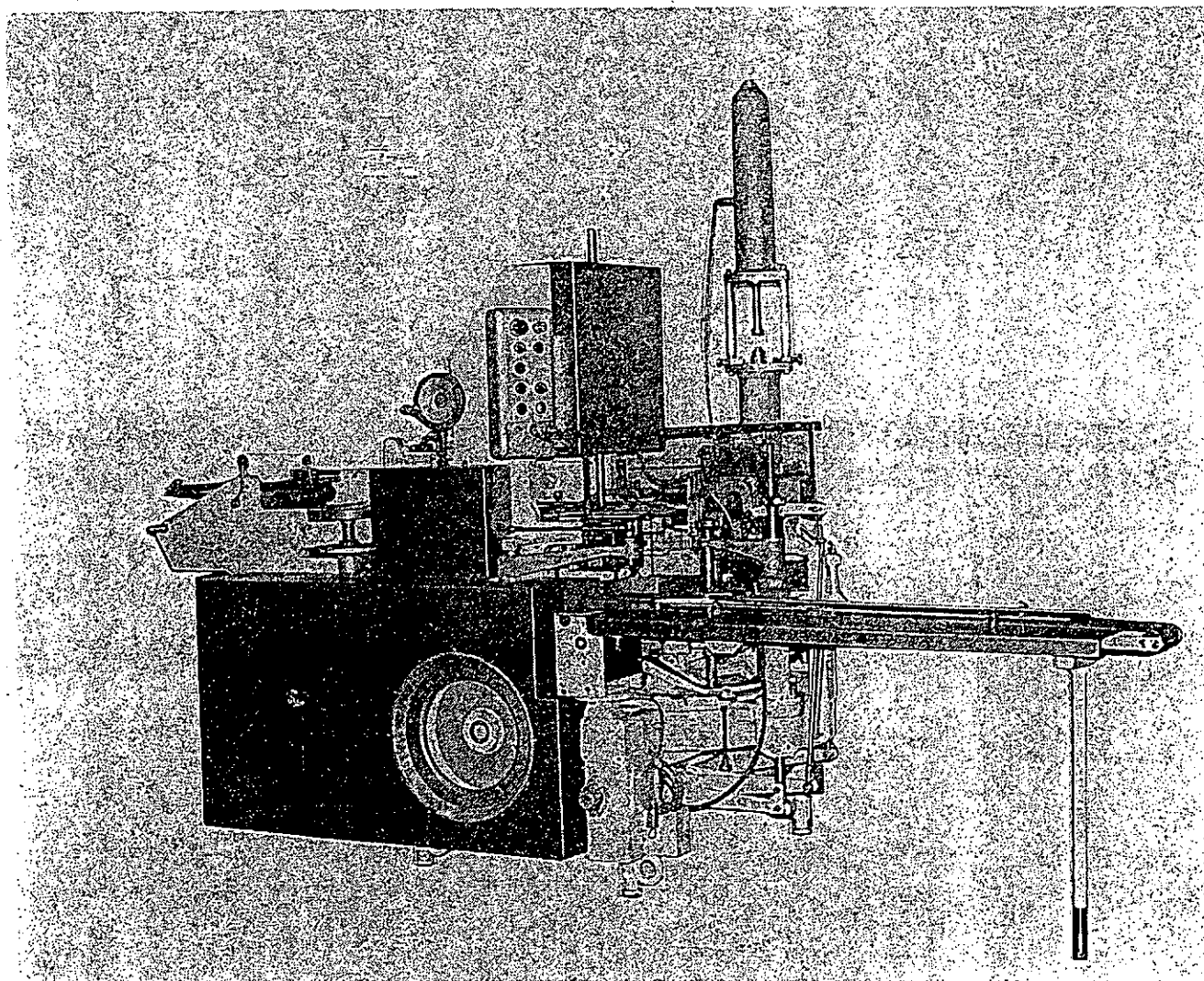


8345

Description and Operating instructions

Filling and
Packaging Machine
Model 8345

NNN
MACHINERY WORLD



BENHIL

JAGENBERG-GRUPPE

Benz & Hilgers GmbH
P.O.B 21 03 54
D-41429 Neuss

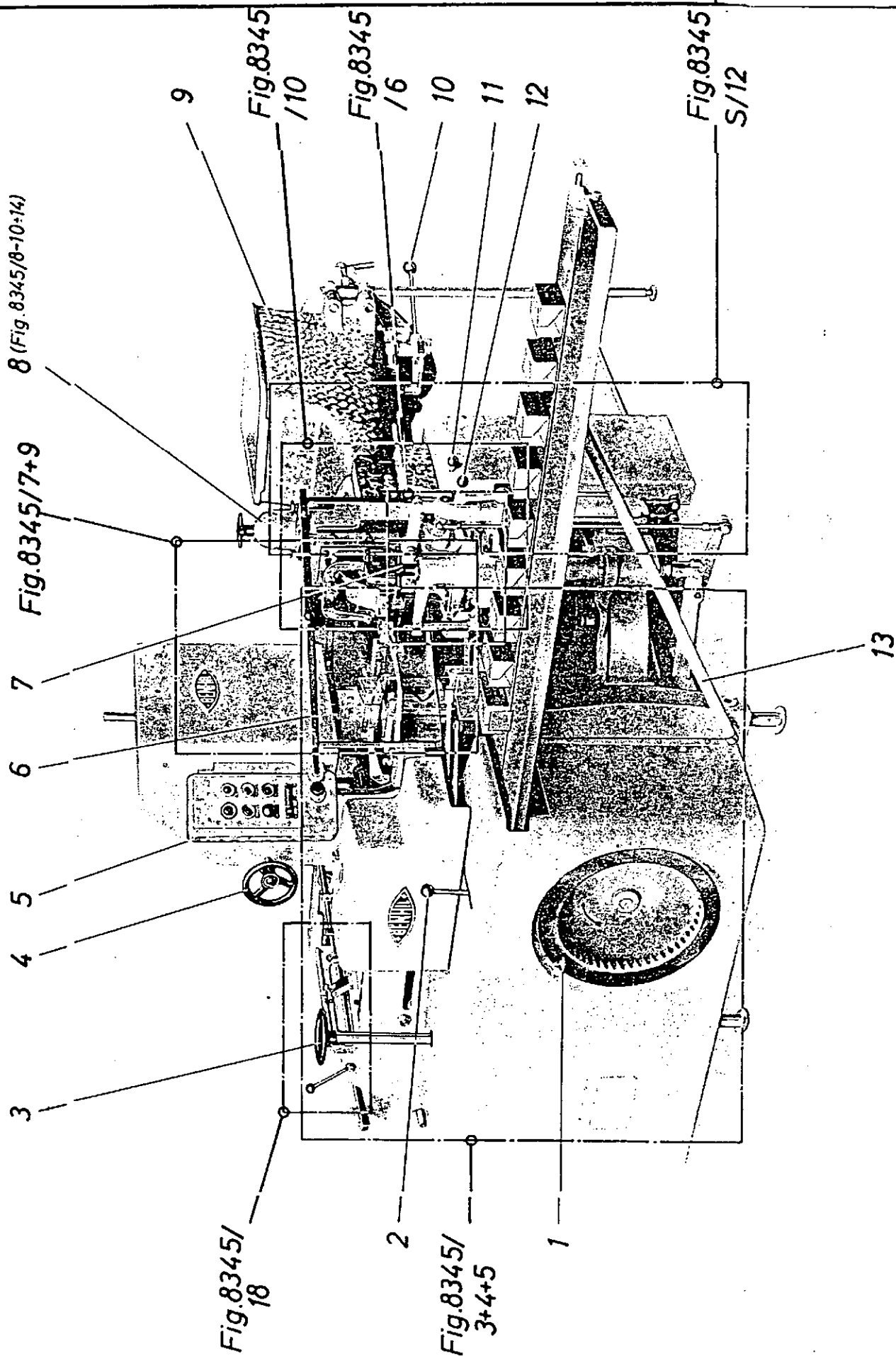
Jagenbergstr. 1
D-41468 Neuss

Phone: 02131/99-03
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Position Reference Repère	Bezeichnung	Designation	Désignation
3	Ansicht der Maschine von der Einwickler-Zuführ-seite	View of the machine in the direction of the wrapper feed	Vue de la machine du côté enfilement de papier
4	Ansicht der Maschine von der Antriebsseite	View of the machine from the drive side	Vue de la machine du côté commande
5	Einwicklerapparat-Be-dienungsseite, Abschie-ber	Wrapper unit service side, delivery, off-transport	Côté d'asservissement appareil à papier, poussoir, tapis transport
6	Faltung	Folding	Pliage
7	Einwicklerapparat, Zellentischseite	Wrapper unit from rotary table side	Appareil à papier, côté table revolver
9	Einwicklerapparat, Zellentischseite	Wrapper unit from rotary table side	Appareil à papier, côté table revolver
10	Antrieb zum Dosierzylinder, Zellenbodenverstellung	Drive of the dosing cylinder, cell base and adjustment	Commande du cylindre de dosage, réglage fonds de cellule
12	Dosierung, Einzelteile	Dosing individual parts	Dosage, pièces détachées
18	Einwicklerapparat, An-sicht von der Bedie-nungsseite, Perforie-rung	Wrapper unit, view from the service side, perforations	Appareil à papier, Vue du côté d'asservissement, Perforation

<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Großes Handrad	Large hand wheel	Grande manivelle
2	Schalthebel	Starting lever	Levier de commande
3	Handrad	Hand wheel	manivelle
4	Stellrad	Positioning wheel	manivelle de serrage
5	Befehlsgerät	Control unit	appareil de commande
6	Schutzwand	Perspex guard	protection
7	Stellspindel	Positioning spindle	vis molletée
8	Ausgleichkolben	Balancing piston	piston compensateur
9	Zuführpartie	Feed trough unit	partie d'amenage
10	Schalthebel	Starting lever	levier de commande
11	Indexbolzen	Indexing pin	boulon d'indice
12	Indexbolzen	Indexing pin	boulon d'indice
13	Stütze	Support	appui

Fig.8345 S/1



<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
13	Dosierung, Einwickler- apparat von der Dosier- seite	Dosing wrapper unit from the dosing side	Dosage, appareil à pa- pier et son vue de côté dosage
14	Abfüllhahn-Dosierzylin- der- und Dosierkolben- antrieb	Depositor, dosing cylin- der- and dosing piston drive	Bec verseur-cylindre de dosage et commande piston dosage
15	Einwicklerapparat von der Dosierseite	Wrapping unit from the dosing side	Appareil à papier du côté dosage
16	Schaltkasten	Control panel	Boîte de commande
17	Einwicklerapparat, An- sicht von oben	Wrapping unit view from above	Appareil à papier, vue de dessus
71	Trog mit Förderschnek- kenantrieb	Trough with feed scroll drive	Trémie avec commande des vis de poussée
73	Förderschneckenantrieb, Wechselräder	Feed scroll, drive, change glass	Commande des vis de poussée, roue d'échange
74	Förderschneckenantrieb, Kupplung	Feed scroll drive coupling	Commande des vis de poussée, embrayage

Fig.
8311S/71
8311S/73

Fig.
8311S/74

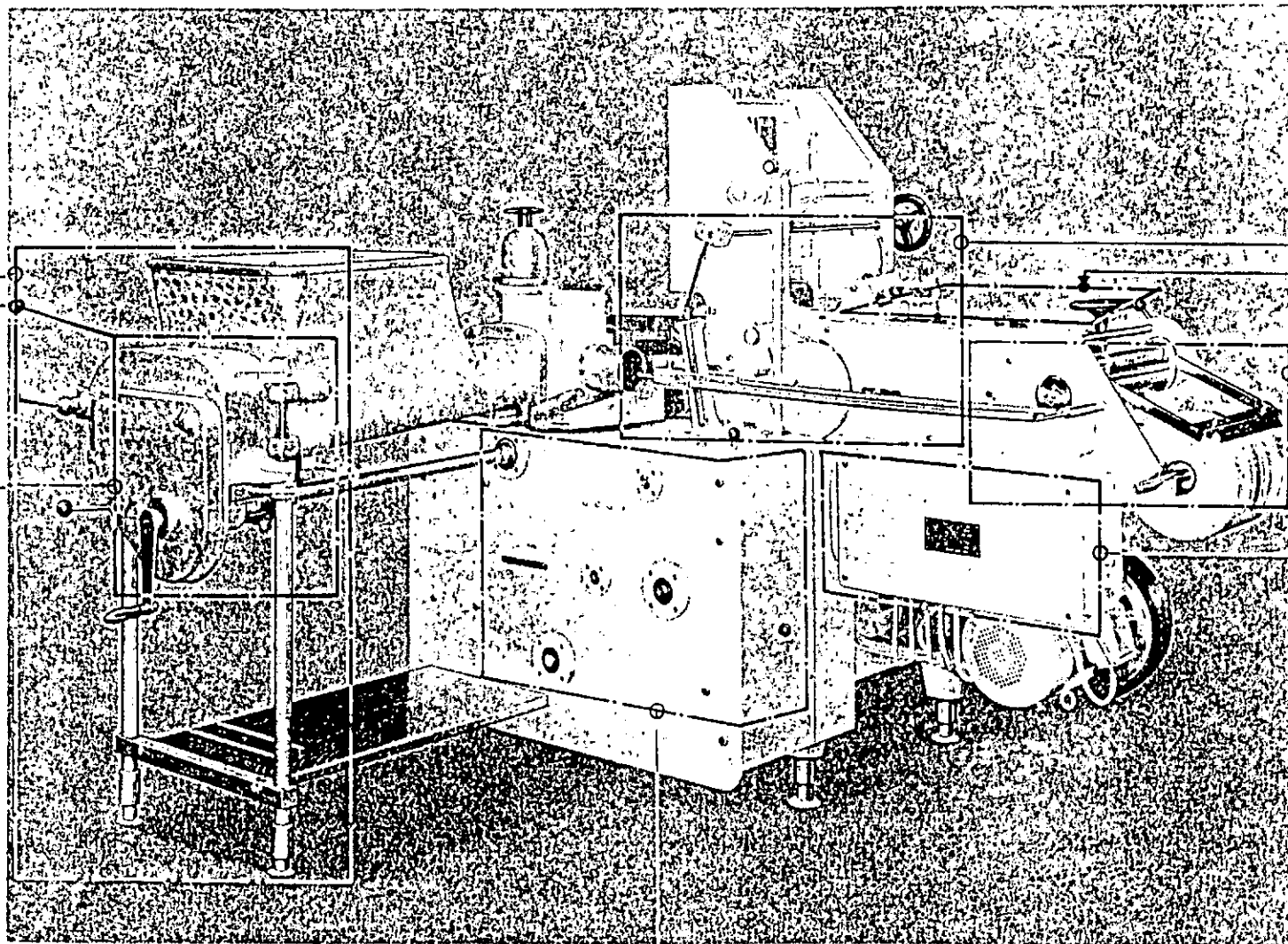


Fig.
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8345/17

Fig.
8345/15

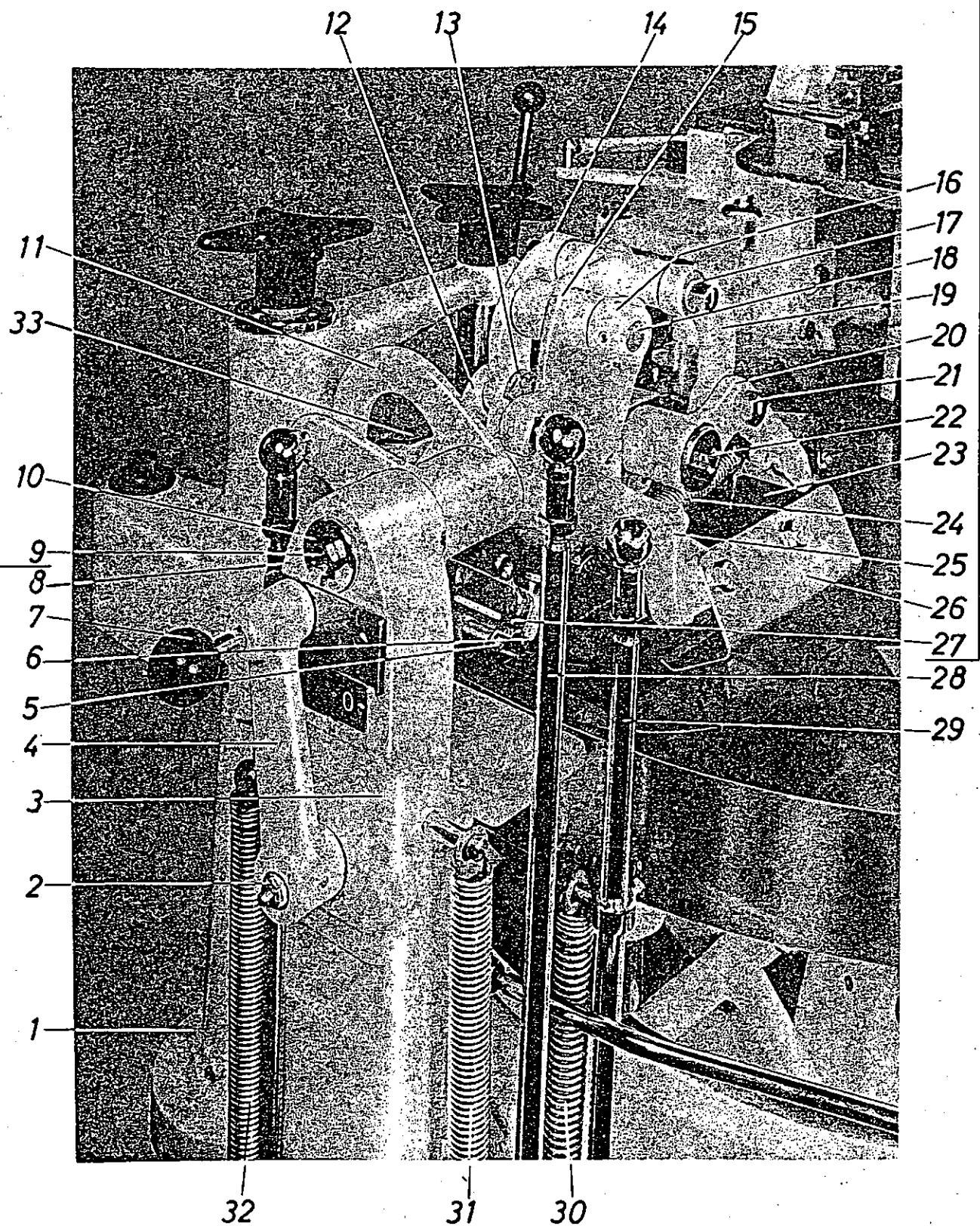
Fig.
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Fig.8345/14

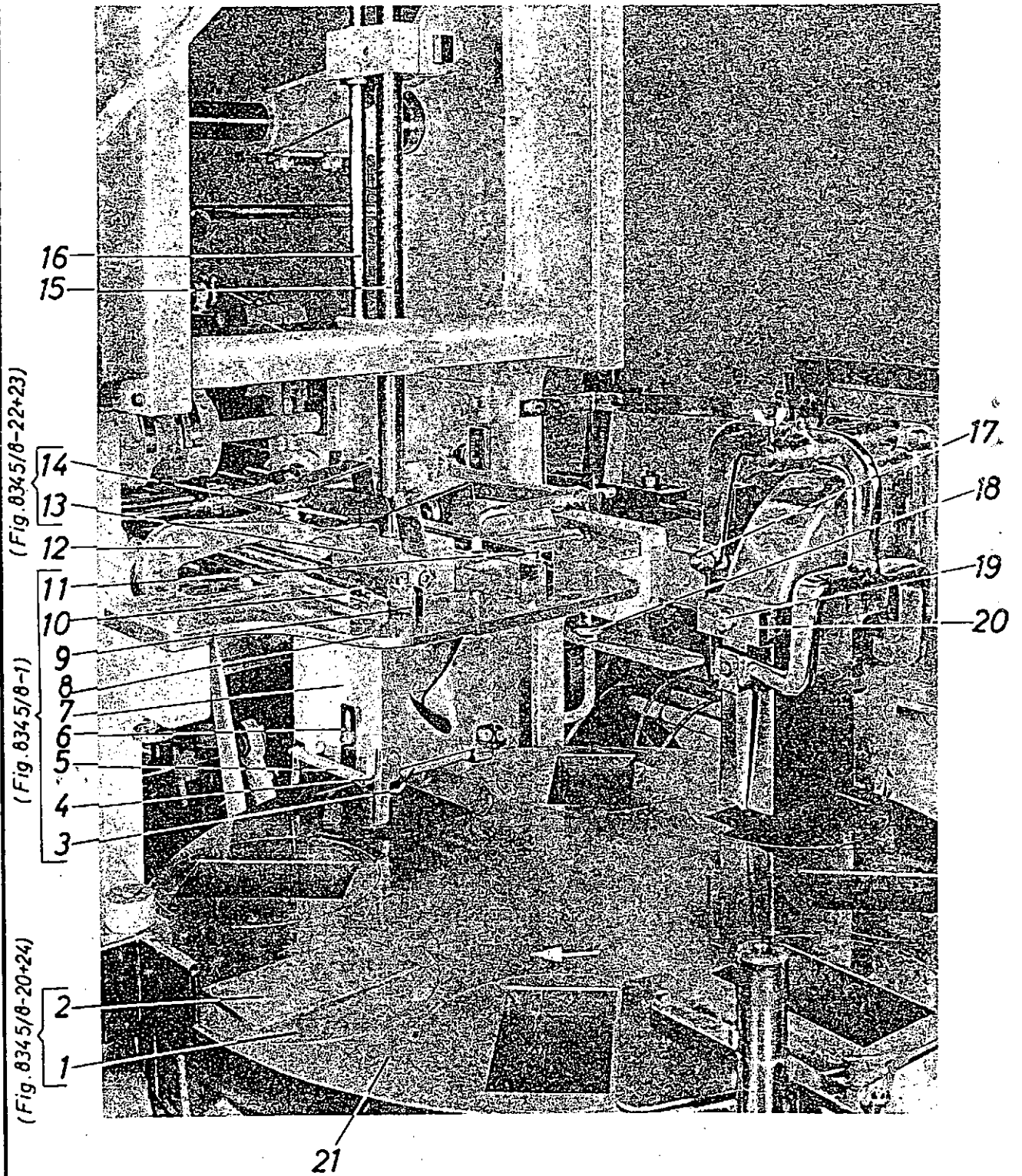
Fig. 8345 S/2

Position Reference Repère	Bezeichnung	Designation	Désignation
1	Flanschlager	Flange bearing	Bossage du bride
2	Bolzen	Bolt	boulon
3	Lagerbock	Bracket support	support
4	Hebel (zur Dosierzylinderabschaltung)	Lever (to dosing cylinder stop)	levier (pour arrêter le cylindre de dosage)
5	Bolzen	Bolt	boulon
6	Bolzen	Bolt	boulon
7	Indexbolzen	Indexing handle	boulon d'indice
8	Zugstange zu Teil 11	Tension rod to Part 11	tige pour pièce no. 11
9	Schraube zum Faltkopf	Screw to folder head	vis pour embout de pliage
10	Scheibe zu Teil 9	Disc to Part 9	disque pour pièce no. 9
11	Hebel zu Teil 33	Lever to Part 33	levier pour pièce no. 33
12	Hebel zu Teil 27	Lever to Part 27	levier pour pièce no. 27
13	Exzenterbolzen	Eccentric bolt	boulon excentrique
14	Hebel	Lever	levier
15	Hebel	Lever	levier
16	Lagerung	Bearing	palier
17	Scheibe	Disc	disque
18	Bolzen	Bolt	boulon
19	Hebel	Lever	levier
20	Hebel zu Teil 23	Lever to Part 23	levier pour pièce no. 23
21	Hutmutter	Cap nut	écrou
22	Sechskantschraube	Hexagon screw	vis à 6 pans
23	Einstech-Klappfalter, hinten	Insert flap folder, back	plieur, derrière
24	Zugfeder zu Teil 23	Tension spring to Part 23	ressort de traction pour pièce 23
25	Hebel zu Teil 26	Lever to Part 26	levier pour pièce 26
26	1. Schließfalter	1 Closing folder	1 ^{er} plieur de fermeture
27	Einstech-Klappfalter, vorne	Insert flap folder, front	plieur du devant
28	Zugstange zu Teil 15	Tension rod to Part 15	tige pour pièce 15
29	Zugstange zu Teil 25	Tension rod to Part 25	tige pour pièce 25
30	Zugfeder zu Teil 29	Tension spring to Part 29	ressort de traction pour pièce 29
31	Zugfeder zu Teil 28	Tension spring to Part 28	ressort de traction pour pièce 28
32	Zugfeder zu Teil 8	Tension spring to Part 8	ressort de traction pour pièce 8
33	2. Schließfalter	Second closing folder	2 ^{ième} plieur de fermeture

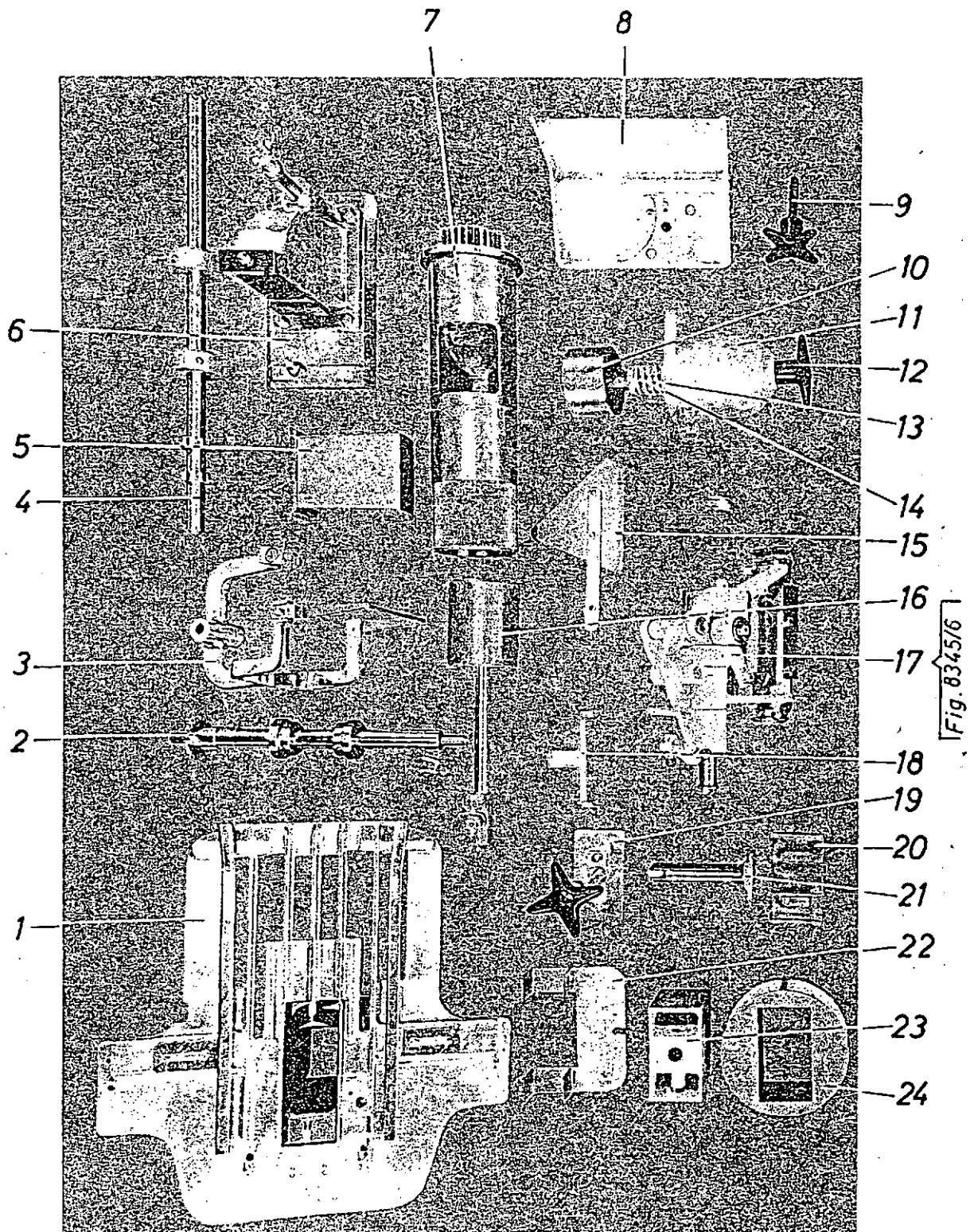
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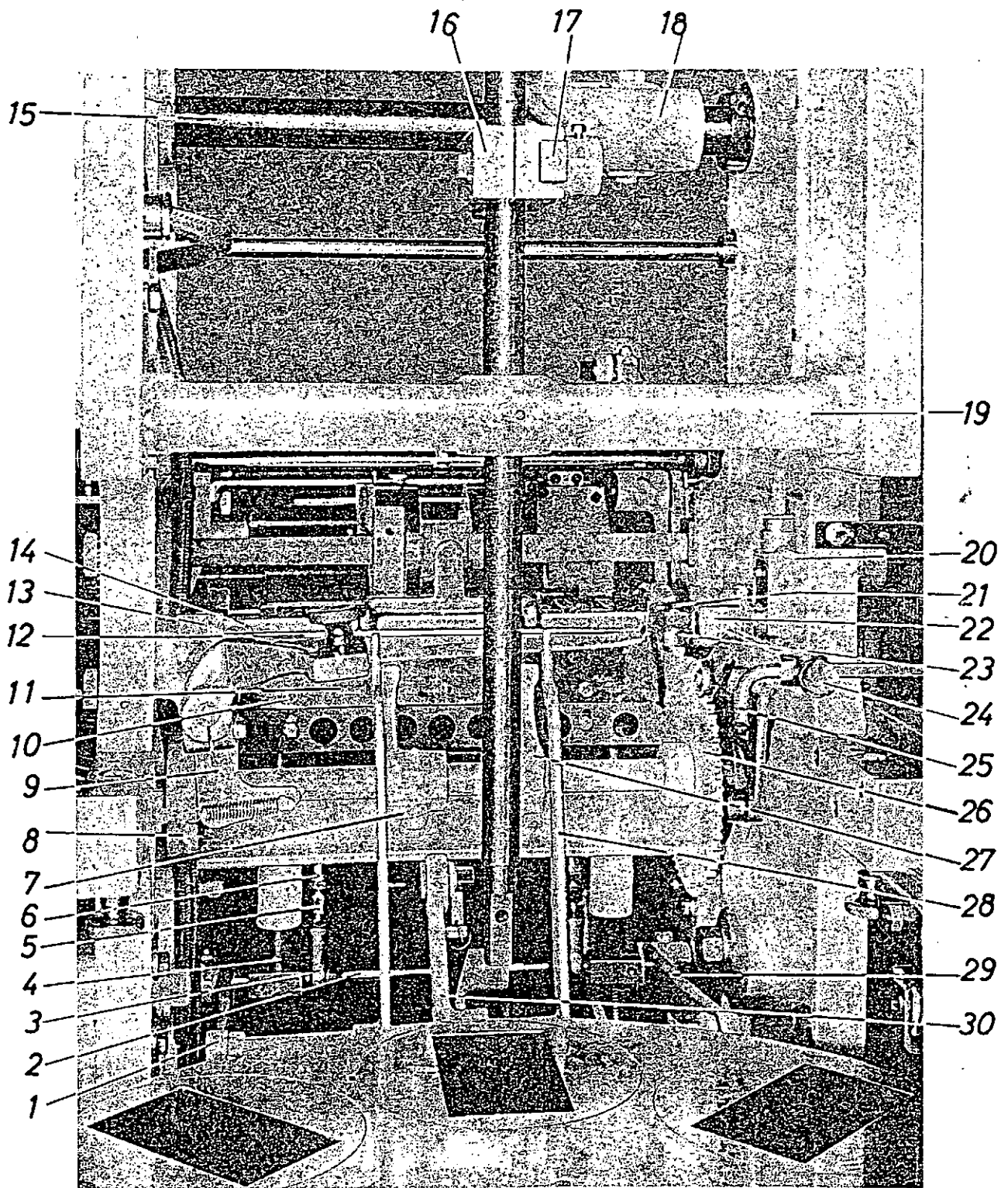
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Einsatzzelle	Inserting cell	cellule de remplacement
2	Zellenboden	Cell base	fond de cellule
3	Andrückrolle	Pressure roller	rouleau de pression
4	Rollenachse	Roller axle	arbre de rouleau
5	Zugfeder zu Teil 3	Tension spring to Part 3	ressort de traction pour pièce 3
6	Hüllenabstreifer	Stripper	reclette de papier
7	Faltkasten	Wrapper forming unit	boîte de pliage
8	Falzkasten	Folding plate	plaque de pliage
9	Einwickleranschlag	Wrapper stop	butée de papier
10	Einwicklerführung, links	Wrapper guide, left	guidage de papier à gauche
11	Einwicklerführung, rechts	Wrapper guide, right	guidage de papier à droite
12	Halter zu Teil 14	Bracket to Part 14	support pour pièce 14
13	Faltstempel	Forming block	poinçon de pliage
14	Vorfalzer, vollständig	Prefolder complete	pré-plieur, complet
15	Faltstempelstange	Forming rod block	colonne de poinçon de pliage
16	Führungsstange	Guide rod	colonne de guidage
17	Sechskantmutter	Hexagon nut	écrou à 6 pans
18	Kordierte Schraube zu Teil 8	Knurled screw to Part 8	vis molletée pour pièce 8
19	Sechskantmutter zu Teil 20	Hexagon nut to Part 20	écrou à 6 pans pour pièce 20
20	Druckleiste	Pressure block	listeau de pression
21	Zellentisch	Rotating table	table revolver



<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
①	Falzplatte mit Faltkasten, vollständig	Folding unit with folding box	plaque de pliage avec boîte de pliage complète
2	Segmentwalze	Segment roller	cylindre de segment
3	Abschneiderhebel	Cut off lever	levier découpeur
4	Einwicklerwelle	Wrapper shaft	arbre à papier
⑤	Abfüllmundstück	Mouth piece	embouchure
6	Schieberplatte	Pusher plate	plaque tiroir
⑦	Dosierzylinder	Measuring cylinder	cylindre de dosage
8	Schutzhaube, vollständig	Guards complete	capot de protection, compl.
9	Kreuzgriff zu Teil 8	Star handle to Part 8	poignée à croix pour pièce 8
10	Ausgleichkolben	Equalising piston	piston compensateur
11	Gehäuse	Housing	carter
12	Kreuzgriff	Star handle	poignée à croix
13	Druckfeder	Pressure spring	ressort clavette
14	Kolbenstange	Piston rod	tige à piston
⑮	Faltzipfelanleger	Lipped folder pressure	plieur patte de pliage
⑮	Dosierkolben, vollständig	Measuring piston, complete	piston doseur complet
⑰	Faltkopf, vollständig	Folder head complete	embout de pliage, complet
18	Messereinstellehre	Cutter setting gauge	ajustage de couteau
⑰	Andrückenplatte, vollständig	Pressure plate, complete	plaque pression complète
⑳	Zellenboden	Cell base	fond de cellule
21	Stempel	Pusher	poinçon
㉒	Vorfalzer, vollständig	Prefolder complete	pré-plieur, complet
㉓	Faltstempel	Folding block	poinçon de pliage complet
㉔	Einsatzzelle	insert (packet size)	cellule de remplacement

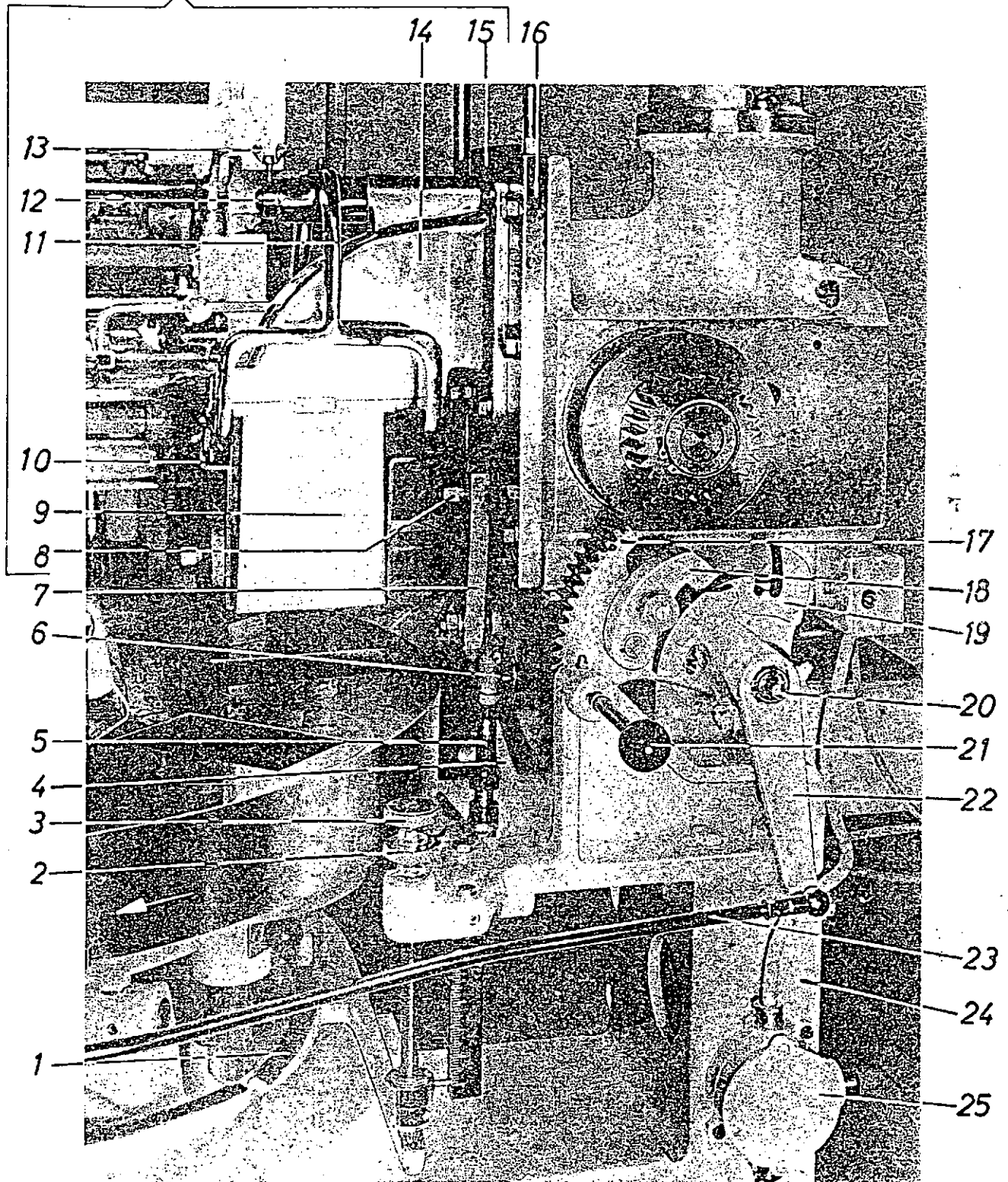


Position Reference Repère	Bezeichnung	Designation	Désignation
1	Rollenhebel (zum Vorwerfer)	Roller lever (forward feed)	levier à galet (pour pré-plieur)
2	Welle	Shaft	arbre
3	Gelenkstangenkopf	Head of linked rod	embout
4	Bolzen	Bolt	boulon
5	Gewindebolzen	Screw bolt	boulon molleté
6	Gelenkstangenkopf	Head of linked rod	embout
7	Vorzugssegment	Feeding segment	segment d'entraînement
8	Kurve zum Vorfalzer	Cam for pre-folder	came pour pré-plieur
9	Rollenhebel (zum Vorfalzer)	Roller lever for pre-folder	levier à galet (pour pré-plieur)
10	Schraube zu Teil 11	Screw to Part 11	vis pour pièce 11
11	Untermesser	Lower knife	couteau inférieur
12	Obermesser (starr)	Upper knife (fixed)	couteau supérieur(fixe)
13	Lager	Bearing	palier
14	Niederhalter	Pressure holder	pièces de retenue
15	Welle	Shaft	arbre
16	Gleitführung, vollständig	slide support complete	guidage, complet
17	Gleitstein	Slip block	pièce de glissement
18	Faltstempelhebel	Lever for folder	levier de poinçon de pliage
19	Brücke	Bridge	pont
20	Endschalter zu Teil 25	End switch for Part 25	fin de course pour pièce no.25
21	Schraube zu Teil 12	Screw to Part 12	vis pour pièce 12
22	Lager	Bearing	palier
23	Einwicklerführung	Wrapper guide	guidage de papier
24	Rändelschraube zu Teil 25	Knurled screw to Part 25	vis moleté pour pièce 25
25	Einwicklerfühler	Wrapper feeler	palpeur de papier
26	Zahnrad	Wheel	roue dentée
27	Vorzugssegment	Feeding segment	segment d'entraînement
28	Vorwerfer	Forward feed bar	pré-plieur
29	Hebel	Lever	levier
30	Hebel	Lever	levier



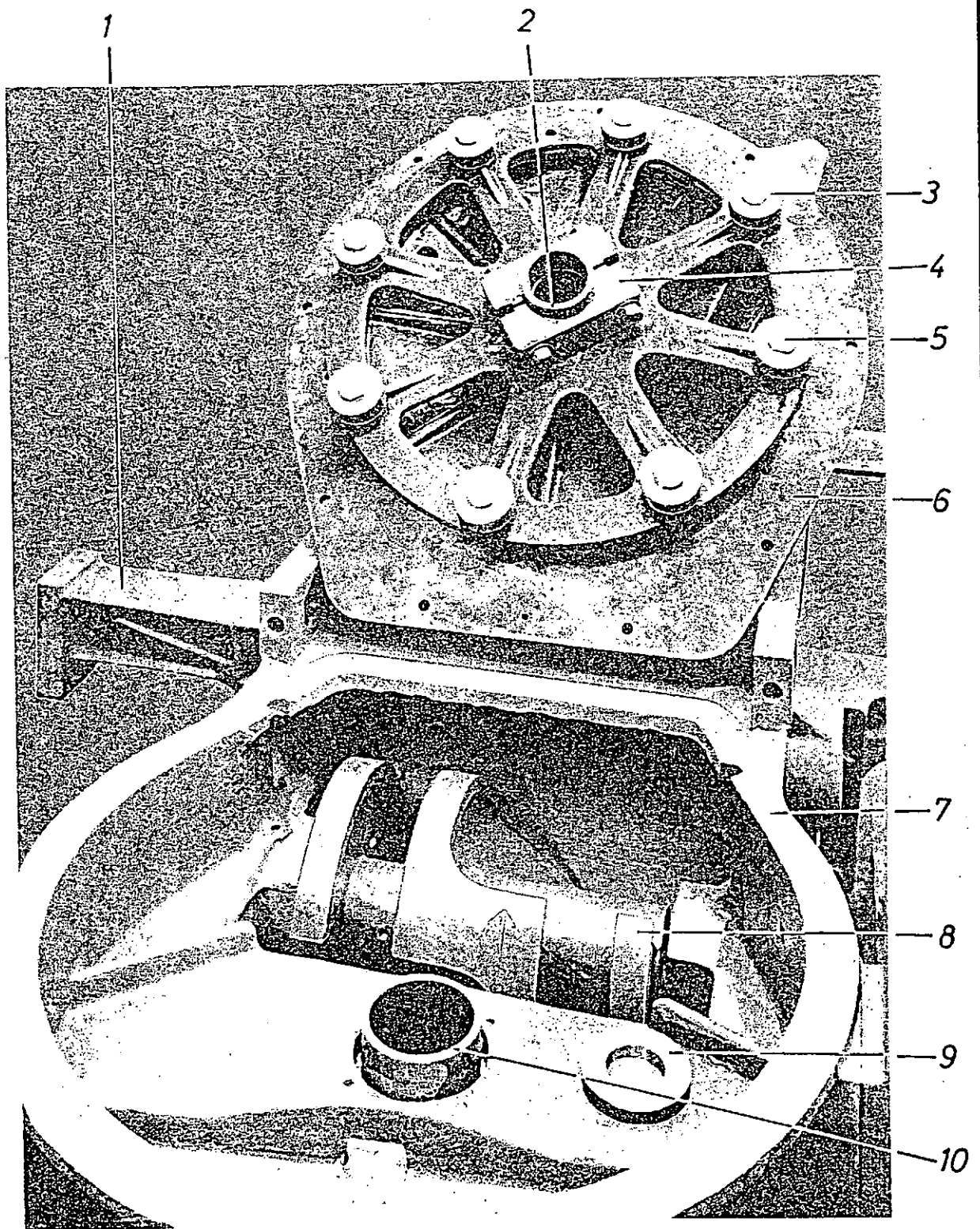
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Rollenhebel (zum Zellen- boden)	Roller lift (to cell base)	levier à galet (pour fond de cellule)
2	Konter-Rändelmutter	Fixing screw	écrou de contre-serrage
3	Stellschraube	Adjusting screw	vis de serrage
4	Rollenhebel zu Teil 15	Roller lever to Part 15	levier à galet pour pièce no. 15
5	Zugstange	Draw rod	tige
6	Gelenkstangenkopf	Head of linked rod	embout
7	Verbindungsstück	Connecting piece	pièce entre-toise
8	Mutter zu Teil 7	Nut for Part 7	écrou pour pièce 7
9	Abfüllmundstück	Mouth piece	embouchure
10	Abschneidebügel	Cutter support	étrier découpeur
11	Abschneiderhebel	Cutter	levier découpeur
12	Stellring	Adjusting ring	bague de serrage
13	Flügelschraube	Wing screw	vis à ailettes
14	Abfüllhahn	Filling head	bec verseur
15	Schieberplatte	Slider plate	plaque tiroir
16	Führungsleiste	Guide rail	listeau de guidage
17	Zahnsegment	Toothed segment	segment denté
18	Klinke	Latch	cliquet
19	Mitnehmersegment	Carrier segment	segment d'entraînement
20	Welle	Shaft	arbre
21	Indexbolzen	Index bolt	boulon d'indice
22	Hebel (zur Dosierzylinder- abschaltung)	Lever (to dosing cylinder stop)	levier (pour arrêter le cylindre doseur)
23	Zugstange (zur Dosier- zylinderabschaltung)	Rod (to dosing cylinder stop)	tige (pour arrêter le cylindre doseur)
24	Gestellfuß	Frame	pied vérin
25	Verteilerdose	Junction base	embase distributeur

Fig.8345/8

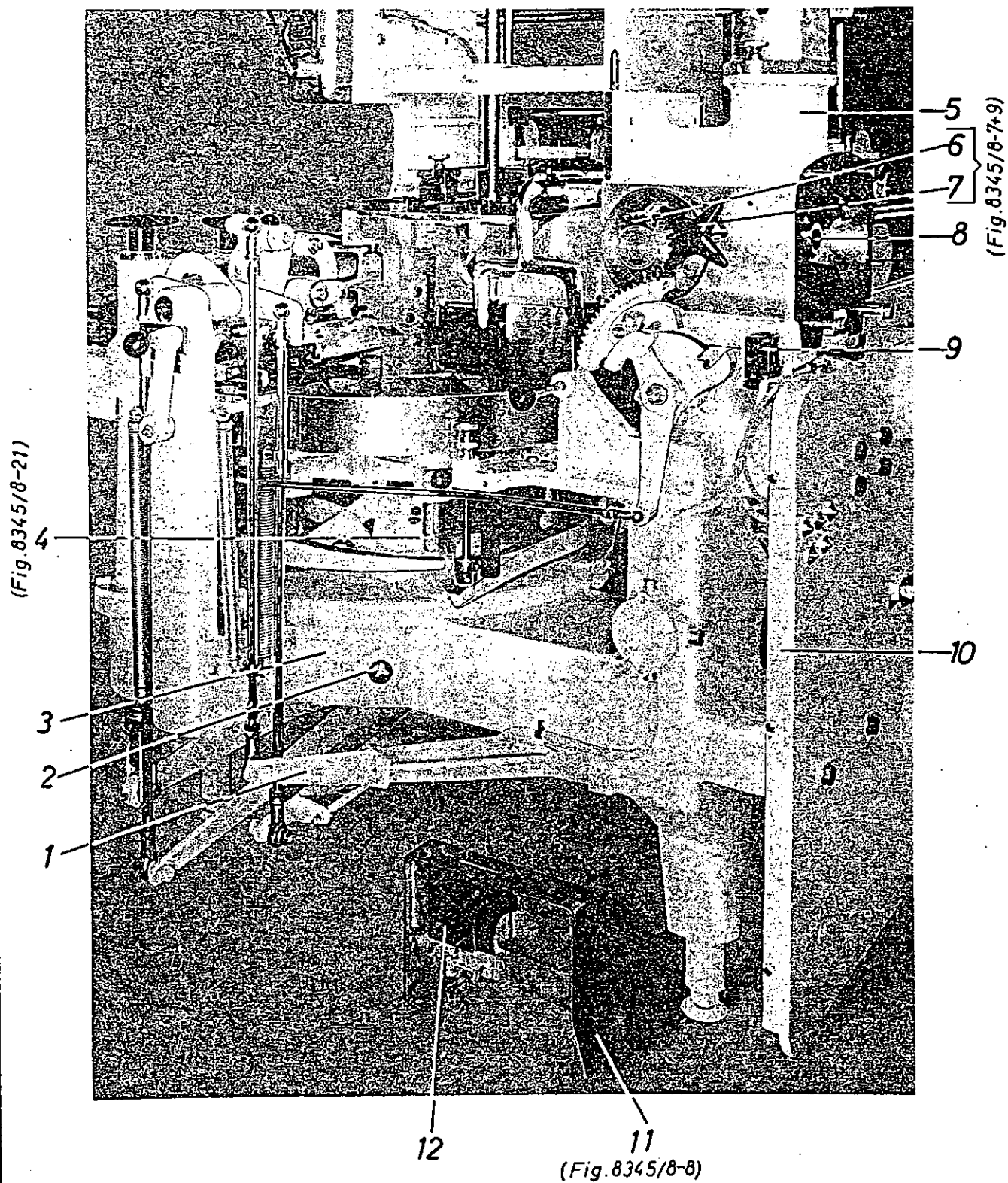


<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Gestellfuß	Support	pied vérin
2	Zellentisch-Säule	Centre support	montant table revolver
3	Rolle	Roller	galet
4	Schaltscheibe	Switch plate	came de manoeuvre
5	Rollenbolzen	Roller bolts	boulon à galet
6	Deckel	Cover	couvercle
7	Untergestell	Base	sous-bâti
8	Schaltkurve	Indexing cam	came de commande
9	Distanzscheibe	Spacer	disque entre-toise
10	Abdeckung	Cover	recouvrement

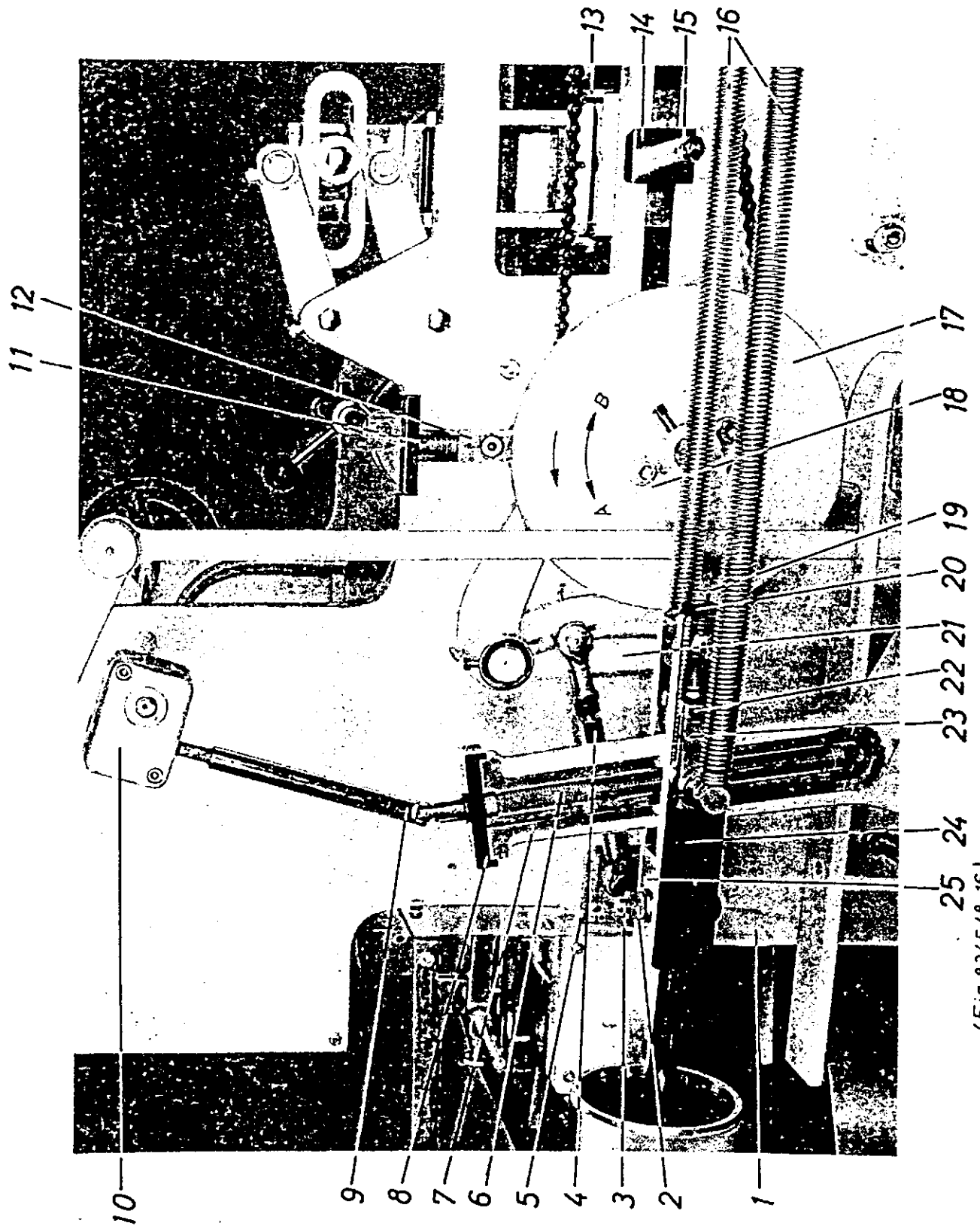
Fig. 8345/11



<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Rollenhebel	roll lever (for initial folder)	levier à galet (pour plieur)
2	Ölstandsauge	oil level glass	niveau d'huile
3	Untergestell	base frame	sous-bâti
4	Stempel	plunger	poinçon
5	Abfüllgehäuse x	filling housing x	carter de dosage x
6	Dosierzylinder	dosing cylinder	cylindre de dosage
7	Kreuzgriff zu Teil 11	star handle for part 11	poignée en croix
8	Buchse (zu den Förder- schnecken x	bush (for the feed worms) x	bague (pour vis de poussée) x
9	Endschalter	limit switch	fin de course
10	Lagerschild	end plate	panneau
11	Schutzhaube, vollständig	guard cover, complete	capot de protection complet
12	Halter	hold-fast	support
x	nur bei Typ 8345 S	x only on type 8345 S	x seulement sur type 8345 S

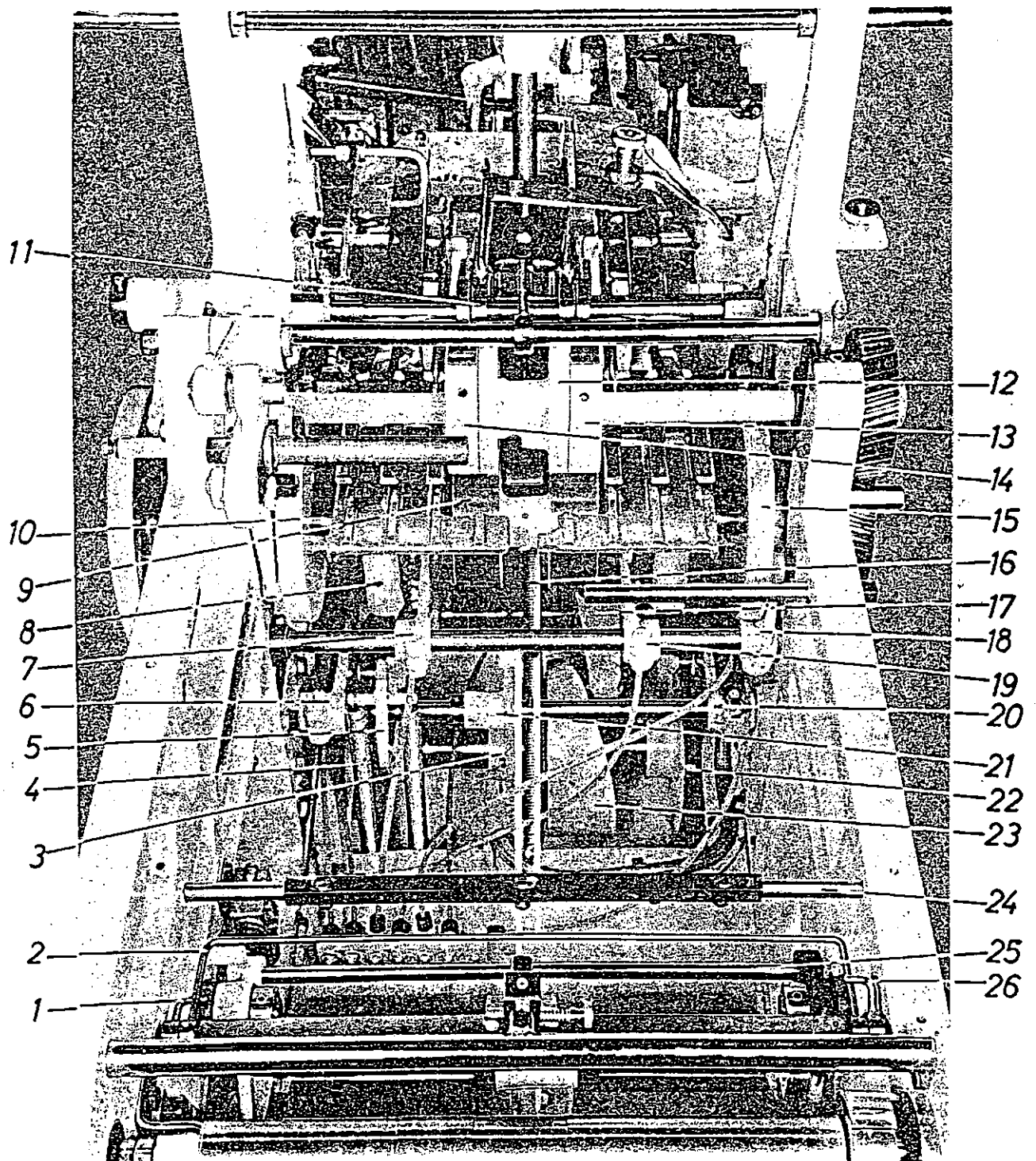


<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Schutzscheibe	Guard	protection
2	Mutter	Nut	écrou
3	Bolzen	Bolt	boulon
4	Zugstange zu Teil 21	Tension rod to Part 21	tige pour pièce 21
5	Schieber (zum Abschnei- derhebel)	Pusher (to cut off lever)	tiroir (pour étrier découpeur)
6	Spindel	Spindle	vis molletée
7	Gabel	Fork	fourchette
8	Deckel	Cover	couvercle
9	Kreuzgelenk	Star link	rotule
10	Gewichtsverstellung, vollständig	Weight control (com- plete)	réglage du poids, complè
11	Druckfeder	Pressure spring	clavette
12	Gleitstein	Slip block	pièce de glissement
13	Klemmleiste	Clamp rail	listeau de serrage
14	Spannplatte	Tension plate	plaque de tension
15	Mutter (zur Perforie- rung)	Nut (to perforation)	écrou (pour perforation)
16	Zugfeder zu Teil 25	Tension spring to Part 25	ressort de traction pour
17	Kurve zu Teil 21	Cam to Part 21	came pour pièce 21
18	Nabe	Hub	rainure
19	Stellspindel	Adjusting spindle	vis molletée
20	Kontermutter	Lock nut	écrou de contre-serrage
21	Rollenhebel (zum Ab- schneider)	Roller lever (for cut- off)	levier à galet (pour découpeur)
22	Riegel	Locking bolt	verrouillage
23	Führungsstein	Guide stone	pièce de glissement
24	Kolbenstangenführung	Piston rod guide	guidage de tige
25	Dosierkolben, vollst.	Measuring piston, complete	cylindre doseur complèt



Position Reference Repère	Bezeichnung	Designation	Désignation
1	Anschlag zu Teil 2	Stop to Part 2	butée pour pièce 2
2	Pendel	Pendle	oscillant
3	Kurve zu Teil 21	Cam to Part 21	came pour pièce 21
4	Zugfeder	Tension spring	ressort de traction
5	Rollenhebel (zum Zellen- boden)	Roller lever (to cell base)	levier à galet (pour fond de cellule)
6	Hebel (Vorwerfer auf und ab)	Lever (for forward feed up and down)	levier (pré-plieur mouvement va-et-vient)
7	Hebel (zum Untermesser)	Lever to lower knife	levier (pour couteau inférieur)
8	Traverse	Supporting bar	traverse
9	Vorzugswalze, unten	Feed roller, below	cylindre d'entraînement, inférieur
10	Welle zu Teil 9	Shaft to Part 9	arbre pour pièce no. 9
11	Segmentwalze	Segment roller	cylindre de segment
12	Vorzugssegment (Ver- stellbar)	Feed segment (adjustable)	segment d'entraînement (réglable)
13	Vorzugssegment (rechts)	Feed segment (right)	segment d'entraînement droite
14	Vorzugssegment (links)	Feed segment (left)	segment d'entraînement gauche
15	Kurve (Untermesser)	Cam (lower knife)	came (couteau inférieur)
16	Zugfeder	Tension spring	ressort de traction
17	Rollenhebel (zum Ab- schieber	Roller lever (to push off)	levier à galet (pour tiroir)
18	Rollenhebel (zum Unter- messer)	Roller lever (to lower knife)	levier à galet (pour couteau inférieur)
19	Hebel (zum Untermesser)	Lever (to lower knife)	levier (pour couteau inférieur)
20	Rollenhebel (zum Vor- werfer)	Roller lever (to forward feed)	levier à galet (pour pré-plieur)
21	Rollenhebel (zum Vor- werfer)	Roller lever (to forward feed)	levier à galet (pour pré- plier)
22	Kurve (Vorwerfer auf und ab)	Cam (to forward feed up and down)	came (pré-plieur (mouve- ment va-et-vient)
23	Kurve zu Teil 17	Cam to part 17	came pour pièce 17
24	Achse	Shaft	arbre
25	Traverse (zum Pendel)	Supporting bar to pendulum	traverse (pour l'oscillant)
26	Anschlag zu Teil 2	Stop to Part 2	butée pour pièce 2

Fig. 8345/17



Position Reference Repère	Bezeichnung	Designation	Désignation
1	Welle	Shaft	arbre
2	Buchse	Bush	bague
3	Führungsstab	Guide rod	colonne de guidage
4	Walzenheber (zur Vorab- wicklung)	Roller lift (to pre- unwind)	palan de cylindre (pré- déroulement)
5	Bremsdaumen	Brake plate	pièce de freinage
6	Rändelmutter	Knurled nut	écrou
7	Traverse	Cross bar	traverse
8	Seitenwand	Side wall	paroi latérale
9	Platte	Plate	plaque
10	Stange	Rod	colonne
11	Rändelschraube	Knurled screw	écrou
12	Perforieraggregat	Perforating unit	perforation
13	Führung	Guide	guidage
14	Führungsstein	Guide rod	pièce de guidage
15	Bolzen	Bolt	boulon
16	Exzenterbolzen	Eccentric bolt	coulon excentrique
17	Hebel zur Perforierung (oben)	Lever for perforation (top)	lever pour perforation (supérieur)
18	Rollenhebel zur Perfo- rierung (unten)	Roller lever for perfo- ration (bottom)	lever à galet pour per- foration (inférieur)
19	Bolzen	Bolt	boulon
20	Bolzen	Bolt	boulon
21	Kurve zur Perforierung	Cam for perforation	came pour perforation
22	Segment (zur oberen Vor- zugswalze)	Segment (to top feed rol- ler)	segment (pour cylindre d'entraînement supérieur)
23	Achse	Shaft	arbre
24	Schraube (zum Vorzugs- segment)	Screw (to feeder segment)	vis (pour segment d'en- trainement)
25	Stange	Rod	colonne
26	Rändelschraube zu Teil 27	Knurled screw to Part 27	écrou pour pièce 27
27	Registerfinger	Register finger	doigt de repérage
28	Halter	Bracket	support
29	Seitenwand	Side wall	paroi latérale
30	Halter	Bracket	support

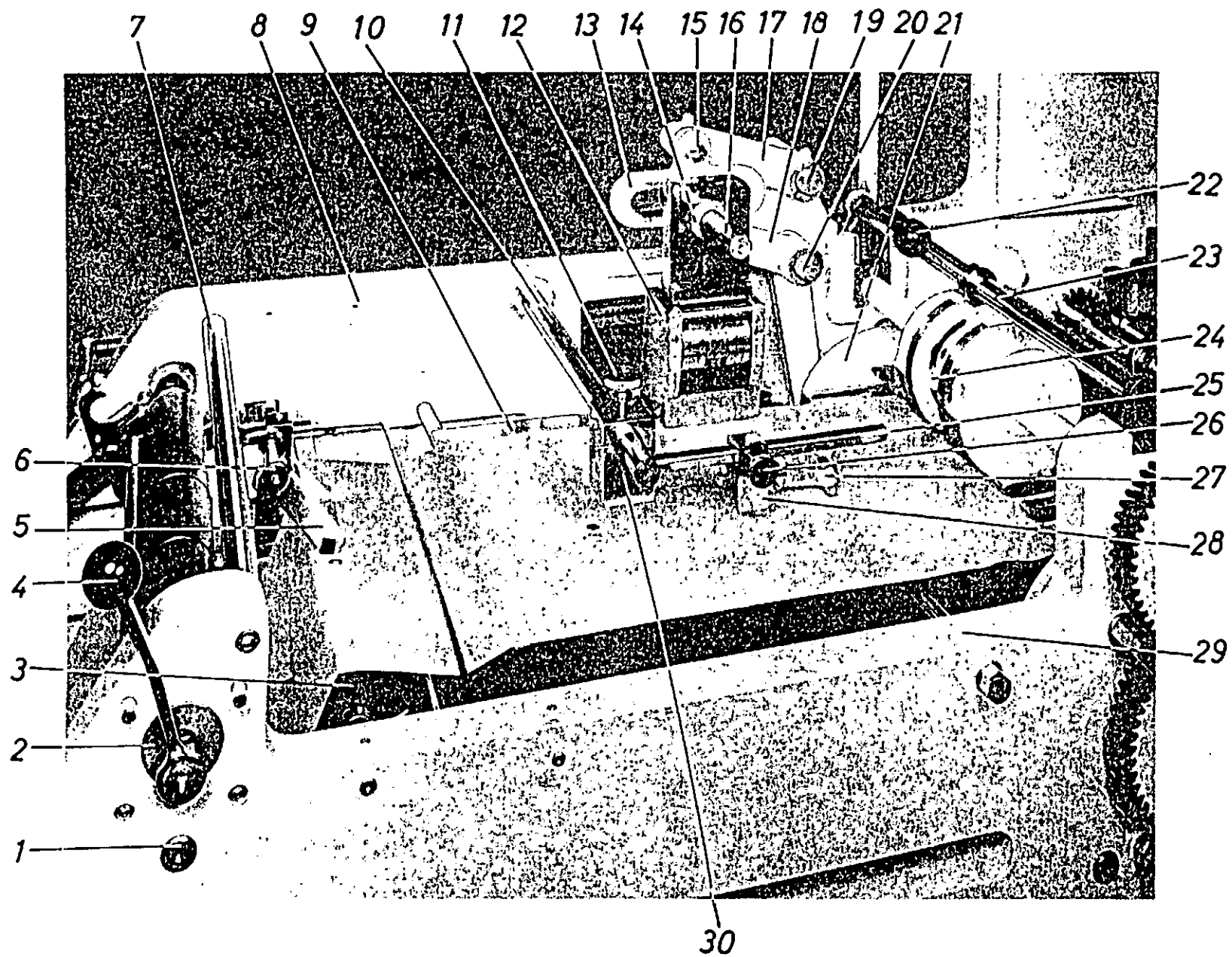
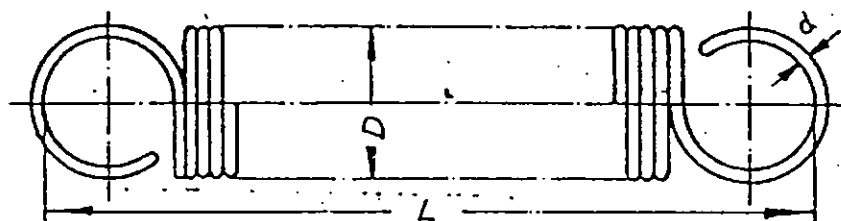
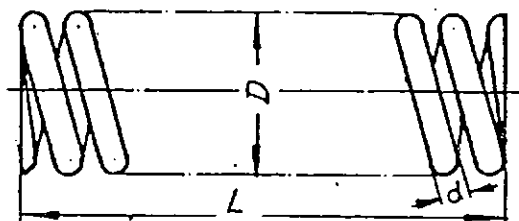


Fig. 8345/18

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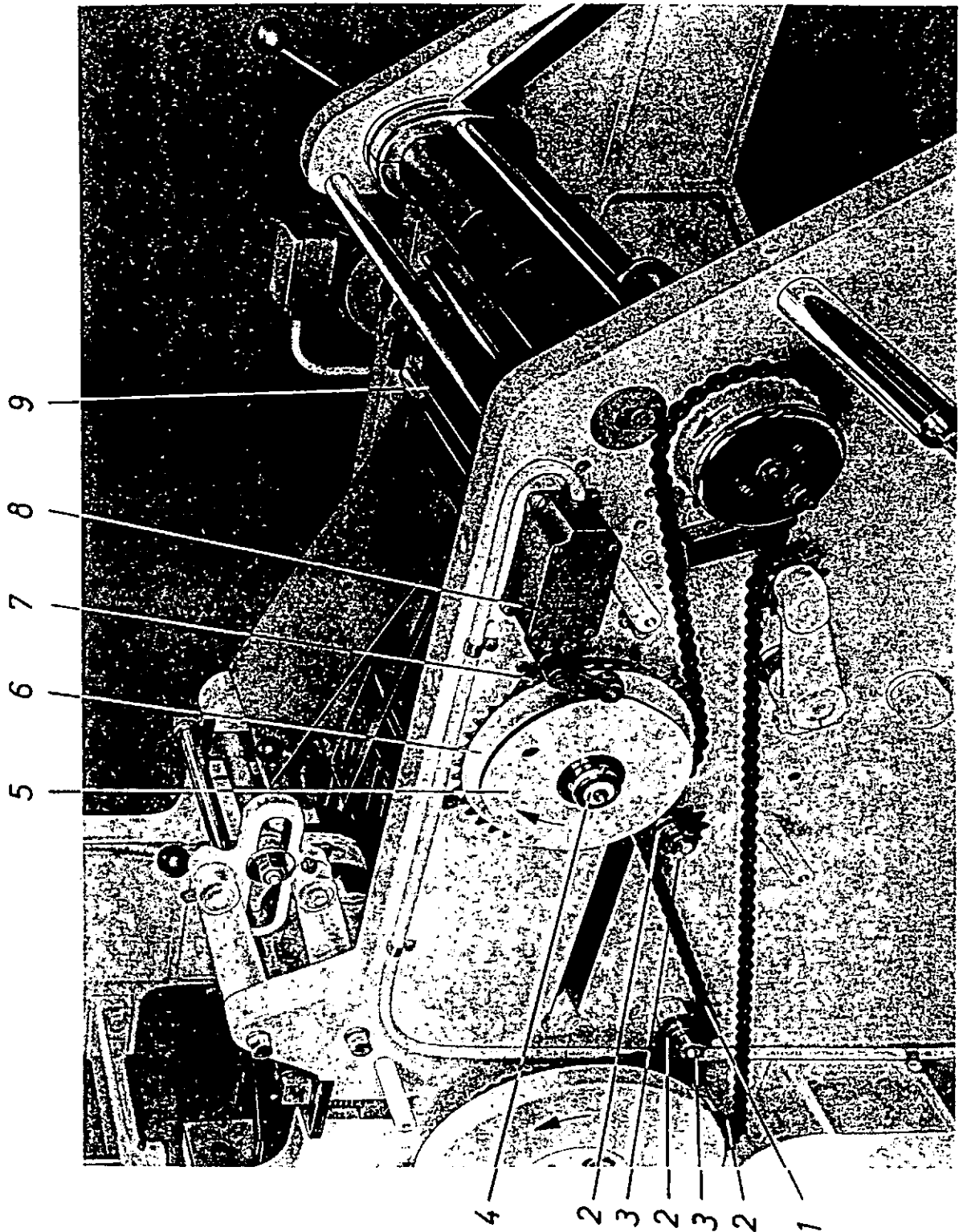
For exam le when placin an order: 1 Tension Spring to Roller Lever

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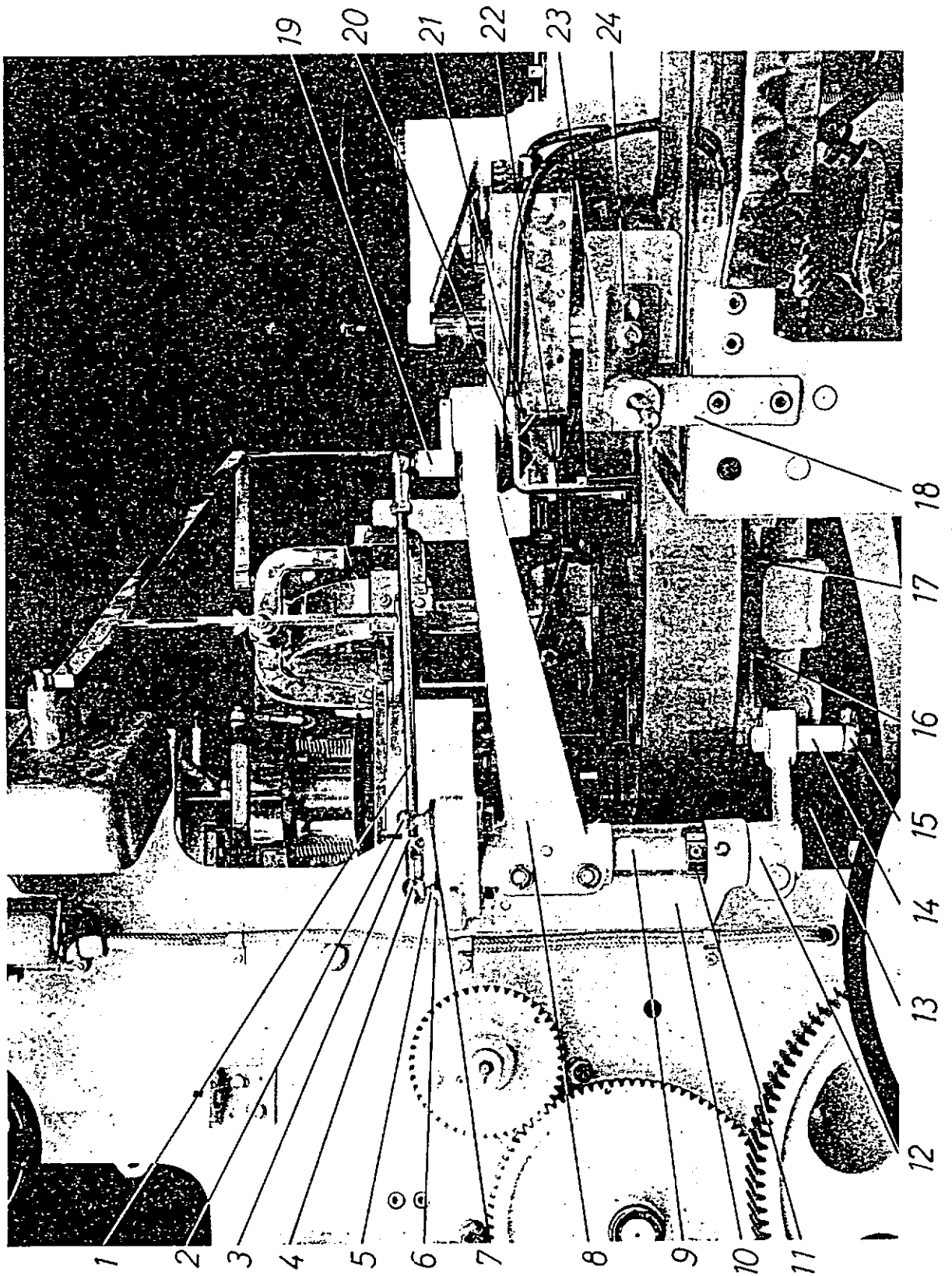
For example, when placing an order: 1 Pressure Spring to Adjusting

Position Reference Repère	Bezeichnung	Designation	Désignation
1	Einfach-Rollenkette	Single roller chain	chaîne à galets simple
2	Kettenrad	Chain wheel	roue de chaîne
3	Kettenradbolzen	Chain wheel bolt	boulon de roue à chaîne
4	Bolzen	Bolt	boulon
5	Kurve zu Teil 8	Cam to Part 8	came pour pièce 8
6	Kettenrad	Sprocket	roue à chaîne
7	Kurve zu Teil 9	Cam to Part 9	came pour pièce 9
8	Endtaster	End switch	fin de course
9	Korrekturbügel	Corrector shaft	étrieur correctrice

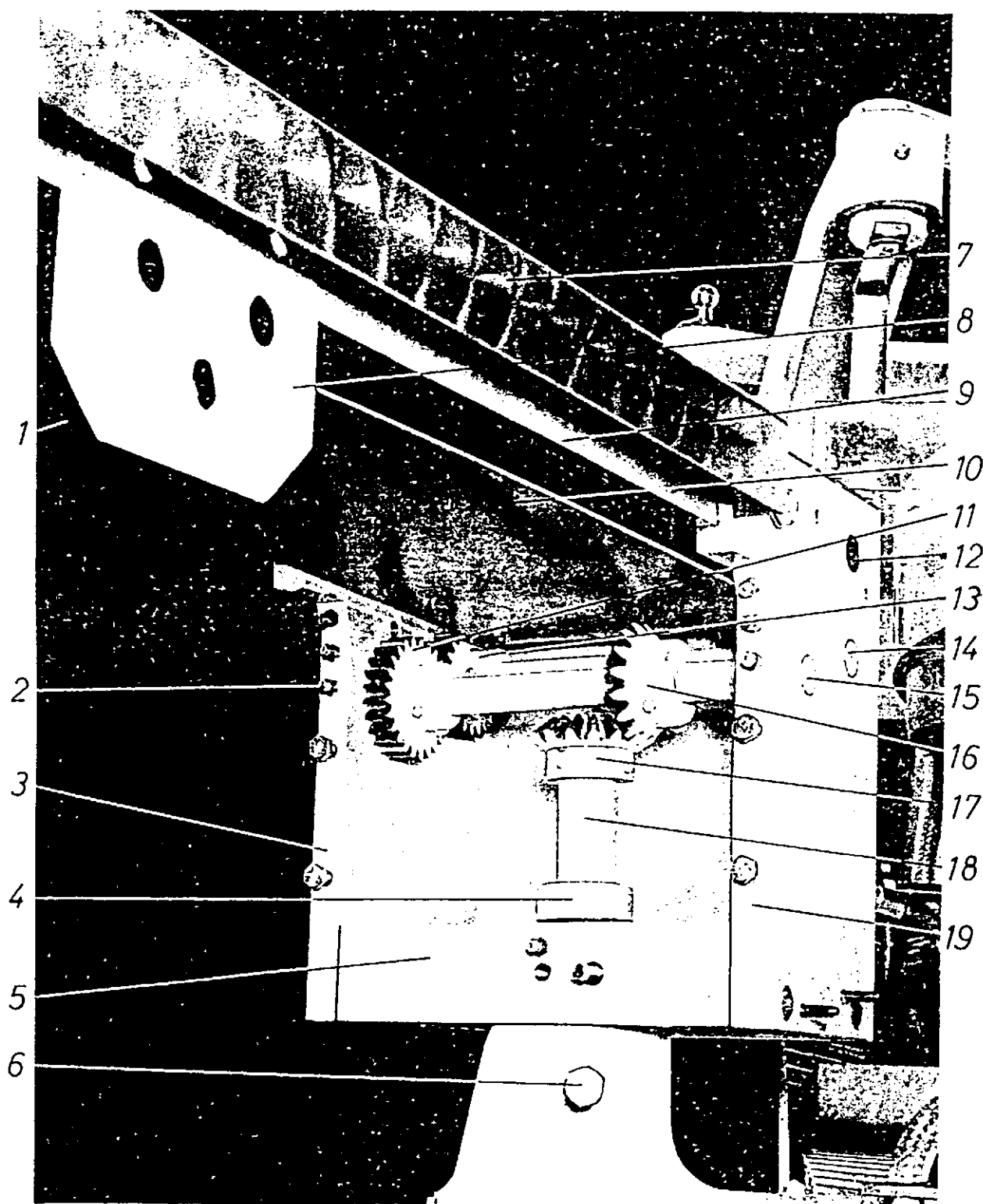


Position Reference Repère	Bezeichnung	Designation	Désignation
1	Zugstange	connecting rod	tige
2	Kugelpopf	ball head	embout
3	6kt-Mutter	hexagon nut	écrou à 6 pans
4	Kugelpfanne	ball socket	palier de bille
5	Kugelpopf	ball head	embout de bille
6	Exzenterbuchse	eccentric bush	bague excentrique
7	Exzenterbuchse	eccentric bush	bague excentrique
8	Hebel	lever	levier
9	Welle	shaft	arbre
10	Lagerbock	pillow block	support
11	Stellring	set collar	anneau de serrage
12	Hebel	lever	levier
13	Zugstange	connecting rod	tige
14	Distanzstück	spacer	entretoise
15	Unibal-Gelenk	Unibal joint	rotule
16	Führungsstück	guide piece	pièce de guidage
17	Führungsstück	guide piece	pièce de guidage
18	Halter	hold-fast	support
19	Hebel	lever	levier
20	Aufnahmestück	receiver	pièce de prise
21	6 kt-Schraube	hexagon head screw	vis à 6 pans
22	Abschieber	push-off device	poussoir
23	Anschlagplatte	stop plate	plaque de butée
24	Führungsstück	guide piece	pièce de guidage

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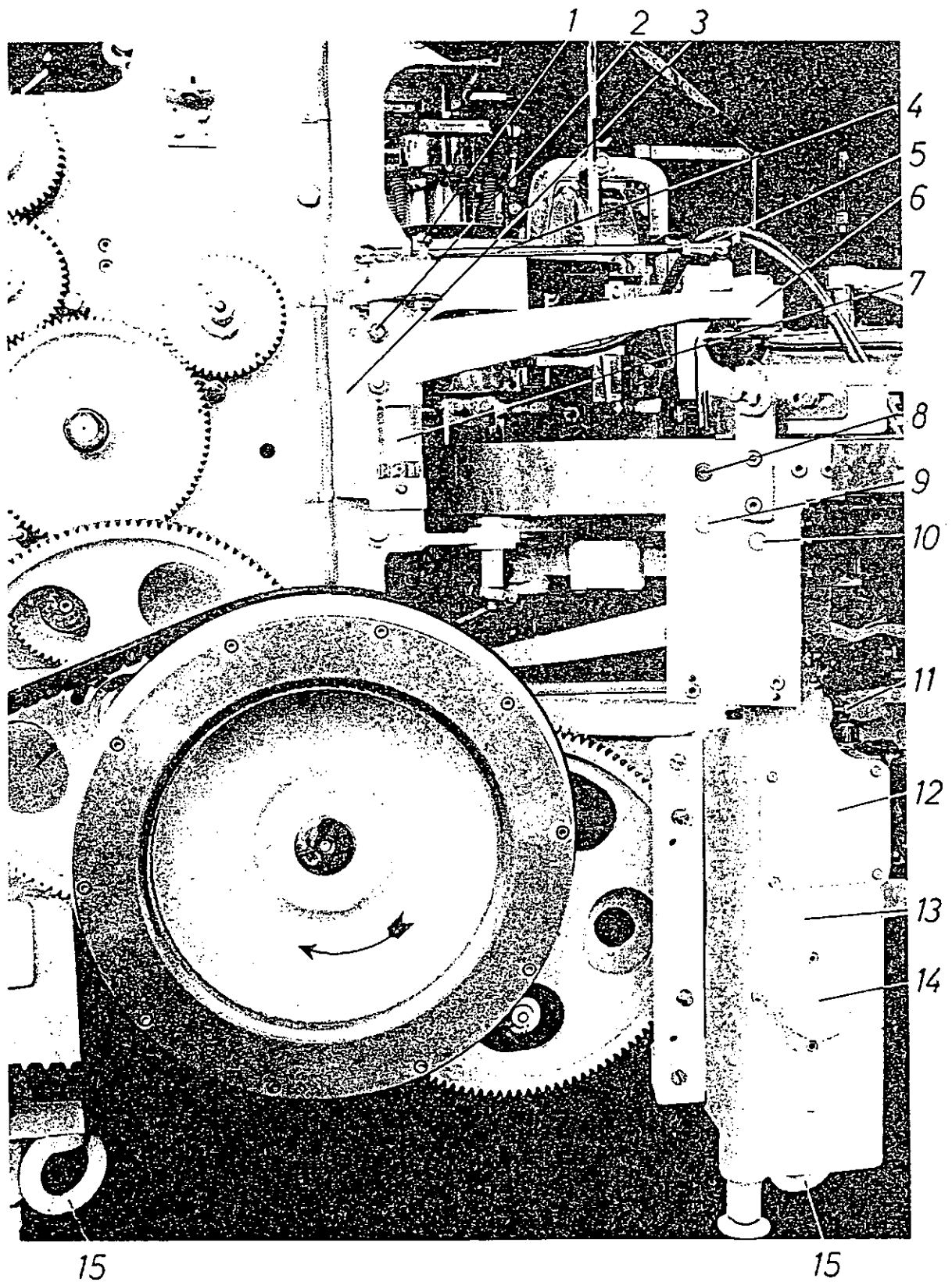


<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Gurtspannrolle	belt tensioning pulley	rouleau tendeur de tapis
2	Kugelschmiernippel	ball lubrication nipple	graisseur
3	Seitenwand	side wall	paroi latérale
4	Stellring	set collar	bague de serrage
5	Lager	bearing	palier
6	6kt-Schraube	hexagon head screw	écrou à 6 pans
7	Tischblech	table plate	tôle de table
8	Schutzblech	guard plate	protection
9	Holm (hinten)	spar (rear)	montant (derrière)
10	Gurt	belt	tapis
11	Zahnrad	gear	roue dentée
12	Achse	axle	arbre
13	Zahnrad	gear	roue dentée
14	Welle	shaft	arbre
15	Welle	shaft	arbre
16	Kegelrad	bevel wheel	roue conique
17	Kegelrad	bevel wheel	roue conique
18	Welle	shaft	arbre



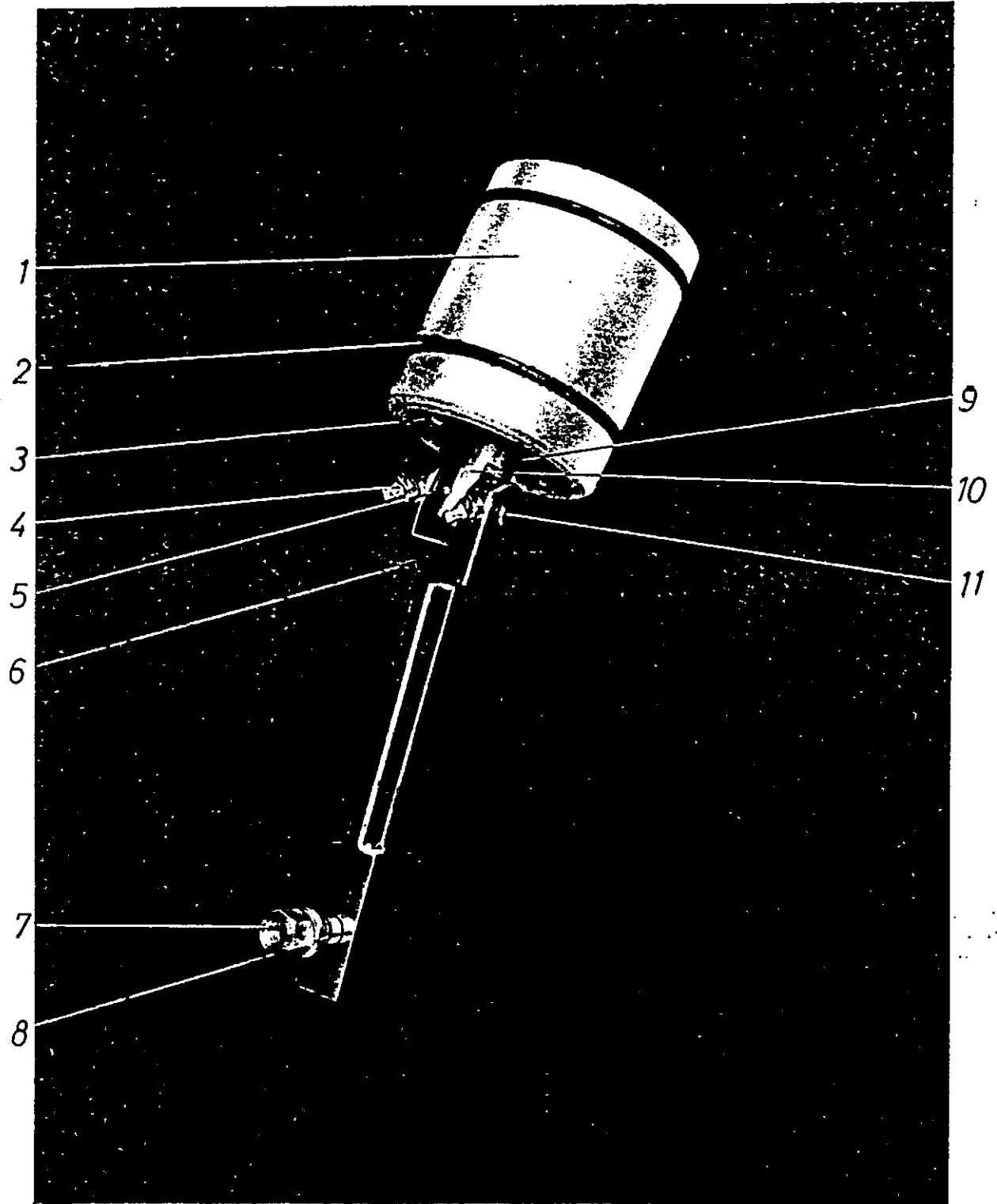
<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Kugelzapfen	ball and socket	goupille à bille
2	Klemmschraube	adjusting screw	ecrou de serrage
3	Lagerbock	pillow block	support
4	Zugstange	connecting rod	tige
5	Kugelgelenk	ball joint	rotule
6	Abschiebehebel	push-off lever	levier poussoir
7	Welle	shaft	arbre
8	Achse	axle	arbre
9	Achse	axle	arbre
10	Achse	axle	arbre
11	Stellschraube	regulating screw	ecrou de serrage
12	Deckblech	cover plate	protection
13	Abtransportfuß	discharge conveyer foot	pied d'évacuation
14	Deckel	cover	couvercle
15	Ringschraube	ring bolt	vis à anneau

Fig. 8345 / 56



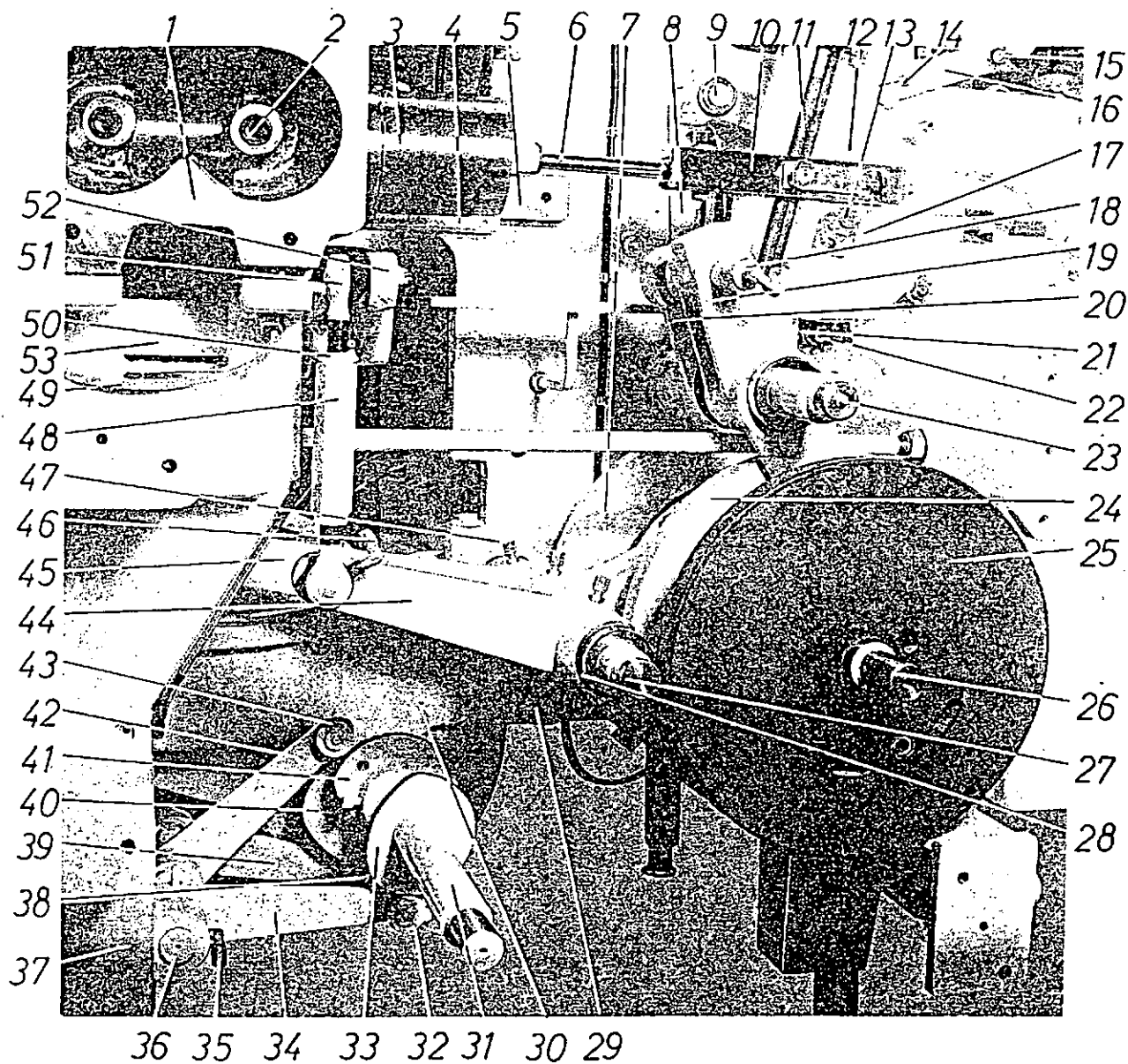
<i>Position. Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Kolben	piston	piston
2	O-Ring	O-ring	joint
3	6kt.-Schraube	hexagon head screw	vis à 6 pans
4	Kugelschmiernippel	ball lubrication nipple	graisseur
5	Kegelstift	taper pin	goupille
6	Kolbenstange	piston rod	tige
7	6kt.-Mutter	hexagon nut	écrou à 6 pans
8	Bolzen	bolt	boulon
9	Deckel	cover	couvercle
10	Bolzen	bolt	boulon
11	Bolzen	bolt	boulon

