

Bedienungsanleitung  
Operating Instructions  
Instructions de service  
Instrucciones para el manejo  
Istruzioni per l'uso

S 160-0

S 160-1

## Applications

### 1. What are the hand shears suitable for?

- For trimming steel, aluminium, plastic and other sheet.
- For parting sheets of material where the expansion resistance of the material is not excessive.
- For straight and curved cuts, where the curve radius is a minimum of 15 mm (.6 in).

### 2. What sheet thicknesses can be cut?

The maximum thickness to be cut depends primarily on the material strength.

Material	Tensile strength up to		Max. material thickness	
	N/mm <sup>2</sup>	tons/sq in	mm	in
Steel	400	25	1.6	.064
Steel	600	38	1.2	.048
Steel	800	50	1.0	.04
Aluminium	250	18.5	2.0	.08

## Operation

### 3. What should be noted when starting work?

#### S 160-1

- Thoroughly blow out compressed-air line and hose.*
- Provide efficient lubricator unit and set for generous oil supply in accordance with oiler operating instructions.*
- Check that the flow pressure of the compressed air at the take-off point is 6 bar (85 psi).*
- Ensure that all air lines are of sufficient cross section and that there are no constrictions. Minimum hose diameter: 7 mm (.28 in).*

### 4. How is the tool guided?

- Hold the shears so that the moving cutter blade (10) is at right angles to the workpiece.
- Advance shears without using force.
- For edge cutting, particularly for accurate work to scribed lines, cut in the overhead position, i.e. the fixed blade carrier faces upwards.

### 5. What should be done when the fixed cutter blade has to be adjusted vertically?

- The most satisfactory vertical setting of the fixed cutter blade is obtained when with maximum clearance between ram and fixed blade carrier the rear points of the two cutters have a distance of 0.2 mm (.008 in). Normally it is not necessary to adjust the cutters vertically.
- If adjustment is necessary, screw (13) must definitely be slackened. Then the cutter is brought to the desired position by means of grub screw (14). Tighten screw (13) and be careful that the cutter rests on grub screw (14).

## Maintenance

### 6. What points should be noted when operating the shears?

- Check that the cutters are sharp.  
**Never cut with blunt cutters!**
- Exchange carbon brushes if worn (see point 9).
- Renew transmission grease (see point 10).

## **S 160-1**

- d) *Top up oiler of lubricator unit at the proper time with SAE 10 oil.*
- e) *If at all dirty, flush motor through thoroughly with kerosene.*
- f) *Clean motor thoroughly, when doing so check vanes (see point 12).*

### **7. What should be done when the moving cutter blade is blunt?**

The shears have multi-edge cutters which do not need regrinding.

- a) Remove screw (11) with socket screw wrench supplied.
- b) Remove cutter (10), turn through 90° so that new cutting edge is exposed.
- c) Insert cutter so that it rests on the oblique face of ram (9).
- d) Screw on cutter.

### **8. What is to be done when the fixed cutter blade is blunt?**

The shears have multi-edge cutters which do not need regrinding.

- a) Remove screw (13).
- b) Remove cutter (12), turn through 90° so that new cutting edge is exposed.
- c) Insert cutter.
- d) Tighten screw (13) and be careful that the cutter rests on grub screw (14).

### **9. How are the carbon brushes changed?**

- a) If the carbon brushes are worn, the machine will stop.
- b) Remove screws (6) and withdraw shearhead.
- c) Remove screws (118). Take off housing cover (122). Take out carbon holder (115).
- d) Replace carbon brushes (114) by new ones.  
Use only original carbon brushes.
- e) Clean carbon holder, insulators and switch compartment with brush or dry compressed air to remove carbon dust and dirt.
- f) When inserting new carbon brushes, ensure that they move freely in the carbon holder.
- g) Insert carbon brushes and carbon holder.
- h) Screw on housing cover and shearhead.
- i) Run in new carbon brushes for approximately 15 minutes on no-load.

