LOCKFORMER MACHINE
MAINTANENCE MANUEL

MODEL :KNT 01
SERİ NO :
PRODUCTION YEAR :

INDEX

1. INTRODUCTION

MACHINE DESCRIPTION

This machine allows you to form the sheet in order to manufacture the necessary fittings for the hvac industry By using changing the rollers you can manufacture various types of connection forms .As this machine consists of 9 roller stations ;it makes a much accurate and precise forms for the fittings. Rollers are made of a special material and the surface is hardened in order to extend the life expectancy .For this reason it is highly resistant to the friction.

It is a simple operating machine .By having the necessary training , you can immediately start your production

You can operate the machine with galvanised sheet ,stainless steel ,aluminium, plain sheet . You should not use any other material in this machine

STANDARD SEAM TYPES THAT YOU CAN MAKE ON THIS MACHINE

- Pitsburgh Seam
- Snaplock Seam
- Drive Cleat Seam
- S & Drive S Cleat Seam
- Longitudinal Seam connection
- Single and double Standing Seam

All the details of the connection types takes place on 8-9 th pages .

MACHINE PARTS

TECHNICAL DETAILS

NUMBER OF FORMING ROLLERS		9
Linear speed	M/min	15
Power	KW	3
Currency	A	7
Sheet thickness max/min Galvanised	mm	1,2 / 0,5
Sheet thichkness max/min Stainless Steel	mm	0,7 / 0,5
Sheet thichkness max/min Plain Sheet	mm	0,9 / 0,5
Sheet thichkness max/min Aluminium	mm	0,7 / 0,5
Forming Roller Diameter	mm	28
Forming roller axis dimension Horizontal/Vertical	mm	100 / 72
Net Weight	kg	430
Noise Level	dB (A)	69
Widht/Lenght/Height	mm	650 / 2215 / 1015
Electric connection		380 / 3 PHASE 50 HZ

SAFETY RULES

•Machine has been designed for the purposes defined in Section 3. It shouldn't be used out of these design purposes. The fault, which may arise from the use of this machine out of the design purposes, may cause and malfunctions and accidents. In such cases, MANUFACTURER will not be responsible.

•Please read the manual carefully and after learning adequate knowledge about the machine, start your application. Otherwise, severe injuries, electrical shocks etc. may happen.

•Keep this manual next to the machine.

•Keep and operate your machine in roofed/closed environments. Danger of electrical shock will occur under rainy and wet environments.

•Keep your working environment neat and clean. Untidy working environment will increase the accident risks.

•Don't permit anybody enter your working area and don't permit them to distract your attention. You may loose your control on the machine because of such reasons.

•Don't operate your machine in the environments where flammable and explosive materials are present.

•Provide a good illumination in the place, where the machine will operate.

•The reasons, which may cause the machine to work unsafely, should be removed.

•Install your machine so that it can stay stationary and safe against unwanted actions.

•Provide that it is consistent with requirements of the Standard EN-60204-1 related to the electrical installation and hardware and other regulations which are put in effect by the authorized establishments.

•Check that the electrical supply and the electrical specifications written on the machine are consistent with each other. Otherwise severe injuries may happen and your machine may have damage.

•Take care about that the electrical cables will not be damaged. Provide that the damaged cables are replaced by authorized services or certified and authorized suppliers.
Before maintenance and cleaning, cut off the electricity supply of the machine.

•The machine should be used, and the cleaning and maintenance works should be done only by the authorized personnel, who have learnt the basic safety rules and accidents prevention information.

•Be careful when using the machine. Momentary abstraction/negligence may cause severe injuries.

•During operation and maintenance, please wear appropriate clothes. Long hair, baggy clothes and jewelleries may be caught by the moving parts of the machine.

•Stay in safe places while the machine is operating. Provide that you stay in a balanced and safe position.

•Check that all safety equipments are in their places and they are operative before starting the machine. Never put any safety equipment into inoperative state.

•Replace the worn, broken parts by the authorized services. Don't skip the maintenance of the machine. Don't forget that most of the accidents occur as a result of neglecting the maintenance and cleaning processes.

•Don't make changes on the machine. Use only original parts.

•Shut down the machine after your operation process is finished.

•Pay attention to the warning-caution signs on the machine.

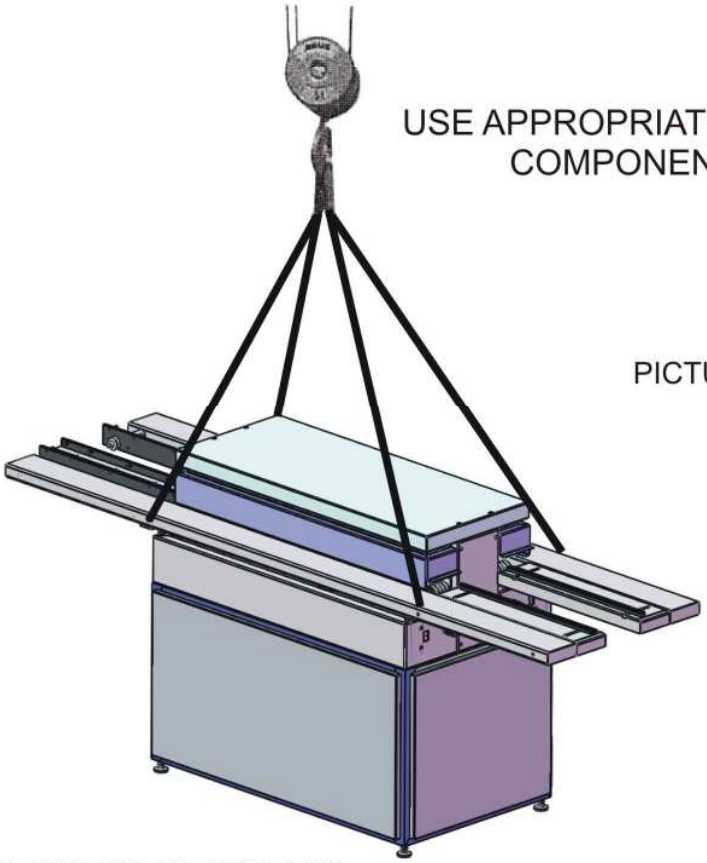
•Provide that the sheet iron loading process is done by the authorized personnel.
Use the sheet iron thicknesses which are in the range of recommended thickness
*

*Do not leave any hand tools or other materials on the machine
*Wear approprate clothes for protection

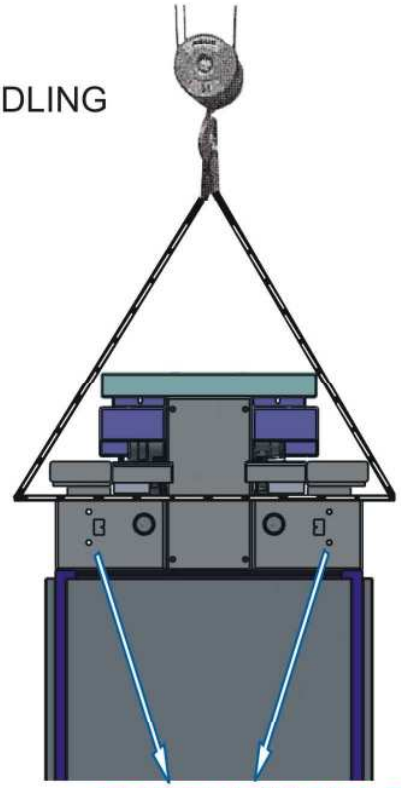
HANDLING AND STORAGE

You can choose one of the ways which is shown below in order to carry the machine . If you will choose the carrying type as shown in picture no :1 then you must be sure that nobody is walking underneath the machine during the job.

