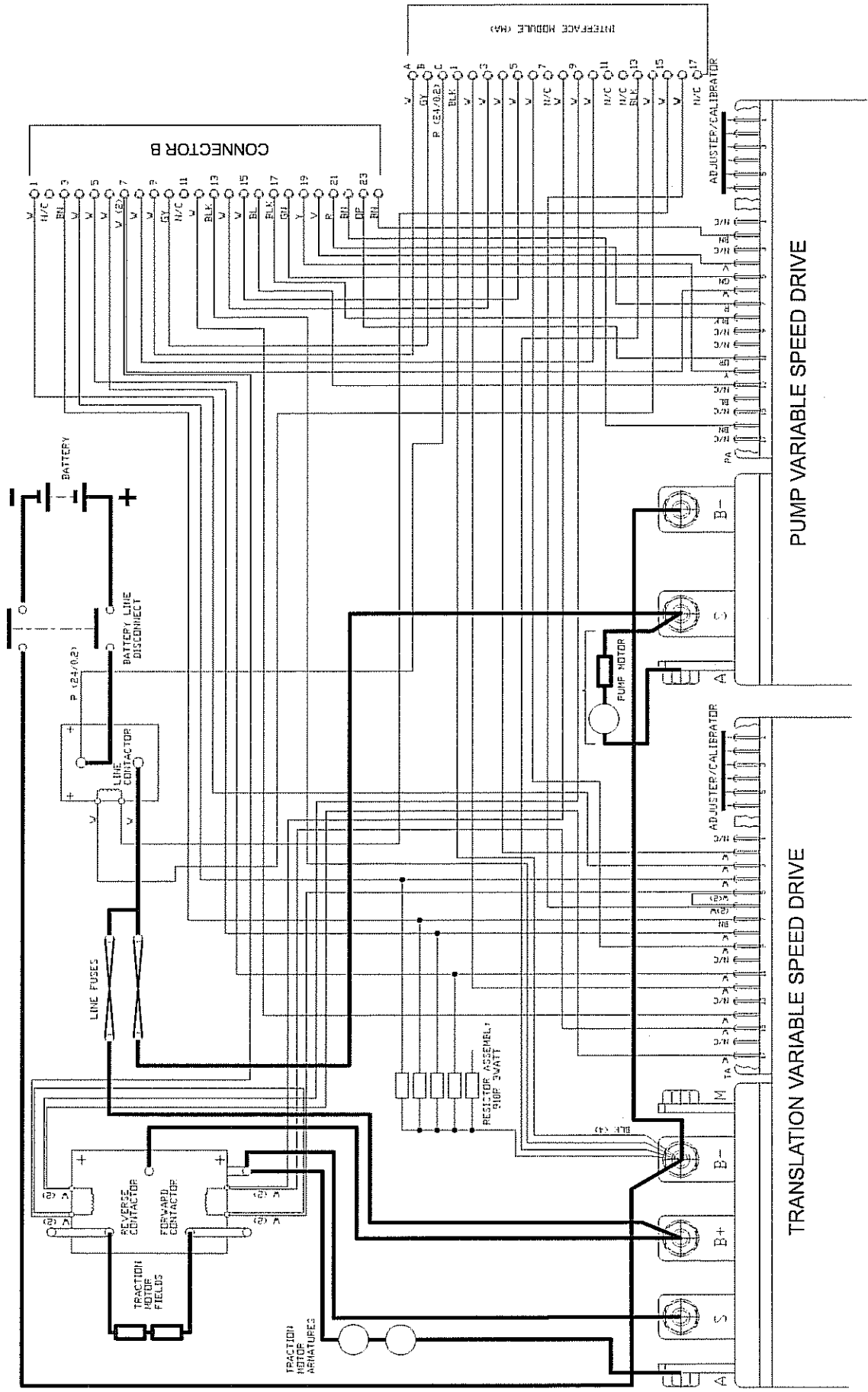
**TACHYMETER**

Yellow 13	VARIABLE SPEED DRIVE TRANS MANIP SIGNAL (B12)
Yellow 27	ARM LOW (B3)
Yellow 28	ARM LOW REVERSE (B4)
Yellow 16	FORWARD (B5)
Yellow 12	MANIP SUPPLY (B10COS)
Yellow 11	MANIP SUPPLY (B11)
Yellow 3	PUMP MANIP SIGNAL (B16)
Yellow 17	SPEED 1 (B17)
Yellow 10	SPEED 2 (B19)
Yellow 7	SPEED 3 (B19)
Yellow 8	SPEED 4 (B20)
Yellow 9	SPEED 5 (B21)
Yellow 19	SPEED 6 (B22)
Yellow 21	SPEED 7 (B23)
Yellow 8	SPEED 8 (B24)
Yellow 15	EMERGENCY STOP (B9)
Yellow 14	EMERGENCY STOP (B10)
(B14)	TACKY
(B15)	TACKY

Version	Modifications	Drawing	Date
A	- Addition of base control diode. - Elements and replaces plant ref. Cf 677666f		22/03/04 5/03/04

# C - CABLING FOR THE VARIABLE SPEED DRIVES

## 1 - SCHEMATIC DIAGRAM OF THE CABLING FOR THE VARIABLE SPEED DRIVE (GENERAL)



80-8-11-M.71

## Electric pump variable speed drive

Menus	Function	Value
SPEED 1	Steering	50
SPEED 2	Lower and int, arm	72
SPEED 3	Upper arm	55
SPEED 4	Telescoping	100
SPEED 5	Turret R and L	27
SPEED 6	Basket rotation R and L reverse tilt	100
SPEED 7	Basket tilt	28
SPEED 8	Oscillation and brake	50
CREEP	Micro-speed	0
RAMP	Acceleration curve	0,30 sec.
EXTRA	Spare	0
I. MAX	Max. permissible current	400

## 2 - CHECKING OPERATION

- Select the TEST menu 2 (Fig. E3) : when this menu is displayed the lifting platform is operating normally.
- The first check involves the acceleration : the display varies from 0 to 100% depending on whether the acceleration required is minimum or maximum.
- By pressing the  button 5 (Fig. E1) or the  button 6 (Fig. E1), you can access other testing phases : a number from 1 to 10 is displayed and :

OP (OPEN) When the instruction relevant to the test is not requested.

CL (CLOSE) When the instruction relevant to the test is requested.

