

UNIVERSAL CUTTER GRINDER

Model: U2/U3

Operation Manual

Series No.:

Max Wheel Dia:100 MM

Voltage:

Power;0.375

Inspector:

Manufacture Date

UNIVERSAL CUTTER GRINDER

一、PERFACE

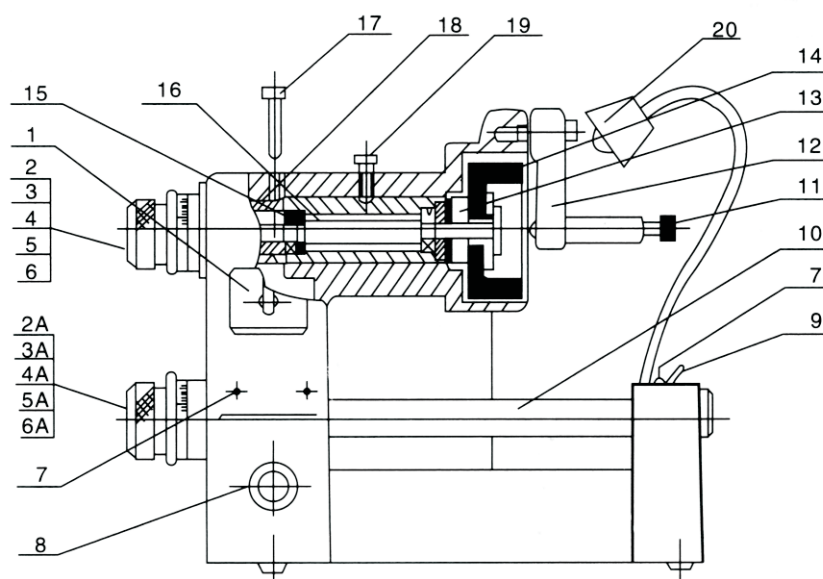
GD-U2/U3 Universal Cutter Grinder, with development of the carved industry, precisely designed by engineers. It is made up by main unit, wheel, spindle, drives, micro-feed and the grinding wheel dresser, knife the composition, structure, novel, modeling beautiful, high precision, good performance, easy to use, easy maintenance, applicable: computer engraving machine, machine engraving machine, engraving machine and high-speed rotary die knife cone head, edge grinding, and milling cutter blade cutting edge, grinding angles accurately. Universal Grinder is equipped with more advanced type of sharpener, my company is quality first, service-oriented for the purpose, sincerely for the majority of mold engraving machine, computer engraving User Services

The Specification and Technical Datas

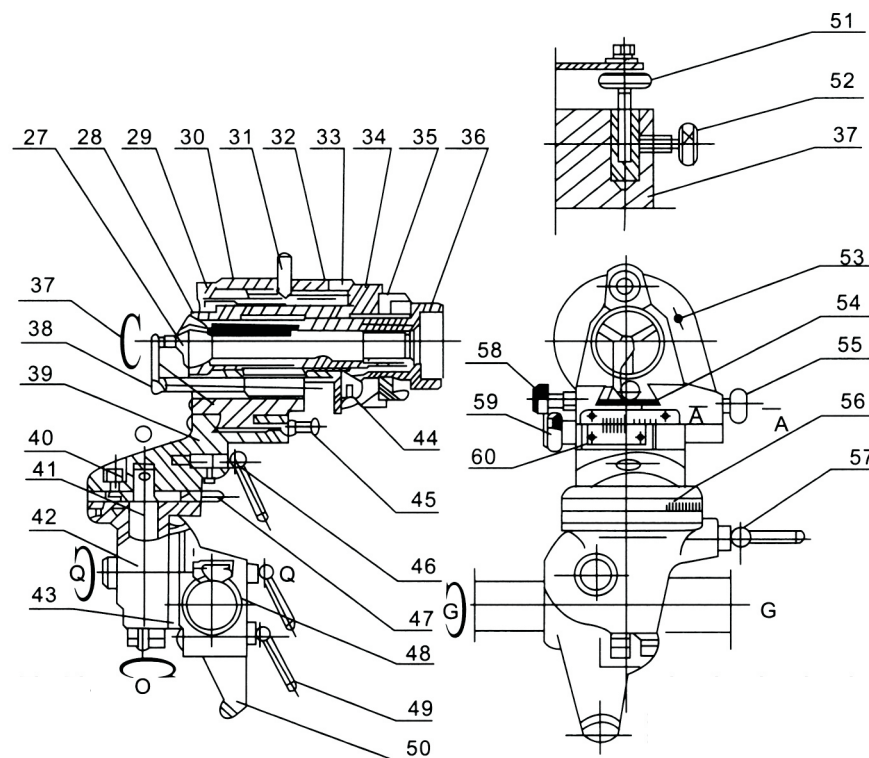
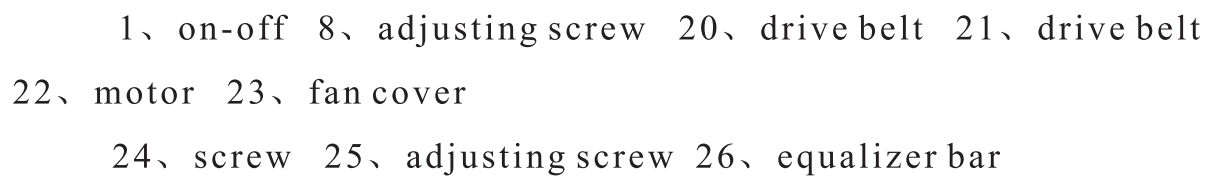
Item	Art.Name	Specification and TDR
1	Wheel	$\phi 100 \times \phi 20 \times 50 \text{mm}$
2	speed of spinde	5200r/min
3	Max.Collect Dia.	$\phi 3.175 \sim \phi 28$
4	Longitudinal travel of cutter index	140mm
5	Cross travel of cutter index	18mm
6	Longitudinal travel of Spindle	6mm
7	Grinding cone angle range	$0^{\circ} \sim 180^{\circ}$