### **10. When and how is the grease in the gear compartment changed?**

- a) It is expedient to do so when changing the carbon brushes.
- b) Remove screws (6) and withdraw shearhead.
- c) Clean gear compartment in end shield (103) and in housing from old grease and wash out.
- d) Pack with new transmission grease (approx. 30 g = 1 oz), e.g.  
SHELL Simnia 1  
CALYPSOL D 6024  
BP ENERGREASE HTO  
Do not use excessive grease.

## **S 160-1**

### **11. What is to be done when the motor power is insufficient?**

- a) *Examine compressed-air hose for damage.*
- b) *Clean filter carrier (328) – in doing so do not pierce filter.*
- c) *Clean sound absorber (327); for this purpose unscrew filter carrier (328) and remove sound absorber from regulating bushing (326).*
- d) *Check vanes (see point 12).*


**12. How is the compressed-air motor stripped?**

- a) Undo screws (6), remove housing (5).
- b) Unscrew motor from end shield (303).
- c) Unscrew valve (316 - 331).
- d) Push internal components out of motor housing (314) from the rear. Do not damage motor housing when doing so.
- e) Pull bearing cover (311) off rotor (309).  
Remove rotor cylinder (310).
- f) Remove vanes (307) and check. The vanes must be at least 6 mm (.24 in) wide in the center. Excessively narrow or damaged vanes should be replaced.
- g) Clean motor.

**13. How is the compressed-air motor assembled?**

- a) Push bearing cover (305) with grooved ball bearing (304) onto rotor (309).
- b) Insert vanes in rotor slots.
- c) Push rotor cylinder (310) over rotor (309). Do not fit rotor cylinder back-to-front. Ensure that mounting pins engage in the correct holes.
- d) Push bearing cover (311) with grooved ball bearing (312) onto rotor (309).
- e) Place motor with mounting pin on intermediate ring (313), push motor housing (314) over it.
- f) Screw in valve complete so that rotary sleeve (324) still rotates freely.
- g) Screw complete motor into end shield (303) and tighten fully.
- h) Check that the rotor turns freely.

Ersatzteilliste  
Spare Parts List  
Liste des pièces de rechange  
Lista de piezas de recambio  
Lista dei pezzi di ricambio

S 160-0   
S 160-1

**Wie man TRUMPF-Ersatzteile bestellt**

Um Verzögerungen und Falschlieferungen zu vermeiden, geben Sie bitte bei Ersatzteilbestellungen folgende Einzelheiten an:

1. **Typenbezeichnung** der Maschine, für die die Ersatzteile bestimmt sind
2. **Fabrik-Nr.** und, wenn möglich, **Baujahr** bzw. **Lieferjahr**
3. **genaue Stückzahl**
4. **Pos.-Nr., Bezeichnung des Ersatzteils** und **Bestell-Nr.** auf Grund der Ersatzteilliste
5. bei elektrischen Teilen **Spannung, Stromart** und **Frequenz**
6. **genaue Versandinstruktionen**; nicht „raschest“ oder „äußerst dringend“, sondern gewünschte Versandart – z.B. Luftpost, Luftfracht, Eilboten, Expresß, Frachtgut, Paketpost usw.
7. **genaue Versandanschrift**

**How TRUMPF spare parts should be ordered**

To avoid delays and mistakes you are urged to state the following when ordering spare or replacement parts:

1. **Model No.** of machine in question
2. **Factory No.** and, if possible, **year of manufacture** or **delivery**
3. **Exact quantity** of parts required
4. **Item No., description,** and **ordering No.** as per spare parts list
5. For electrical parts state **voltage, current** and **cycles per second**
6. **Give detailed shipping instructions**, not simply “soonest” or “extremely urgent” but specify according to your needs, e.g., “airmail”, “airfreight”, “express”, “railway freight”, “parcel post”, etc.
7. **Exact address**

