

NATIONALE MAATSCHAPPIJ DER BELGISCHE SPOORWEGEN



BOEKJE HLT

DEEL 12

Hoofdstuk XIX

Electrische locomotieven
BoBo reeks 22

Figuren

Directie M. A.
Bureau 24-12

Loco BoBo REEKS 22

Lijst der tekeningen en schema's

Fig. 1 tot 45

Schema's 122/B.00.01.01.
tot 122/B.00.01.014.

Krommen 122/F.02.01.11.
122/F.02.01.12.
122/F.02.02.11.

Schema's 122/A.00.01.01.
122/D.00.01.01.
122/D.00.01.02.
122/G.00.01.01.

122/D.00.02.07.

122/D.12.00.01

C/D.00.01.08

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Director
1925-26

1925-26

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1925-26

1925-26

1925-26

1925-26

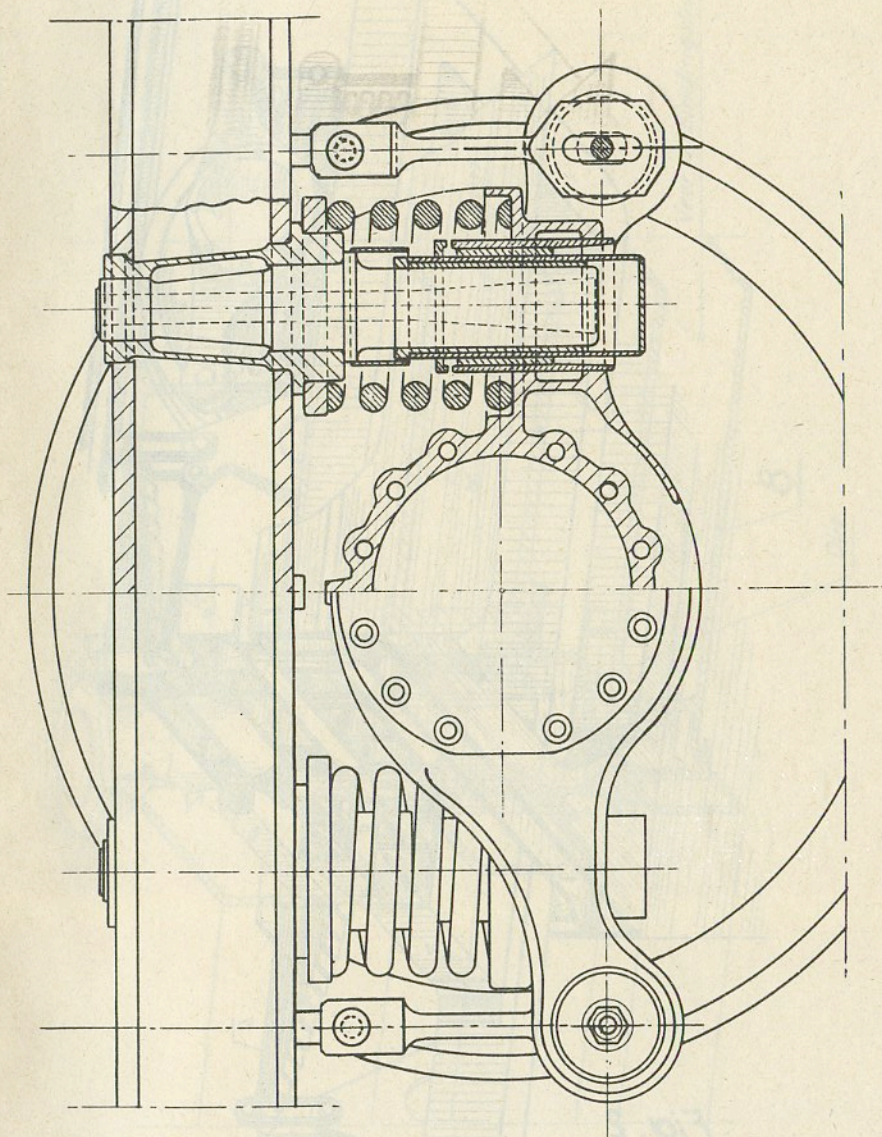


Fig. 1

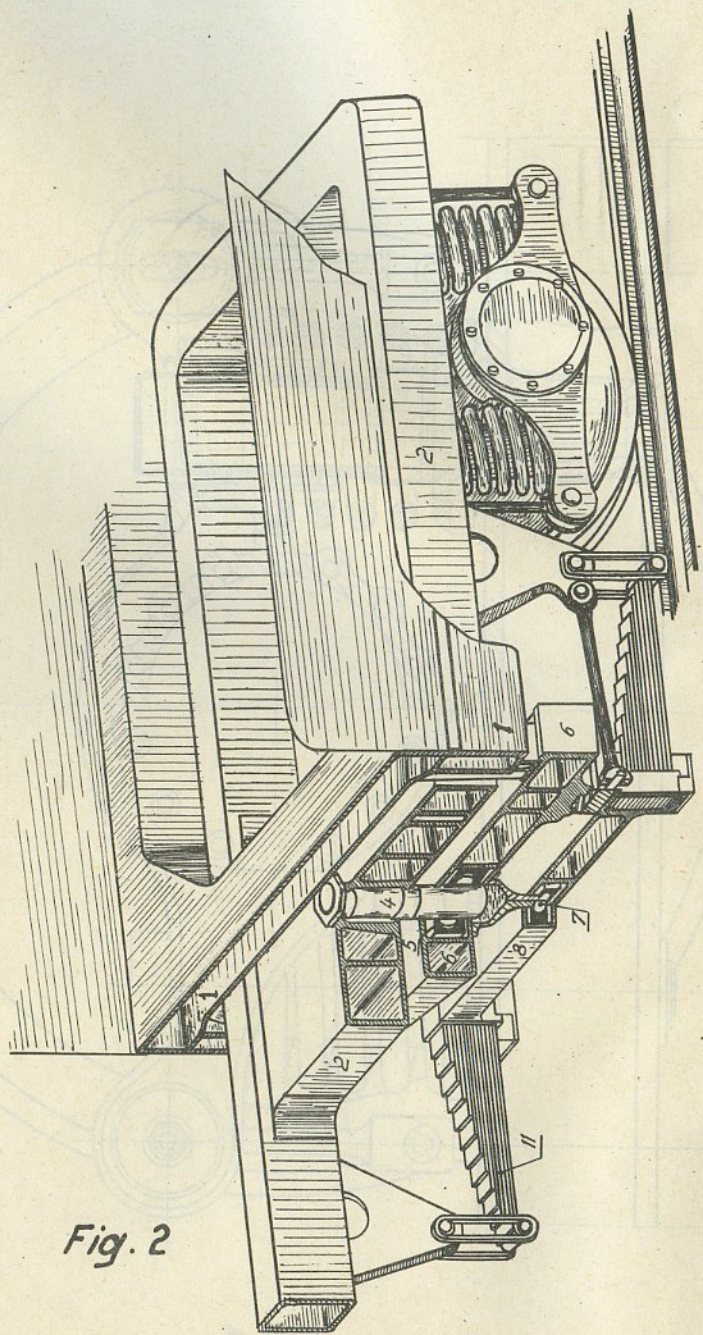


Fig. 2

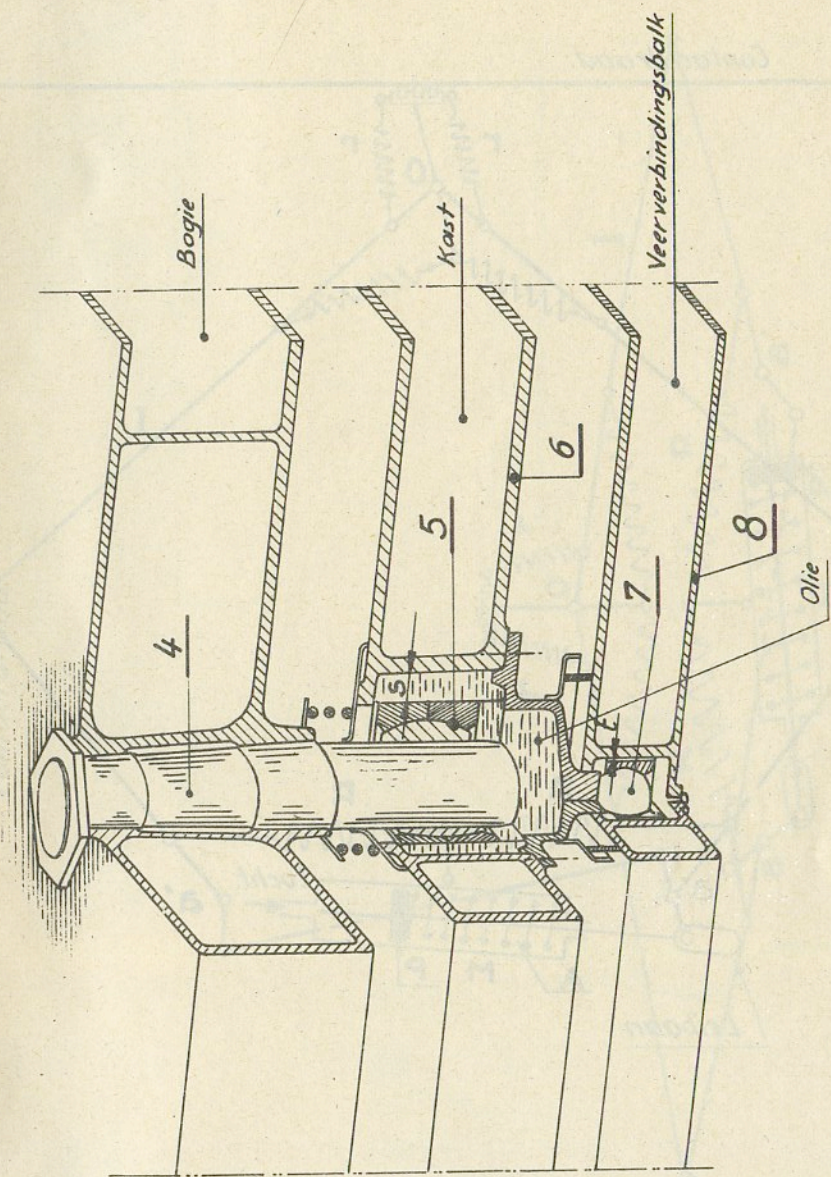


Fig. 3

Contactdraad.

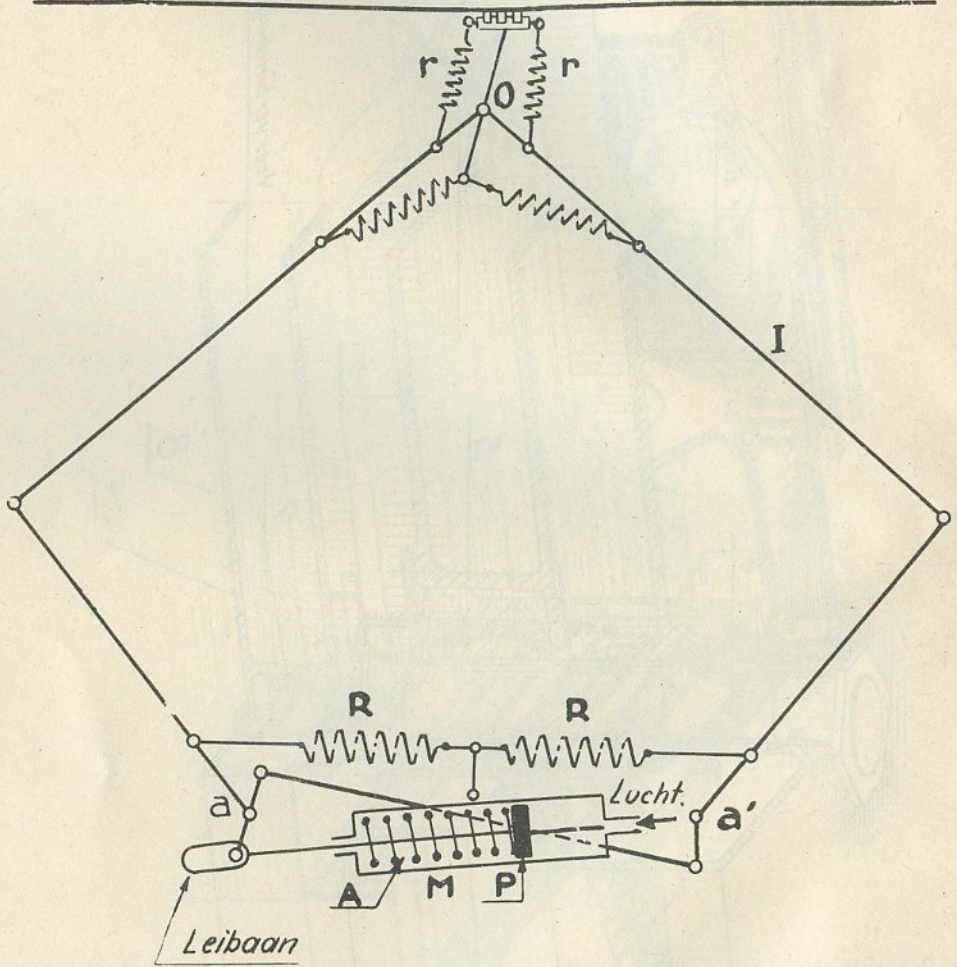


Fig. 4

Contactdraad.

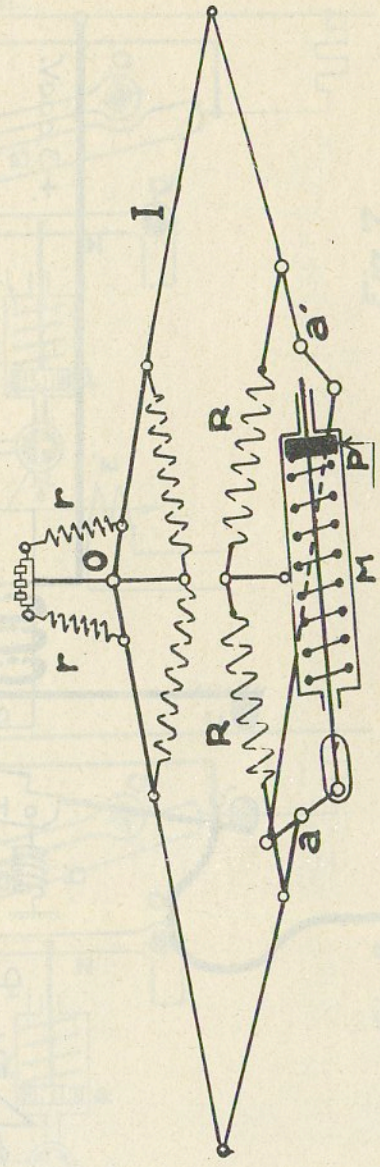


Fig. 5

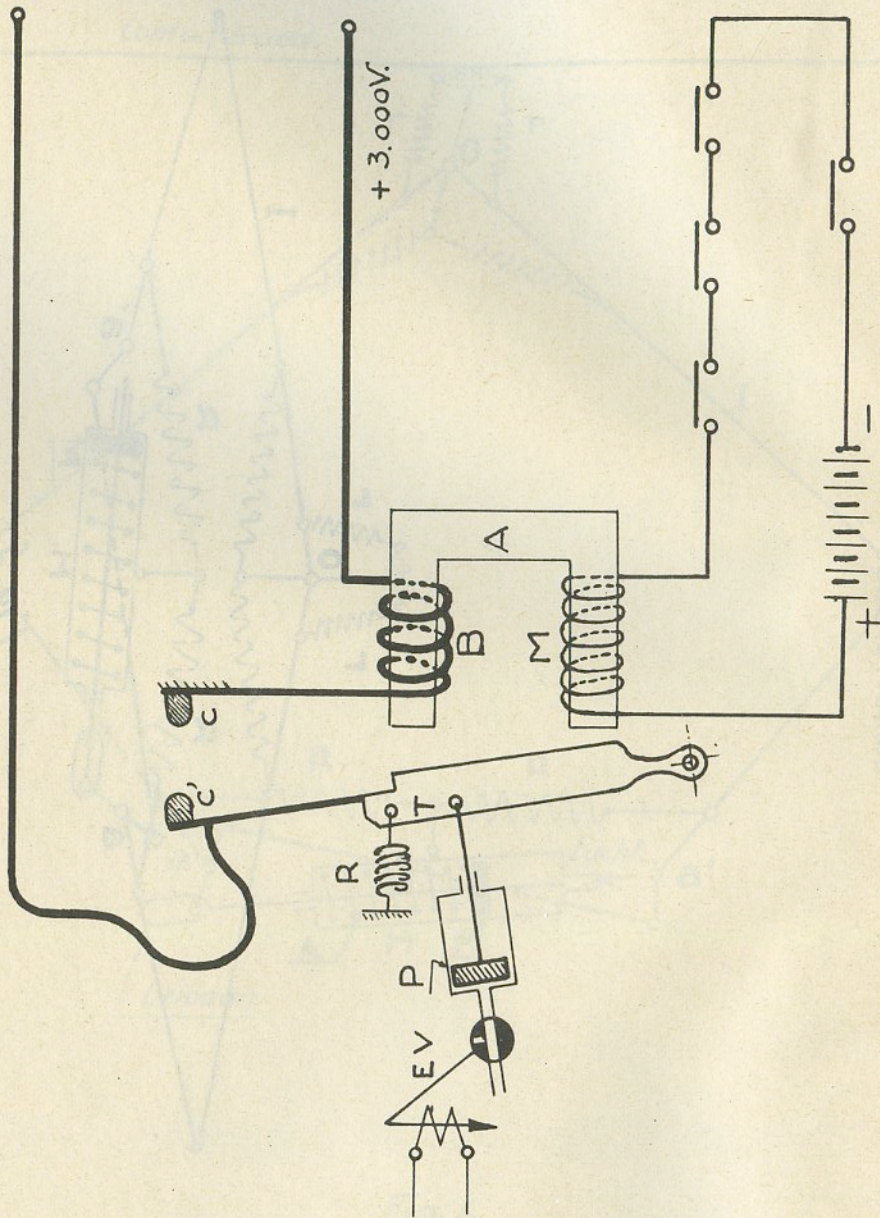


Fig. 6

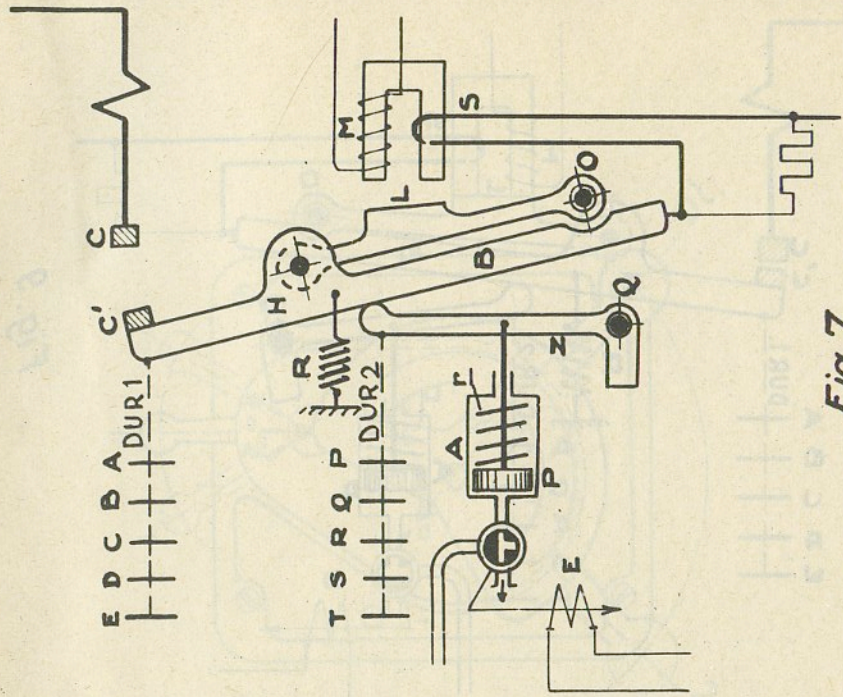


Fig. 7

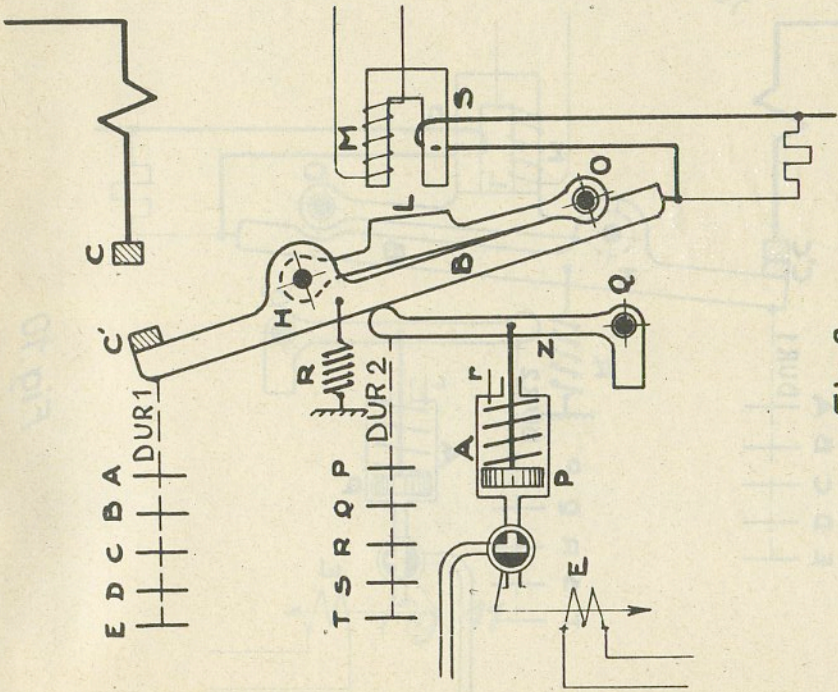


Fig. 8

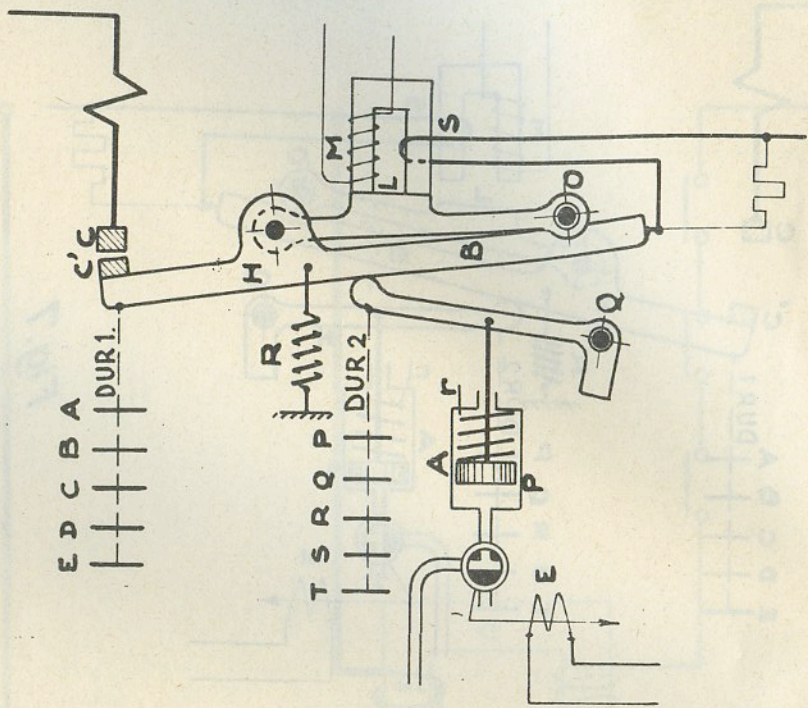


Fig. 9

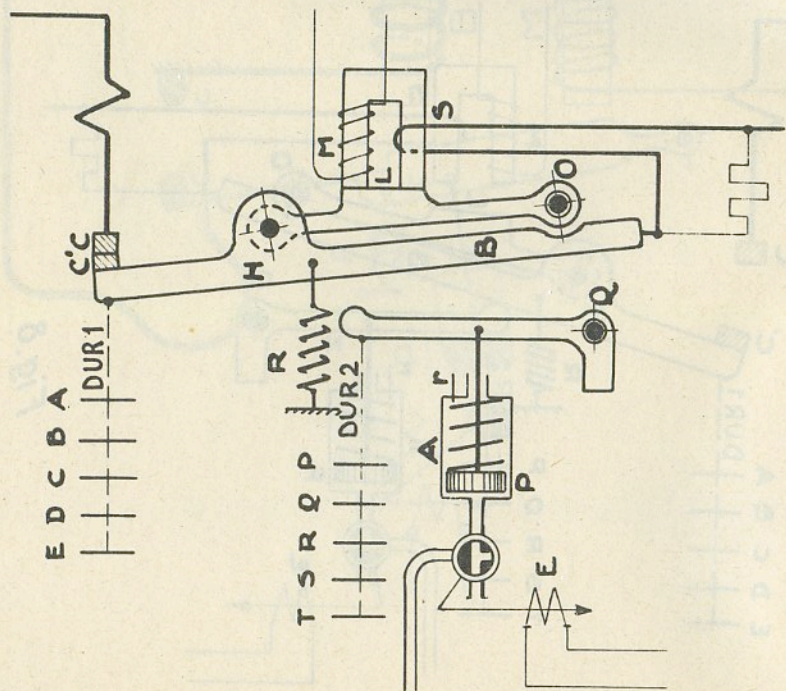


Fig. 10

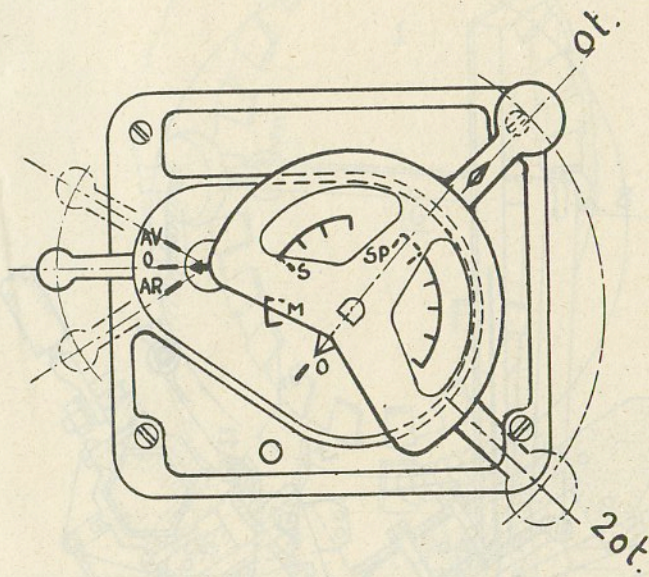


Fig. 11

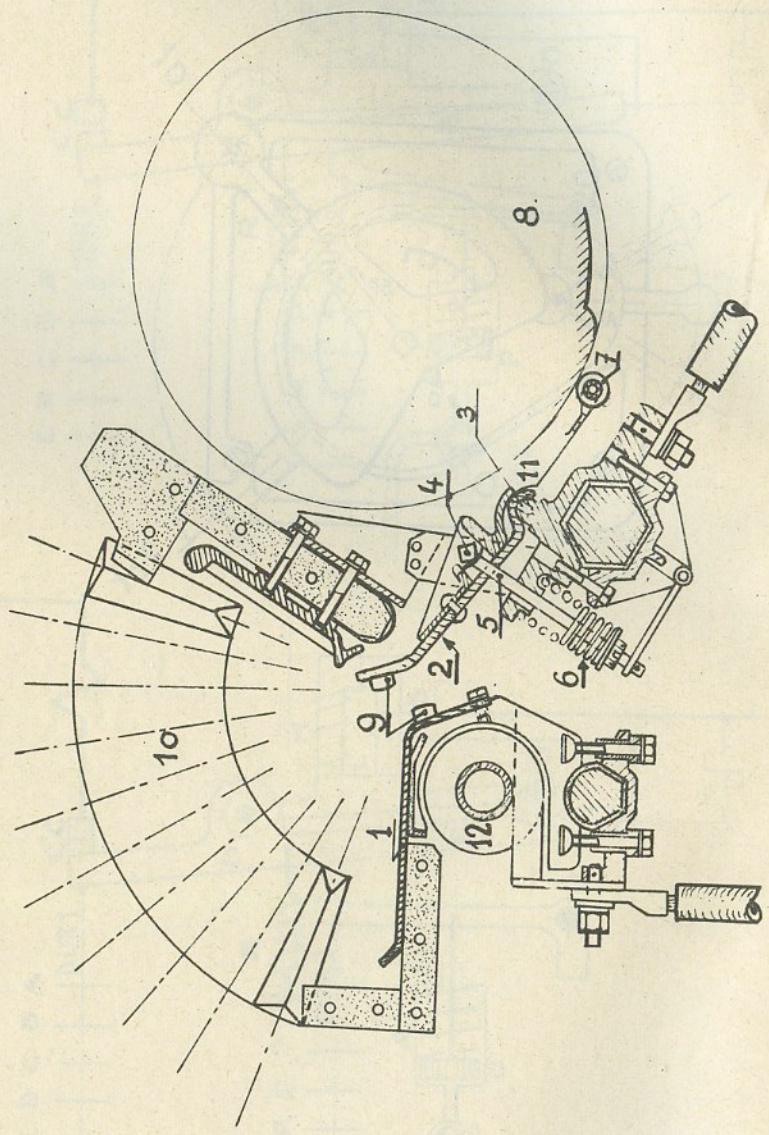


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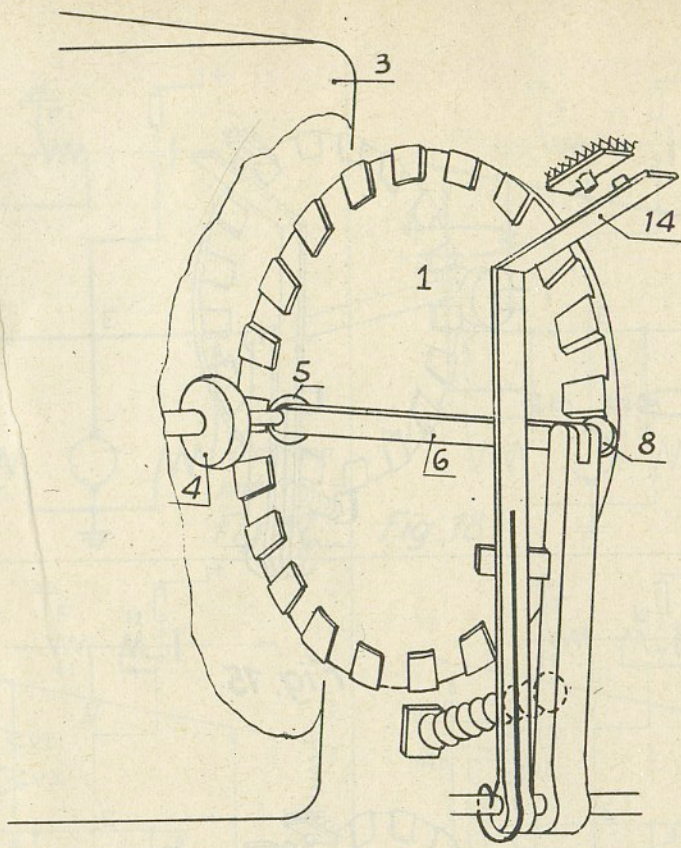


