



TOP WORK  
ISO 9001 · CE

# M-40

## Universal Cutter & Tool Grinder

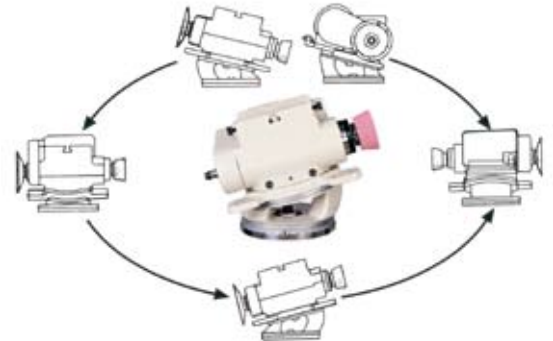
HIGH PRECISION  
HIGH QUALITY



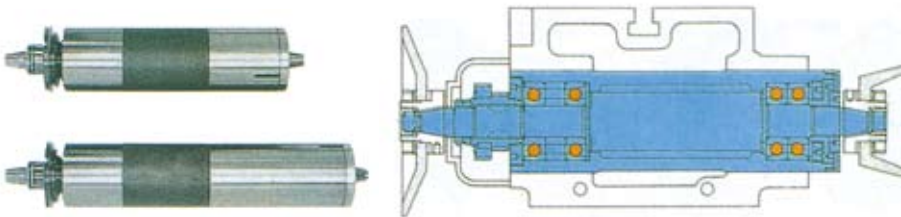
# Universal Cutter & Tool Grinder

## TILTING WHEELHEAD FOR EASY CLEARANCE SETTING

The wheel head is designed so that it can tilted easily to  $\pm 15$  degrees. It can also be swiveled 360 degrees on the horizontal plane. Both of these features, make it very easy to set rake and relief angles, and make for a very wide angle of grinding.

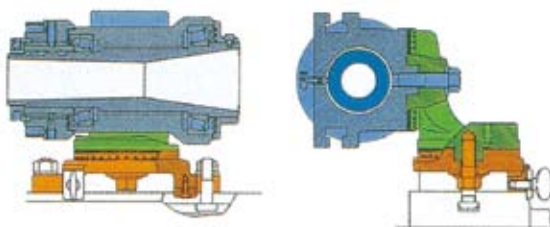


The spindle assembly is designed so that the spindle shaft is supported by two pairs of angular ball bearings, one pair at each end of the spindle support. The bearings are properly pre-loaded by tightening the nuts. Incorporated in the design also is compensation for expansion by heat. The grinding wheel spindle is grease lubricated for life and no additional lubrication is required.



## UNIVERSAL WORKHEAD

The workhead is positioned on the table as desired by the operator and can be swiveled accurately at any angle both horizontally and vertically. It means it can be swiveled optionally. Set to obtain the most suitable angle for a specific grinding job. It has a taper hole in each end of the spindle, one M. T. No. 5 (or B & S No.12), the other ASA No. 50.



## ACCURATE, VERSATILE TABLE

TABLE SWIVELS 120 DEGREES:

The table is equipped with a graduated scale and swivels  $\pm 60$  degrees.

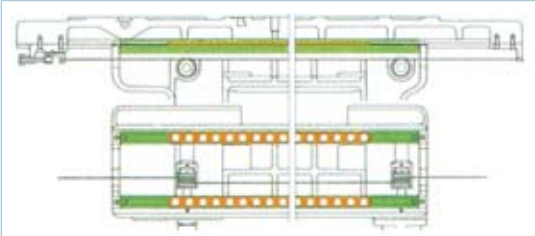
This  $\pm 60$  degrees swiveling combined with the 360 degrees swivelling of the wheel head extends M-40 versatility when grinding large(long) cutters and tools.



