

NC/CNC

Precision Surface Grinder

**SEEDTEC**®

PRECISION SURFACE GRINDER

CE ISO 9001:2008

# **Column Moving Structure !**

## **Humanized operation !**



**YSG-2040/2048/2060 TS/P** series

**YSG-2448/2460/2480 TS/P** series

- "T" shaped bed maximizes structural rigidity and stability.
- NC control. Data input is conversational, calculation is not required
- Conversational shop floor language and humanized operation.
- Vertical feed is servo motor driven
- Hydraulic driven table
- Cross feed is with AC servo drive
- Slide-way : Y & Z are with linear guide-ways. Double-vee longitudinal traverse

**SEEDTEC MACHINERY CO., LTD.**

# NC/CNC Precision Surface Grinder

**5 $\mu$**  Table Accuracy  
**1 $\mu$**  Vertical Feed  
**0.02 Ra** Surface Roughness



A perfect combination of precision, stability and easy operation to ensure precision grinding

## Rigid! Deformation-free!

### "T" SHAPED BASE

- The "T" shaped base ; based on the column width, is designed to exhibit perfect dynamic stability
- Structure is quality cast iron, is internally stress relieved and designed to ensure rigidity and to stabilize accuracy



## MACHINE FEATURE:

### RIGID CONSTRUCTION:

- All major structural parts, such as base, table, column and headstock, etc. are manufactured from "Meehanite" high quality cast iron tempered and stress relieved for deformation free of the structural parts and ensure lifetime accuracy.

### CROSS FEED

- Linear guide ways on cross feed with low friction to ensure outstanding repeatability accuracy.
- Cross feed is driven by AC servo motor.

### AUTOMATIC LUBRICATION

- Lubrication oil continuously is delivered to longitudinal slide way whenever the machine is power on.

### TABLE LONGITUDNAL FEED

- Table speed is changeable from 0.5M/min. to 25M/min.
- The table is driven by two hydraulic cylinders for ideal smooth movement and buffering effect.
- To have the wheel contacting the job by control panel
- Longitudinal slide-way is double Vee with scrapped to ensure high flatness accuracy.

# No Vibration! Extra Smooth Motion!

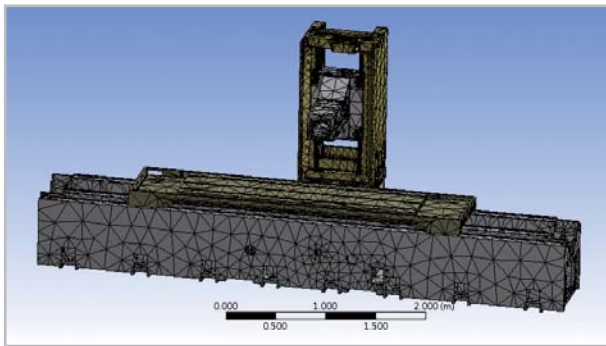
## ADVANCED HYDRAULIC CIRCUIT DESIGN

- The machine is designed with the advanced hydraulic circuit that reduces shock to a minimum when table reverses at the end of travel.
- The hydraulic power unit is separated from the machine to avoid the machine vibration and heat transferring to the machine.
- The specially designed hydraulic circuit always provides powerful feeding even at low speed movement.



## FINITE ELEMENT ANALYSIS (FEA)

- The major casting parts on the SEEDTEC machines are analyzed by the most advanced "Finite Element Analysis" to achieve the optimum structure design.
- Through computer analysis, it is clear the structural deformation in heavy loading condition. SEEDTEC machines feature unmatched rigidity and stability.



## DOUBLE HYDRAULIC CYLINDERS DRIVE

- The longitudinal feed (x-axis) of table is driven by two hydraulic cylinders together with the use of "variable speed regulator", allowing for adjusting longitudinal feed speed at any time for convenience.



