

SOCIÉTÉ NATIONALE DES CHEMINS DE FER BELGES



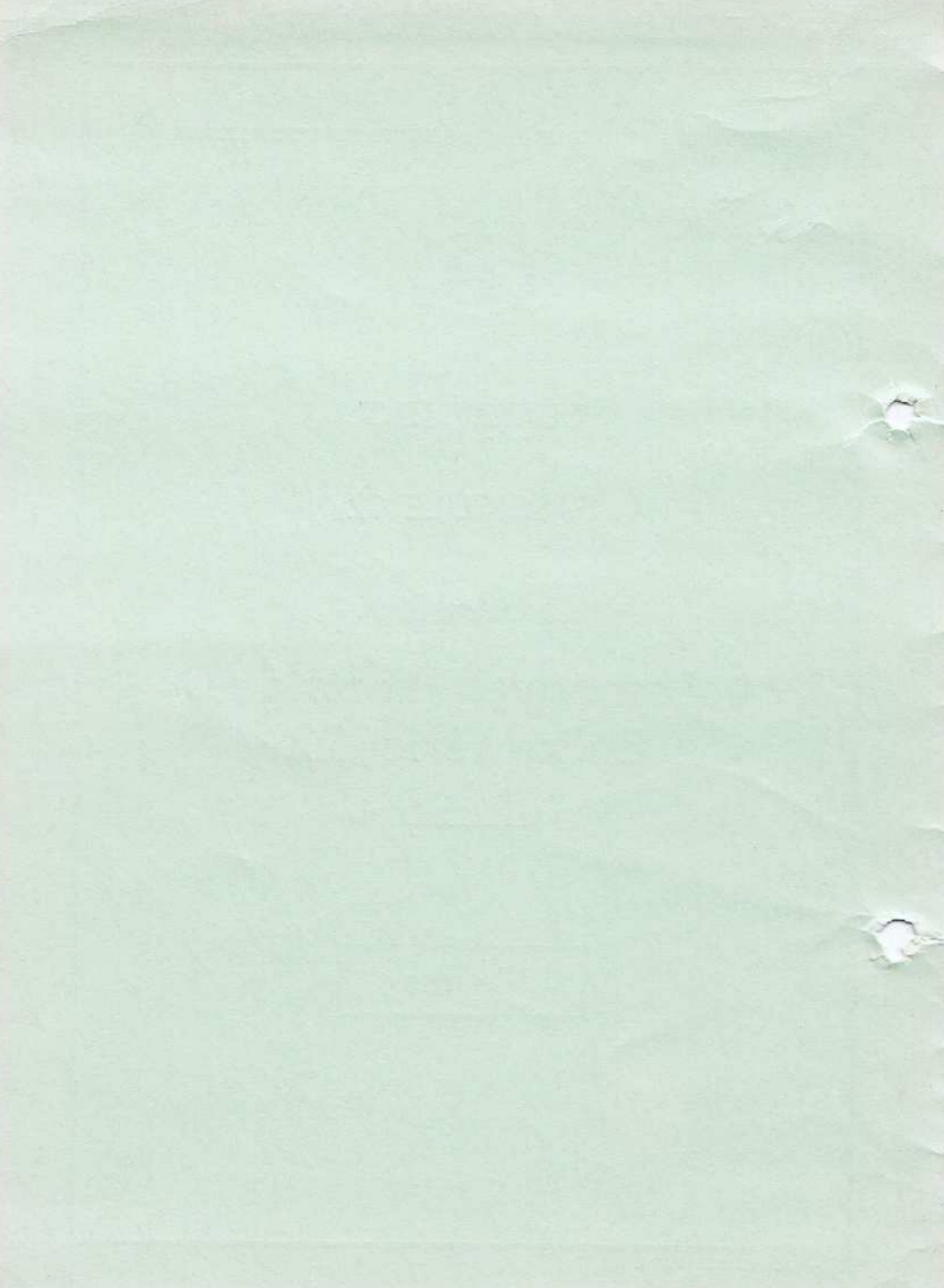
LIVRET HLT

FASCICULE 12

Chapitre XIX

Locomotives électriques
BoBo série 22

Figures



Direction M. A.
Bureau 24-12

Loco BoBo SERIE 22

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à 122/B.00.01.014.

Courbes 122/F.02.01.11.
122/F.02.01.12.
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C/D.00.01.08.