# Universal Cutter & Tool Grinder

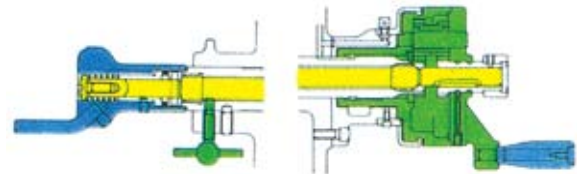
## ANTI-FRICTION SLIDE WAY BEARINGS USED

For precise smooth table slide, the table ways have been hardened and ground and antifriction slide way bearings are used, The table is controlled by the winding motion of cable on to a take up reel, which insures back-lash free operation. Because of this construction of table, operation is light and smooth. So that it does not fatigue the operator.



## FINGER TIP CONTROL

It is absolutely necessary that the table be easily controlled from fine to rapid feed range to handle various grinding requirements. The M-40 has table feed knobs on the right and left hand side of the table. Also, there is a crank handle on the right hand side for fine table control. The table feed mechanisms is so designed to be controllable by finger tip action that it permits integral response of grinding conditions to operator hand.



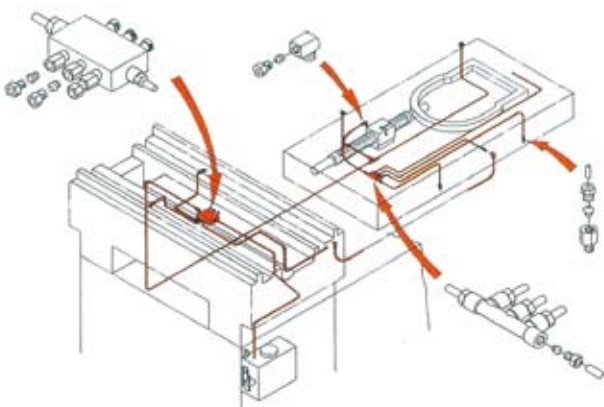
## TAILSTOCK

The tailstock can be easily positioned at any place on the table. It is combined with the workhead or other tailstock to hold the work-piece. Design is such that the tailstock can be aliened easily and positively by pushing both to one side of the table slot by thumb screws. The right tailstock has a retractable center for easy workpiece mounting and dismounting.



## CENTRALIZED LUBRICATION

For cutter grinding operation, precise tool grinder's movement is of primary importance, and it must be at all times maintained. This means a complete lubrication system is necessary . The M-40 is equipped with the centralized system which lubricates all the required points, shown at the right. This system is not only saves time for daily lubrication, but also keeps the machine in its best condition to extend its life.





# Universal Cutter & Tool Grinder



## NO: 01 FACE MILL GRINDING ATTACHMENT

This attachment comprises a base, swivelling horizontally with respect to table, and a workhead swivelling at 15 degree angle. This construction simplifies greatly the setting of elevation and depression angle. Further more, rugged design gives the M-40 the capacity for grinding large size cutters and tools.

Capacity: Max. dia. of cutter - 457mm



## NO: 02 RADIUS GRINDING ATTACHMENT(#1)

This is ideal for sharpening the radii of ball end mills and styli. It consists of two slide bases, each with micrometer adjustment and a workhead having a M.T. No. 5 or No. 12 taperhole spindle. Indexing of straight flutes cutters is possible by using an index plate mounted on the back of workhead.

Capacity: Radius-0-50mm



## NO: 03 RADIUS GRINDING ATTACHMENT(#2)

This is suitable for corner radius grinding of face mill and shell end mills. The start position for grinding is set by the micrometer to eliminate grinding error. The grinding capacity of this attachment is 0 to 1" radii (0 to 25mm) and 0 to 12" cutter diameter (0 to 300mm) (Capacity: Radius-0-25mm; Max. dia. of cutter-300mm) An accurate radius on the corner of teeth can be ground.



## NO: 04 CYLINDRICAL GRINDING ATTACHMENT

This attachment is most suitable for straight or taper cylindrical grinding and for face grinding of various tools.

