

Operating Instructions

PF A - 115

Version A, B and C



TEKUWA GmbH

**Machines and Tools for
processing wires and cables**

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PFA115e.doc

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2 Information and Regulations

2.1 General Information

The PFA 115 is a user-friendly and solid de-reeler equipped with a motorized axle and controlled by a micro-processor.

This machine is designed to transport fully automatically practically all commonly used materials such as wires, cables, foils, paper, sheet copper, plastic tubes, corrugated, contracting and insulating tubes, etc. without any traction to the master machine such as a cutting machine.

The acceleration and brake ramps as well as the maximum speed are freely programmable.

The drum weight is 15 kg maximum. Depending on the model the length of the axle is 350mm (Type A), 450mm (type B) and 550mm (type C).

Please, observe the following general instructions so that the de-reeler will serve well over many years:

Before putting the PF A 115 into operation, read the operating instructions .

2.2 Using the Machine as agreed

The de-reeler PF A 115 is solely to be used for prefeeding wires, cables and profiles up to a drum weight of maximum 15 kg.

Site: Install the machine in a dry room without the danger of fire and explosion.

The operator has to make sure that the machine is installed at the right working height and that the illumination is sufficient.

Attention ! Please, really take into consideration!

If this machine isn't fitted to the machine table **when being installed, it's only permitted to mount cable** drums of a weight of up to 3 kg maximum.

The machine must be fitted if the drums have more than 3 kg.

2.3 Safety Regulations

for electrical, pneumatic machines used in industry.

The equipment described is designed for being operated in the cable manufacturing industry.

This equipment can injure by moving parts and high voltages, therefore it is essential that guards for both electrical and mechanical parts are not removed and sufficient maintenance and safety precautions are observed.

The persons responsible for the safety of the machine should observe and ensure that

- only qualified personnel familiar with the equipment are permitted to position, operate and maintain the machine.
- system documentation and operating instructions are always available to these persons and are strictly observed by them at all times.
- all non-qualified personnel are kept at a safe distance from the machine.

Qualified personnel are persons who have been authorized by the persons responsible for the safety of the machine to do the necessary works and who can recognize the possible hazards involved and avoid them because of their education, experience and instruction as well as their knowledge of relevant norms, regulations, accident prevention regulations and the internal conditions.

(For more detailed definitions for qualified employees see VDE 105 or IEC 364.)

These safety notes do not represent a complete list of the steps necessary to ensure safe operation of the machine. If you wish further information, please contact your nearest TEKUWA GmbH representative.

The information in these operating instructions and the specifications, processes, drawings and circuitry described are for guidance only and must be checked with regard to their applicability to your own specific applications.

TEKUWA GmbH does not guarantee the suitability of the processes, drawings and circuitry described in this description for individual applications.

The specifications in these operating instructions describe the features of the machine, without guarantee.

The finish and quality of the de-reeler is in conformity with the current safety and VDE-regulations. Besides the specific requirements of the country where the machine is operated must be observed.

Improper use and technical alterations of the machine will lead to the loss of guarantee and to the lapse of right to operate the machine.

The removal of safety parts such as cover, sensors, etc. will also lead to the immediate lapse of right to operate the machine.

TEKUWA GMBH personnel have carefully made and checked the hardware and software of the machine as well as the documentation of the product, but they cannot be held responsible for its absolute accuracy.

Technical alterations reserved to TEKUWA GmbH.

2.4 EC-Declaration of Conformity

according to the EC- guide line of machines 98/37 EG, appendix II A

We hereby declare that the

De-reeler

Model: _____

Serial number: _____

Year of construction: _____

Make: Tekuwa GmbH

is conform to all relevant requirements of the EC- Machinery Directive 2006/42 / EC of 17 May 2006, as last amended by Article 77 of the Ordinance of 5 February 2013 (OJ. L 60, p.1).

We further declare compliance with the relevant provisions of the following guidelines:

2014/30/EU Directive of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility

Applied harmonized standards in particular:

EN ISO 12100:2010
EN ISO 13857:2008
EN 60204-1:2006/AC:2010
EN ISO 13849-1:2015
EN 349:1993+A1:2008
EN ISO 13850:2015
EN ISO 14119:2013

For the compilation of the technical documentation is authorized:

Tekuwa GmbH, Finsterbachstraße 13, D-79664 Wehr

(Place and date of making out)

(Company stamp, legally valid signature)