8	Grinding negative angle range	0°-52°
9	Grinding back angle range	0°-44°
10	Motor	0.375KW 50Hz 220v
11	Net weight	45KG
12	Packing dimension	536x424x415mm

U2/U3



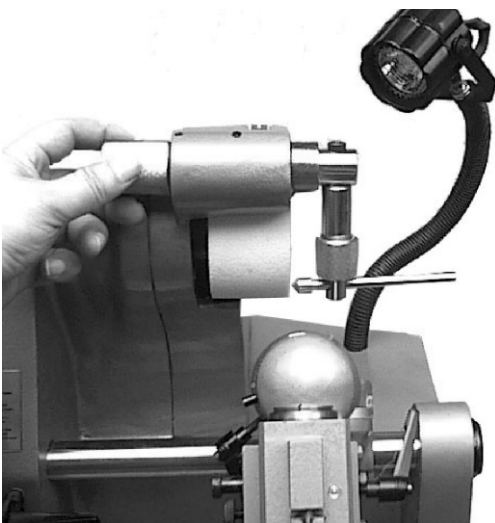
- 1.On-off 2、 Handle 3、 dial scale 4、 cover 5.screw joint
6、 connectingrod 2A、 handle
3A、 dialscale 4A.cover 5A、 screwjoint 6A、 connecting cover
7、 oil cup 8.adjusting screw
9、 handle 10 axis 11、 fastening cover 12.reshaper stand 13、 wheel
flange 14、 grinding wheel
15、 axis 16.axis of grinding wheel 17、 stop bar 18、 connecting cover
19、 screw 20、 lamp

3

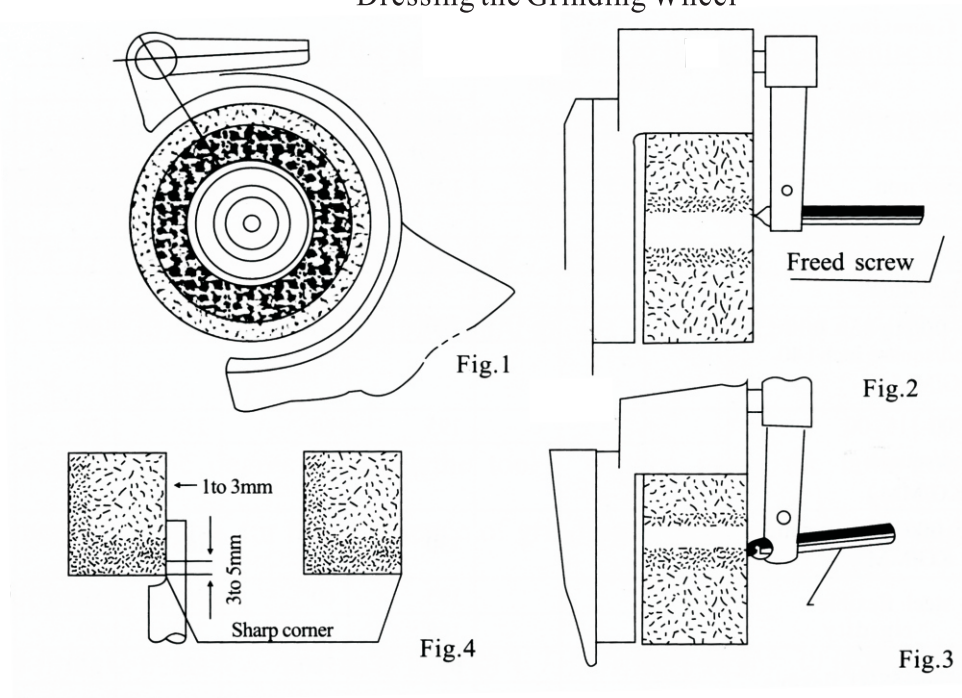
telescopic link	bolt	ring flange	index plate	Nut
multiple slip	localizer	Rotary table	Screw	indicator dial
Base of the rotary table	dial scale	dial scale	Screw	Handle
Fastening pin	oil seal	Handle	Base	screw stem
Screw	Pin	Ruler	Screw	Dial scale
Handle	Handle	Screw	Ruler	

Grinding Wheel Finishing

1. Loosen clamp nut D, rightward move diamond dresser, to approach wheel adge;
2. Adjust dresser well and wheel' distance about 1MM, lock up clamp nut D;
3. rotate bolt, until dresseapproch to wheel. When the bolt rotate 1/5 circle, it is will scraping about 0.2MM.

