



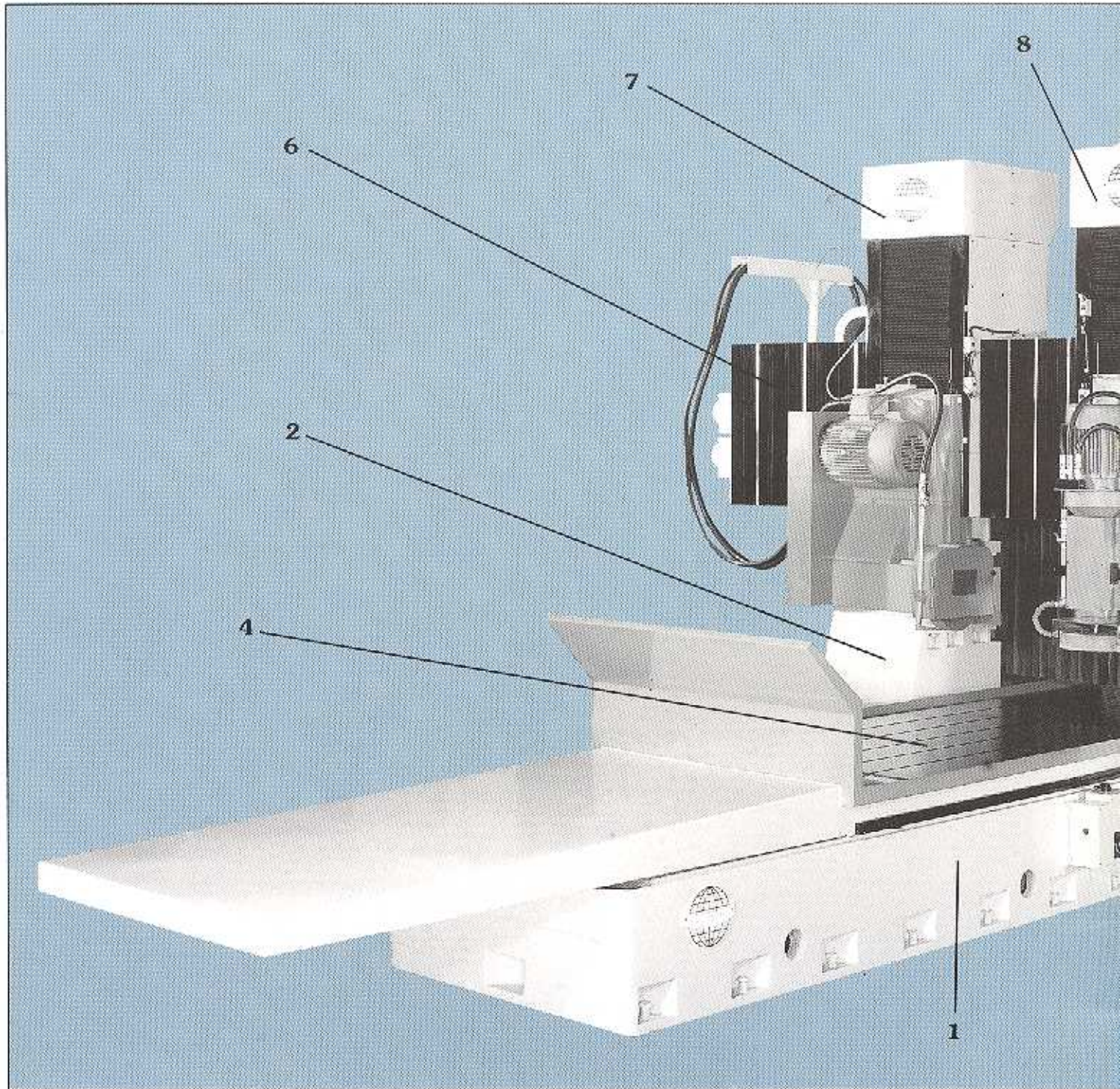
FREEPORT
SURFACE GRINDER

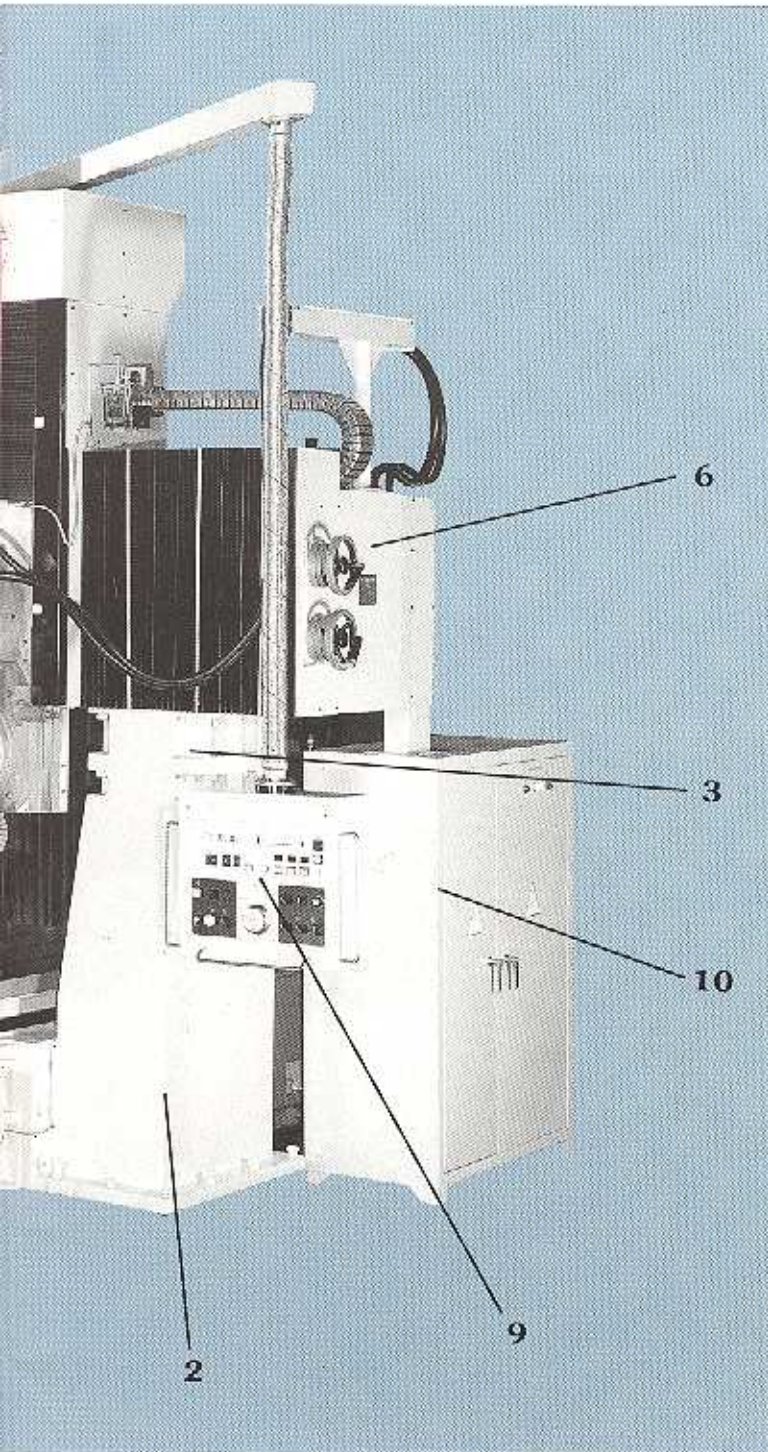
DOUBLE-COLUMN TYPE SLIDEWAY & SURFACE GRINDING MACHINES



MACHINERY

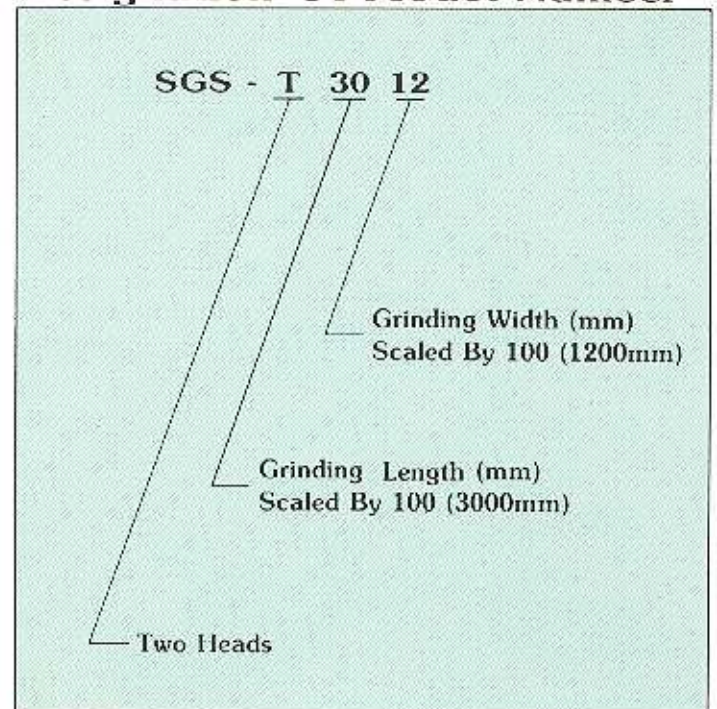
CONSTRUCTION OF MACHINE





1. Bed
2. Columns
3. Riser Block
4. Table
5. Hydraulic Unit
6. Cross Rail
7. Horizontal Grinding Head
8. Universal Grinding Head
9. Pendant Control Box
10. Electrical Equipment
11. Magnetic Coolant Separator

