

FARtools®

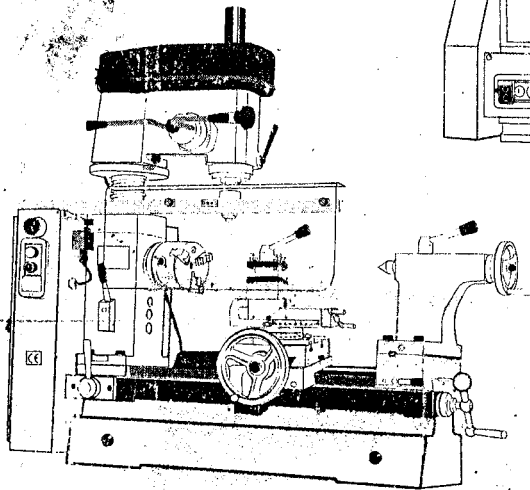
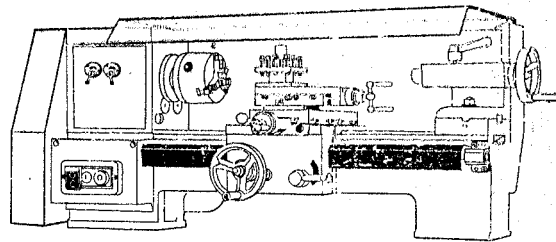
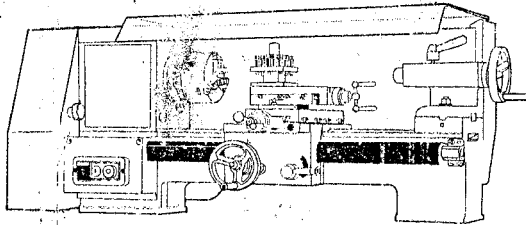
P R O

GB METAL LATHE

F TOUR A METAUX



ML 400
GB 550 S
TDM 400



206, rue Marcel Cachin
92700 Vanille-Pierre des Corne
PARIS

A-19/01/2004

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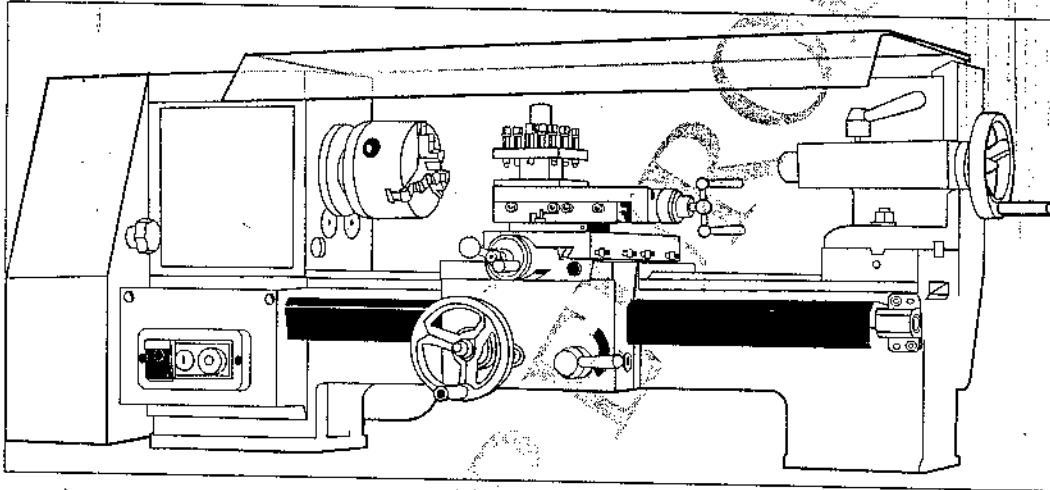


114070-114135-114150-B

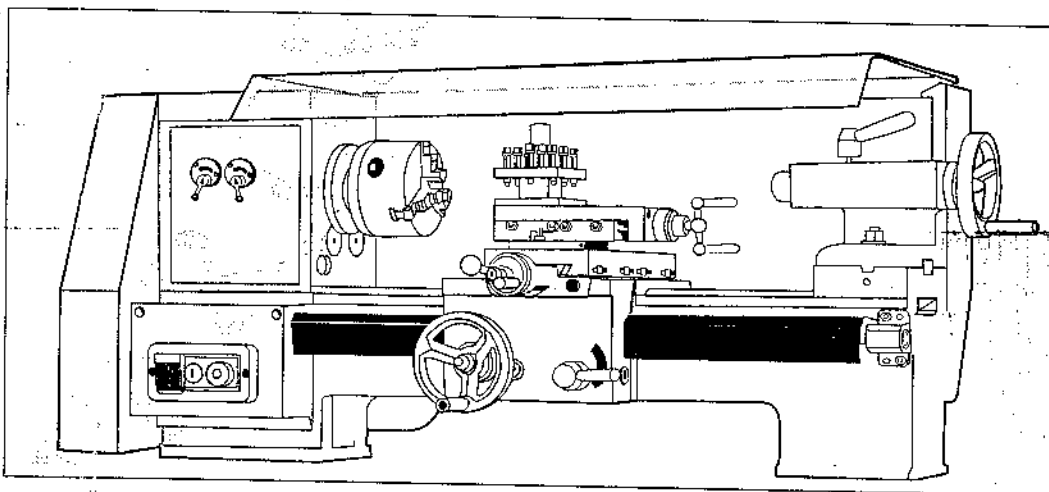
19/04/04, 11:29

114070 = ML 400
114135 = TDM 400
114250B = GB 550S-

ML 400

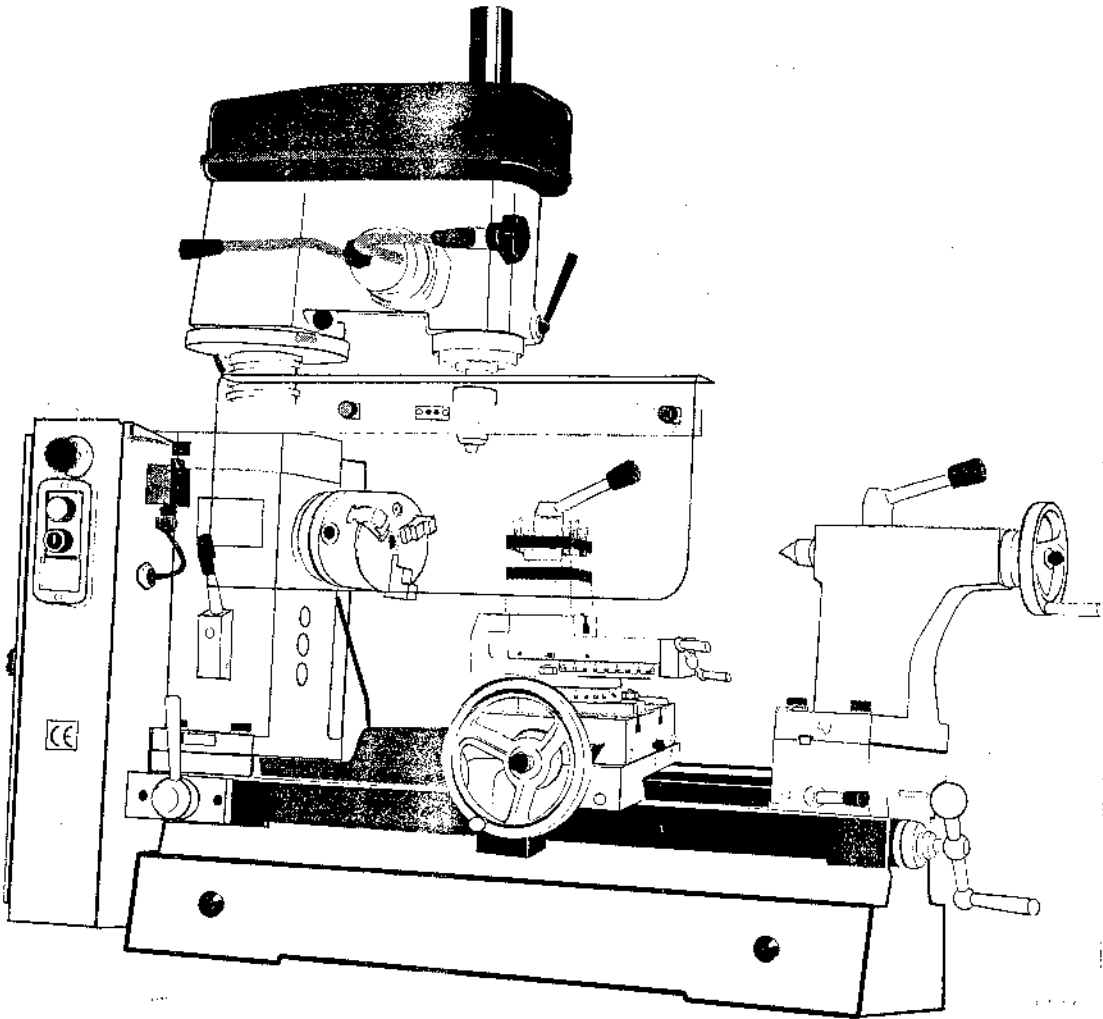


GB 550 S



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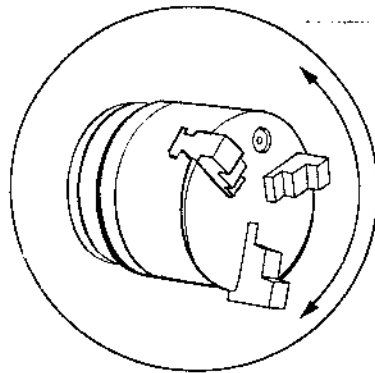
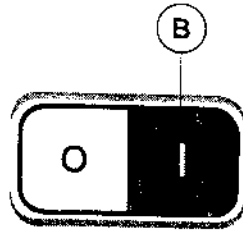
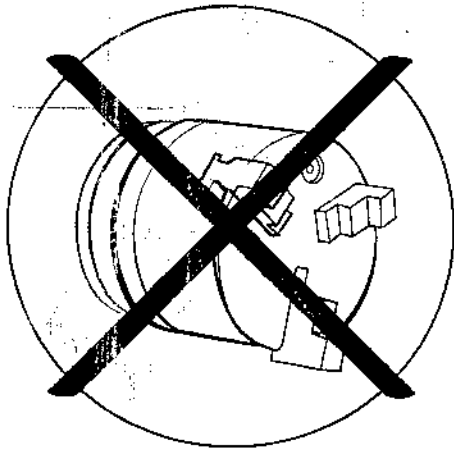
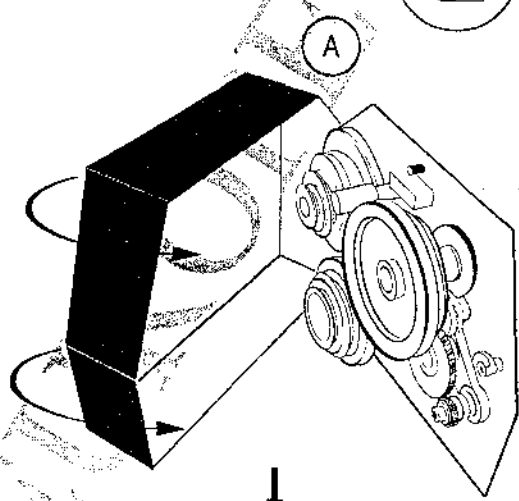
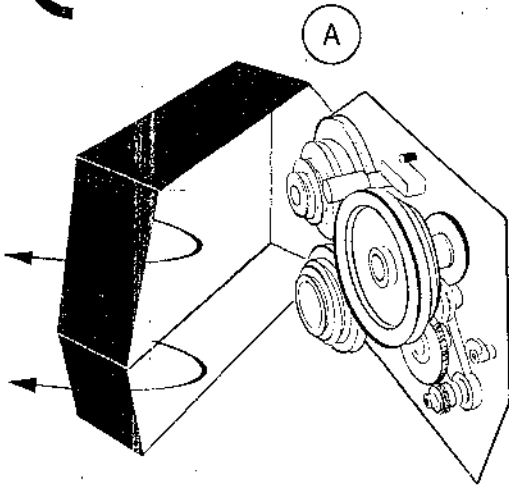
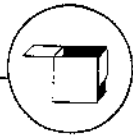
TDM 400

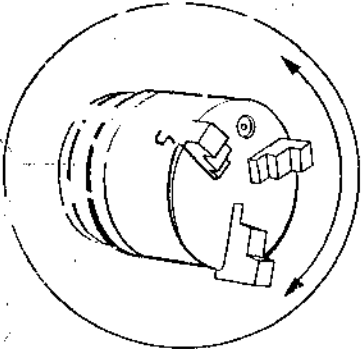
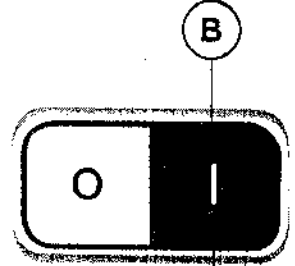
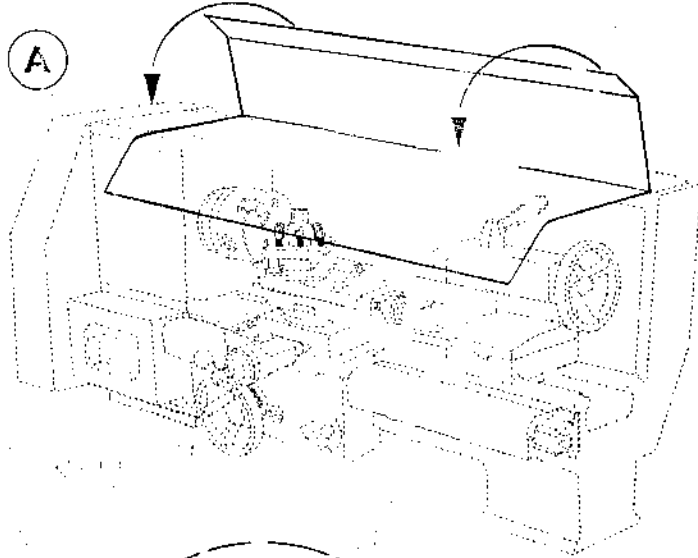
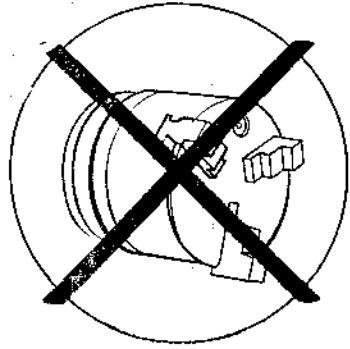
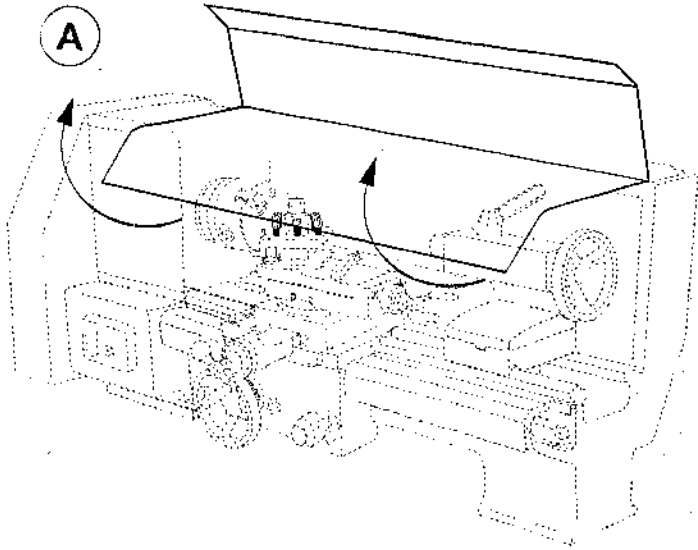
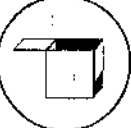


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ML 400

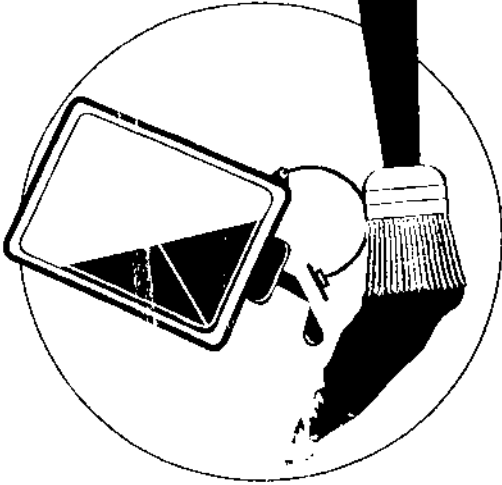
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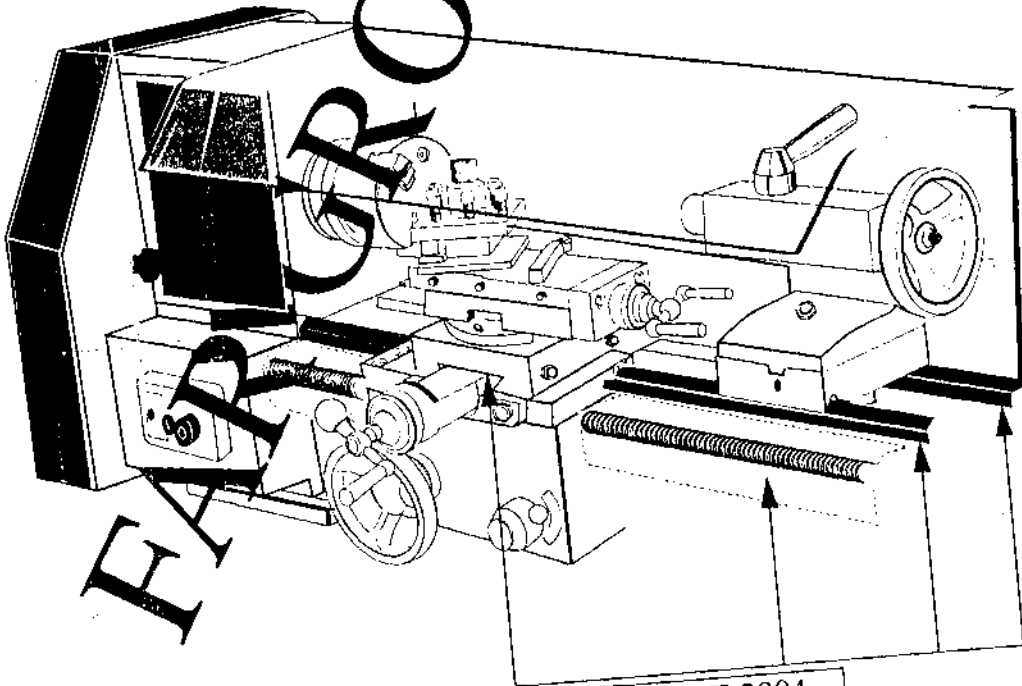


ML 400-GB 550 S

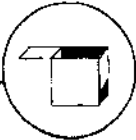
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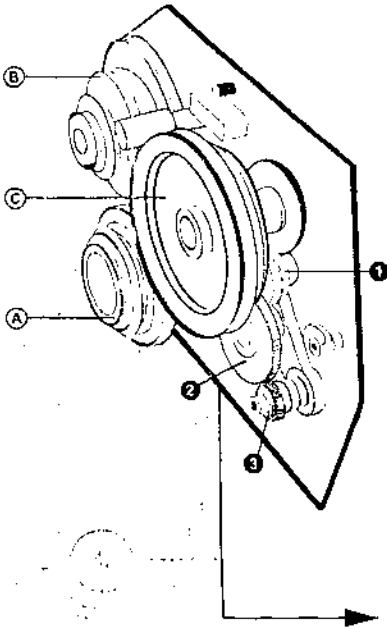
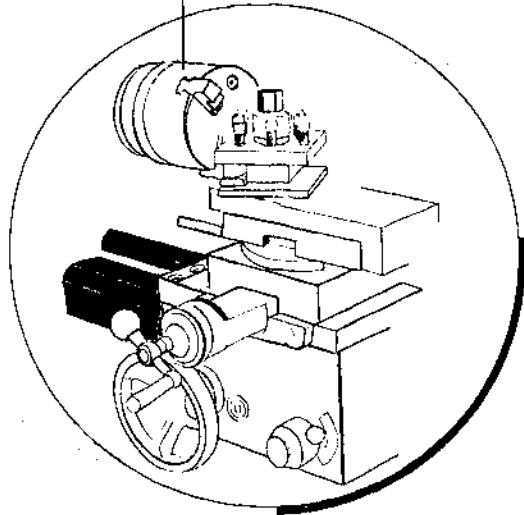
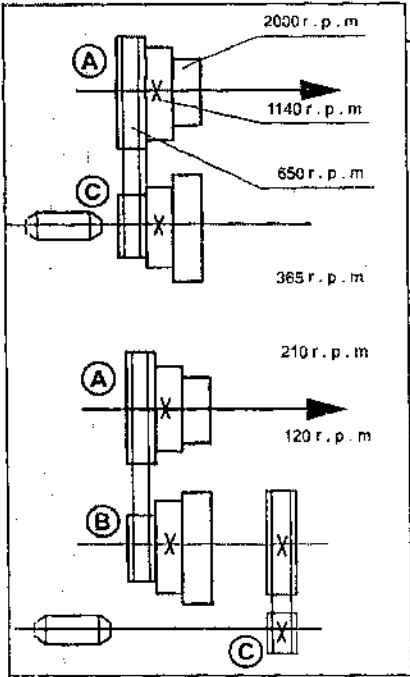
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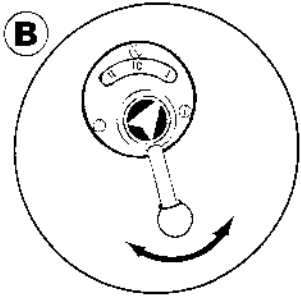
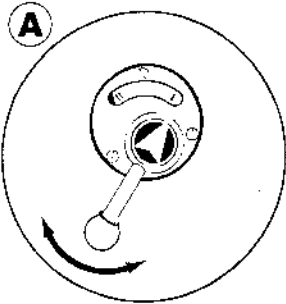
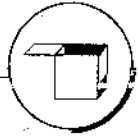


