ARTOS
ENGINEERING FRANCE

OPERATING INSTRUCTIONS

PREFEEDER PF-121

Photo: PF-121 without foot

TEKUWA GmbH

Machines and Tools for processing wires and cables

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1. List of Contents

2 Informations and Regulations

2.1 General Information

The prefeeder PF-121 is a user-friendly and solid machine controlled by a micro-processor.

This machine is designed to prefeed the connected machines such as cutting machine automatically with practically all commonly used materials such as wires, cables, foils, paper, sheet copper, plastic convoluted, shrink and insulating tubing, etc.

The feeder opening of this prefeeder is up to approx. 30mm high maxi, the feeder opening is up to 30mm, 50mm, 75mm, 95mm, 115mm wide depending on the model.

The belt-feed with mechanical anti-locking device is driven by a vector controlled AC motor with programmable start and brake-ramp control.

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

1.) Before putting the pre-feeder into operation, read the operating instructions of the prefeeder and those of the frequency inverter.

2.) The feedbelts should be replaced at the first signs of wear in time so that the tooth rollers and the feed plain rollers aren't damaged.

3.) Please, have the sense to check if the material doesn’t exceed the pulling forces that are maximum possible.

2.2 Using the machine as agreed

The prefeeder PF 121 is solely to be used for transporting wires, cables and profiles up to a height of approx. 30mm and up to a width of 115mm depending on the model.

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.

Note
This device is intended for use in applications as described in the operating instructions only. Any other form of usage is not permitted and can lead to accidents or destruction of the unit. Any misuse will result in the expiry of all guarantee and warranty claims on the part of the operator against the manufacturer.

Warning: Danger
Using the selected product for purposes other than those specified or failure to observe the operating instructions and warning notes can lead to serious malfunctions that may result in personal injury or damage to property.

2.3 Safety Regulations

for electrical, pneumatic machines used in industry.

The equipment described is designed for being used in the cable processing 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 following points should be observed for the safety of the personnel:

- ***Only qualified personnel familiar with the equipment are permitted to position, operate and maintain the machine.***
- ***System documentation and operating instructions must be available and strictly observed at all times.***
- ***All non-qualified personnel are kept at a safe distance from the machine.***

A qualified person is someone who is familiar with all safety notes and established safety practices, with the installation, operation and maintenance of this machine and the hazards involved in order to avoid them.

(For chap. 2.4 “EC- Declaration of Conformity”)

These safety notes do not represent a complete list of the steps necessary to ensure safe operation of the machine. If you wish further specific 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 adapted 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 machine is in conformity with the current safety regulations, according to chap. 2.4, Declaration of Conformity, p.6). 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 checked this description and the equipment it describes, but they cannot be held responsible for its absolute accuracy.

Technical alterations reserved to TEKUWA GmbH.

2.3.1 Safety Devices

To avoid damages and to safeguard the operating personnel against accident injuries the machine has been equipped with several different safety devices such as safety cover, exit tube, etc..

	Caution
	Avoiding or putting one or several of these devices out of service is a gross misuse and relieves the manufacturer of any responsibility. We highly recommend to test the safety devices for their effect at frequent intervals.

2.3.1.1 Safety Devices For Protecting Persons

The operating personnel is protected by safety devices against risk of injuries which arise from the working equipment.

	Caution
	The authority responsible for operating the machine must ensure that before every start of every shift the effectiveness of all safety devices is checked for external damages or defects by competent, adequately trained personnel. Once any damage or defect has been discovered, the machine must be taken out of operation without any delay! It mustn't be put into service again until all damages and/or defects have been repaired and all safety devices are fully effective.

2.4 Original EC-Declaration of Conformity

Tekuwa GmbH

Finsterbachstraße 13, D-79664 Wehr

We, the company Tekuwa GmbH, declare that the machine described below

Prefeeder

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

Wehr,

(Place and date of making out) (Company stamp, legally valid signature)

3 Technical Description

3.1 Technical Specifications

- Speed of belt-feed: depending on the gearing 0 – approx. 5m/sec.
- Noise emission: less than or equal to 70dB(A)
- Air pressure: approx. 3 – 10 bar
- Dimensions (with foot): HxLxD 270x380x510mm
- Total weight: approx. 57 Kg
- Machine casing: approx. 40 Kg
- Foot: approx. 17 Kg

3.2 Mechanical Part

- Material guide: 2 adjustable guide bars are positioned in pairs in front of the belt-feed
- Belt-feed: Supported by three rollers with mechanical reverse locking device.

  Pneumatic opening and closing of the bel-feed with adjustable spring clamping pressure.
- Mobile arm: Supported in double ball bearings and adjustable torque-compensation.

3.3 Electrical Part

Power supply:	motor approx. 550 watt
Operating voltage:	220V/230V AC
Electrical drive:	Three-phase current motor of 0.55 KW
Electrical connexions to:	TEKUWA GmbH Cutting machine SC
	TEKUWA GmbH Cutting and stripping machine SCM
	Other machines after consulting Tekuwa GmbH

4 Functions

4.1 Connexions

4.1.1 Power Supply

The machine can be operated at an operating voltage of 220 / 230 V AC / 50 Hz.
(Special versions)

If not ordered differently, the Tekuwa company has set the operating voltage of the machine to 230 V / AC.