Fig. 8345/58



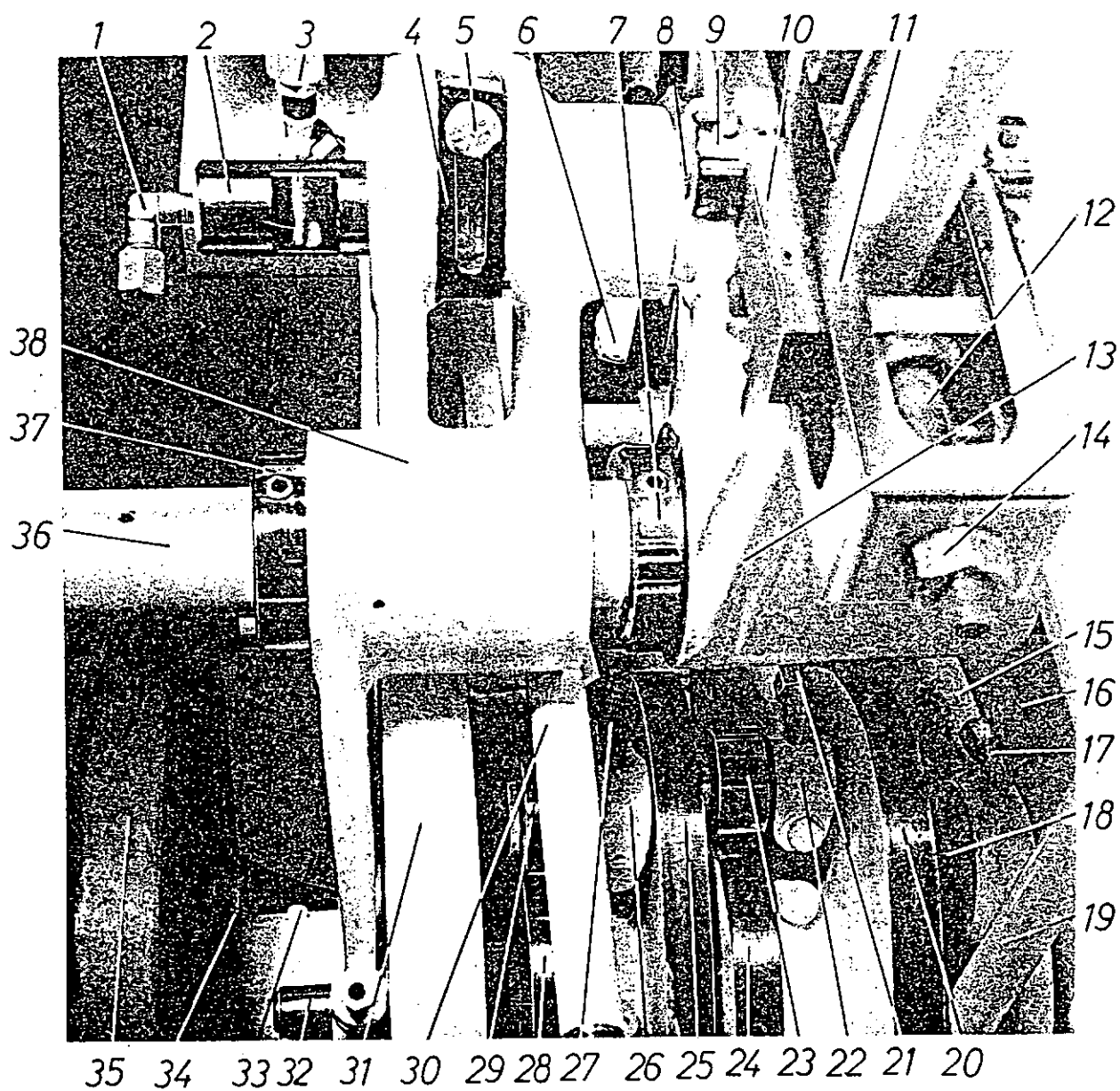
Position Reference Repère	Bezeichnung	Designation	Désignation
38	Kurvenrolle	cam roller	rouleau à cames
39	Rollenhebel	roll lever	levier à galet
40	Falterkurve	folder cam	came de pliage
41	Falterkurve	folder cam	came de pliage
42	Rollenhebel	roll lever	levier à galet
43	Kurvenrolle	cam roller	rouleau a cames
44	Rollenhebel z. Dosierzylinder	roll lever for dosing cylinder	levier à galet pour cylindre doseur
45	Rollenhebel z. Abfüllhahn	roll lever for filling nozzle	levier à galet pour bec verseur
46	Einschraubverschraubg.	screwing joint	reccords à vis
47	Gerade-Einschraubverschraubung	straight screwing joint	raccords à vis tout droit
48	Zugstange, vollst.	connecting rod, compl.	tige complète
49	Schmierschlauch	lubrication hose	tuyeau de graissage
50	6kt-Mutter	hexagon nut	ecrou à 6 pans
51	Hebel	connecting rod	tige
52	Achse	lever	levier

Position Reference Repère	Bezeichnung	Designation	Désignation
1	Dosiergehäuse (nur bei Typ 8345 S)	dosing housing (only on Typ 8345S)	carter de dosage
2	Buchse (nur bei Typ 8345 S)	bush (only on Typ 8345 S)	bague suel sur type 8345S suel sur type 8345S
3	Dosierzylinder	dosing cylinder	cylindre doseur
4	Führung	guide	guidage
5	Führungsstück	guide piece	pièce de guidage
6	Kolbenstange	piston rod	tige
7	Kurve z. Faltstempel	cam for folding plunger	came pour poinçon de pliage
8	Hebel	lever	levier
9	Bolzen	bolt	boulon
10	Spannstück	tensioning piece	pièce de tension
11	Gewindespindel	thread spindle	vis molletée
12	Abschneiderkurve	cutter cam	came découpeur
13	Welle	shaft	arbre
14	Bolzen	bolt	boulon
15	Bolzen	bolt	boulon
16	Hebel	lever	levier
17	Aufnahmeflansch	receiving flange	flasque de prise
18	Mitnehmerachse	carrier axle	arbre d'entraînement
19	Rollenhebel	roll lever	levier à galet
20	Dosiergabel	dosing fork	fourchette de dosage
21	Kettenrad	chain wheel	roue à chaîne
22	Bolzen	bolt	boulon
23	Achse	axle	arbre
24	Dosierkurve	dosing cam	came de dosage
25	Dosierkurve	dosing cam	came de dosage
26	Kurvenwelle	cam shaft	arbre de came
27	Hebelwelle	lever shaft	arbre à levier
28	Stellring	set collar	anneau de serrage
29	Scheibe	disc	disque
30	Untergestell	frame	sous-bâti
31	Kurvenwelle	came shaft	arbre à comes
32	Kurvenrolle	cam roller	galet à came
33	Falterkurve	folder cam	came de pliage
34	Rollenhebel	roll lever	levier à galet
35	Einschraubverschraubg.	screwing joint	raccord à vis
36	Hebelwelle	lever shaft	arbre à leviers
37	Gestellfuß	frame foot	pied verin

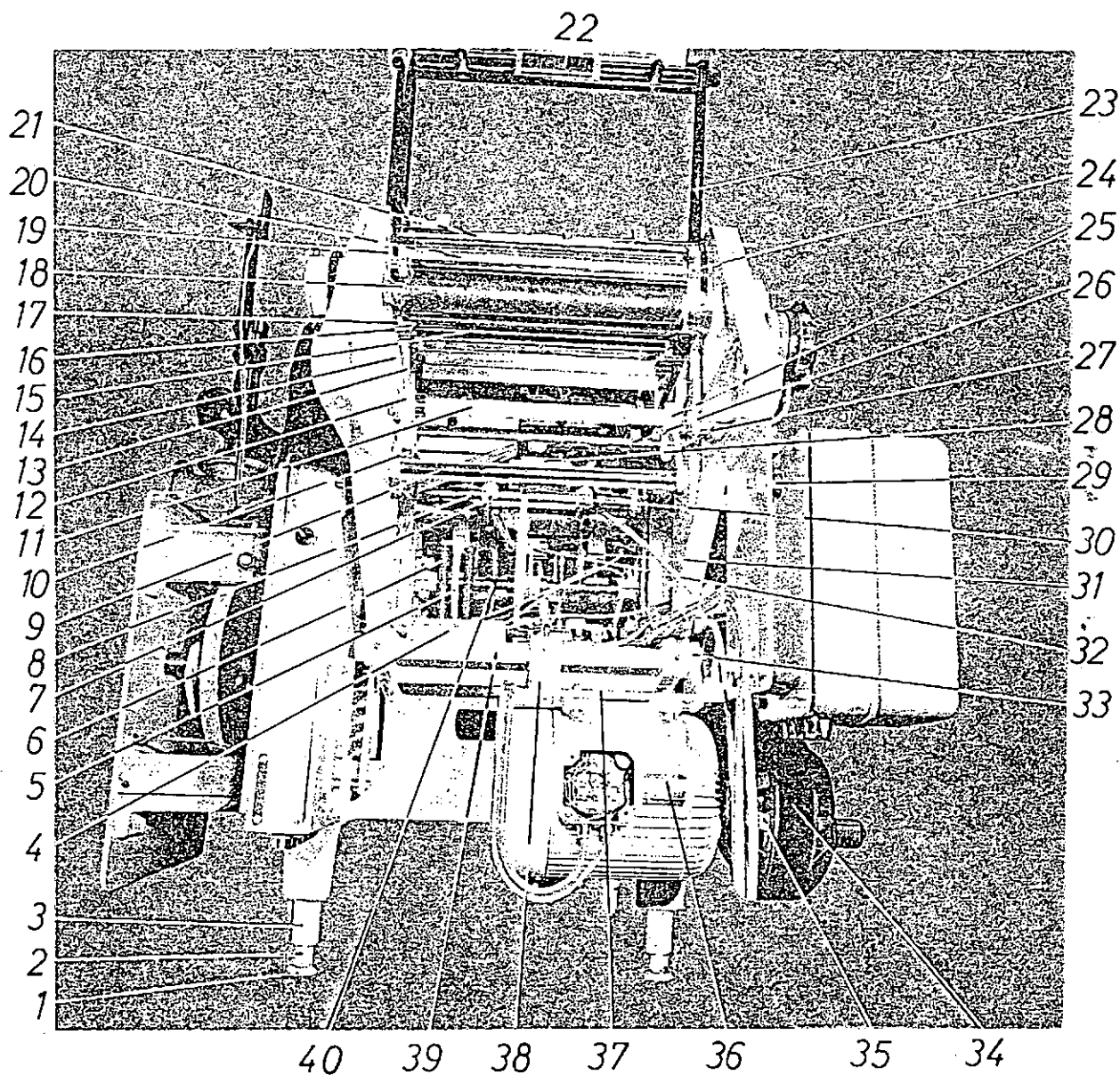


<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
36	Achse	axle	arbre
37	Stellring	set collar	anneau régulateur
38	Rollenhebel z. Dosier- gabel	roller lever for do- sing support	levier à galet pour la jumelle de dosage

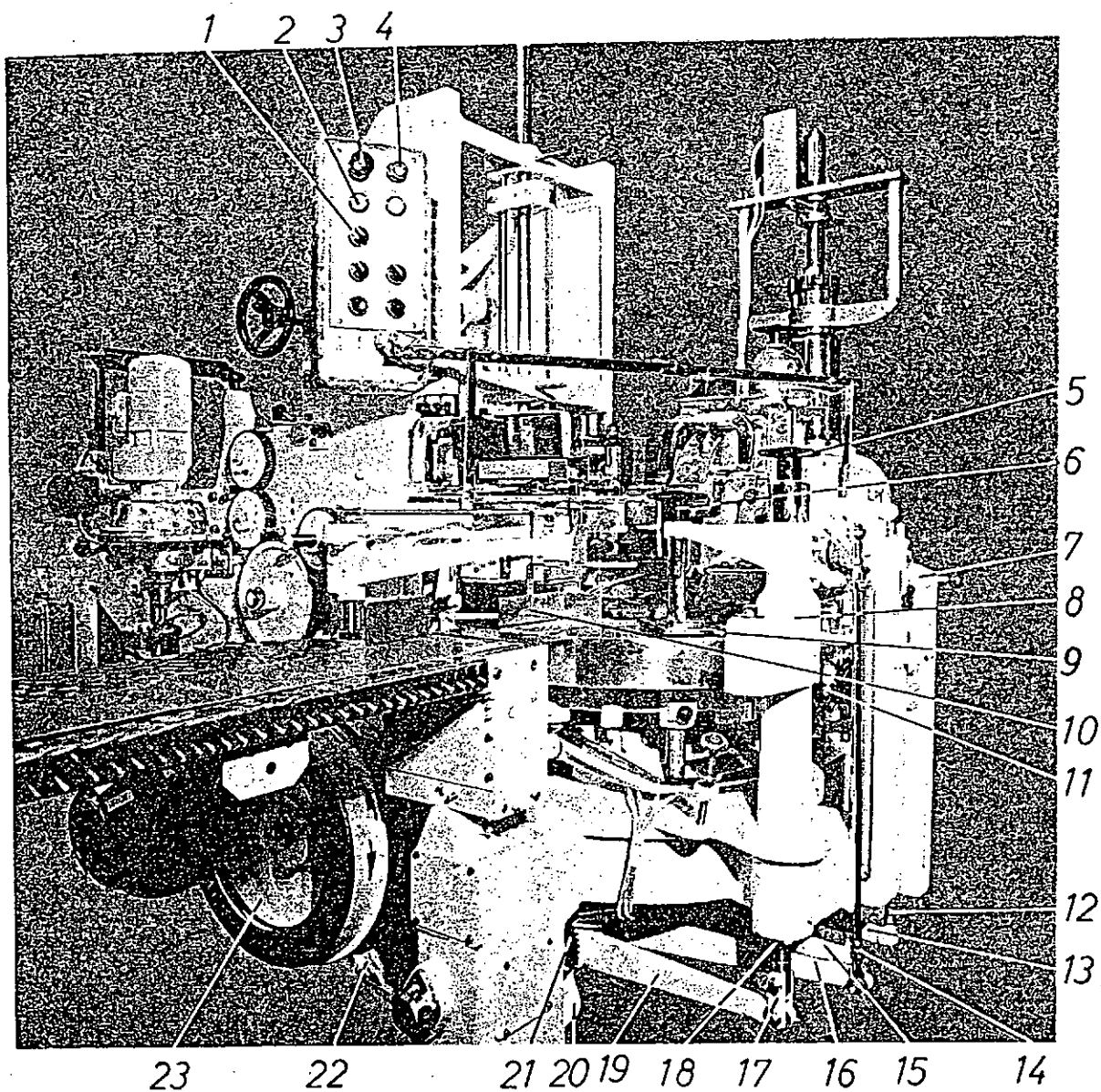
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Einstellschraube	Adjusting Screw	vis de réglage
2	Mitnehmerwelle	Carrier shaft	axe d'entraînement
3	Zugstange	Connecting rod	barre de traction
4	Leiste	Ledge	languette
5	6kt-Schraube	Hex. screw	vis hexagone
6	Zugstange	Connecting Rod	barre de traction
7	Stellring	Set collar	anneau régulatric
8	Bolzen	Bolt	boulon
9	Stellring	Set collar	anneau régulatric
10	Führungsstück	Guide Rail	segment de guidage
11	Stellstück	Adjusting piece	segment régulatric
12	Stellspindel	Adjusting spindle	pivot régulatric
13	Dosiergabel	dosing support	jumelle de dosage
14	6kt-Mutter	Hex. Nut	écrou haxagone
15	Rollenhebel z. Faltstempel	Roller lever for folding	levier à galet pour le poinçon
16	Faltstempelkurve	Folding plunger cam	came du poinçon de pliage
17	Einschraubverschraubg.	Screw joint	boulonnage de vissage
18	Rollenbolzen und Rolle	roller bolt and roller	boulon à galet et galet
19	Zugstange	Connecting rod	barre de traction
20	Hauptkurve z. Abfüllhahn	Main cam for filling nozzle	came principale pour le robinet de remplissage
21	Einschraubverschraubg.	Screw joint	boulonnage de vissage
22	Rollenhebel z. Abfüllhahn	Roller lever for filling	levier à galet pour le robinet de remplissage
23	Kurvenrolle 50 Ø	cam roller 50 Ø	galet à came 50 Ø
24	Gegenkurve z. Abfüllhahn	Counter cam for filling	contre-came pour le robinet de remplissage
25	Hauptkurve z. Dosierzylinder	main cam for dosing cylinder	came principale pour le verin de dosage
26	Rollenhebel z. Dosierzylinder	roller lever for dosing cylinder	levier à galet pour le verin de dosage
27	Einschraubverschraubg.	screw joint	boulonnage de vissage
28	Gegenkurve z. Dosierzylinder	counter cam for dosing cylinder	contre-came pour le verin de dosage
29	Kurvenrolle	cam roller	galet à came
30	Traverse	bracket	traverse
31	Dosierkurve	dosing cam	came de dosage
32	Rollenbolzen	roller bolt	boulon à galet
33	Kegelstift	taper pin	goupille conique
34	Nabe	hub	moyeu
35	Dosierkurve	dosing cam	came de dosage



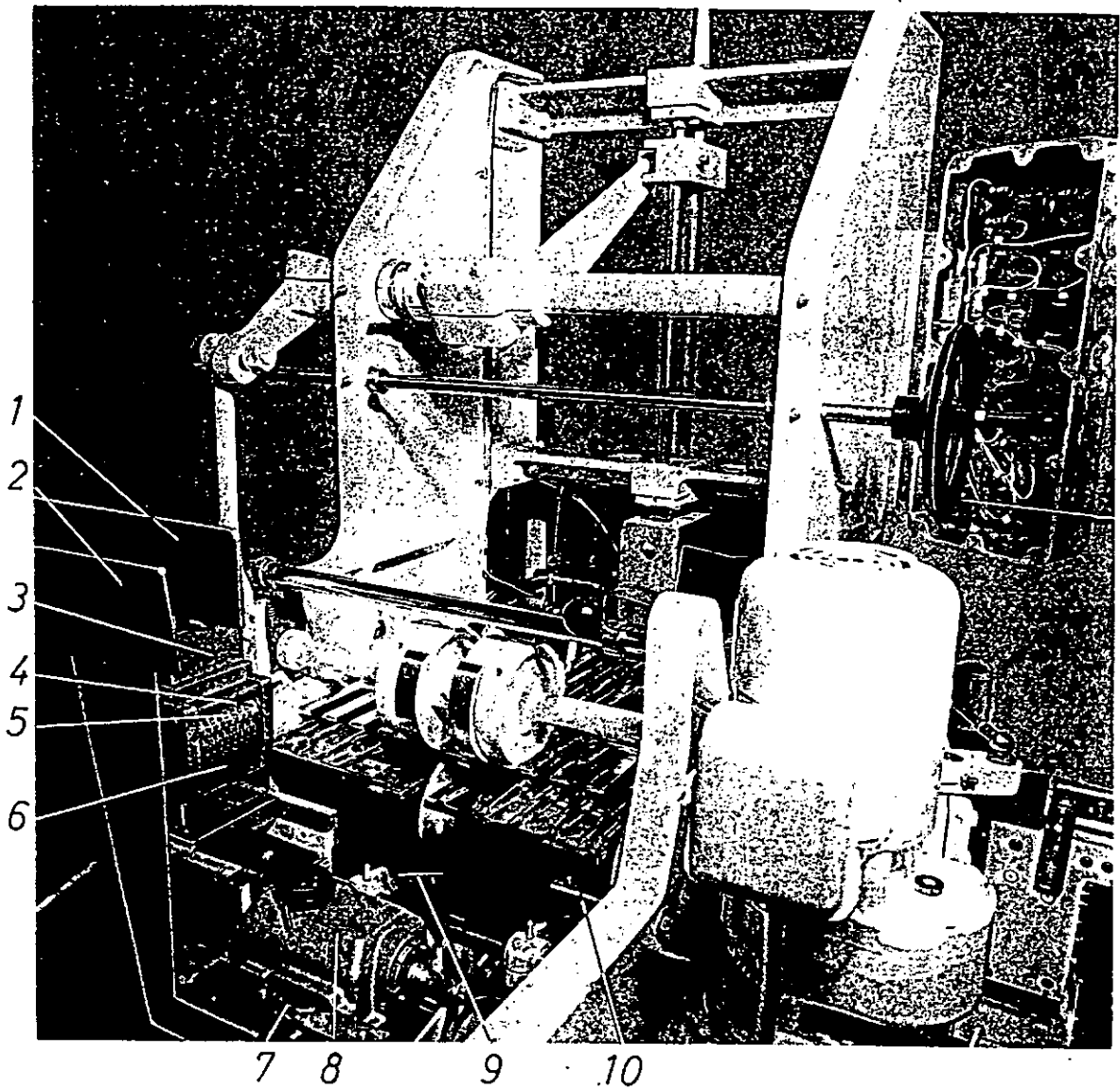
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Kalotte	spherical cap	pied vérin
2	Kalottenfuß	adjustable foot	piéd vérin
3	Hülse	sleeve	douille
4	Schmierleiste	lubrication gib	listeau de graissage
5	Zellenbodenhebel	cell bottom lever	levier de fond de cellule
6	Zugfeder	tension spring	ressort de traction
7	Hebel	lever	levier
8	Welle	shaft	arbre
9	Pendelrolle	pendulum roller	rouleau oscillant
10	Endschalter	limit switch	fin de course
11	Achse	axle	arbre
12	Pendelhebel	pendulum lever	levier oscillant
13	Zugfeder z. Kupplung	tension spring for clutch	ressort de traction pour embrayage
14	Zugstange	connecting rod	tige
15	Pendeltraverse	pendulum bracket	traverse oscillant
16	Kupplungsstück	coupling piece	pièce d'embrayage
17	Kupplungsstück	coupling piece	pièce d'embrayage
18	Untere Vorzugswalze	lower feed roller	cylindre d'entraînement
19	Lagerstein	slide block	pièce de glissement inférieur
20	Obere Vorzugswalze	upper feed roller	cylindre d'entraînement supérieur
21	Traverse	bracket	traverse
22	Bremsleiste	brake gib	listeau de freinage
23	Bremsbügel	brake bow	étrier de freinage
24	Rädergehäuse	gear housing	carter des roues
25	Pendelhebel	pendulum lever	levier oscillant
26	Führungsstange	guide rod	colonne de guidage
27	Pendelanhebel	pendulum lifting device	leveur de l'oscillant
28	Hebel	lever	levier
29	Gummi-Schwingkörper	rubber oscillating body	pièce oscillant en caoutchouc
30	Hebel	lever	levier
31	Zugstange	connecting rod	tige
32	Zugstange	connecting rod	tige
33	Lager	bearing	palier
34	Keilriemen	cone belt	courroie trapezoidale
35	Spreizscheibe	expanding disc	poulie
36	Bremsmotor	brake motor	moteur frein
37	Motorplatte	motor plate	plaque moteur



Position Reference Repère	Bezeichnung	Designation	Désignation
1	Drehschalter	rotary switch	interrupteur
2	Druckknopfschalter	push-button switch	bouton poussoir
3	Pilzdrucktaster	mushroom type switch	bouton interrupteur
4	Leuchtdrucktaster	luminous push-button	bouton poussoir d'alerte
5	Kreuzgriff	star handle	poignée en croix
6	Kreuzgriff	star handle	poignée en croix
7	Hebel	lever	levier
8	Halter	hold-fast	support
9	Preßplatte	press-plate	plaque de pression
10	Paketabschieber	packet push-off device	poussoir plaquettes
11	Zugstange	connecting rod	tige
12	Gelenkstangenknopf	toggle-link head	embout
13	Hebel	lever	levier
14	Gelenkstangenkopf	taggle-link head	embout
15	Hebel	lever	levier
16	Hebel	lever	levier
17	Gelenkstück	articulated joint	rotule
18	Stange	rod	colonne
19	Hebel	lever	levier
20	Lagerbock x	pillow block	support
21	Zahnrad x	gear	roue dentée
22	Zahnrad	gear	roue dentée
23	Keilriemenscheibe	cone belt pulley	courroie trapézoïdale
x	Siehe Fig. 8345/ 96	look at fig. 8345/96	

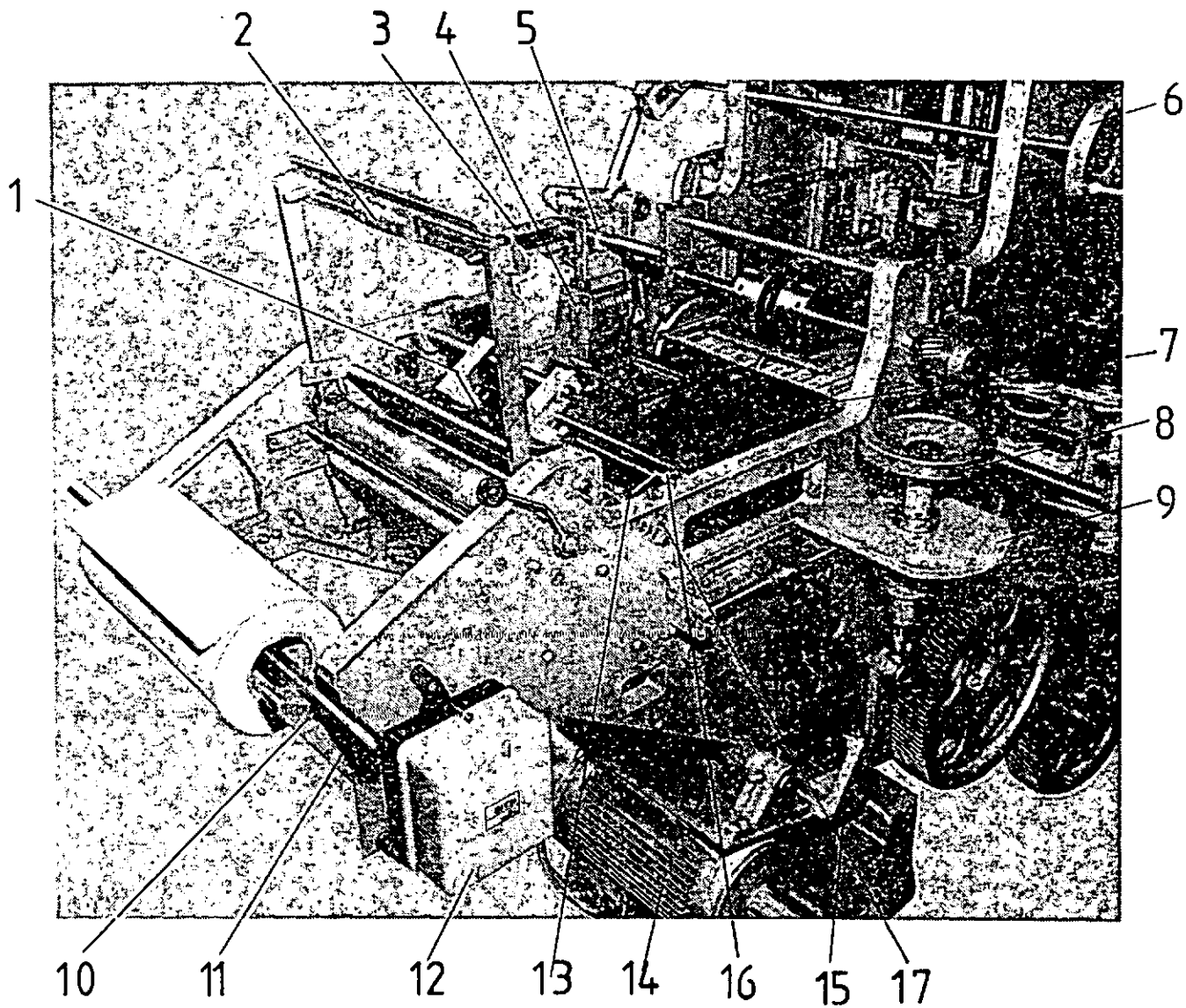


<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Deckblech	cover plate	protection
2	Blech	plate	tôle
3	Perforieraggregat	perforating attachment	dispositif de perforation
4	Blindscheibe	blind disc	disque à types blancs
5	Perforierscheibe	perforating disc	disque de perforation
6	Stechnadel	perforating needle	types de piquage en aiguilles
7	Leiste	gib	listeau
8	Tastkopf	scanning head	tête palpeur
9	Spiegel	mirror	miroir
10	Anschlag	stop	butée
11	Endschalter	limit switch	fin de course



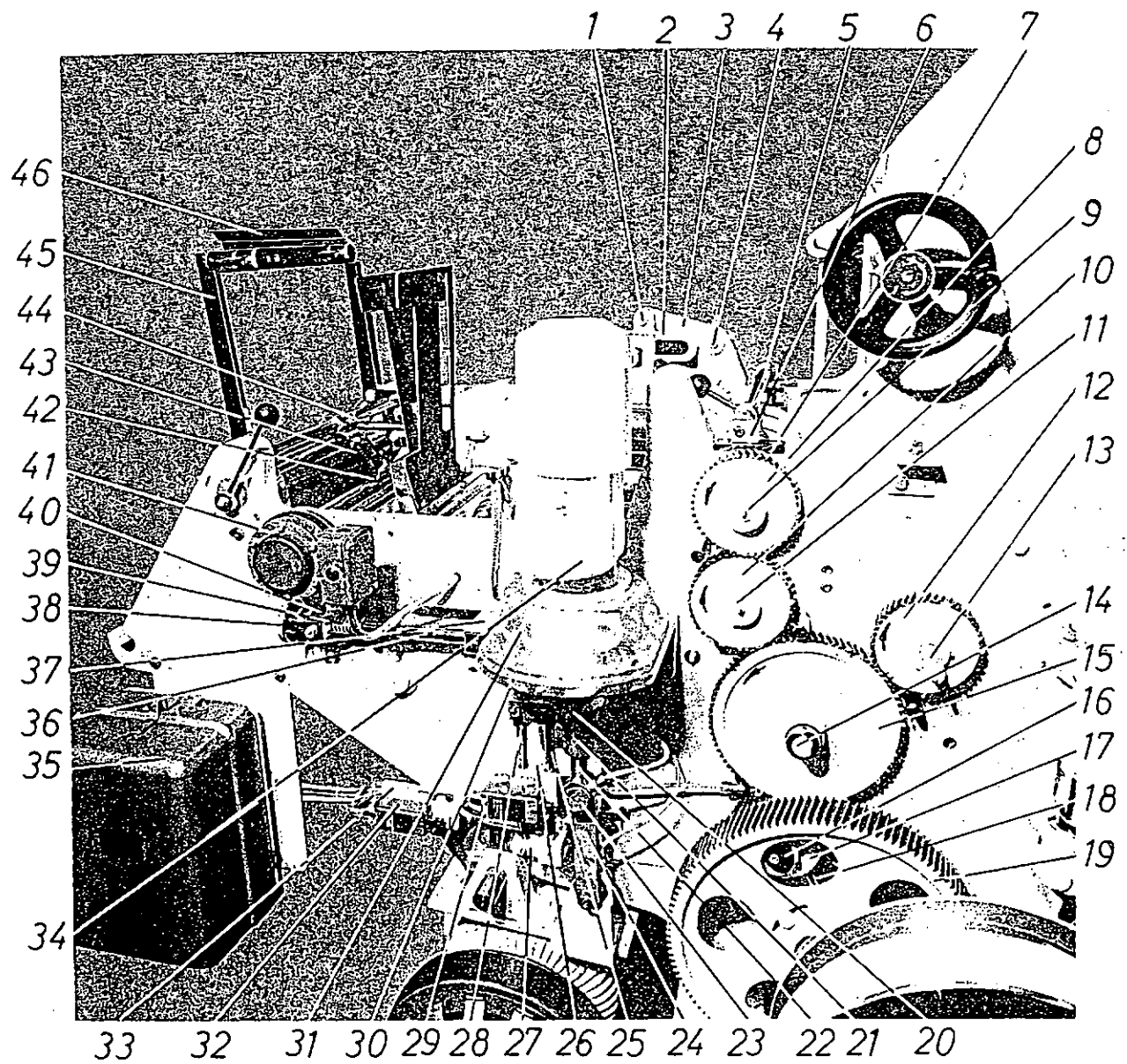
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Fallbremse	Lift brake	Frein de chute
2	Bremse	Brake	Frein
3	Führung	Guide	Guidage
4	Perforiergerät	Perforation unit	Unité de perfora- tion
5	Führung	Guide	Guidage
6	Handrad	Hand wheel	Manette
7	Platte	Plate	Plaque
8	Handrad	Hand wheel	Manette
9	Lager	Bearing	Palier
10	Lagerschale	Bearing box	Coquille
11	Einwicklerachse	Wrapping shaft	Arbre d'enveloppe- ment
12	Elk.-Kasten	Electro-connection box	Boîte à connexion électrique
13	Umlenkrolle z. Pendel	Reversing roll to swinging lever	Poulie de renvoi au pendule
14	Motor	Motor	Moteur
15	Lager	Bearing	Palier
16	Umlenkrolle	Reversing roll	Poulie de renvoi
17	Welle	shaft	arbre

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Position Reference Repère	Bezeichnung	Designation	Désignation
37	Führung	guide	guidage
38	Handrad	handwheel	manivelle
39	Druckfeder	pressure spring	clavette
40	Lager	bearing	palier
41	Magnetbremse	magnetic brake	frein magnetique
42	Bremsgummi	brake rubber	caoutchouc de freinage
43	Bremsdaumen	brake cog	pièce de freinage
44	Anschlag	stop	butée
45	Rollenbremse	roll brake	frein à galet
46	Abreiðblech	tear-off plate	tôle déchire-papier

Position Reference Repère	Bezeichnung	Designation	Désignation
1	Bolzen	bolt	boulon
2	Lager	bearing	palier
3	Hebel	lever	boulon
4	Bolzen	bolt	levier
5	Stange	rod	colonne
6	Führungsstein	guide block	pièce de glissement
7	Platte	plate	plaque
8	Zahnrad	gear	roue dentée
9	Welle	shaft	arbre
10	Zahnrad	gear	roue dentée
11	Welle	shaft	arbre
12	Zahnrad	gear	roue dentée
13	Welle	shaft	roue dentée
14	Welle	shaft	arbre
15	Zahnrad	gear	roue dentée
16	Bolzen	bolt	boulon
17	Zahnrad	gear	roue dentée
18	Zahnrad	gear	roue dentée
19	Zahnrad	gear	roue dentée
20	Ring	ring	anneau
21	Führungsbüchse	guide bush	bague de guidage
22	Gewindestange	threaded rod	colonne filletée
23	Bolzen	bolt	boulon
24	Stange	rod	colonne
25	Stange	rod	colonne
26	Führungsstück	guide piece	pièce de guidage
27	Lager	bearing	palier
28	Lager	bearing	palier
29	Endschalter	limit switch	fin de course
30	Konsole	bracket	cale
31	Glocke (oder bei Hand- verstellung=Handrad)	bell (or in case of manual adjustment=handwheel)	cloche (ou bien mani- velle pour manœuvrement à main)
32	Endschalter	limit switch	fin de course
33	Halter	hold-fast	support
34	Servo-Motor	servo motor	servo-moteur
35	Steuerkasten f. Fotozelle	control box for photo-cell	boîte de commande pour cellule photo-électrique
36	Gewindespindel	threaded spindle	vis molletée



Position Reference Repère	Bezeichnung	Designation	Désignation
1	Elk. Kasten	Electro-connection box	Boîte à connexion électrique
2	Lagerschale	Bearing box	Coquille
3	Bremse	Brake	Frein
4	Führung	Guide	Guidage
5	Platte	Plate	Plaque
6	Platte	Plate	Plaque
7	Fotozelle	Photo-electric cell	Cellule photo-électrique
8	Zugstange	Draw rod	Tige de traction
9	Winkelgelenk	Angle joint	Joint angulaire
10	Vielkeilwelle	Spline shaft	Arbre à cales multiples
11	Zahnrad	Gear wheel	Roue dentée
12	Welle	Shaft	Arbre
13	Endschalter	Limit switch	Interrupteur de limite
14	Schaltkurve	Switching curve	Courbe de distribution
15	Welle	Shaft	Arbre
16	Welle	Shaft	Arbre
17	Bolzen	Bolt	Boulon
18	Zahnrad	Gear wheel	Roue dentée
19	Zahnrad	Gear wheel	Roue dentée
20	Spannsatz	Clamping set	Jeu de serrage
21	Spindel	Spindle	Axe
22	Bolzen	Bolt	Boulon
23	Kellenrad	Ladle wheel	Roue de truelle
24	Halter	Clip	Support
25	Spannrad	Clamping wheel	Roue de serrage
26	Rollenkette	Roll chain	Chaîne à rouleaux
27	Kettenrad	Chain wheel	Roue à chaînes
28	Welle	Shaft	Arbre
29	Kipphebel	Tipping lever	Briquet
30	Zahnrad	Gear wheel	Roue dentée

Fig. 8345/69-1

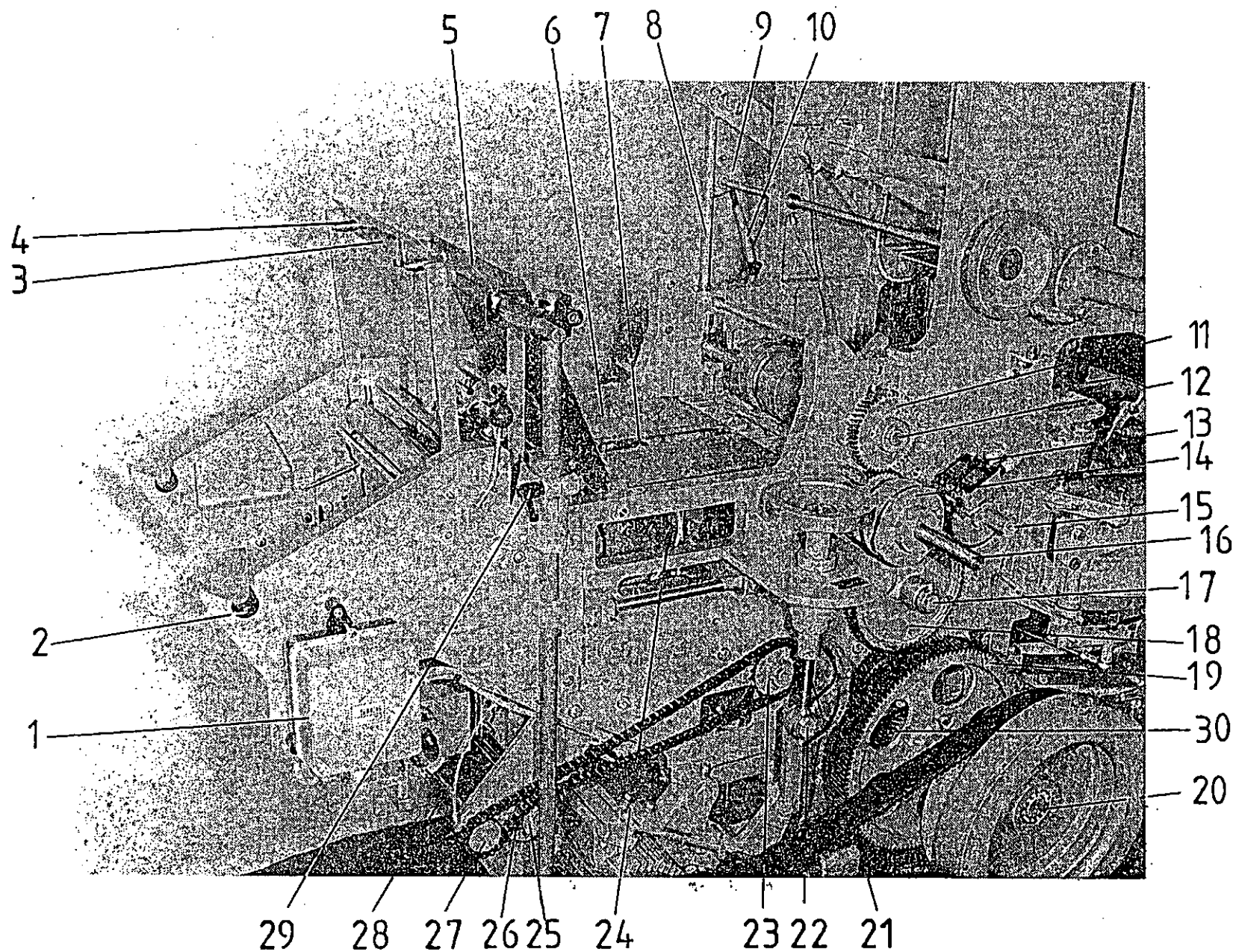


Fig. 8345/69-1

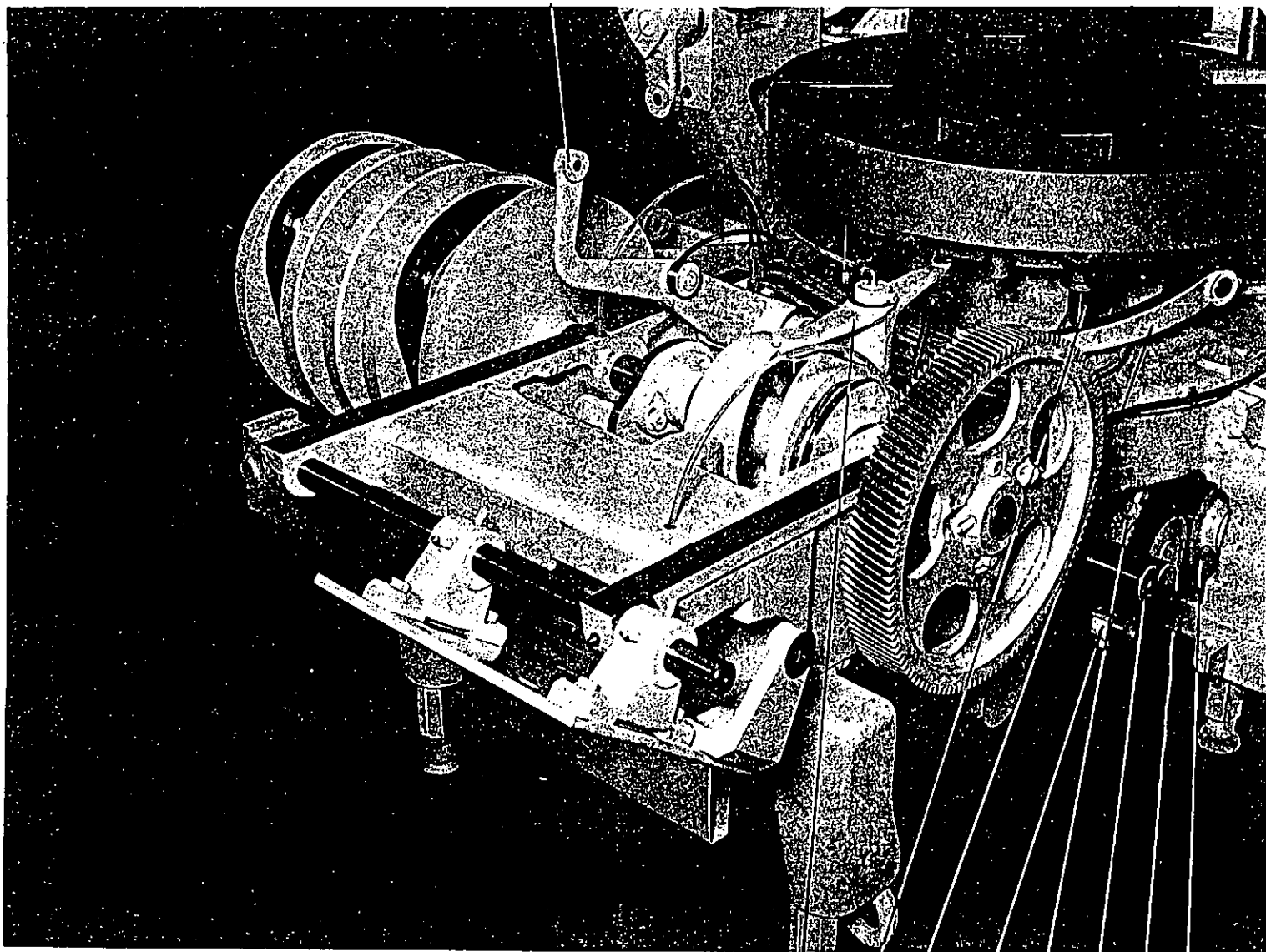
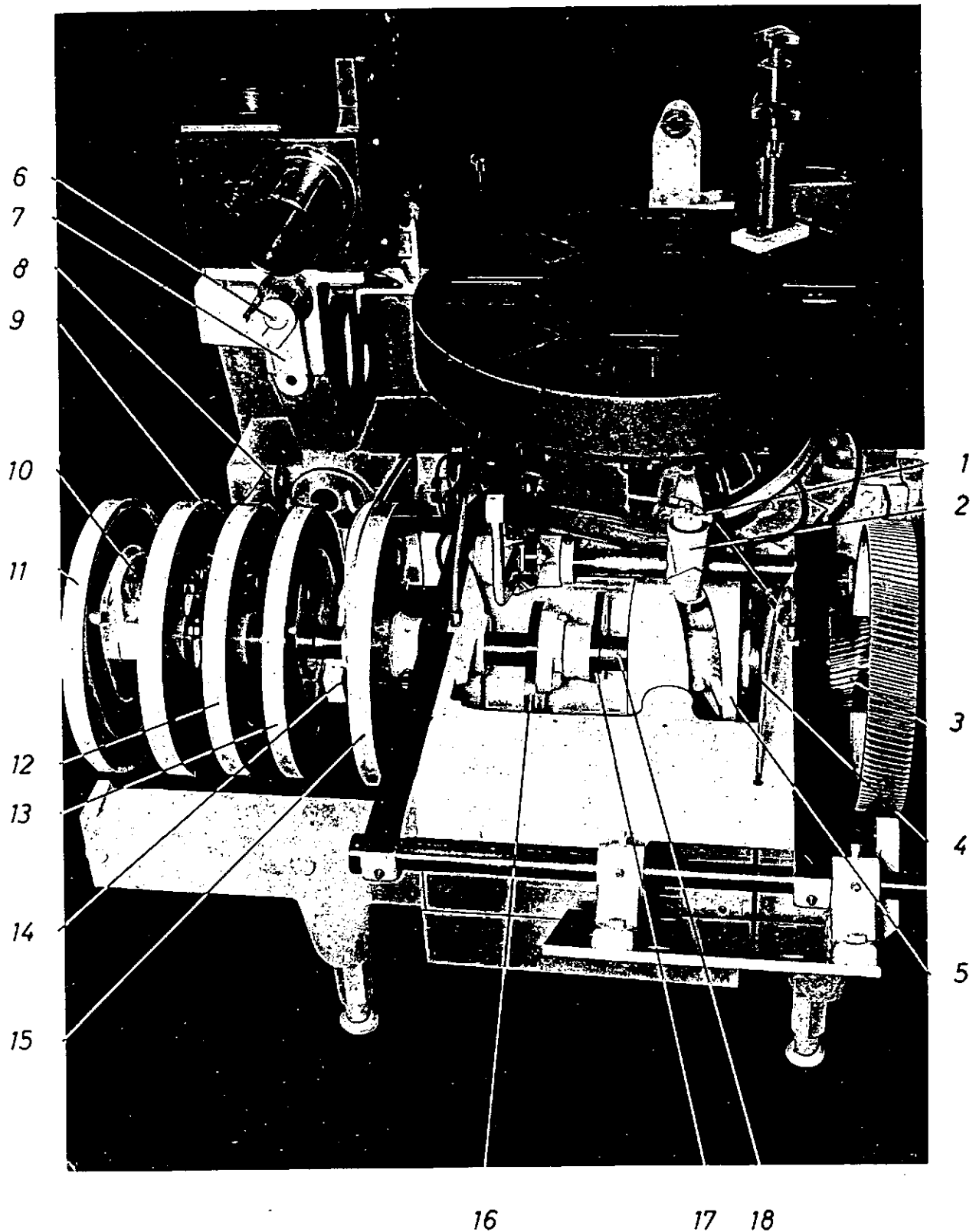


Fig. 8345193

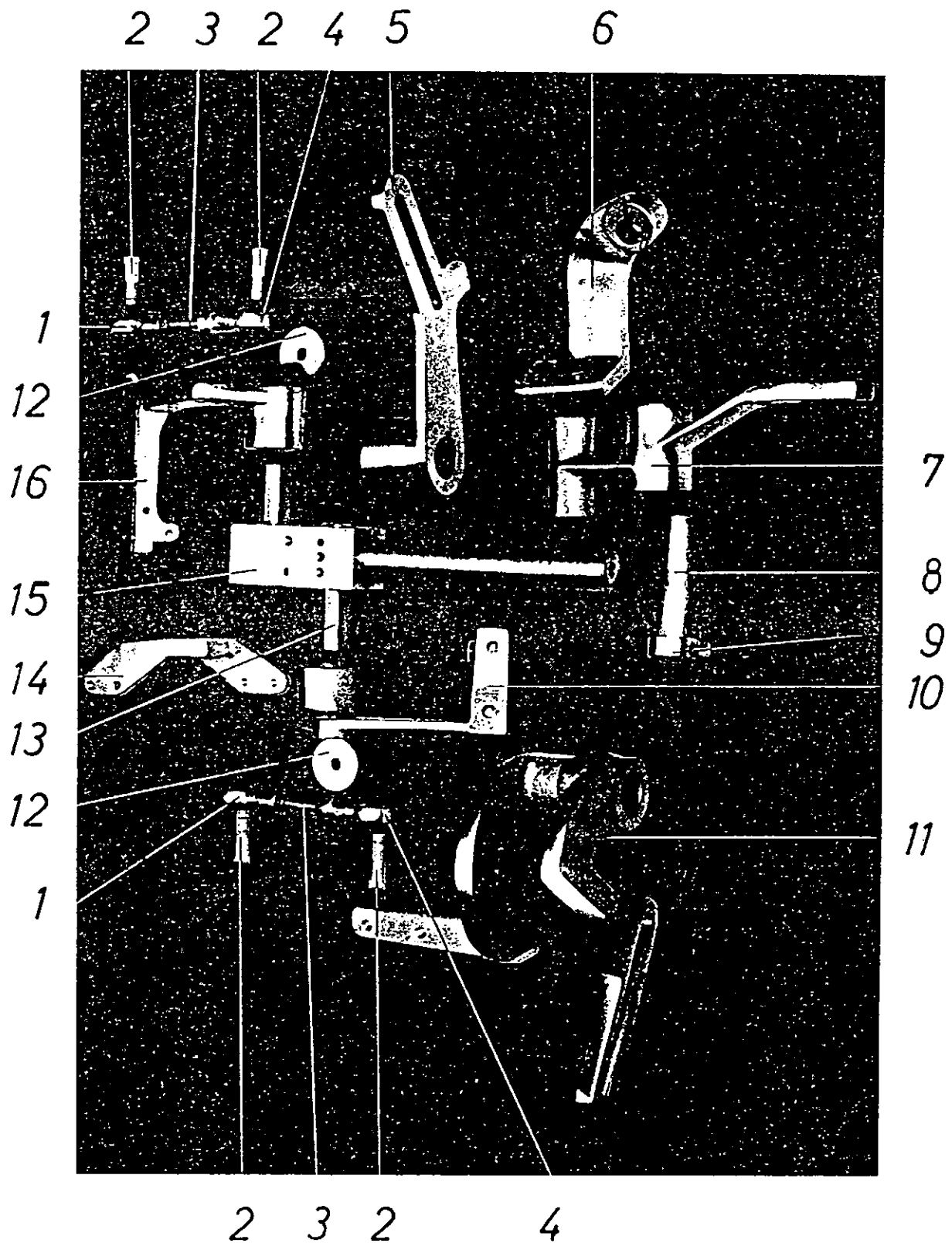


2 3 4 5 6 7 8 9

Fig. 8345194

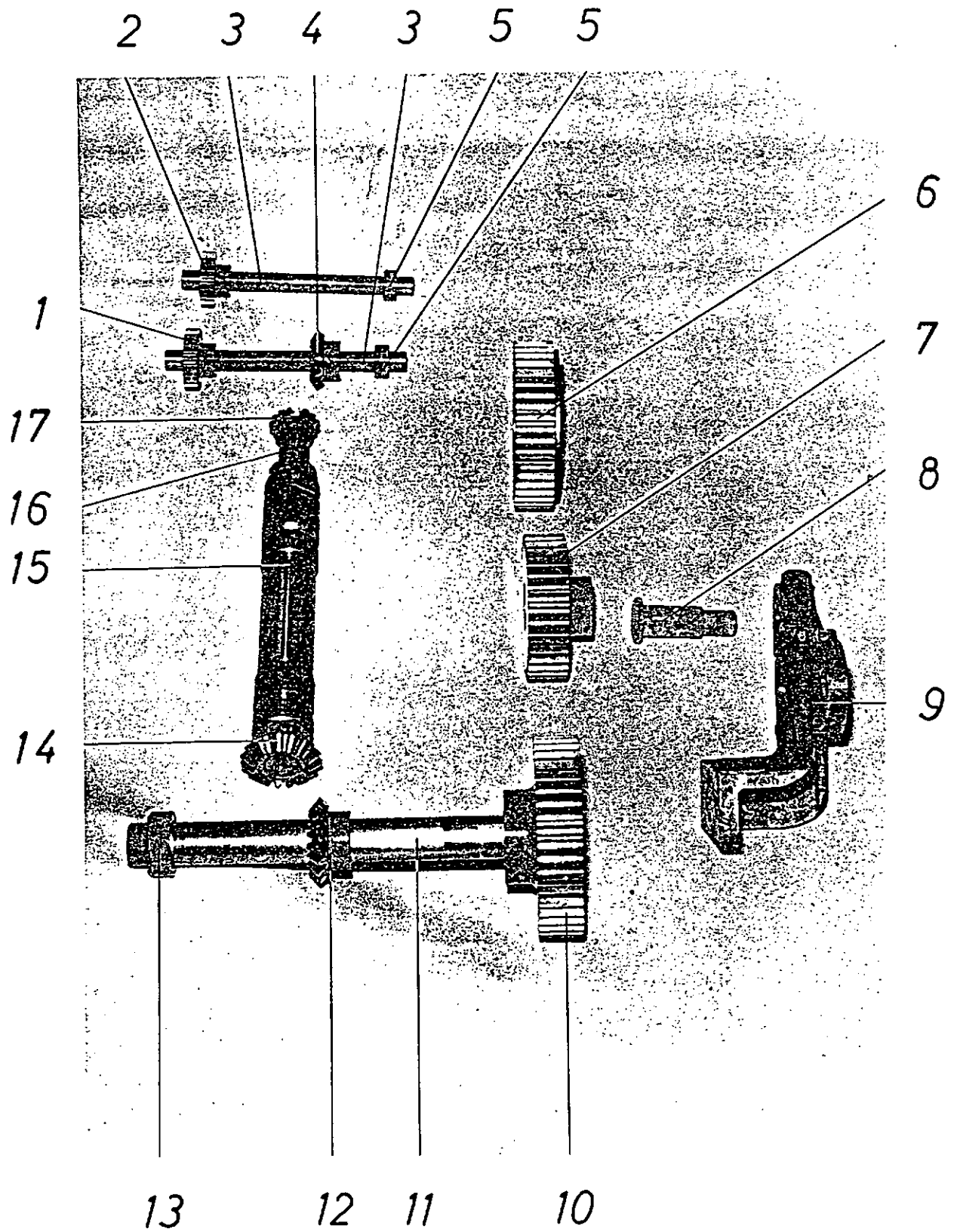


<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Gelenkstangenkopf links	toggle link head left	tête de joint articulé gauche
2	Bolzen	bolt	boulon
3	Zugstange	tie rod	tirant
4	Gelenkstangenkopf rechts	toggle link head right	tête de joint articulé droite
5	Hebel	lever	levier
6	Lager	bearing	palier
7	Hebel	lever	levier
8	Achse	axle	axe
9	Stellring	adjusting ring	bague de réglage
10	Hebel	lever	levier
11	Hebel	lever	levier
12	Deckscheibe	cover disc	disque de recouvrement
13	Bolzen	bolt	boulon
14	Halter	support	support
15	Achse	axle	axe
16	Hebel	lever	levier



<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Zahnrad	Gear Wheel	Roue dentée
2	Zahnrad	Gear Wheel	Roue dentée
3	Welle	Shaft	Arbre
4	Kegelrad	Bevel wheel	Roue conique
5	Stellring	Adjusting Ring	Eague de réglage
6	Zahnrad	Gear Wheel	Roue dentée
7	Zahnrad	Gear Wheel	Roue dentée
8	Bolzen	Bolt	Boulon
9	Falter	Support	Support
10	Zahnrad	Gear Wheel	Roue dentée
11	Welle	Shaft	Arbre
12	Kegelrad	Bevel Wheel	Roue conique
13	Stellring	Adjusting Ring	Eague de réglage
14	Kegelrad	Bevel Wheel	Roue conique
15	Hohlachse	Hollow Axle	Essieu Creux
16	Welle	Shaft	Arbre
17	Kegelrad	Bevel Wheel	Roue conique

Fig. 8345/96

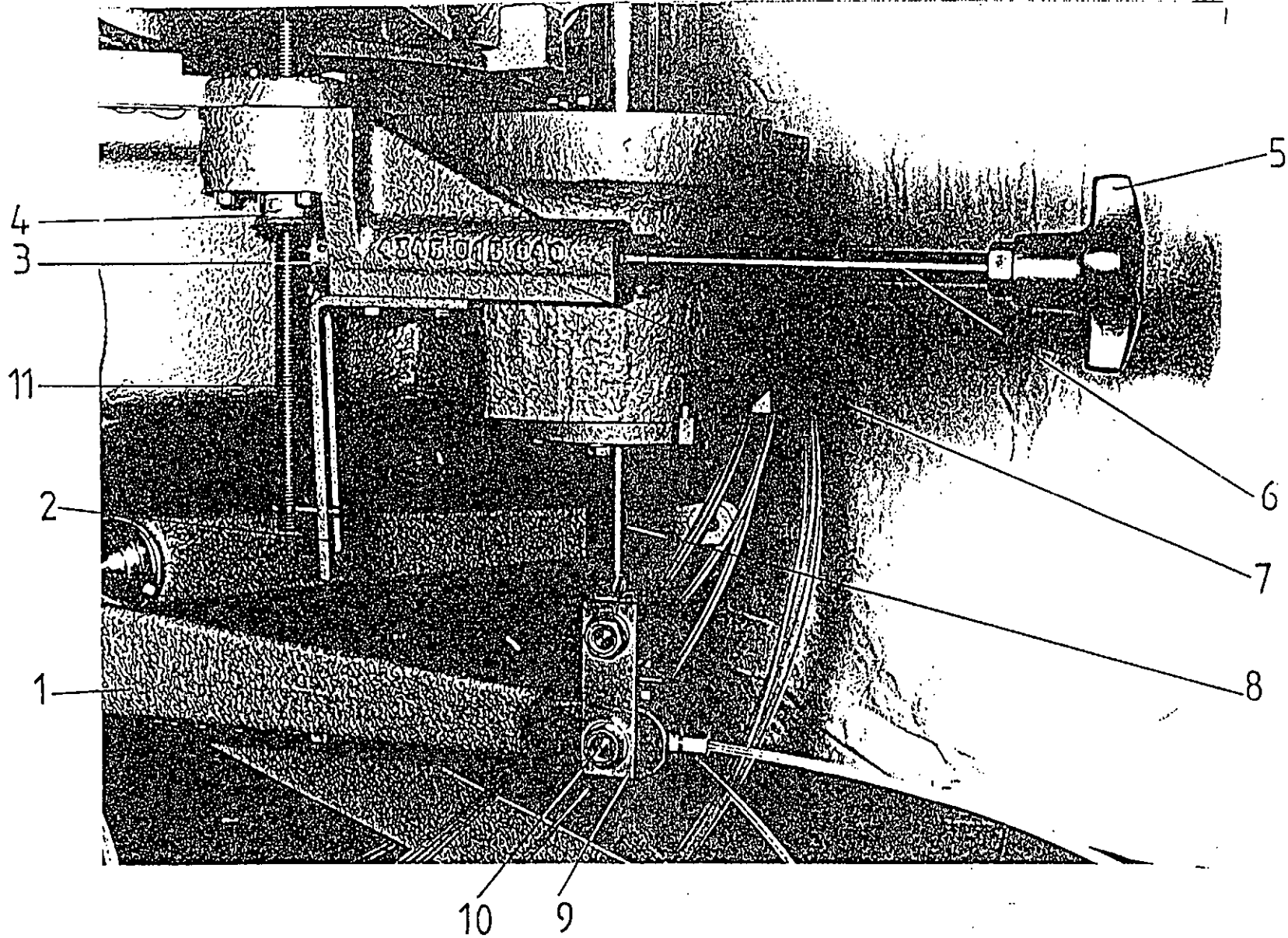


**BENHIL**

JÄGERBERG GRUPPE

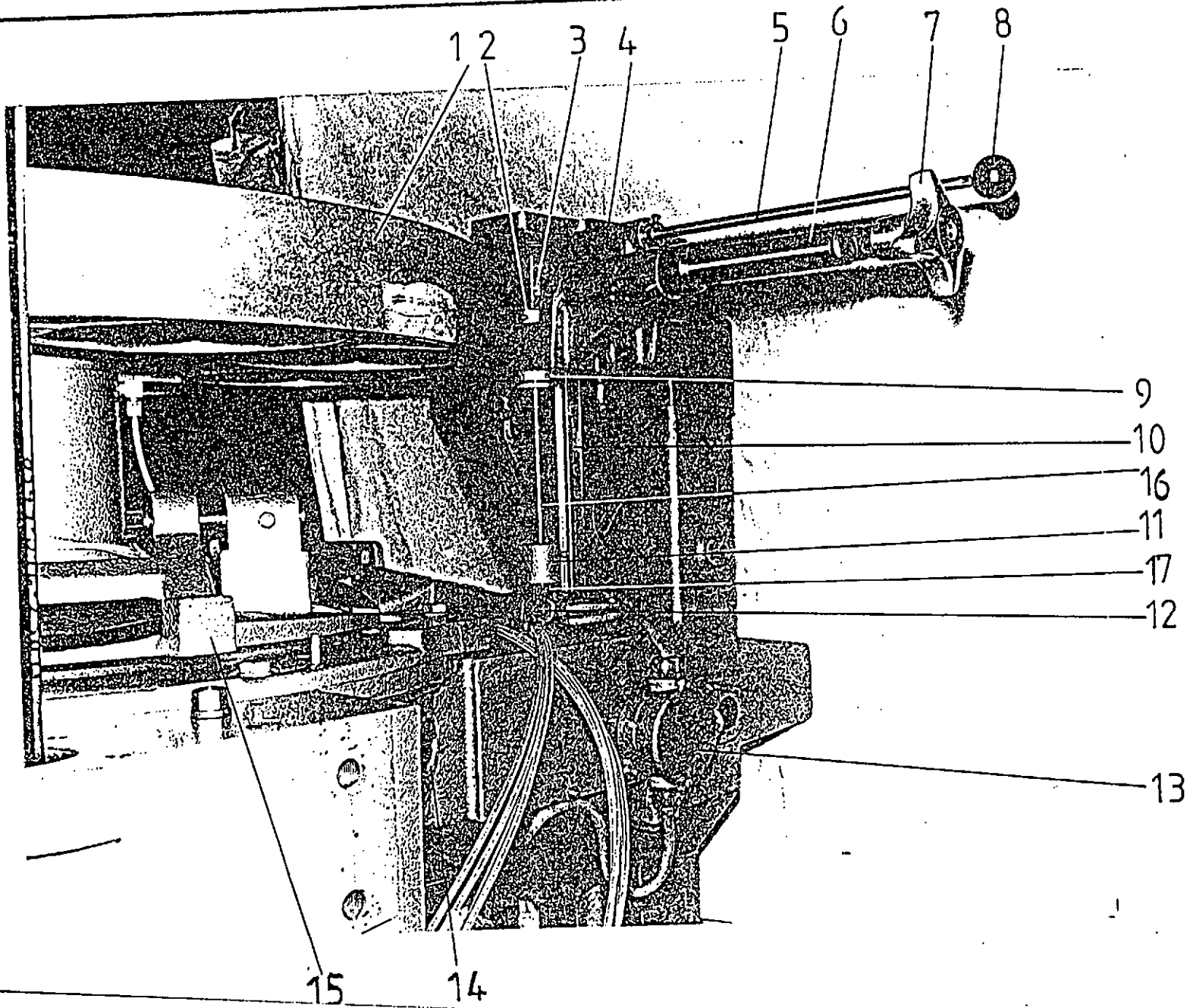
Fig 8345/ 140

<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Désignation</i>	<i>Désignation</i>
1	Hebel	Lever	Levier
2	Führung	Guide	Guidage
3	Kegelrad	Bevel gear	Roue d'angle
4	Kegelrad	Bevel gear	Roue d'angle
5	Kreuzgriff	Universal handle	Croisillon
6	Spindel	Spindle	Axe
7	Lager	Bearing	Palier
8	Stange	Rod	Tige



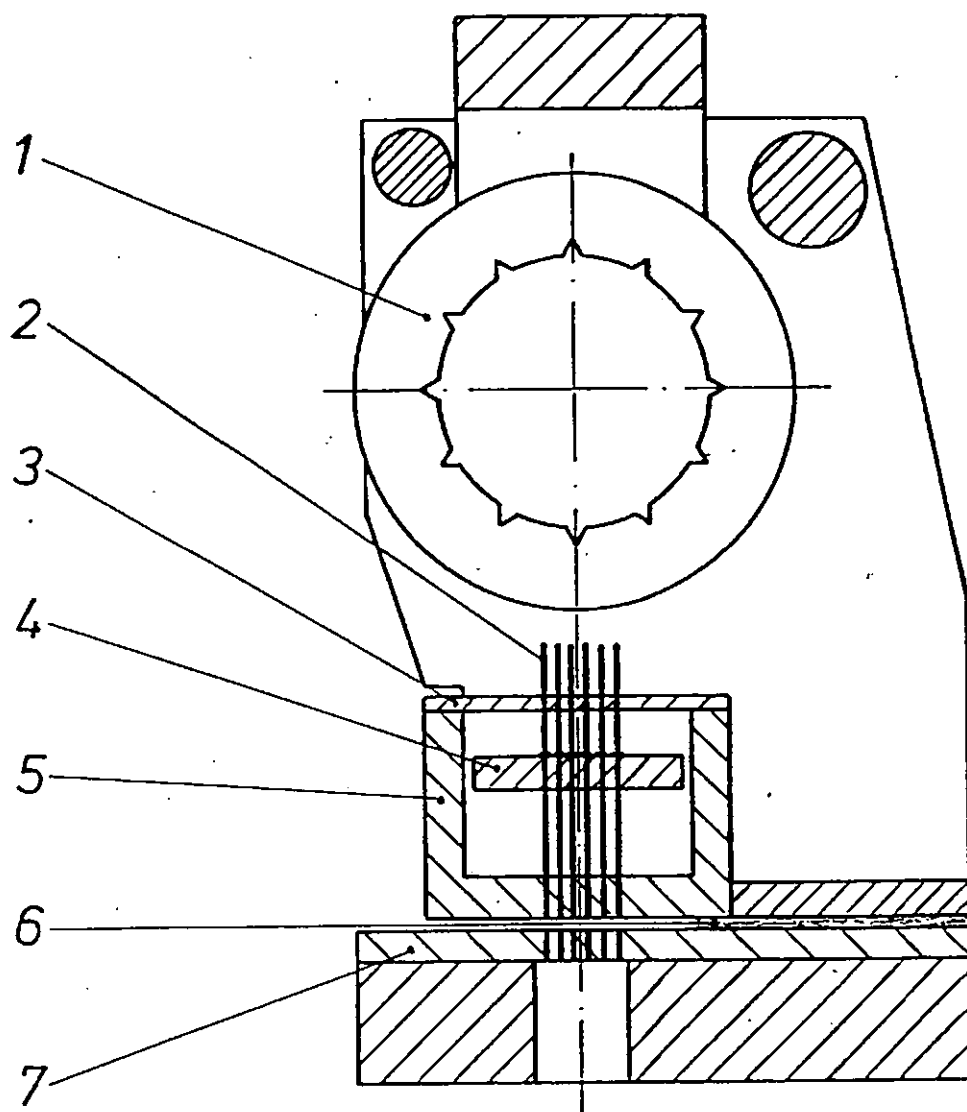
Position Référence Repère	Bezeichnung	Designation	Désignation
1	Zellentisch	Cell table	Table de cellules
2	Kegelrad	Bevel gear	Roue d'angle
3	Kegelrad	Bevel gear	Roue d'angle
4	Lager	Bearing	Palier
5	Stange	Rod	Tige
6	Hülse	Core	Douille
7	Kreuzgriff	Universal handle	Croisillon
8	Kugelkopf	Ball end	Tête sphérique
9	Buchse	Bushing	Boîte
10	Skala	Scale	Gamme
11	Anschlag	Stop	Butée
12	Weiche	Deflector	Changement
13	Abzweigdose	Connector box	Boîte de connexion
14	Ölschauglas	Oil-gauge window	Indicateur de niveau d'huile
15	Weiche	Deflector	Changement
16	Spindel	Spindle	Axe
17	Stopfen	Stopper	Bouchon

Urheberschutz: Für diese technische Unter-
lage behalten wir uns alle Rechte vor.



Position Reference Repère	Bezeichnung	Designation	Désignation
1	Walze	Cylinder	Cylindre
2	Perforiernadel Ø 0,9 x 35	Perforating pin Ø 0,9 x 35	Aiguille à perforer Ø 0,9 x 35
3	Abdeckplatte 40x2x Stellenzahl	Covering Plate 40x2x number of digits	Plaque de couver- ture 40x2x nombre des chiffres
4	Ausziehplatte 28x4x Stellenzahl	Pull-off plate 28x4x number of digits	Plaque à retirer 28x4x nombre des chiffres
5	Messing U-Profil 40x27x Stellenzahl	Brass U-profile 40x27x number of digits	Profil en U en laiton 40x27x nombre des chiffres
6	Distanz-Stück 35x1,5x Stellenzahl	Spacer 35x1,5x number of digits	Pièce de distance 35x1,5x nombre des chiffres
7	Platte 78,5x4x Stellenzahl	Plate 78,5x4x number of digits	Plaque 78,5x4x nombre des chiffres

Urheberschutz: Für diese technische Unter-
lage behalten wir uns alle Rechte vor.





Betriebs- und Montageanweisung

für SIMPLABELT-Verstellgetriebe 1:3

Type 100 und 101

Bestandteil der Garantiebedingungen

Maschinenfabrik Hans Lenze KG

4923 Extertal 1

A. Montage

I. Die fertiggebohrte Verstellscheibe ist mit gutem Festsitz auf den Motorwellenstumpf (5) aufzupassen. Zu beachten ist, daß die Verstellscheiben bis Größe 30 wahlweise mit Gewindestift oder Spannschraube axial gesichert werden müssen. Der Kopf des Gewindestiftes darf nicht über den Zahnfußkreis der Verschiebewelle hinausragen, damit die innere Tellerscheibe nicht blockiert wird. Ab Größe 40 erfolgt die axiale Sicherung generell durch Spannschrauben.

Die Paßfeder im Wellenstumpf muß gegen axiale Verschiebung gesichert sein.

II. Wippe oder Motorschlitten sind so in ihren Verstellbereichen einzustellen, daß der Riemen (2) nicht über den Scheibenrand hinauslaufen bzw. zu weit in die Verstellscheibe eingezogen und damit überspannt werden kann.

III. Verstell- und Gegenschleibe sind genau auszufluchten.

IV. Falls die Verstellscheibe auseinandergenommen werden muß, ist darauf zu achten, daß beim Zusammenbau die Zeichen 0-0 und 1-1 von korbverzahnter Nabe und Tellerscheiben übereinstimmen.

B. Schmierung

Grundschrnerung nicht vergessen!

Um eine hohe Lebensdauer der Verstellscheiben zu gewährleisten, ist die Grundschrnerung nach Montage der Scheiben unbedingt notwendig. Bitte deshalb unbedingt so lange mit der Fettpresse durchschmieren, bis Fettaustritt an der Korbverzahnung erfolgt. Der Schmierfilm in der Verzahnung muß immer gewährleistet sein.

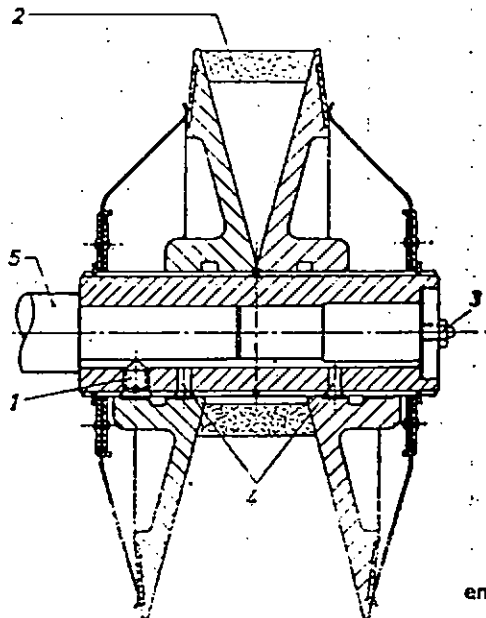
Nachschrnerfristen:

bel 8-Std.-Betrieb 1 x wöchrntlich
bel 16-Std.-Betrieb 2 x wöchrntlich
bel 24-Std.-Betrieb 3 x wöchrntlich

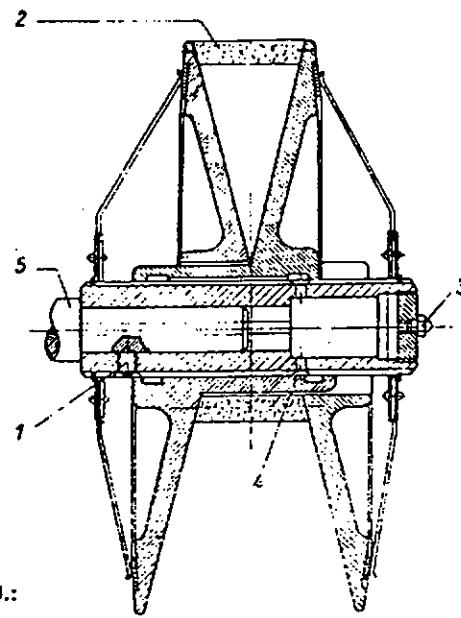
bel Hitze-, Staub- oder
Feuchtigkeitselnwirkung
entsprechend öfter.

Getriebe nicht im Stillstand verstellen!

Verstellscheibe Normalausführung Type 100



Verstellscheibe Fingerausführung Type 101



Zur Schrnerung
empfehlen wir z. B.:

			
BP ENERGREASE RBB 2 oder BP ENERGREASE LS 2	ANDOK B oder BEACON 2	GARGOYLE FETT 1200, MUBILUX 2	SHELL FETT FP 4 oder SHELL Alvania Fett 2

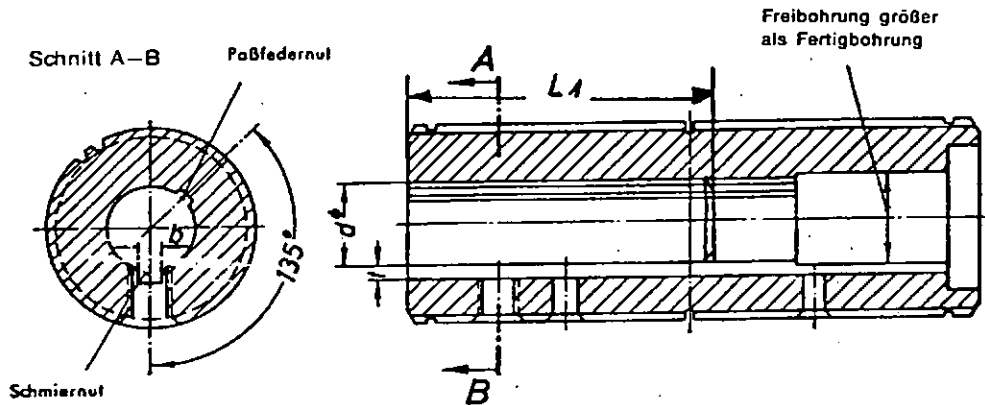
Bel Wahl eines anderen Fettfabrikates ist auf gleiche Zusammensetzung des Fettes zu achten.

Anweisung für Fertigbohrung und Schmiernuten

Wenn die SIMPLABELT-Verstellscheibe in Normalausführung mit vorgebohrter Nabe geliefert wird, ist zu beachten, daß nach dem Fertigbohren außer der Keilnut die Schmiernut lt. Zeichnung eingestoßen wird, da sonst die Schmierung der Verstellscheibe nicht gewährleistet ist.

Verstellscheiben in Fingerausführung erhalten keine Schmiernut. Bei dieser Ausführung hat die Nabe mehrere Radialbohrungen, die in jeden einzelnen Finger der Tellerscheiben führen. Dabei darf jedoch die maximale Wellenlänge L_{max} nach Katalog nicht überschritten werden, da sonst keine Schmierung erfolgen kann.

Minimale und maximale Wellenlängen — Abmessungen der Schmiernut



Normalausführung Type 100

Größe	03	05	10	20	30	50
t	2	2,5	3	3	3	5
b	3	3	4	5	6	6
d ϕ normal	8 - 11	8 - 12	14 - 19	16 - 24	18 - 28	25 - 45
d ϕ max. *	12	14	20	25	—	48
L_{min}	25	30	35	40	50	75

Fingerausführung Type 101

Größe	10	20	30	40/45	55	65	80
d ϕ normal	14 - 19	16 - 24	18 - 28	20 - 32	25 - 42	32 - 42	38 - 48
d ϕ max. *	20	25	—	35	45	—	—
L_{min}	35	40	50	60	75	80	80
L_{max}	50	60	75	85	95	110	110

* Bei max. Bohrung ist flache Paßfedernut nach DIN 6885 Bl. 3 erforderlich.

Die umseitig aufgeführten Schmiermittel sind Erzeugnisse der:

BP BENZIN UND PETROLEUM AKTIENGESELLSCHAFT, Hamburg, Niederlassungen in:

1000 Berlin 15	Kurfürstendamm 178-179	Tel. 8 81 04 71	5000 Köln 1	Neumarkt 35-37	Telefon 20 89-1
2800 Bremen 1	Breitenweg 32	Telefon 31 41 08	6800 Mannheim 1	L 15, 16	Telefon 2 48 01
4600 Dortmund 1	Brüderweg 22	Telefon 5 70 01		Hamburg-Mannh.-Haus	
4300 Essen 1	Porscheplatz 3	Telefon 22 02-1	8000 München 2	Brienerstraße 10	Telefon 21 87-1
6000 Frankfurt 1	Berliner Straße 44	Telefon 21 00-1	8500 Nürnberg 111	Am Gräselein 12	Telefon 20 06-1
2000 Hamburg 1	Oberseering 2	Telefon 6 35-1	7000 Stuttgart 1	Vorderbergstraße 16	Telefon 20 54-1
3000 Hannover 1	Osterstraße 26	Telefon 31 07-1			

Im Ausland: Die BP-Gesellschaften in der ganzen Welt

DEUTSCHE SHELL AKTIENGESELLSCHAFT, Hamburg, Verkaufsniederlassungen in:

1000 Berlin 12	Bismarckstraße 105	Telefon 31 17(1)	7500 Karlsruhe 1	Kaiserstraße 231	Telefon 1 52(1)
2800 Bremen 1	Contrascarpe 72	Telefon 36 39(1)	5000 Köln 1	Oberländer Ufer 72	Telefon 37 07(1)
4600 Dortmund 1	Kampstraße 42	Telefon 1 30(1)	6700 Ludwigshafen 2	Mundenheimer Straße 149	Telefon 56 10(1)
4000 Düsseldorf 1	Vogelsanger Weg 49	Telefon 63 97(1)	8000 München 22	Bürkleinstraße 10	Telefon 21 97(1)
6000 Frankfurt/M. 1	Nibelungenplatz 3	Telefon 15 65(1)	8500 Nürnberg 2	Rosenastraße 4	Telefon 2 75(1)
2000 Hamburg 1	Heidenkampsweg 66	Telefon 28 93(1)	7000 Stuttgart	Theodor-Heuss-Straße 21	Tel. 2 49 74(1)
3000 Hannover	Marktstraße 43-47	Telefon 19 34(1)			

Im Ausland: Die SHELL-Gesellschaften in der ganzen Welt

ESSO A.G., Hamburg, Verkaufsabteilungen in:

1000 Berlin 30	Tauntenzienstraße 7	Tel. 2 11 50 01	5400 Koblenz-Wallersheim	August-Borsig-Straße 13	Telefon 8 40 33
2800 Bremen 1	Birkenstraße 37	Telefon 31 00 21	5000 Köln 60	Neußer Landstraße 18	Telefon 7 70 31
4000 Düsseldorf 1	Berliner Allee 26	Telefon 8 38 71	6800 Mannheim 1	Werthallenstraße 43-45	Telefon 2 78 31
4300 Essen	Huyssenallee 1	Telefon 22 15 41	8000 München 1	Promenadeplatz 12	Telefon 2 18 91
		22 22 82	8500 Nürnberg 1	Grolandstraße 53	Telefon 20 45 21
6000 Frankfurt/Main	Lindenstraße 15	Telefon 7 56 11	4500 Osnabrück	Neumarkt 10	Telefon 2 85 33
7800 Freiburg/Breisgau	Auerstraße 2	Telefon 5 50 95	7980 Ravensburg	Marienplatz 4	Telefon 2 13 55
2000 Hamburg 90	Moorburger Straße 18	Telefon 7 71 81	8400 Regensburg	Wiener Straße 14	Telefon 5 70 24
		77 19 21	6600 Saarbrücken	Neumarkt 11	Tel. 5 50 01-2
3000 Hannover	Hohenzollernstraße 26	Tel. 31 10 38-38	7000 Stuttgart 60	Zum Olhafen 49	Telefon 3 03 31
7500 Karlsruhe 21	ESSO-Straße 1	Telefon 5 98 11			33 45 45
3500 Kassel	Opernstraße 2	Telefon 1 25 28	8700 Würzburg 1	Langgasse 8	Telefon 5 05 85

Im Ausland: Die ESSO-Gesellschaften in der ganzen Welt

MOBIL OIL A. G. IN DEUTSCHLAND, Hamburg, Verkaufsabteilungen in:

1000 Berlin 12	Uhlandsstraße 7-8	Tel. 3 12 40 43	2000 Hamburg 1	Kosterwall 6	Tel. 3 04 22 17
4000 Düsseldorf	Tonhallenstraße 14-15	Telefon 36 20 01			3 04 22 19
4300 Essen	Schürmannstraße 7	Telefon 27 20 61	7500 Karlsruhe	Andreas-Hofer-Straße 3	Telefon 59 40 91
6000 Frankfurt/Main	Oeder Weg 151	Telefon 55 08 44	8000 München	Arabellastraße 4	Telefon 91 10 41

Im Ausland: Die MOBIL OIL-Gesellschaften in der ganzen Welt

Anschluß

Die SEW-Bremsmotoren von Typ D...BS besitzen eine eingebaute Scheibenbremse. Die Bremspule wird über Gleichrichter in Einwegschaltung gespeist. Alle Anschlußklemmen für Motor und Bremse befinden sich bei der normalen Ausführung im Klemmenkasten. Das dem Motor beigelegte Schaltbild gibt Auskunft über den Anschluß. Falls erforderlich, muß dafür gesorgt werden, daß beim Ausfall auch nur einer Phase die Bremse sofort einfällt. Wir verweisen in diesem Zusammenhang auf die einschlägigen Vorschriften der Berufsgenossenschaften.

Einstellen der Handlüftvorrichtung HL

Bei der Einstellung die Handlüftschaube bis zum Anschlag in das Gewinde eindrehen. Lüfring auf die Stiftschrauben setzen und Zylinderrolle einlegen. Beide Stellmutter gleichmäßig anziehen, bis die Ankerscheibe bzw. die Klebebleche am Spulenkörper anliegen. Deckscheibe wieder anbringen und dabei die Stellmutter ausrichten. Handlüftschaube zurückdrehen.

Einstellen der Handlüftvorrichtung HR

Lüfring auf die Stiftschrauben setzen und Lüfthebel einstecken. Stellmutter gleichmäßig anziehen, dabei Lüfthebel in Pfeilrichtung drücken, bis er am Spulenkörper anliegt. Die Handlüftung ist richtig eingestellt, wenn die Ankerscheibe bei angedrücktem Lüfthebel gelüftet ist. Deckscheibe wieder anbringen.

Nachstellen der Bremse

Die SEW-Bremsmotoren des Typs D...BS verlassen, falls nicht anders vereinbart, auf maximales - zugleich listenmäßiges - Bremsmoment und minimalen Luftspalt eingestellt und geprüft

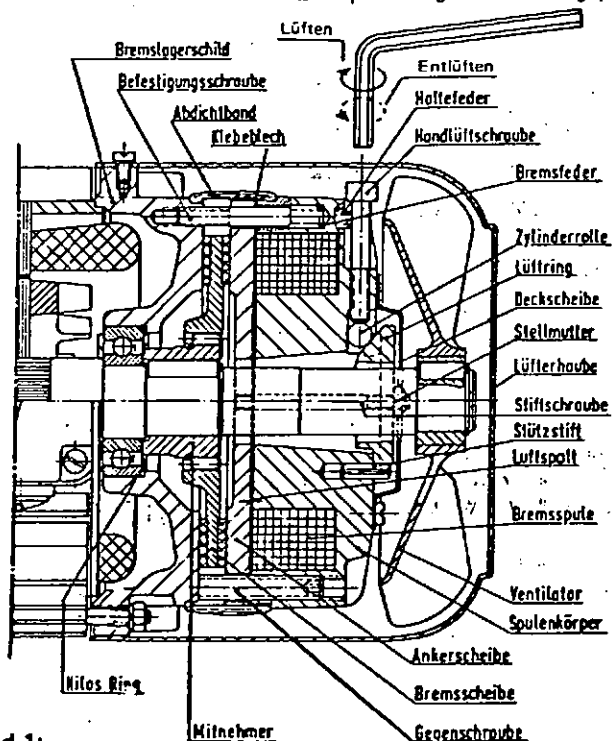


Bild 1:
Handlüftung HL (nicht selbsttätig zurückspringend)

Einstellen des Bremsmomentes

Durch Einbauen verschiedener Federsätze kann das Bremsmoment jeden Typs stufenweise verändert werden.

Bremsmoment in % vom Listenwert	Anzahl und Art der Federn	Bemerkung.
100	8 normale Federn	Rote bzw. normale Federn müssen axial- symmetrisch angeordnet sein, damit die Anker- scheibe gleichmäßig gegen die Bremsschei- ben gedrückt wird.
75	6 normale Federn	
50	4 normale Federn	
35	2 normale und 6 rote Federn	
20	2 normale und 2 rote Federn	
15	8 rote Federn	
10	6 rote Federn	

Die normalen Federn sind verzinkt oder unbehandelt.

das Werk. Beim Überschreiten des max. Luftspaltes von etwa 1,3 mm wächst die Ansprechzeit der Bremse stark an bzw. lüftet die Bremse bei ungünstigen Spannungsverhältnissen nicht mehr.

Es muß wie folgt nachgestellt werden:

- 1.) Abnehmen der Lüfterhaube und Verschieben des Abtichtbandes; damit wird der Luftspalt zwischen Spulenkörper und Ankerscheibe zugänglich. Abrieb entfernen.
- 2.) Falls Handlüftvorrichtung HL vorhanden, diese öffnen (Bremsstellung)
- 3.) Ventilator abziehen.
- 4.) Die vier stirnseitigen Befestigungsschrauben des Spulenkörpers lösen (nicht ganz entfernen) und die daneben versenkt sitzenden vier Gegenschrauben ca. 3 mm zurückdrehen.
- 5.) Die vier Befestigungsschrauben gleichmäßig nachziehen bis der kleinstmögliche Luftspalt von 0,6 - 0,7 mm erreicht ist. Gleichmäßigkeit des Luftspaltes mittels Fühlerlehre (Spion) kontrollieren.
- 6.) Gegenschrauben leicht gegen das Logerschild drehen.
- 7.) Befestigungsschrauben festziehen und Luftspalt nochmals auf Gleichmäßigkeit kontrollieren. Nach der Einstellung dürfen die 0,5 mm starken Messingscheiben - bei roten Federn zweimal 0,5 mm stark - (sogenannte Klebebleche) zwischen Spulenkörper und Ankerscheibe, gehalten von vier Befestigungsschrauben, nicht eingeklemmt sein. Sie müssen vielmehr ein Spiel von ca. 0,1 - 0,2 mm haben. Bei gelüfteter Bremse muß sich der Rotor drehen lassen.
- 8.) Ventilator, Abtichtband und Lüfterhaube wieder anbringen.

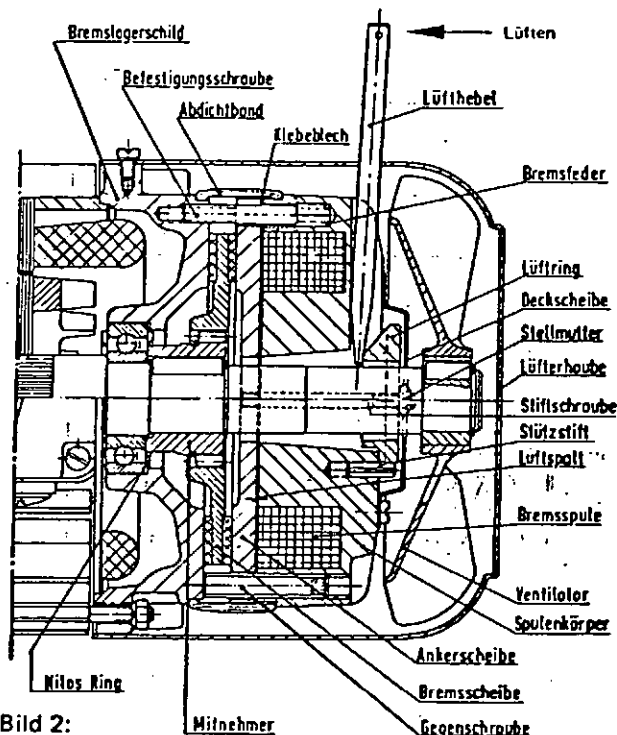


Bild 2:
Handlüftung HR (selbsttätig zurückspringend)

Bei Bremsmomenten kleiner als 50% des Listenwertes empfiehlt es sich, nur die gleichstromseitige Abschaltung zu wählen (siehe Schaltbild 2).

Die Federn werden wie folgt entnommen:

- 1.) Haube, Ventilator und Abtichtband entfernen.
- 2.) Falls Handlüftung vorhanden, Deckscheibe abnehmen, die beiden Stellmutter sowie den Lüfring und bei Handlüftung HL die Zylinderrolle der Lüftvorrichtung entfernen.
- 3.) Die vier Befestigungsschrauben lösen und Spulenkörper ca. 50 mm nach hinten ziehen. Dabei Anschlußkabel nicht beschädigen.
- 4.) Entsprechende Anzahl der Federn auswählen.
- 5.) Bremse wieder montieren und dabei kleinstmöglichen Luftspalt einstellen (siehe Nachstellen der Bremse).
- 6.) Gegebenfalls Handlüftvorrichtung wieder montieren und einstellen.

Prüfung des Gleichrichtereinsatzes mittels Spannungsprüfer mit eingebauter Glühlampe

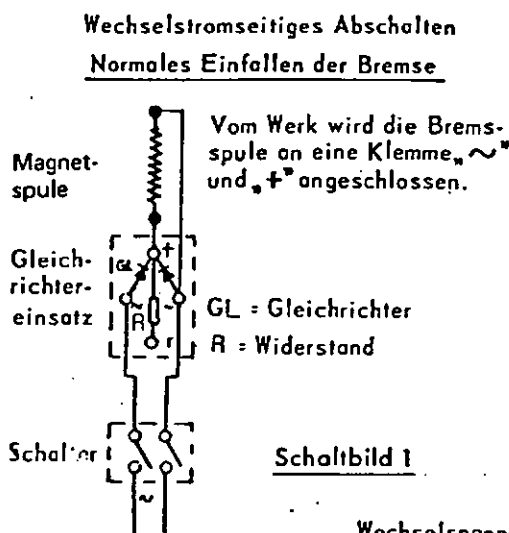
- 1) Anlegen des stromführenden Leiters der Wechselspannung (nur eine Phase) an eine der mit $\sim$ bezeichneten Klemmen:
 - a) Glühlampe des Spannungsprüfers darf beim Anlegen des Prüfers an die freie, mit $\sim$ bezeichnete Klemme nicht aufleuchten.
 - b) Beim Anlegen des Spannungsprüfers an den Pluspol darf nur ein Pol der Glühlampe aufleuchten.
 - c) Wird der stromführende Leiter der Wechselspannung an die andere mit $\sim$ bezeichnete Klemme angeschlossen, so darf beim Anlegen des Spannungsprüfers an den Pluspol ebenfalls nur ein Pol aufleuchten.