Fig. 13

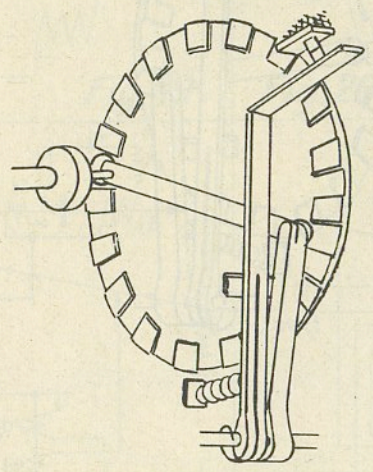


Fig. 14

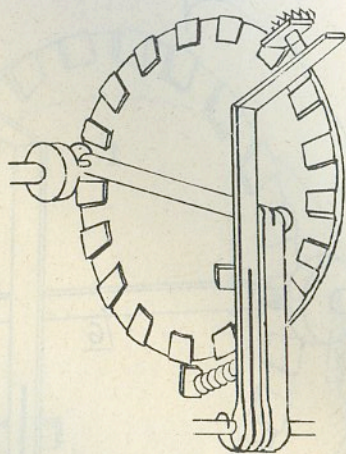


Fig. 15

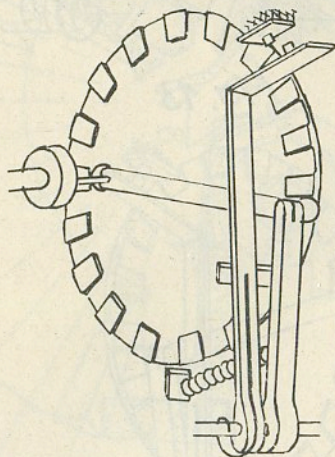


Fig. 16

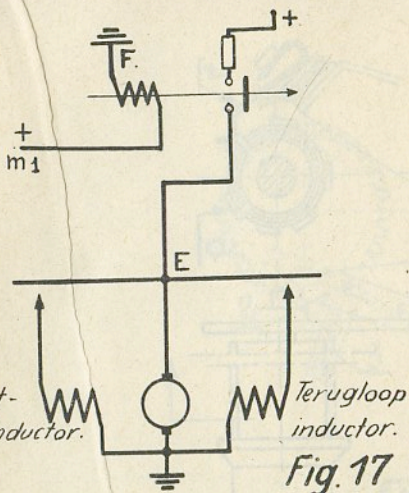


Fig. 17

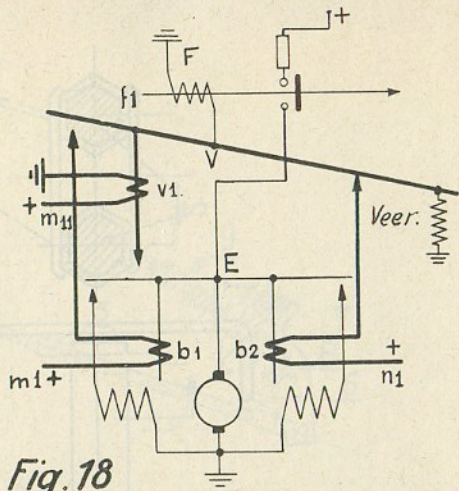


Fig. 18

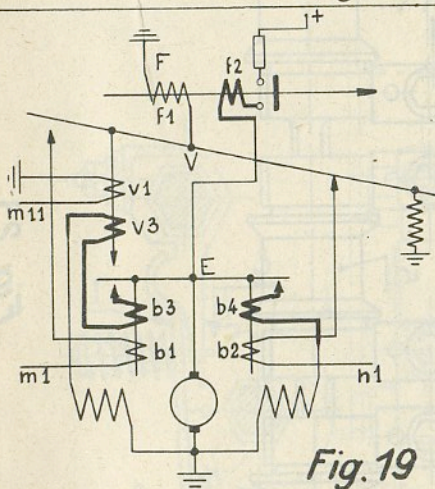


Fig. 19

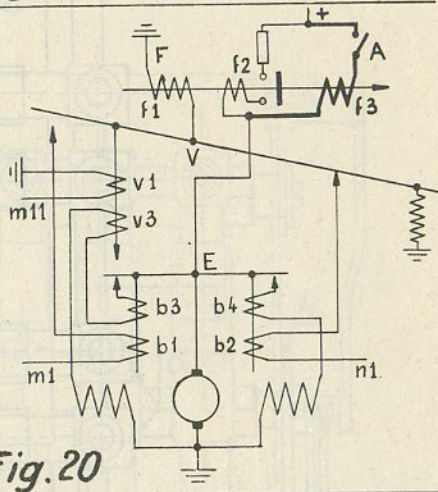


Fig. 20

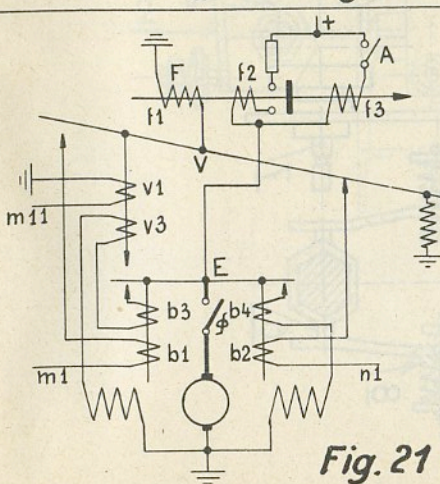


Fig. 21

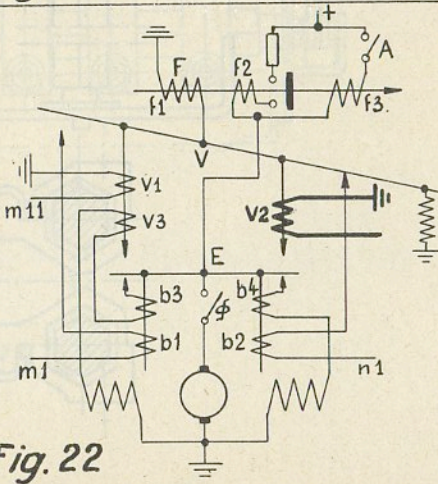


Fig. 22

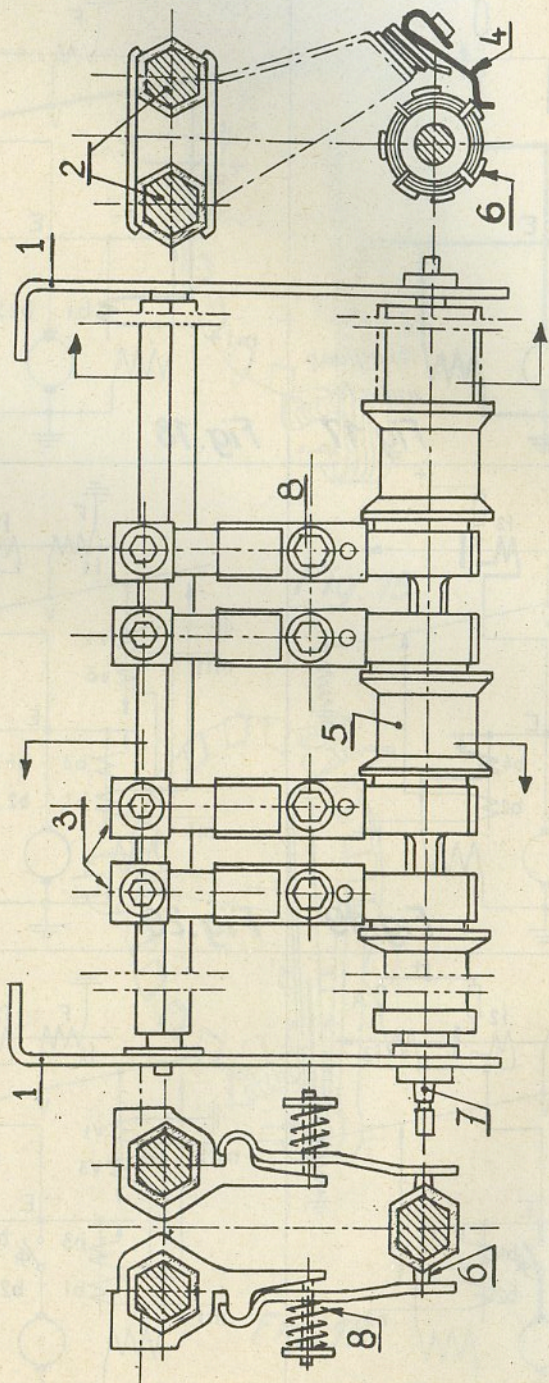


Fig. 23

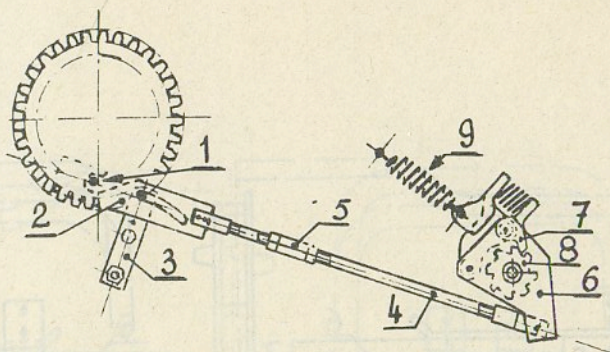


Fig. 24

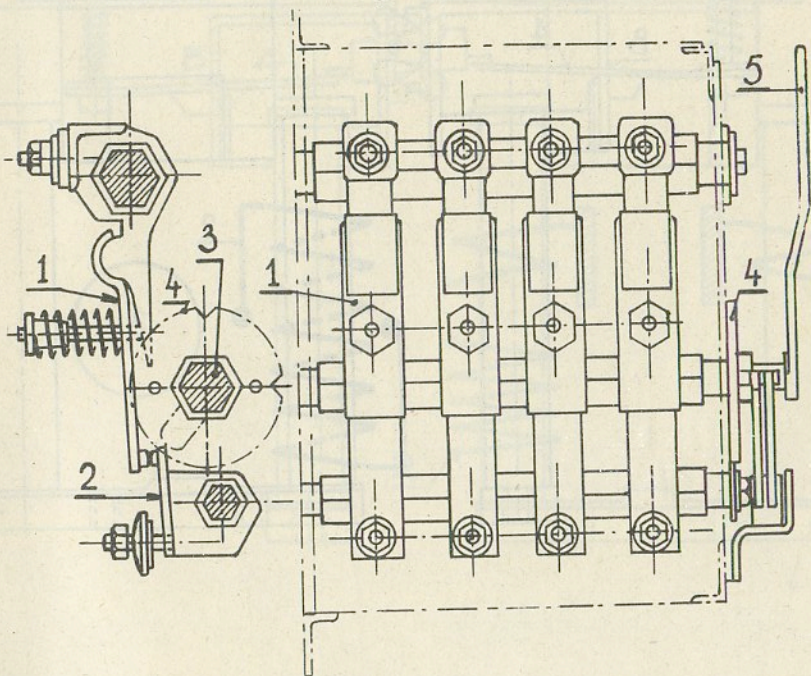


Fig. 25

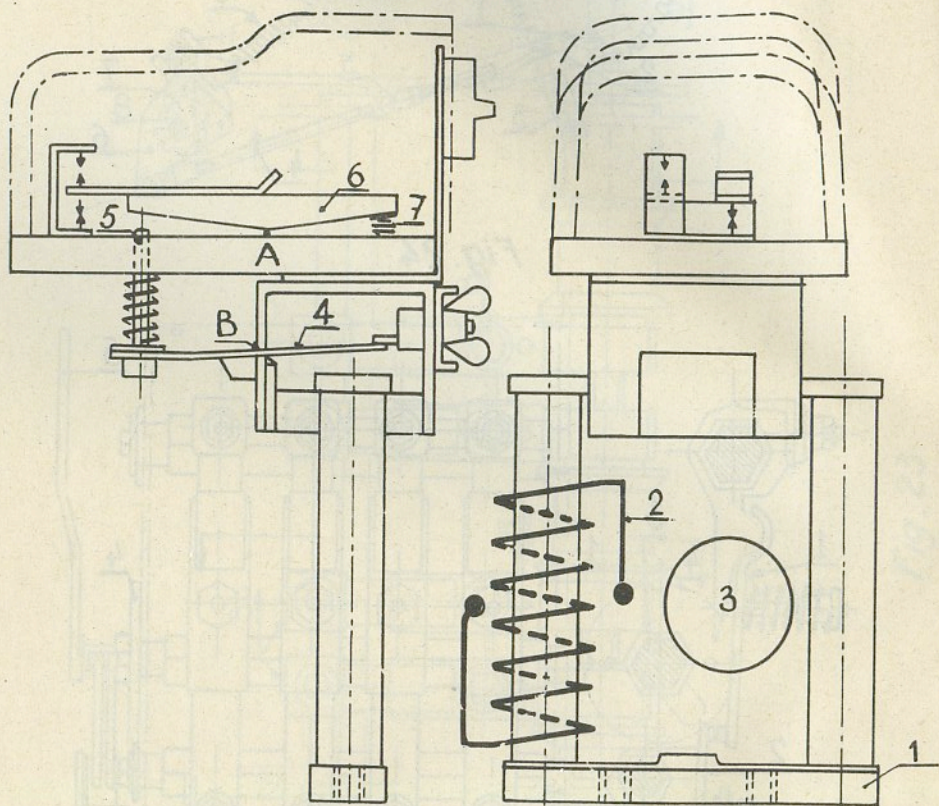


Fig. 26

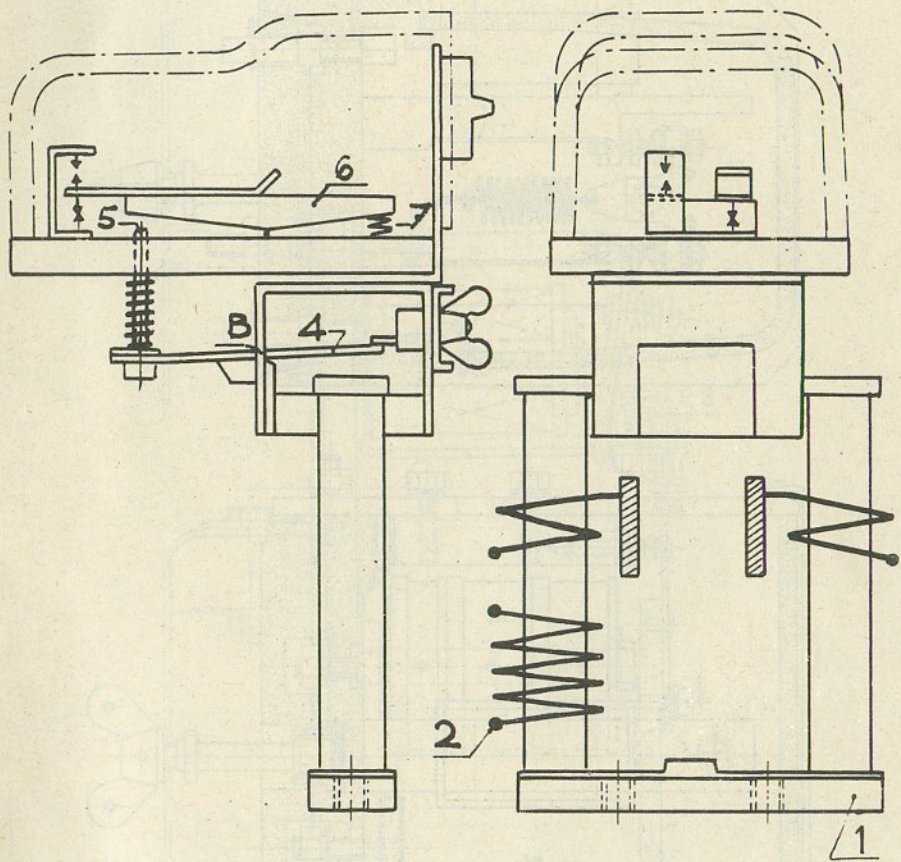


Fig. 27

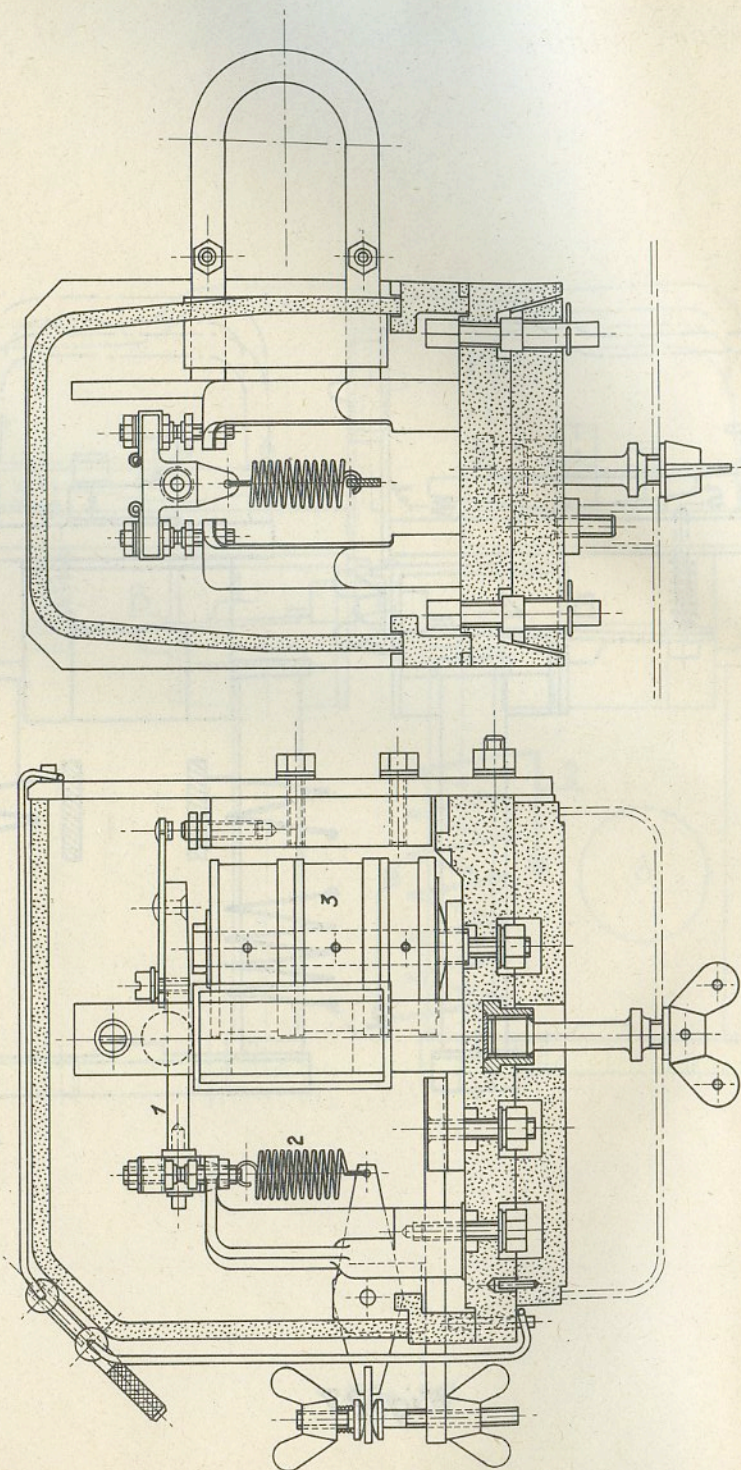


Fig. 28

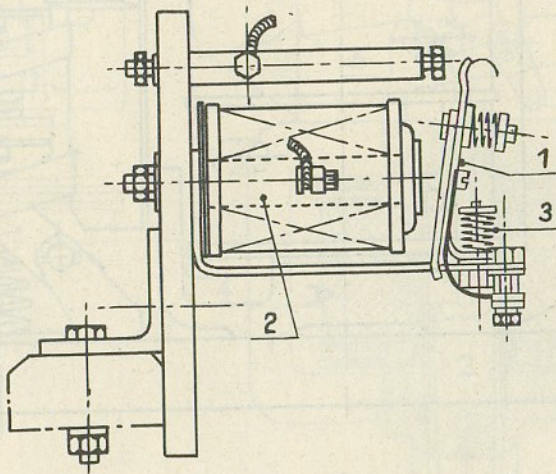


Fig. 29

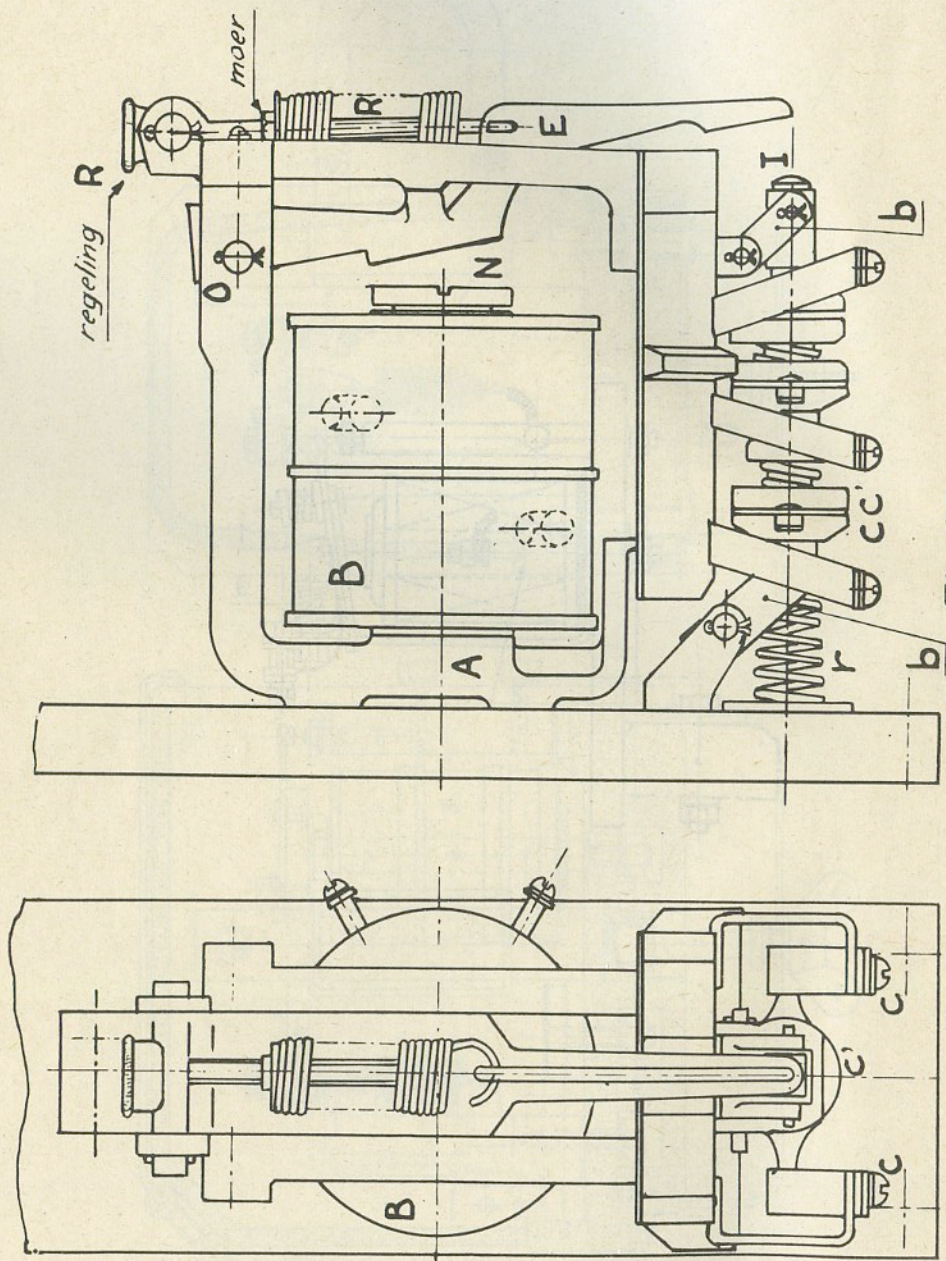


Fig. 30

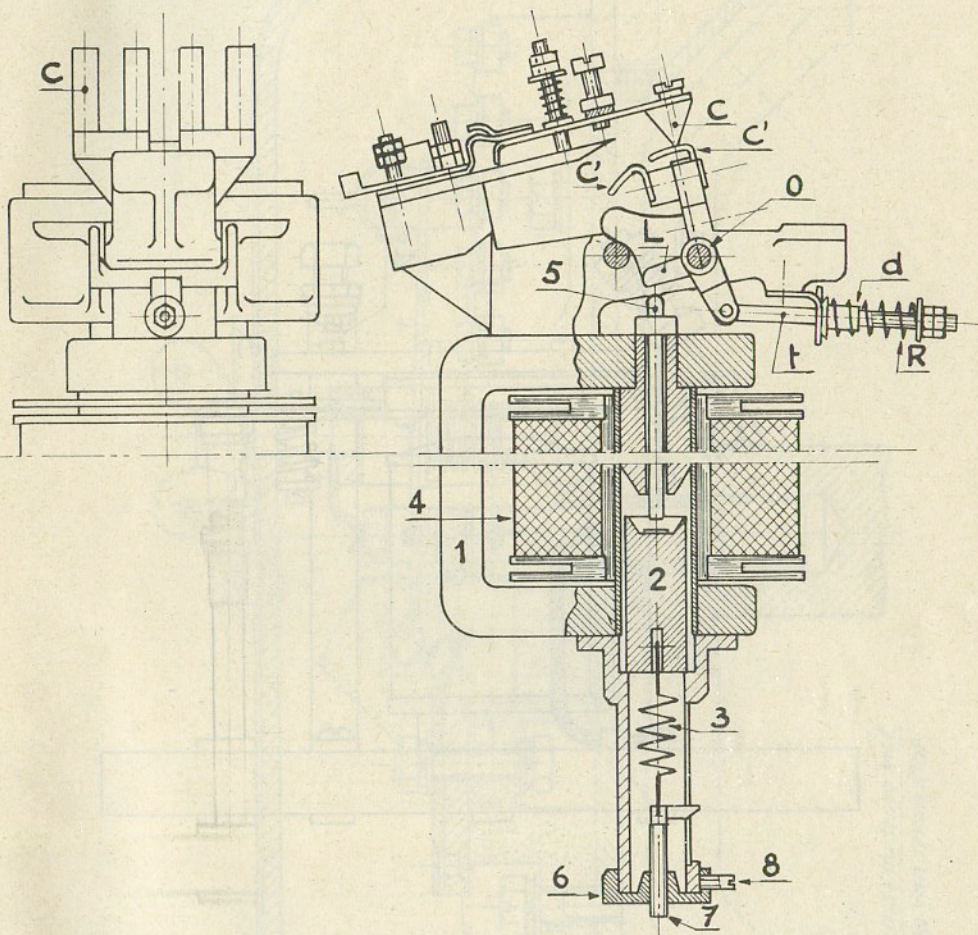


Fig. 31

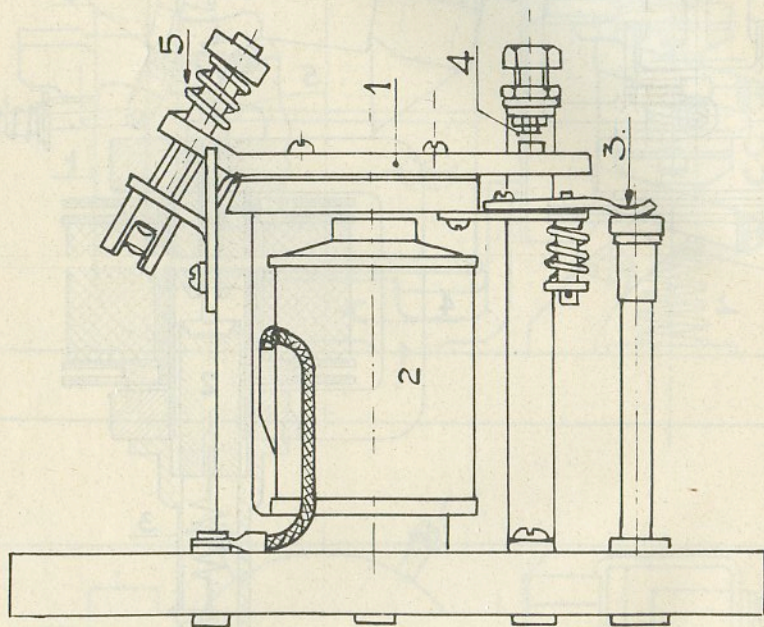
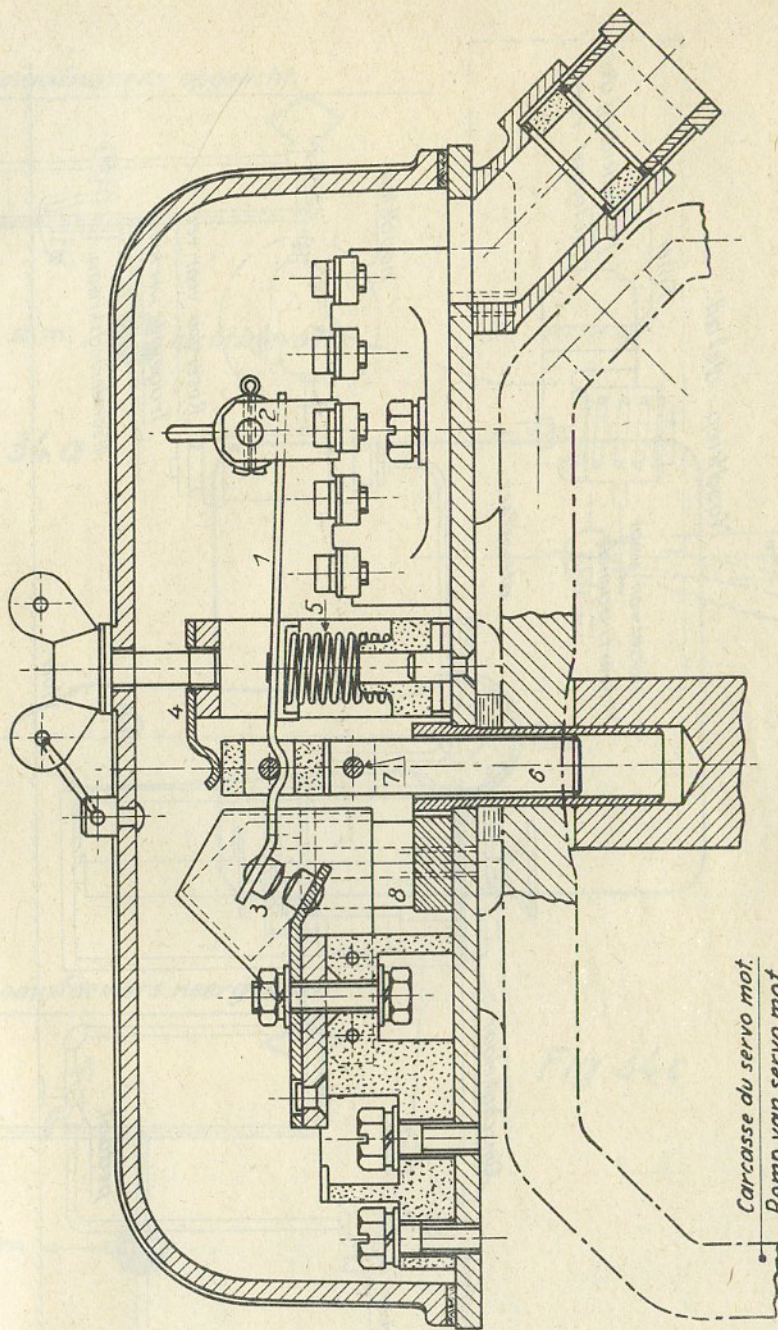


Fig. 37 bis.



Carcasse du servo mot.
Romp van servo mot.

Fig. 32

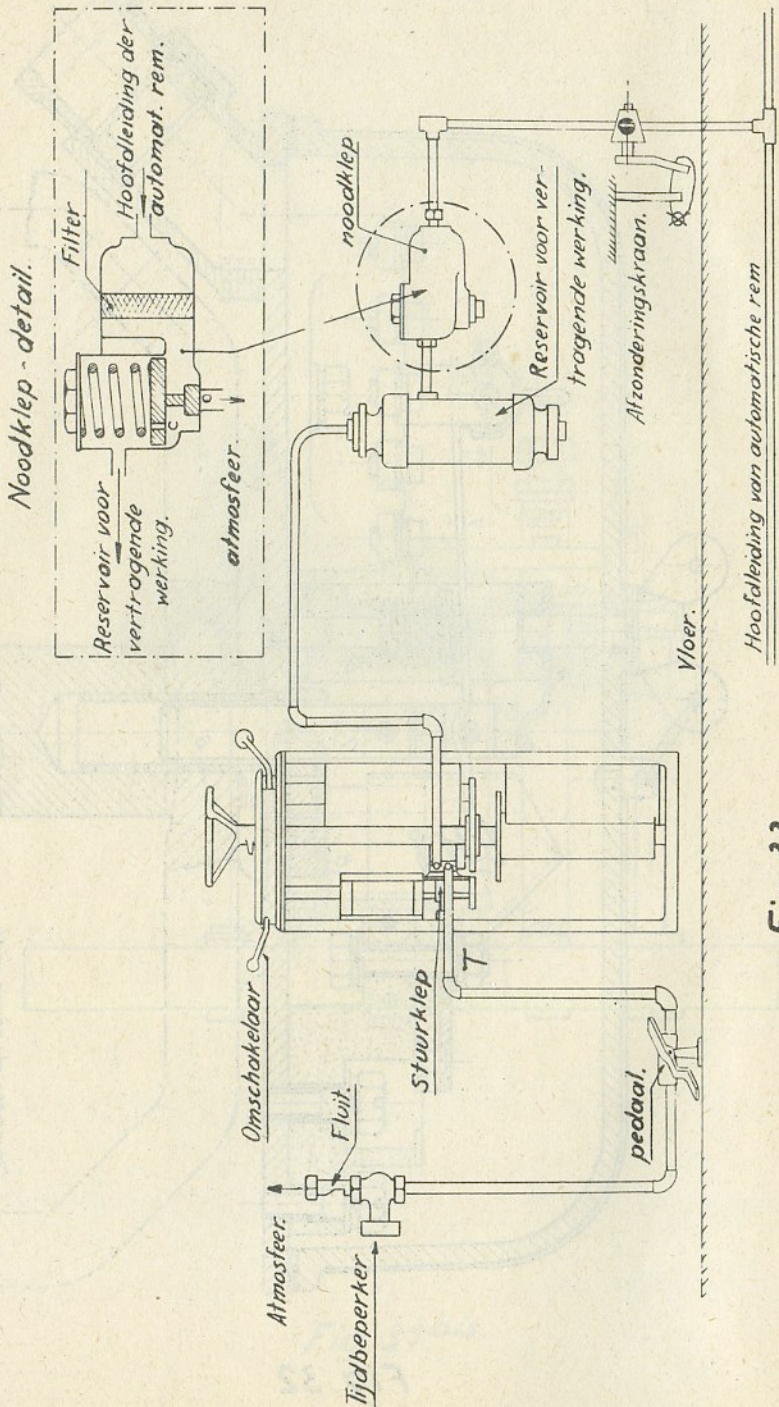


Fig. 33

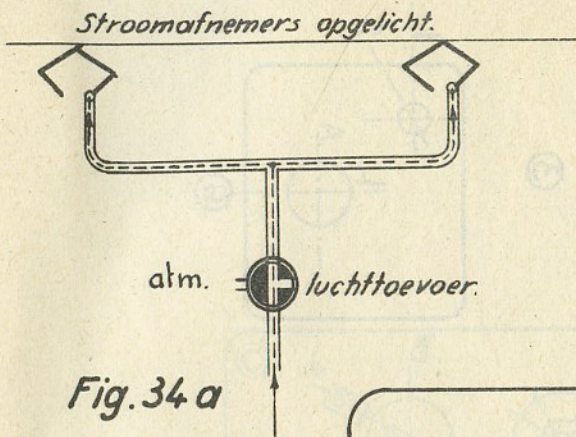


Fig. 34 a

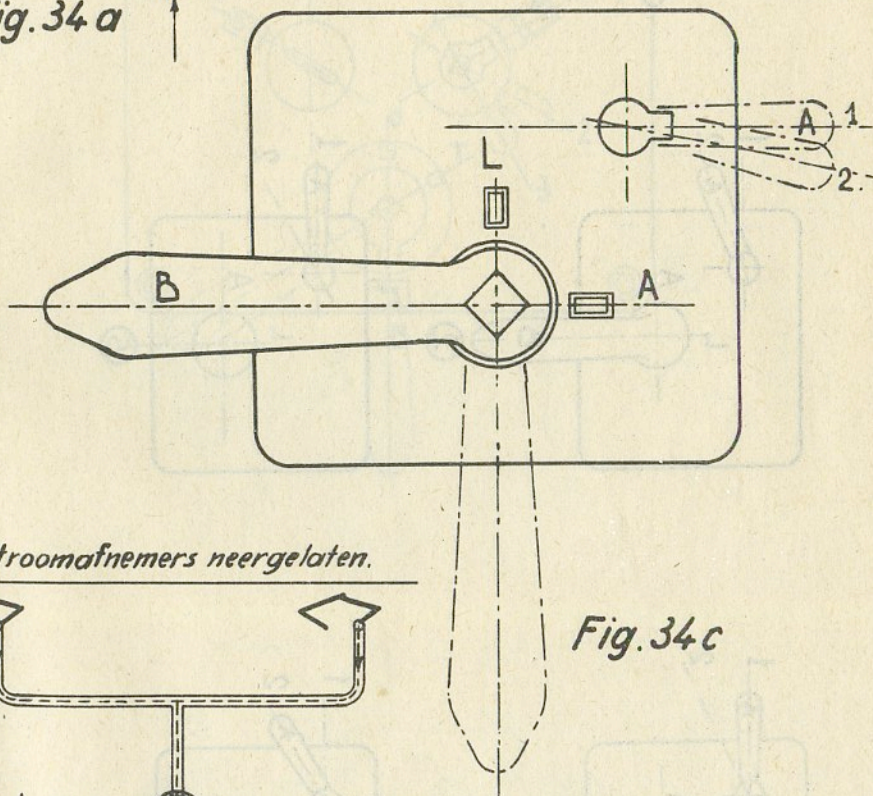


Fig. 34 c

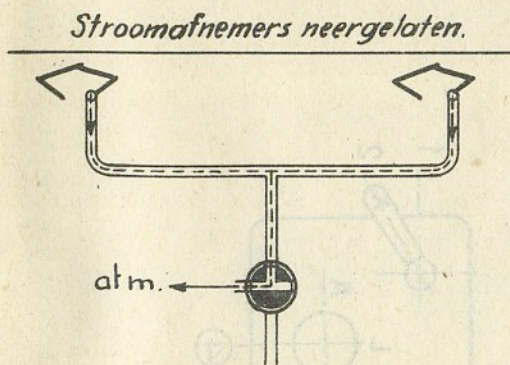
