

Operator's manual



Nailless Riveting Machine TF-3050



LLC "StanGroup Rus"

www.stangroup.ru

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1. Safety

1.1 General safety information

WARNING



- Read all the safety information and instructions including those in the brochure also supplied.
- Failure to comply with the safety information and instructions can cause electric shock, burns and/or serious injury.
- Retain all the safety information and instructions for future use.

DANGER

Electrical voltage! Risk of fatal injury due to electric shock!

- Remove the plug from the plug socket before undertaking any maintenance work on the machine.
- Check the plug, cable and machine for damage each time before using the machine.
- Keep the machine dry and do not operate it in damp rooms.
- Connect the fault current (FI) circuit breaker with a maximum breaking current of 30 mA when using the electric tool outside.
- Only use original Fconnect accessories.

WARNING

Damage to the machine due to improper handling.

- Wear safety glasses, hearing protection, breathing protection, protective gloves and working shoes when working.
- Connect the plug only when the machine is switched off. Pull the power plug after use.
- Do not carry the machine by the cable.
- Have maintenance carried out by specialists.

1.2 Specific safety information for power fastener

DANGER

Electrical voltage! Risk of fatal injury due to electric shock!

- Always keep the power cable behind the device and do not pull it over sharp edges.
- Do not perform any work that may cause the machine to come into contact with hidden power lines or its own cable. Contact with a live conductor can cause metallic machine parts to become live and can lead to an electric shock.

 WARNING

Risk of injury to hands.

- Do not reach into the processing line with your hands.
- Use both hands to hold the machine.

 WARNING

Risk of injury from falling machinery

The entire weight of the machine must be taken up after machining the workpiece.

- Use slewing ring (option) with balancer.

2. Description

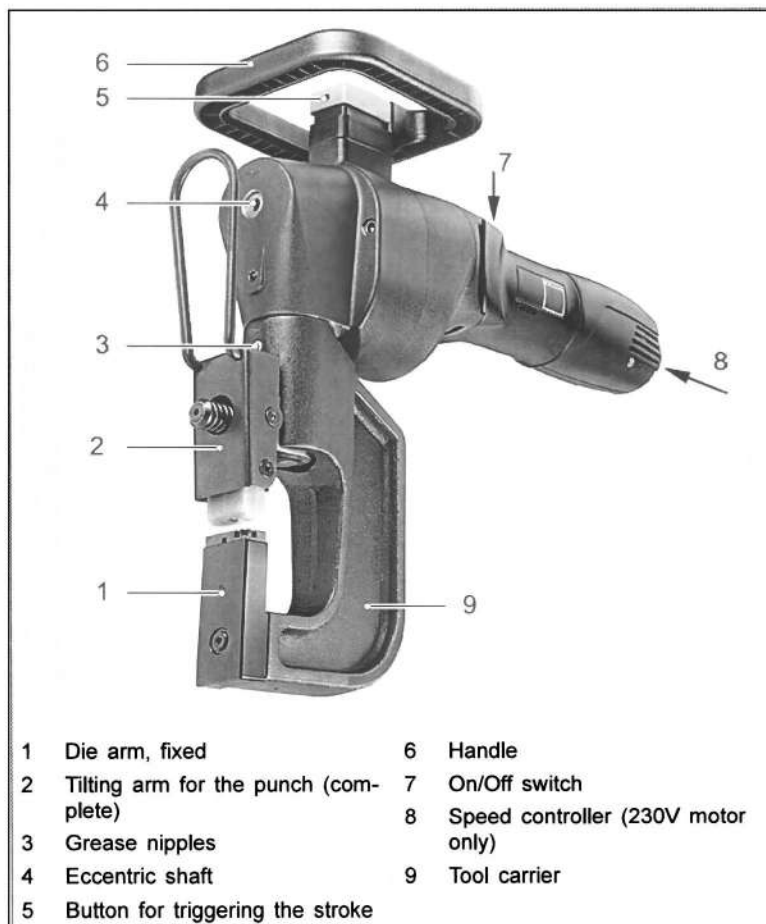


Fig. 28214

2.1 Intended use

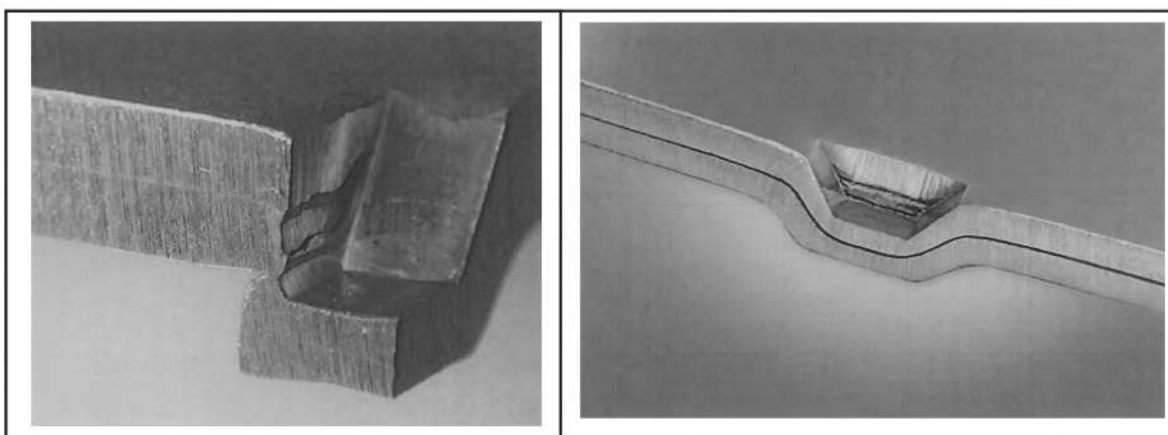
Fconnect jointing press F350 is an electrically powered hand-held device designed for the following applications:

- Connecting sheet metal parts in overlapping alignment by means of a cold forming process.
- This process involved with this mechanical sheet joining technique is the "displacement jointing" (DIN 8593) manufacturing method.

Characteristics

- The joint arises during an uninterrupted ram stroke.
- A movable punch and a fixed die together make up the set of tools for this "one-step displacement joining".

- The die consists of the fixed anvil, on which two lateral spring-loaded non-rigid cutting segments are aligned.
- A positive locking connection is created by this process (without additional connection elements such as screws or rivets), by means of a combined forming and shearing sequence with a subsequent cold extrusion procedure.
- Joining of both uncoated and coated workpieces.
- Joining without application of heat.
- No zinc vapors with galvanized sheets.
- Joining of parts made of different sheet materials is possible.
- Joining of two or three workpieces is possible.
- No preliminary roughing or finishing.
- Work also possible in upside-down position.



Cross-section of the joint

Tab. 1

2.2 Technical data

	Other countries			USA
Voltage	230 V	120 V	110 V	120 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Permissible total material thickness: steel up to 400 N/mm²	3.5 mm	3.5 mm	3.5 mm	0.135 in
Permissible total material thickness: steel up to 600 N/mm²	2.5 mm	2.5 mm	2.5 mm	0.1 in
Permissible total material thickness: aluminum up to 250 N/mm²	4.0 mm	4.0 mm	4.0 mm	0.16 in
Min. total material thickness	0.8 mm	0.8 mm	0.8 mm	0.031 in
Max. jointing force	25 kN	25 kN	25 kN	5600 lbf
Nominal power consumption	1400 W	1200 W	1140 W	1200 W
Stroke cycle	2/s	2/s	2/s	2/s

	Other countries			USA
Max. height of flange with flanged material	36 mm	36 mm	36 mm	1.42 in
Weight	8.3 kg	8.3 kg	8.3 kg	18.4 lbs
Min. edge spacing	8 mm	8 mm	8 mm	0.315 in
Max. edge spacing	58 mm	58 mm	58 mm	2.28 in
Safety class	II / 	II / 	II / 	II / 

Tab. 2

2.3 Icons

Note

The following symbols are important for reading and understanding the operator's manual. The correct interpretation of the symbols will help you operate the machine better and safer.

Icon	Name	Meaning
	Read operator's manual	Read the operator's manual and safety information in their entirety before starting up the machine. Closely follow the instructions given.
	Safety class II	Indicates a doubly insulated tool.
	Alternating current	Type or property of current
V	Volt	Voltage
A	Ampere	Current, current input
Hz	Hertz	Frequency (oscillations per second)
W	Watt	Power, power input
mm	Millimeters	Dimensions e.g.: material thickness, chamfer length
in	Inch	Dimensions e.g.: material thickness, chamfer length
n_0	Idle speed	Revolution speed without load
.../min	Revolutions/strokes per minute	Revolution speed, stroke rate per minute

Tab. 3

2.4 Noise and vibration information



Noise emission value may be exceeded.

- Wear hearing protection.

⚠ WARNING

The vibration emission value can be exceeded!

- Select the right tools and exchange them in time in the event of wear.
- Have maintenance carried out by trained specialized technicians.
- Define additional safety measures for protecting the operator from the effect of vibrations (e. g. keep hands warm, organization of working procedures, machining at normal feed force).
- Depending on the operating conditions and state of the electric tool, the actual load might be higher or lower than the specified measured value.

Notes

- The specified vibration emission value was measured in accordance with a standardized testing procedure and can be used to compare one electric tool with another.
- The specified vibration emission value can also be applied for a provisional estimate of the vibration load.
- Times during which either the machine is switched off or running but not actually in use can considerably reduce the vibration load during the entire working period.
- Times during which the machine works independently and self-propelled do not have to be calculated.

