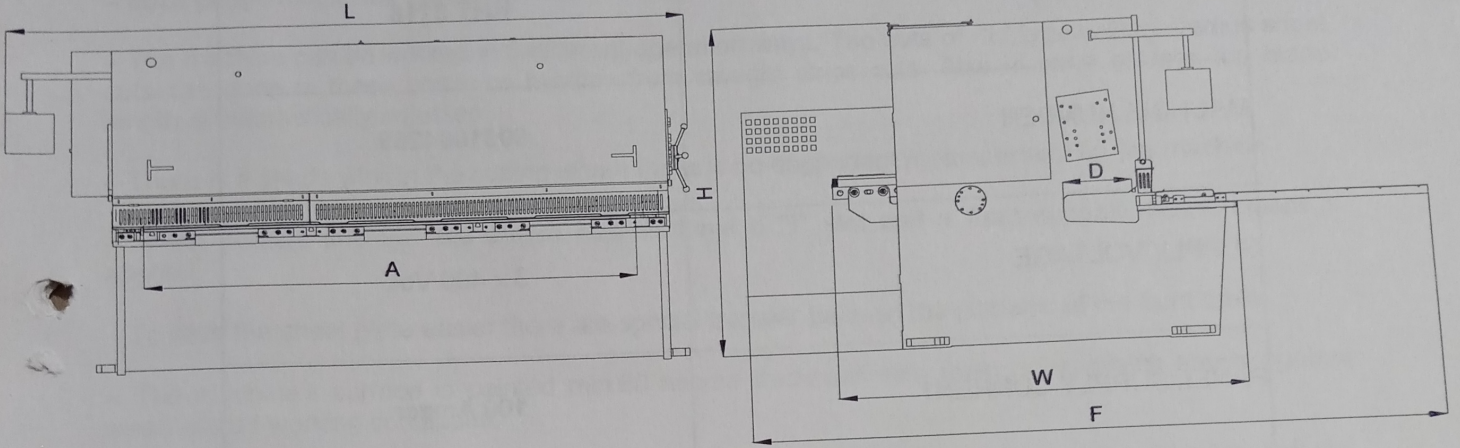


A – DELIVERY INFORMATION

A – 1.1 TECHNICAL CHARACTERISTICS



TYP	Cutting Capacity	Cutting Length	Cutting Angle (fixed)	Stroke per min.	Number of Holddowns	Holddown Force	Motor Power	Oil Capacity	Stroke	Throat Depth	Height	Length	Width	Total Width	Weight
	mm	mm	°	1/min	Pcs.	ton	kw	lt	mm	mm	mm	mm	mm	mm	~ kg
		A								D	H	L	W	F	
KHT 3116	16	3100	2°	10	14	61	37	410	140	350	2250	4550	2240	3825	14800

A – 1.2 ELEKTRISCHER INFORMATION FORM	
MACHINE NAME	KHT 3116
MACHINE NUMBER	6091064259
SUPPLY VOLTAGE	3 x 400 Volt
PANEL SUPPLY CURRENT	100 Amper
MOTOR SUPPLY CURRENT	72 Amper
SUPPLY CABLE SECTION	4 x 25 mm ²
INSULATION RESISTANCE MIN.	1 M Ω
TEST VOLTAGE	1000 Volt
COMMAND VOLTAGE	24 Volt
FREQUENCY	50 Hz.

F720.05

REV.0

A – 2.1 INTRODUCTION OF THE MACHINE

- The machine functions has 2 main motors:
 - Hydraulic system motor
 - Back gauge motor
- Back gauge motor has speed control.
- The machine can be worked in 3 different operation ways. The cuts of "L" type or large radius sheet cuts can done in these positions besides from straight strips cuts. Also in serie cuttings the blade length is automatically adjusted.
- There is a shade wire in the cutting where there is no dependant measurement on the machine.
- Sheet holders and 90° set-square support have a "T" slot and a front support measurement is applied.
- To slide the sheet plate easier there are special transfer balls on the platform of the front table.
- The machine's surface is painted min.60 micron thickness with main paint, which saves against weather and working conditions.
- Besides from the operation use of the machine there is a 1 year guaranty against production defects.

A – 3.0 STANDARD AND REQUESTED EQUIPMENT

A – 3.1 STANDARD EQUIPMENT

- Digital readout command panel
- 2 pieces of sheet holders
- 1 piece of ruler set - square
- 3 pieces of front support apparatus pins
- 1 piece of shade wire
- Illumination light
- 1 piece of command pedal
- Special sheet transfer balls on the front table
- Ballscrew movement transmission system
- Owners manual

A – 3.2 REQUESTED EQUIPMENT

- NC Control unit (ELGO , EMKO , NUOVA)
 - It is possible to have 200 separate programs for the sheet support distance and cutting amount
 - If requested the gauge will automatically go back during the cutting process
 - It can be worked on manual or automatic program command
- Special security system and control is contained according to the CE certificate
- Special angle set – square for degree cutting
- Support arms and 90° set – square with support device up to 3000 mm.
- Pneumatic control sheet support system which is assembled on the back gauge.

B – MACHINE AND PERSON SECURITY

B – 1.1 INFORMATION FOR HYDRAULIC OIL

The required hydraulic oil must be filled in the machine as stated on the number 1 points and this must be done before installing the machine.
(Look at A – 1.1 for the required oil proportion)

HYDRAULIC OIL	PLACES WHERE TEMPERATURE IS BELOW 20°C	PLACES WHERE TEMPERATURE IS ABOVE 20°C
STANDARD NORM	ISO VG 32	ISO VG 46
ARAL	VITAN GF 32	VITAN GF 46
B.P.	HLP 32	HLP 46
CALTEX-TEXACO	RANDO OIL 32	RANDO OIL 46
ESSO	NUTO H 32	NUTO H 46
PURFINA FRANCE	HYDRAN 32	HYDRAN 46
HUILE RENAULT-ELF	OLNA 32	OLNA 46
SHELL	TELLUS 32	TELLUS 46
VALVOLINE	ULTRAMAX 32	ULTRAMAX 46
VEEDOL	ANDRAIN 32	ANDRAIN 46
YACCO	TRANSHYD 32	TRANSHYD 46
GULF	HARMONY 32 AW	HARMONY 46 AW
CASTROL	AWS 32	AWS 46

GREASE	
SHEEL	ALVANIA R 2
B.P.	ENERGREASE HY 2

B – 1.2 FIRE DATA

Flash point (°C) and method : 193 closed cup.

Auto ignition temperature (°C) > 200

Flammability limits : 1.5 – 6

Products of combustion : Mainly oxides of carbon , water vapour with unidentified organic compounds.

Special fire / explosion hazards : Large surface areas exposed to air / oxygen (e.g. , oil-soaked rags , paper or absorbed soillages) may be easily ignited and these should be cleared up at once.

Special fire-fighting procedures : Firefighters should enter area wearing self-contained breathing apparatus. Do not spray water directly into stroge containers due to boil over danger.

Extinguishers : Foam , dry chemical powder , carbon dioxide , halon.

B – 1.3 STORAGE and REACTIVITY DATA

Suitable materials / coatings	: Most common metals.
Unsuitable materials / coatings	: May soften some rubbers.
Stability	: Stable.
Reaction with water	: None.
Dangerous reactions	: None known.
Hazardous polymerisation	: Will not occur.
Materials to avoid	: Strong oxidising agents.
Conditions to avoid	: Extreme temperatures.
Decomposition temperature (°C)	: > 100
Dangerous decomposition products	: Significant concentrations of hazardous decomposition products are not expected.
Storage temperature (°C)	: 0 - 40
Storage precautions	: No special requirements. Avoid elevated temperatures.

B – 1.4 RECOMMENDED FIRST AID IN CASE OF CONTACT WITH HYDRAULIC OIL

Eye contact : Flush with plenty of water for at least 15 minutes. If irritation persists , obtain medical attention.

Skin contact : Wash with soap , or approved skin cleanser , and water. Remove heavily contaminated clothing. Where skin rashes or other abnormalities occur as a result of excessive contact , medical advice should be obtained.

Inhalation : In the event of discomforting effects produced by overexposure , remove to fresh air. If effects persist , obtain medical attention.

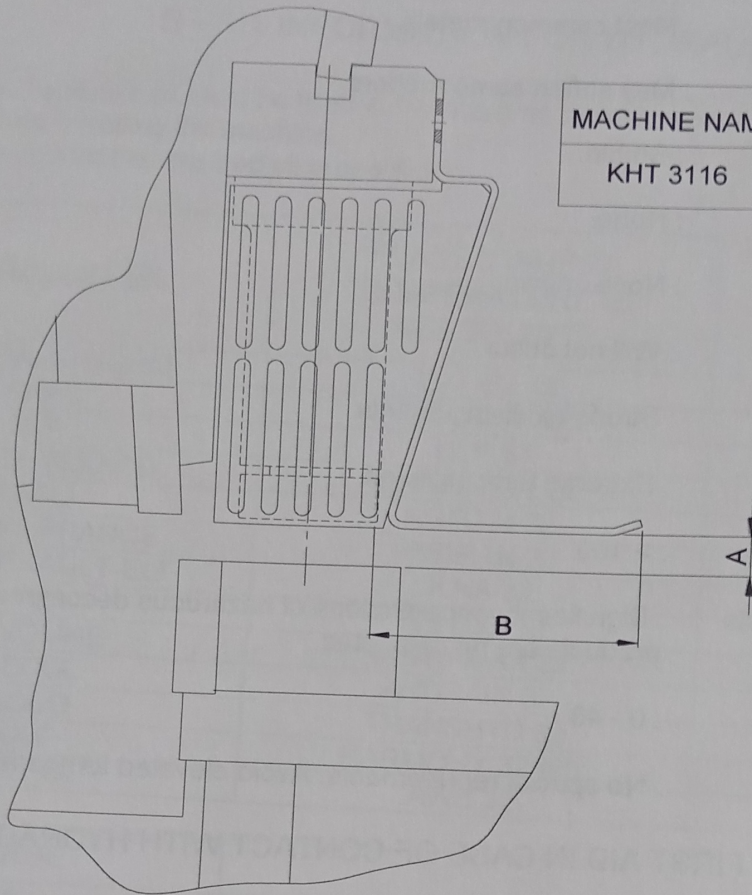
Ingestion : Milk or water to drink may be beneficial, DO NOT INDUCE VOMITINH. Main hazard is aspiration into the lungs during of following ingestion , children being more susceptible than adults. If this occurs (e.g. , during vomiting) , send to hospital immediately.