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1911
1912

Local Sales 1911

Local Sales 1912

1911

1912

1913

1914

1915

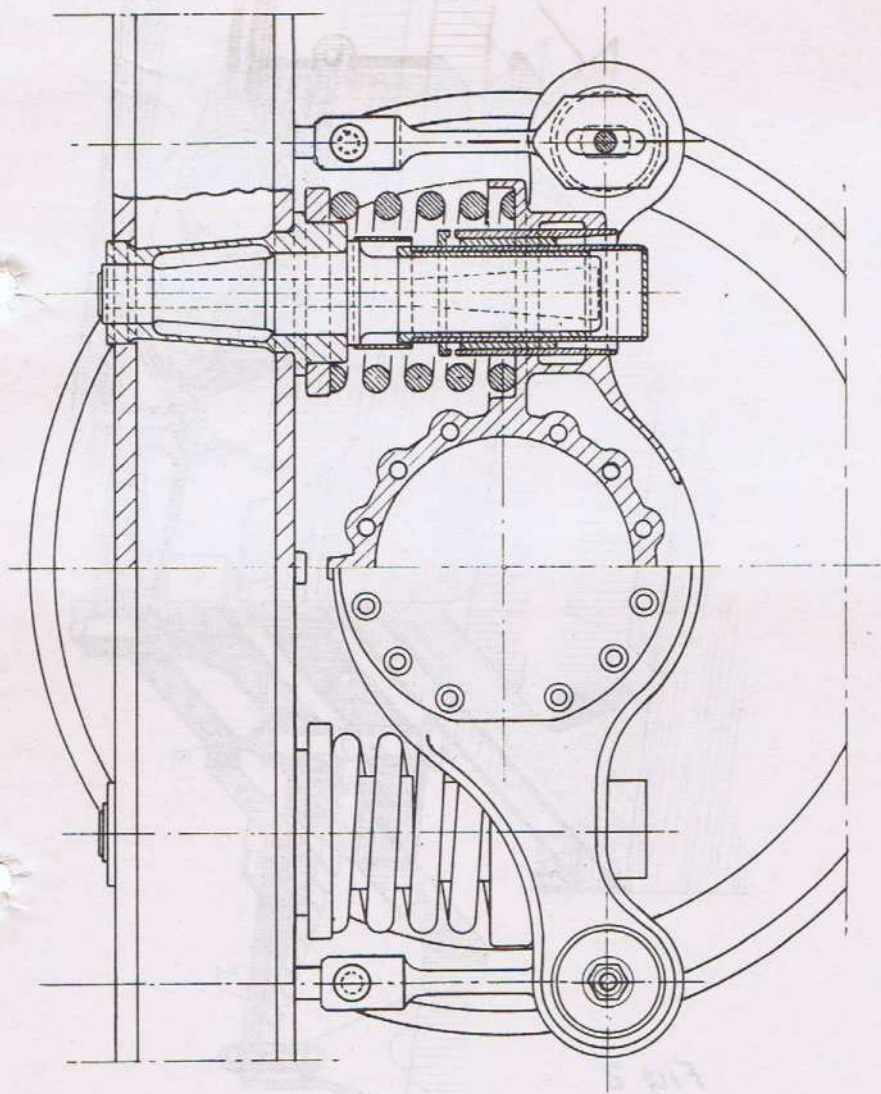


Fig. 1

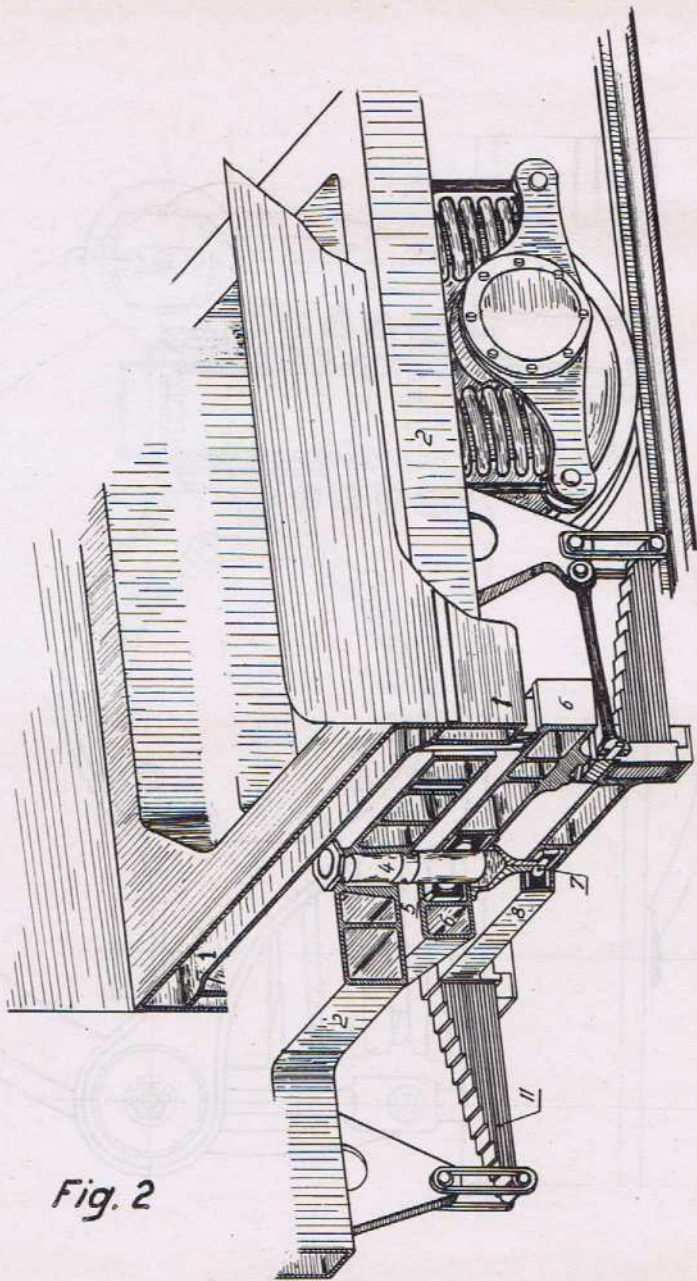


Fig. 2

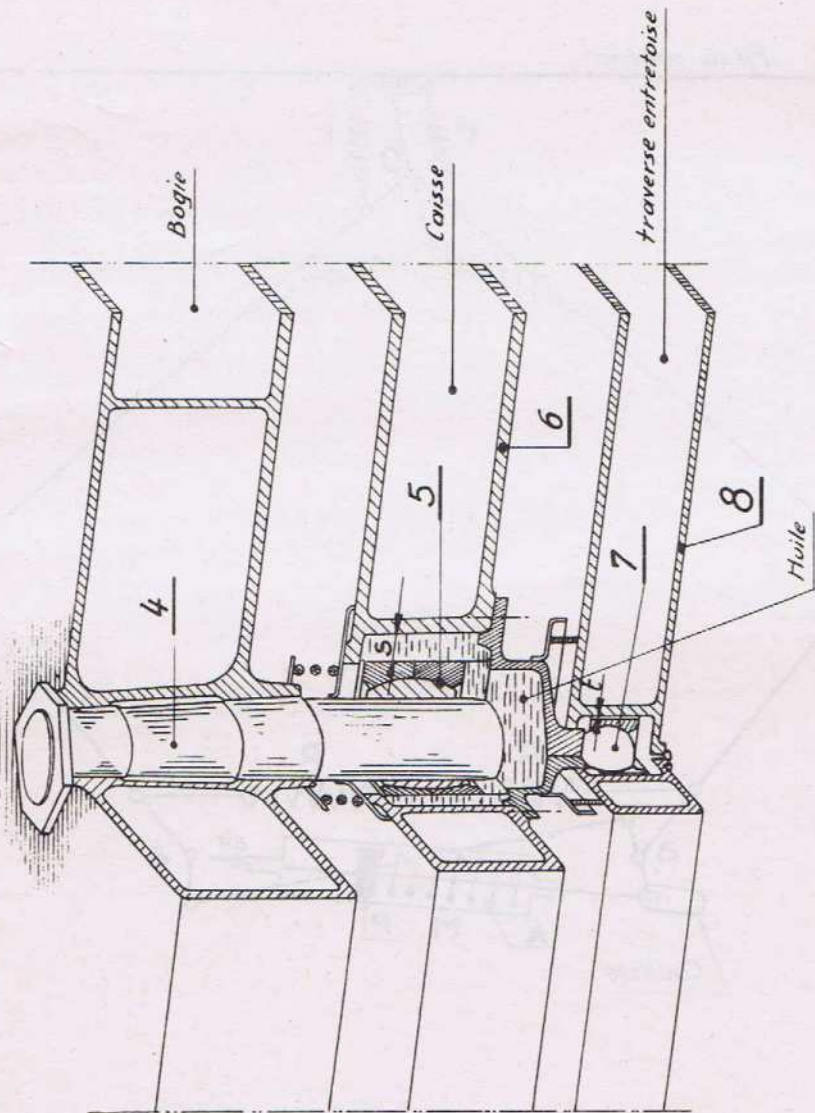


Fig. 3

Fil de contact

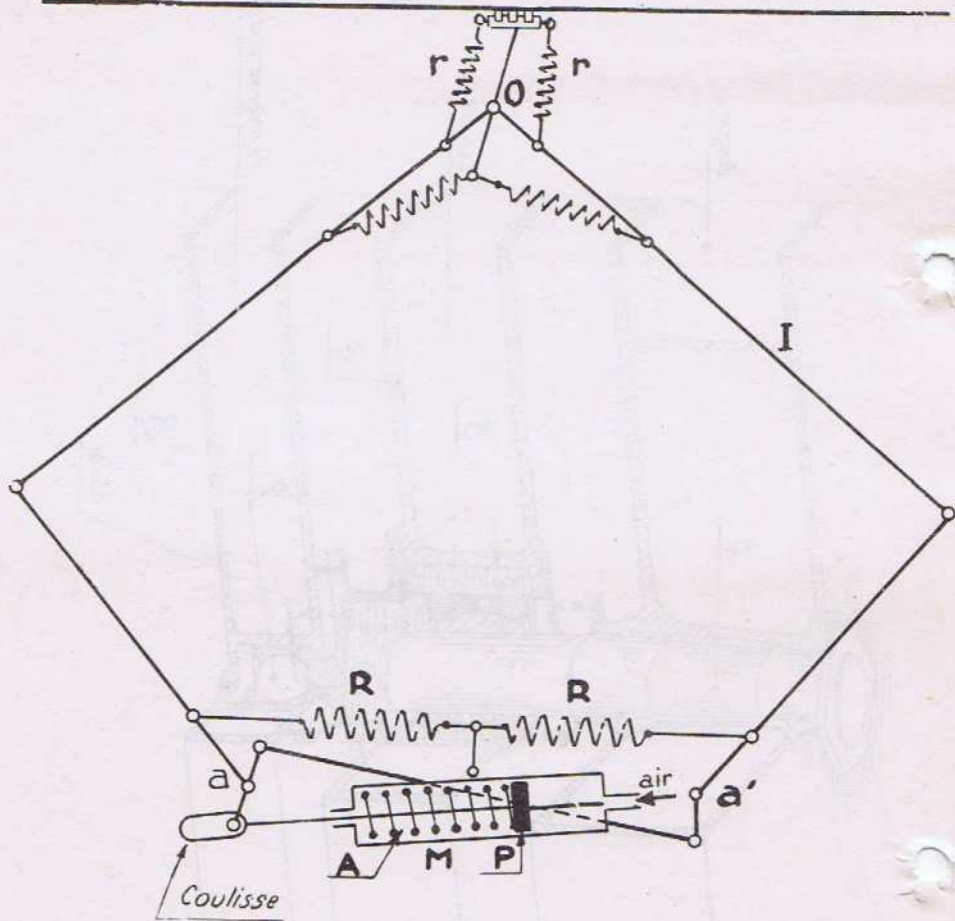


Fig. 4

Fil de contact

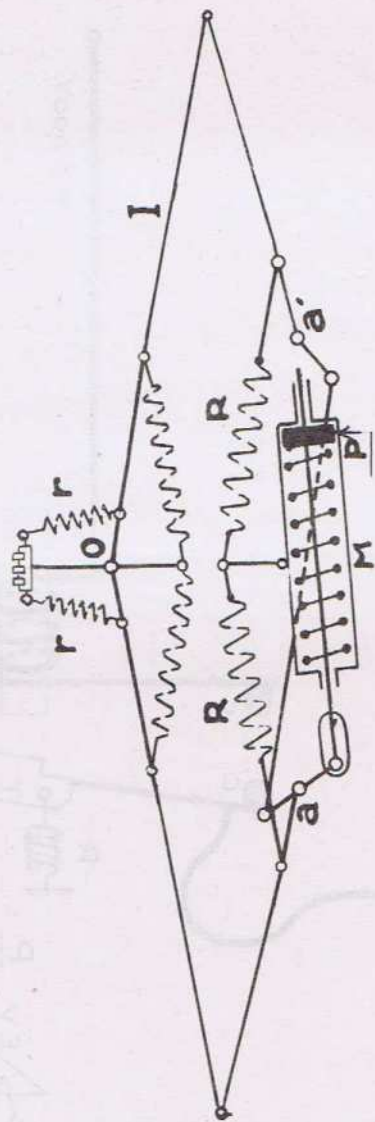


Fig. 5

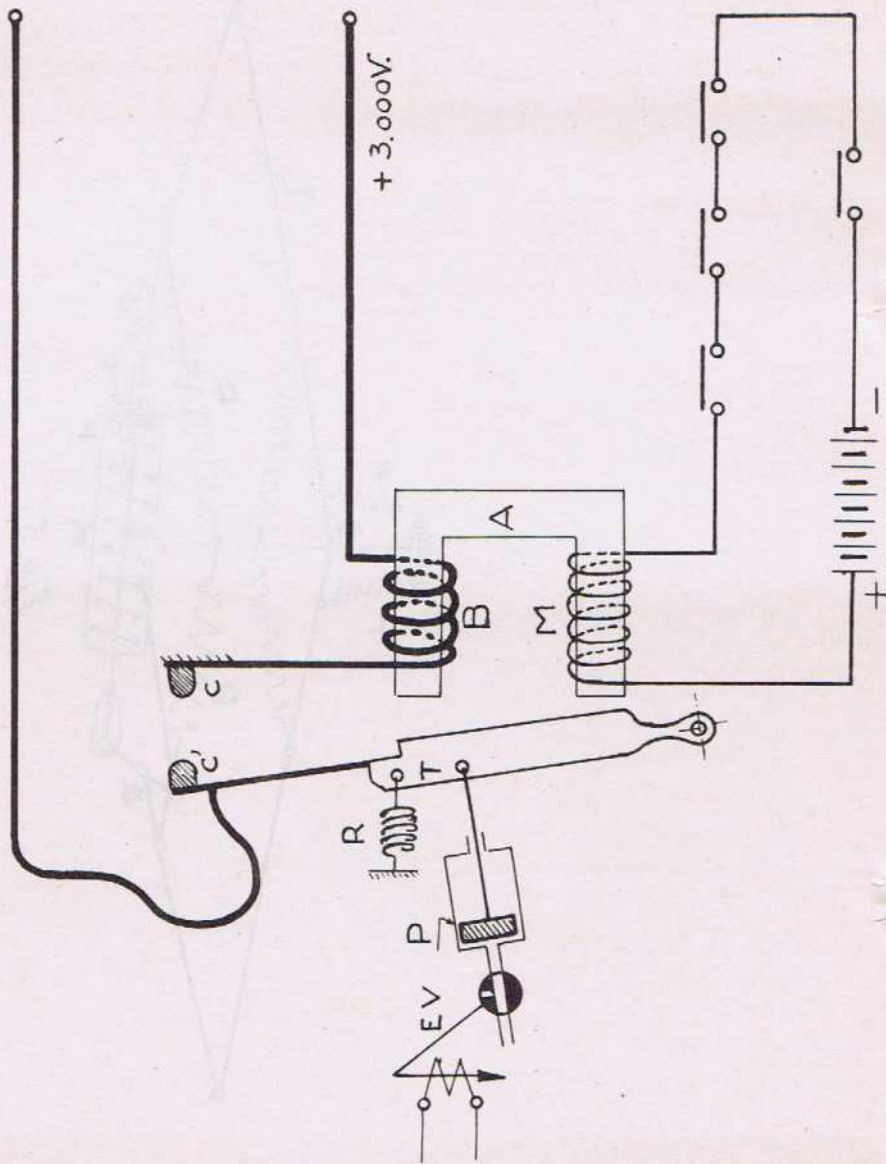


Fig. 6

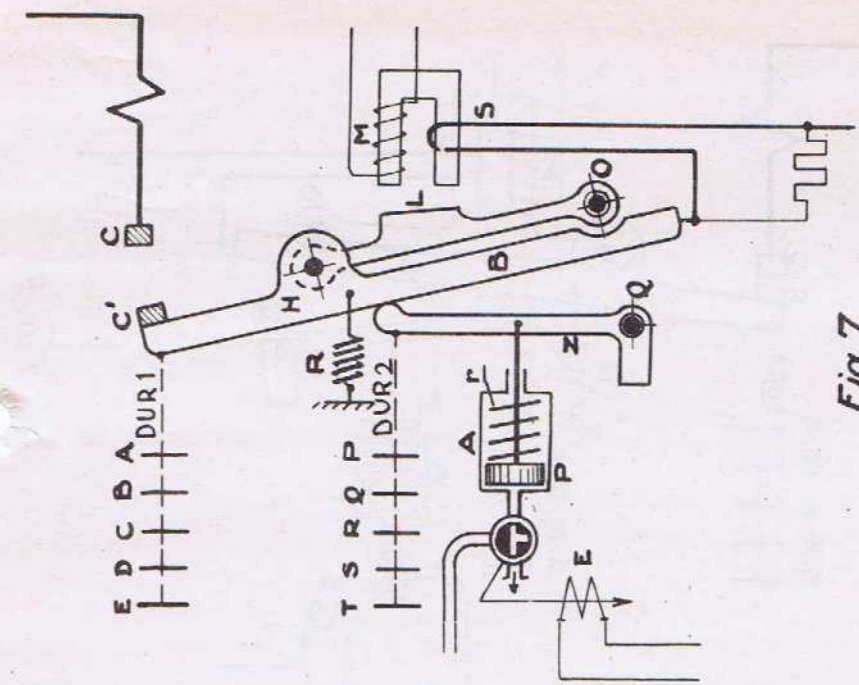


Fig. 7

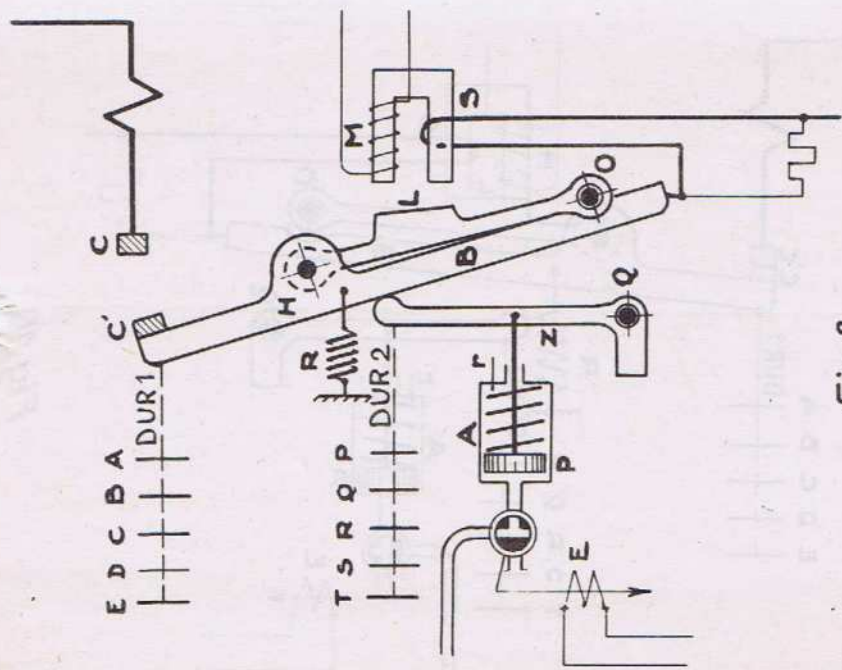


Fig. 8

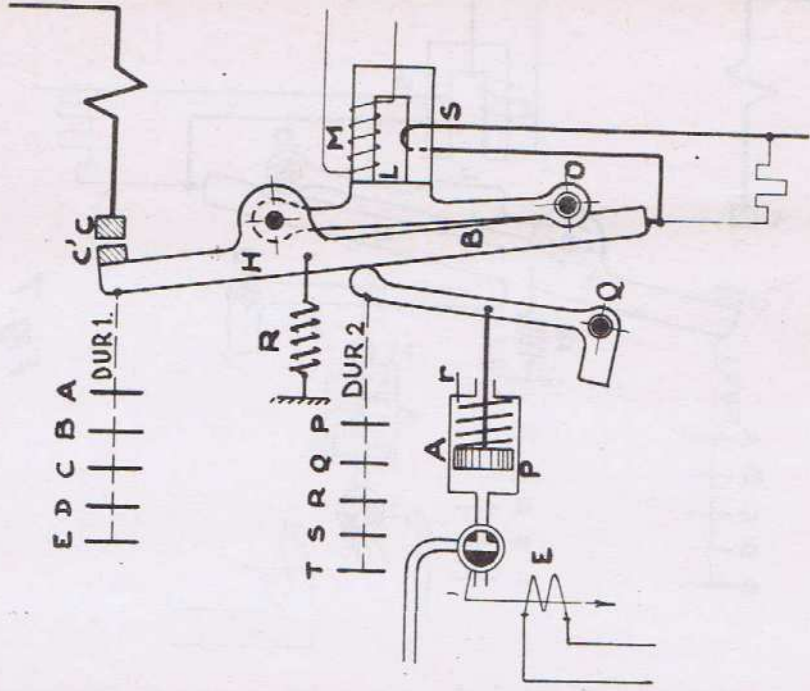


Fig. 9

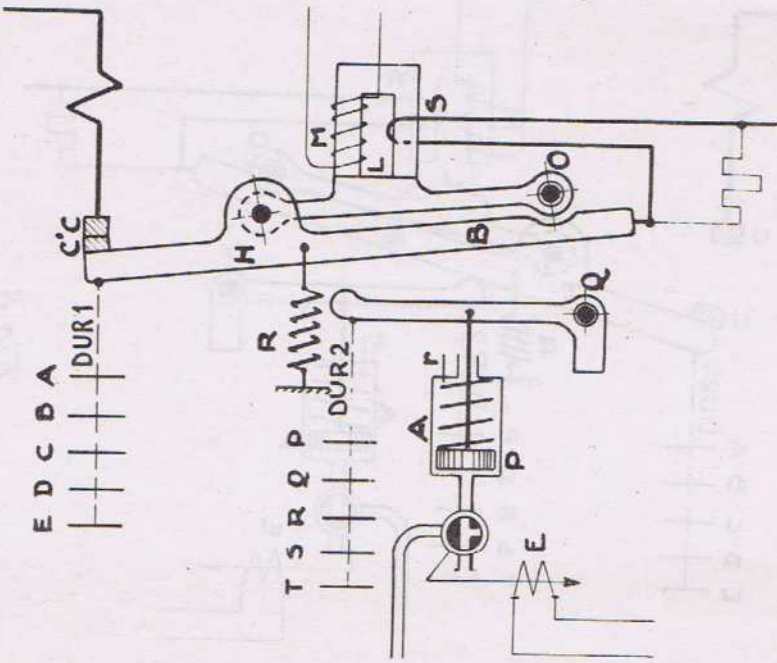


Fig. 10

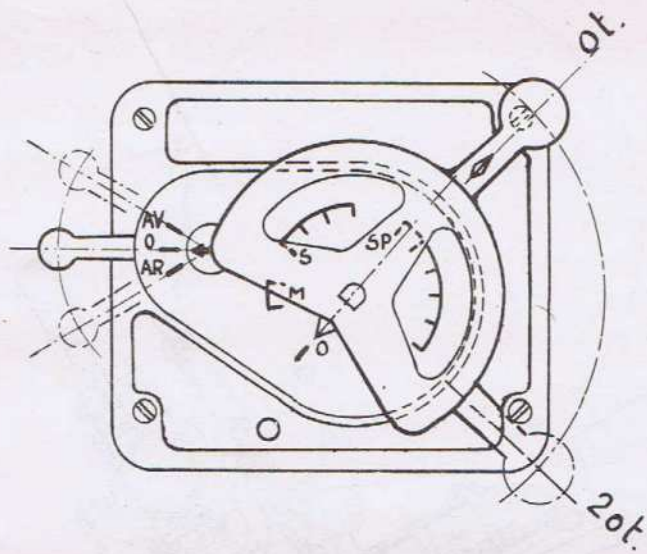


Fig. 11

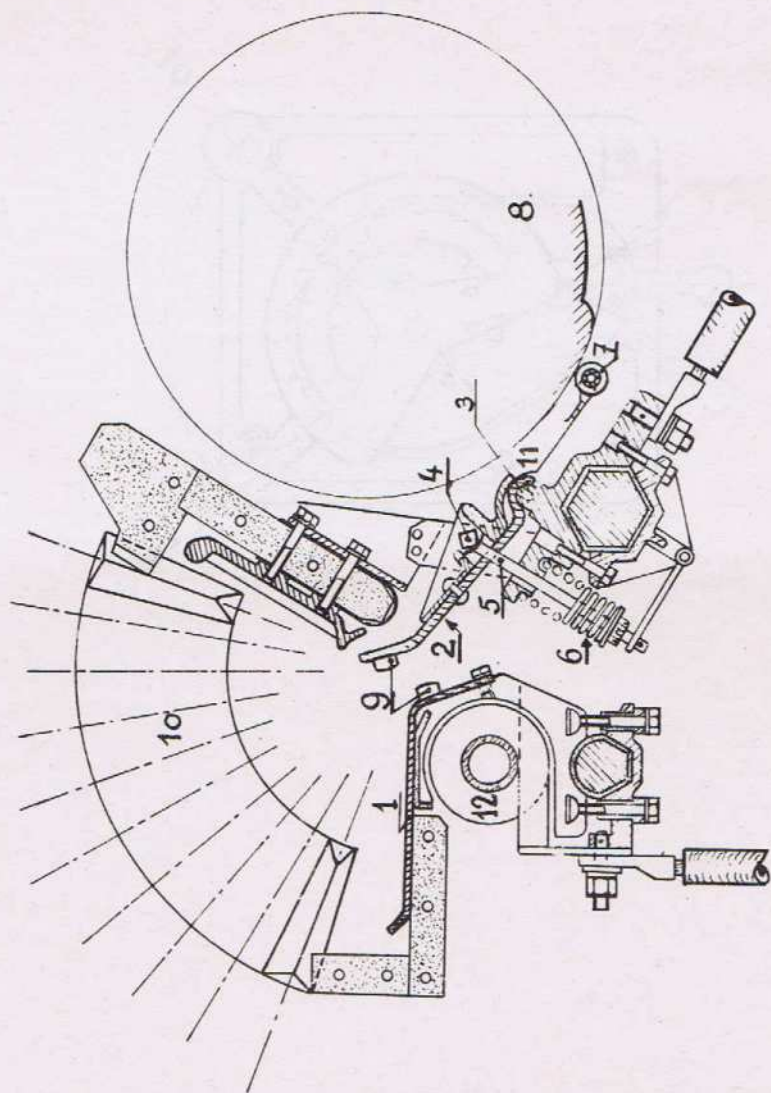


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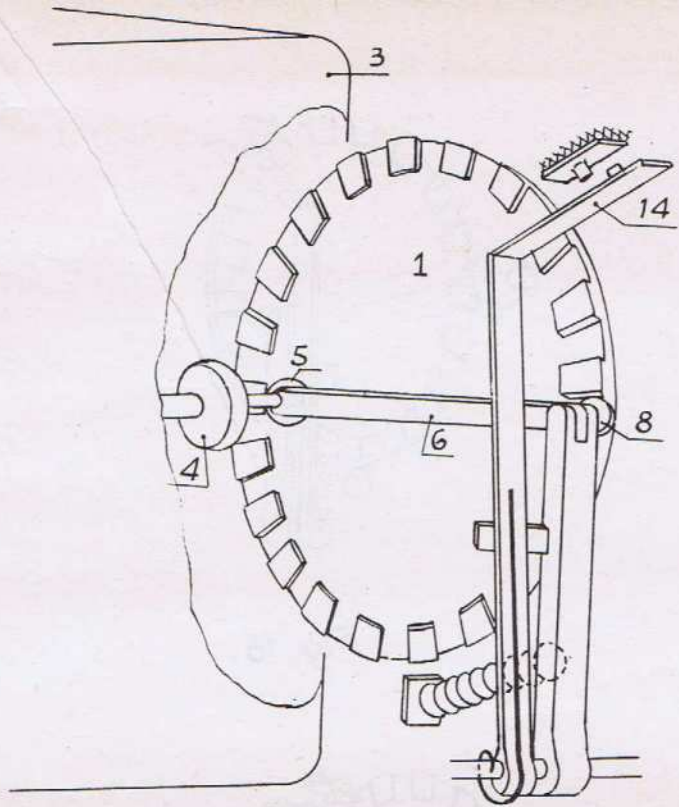


Fig. 13

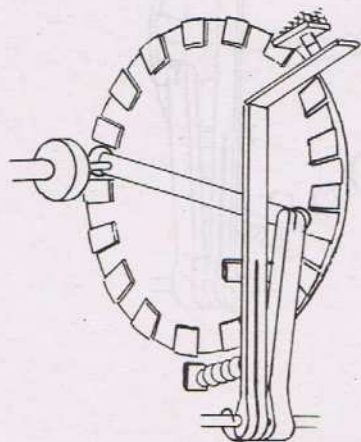


Fig. 14

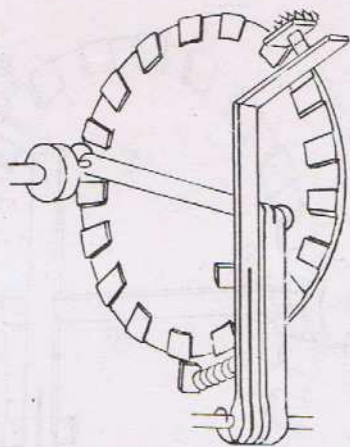


Fig. 15

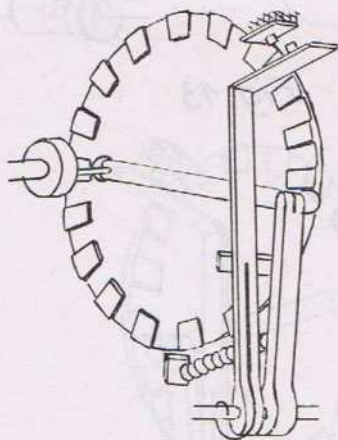


Fig. 16

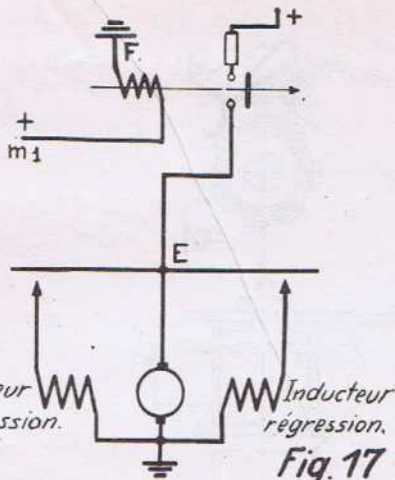


Fig. 17

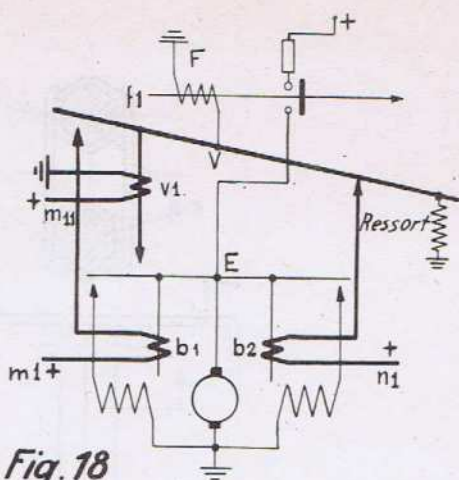


Fig. 18

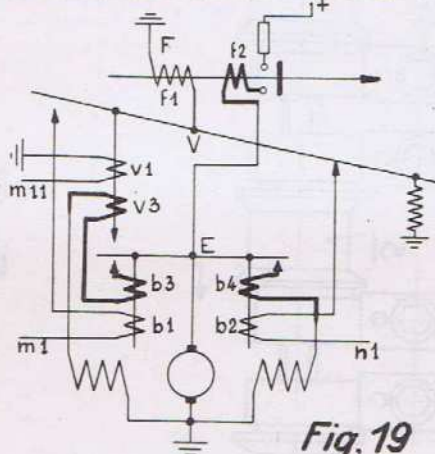


Fig. 19

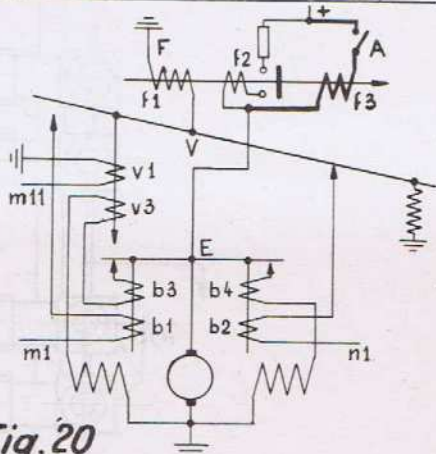


Fig. 20

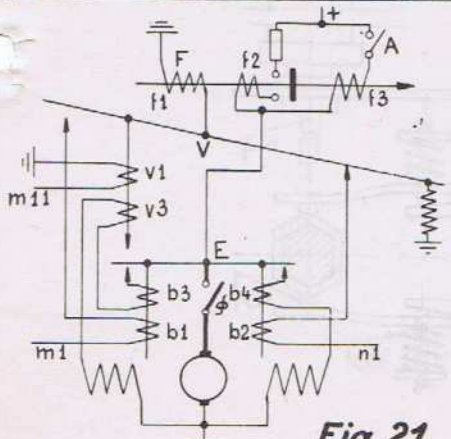


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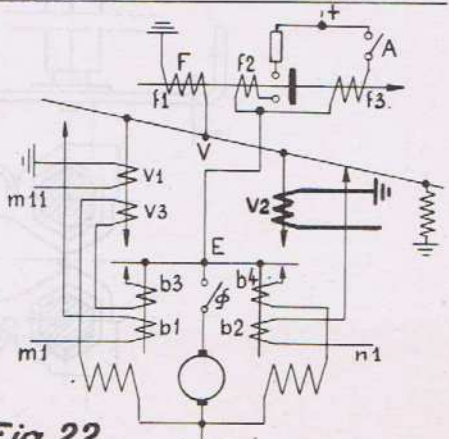


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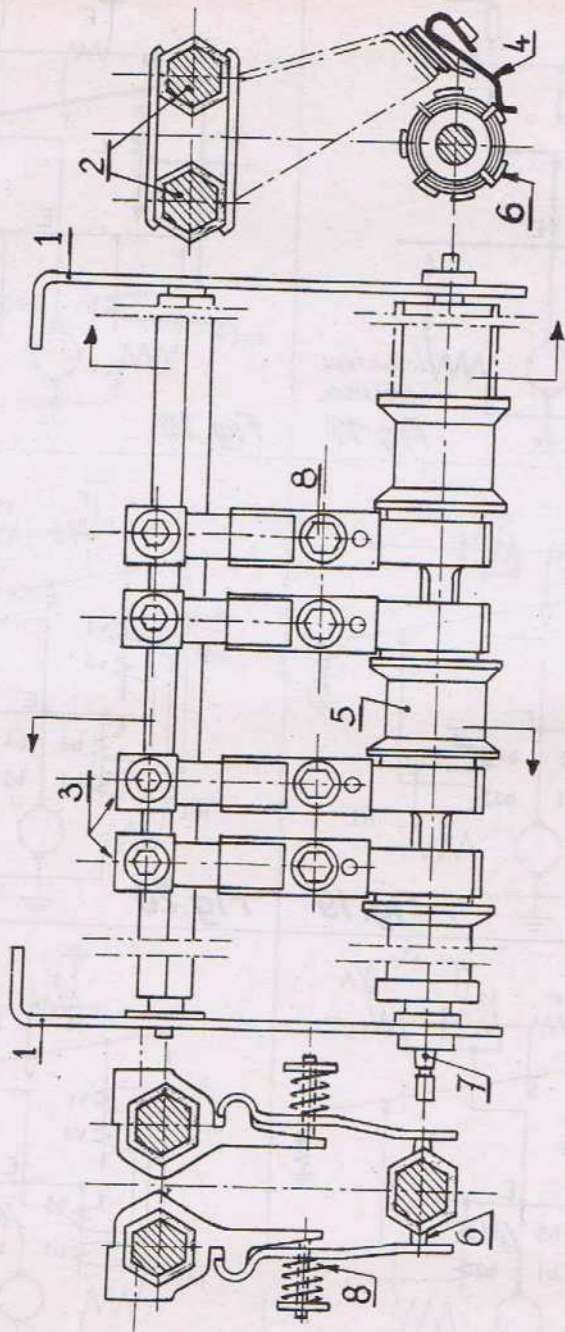


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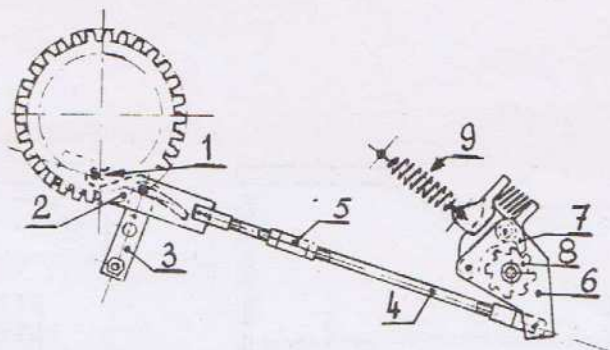