USE APPROPRIATE HANDLING COMPONENTS!

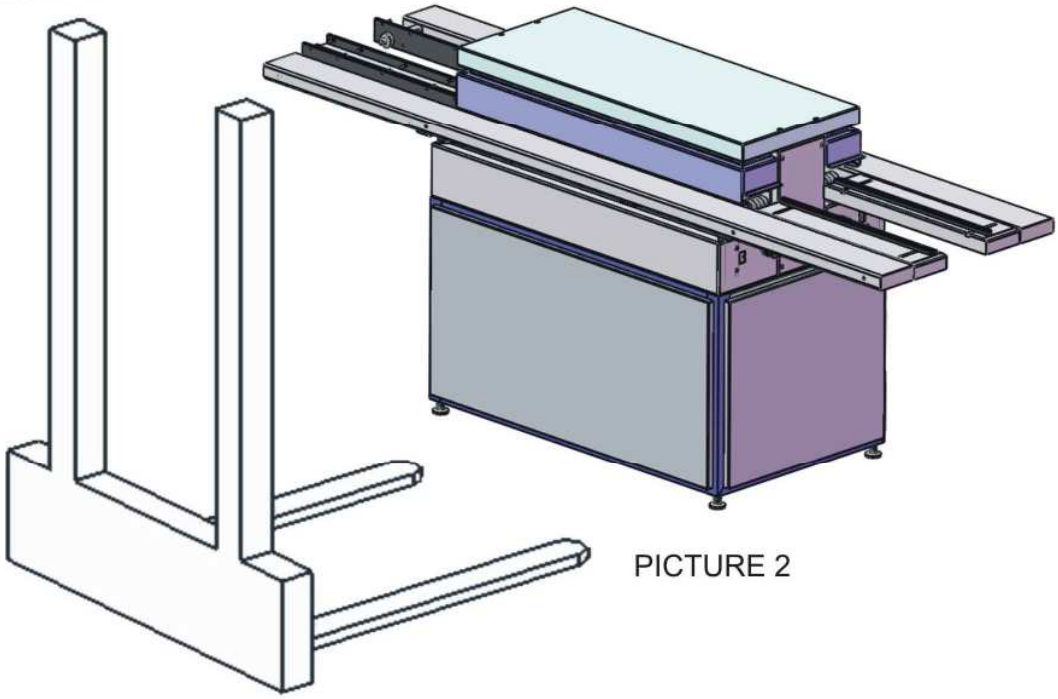


PICTURE 1



TIGHTEN THE TABLE ADJUSTMENT SCREWS CAREFULLY!

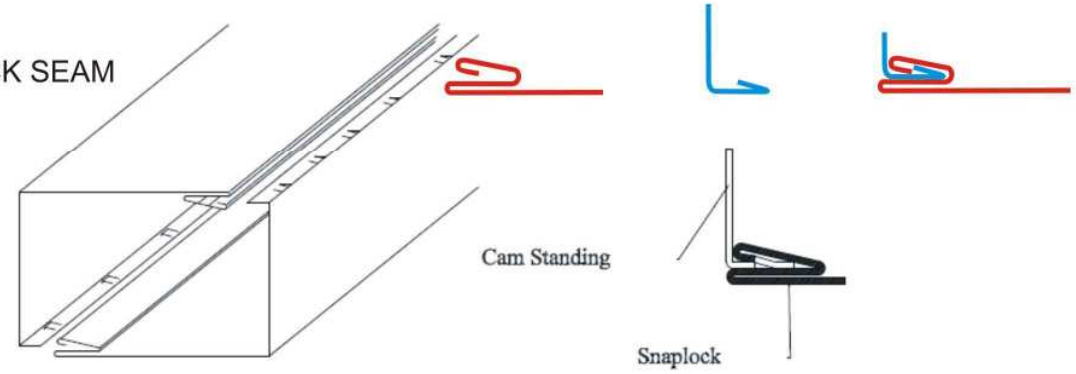
NOTICE THE NECESSARY PRECAUTIONS WHILE THE MACHINES ARE CARRYING AROUND !



