ROTAVAPOR

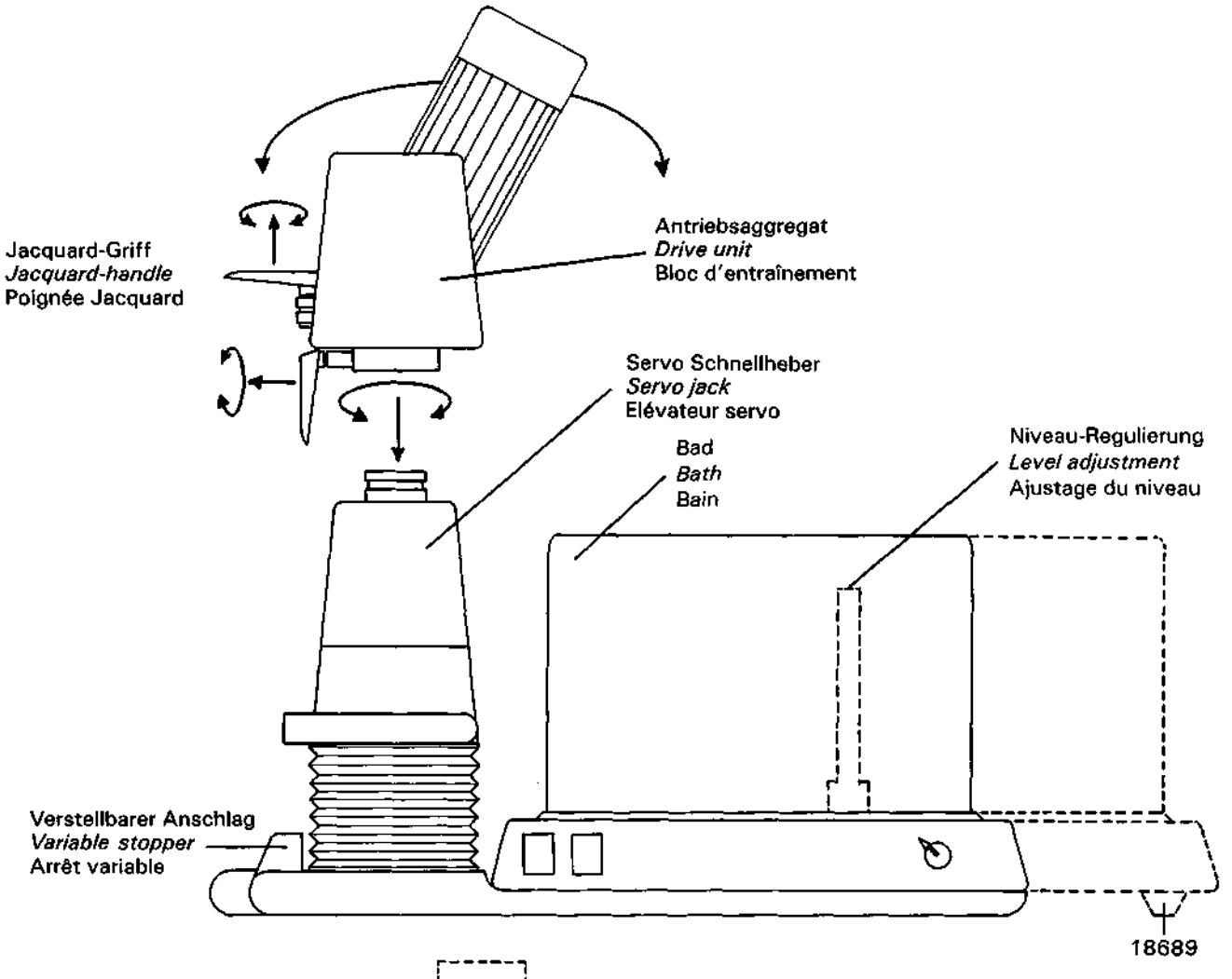
RE-111 RE-121 EL-131

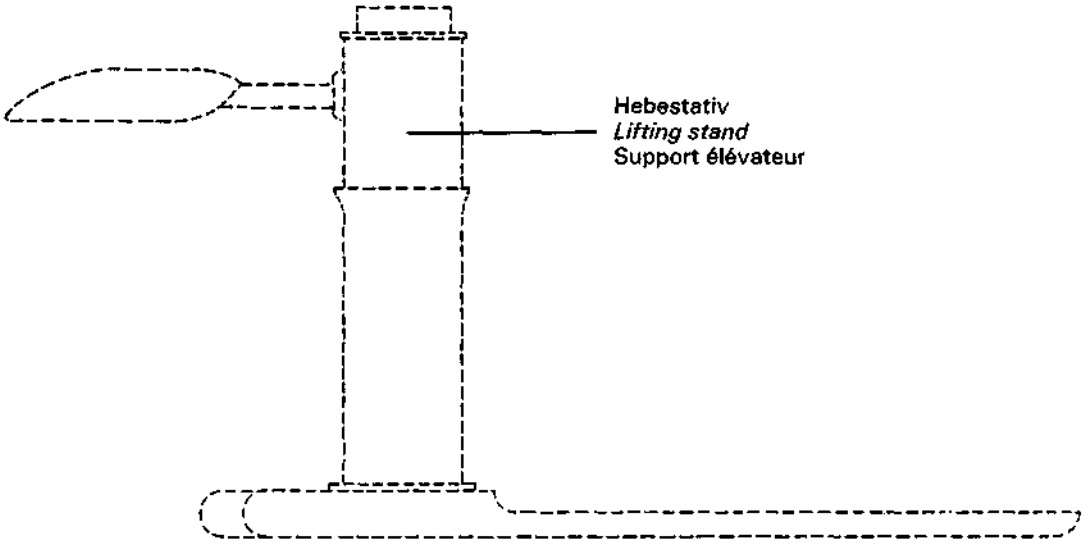
95068 A4 3000 185

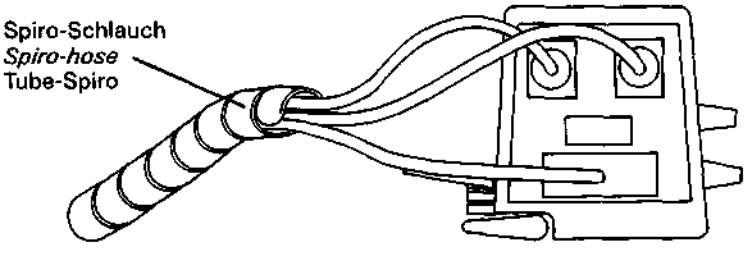
Technische Spezifikationen	R-111	RE-121	EL-131	Wasserbad 461	Ölbad 471
Antrieb	Induktionsmotor elektronisch reguliert, mit Tachogenerator			–	–
Drehzahl	stufenlos, 0 bis 220 U/min			–	–
Vakuumdichtheit		<1 mbar		–	–
Digitalanzeige	–	Drehzahl		–	–
	–	Badtemperatur		–	–
	–	Dampftemperatur (Sonde als Zubehör)		–	–
Spannungen	220 V/50 Hz	240 V/50 Hz	117 V/60 Hz	220 V, 117 V	220 V, 117 V
Leistungsaufnahme		85 W		1200 W	1200 W
Temperaturregelbereich				20–100°C	30–180°C
Trockenlaufsicherung				standard	standard
Niveauregulierung				standard	–
Baddurchmesser				265 mm	265 mm
Badinhalt				9 l	9 l

Technical specifications	*R-111*	*RE-121*	*EL-131*	*Waterbath 461*	*Oilbath 471*
Drive unit	*Sparkless induction motor, constant torque, electronically regulated*			–	–
Rotation	*stepless speed control up to 220 rpm*			–	–
Vacuum tightness		<1 mbar		–	–
Digital LED display	–	*Speed of rotation*		–	–
	–	*bath temperature*		–	–
	–	*vapour temperature (Probe is optional)*		–	–
Voltages	*220 V/50 Hz*	*240 V/50 Hz*	*117 V/60 Hz*	*220 V, 117 V*	*220 V, 117 V*
Power consumption		*85 W*		*1200 W*	*1200 W*
Temperature range				*20–100°C*	*30–180°C*
Dry run dual safety switch				*standard*	*standard*
Level control				*standard*	–
Bath diameter				*265 mm*	*265 mm*
Bath volume				*9 l*	*9 l*

Spécifications techniques	R-111	RE-121	EL-131	Bain marie 461	Bain d'huile 471
Entraînement	Moteur à induction, régulation électronique, couple constant			–	–
Rotation	variable 0 à 220 t.p.m.			–	–
Etenchéité		<1 mbar		–	–
Affichage digital	–	Nombre de tours		–	–
	–	Température du bain		–	–
	–	Température de la vapeur (sonde optionnelle)		–	–
Tensions	220 V/50 Hz	240 V/50 Hz	117 V/60 Hz	220 V, 117 V	220 V, 117 V
Puissance		85 W		1200 W	1200 W
Domaine de température				20–100°C	30–180°C
Sécurité contre la marche à sec				standard	standard
Contrôle de niveau				standard	–
Diamètre du bain				265 mm	265 mm
Volume du bain				9 l	9 l


Jacquard-Griff
Jacquard-handle
Poignée Jacquard
Antriebsaggregat
Drive unit
Bloc d'entraînement
Servo Schnellheber
Servo jack
Elévateur servo
Bad
Bath
Bain
Niveau-Regulierung
Level adjustment
Ajustage du niveau
Verstellbarer Anschlag
Variable stopper
Arrêt variable
18689


Hebestativ
Lifting stand
Support élévateur


Spiro-Schlauch
Spiro-hose
Tube-Spiro

usammenbau

. Untere Bride öffnen und das Aggregat auf den Servoschnellheber oder das Stativ setzen.
Bride anziehen.

. Der Neigungswinkel der Rotationsachse sollte 25° sein. Die angegossenen Winkelmarken müssen sich decken. Gegebenenfalls die obere Bride öffnen und richtigen Neigungswinkel einstellen.
Die Jacquard-Griffe an der Schwenk- und an der Drehbride werden zum Nachfassen wie abgebildet angehoben.

. Bad hinzufügen.
Den fünften Badfuss (18689) einstecken, wenn das Bad mehr als 5 cm nach rechts verschoben werden muss.

. Glassatz wie auf Seiten 7–10 abgebildet aufbauen.

. Verstellbaren Anschlag so einstellen, dass drehende Teile den Badrand nicht berühren.

. Den Wassernachspeiseschlauch an die kleine und den Wasserablaufschlauch an die grosse Olive des Bades anschliessen.
Für kleine Kolben bringt man die Niveau-Regulierung nach oben:
Überlaufrohr durch Drehen lösen.

. **Kabel**
Das Anschlusskabel an den Nocken der Aggregatrückseite befestigen.
Dazu wird die Plastik-Kabelplatte zuerst nach hinten geschoben.
Bei den Modellen mit Temperatursonden werden die Kabel zusätzlich mit dem Spiroschlauch (00728) umwickelt.

Assembling

1. *Loosen lower clamp and place drive unit onto the servo jack or lifting stand.*
Tighten clamp.
2. *Inclination angle of rotation axis should be 25°. Check the marks. If necessary loose upper clamp and tilt until the angle marks are congruent.*

Lift the Jacquard-handle as shown for additional turning.

3. *Put bath onto the base plate.*
Insert the fifth plastic foot (18689) if the bath has to be displaced more than 5 cm to the right.

4. *Mount glass assembly according to sketches on pages 7 to 10.*
5. *Adjust variable stopper such that no rotating part touches the bath bord.*

6. *Connect the feed water hose to the small and the drain hose to the large connection of the bath.*

For small flasks put level adjustment in a higher position:
Turn overflow tube to loose it.

7. ***Cable***
The cable may be fixed at the pins located at the rear of the drive unit.
For access, push the plastic cable plate backwards form the drive unit.
-The spiro-hose (00728) is wrapped around the probe cables to secure them additionally. See illustration.

Assemblage

1. Ouvrir la bride inférieure et poser le bloc d'entraînement sur l'élévateur servo ou sur le statif élévateur.
Serrer la bride.
2. L'angle de l'axe de rotation devrait être 25°. Vérifier les marques. Si nécessaire desserrer la bride supérieure et corriger l'inclinaison.

Les poignées Jacquard peuvent être levées selon le dessin pour tourner l'écrou d'avantage.

3. Rajouter le bain.
Inserer le cinquième pied (18689) si le bain doit être déplacé en excès de 5 cm vers la droite.

4. Assembler le montage en verres selon les illustrations (pages 7–10).
5. Ajuster l'arrêt variable de la manière qu'aucune pièce en rotation ne touche le bord du bain.
6. Connecter le tuyeau d'alimentation sur la petite olive du bain et le tuyeau de vidange sur la grande olive.

Pour les ballons petits, mettez l'ajustage en position haute:
Tournez le tube trop plein pour le deserrer.

7. **Câble**
Le câble est fixé autour des boulons à l'arrière de l'unité de l'entraînement.
Pour l'accès, pousser la plaque cache câble en plastique vers l'arrière.
Le tube spiro (00728) est enroulé autour des câbles des sondes. Voir illustration.

Hinweise und Tips

Vor dem ersten Einschalten
Überprüfen, ob die Netzspannung und Frequenz mit den Angaben auf dem Typenschild übereinstimmen.

Wartung der Vakuumdichtung
- Reinigen durch Spülen und Trocknen mit weichem Lappen verlängert die Lebensdauer der Dichtung. Eindringen von Lösungsmitteln in das Aggregat wird ebenfalls verhindert.
- Dichtung und Glasteil regelmässig reinigen, besonders nach Siedeverzügen und Arbeiten mit kristallinen Produkten.
- Dichtung beim Montieren und Herausnehmen nicht verkanten und auf dem Glasteil immer rechtwinklig zur Drehachse bewegen. Dichtungslippe nicht beschädigen.
- Dichtung nicht fetten. (Abrieb und Fett wirken wie eine Schleifpaste.)

Glasschliffe
Für die beste Dichtheit müssen die Glasschliffe gefettet werden. Empfehlung: Art. 17595 Glisseal Laborfett (silikonfrei).

Festsitzendes Dampfdurchführungsrohr
Festsitzendes Dampfdurchführungsrohr kann mit dem ‹Extractor› herausgenommen werden. Bestellcode: 11137.

Wasserbad
Wird im Wasserbad deionisiertes oder destilliertes Wasser verwendet, muss diesem Borax zugegeben werden.

Ölbad
Nebst Wärmeträgeröl kann auch wasserlösliches Polyalkylenglykol oder PEG verwendet werden.

Ersatzteile
Damit Ersatzteile schnell und richtig geliefert werden, benötigen wir die korrekte Artikelnummer aus dieser Betriebsanleitung.

Notes and tips

Before you switch on the instrument for the first time:
Check that voltage and frequency are the same as on the type plate.

Care of vacuum seal
- *Rincing and wiping with a soft towel will increase the durability of the seal and avoid solvent penetration into the drive unit.*
- *Clean the seal and glass part regularly and especially after boiling delays and work with cristalline products.*
- *Do not tilt the seal on the glass, move it perpendicularly to rotation axis. Don't hurt the lip of the seal.*
- *Don't grease the seal. (Abrasion debris and grease will grind on the seal.)*

Ground glass joints
Use silicone free grease (Glisseal, code 17595) for optimal tightness.

Jammed vapour duct
Use extractor (code 11137) to remove jammed vapour duct.

Waterbath
If the waterbath is operated with deionised or distilled water it is necessary to add Borax to the water.

Oilbath
Besides heat transfer oils, water soluble PEG or polyalkylene glycole may be used.

Spare parts
To process your order fast and correctly we need the part number used in this manual.

Conseils et recommandations

Avant la première mise en marche
Vérifier si la tension et la fréquence correspondent avec les indications de l plaque de fabrication.

Soins du joint de vide
- Le nettoyage par rinçage et séchage avec un chiffon mou augmente la longévité du joint et évite la pénétration de solvent dans le bloc d'entraînement.
- Nettoyer le joint et la pièce en verre regulièrement et surtout après retards d'ébullition ou travaux avec des produits cristallins.
- Ne pas graisser le joint. (Les débris c frictionnement et la graisse forment une pâte abrasive.)

Rodages en verre
Pour la meilleure etanchéité les rodage: doivent êtres graissés. Recommendation: Article 17595, Glisseal, graisse sans silicone.

Tube conduit de vapeur coincé
L'extracteur, code 11137, permet l'enlèvement facile du tube coincé.

Bain marie
Si le bain marie est utilisé avec de l'eau déionisée ou distillée, il faut y ajouter c borax.

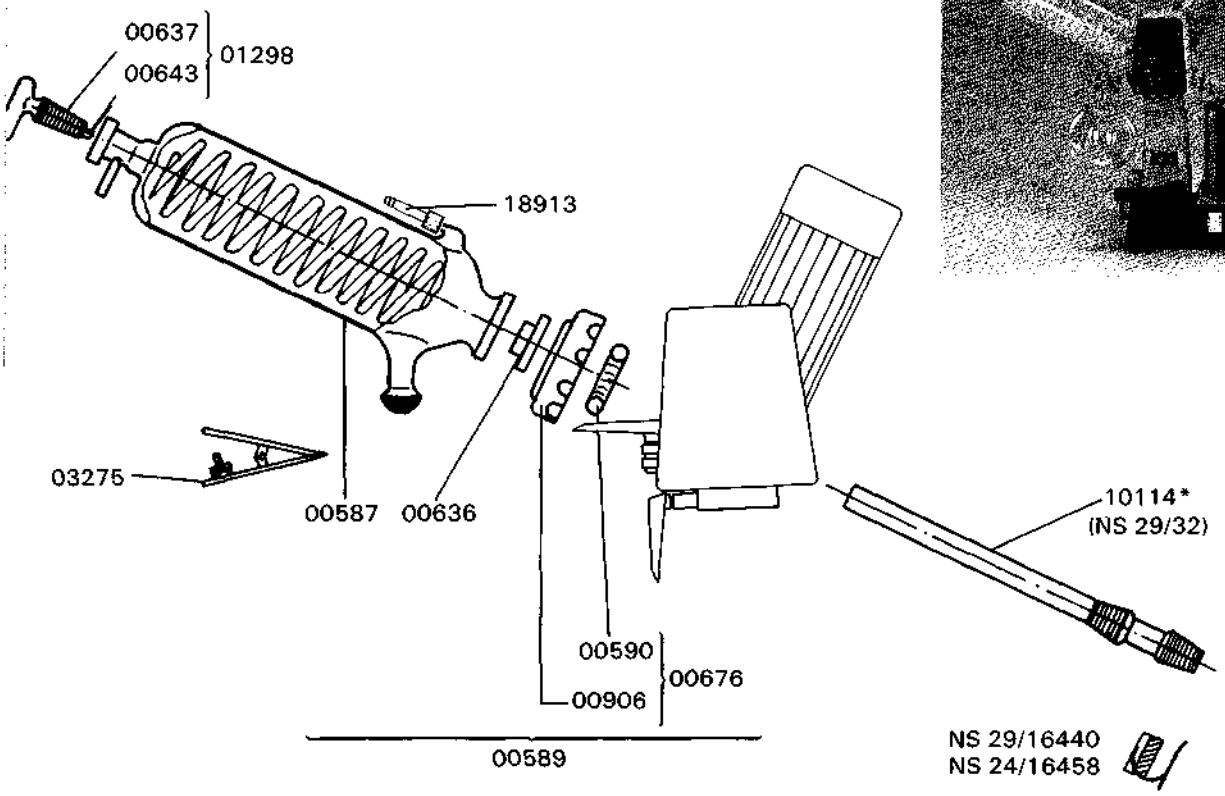
Bain d'huile
A part les huiles thermiques, on peut utiliser un PEG ou un glycol polyalcyler soluble à l'eau.

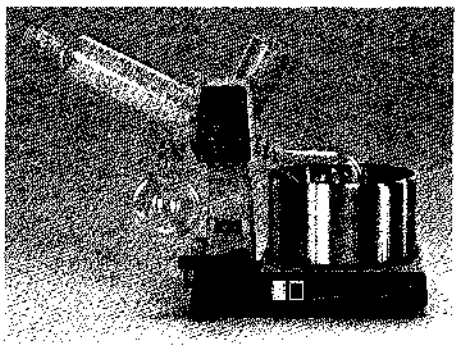
Pièces de rechange
Pour que les pièces de rechange arrivei vite et correcte chez vous, veuillez toujours indiquer le numéro des article: listés dans ce mode d'emploi.

Glasaufbauten | ***Glass assemblies*** | **Assemblages de verre**

Aufbau RE A | ***Assembly RE A*** | **Assemblage RE A**

Rotavapor RE-111, 121, 140





	Aufbau A	***Assembly A***	**Assemblage A**
18965	**Glasaufbau A kompl. zu RE**	***Glass assembly A compl. for RE***	**Assemblage A compl. pour RE**
00587	Kühler	*Condenser*	Réfrigérant
00589	Kühler mit Überwurfmutter und Dichtung	*Condenser with screw cap and seal*	Réfrigérant avec écrou chapeau et joint
00636	Dichtung KD-22	*Gasket KD-22*	Joint KD-22
00637	Hahnreiber NS 19/38	*Cock STJ 19/38*	Robinet CN 19/38
00643	PTFE-Schlauch, 460 mm	*PTFE tube, 460 mm*	Tuyau PTFE, 460 mm
00676	Überwurfmutter mit Einlagefeder	*Screw cap with insert spring*	Couplage avec ressort
01298	Einleithahn kompl.	*Introduction stopcock compl.*	Robinet d'introduction compl.
03275	KS-Klammer	*KS-Clip*	KS-Pince
10114*	Dampfdurchführungsrohr	*Vapour duct*	Conduit de vapeur
16440	Sicherheitsklammer 29	*Saveclip 29*	Agrafe de sécurité 29
18913	**Schlaucholive GL 14 kompl.**	***Hose adapter GL 14 compl.***	**Olive GL 14 compl.**
18914	Überwurfmutter GL 14	*Screw cap GL 14*	Ecrou chapeau GL 14
18915	O-Ring GL 14	*O-ring GL 14*	Joint torique GL 14
18916	Olive GL 14, gebogen	*Hose stem GL 14, bent*	Olive GL 14, coudée

Andere Schliffe siehe Matrix auf Seite 34
Other Joints see matrix at page 34
Autre rodages voir matrix page 34

Aufbau RE B

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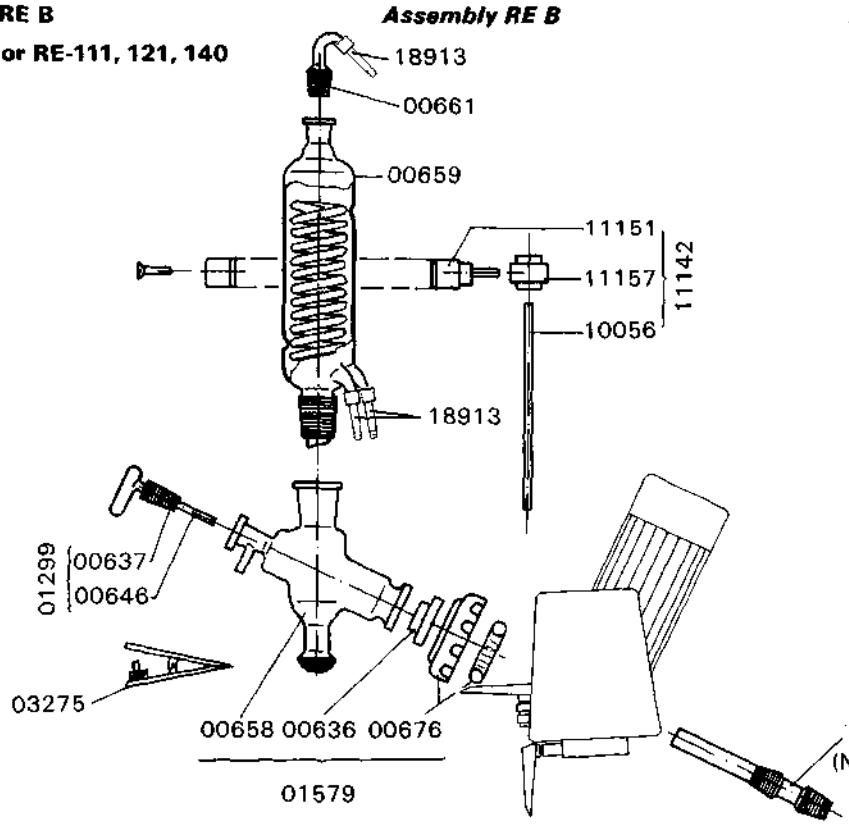
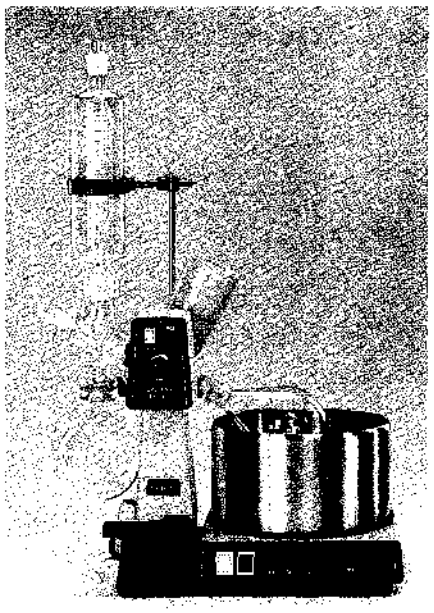
Assembly RE B

Assemblage RE B





	Aufbau B	***Assembly B***	**Assemblage B**
18964	**Glasaufbau B kompl. zu RE**	***Glass assembly B compl. for RE***	**Assemblage B compl. pour RE**
00636	Dichtung KD-22	*Gasket KD-22*	Joint KD-22
00637	Hahnreiber, NS 19/38	*Cock, STJ 19/38*	Robinet, CN 19/38
00646	PTFE-Schlauch, 210 mm	*PTFE tube, 210 mm*	Tuyau PTFE, 210 mm
00658	Verteilstück Glas	*Distribution piece glass*	Tête de distribution verre
00659	Kühler	*Condenser*	Réfrigérant
00661	Vakuumstutzen	*Vacuum connection*	Raccord de vide
00676	Überwurfmutter mit Einlagefeder	*Screw cap with insert spring*	Couplage avec ressort
01299	Einleithahn kompl.	*Introduction stopcock compl.*	Robinet d'introduction compl.
01579	Verteilstück mit Dichtung und Überwurfmutter	*Distribution piece with gasket and screw cap*	Tête de distribution avec joint et couplage
03275	KS-Klammer	*KS-Clip*	KS-Pince
10175	Dampfdurchführungsrohr	*Vapour duct*	Conduit de vapeur
11142	Stativ für Aufbau B kompl., bestehend aus:	*Scaffolding for Assembly B compl., consisting of:*	Support pour assemblage B compl., composé de:
10056	Stab, 300 × 12	*Rod, 300 × 12*	Tige, 300 × 12
11151	Kühlerbride mit Stab	*Condenser clamp with rod*	Bride pour réfrigérant et tige
11157	Kreuzmuffe	*Cross piece*	Pièce en croix
16440	Sicherheitsklammer 29	*Saveclip 29*	Agrafe de sécurité 29
18913	**Schlaucholive GL 14 kompl.**	***Hose adapter GL 14 compl.***	**Olive GL 14 compl.**
18914	Überwurfmutter GL 14	*Screw cap GL 14*	Ecrou chapeau GL 14
18915	O-Ring GL 14	*O-ring GL 14*	Joint torique GL 14
18916	Olive GL 14, gebogen	*Hose stem GL 14, bent*	Olive GL 14, coudée

* Andere Schliffe siehe Matrix auf Seite 34
Other Joints see matrix at page 34
Autre rodages voir matrix page 34

ufbau RE C ***Assembly RE C*** **Assemblage RE C**

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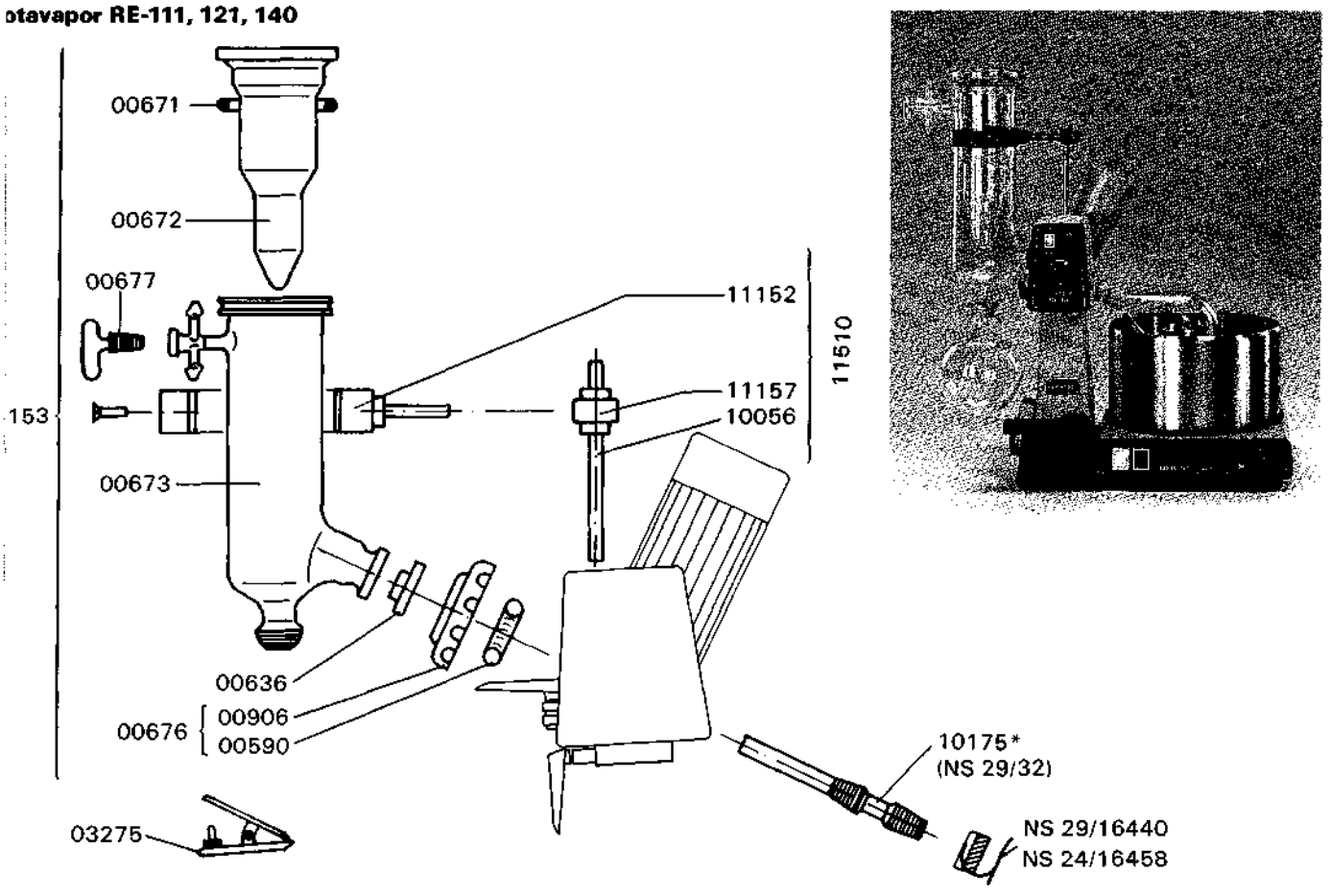
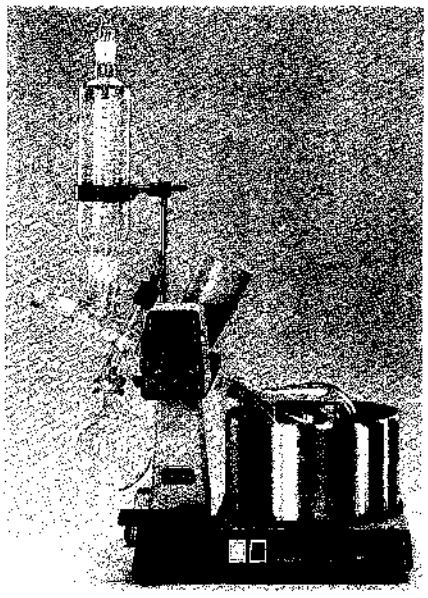