Electrical Connexions

(1) Female connector of 5 poles to connect to a Tekuwa cutting machine for external speed regulation 0 – 10 V
(2) Socket 230V / AC with installed fuse
(3) Plug connection for tube of compressed air (pneumatic opening and closing of the belt feed)

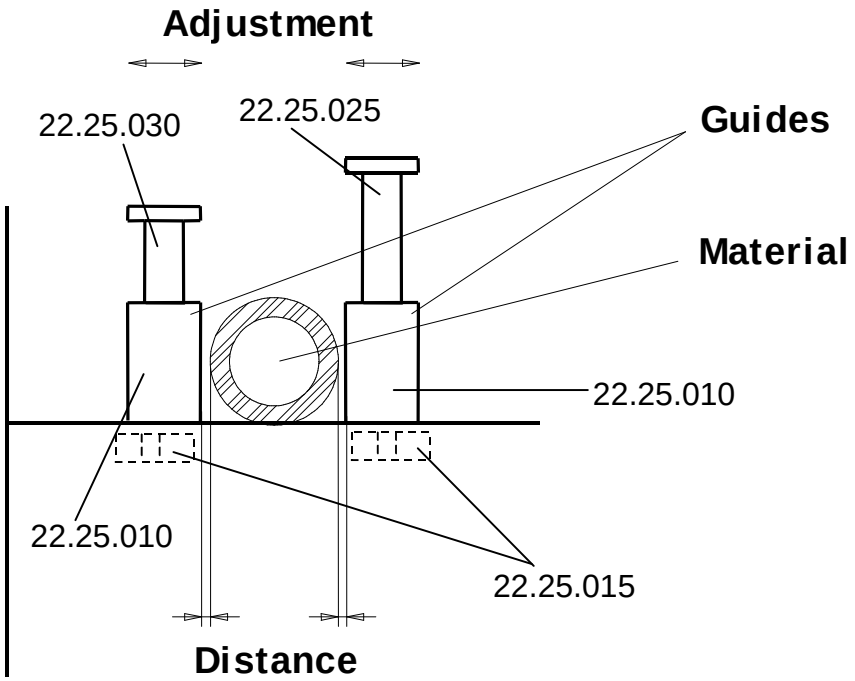
4.1.2 Compressed-Air Supply

Compressed air 6 -10bar dry air

4.2 Guide Bars

The material is positioned in and fed through by the pair of guide bars installed in front of the belt-feed.

The guide bars are to be adjusted so that the material can pass through easily.



Drawing: Adjustment of the guide bars

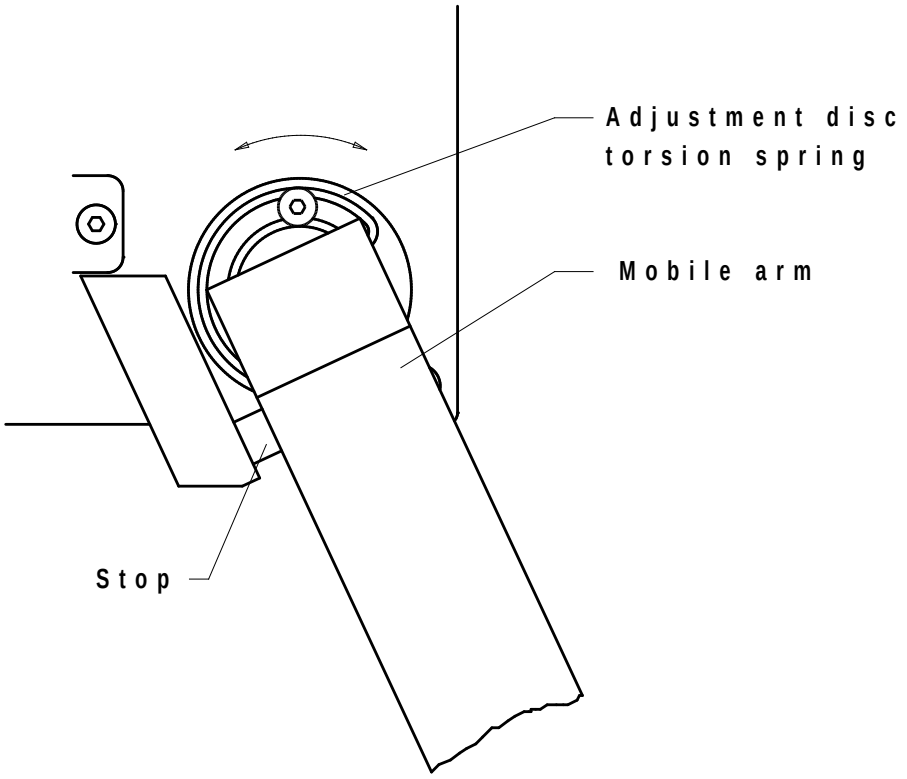
4.3 Mobile Arm

The mobile arm regulates the prefeeding speed of the prefeeder entre 0 and Vmax.. The maximum prefeeding speed is reached when the mobile arm is in horizontal position.

For security reasons the drive system is stopped with an error message in the horizontal position.

If the mobile arm is in the lower position, the drive is stopped.

For very thin and light materials, the share weight of the mobile arm can be compensated by means of the additional adjustable torsion spring until an instable equilibrium of the mobile arm is reached.



Drawing: Mobile arm in position Drive " STOP "

4.3.1 Adjusting the start position of the mobile arm

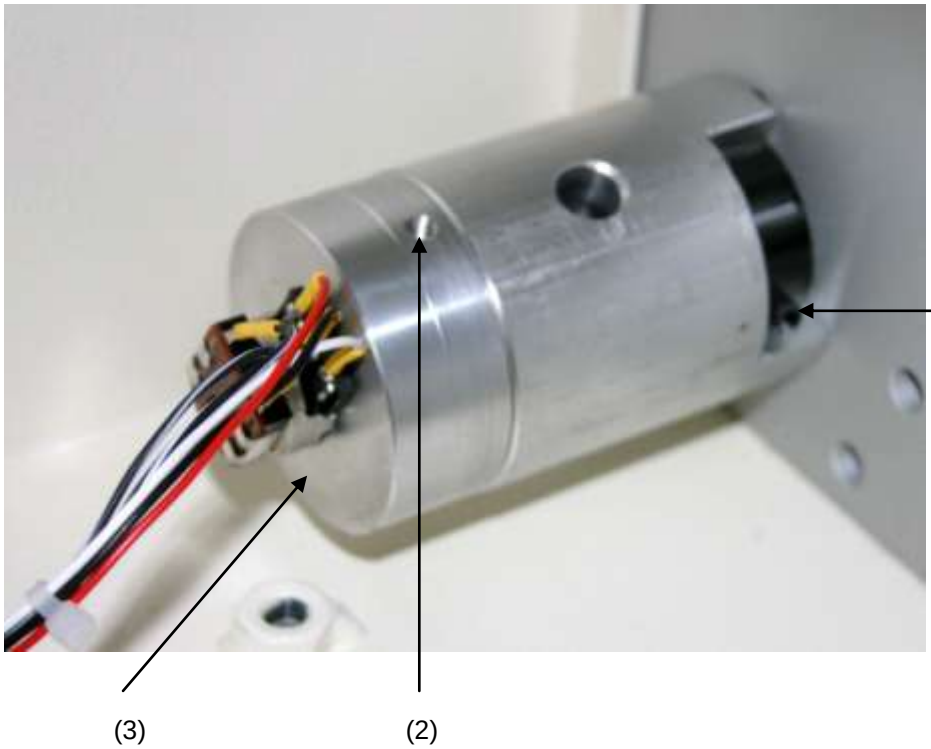
- Have the machine run, put the mobile arm into horizontal position.
  Now the machine must stop and sets to EF1(error)
- If not, the top of the potentiometer in the machine must be adjusted until this function has been carried out (see point 4.3.2).