4



		A	B	C
0,4	0,04	70		105
0,5	0,05	70		84
0,7	0,07	70	98	84
0,8	0,08	105	98	49
1	0,1	96		42
1,25	0,125	84	105	42
1,50	0,150	105		28
1,75	0,175	84	98	28
2	0,2	49	98	42
2,5	0,25	63	105	28
	0,3	49	105	30

5

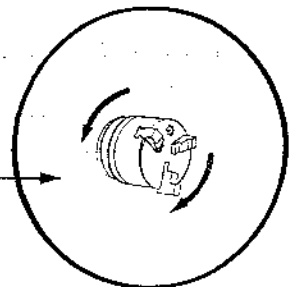
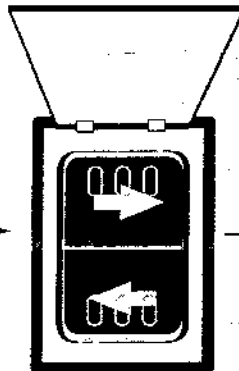
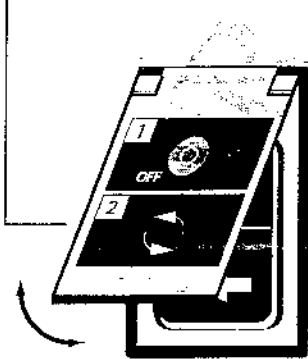
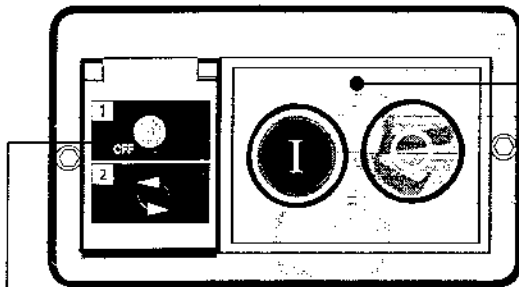


II

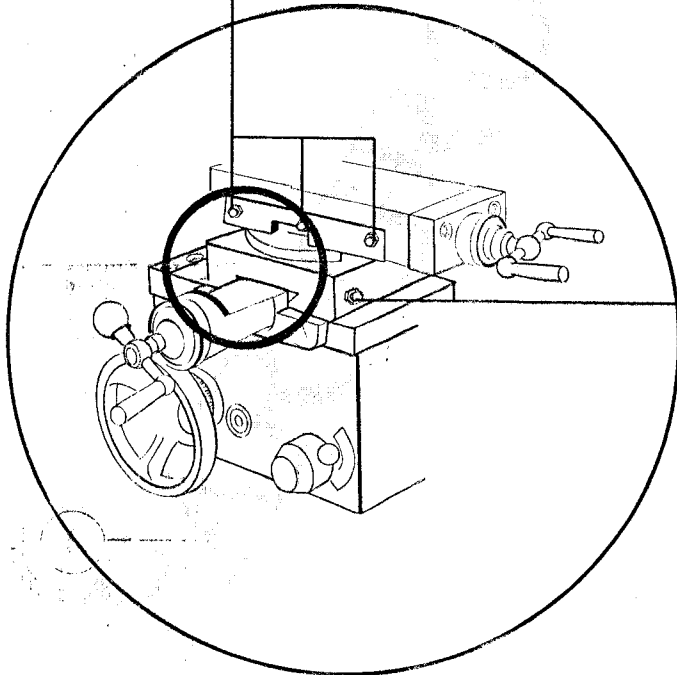
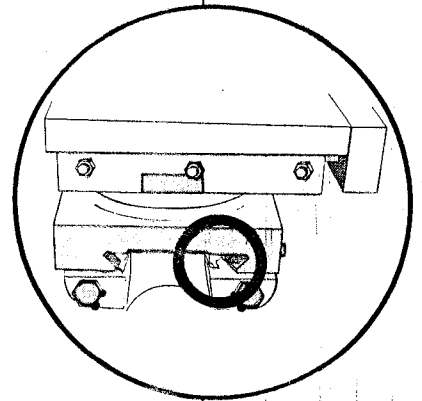
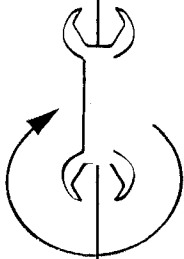
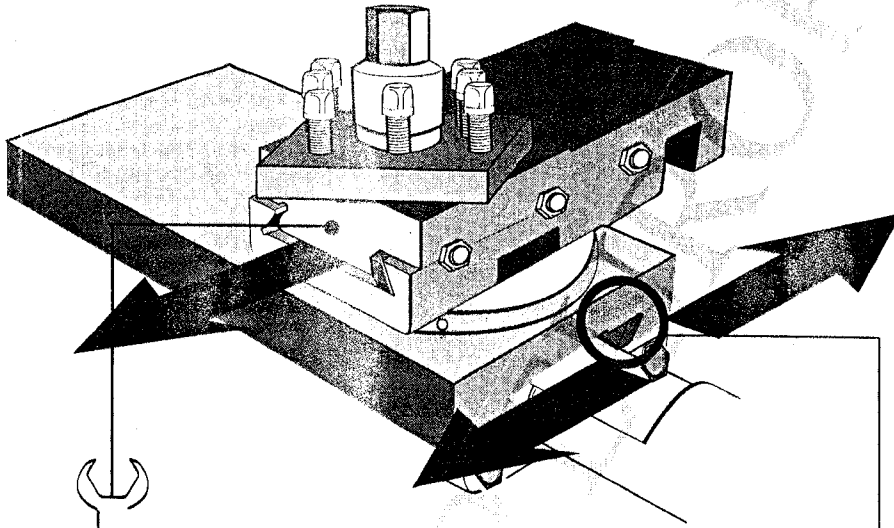
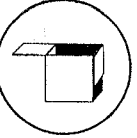
B

III	140 min ⁻¹
II	250 min ⁻¹
III	300 min ⁻¹
I	600 min ⁻¹
II	1080 min ⁻¹
III	1710 min ⁻¹

1

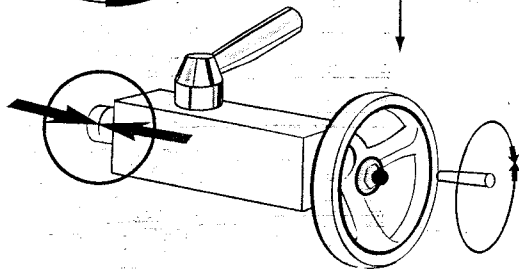
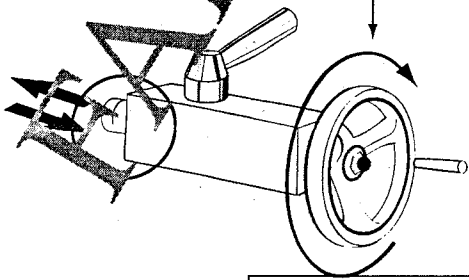
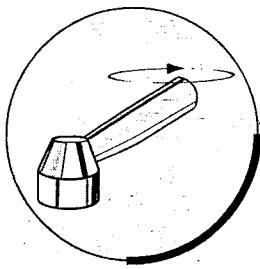
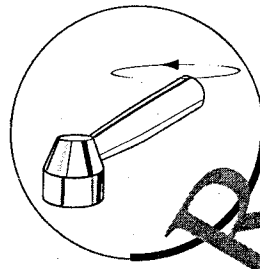
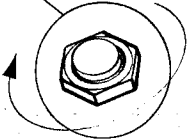
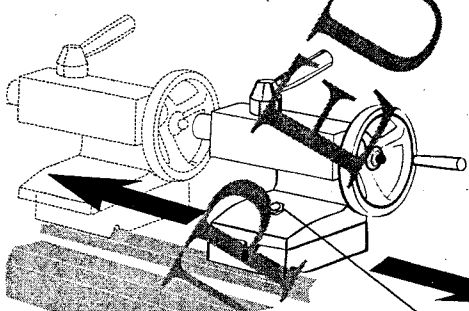
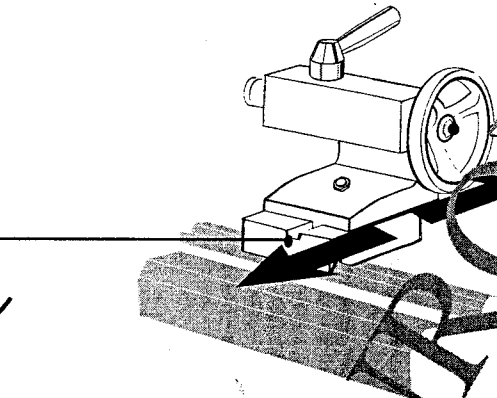
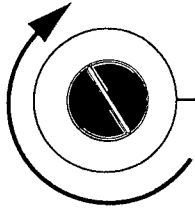
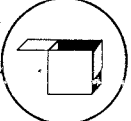


6



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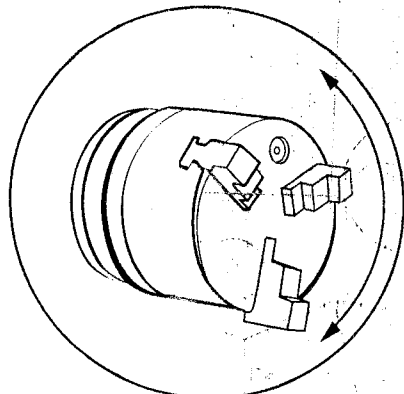
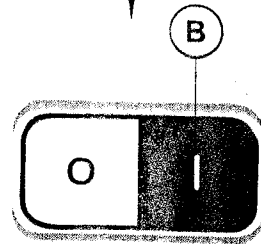
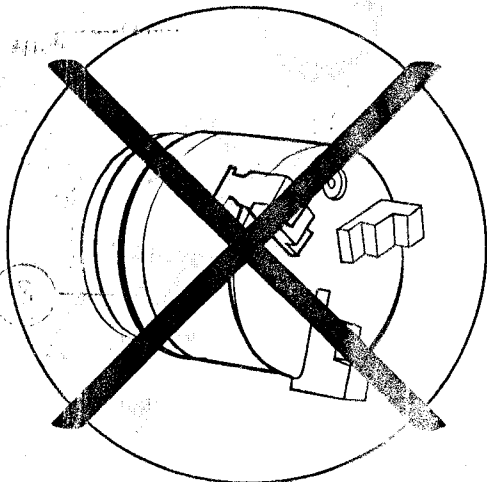
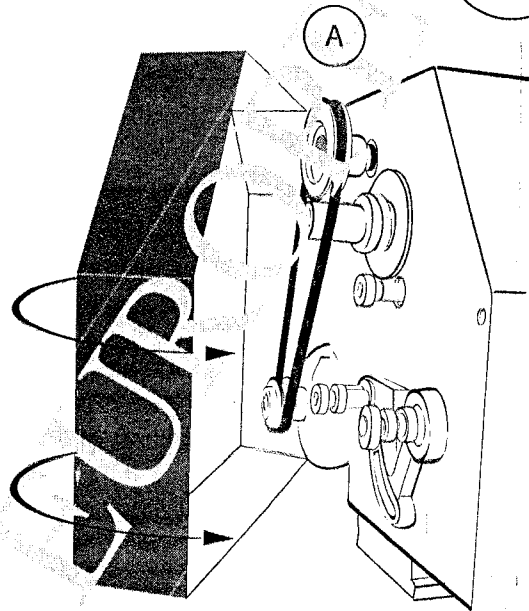
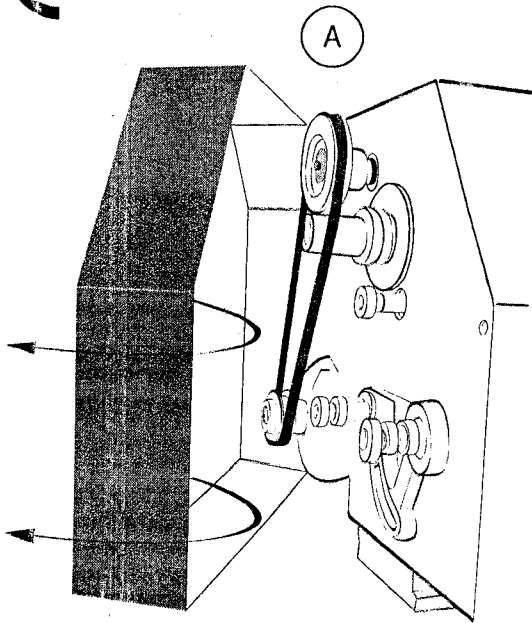
7



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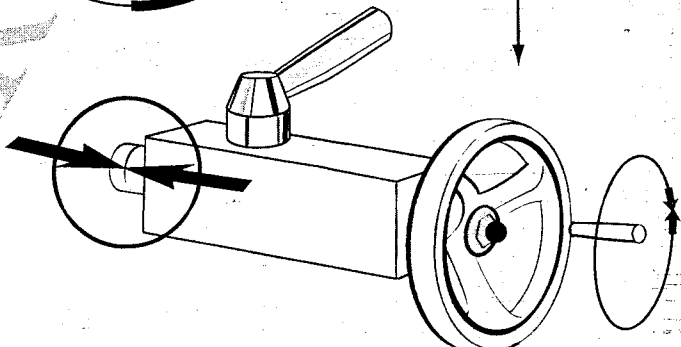
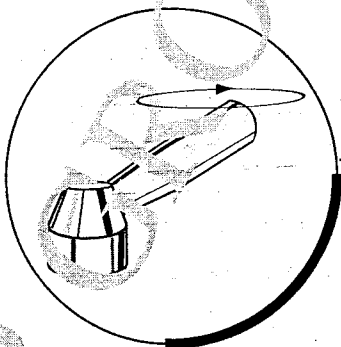
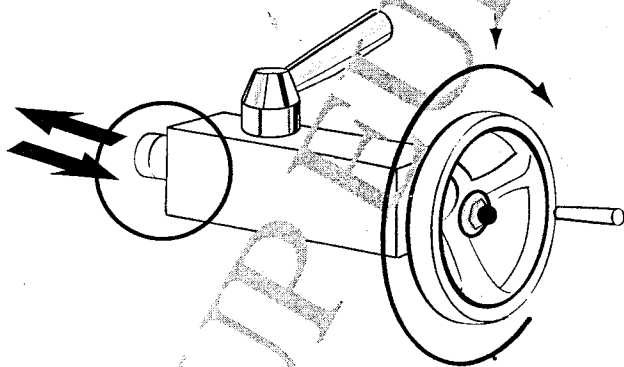
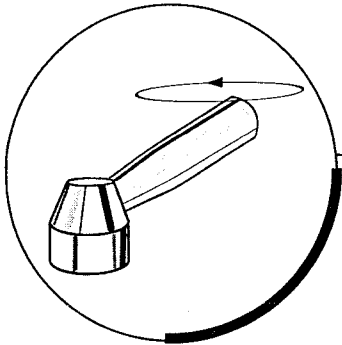
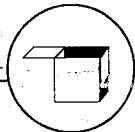
8

GB 550 S

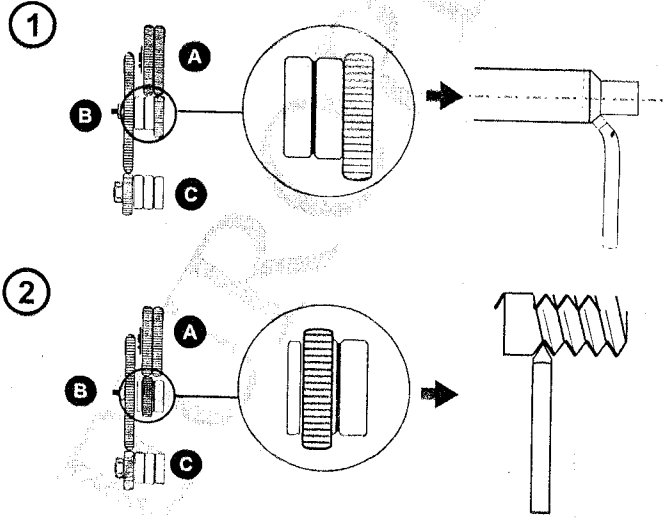
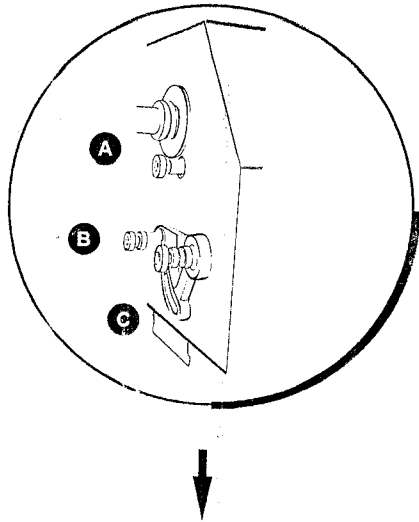
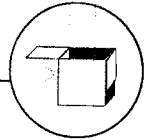


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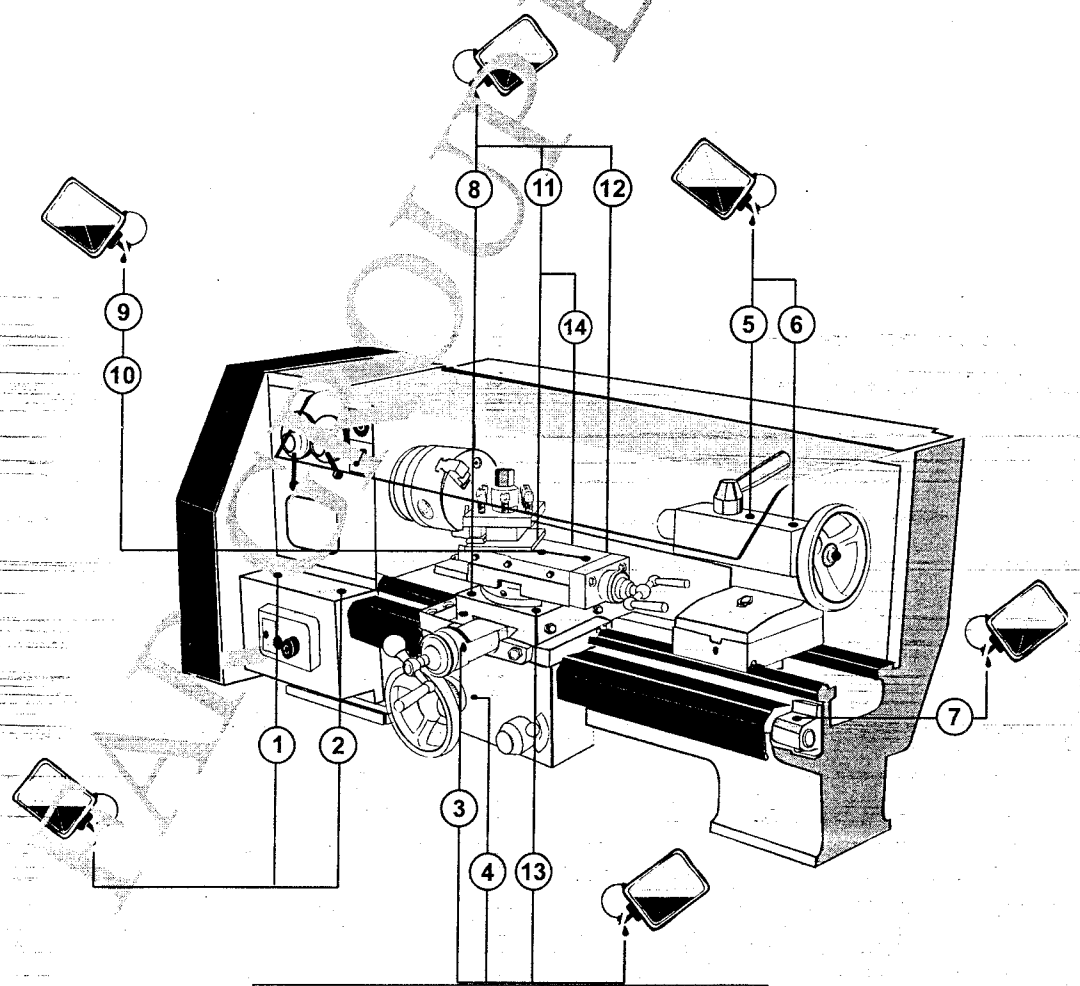
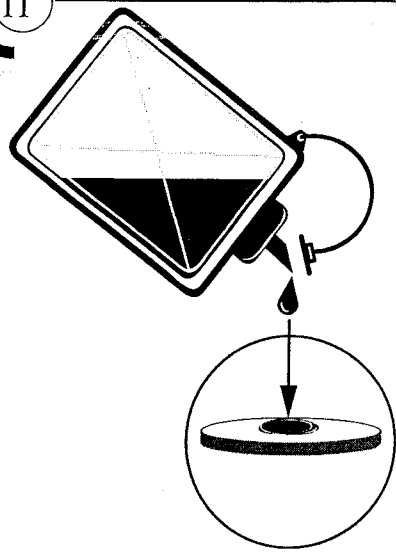
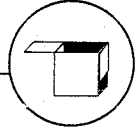