No.	Bezeichnung / Bestell-Nr. Description / Ordering No. Désignation / N° de référence Designación / N° de referencia Denominazione / No. d'ordine			
1	Exzenterachse Eccentric shaft Excentrique Eje de excéntrica Albero eccentrico	2540-46	TRUMPF	
2	Nadelkäfig Needle cage Cage à aiguilles Jaula porta-agujas Gabbia per rullini	K8 x 12 x 13	DUERKOPP	027154
3	Klemmring Clamping ring Rondelle de serrage Anillo de apriete Anello di fissaggio	2540-47	TRUMPF	
4	Rillenkugellager Grooved ball bearing Roulement à billes à gorge Rodamiento radial de bolas Cuscinetto a sfera	626	DIN 625	026638
5	Gehäuse Housing Carter Carter Carcassa	2540-42	TRUMPF	
6	Zylinderschraube Cheesehead screw Vis cylindrique Tornillo cilíndrico Vite cilindrica	M5 x 25-12.9	DIN 912	014583
7	Pleuel Connecting rod Bielle Biela Biella	2540-44	TRUMPF	
8	Bolzen Bolt Goujon Bulón Perno	2540-45	TRUMPF	
9	Stößel Ram Coulisseau Colisa Slitta	2541-43	TRUMPF	

No.	Bezeichnung / Bestell-Nr. Description / Ordering No. Désignation / N° de référence Designación / N° de referencia Denominazione / No. d'ordine			
10	Stößelmesser Moving cutter blade Couteau pour coulisseau Cuchilla para la colisa Coltello mobile	2541-40	TRUMPF	
11	Zylinderschraube Cheesehead screw Vis cylindrique Tomillo cilíndrico Vite cilindrica	M4 x 10-12.9	DIN 912	014419
12	Schneidtmesser Fixed cutter blade Couteau pour la table de coupe Cuchilla para la mesa de corte Supporto porta coltello	2541-41	TRUMPF	
13	Zylinderschraube Cheesehead screw Vis cylindrique Tomillo cilíndrico Vite cilindrica	M4 x 16-12.9	DIN 912	014435
14	Gewindestift mit Sicherung Set screw with safety Goupille fileté avec arrêt Espiga roscada con aseguramiento Perno filettato con sicurezza	M5 x 8-45H	DIN 913	013625
15	Schneidtmesser Fixed blade carrier Table de coupe Mesa de corte Supporto porta coltello	2540-48	TRUMPF	
16	Linsenschraube Raised head screw Vis à tête goutte de suif Tomillo de gota de sebo Vite con testa lenticolare	M5 x 10-10.9	UNBRAKO	019518
17	Blechrichter Waste guide Guide-tôle Enderezador de chapa Guida lamiera	2540-52	TRUMPF	
18	Gewindestift Set screw Vis d'arrêt Prisionero Perno filettato	2710-51	TRUMPF	

No.	Bezeichnung / Bestell-Nr. Description / Ordering No. Désignation / N° de référence Designación / N° de referencia Denominazione / No. d'origine				
91	Zahnrad Toothed wheel Roue dentée Rueda dentada Ingranaggio	244063	AEG		047015
92	Dichtung Gasket Joint Junta Guarnizione	222136	AEG		046701
93	Zahnrad Toothed wheel Roue dentée Rueda dentada Ingranaggio	323938	DEPRAG		049050
101	Rillenkugellager Grooved ball bearing Roulement à billes à gorge Rodamiento radial de bolas Cuscinetto a sfera	625	DIN 625		027693
103	Lagerschild End shield Carter de palier de roulement Escudo de cojinete Supporto intermedio	254648	AEG		080829
104	Rillenkugellager Grooved ball bearing Roulement à billes à gorge Rodamiento radial de bolas Cuscinetto a sfera	608-2Z	DIN 625		027669
105	Scheibe Washer Disque Disco Disco	8,1 x 16 x 0,5	901226	AEG	047570
106	Anker, vollständig, mit 104, 105, 107 Armature, complete, with 104, 105, 107 Induit, complet, avec 104, 105, 107 Inducido, completo, con 104, 105, 107 Indotto, completo, con 104, 105, 107	220/240 V	244087	AEG	047023
107	Rillenkugellager Grooved ball bearing Roulement à billes à gorge Rodamiento radial de bolas Cuscinetto a sfera	626-2Z	DIN 625		027707



