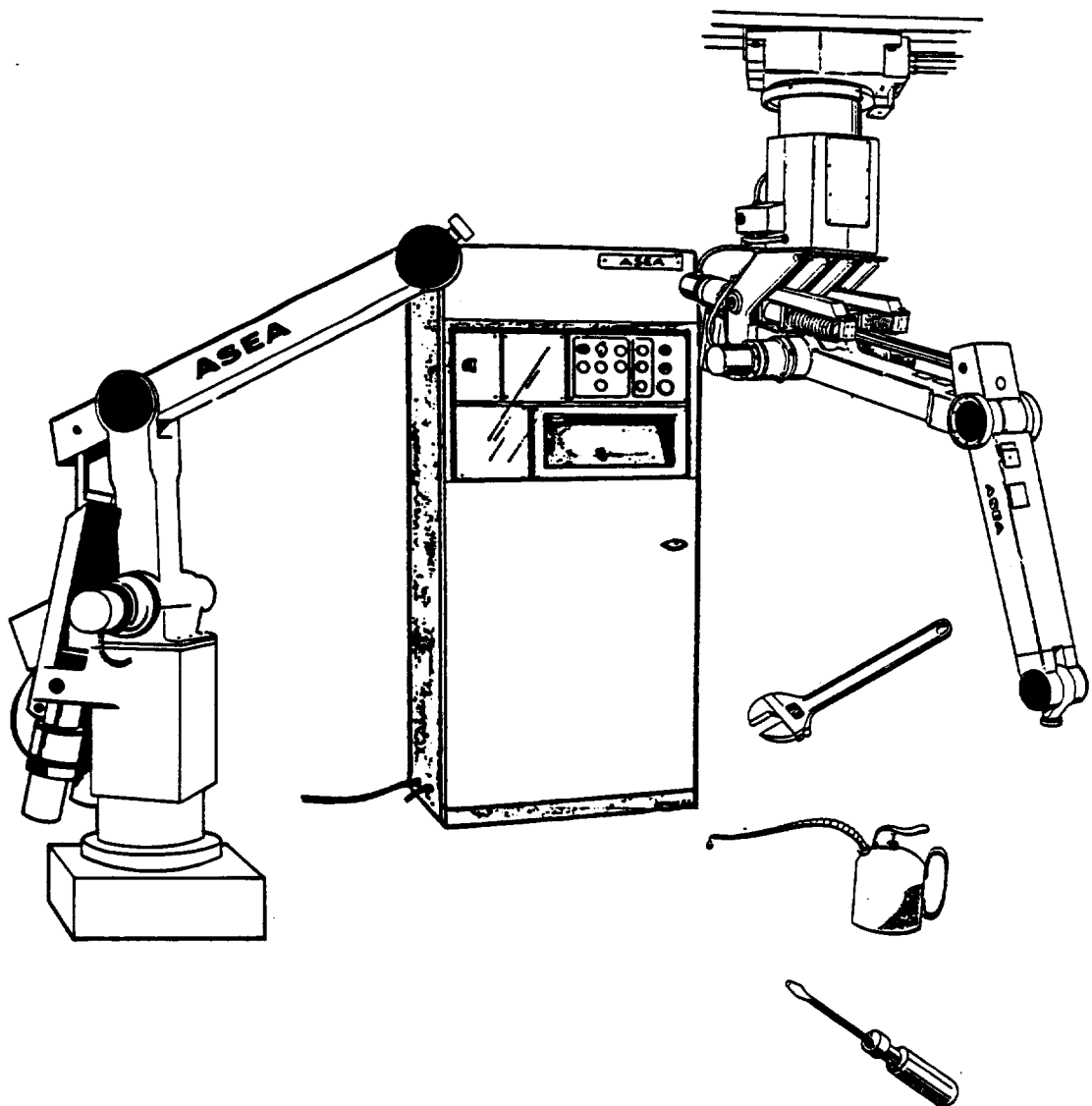


# ASEA

## Industrial Robot System

### IRB 6/2, L6/2, G6/2



6397 004-11

Part of Product Manual CF 09-8015E

**CK 09-1505E**

**JAN 1985**

**MAINTENANCE**

## MAINTENANCE OF THE ROBOT SYSTEM

### 1 GENERAL

To ensure reliable, and consequently economic operations of the robot system, it must be properly maintained and serviced. It is therefore important that the oil is changed in the gear boxes, the ball screws are lubricated, and routine checking of the control cabinet is performed (including vacuum-cleaning) at the recommended intervals. If adjustment of the clearance in the wrist gear is necessary, refer to the SERVICE MANUAL, chapter 10 section 4.6.

#### Tools required

- o Vacuum-cleaner
- o Brush
- o Normal hand tools
- o Syringe 20 ml (art. no. 6883 053-B)

#### Safety precautions

During maintenance - all persons who have reason to be within the working area of the robot should be familiar with robot performance and any hazards connected therewith.

When working on the robot, personnel must be familiar with the electrical system and must be able to disconnect the robot. They must also know where the emergency stop switches are located so that power can be cut off immediately if there is any danger.

When working on the control system -

- o Remember that certain parts of the system are connected to the mains (line transformer, power supply and stabilizer unit, for instance).
- o Make sure that nobody is within the working range of the robot as long as the control system is in operation mode, i.e. when the robot motors are running.
- o When replacing electrical sub.units such as circuit boards or reconnecting any of the electrical connections such as RTXG-connectors, the main circuit breaker on the operator's panel of the control cabinet must be turned off. Otherwise the unit may be damaged.

## 2 MECHANICAL MAINTENANCE

### Changing oil in the gear boxes

Upon delivery the gear boxes are filled with oil to the correct level. The oil must be changed after six months or a maximum of 1000 hours in operation.

Note that you have to ventilate the gear boxes in order to refill any oil. This is done by lifting the oil injector now and then during the filling.

Syringe (6883 053-B) should be used for filling oil.

Oil type: ATF, type A, Suffix A

Producers designation: Shell Donax T6  
Mobil fluid ATF 200  
Esso ATF

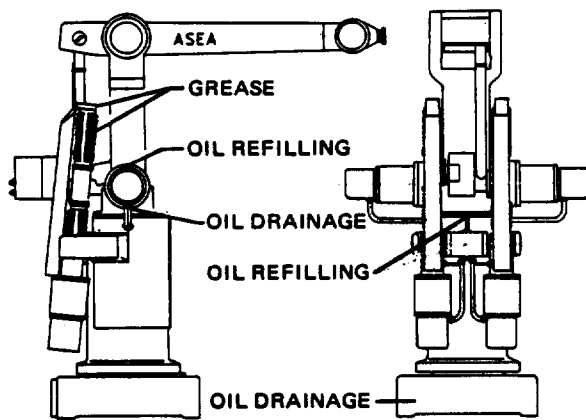


Fig 1A

### Oil quantity IRB 6/2, L6/2:

C (1:st) axis 75 cm<sup>3</sup>

E (4:th) axis 30 cm<sup>3</sup>

P (5:th) axis 30 cm<sup>3</sup>

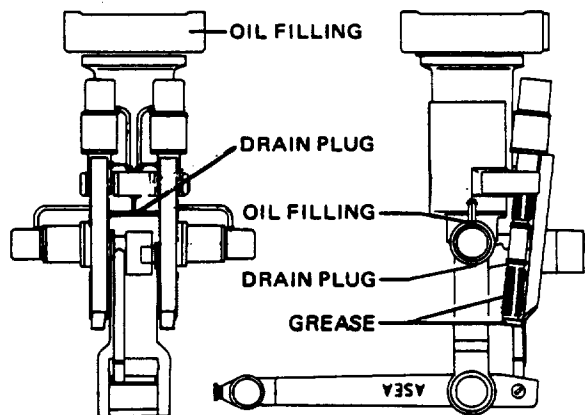


Fig 1B

C (1:st) axis 260 cm<sup>3</sup> 1)

C (1:st) axis 330 cm<sup>3</sup> 2)

E (4:th) axis 30 cm<sup>3</sup>

P (5:th) axis 30 cm<sup>3</sup>

1) If the drain plug is located on one side of the gearbox.

2) If the drain plug is located on the intermediate plate.

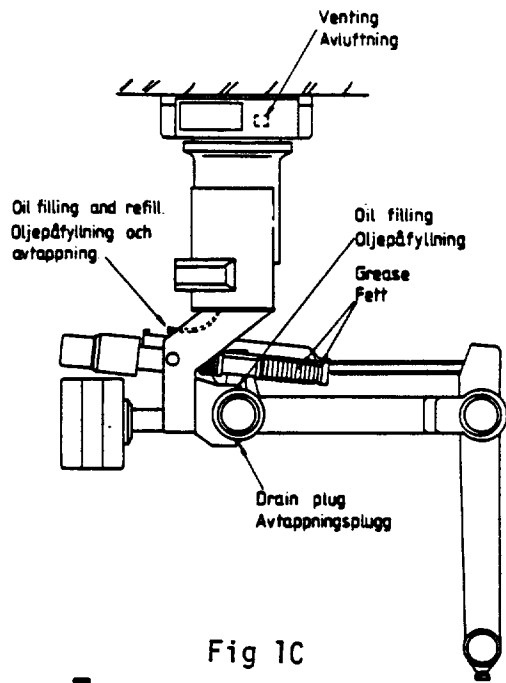


Fig 1 C

**Oil quantity IRB G6/2:**

C (1:st) axis 330 cm<sup>3</sup>

E (4:th) axis 30 cm<sup>3</sup>

P (5:th) axis 30 cm<sup>3</sup>

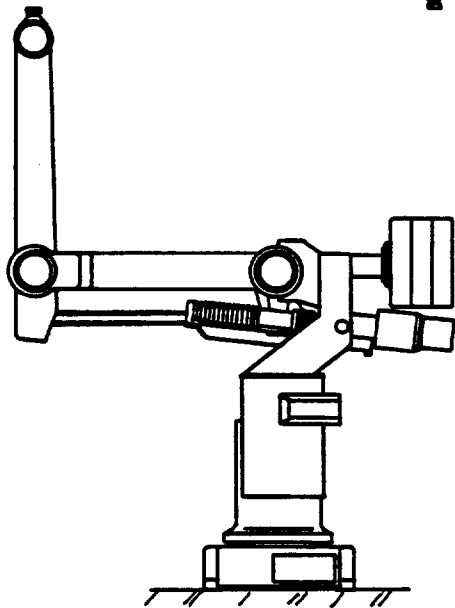


Fig 1 D

C (1:st) axis 75 cm<sup>3</sup>

E (4:th) axis 30 cm<sup>3</sup>

P (5:th) axis 30 cm<sup>3</sup>

**Lubrication of ball screws**

The ball screws shall be lubricated every three months or after 300 hours in operation.

Recommended lubricant: ESSO BEACON 2 or similar grade.

- o The protective bellows over the ball screws must be released to enable lubrication of the ball screws. It might be sufficient to cut only the lower cable tie (Fig 2 A item 1) of the upper bellow and the upper cable tie (Fig. 2 B item 1) of the lower bellow.
- o Move the ballnut to its lowest position. Press up the upper bellow away from the ball nut. Wipe off old grease with paper or a lint-free cloth. **Don't polish and don't use degreasing chemicals!**  
Move the ballnut to its uppermost position. Press the lower bellow downwards away from the ballnut and wipe off old grease from the lower part of the ball screw.
- o With the ball nut still at its uppermost position apply new grease with a brush direct on the threads of the ballscrew. Move the ball nut up and down a number of times and if necessary apply some more grease.
- o **CAUTION!** Don't apply too much grease because then the mechanical resistance will be too high and might cause emergency stops later when the robot runs. Repeat for the upper part of the ball screw and apply some grease on the upper ball bearing.
- o When replacing the bellows fit new cable ties.
- o If any of the bellows are worn they should be replaced by new ones in order to avoid dust or dirt entering the ball nut. For information on replacing the bellows, see the SERVICE MANUAL.

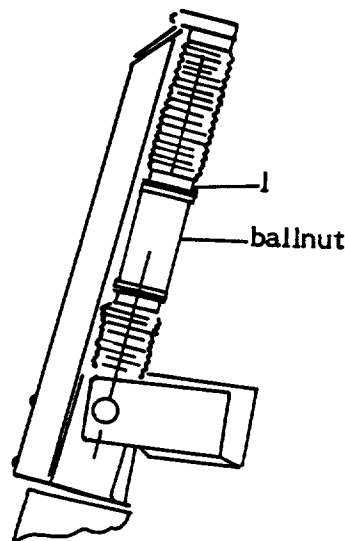


Fig. 2 A

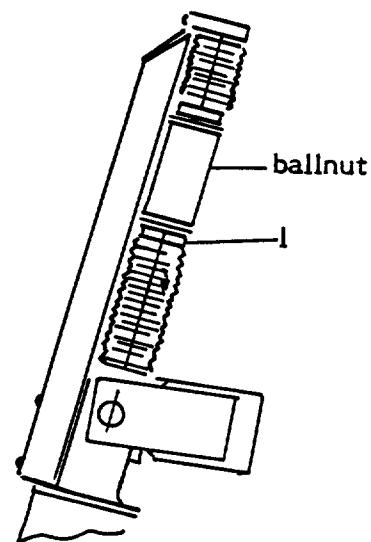


Fig. 2 B

### Lubrication of the 6:th axis

#### Lubrication of gears

Recommended lubricant: ESSO BEACON 2 or similar grade

#### Conical angle gear:

- Shall be lubricated every 3 months or after 300 hours in operation
- Open cover 1 or 5 (see fig 3) and grease the gear. Use a thin brush so that the grease reaches down in the cogs. Rotate the outgoing axis so that the whole gear is reached.

#### Cylindrical gear unit:

- Shall be lubricated every 6 months or after 1000 hours in operation.
- Open cover 3 (see fig 3). Refill new grease.

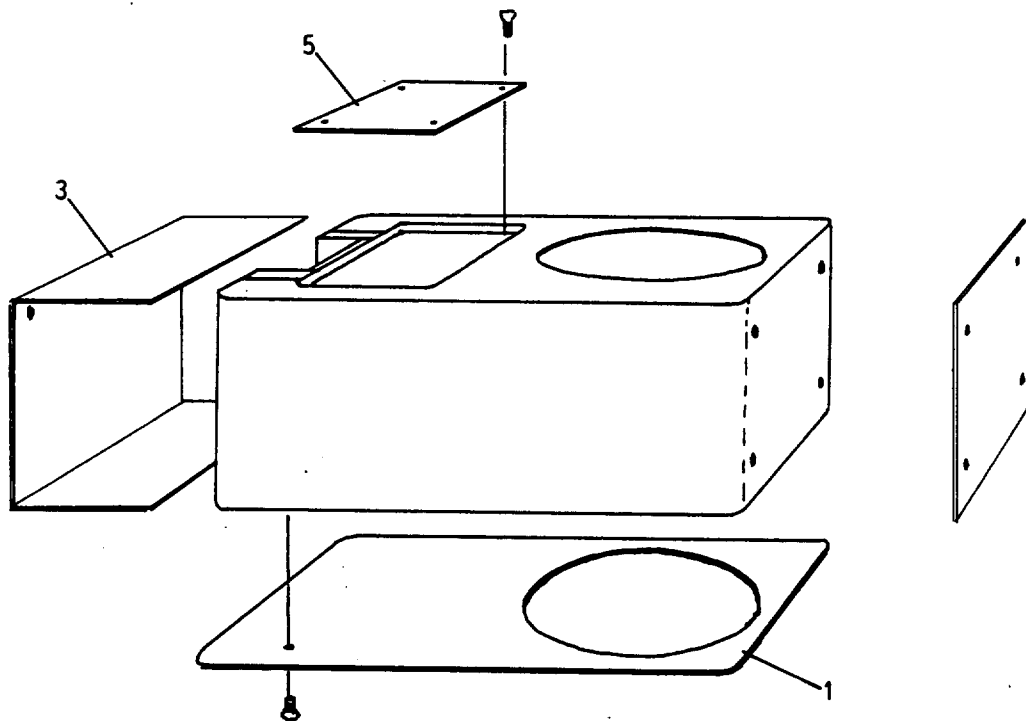


Fig. 3

## 3 MAINTENANCE OF ELECTRONICS

The control system is composed of various electronic units. The electronic components require only visual inspection and occasional vacuum-cleaning.

Routine inspection of control cabinet.

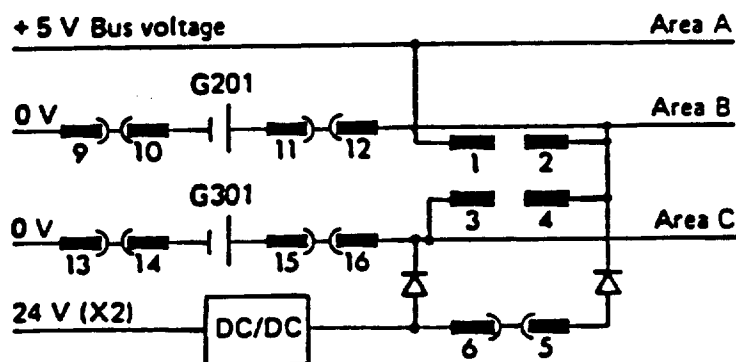
The control cabinet is completely enclosed and the electronics thus protected from normal factory surroundings. However, in surroundings with much dust the cabinet should be inspected regularly inside. Any deposits should then be removed by brushing or vacuum-cleaning, for instance. The power should be disconnected.

- o Check that the fans are working both in the control cabinet and in the floppy disk enclosure.
- o Check that the sealing strip and cable grammets in the cabinet seal properly, so that dirt is not sucked into the control system.
- o Check that the cabling to the programming unit is not visibly damaged in any way.

### Replacing the batteries for the memory back-up

The two batteries for the memory back-up are soldered to the circuit boards DSMB 124 and DSMB 125 respectively. The batteries have an expected life of minimum two years. To preserve the memory back-up it is suggested that the batteries be replaced every two year. In order to avoid emptying the memory in the process of replacing the batteries, the following procedure is at hand.

- o Transfer the memory to a floppy disk before the circuit board is removed from the electronics rack.
- o Switch off the main switch.
- o Remove the circuit board from the electronics rack.
- o Remove S2:9-10, 11-12 for battery G 201 and S2:13-14, 15-16 for battery G 301. See the circuit diagram.



- o Use a grounded or otherwise isolated soldering iron to remove the batteries. Note the polarity. Cut off the plastic straps used as battery clamps.
- o Clamp replacement batteries with straps ASEA 2166 2054-1 and solder the batteries. Note the polarity.
- o Return S2:9-10, 11-12 and 13-14, 15-16 to their original positions.
- o Place the circuit board in the electronics rack.
- o The system is now operational.

#### **Indicator lamps**

- o Check that all lamps on the control panel are working by pressing the lamp test button.
- o Defective lamps can be replaced by turning the plastic lens (anti-clockwise) and then removing the bayonet-fitting lamp by pressing a piece of plastic or rubber tubing over the bulb and turning 1/4 turn anti-clockwise. Replace in reverse order.

#### **Floppy disk unit**

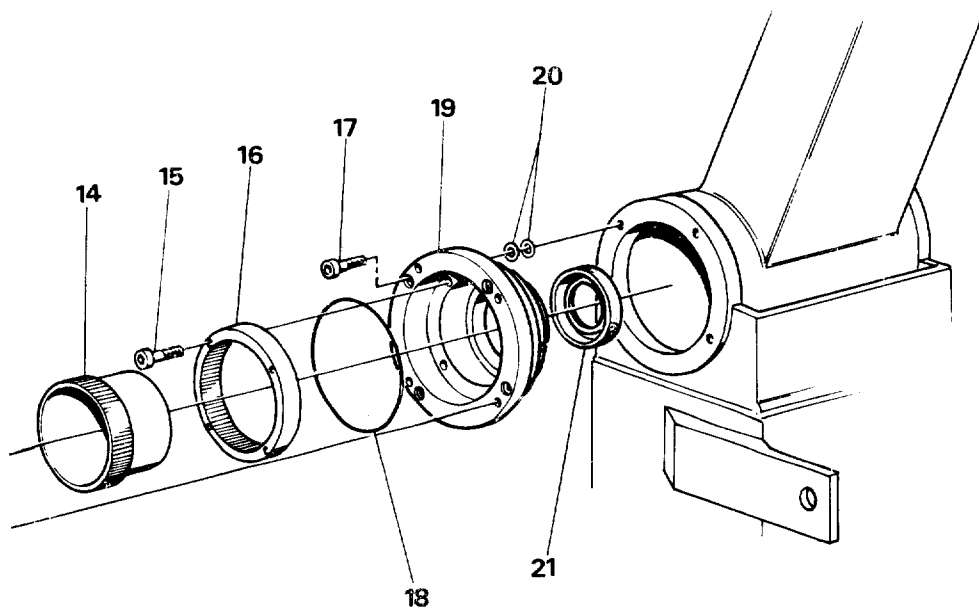
- o The floppy disk unit should be protected from dirt and fine particles as much as possible. This is best achieved by storing the unit in dirtfree environment (eg. office) when it is not being used. If the unit is in continuous use, make sure that the protective cover plate is always shut.
- o Floppy disks should always be stored in an office environment and at normal room temperature. Temperatures exceeding +50°C can permanently damage the information stored on a disk. In areas where magnetic interference is likely the disks should be stored in a steel box.
- o The floppy disk unit can be tested by first recording a program and then reading it back to the control system again. The built-in function tests will then check if the unit is functioning correctly. As long as no error lights or error messages are apparent, the unit is satisfactory.
- o If difficulty in reading or writing is experienced, the read and write head can be cleaned by using a special cleaning disk (BASF 5 1/4" doublesided floppy disk) in conjunction with the Test adapter program for the disk unit (see SERVICE MANUAL).



# ASEA

## Industrial robot system

## Spare parts set for **IRB 6/2, IRB L 6/2**



Art. No 6397 004-13

Replaces CK 09 - 1507E, January 1983

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CK 09-1507E

Jan. 1984

Spare Parts

## CONTENTS

		Page
1	Introduction	2
2	Spare Parts Set, Mechanical	3
3	Spare Parts Set, Electrical	4
4	Spare Parts, Figures and Location	5-11

ASEA reserves the right to change design, technical data and measurements without previous notice.

**1.**  
**Introduction**

The amount of productive time lost to an industry as a result of a mechanical breakdown and the subsequent repairs is always difficult to predict.

The time lost is naturally dependent to a great extent on the nature of the breakdown and the time taken in the actual repairs, but the greatest amount of time lost is usually that wasted in waiting for spare parts. To reduce such a time and production losses to a minimum, it is wise for the users having to hand, certain spare parts for the equipment in use.

For users of ASEA Industrial Robot Systems, ASEA has assembled different types of sets of spares of those parts known to need the most frequent replacement.

These spare parts sets are available in two sizes, large and small, and contain adequate material for all levels of reparation skill and resources.

Each set is intended for one robot. A combination of one large set and a number of small sets is suitable for an installation containing more than one robot.

This information pamphlet contains lists of the details and units contained in the spare parts sets and illustrations showing their location in the robot.

**Instructions concerning dismantling of erroneous parts and re-assembling of spare parts are given in the Service Manual IRB 6/2.**

2.

**SPARE PARTS SET, IRB**

IRB L 6/2 1 Mechanical Large Set YB 121 002-CU  
 IRB L 6/2 1 Mechanical Small Set YB 121 002-CT  
 IRB L 6/2 1 Mechanical Large Set YB 121 002-BK  
 IRB L 6/2 1 Mechanical Small Set YB 121 002-BH

ITEM	ARTICLE No	LARGE SET	SMALL SET	LOCATION IN ROBOT	RE-MARKS
Ball screw unit	6397 001-ACC	1	1	A	
Bearing	2213 0047-1	1		A1	
Bearing	2213 6001-102	1		A2	
Bellows	2516 013-1	2	2	A3	
Ball screw	2323 007-A	1		A4	
Motor + tacho	4419 545-A	1	1	B1	
Resolver	5766 388-1	1		B2	
Upper linkage rod	2184 241-A	2		C1	
Lower linkage rod	2184 241-B	2		C2	For IRB 6/2 only
Lower linkage rod	2184 241-E	2		C3	For IRB L 6/2 only
Rod end bearing RH	2219 239-A	2		C4	Complete
Rod end bearing LH	2219 239-B	2		C5	"
Rod end bearing RH	2219 240-A	2		C6	"
Rod end bearing LH	2219 240-B	2		C7	"
Spring unit	6397 001-ABS	1		C8	For IRB L 6/2 only
Gear box	2353 001-E	1		D1	
Gear box	2353 001-D	1		D2	
Seal	2216 261-1	3		D3	
Spiral cable	2623 009-1	6	2	E1	
Spiral cable	2625 005-1	4	1	E2	
Socket connector	RK 924 008-AB	2		E5	
Sync. bar	2171 409-16	1		F1	
Reed switch	5633 794-1	2	2	F2	
Reed switch	5633 794-5	1	1	F3	
Maqnet	5633 794-2	3	2	F4	

3.  
SPARE PARTS SET, IRB 6/2, L 6/2

1 Electrical Large Set 50 Hz YB 161 100-AL  
 1 Electrical Large Set 60 Hz YB 161 100-AR  
 1 Electrical Small Set YB 161 100-AK

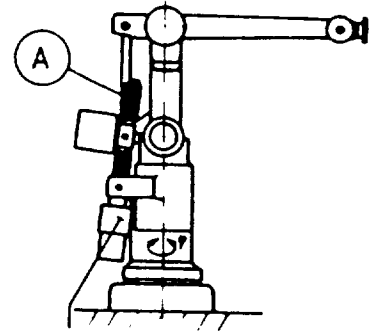
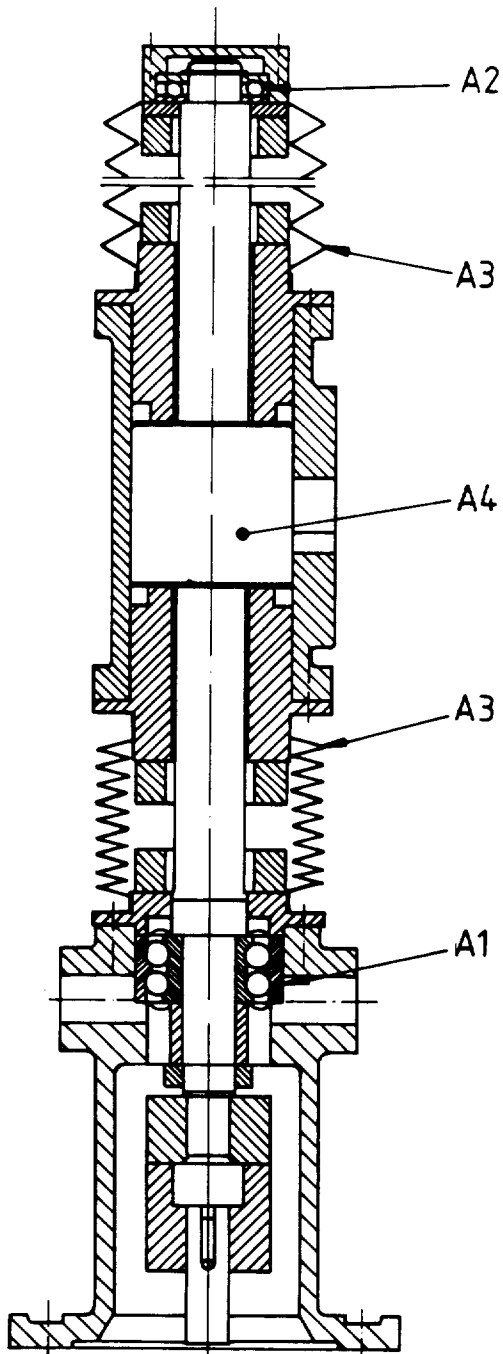
ITEM	ARTICLE No	LARGE SET	SMALL SET	LOCATION IN ROBOT	RE-MARKS
PC-relay 24 V	5633 890-3	1		D14	
Contactora 50 Hz	SK 814 001-AB	1		H22	
Contactora 60 Hz	SK 814 001-AA	1		H22	
Diode module	4858 226-3	1		H24	
Electr.capacitor	4987 070-307	1		H24	
Single board comp DSPC 153	5731 0256-BA	1		D14	
PD-bus DSCA 121	5752 0001-U	1		D14	
RD-converter DSQC 104	YB 161 102-AE	1		D14	
Res exciter DSQC 103	YB 161 102-AD	1		D14	
I/O board DSDX 110	YB 161 102-AH	1		D14	
Axis proc. DSPA 110	YB 161 102-AK	1		D14	
Servo cont unit YYT 120A	YT 212 001-AC	1		D22	
Servo power unit YTEA 250-8	YT 212 001-AE	1		D22	
Adjusting set	YB 161 101-CZ	1		D22	
Filament lamp	5911 069-4	10	10	F16	
Fuse 10A	SK 161 0007	5	5	H24 D21	
Fuse 6A	SK 161 0005	5	5	H24	
Fuse 2A	SK 161 0001	5	5	H24	
Fuse 16A	SK 161 0009	10	10	H24	
Quick fuse ZA	5672 2011-17	10	10		
Battery	4944 016-2	2	2		
Quick fuse 100mA	5672 2011-4	5		D14	
Quick fuse 1 A	5672 2011-14	5	5		
Time fuse 16 A	SK 161 0041	5	5		
Quick fuse 6.3 A	5672 2011-22	10	10		
Quick fuse 8 A	5672 2011-23	5	5		
UDN 2983	4855 351-2	5	5		Final test for DSDX110, DSDO110

4.

### SPARE PARTS, FIGURES AND LOCATION

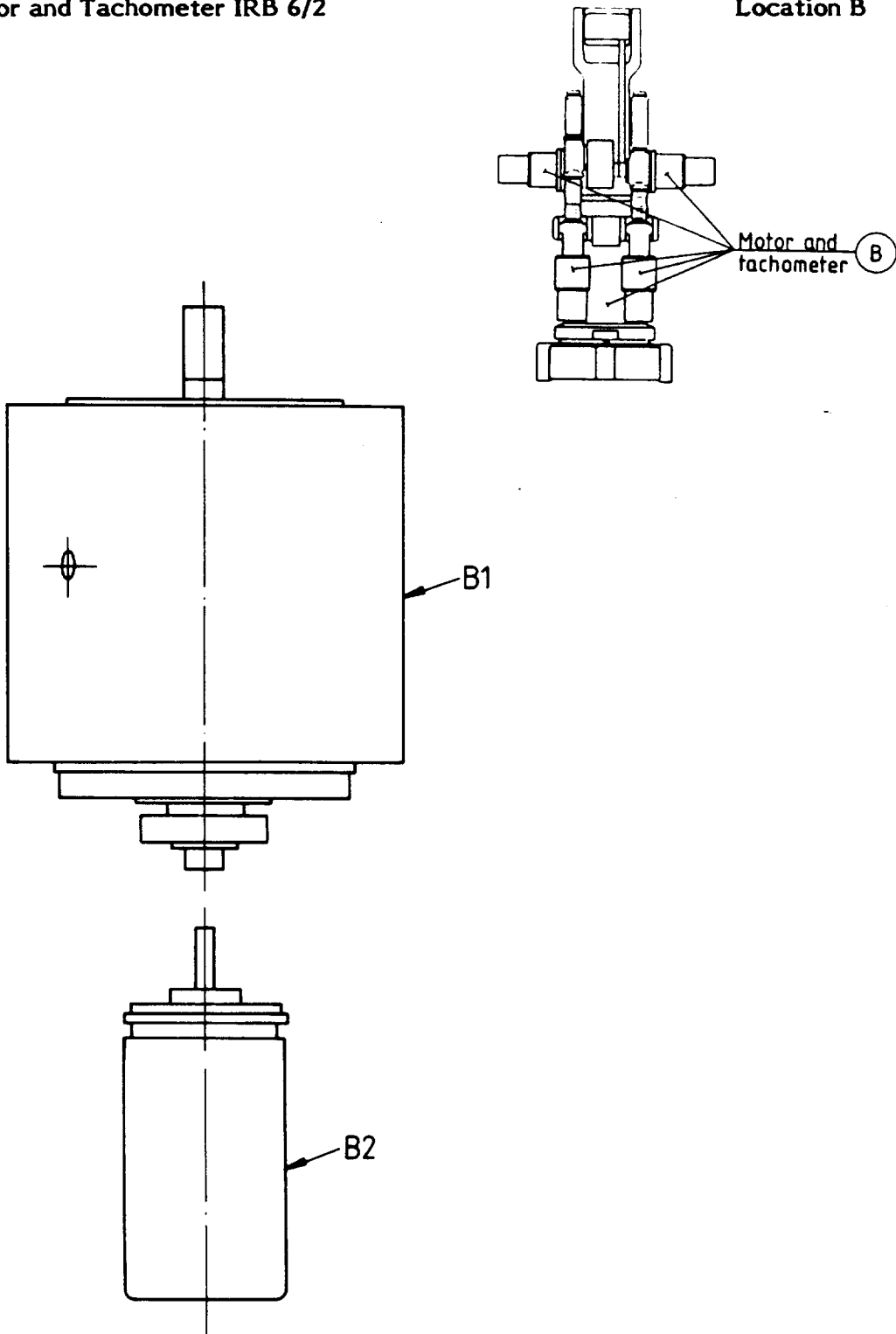
#### Ball Screw Unit IRB 6/2

#### Location A



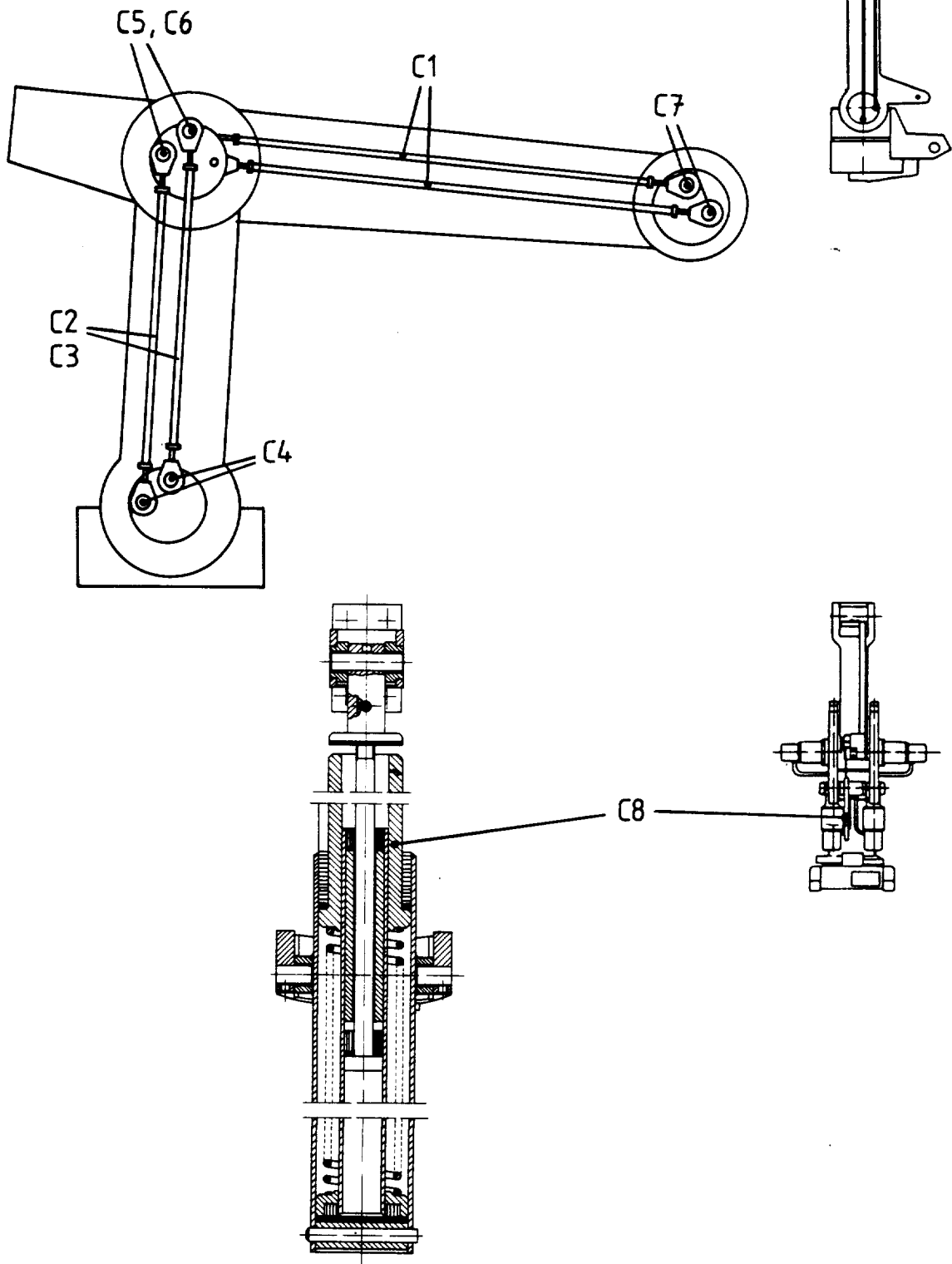
Motor and Tachometer IRB 6/2

Location B



Linkage Rod System IRB 6/2  
Spring unit IRB L 6/2

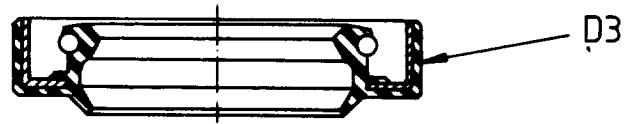
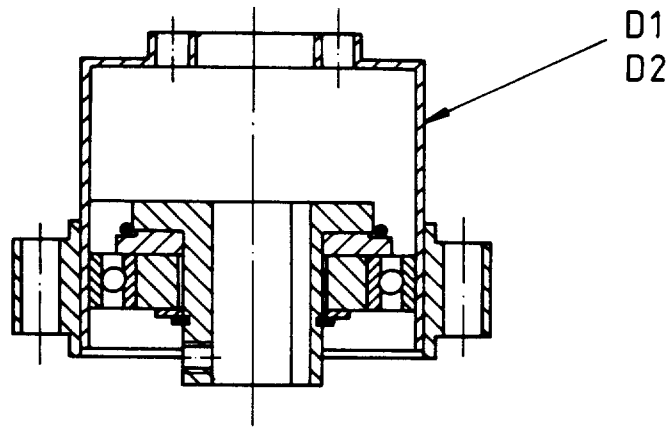
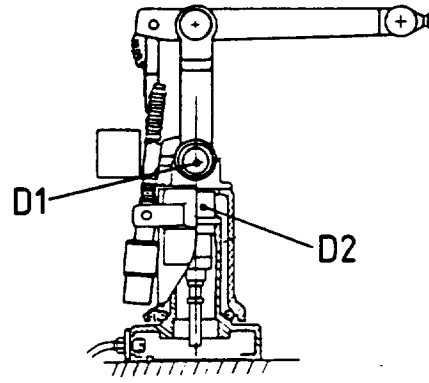
Location C

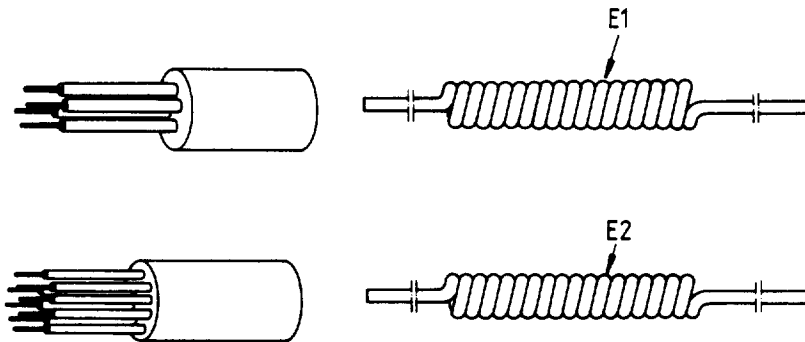
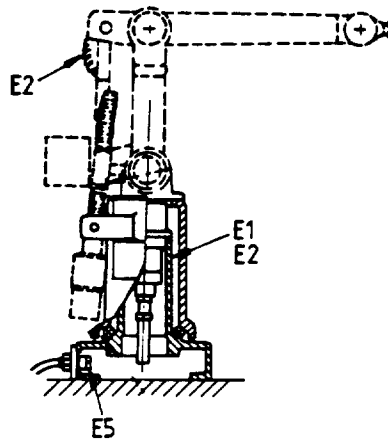




Gear Box IRB 6/2

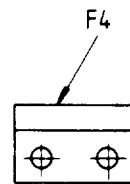
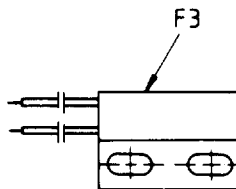
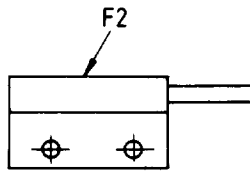
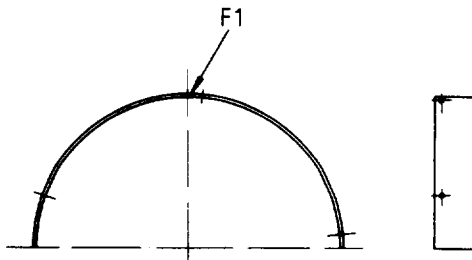
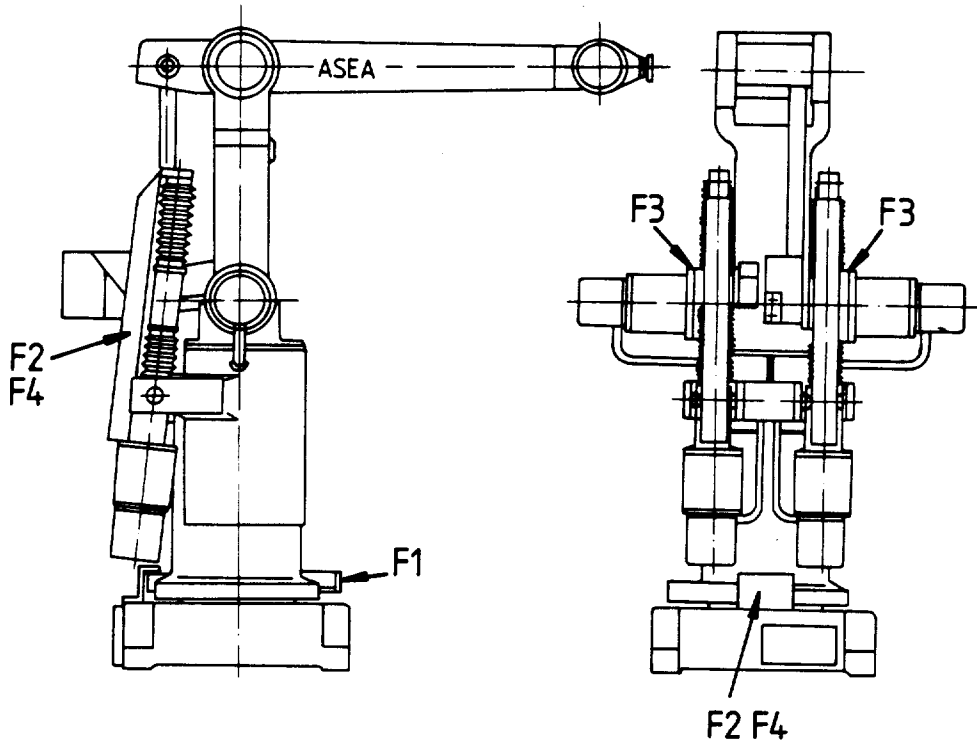
Location D