Notes for doctors : Treat symptomatically. Aspiration may cause sever pneumonitis , requiring antibiotics and corticosteroid therapy.

B – 2.1 PROTECTION OF HAND AND BODY

- Always keep your hands away from the cutting axis during cutting. Cutting gap adjustment and protection covers should not be adjusted during the cutting process. The front panel covers and protection covers security switches on the main electrical panel shouldn't be out of circuit at any time. If machine has a sheet support system the material should be placed carefully.
- Don't get close to the machine during the machines operation. Stay at the given measurement for the security distance.
- Never go inside the machine during the cutting process.

B – 3.1 PROTECTION SHEETS MONTAGE MEASURE



MACHINE NAME	A	B
KHT 3116	20<A<22	165



B – 5.1 NOISE

This range of machines have been designed to keep noise levels down to a minimum. During design , the following factors were taken into account.

- 1 - The internal ear pump , gear pump and vone pumps are used which we believe to be one of the quietest on the market.
- 2 - The motor and pump assemblies are mounted on anti-vibration pads.
- 3 - Flexible hoses are used to isolate the pump and manifold assembly from the main structure of the machine.
- 4 - The side frames have been kept high to reduce transmitted airborne noise at ear level.
- 5 - Special considerations were taken in to design of the control circuit to reduce hydraulic knock due to valves switching under pressure.

By far the largest source of noise on the press brakes is generated as the offcut falls at the rear. This problem is outside the control of the manufacturers , however , the following point should be considered.

- 1 - Do not allow an accumulation of scrap at the rear of the machine.
- 2 - Where the above considerations do not reduce the noise level below a safe working level , ear defenders should be supplied to all exposed persons.

B – 5.2 NOISE LEVEL MEASUREMENT

MACHINE NAME	UNLOADED WORK (dBA)	LOADED WORK (dBA)
KHT 3116	62	72

B - 6.1 SECURITY PROCEDURE

- 1 - At the moment of machine's feeding , obey to the values given on the electric introduction label which is located on the machine.
- 2 - Absolutely do not in any way bring near a part of your body close to the operation zone.
- 3 - Absolutely do not attempt to accutate the machine, carry out service and maintenance or change parts without consulting your executive.
- 4 - Absolutely do not service the machine while motor is on.
- 5 - Service and maintenance of machinery ought to be carried by personel which are capable and well-informed.
- 6 - From the point of view of safety, do not dislocate adjustment of hydraulic valves.
- 7 - Do not dislocate adjustment of top table limit switches.
- 8 - Do not go over the maximum values given on the introduction label and pressure label located on the machine.
- 9 - Safety guards are available on moving parts of the machine.
- 10 - Safety guard are placed in order to avoid hands to enter between blades. When machine is operating, this guards must not be disassembled from it is place.
- 11 - When machine is operating, the side covers must not be opened.
- 12 - On the rear sides the machine , safety guards are available and photocelled safety system exists. During operation of machinery, when someone places themself behind the machine, the machine will stop. (OPTIONAL)
- 13 - Turn of the power before opening the electrical panel.
- 14 - On our machines don't use tooling outside our production otherwise the machine can be damaged.
- 15 - Do not operate the machine in over capacity.
- 16 - Keep away unauthorised persons from the machine.
- 17 - Keep the working place in order other wise , there can be danger and stricts your working area.
- 18 - Before operating the machine , check security appliances and parts which are damaged.
- 19 - Machine has to be operated by a specialized person after reading the instruction manual.

NOTE : All safety instructions required for machinery are written on the labels attached to the machine.

B - 7.1 SECURITY COVERS AND SWITCHES

LOWER LIMIT SWITCH
BES 516-3026-0B-C

UPPER LIMIT SWITCH
BES 516-3026-0B-C

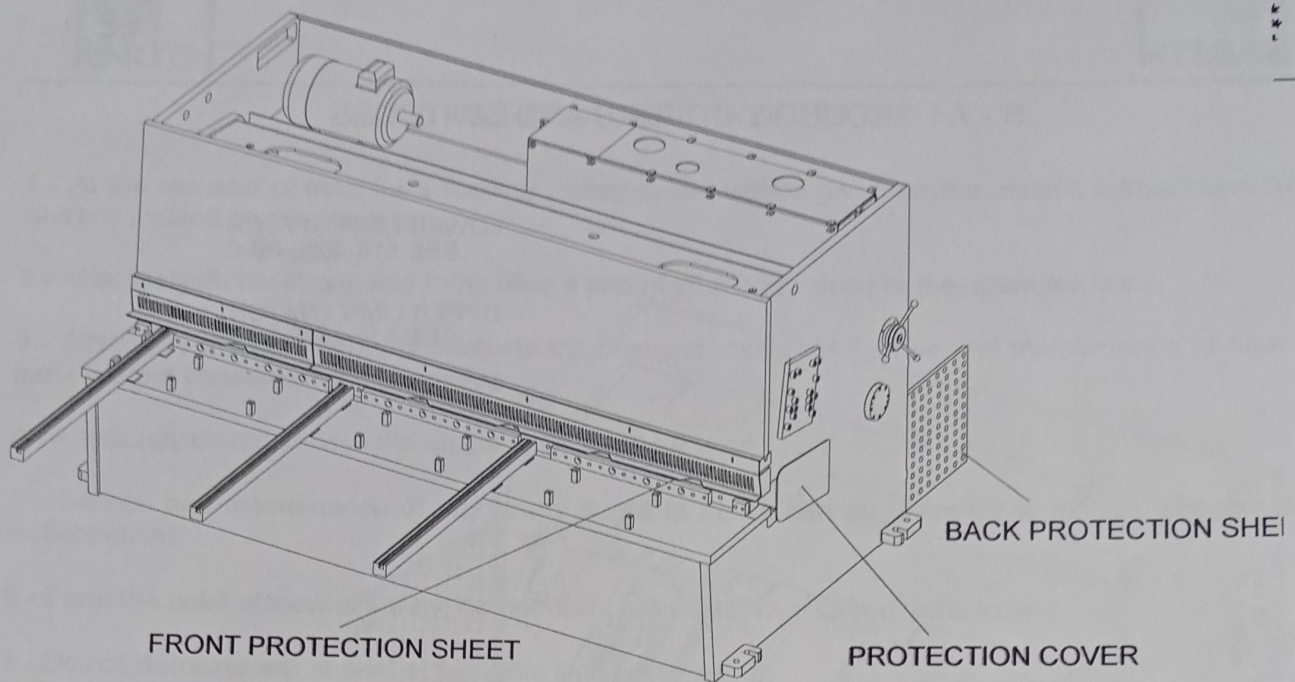
PHOTOSELL
XU2-S18 NP 340 L5-R

BACK GAUGE
MIN. LIMIT SWITCH
XCK-P718

BACK GAUGE
MAX. LIMIT SWITCH
XCK-P718

PHOTOSELL
XU2-S18 KP 340 L5-T

BACK GAUGE
SECURITY SWITCH
XCK-P718
(OPTIONAL
13-16-20mm)



BACK GAUGE MIN LIMIT SWITCH (XCK-P718) : It supplies to come the minimum distance in front side for the back gauge.

BACK GAUGE MAX LIMIT SWITCH (XCK-P718) : It supplies to come the maximum distance in front side for the back gauge.

UPPER LIMIT SWITCH (BES 516-3026-B0-C) : It makes stop the beam (top table) up , when it's cutting process is over.

LOWER LIMIT SWITCH (BES 516-3026-B0-C) : It determines the most lower point the back gauge will turn, when the cutting process is over.

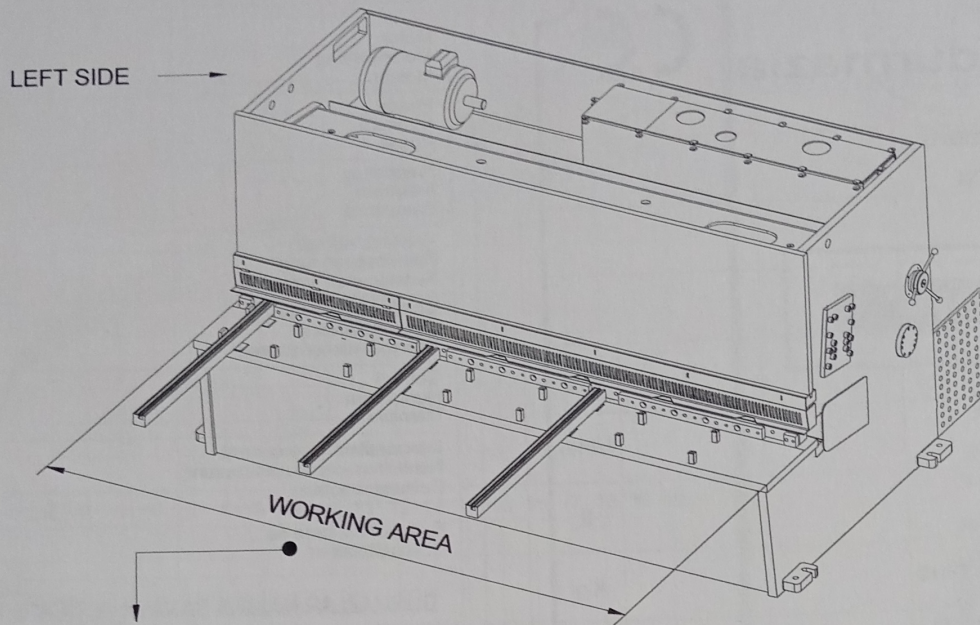
PHOTOSELL (XU2-S18 KP 340 L5-T) : It stops the motor , when there is any substance or living (creature) at the back side of the machine.