- 2) Anlegen der Wechselspannung an die beiden mit $\sim$ bezeichneten Klemmen:
Beim Anlegen des Spannungsprüfers an den Pluspol darf nur ein Pol der Glühlampe aufleuchten.

Schmierung des Kugellagers

Das bremsseitige Kugellager ist mit hoch-wärmebeständigem Fett „Wacker Silicon 511“ zu schmieren. Das Lager hierbei nur zu einem Drittel des freien Raumes zwischen den Kugeln mit Fett gefüllt werden.

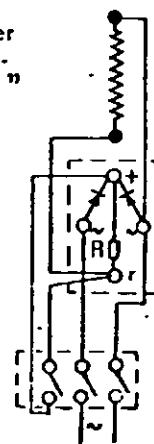
Schaltung des Gleichrichtereinsatzes



Gleichstromseitiges Abschalten

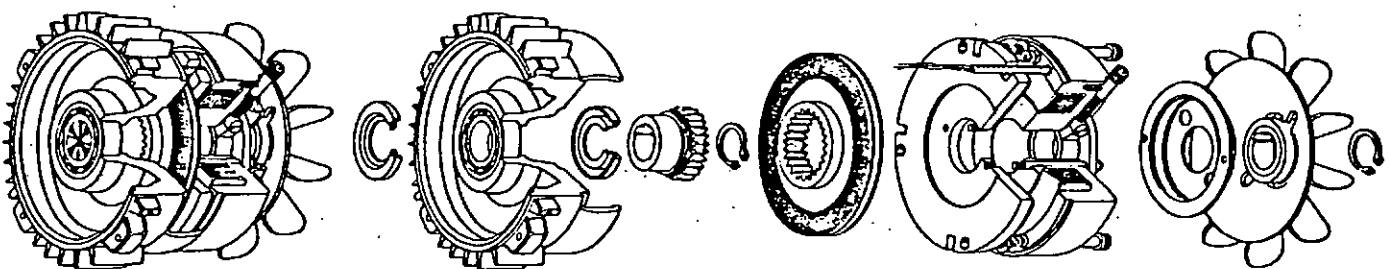
Extrem schnelles Einfallen der Bremse

Es muß der Anschluß der Bremsspule von der Klemme „+“ auf Klemme „r“ umgeklemmt werden.



Wechselspannung gemäß Leistungsschild
(Bremse.....V)

Die in den Gleichrichterkästchen eingebauten Elemente sind für die üblichen Spannungsspitzen in Industrienetzen reichlich bemessen. Bei extremen Spannungsspitzen bitten wir um Rückfrage.



Bremse Typ BS

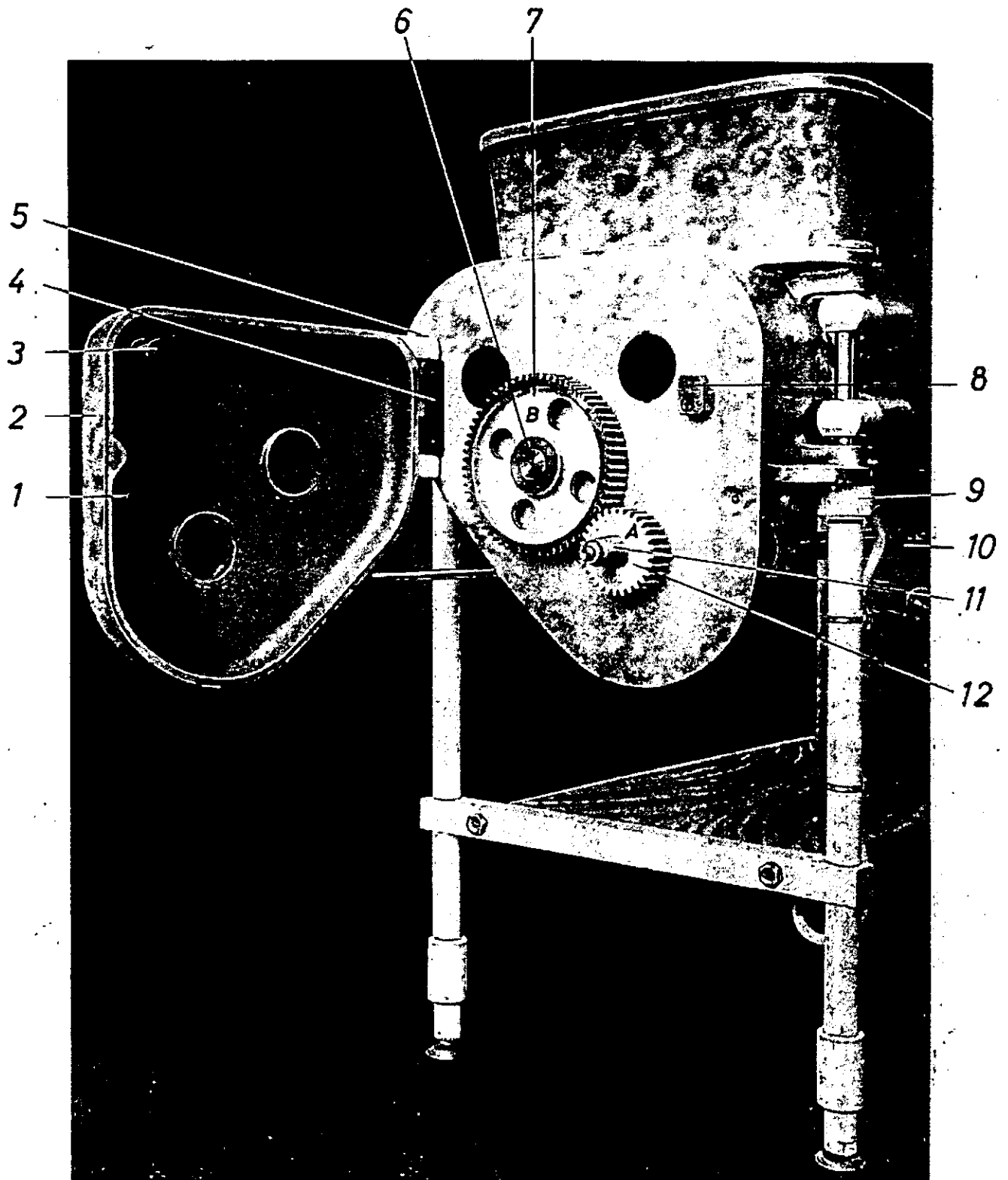
Bremslagerschild Mitnehmer Bremsscheibe Ankerscheibe mit Spulenkörper Ventilator

Betriebsstörungen	Ursache	Behebung	Betriebsstörungen	Ursache	Behebung
Bremse lüftet nicht!	Falsche Spannung am Gleichrichtereinsatz.	Richtige Spannung anlegen (siehe Leistungsschild).	Motor bremsl nicht!	Bremsbelag vollständig abgenutzt.	Belag erneuern oder Belagträger mit Belag austauschen.
	Gleichrichter ausgefallen.	Gleichrichtereinsatz auswechseln.		Bremse noch von Hand gelüftet.	Handlüftscharbe entgegen dem Uhrzeigersinn herausdrehen.
	Maximal zulässiger Luftspalt überschritten, da Bremsbelag abgenutzt.	Bremse nachstellen. Bei vollständig abgenutztem Bremsbelag Belag erneuern.		Handlüfteinrichtung nicht richtig eingestellt.	Stellmuttern richtig einstellen.
	Spannungsabfall in der Zuleitung zu groß (zulässig sind 5%).	Für richtige Anschlußspannung sorgen.	Bremse fällt verzögert ein!	Bremse wird auf der Wechselspannungsseite geschaltet.	Gleichspannungsseitig schalten.
				Bei Wiedermontage wurden die Klebebleche vergessen.	Klebebleche anbringen.

- Förderschneckenantrieb, Wechselräder
- Drive of Feedworms, Change Wheels
- Commande des vis de poussée, roue d'échange

Position Reference Repère	Bezeichnung	Designation	Désignation
1	Anschlagbolzen	Stop Bolt	boulon de butée
2	Schutzhaube	Guard Cover	capet de protection
3	Griffbolzen	Handle bolt	boulon d'attache
4	Gelenkstück	Joint piece	segment d'articulation
5	Bolzen	Bolt	boulon
6	Ritzelwelle	Pinion Shaft	arbre à pignons
7	Wechselrad (getrieben)	Change Wheel (driven)	roue d'échange (commandée)
8	Vorreiberklemme	Catch Clamp	borne de tourniquet
9	Stellring	Set Collar	anneau de serrage
10	Antriebswelle	Drive Shaft	arbre de commande
11	Welle	Shaft	arbre
12	Wechselrad (treibend)	Change Wheel (driving)	roue d'échange (commandant)

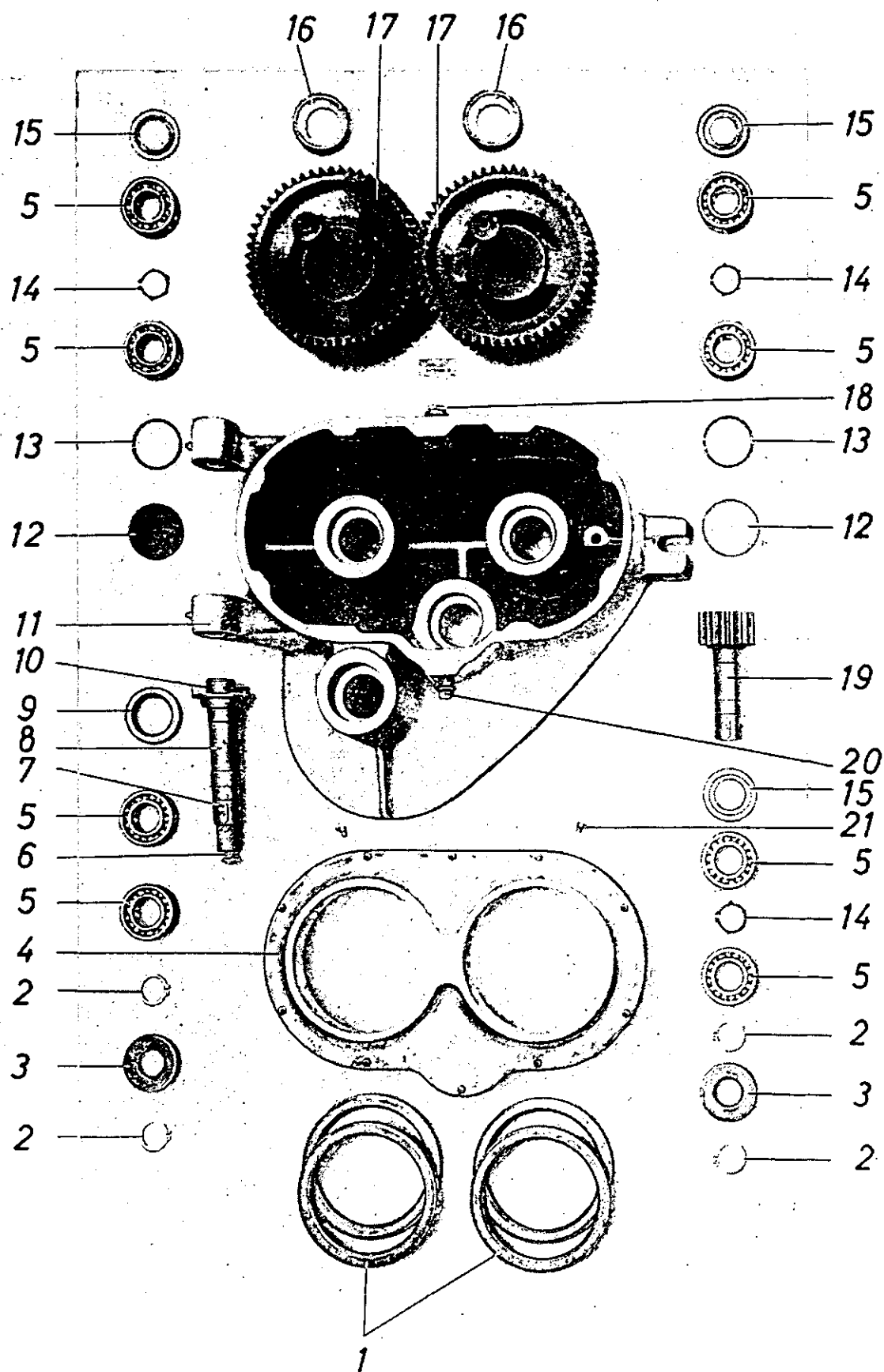
Fig. 8311S/73



- Förderschneckenantrieb, Einzelteile
- Drive of Feedworms, components
- Commande des vis de poussée, pièces détachées

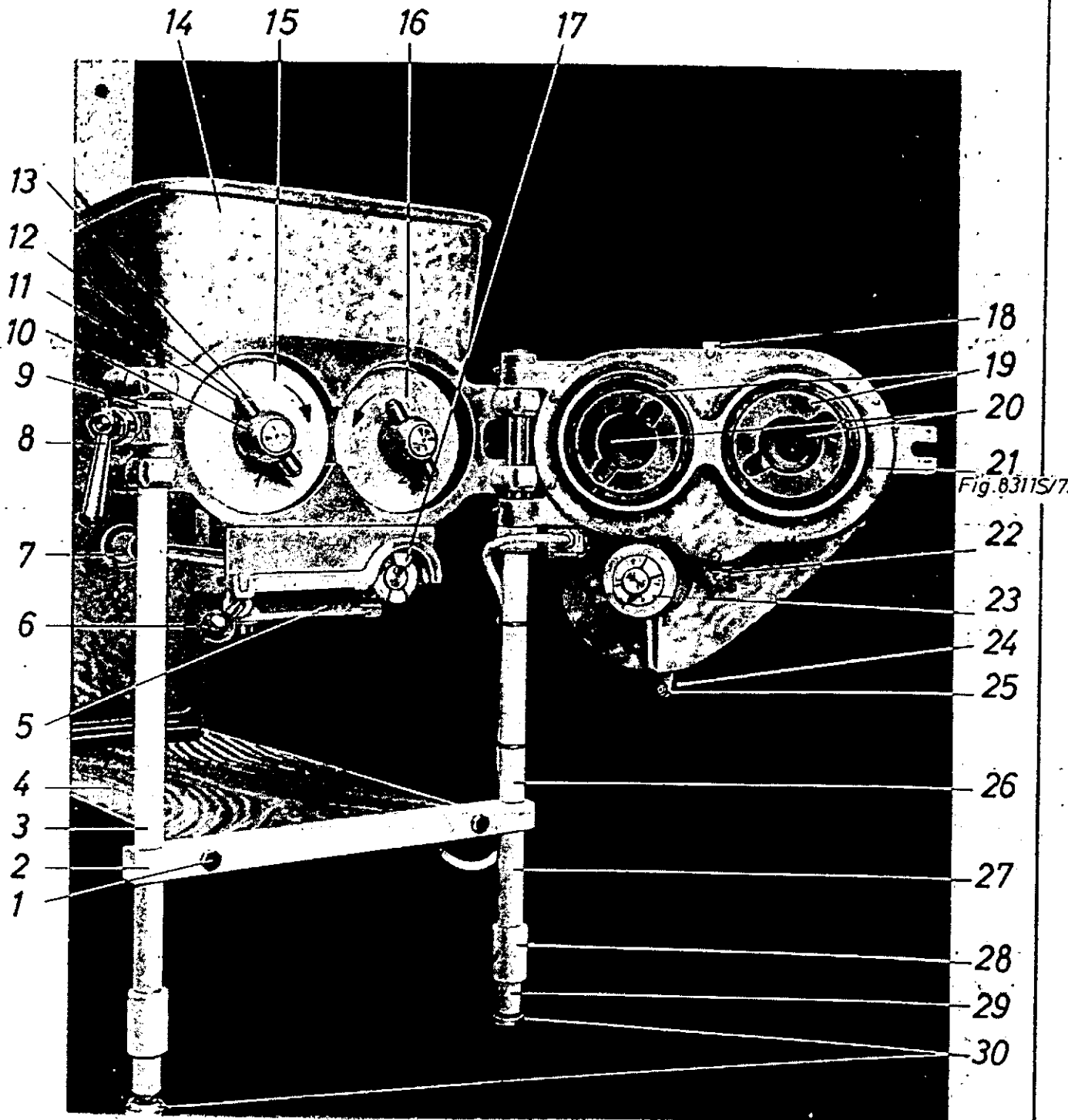
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Wellendichtung 150 x 180 x 15	Shaft seal 150 x 180 x 15	joint 150 x 180 x 15
2	Sicherungsring 35 x 1,5	Safety Ring 35 x 1,5	Bague de sécurité 35 x 1,5
3	Wellendichtung 35 x 72 x 12	Shaft Seal 35 x 72 x 12	joint 35 x 72 x 12
4	Deckel	Cover	Couvercle
5	Rillenkugellager 35 x 72 x 17	Grooved Ball Bearing 35 x 72 x 17	roulement à bille rainuré 35x72x17
6	Druckfeder	Pressure Spring	ressort de pression
7	Paßfeder	Fitting Key	ressort de serrage
8	Welle	Shaft	axe
9	Wellendichtung 50 x 72 x 10	Shaft Seal 50 x 72 x 10	joint 50 x 72 x 10
10	Klaue	Claw	griffe
11	Räderkasten	Gear Box	boîte de roues dentées
12	Deckel	Cover	couvercle
13	Sprengring	Spring ring	bague d'ecartement
14	Sicherungsring 35 x 1,5	Safety Ring 35 x 1,5	bague de sécurité 35 x 1,5
15	Nilos-Ring	Nilos Ring	joint Nilos
16	Lagerschale	Bearing Bush	coussinet
17	Zahnrad	Gear	roue dentée
18	Verschlussschraube	Locking Screw	vis de fermeture
19	Ritzelwelle	Pinion Shaft	arbre de pignons
20	Stopfen mit Rand	Plug with Rim	bouchon avec bord
21	Deckelöler	Cover Oiler	graisseur de couvercle

Fig. 8311S/72



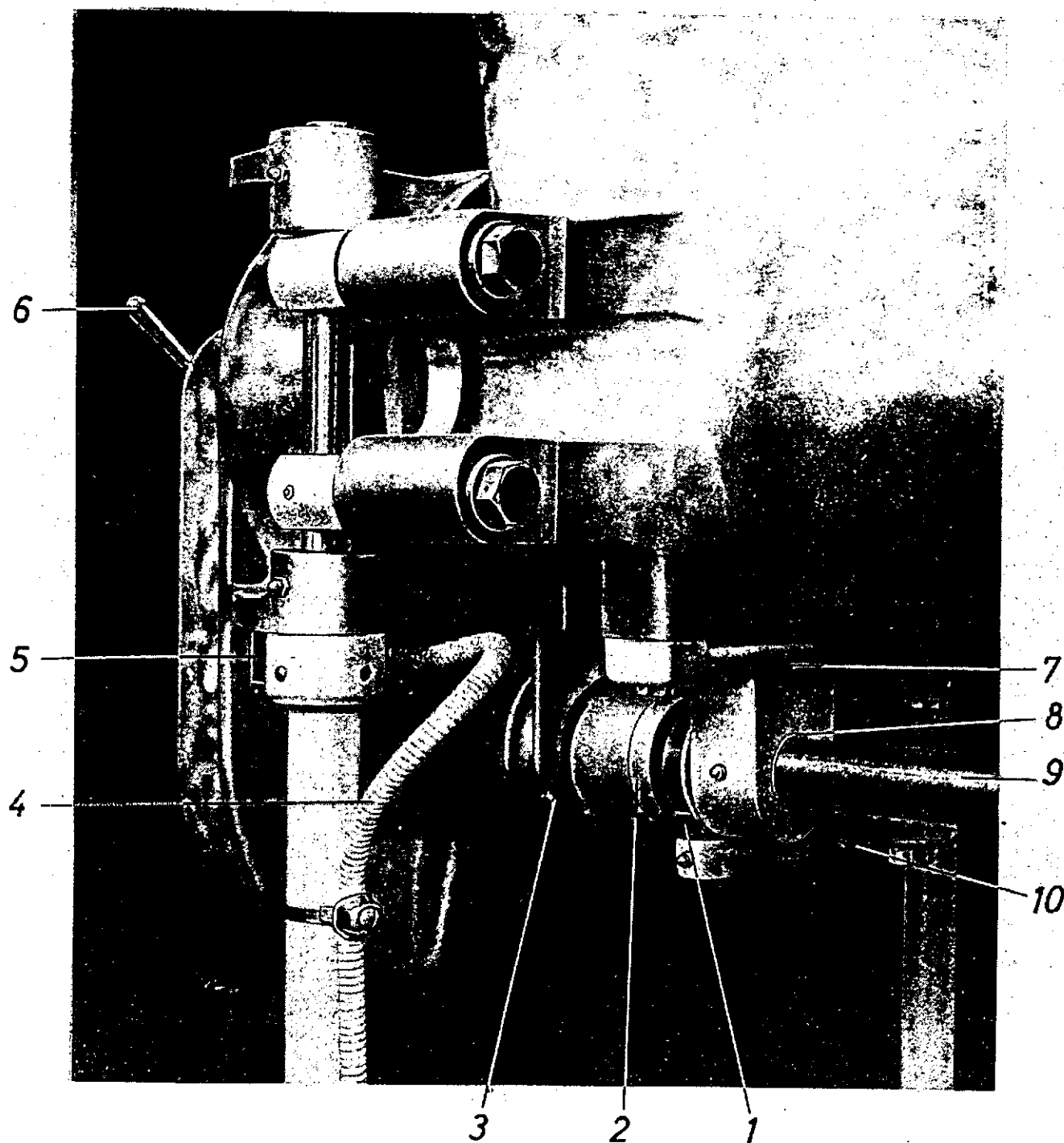
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Traverse	Bracket	traverse
2	Traverse	Bracket	traverse
3	Stehachse, links	Vertical Axle, left	arbre vertical, à gauche
4	Auflage	Support	appui
5	Schalthebel	Control Lever	levier de commande
6	Schalthebelstange	Control-Lever Rod	tige de levier de commande
7	Kupplungsmuffe	Clutch Sleeve	manchon d'embrayage
8	Kegelgriff	Conical Handle	poignée
9	Schwenkbolzen	Sleuable Bolt	boulon oscillant
10	Kugelring	Ball Ring	anneau à billes
11	Spannring	Tension Ring	anneau de serrage
12	Mitnehmerbolzen	Driving Bolt	boulon d'entraînement
13	Rolle	Roll	galet
14	Schnecken-trog	feed worm trough	auge avec vis de poussée
15	Förderschnecke, links	feedworm, left	vis de poussée, à gauche
16	Förderschnecke, rechts	feedworm, right	vis de poussée, à droite
17	Klaue, lose	Claw, loose	griffe, mobile
18	Verschlussschraube	Closing Screw	vis de fermeture
19	Zahnrad	Gear	roue dentée
20	Lagerschale	Bearing Bush	coussinet
21	Förderschnecken- antrieb, vollständig (Einzelteile siehe Fig. 8311 S / 72)	Drive of Feedworms, complete (components see fig. 8311 S/72)	commande des vis de poussée, complète (pièces séparées voir fig. 8311 S / 72)
22	Stopfen mit Rand	Plug with Rim	bouchon avec bord
23	Klaue, fest	Claw, fixed	griffe, fixe
24	Ballengriff z. Kurbel	Ball Knob for Crank	poignée bombée pour la manivelle
25	Handkurbel	Hand Crank	manivelle
26	Stehachse, rechts	Vertical Axle, right	arbre vertical, à droite
27	Zwischenmutter	Intermediate Nut	intermédiaire écrou
28	Überwurf	Cap	couverture
29	Stellfuß	Adjustable Foot	pieds de la machine
30	Maschinenfuß-Untersatz	Support of machine foot	piédestal pour ces piéds

Fig. 8311S/71



Position Reference Repère	Bezeichnung	Designation	Désignation
1	Kupplungsstein	Clutch Block	pièce d'embrayage
2	Klaue, lose	Claw, loose	griffe, mobile
3	Klaue, fest	Claw, fixed	griffe, fixe
4	Kabelschlauch	Cable Hose	tuyau de cable
5	Endschalter	Limit Switch	interrupteur final
6	Griffbolzen	Handle Bolt	poignée
7	Stützlager	Step Bearing	palier d'appui
8	Lagerbuchse 35 x 40 x 40	Bearing Bush 35 x 40 x 40	bague palier 35 x 40 x 40
9	Antriebswelle	Drive Shaft	Arbre de commande
10	Schalthebel	Switch Lever	levier de commande

Fig. 8311S/74



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1 Description

1.1 Technical Data

Machine width

Machine depth

Machine height

Foil height

Refer to the installation plans in 2.1

Power

Drive motor

3 kW

Thermal printer heating plate

0.08 kW

Servomotor (speed)

0.37 kW

Servomotor (weight)

0.09 kW

Drive motor speed

940 rpm

Air pressure required, approx.
 (only for machines with a direct connection)

2 bar

Filling volume

Small dosing cam and 70 mm piston dia.

87 cm³ ... 185 cm³

Small dosing cam and 100 mm piston dia.

178 cm³ ... 378 cm³

Large dosing cam and 100 mm piston dia.

373 cm³ ... 750 cm³

Large dosing cam and 125 mm piston dia.

583 cm³ ... 1180 cm³

Number of cycles

38...90 for rectangular formats of up to 500 g
 38...80 for roll formats of up to 500 g
 38...60 for rectangular and roll formats of up to 1000 g

Wrapper

Parchment
 Laminated aluminium foil
 Plastic laminated paper

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1.2 Lubricants

Lubricating points	Designation as per DIN 51 502	Types (examples)
Central lubricating system		{ Chevron = Poly GM Grease CENTOPLEX CLP 500
Lubricating sledges and redmarked hydraulic type lubricating nipples, angle joints, toothed wheels and spindles	Friction bearing grease M 2 A Ca-saponifier	BP = Energrease PR 2 Eller-Montan = Ellmo-Grease - Ca 2 Esso = Cazar K 2 Mobil = Mobilplex 47 Shell = Fett 6432 POLYLUBE GA352P
Cam rollers and curves which are not connected to the central lubricating system (to be sprayed), sliding pads, roller chains, articulations (without ball type lubricating heads), lubricating holes and oiler	CL 46 lubricating oil	Aral = Öl TU 518 BP = BP Energol HL 100 or HLP 100 Esso = Teresso 46 Mobil = D.T.E. Oil Medium Shell = Tellus Oel 133 or Tellus Oil 33 DELSPIN 46
Oil filling for the cell table = 35 l	CLP 320 lubricating oil	BP = BP Energol GR-XP 320 Eller-Montan = Ellmo IGL 4 Esso = Spartan EP 320 Shell = Omala-Oel 320 EP 320
Flushing oil (cell table = 20 l) (worm trough 5 l)	Flushing oil C5	BP = BP Energol HP 5 Eller-Montan = Ellmo-HGL 15 Esso = Somentor 43 Mobil = Mobil-Velocite Oil Nr. 4 Shell = Shell-Spüloil CRUCOLAN 10
Gearbox (worm trough) approx. 1500 g (weight control) approx. 50 g	Semifluid grease D 000 A Ca-saponified	BP = BP Energrease HT 00-EP Eller-Montan = Ellmo Grease NG03 or NG0 Mobil = Schmierfett „5“ (Mobilux EP 023) Shell = Ossagol V HEP-O
Oiler of maintenance unit		Aral = Öl TU 500 Avia = Avilub-RSL 3 BP = Energol HLP 15 Esso = Nuto H 10 Festo = Special oil Festo Mobil = Vac HLP 9 Shell = Tellus-Öl C 10 Texaco = Rando-Oil AAA Valvoline = Ritzol R-60 Veedol = Andarin 38 CRUCOLAN 10
When dosing parts for lowfat product are installed		Klüber UVN-PLB (evaporable)

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1.3 Definition of sides

The side with the handwheel (Figure 1/arrow) is the front and operating side of the machine.

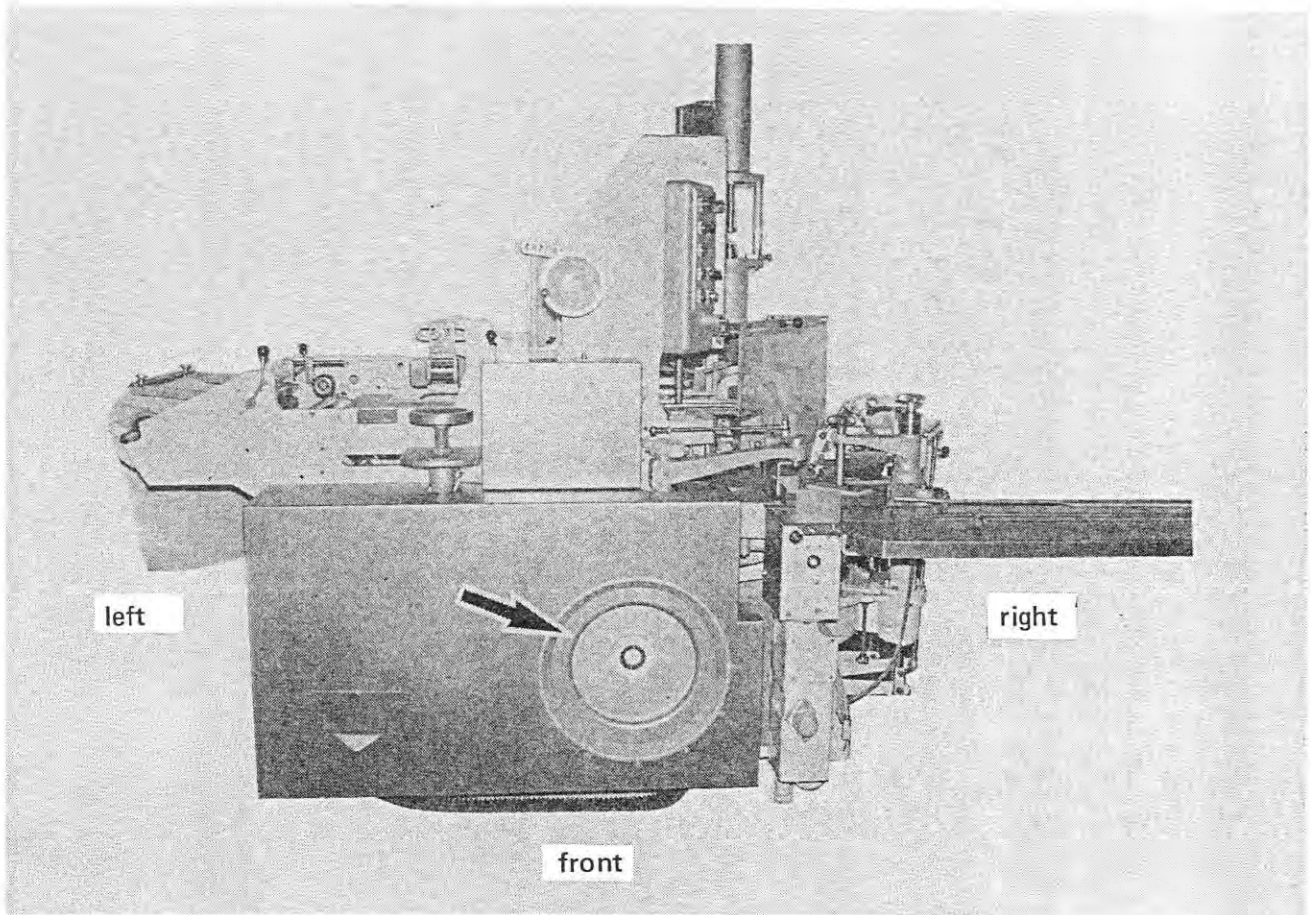


Fig. 1

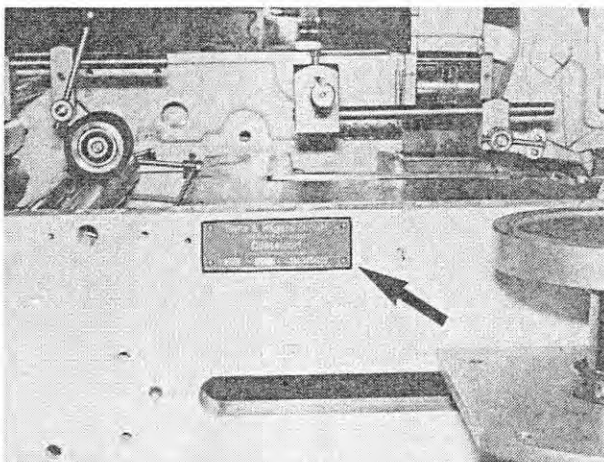


Fig. 2

The model plate (Figure 2) is located on the front of the wrapping unit side wall. It is imperative that the information on the model plate be given when ordering spare parts.

1.4 Additions
 1.4.1 Tools

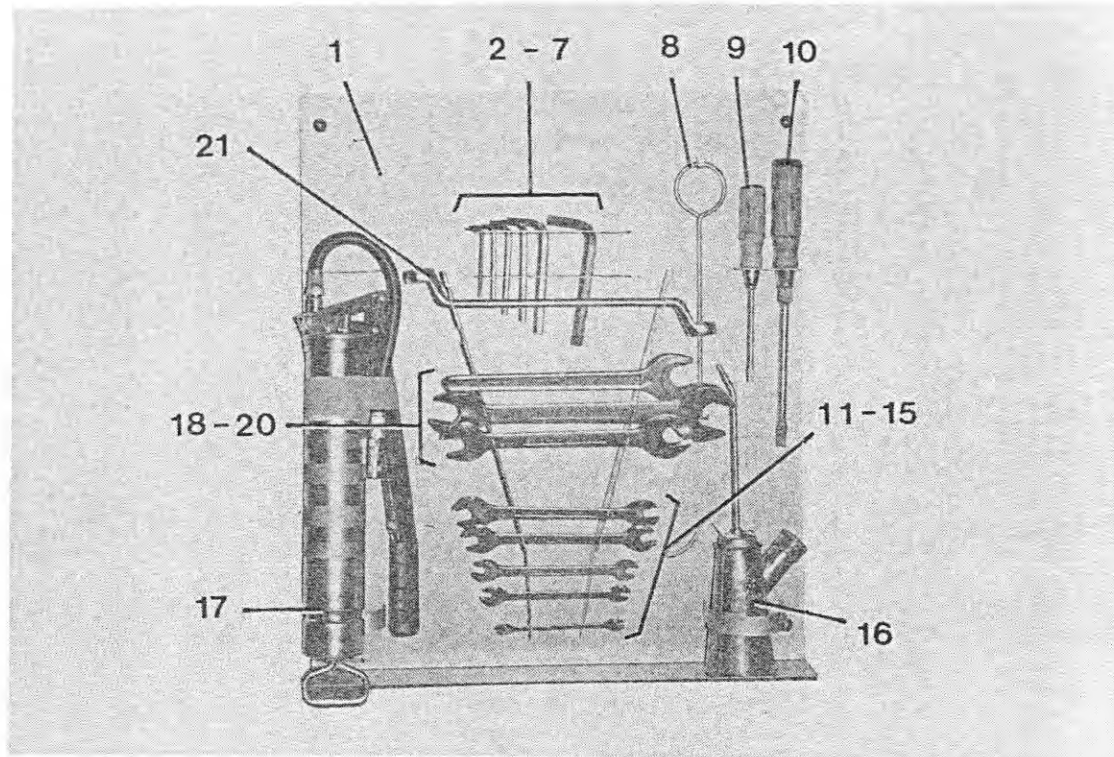


Fig. 3

Item	Tool	Pieces	Dimension	Notes
1	Mounting plate, complete	1		
2	Hex head wrench	1	3 DIN 911	
3	Hex head wrench	1	4 DIN 911	
4	Hex head wrench	1	5 DIN 911	
5	Hex head wrench	1	6 DIN 911	
6	Hex head wrench	1	8 DIN 911	
7	Hex head wrench	1	10 DIN 911	
8	Spring drawer	1	BH 1160	
9	Screw driver	1	0.6x4.5x90	
10	Screw driver	1	1.2x9x60	
11	Double open ended wrench	1	6x7 DIN 895	
12	Double open ended wrench	1	8x9 DIN 895	
13	Double open ended wrench	1	10x11 DIN 895	
14	Double open ended wrench	1	13x14 DIN 895	
15	Double open ended wrench	1	14x17 DIN 895	
16	Oil gun	1	Size II	
17	Lever press No. 100/E with high-pressure hose	1		
18	Double open ended wrench	1	19x22 DIN 895	
19	Double open ended wrench	1	24x30 DIN 895	
20	Single end spanner	1	27 DIN 895	
21	Double-ended ring spanner	1	17x19 DIN 838	

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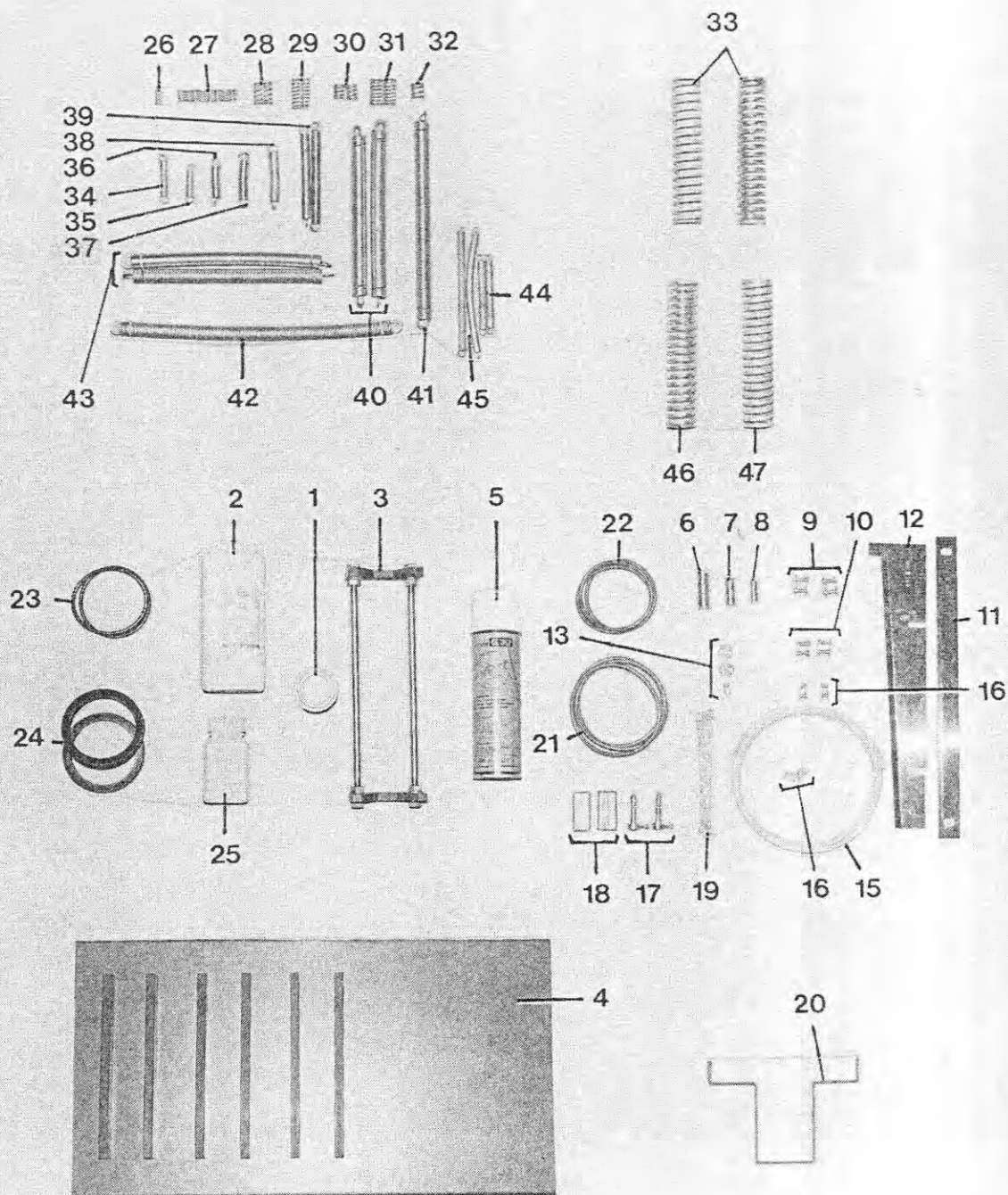


Fig. 4

1.4.2 Accessories

Item	Part	Pieces	Dimension	Notes
1	Paint	1/8 kg		
2	P3 tin proof	1	800 g	
3	Support	2		Only for a direct and hopper connection, per rotary cylinder and intermediate bushing 1 support
4	Rest, complete	1		Only for a worm trough machine. Two plastic rests per rotary cylinder and intermed. bushing
5	Chain protection	1	450 g tin	

1.4.3 Spare parts

Item	Part	Pieces	Dimension	Notes
6	Pin	1	16x51 BHN 405,2	
7	Pin	1	18x38 BHN 405,2	
8	Pin	1	10x31 BHN 405,2	
9	Stud link	2	1x12.7x3.5 DIN 8187	
10	Stud link	2	1E 15.87x9.56 DIN 8187	
11	Wrapper knife, fixed	1		
12	Wrapper knife, loose	1		
13	Hydraulic type lubricating nipple	5	A 8 DIN 71412	
14	Stud link	2	1E 12.7x7.75 DIN 8187	
15	Tecalamit hose	1	6x3.15x2,000	
16	Inserting bush	8		
17	Shear pin	2		
18	Glass tube fuse	20		Only for safety fuses
19	Cutting wire, complete	9		Only for heated cutters. 9 cutting wires for each format
20	Cutting bow	1		Only for unheated cutters. 1 cutting bow for each format
21	O-ring (dia. 125)	4	OR 114.2x5.7	
22	O-ring (dia. 100)	3	OR 89.2x5.7	
23	O-ring	2	OR 89.2x5.7	
24	Piston packing	2		Only for a direct connection
25	Hydraulic fluid	1/8 kg	HL 9	

Item	Part	Pieces	Dimension	Notes
26	Pressure spring	1	7.8x1.2x20 BHN 421	
27	Pressure spring	8	10x1x15 BHN 421	
28	Pressure spring	2	12.5x1.5x30 BHN 421	
29	Pressure spring	2	12.5x1x40 BHN 421	
30	Pressure spring	2	16x2x20 BHN 421	
31	Pressure spring	2	18x1.5x35 BHN 421	
32	Pressure spring	1	19x2.5x20 BHN 421	
33	Pressure spring	2	41x5x190 BHN 421	
34	Tension spring	1	10x1x55 BHN 420	
35	Tension spring	1	10x1x48 BHN 420	
36	Tension spring	1	13x1.25x50 BHN 420	
37	Tension spring	1	13x1.5x60 BHN 420	
38	Tension spring	1	13x1.5x75 BHN 420	
39	Tension spring	2	13x1.5x125 BHN 420	
40	Tension spring with eye	2	20x2.5x247	
41	Tension spring with eye	1	10x2.5x270 BHN 420	
42	Tension spring	1	20x2.5x335 BHN 420	
43	Tension spring with eye	2	20x2.5x255	
44	Tension spring	2		Subject to format
45	Tension spring	2		
46	Pressure spring	1	40x4x190 BHN 421	Worm trough, direct connection with a spring-admitted compensating piston
47	Pressure spring	1	41.5x4.4x190 BHN 421	

1.5 Types

The following filling and packaging machine types are available for various applications and customer needs:

Drive

1.5.1 Lubrication

1.5.1.1 With a central lubricating system

The bearing points to be lubricated daily are supplied via a one-line central lubricating system. When the lever (Figure 5/1) is actuated, grease is taken from the bin (Figure 5/2) and supplied to all connected bearing points in defined doses. (Refer to section 4.9.)

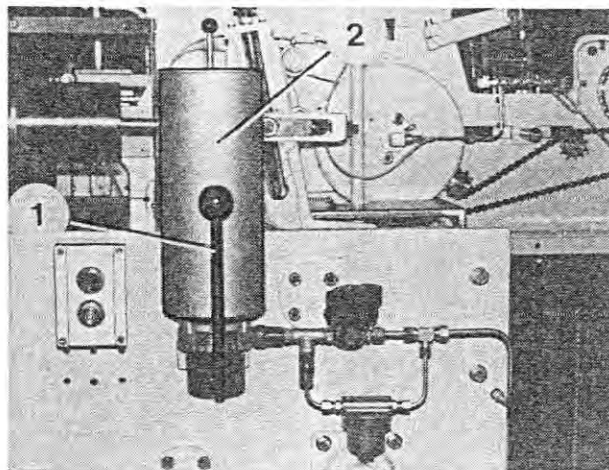


Fig. 5

1.5.1.2 With lubricating sledges

The lubricating nipples are grouped together to form lubricating sledges (Figure 6/1+2) in this type of machine and are connected with the lubricating points by plastic pipes.

1.5.2 Speed control

1.5.2.1 Speed control by a handwheel

The speed of the machine is controlled by this handwheel.

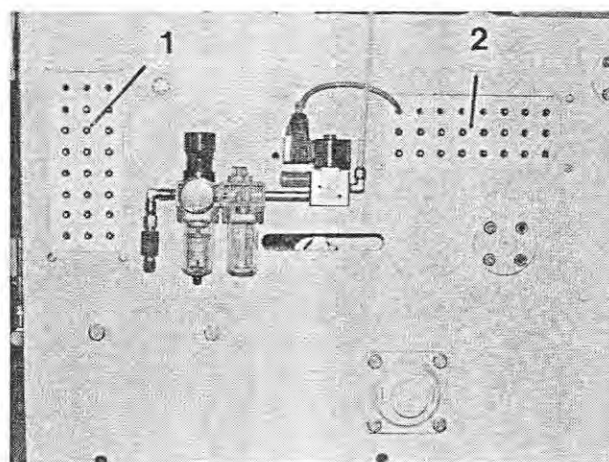


Fig. 6

1.5.2.2 Speed control by a geared motor

A geared motor (Figure 7/1) is installed in the place where the type of machine described in 1.5.2.1 has a handwheel. The geared motor is controlled from the operator panel by pressing the buttons „Machine Fast” or „Machine Slow”.

1.5.2.3 Speed control by an infinitely variable DC motor

The speed of the machine is controlled by a potentiometer.

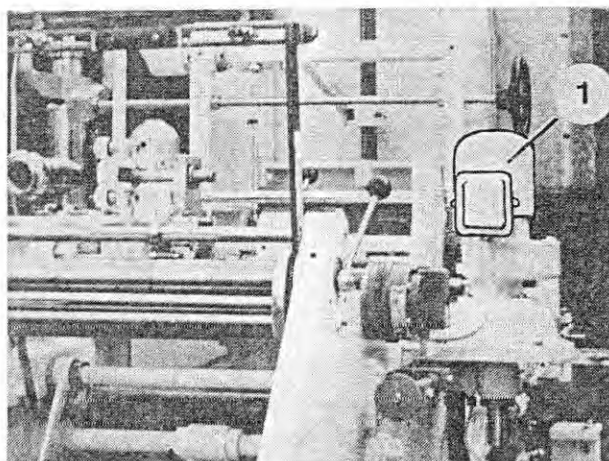


Fig. 7

Cell table types

1.5.3 Capability of changing the format

1.5.3.1 Without the capability of changing the format

The machine has been designed for a particular format.

1.5.3.2 With the capability of changing the format

The machine has been designed for changing the format and is equipped with the parts required for changing the format.

1. Rectangular format (Figure 8) 
2. Oval format 
3. Round format 
4. Roll format 

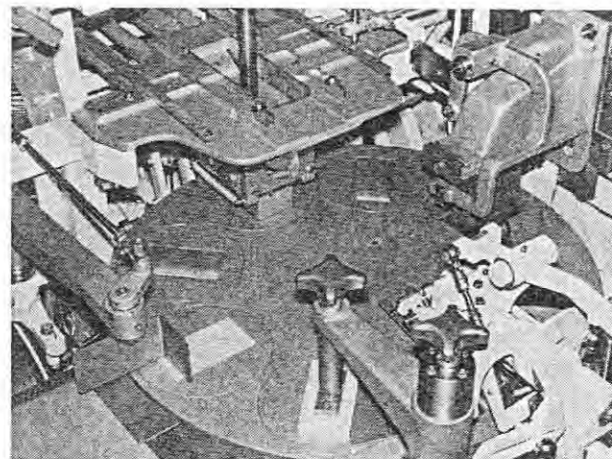


Fig. 8

Wrapping unit types

1.5.4 Wrapping unit with wrapper advance

1.5.4.1 Wrapper with scattered pressure

Scattered pressure (or no pressure) is provided for the wrapper. A wrapper advance with registry is not necessary.

1.5.4.2 Wrapper with selected pressure

Selected pressure is provided for the wrapper. The wrapper is advanced via a registry.

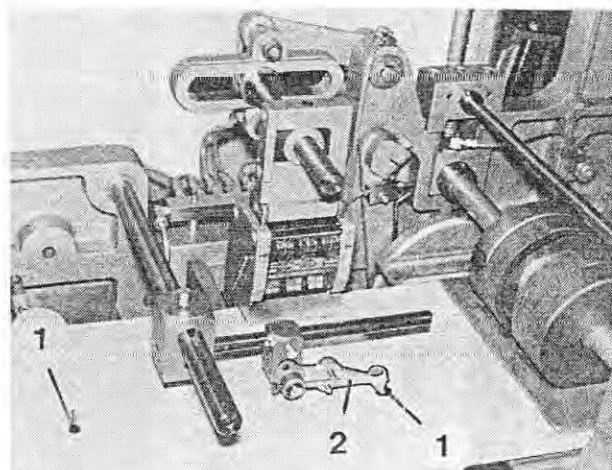


Fig. 9

1.5.4.2.1 Wrapper advance with a register finger

Register holes (Figure 9/1) are punched into the wrapper for registry. The wrapper advance is equipped with a register finger (Figure 9/2). (Refer to section 4.6.)

1.5.4.2.2 Wrapper advance with a photocell

When registry via a photocell is used, scan marks are printed on the wrapper and the wrapper advance is equipped with the photocell (Figure 10/1). (Refer to section 4.5.)

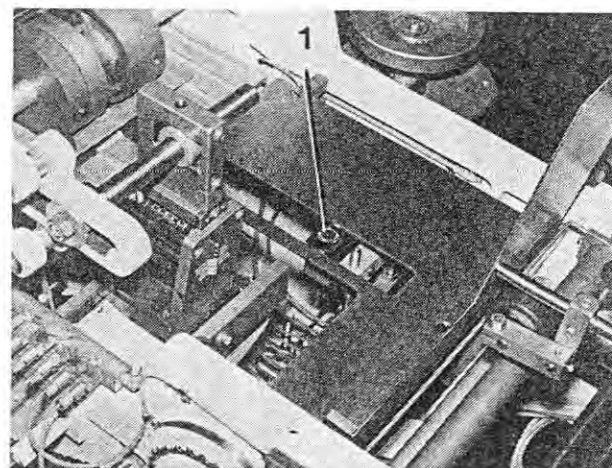


Fig. 10

1.5.5 Coding

1.5.5.1 Coding by perforation

A perforating unit (Figure 11) is installed on the upper side of the wrapping unit, punching a code into the margin when in operation.

The perforating unit is driven by the groove cam plate (Figure 11/1) in the wrapping unit.

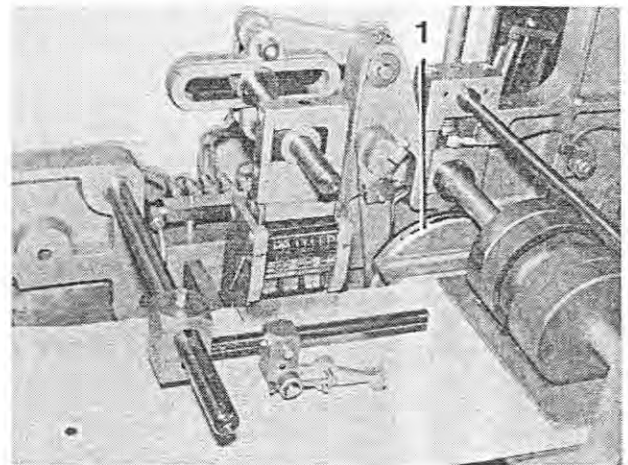


Fig. 11

1.5.5.2 Coding by an ink printer

The machine is equipped with an ink printer (Figure 12), the types of which print the date or the price (or both) on the wrapper. Prior to printing, an ink pad applies ink to the types. The ink printer is driven either by a roller chain or by a double lifting magnet controlled by limit switches.

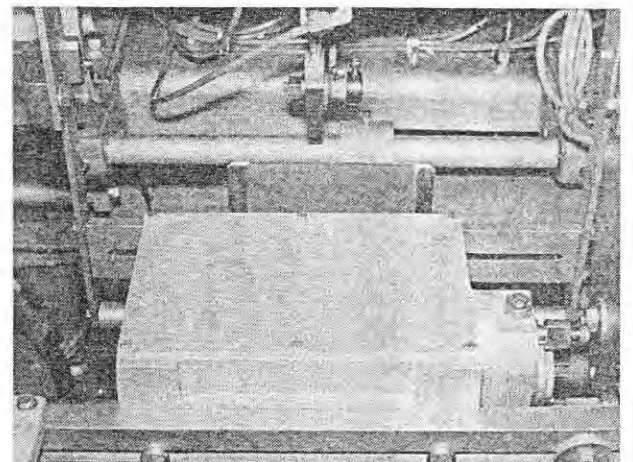


Fig. 12

1.5.5.3 Coding by a thermal printer

The machine is equipped with a thermal printer (Figure 13), the heated types of which press a colour film against the wrapper and print distinctly the date or the price (or both).

The thermal printer is driven by a double lifting magnet controlled by limit switches.

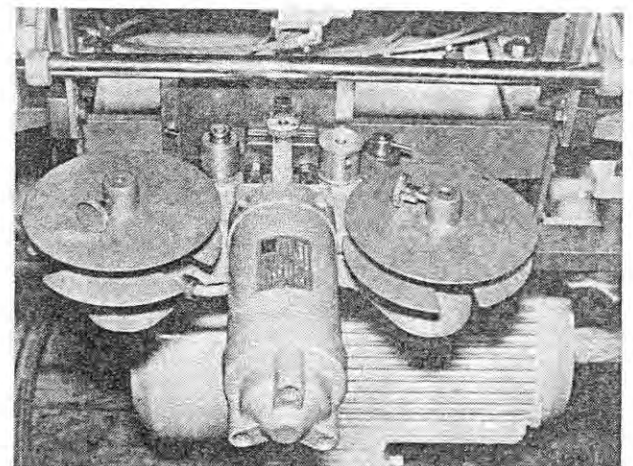


Fig. 13

1.5.6 Wrapper control

1.5.6.1 Wrapper control by a sensor

Before the wrapper strip is pressed into the folding box by the pouch stamp, the sensor (Figure 14/1) checks whether or not a wrapper strip is really placed above the folding box.

If there is no wrapper strip above the folding box, the sensor is lowered. It contacts the folding box plate, is grounded and switches the machine off.

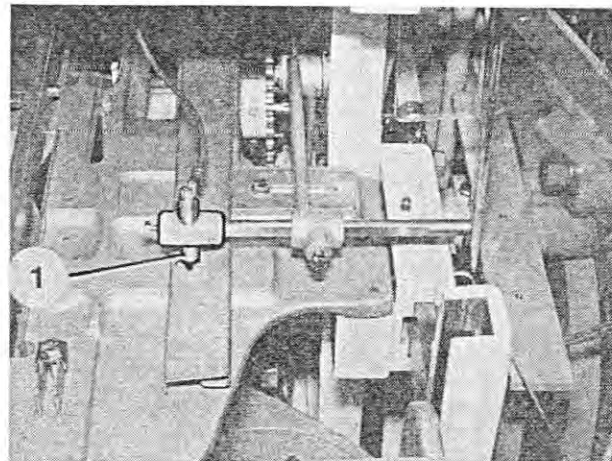


Fig. 14

1.5.6.2 Wrapper control by a light barrier

To control the wrapper, a light barrier (Figure 15/1) and its associated reflecting plate (Figure 15/2) are installed in the folding station.

If there is no wrapper strip pushed by the pouch stamp through the folding box, the light ray emitted by the light barrier is reflected by the reflecting plate back to the light barrier which switches the machine off when it receives the light ray.

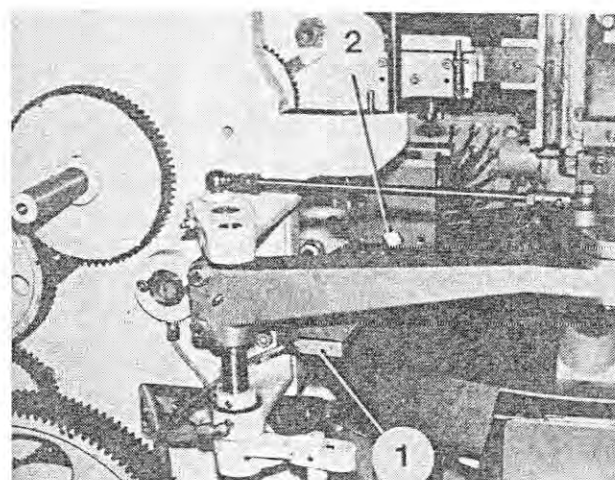


Fig. 15

Filling unit types

1.5.7 Weight control

1.5.7.1 Weight control by hand

The handwheel (Figure 16/1) of the weight control is connected to a spindle in the dosing lever via an angle gear.

When the handwheel is actuated, the spindle rotation changes the bearing of the dosing piston and thus the dosing piston stroke, allowing more or less product be filled.

1.5.7.2 Weight control by a geared motor

This type of machine has a geared motor instead of a handwheel. The motor is controlled by operating the weight „+“ or „-“ push-button on the operator panel.

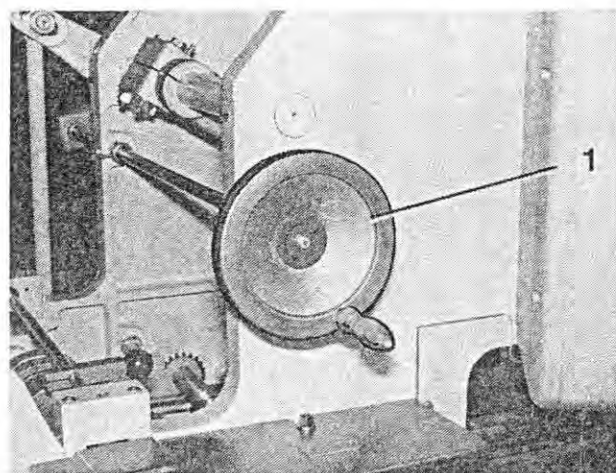


Fig. 16

Types for feeding product

1.5.8 Feeding the product

1.5.8.1 Feeding the product through a worm trough (Model 8345S)

The product is fed into the worm trough by hand or a feeding facility and delivered to the dosing unit by worms.

The cylinder on the dosing case (Figure 17/1) stores the product via a spring-loaded compensating piston.

The worms are driven by change wheels which are powered by the machine.

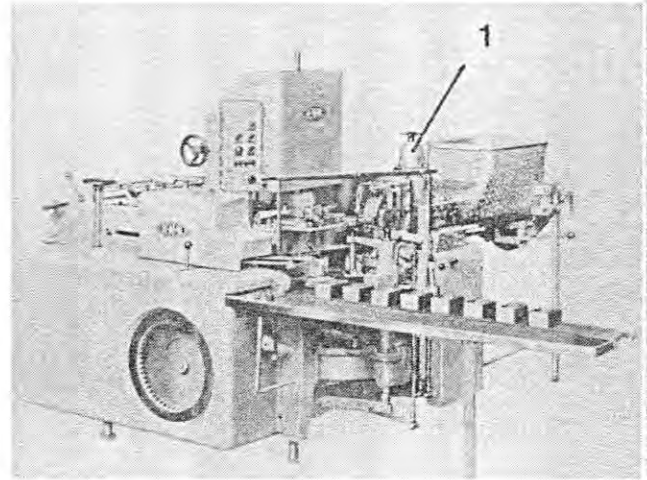


Fig. 17

1.5.8.2 Feeding the product through a hopper (Model 8345T)

The product is fed into the hopper (Figure 18/1) by hand or a feeding facility and can additionally be pressed into the dosing case by a stirrer worm and its blade.

In the case of a heated hopper, the double-walled hopper is heated by water circulation.

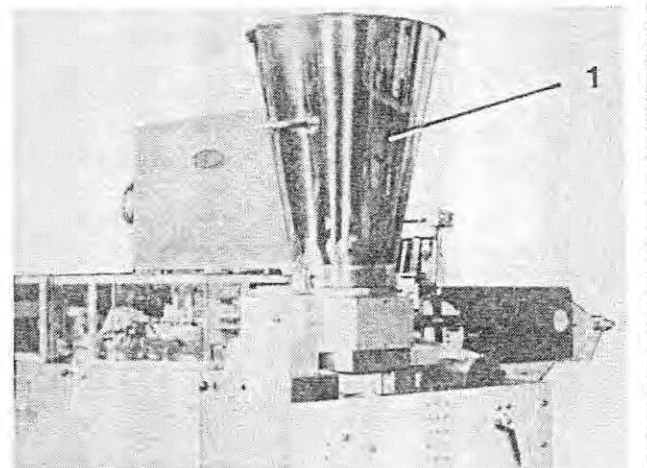


Fig. 18

1.5.8.3 Feeding the product through a direct connection (Model 8345D)

The product is fed through the product line (Figure 19/1) which is directly connected to the dosing case. A pressurized compensating piston (Figure 19/4) with or without a product return line (Figure 19/3) is installed on the dosing case.

The pressure gauge (Figure 19/2) indicates the pressure in the product feed line immediately in front of the dosing case.

A spring-loaded piston (Figure 17/1) can be installed instead of an air-admitted compensating piston.

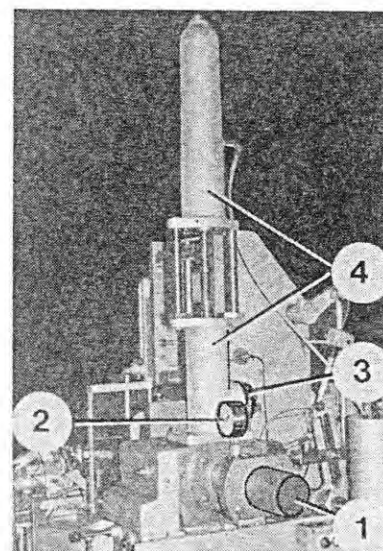


Fig. 19

1.5.9 Die

1.5.9.1 Normal die

The normal die is designed to cut the product from the die, using a cutter bow.

1.5.9.2 Die with a heated wire cutter

A die with a heated wire cutter has an replaceable cutting wire (Figure 20/3) between both bows (Figure 20/2), to which an adjustable voltage between 1.3 V and 2.8 V is supplied via an electric line (Figure 20/1).

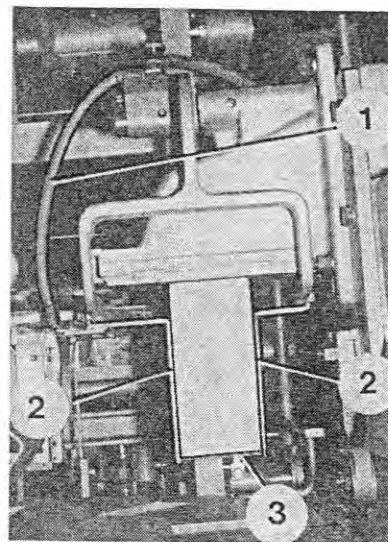


Fig. 20

Ejection station types

1.5.10 Discharge conveyor

1.5.10.1 Belted discharge conveyor

The packages removed from the rotary table are conveyed by a conveyor belt which transports the packages at right angles to the left (Figure 21) or straight ahead, depending on installation. When oval and rectangular packages are transported straight ahead they can be turned by 90°. Packages in a roll format can only be transported at right angles to the left.

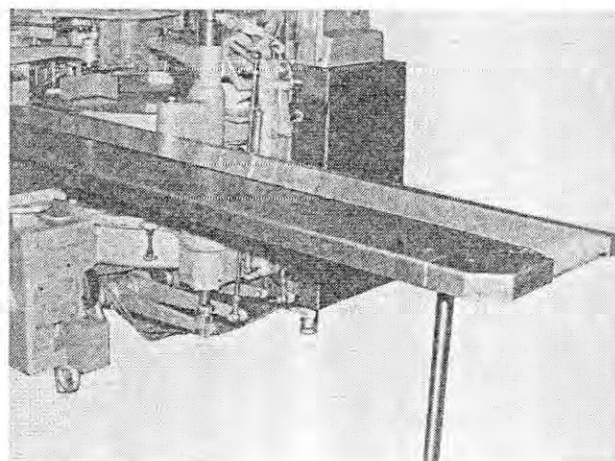


Fig. 21

1.5.10.2 Chained discharge conveyor

Machines which handle only roll formats with seals are equipped with a chained discharge conveyor. Each roll is removed from the rotary table and pushed into one of the conveyor trays attached to a continuous chain. The conveyor chain is driven step by step.

1.5.10.2.1 Chained discharge conveyor with seals

The edges pointing upwards are sealed and pressed in the chained discharge conveyor.

Follow-up machine

1.5.11 Carton filling machine

The 8345 Model is combined with a 8531 Model carton filling machine to collect, stack and pack the packages, produced by the 8345 Model, in folding or two-part cartons (Figure 22).

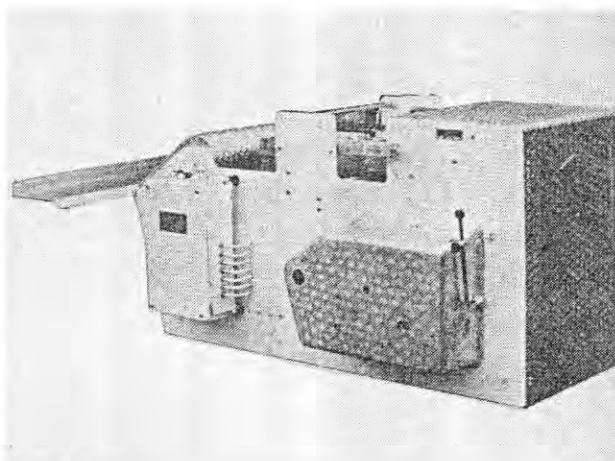


Fig. 22

2 Installation

The filling and packaging machine is installed by technicians of Benz & Hilgers. The following is to be observed during or after installation.

1. Level the machine by adjusting the machine supports (Figure 23/arrows).

2. Connect the product feed and return line to the connecting pieces (Figure 24/1+2), when machines with a direct connection are used.

2.1 Connect the compressed air line to the connecting piece (Figure 24/arrows) of the pressure reducer.

2.2 After the compressed air line has been pressurized, adjust a pressure of 1.5 bar, turning the handwheel (Figure 24/3). Read the pressure indicated by the pressure gauge (Figure 24/4). Then, check the pneumatic lines for leaks.

3. When machines with a worm through are used, install the worm through and level it, using the machine supports.

3.1 Install and tighten the roller chain of the worm trough. (Refer to section 5.11.)

4. Connect the mains in the switch box.

NOTE

The machine must be connected by an electrician in accordance with the enclosed circuit diagrams. Check whether the voltage and frequency given on the motor plate correspond with your environment. Observe the sense of rotation of the motor!

5. When machines with a switch cabinet are used, connect the mains in the switch cabinet. (Refer to Note.)

5.1 Attach the plug-in connections of the switch cabinet (Figure 25) to those of the switch box.

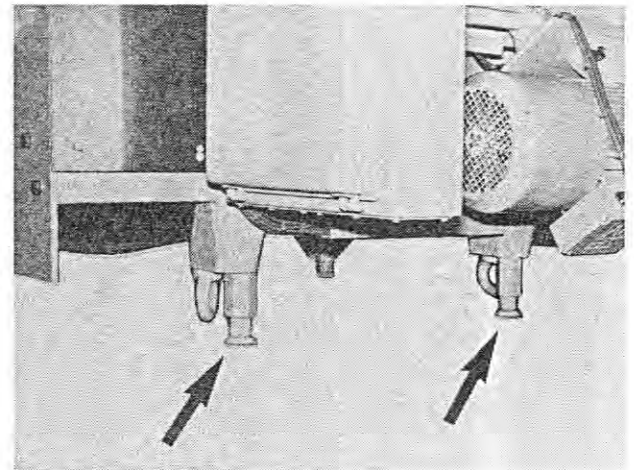


Fig. 23

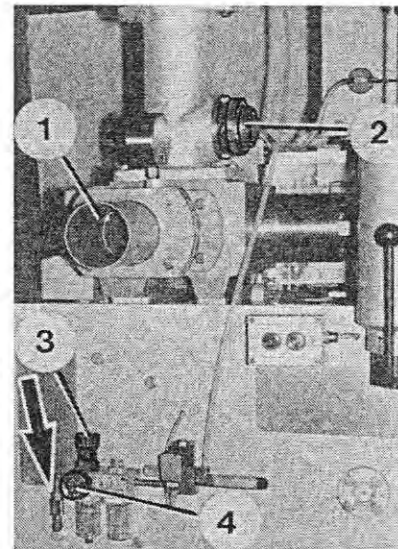


Fig. 24

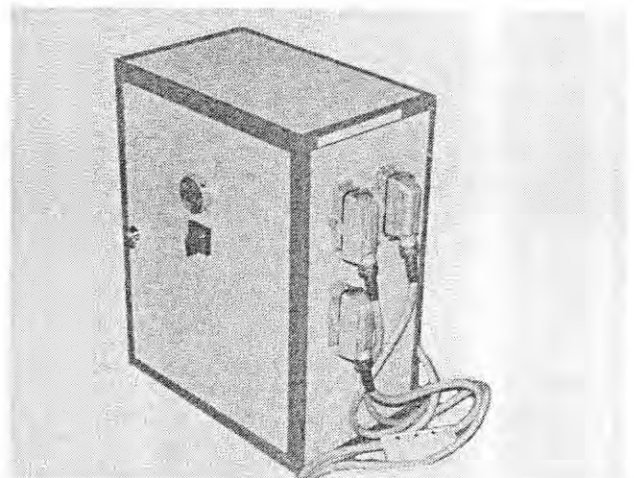
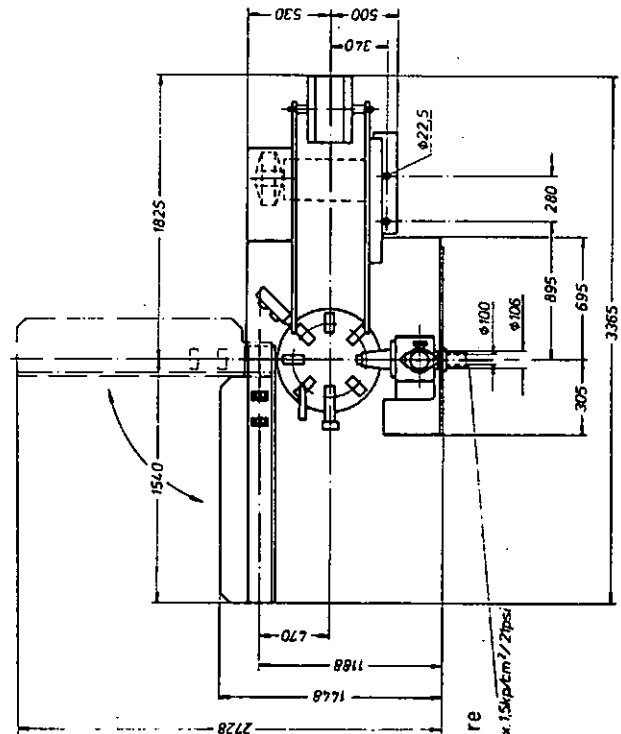
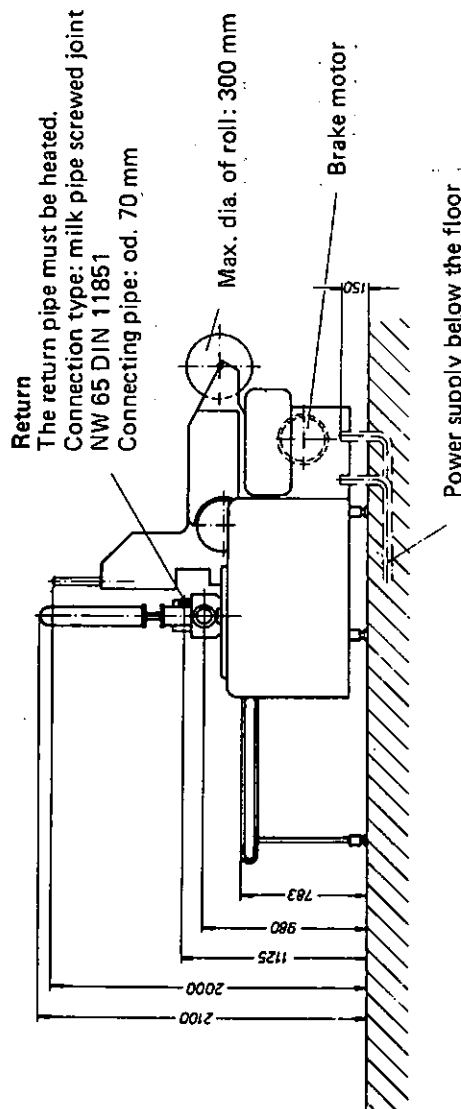


Fig. 25

2.1 Installation plans

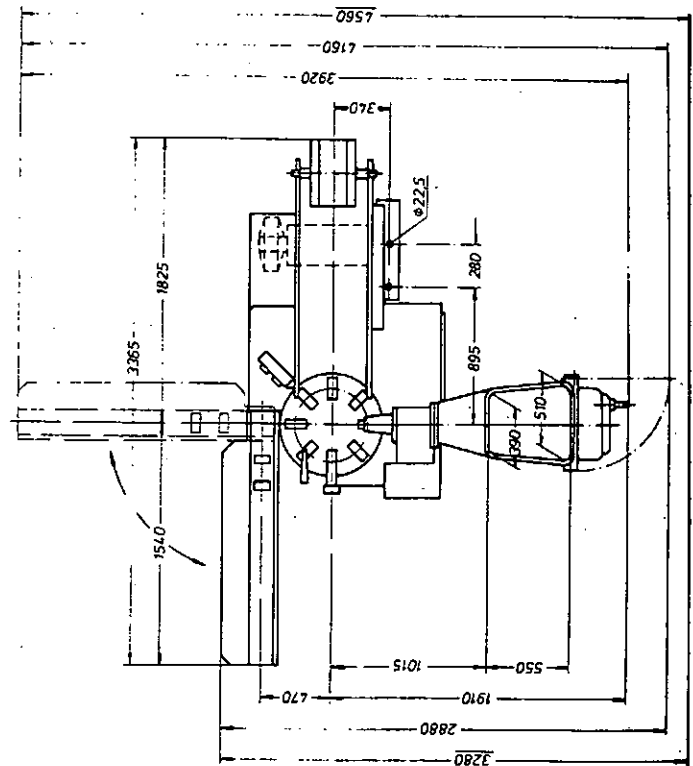
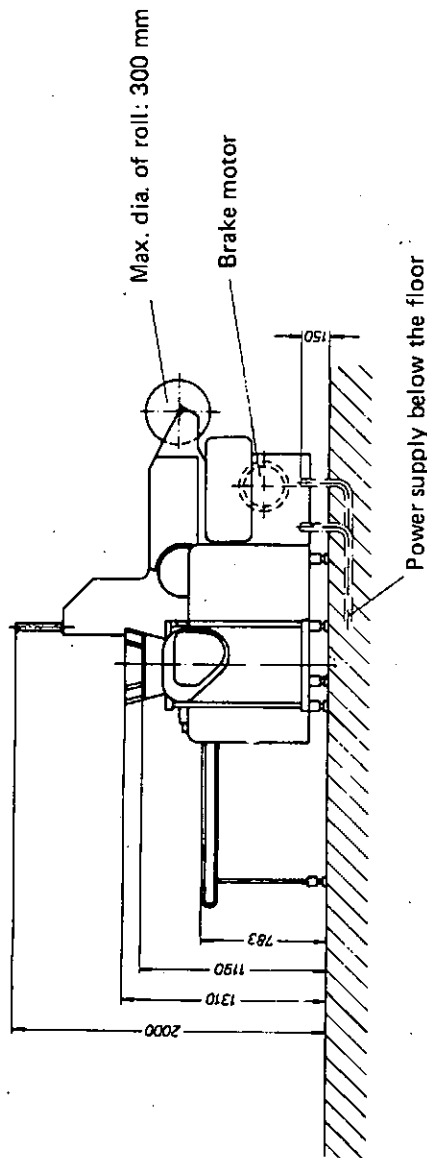
2.1.1 Installation plan for Model 8345D (direct connection)



The rights for constructional modifications are reserved.
Dimensions unbinding.

2.1.2 Installation plan for Model 8345S (worm trough)

The rights for constructional modifications are reserved.
Dimensions unbinding.



For worm removal

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3 General description

The filling and packaging machine is designed to process butter, margarine, lard and other edible fat.

The machine uses wrapper to produce open-top pouches into which the product is filled in defined doses. These pouches filled with product are formed to packages by closing. The packages height depends on the filling weight, when the basis is the same.

The machine can be equipped to accommodate one or more formats such as rectangular, roll, round or oval formats.

Depending on the type of machine, the filling weights range from 100 g to 1,000 g. The maximum output is 90 packages/minute (when the filling volume is not too large).

The product is fed trough a direct connection, a worm trough or a hopper.

The filling and packaging machine is divided into two main assemblies: the substructure and the working elements.

The **substructure** (Figure 26) is a cast iron frame which houses and drives the working elements necessary for packing. The rotary table (Figure 26/1) is driven in the substructure oil sump. The drive shafts (Figure 26/2) are supported by an end plate which is screwed on the substructure (Figure 26/arrows).

The pivoted plate (Figure 26/3) supports the drive motor.

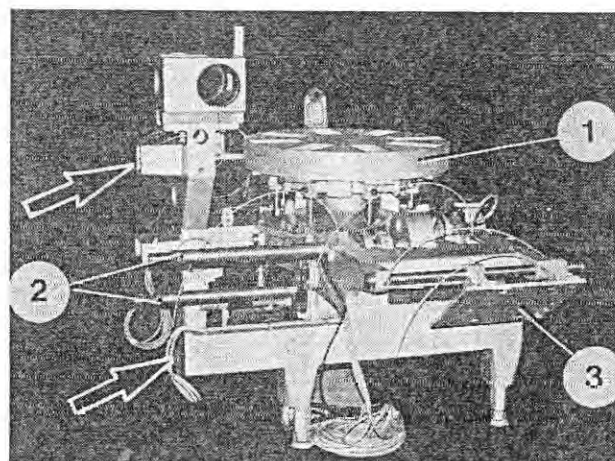


Fig. 26

The **working elements** are arranged on the following stations in front of the appropriate cells of the rotary table (Figure 27) and are equipped with the proper controls.

Wrapping station	(Figure 27/1)
Dosing station	(Figure 27/2)
Folding station	(Figure 27/3)
Pressing station	(Figure 27/4)
Ejecting station	(Figure 27/5)

The working elements as well as the cells and cell bottoms can be replaced for changing the format.

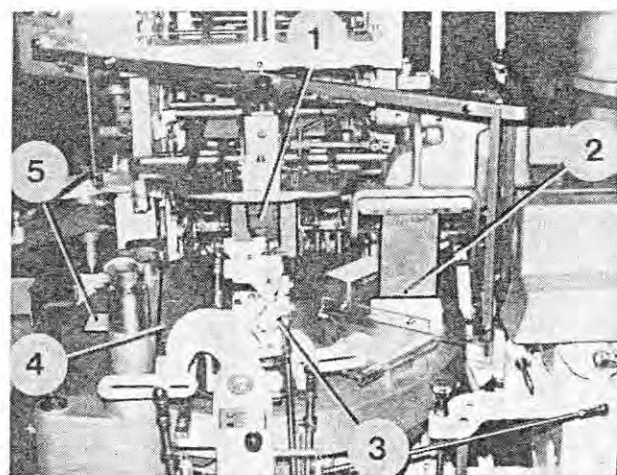


Fig. 27

3.1 Power flow diagram for the substructure

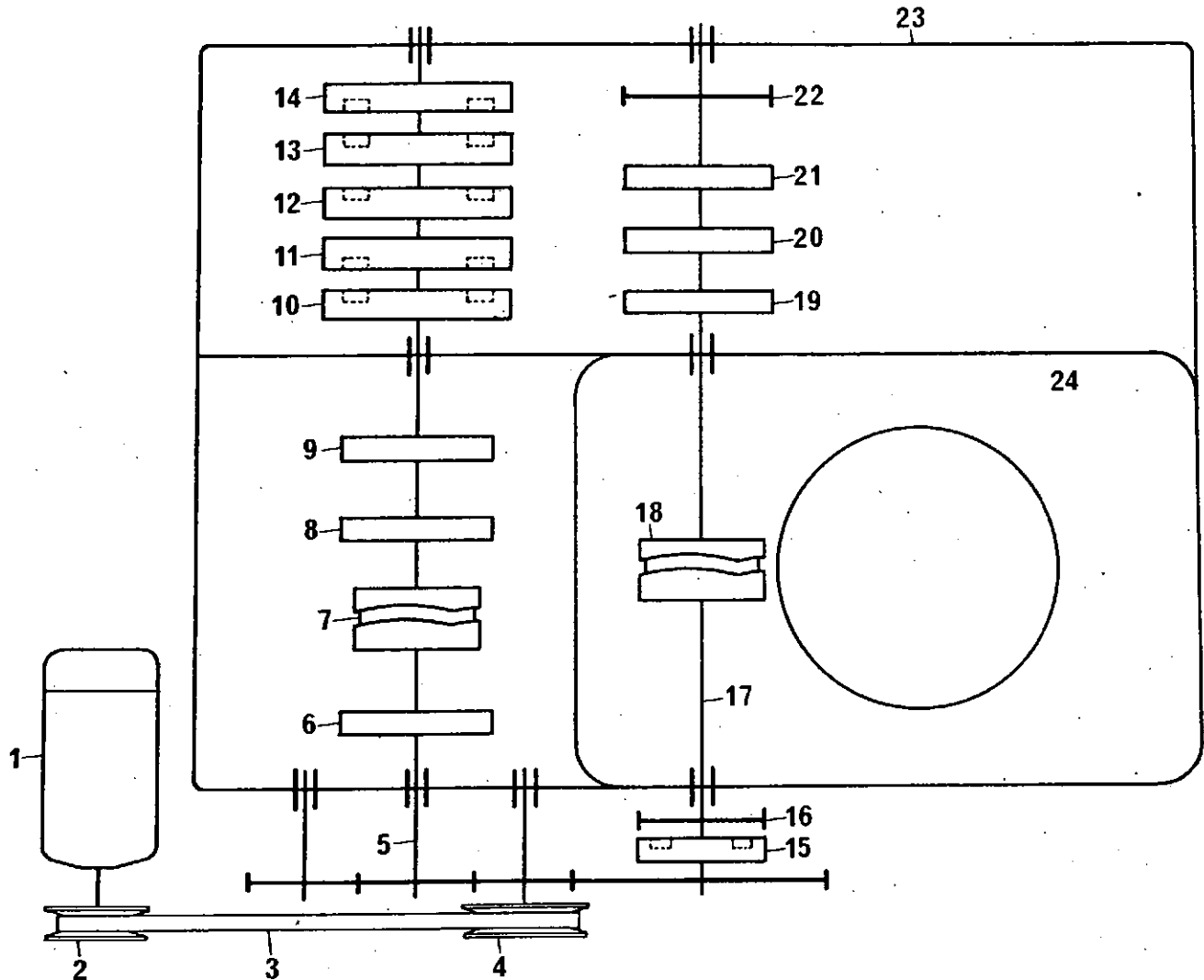


Fig. 28

- | | |
|---|---|
| 1 Drive motor | 13 Groove cam plate for the dosing unit |
| 2 Expansion plate | 14 Groove cam plate for the dosing unit |
| 3 Broad V-belt | 15 Groove cam plate for the pressing stamp |
| 4 Main shaft pulley | 16 Toothed wheel to drive the conveyor belt |
| 5 First drive shaft | 17 Second drive shaft |
| 6 Cam plate for the (vertical) ejector | 18 Rotary table switching cam |
| 7 Cam drum for the package ejector | 19 Cam plate for the 1st closing folder |
| 8 Cam plate for the (horizontal) ejector | 20 Cam plate for the perforating folder |
| 9 Cam plate for the cell bottom motion | 21 Cam plate for the 2nd closing folder |
| 10 Groove cam plate for the pouch stamp | 22 Double sprocket wheel for the worm through drive |
| 11 Groove cam plate for the filling cock | 23 End plate |
| 12 Groove cam plate for the rotary cylinder | 24 Substructure oil sump |

3.2 Principle of operation

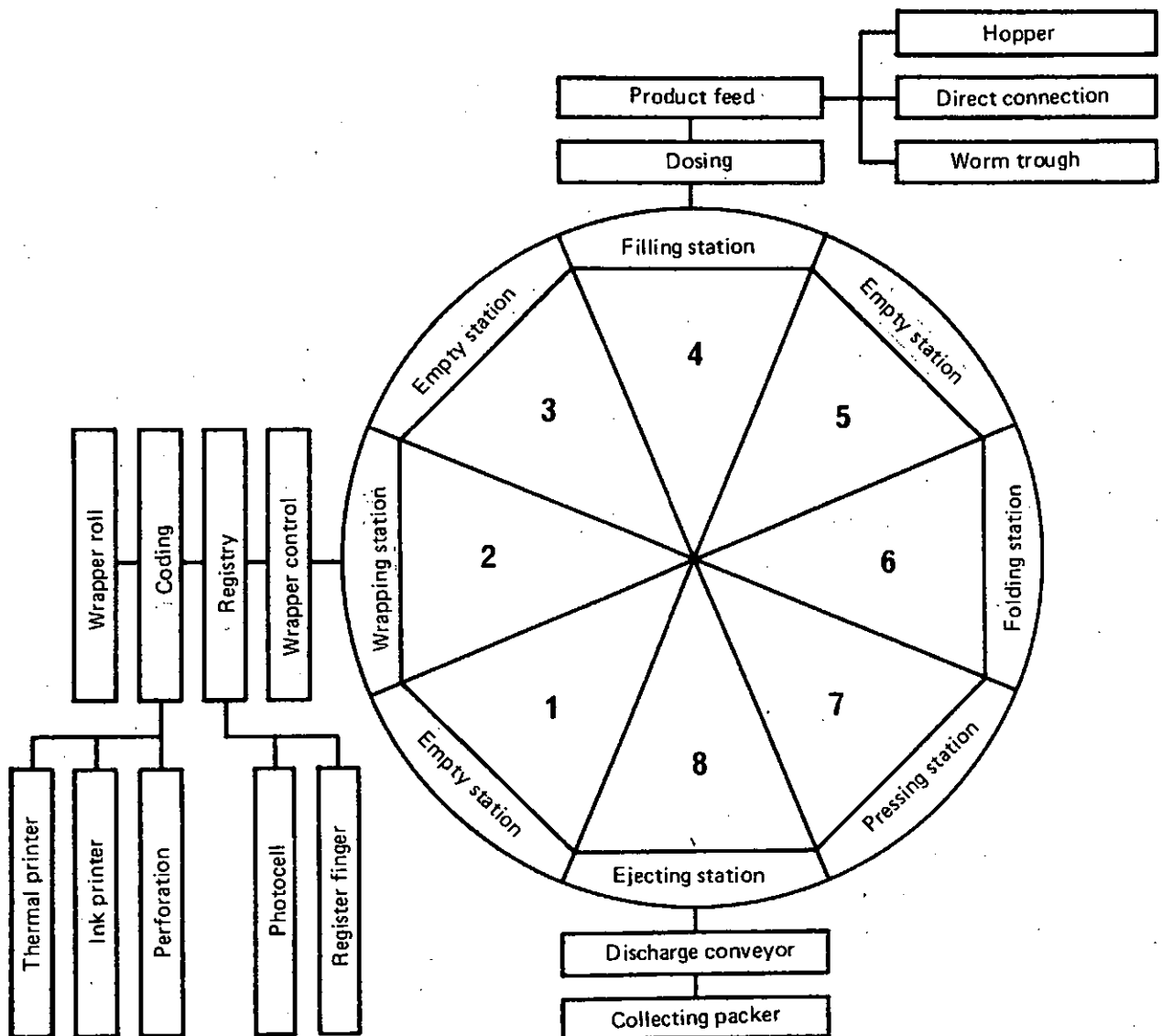


Fig. 29 Diagram of stations

Each pouch remains over seven cycles in the rotary table as a filled and closed package from the time of insertion until ejection. The following operations are performed during the individual cycles.

Cycle 1

After control by the wrapper sensor, the wrapper strip is pushed through the folding box (Figure 30/1) by the pouch stamp and inserted into the cell (Figure 30/3) of the rotary table as a folded pouch (Figure 30/2). The pouch stamp is lifted again, and the pouch is retained in the cell by a holder-down.

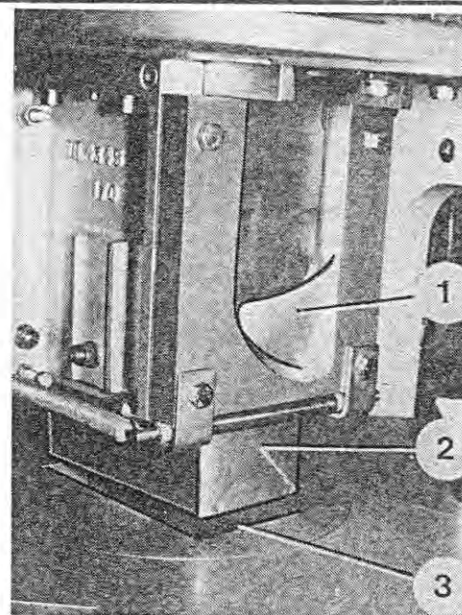


Fig. 30

The wrapper is advanced somewhat more than the register length by the advance segments (Figure 31/4) and then pulled back by the bail (Figure 31/6) until the register finger (Figure 31/5) fits into the register hole. The rotary table starts turning. The wrapper strip (Figure 31/1) is cut off, advanced by the accelerating rollers (Figure 31/3) and pushed up to the stop on the folding box by the ejectors (Figure 31/2). The rotary table stops.

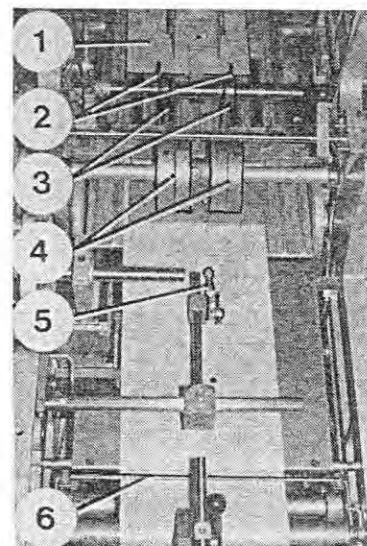


Fig. 31

Cycle 2

The second cycle is an idle cycle during which the rotary turns by 45°.

Cycle 3

While the rotary cylinder is switched from sucking into ejecting position, the sucked product is prepressed and the filling cock (Figure 32/1) moves just to the pouch bottom (Figure 32/3). The dosing piston presses the product via the filling cock into the pouch, while the filling cock and the cell bottom are lifted.

After filling, the product is cut off by the cutting bow (Figure 32/2) during a re-sucking motion of the piston.

The rotary cylinder closes the ejection opening and opens the suction opening.

The rotary cylinder start turning and the dosing piston sucks product.

The filling cock is in its upper position again. The cell bottom is lowered and the rotary table stops.

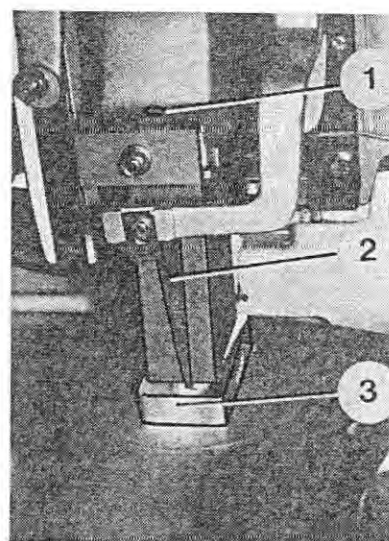


Fig. 32

Cycle 4

The fourth cycle is an empty cycle in which the rotary table turns by 45° .

Cycle 5

The closing folders I + II (Figure 33/1+2) are moved to the pouch. They support the pouch when it is punched by the punching folders (Figure 33/3).

The punching folders return to their home position, and closing folder I closes the first edge. Closing folder II folds the second edge and closing folder I returns to its home position.

The rotary table starts turning and moves the folding edge presser (Figure 33/4) to the pressing station. Closing folder II returns to its home position and the rotary table stops.

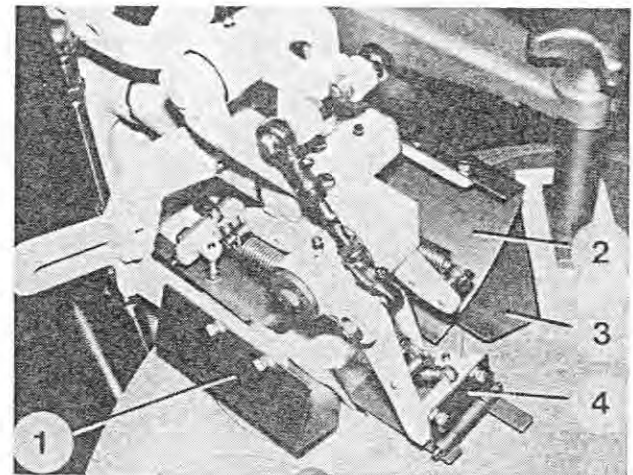


Fig. 33

Cycle 6

The pressing stamp (Figure 34/1) is lowered and applies pressure to the package fold (Figure 34/2), using spring load. The pressing stamp remains in this pressing position for a while and returns then to its home position.

The rotary table starts turning. The package is pressed out of the cell by lifting the cell bottom.