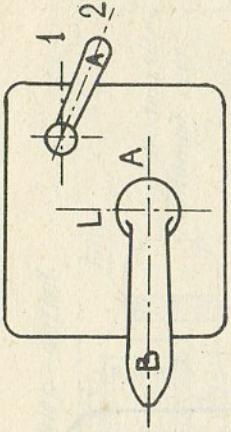


Fig. 34 b



③

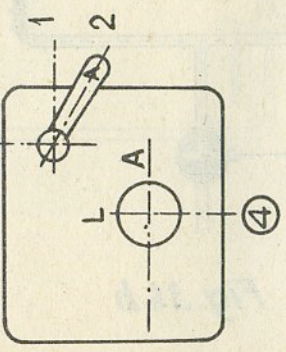
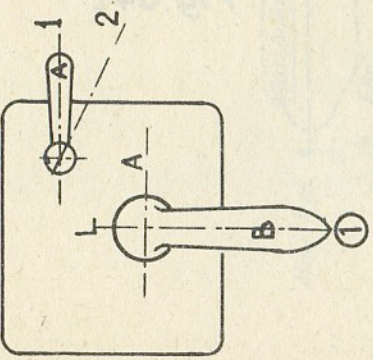
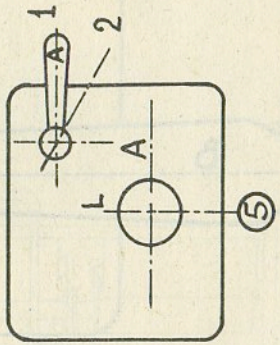
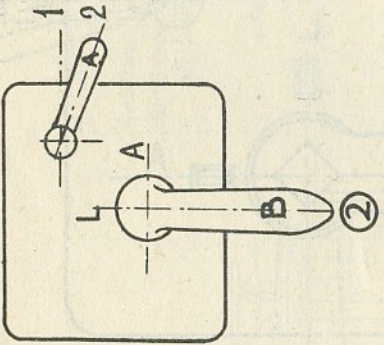
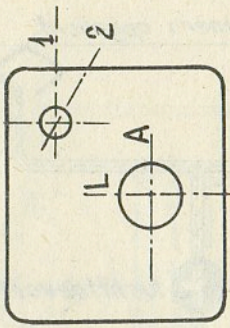


Fig 35

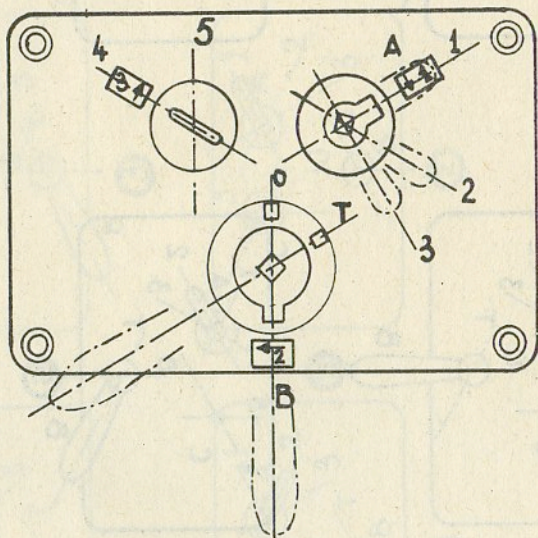


Fig. 36

Aarding.

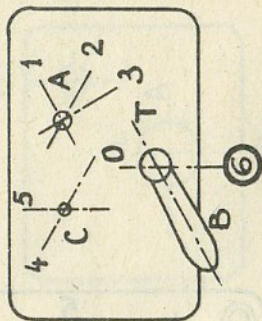
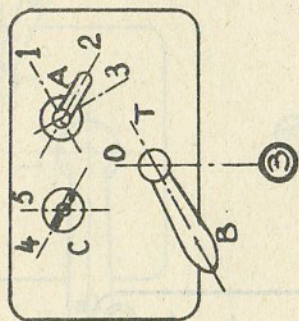
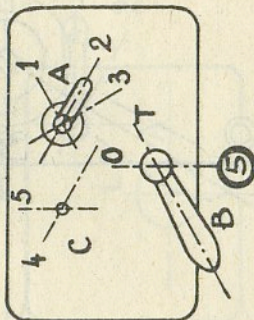
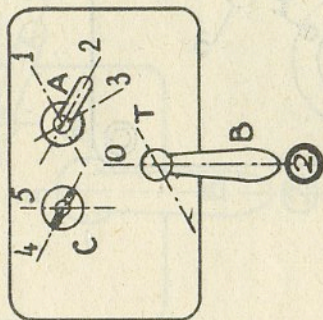
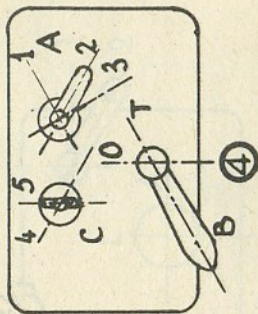
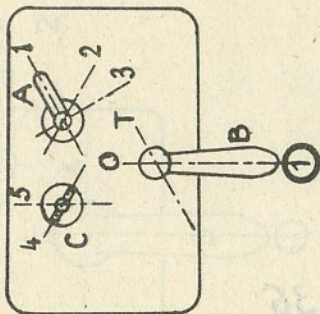


Fig. 37a

Terugplaatsing in normale stand.

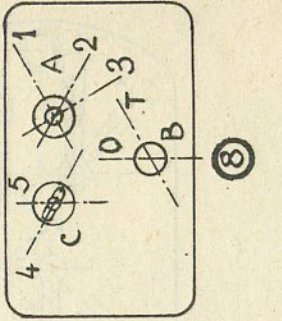
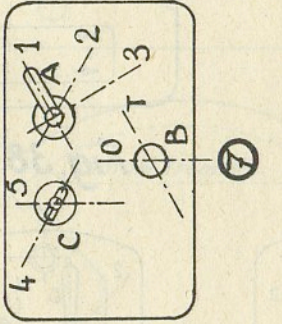
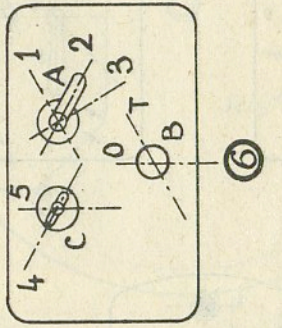
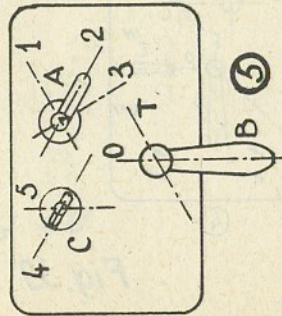
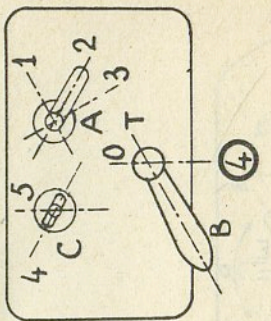
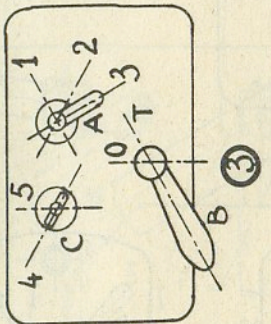
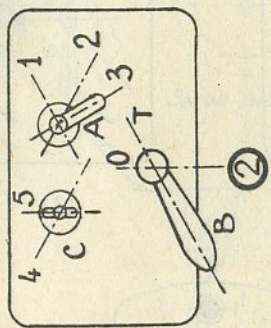
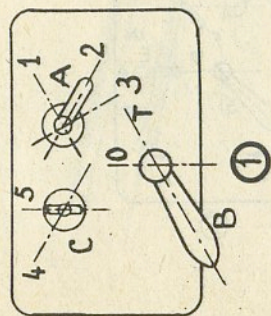


Fig. 37 b

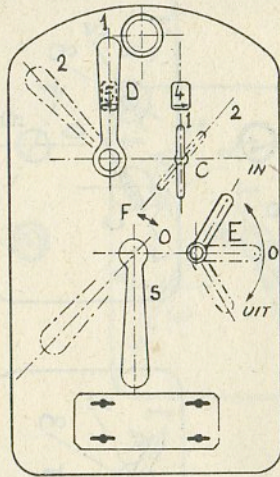
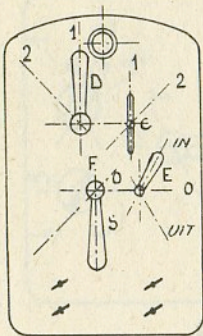
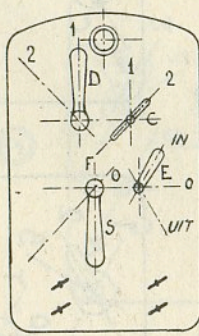


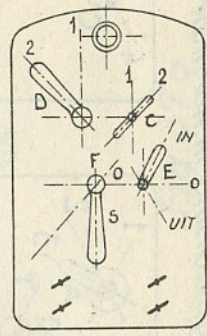
Fig. 38



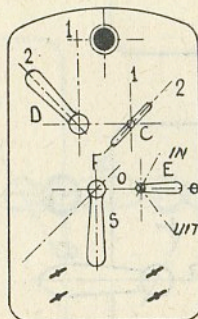
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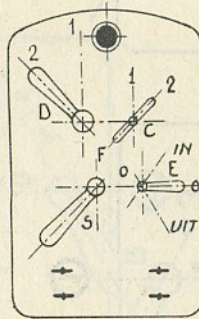
②