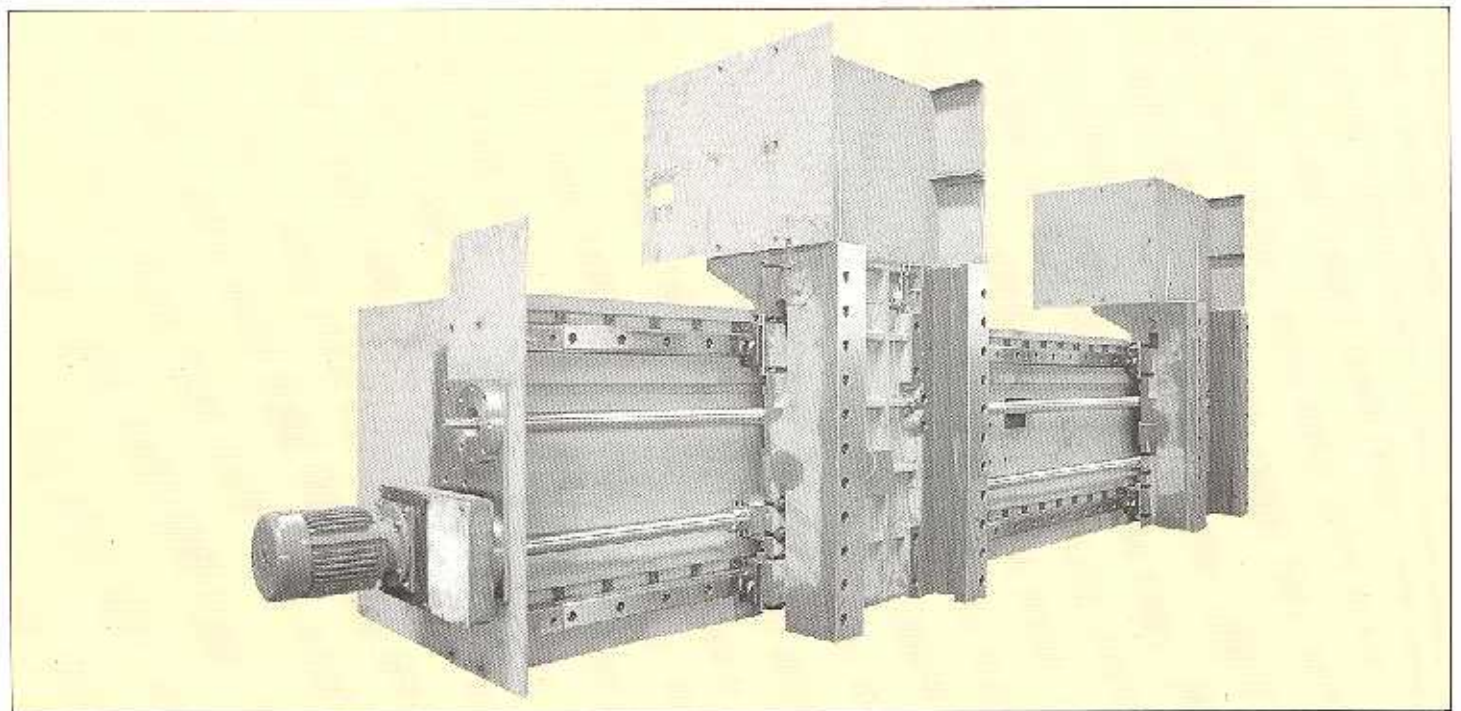
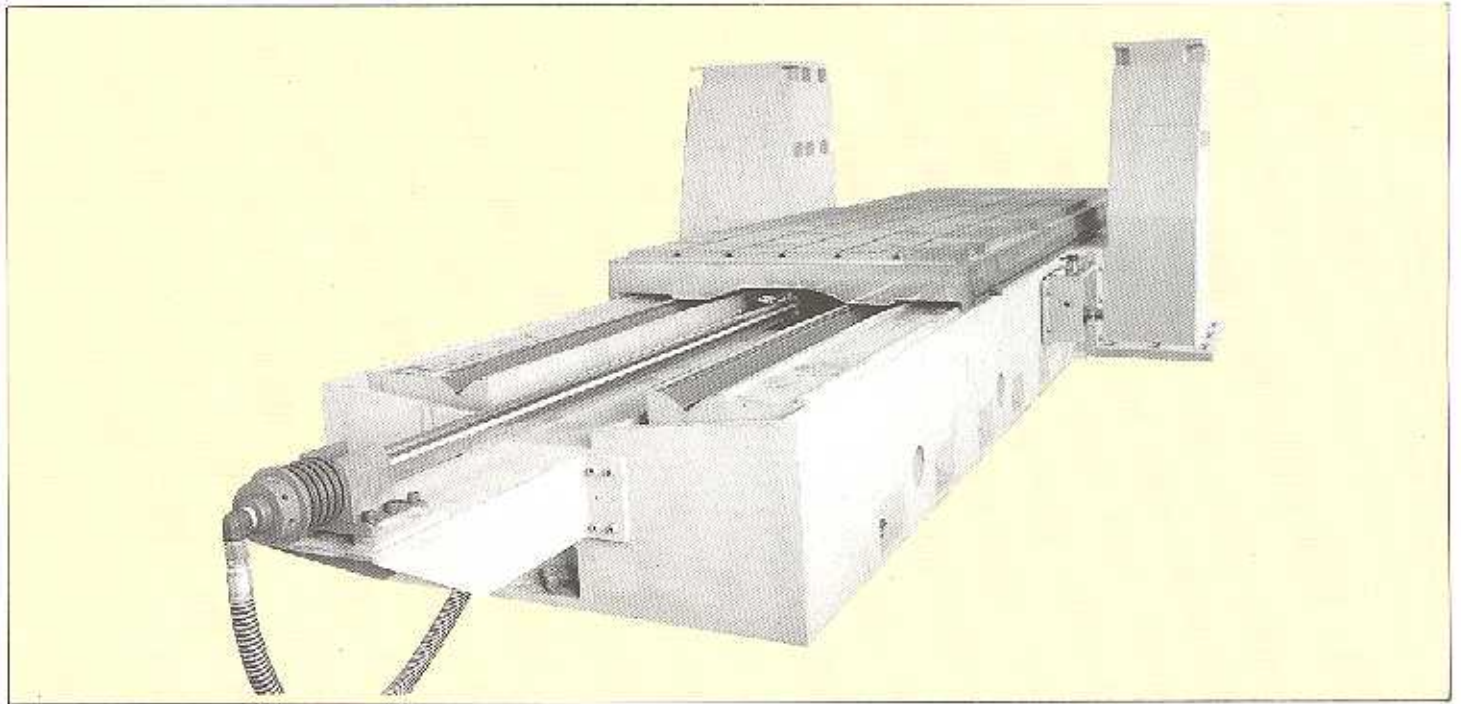
Designation Of Model Number





MACHINERY

BED AND MACHINE FRAME



1. Bed
2. Column (right)
3. Column (left)
4. Cross Rail
5. Levelling Blocks

- Base and two columns are made of high rigidly cast iron, have completely internal stress eliminated by complete tempering. This strong and antivibrated structure ensures steady and durability of the machine.
- Two "V" base slide rails had been operated with precise grinding or scrape. Length of the base is twice as long as maximum table traverse, so that table can be kept in straight running any time.
- Two columns are firmly fixed at two sides of the base. They are tightly connected with bolts and square pins. Thus, beam, columns, and base form a strong square to assure the grinding accuracy.
- Lateral beam has high intensity structure, well machined by precision grinder and joins with precision linear bearing slide ways (for two heads type). Or use high rigid cast iron which is treated with high frequency tempering and precise grinding, meanwhile, compensating with precision column type bearings (for single head type). Cross movement is driven through ball screw, very smooth and steady.

Levelling Wedges

- The base bolts influence the accuracy of the big precision machine. They are perfectly designed for the machine itself. In order to get the steady machining of the machine, readjust the level of all base bolts before set up the machine.

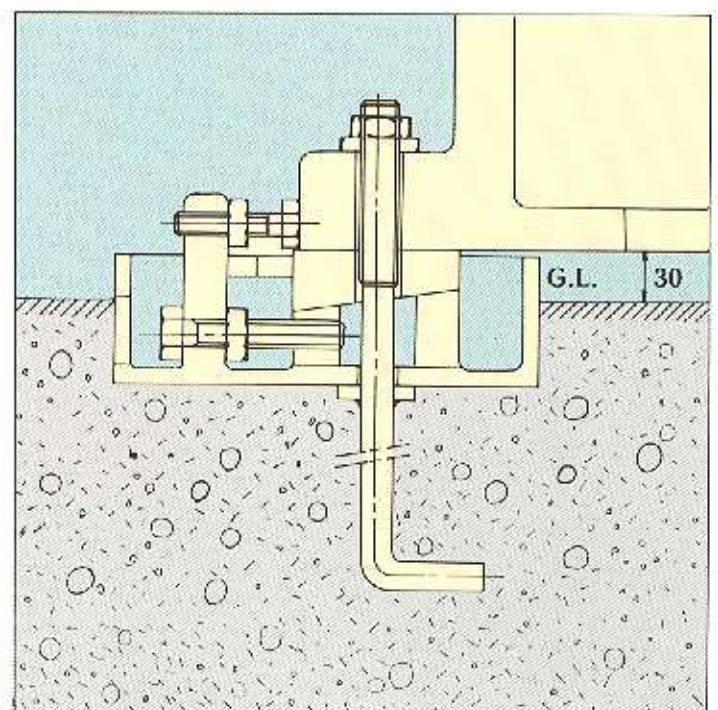
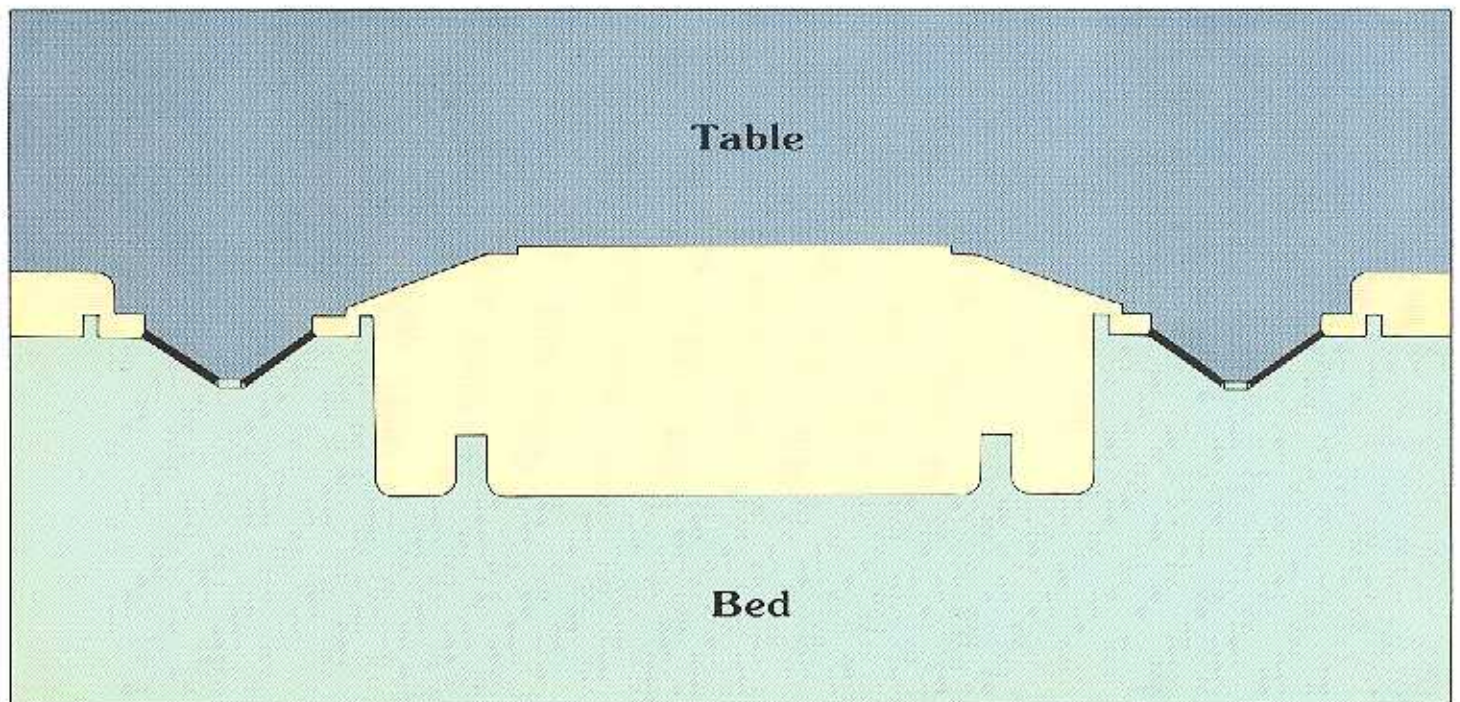
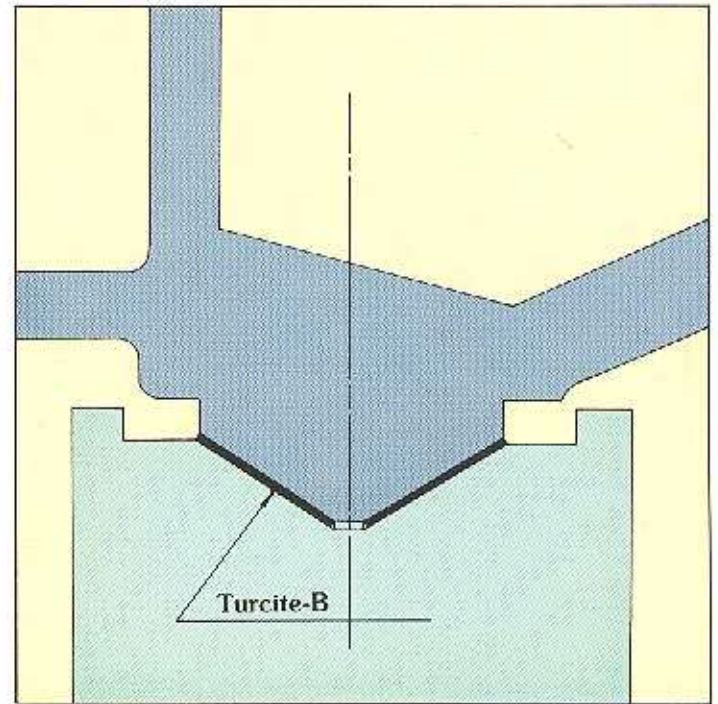