	Kühlfalle 2teilig	***Cold Trap 2-parts***	**Piège à froid 2-pièce**
3963	**Glasaufbau C kompl. zu RE**	***Glass assembly C compl. for RE***	**Assemblage C compl. pour RE**
0636	Dichtung KD-22	*Gasket KD-22*	Joint KD-22
0671	O-Ring, 88,3 × 5,3	*O-ring, 88.3 × 5.3*	Joint torique, 88,3 × 5,3
0672	Kühlfinger	*Cold finger*	Partie intérieur
0673	Kühlfalle Aussenteil	*Cold Trap mantle*	Manteau pour piège à froid
0676	Überwurfmutter mit Einlagefeder	*Screw cap with insert spring*	Couplage avec ressort
0677	Hahnreiber, NS 19/38	*Cock, STJ 19/38*	Robinet, CN 19/38
3275	KS-Klammer	*KS-Clip*	KS-Pince
0175	Dampfdurchführungsrohr	*Vapour duct*	Conduit de vapeur
153	Kühlfalle mit Dichtung und Überwurfmutter kompl.	*Cold Trap with Gasket and screw cap compl.*	Piège à froid avec joint et couplage compl.
510	Stativ für Kühlfalle kompl., bestehend aus:	*Scaffolding for Cold Trap compl., consisting of:*	Support pour assemblage piège compl., composé de:
0056	Stab, 300 × 12	*Rod, 300 × 12*	Tige, 300 × 12
152	Kühlerbride mit Stab	*Clamp for Cold Trap with rod*	Bride pour piège avec tige
157	Kreuzmuffe, 12/12	*Cross piece, 12/12*	Pièce en croix, 12/12
440	Sicherheitsklammer 29	*Saveclip 29*	Agrafe de sécurité 29

Andere Schliffe siehe Matrix auf Seite 34
Other Joints see matrix at page 34
Autre rodages voir matrix page 34

Aufbau EL S *Assembly EL S* **Assemblage EL S**

Rotavapor EL-131, 141



	Aufbau S	***Assembly S (Standard)***	**Assemblage S**
3961	**Glasaufbau S kompl. zu EL**	***Glass assembly S compl. for EL***	**Assemblage S compl. pour EL**
)590	Einlagefeder	*Insert spring*	Ressort
)591	Auflagering zu Kühlerflansch	*Flat seal for condenser flange*	Joint plat pour réfrigérant
)659	Kühler	*Condenser*	Réfrigérant
)661	Vakuumstutzen	*Vacuum connection*	Raccord de vide
)676	Überwurfmutter mit Einlagefeder	*Screw cap with insert spring*	Couplage avec ressort
)906	Überwurfmutter, di 50,5 mm	*Screw cap, di 50.5 mm*	Ecrou chapeau, di 50,5 mm
)933	Einleithahn Glas (19/26; 14,5/27)	*Stopcock glass (19/26; 14.5/27)*	Robinet verre (19/26; 14,5/27)
)934	PTFE-Schlauch, 300 mm	*PTFE tube, 300 mm*	Tuyau PTFE, 300 mm
)935	PTFE-Ring zu 00934	*PTFE washer for 00934*	Rondelle PTFE pour 00934
)936	Ablaufventil kompl., bestehend aus:	*Drain valve compl., consisting of:*	Soupape d'écoulement compl., composé de:
)927	Drehknopf	*Knob*	Bouton
)928	Deckel	*Cover*	Couvercle
)939	Überwurfmutter	*Screw cap*	Ecrou chapeau
)955	Ventilspindel	*Valve spindel*	Pivot de robinet
)958	Gewindestück PVC	*Thread piece PVC*	Pièce filetée PVC
3473	Dichtung	*Gasket*	Joint
006	Vakuumzwischenstück mit Hahn	*Vacuum-adapter with cock*	Pièce intermédiaire de vide avec robinet
301	Einleithahn kompl.	*Introduction stopcock compl.*	Robinet d'introduction compl.
353	Vak. Zwischenstück + Klammer	*Vacuum-adapter + RJ-Clip*	Pièce interméd. + Pince RS
3275	KS-Klammer	*RJ-Clip*	Pince RS
3280	Klammer NS 19	*STJ 19 clip*	Pince CN 19
056	Stab, 300 × 12	*Rod, 300 × 12*	Tige, 300 × 12
3180	Verteilstück nur Glas	*Distribution head glass only*	Pièce de distribution verre seulement
130	Verteilstück kompl. mit Ablaufventil	*Distribution head compl. with drain valve*	Pièce de distribution compl. avec soupape d'écoulement
3142	Stativ kompl.	*Scaffolding compl.*	Support compl.
143	Schutzring PTFE	*Protecting ring PTFE*	Anneau de protection PTFE
162	Ausziehwerkzeug KD 26	*Seal extractor KD 26*	Outil d'extraction KD 26
204	Überwurfmutter, di 51,5 mm	*Screw cap, di 51.5 mm*	Ecrou chapeau, di 51,5 mm
3440	Sicherheitsklammer 29	*Saveclip 29*	Agrafe de sécurité 29
3661	Übergangsstück Flansch, NS 29/32	*Transition pipe, flange, STJ 29/32*	Raccord de réduction, joint à bride, CN 29/32
	Vakuumdichtungssystem	***Vacuum-Sealing System***	**Système du joint pour le vide**
3179	KD-26 Vakuumdichtung	*KD-26 Vacuum seal*	KD-26 Joint pour le vide
623	Stützring, rostfrei, Stahl	*Supporting ring, ss-steel*	Anneau de support, inox.
629	Viton O-Ring	*Viton O-ring*	Anneau-O viton
630	PTFE-Schutzring	*Protecting ring PTFE*	Anneau de protection PTFE
635	Schutzring mit 2 O-Ringen kompl.	*Protecting ring with 2 O-rings compl.*	Anneau de protection avec 2 anneaux-O compl.
913	**Schlaucholive GL 14 kompl.**	***Hose adapter GL 14 compl.***	**Olive GL 14 compl.**
914	Überwurfmutter GL 14	*Screw cap GL 14*	Ecrou chapeau GL 14
915	O-Ring GL 14	*O-ring GL 14*	Joint torique GL 14
916	Olive GL 14, gebogen	*Hose stem GL 14, bent*	Olive GL 14, coudée

Aufbau EL E ***Assembly EL E*** **Assemblage EL E**

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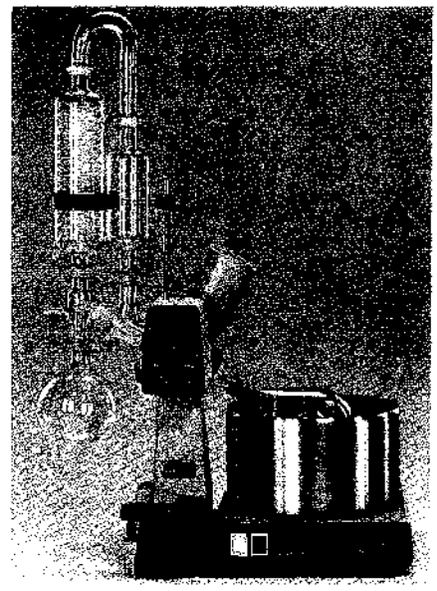


	Aufbau E mit absteigendem Kühlsystem	***Assembly E*** *with descending condenser*	**Assemblage E** avec réfrigérant descendant
18962	**Glasaufbau E kompl. zu EL**	***Glass assembly E compl. for EL***	**Assemblage E compl. pour EL**
00590	Einlagefeder	*Insert spring*	Ressort
00591	Auflagering zu Kühlerflansch	*Flat seal for condenser flange*	Joint plat pour réfrigérant
00676	Überwurfmutter mit Einlagefeder	*Screw cap with insert spring*	Ecrou chapeau avec ressort
00794	Schraubkappe SVL 15	*Screw cap SVL 15*	Couvercle SVL 15
00906	Überwurfmutter, di 50,5 mm	*Screw cap, di 50.5 mm*	Ecrou chapeau, di 50,5 mm
00933	Einleithahn Glas (19/26; 14,5/27)	*Introduction stopcock glass* *(19/26; 14.5/27)*	Robinet d'indroduction verre (19/26; 14,5/27)
00934	PTFE-Schlauch, 300 mm	*PTFE tube, 300 mm*	Tuyau PTFE, 300 mm
01002	Expansionsgefäss	*Expansion vessel*	Vase d'expansion
01003	Bogenrohr	*U-tube*	Tube en U
01004	Vakuumzwischenstück	*Vacuum intermediate piece*	Pièce intermédiaire d'aspiration
01301	Einleithahn kompl. mit PTFE-Schlauch	*Introduction stopcock compl.* *with PTFE tube*	Robinet d'introduction compl. avec tuyau PTFE
03275	KS-Klammer	*KS-Clip*	KS-Pince
03280	Klammer NS 19	*STJ 19 clip*	Pince CN 19
10179	KD-26 Vakuumdichtung	*Vacuum gasket KD-26*	Joint pour le vide KD-26
10183	Kühler	*Condenser*	Réfrigérant
10184	Verteilstück mit Überwurfmutter	*Distribution head* *with screw cap*	Pièce de distribution avec écrou-chapeau
10056	Stab, 300 × 12	*Rod, 300 × 12*	Tige, 300 × 12
11142	Kühlerhalterung kompl.	*Condenser scaffolding compl.*	Support pour réfrigérant compl.
11157	Kreuzmuffe	*Cross piece*	Pièce en croix
11151	Kühlerbride mit Stab	*Condenser clamp with rod*	Bride pour réfrigérant avec tige
11204	Überwurfmutter, di 51,5 mm	*Screw cap, di 51.5 mm*	Ecrou chapeau, di 51,5 mm
16440	Sicherheitsklammer 29	*Saveclip 29*	Agrafe de sécurité 29
16661	Übergangsstück Flansch, NS 29/32	*Transition pipe, flange,* *STJ 29/32*	Raccord de réduction, joint à bride, CN 29/32

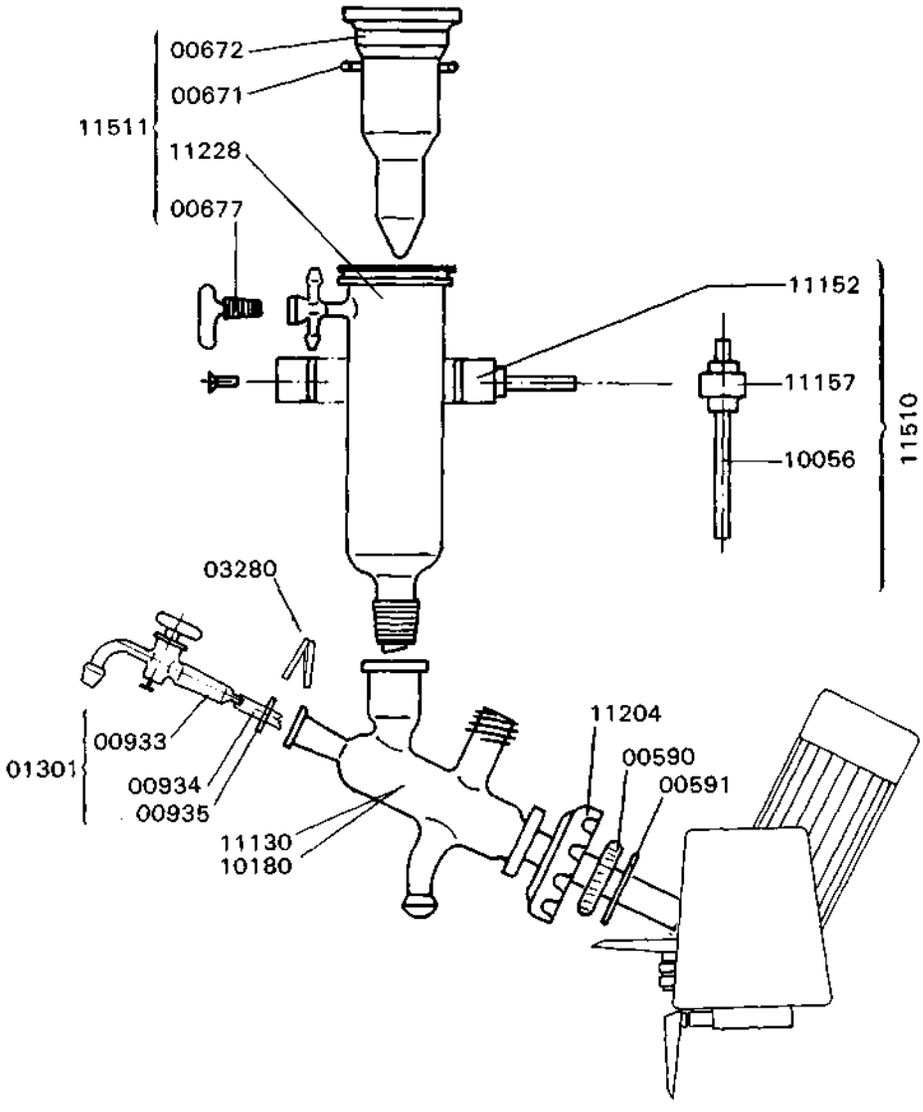
	Vakuumdichtungssystem	***Vacuum-Sealing System***	**Système du joint pour le vide**
10179	KD-26 Vakuumdichtung	*KD-26 Vacuum seal*	KD-26 Joint pour le vide
11623	Stützring, rostfrei, Stahl	*Supporting ring, ss-steel*	Anneau de support, inox.
11629	Viton O-Ring	*Viton O-ring*	Anneau-O viton
11630	PTFE-Schutzring	*Protecting ring PTFE*	Anneau de protection PTFE
11635	Schutzring mit 2 O-Ringen kompl.	*Protecting ring with 2 O-rings* *compl.*	Anneau de protection avec 2 anneaux-O compl.

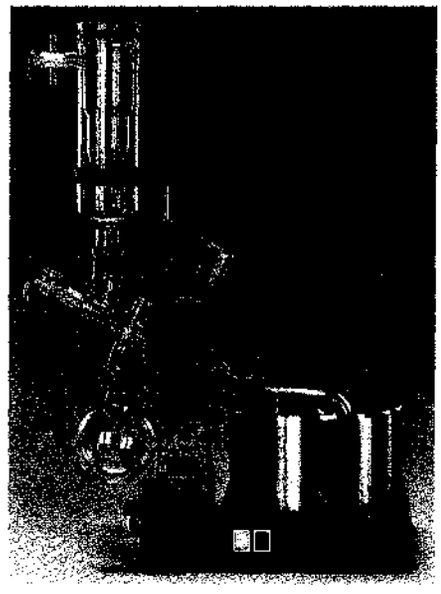
18913	**Schlaucholive GL 14 kompl.**	***Hose adapter GL 14 compl.***	**Olive GL 14 compl.**
18914	Überwurfmutter GL 14	*Screw cap GL 14*	Ecrou chapeau GL 14
18915	O-Ring GL 14	*O-ring GL 14*	Joint torique GL 14
18916	Olive GL 14, gebogen	*Hose stem GL 14, bent*	Olive GL 14, coudée
13280	Klammer NS 19	*STJ 19 clip*	Pince CN 19

Aufbau EL C
Rotavapor EL-131, 141

Assembly EL C

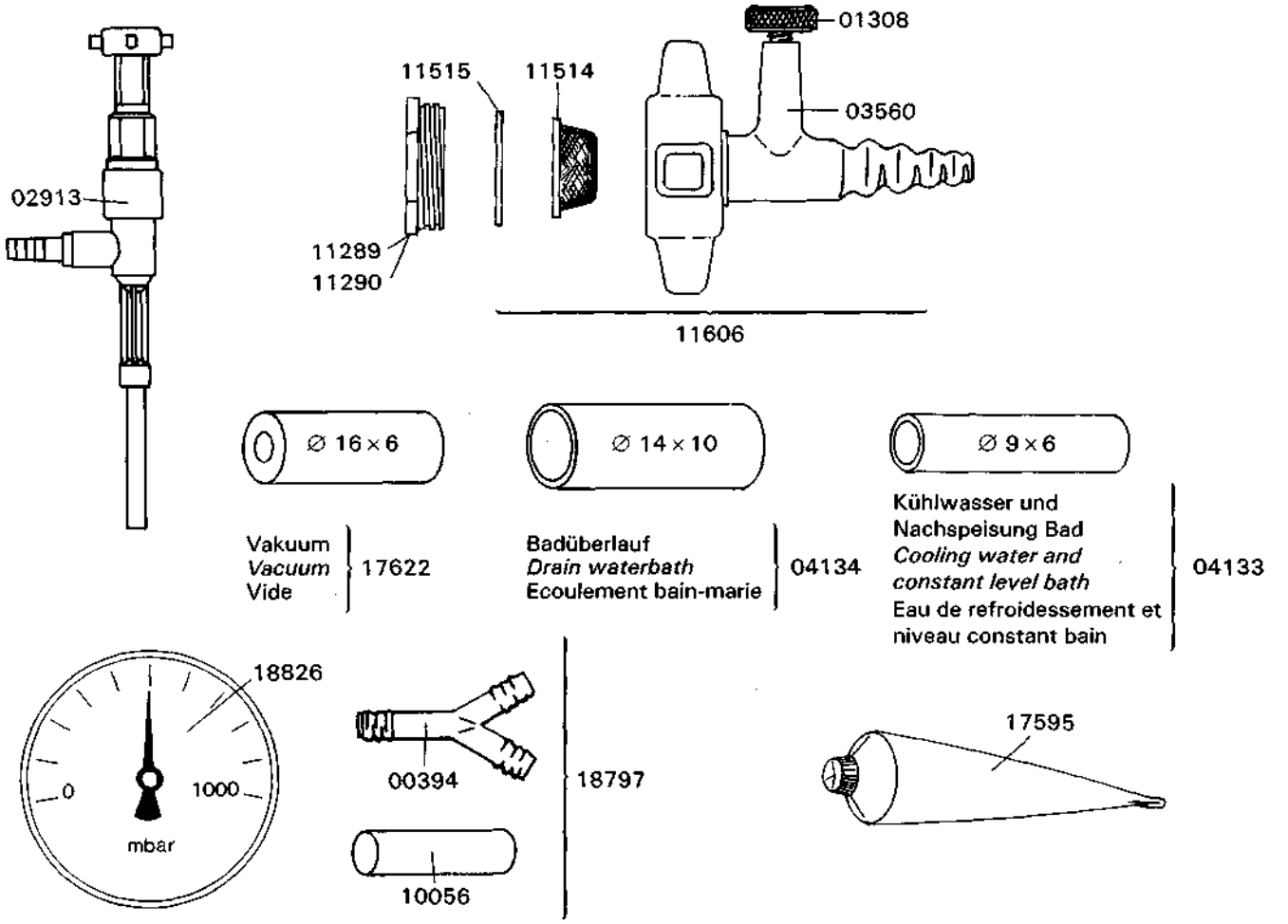
Assemblage EL C



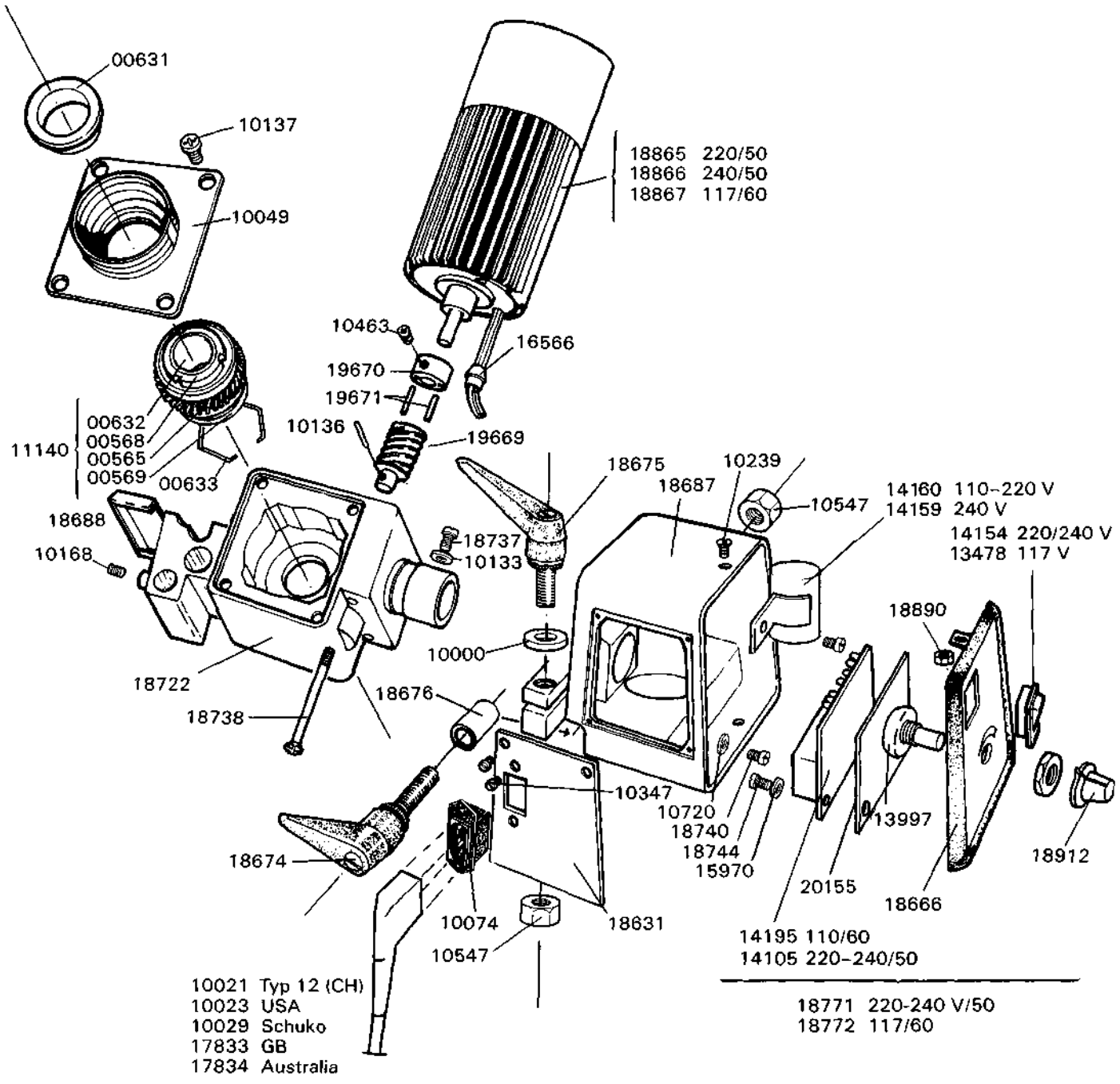


	Kühlfalle 2teilig	***Cold Trap 2-parts***	**Piège à froid 2-pièce**
18960	**Glasaufbau C kompl. zu EL**	***Glass assembly C compl. for EL***	**Assemblage C compl. pour EL**
00671	O-Ring, 88,3 × 5,3	*O-ring, 88.3 × 5.3*	Joint torique, 88,3 × 5,3
00672	Kühlfinger	*Cold finger*	Partie intérieure
00677	Hahnreiber, NS 19/38	*Cock, STJ 19/38*	Robinet, CN 19/38
03280	Klammer NS 19	*STJ 19 clip*	Pince CN 19
10180	Verteilstück nur Glas	*Distribution head, glass only*	Pièce de distribution, verre
11130	Verteilstück kompl. mit Ablaufventil	*Distribution head compl. with drain valve*	Pièce de distribution compl. avec soupape d'écoulement
11204	Überwurfmutter, di 51,5 mm	*Screw cap, di 51.5 mm*	Ecrou chapeau, di 51,5 mm
11228	Kühlfalle, Aussenteil	*Cold trap mantle*	Manteau pour piège à froid
11510	Stativ für Kühlfalle kompl.	*Scaffolding for Cold trap compl.*	Support pour piège compl.
11511	Kühlfalle 2teilig kompl. (ohne Verteilstück 11130)	*Cold trap 2-parts compl. (without distribution head 11130)*	Piège à froid 2-pièce compl. (sans pièce de distribution 11130)

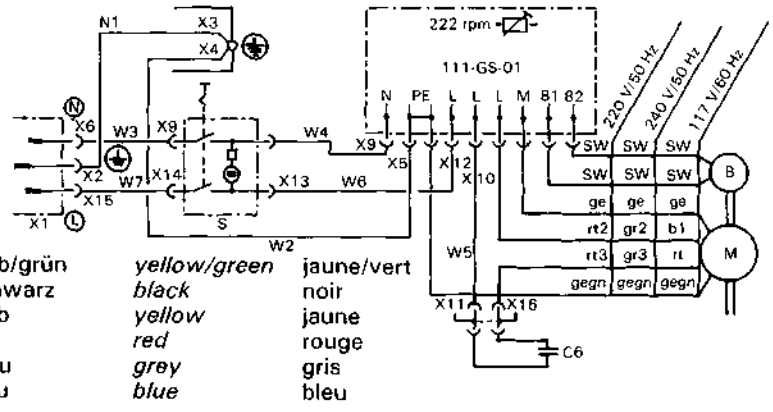
	Zubehör	*Accessories*	Accessoires
11606	**Wasserregulierdüse ½"**	***Water reg. valve ½"***	**Buse de réglage compl. ½"**
01308	Regulierdüse	*Needle valve*	Pointeau pour buse
03560	O-Ring, 6,0 × 1,5	*O-ring, 6.0 × 1.5*	Joint torique, 6,0 × 1,5
11514	Einsatzsieb	*Sieve for needle valve*	Tamis pour buse
11515	Dichtung zu Regulierdüse	*Gasket for needle valve*	Joint pour buse
11289	Reduziernippel ½"–⅜"	*Reduction piece ½"–⅜"*	Raccord de réduction ½"–⅜"
11290	Reduziernippel ½"–¾"	*Reduction piece ½"–¾"*	Raccord de réduction ½"–¾"
04133	Silikonschlauch 9/6	*Silicon hose 9/6*	Tuyau silicone 9/6
04134	Silikonschlauch 14/10	*Silicon hose 14/10*	Tuyau silicone 14/10
17622	Vakuumschlauch 16/6	*Vacuum hose 16/6*	Tuyau de vide 16/6
17595	Glisseal Laborfett 10 g	*Glisseal grease 10 g*	Graisse glisseal 10 g
02913	Wasserstrahlpumpe, plastic	*Waterjet pump, plastic*	Trompe à eau, plastique



18797	**Vakuummeter 0–1000 mbar:**	***0–1000 mbar Vacuummeter:***	**Manomètre 0–1000 mbar:**
18826	Vakuummeter	*Vacuummeter only*	Manomètre seulement
10056	Stativstange, 12 × 300	*Rod, 12 × 300*	Tige, 12 × 300
00394	Y-Stück D, 10 mm	*Y piece D, 10 mm*	Pièce-Y D, 10 mm