BACK GAUGE SECURITY SWITCH (XCK-P718) : It present to continue the cutting process when the back gauge tampon is risen. OPTIONAL (13-16-20 mm DHGM)

PHOTOSELL (XU2-S18 NP 340 L5-R) : It stops the motor , when there is any substance or living (creature) at the back side of the machine.

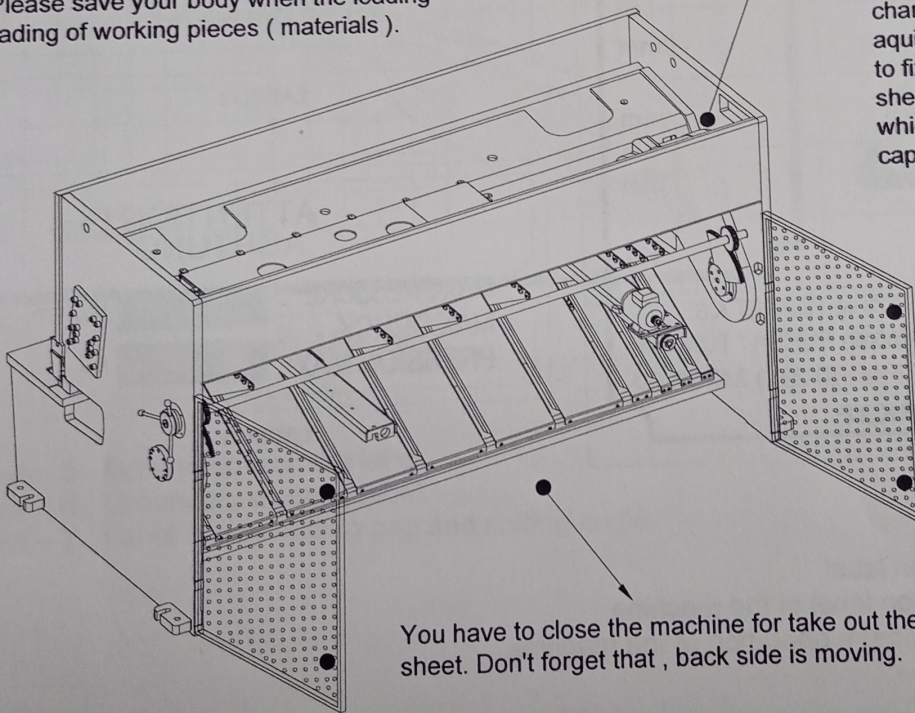
PROTECTION COVER : There is protection covers which are fixed to the right and left frame to the machine with bolt connection , in order to supply full safety for the person who works.

B - 7.2 REST HAZARDS





Please be carefull in working area and use the gloves. Please save your body when the loading and unloading of working pieces (materials).

When you want to take out , pull at changing , cleaning etc. of hydraulic aequipmnet for maintenance , you have to fix the upper beam. You have to put sheet between top and bottom blade which is higher than machine thickness capacity.



B – 8.1 INTRODUCTION AND SAFETY LABELS PUT ONTO THE MACHINE

 durmazlar 	
TYPE	
MANUFACTURING YEAR BAUJAHR ANNEE FABRICATION	
MACHINE NO MASCH-NR N'DE SERIE	
CAPACITY КАПАЦИТЪТ CAPACITE	
STROKE HUB COURSE	mm
STROKE IN A MINUTE HUBZAHL PRO MIN. COURSE PAR MINUTE	1/min
LUBRICANT CAPACITY ЦЛТANK КАПАЦИТЪТ CAPACITE RESERVOIR	lt
TOP TOOL WEIGHT GEWICHT OBERWERKZEUG POIDS OUTIL SUP.	Kg
BOTTOM TOOL WEIGHT GEWICHT UNTERWERKZEUG POIDS OUTIL INF.	Kg
WIDTH BREITE LARGEUR	mm
LENGTH ЛЪНГЕ LONGUEUR	mm
HEIGHT НЪЧЕ HAUTEUR	mm
WEIGHT GEWICHT POIDS	Kg
<p>DURMAZLAR MAKİNA SANAYİİ ve TİCARET A.Ş. Organize Sanayi Bölgesi 75. Yıl Bulvarı BURSA / TÜRKİYE Tel : (0 224) 241 80 00 pbx. Fax : (0 224) 242 75 80</p> <p>MADE IN TÜRKİYE</p>	

LABEL-1

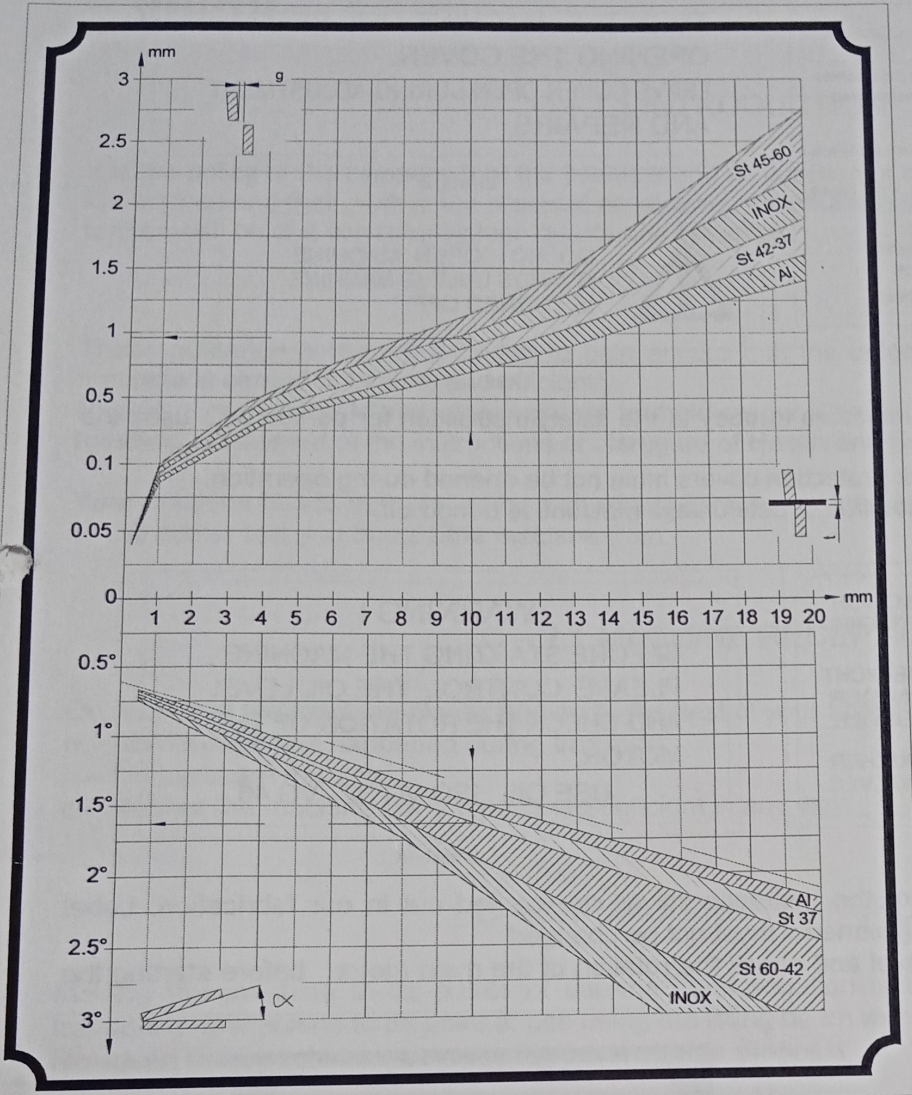
Motor Motorleistung Moteur		KW
Phase Stromart Phase		~
Frequency Frequenz Frequence		Hz
Working voltage Betriebsspannung Tension d'alimentation		V
Command voltage Steuerspannung Tension de commande		V
Current Nennstrom Intensität		A
Intermediate fuse current Nennstrom der hauptsicherung Puissance totale		A
E. circuit scheme no E. schaltplan nr.		
<p>DURMAZLAR MAKİNA SANAYİİ ve TİCARET A.Ş. Organize Sanayi Bölgesi 75.Yıl Bulvarı BURSA / TÜRKİYE Tel : (0 224) 241 80 00 pbx. Fax : (0 224) 242 75 80</p>		

LABEL-2

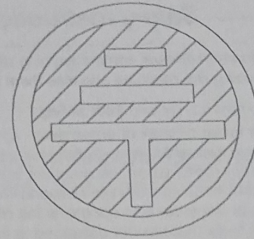
<p>ATTENTION ! ACHTUNG !</p>	
MAX PRESSURE :	<div style="background-color: black; width: 100px; height: 15px; display: inline-block;"></div> Kg/cm ²
MAX DRUCK :	<div style="background-color: black; width: 100px; height: 15px; display: inline-block;"></div>
PRESSION MAXI :	<div style="background-color: black; width: 100px; height: 15px; display: inline-block;"></div> Psi

LABEL-3

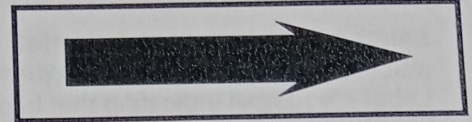
- Label - 1 : Machine introduction label
 Label - 2 : Electrical introduction label of the machine.
 Label - 3 : Label showing maximum operation of the machine.



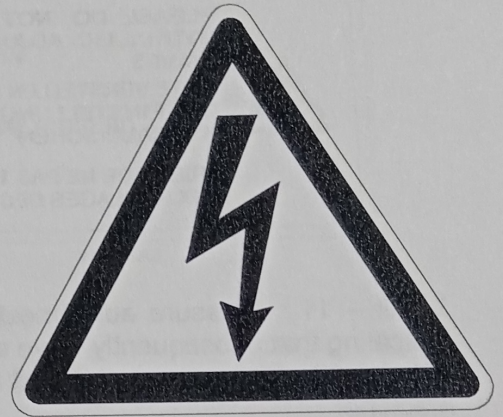
LABEL-7



LABEL-4



LABEL-5



LABEL-6

- Label – 5 : Grounding warning label.
- Label – 6 : Grounding warning label.
- Label – 7 : Label shows cutting gap and cutting angle.



Safety Instruction

Read the instruction manual and the warning plates on the machine before operating the machine and take them into consideration.