Designation of measured value	Unit	Value according to EN 60745
Vibration emission value a_h (vector sum of three directions)	m/s ²	2.6
Uncertainty K for vibration emission value	m/s ²	1.5
A-class acoustic pressure level L_{PA} typically	dB (A)	84
A-class acoustic power level L_{WA} typically	dB (A)	95
Uncertainty K for noise emission value	dB	3

Tab. 4

3. Setting work

3.1 Setting the stroke rate (230 V motor only)

 CAUTION

Property damage resulting from incorrect alignment of the tools!

- Check the alignment of punch and die (both lengthwise or both diagonal).

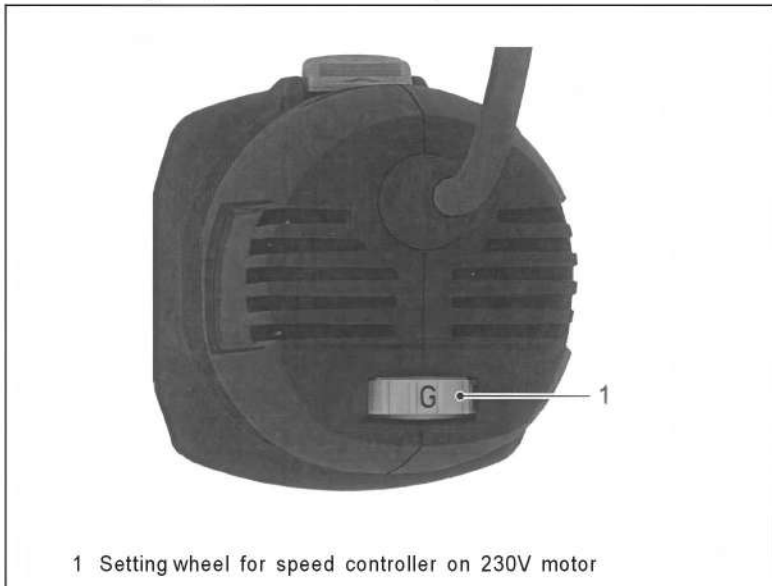


Fig. 71200

1. Setting wheel for speed controller on motor.
2. Reduced stroke rates result in:
 - less engine noise.
 - less heating and wearing on the gears.
 - slightly increased jointing time.

3.2 Select tool

The jointing press F350 can be equipped with tools in various ways depending on the particular application.

Five different types of dies are available to make it possible to utilize tools corresponding to different types of materials and material thicknesses.

A special tool holder belongs with each type of die (= fixed arm or tilting arm), which is used as a receptacle for the die.

The following example help for the selection of the tools.

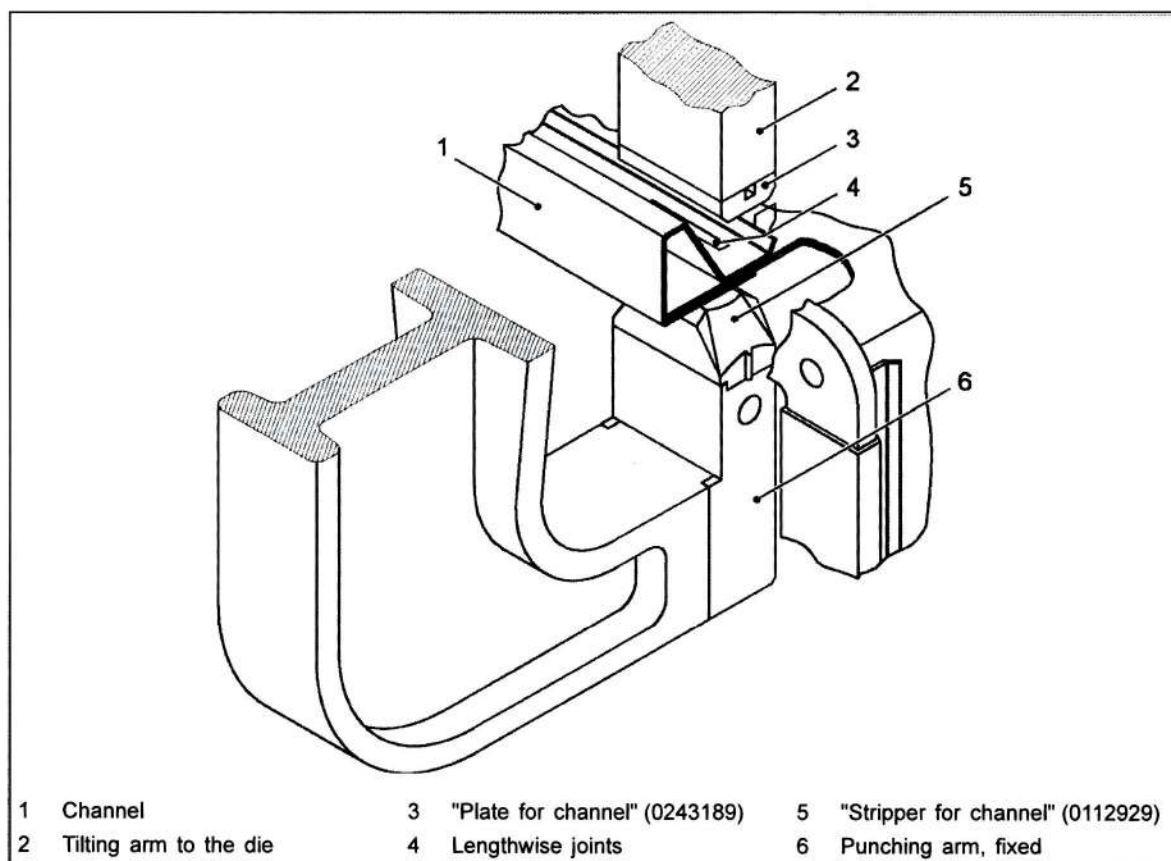
3.3 Selecting tools for ventilation duct construction

Whether or not the joint faces inwards (optical reasons) or outwards (fluidic reasons) depends on the respective tool set selected for application.

The "plate for channel" makes it possible to have the joining on the flange profiles. When doing this, joints are possible in the depressions of the flange profiles.

Note

The joints with "Plate for channel" are only possible in the longitudinal direction.

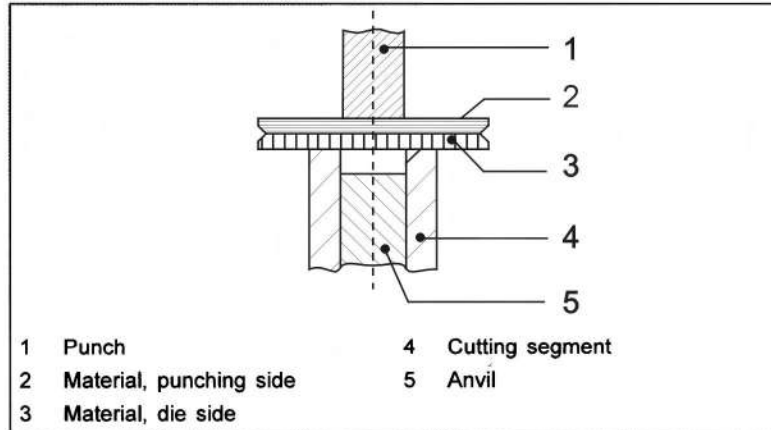


Tools for ventilation duct construction

Fig. 50436

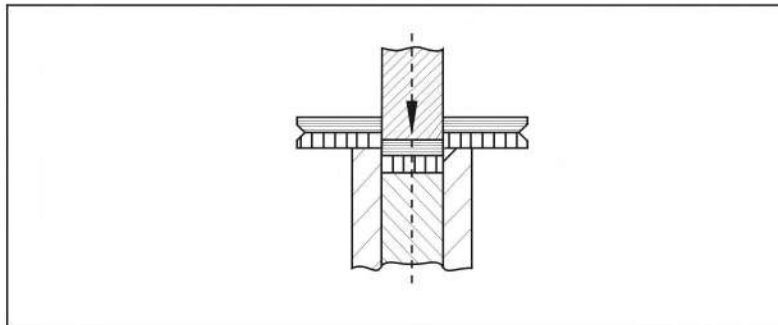
The "Stripper for channel" makes working across the corners easier.

3.4 Joining materials



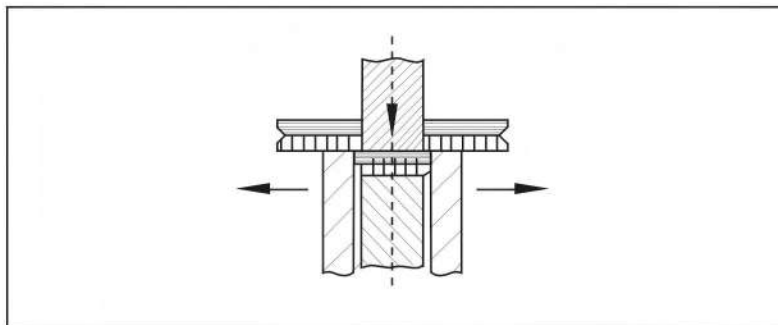
Tool and workpiece arrangement

Fig. 100043



Cutting

Fig. 10044



Forming

Fig. 10045

Note

Additional cutting and extruding merge together seamlessly during the course of the stroke movement.