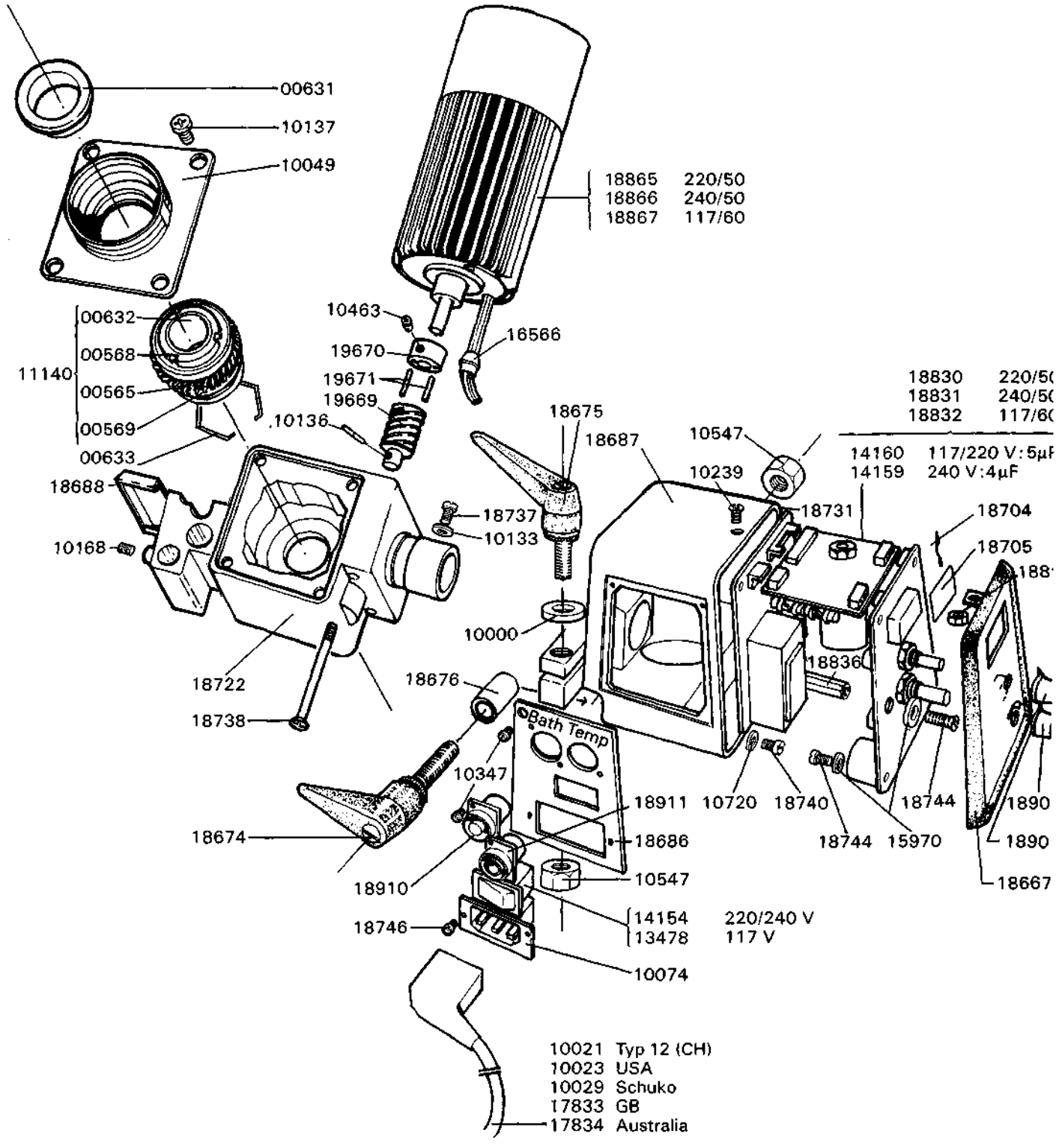


Verdrahtungsschema RE-111 ***Wiring diagram RE-111*** **Schéma de câblage RE-111**



gegn	gelb/grün	*yellow/green*	jaune/vert
sw	schwarz	*black*	noir
ge	gelb	*yellow*	jaune
rt	rot	*red*	rouge
gr	grau	*grey*	gris
bl	blau	*blue*	bleu

	RE-111 Antriebsaggregat	***RE-111 Drive Unit***	**RE-111 Unité d'entraînement**
18984	**RE-111 Antriebsaggregat 220/50**	***RE-111 Drive Unit 220/50***	**RE-111 Unité d'entraînement 220/50**
18983	**RE-111 Antriebsaggregat 240/50**	***RE-111 Drive Unit 240/50***	**RE-111 Unité d'entraînement 240/50**
18982	**RE-111 Antriebsaggregat 117/60**	***RE-111 Drive Unit 117/60***	**RE-111 Unité d'entraînement 117/60**
00631	Schleuderring PTFE	*Deflector ring PTFE*	Anneau centrifuge PTFE
00632	Nabe	*Hub*	Moyeu
00568	Ringmutter	*Ring nut*	Ecrou anneau
00565	Schraubenrad	*Screw wheel*	Roue hélicoïdale
00569	Kugellager, 35 × 62 × 14	*Ball bearing, 35 × 62 × 14*	Roulement à billes, 35 × 62 × 14
00633	Haltefeder	*Fixing spring*	Ressort de retention
10000	U-Scheibe M6 PA	*Plastic washer M6*	Rondelle plastique M6
10021	Anschlusskabel Typ 12 (CH)	*Cable with plug type 12*	Câble avec fiche type 12
10023	Anschlusskabel Typ USA	*Cable with plug type USA*	Câble avec fiche type USA
10029	Anschlusskabel Schuko	*Cable with plug Schuko*	Câble avec fiche Schuko
10049	Kühlerverschraubung	*Condenser coupling*	Couplage réfrigérant
10074	Gerätestecker	*Built-in plug*	Fiche incorporée
10133	Fächerscheibe M4	*Serrated washer M4*	Rondelle à dents M4
10136	Spannstift, 2,5 × 14	*Cotter pin 2.5 × 14*	Goupille 2,5 × 14
10137	Senkkopfschraube M4 × 12	*Countersunk screw M4 × 12*	Vis à tête fraisée M4 × 12
10168	Gewindestift M6 × 8	*Set screw M6 × 8*	Vis sans tête M6 × 8
10239	Senkkopfschraube M3 × 6	*Countersunk screw M3 × 6*	Vis à tête fraisée M3 × 6
10347	Zylinderkopfschraube M3 × 6	*Cylinderhead screw M3 × 6*	Vis à tête cyl. M3 × 6
10463	Gewindestift M4 × 5	*Set screw M4 × 5*	Vis sans tête M4 × 5
10547	Mutter M6	*Nut M6*	Ecrou M6
10720	Fächerscheibe M5	*Serrated washer M5*	Rondelle à dents M5
11140	Nabe kompl.	*Hub compl.*	Moyeau compl.
13478	Wippschalter grün, 110 V	*Rocker switch green, 110 V*	Interrupteur à poussoir vert, 110 V
13997	Potentiometer 10 K	*Potentiometer 10 K*	Potentiomètre 10 K
14105	111 GS-1 Motorregelung 220/240 V	*111 P.C. Motor control 220/240 V*	111 C.I. Réglage moteur 220/240 V
14154	Wippschalter grün, 220 V	*Rocker switch green, 220 V*	Interrupteur à poussoir vert, 220 V
14159	4 µF Mot.-Kondensator 240 V	*4 µF Condenser 240 V*	Condensateur 4 µF 240 V
14160	5 µF Mot.-Kondensator 220/117 V	*5 µF Condenser 220/117 V*	Condensateur 5 µF 220/117 V
14195	111 GS-1 Motorregelung 117 V	*111 P.C. Motor control 117 V*	111 C.I. Réglage moteur 117 V
15970	Fächerscheibe M2,5	*Serrated washer M2,5*	Rondelle à dents M2,5
16566	Kabeltülle F.80	*Cable bushing*	Passe fil
17833	Anschlusskabel Typ GB	*Cable with plug type GB*	Câble avec fiche type GB
17834	Anschlusskabel Typ Australien	*Cable with plug type Australia*	Câble avec fiche type Australia
18631	Steckerplatte RE-111	*Plug plate RE-111*	Plaque à fiche RE-111
18666	Frontplatte RE-111	*Front plate RE-111*	Plaque frontale RE-111
18674	Klemmhebel M6 × 60	*Handle M6 × 60*	Poignée M6 × 60
18675	Klemmhebel M6 × 15	*Handle M6 × 15*	Poignée M6 × 15
18676	Distanzrohr 12/8 × 33	*Distance tube 12/8 × 33*	Tube de distance 12/8 × 33
18687	Elektronikgehäuse	*Housing for electronics*	Boîtier pour l'électronique
18688	Kabeldeckel	*Cable plate*	Cache câble
18722	Antriebsgehäuse RE	*Gear housing RE*	Boîtier boîte à vit. RE
18737	Zylinderkopfschraube M4 × 6	*Cylinder head screw M4 × 6*	Vis à tête cyl. M4 × 6
18738	Zylinderkopfschraube M4 × 55	*Cylinder head screw M4 × 55*	Vis à tête cyl. M4 × 55
18740	Zylinderkopfschraube M5 × 8	*Cylinder head screw M5 × 8*	Vis à tête cyl. M5 × 8
18744	Schneidschraube 2,2 × 6,5	*Threading screw 2.2 × 6.5*	Vis filletent 2,2 × 6,5
18746	Schneidschraube 2,9 × 6,6	*Threading screw 2.9 × 6.6*	Vis filletent 2,9 × 6,6
18771	111 Elektronik-Einschub 220/240	*Plug-in electronics 220/240*	Electronique embrochable 220/240
18772	111 Elektronik-Einschub 117/60	*Plug-in electronics 117/60*	Electronique embrochable 117/60
18865	Motor 220/50 mit Schnecke	*Motor 220/50 with worm*	Moteur 220/50 avec vis
18866	Motor 240/50 mit Schnecke	*Motor 240/50 with worm*	Moteur 240/50 avec vis
18867	Motor 117/60 mit Schnecke	*Motor 117/60 with worm*	Moteur 117/60 avec vis
18890	Gewindeplatte M3	*Threaded plate M3*	Plaquette filleté M3
18912	Knopf kompl. 15/6 111	*Knob compl.15/6 111*	Bouton compl. 15/6 111
19669	Schnecke M 1,25	*Worm M 1.25*	Vis sans fin M 1,25
19670	Kupplungsring	*Clutch ring*	Anneau embrayage
19671	Stift 0,7 × 18	*Bolt 0.7 × 18*	Cheville 0,7 × 18
19686	Resofilplatte 80 × 47	*Resofil plate 80 × 47*	Plaque resofil 80 × 47
20155	Isolationsplatte		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19671
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18675
18687
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18830 220/5(
18831 240/5(
18832 117/6(
14160 117/220 V:5µF
14159 240 V:4µF
18731
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18705
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18737
10133
18688
10168
10000
18722
18738
18676
Bath Temp
10347
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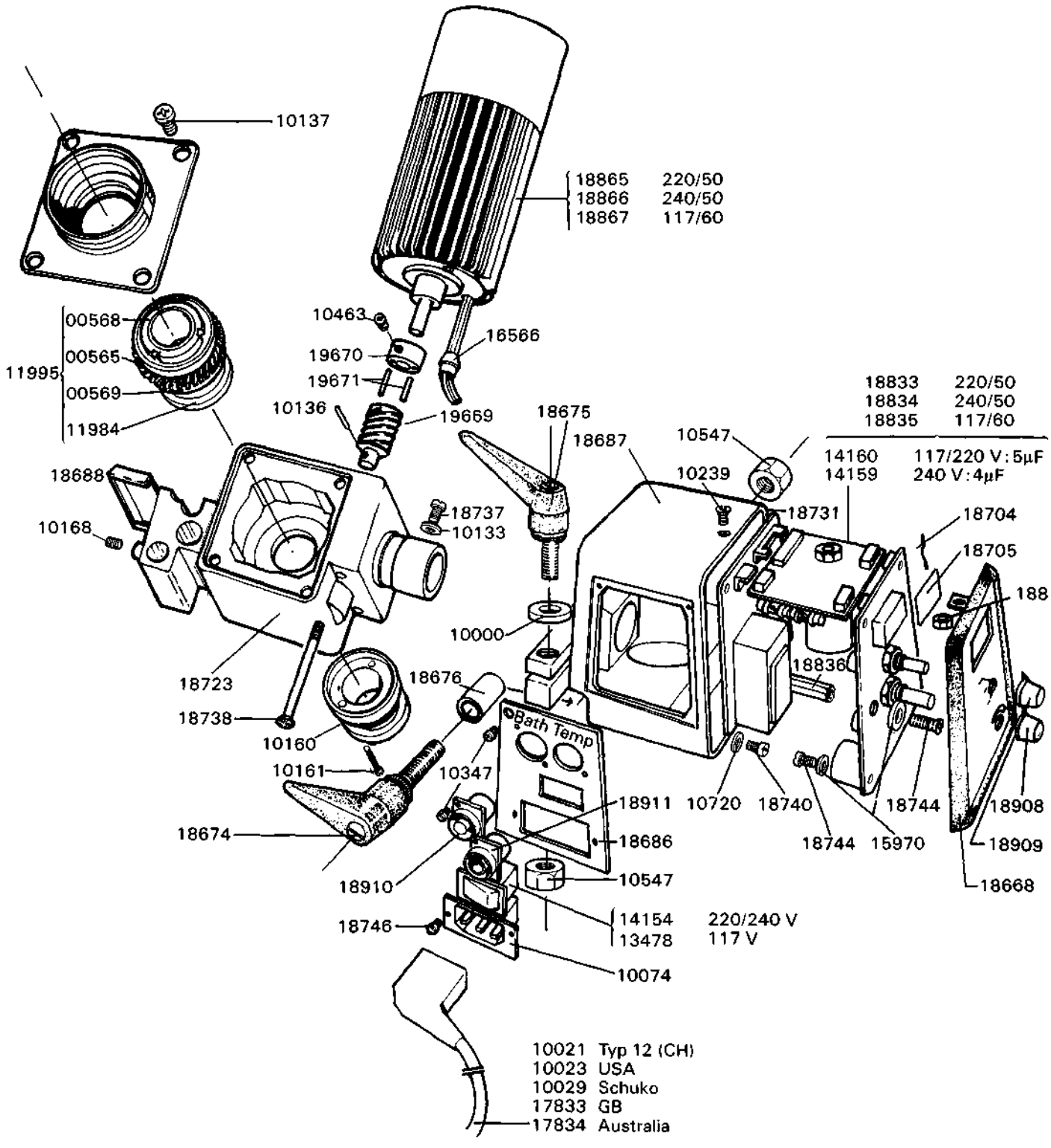
10720
18740
18744
1890
18674
18686
18744
15970
1890
18910
10547
18667
14154 220/240 V
13478 117 V
18746
10074
10021 Typ 12 (CH)
10023 USA
10029 Schuko
17833 GB
17834 Australia

	RE-121 Antriebsaggregat	***RE-121 Drive Unit***	**RE-121 Unité d'entraînement**
18981	RE-121 Antriebsaggregat 220/50	*RE-121 Drive Unit 220/50*	RE-121 Unité d'entraînement 220/50
18980	RE-121 Antriebsaggregat 240/50	*RE-121 Drive Unit 240/50*	RE-121 Unité d'entraînement 240/50
18979	RE-121 Antriebsaggregat 117/60	*RE-121 Drive Unit 117/60*	RE-121 Unité d'entraînement 117/60
00631	Schleuderring PTFE	*Deflector ring PTFE*	Anneau centrifuge PTFE
00632	Nabe	*Hub*	Moyeu
00568	Ringmutter	*Ring nut*	Ecrou anneau
00565	Schraubenrad	*Screw wheel*	Roue hélicoïdale
00569	Kugellager, 35 × 62 × 14	*Ball bearing, 35 × 62 × 14*	Roulement à billes, 35 × 62 × 14
00633	Haltefeder	*Fixing spring*	Ressort de retention
10000	U-Scheibe M6 PA	*Plastic washer M6*	Rondelle plastique M6
10021	Anschlusskabel Typ 12 (CH)	*Cable with plug type 12*	Câble avec fiche type 12
10023	Anschlusskabel Typ USA	*Cable with plug type USA*	Câble avec fiche type USA
10029	Anschlusskabel Schuko	*Cable with plug Schuko*	Câble avec fiche Schuko
10049	Kühlerverschraubung	*Condenser coupling*	Couplage réfrigérant
10074	Gerätestecker	*Built-in plug*	Fiche incorporée
10133	Fächerscheibe M4	*Serrated washer M4*	Rondelle à dents M4
10136	Spannstift, 2,5 × 14	*Cotter pin 2.5 × 14*	Goupille 2,5 × 14
10137	Senkkopfschraube M4 × 12	*Countersunk screw M4 × 12*	Vis à tête fraisée M4 × 12
10168	Gewindestift M6 × 8	*Set screw M6 × 8*	Vis sans tête M6 × 8
10239	Senkkopfschraube M3 × 6	*Countersunk screw M3 × 6*	Vis à tête fraisée M3 × 6
10347	Zylinderkopfschraube M3 × 6	*Cylinderhead screw M3 × 6*	Vis à tête cyl. M3 × 6
10463	Gewindestift M4 × 5	*Set screw M4 × 5*	Vis sans tête M4 × 5
10547	Mutter M6	*Nut M6*	Ecrou M6
10717	Fächerscheibe M3	*Serrated washer M3*	Rondelle à dents M3
10720	Fächerscheibe M5	*Serrated washer M5*	Rondelle à dents M5
11140	Nabe kompl.	*Hub compl.*	Moyeu compl.
13478	Wippschalter grün, 110 V	*Rocker switch green, 110 V*	Interrupteur à poussoir vert, 110 V
14154	Wippschalter grün, 220 V	*Rocker switch green, 220 V*	Interrupteur à poussoir vert, 220 V
14159	4 µF Mot.-Kondensator 240 V	*4 µF Condenser 240 V*	Condensateur 4 µF 240 V
14160	5 µF Mot.-Kondensator 220/117 V	*5 µF Condenser 220/117 V*	Condensateur 5 µF 220/117 V
15970	Fächerscheibe M2,5	*Serrated washer M2,5*	Rondelle à dents M2,5
16566	Kabeltülle F.80	*Cable bushing*	Passe fil
17833	Anschlusskabel Typ GB	*Cable with plug type GB*	Câble avec fiche type GB
17834	Anschlusskabel Typ Australien	*Cable with plug type Australia*	Câble avec fiche type Australia
18667	Frontplatte RE-121	*Front plate RE-121*	Plaque frontale RE-121
18674	Klemmhebel M6 × 60	*Handle M6 × 60*	Poignée M6 × 60
18675	Klemmhebel M6 × 15	*Handle M6 × 15*	Poignée M6 × 15
18676	Distanzrohr 12/8 × 33	*Distance tube 12/8 × 33*	Tube de distance 12/8 × 33
18686	Steckerplatte RE-121/EL-131	*Plug plate RE-121/EL-131*	Plaque à fiche RE-121/EL-131
18687	Elektronikgehäuse	*Housing for electronics*	Boîtier pour l'électronique
18688	Kabeldeckel	*Cable plate*	Cache câble
18704	Filterhaltefeder	*Filter spring*	Ressort filtre
18705	Grünfilter	*Filter green*	Filtre vert
18722	Antriebsgehäuse RE	*Gear housing RE*	Boîtier boîte à vit. RE
18731	Gummi 3/6 × 9	*Rubber 3/6 × 9*	Tuyeau plastique 3/6 × 9
18737	Zylinderkopfschraube M4 × 6	*Cylinder head screw M4 × 6*	Vis à tête cyl. M4 × 6
18738	Zylinderkopfschraube M4 × 55	*Cylinder head screw M4 × 55*	Vis à tête cyl. M4 × 55
18740	Zylinderkopfschraube M5 × 8	*Cylinder head screw M5 × 8*	Vis à tête cyl. M5 × 8
18744	Schneidschraube 2,2 × 6,5	*Threading screw 2.2 × 6.5*	Vis filletent 2,2 × 6,5
18746	Schneidschraube 2,9 × 6,6	*Threading screw 2.9 × 6.6*	Vis filletent 2,9 × 6,6
18830	121 Elektronik-Einschub 220/50	*Plug-in electronics 220/50*	Electronique embrochable 220/50
18831	121 Elektronik-Einschub 240/50	*Plug-in electronics 240/50*	Electronique embrochable 240/50
18832	121 Elektronik-Einschub 117/60	*Plug-in electronics 117/60*	Electronique embrochable 117/60
18836	Distanzhalter L75	*Hex-bushing L75*	Douille 6-pan L75
18865	Motor 220/50 mit Schnecke	*Motor 220/50 with worm*	Moteur 220/50 avec vis
18866	Motor 240/50 mit Schnecke	*Motor 240/50 with worm*	Moteur 240/50 avec vis
18867	Motor 117/60 mit Schnecke	*Motor 117/60 with worm*	Moteur 117/60 avec vis
18890	Gewindeplatte M3	*Threaded plate M3*	Plaquette filleté M3
18908	Knopf kompl. 15/6	*Knob compl. 15/6*	Bouton compl. 15/6
18909	Knopf kompl. 15/4	*Knob compl. 15/4*	Bouton compl. 15/4
18910	Stecker Ri8 kompl.	*Built-in plug Ri8 compl.*	Fiche incorporée Ri8 compl.
18911	Stecker Ti8 kompl.	*Built-in plug Ti8 compl.*	Fiche incorporée Ti8 compl.
19669	Schnecke M 1,25	*Worm M 1.25*	Vis sans fin M 1,25
19670	Kupplungsring	*Clutch ring*	Anneau embrayage
19671	Stift 0,7 × 18	*Bolt 0.7 × 18*	Cheville 0,7 × 18
19686	Resofilplatte 80 × 47	*Resofil plate 80 × 47*	Plaque resofil 80 × 47
20155	Isolationsplatte		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18675
18687
10547
10239
18833 220/50
18834 240/50
18835 117/60
14160 117/220 V: 5µF
14159 240 V: 4µF
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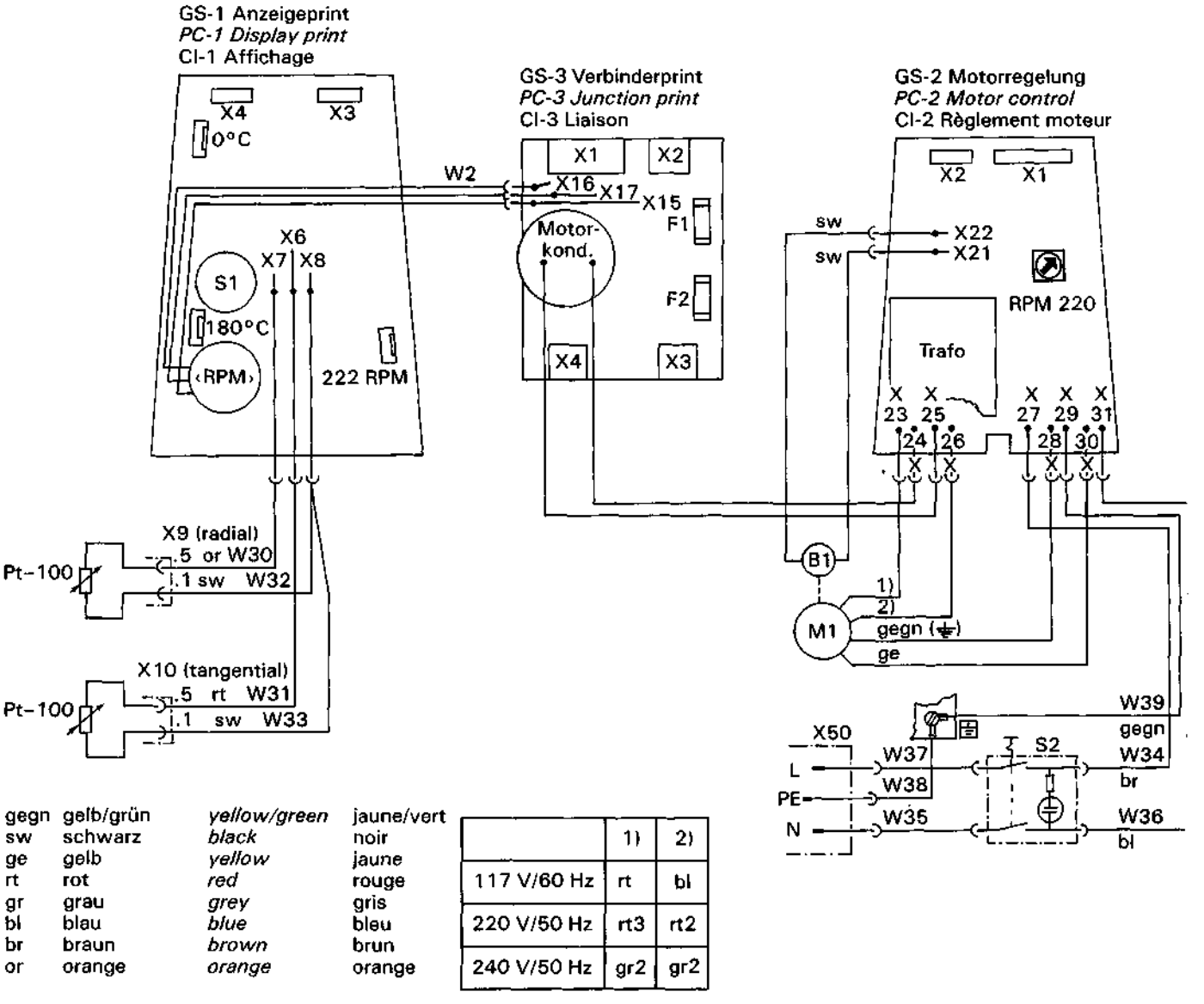
10547
18668
18746
14154 220/240 V
13478 117 V
10074
10021 Typ 12 (CH)
10023 USA
10029 Schuko
17833 GB
17834 Australia

	EL-131 Antriebsaggregat	***EL-131 Drive Unit***	**EL-131 Unité d'entraînement**
8978	EL-131 Antriebsaggregat 220/50	*EL-131 Drive Unit 220/50*	EL-131 Unité d'entraînement 220/50
8977	EL-131 Antriebsaggregat 240/50	*EL-131 Drive Unit 240/50*	EL-131 Unité d'entraînement 240/50
8976	EL-131 Antriebsaggregat 117/60	*EL-131 Drive Unit 117/60*	EL-131 Unité d'entraînement 117/60
0565	Schraubenrad	*Screw wheel*	Roue hélicoïdale
0568	Ringmutter	*Ring nut*	Ecrou anneau
0569	Kugellager, 35 × 62 × 14	*Ball bearing, 35 × 62 × 14*	Roulement à billes, 35 × 62 × 14
1984	Nabe	*Hub*	Moyeu
0633	Haltefeder	*Fixing spring*	Ressort de retention
0000	U-Scheibe M6 PA	*Plastic washer M6*	Rondelle plastique M6
0021	Anschlusskabel Typ 12 (CH)	*Cable with plug type 12*	Câble avec fiche type 12
0023	Anschlusskabel Typ USA	*Cable with plug type USA*	Câble avec fiche type USA
0029	Anschlusskabel Schuko	*Cable with plug Schuko*	Câble avec fiche Schuko
0049	Kühlerverschraubung	*Condenser coupling*	Couplage réfrigérant
0074	Gerätestecker	*Built-in plug*	Fiche incorporée
0133	Fächerscheibe M4	*Serrated washer M4*	Rondelle à dents M4
0136	Spannstift, 2,5 × 14	*Cotter pin 2.5 × 14*	Goupille 2,5 × 14
0137	Senkkopfschraube M4 × 12	*Countersunk screw M4 × 12*	Vis à tête fraisée M4 × 12
0160	Kolbenverschraubung	*Flask coupling*	Couplage pour ballon
0161	Senkkopfschraube M2 × 10	*Countersunk screw M2 × 10*	Vis à tête fraisée M2 × 10
0168	Gewindestift M6 × 8	*Set screw M6 × 8*	Vis sans tête M6 × 8
0239	Senkkopfschraube M3 × 6	*Countersunk screw M3 × 6*	Vis à tête fraisée M3 × 6
0347	Zylinderkopfschraube M3 × 6	*Cylinderhead screw M3 × 6*	Vis à tête cyl. M3 × 6
0463	Gewindestift M4 × 5	*Set screw M4 × 5*	Vis sans tête M4 × 5
0528	Mutter M3	*Nut M3*	Ecrou M3
0547	Mutter M6	*Nut M6*	Ecrou M6
0720	Fächerscheibe M5	*Serrated washer M5*	Rondelle à dents M5
1995	Nabe kompl. EL	*Hub compl. EL*	Moyeu compl. EL
3478	Wippschalter grün, 110 V	*Rocker switch green, 110 V*	Interrupteur à poussoir vert, 110 V
4154	Wippschalter grün, 220 V	*Rocker switch green, 220 V*	Interrupteur à poussoir vert, 220 V
4159	4 µF Mot.-Kondensator 240 V	*4 µF Condenser 240 V*	Condensateur 4 µF 240 V
4160	5 µF Mot.-Kondensator 220/117 V	*5 µF Condenser 220/117 V*	Condensateur 5 µF 220/117 V
5970	Fächerscheibe M2,5	*Serrated washer M2,5*	Rondelle à dents M2,5
6566	Kabeltülle F.80	*Cable bushing*	Passe fil
7833	Anschlusskabel Typ GB	*Cable with plug type GB*	Câble avec fiche type GB
7834	Anschlusskabel Typ Australien	*Cable with plug type Australia*	Câble avec fiche type Australia
8668	Frontplatte EL-131	*Front plate EL-131*	Plaque frontale EL-131
8674	Klemmhebel M6 × 60	*Handle M6 × 60*	Poignée M6 × 60
8675	Klemmhebel M6 × 15	*Handle M6 × 15*	Poignée M6 × 15
8676	Distanzrohr 12/8 × 33	*Distance tube 12/8 × 33*	Tube de distance 12/8 × 33
8686	Steckerplatte EL-121/131	*Plug plate EL-121/131*	Plaque à fiche EL-121/131
8687	Elektronikgehäuse	*Housing for electronics*	Boîtier pour l'électronique
8688	Kabeldeckel	*Cable plate*	Cache câble
8704	Filterhaltefeder	*Filter spring*	Ressort filtre
8705	Grünfilter	*Filter green*	Filtre vert
8723	Antriebsgehäuse EL	*Gear housing EL*	Boîtier boîte à vitesse EL
8731	Gummi 3/6 × 9	*Rubber 3/6 × 9*	Tuyeau plastique 3/6 × 9
8737	Zylinderkopfschraube M4 × 6	*Cylinder head screw M4 × 6*	Vis à tête cyl. M4 × 6
8738	Zylinderkopfschraube M4 × 55	*Cylinder head screw M4 × 55*	Vis à tête cyl. M4 × 55
8740	Zylinderkopfschraube M5 × 8	*Cylinder head screw M5 × 8*	Vis à tête cyl. M5 × 8
8744	Schneidschraube 2,2 × 6,5	*Threading screw 2.2 × 6.5*	Vis filletent 2,2 × 6,5
8746	Schneidschraube 2,9 × 6,6	*Threading screw 2.9 × 6.6*	Vis filletent 2,9 × 6,6
8833	131 Elektronik-Einschub 220/50	*Plug-in electronics 220/50*	Electronique embrochable 220/50
8834	131 Elektronik-Einschub 240/50	*Plug-in electronics 240/50*	Electronique embrochable 240/50
8835	131 Elektronik-Einschub 117/60	*Plug-in electronics 117/60*	Electronique embrochable 117/60
8836	Distanzhalter L75	*Hex-bushing L75*	Douille 6-pan L75
8865	Motor 220/50 mit Schnecke	*Motor 220/50 with worm*	Moteur 220/50 avec vis
8866	Motor 240/50 mit Schnecke	*Motor 240/50 with worm*	Moteur 240/50 avec vis
8867	Motor 117/60 mit Schnecke	*Motor 117/60 with worm*	Moteur 117/60 avec vis
8890	Gewindeplatte M3	*Threaded plate M3*	Plaquette filleté M3
8908	Knopf kompl. 15/6	*Knob compl. 15/6*	Bouton compl. 15/6
8909	Knopf kompl. 15/4	*Knob compl. 15/4*	Bouton compl. 15/4
8910	Stecker Ri8 kompl.	*Built-in plug Ri8 compl.*	Fiche incorporée Ri8 compl.
8911	Stecker Ti8 kompl.	*Built-in plug Ti8 compl.*	Fiche incorporée Ti8 compl.
9669	Schnecke M 1,25	*Worm M 1.25*	Vis sans fin M 1,25
9670	Kupplungsring	*Clutch ring*	Anneau embrayage
9671	Stift 0,7 × 18	*Bolt 0.7 × 18*	Cheville 0,7 × 18
9686	Resofilplatte 80 × 47	*Resofil plate 80 × 47*	Plaque resofil 80 × 47
9155	Isolationsplatte		

Verdrahtungsschema RE-121/EL-131
Die gedruckten Schaltungen werden im Standardaustauschverfahren ersetzt. Sind wir nicht im Besitz des defekten Prints, kommt der volle Preis für neue Prints zur Anwendung.