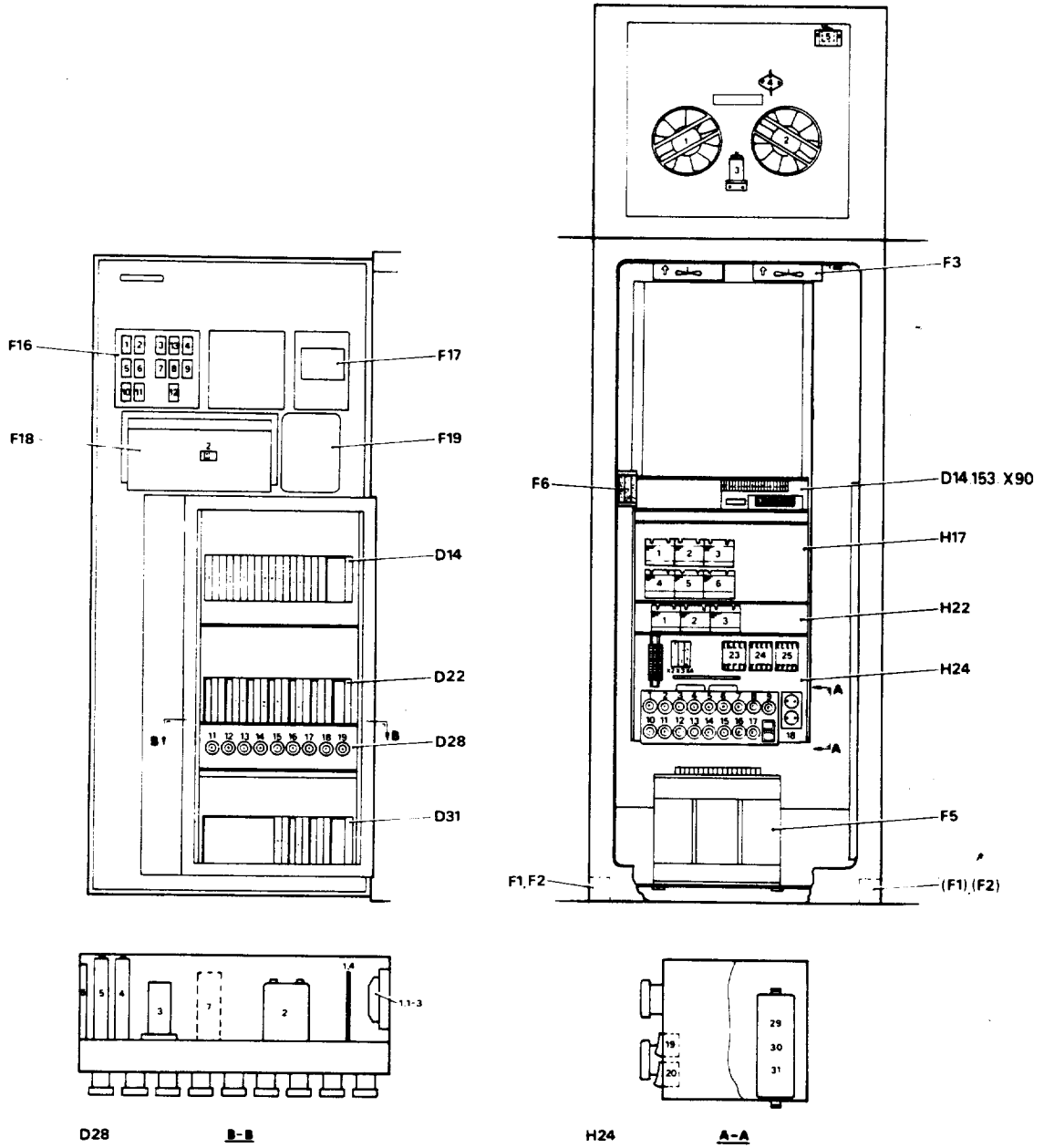


Switches IRB 6/2

Location F



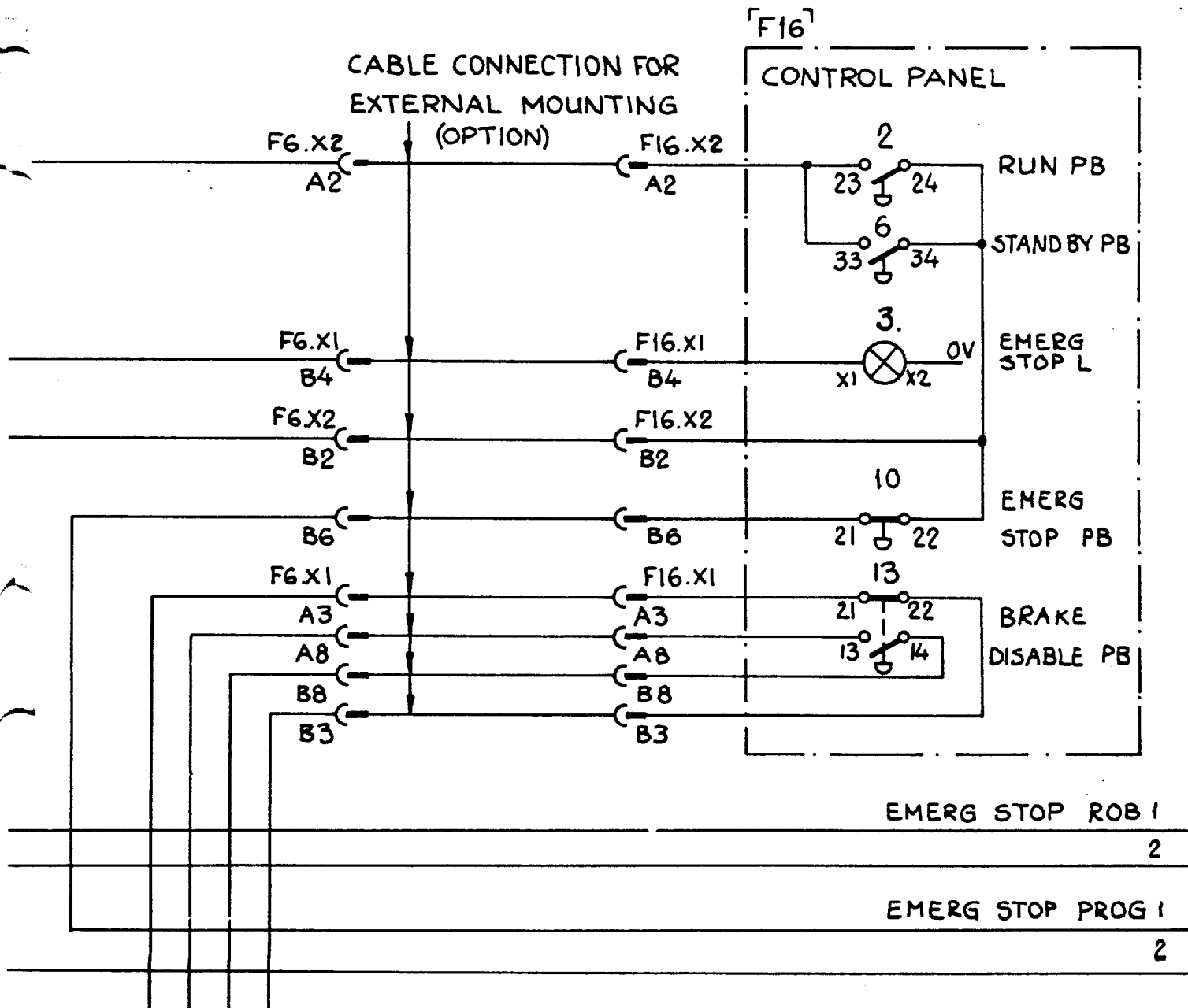
# Control Cubicle IRB 6/2



# ASEA

## Industrial Robot System

### IRB L6/2 IRB G6/2



6397 004-009

CK 09-1503E

SEP 1986

CIRCUIT DIAGRAMS

## Circuit Diagrams for ASEA Industrial Robot System IRB 6/2

The symbols used in the diagrams are drawn in accordance with IEC publication 117.

CONTENTS	Diagram No
<b>Mechanical Robot</b>	
IRB 6/2,L6/2	6397 003-BA
IRB G6/2	6397 003-LC
IRB 6/2,L6/2 with ABSM	6397 003-TH
IRB G6/2 with ABSM	6397 003-TK
<b>Control Cabinet</b>	
-Control system	6704 100-BCA
-Bus Back Plane	6704 102-ANA
-Bus Board Drive Units	6704 102-AAA

All documents included in this instruction are subject to alterations, additions or deletions without notice.

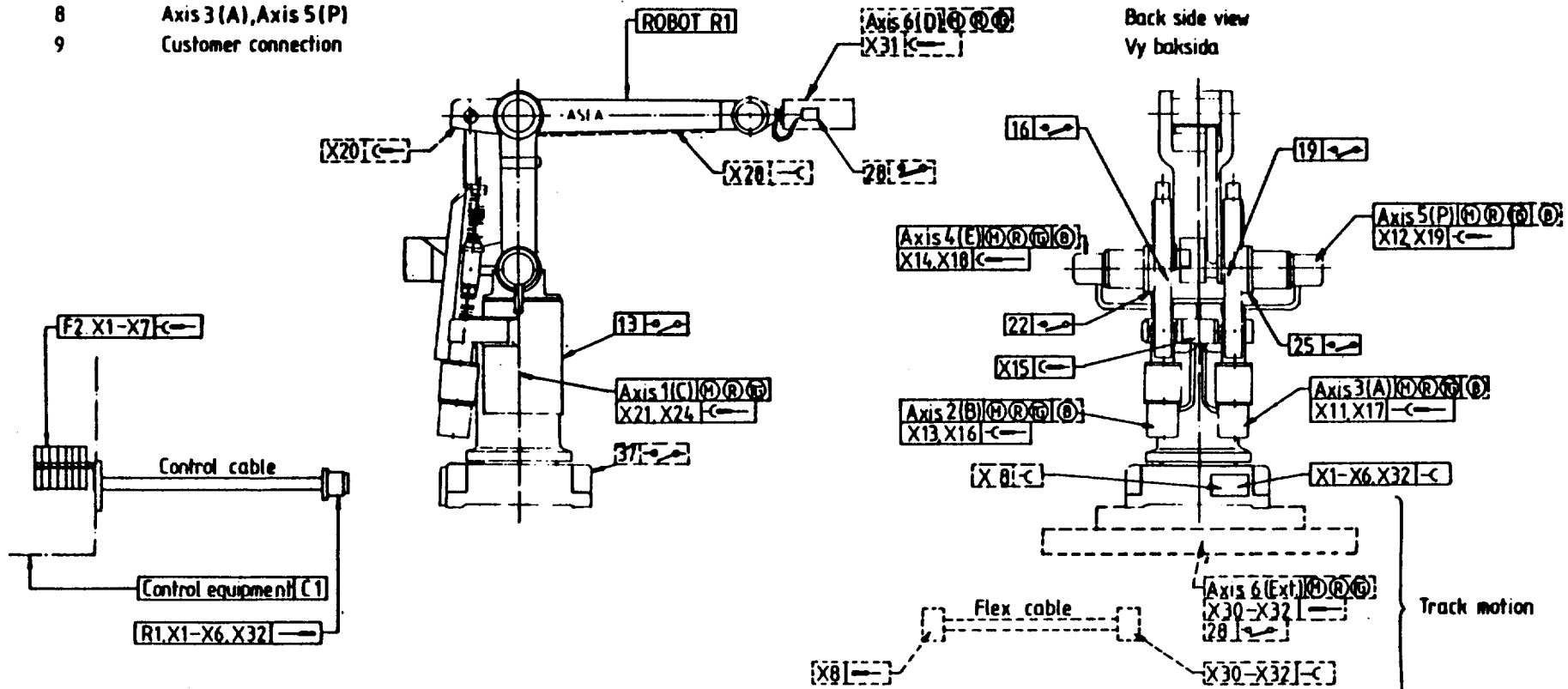
Art. No. 6397 004-9

Sheet 2, Found rev. 1			JKCL	9334
Sh. 1 and 6 rev. 1	RT 162	AS	JKCL	8417
Sheet 2 rev. 1	358	TF	JAKA	8434
Sheet 6 rev. 1	RI 506	AT	JAKA	7174
Sheet 6 rev. 1	RI 506	AT	JAKA	8446
Sheet 6 rev. 1	RI 605	NA	JAKA	8521
C-type change place.				
Sh. 2, 4, 6 rev. 1	RI 585	du	JAKA	8528

Industrial robot IRB 6/2		6397 003-BA		1
ASEA		Kaufmann	Wolfgram	2
		Table	JKCL	83.22

Sheet	Contents
2-5	Control cable
6	Axis 1(C), Axis 6 (D)
7	Axis 2(B), Axis 4 (E)
8	Axis 3(A), Axis 5(P)
9	Customer connection

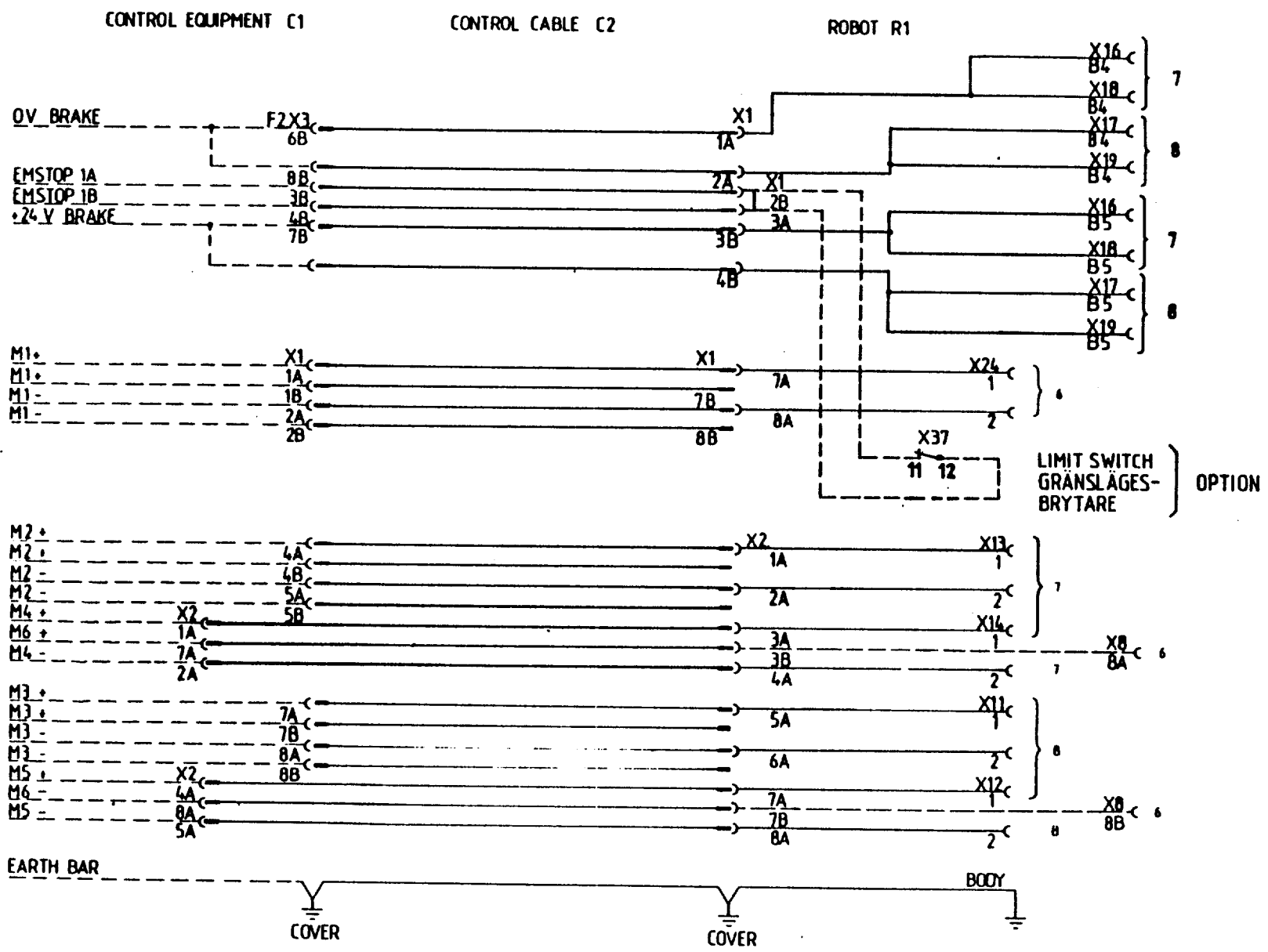
Review: Location axis connectors (←) and switches (→)



Remark: Either Axis 6 (D) or track motion can be connected to X8.

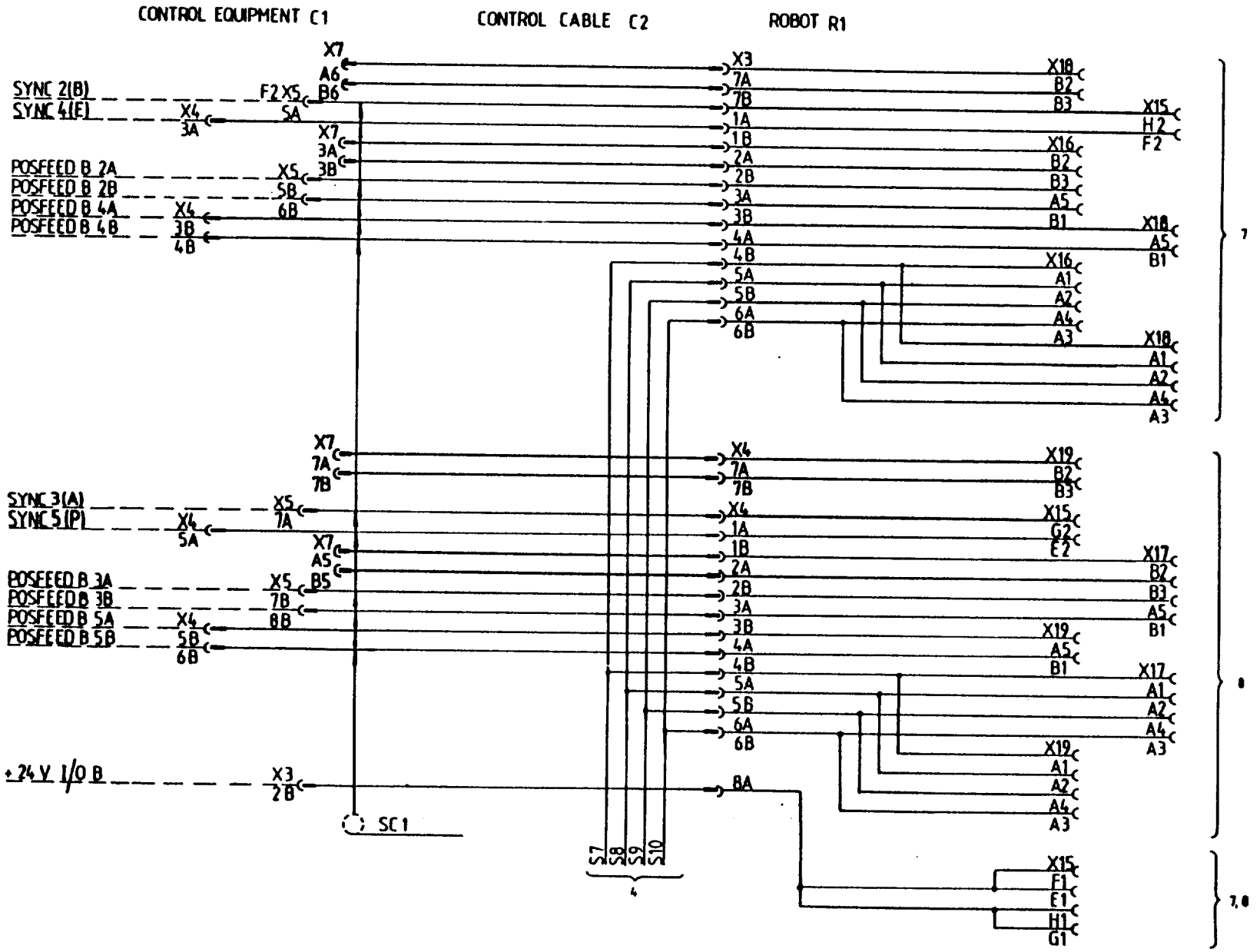
1	Option cabling for brakes added	HL	JKCL	83.34
3	Cabling for brakes add. R1358	TF	JAAA	84.35
6	Limit switches (optional) add.	dll	JAKA	85.34

Oversiktsschema Block diagram    X Kretsdiagram Circuit diagram  
**Robot IRB 6/2**  
**ASEA**  
 Kaufmann #  
 Wolfram (A)    B&K JKCL    83.22  
**6397 003-BA**



01952-428149





Robot IRB 6/2  
**ASEA**

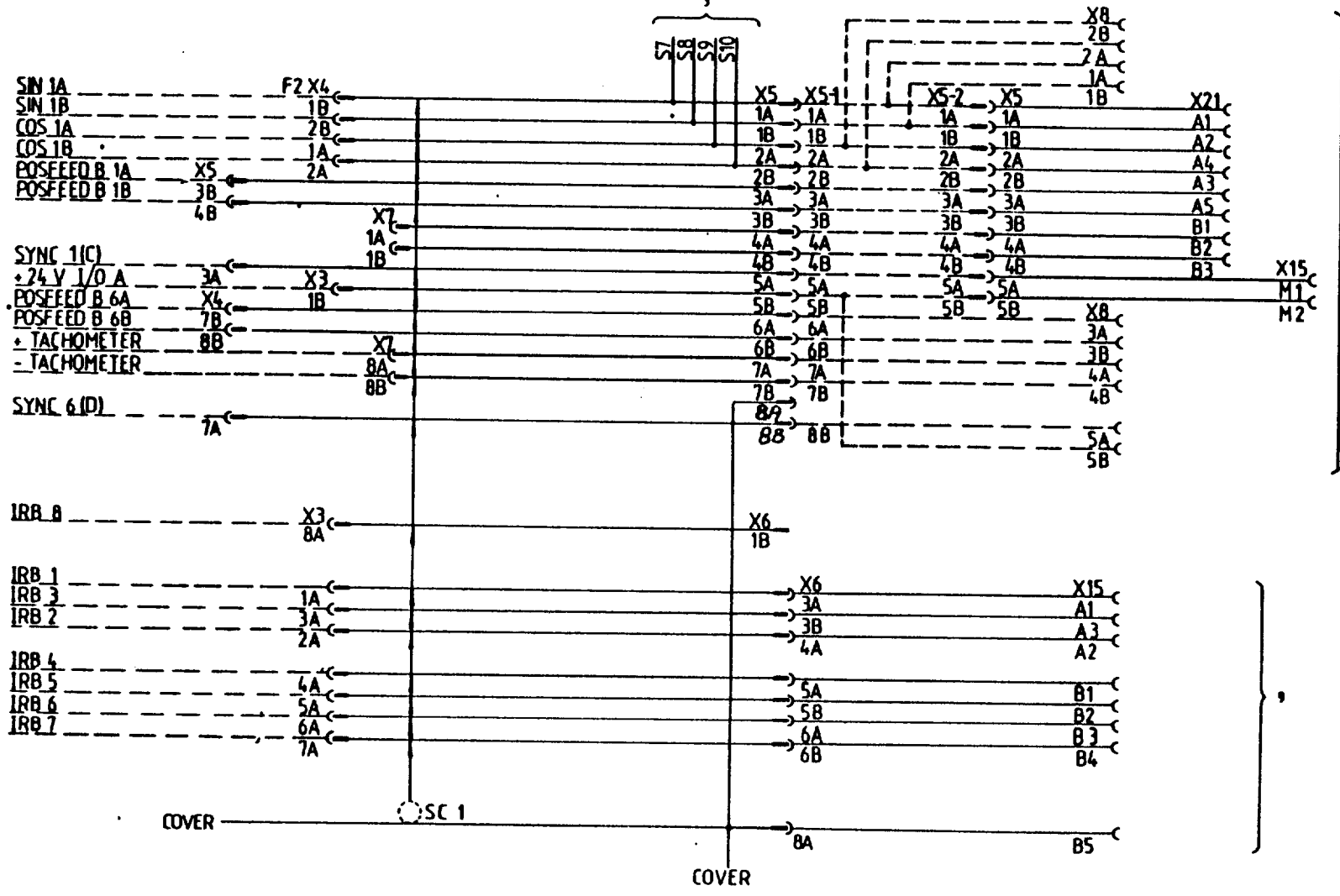
6397 003-BA

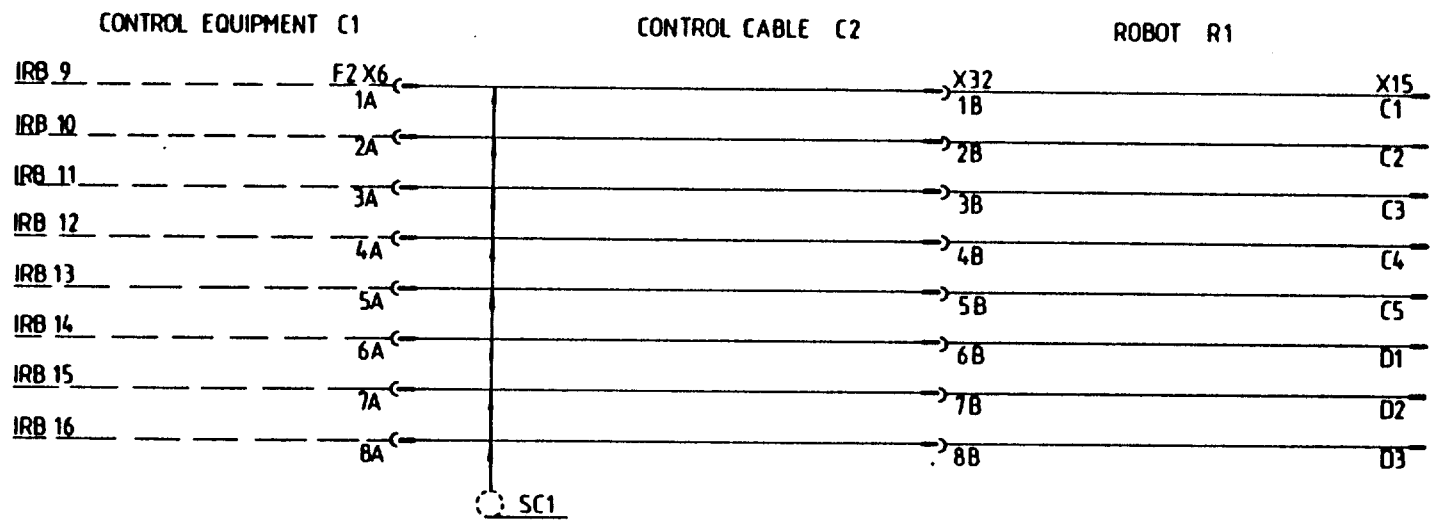
Kaufmann H. Wolfgram W. BHe JKCL 83 22

CONTROL EQUIPMENT C1

CONTROL CABLE C2

ROBOT R1





SC1 SC1

1

2

3

Rev.	Description	Author	Drawn	Checked
2	Revised to 3d wrist motion RI 162	BS	JKCL	8417
3	J1, J2 was: J1, J2 RI 35A	BS	JAKA	8434
4	Changed colour X31, Hand 15	S	JAKA	8447
5	2A, 2B changed	JM	JAKA	8531
6	X15, M1, M2 was S3, S4	BS	JAKA	8535

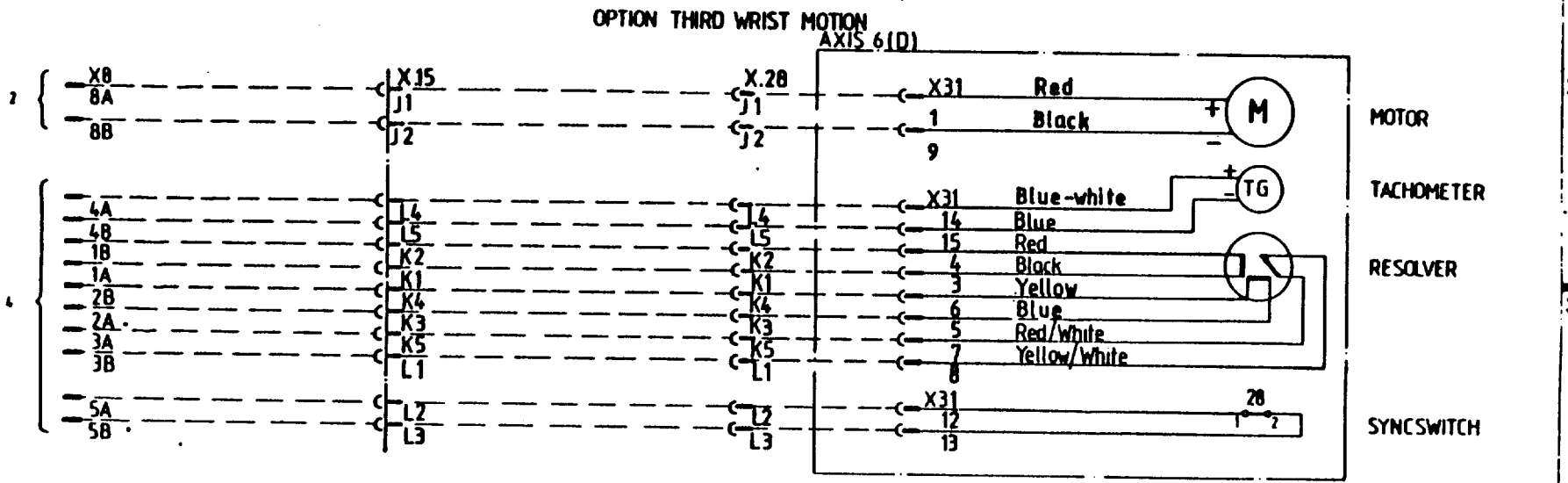
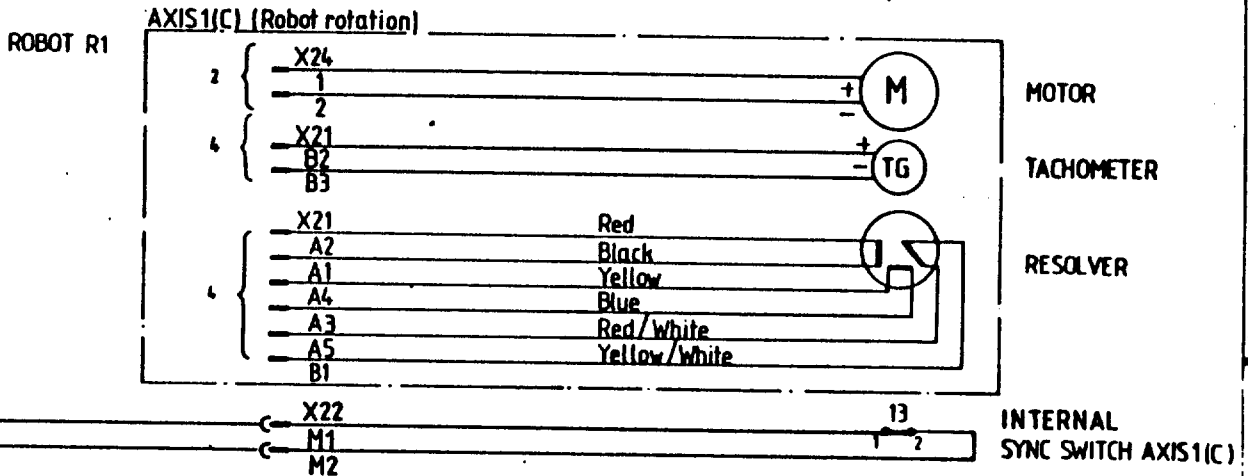
Übersichtsschema Block diagram    X    Kitzschema Circuit diagram

**Robot IRB 6/2**

6397 003-BA

Drawing: Part and No. *Kaufmann Hc*    Drawing: Part and No. *Wolfram W*    Drawing: Part and No. *Blie JKCL*

Rev. 6  
 Rev. 7  
 Rev. 83.22

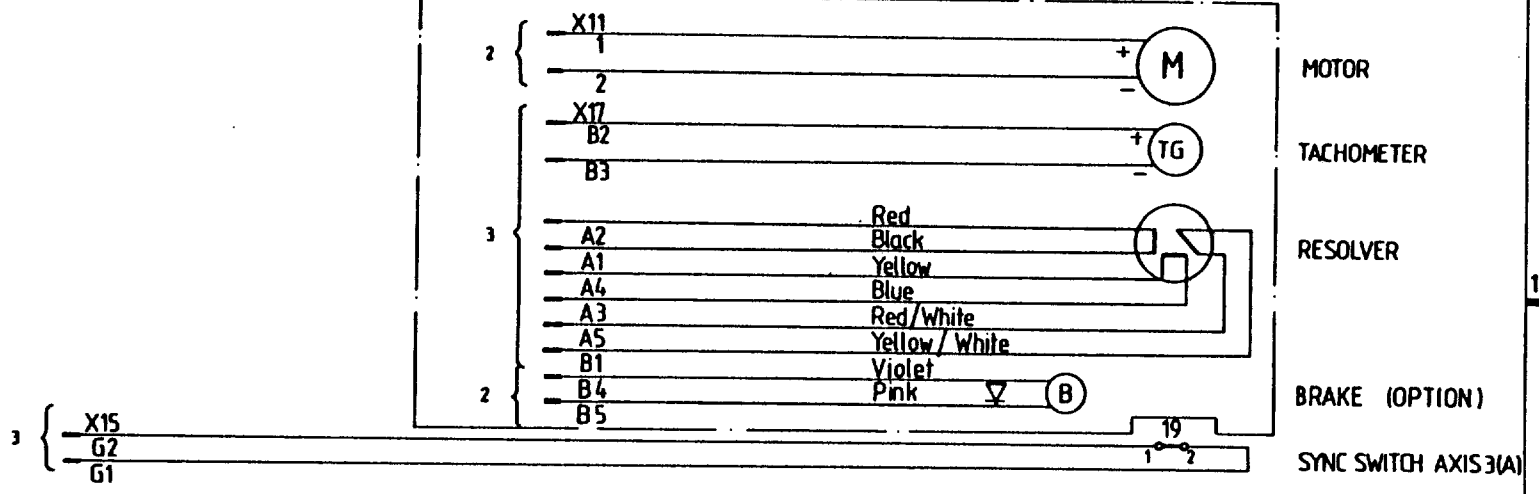


01952 428149

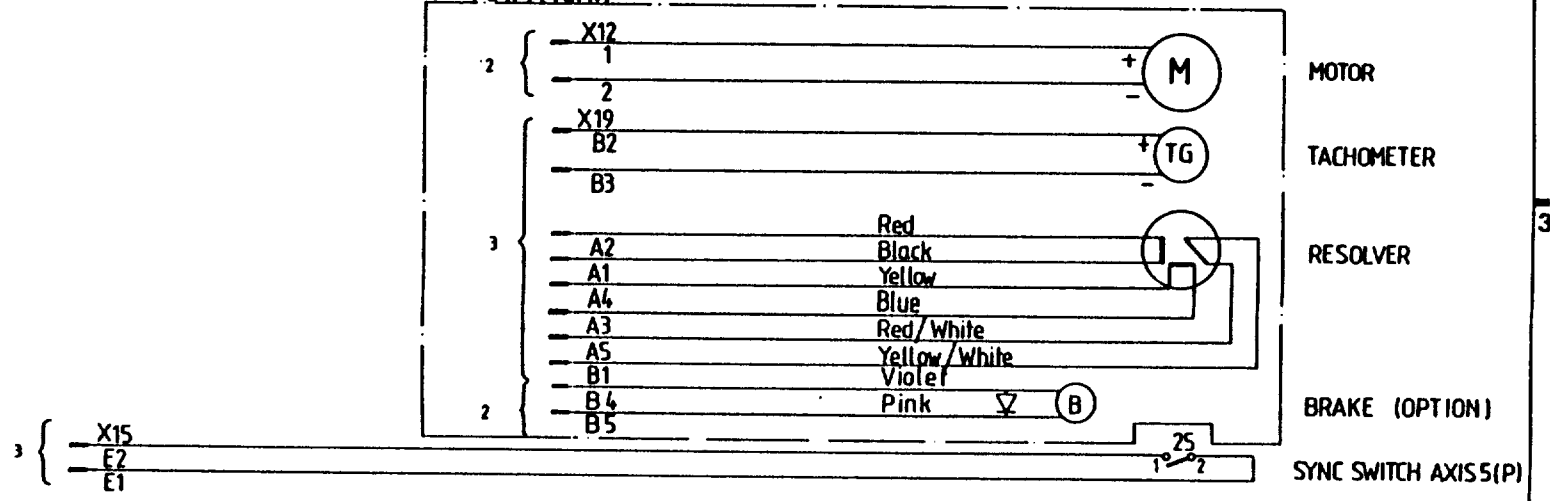


ROBOT R1

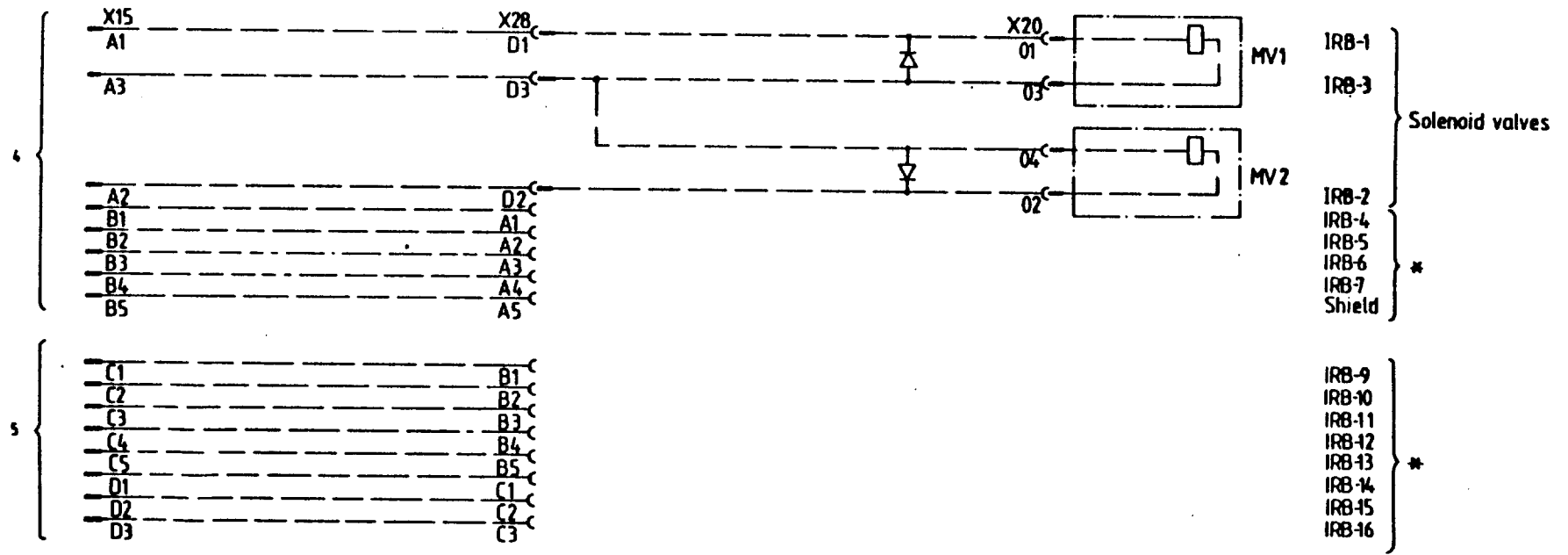
AXIS 3 (A) (Upper arm)



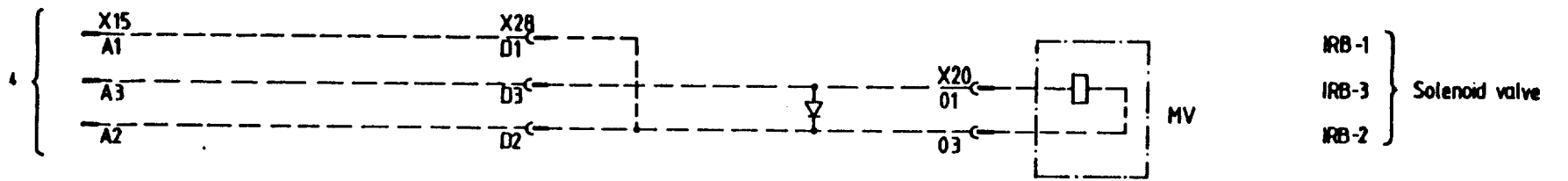
AXIS 5 (P) (Turn)



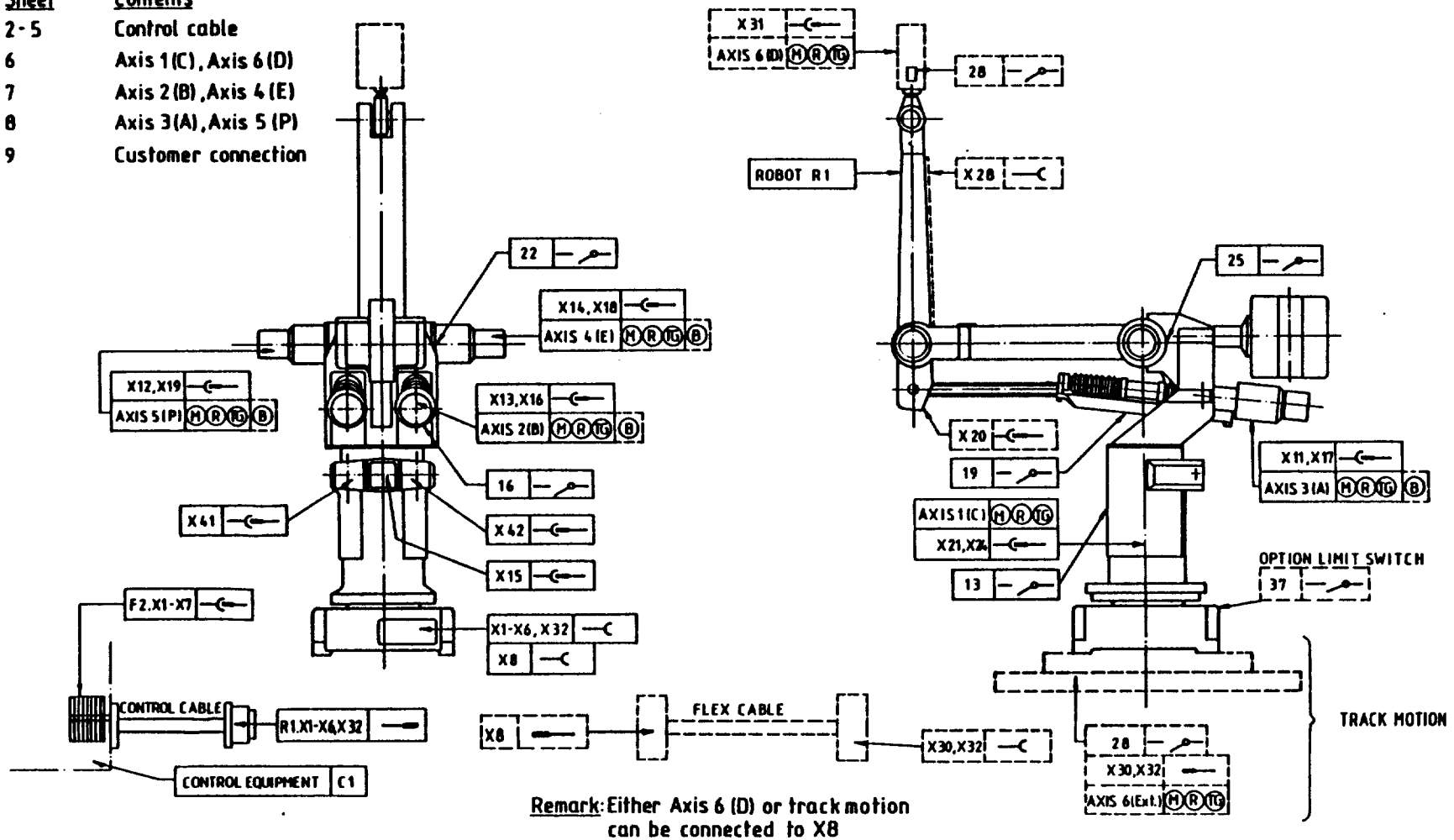
The alternative two solenoid valves



The alternative one solenoid valve



Sheet	Contents
2-5	Control cable
6	Axis 1(C), Axis 6(D)
7	Axis 2(B), Axis 4(E)
8	Axis 3(A), Axis 5(P)
9	Customer connection