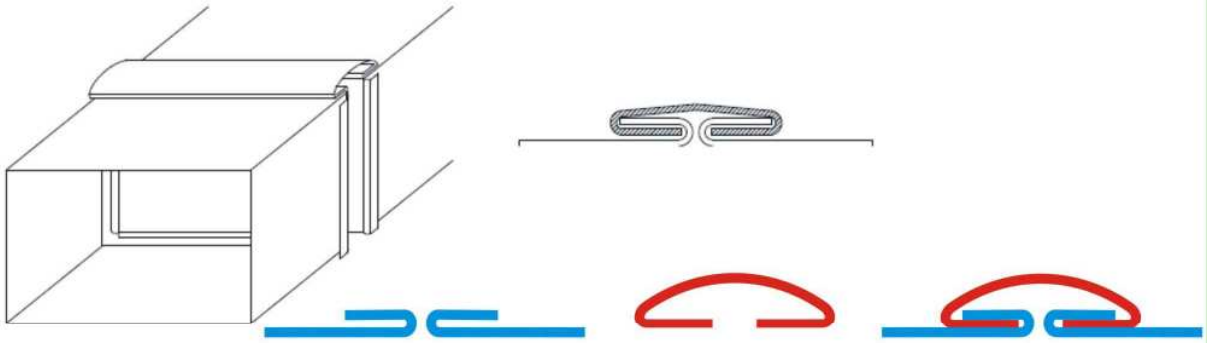
PICTURE 2

STANDARD SEAMS

SNAPLOCK SEAM

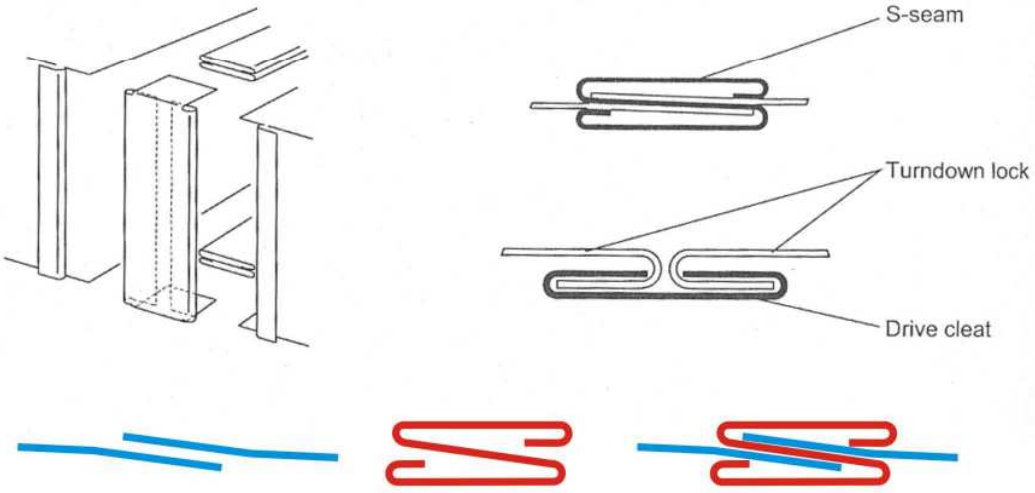


Drive Cleat



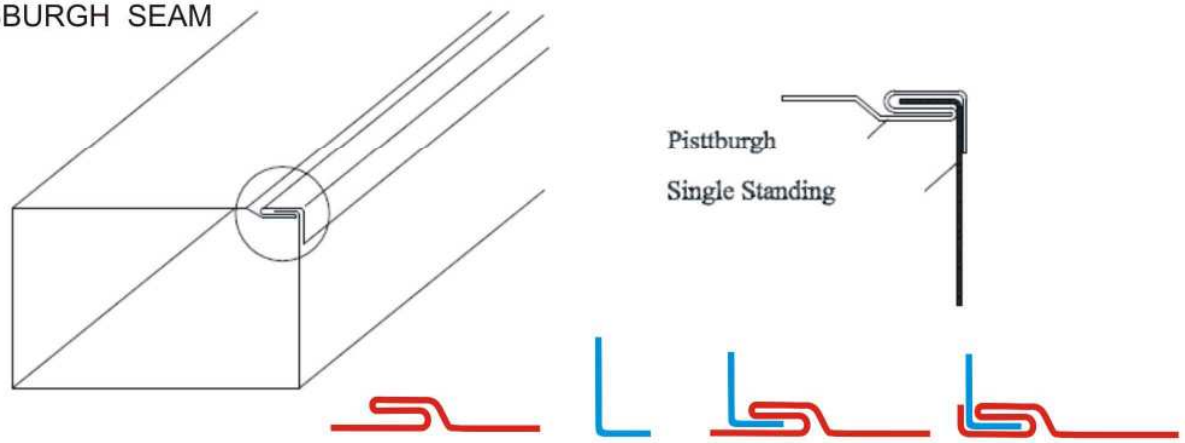
S-seam

Drive cleat

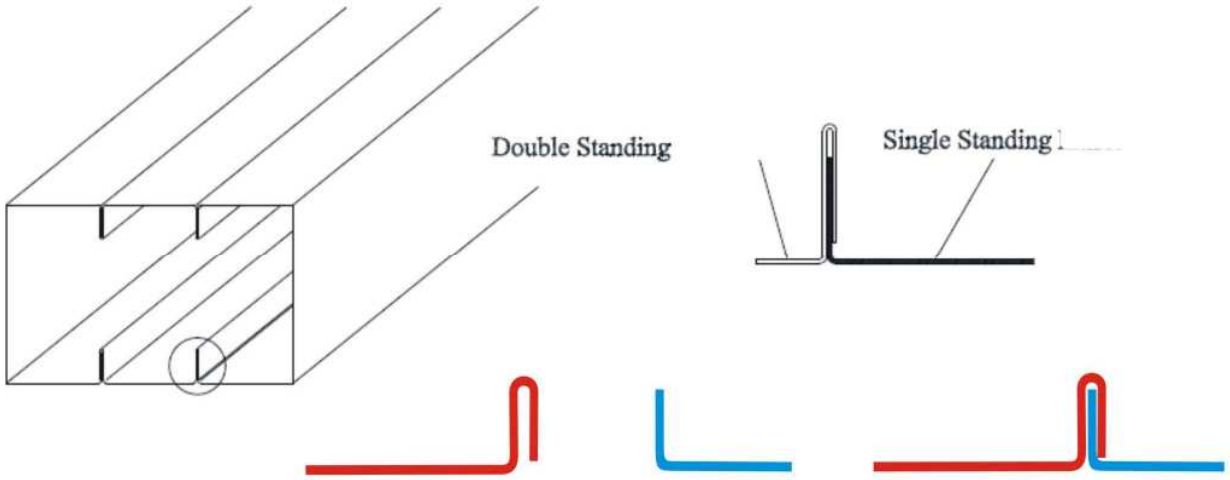


STANDARD SEAMS

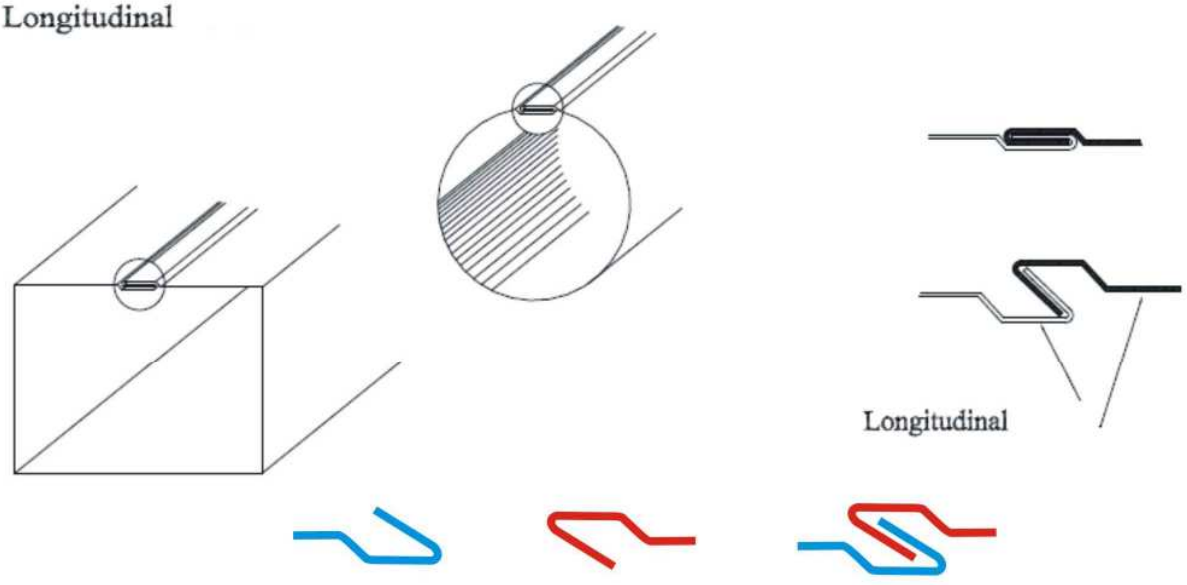
PİTTSBURGH SEAM



SINGLE&DOUBLE STANDING SEAM



Longitudinal



INSTALLATION AND OPERATION OF THE MACHINE

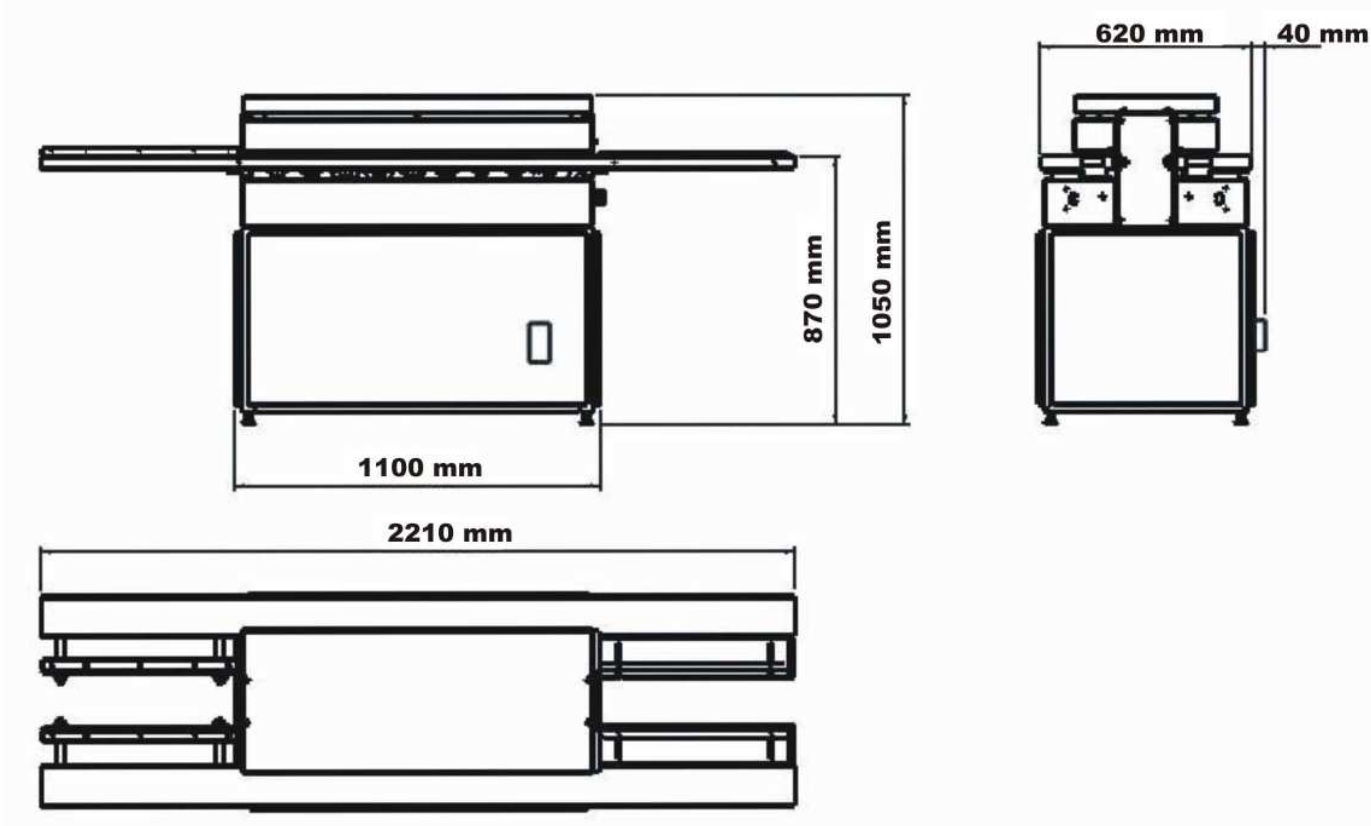
The working area should be roofed/closed, and it should be kept free from the negative effects such as excessive humidity, dust.
İt should be provided that the floor, where the machine will be installed, should ˙be smooth and leveled

ELECTRIC CONNECTION:

The energy supply installation, which will be connected to the machine, should be designed according to the input direction/side, and temporary solutions, such as extension cables, etc, shouldn't be used.
16A fuse and 5*16 socket should be placed.
When you start the machine ; if the running direction of the rollers are opposite , then replace the wires for the phase electricity.
