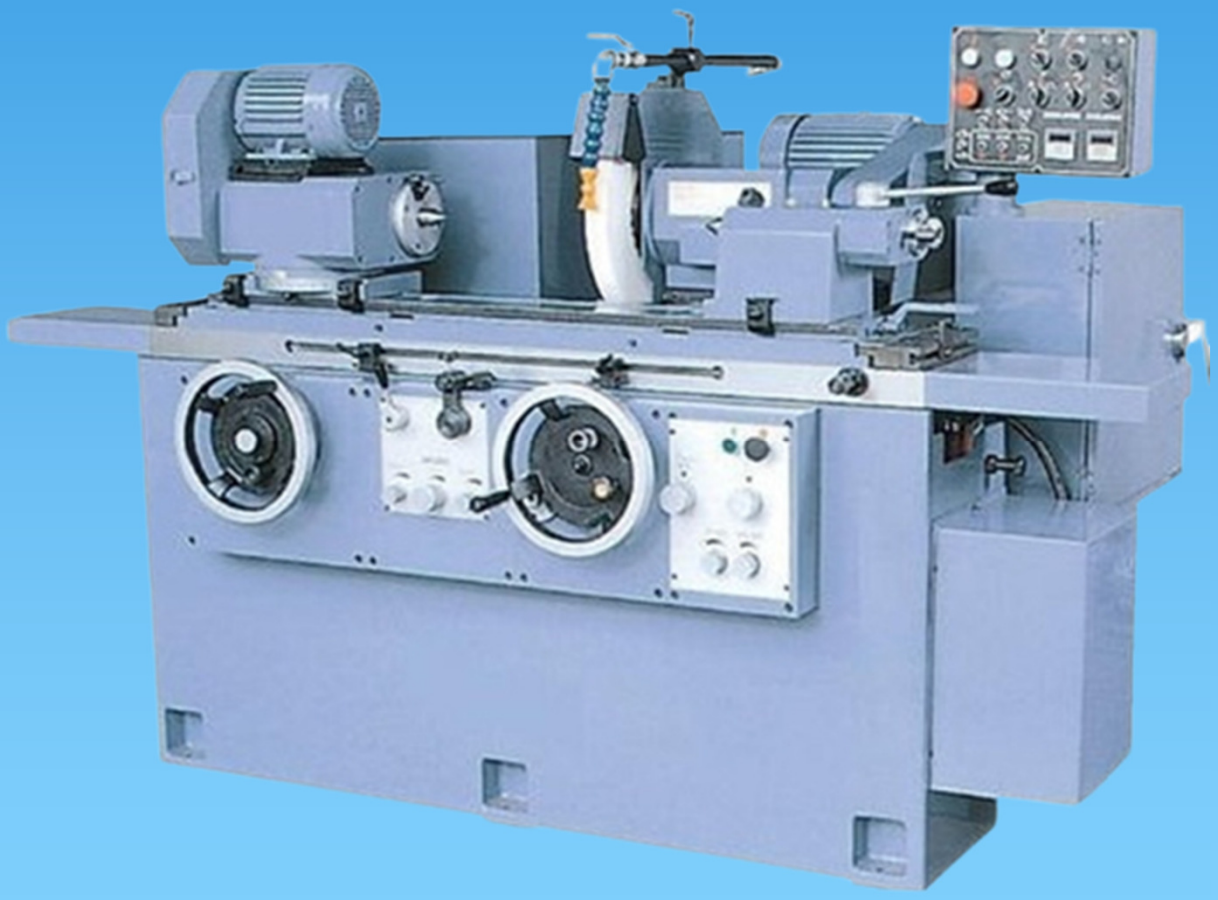
CYLINDRICAL GRINDER MANUAL



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Specification Of Cylindrical Grinder:

Cylindrical grinder	
Max. grinding length	300 mm
Height of centre	130 mm
Max.distance between centers	340 mm
Maximum swing over table	250mm
Maximum grinding dimeter	200mm
Work spindle speed	3
Size of grinding wheel	355 x 25 x 127 mm
Rpm of grinding wheel	1650-2200
Max. dia of hole for grinding	15-240mm
Wheel head motor	1440 Rpm/3hp

INSTALLATION:

Never install the machine at an area where has direct sun light to maintain a longer life ,preferable at an area has constant temperature.

Never install the machine at an area where is dusty ,not at an area next to high-shocking machines ,such as ,air compressor ,press machine ,etc.

Machine is supplied with leveling and blocks as standard to facilitate and to avoid any vibration.

ILLUSTRATIONS OF MACHINE:

→ WORKHEAD
→ TOP TABLE SLIDE
→ TABLE TRAVEL LIMIT DOG
→ REVERSE LIMIT SWITCH
→ BOTTOM TABLE SLIDE
→ AUTO/MANUAL OPERATING KNOB
→ TABLE HANDWHEEL
→ WEELHEAD
→ TAILSTOCK
→ CONTROL PANEL
→ WHEELHEAD HANDWHEEEL
→ ECTRICAL CABINET
→ BASE.