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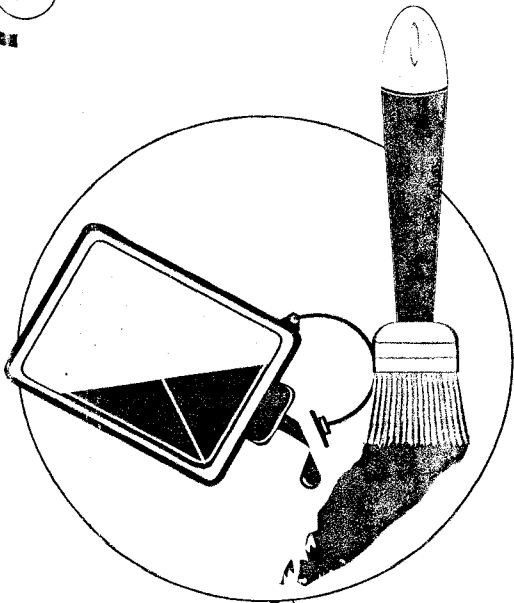


					MM					
						A	B	C	D	
					0.4	30	80	100	50	
					0.5	30			40	
					0.7	42			40	
					0.8	42			35	
					1.0	45			30	
	Avances longitudinales				1.25	45	80	100	30	
					1.5	45	80	20		
	0.05	30	80	20	100	1.75	42	80	100	20
	0.1	30	80	40	100	2.0	45	50	100	30
	0.15	45	80	40	100	2.5	45	40	100	30
	0.2	30	80	40	100	3.0	45	20	100	50
						40	100	50		

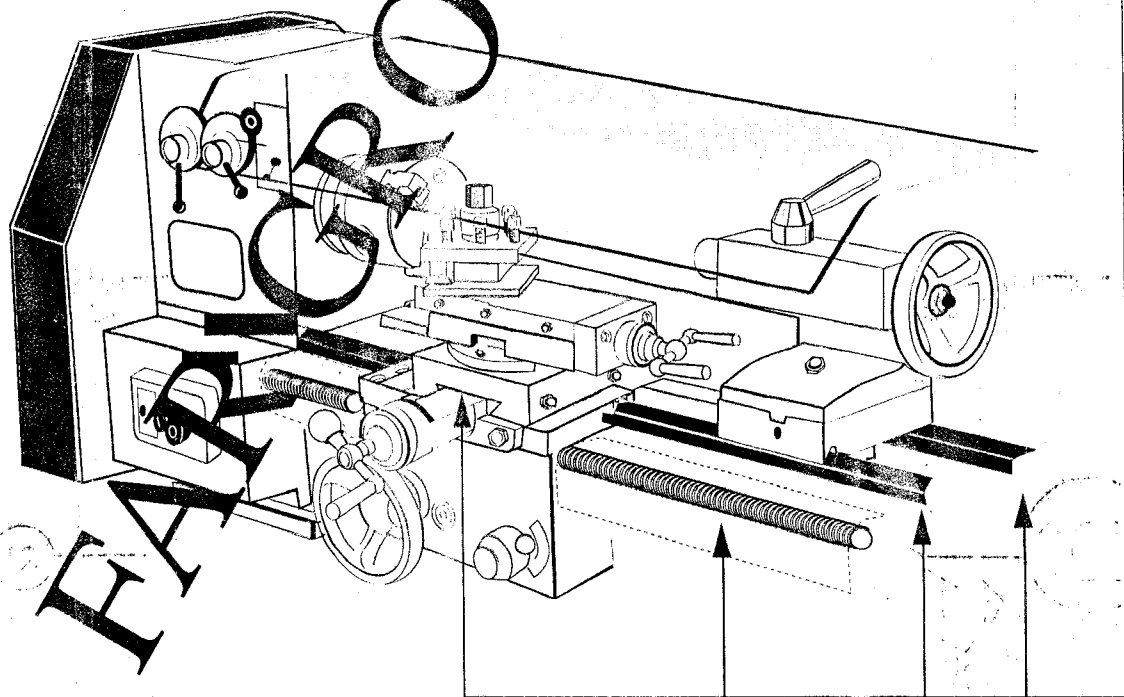
11



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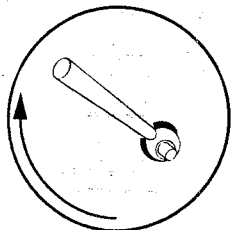
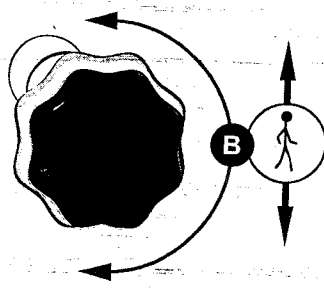
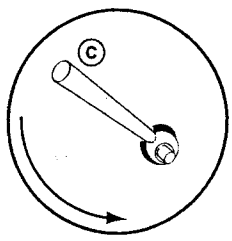
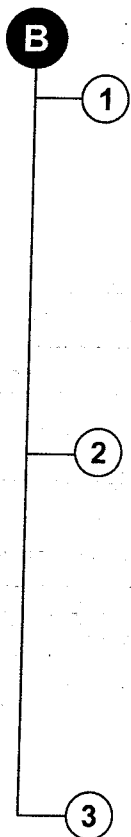
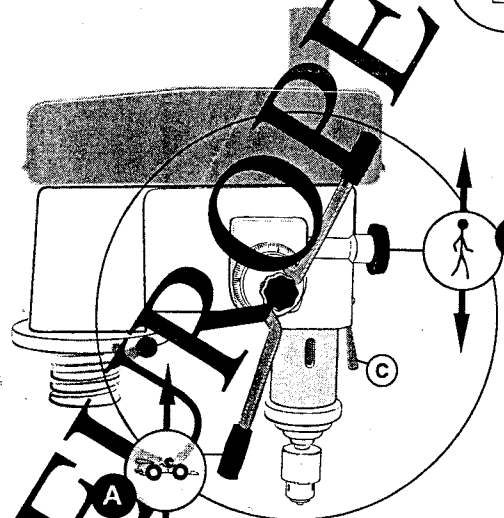
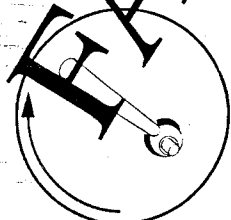
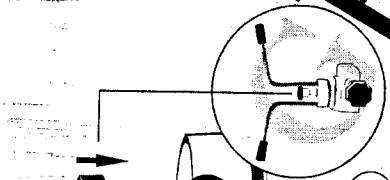
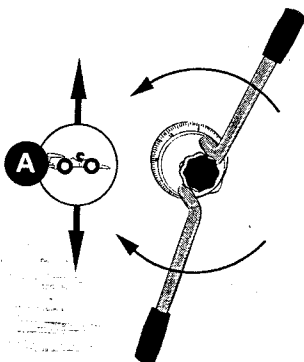
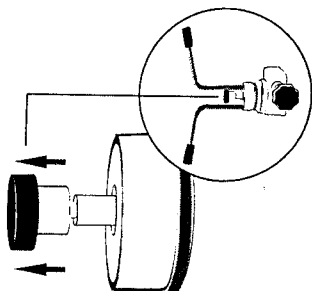
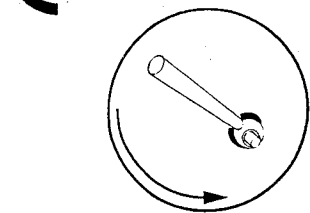
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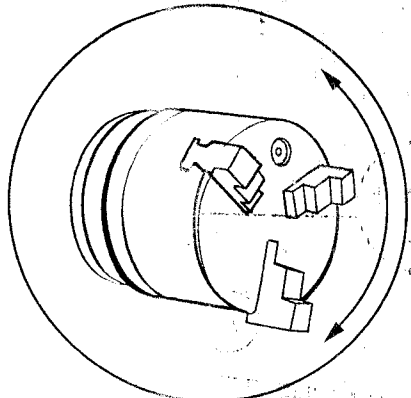
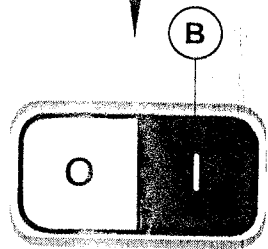
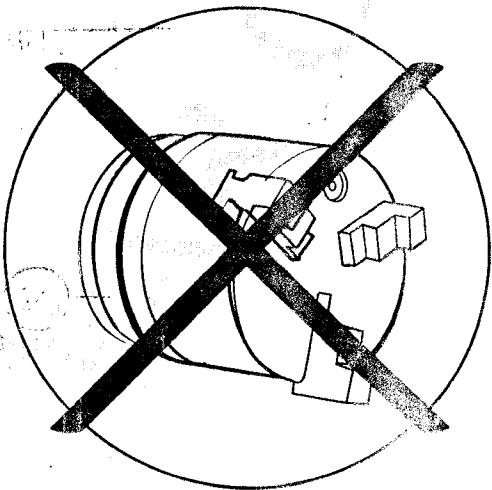
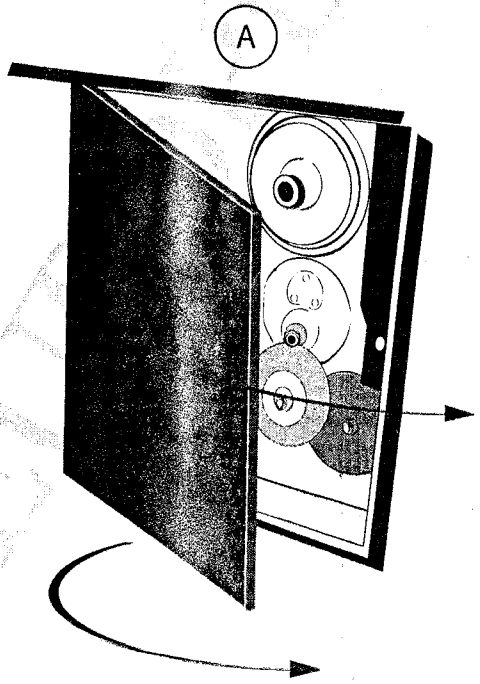
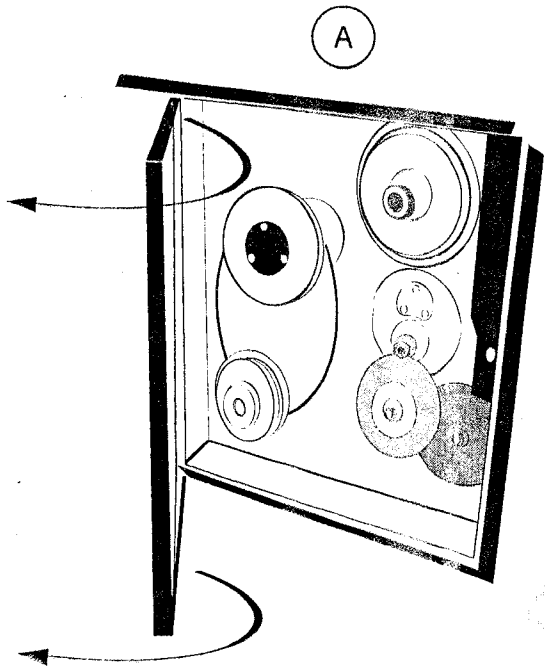
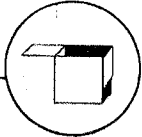
TDM 400

13

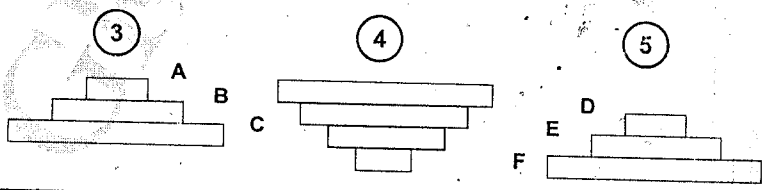
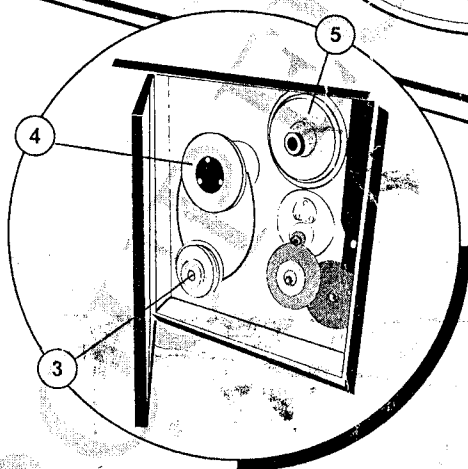
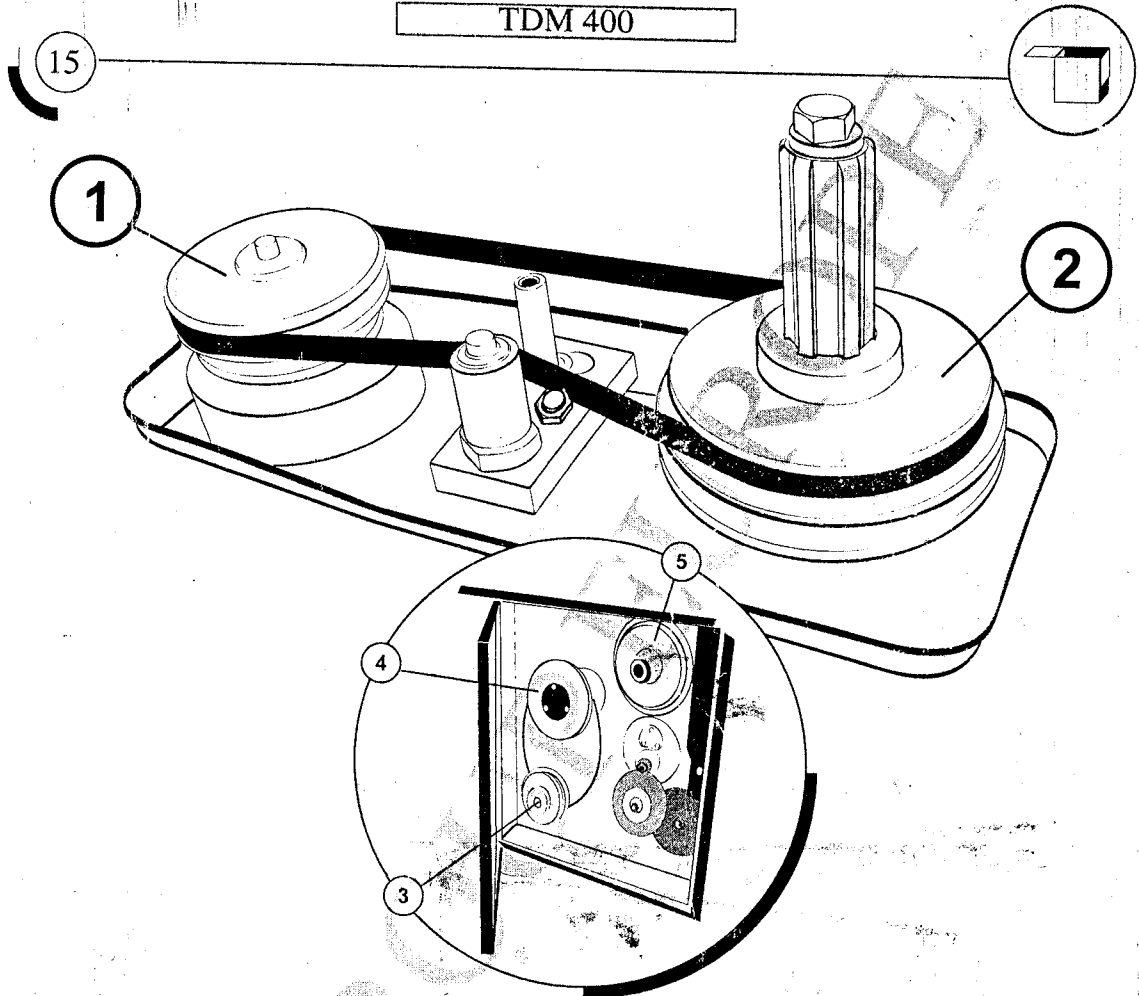


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14



TDM 400



2

1

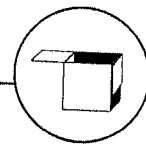


	A-F	A-E	A-D	B-F	C-F	B-E	C-D
K-G	150	300	360	450	575	836	1300
L-F	117	220	276	345	440	640	1000

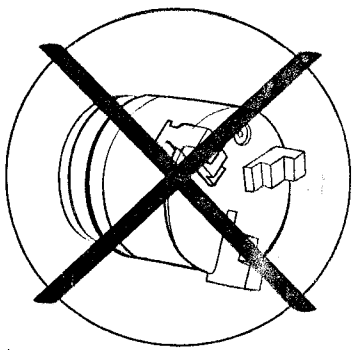
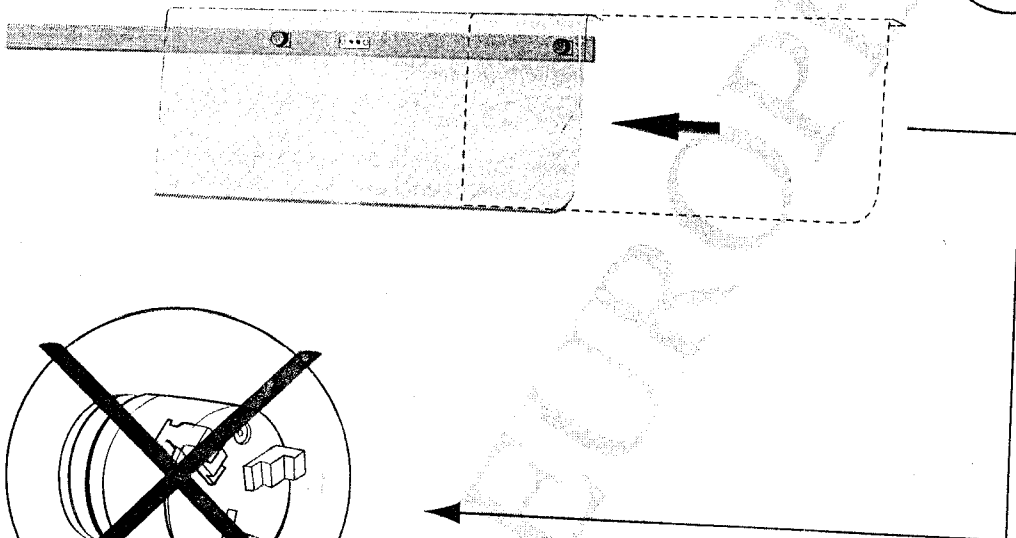
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TDM 400