Adjusting via the software

To adjust the mobile arm stop the machine by pressing the key STOP.

When the PF has been stopped, you can switch to the parameter entry by pressing the key ENTER several times.
The user must change over to the parameter 04.50 (see chapt. 5) and editing it by means oft he key ENTER. (The value „0“ is displayed).
When by pressing the arrow key „▲“ on the digital panel this value is set to „1“ and is confirmed by means of the key ENTER, the actual position of the mobile arm is taught-in as zero point by the control unit.

4.3.2 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 (3) as long as the switch of the potentiometer switches in the stop position (mobile arm horizontal) and the machine stops.
- After turning the cover (3), screw the endless screw (2) again.

4.4 Pressure Regulator

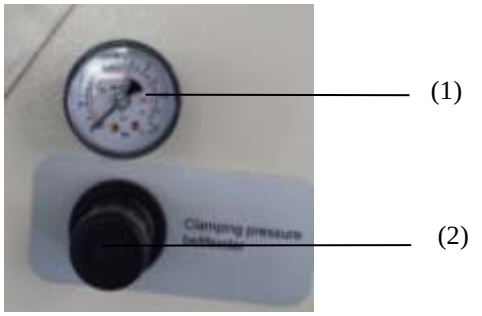
The pressure force of the belt-feed system can be adjusted by the pressure regulator according to the necessary clamping force pressure of the material that is to be transported.

Adjusting the pressure regulator :

Pull out the handle by approx.10mm .

If you turn it to the right, the pressure is increased.
If you turn it anti-clockwise, the pressure is decreased (s. picture).

A minimum pressure of approx. 3 bar is necessary for operating the drive.



(1) Pressure gauge
(2) Pressure regulator

4.5 Controlling the speed of the belt-feed

The feeding speed is controlled manually or automatically

1. by using the control knob „Speed“ (see chapt. 5.2.1) to set a basic speed
   Condition: The switch „Speed intern/extern“ must be set to „Speed Intern“.
2. via the mobile arm with installed potentiometer
3. via an external analogue input 0 – 10 V or potentiometer 10 kOhm
   Condition: The switch „Speed intern/extern“ must be set to „Speed extern“.
4. The release of the drive system is given via the switch „Freigabe intern“(internal release) or via the switch „Freigabe extern“(external release) with external release contact.
5. via RS-232 or RS-485 interface (option).

5 Putting into operation

Commission the prefeeder as described below (see chap.5.1, photo of postions for putting into operation):

- Connect the prefeeder to the power supply system 220/230V 50 Hz
- Connect a connection cable of 5 poles to an external machine if necessary.
- Main Switch (chapt. 5.2, pos.1) on.
- Open the belt-feed (2) by means of the toggle switch (chap. 5.2, pos. 4)
- Open safety cover (1). In this case the message EF must be displayed (chapt. 5.3.1, pos.1).
- Adjust the guide bars (4) so that the material can be fed easily.
- Feed the material into the machine.
  - When the material is squeezed, use the adjusting screw to adjust the distance between the drive blocks.
- Close the safety cover (1).
- Close the belt-feed (2).
- By setting the switch Speed intern / speed extern you choose internal or external speed regulation
- Adjust the basic speed if necessary.
- For internal release (see chapt. 5.2.2)

  The machine starts when the control knob (chapt. 5.3.1, pos.6) is > 0 or the mobile arm is lifted

  For external release (see chapt. 5.2.2)

  The machine starts when it gets a free signal from the master machine such as Tekuwa-SCM via a connecting cable.

5.1 Positions of putting into operation / Front view

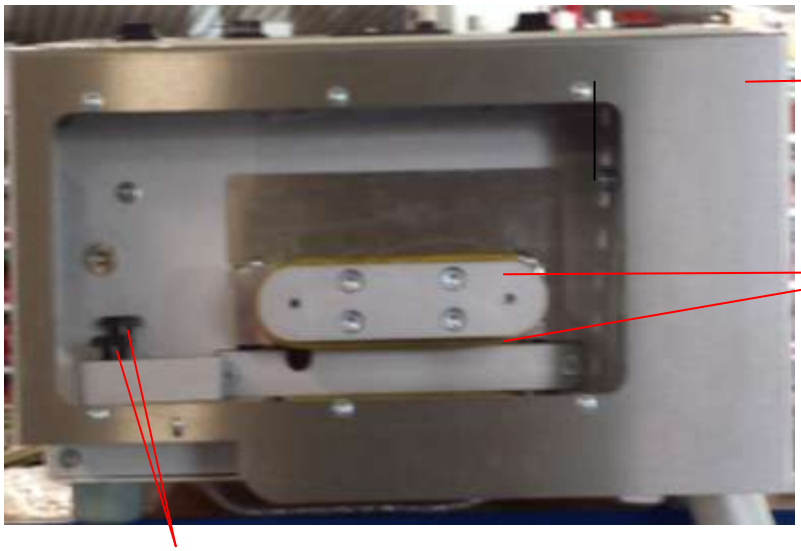
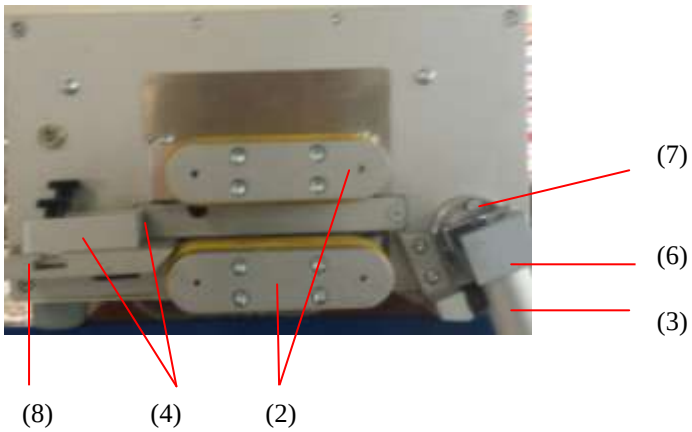