Information concerning the workpiece and the joint

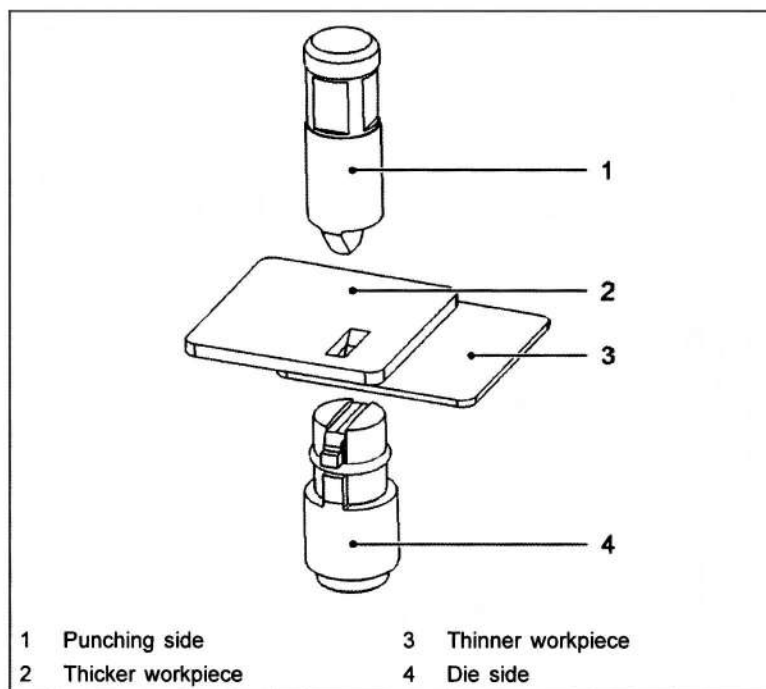


Fig. 50427

- Adjust the set of tools to match the material thickness actually present.
- In case of different material thicknesses, the thinner workpiece has to be on the die side (see "Fig. 50427", pg. 14). Joints can be achieved with material thickness differences of up to ratios of approximately 1 : 2.
- The thinner workpiece determines the maximum shear strength of the component.
 - Work with lubricants when processing aluminum and V2A (increases service life).
- The direction of the joint can be rotated by 90° (not possible if "Plate for channel" (order no. 0243189) is used). For this, the die is mounted in the desired position and the punch is aligned accordingly.

Note

The total material thickness measured counts as the recommended value for selecting the die arm. It is also possible to connect more than two workpieces with each other. In general, the more workpieces that are joined together, the less the holding force of the joint/bond will be.

Joint

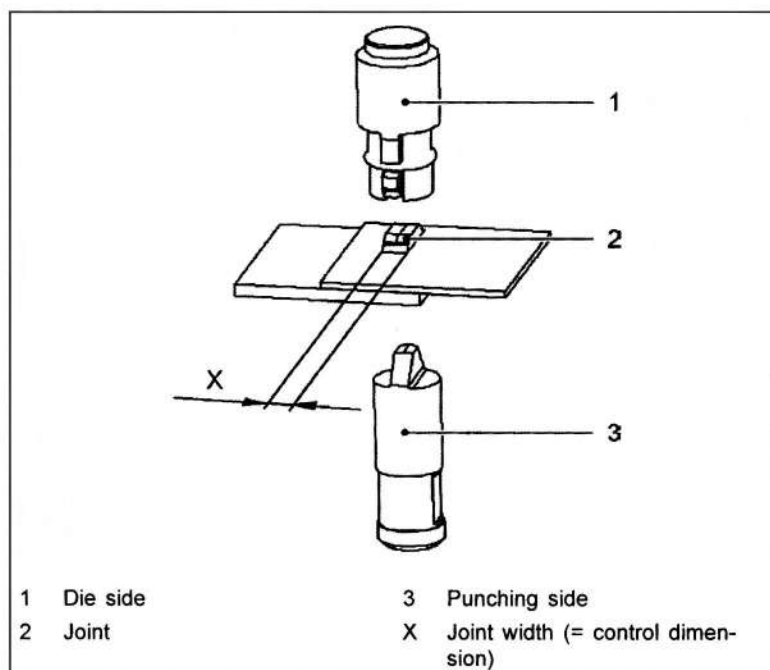
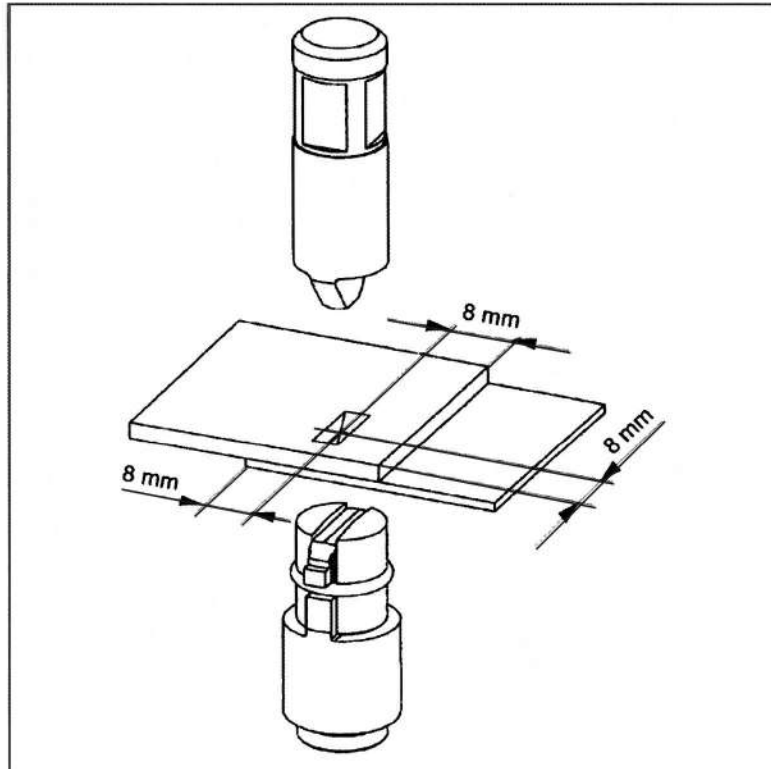


Fig. 50428

Die	Total material thickness, steel	Control dimension, joint width
1	1.5 mm	4.0 - 4.5 mm
2	2.0 mm	3.5 - 4.5 mm
2+	2.5 mm	3.4 - 4.5 mm
3-	3.0 mm	3.8 - 4.5 mm
3	3.5 mm	3.6 - 4.5 mm

Tab. 7

Distance of the joints from the edge of the material



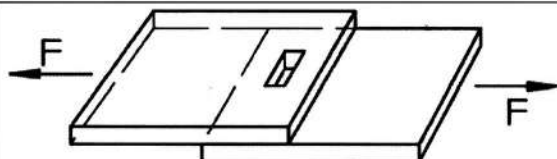
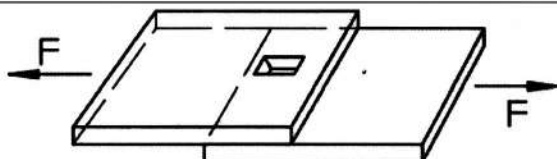
Minimum edge spacing of the joint

Fig. 50429

The middle of the joint has to be at least 8 mm from the edge of the material. Otherwise, a joint of lesser quality will be created.

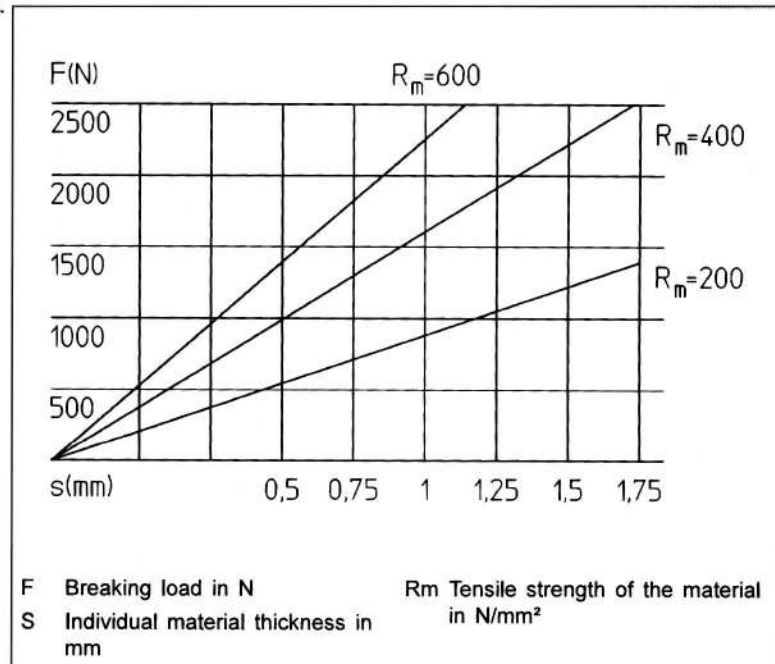
3.5 Selecting processing strategy

Die and punch can be arranged in two different directions.

	
Load example: shear diagonal, maximum shear strength	Load example: shear lengthwise, 50% of the maximum shear strength

Tab. 8

Maximum transferable shear force



Max. transferable lateral shearing forces depending on the material thickness and the tensile strength of the material

Fig. 50430

A maximum shear strength is achieved from joining two materials which each have:

- have the same material stability.
- have the same material thickness.

4. Operation

WARNING

Damage to the machine due to improper handling.

- Make sure the machine is always in a stable position when operating it.
- Never touch the tool while the machine is running.
- Always operate the machine away from your body.
- Do not operate the machine above your head.

Electromagnetic faults

The appliance may switch off prematurely when affected by electromagnetic interference. The appliance will resume operation when the faults have been cleared.

Lubricating oil

In order to improve the seaming result and increase the service life of the punch, coat the seam point or the tool with oil before processing the workpiece.

Material	Oil
Steel, chromium steel	Punching and nibbling oil (0.5 l, order no. 0103387)
Aluminum	Punching and nibbling oil for aluminum (1 l, order no. 0125874)

Tab. 9

4.1 Working with Fconnect F350

Condition

- All setting work has been carried out.

WARNING

Damage to property possible as a result of unnecessarily long engine running times!

- Switch the machine off following processing.