Fig. 24

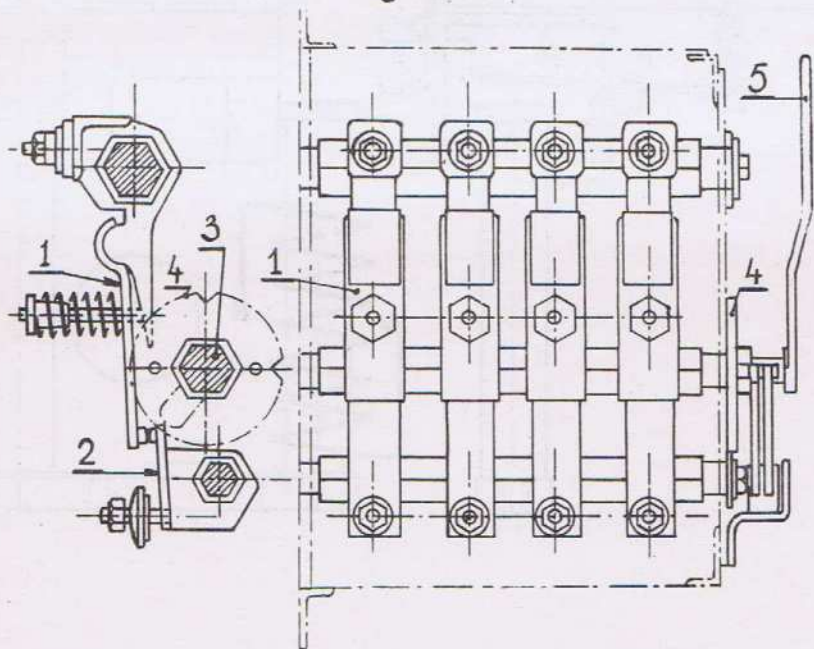


Fig. 25

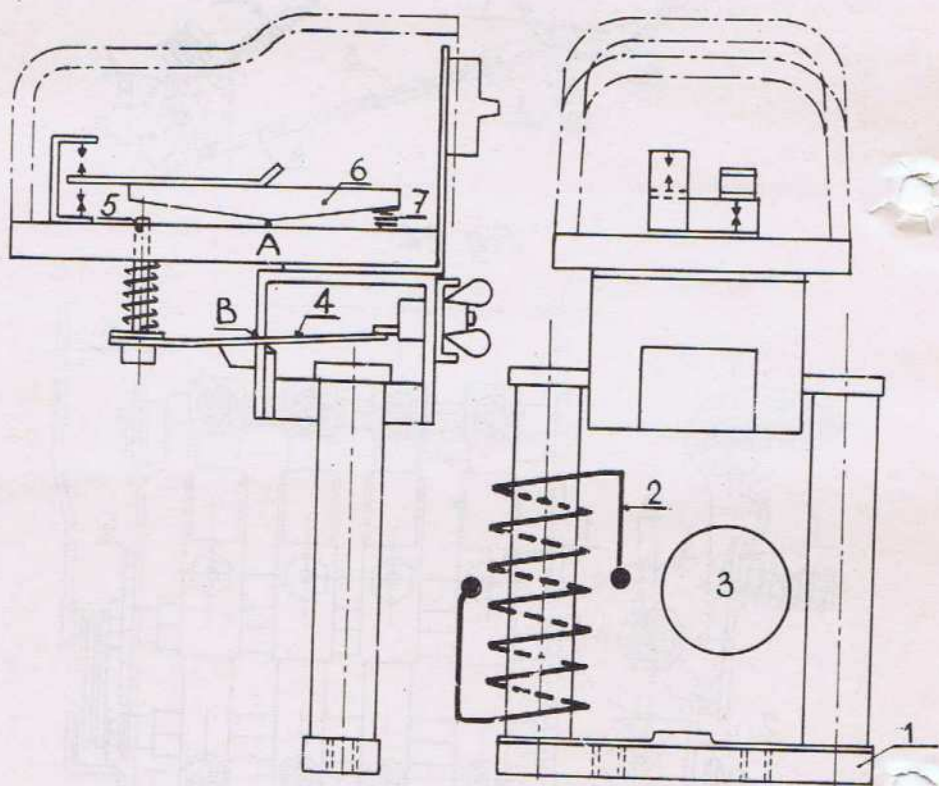


Fig. 26

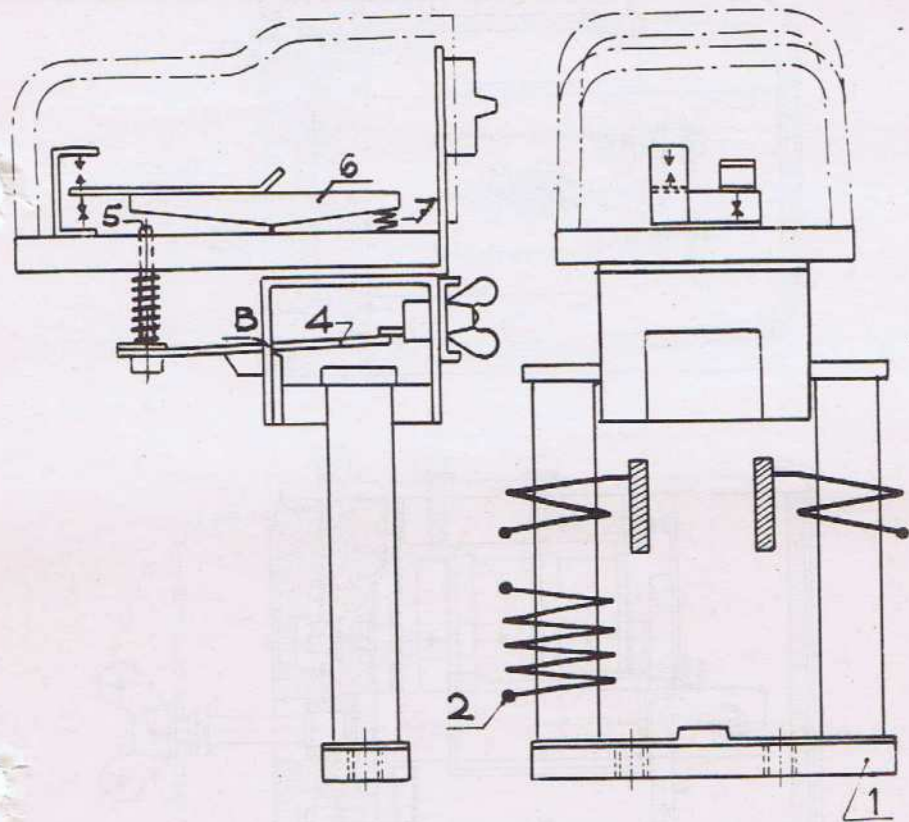
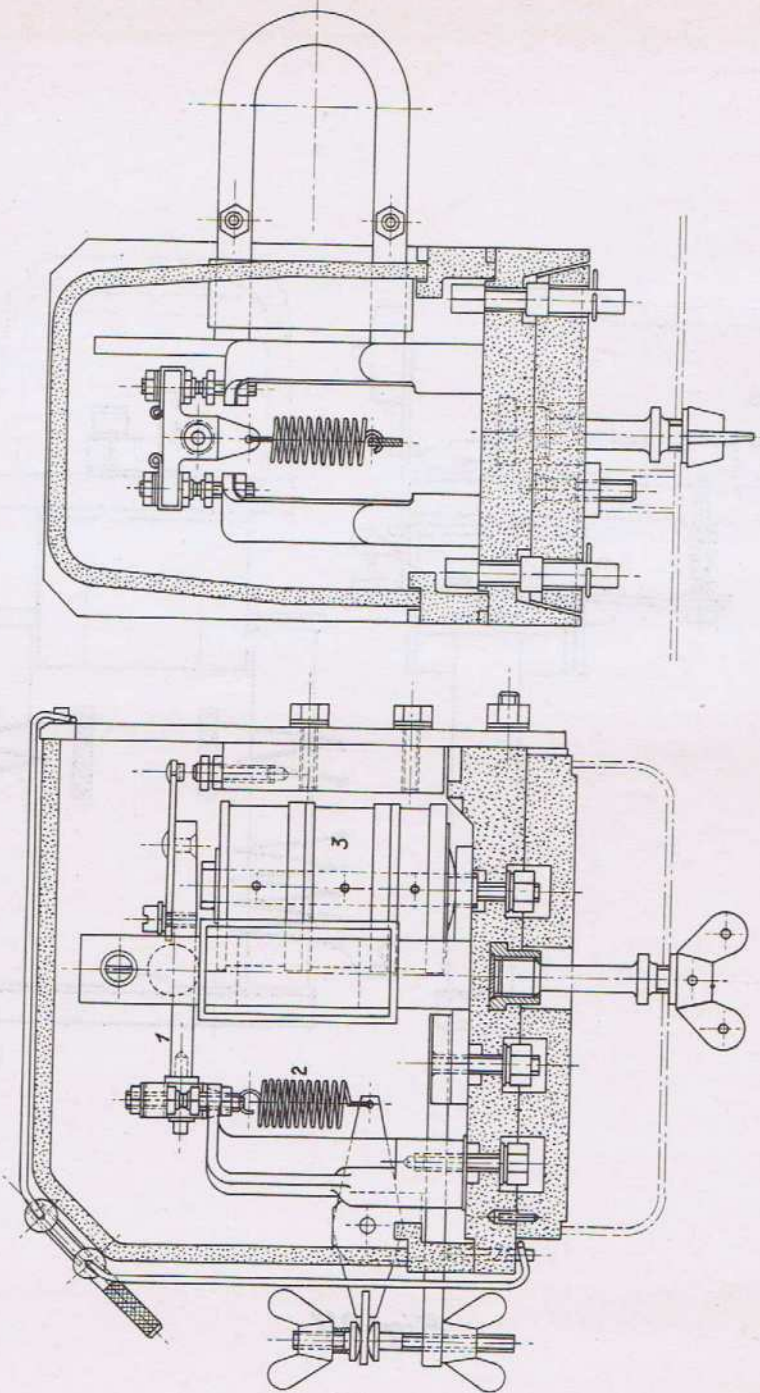


Fig. 27



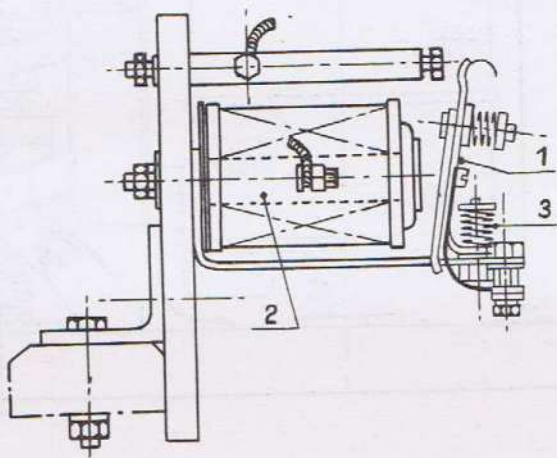


Fig. 29

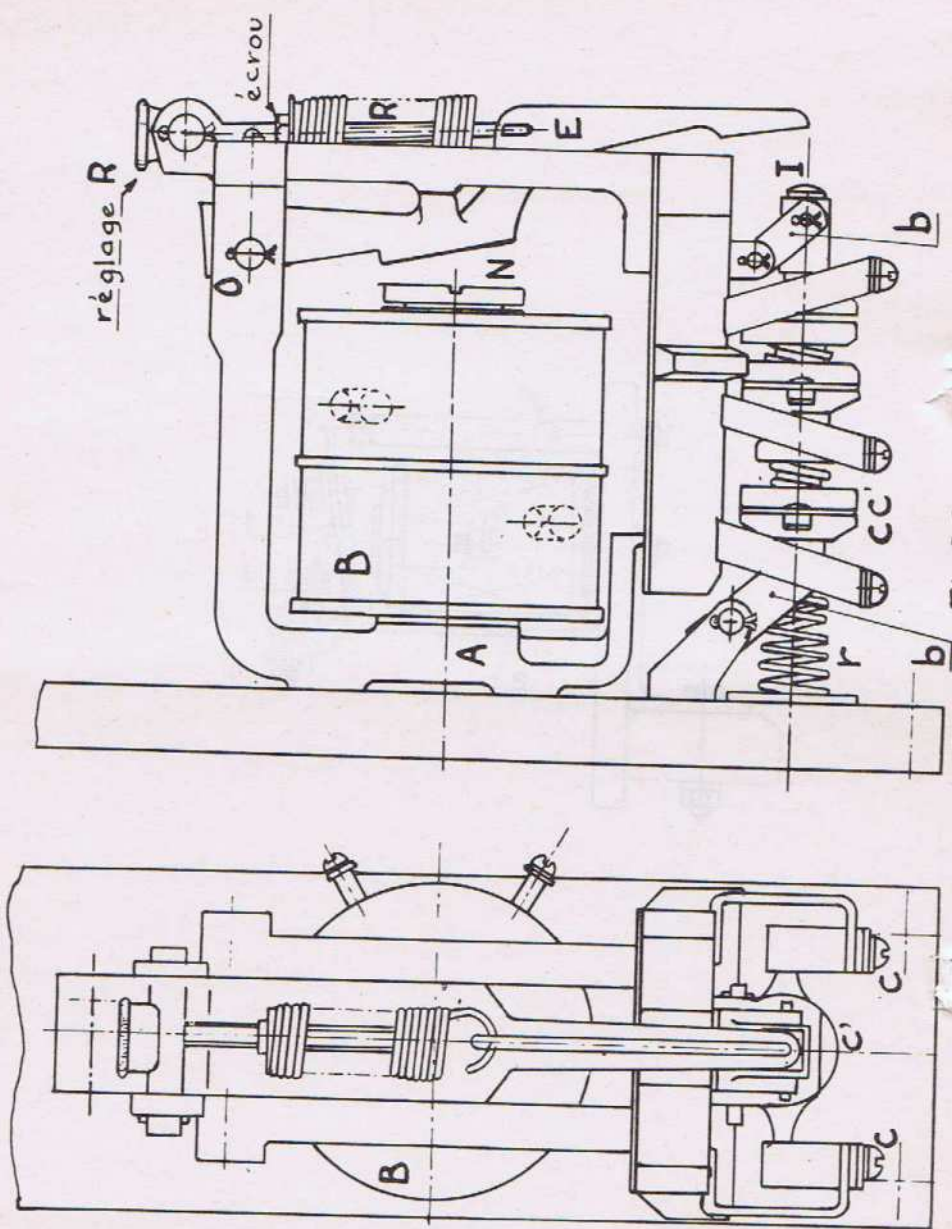


Fig.30

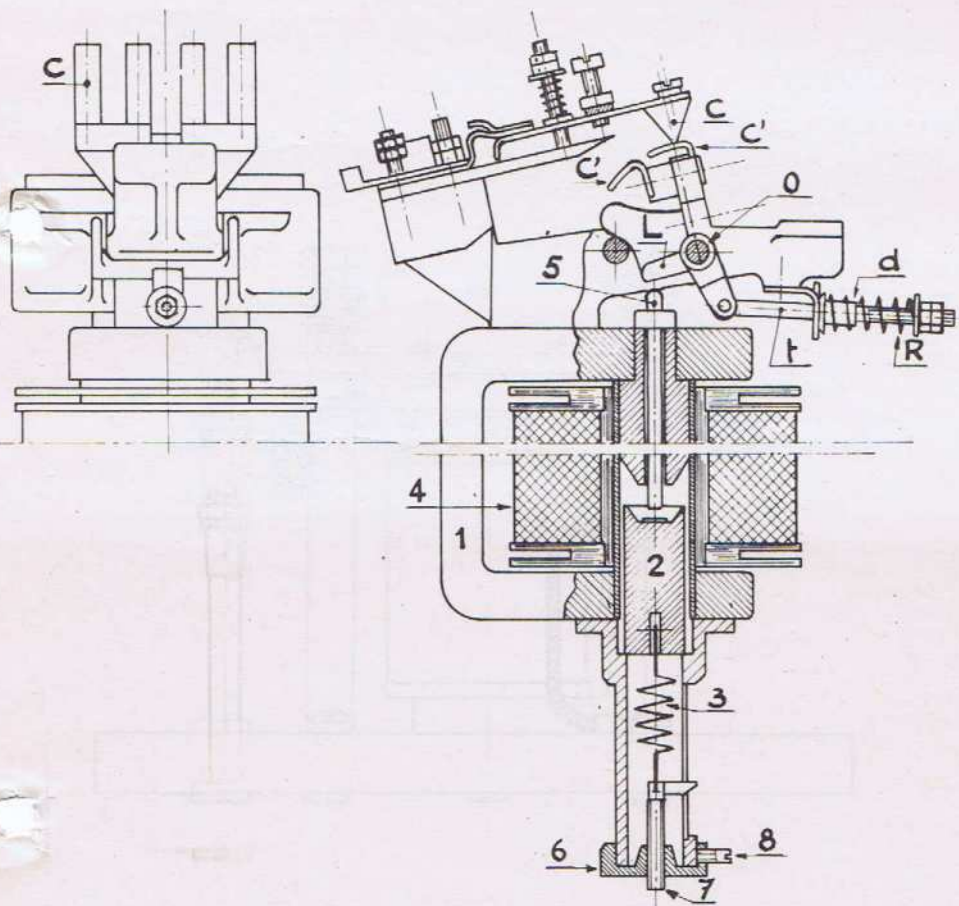


Fig. 31

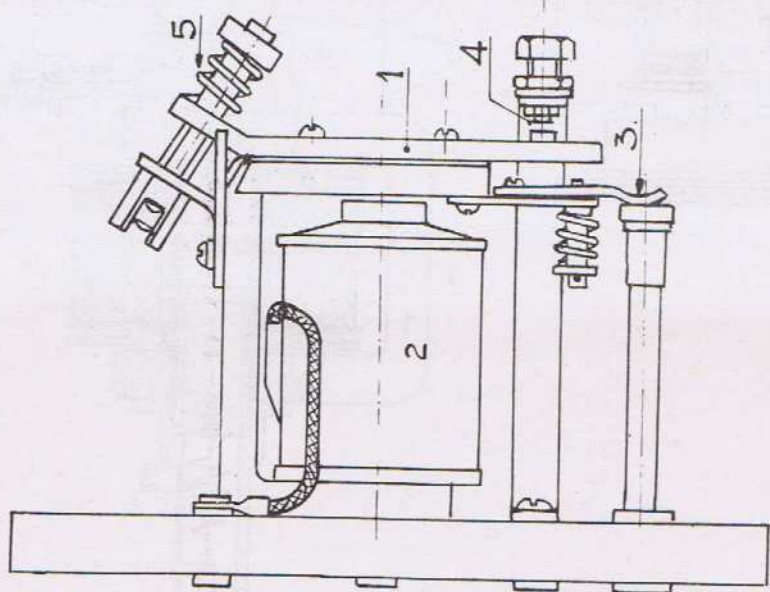
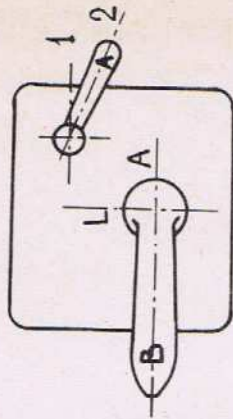
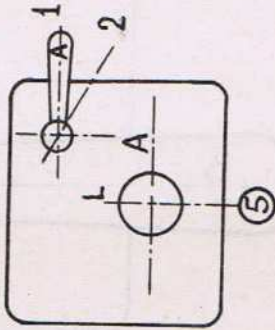
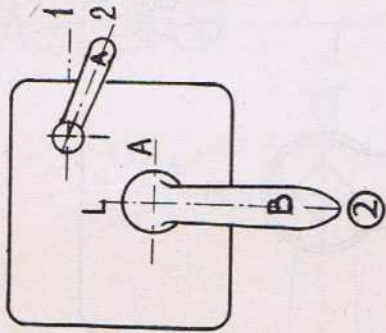
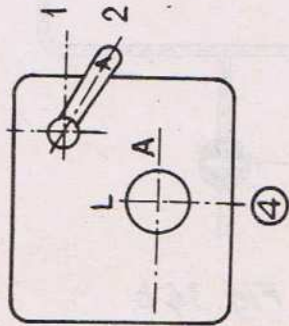
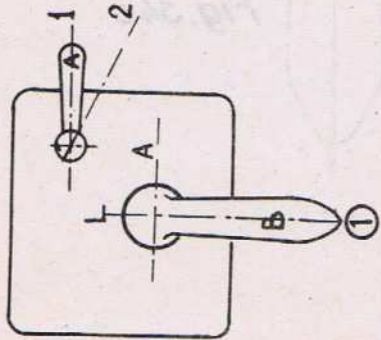


Fig. 31 bis.



③

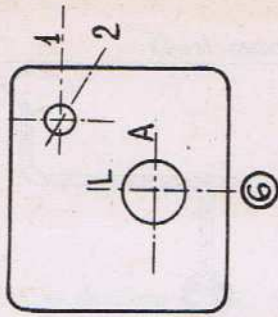


Fig 35

Mise à la terre.

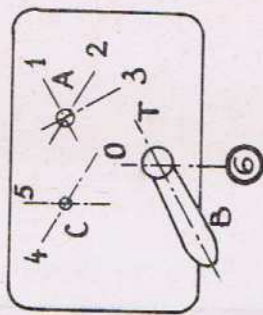
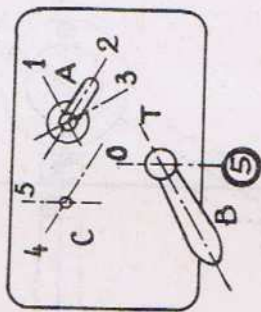
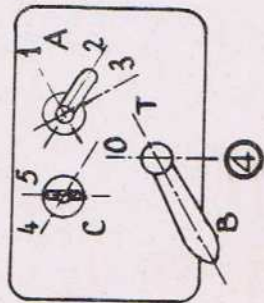
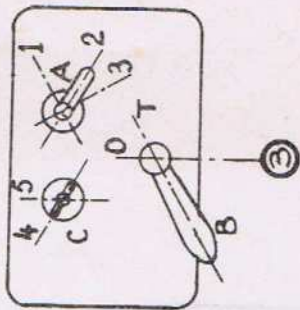
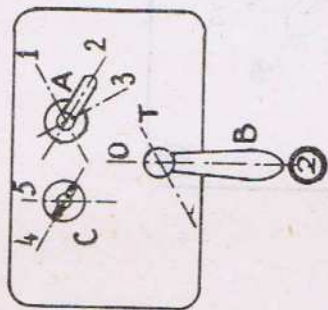
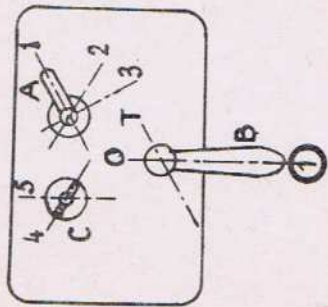


Fig. 37a

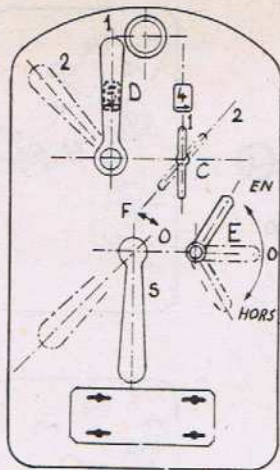
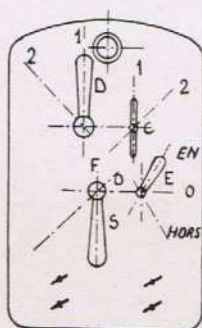
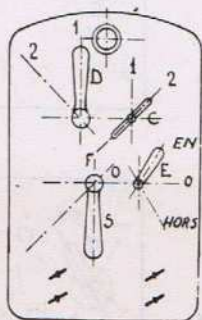


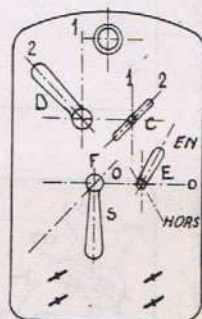
Fig. 38



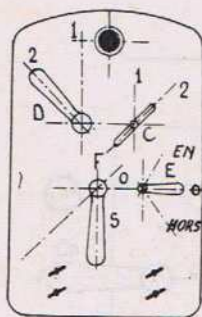
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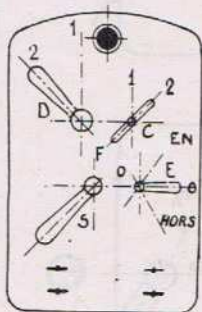
②



③



④



⑤

Fig. 39

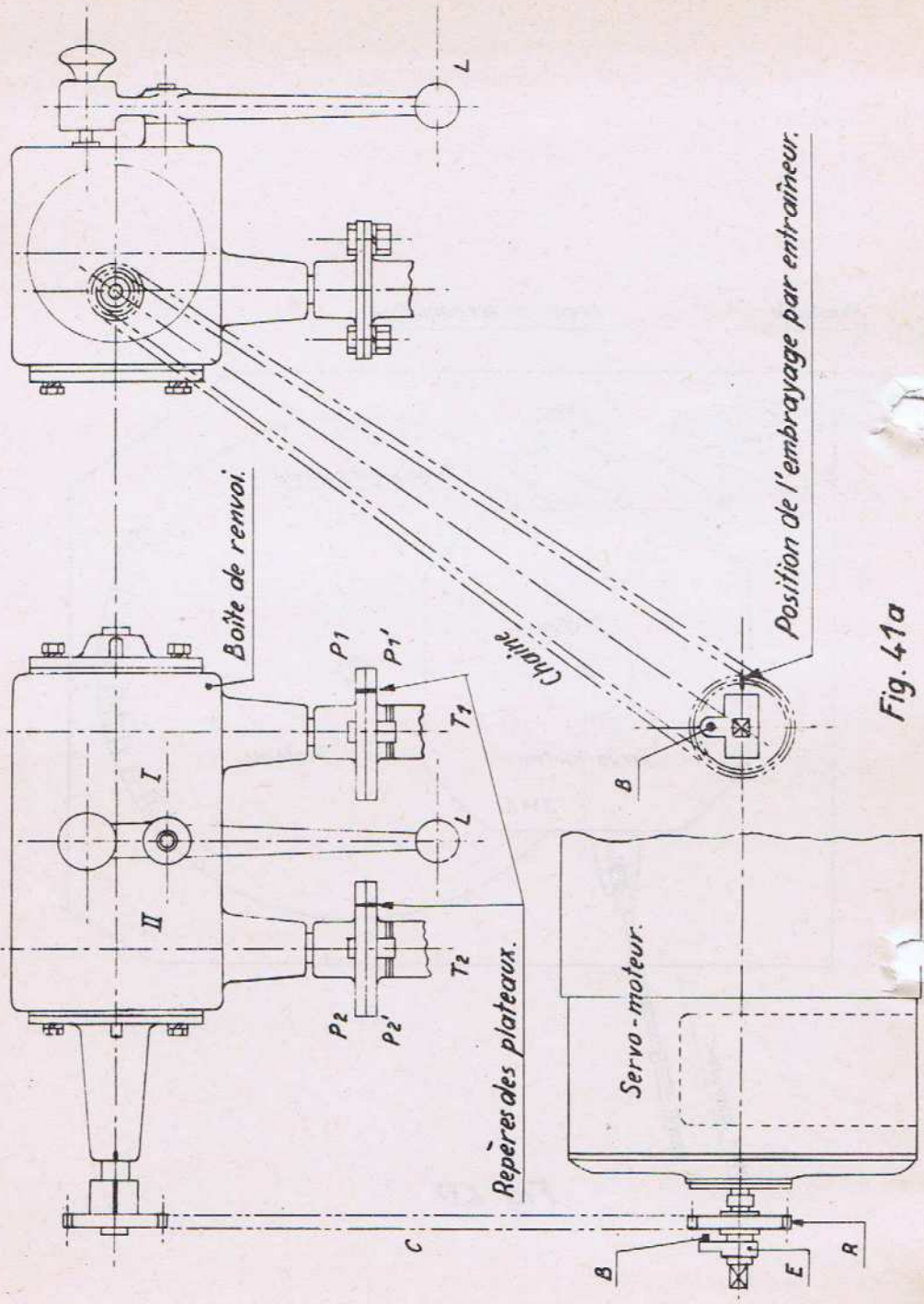


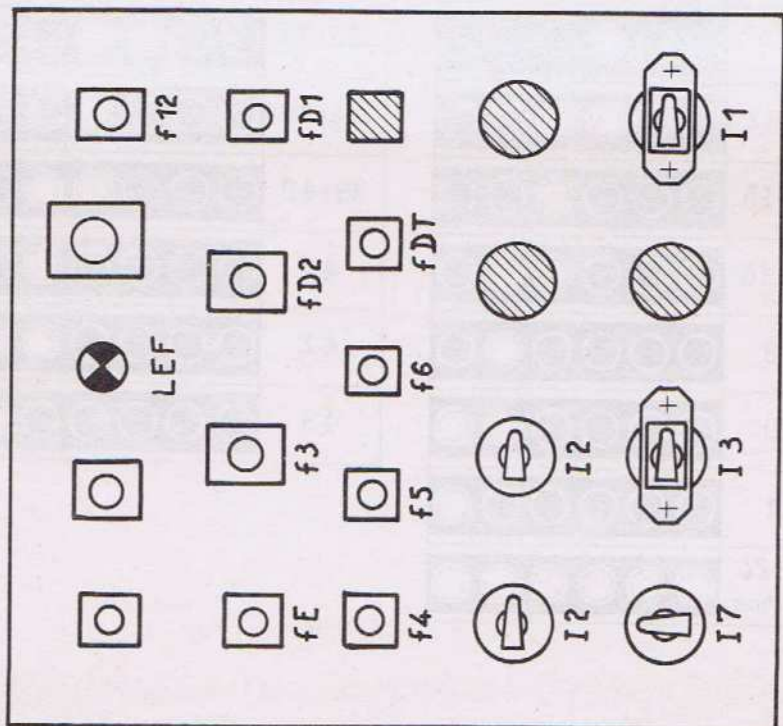
Fig. 41a

SERIE	
<i>Crans</i>	<i>Position des lampes</i>
0	
1	
2	
3	
4 - 6	
7 - 9	
10 - 12	
13 - 15	
16 - 18	
19	
20	
21	
22 - 24 <i>Transition.</i>	