WARNING :If there is a electricity cut or failure then check the machine before the next start up.
Checking operation should be done by the authorised electrician .

Do not forget to make the grounding for the electricity.

After finishing the whole necessary connections please fix the wheels of the machine .

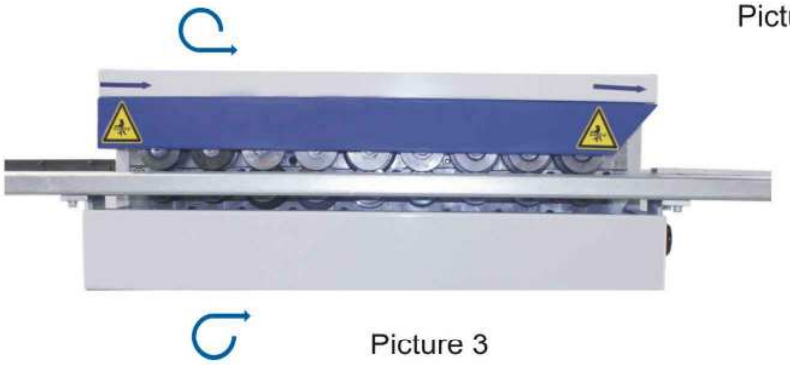


MACHINE START UP

Plug in the electric cable first.(picture 1)
Turn the electric switch to the 'on' position.(picture 2)
Machine will work instantly. Firstly check the turning directions of the rollers .It should have the same direction with the sheet entrance direction ; if not then check the electric wires (picture 3)

Picture 1

Picture 2



Picture 3

After checking the all necessary controls ;put the sheet on to the machine and move it from the docking place . Sheet will take the form according to the roller sets

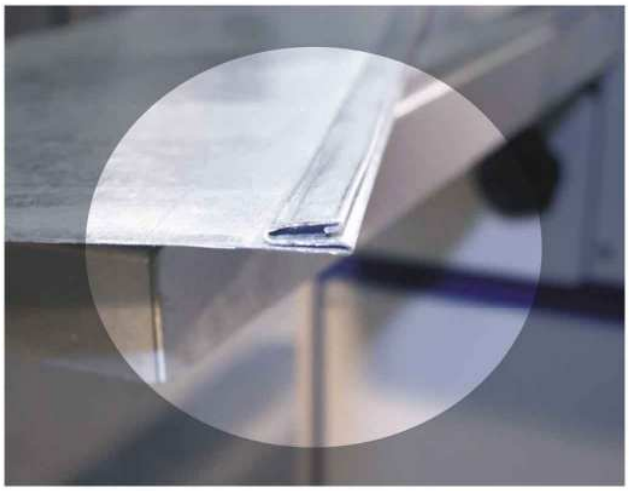
There is 2 sets of rollers in the machine which can be work at the same time .For different seam types

Please read the instructions and the warning signs before operating the machine

Keep your hands away from the machine while it is running .