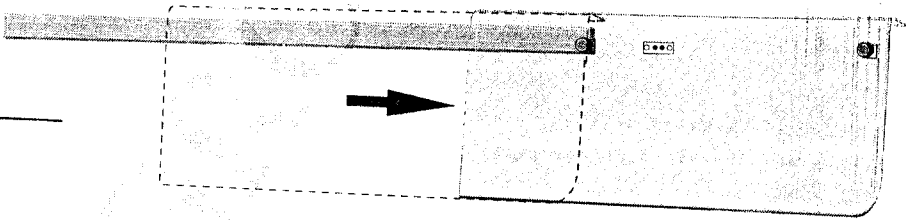
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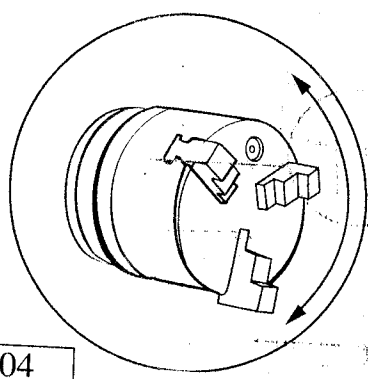
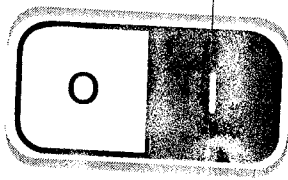
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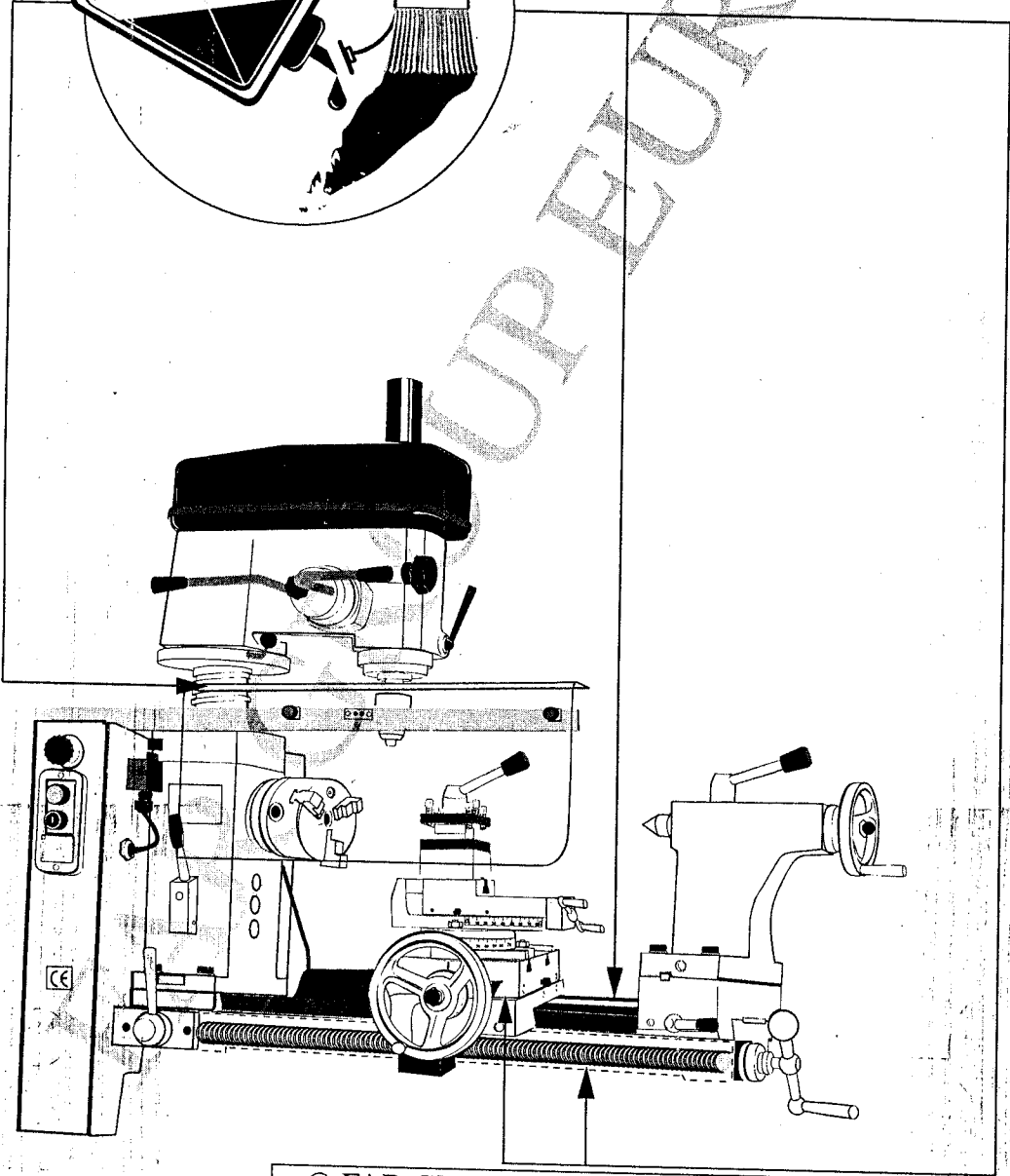
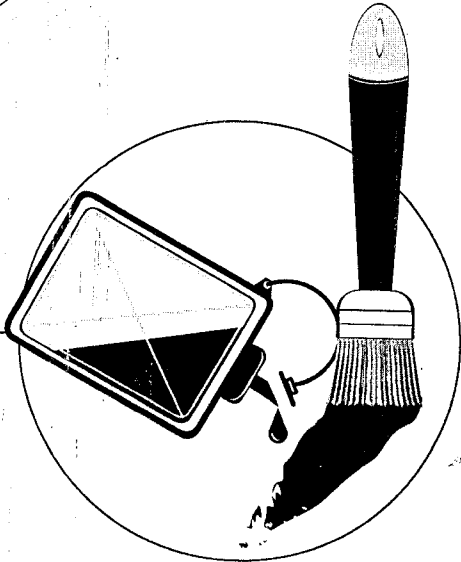
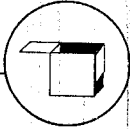
A



B

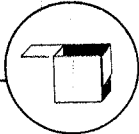


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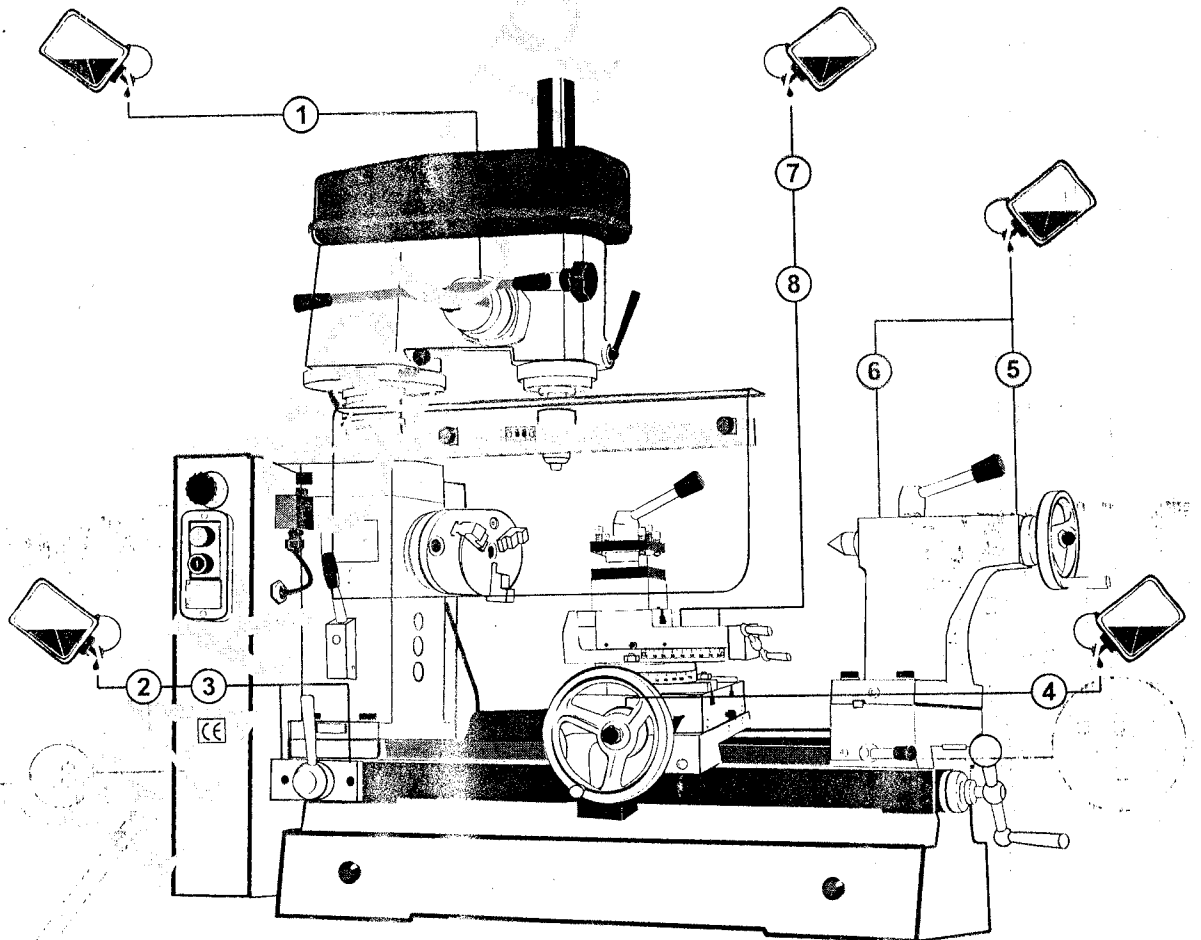
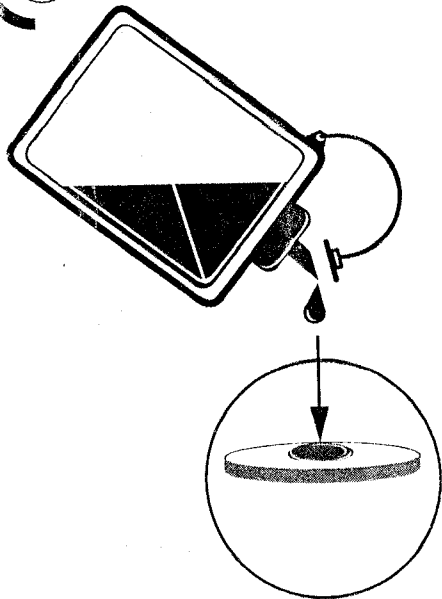


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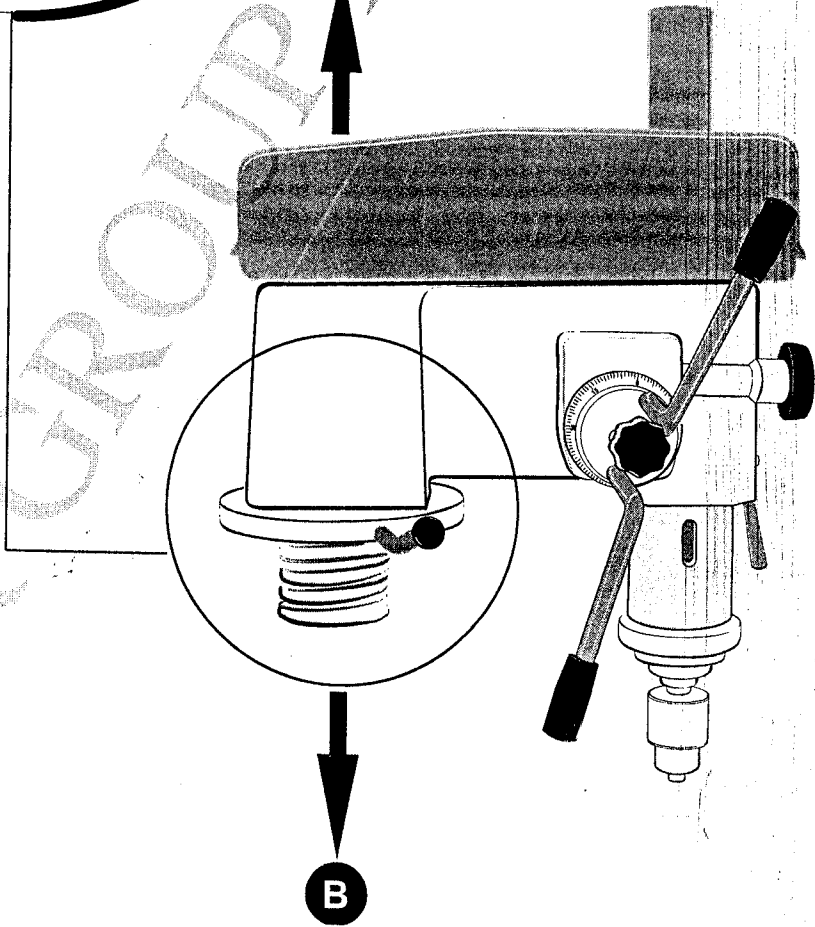
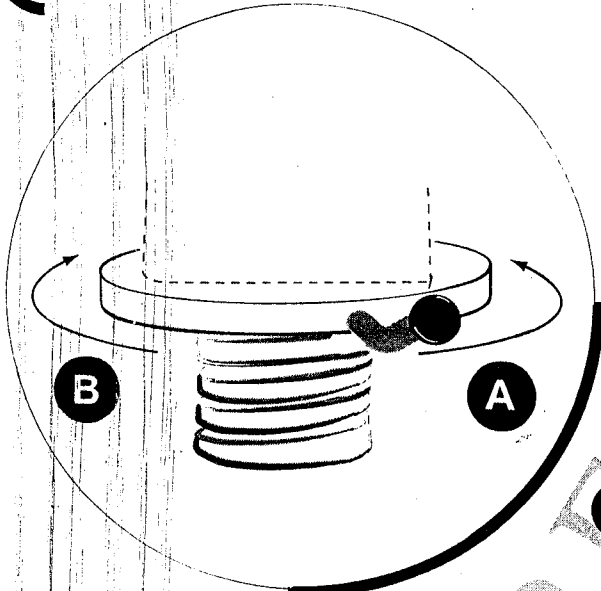
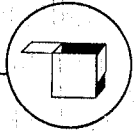
TDM 400



18



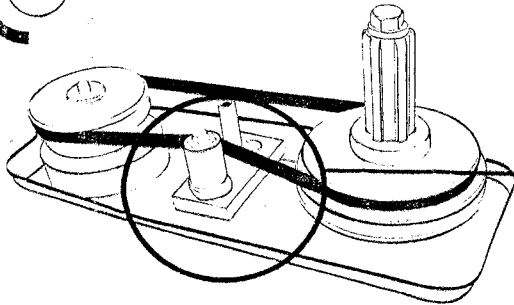
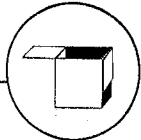
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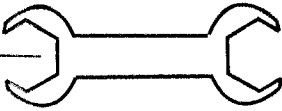
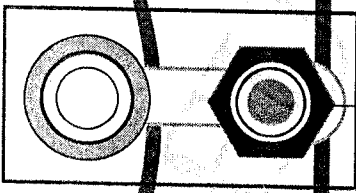
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TDM 400

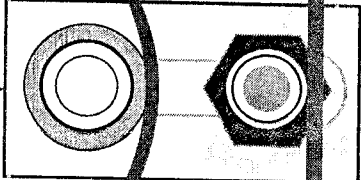
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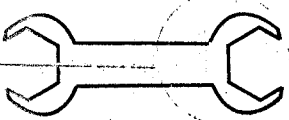
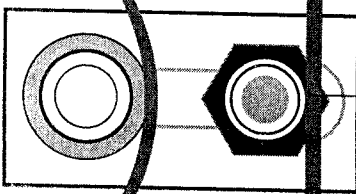
1



2



3



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Choix des vitesses / Speed choosing

Matière / Material		Vitesse de coupe / Cutting speed		
		Outil coupant / Cutting tool		
		Acier rapide / Steel	Carbure / Carbide	
Acier / Steel	Doux / Soft	30-40 daN/mm ²	30-40 m.min ⁻¹	140-300 m.min ⁻¹
		40-50 daN/mm ²	28-34 m.min ⁻¹	130-280 m.min ⁻¹
	Demi dur / Half hard	50-60 daN/mm ²	23-30 m.min ⁻¹	100-240 m.min ⁻¹
		60-70 daN/mm ²	20-25 m.min ⁻¹	85-200 m.min ⁻¹
	Dur / Hard	70-80 daN/mm ²	17-22 m.min ⁻¹	70-160 m.min ⁻¹
		80 daN/mm ² ->	12-15 m.min ⁻¹	60-120 m.min ⁻¹
Laiton / Brass		40-65 m.min ⁻¹	300-600 m.min ⁻¹	
Bronze		26-33 m.min ⁻¹	270-500 m.min ⁻¹	
Bronze phosphoreux / phosphorous		18-24 m.min ⁻¹	250-400 m.min ⁻¹	
Aluminium / Aluminum		120-165 m.min ⁻¹	800-1300 m.min ⁻¹	
Cuivre / Copper		90-125 m.min ⁻¹	600-900 m.min ⁻¹	
Fonte / Cast iron		15-25 m.min ⁻¹	30-100 m.min ⁻¹	

$$N = \frac{1000 \times V}{\pi \times D}$$

N : Vitesse de rotation (tr.min⁻¹) / Rotation speed (rpm).

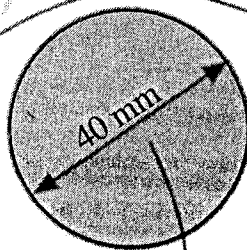
V : Vitesse de coupe (m.min⁻¹) / Cutting speed (m.min⁻¹).

D : Diametre de la pièce (mm) / Workpiece diameter (mm).

Expl : Alu ø 40 mm.

$$N = \frac{1000 \times 120}{\pi \times 40}$$

$$N = 955$$



En alésage, la vitesse doit être diminuée de 10 à 20% / Speed using on hole cutting must be lowered 10 to 20%.

Le choix de la profondeur de passe et de la vitesse d'avance doit être basé sur la matière de la pièce, le type de l'outil et le niveau de l'opérateur / The cutting depth and feeding speed choosingshould be based on the workpiece, the tool and the operate level of the user.

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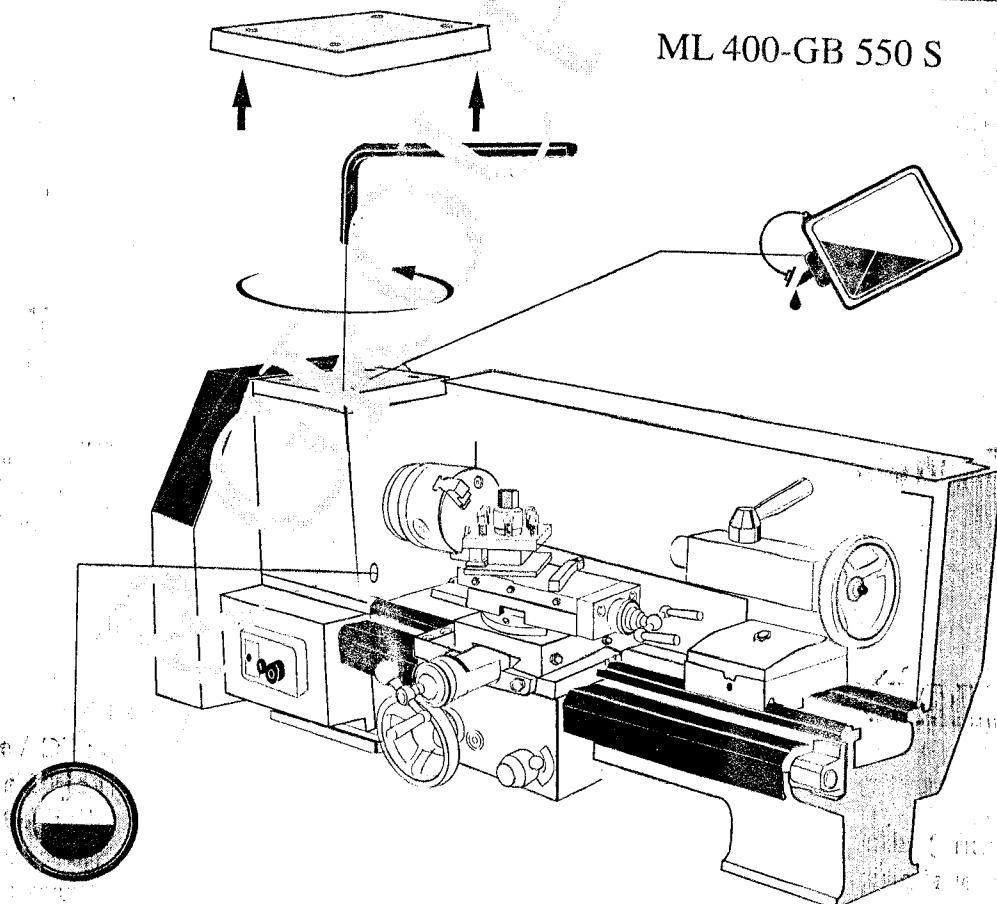
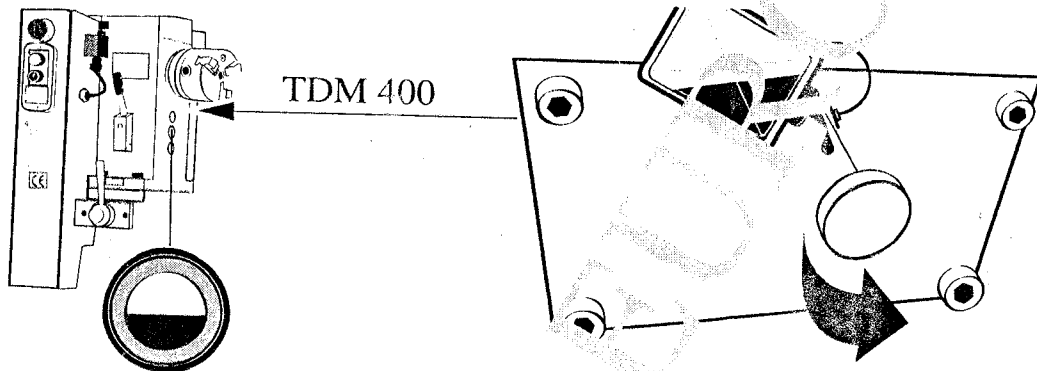
Lubrication / Lubrication

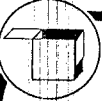
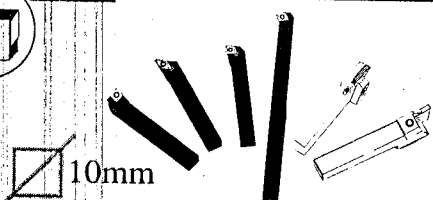
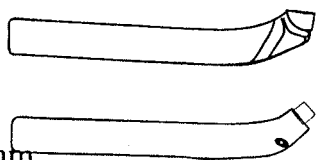
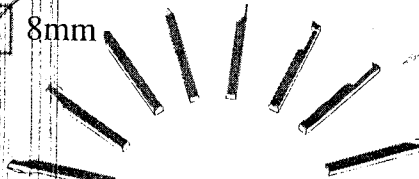
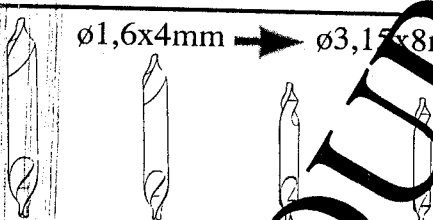
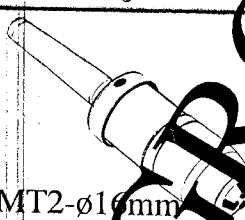
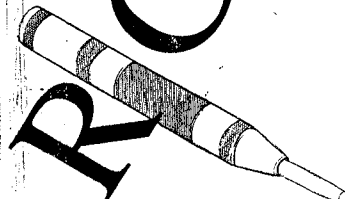
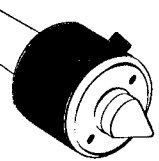
Huile / Oil : SAE 30-50.