No.	Bezeichnung / Bestell-Nr. Description / Ordering-No. Désignation / N° de référence Designación / N° de referencia Denominazione / No. d'ordine				
108	Zylinderschraube Cheesehead screw Vis cylindrique Tornillo cilíndrico Vite cilindrica	M3,5 x 20-5.8	DIN 84		018732
109	Luftführungsring Airflow guide ring Déflecteur Anillo guiador de aire Anello deflettore	221819	AEG		046647
110	Feld Stator Stator Estator Magneete	220 V	234978	AEG	046922
111	Schieber Slide valves Palettes d'aube Correderas Palette	221829	AEG		046680
112	Senkschraube C/sk. screw Vis noyée Tornillo avellanado Vite a testa svasata	M4 x 6-4.8	DIN 963		017930
113	Gehäuse Housing Carter Carter Carcassa	251698	AEG		047252
114	Kohlebürste Carbon brush Balai en charbon Escobilla Carboncino	223422	AEG		046787
115	Bürstenhalter Carbon holder Porte-charbon Porta-escobilla Portaspazzole	221824	AEG		046655
116	Führungsstück Guide piece Pièce de guidage Pieza de guía Corpo di guida	221828	AEG		046671

No.	Bezeichnung / Bestell-Nr. Description / Ordering No. Désignation / N° de référence Designación / N° de referencia Denominazione / No. d'ordine				
117	Schalter Switch Interrupteur Interruptor Interruttore	222338	AEG		046728
118	Blechschraube Screw Vis Tornillo Vite per lamiera	BZ 3,9 x 13	DIN 7981		020168
119	Gehäusedeckel Housing cover Couvercle du carter Tapa del carter Coperchio della scatola	254067	AEG		047260
120	Entstörkondensator Suppressor condenser Antiparasite Condensador antiparásito Condensatore antidisturbo	251466	AEG		047244
121	Kabelschelle Cable clip Collier de retenue du câble Abrazadera de cable Ponticello ferma cavo	256500	AEG		047317
122	Kabelschutzschlauch Protective hose Gaine protectrice de câble Protección del cable Tubo di protezione cavo	206687	AEG		045594
123	Anschlußleitung Flexible lead Câble d'alimentation Conducto de conexión Cavo di alimentazione	220 V	250515	AEG	047171
301	Rillenkugellager Grooved ball bearing Roulement à billes à gorge Rodamiento radial de bolas Cuscinetto a sfera	625	DIN 625		027693
302	Zylinderstift Cylinder pin Goupille cylindrique Pasador cilíndrico Perno cilindrico	4M6 x 12-ST 50K	DIN 7		010090

No.	Bezeichnung / Bestell-Nr. Description / Ordering No. Désignation / N° de référence Designación / N° de referencia Denominazione / No. d'ordine				
303	Zwischenstück End shield Pièce intermédiaire porte-paliers Pieza intermedia Pezzo intermedio	322345	DEPRAG	049026	
304	Rillenkugellager Grooved ball bearing Roulement à billes à gorge Rodamiento radial de bolas Cuscinetto a sfera	627-2RS	DIN 625	027723	
305	Lagerdeckel Bearing cover Couvercle de palier Tapa del alojamiento Coperchio del supporto	311865	DEPRAG	048496	
306	Lagernadel Cylinder pin Goupille cylindrique Aguja del cojinete Perno del supporto	1,5 Ø x 7,8	802331	DEPRAG	049530
307	Lamelle (3 Stück) Segment (3 pieces) Segment (3 pièces) Segmento (3 piezas) Lamella (3 pezzi)	312130	DEPRAG	048631	
308	Lagernadel Cylinder pin Goupille cylindrique Aguja del cojinete Perno del supporto	1,5 Ø x 9,8	802332	DEPRAG	049549
309	Rotor Rotor Rotor Rotore	322033	DEPRAG	049000	
310	Rotorzylinder Rotor cylinder Cylindre du rotor Cilindro del rotor Cilindro del rotore	311856	DEPRAG	048488	
311	Lagerdeckel Bearing cover Couvercle de palier Tapa del alojamiento Coperchio del supporto	311921	DEPRAG	048607	