Wiring diagram RE-121/EL-131
The printed circuit boards are delivered as a standard exchange item. Full price applies until we receive the faulty print for credit.

Schéma de câblage RE-121/EL-131
Les circuits imprimés sont livrés comm échanges standard. Si nous ne somme pas en possession d'un circuit imprim défectueux, le prix entier sera facturé.



gegn	gelb/grün	*yellow/green*	jaune/vert
sw	schwarz	*black*	noir
ge	gelb	*yellow*	jaune
rt	rot	*red*	rouge
gr	grau	*grey*	gris
bl	blau	*blue*	bleu
br	braun	*brown*	brun
or	orange	*orange*	orange

	1)	2)
117 V/60 Hz	rt	bl
220 V/50 Hz	rt3	rt2
240 V/50 Hz	gr2	gr2

Digitalanzeige
Eine Anzeige von 300 oder höher auf der Stellung ‹Bath› oder ‹Temp.› heisst:
- keine Fühler angeschlossen oder
- Fühlerunterbruch

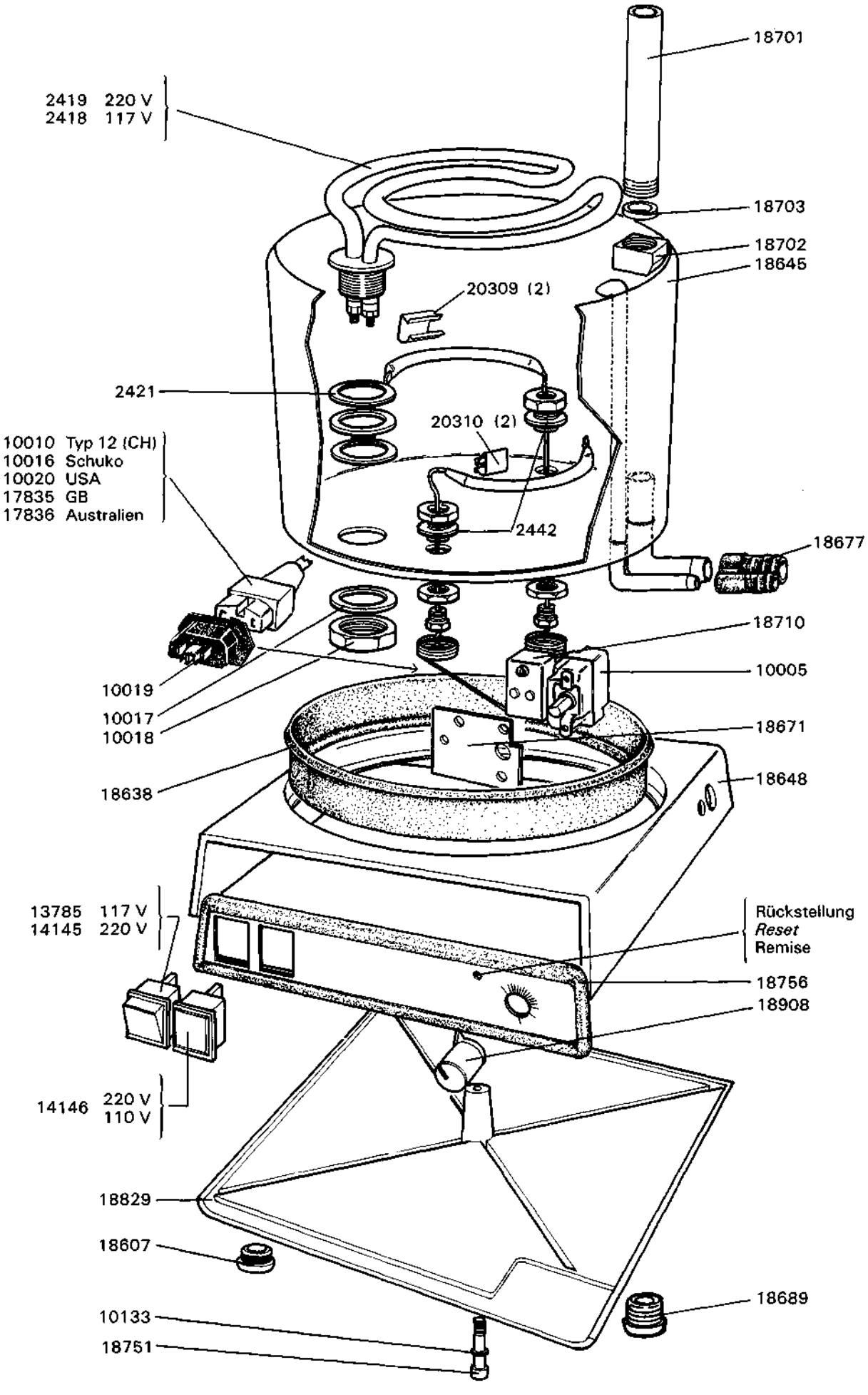
Digital display
300 or a higher number on display in position 'Bath' or 'Temp.' means:
- *no temperature probe connected or*
- *probe line interrupted*

Affichage digitale
Une valeur de 300 ou plus en position ‹Bath» ou ‹Temp.› veut dire:
- sonde n'est pas branché ou
- câble de la sonde défectueux

	Print Motorregelung **RE-121/EL-131**	***Print motor control*** ***RE-121/EL-131***	**Circuit imprimé régulation moteur** **RE-121/EL-131**
4130	121 GS-2 Motorregelung 220 V/50 Hz	*121 PC-2 Motor control* *220 V/50 Hz*	121 CI-2 Réglage moteur 220 V/50 Hz
4136	121 GS-2 Motorregelung 117 V/60 Hz	*121 PC-2 Motor control* *117 V/60 Hz*	121 CI-2 Réglage moteur 117 V/60 Hz
4138	121 GS-2 Motorregelung 240 V/50 Hz	*121 PC-2 Motor control* *240 V/50 Hz*	121 CI-2 Réglage moteur 240 V/50 Hz
3905	121 GS-2 Austausch 220 V/50 Hz	*121 PC-2 Exchange 220 V/50 Hz*	121 CI-2 Echange 220 V/50 Hz
3906	121 GS-2 Austausch 117 V/60 Hz	*121 PC-2 Exchange 117 V/60 Hz*	121 CI-2 Echange 117 V/60 Hz
3907	121 GS-2 Austausch 240 V/50 Hz	*121 PC-2 Exchange 240 V/50 Hz*	121 CI-2 Echange 240 V/50 Hz

	Verbindungsprint **RE-121/EL-131**	***Junction print*** ***RE-121/EL-131***	**Circuit imprimé liaison** **RE-121/EL-131**
4140	121 GS-3 Verbinderprint	*121 PC-3 Junction*	121 CI-3 Liaison
3903	121 GS-3 Austausch	*121 PC-3 Exchange*	121 CI-3 Echange
3525	10 Sicherungen 250 mAT	*10 Fuses 250 mAS*	10 Fusibles 250 mAL
4191	Potentiometer 10 kOhm	*Potentiometer 10 kOhm*	Potentiomètre 10 kOhm

	Anzeigeprint **RE-121/EL-131**	***Display print*** ***RE-121/EL-131***	**Circuit imprimé d'affichage** **RE-121/EL-131**
4124	121 GS-1 Anzeigeprint	*121 PC-1 Display print*	121 CI-1 Affichage
3904	121 GS-1 Austausch	*121 PC-1 Exchange*	121 CI-1 Echange


18701
2419 220 V
2418 117 V
18703
18702
18645
20309 (2)
2421
20310 (2)
10010 Typ 12 (CH)
10016 Schuko
10020 USA
17835 GB
17836 Australien
2442
18677
18710
10005
10019
10017
10018
18671
18638
18648
13785 117 V
14145 220 V
Rückstellung
Reset
Remise
18756
18908
14146 220 V
110 V
18829
18607
18689
10133
18751

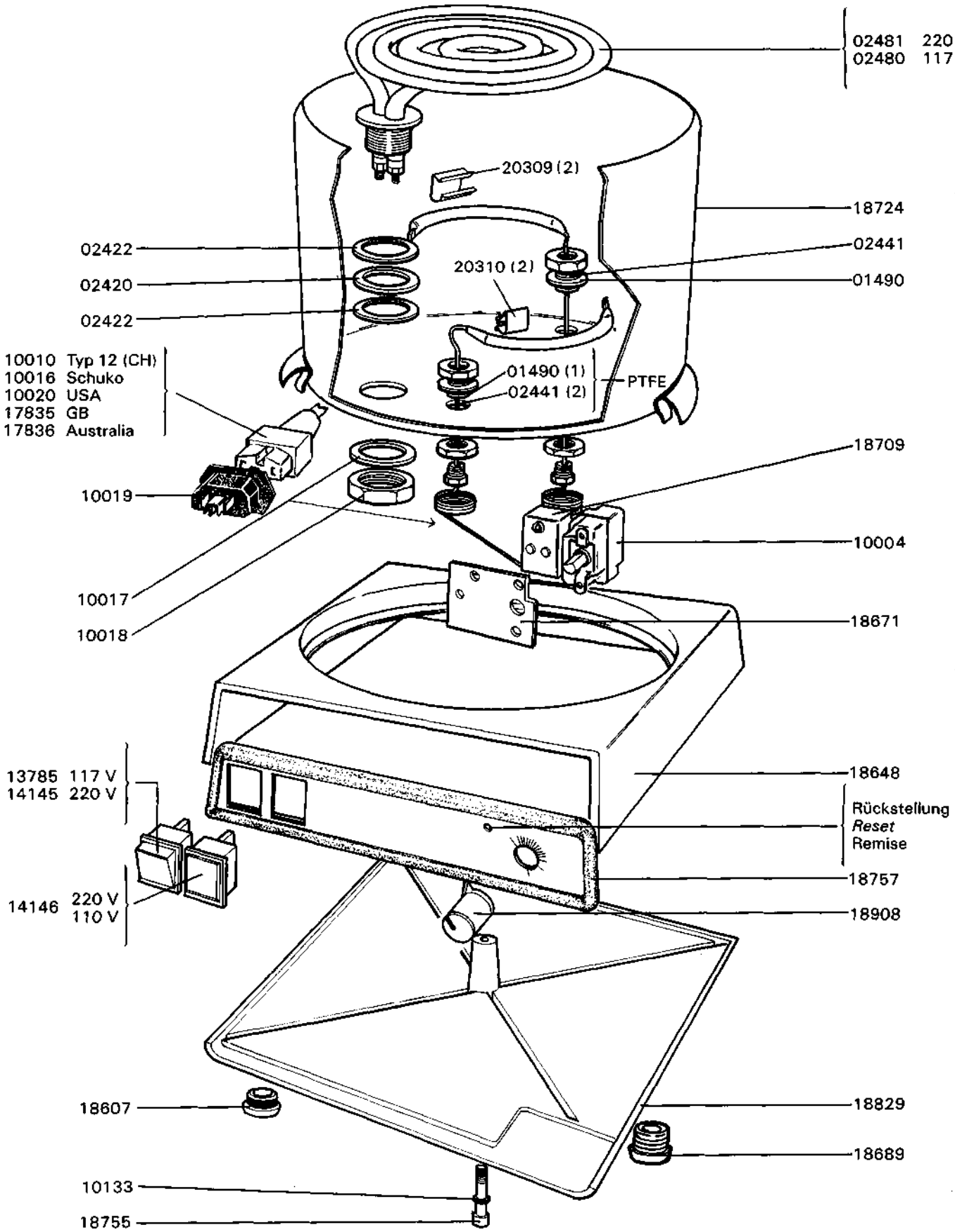
	Wasserbad 461	***Waterbath 461***	**Bain-marie 461**
8999	Wasserbad 461, 220 V	*Waterbath 461, 220 V*	Bain-marie 461, 220 V
8997	Wasserbad 461, 117 V	*Waterbath 461, 117 V*	Bain-marie 461, 117 V
2418	Ringheizkörper, 110 V	*Heating element, 110 V*	Corps de chauffe, 110 V
2419	Ringheizkörper, 220 V	*Heating element, 220 V*	Corps de chauffe, 220 V
2421	Nylondichtung 35/27 × 2	*Nylon Seal 35/27 × 2*	Joint nylon 35/27 × 2
2442	Nylondichtung 12/16 × 2	*Nylon Seal 12/16 × 2*	Joint nylon 12/16 × 2
0005	Thermostat	*Thermostate*	Thermostat
0010	Anschlusskabel Typ 12	*Cable type 12*	Câble type 12
0016	Anschlusskabel Schuko	*Cable Schuko*	Câble Schuko
0017	U-Scheibe 35/27 × 1	*Washer 35/27 × 1*	Rondelle 35/27 × 1
0018	Mutter M26 × 1,5	*Nut M26 × 1.5*	Ecrou M26 × 1,5
0019	Einbaustecker	*Unit socket*	Prise incorporée
0020	Anschlusskabel USA	*Cable type USA*	Câble type USA
0133	Fächerscheibe M4	*Serrated washer M4*	Rondelle à dents M4
3785	Wippschalter, 117 V	*Rocker switch, 117 V*	Interrupteur à poussoir, 117 V
4145	Wippschalter, 220 V	*Rocker switch, 220 V*	Interrupteur à poussoir, 220 V
4146	Signallampe, 220 V	*Pilot lamp, 220 V*	Témoin lumineux, 220 V
7835	Anschlusskabel GB	*Cable type GB*	Câble type GB
7836	Anschlusskabel Australien	*Cable type Australia*	Câble type Australie
8607	Fuss (4)	*Foot (4)*	Pied (4)
8638	Gummiprofil	*Rubber ring*	Joint en cautchouc
8645	Wasserbehälter	*Waterpan*	Bassine d'eau
8648	Bad Oberteil	*Upper part of bath*	Partie supérieure du bain
8671	Thermostatplatte	*Thermostate plate*	Plaque thermostat
8677	Schlauchnippelpaar	*Hose fitting pair*	Paire d'olives
8689	Zusatzfuss, hoch	*Additional foot, high*	Pied supplémentaire, haut
8701	Überlaufrohr	*Tube overflow*	Tube trop plain
8702	Mutter Überlaufrohr	*Nut overflow tube*	Ecrou tube trop plain
8703	Silikondichtung 20/13 × 5	*Silicone seal 20/13 × 5*	Joint silicone 20/13 × 5
8710	Temperaturebegrenzer, 130°C	*Temperature limiter, 130°C*	Disjoncteur thermique, 130°C
8751	Schraube M4 × 35	*Screw M4 × 35*	Vis M4 × 35
8756	Frontplatte WB 461	*Front panel WB 461*	Plaque frontale BM 461
8829	Bad Unterteil	*Lower part of bath*	Partie inférieure du bain
8908	Knopf kompl. 15/6	*Knob compl. 15/6*	Bouton compl. 15/6
8761	Deckel	*Cover*	Couvercle
8762	Siebbodeneinsatz	*Perforated bottom insert*	Garniture interne
0309	Klammer Temp.-Begrenzer	*Clip temperature limiter*	Ressort disjoncteur thermique
0310	Klammer Thermostat	*Clip thermostate*	Ressort thermostat

bertemperaturschutz
e Sicherheitssonde (18710) schützt
s Bad vor einer Überhitzung bei
ockenlauf.
ickstellung R:
fern die Sicherheitssonde wieder
ter die Abschalttemperatur abgekühlt
, kann der Rückstellknopf durch das
ch R eingerastet werden.

Overtemperature cut out
The tempereture limiter (18710) protects
the bath from overheating.
Reset R:
Provided that the probe has cooled below the trigger temperature, reset the bath by pushing back the button through the hole R.

Disjoncteur thermique
Le limiteur de température (18710) protège le bain contre le surchauffe.

Remise R:
Quand la sonde s'est refroidie en dessous de la température de déclenchement, la remise se fait en repoussant le bouton à travers le trou R.


02481 220
02480 117
20309 (2)
18724
02422
02420
02422
02441
20310 (2)
01490
10010 Typ 12 (CH)
10016 Schuko
10020 USA
17835 GB
17836 Australia
01490 (1)
02441 (2)
PTFE
18709
10019
10004
10017
10018
18671
13785 117 V
14145 220 V
18648
Rückstellung
Reset
Remise
18757
14146 220 V
110 V
18908
18607
18829
18689
10133
18755

	Ölbad 471	*Oilbath 471*	Bain d'huile 471
3993	Ölbad 471, 220 V	*Oilbath 471, 220 V*	Bain d'huile 471, 220 V
3991	Ölbad 471, 117 V	*Oilbath 471, 117 V*	Bain d'huile 471, 117 V
1490	Durabla-Dichtung 12/16 × 2 (2)	*Seal durabla 12/16 × 2 (2)*	Joint durabla 12/16 × 2 (2)
2420	Durabla-Dichtung 35/27 × 2	*Seal durabla 35/27 × 2*	Joint durabla 35/27 × 2
2422	Teflon-Dichtung 35/27 × 0,3	*Seal PTFE 35/27 × 0.3*	Joint PTFE 35/27 × 0,3
2441	Teflon-Dichtung 16 × 0,3 (4)	*Seal PTFE 16 × 0.3 (4)*	Joint PTFE 16 × 0,3 (4)
2480	Ringheizkörper, 110 V	*Heating element, 110 V*	Corps de chauffe, 110 V
2481	Ringheizkörper, 220 V	*Heating element, 220 V*	Corps de chauffe, 220 V
)004	Thermostat, 30–180°C	*Thermostate, 30–180°C*	Thermostat, 30–180°C
)010	Anschlusskabel Typ 12	*Cable type 12*	Câble type 12
)016	Anschlusskabel Schuko	*Cable Schuko*	Câble Schuko
)017	U-Scheibe 35/27 × 1	*Washer 35/27 × 1*	Rondelle 35/27 × 1
)018	Mutter M26 × 1,5	*Nut M26 × 1.5*	Ecrou M26 × 1,5
)019	Einbaustecker	*Unit socket*	Prise incorporée
)020	Anschlusskabel USA	*Cablet type USA*	Câble type USA
)133	Fächerscheibe M4	*Serrated washer M4*	Rondelle à dents M4
3785	Wippschalter, 117 V	*Rocker switch, 117 V*	Interrupteur à poussoir, 117 V
1145	Wippschalter, 220 V	*Rocker switch, 220 V*	Interrupteur à poussoir, 220 V
1146	Signallampe, 220 V	*Pilot lamp, 220 V*	Témoin lumineux, 220 V
7835	Anschlusskabel GB	*Cable type GB*	Câble type GB
7836	Anschlusskabel Australien	*Cable type Australia*	Câble type Australie
3607	Fuss (4)	*Foot (4)*	Pied (4)
3648	Bad Oberteil	*Upper part of bath*	Partie supérieure du bain
3671	Thermostatplatte	*Thermostate plate*	Plaque thermostat
3689	Zusatzfuss, hoch	*Additional foot, high*	Pied supplémentaire, haut
3709	Temperaturebegrenzer, 250°C	*Temperature limiter, 250°C*	Disjoncteur thermique, 250°C
3724	Ölbehälter	*Oil pan*	Bassine d'huile
3755	Schraube M4 × 45	*Screw M4 × 45*	Vis M4 × 45
3757	Frontplatte OB 471	*Front panel OB 471*	Plaque frontale BH 471
3829	Bad Unterteil	*Lower part of bath*	Partie inférieure du bain
3908	Knopf kompl. 15/6	*Knob compl. 15/6*	Bouton compl. 15/6
1761	Deckel	*Cover*	Couvercle
3762	Siebbodeneinsatz	*Perforated bottom insert*	Garniture interne
1309	Klammer Temp.-Begrenzer	*Clip temperature limiter*	Ressort disjoncteur thermique
1310	Klammer Thermostat	*Clip thermostate*	Ressort thermostat

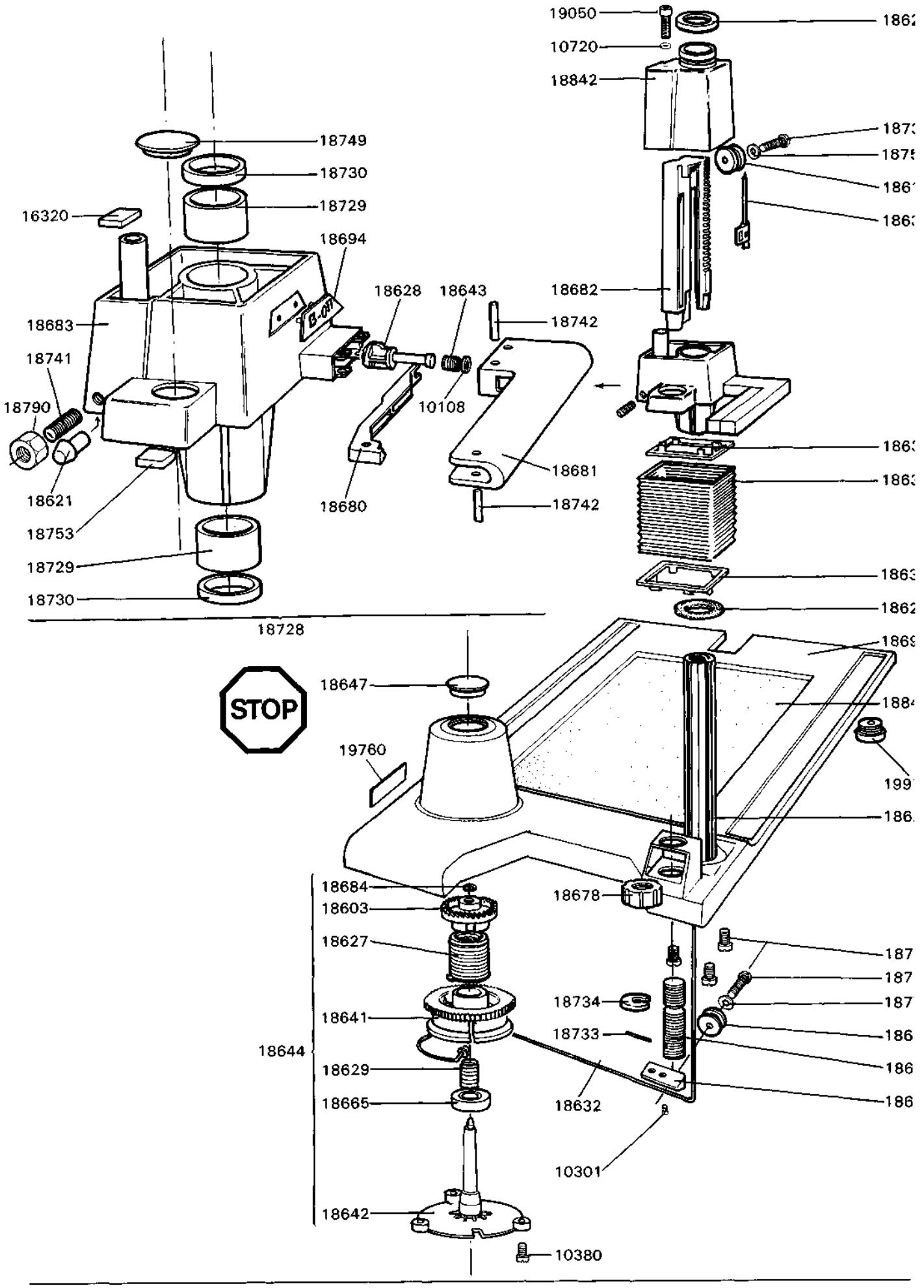
ertemperaturschutz
e Sicherheitssonde (18709) schützt
s Bad vor einer Überhitzung bei
ckenlauf.
ckstellung R:
fern die Sicherheitssonde wieder
er die Abschalttemperatur abgekühlt
kann der Rückstellknopf durch das
h R eingerastet werden.

Overtemperature cut out
The temperature limitor (18709) protects the bath from overheating.

Reset R:
Provided that the probe has cooled below the trigger temperature, reset the bath by pushing back the button through the hole R.

Disjoncteur thermique
Le limiteur de température (18709) protège le bain contre le surchauffe.

Remise R:
Quand la sonde s'est refroide en dessous de la température de déclenchement, la remise se fait en repoussant le bouton à travers le trou R.