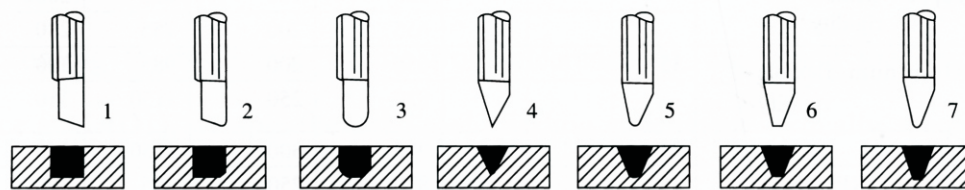


Dressing the Grinding Wheel

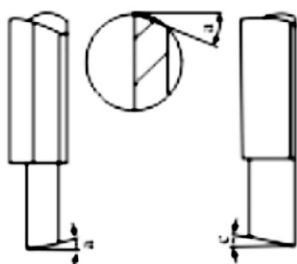


Reamer figuration

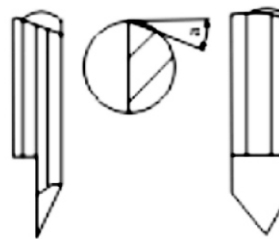
Commonly, single blade milling cutter instruct of basis outline:



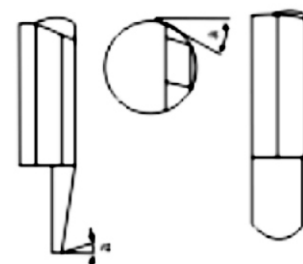
1. Column shape, end side angle
2. Column shape, anomaly center radius
3. Column shape, partiality
4. Acrocephalia
5. Cone-shaped, end side angle
6. Cone-shaped, anomaly center radius
7. Cone-shaped, circularity tine angle



End side angle reamer



Acuminate reamer



Anomaly center radius

1.Angle of Knife

Usually, all of metal cutting knives and single-blade milling cutters need suitable relief angle of cutting blade and front angle, which is in order to removal of machining allowance and get higher surface's degree of finish. the operator must pay attention to the three different angles of single-edged cutting tool, because all kinds of cutting tools will be used. Angle- β just fit the relief angle end milling cutter, this kind of knife has one of angle that is less than 20° , after grinding it will become between 25° and 30° .

2.Cutting Speed of Knife

About the single-blade milling cutter, its cutting speed is three times higher than standard milling cutter, the following table is for introductory information. It is refer to transmission condition and attainable spindle speed etc. During grinding, the cutting speed will be reduced by gradually drawing the center line of the tool: this result is distinct for anomaly center knife. Because the outside cutting blade of anomaly center knife can better remove those processing machining allowance. Show as the table.

Angle of single-blade knife and recommend cutting speed. >

Cutting material	Reamer Angle			Cutting speed			
				thick cut		thick cut	
	α	β	γ	Chi/min	M/min	Chi/min	M/min
Ash cast iron	25°	15°	5°	195	60	260	80
Cast steel							
Forge cast iron							
Configuration							
57,000 to 85,000				230	70	295	90
pound/square foot (40-60KG/MM)							
85,000 -115,00				195	60	230	70
pound/square (80KG/MM)							
$\geq 115,00$ pound/square (80KG/MM)				130	40	165	50
Tool steel flexible rigidity				195	60	260	80
				165	50	230	70
Brassiness 58/41 flexible rigidity				655	200	820	250
				820	250	1150	350
Brassiness 63/37 flexible rigidity	30°	15°	5°	395	120	490	150
				490	150	590	180
Copper flexible rigidity				525	160	655	200
				655	200	755	230
Aluminium flexible rigidity	35°			655	200	985	300
				820	250	1150	350

lumber	25°	15°	5°	985	300	1150	350
plastic: TRPLON	35°			820	250	985	300
PERTINAZ, strawboard				655	200	820	250
POLLOPAS, RASOPAL	45°	25°	20°	655	200	985	300
ASTRALON				655	200	1150	350
Organic							

Welding lathe tool grinding operation instruction

When you want to grind the lathe tool, please change the workhead into the lathe tool grinding attachment (picture 1,2), and fixed it on the worktable, then adjust the centre of lathe tool by using of the spacer according to the height of centre of the wheel.

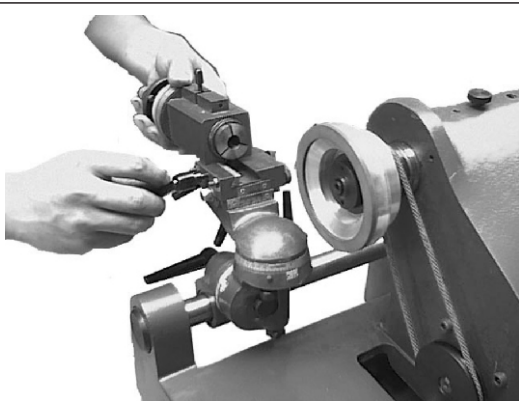
According the degree of the lathe tool's winger, move the lathe tool grinding attachment horizontal, for the convience of grinding the end cutting edge angle, after it fixed, it can be sharp.