For the machine's safety and your safety :


- Do not wear loose clothes or ornaments , these cause accidents.
- Wear safety-shoes while working for your safety.
- Never adjust or repair when the machine is running. If not in use, disconnect the machine from the network.
- Work only with the tools appropriate to the machine.
- Use only the tools that are not damaged to the machine.
- Never use the parts that are not fitting to the machine.

- Never remove this warning plate from the machine -

LABEL-8

TURN THE MACHINE OFF BEFORE
OPENING THE COVER.
LEAVE COVER OPEN DURING ADJUSTMENT
AND REPAIRS.

LABEL-9




DO NOT OPEN MACHINE
GUARDS UNLESS MACHINE
IS TURNED OFF.

LABEL-10

Label – 8 : This is the label which indicates to obey to the safety instruction for person who uses the machine.

Label – 9 : Label indicating that back protection covers must not be opened during operation.

Label – 10 : Please do not open protection sheets unless machine is turned off.



PLEASE DO NOT TOUCH
HYDRAULIC ADJUSTMENT
VALVES.
BITTE VERSTELLEN SIE NICHT
DIE EINSTELLUNGEN DER
HYDRAULISCHEN VENTILE.
PRIERE DE NE PAS TOUCHER
AUX REGLAGES DES VALVES.

LABEL-11

WARNING !

BEFORE STARTING THE MACHINE ,
PLEASE CONTROL THE OIL LEVEL
AND CHECK THE ROTATION OF THE
MOTOR.
USE OIL : ISO VG 32 - VG 46

LABEL-12

Label – 11 : Pressure adjustment of the hydraulic valves are carried out in our fabrication. Label indicating that subsequently valve adjustments must not be changed.

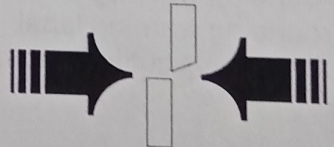
Label – 12 : Please control the oil level and check the rotation of the main motor , before starting the machine.



LABEL-13

DANGER

PINCH
POINT



LABEL-14

Label – 13 : Never put your hand between top-bottom blade during cutting process.

Label – 14 : The warning label which indicates the pinch point.

C – GUIDANCE NOTES FOR PLANT INSTALLATION

C – 1.1 INTRODUCTION

It is the policy of the company that the interests and satisfaction of our customers will be of paramount importance and that, with in the practical constraints of manufacturing cost, the goods offered for sale to them will be of a consistently high quality and reliability.

These guidance notes are provided to help ensure that the unloading, handling and siting of your machine is carried out safely and efficiently. Please note that the Manufacturer cannot be held responsible for damage due to improper machine handling, disregard of the instructions or disregard of Health and Safety Regulations.

Your machine has to be installed by a specialist person. For installation, please contact with company or the dealer that you bought the machine from.

C – 2.1 MACHINE RECEPTION

On receipt of the machine please ensure to the best of your ability that there is:

- a – No damage has happened during transport.
- b – No parts are missing.
- c – Neither the machine nor the parts are deficient in any way.

C – 3.1 MACHINE TRANSPORT

Moving the machine to its points of use—the ideal situation is to be able to offload and internally transport the machine to its point of use using the lifting beam with crane or overhead crane. However, this is not always an appropriate or viable proposal.

The usual operation for the movement of the machine is as follows:

- a – If on caterpillars or skates, use in four positions – two at the front, and two at the rear under the sideframe legs of the machine.
- b – Always move the machine in a longitudinal direction, never forward or backwards.
- c – Secure the two front caterpillars with a piece of hard-grained wood, or a block of steel placed beside each plate. This will support the machine in case one of the skates slip.
- d – Check the floor on which the machine is to be transported for cracks, uneven surface or slopes. It is recommended that the machine is transported over smooth and parallel floors.

POSITIONING :

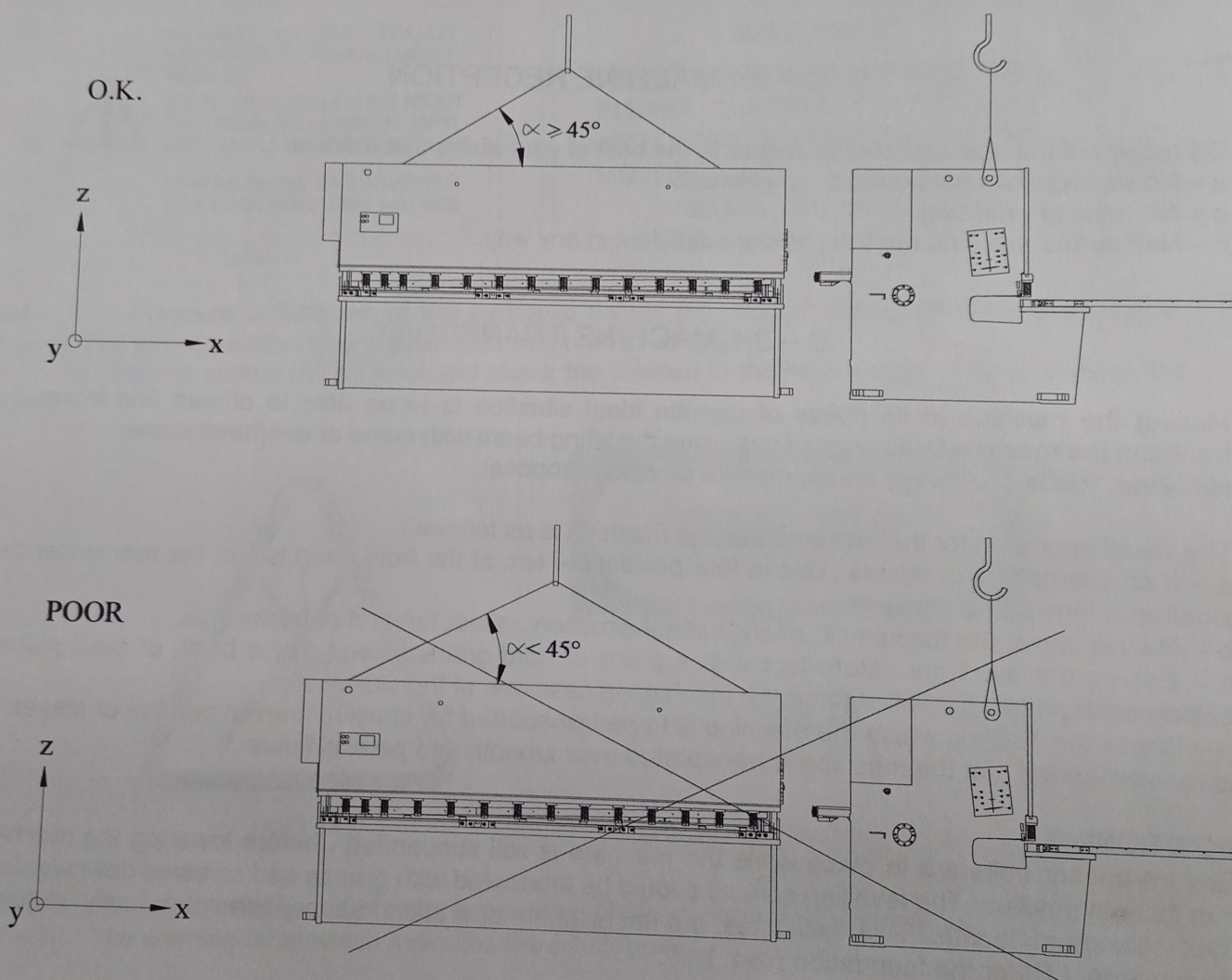
Ensure anchor bolts are in place while the machine is still suspended, before lowering the machine into its final position. The levelling screws should be lubricated with grease and screwed downwards to their maximum length. This facilitates the installation operation, as adjustment is only required downwards. (Refer the foundation plan.)

There are lifting points at the upper right and left hand side of the sideframes, towards the front of the machine. (refer to lifting illustrations)

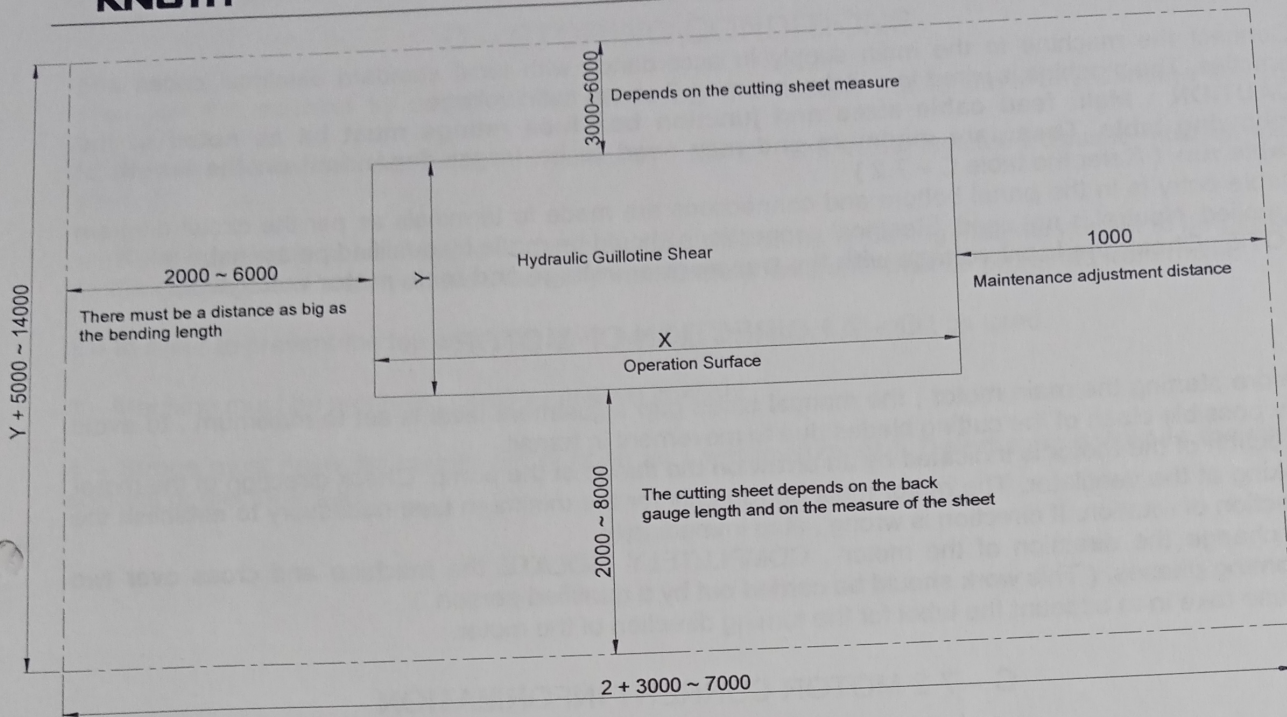
These lifting points are located at the centre of gravity as seen along the length of the machine. The machine thus hangs fairly straight (depending on the position of the backgauge).