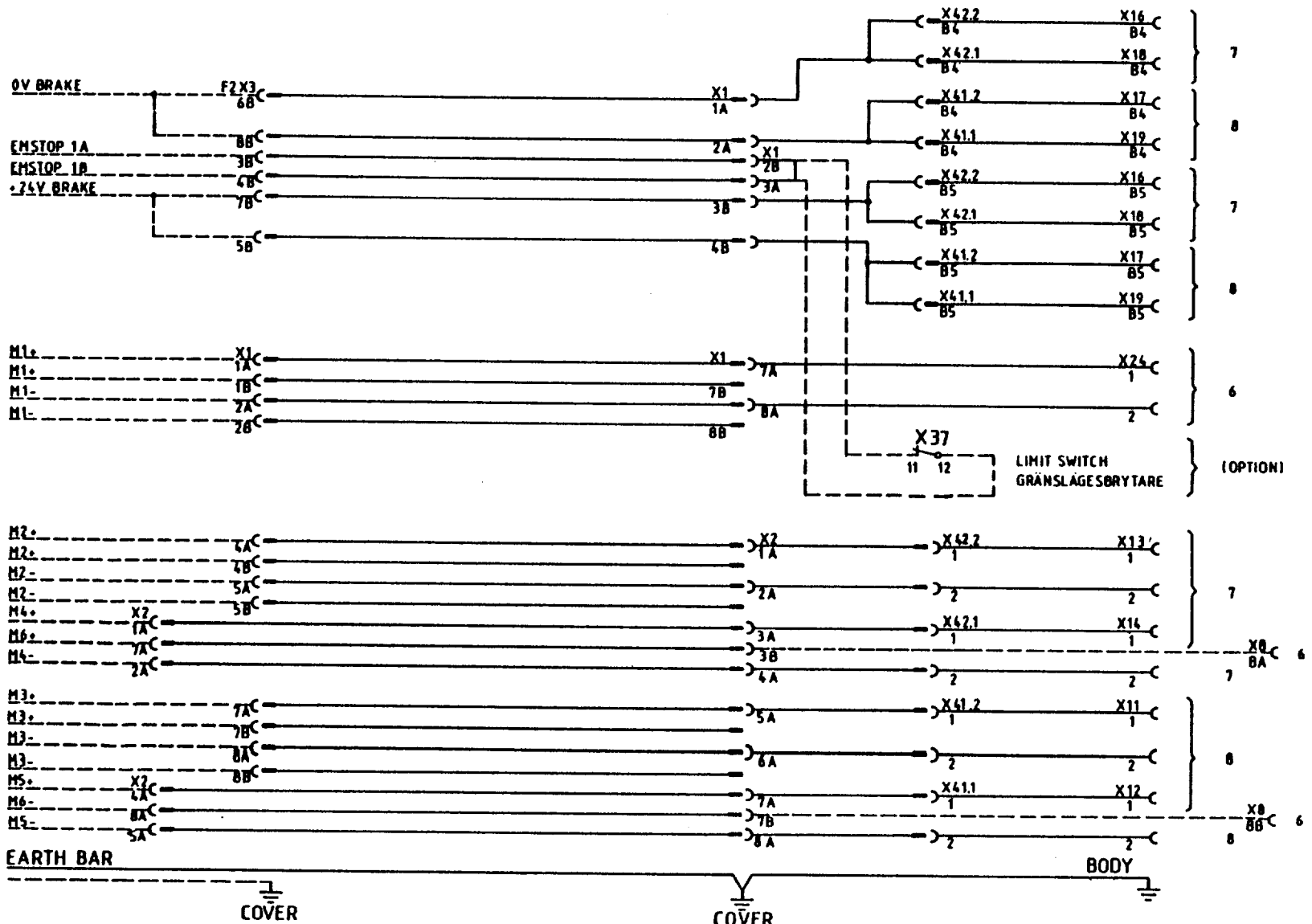
3	Compare the plan to the drawing R1 665	All	85	05	Design checked by <b>Kaufmann</b> / HK	IRB G612	6397 003-LC	Rev. No.	Sheet
2	Check Customer R1 665	TF	85	01	Drawn by <b>Kullborg</b> / RK			1	
1	Corr before reg.	TF	85	13	Drawn by <b>Hedberg</b> / KE	ASEA	JAKK 84 33	Cont.	2
Rev. No. Revision		Appd.	Year	Week	6917 5339 AA (A3) Rev. 2:2				



CONTROL EQUIPMENT C1

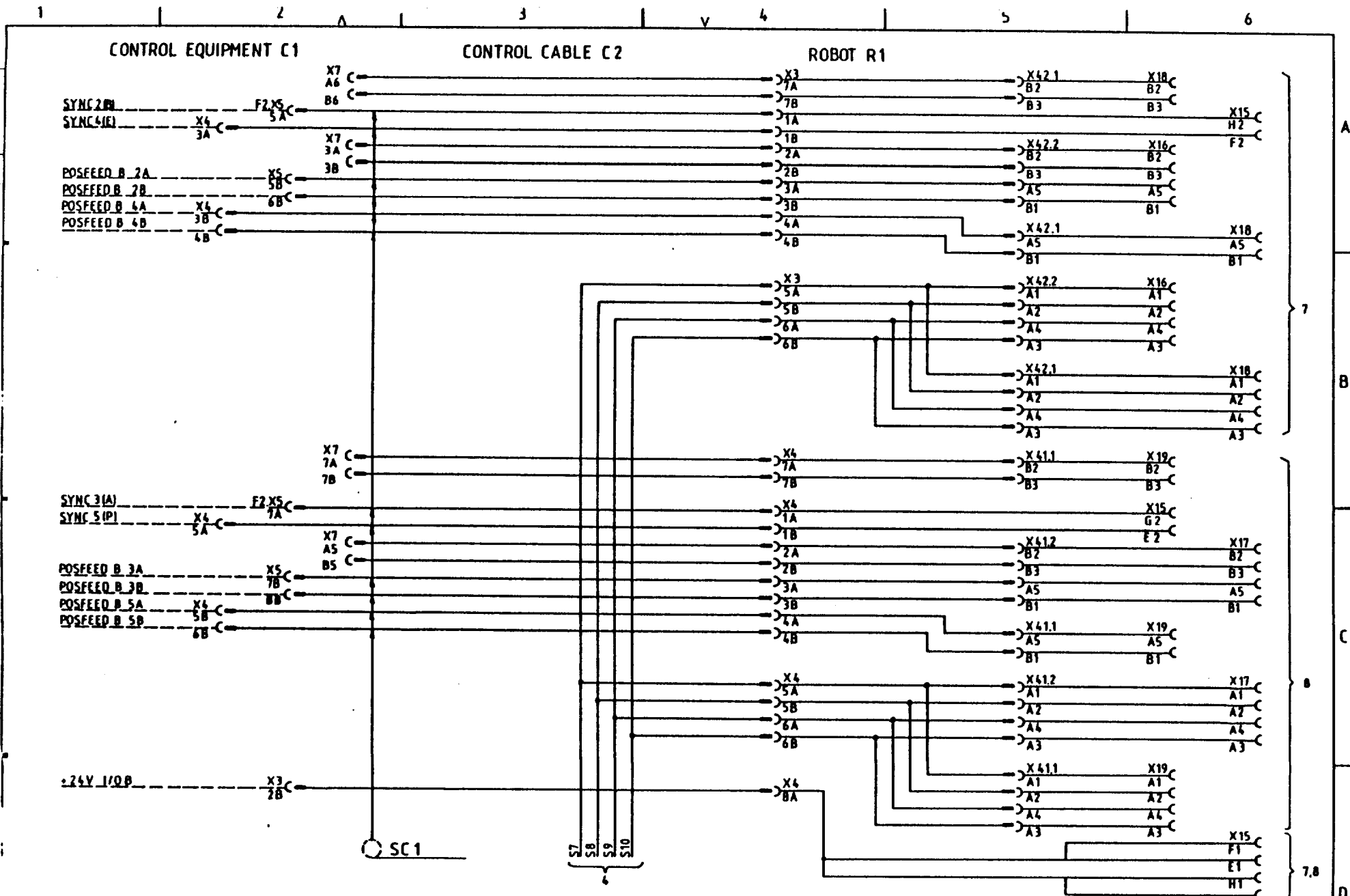
CONTROL CABLE C2

ROBOT R1



01536-401298

3	Limit switch add.	AM	85	28	Design checked by <b>Kaufmann</b> <i>He</i> Drawing checked by <b>Kullborg</b> <i>OK</i> Drawn by <b>Hedberg / KE</b>	IRB G 612	ASEA	JAKK 84 33	6397 003-LC	Rev. No.	Sheet
1	Corr before req.	TF	85	13						2	
6917 6338-AA (A3) Rev. ...		Appr.	Year	Week					3		



1		Corr before req		TF	B5	13	Design checked by <b>Kaufmann</b>		IRB G 6/2		Rev. Ind. Sheet		
Rev. Ind. Revision		Appd. Year Week		Drawn by <b>Kullborg</b>		Checked by <b>Hedberg/KE</b>		ASEA		JAKK 84 33		Rev. Ind. Sheet 3	
1977 5328 AA (A3) Rev. :		2		3		4		5		6397 003-LC		4	

1977 5328 AA (A3) Rev. :

2

3

4

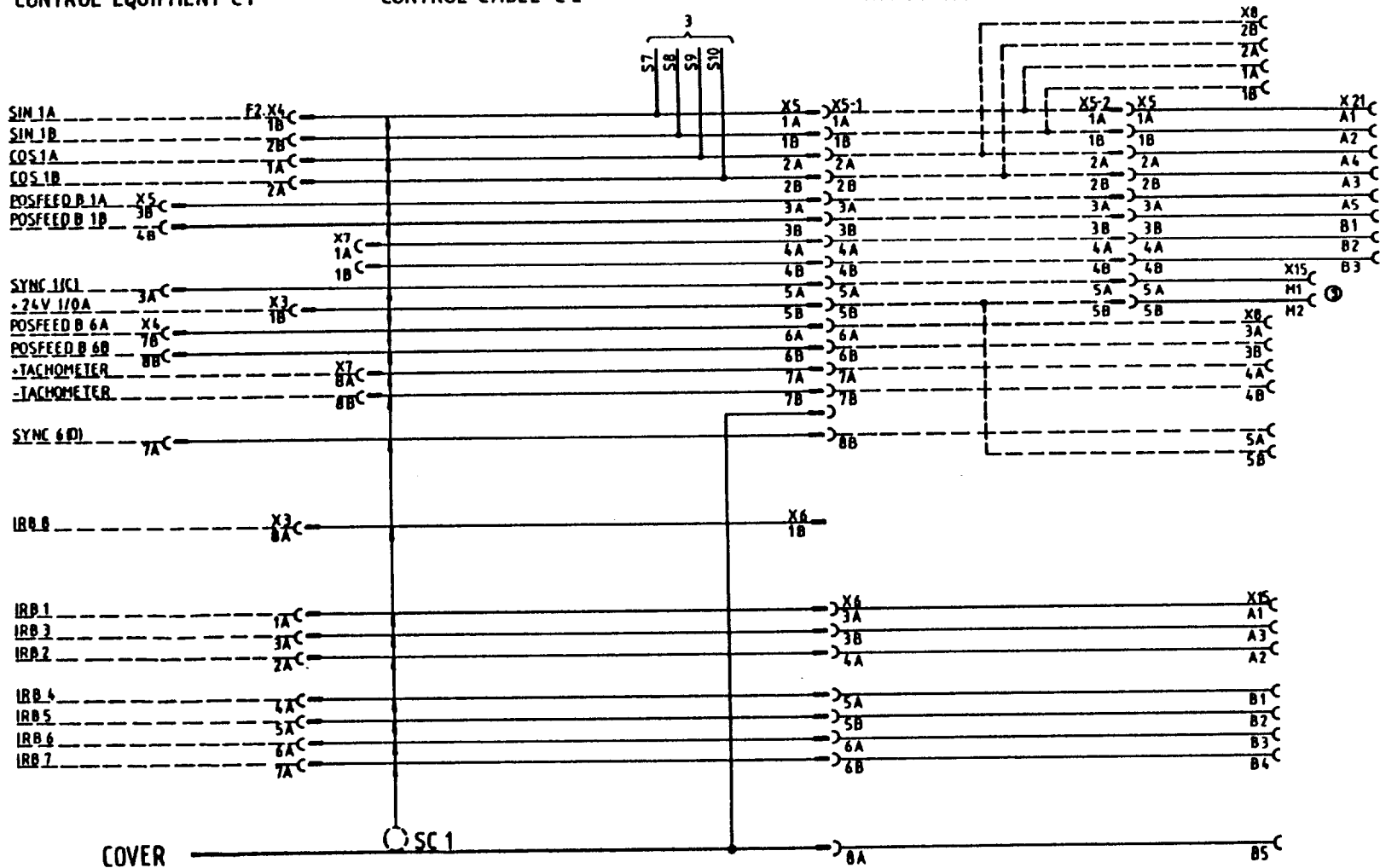
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6

CONTROL EQUIPMENT C1

CONTROL CABLE C2

ROBOT R1

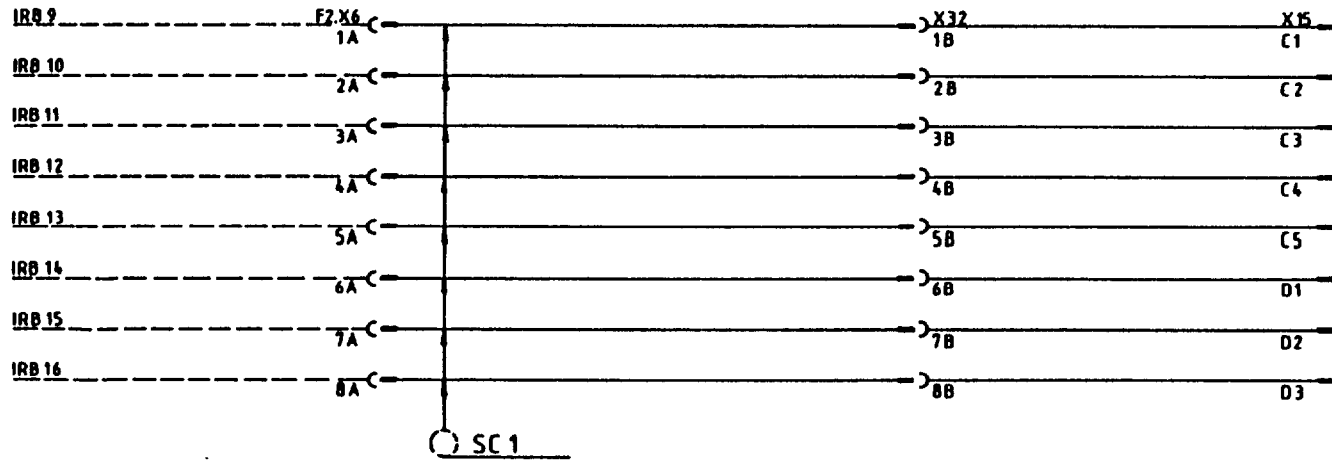


3	X15 M1 and M2 was S3 and S4.	AM	85	28	Design checked by <b>Kaufmann</b> Drawing checked by <b>Kullborg</b> Drawn by <b>Hedberg / KE</b>	IRB G 6/2 <b>ASEA</b>	See by Dept Year Week <b>JAKK 84 33</b>	6397 003-LC	Rev	Inc	Sheet
1	Corr before req	TF	85	13					4		
1	Revision	Appri	Year	Week	5						

CONTROL EQUIPMENT C1

CONTROL CABLE C2

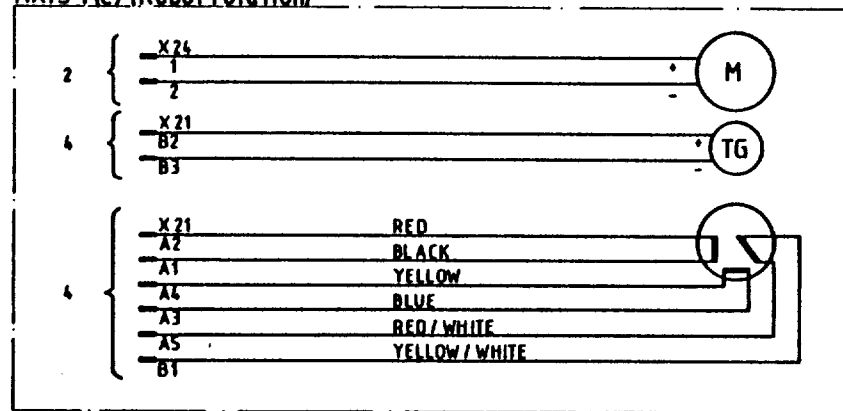
ROBOT R1



Rev	Issued	Revised	Appd	Year	Week	Design checked by <b>Kaufmann</b> <i>He</i>	IRB G 6/2	Rev	Issued	Sheet
						Drawing checked by <b>Kullborg</b> <i>AK</i>		6397 003-LC	Rev	Issued
Drawn by <b>Hedberg / KE</b>						<b>ASEA</b>	Issued by User Year Week <b>JAKK 84 33</b>			5
-917 6338 AA (A3) Rev : : : :										6

ROBOT R1

AXIS 1(C) (Robot rotation)

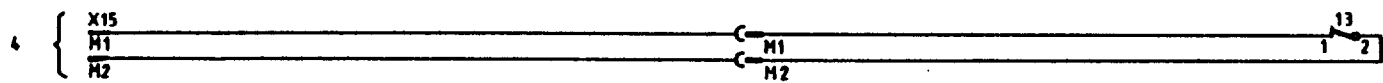


MOTOR

TACHOMETER

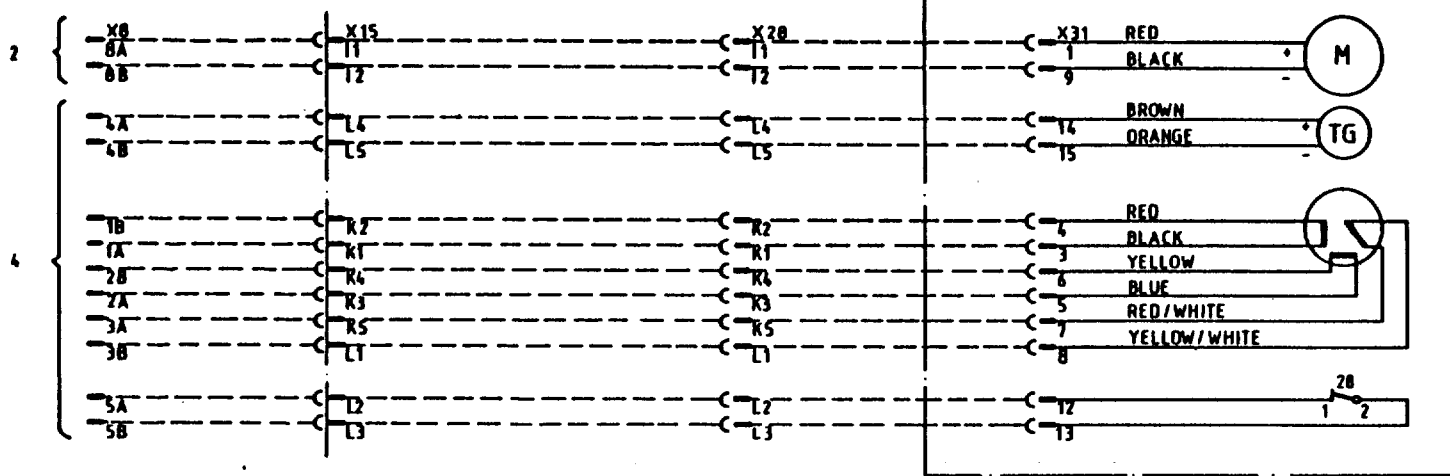
RESOLVER

INTERNAL SYNC SWITCH AXIS 1(C)



OPTION THIRD WRIST MOTION

AXIS 6(D)



MOTOR

TACHOMETER

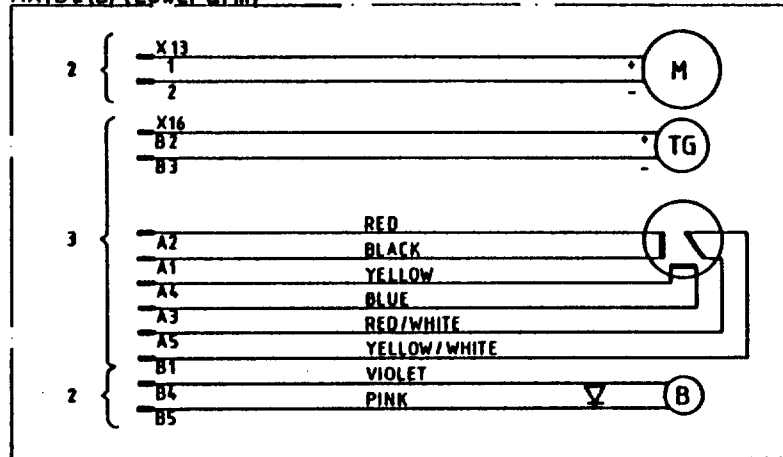
RESOLVER

SYNC SWITCH

3	X15, M1 and M2 was S3 and S4	88	35	35	Design checked by <b>Kaufmann</b> Drawing checked by <b>Kullborg</b> Drawn by <b>Hedberg/KE</b>	IRB G 6/2	No. by Dept Year Week <b>JAKK 84 33</b>	Rev. Inc. Sheet
1	Corr before req	TF	85	13				6397 003-LC
Rev. Inc. Revision		Appd	Year	Week	<b>ASEA</b>			6
117 8338 AA (A3) Rev. :		2						7

ROBOT R1

AXIS 2(B) (Lower arm)

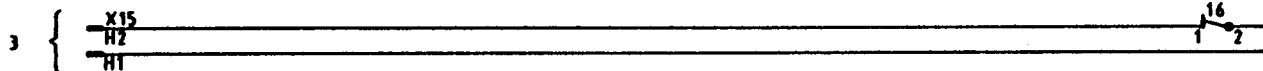


MOTOR

TACHOMETER

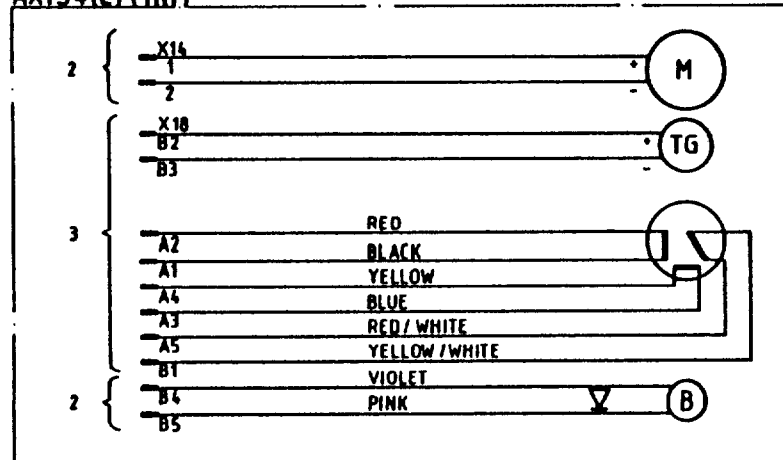
RESOLVER

BRAKE (OPTION)



SYNC SWITCH AXIS 2(B)

AXIS 4(E) (Tilt)

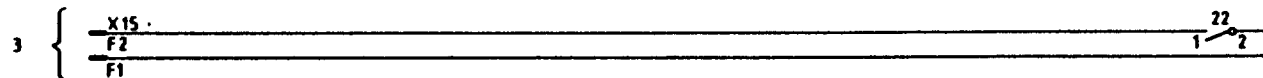


MOTOR

TACHOMETER

RESOLVER

BRAKE (OPTION)

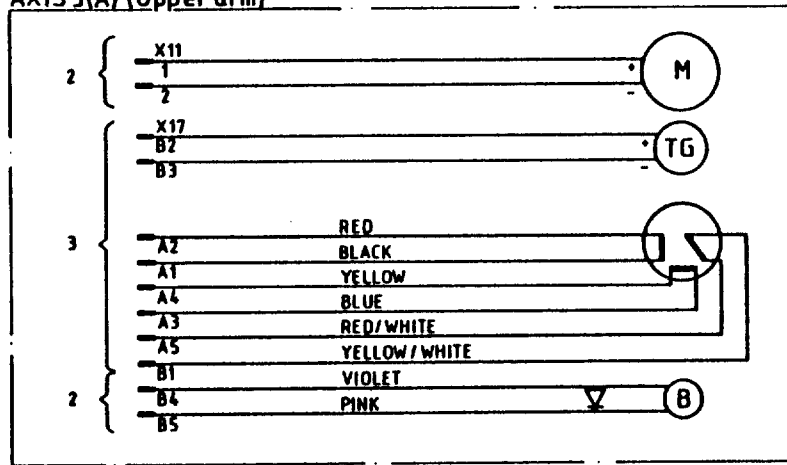


SYNC SWITCH AXIS 4(E)

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					Drawing checked by <b>Kullborg</b>			7	Cont
917 5339-AA (A3) Rev		Appd	Year	Week	Drawn by <b>Hedberg / KE</b>	ASEA	Iss. In Date Year Week <b>JAKK 84 33</b>		

ROBOT R1

AXIS 3(A) (Upper arm)

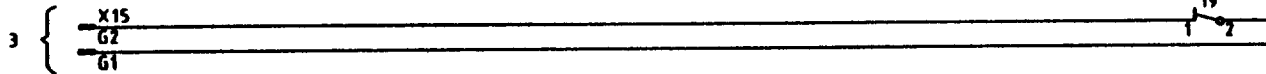


MOTOR

TACHOMETER

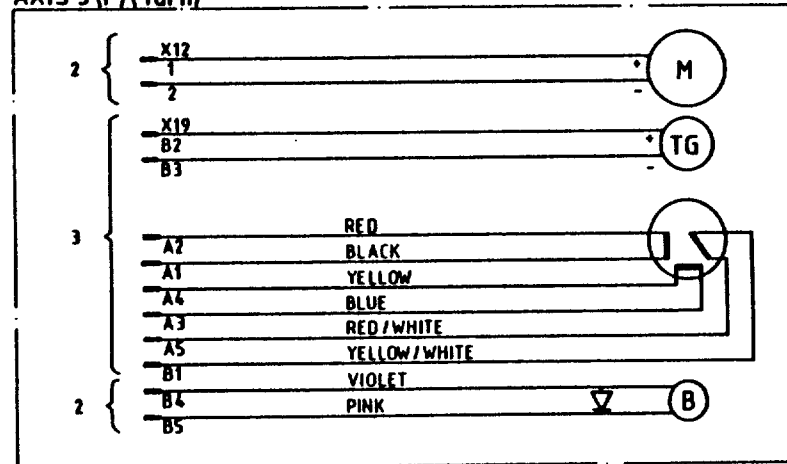
RESOLVER

BRAKE (OPTION)



SYNC SWITCH AXIS 3(A)

AXIS 5 (P) (Turn)

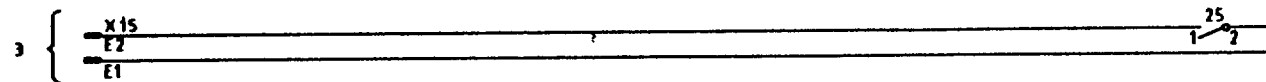


MOTOR

TACHOMETER

RESOLVER

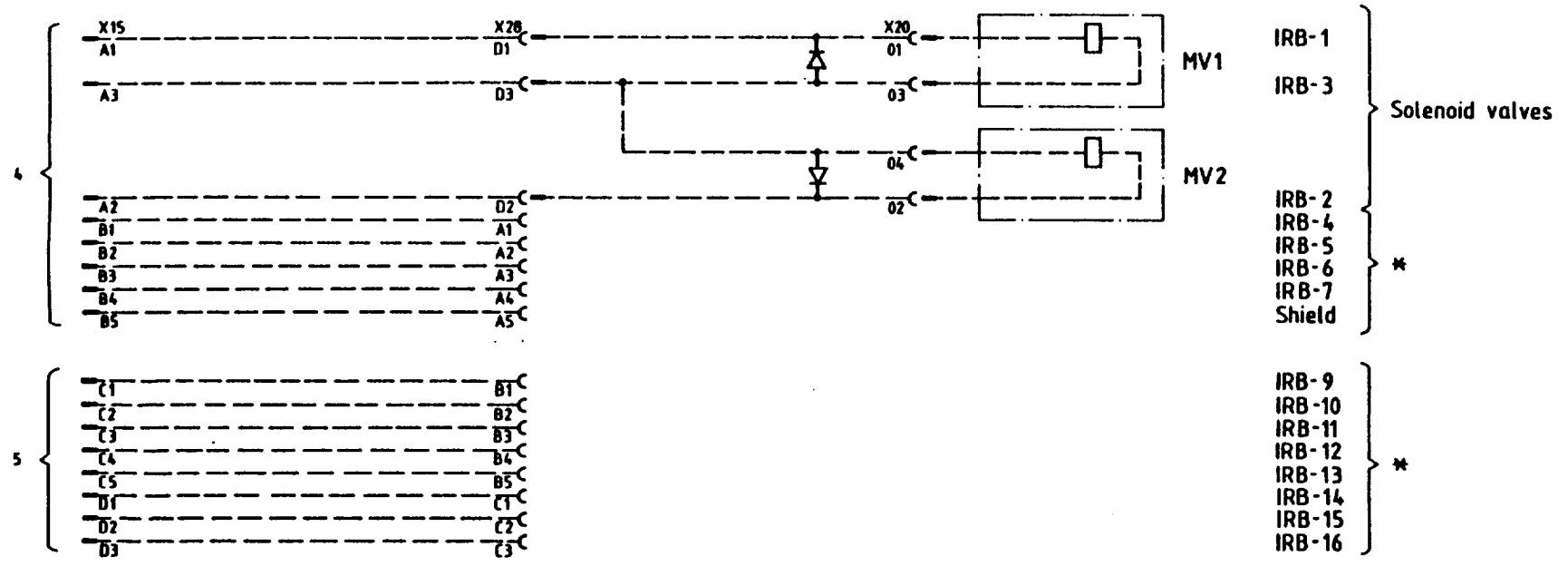
BRAKE (OPTION)



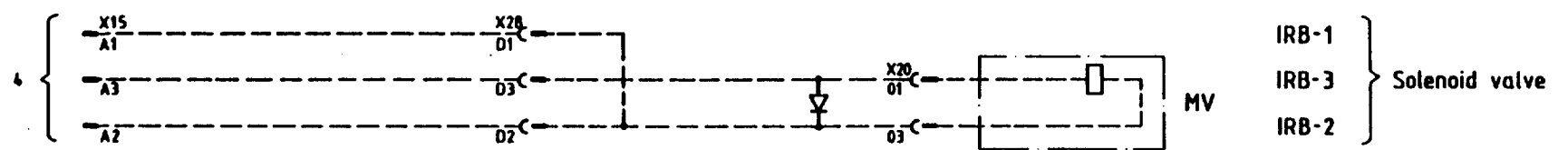
SYNC SWITCH AXIS 5 (P)

				Design checked by <b>Kaufmann</b>		IRB G 6/2		Rev. No. Sheet	
				Drawing checked by <b>Kullborg</b>				Rev. No. Sheet	
1		Corr before reg		TF 05 13		ASEA		6397 003-LC	
Rev. No.		Revision		April Year Week		Drawn by <b>Hedberg / KE</b>		No. by Dept. Year Week <b>JAKK 84 33</b>	
								8	
								9	

The alternative two solenoid valves



The alternative one solenoid valve



1		2		3		4		5		6	
1		TF 85 13		Design checked by <b>Kaufmann</b>		IRB G6/2		Rev. Ind. Sheet		Rev. Ind. Sheet	
1		Appd Year Week		Drawing checked by <b>Kullborg</b>		ASEA		Rev. Ind. Sheet		Rev. Ind. Sheet	
6917 5339 AA (A3) Rev. : : : :		2		Drawn by <b>Hedberg/KE</b>		JAKK 84 33		6397 003-LC		9	
										-	



IRB 6/2 with ABSM

ASEA

6397 003-TH

KAUFMANN

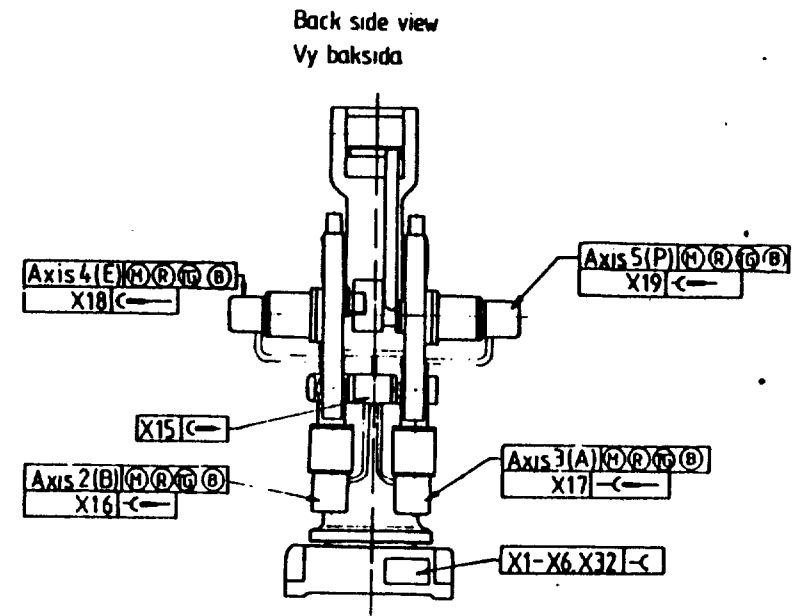
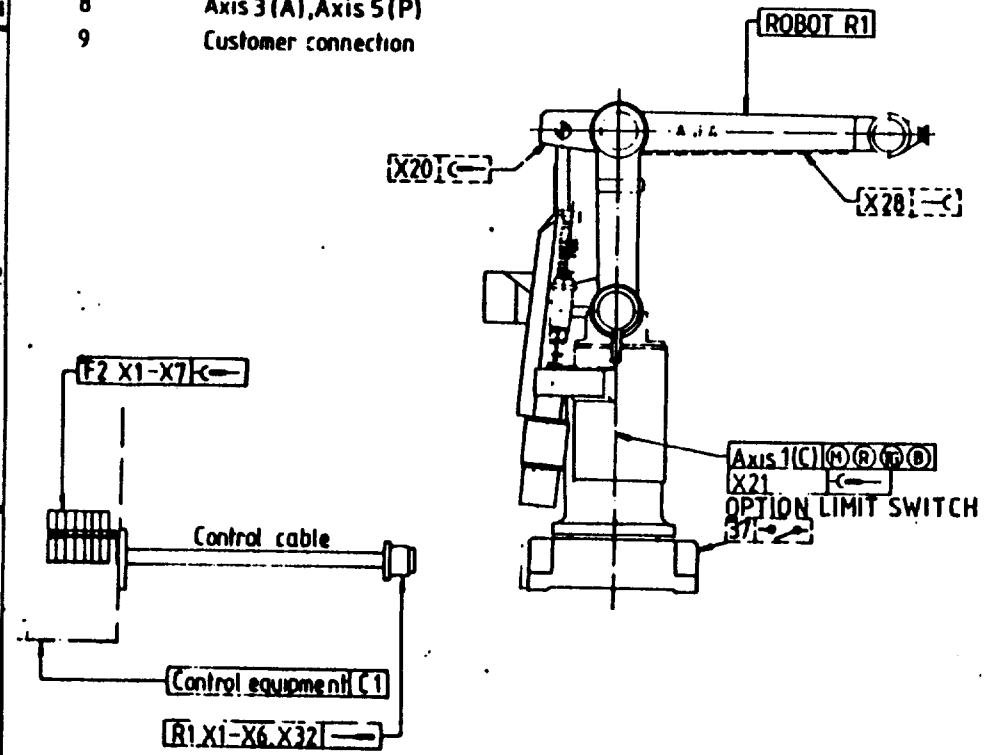
BERGSTROM

FORSS

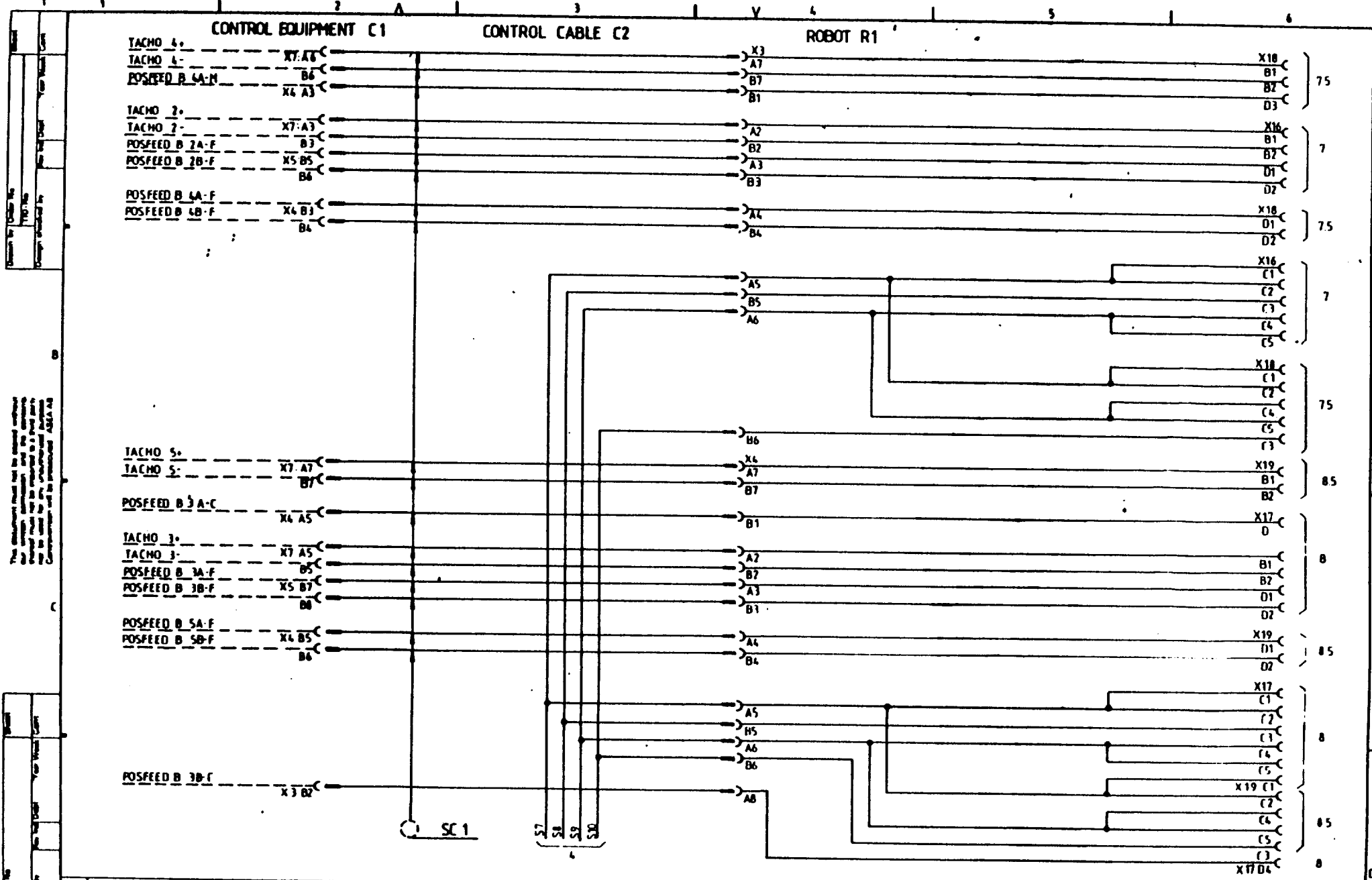
JAKA 1 86 16

Sheet	Contents
2-5	Control cable
6	Axis 1 (C)
7	Axis 2 (B), Axis 4 (E)
8	Axis 3 (A), Axis 5 (P)
9	Customer connection

Review Location axis connectors (←)







2. All dimensions must be in millimeters unless otherwise specified. All dimensions are in millimeters unless otherwise specified. All dimensions are in millimeters unless otherwise specified.

2. All dimensions must be in millimeters unless otherwise specified. All dimensions are in millimeters unless otherwise specified. All dimensions are in millimeters unless otherwise specified.