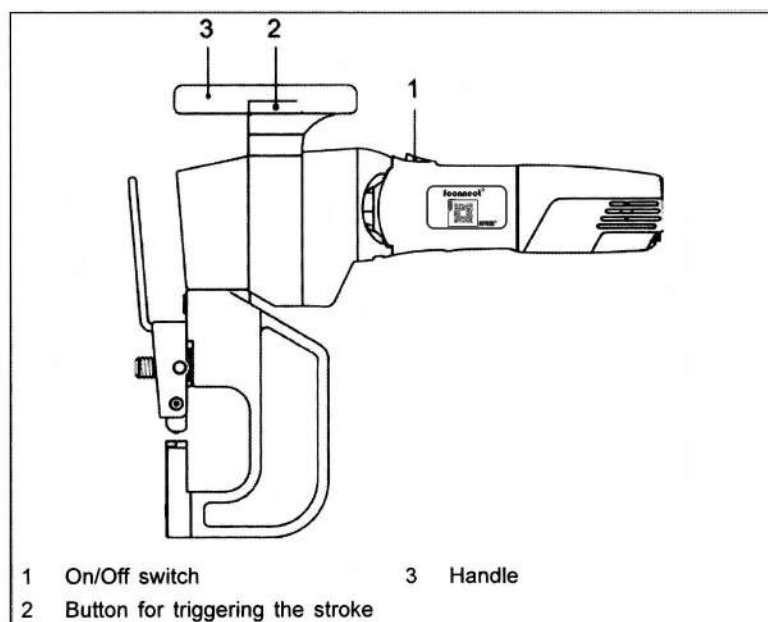


Fig. 28377

Switching on the machine

1. Insert the mains plug.
2. Move the On/Off switch (1) to the front.

Correct holding of the machine

Fig. 50437

3. Triggering the stroke:
 - Actuate the button (2) which is located inside the handle (3).
 - If full revolution speed has been reached, trigger the stroke.

Switching off the machine

4. Move the On/Off switch (1) to the rear.
5. Pull out the mains plug.

4.2 Overload protective device on the motor

Notes

- The appliance may switch off prematurely when affected by electromagnetic interference. The appliance will resume operation when the faults have been cleared.
- If the motor temperature is too high, the motor will switch off.

1. Allow the machine to run in idle until it has cooled down.

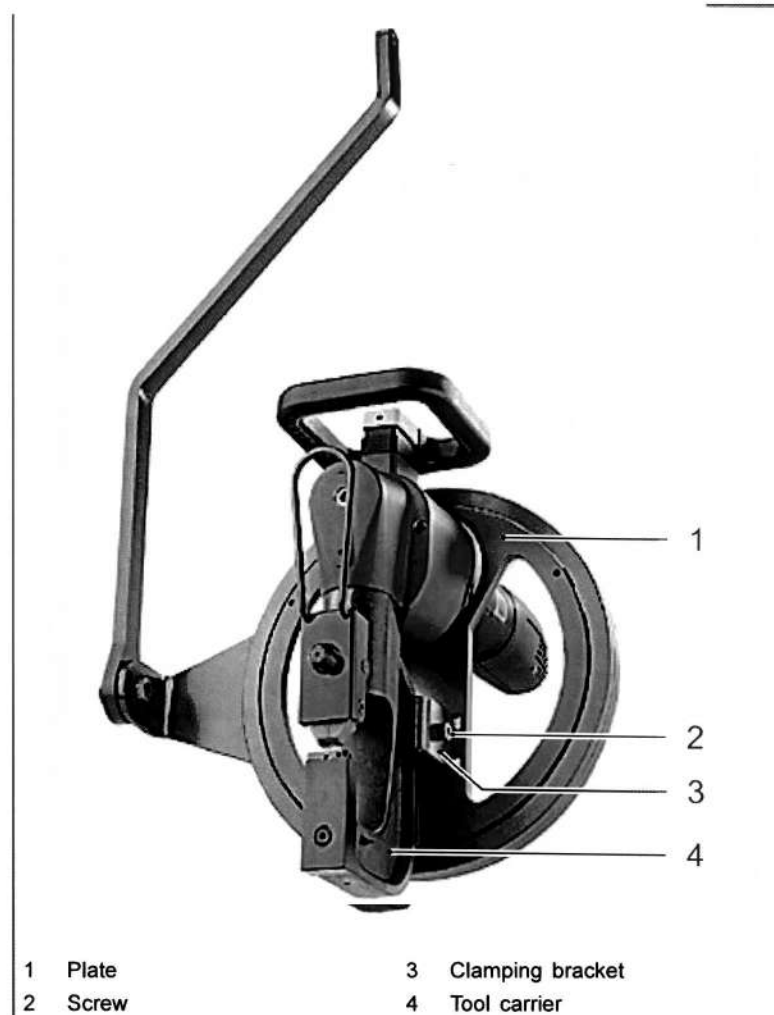
2. Operate the machine normally after it has cooled down.

4.3 Slewing ring (option)

The machine can be swivelled into any processing position desired with the help of the auxiliary "slewing ring" device (order no. 0976671). The use of the slewing ring makes the work of the machine operator easier.

The slewing ring is suspended over an eyelet (total weight of the machine Fconnect F350 with slewing ring is 15kg).

A balancer is used to provide optimal handling.



F350 with installed slewing ring

Fig. 50438

1. Align the machine in the plate (1) over the centering hole.
2. Clamp the machine on the tool carrier (4) in the clamping bracket (3) and tighten the screw (2).

5. Maintenance

DANGER

Electrical voltage! Risk of fatal injury due to electric shock!

- Remove the plug from the plug socket before undertaking any maintenance work on the machine.
- Check the plug, cable and machine for damage each time before using the machine.
- Keep the machine dry and do not operate it in damp rooms.
- Connect the fault current (FI) circuit breaker with a maximum breaking current of 30 mA when using the electric tool outside.
- Only use original Fconnect accessories.

WARNING

Risk of injury due to incorrect repair work

Machine does not work properly.

- Maintenance may be carried out by trained specialist technicians only.

WARNING

Risk of injury due to joining station tipping over

- Anchor the joining station securely to the floor.

CAUTION

Damage to property caused by blunt tools!

Machine overload.

- Check the cutting edge of the punch hourly for wear. A sharp punch produces good seaming results and prevents machine damage. Change the punch in due time.

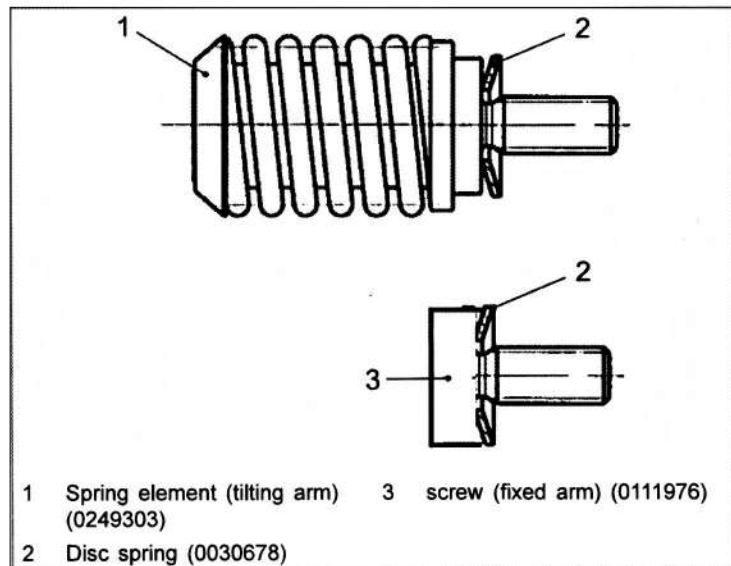
Maintenance point	Interval	Recommended lubricants
Punch	Change as needed.	-
Die	Change as needed.	-
Tool carrier	Clean as needed.	-
Ventilation slots	Clean as needed.	-
Ram	Relubricate after 20 operating hours.	Lubricating grease "G1"
Coupling	Relubricate after 20 operating hours.	Lubricating grease "G1"
Gearbox and gear head	After 300 operating hours, arrange for a trained specialist to relubricate or to replace the lubricating grease.	Lubricating grease "G1"

Maintenance points and intervals

Tab. 10

5.1 Replacing the tool

Cleaning the tool holder

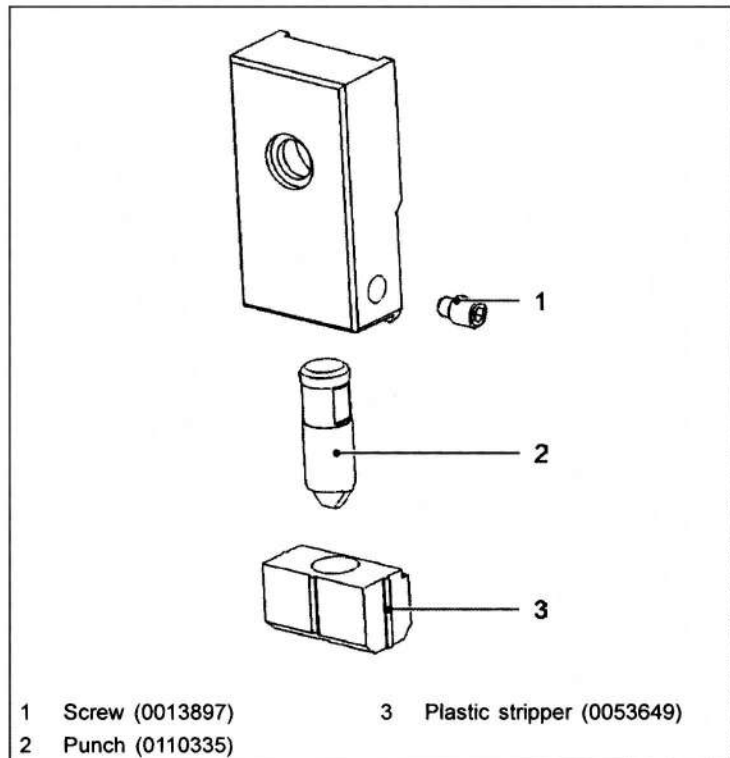


Tool adapter

Fig. 64014

1. Cleaning the tool holder.
2. Check for damage.
3. Lubricate location bolt with lubricating grease "G1" (order no. 344969).
4. Mount the disc spring (2) on the screw (3) / the spring element (1) as shown in the illustration.
5. Mount the tool arm on bolts.
6. Tighten screw (3) / spring element (1) firmly.