According to the degree of the front clearance(D) angle and the secondary clearance angle(D1), we spin the lathe tool grinding attachment vertically, then we can fixed it and sharp it.

Horizontally spin the lathe tool grinding attachment according the original position in degrees, then vertically spin the lathe tool grinding attachment according the main clearance angle(E) and the second clearance angle(E1), and then fixed it and grind E and E1.

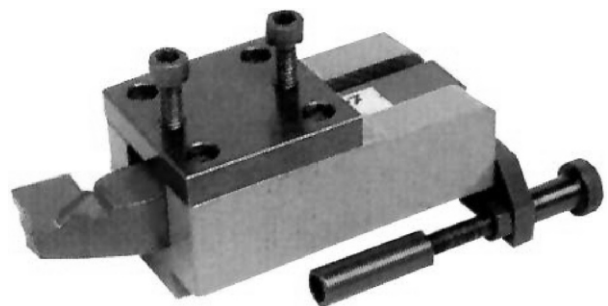
To change the lathe tool by using the top side of the wheel, according the degree of former angle and negative angle to spin the attachment, so we can grind the former angle(F) and negative angle (F1)..(Picture3)

As to the workhead of the lathe tool attachment can be rotated 360degree, and according to the shape of the wheel, we can grind all kind of lathe tools.



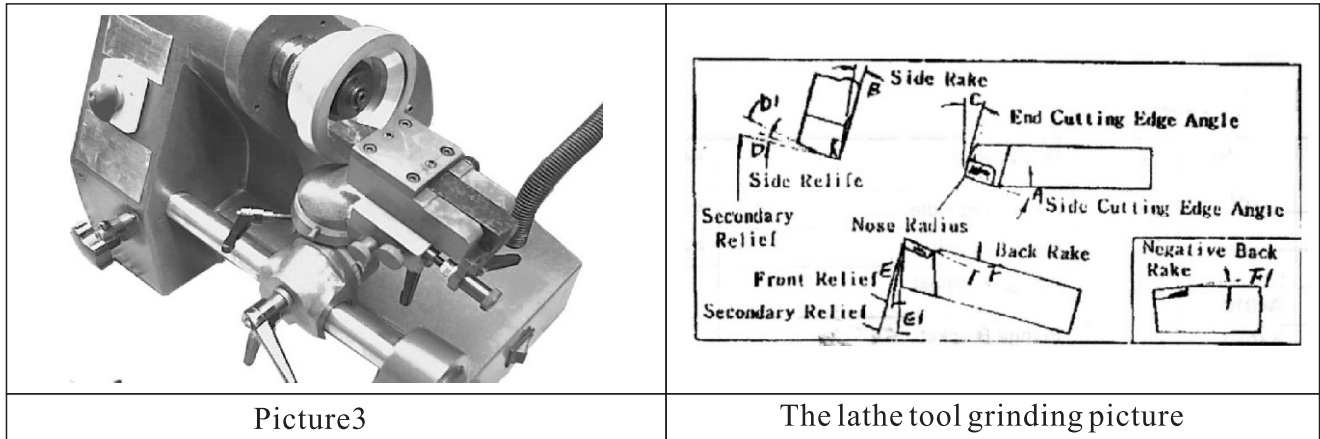
Picture1

Remove the original U2machine workhead



Picture2

table of the lathe tool grinding attachment

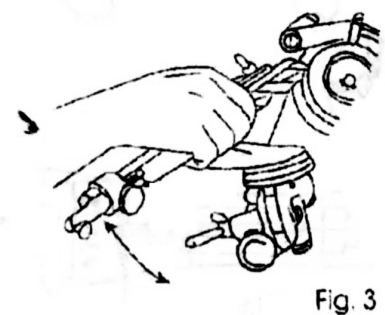
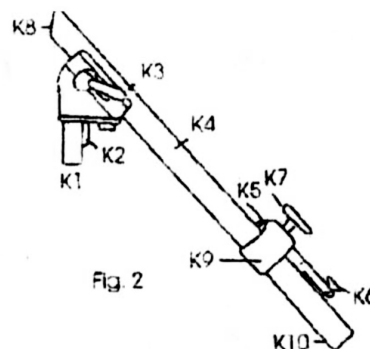
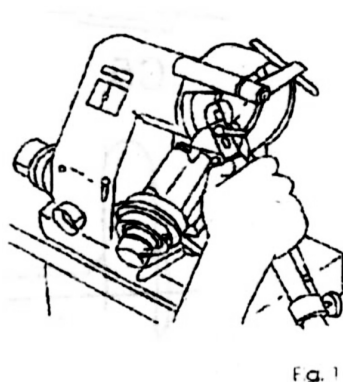