TABLE WAYS

- Two "V" slide rails of table are coated with TURCITE-B, and have a forced lubricant from automatic circulatory lubricant system. These ensure the smooth and steady grinding.
- Table is driven by a specially designed hydraulic system and cylinder for steady longitudinal movement. It can prevent pulsation, increase working efficiency and grinding quality.



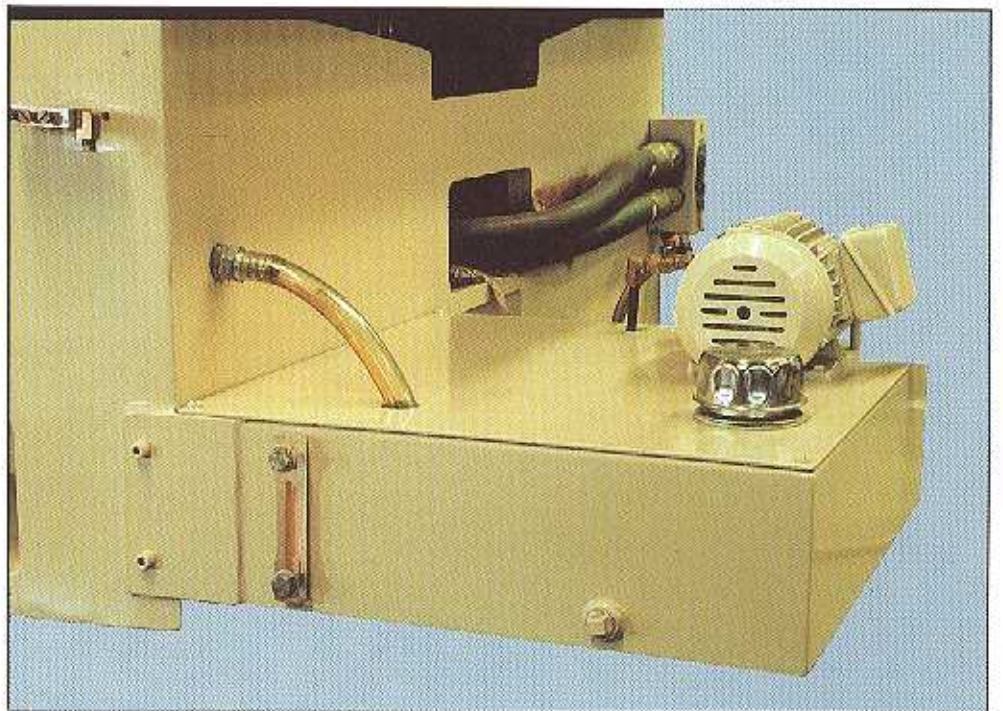
BEDWAY LUBRICATION

- Lubricant of table and base is forced lubricant system. Lubricant goes through oil grooves from top to bottom completely for firm and smooth sliding.



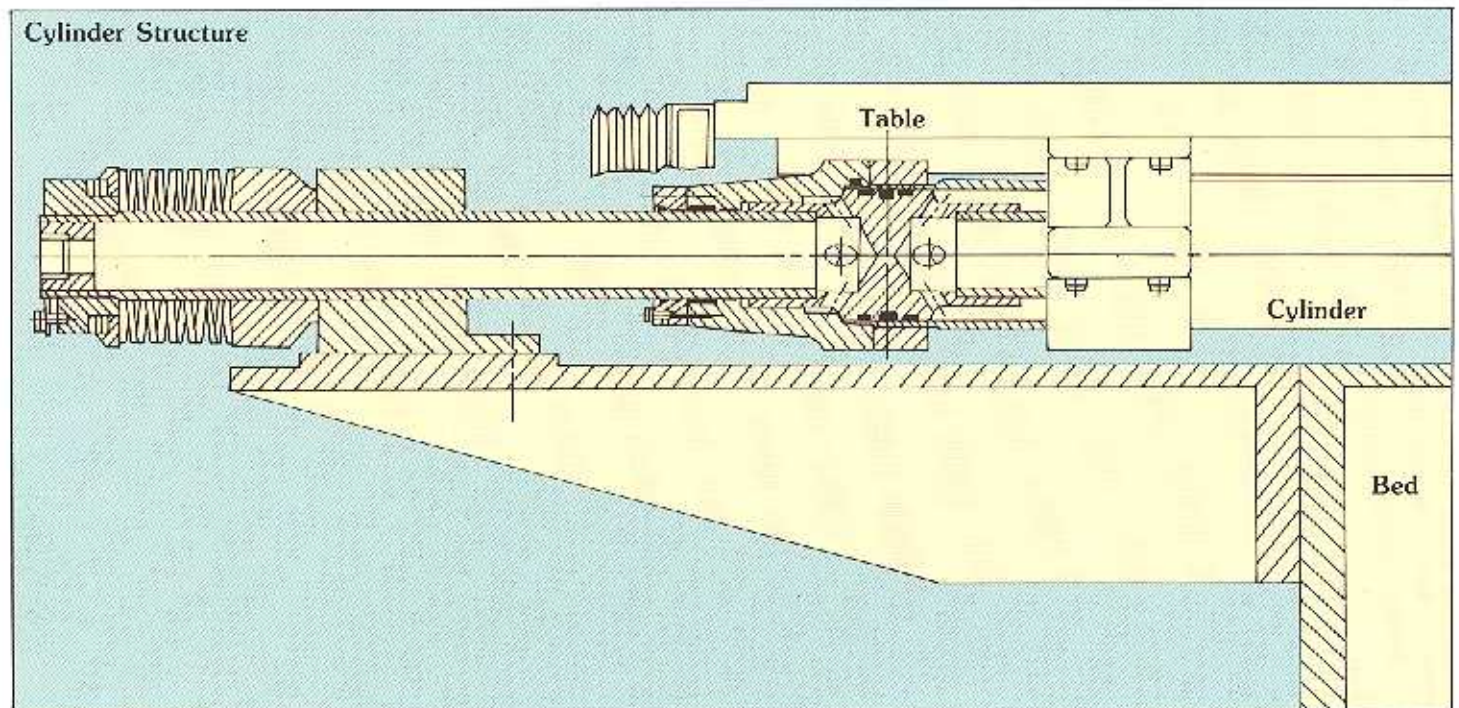
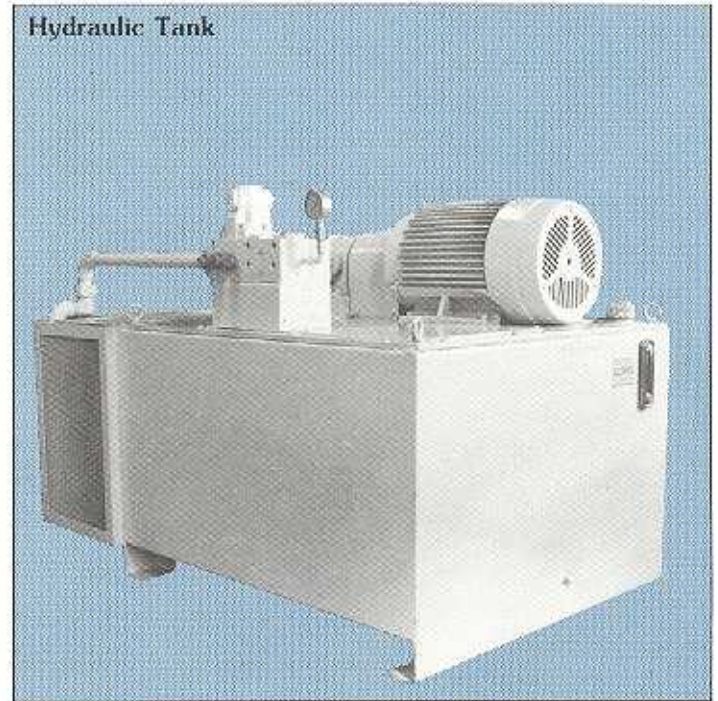
Lubricant Unit

- The lubricant tank is designed automatic circulatory system. It has flow rate adjusting valve, can offer suitable lubrication to the machine.