Changing the punch arm

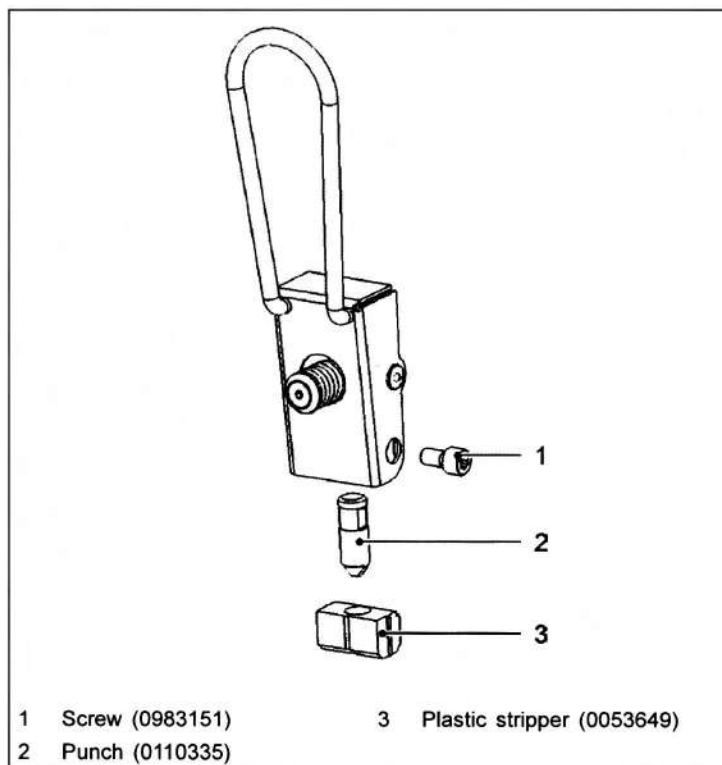


Fixed punch arm

Fig. 50440

1. Remove the complete punch arm from the machine.
2. Remove the stripper (3).
3. Loosen screw (1).
4. Pull out punch (2).
5. Install new punch.
6. Align punch (2).
7. Tighten screw (1) firmly.

Changing the punch on the tilting arm

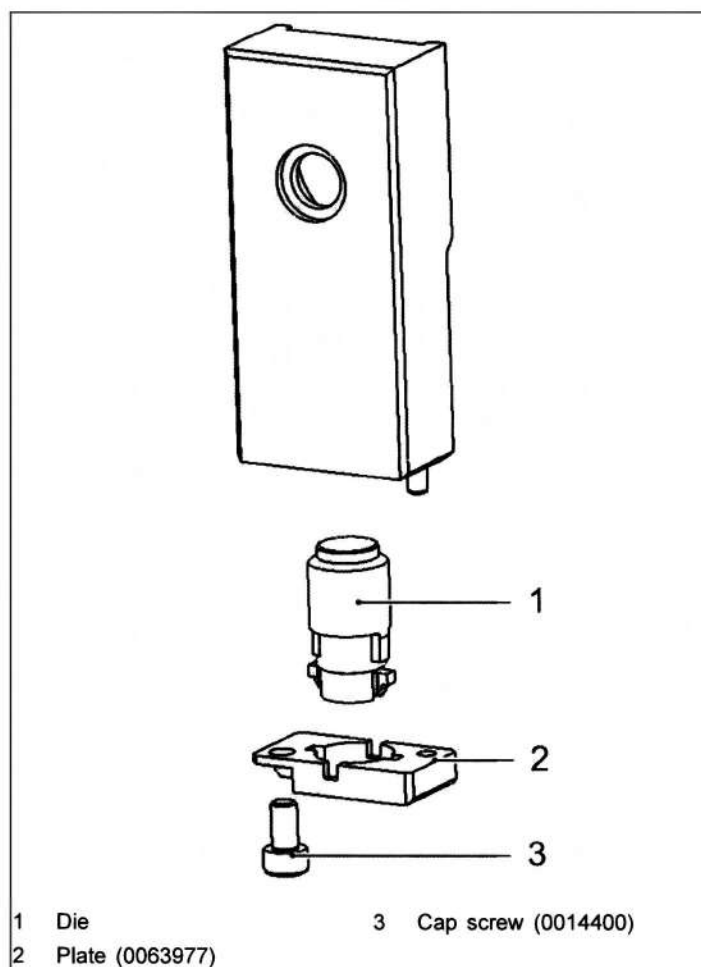


Tilting arm on the punch

Fig. 50441

1. Remove the complete punch arm from the machine.
2. Remove the stripper (3).
3. Loosen screw (1).
4. Pull out punch (2).
5. Install new punch.
6. Align punch (2).
7. Tighten screw (1) firmly.

Replace die arm



Fixed die arm

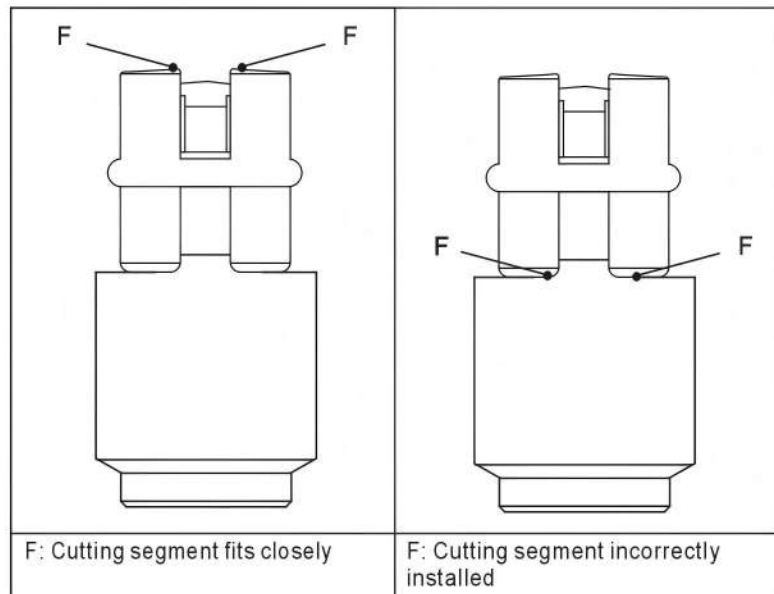
Fig. 50442

1. Remove the complete fixed die arm from the machine.
2. Loosen cap screw (3).
3. Remove the plate (2).
4. Remove the die (1).

Note

Do not install the cutting segment backwards.

5. Install new die (be sure that the cutting segments fit closely to the anvil).



6. Install the plate (2).
7. Tighten screw (3) firmly.

Changing the die tilting arm

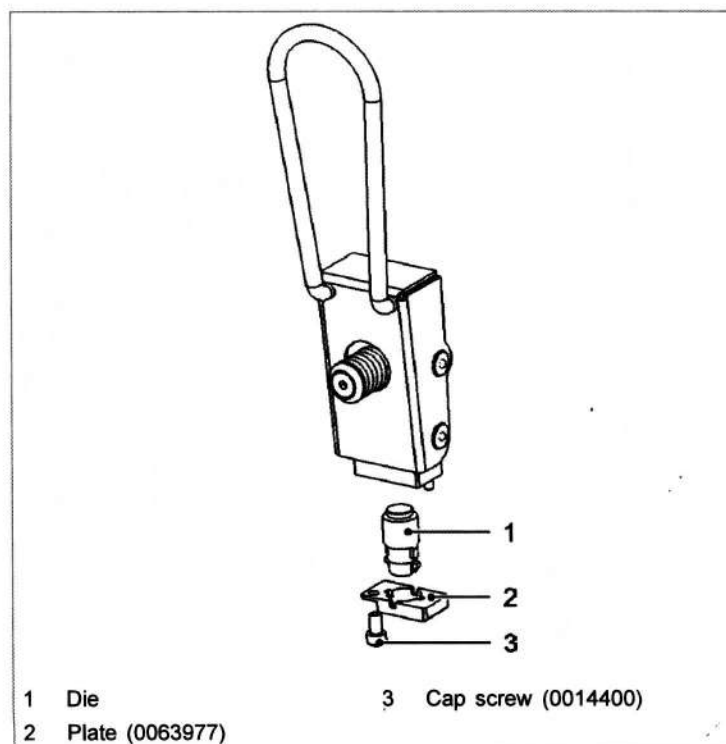


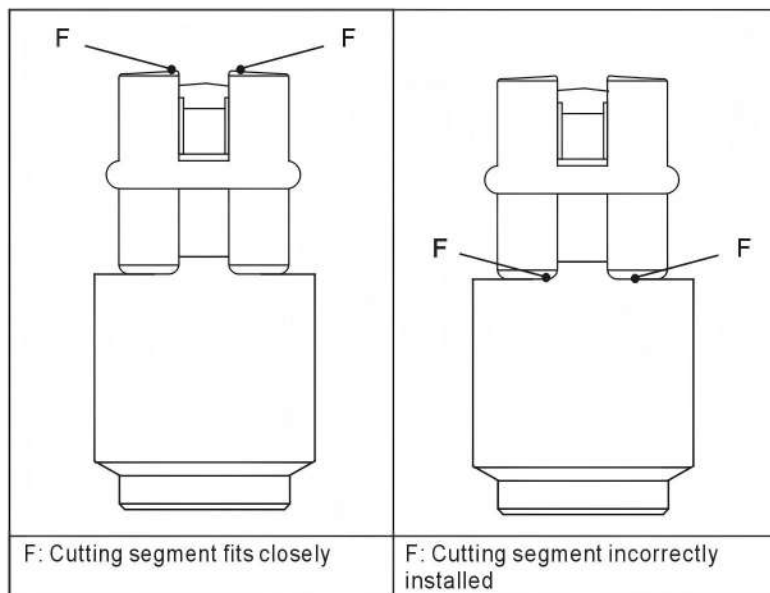
Fig. 50443

1. Pull the bracket towards the front and swivel the whole fir arm so that the cap screw (3) can be accessed.
2. Loosen cap screw (3).
3. Remove the plate (2).
4. Remove the die (1).