③



④



⑤

Fig. 39

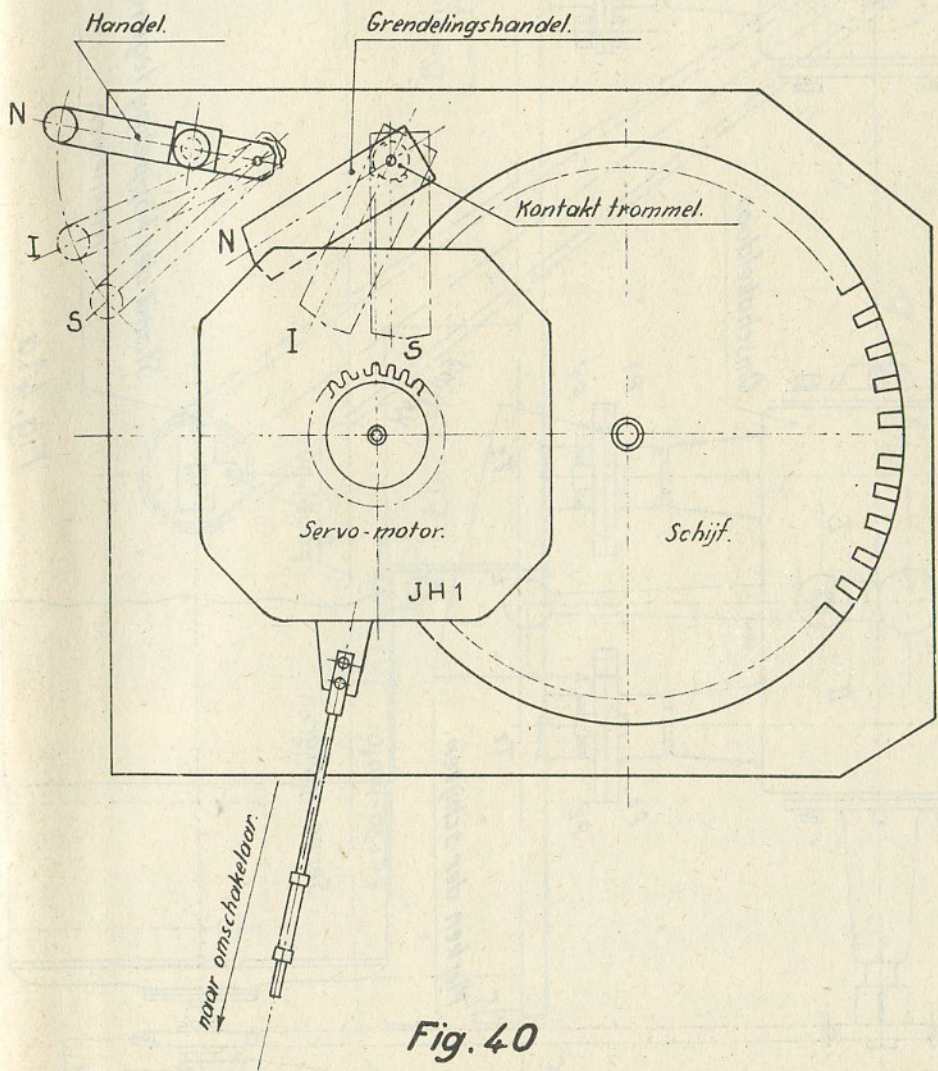


Fig. 40

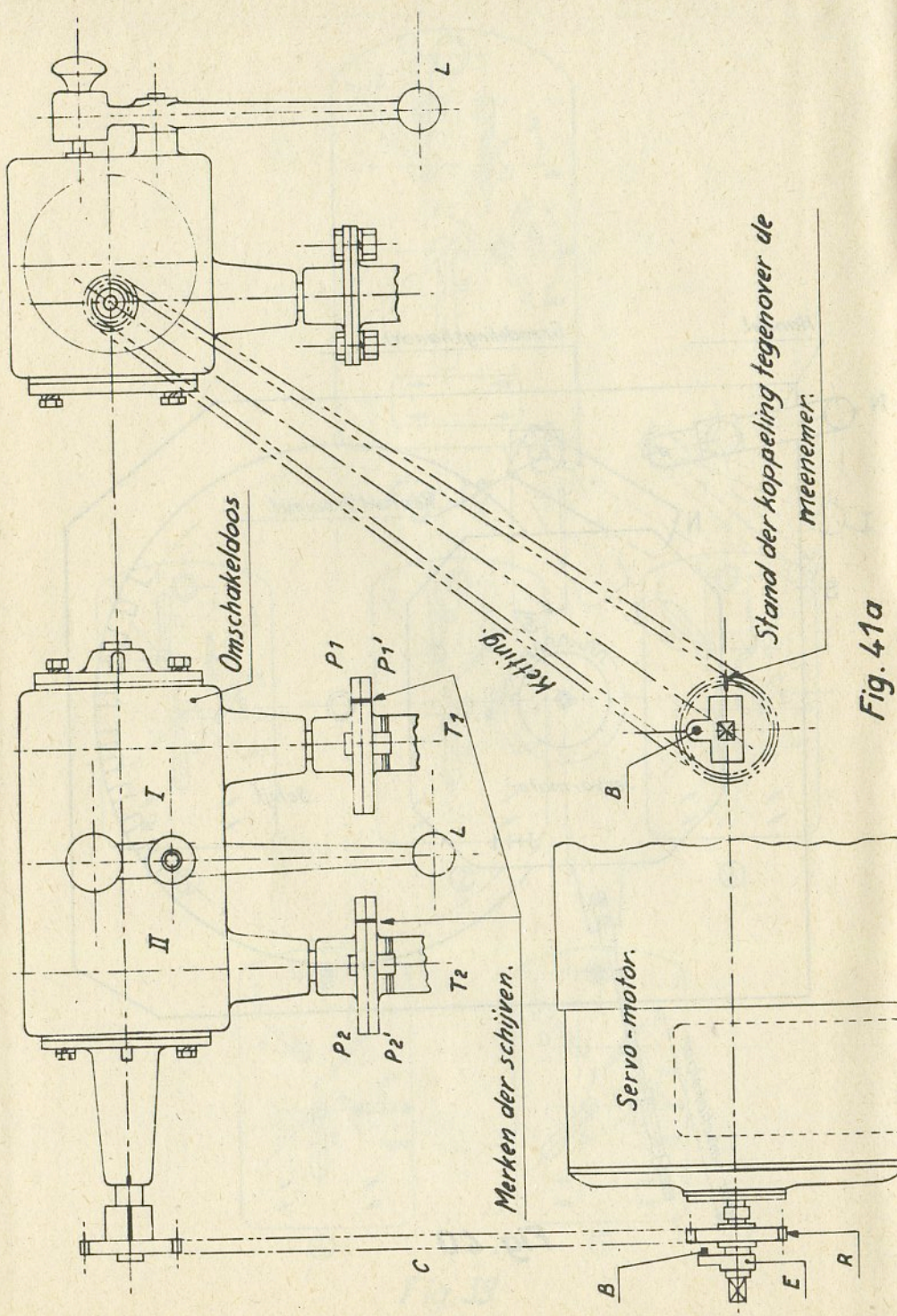


Fig. 41a

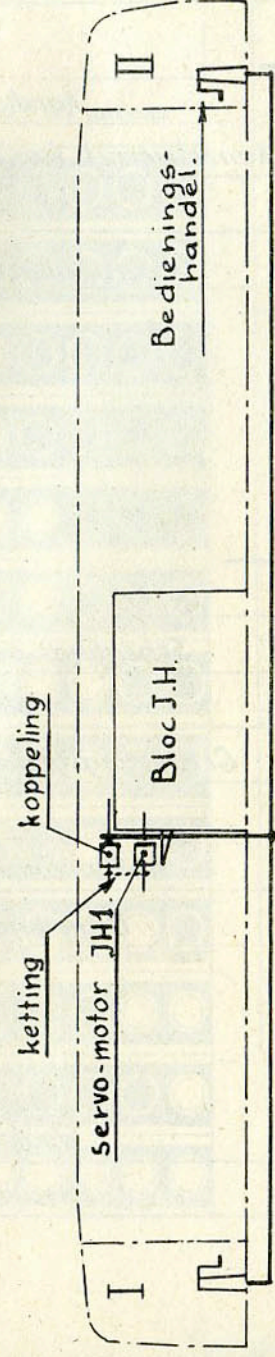


Fig. 41 b

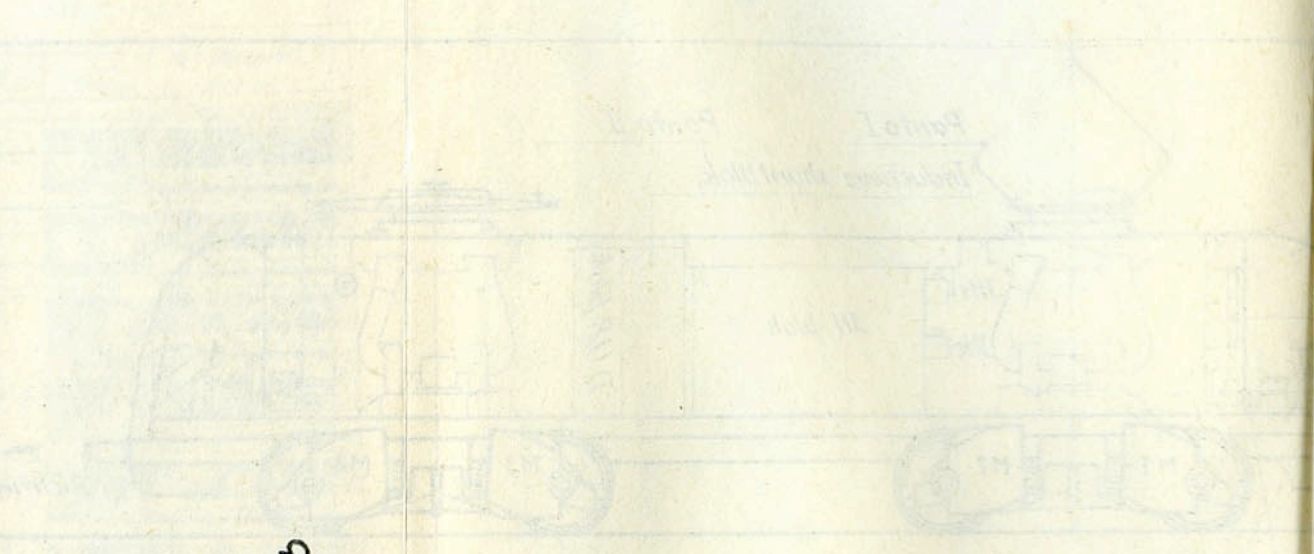
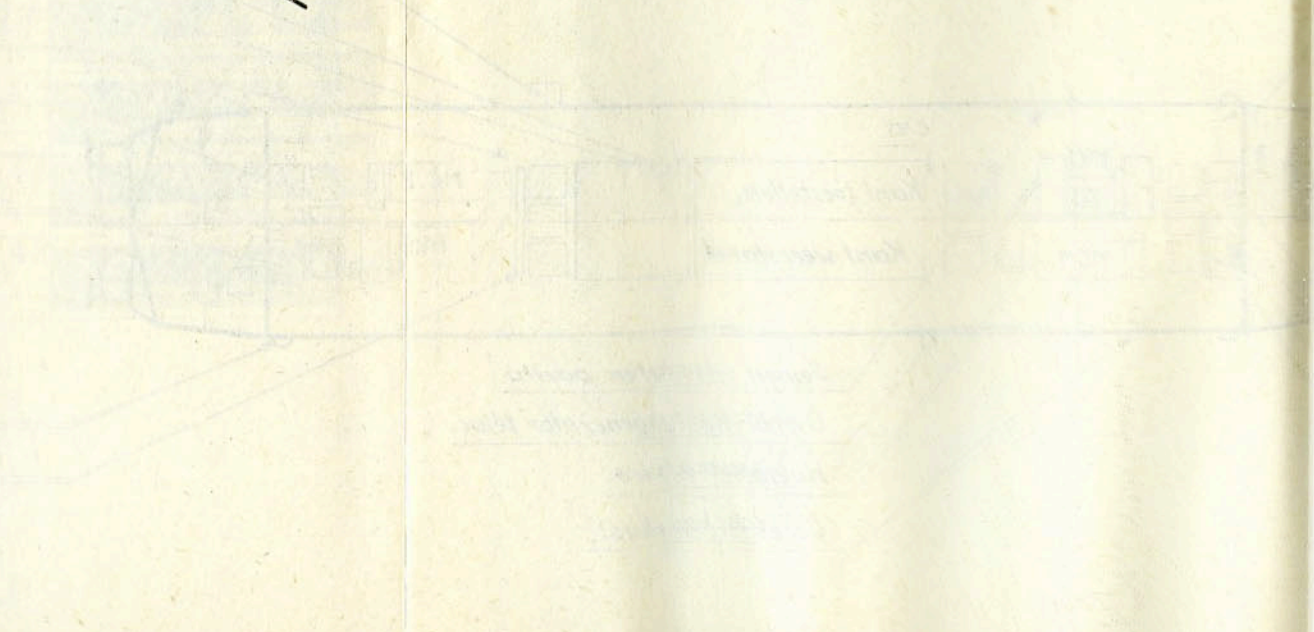


Fig 42



Aanzetweerst. van hulpgroepen.

Stuurcab. I.

Signalisatie van de JH1.

Spanningsregelaar.

1/2 accumulatorenbatterij.

Remkranen.

Manometers en Teloc.

Manipulator.

Voltmeters - Amperemeters.

Handbediening.

Signalisatielampen.

Drukknoppendoos.

Antislipping bediening.

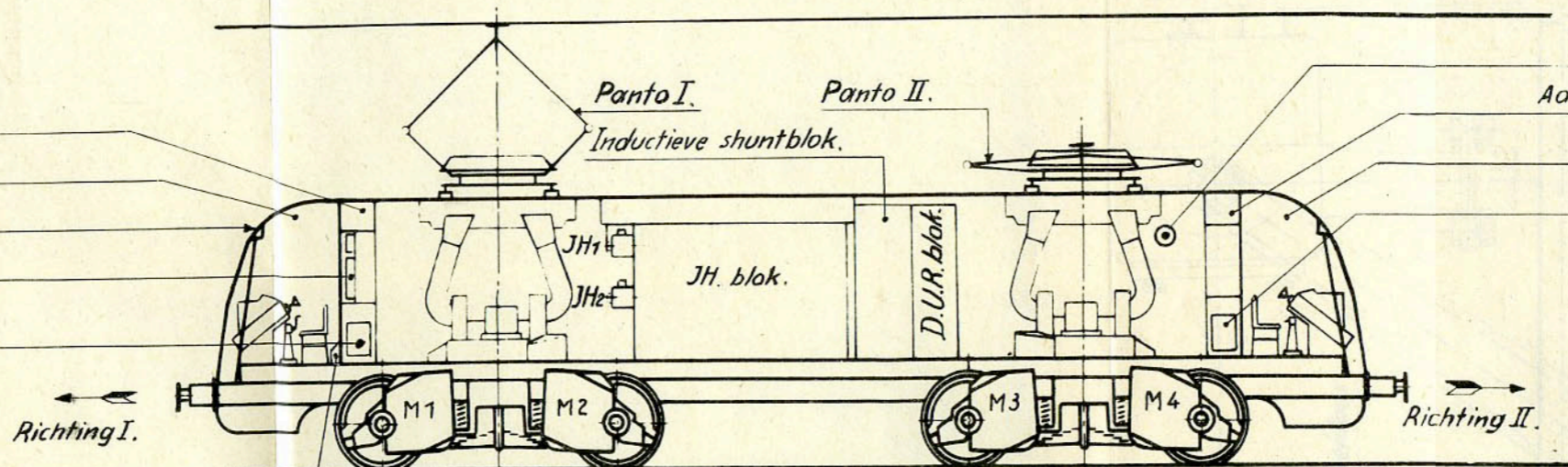
Smeltzekeringenbordje.

Bedieningsbord TA.1.

Spanningsregelaar.

Drukregelaar.

Batterijbord.



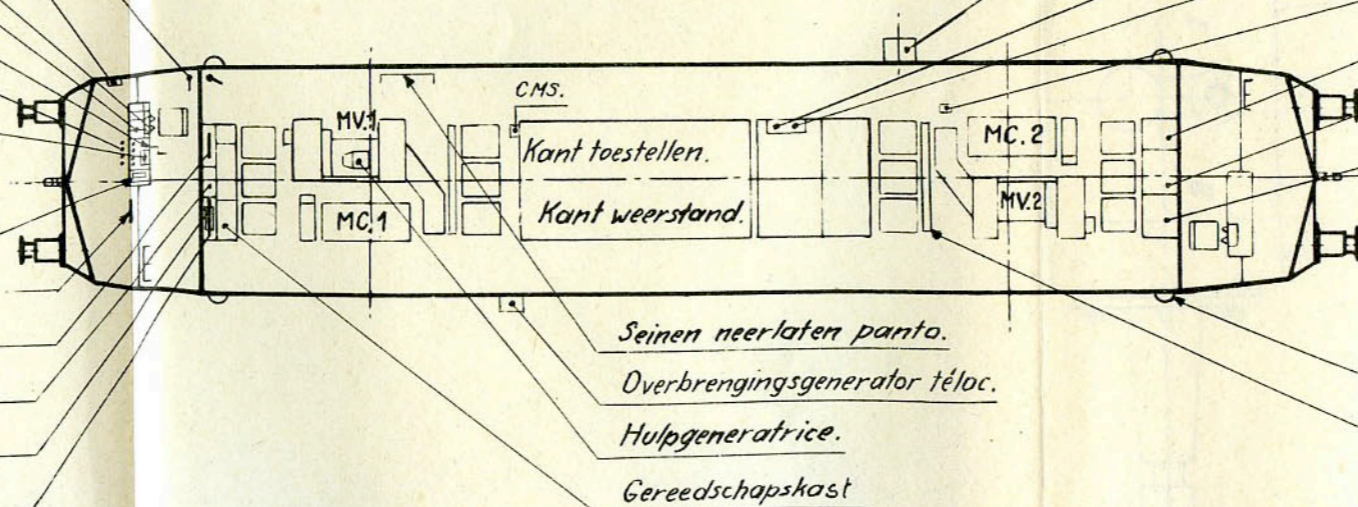
Aardingsstaak.

Aanzetweerst. van hulpgroepen.

Stuurcab. II.

1/2 accumulatorenbatterij.

Fig. 42



Autovariabele.

Scheidings-aardingschakelaar.

Sleuteldoos.

Grendelingskraan der pantos.

Kleerkast.

Pneumatische kast.

Bedieningsbord TA.2.

Seinen neerlaten panto.

Overbrengingsgenerator télloc.

Hulpgeneratrice.

Gereedschapskast

Waakzaamheidslamp.

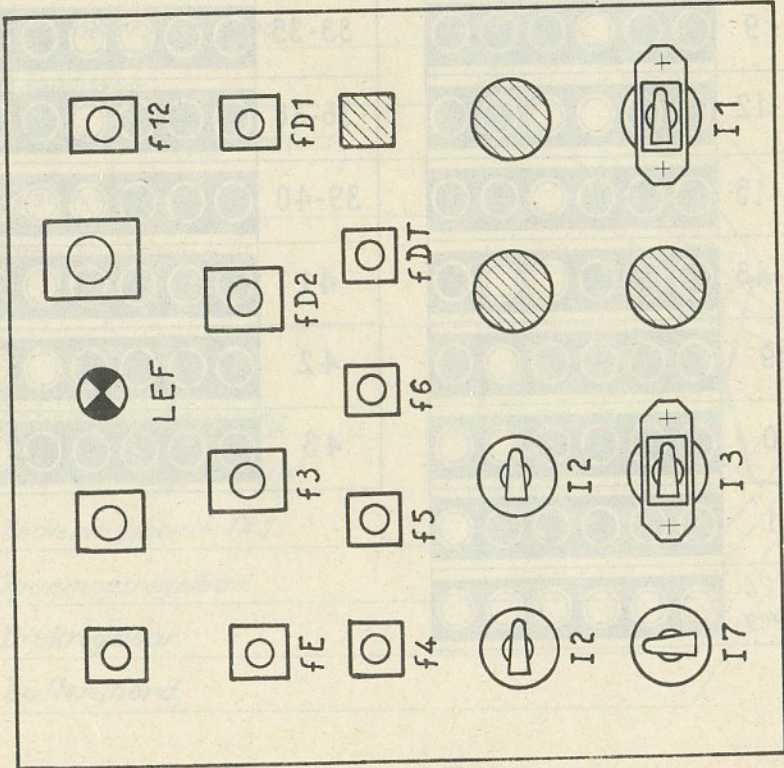
Pneumatisch bord.

SERIE	
<i>Ständen.</i>	<i>Stand der lampen.</i>
0	○ ○ ○ ○ ○ ○ ○ ○
1	○ ○ ○ ○ ○ ○ ○ ○
2	○ ○ ○ ○ ○ ○ ○ ○
3	○ ○ ○ ○ ○ ○ ○ ○
4 - 6	○ ○ ○ ○ ○ ○ ○ ○
7 - 9	○ ○ ○ ○ ○ ○ ○ ○
10 - 12	○ ○ ○ ○ ○ ○ ○ ○
13 - 15	○ ○ ○ ○ ○ ○ ○ ○
16 - 18	○ ○ ○ ○ ○ ○ ○ ○
19	○ ○ ○ ○ ○ ○ ○ ○
20	○ ○ ○ ○ ○ ○ ○ ○
21	○ ○ ○ ○ ○ ○ ○ ○
22 - 24 <i>Übergang.</i>	○ ○ ○ ○ ○ ○ ○ ○

SERIE - PARAL.	
<i>Ständen</i>	<i>Stand der lampen.</i>
25	○ ○ ○ ○ ○ ○ ○ ○
26	○ ○ ○ ○ ○ ○ ○ ○
27	○ ○ ○ ○ ○ ○ ○ ○
28-29	○ ○ ○ ○ ○ ○ ○ ○
30-32	○ ○ ○ ○ ○ ○ ○ ○
33-35	○ ○ ○ ○ ○ ○ ○ ○
36-38	○ ○ ○ ○ ○ ○ ○ ○
39-40	○ ○ ○ ○ ○ ○ ○ ○
41	○ ○ ○ ○ ○ ○ ○ ○
42	○ ○ ○ ○ ○ ○ ○ ○
43	○ ○ ○ ○ ○ ○ ○ ○

Fig. 43

TA.1



TPC.1

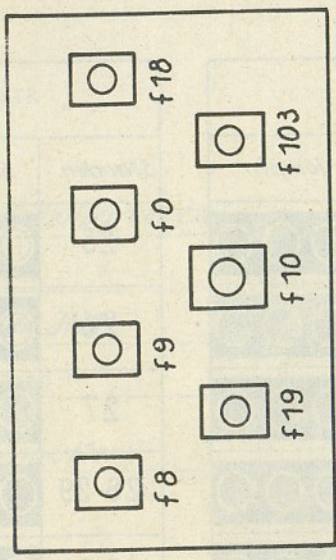
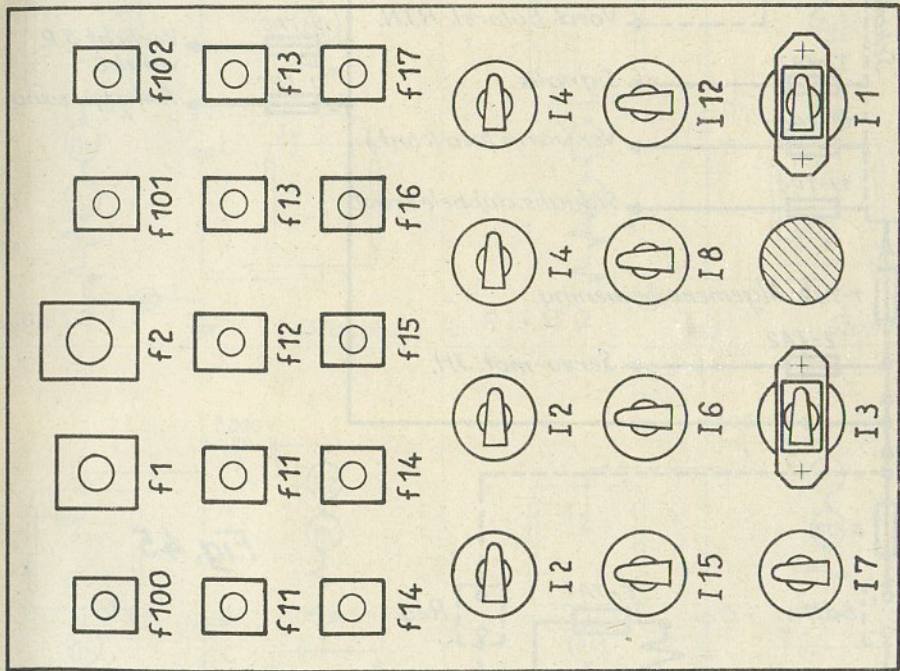
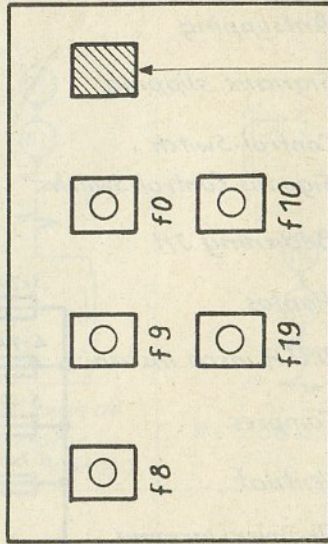


Fig. 44.a

TA. 2



TPC. 2



Stop Aut. 122.201 tot 122.212
Res. 122.001 tot 122.038

Fig. 44.b

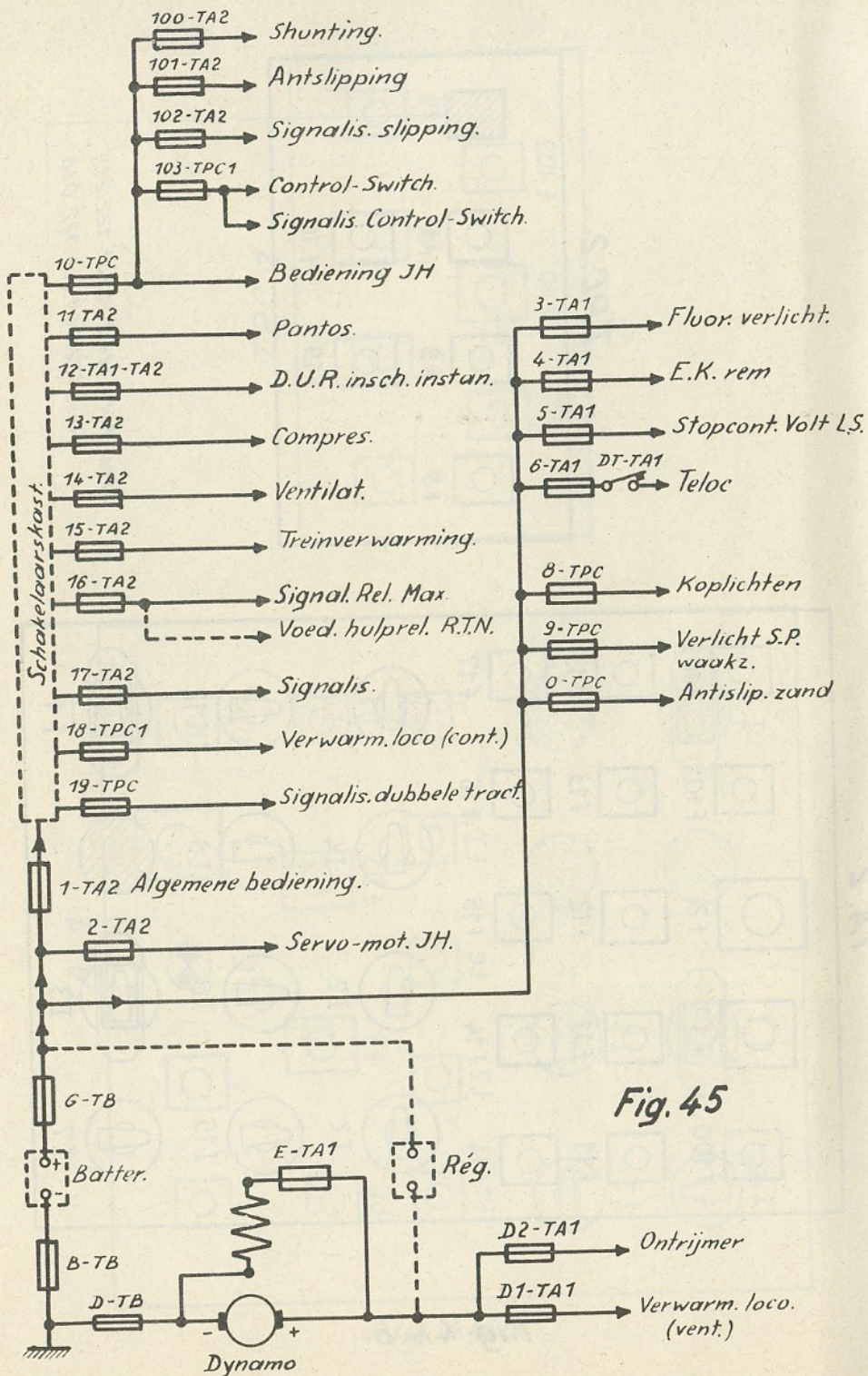
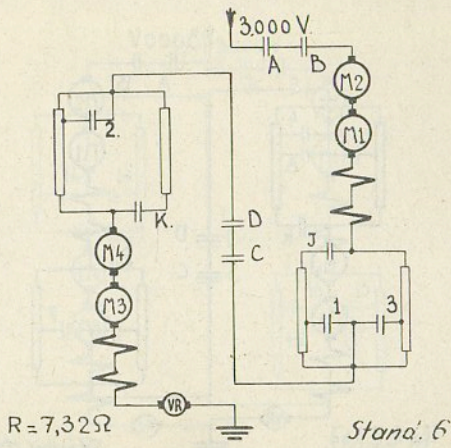
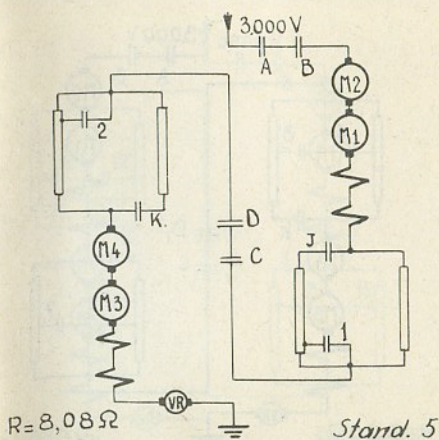
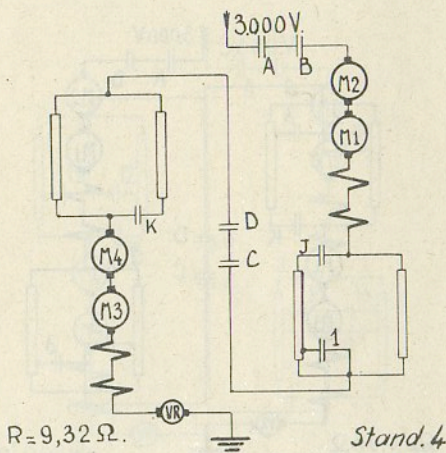
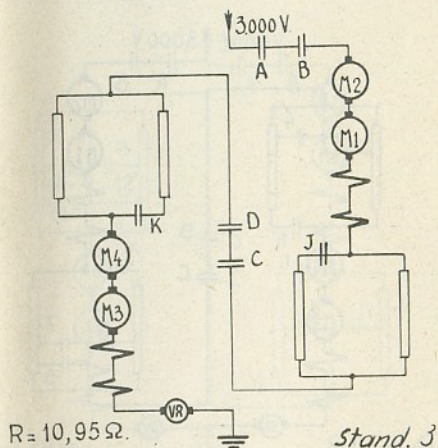
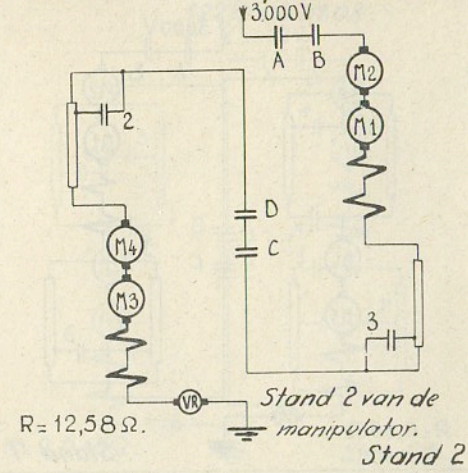
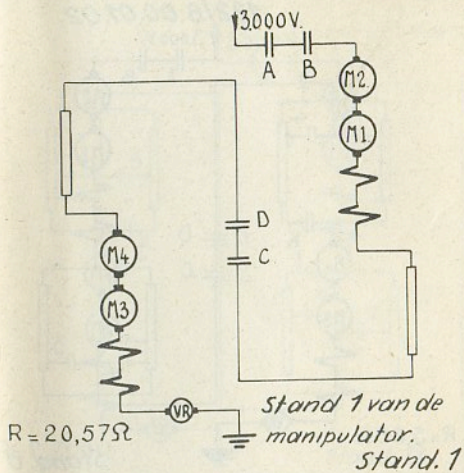


Fig. 45

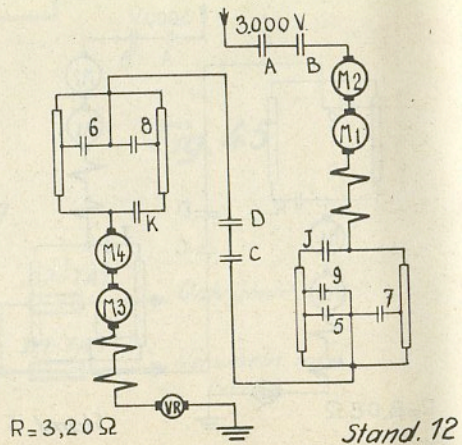
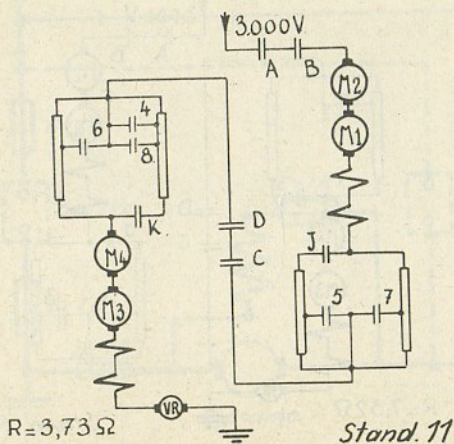
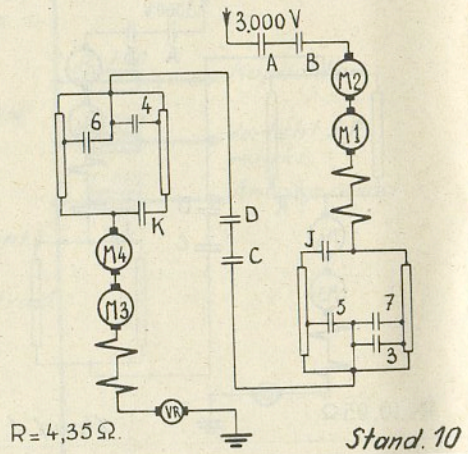
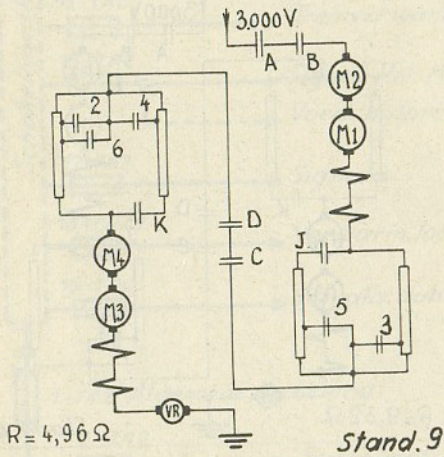
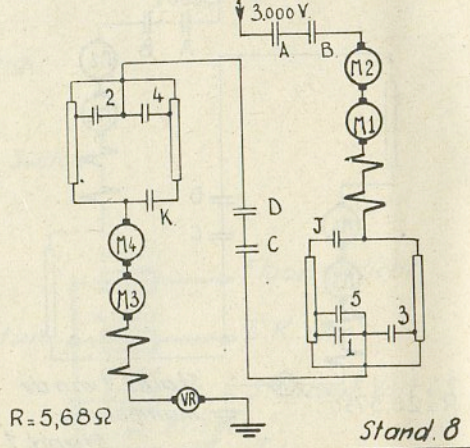
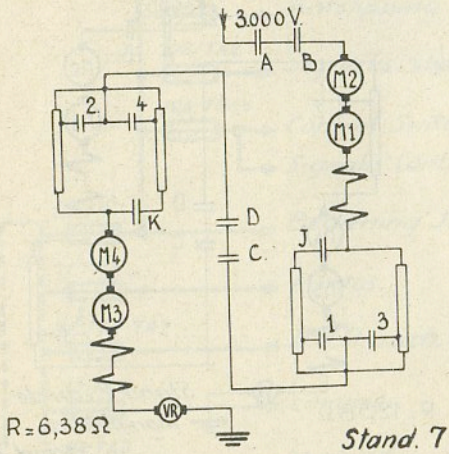
SERIE STANDEN.

