STAUFF Press
Cutting Ring Final Assembly Machine
Type SPR-PRC-POC-A-A

IoT

Product Description

The STAUFF Press Assembly Machine SPR-PRC-POC-A-A allows the pressure/position-controlled final assembly of cutting rings from the Extra-Light Series (LL), the Light Series (L) and the Heavy Series (S) according to ISO 8434-1 / DIN 2353 on tube ends with outer diameters between 4 mm and 42 mm.

The machine is designed as a robust table-top device for continuous operation in the workshop. It is used in connection with hardened and wear-resistant assembly studs FI-FMK and support plates FI-GP which are specially designed for the machine-assisted assembly.

The combined pressure/position-control of the device allows wear on the assembly tools to be detected in time before it can have a negative influence on the assembly result. Maximum service life of the tools is achieved through careful handling of the components and practical operation of the assembly machine. Other factors are proper storage (protected against contamination and corrosion), regular cleaning and lubrication (with suitable lubricants) and thorough preparation of the tube ends before assembly (cutting, deburring and cleaning).

Short times for tool changes, setup and assembly make it possible to carry out series assembly of cutting rings as well as assembly of small and medium quantities with a high level of economic efficiency, reproducibility and process reliability. Among other things, this is achieved with the RFID transponders – which are integrated into the support plates for automatic tool size identification as a standard – and with the tool contact switch: this allows assembly processes to be automatically started and completed by simply pushing the tube end into the assembly stud without having to press any buttons. The assembly area is secured against interference by a light grid to comply with current accident prevention regulations.

With machine-assisted **final assembly**, the cutting ring has already cut 100% into the tube and the fitter only has to tighten the union nut by 30° (corresponds to 1/12 turns) from the fix point. Please pay attention to the corresponding assembly instruction.

Final assembly (100%) minimises the risk for errors (insufficient or excessive manual tightening) and the resulting leak potentials which can often lead to time consuming and expensive machine downtimes and environmental impact. Due to the time benefits during final tightening, final assembly by machine also generates clear saving potentials compared to manual direct assembly as well as to machine-assisted pre-assembly.

In case of incorrect or incomplete assembly where pressure and position parameters significantly deviate from the values stored in the machine, it automatically stops the assembly process and displays a corresponding warning message on the operating panel.





Operating elements of the assembly machine



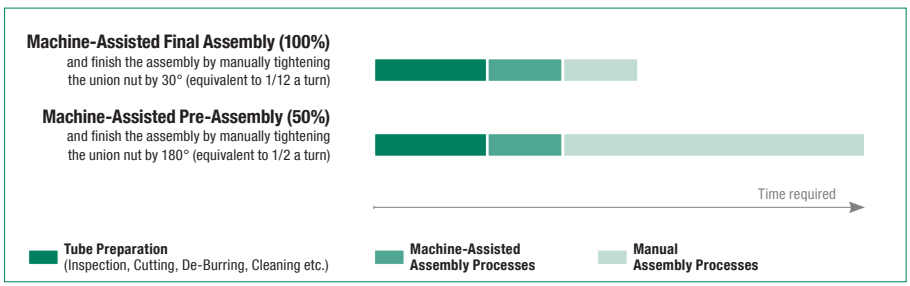
Noise-reducing tool tray with durable rubber mat



Electrical connection plug and Ethernet port (RJ45)



Lateral handle bars and rubber machine feet with suitable clearance height



Comparison of the total times required for the assembly and installation of cutting ring connections (medium size)

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Characteristics

Performance

- final assembly (100 %)
- Short times for tool changes, setup and assembly
- Tool size detection via RFID transponders in the support plates
- Automatic assembly start through integrated tool contact switch
- Tool wear detection through combined pressure/position-control
- Internal memory for up to 9 assembly programs which can be selected on the operating panel: predefined are tube materials steel E235 and E355 as well as stainless steel 316; parameters for other materials (copper, CuNiFe, Tungum, polyamide etc.) can be added by the manufacturer if required
- Counters for lot/batch sizes and total quantities (separated by tool size)
- Documented process control through programmable logic control (PLC)
- Predefined menu languages: English, German, French and Italian
- Manual pressure adjustment possible

Design

① Robust and ergonomically designed machine housing
② Optimised assembly area, which allows processing of tubes with low bending radii (to at least 31 mm / 1.22 in distance from the tube axis to the interfering edge of the machine housing) or complex geometries
③ Noise-reducing tool tray with durable rubber mat
④ Lateral handle bars as attachment points for transport (e.g. with lifting belts)
⑤ Secure positioning thanks to flexible rubber machine feet
⑥ Type plate, with technical data, serial number, year of manufacture, etc.