3. Abridged Operating Instructions PF A – 115 Model A, B, C

3.1 Switch Description

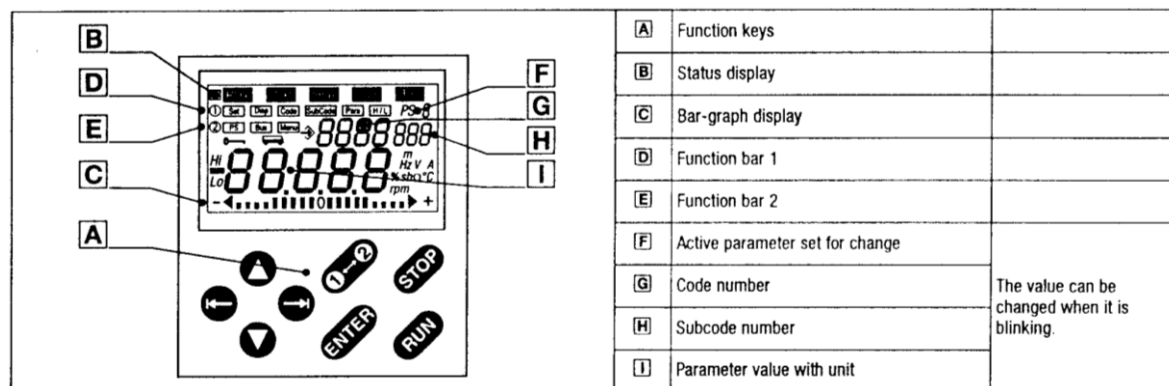
Potentiometer left : Speed adjustment of the basic speed 0 - 10

Switch left (Speed): If the switch is put up, the basic speed of the PF A -115 is controlled by the potentiometer (left).

If the switch is put down, the PF A -115 is controlled by an external speed regulation positioned on the SCM, for example.

(A connection cable with a 5-pole-plug is necessary.)

3.2 Programming Unit



3.3 Programming the Machine

Keys sequence:

1. Press the function key "STOP"
2. Press the function key \rightarrow , until **CODE** is displayed in the function bar 1(see 3.2,D).
3. Press the function key Δ " until you get to the required parameter such as 0011.
4. Use the function key \rightarrow to change to **Para** in the function bar 2.
5. Use the function key Δ " or ∇ " to change the value .
6. If necessary, confirm by pressing the function key ENTER .
7. Return to **Disp** in the function bar 1, using the function key \leftarrow .
8. Press the function key " RUN " .
9. If necessary, switch off the machine and then on again.

For further technical details, please, see the enclosed description by LENZE.

3.4 Notes to the PFA

If the PF A -115 is connected to a Tekuwa cutting machine, both machines must be connected via a 5-pole-connection cable.

Then the Tekuwa machine gives the starting signal automatically to the PF A when the belt-feed of the master machine starts running.

Turning the potentiometer (on the left side of the PF A) the basic speed is adjusted so that the speed of the PF A is slower than that of the Tekuwa machine.

The swing arm additionally regulates approximately 15% of the maximum speed.

3.5 The switch position on the PF A

Main switch is set for "on".

Put up the left-hand switch (Speed).

Programming unit is set for "Run".

Right-hand switch is put down.

After the initial programming of the PF A 115 the programme isn't changed any more.

After switching the main switch on, the machine is ready for operation.

4. Operating the Control Unit

The enclosed short description of the "frequency inverters" describes how to operate and programme the control unit.

The TEKUWA GmbH has set the following values:

- 0050 The output frequency is only displayed
- 0011 100 Maximum output frequency
- 0012 1 Running up time main scheduled value (mobile arm)
- 0013 1 Deceleration time main scheduled value (mobile arm)
- 0105 0,5 Deceleration time QSP (Basic speed)
- 220 1 Running-up time additional scheduled value (Basic speed)

The remaining values correspond to those set by the manufacturer of the inverter.

Follow the booklet safety instructions in these, even if they're not mentioned in these operating instructions when changing any values.

Attention!! Note!!

There's a special programme installed on the frequency converter by the company TEKUWA .

For this reason it ***isn't possible*** to replace this frequency converter by another one of the same kind without having installed the TEKUWA's programme beforehand.

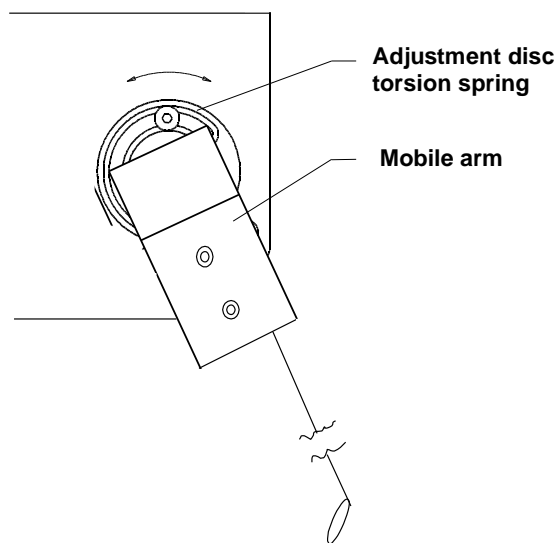
5. Mobile Arm

The mobile arm regulates the prefeeding speed of the prefeeder. The maximum prefeeding speed is reached when the mobile arm is in the horizontal position.