Do not use , the both sides of the machine at the same time while operating with one operator

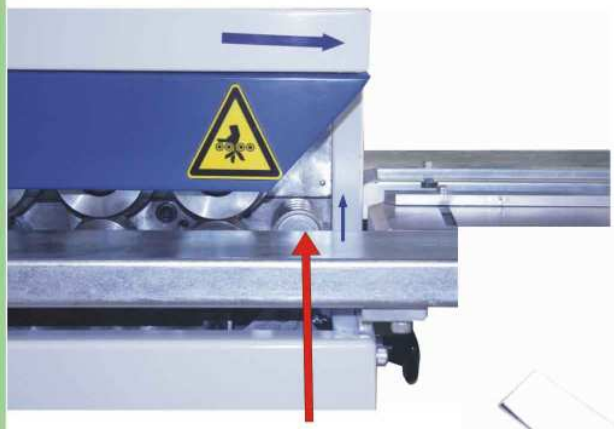
Do not leave any handtools , or any other equipment on to the machine while it is running .

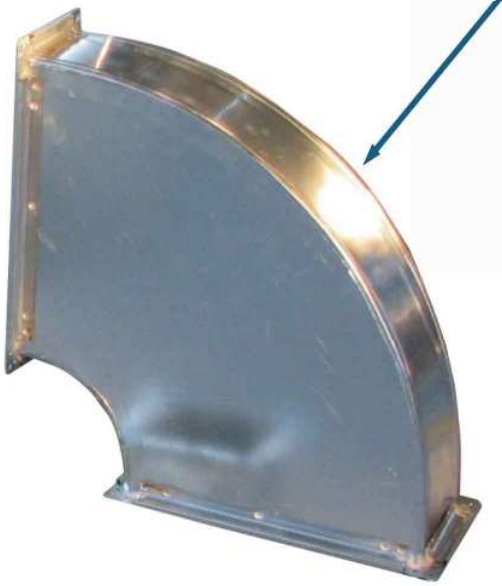


PRE FOLDING

This cylinder allows you to make the pre folding job for the fittings .

Operation :
Turn the adjustment arm of the folding cylinder to the upwards position.
You can move the arm upwards or downwards after testing the angle by using the sheet.





Pre-Folding ;
You can use this feature in order manufacture the fittings's outer part or inner part (as shown in the picture)

In order to manufacture the part that you see in the picture ;run the sheet to the machine without increasing the curve roller upwards.After that increase the level for the curving roller and then run the sheet

REPLACİNG THE ROLLER SETS

Machine is manufactured according to the customer's desired type seam .If you want to produce a different form of seam then you need to buy another appropriate roller sets from us.Then you need to disassemble the rollersets which are already on the machine and replace it with the new one. You will see the steps of this replacement below..

Before starting to the job , cut the electricity for the machine and turn the electric switch to the '0' position and lock it.!

1-) Dissambling the upper cover ;
Üst kapağı sökmek için ; Use the allen key no :6
and untighten the m8 bolts
All the bolts have a slot holesYou only need to fully untighten the two of them and just untighten the other two.
Remove the upper cover .

2-)DİSASSEMBLİNG THE SİDE SUPPORT SHETT

USE THE ALLEN KEY NO:8 İN ORDER TO UNTİGHTEN THE M10 BOLTS WHİCH ARE PLACED UNDER THE SİDE SUPPORT SHEETS.

REMOVE THE SİDE SUPPORT SHEETS

Now the machine is ready for the dissambly jo for the roller sets .

3-)Disassembly job for the roller sets ;

Use allen key no:10 in order to untighten the m12

Replace the roller .You will use the washer and the pin bolt again with the new roller .

Start the dissasembly job from the sheet entrance side ..

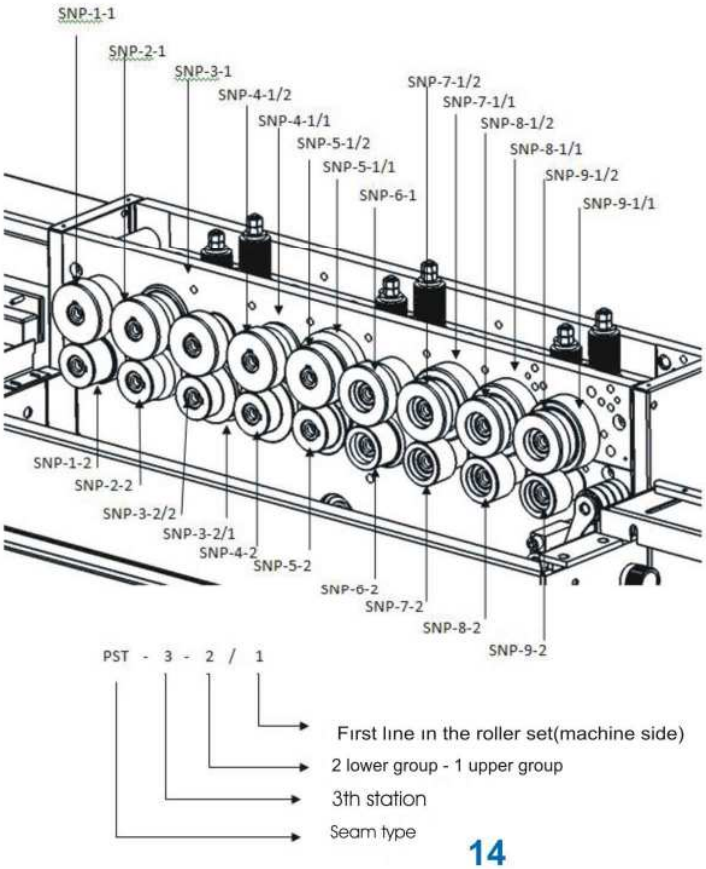
Notice the codes which were take place on the rollers ..

Coding diagram is shown in picture no :5.

Replacing job should be done for the upper rollers first and then the lower rollers.

