



M-40

HIGH PRECISION . HIGH QUALITY

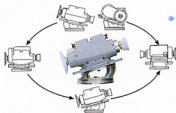
UNIVERSAL CUTTER & TOOL GRINDER



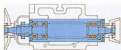
TOP WORK INDUSTRY CO., LTD.

UNIVERSAL CUTTER & TOOL GRINDER

TILTING WHEELHEAD FOR EASY CLEARANCE SETTING



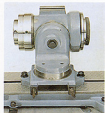
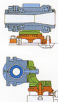
The wheel head is designed so that it can be tilted easily to ± 15 degrees. It can also be swiveled 360 degrees on the horizontal plane. Both of these features, make it very easy to set rake and relief angles, and make for a very wide angle of grinding.



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.

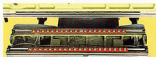


ACCURATE, VERSATILE TABLE

TABLE SWIVELS 120° DEGREES:

The table is equipped with a graduated scale and swivels ± 60 degrees.

This ± 90 degrees swivelling combined with the 360 degrees swivelling of the wheel head extends M-40 versatility when grinding large (long) cutters and tools.

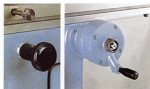


ANTI-FRICTION SLIDE WAY BEARINGS USED

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.



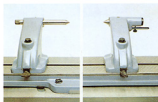
FINGER TIP CONTROL



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 mechanism is so designed to be controllable by finger tip action that it permits integral response of grinding conditions to operator hand.



TAIL STOCK

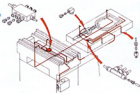


The tailstock can be easily positioned at any place on the table. It is combined with the workhead or other tailstock to hold the work-piece. Design is such that the tailstock can be aligned easily and positively by pushing both to one side of the table slot by thumb screws. The right tailstock has a 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 not only saves time for daily lubrication but also keeps the machine in its best condition to extend its life.



EXTRA ATTACHMENTS

NO: 01 FACE MILL GRINDING ATTACHMENT ▶

This attachment comprises a base, swivelling horizontally with respect to table, and a workhead swivelling at a 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.....18" (457mm)



◀ NO: 02 RADIUS GRINDING ATTACHMENT



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 B & S No. 12 taper hole spindle. Indexing of straight flutes cutters is possible by using an index plate mounted on the back of workhead.

Capacity:

Radius.....0-2" (0-50mm)

(in case that max. dia of cutter is 4" (100mm))

Taper hole: M.T. No. 5 or B & S No. 12 (specify by order)

Convenient for grinding of ball end mills & styli.



◀ NO: 03 RADIUS GRINDING ATTACHMENT

This is suitable for corner radius grinding of face mills and shell end mills. The position for grinding start is set by the micrometer to eliminate grinding error. The grinding capacity of this attachment is 0 through 1" radii (0 through 25mm) and 0 to 12" cutter diameter (0 through 300mm).

Capacity:

Radius.....0-1" (0-25mm)

Max. dia. of cutter.....11 3/4" (300mm)

An accurate radius on the corner of teeth can be ground.

NO: 04 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.

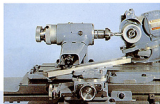
Index: 24 (Standard)

Grinding length: max. 12 1/2" Grinding length: max. 12 1/2" (320mm)

(in case that helix angle is 0°)

Module (Hob): max. 8

Helix (Hob): max. ±8°



NO: 05 CYLINDRICAL GRINDING ATTACHMENT ▶

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

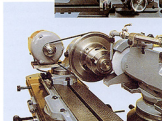
Capacity:

Swing.....10" (250mm)

Main spindle speed.....310rpm. (50c/s)

370rpm. (60c/s)

Motor.....1/4HP. (0.2Kw)



◀ NO: 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"-3/4" (8-20mm) or 1/2"-2" (12-50mm)



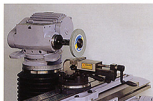
◀ NO: 07 WORKHEAD INDEXING ATTACHMENT

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.....specify number of notches desired.

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) Extension Convenient when the extended spindle application is required. Spindle is also cartridge type and interchangeable with standard spindle.





◀ NO: 9 SURFACE GRINDING ATTACHMENT

This is a so called "Universal Vise" and ideally suited to grinding bits as well as surface grinding. It consists of a swivel vise and independent support provided between the 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 have 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-centring chuck, suitably geared to the operating handle.