There's more material put at the disposal of the following machine than this one can work. As a result of this, due to the own weight of the mobile arm and the material the material slackens, which reduces the prefeeding speed.

The bottom position of the mobile arm stops the drive.

In order to adjust thin and light materials, the share of weight of the mobile arm must be compensated by means of the additionally adjustable torsion spring until an instable equilibrium is reached.



Picture: Mobile arm in the position Drive " STOP "

Mobile arm in horizontal position:

If the mobile remains in horizontal position for more than 1 sec., the PFA automatically stops.

Initiating a restart of the machine:

1. by pressing the key STOP (control panel)
2. Then by pressing the key RUN (control panel)

If the mobile arm is in horizontal position, it isn't possible to restart the machine.

5.1 Enabling Signal

When stopping the PFA by means of the mobile arm, the external enabling signal is deactivated and is activated again when the machine is restarted.


5.2 Adjusting the start position of the mobile arm

- Have the machine run, put the mobile arm into horizontal position.
Now the machine must stop and sets to ERR(error) 161
- If not, the top of the potentiometer in the machine must be adjusted until this function has been carried out (see the enclosed supplement).

Adjusting via the software:

The regulator by Lenze is equipped with a reinforcement parameter by means of which it's possible to regulate the start position of the mobile arm via the programme.

For this process proceed as follows:

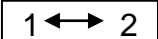



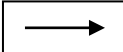

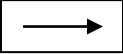
- Switch on the machine.
- The switch AUTOMATIC ON must be set to OFF.
- The switch SPEED EXTERN must also be set to OFF.
- The potentiometer SPEED must be set to 0.
- Activate the key . The machine runs when the mobile arm is lifted up.



If the mobile is adjusted wrongly, it may be that the machine runs at a low speed, even if the arm is in the lower position at the stop position.

When you lift up the mobile arm, the machine must run.

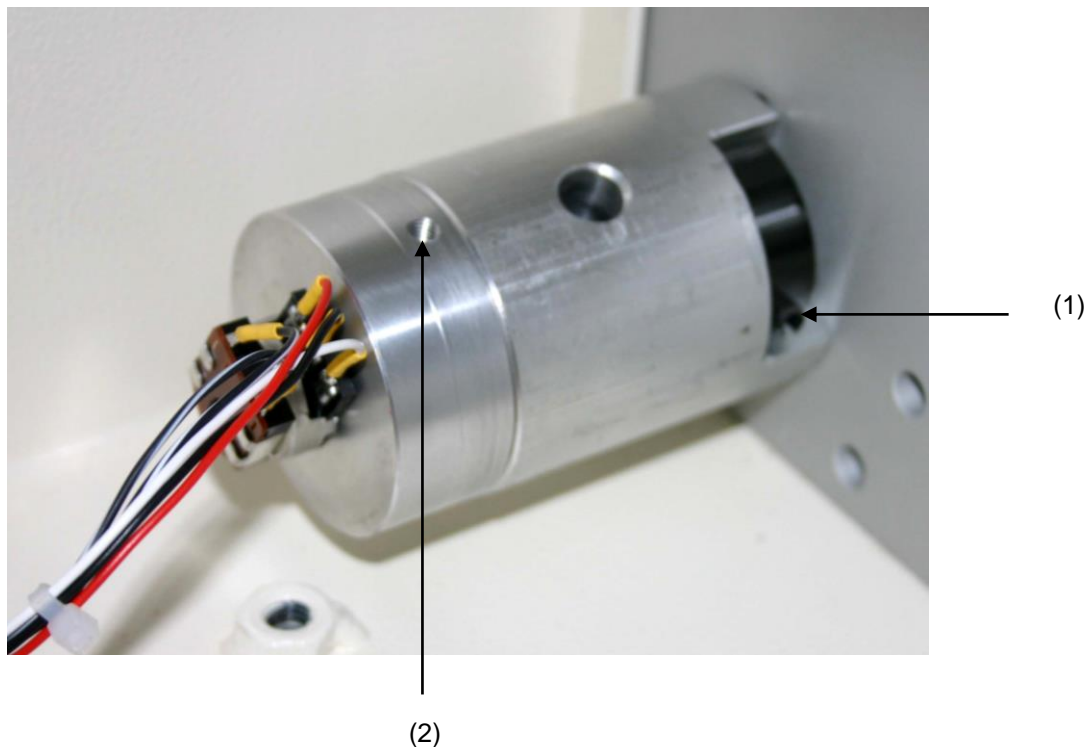
This is necessary for the later precise adjusting of the required start position via the software.