No.	Bezeichnung / Best.-Nr. Description / Ordering No. Désignation / N° de référence Designación / N° de referencia Denominazione / No. d'ordine			
312	Rillenkugellager Grooved ball bearing Roulement à billes à gorge Rodamiento radial de bolas Cuscinetto a sfera	607-2 Z	DIN 625	027650
313	Zwischenring Intermediate ring Bague intermédiaire Anillo intermedio Anello intermedio	311923	DEPRAG	048615
314	Motorgehäuse Motor housing Carter du moteur Carcasa del motor Carcassa motore	322346	DEPRAG	049034
315	Schrumpfschlauch Shrink hose Tuyau de serrage Manguera de contracción Tubo	322741	DEPRAG	049042
316	Arretierung Stop Dispositif d'arrêt Blocaje Bloccaggio	311919	DEPRAG	048593
317	Bolzenfeder Spring Ressort Muelle de bulón Molla	301560	DEPRAG	048429
318	Ventilgehäuse Valve housing Carter de vanne Caja de la válvula Carcassa della valvola	312362	DEPRAG	048640
319	Rundschnurring O-ring Bague ganse Junta toroidal Anello O	R5 x 1,5	802502 DEPRAG	049573
320	Ventilstift Valve pin Goupille de soupape Prisionero de válvula Perno della valvola	311870	DEPRAG	048500