photo: positions of putting into operation

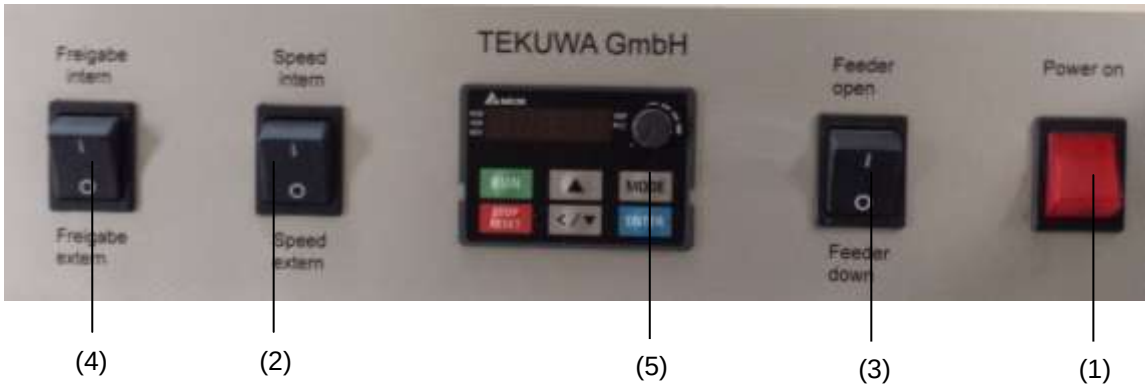


5.1.1 Explanation of Front View

(1) Safety cover
(2) Belt feed
(3) Mobile arm
(4) Guide bars
(5) Adjusting screw
(6) Support of mobile arm
(7) Adjusting ring for mobile arm
(8) Entry table

5.2 Abridged Operating Instructions PF - 121

5.2.1 Operating Panel



5.2.1.1 Description of operating panel

(1) ON-OFF: The main switch serves for switching the machine on and off.

When the machine is switched on, the lamp installed in the switch is lighted.

(2) Switch „Speed Intern / Extern“ In the upper position the machine is switched to speed regulation of the basic speed (operating display) of the PF -121. In the lower position the machine is switched to external speed regulation such as a SCM (a connection cable with a diode socket of 5-poles is necessary)

(3) Switch „Freigabe intern / extern“ „Freigabe intern“ means internal release and „Freigabe extern“ means external release. By means of this switch the release condition for the PF is given.

When the switch is set to „Freigabe extern“, the machine is activated by the external signal of the master machine. When the switch is set to „Freigabe intern“, the machine is immediately started, when the speed setpoint > 0 is applied.

(4) Schalter „ Feeder open / down When the switch is set to „Feeder open“, the belt feed opens. When the switch is set to „Feeder down“, the belt feed closes.

(5) Digital Operating Unit (see chapt. 5.3.2)

5.2.3 Programming Unit

5.3 Digital Operating Unit KPMS-LE01

5.3.1 Description of the operating unit

Status Display (1)

Start-Button (2): The machine is started, if there is no error.

Stop/Reset-Button (3): The machine is stopped and error messages are acknowledged, if the cause has been remedied.

Arrow „Up“ (4): This key is used to select the parameters and to adjust the parameter values.

Arrow „Down“ (5): This key is used to select the parameters and to adjust the parameter values.

Potentiometer (6): This potentiometer is used to choose the basic speed.
The setting is only effective, if the switch „Speed extern/Speed intern“ is set to „Speed intern“.

Mode-Button (7): This key is used to change the display. It is possible to have e.g. the output voltage or output frequency displayed.

Enter-Button (8): The key ENTER is used to select the parameter to be changed and to confirm the modification of the parameter.