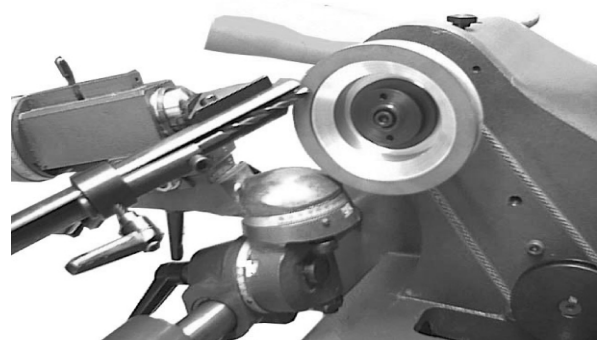
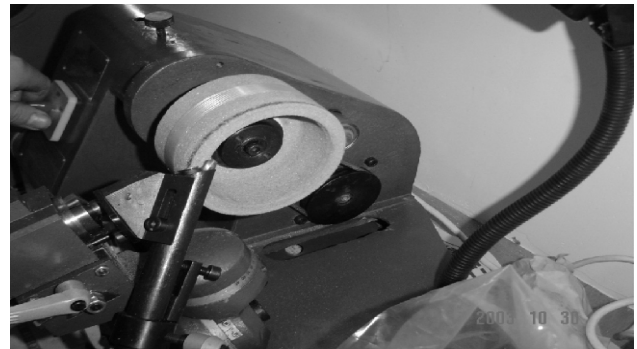
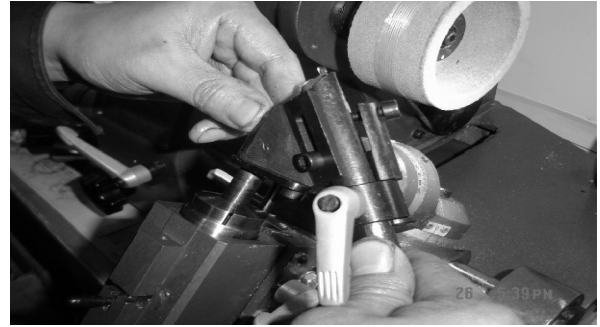
Drill bit grinding instruction

The drill bit grinding attachment, can be used to grind the drill bit from 3-8mm, the point angle is 118 degree, but the point angle can also be adjust according to your requirement.

Operation step

1. K1 and K2 insert the U3 of the original turret of the R8 chuck hole (12MM of the R8 chuck) and the right knife block hole, the tight sub-dial hand.
2. Put the drill bit into the T solt, and then move the K5,K6,K9 to adjust the arm pressure to hold the drill bit.
3. Then move the drill bit, adjust the point angle to 118degree, after adjust the point angle, then fixed the positioning block(K8),and then fixed the drill bit again.
4. Move and adjust the workhead, and then adjust the length of the drill bit so as the drill point grinding is high than the centre of the wheel.
5. Then move up and down the drill bit grinding attachment to grind the point of drill bit.
6. If you want to counter blade at 180 degree, please loosen the K7, and move the drill bit from one side to other side, and then tight the drill bit to grind it, can can be grind manytimes.





U2/U3 grinding mill direction

Grinding end edge of butt mill.

Using clamping chuck of original blade carrier grinder to clamp the handle of milling cutter, according 90° horizontal to turn butt mill to grind the accessories, pull-out limit screw, adjust blade carrier, 360° turn the blade carrier to grinding end edge position (as picture 1), and then according degree of cutting edge to grind the relief angle gradient of end edge (as picture 2). Pay attention to the feed mode when grinding. Using tool holder indexing device to return 45° (4 edge) or 90° (2 edge) to grind other side edge after grinding finished (as picture 3,4).

Grinding flank edge of butt mill.

Change the worktable to be worktable of end milling cutter grinding accessories.
(as picture 5,6)

Insert the grinder chuck into the conical hole of the milling cutter accessory worktable, and then insert the butt mill to grinder chuck and fix it, make it no longer rotate. (as picture 7)

Adjust the butt mill higher than center of grinding wheel. (as picture 7)

According degree of flank edge to turn the tool stand worktable to $0-40^\circ$, make the accessory worktable of the butt mill cutter adjust the proper grinding angle.

Use the guide adjustable bracket fixing slot pin of butt mill cutter accessory to close the side edge spiral groove to guide (as picture 8-14), and then free rotation from front to back (by guided guidance), grind the helical edge of relief angle by pushing handle. (as 15, 16)

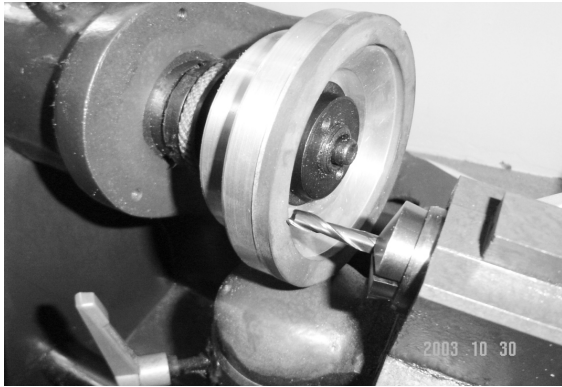
When the main relief angle is finished, the pair relief angle will be ground. Insert the guide adjustable bracket fixed slot needle into the helical groove with the second inclination, and start grinding as grinding the first angle of inclination.