## COLUMN-MOVING

- With the column-moving design, a variation of workpiece weight dose not affect loading of the transmission system and thus ensuring consistent accuracy in grinding.
- Box type column structure features outstanding rigidity.

## SPINDLE VERTICAL FEED

- Spindle vertical feed on the linear guide ways and is transmitted through precision ball screw, making micrometric feed setting down to 0.001mm possible and ensuring high repeatability accuracy.
- The vertical movement of wheel spindle is controlled via a MPG handwheel resulting in fast and accurate positioning.

## AUTOMATIC WHEEL DRESSING WITH COMPENSATION FUNCTION (Optional)

- Table mounted wheel dresser combined with automatic dressing and compensation through Y-axis vertical movement are available before rough and fine grinding. Besides, the cross feed speed (z-axis) for rough and fine dressing can be controlled independently, resulting in higher working efficiency, saving manual dressing time and lowering production cost.

## HIGH EFFICIENCY GRINDING (Shift Plunging, P-type)

- Rough grinding employs straight feed (plunge) grinding function combined with "equal-pitch" grinding mode. Fine grinding employs "step surface" grinding mode so as to dramatically shorten grinding time while upgrading efficiency.

## DOUBLE REFERENCE PLANES FOR GRINDING

- According to the reference plane indicated on a machining drawing, the operator may select either the workpiece surface or the magnetic chuck surface as a reference plane.



# FEATURES OF NC/CNC CONTROL SYSTEM

- Colorful touch screen combined with conversational parameters input for easy operation.
- Allows for two-step machining including rough and fine grinding. This combines with 1-9 times setting for spark elimination to achieve higher surface accuracy and higher efficiency.
- The spindle position displays on the screen at any time, and permits zero position setting at any position featuring similar function as linear scale.
- Featuring zero position return function. Once the spindle moves, simply press the zero return key for returning to zero position.
- Rough and fine grinding feed can be adjusted during executing program without need to stop program execution.
- The vertical feed provides 6 modes :
  - (1) Rapid traverse
  - (2) Low speed feed
  - (3) Jog feed [According to fine grinding feed setting ]
  - (4) Micrometric feed (0.001mm / per time)
  - (5) MPG feed
  - (6) Fully automatic feed
- Three types of spindle raise to select :
  - (1) Spindle does not raise.
  - (2) Raise to zero position.
  - (3) Raise to "A" position (above the zero position).



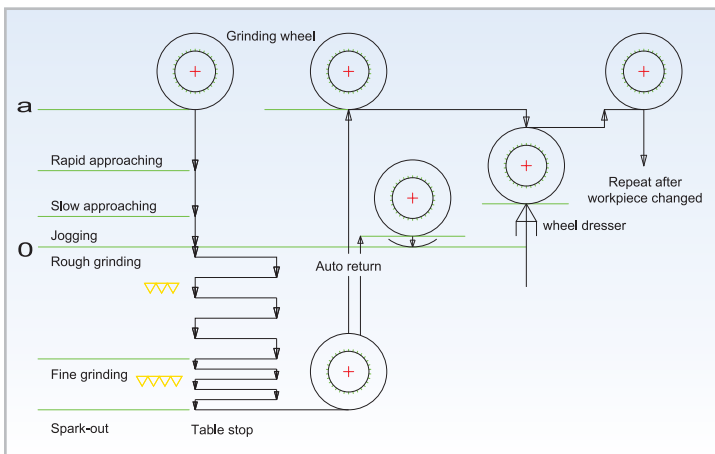
## EXTRA POWERFUL CONTROL FUNCTION:

- Vertical & Cross feeds employ fully digitized servo system, that allows the machine to automatically perform surface and plunge grinding with outstanding accuracy and easier operation.
- Table mounted wheel dresser combine auto-wheel dressing function with auto-compensation, a dramatic increase in machining efficiency can be obtained.
- Capable of performing combine "multi-plunge rough grinding" and "step surface fine grinding" that drastically upgrades the entire machining efficiency (P series).