5.3.2 Display-Elements and Function Keys

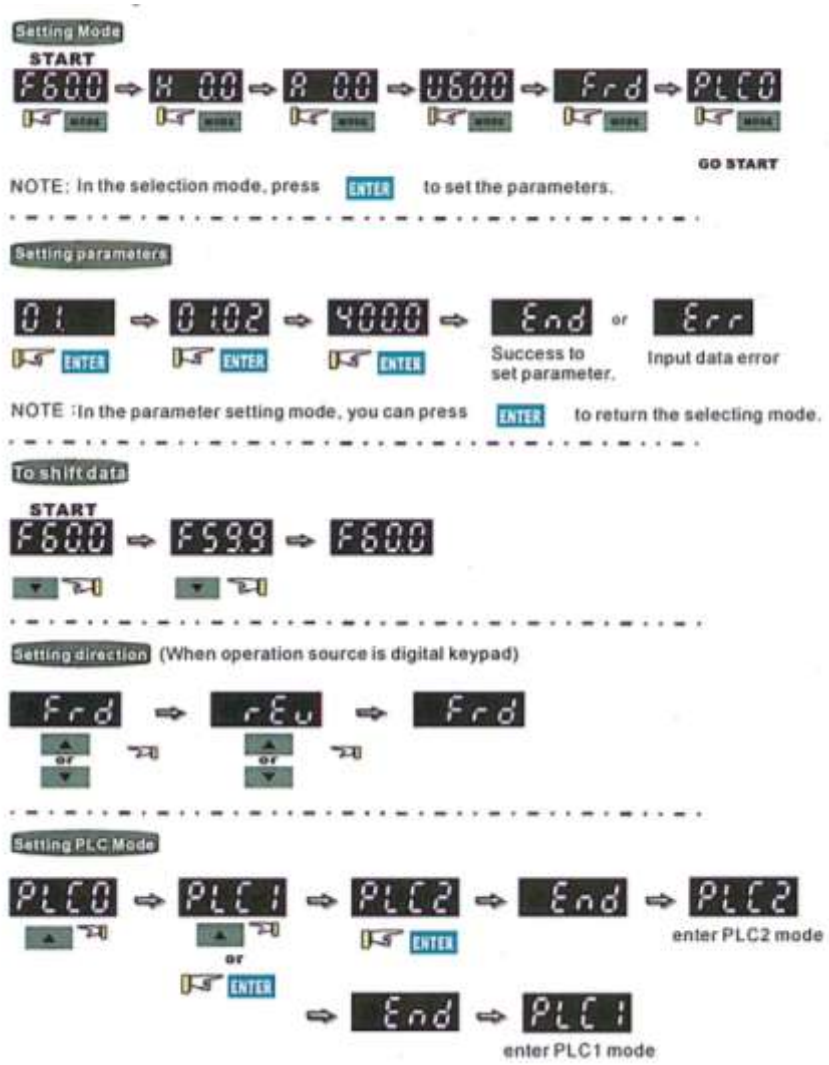
Display Message	Descriptions
	Display of set frequency value of the frequency inverter
	Actual operating frequency at the connecting terminals U, V and W
	User-defined unit (in which U = F x Pr.00.05)
	Output voltage at the terminals U/T1, V/T2 and W/T3
	Frequency inverter is in forward run
	Frequency inverter is in reverse run
	Reading value (C)
	Display of the current parameter setting

Display Message	Descriptions
	Display of the actual value in the indicated parameter
	External error
	Short display “End” when the enter key ENTER was pressed. The new value is automatically saved. To change the value, use the arrow keys ▲ and ▼
	“Err” is displayed, when the entry is invalid.

HINWEIS

As the display is a 4-digital one, input that exceed 99.99 will only be displayed with one decimal.

5.4 Operating the KPMS-LE01



5.4.2 Reference Table for the 7-Segment Display of the Operating Unit

Stelle	0	1	2	3	4	5	6	7	8	9
LED Anzeige	0	1	2	3	4	5	6	7	8	9

Engl. Alphabet	A	b	Cc	d	E	F	G	Hh	Ii	Jj
LED Anzeige	A	b	C c	d	E	F	G	H h	I	J

Engl. Alphabet	K	L	n	Oo	P	q	r	S	Tt	U
LED Anzeige	K	L	n	O o	P	q	r	S	T t	U

Engl. Alphabet	v	Y	Z							
LED Anzeige	v	Y	Z							

Legend

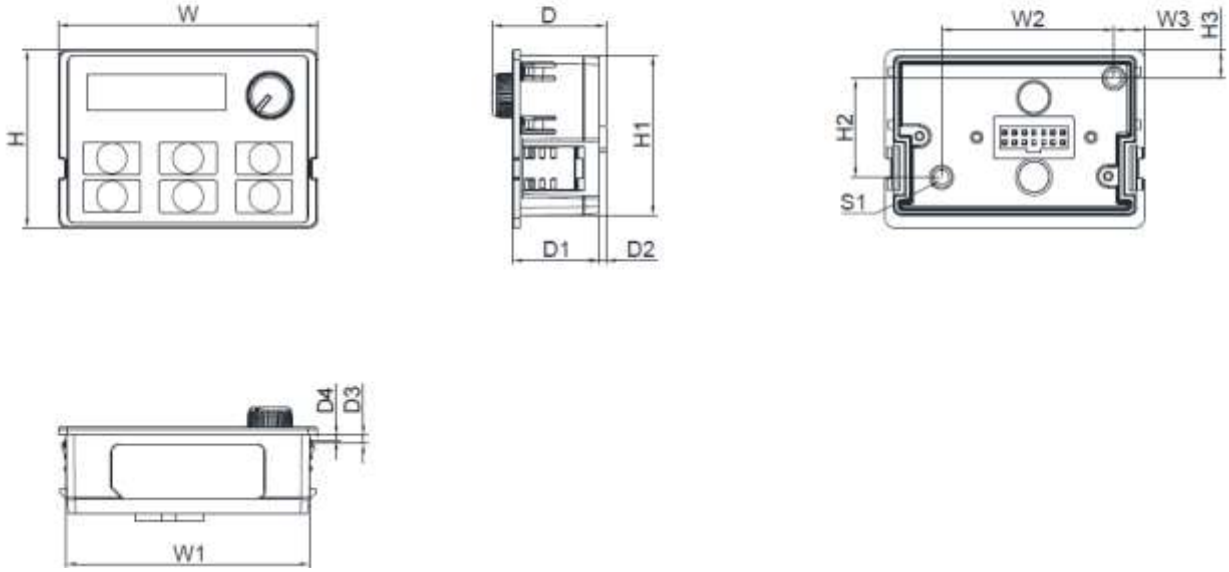
German	English
Stelle	Digit
LED-Anzeige	LED display

5.4.2 Measures of the KPMS-LE01

Unit: mm [inch]

W	W1	W2	W3	H	H1	H2
68.0 [2.67]	63.8 [2.51]	45.2 [1.78]	8.0 [0.31]	46.8 [1.84]	42.0 [1.65]	26.0 [1.02]

H3	D	D1	D2	D3	D4	S1
7.5 [0.31]	30.0 [1.18]	22.7 [0.89]	2.0 [0.08]	2.2 [0.09]	1.3 [0.05]	M3*0.5(2X)



5.5 Acknowledging Errors

If the display shows an error, this one can be acknowledged by pressing the key STOP/RESET, if the cause has been remedied.