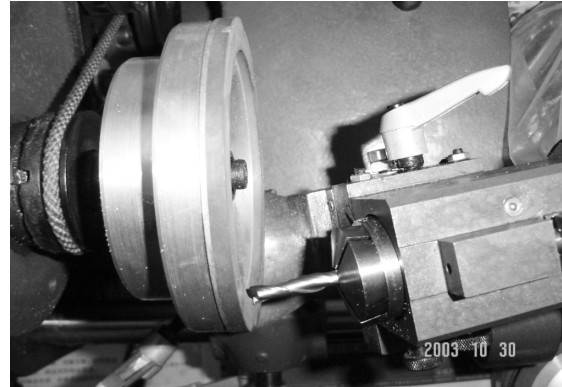
P1. uprooted limit screws can be turned around 360 degrees rotating turret, convenient grinding mill cutting edge.



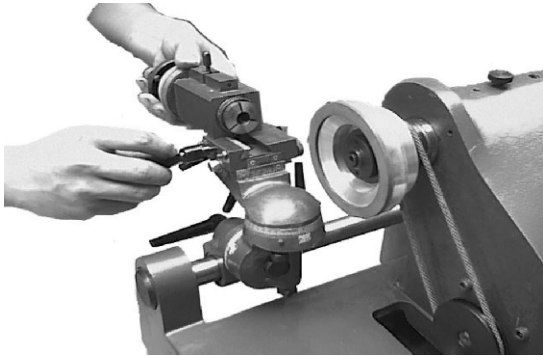
P2. Chuck R8 with the original turret milling toolholder clamping Department of grinding knife cutting edge can be transferred to the location exhausted grinding tool turned around 45 degrees or 90 degrees the other teeth grinding



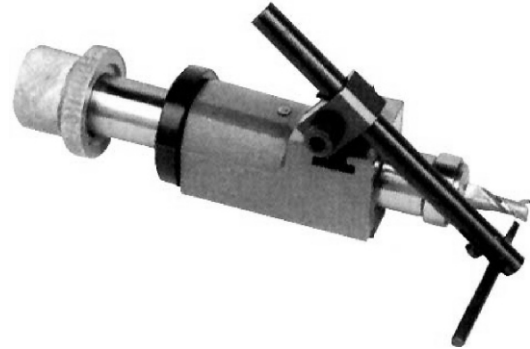
P3----



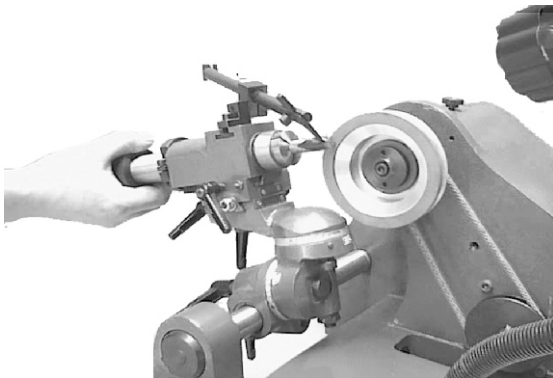
P4---



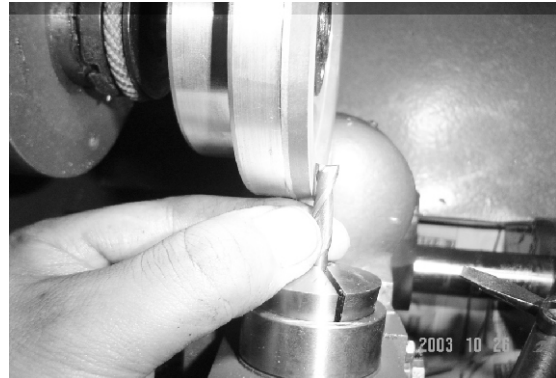
P5 take off the original cut set



P6-----mill grinding attachment stand



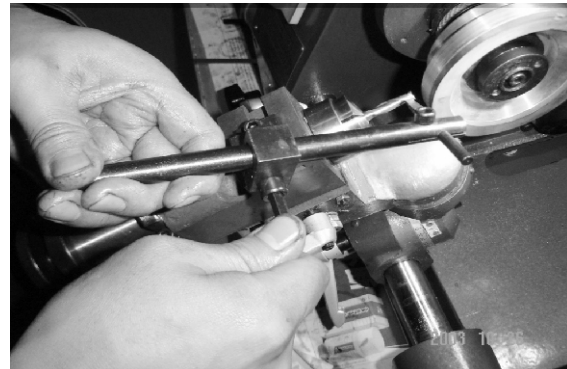
P7 -----install drill grinding attachment



P8 -----have mill approach to grinding wheel vertical



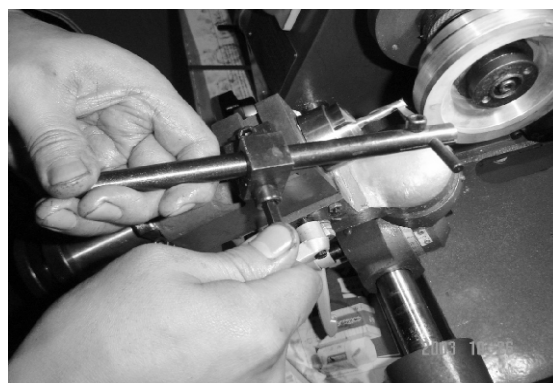
P9----use fixed-pin close to blade slotP