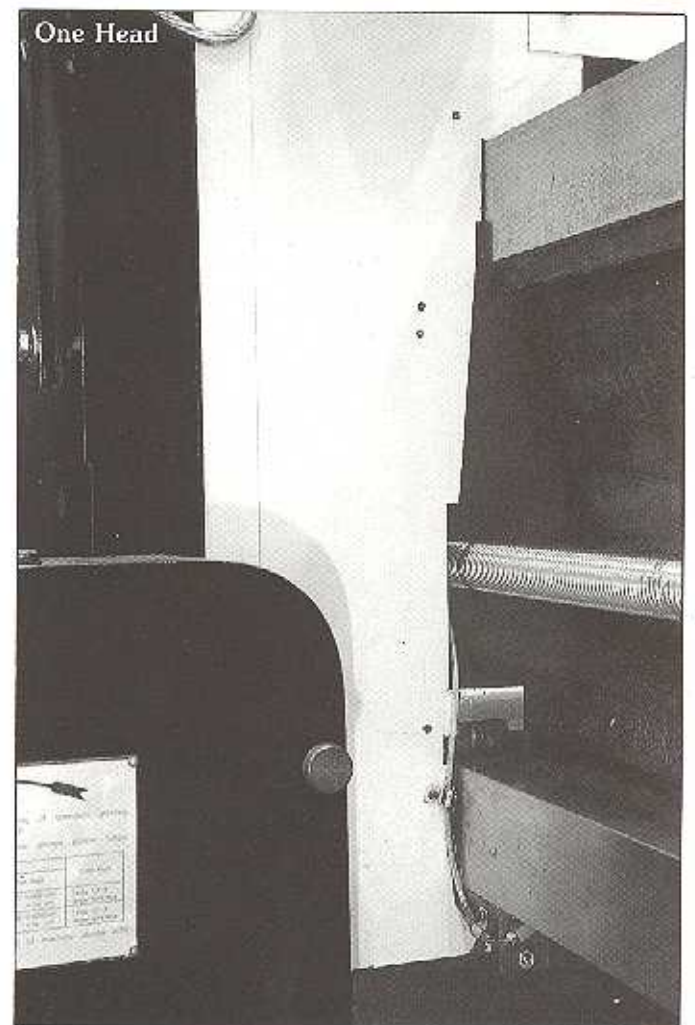
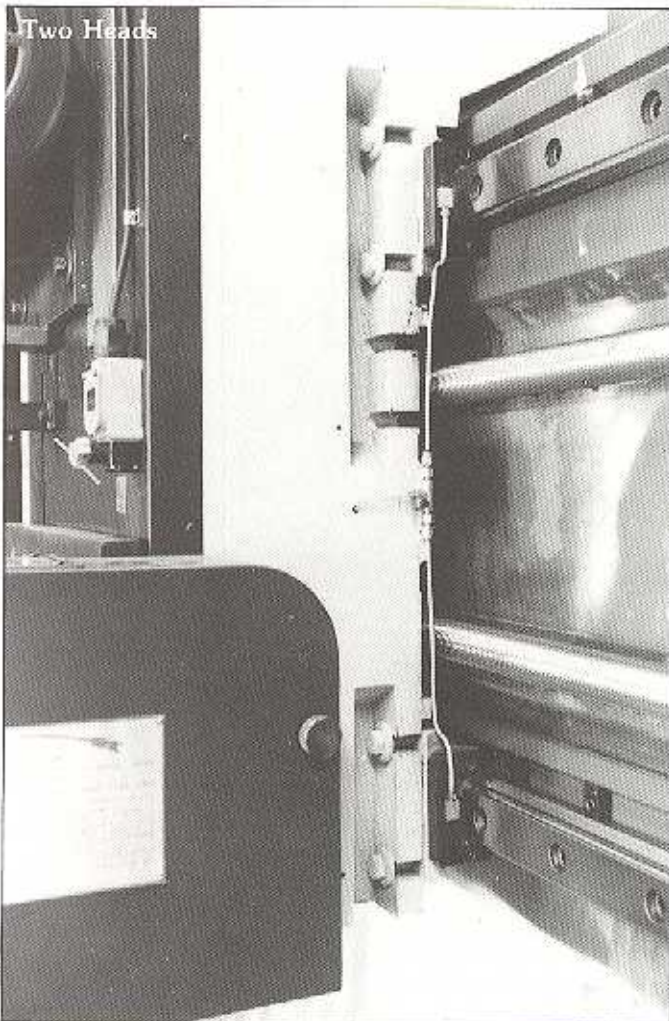
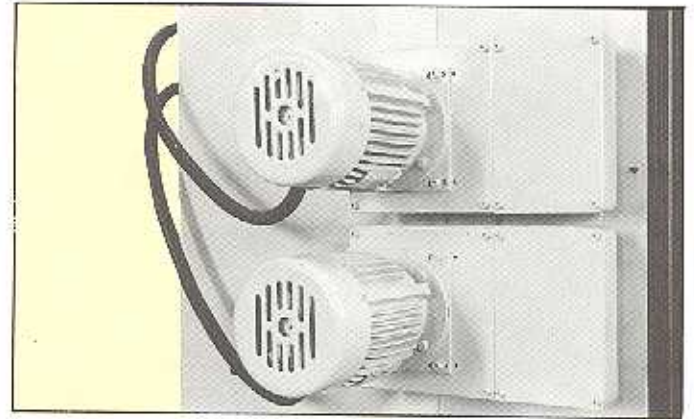
HYDRAULIC UNIT CYLINDER

- Hydraulic tank uses independent fan forced cooler to control oil in standard temperature. Meanwhile, hydraulic pressure can be adjusted per the weight of work piece.



CROSS RAIL

- There are two kinds of rail for lateral beam: one is linear bearing rail for two heads type, the precision rail makes sliding more lightly and smoothly; the other is steel rail for single head type, it has been treated with high frequency tempering to hardness HRC 59°, this ensures the precision and durable grinding.
- Power transmission of two heads type grinder: one is from common motor, belt, longitudinal ball screw to drive the spindle; the other is from servo motor, longitudinal ball screw to drive the spindle.





MACHINERY

HORIZONTAL GRINDING HEAD

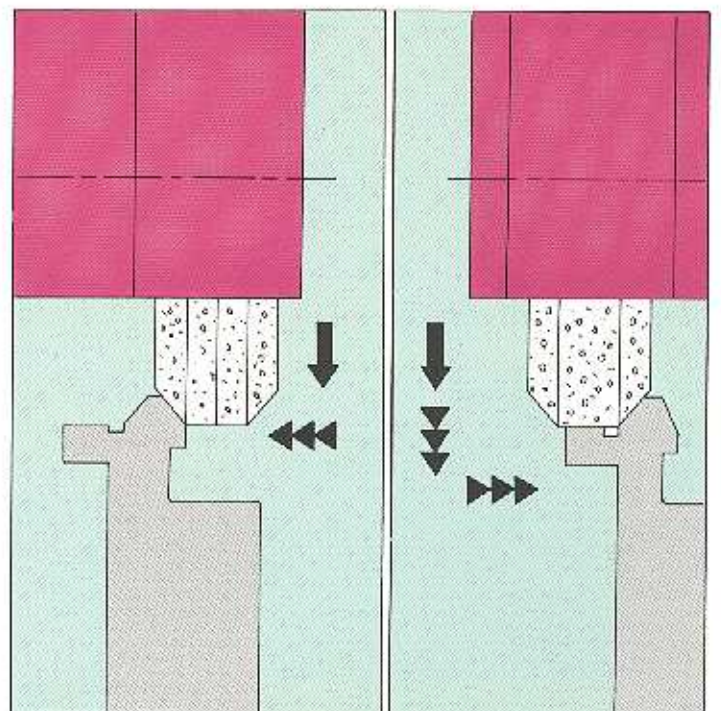
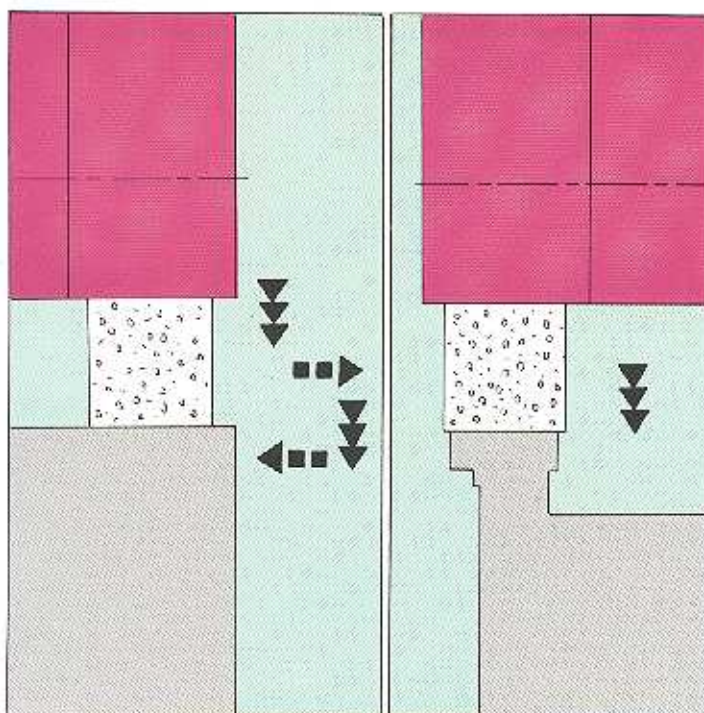
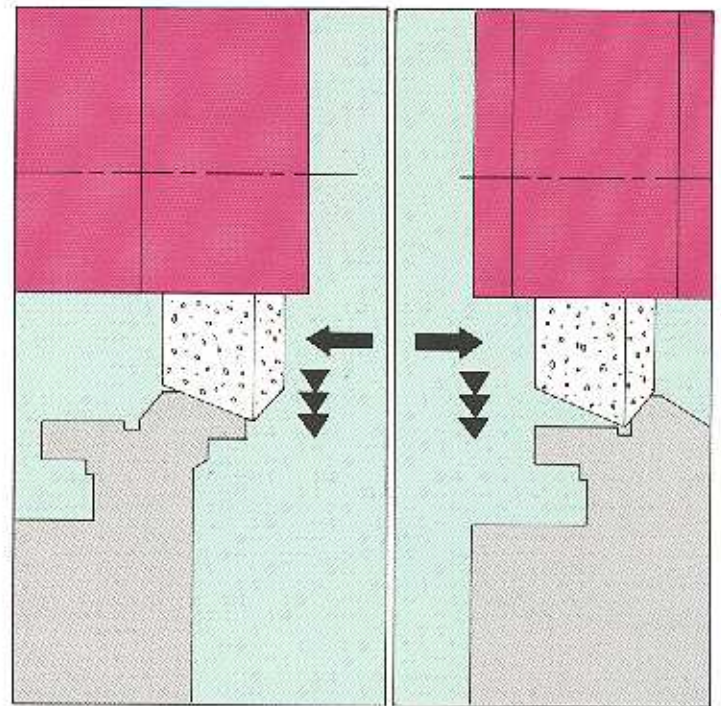
Horizontal Wheel Head