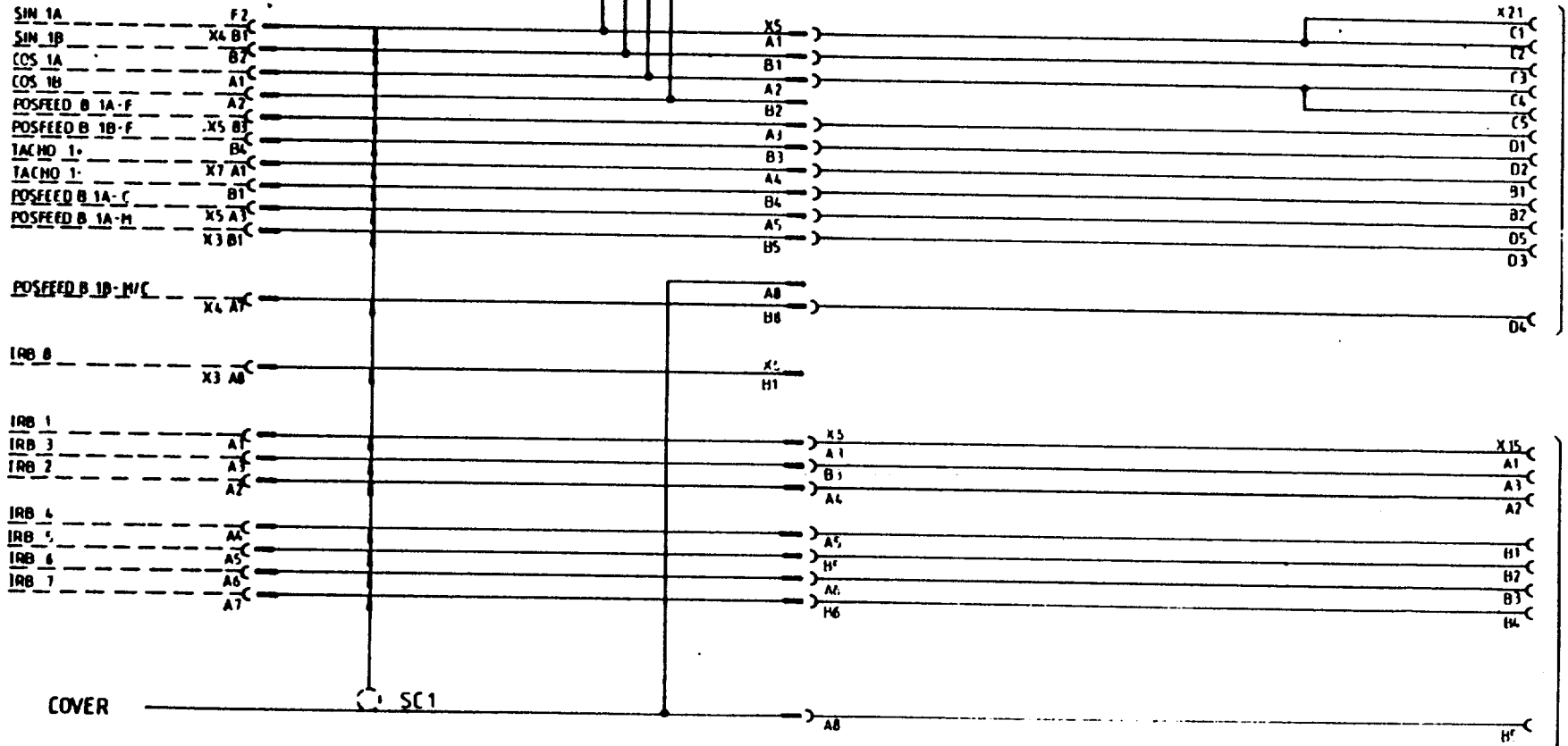
Rev	Rev	Rev	Rev	Rev	Rev

Design / Checked by <b>KAUFMANN</b> Drawing checked by <b>BERGSTROM</b> Drawn by <b>FORSS</b>	IRB 6/2 with ABSM	JAKA 1 86 16	6397 003-TH
<b>ASEA</b>	JAKA 1 86 16	6397 003-TH	6397 003-TH

CONTROL EQUIPMENT C1

CONTROL CABLE C2

ROBOT R1



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Sheet 1 of 1  
Drawing No. 6397 003 TH  
Year 1986

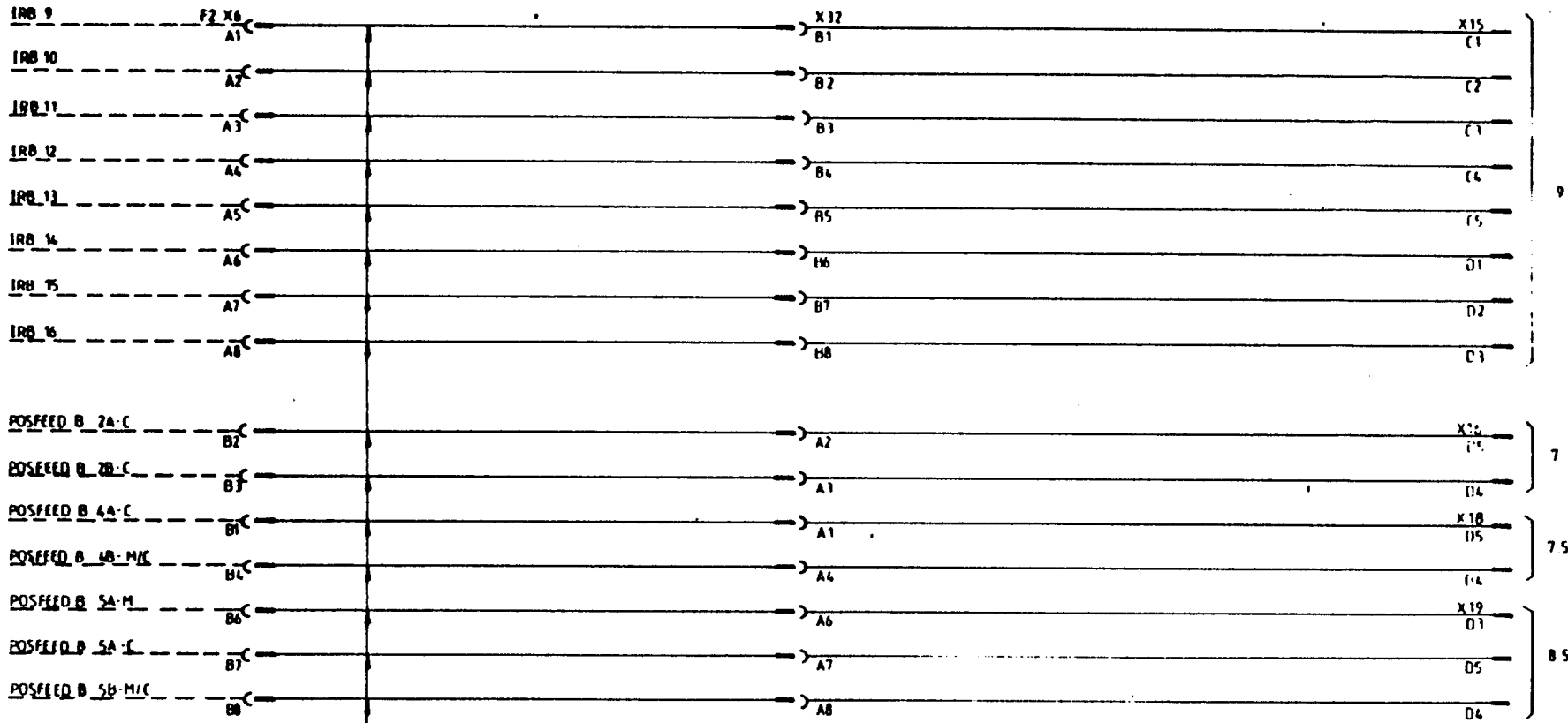
Rev. No.	Description	Date	By

Drawn by: FORSS Checked by: BERGSTRÖM Approved by: KAUFMANN	IRB 6/2 with ABSM <b>ASEA</b>	No. in this Year: 16 JAKA 1 86 16	6397 003-TH	Sheet 5 of 5
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CONTROL EQUIPMENT C1

CONTROL CABLE C2

ROBOT R1



SC 1

Drawn by: [Blank]  
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 Date: [Blank]

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 Drawing checked by: [Blank]  
 Date: [Blank]

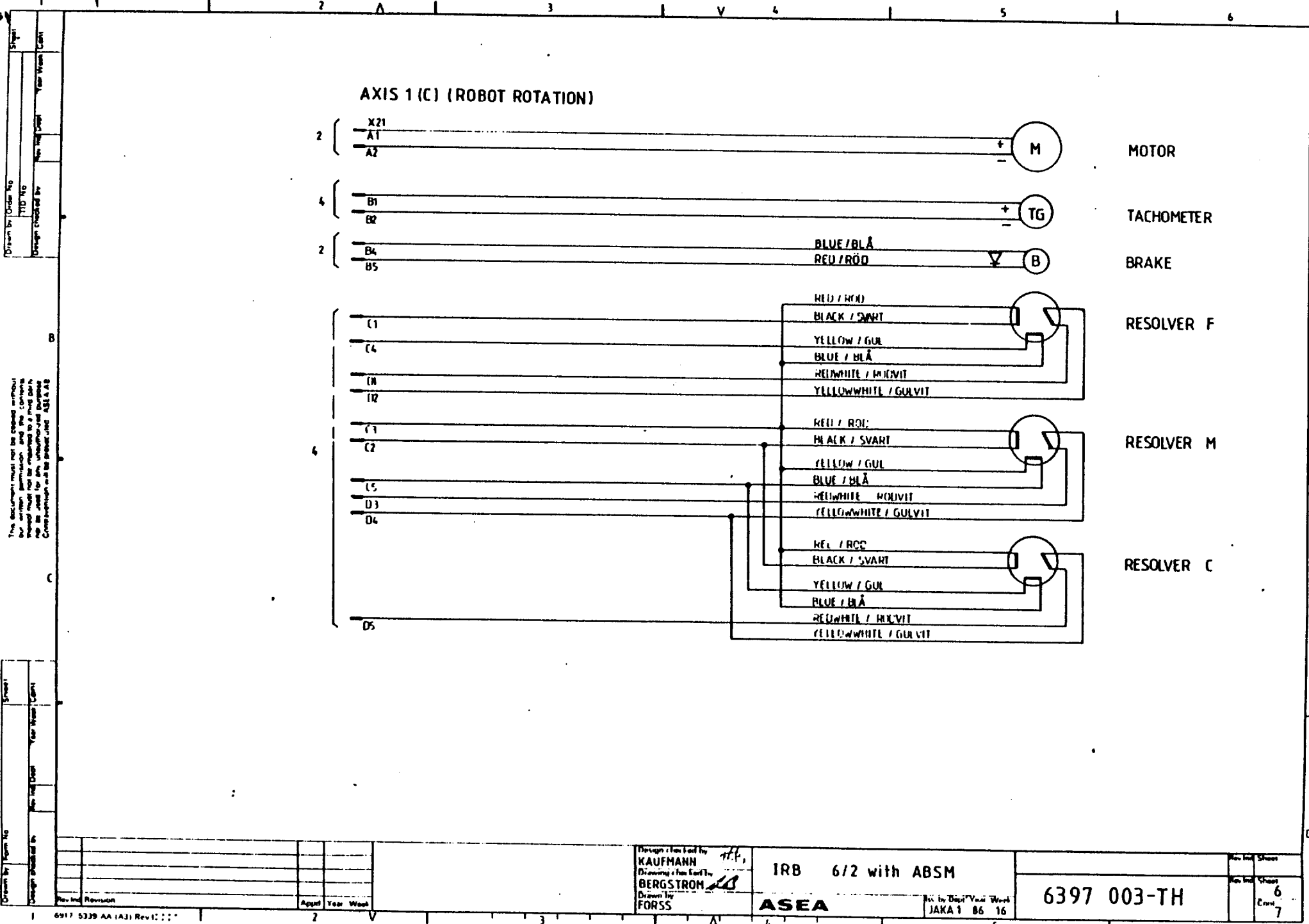
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 Date: [Blank]

No.	Revision	App'd	Year	Month

Design checked by: KAUFMANN  
 Drawing checked by: BERGSTROM  
 Drawn by: FORSS

IRB 6/2 with ABSM  
**ASEA**  
 In Use Until Year Week: JAKA 1 86 16

6397 003-TH  
 No. of Sheets: 5  
 No. of Sheets: 6



Drawn by: Order No. 710 No. Design checked by: Year Week Cont.

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Rev. No.	Revision	Appr.	Year	Week

Design: Led by KAUFMANN  
 Drawing: Led by BERGSTRÖM  
 Drawn by: FORSS

IRB 6/2 with ABSM  
**ASEA**  
 JAKA 1 86 16

6397 003-TH

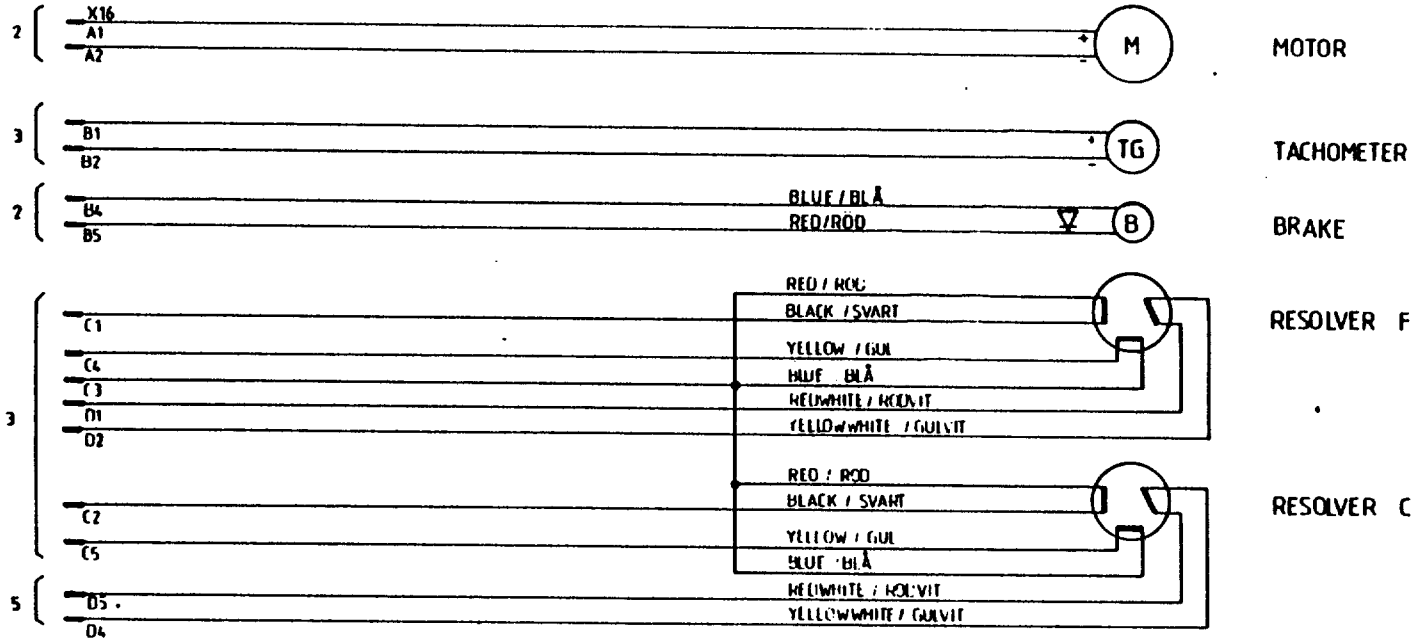
Rev. No.	Sheet
6	7

Sheet  
 Drawn by: Olof NG  
 YTD No:  
 Design checked by: Per Ing Uggli Year Week Cont

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Sheet 1  
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 Design checked by: Per Ing Uggli Year Week Cont

AXIS 2 (B) (LOWER ARM)



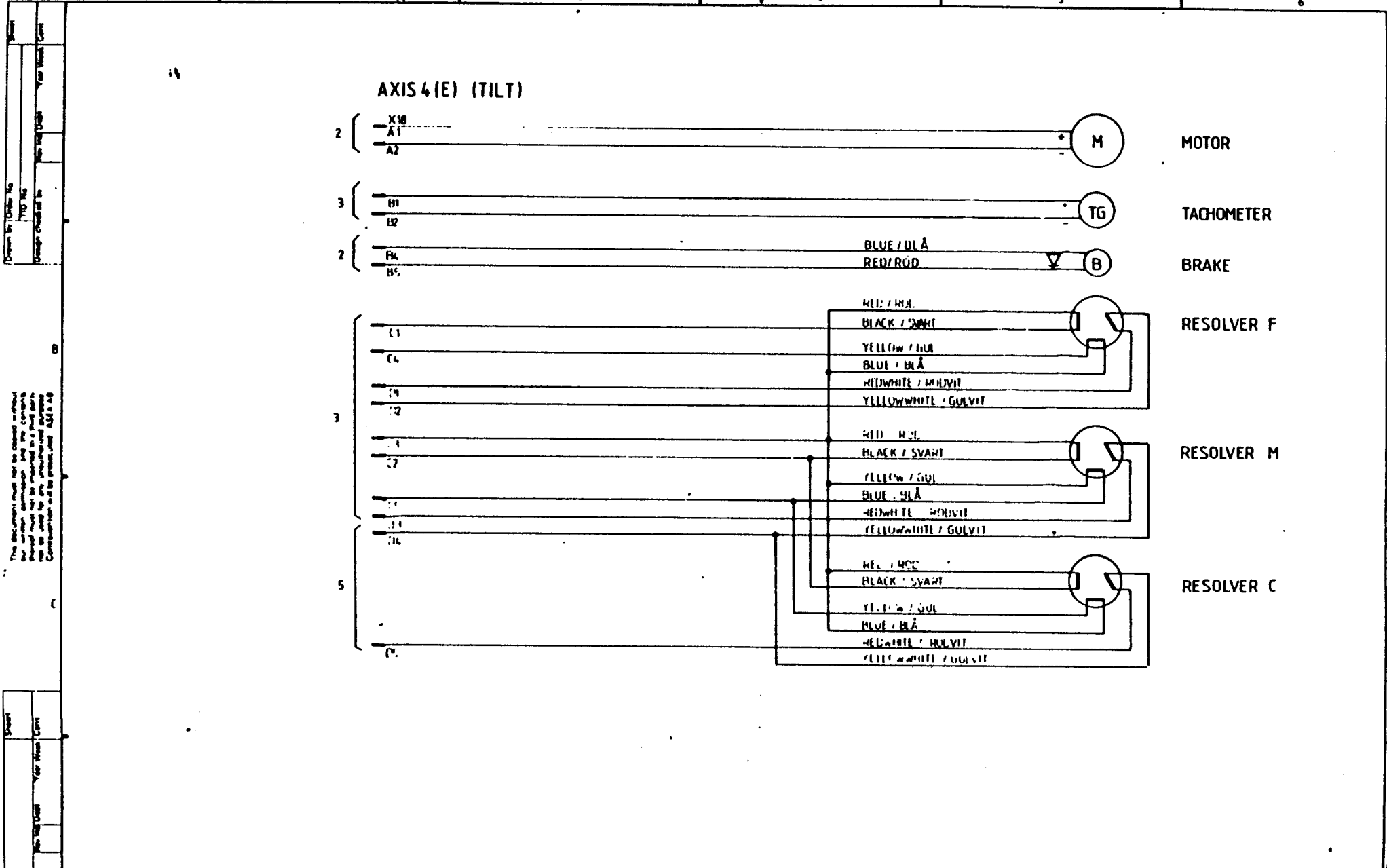
Rev. No.	Revision	Appr.	Year	Week

Design & Test by  
**KAUFMANN**  
 Drawings & Test by  
**BERGSTROM**  
 Drawn by  
**FORSS**

IRB 6/2 with ABSM  
**ASEA**  
 Rev. No. Sheet  
 JAKA 1 86 16

6397 003-TH

Rev. No. Sheet  
 7  
 Cont. 75



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Sheet 1 of 1  
 Design No. 6397 003-TH  
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No.	Revised	App'd	Year	Week

Design checked by KAUFMANN  
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IRB 612 with ABSM  
**ASEA**  
 Iss. In Desig. Year Week  
 JAKA1 86 16

6397 003-TH

No. of Sheets 75  
 No. of Sheets 8

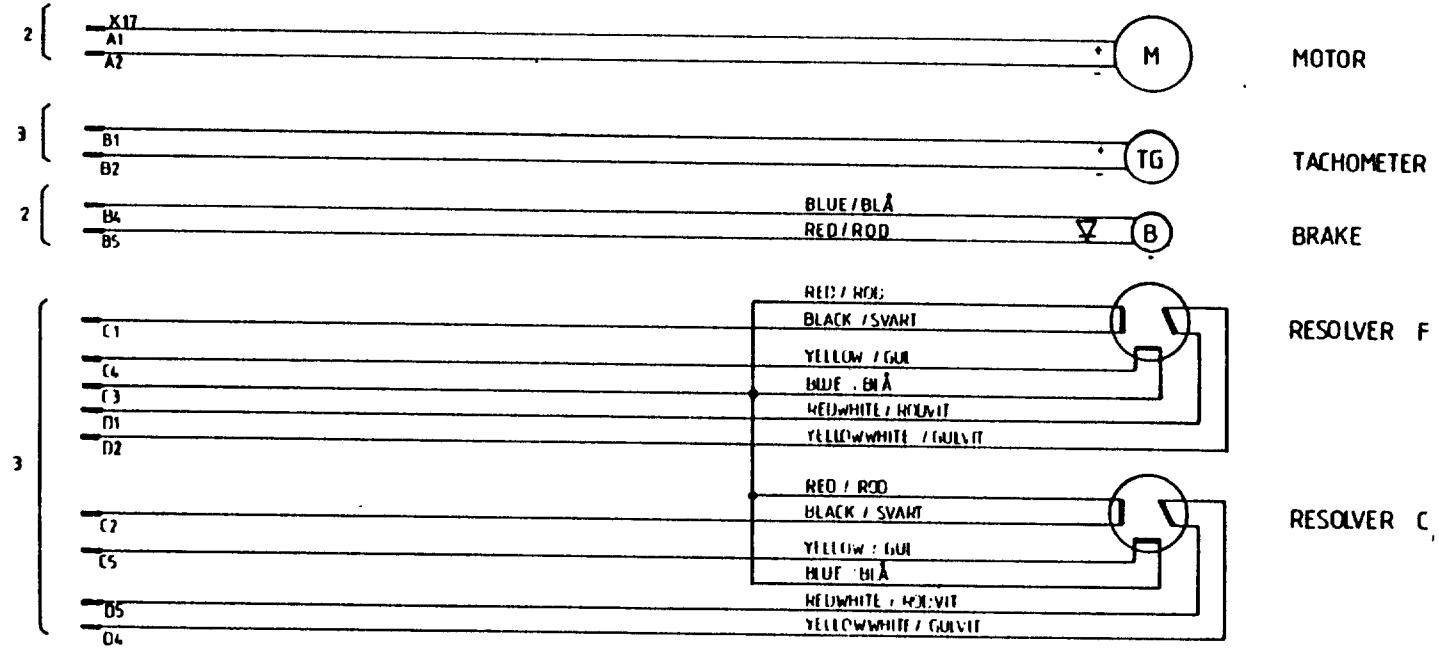


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AXIS 3 (A) (UPPER ARM)



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**KAUFHANTT**  
 Drawings checked by  
**BERGSTROM**  
 Drawn by  
**FORSS**

IRB 6/2 with ABSM  
**ASEA**

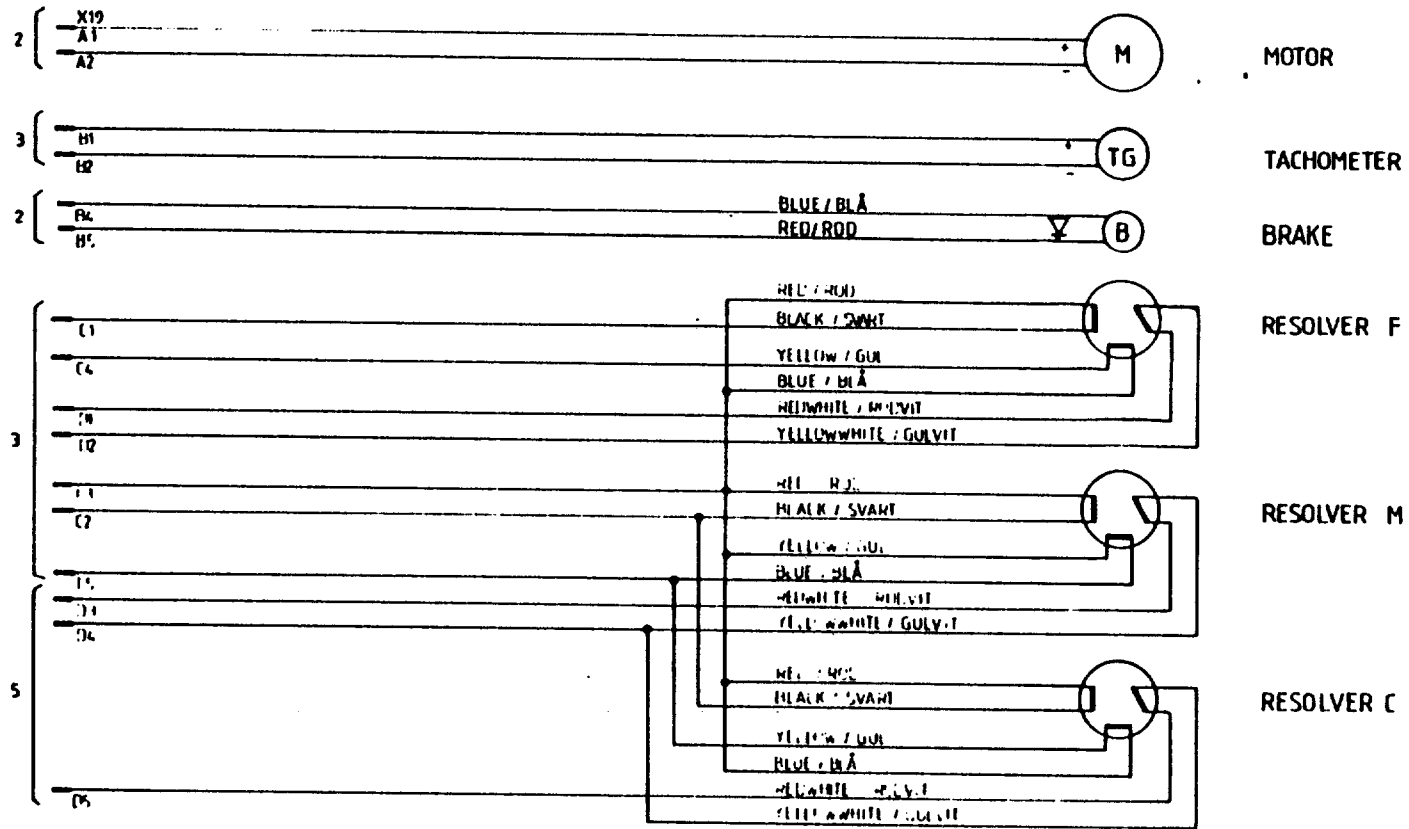
Iss. by Dept. Year Week  
 JAKA 1 86 16

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Rev. No.	Sheet
	8
	85

Design No. \_\_\_\_\_  
 Title \_\_\_\_\_  
 Date \_\_\_\_\_  
 Drawn by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Year Week \_\_\_\_\_

AXIS 5 (PI) (TURN)



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 Date \_\_\_\_\_  
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 Checked by \_\_\_\_\_  
 Year Week \_\_\_\_\_

No.	Revision	App'd	Year	Week

Drawn by KAUFMANN  
 Planning by BERGSTROM  
 Design by FORSS

IRB 612 with ABSM  
**ASEA**  
 Design No. 6397 003-TH  
 Date: 86 16

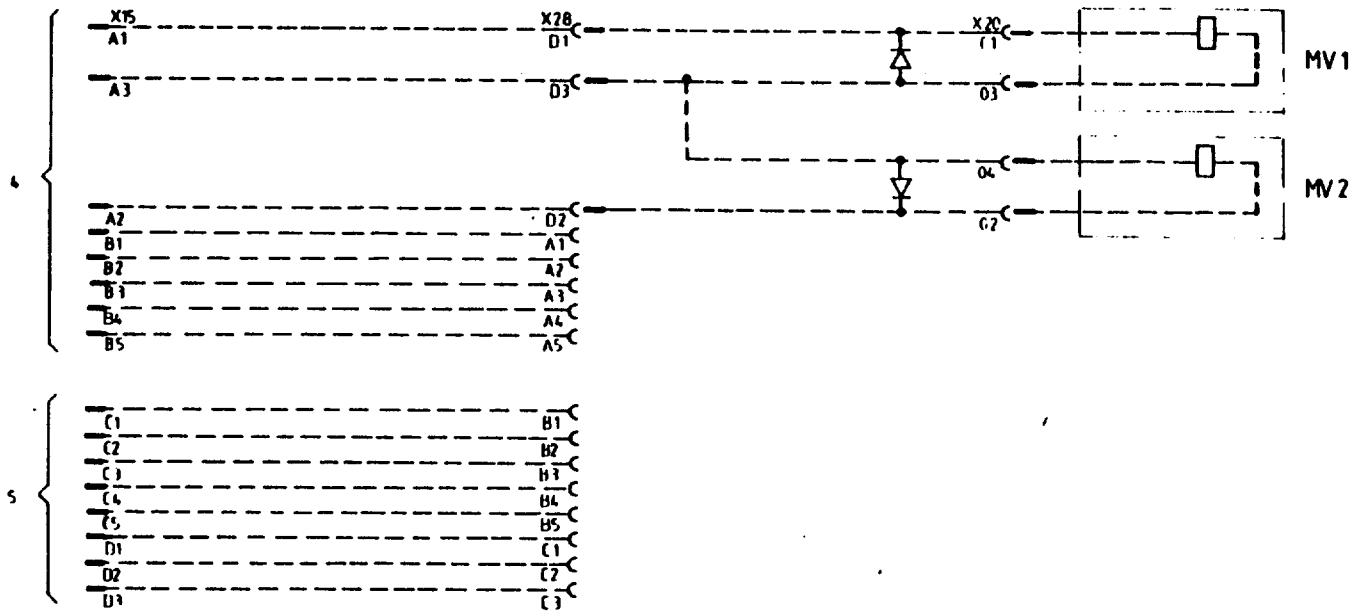
6397 003-TH  
 Sheet 85 of 9

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 Design Checked by: [Blank] Year Week Cont: [Blank]

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 Construction and the product code".

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 Title No: [Blank]  
 Design Checked by: [Blank] Year Week Cont: [Blank]

### The alternative two solenoid valves



Customer connection

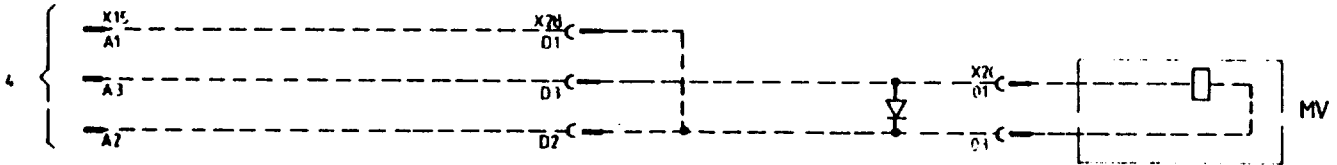
- IRB - 1
- IRB - 3
- IRB - 2
- IRB - 4
- IRB - 5
- IRB - 6
- IRB - 7
- Shield
- IRB - 9
- IRB - 10
- IRB - 11
- IRB - 12
- IRB - 13
- IRB - 14
- IRB - 15
- IRB - 16

Solenoid valves

\*

\*

### The alternative one solenoid valve



\* max current for cables 1A

- IRB - 1
- IRB - 3
- IRB - 2

Solenoid valve

Designed & Drawn by  
**KAUFMANN**  
 Drawn by  
**BERGSTROM**  
 Design by  
**FORSS**

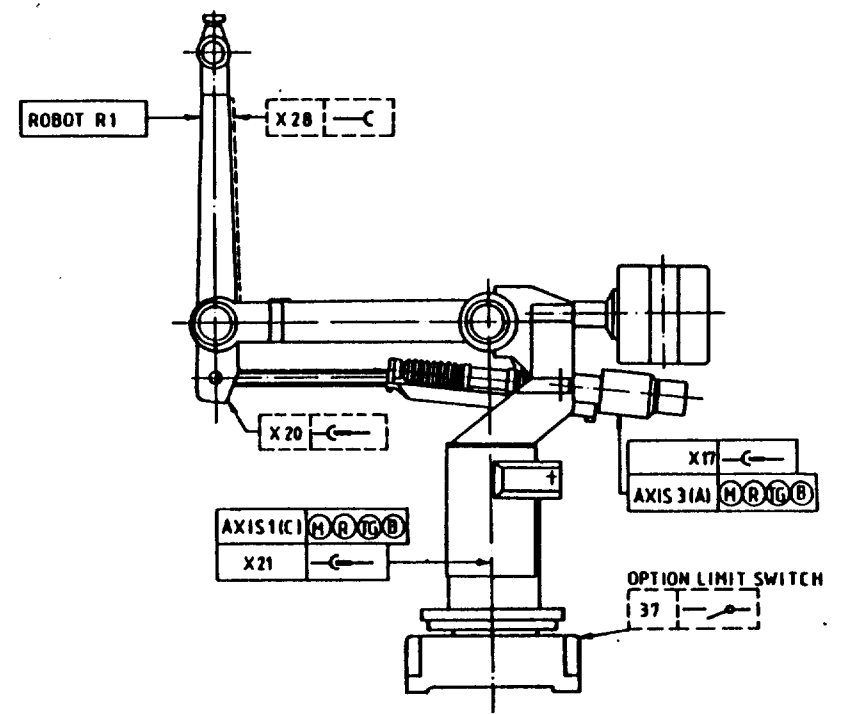
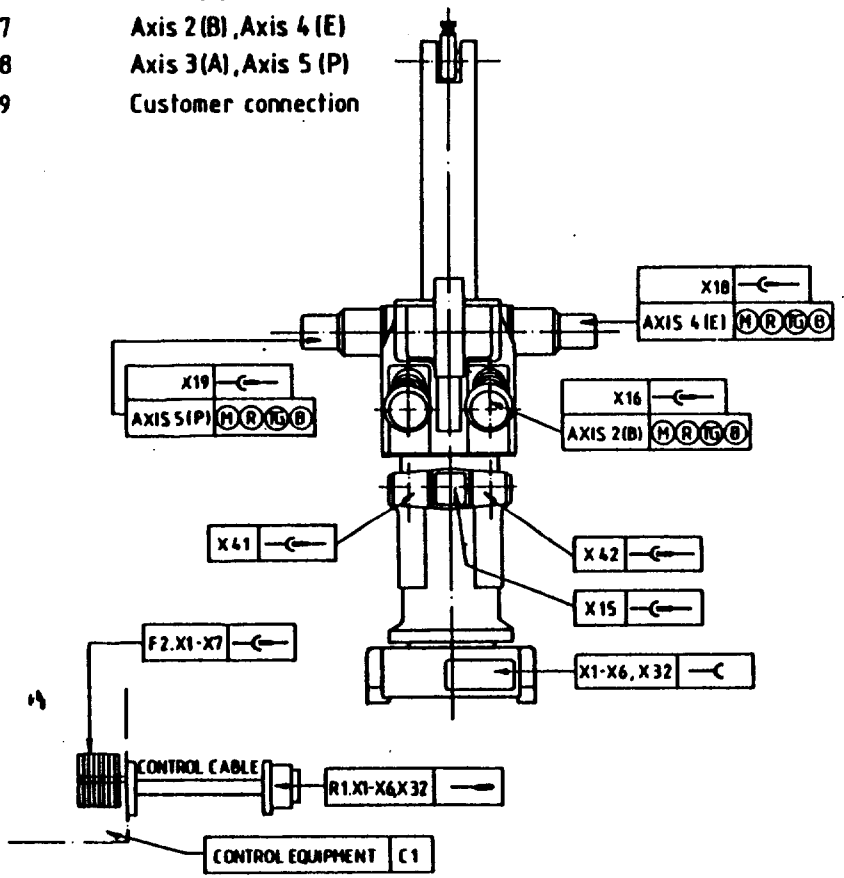
IRB 6/2 with ABSM  
**ASEA**

Iss. by Dept. Year Week  
 JAKA 1 86 16

6397 003-TH

Rev. No. Sheet  
 9

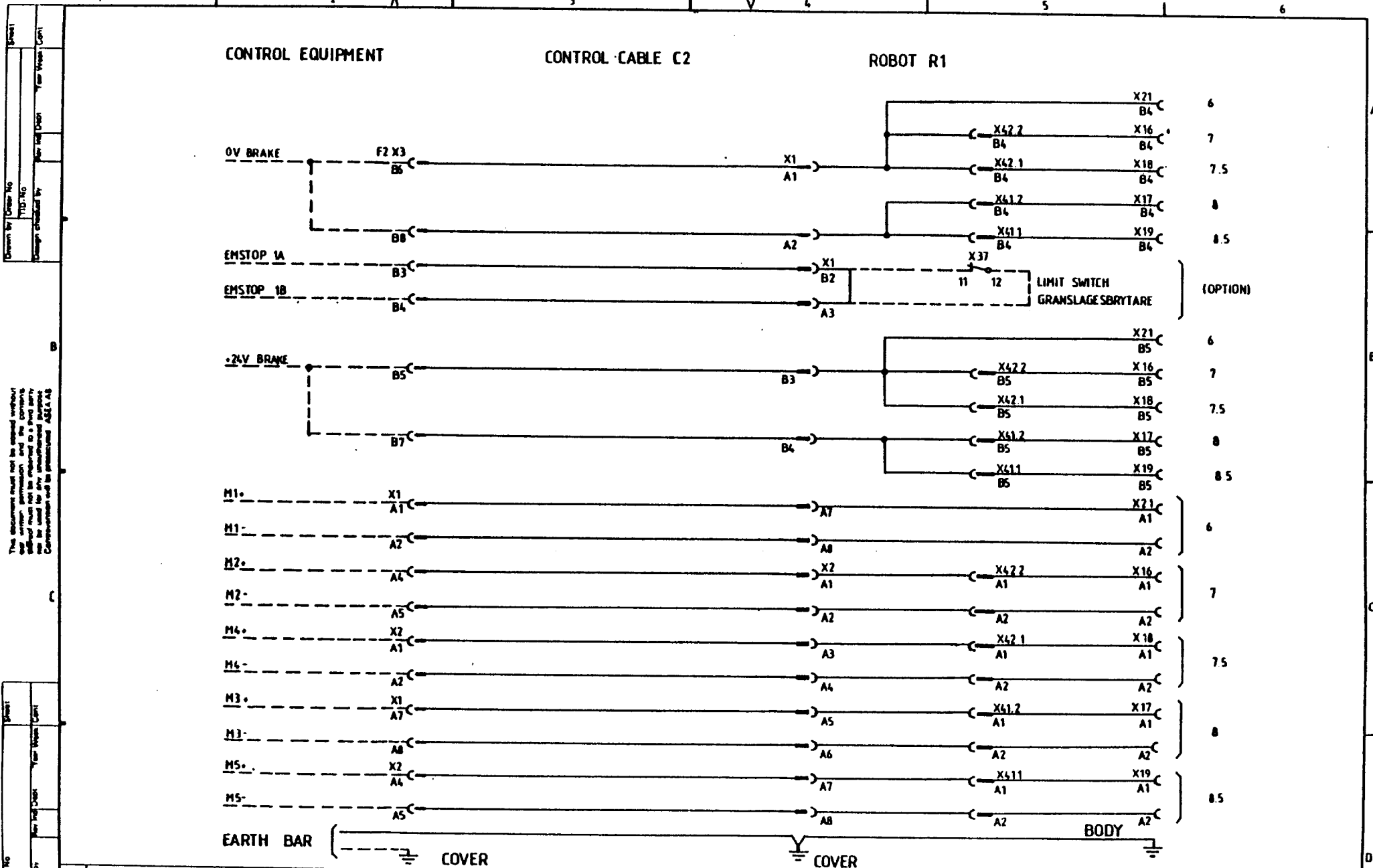
Sheet	Contents
2-5	Control cable
6	Axis 1(C)
7	Axis 2(B), Axis 4(E)
8	Axis 3(A), Axis 5(P)
9	Customer connection



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Rev	Reason	Appd	Year	Week

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<b>ASEA</b>	<b>6917 5329 AA (A3) Rev</b>			



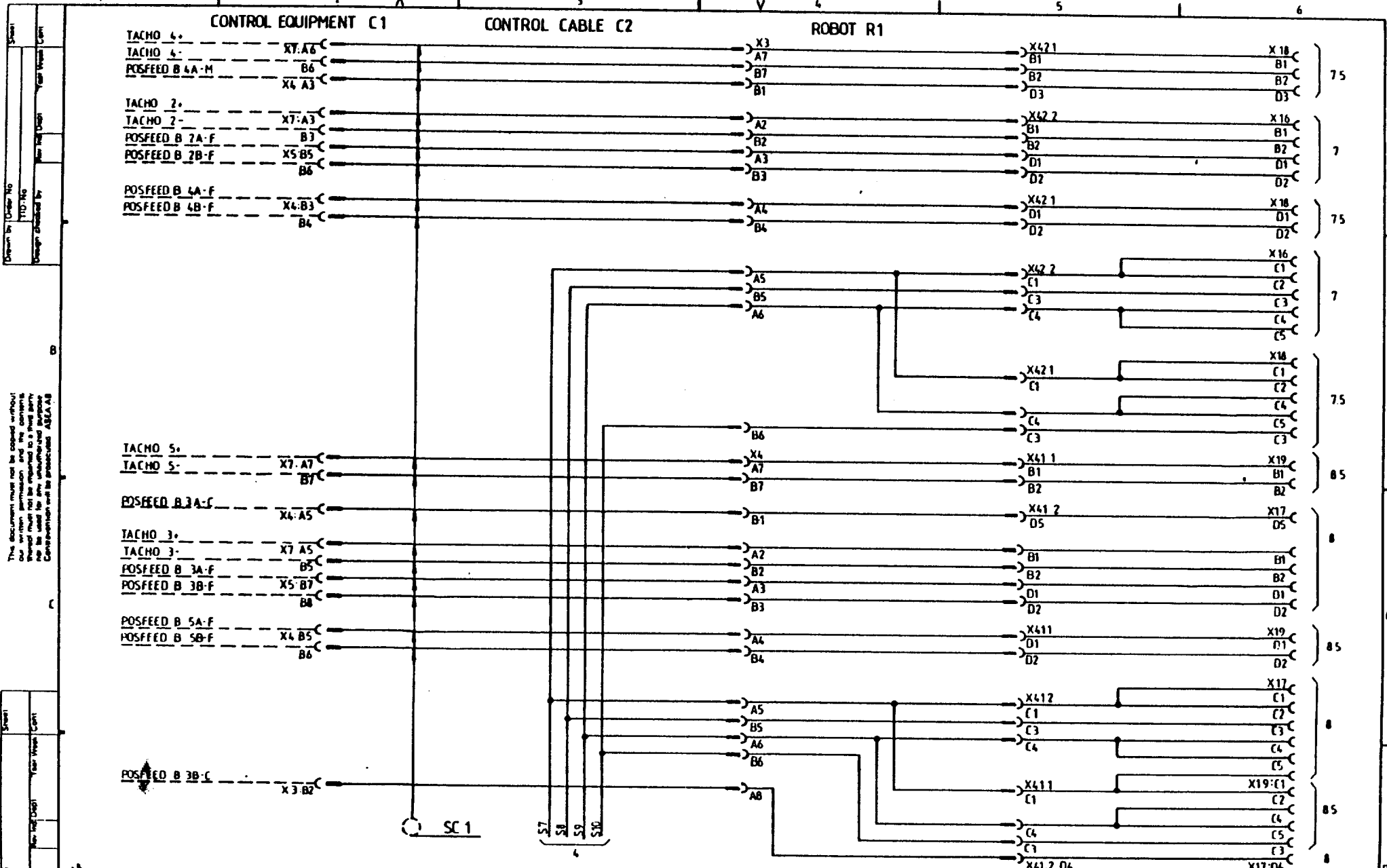
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Drawn by	Year	Week
Design checked by	Year	Week
Rev	Int	Revision
	Appd	Year
	Week	

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 Drawing checked by  
**BERGSTROM**  
 Drawn by  
**FORSS**

IRB G6/2 with ABSM  
**ASEA**  
 Iss. by Dept Year Week  
 JAKA 1 86 16

Rev	Int	Sheet
		2
		Cont. 3
6397 003-TK		



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 Year: [Blank] Week: [Blank]

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 Year: [Blank] Week: [Blank]

Rev. No.	Revision	Appd.	Year	Week

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**KAUFMANN**  
 Drawing checked by  
**BERGSTROM**  
 Drawn by  
**FORSS**

**IRB G6/2 with ABSM**  
**ASEA**  
 JAKA 86 16

6397 003-TK  
 New Incl. Sheet  
 3  
 Cont. 4

Sheet  
 Drawn by: Ulfar NG  
 TTD No  
 Design Checked by: Ken Ing Duff Year Work Cont

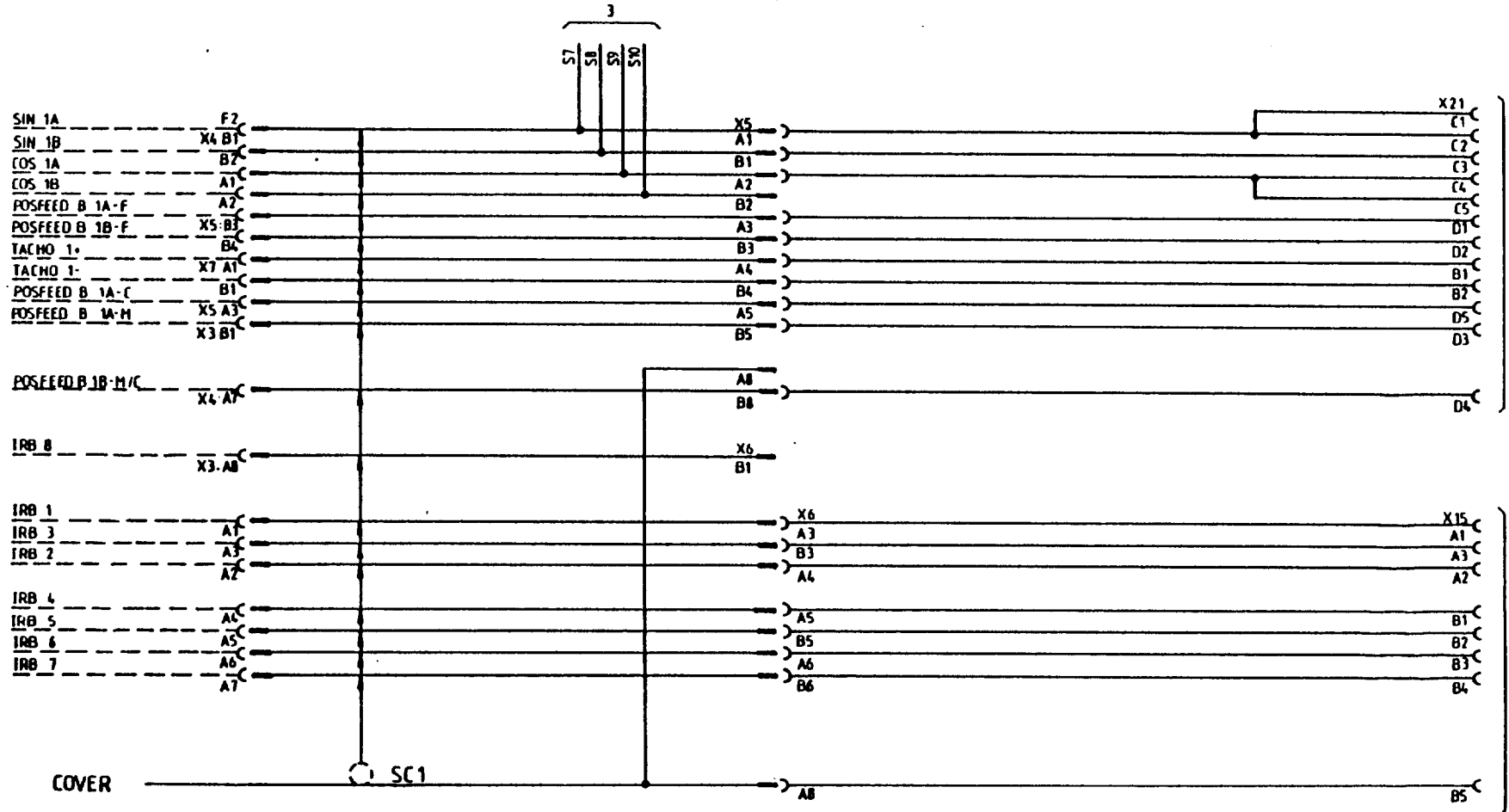
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 Drawn by: Ulfar NG  
 Design Checked by: Ken Ing Duff Year Work Cont