## SELECTION OF VARIOUS OPERATION MODES:

- Selection of left side, right side or both sides feeding for plunge grinding.
- Cross feed is equipped with "variable speed regulator for rough grinding" and "variable speed regulator for fine grinding" that upgrades operational convenience.
- Cross feed mode provides a selection of intermittent or criss-cross feed.

## AUTOMATIC GRINDING CYCLE + AUTOMATIC WHEEL DRESSING (OPTIONAL)



## TABLE-MOUNTED WHEEL DRESSER (OPTIONAL)



## STANDARD ACCESSORIES

1. Grinding wheel (Dia x Thickness x Bore) 355 x 75 x 127m/m(60HZ) or 406 x 75 x 127m/m(50HZ)	1 pc	8. Electrical Cabinet Hanging ring	2 pcs
2. Grinding wheel adaptor (flange) & puller	1 set	9. T-Nut & screws	6 set
3. Arbor & nut for wheel balancing	1 set	10. Necessary tools with a tool box :	
4. Diamond tool (1/4 carat) with a base	1 set	A. Single-end spanner (36 m/m)	1 pc
5. Dust sweeping plate	1 pc	B. Hexagon-headed spanner (2.5,3,4,5,6,8 m/m)	1 set
6. Working lamp (fitted on the machine)	1 set	C. Adjustable wrench (375 m/m)	1 pc
7. Leveling plates, bolts with nuts		D. Cross screw driver #4	1 pc
YSG - 2040 / 2048 / 2448	16 sets	11. Lubrication oil (4 liters)	2 cans
YSG - 2060 / 2460	20 sets	12. Operation manual and inspection certificate	1 copy each
YSG - 2480	24 sets	13. Spare paint	1 can

## OPTIONAL ACCESSORIES

- (1002) Grinding wheel balancing apparatus
- (1003) Spare grinding wheel adaptor (flange)
- ★ (1007) Inverter
- ★ (1020) Automatic demagnetizing controller for electro-magnetic chuck
- (1021) Electro-magnetic chuck
- ★ (1022) Consistent temperature control unit for hydraulic system
- ★ (1024) Coolant system C/W a magnetic dust separator
- ★ (1025) Coolant system with paper filter
- ★ (1027) Coolant system with paper filter & C/W a magnetic dust separator
- ★ (1032) Manual dynamic balancer for grinding wheel on machine
- (1033) Powered conditioning tools for diamond & CBN wheel
- ★ (1034) Table-mounted diamond roll dresser
- ★ (1037) CNC controller (FANUC or MITSUBISHI or...)
- ★ (1040) Half enclosed table guard
- ★ (1042) Linear scale (feedback) for cross and vertical axes.
- ★ (1043) Hydraulic cooling system for wheel head
- ★ (1044) Table-mounted fixed dresser with one diamond tool for profiling and compensated device.
- ★ (1046) Table-mounted fixed dresser with three diamond tools for profiling and compensated device.
- ★ (1050) Oil mist air cleaner
- ★ (1051) Auto. Dynamic balancer for grinding wheel on machine.
- ★ (1052) Fully enclosed table guard.
- ★ (1053) Overtop NC Auto-Dresser on wheel-head and compensated device.

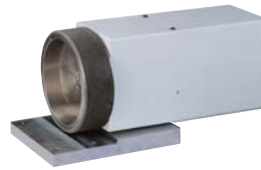
(Note: The marks " ★ " to be installed at factory.)



(1022)



(1003)



(1034)



(1050)



(1051)



(1053)



### Advantages of Manual dynamic balancer for grinding wheel on machine [OPTION(1032)] :

- Workpiece surface accuracy reaches 0.02 Ra.
- To extend the service life of wheel spindle & bearings.