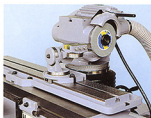
NO: 11 LATHE & PLANNER TOOL GRINDING ATTACHMENT ▶

This attachment facilitates setting cutters for grinding rake face 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)

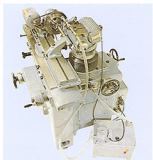
Convenient for grinding rake face and relief angles.



NO: 12 SPRING COLLET CHUCK ▶

This chuck can be mounted directly in the taper hole of the workhead a ASA No. 50. This is an indispensable attachment for small cutter grinding. Spring Collet Chuck for larger size cutters or adapter for SC collets is also available.

Sizes of collets: 6, 8, 10, 12, 16, 20, 25 (mm) or
1/4, 5/16, 3/8, 1/2, 5/8, 3/4, 1 (inches).



◀ NO: 13 WET GRINDING ATTACHMENT

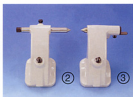
This is so called "Coolant Supply System". It is conveniently used for cylindrical, internal, surface and various cutters grinding works when necessary.

Coolant pump motor.....1/8HP (0.1Kw)

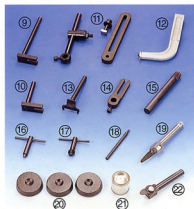
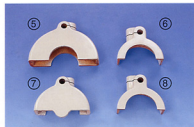
NO: 14 DUST COLLECTOR ▶

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.



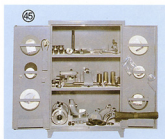
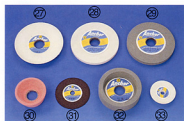


STANDARD EQUIPMENT



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 (3 pcs)
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 (5 sets)



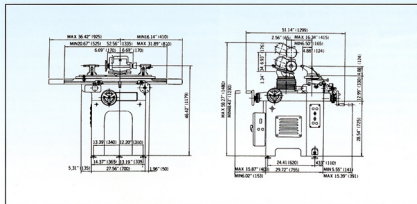


27. Grinding wheel (6" x 3/4" x 1 1/4")
 28. Grinding wheel (6" x 1/2" x 1 1/4")
 29. Grinding wheel (6" x 1/2" x 1 1/4")
 30. Grinding wheel (3 1/2" x 1 1/2" x 1 1/4")
 31. Grinding wheel (4" x 1/16" x 1/2")
 32. Grinding wheel (5" x 1 1/2" x 1 1/4")
 33. Grinding wheel (3" x 1/2" x 1/2")
 34. Double end wrench
 35. Nut wrench
 36. Driver
 37. Nut wrench
 38. Allen type wrench
 39. Washer 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 washer
 45. Tool cabinet
 46. Extension and washers of slit-saw
 and side-mill cutters.

SPECIFICATIONS

Capacity.....	Inch Metric	Range of movement:	Inch Metric
Swing over table.....	10" 250mm	Longitudinal movement of table.....	16" 400mm
Distance between centers.....	27 1/2" 700mm	Cross movement of saddle.....	10" 250mm
Distance between tailstock & workhead.....	22 3/4" 580mm	Graduation for table swivel movement.....	±60°
Taper hole in workhead spindle.....	one end ASA No.50 other end M.T.No.5 or B & S No. 12 (Specify by order)	Table graduation on end, for taper of.....	±10°
Table:		Vertical movement of wheel head.....	10" 250mm
T-Slot (number & size).....	one 0.565" 15.00mm +0.05mm 0.563" -0.00mm	Wheel head tilts.....	±15°
Working surface.....	5 5/16"x37" 135x940mm	Wheel head swivels.....	360°
Grinding wheel spindle rpm.....	2600, 3700, 6200	From wheel spindle center to top of table	max. 12" 300mm min. 2" 50mm
Grinding wheel spindle motor.....	1 HP 0.75kw	From wheel spindle center to T-slot center	max. 16 1/2" 415mm min. 6 1/2" 165mm
		Required floor space.....	61"x68 1/2" 1550x1735mm
		Net weight of machine.....	2560lbs. 1160kgs
		Dimension of Packing case.....	1460x1460x1510mm

MAIN DIMENSIONS



※ All specifications are subject to change without prior notice

TRUMP

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