Note

Do not install the cutting segment backwards.

5. Install new die (be sure that the cutting segments fit closely to the anvil).



Tab. 12

6. Install the plate (2).
7. Tighten screw (3) firmly.

5.2 Lubricating the ram

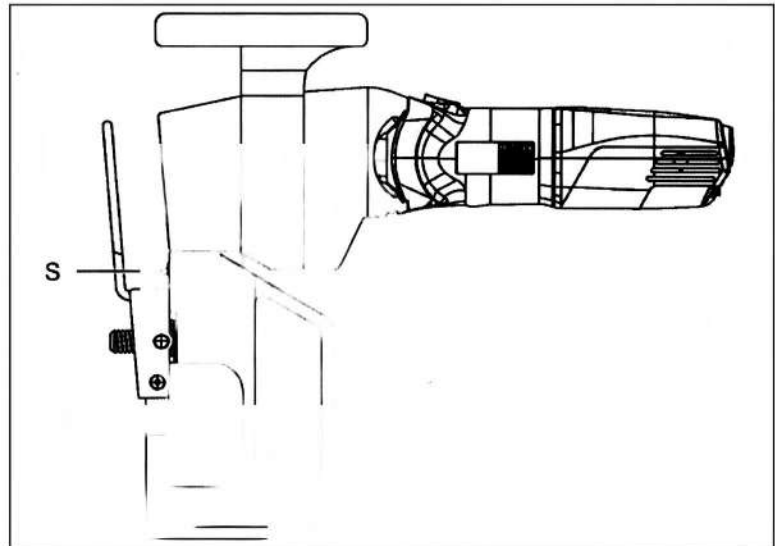


Fig. 64015

- Lubricate the grease nipple (S) on the tool with a grease gun.

5.3 Lubricating the coupling

1. Pull the power plug out of the plug socket.

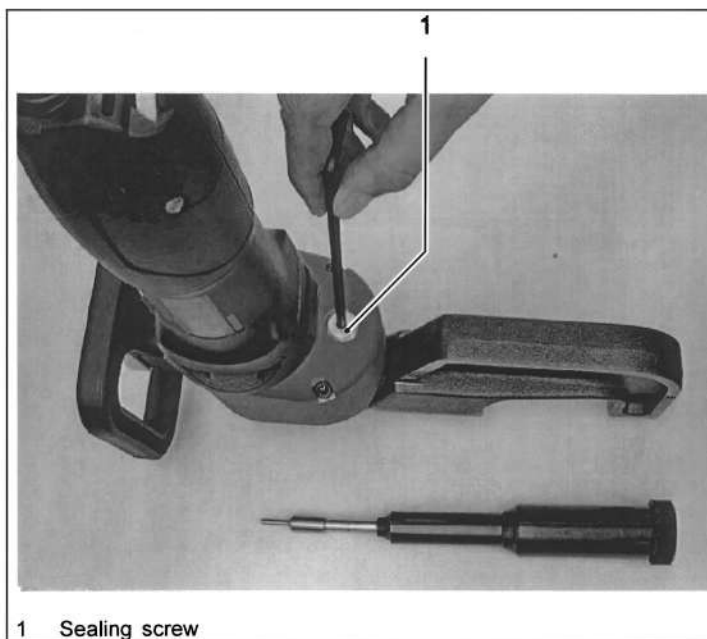


Fig. 50449

2. Unscrew the screw plug (1).

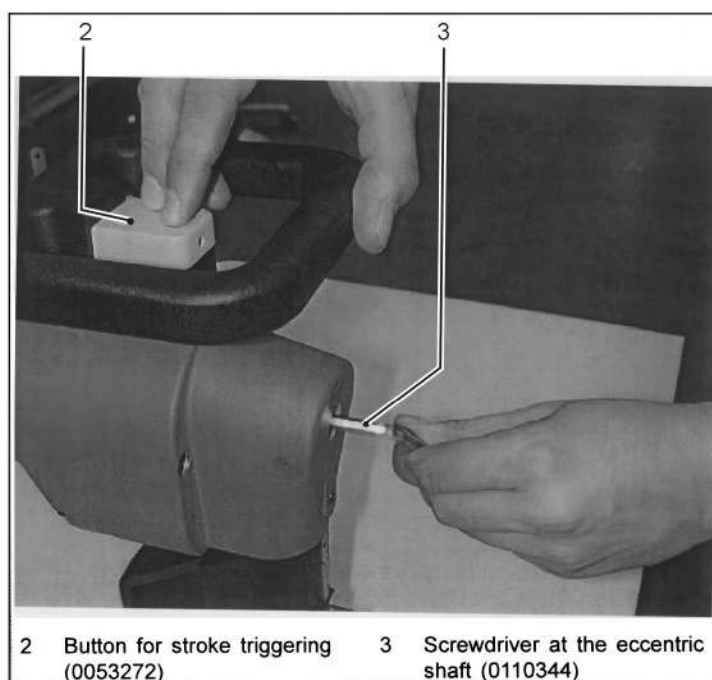


Fig. 50448

3. Press and hold the button for stroke triggering (2) and rotate the eccentric shaft (3) clockwise (see arrow at the machine's face end) until the lubrication port becomes visible.

or

- Put the grease gun through the bore hole in the end sign and rotate the eccentric shaft clockwise until the grease gun engages in the lubrication port.

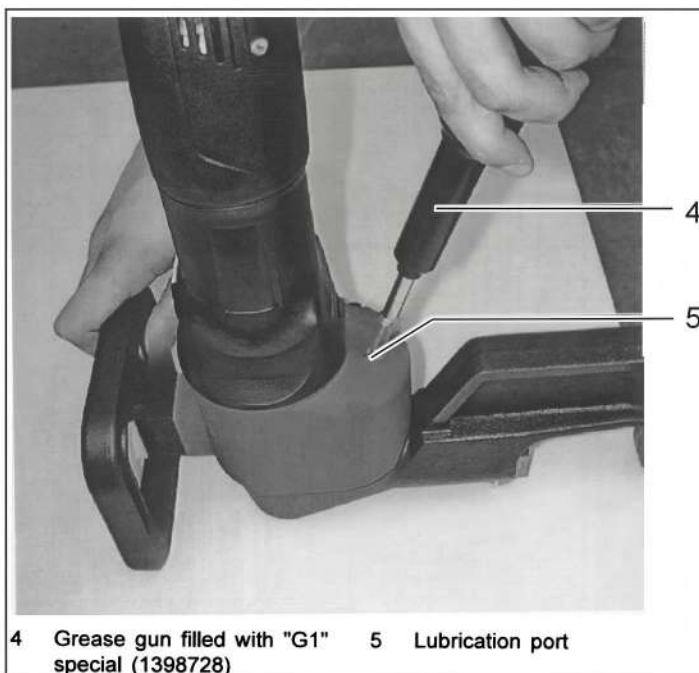


Fig. 50447

4. Relubricate the coupling with the grease gun (4) through the lubrication port (5) (one stroke).
5. Screw in the screw plug again.
6. Put the machine in a safe position.
7. Connect the power plug.
8. Switch on the motor.

The machine completes the stroke which was manually started.

9. Press the button for stroke triggering and trigger a test stroke.

5.4 Changing the power cable

If the power cable is to be replaced, it should be procured from the manufacturer or an authorized dealer to avoid safety hazards.

5.5 Replacing carbon brushes

The motor comes to a standstill whenever the carbon brushes are worn out.

6. Accessories and consumables

Consumables	Order number	Scope of delivery
Punch	0110335	X
Die no. 1	0111969	-
Die no. 2	0111968	-
Die no. 2+	0122272	-
Die no. 3-	0053875	-
Die no. 3	0111967	X
Stripper for flat materials	0053649	X
Stripper for channels	0112929	X
Grease gun filled with "G1" special	1398728	X
Punching and nibbling oil for steel (0.5 l)	0103387	X
Punching and nibbling oil for aluminum (1 l)	0125874	-

Tab. 13

Consumables

Accessories	Order number	Scope of delivery
Die arm fixed (complete)		-
No. 1	0118130	
No. 2	0118131	
No. 2+	0129763	
No. 3-	0129764	
No. 3	0118132	
Tilting arm for die (complete)		-
No. 1	0128792	
No. 2	0128793	
No. 2+	0129723	
No. 3-	0129724	
No. 3	0128794	
Punch arm fixed (complete)	0118129	-
Tilting arm to the punch (complete)	0128748	-
Plate for channels	0243189	-
Operator's manual	1893447	X
Safety information, other countries	0125699	X
Safety information (red document), USA	1239438	X
Slewing ring	0976671	-

6.1 Ordering consumables

Note

The following data must be specified in order to ensure that parts are delivered correctly and without delay.