Après 20 jours d'utilisation / After 20 days of using.

Ajout d'huile tous les 6 mois (après nettoyage) / Re-adding every 6 months (must clean first).

L'adjonction d'huile ne doit pas dépasser les 2/3 de la jauge / The oil adding level should not be higher than 2/3 the the oil gauge.



		114135	114100	114070	114080
114351	  10mm	x	x		x
114349	 10mm	x	x	x	x
114202	 8mm		x	x	x
11493	 $\varnothing 1,6 \times 4 \text{mm}$ → $\varnothing 3,15 \times 8 \text{mm}$	x	x	x	x
11482	 CM2/MT2- $\varnothing 16 \text{mm}$	x	x	x	x
11491		x			
114317	 CM2/MT2	x	x	x	x

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114135 114100 114070 114080

IDM 400

NL 400



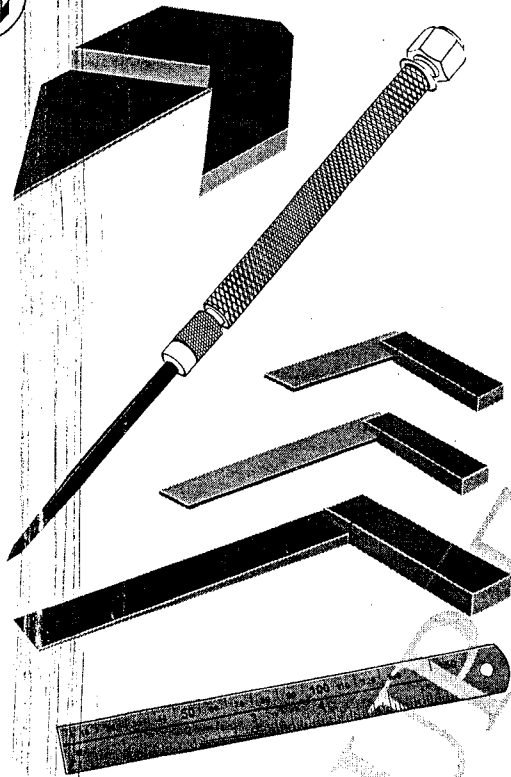
114350	<p>10mm</p>	X	X	X	X
114354	<p>WITHWORTH</p>		X	X	X
114320			X	X	X
114300			X	X	X
114352	<p>CM3/MT3-CM2/MT2</p>	X			

engraves Module

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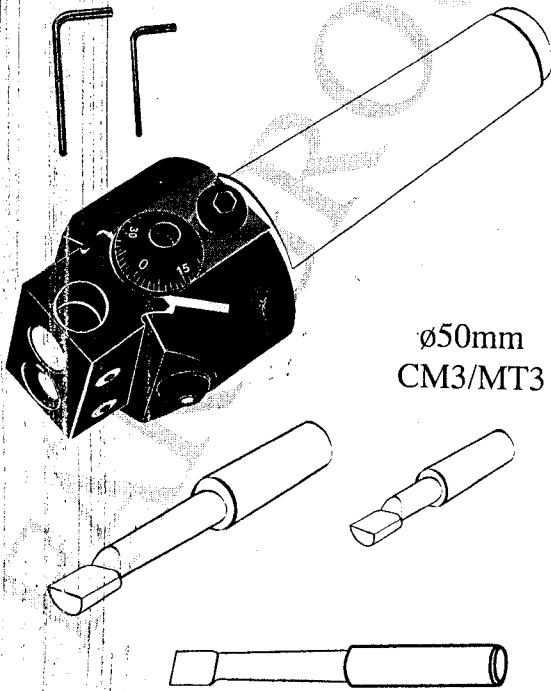
114135 114100 114070 114080

114199



x x x x

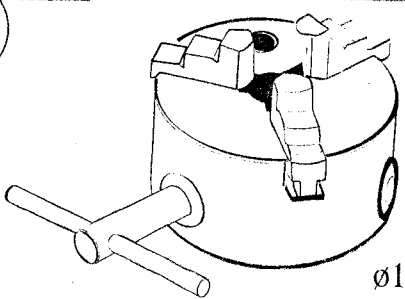
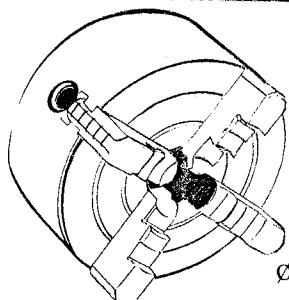
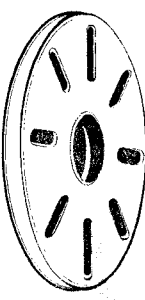
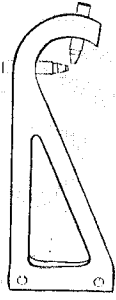
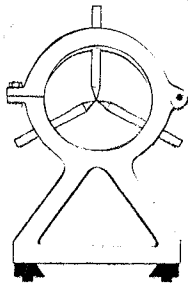
114198



ø50mm
CM3/MT3

x

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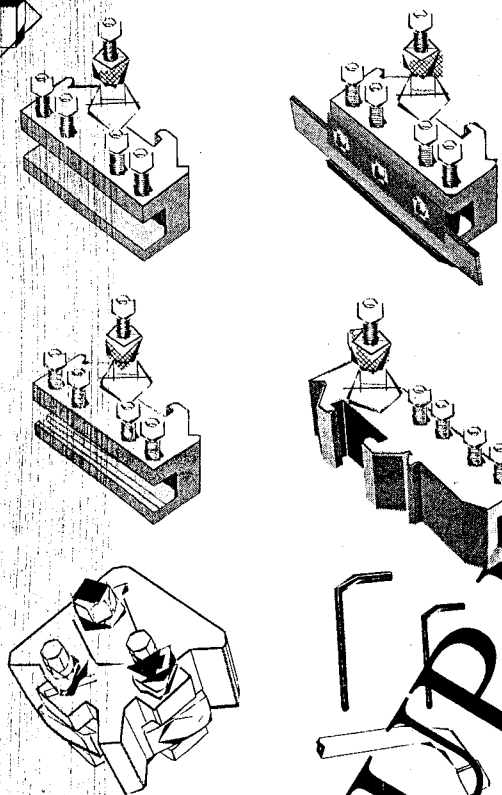
		114135	114100	114070	114080
114315	 <p>ø125mm</p>	X	X	X	X
114316	 <p>ø125mm</p>	X	X	X	X
114310	 <p>ø200mm</p>	X	X	X	X
114328		X			
114326		X			

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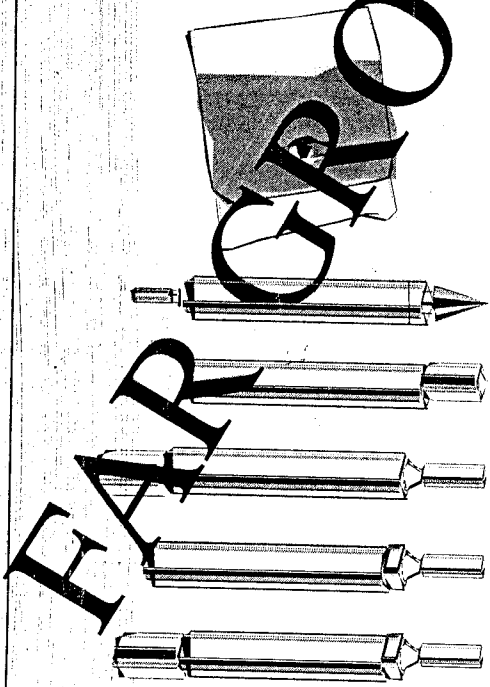
114135 114100 114070 114080

*

114631



111492



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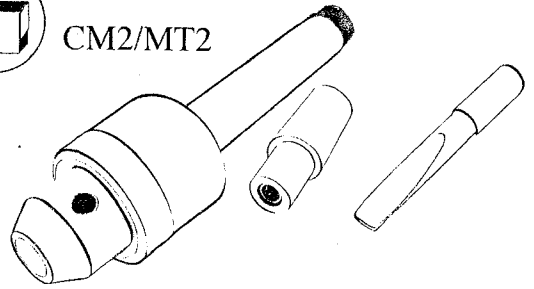
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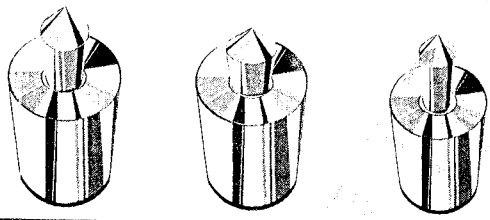
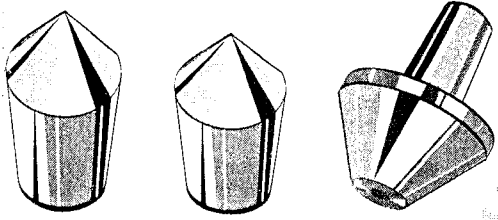
114135 114100 114070 114080



CM2/MT2



111494



x

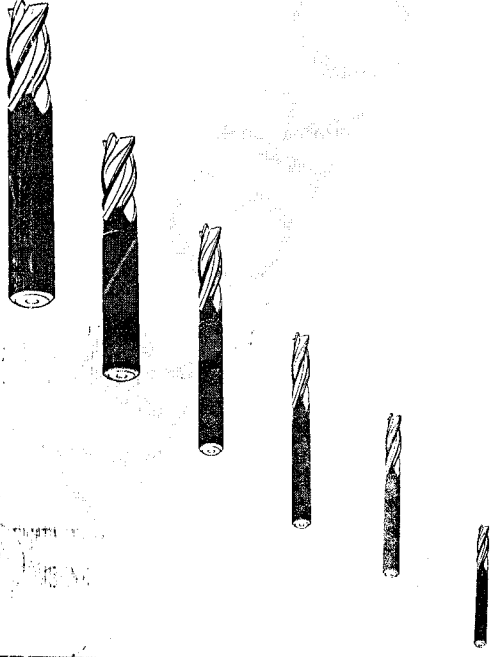
x

x

x




ø4/5/6/8/10/12mm





114811




x

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	<p>Tension et fréquence assignée: Nominal frequency and power: Spannung und Frequenz: Tensión y frecuencia fijada: Tensione e frequenza assegnata: Tensão e frequência fixa: Aangegeven spanning en frequentie: Ονομαστική τάση και συχνότητα: Napięcie i częstotliwość przydzielona: Jännite ja määrätty taajuus: Angiven spänning och frekvens: Консумирано напрежение и честота :</p>	230V ~50 Hz	230V ~50 Hz	230V ~50 Hz					
	<p>Puissance assignée: Nominal power: Leerlaufdrehzahl: Potencia fijada: Potenza assegnata: Potência assinada: Οηbelast toerental: Ονομαστική ισχύς : Prędkość na biegu jałowym: Teho: Angiven effekt: Консумирана мощност:</p>	370 W	370 W	370 W					
	<p>Vitesse à vide: No-load speed: Drehzahl unbelastet: Velocidad vacía: Velocità a vuoto: Velocidade no vácuo: Leerlaufdrehzahl: Ταχύτητα στο κενό: Prędkość bezciążenia: Nopeus tyhjäkään: Tomgångshastighet: Скорост на празни обороти:</p>	(6x) 120 -> 2000 min ⁻¹	(6x) 120 -> 2000 min ⁻¹	(6x) 140 -> 1710 min ⁻¹					
		ML 400	ML 550	GB 400					

	Porter une protection auditive: Wear hearing protective equipment: Gehörschutz tragen: Llevar puesta una protección auditiva: Portare una protezione uditiva: Utilizar uma protecção auditiva: Draag gehoorbeschermers: Φορέστε Προστατευτικά ακουστικά: Zakładać słuchawki ochronne: Käytä kuulosuojaimia: Bär hörselskydd: Да се използва слухови защитни средства:								
	Porter des lunettes de sécurité : Wear protective eyewear : Schutzbrille tragen : Llevar puestas gafas protectoras : Portare de gli occhiali di sicurezza : Utilizar óculos de segurança : Draag een veiligheidsbril : Φορέστε Προστατευτικά γυαλιά : Zakładać okulary ochronne : Käytä suoja-laseja : Använd skyddsglasögon : Да се използват защитни очила :								
	Porter un masque anti-poussière: Wear a dust mask : Staubschutzmaske tragen : Llevar puesta una careta de protección contra el polvo : Indossare una mascherina anti-polvere : Utilizar uma máscara anti-poeira : Draag een stofmasker : Χρήση προστατευτικής μάσκας : Zakładać maskę przeciwpyłową : Käytä pölysuojust : Bär mask mot damm : Да се използва защитна маска :								
	Porter des gants : Use rubber gloves : Schutzhandschuhe tragen : Llevar guantes de protección : indossare i guanti di protezione : Utilizar luvas de protecção : Draag veiligheidshandschoenen : Χρήση προστατευτικών γαντιών : Używać rękawic ochronnych : Käytä suoja-käsineitä : Använd skyddshandskar : Да се използват предпазни ръкавици :								

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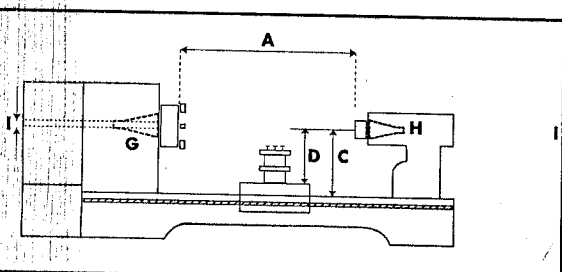
	<p>Niveau de pression acoustique : Acoustic pressure level : Schalldruckpegel : Nivel de presión acústica : Livello di pressione acustica : Nivel de pressão acústica : Niveau akoestische druk : Στάθμη Θορύβου : Poziom mocy akustycznej : Käytä kuulosuojaimia : Ljudtrycksnivå : Равнище на акустично налягане :</p>	dB(A)								
	<p>Niveau de puissance acoustique : Acoustic power level : Schalleistungspegel : Nivel de potencia acústica : Livello di potenza acustica : Nivel de potência acústica : Niveau akoestisch vermogen : Στάθμη Ονομαστικής Θορύβου : Poziom mocy akustycznej : Käytä suojalaseja : Ljudstyrkenivå : Равнище на вибрации :</p>	dB(A)								
	<p>Niveau de vibration : Hand/arm vibration level : Vibrationspegel Hand/Arm : Nivel de vibración mano/brazo : Livello di vibrazione mano/braccio : Nivel de vibração mão/braço : Trillingsniveau hand/arm : Στάθμη κρα"οστίμων : Poziom wibracji rżka/ramiż : Käytä pölysuojust : Vibrationsnivå hand/arm : Равнище :</p>	m/s ²								
	<p>Poids : Weight : Gewicht : Peso : Peso : Peso : Gewicht : Βάρος : Masa : Käytä suojakäsineitä : Vikt : Терло :</p>	111 Kg	130 Kg	111 Kg						

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	<p>Conforme aux normes CE : Conforms to EC standards : CE-Konformität : Cumple con las directivas CE : Conforme alle norme CE : Conforme às normas CE : Voldoet aan de EG-normen : Συμμορφωμένα με τα πρότυπα : Zgodność z normami CE : EU-standardien mukainen : EU-standardien mukainen : Съответствие с европейските норми :</p>	<p>X</p>	<p>X</p>	<p>X</p>					
	<p>Lire les instructions avant usage : Read the instructions before use : Vor Einsatz des Geräts Anweisung lesen : Léase las instrucciones antes de usar : Leggere le istruzioni prima dell'uso : Ler as instruções antes da utilização : Lees voor het gebruik de instructies : Διαβάστε τις οδηγίες χρήσης : Zapoznać się z instrukcją przed użyciem : Lue ohjeet ennen käyttöä : Läs anvisningarna före användning : Прочетете указанията за употреба :</p>	<p>X</p>	<p>X</p>	<p>X</p>					
	<p>Danger : Danger : Gefahr : Peligro : Pericolo : Perigo : Gevaar : Κίνδυνος : Niebezpieczeństwo : Vaara : Fara : Опасност :</p>	<p>X</p>	<p>X</p>	<p>X</p>					
	<p>Conformité Pologne : Conforms to Polish requirements : Konformität Polen : Conformidad Polonia : Conformità Polonia : Conformidade Polónia : Overeenstemming Polen : Προδιαγραφές Πολωνίας : Zgodność z normami polskimi : Yhdenmukaisuus Puola : Överensstämmelse Polen : Полски стандарт :</p>	<p>X</p>	<p>X</p>	<p>X</p>					

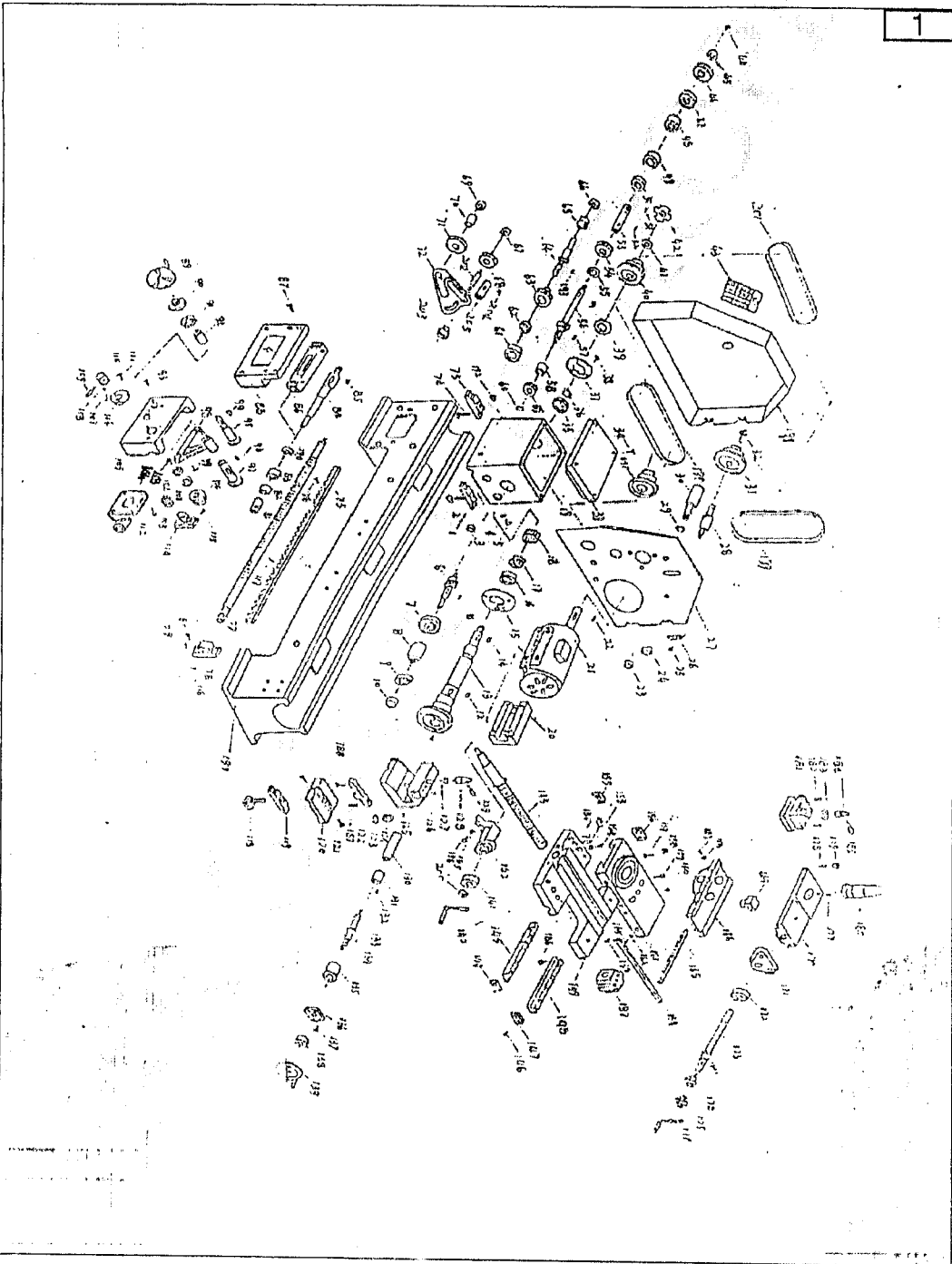
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I	H	G	D	C	A	
20 mm	CM2	CM3	70 mm	110 mm	400 mm	ML 400
20 mm	CM2	CM3	70 mm	110 mm	550 mm	ML 550
20 mm	CM2	CM3	70 mm	110 mm	400 mm	GB 400