122/B.00.01.01



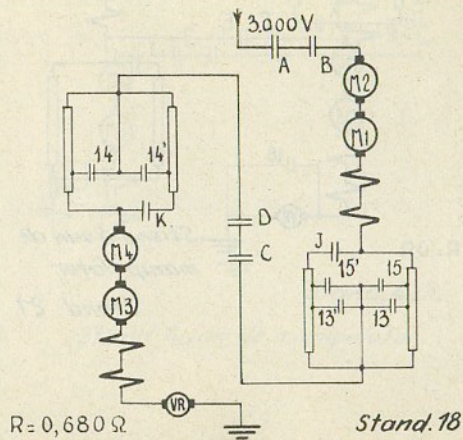
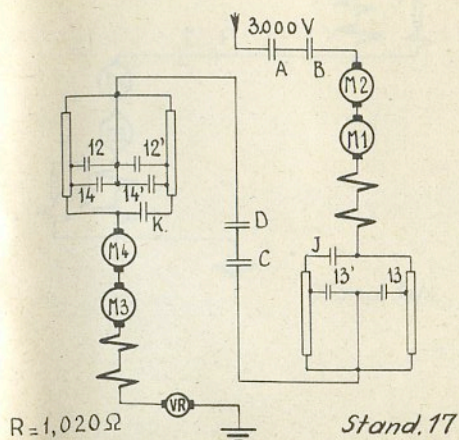
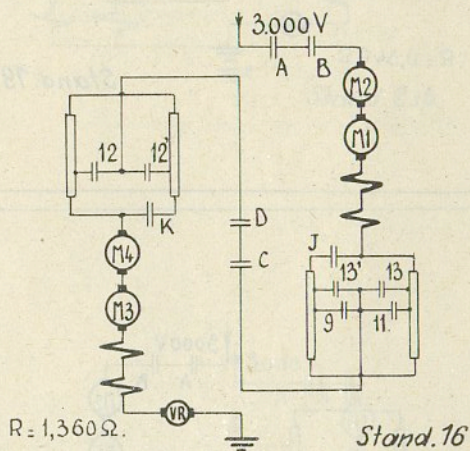
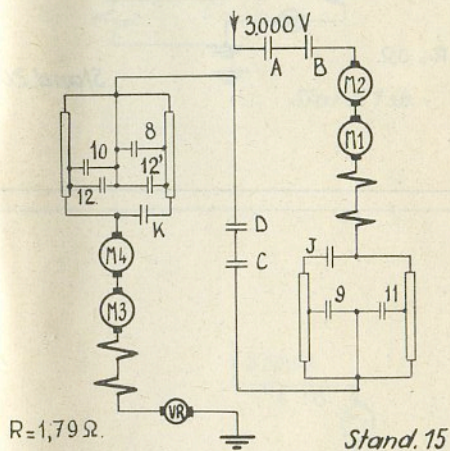
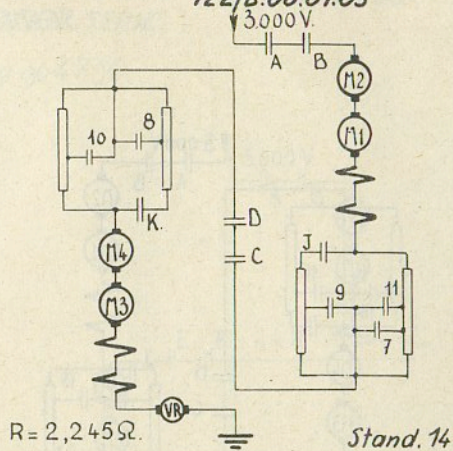
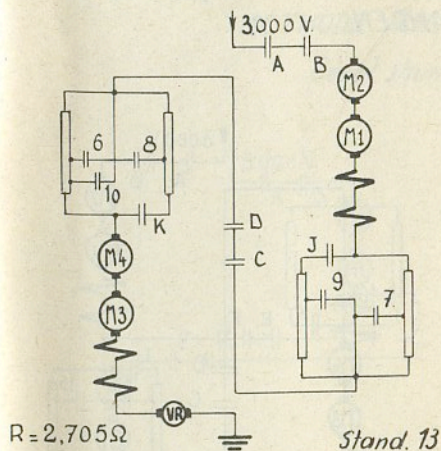
SERIE STANDEN.

122/B.00.01.02

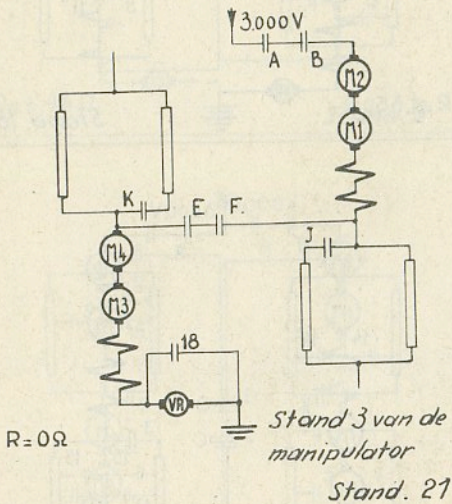
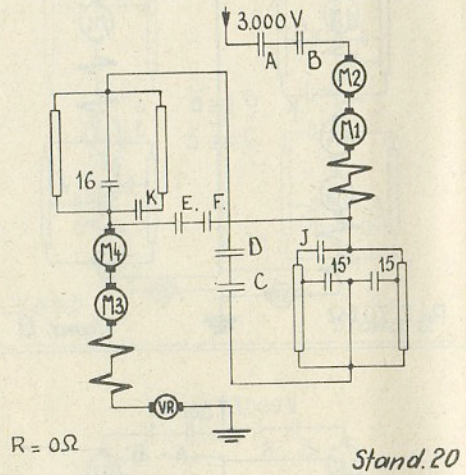
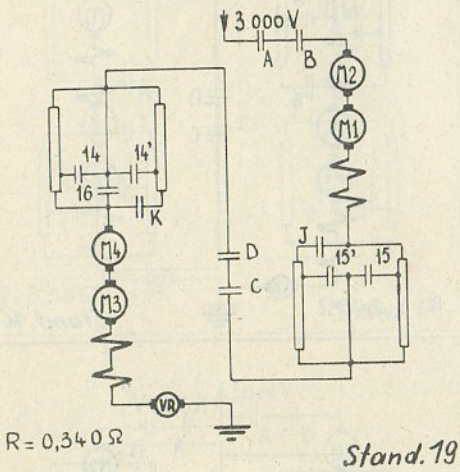


SERIE STANDEN.

122/B.00.01.03



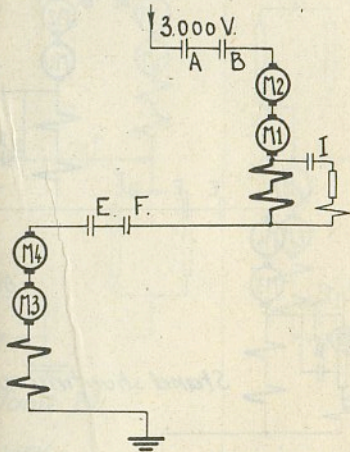
SERIE STANDEN.



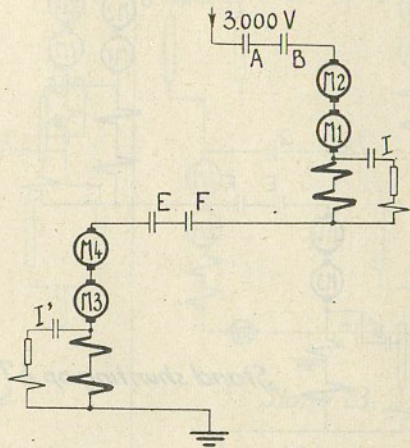
METHODE VAN SHUNTING SERIE.

122/B.00.01.05

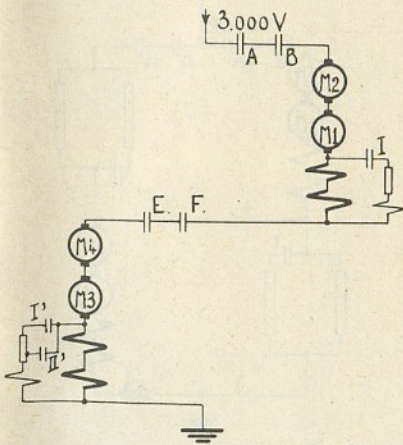
Geval shuntering op 47%.



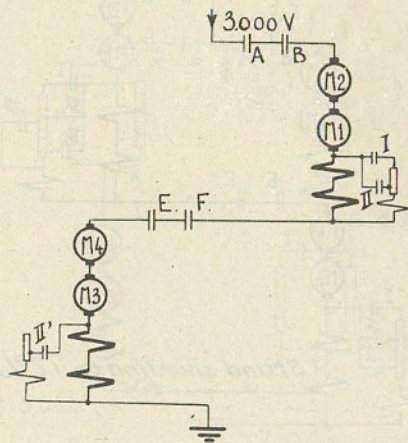
Stand. 1 sh.



Stand. 2 sh.



Stand. 3 sh.

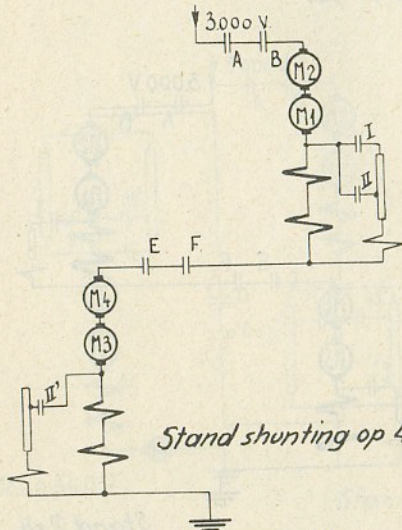


Stand. 4 sh.

Stand 4 van de manipulator.

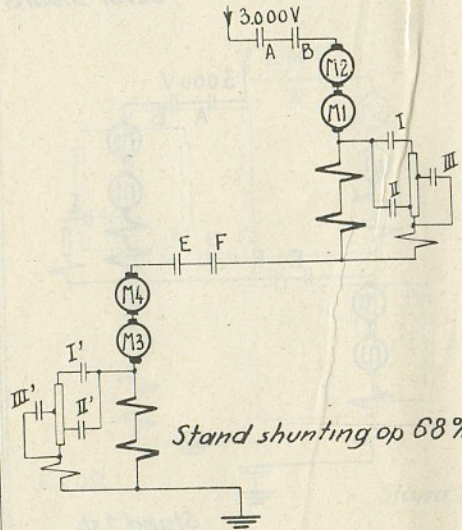
SHUNTINGSSTANDEN SERIE.

122/B.00.01.06



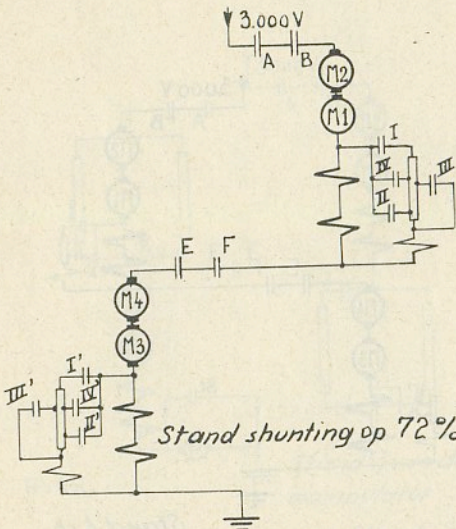
Stand shunting op 47%

Stand 4 van de manipulator



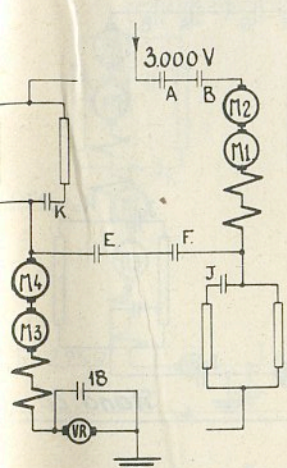
Stand shunting op 68%

Stand 5 van de manipulator.



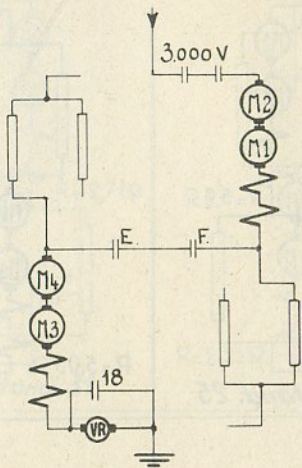
Stand shunting op 72%

Stand 6 van de manipulator.

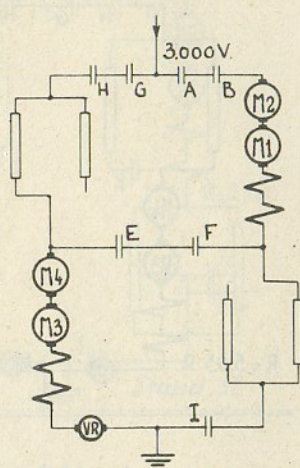


$R = 0\Omega$ Stand. 21

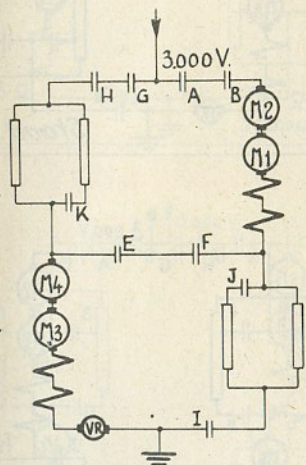
Einde serie.



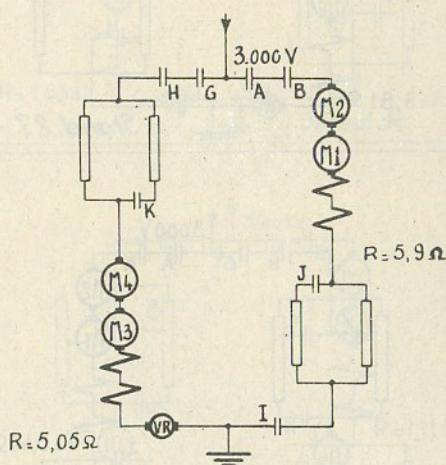
Stand. 22



Stand. 23.



Stand. 24

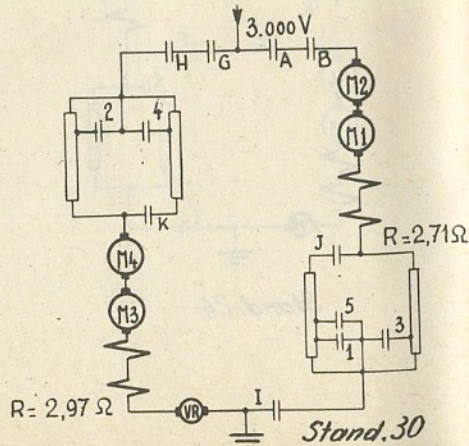
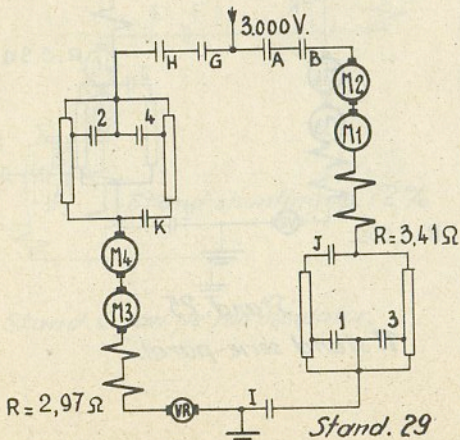
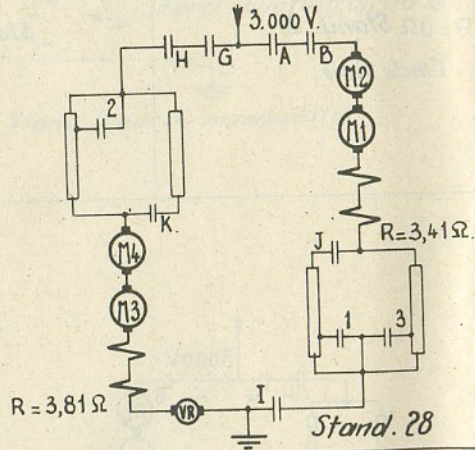
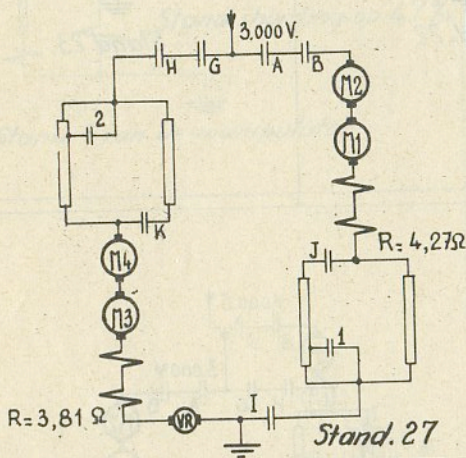
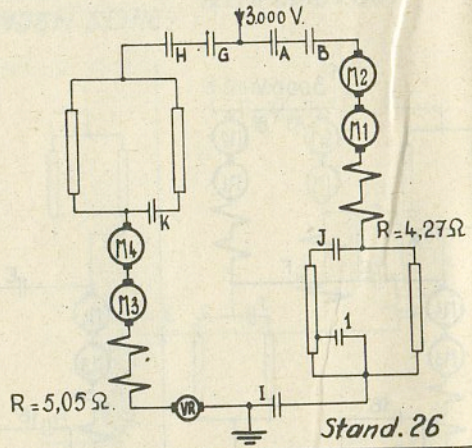
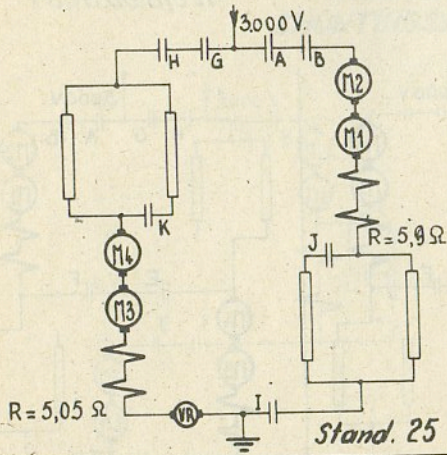


Stand. 25

1^o stand serie-paral.

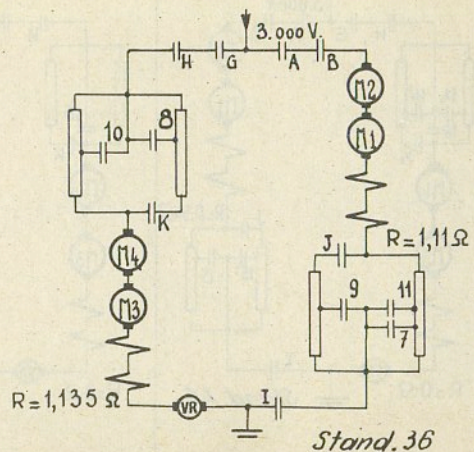
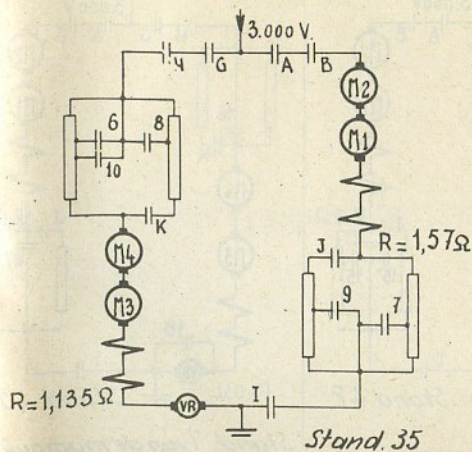
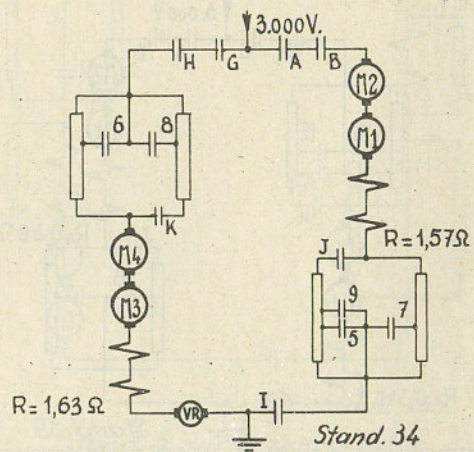
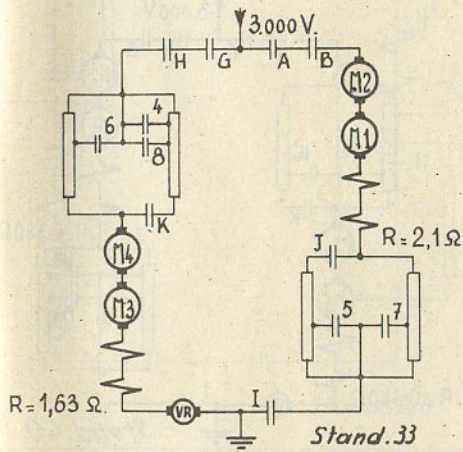
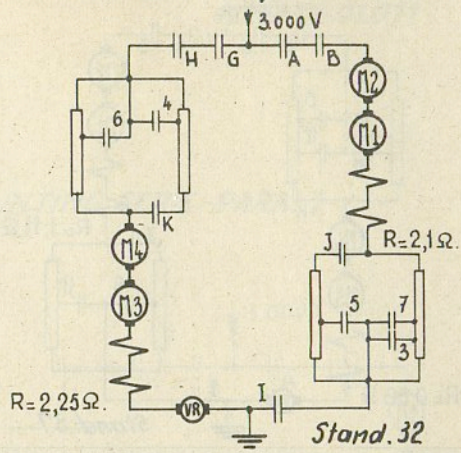
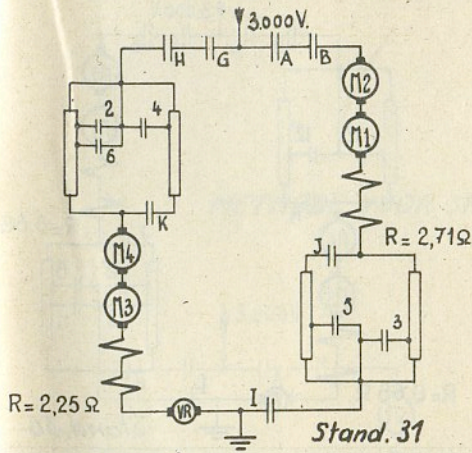
SERIE-PARAL. STANDEN.

122/B.00.01.08



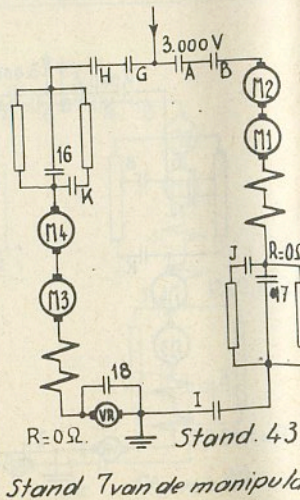
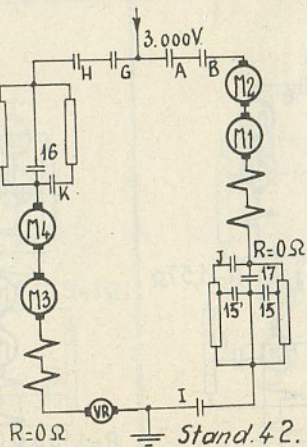
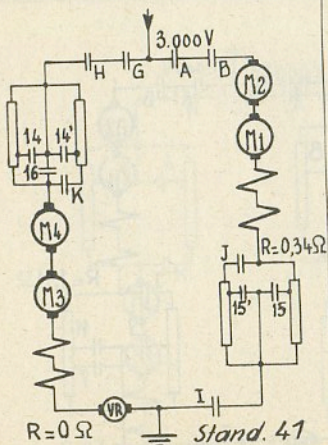
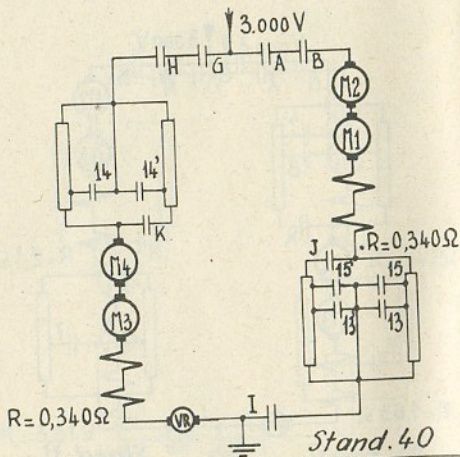
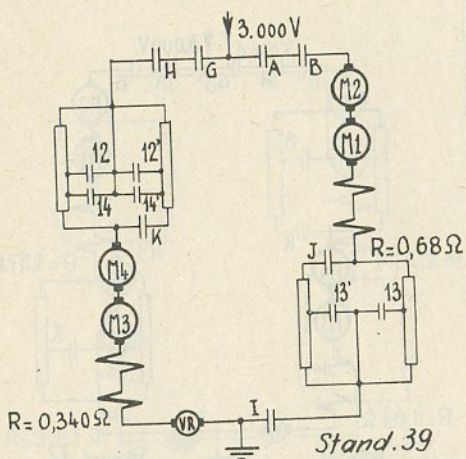
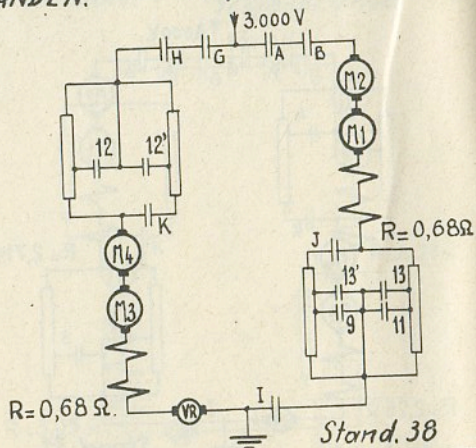
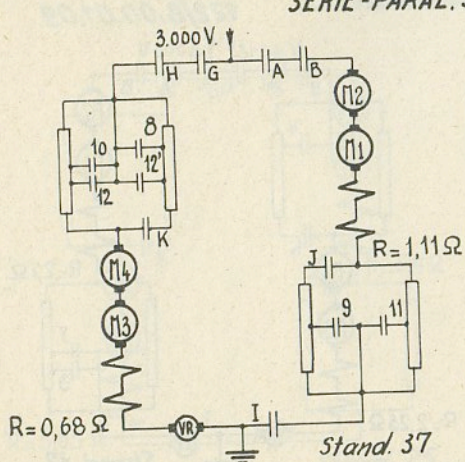
SERIE-PARAL. STANDEN.