Operation Example Of Horizontal Grinding Head

Operation of horizontal axle grinding wheel can cooperate with special wheel dressers to make surface, slot, and different kinds of forming grinding easily.

- ← Rapid wheel head displacement
- ▣ Automatic stepping cross feed
- ▢ Automatic pulse feed

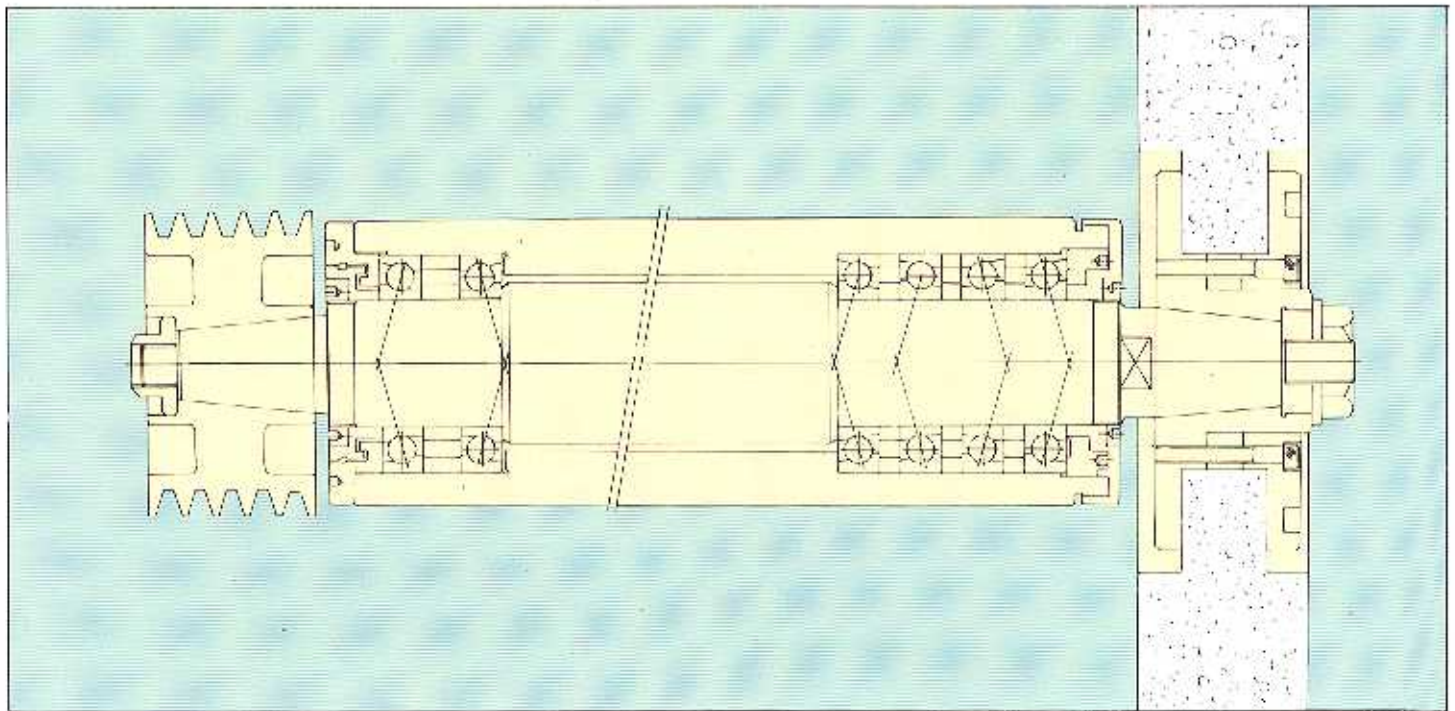
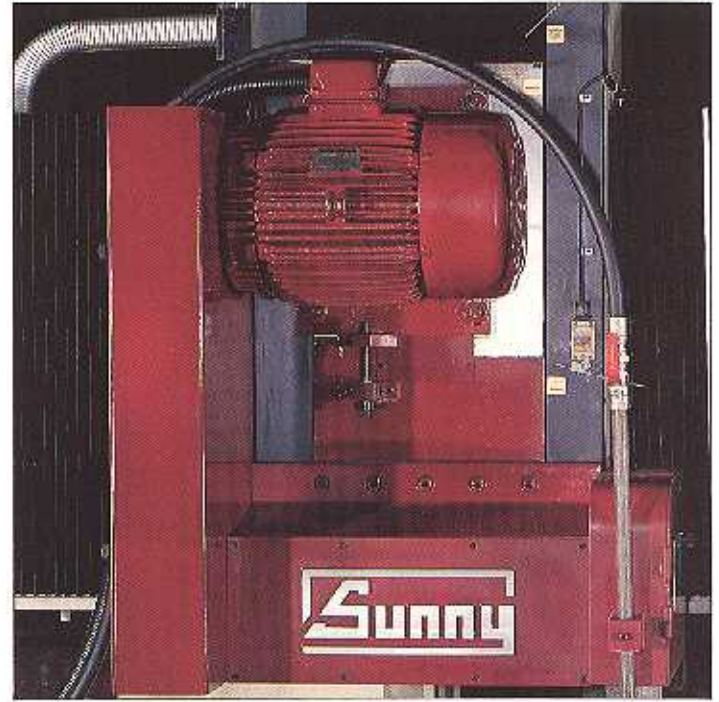




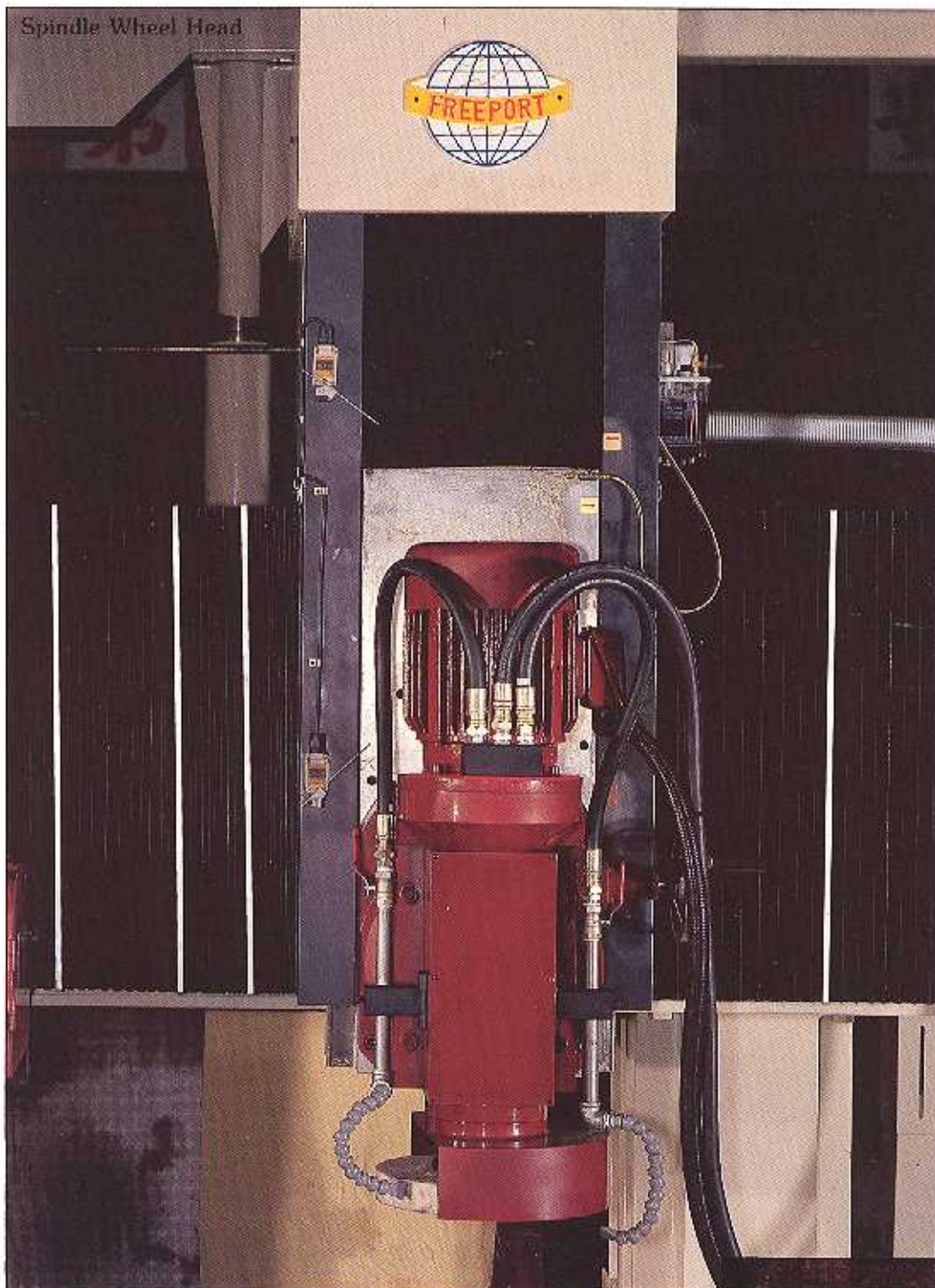
MACHINERY

HORIZONTAL GRINDING HEAD

- High precision and rigidity spindle uses preloaded super precision high speed ball bearings, and are completely sealed with high class grease. Even under heavy duty grinding, it still maintain quiet, high accuracy, and low temperature. Spindle taper runs out under 0.003mm T.I.R.