# SPECIFICATIONS

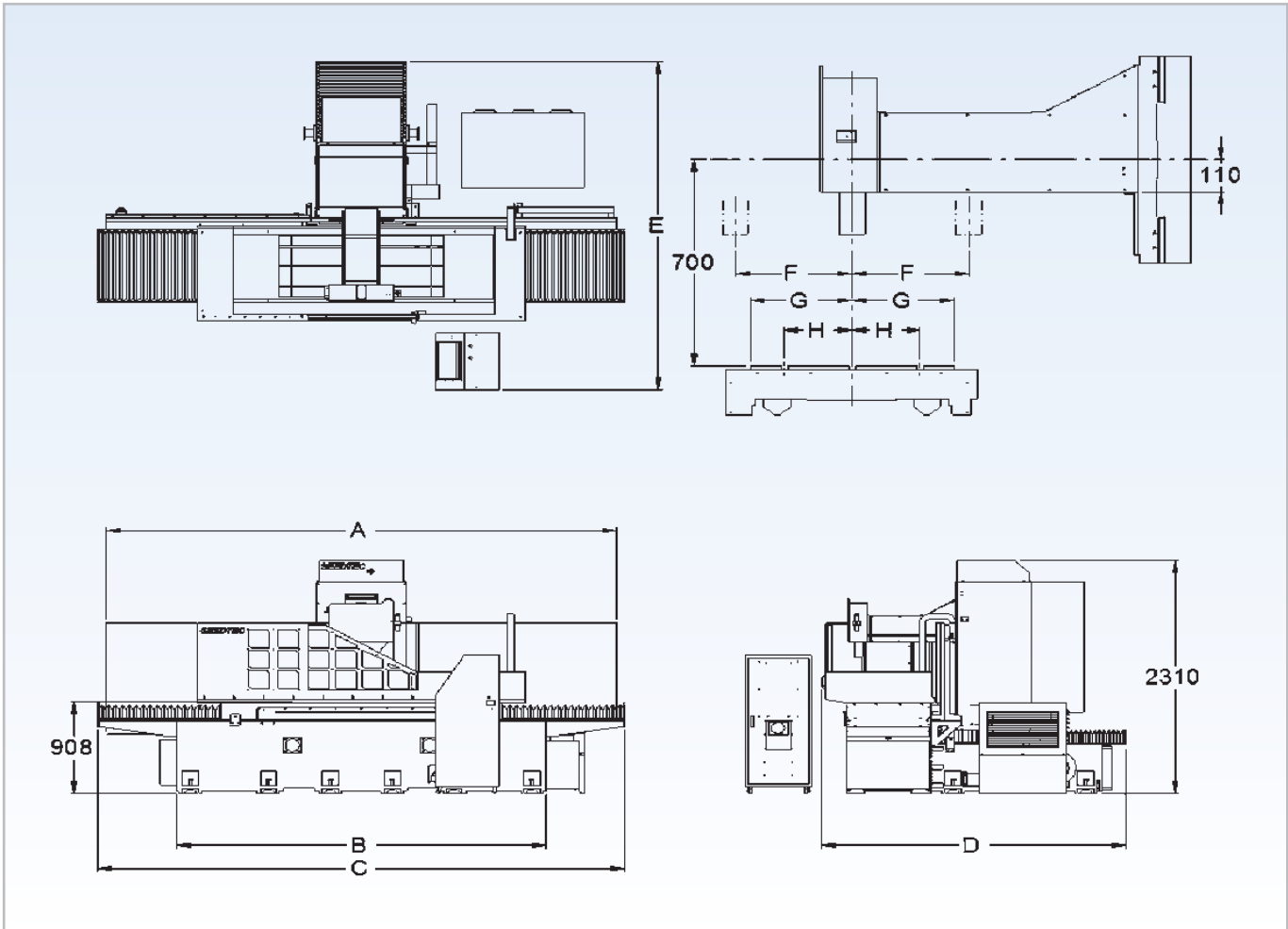
	ITEM	MODEL	UNIT	YSG- 2040TS/P	Y
TABLE CAPACITY	Maximum grinding (length x width)		mm	1100 x 500	
	Maximum distance from table top to spindle center line		mm	700	
	Table surface (length x width)		mm	1000 x 500	
	Maximum longitudinal travel		mm	1200	
	Maximum cross travel		mm	585	
	T-slot (NO. x width)		NO. x mm	3 x 20	
	Workpiece tolerance weight (include magnetic chuck)		Kgs	2100	
FEED	Longitudinal movement of table				
	Hydraulic feed		m/min	0.5 ~ 25	
	Cross movement				
	Intermittent feed		mm	0 ~ 20	
	Continuous transverse feed		mm/min	2200	
	MPG Hand feed per revolution (X1,X10X,100)		mm	0.1 , 1 , 10	
	Graduation of MPG handwheel (X1,X10X,100)		mm	0.001 , 0.01 , 0.1	
	Vertical movement of wheel head				
	Slow/rapid feed		mm/min	100 ~ 600	
	MPG Hand feed per revolution (X1 , X10 , X100)		mm	0.1 , 1 , 10	