1. Specify the order number.

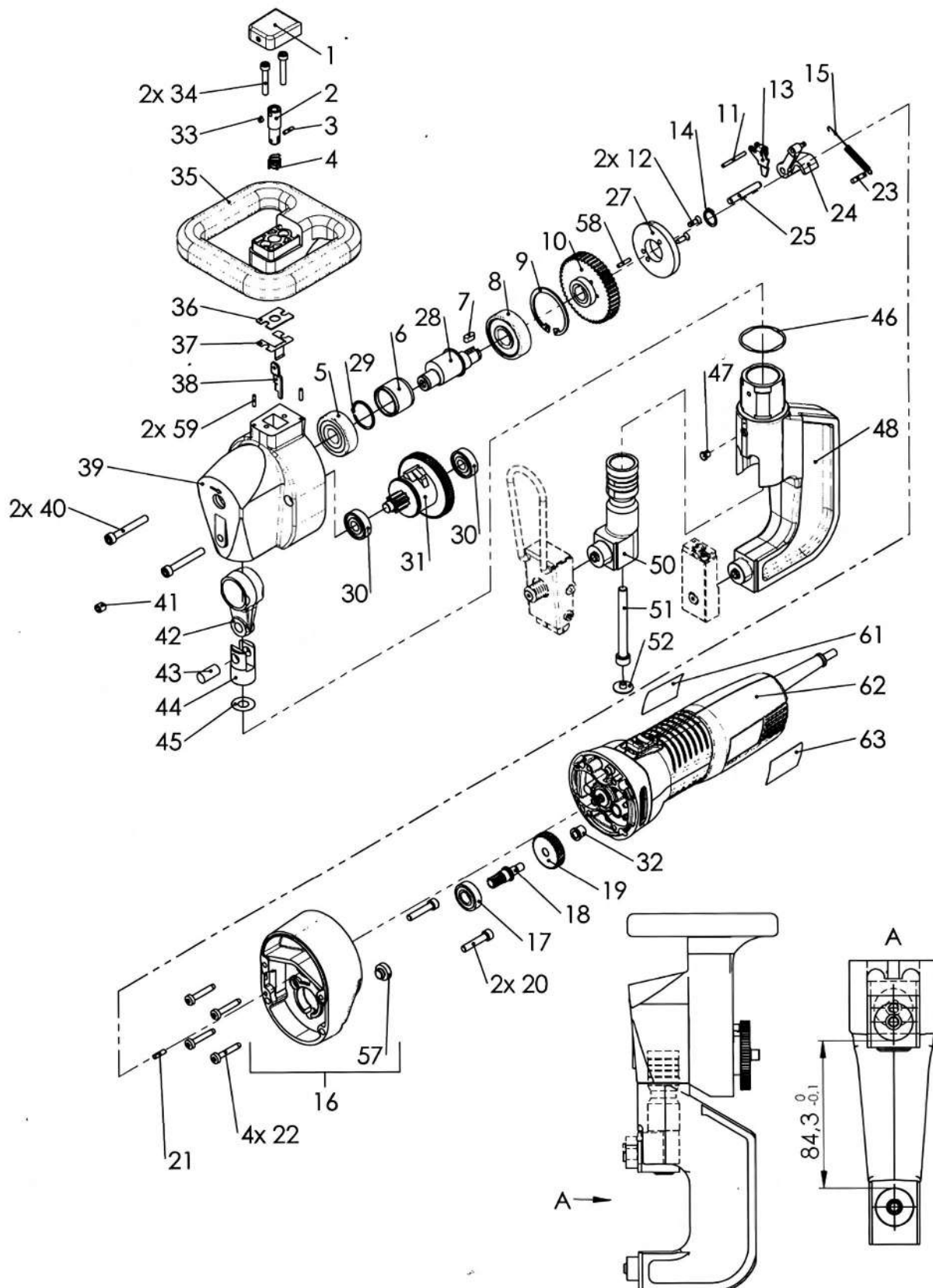
2. Enter further order data:
 - Voltage data
 - Quantity
 - Machine type
3. Specify the complete shipping information:
 - Correct address.
 - Selected delivery type (e.g. air mail, courier, express freight, parcel post).