Capacity: Swing-10"(250mm); Main spindle speed-310rpm(50c/s) \ 370rpm(60c/s); Motor 1/4Hp-0.2Kw



## NO: 05 HELICAL GRINDING ATTACHMENT

This attachment is suitable for grinding the relief and rake angle of spiral cutters or the straight teeth of hobs, end mills and center drills. The work spindle is possible to be turned twice at Max. for the lead of 0 through infinity.

Taper hole of work spindle is M.T. No.4. Lead:0-8(stepless)

Spindle turns twice at max. Index: 24(Standard) Grinding length:max. 12 1/2"(320mm) (in case that helix angle is 0°)

Module (Hob):max.8 Helix(Hob):max. ±8°



## NO: 06 INTERNAL GRINDING ATTACHMENT

This is generally used with the Cylindrical Grinding Attachment. Of course, it can be used for grinding internal tapers.

Capacity: Internal spindle- 20,000rpm

Length of hole up to 1 9/16" or 3"(40mm or 75mm)

Range of bore to be ground: 5/16"(8-20mm) or 1/2"~2"(12-50mm)



## NO: 07 WORKHEAD INDEXING ATTACHMENT

Accurate indexing can be made quickly and easily by mounting the Indexing Attachment on the standard workhead. This eliminates the need for a tooth rest which is normally required for grinding cutters. If not specified, workhead indexing attachment is provided with a plate of twenty four equally spaced slots, includes one 24 notched index plate, Extra index plates desired, please specify number of notches .



# Universal Cutter & Tool Grinder



## NO: 08 EXTENDED GRINDING WHEEL SPINDLE

This attachment offers extreme convenience when the extended spindle application is required. As this spindle is also cartridge type construction, it is readily interchangeable with standard spindle. Spindle extension is 3"(75mm).



## NO: 09 SURFACE GRINDING ATTACHMENT

This is a so called "Universal Vise" and ideally suitable to grinding bits as well as surface grinding. It consists of swivel vise and base. The intermediate support permits the vise to swivel 360 degrees horizontally and vertically, so the work-piece can be set easily. Capacity: Width of vise--4"(100mm); Depth of vise -- 1"(25mm) Opening-2 3/4"(70mm)



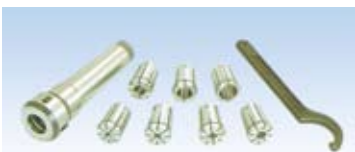
## NO: 10 DRILL POINTING ATTACHMENT

This attachment has been designed to provide a simple, effective means of sharpening drills accurately with the minimum of skill. The drill itself is held in a precision six jaw self-centering chuck, suitably geared to the operating handle.



## NO: 11 LATHE & PLANER TOOL GRINDING ATTACHMENT

This attachment facilitates setting cutters for grinding rake and relief angles. The large work support provides an outstanding grinding capability. This attachment is ideally suited to grinding cutters for lathes and planers. Capacity: 3/8"~1 1/2"(10-38mm)



## NO: 12 SPRING COLLET CHUCK

This chuck can be mounted directly in the taper hole of the workhead (ASA No. 50). This is an indispensable attachment for small cutter grinding. Spring Collet Chuck for larger size cutters or adapter for 5C collets is also available. Size of collets: 6, 8, 10, 12, 16, 20, 25mm or 1/4, 5/16, 3/8, 1/2, 5/8, 3/4, 1 inches



## NO: 13 WET GRINDING ATTACHMENT WITH SPLASH PLATE

This is so called "Coolant Supply System". It is conveniently used for cylindrical, internal, surface and various cutters grinding works when necessary. Coolant pump motor...1/8HP(0.1Kw)



## NO: 14 DUST COLLECTOR

This accessory contributes toward operator safety and his health by collecting dust particles flying off the grinding wheel during grinding. It is compact and consumes a minimum of floor space.