UNIVERSAL GRINDING HEAD

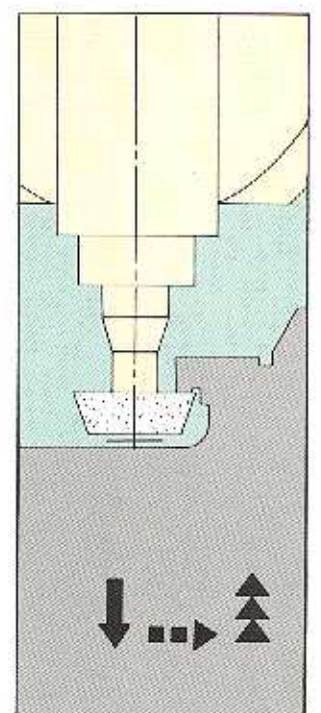
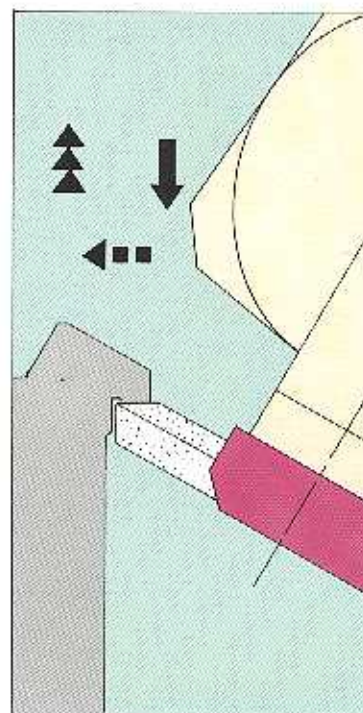
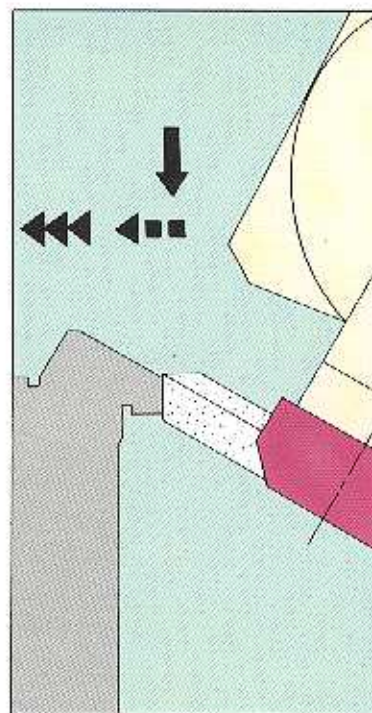
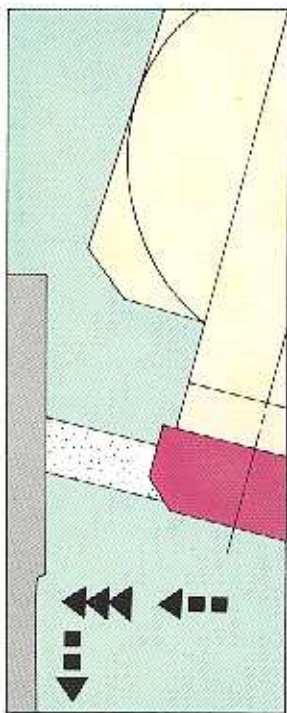
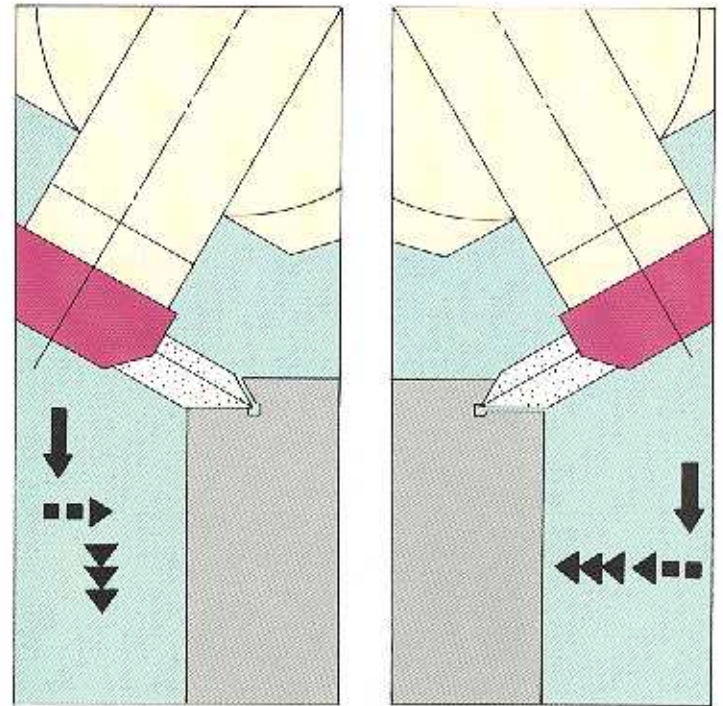


UNIVERSAL GRINDING HEAD

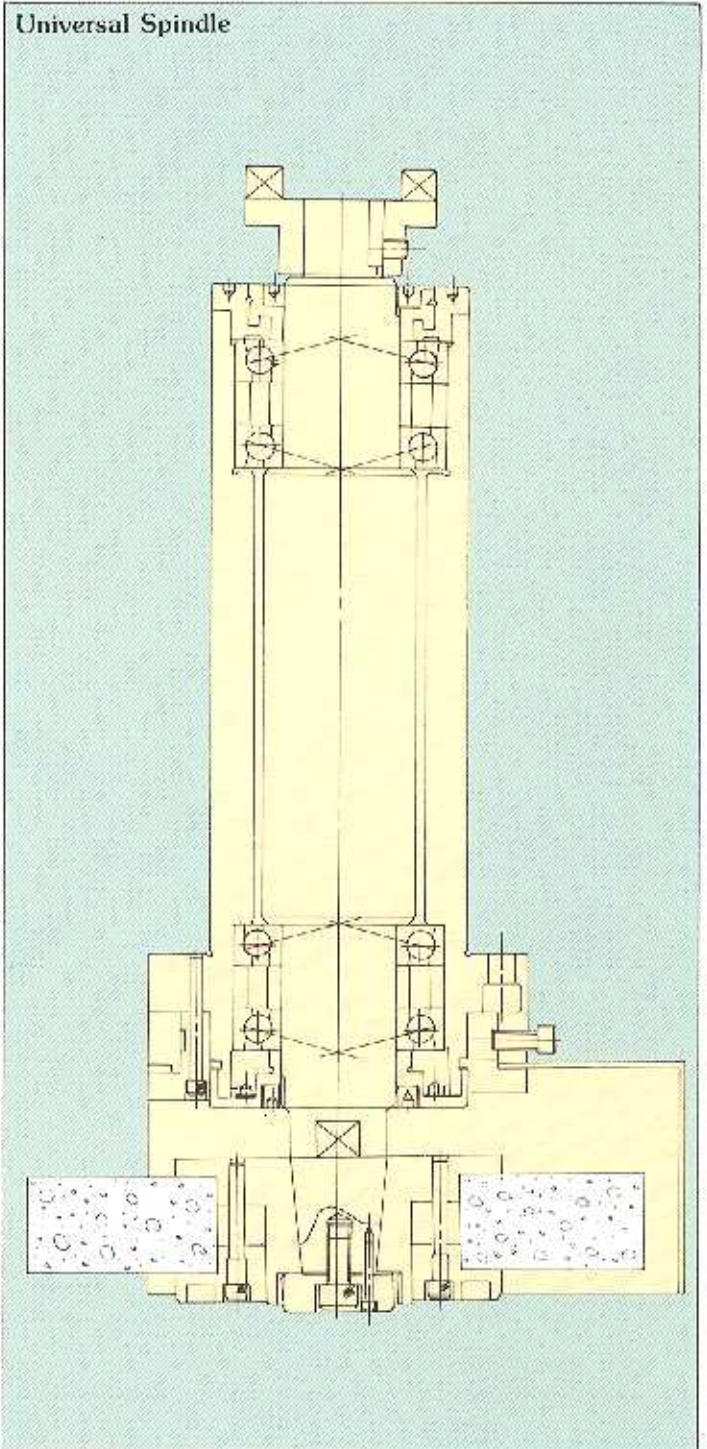
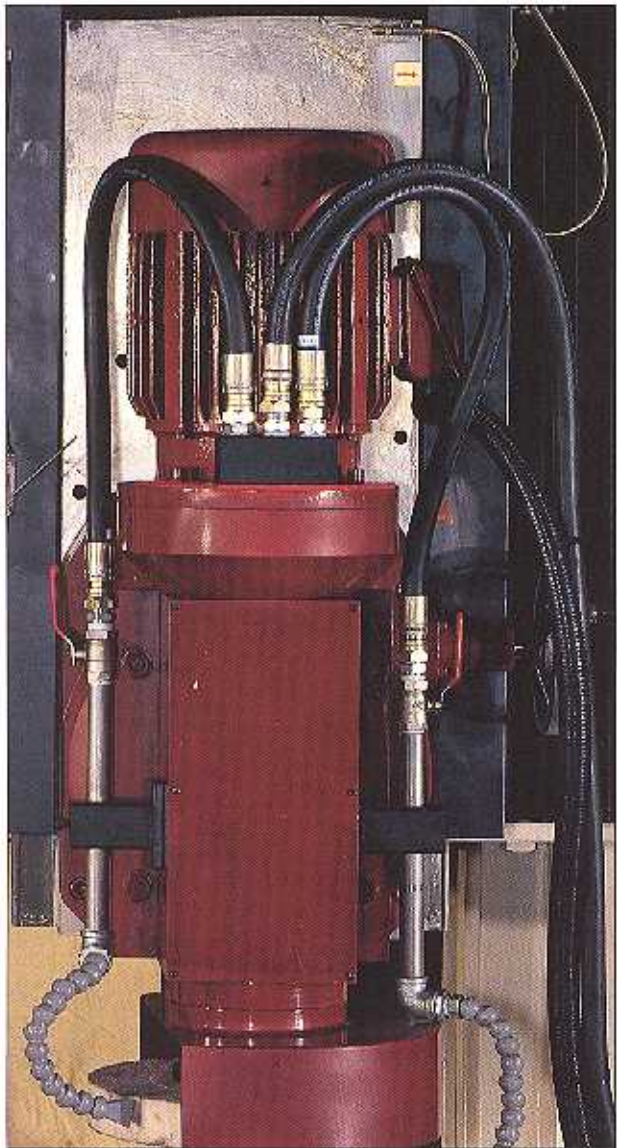
Operation Example Of Universal Grinding Head

- Angle swivel of universal axle wheel head is driven through lead screw and worm gear, it can swiftly turn wheel head within $\pm 90^\circ$, which is very convenient for forming grinding procession.
- Vertical feeding cooperates with cross movement of wheel head to achieve the surface and forming grinding, see diagram.