Operating Elements

⑦ Operating panel for display and selection of all relevant settings and assembly parameters
⑧ Button for definite confirmation of entries made on the operating panel
⑨ Status light to indicate readiness for operation and running assembly processes

Safety Devices

⑩ Main power switch (can be secured against unauthorised actuation when required)
⑪ Separate emergency stop button to immediately stop all machine movements
⑫ Light grid to protect users when reaching into the assembly area

Connections (at the back of the machine)

⑬ Electrical connection according to IEC 60309 CEE 16A (cable length: 4 m / 13.12 ft) and Ethernet connection (RJ45) for maintenance and data input by the manufacturer

Assembly Tools

⑭ Wear-resistant assembly stud FI-MFK
⑮ Support plate FI-GP with RFID transponder

Technical Data

Area of Application

▪ Function:	final assembly (100%) of cutting rings on metric tube ends
▪ Operating principle:	Assembly with combined pressure/position-control
▪ Series and diameters:	Extra-Light Series (LL): 4, 6, 8, 10, 12 mm Light Series (L): 6, 8, 10, 12, 15, 18, 22, 28, 35, 42 mm Heavy Series (S): 6, 8, 10, 12, 14, 16, 20, 25, 30, 38 mm

Dimensions / Weight

▪ Dimensions (W x D x H):	780 mm x 650 mm x 305 mm 30.70 in x 25.29 in x 12.00 in with lateral handle bars (detachable)
▪ Distance from the tube axis to the interfering edge of the machine housing:	80 mm / 3.15 in
▪ Clearance height:	65 mm / 2.56 in (height of the machine feet) enables simple and safe transport using a forklift or pallet jack
▪ Weight:	95 kg / 210 lbs (incl. operating fluid, excl. assembly tools)

Materials

▪ Machine frame:	Aluminium
▪ Machine housing:	Steel, painted
▪ Tool tray:	NBR (Perbunan®)
▪ Machine feet:	Natural rubber
▪ Assembly studs:	Steel, PVD coated
▪ Support plates:	Steel, browned

Motor Configuration

▪ Power supply:	400 V AC @ 50 Hz - 3 phases 460 V AC @ 60 Hz - 3 phases
▪ Current consumption:	2,7 A
▪ Connected load:	0,9 kW
▪ Electrical connection:	Phase reversing plug according to IEC 60309 CEE 16A
▪ Cable length:	4 m / 13.12 ft

Alternative motor configurations and plug types are available on request.
Please contact STAUFF for details.

Hydraulic System

▪ Operating fluid:	Hydraulic oil Shell Tellus S2 MA 46 or equivalent (filled and ready for operation when delivered)
▪ Fluid volume:	4 litres / 1.06 US Gallon
▪ Max working pressure:	450 bar / 6527 PSI

Operating Conditions

▪ Storage temperature:	-10°C … +70°C / +14°F … +158°F
▪ Ambient temperature:	+15°C … +35°C / +59°F … +95°F
▪ Ambient conditions:	Dry, no condensing humidity, operation in horizontal position only
▪ Noise emission:	less than 66 dB(A) as per EN ISO 11202 at full-load operation with maximum tube dimensions

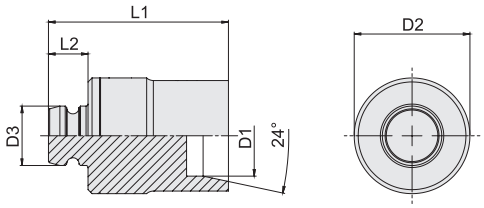
STAUFF Maintenance Contracts
Please contact STAUFF for a maintenance contract, that provides optimum service for your STAUFF assembly machine.

STAUFF Machine Rental
Please contact STAUFF for a rental machine and further details of what this service can offer.