SERIE - PARAL.	
<i>Crans</i>	<i>Position des lampes.</i>
25	
26	
27	
28-29	
30-32	
33-35	
36-38	
39-40	
41	
42	
43	

Fig. 43

TA.1



TPC.1

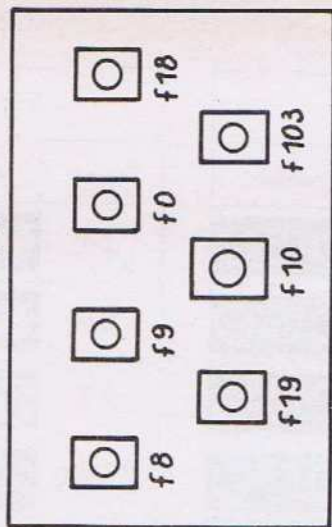
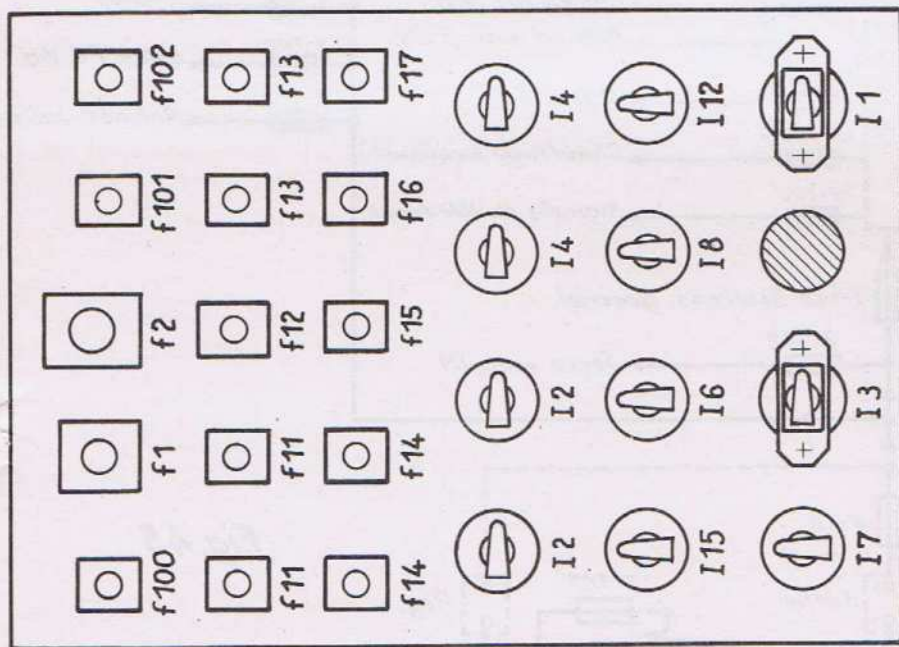
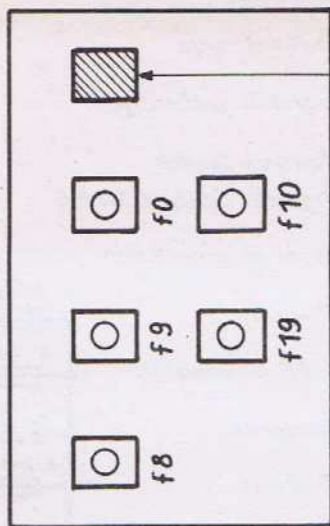


Fig. 44.a

7A.2



TPC.2



Stop Aut. 122.201 à 122.212
 Rés. 122.001 à 122.038

Fig. 44.b

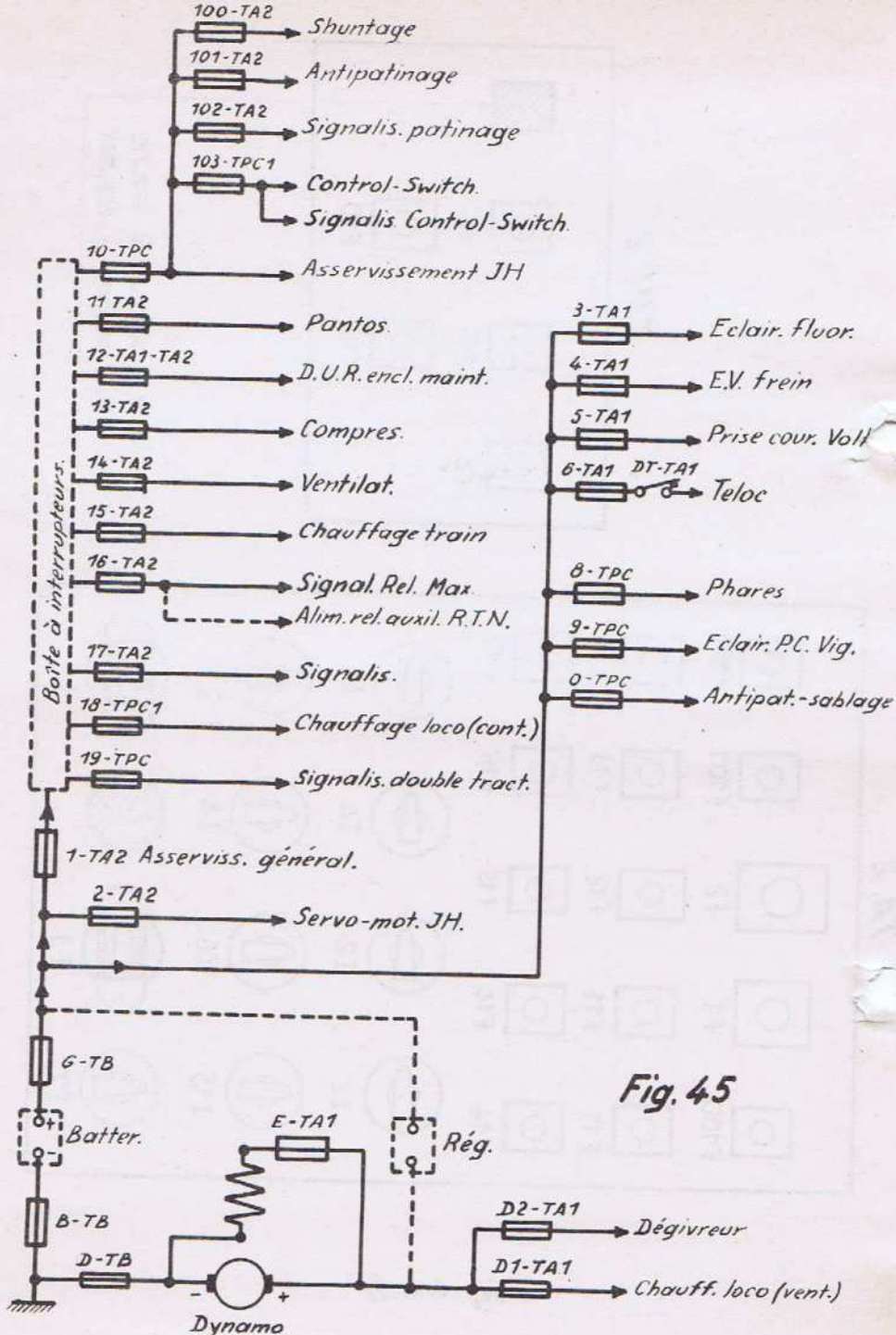
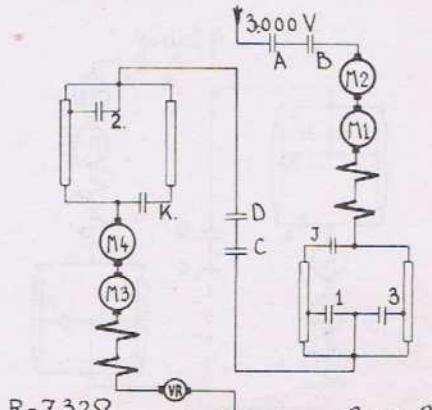
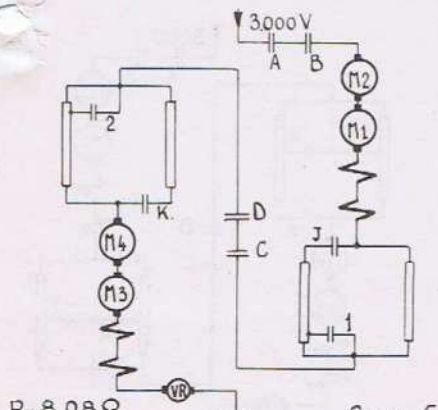
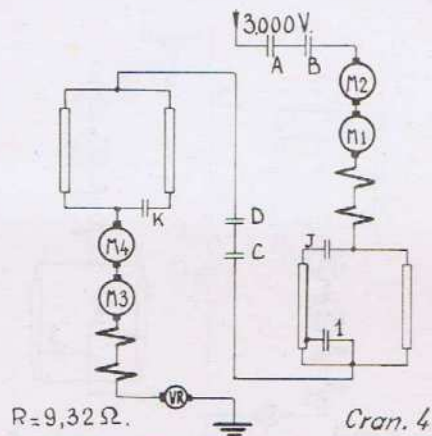
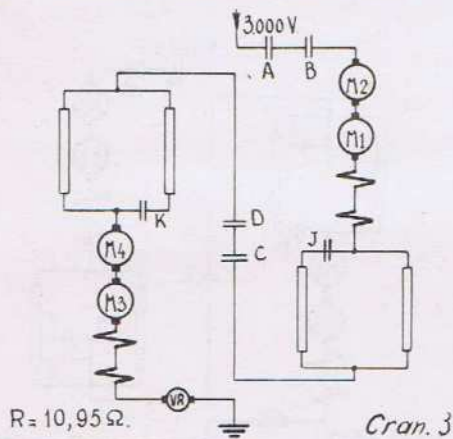
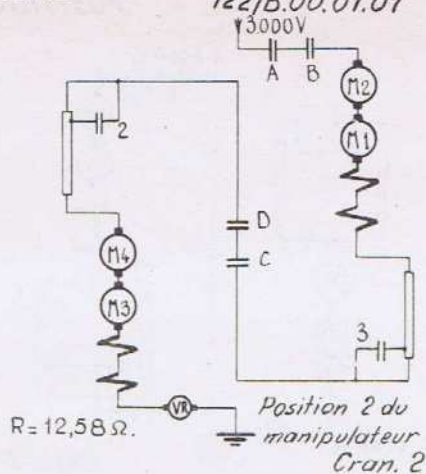
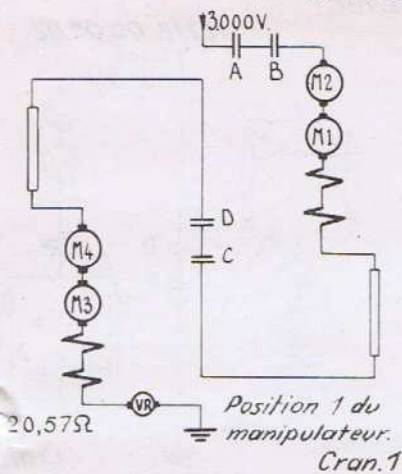


Fig. 45

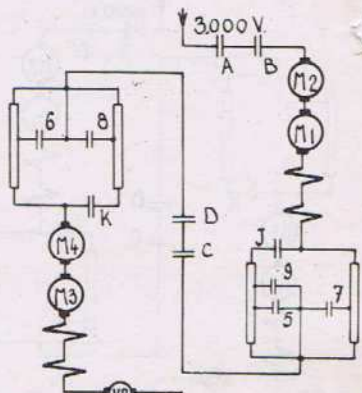
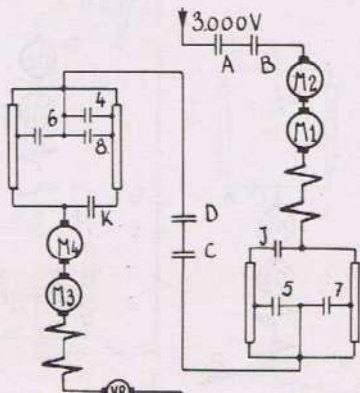
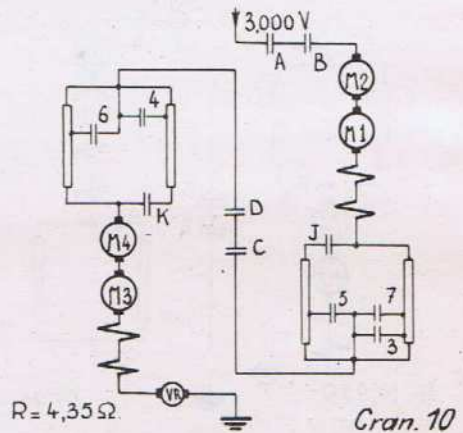
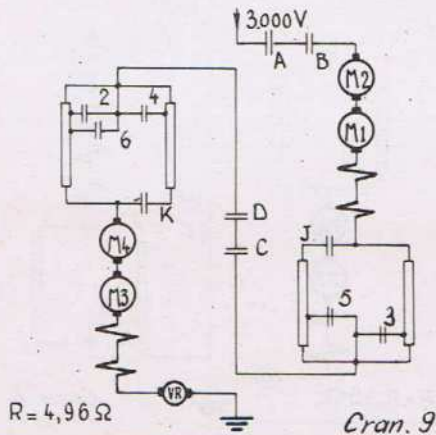
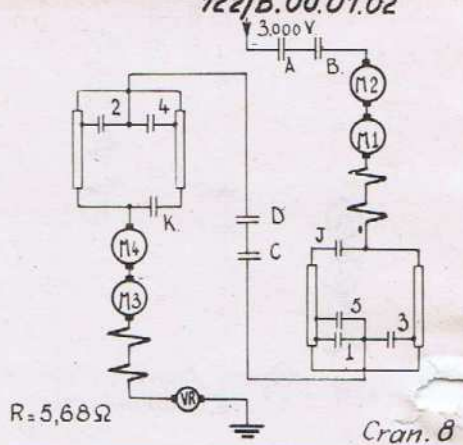
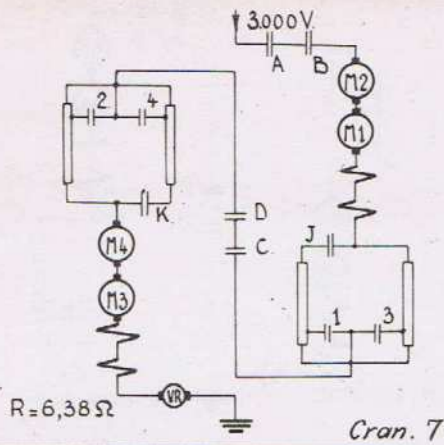
POSITIONS SERIE

122/B.00.01.01



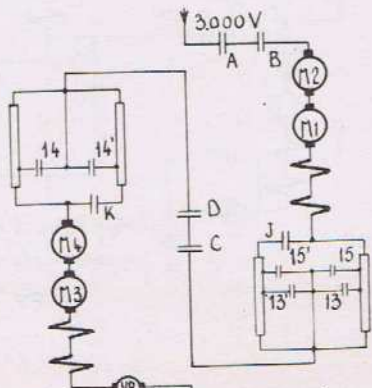
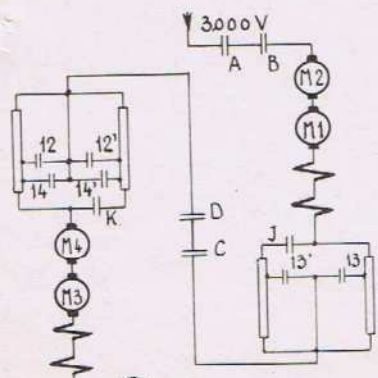
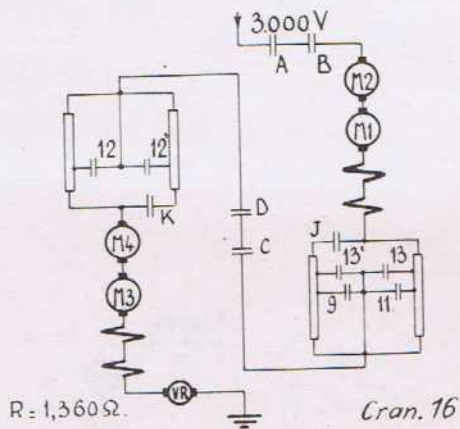
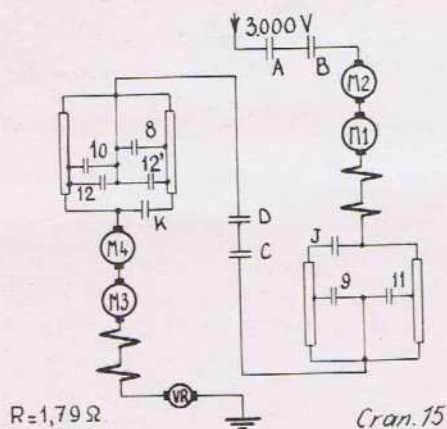
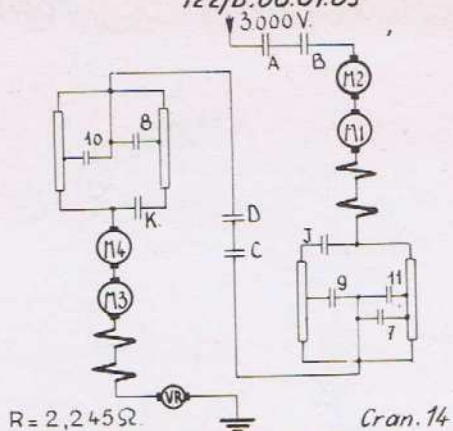
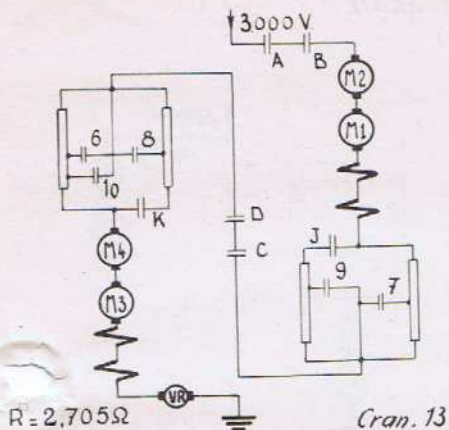
POSITIONS SERIE.

122/B.00.01.02

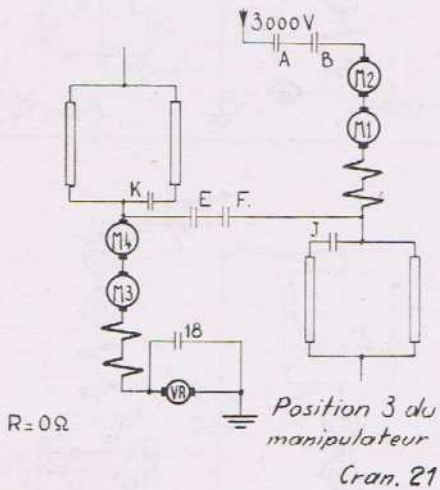
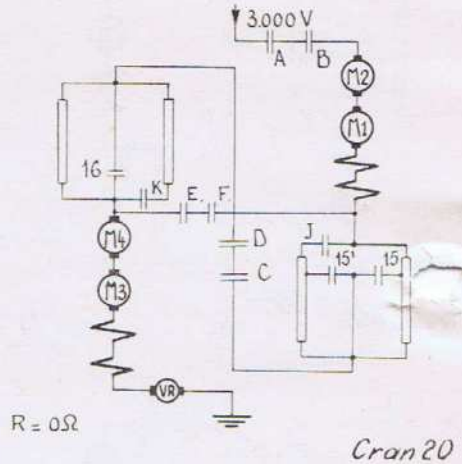
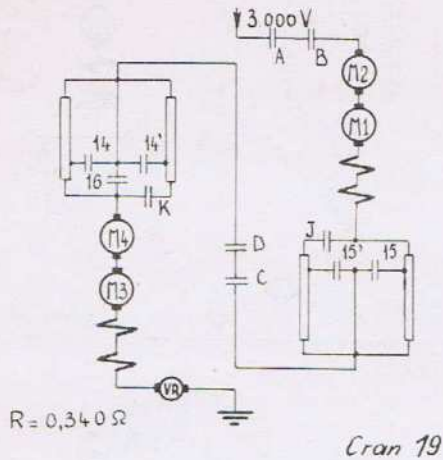


POSITIONS SERIE.

122/B.00.01.03

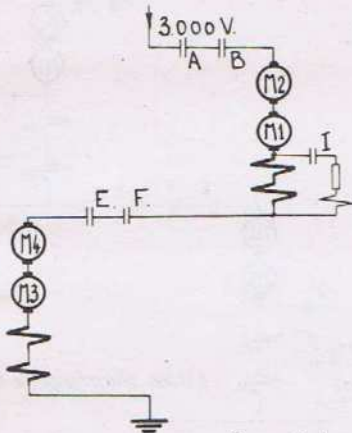


POSITIONS SERIE.

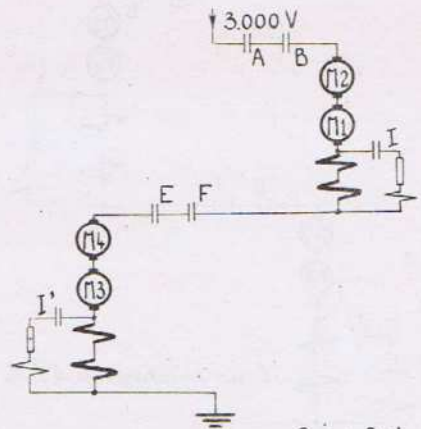


PROCESSUS DU SHUNTAGE SERIE.

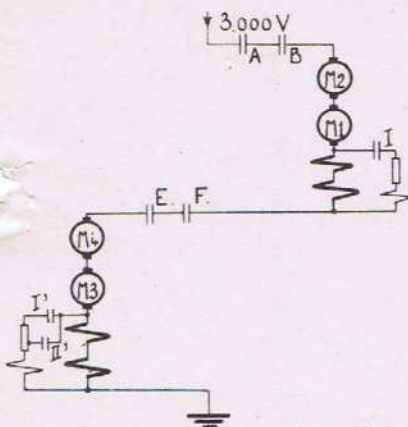
Cas de shuntage à 47 %.



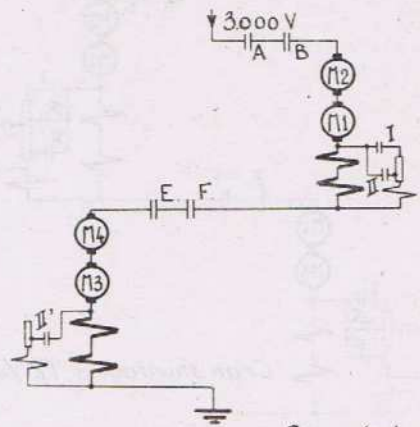
Cran. 1 sh.



Cran. 2 sh.



Cran. 3 sh.