19050
10720
18842
18749
18730
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16320
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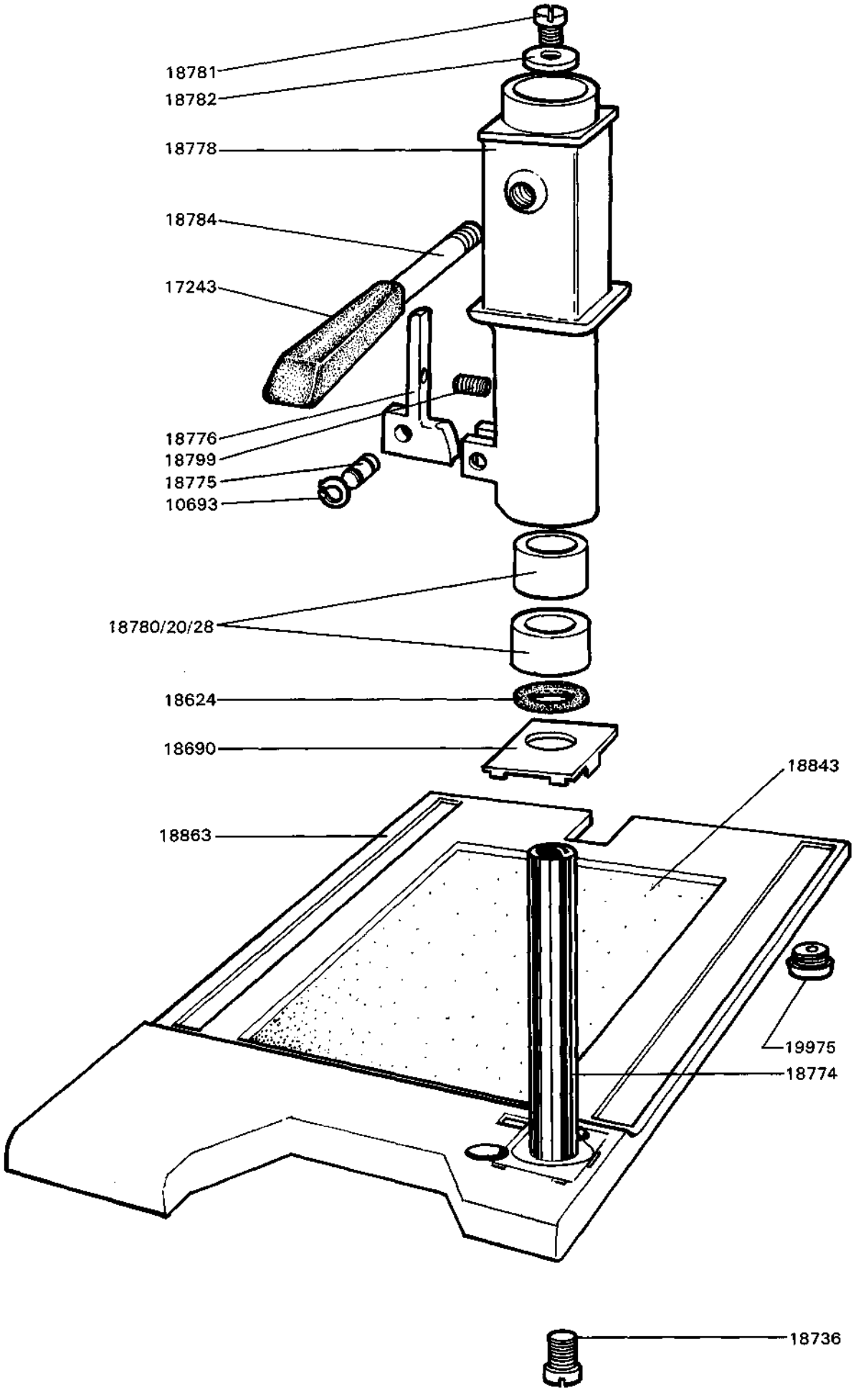
18643
18742
18683
18741
18790
10108
18682
18681
18621
18680
18742
18753
18729
18730
18728
STOP
18647
19760
18684
18603
18627
18641
18644
18629
18665
18642
10380
18678
18734
18733
18632
10301

3986	**Servo-Schnellheber B-011**	***Servo jack B-011***	**Elévateur Servo B-011**
0108	Unterlagsscheibe 8,4/15 × 1	*Washer 8.4/15 × 1*	Rondelle 8,4/15 × 1
0380	Zylinderkopfschraube M4 × 16	*Cylinder head screw M4 × 16*	Vis à tête cyl. M4 × 16
0386	Zylinderkopfschraube M5 × 10	*Cylinder head screw M5 × 10*	Vis à tête cyl. M5 × 10
6320	Puffer 10 × 10 × 2	*Buffer 10 × 10 × 2*	Amortisseur 10 × 10 × 2
3603	Zahnspannscheibe	*Toothhead tension disc*	Disque de tension denté
3616	Seilrolle	*Rope pulley*	Poulie
3621	Gleitzapfen, plastik	*Sliding block, plastic*	Rivet de glissement
3623	Nylonscheibe 50 × 40/1,5	*Nylon washer 50 × 40/1.5*	Rondelle Nylon 50 × 40/1,5
3624	Nylonscheibe 35 × 20/3	*Nylon washer 35 × 20/3*	Rondelle Nylon 35 × 20/3
3625	Führungssäule 20 × 270	*Column 20 × 270*	Colonne 20 × 270
3626	Anschlagschraube M10 × 102	*Stopper screw M10 × 102*	Vise de l'arrêt M10 × 102
3627	Torsionsfeder	*Torsion spring*	Ressort à torsion
3628	Arretierstift	*Fixing pin*	Levier d'arrêt
3629	Druckfeder 59 × 13 × 1,6	*Compression spring 59 × 13 × 1.6*	Ressort de pression 59 × 13 × 1,6
3632	Seil kompl.	*Rope compl.*	Corde compl.
3636	Balgrahmen	*Frame for bellow*	Cadre du soufflet
3637	Faltenbalg zu B-011	*Bellow for B-011*	Soufflet pour B-011
3641	Wickelrolle	*Wrapping pulley*	Poulie d'enbobinage
3642	Kraftspeicherboden	*Bottom of spring pack*	Fond du compensateur
3643	Druckfeder 32 × 10 × 1	*Compression spring 32 × 10 × 1*	Ressort de pression 32 × 10 × 1
3644	Kraftspeicher vormontiert	*Spring pack pre-assembled*	Compensateur pré-assemblé
3647	Abdeckkappe Kraftspeicher	*Cap of spring pack*	Couvercle du compensateur
3665	Kugellager6203zz, 40/17 × 12	*Bearing 6203zz, 40/17 × 12*	Roulement à biles 6203zz, 40/17 × 12
3678	Anschlagmutter M10	*Stopper nut M10*	Ecrou d'arrêt M10
3679	Seilrollenhalterung	*Holder for rope pulley*	Support du poulie
3680	Abzug B-011	*Trigger B-011*	Levier de détente B-011
3681	Griff B-011	*Handle B-011*	Poignée B-011
3682	Verdrehsicherung	*Distorsion element*	Elément anti torsion
3683	Konsole B-011	*Console B-011*	Console B-011
3684	Quicklock Benzing 4,0	*Quicklock circlip 4.0*	Circlip quicklock 4,0
3694	Bezeichnungsschild B-011	*Type plate B-011*	Plaquette B-011
3696	Grundplatte B-011	*Base plate B-011*	Plaque de fond B-011
3728	Konsole B-011, vormontiert	*Console B-011, pre-assembled*	Console B-011, pré-assemblé
3729	Kugelhülse KH 2030	*Ball bushing KH 2030*	Douille à billes KH 2030
3730	Dichtring G 20 × 28 × 4	*Sealing ring G 20 × 28 × 4*	Joint G 20 × 28 × 4
3733	Spannstift 2 × 14	*Cotter pin 2 × 14*	Goupille 2 × 14
3734	Sicherungsscheibe D8	*Circlip D8*	Circlip D8
3735	Senkkopfschraube M5 × 8	*Countersunk screw M5 × 8*	Vis à tête fraisée M5 × 8
3736	Zylinderkopfschraube M6 × 16	*Cylinder head screw M6 × 16*	Vis à tête cyl. M6 × 16
3741	Gewindestift M8 × 16, Nylon	*Set screw M8 × 16, Nylon*	Vis sans tête M8 × 16, Nylon
3742	Spannstift 4 × 20	*Cotter pin 4 × 20*	Goupille 4 × 20
3749	Abdeckkappe Konsole	*Cap for console*	Couvercle pour console
3750	Senkunterlagscheibe M5	*Countersunk washer M5*	Rondelle fraisée M5
3790	Mutter M8	*Nut M8*	Ecrou M8
3842	Turm B-011	*Tower B-011*	Tour B-011
3843	Einsatzplatte	*Insert plate*	Plaque complémentaire
3760	Deckel/Wickelrolle	*Cap wrapping pulley*	Couvercle poulie d'enbobinage
0050	Zylinderkopfschraube M 5 × 60	*Cylinder head screw M 5 × 60*	Vis à tête cyl. M 5 × 60
3975	Fuss	*Foot*	Pied

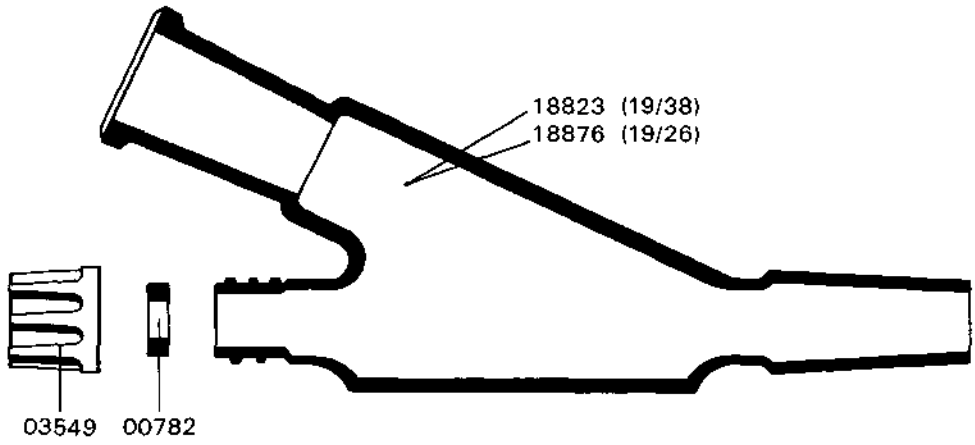
htung!
r Kraftspeicher 18644 darf wegen
r gespannten Feder nur durch
torisiertes Servicepersonal
öffnet werden.

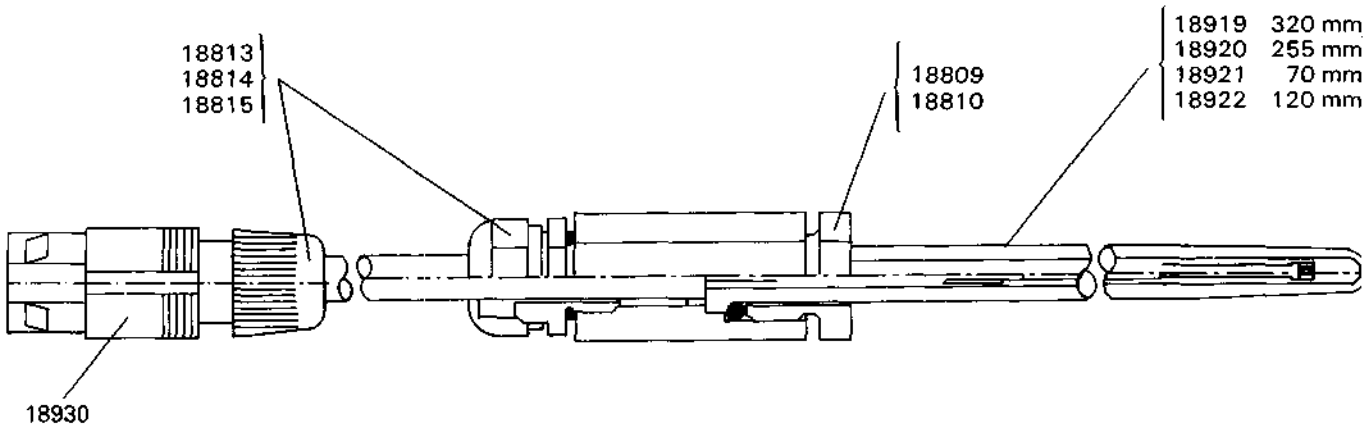
Caution!
Only authorized service technicians are entitled to open the 18644 assembly containing a loaded spring.

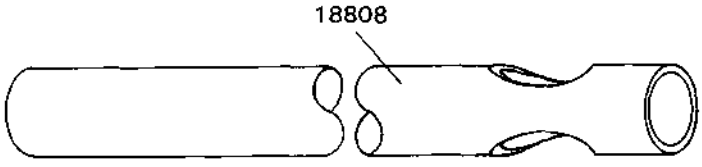
Attention!
Seulement des techniciens après ventes qualifiés sont autorisés à ouvrir le compensateur 18644 contenant un ressort remonté.


18781
18782
18778
18784
17243
18776
18799
18775
10693
18780/20/28
18624
18690
18843
18863
19975
18774
18736

8987	**Hebestativ**	***Lifting stand***	**Support élévateur**
0693	B-Sicherungsring 8 mm	*Circlip 8 mm*	Circlip 8 mm
7243	Handgriff	*Handle*	Poignée
8624	Plastikscheibe 35 × 20/3	*Plastic disc 35 × 20/3*	Disque en plastique 35 × 20/3
9690	Abdeckplatte Hebestativ	*Coverplate lifting stand*	Couvercle support élévateur
9863	Grundplatte Hebestativ	*Baseplate lifting stand*	Fond du support élévateur
9736	Zylinderkopfschraube M6 × 16	*Cylinder head screw M6 × 16*	Vis à tête cyl. M6 × 16
9774	Führungssäule D 20 × 270	*Column D 20 × 270*	Colonne D 20 × 270
9775	Bolzen 8 × 30,5	*Pin 8 × 30.5*	Goujon 8 × 30,5
9776	Klemmhebel Hebestativ	*Trigger lifting stand*	Levier de détente supp. élévateur
9778	Heberohr zu Hebestativ	*Lifting tube*	Tube élévateur
9780	Glissa-Lager D 20/28 × 15	*Bearing D 20/28 × 15*	Coussinet D 20/28 × 15
9781	Pan-head-Schraube M8 × 12	*Pan head screw M8 × 12*	Vis à tête pan head M8 × 12
9782	Unterlagscheibe 25/8,4 × 2	*Washer 25/8.4 × 2*	Rondelle 25/8,4 × 2
9784	Griffstange D 10 × 120	*Rod D 10 × 120 for handle*	Tige D 10 × 120 pour poignée
9799	Druckfeder 20 × 6 × 1	*Compression spring 20 × 6 × 1*	Ressort de pression 20 × 6 × 1
9975	Fuss	*Foot*	Pied
9843	Einsatzplatte zu Servo-Schnell-heber	*Insert plate for servo-jack and lifting stand*	Plaque complémentaire pour Servo- et support élévateur


18823 (19/38)
18876 (19/26)
03549
00782


18813
18814
18815
18809
18810
18919 320 mm
18920 255 mm
18921 70 mm
18922 120 mm
18930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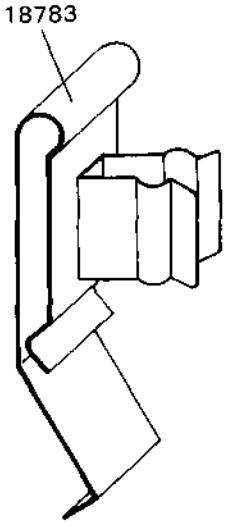
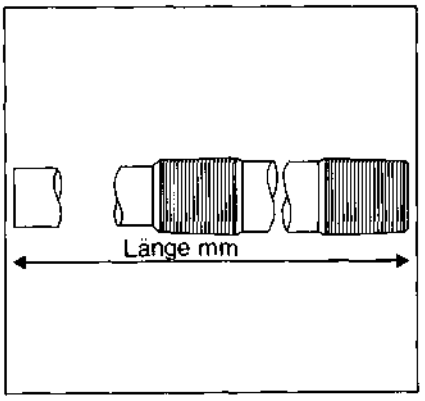

18783

	Temperatursonden	*Temperature probes*	Sondes de température
3793	**Dampftemperatursonde zu Aufbau RE-A**	***Vapour-temperature probe for assembly RE-A***	**Sonde de température de vapeur pour assemblage RE-A**
0782	Dichtung SVL 15 × 6 PTFE	*Seal SVL 15 × 6 PTFE*	Joint SVL 15 × 6 PTFE
1549	Überwurfmutter SVL 15	*Screw cap SVL 15*	Ecrou chapeau SVL 15
1560	O-Ring 6 × 1,5	*O-ring 6 × 1.5*	Joint torique 6 × 1,5
1810	Fühlerhalteschraube 7,5/M10	*Probeholder screw 7.5/M10*	Ecrou support sonde 7,5/M10
1814	Fühler 320 mm kompl. zu RE-A	*Probe 320 mm compl. for RE-A*	Sonde 320 mm compl. pour RE-A
1823	Y, Glas NS 19/38, SVL 15	*Y, glass, STJ 19/38, SVL 15*	Y, verre, CN 19/38, SVL 15
1917	Schlauch PTFE 600 mm	*PTFE-hose 600 mm*	Tuyau PTFE 600 mm
1919	Glasrohr zu Sonde 336 mm	*Glass-tube for probe 336 mm*	Tube en verre pour sonde 336 mm
1923	Stecker SC 8 kompl.	*Plug SC 8 compl.*	Fiche SC 8 compl.
1794	**Dampftemperatursonde zu Aufbau RE-B**	***Vapour-temperature probe for assembly RE-B***	**Sonde de température de vapeur pour assemblages RE-B**
0782	Dichtung SVL 15 × 6 PTFE	*Seal SVL 15 × 6 PTFE*	Joint SVL 15 × 6 PTFE
1549	Überwurfmutter SVL 15	*Screw cap SVL 15*	Ecrou chapeau SVL 15
1560	O-Ring 6 × 1,5	*O-ring 6 × 1.5*	Joint torique 6 × 1,5
1810	Fühlerhalteschraube 7,5/M10	*Probeholder screw 7.5/M10*	Ecrou support sonde 7,5/M10
1815	Fühler 255 mm kompl. zu RE-B	*Probe 255 mm compl. for RE-B*	Sonde 255 mm compl. pour RE-B
1823	Y, Glas NS 19/38, SVL 15	*Y, glass, STJ 19/38, SVL 15*	Y, verre, CN 19/38, SVL 15
1918	Schlauch PTFE 400 mm	*PTFE-hose 400 mm*	Tuyau PTFE 400 mm
1920	Glasrohr zu Sonde 271 mm	*Glass-tube for probe 271 mm*	Tube en verre pour sonde 271 mm
1923	Stecker SC 8 kompl.	*Plug SC 8 compl.*	Fiche SC 8 compl.
1795	**Dampftemperatursonde zu Aufbau EL-S und C**	***Vapour-temperature probe for assemblies EL-S and C***	**Sonde de température de vapeur pour assemblages EL-S et C**
0782	Dichtung SVL 15 × 6 PTFE	*Seal SVL 15 × 6 PTFE*	Joint SVL 15 × 6 PTFE
1549	Überwurfmutter SVL 15	*Screw cap SVL 15*	Ecrou chapeau SVL 15
1560	O-Ring 6 × 1,5	*O-ring 6 × 1.5*	Joint torique 6 × 1,5
1810	Fühlerhalteschraube 6,3/M10	*Probeholder screw 6.3/M10*	Ecrou support sonde 6,3/M10
1815	Fühler 255 mm kompl. zu RE-B, EL-S und C	*Probe 255 mm compl. for RE-B, EL-S and C*	Sonde 255 mm compl. pour RE-B, EL-S et C
1876	Y, Glas, NS 19/26, SVL 15	*Y, glass, STJ 19/26, SVL 15*	Y, verre, CN 19/26,SVL 15
1918	Schlauch PTFE 400 mm	*PTFE-hose 400 mm*	Tuyau PTFE 400 mm
1920	Glasrohr zu Sonde 271 mm	*Glass-tube for probe 271 mm*	Tube en verre pour sonde 271 mm
1923	Stecker SC 8 kompl.	*Plug SC 8 compl.*	Fiche SC 8 compl.
1796	**Dampftemperatursonde zu Aufbau EL-E**	***Vapour-temperature probe for assembly EL-E***	**Sonde de température de vapeur pour assemblage EL-E**
0782	Dichtung SVL 15 × 6 PTFE	*Seal SVL 15 × 6 PTFE*	Joint SVL 15 × 6 PTFE
1549	Überwurfmutter SVL 15	*Screw cap SVL 15*	Ecrou chapeau SVL 15
1560	O-Ring 6 × 1,5	*O-ring 6 × 1.5*	Joint torique 6 × 1,5
1810	Fühlerhalteschraube 7,5/M10	*Probeholder screw 7,5/M10*	Ecrou support sonde 7,5/M10
1813	Fühler 70 mm kompl. zu EL-E	*Probe 70 mm compl. for EL-E*	Sonde 70 mm compl. pour EL-E
1921	Glasrohr zu Sonde 86 mm	*Glass-tube for probe 86 mm*	Tube en verre pour sonde 86 mm
1923	Stecker SC 8 kompl.	*Plug SC 8 compl.*	Fiche SC 8 compl.
1819	**Temperaturfühler Bad**	***Teemperature probe bath***	**Sonde pour bain**
1560	O-Ring 6 × 1,5	*O-ring 6 × 1.5*	Joint torique 6 × 1,5
1808	Schutzrohr 130 × 6	*Protection tube 130 × 6*	Tube de protection 130 × 6
1809	Fühlerhalteschraube 7,5/M10	*Probeholder screw 7,5/M10*	Ecrou support sonde 7,5/M10
1922	Glasrohr zu Sonde 132 mm	*Glass-tube for probe 132 mm*	Tube en verre pour sonde 132 mm
1930	Stecker SC 8 kompl.	*Plug SC 8 compl.*	Fiche SC 8 compl.
1783	**Halteklammer Badfühler**	***Clip for bath probe***	**Pince pour sonde du bain**

Zubehör
Dampfdurchführungsrohr

Accessories
Vapour duct

Accessoires
Conduit de vapeur

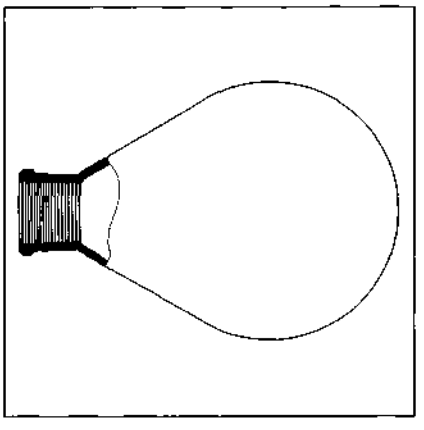


Aufbau *Assembly* Version	Länge mm *Length mm* Longueur mm	Normschliffe *Standard joints* Rodages normalisés					* = mit Sicherheitsklamme * = *with safety clip* * = avec attache rapide
		29/32	24/40	34,5/35	29/42	24/29	19/26
A	282	10114					
A	282	17484*					
A	290		10980				
A	290		17486*				
A	285			10981			
A	292				10982		
A	292				17488*		
A	279					10983	
A	179					17490*	
A	276						10984
B&C	165	10175					
B&C	165	17485*					
B&C	175		10985				
B&C	175		17487*				
B&C	165			10986			
B&C	175				10987		
B&C	175				17489*		
B&C	159					10988	
B&C	159					17491*	
B&C	156						10989

Verdampferkolben (birnenförmig)
Für EL-Geräte nur mit Übergangsstück Flansch-NS

Evaporating flasks *(peer-shaped)*
For EL systems only with adapter flange-STJ

Ballon évaporateur (piriforme)
Pour les appareils EL uniquement avec réducteur raccord plat-CN

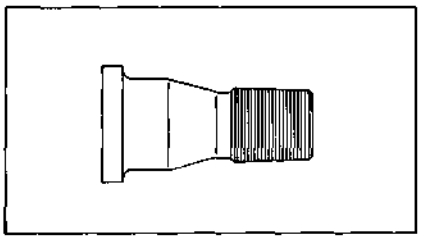


NS/*STJ*/CN	29/32	24/40	34,5/35	29/42	24/29	19/26
50 ml	00431	08750	08740	08736	00472	08743
100 ml	00432	08751	08741	08737	00473	08744
250 ml	00433	08754	08755	08738	08753	08745
500 ml	00434	08758	08759	08739	08757	08746
1000 ml	00435	00440	08763	08762	08761	08747
2000 ml	00436	08765	08766	08769	08764	08748
3000 ml	00437	08767	08742	08770	08735	08749

Übergangsstück
Flansch-NS zu EL-Geräten
1 Übergangsstück NS 29/32 wird mit dem ROTAVAPOR geliefert

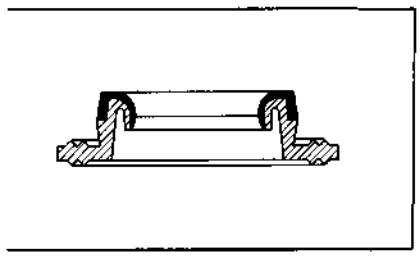
Adapter flange-STJ
for EL systems
1 adapter STJ 29/32 is supplied with the ROTAVAPOR

Réducteur
raccord plat-CN pour appareils EL
1 réducteur raccord plat-CN 29/32 est fourni avec le ROTAVAPOR



NS/*STJ*/CN	29/32	24/40	34,5/35	29/42	24/29	19/26
	16661	16865	00921	16866	16867	00916

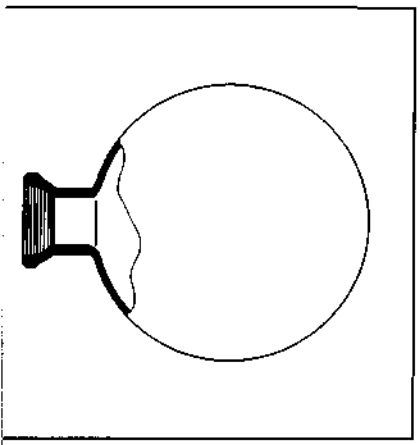
)CHI-Dichtung



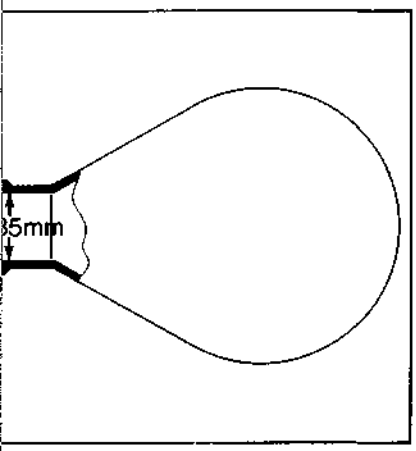
	Code
)-22 für RE-Geräte	00636
)-26 für EL-Geräte	10179

ide Dichtungen können ohne Fett nützt werden.

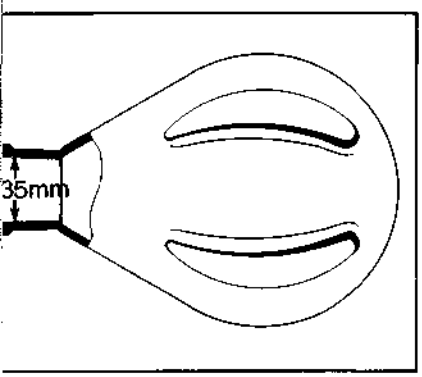
uffangkolben
nd mit KS 35/20



ansch-Verdampferkolben
EL-Geräten



ansch-Trocknungskolben
EL-Geräten



BÜCHI seal

	Code
KD-22 for RE systems	*00636*
KD-26 for EL systems	*10179*

Both seals can be used without grease.

Receiving flasks
round with SPJ 35/20

Inhalt/*Capacity*/Capacité	Code
50 ml	00421
100 ml	00422
250 ml	00423
500 ml	00424
1000 ml	00425
2000 ml	00426
3000 ml	00427

Flanged evaporating flasks
for EL systems

Inhalt/*Capacity*/Capacité	Code
100 ml	11607
250 ml	11146
500 ml	11147
1000 ml	11148
2000 ml	11149
3000 ml	11150

Flanged drying flask
for EL systems

Inhalt/*Capacity*/Capacité	Code
500 ml	00459
1000 ml	00460
2000 ml	00461

Joint d'étanchéité BÜCHI

	Code
KD-22 pour appareils RE	00636
KD-26 pour appareils EL	10179

Les deux joints d'étanchéité peuvent être utilisés sans graisse.

Ballon récepteur
rond avec RS 35/20

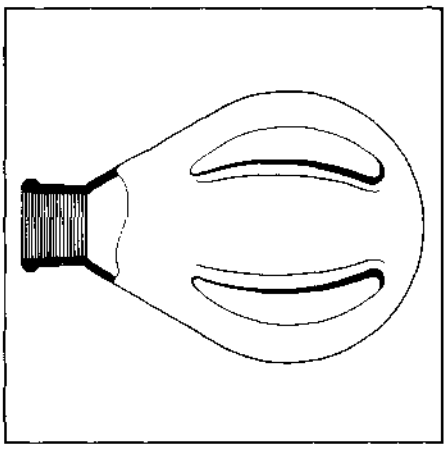
Ballon évaporateur
pour appareils EL à raccord plat

Ballon dessiccateur
pour appareils EL

Spezialkolben zur Trocknung pulverförmiger Substanzen

Specile flasks for drying powdery substances

Ballon dessiccateur pour substances pulvérulentes

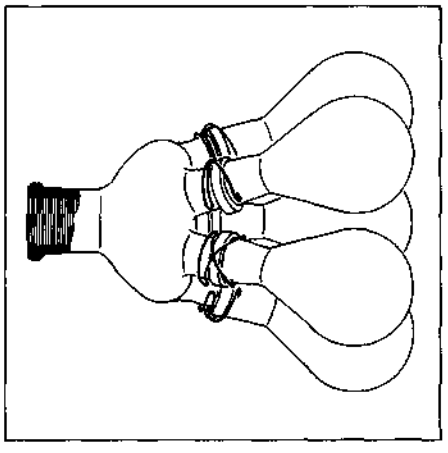


Inhalt/*Capacity*/Capacité	NS/*STJ*/CN 29/32	NS/*STJ*/CN 24/
500 ml	00452	115
1000 ml	00453	004
2000 ml	00454	115

Destillierspinnen

Spider evaporators

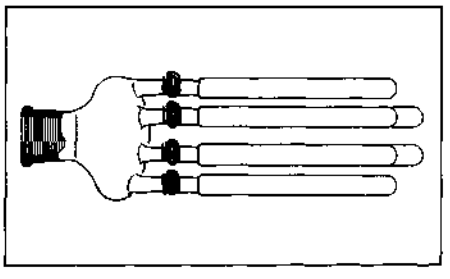
Gallettes de distillation



	29/32	24/40
mit 5 Kolben 24/29 à 50 ml	01332	11574
mit 5 Kolben 24/29 à 100 ml	01333	11575

	29/32	*24/40*
with 5 flasks 24/29 of 50 ml	*01332*	*11574*
with 5 flasks 24/29 of 100 ml	*01333*	*11575*

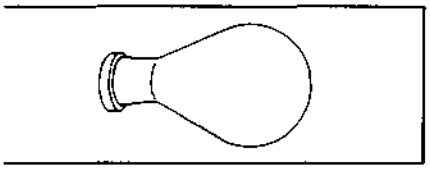
	29/32	24/
avec 5 ballons CN 24/29 à 50 ml	01332	115
avec 5 ballons CN 24/29 à 100 ml	01333	115

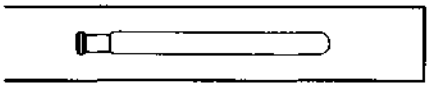


	29/32	24/40
mit 6 zyl. Gläsern 14,5/23 à 20 ml	01334	11576
mit 12 zyl. Gläsern 14,5/23 à 20 ml	01335	11577
mit 20 zyl. Gläsern 14,5/23 à 20 ml	01336	11578

	29/32	*24/40*
with 6 cyl. tubes 14,5/23 of 20 ml	*01334*	*11576*
with 12 cyl. tubes 14,5/23 of 20 ml	*01335*	*11577*
with 20 cyl. tubes 14,5/23 of 20 ml	*01336*	*11578*

	29/32	24/
avec 6 tubes cyl. CN 14,5/23 à 20 ml	01334	115
avec 12 tubes cyl. CN 14,5/23 à 20 ml	01335	115
avec 20 tubes cyl. CN 14,5/23 à 20 ml	01336	115





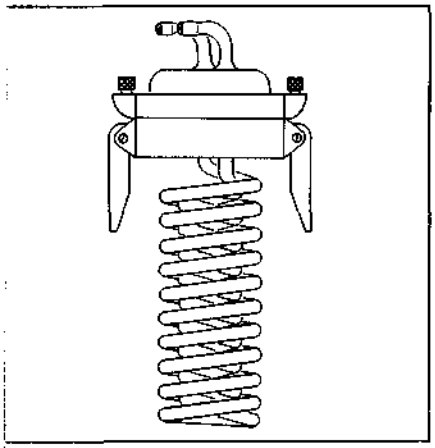
		Code
Verdampferkolben zu Spinne *Flasks for spider* Ballons pour galette	50 ml 100 ml	00472 00473
Zylinderkolben zu Spinne *Cylinder flasks for spider* Ballons cylindrique pour galette	20 ml	00477

inhängekühlspirale
iese Spirale kann anstelle des Kühl-
ngers in die Kühlfalle eingehängt und
ittels Schnellverschluss fixiert werden.

lit diesem Zubehör kann der
OTAVAPOR nun wahlweise mit Kühl-
ılle oder mit Normalkühler betrieben
'erden.