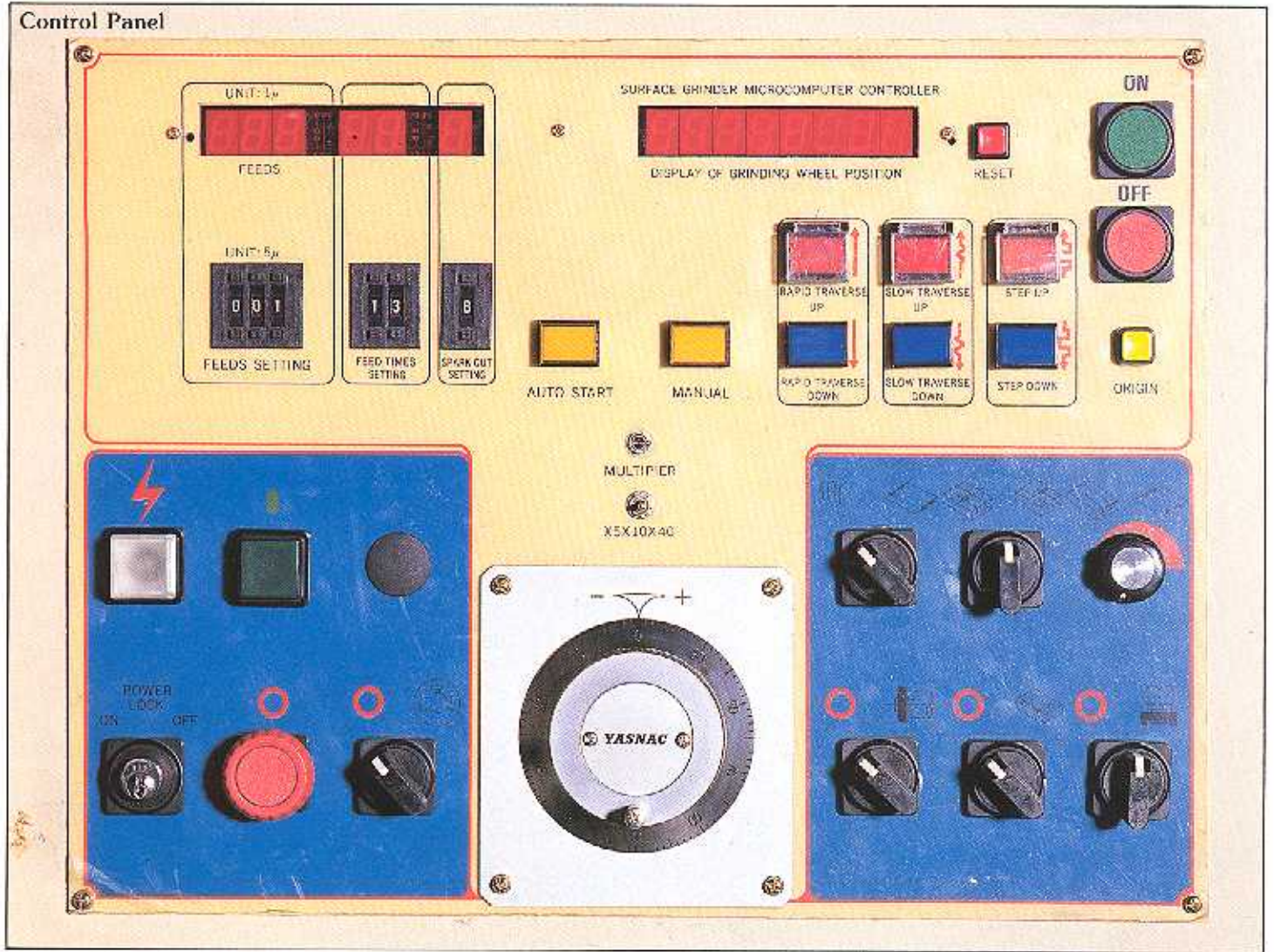
-  Rapid wheel head displacement
-  Automatic stepping cross feed
-  Automatic pulse feed



- V3 grade spindle motor and coupler had been correctly balanced, it ensures quiet and steady machining.



PENDANT CONTROL BOX



- The location of switches on control panel is designed for the best view and most convenient operation of the operator. Microcomputer and machinery power switches are separately lined up, there are two different colors to identify, each switch has simple graph on it to show its function; so that all control switches can be understood very easily.
- P.L.C. controller separates the machinery control circuit and microcomputer control circuit strictly, so that the microcomputer control circuit won't be interrupted by machinery power noise.
- The functions of microcomputer operation switches are designed into three parts. One is automatic feeding, the other is manual operation, another is pulse generator hand wheel operation.
- Automatic feeding: It can be set for (a) each feeding capacity (b) feeding times, can be set from 1 to 99 times. (c) spark out machining, can be set from 0 to 9 times.
- Manual operation: There are three sets push button to change the rapid, normal, and stepping up, down, forward, and backward feeding. (Stepping capacity is set by the automatic feeding capacity.)
- Hand wheel operation: Through triple speeds selected transmission of manual pulse generator, further ensures accuracy and easy operation.



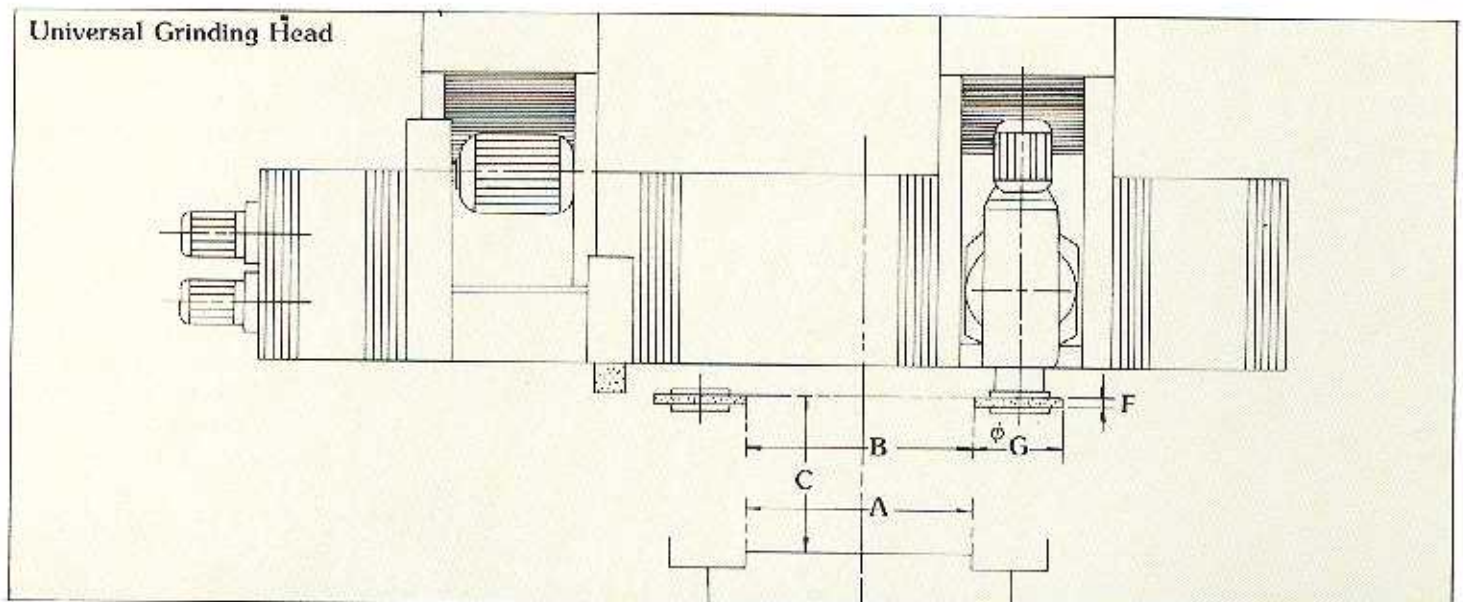
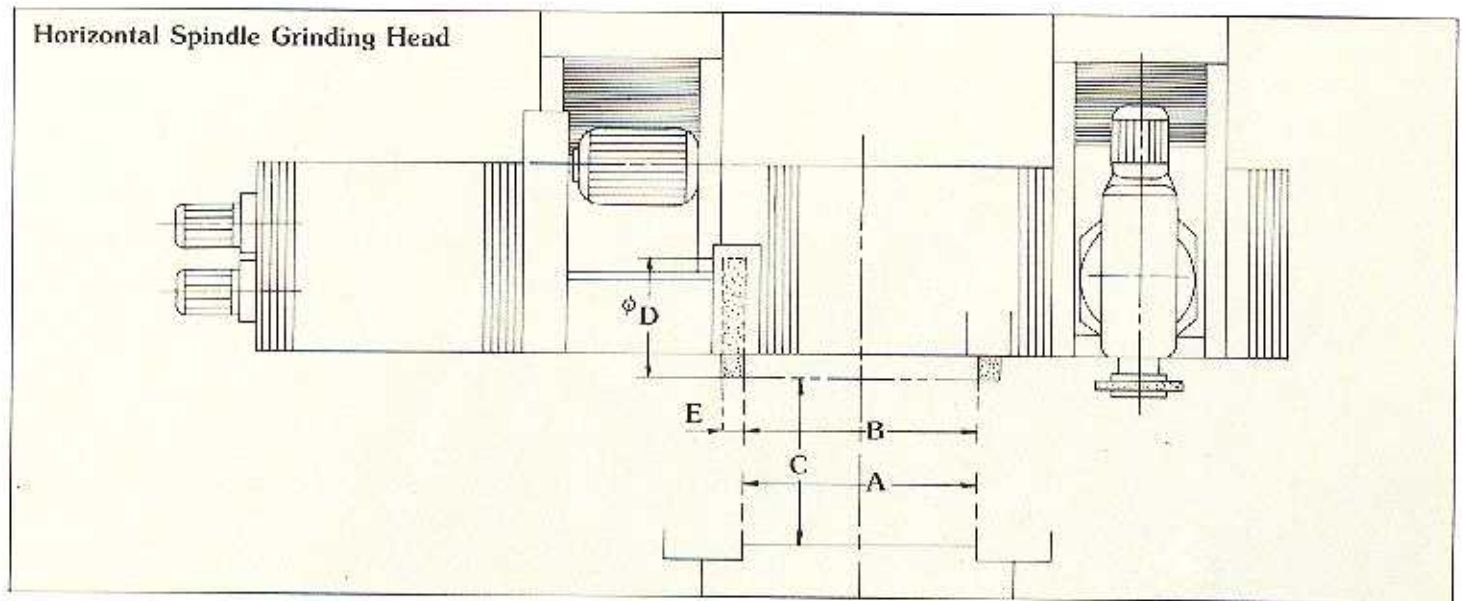
MACHINERY