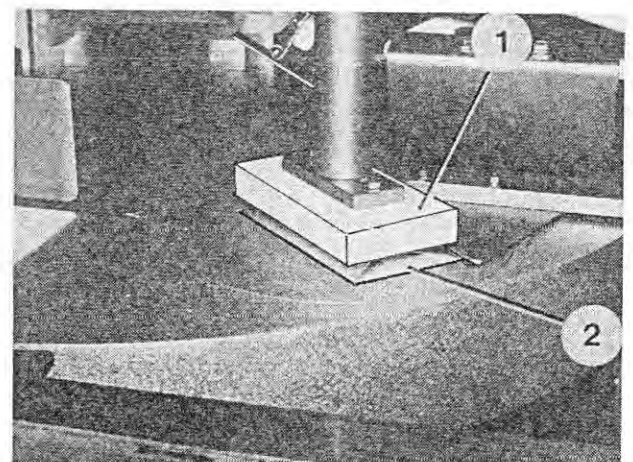


Fig. 34

Cycle 7

The pusher (Figure 35/1) moves the packages (Figure 35/2) onto the conveyor belt (Figure 35/3). After the package has been removed, the pusher moves back and the rotary table starts turning.

At the next empty station, the cell bottom has reached its lowest position and the rotary table stops.

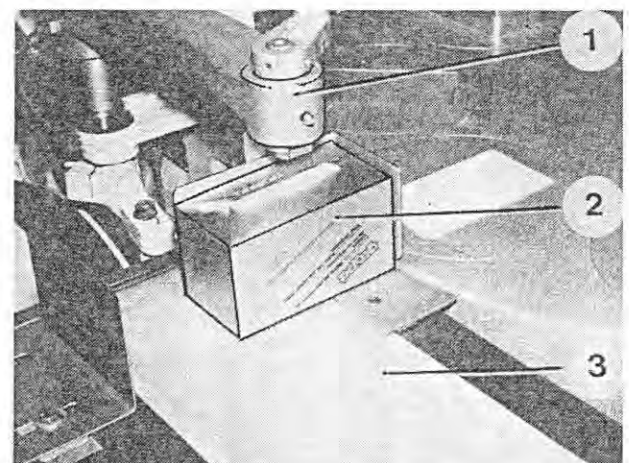


Fig. 35

3.3 Work flow diagram

Wrapping station	Empty station	Filling station	Empty station	Folding station	Pressing station	Ejecting station	Empty station
Pouch stamp is lowered	Rotary table starts turning	Prepressing by the dosing piston	Rotary table starts turning	Closing folders I + II support the pouch	Pressing stamp is lowered	Package is removed	Rotary table starts turning
Sensor controls the wrapper	Rotary table stops	Filling cock is lowered	Rotary table stops	Punching folders punch the pouch	Pressing stamp does not move in its low. posi.	Pusher is above the conveyor belt	
neg. pos. Machine „off“		Suction opening is closed		Punching folders move back	Pressing stamp is lifted	Pusher moves back	
Ejectors move back		Ejection opening is opened		Closing folder I closes	Rotary table starts turning	Rotary table starts turning	
Pouch is folded		Filling cock in its lowest position		Closing folder II closes	Pressing stamp in its upper position	Cell bottom is lowered	
Pouch is inserted into the rotary table		Product is pressed out		Closing folder I returns to its home position	Cell bottom is lifted	Rotary table stops	
Pouch stamp is lifted		Filling cock and cell bottom are lifted		Rotary table starts turning	Rotary table stops		
Advance segments stop wrapper advance		Resuction by the dosing piston		Closing folder II returns to its home position			
Registry by the photocell or the register finger		Product is cut off		Rotary table stops			
Wrapper strip is cut off		Ejection opening is closed					
Rotary table starts turning		Suction opening is opened					
Accelerating roller starts wrapper advance		Rotary table starts turning					
Pouch stamp stops in its upper position		Filling cock in its upper position					
Advance rollers start wrapper advance		Product is sucked					
Accelerating roller stops wrapper advance		Cell bottom is lowered					
Ejectors push the wrapper strip		Rotary table stops					
Rotary table stops							

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4 Description of components

4.1 Drive

The packaging machine is powered by a three-phase motor (Figure 36/1) which incorporates a spring pressure brake. The motor is attached to a pivoted plate (Figure 36/2) at the front left side of the machine and drives the pulley (Figure 36/8) and its handwheel of the main shaft, using the broad V-belt (Figure 36/9) and the expansion plate (Figure 36/10). Using face wheels, the main shaft powers the first and second drive shaft (figure 36/6+5) which transmits the motions of the machine required for filling and packaging. The spindle (Figure 36/4) moves the drive motor to the left or the right when the handwheel (Figure 36/3) is turned. As a result, the spring-urged expansion plate expands or retracts by increasing or reducing the tension of the broad V-belt. Thus, the rolling diameter of the broad V-belt on the expansion plate and the ratio to the pulley is changed. The range of adjustment is limited by stop screws.

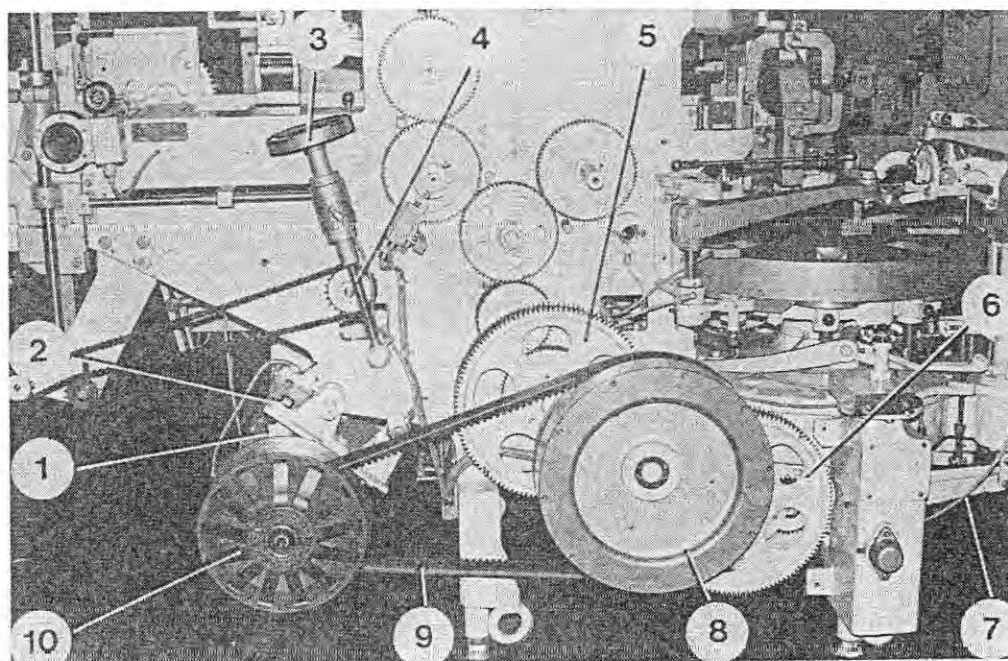


Fig. 36

4.2 First drive shaft

The first drive shaft runs through the whole substructure and serves for the installation of several cam plates and one switching cam.

A cam plate, which operates the pressing stamp via the lever (Figure 36/7), is located on the front side behind the face wheel (Figure 36/6).

The switching cam (Figure 37/1) in the oil sump of the substructure drives the rotary table turret (Figure 37/3), using the rollers (Figure 37/2).

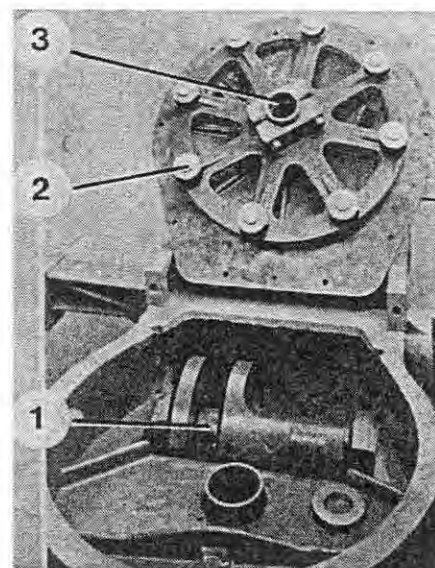


Fig. 37

The first drive shaft end is supported in an end shield (Figure 40/6) on the rear side of the machine. The cam plates required for folding are installed between the substructure and the end shield.

In machines with a worm trough, the power for the worm trough is additionally transmitted from the drive shaft by a sprocket wheel.

The cams (Figure 38/1,2+3) power the 1st closing folder, the punching folders and the 2nd closing folder.

Two cams (Figure 38) which can be switched by lever are installed for each folder motion in machines allowing a change to a roll format.

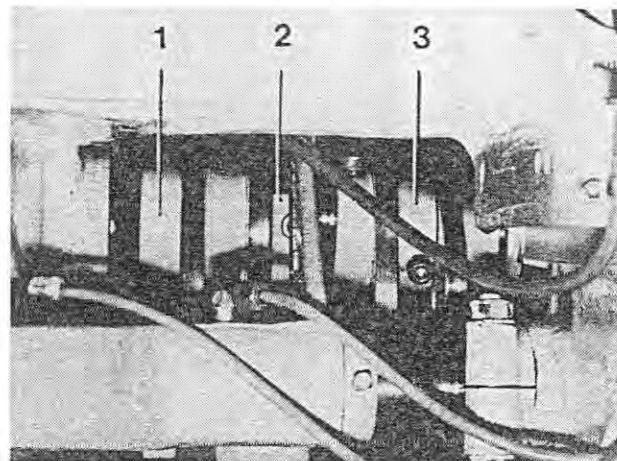


Fig. 38

4.3 Second drive shaft

The second drive shaft runs through the whole substructure and is designed for the installation of groove cam plates, cam plates and one drum cam.

The cam plates (Figure 39/1,3+4) between the two bearing points in the frame drive the vertical ejectors, the horizontal ejectors as well as the cells on the filling station. The drum cam (Figure 39/2) drives the pusher.

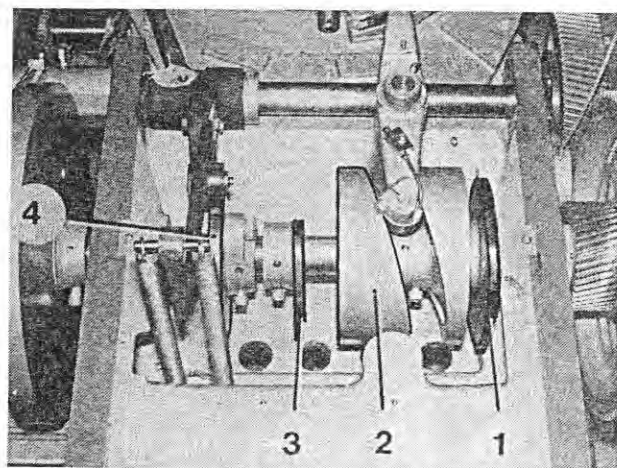


Fig. 39

The second drive shaft end is also supported in the end shield (Figure 40/6) on the rear side of the machine.

The pouch stamp, the pusher plate of the filling cock and the rotary cylinder are driven by the groove cam plates (Figure 40/1,2+3).

The groove cam plates (Figure 40/4+5) serve for driving the dosing piston. The drive lever (Figure 40/7) to the dosing piston is adjustable and must be engaged with the appropriate groove cam when the format is changed. The groove cam (Figure 40/4) serves to fill small volumes and the groove cam (Figure 40/5) is designed to fill large volumes.

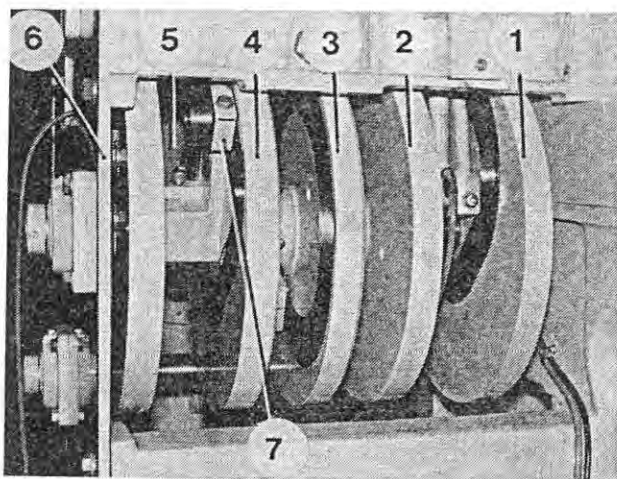


Fig. 40

4.4 Wrapping unit drive

The toothed wheels of the wrapping unit drive shafts are powered by a face wheel on the second drive shaft via intermediate wheels (Figure 41/1).

The toothed wheels (Figure 41/2+3) drive the upper drive shaft with advance segments (Figure 42/2) and the lower drive shaft with its counter roller for the advance segments.

The toothed wheel (Figure 41/4) powers the accelerating segments (Figure 42/3).

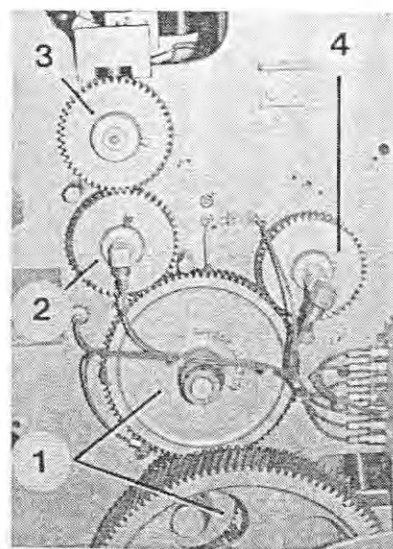


Fig. 41

Within the wrapping unit, the lower drive shaft powers the cutter knife via the groove cam plate (Figure 42/1), and the perforating unit via groove cam plate (Figure 42/4).

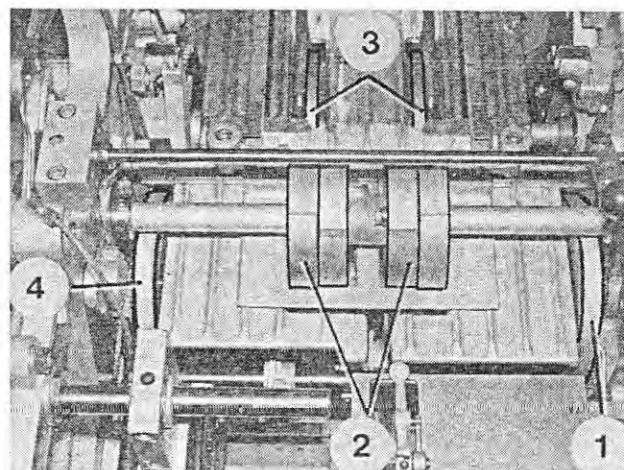


Fig. 42

On the rear side of the wrapping unit, the power for the advance rollers is transmitted from the lower drive shaft via the roller chain (Figure 43/1). The cutter bow is operated by the groove cam gear (Figure 43/2) via a control (Figure 43/3).

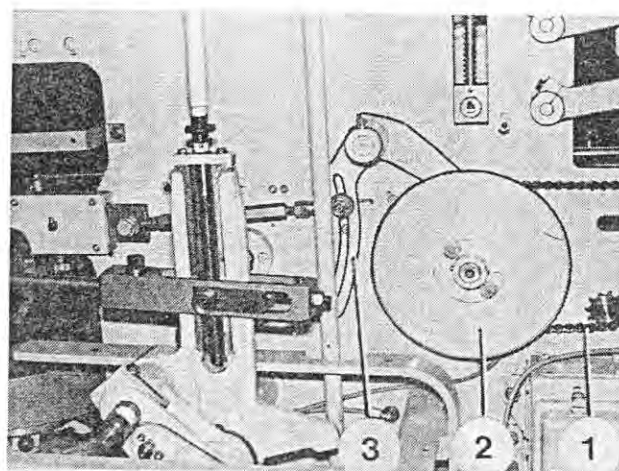


Fig. 43

4.5 Registry by a photocell

The photocell (Figure 44/4) which can be adjusted to accommodate different wrapper lengths is installed in the wrapping unit and detects scan marks printed on the wrapper.

A box (Figure 44/1) houses the components required for electrical control.

When the machine is in operation, the advance segments (Figure 44/5) advance the wrapper with an excess length of 2...4 mm. Then, the limit switch (Figure 44/6) activates the photocell.

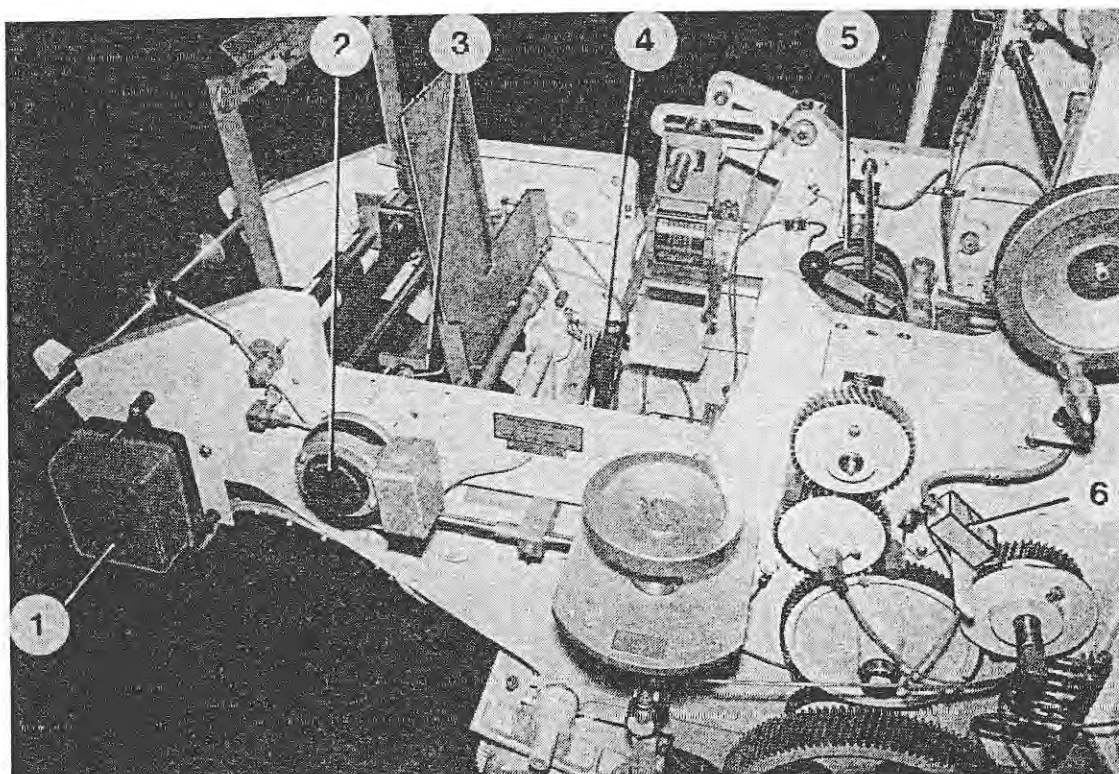


Fig. 44

Now, the wrapper is pulled back by the bail (Figure 44/3) which runs on the cam plate (Figure 45/2) via the roller lever (Figure 45/1), until the photocell detects the scan mark. The electromagnetic spring pressure brake (Figure 44/2) is deenergized and retains the bail in its current position. The wrapper has now the required length and can be cut off.

Prior to beginning a new wrapper advance, the limit switch switches the photocell off and the spring pressure brake is energized again.

The brake is released and the bail can be lifted on subsequent advance of the wrapper strip.

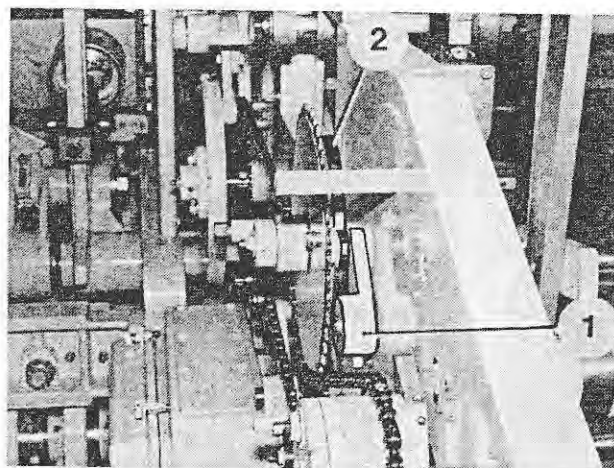


Fig. 45

4.6 Registry by a register finger

The register finger (Figure 46/2) can be adjusted to accommodate different wrapper lengths and is installed in the wrapping unit.

Immediately after the wrapper has been cut off by the lower knife, the upper advance segments (Figure 46/3) advance the required amount of wrapper. When the wrapper advance is completed, the register hole in the wrapper strip must project 2...4 mm over the register finger front edge. (Approx. 6...8 mm when plastic laminated wrapper is used.)

The advance segment releases the wrapper strip which is pulled back by the weight of the pendulum (Figure 46/1) until the register finger fits into the register hole. Another cut is performed. If the pendulum does not pull back the wrapper sufficiently, its stop must be relocated in downward direction.

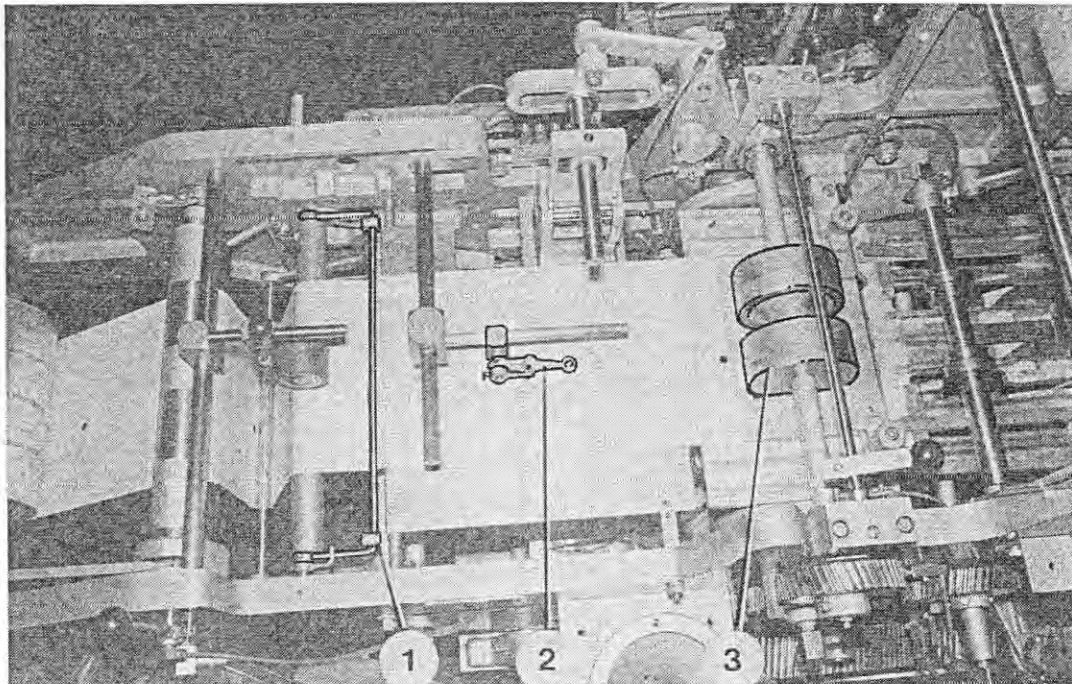


Fig. 46

4.7 Pendulum roller limit switch

The limit switch (Figure 47/1) of the pendulum roller (Figure 47/2) is operated and stops the machine when the roll is out of wrapper and a new one must be inserted.

4.8 Wrapper sensor

Each time the pouch stamp is lowered into the folding box, the wrapper sensor checks whether or not there is a wrapper on the folding box. If not, the sensor is grounded and switches the machine off (refer to Figure 14). The wrapper sensor can be switched off for test runs, using a select switch in the operator desk.

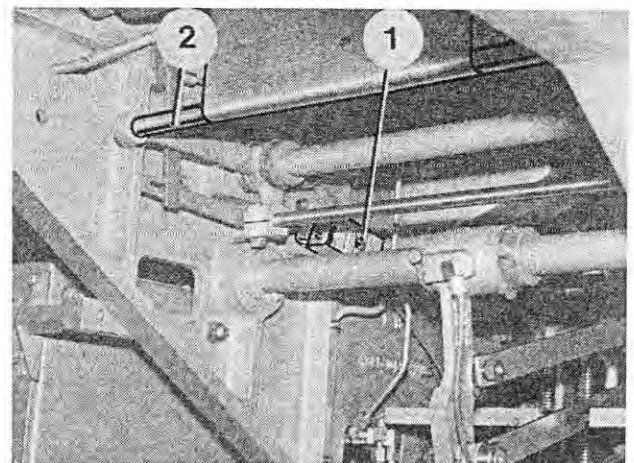


Fig. 47

4.9 Central lubricating system

NOTE

Only for the type described in 1.5.1.1.

A one-line greasing lubricating system lubricates the chains, bearing points and cam gears.

A hand pump (Figure 48/1) supplies the semiefluid grease through the main lines (Figure 49/2) to the distributor sledges and their metering valves (Figure 49/1) and from there to the bearing points through plastic or metal tubes (Figure 49/5).

The filter (Figure 48/6) installed prevents foreign matter from entering the lubricating system.

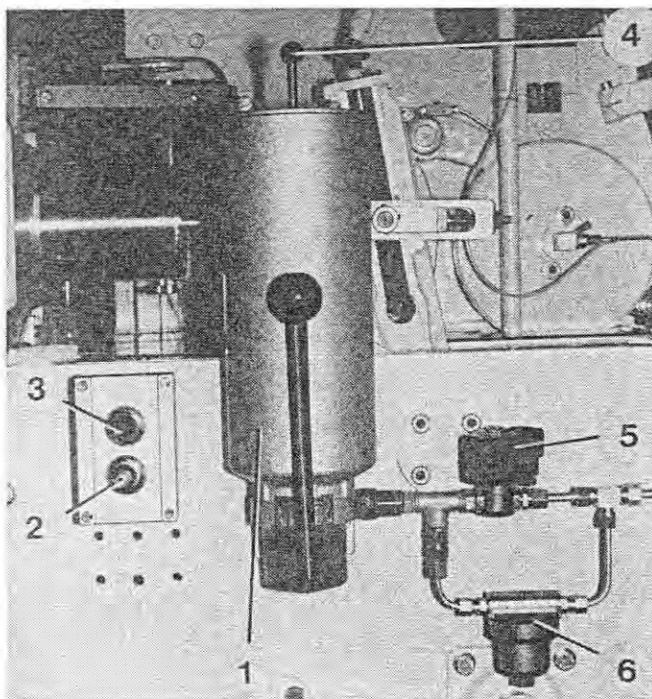


Fig. 48

Operation of the lubricating system:

After the machine has been switched on, the green indicator lamp (Figure 48/3) is lit. If the pressure in the main lines exceeds 5 bar after the hand pump (Figure 48/1) has been operated several times, the pressure switch (Figure 49/3) switches off the green indicator lamp.

If the pressure exceeds 40 bar, the pressure switch (Figure 49/4) switched on the white indicator lamp (Figure 48/2) and opens the pressure compensating valve (Figure 48/5), reducing slowly the pressure in the lines.

If there is a pressure below 40 bar, the white indicator lamp is extinguished and the green indicator lamp is lit when the pressure drops below 5 bar.

When the pressure in the main lines drops below 5 bar now, the amounts of grease in front of pistons of the metering valves are supplied to the points to be lubricated.

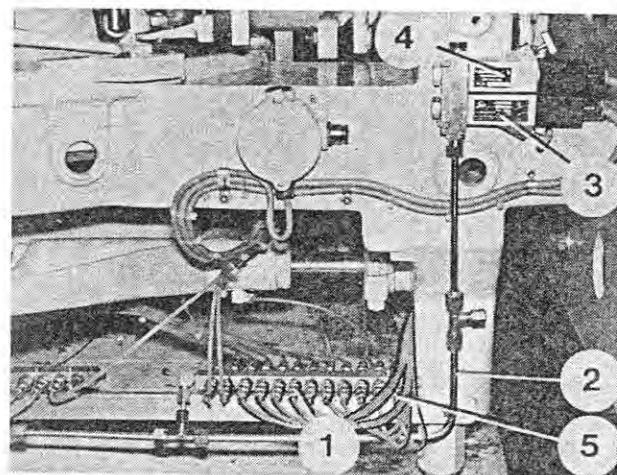


Fig. 49

4.10 Safety facilities

The following safety facilities are installed in the filling and packaging machine to prevent accidents or for secure operation of the machine.

The operator desk (Figure 50/1) houses a safety switch which switches the machine off when the protective pane (Figure 50/2) in front of the folding and dosing elements is opened.

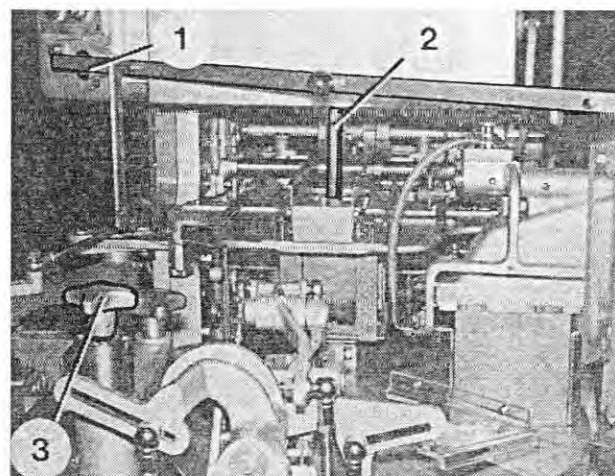


Fig. 50

NOTE

Only for machines with a worm trough.

The worm trough is equipped with a safety switch (Figure 51/arrow) which switches the machine off when the wheel box door (Figure 51/1) is opened.

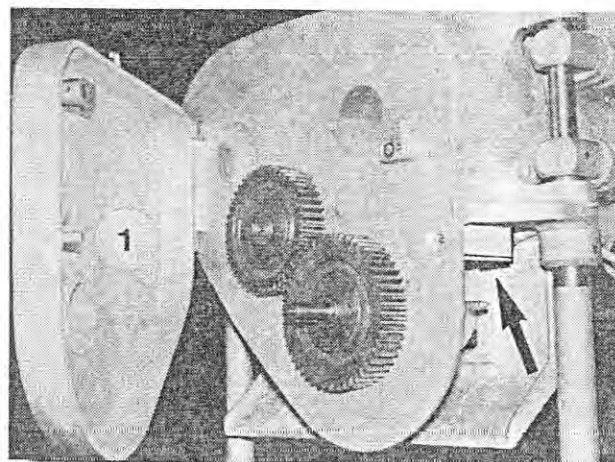


Fig. 51

5 Maintenance

Maintenance survey

Symbols:  daily  weekly  every 100 operating hours
 every 750 operating hours, after 3 months at the latest
 every 1500 operating hours, after 6 months at the latest
 every 3000 operating hours, after 1 year at the latest

Action	Interval see figure 52	Notes
Operating the central lubricating system		refer to section 5.1
Lubricating the lubricating sledges		2 strokes per nipple
Lubricating all other lubricating nipples of the machine		2 strokes per nipple
Lubricating the lubricating point, using the oil gun		refer to section 5.2
Removing the grease from the expansion plate and the broad V-belt		refer to section 5.3
Applying grease to the lubricating points, using a paint brush		refer to section 5.4
Grease exposed toothed wheels (A+B)		only at execution worm trough, see fig. 190
Draining the water separator		refer to section 5.5
Checking and topping up the oiler level		refer to section 5.6
Checking the grease level in the central lubricating system		refer to section 5.7
Checking and topping up the substructure oil level		refer to section 5.8
Lubricating the expansion plate		2 strokes
Testing the machine by the workshop mechanic		refer to section 5.18
Checking and adjusting the chain tension of the advance roller drive		refer to section 5.9
Checking and adjusting the chain tension of the ink printer drive		refer to section 5.10
Checking and adjusting the chain tension of the worm trough drive		refer to section 5.11
Greasing the cutter knife		refer to section 5.12
Checking and adjusting the conveyor belt tension		refer to section 5.13
Changing the grease in the gear box for weight control		
Changing the oil in the substructure		1st oil change after 300 operating hours refer to section 5.15
Cleaning the pump and filter of the central lubricating system		refer to section 5.16
Changing the grease in the conveyor worm drive		refer to section 5.17

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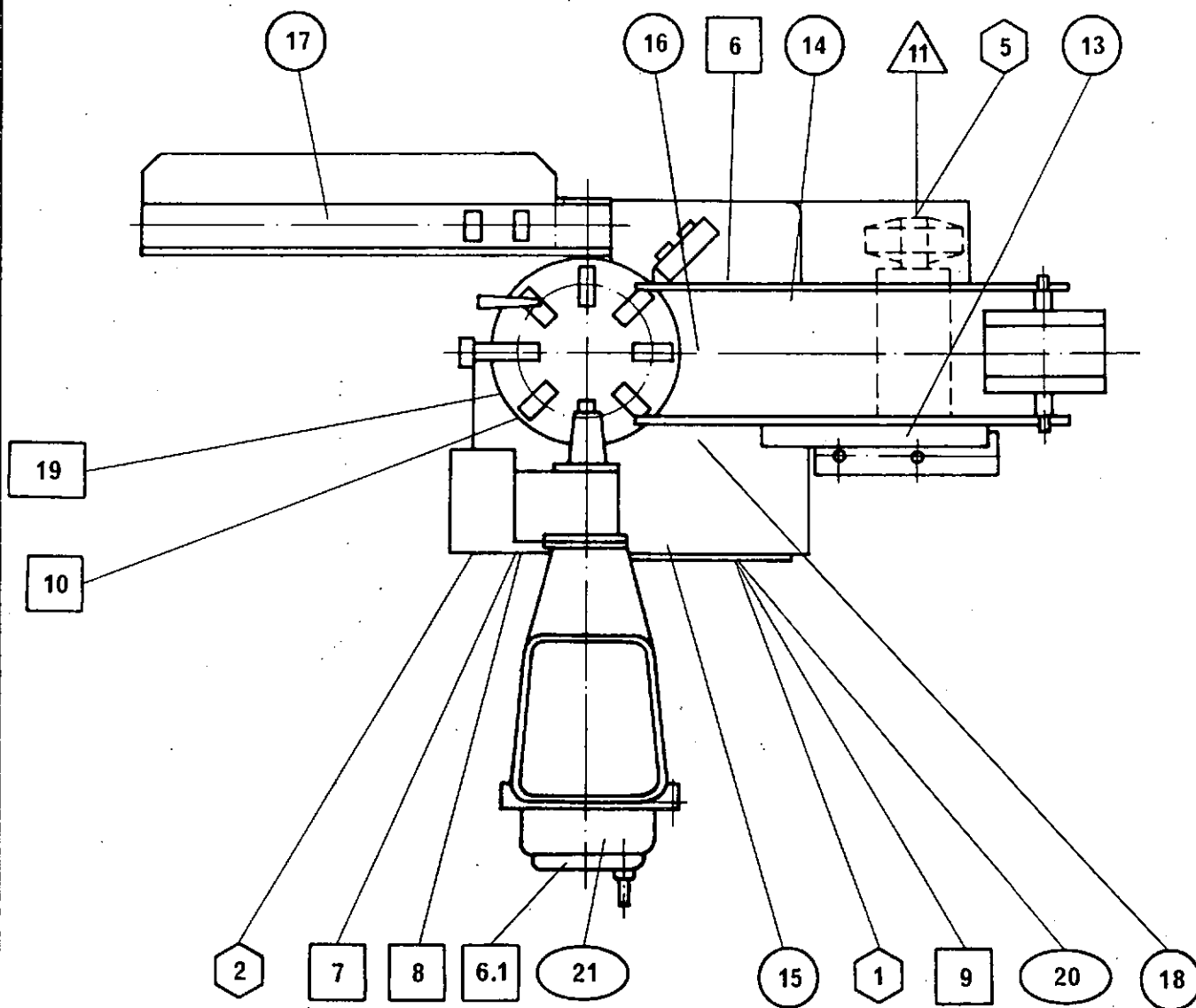


Fig. 52

ATTENTION

Deenergize the machine for all maintenance work which does require that the machine be in operation. Switch off the master switch and depressurize the pneumatic system.

Furthermore, attach a plate to the master switch, reading „Work is carried out on this machine. Do not switch on“.

5.1 Operating the central lubricating system

NOTE

Only for the models described in 1.5.1.1.

1. Operate the machine without load.
2. Actuate the lever (Figure 53/1) of the lubricating pump until the white indicator lamp is lit (Figure 53/2).
3. After the green indicator lamp (Figure 53/3) is lit, run the machine for another minute. Then, switch it off.

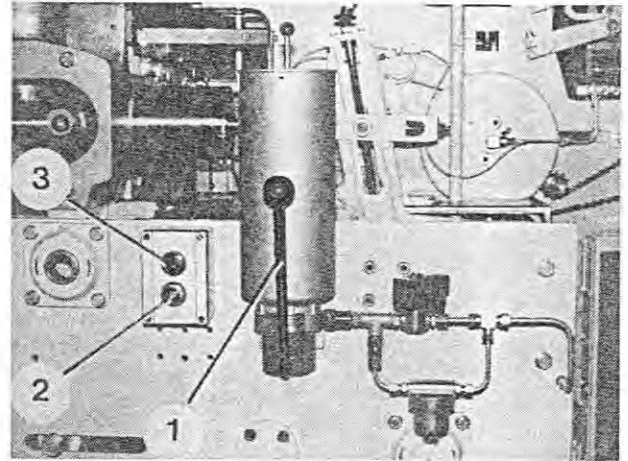


Fig. 53

5.2 Lubricating the lubricating points, using an oil gun

1. Lubricate all red-marked lubricating points, using an oil gun (e.g. accelerating roller, dispenser axle, lubricating holes of the sliding pads in the dosing lever (Figure 54/2) etc.). Refer to lubricants see section 1.2.
2. Remove the cover plate (Figure 54/1). Spray oil on all cam rollers and curves which are not connected to the central lubricating system or the lubricating sledge. Spray the oil in such a way that it runs between the cam roller and lever. Crank the machine with the handwheel for better distribution.
3. When machines with a worm trough are used, lubricate the oiler (Figure 54/3) using the oil gun.

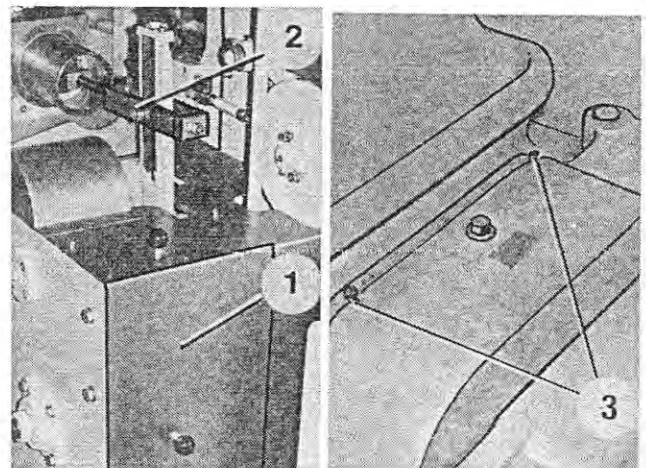


Fig. 54

5.3 Removing the grease from the expansion plate and broad V-belt

1. Raise the maintenance plate (Figure 55/1) and use a cloth to remove the grease which has come out of the multiple spline shaft (Figure 55/arrow).
2. If grease can be seen on the broad V-belt when looking through the opening, remove the cover and then the grease. Clean the large pulley, if necessary.

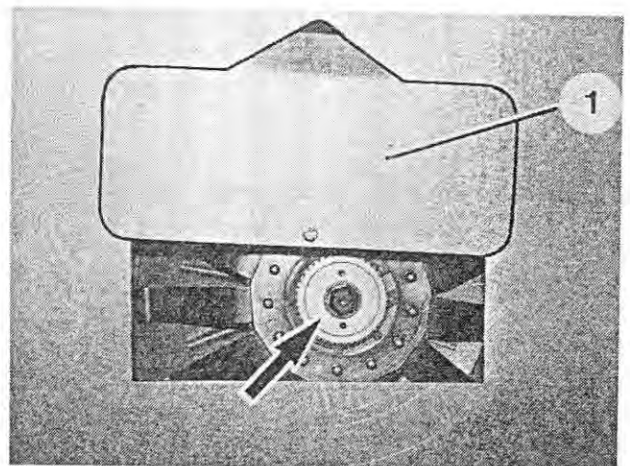


Fig. 55

5.4 Applying grease to the lubricating points, using a paint brush

NOTE

Only for machines without a central lubricating system.

1. Remove the maintenance plates on the front and rear side of the machine.
2. Apply grease to the face wheels (Figure 56) and all roller chain drives using a paint brush. (Refer to section 1.2 for lubricants.)
3. Reinstall the maintenance plates.

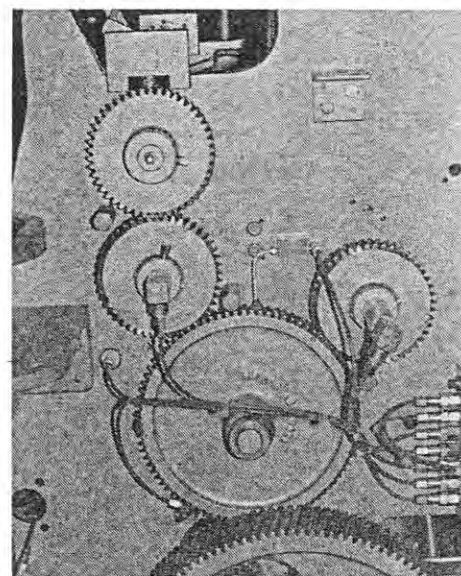


Fig. 56

5.5 Draining the water separator

NOTE

Only for machines with a direct connection.

1. Loosen the plug under the collecting vessel (Fig. 57) and drain the water.
2. Tighten the plug.

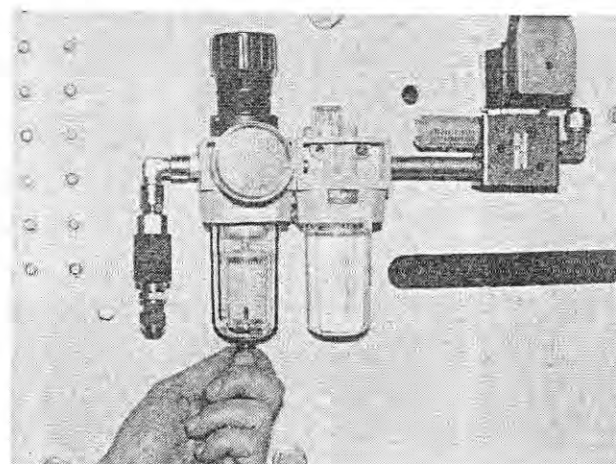


Fig. 57

5.6 Checking and topping up the oiler level

NOTE

Only for machines with a direct connection.

1. Check the oil level which must be between the minimum and maximum mark.
2. To top up with oil, turn the storage vessel to the left (Figure 58) and remove it downwards. Top up with oil up to the maximum mark. (Refer to section 1.2 for lubricants).

NOTE

Topping up can be carried out with pressure.

3. Insert the storage vessel and turn to the right up to the stop.

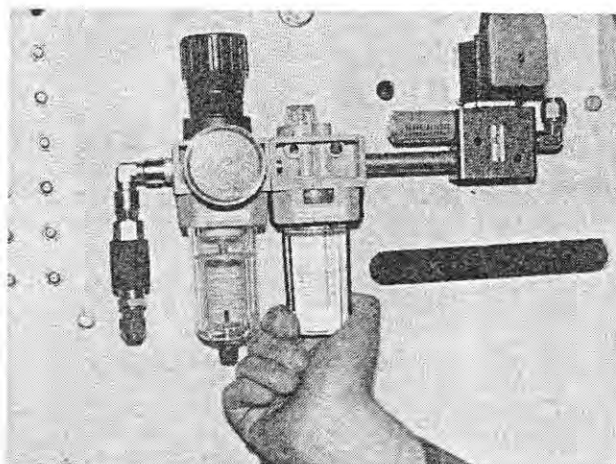


Fig. 58

5.7 Checking and topping up the lubricating pump container with grease

NOTE

Only for machines with a central lubricating system.

1. Check the grease level in the lubricating pump container. It is sufficient as long as the ball of the piston rod (Figure 59/1) is at least 20 mm above the cover (Figure 59/3).

2. To top up with grease, raise the cover (Figure 59/3). Grasp the piston rod (Figure 58/2) and pull the piston out of the lubricating pump container.

3. Fill in grease. (Refer to section 1.2 for lubricants.)

4. Insert the piston into the lubricating pump container and install the cover.

5. Vent the system. (Refer to section 5.16, item 6.)

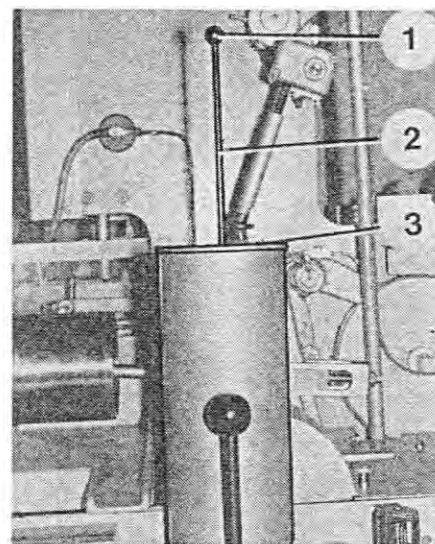


Fig. 59

5.8 Checking and topping up the substructure oil level

1. Check the oil level in the inspection glass. The level must be between the maximum (Figure 60/1) and the minimum mark (Figure 60/2).

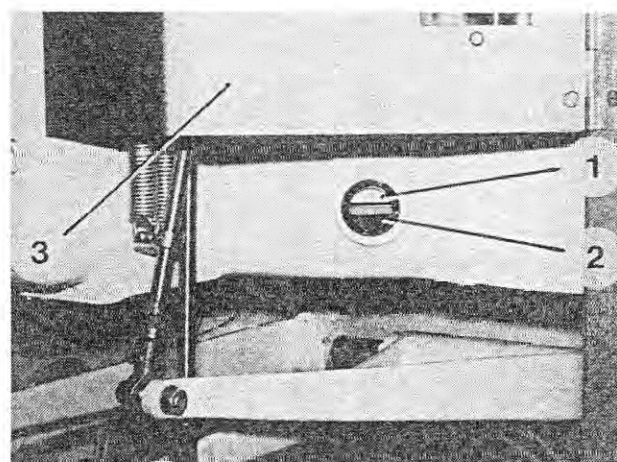


Fig. 60

2. To top up with oil, open the door (Figure 60/3). Unscrew the filling plug (Figure 61/1) and top up with oil up to the maximum mark. (Refer to section 1.2 for lubricants.)

3. Screw in the filling plug.

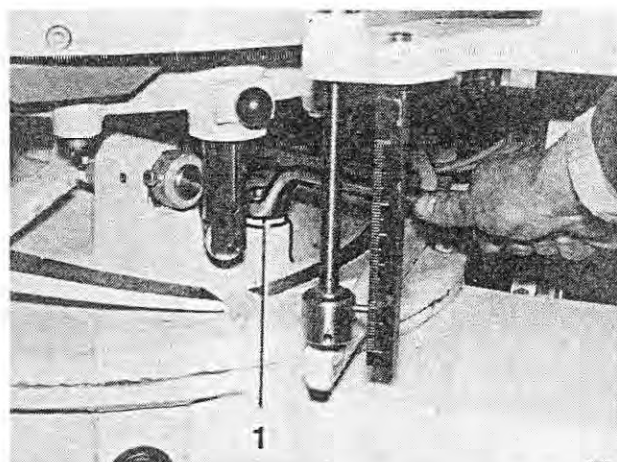


Fig. 61

5.9 Checking and adjusting the chain tension of the advance roller drive

1. Remove the cover plate.
2. Press down the chain on its longest section (Figure 62). It must deflect by 15...25 mm.

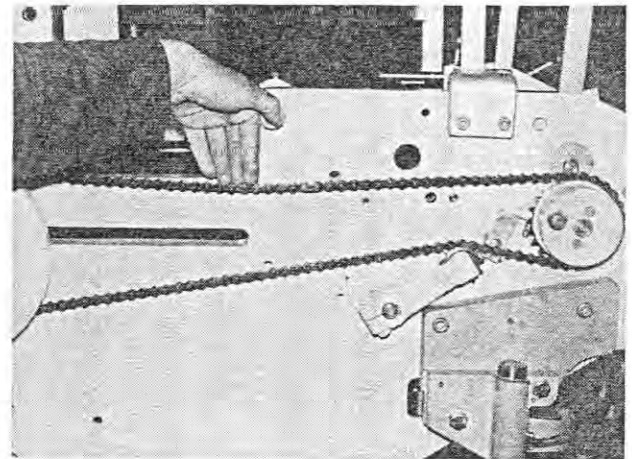


Fig. 62

3. To adjust the tension, loosen the clamping screw (Figure 63/1). Raise the tensioning lever with its sprocket wheel and tighten the clamping screw.
4. Check the adjustment and correct it, if necessary.
5. Reinstall the cover plate.

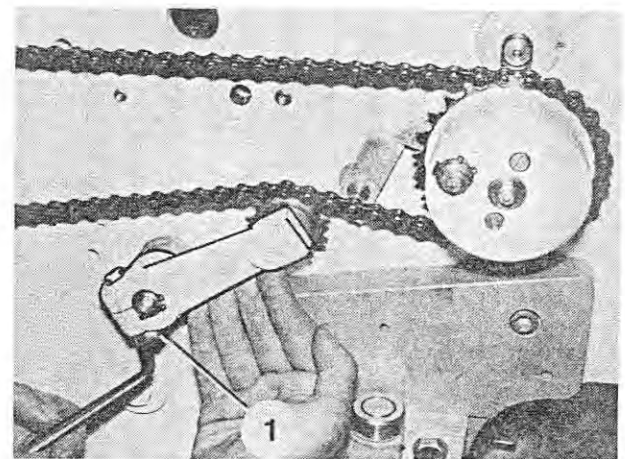


Fig. 63

5.10 Checking and adjusting the chain tension of the ink printer drive

NOTE

Only for machines with an ink printer.

1. Unscrew the locking screw (Figure 64/arrow) of the cover plate and remove the plate.

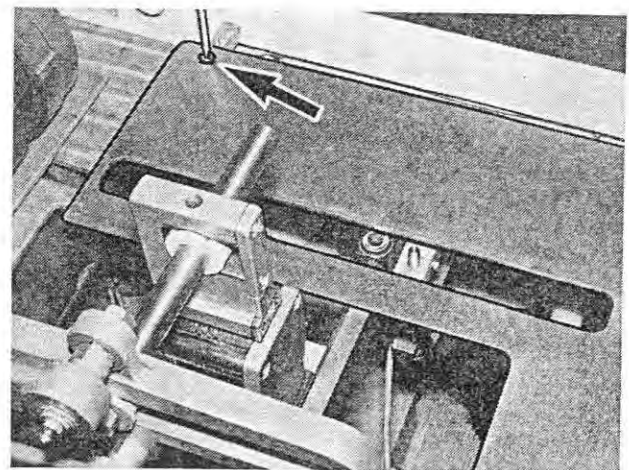


Fig. 64

2. Apply pressure to the longest exposed section (Figure 65). The chain must deflect by 10...15 mm.

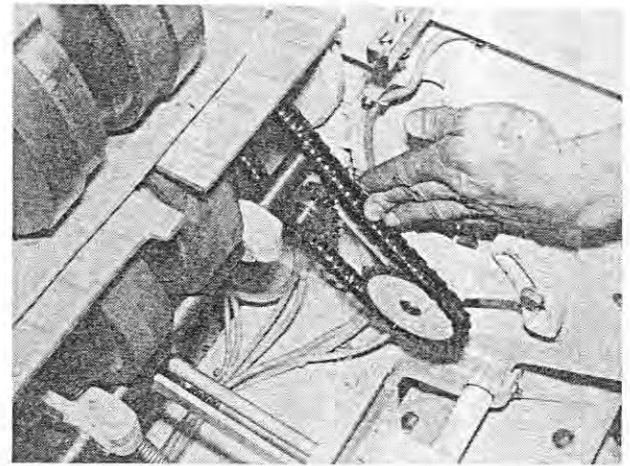


Fig. 65

3. To adjust the chain tension, loosen the locking screw (Figure 66/1). Relocate the adjustment facility and the sprocket wheel appropriately and tighten the locking screw.

4. Check the adjustment and correct it, if necessary.

5. Reinstall the cover plate.

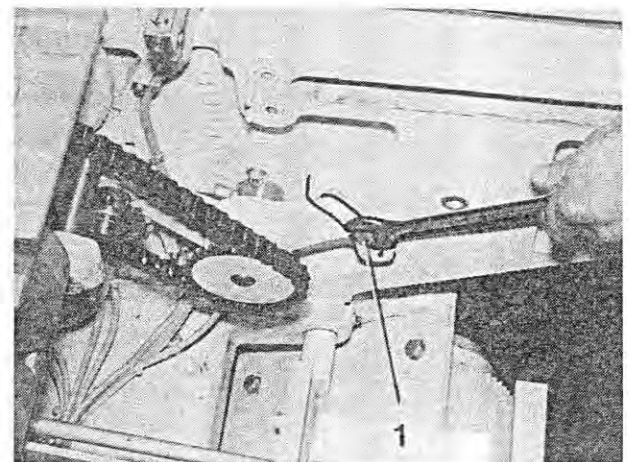


Fig. 66

6. Remove the front cover plate.

7. Apply pressure to the longest exposed section of the drive chain (Figure 67). It must deflect by 15...20 mm.

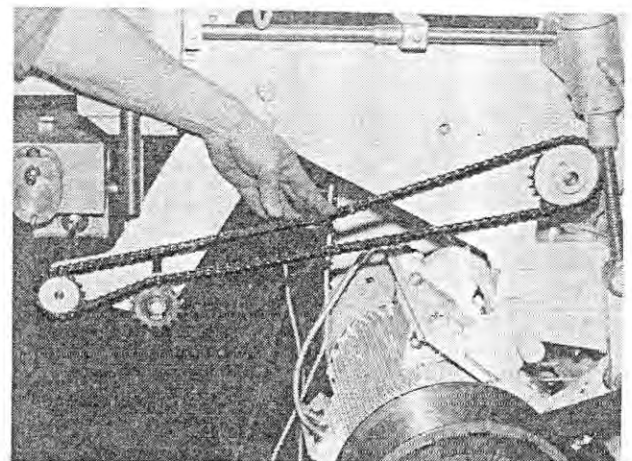


Fig. 67

8. To adjust the chain tension, loosen the hex nut (Figure 68/1). Push the sprocket wheel (Figure 68/2) upwards and tighten the hex nut.

9. Check the adjustment and correct it, if necessary.

10. Reinstall the front cover plate.

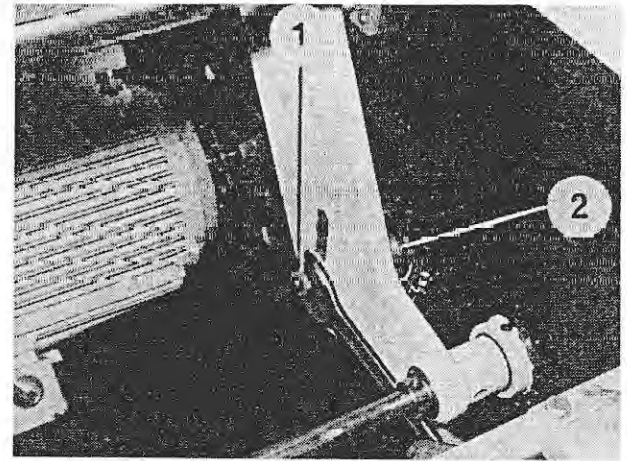


Fig. 68

5.11 Checking and adjusting the chain tension of the worm trough drive

NOTE

Only for machines with a worm trough.

1. Remove the protective plates above the dosing drive.

2. Check the chain tension on the longest exposed section (Figure 69/arrow). The chain must deflect by 15...20 mm.

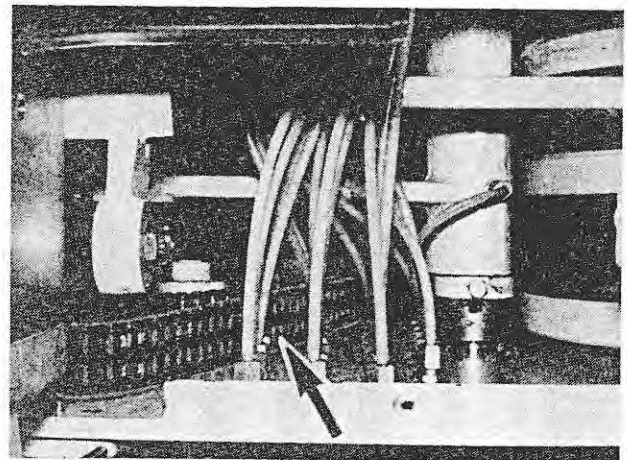


Fig. 69

3. To adjust the chain tension, loosen the hex nut which locks the tensioning wheel (Figure 70). Relocate the tensioning wheel appropriately and tighten the locking screw. Check the adjustment and correct it, if necessary.

4. Reinstall the protective plates.

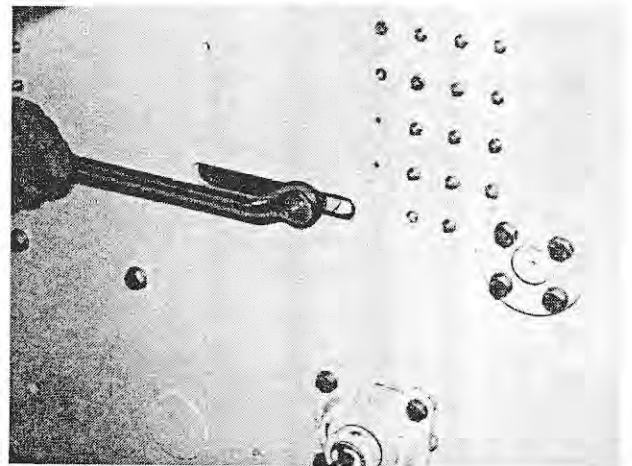


Fig. 70

5.12 Greasing the cutter knife

To protect the surfaces of the upper and lower cutter knives, apply a thin layer of grease to them.

The same applies to the spare knives supplied with the machine.

5.13 Checking and adjusting the conveyor belt tension

1. Check the conveyor belt tension. The belt must have such a tension that it does not stop when you press your hand on it (Figure 71).

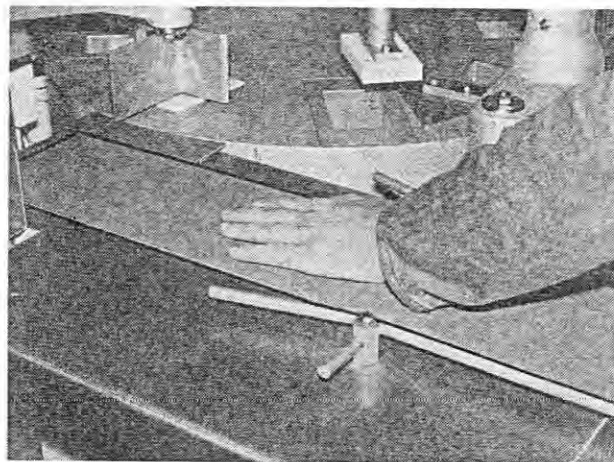


Fig. 71

2. To adjust the tension, loosen the hex nut (Figure 72/1). Increase the tension of the conveyor belt by turning the tensioning facility appropriately (Figure 72/2) and tighten the hex nut.

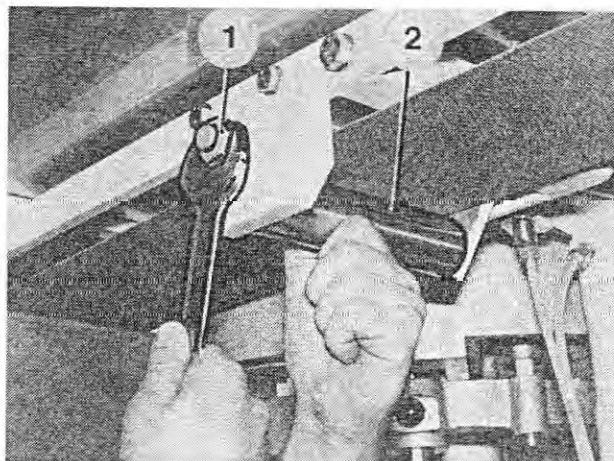


Fig. 72

5.14 Centering the conveyor belt

To center the conveyor belt, screw in or out one of the setting screws (Figure 73/1) when the belt is running until the conveyor belt is centered.

Refer to section 5.13 for checking the conveyor belt tension.

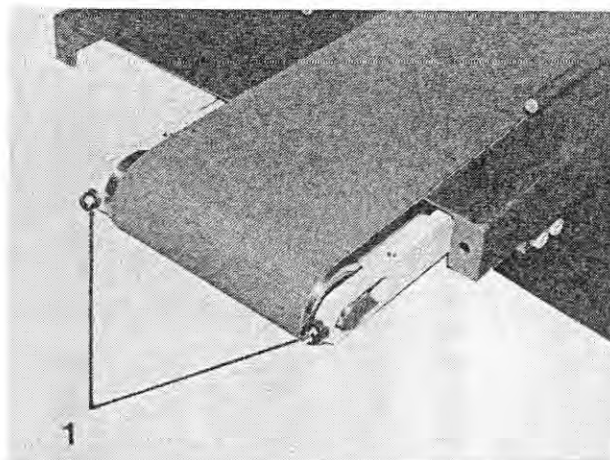


Fig. 73

5.15 Changing the substructure oil

NOTE

The machine must be at operating temperature.

1. Unscrew the oil draining plug (Figure 74/1) and drain the oil.

NOTE

Catch the oil running out.

2. Screw in the oil draining plug.

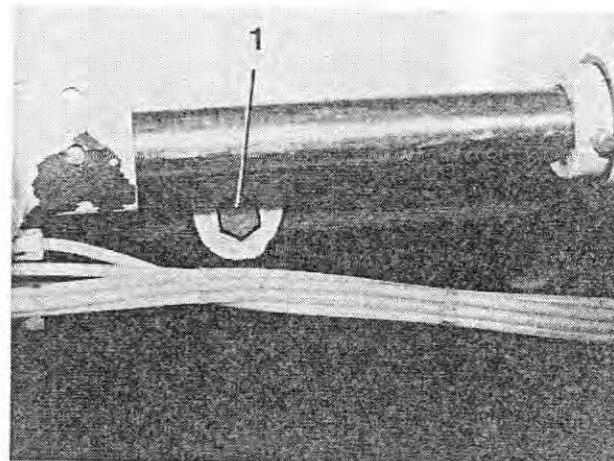


Fig. 74

3. Open the door (Figure 76/3). Unscrew the oil filling plug (Figure 75/1) and fill 20 l flushing oil in the machine. (Refer to section 1.2 for lubricants.)

4. Operate the machine for 5 minutes without load.

5. Unscrew the oil draining plug (Figure 74/1). Drain the flushing oil and screw the oil draining plug in.

NOTE

Catch the oil running out.

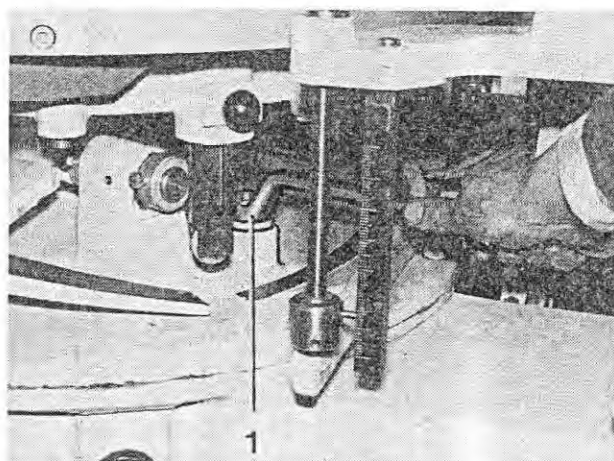


Fig. 75

6. Fill oil in the machine until the oil level has reached its maximum mark (Figure 76/1). (Refer to section 1.2 for lubricants.)

7. Screw in the filling plug (Figure 75/1).

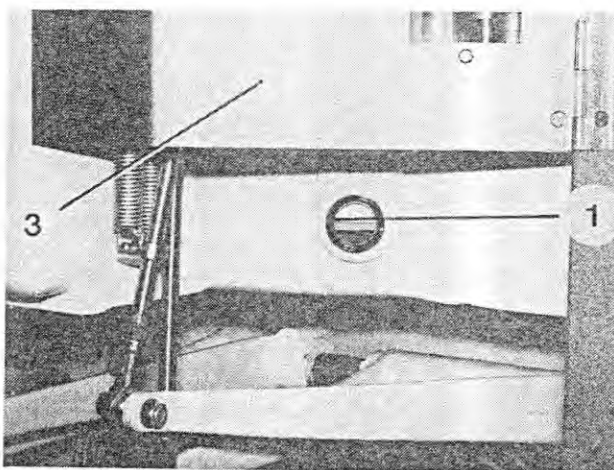


Fig. 76

5.16 Cleaning the pump and the filter element of the auxiliary lubricating system or replacing the filter

1. Remove the grease from the pump. Clean the pump in accordance with the manufacturer's instructions and fill in grease.
2. Unscrew the collecting vessel (Figure 77/1) of the filter.
3. Clean the collecting vessel and, if necessary, the filter element.

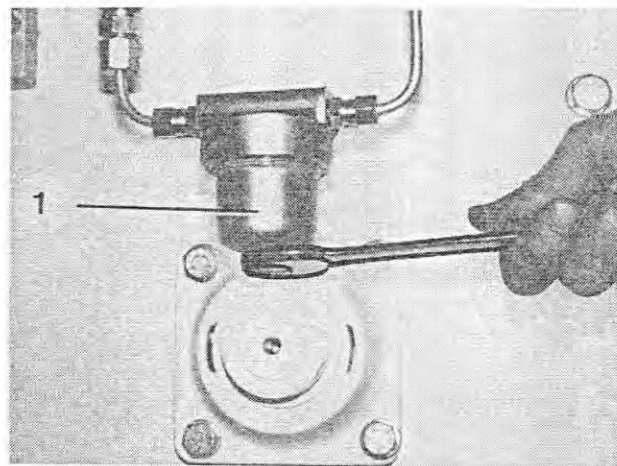


Fig. 77

4. Check whether the seal (Figure 78/1) is in a good condition and properly seated. Replace it, if necessary.

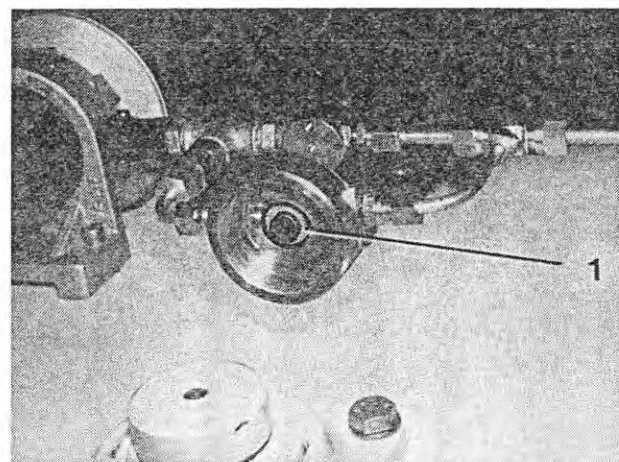


Fig. 78

5. Check whether the gasket (Figure 79/2) is in a good condition and properly seated. Replace it, if necessary. Fill the collecting vessel and the filter element completely with grease. Place the closed lower side (Figure 79/1) of the filter element on the spring (Figure 79/3) in the collecting vessel and screw in the collecting vessel.

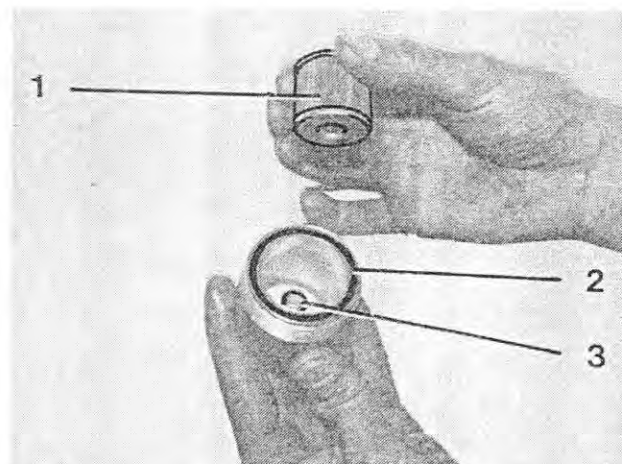


Fig. 79

6. Vent the central lubricating system. To do so, loosen the vent plug (Figure 80/1) which is farthest away from the lubricating pump a few turns and actuate the lubricating pump until the air has escaped.

NOTE

Catch the grease running out.

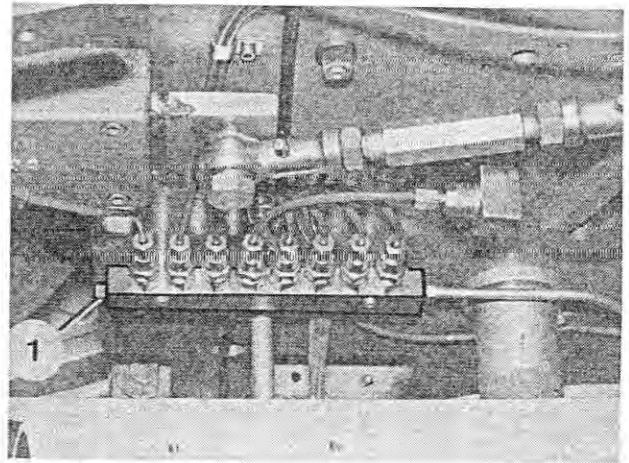


Fig. 80

5.17 Changing the grease in the worm trough

NOTES

Only for machines with a worm trough.

The machine must be at operating temperature.

1. Loosen the handle of the wheel box and swing open the wheel box.

2. Unscrew the filling plug (Figure 81/1) on the gear box of the worm trough.

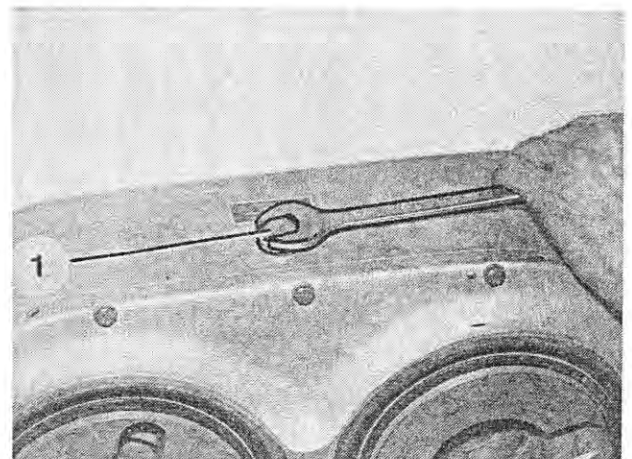


Fig. 81

3. Unscrew the draining plug (Figure 82/1) on the gear box of the worm trough.

NOTE

Catch the semifluid grease running out.

4. After the semifluid grease has completely run out, screw the draining plug in.

5. Fill in 5 l flushing oil and operate the worm trough for 5 minutes. Drain the flushing oil and screw the draining plug in.

6. Fill in 1,500 g semifluid grease through the filling hole in the gear box. (Refer to section 1.2 for lubricants.)

7. Check the gasket of the filling plug and replace it, if necessary. Screw in the filling plug and close the wheel box.

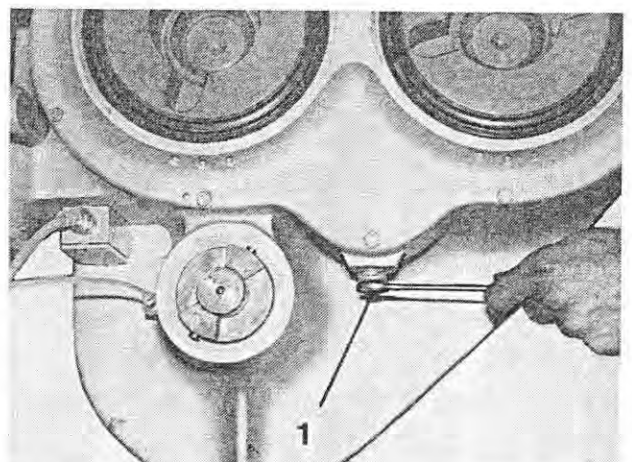


Fig. 82

5.18 Machine test by a workshop mechanic

Remove the cover plates and check whether:

1. All cam rollers run smoothly on their pins (increased wear will be the result of jammed rollers).
2. The roller pins are firmly seated in their levers.
3. The bolts and nuts are tightened.
4. The tapered pins are seated properly on all rotating parts.
5. The levers move smoothly in their bearings.
6. There is no abnormal wear on any point.

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6 Operation

6.1 Operator panel

NOTE

The combination of switches, buttons and indicator lamps on the operator panel depends on the machine model.

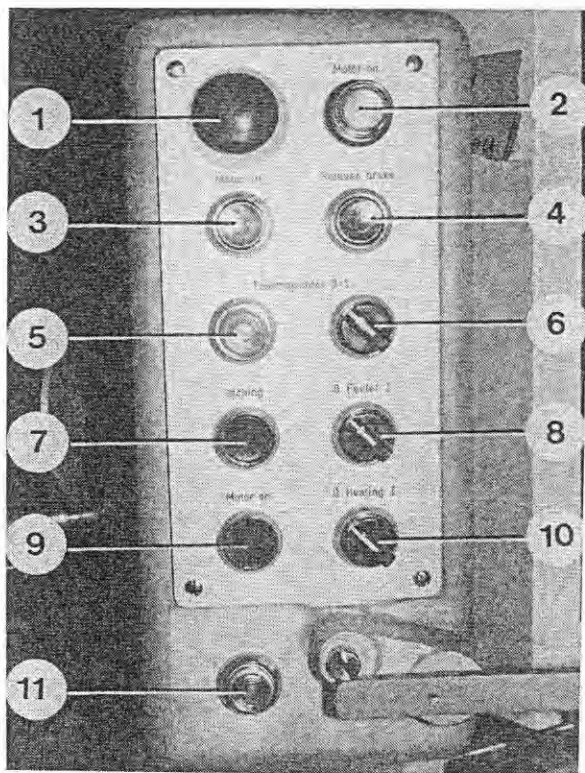


Fig. 83

- | | |
|--|--|
| 1 Emergency switch | 7 „Tip“ button |
| 2 „Motor on“ button and indicator lamp | 8 „Sensor 0/1“ select switch |
| 3 „Motor off“ button | 9 „Motor on“ button |
| 4 „Vent Brake“ button | 10 „Heater (cutting wire) 0/1“ select switch |
| 5 Thermal printer indicator lamp | 11 „Mains“ indicator lamp |
| 6 „Thermal printer 0/1“ select switch | |

Furthermore, buttons for speed and weight control can be installed.

6.1.1 Explanation of symbols

The symbols used in the Figures have the following meaning:

-  Indicator lamp off
-  Indicator lamp on
-  Switch positions
-  The switch has just been set to this position
-  The button has just been pressed
-  The machine has just been switch off by pressing the button

6.2 Hints for the first start-up

1, 2 and 3 apply only to machines with a direct connection.

1. Open the sleeve valve (Figure 84/4) and check on the pressure gauge (Figure 84/2) of the pressure reducer whether it indicates 1 bar. If necessary, correct the pressure using the control knob (Figure 84/1).

2. Check the pneumatic system for leaks and take corrective action, if necessary.

3. Check whether there is sufficient oil in the storage vessel (Figure 84/3) of the oiler. Top up with oil, if necessary. (Refer to section 5.6.)

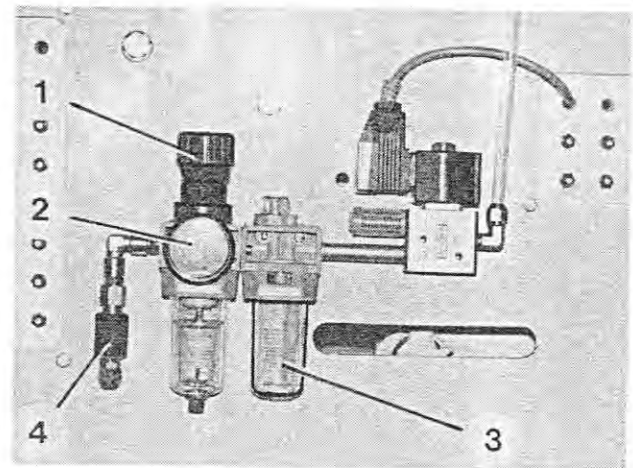


Fig. 84

4. Check whether all plastic lines of the central lubricating system or from the lubricating sledges have no bends and are connected properly (Figure 85). Take corrective action, if necessary.

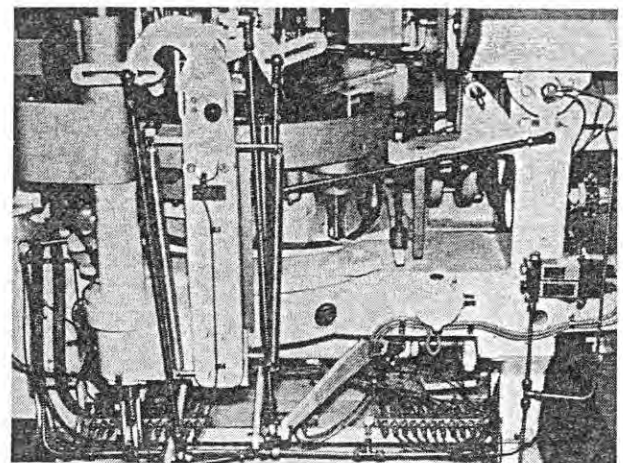


Fig. 85

5. Carry out the maintenance work described in 1. ...15. (Refer to section 5.)

6. Switch on the master switch and press the „Vent Brake“ button (Figure 86/1).

7. Crank the machine, turning the handwheel in the direction of the arrow. Check whether all motions are properly performed. Take corrective action, if necessary.

8. Switch on the machine by pressing the button (Figure 86/2). Operate the machine without load for some time and observe it.

9. Switch off the machine by pressing the button (Figure 86/3).

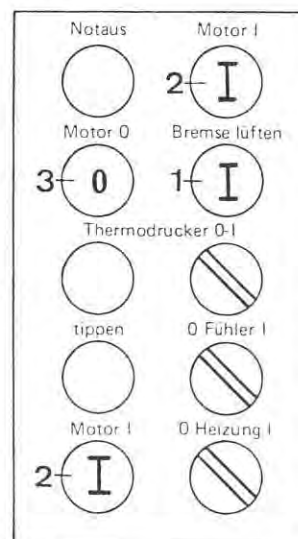


Fig. 86

6.3 Inserting wrapper

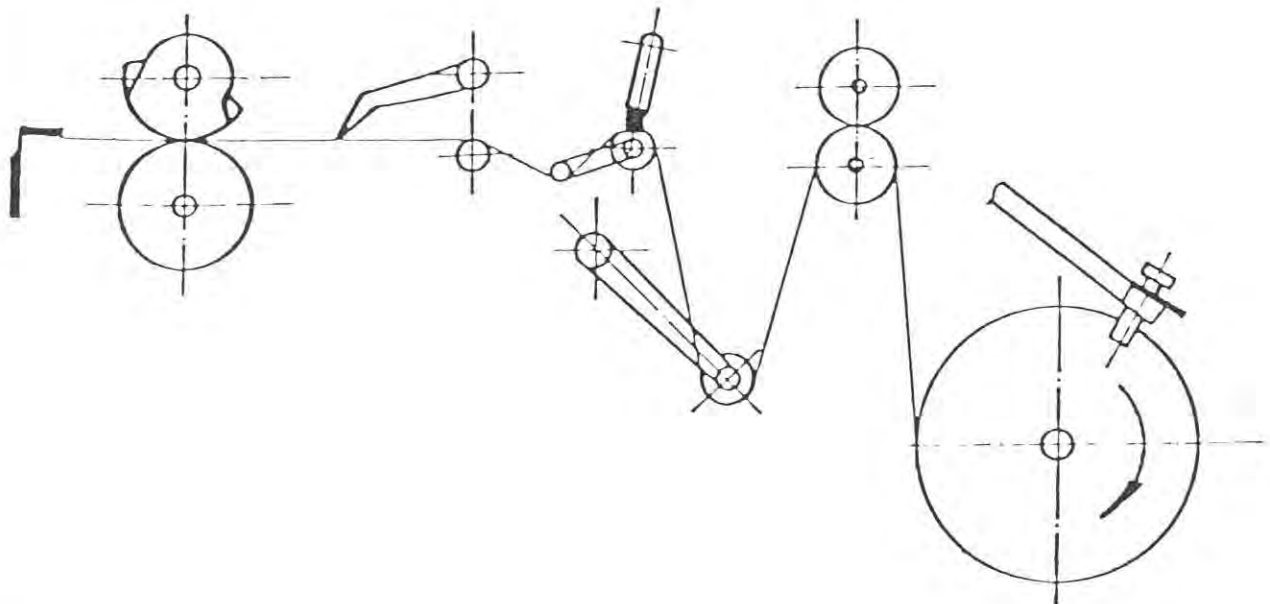


Fig. 87 Wrapper path

1. Press the „Vent Brake” button and use the handwheel to crank the machine in the direction of the arrow until the movable cutter knife (Figure 88/1) has reached its upper position.

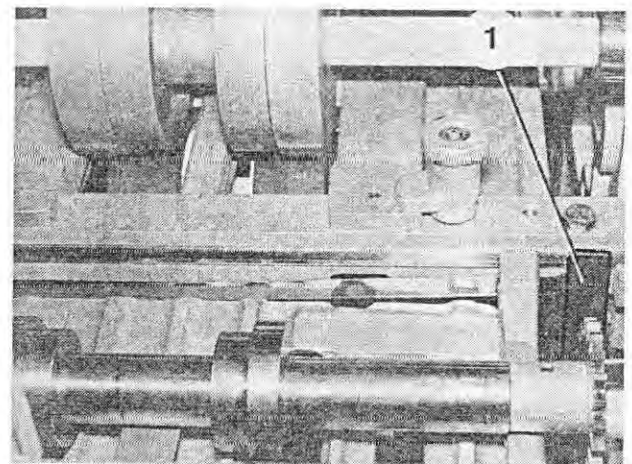


Fig. 88

2. Raise the brake bow (Figure 89/1) until the latch (Figure 89/2) is engaged.

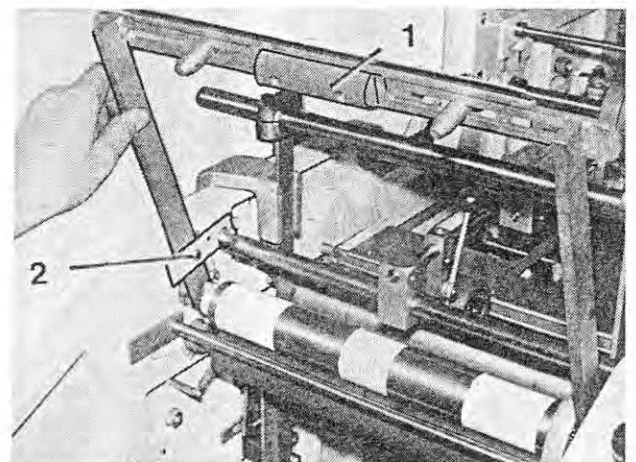


Fig. 89

3. Remove the dispenser axle from the frame bearings and place it in the bearing of the front frame wall in such a way that the frame wall (Figure 90/1) is between the stop rings (Figure 90/2). If necessary, pull the paper roll off the dispenser axle.

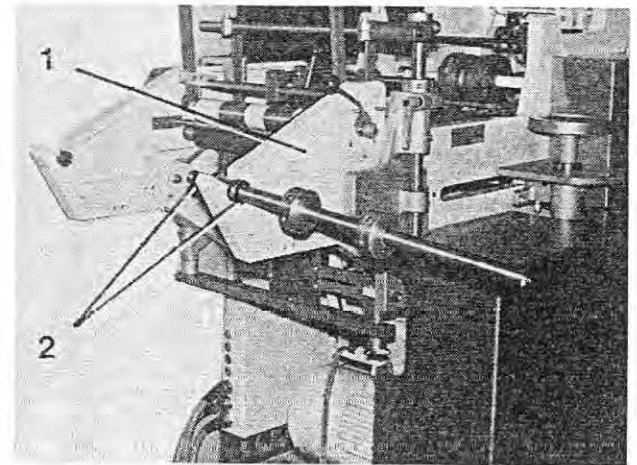


Fig. 90

4. Pull out the bars of lifting the pendulum (Figure 91/1) and fix it on the retaining pin (Figure 91/2).

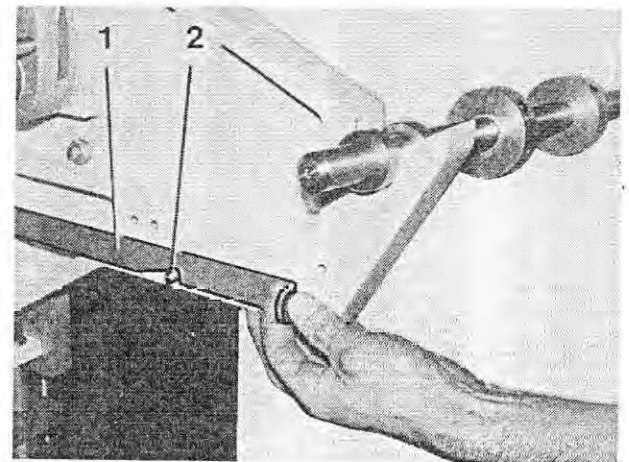


Fig. 91

5. Raise the upper predisensing roller (Figure 92/1) by reversing the lever (Figure 92/2).

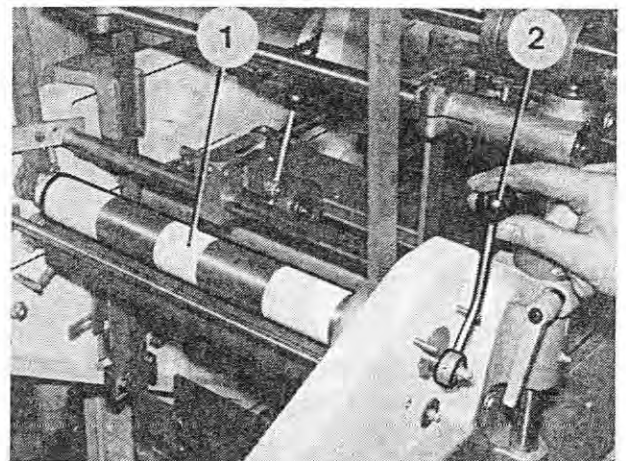


Fig. 92

6. Raise the back stop (Figure 93/3) by reversing the lever (Figure 93/1) up to the rear of the latch (Figure 93/2).

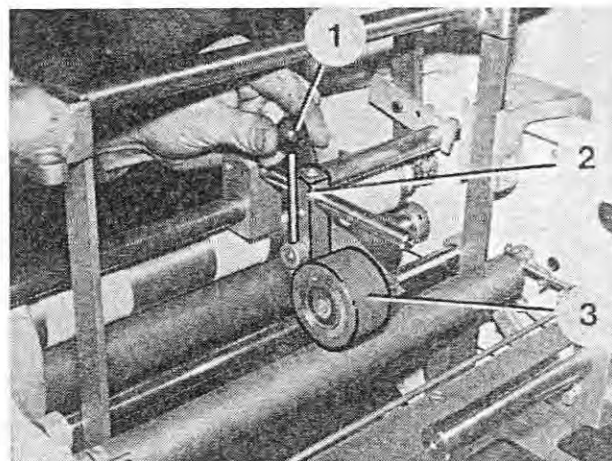


Fig. 93

7. Raise the advance segments (Figure 94/1) by reversing the lever (Figure 94/2).

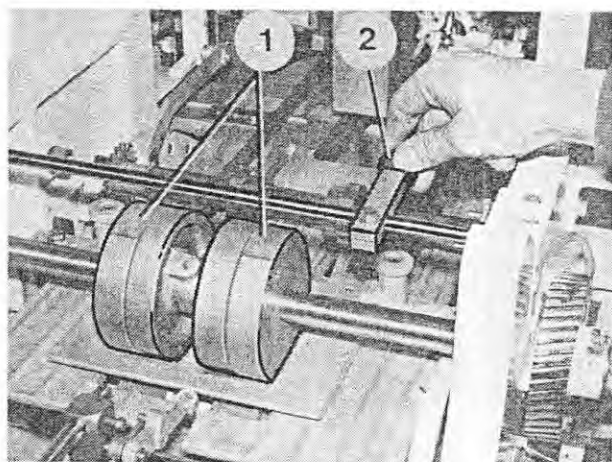


Fig. 94

8. Swing open thermal printer or pull out the ink printer when the machine is equipped with them.

9. Slip the wrapper roll on the dispenser axle in such a way that the wrapper can be rolled off downwards (Figure 95).

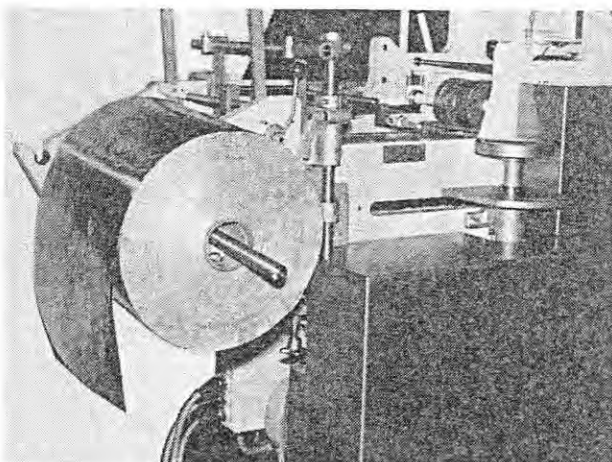


Fig. 95

10. Insert the wrapper and the dispenser axle in the frame bearings in such a way that the rear frame wall (Figure 96/1) is between the stop rings (Figure 96/2).

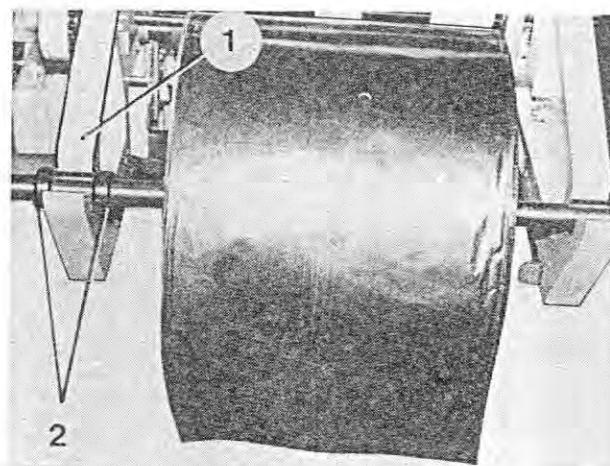


Fig. 96

11. Loosen the latch (Figure 97/1). Place the brake bow on the wrapper roll and center the wrapper roll with regard to the stops (Figure 97/2).

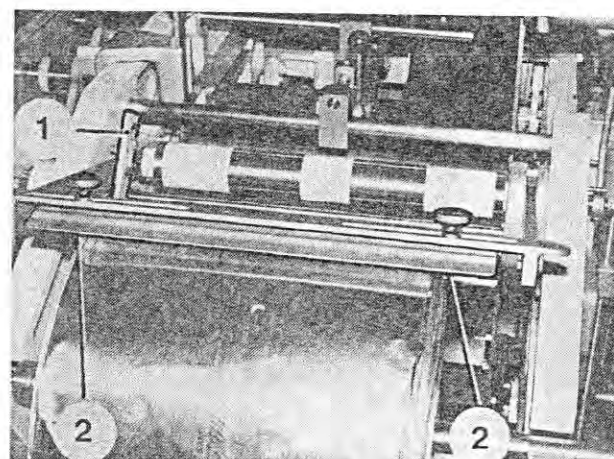


Fig. 97

12. Tear straight off the wrapper on the breaking plate (Figure 98/1) at right angles to the register hole or the print mark.

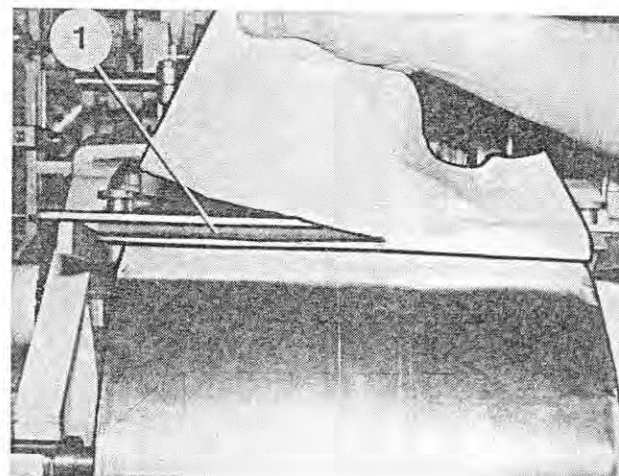


Fig. 98

13. To thread in the wrapper easily, fold it as shown in Figure 99.

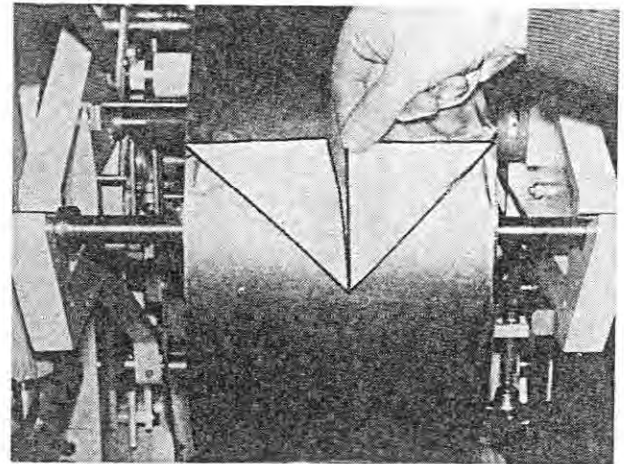


Fig. 99

14. Thread the wrapper between the predisposing rolls (Figure 100).

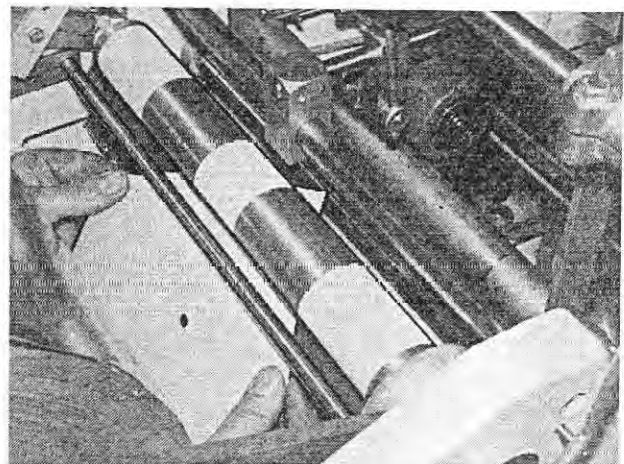


Fig. 100

15. Thread the wrapper below the roller pendulum (Figure 101/1) as well as over the reversing axle (Figure 101/2).

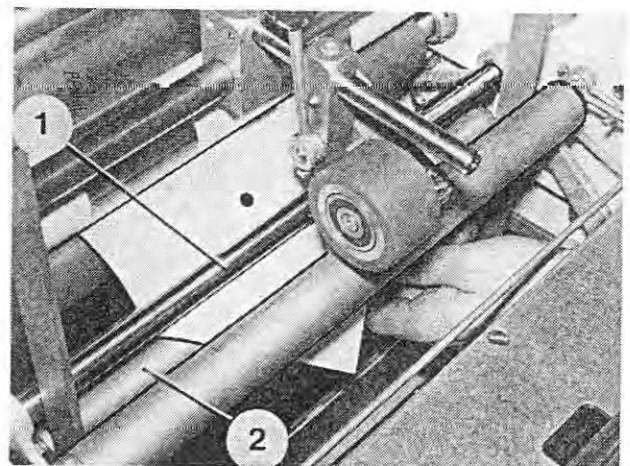


Fig. 101

16. When machines with a thermal or an ink printer are used, thread the wrapper downwards, around the reversing roller (Figure 102/1) and then upwards again.