ILLUSTRATIONS OF CONTROL PANEL:

→ POWER “ON” BUTTON
→ I.D./O.D. SELECTION SWITCH
→ WHEEL “ON” SWITCH.
→ WHEEL”OFF” SWITCH
→ COOLANT ON “MANU.” POSITION
→ COOLANT OFF
→ COOLANT ON “AUTO” POSITION
→ TABLE RIGHT SIDE MOVEMENT BUTTON
→ TABLE AUTO MOVEMENT BUTTON
→ TABLE MANU. MOVEMENT BUTTON
→ TABLE LEFT SIDE MOVEMENT BUTTON
→ EMERGENCY STOP SWITCH
→ WORKHEAD SWITCH “ON” POSITION
→ WORKHEAD SWITCH “OFF” POSITION
→ WORKLIGHT ON/OFF
→ WORKHEAD SPEED ADJUSTING KNOB
→ TABLE FEED RATE ADJUSTING KNOB
→ LED DISPLAY FOR WORKHEAD SPEED
→ LED DISPLAY FOR TABLE FEED RATE.

Electrical equipment:

Check the machine voltage with power source before connection. And check the rotation of motors before operation.

Rotation of motors:

Check the rotation of motors in details before operating the machine.
Wheelhead motor: The grinding wheel should rotate inward in the operator’s direction.(Clockwise CW).

Workhead motor : The tipped center should rotate inward in the operator’s direction.(Clockwise CW).

Coolant Pump : Clockwise (CW)

Table travel motor : Push up the button “TABLE AUTO MANUL”, then push the button “TABLE LEFT” or “TABLE RIGHT” .Check the table if move on the correct direction.

Lubrication system:

There is an automatic lubrication supplied as standard for lubrication on all slideways .The volume of the unit of 1 liter.

Coolant system:

The volume of coolant tank is of 72 liters. Just hook up the pipe to the coolant nozzle before connecting power.

Table traverse and adjustment:

Manual traverse : Release the AUTO/MANUAL operating knob at the clutch gear from the clutch unit .Swivel the handwheel to drive table manually.

Motorized auto drive : Adjust the table travel limit dogs to a desired position .Tighten the AUTO/MANUAL operation knob at the table handwheel to engage the clutch gear with the clutch unit .Push the “TABLE RIGHT” or “TABLE LEFT” movement buttons to drive table automatically .The table’s speed is variable that can be altered by Digital Variable Speed (DVS)System .

Adjustment of table inclination:

Release the two hex bolts at both table ends.
Pull up the knob.
Turn the adjusting knob in conjunction of the indicator to desired angle.
Tighten the two hex bolts at both table ends then begin grinding.

Structure of workhead:

The workhead is furnished with 1/4 HP motor and is capable of variable speed that can be altered by Digital Variable Speed (DVS) System.

Dead center and live center are available for supporting workpiece .Use a dead center for external grinding .When using a 3-jaw chuck ,the spindle can be shift for a free rotation.

Adjustment of workhead:

Movement of workhead : Release the two fixed bolts at front of the unit to move the workhead to desire position .Then clamp the two bolts .Clean the table surface before moving is to be made .

Inclination of workhead : Release the two setting nuts at bottom of the unit to swivel the workhead ±45° to an desire angle .Then clamp the nuts . Alternation of dead center & live center : The spindle rotates when a chuck is used .Pull out the plunger unit at back of the unit & press the clutch of driving plate into the groove of spindle nose for free rotation .Star the procedures reversely while changing the live center to dead center .

Tailstock:

Move the tailstock in position according to workpiece length .clean the table surface before moving the tailstock to maintain accuracy .

Adjusting the tension of carbide tip center from the knob at rear of tailstock according to workpiece length and forms .Turn the knob clockwise to increase tension whilst turn counterclockwise to release .The workpiece may possibly be deflected or its center bore expended in case the center tension is too great .To the contrary ,workpiece would vibrate if it is small .

Clean the center bore of workpiece and tailstock before clamping to ensure grinding accuracy .

Wheelhead:

The wheelhead comprises of whellhead base ,rotary base ,saddle and saddle side ,etc .That can be driven both by manual and automatically and is inclinable for taper grinding.

Wheel spindle and bearings : The wheelhead is the key part of the machine that adopts 4 pieces of precision angular contact ball bearing providing a higher rigidity so as obtain a finer straightness and roundness.

Wheel spindle drive mechanism & adjustment The wheel spindle is driven by a multiple V belt .A big tension may cause a poor surface finish while a small tension cause vibration .Therefore it is imperative to keep an adequate belt tension that can be adjusted through the bolts at back of motor.

Grinding Wheels:

Selection of grinding wheels A successful grinding is based on a qualified operator who knows well about the forms ,types and property of grinding wheels and knows how to use them in different conditions.

Machine Alignment:

Place a dial gage on top of table and against dovetail surface of the upper table, Turn the table handwheel to check if the zero-setting is obtained .

Alignment of workhead and tailstock:

Place a dial gage on top of table and a test bar into the spindle bore, Direct the stylus to the test bar, Turn the table handwheel to check if the zero-setting is obtained, If not ,adjust it in reference of procedures as stated in Page. 12 (adjustment of workhead inclination), Test grind a bar of 300 mm long and measure the diameter at both ends see if it has the same diameter .If not ,realign the table.

Safety Rule of Grinding Wheels:

Carefully store grinding wheels in proper condition ,i.e. away from heat and humidity sources, Select correct wheel in accordance with grinding requirements .”Ring “ wheel and inspect for cracks .Never use cracked wheel, Strictly prohibit exceeding maximum safe operation speed established for wheel, Use clean recessed matching flanges at least 1/3 wheel diameter, Never alter hole in wheel or force wheel on spindle, Wheel newly mounted or rarely used must run idle for at least 3 minutes before starting to grind, Under grinding ,carefully protect eyes and organ of breath.