5.6 Adjusting the Reference Frequency

It is possible to adjust the maximum frequency at which the machine is to be operated when the potentiometer on the operating panel or the mobile arm has reached the deflexion of 100% via the parameter P01-10.

NOTE

The frequency inverter is equipped with a special TEKUWA- software.
Therefore it isn't possible to replace the inverter by another identical inverter without previously loading the special TEKUWA-software onto it.

5.7 Connecting the PF-121 to a master machine (SCM, SMT, etc.)

If the PF 121 is to be 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 when the belt-feed of the master machine starts running.

Turning the potentiometer (control knob on the operating panel, chapt. 5.3.1, pos.6) the basic speed is adjusted so that the speed of the PF is slower (e.g. 90%) than that of the Tekuwa machine.

The swing arm additionally regulates the rest needed speed up to the maximum speed of the machine.

5.7.1 Position of the switches on the PF (for automatic operation)

- Main switch is set for "on". (chapt.5.2.1, pos.1)
- Put down the switch (Speed) (chapt.5.2.1, pos.2).
- Operating panel is set for "Run" (chapt.5.3.1, pos.2).
- Switch “Freigabe” (Release) is put down (chapt.5.2.1, pos.3).

Having programmed the PF-121 once, the programme isn't changed any more.

After switching on the machine, it's ready for operation.

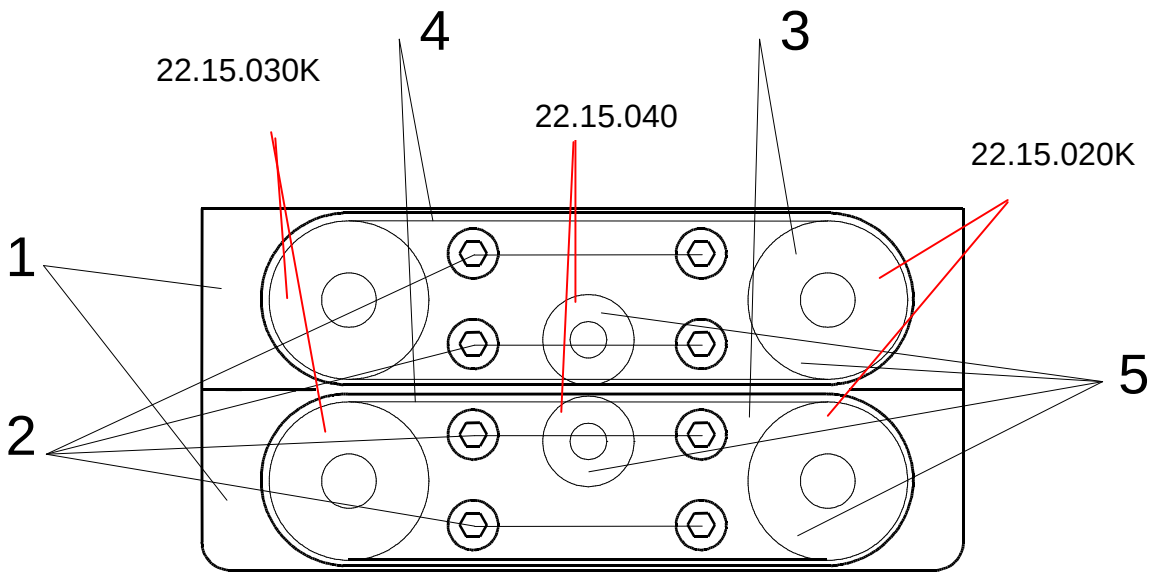
6 Maintenance

6.1 Change of Belts Belt-feed

To change the belts of the belt-feed (1), unscrew the screws of the cylinder head (2) M6x20, remove the tops (3) of the bearings and take off the belts (4) with the pulleys (5) by pulling them off towards the front of the m/c.

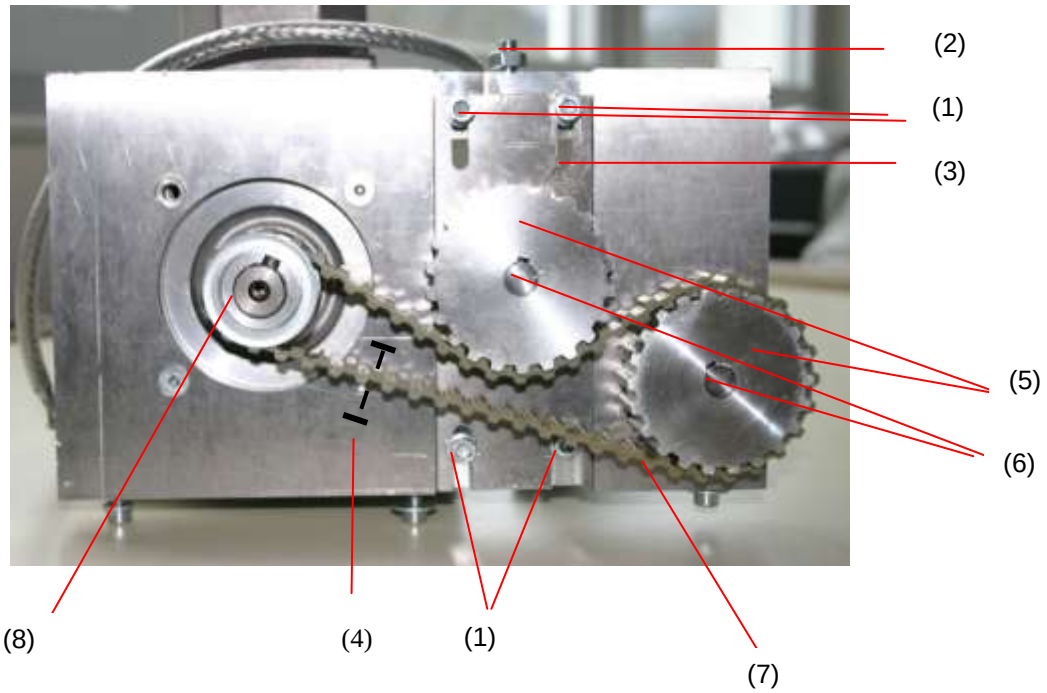
The installation of the belts must be done in reverse sequence.