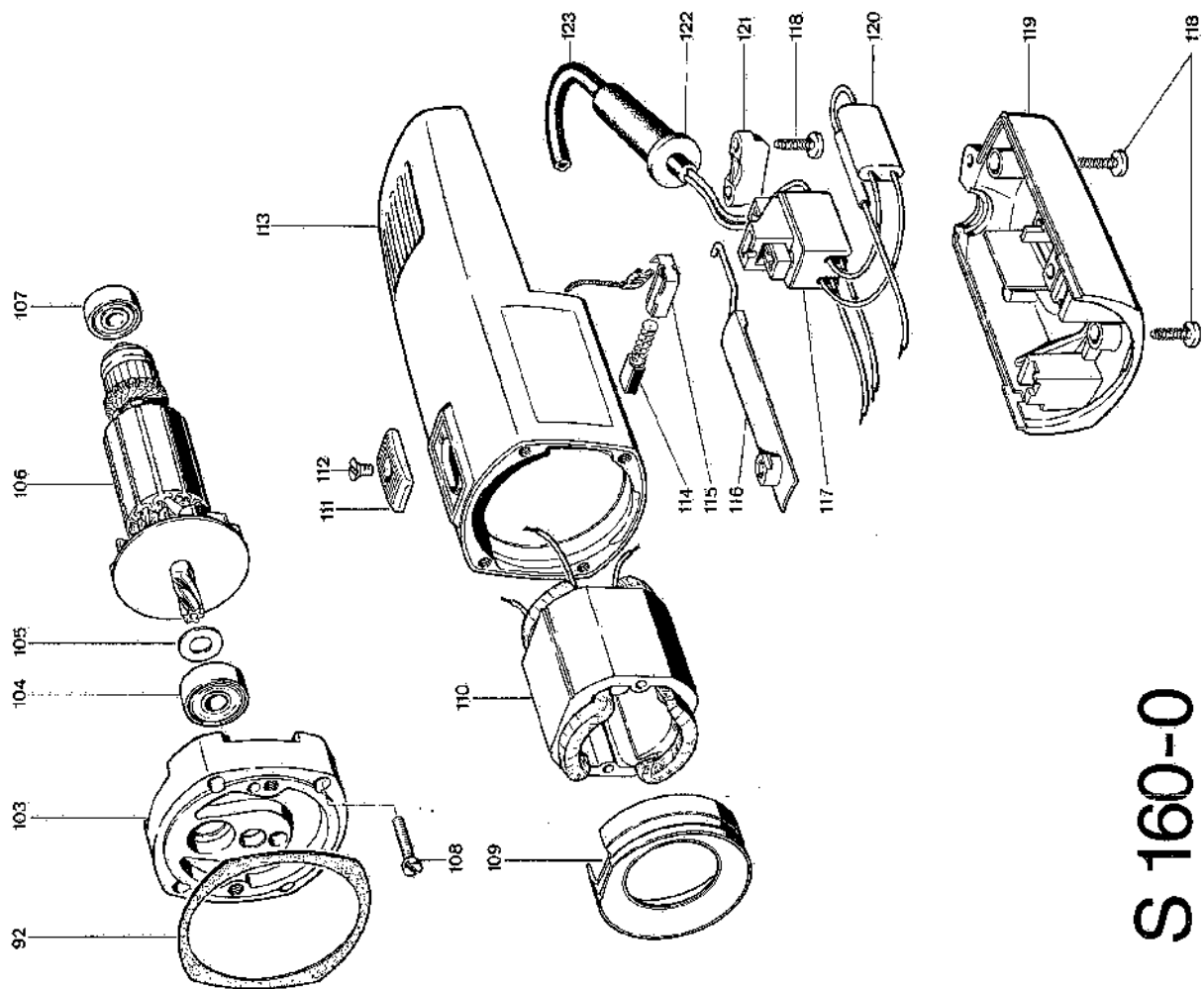
No.	Bezeichnung / Bestell-Nr. Description / Ordering No. Désignation / N° de référence Designación / N° de referencia Denominazione / No. d'ordine				
321	Ventilfeder Valve spring Ressort de soupape Resorte de válvula Molla della valvola	301559	DEPRAG		048410
322	Stopfen Plug Bouchon Tapón Tappo	311871	DEPRAG		048518
323	Druckfeder Compression spring Ressort hélicoïdal Muelle de compresión Molla di pressione	301311	DEPRAG		048372
324	Zylinderstift Cylinder pin Goupille cylindrique Espiga cilíndrica Perno cilíndrico	301301	DEPRAG		048364
325	Drehhülse Rotary sleeve Douille tournante Casquillo giratorio Boccola	301280	DEPRAG		048321
326	Rundschnurring O-ring Bague ganse Anillo O Anello O	R26 x 2 802525	DEPRAG		049590
327	Regulierhülse Regulating bushing Douille de réglage Casquillo de regulación Boccola di regolazione	313114	DEPRAG		048674
328	Schalldämpfer Muffler Amortisseur Amortiguador de sonidos Silenziatore	313160	DEPRAG		048704
329	Schalldämpfer Muffler Amortisseur Amortiguador de sonidos Silenziatore	313145	DEPRAG		048690

No.	Bezeichnung / Bestell-Nr. Description / Ordering No. Désignation / N° de référence Designación / N° de referencia Denominazione / No. d'ordine			
330	Siebträger Filter carrier Porte-tamis Portacolador Supporto del filtro	313143	DEPRAG	048682
331	Schlauchtülle Sleeve Douille Boquilla Imboccatura tubo	410532	DEPRAG	049425
332	Überwurfmutter Cap nut Ecrou-chapeau Tuerca de racor Madrevite	410533	DEPRAG	049433
	Drehventil komplett, mit Nr. 316-330 Rotary valve complete, with No. 316-330 Soupape à gorge complète, avec N° 316-330 Válvula giratoria completa, con N° 316-330 Valvola rotante completa, con No. 316-330	340413A	DEPRAG	049379