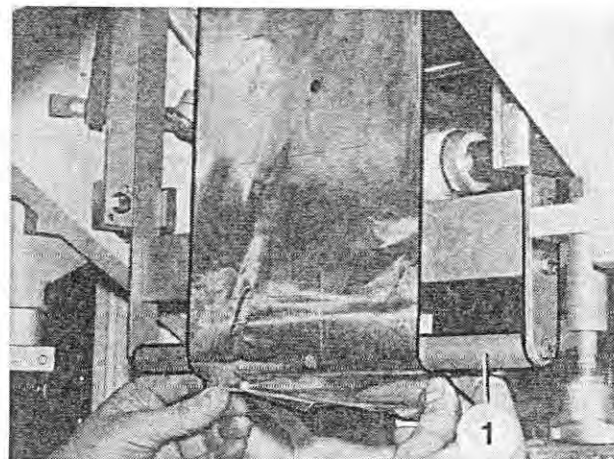


Fig. 102

17. Thread the wrapper over the reversing axle (Fig. 103/1) and below the pendulum (Figure 103/2).

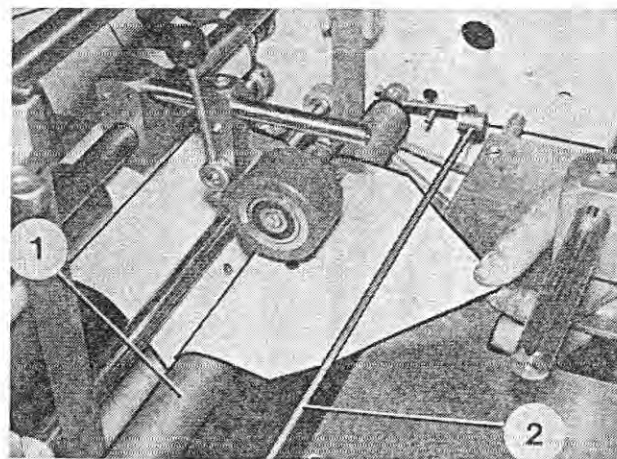


Fig. 103

NOTE

When machines with a photocell are used, first raise the cover plate (Figure 104/1).

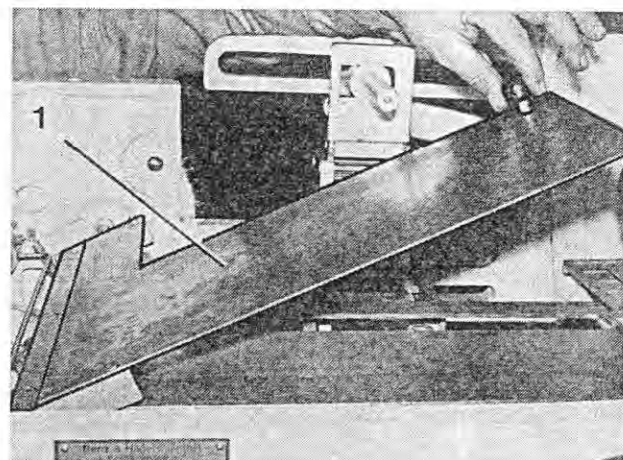


Fig. 104

18. Slip the wrapper below the advance segments (Figure 105/2) until the register finger (Figure 105/1) fits into the register hole or, when wrapper with print marks is used, the front edge of the wrapper contacts the cutter knife.

19. Set the lever for the advance segments, back stop, predispending rollers as well as the bars of the pendulum to their home positions.

NOTES

When machines with a photocell are used, lower the cover plate.

A thermal or ink printer, when installed in the machine, must be set to home position.

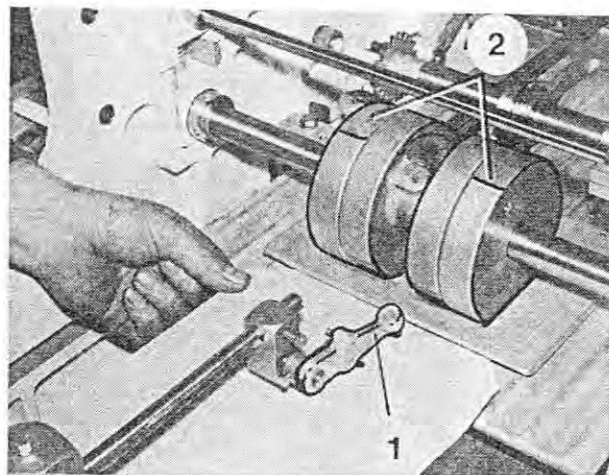


Fig. 105

20. Vent the brake using the button (Figure 106/1). Operate the machine by pressing the „Tip button (Figure 106/2) until the folded wrapper has been cut off and is in front of the accelerating rollers (Figure 107).

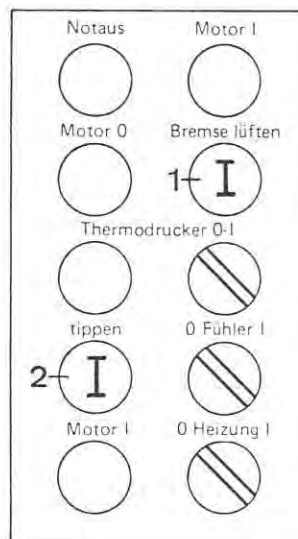


Fig. 106

21. Remove the wrapper cut off (Figure 107).

NOTE

The cutting edge must always run through the register hole or through the print mark.

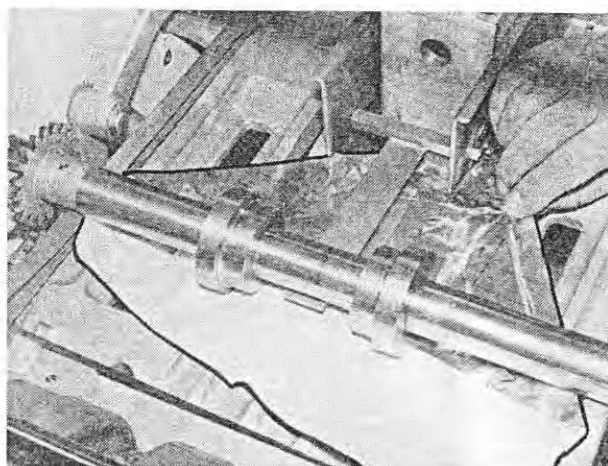


Fig. 107

6.4 First start-up

1. Switch on the master switch.
2. Press the „Vent Brake“ button (Figure 108). For reasons of safety, crank the machine a few cycles and be sure that all motions are performed smoothly.
3. Insert the appropriate types into the machine or adjust the perforating unit properly.

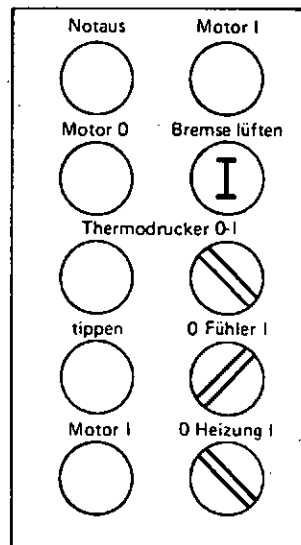


Fig. 108

4. Set the select switch to „I“ for machines which are equipped with a thermal printer (Figure 109).

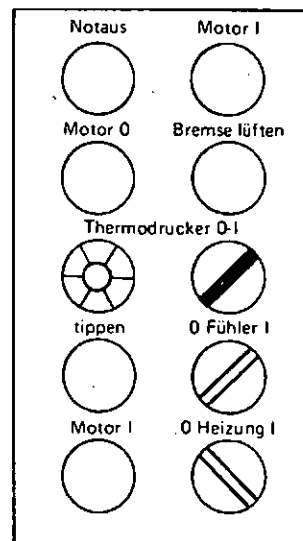


Fig. 109

5. Set the „Heater“ select switch to „I“ for machines which are equipped with a heated wire cutter (Figure 110).

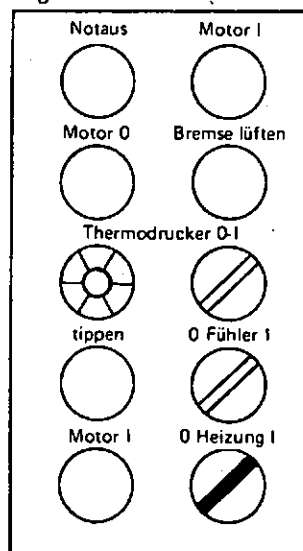


Fig. 110

6. Using the lever (Figure 111/1), disconnect the worm drive when machines with a worm trough are used.

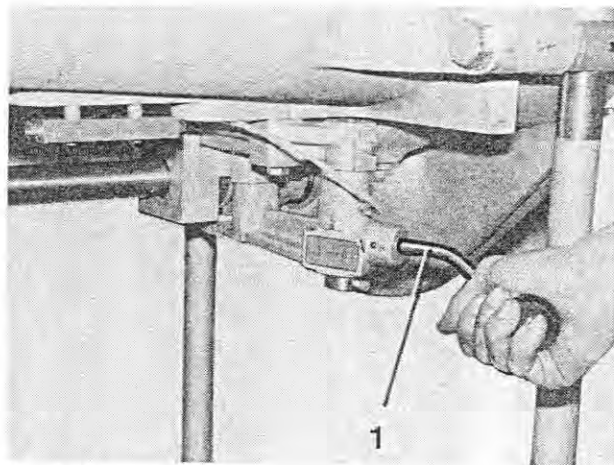


Fig. 111

7. Switch off the dosing unit, pulling out the index pin (Figure 112/1) and setting the lever to position „0“.

8. Insert wrapper. (Refer to section 6.3.)

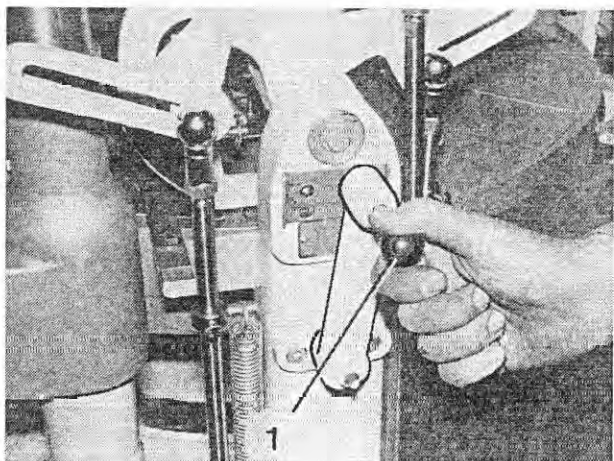


Fig. 112

9. Press the „Tip“ button (Figure 113) to insert pouches into the cells of the rotary table.

10. Remove a pouch from the rotary table and check the imprint for proper placing. Correct it, if necessary. (Refer to sections 6.8.1...6.8.3.)

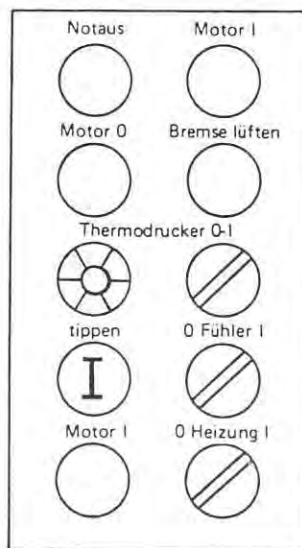


Fig. 113

11. Operate the machine by pressing the „Tip“ button (Figure 113) until the cutter knife (Figure 114/1) has reached its upper position. Then, switch off the wrapper advance by reversing the lever (Figure 114/2).

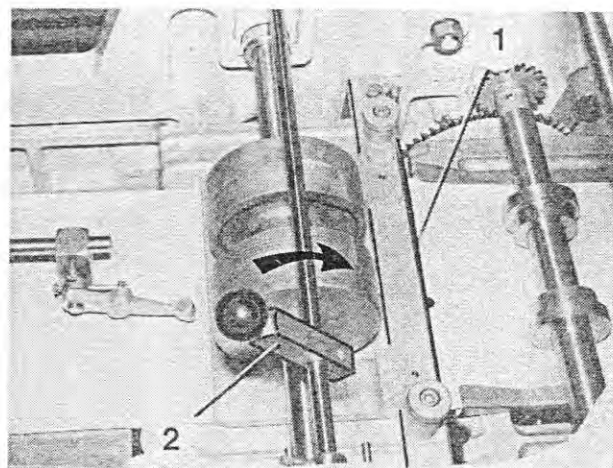


Fig. 114

12. When machines with a worm trough are used, engage worm drive using the lever (Figure 115/1).

13. Feed product.

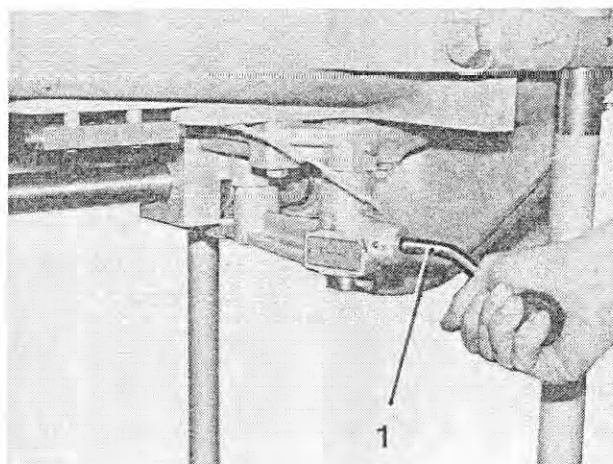


Fig. 115

14. Set the „Sensor“ select switch to „0“. Switch on the machine by simultaneously pressing the „Machine I“ button (Figure 116) –

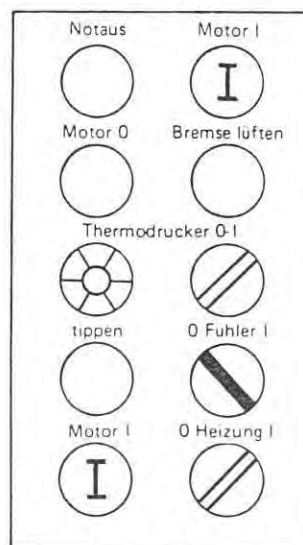


Fig. 116

— and operate it until the compensating piston (Figure 117/1) has fully come out. Switch off the machine by pressing the button (Figure 118/1).

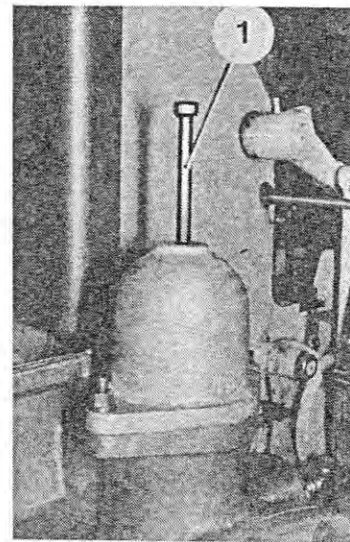


Fig. 117

15. Vent the brake and operate the machine by pressing the „Tip“ button (Figure 118) until the cutter knife (Figure 119/1) has reached its upper position.

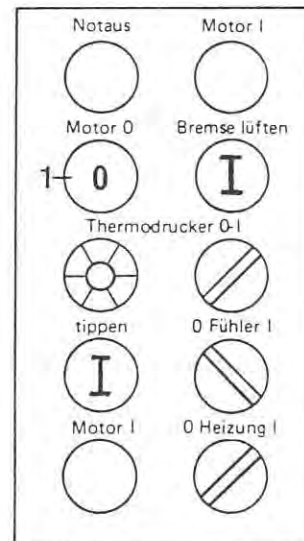


Fig. 118

16. Switch on the wrapper advance by reversing the lever (Figure 119/2).

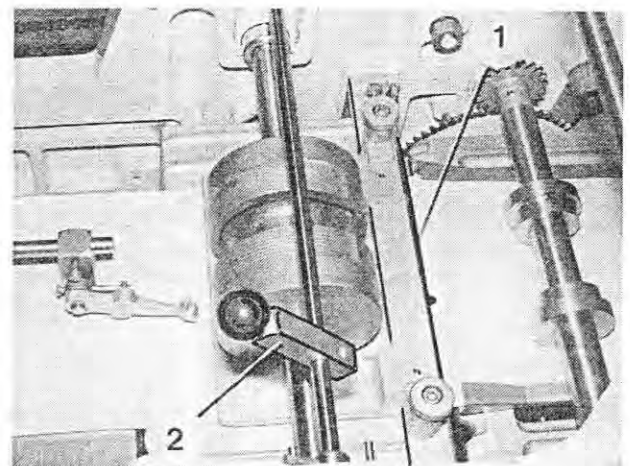


Fig. 119

17. Operate the machine by pressing the „Tip“ button (Figure 120) until the first inserted pouch is below the die of the filling station. Then, set the „Sensor“ select switch to „I“ (Figure 120).

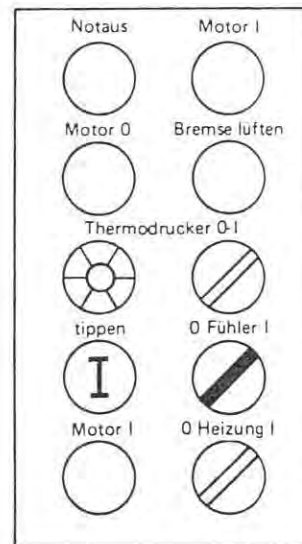


Fig. 120

18. Switch on the dosing unit, pulling out the index pin (Figure 121/1) and setting the lever to position „I“.

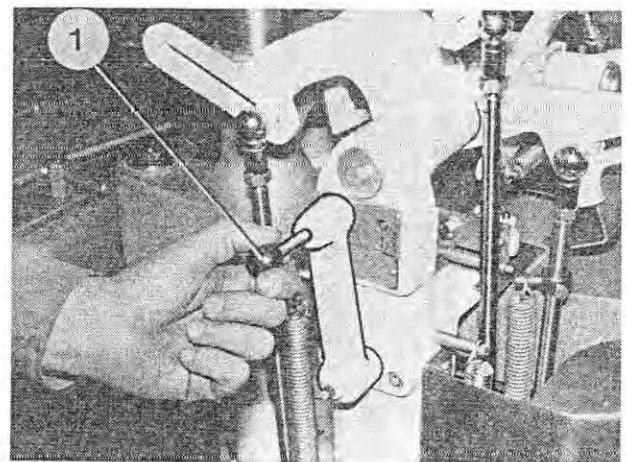


Fig. 121

19. Operate the machine by pressing the „Tip“ button (Figure 122) until fully filled pouches leave the machine.

NOTE

Remove pouches which are not fully filled from the conveyor belt.

20. Switch on the machine by simultaneously pressing the „Machine I“ buttons (Figure 122).

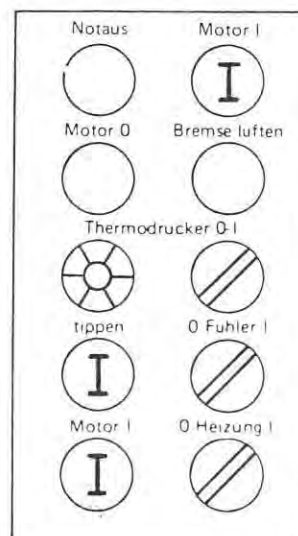


Fig. 122

21. Remove packages from the conveyor belt and check their weight (Figure 123).

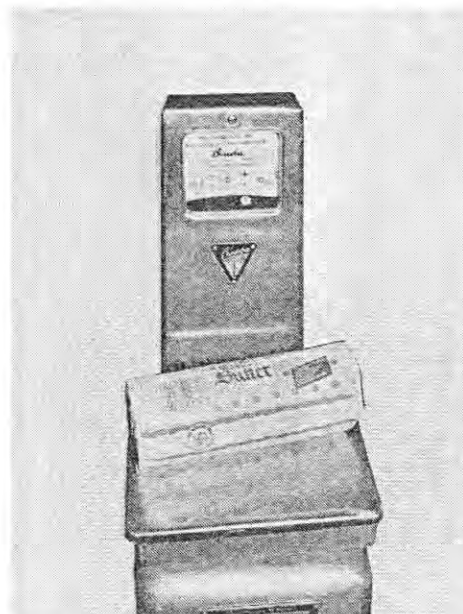


Fig. 123

22. To correct the weight, turn the handwheel (Figure 124/1) appropriately.

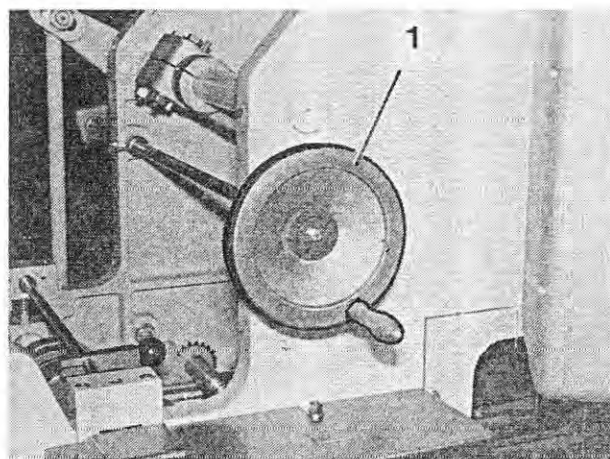


Fig. 124

23. Adjust the desired number of machine cycles using the handwheel (Figure 125/1).



Fig. 125

6.5 Stopping operation

1. Stop the feed of product and switch off the machine by pressing the „Machine 0“ button (Figure 127/1) while the compensating piston (Figure 126/1) or the pressurized piston is lowered.



Fig. 126

2. Vent the brake. Operate the machine by pressing the „Tip“ button (Figure 127) until the packages have underweight.

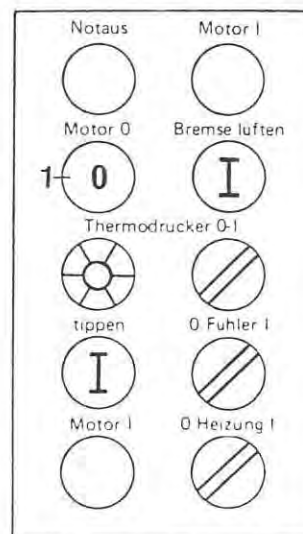


Fig. 127

3. Switch off the heater for the thermal printer or cutting wire, using the appropriate select switch (Figure 128).

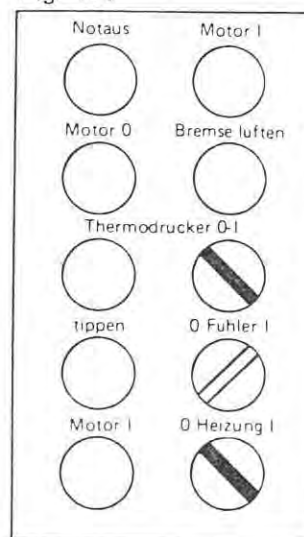


Fig. 128

4. Switch off the dosing unit, pulling out the index pin (Figure 129/1) and setting the lever to position „0“.

5. Switch off the advance rollers and the back stop of the wrapper. Raise the register finger and roll up the wrapper. Remove the wrapper from the machine and store is properly. (Refer to section 6.12.)

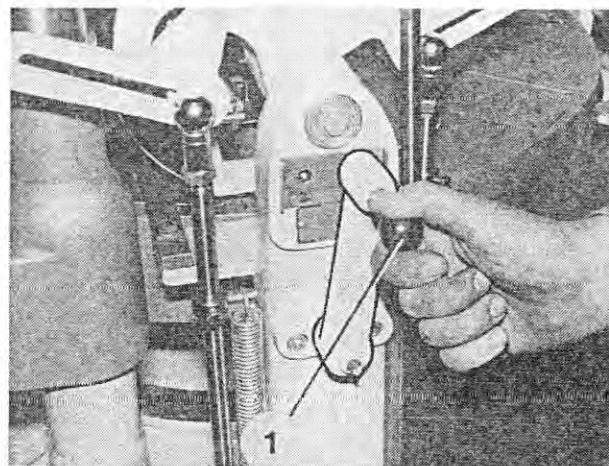


Fig. 129

6. Raise the pendulum, using the lever (Figure 130/1). Fix the lever in the recess (Figure 130/2).

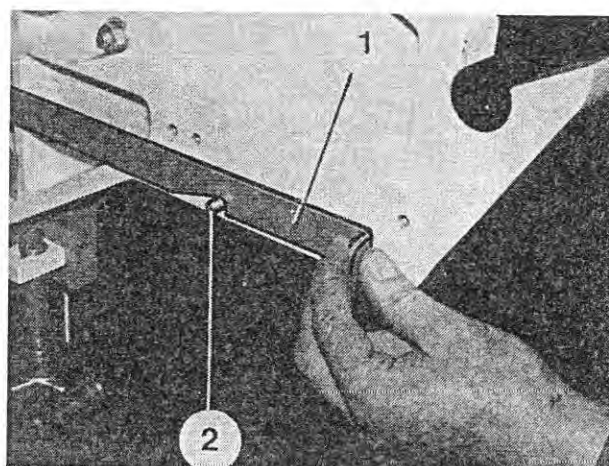


Fig. 130

7. Operate the machine by pressing the „Tip“ button (Figure 131) until there are no pouches in the rotary table any longer.

8. Place a foil over the paper unit and the rotary table and clean the machine. (Refer to section 6.7.)

9. Switch off the master switch.

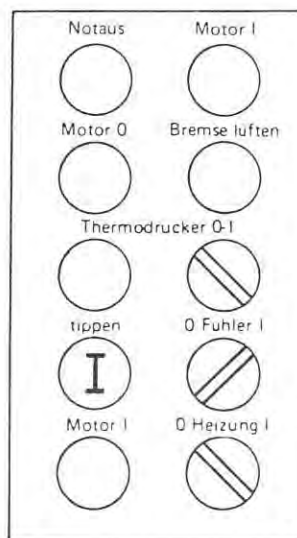


Fig. 131

6.6 Changing the format

NOTE

Carry out a test run after the working elements have been installed, cranking the machine for a few cycles by hand and observing the motions of the working elements.

1. Push in the emergency switch for the time the format is changed (Figure 132).

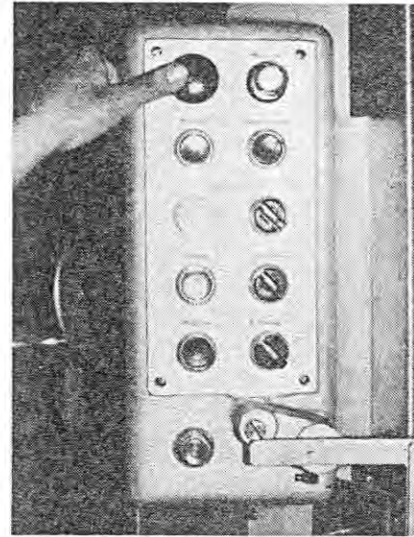


Fig. 132

2. Switch off the dosing unit, pulling out the index pin (Figure 133/1) and setting the lever to position „0“.

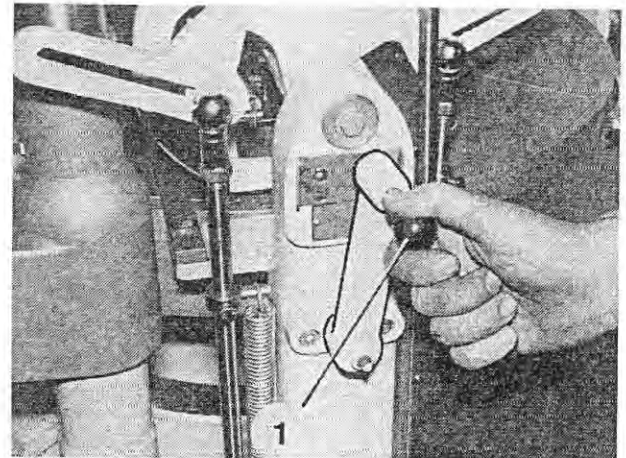


Fig. 133

3. Remove the accelerating roller (Figure 134/1) from the frame of the wrapping unit.

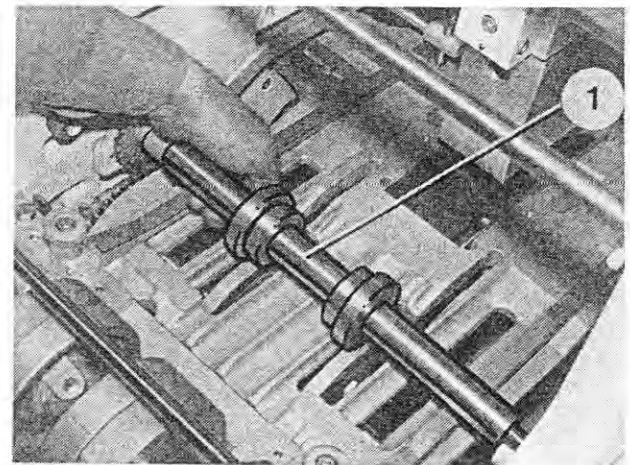


Fig. 134

4. Swing open the protective pane and crank the machine by hand until the pouch stamp, the filling cock and the closing folders have reached their upper positions.

5. Unscrew the locking screw (Figure 135/1) and pull the pouch stamp off the control rod.

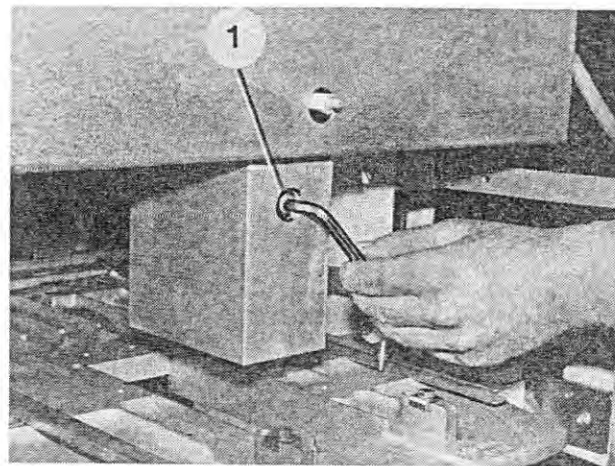


Fig. 135

6. Unscrew the star screws (Figure 136/1). Raise the control sensor (Figure 136/2) and remove the folding box (Figure 136/3).

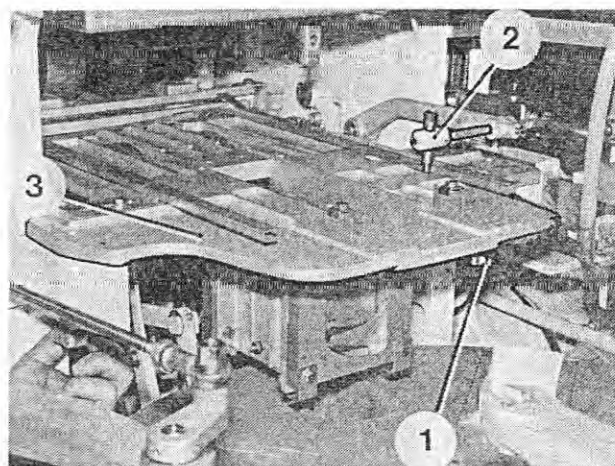


Fig. 136

Hint for installation:

When machines with adjustable ejectors are used (Figure 138/3), compare the distances of the recesses in the folding box (Figure 137) with the distance of the ejectors (Figure 138/3).

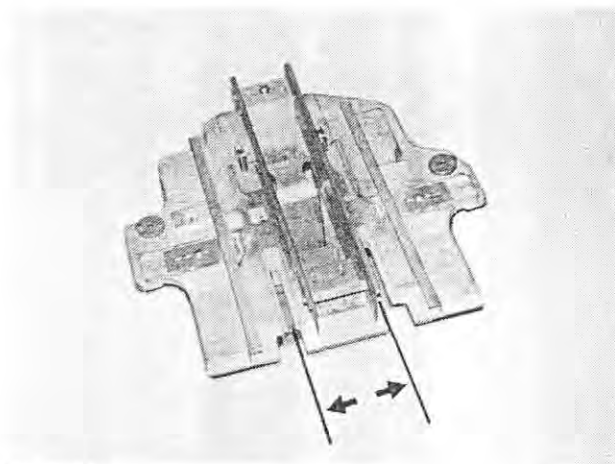


Fig. 137

If the distance is not the same, loosen the clamping nuts (Figure 138/1) and set the ejector (Figure 138/3) to another end position (Figure 138/2). Tighten the clamping nuts.

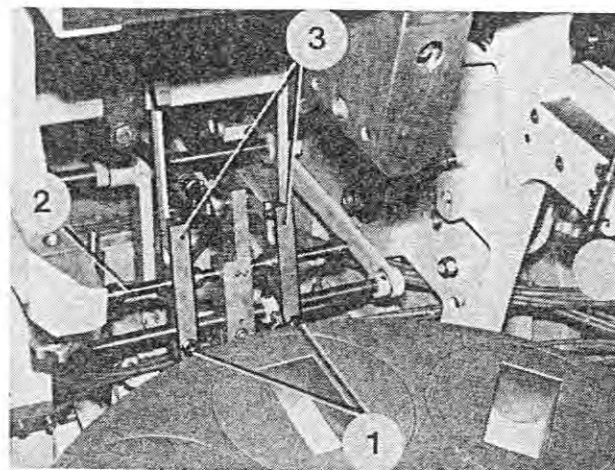


Fig. 138

Attach the folding box in such a way that the centering pin (Figure 139/1) fits on both sides into the hole (Figure 139/2) provided for the appropriate folding box.

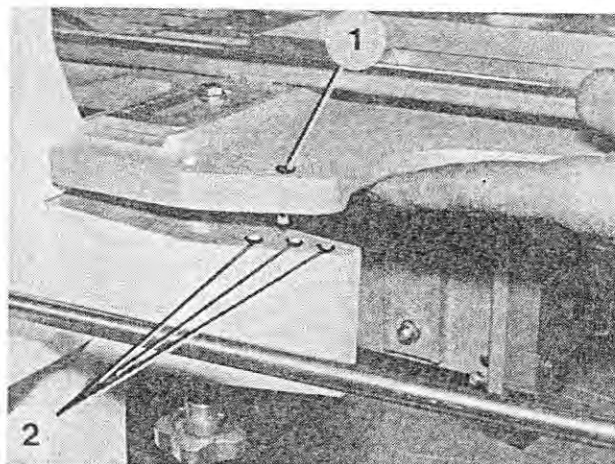


Fig. 139

7. When machines with heated wire cutter are used, unscrew the knurled nut (Figure 140/1) and remove the disk as well as the electric line (Figure 140/2). Attach the disk and screw on the knurled nut.

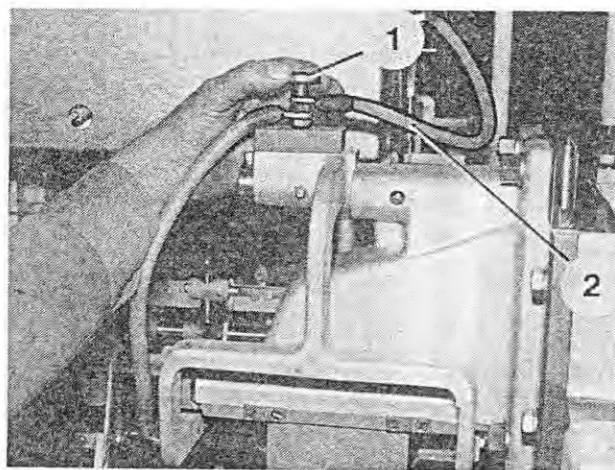


Fig. 140

8. Loosen the hex nuts (Figure 141/arrows) a few turns. Pull the filling cock and the die from the pusher plate. Raise and pull them off over the hex nuts.

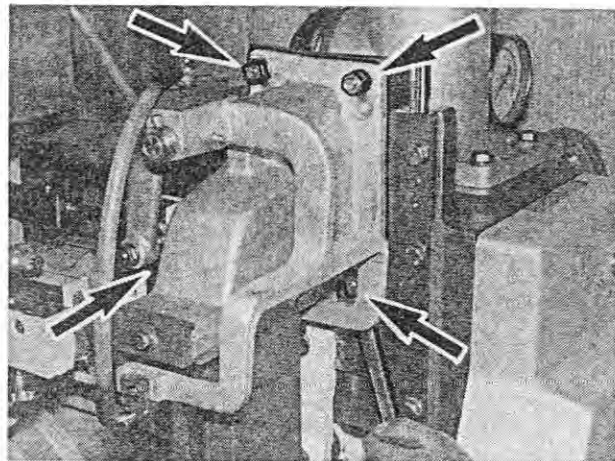


Fig. 141

Hint for installation:

When machine with a product cutting facility are used, grease the sliding pad. (Refer to section 1.2 for lubricants). Attach the filling cock in such a way that the sliding pad (Figure 142/1) is engaged with the guide (Figure 142/2) and the pins of the filling cock fit into the holes of the pusher plate.

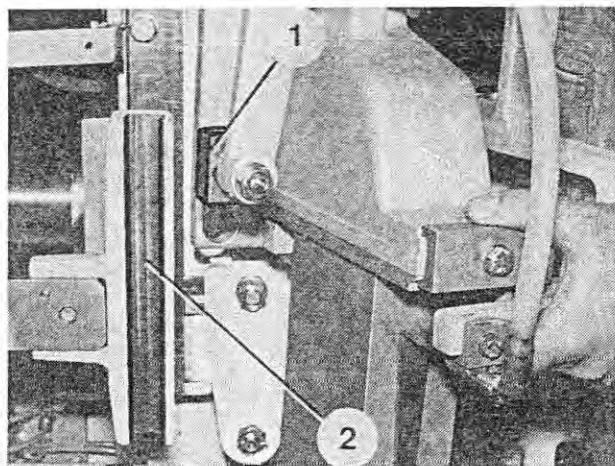


Fig. 142

9. If the filling cock is to be reused, loosen the the locking screw (Figure 143/1). Pull off the clamping piece (Figure 143/2) and remove the die (Figure 143/3).

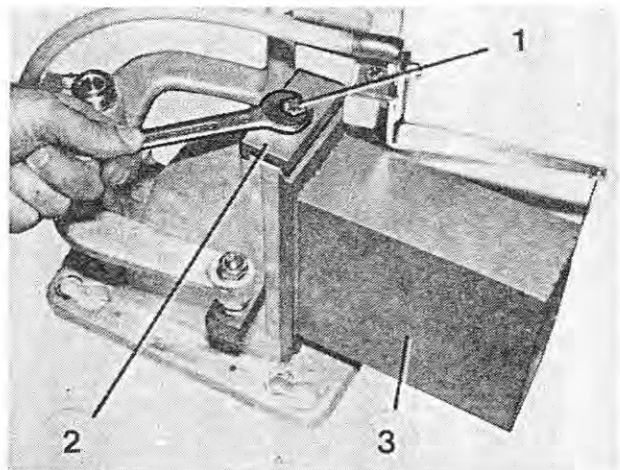


Fig. 143

Hint for installation:

Insert the die in such a way that the stops (Figure 144/1) rest against the right outside of the filling cock.

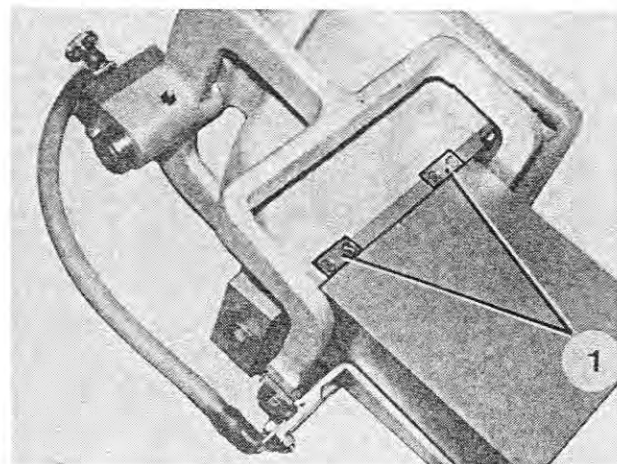


Fig. 144

10. Loosen the locking screw (Figure 145/1) of the stop ring. Pull the stop ring and the cutting bow off the axle.

Hint for installation:

Attach the stop ring in such a way that the locking screw can be screwed in the recess of the axle.

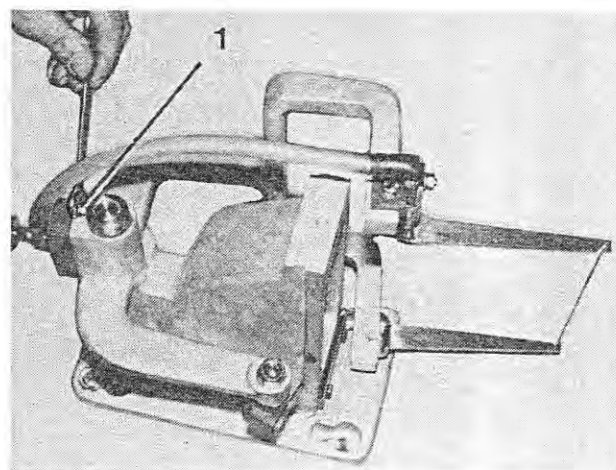


Fig. 145

11. Unhook the ball-type heads (Figure 146/arrows) on the levers of the folding head.

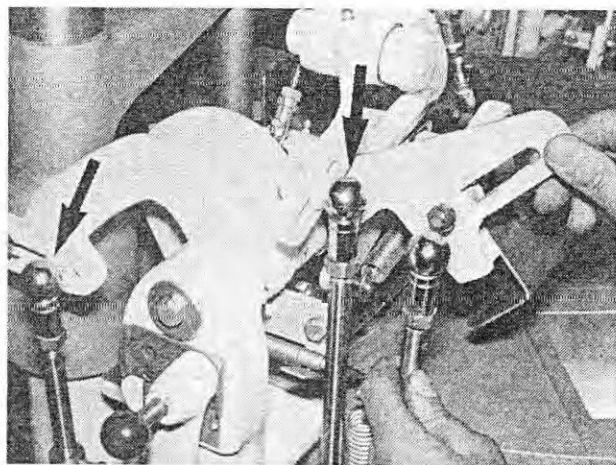


Fig. 146

12. Unscrew the locking screw (Figure 147/1) of the folding head and remove it with the washer (Figure 147/2).

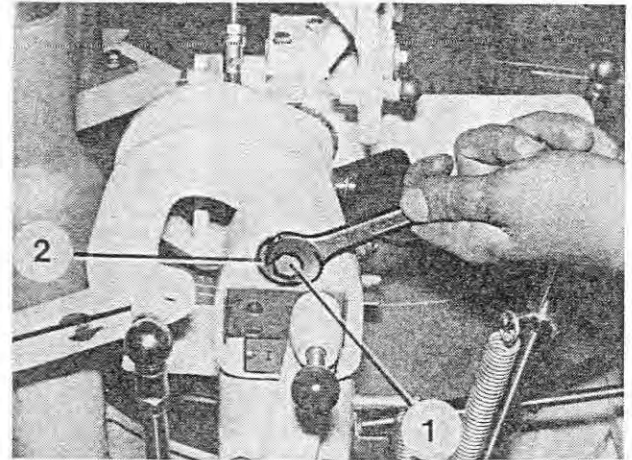


Fig. 147

13. Pull the folding head out of its seat and remove it.

NOTE

To avoid scratching the rotary table, raise the punching and jaw folder when pulling them out.

Hint for installation:

Insert the folding head into its seat (Figure 184/1) in such a way that the pin (Figure 148/2) fits into the recess (Figure 148/3) of the seat.

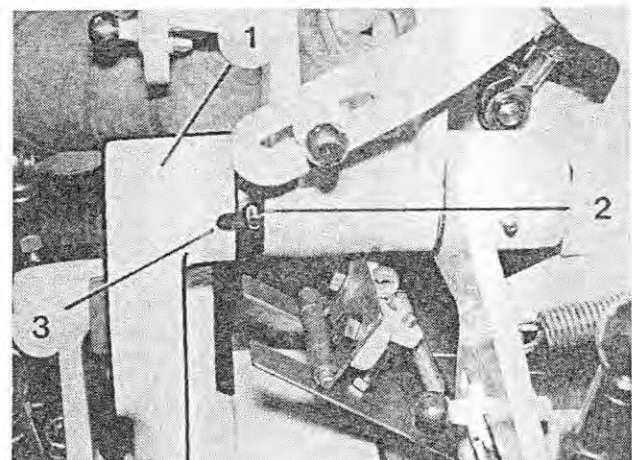


Fig. 148

14. Unscrew the locking screw (Figure 149/1) of the folding edge presser (Figure 149/2). Remove the folding edge presser.

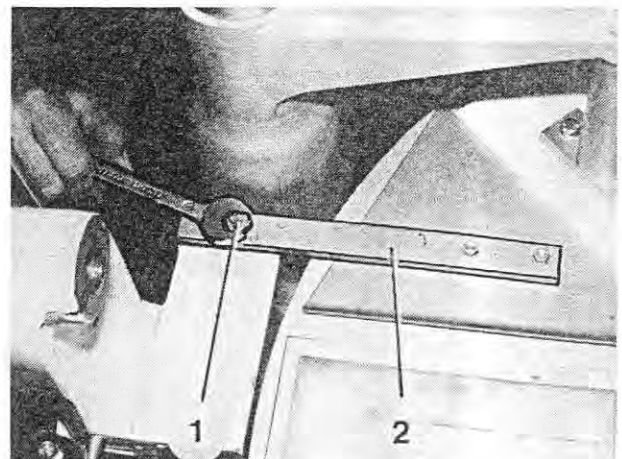


Fig. 149

Hint for installation:

Attach the folding edge presser in such a way that the centering pins (Figure 150/1) fit into the appropriate holes (Figure 150/2).

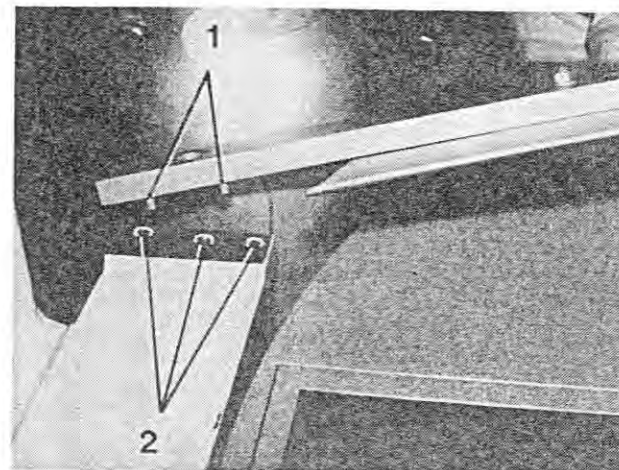


Fig. 150

15. Loosen the star grip (Figure 151/1), which locks the presser, a few turns. Pull the presser (Figure 151/2) down and remove it from the control arm (Figure 151/3).

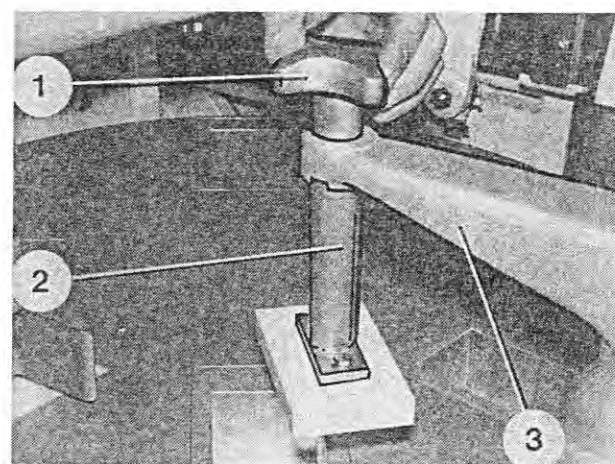


Fig. 151

Hint for installation:

Insert the presser in such a way that the pin (Figure 152/1) points away from the control arm (Figure 152/3).

Insert the web (Figure 152/2) of the presser in the recess of the control arm and tighten the star grip.

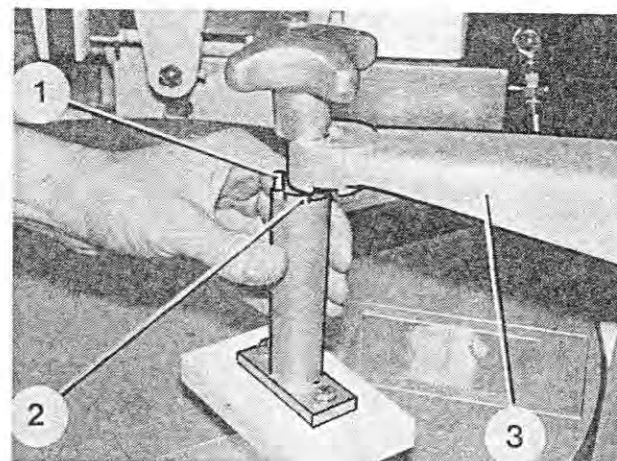


Fig. 152

16. Unscrew the locking screw (Figure 153/1) of the pusher plate (Figure 153/2) and remove the pusher plate.

Hint for installation:

Insert the pusher plate in such a way that the flat bar fits into the recess.

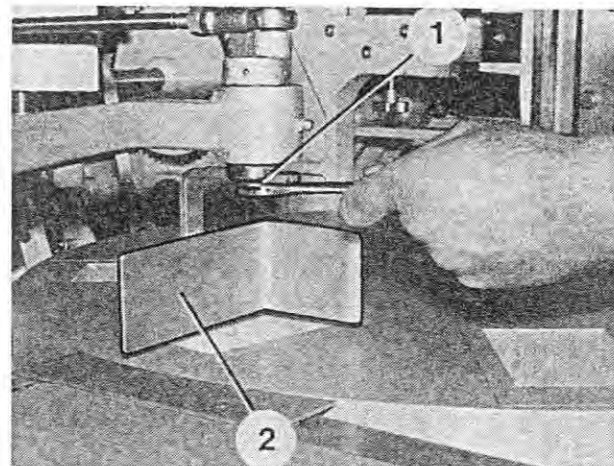


Fig. 153

17. Open the door between the filling and the folding station.

18. Pull on the index pin (Figure 154/1) and raise the cell bottom on the guide rod (Figure 154/2) until the index pin is engaged in its upper position.

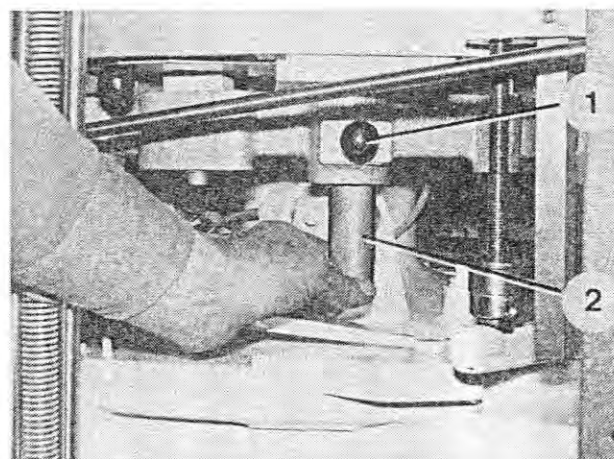


Fig. 154

19. Pull the cell bottom off the guide rod (Figure 155).

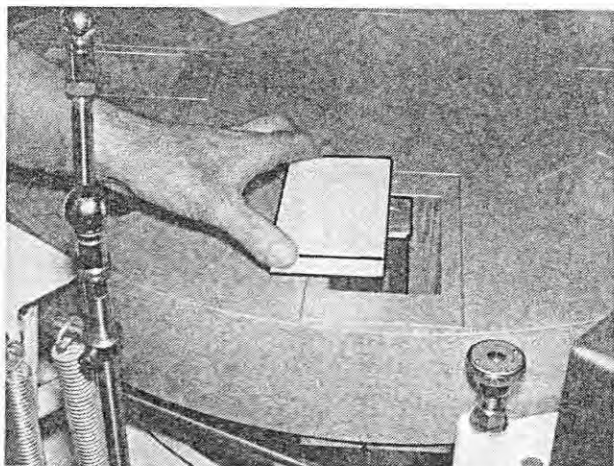


Fig. 155

20. Pull back the retaining plate on the lower side of the rotary table. Pull out the cell element (Figure 156).

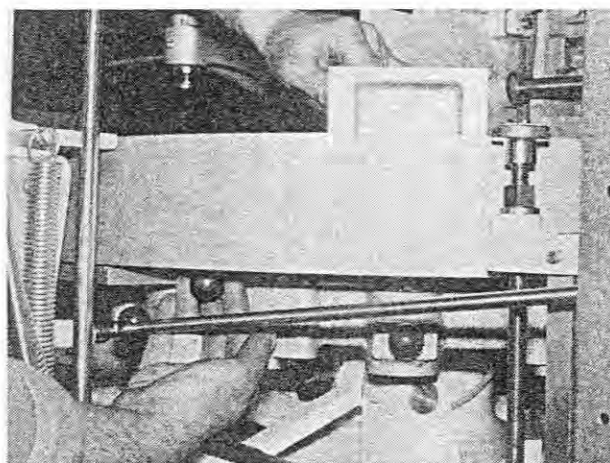


Fig. 156

21. Pull back the retaining plate and insert the cell element of the format to be installed until the retaining plate is engaged with the cell element.

NOTE

The cell element number (Figure 157/1) must correspond with the cell number (Figure 157/2) in the rotary table and the groove (Figure 157/3) must point to the retaining plate.

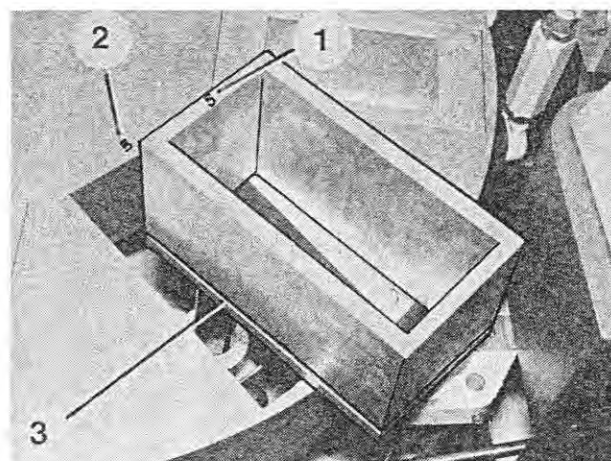


Fig. 157

22. Slip the associated cell bottom on the guide rod (Figure 158).

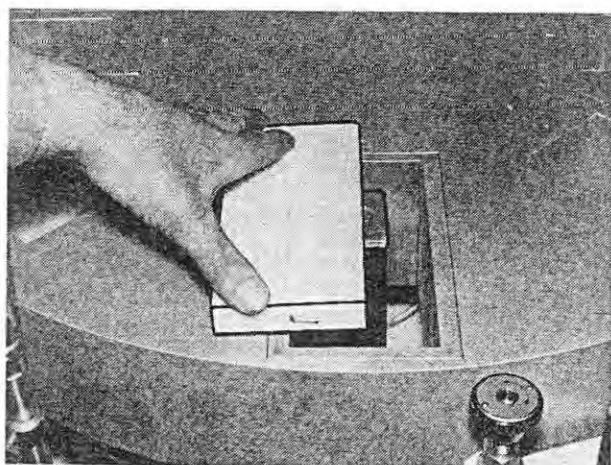


Fig. 158

23. Lower the cell bottom by pulling out the index pin (Figure 159).

24. Crank the machine by hand until the rotary table has performed another cycle.

25. Repeat the procedures 18...24 until all cell bottoms and cell elements have the new format.

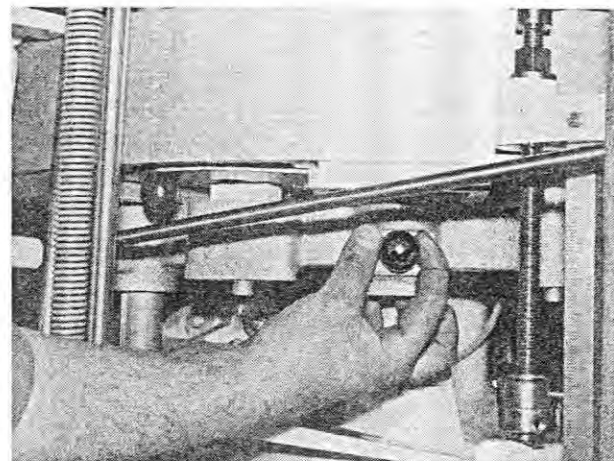


Fig. 159

26. Loosen the counternut (Figure 160/1) and turn the spindle to adjust the stop (Figure 160/2) of the roller lever to the package height which corresponds to the format. Tighten the counternut.

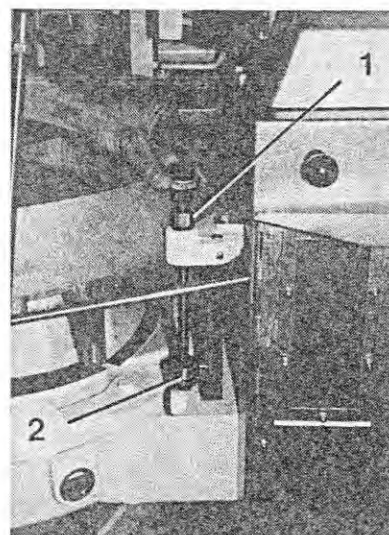


Fig. 160

27. Loosen the counternut (Figure 161/1) and turn the spindle until the distance from the upper edge of the rotary table to the cell bottom in the pressing station exceeds the package height by 4...6 mm. Tighten the counternut.

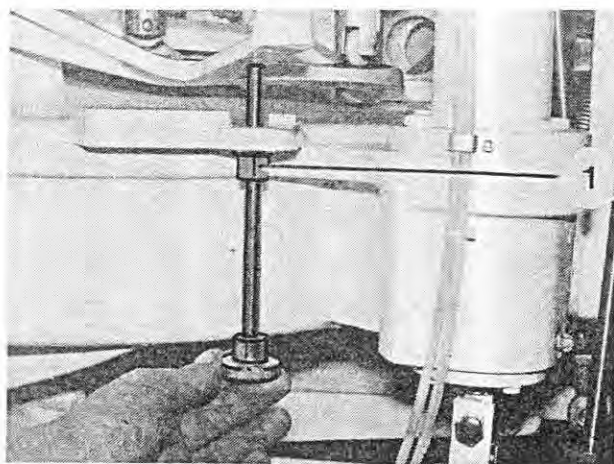


Fig. 161

28. Close the door between the filling and the folding station.

NOTE

Check prior to installing the working elements of the new format which of the following resetting work must be carried out in addition.

- 6.6.1 Resetting work on the wrapping unit
- 6.6.2 Adjusting the product cutter stroke
- 6.6.3 Exchanging the dosing cam
- 6.6.4 Exchanging the dosing piston and rotary cylinder
- 6.6.5 Switching on/off the pressing rollers of the folding box
- 6.6.6 Changing the package height
- 6.6.7 Changing the conveyor worm speed
- 6.6.8 Switching over the drive of the folding unit (only for roll format)
- 6.6.9 Exchanging the cam plates for roll formats

After the additional resetting work has been carried out, the working elements of the new format must be installed by reversing the order in which the old working elements were removed (Items 16...1).

6.6.1 Resetting the wrapping unit

1. Adjust the ejector stroke.

1.1 Loosen the hex nut (Figure 162/1). Adjust the pointer (Figure 162/2) of the control rod to the lever mark which corresponds to the format. Tighten the hex nut.

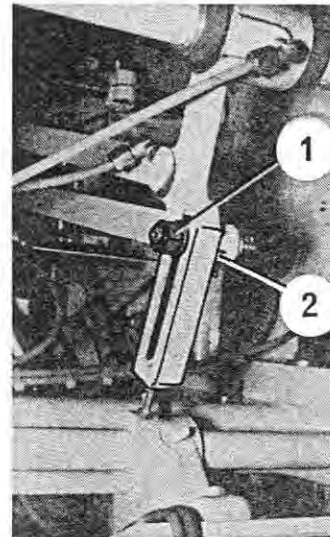


Fig. 162

2. Raise the advance segments to their upper positions (Figure 163/1) by reversing the lever. Loosen the clamping screw (Figure 163/2).

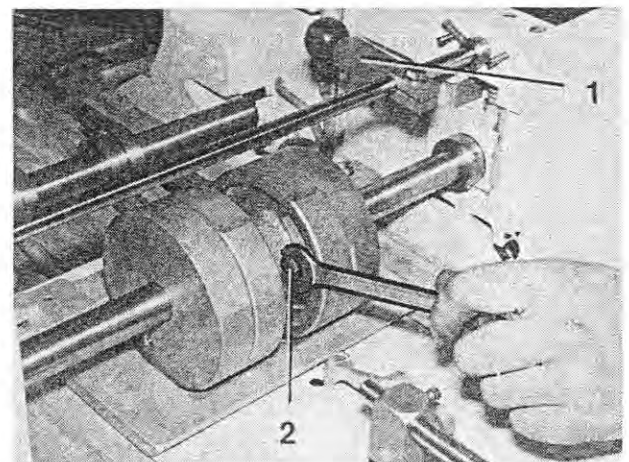


Fig. 163

3. Turn the inside segment to the mark which corresponds to the format (Figure 164). Tighten the clamping screw.

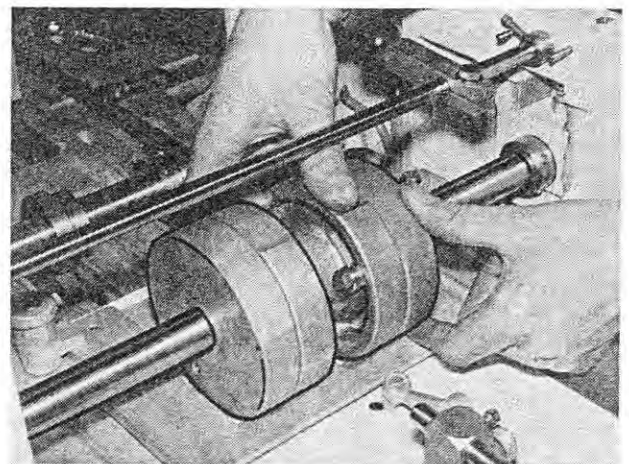


Fig. 164

4. In the case of wrapper advance with a register finger, loosen the locking screw (Figure 165/1) and adjust the register finger to the mark which corresponds to the format. Tighten the locking screw.

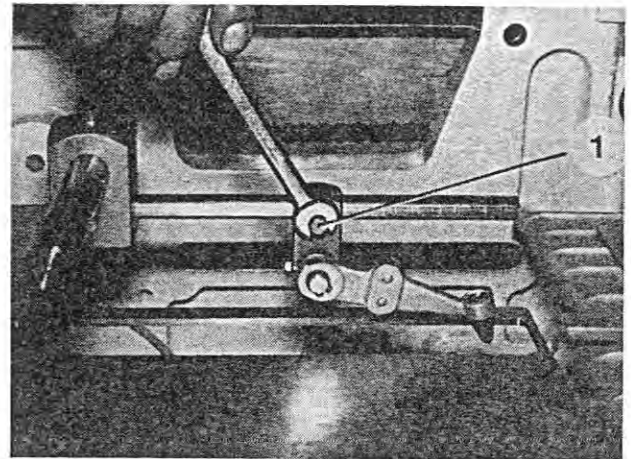


Fig. 165

4.1 In the case of wrapper advance with a photocell, loosen the locking screw (Figure 166/1) and adjust the retainer of the photocell to the mark which corresponds to the format. Tighten the locking screw.

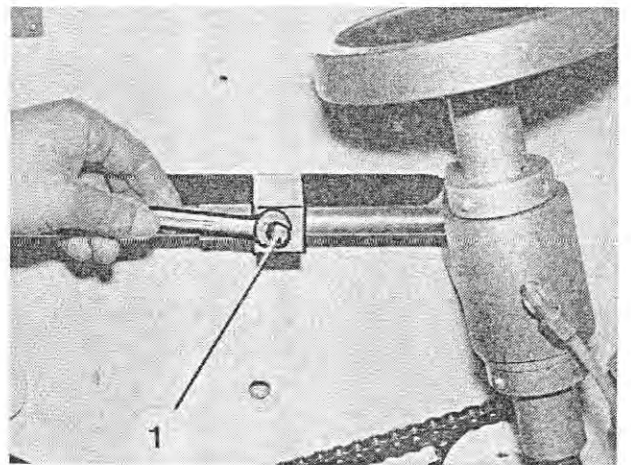


Fig. 166

5. Adjust the coding facility.

5.1 To adjust the coding facility, the longitudinal and transverse direction of the perforating facility, the thermal or the ink printer with regard to the wrapper must be adjusted to the marks which correspond to the format.

Refer to section 6.8.3 for adjusting the perforating facility.

Refer to section 6.8.2 for adjusting the ink printer.

Refer to section 6.8.1 for adjusting the thermal printer.

6. Loosen the knurled nuts (Figure 167/1). Adjust the guide pins to the marks which correspond to the format and tighten the knurled nuts.

NOTE

The distance between the guide pin and the wrapper roll should be 1 mm each.

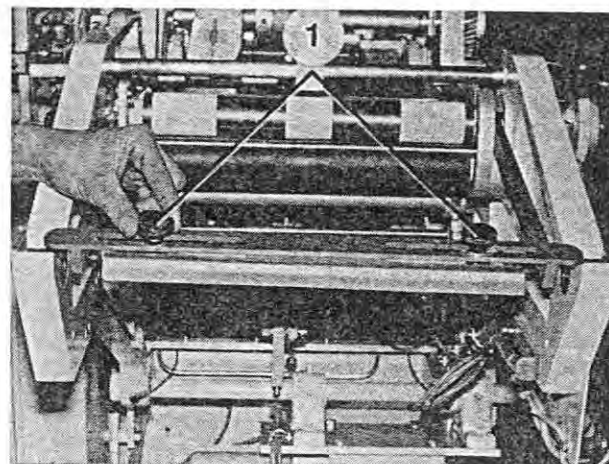


Fig. 167

7. Loosen the locking screw (Figure 168/1) of the sensor rods. Adjust the sensor rods to the marks which correspond to the format. Tighten the locking screw.

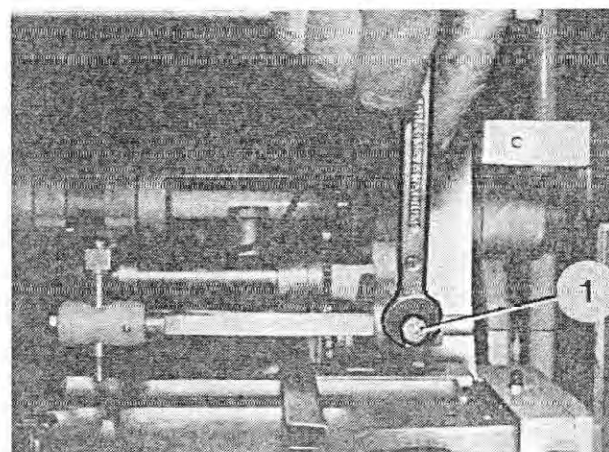


Fig. 168

6.6.2 Adjusting the product cutter stroke

1. Remove the cover plate.
2. Loosen the hex nut (Figure 169/1) and adjust the pointer (Figure 169/2) of the rods to the mark which corresponds to the format. Tighten the hex nut.
3. Reinstall the cover plate.

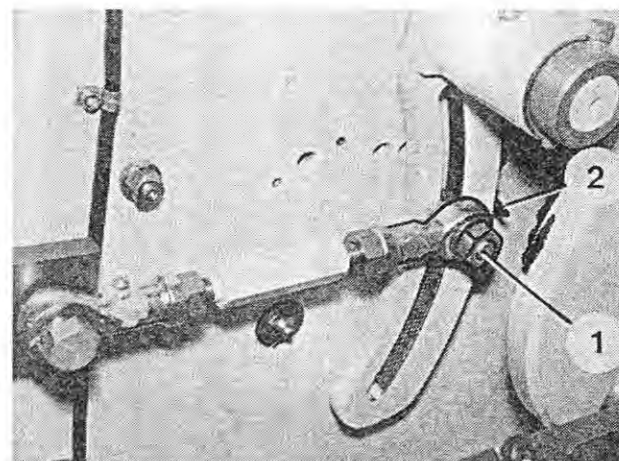


Fig. 169

6.6.3 Exchanging the dosing cam

Piston dia. (mm)	Filling volume cm ³	Dosing cam Figure 170
70	87... 185	B
100	178... 378	B
100	373... 750	A
125	582...1180	A

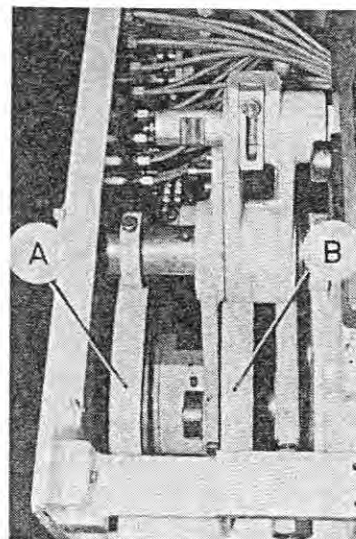


Fig. 170

1. Remove the protective plate above the dosing drive.

2. Loosen the locking screw (Figure 171/1). Raise the centering piece (Figure 171/2) and lock it in this position, using the locking screw.

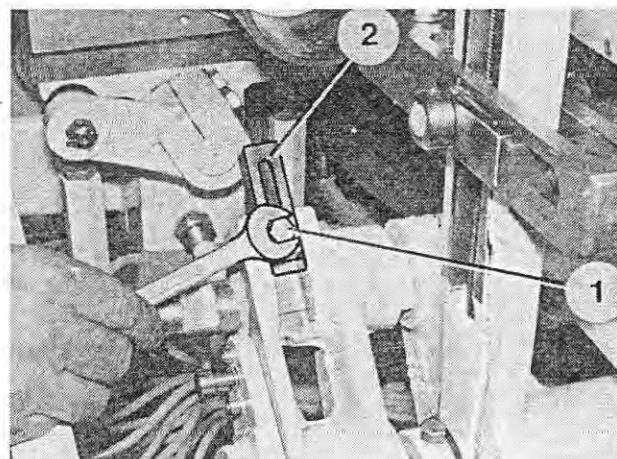


Fig. 171

3. Crank the machine by hand until the cam roller is on the highest point of the curve. Push the drive lever (Figure 172/1) to the appropriate dosing cam (Figure 172/2) and engage the appropriate cam roller.

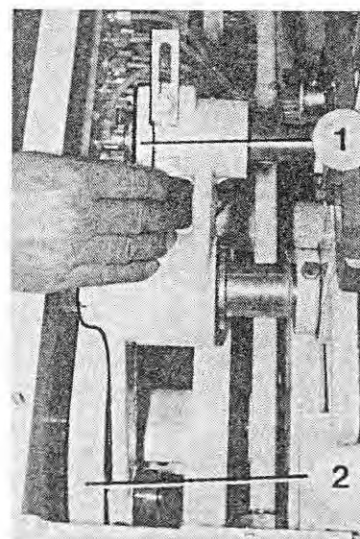


Fig. 172

4. Loosen the locking screw. Slip the centering piece into the recess of the catcher axle (Figure 173/1) and tighten the locking screw.

5. Reinstall the protective plate.

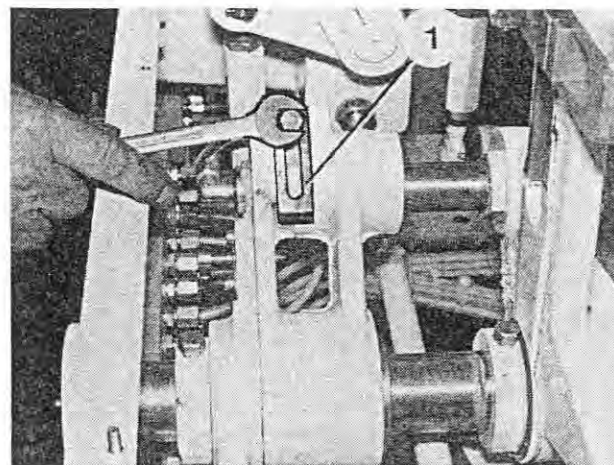


Fig. 173

6.6.4 Exchanging the dosing piston and the rotary cylinder

NOTE

Refer to the table for Figure 170 for the piston diameter required.

The following paragraphs describe how the dosing piston and the rotary cylinder with the intermediate piece are to be removed. Removal without an intermediate piece is to be carried out similarly.

1. Use the handwheel to turn the machine until the dosing lever (Figure 174/3) is in its rear position.

2. If necessary, turn the weight control up to have sufficient space for removing the piston.

3. Unscrew the hex nut (Figure 174/1) which retains the piston rod. Push the piston rod out of the slide piece (Figure 174/2) and pull the piston out of the rotary cylinder.

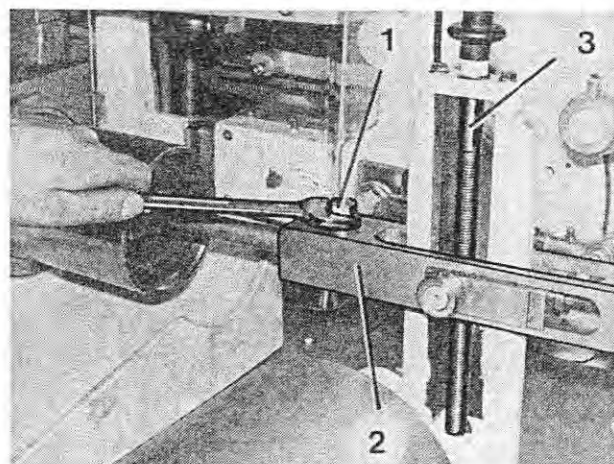


Fig. 174

Hint for installation:

Check the gasket (Figure 175/1) of the dosing piston and replace it, if necessary.

Apply product to the dosing piston and insert it in the rotary cylinder as shown in Figure 175.

ATTENTION

When low-fat product is to be used, apply Klüber grease to the piston. (Refer to section 1.2 for lubricants.)

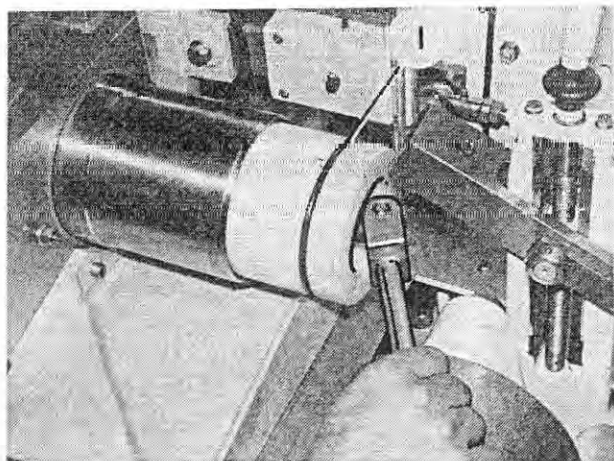


Fig. 175

4. Loosen the hex nut (Figure 176/1) which keeps the protective hood (Figure 176/2) in position. Remove the protective hood.

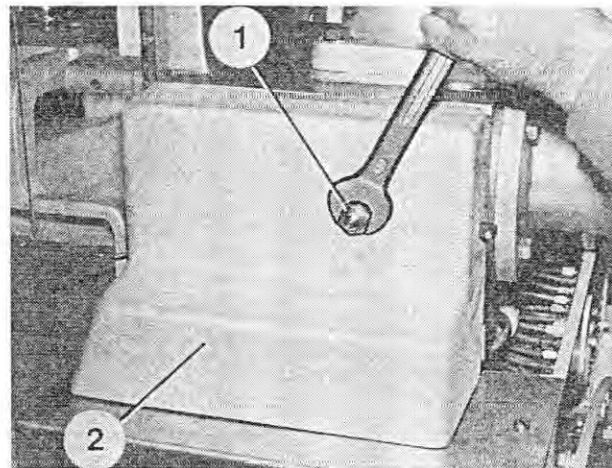


Fig. 176

5. Pull out the index pin (Figure 177/1) and turn the rotary cylinder on the other side of the dosing case in the direction of the arrow until the toothed wheel (Figure 177/3) has released the toothed segment (Figure 177/2).

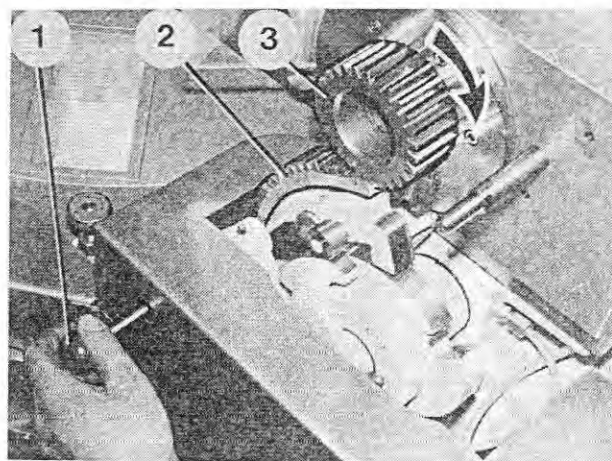


Fig. 177

Hint for installation:

Lift the toothed segment (Figure 178/1) and bring it into mesh with the toothed wheel (Figure 178/2) by turning the rotary cylinder into the direction of the arrow.

NOTE

The marks on the toothed wheel and the tooth segment must be opposite each other (Figure 178). If necessary, apply the toothed segment again.

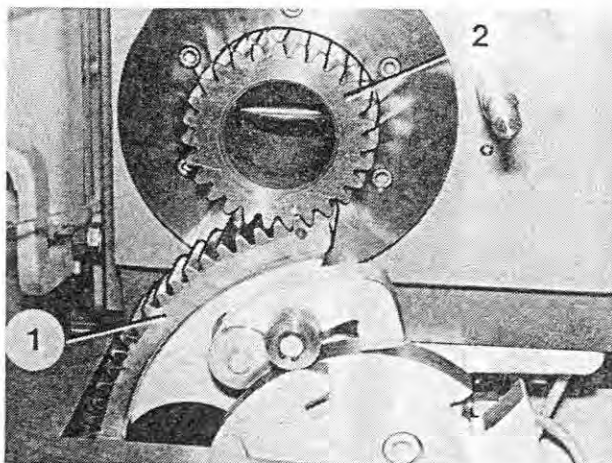


Fig. 178

6. Pull the rotary cylinder out of the dosing case.

Hint for installation:

Apply product to the outer running face, to both sides of the stop disk (Figure 179/arrows) as well as to the inner running face of the dosing case. Insert the rotary cylinder into the dosing case up to the stop.

ATTENTION

When low-fat product is to be used, apply Klüber grease to the rotary cylinder. (Refer to section 1.2 for lubricants.)

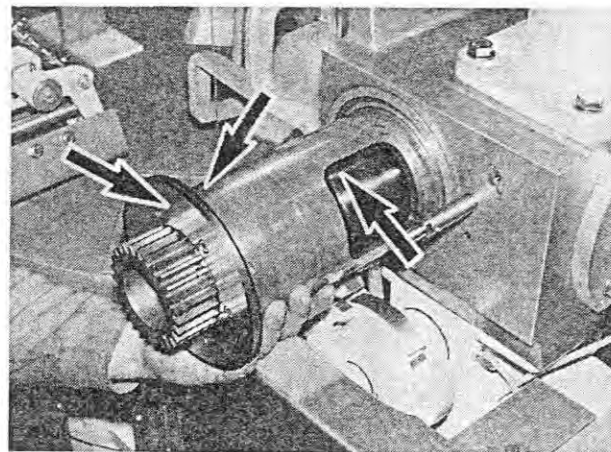


Fig. 179

7. When machine with a direct connection or a hopper are used, place the rotary cylinder on the support (Figure 180/1).

ATTENTION

The rotary cylinder must only be put on the support (Figure 180/1).

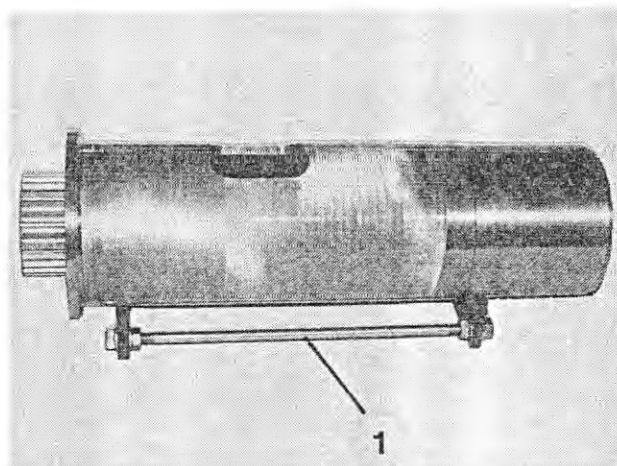


Fig. 180

8. When machines with a worm trough are used, place the rotary cylinder between the support sledges (Figure 181/1).

ATTENTION

The rotary cylinder must only be placed in the support sledges (Figure 181/1).

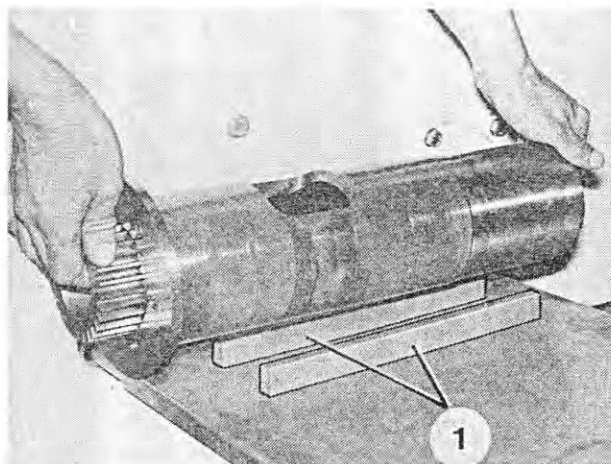


Fig. 181

9. Loosen the hex nut (Figure 182/1). Turn the intermediate cylinder (Figure 182/2) away from the retainer and pull it out of the dosing case.

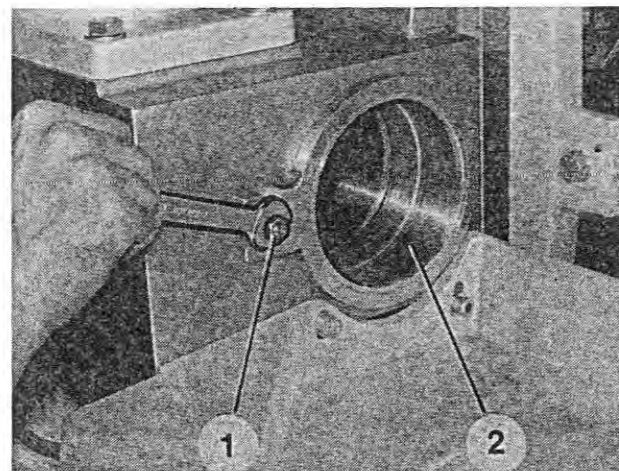


Fig. 182

Hint for installation:

Apply product to the inner and outer running face of the intermediate cylinder (Figure 183/1).—

ATTENTION

When low-fat product is to be used, apply Klüber grease to the intermediate cylinder. (Refer to section 1.2 for lubricants.)

— First slip the intermediate cylinder over the slide piece (Figure 183/2) and then insert it into the dosing case.

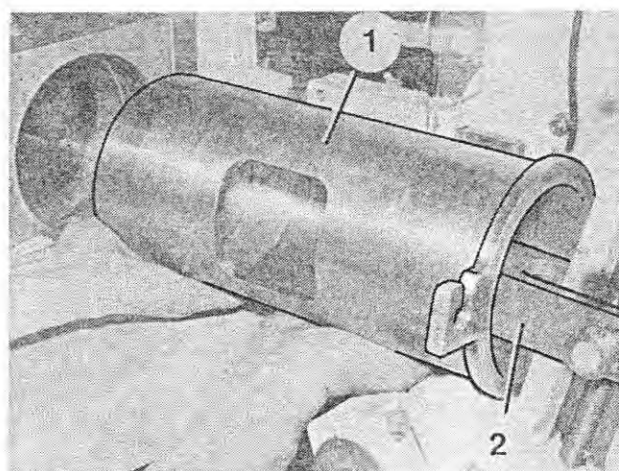


Fig. 183

10. When machines with a direct connection or a hopper are used, place the intermediate cylinder on the support (Figure 184/1).

ATTENTION

The intermediate cylinder must only be placed on the support (Figure 184/1).

11. When machines with a worm trough are used, place the intermediate cylinder between the support sledges.

ATTENTION

The intermediate cylinder must only be placed on the support sledges.

Installation (with or without an intermediate cylinder) is similarly effected reverse order.

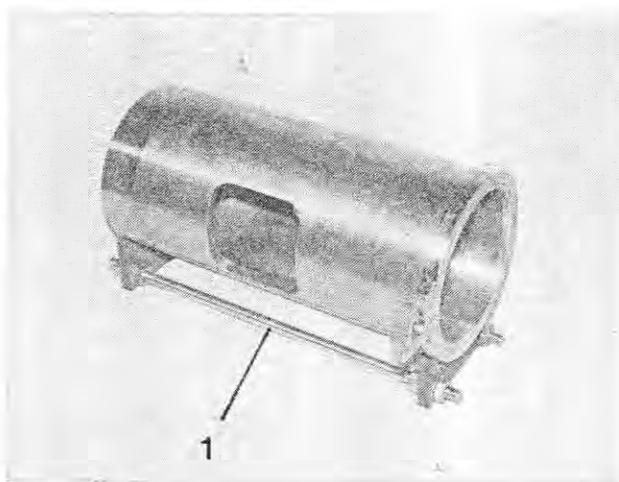


Fig. 184

6.6.5 Switching on/off the pressing rollers of the folding box

Figure 185 shows the pressing rollers (Figure 185/1) in switched-on position to process wrapper made of parchment.

To process wrapper foil, the pressing rollers must be switched off by pressing the rods in the direction of the arrow.

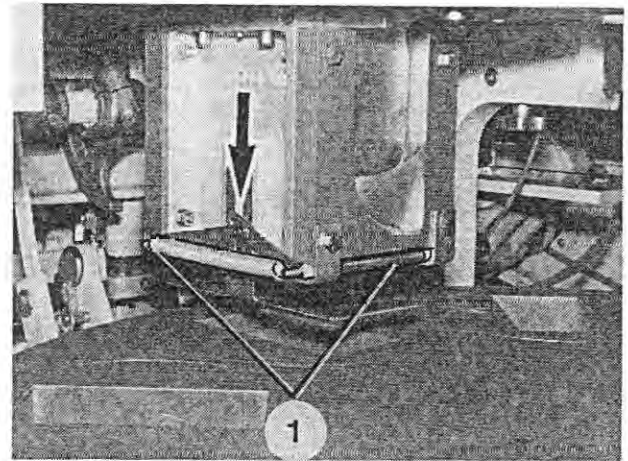


Fig. 185

6.6.6 Changing the package height but not the format

1. Loosen the knurled nuts (Figure 186/1). Adjust the guide pins to the marks which correspond to the wrapper. Tighten the knurled nuts.

NOTE

The distance between the guide pin and the wrapper roll should be 1 mm each.

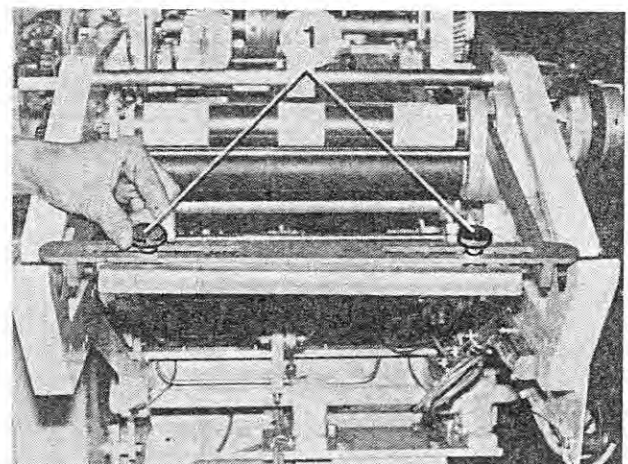


Fig. 186

2. Loosen the locking screws (Figure 187/1+2) of the wrapper guides (Figure 187/4) and of the sensor (Figure 187/3).

3. Adjust the wrapper guides to the mark which corresponds to the wrapper width. Tighten the locking screws (Figure 187/1).

4. Relocate the sensor rods in such a way that the sensor fits into the hole (Figure 187/arrow). Tighten the locking screw (Figure 187/2).

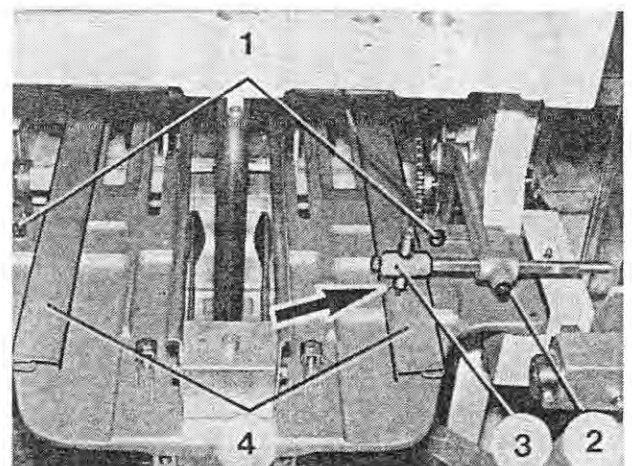


Fig. 187

5. Adjust the pouch stripper (Figure 188/1), loosening the hex nut (Figure 188/2) and re-locating the pouch stripper in such a way that it is 2 mm above the upper edge of an inserted pouch. Tighten the hex nut.

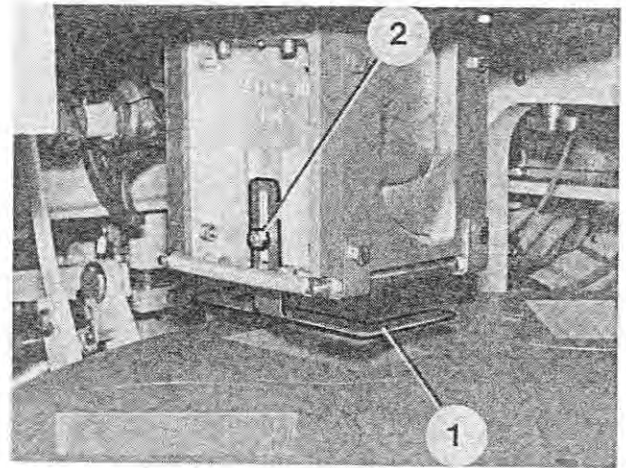


Fig. 188

6. Loosen the counternut (Figure 189/1) and turn the spindle to adjust the stop (Figure 189/2) of the roller lever to the mark which corresponds to the package height. Tighten the counternut.

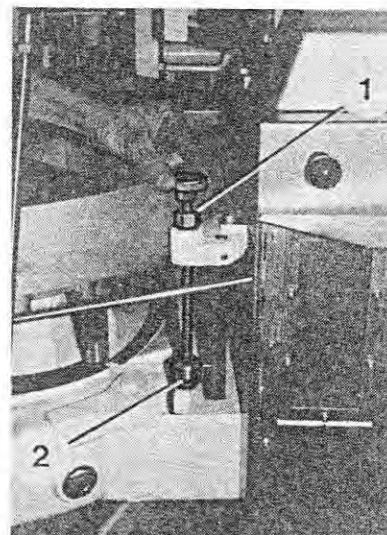


Fig. 189

7. Adjust the cell bottom deflector. (Refer to section 6.6, item 27.)

6.6.7 Changing the conveyor worm speed

NOTE

Refer to the Change Wheel Table in section 6.6.7.1

When another weight is to be used, the amount of product delivered by the dosing piston must be reduced or increased. To do so, the change wheels (Figure 190/A+B) outside the conveyor worm drive are to be exposed by swinging the protective hood (Figure 190/1) open and must be exchanged by the appropriate change wheels. Normally, the smaller toothed wheel should be slipped on the pinion with the slot. However, the worm rotation can also be modified by changing the toothed wheels and adapted to product to be packed (e.g. curds).

Swing the protective hood back and secure it after the change!