Points to remember , and recommendations :

- a – The centre of gravity is high, and there is a danger that it may tip over.
- b – NEVER lift the machine using the oil tank , carrier , backgauge or cylinder. ALWAYS use the lifting points (Refer to lifting illustrations)
- c – When lifting the machine from its transport to its point of use , it is strongly recommended that a lifting beam of the appropriate lifting capacity is used.
- d – If an appropriate lifting beam is not available , chains and shackles of the appropriate lifting capacity must be used.
- e – NEVER use slings of any sort for lifting.
- f – ALWAYS use the correct methods for lifting the machine when using chains. (Refer to lifting illustrations.)
- g – ALWAYS use shackles and lifting accessories of the correct specifications and loading capacities.



C – 4.1 OPERATION AREA OF THE MACHINE



C – 5.1 PRE-START UP DETAILS

The machined surfaces of the shear have been treated against rust with cleaner. It can be removed easily with appropriate cleaning fluid.

Cleaning operation : Cover the tools with wet cloth , wait 10 minutes and than clean it with a cloth. Benzine or oil Solvent have to be used.

Machine jacking bolts should be supported on metal plates. Recommended plate sizes are available. The machine should be bolted down using cast in anchor bolts , having positioned the machine allow concrete to set before final tightening , or wedge bolts of sufficient dimension and quality , to be fixed according to the type used.

The machine should be checked using a precision levelling instrument. The recommended positions for checking the level are , centre of the table with the levelling device resting on the infill support pads , to check the longitudinal level and at each end of the table , again resting on the infill support pads to check front to back level. The machine level is adjusted using the jacking screws in each foot. **THE FRAME MUST NOT BE TWISTED.** A mean value should be obtained from end across the infill support pads. The frame should not be twisted to achieve exact parallelism.

C – 6.1 ELECTRICAL CONNECTIONS

Connect the machine to the main supply in accordance with local standard electrical codes and practices. The machine is wired to suit the incoming 3 phase main voltage.

CAUTION : Main feed cable sizes and junction box fuse ratings must be as noted in the following table. These are minimum and may need to be larger dependent on the length of cable run. (Refer the table C – 7.2)

Cable entry is in the panel bottom and connections are made to terminals as per the circuit diagram supplied. Neutral is not used. Electrical connections should be made by qualified personnel.

NOTE : Check the local voltage with the transformer voltage and main motor voltage.

C – 7.1 DIRECTION OF MOTOR











Before starting the main motor , the manual blade gap adjustment level is set to maximum , to avoid any possible clash of the cutting blades due to movement in transit.

Direction of the motor is indicated by an arrow on the flange of the pump. Check direction of the motor looking at the ventilator. The motor must be run only for the minimum time necessary to establish the direction of rotation. If direction is wrong , stop immediately.

To change the direction of the motor , **COMPLETELY ISOLATE** the machine and cross over two incoming phases. (This work should be carried out by a qualified person.)

Please take in to account the label for the turning direction of the motor.

C – 7.2 MOTOR CURRENT INFORMATION

kW HP	220-240 V (50Hz/60Hz)			380-400 V (50Hz/60Hz)			415 V (50Hz/60Hz)			440 V (50Hz/60Hz)			575 V (50Hz/60Hz)		
	 A	 A	q mmI	 A	 A	q mmI	 A	 A	q mmI	 A	 A	q mmI	 A	 A	q mmI
3 4	16	11.5	1.5	10	7	1.5	10	6.5	1.5	10	6	1.5	6	3.5	1.5
4 5.5	25	14.5	1.5	16	8.5	1.5	16	8	1.5	16	8	1.5	10	5	1.5
5.5 7.5	25	20	2.5	16	11.5	1.5	16	11	1.5	16	10	1.5	16	8	1.5
7.5 10	32	27	6	25	15.5	2.5	25	14	2.5	20	14	2.5	16	10	1.5
11 15	50	39	10	32	22	4	32	21	4	32	20	4	25	16.5	2.5
15 20	63	52	16	40	30	6	40	28	6	32	26.5	6	24	20.5	4
18.5 25	80	64	16	50	37	10	50	35	10	40	33	6	40	21	4
22 30	80	75	25	63	44	10	50	40	10	50	39	10	40	26	6
30 40	125	103	35	80	60	16	63	55	16	63	51.5	16	50	32	10
37 50	150	126	50	100	72	25	80	66	25	80	64	25	63	50	16
55 75	200	182	95	125	105	35	125	100	35	100	90	35	80	70	25



D – STORING CONDITIONS

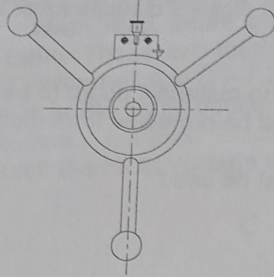
Transport the machine by taking all the necessary precautions not to have any damage on the machine.

If machine is to be stored more then a period of 1 month , the below indicated clauses must be met carefully.

- 1 – If the machine is to be stored in a damp enviroment , damp removing materials ought to be placed on the electric panel and hydraulic block , by means electrical parts shall be protected from moist.
- 2 – In order to prevent the top and tools from rusting , protective oil must be used.
- 3 – Machine must be protected carefully against sunlight.
- 4 – Stroge must never be carried out in open air (wet inviroment). Defect may occure in the valve sockets or electrical parts.

E – MECHANICAL ADJUSTMENT

E –1.1 CUTTING GAP ADJUSTMENT



The cutting gap adjustment is made by using the handle , on the bearing disk at the side of the machine , in moving it on the numbers depending on the sheet thickness.

For example : For 5 mm thick sheet move the handle on to number 5 on the scale.

E-1.2 TABLE OF CUTTING GAP BETWEEN THE BLADE

TABLE OF CUTTING GAP BETWEEN THE BLADES

SHEET THICKNESS	CARBON STEEL			STANLESS STEEL			ALUMINIUM ALLOY		COPPER and COPPER ALLOY	
	330 ч 370	370 ч 500	500 ч 700	450 ч 660	600 ч 800	800 ч 950	110 ч 250	250 ч 450	210 ч 350	350 ч 550
	350 N/mmI	450 N/mmI	600 N/mmI	550 N/mmI	700 N/mmI	850 N/mmI	200 N/mmI	400 N/mmI	300 N/mmI	450 N/mmI
	SAE 1005 St 33	SAE 1015 St 37	SAE 1040 St 60	SAE 304	SAE 316	SAE 430	AlMnCu AlMg1	AlMg3 AlMg4	CuAl	CuAl10Fe
0.25	0,02	0,02	0,02	0,01	0,01	0,02	0,01	0,01	0,01	0,01
0.50	0,04	0,04	0,04	0,02	0,03	0,04	0,02	0,04	0,02	0,03
0.80	0,06	0,07	0,06	0,04	0,04	0,06	0,04	0,06	0,04	0,05
1.00	0,08	0,09	0,08	0,05	0,06	0,08	0,06	0,08	0,05	0,07
1.50	0,12	0,13	0,12	0,08	0,09	0,13	0,08	0,12	0,08	0,10
2.00	0,15	0,18	0,15	0,11	0,12	0,17	0,10	0,16	0,10	0,14
2.50	0,20	0,22	0,20	0,14	0,15	0,21	0,13	0,22	0,13	0,17
3.00	0,25	0,27	0,25	0,18	0,18	0,25	0,15	0,25	0,15	0,21
4.00	0,30	0,36	0,36	0,22	0,24	0,34	0,22	0,34	0,20	0,28
5.00	0,40	0,45	0,45	0,27	0,30	0,42	0,28	0,42	0,25	0,36
6.00	0,48	0,54	0,55	0,33	0,37	0,51	0,35	0,50	0,30	0,44
7.00	0,60	0,65	0,66	0,39	0,44	0,60	0,41	0,58	0,36	0,52
8.00	0,70	0,74	0,76	0,45	0,51	0,70	0,48	0,66	0,42	0,60
10.00	0,85	0,90	0,95	0,60	0,65	0,90	0,60	0,74	0,54	0,70
12.00	1,00	1,08	1,15	0,72	0,80	1,08	0,72	0,90	0,66	0,76
13.00	1,08	1,17	1,25	0,78	0,86	1,17	0,78	0,97	0,72	0,85
15.00	1,25	1,35	1,50	0,90	1,00	1,35	0,90	1,15	0,84	1,02
20.00	1,65	1,90	2,00	1,25	1,35	1,80	1,25	1,55	1,10	1,44
25.00	2,00	2,30	2,50	1,60	1,70	2,25	1,60	1,90	1,35	1,85