While you are assembling the new rollers be careful about the position and the place of the new ones .

After finishing the replacement job , now you can start to assemble the other parts (covers ..etc)



Picture 5

4-) For different roller sets replacements ,you also need to change the adjustment docking mill. In order to make this process please follow up the necessary steps which is shown below.

Firstly untighten the screws and the bolts

Disassemble the docking table

Disassemble the docking mills

Put the new docking mills in to the slots .all the docking mills's lenghts are different from each other and it is shownin the table .

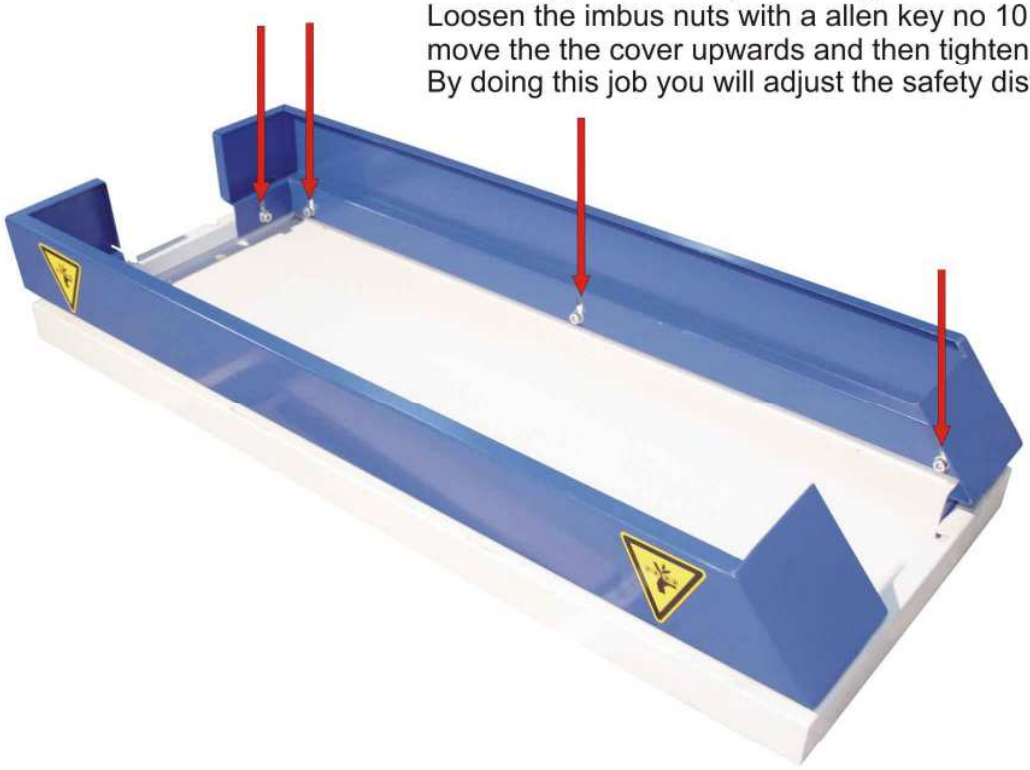
Upper table Scale :
For different roller sets ;you need to move the upper table to upwards or downwards .And it is shown in the table as well.

After finishing the whole disassembly job ,please assemble the upper cover and adjust the safety distance

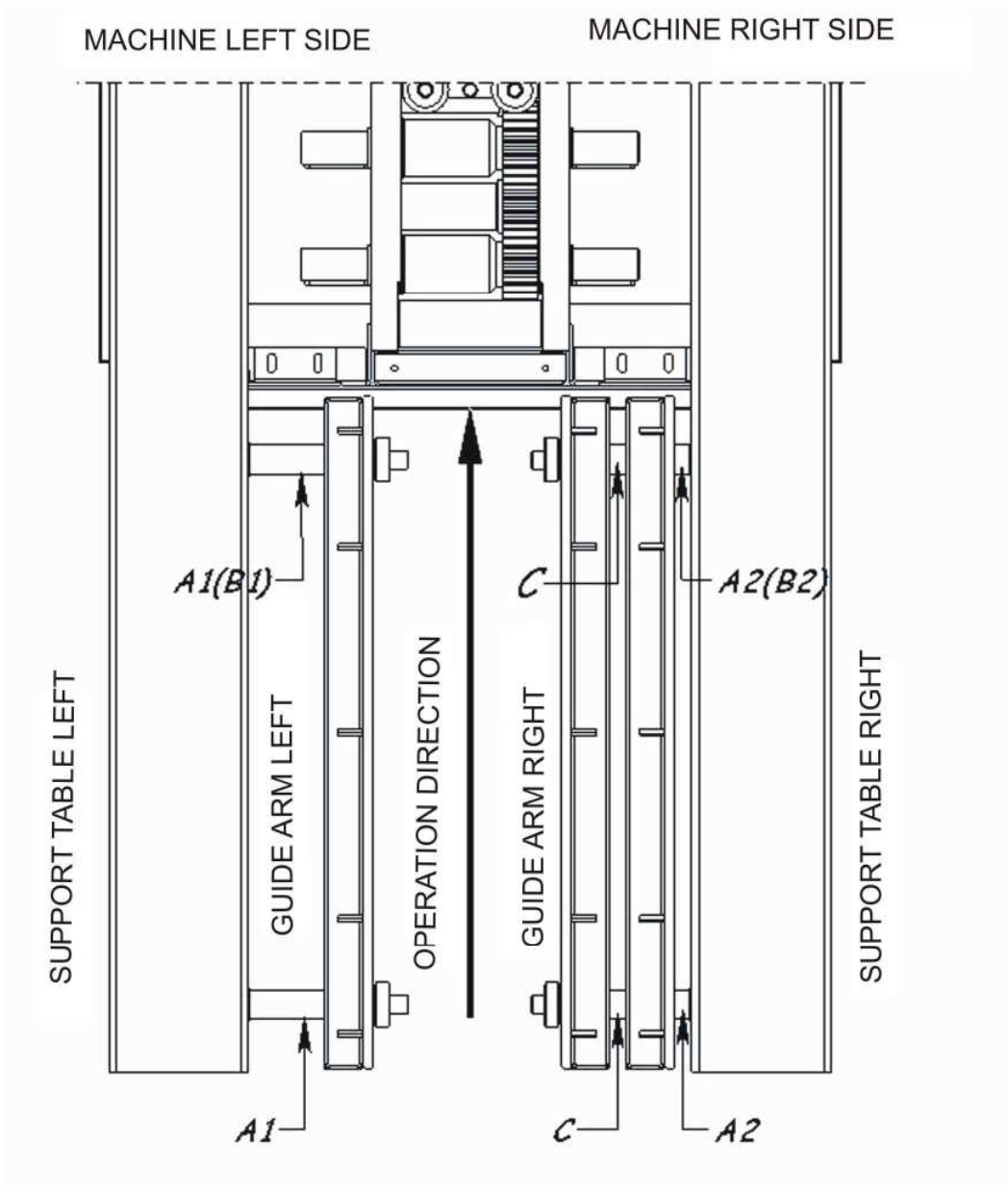
UPPER COVERDISTANCE ADJUSTMENTI

If you want to use the different roller sets
you need to move the table to upwards
and downwards.Then you also need to make
the necessary
adjustments for the upper cover
the distance which is shown in figure 1
is exceeding the normal safety distance .
It should be 10mm .Otherwise it can be
dangerous for the operator .