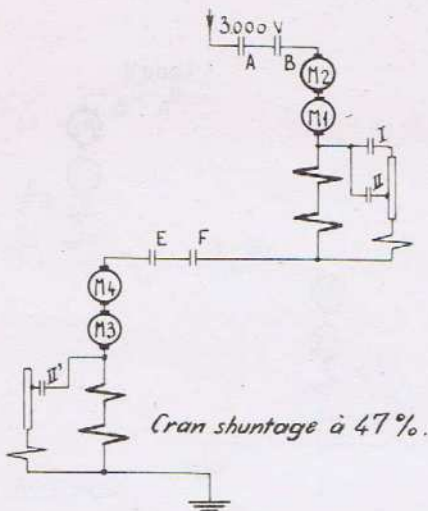


Cran. 4 sh.

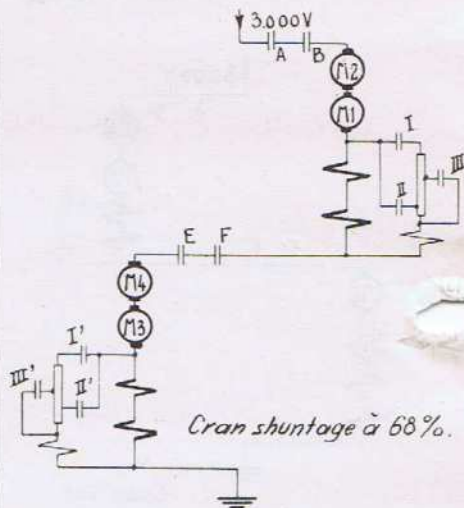
Position 4 du manipulateur.

POSITIONS DE SHUNTAGE SERIE.

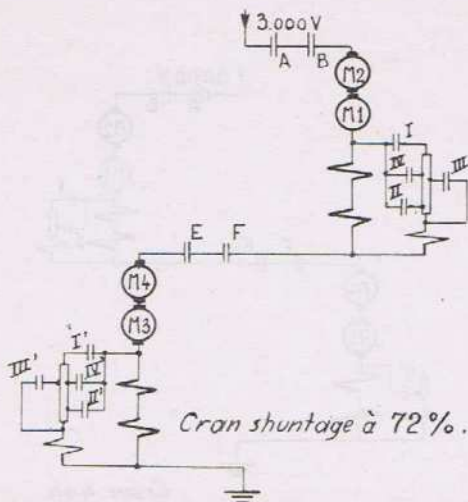
122/B.00.01.06



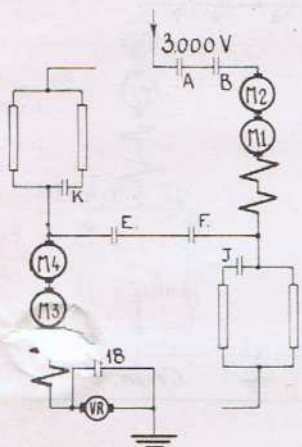
Position 4 du manipulateur.



Position 5 du manipulateur.

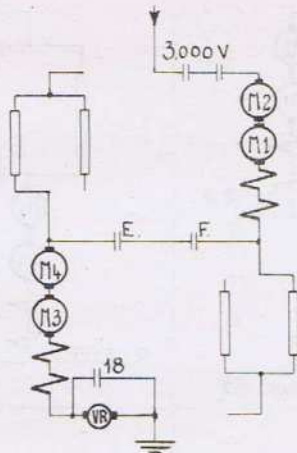


Position 6 du manipulateur

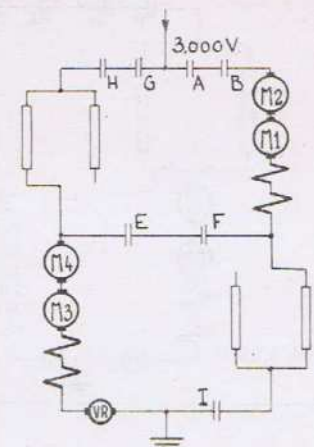


$R = 0\Omega$ Cran. 21

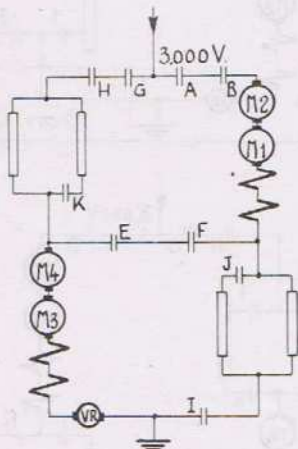
Fin série.



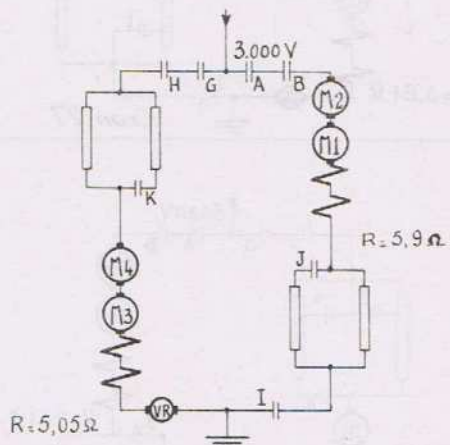
Cran. 22



Cran. 23



Cran. 24



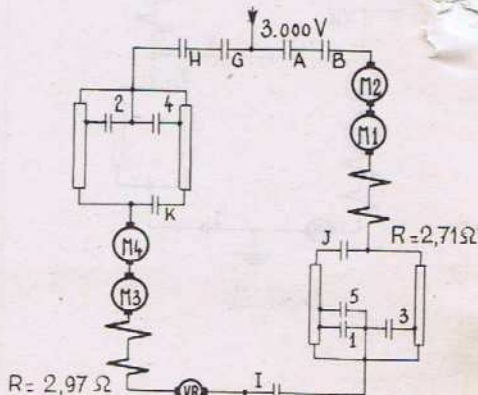
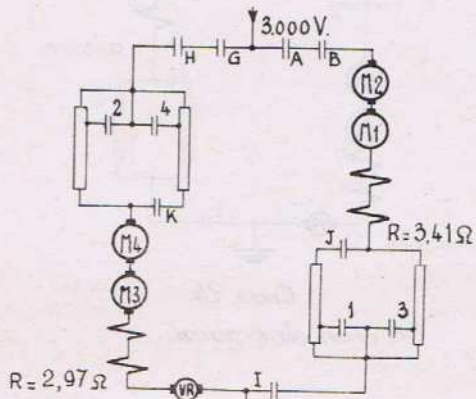
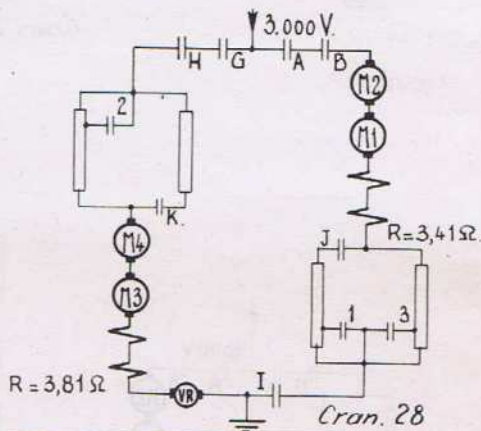
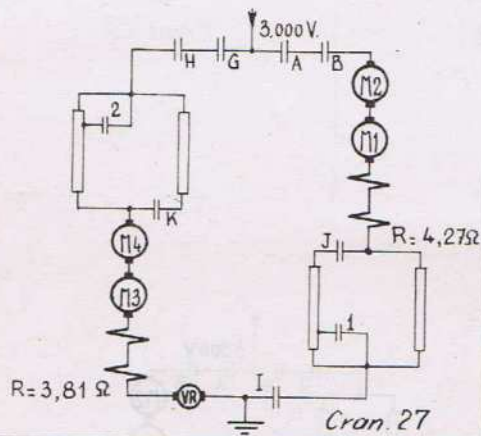
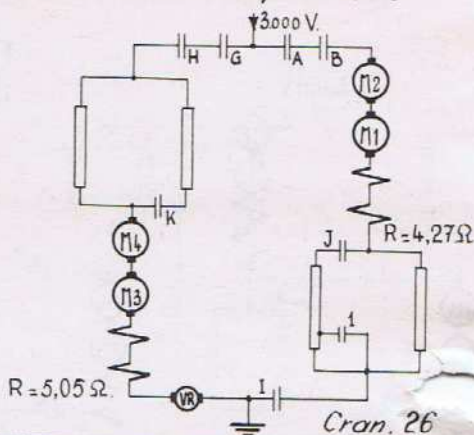
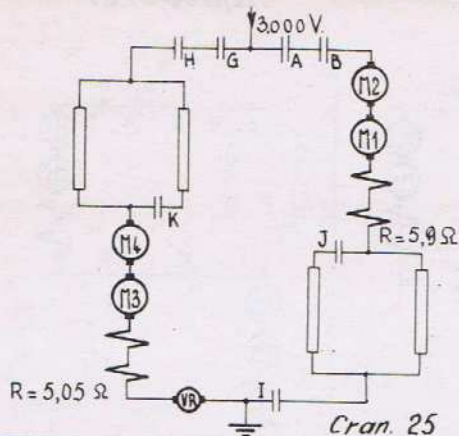
$R = 5,05\Omega$

Cran. 25

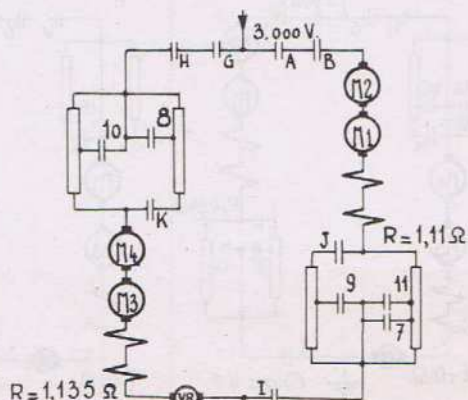
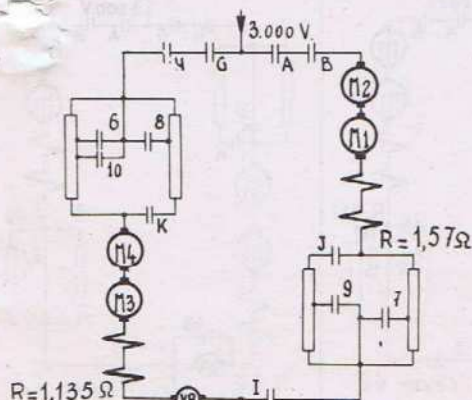
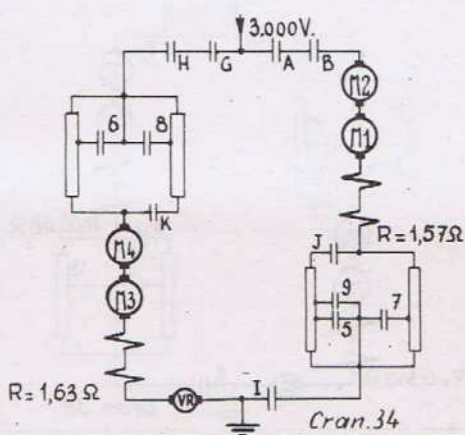
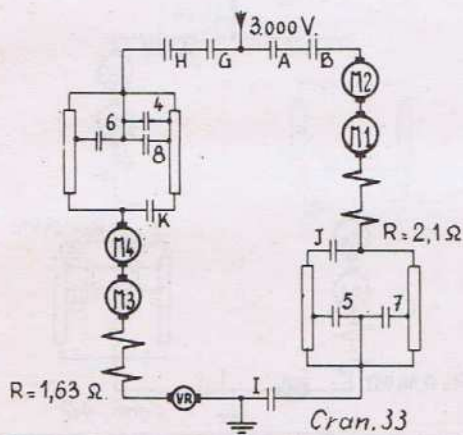
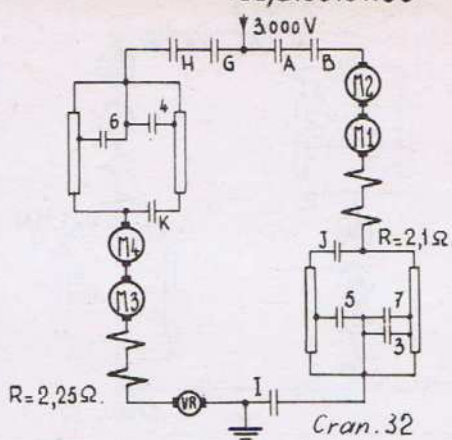
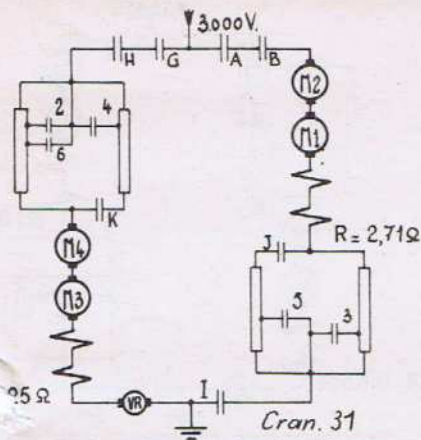
1^{re} cran série-paral.

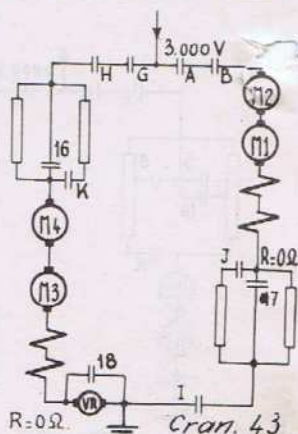
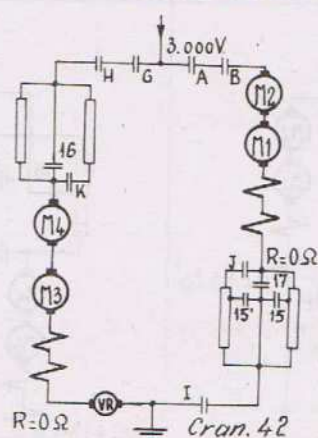
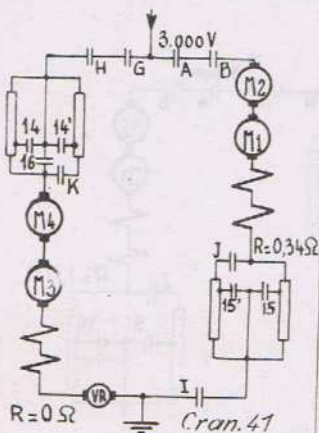
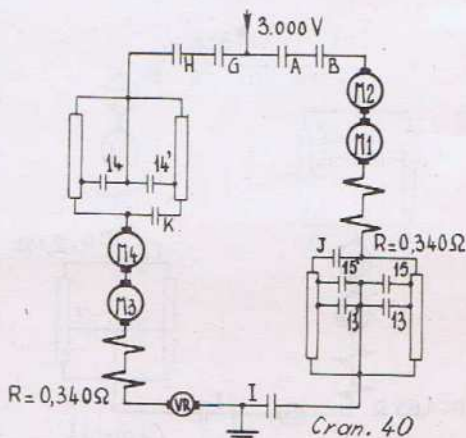
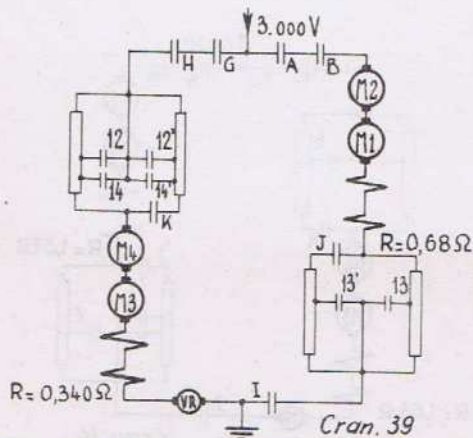
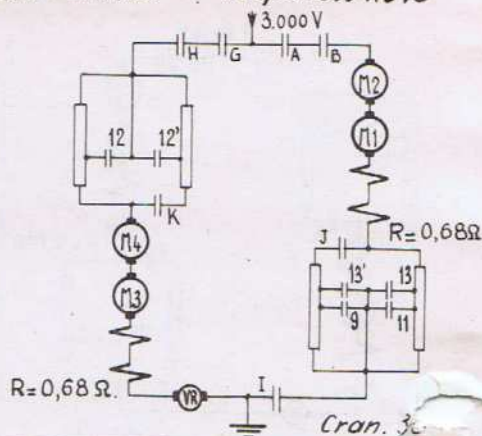
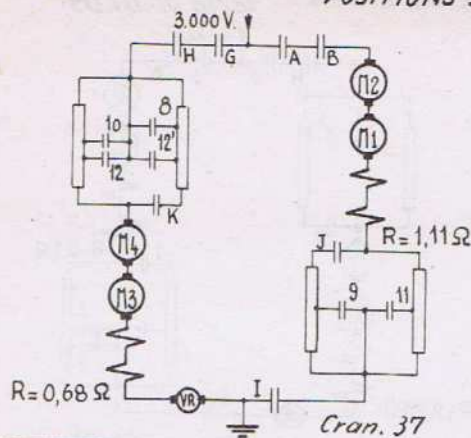
POSITIONS SERIE-PARAL.

122/B.00.01.08

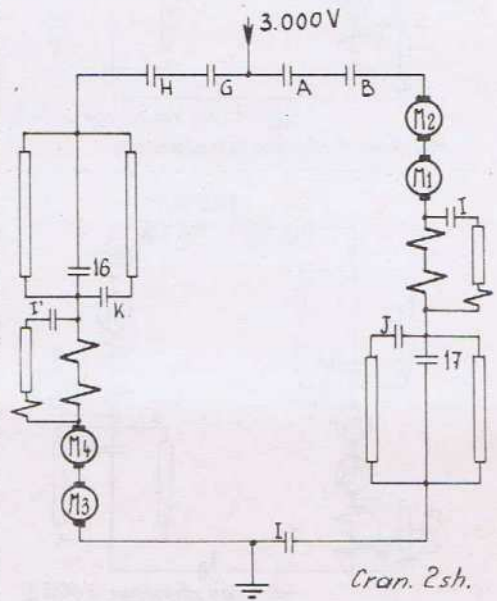
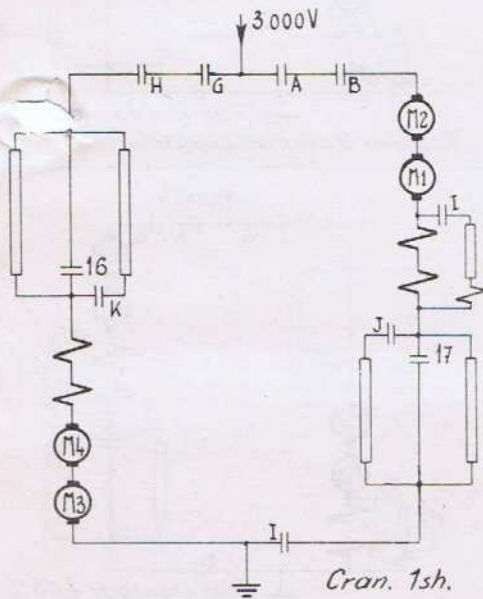


POSITIONS SERIE-PARAL. 122/B.00.01.09



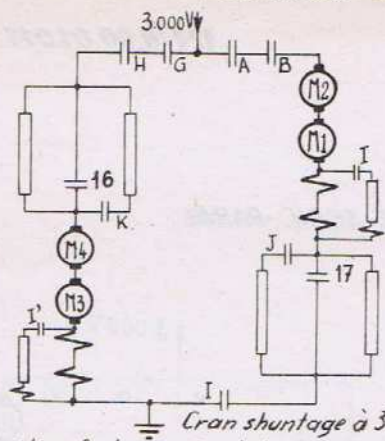


PROCESSUS DU SHUNTAGE SERIE-PARAL.

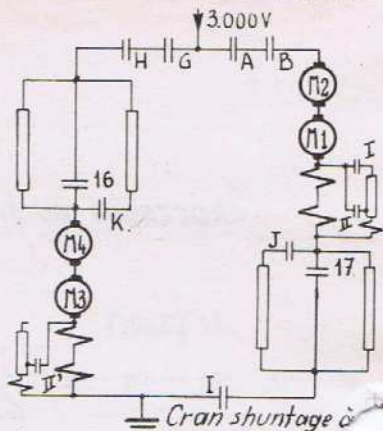


Position 8 du manipulateur.

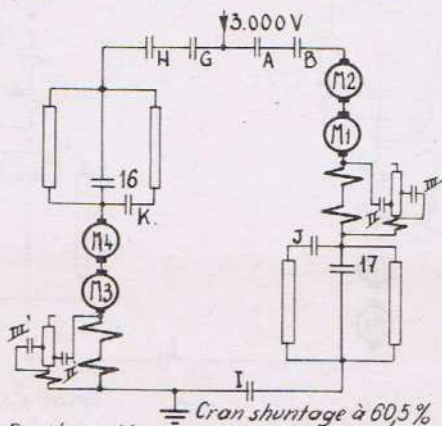
Shuntage à 34 %.



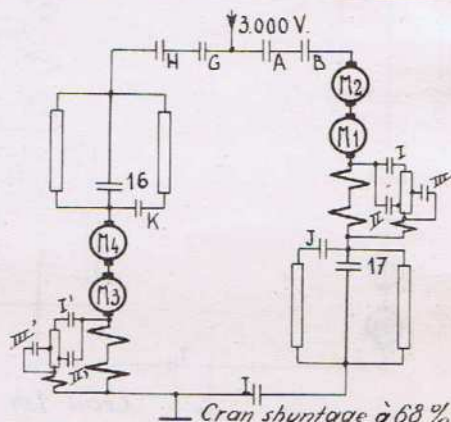
Cran shuntage à 34%
Position 8 du manipulateur.



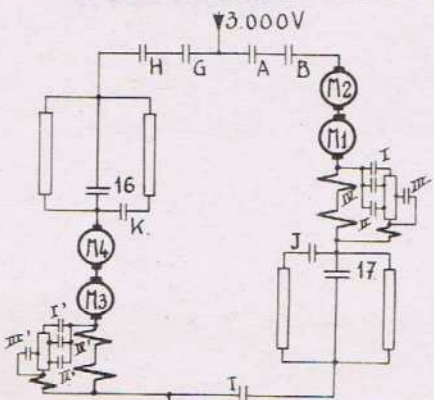
Cran shuntage à 46%
Position 9 du manipulateur.



Cran shuntage à 60,5%
Position 10 du manipulateur.



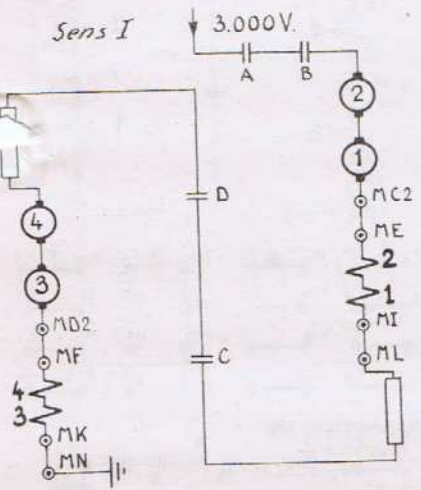
Cran shuntage à 68%
Position 11 du manipulateur.



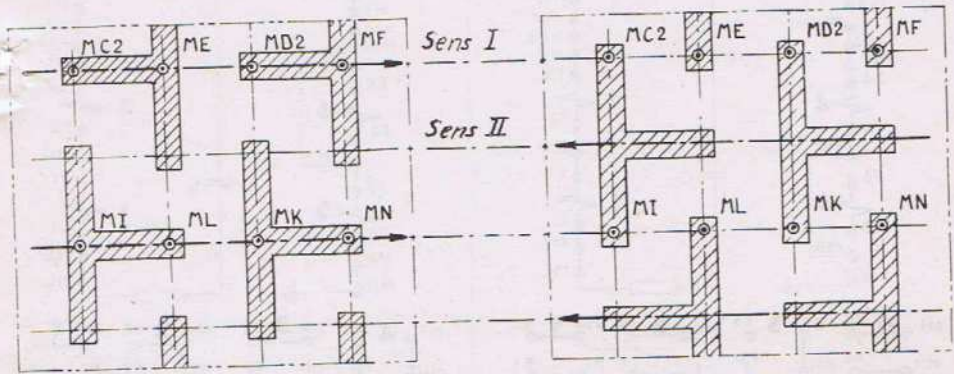
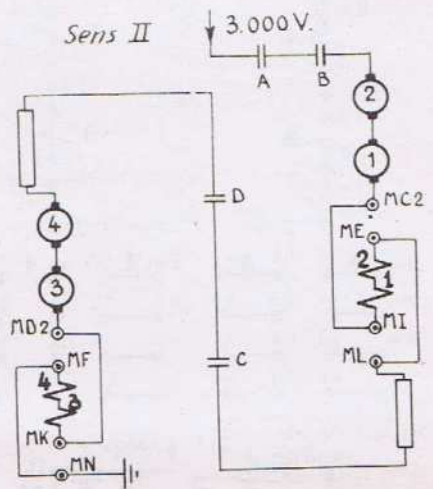
Cran shuntage à 72%
Position 12 du manipulateur.