Take care that the distance washers on the shafts and axles are reinstalled.



Drawing: Change of belts of the belt-feed

6.2 Belt Tension Drive System



Procedure:

- Unscrew the 4 screws (1) M6.
- Unscrew the tension screw (2) and adjust the sliding plate (3) by means of the tension screw so that the belt can be moved at approx. 8mm (4) upwards and downwards.

Spare Parts

(5) Belt pulley, no. 22.34.005

(6) Gear shaft, no. 22.34.003

(7) Motor tooth belt, no. 3168

(8) Motor tooth wheel, no. 22.34.006

7 Fault Messages

a.) A detailed description of possible fault messages are explained in the enclosed operating instructions " Frequency Inverters" by Delta.

1. The message “EF” (external error) is displayed when the

   - safety cover is open or is missing.
   - magnet is missing.
   - reed sensor is defective.

2. The message “EF1” is displayed when the

   - terminal switch on the potentiometer in the mobile arm is switched in the end position (horizontal)
   - switch or the supply conduction is defective.

d.) Values of machine have been changed – Machine doesn’t work properly any more.

Please, contact the company Tekuwa GmbH!
Phone: +49 7762 / 5212-40

NOTE
Attention!! Changing parameters of the frequency inverters may result in maloperation of the machine. It must be returned for reparameterization to the manufacturer.

8 List of Spare Parts

8.1 Tin Parts

22.01.001 Main Casing

22.01.005 Metal Top for Casing

22.01.010 Front Plate

22.01.015 shield drive

22.01.13 Cover steel

22.01.14 Retainer for cover steel

8.2 Drive System

22.05.001K Bottom Feeding Block Complete

22.05.010 Guide rail

22.05.015 Column Guide D12x200

22.10.001K Top Feeding Block Complete

22.10.015 Guide Bush

22.15.001K Bearing cap complete with roller tooth ball bearing

22.15.015 Axle D12x55 with Circlip - This axle goes through the plain feed rollers of the belt-feed.

22.15.020K Plain Feed Roller D35x39 complete

22.15.025A Drive Shaft D12x140 ... with Circlip

22.15.030K Toothed belt pulley D37x39 complete with border

22.15.035 Axle D8x1

22.15.040 Plain roller D20x39

22.15.045 Toothed belt with border D28

22.25.020 Shield bottom drive system

22.25.021 Shield top drive system

2543 Ball bearing for drive block top/bottom

8.3 Cylinder for opening device

22.10.020	Cylinder tube for opening cylinder
22.10.020D	Set of washers for opening device
22.10.025	Cylinder cap
22.10.030	Opiston rod for opening cylinder
22.10.035	Piston for opening cylinder
2755	Plain bearing for piston rod

8.4 Mobile arm with Regulator

22.20.060K	Mobile arm 400mm complete round
22.20.060K-K	Mobile arm 400mm round complete with regulator (poti)
22.20.061K	Mobile arm 400mm complete 80 x 40
22.40.001	tension cap
22.40.005	bearing flange for regulator (poti)
22.40.010	Cap for regulator (poti)
22.40.015	Bending spring
22.40.020	Regulator shaft
22.40.052	Support for mobile arm (right-hand version)
22.40.053	Fixing plate for mobile arm
22:45:001	stop arm (right-hand version)
3706	rubber puffer black for stop arm

8.5 Material entry

22:25:001	Plate for Material Guide
22.25.002	Roller for guide plate
22.25.010	Front and Back Guide Bars
22.25.015	Groove for Guide Bars
22.25.025K	Clipscrew long complete with groove
22.25.030K	Clipscrew short complete for guide with groove

8.6 Gears

22:34:001	Gear plate
22:34:002	Plate for belt tensioner
22.34.003	Gear shaft
22.34.004	Cardan shaft
22.34.005	Belt pulley
22.34.006	toothed motor wheel
3168	Double-toothed motor belt ,16mm wide
2543	Ball bearing for gears, beating flange

8.7 Toothed belt for belt feed

3183	Feedbelt 30mm (for PF-121/30)
3143	Feedbelt 30mm PU yellow (for PF-121/30)
3143S	Feedbelt 30mm PU grey (for PF-121/30)
3146	Feedbelt 50mm (for PF-121/50)
3147	Feedbelt 50mm PU yellow (for PF-121/50)
3147S	Feedbelt 50mm PU grey (for PF-121/50)
3182	Feedbelt 75mm (for PF-121/75)
3184	Feedbelt 75mm PU yellow (for PF-121/75)
3187	Feedbelt 95mm (for PF-121/95)
3186	Feedbelt 95mm PU yellow (for PF-121/95)