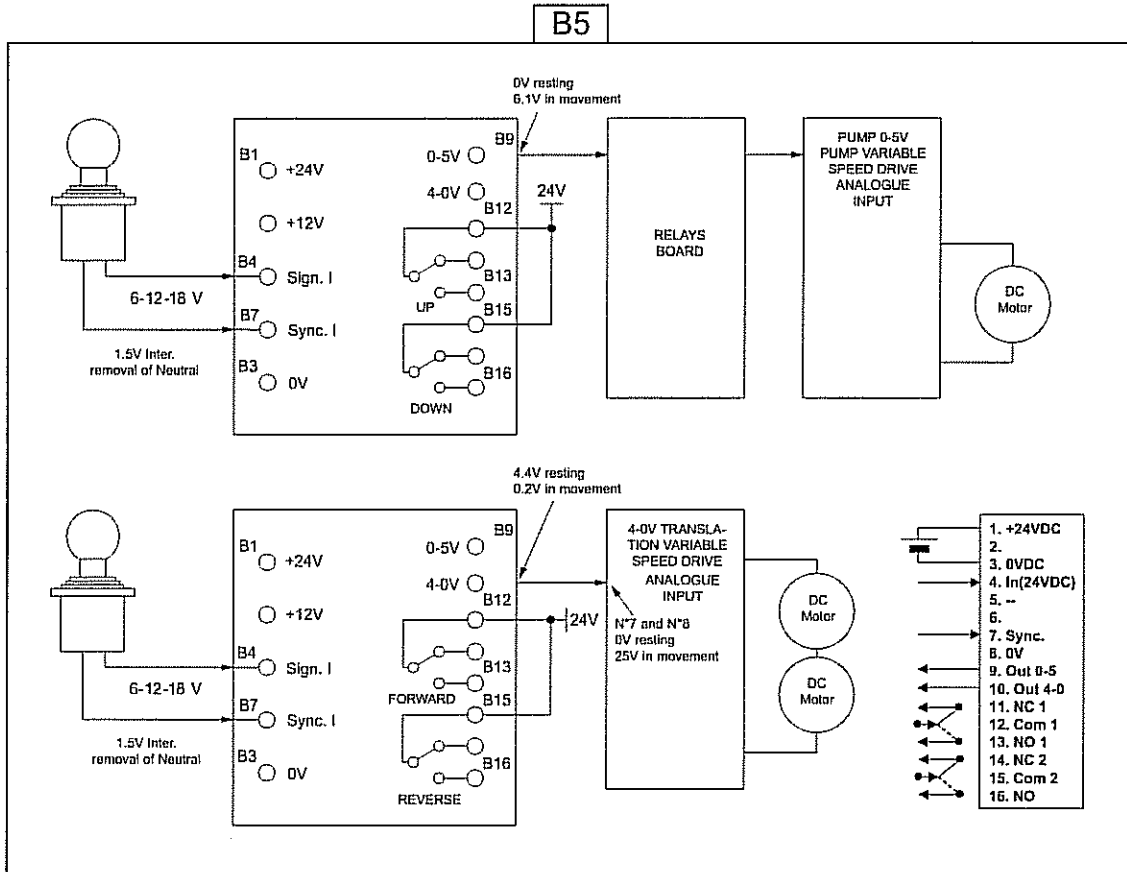
## Translation variable speed drive

Test	Function	Reading
-	Potentiometer	0 to 100%
1	Forward motion	OP/CL
2	Reverse motion	OP/CL
3	Generator value	3,00/3,60
4	Speed selection	OP = High speed CL = Low speed
5	Slope detection	OP = Machine in slope