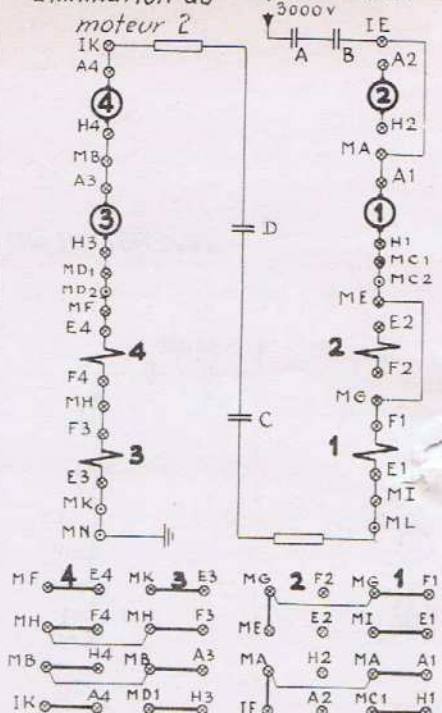
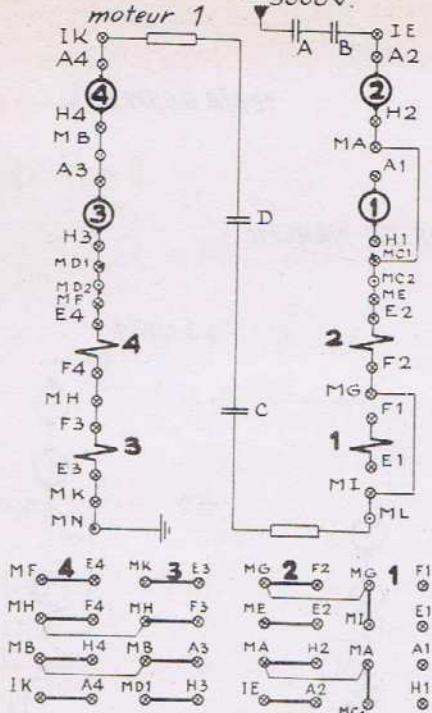
INVERSEUR DU SENS DE MARCHE.

Sens I



Sens II



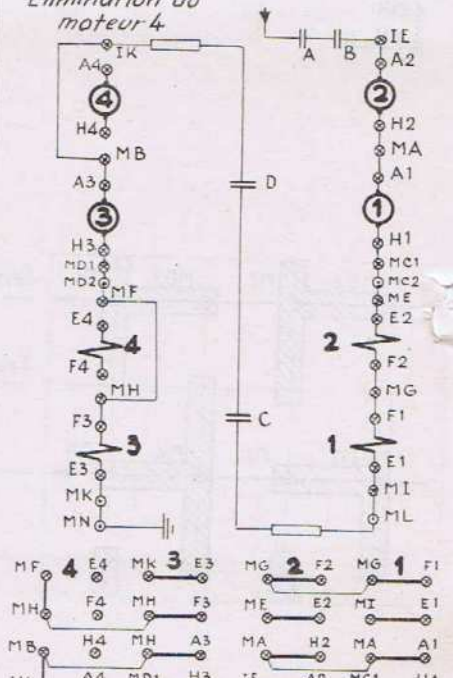
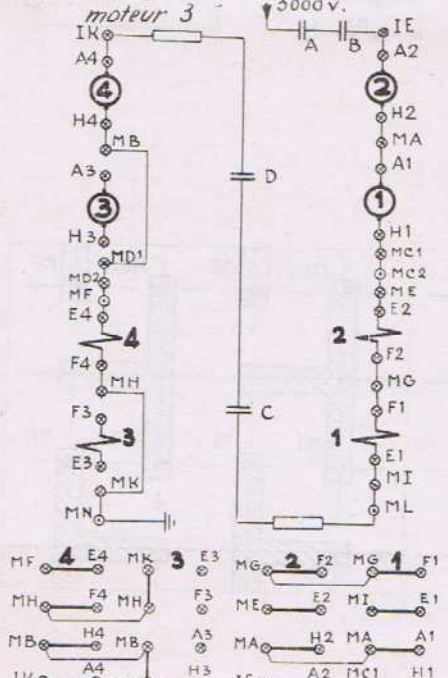


Elimination du

3000 v.

Elimination du

3000 v.



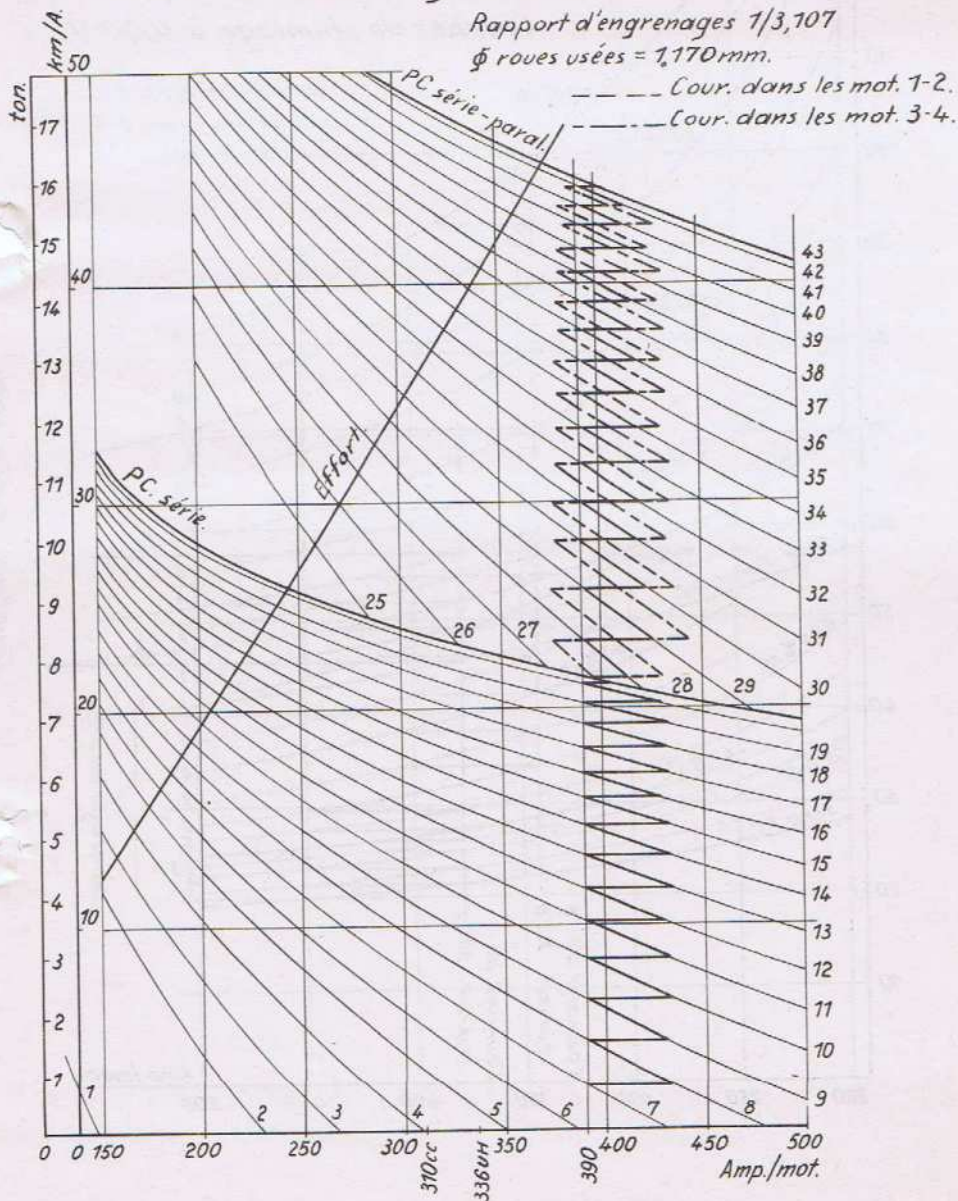
122/F.02.01.11

Loco. Bo Bo type 122.

Courbes de démarrage à 3000 V.

Rapport d'engrenages 1/3,107

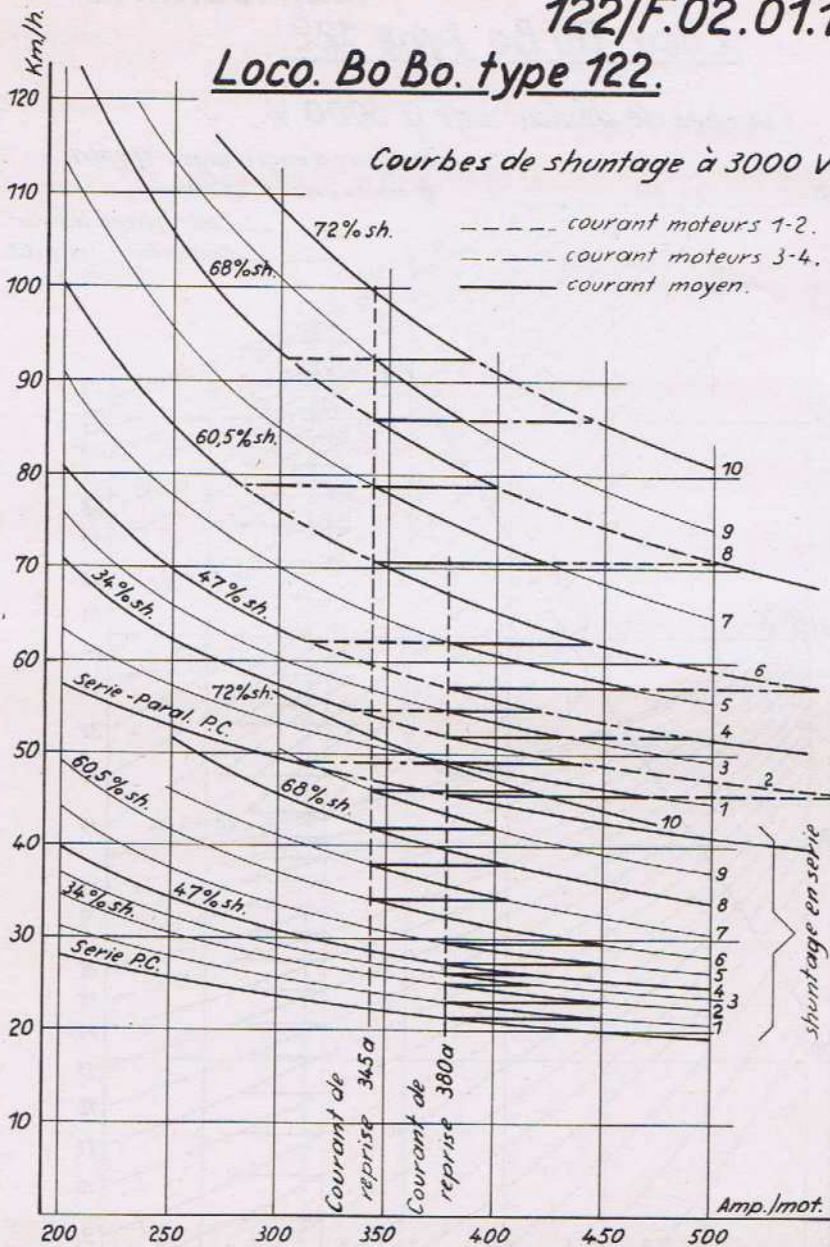
φ roues usées = 1,170mm.



122/F.02.01.12

Loco. Bo Bo. type 122.

Courbes de shuntage à 3000 V



Loco. Bo Bo type 122. 122/F.U. 02.11

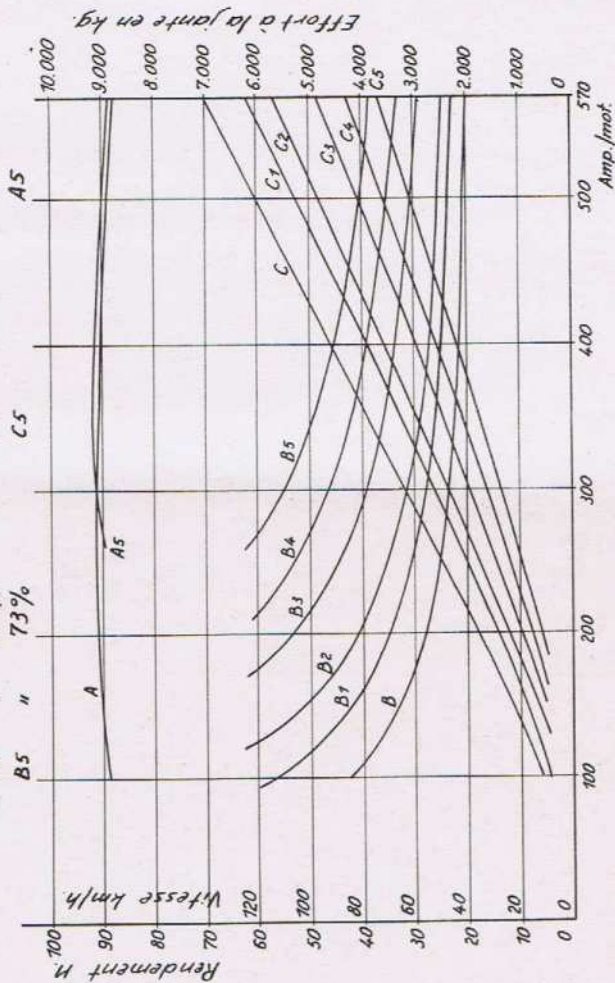
Courbes caractéristiques du mot. CF 729 N avec roues usées (ϕ 1170 mm)
Tension 3.000/2 V. Rapport d'engrenages 1/3,107

Vitesse Effort de traction Rendement

B Plein champs
B1 Shunté 33%
B2 " 46%
B3 " 61%
B4 " 68%
B5 " 73%

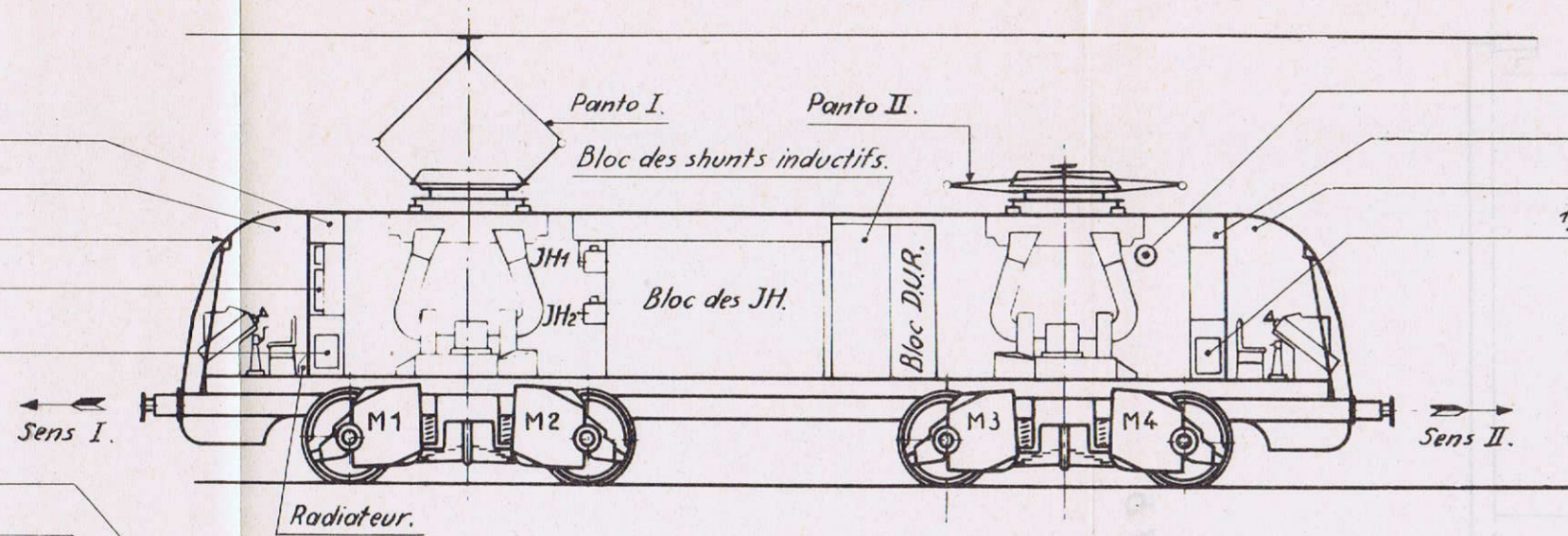
C
C1
C2
C3
C4
C5

A





Résist. démarrage des groupes auxil.
 Cabine I.
 Signalisation du JH1.
 Régulateur de tension.
 1/2 batterie d'accumulateurs.

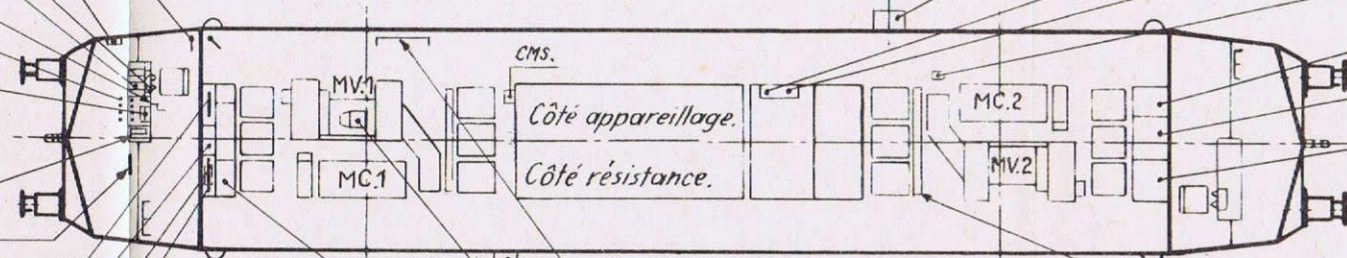


Perche de mise à la terre.
 Résist. démarrage des groupes auxil.
 Cabine II.
 1/2 batterie d'accumulateurs.

Robinetts du frein.
 Manomètres et Téléc.
 Manipulateurs.
 Voltmètres - Ampèremètres.
 Commande manuelle.
 Lampes de signalisation.
 Boîte à boutons-poussoirs.

Commande antipatinage.
 Tableautin fusibles
 Tableau d'asservissement TA.1
 Régulateur de tension.
 Régulateur de pression.
 Tableau de batterie.

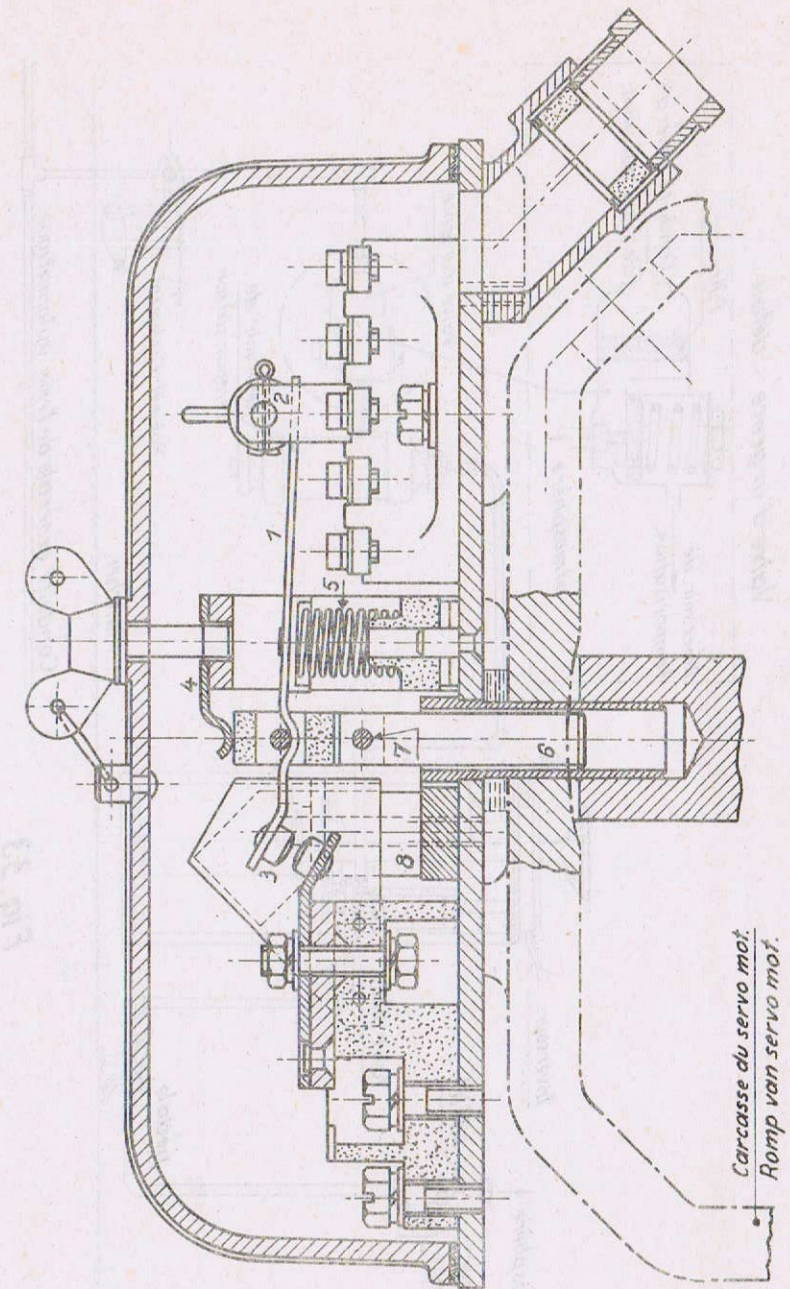
Fig. 42



Signaux abaiss. pantos.
 Emetteur téléc.
 Génératrice auxiliaire.
 Armoire à outillage.

Autovariable.
 Sectionneur de mise à la terre.
 Boîte à clefs
 Robinet de verrouillage des pantos.
 Armoire vestiaire.
 Armoire pneumatique.
 Tableau d'asservissement TA.2.

Lampe vigilance.
 Tableau pneumatique.



Carcasse du servo mot.
 Remp van servo mot.