7. Appendix: Declaration of conformity, guarantee, replacement parts lists



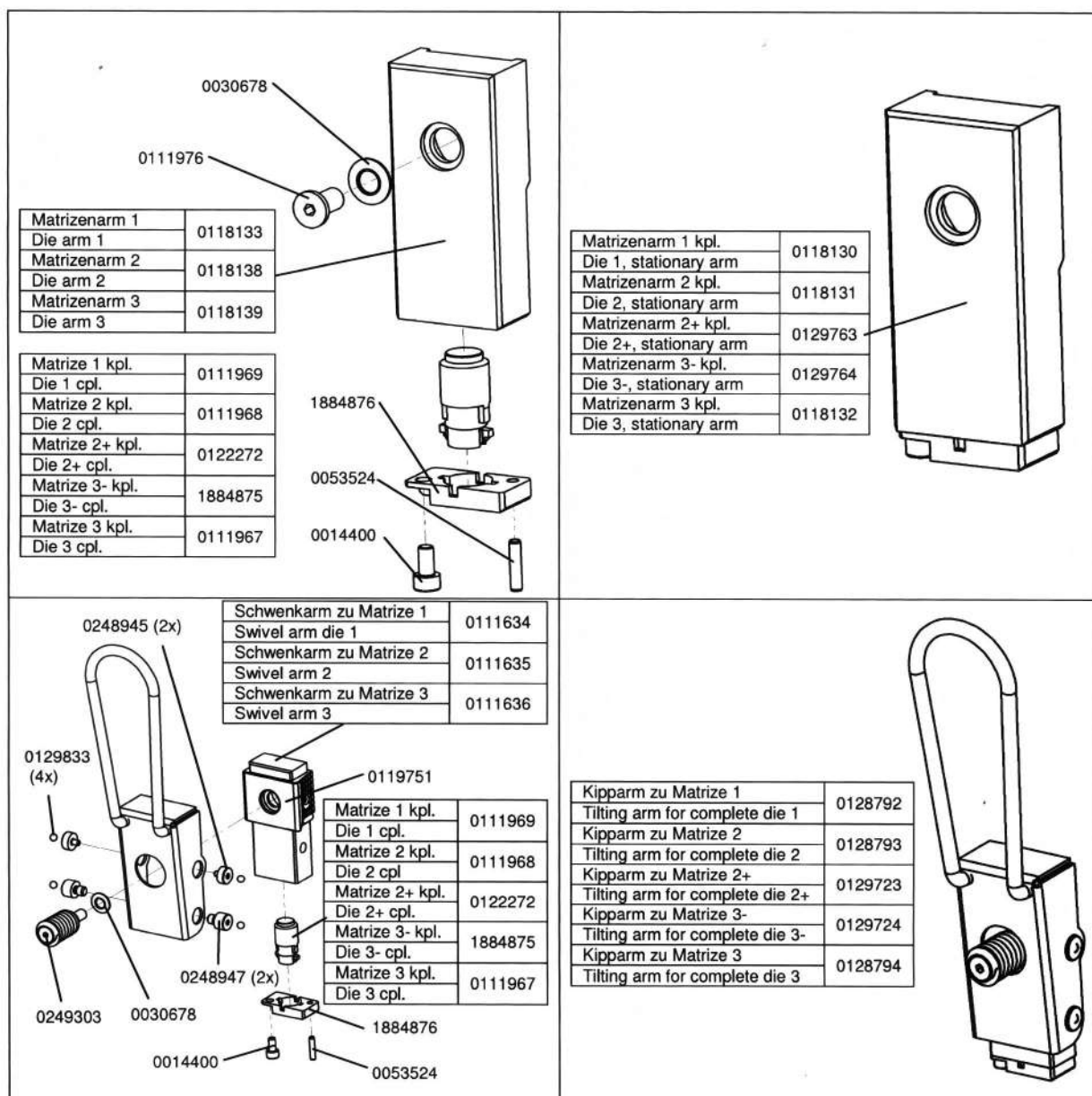
StanGroup

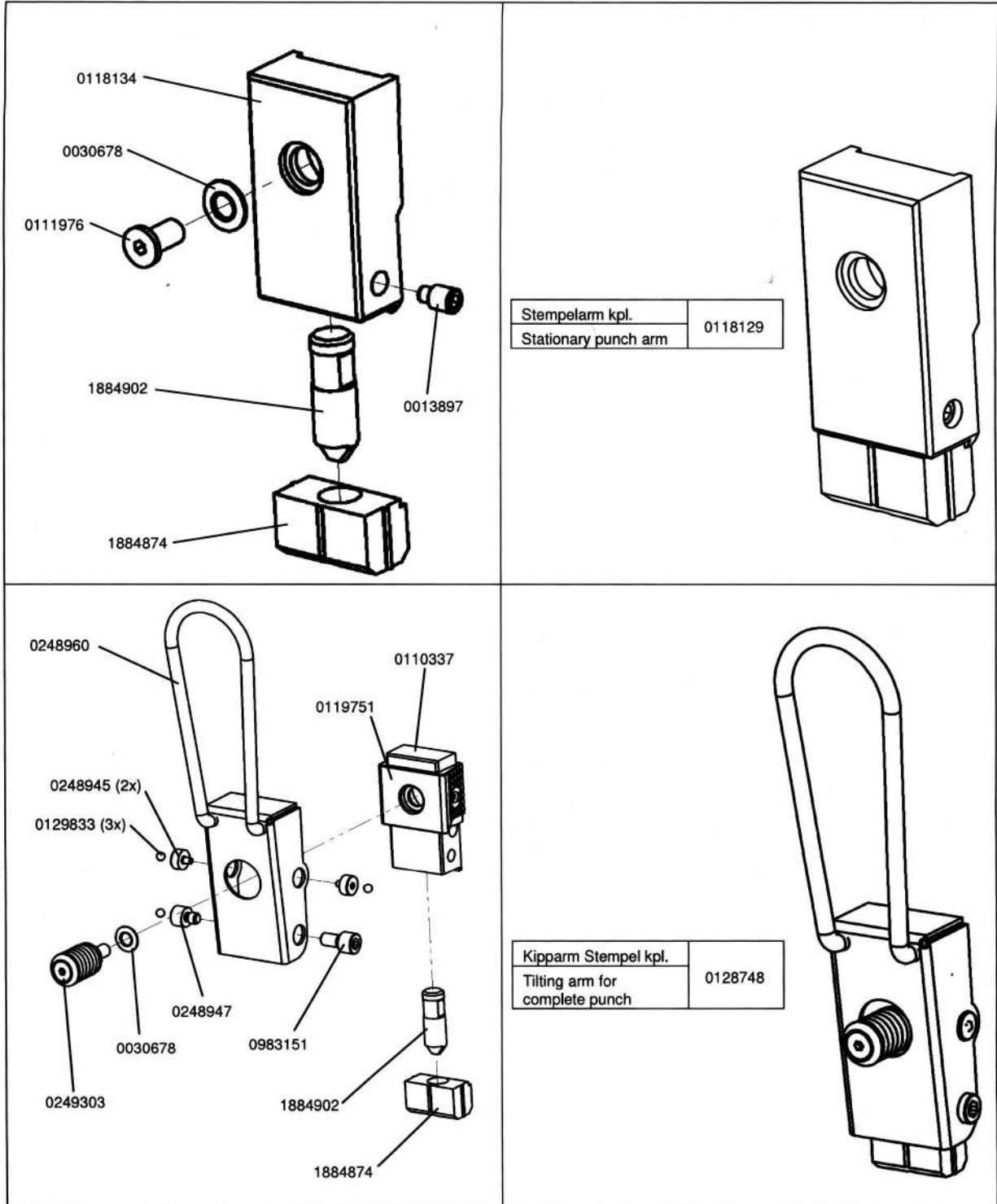
订货号 备件		
No. D'ORDINE	PEZZO DI RICAMBIO	
NO. DE REF.	PIEZA DE RECAMBIO	
NO. DE REF.	PIECE DE RECHANGE	
ORDER NO.	SPARE PART	
NO BEST.-NR.	ERSATZTEIL	
1	0053272	
2	0053268	
3	0053514	
4	0062074	
5	0026468	
6	0067033	
7	0069981	
8	0026476	
9	0021520	
10	0110339	
11	0111956	
12	0018007	
13	1889626	incl. Pos. 38
14	0021156	
15	0111959	
16	1398917	
17	0027782	
18	0053134	
19	0099997	
20	0014788	
21	0053510	
22	1956902	
23	0053515	
24	0111971	
25	0053522	
27	0053327	
28	0110344	
29	0346825	
30	0053525	
31	0145363	
32	0102927	
33	0053516	
34	0014591	
35	0053129	
36	0053231	
37	0053269	
38	1889626	incl. Pos. 13
39	0111469	
40	0014818	
41	0103666	
42	0067026	
43	0111923	
44	0110342	
45	0111965	max. 10x
46	0110334	
47	0029556	
48	0108379	
50	0110341	
51	0111964	
52	0113038	
57	1387462	
58	0098368	
59	0112029	
61	1893477	D 230V 50/60Hz
	1893477	CH 230V 50/60Hz
	1893478	GB 110V 50Hz
	1893479	USA 120V 50/60Hz
	1893480	KR 220V 60Hz
62	2295192	D 230V 50/60Hz
	2295195	CH 230V 50/60Hz
	2295194	GB 110V 50Hz
	2295193	USA 120V 50/60Hz
	2295196	KR 220V 60Hz
63	1951625	



Versandanschrift
Address
Adresse du destinataire
Indirizzo di trasporto
Dirección de expedición

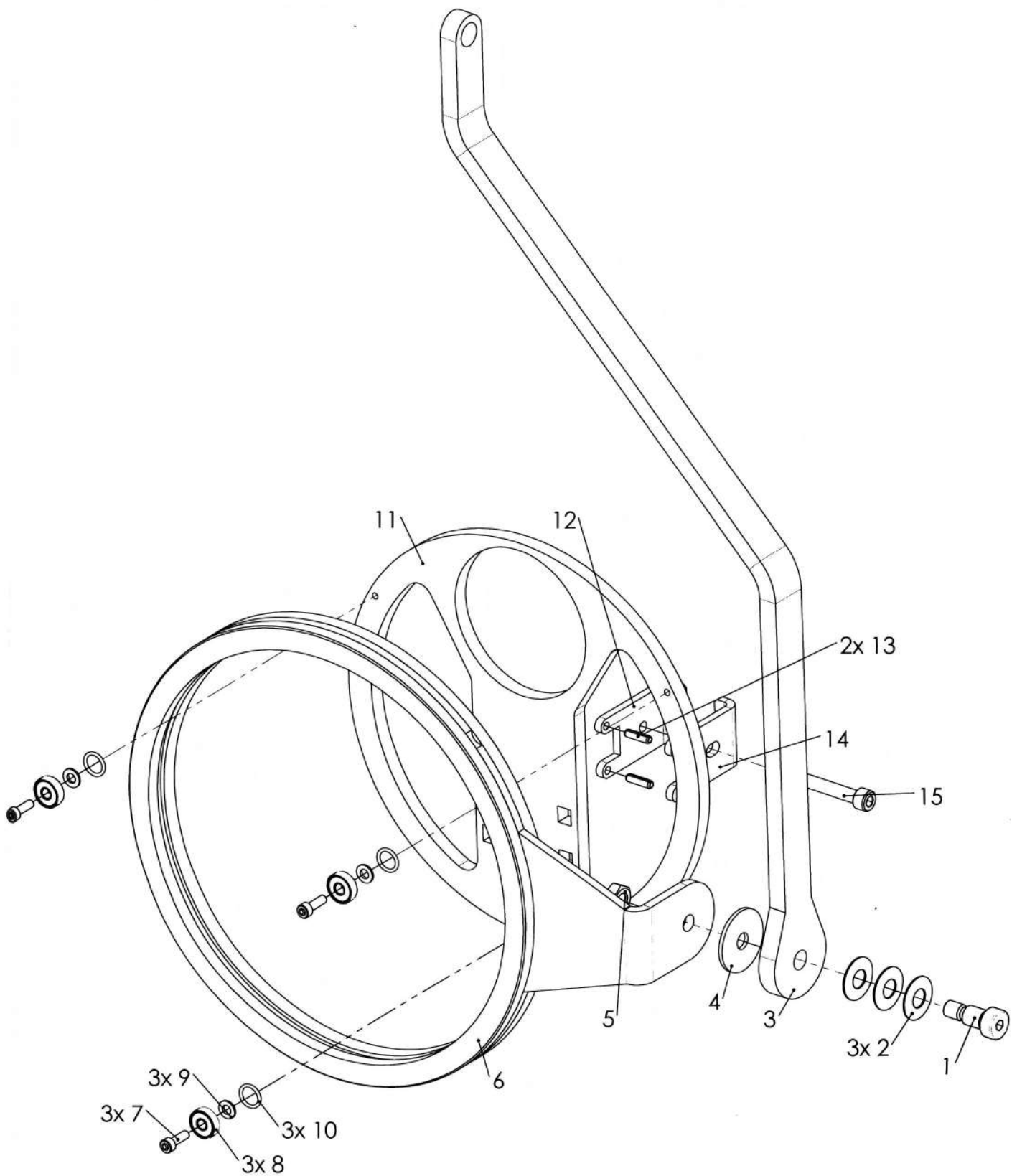
Fax.-No







0976671			
订货号 备件			
No. D'ORDINE	PEZZO DI RICAMBIO	7	0014540
NO. DE REF.	PIEZA DE RECAMBIO	8	0027707
NO. DE REF.	PIECE DE RECHANGE	9	0016144
ORDER NO.	SPARE PART	10	4144726
NO BEST.-NR.	ERSATZTEIL	11	0117849
1	0016560	12	0117852 TF 350-0 / -2
2	0030872		0249779 TF 350-4
3	0117851	13	0011525
4	0119298	14	0117853 TF 350-0 / -2
5	0022373		0249778 TF 350-4
6	0117847	15	0015059





1893306	Motor DSS 1400 DSS 1050	D 230V 50/60Hz		
1893307		CH 230V 50/60Hz		
1893308		GB 110V 50Hz		
1893309		USA 120V 50/60Hz		
1893306		KR 220V 60Hz		
2007333		CN 220V 50Hz		
订货号 备件		516	1898503	
No. D'ORDINE PEZZO DI RICAMBIO		517	1898504	
NO. DE REF. PIEZA DE RECAMBIO		518	1898533	
NO. DE REF. PIECE DE RECHANGE		519	1898534	
ORDER NO. SPARE PART		520	1898535	
NO	BEST.-NR.	ERSATZTEIL		
501	1806246			
502	2301123			
503	1870683			
504	1881659			
505	1870620			
506	0021105			
507	0100849			
508	1870681			
509	0137468			
510	1898541	110 - 120V		
	1898460	220 - 230V		
511	1898532			
512	1898513			
513	1898514			
514	1898547	110 - 120V		
	1898548	220 - 230V		
515	1898515			