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Cutting Ring Assembly Stud for Machine-Assisted Assembly
Type FI-MFK ▪ Series LL / L / S





Series	Tube OD (mm/in)	Dimensions (mm/in)				Weight (kg/lbs) ca.	Ordering Codes
	D1	D2	D3	L1	L2	per 100	
LL	4	30	14,8	50	10	12,98	FI-MFK-04LL-W100
	.16	1.18	.58	1.97	.39	28.55	
	6	30	14,8	50	10	13,28	FI-MFK-06LL-W100
	.24	1.18	.58	1.97	.39	29.22	
	8	30	14,8	50	10	13,68	FI-MFK-08LL-W100
	.31	1.18	.58	1.97	.39	30.10	
L	6	30	14,8	50	10	13,57	FI-MFK-06L-W100
	.24	1.18	.58	1.97	.39	29.85	
	8	30	14,8	50	10	14,01	FI-MFK-08L-W100
	.31	1.18	.58	1.97	.39	30.82	
	10	30	14,8	50	10	14,63	FI-MFK-10L-W100
	.39	1.18	.58	1.97	.39	32.18	
	12	30	14,8	50	10	16,09	FI-MFK-12L-W100
	.47	1.18	.58	1.97	.39	35.39	
	15	30	14,8	50	10	16,63	FI-MFK-15L-W100
	.59	1.18	.58	1.97	.39	36.58	
	18	30	14,8	50	10	18,23	FI-MFK-18L-W100
	.71	1.18	.58	1.97	.39	40.10	
	22	30	14,8	49	10	19,13	FI-MFK-22L-W100
	.87	1.18	.58	1.93	.39	42.08	
	28	33,8	14,8	48	10	24,43	FI-MFK-28L-W100
	1.10	1.33	.58	1.89	.39	53.74	
	35	42,8	14,8	45	10	32,72	FI-MFK-35L-W100
	1.38	1.69	.58	1.77	.39	71.99	
	42	49,8	14,8	44	10	41,17	FI-MFK-42L-W100
	1.65	1.96	.58	1.73	.39	90.58	
S	6	30	14,8	50	10	14,14	FI-MFK-06S-W100
	.24	1.18	.58	1.97	.39	31.11	
	8	30	14,8	50	10	14,68	FI-MFK-08S-W100
	.31	1.18	.58	1.97	.39	32.29	
	10	30	14,8	50	10	15,23	FI-MFK-10S-W100
	.39	1.18	.58	1.97	.39	33.51	
	12	30	14,8	50	10	15,89	FI-MFK-12S-W100
	.47	1.18	.58	1.97	.39	34.95	
	14	30	14,8	49	10	15,98	FI-MFK-14S-W100
	.55	1.18	.58	1.93	.39	35.15	
	16	30	14,8	49	10	16,65	FI-MFK-16S-W100
	.63	1.18	.58	1.93	.39	36.64	
	20	30	14,8	45	10	16,43	FI-MFK-20S-W100
	.79	1.18	.58	1.77	.39	36.15	
	25	33,8	14,8	42	10	19,02	FI-MFK-25S-W100
	.98	1.33	.58	1.65	.39	41.84	
	30	39,8	14,8	40	10	22,88	FI-MFK-30S-W100
	1.18	1.57	.58	1.57	.39	50.34	
	38	49,8	14,8	36	10	26,41	FI-MFK-38S-W100
	1.50	1.96	.58	1.42	.39	58.10	

Materials / surface finishings: **W100** Steel, PVD coated

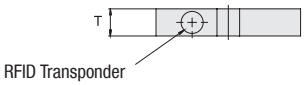
Accessories

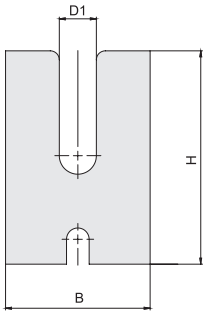


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Support Plate for Machine-Assisted Assembly
Type FI-GP ▪ Series LL / L / S