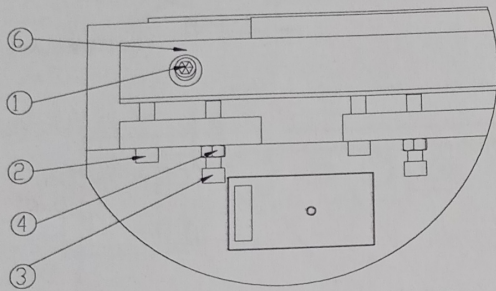
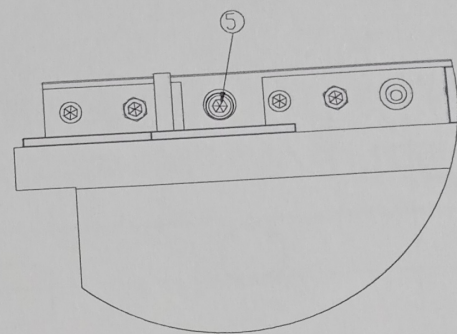
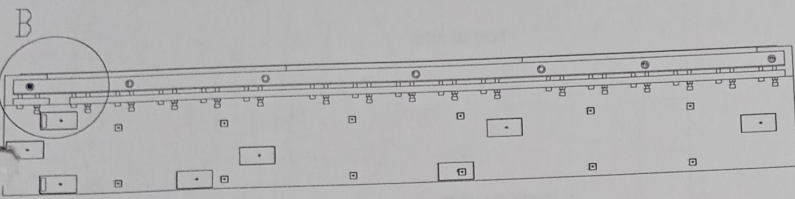
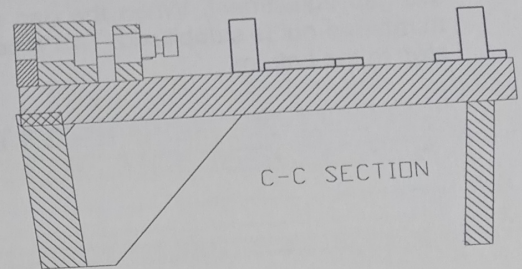
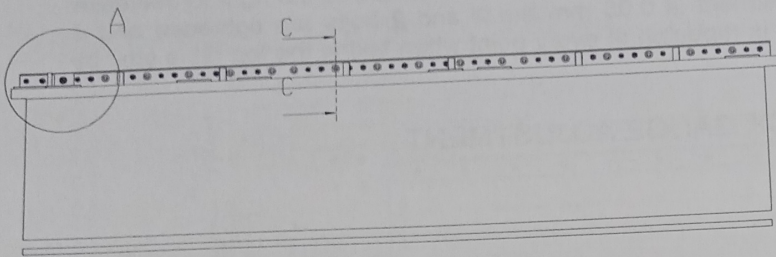
NOTE : Calculations has been made to the metarials absorb resistance.

10 N/mmI : 1 daN/mmI : 1 kg/mmI

1 N/mmI : 1 MPa/mmI

IMPORTANT P.S. : Make cutting by take in to account the label on the machine which shows blade gap and cutting angle values.

E – 2.1 BLADE ADJUSTMENT



B DETAIL

The distance between top and bottom blades are adjusted as 0.05 mm at our factory. But the adjustment process must be made after the blades are sharpened. So, firstly take the gap adjustment mechanism to 0 position and take off front guarding sheet. Max. open back gauge support place appropriate support between top and bottom blade for your and your machine safety.

Change top blade as follows :

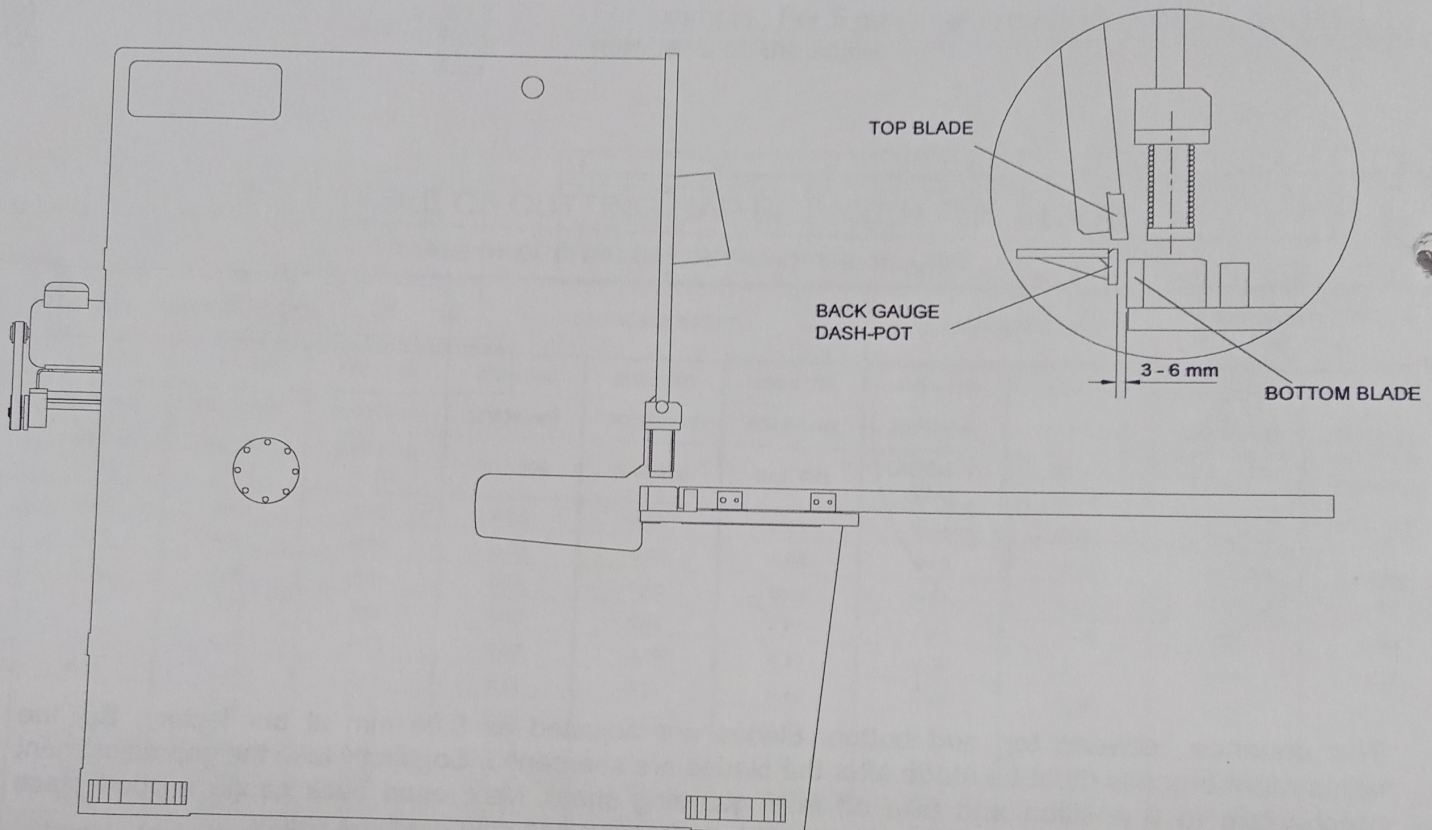
- Loosen all bolts of top blade from the back of the machine.
- Disassembly the bolts at both edges of the blades, put appropriate bolts instead of the disassembled ones. Than disassemble all remaining bolts.
- Take off the blades one by one and carefully.
- Apply the same transactions on the contrary to assembly the blades to their places. Tighten the blade bolts with 35 Nm moment.

Change bottom blade as follows :

- The 6 numbered blade connection wedges are assembled after tightening the 5 numbered bolts of the bottom blade.
- For the adjustment of the top blade and bottom blade, the top table is taken down slightly for the top and bottom tools to cross each other.
- When the 2 numbered bolt blade is pulled back (gap is given) and then 3 numbered bolt blade is pushed (gap is taken). The numbered 3 bolt is stabilized to number 4 nut.

– Bolts numbered 1 and 2 and nut numbered 4 is loosened to give gap between the blades. The gap is obtained by turning the bolt to the left. The control is made with the fine adjustment device of 0.05 mm. If the gap adjustment is more then 0.05 m then the numbered 3 bolt is turned to the right to decrease the gap adjustment. When the gap adjustment is 0.05 mm the 1 and 2 bolts are tightened and 4 numbered nut is satabilised. This process is repeated at every point when taking the top table step by step to the bottom.

E – 3.1 BACK GAUGE ADJUSTMENT



If the back gauge of the machine is not adjusted (which means that the value indicated on the digital and the width of the sheet supported to the dash-pot is not the same) the back gauge zero setting process is carried out.

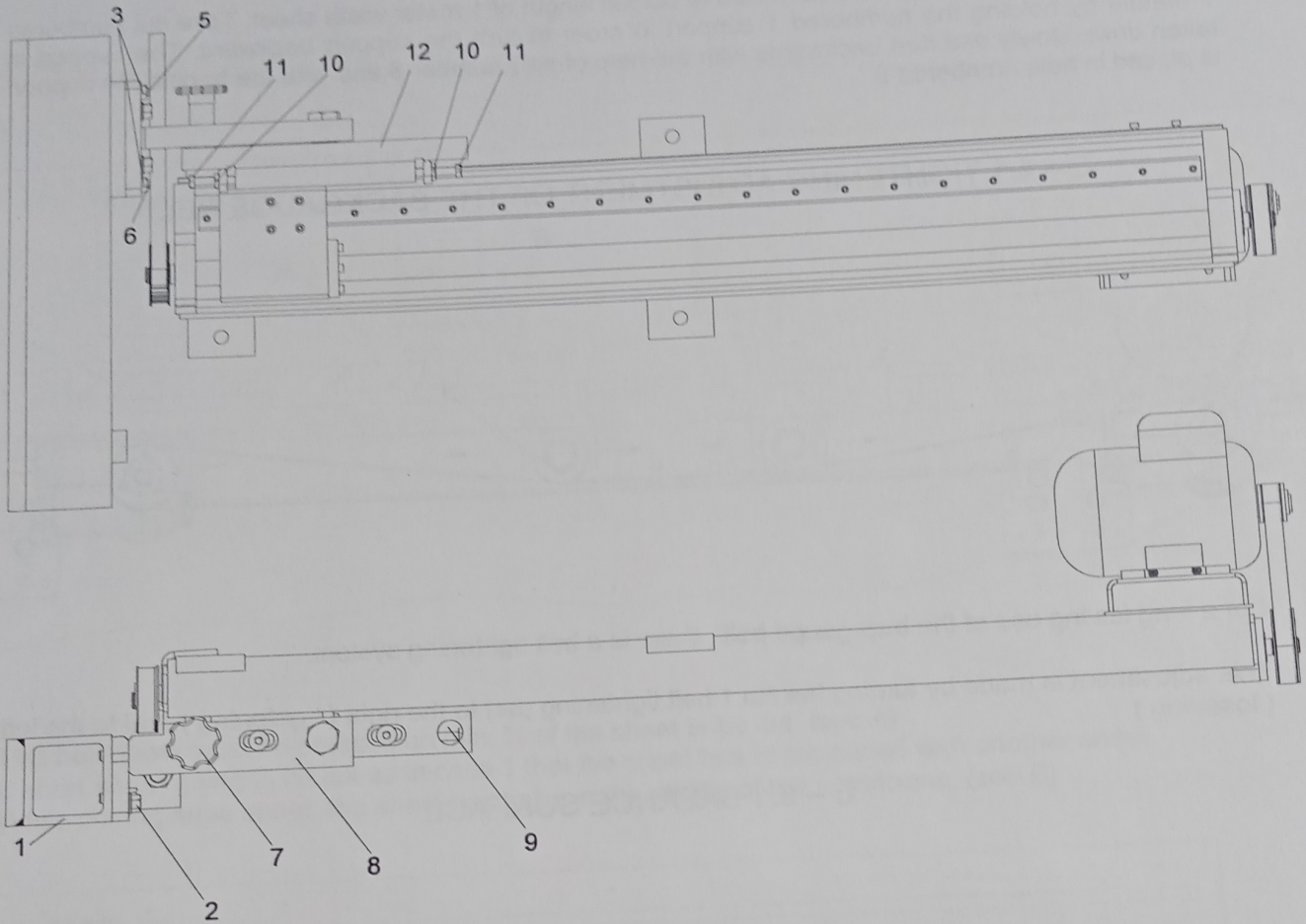
The back gauge zero setting process shall be carried out as explained below. The back gauge dash-pot is carried to the frontmost position by pressing the (4) button on the command panel. To obstruct the back gauge dash-pot striking the bottom blade , the 5S3 switch is adjusted in such a form so as to leave a distance of 3 – 6 mm ' s between the cutting surface of the bottom blade and the dash-pot and cut the power supply to the back gauge.