For the upper cover adjustment ; please remove the upper cover
Loosen the imbus nuts with a allen key no 10 as shown in the picture
move the the cover upwards and then tighten the nuts and screws.
By doing this job you will adjust the safety distance .



UPPER TABLE DESCRIPTION



SEAM TYPES

		MILL LENGHT MM	SCALE POSİTİONİ	SEAM CODES
• PITTSBURG SEAMİNG FEMALE		97	-7	PTS
• PITTSBURG SEAMING MALE		90	-7	SSTN
• SINGLE AND DOUBLE STANDING SEAM		90	-7	DSTN
• LONGITUDINAL SEAM		75,5	-	LGD
• SNAPLOCK SEAM FEMALE		102,2	-7	SNP
• SNAPLOCK SEAM MALE		90	-7	CSTN
• DRIVE CLEAT		97	-7	DRV-CL
• S & DRIVE S CLEAT SEAM		97	-7	S-CL

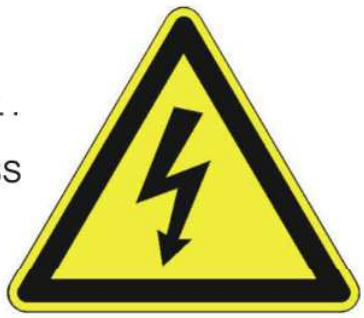
WARNING SIGNS

DO NOT PUT YOUR HANDS IN TO THE ROLLER SETS WHILE THE MACHINE IS RUNNING.

SPINING PARTS BE CAREFUL ABOUT YOUR HANDS

UNDERNEATH THE ROLLER SETS THERE ARE GEARS .
DO NOT TRY TO ASSEMBLE OR FIX THE GEARS WHILE THE MACHINE IS RUNNING.

YOU WILL SEE THIS SIGN ON THE ELECTRIC PANEL .
DANGER OF ELECTRICITY.
ONLY AUTHORISED PERSON SHOULD HAVE ACCESS TO OPEN IT .



DO OT WEAR GLOVES WHILE YOU ARE WORKING ON THE ROLLER SET GROUP.

DANGER FOR THE OPERATOR AND THE OTHER PEOPLE .

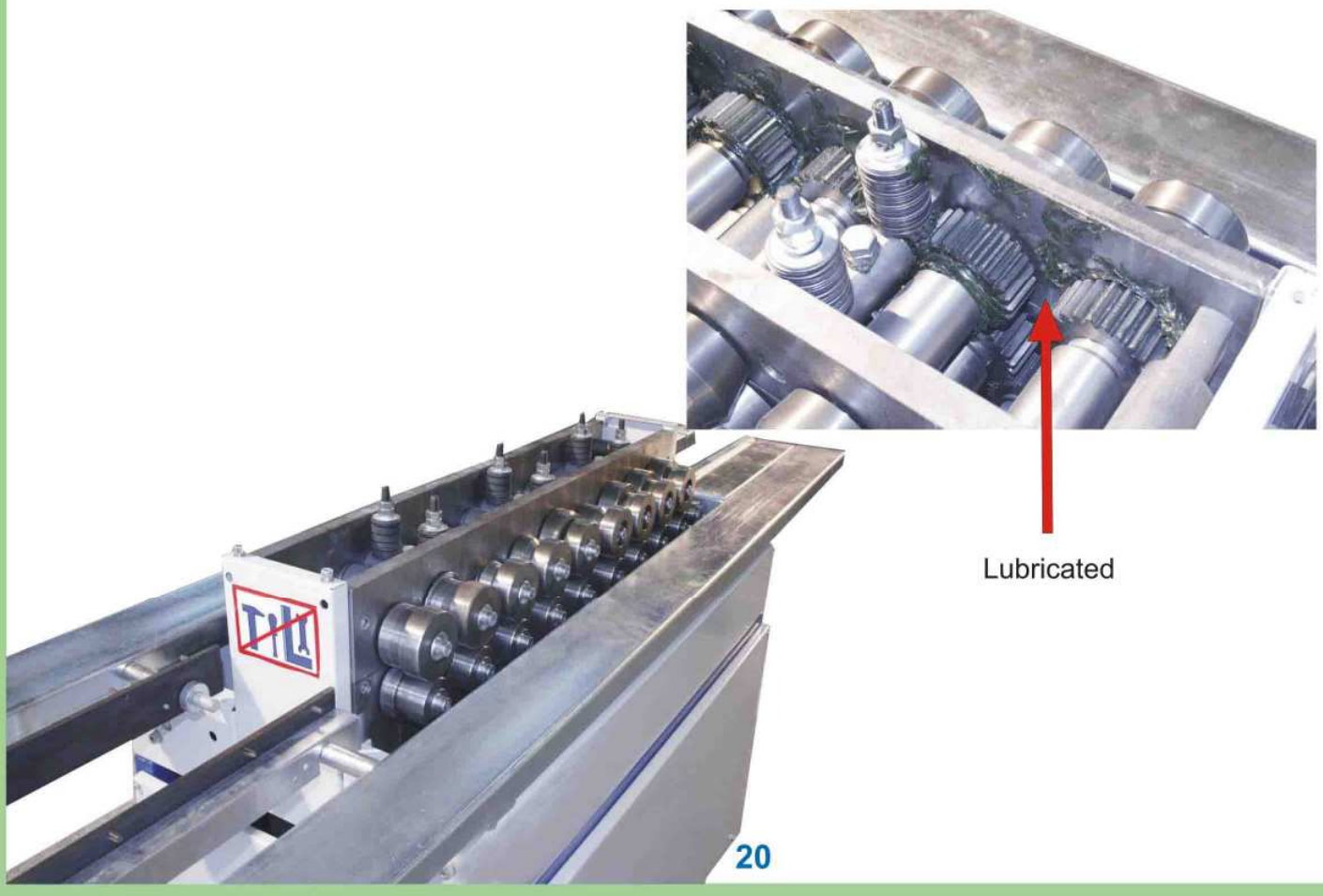
MAINTANENCE

In order to run the machine for a long time without problems ; You need to make the necessary maintanences .

Disconnect the electricity before starting the maintanence
Note:When you turn to main switch to 0 position , you can also put a on it.