Series	Tube OD (mm/in)	Dimensions (mm/in)			Weight (kg/lbs) ca.	Ordering Codes
	D1	B	H	T	per 100	
LL	4	80	118	15	104,43	FI-GP-04LL-W101
	.16	3.15	4.65	.59	229.75	
	6	80	118	15	102,97	FI-GP-06LL-W101
	.24	3.15	4.65	.59	226.53	
	8	80	118	15	101,46	FI-GP-08LL-W101
	.31	3.15	4.65	.59	223.22	
L	6	80	118	15	102,97	FI-GP-06L-W101
	.24	3.15	4.65	.59	226.53	
	8	80	118	15	101,46	FI-GP-08L-W101
	.31	3.15	4.65	.59	223.22	
	10	80	118	15	99,93	FI-GP-10L-W101
	.39	3.15	4.65	.59	219.84	
	12	80	118	15	98,35	FI-GP-12L-W101
	.47	3.15	4.65	.59	216.37	
	15	80	118	15	95,91	FI-GP-15L-W101
	.59	3.15	4.65	.59	211.01	
	18	80	118	15	93,40	FI-GP-18L-W101
	.71	3.15	4.65	.59	205.47	
	22	80	118	15	89,91	FI-GP-22L-W101
	.87	3.15	4.65	.59	197.80	
	28	80	118	15	84,41	FI-GP-28L-W101
	1.10	3.15	4.65	.59	185.69	
	35	80	118	15	77,56	FI-GP-35L-W101
	1.38	3.15	4.65	.59	170.64	
	42	80	118	15	70,27	FI-GP-42L-W101
	1.65	3.15	4.65	.59	154.59	
S	6	80	118	15	102,97	FI-GP-06S-W101
	.24	3.15	4.65	.59	226.53	
	8	80	118	15	101,46	FI-GP-08S-W101
	.31	3.15	4.65	.59	223.22	
	10	80	118	15	99,93	FI-GP-10S-W101
	.39	3.15	4.65	.59	219.84	
	12	80	118	15	98,35	FI-GP-12S-W101
	.47	3.15	4.65	.59	216.37	
	14	80	118	15	96,73	FI-GP-14S-W101
	.55	3.15	4.65	.59	212.81	
	16	80	118	15	95,08	FI-GP-16S-W101
	.63	3.15	4.65	.59	209.18	
	20	80	118	15	91,67	FI-GP-20S-W101
	.79	3.15	4.65	.59	201.68	
	25	80	118	15	87,20	FI-GP-25S-W101
	.98	3.15	4.65	.59	191.84	
	30	80	118	15	82,50	FI-GP-30S-W101
	1.18	3.15	4.65	.59	181.49	
	38	80	118	15	74,49	FI-GP-38S-W101
	1.50	3.15	4.65	.59	163.88	

Materials / surface finishings: **W101** Steel, browned

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STAUFF Press
Optional tool holder for tubes with small bending radii
Type SPR-PRC-POC-RTH



The assembly head differs from the standard model by the holder for the cutting ring assembly socket being moved upwards, shortening the distance from the tube axis in the assembly socket to the upper edge of the machine from the standard 77 mm to 31 mm.

This means that cutting rings can be fitted with ease to tubes with small axis distances.

If tubes with complex geometries are to be handled (e.g. with short tube end and 90°tail), the safety light barrier, which secures the assembly area, can be disabled if required.

The optional assembly head enables tubes with a diameter of 6 to 18 mm in the Light Series and 6 mm to 16 mm in the Heavy Series to be handled.

Existing assembly tools can also continue to be used. The user simply needs to import new parameter sets into the machine.

STAUFF Press
Optional Cloud connection allows preventive maintenance via remote access and facilitates the documentation of assembly processes
Type SPR-PRC-POC-A-A-IOT



Cutting ring assembly machines type SPR-PRC-POC can be equipped at the factory with a built-in module for direct connection to a cloud operated by STAUFF. This solution is realised with an integrated SIM card which can be used in all industrial regions of the world.

This enables software updates, for example, without having to connect the machine to a local network on site. Parameter sets, which have been determined by STAUFF for non-standard tube materials can also be transferred quickly and directly to the machine in this way.

Customers are given access to the cloud via a protected online portal, where they can get detailed information on the assembly processes performed, among other things.

The required data security is guaranteed by encryption in both directions.

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Assembly Tool Magazine
Type SPR-TM



- Provides safe and convenient storage for up to 10 assembly studs (type FI-MFK) as well as up to 10 support plates (types FI-GP and FI-GP-PRC) for the machine-assisted cutting ring assembly
- Assembly studs and support plates are not included in the scope of delivery for this item and have to be ordered separately

External Foot Control Switch
Type SFO/PRC-POC-FS



- Enables the operator to trigger assembly processes from a larger distance to the machine (cable length: 5 m / 16.40 ft)