6	Spare	-
7	Generator direction	OP = Front CL = Rear
8	Spare	-
9	Spare	-
10	Spare	-

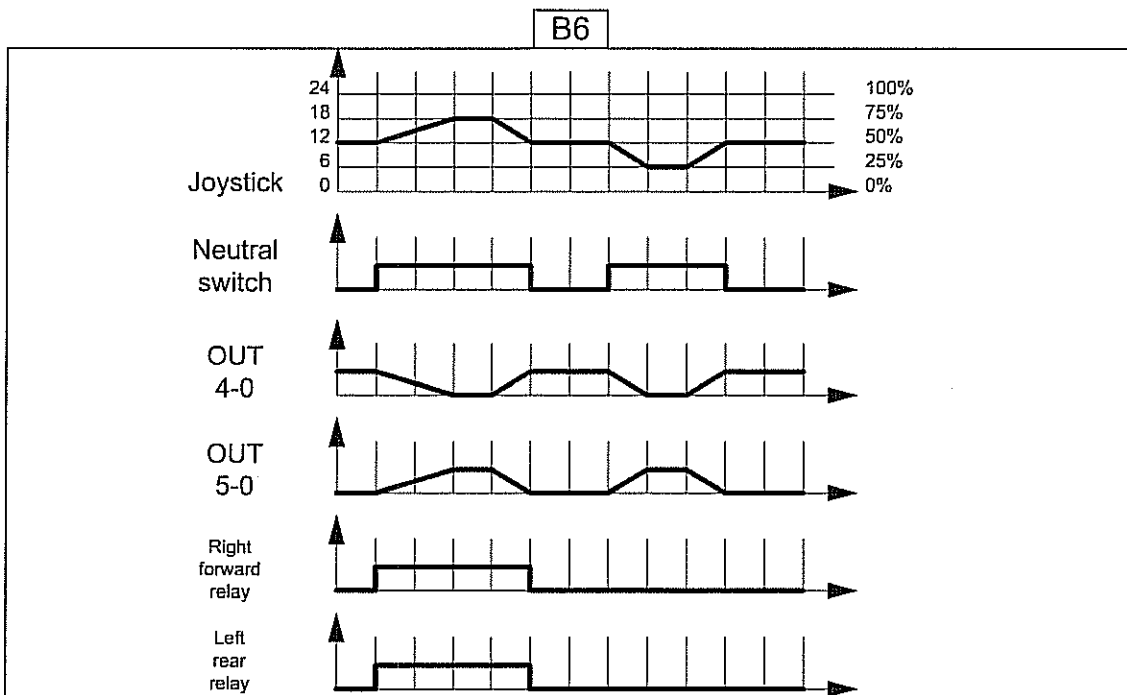
80-B-11-M.71

### 3 - ELECTRONIC CARDS RUBEN POWER

- Connections between manipulator interfaces and the variable speed drives (Fig. B5).