Cooling coil insert
This coil can be inserted in the cold-trap condenser in place of the cold finger and can be fixed by means of a quick fastener.
With this accessory, the ROTAVAPOR can now be operated with a cold-trap condenser or with a normal condenser, as desired.

Spirale réfrigérante suspendue
Cette spirale peut être suspendue dans le piège à froid à la place du doigt réfrigérant et être fixée par une attache rapide.
Avec cet accessoire, le ROTAVAPOR peut fonctionner alors selon nécessité avec un piège à froid ou un réfrigérant normal.

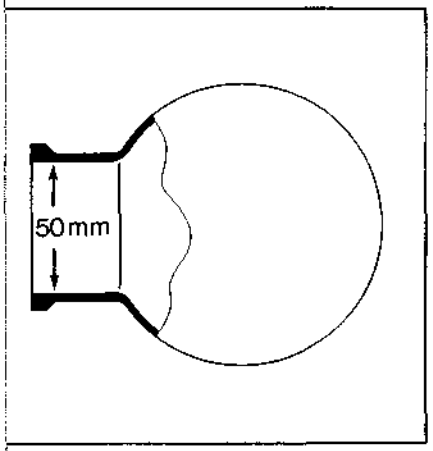


			Code
Einhänge-Spirale	*Coil insert*	Spirale de refroidissement	11518
Schnellverschluss komplett	*Quick fastener complete*	Fermeture attache rapide complète	01578
O-Ring-Dichtung	*O-ring seal*	Joint torique ∅ 99 × 25,3 mm par piège à froid	00671

anschkolben für
ansch-Dampfdurchführungsrohr
er weite Kolbenhals gestattet ein
ichtes Entfernen von Substanzen aus
m Verdampfungskolben.

Flanged flasks
for flanged vapour duct
The wide flask neck makes it easy to remove substances from the evaporating flask.

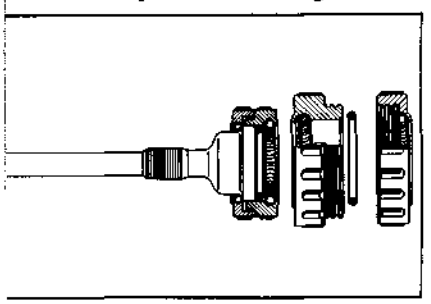
Ballon à raccord plat pour
conduit de vapeur à raccord plat
Le col large permet d'enlever facilement les substances du ballon évaporateur.



Inhalt/*Capacity*/Capacité	Code
500 ml	00441
1000 ml	00442
2000 ml	00443
3000 ml	00444

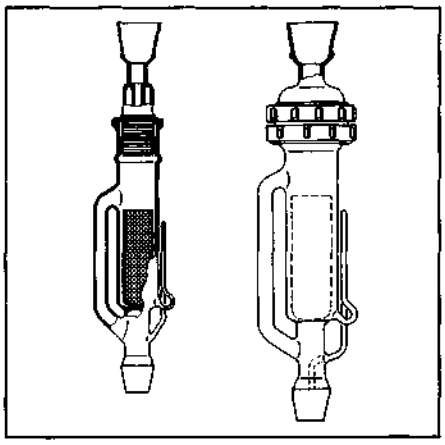
ansch-Dampfdurchführungsrohr

Flanged vapour duct **Conduit de vapeur à raccord plat**



			Code
zu Aufbau A	*for A assembly*	pour version A	00509
zu Aufbau B und Kühlfalle	*for B assembly and cold-trap condenser*	pour version B et piège à froid	00510
Verschraubung komplett	*Threaded connected complet*	Bride complète pour raccord plat	00260
O-Ring-Dichtung	*O-ring seal*	Joint torique	01841

Extraktionsaufsatz «Soxhlet»
zu EL-Modellen



«Soxhlet» extraction unit
for EL models

Extracteur «Soxhlet»
pour modèles EL

	ml	Code
Reduzieraufsatz *Reduction part* Pièce de réduction	200/500	11705
Extraktionsaufsatz Unterteil *Extraction Vessel lower part* Vase d'extraction partie inférieur	200 ml 500 ml	11585 11388
Stab 12 × 750 (zu Extraktion) *Rod (for extraction)* Tige (pour l'extraction)		11904
PTFE O-Ring		19051
Verschraubung komplett *Coupling complete* Raccordement complet		00982

fest/flüssig, komplett	Code
Inhalt 200 ml	11744
Inhalt 500 ml	11745
Extraktionshülsen Inhalt 200 ml	08560
Inhalt 500 ml	00989

Solid/liquid, complete	*Code*
Capacity 200 ml	*11744*
Capacity 500 ml	*11745*
Extraction cartridges *Capacity 200 ml*	*08560*
Capacity 500 ml	*00989*

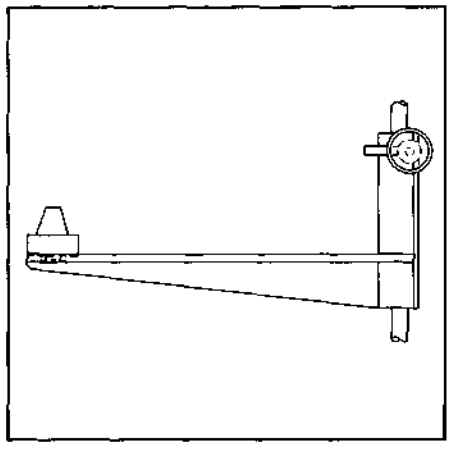
Solid/liquide, complète	Coc
Capacité 200 ml	1174
Capacité 500 ml	1174
Cartouches d'extraction Capacité 200 ml	0856
Capacité 500 ml	0098

Stativmontage-Adapter
Dieser Adapter ermöglicht die Montage des Antriebsaggregates an einer Laborstativstange mit einem Durchmesser von 12 bis 15 mm.
Geeignet für Aggregate 111/121/131.

Stand assembly adapter
This adapter enables the drive unit to be mounted on a laboratory stand having a rod of diameter 12 to 15 mm.

Suitable for units 111/121/131.

Adaptateur pour montage sur statif
Cet adaptateur permet le montage du bloc d'entraînement sur une tige de statif de laboratoire d'un diamètre de 12 à 15 mm.
Convient aux ensembles 111/121/131.



Code	18798

BÜCHI

ROTAVAPOR®

BÜCHI
Laboratory-Techniques Ltd.
CH - 9230 Flawil/Switzerland
Tel. 071 84 81 81, Telex 881230 buchi ch, Telefax 071 83 57 11

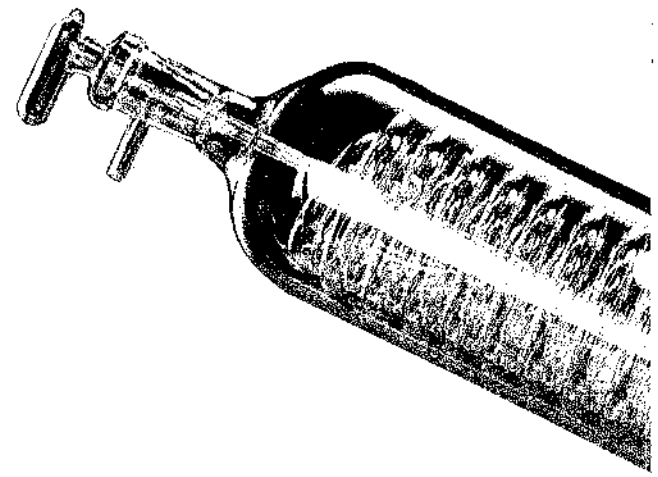
Introduction

It is now hardly possible to consider rapid and careful evaporation of solvents in the laboratory without ROTAVAPOR (vacuum rotary evaporator.

The first ROTAVAPOR for professional users was originally produced by BÜCHI in the fifties.

Today's ROTAVAPOR which combines traditional craftsmanship with up-to-date technology, satisfies **your** requirements too. In addition to the conventional evaporation of solvents, the number of possible applications of the ROTAVAPOR has greatly increased.

In particular, the first fully automatic ROTAVAPOR RE-140/EL-141 opens up new horizons.



Advantages of the ROTAVAPOR

When BÜCHI designs a new system in collaboration with the users, very clear goals are first set. These were so ambitious that new standards were applied to many points:

Problem-solving
The ROTAVAPOR, from the robust standard model RE-111 up to the fully automatic RE-140/EL-141, takes full account of **your** personal needs too. In particular, the comprehensive range of accessories make it possible to carry out a large number of applications.

Finest quality
The ROTAVAPOR offers you top performance and reliability at reasonable cost. The BÜCHI philosophy is to give the best and not just the necessary quality. Quality also includes advice for special needs and a first-class customer service.

Safest ROTAVAPOR
All baths are designed as safety water baths.
An additional thermal cut out prevents the worst if you have switched the bath on without liquid.
A standard feature at no extra cost.

The glass components are provided with threaded safety connectors.

The fully automatic ROTAVAPOR RE-140/EL-141 has a remote control for those who want to remain «at a distance».

All systems are supplied with the BÜCHI STJ combi clip. It is permanently fitted and retains the flask even at normal pressure.

Balanced
A special exclusive feature is the servo quick-action jack. In the B-011 version, it can be raised and lowered almost without effort; Swiss precision work, pioneering in a new direction!

The quick-action jack B-143 belonging to the ROTAVAPOR RE-140/EL-141 is of course motor-driven. Automatic raising or lowering by pressing a key or according to the distillation program.

Application of the ROTAVAPOR

The popularity of the ROTAVAPOR is also based on its versalitiy. The ROTAVAPOR adapts to changing needs or can be suitably modified. The two different drive units can be provided with a total of six tried-and-tested glass assemblies. Their application can be optimised by the extensive range of accessories.

The following areas of application of the ROTAVAPOR can also be combined, e.g. extraction/concentration with simultaneous solvent regeneration.

- Distillation
- Concentration
- Reaction
- Powder drying
- Coating
- Crystallisation
- Solvent purification
- Extraction
- Degassing

General specifications

Drive unit
Powerful sparkless induction motor. 0–220 rpm, electronically regulated. The torque is proportional to the load. Power input 85W.

Seals
Durable PTFE seal vulcanised on elastic rubber compound. Vacuum-tight to <1 mbar.

Baths
Ø 265 mm, capacity 9 litres, overtemperature cut out with double circuit system, stainless steel body.

Oil bath	30–180° C, 1200W
Water bath	20–100° C, 1200W with top-up, overflow and drain function

Glassware
First-class, chemically inert borosilicate glass.

Flasks
Both evaporating and receiving flasks can be obtained with capacities from 50 ml to 3 litres. The units are supplied as standard with one 1 litre receiving flask SPJ 35/20 and one evaporating flask STJ 29/32. Naturally, you will also find all other standard ground joints in our range (see page 13).

Connectors

On the glass components:	— threaded safety connectors Ø 9 mm
On the water bath:	— inlet 8 mm
	— outlet 14 mm

Cooling water consumption
Approx. 1.5 litres per minute

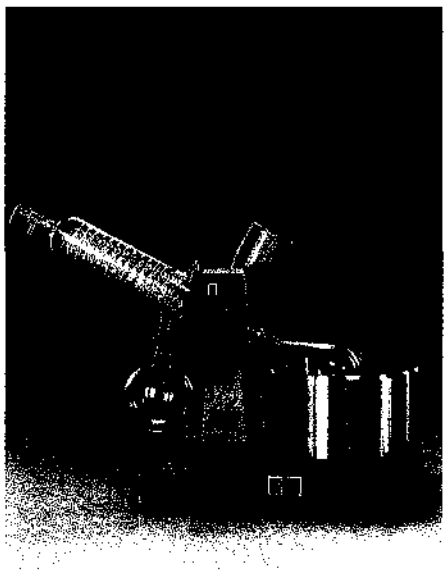
Raising distance
The raising/lowering distance of the quick-action jack is 150 mm

Shipping weight
20–25 kg, according to model

For your use: The optimum assembly

Models RE-111, 121 and 140

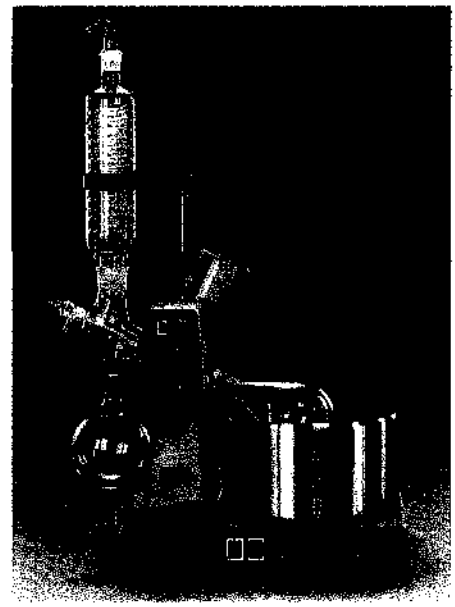
The RE models have a fixed seal, the KD-22, and a rotating vapour duct. The glass assemblies A, B, C which are possible with this system are suitable for concentration/distillation. Flasks with an internal neck diameter of 50 mm, and a corresponding vapour duct, are obtainable as accessories.



A Assembly
This assembly is characterised by the diagonal condenser. It has widespread use for the **simple distillation** of organic solvents.

The vapours pass from the evaporating flask through the vapour duct into the condenser. The vapours condense on the tap-water-cooled coils. The condensate runs into the receiving flask.

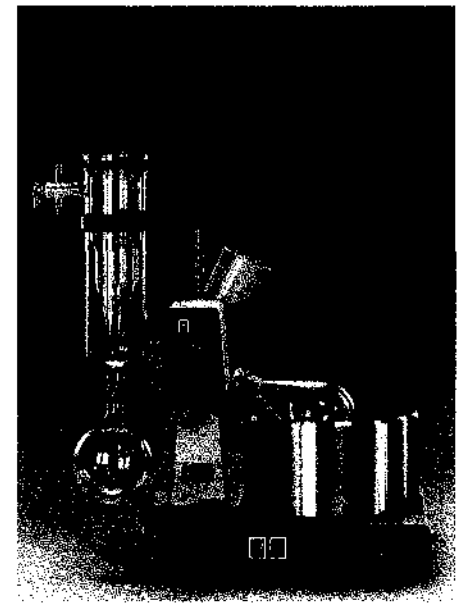
The stopcock on the condenser is used for continuously filling the evaporating flask and for aerating the unit.



B Assembly
The vertical condenser of the B assembly is cooled with tap-water. This configuration requires 10 cm less bench space than the A assembly. Also, the vapour duct is shorter. The B assembly is therefore particularly suitable for **stripping solvents** with high heat of evaporization, for example water and methanole.

The vapours pass from the evaporating flask through the short vapour duct. The vapours already condense in the distribution head or on the condenser coils. The liquid is collected in the round-bottomed flask.

The stopcock on the distribution head is used for feeding solvents and for aerating the system.



C Assembly
The two-piece cold-trap condenser can be filled with dry-ice, cooling brine or liquid air. This enables **solvent freezing.** The applications of the cold-trap condenser are:

Distillation at low temperatures, **freeze-drying.**

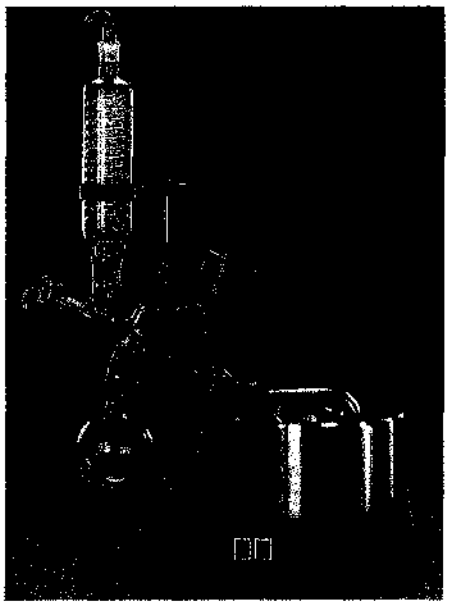
The cold finger can be removed without tools for recovery of the distillate and cleaning.

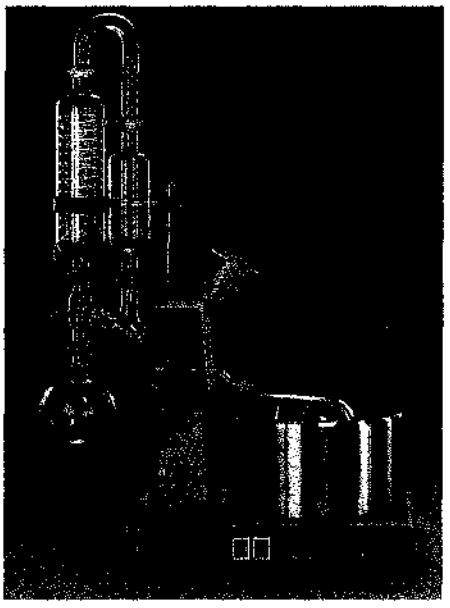
There is no provision for continuous feeding of the evaporating flask.

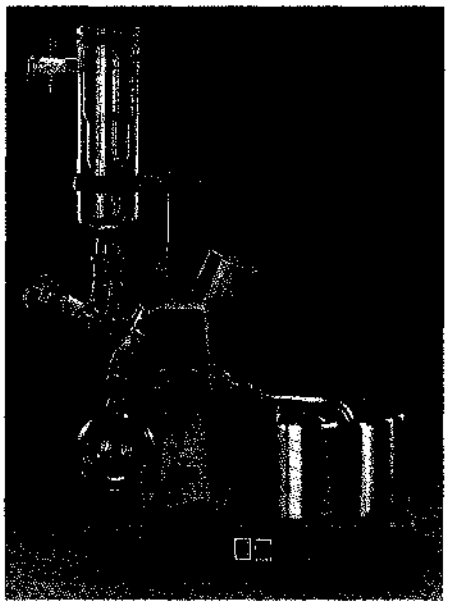
The vapours pass through the short vapour duct into the cold-trap condenser. The distillate can freeze out on the cold finger or run as liquid into the receiving flask.

Models EL-131 and 141

The EL glass assemblies S, E, C permit the following applications in addition to distillation and concentration: reactions under reflux, degassing of samples, Soxhlet extractions. In the EL models, the vapour duct is fused to the distribution head and stationary. The KD-26 seal rotates. Evaporating flasks with a flange of internal 35 mm are obtainable as accessories and can be fixed directly to the unit.







S Assembly
The vertical condenser is cooled with tap-water. A PTFE valve is fitted to the distribution head. The valve is opened for distillation. The vapours pass through the distribution head, condense in the condenser and run freely into the receiving flask.

If the receiver valve is closed, the condensate runs back into the evaporating flask; this is called **distillation** under **total reflux.** With total reflux, solutions can be degassed and a very large number of reactions can be carried out under vacuum or at normal pressure. This offers the possibility of evaporating off solvent at any time by opening the receiver valve. Using the glass stopcock, reactant or solvent can be fed into the evaporating flask.

A **Soxhlet extraction** unit can be supplied as an accessory. This is inserted between the distribution head and the condenser. Extraction takes place when the receiver valve is closed and the extract is concentrated when the valve is opened.

E Assembly
An **expansion vessel** is fitted in front of the descending condenser. The vapours pass from the evaporating flask into the distribution head and rise into the expansion vessel, which acts as a buffer vessel for any foam reaching this point. By widening the cross-section, the vapours are expanded and their speed reduced. Aerosols and drops carried over are separated off and run back into the evaporating flask.

The vapours must pass through the whole length of the condenser so as to reach the receiving flask as condensate. The distribution head has a stopcock for continuous feed and for aerating the unit.

The main applications of the E assembly are: **Distillation of solvents with low heat of evaporization, high-foaming solvents** and solvent recovery.

C Assembly
In this assembly, the cold-trap condenser replaces the conventional coil condenser. The inner part of the cold-trap condenser, namely the cold finger, receives the coolant, for example dry-ice, liquid air or cooling brine.

The applications of this C assembly are: Distillation at low temperatures, **freeze-drying,** condensation of low-boiling solvents.

The distribution head has a feed/aerating stopcock next to the PTFE receiver valve.

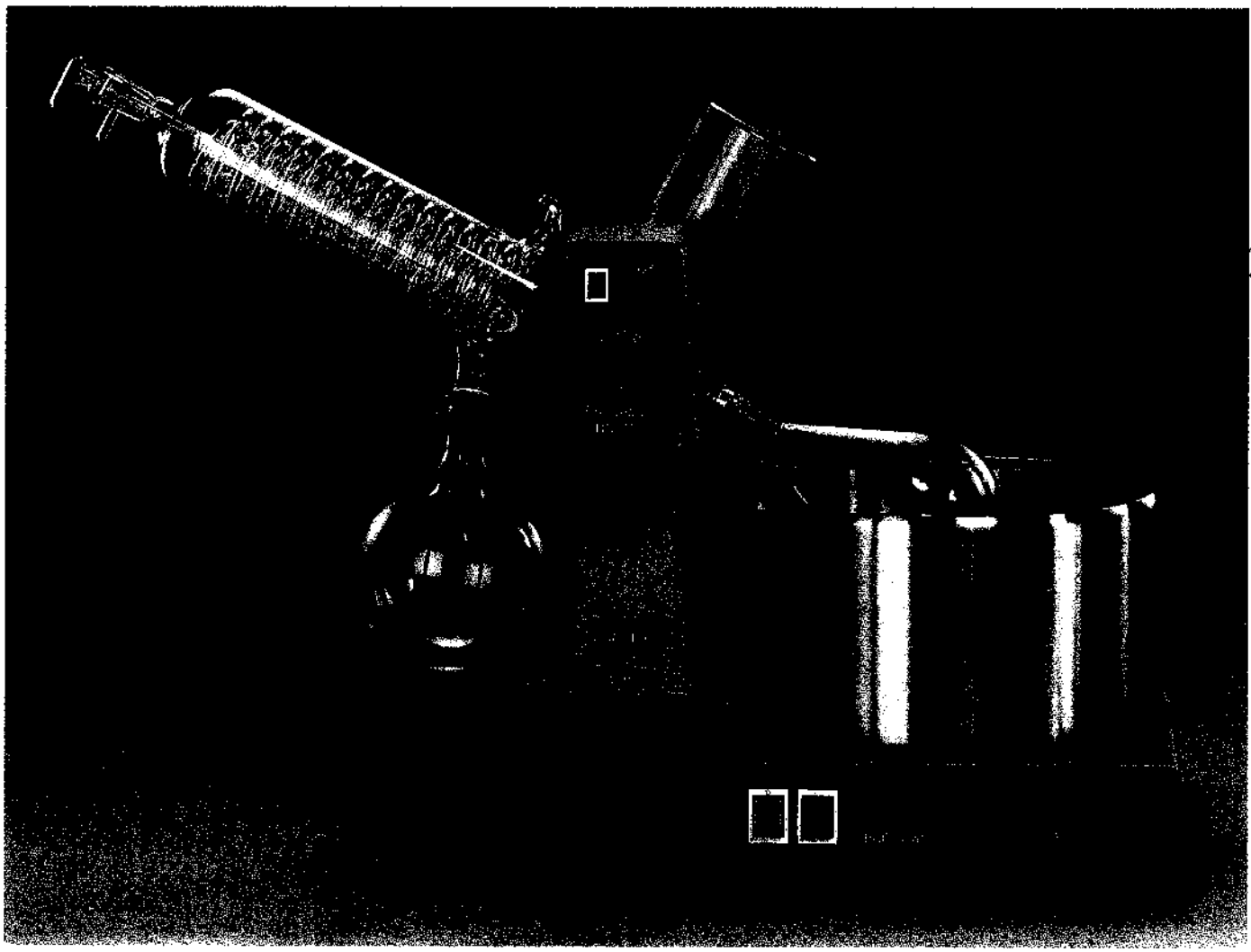
The vapours pass from the evaporating flask through the distribution head into the cold-trap condenser. Products which freeze out deposit on the cold finger. Liquid condensate run as into the receiving flask or, if the valve is closed, back into the evaporating flask.

ROTAVAPOR RE-111

The most popular ROTAVAPOR is the Model RE-111. It forms part of the standard equipment in modern chemical laboratories throughout the world. The ROTAVAPOR RE-111 is the result of decades of BÜCHI experience in the construction of such systems; in other words: it was shaped through distillations.

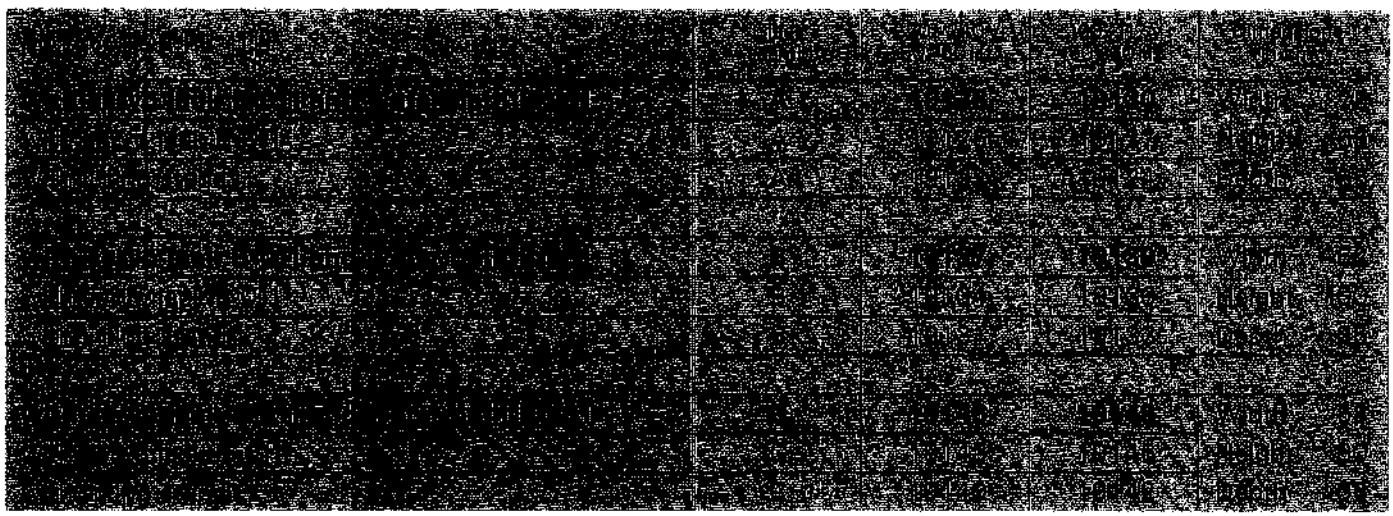
The mechanical construction of the drive unit is made to suit the RE glassware A, B, C. The ROTAVAPOR RE-111 can be used either with the water bath B-461 or with the oil bath B-471. Both are suitable for heating evaporating flasks from 50 ml to 3 litres.

The advantages of the ROTAVAPOR RE-111 are enhanced by the servo quick-action jack B-011: safe, **problem-free distillation** in regular daily use is guaranteed.



Ordering Information

The units are supplied with one 1 litre evaporating flask STJ 29/32 and one receiving flask SPJ 35/20.

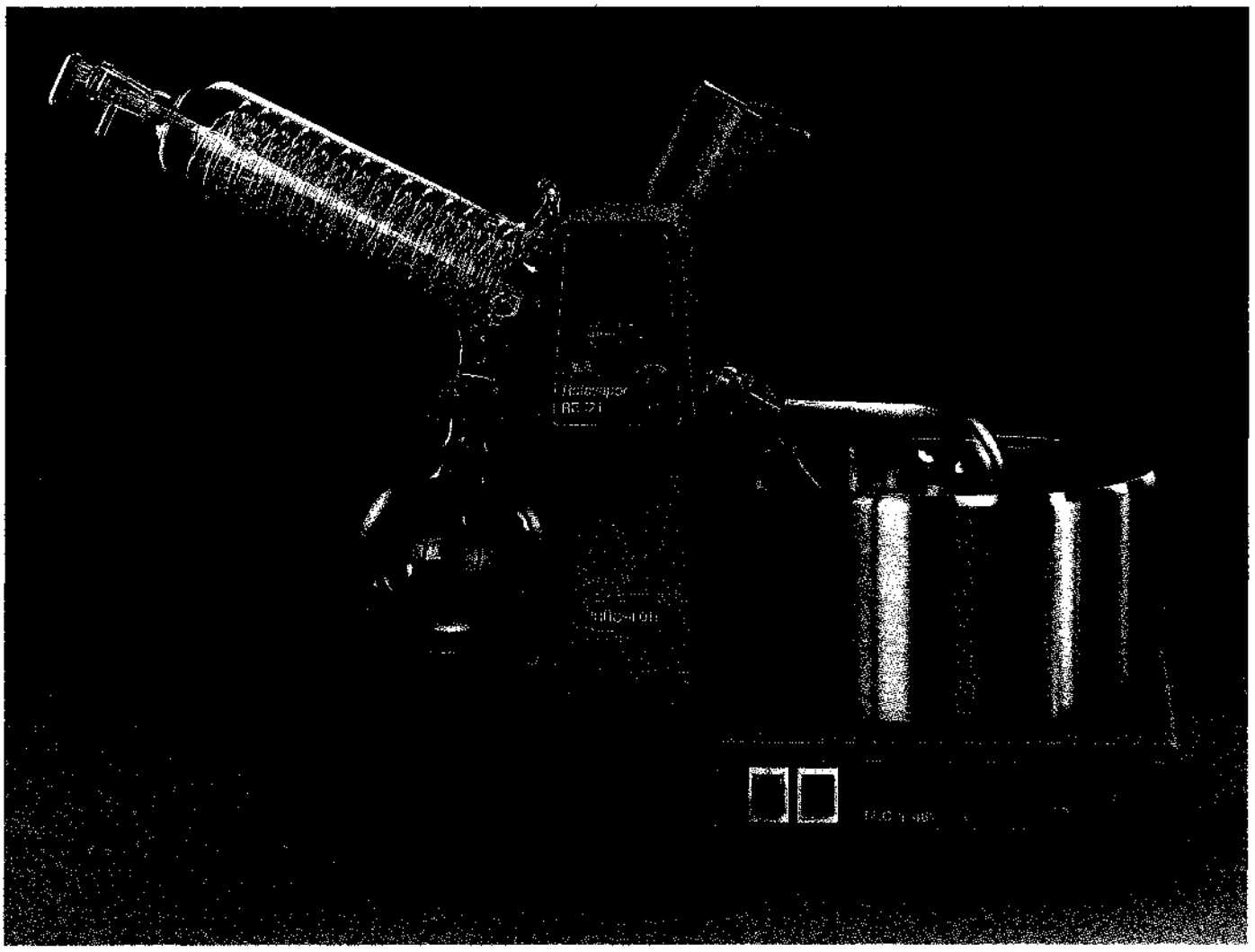


Accessories

The accessories suitable for this system are listed on pages 12–15.