122/B.00.01.09



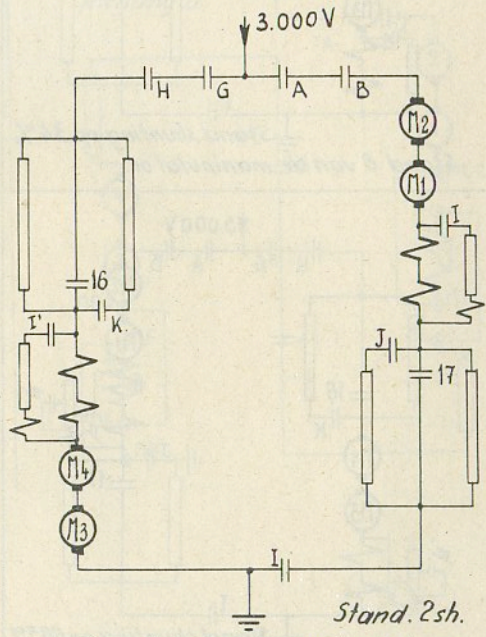
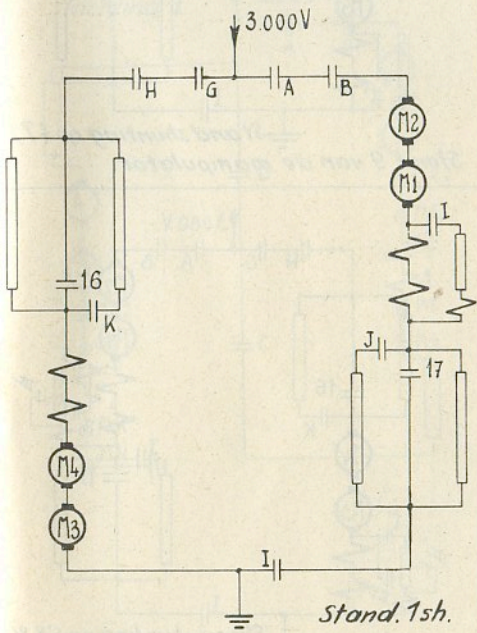
SERIE-PARAL. STANDEN.

122/B.00.01.010



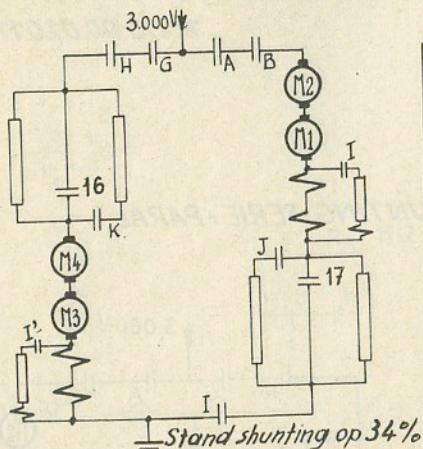
Stand 7 van de manipula

METHODE VOOR SHUNTING SERIE-PARAL.

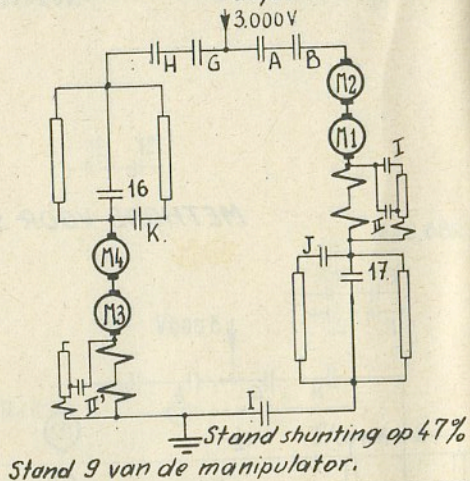


Stand 8 van de manipulator.
Shunting op 34 %

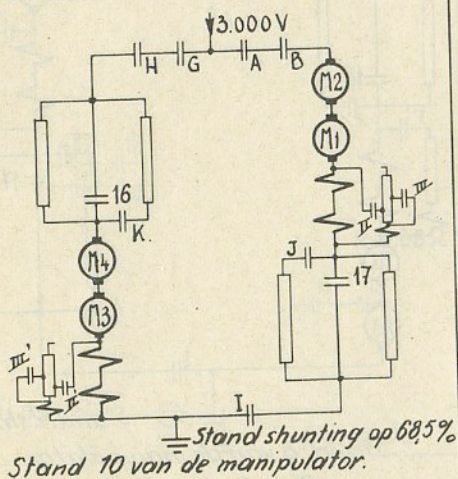
SHUNTINGSSTANDEN SERIE-PARAL. 122/B.00.01.012



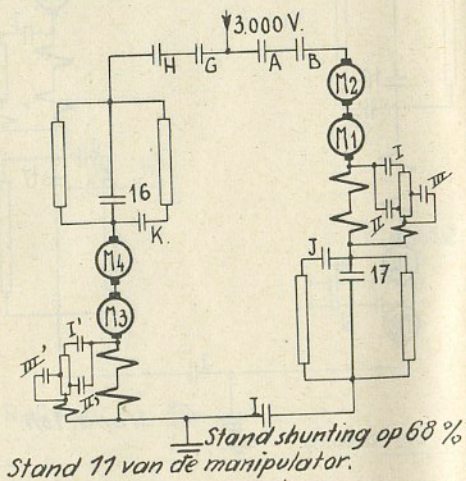
Stand 8 van de manipulator.



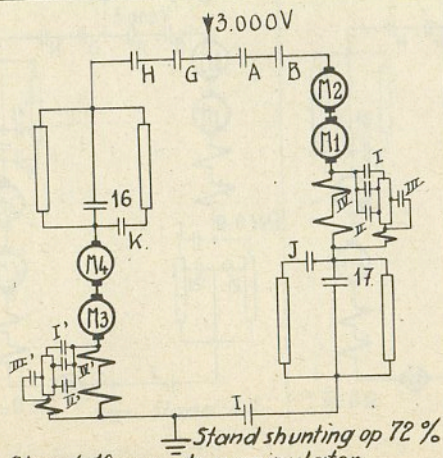
Stand 9 van de manipulator.



Stand 10 van de manipulator.

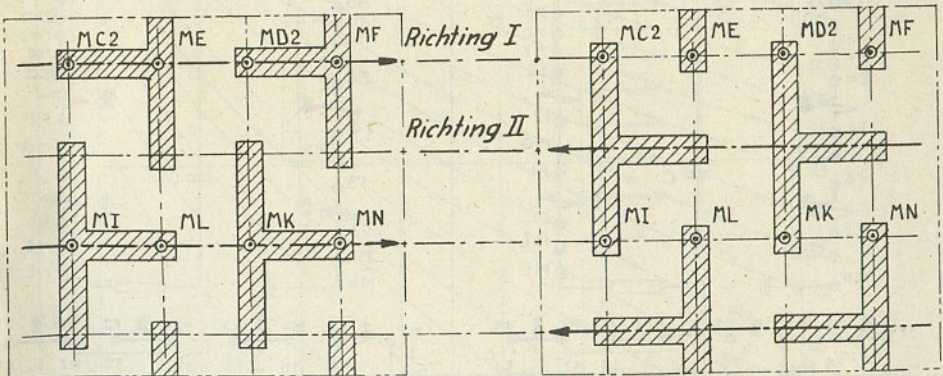
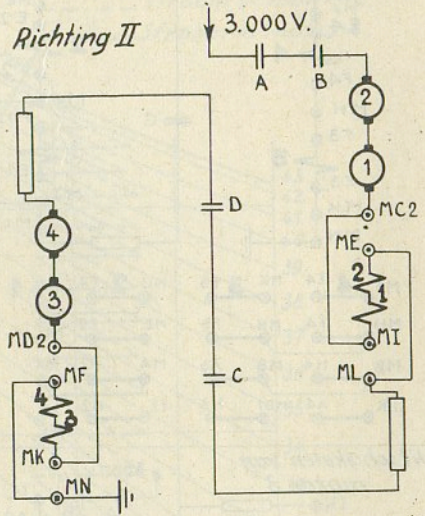
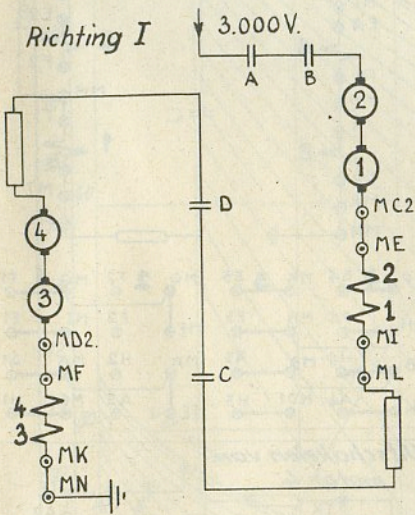


Stand 11 van de manipulator.

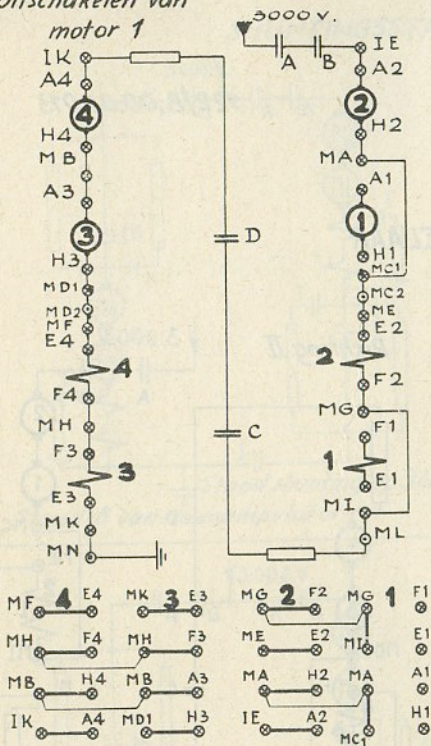


Stand 12 van de manipulator.

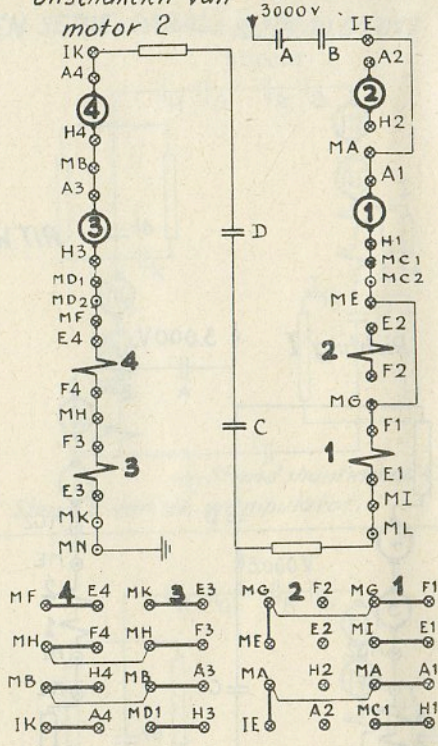
RITWISSELAAR



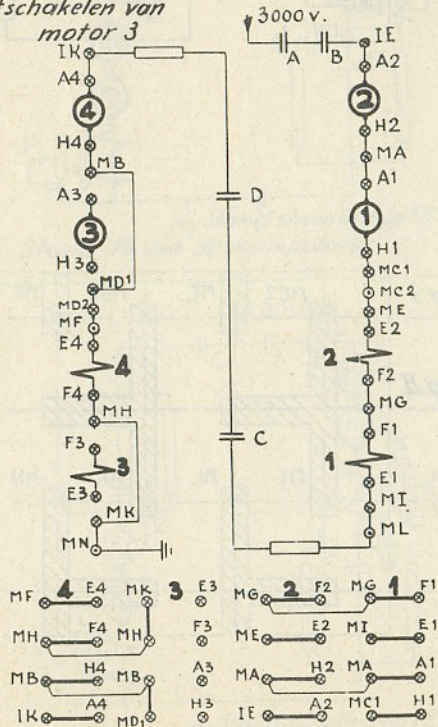
Uitschakelen van motor 1



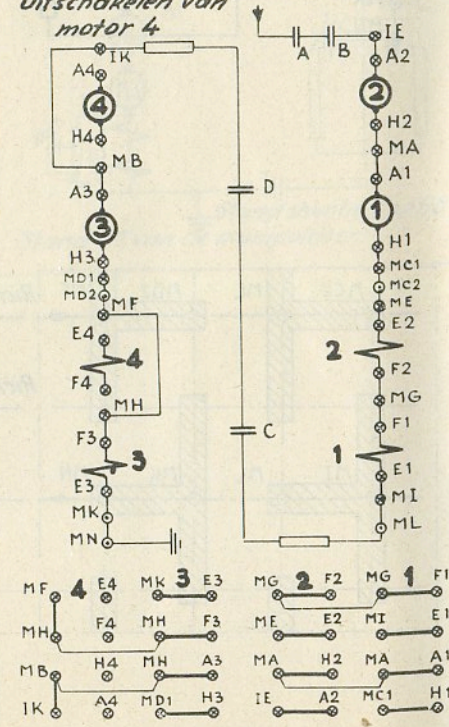
Uitschakelen van motor 2 122/B.00.07.074



Uitschakelen van motor 3



Uitschakelen van motor 4

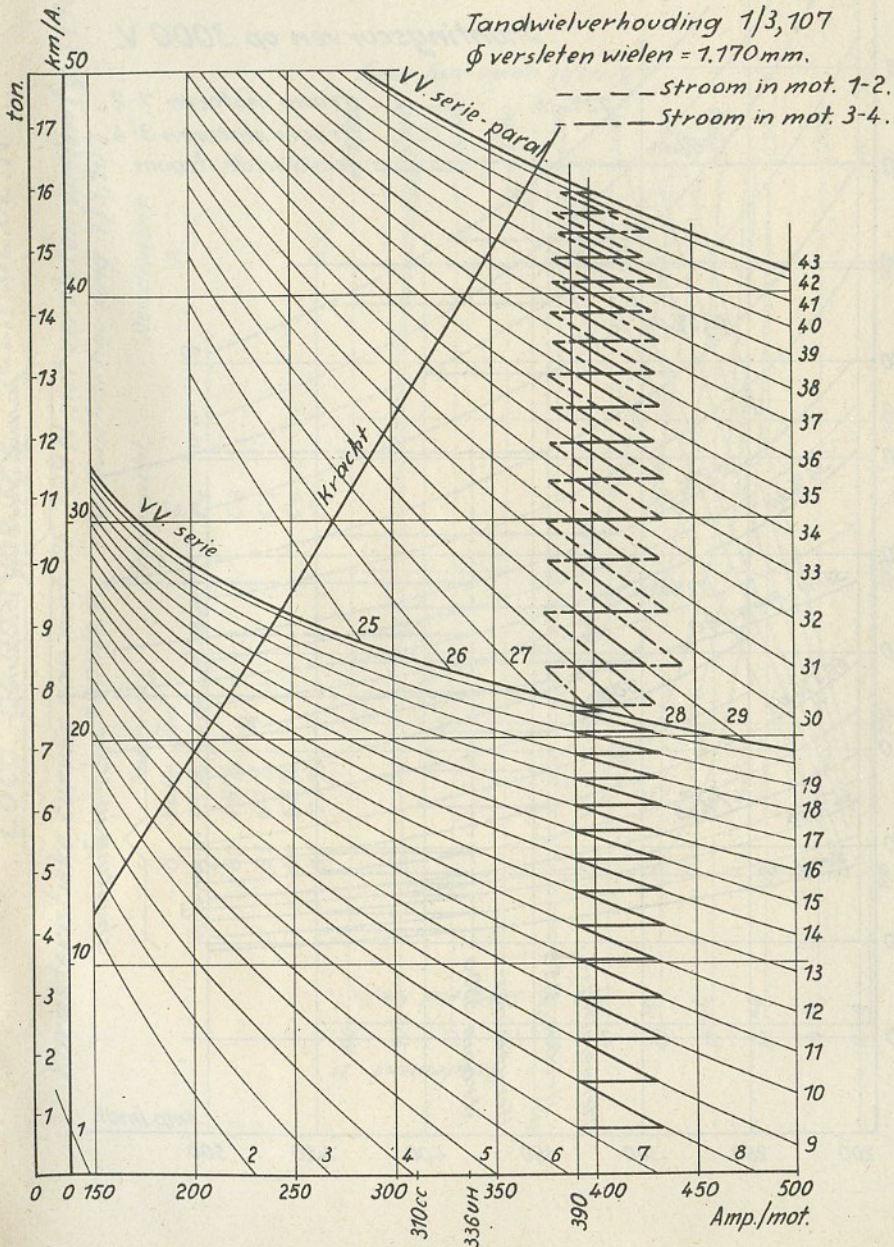


122/F.02.01.11

Loco. Bo Bo type 122.

Aanzetcurven op 3000 V.

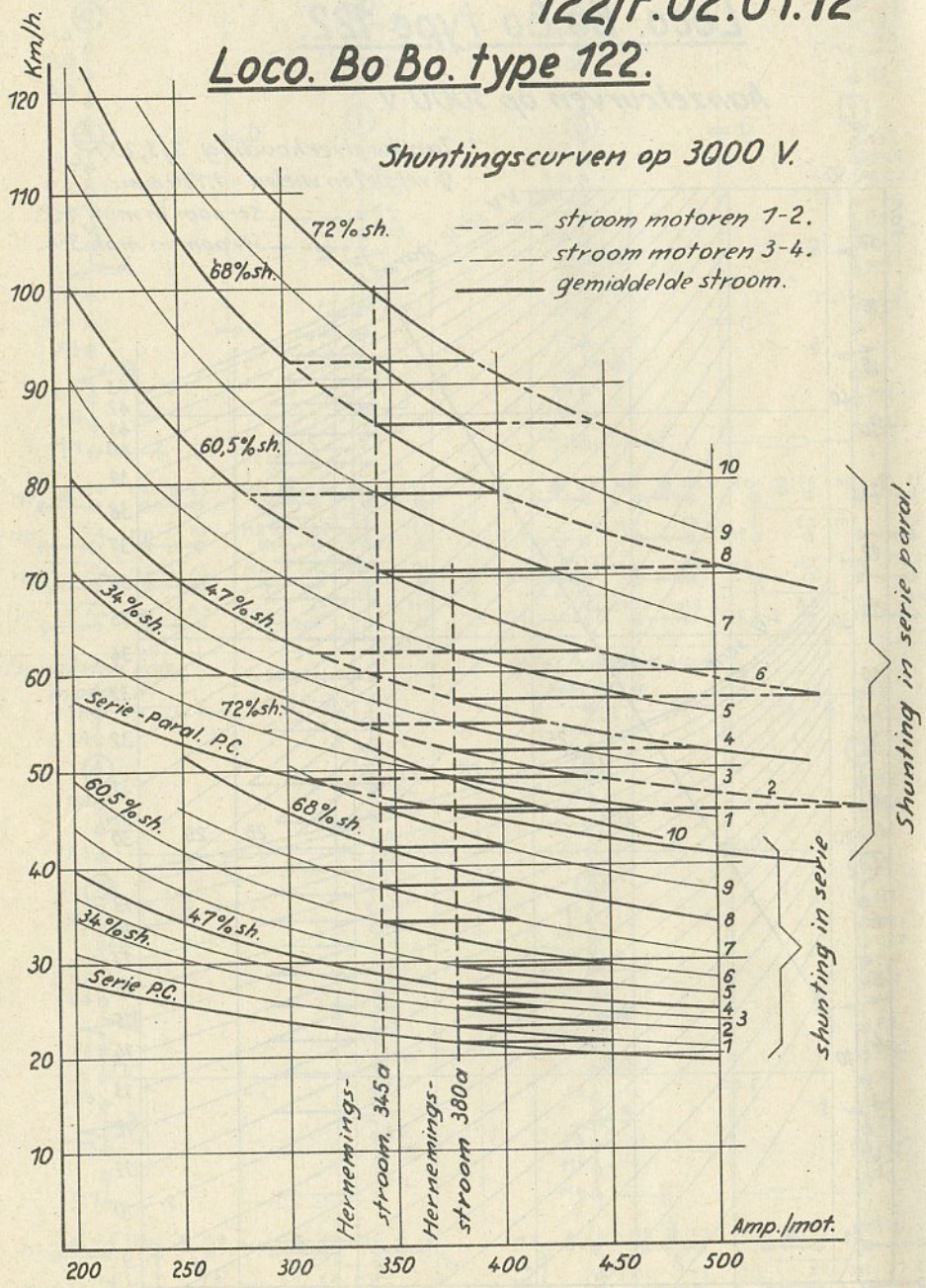
Tandwielverhouding 1/3,107
 ϕ versleten wielen = 1.170 mm.



122/F.02.01.12

Loco. Bo Bo. type 122.

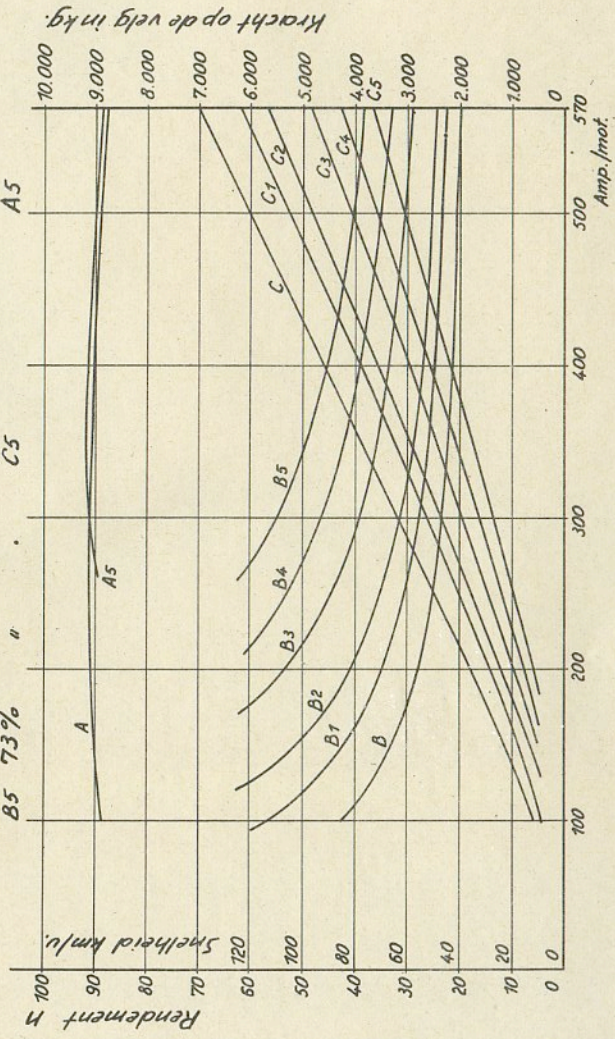
Shuntingscurven op 3000 V.



Loco. Bo Bo type 122. 122/F.02.02.11

Karakteristieke curven van mot. CF 729N met versleten wielen (ϕ 1170 mm.)
 Spanning 3.000/2 v. Tandwielverhouding 1/3,107

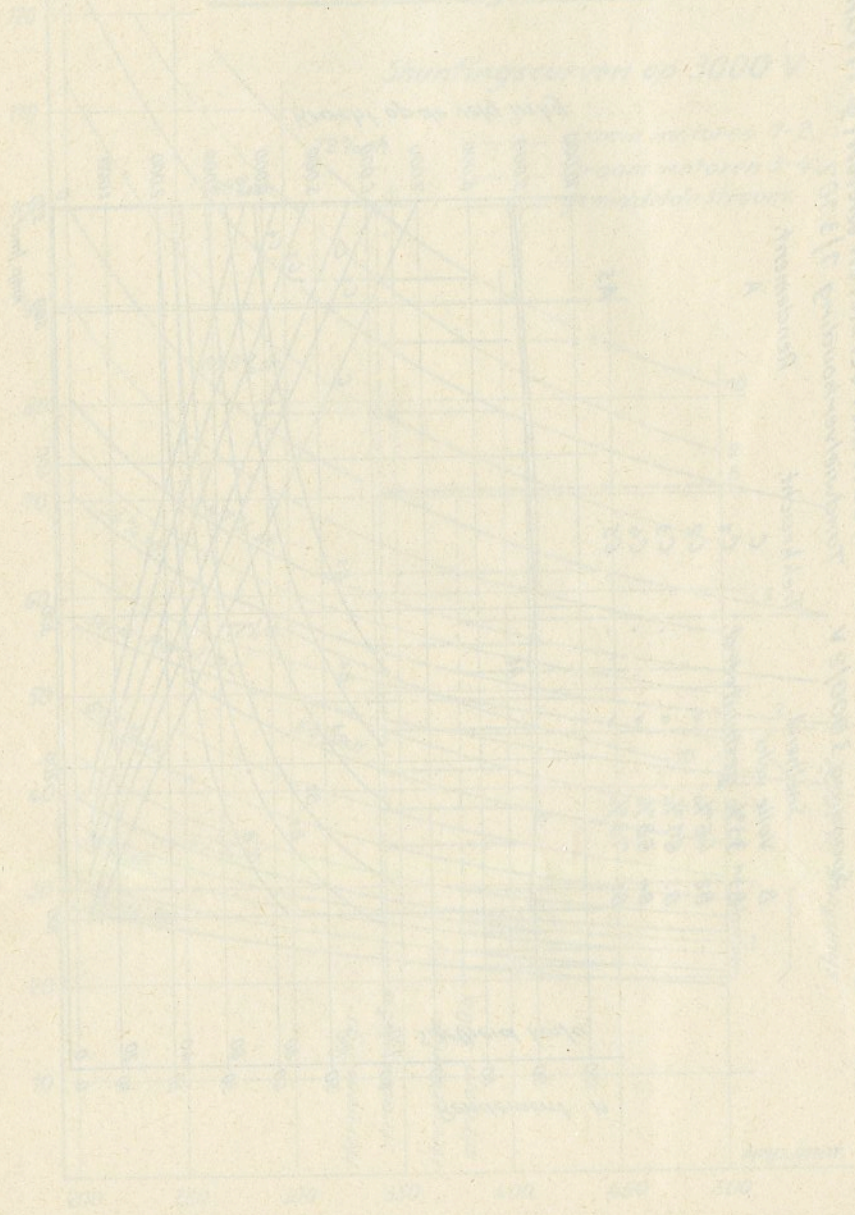
Snelheid.	Trekkracht.	Rendement.
B Volle veld	C	A
B1 33% gestuuntheid.	C1	
B2 46% "	C2	
B3 61% "	C3	
B4 68% "	C4	
B5 73% "	C5	



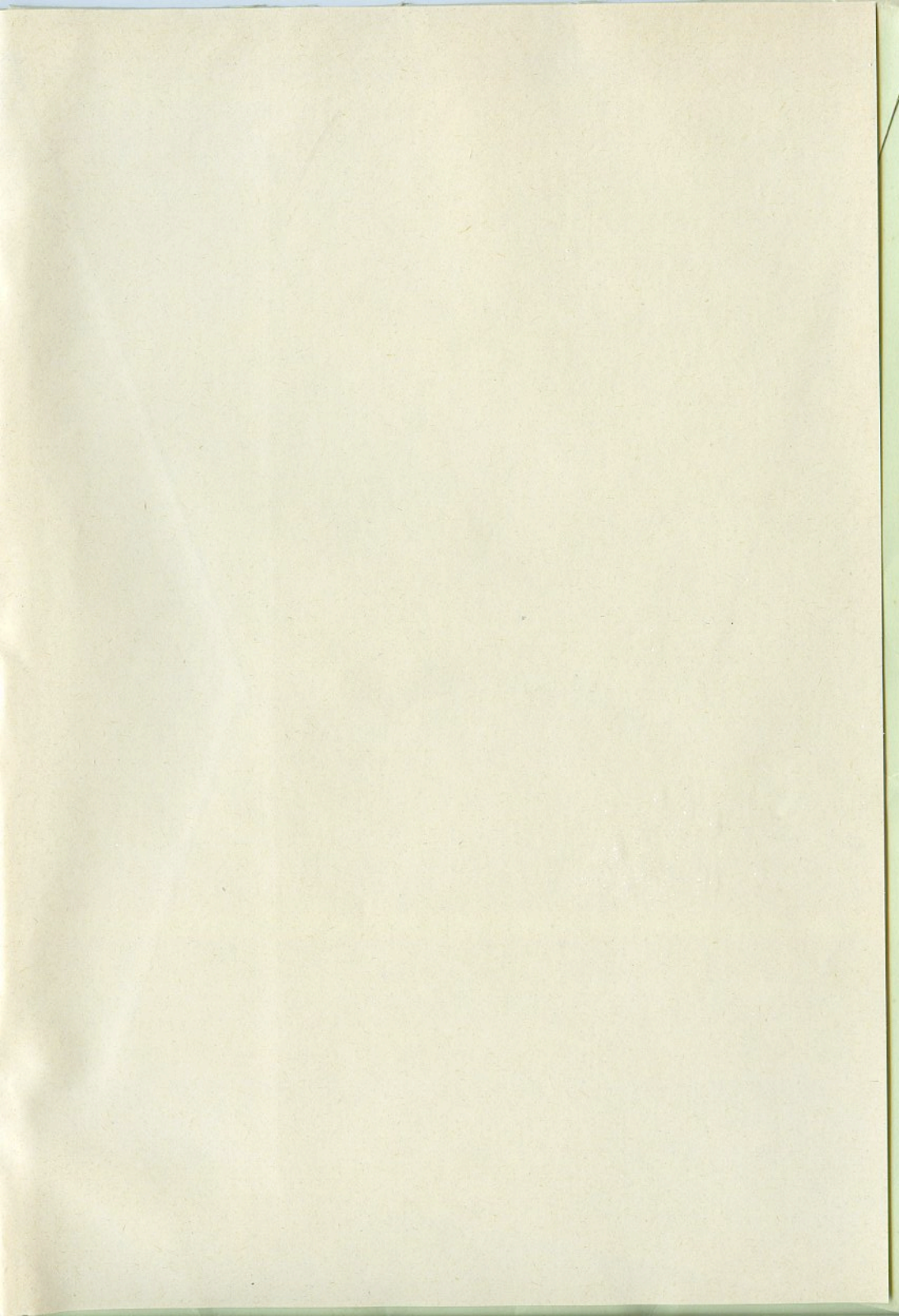
Kracht op de vely in kg.