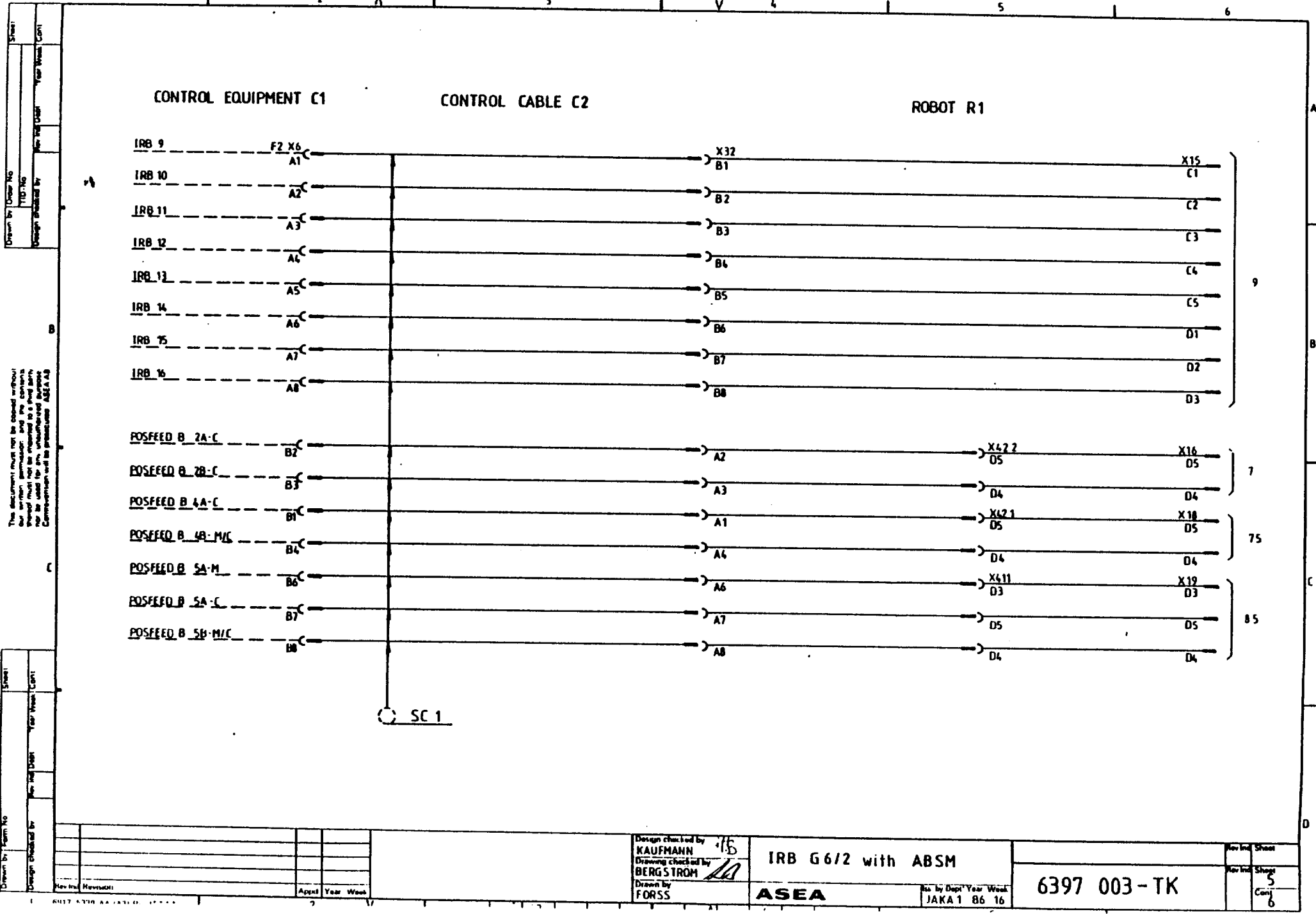
CONTROL EQUIPMENT C1

CONTROL CABLE C2

ROBOT R1



Rev No	Rev Desc	Year	Week	Design Checked by <b>KAUFMANN</b>	Drawn by <b>BERGSTRÖM</b>	Drawn by <b>FORSS</b>	Title <b>IRB G6/2 with ABSM</b>	Part No <b>6397 003-TK</b>	Rev No	Sheet	
									4	5	
							File by Dept Year Week <b>JAKA 1 86 16</b>				



Sheet  
 Drawn by: [Name]  
 Design checked by: [Name]  
 Rev No: [Number]  
 Dept: [Department]  
 Year: [Year]  
 Week: [Week]

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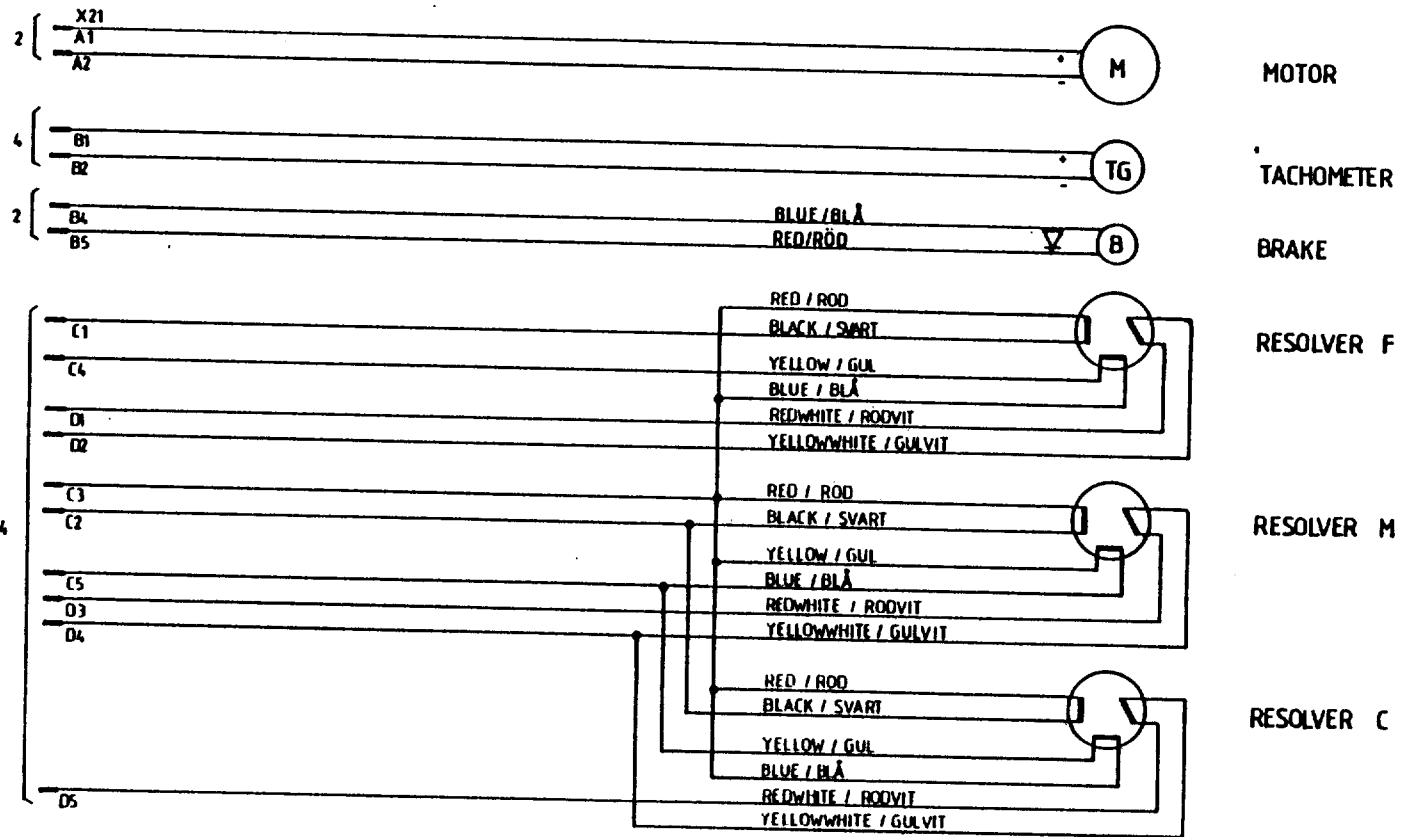
Sheet  
 Drawn by: [Name]  
 Design checked by: [Name]  
 Rev No: [Number]  
 Dept: [Department]  
 Year: [Year]  
 Week: [Week]

Rev No	Revised	App'd	Year	Week	Design checked by <b>KAUFMANN</b> 7/5 Drawing checked by <b>BERGSTRÖM</b> 1/1	IRB G6/2 with ABSM	Rev No	Sheet	
					Drawn by <b>FORSS</b>	<b>ASEA</b>	Rev No	Sheet	
						Rev by Dept Year Week JAKA 1 86 16	5	6	
							6397 003-TK		



1 2 3 4 5 6

AXIS 1 (C) (ROBOT ROTATION)



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Drawn by: Forss  
 Design checked by: Bergstrom  
 Year: 1986 Week: 16

Rev	Ind	Reason	App'd	Year	Week

Design checked by  
**KAUFMANN** *TK*  
 Drawing checked by  
**BERGSTROM** *AB*  
 Drawn by  
**FORSS**

IRB G6/2 with ABSM  
**ASEA**  
 Iss. by Dept Year Week  
 JAKA 1 86 16

6397 003-TK

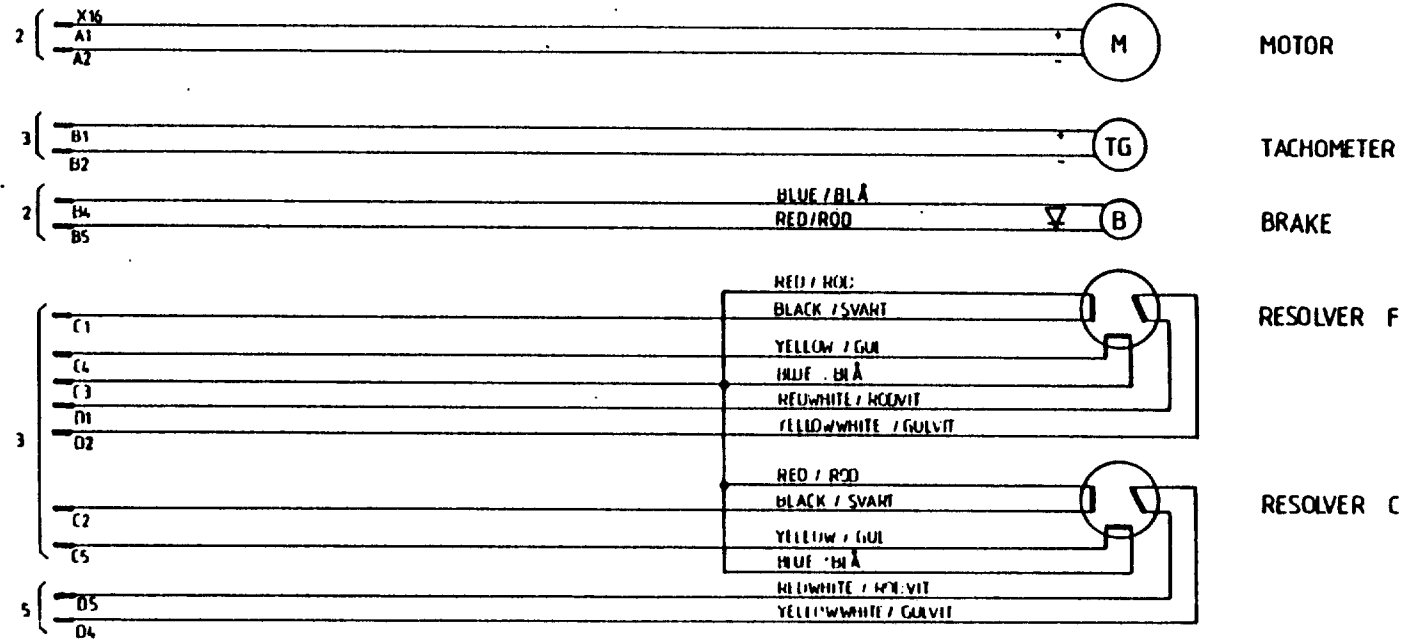
New Incl Sheet  
 New Incl Sheet  
 Cont. 6  
7

Drawn by: [Blank] Sheet: [Blank]  
 Design Checked by: [Blank] Year: [Blank] Week: [Blank]  
 Design Checked by: [Blank] Year: [Blank] Week: [Blank]

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Drawn by: [Blank] Sheet: [Blank]  
 Design Checked by: [Blank] Year: [Blank] Week: [Blank]  
 Design Checked by: [Blank] Year: [Blank] Week: [Blank]

AXIS 2 (B) (LOWER ARM)



Rev	By	Reason	App'd	Year	Week

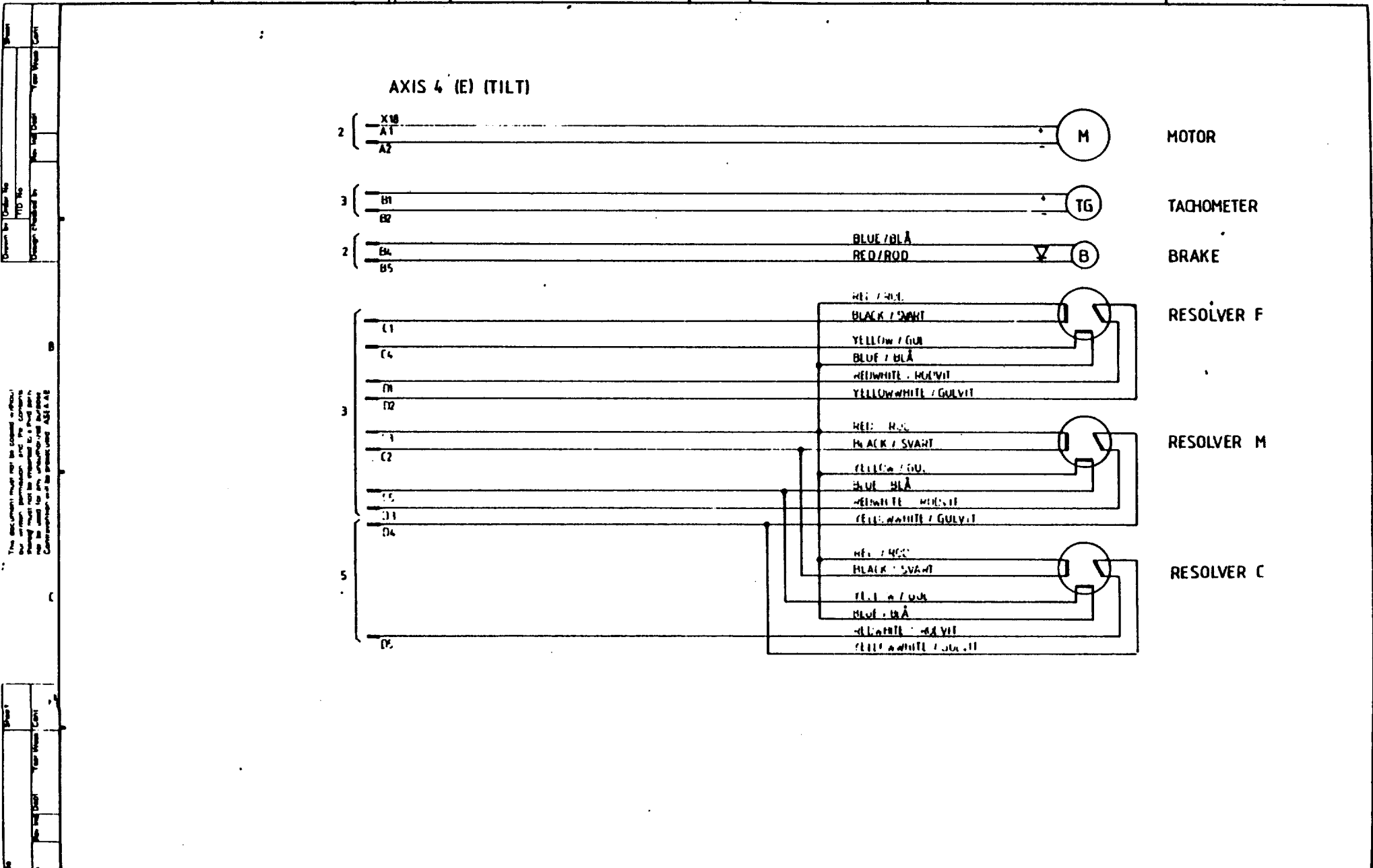
Drawn / Checked by  
**KAUFMANN**  
 Drawn / Checked by  
**BERGSTRÖM**  
 Drawn by  
**FORSS**

IRB G 6/2 with ABSM  
**ASEA**  
 As To Date Year Week  
 JAKA 1 86 16

6397 003-TK

Rev	By	Reason	App'd	Year	Week

Sheet 7  
 Total 75



Design No. \_\_\_\_\_  
 YTD No. \_\_\_\_\_  
 Design Checked by \_\_\_\_\_  
 Year Month \_\_\_\_\_

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Design No. \_\_\_\_\_  
 YTD No. \_\_\_\_\_  
 Design Checked by \_\_\_\_\_  
 Year Month \_\_\_\_\_

Rev. No.	Revision	App'd	Year	Week

Design / Drawn by  
**KAUFMANN**  
 Drawing checked by  
**BERGSTRÖM**  
 Drawn by  
**FORSS**

**IRB G6/2 with ABSM**  
**ASEA**  
 JAKA 1 86 16

**6397 003-TK**

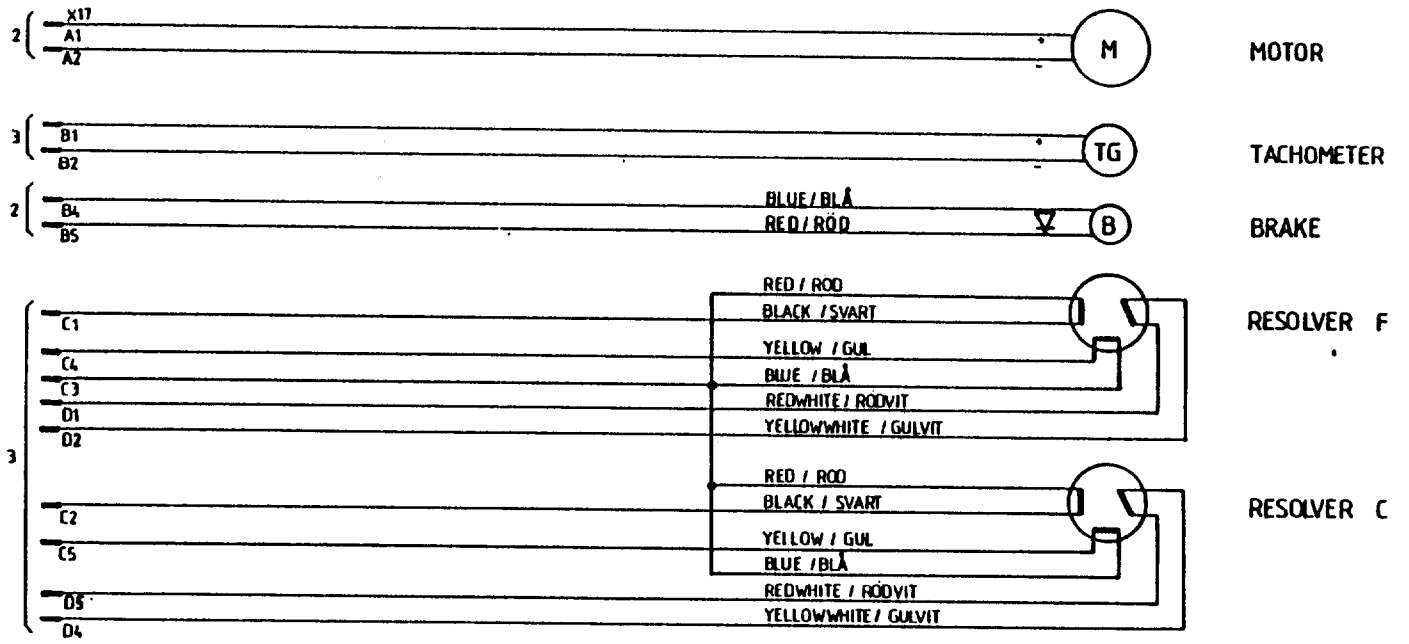
Rev. No. \_\_\_\_\_  
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**75**  
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**8**

Sheet 1  
 Drawn by: [Blank]  
 Year Week Cont: [Blank]

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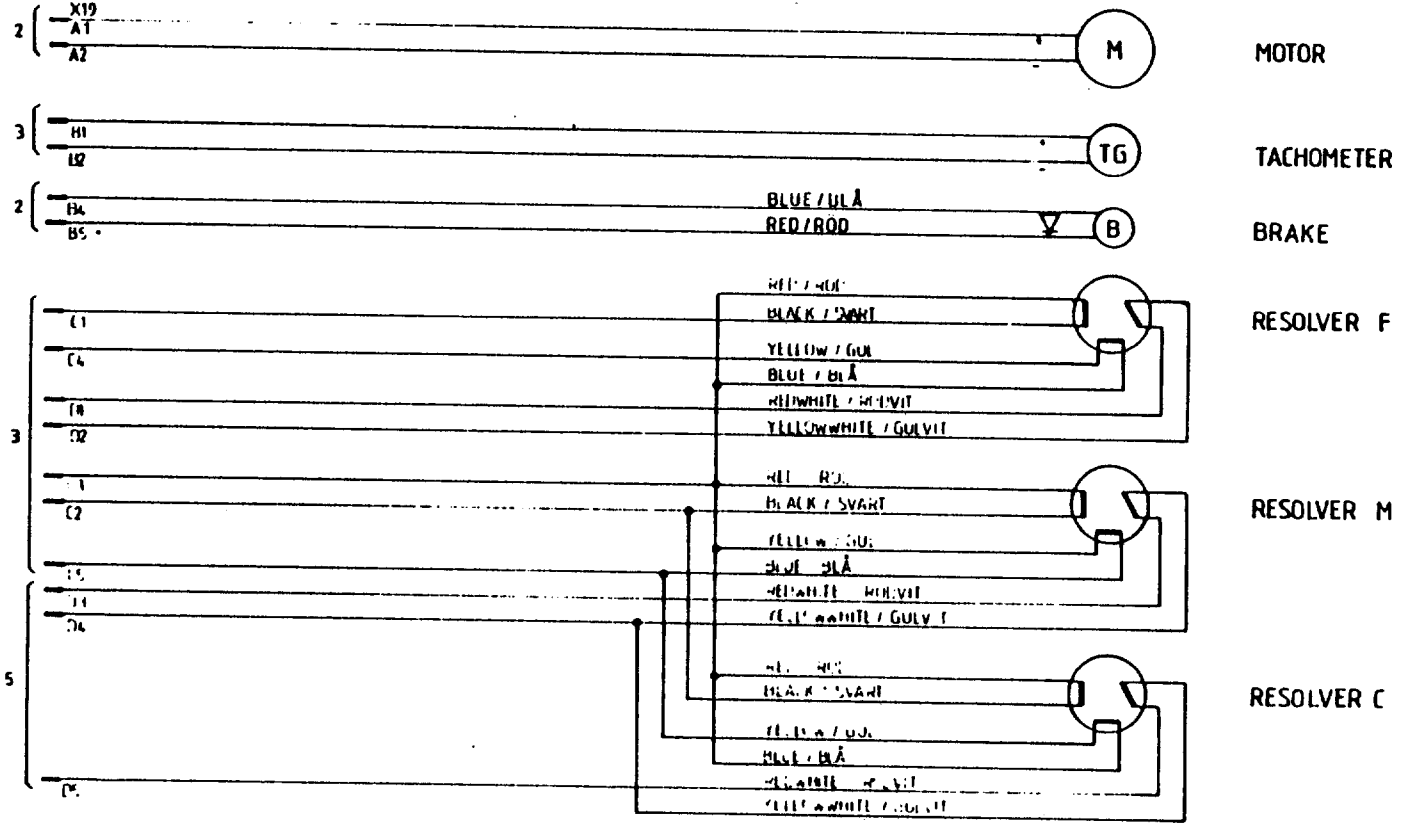
Sheet 1  
 Drawn by: [Blank]  
 Year Week Cont: [Blank]

AXIS 3 (A) (UPPER ARM)



Revised	App'd	Year	Week	Design checked by <b>KAUFMANN</b>	IRB G 6/2 with ABSM	6397 003-TK	Rev. No.	Sheet
				Drawing checked by <b>BERGSTROM</b>			8	8
Drawn by <b>FORSS</b>				Design checked by <b>KAUFMANN</b>	ASEA	Rev. by Dept Year Week JAKA 1 86 16		

AXIS 5 (P) (TURN)



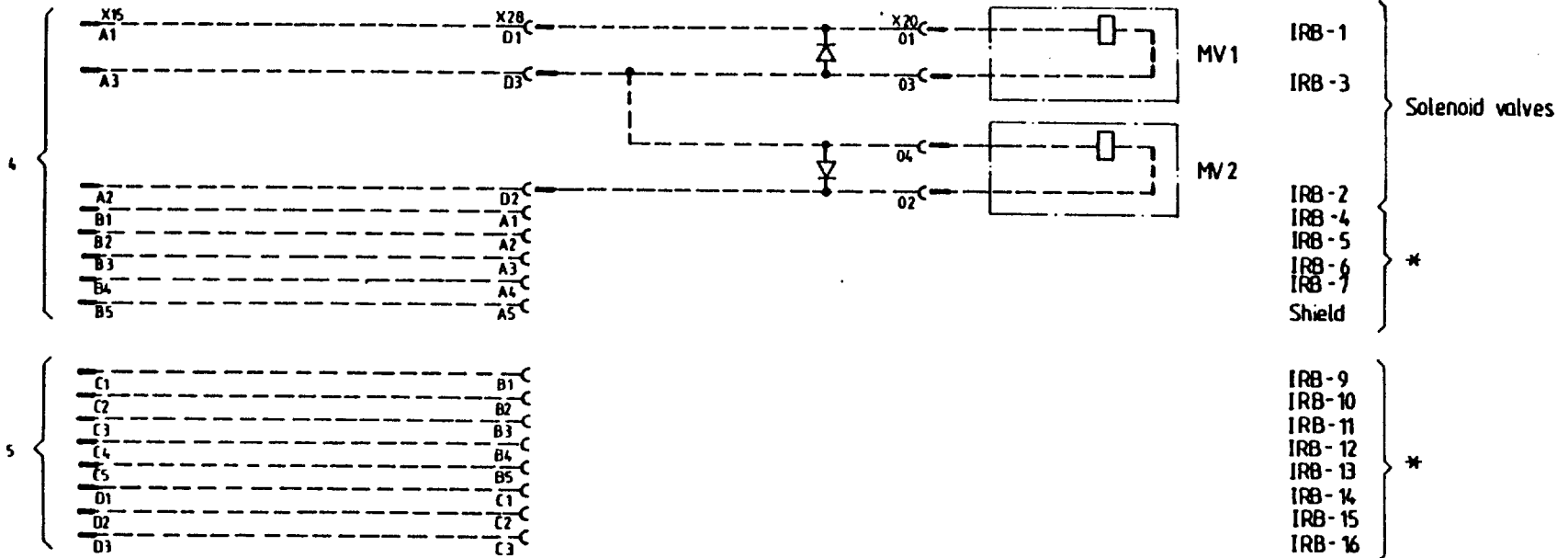
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Drawing No. JAKA-1 86 16  
Change Order No. 001  
Year Week

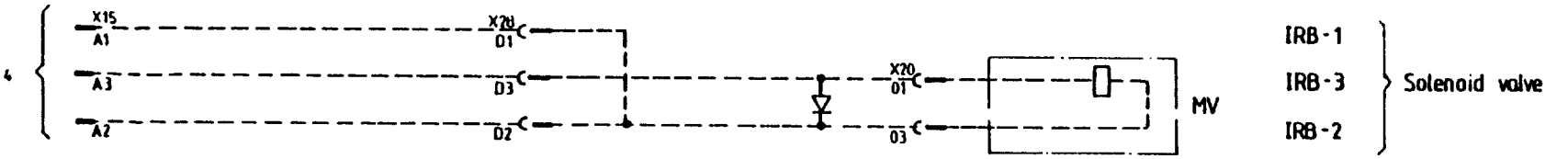
No.	Revision	August	Year	Week

Drawing: Prepared by <b>KAUFMANN</b> Drawing: Checked by <b>BERGSTROM</b> Drawn by <b>FORSS</b>	IRB G6/2 with ABSM <b>ASEA</b>	File No. Draw. Year. Week JAKA-1 86 16	Part No. Sheet 6397 003-TK 05 copy
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The alternative two solenoid valves



The alternative one solenoid valve



Drawn by: Order No. Year Week: COM1  
 TID No.  
 Design checked by: Year Week: COM1

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Drawn by: Form No.  
 Design checked by: Year Week: COM1

Year	Week	Appr	Year	Week

Design checked by  
**KAUFMANN**  
 Drawing checked by  
**BERGSTROM**  
 Drawn by  
**FONSS**

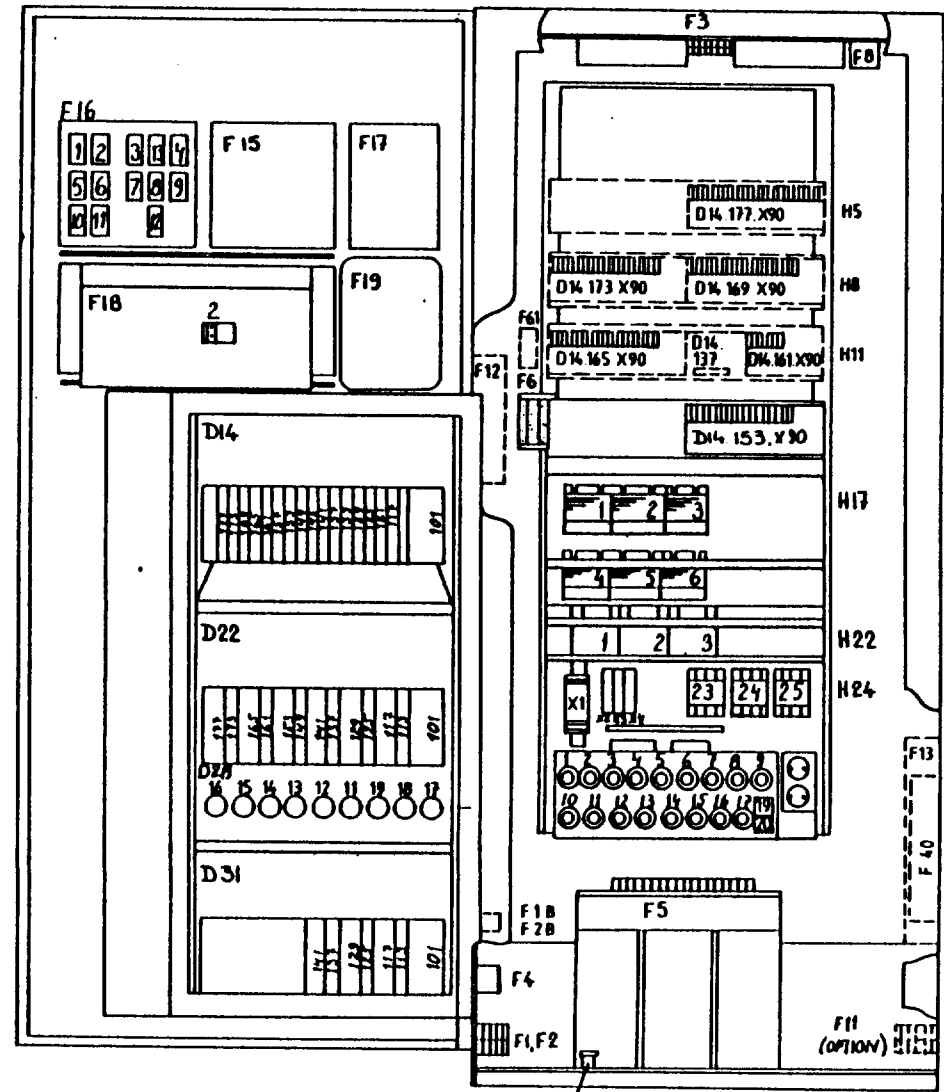
IRB G6/2 with ABSM  
**ASEA**  
 Iss. by Dept Year Week  
 IAKA 1 86 16

6397 003-TK  
 New Incl. Sheet  
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A					B		C		D		
No.	Revision	Appr.	Check	Date			<input type="checkbox"/> Overallscheme Block diagram	<input checked="" type="checkbox"/> Kretscheme Circuit diagram			Sheet
4	Adj F12 and F13 add.	NAH	JKLS	86 19			Control system IRB 6/2		6704 100-BCA		2
6	F15 add RI 594		JSAK	85 31							3
7	F18 F28 F40 ADD RI 682		JKPK	86 11							
8	D14 157 DELETED RI 697		JKPK	86 19							
<b>ASEA</b>							Design checked by JKEM	Drawing checked by JKEM	Drawn by BWC	For by sheet JKK	Year Week 83 20

VIEW OF CONTROL CABINET



Blickort

The manufacturer shall not be held responsible for any errors in this drawing. The customer shall be responsible for the correctness of the data and the conditions of use.

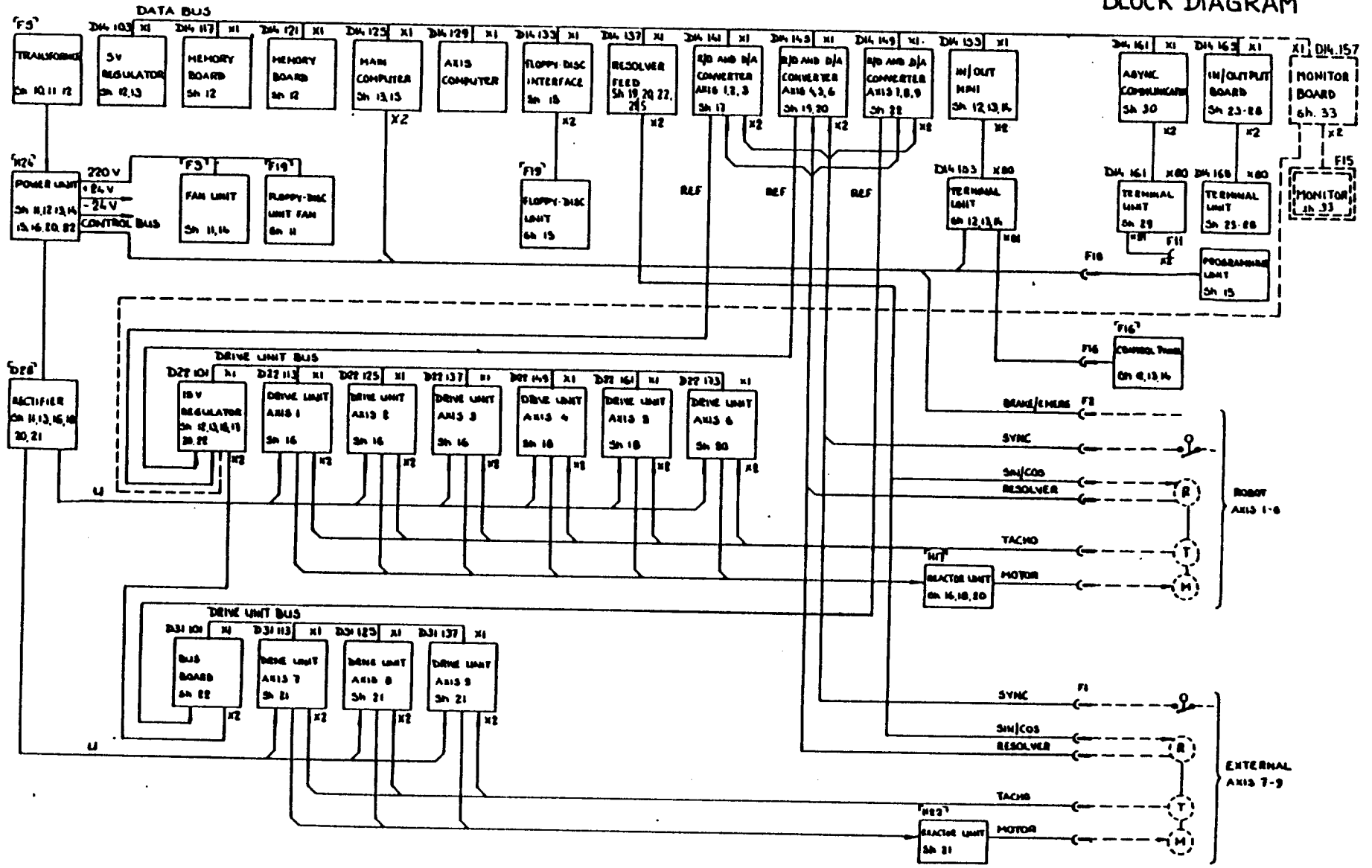
Order No.	
Y18 No.	
Order No.	



No	Revisi	Appr	Disr	Year	Rev
1	D14 161 ASYNK COMMUNICATION MS	N.A.H	JKCS	83	23
4	Adj	NAH	JKCS	84	19
5	PD-BUS DEL	RI 165	JSAK	84	49
6	Monitor Infr.	RI 394	JSAK	85	31
7	Sh 3,5 add	RI 682	JPKK	86	11

<input checked="" type="checkbox"/> Overallscheme Block diagram Control system	<input type="checkbox"/> Kretscheme Circuit diagram IRB 6/2	<b>6704 100-BCA</b>	Page 3 of 3.5
<b>ASEA</b>		Design checked by JKEM	Drawing checked by JKEM
		Drawn by BAK	No. of Rev JKEM
		Year 83	Month 20

### BLOCK DIAGRAM



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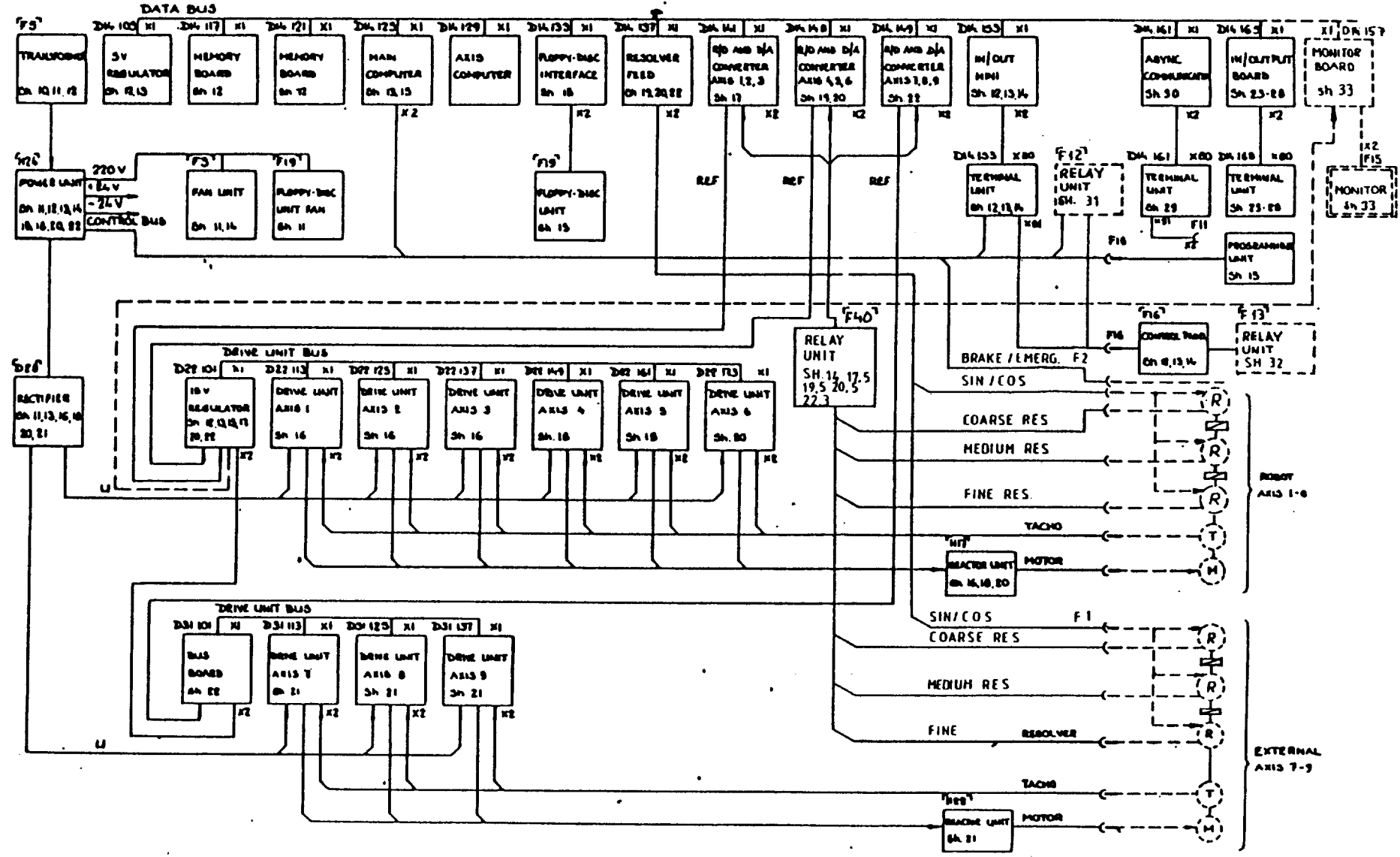
1	2	3	4	5	6	7	8	9	10
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Rev	Description	Date	By	App
1	R1 582			

Översiktsschema Block diagram     Kretsenschema Circuit diagram  
**Control system IRB 6/2**    6704 100-BCA    3.5  
**ASEA**    Design checked by Ljungner    Petterson/EY    JRP/86 11

**ABSOLUTE MEASURING SYSTEM (OPTION)**

**BLOCK DIAGRAM**



Bildkort

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No.	Description	Author	Check	Date
3	Inhibit - N introduced	NAH	JKKE	83.14
4	DSPC 150 intr.	NAH	JKCS	84.19
5	Jumpers DSPC 150 RI 502 DSPC 153 del. RI 165	NAH	JSAK	84.49
8	DSPC 157 or 150 RI 690	NAH	JKPK	86.20

Oversichtsschema Block diagram <input checked="" type="checkbox"/> Kretsschema Circuit diagram		6704 100-BCA	
Control system 1RB 6/2		Design checked by JKEM	Drawing checked by JKEM
<b>ASEA</b>		Drawn by BME	For the date JKK

JUMPERS ON MAIN COMPUTER

D 14.125

DSPC 157 Main single-board computer	
1. Memory address field S6: 1-2 S13: 2-3, 5-6, 8-9, 17-18	<input checked="" type="checkbox"/> Memories on the board <input checked="" type="checkbox"/> 0-512 kbytes
2. Memory type S10: 1-3, 5-6, 11-12 S20: 1-3, 5-6, 11-12	<input checked="" type="checkbox"/> EPROM 27256 <input checked="" type="checkbox"/> EPROM 27256
3. Back-up voltage S5: 1-2, 3-5, 4-6	<input checked="" type="checkbox"/> None
4. Access time S12: 3-4	<input checked="" type="checkbox"/> 2 Wait-states
5. Mode S2: 3-4 X9: 1-2	<input checked="" type="checkbox"/> Normal operation <input checked="" type="checkbox"/> Normal operation
6. Inhibit -N S11: 1-2 Shall be removed	

Attention! The jumpers which are not marked must be placed according to the actual options which are included in the system

Other jumper groups are not to be used

The pin marked "1" on the short side of the straps groups is the first pin.

The jumper groups are not to be used if the actual options are not included in the system. The pin marked "1" on the short side of the straps groups is the first pin.