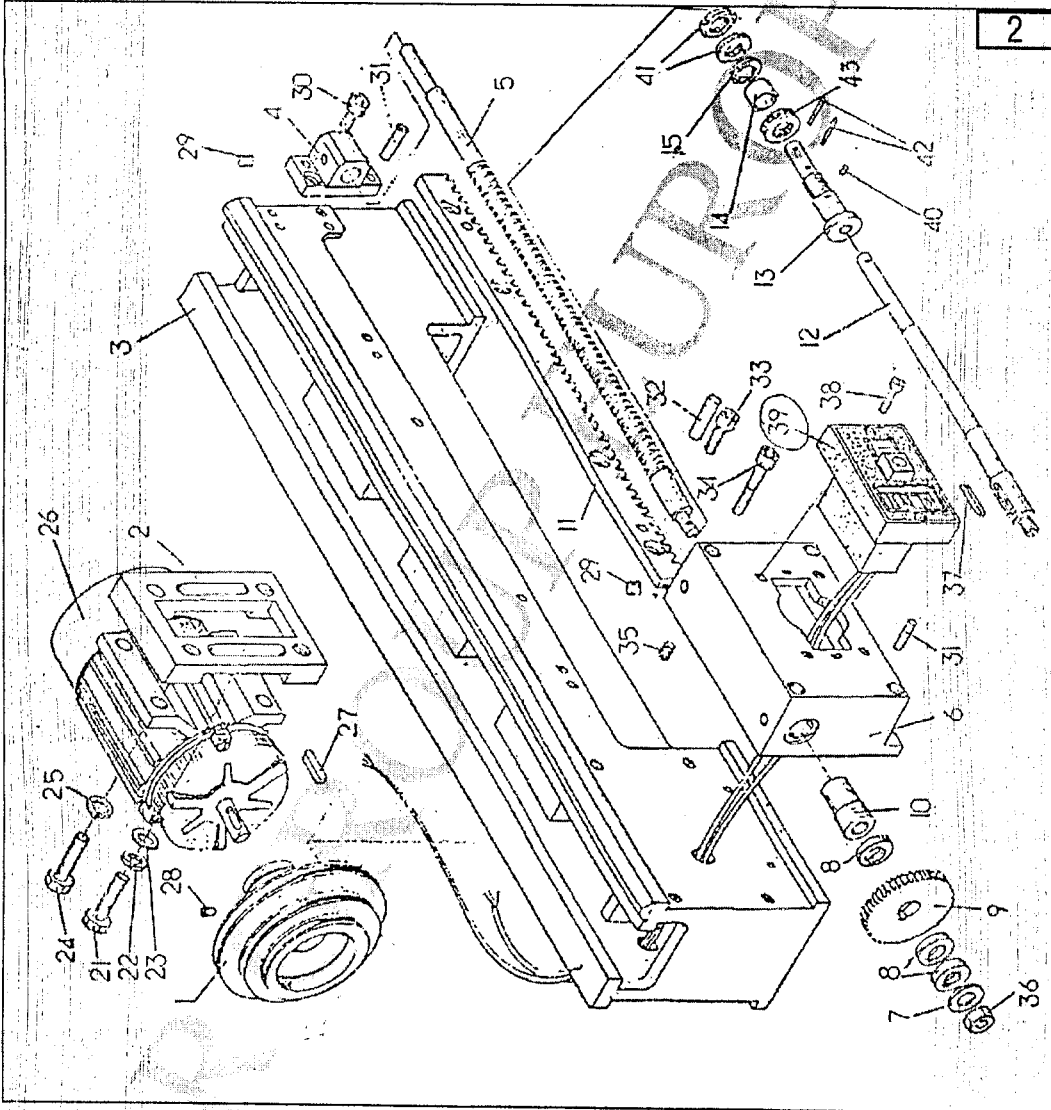
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ML 400



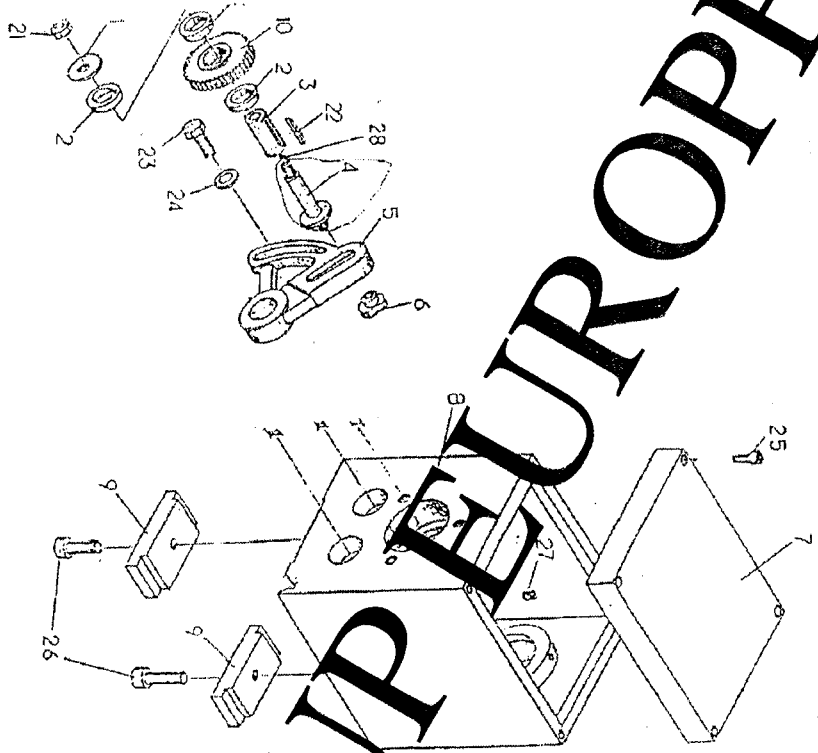
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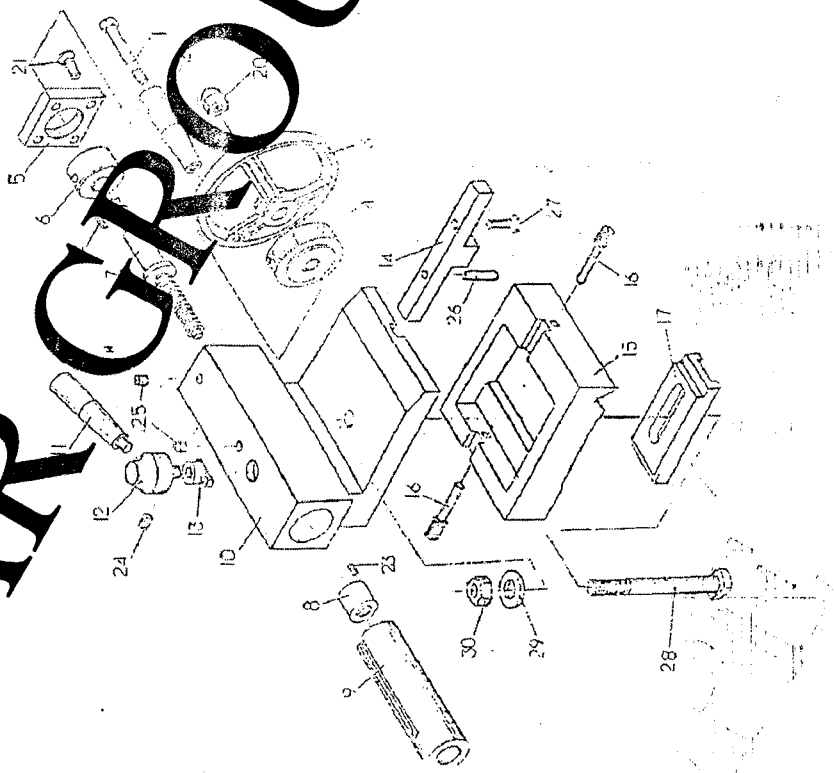


ML 400

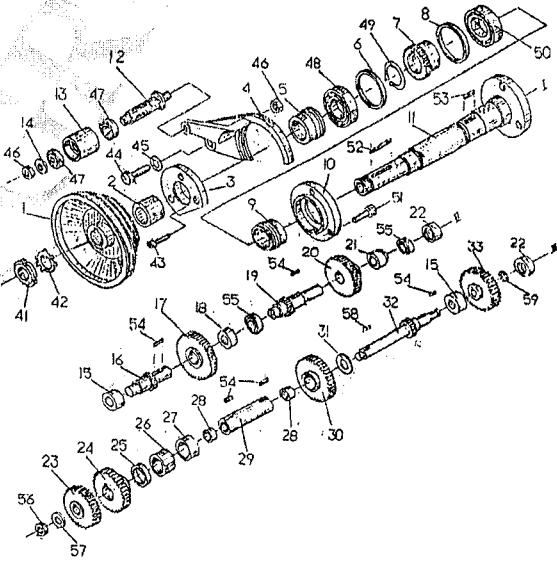
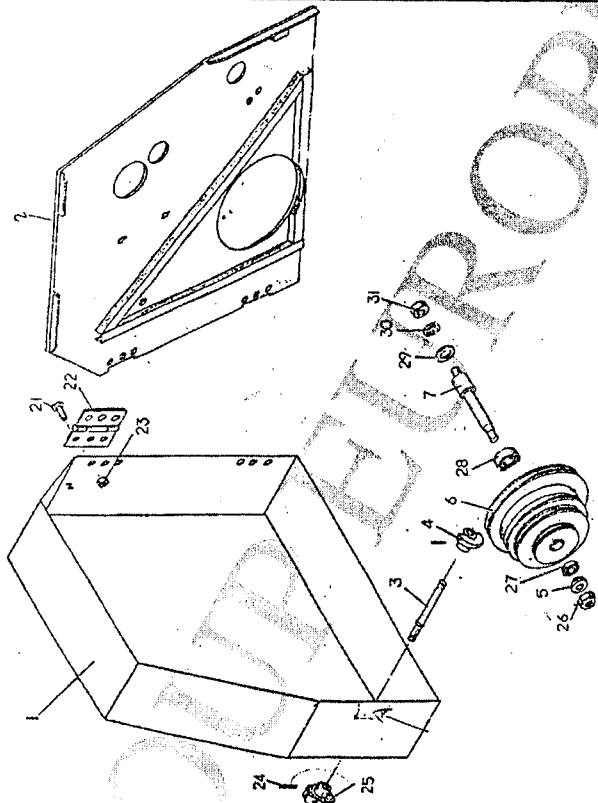
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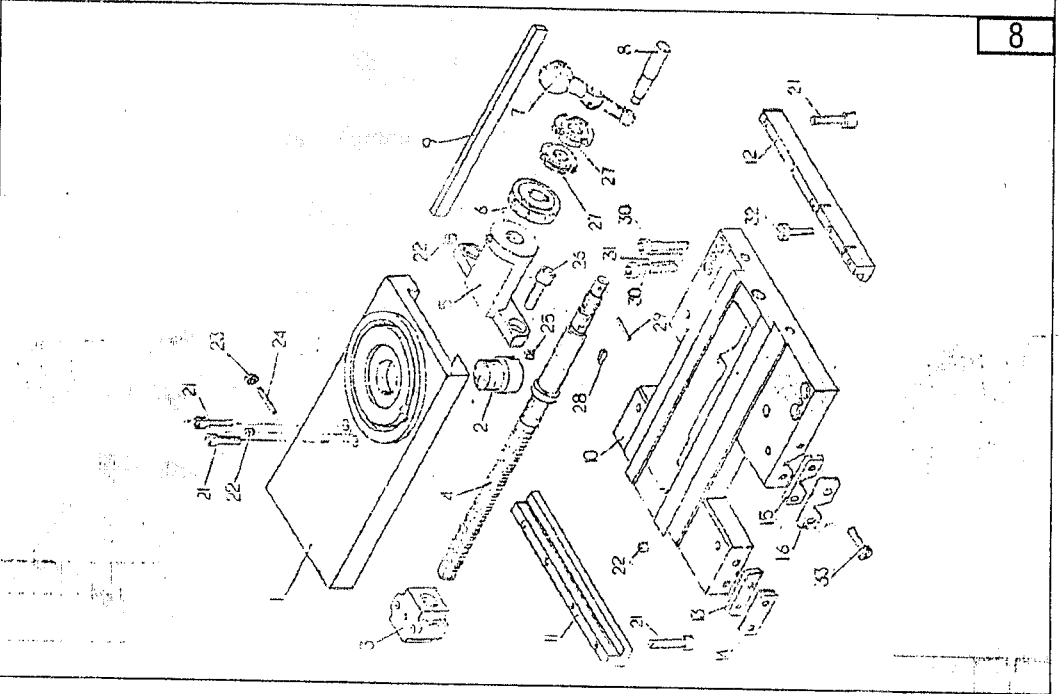
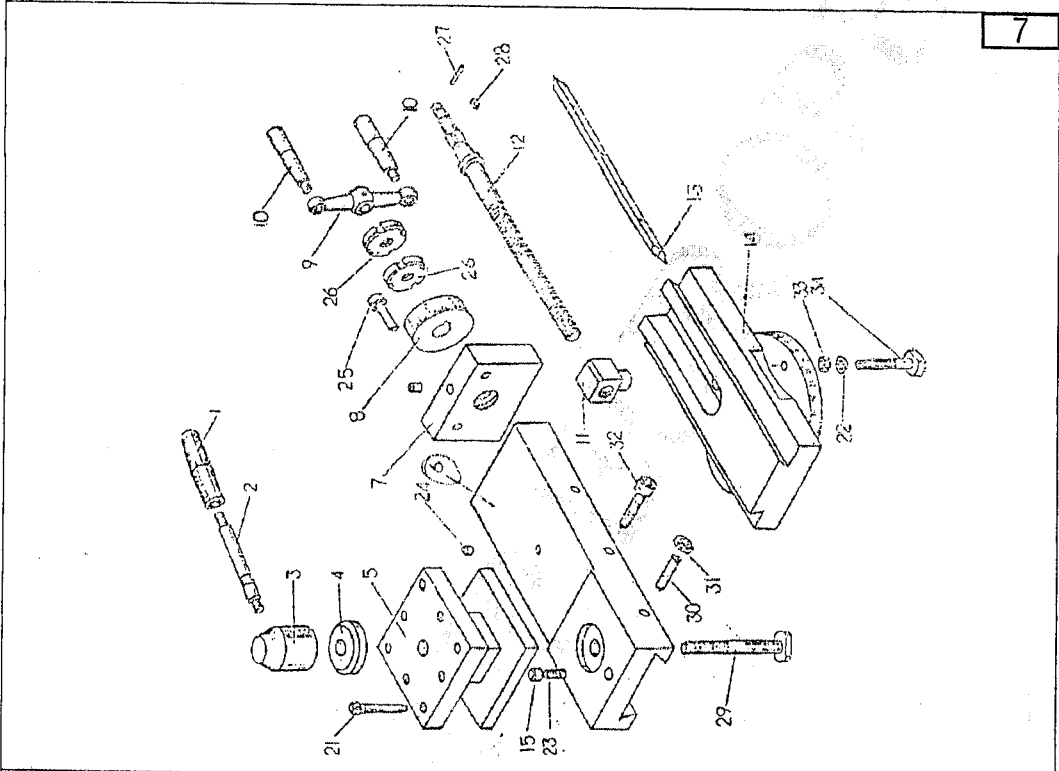


4

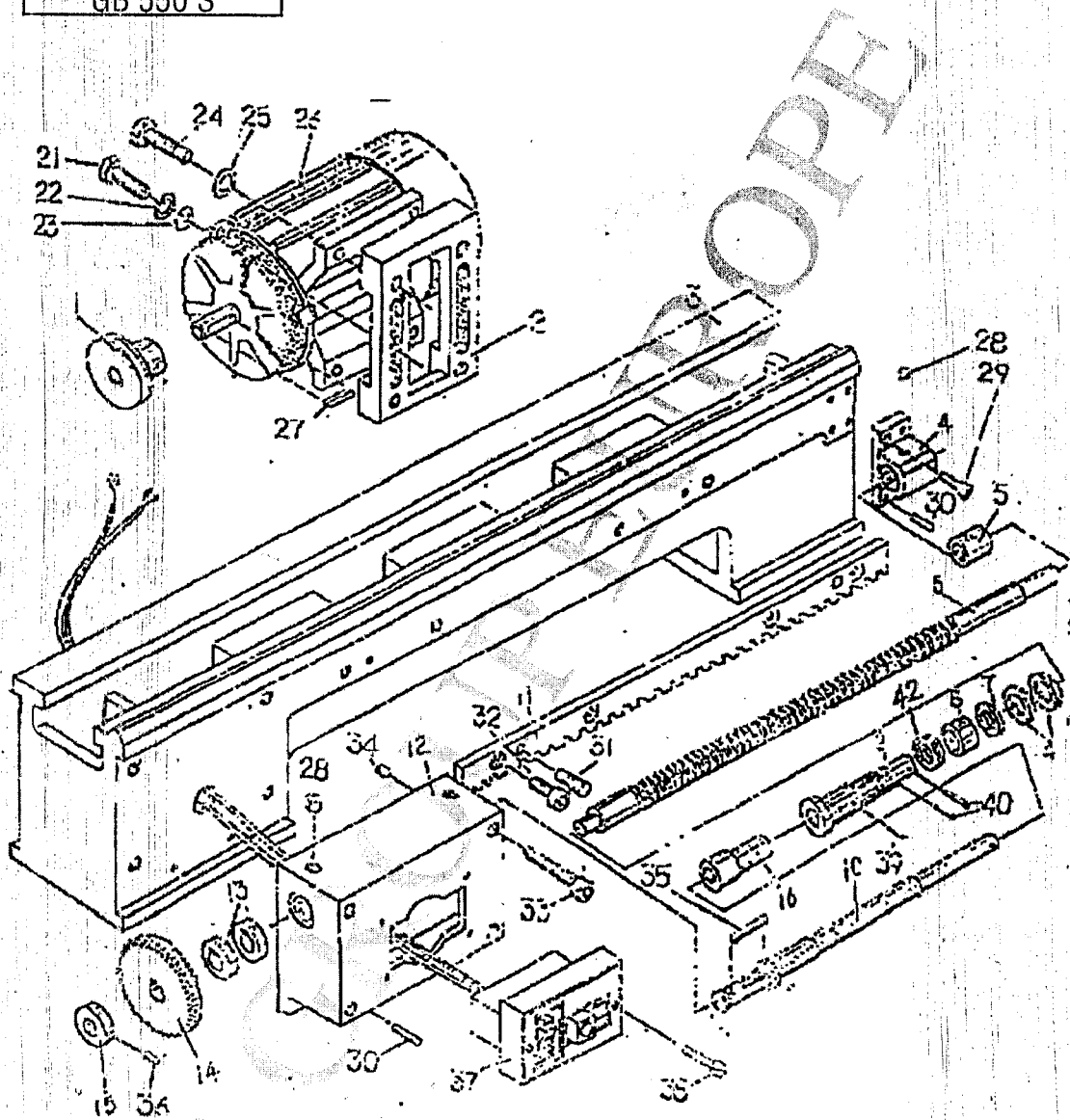


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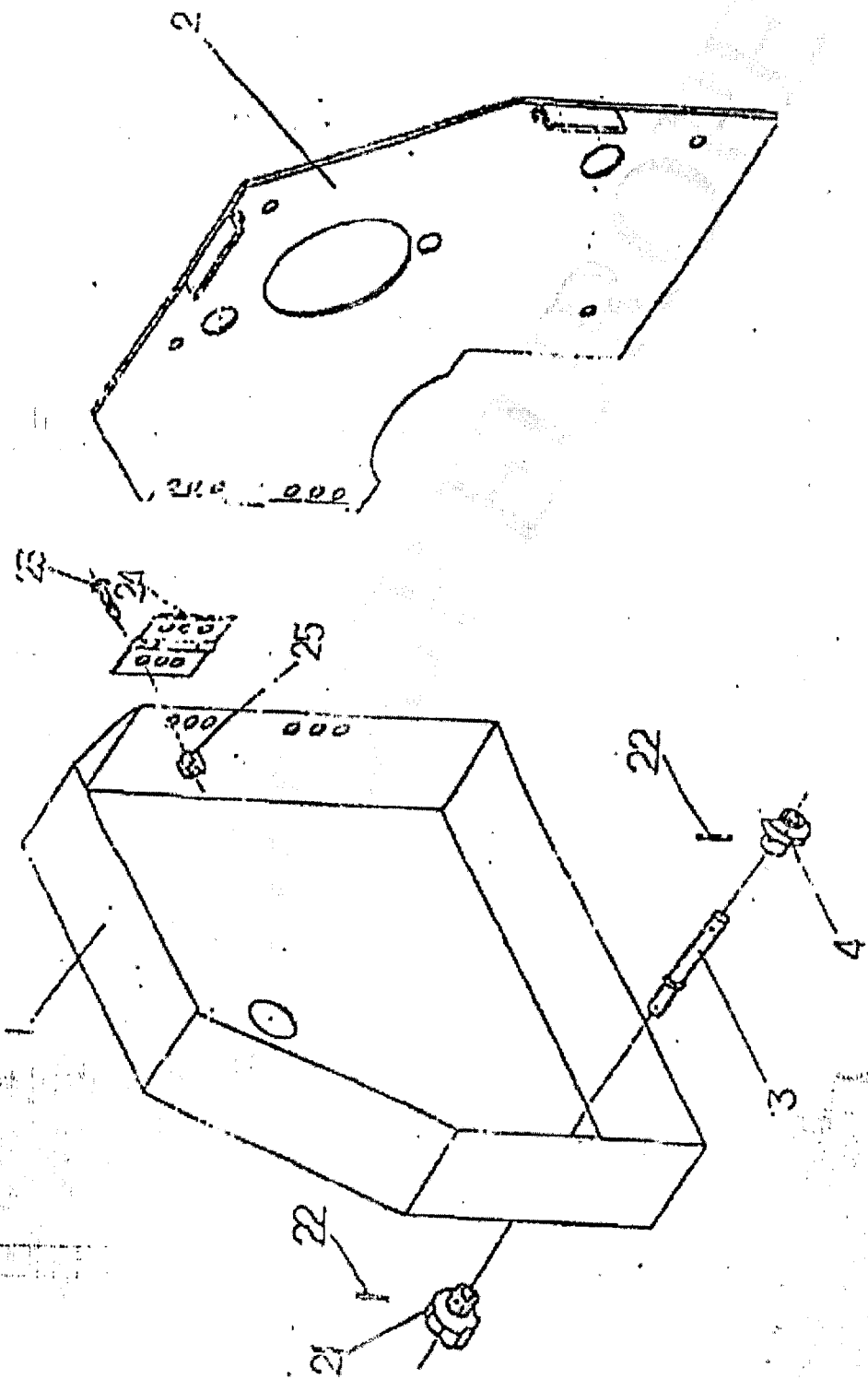