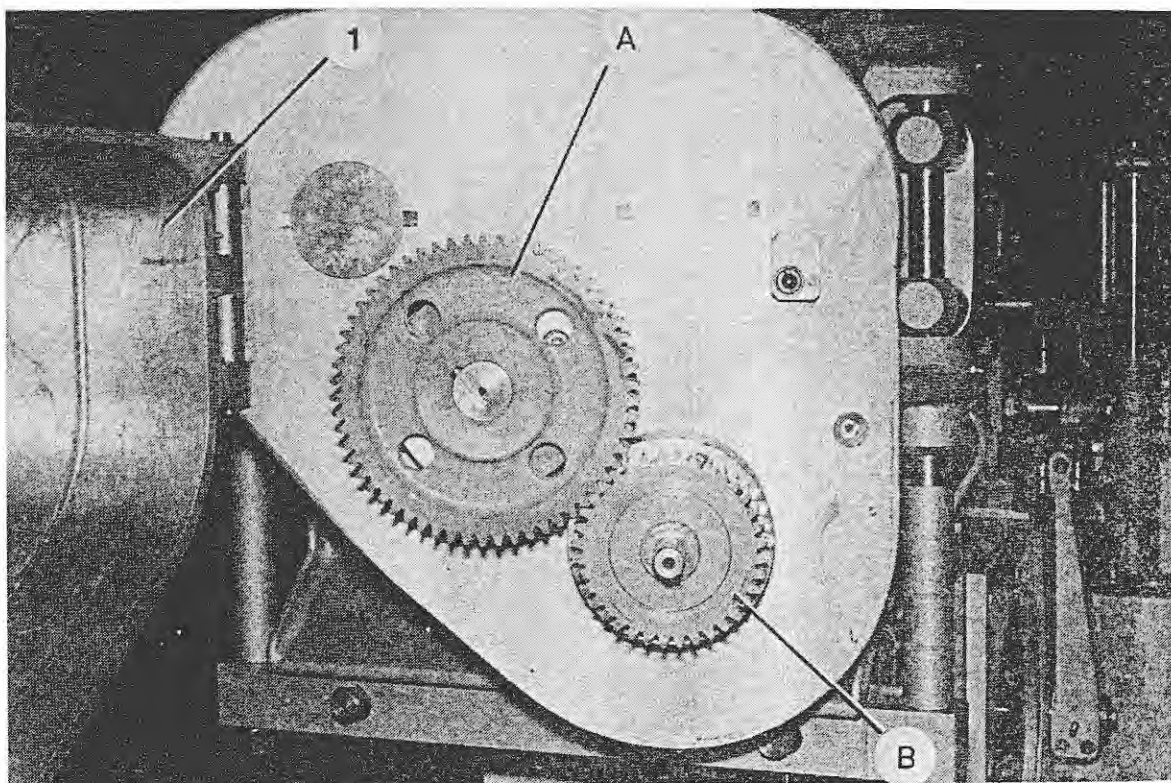


Figure 190

6.6.7.1 Change Wheel Table

Z = number of teeth

Change wheel (Figure 190/A) (Driving wheel)	Change wheel (Figure 190/B) (Driven wheel)	Packing weight	Worm rotation per cycle	Colour
Z = 29	Z = 65	110... 150 g	normal	yellow
Z = 36	Z = 58	110... 150 g	for compact product	blue
Z = 44	Z = 50	150... 300 g	normal	red
Z = 50	Z = 44	150... 300 g	for compact product	red
Z = 58	Z = 36	300... 500 g	normal	blue
Z = 65	Z = 29	250... 500 g	curds	yellow
Z = 74	Z = 20	700... 1,000 g	normal	green

6.6.8 Switching over the drive of the folding unit (only for roll formats)

1. Vent the brake on the operator desk and use the handwheel to crank the machine in the direction of the arrow until the marks (Figure 191/1+2) are aligned.

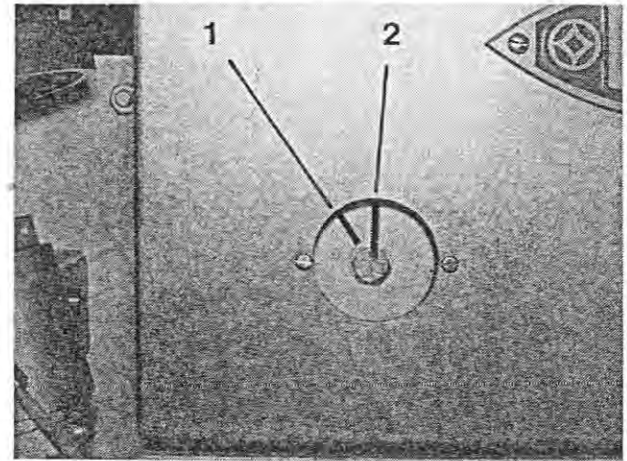


Fig. 191

2. Loosen the locking screw (Figure 192/1) a few turns.

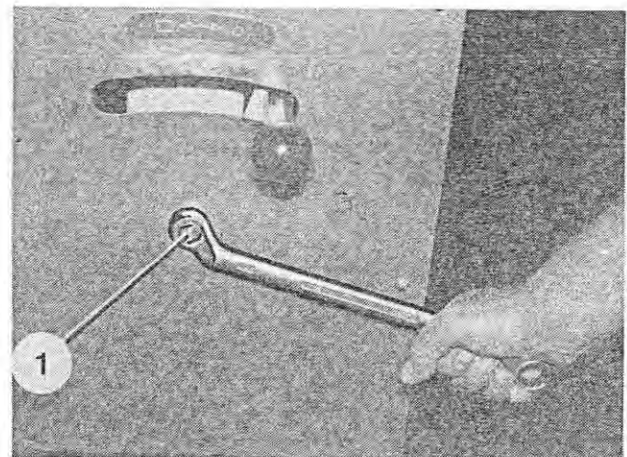


Fig. 192

3. Switch the drive of the folding unit over to the appropriate format (Figure 193/1 or 2) by reversing the lever.

4. Tighten the locking screw.

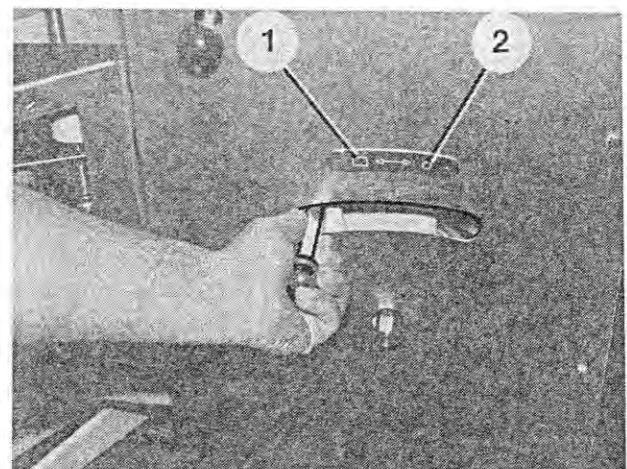


Fig. 193

6.7 Cleaning

ATTENTION

Clean all dosing parts, using only clear and hot water without cleansing agents. Otherwise, there will be malfunctions or differences in weight.

1. Pull out the index pin (Figure 194/1) and switch off the dosing unit by reversing the lever.

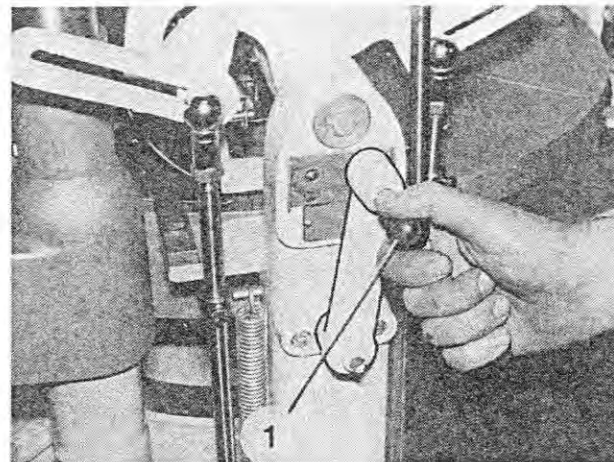


Fig. 194

NOTE

Carry out procedures 2...5 only for machines with a worm trough.

2. Engage the handle (Figure 195/1) by pulling back and turn it in the direction of the arrow until the clutch of the worm trough can be disengaged on the lever (Figure 196/1).

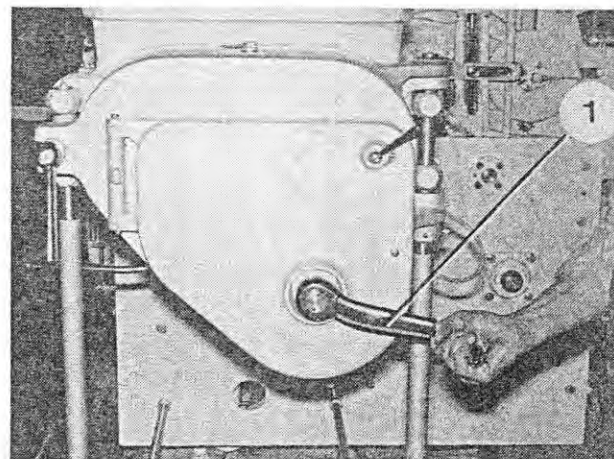


Fig. 195

3. Turn the handle in the direction of the arrow until the worm have removed the residual product from the front worm space.

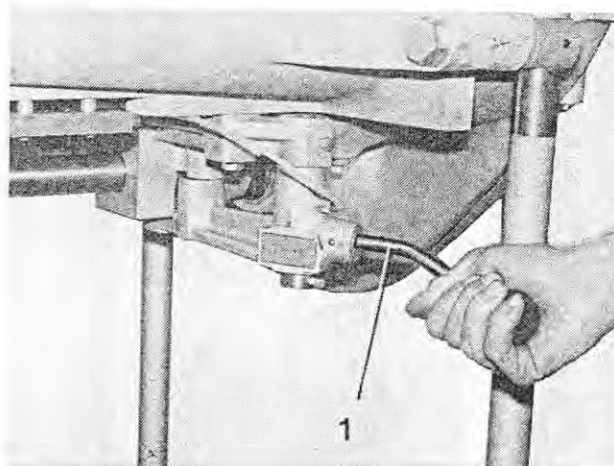


Fig. 196

4. Loosen the tommy nut (Figure 179/1). Reverse the pivoted pin and swing open the wheel box.

Hint for installation:

Align the catcher rollers (Figure 198/1) with the recesses (Figure 198/2) and close the wheel box.

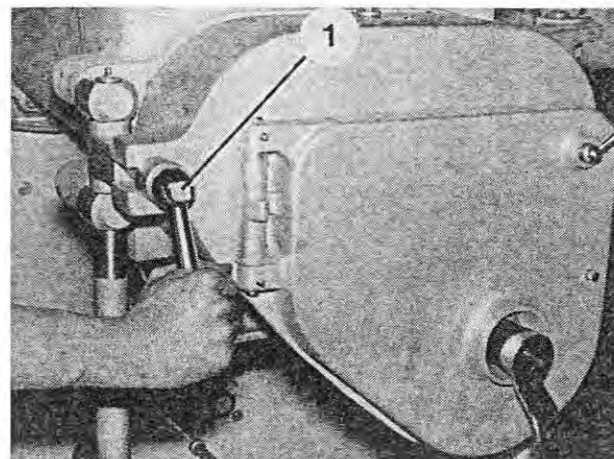


Fig. 197

5. Remove the worms from the worm trough (Figure 198) and clean the worms.

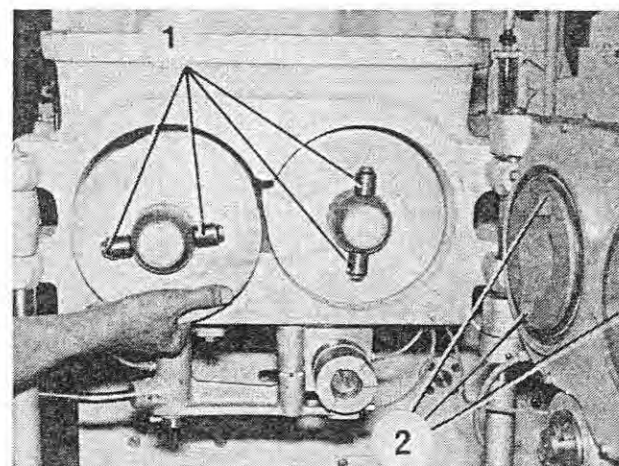


Fig. 198

Hint for installation:

Install the worms in the worm trough in such a way that marks (Figure 199/arrows) correspond to each other.

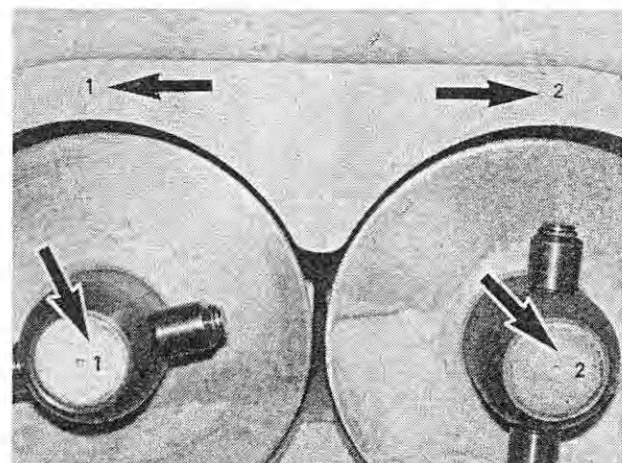


Fig. 199

6. Loosen the hex nuts (Figure 200/1). Turn the compensating cylinder (Figure 200/2). Pull it out of the intermediate housing and clean it.

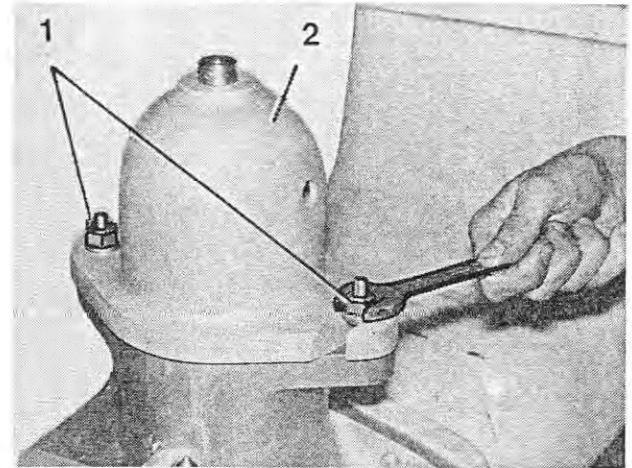


Fig. 200

Hint for installation:

Check the sealing ring (Figure 201/1) of the piston. Replace it, if necessary.

Apply product to the piston and install the piston in the dosing case.

ATTENTION

When low-fat product is to be used, apply Klüber grease to the piston. (Refer to section 1.2 for lubricants.)

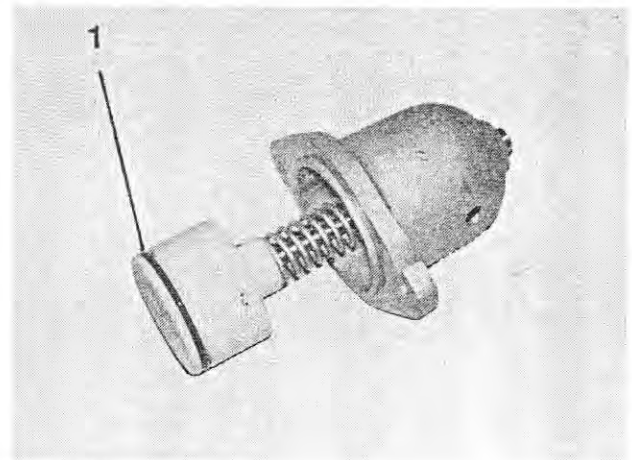


Fig. 201

7. Use the handwheel to crank the machine until the dosing lever (Figure 202/3) has reached its rear position.

NOTE

Turn the weight up to have sufficient space for removing the piston.

8. Unscrew the hex nut (Figure 202/1) which retains the piston rod. Push the piston rod out of the slide piece (Figure 202/2).

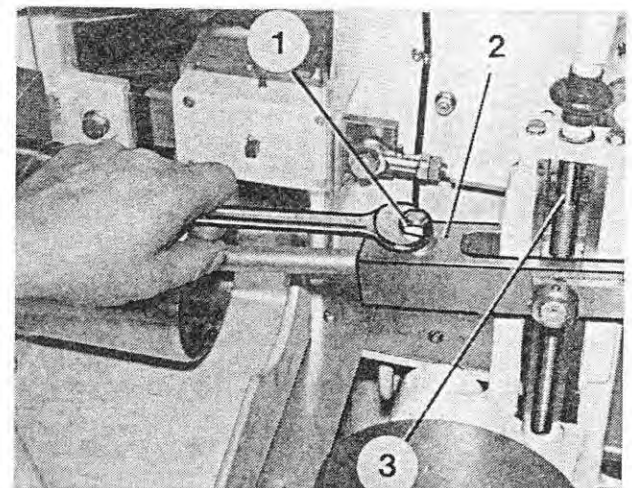


Fig. 202

9. Pull the piston (Figure 203) out of the rotary cylinder and clean it.

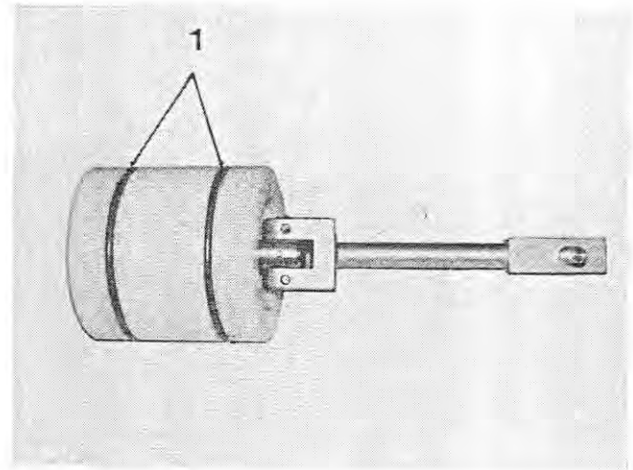


Fig. 203

Hint for installation:

Check the sealing ring (Figure 203/1) and replace it, if necessary.

Apply product to the dosing piston as shown in Figure 204 and insert it into the rotary cylinder.

ATTENTION

When low-fat product is to be used, apply Klüber grease to the piston. (Refer to section 1.2 for lubricants.)

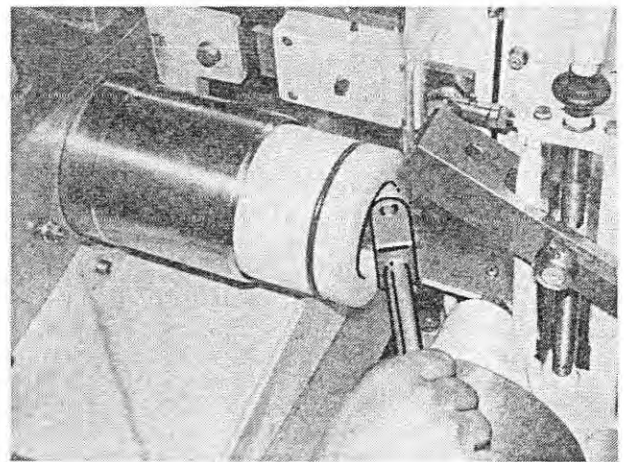


Fig. 204

10. Unscrew the hex nut (Figure 205/1) which keeps the protective hood (Figure 205/2) in position. Remove the protective hood.

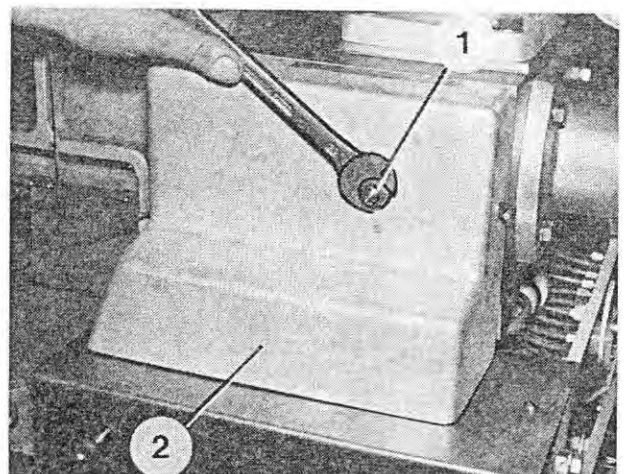


Fig. 205

11. Pull out the index pin (Figure 206/1) and turn the rotary cylinder on the other side of the dosing case in the direction of the arrow until the toothed wheel (Figure 206/3) has released the toothed segment (Figure 206/2).

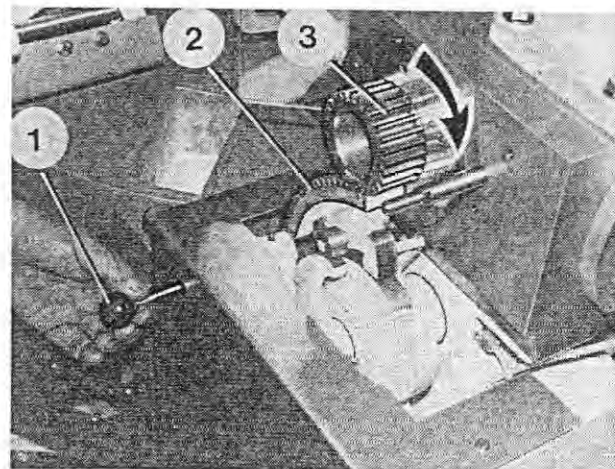


Fig. 206

Hint for installation:

Raise the toothed segment (Figure 207/1) and bring it into mesh with the toothed wheel (Figure 207/2) by turning the rotary cylinder in the direction of the arrow.

NOTE

The marks on the toothed wheel and the toothed segment must be opposite each other (Figure 207). Apply the toothed segment again, if necessary.

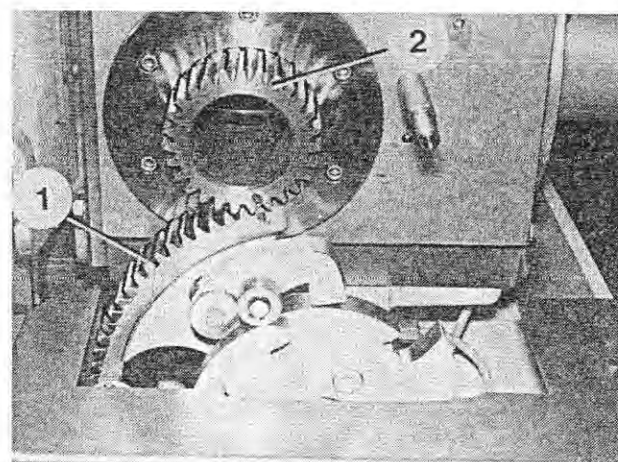


Fig. 207

12. Pull the rotary cylinder out of the dosing case.

Hint for installation:

Apply product to the outer running face, to both sides of the stop disk (Figure 208/arrows) as well as to the inner running face of the dosing case. Insert the rotary cylinder into the dosing case up to the stop.

ATTENTION

When low-fat product is to be used, apply Klüber grease to the rotary cylinder. (Refer to section 1.2 for lubricants.)

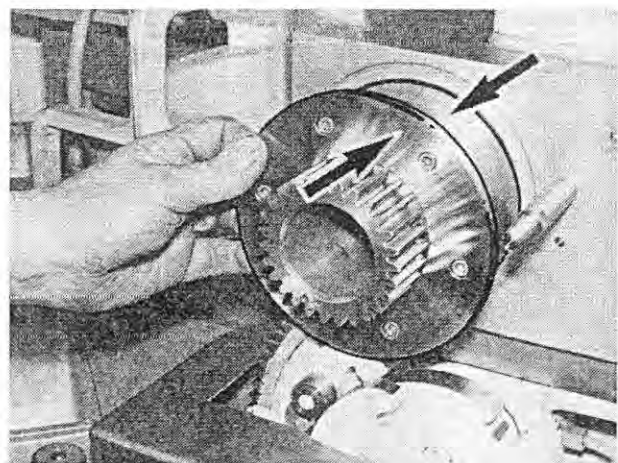


Fig. 208

13. When machines with a direct connection or a hopper are used, place the rotary cylinder in the support (Figure 209/1) and clean it.

ATTENTION

The rotary cylinder must only be placed in the support (Figure 209/1).

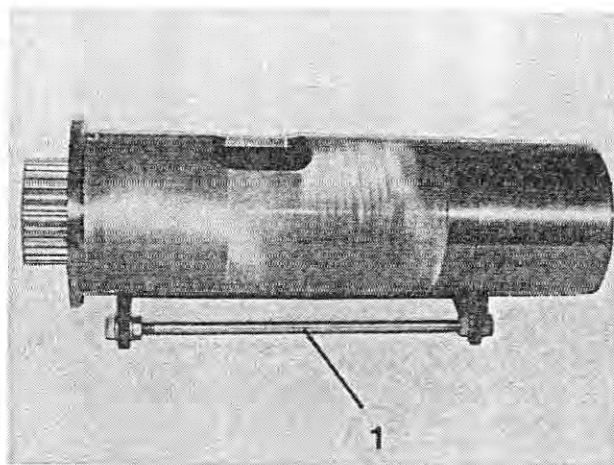


Fig. 209

13.1 When machines with a worm trough are used, place the rotary cylinder between the support sledges (Figure 210/1) and clean it.

ATTENTION

The rotary cylinder must only be placed in the support sledges (Figure 210/1).

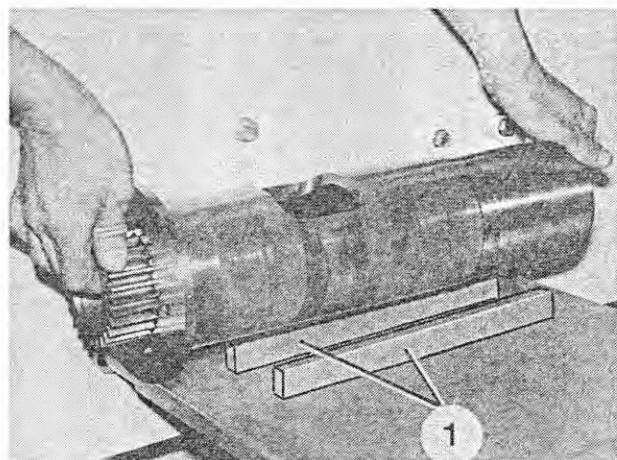


Fig. 210

14. Loosen the hex nuts (Figure 211/1). Turn the intermediate cylinder away from the retainer (Figure 211/2) and pull it out of the dosing case.

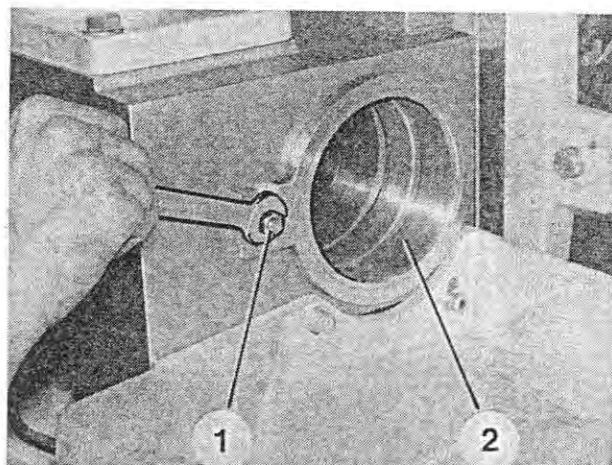


Fig. 211

Hint for installation:

Apply product to the inner and outer running face of the intermediate cylinder (Figure 212/1).—

ATTENTION

When low-fat product is to be used, apply Klüber grease to the intermediate cylinder. (Refer to section 1.2 for lubricants.)

— First slip the intermediate cylinder over the slide piece (Figure 212/2) and then insert it into the dosing case.

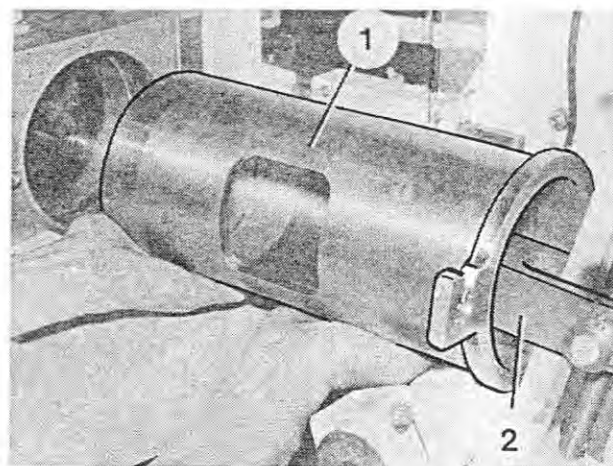


Fig. 212

15. When machines with a direct connecting or a hopper are used, place the intermediate cylinder in the support (Figure 213/1).

ATTENTION

The intermediate cylinder must only be placed in the support (Figure 213/1).

15.1 When machines with a worm trough are used, place the intermediate cylinder between the support sledges.

ATTENTION

The intermediate cylinder must only be placed on the support sledges.

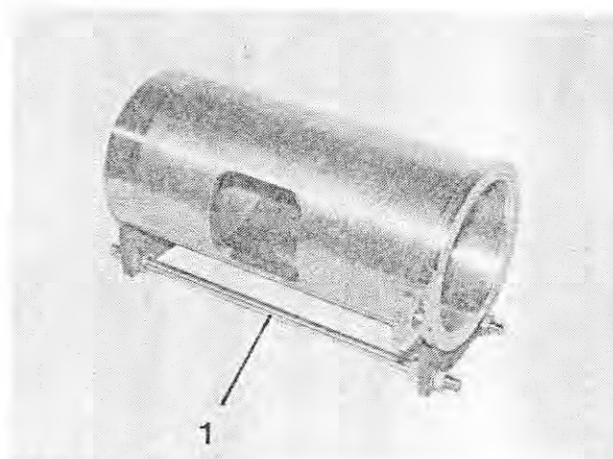


Fig. 213

16. When machine with a heated wire cutter are used, unscrew the knurled nut (Figure 214/1). Remove the washer and disconnect the electric line (Figure 214/2). Reinstall the washer and the knurled nut.

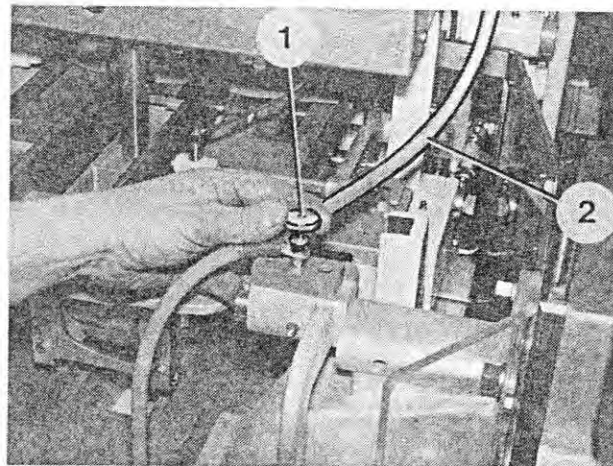


Fig. 214

17. Loosen the hex nut (Figure 215/1) a few turns. Pull the connecting piece out of the groove of the pusher plate (Figure 215/2) and the pusher plate with the filling cock out of the guide upwards. Clean the pusher plate.

Hint for installation:

Apply product to the pusher plate and guides,—

ATTENTION

The sealing face of the pusher plate is very sensitive and must not come into contact with hard objects.

When low-fat product is to be used, apply Klüber grease to the pusher plate and the guides. (Refer to section 1.2 for lubricants.)

— and grease to the sliding pad (Figure 216/1). Insert the sliding pad into the guide (Figure 216/2). (Refer to section 1.2 for lubricants.)

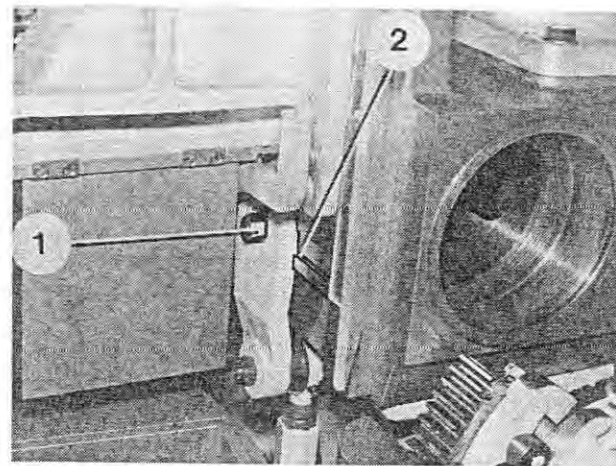


Fig. 215

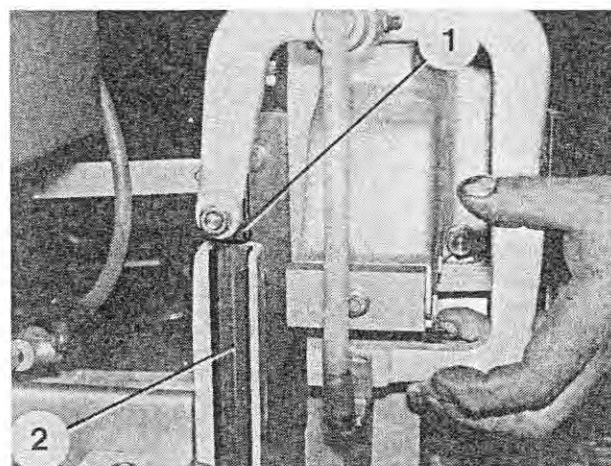


Fig. 216

NOTE

Carry out procedures 18...25 only on machines with a direct connection.

18. Loosen the locking screws (Figure 217/arrows) of the product feeding line and disconnect this line from the fitting flange.

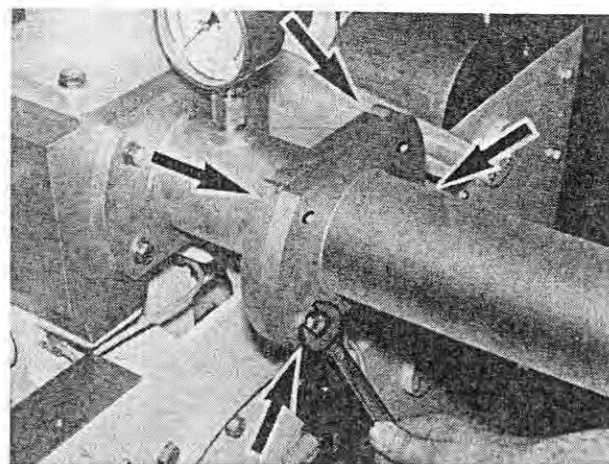


Fig. 217

Hint for installation:

Check whether the sealing ring (Figure 218/1) is in a good condition and properly seated. Replace the ring, if necessary.

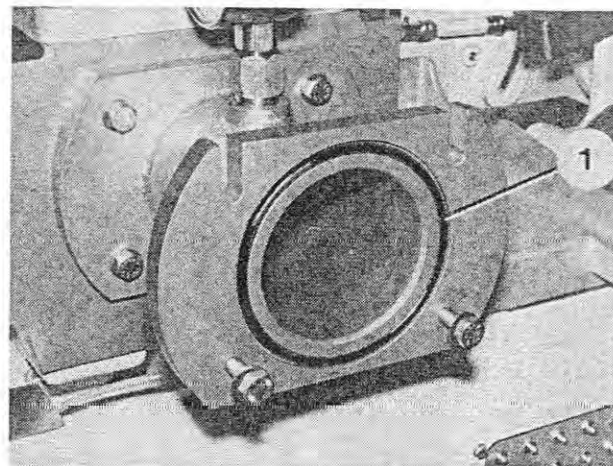


Fig. 218

19. Unscrew the swivel nut (Figure 219/1) of the return line and remove the return line.

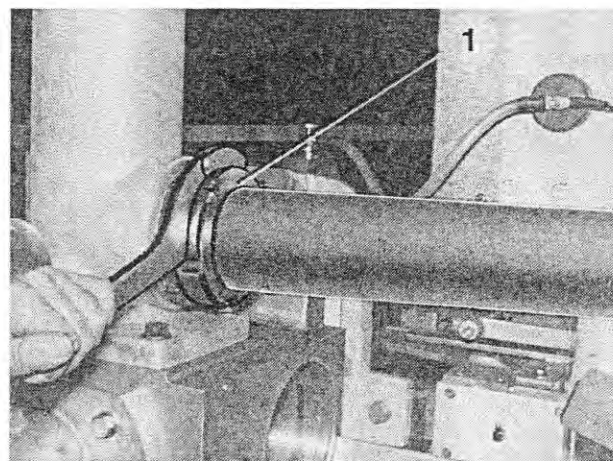


Fig. 219

20. Disconnect the rapid action coupling (Figure 220/1) from the connection of the pneumatic cylinder.

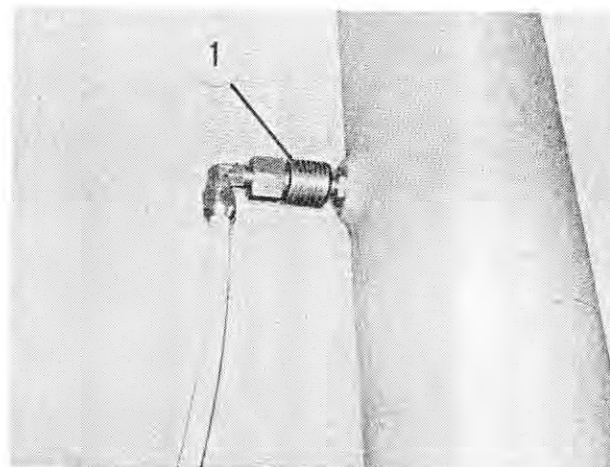


Fig. 220

21. Unscrew the hex nuts of the pneumatic cylinder (Figure 221) and remove the cylinder.

Hint for installation:

Attach the pneumatic cylinder in such a way that the connection is on the right side of the machine.

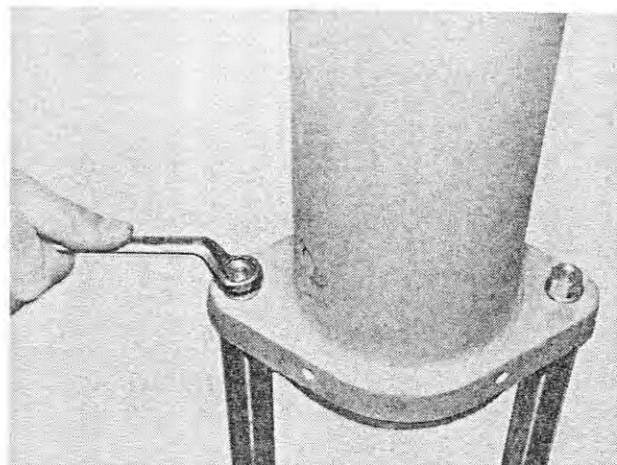


Fig. 221

22. Loosen the knurled screws of the clamping pieces (Figure 222).

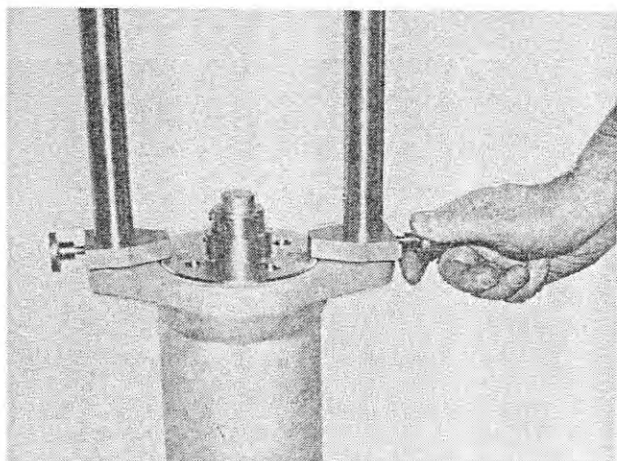


Fig. 222

23. Turn the clamping pieces by 90° (Figure 223).

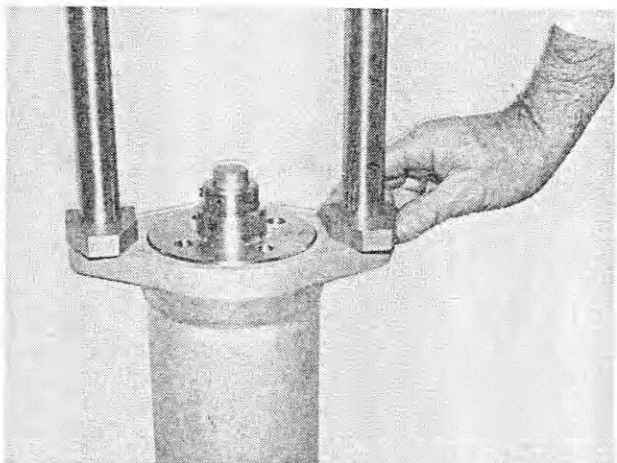


Fig. 223

24. Remove the piston from the storage cylinder (Figure 224) and clean the cylinder.

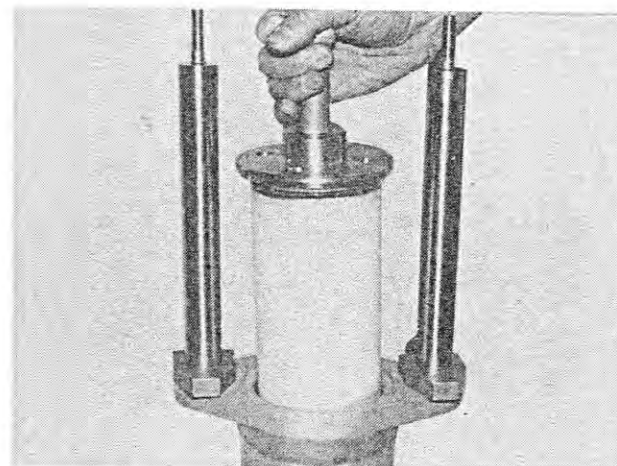


Fig. 224

Hint for installation:

Check the sealing ring (Figure 225/2) and replace it, if necessary.

Apply product to the piston (Figure 225/1).

ATTENTION

When low-fat product is to be used, apply Klüber grease to the piston. (Refer to section 1.2 for lubricants.)

25. Clean the dosing case and the product feeding facilities (worm trough, direct connection or hopper), using an appropriate cleansing agent.

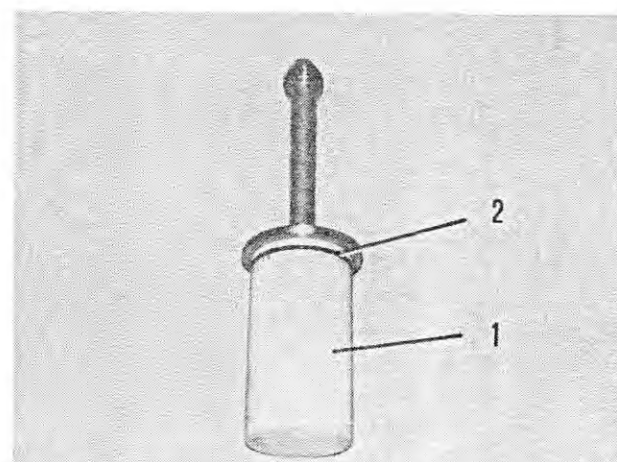


Fig. 225

ATTENTION

The bearing bushes of the rotary cylinders in the dosing case (Figure 226/arrow) must not come into contact with hard objects.

Installation is effected in reverse order.

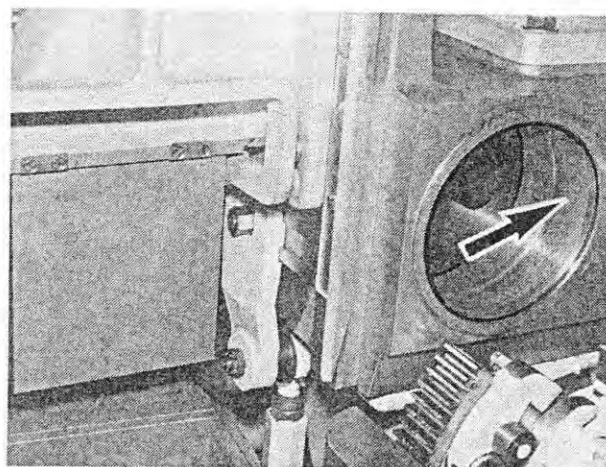


Fig. 226

6.8 Adjusting the coding facility

6.8.1 Adjusting the thermal printer

1. Loosen the knurled nuts (Figure 277/1) to laterally adjust the thermal printer. Adjust the thermal printer appropriately and tighten the knurled nuts.

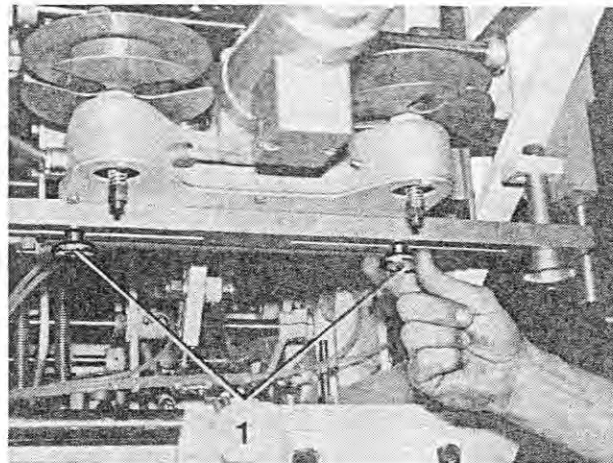


Fig. 227

2. To adjust the thermal printer in longitudinal direction to the wrapper, grasp the rods of the counterplate (Figure 228/1) and loosen the clamping facility, using the lever (Figure 228/2).

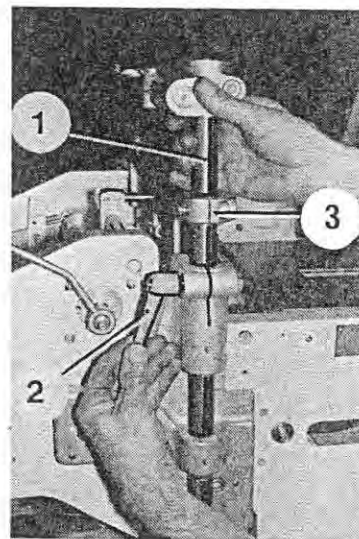


Fig. 228

3. Adjust the printing height by relocating the rods with the counterplate (Figure 229/1).

Hint for installation:

Tighten the clamping facility.

4. The stop ring (Figure 228/3) can be used as a stop for the longest wrapper. To do so, loosen the clamping screw of the stop ring. Lower the stop ring down to the clamping facility and tighten the clamping screw.

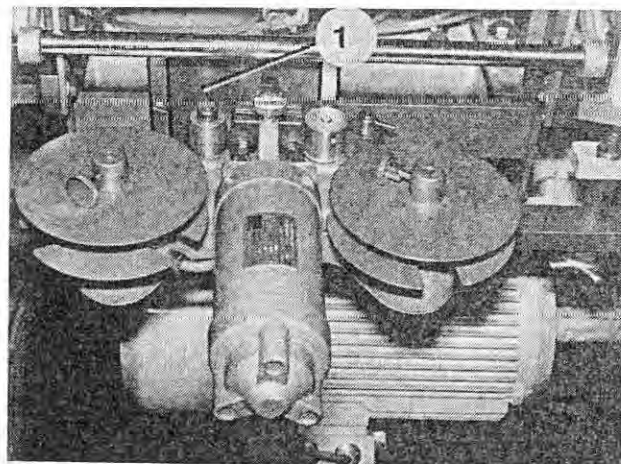


Fig. 229

6.8.2 Adjusting the ink printer

1. To laterally adjust the ink printer, loosen the hex nuts (Figure 230/1), the locking screw (Figure 230/3) of the stop and the locking screw in the stop ring (Figure 230/2) of the drive. Adjust the printer appropriately. Press the stop against the ink printer and tighten the locking screws as well as the hex nuts.

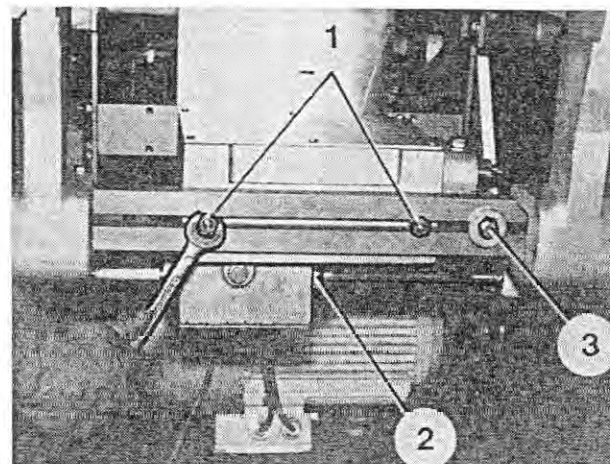


Fig. 230

2. To adjust the ink printer in longitudinal direction with regard to the wrapper, grasp the rods of the counterplate (Figure 231/1) and loosen the clamping facility, using the lever (Figure 231/2).

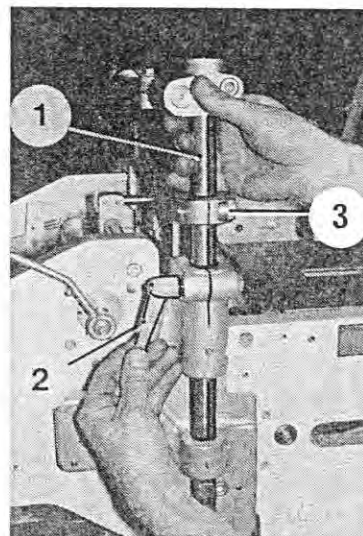


Fig. 231

3. Adjust the printing height by relocating the rods with the counterplate (Figure 232/1).

Hint for installation:

Tighten the clamping facility.

4. The stop ring (Figure 231/3) can be used as a stop for the longest wrapper. To do so, loosen the clamping screw of the stop ring. Lower the stop ring down to the clamping facility and tighten the clamping screw.

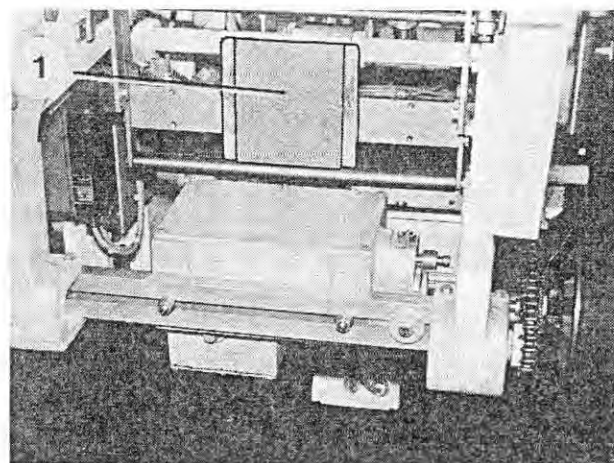


Fig. 232

6.8.3 Adjusting the perforating facility

1. To laterally adjust the perforating facility, loosen the clamping screw (Figure 233/1) and relocate the perforating facility appropriately. Tighten the clamping screw.

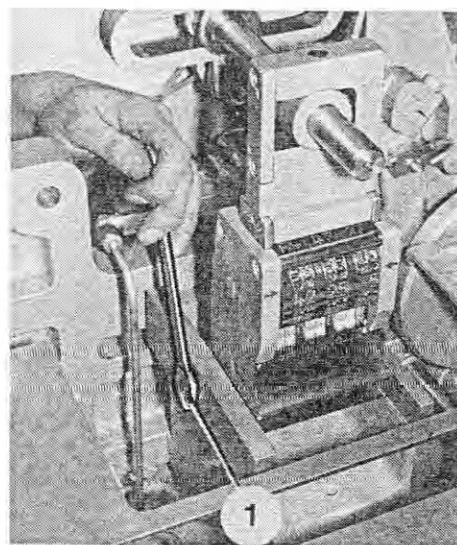


Fig. 233

2. To adjust the perforating facility in the moving sense of the wrapper, loosen the hex nuts (Figure 234/1+2) and relocate the perforating facility appropriately. Tighten the hex nuts.

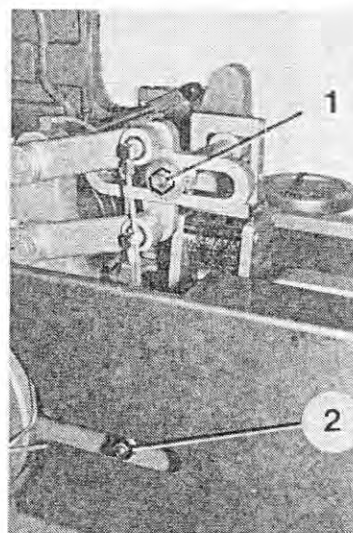


Fig. 234

6.9 Preparation when butter is to be packed

NOTE

Only for machines with a direct connection.

Hot wash thoroughly only the through charging opening (Figure 235) as well as the visible worm bed below, conveyor worms, cutting bows and the die bottom edge on the outside. Prepare them by brushing all sides, using a hot solution of P3 tin proof (or similar agent) at a rate of 1:10 (e.g. 1/4 kg P3z in 2 1/2 l water). This lye can be reused several times.

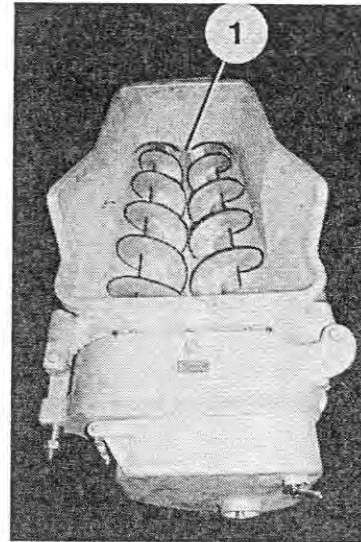


Fig. 235

Be sure that the hot solution does not come into the cylinder bearing. Otherwise, the layer of grease for the cylinder will be destroyed. Wait for ten minutes until the prepared parts begin to dry and cold flush them so that the invisible preparation layer can reabsorb water and the temperature of the parts is below the product temperature.

NOTE

Do not touch the prepared surfaces!

ATTENTION

Never prepare:

The closed front trough space (Figure 235/1), filling housing, dosing cylinder, dosing piston, compensating piston, filling cock, pusher plate and inside of the die.

6.10 Replacing the pressure spring of the compensating piston

NOTE

Only for machines with a worm trough.

1. Remove the compensating piston.
2. Loosen the stud bolt (Figure 236/1) a few turns. Start the tapered pin (Figure 236/2) and remove the stop ring (Figure 236/3) and the bell (Figure 236/4).

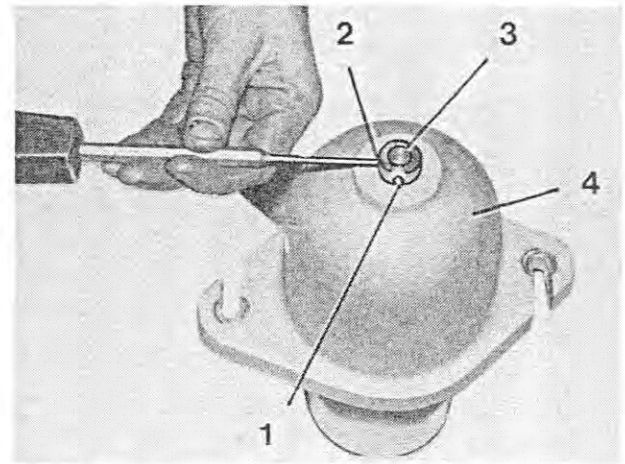


Fig. 236

3. Remove the pressure spring (Figure 237/2) from the piston rod.

Hint for installation:

Place the pressure spring on the spring seat (Figure 237/1) of the piston.

NOTE

When the piston was always at the upper stop during production, insert a spring with a larger wire diameter. If it was always at the lower stop, insert a spring with a smaller wire diameter.

Installation is effected in reverse order.

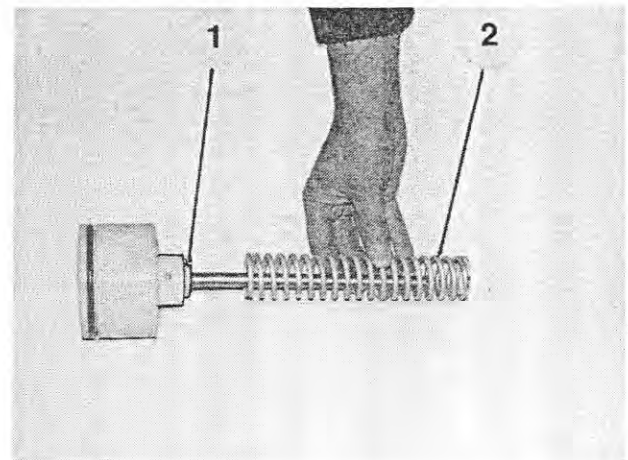


Fig. 237

6.11 Adjusting the heating temperature of the cutting wire

NOTE

Only for machine with a heated cutter wire.

1. Switch off the master switch.
2. Open the large or the small switch cabinet, respectively.
3. Disconnect the electric line (Figure 238/arrow) from the transformer terminal and connect it on a terminal with the appropriate voltage.

Voltages available:

(Figure 238/1)	1.3 V
(Figure 238/2)	1.6 V
(Figure 238/3)	2.0 V
(Figure 238/4)	2.4 V
(Figure 238/5)	2.8 V

4. Close the switch cabinet.

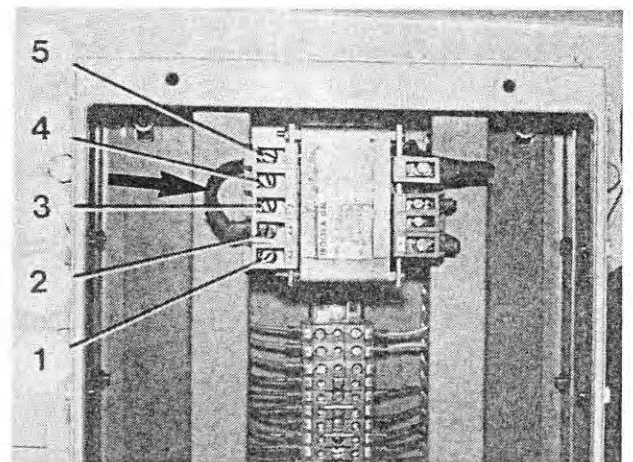


Fig. 238

6.12 Storing and handling the wrapper rolls**NOTE**

Store the wrapper material in a clean and sterilized environment. Observe the following items for proper storage.

1. The storage rooms should have a temperature of 10° to 20° C at a relative humidity of approximately 65...70 %. Dry/wet rooms cause the wrapper to be brittle/wet. Both result in malfunctions. Furthermore, wet wrapper material encourages the growth of mould, yeast and microorganisms, infecting and spoiling the wrapper.

2. Never store the wrapper roll directly on the floor. Use grates providing a distance of at least 10 cm between the floor and the rolls.

3. Always store the wrapper rolls in upright position and secure them against falling to prevent them from being flattened. Damaged and flattened rolls are always the cause of malfunctions when they are rolled off.

4. Do not expose the wrapper to sunlight in the storage rooms.

5. Use a hygrometer or a similar and cheap recording device to control the temperature and the relative humidity. If possible, store the wrapper rolls in a separate room.

7 Repair

ATTENTION

Deenergize the machine all maintenance works which do not require that the machine be in operation. Switch off the master switch and depressurize the pneumatic system.

Furthermore, attach a plate to the master switch, reading „Work is carried out on this machine. Do not switch on“.

Refer to the circuit diagram in the switch cabinet or switch box for repairing the electrical system.

7.1 Cranking the machine by hand or turning it to position „0“

NOTE

The master switch must have been switched on.

1. Vent the brake by pressing the „Vent brake“ button (Figure 239).

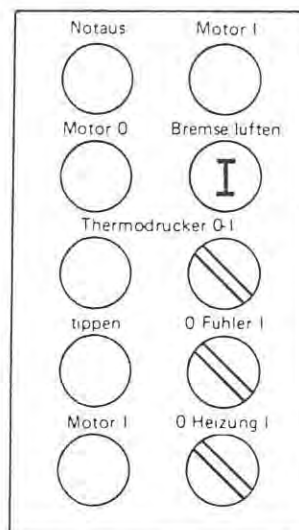


Fig. 239

2. Crank the machine by turning the handwheel in the direction of the arrow (Figure 240).

3. Set the machine to position „0“, turning the handwheel until the rotary table just stops.

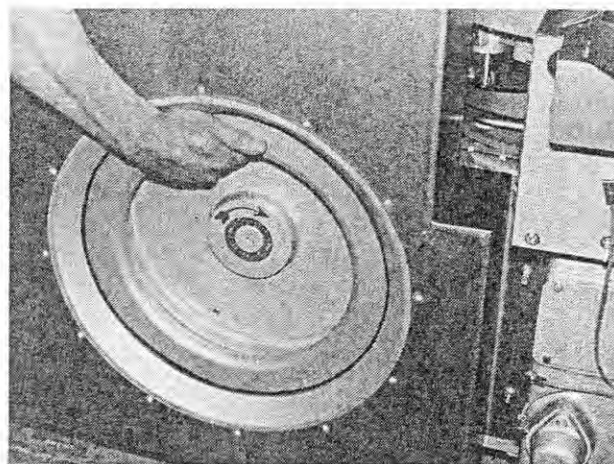


Fig. 240

7.2 Replacing the sliding pad of the pouch stamp

1. Remove the cover plate in front of the pouch stamp.

2. Loosen the clamping screw (Figure 241/1) of the sliding pad axle and unscrew it a few turns.

3. Grasp the pouch stamp or support it and pull out the sliding pad axle (Figure 242).

Hint for installation:

Check the sliding pad axle for wear and replace it, if necessary. To do so, reset the lubricating nipple.

Grease the sliding pad axle and install it in such a way that the recess (Figure 242/arrow) points in the direction of the locking screw. (Refer to section 1.2 for lubricants.)

4. Remove the sliding pad.

Hint for installation:

Apply grease to all sides of the sliding pad and insert the sliding pad into the guide. (Refer to section 1.2 for lubricants.)

Installation is effected in reverse order.

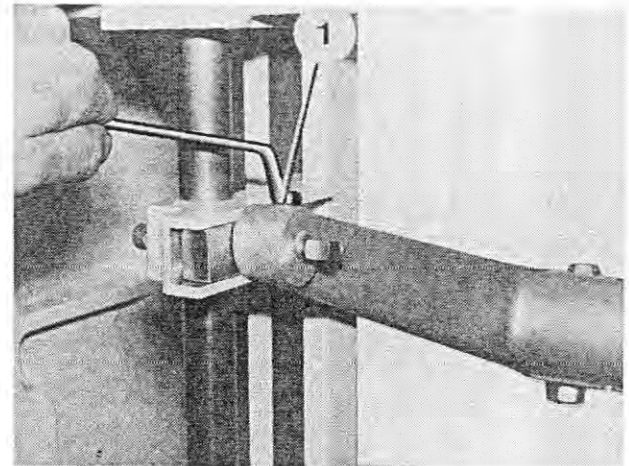


Fig. 241

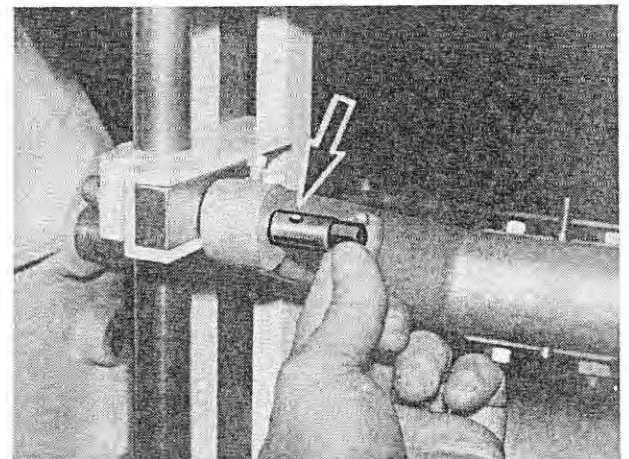


Fig. 242

7.3 Replacing the sliding pads of the dosing piston drive

1. Remove the cover plate above the dosing piston drive.

2. Loosen the counternut (Figure 243/1) and screw out the spindle (Figure 243/2) a few turns.

Hint for installation:

Adjust the counter-bearing (Figure 243/3) of the lateral sliding pads.

To do so, move the counter-bearing to the sliding pads by screwing in the spindle until there is just no travel.

Tighten the counternut (Figure 243/1) by holding the spindle.

Check the adjustment and correct it, if necessary.

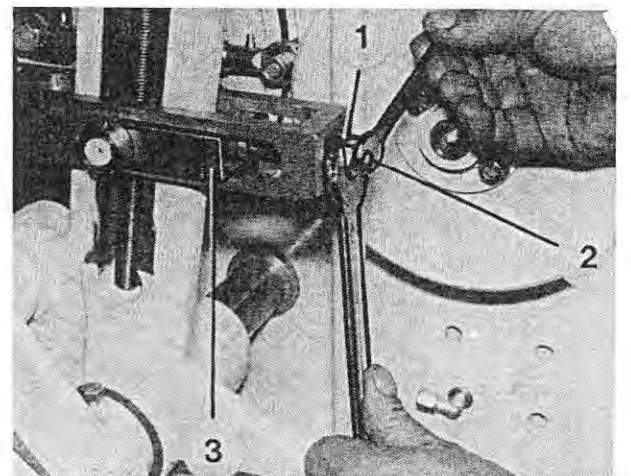


Fig. 243

3. Loosen the locking screw (Figure 244/1) of the centering piece (Figure 244/2). Push the centering piece up and lock it, using the locking screw.

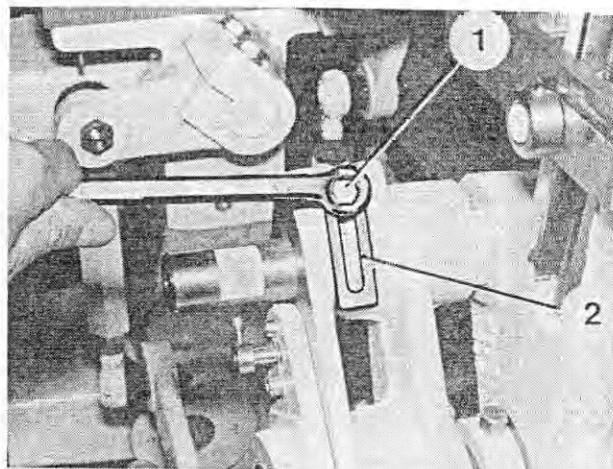


Fig. 244

4. Unscrew the hex nut (Figure 245/1) which keeps the dosing piston in position. Separate the joint and push the dosing piston into the rotary cylinder up to the stop.

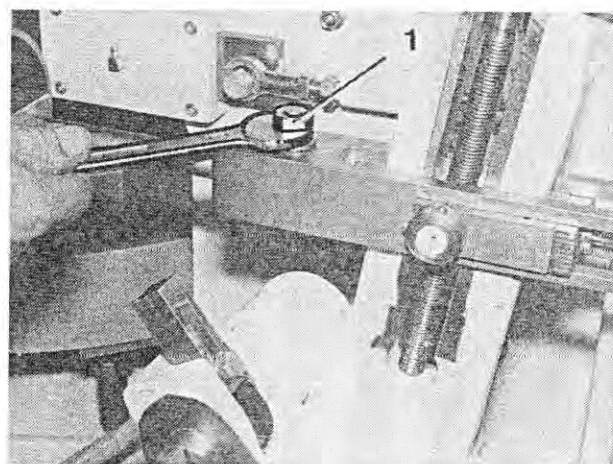


Fig. 245

5. Move the dosing lever (Figure 246/1) in such a way that the cam rollers (Figure 246/2) are not engaged any longer.

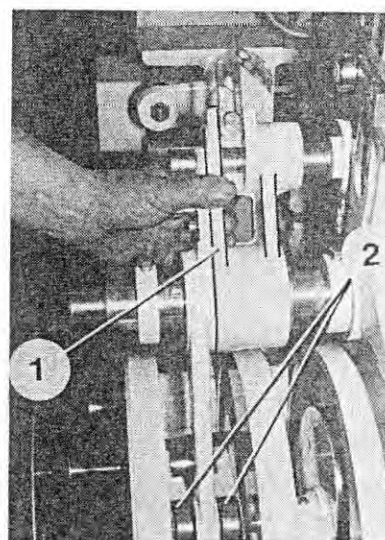


Fig. 246

6. Push the dosing lever in the direction of the dosing case until the driving tube (Figure 257/1) and the multiple spline shaft (Figure 247/2) are disconnected.

Hint for installation:

Grease the multiple spline shaft prior to installation. (Refer to section 1.2 for lubricants.)

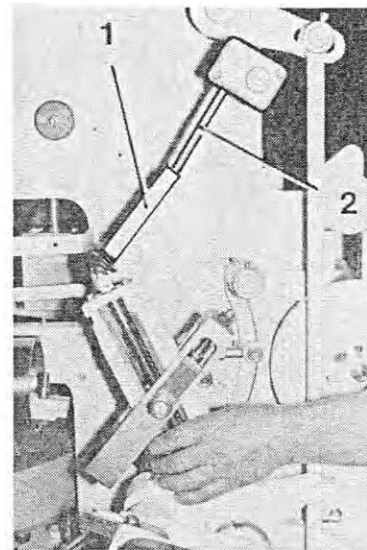


Fig. 247

7. Unscrew the locking screws (Figure 248/1) of the spindle bearing and remove the spindle bearing and spindle, the sliding pads as well as the sliding pad guide from the dosing lever.

Hint for installation:

Insert the sliding pad joint in such a way that the hole (Figure 248/arrow) points to the dosing piston.

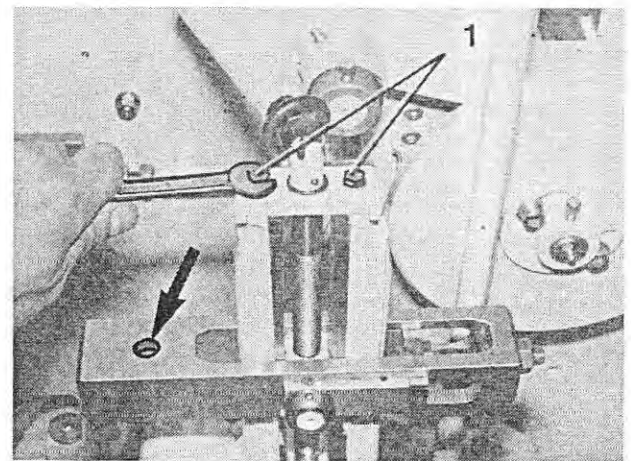


Fig. 248

8. Start the tapered pin out of the spindle (Figure 249). Unscrew the spindle from the middle sliding pad.

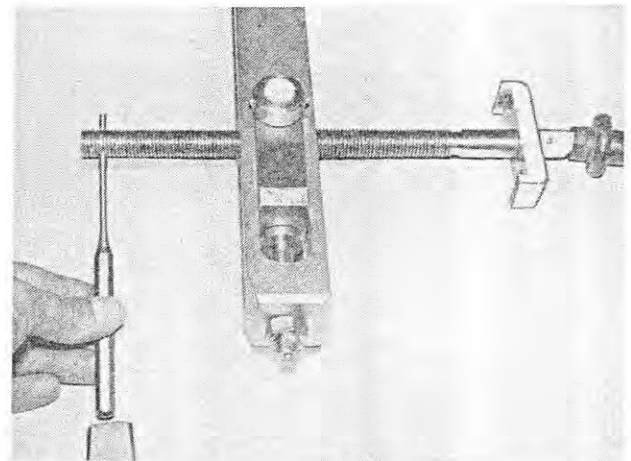


Fig. 249

7.4 Replacing a cam roller of a cam plate

1. Crank the machine by hand until the cam roller to be replaced is on the lowest point on the cam plate (Figure 254).
2. Relieve the lever of the cam roller to be replaced by unhooking the appropriate cylinder (Figure 253).

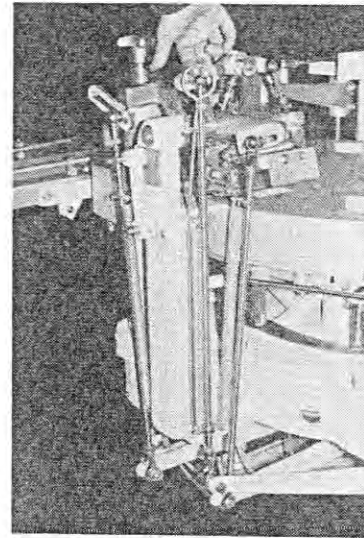


Fig. 253

3. Unscrew the locking screw (Figure 254/1) of the stop plate and remove the stop plate.

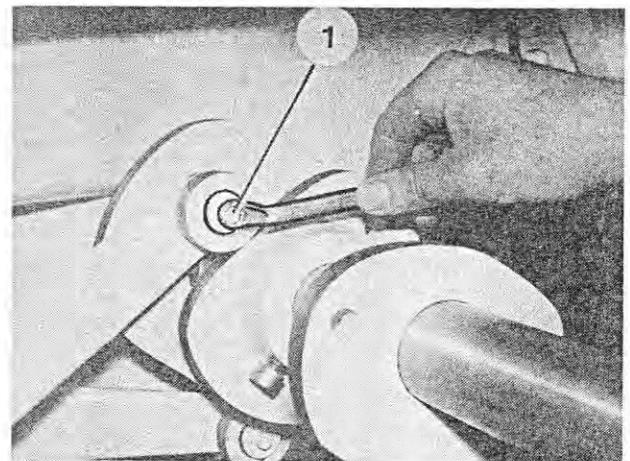


Fig. 254

Hint for installation:

Attach the stop plate in such a way that the neck (Figure 255/arrow) fits into the recess of the roller axle.

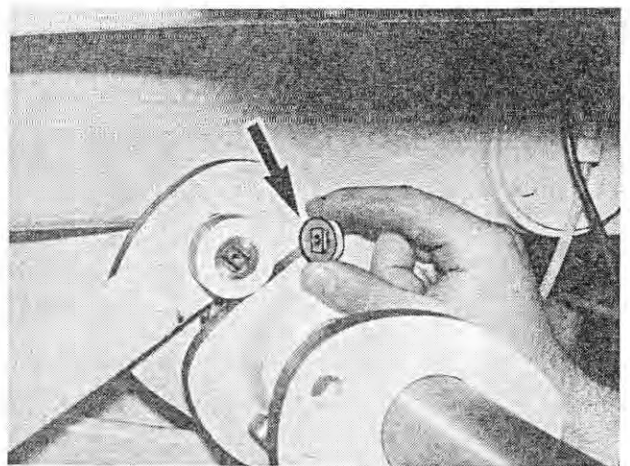


Fig. 255

Hint for installation:

Screw the spindle in the sliding pad on the closed side of the sliding pad guide (Figure 250).

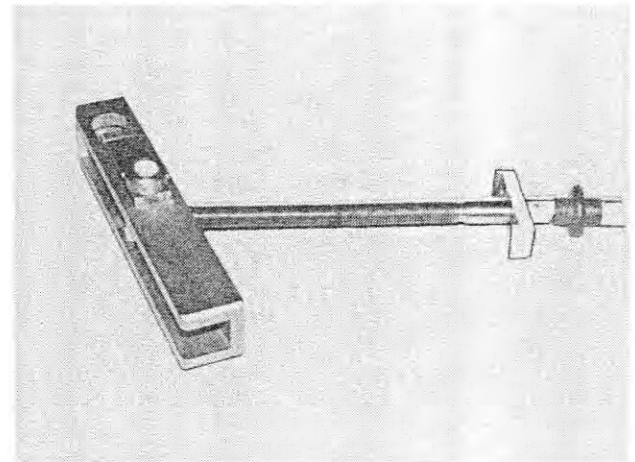


Fig. 250

9. Release the stop rings (Figure 251/1). Loosen the stud bolts and remove the stop rings.

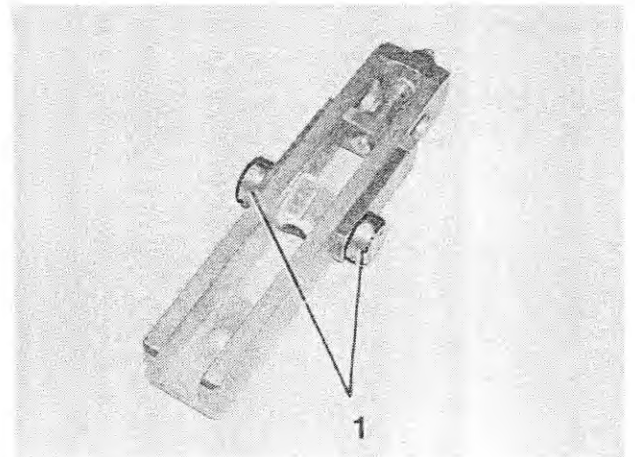


Fig. 251

10. Remove the left and right sliding pad from the middle sliding pad.

Hint for installation:

Oil the sliding pads and attach them in such a way that the lubricating holes (Figure 252/arrows) are on the outside and show in the moving sense of the sliding pad guide. (Refer to section 1.2 for lubricants.)

NOTE

The right and left sliding pads are different.

11. Turn the middle sliding pad and remove it from the sliding pad guide.

Hint for installation:

Oil the middle sliding pad and insert it. (Refer to section 1.2 for lubricants).

Installation is effected in reverse order.

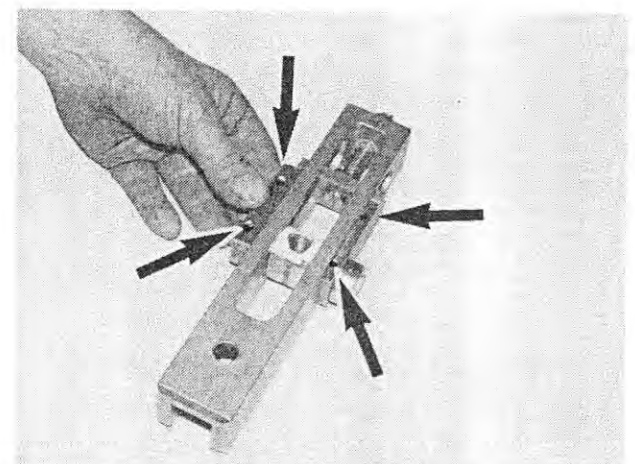


Fig. 252

4. Remove the cam roller.

Hint for installation:

Oil the cam roller and attach it to the big neck (Figure 256/arrow) pointing to the lever. (Refer to section 1.2 for lubricants.)

Installation is effected in reverse order.

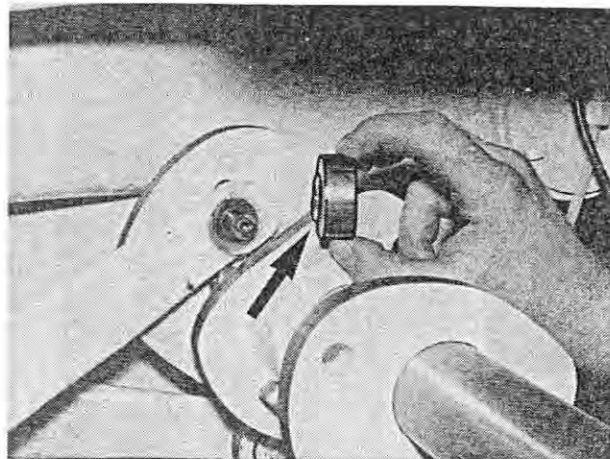


Fig. 256

7.5 Replacing the shear pin in the dosing lever

1. Unscrew the stop screw (Figure 257/1) of the retaining spring.

2. Pull out the front part of the shear pin (Figure 257/2).

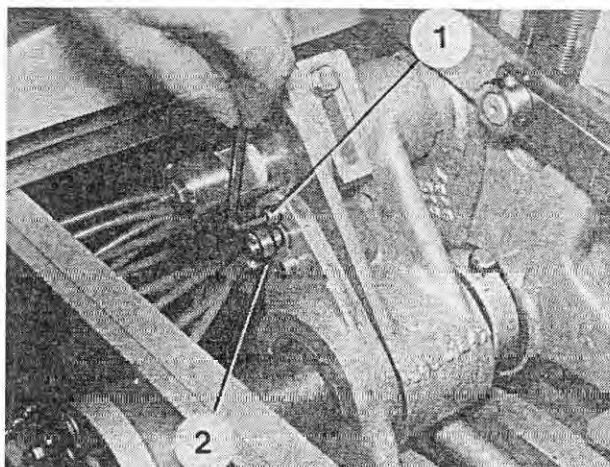


Fig. 257

3. Crank the machine by hand (refer to section 7.1) until the front hole is aligned with the rear one or rear pin shorn off. If necessary, start the rear part of the pin (Figure 258).

4. Insert a new shear pin and hook the spring in the small groove of the shear pin.

5. Screw in the stop screw.

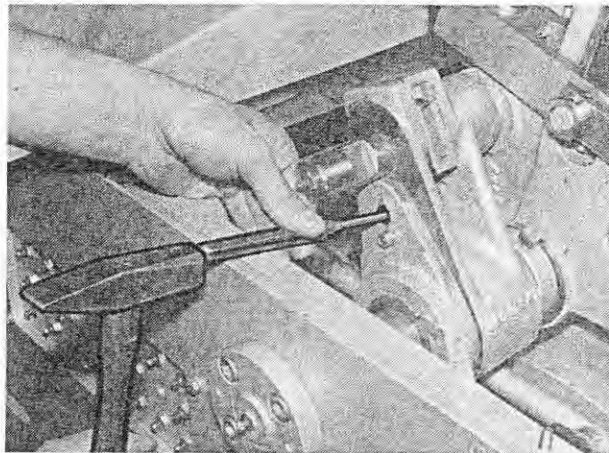


Fig. 258

Hint for installation:

Attach the cutter knife (Figure 265/1) and the clamping sledge (Figure 265/2). Screw in the locking screws (Figure 265/3).

Before tightening the locking screws, press the cutter knife against the stops (Figure 265/arrow) on both sides.

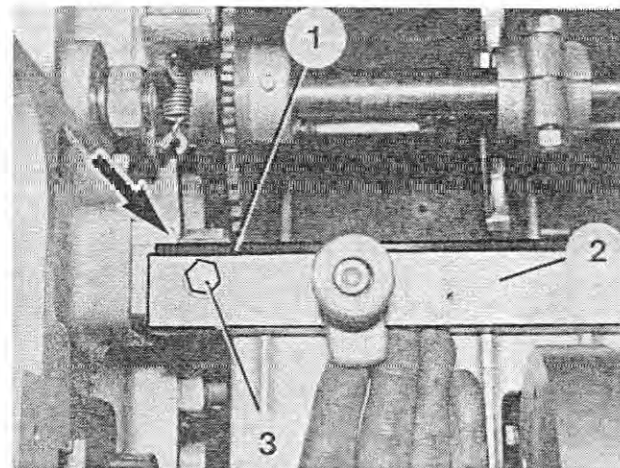


Fig. 265

5. To completely replace the cutter knives, loosen the hex nuts (Figure 266/1) and pull out the lower cutter knife (Figure 266/2).

NOTE

Proper grinding of the knives is only possible with machines.

Have the knives ground by BENHIL or a workshop.

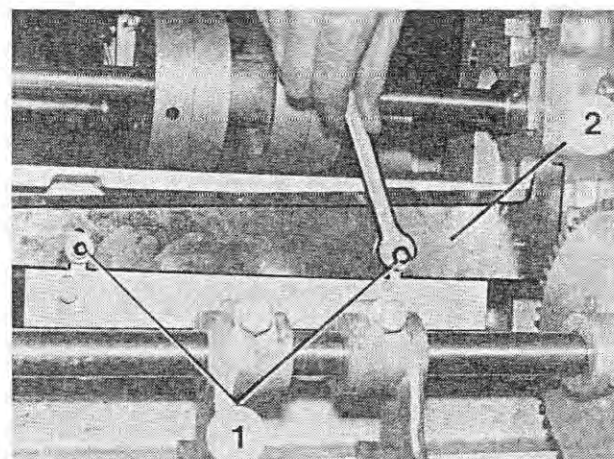


Fig. 266

Hint for installation:

Screw the hex nut (Figure 267/1) on both sides back to the end of the thread.

Press the locking screws through the retainer (Figure 267/3) against the pressure of the spring. Place the lower cutter knife between the washers (Figure 267/2) and push it down to the stop (Figure 265/arrow).

NOTE

For better illustration, picture 267 was taken with the retainer removed.

Installation is effected in reverse order.

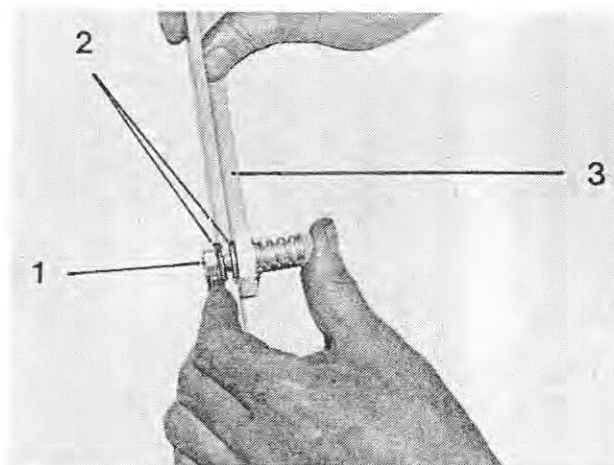


Fig. 267

7.6 Reversing or replacing the cutter knife

NOTE

When the complete cutter knife has been replaced, check its adjustment after installation.

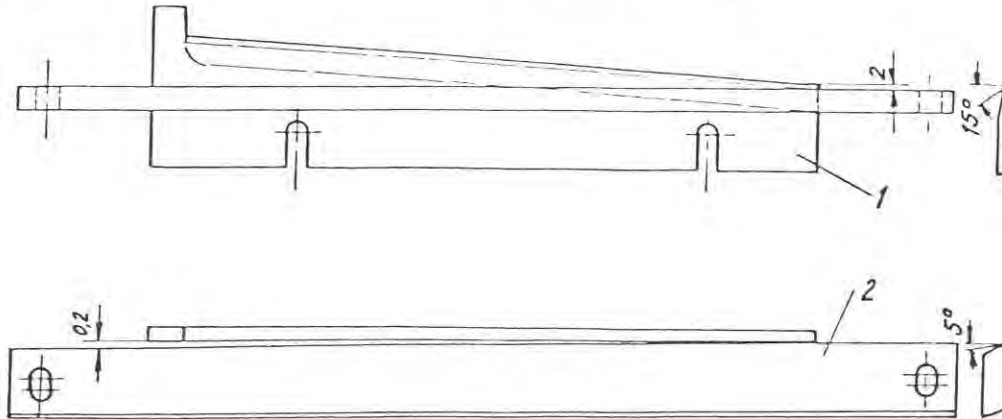


Fig. 259

Figure 259 shows the proper positions of the the upper (Figure 259/2) and lower knives (Figure 259/1) after cutting.

In its upper position the cutting edge of the lower knife must be 2 mm above the cutting edge of the upper knife on one side and project 0.2 mm on the other side. (Refer to Figure 259).

The cutting edge must be exposed over its whole width when the lower knife is in its lower position.

To adjust the height of the lower knife, loosen the clamping screws (Figure 260/arrows) and relocate the lower knife properly. Tighten the clamping screws.

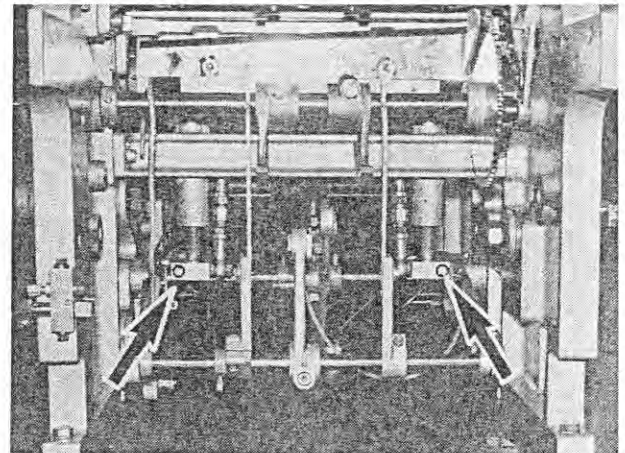


Fig. 260

1. Set the pouch stamp to its upper position by cranking the machine with the handwheel.

2. Remove the folding box and the accelerating roller (Figure 261).

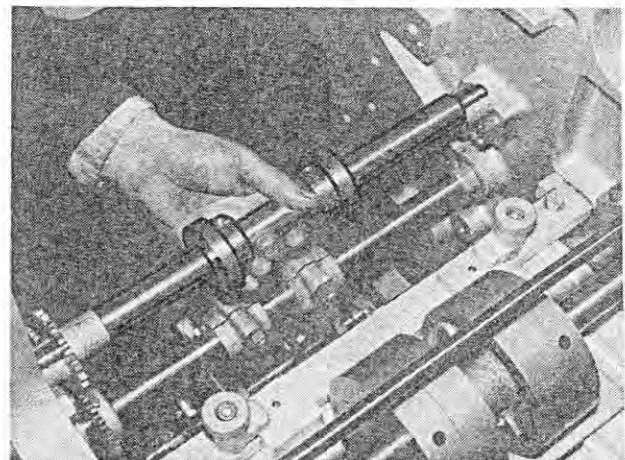


Fig. 261

3. Raise the clamping pieces on both sides (Figure 262/1) and turn them away from the holder-down (Figure 262/2). Remove the holder-down.

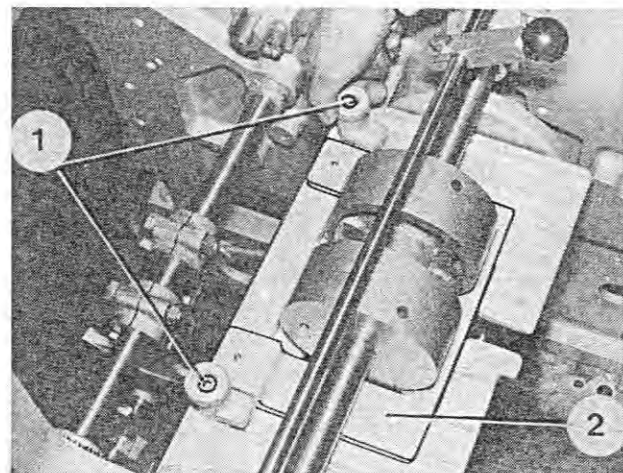


Fig. 262

Hint for installation:

Attach the holder-down in such a way that the centering pins fit into the holes of the clamping sledge (Figure 263/arrows).

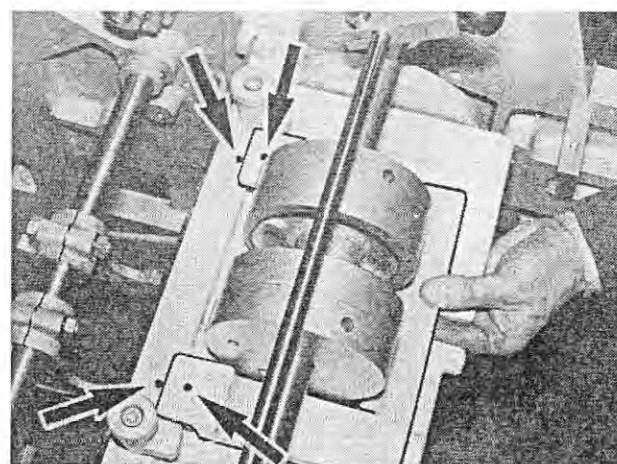


Fig. 263

4. Unscrew the locking screws (Figure 264/1) on both sides and remove the clamping sledge (Figure 264/2) and the upper cutter knife (Figure 264/3).

NOTE

If the second cutting edge of the upper knife has not been used, reverse the knife and reinstall it.

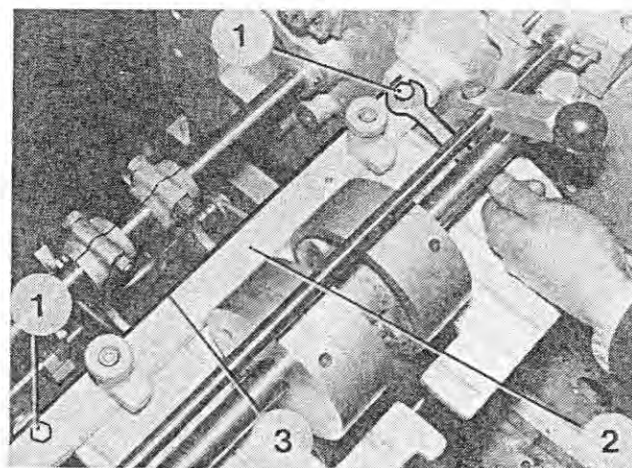


Fig. 264

7.7 Replacing the cutting wire

NOTE

Only for machines with a heated cutter wire.

1. Refer to section 6.6, items 7...9. for removing the die.
2. Press the cutter bow (Figure 268/1) somewhat together and remove the cutting wire.

Installation is effected in reverse order.

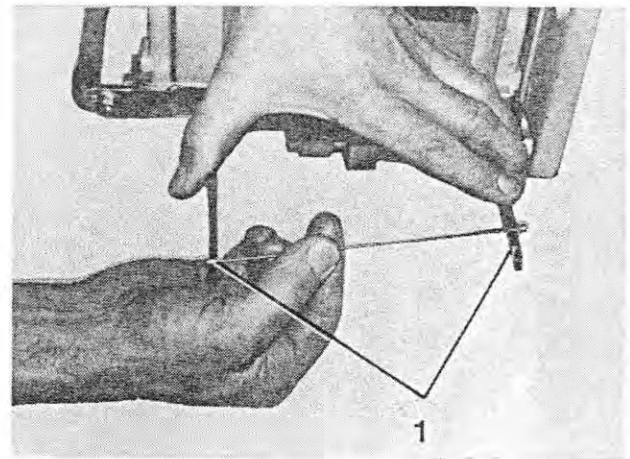


Fig. 268

8 Malfunctions

Incorrect or badly shaped packages

The most frequent source of error is maladjustment of the cell bottom, resulting in incorrect or badly shaped packages. Readjustment is always required when the volume is changed.

The filling cock on the tie rod is adjusted in the factory in such a way that the die lower edge is 6...8 mm above lowest position of the cell bottom. Thus, its roller has no contact with the cell bottom deflector.

Figure 269 shows the proper filling of the packaging pouch prior to beginning folding.