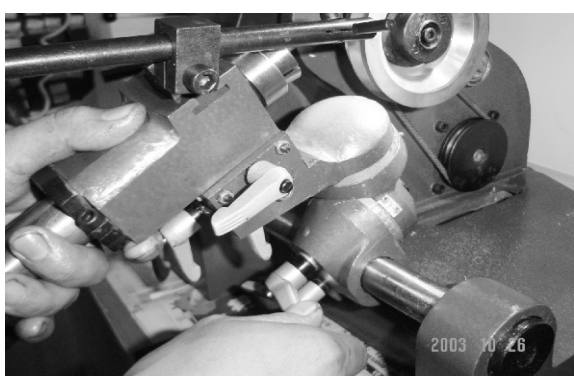
10 ----use fixed-pin close to blade slot



P11----use fixed-pin close to blade slotP



12---- -use fixed-pin close to blade slot



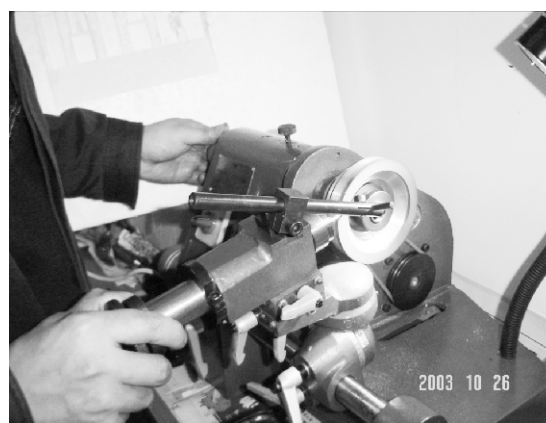
P13-----lock the handle tightlyP



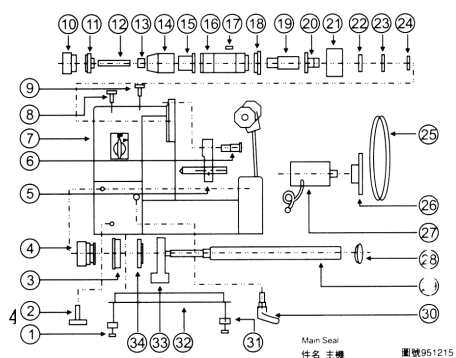
14-----adjust slide slot



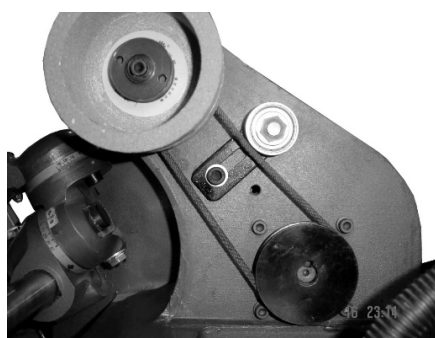
P15-grinding can be rotate



P16 -grinding cutter slowly

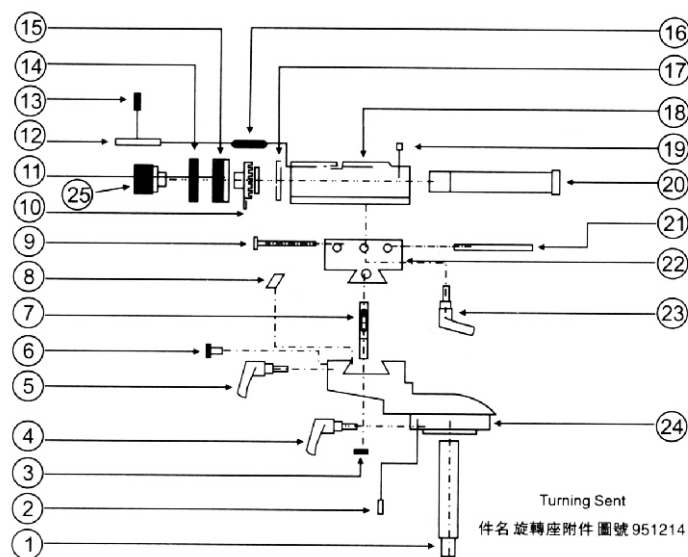


Main unit



belt tensioner function

NO	The name of Parts		Remark	NO	The name of Parts	Code	Remark
1	bolt			17	key		
2	Adjustment screw			18	Belt wheel	A4026	
3	Scale annulus	A4016		19	mandril	A4033	
4	Wheel	A4012		20	Flange bolts	A4029	
5	Wheel dresser handle	A4035		21	Grinding wheel		
6	Wheel dresser	A4041		22	Flange set		
7	stand			23	Flange lock nut		
8	Lock bolt			24	lock		
9	Lock bolt			25	Drive belt		
10	Wheel rotate	A4006		26	Blet wheel	A4044	
11	Scale annulus	A4044		27	wire		
12	Adjust bolt			28	Fixed ring		
13	Copper plate			29	conect spindle	A4023	
14	Spindle set	A4045		30	handle		
15	Spindle set	A4017		31	Foot mat		
16	Spindle set	A4007		32	Annex board	A4042	
				33	board	A4037	
				34	Scale ring	A4011	