1	5
2	4
3	3

No	Description	Amount	Design	Year
5	New sheet RI 502	1	JSAK	84.49
6	Options for DSMB 127 del RI 606		JSAK	85.31
	Jumper S2: 3-4 add RI 627			
8	DSMB 127 was 124 and 125 RI 608		JKPK	86.20

<input type="checkbox"/> Översiktschema Block diagram <input checked="" type="checkbox"/> Kretschema Circuit diagram		6704 100-BCA		Sheet 4,5
Control system IRB 6/2				Page 5
<b>ASEA</b>		Design checked by Hardegård	Drawing checked by Patterson	Drawn by U.C.
			For the Dept JSAK	Year Month 83 20

### JUMPERS ON MEMORY BOARDS

014 121

DSMB 127 PROM/RW memory board	
1 Memory address field	
S1: 2-3, 4-5, 7-8, 10-11, 14-15, 17-18, 20-21, 23-24	<input checked="" type="checkbox"/> 896k - 960k bytes
S100: 5-6, 8-9, 11-12	
3 Back-up voltage	
S2: 1-2, 3-4, 5-6, 7-8, 9-10, 11-12 S6: 1-2	<input checked="" type="checkbox"/> Internal on <input checked="" type="checkbox"/> External on
4 Access time	
S4 1-2	<input checked="" type="checkbox"/> Quick acknowledge activated

014 117

DSMB 127 PROM/RW memory board	
1 Memory address field	
S1: 1-2, 4-5, 7-8, 10-11, 14-15, 17-18, 20-21, 23-24	<input checked="" type="checkbox"/> 960k - 1024k bytes
S100: 5-6, 8-9, 11-12	
3 Back-up voltage	
S2: 1-2, 3-4, 5-6, 7-8, 9-10, 11-12 S6: 1-2	<input checked="" type="checkbox"/> Internal on <input checked="" type="checkbox"/> External on
4 Access time	
S4 1-2	<input checked="" type="checkbox"/> Quick acknowledge activated

Bildkort


No.	Revision	Appr.	Drawn	Year	Wk
3	DSQC 115 add. Redrawn	JEM	JKKE	83	46
5	DSQC 123 inlr. RI 481	JEM	JSAK	84	49
8	DSQC 129 was 123 RI 695	JEM	JKPK	86	20

<input type="checkbox"/> Översiktsschema Block diagram <input type="checkbox"/> Krets-schema Circuit diagram		6704 100 - BCA	
Control system IRB 6/2		Design checked by JKEM	Drawing checked by JKEM
<b>ASEA</b>		Drawn by JKK	Year/Week 83 20

JUMPERS ON AXIS CONTROL BOARDS

D14.129

DSQA 110 Axis slave computer	
1. I/O address	<input checked="" type="checkbox"/> 29
S1: 1-2, 5-6, 8-9, 10-11 14-15, 16-17, 20-21, 23-24	
2. Memory type	<input checked="" type="checkbox"/> RW 6116
S6: 1-2, 3-4 S5: 1-3, 5-6 <input checked="" type="checkbox"/> EPROM 2764	
3. Access time	<input checked="" type="checkbox"/> 1 wait-state
S4: 3-4 S3: 1-2 <input checked="" type="checkbox"/> 0 wait-state area 3	
4. Mode	<input checked="" type="checkbox"/> Normal
S2: 7-9 S7: 1-2 <input checked="" type="checkbox"/> Normal	

D14.141

DSQC 129 R/D and D/A converter Axis 1,2,3	
1. I/O address	<input checked="" type="checkbox"/> 41
S1: 1-2, 5-6, 8-9, 11-12 14-15, 17-18, 19-20, 23-24	
2. Measuring channels	<input checked="" type="checkbox"/> Axis 1,2,3
X4: 21-23, 22-24	

D14.145

DSQC 129 R/D and D/A converter Axis 4,5,6	
1. I/O address	<input checked="" type="checkbox"/> 45
S1: 1-2, 5-6, 7-8, 11-12 14-15, 17-18, 19-20, 23-24	
2. Measuring channels	<input type="checkbox"/> Axis 4,5
X4: 21-23, 24-26 <input type="checkbox"/> Axis 4,5,6 (Option)	
X4: 21-23, 22-24	

D14.137

DSQC 115 Resolver feed and two D/A (Option)	
1/O address	<input checked="" type="checkbox"/> 37
S1: 1-2, 4-5, 7-8, 11-12 13-14, 16-17, 20-21, 23-24	

D14.149

DSQC 129 R/D and D/A converter Axis 7,8,9 (Option)	
1. I/O address	<input checked="" type="checkbox"/> 49
S1: 1-2, 5-6, 8-9, 10-11 14-15, 17-18, 19-20, 23-24	
2. Measuring channels	<input type="checkbox"/> Axis 7 (Option)
X4: 23-25, 24-26 <input type="checkbox"/> Axis 7,8 (Option)	
X4: 21-23, 24-26 <input type="checkbox"/> Axis 7,8,9 (Option)	
X4: 21-23, 22-24	

Bildkonst

The drawings are to be read in connection with the general conditions of sale and the instructions for use of the product.

1	2	3
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73	74	75
76	77	78
79	80	81
82	83	84
85	86	87
88	89	90
91	92	93
94	95	96
97	98	99
100	101	102

No	Region	Post	Dept	Year
1	DLM 161 ASYNK. COMMUNICATION ADD. KAH		JKCS	83 23
5	DSCA 121 DEL. RI 165		JSAK	86 49
6	DSQC 121 intr. RI 594		JSAK	85 31
8	DSCA 121 del. 54 add. DSMC 110 Addr. DSQC 121 RI 689, 698		JKPK	86 20

<input type="checkbox"/> Overallscheme Block diagram <input checked="" type="checkbox"/> Kretscheme Circuit diagram		6704 100-BCA	
Control system 1RB 6/2		Design checked by JKEM    Drawing checked by JKEM    Drawn by BWA    No by dept JKK	
<b>ASEA</b>		Year 83    Week 20	

JUMPERS ON I/O BOARDS

**DI4 133**

DSMC 110 Floppy-disc interface

1. I/O address  
 S1: 1-2, 4-5, 8-9, 11-12     33  
 13-14, 16-17, 20-21, 23-24

2. Density, writepulse adjustment and mode  
 S2: 1-2, 3-4     Normal  
 S3: 1-2     Normal  
 S4: 1-2     Normal

**DI4 161**

DSCA 114 Asynchronous communication module (Option)

1. I/O-address and interrupt level  
 S1: 8-9, 11-12, 14-15, 16-17, 19-20, 23-24     60  
 S1: 2-3, 4-5     Level 2

**DI4 153**

DSDX 110 I/O-mini

1. I/O address  
 S1: 1-2, 4-5, 8-9, 11-12     53  
 13-14, 17-18, 19-20, 23-24

2. Mode  
 X3: 37-38, 39-40     Normal

**DI4 157**

DSQC 121 Monitor board

Memory address field (8k byte)

S1: 2-3, 5-6, 8-9, 11-12, 14-15, 16-17, 20-21     By placing the jumpers in different ways it is possible to choose any 8k byte field within 0-2 M byte

Bildkort


No.	Revizija	Author	Dept	Year
1	DSAO 110 add. D14.165 was D14.161 D14.169 was D14.165	NA H	JKCS	83.23
3	DSAO 110 jumpers add.	JKRE	JKRE	83.46
6	DSDO 31 intr. RI 534	JSAK	JSAK	85.31

C		D	
<input type="checkbox"/> Overallschema Block diagram <input checked="" type="checkbox"/> Kretscheema Circuit diagram		6704 100-BCA	
Control system    IRB 6/2			
<b>ASEA</b>		Design checked by JKEM	Drawing checked by JKEM
		Drawn by BWK	For by dept JKK
		Year	Week
		83	20

JUMPERS ON I/O BOARD

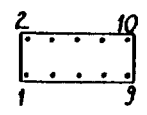
**'D14.165'**

DSDX 110 DSDO 110, 120, 130, 131, 140 DSDI 110, 120, 130, 140 DSAI 120 2) DSAO 110	I/O-mini Digital outputs Digital inputs Analog inputs Analog outputs	} (Option)
1. I/O address		
S1: 1-2, 5-6, 7-8, 11-12	<input checked="" type="checkbox"/>	65
14-15, 16-17, 19-20, 23-24		
2. Test light diodes on DSAI 120		
S2: 1-2	<input checked="" type="checkbox"/>	Off
3. Mode on DSDX 110, DSDI 110, 120, 130, 140		
X3: 37-38, 39-40	<input checked="" type="checkbox"/>	Normal
4. Function on DSAO 110		
S101, S201, S301, S401: 1-2, 3-4, 5-6, 7-8	<input checked="" type="checkbox"/>	Normal
5. Mode on DSAO 110 1)		
S102, S202, S302, S402		
1-2, 5-6	<input type="checkbox"/>	0 - ± 10V
1-2, 7-8	<input type="checkbox"/>	0 - ± 10mA
1-2, 7-8	<input type="checkbox"/>	0 - ± 20mA
6. Mode on DSAO 110		
Solder strap W106, W206, W306, W406		
connected	<input type="checkbox"/>	0 - ± 10V
not connected	<input type="checkbox"/>	0 - ± 10mA
connected	<input type="checkbox"/>	0 - ± 20mA

**'D14.169'**

DSDX 110 DSDO 110, 120, 130, 131, 140 DSDI 110, 120, 130, 140 DSAI 120 2) DSAO 110	I/O-mini Digital outputs Digital inputs Analog inputs Analog outputs	} (Option)
1. I/O address		
S1: 1-2, 5-6, 8-9, 10-11	<input checked="" type="checkbox"/>	69
14-15, 16-17, 19-20, 23-24		
2. Test light diodes on DSAI 120		
S2: 1-2	<input checked="" type="checkbox"/>	Off
3. Mode on DSDX 110, DSDI 110, 120, 130, 140		
X3: 37-38, 39-40	<input checked="" type="checkbox"/>	Normal
4. Function on DSAO 110		
S101, S201, S301, S401: 1-2, 3-4, 5-6, 7-8	<input checked="" type="checkbox"/>	Normal
5. Mode on DSAO 110 1)		
S102, S202, S302, S402		
1-2, 5-6	<input type="checkbox"/>	0 - ± 10V
1-2, 7-8	<input type="checkbox"/>	0 - ± 10mA
1-2, 7-8	<input type="checkbox"/>	0 - ± 20mA
6. Mode on DSAO 110		
Solder strap W106, W206, W306, W406		
connected	<input type="checkbox"/>	0 - ± 10V
not connected	<input type="checkbox"/>	0 - ± 10mA
connected	<input type="checkbox"/>	0 - ± 20mA

1) Strap group orientation for mode on DSAO 110



2) Straps on Terminal unit for DSAI 120 should be removed. Make sure that the straps don't fall inside the cabinet

Bildkot

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No.	Revision	Appr.	Date	Year	Ver.
1	DSAO 110 add DPL173 was DPL167 DPL171 was DPL173	WAH	JKCS	83	23
3	DSAO110 jumpers add	F.44	JKKE	83	46
6	DSDQ 131 intr. RJ 534		JSAK	85	31

C		D	
<input type="checkbox"/> Übersichtsdiagramm Block diagram	<input checked="" type="checkbox"/> Kreisschema Circuit diagram	6704 100-BCA	
Control system IRB 6/2			
ASEA		Design checked by JKEM	Drawing checked by JKEM
		Drawn by B.4c	For by dept JKK
		Year	Week
		83	20

JUMPERS ON I/O BOARDS

**'D14.173'**

DSDX 110 DSDO 110, 120, 130, 131, 140 DSDI 110, 120, 130, 140 DSAO 110	I/O - mini Digital outputs Digital inputs Analog outputs	} OPTION
1. I/O address		
SI: 1-2, 4-5, 8-9, 11-12	<input checked="" type="checkbox"/> \$ 73	
13-14, 16-17, 19-20, 23-24		
2. Made on DSDX 110, DSDI 110, 120, 130, 140		
X3: 37-38, 39-40	<input checked="" type="checkbox"/> Normal	
3. Function on DSAO 110		
6101, 5201, 6301, 5401:	<input checked="" type="checkbox"/> Normal	
1-2, 3-4, 5-6, 7-8		
4. Made on DSAO 110 1)		
5102, 5202, 5302, 5402		
1-2, 5-6	<input type="checkbox"/> 0 - ± 10V	
1-2, 7-8	<input type="checkbox"/> 0 - ± 10mA	
1-2, 7-8	<input type="checkbox"/> 0 - ± 20mA	
5. Made on DSAO 110		
Solder strap W106, W206, W306, W406		
connected	<input type="checkbox"/> 0 - ± 10V	
not connected	<input type="checkbox"/> 0 - ± 10mA	
connected	<input type="checkbox"/> 0 - ± 20mA	

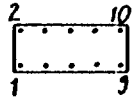
**'D14.177'**

DSDX 110 DSDO 110, 120, 130, 131, 140 DSDI 110, 120, 130, 140	I/O - mini Digital outputs Digital inputs	} OPTION
1. I/O address		
SI: 1-2, 4-5, 7-8, 11-12	<input checked="" type="checkbox"/> \$ 77	
13-14, 16-17, 19-20, 23-24		
2. Made on DSDX 110, DSDI 110, 120, 130, 140		
X3: 37-38, 39-40	<input checked="" type="checkbox"/> Normal	

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1) Strap group orientation for made on DSAO 110





No.	Revision	Appr.	Drawn	Year	Ver.
4	Text adj.	NAH	JKCS	84	19
5	YYT 102 N Intr. RI 491		JSAK	84	49
6	Overload for axis 2,3 IRB LG, GG add. RI 629		JSAK	85	31

C		D		Sheet
<input type="checkbox"/> Übersichtsschema Block diagram <input checked="" type="checkbox"/> Kretsschema Circuit diagram		Control system IRB 6/2		8
6704 100-BCA				9
<b>ASEA</b> Design checked by JKEM		Drawing checked by JKEM Drawn by BJK Ink by JKK		Year 83 Week 20

JUMPERS ON DRIVE UNITS

D22.113

1) YYT 102D/YYT 102 N Control board with tacho Axis 1

---

1. Overload  
SI: 7-8  6,5A,

D22.137

YYT 102D Control board with tacho Axis 3

---

1. Overload  
SI: 7-8  6,5 A  
SI: 1-2<sup>2)</sup>  8 A

D22.125

YYT 102D Control board with tacho Axis 2

---

1. Overload  
SI: 7-8  6,5A,  
SI: 1-2<sup>2)</sup>  8 A

D22.149

YYT 102E Control board with tacho Axis 4

---

1. Overload  
SI: 7-8  6,5 A,

D22.161

YYT 102E Control board with tacho Axis 5

---

1. Overload  
SI: 7-8  6,5A,

1) YYT 102N ONLY FOR IRB 66/2

2) ONLY FOR IRB LG, GG WITH MOTOR TYPE F12 M4

Bildkont

Rev.	Year	Ver.
1	83	20

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No.	Revision	Appd.	Dept.	Year	Wk.
4	6:th robot axis introduced	NAH	JKCS	84	19

C		D	
<input type="checkbox"/> Översiktschema Block diagram	<input checked="" type="checkbox"/> Krets-schema Circuit diagram	6704 100-BCA	
Control system IRB 6/2			
<b>ASEA</b>	Design checked by JKEM	Drawing checked by JKEM	Drawn by BWC / Iss. by dept. JKK
			Sheet 9 From 10 Year Week 83 20

D22.173

YYT 102K Control board with tach. IRB axis 6 (Option)	
YYT 102A Control board with tach. External axis 6 (Option)	
I. Overload	
SI: 9-10	<input type="checkbox"/> 2A, IRB
SI: 7-8	<input type="checkbox"/> 6.5A, External small motor
SI: 1-2	<input type="checkbox"/> 8A, External large motor

JUMPERS ON DRIVE UNITS AND CONVERTER

D31.125

YYT 102A Control board with tach. External axis 8 (Option)	
I. Overload	
SI: 7-8	<input type="checkbox"/> 6.5A External small motor
SI: 1-2	<input type="checkbox"/> 8A External large motor

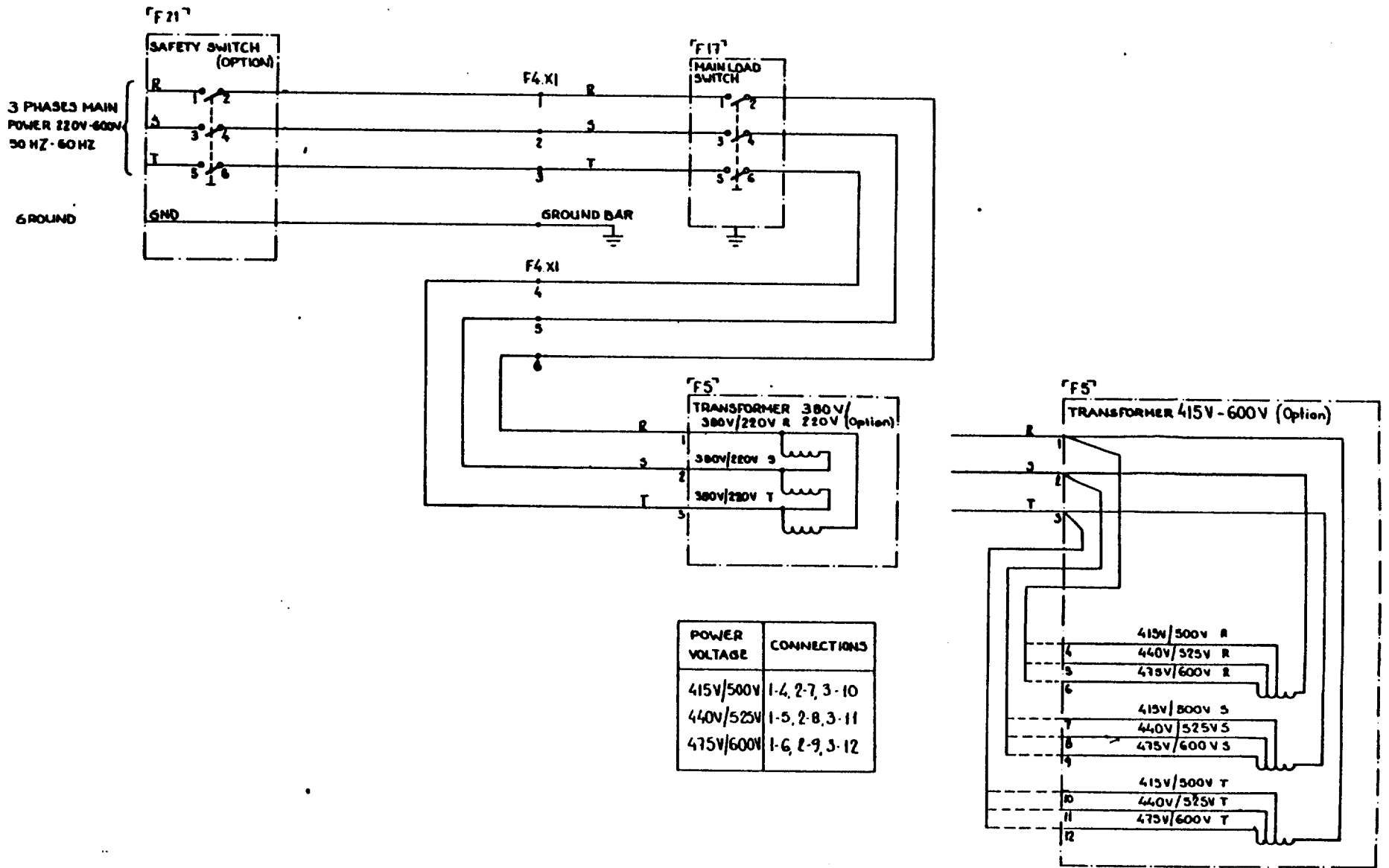
D31.113

YYT 102A Control board with tach. External axis 7 (Option)	
I. Overload	
SI: 7-8	<input type="checkbox"/> 6.5A External small motor
SI: 1-2	<input type="checkbox"/> 8A External large motor

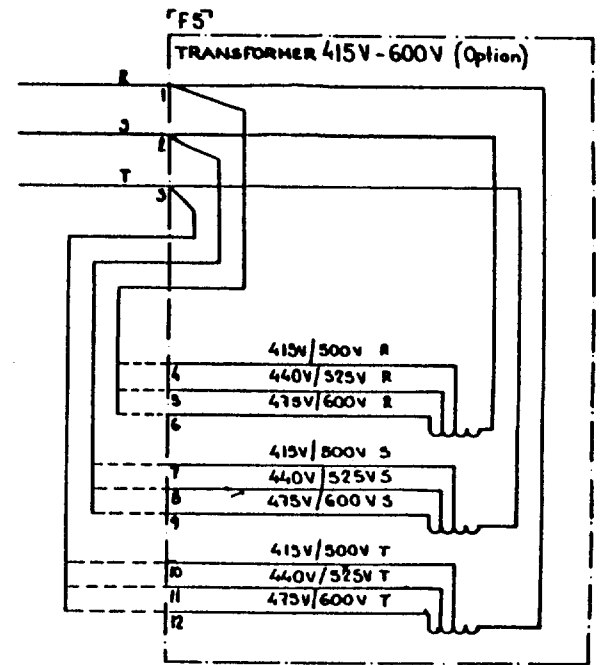
D31.137

YYT 102A Control board with tach. External axis 9 (Option)	
I. Overload	
SI: 7-8	<input type="checkbox"/> 6.5A, External small motor
SI: 1-2	<input type="checkbox"/> 8A, External large motor

MAIN POWER CONNECTION



POWER VOLTAGE	CONNECTIONS
415V/500V	1-4, 2-7, 3-10
440V/525V	1-5, 2-8, 3-11
475V/600V	1-6, 2-9, 3-12



Bilskott

No.	Year	Ver

No.	Revision	Appr.	Drawn	Scale
4	British adaption intr.	NAH	JKCS	04.19

<input type="checkbox"/> Overskisschema Block diagram	<input checked="" type="checkbox"/> Kretsdiagram Circuit diagram
Control system IRB 6/2	

6704 100-BCA

Sheet	11
Cover	12
Year	83
Week	20

**ASEA**

Design checked by JKEM

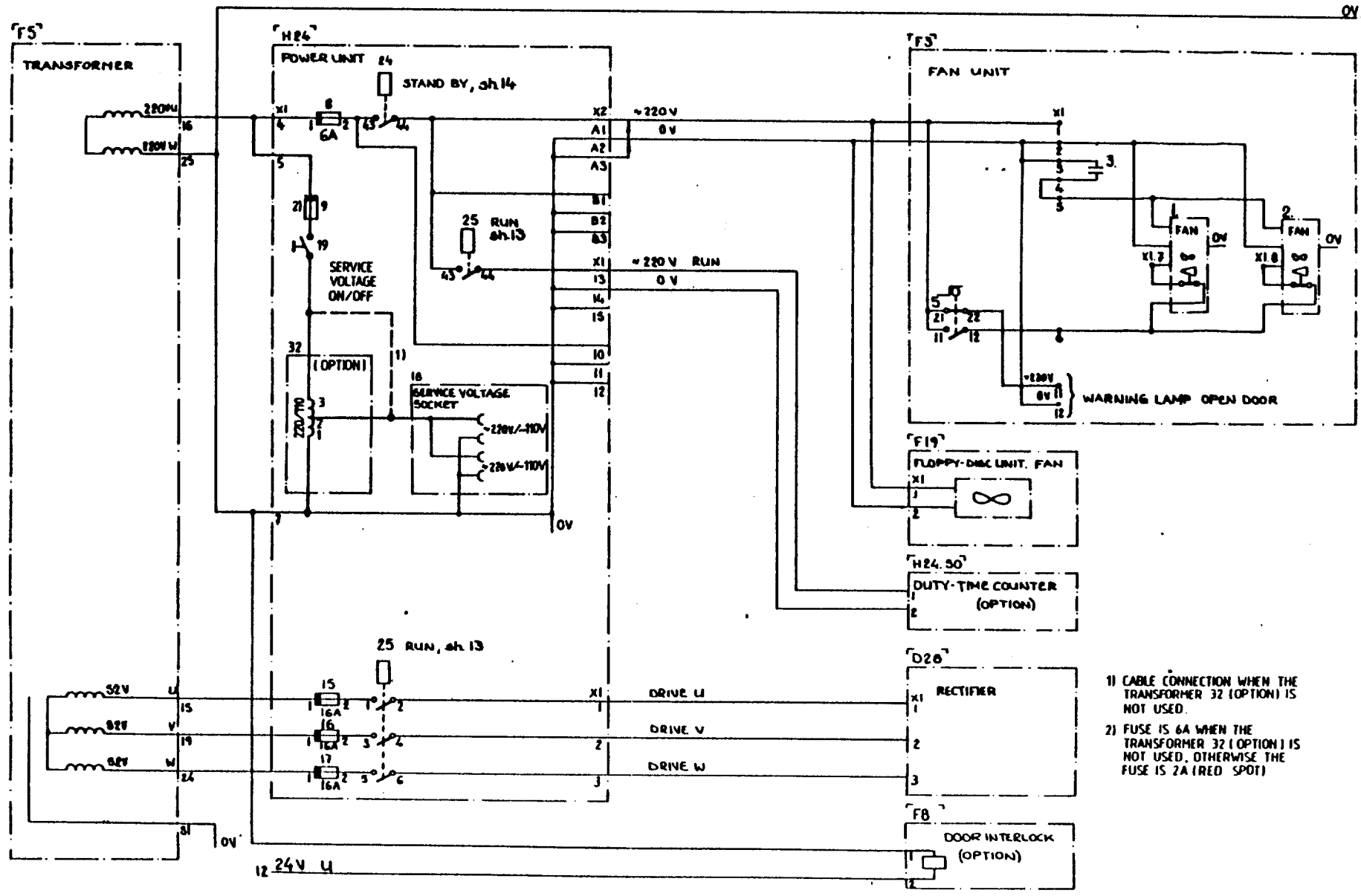
Drawing checked by JKEM

Drawn by BWC

See by dept JKK

POWER DISTRIBUTION

04/12



- 1) CABLE CONNECTION WHEN THE TRANSFORMER 32 (OPTION) IS NOT USED.
- 2) FUSE IS 6A WHEN THE TRANSFORMER 32 (OPTION) IS NOT USED, OTHERWISE THE FUSE IS 2A (RED SPOT)

Bildkort

This diagram is not to be used for the design of the equipment. It is only a reference diagram. The user must refer to the technical specifications of the equipment for the correct wiring and component values.

Rev.	1	2	3
Date			
By			
Checked by			

No	Revision	Appr	Drawn	Year	Week	7	8
4	Redrawn. Dead mans handle and remote control intr.	NAH	JKCS	84	19	F 60 ADD	RI 682
5	Control panel ch. RI 695		JSAK	84	49	SH 14.5 DEL	RI 593
6	DSDC (24 intr. +24V) DSD 512		JSAK	85	31		

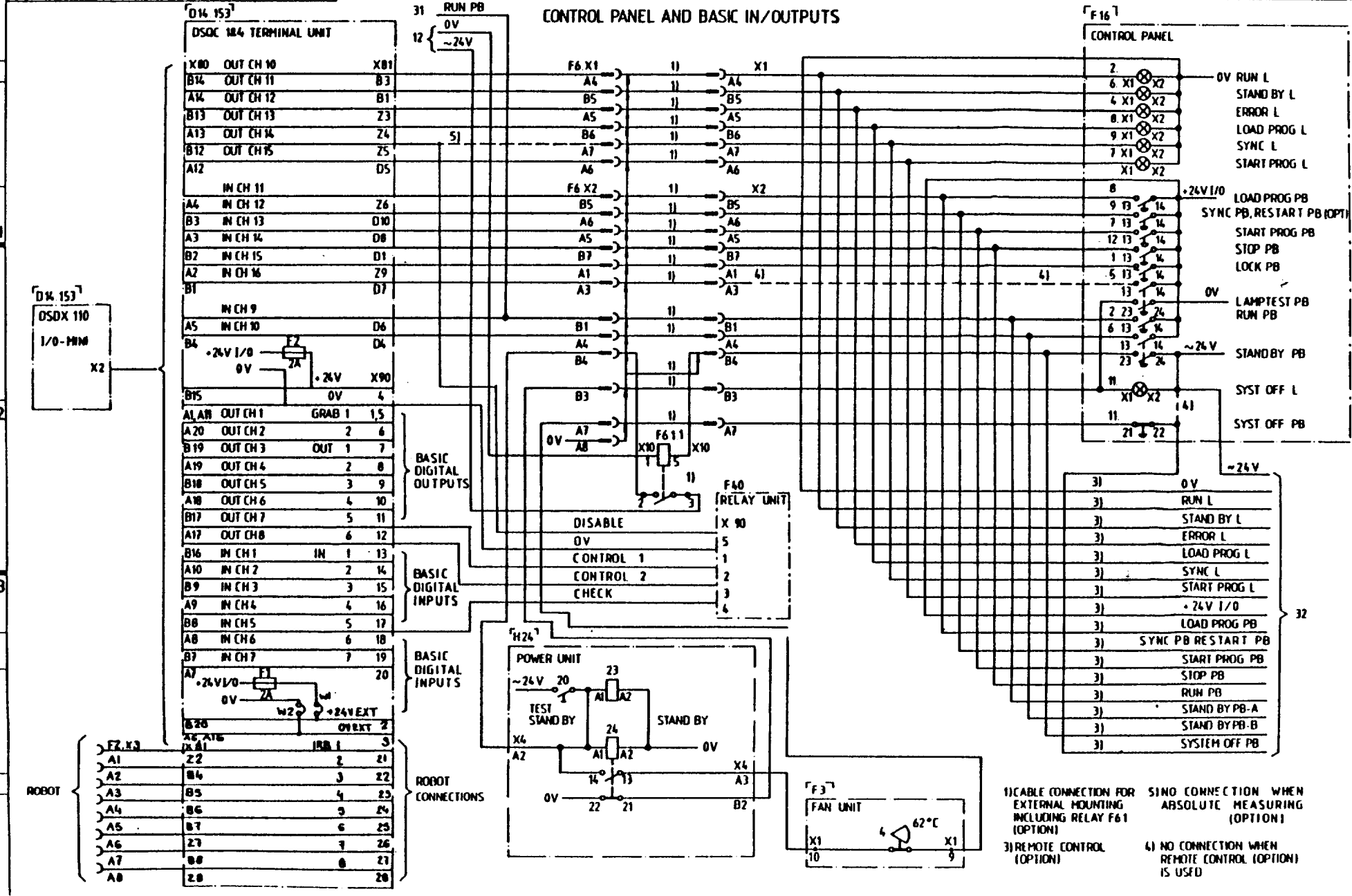
Control system IRB 6/2

**ASEA**

6704 100-BCA

Design checked by JKEM  
Drawn by JJK

Bildkort



1) CABLE CONNECTION FOR EXTERNAL MOUNTING INCLUDING RELAY F61 (OPTION)

2) REMOTE CONTROL (OPTION)

3) NO CONNECTION WHEN REMOTE CONTROL (OPTION) IS USED

4) ABSOLUTE MEASURING (OPTION)

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Printed in Sweden by Bildkort AB

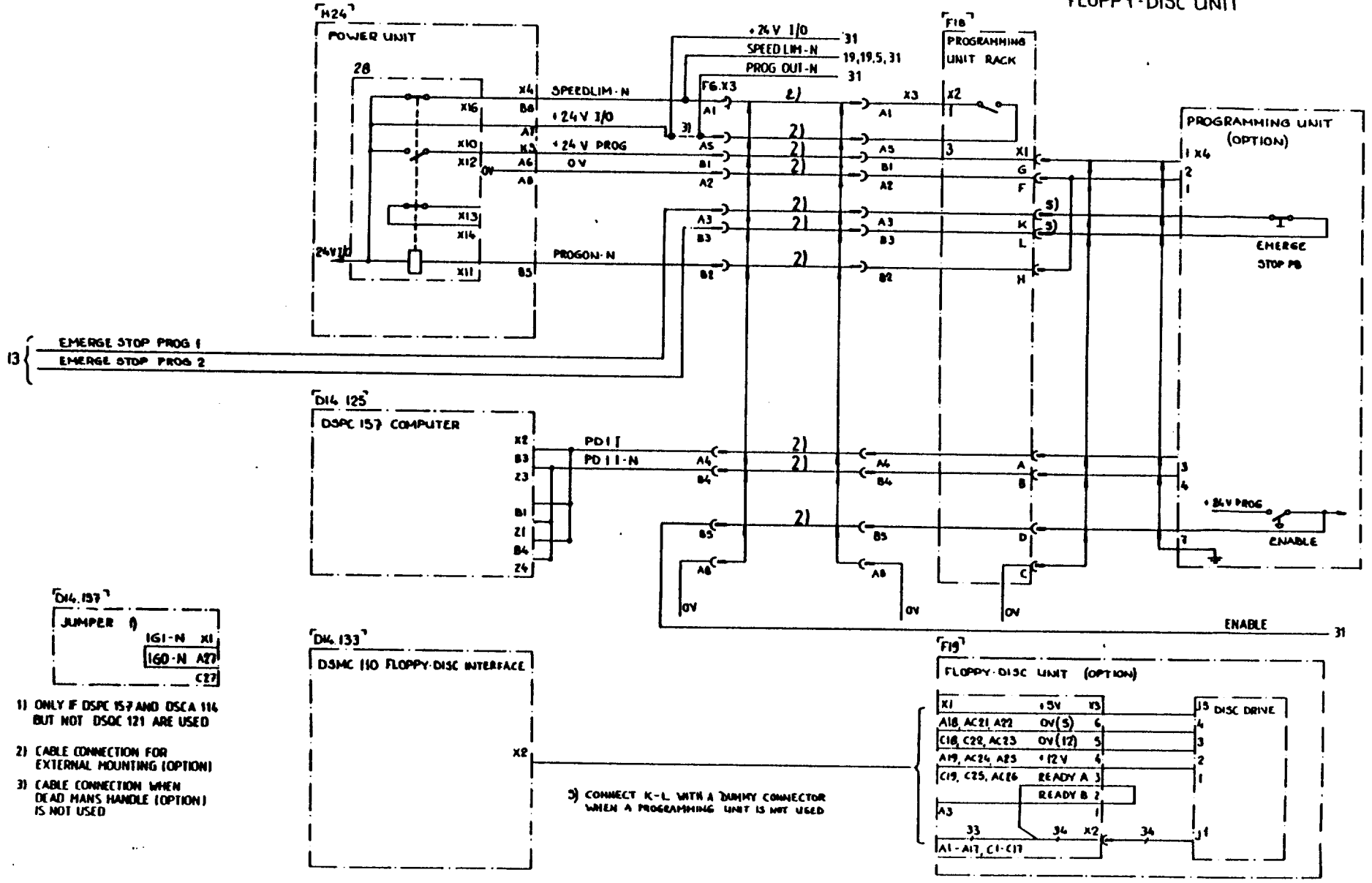
Bilcock

The equipment must not be opened without the written permission and the control panel must not be tampered with. Any work must be done by the authorized service technician only.

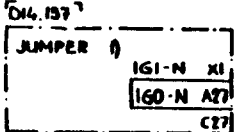
No.	Revision	Appr.	Design	Year	Sh.	Rev.	Appr.	Design	Year	Sh.	Rev.
4	Dead mans handle and DSPC 150 intr. Switch removed on F19	NAH	JKCS	84	19	6	JSAK	85	31		
5	Screened prog unit intr. RI 488 El. set PD-Bus del. RI 502		JSAK	84	49	8	JKPK	86	20		

[1] Oversichtsschema Block diagram [2] Kretsoschema Circuit diagram		Control system IRB 6/2		6704 100-BCA		Sheet 15
ASEA		Design checked by JKEM	Drawing checked by JKEM	Drawn by BHe	For by JKK	Year 83

PROGRAMMING UNIT AND FLOPPY-DISC UNIT



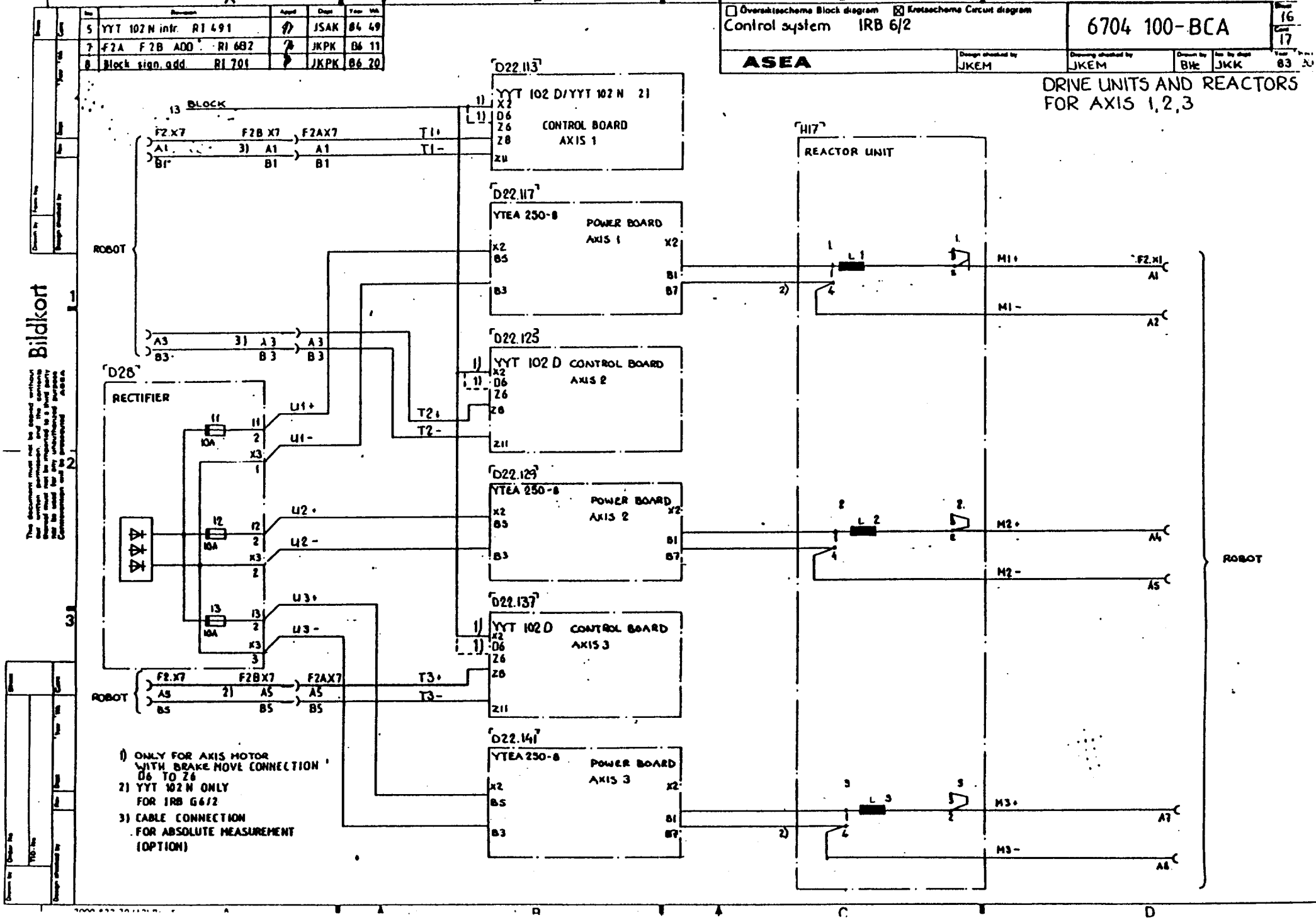
13) EMERGE STOP PROG 1  
EMERGE STOP PROG 2



- ONLY IF DSPC 157 AND DSCA 114 BUT NOT DSCC 121 ARE USED
- CABLE CONNECTION FOR EXTERNAL MOUNTING (OPTION)
- CABLE CONNECTION WHEN DEAD MANS HANDLE (OPTION) IS NOT USED

3) CONNECT K-L WITH A DUMMY CONNECTOR WHEN A PROGRAMMING UNIT IS NOT USED

DRIVE UNITS AND REACTORS FOR AXIS 1,2,3



- 1) ONLY FOR AXIS MOTOR WITH BRAKE MOVE CONNECTION D6 TO Z6
- 2) YTT 102 N ONLY FOR IRB 66/2
- 3) CABLE CONNECTION FOR ABSOLUTE MEASUREMENT (OPTION)

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Design by  
 Group checked by

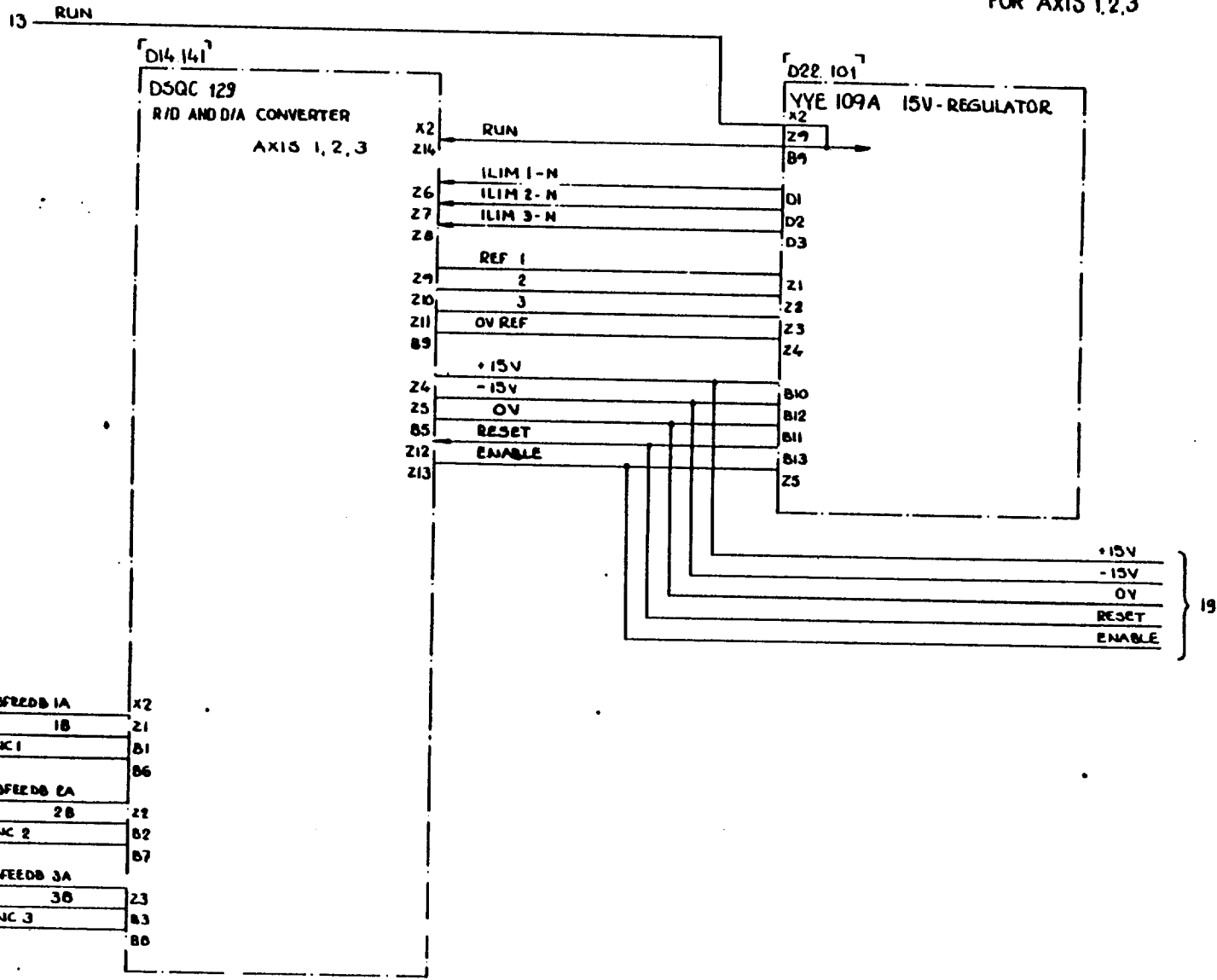
No.	Description	Author	Check	Date
5	DSQC 123 intr RI 481	JSAK	86 49	
7	Sh 17,5 add RI 682	JKPK	86 11	
8	DSQC 129 was 104 RI 685	JKPK	86 19	

<input type="checkbox"/> Overall scheme Block diagram	<input checked="" type="checkbox"/> Kretscheme Circuit diagram	6704 100-BCA		Sheet 17
Control system IRB 6/2				Case 17,5
ASEA		Design checked by JKEM	Drawing checked by JKEM	Year 83 20
		Drawn by BHE	File by JKK	