The 3 – 6 mm distance is obtained by hand in order to carry out the zero setting process.

In this process the hand set mounted on the front of the machine is to be rotated by hand so as to draw the dash-pot near the bottom blade. In this position the digital is also zero setted. (For digital zero setting process see users manual.)

The digital is adjusted with a perceptivity of 0.1 mm ' s. If the required presice value is not obtained by pressing the (3) and (4) buttons with short intervals (for delicate cutting) by turning the handle as seen below , precise adjustment may be maintained.

E - 3.2 PARALLELISM ADJUSTMENT OF THE BACKGAUGE SUPPORT



Loosen numbered 2 and 3 nuts of the top table axis parallelism to the backgauge support. The parallelism is obtained by setscrew numbered 5 and 6. When loosening numbered 5 setscrew and tightening numbered 6 setscrew, the support angle is getting larger than 90° . When loosening numbered 6 setscrew and tightening numbered 5 setscrew, the support angle is getting smaller than 90° . After obtaining the parallelism of the support, the parallelism of the support is obtained 3 numbered bolts and then numbered 2 and 4 nuts are tightened. The parallelism control is made by the parallelism of the sledge surface behind the top table.

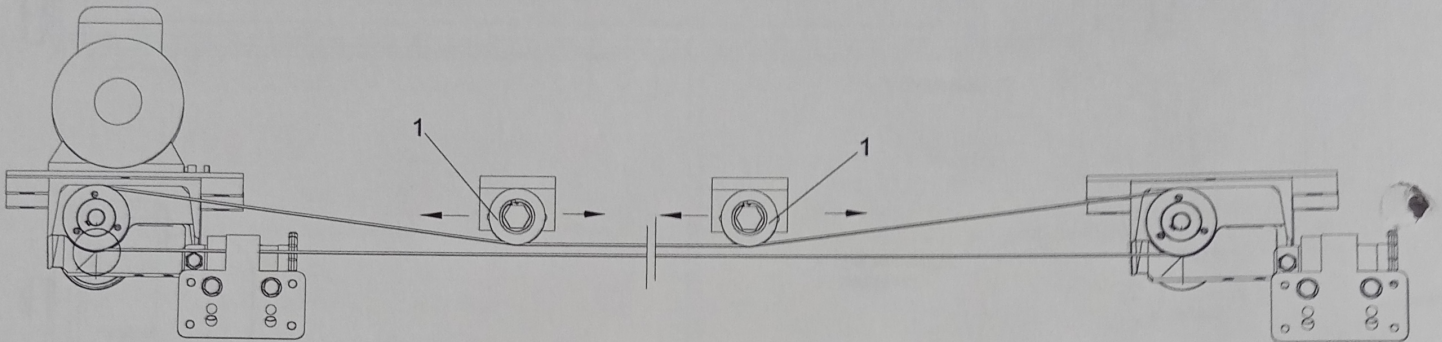
Parallelism of the backgauge support (part number 1) with the bottom blades edge is made by loosening numbered 10 nut. Support parallelism is obtained by moving back and forth numbered 11 bolts and number 12 wedges. After the parallelism is obtained number 10 nuts are tightened. The parallelism control is made by having the support parallel to the bottom blade top edge.

Test cuts can be made for parallelism control. If required the adjustment can be made once more.

E – 3.3 BACKWARD TURN DEVICE OF THE SUPPORT

The support needs to be turned backward to cut full length of 1 meter width sheet. Take out numbered 7 handle by holding the numbered 1 support in order to turn the support backward. The support is taken down slowly and turn backwards with the help of part number 8 and with the handle the support is placed in hole numbered 9.

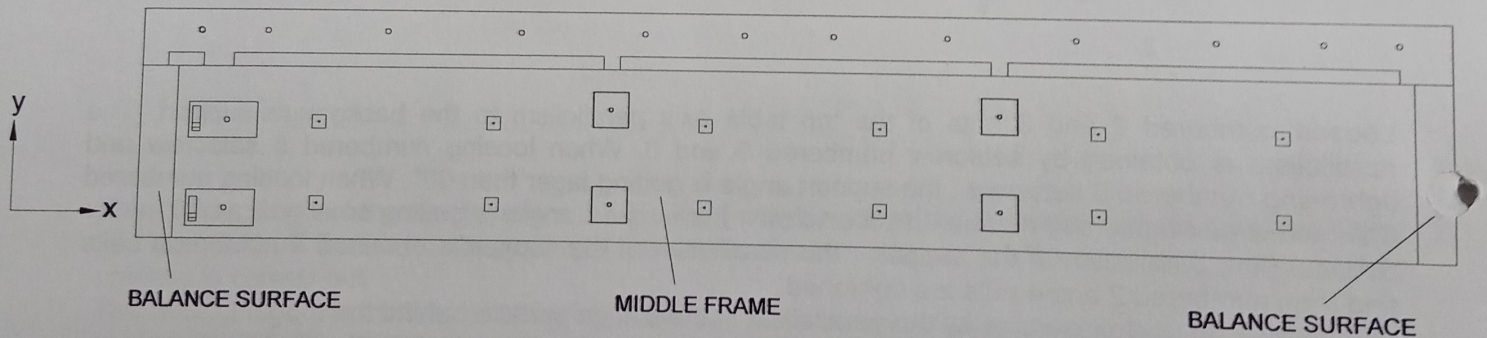
E – 4.1 TIGHTENING ADJUSTMENT OF THE BACKGAUGE BELT



For a long lasting use of the backgauge belt , there is a belt tightening system.

This adjustment is made by turning the No.1 belt tightening part to the right (tightening) and to the left (loosening).

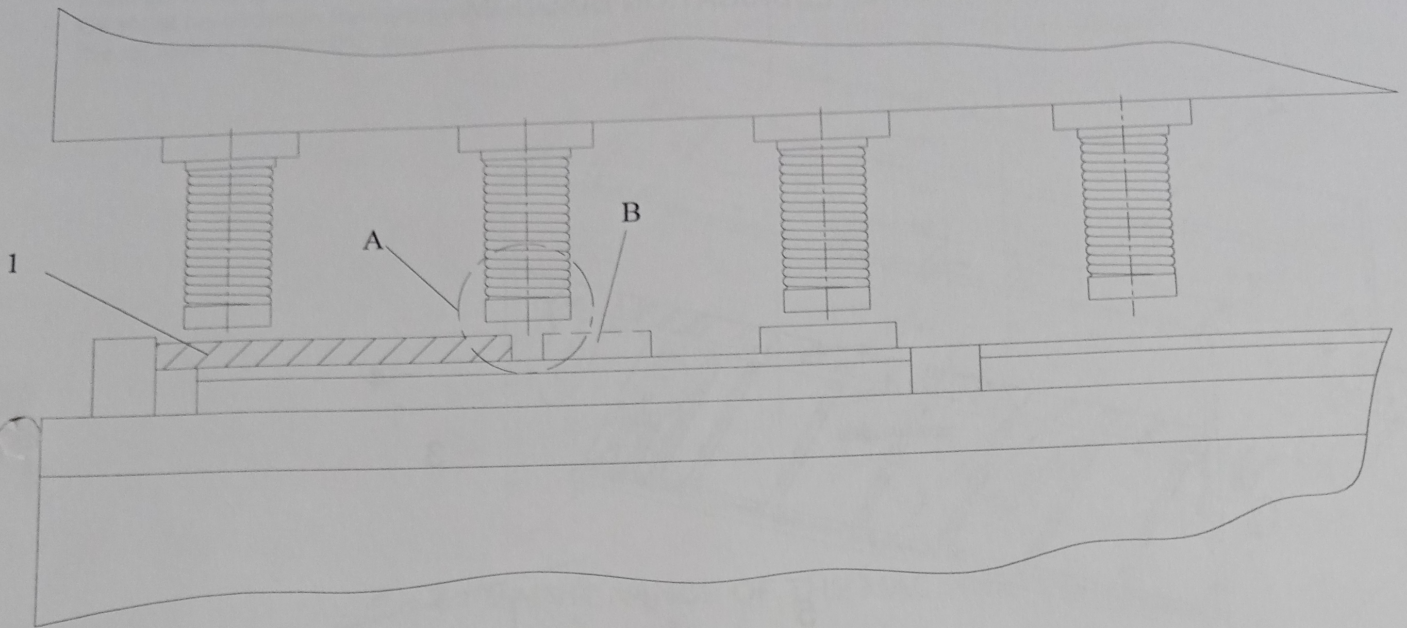
E – 5.1 BALANCE SURFACE



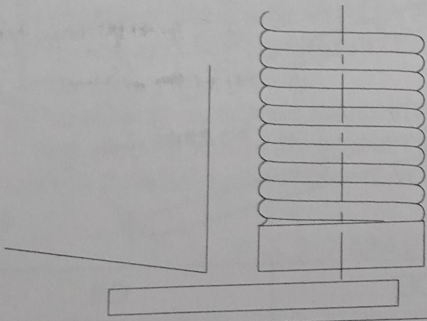
You should check to ground which is located the machine when the machine arrive working area. The ground has to be clear , flat and you are sure that there is no any split on the ground.