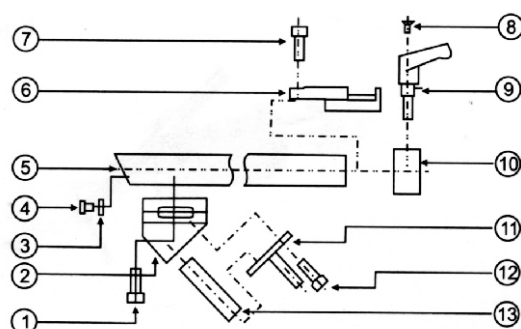


circumvolve set accessory

NO	The name of Parts	Code	Rmark	NO	The name of Parts	Code	Rmark
1	Shank spindle			14	Lock screw	A4009	
2	Fixed bolt			15	Scale ring	A027	
3	Adjust screw			16	spring		
4	Fixed-adjustion handle			17	Graduation fixed board		

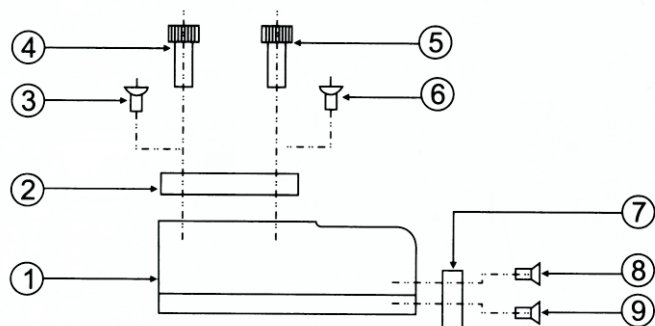
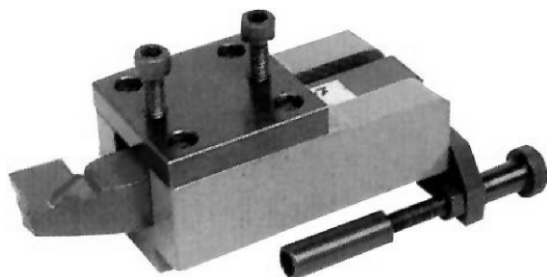
5	handle			18	Clamp set	A3005	
6	screw			19	Oil pear		
7	Fixed screw			20	collect	A4001	
8	键 key			21	lock		
9	Adjustion shank			22	stand	A3003	
10	Gear wheel	A4005		23	handle		
11	board	A4038		24	Circumvolve set	A3006	
12	Index screw	A4030		25	Sleeve lock nut	A4046	
13	3-fixed-speed handle						

R drill grinding attachment



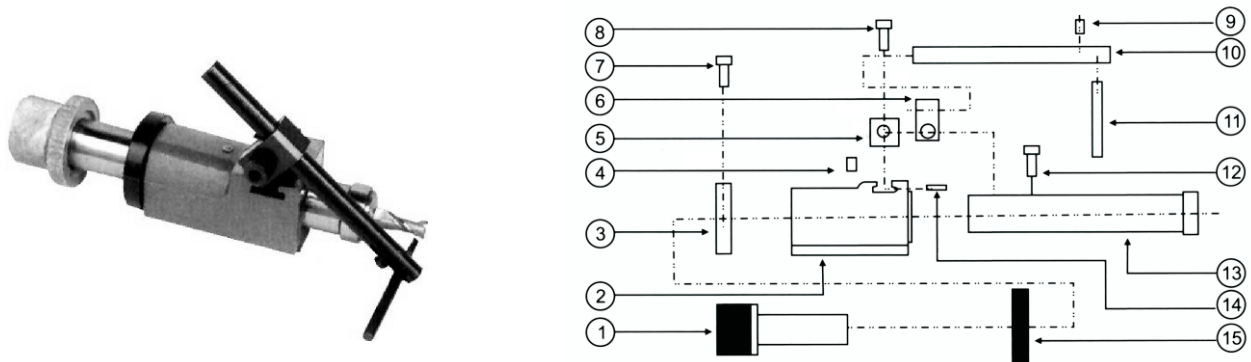
NO	The name of Parts	Code	Remark	NO	The name of Parts	Code	Remark
1	bolt		M6×12	8	bolt		M3×15
2	Slide set	A4036		9	Handle		
3	Grads mat			10	ring	A4018	
4	Bolt		M4×8	11	rotate		
5	R drill spindle	A40311		12	Bolt		M1×12
6	Slide			13	spindle		
7	bolt		M6×12				

Lathe tool grinding attachment



NO	The name of Parts	Code	Remark	NO	The name of Parts	Code	Remark
1		A3001		6	screw		M6×12
2	Fixed	A4020		7	Fixed board	A4021	
3	bolt		M6×12	8	Bolt		M4×8
4	Bolt		M6×20	9	bolt		M4×8
5	Bolt		M6×20				

End mill grinding attachmen



NO	The name of Parts	Code	Remark	NO	The name of Parts	Code	Remark
1	Sleeve lock screw	A4019		9	Bolt		M5×12
2	sleeve			10	Adjust ed shank	A4032	
3	Lock ring	A4013		11	Adjusted shank		
4	Oil cup			12	Bolt		M8×25
5	connect board			13	sleeve	A4003	
6	Connect board			14	Slide board		
7	bolt		M6×16	15	Lock screw		
8	bolt		M6×16				

Circuit diagram