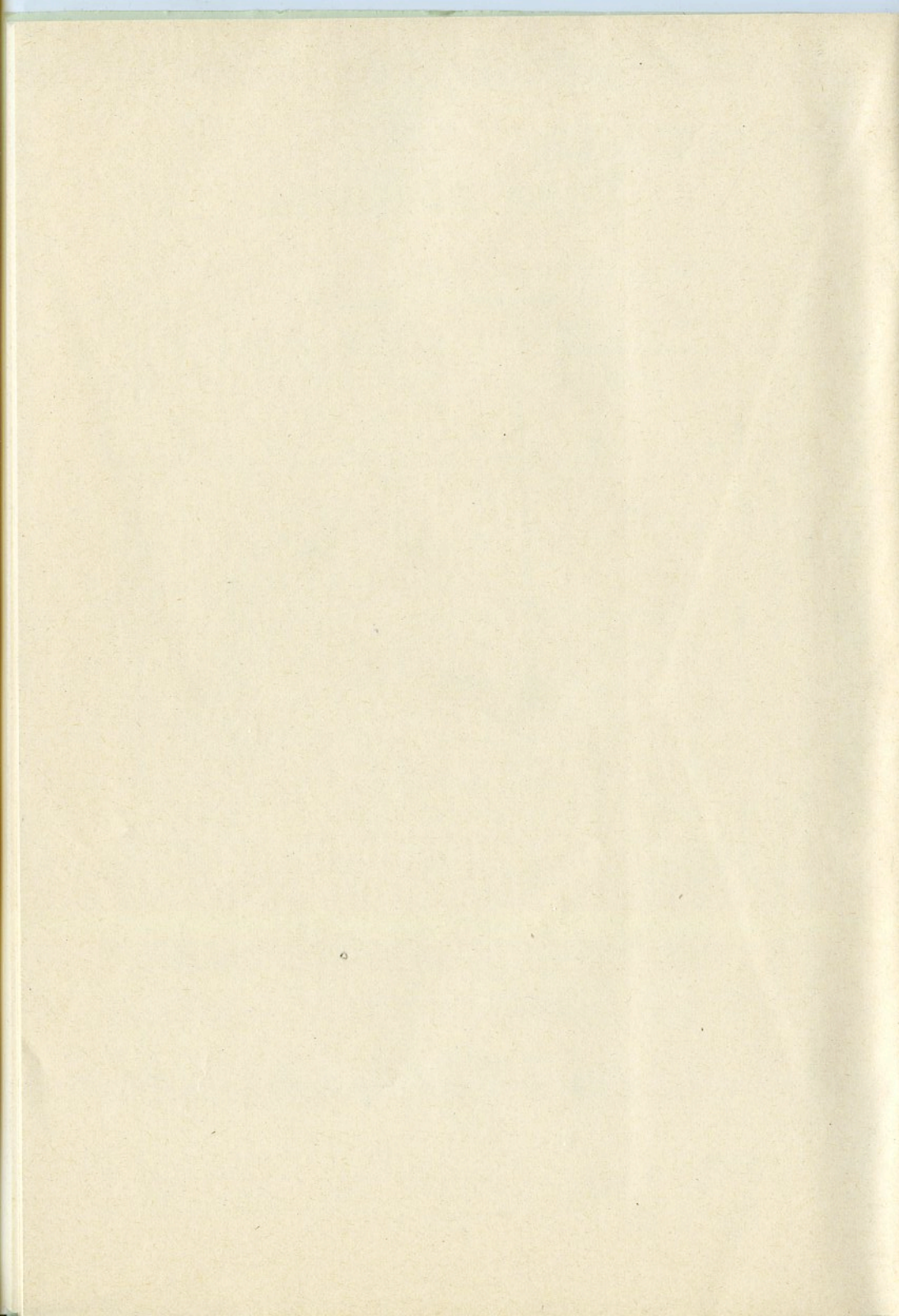
122/F 02.01.12

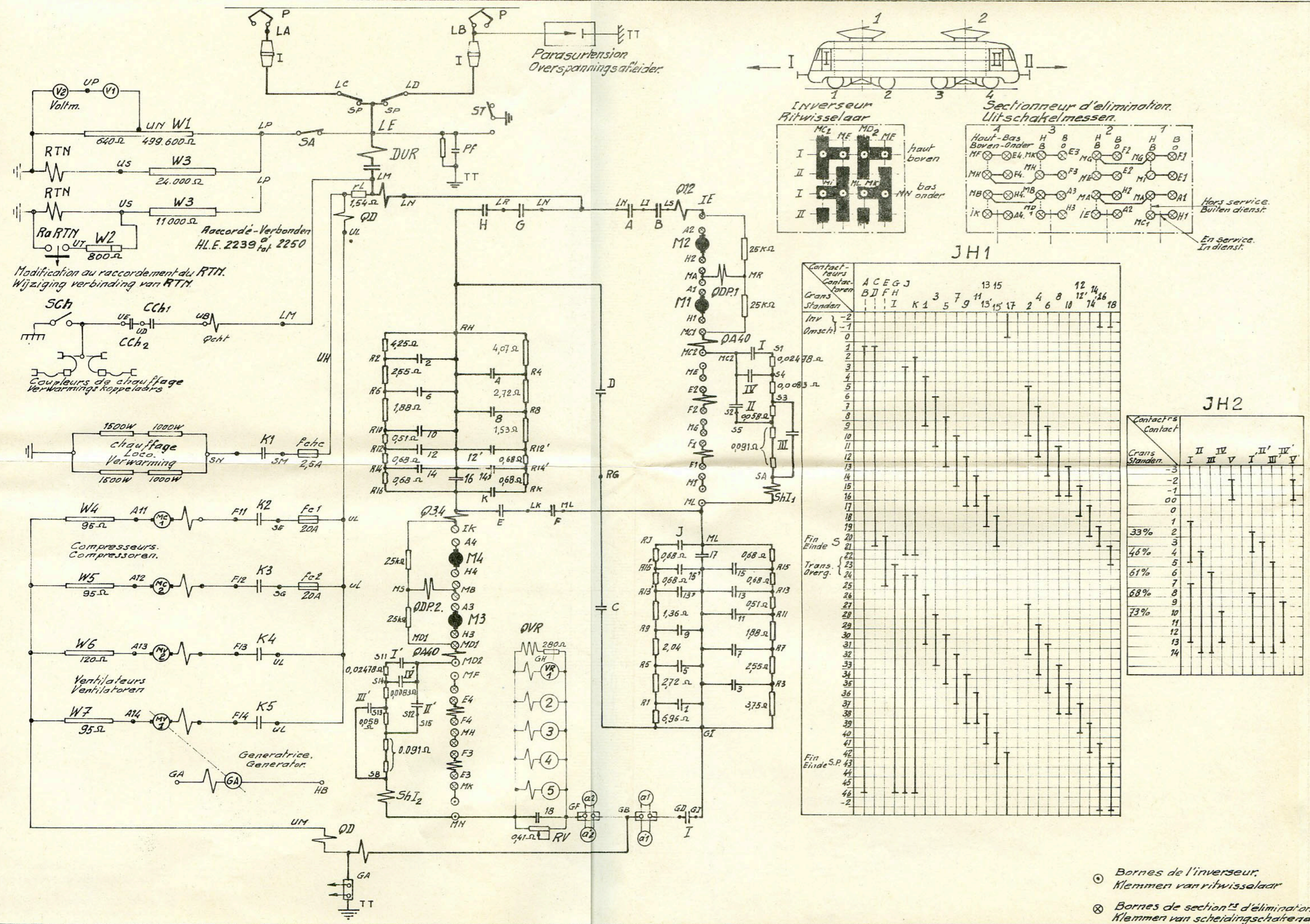
Loco. Bo Bo. Type 122



122/F 02.01.12



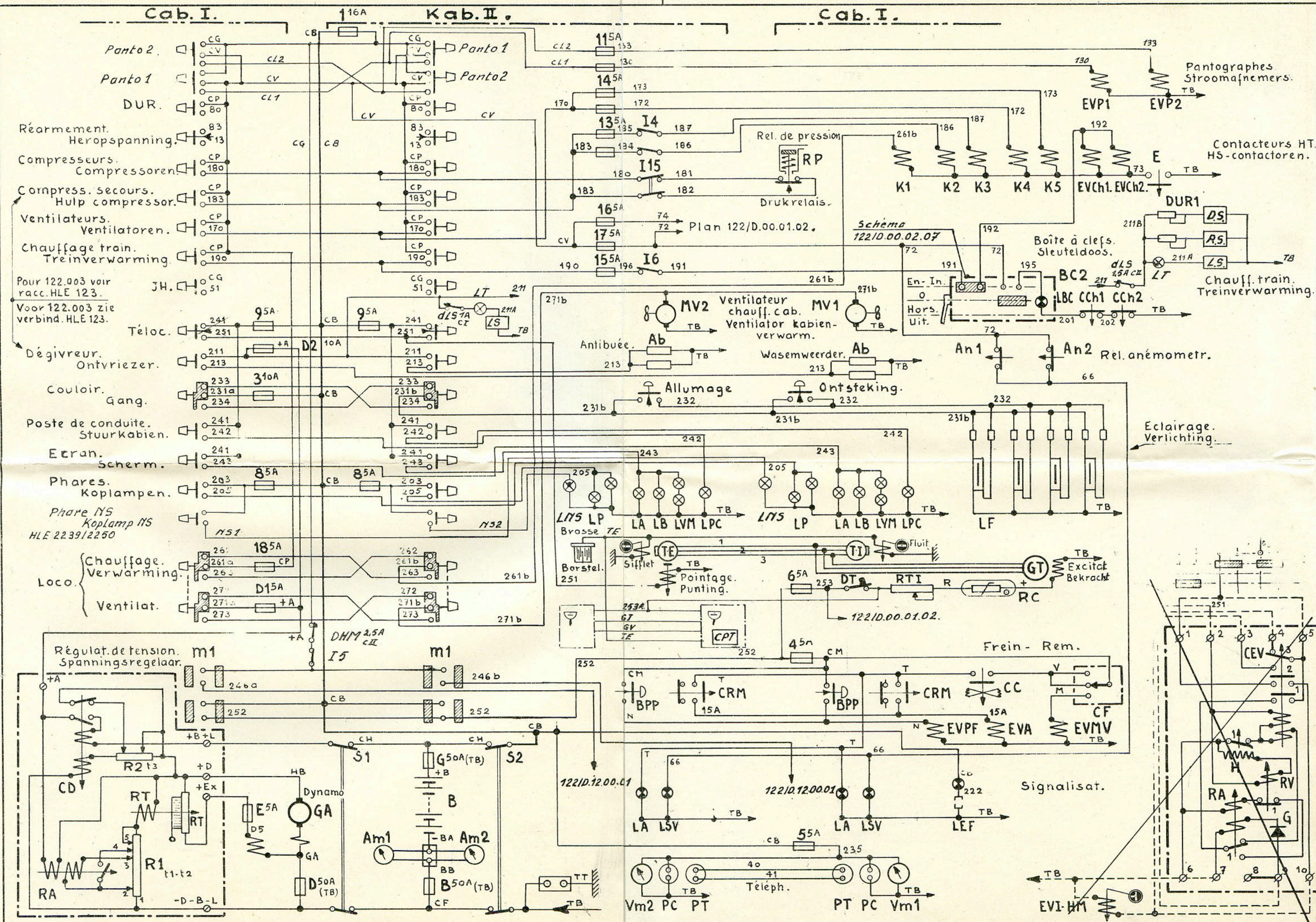




k	Cliché refait.	Cliché hermaakt.	7-12-72
Visa	Modifications.	Wijzigingen.	N° trav. Date. H'werk Datum
H.L.E. 22 Schema circuits de puissance et auxiliaires à 300.v. H.L.E. 2201 à 2250.		H.L.E. 22 Schema kracht en hulpstroom ketens 300.v. H.L.E. 2201 tot 2250.	
	Etabli. Opgeesteld. Dessine. Getekend. Vérifié Nagezien. Approuvé Goedgek.	Date. Datum.	Nom Naam
		7-12-72	Vandervort.
			Vaes.R.
		122/A.00.01.01.	
		(B) MaA.Bur24-12.	

⊙ Bornes de l'inverseur.
Klemmen van ritwisselaar

⊗ Bornes de sectionnés d'élimination.
Klemmen van scheidingschakelaar



Légende.	Appareil. Toestel.	Verklaring.
Contacteurs-HT.		HS-contactoren.
Chauffage loco.	K1	Verwarming locomot.
Compresseur.	K2-K3	Compressor.
Ventilateur.	K4-K5	Ventilator.
Chauffage train (électro-valve).	EVCh1-EVCh2	Treinverwarming (electroklep.)
Interlock cont. de chauff.train.	CCh1-CCh2	Interlock verwarmingscontactor trein.
Tachymètre.		Tachymeter.
Téloc enregistreur	TE	Registrende Téloc.
Téloc indicateur.	TI	Aanwijzende Téloc.
Génératrice Téloc.	GT	Generator Téloc.
Résistance réglable p ^r GT	RTI	Regeerbare weerstand GT.
Lampe stabilisatrice. (GT)	RC	Stabilisatielamp. (GT.)
Relais.		Relais.
CSEE: Déclenchement.	CEV	CSEE: Uitschakeling.
Thermostat.	H	Thermostaat.
Verrouillage.	RV	Grendeling.
Arrêt.	RA	Stilstand.
Redresseur.	G	Gelijkrichter.
Rég. de tension.		Spanningsreg.
Conjoncteur-Disjonct.	CD	In- en uitschakeelaar.
Régulat. de tension.	RT	Spanningsregelaar.
Régulat. de débit.	RA	Debietregelaar.
Frein.		Rem.
Bouton pous. purge cyl.	BPP	Drukknop spuijng cyl.
Cont. du rob. de mécanicien (AUT.)	CRM	Cont. van machinistenkraan.
Contacteur centrifuge.	CC	Centrifugale contactor.
Commutateur de frein.	CF	Commutator van de rem.
Electro-valve autovariable.	EVA	Electroklep zelfregelaar
" " marchand-voyageurs.	EVMV	" goederen-reizigers.
" " purge des cylindres.	EVPF	" spuijng cylinders.
Lampes.		Lampen.
Eclairage.		Verlichting.
Phares C/D. 00.01.08	LP	Koplampen.
Appareils (manom.)	LA	Toestellen (manom.)
Boîte Faiveley	LB	Faiveleydoos.
App. de mesure (AetVm)	LVM	Meettoestellen (AetVm)
Poste de conduite.	LPC	Stuurcabien.
Fluorescentes (couloir)	LF	Fluorescentie (gang)
Contrôle.		Control.
Boîte à clefs.	LBC	Sleuteldoos.
Vigilance.	LV	Waakzaamheid.
Autovariable.	LA	Zelfregelaar.
Ventilat. mot. de tract.	LSV	Ventilator tractiemot.
Arrêt aut. CSEE (rouge et vert)	Stop. Aut.	Aut. stilst. CSEE (rood-groen)
Essai fusible.	LEF	Beproeven smeltzeker.
Phare NS	L15	Koplamp NS
Inverseur du manipul.	m1.	Keerkrak van manip.
Lanterne secour	LS	Noodlantaarn
Lanterne Disque rouge	DR-RS	Rode schijflantaarn
Eclairage Téloc	LT	Verlichting Téloc

Locomotive Serie 22.
 Locomotief Reeks 22.
 HLE 22.01 a 22.50

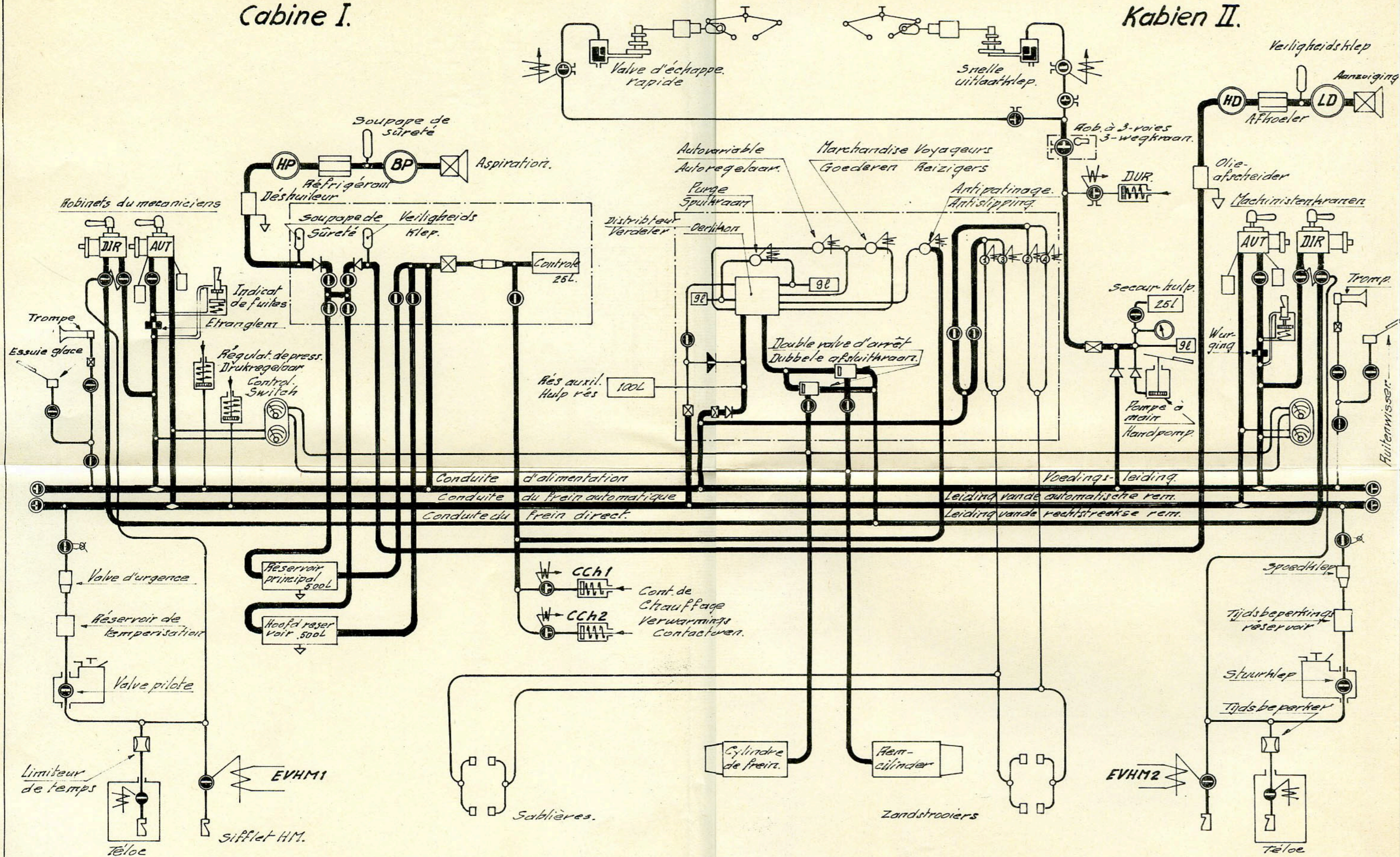
Schéma de commande.
 Bedieningschema. 122/D.00.01.01

Modifications.
 Wijzigingen. i) 4-8-61. v.
 j) 18-10-72

122-282

Cabine I.

Kabien II.

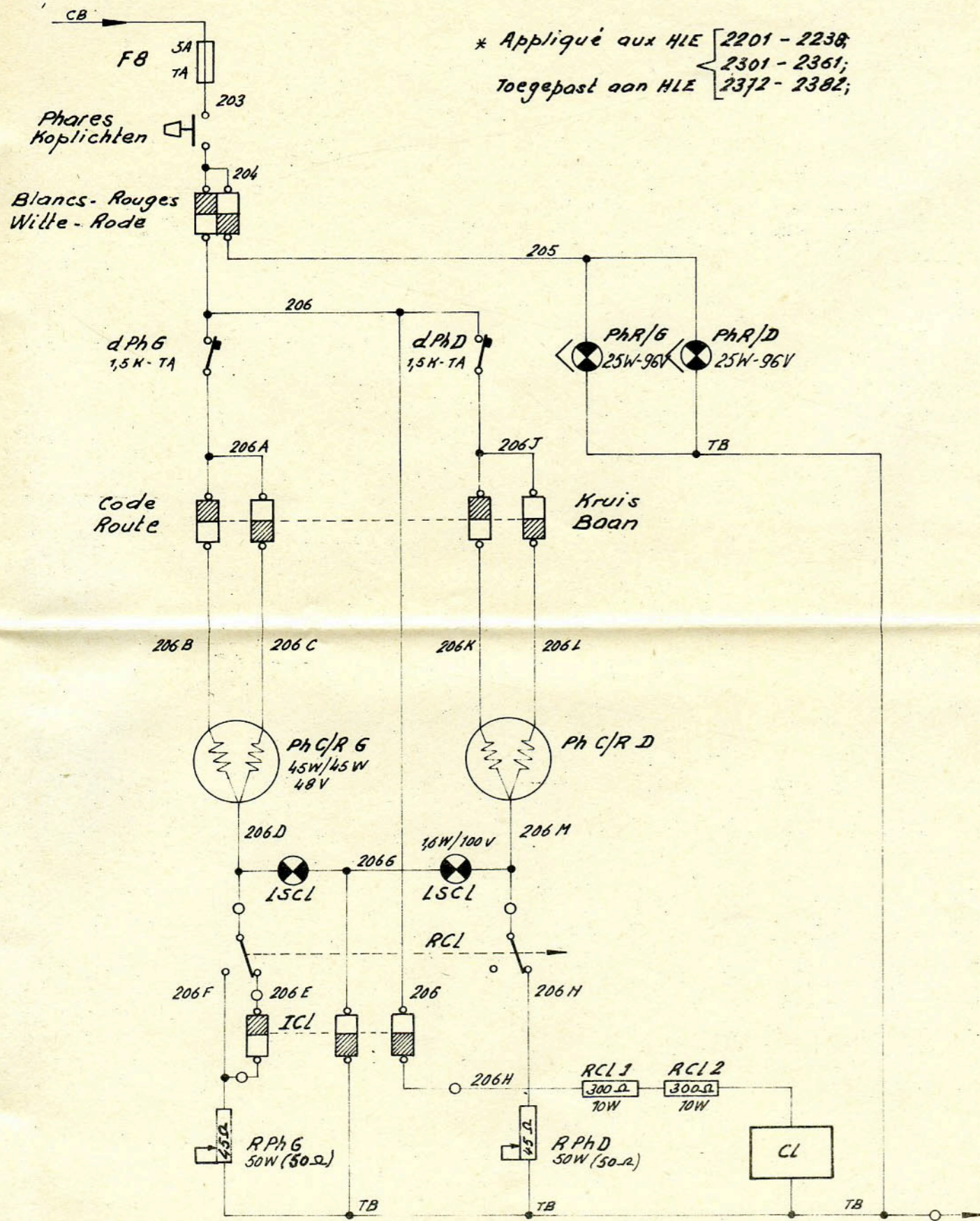


- Robinet d'isolement - Afzonderingskraan.
- Robinet d'arrêt - Stopkraan.
- ⊕ Electro valve - Electro klep
- ⊖ Robinet plombé - Gelode kraan
- ⊙ Robinet de purge - Spuikraan.
- ▭ - Soupape d'alimentation - Voedingklep.
- ⊥ - Clapet de retenue - Weerhoudingklep
- ⊠ - Filtre - Filter
- ◇ - Poche de vidange - Spuizak.
- ▭ - Réservoir.

e	cliché refait.	cliché hermaakt		7-12 '72
Visa.	Modification.	Wijzigingen.		N°trav. Datum.
	HLE 22	HLE 22		
	Schema de la tuyauterie d'air.	Schema van de luchtleidingen.		
	HLE 2201 à 2250	HLE 2201 tot 2250		122-463
	Etabli Opgesteld Dessiné Getekend Vérifié Nagezien Approuvé Goedgek.	Date Datum 7.12.72 Nom Naam Vandervorst Visa Vaes R.		
	122/G.00.01.01.			
	(B) M & A. Bur 24.12.			