	Graduation of MPG handwheel (X1 , X10 , X100)		mm	0.001 , 0.01 , 0.1	
	Vertical automatic downfeed				
	Total stock removal		mm	0.001 ~ 999.999	
	Fine grinding amount		mm	0.001 ~ 999.999	
	Rough grinding feed		mm	0.001 ~ 0.024	
Fine grinding feed : rough grinding feed / 2		mm	0.001 ~ 0.012		
Spark-out		number	0 ~ 9		
SPINDLE & WHEEL	Spindle speed	50 Hz	r.p.m / P	1460 / 4(OPT. 960 / 6)	
		60 Hz		1760 / 4(OPT. 1160 / 6)	1
	Grinding wheel outside diameter x thickness		mm	( $\phi$ 406/355) x 75t / 4P (OPT. $\phi$ 508 x 75t / 6P)	(
Grinding wheel bore		mm	$\phi$ 127		
MOTOR	Spindle motor		HP / P	15 ~ 40 / 4 (OPT. 10 ~ 25 / 6)	
	Hydraulic motor		KW / P	5.5 / 6	
	Vertical servo motor		KW	1.5	
	Cross servo motor		KW	0.75	
	Longitudinal servo motor		KW	0.4	
DIMENSIONS & WEIGHTS	Floor space (LxWxH)		mm	4075 x 3045 x 2310	
	Weight (Approx.)		Kgs	7200	
	Packing dimensions (LxWxH)		mm	4250 x 2310 x 2520	