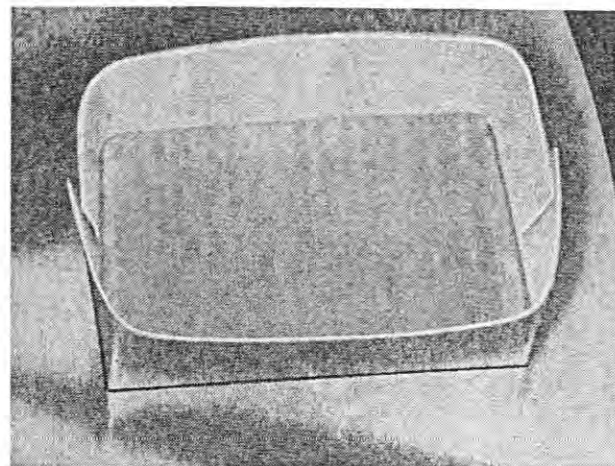


Fig. 269

Figure 270 shows a pyramidal filling.

Cause:

The distance between the die and the cell bottom is too large in lowest position.

Action:

Adjust the package filling by relocating the cell bottom, i.e. turn the setting screw in the direction of the arrow for „low package“. The cell bottom is lifted.

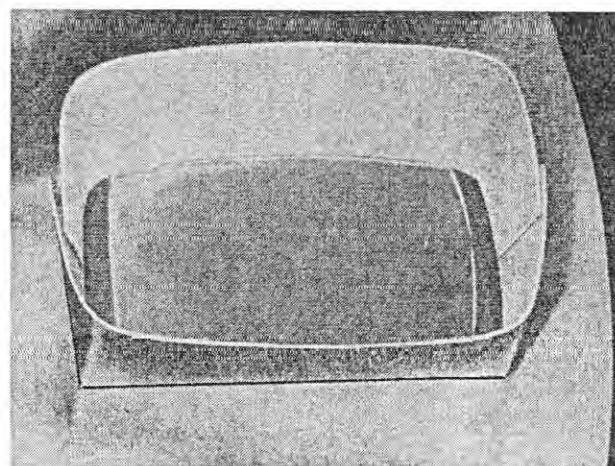


Fig. 270

Figure 271 shows a trough-shaped filling. The package is pulled out of the cell table.

Cause:

The distance between the die and the cell bottom is too small in lowest position.

Action:

Adjust the package filling by relocating the cell bottom, i.e. turn the setting screw in the direction for „high package“. The cell bottom is lowered.



Fig. 271

8.1 Table of malfunctions

Malfunction	Possible cause	Action
The machine cannot be switched on	Protective pane (Fig. 50/2) or wheel box door (Fig. 51/1) is open Defective limit switch	Close the protective pane or wheel box door Check the limit switch or replace it, if necessary
On the wrapping unit Wrapper advance malfunctions	Wrapper is not centered Bearing points of the dispenser axle are not lubricated Improper wrapper storage	Center the wrapper Oil the bearing points Change the wrapper storage. (Refer to section 6.12)
Malfunctions when the wrapper is cut	Dull cutter knife Maladjusted cutter knife	Reverse the cutter knife or replace it, if necessary. (Refer to section 7.6) Adjust the cutter knife. (Refer to section 7.6)
Pouches are pulled out by the pouch stamp on the wrapping station	Product on the pouch Maladjusted stripper	Clean the pouch stamp Adjust the stripper. (Refer to Fig. 188)
Pouches with different side wall heights	Wrapper has too much travel in the wrapper guides	Narrow the wrapper guides (Figure 187/4)
On the filling station Pouches stick to the die in the filling station	Product on the die	Clean the die
Incorrect packages or badly-shaped packages	Maladjusted cell bottom control. (Refer to section 8)	Adjust the cell bottom control (Refer to Figure 189)

Urheberrecht: Für diese technische Unterlage behalten wir uns alle Rechte vor.

Malfunction	Possible cause	Action
Differences in weight (for worm troughs)	Wrong worm ratio	Change the ratio. (Refer to section 6.6.7)
	Worms and rear worm space are not prepared	Prepare the worms and the rear worm space using P3
(for a spring loaded compensating piston)	Wrong spring in the compensating piston	Install a stronger or weaker spring. (Refer to section 6.10)
Cutting wire too hot or not hot enough	Maladjusted temperature	Adjust the temperature. (Refer to section 6.11)
On the folding station		
Improper folds	Maladjusted cell bottom deflector	Adjust the cell bottom deflector. (Refer to section 6.6, item 27)
On the pressing station		
Improper pressing of packages	Maladjusted cell bottom deflector	Adjust the cell bottom deflector. (Refer to section 6.6, item 27)
	Maladjusted inserting depth of the pressing stamp	Using the star grip (Figure 50/3), adjust the inserting depth in such a way that the pressing stamp is inserted into the cell by 2...3 mm
The package is pulled out of the cell	Sticky pressing stamp	Clean the pressing stamp

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General

Every SEW-Motor is despatched only after the specifications on the order have been checked, and a test run. Until installed the motor is to be stored dry and in the same way as the mounting position. For trouble free functioning proper installation and operation are essential.

Installation

The motor is to be installed according to its mounting position and on an even and vibration free base. The shaft ends have tolerances conforming to ISO k6 (up to 50 mm diameter) or ISO m6 (if larger than 50 mm). Before fitting, the corrosion protection must be removed, however care must be exercised to ensure that no solvent penetrates into the bearing. The shaft end has been provided with a centre and a tapped hole, according to DIN 332 version D, which can be used to pull on the transmission elements without imposing harmful forces onto the motor bearings.

Hammer blows and jolts are to be avoided at all times! So as not to load the motor shaft excessively, the motor and the driven machine are to be carefully aligned.

It is absolutely essential to ensure that the ventilation cooling air has unrestricted access.

Electrical connection

When connecting the squirrel cage three phase motor the regulations must be complied with such as the VDE - regulation 0100 covering heavy current installations with rated voltages up to 1000 V, as well as the VDE - regulation 0530 part 1/11. 72. "Regulations covering electrical machines."

1. From the enclosed circuit diagram the wiring of the motor and brake can be ascertained.
2. The incorporated D.C. disc brake is fed from a halfwave rectifier with a zero - diode which is mounted in the terminal box (possible also in a control cabinet). The brake release is triggered electrically by switching off the current, the braking action is carried out mechanical by means of helical springs

Please comply with the factory acts covering the necessary switch gear which control the event of a possible phase failure.

Maintenance:

For the motor it is sufficient if the ventilation passages are kept clean and the bearings are inspected. After 5000 operating hours the bearing nearest to the brake requires to be regreased.

Caution:

Only high temperature silicon greases are permissible such as "Wacker Silicon 511 medium" or "Klueber Unisilicon TK44 N 3". The bearing may only be filled to one third of its free volume between the ball bearings elements.

Resetting of the brake:

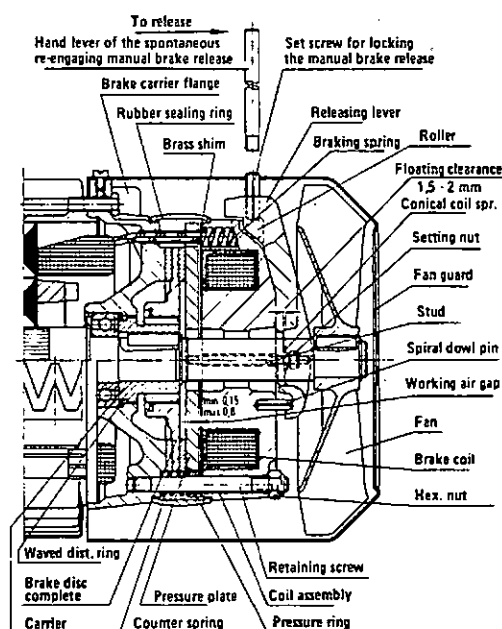
When the working gap exceeds 0,8 mm then the brake is to be reset according to the following working schedule. (see cross-sectional drawing)

1. Remove fan guard, displace the rubber sealing ring, if necessary remove the brake wear grit.
2. Adjust the hex. nuts (see cross-sectional drawing) until the smallest possible air gap of 0,15 to 0,2 mm is attained over the whole circumference. The air gap is checked by means of feeler gages. Thereafter replace rubber sealing ring and fan guard.

Changing the brake torque

By fitting different brake springs and changing their number the braking torque can gradually be decreased in steps. The spring combinations are changed in the following way.

1. Remove fan guard, fan and rubber sealing ring.
2. Remove releasing lever of the manual brake, if available.
3. Loosen the hex. nuts and pull the coil assembly approximately 50 mm backwards.
4. Change the spring sets. It is important to arrange the springs symmetrically.
5. Assemble the brake and set the air gap to the least possible distance. (see resetting of brake)
6. Refit the manual brake release if present (refer to "Fitting and operation of manual brake release.")



Fitting and operation of manual brake release (see cross sectional drawing)

1. Fit both studs securely (even possibly with locktite) into the pressure plate. Fit the spiral dowel pin.
2. Mount releasing lever. For lockable manual brake release, position the roller. For the spontaneous re-engaging manual brake release, the roller is not required. Fit the conical coil springs onto the studs.
3. Mount the setting nuts and tighten until the floating clearance between the completely compressed conical coil spring and the releasing lever is 1,5 - 2 mm.

Caution: This floating clearance must definitely be maintained so that due to the wear of the brake linings the pressure plate can follow up.

4. Fit the fan and fan guard. For the spontaneous manual re-engaging brake, fit the hand lever - for the lockable brake release, fit the set screw.

Please note when applying the manual brake

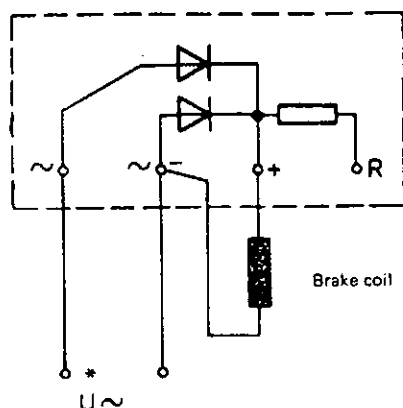
On the lockable manual brake, the brake release action is already accomplished as soon as a resistance is noticed on turning down the set screw.

To disengage the spontaneous manual brake release the normal strength of the hand is sufficient.

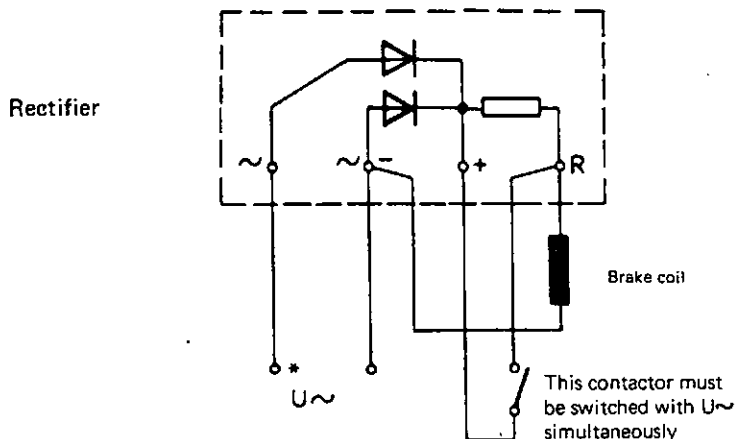
Over exertion can cause the releasing lever to fracture.

Brake Circuits

Normal brake action (switch in AC circuit)



Rapid brake action (simultaneous switching in AC and DC circuits)



$U \sim$ * The voltage to be applied see name plate V_B

The components used in the rectifier units are generously dimensioned and protected against the usual voltage peaks to be found in the industrial power mains.

Testing the rectifier

1. Rectifier under power:

The test is carried out with a moving coil instrument. Measurements are made of the d.c. voltage between the terminals (+) and ($\sim -$), as well as the a.c. voltage between the terminals ($\sim$) and ($\sim -$).

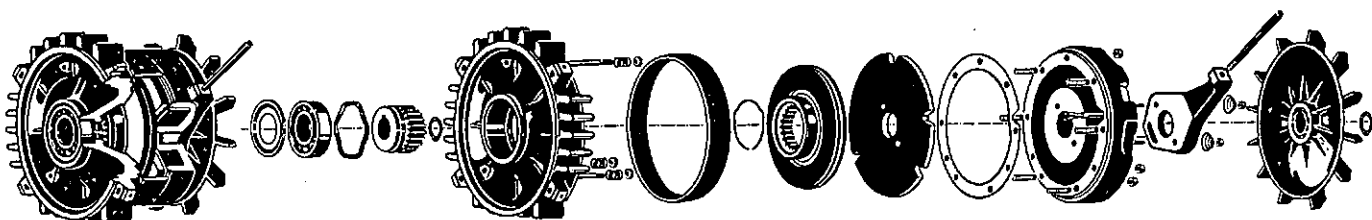
The measured value of the d.c. voltage should be about 45% of the measured value of the imposed a.c. voltage.

2. If the rectifier is not under power:

The test is carried out with a ohmmeter or a d.c. continuity indicator. The rectifier diodes are tested by checking the continuity between ($\sim$) and (+), as well as ($\sim -$) and (+).

The diodes may not have a continuity in the one direction and must have continuity in the opposite direction when the measuring instrument has had its poles changed.

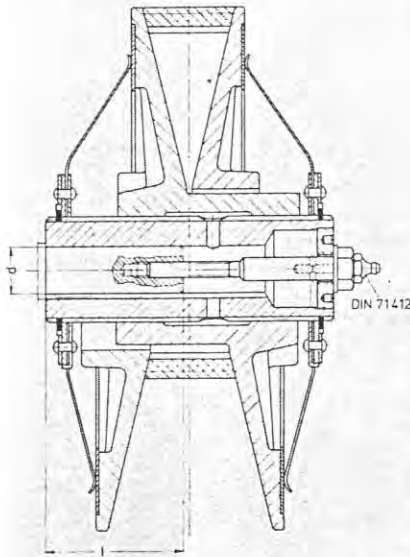
A residual resistance measured in the direction of the continuity results from the diodes threshold voltage.



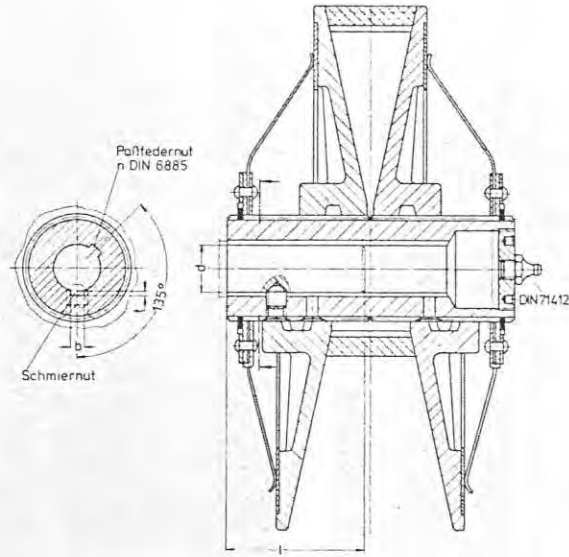
Fault	Cause	Remedy	Fault	Cause	Remedy
Brake does not disengage	Wrong voltage on the rectifier module	Apply correct voltage (check from the name plate)	Motor does not brake	Brake lining completely worn.	Replace brake lining or replace brake disc complete with brake lining
	Rectifier dead	Replace rectifier		The air gap has increased to a point where the setting nuts are run up tight	Reset brake
	The maximum permissible air gap exceeded due to brake lining wear.	Readjust brake. If brake lining is completely wornout, replace the lining		The hand brake is not properly adjusted	The setting nuts must be properly adjusted
	Voltage drop in the mains to high (permissible tolerance $\pm 5\%$)	Ensure correct mains voltage	Braking action is lagging	The brake is actuated with the switching in the A.C. circuit	The brake to be actuated with the switching in the D.C. circuit
				During the reassembly the brass shims were omitted	Fit the brass shims

Montage- und Betriebsanweisung für Simplabelt-Verstellgetriebe 1:3, Typen 11.100 und 11.101 (Bestandteil der Garantiebedingungen)

**Fingerausführung
(Typ 11.101)**



**Normalausführung
(Typ 11.100)**



1. Allgemeines

1.1. Die federbelastete Verstelleisbe wird normalerweise antriebsseitig (auf dem Motorwellenstumpf) und die Gegenisbe abtriebsseitig angeordnet.

1.2. Simplabelt-Verstellgetriebe nicht im Stillstand verstellen.

2. Montage

2.1.1. Die Verstelleisben werden mit einer ISO-Passung H7 oder J7 gefertigt. Für die Wellen, auf die die Verstelleisben montiert werden, ist eine ISO-Passung k6 erforderlich. Die Wellenlänge l und der Wellendurchmesser d der Tabelle dürfen nicht unter- bzw. überschritten werden.

Normalausführung (Typ 11.100)						
Größe	03	05	10	20	30	50
t	2	2,5	3	3	3	5
b	3	3	4	5	6	6
min.	8	8	14	16	18	25
d Ø Stand.	11	14	19	24	28	38
max.	12*	14*	20*	25*	28	48*
l min.	25	30	35	40	50	75

Fingerausführung (Typ 11.101)							
Größe	10	20	30	40/45	55	65	80
min.	14	16	18	20	25	32	38
d Ø Stand.	19	24	28	28	38	38/42	42/48
max.	20*	25*	28	35*	45*	48*	48
l min.	35	40	50	60	75	80	80
l max.	50	60	75	85	95	110	110

* Bei max. Bohrung ist flache Paßfedernut nach DIN 6885 Bl. 3 erforderlich.

2.1.2. Die Verstelleisben sollten grundsätzlich fertiggebohrt bezogen werden, da wir dann die Gewähr für die einwandfreie Rundlauf- und Wuchtqualität übernehmen können. Für die Verstelleisben in Normalausführung (Typ 11.100) ist nach dem Fertigbohren neben der Paßfedernut eine Schmiernut vorzusehen. Bei Verstelleisben in Fingerausführung (Typ 11.101) ist diese Schmiernut nicht erforderlich.

2.2. Zu beachten ist, daß die Verstelleisben bis einschl. Gr. 30 wahlweise mit Gewindestift oder Spannschraube, und ab Gr. 40 generell durch Spannschraube axial gesichert werden müssen. Der Kopf des Gewindestiftes darf nicht über den Fußkreis der Korbverzahnung hinausragen, damit die Tellerscheibe nicht blockiert wird.

2.3. Die Paßfeder im Wellenstumpf muß gegen axiale Verschiebung gesichert sein.

2.4. Verstell- und Gegenseisbe sind auszurichten.

2.5. Verstellorgane (z. B. Motorschlitten) sind so einzustellen, daß der

Riemen nicht über den Scheibenrand hinaus- bzw. nicht auf dem Scheibenrand auflaufen kann.

2.6. Falls aus besonderen Gründen die Verstelleisbe einmal demontiert werden sollte, ist beim Zusammenbau zu beachten, daß die Zeichen 0-0 und 1-1 von korbverzahnter Nabe und Tellerscheiben übereinstimmen.

3. Wartung

3.1. Um eine hohe Lebensdauer der Verstelleisben zu gewährleisten, ist die Grundschiemung nach Montage der Scheiben unbedingt notwendig.

Bitte, deshalb so lange Fett einpressen, bis Fettaustritt an der Korbverzahnung erfolgt. Der Schmierfilm in der Verzahnung muß immer gewährleistet sein.

3.2. Nachschmierfristen:

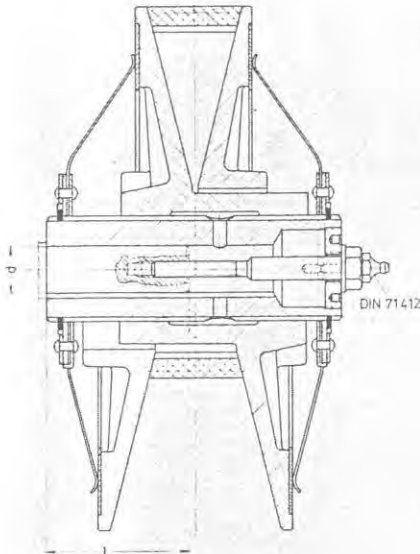
bei 8-Stunden-Betrieb 1 x wöchentlich
bei 16-Stunden-Betrieb 2 x wöchentlich
bei 24-Stunden-Betrieb 3 x wöchentlich

Zur Schmierung empfehlen wir nachfolgend genannte oder gleichwertige Fette

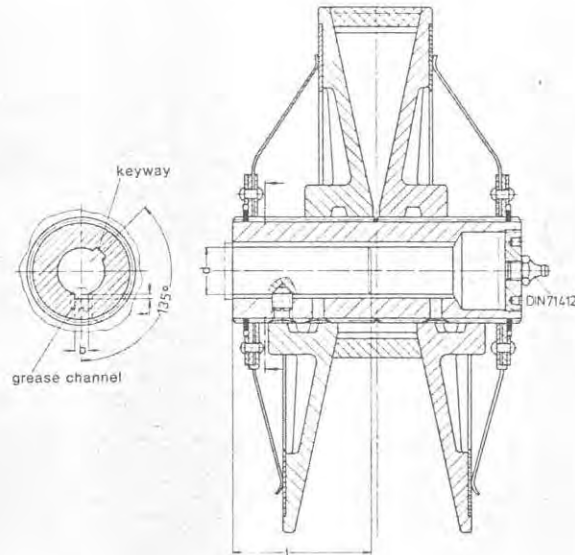
BP	Esso	Mobil	Shell
BP ENERGREASE RBB 2 oder BP ENERGREASE LS 2	ANDOC B oder BEACON 2	GARGOYLE FETT 1200 MUBILUX 2	SHELL FETT FP 4 oder SHELL Alvania Fett R 2

Mounting and maintenance instructions for Simplabelt variable-speed drives, design 1:3, types 11.100 and 11.101 (Part of guarantee conditions)

Finger design
(type 11.101)



Standard design
(type 11.100)



1. General

1.1. Spring-loaded variable-speed pulleys are normally fitted to the drive side (motor shaft), and fixed pulleys to the driven side.

1.2. Do not adjust the Simplabelt variable-speed drive while the unit is stationary.

2. Assembly

2.1.1. The bores of the variable-speed pulleys are manufactured to ISO tolerances H7 or J7. An ISO tolerance of k6 is necessary for shafts, onto which the variable-speed pulleys are assembled. The maximum and minimum shaft lengths l or diameters d in the table below must not be exceeded.

Normal design (type 11.100)							
Size	03	05	10	20	30	50	
t	2	2.5	3	3	3	5	
b	3	3	4	5	6	6	
min.	8	8	14	16	18	25	
$d \varnothing$ std.	11	14	19	24	28	38	
max.	12*	14*	20*	25*	28	48*	
l min.	25	30	35	40	50	75	

Finger design (type 11.101)							
Size	10	20	30	40/45	55	65	80
min.	14	16	18	20	25	32	38
$d \varnothing$ std.	19	24	28	28	38	38/42	42/48
max.	20*	25*	28	35*	45*	48*	48
l min.	35	40	50	60	75	80	80
l max.	50	60	75	85	95	110	110

* For max. bores a shallow keyway acc. to DIN 6885, sheet 3 is necessary.

2.1.2. Variable-speed pulleys with finished bores are certified as regards concentricity and balance. Should it be necessary to supply variable-speed pulleys of the normal design (type 11.100) in the pilot bored condition, a grease channel in addition to the keyway must be provided after finish boring. For variable-speed pulleys of the finger design (type 11.101), this grease channel is not required.

2.2. Please note that variable-speed pulleys up to and including size 30 must be axially secured with set screw or an axial tightening screw. For size 40 and above, an axial tightening screw must be used. The set screw must not protrude above the root diameter of the serrated hub, otherwise axial movement of the pulley flange will not be possible.

2.3. The key of the shaft must be axially secured.

2.4. Variable-speed pulleys and fixed pulleys must be aligned.

2.5. When fitting speed adjustment devices (i.e. a motor slide base), care must be taken to ensure that the wide section

V-belt does not run beyond the rim of the pulley, and also that it does not bottom on the flange or the hub.

2.6. If, for special reasons, the variable-speed pulley must be dismantled, care should be taken to ensure that it is assembled in its original position (relationship). The identification marks 0-0 and 1-1 on the serrated hub and the pulley flange must be in alignment.

3. Servicing

3.1. In order to guarantee a long operating life of the variable-speed pulleys, the initial lubrication is imperative. After assembly, fill the pulley bore cavity with grease, until it seeps out around the pulley serrations. A lubrication film on the serrations must be guaranteed.

3.2. Lubrication intervals

At 8-hour operation	once per week
At 16-hour operation	2 x per week
At 24-hour operation	3 x per week

For lubrication the following greases are recommended, or greases of the same quality.			
BP ENERGREASE RBB 2 or BP ENERGREASE LS 2	ANDOK B or BEACON 2	GARGOYLE FETT 1200 MUBILUX 2	SHELL FETT FP 4 or SHELL Alvania Fett R 2

Position Reference Repère	Bezeichnung	Designation	Désignation
3	Ansicht der Maschine von der Einwickler-Zuführ-seite	View of the machine in the direction of the wrapper feed	Vue de la machine du côté enfilement de papier
4	Ansicht der Maschine von der Antriebsseite	View of the machine from the drive side	Vue de la machine du côté commande
5	Einwicklerapparat-Bedi-nungsseite, Abschie-ber	Wrapper unit service side, delivery, off-transport	Côté d'asservissement appareil à papier, poussoir, tapis transport
6	Faltung	Folding	Pliage
7	Einwicklerapparat, Zellentischseite	Wrapper unit from rotary table side	Appareil à papier, côté table revolver
9	Einwicklerapparat, Zellentischseite	Wrapper unit from rotary table side	Appareil à papier, côté table revolver
10	Antrieb zum Dosierzylinder, Zellenbodenverstellung	Drive of the dosing cylinder, cell base and adjustment	Commande du cylindre de dosage, réglage fonds de cellule
12	Dosierung, Einzelteile	Dosing individual parts	Dosage, pièces détachées
18	Einwicklerapparat, An-sicht von der Bedie-nungsseite, Perforie-rung	Wrapper unit, view from the service side, perforations	Appareil à papier, Vue du côté d'asservissement, Perforation

<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Großes Handrad	Large hand wheel	Grande manivelle
2	Schalthebel	Starting lever	Levier de commande
3	Handrad	Hand wheel	manivelle
4	Stellrad	Positioning wheel	manivelle de serrage
5	Befehlsgerät	Control unit	appareil de commande
6	Schutzwand	Perspex guard	protection
7	Stellspindel	Positioning spindle	vis molletée
8	Ausgleichkolben	Balancing piston	piston compensateur
9	Zuführpartie	Feed trough unit	partie d'amenage
10	Schalthebel	Starting lever	levier de commande
11	Indexbolzen	Indexing pin	boulon d'indice
12	Indexbolzen	Indexing pin	boulon d'indice
13	Stütze	Support	appui

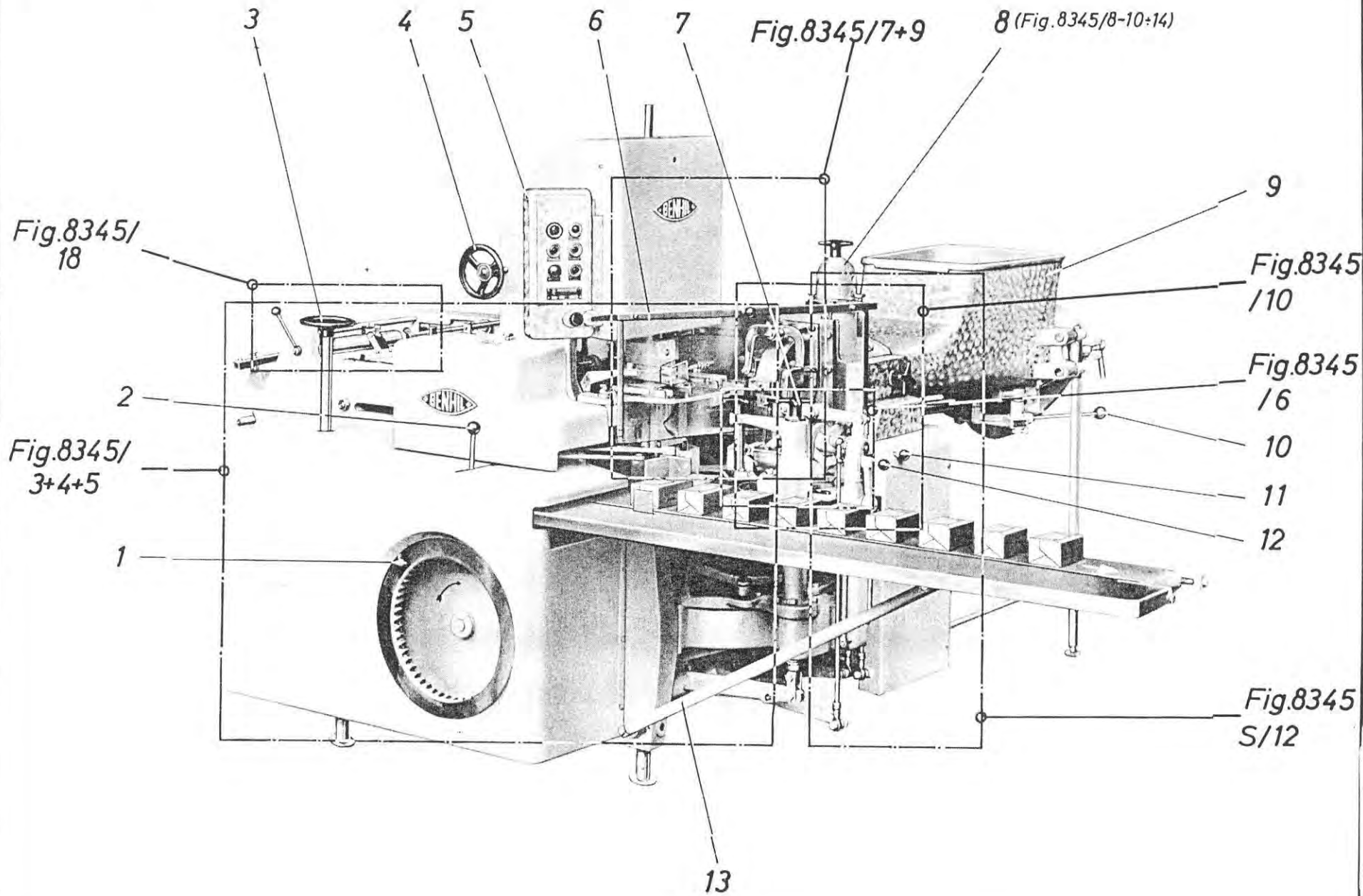


Fig. 8345 S/1

<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
13	Dosierung, Einwickler- apparat von der Dosier- seite	Dosing wrapper unit from the dosing side	Dosage, appareil à pa- pier et son vue de côté dosage
14	Abfüllhahn-Dosierzylin- der- und Dosierkolben- antrieb	Depositor, dosing cylin- der- and dosing piston drive	Bec verseur-cylindre de dosage et commande piston dosage
15	Einwicklerapparat von der Dosierseite	Wrapping unit from the dosing side	Appareil à papier du côté dosage
16	Schaltkasten	Control panel	Boîte de commande
17	Einwicklerapparat, An- sicht von oben	Wrapping unit view from above	Appareil à papier, vue de dessus
71	Trog mit Förderschnek- kenantrieb	Trough with feed scroll drive	Trémie avec commande des vis de poussée
73	Förderschneckenantrieb, Wechselräder	Feed scroll, drive, change glass	Commande des vis de poussée, roue d'échange
74	Förderschneckenantrieb, Kupplung	Feed scroll drive coupling	Commande des vis de poussée, embrayage

Fig.
8311S/71
8311S/73

Fig.
8311S/74

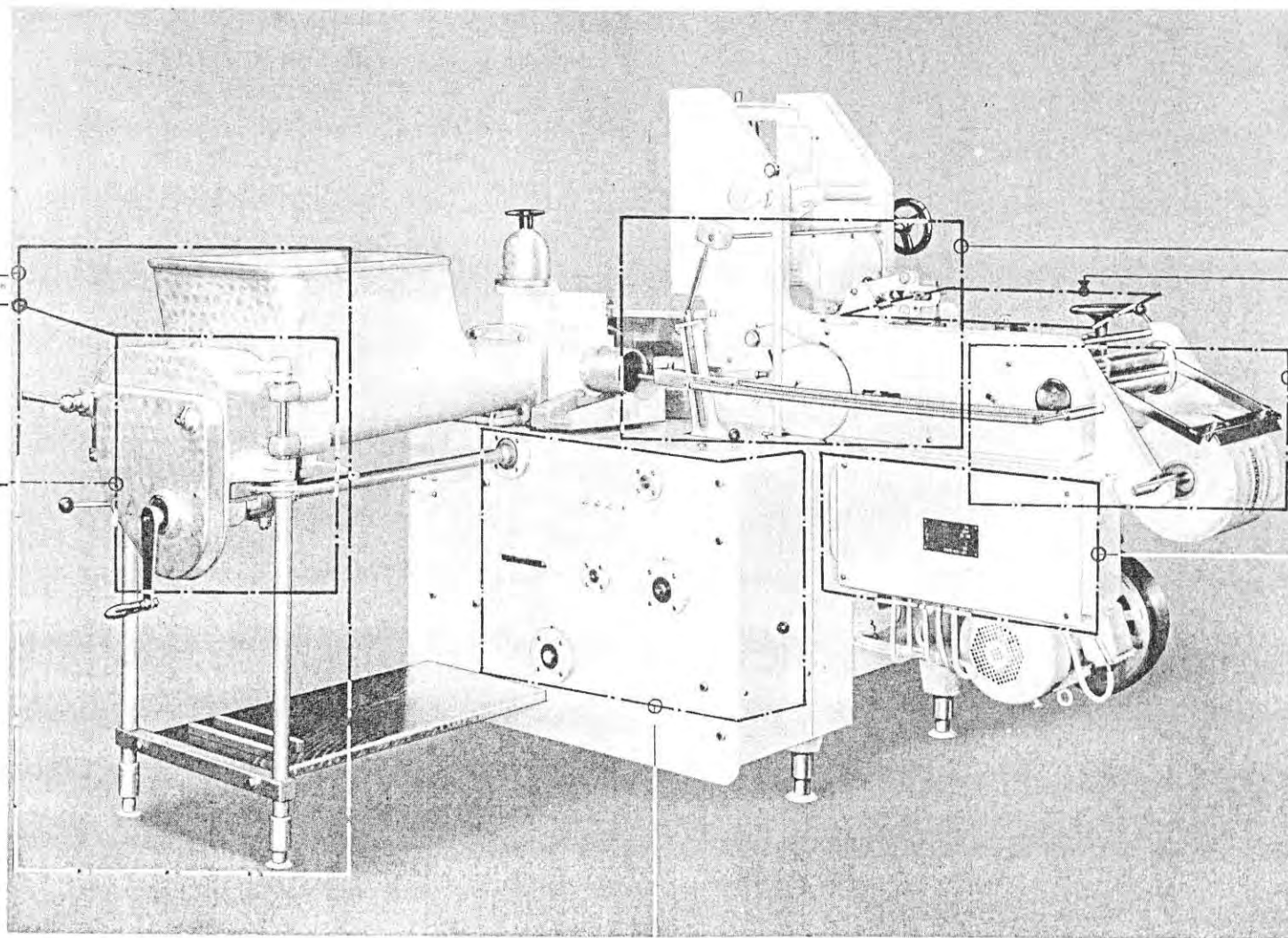


Fig.
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8345/17

Fig.
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Fig.
8345/16

Fig.8345/14

Fig. 8345 S/12



Fig. 8311 S / 71

- Trog mit Förderschneckenantrieb
- Trough with Drive of Feedworms
- Trémie avec commande des vis de poussée

Position Reference Repère	Bezeichnung	Designation	Désignation
1	Traverse	Bracket	traverse
2	Traverse	Bracket	traverse
3	Stehachse, links	Vertical Axle, left	arbre vertical, à gauche
4	Auflage	Support	appui
5	Schalthebel	Control Lever	levier de commande
6	Schalthebelstange	Control-Lever Rod	tige de levier de commande
7	Kupplungsmuffe	Clutch Sleeve	manchon d'embrayage
8	Kegelgriff	Conical Handle	poignée
9	Schwenkbolzen	Slewable Bolt	boulon oscillant
10	Kugelring	Ball Ring	anneau à billes
11	Spannring	Tension Ring	anneau de serrage
12	Mitnehmerbolzen	Driving Bolt	boulon d'entraînement
13	Rolle	Roll	galet
14	Schneckentrog	feed worm trough	auge avec vis de poussée
15	Förderschnecke, links	feedworm, left	vis de poussée, à gauche
16	Förderschnecke, rechts	feedworm, right	vis de poussée, à droite
17	Klaue, lose	Claw, loose	griffe, mobile
18	Verschlußschraube	Closing Screw	vis de fermeture
19	Zahnrad	Gear	roue dentée
20	Lagerschale	Bearing Bush	coussinet
21	Förderschnecken- antrieb, vollständig (Einzelteile siehe Fig. 8311 S / 72)	Drive of Feedworms, complete (components see fig. 8311 S/72)	commande des vis de poussée, complète (pièces séparées voir fig. 8311 S / 72)
22	Stopfen mit Rand	Plug with Rim	bouchon avec bord
23	Klaue, fest	Claw, fixed	griffe, fixe
24	Ballengriff z. Kurbel	Ball Knob for Crank	poignée bombée pour la manivelle
25	Handkurbel	Hand Crank	manivelle
26	Stehachse, rechts	Vertical Axle, right	arbre vertical, à droite
27	Zwischenmutter	Intermediate Nut	intermédiaire écrou
28	Überwurf	Cap	couverture
29	Stellfuß	Adjustable Foot	pieds de la machine
30	Maschinenfuß-Untersatz	Support of machine foot	piédestal pour ces piéds

Fig. 8311S/71

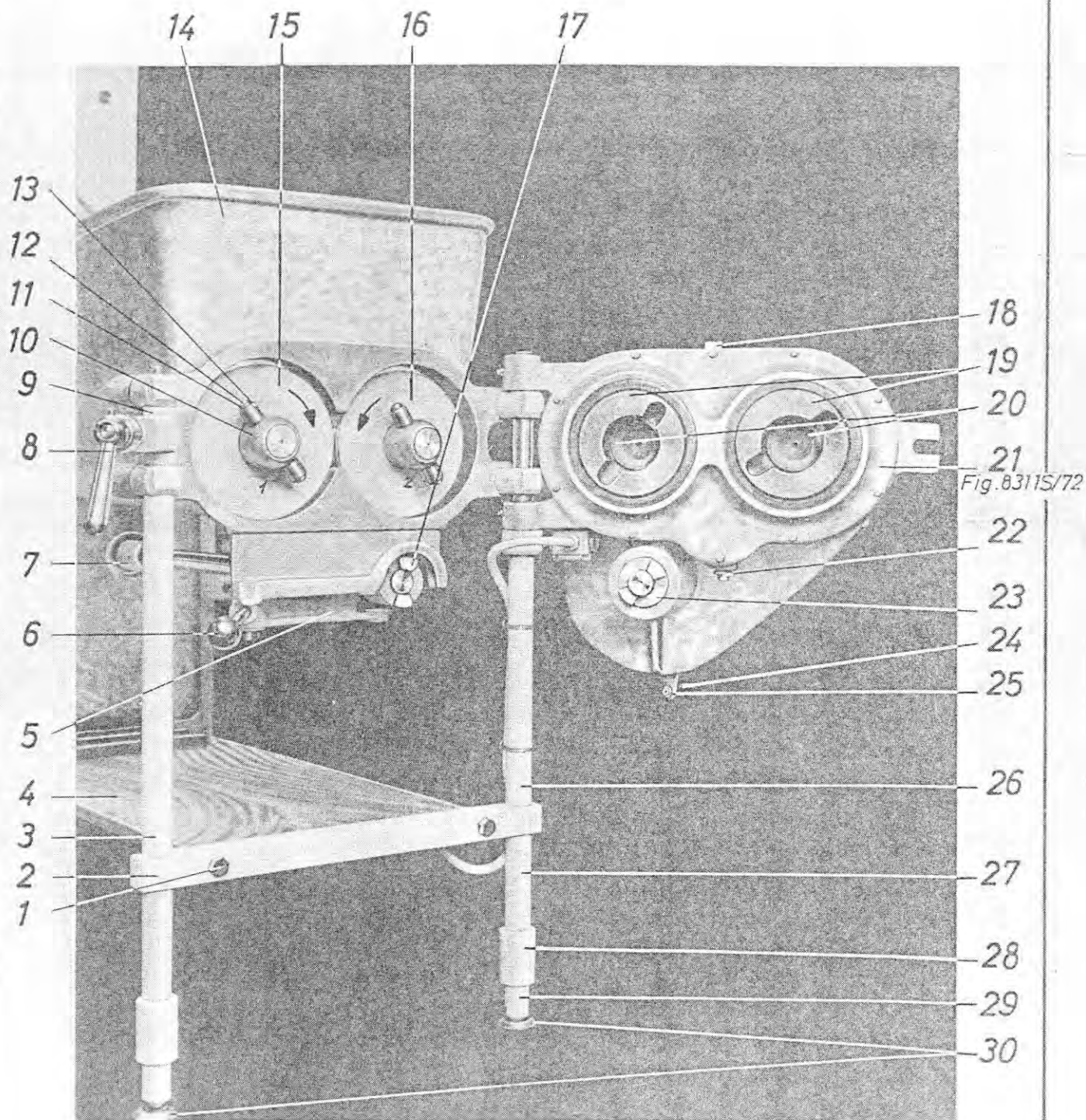


Fig. 8311S/72



Fig. 8311 S / 72

- Förderschneckenantrieb, Einzelteile
- Drive of Feedworms, components
- Commande des vis de poussée, pièces détachées

Position Reference Repère	Bezeichnung	Designation	Désignation
1	Wellendichtung 150 x 180 x 15	Shaft seal 150 x 180 x 15	joint 150 x 180 x 15
2	Sicherungsring 35 x 1,5	Safety Ring 35 x 1,5	Bague de sécurité 35 x 1,5
3	Wellendichtung 35 x 72 x 12	Shaft Seal 35 x 72 x 12	joint 35 x 72 x 12
4	Deckel	Cover	Couvercle
5	Rillenkugellager 35 x 72 x 17	Grooved Ball Bearing 35 x 72 x 17	roulement à bille rainuré 35x72x17
6	Druckfeder	Pressure Spring	ressort de pression
7	Paßfeder	Fitting Key	ressort de serrage
8	Welle	Shaft	axe
9	Wellendichtung 50 x 72 x 10	Shaft Seal 50 x 72 x 10	joint 50 x 72 x 10
10	Klaue	Claw	griffe
11	Räderkasten	Gear Box	boîte de roues dentées
12	Deckel	Cover	couvercle
13	Sprengring	Spring ring	bague d'ecartement
14	Sicherungsring 35 x 1,5	Safety Ring 35 x 1,5	bague de sécurité 35 x 1,5
15	Nilos-Ring	Nilos Ring	joint Nilos
16	Lagerschale	Bearing Bush	coussinet
17	Zahnrad	Gear	roue dentée
18	Verschlußschraube	Locking Screw	vis de fermeture
19	Ritzelwelle	Pinion Shaft	arbre de pignons
20	Stopfen mit Rand	Plug with Rim	bouchon avec bord
21	Deckelöler	Cover Oiler	graisseur de couvercle

Fig. 8311S/72

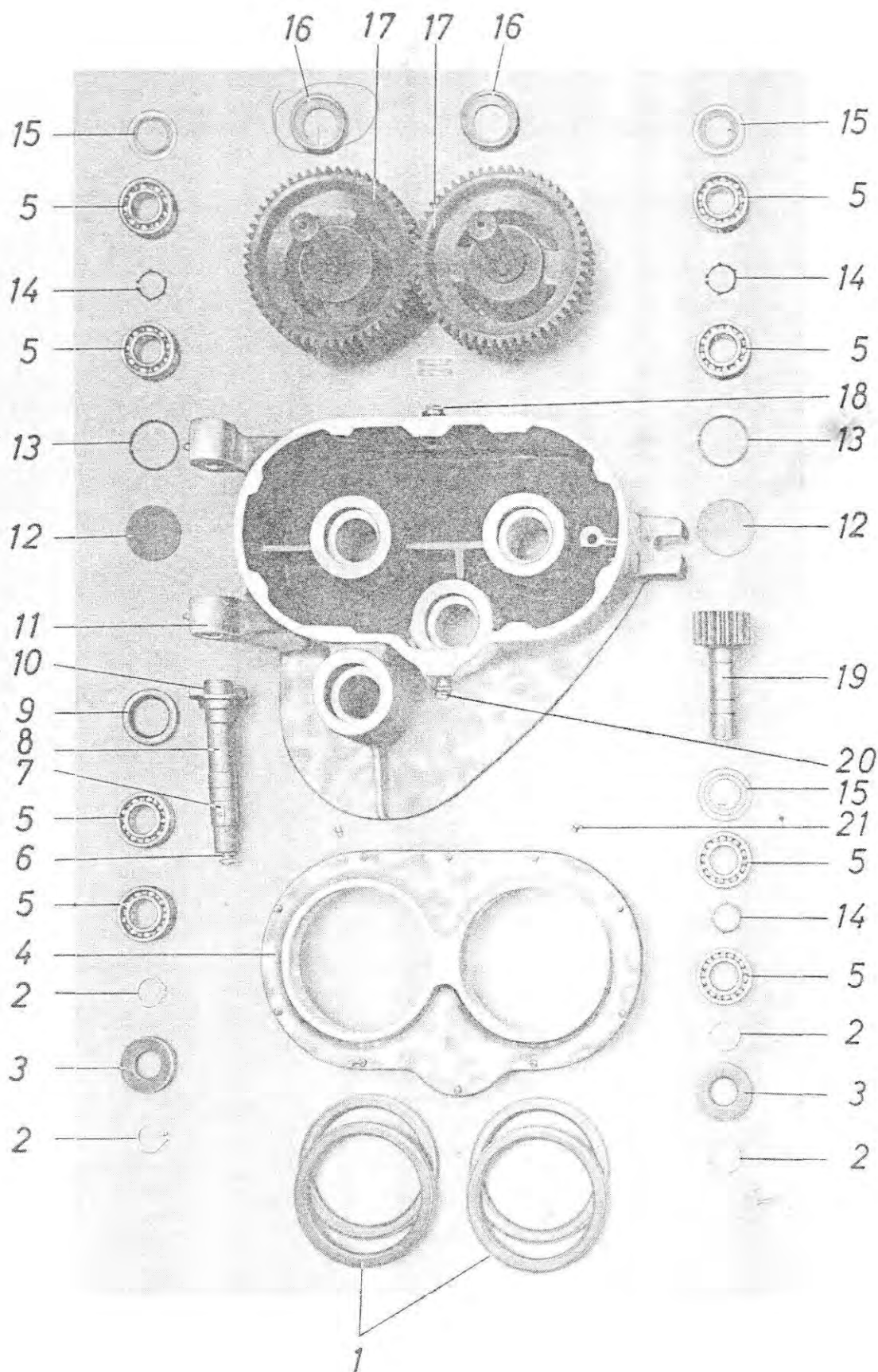




Fig. 8311 S / 73

- Förderschneckenantrieb, Wechselräder
- Drive of Feedworms, Change Wheels
- Commande des vis de poussée, roue d'échange

Position Reference Repère	Bezeichnung	Designation	Désignation
1	Anschlagbolzen	Stop Bolt	boulon de butée
2	Schutzhaube	Guard Cover	capet de protection
3	Griffbolzen	Handle bolt	boulon d'attache
4	Gelenkstück	Joint piece	segment d'articulation
5	Bolzen	Bolt	boulon
6	Ritzelwelle	Pinion Shaft	arbre à pignons
7	Wechselrad (getrieben)	Change Wheel (driven)	roue d'échange (commandée)
8	Vorreiberklemme	Catch Clamp	borne de tourniquet
9	Stellring	Set Collar	anneau de serrage
10	Antriebswelle	Drive Shaft	arbre de commande
11	Welle	Shaft	arbre
12	Wechselrad (treibend)	Change Wheel (driving)	roue d'échange (commandant)

Fig.8311S/73

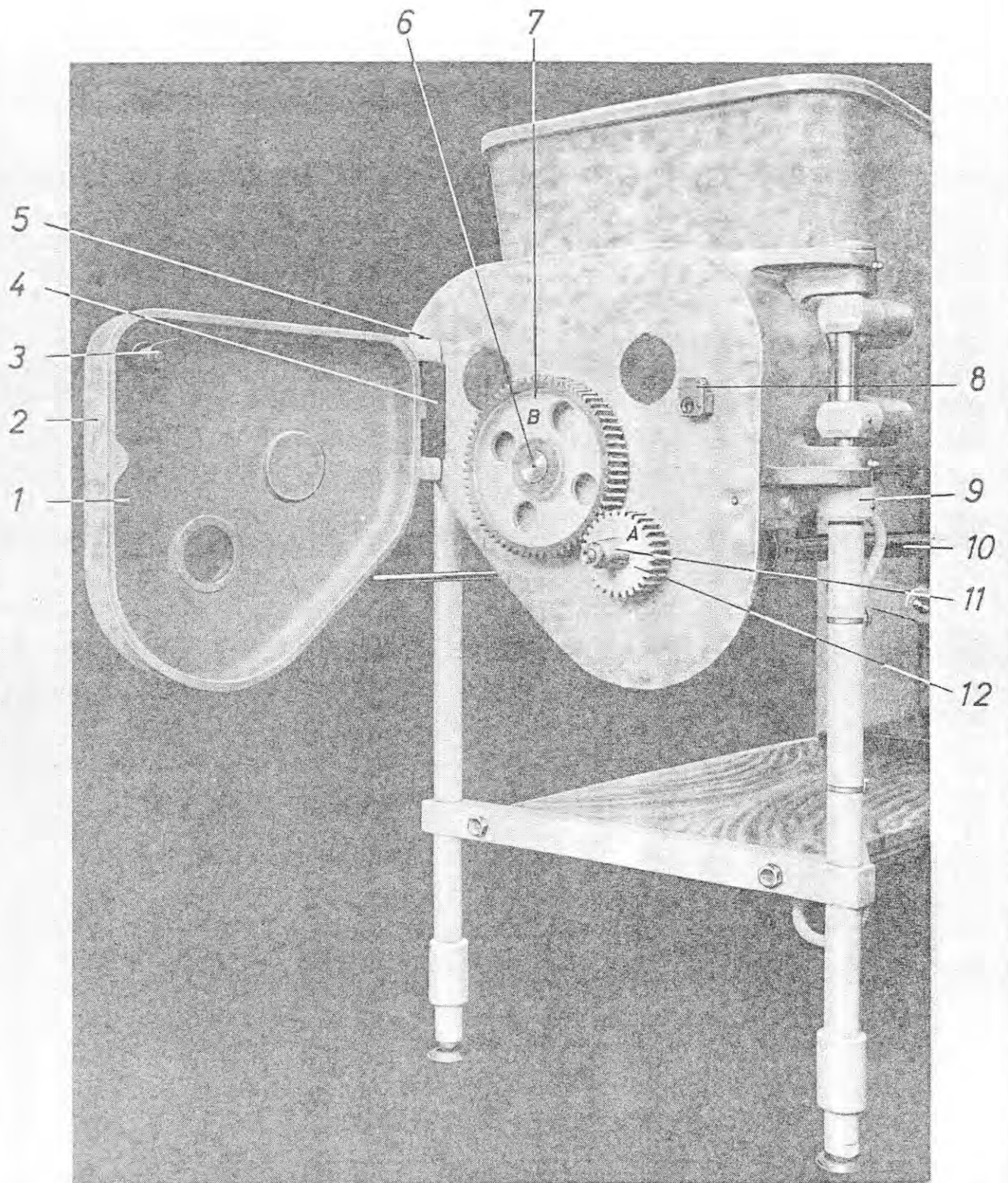


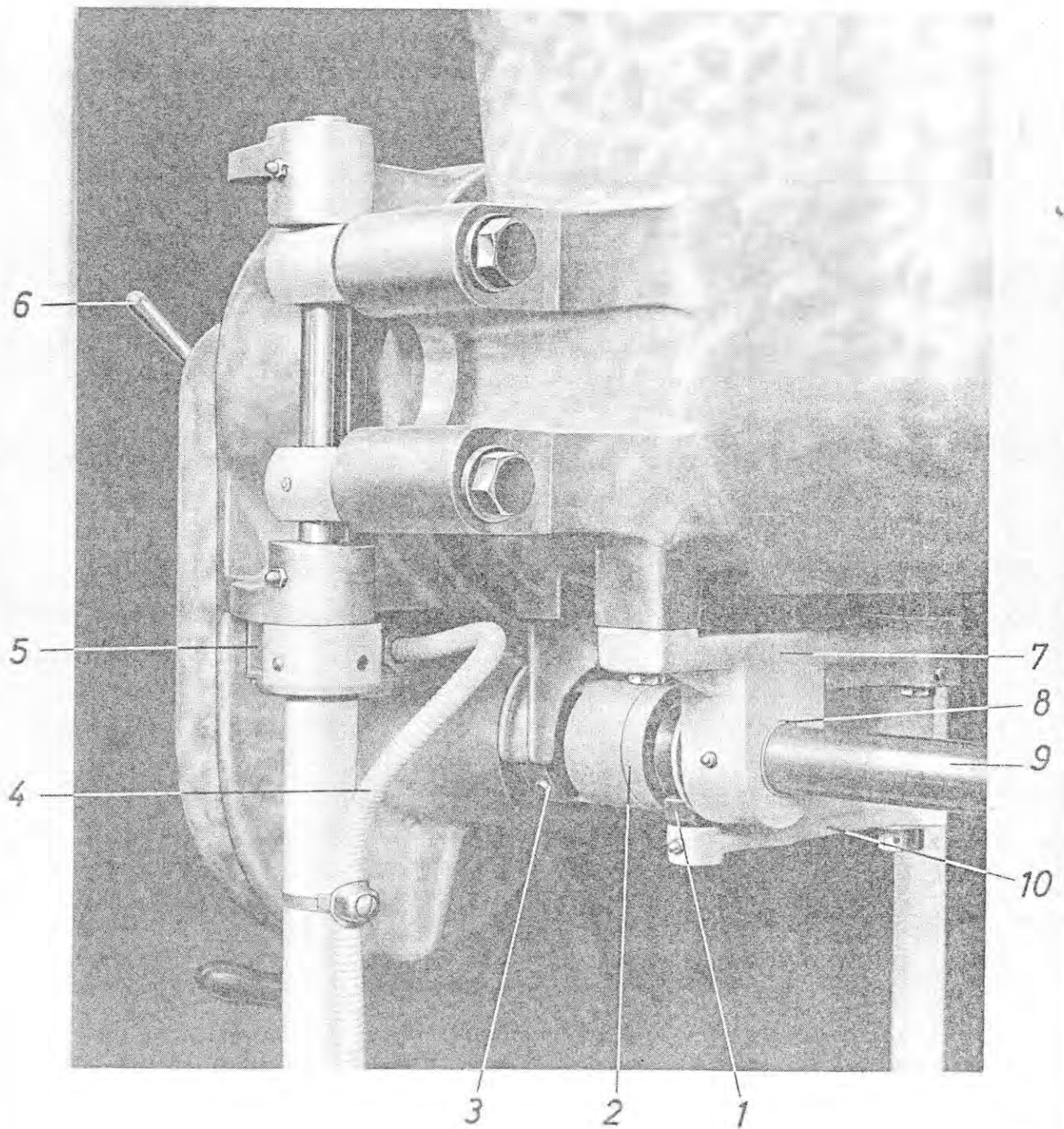


Fig. 8311 S / 74

- Förderschneckenantrieb, Kupplung
- Drive of Feedworms, Clutch
- Commande des vis de poussée, embrayage

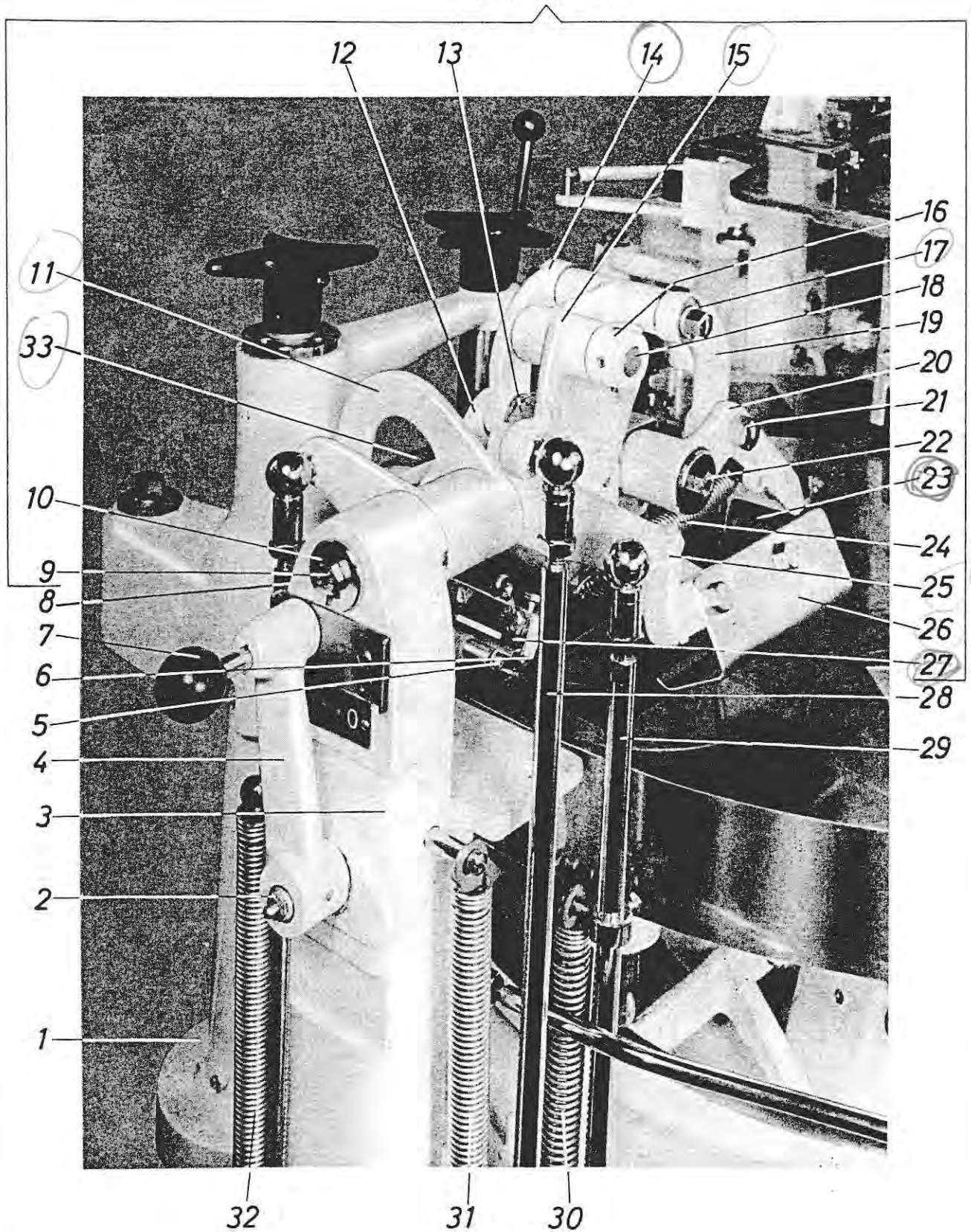
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Kupplungsstein	Clutch Block	pièce d'embrayage
2	Klaue, lose	Claw, loose	griffe, mobile
3	Klaue, fest	Claw, fixed	griffe, fixe
4	Kabelschlauch	Cable Hose	tuyau de cable
5	Endschalter	Limit Switch	interrupteur final
6	Griffbolzen	Handle Bolt	poignée
7	Stützlager	Step Bearing	palier d'appui
8	Lagerbuchse 35 x 40 x 40	Bearing Bush 35 x 40 x 40	bague palier 35 x 40 x 40
9	Antriebswelle	Drive Shaft	Arbre de commande
10	Schalthebel	Switch Lever	levier de commande

Fig. 8311S/74

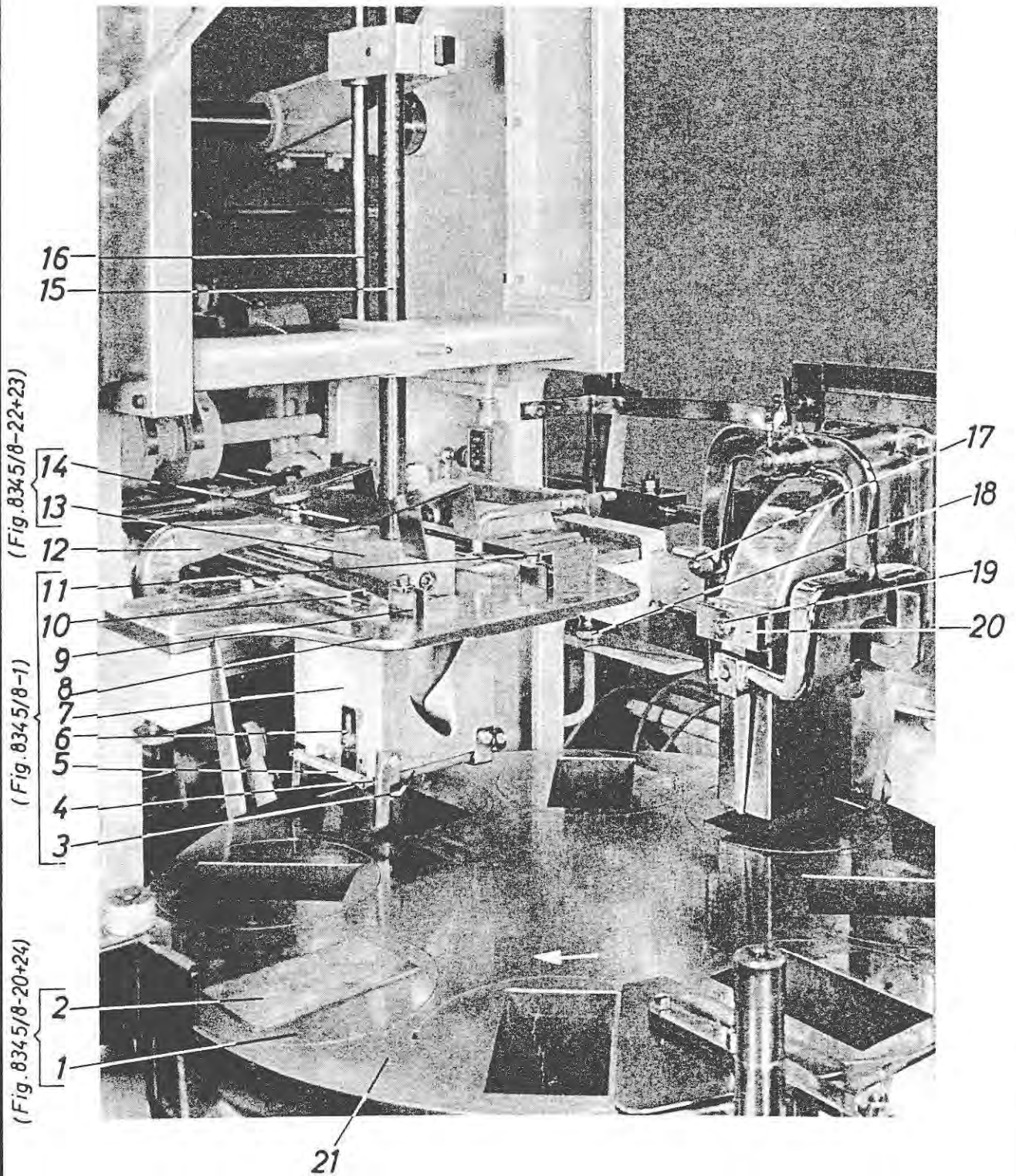


Position Reference Repère	Bezeichnung	Designation	Désignation
1	Flanschlager	Flange bearing	Bossage du bride
2	Bolzen	Bolt	boulon
3	Lagerbock	Bracket support	support
4	Hebel (zur Dosierzylinderabschaltung)	Lever (to dosing cylinder stop)	levier (pour arrêter le cylindre de dosage)
5	Bolzen	Bolt	boulon
6	Bolzen	Bolt	boulon
7	Indexbolzen	Indexing handle	boulon d'indice
8	Zugstange zu Teil 11	Tension rod to Part 11	tige pour pièce no. 11
9	Schraube zum Faltkopf	Screw to folder head	vis pour embout de pliage
10	Scheibe zu Teil 9	Disc to Part 9	disque pour pièce no. 9
11	Hebel zu Teil 33	Lever to Part 33	levier pour pièce no. 33
12	Hebel zu Teil 27	Lever to Part 27	levier pour pièce no. 27
13	Exzenterbolzen	Eccentric bolt	boulon excentrique
14	Hebel	Lever	levier
15	Hebel	Lever	levier
16	Lagerung	Bearing	palier
17	Scheibe	Disc	disque
18	Bolzen	Bolt	boulon
19	Hebel	Lever	levier
20	Hebel zu Teil 23	Lever to Part 23	levier pour pièce no. 23
21	Hutmutter	Cap nut	écrou
22	Sechskantschraube	Hexagon screw	vis à 6 pans
23	Einstech-Klappfalter, hinten	Insert flap folder, back	plieur, derrière
24	Zugfeder zu Teil 23	Tension spring to Part 23	ressort de traction pour pièce 23
25	Hebel zu Teil 26	Lever to Part 26	levier pour pièce 26
26	1. Schließfalter	1 Closing folder	1 ^{er} plieur de fermeture
27	Einstech-Klappfalter, vorne	Insert flap folder, front	plieur du devant
28	Zugstange zu Teil 15	Tension rod to Part 15	tige pour pièce 15
29	Zugstange zu Teil 25	Tension rod to Part 25	tige pour pièce 25
30	Zugfeder zu Teil 29	Tension spring to Part 29	ressort de traction pour pièce 29
31	Zugfeder zu Teil 28	Tension spring to Part 28	ressort de traction pour pièce 28
32	Zugfeder zu Teil 8	Tension spring to Part 8	ressort de traction pour pièce 8
33	2. Schließfalter	Second closing folder	2 ^{ième} plieur de fermeture

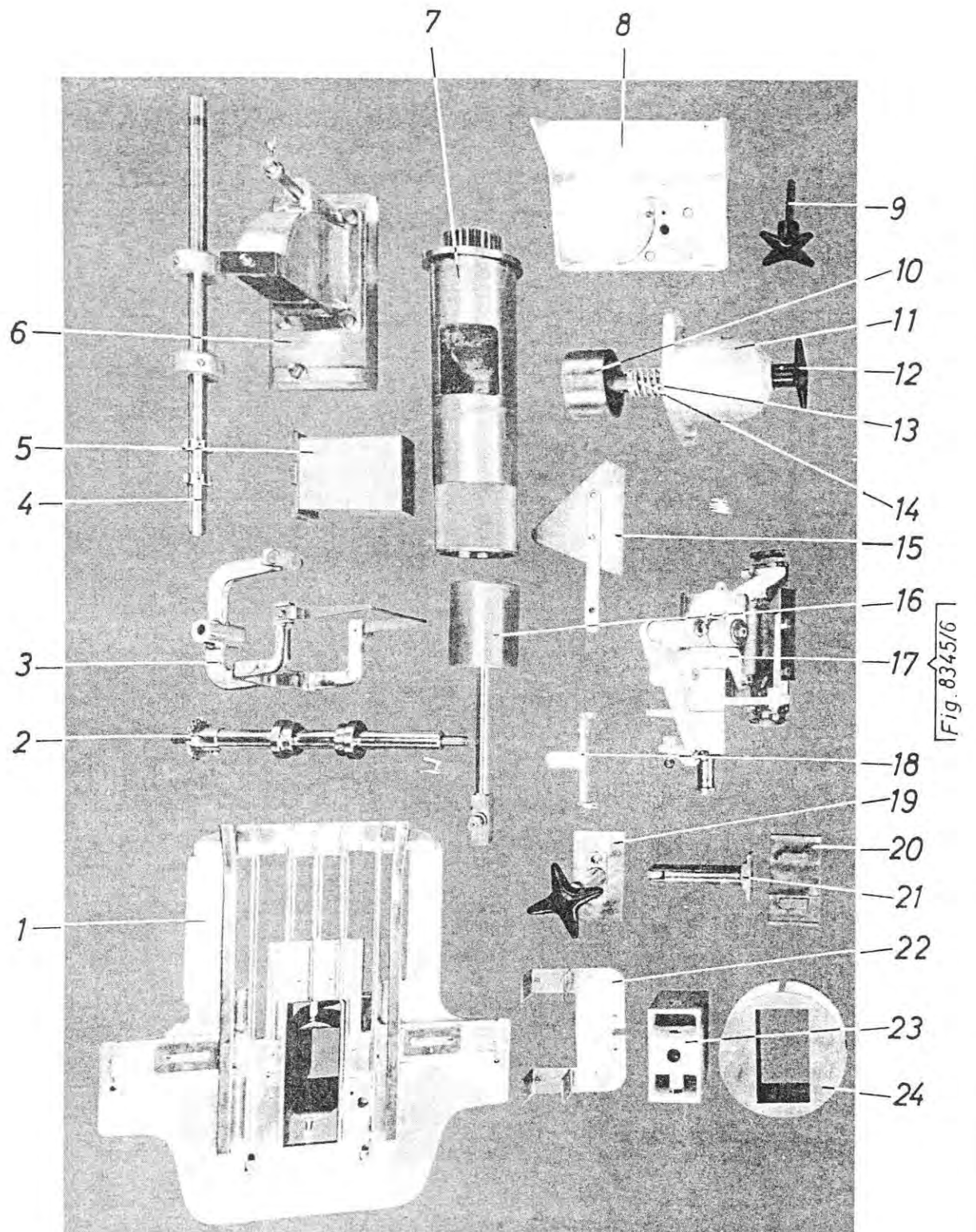
(Fig. 8345/6-17)



Position Reference Repère	Bezeichnung	Designation	Désignation
1	Einsatzzelle	Inserting cell	cellule de remplacement
2	Zellenboden	Cell base	fond de cellule
3	Andrückrolle	Pressure roller	rouleau de pression
4	Rollenachse	Roller axle	arbre de rouleau
5	Zugfeder zu Teil 3	Tension spring to Part 3	ressort de traction pour pièce 3
6	Hüllenabstreifer	Stripper	reclette de papier
7	Faltkasten	Wrapper forming unit	boîte de pliage
8	Falzkasten	Folding plate	plaque de pliage
9	Einwickleranschlag	Wrapper stop	butée de papier
10	Einwicklerführung, links	Wrapper guide, left	guidage de papier à gauche
11	Einwicklerführung, rechts	Wrapper guide, right	guidage de papier à droite
12	Halter zu Teil 14	Bracket to Part 14	support pour pièce 14
13	Faltstempel	Forming block	poinçon de pliage
14	Vorfalzer, vollständig	Prefolder complete	pré-plieur, complet
15	Faltstempelstange	Forming rod block	colonne de poinçon de pliage
16	Führungsstange	Guide rod	colonne de guidage
17	Sechskantmutter	Hexagon nut	écrou à 6 pans
18	Kordierte Schraube zu Teil 8	Knurled screw to Part 8	vis molletée pour pièce 8
19	Sechskantmutter zu Teil 20	Hexagon nut to Part 20	écrou à 6 pans pour pièce 20
20	Druckleiste	Pressure block	listeau de pression
21	Zellentisch	Rotating table	table revolver

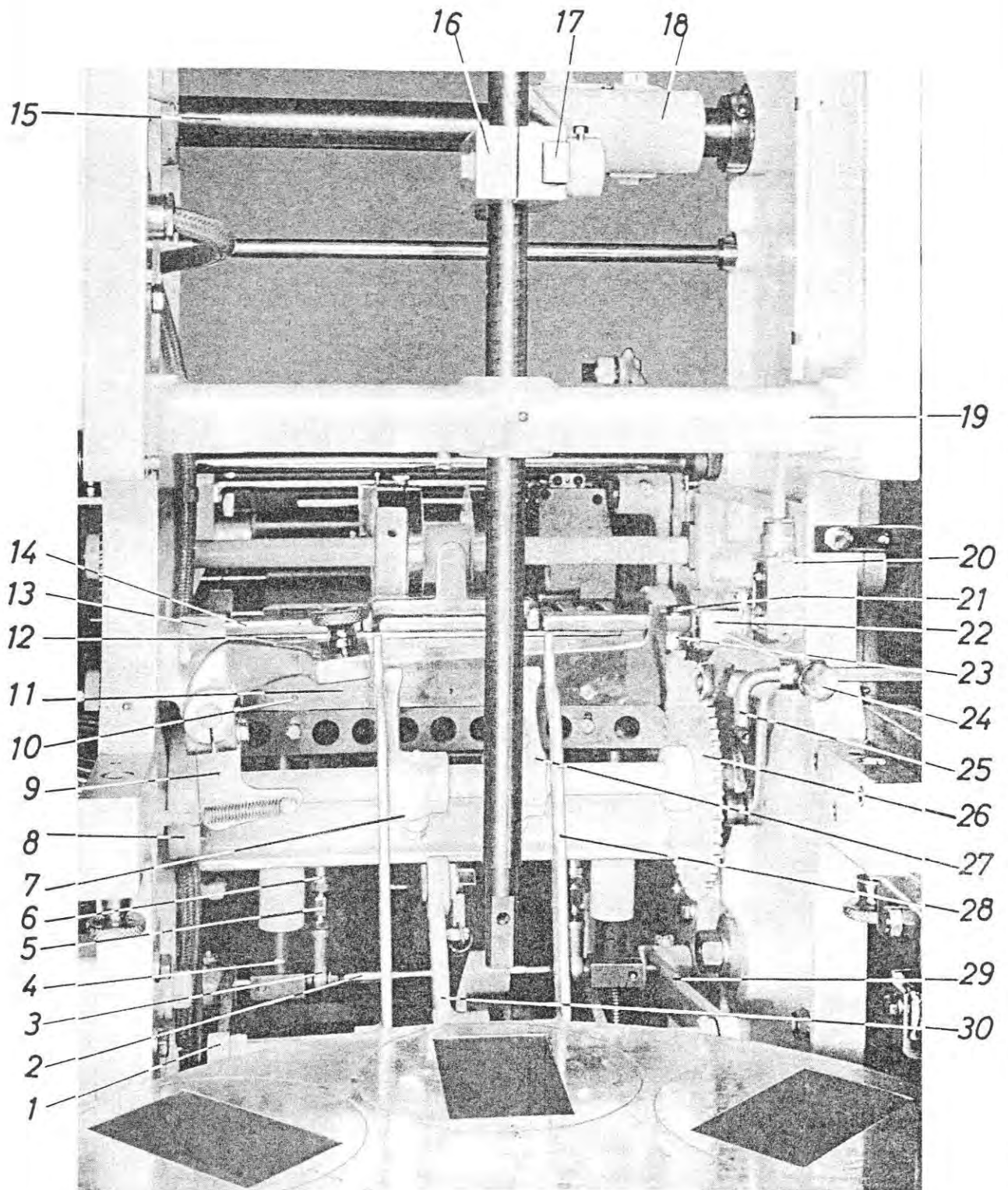


Position Reference Repère	Bezeichnung	Designation	Désignation
①	Falzplatte mit Faltkasten, vollständig	Folding unit with folding box	plaque de pliage avec boîte de pliage complète
2	Segmentwalze	Segment roller	cylindre de segment
3	Abschneiderhebel	Cut off lever	levier découpeur
4	Einwicklerwelle	Wrapper shaft	arbre à papier
⑤	Abfüllmundstück	Mouth piece	embouchure
6	Schieberplatte	Pusher plate	plaque tiroir
⑦	Dosierzylinder	Measuring cylinder	cylindre de dosage
8	Schutzhaube, vollständig	Guards complete	capot de protection, compl.
9	Kreuzgriff zu Teil 8	Star handle to Part 8	poignée à croix pour pièce 8
10	Ausgleichkolben	Equalising piston	piston compensateur
11	Gehäuse	Housing	carter
12	Kreuzgriff	Star handle	poignée à croix
13	Druckfeder	<u>Pressure spring</u>	ressort clavette
14	Kolbenstange	Piston rod	tige à piston
⑮	Faltzipfelanleger	Lipped folder pressure	plieur patte de pliage
⑮	Dosierkolben, vollständig	Measuring piston, complete	piston doseur complet
⑰	Faltkopf, vollständig	Folder head complete	embout de pliage, complet
18	Messereinstellehre	Cutter setting gauge	ajustage de couteau
⑰	Andrückenplatte, vollständig	Pressure plate, complete	plaque pression complète
⑳	Zellenboden	Cell base	fond de cellule
21	Stempel	Pusher	poinçon
⑳	Vorfalzer, vollständig	Prefolder complete	pré-plieur, complet
㉓	Faltstempel	Folding block	poinçon de pliage complet
㉔	Einsatzzelle	insert (packet size)	cellule de remplacement



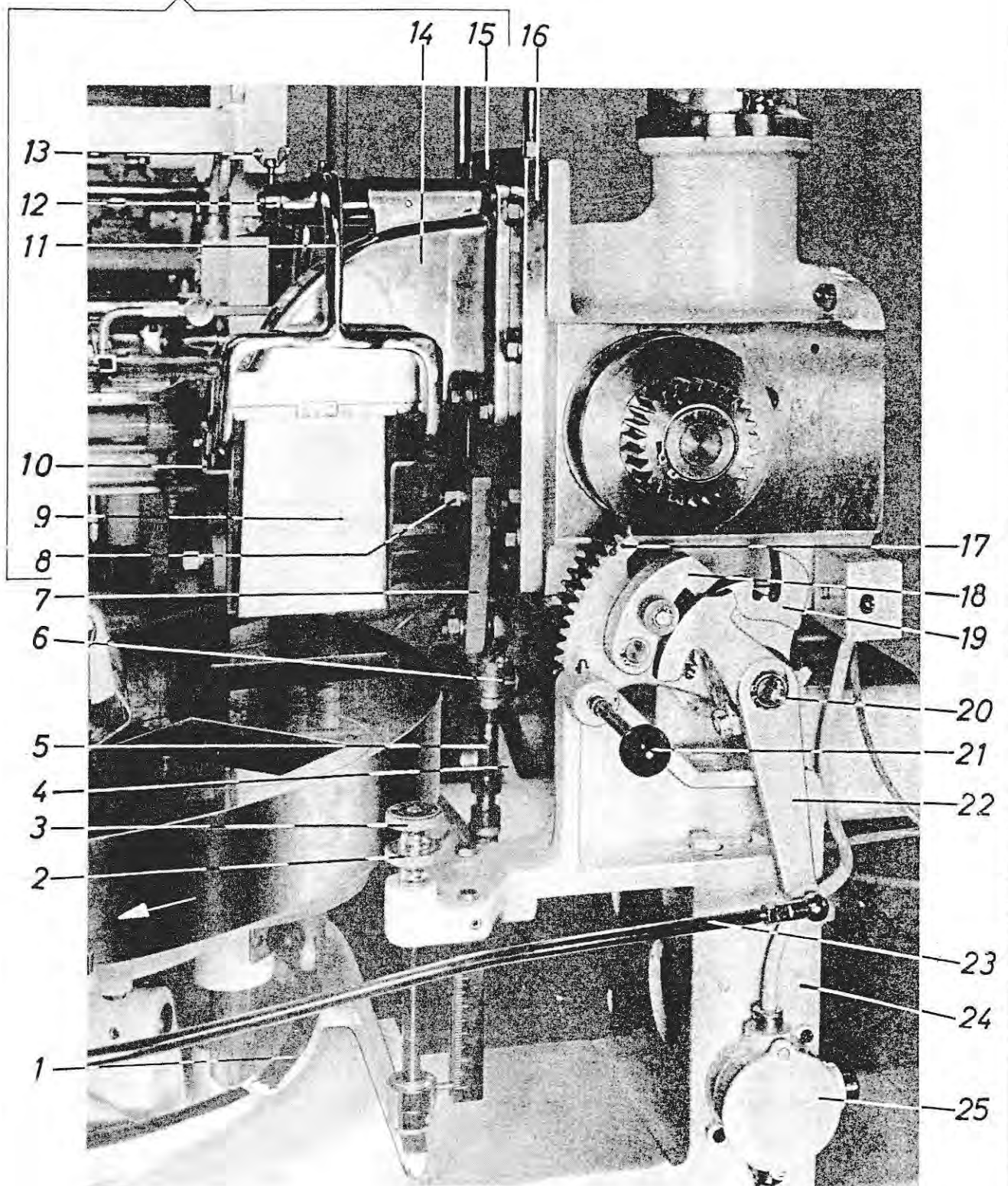
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Rollenhebel (zum Vorwerfer)	Roller lever (forward feed)	levier à galet (pour pré-plieur)
2	Welle	Shaft	arbre
3	Gelenkstangenkopf	Head of linked rod	embout
4	Bolzen	Bolt	boulon
5	Gewindebolzen	Screw bolt	boulon molleté
6	Gelenkstangenkopf	Head of linked rod	embout
7	Vorzugssegment	Feeding segment	segment d'entraînement
8	Kurve zum Vorfalzer	Cam for pre-folder	came pour pré-plieur
9	Rollenhebel (zum Vorfalzer)	Roller lever for pre-folder	levier à galet (pour pré-plieur)
10	Schraube zu Teil 11	Screw to Part 11	vis pour pièce 11
11	Untermesser	Lower knife	couteau inférieur
12	Obermesser (starr)	Upper knife (fixed)	couteau supérieur(fixe)
13	Lager	Bearing	palier
14	Niederhalter	Pressure holder	pièces de retenue
15	Welle	Shaft	arbre
16	Gleitführung, vollständig	slide support complete	glissement, complet
17	Gleitstein	Slip block	pièce de glissement
18	Faltstempelhebel	Lever for folder	levier de poinçon de pliage
19	Brücke	Bridge	pont
20	Endschalter zu Teil 25	End switch for Part 25	fin de course pour pièce no.25
21	Schraube zu Teil 12	Screw to Part 12	vis pour pièce 12
22	Lager	Bearing	palier
23	Einwicklerführung	Wrapper guide	guidage de papier
24	Rändelschraube zu Teil 25	Knurled screw to Part 25	vis moleté pour pièce 25
25	Einwicklerfühler	Wrapper feeler	palpeur de papier
26	Zahnrad	Wheel	roue dentée
27	Vorzugssegment	Feeding segment	segment d'entraînement
28	Vorwerfer	Forward feed bar	pré-plieur
29	Hebel	Lever	levier
30	Hebel	Lever	levier

Fig. 8345/ 9



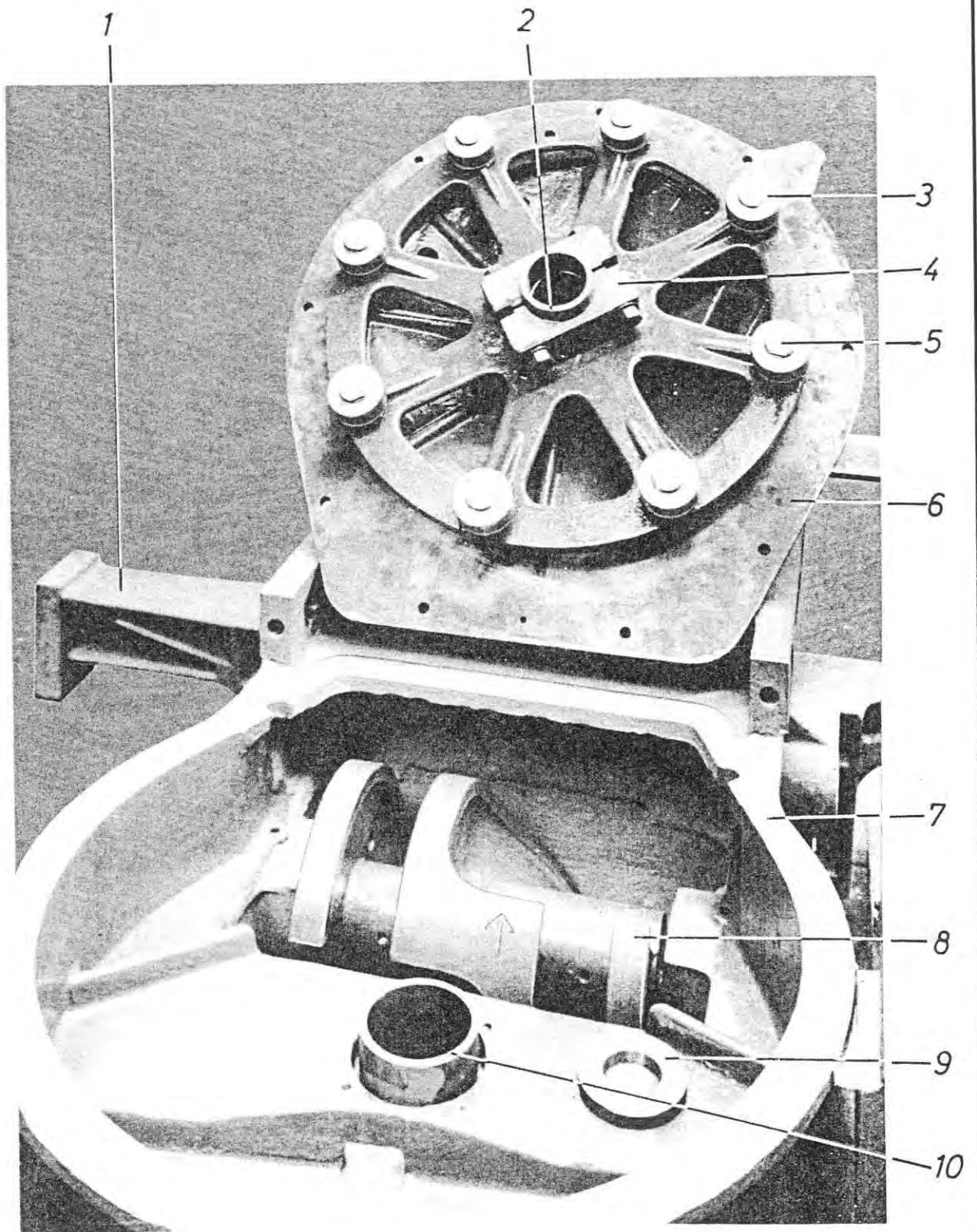
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Rollenhebel (zum Zellen- boden)	Roller lift (to cell base)	levier à galet (pour fond de cellule)
2	Konter-Rändelmutter	Fixing screw	écrou de contre-serrage
3	Stellschraube	Adjusting screw	vis de serrage
4	Rollenhebel zu Teil 15	Roller lever to Part 15	levier à galet pour pièce no. 15
5	Zugstange	Draw rod	tige
6	Gelenkstangenkopf	Head of linked rod	embout
7	Verbindungsstück	Connecting piece	pièce entre-toise
8	Mutter zu Teil 7	Nut for Part 7	écrou pour pièce 7
9	Abfüllmundstück	Mouth piece	embouchure
10	Abschneidebügel	Cutter support	étrier découpeur
11	Abschneiderhebel	Cutter	levier découpeur
12	Stellring	Adjusting ring	bague de serrage
13	Flügelschraube	Wing screw	vis à ailettes
14	Abfüllhahn	Filling head	bec verseur
15	Schieberplatte	Slider plate	plaque tiroir
16	Führungsleiste	Guide rail	listeau de guidage
17	Zahnsegment	Toothed segment	segment denté
18	Klinke	Latch	cliquet
19	Mitnehmersegment	Carrier segment	segment d'entraînement
20	Welle	Shaft	arbre
21	Indexbolzen	Index bolt	boulon d'indice
22	Hebel (zur Dosierzylinder- abschaltung)	Lever (to dosing cylinder stop)	levier (pour arrêter le cylindre doseur)
23	Zugstange (zur Dosierzylinder- abschaltung)	Rod (to dosing cylinder stop)	tige (pour arrêter le cylindre doseur)
24	Gestellfuß	Frame	pied vérin
25	Verteilerdose	Junction base	embase distributeur

Fig.8345/8

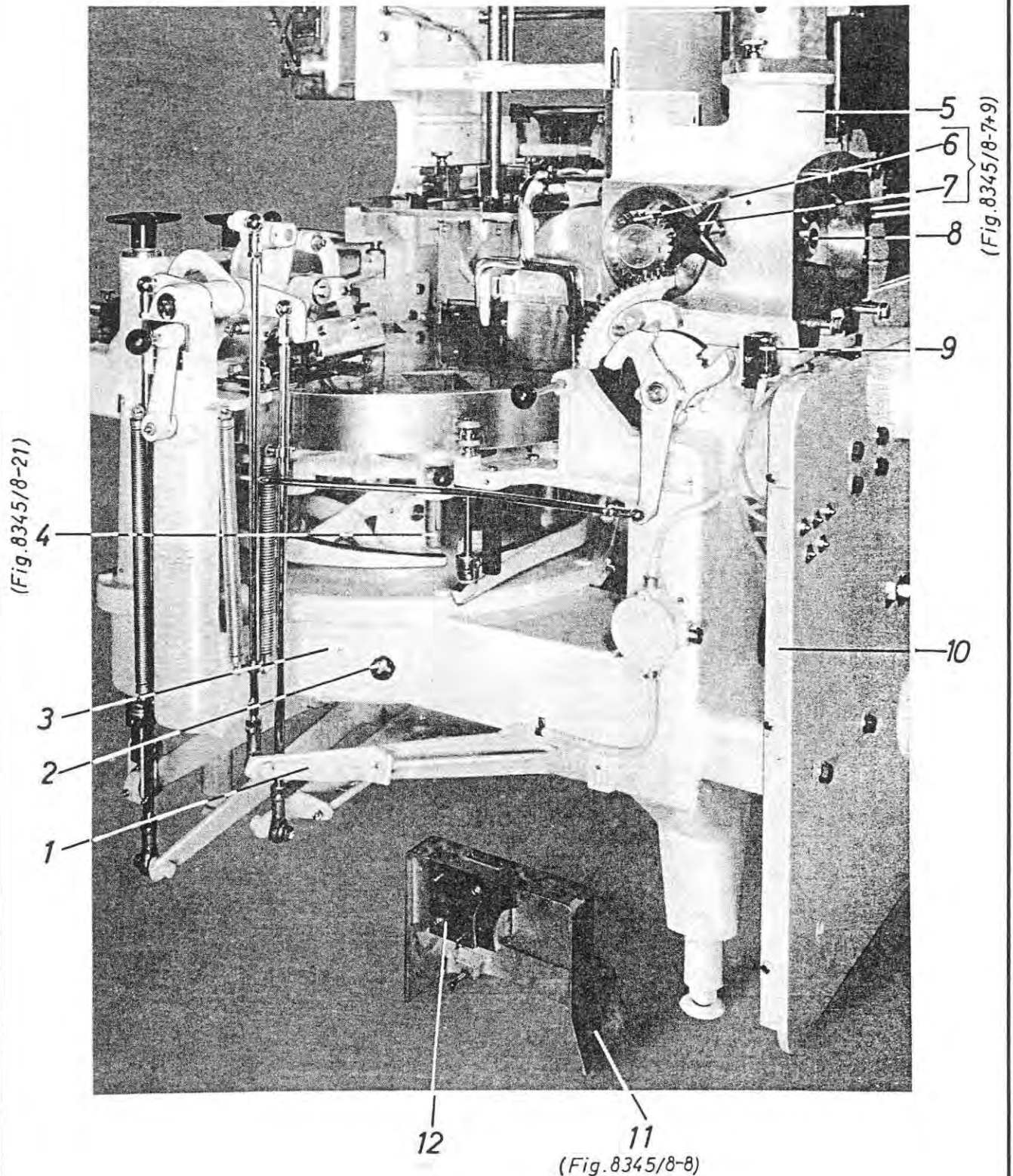


Position Reference Repère	Bezeichnung	Designation	Désignation
1	Gestellfuß	Support	pied vérin
2	Zellentisch-Säule	Centre support	montant table revolver
3	Rolle	Roller	galet
4	Schaltscheibe	Switch plate	came de manoeuvre
5	Rollenbolzen	Roller bolts	boulon à galet
6	Deckel	Cover	couvercle
7	Untergestell	Base	sous-bâti
8	Schaltkurve	Indexing cam	came de commande
9	Distanzscheibe	Spacer	disque entre-toise
10	Abdeckung	Cover	recouvrement