HLE 22*23*24

* Appliqué aux HLE 2201 - 2238;
2301 - 2361;
Toegepast aan HLE 2372 - 2382;



C	Corr. valeurs résistances. Nrs. HLE 22 gew.	Waarde weerstand verbeterd. Corr. n° HLE 22	14-07-72
b	Schema HLE 29 gewijz. 20 bijgevoegd	Modifié schéma HLE 29 Ajouté 20	1-3-72
a	Annuleert en vervangt C/D 00.01.05	Annule et remplace C/D 00.01.05	08-02-72
Visa	Wijzigingen	Modifications	Datum Date

HLE Reeks 22
Schema's van kopluchten
kruis / dim
met pinker

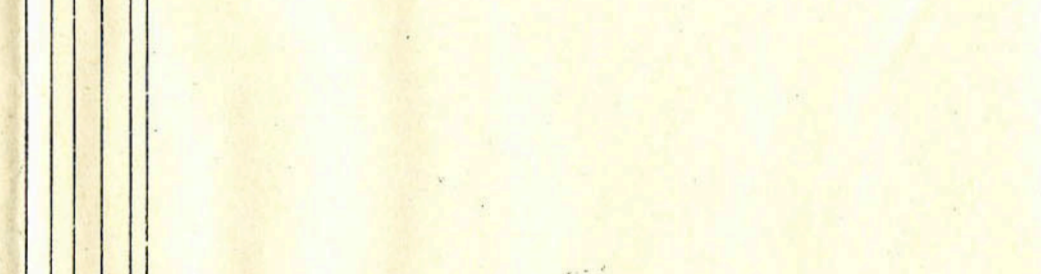
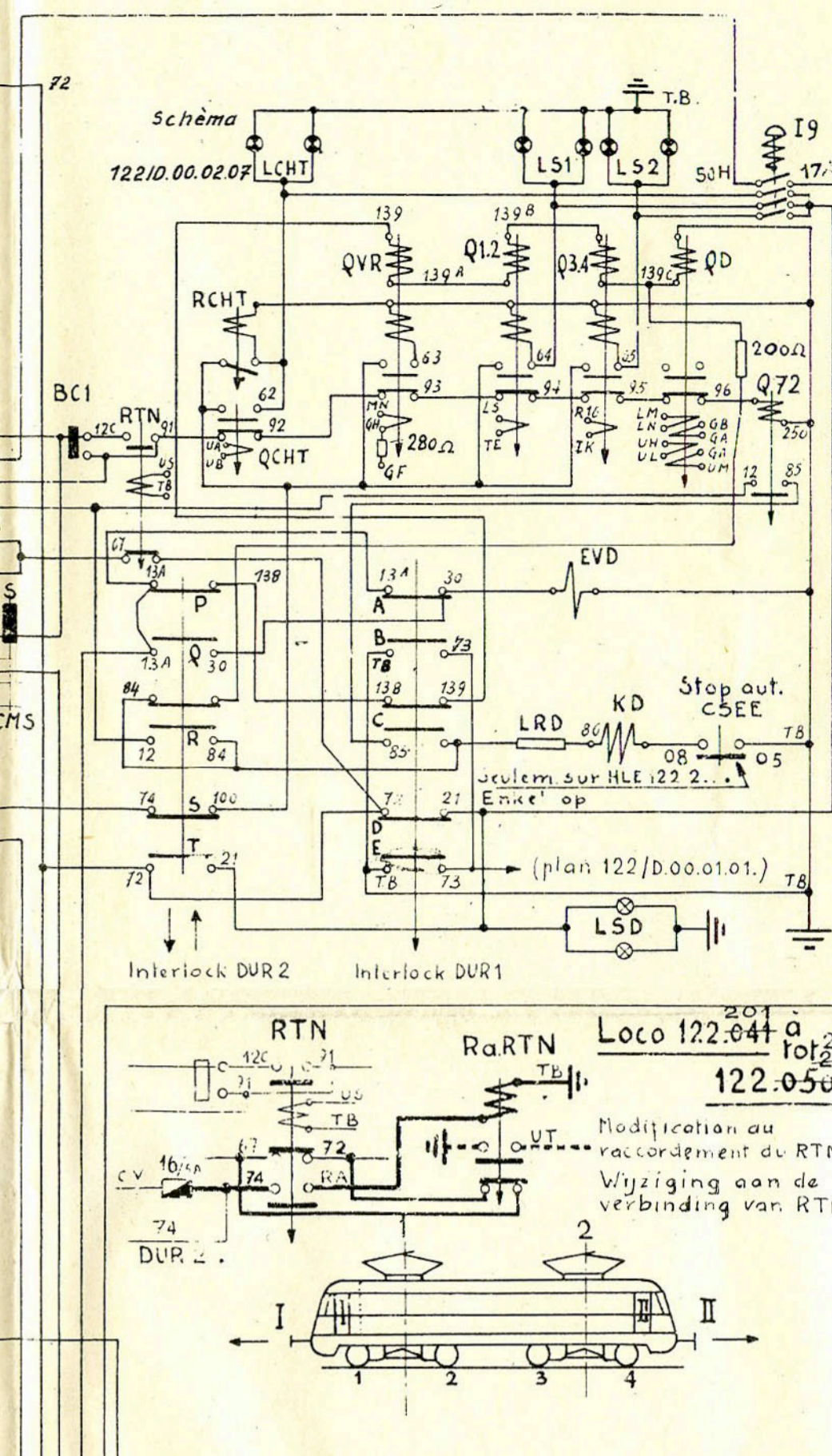
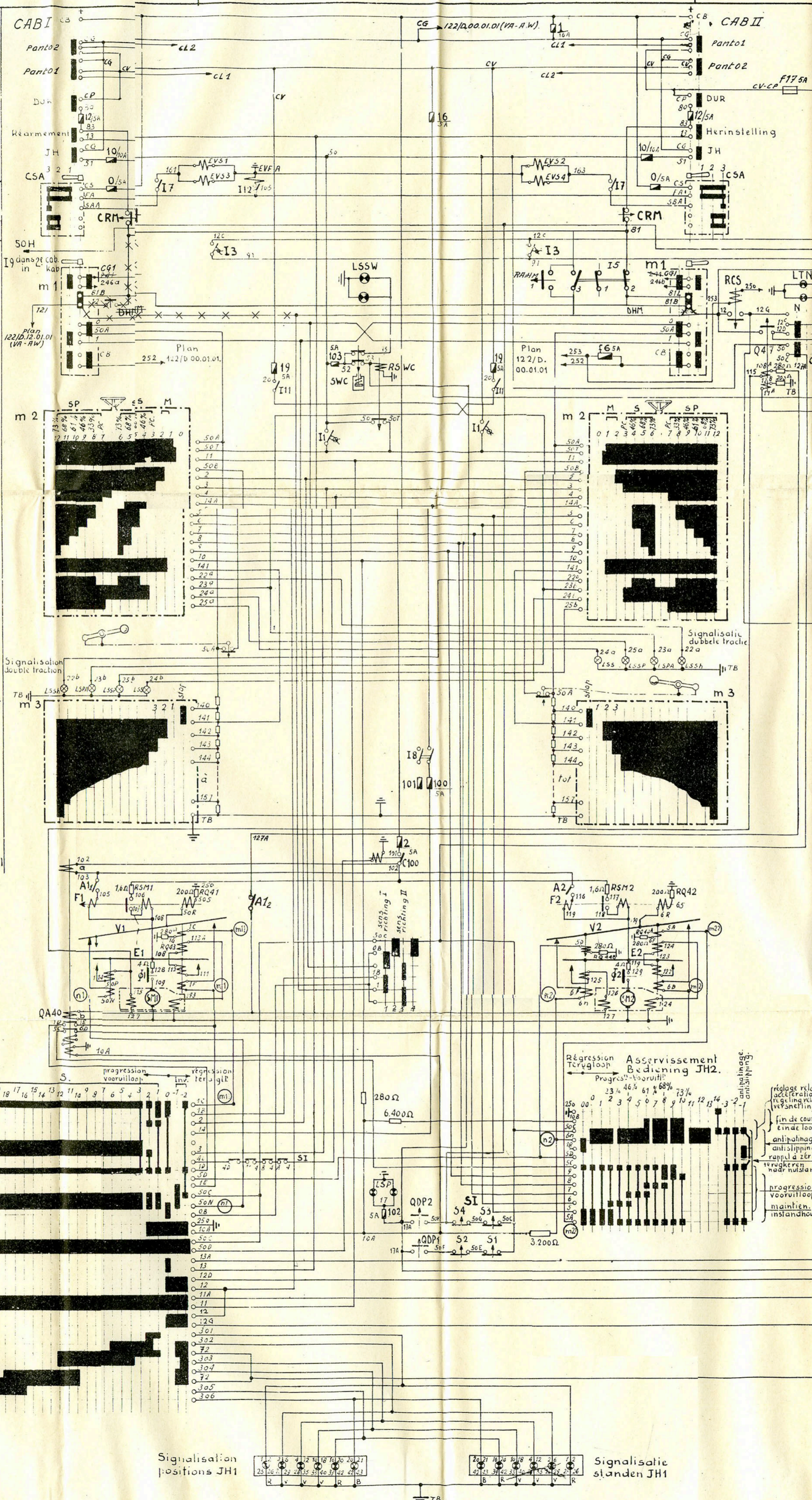
HLE Serie 22
Schéma des phares
code / route
avec clignoteur

Schaal Echelle	Toleranties Tolérances	Opgeest Etabli	Datum Date	Naam Nom	Visa
		Getekend Dessiné	07-02-72	VanButseele	
		Nagezien Vérifié	08-02-72	Vaes R	
		Goedgek Approuvé			

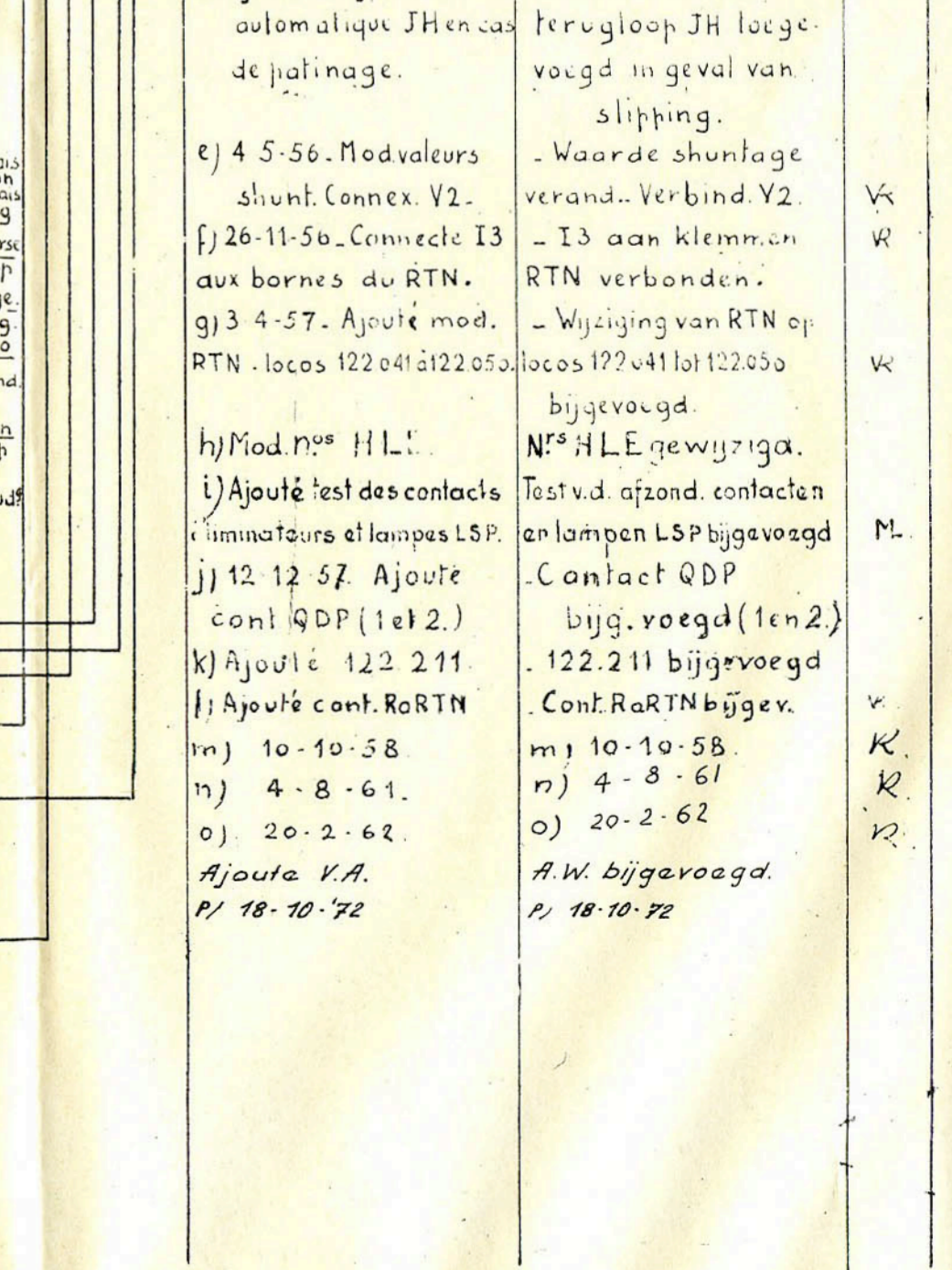
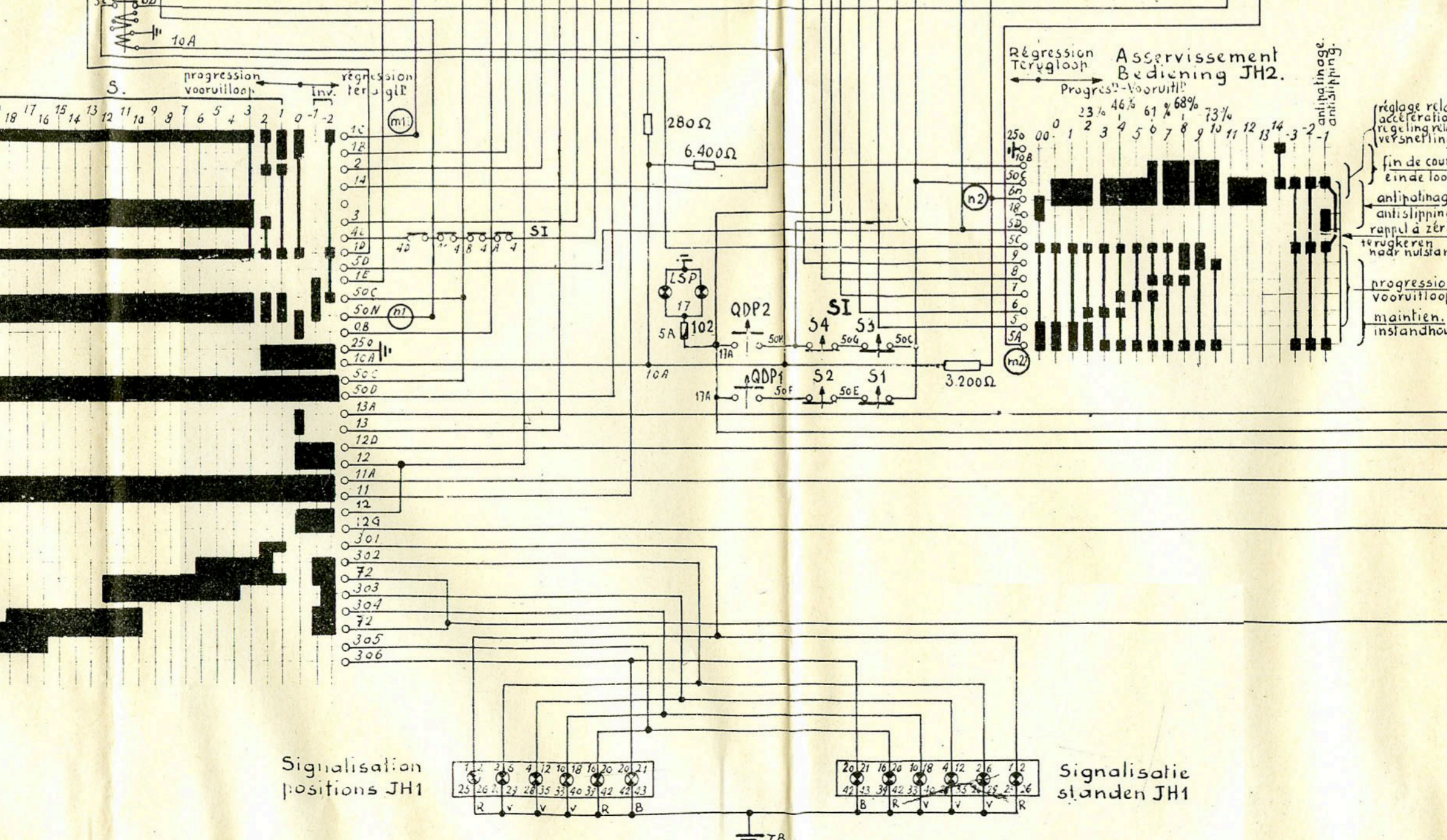
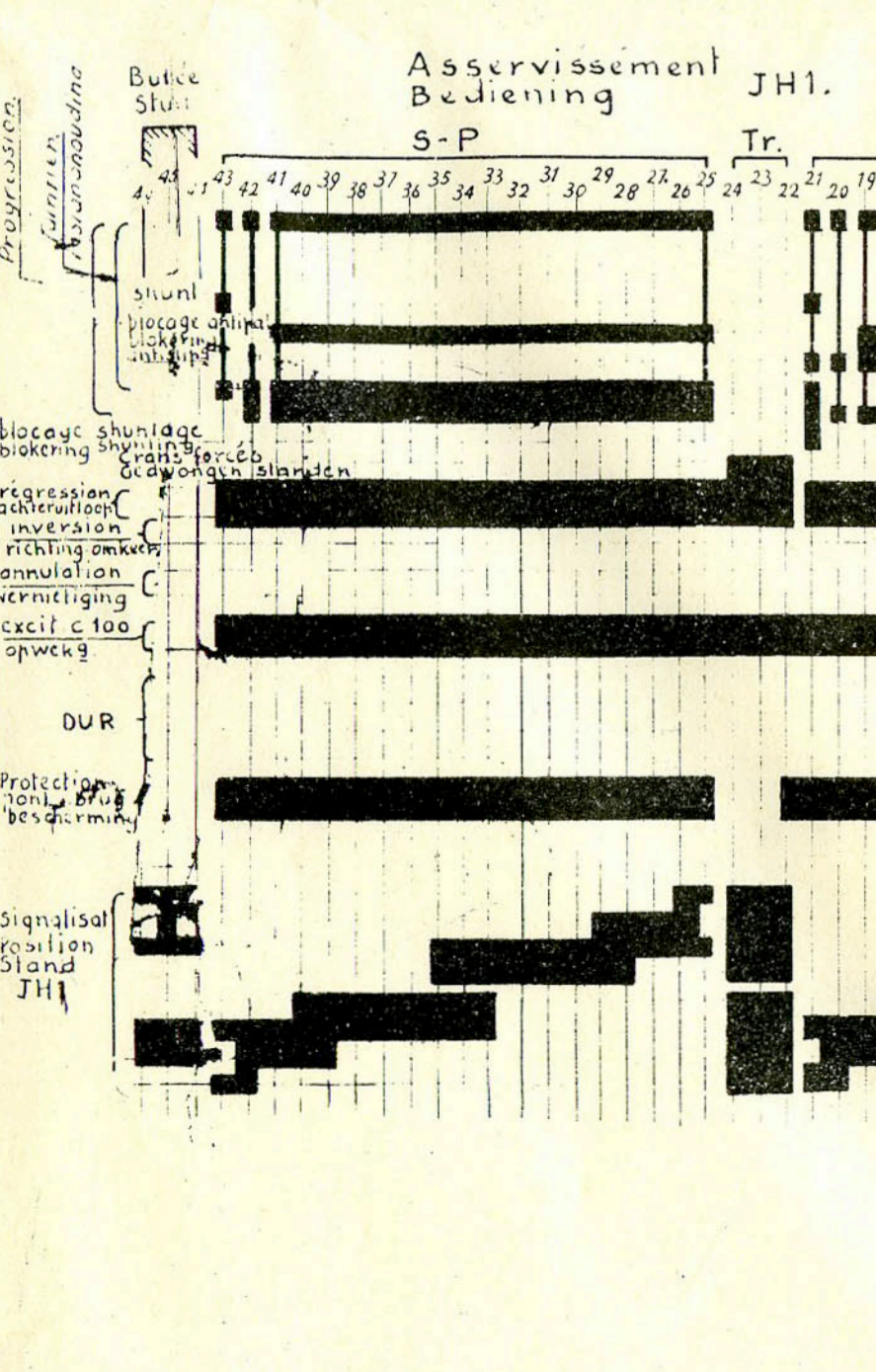
C/D 00.01.08.

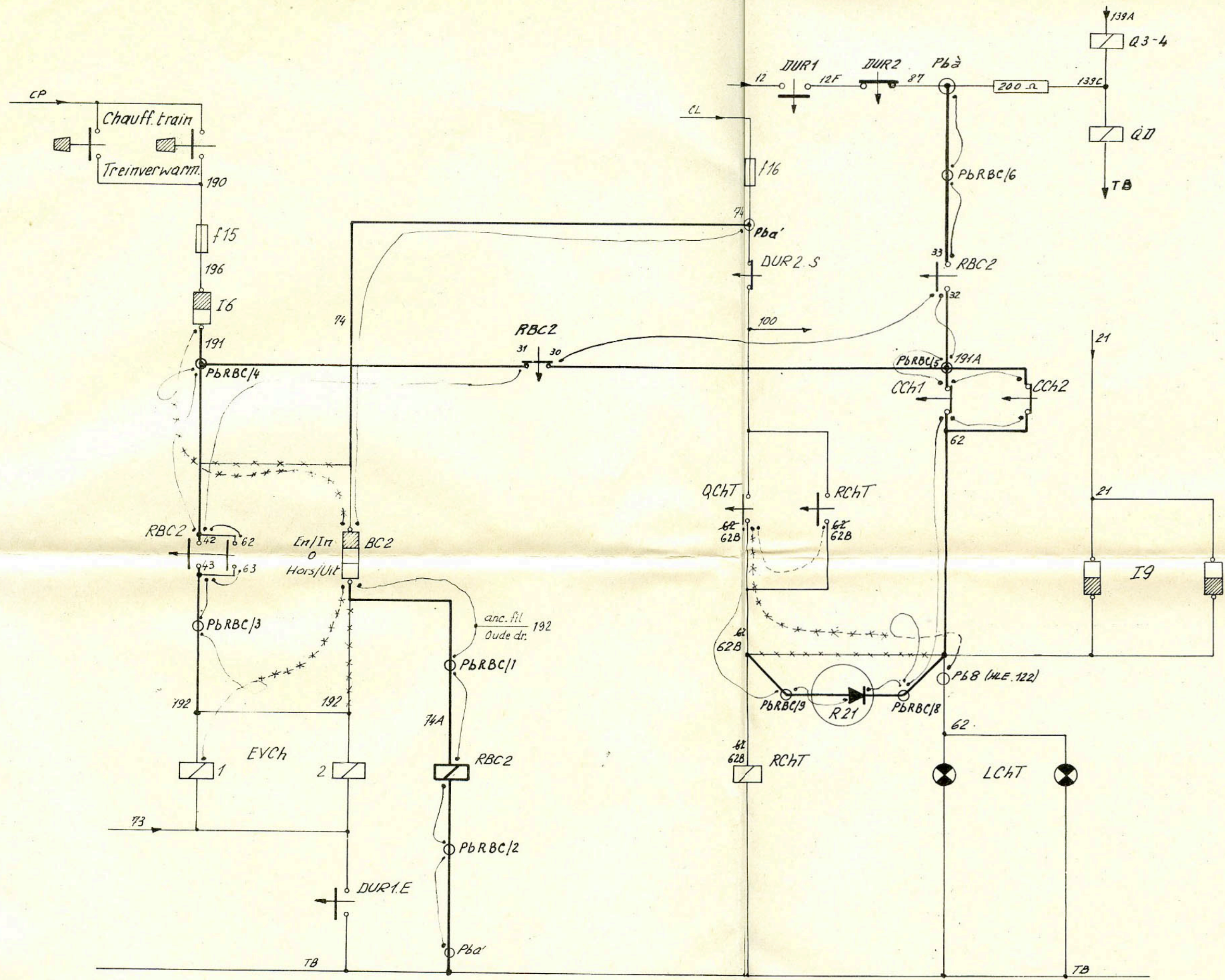
B Bureau MA 24-12

Légende.	Verklaring.
Autorupteurs.	A1-A2 Autoruptoren.
Boîte à clefs	BC1 Sleutelkast.
Contacteurs des servo-moteurs JH.	C100 Contactoren van de servo motoren JH.
Commutateur de commande manuelle de secours.	CMS Omschakelaar hulphand bediening.
Contact robinet du mécanicien	CRM Contact machinistenkraan.
Commutateur sablage antipatinage.	CSA Omschakelaar zanding antislipping.
Contact pédale Homme-mort.	DHM Contact dodemanspedaal.
Relais d'inversion.	E1-E2 Omkeerrelais.
Electrovalve sablières.	EvS Electroklep zandstrooiers.
Electrovalve frein antipatinage.	EvFA Electroklep antislipping rem.
Relais d'alimentation.	F1-F2 Voedingrelais.
Bobine de maintien DUR.	KD Instandhoudingsspoel DUR.
Tambour d'inversion.	m1 Omkeerwals.
Volant de vitesse.	m2 Snelheidskrandiel.
Manette d'effort.	m3 Krachthandel.
Relais à maxima moteurs 1-2.	Q1-2 Maximaalrelais motoren 1-2.
Relais à maxima moteurs 3-4.	Q3-4 Maximaalrelais motoren 3-4.
Relais de substitution du DUR.	Q72 Vervangingsrelais van de DUR.
Relais de déret de patinage.	QDP Slipaanhoudingsrelais.
Relais différentiel.	QD Differentiaalrelais.
Relais de vigilance.	Q47 Waakzaamheidsrelais.
Relais d'accélération.	QA40 Versnellingsrelais.
Relais à maxima, chauffage train.	QHT Maximaalrelais verwarming trein.
Relais de survitesse moteurs, ventilateur, résistance démarrage.	QVR Oversnelheidsrelais motoren ventilator aanzetweerstand.
Abaissement automatique des pantous.	R. 2 Automatische neerlaten der pantous.
Relais signalisation.	RCHT Seinrelais.
Relais de contrôle Switch.	RSWC Control Switch-relais.
Relais de potentiel.	RTN Potentiaalrelais.
Interlocks sectionneur d'élimination mot. de tract.	SI Interlocks van uitschakelaar tractiemotoren.
Servo-moteurs du JH.	SM1, SM2 Servomotoren van JH.
Control Switch.	SWC Control Switch.
Relais verrou.	V1-V2 Grensrelais.
Relais auxiliaire du relais de potentiel (RTN).	RaRTN Hulprelais van het potentiaalrelais (RTN).



Modifications	Wijzigingen	Per. de legal. Bijz. m.b.t. schied.
a - Dédouble fusible 12	Sineltzekering 12 verdubbeld	
- Modifié raccordement des relais Q47 et Q72	Verbinding van relais Q47 en Q72 gewijzigd.	D.
- Modifié alimentation des SM1 et SM2.	- Voeding van de SM1 en SM2 gewijzigd.	
b - Ajouté contact CB 252 au m1.	Contact CB 252 aan m1 bijgevoegd.	D.
c - 17-6-34. Supprimé dis	Inrichting	W.
positif d'abaissement automatique des pantous.	tot automatisch neerlaten der pantous afgeschaf.	
- Connecté Q47 aux bornes 115 et 127 du servomoteur JH1.	- Q47 aan de klemmen 115 en 127 van servomotor JH1 verbonden.	
- Modifié raccordement CM3 (bornes 12C 12D)	Verbinding CM3 veranderd (klemmen 12C 12D)	
d - Ajouté régression automatique JH en cas de patinage.	- Automatische terugloop JH toegevoegd in geval van slipping.	
e) 4 5-56. Modvaleurs shunt Connex V2.	- Waarde shuntage verand. Verbind V2	V.
f) 26-11-50. Connecté I3 aux bornes du RTN.	- I3 aan klemmen RTN verbonden.	W.
g) 3 4-57. Ajouté mod. RTN - locos 122 041 et 122 050	- Wijziging van RTN op locos 122 041 tot 122 050 bijgevoegd.	W.
h) Mod. n° HLE	N° HLE gewijzigd.	
i) Ajouté test des contacts éliminateurs et lampes LSP.	Test v.d. afzond. contacten en lampen LSP bijgevoegd	M.
j) 12-12-57. Ajouté cont. QDP (1 et 2)	- Contact QDP bijgevoegd (1 en 2)	
k) Ajouté 122 211	- 122-211 bijgevoegd	
l) Ajouté cont. RaRTN	- Cont. RaRTN bijgev.	
m) 10-10-58	m) 10-10-58	K.
n) 4-8-61.	n) 4-8-61	R.
o) 20-2-62.	o) 20-2-62	R.
Ajouté V.A.	A.W. bijgevoegd.	
P/ 18-10-72	P/ 18-10-72	





Legende du câblage des fils Verklaring v.d. kablering der draden

- Existant - - - - - Bestand
- A enlever * * * * * Weg nemen
- A déplacer - - - - - Te verplaatsen
- Reserve - - - - - Reserve
- Nouveau - - - - - Nieuw

Relais RBC2
 Diode R21
 Pl. à bornes PbRBC
 Klemmenpl. PbRBC } Pl. C/D.17.16.42

D	Ajouté PbRBC	PbRBC bijgevoegd	15-12-70
C	Racc. alim. LCHT derrière cont. DUR 1/2 - 1.1.87	Voed. LCHT aangeslot. achterkant DUR 1/2 dr. 87	3-11-70
B	Supprime diode R20 et remplace par contact RBC2.	Diode R20 afgeschafte vervangen dr. contact RBC2	6-8-70
A	Corrigé contacts CCh1 et CCh2	Cont. CCh1 en CCh2 verbeterd	26-6-70

Visa	Modifications	Wijzigingen	Date Datum
	HLE Serie 22 Signalisation de la position du sectionn. de chauff. train	HLE Reeks 22 Signalisatie van stand scheidings-schak. treinverwarm.	
	Schéma et câblage	Schema en kablering	

Echelle Schaal	Tolérances Toleranties	Établi Opgeest	Date Datum	Nom Naam	Visa
		Dessiné Getekend	1-6-70	De Grande P.	JL
		Vérifié Nagezien		Vos R.	
		Approuvé Goedgek.			
122/DOO.02.07					
(B) MA 24-12					