- Input/output signals (Fig. B6).



80-B-10-M.7

**POSITIONING AND ADJUSTING THE  
CONTACTORS**

**150 AET2**

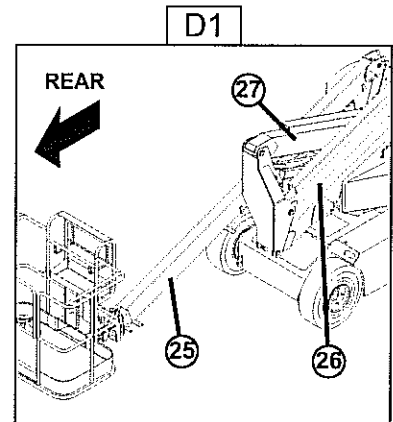
**80-8-81-M.71 EN**

80-8-81-M.71

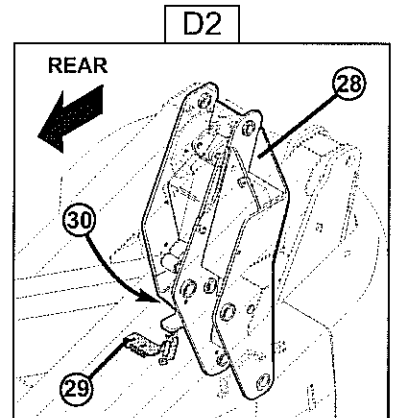
03 / 2005

## D - ADJUSTING THE LOWER ARM SENSOR

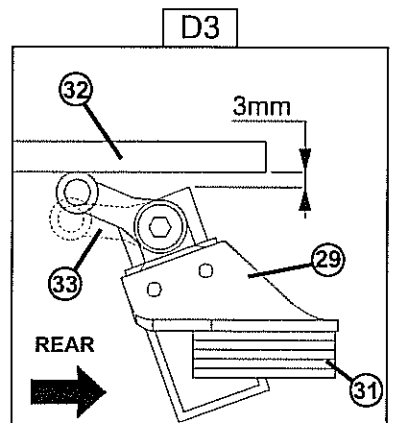
- Open the left-hand turret's cowl.
- From the base console, instruct the upper arm 25 (Fig. D1) to rise fully and the lower and intermediate arms 26 & 27 (Fig. D1) to rise by 10 cm.



- Locate the sensor / sensor support assembly 29 (Fig. D2) at the bottom of the intermediate articulation 28 (Fig. D2), remove it (2 screws, No. 13 spanner) and remove the wedges.
- From the base console, instruct arms 1 and 2 to descend completely.
- Check that the intermediate articulation is in contact with the counterweight via the wedge on the left-hand side 30 (Fig. D2).

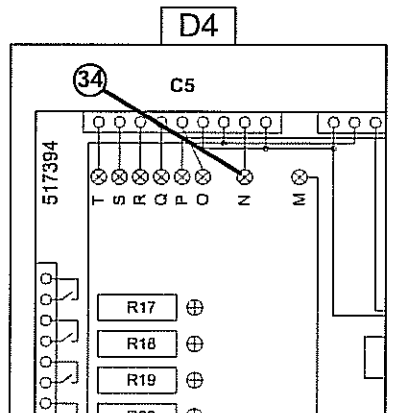


- Install the sensor / sensor support assembly 29 (Fig. D3) on the turret and place wedges 31 (Fig. D3) under the support until the play between the body of the sensor and the intermediate sensor 32 (Fig. D3) is  $\geq 3\text{mm}$ .
- Manually verify that when the intermediate articulation is in the low position, the sensor's roller 33 (Fig. D3) can still descend a few mm.
- Tighten the fasteners (2 screws, No. 13 spanner).



### Testing sensor

- Open the base console.
- Check on the main card in the base console that :
  - When arms 1 and 2 are in the low position, the LED (N) 34 (Fig. D4) is lit.
  - When one of the two arms is raised, the LED (N) 34 (Fig. D4) goes out.
- Close the base console and the left-hand turret's cowl.



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*The "V"s mean that a random voltage can be measured on the indicated wire.*

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