Fig. 32

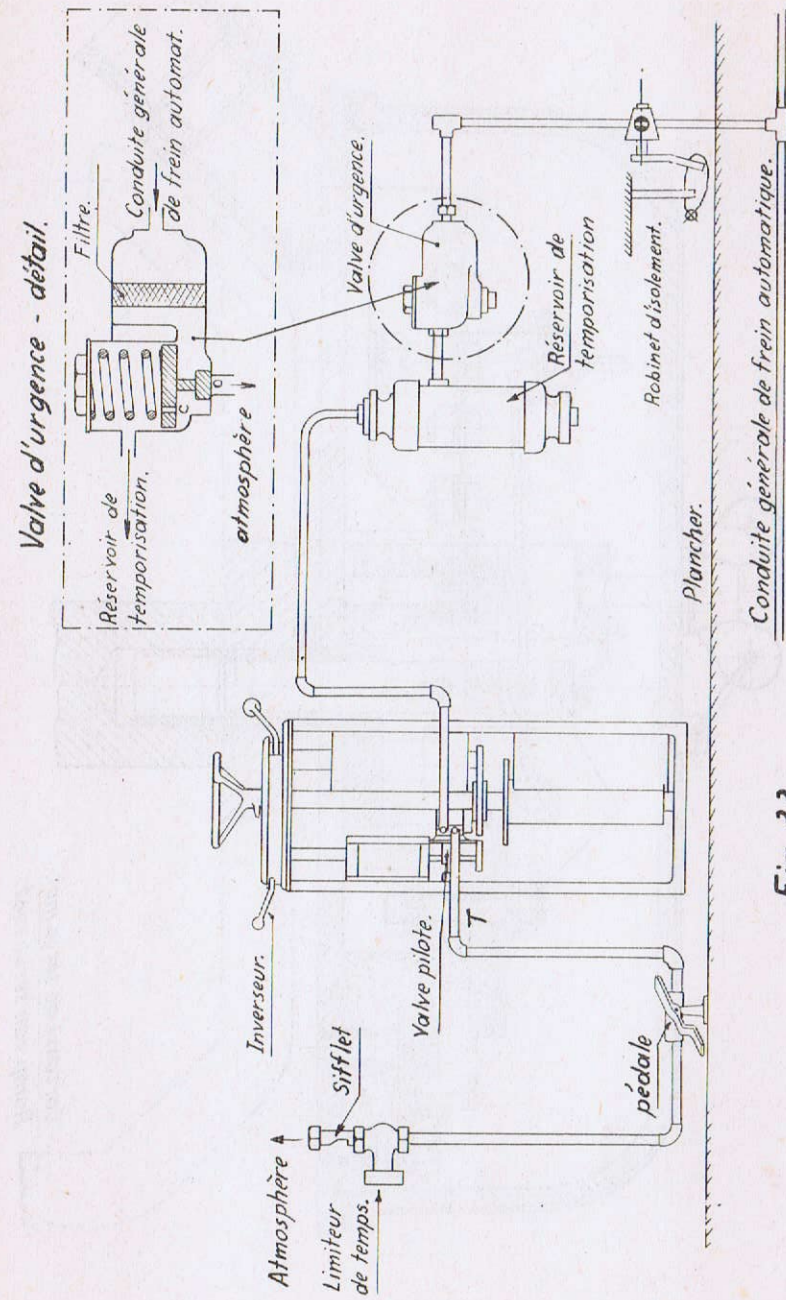


Fig. 33

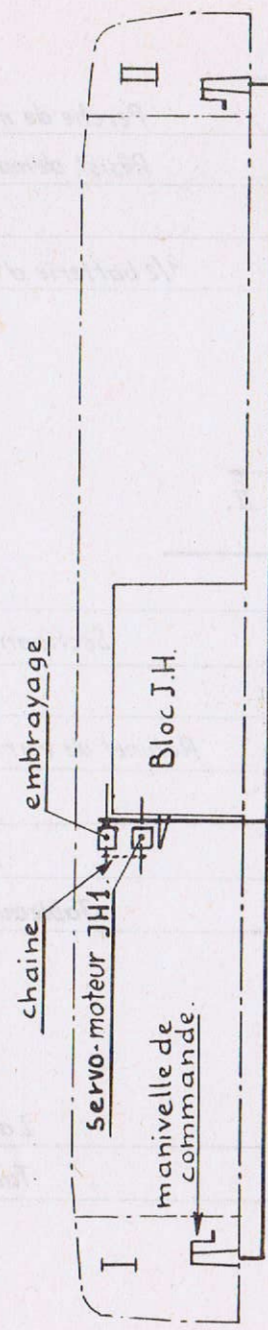
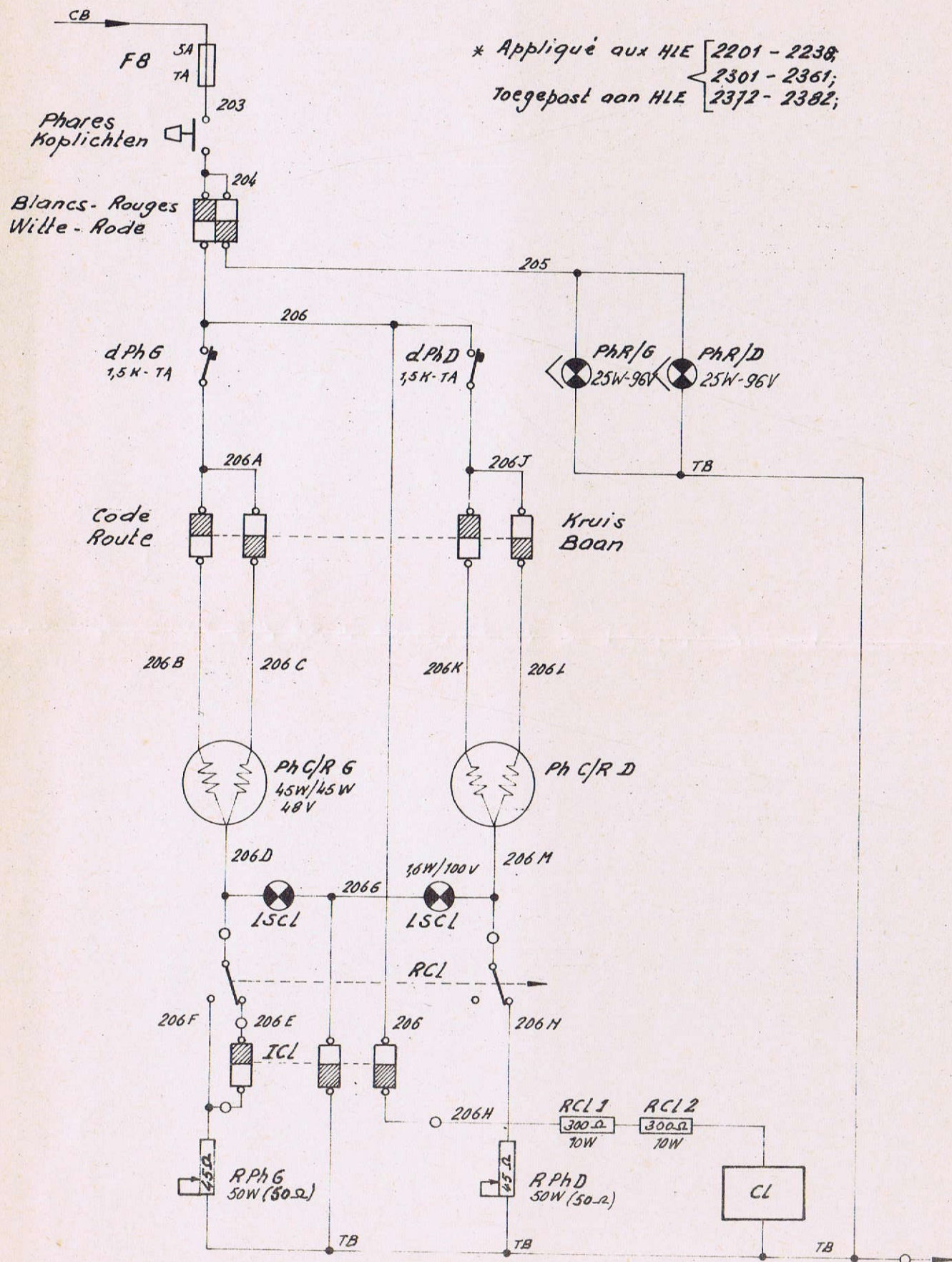


Fig. 41 b

HLE 22*23*24



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

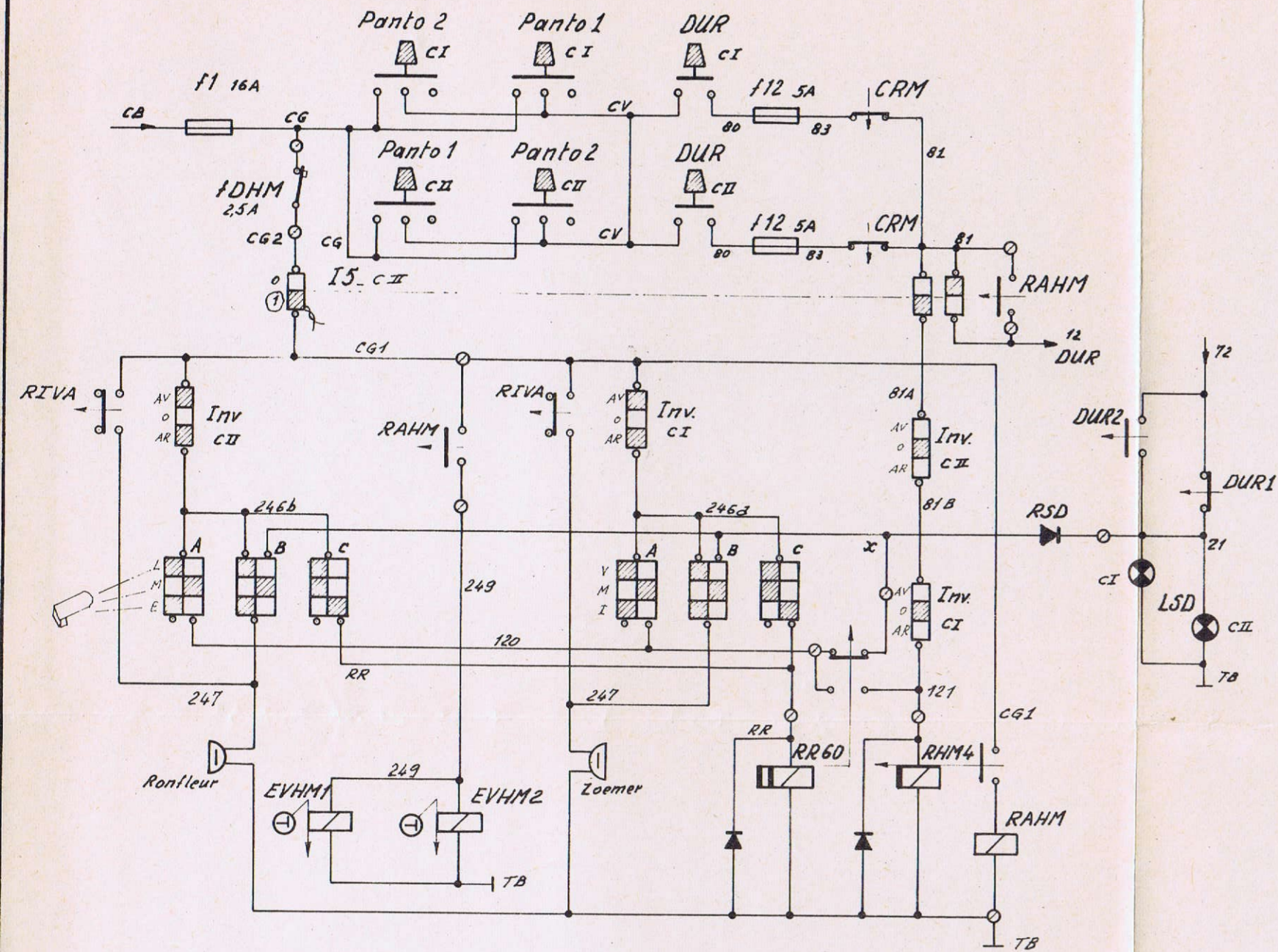
HLE Reeks 22
**Schema's van kopluchten
 kruis / dim
 met pinker**

HLE Serie 22
**Schéma des phares
 code / route
 avec clignoteur**

Schaal Echelle	Toleranties Tolérances	Oppest Etabli	Datum Date	Naam Nom	Visa
		Getekend Dessiné	07-02-72	VanButseele	<input checked="" type="checkbox"/>
		Nagezien Vérifié	08-02-72	Vaes R	
		Goedgek Approuvé			

C/D 00.01.08.

(B) Bureau MA 24-12



Légende

- Relais électro-pneumatique, retardé de 60 secondes au déclenchement.
- Relais électro-pneumatique, retardé de 4 secondes au déclenchement.
- Relais auxiliaire du relais RHM
- Electro-valve inverse type Jaspar, du dispositif d'homme-mort
- Borne sur tableau à relais dans PC II

RR 60

- Elektropneumatisch relais, 60 seconden vertraagd bij het uitschakelen

RHM

- Elektropneumatisch relais, 4 seconden vertraagd bij het uitschakelen

RAHM

- Hulprelais v.h. relais RHM

EVHM 1/2

- Omgekeerde elektroklep, type Jaspar, v.h. dodemansstelsel.

⊙

- Klem op relaisbord in cab. II.

Verklaring

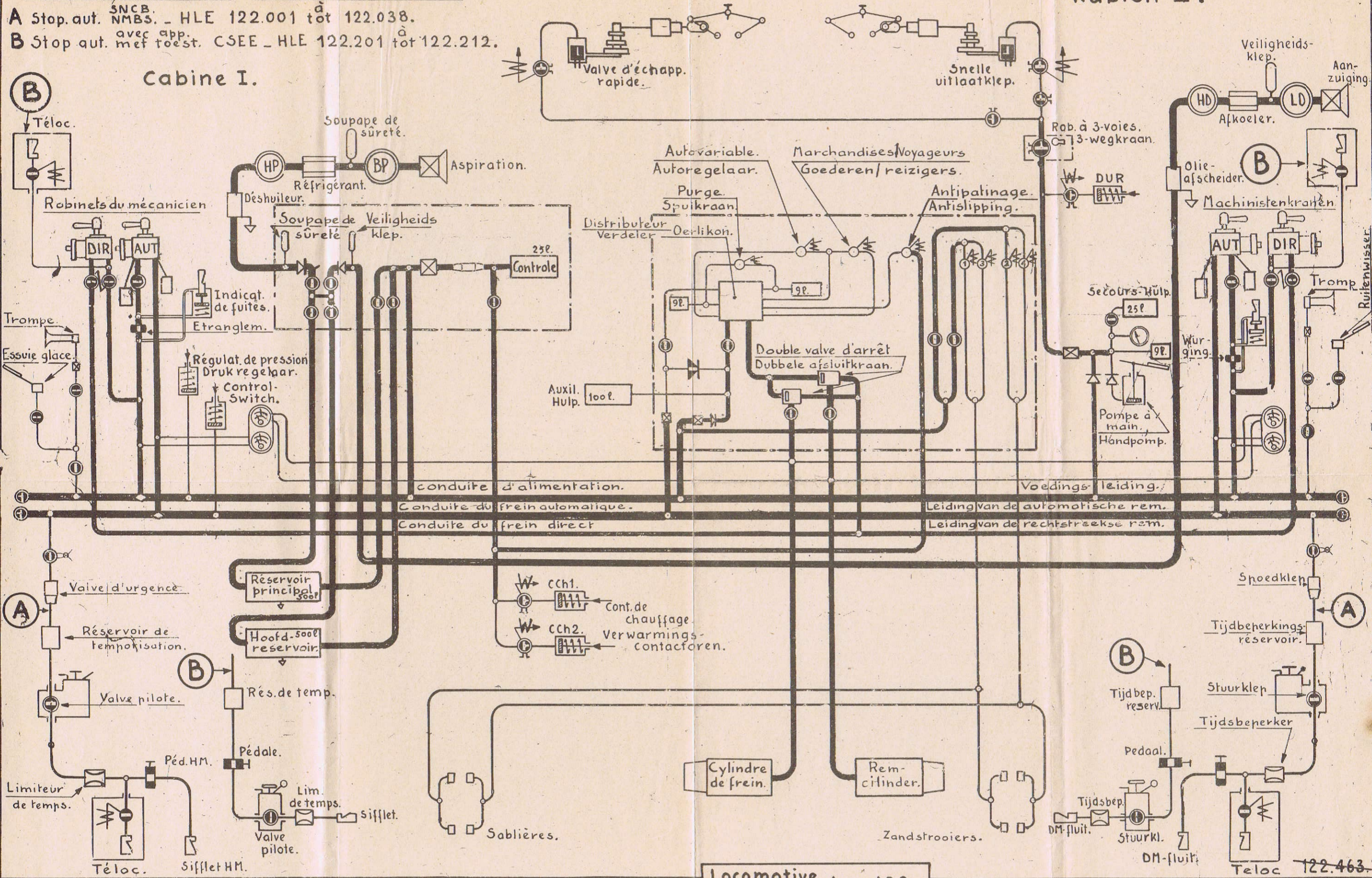
G	⊙	Cliché refait	Cliché hermaakt		16-11-72
Visa	Modifications		Wijzigingen		Date Datum
HLE Série 22/23			HLE Reeks 22/23		
Dispositif d'homme-mort temporisé Schéma			Dodemansstelsel met vertraagde werking Schema		
Echelle Schaal		Tolérances Toleranties		Date Datum	Nom Naam
				11-72	Abts. C.
				11-72	De Grande
					Vaes R
				Format Formaat A3	
				122/D.12.00.01	
				B Bureau 24-12	

Disposition schématique - Schematische opstelling.

A Stop aut. ^{SNCB} NMB. - HLE 122.001 tot 122.038.
 B Stop aut. ^{avec app.} met toest. CSEE - HLE 122.201 tot 122.212.

Kabien II.

Cabine I.



- ⊖ - Robinet d'isolement - Afzonderingskraan.
- ⊕ - Robinet d'arrêt - stopkraan.
- ⊗ - Electrovalve - Electroklep.
- ⊙ - Robinet plombé - Gelode kraan.
- ↓ - Robinet de purge - Spuikraan.

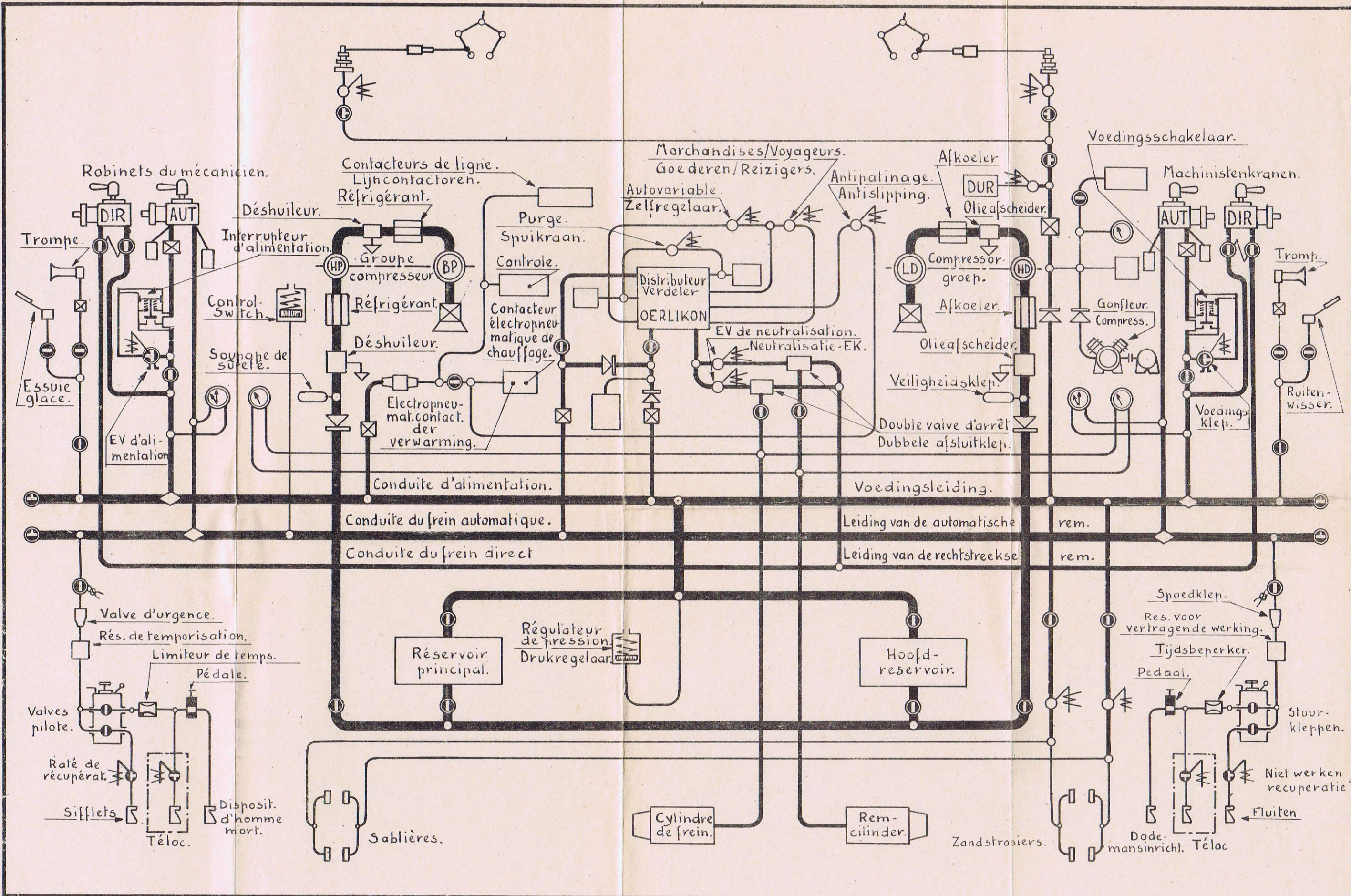
- ⊞ - Soupape d'alimentation - Voedingsklep.
- ⊞ - Clapet de retenue - Weerhoudingsklep.
- ⊞ - Filtre - Filter.
- ◇ - Poche de vidange - Spuizak.
- - Reservoir.

Locomotive type 122.
 Locomotief type 122.
 HLE 122.001 à 122.038.
 122.201 tot 122.212.
 Modifications: a: Ajouté Tél. aliment. frein.
 Wijzigingen: b: 10-10-58. R.
 c: 10-1-59. K.

Schéma de la tuyauterie d'air.
 Schema van de luchtleiding.

122/G.00.01.01.

122.463.



- ⊙ Robinet d'isolement - Afzonderingskraan.
- ⊕ Robinet à 3 voies - Driewegkraan.
- ⊖ Electrovalve - Elektroklep.
- ⊗ Robinet plombé - Gelode kraan.
- ⊘ Robinet de purge - Spuikraan.