8.8 Pneumatics

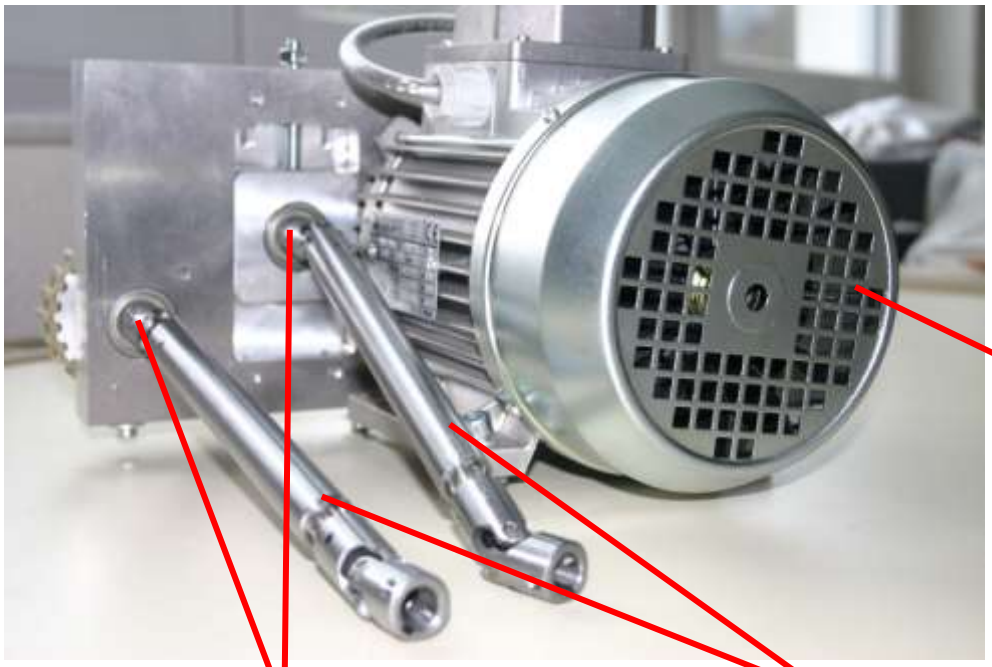
4535A	Opening vlave complete with connexion
4543	Opening cylinder for belt feed
4575	pressure regulator
4535A	set of seals for opening cylinder

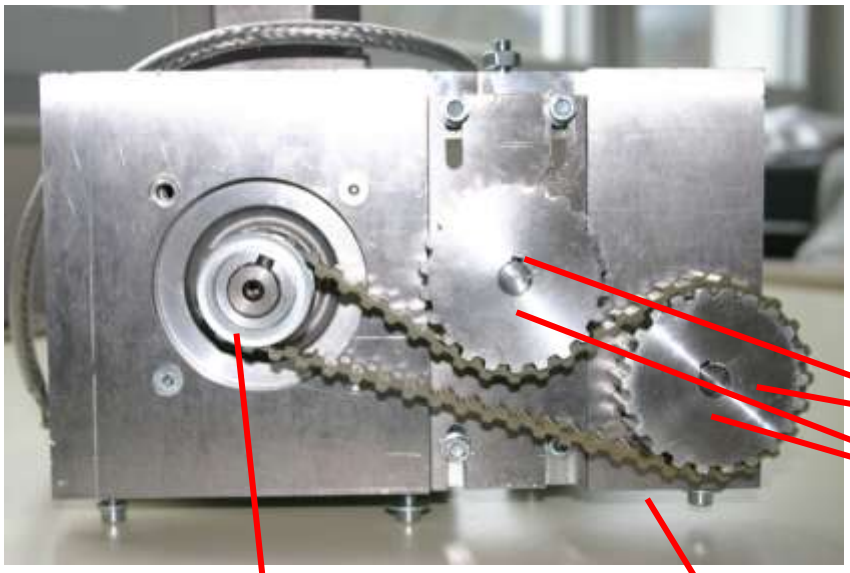
8.9 Electrical Components

5564	Cooling Fan

5591	Magnet D6x2	
5661	Frequency inverter	
5661A	Digital operating panel	
5638	Three-phase current motor according to the specifications of the 0.55kw / 1500 min	
5984	Reed Relay Sensor	
6130	Appliance socket 220v with fuse 10AT	
5960	Potentiometer 10 kOhm for regulation of speed	
5960S	Potentiometer 10 kOhm with switch for mobile arm	
6041	Main Switch lit red	
6042	Switch for Automatic System Termination	
6050A	Shift switch:	open / close (belt feed)
6050A	Shift Switch:	Manual or Automatic Operation
6050A	Shift Switch:	PF-120 extern (Speed Regulation)
6172	Connection Socket (5 poles)	

8.10 Photos of spare parts





9 Wiring Diagram

9.1 Legend of Wiring Scheme

German Terms	English Terms
Analogeingänge	Analog entries
Anschlag	Stop
Ausgangsbuchse	Exit hub
Automatik ON	Automatic mechanism ON
Bedieneinheit	Operating panel
Bezugspotential	Reference potential
Draufsicht (Steckerseite)	Front view (socket side)
Endschalter	Terminal switch
Entweder … oder	Either ... or
Freigabe	Enabling
Frequenzumrichter	Frequnecy converter
Geschwindigkeitsregulierung durch Poti	Speed regulation by potentiometer
Gesteuert	Controlled
Haubenkontakt	Cover contact
Hauptschalter	Main switch
Mit pneumatischer Hebevorrichtung	With pneumatic opening device
Netzanschluss	Power connection
Offen, wenn Lenze gesperrt	Open when Lenze is inaccessible
Pneumatisch	Pneumatic
Potentialfreier Kontakt	Potential free contact
Reedschalter	Reed sensor
Referenzspannung	Reference tension
Schalter	Switch
Senken	Close
Sicherung	Fuse
Startfreigabe Hauptmaschine	Start release master machine
Stecker	Plug
Tänzerarm, Tänzer	Mobile arm
Umschalter Heben/Senken	Switch Open /Close
Umschalter Kabelendabschaltung	Switch Stop cable end
Variante	version
Ventil Heben / Senken	Valve Open /Close
Ventilator	fan
Versorgung	supply
„Es ist entweder Variante 1 oder 2 möglich, nicht beides!“	“Version 1 or 2 is possible, but not both!”
„von hinten gesehen“	“Seen from the back”
Text: "Diese Zeichnung unterliegt unserem Eigentum .... sind hiermit ungültig."	Text: “This drawing is subject to our right of property and to our copyright. It’s not allowed to open to a third person. It’s only allowed to use it for the purpose determined by our company. After carrying out the order, it must be returned to our company. All previous drawings are herewith no longer valid.“

10. Appendix A – Customer-specific Functions

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