**NOTE :** As SEEDTEC is constantly improving the design of its machines, appearance, specifications, dimensions and weights are subject to be changed without notice."

YSG-2048TS/P	YSG-2060TS/P	YSG-2448TS/P	YSG-2460TS/P	YSG-2480TS/P
1300 x 500	1600 x 500	1300 x 600	1600 x 600	2100 x 600
700	700	700	700	700
1200 x 500	1500 x 500	1200 x 600	1500 x 600	2000 x 600
1400	1700	1400	1700	2200
585	585	685	685	685
3 x 20	3 x 20	3 x 20	3 x 20	3 x 20
2000	1850	2400	2350	2250
0.5 ~ 25	0.5 ~ 25	0.5 ~ 25	0.5 ~ 25	0.5 ~ 25
0 ~ 20	0 ~ 20	0 ~ 20	0 ~ 20	0 ~ 20
2200	2200	2200	2200	2200
0.1, 1, 10	0.1, 1, 10	0.1, 1, 10	0.1, 1, 10	0.1, 1, 10
0.001, 0.01, 0.1	0.001, 0.01, 0.1	0.001, 0.01, 0.1	0.001, 0.01, 0.1	0.001, 0.01, 0.1
100 ~ 600	100 ~ 600	100 ~ 600	100 ~ 600	100 ~ 600
0.1, 1, 10	0.1, 1, 10	0.1, 1, 10	0.1, 1, 10	0.1, 1, 10
0.001, 0.01, 0.1	0.001, 0.01, 0.1	0.001, 0.01, 0.1	0.001, 0.01, 0.1	0.001, 0.01, 0.1
0.001 ~ 999.999	0.001 ~ 999.999	0.001 ~ 999.999	0.001 ~ 999.999	0.001 ~ 999.999
0.001 ~ 999.999	0.001 ~ 999.999	0.001 ~ 999.999	0.001 ~ 999.999	0.001 ~ 999.999
0.001 ~ 0.024	0.001 ~ 0.024	0.001 ~ 0.024	0.001 ~ 0.024	0.001 ~ 0.024
0.001 ~ 0.012	0.001 ~ 0.012	0.001 ~ 0.012	0.001 ~ 0.012	0.001 ~ 0.012
0 ~ 9	0 ~ 9	0 ~ 9	0 ~ 9	0 ~ 9
1460 / 4(OPT. 960 / 6)	1460 / 4(OPT. 960 / 6)	1460 / 4(OPT. 960 / 6)	1460 / 4(OPT. 960 / 6)	1460 / 4(OPT. 960 / 6)
1760 / 4(OPT. 1160 / 6)	1760 / 4(OPT. 1160 / 6)	1760 / 4(OPT. 1160 / 6)	1760 / 4(OPT. 1160 / 6)	1760 / 4(OPT. 1160 / 6)
(ø406/355) x 75t / 4P (OPT. ø508 x 75t / 6P)	(ø406/355) x 75t / 4P (OPT. ø508 x 75t / 6P)	(ø406/355) x 75t / 4P (OPT. ø508 x 75t / 6P)	(ø406/355) x 75t / 4P (OPT. ø508 x 75t / 6P)	(ø406/355) x 75t / 4P (OPT. ø508 x 75t / 6P)
ø127	ø127	ø127	ø127	ø127
15 ~ 40 / 4 (OPT. 10 ~ 25 / 6)	15 ~ 40 / 4 (OPT. 10 ~ 25 / 6)	15 ~ 40 / 4 (OPT. 10 ~ 25 / 6)	15 ~ 40 / 4 (OPT. 10 ~ 25 / 6)	15 ~ 40 / 4 (OPT. 10 ~ 25 / 6)
5.5 / 6	5.5 / 6	5.5 / 6	5.5 / 6	5.5 / 6
1.5	1.5	1.5	1.5	1.5
0.75	0.75	0.75	0.75	0.75
0.4	0.4	0.4	0.4	0.4
4515 x 3045 x 2310	5185 x 3045 x 2310	4515 x 3260 x 2310	5185 x 3260 x 2310	6265 x 3260 x 2310
7500	8000	8500	8950	9850
4670 x 2310 x 2520	5360 x 2310 x 2520	4670 x 2310 x 2520 (Wooden pallet) 2990 x 1150 x 1090 (Wooden crate)	5360 x 2310 x 2520 (Wooden pallet) 3310 x 1150 x 1090 (Wooden crate)	6440 x 2310 x 2520 (Wooden pallet) 3810 x 1150 x 1090 (Wooden crate)

## 20 & 24 SERIES DIMENSIONAL DRAWINGS

unit : mm



ITEM	YSG-2040TS/P	YSG-2048TS/P	YSG-2060TS/P	YSG-2448TS/P	YSG-2460TS/P	YSG-2480TS/P
A	3940	4380	5050	4380	5050	6130
B	2760	3160	3760	3160	3760	4760
C	4075	4515	5185	4515	5185	6265
D	2400	2400	2400	2615	2615	2615
E	3045	3045	3045	3260	3260	3260
F	292.5	292.5	292.5	342.5	342.5	342.5
G	250	250	250	300	300	300
H	180	180	180	200	200	200

# SEEDTEC®

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