ROTAVAPOR RE-121

The large green LED show you, as required, the rpm, the bath temperature and, with an additional sensor, the vapour temperature. A precision of 1% is achieved by modern electronics in a compact structure. The ROTAVAPOR RE-121 offers quality at reasonable cost. The drive unit is suitable for the RE glass assemblies A, B and C. Either the water bath B-461 or the oil bath B-471 can be used, according to the application. For this unit, we recommend especially the servo jack B-011. **ROTAVAPOR RE-121, digitised distillation!**



The units are supplied with one 1 litre evaporating flask STJ 29/32 and one receiving flask SPJ 35/20.
The sensor for measuring the vapour temperature must be ordered separately: see Accessories.

Ordering Information

ROTAVAPOR RE-121	Glass Assembly	220–240 V~ 50–60 Hz	100–117 V~ 50–60 Hz	Dimensions in cm	
with servo jack B-011 and water bath B-461	**A**	**19158**	**19157**	Width	75
with servo jack B-011	A	19152	19154	Height	65
with lifting stand	A	19149	19151	Depth	35
with servo jack B-011 and water bath B-461	**B**	**19164**	**19166**	Width	62
with servo jack B-011	B	19161	19163	Height	100
with lifting stand	B	19158	19160	Depth	35
with servo jack B-011 and water bath B-461	**C**	**19173**	**19175**	Width	58
with servo jack B-011	C	19170	19172	Height	80
with lifting stand	C	19167	19169	Depth	35

Accessories

The accessories suitable for this system are listed on pages 12–15.

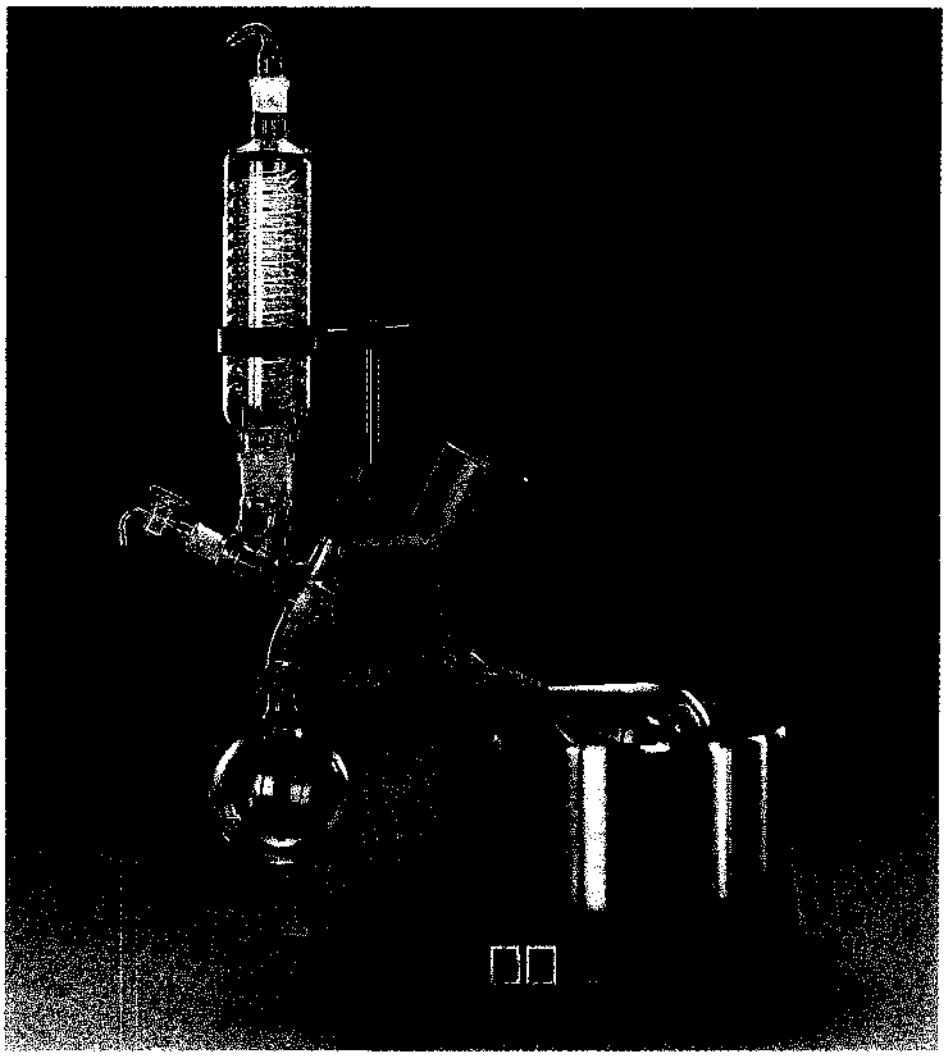
ROTAVAPOR EL-131

We recommend the ROTAVAPOR EL-131 for applications which are not restricted only to distillation and concentration. The glass assemblies S, E and C can be used with the ROTAVAPOR EL-131.

The rpm, the bath temperature and, with an optional sensor, the vapour temperature are reversibly displayed with clearly visible, green LED elements.

The most modern electronics — only components of «process quality» are fitted — offers you a precision of 1%.

The ROTAVAPOR EL-131, with its variety of possible applications, is the first choice for synthesis laboratories. Oil bath or water bath can be added to the ROTAVAPOR EL-131. For routine use, the unique servo quick-action jack B-011 is of course a must!



Reaction and distillation: ROTAVAPOR EL-131 with digital display at an affordable cost!

The units are supplied with one 1 litre evaporating flask STJ 29/32 and one receiving flask SPJ 35/20.
The sensor for measuring the vapour temperature must be ordered separately: see Accessories.

Ordering Information

ROTAVAPOR EL-131					
with servo jack B-011 and water bath B-481					
with servo jack B-011					
with lifting stand					
with servo jack B-011 and water bath B-491					
with servo jack B-011					
with lifting stand					
with servo jack B-011 and water bath B-461					
with servo jack B-011					
with lifting stand					

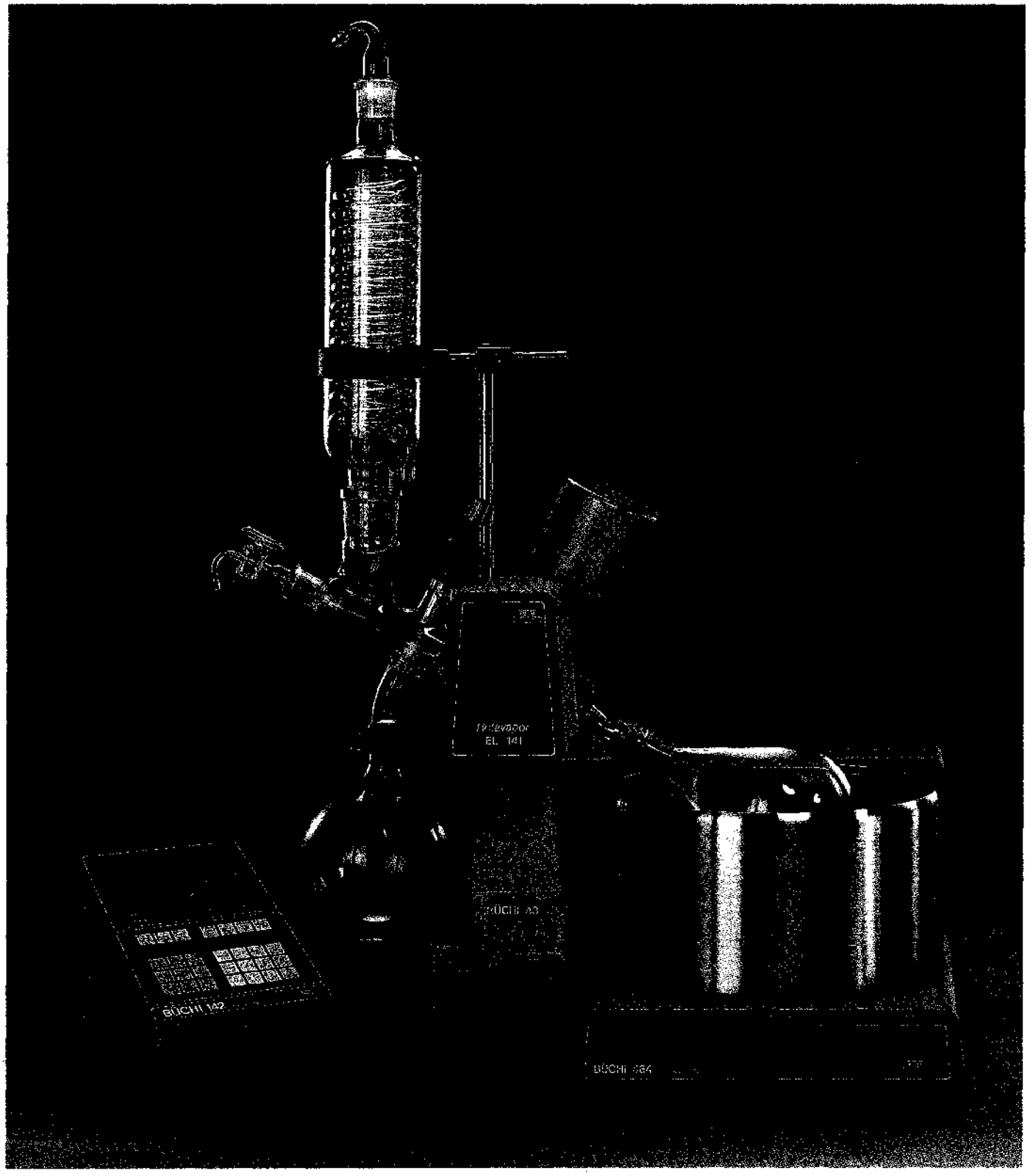
Accessories

The accessories suitable for this system are listed on pages 12–15.

ROTAVAPOR RE-140/EL-141

These two models differ in the glass components which they use. The RE-140 can be combined with the RE assemblies A, B or C and the EL-141 can be combined with the EL glassware S, E or C.

The ROTAVAPOR RE-140/EL-141 is the first rotary evaporator to permit fully automatic distillation. The use of the microprocessor makes is possible to carry out distillations according to fixed programs. Particular attention has been paid to make it easy to use: rotation speed and distillation pressure are selected via rotary potentiometers without anything having to be keyed in. In this instance, it is more practical than keying-in. Other functions, for example motor-driven raising/lowering of the quick-action jack, are effected by keying-in. The keys do not have any confusing dual functions and, when keying-in, the confirmatory click is felt with the fingertip.



Main features of ROTAVAPOR RE-140/EL-141

- Fully automatic distillation
- Integrated vacuum controller
- User-friendly electronics
- Motor-driven quick-action jack
- Six possible glass assemblies

Automatic distillation

An automatic distillation is best described with the aid of a practical example: a substance dissolved in water loses its biological activity at 60° C. The substance must be concentrated to complete dryness by evaporation, quickly and under mild conditions.

a) Bath temperature
In the example, you set this to 55° C which is below the temperature which is harmful to the substance.

On pressing ***Desired bath temperature [°C],*** the previously used temperature appears in the display. If this value is other than 55, you press ***Set bath temperature [°C]*** and key in 55.

The diode ***Heating*** lights up when current is flowing through the heating system. The present temperature is displayed by means of the key ***Actual bath temperature [°C].***

If for any reason the bath temperature rises 5° C above the desired temperature, the system automatically switches off and a fault is displayed.

b) Distillation vacuum
A difference between bath temperature and boiling point of 20° C ensures a sufficiently large evaporative capacity.

Accordingly, with a bath temperature of 55° C minus 20° C, the boiling point must be 35° C. This is obtained at a pressure of 30 mbar.

With the rotation switched on, you actuate the key ***Controlled vacuum*** and the pressure is reduced to the preset value by means of the potentiometer ***Vacuum.*** To display the present vacuum, the key ***Actual vacuum [mbar]*** is pressed.

The key ***Aerate*** aerates the unit while it is being pressed. With this key, you can at any time immediately suppress foaming which occurs during evacuation.

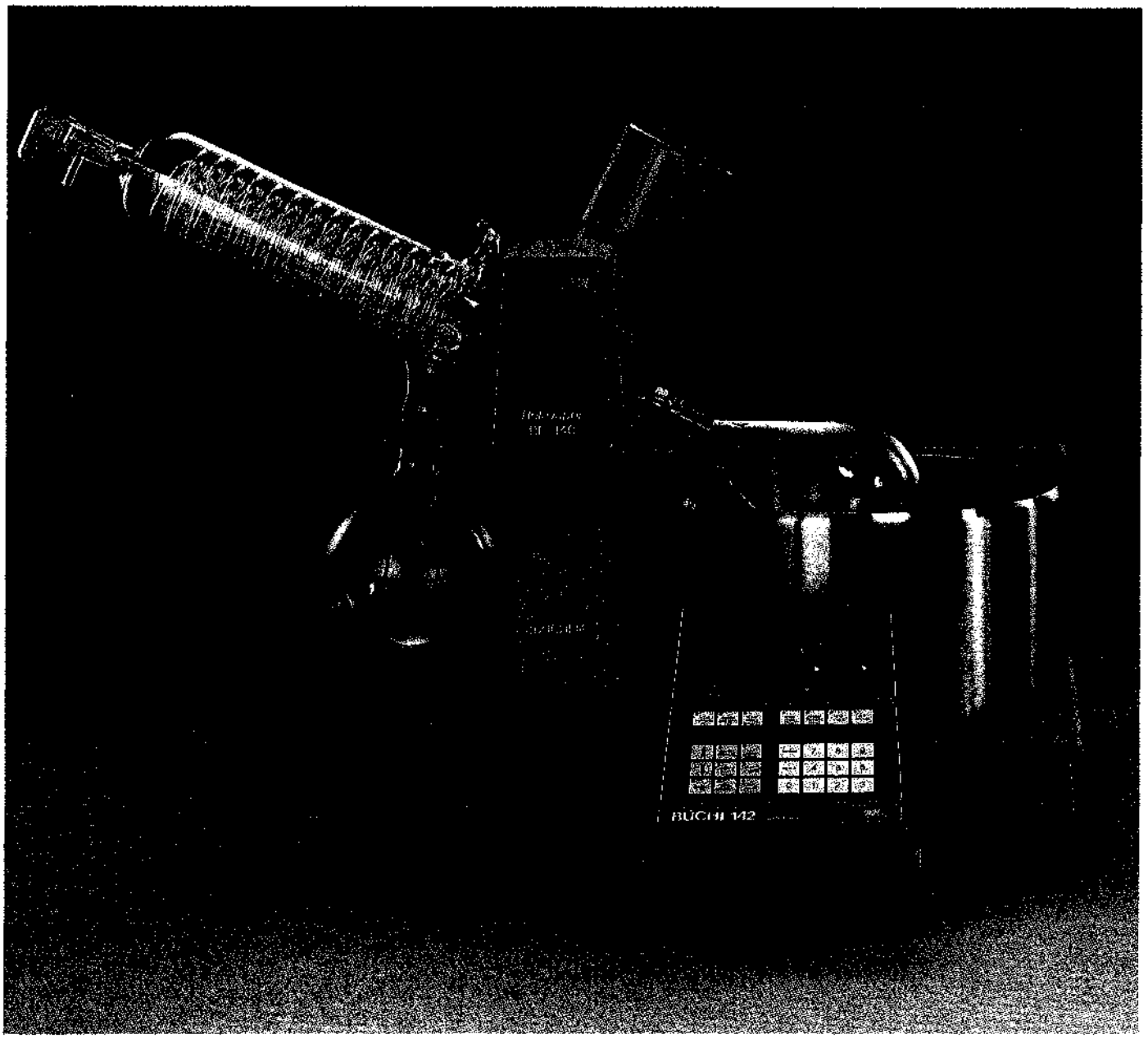
The desired pressure of 30 mbar is now kept constant automatically.

The Distillation
The object is to evaporate the sample to complete dryness.

By pressing the key ↓ the flask is lowered into the bath by means of the motor. Instead of the bath temperature, we can now display the vapour temperature with the key ***Vapour temperature [°C].*** This will adjust itself to the desired 35° C. As soon as this temperature has been reached, we now select the mode of operation. Constant vapour temperature with the key ***Controlled vapour temperature.*** The ROTAVAPOR now operates not under constant vacuum, but changes the vacuum, as required, in order to keep the vapour temperature constant.

c) End of Distillation
As soon as all the solvent has evaporated off, the ROTAVAPOR must stop operating. As required, the sample has been evaporated rapidly, under mild conditions and to dryness.

In every distillation, the vapour temperature drops when no more solvent evaporates. The microprocessor therefore monitors the vapour temperature continuously. If this drops over a certain time, the ROTAVAPOR is switched off. Switching-off procedure consists of: stop rotation, aerate, raise evaporating flask out of the bath, short acoustic signal. You engage this function by pressing the key ***Automatic stop.***



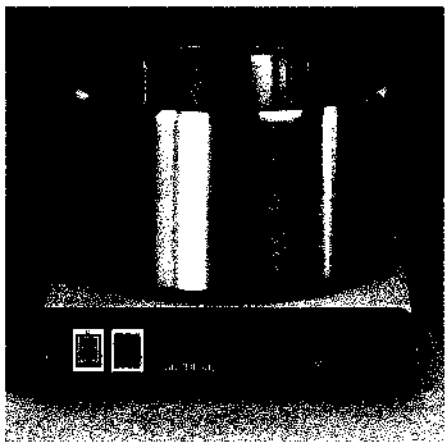
Necessary Accessories: These items are not included as standard item and must be ordered separately.
1 Water-jet pump unit, Code 23349, or when using a mechanical vacuum pump: 1 Vacuum valve with 5 mm orifice, Code 27259.

Ordering Information

ROTAVAPOR RE-140	Glass Assembly	220–240 V, 50/60 Hz	100–115 V, 50/60 Hz	Dimensions [cm]
with motor-driven jack B-143 and water bath B-464	A	19206	19208	Width 75
with motor-driven jack B-143 and oil bath B-474	A*	19209	19207	Height 60 Depth 45
with motor-driven jack B-143 and water bath B-464	B	19212	19214	Width 68
with motor-driven jack B-143 and oil bath B-474	B*	19209	19211	Height 150 Depth 45
with motor-driven jack B-143 and water bath B-464	C	19218	19220	Width 58
with motor-driven jack B-143 and oil bath B-474	C*	19215	19217	Height 60 Depth 45

ROTAVAPOR RE-141	Glass Assembly	220–240 V, 50/60 Hz	100–115 V, 50/60 Hz	Dimensions [cm]
with motor-driven jack B-143 and water bath B-464	S	19224	19226	Width 82
with motor-driven jack B-143 and oil bath B-474	S*	19221	19223	Height 150 Depth 45
with motor-driven jack B-143 and water bath B-464	E	19230	19232	Width 68
with motor-driven jack B-143 and oil bath B-474	E*	19227	19229	Height 150 Depth 45
with motor-driven jack B-143 and water bath B-464	C	19236	19238	Width 58
with motor-driven jack B-143 and oil bath B-474	C*	19233	19235	Height 150 Depth 45

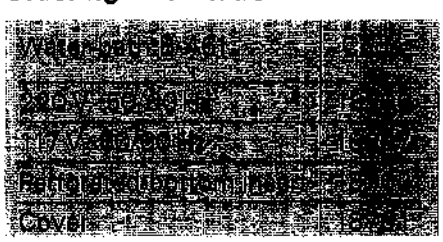
Accessories for ROTAVAPOR 111, 121/131

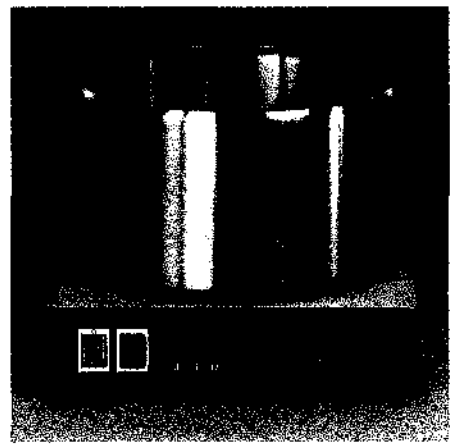


Water bath B-461
The water bath B-461 has a diameter of 265 mm and can take flasks up to 3000 ml. The 1200 Watt heating system keeps the temperature constant, even with large heat extraction. The temperature range is 20 to 100° C. Temperature accuracy ± 1° C. The stainless steel body has an incurved edge so that the bath liquid does not splash over the edge. The water bath B-461 has a continuous feed as well as an overflow and drain device. The latter is constructed so that the level cannot fall below the heating coil. As an active safety feature, the B-461 uses a double circuit system, with two sensors and two separate switching circuits.

If distilled or deionised water is used in the water bath, borax must be added.

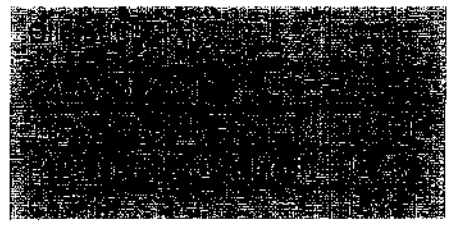
Ordering information

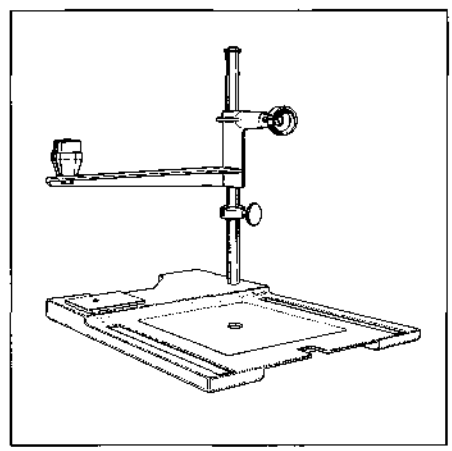


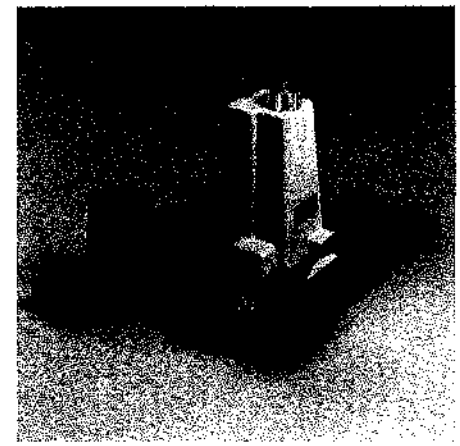


Oil bath B-471
The oil bath can be used in the range from 30 to 180° C. Temperature accuracy ± 1° C. Thermal oil, water-soluble polyalklene glycol or PEG can be used as the bath liquid. The oil bath is of course equipped with a safety circuit. This consists of a second probe and a second switching circuit. The diameter of the bath is 265 mm, the body is made of stainless steel and the heating power is 1200 Watt. Flasks of 30 to 3000 ml can be used with the oil bath B-471.

Ordering information







Servo jack B-011
The servo jack B-011 is the ideal complement for the 111, 121 and 131 units.

The new servo jack is exceptionally easy to use and extremely stable. This masterpiece of Swiss precision is designed for hard daily use.

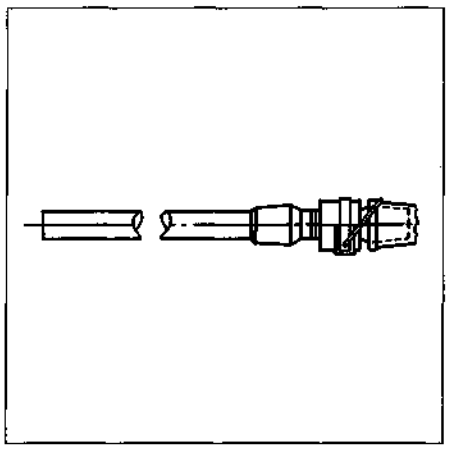
The glass assemblies are raised and lowered with precision, without effort and without jolts. This unique solution is afforded by the patented energy accumulator. The vertical adjustment is 150 mm. The water or oil bath, added as an autonomous module, makes the ROTAVAPOR compact.

Ordering code

Lifting stand
This robust lifting stand is suitable for raising/lowering the 111, 121/131 units. The vertical adjustment distance is 150 mm. The BÜCHI heating baths naturally fit into the stand. The lifting stand has no servo assistance for power boosting.

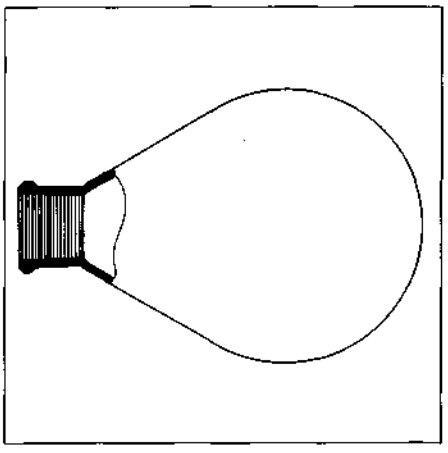
Ordering code

Accessories



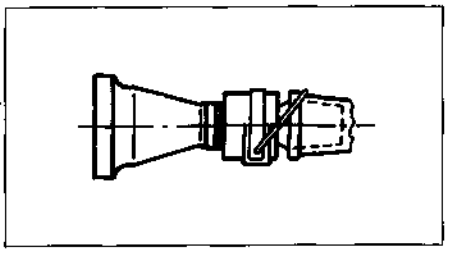
Vapour duct

Assembly	mm	Standard joints* = with Combi clip					
		29,2/32	24/40	34,5/35	29,2/42	24/29	18,8/26
A	280	23739					
A	280	17494*					
A	290		23733				
A	290		17486*				
A	286			10981			
A	290				27079		
A	290				17488*		
A	280					27077	
A	280					17490*	
A	276						10984
B&C	165	23745					
B&C	165	17496*					
B&C	175		23738				
B&C	175		17487*				
B&C	165			10986			
B&C	178				27078		
B&C	176				17489*		
B&C	160					27076	
B&C	160					17491*	
B&C	156						10989



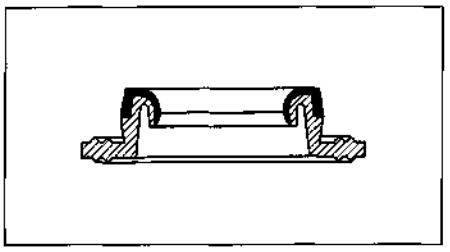
Evaporating flasks (pear-shaped)
For EL systems only with adapter flange-STJ

STJ	29/32	24/40	34,5/35	29/42	24/29	19/26
50 ml	00431	08750	08740	08736	00472	08743
100 ml	00432	08751	08741	08737	08479	08744
250 ml	00433	08754	08755	08738	08753	08745
500 ml	00434	08758	08759	08739	08757	08746
1000 ml	00435	00440	08763	08762	08761	08747
2000 ml	00436	08765	08766	08769	08764	08748
3000 ml	00437	08767	08742	08770	08735	08749



Adapter flange STJ for EL systems
1 adapter STJ 29,2/32 is supplied with the ROTAVAPOR

STJ	29,2/32	24/40	34,5/35	29,2/42	24/29	19/26
	23733	23747	00921	27101	27100	00916

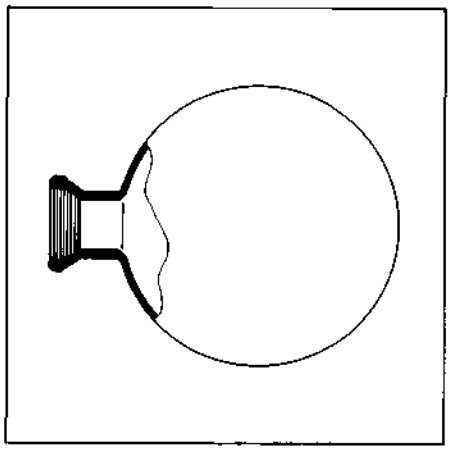


BÜCHI seal

	Code
KD 22 for RE systems	00636
KD 26 for EL systems	10179

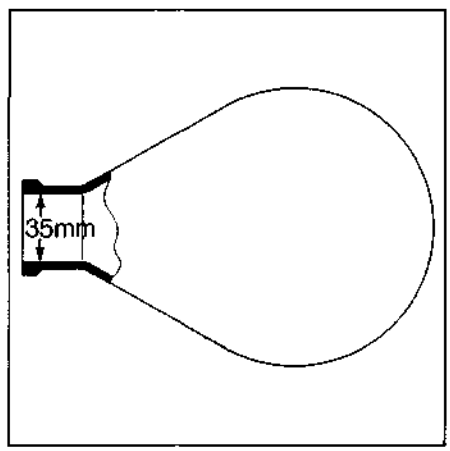
Both seals can be used without grease.