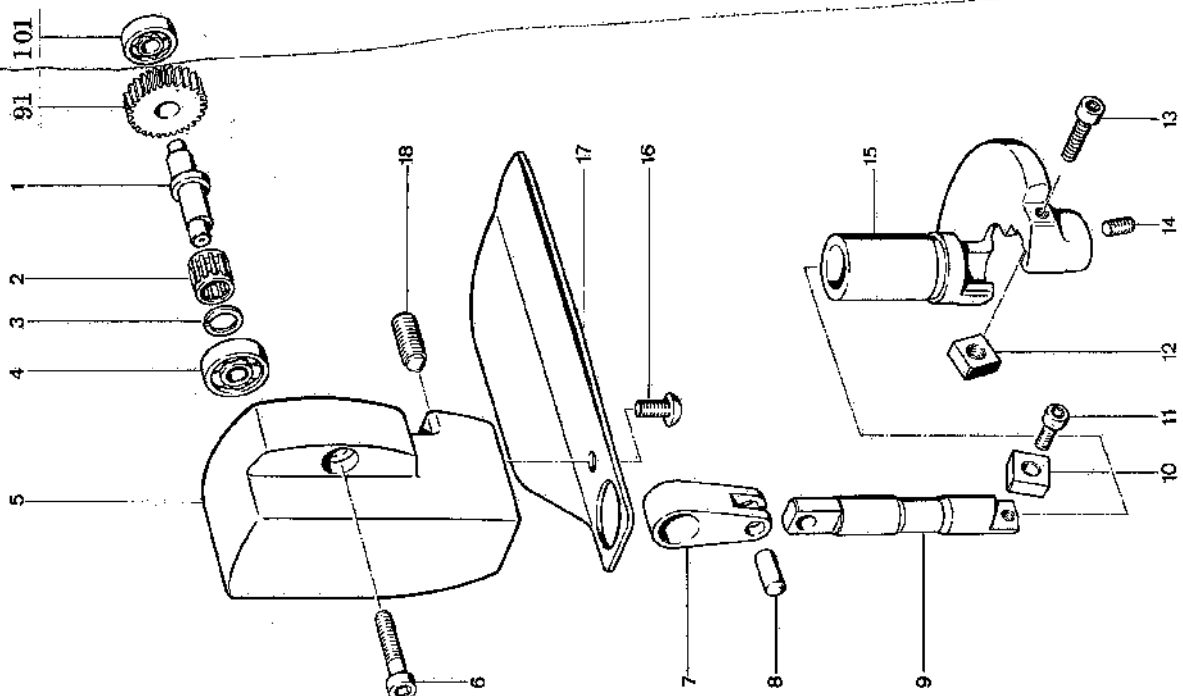
No. Bezeichnung / Bestell-Nr.  
Description / Ordering No.  
Désignation / N° de référence  
Designación / N° de referencia  
Denominazione / No. d'ordine