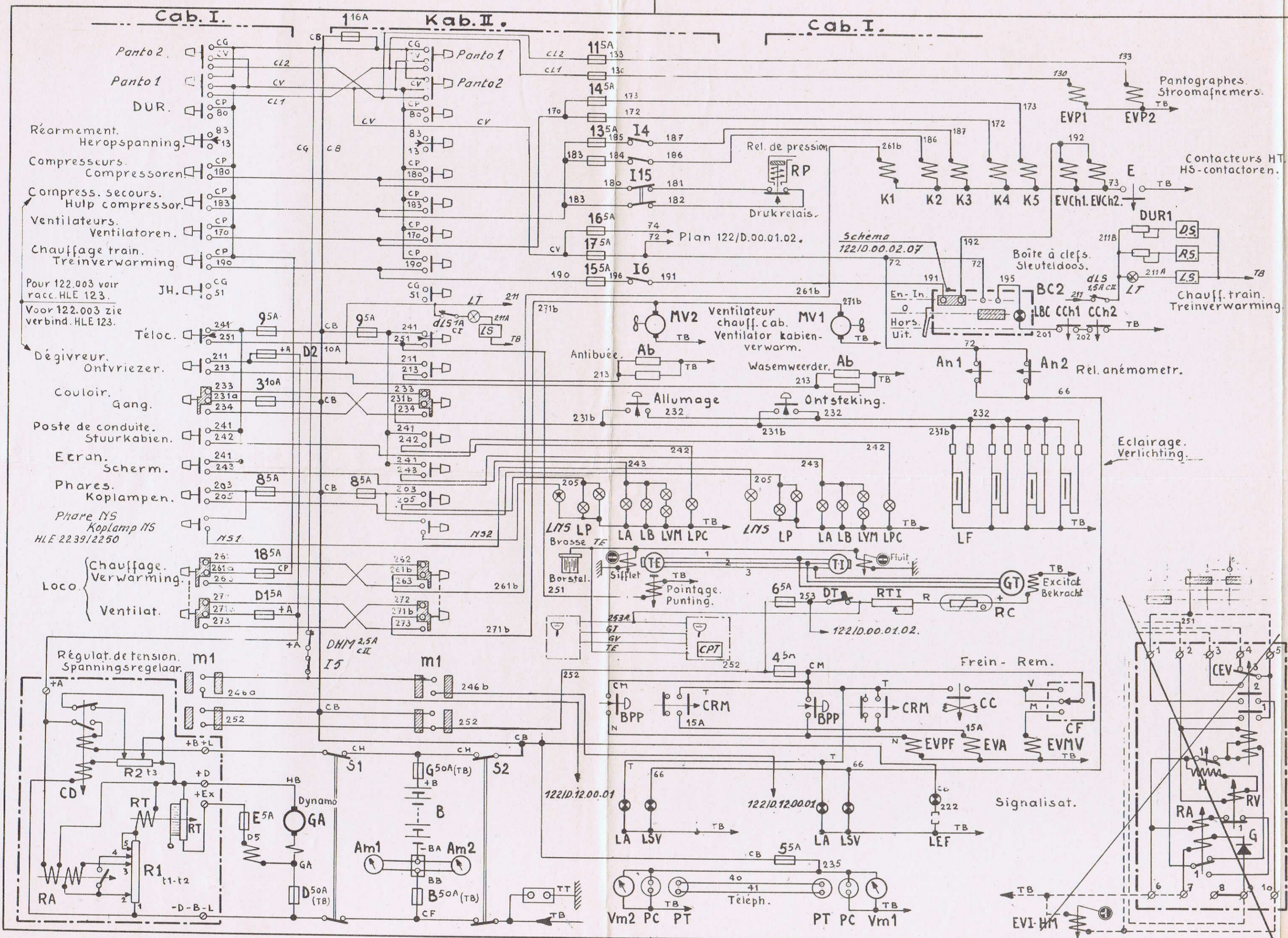
- ⊞ Soupape d'alimentation - Voedingsklep.
- ⊟ Clapet de retenue - Weerhoudingsklep.
- ⊠ Filtre - Filter.
- ◇ Poche de vidange - Spuizak.
- Réservoir - Reservoir.

Locomotives type 123
Locomotieven type 123

Modifications / Wijzigingen:
 a) Mod. Gew.
 b) Mod. Gew.
 c) 9-8-58, v.

Schéma de la tuyauterie d'air
 Schema van de luchtleiding.

123.463.4

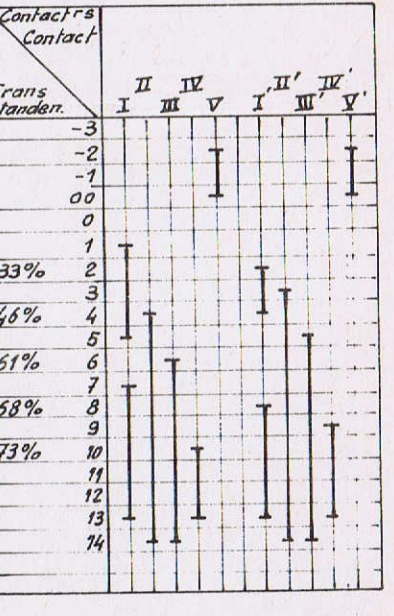
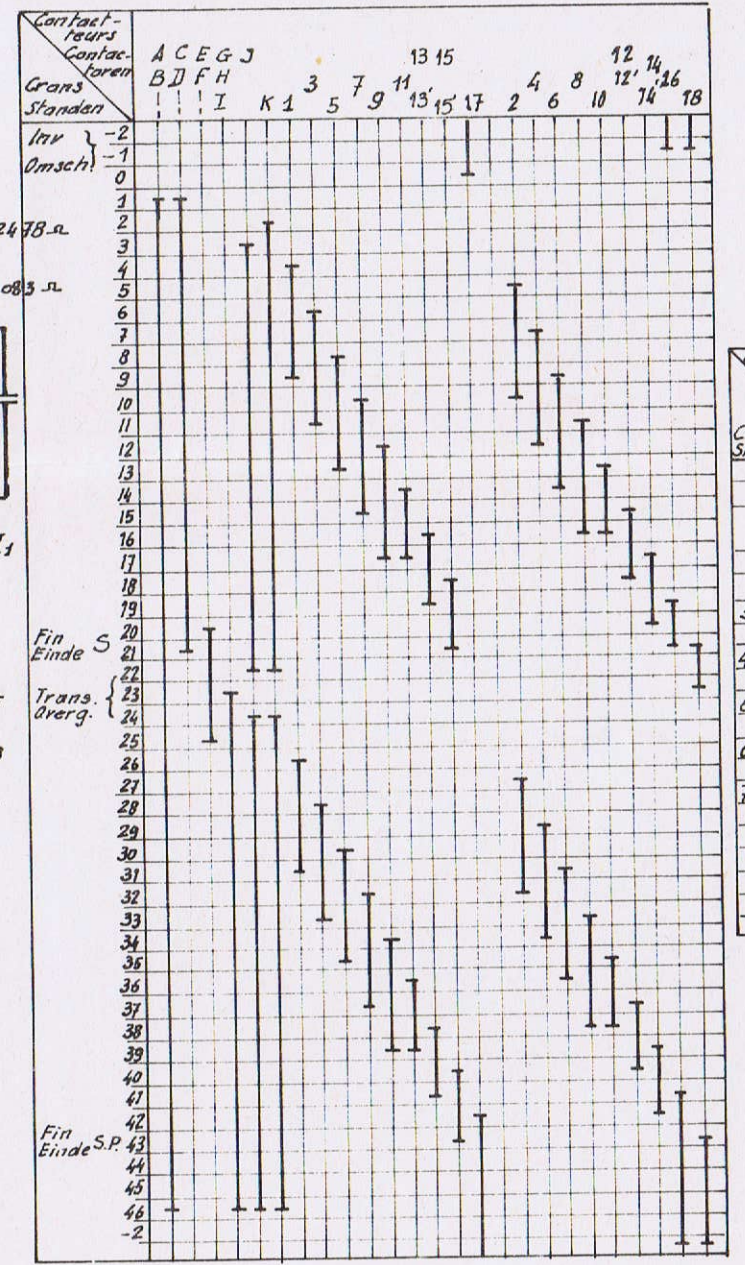
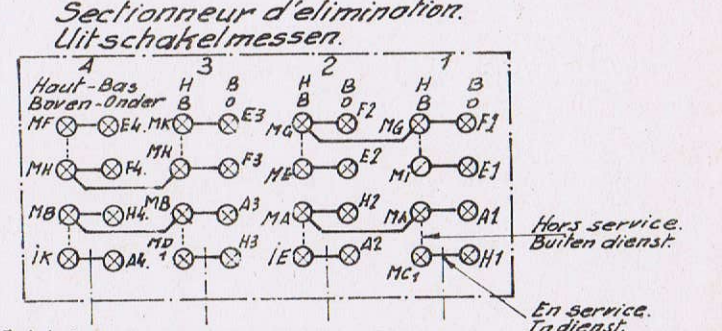
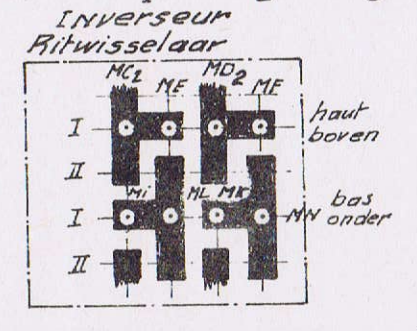
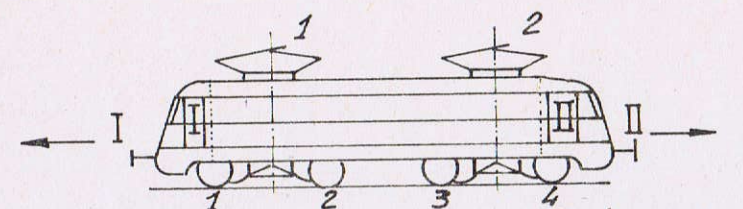
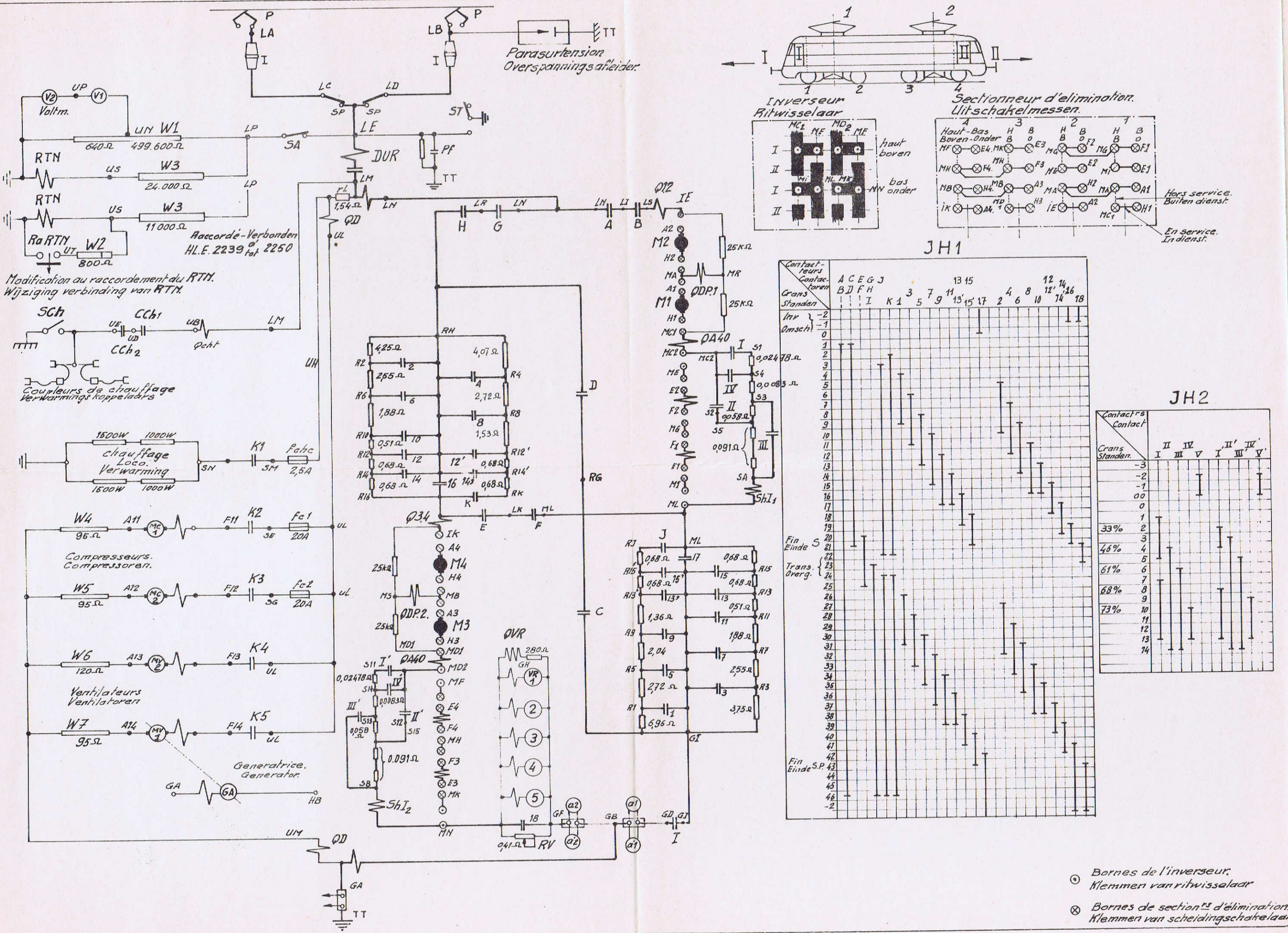


Légende.	Appareil. Toestel.	Verklaring.
Contacteurs-HT.		HS-contactoren.
Chauffage loco.	K1	Verwarming locomot.
Compresseur.	K2-K3	Compressor.
Ventilateur.	K4-K5	Ventilator.
Chauffage train (electro-valve)	EVCh1-EVCh2	Treinverwarming (electroklep.)
Interlock cont. de chauff. train.	CCh1-CCh2	Interlock verwarmingscontacteur trein.
Tachymètre.		Tachymeter.
Téloc enregistreur	TE	Registrerende Téloc.
Téloc indicateur.	TI	Aanwijzende Téloc.
Génératrice Téloc.	GT	Generator Téloc.
Résistance réglable p ^r GT	RTI	Regelbare 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 uitschakelaar.
Régulat. de tension.	RT	Spanningsregelaar.
Régulat. de débit.	RA	Debietregelaar.
Frein.		Rem.
Bouton pouss. purge cyl.	BPP	Druknop spuiling cyl.
Cont. du rob. de mécanicien (AUT.)	CRM	Cont. van machinistenkraan.
Contacteur centrifuge.	CC	Centrifugale contacteur.
Commutateur de frein.	CF	Commutator van de rem.
Electro-valve autovariable.	EVA	Electroklep zelfregelaar
" " marchand-voyageurs.	EVMV	" goederen-reizigers.
" " purge des cylindres.	EVPF	" spuiling cylinders.
Lampes.		Lampen.
Eclairage.		Verlichting.
Phares CID.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-	-Wakzaamheid-
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	LNS	Koplamp NS
Inverseur du manipulat.	m1.	Keerkrak van manip.
Lanterne secour	LS	Noodlantaarn
Lanterne Disque rouge	DR-RS	Rode schijflantaarn
Eclairage Téloc	LT	Verlichting Téloc

Locomotive Serie Reeks 22.
 HLE 22.01 a 22.50
 Modifications. Wijzigingen. 1) 4-8-61. W. 2) 18-10-72

Schéma de commande. Bedieningschema. 122/D.00.01.01 *

122-282

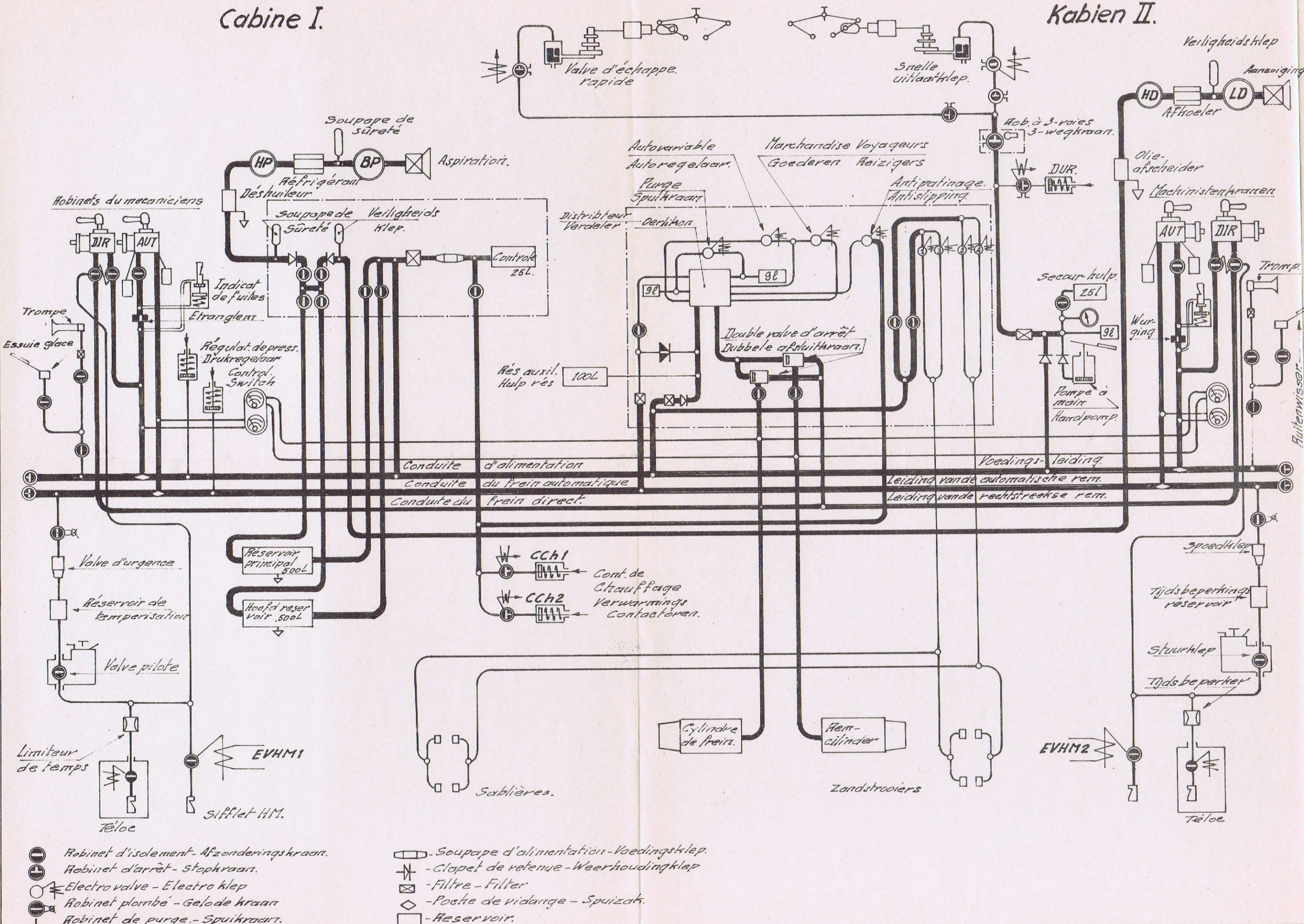


- Bornes de l'inverseur. Klemmen van ritwisselaar
- ⊗ Bornes de section d'elimination. Klemmen van scheidingschakelaar

k		Cliché refait.		Cliché hermaakt.		7-12-72
Visa		Modifications.		Wijzigingen.		Nº trav. Date. Nº werk. Datum.
H.L.E. 22 Schema circuits de puissance et auxiliaires à 300v. H.L.E. 2201 à 2250.				H.L.E. 22 Schema kracht en hulpstroom ketens 300v. H.L.E. 2201 tot 2250.		
Etabli. Opgesteld.	Date. Datum.	Nom Naam	Visa	122/A.00.01.01. Ⓟ MaA. Bur24-12.		
Dessine. Getekend.	7-12-72	Vandervorst.				
Vérifié Nagezien.		Voets.R.				
Approuvé Goedgek.						

Cabine I.

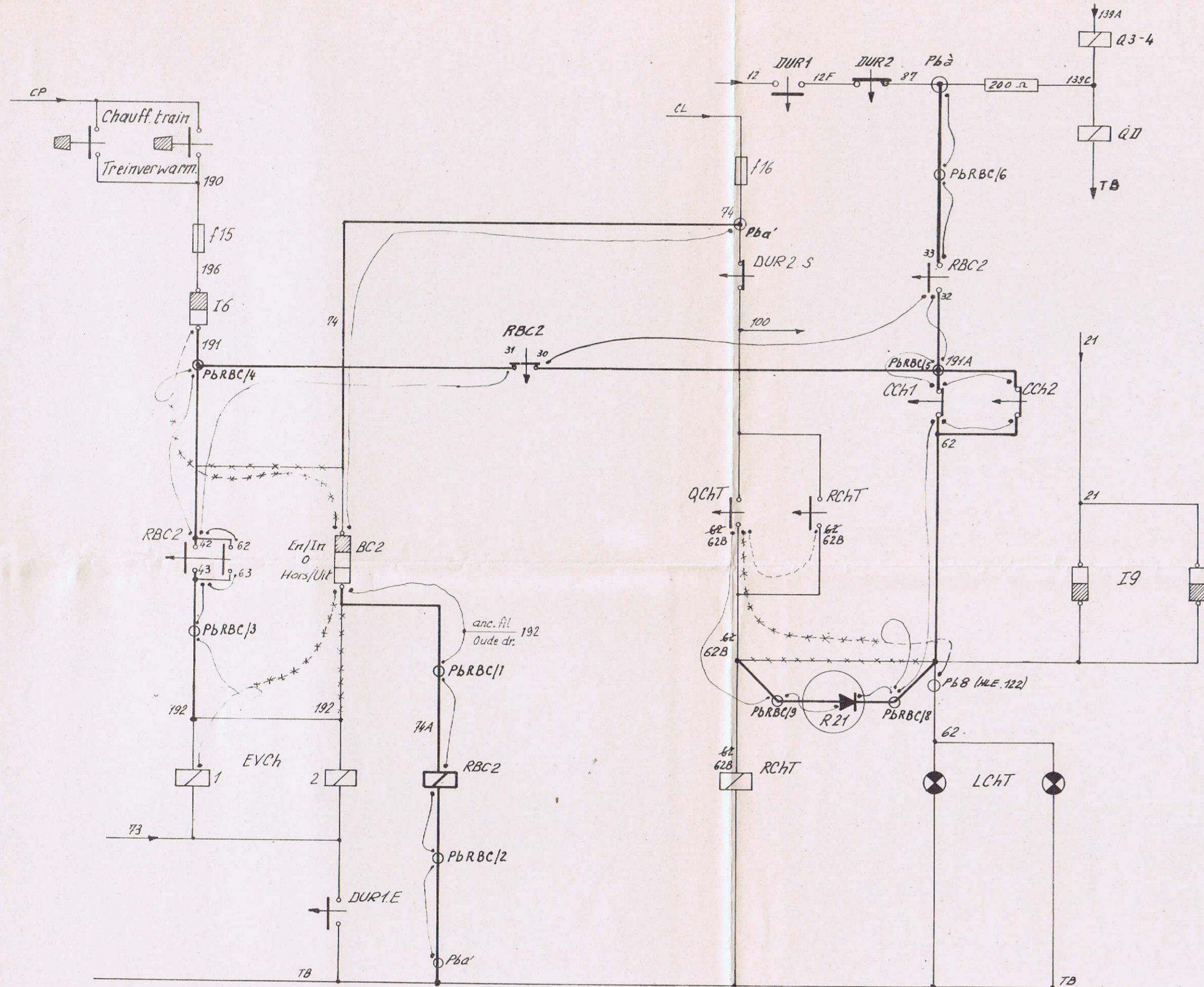
Kabien II.



- Robinet d'isolement - Afzonderingskraan.
- Robinet d'arrêt - stopkraan.
- ⚡ Electro valve - Electro klep
- Robinet plombé - Gelode kraan
- ⬇ Robinet de purge - Spuikraan.

- ▭ - Soupape d'alimentation - Voedingsklep.
- ⚡ - Clapet de retenue - Weerhoudingklep
- ⊠ - Filtre - Filter
- ◇ - Poche de vidange - Spuizak.
- ▭ - Réservoir.

e	cliché refait.	cliché hermaakt	7-12 '72
Visa.	Modification.	Wijzigingen.	N°trav. Date. N°werk 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 Horn Naam Vandervorst Visa Vaes R.	
	122/G.00.01.01.		
	(B) MaA.Bur24.12.		



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

- Existant - - - - - Bestaand
- A enlever * * * * * Weg te 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 - fil 87	Vacc. LcHT aangeslot. achterkant DUR 1/2 dr. 87	3-11-70
B	Supprimé diode R20 et remplacé par contact RBC2	Diode R20 afgeschafte, en vervangen dr. contact RBC2	6-8-70
A	Corrigé contacts CCh1 et CCh2	Cont. CCh1 en CCh2 verbeterd	28-6-70

Visa	Modifications	Wijzigingen	Date Datum
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HLE Serie 22
Signalisation de la position du sectionn. de chauff. train
Schéma et câblage

HLE Reeks 22
Signalisatie van stand scheidings-schak. treinverwarm.
Schema en kablering

Echelle Schaal	Tolérances Toleranties	Etabli Opgest.	Date Datum	Nom Naam	Visa
		Dessiné Getekend	1-6-70	De Grande R.	T.
		Vérifié Nagezien		Vaes R.	R.
		Approuvé Goedgek.			

122/DOO.02.07

(B) MA 24-12