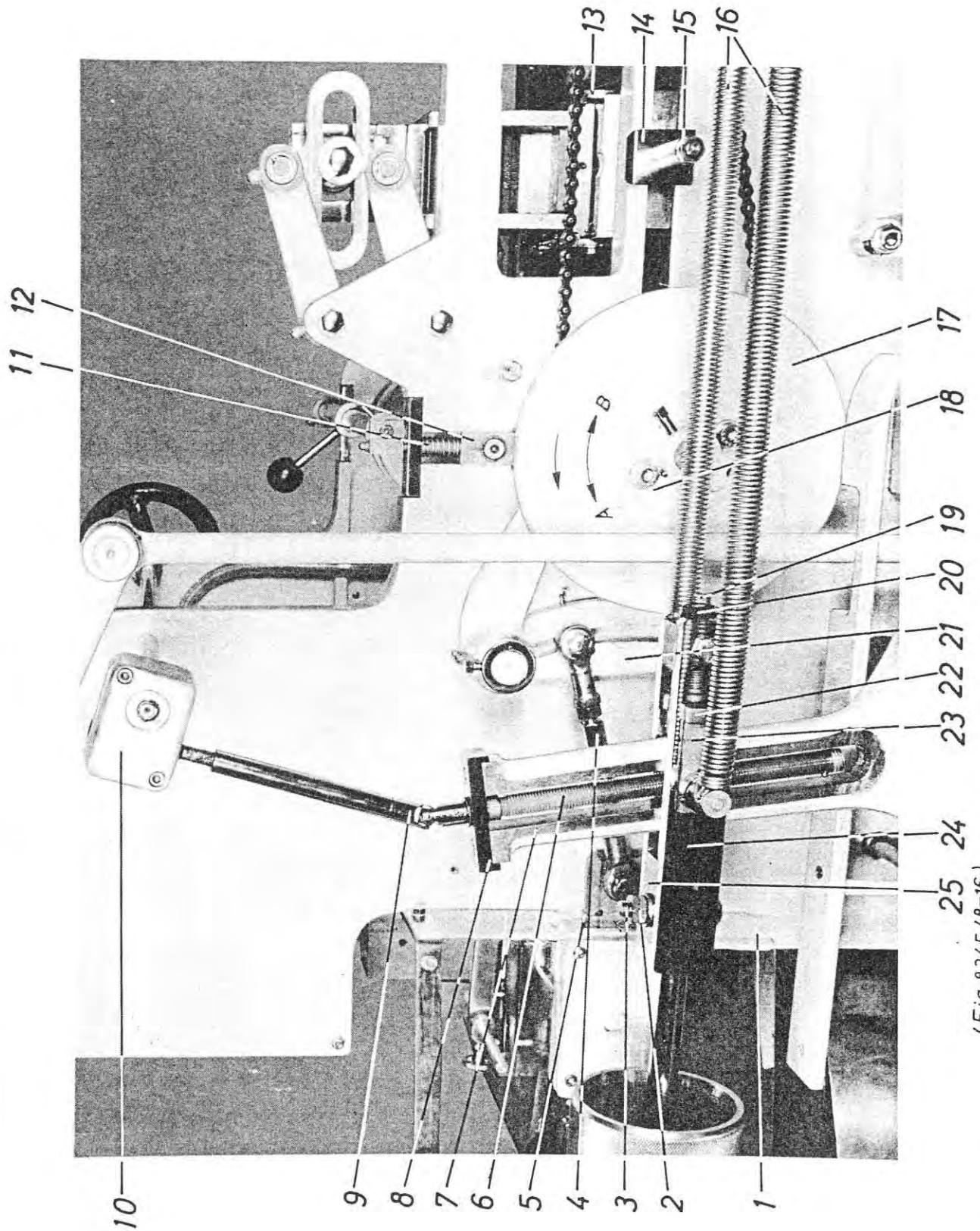
Fig. 8345/11



Position Reference Repère	Bezeichnung	Designation	Désignation
1	Rollenhebel	roll lever (for initial folder)	levier à galet (pour plieur)
2	Ölstandsauge	oil level glass	niveau d'huile
3	Untergestell	base frame	sous-bâti
4	Stempel	plunger	poinçon
5	Abfüllgehäuse x	filling housing x	carter de dosage x
6	Dosierzylinder	dosing cylinder	cylindre de dosage
7	Kreuzgriff zu Teil 11	star handle for part 11	poignée en croix
8	Buchse (zu den Förder- schnecken x	bush (for the feed worms) x	bague (pour vis de poussée) x
9	Endschalter	limit switch	fin de course
10	Lagerschild	end plate	panneau
11	Schutzhaube, vollständig	guard cover, complete	capot de protection complet
12	Halter	hold-fast	support
x	nur bei Typ 8345 S	x only on type 8345 S	x seulement sur type 8345 S

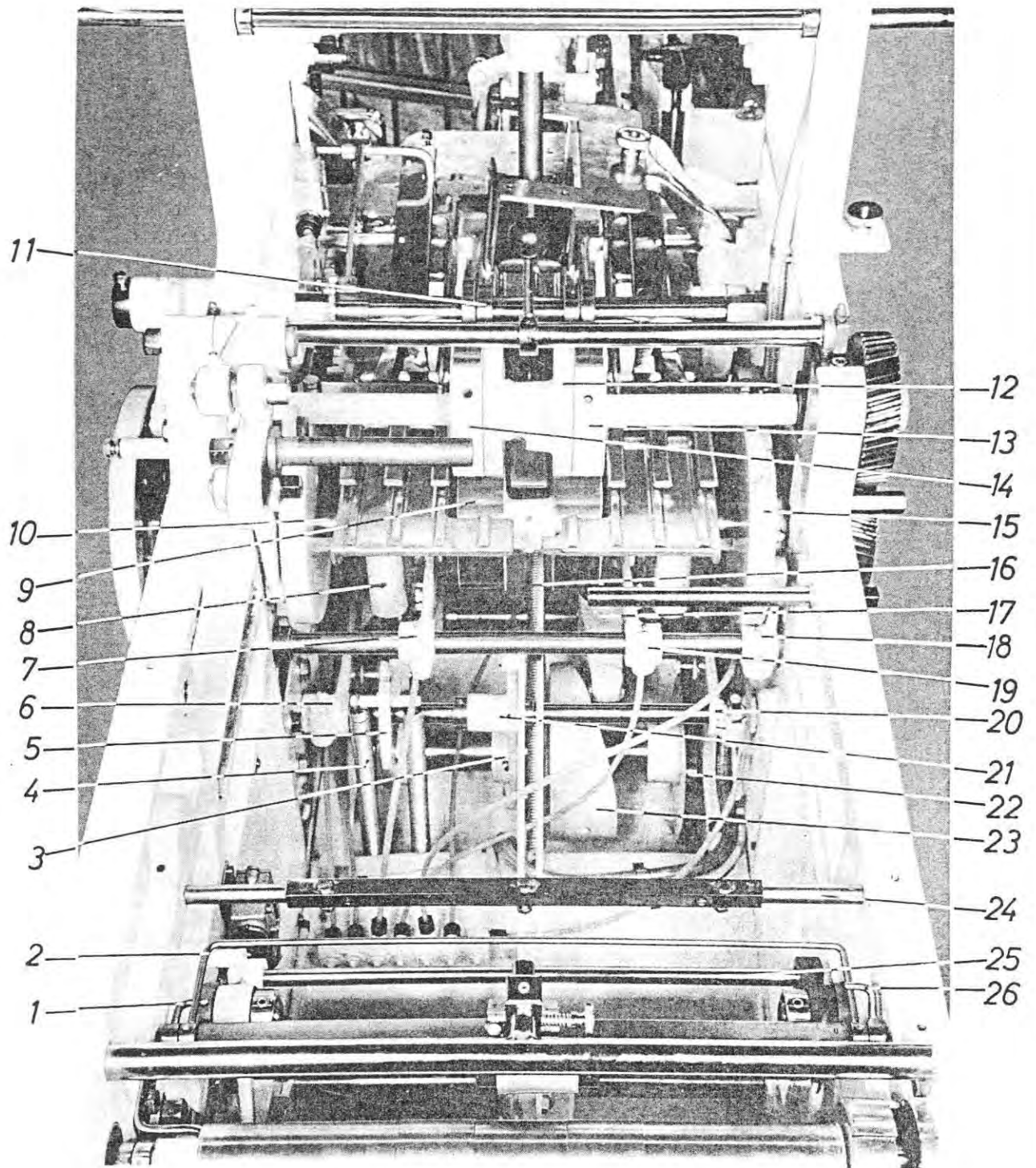


Position Reference Repère	Bezeichnung	Designation	Désignation
1	Schutzscheibe	Guard	protection
2	Mutter	Nut	écrou
3	Bolzen	Bolt	boulon
4	Zugstange zu Teil 21	Tension rod to Part 21	tige pour pièce 21
5	Schieber (zum Abschneiderhebel)	Pusher (to cut off lever)	tiroir (pour étrier découpeur)
6	Spindel	Spindle	vis molletée
7	Gabel	Fork	fourchette
8	Deckel	Cover	couvercle
9	Kreuzgelenk	Star link	rotule
10	Gewichtsverstellung, vollständig	Weight control (complete)	réglage du poids, complet
11	Druckfeder	Pressure spring	clavette
12	Gleitstein	Slip block	pièce de glissement
13	Klemmleiste	Clamp rail	listeau de serrage
14	Spannplatte	Tension plate	plaque de tension
15	Mutter (zur Perforierung)	Nut (to perforation)	écrou (pour perforation)
16	Zugfeder zu Teil 25	Tension spring to Part 25	ressort de traction pour pièce 25
17	Kurve zu Teil 21	Cam to Part 21	came pour pièce 21
18	Nabe	Hub	rainure
19	Stellspindel	Adjusting spindle	vis molletée
20	Kontermutter	Lock nut	écrou de contre-serrage
21	Rollenhebel (zum Abschneider)	Roller lever (for cut-off)	levier à galet (pour découpeur)
22	Riegel	Locking bolt	verrouillage
23	Führungsstein	Guide stone	pièce de glissement
24	Kolbenstangenführung	Piston rod guide	guidage de tige
(25)	Dosierkolben, vollst.	Measuring piston, complete	cylindre doseur complet



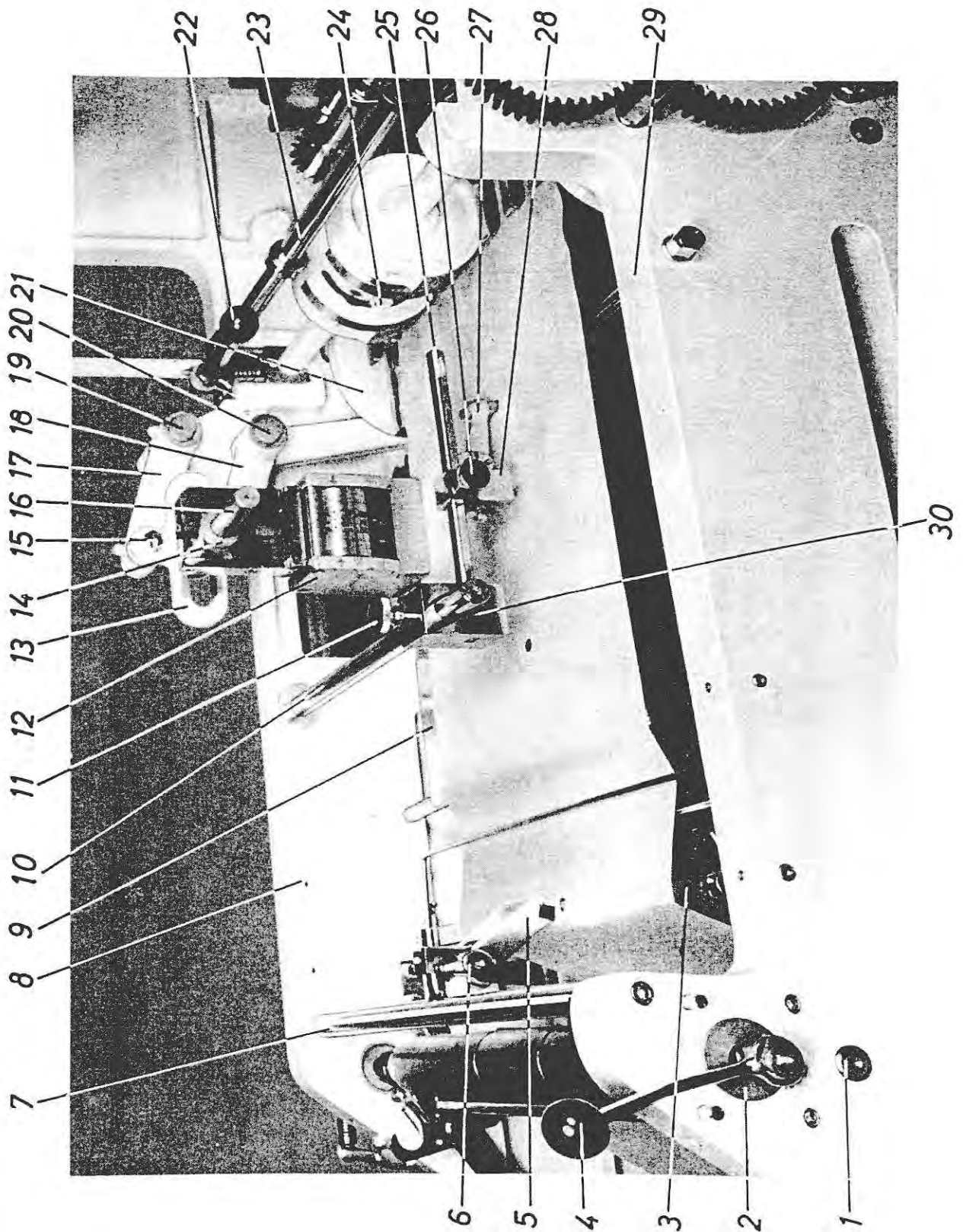
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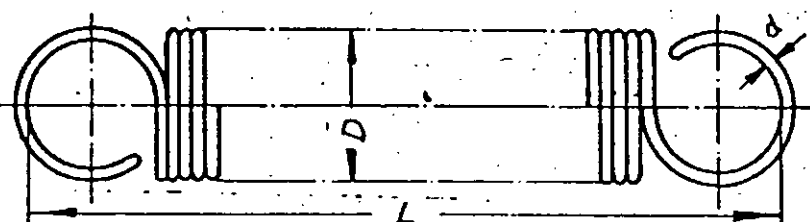
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Anschlag zu Teil 2	Stop to Part 2	butée pour pièce 2
2	Pendel	Pendle	oscillant
3	Kurve zu Teil 21	Cam to Part 21	came pour pièce 21
4	Zugfeder	Tension spring	ressort de traction
5	Rollenhebel (zum Zellen- boden)	Roller lever (to cell base)	levier à galet (pour fond de cellule)
6	Hebel (Vorwerfer auf und ab)	Lever (for forward feed up and down)	levier (pré-plieur mouvement va-et-vient)
7	Hebel (zum Untermesser)	Lever to lower knife	levier (pour couteau inférieur)
8	Traverse	Supporting bar	traverse
9	Vorzugswalze, unten	Feed roller, below	cylindre d'entraînement, inférieur
10	Welle zu Teil 9	Shaft to Part 9	arbre pour pièce no. 9
11	Segmentwalze	Segment roller	cylindre de segment
12	Vorzugssegment (Ver- stellbar)	Feed segment (adjustable)	segment d'entraînement (réglable)
13	Vorzugssegment (rechts)	Feed segment (right)	segment d'entraînement droite
14	Vorzugssegment (links)	Feed segment (left)	segment d'entraînement gauche
15	Kurve (Untermesser)	Cam (lower knife)	came (couteau inférieur)
16	Zugfeder	Tension spring	ressort de traction
17	Rollenhebel (zum Ab- schieber	Roller lever (to push off)	levier à galet (pour tiroir)
18	Rollenhebel (zum Unter- messer)	Roller lever (to lower knife)	levier à galet (pour couteau inférieur)
19	Hebel (zum Untermesser)	Lever (to lower knife)	levier (pour couteau inférieur)
20	Rollenhebel (zum Vor- werfer)	Roller lever (to forward feed)	levier à galet (pour pré-plieur)
21	Rollenhebel (zum Vor- werfer)	Roller lever (to forward feed)	levier à galet (pour pré- plier)
22	Kurve (Vorwerfer auf und ab)	Cam (to forward feed up and down)	came (pré-plieur (mouve- ment va-et-vient)
23	Kurve zu Teil 17	Cam to part 17	came pour pièce 17
24	Achse	Shaft	arbre
25	Traverse (zum Pendel)	Supporting bar to pendulum	traverse (pour l'oscillant)
26	Anschlag zu Teil 2	Stop to Part 2	butée pour pièce 2



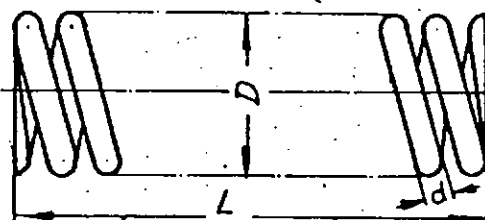
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Welle	Shaft	arbre
2	Buchse	Bush	bague
3	Führungsstab	Guide rod	colonne de guidage
4	Walzenheber (zur Vorab- wicklung)	Roller lift (to pre- unwind)	palan de cylindre (pré- dérroulement)
5	Bremsdaumen	Brake plate	pièce de freinage
6	Rändelmutter	Knurled nut	écrou
7	Traverse	Cross bar	traverse
8	Seitenwand	Side wall	paroi latérale
9	Platte	Plate	plaque
10	Stange	Rod	colonne
11	Rändelschraube	Knurled screw	écrou
12	Perforieraggregat	Perforating unit	perforation
13	Führung	Guide	guidage
14	Führungsstein	Guide rod	pièce de guidage
15	Bolzen	Bolt	boulon
16	Exzenterbolzen	Eccentric bolt	coulon excentrique
17	Hebel zur Perforierung (oben)	Lever for perforation (top)	lever pour perforation (supérieur)
18	Rollenhebel zur Perfo- rierung (unten)	Roller lever for perfo- ration (bottom)	lever à galet pour per- foration (inférieur)
19	Bolzen	Bolt	boulon
20	Bolzen	Bolt	boulon
21	Kurve zur Perforierung	Cam for perforation	came pour perforation
22	Segment (zur oberen Vor- zugswalze)	Segment (to top feed rol- ler)	segment (pour cylindre d'entraînement supérieur)
23	Achse	Shaft	arbre
24	Schraube (zum Vorzugs- segment)	Screw (to feeder segment)	vis (pour segment d'en- trainement)
25	Stange	Rod	colonne
26	Rändelschraube zu Teil 27	Knurled screw to Part 27	écrou pour pièce 27
27	Registerfinger	Register finger	doigt de repérage
28	Halter	Bracket	support
29	Seitenwand	Side wall	paroi latérale
30	Halter	Bracket	support

Fig. 8345/18





Description	Nos.	$D \times d \times L$	Part No.	
Tension Spring to Wrapper Brake (Lock)	1	10 x 1 x 40	1	
Tension Spring to Roller Lever (to forward feeder)	1	20 x 2,5 x 335	2	
Tension Spring to Roller Lever (Wrapper Feeler)	1	10 x 1 x 70	3	
Tension Spring to Roller Lever (Pre-Folder)	1	13 x 1,5 x 60	4	
Tension Spring to Pressure Roller (Form A)	2	10 x 1 x PL	5	
Tension Spring to Pressure Roller (Form B)	2	10 x 1 x PL	6	
Tension Spring to Insert Cell	4	13 x 1,5 x 100	7	
Tension Spring to Roller Lever (Cell Bottom Control)	2	20 x 2,5 x 275	8	
Tension Spring to Dosing Fork	2	20 x 2,5 x 310	9	
Tension Spring to Dosing Fork	2	20 x 3 x 310	10	
Tension Spring to Cylinder Disengagement	1	13 x 1,25 x 60	11	
Tension Spring to Flap Insert Folder	2	9 x 0,8 x 50	12	
Tension Spring to Flap Insert Folder	2	18 x 2 x 120	13	
Tension Spring to Roller Lever (Insert and Closing Folder)	3	20 x 2,5 x 320	14	
Tension Spring to Lever (push off)	1	20 x 2,5 x 345	15	
Tension Spring to Packet Lifting Unit (push off)	1	20 x 2,5 x 275	18	

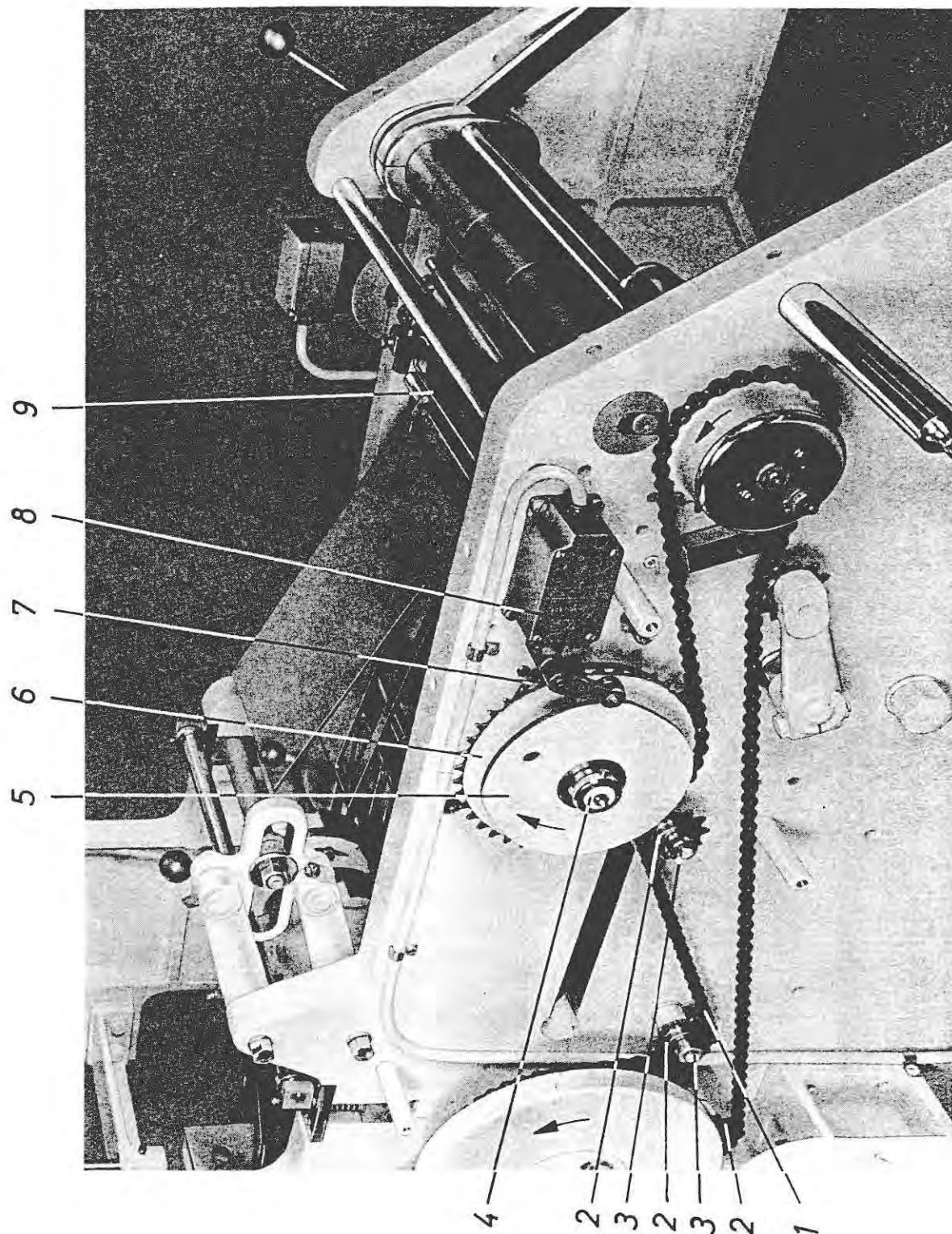
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Urhaberschulz: FDr diese technische Unter-
lage behalten wir uns alle Rechte vor.

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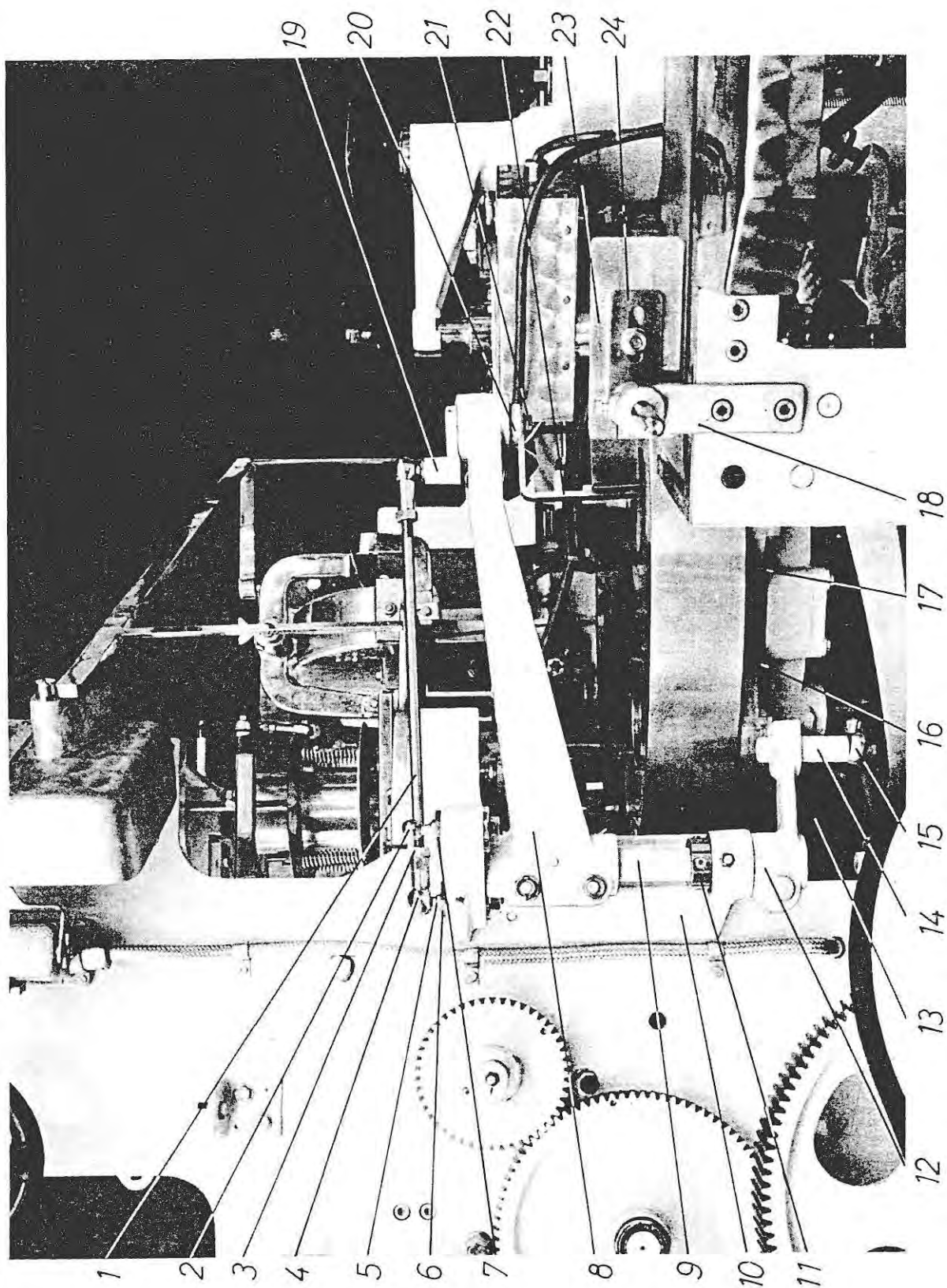
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Position Reference Repère	Bezeichnung	Designation	Désignation
1	Einfach-Rollenkette	Single roller chain	chaîne à galets simple
2	Kettenrad	Chain wheel	roue de chaîne
3	Kettenradbolzen	Chain wheel bolt	boulon de roue à chaîne
4	Bolzen	Bolt	boulon
5	Kurve zu Teil 8	Cam to Part 8	came pour pièce 8
6	Kettenrad	Sprocket	roue à chaîne
7	Kurve zu Teil 9	Cam to Part 9	came pour pièce 9
8	Endtaster	End switch	fin de course
9	Korrekturbügel	Corrector shaft	étrieur correctrice

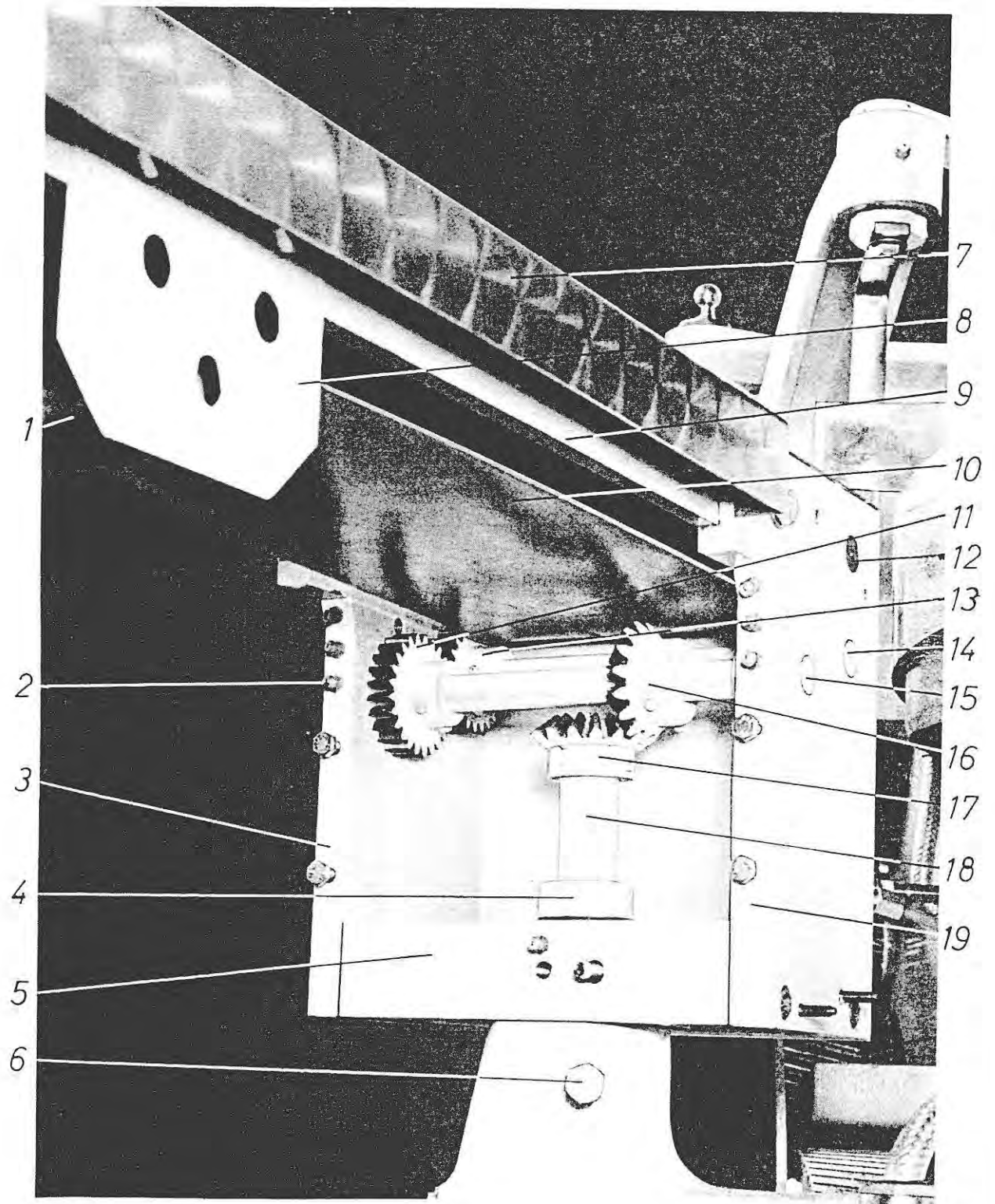


Position Reference Repère	Bezeichnung	Designation	Désignation
1	Zugstange	connecting rod	tige
2	Kugelpopf	ball head	embout
3	6kt-Mutter	hexagon nut	écrou à 6 pans
4	Kugelpfanne	ball socket	palier de bille
5	Kugelpopf	ball head	embout de bille
6	Exzenterbuchse	eccentric bush	bague excentrique
7	Exzenterbuchse	eccentric bush	bague excentrique
8	Hebel	lever	levier
9	Welle	shaft	arbre
10	Lagerbock	pillow block	support
11	Stellring	set collar	anneau de serrage
12	Hebel	lever	levier
13	Zugstange	connecting rod	tige
14	Distanzstück	spacer	entretoise
15	Unibal-Gelenk	Unibal joint	rotule
16	Führungsstück	guide piece	pièce de guidage
17	Führungsstück	guide piece	pièce de guidage
18	Halter	hold-fast	support
19	Hebel	lever	levier
20	Aufnahmestück	receiver	pièce de prise
21	6kt-Schraube	hexagon head screw	vis à 6 pans
22	Abschieber	push-off device	poussoir
23	Anschlagplatte	stop plate	plaque de butée
24	Führungsstück	guide piece	pièce de guidage

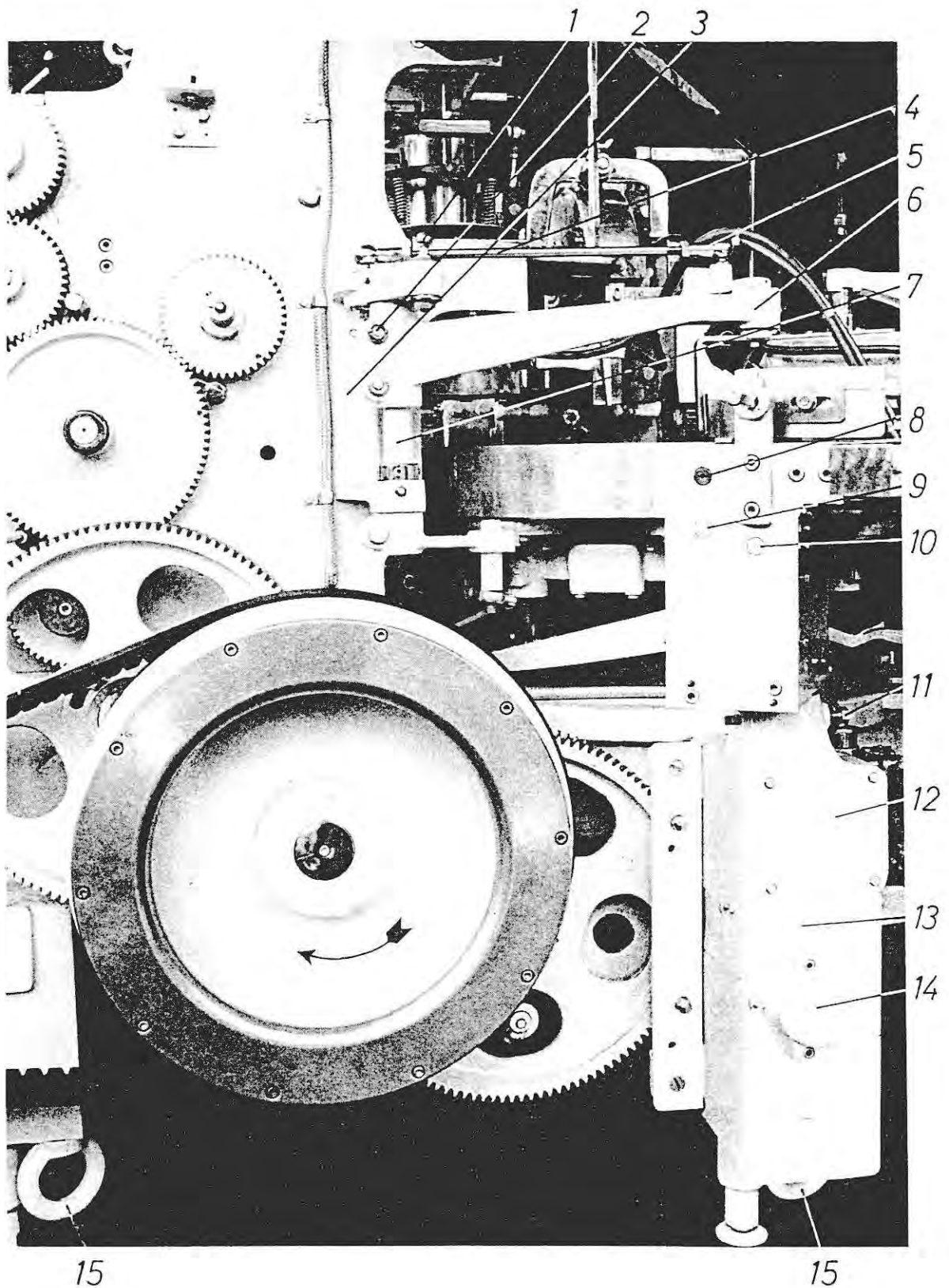
Fig. 8345 / 54



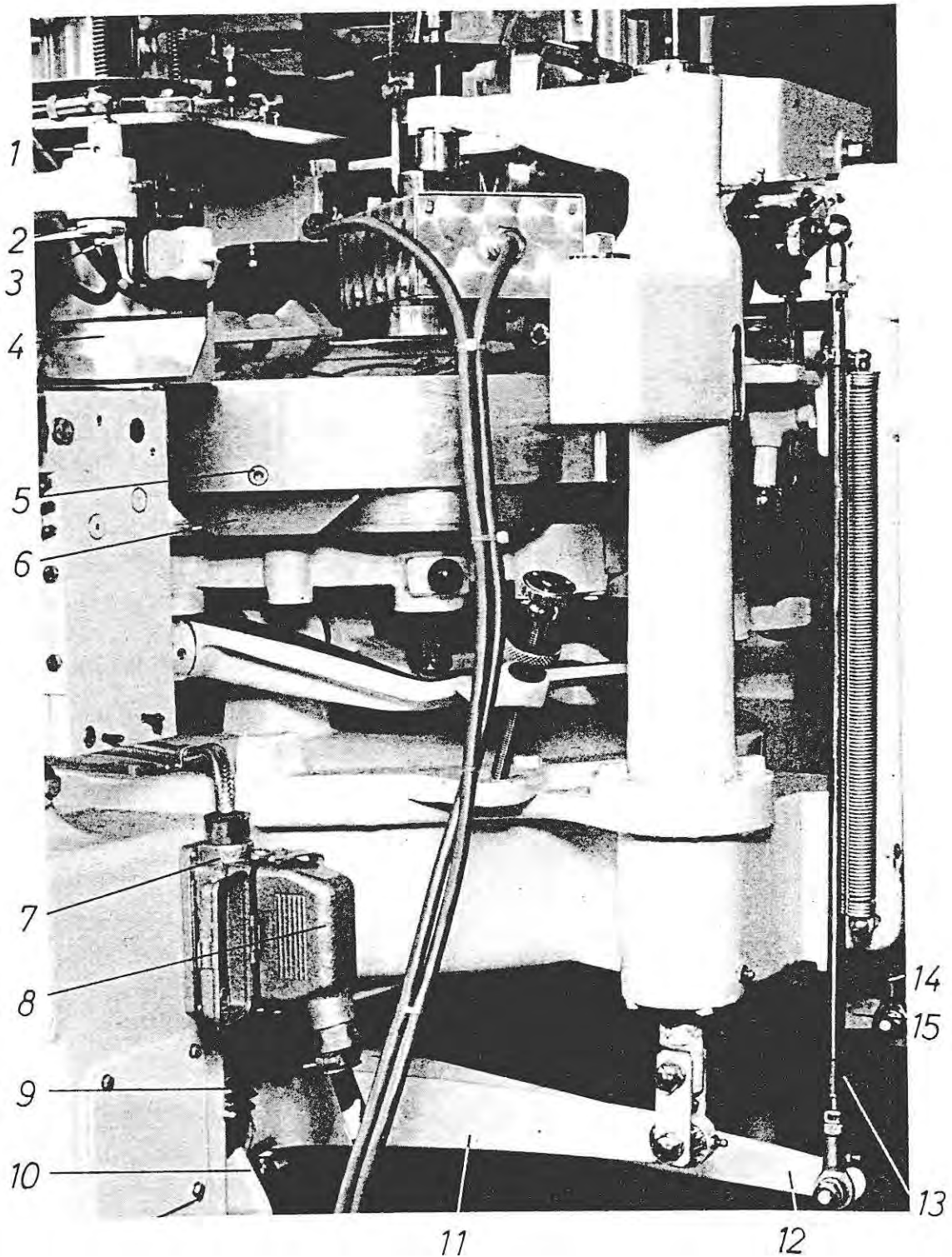
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Gurtspannrolle	belt tensioning pulley	rouleau tendeur de tapis
2	Kugelschmiernippel	ball lubrication nipple	graisseur
3	Seitenwand	side wall	paroi latérale
4	Stellring	set collar	bague de serrage
5	Lager	bearing	palier
6	6kt-Schraube	hexagon head screw	écrou à 6 pans
7	Tischblech	table plate	tôle de table
8	Schutzblech	guard plate	protection
9	Holm (hinten)	spar (rear)	montant (derrière)
10	Gurt	belt	tapis
11	Zahnrad	gear	roue dentée
12	Achse	axle	arbre
13	Zahnrad	gear	roue dentée
14	Welle	shaft	arbre
15	Welle	shaft	arbre
16	Kegelrad	bevel wheel	roue conique
17	Kegelrad	bevel wheel	roue conique
18	Welle	shaft	arbre



<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Kugelpapfen	ball and socket	goupille à bille
2	Klemmschraube	adjusting screw	ecrou de serrage
3	Lagerbock	pillow block	support
4	Zugstange	connecting rod	tige
5	Kugelgelenk	ball joint	rotule
6	Abschiebehebel	push-off lever	levier poussoir
7	Welle	shaft	arbre
8	Achse	axle	arbre
9	Achse	axle	arbre
10	Achse	axle	arbre
11	Stellschraube	regulating screw	ecrou de serrage
12	Deckblech	cover plate	protection
13	Abtransportfuß	discharge conveyer foot	pied d'évacuation
14	Deckel	cover	couvercle
15	Ringschraube	ring bolt	vis à anneau

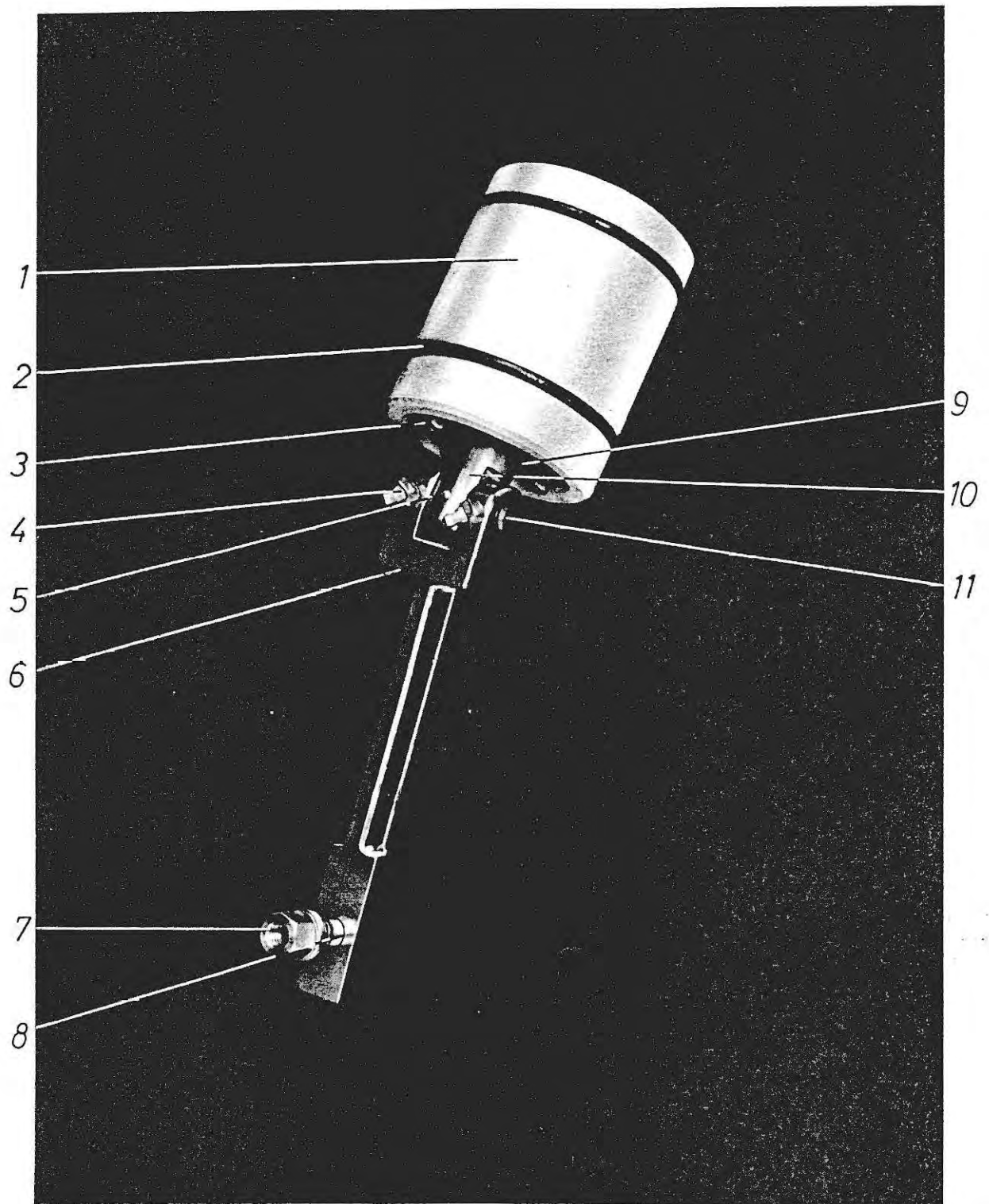


Position Reference Repère	Bezeichnung	Designation	Désignation
1	Hebel	lever	levier
2	Aufnahmestück	receiver	pièce de prise femelle
3	6kt. Schraube	hexagon bead screw	ecrou à 6 pans
4	Abschieber	push-off device	poussoir
5	Schraube	screw	vis
6	Halteblech	supporting plate	tôle de soutenu
7	Stechvorrichtung	perforating device	dispositif de piquage
8	Stecker	plug	prise
9	Zahnrad	gear	roue dentée
10	Lager	bearing	palier
11	Hebel	lever	levier
12	Hebel	lever	levier
13	Zugstange	connecting rod	tige
14	Unibal-Gelenkstangen- kopf	Unibal toggle-link head	embout unibal
15	Hebel	lever	levier



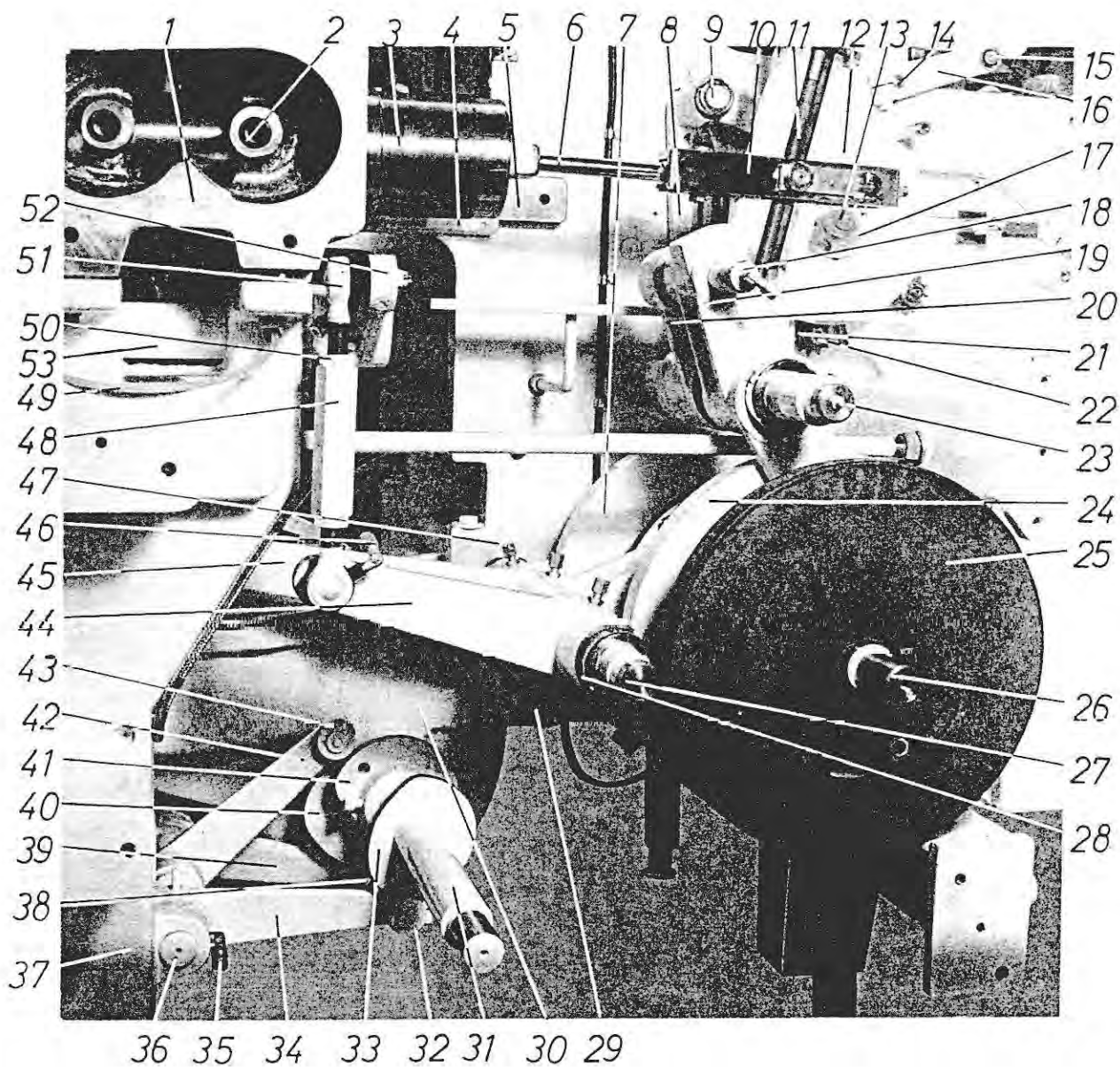
<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Kolben	piston	piston
2	O-Ring	O-ring	joint
3	6kt.-Schraube	hexagon head screw	vis à 6 pans
4	Kugelschmiernippel	ball lubrication nipple	graisseur
5	Kegelstift	taper pin	goupille
6	Kolbenstange	piston rod	tige
7	6kt.-Mutter	hexagon nut	écrou à 6 pans
8	Bolzen	bolt	boulon
9	Deckel	cover	couvercle
10	Bolzen	bolt	boulon
11	Bolzen	bolt	boulon

Fig. 8345/58



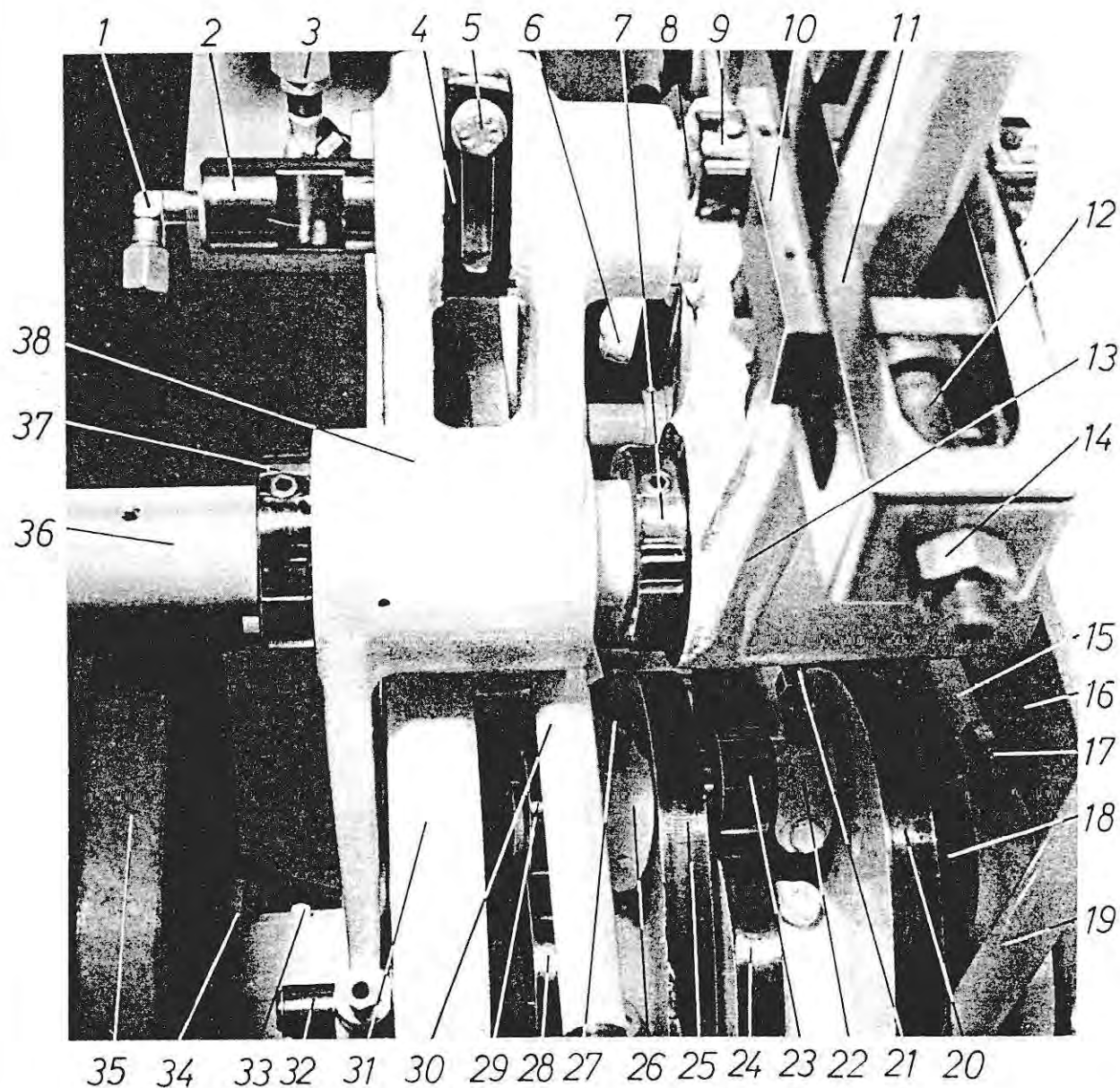
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Dosiergehäuse (nur bei Typ 8345 S)	dosing housing (only on Typ 8345S)	carter de dosage
2	Buchse (nur bei Typ 8345 S)	bush (only on Typ 8345 S)	bague suel sur type 8345S suel sur type 8345S
3	Dosierzylinder	dosing cylinder	cylindre doseur
4	Führung	guide	guidage
5	Führungsstück	guide piece	pièce de guidage
6	Kolbenstange	piston rod	tige
7	Kurve z. Faltstempel	cam for folding plunger	came pour poinçon de pliage
8	Hebel	lever	levier
9	Bolzen	bolt	boulon
10	Spannstück	tensioning piece	pièce de tension
11	Gewindespindel	thread spindle	vis molletée
12	Abschneiderkurve	cutter cam	came découpeur
13	Welle	shaft	arbre
14	Bolzen	bolt	boulon
15	Bolzen	bolt	boulon
16	Hebel	lever	levier
17	Aufnahmeflansch	receiving flange	flasque de prise
18	Mitnehmerachse	carrier axle	arbre d'entraînement
19	Rollenhebel	roll lever	levier à galet
20	Dosiergabel	dosing fork	fourchette de dosage
21	Kettenrad	chain wheel	roue à chaîne
22	Bolzen	bolt	boulon
23	Achse	axle	arbre
24	Dosierkurve	dosing cam	came de dosage
25	Dosierkurve	dosing cam	came de dosage
26	Kurvenwelle	cam shaft	arbre de came
27	Hebelwelle	lever shaft	arbre à levier
28	Stellring	set collar	anneau de serrage
29	Scheibe	disc	disque
30	Untergestell	frame	sous-bâti
31	Kurvenwelle	came shaft	arbre à cames
32	Kurvenrolle	cam roller	galet à came
33	Falterkurve	folder cam	came de pliage
34	Rollenhebel	roll lever	levier à galet
35	Einschraubverschraubg.	screwing joint	raccord à vis
36	Hebelwelle	lever shaft	arbre à leviers
37	Gestellfuß	frame foot	pied verin

Position Reference Repère	Bezeichnung	Designation	Désignation
38	Kurvenrolle	cam roller	rouleau à cames
39	Rollenhebel	roll lever	levier à galet
40	Falterkurve	folder cam	came de pliage
41	Falterkurve	folder cam	came de pliage
42	Rollenhebel	roll lever	levier à galet
43	Kurvenrolle	cam roller	rouleau a cames
44	Rollenhebel z. Dosierzy- linder	roll lever for dosing cy- linder	levier à galet pour cylin- dre doseur
45	Rollenhebel z. Abfüll- hahn	roll lever for filling nozzle	levier à galet pour bec verseur
46	Einschraubverschraubg.	screwing joint	reccords à vis
47	Gerade-Einschraubver- schraubung	straight screwing joint	raccords à vis tout droit
48	Zugstange, vollst.	connecting rod, compl.	tige complète
49	Schmierschlauch	lubrication hose	tuyeau de graissage
50	6kt-Mutter	hexagon nut	ecrou à 6 pans
51	Hebel	connecting rod	tige
52	Achse	lever	levier



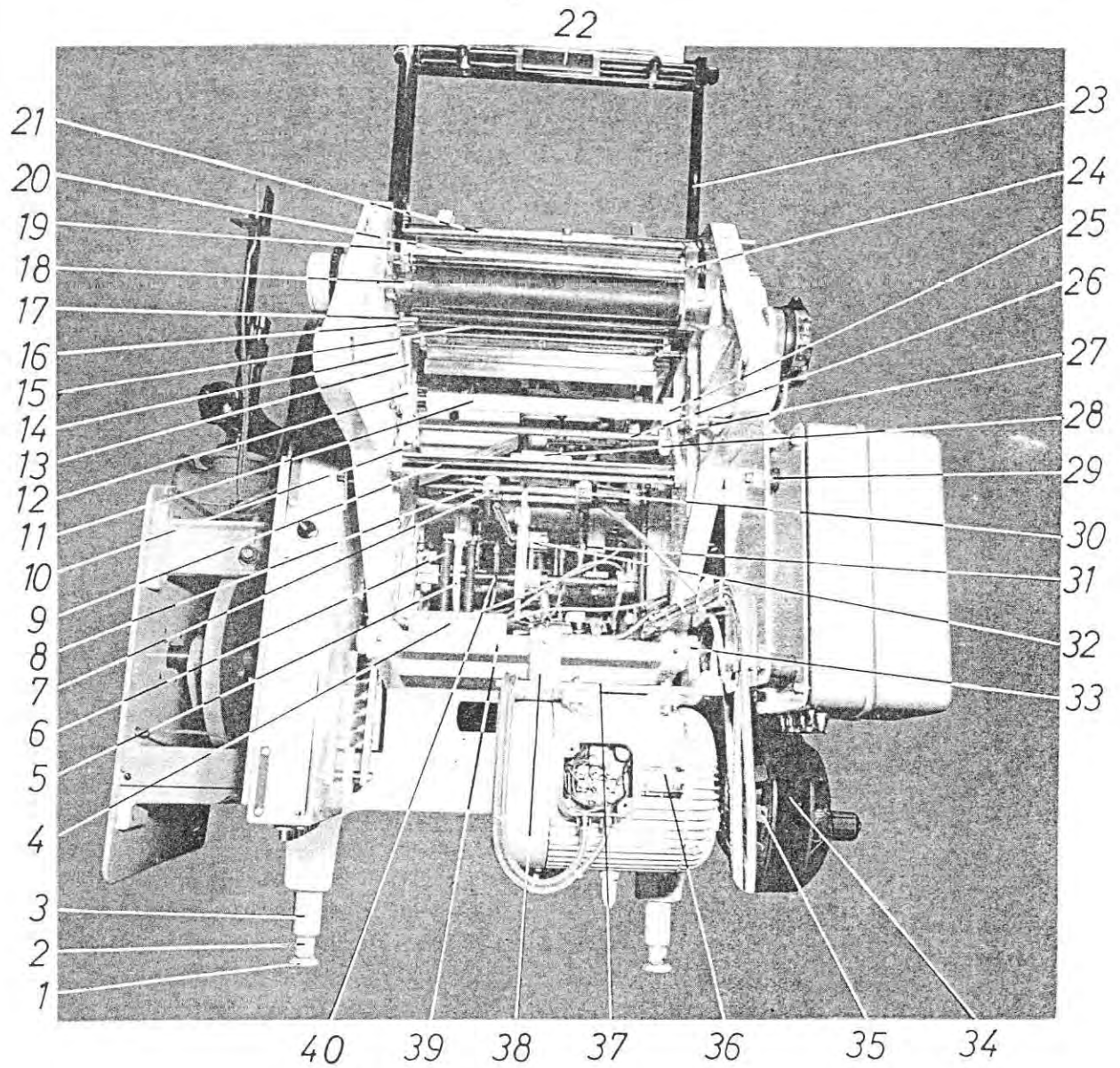
<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
36	Achse	axle	arbre
37	Stellring	set collar	anneau régulateur
38	Rollenhebel z. Dosier- gabel	roller lever for do- sing support	levier à galet pour la jumelle de dosage

Position Reference Repère	Bezeichnung	Designation	Désignation
1	Einstellschraube	Adjusting Screw	vis de réglage
2	Mitnehmerwelle	Carrier shaft	axe d'entraînement
3	Zugstange	Connecting rod	barre de traction
4	Leiste	Ledge	languette
5	6kt-Schraube	Hex. screw	vis hexagone
6	Zugstange	Connecting Rod	barre de traction
7	Stellring	Set collar	anneau régulateur
8	Bolzen	Bolt	boulon
9	Stellring	Set collar	anneau régulateur
10	Führungsstück	Guide Rail	segment de guidage
11	Stellstück	Adjusting piece	segment régulateur
12	Stellspindel	Adjusting spindle	pivot régulateur
13	Dosiergabel	dosing support	jumelle de dosage
14	6kt-Mutter	Hex. Nut	écrou hexagone
15	Rollenhebel z. Faltstempel	Roller lever for folding	levier à galet pour le poinçon
16	Faltstempelkurve	Folding plunger cam	came du poinçon de pliage
17	Einschraubverschraubg.	Screw joint	boulonnage de vissage
18	Rollenbolzen und Rolle	roller bolt and roller	boulon à galet et galet
19	Zugstange	Connecting rod	barre de traction
20	Hauptkurve z. Abfüllhahn	Main cam for filling nozzle	came principale pour le robinet de remplissage
21	Einschraubverschraubg.	Screw joint	boulonnage de vissage
22	Rollenhebel z. Abfüllhahn	Roller lever for filling	levier à galet pour le robinet de remplissage
23	Kurvenrolle 50 Ø	cam roller 50 Ø	galet à came 50 Ø
24	Gegenkurve z. Abfüllhahn	Counter cam for filling	contre-came pour le robinet de remplissage
25	Hauptkurve z. Dosierzylinder	main cam for dosing cylinder	came principale pour le verin de dosage
26	Rollenhebel z. Dosierzylinder	roller lever for dosing cylinder	levier à galet pour le verin de dosage
27	Einschraubverschraubg.	screw joint	boulonnage de vissage
28	Gegenkurve z. Dosierzylinder	counter cam for dosing cylinder	contre-came pour le verin de dosage
29	Kurvenrolle	cam roller	galet à came
30	Traverse	bracket	traverse
31	Dosierkurve	dosing cam	came de dosage
32	Rollenbolzen	roller bolt	boulon à galet
33	Kegelstift	taper pin	goupille conique
34	Nabe	hub	moyeu
35	Dosierkurve	dosing cam	came de dosage

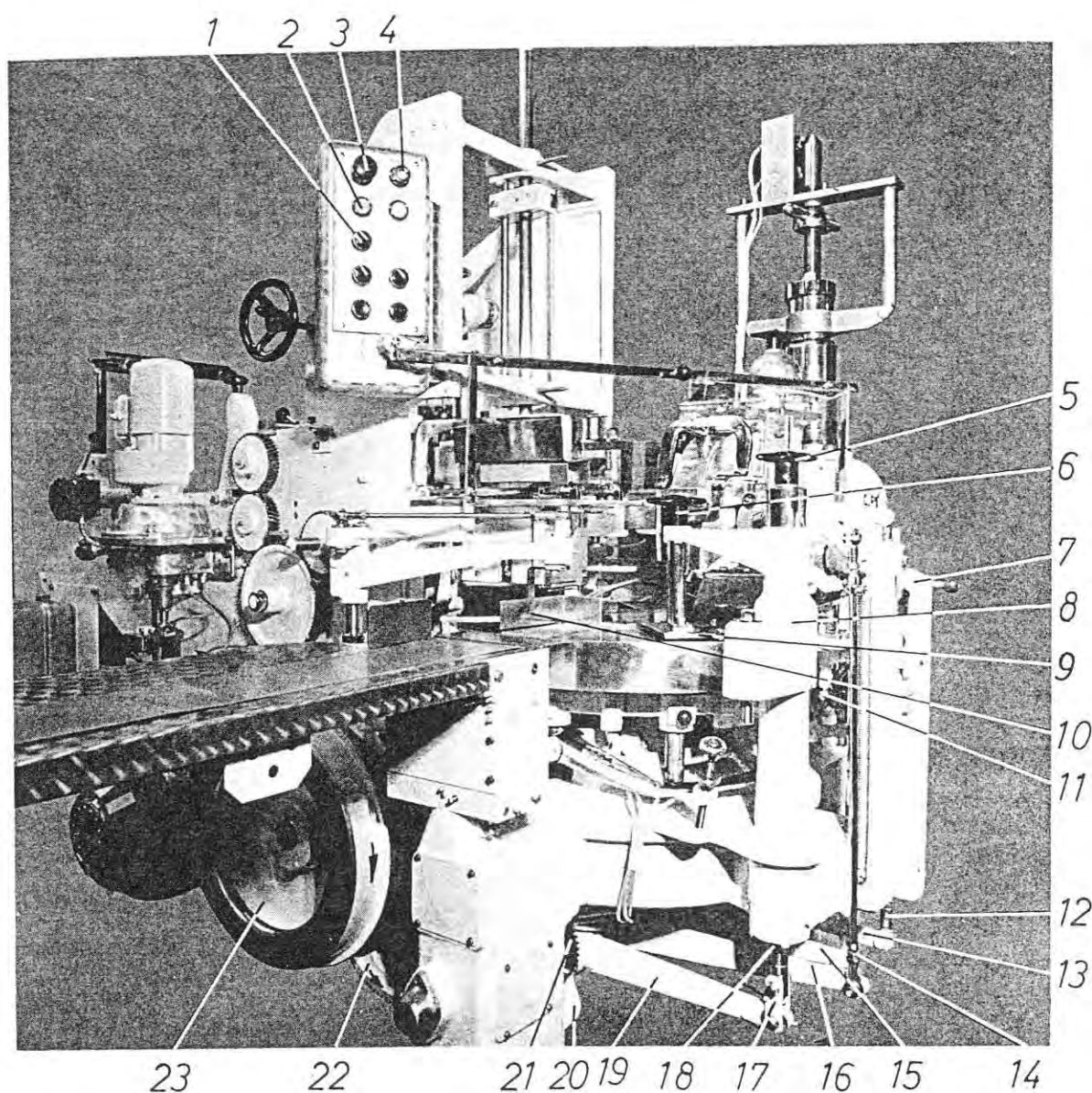


<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
38	Lager	bearing	palier
39	Achse	axle	arbre
40	Achse	axle	arbre

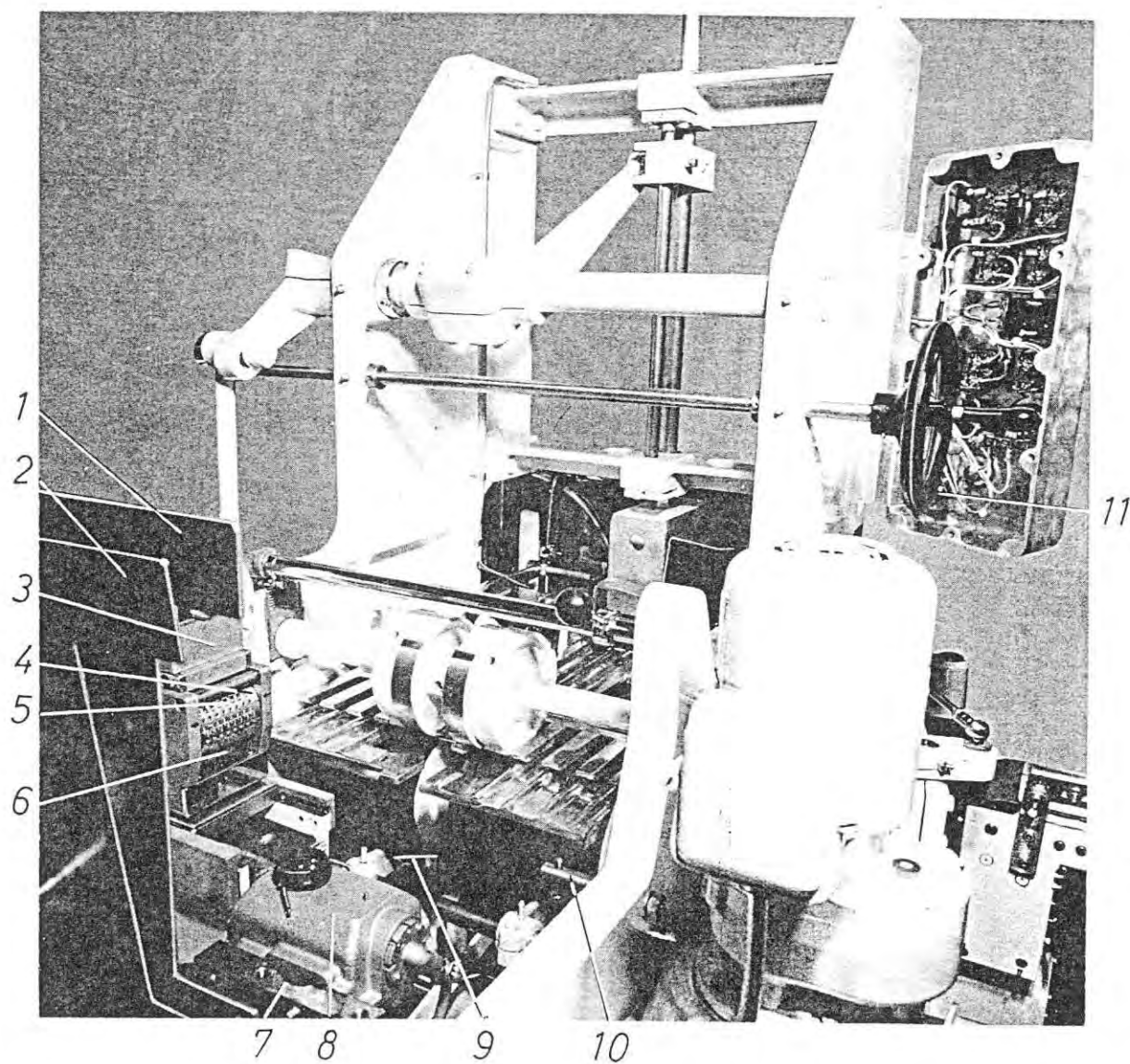
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Kalotte	spherical cap	pied vérin
2	Kalottenfuß	adjustable foot	piéd vérin
3	Hülse	sleeve	douille
4	Schmierleiste	lubrication gib	listeau de graissage
5	Zellenbodenhebel	cell bottom lever	levier de fond de cellule
6	Zugfeder	tension spring	ressort de traction
7	Hebel	lever	levier
8	Welle	shaft	arbre
9	Pendelrolle	pendulum roller	rouleau oscillant
10	Endschalter	limit switch	fin de course
11	Achse	axle	arbre
12	Pendelhebel	pendulum lever	levier oscillant
13	Zugfeder z. Kupplung	tension spring for clutch	ressort de traction pour embrayage
14	Zugstange	connecting rod	tige
15	Pendeltraverse	pendulum bracket	traverse oscillant
16	Kupplungsstück	coupling piece	pièce d'embrayage
17	Kupplungsstück	coupling piece	pièce d'embrayage
18	Untere Vorzugswalze	lower feed roller	cylindre d'entraînement inférieur
19	Lagerstein	slide block	pièce de glissement
20	Obere Vorzugswalze	upper feed roller	cylindre d'entraînement supérieur
21	Traverse	bracket	traverse
22	Bremsleiste	brake gib	listeau de freinage
23	Bremsbügel	brake bow	étrier de freinage
24	Rädergehäuse	gear housing	carter des roues
25	Pendelhebel	pendulum lever	levier oscillant
26	Führungsstange	guide rod	colonne de guidage
27	Pendelanhebel	pendulum lifting device	leveur de l'oscillant
28	Hebel	lever	levier
29	Gummi-Schwingkörper	rubber oscillating body	pièce oscillant en caoutchouc
30	Hebel	lever	levier
31	Zugstange	connecting rod	tige
32	Zugstange	connecting rod	tige
33	Lager	bearing	palier
34	Keilriemen	cone belt	courroie trapezoidale
35	Spreizscheibe	expanding disc	poulie
36	Bremsmotor	brake motor	moteur frein
37	Motorplatte	motor plate	plaque moteur



Position Reference Repère	Bezeichnung	Designation	Désignation
1	Drehschalter	rotary switch	interrupteur
2	Druckknopfschalter	push-button switch	bouton poussoir
3	Pilzdrucktaster	mushroom type switch	bouton interrupteur
4	Leuchtdrucktaster	luminous push-button	bouton poussoir d'alerte
5	Kreuzgriff	star handle	poignée en croix
6	Kreuzgriff	star handle	poignée en croix
7	Hebel	lever	levier
8	Halter	hold-fast	support
9	Preßplatte	press-plate	plaque de pression
10	Paketaabschieber	packet push-off device	poussoir plaquettes
11	Zugstange	connecting rod	tige
12	Gelenkstangenknopf	toggle-link head	embout
13	Hebel	lever	levier
14	Gelenkstangenkopf	taggle-link head	embout
15	Hebel	lever	levier
16	Hebel	lever	levier
17	Gelenkstück	articulated joint	rotule
18	Stange	rod	colonne
19	Hebel	lever	levier
20	Lagerbock x	pillow block	support
21	Zahnrad x	gear	roue dentée
22	Zahnrad	gear	roue dentée
23	Keilriemenscheibe	cone belt pulley	courroie trapézoïdale
x	Siehe Fig. 8345/ 96	look at fig. 8345/96	



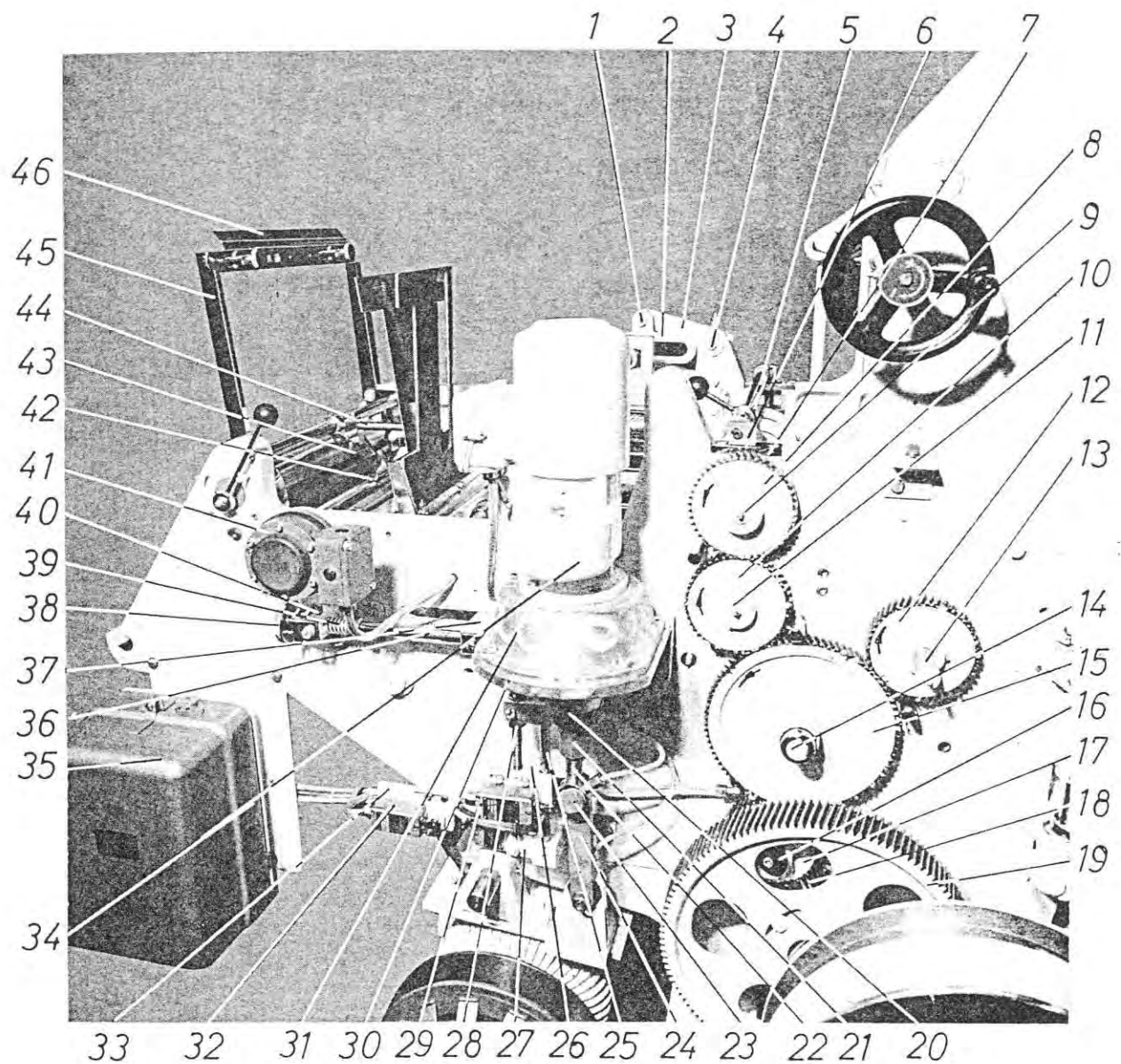
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Deckblech	cover plate	protection
2	Blech	plate	tôle
3	Perforieraggregat	perforating attachment	dispositif de perforation
4	Blindscheibe	blind disc	disque à types blancs
5	Perforierscheibe	perforating disc	disque de perforation
6	Stechnadel	perforating needle	types de piquage en aiguilles
7	Leiste	gib	listeau
8	Tastkopf	scanning head	tête palpeur
9	Spiegel	mirror	miroir
10	Anschlag	stop	butée
11	Endschalter	limit switch	fin de course



<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
37	Führung	guide	guidage
38	Handrad	handwheel	manivelle
39	Druckfeder	pressure spring	clavette
40	Lager	bearing	palier
41	Magnetbremse	magnetic brake	frein magnetique
42	Bremsgummi	brake rubber	caoutchouc de freinage
43	Bremsdaumen	brake cog	pièce de freinage
44	Anschlag	stop	butée
45	Rollenbremse	roll brake	frein à galet
46	Abreißblech	tear-off plate	tôle déchire-papier

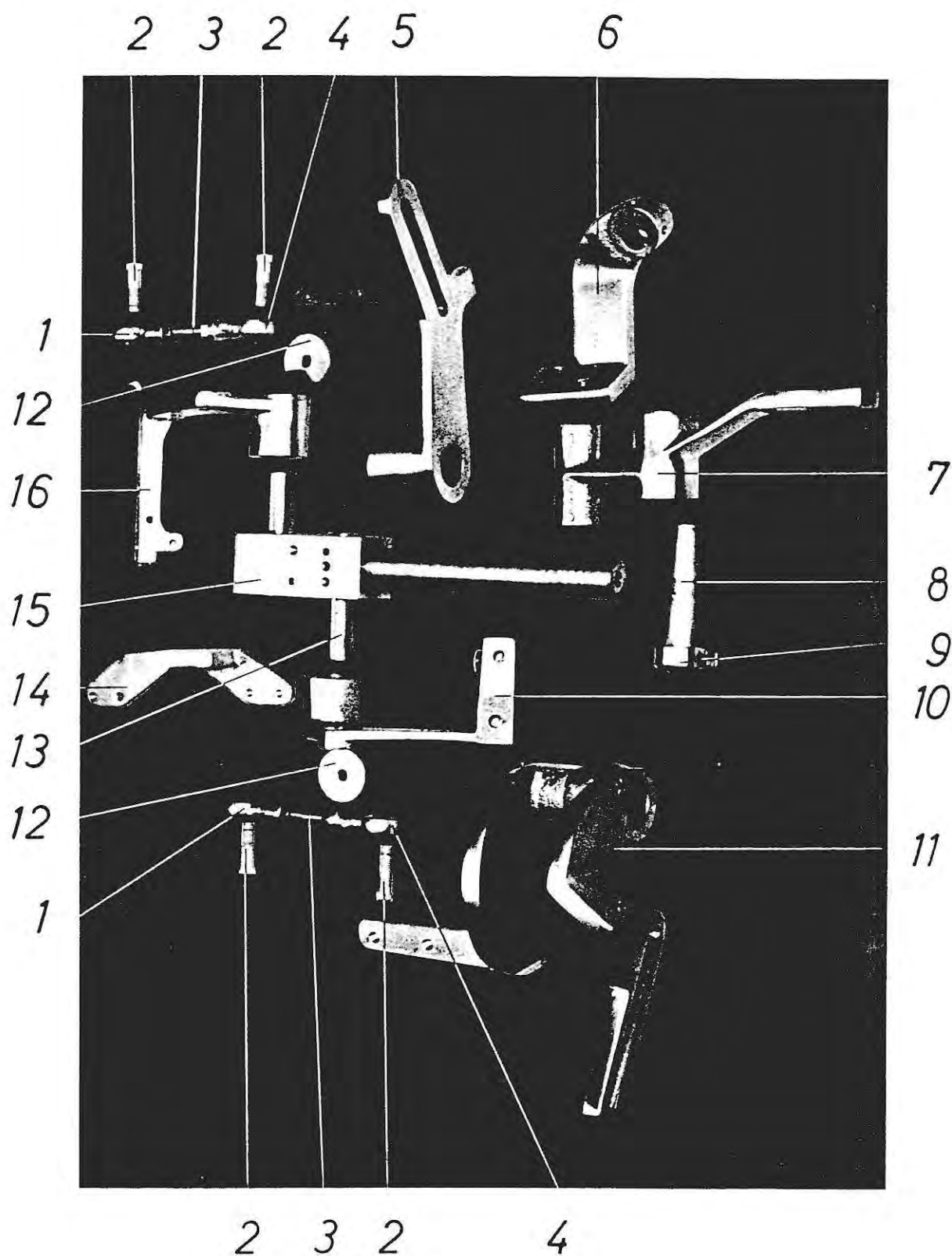
Position Reference Repère	Bezeichnung	Designation	Désignation
1	Bolzen	bolt	boulon
2	Lager	bearing	palier
3	Hebel	lever	boulon
4	Bolzen	bolt	levier
5	Stange	rod	colonne
6	Führungsstein	guide block	pièce de glissement
7	Platte	plate	plaque
8	Zahnrad	gear	roue dentée
9	Welle	shaft	arbre
10	Zahnrad	gear	roue dentée
11	Welle	shaft	arbre
12	Zahnrad	gear	roue dentée
13	Welle	shaft	roue dentée
14	Welle	shaft	arbre
15	Zahnrad	gear	roue dentée
16	Bolzen	bolt	boulon
17	Zahnrad	gear	roue dentée
18	Zahnrad	gear	roue dentée
19	Zahnrad	gear	roue dentée
20	Ring	ring	anneau
21	Führungsbüchse	guide bush	bague de guidage
22	Gewindestange	threaded rod	colonne filletée
23	Bolzen	bolt	boulon
24	Stange	rod	colonne
25	Stange	rod	colonne
26	Führungsstück	guide piece	pièce de guidage
27	Lager	bearing	palier
28	Lager	bearing	palier
29	Endschalter	limit switch	fin de course
30	Konsole	bracket	cale
31	Glocke (oder bei Hand- verstellung=Handrad)	bell (or in case of manual adjustment=handwheel)	cloche (ou bien mani- velle pour manoeuvrement à main)
32	Endschalter	limit switch	fin de course
33	Halter	hold-fast	support
34	Servo-Motor	servo motor	servo-moteur
35	Steuerkasten f. Fotozelle	control box for photo-cell	boîte de commande pour cellule photo-électrique
36	Gewindespindel	threaded spindle	vis molletée

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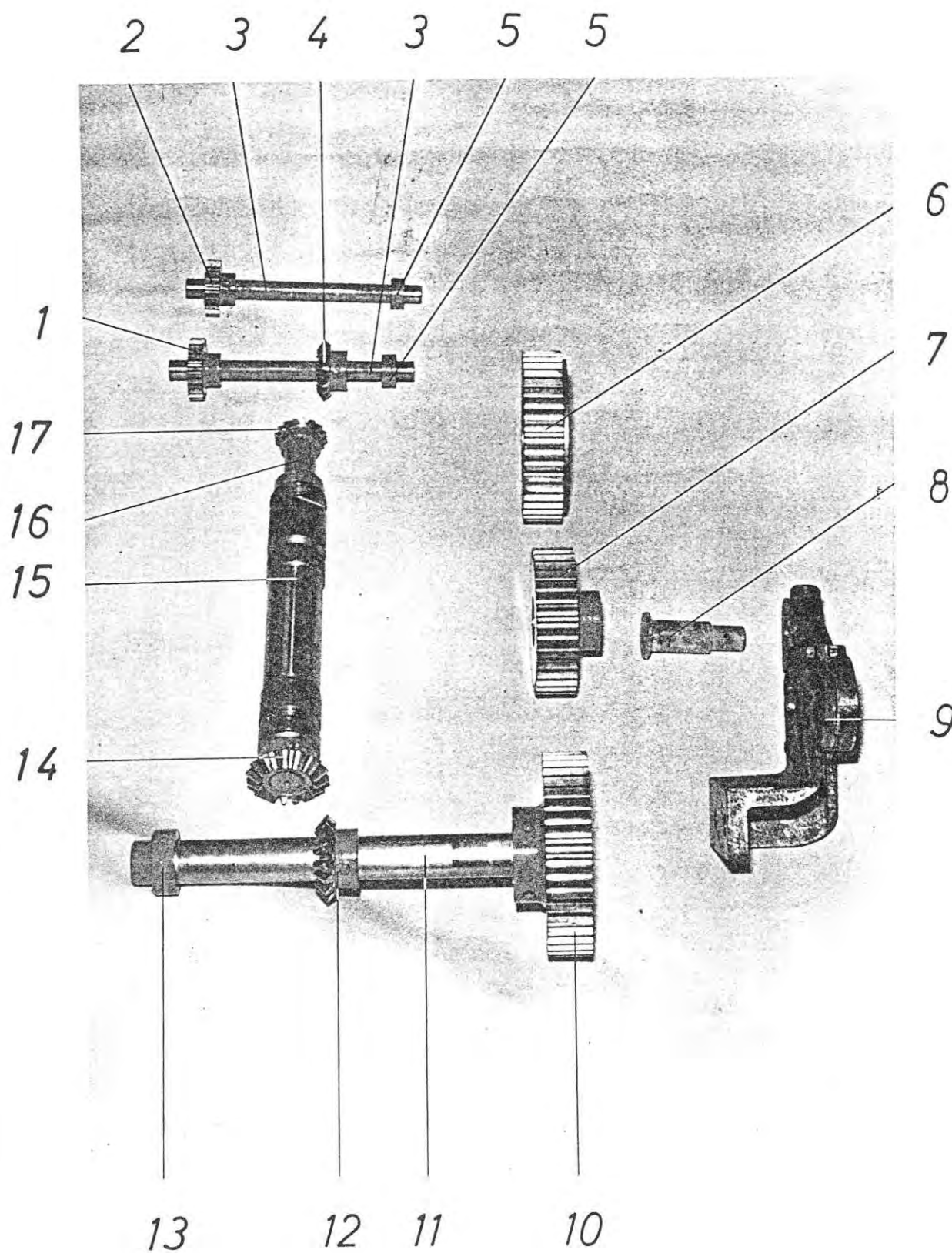
<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Gelenkstangenkopf links	toggle link head left	tête de joint articulé gauche
2	Bolzen	bolt	boulon
3	Zugstange	tie rod	tirant
4	Gelenkstangenkopf rechts	toggle link head right	tête de joint articulé droite
5	Hebel	lever	levier
6	Lager	bearing	palier
7	Hebel	lever	levier
8	Achse	axle	axe
9	Stellring	adjusting ring	bague de réglage
10	Hebel	lever	levier
11	Hebel	lever	levier
12	Deckscheibe	cover disc	disque de recouvrement
13	Bolzen	bolt	boulon
14	Halter	support	support
15	Achse	axle	axe
16	Hebel	lever	levier

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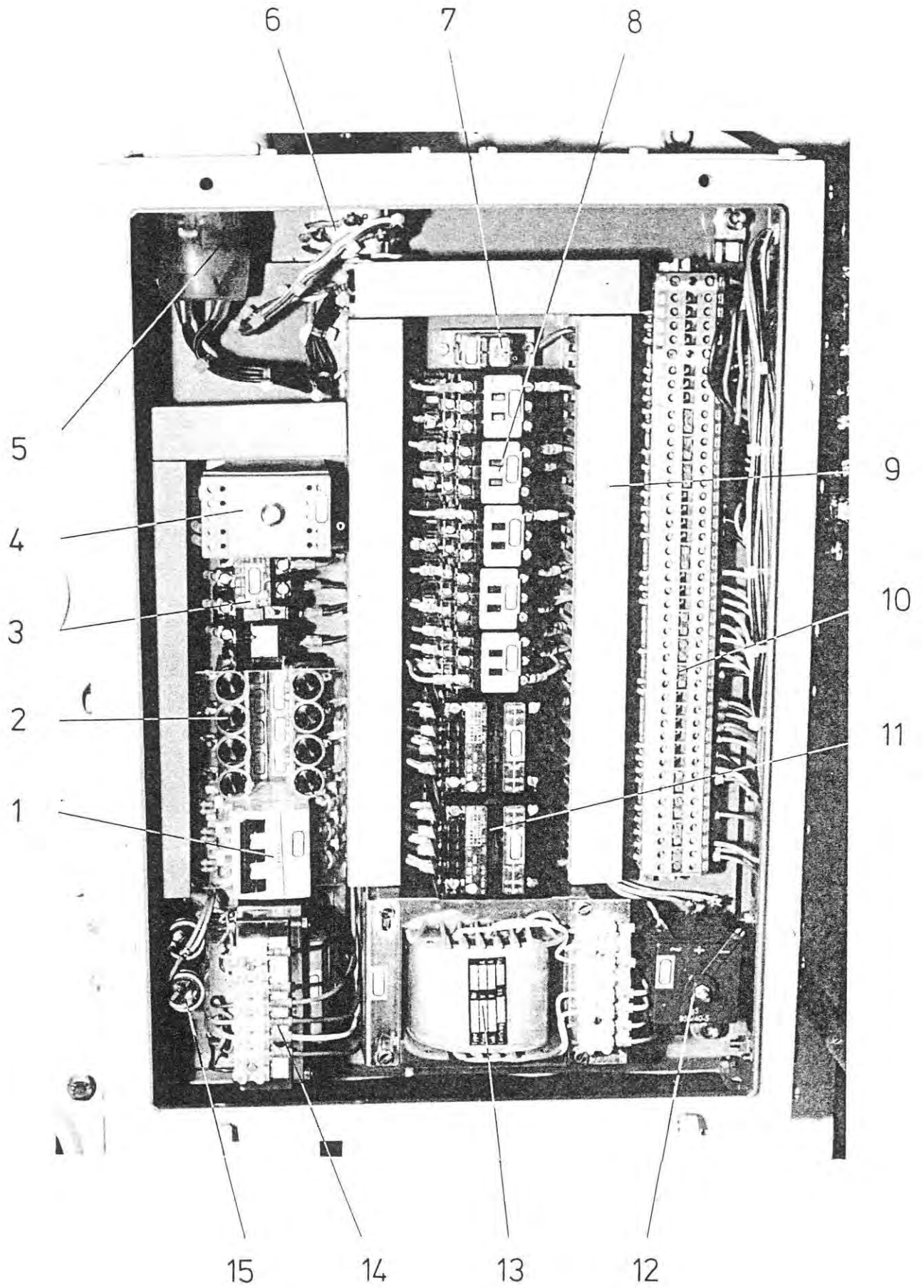
<i>Position Reference Repère</i>	<i>Bezeichnung</i>	<i>Designation</i>	<i>Désignation</i>
1	Zahnrad	Gear Wheel	Roue dentée
2	Zahnrad	Gear Wheel	Roue dentée
3	Welle	Shaft	Arbre
4	Kegelrad	Bevel wheel	Roue conique
5	Stellring	Adjusting Ring	Eague de réglage
6	Zahnrad	Gear Wheel	Roue dentée
7	Zahnrad	Gear Wheel	Roue dentée
8	Bolzen	Bolt	Boulon
9	Falter	Support	Support
10	Zahnrad	Gear Wheel	Roue dentée
11	Welle	Shaft	Arbre
12	Kegelrad	Bevel Wheel	Roue conique
13	Stellring	Adjusting Ring	Eague de réglage
14	Kegelrad	Bevel Wheel	Roue conique
15	Hohlachse	Hollow Axle	Essieu Creux
16	Welle	Shaft	Arbre
17	Kegelrad	Bevel Wheel	Roue conique

Fig. 8345/96



Position Reference Repère	Bezeichnung	Designation	Désignation
1	Sockelautomat	automatic connector	fusible automatique
2	Feinsicherung (Steuer- sicherung)	control fuse	fusible pour faible intensité (fusible de commande)
3	Motorschutzrelais	motor protection relay	relais de protection du moteur
④	Zeitrelais	timer	relais temporisé
5	Hauptschalter	main switch	interrupteur principale
⑥	Vier-Stufenschlatter	four-step-switch	interrupteur à 4 étapes
7	Klein-Relais	small relay	petit relais
8	Steuerschütz	control relay	contacteur de commande
9	Kabelkanal	cable duct	conduite de câbles
10	Klemmleiste	clamp gib	réglette de bornes
11	Luftschütz	air relay	contacteur à entrefer
12	Selengleichrichter	selenium rectifier	redresseur au sélénium
13	Steuertransformator	control transformer	transformateur de commande
⑭	Heiztransformator	heating transformer	transformateur de chauffage
⑮	Löschkondensator	quenching condenser	condensateur étouffant
○	= Nur für Thermodruck- gerät	= only in case of thermoprinting device	= pour thermo- imprimage seulement

Fig. 8380/71



Position Reference Repère	Bezeichnung	Designation	Désignation
1	Walze	Cylinder	Cylindre
2	Perforiernadel Ø 0,9 x 35	Perforating pin Ø 0,9 x 35	Aiguille à perforer Ø 0,9 x 35
3	Abdeckplatte 40x2x Stellenzahl	Covering Plate 40x2x number of digits	Plaque de couver- ture 40x2x nombre des chiffres
4	Ausziehplatte 28x4x Stellenzahl	Pull-off plate 28x4x number of digits	Plaque à retirer 28x4x nombre des chiffres
5	Messing U-Profil 40x27x Stellenzahl	Brass U-profile 40x27x number of digits	Profil en U en laiton 40x27x nombre des chiffres
6	Distanz-Stück 35x1,5x Stellenzahl	Spacer 35x1,5x number of digits	Pièce de distance 35x1,5x nombre des chiffres
7	Platte 78,5x4x Stellenzahl	Plate 78,5x4x number of digits	Plaque 78,5x4x nombre des chiffres