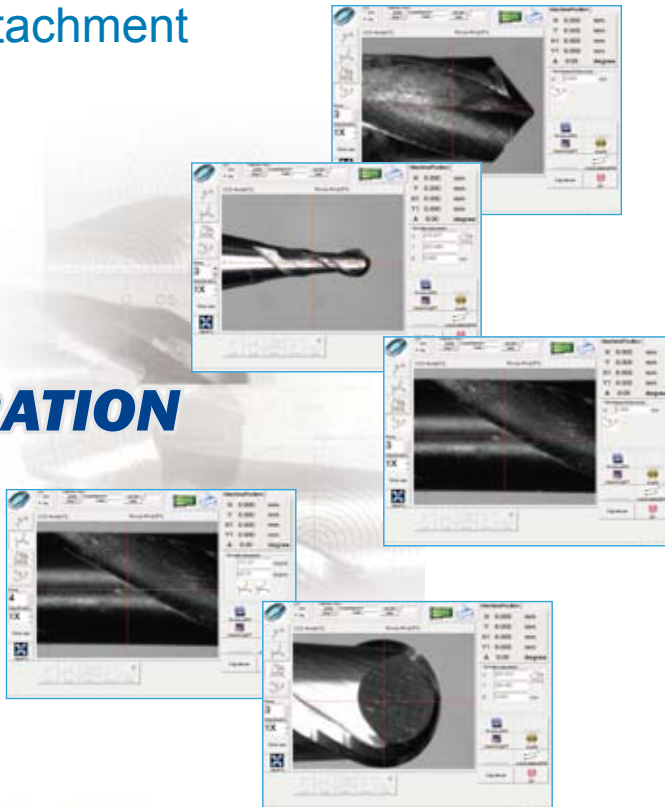
# Universal Cutter & Tool Grinder



**NEW**  
**M-60**  
Universal Cutter & Tool Grinder

## Optional Attachment

**SMART  
OPERATION**



• CCD Measurement (Optional)



• 5C collector (Option)





# Universal Cutter & Tool Grinder

## Standard Accessories

1. Workhead
2. Left-hand tailstock
3. Right-hand tailstock
4. Diamond dresser holder
5. Wheel guard
6. Wheel guard
7. Wheel guard
8. Wheel guard
9. Wheel guard holder(long)
10. Wheel guard holder(short)
11. Universal tooth rest plate and blade holder extension
12. Center gauge
13. Collet wrench
14. Plain tooth rest holder (with offset blade)
15. Ejector rod
16. T-wrench for grinding wheel sleeve
17. Sleeve extracting bar
18. Pin wrench
19. Micrometer adjustable toothrest (with round top blade)
20. Levelling pads (3pcs)
21. Touch-up paint
22. Plain tooth rest holder (with offset blade)
23. Reducing collet B&S No.12 x No.10 (or MT No. 5 x No.4)
24. Reducing collet B&S No.12 x No.9 (or MT No. 5 x No.3)
25. Reducing collet B&S No.12 x No.7 (or MT No. 5 x No.2)
26. Grinding wheel sleeves (5sets)
27. Grinding wheel (6" x 3/4" x 1 1/4")
28. Grinding wheel (6" x 1/2" x 1 1/4")
29. Grinding wheel (6" x 1/2" x 1 1/4")
30. Grinding wheel (3" 1/2" x 1 1/2" x 1 1/4")
31. Grinding wheel (4" x 1/16" x 1/4")
32. Grinding wheel (5" x 1 1/2" x 1 1/4")
33. Grinding wheel (3" x 1/2" x 1/2")
34. Double end wrench
35. Nut wrench
36. Screw Driver
37. Nut wrench
38. Allen type wrench
39. Spacer for 1/8" dia. grinding wheel
40. Center for workhead spindle B & S No.7 (or MT No.2)
41. 4" spindle extension
42. 4" extension wheel sleeve and collar
43. Belt for spindle drive (Poly-flex belt)
44. Draw-in bolt for workhead and spacer
45. Tool cabinet
46. Extension and spacer s of slit-saw and side-mill cutters.