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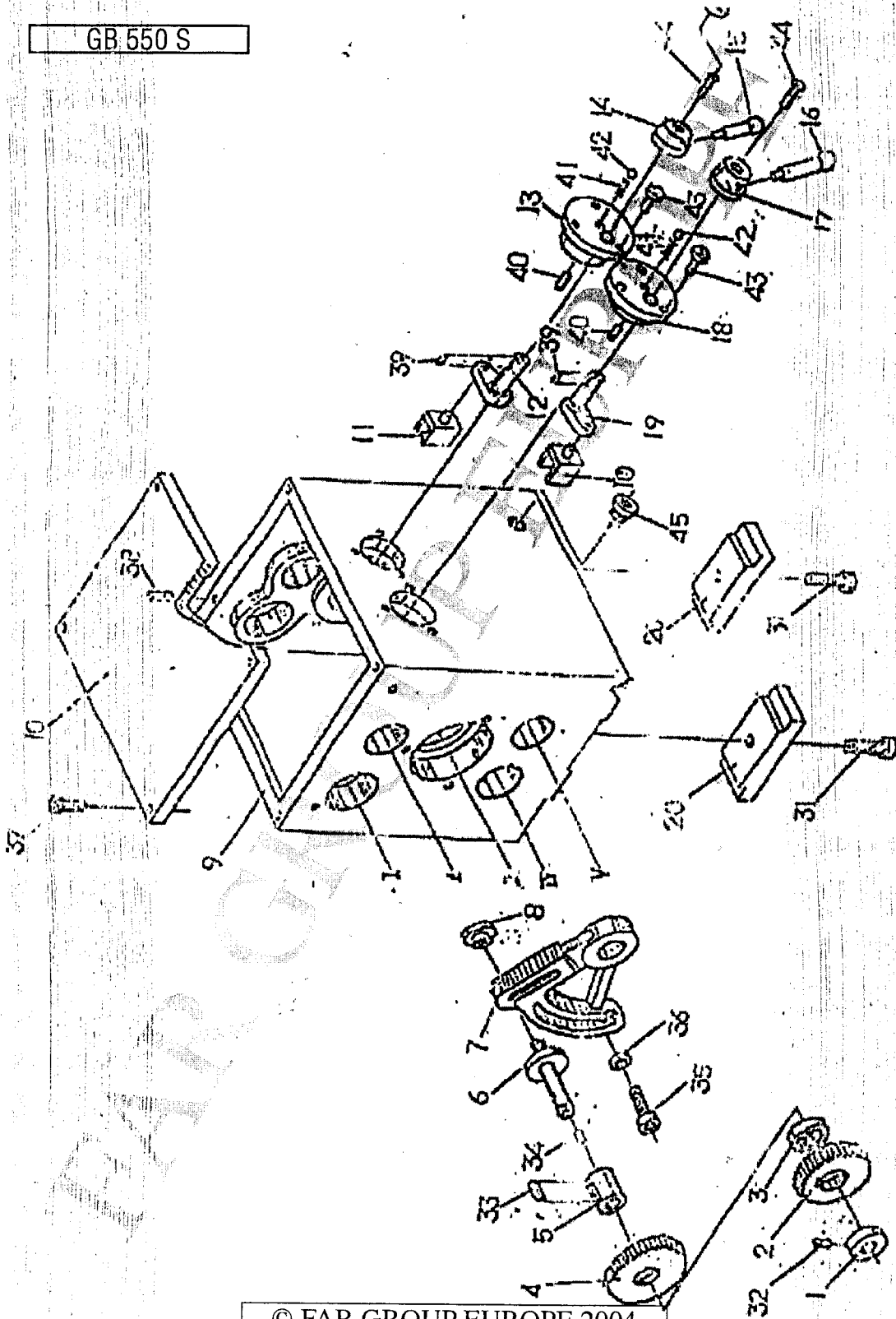
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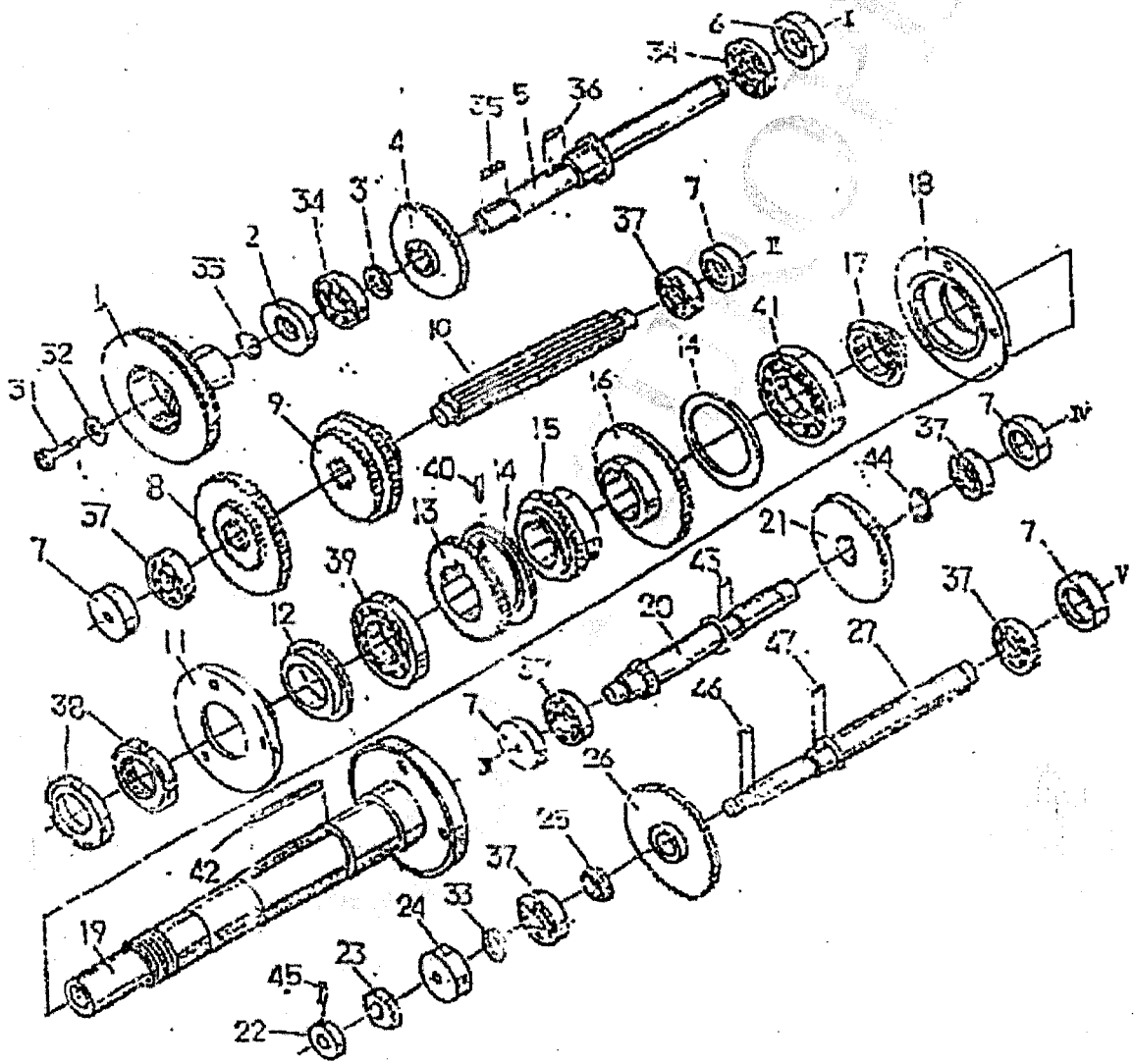


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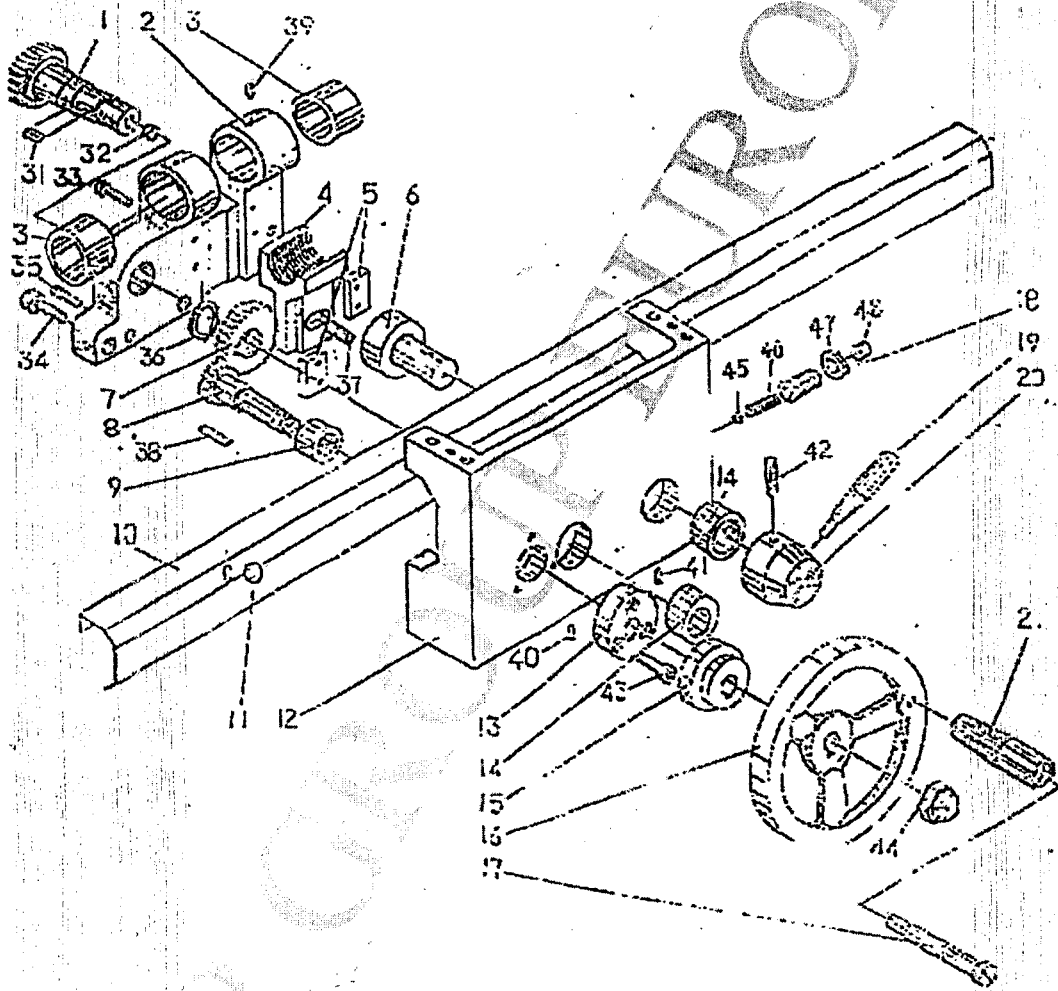
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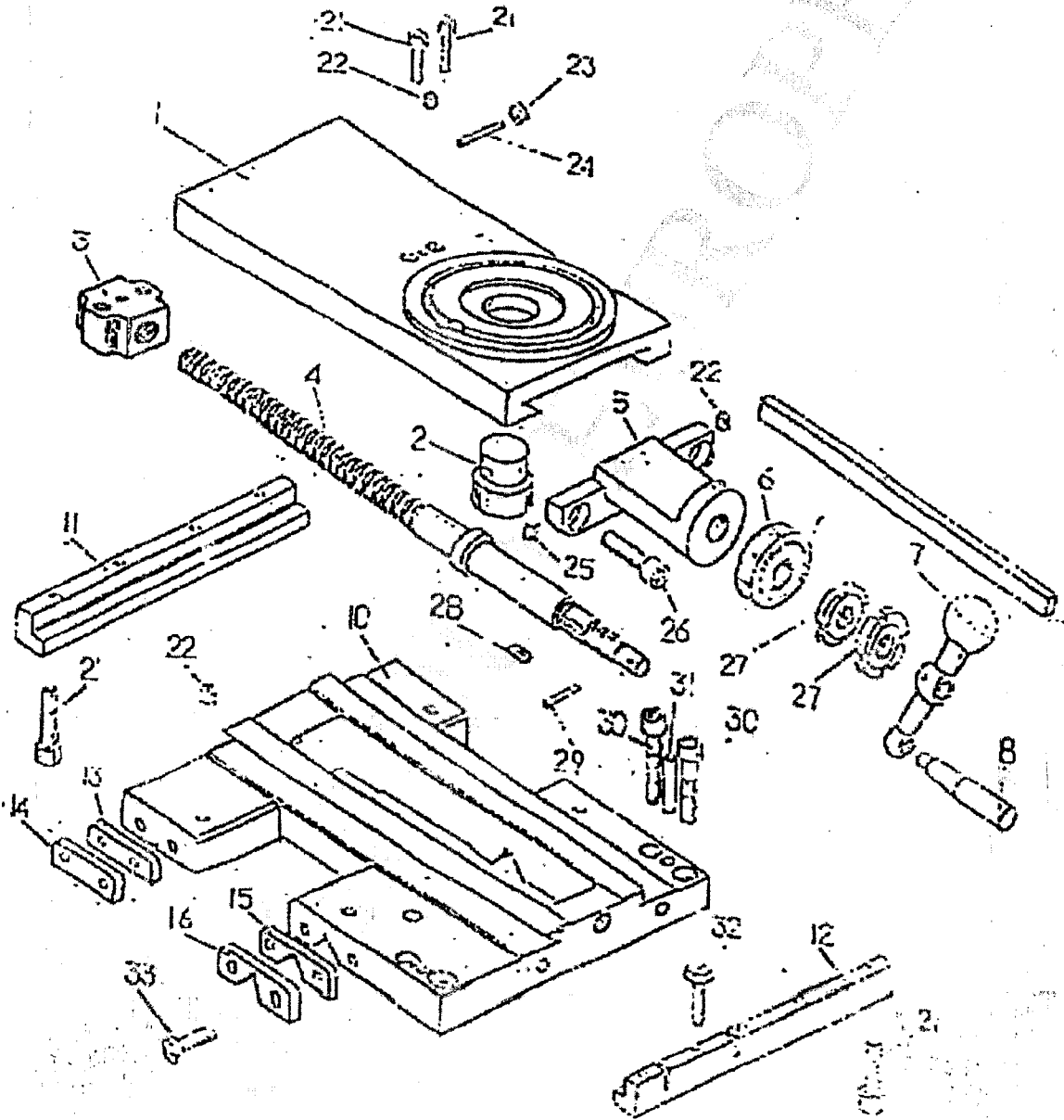