Accessories



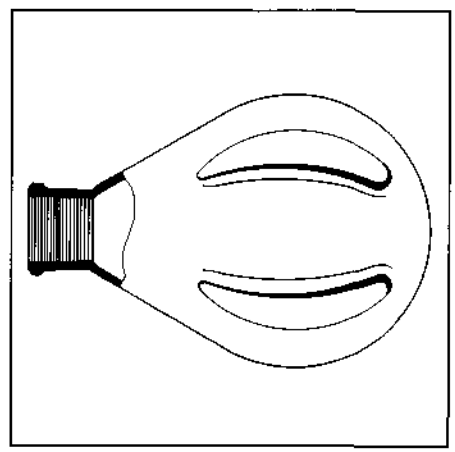
Receiving flask
round with SPJ 35/20

Capacity	Code
500 ml	00421
1000 ml	00420
2000 ml	00422
3000 ml	00423



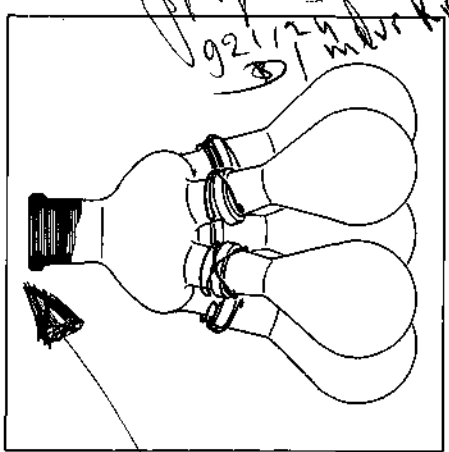
Flanged evaporating flasks
for EL systems

Capacity	Code
1 l	11537
2 l	11538
3 l	11539
5 l	11540



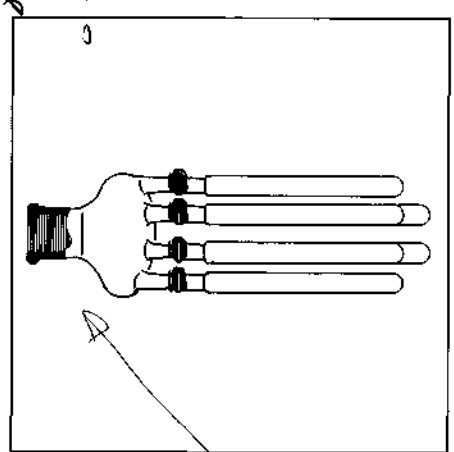
Special flasks for drying powdery substances

Capacity	SPJ 24/40	SPJ 24/40
500 ml	00452	11579
1000 ml	00453	00420
2000 ml	00454	11580



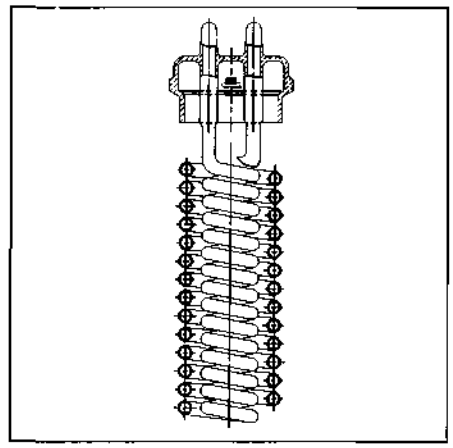
Spider evaporators
for RE models

SPJ	29/32	24/40
with 4 flasks 250 ml	01535	11575
with 4 flasks 100 ml	01536	11576



Spider evaporators, for RE models

SPJ	29/32	24/40
with 4 flasks 250 ml	01535	11575
with 4 flasks 100 ml	01536	11576

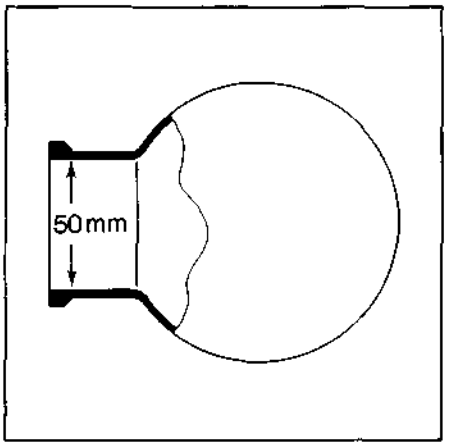


Cooling coil insert
This coil can be inserted in the cold-trap condenser in place of the cold-finger.

With this accessory, the ROTAVAPOR can now be operated with a cold-trap condenser or with a normal condenser, as desired.

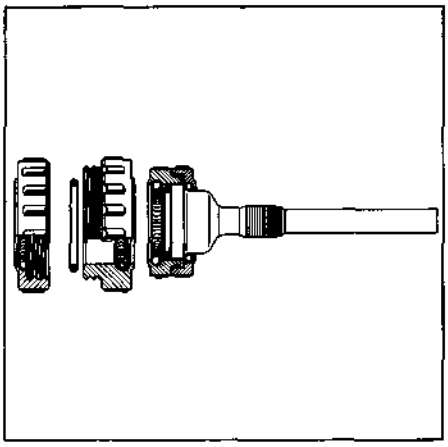
	Code
Coil insert, complete	27468
Coil (PTFE)	27467
Seal complete	27462
O-ring	27461
PTFE	21071

Accessories



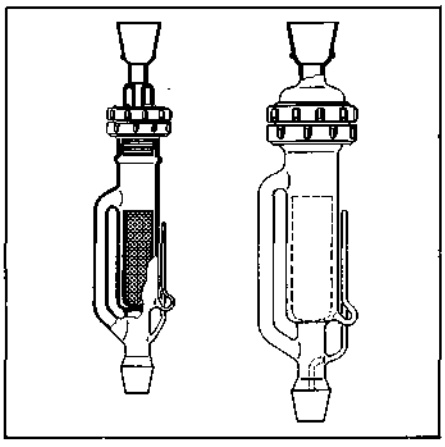
Flanged flask for flanged vapour duct, for RE models
The wide flask neck makes it easy to remove substances from the evaporating flask.

Capacity	Code
500 ml	00441
1000 ml	00442
2000 ml	00443
3000 ml	00444



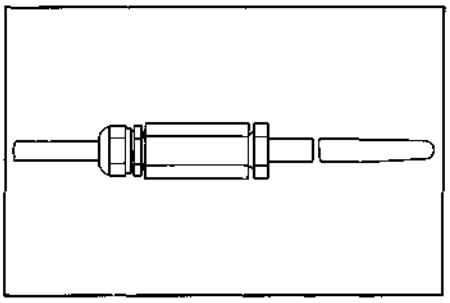
Flanged vapour duct
for RE models

	Code
for A assembly	00509
for E assembly and cold finger condenser	00510
Threaded connector complete	00260
O-ring seal	01841



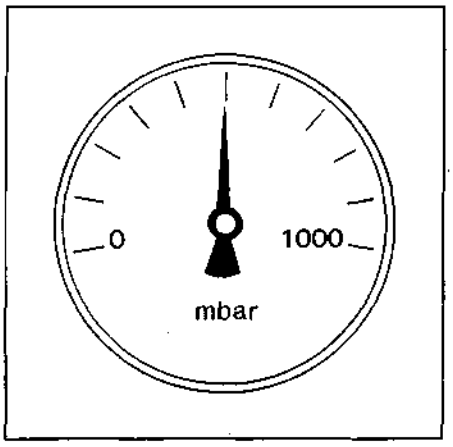
«Soxhlet» extraction unit
for EL models

Solid/liquid complete	Code
Capacity 200 ml	11744
Capacity 500 ml	11745
Extraction cartridges	
Capacity 200 ml	08560
Capacity 500 ml	00989



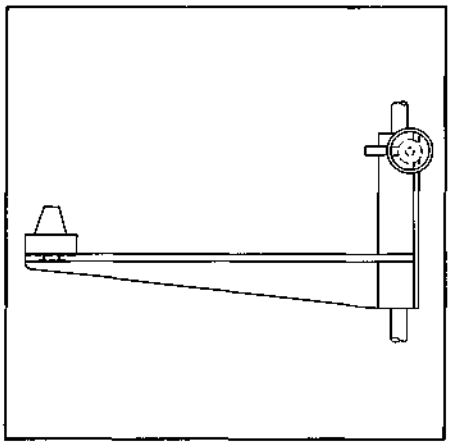
Vapour temperature measuring sensors
Recommended accessories for the RE-121/EL-131 (for the RE-140/EL-141 included when supplied)

For assembly	A	B
RE	35/20	25/20
Code	25462	25461
For assembly	E	C
EL	35/20	25/20
Code	25462	25462



0–1000 mbar vacuummeter
for the RE-111/121 and EL-131

Code	18797

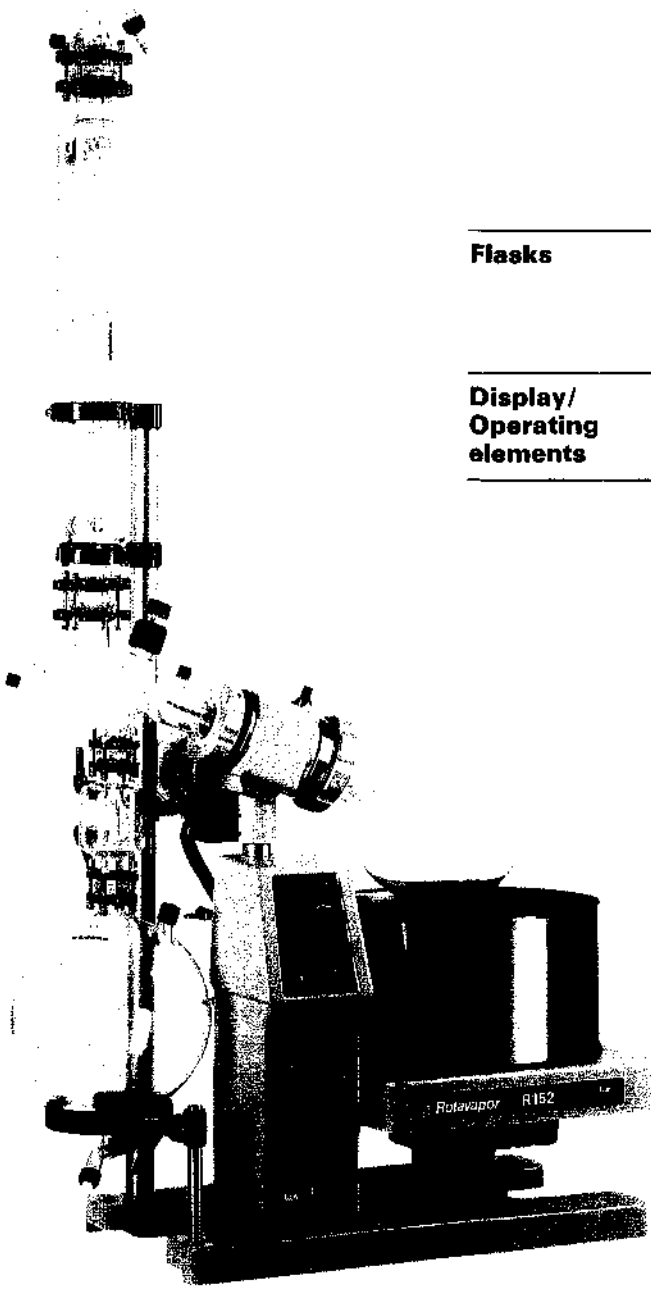


Stand assembly adapter
This adapter enables the drive unit to be mounted on a laboratory stand having a rod of diameter 12 to 15 mm.
Suitable for units 111/121/131

Code	18793

ROTAVAPOR R-152

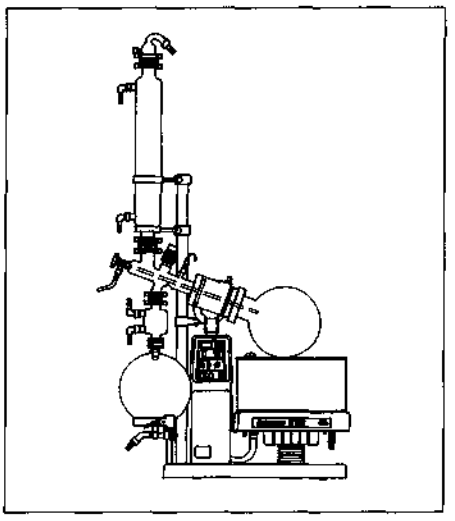
Introduction
The ROTAVAPOR R-152 has been designed to process batches between 1 and 15 litres of solvent or for continous feed. The R-152 is predominantly used for the gentle evaporation of solvents at normal pressure or under vacuum. The ROTAVAPOR R-152 is suitable for many applications in addition to the distillation and the stripping of solvents. The design concept of the glass configurations combined with the accessories provided, make it possible to carry out the following operations: powder and granule drying, reflux reactions, recrystallization, solid/liquid extractions, automatic concentration by evaporation, and many other operations.



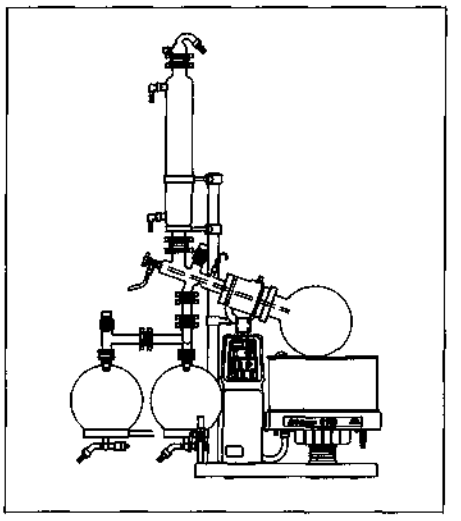
Technical data

Rotary drive	Motor	Enclosed induction motor with cooling, 100 Watt, protection class IP 54	
	Speed regulation	Electronic, infinitely variable from 15 to 130 rpm, high torque over the entire range	
Bath	Diameter	412 mm	
	Depth	220 mm	
	Capacity	29 l	
	Bath pan	Made of stainless steel, water bath with continuous replenishing with needle valve for constant level Oil bath with protective surround eliminating risk of accidental contact with hot bath wall	
	Heater regulation	Electronic, with PT-100	
		Water bath	Oil bath
	Power rating in Watt	3750	3150
	Temperatur range °C	20–100	20–180
	Over temperature	Cut-out switch which responds whenever the required temperature is exceeded by 15 °C for any reason. A warning light is illuminated	
	Raising/Lowering	Motorized, with automatic lowering in the event of a power failure	
Flasks	Receiving flask	10 l with built-in drain valve for emplying and volume scale	
	Evaporation flask	10 l as standard, 6 and 20 l as option	
Display/ Operating elements	Bath temperature Vapour temperature Speed of rotation	with large green LED's, switchable by	
	Aeration	Built-in aeration valve, aerates when the aeration key is pressed or in event of a power failure. Also suitable for use with inert gas	
	Vacuum	Thightnes Better than 1 mbar	
	Pump	Recommended pump rate 3–5 m^3/hour	
	Cooling water consumption	Approx. 200 l/hour	
	Weight	Approx. 70 kg, depending on glass configuration	
	Dimensions	Width	Depth	Height
	R configuration	90 cm	49 cm	172 cm
	All other configurations	105 cm	58 cm	172 cm

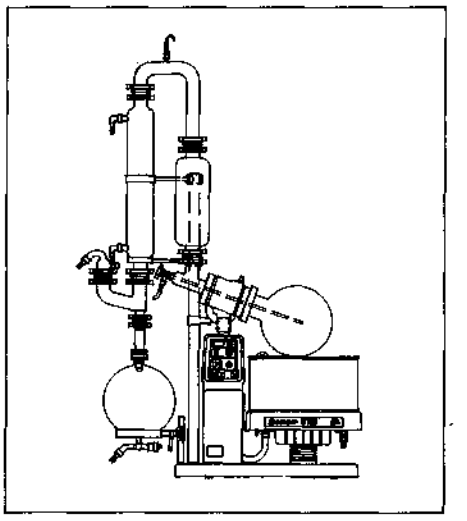
The six different glass configurations



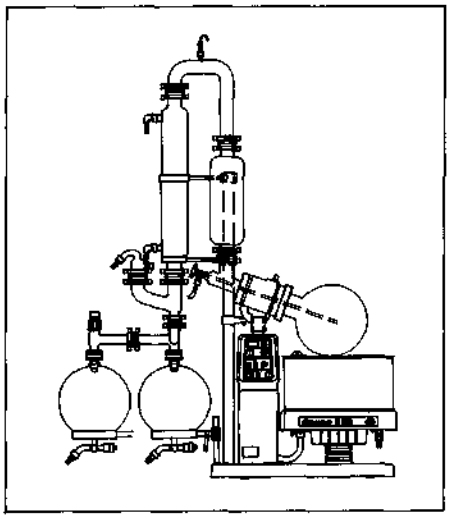
Rotavapor R-152/R
Reflux



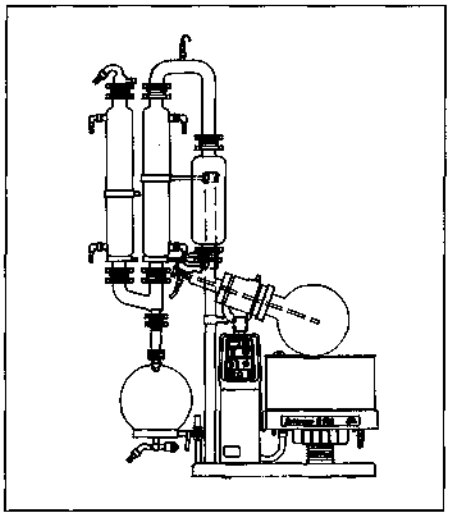
Rotavapor R-152/RW
Reflux with interchangeable receiver



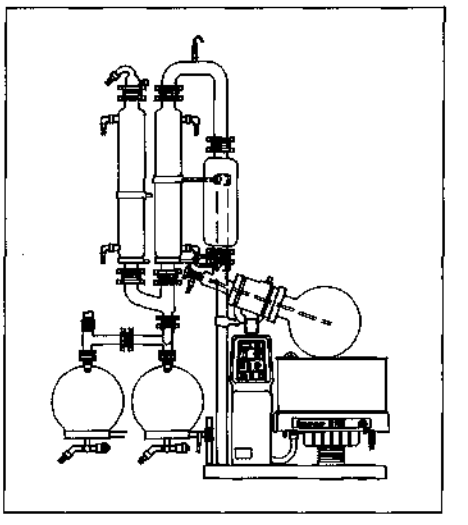
Rotavapor R-152/D
Descending



Rotavapor R-152/DW
Descending with interchangeable receiver



Rotavapor R-152/D2
Descending with two condensers

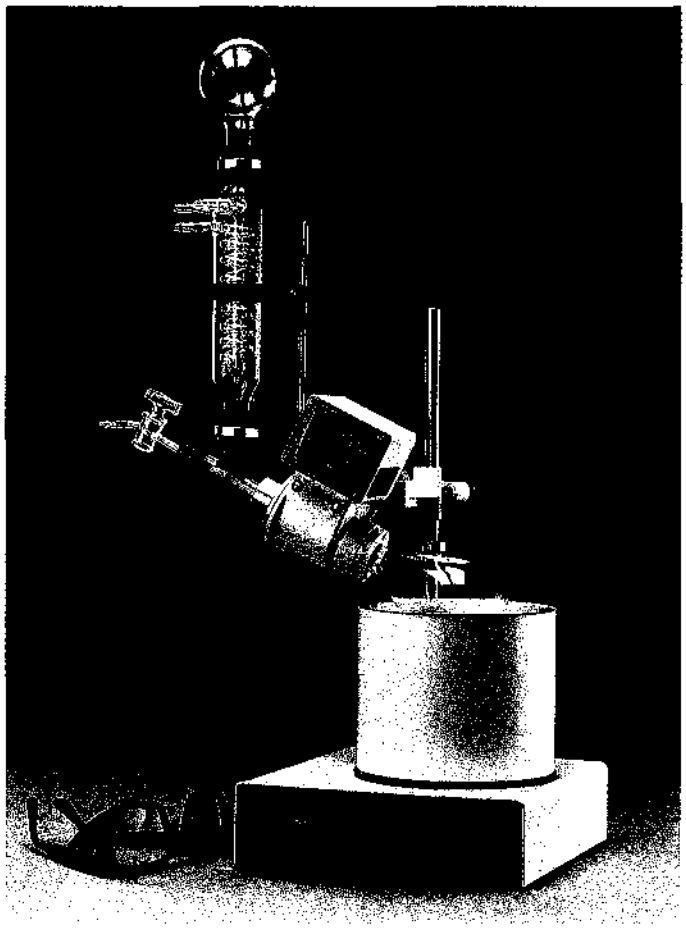


Rotavapor R-152/D2W
Descending with two condensers and with interchangeable receiver

Ordering Information

Glass configuration/Bath-type	Voltage (Volt) Frequency (Hertz)	3×380/220 50-60	1×220 50-60	3×220 50-60	1×240 50-60
Reflux					
Water bath	152/R	27192	27194	27198	27198
Water bath, change overreceiver	152/RW	27210	27211	27213	27212
Oil bath	152/R	27193	27195	27199	27197
Oil bath, change overreceiver	152/RW	27230	27231	27233	27232
Descending					
Water bath	152/D	27214	27215	27217	27216
Water bath, change overreceiver	152/DW	27222	27223	27225	27224
Oil bath	152/D	27234	27235	27237	27236
Oil bath, overreceiver	152/DW	27242	27243	27245	27244
Descending with two condensers					
Water bath	152/D2	27218	27219	27221	27220
Water bath, change overreceiver	152/D2W	27226	27227	27229	27228
Oil bath	152/D2	27238	27239	27241	27240
Oil bath, change overreceiver	152/D2W	27246	27247	27249	27248

ROTAVAPOR M



The ROTAVAPOR, Standard and Compact are designed for working with small volumes. Evaporating flasks with capacities of 30, 50, 100 and 200 ml can be firmly screwed to the drive unit.

The volumes of the receiving flasks are 50, 100 and 250 ml.

The ROTAVAPOR M is supplied with a water bath or oil bath, as desired.

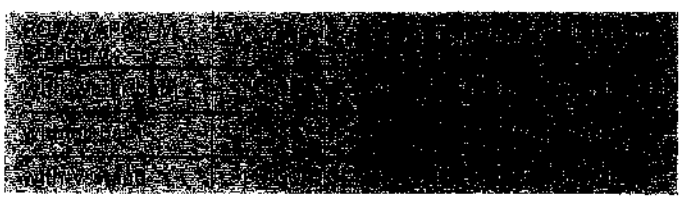
General specifications of ROTAVAPOR M

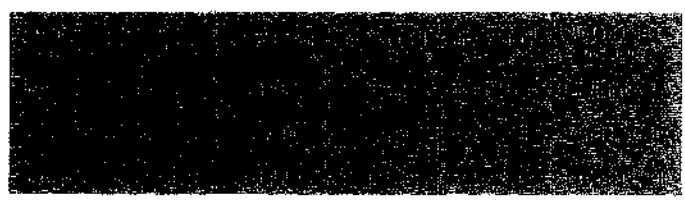
Drive unit:	Sparkless induction motor Power input 24 W Rpm fixed at 150
Baths:	∅ 140 mm external and ∅ 110 mm internal Bath capacity 1 litre, power input 400 W Water bath 20 – 110° C Oil bath 60 – 200° C
Weight:	5 kg net, shipping weight 7 kg.

ROTAVAPOR M Standard
With a vertical condenser, this ROTAVAPOR is suitable for working under reflux. If the condenser is swivelled downwards, the condensate runs into the receiving flask.

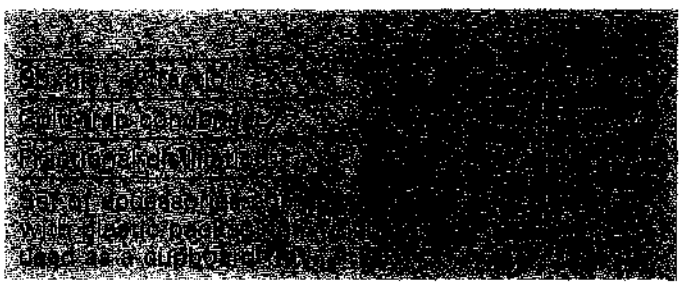
The many accessories make this system particularly suitable for educational purposes. Ask for the guide for carrying out the experiments!

ROTAVAPOR M Compact
With its glass assembly, the ROTAVAPOR M Compact is suitable for applications restricted exclusively to the distillation of solvents. The ROTAVAPOR M Compact has a structure requiring a particularly small amount of space.

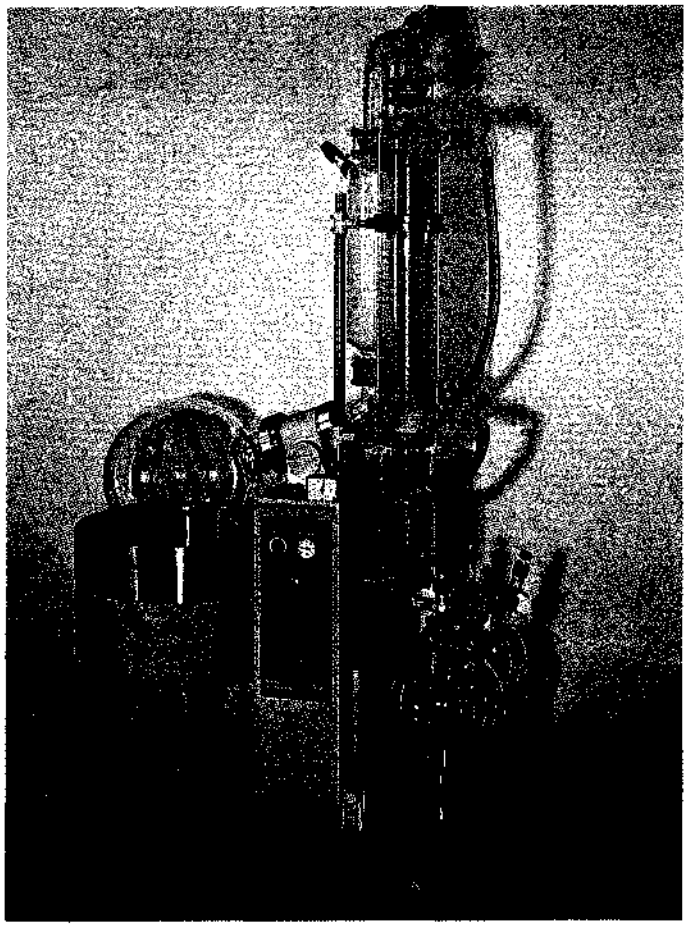




Special accessories (only for ROTAVAPOR M Standard!) for carrying out the following operations:



ROTAVAPOR 176 Ex/186 Ex



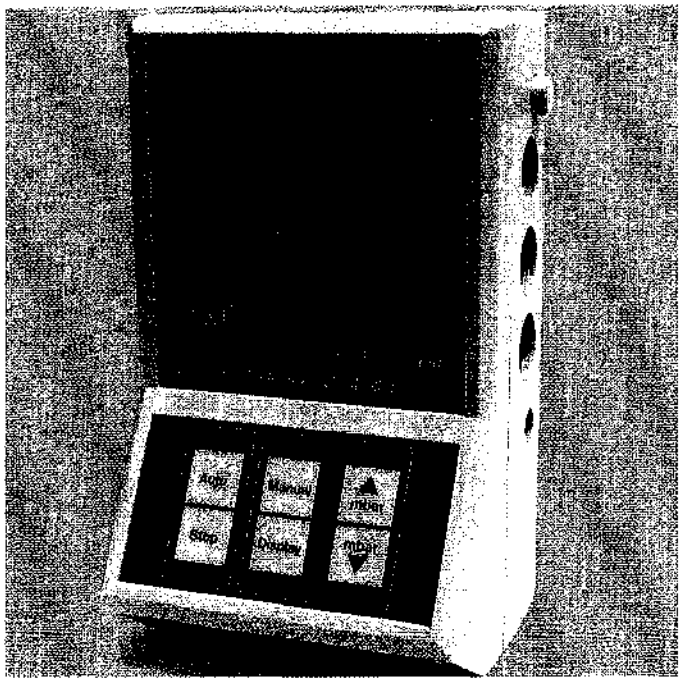
ROTAVAPOR 176 Ex
Rotary evaporator with 20 litre flask for use in rooms with explosion hazard. Complies with SEV and VDE codes. Steam-heated water bath, infinitely variable speed control with mechanical gear unit.

Alternation receiving device with two receiving flasks of 10 litres each.

ROTAVAPOR 186 Ex
Rotary evaporator with 50 litre evaporating flask, explosion-proof in compliance with SEV and VDE codes. Steam-heated water bath adjustable from 30 to 100° C. Infinitely variable mechanical speed control from 5 to 95 rpm. 2 alternative setups as with ROTAVAPOR 176.

Alternation receiving device with two receiving flasks of 20 litres each.

B-168 Vacuum/Distillation Controller



The B-168 Vacuum/Distillation Controller keeps a vacuum constant and can also be used as an apparatus for automatic distillation control of a ROTAVAPOR by the addition of the Dual-Temp probe.

If the Dual-Temp probe for distillation control is not connected, the B-168 performs the functions of a vacuum controller: a preselected pressure in the range of atmospheric pressure to 1 mbar is kept constant by switching a solenoid valve in the vacuum line or by controlling a water jet pump equipped with valves. The band width of the switching points (hysteresis) is matched automatically.

All B-168 units are equipped as standard with an aeration valve.

Additional applications for the B-168 include a wide range of vacuum systems such us drying ovens, desiccators, filtrations and many other equipment requiring a defined, precisely controlled vacuum.

Ordering Information

B-168 Vacuum/Distillation Controller

Voltage	Part Number
220 V	27053
100–117 V	27052
240 V	25564

B-167 water-jet pump unit

Part Number	27054

B-164 24 V water-jet pump unit

Part Number	23349

Dual-Temp probe, complete

Condenser Type	Part Number
For diagonal condenser with SG 19/38	28908
For vertical condenser with SG 29/32 and inside diameter of 2–22 mm up to 250 mm	28910

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Subject to changes without notice
Printed in Switzerland

Manufacturing program

Evaporation of Solvents

- Rotary Evaporators ROTAVAPOR®
- Vacuum Controller
- PTFE pump and controller
- Recirculation Chiller
- Circulating Aspirator
- Heating Baths
- Spray Dryer
- Tube Ovens

Preparative Liquid-Chromatography

- Medium Pressure Liquid Chromatography System
- Fraction Collector

Determination of Nitrogen and Fat

- Kjeldahl Nitrogen and Protein Analysis
- Total Fat Determination System
- Extraction and Gas Scrubbing System

Various Instruments

- Melting Point, Boiling Point and Dropping Point
- Water Distillation Units
- Stereo Models

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