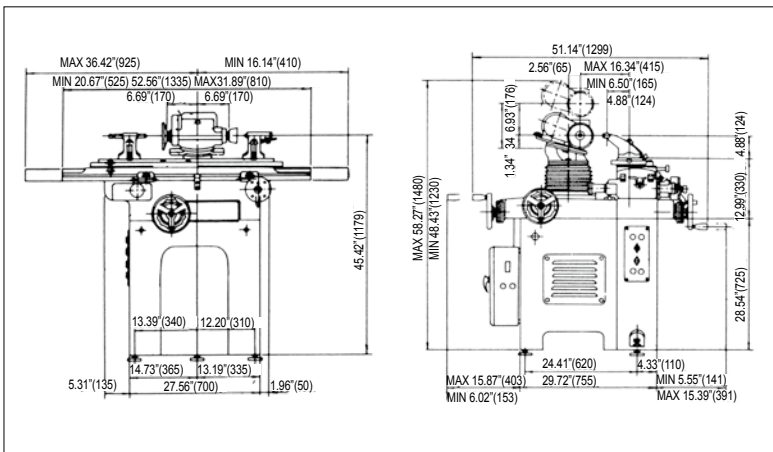


## Machine Specifications

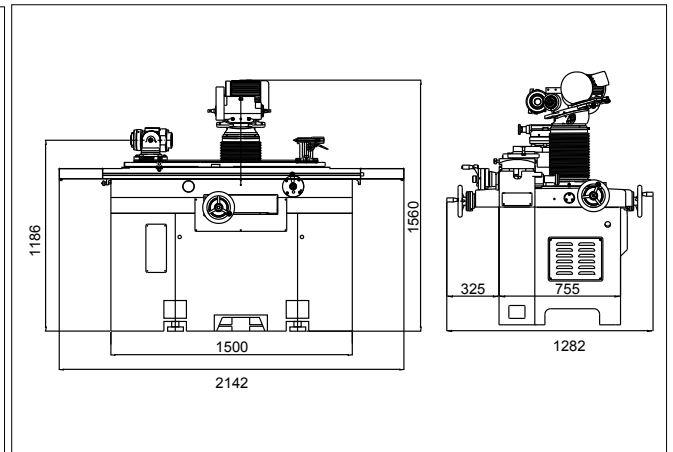
Capacity :	M-40		M-60	
Swing over table	250mm	10"	250mm	10"
Distance between centers	700mm	27 1/2"	900mm	35"
Distance between tailstock & workhead	580mm	22 3/4"	780mm	30"
Taper hole in workhead spindle one end	MT#5			
the other end	ASA#50(or B&s#12)			
Table :				
T-Slot (numer & size)	one	+0.05mm (0.565")		
		-0.00mm		
Working surface	135 x 940mm	5 5/16"x37"	135 x 1140mm	5 5/16"x45"
Grinding wheel spindle rpm	2600, 3700, 6200			
Grinding wheel spindle motor	1.5hp (1.2kw)			
Range of movement :				
Longitudinal movement of table	400mm	16"	600mm	23"
Cross movement of saddle	250mm	10"	250mm	10"
Graduation for table swivel movement	+ 60°		+ 60°	
Table graduation on end, for taper of	- 10°		- 7°	
Vertical movement of wheel head	250mm	10"	250mm	10"
Wheel head tilts	+15°			
Wheel head swivels	360°			
From wheel spindle center to top of upper table	max. 300mm (12")			
	min. 50mm (2")			
From wheel spindle center to T-slot lower table	max. 415mm (16 1/2")			
	min. 165mm (6 1/2")			
Required floor space	1550 x 1735mm	61" x 68 1/2"	1550 x 2740mm	61" x 109"
Net weight of machine	1160kg	2560lbs	1260kg	2780lbs
Dimension of Packing case	1460 x 1460 x 1510mm		2460 x 1660 x 1510mm	

## Dimensions

M-40



M-60



All specifications are subject to change without prior notice.

**TOP** TOPWORK Industry Co., Ltd.

No.9, 6<sup>th</sup> Road, Taichung Industrial District, Taichung 40755, Taiwan.

TEL:886-4-23581558 FAX:886-4-23581268

<http://www.topwork.com.tw> E-mail:topwork@ms12.hinet.net