R/D AND D/A CONVERTER  
FOR AXIS 1,2,3

Bilckort

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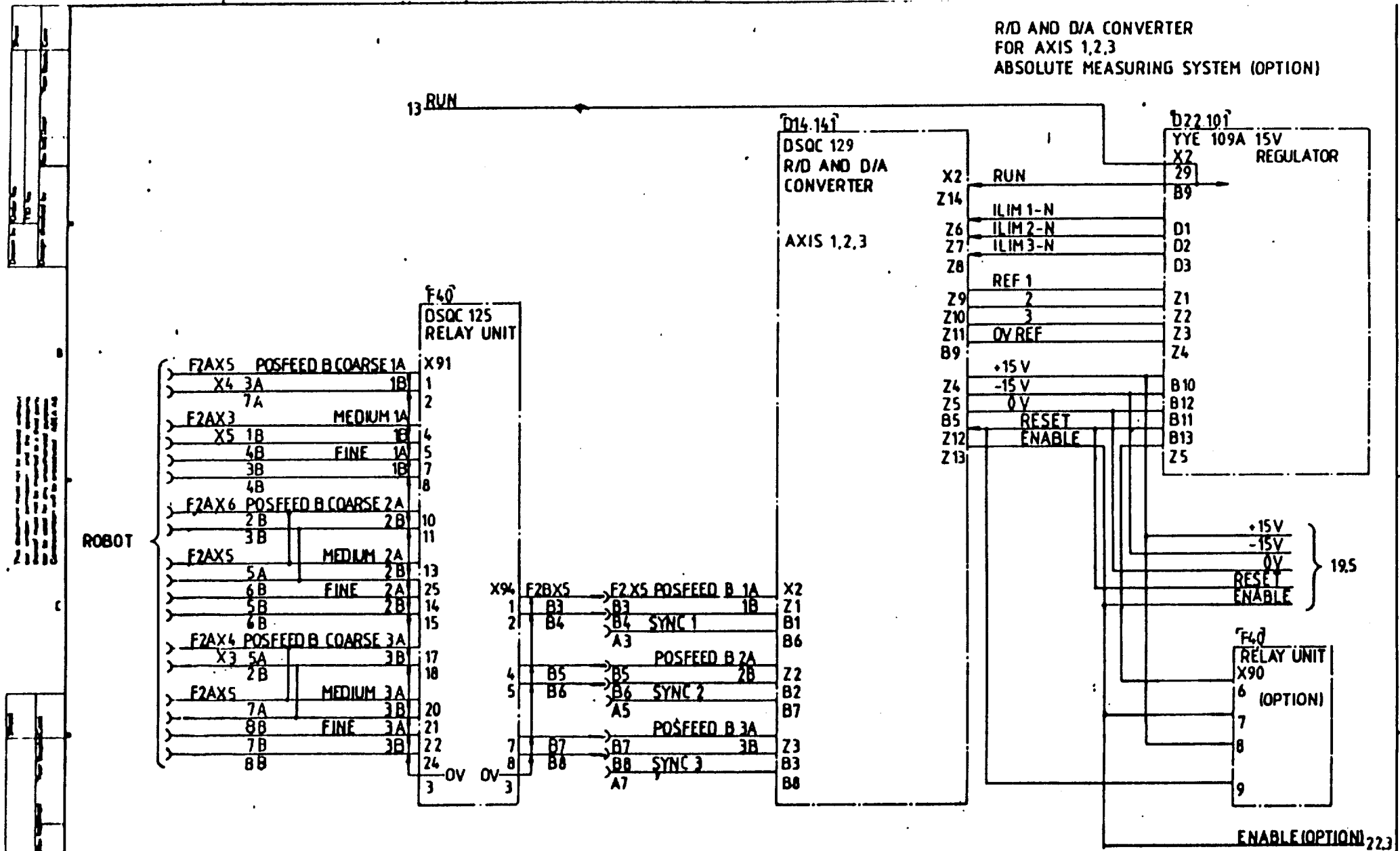


ROBOT

F2.X5 - - POSFEED 1A	X2
B3	Z1
B4	B1
A3	B6
POSFEED 2A	
B5	Z2
B6	B2
A5	B7
POSFEED 3A	
B7	Z3
B8	B3
A7	B8



R/D AND D/A CONVERTER  
FOR AXIS 1,2,3  
ABSOLUTE MEASURING SYSTEM (OPTION)



DSQC 129 was 123 RI 685 RI 682 86 23

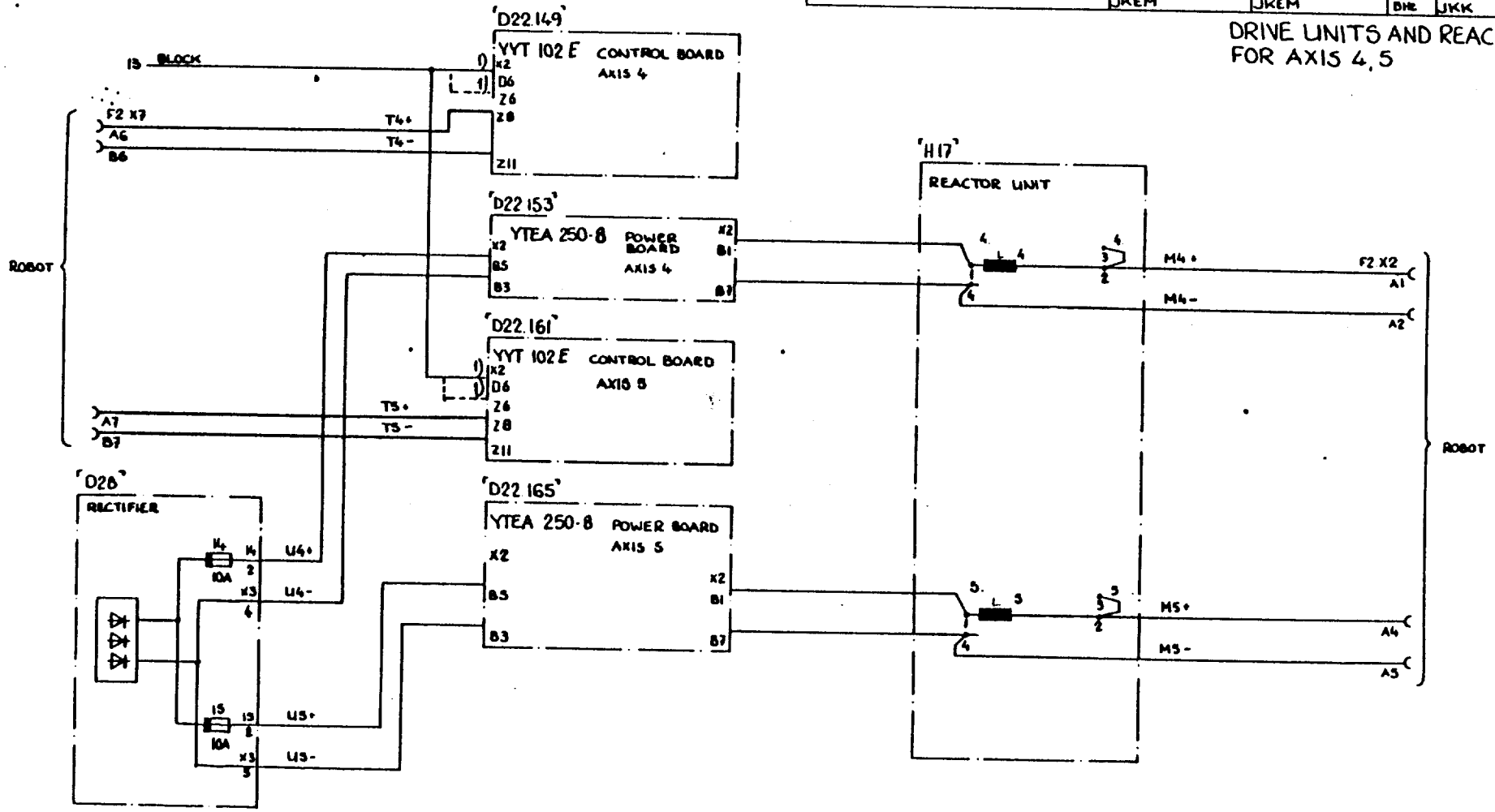
Ljungner-Peffersson Ylikylä  
CIRCUIT DIAGRAM CONTROL SYSTEM IRB 65/2  
ABEA DKPR 86 11

6704 100-BCA 17.5 18

A		B		C		D	
No.	Revision	Appr.	Drawn	Year	1988		
8	Block sign. add. RI 701	JPKA	B632				

<input type="checkbox"/> Översättningsschema Block diagram <input checked="" type="checkbox"/> Kretschema Circuit diagram		Control system IRB 6/2		6704 100-BCA		Sheet 18 of 19 Year 83 20	
<b>ASEA</b>				Design checked by JKEM		Drawing checked by JKEM	
				Drawn by BHE		No. by sheet JKJK	

DRIVE UNITS AND REACTORS FOR AXIS 4,5



1) ONLY FOR AXIS MOTOR WITH BRAKE  
MOVE CONNECTION D6 TO Z6

L100007

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No.	Rev.	Date	By
1			
2			
3			

No	Revision	Appr	Drawn	Year	Week
3	DSQC 115 add	JAK	JKKE	83	46
5	DSQC 123 intr. RI 481		JSAK	84	49
7	Sh 19,5 add RI 682		JKPK	86	11
8	Speedlim-N add RI 697		JKPK	86	20
	DSQC 129 was 123 RI 685				

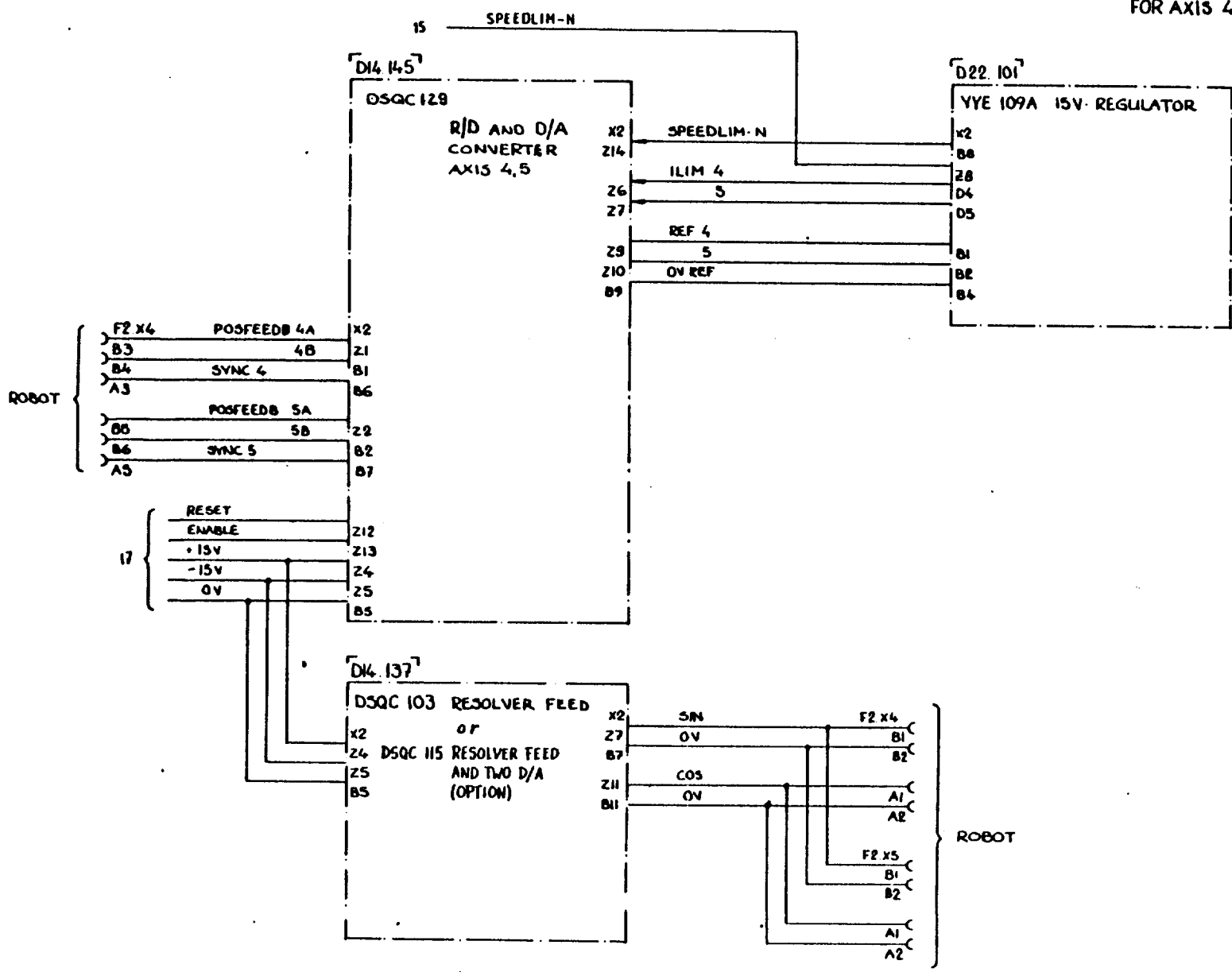
1) Oversichtschemata Block diagram		2) Kretschemata Circuit diagram	
Control system IRB 6/2			
<b>ASEA</b>		Design checked by JKEM	Drawing checked by JKEM
		Drawn by BWC	For the design JKPK
			Year 83
			Week 20

6704 100-BCA

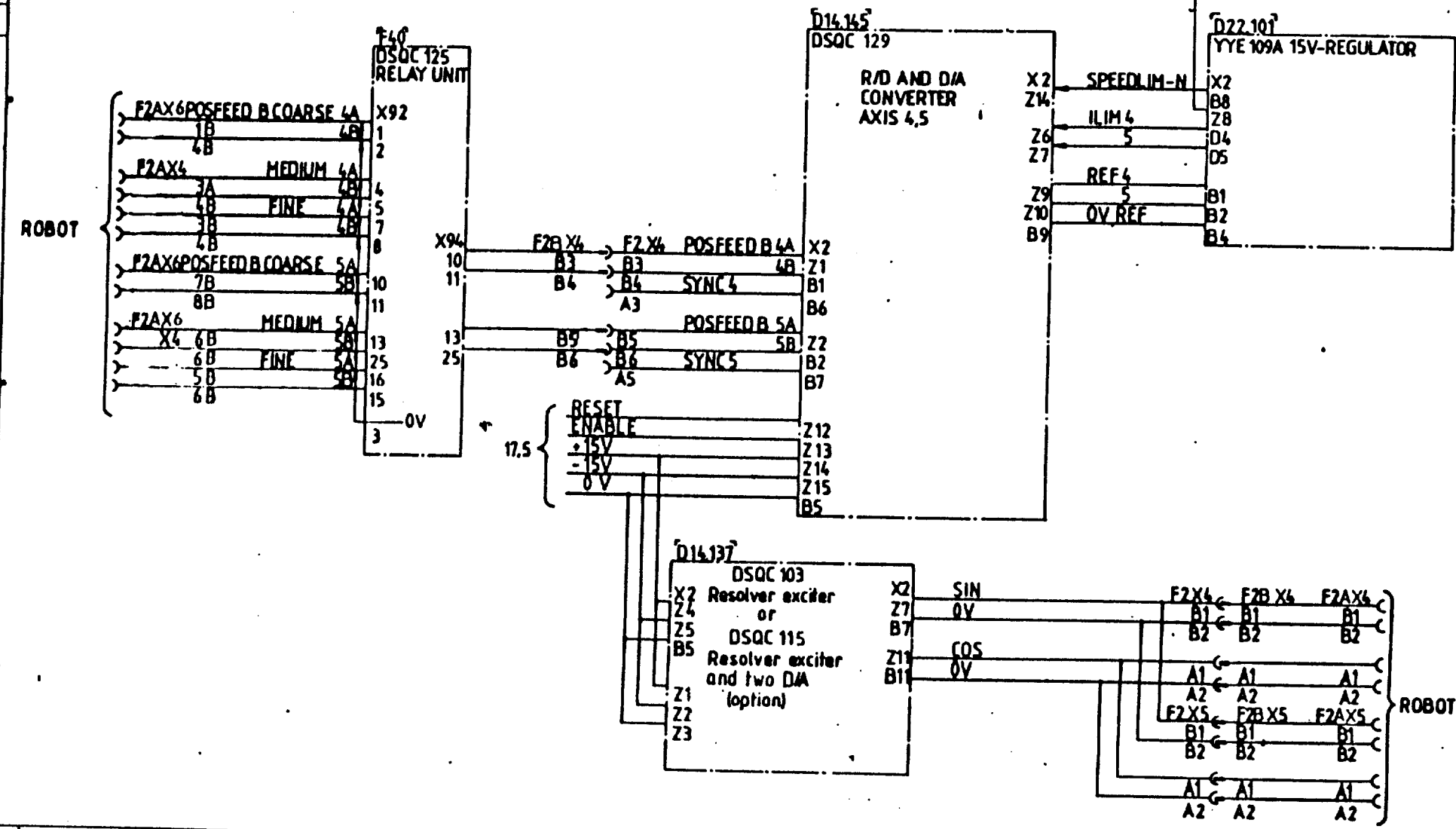
R/D AND D/A CONVERTER  
FOR AXIS 4,5 RESOLVER FEED

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R/D AND D/A CONVERTER  
FOR AXIS 4,5. RESOLVER FEED  
ABSOLUTE MEASURING SYSTEM (OPTION)



8	DSQC 129 was 123	RI 685	RA 23
		RI 682	
Rev	Revision	App'd	Year Month

Design checked by Ljungner	CIRCUIT DIAGRAM CONTROL SYSTEM IRB 6S/2	704 100-BCA	185 20
Checked by Pettersson			
Ylikylä	ABEA	JRPR 86 11	

No	Revision	Appr	Drawn	Year	Rev
3	DSQC 115 add	NAH	JKKE	83	46
4	Table adj.	NAH	JKCS	84	19
5	DSQC 123 infr. RI 481		JSAK	84	49
7	Sf. 20,5 add RI 682		JKPK	86	11
8	DSQC 129 was 123 RI 685		JKPK	86	22

Control system IRB 6/2

6704 100-BCA

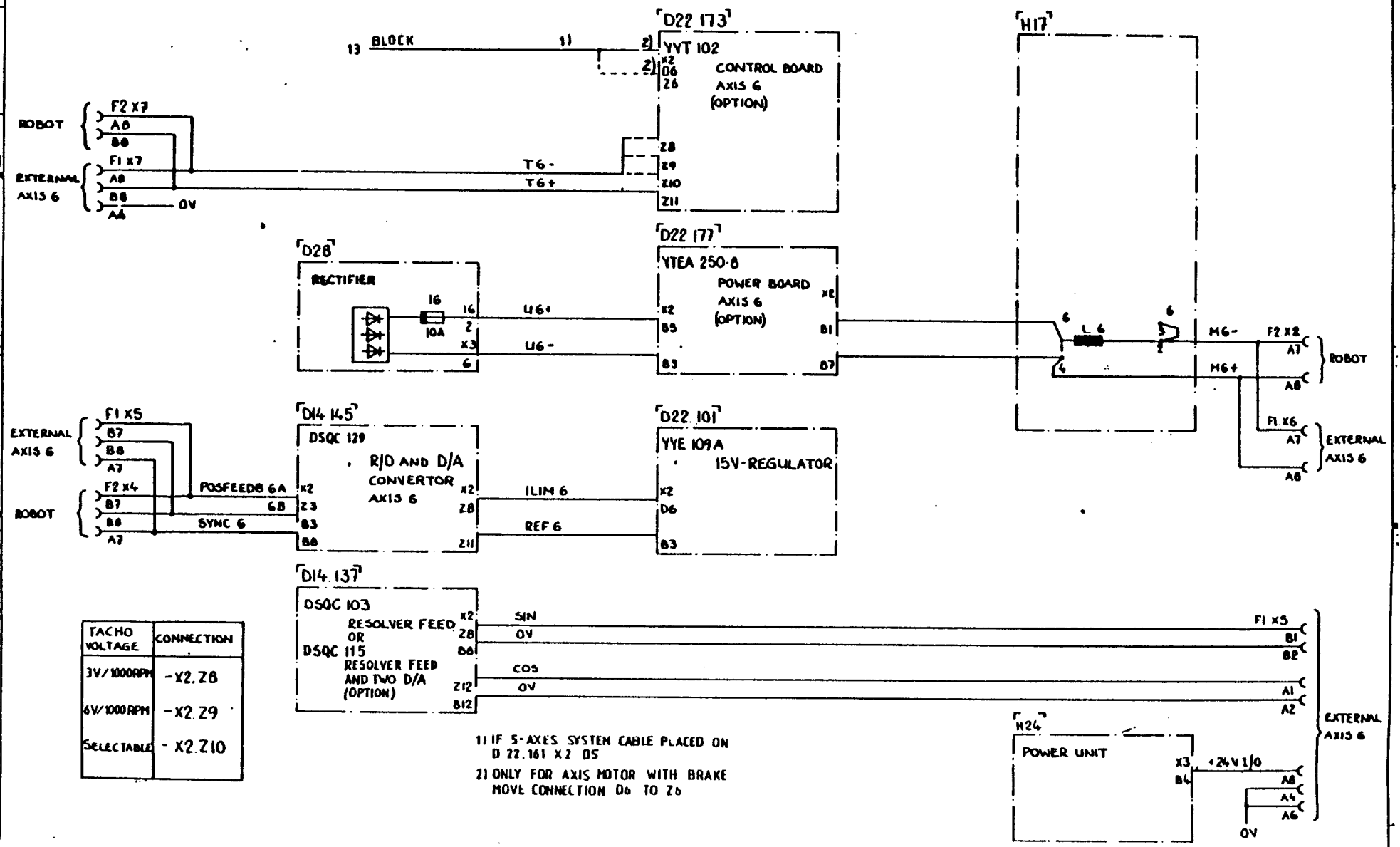
**ASEA**

Design checked by JKEM  
 Drawing checked by JKEM  
 Drawn by BHE  
 Ink by JKC

Year 83  
 Week 20,5  
 20

**AXIS CONTROL FOR AXIS 6  
(OPTION)  
Resolver supply for external axis 6**

Bilskott



TACHO VOLTAGE	CONNECTION
3V/1000RPM	-X2.28
6V/1000RPM	-X2.29
SELECTABLE	-X2.210

11 IF 5-AXES SYSTEM CABLE PLACED ON D 22.161 X2 D5  
 21 ONLY FOR AXIS MOTOR WITH BRAKE MOVE CONNECTION D6 TO Z6

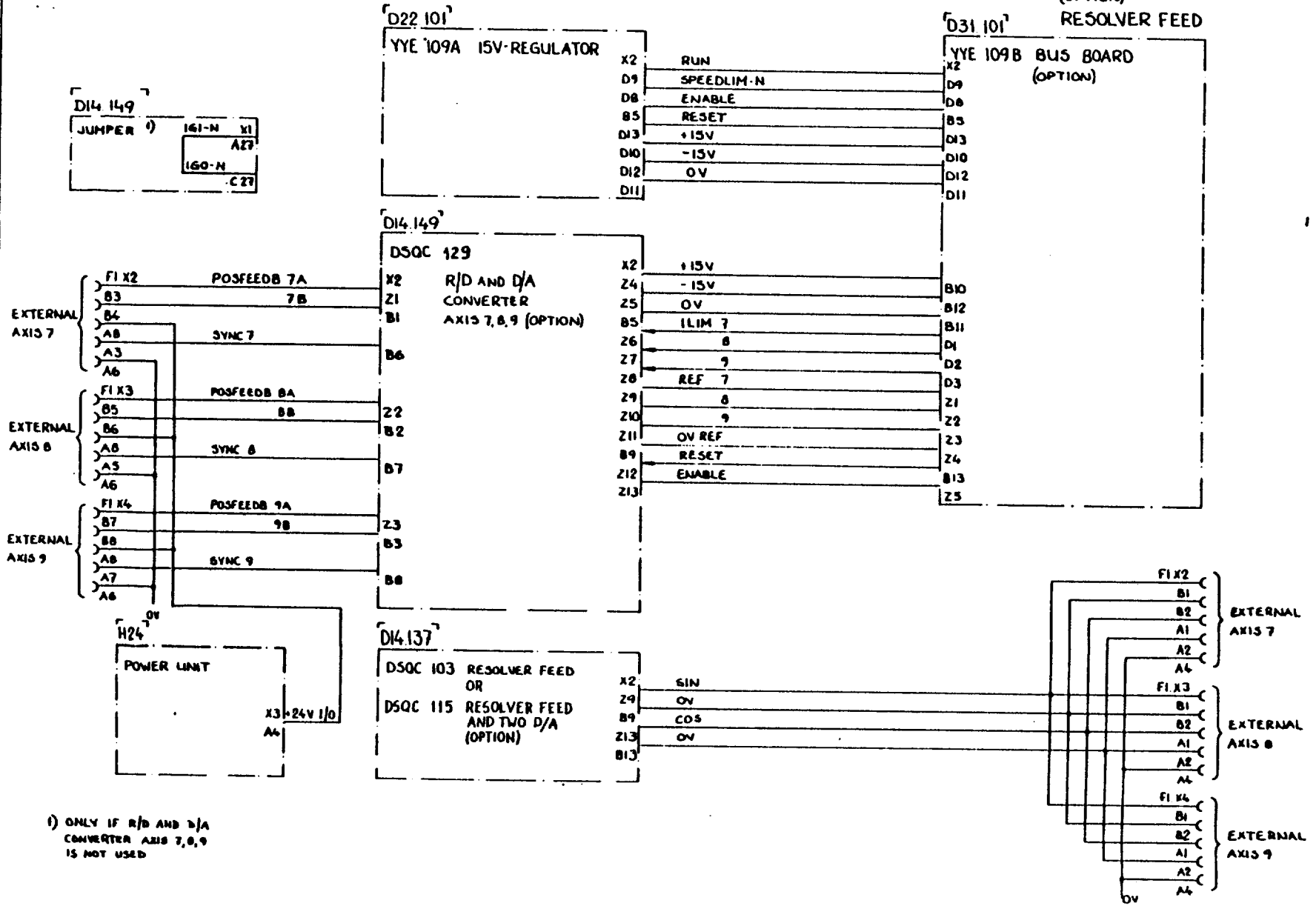




No.	Revision	Appr.	Stage	Year	Week
3	DSQC 115 add		JKKE	83	46
5	DSQC 123 intr	RI 481	JSAK	84	49
6	DI4.149 add Sh 22.5 add.		JSAK	85	31
7	Sh 22.3 add	RI 682	JKPK	86	11
8	DSQC 129 vrs 123	RI 685	JKPK	86	20

Overskisschema Block diagram		Kretschema Circuit diagram		Sheet 22
Control system		IRB 6/2		Case 22.3
6704 100-BCA		Design / Approved by JKEM		Year 83
Drawing / Checked by JKEM		Drawn by BHe		Week 20
Checked by JKEM		For by Dept JKEM		

R/D AND D/A CONVERTER FOR AXIS 7,8,9 (OPTION)



1) ONLY IF R/D AND D/A CONVERTER AXIS 7,8,9 IS NOT USED

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Bilfront

1	2	3	4	5



No.	Revision	Appr.	Dept.	Year	Week
6	Note add RJ 593		35AK	85	31
8	DSQC 122 vers 160 RI 593		JKPK	86	20

Oversichtsschema Block diagram

Kretsdiagram Circuit diagram

Control system IRB 6/2

6704 100-BCA

Sheet 23  
 of 24  
 Year Week 83 20

ASEA

Design checked by JKEM

Drawing checked by JKEM

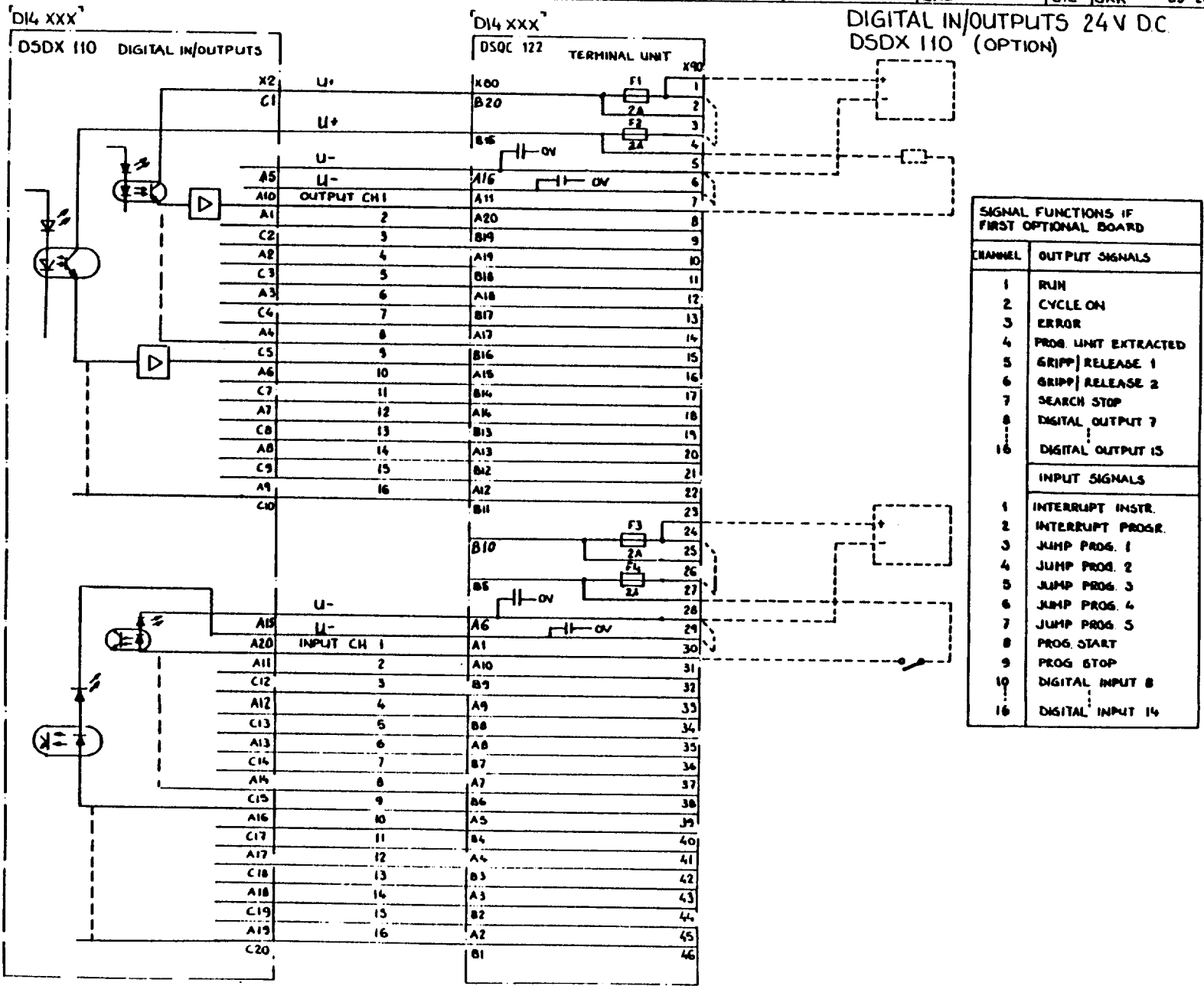
Drawn by BHC

For by dept JKK

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**ATTENTION!**  
 THE BOARD IS PLACED ON POSITION ACCORDING TO THE ACTUAL SYSTEM CONFIGURATION



SIGNAL FUNCTIONS IF FIRST OPTIONAL BOARD	
CHANNEL	OUTPUT SIGNALS
1	RUN
2	CYCLE ON
3	ERROR
4	PROG. UNIT EXTRACTED
5	GRIPP/RELEASE 1
6	GRIPP/RELEASE 2
7	SEARCH STOP
8	DIGITAL OUTPUT 7
16	DIGITAL OUTPUT 15
INPUT SIGNALS	
1	INTERRUPT INSTR.
2	INTERRUPT PROGR.
3	JUMP PROG. 1
4	JUMP PROG. 2
5	JUMP PROG. 3
6	JUMP PROG. 4
7	JUMP PROG. 5
8	PROG. START
9	PROG. STOP
10	DIGITAL INPUT 8
16	DIGITAL INPUT 14

AXIS 7 } F1AX2  
           A6  
 AXIS 8 } F1AX3  
           A6  
 AXIS 9 } F1AX4  
           A6

ABSOLUTE MEASURING SYSTEM  
(OPTION)

R/D AND D/A CONVERTER FOR AXIS 7,8,9  
 (OPTION)  
 RESOLVER FEED

F40  
 DSQC 12C  
 RELAY UNIT (OPTION)

D22 101  
 YVE 109A JSV-REGULATOR

X2	RUN
D9	SPEED LIM-N
D8	ENABLE
B5	RESET
D13	+15V
D10	-15V
D12	0V
D11	

D31 101  
 YVE 109B BUS BOARD  
 (OPTION)

X2	
D9	
D8	
B5	
D13	
D10	
D12	
D11	

EXTERNAL AXIS 7

F1AX2 POSFEED COARSE 7A	X93
B3	1
B4	2
B5	4
B6	5
B7	6
B8	8

EXTERNAL AXIS 8

F1AX3 COARSE 8A	10
B3	10
B4	11
B5	13
B6	25
B7	14
B8	15

EXTERNAL AXIS 9

F1AX4 COARSE 9A	17
B3	17
B4	18
B5	20
B6	21
B7	23
B8	24

X94  
 F1BX2 } F1X2 POSFEED B7A  
           B3 }  
           B4 }  
           A8 } SYNC 7  
           A3 }  
           A6 } F1X3 POSFEED B8A  
           B5 }  
           B6 }  
           A8 } SYNC 8  
           A5 }  
           A6 } F1X4 POSFEED B9A  
           B7 }  
           B8 }  
           A8 } SYNC 9  
           A7 }  
           A6 }

D14 149  
 DSQC 129

X2	+15V
Z4	-15V
Z5	0V
B5	ILIM 7
Z6	8
Z7	9
Z8	REF 7
Z9	8
Z10	9
Z11	OVREF
B9	RESET
Z12	ENABLE
Z13	

X2 R/D AND D/A  
 Z1 CONVERTER  
 B1 AXIS 7,8,9  
 (OPTION)  
 B6  
 B2  
 B7  
 Z3  
 B3  
 B8

ENABLE 17.5

H24  
 POWER UNIT

X3 +24V 10  
A4

D14 137  
 DSQC 103  
 RESOLVER EXCITER OR  
 DSQC 115  
 RESOLVER EXCITER  
 WITH TWO D/A  
 (OPTION)

X2	SIN
Z9	0V
B9	COS
Z13	0V
B13	

F1X2 } F1BX2 } F1AX2 }  
       B1 } B1 } B1 }  
       B2 } B2 } B2 }  
       A1 } A1 } A1 }  
       A2 } A2 } A2 }  
       A4 }  
 F1X3 } F1BX3 } F1AX3 }  
       B1 } B1 } B1 }  
       B2 } B2 } B2 }  
       A1 } A1 } A1 }  
       A2 } A2 } A2 }  
       A4 }  
 F1X4 } F1BX4 } F1AX4 }  
       B1 } B1 } B1 }  
       B2 } B2 } B2 }  
       A1 } A1 } A1 }  
       A2 } A2 } A2 }  
       A4 }

EXTERNAL AXIS 7

EXTERNAL AXIS 8

EXTERNAL AXIS 9

0V

DSQC 129 was 123 Sh 27.5 del RI 685 7 86 20  
 RI 682

Liunger  
 Pettersson  
 Ylikylä

CIRCUIT DIAGRAM  
 CONTROL SYSTEM IRB 6S/2  
 ASEA JKPK 86 11

6704 100-BCA

223  
23

6	Note add	RI 593	JSAK	85 31
8	DSQC 122 was DSTO	RI 593	JKPK	86 20

Overall scheme Block diagram  Kreis scheme Circuit diagram  
Control system IRB 6/2

6704 100-BCA

24  
25  
83 20

ASEA

JKEM JKEM BK JK

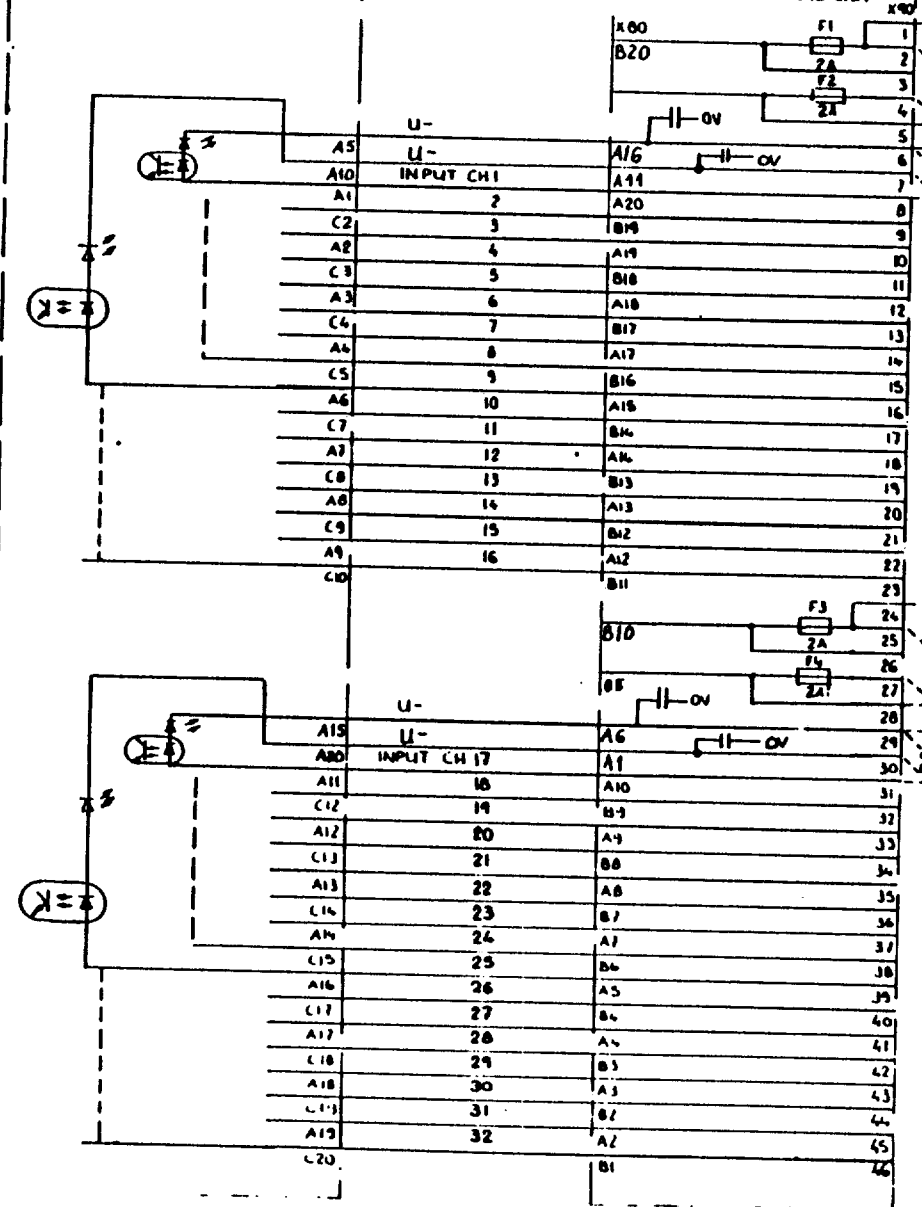
D14 XXX

D14 XXX

DIGITAL INPUTS 24V D.C.  
DSDI 110 (OPTION)

DSDI 110 DIGITAL INPUTS

DSQC 122 TERMINAL UNIT



CHANNEL	INPUT SIGNALS
1	INTERRUPT INSTR
2	INTERRUPT PROGR
3	JUMP PROG 1
4	JUMP PROG 2
5	JUMP PROG 3
6	JUMP PROG 4
7	JUMP PROG 5
8	PROG START
9	PROG STOP
10	DIGITAL INPUT 8
32	DIGITAL INPUT 31

ATTENTION!  
THE BOARD IS PLACED ON  
POSITION ACCORDING TO  
THE ACTUAL SYSTEM  
CONFIGURATION

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31

1

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3



6	Note add	RI 593	JSAK	05 31
8	D50C 122 was D50D 110 RI 593		JKPK	06 20

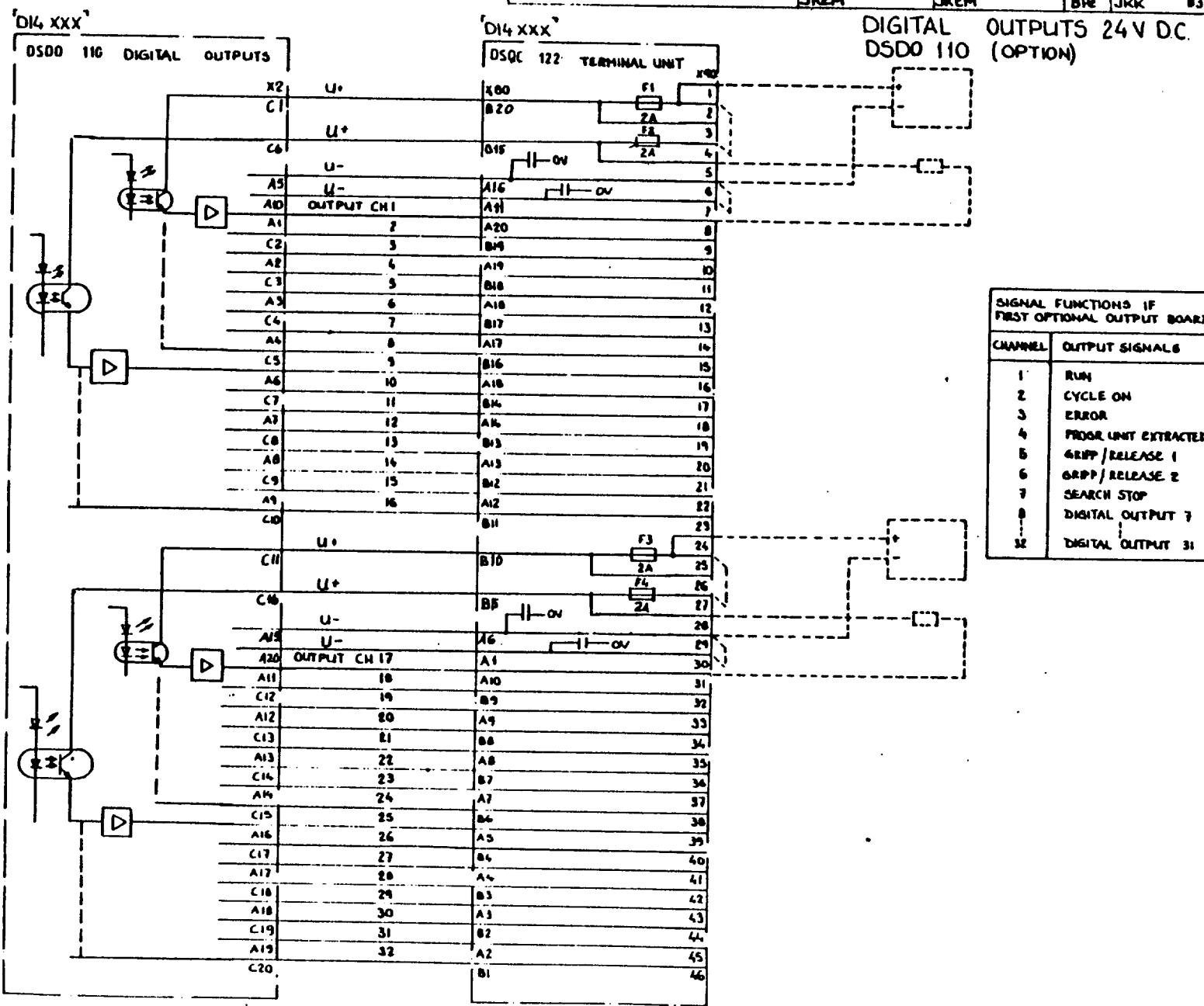
Ovsobshchaya Blok diagram     Kretschema Circuit diagram  
 Control system IRB 6/2

**6704 100-BCA**

**ASIA**

Design checked by JKEM    Drawing checked by JKEM    Drawn by BHE    Ink by JKK

Sheet 26  
 of 27  
 Date 03 20



**SIGNAL FUNCTIONS IF FIRST OPTIONAL OUTPUT BOARD**

CHANNEL	OUTPUT SIGNALS
1	RUN
2	CYCLE ON
3	ERROR
4	PROG. UNIT EXTRACTED
5	GRIP/RELEASE 1
6	GRIP/RELEASE 2
7	SEARCH STOP
8	DIGITAL OUTPUT 7
32	DIGITAL OUTPUT 31

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1	1	1	1
2	2	2	2
3	3	3	3

6704 100-BCA

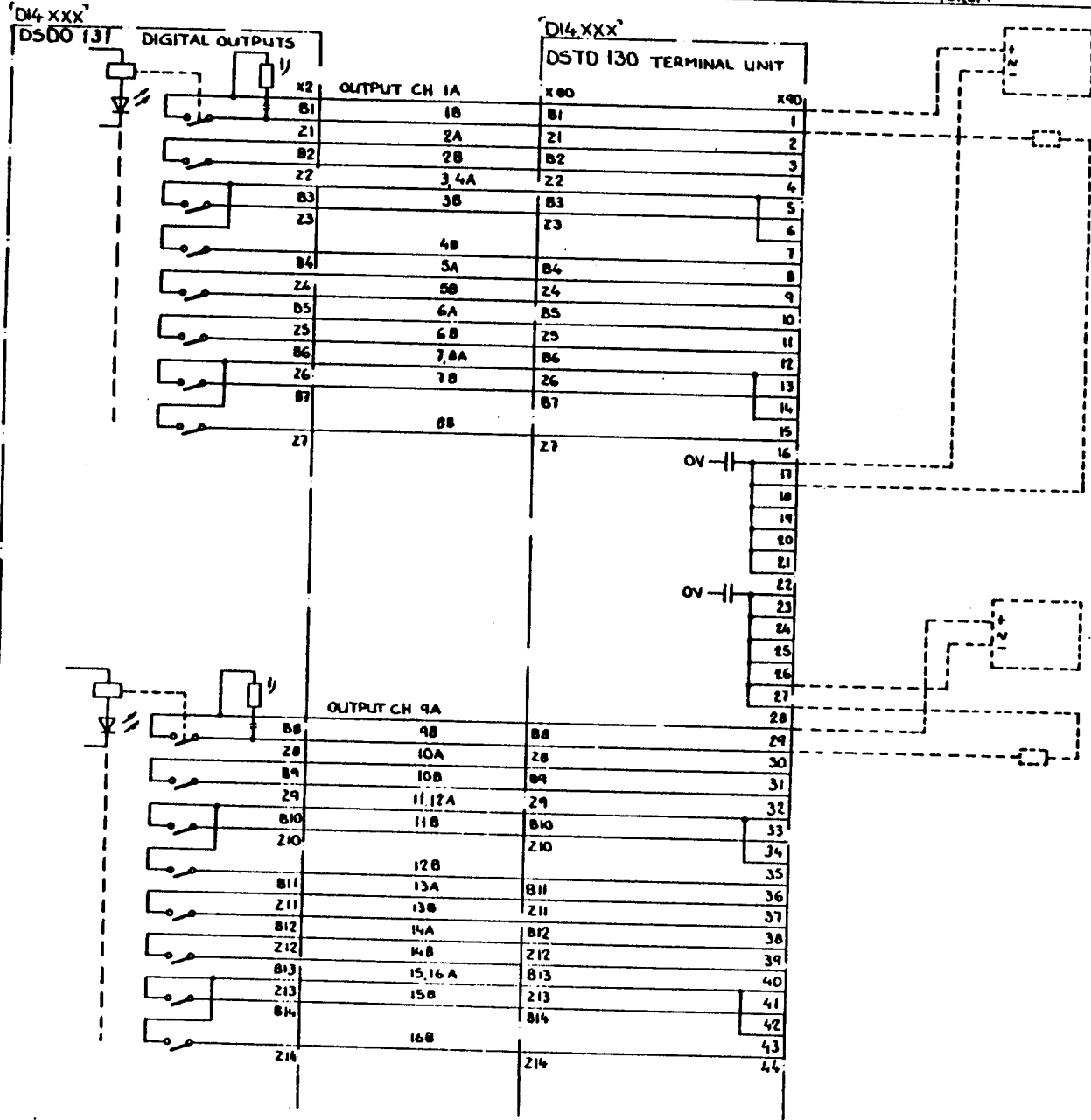
DIGITAL OUTPUTS  
RELAY, 24-240V AC/DC  
D500 131 (OPTION)

Bildkort

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ATTENTION!