Please, proceed on the display as follows:

- Press the key 
- The number 1 is flashing while being displayed.
- Press the arrow key 
- USER is displayed
- Press the arrow key 
- ALL is displayed
- Press the arrow key 
- Press the arrow key 
- Now you're in the field "code"
- Press the key  several times until you reach the code 26
- Press the arrow key  until you are in the field "parameter".
- Now the second line is flashing with a value in %.

- By pressing the arrow keys  or  the operating point is adjusted at which the belt feed system doesn't run any more when the mobile arm is in stop position.
- When the operating point is adjusted correctly, the machine is switched off by the main switch.
- After switching on the machine again, it works as programmed.

5.3 Mechanical Adjustment of mobile arm



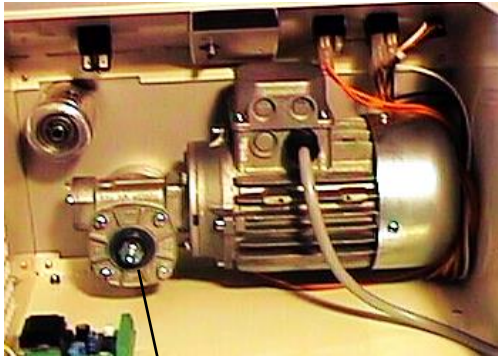
Procedure:

- Mechanical Stop (1):
 - The mobile arm must be fixed in horizontal position when the mechanical stop takes effect.
- Unscrew the endless screw (2) :
 - Turn the cover of the potentiometer as long as the switch of the potentiometer switches in the stop position (mobile arm horizontal) and the machine stops.
 - Screw the endless screw again.

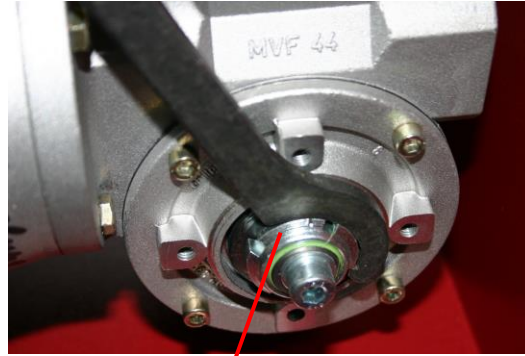
6. Accident Prevention / Torque Limitation

Mechanical: Torque limitation

- by tightening the nut (1), the torque is increased.
- By unscrewing the nut (1), the torque is reduced.



(1)



(1)

Attention!!

The torque must be only adjusted in the way that the drive shaft can still be stopped by hand.

Safety information:

The machine PF A 115 must be fixed to the floor, otherwise there's the danger that the machine moves during the operation and therefore there's a risk of being injured.

The torque must be adjusted according to the instructions.

Attention:

If the torques of the machine are set too high, there's a risk of injuries !

In this case the customer must ensure that a special protection prohibits the machine being touched while being in operation.

7. Technical Description

Mobile arm:	Torsionally supported in bearings with adjustable torque compensation
Revs:	Depending on the gearing 0 – 200 rpm
Electrical drive:	AC motor, 3-phases via frequency inverter
Operating voltage:	220V/230V AC
Consumption:	Depending on the motor approx. 200 watt
Noise emission:	less or equal than 40dB(A)
Elect. Control connections to:	TEKUWA GmbH machines SMT, SCM Weidmüller cutting machine CCM
Dimensions:	HxWxD 270x360x290
Total weight:	approx. 20kg
Colour:	RAL 1013
De-reeling reel:	- useable shaft length Version A 350mm Version B 450mm Version C 550mm - Shaft diameter 18mm - Load bearing capacity: 15 kg

8. List of Spare Parts

26.01.001K	Casing complete
26.01.005	Top for casing
26.01.010	Front plate
26.15.020	Cone
26.15.025	Drive shaft type A, 350mm
26.15.025A	Drive shaft type B, 450mm
26.15.025B	Drive shaft type C, 550mm
26.35.001K	Gears with overload clutch
20.40.001	Tension Top For Tension Arm
20.40.005	Lagerflansch für Regler
20.40.010	Cover For Regulator
20.40.015	Bending Spring
20.40.020	Adjusting Shaft
20.40.052	bracket for mobile arm
20.40.053	fastening plate for mobile arm
5520	Gear motor
5650	Frequency converter Lenze Unit 370 watt
5650C	Control Panel for frequency converter
5960	Potentiometer
5960S	Potentiometer for mobil arm
6041	Main switch ON / OFF

10. Wiring Scheme

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