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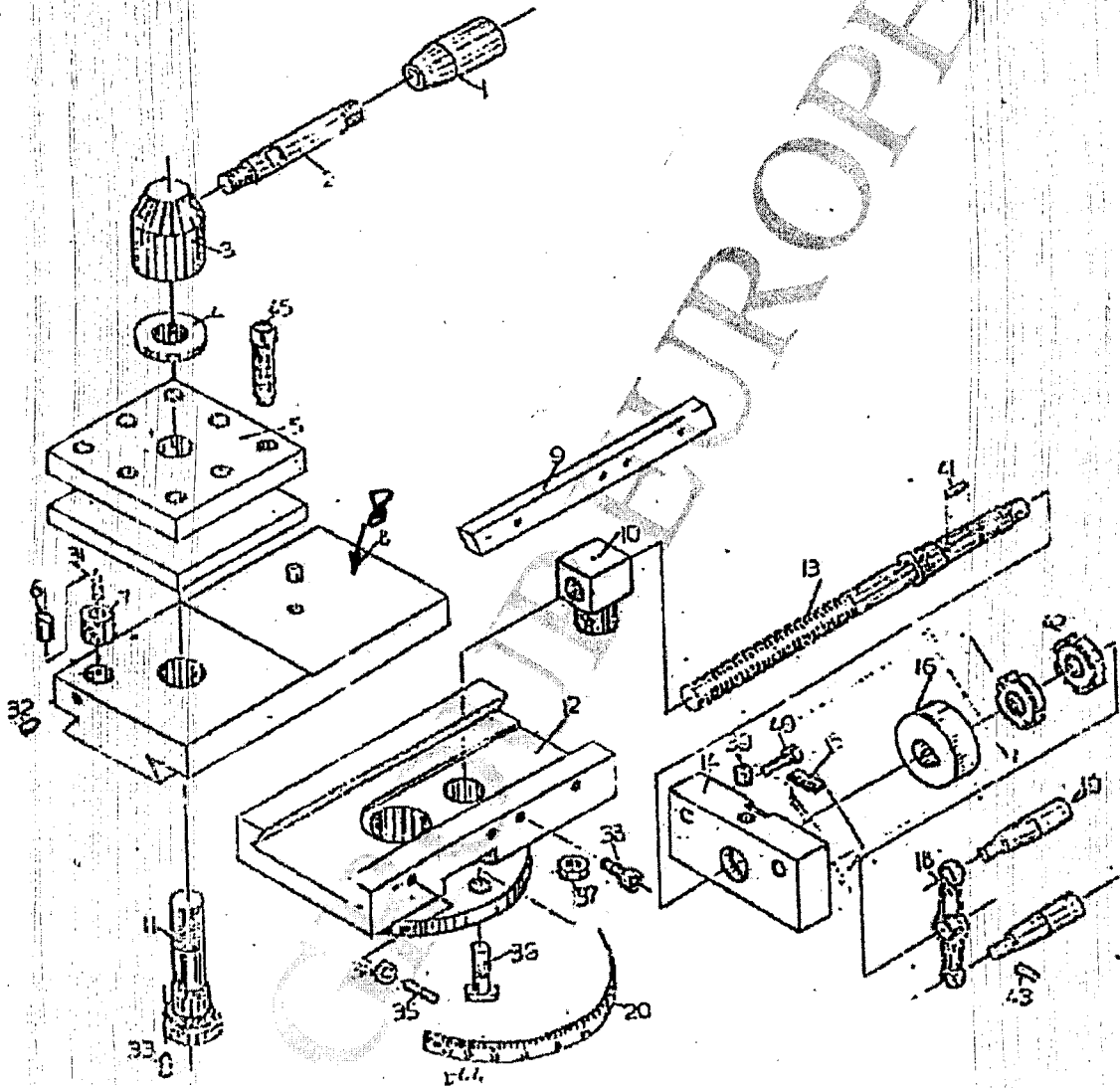
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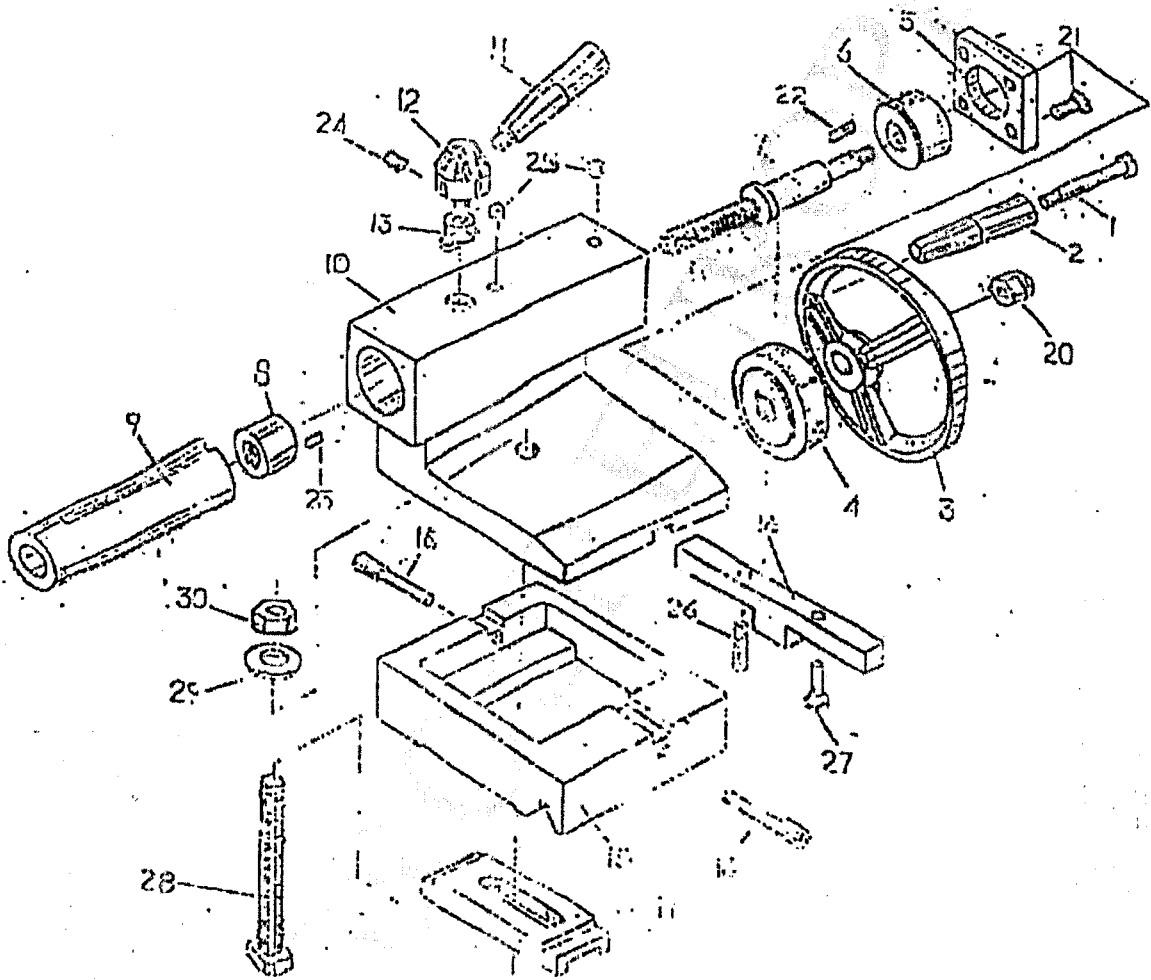
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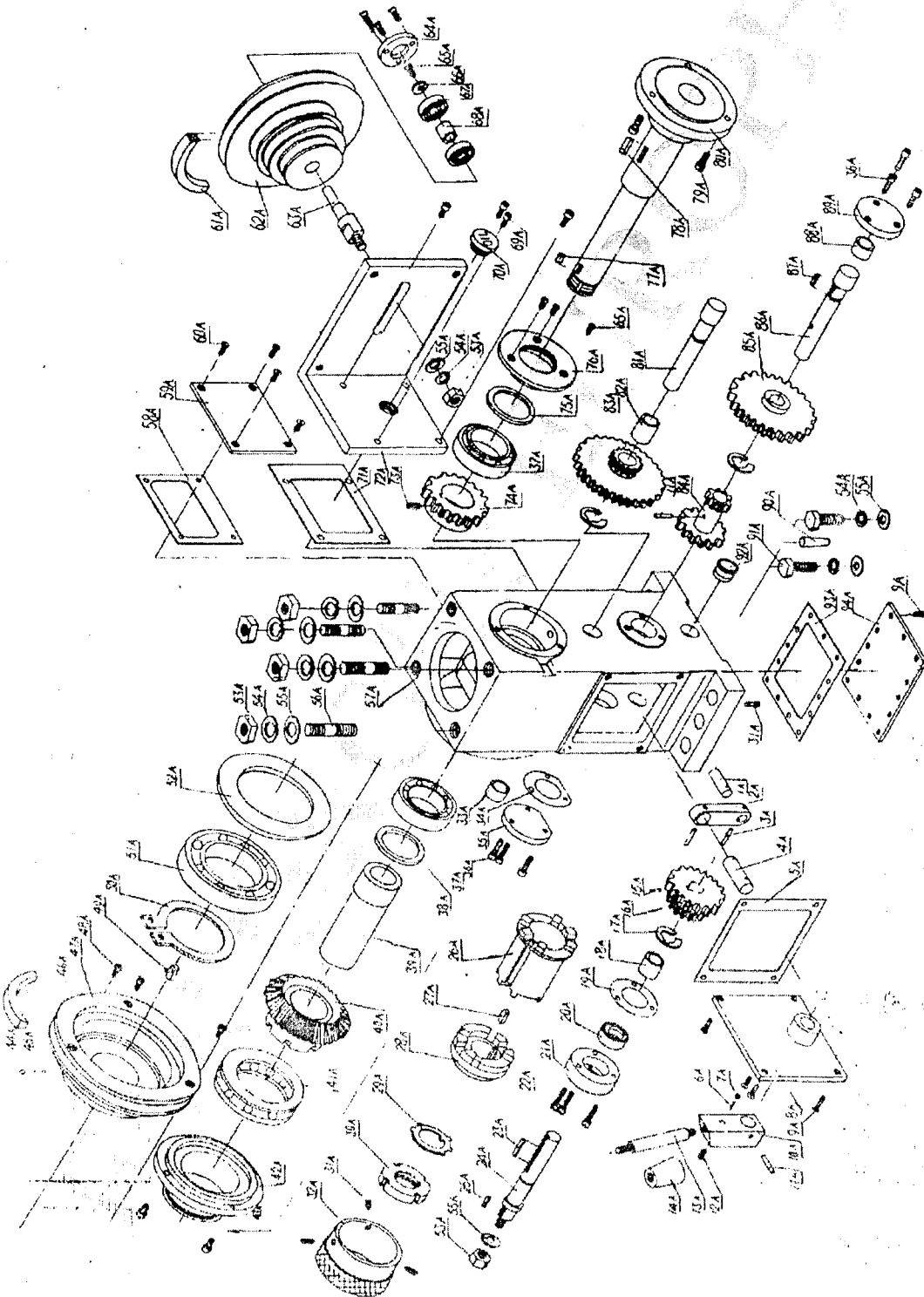
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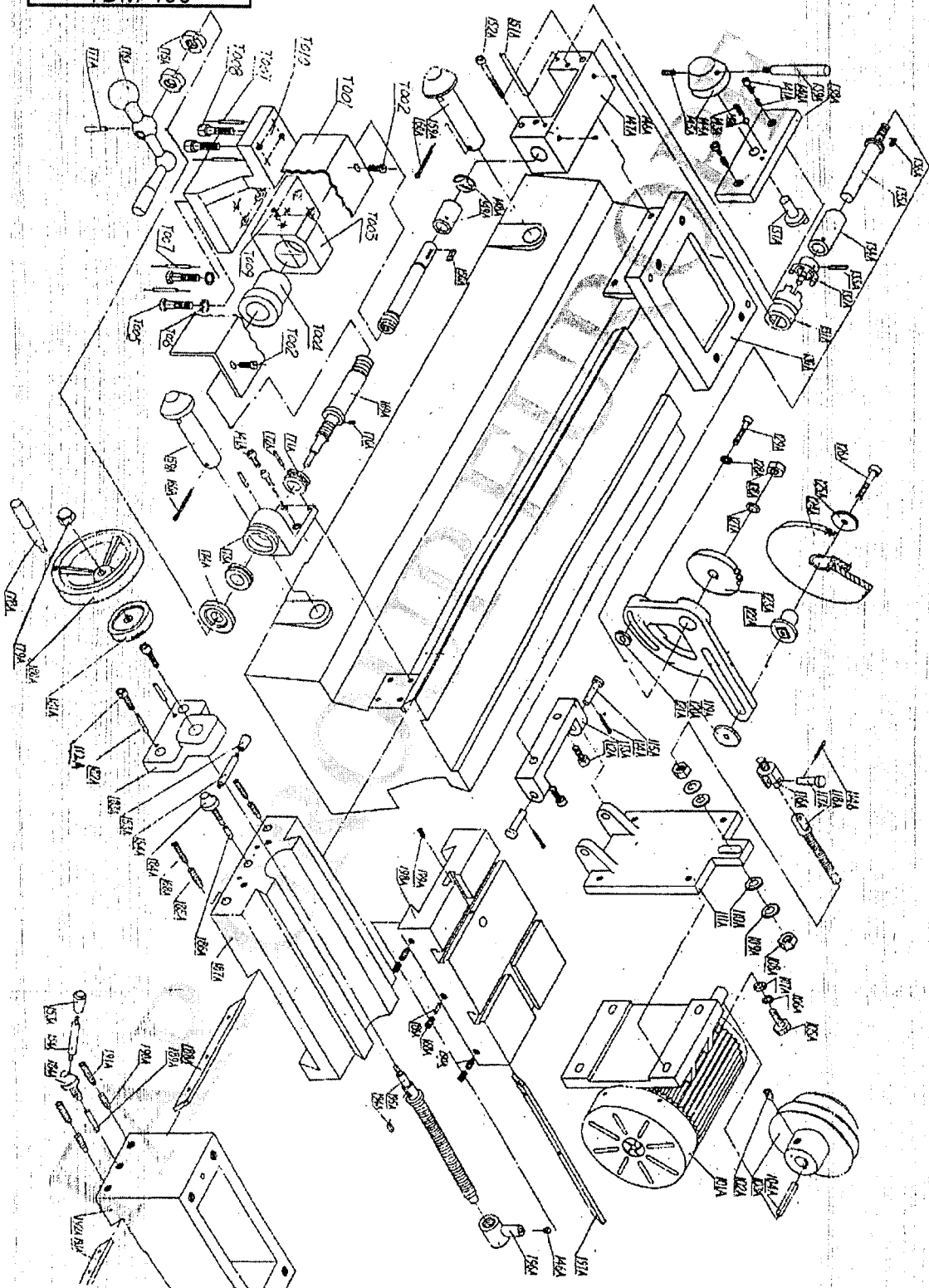
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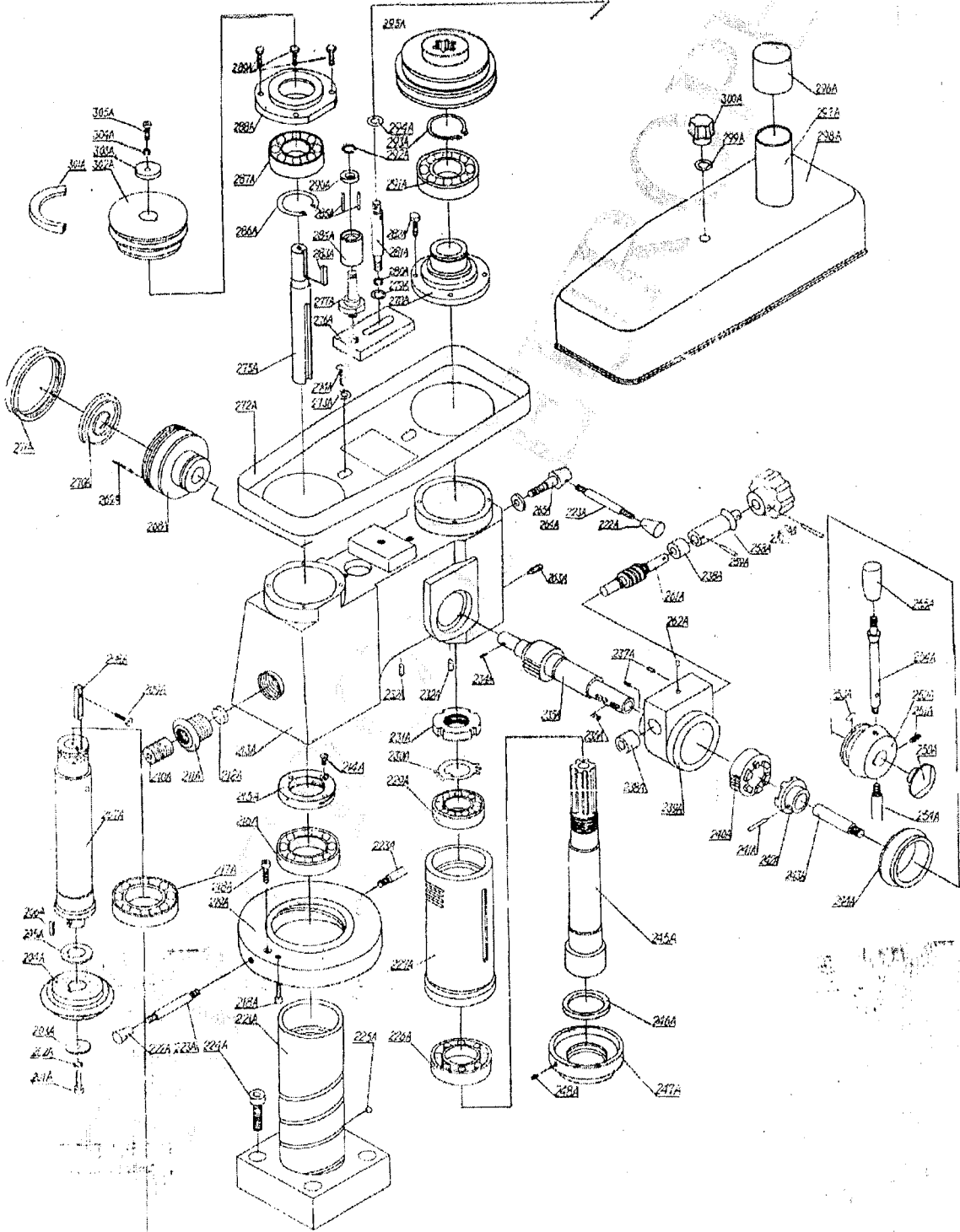
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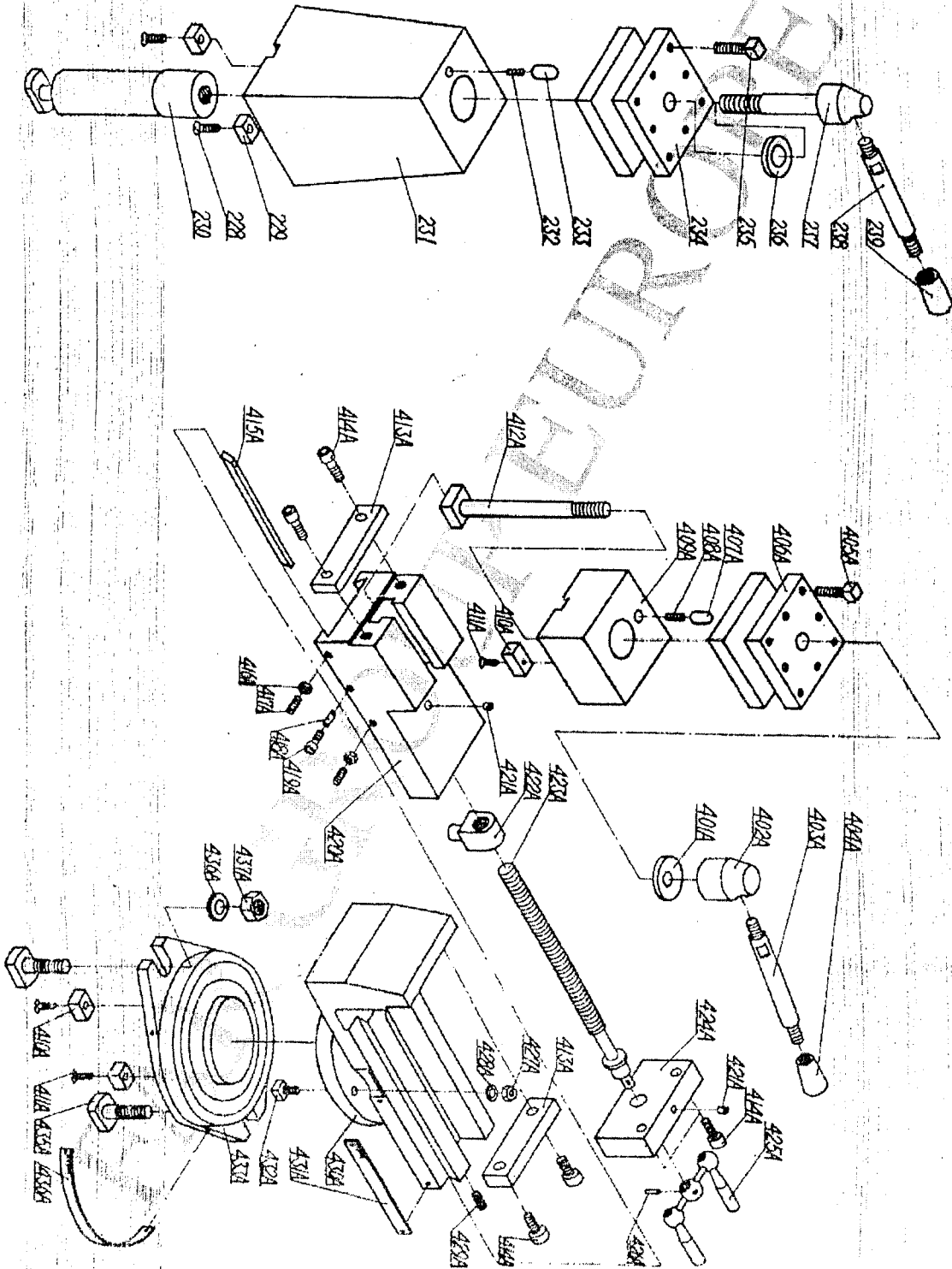
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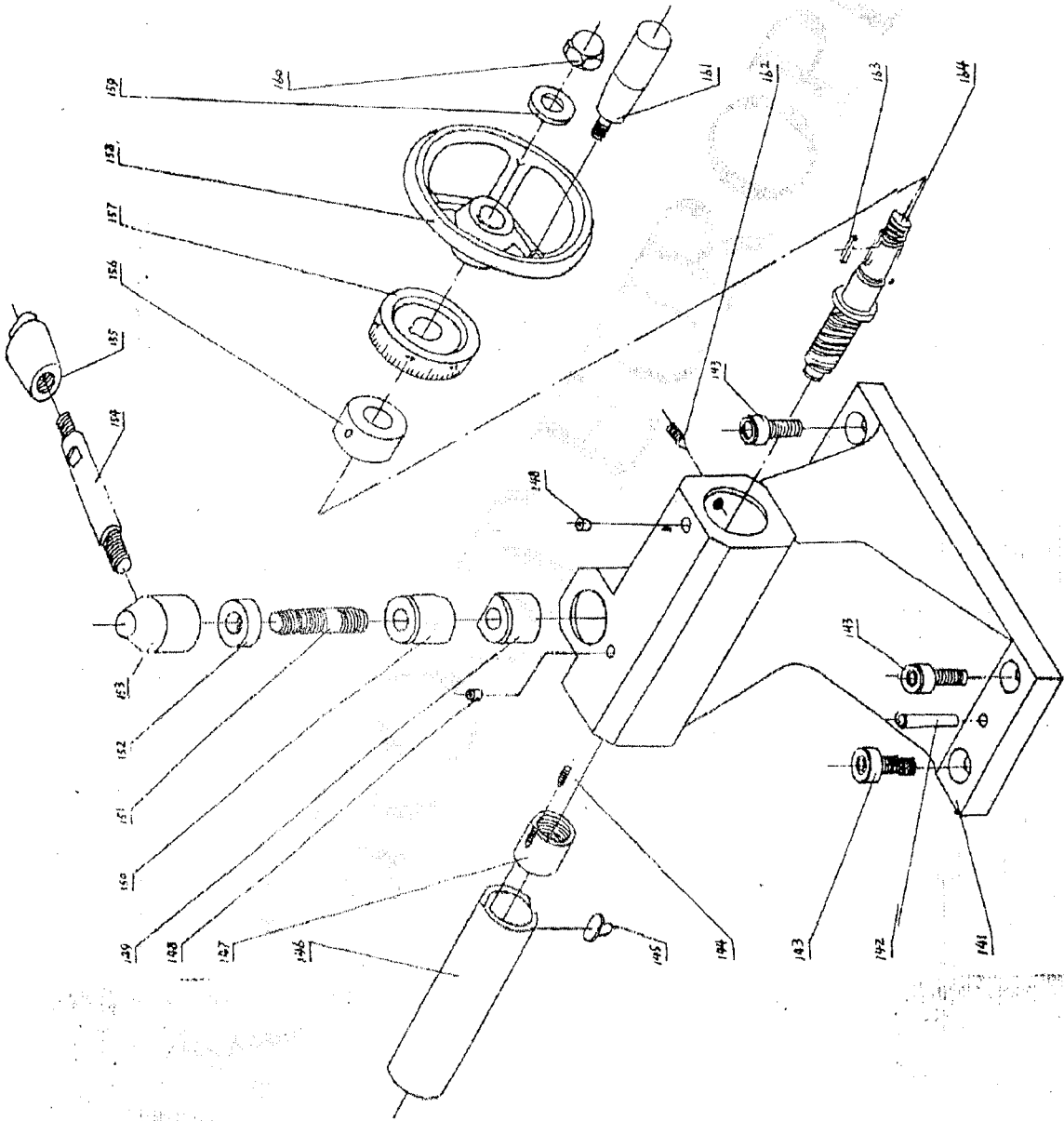
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