1- You need to remove the sheet metal parts by using the pressurized air which were stand on the rollers .In order to do this job you do not need to disassemble the upper cover .You need to this in everyday .
2- You need to lubricate the gears ; disconnect the electricity and remove the upper cover
3- Gear should be lubricated with the grease oil.You only need to put some grease oil on to the top of the gear .That oil will reach to the necessary points while the machine is running.You need to remove the sheet metal parts from the rollers by using a solvent like an alcohol

Lubrication period is 4 months .
Keep the roller setsaway from any lubricant and water.
Do not put any grease on the painted parts of machine, it may cause a damage on the painted parts ,



TROUBLE SHOOTING

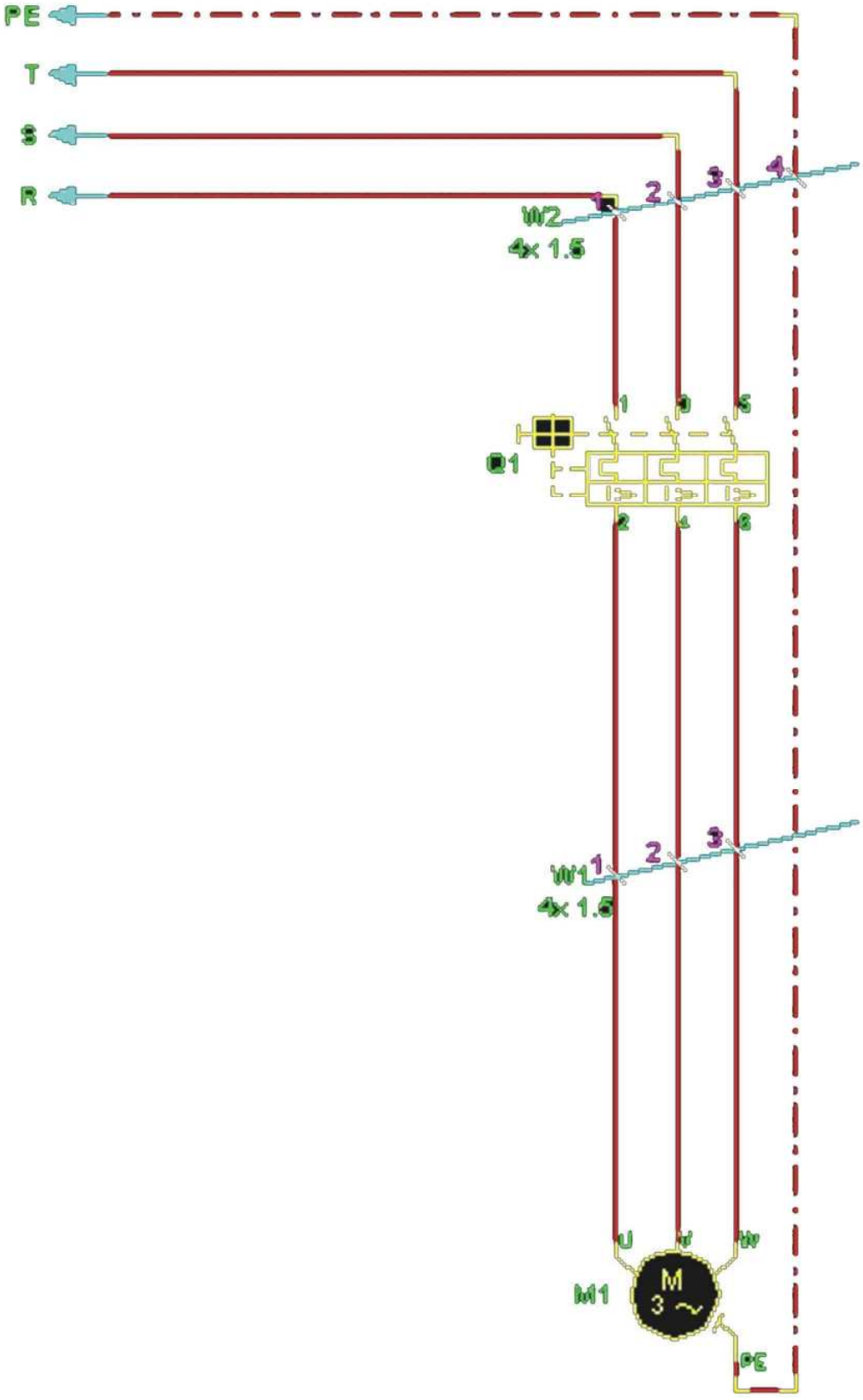
1- MACHINE DOES NOT WORK ?
Check the electric connections .
Control the energy cable which is connected to the machine .
Check the on-off switch.

2- PRODUCT İS NOT GOOD ?
Control the upper table (scale).
Check the sheet qaulity and the thichkness
Sheet edges should be plain and smooth while you are feeding the machine.

3- DİFFİCULTY WHILE FEEDING THE MACHINE WITH THE CURRENT SHEET.?
Chechk the rollers and be sure that there are no any galvanised sheet particles inside ,
if yes clean it up
Check that there is no grease inside
Check that all the gears are well lubricated .

4- YOU CAN NOT FEED THE MACHINE WITH THE CURRENT SHEET?
Check the sheet thickness ,it might be thichker than it is allowed
Rollers might be running on the opposite way.
The first roller might be broken down .

WIRING DIAGRAM



STANDARD PARTS

PART NAME	QTY	DIMENSION
COTTER	2	12-8 L=50
COTTER	1	88-7 L=35
COTTER	3	68-7 L=55
BEARING	72	AS 3552
BEARING	36	AXK 3552
BEARING	36	HK 3520
BEARING	8	HK 3026
BEARING	36	IR 30 35 30
BEARING	8	IR 25 30 30
BEARING	1	6009 ZZ
BEARING	8	6204 ZZ
BEARING	1	6305 ZZ
SCREW	1	M16*1000
SCREW	1	M24*200
IMBUS	6	M12*200
IMBUS	4	M12*90
BOWL SPRING	120	Ø40*Ø20*2,35-3,5
WASHER	36	M12
CYLINDERICAL PIVOT PIN	2	Ø8*30
IMBUS	1	M20*40
RETAINER	1	472/75
RETAINER	1	472/62
ADCUSTMENT WHEEL	2	Ø10*Ø40
IMBUS	50	M12*30
IMBUS	50	M12*35
IMBUS	20	M12*40
IMBUS	20	M10*20
IMBUS	15	M5*15
SAFETY CATCH ARM	4	M6 METAL
WHEEL	4	KAMA 4102-F17 RMB 80
REDUCER	1	W75 U D30 20 P100 B14 B3
TORK ARM	1	W75
MOTOR	1	WAT 3 KW 1400 D/DP100 B14
PROTECTION SWITCH	1	C1-PKZ01-G MOELLER