After the machine is located on the working area, you put the balance tool on the machine both of sides, as in figure. With the help of pull and push boltes which are on the four different footes of the machine, you have to balance and adjust the machine in X and Y axes. Don't forget that the machine has been sent to you with the blade clearance adjustment has been done by our company.

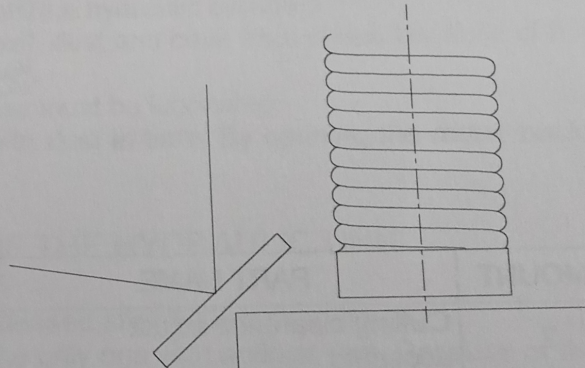
E - 6.1 PAY ATTENTION TO FOLLOWING BY CUTTING ACTION



- The holddown must be pressed on min. $\frac{3}{4}$ of the sheet to be cut. (see A)
- If short sheet going to be cut as in case 1 that the sheet has to be supported with another sheet.
- While cutting stripe sheet; the sheet has to be in the middle of the holddowns. (see B)



CORRECT

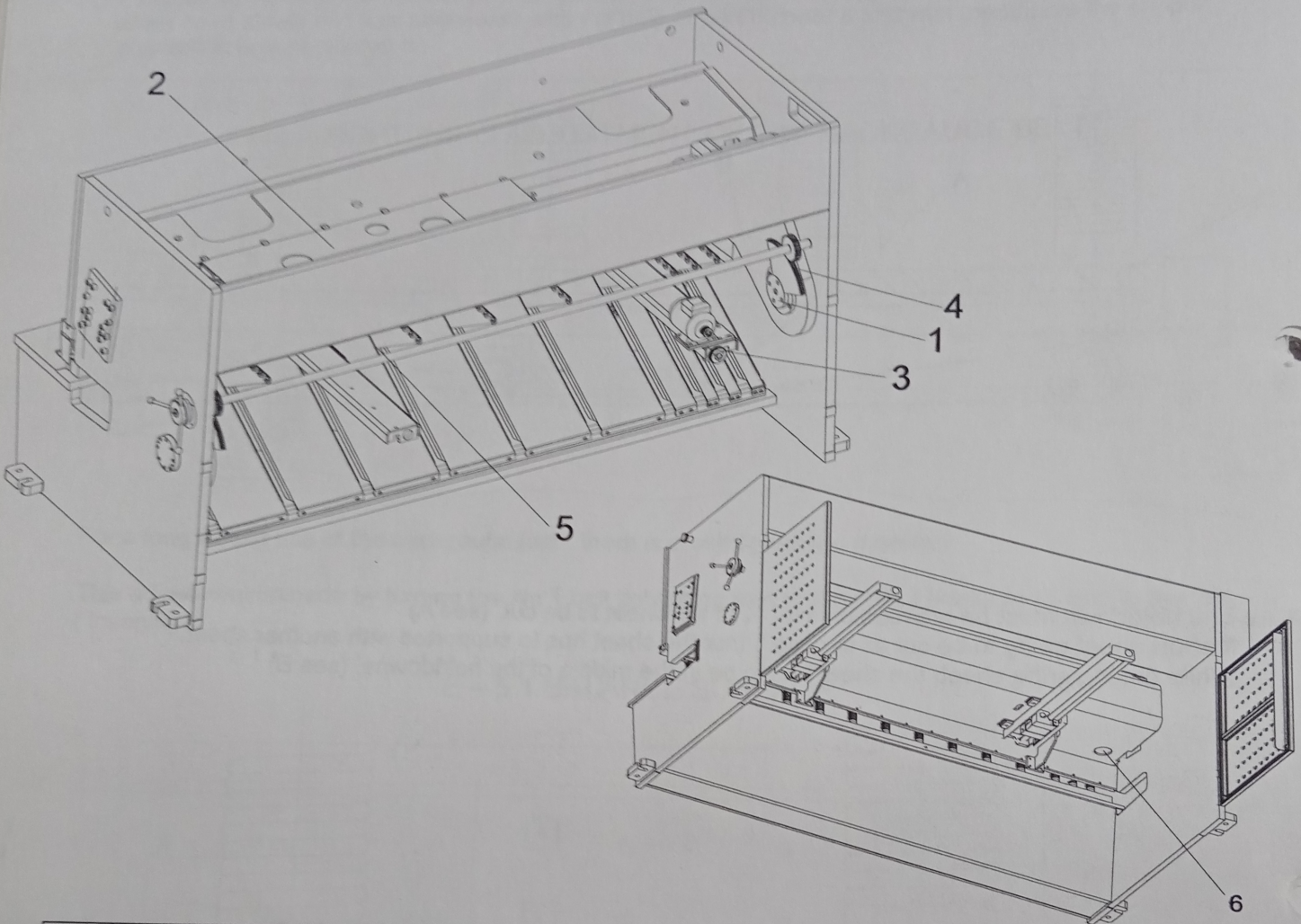


WRONG

- When cutting strips the holddown cylinder pads should at least press $\frac{3}{4}$.

F – MECHANICAL MAINTENANCE

F – 1.1 LUBRICATION DIAGRAM

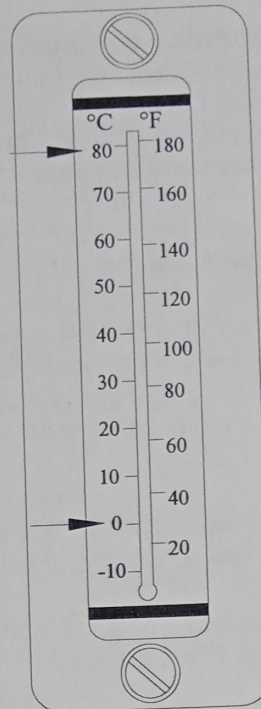


NR	AMOUNT	PART NAME	PERIOD	OIL
1	2	Cutting clearance adjust eccentric	Once a month	Grease
2	1	Hydraulic tank	When oil level decrease	ISO VG 32-ISO VG 46
3	2	Back gauge propeller shaft	Every week	Grease
4	2	Cutting gap adjustment gears	Once a month	Gres
* 5	-	Pneumatic sheet support rod beds	Every week	Gres
6	-	Cylinder touch part	When oil decrease	MOLYKOTE G-n PLUS (black)

* : Optional

F – 1.2 OIL LEVEL DISPLAY OF THE HYDRAULIC TANK

At the same time the oil level display of the hydraulic tank is a thermometer. The oil must be filled up until it reaches 80°C line. Oil must be added in the hydraulic tank when the oil level is below 0°C line.



F – 2.1 MAINTENANCE OF THE MACHINE

- 1 – Lubrication places indicated in Lubrication chart have to be Lubricated in time period mentioned on Lubrication chart.
- 2 – If machine's gap value has to be checked after 1500 hours operation , adjust the gap from adjustment buffer. After this , in first controlled operation , the risk of the blade's touches to each other removed.
- 3 – If machine will not be used for long time , lubricate the hydraulic cylinders.
- 4 – The top and bottom blades can be covered by oxit, dust and crust from sheet, because of this they must be cleaned regularly.
- 5 – The cutting clearance excentric connection places must be lubricated.
- 6 – The electric motor fly-wheel can be covered with dust in time. By opening the motor back cover clean the fly-wheel and motor cover.

F – 2.2 MAINTENANCE OF THE HYDRAULIC UNIT

- 1 – The suction filter in the hydraulic tank must be cleaned after 500 working hours.
- 2 – The return filter UCC with 25 µm sensivity, is the only one with antirust test. Because of that if the indicator changes from green to red than the filter part in it must be changed.
- 3 – The oil in hydraulic tank must be changed after first 500 working hours. Later on every 2000 working hours.
- 4 – The pressure safety valve is adjusted to max. working pressure in our factory. It is strictly prohobited to change the adjustment.
- 5 – The hydraulic pump does not need maintenance lifetime.

F – 3.1 PROBABLE DEFECTS TO OCCUR



1 – Workbench does not take command :

- Check the rotation direction of the main motor which actuates the hydraulic pump.
- The hydraulic oil level could be low.
- Pedal socket may not have been attached to the plug in the panel.
- Check the R.S.T. super-additionals in the panel entrance.
- Check the power circuit in the electric panel.
- The emergency buttons could be above circuit.
- Contactor thermics may have ejected.

2 – Workbench takes command. But no movement in cables :

- Check the coupling system which connects motor to pump.
- The no.7 key located on the control panel may have turned right it must be turned to the left.
- There isn't a mechanical warning to the hydraulic valves. Control the input socket of the valve.
(Refer to the hydraulic cycle diagram)

3 – If the machine actuates but top table does not return from below . The position switch may have remained at either position 0 or 1. Bring it to either position 2 or 3.

4 – If the machine actuates but does not achieve cutting :

- Check main pressure valve. If it does not fulfill it's function , clean the valve.

5 – If the machine cuts rheumy , sheet cutting clearance adjustment may not have been done.