**Zubehör**  
**Accessories**  
**Accessoires**  
**Accesorios**  
**Accessori**

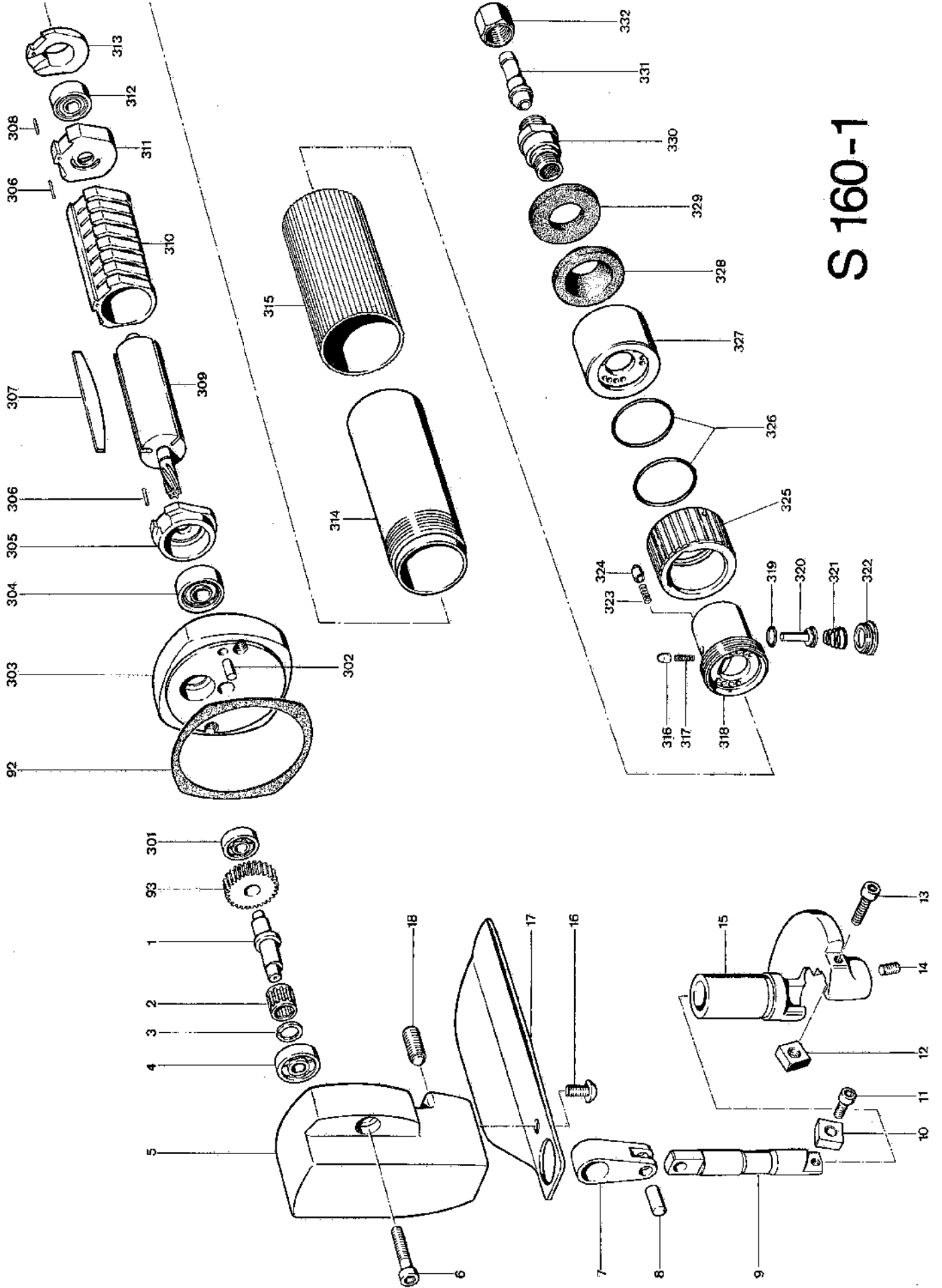
1 Schraubendreher 1 Screw driver 1 Tournevis 1 Destornillador 1 Cacciavite	2,5	DIN 911	067822
1 Schraubendreher 1 Screw driver 1 Tournevis 1 Destornillador 1 Cacciavite	3	DIN 911	067830
2 Kohlebürsten 2 Carbon brushes 2 Balais en charbon 2 Escobillas 2 Carboncini	223422	AEG	046787
1 Bedienungsanleitung 1 Instruction manual 1 Manuel d'instructions de service 1 Manual con instrucciones para el manejo 1 Manuale con istruzioni per l'uso			



# S 160-0







S 160-1