THE BOARD IS PLACED ON POSITION ACCORDING TO THE ACTUAL SYSTEM CONFIGURATION



SIGNAL FUNCTIONS IF FIRST OPTIONAL OUTPUT BOARD	
CHANNEL	OUTPUT SIGNALS
1	RUN
2	CYCLE ON
3	ERROR
4	PROG. UNIT EXTRACTED
5	GRIPP / RELEASE 1
6	GRIPP / RELEASE 2
7	SEARCH STOP
8	DIGITAL OUTPUT 7
16	DIGITAL OUTPUT 15

6	Straps DSTA 121 add	35AK	85 31
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Control system IRB 6/2

6704 100-BCA

ASEA

Design checked by JKEM

Checked by JKEM

Drawn by BHC

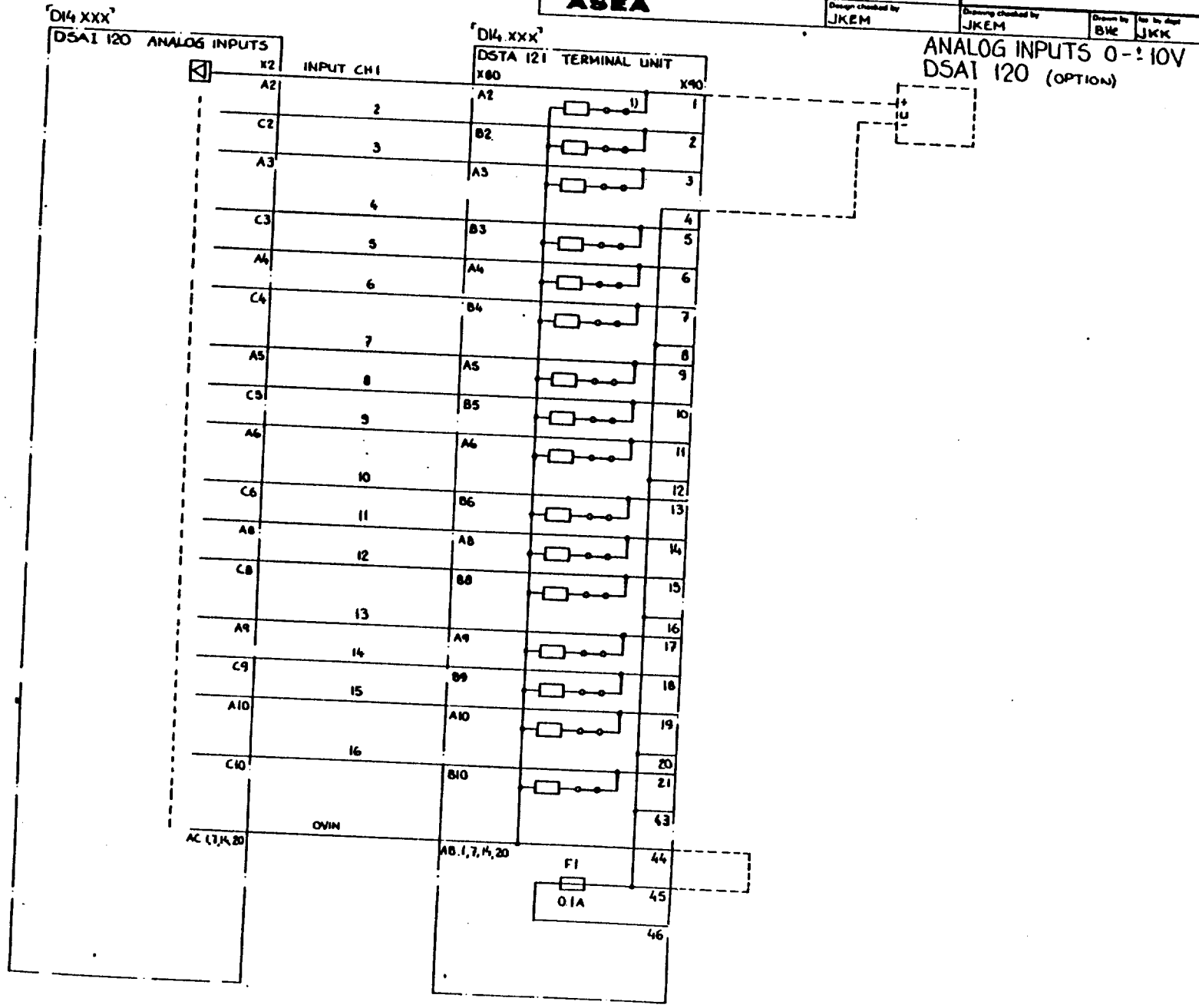
Sheet 28  
 of 29  
 Date 83 20

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1) OPEN STRAPS FOR VOLTAGE SIGNAL



A		B		C		D	
No.	Revision	Appr.	Check	Year	Ver.	Sheet	Count
1	Sh.added	NAH	JKLS	83	23	29	
3	Ch cont. numb		JKKE	83	46	295	

Übersichtsschema Block diagram     Krettschema Circuit diagram  
 Control system    IRB 6/2

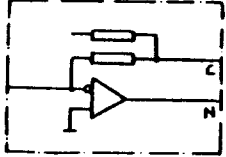
**6704 100-BCA**

**ASEA**    Design checked by JKEM    Drawing checked by JKEM    Drawn by BMc    Ink by JKK

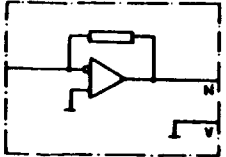
Year: 83    Week: 20

ANALOG OUTPUTS : 10V  
 DSAO 110 (OPTION) : 10mA  
                               : 20mA

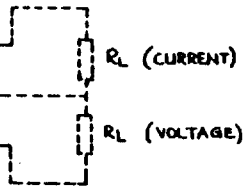
CURRENT OUTPUTS



VOLTAGE OUTPUTS



DSAO 110 ANALOG OUTPUTS		DSTA 160 CONNECTION UNIT	
OUTPUT	CH IC	X80	X90
A3	IN	A11	3
C3	1V	B11	1
C4		B10	2
2C			
C6	2C	A11	8
A5	2M	A9	4
A6	2V	A8	5
3C			
A8	3C	A6	9
C8	3N	B6	7
C9	3V	B5	8
4C			
C11	4C	B3	12
.4N			
A10	.4N	A4	10
4V			
A11	4V	A3	11



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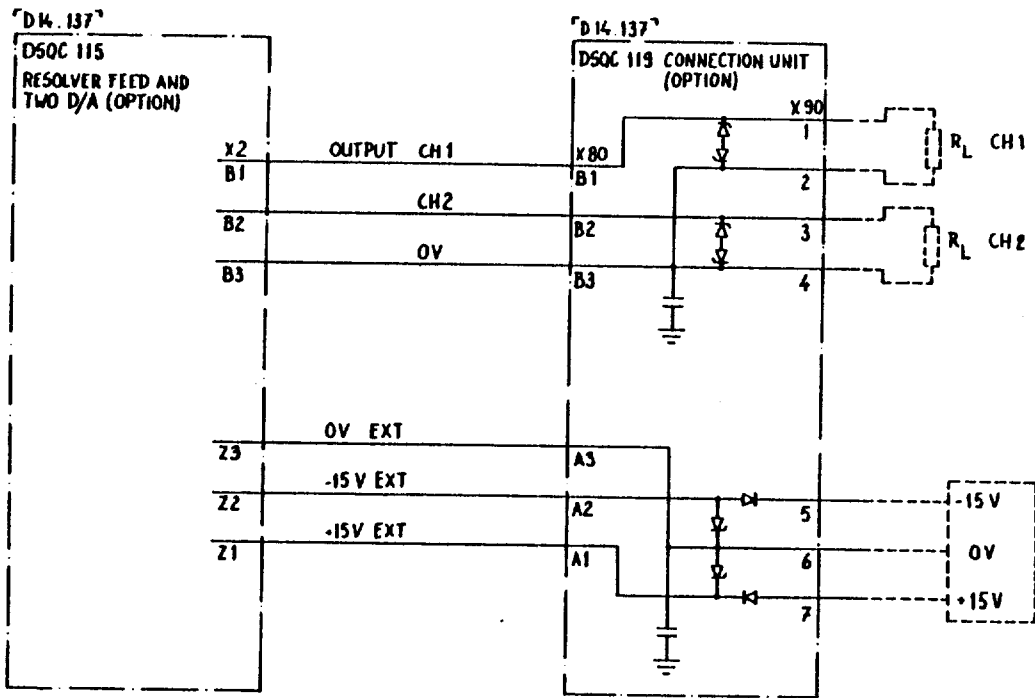
Order No.	
Year	
Week	
Page	



A		B		C		D	
No	Revision	Appr	Draw	Year	No		
3	Sh. add		JKKE	83	46		

1) Oversiktschema Block diagram		<input checked="" type="checkbox"/> Kretschema Circuit diagram	
Control system		IRB 6/2	
6704 100 - BCA			
ASEA		Design checked by JKEM	Drawing checked by
		Drawn by	See by dept

Sheet 29.5  
 of 30  
 Year / Month



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Drawn by	Checked by
Date	Date

4 text DSQU 149 added  
 Cont. 31 added

1	JKCS 83 23
NAH	JKCS 84 19

C

□ Übersichtsschema Block diagram     Kertschema Circuit diagram

Control system IRB 6/2

D

**ASEA**

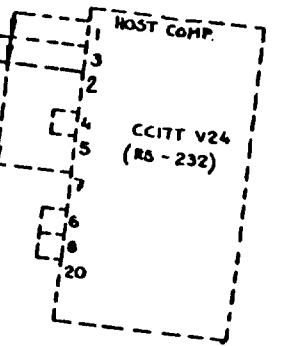
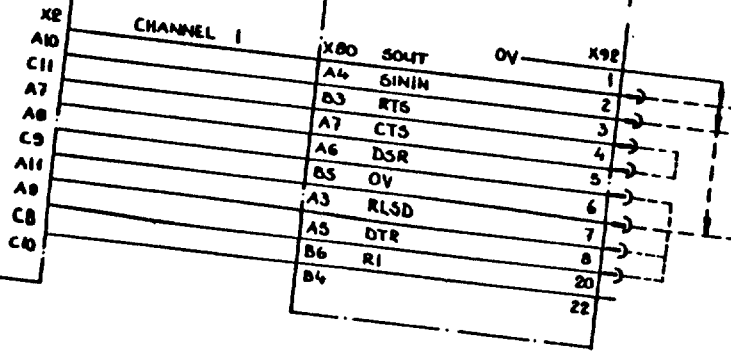
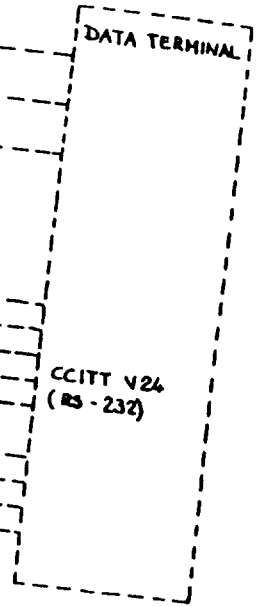
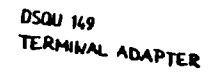
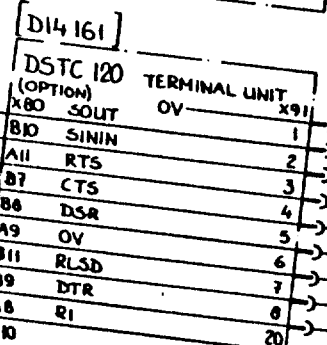
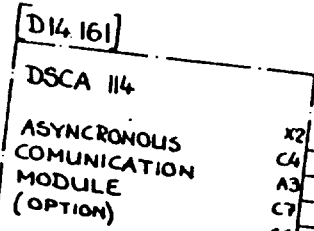
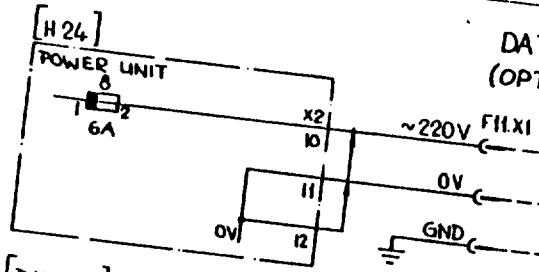
Design checked by JKEM Att

6704 100-BCA

Drawing checked by JKEM

Drawn by BME JKK

DATA TERMINAL AND COMPUTER LINK CONNECTION  
 (OPTION)



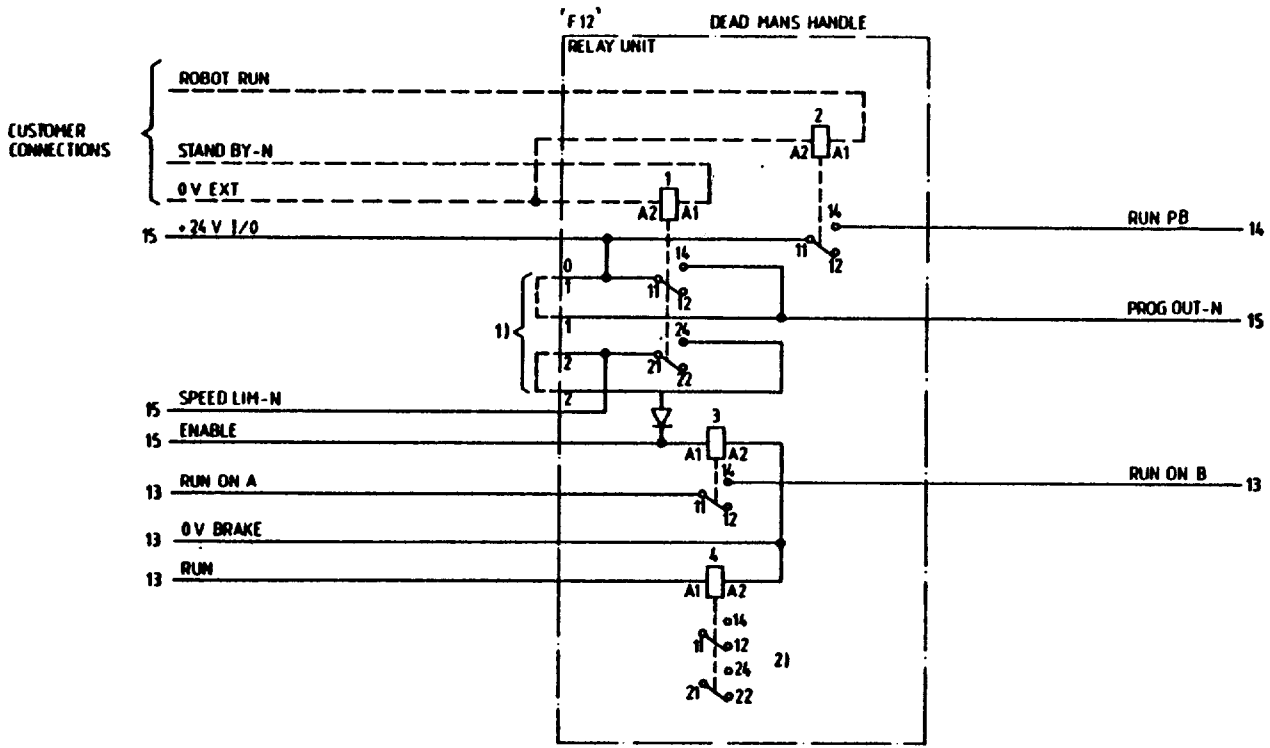
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31

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24

A					B					C					D					
No	Revision	Appr	Stage	Year	No	1 Overkitaschema Block diagram					Kretschema Circuit diagram					6704 100 - BCA				
4	Sh. add	NAH	JKCS	84	19	Control system IRB 6/2					Design checked by JKEM					Drawing checked by JKEM				
6	Points 22,24 FR 4 ch	JSAK		85	31	ASEA					Drawn by JKK					Year 83				



- 1) STRAPS ARE CONNECTED ON DELIVERY. SHALL BE REMOVED WHEN F12 1.A1 AND F12 1.A2 ARE CONNECTED
- 2) ON F12 4 CONNECTIONS POINTS 11,12 AND 14 ARE RESERVED FOR INTERNAL USE. CONNECTIONS POINTS 21, 22 AND 24 ARE FREE FOR CUSTOMER USE

RELAYS 1- 4 ARE EQUIPPED WITH DIODES



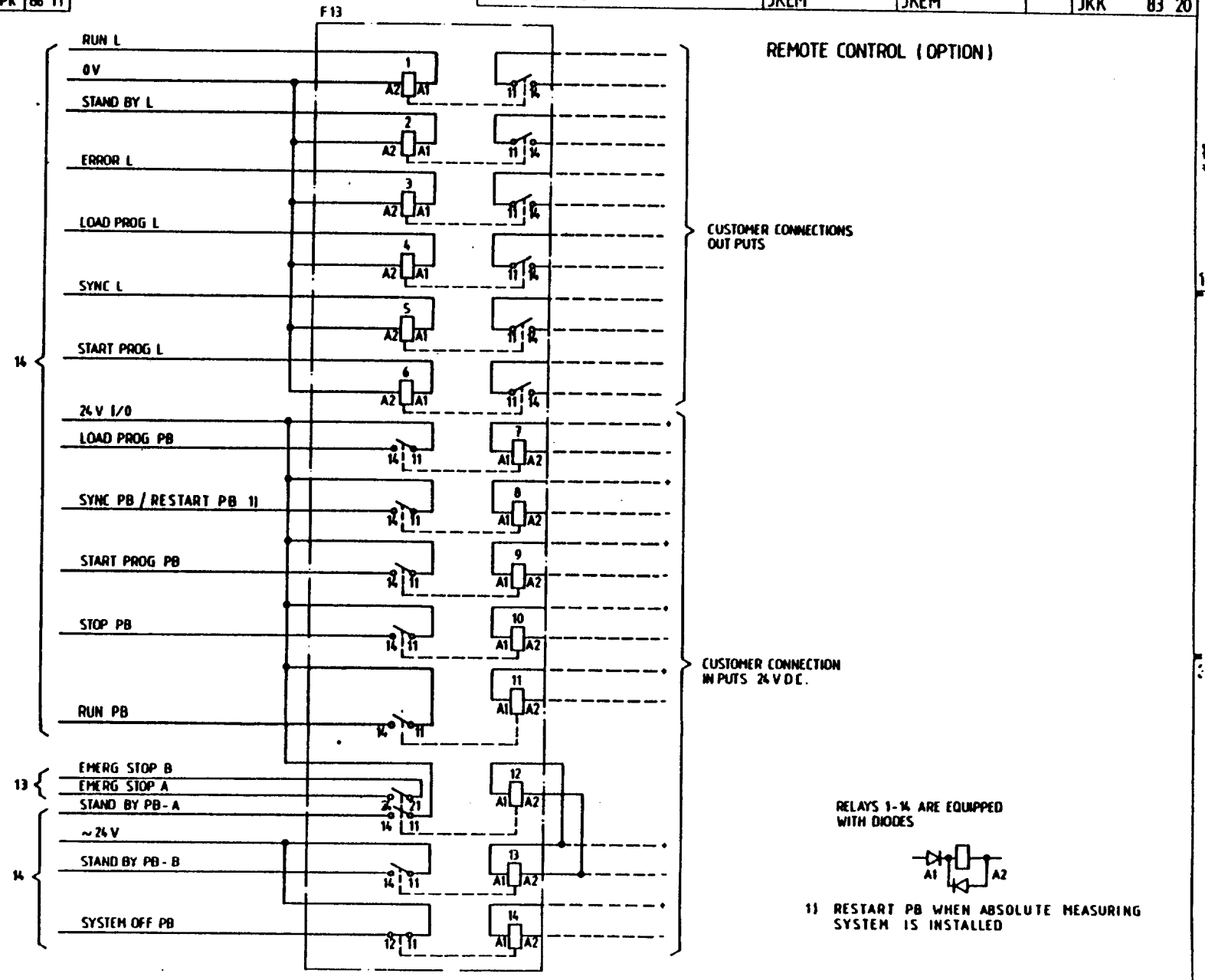
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Drawn by	JKK
Checked by	JKK
Year	83
Sheet	31
Total	32
Year	83
Week	20

Rev.	Revision	Appr.	Desig.	Year	Week
4	Sh. add	NAH	JKCS	84	19
5	Remote control ch. RI 495	JSAK		84	49
6	Sh 33 add, RI 594	JSAK		85	31
7	1) ADD RI 682	JKPK		86	11

<input type="checkbox"/> Oversichtsschema Block diagram <input checked="" type="checkbox"/> Kretsschema Circuit diagram		Control system IRB 6/2		6704 100-BCA		Sheet 32 From 33
<b>ASEA</b>			Design / checked by <b>JKEM</b>	Drawing / checked by <b>JKEM</b>	Drawn by <b>JKK</b>	Year 83 Week 20

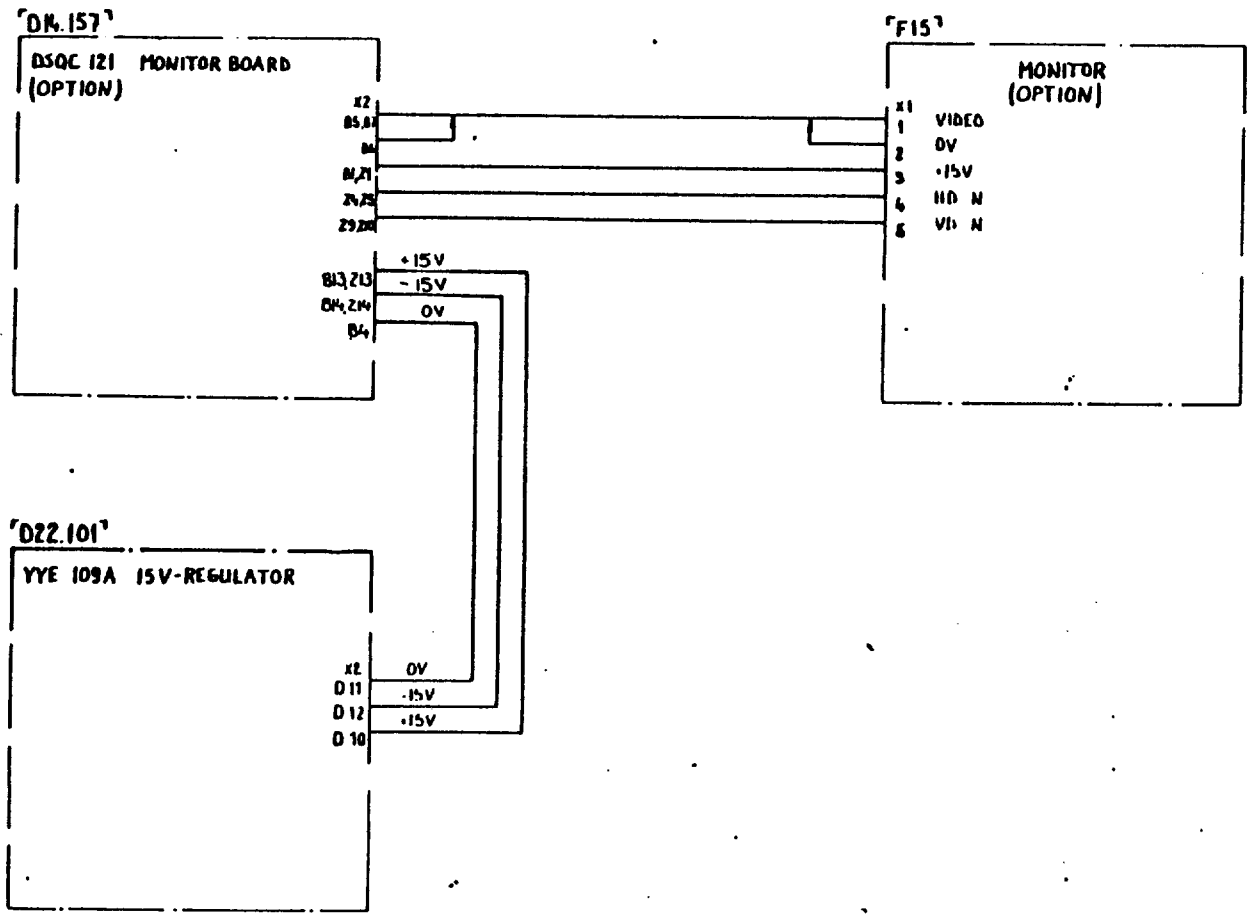
Bilfinger  
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Order No.	Year	Week

A				B				C				D			
RT 594								<input type="checkbox"/> Överskottsschema Block diagram <input checked="" type="checkbox"/> Kretsenschema Circuit diagram Control system IRB 6/2				6704 100-BCA			
				<b>ASEA</b>				Design checked by Hardegård <i>EH</i>				Drawing checked by Pelleresson <i>P</i>			
								Checked by JSÄK				Year 85 31			

Program display (option)



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1	2	3	4	5

Oversichtsschema Block diagram  Krossschema Circuit diagram

DSQC 10B. BUS BACK PLANE  
BUSSBAKPLAN

6704 102-ANA

ASEA

Design checked by  
A. JENSEN

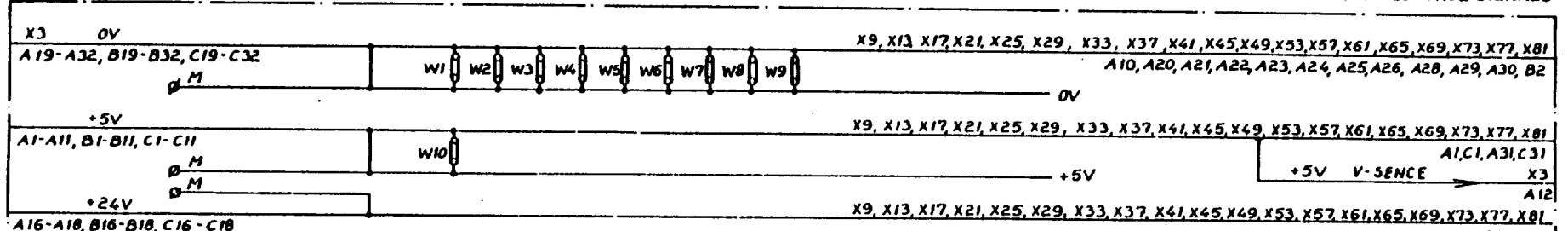
Drawing checked by  
S. OLOVSON 16

Drawn by  
M.L. YLPKK

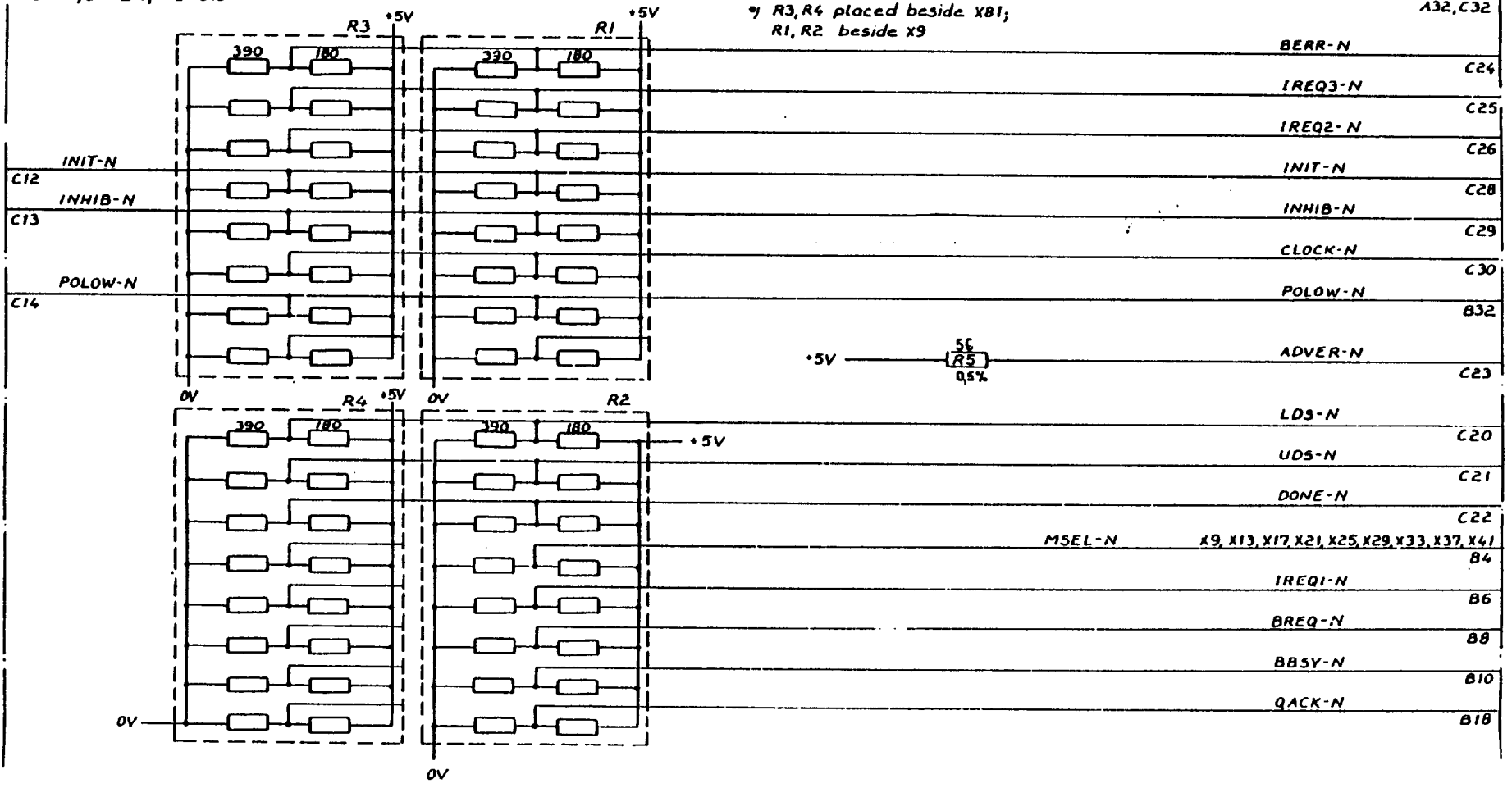
Sheet 1  
Circ 2  
Year 82 03

REF. YB 101 102-AN

POWER CONTROL SIGNALS



\* R3, R4 placed beside X81;  
R1, R2 beside X9



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Drawn by	Checked by	Year	Week
Design released to	For	Order	Year

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Drawn by	Checked by
Year	Year
Drawn by	Checked by
Year	Year

<input type="checkbox"/> Overskikschema Block diagram <input checked="" type="checkbox"/> Kretschema Circuit diagram		Sheet 2 Case 3	
DSQC 108 BUS BACK PLANE BUSBACKPLAN		6704 102-ANA	
ASEA	Design checked by A. JENSSEN	Drawing checked by S. OLOYSON 10	Drawn by M.L. YLPKK
	Year 82	Week 09	

## INTRPT IDENT CHAIN

	IGI-N	X9
X9	100-N	A27
C27		X13
X13		A27
C27		X17
X17		A27
C27		X21
X21		A27
C27		X25
X25		A27
C27		X29
X29		A27
C27		X33
X33		A27
C27		X37
X37		A27
C27		X41
X41		A27
C27		X45
X45		A27
C27		X49
X49		A27
C27		X53
X53		A27
C27		X57
X57		A27
C27		X61
X61		A27
C27		X65
X65		A27
C27		X69
X69		A27
C27		X73
X73		A27
C27		X77
X77		A27
C27		X81
X81		A27
C27		

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Revision	Appr.	Draft	Year	Week	<input type="checkbox"/> Översiktsschema Block diagram <input checked="" type="checkbox"/> Kretsschema Circuit diagram <b>DSQC 108 BUS BACK PLANE</b> <b>BUSSBAKPLAN</b>	<b>6704 102-ANA</b> Sheet <b>3</b> Can. <b>4</b>
<b>ASEA</b>		Design checked by <b>A. JENSEN</b>	Drawing checked by <b>S. OLOVSON 10</b>	Drawn by <b>ML YLPKK</b>	Year <b>82</b>	Week <b>09</b>

DMA REQUEST IDENT. CHAIN

X17	BGO-N		
B20		BGI-N	X21
X21			B22
B20			X25
X25			B23
B20			X29
X29			B22
B20			X33
X33			B22
B20			X37
X37			B22
B20			X41
X41			B22
B20		X45, X49	
			B22

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3

710-74

No	Revision	Appd	Sign	Year	Mod	C		D		Sheet	Total
						Design checked by	Design checked by	Drawn by	Iss. by date		
							Å JENSSEN	JA	YLPKK	3	4
X13	P1-1									X17	
C2										C2	
	P2-1										
C3										C3	
	P3-1										
C4										C4	
	P4-1										
C5										C5	
	SPARE D-1										
C27										C27	
	T1-1										
C28										C28	
	T2-1										
C29										C29	
	T3-1										
C30										C30	
X25	P1-2									X29	
C2										C2	
	P2-2										
C3										C3	
	P3-2										
C4										C4	
	P4-2										
C5										C5	
	SPARE D-2										
C27										C27	
	T1-2										
C28										C28	
	T2-2										
C29										C29	
	T3-2										
C30										C30	
X37	P1-3									X41	
C2										C2	
	P2-3										
C3										C3	
	P3-3										
C4										C4	
	P4-3										
C5										C5	
	SPARE D-3										
C27										C27	
	T1-3										
C28										C28	
	T2-3										
C29										C29	
	T3-3										
C30										C30	

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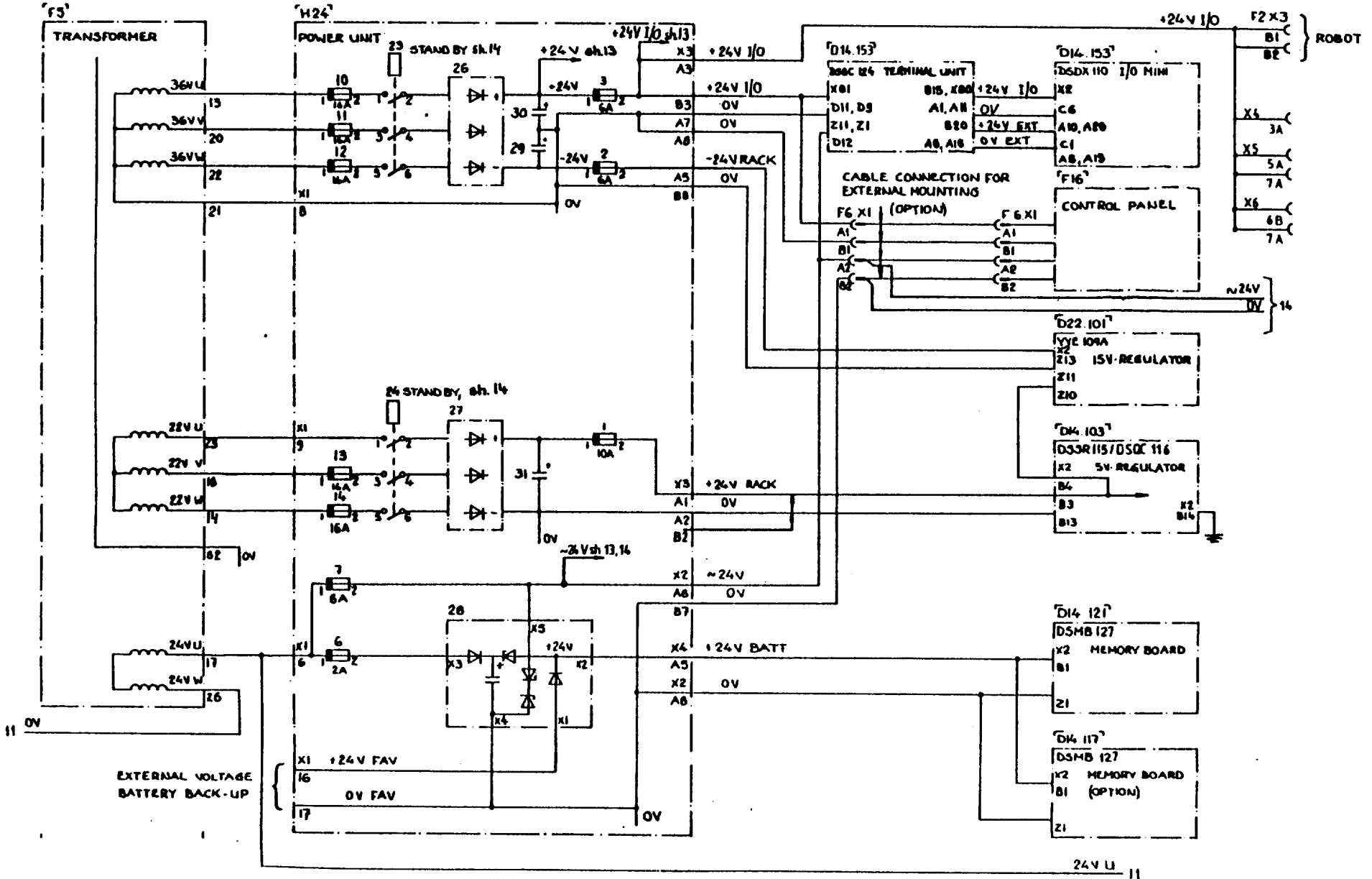
3



A				B				C				D			
No.	Revision	Appr.	Drawn	Year	Sh.	Del.	RI	Sh.	Del.	RI	Sh.	Del.	RI	Sh.	Del.
3	Ref. to sheet 14 add D55R 110 replaced by D55R 115	K.H.	JKKE	83	46	7	F 2	X 4	X 5	X 6	ADD	RI 682	JKPK	B 6	11
4	Screen cable add.	NAH	JKCS	84	19	8	SH 12,5	DEL		RI 593		JKFK	B 6	20	
5	DSQC 116 intr. RI 486		JSAK	84	48										
6	DSQC 124 intr. conn. D14.103.72 BMod RI 592 sh. 12.9 add.		JSAK	85	31										

[1] Übersichts-Block diagram		[2] Krets-Block diagram		6704 100-BCA	Sheet 12
Control system		IRB 6/2			13
ASEA		Design checked by JKEM	Drawing checked by JKEM	Drawn by BHe	Year 83
				Drawn by JKK	Week 80

ELECTRONIC POWER DISTRIBUTION



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<b>ESAB</b>		WELDING ROBOT STATION		412 477	
SERIE		542.210		Type 160R	
Year	Week	Design checked by	Accepted for prod. by	Drawing checked by	Drawn by
86	02	<i>[Signature]</i>		<i>Anle</i>	KP ARD L
Scale				Code K6	
V indicates R <sub>s</sub> in µm				Sheet	1
				Cont.	1a

\* TWO TYPES OF RELAYS ARE USED AS B22 - B25. ELESTA SHOWN IN CIRCUIT DIAGRAM AND ISKRA HAS OPPOSIT CONNECTION FOR LED AND COIL.

MAIN CABLES	Sh.1a
CABLE L2 (A32), L5	Sh. 2
CABLE L1	Sh. 3
CABLE L3	Sh. 4
CABLE L6	Sh. 5
CABLE L8	Sh. 6
CABLE L2 (A33)	Sh. 8
SERVO UNITS	Sh.10
TACHO , REF , ENABLE	Sh.11
INTERCHANGE UNIT	Sh.11a
SYNC UNITS	Sh.11b
RESOLVER , CLAMPING , STN1 , STN2	Sh.12
ROBOT CABINET, RESOLVER CONNECTION, JUMPERS ON TERMINAL MANOEUVER	Sh.14
CLAMP CONTROL	Sh.15
SELECT STN1, STN 2 , AUTOMATIC END POSITION INTERCHANGE	Sh.16
SELECT STN1, STN 2 , INTERCHANGE STN1, STN 2	Sh.17
CLAMP CONTROL FROM ROBOT (OPTIONI)	Sh.18
TERMINAL CONNECTION , ROBOT CABINET	Sh.18a
TERMINAL CONNECTION , ROBOT CABINET	Sh.19
EMERGENCY STOP	Sh.20
TERMINAL CONNECTION , BACKPLANE	Sh.21
BACKPLANE	Sh.22
	Sh.23

73090	KOMPL MED SERIERN	2 87 01
861703	BYTT AV RELATYP (A2, A3) BL 20	KP 86 04
	JUST BL 19	
Creation No	Alteration	

Tolerances for untoleranced dimensions acc. to SMS 715

Painting No

Compare No