TWO HEADS

Two Heads Precision Double Column Surface Grinder



GRINDING HEADS STROKE



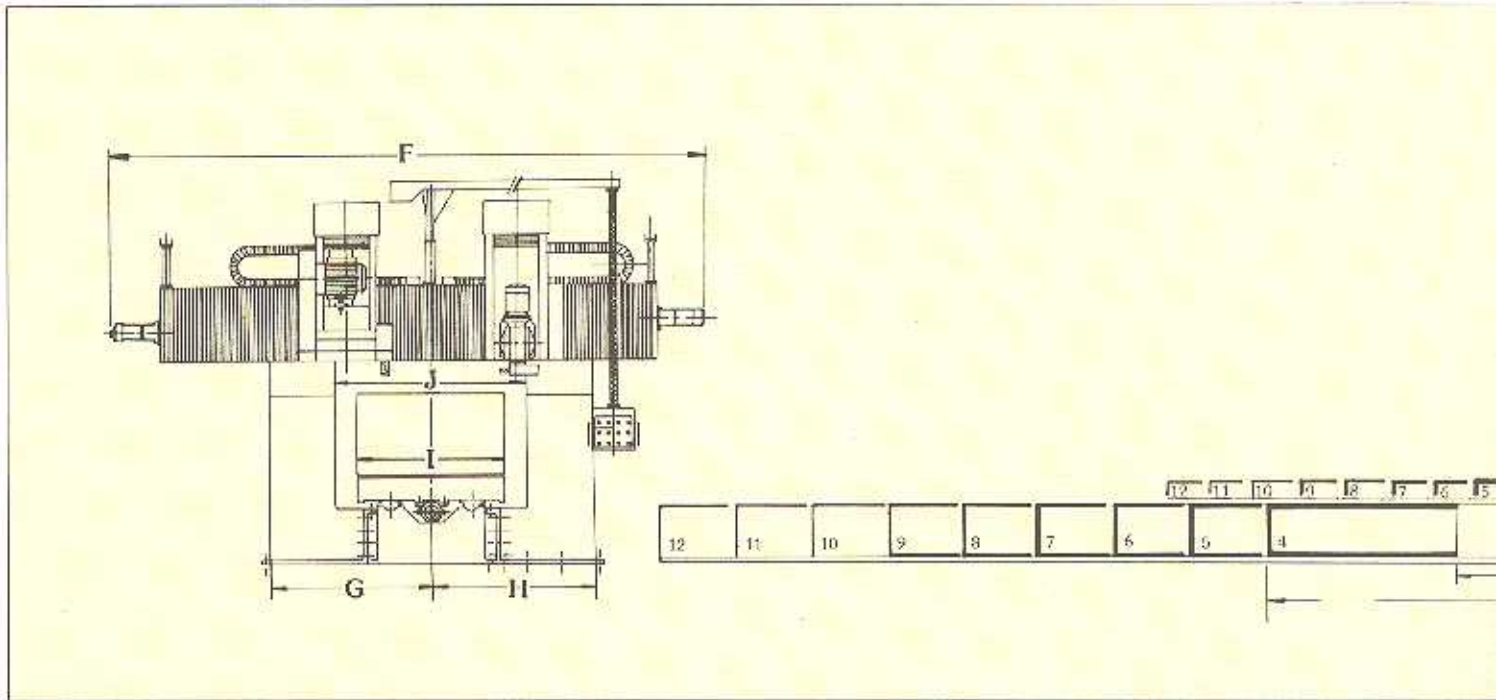
SPECIFICATIONS

UNIT:MM

ITEM MODEL	A	B	C	D	E	F	G
SGS-T12	1200	1400	650	406	50	50	406
SGS-T18	1800	2200	900	610	100	50	406

We follow a policy of continuous improvement of all our products, reserving the right to change specifications, mechanics, or designs at any time without notice or obligation.

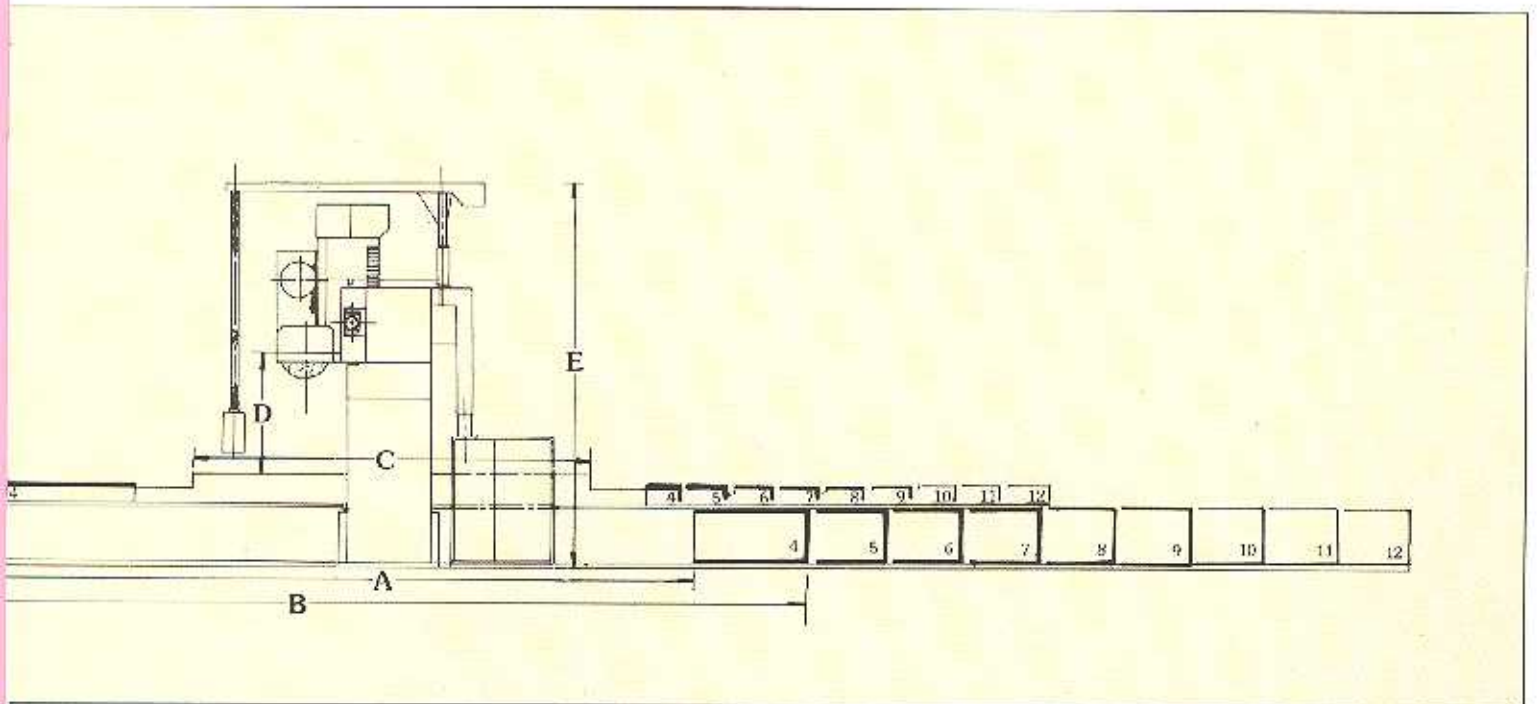
SUPER TWO HEADS



SPECIFICATIONS

ITEM \ MODEL	SGS-T4018	SGS-T5018	SGS-T6018	SGS-T7018
A	8000 (320")	10000 (393.7")	12000 (472.5")	14000 (551")
B	10000 (393.7")	12500 (492.1")	15000 (590.5")	17500 (689")
C	4000 (157.4")	5000 (198.5")	6000 (236.2")	7000 (275.6")
D	1200 (47.2")	1200 (47.2")	1200 (47.2")	1200 (47.2")
E	4200 (165.3")	4200 (165.3")	4200 (165.3")	4200 (165.3")
F	7140 (281")	7140 (281")	7140 (281")	7140 (281")
G	1950 (76.8")	1950 (76.8")	1950 (76.8")	1950 (76.8")
H	1950 (76.8")	1950 (76.8")	1950 (76.8")	1950 (76.8")
I	1800 (70.8")	1800 (70.8")	1800 (70.8")	1800 (70.8")
J	2300 (90.5")	2300 (90.5")	2300 (90.5")	2300 (90.5")

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UNIT:MM

SGS-T8018	SGS-T9018	SGS-T10018	SGS-T11018	SGS-T12018
16000 (630")	18000 (708.7")	20000 (787.5")	22000 (866")	24000 (945")
20000 (787.4")	22500 (885.8")	25000 (984.2")	27500 (1082.7")	30000 (1181")
8000 (315")	9000 (354.3")	10000 (393.7")	11000 (433")	12000 (472.5")
1200 (47.2")	1200 (47.2")	1200 (47.2")	1200 (47.2")	1200 (47.2")
4200 (165.3")	4200 (165.3")	4200 (165.3")	4200 (165.3")	4200 (165.3")
7140 (281")	7140 (281")	7140 (281")	7140 (281")	7140 (281")
1950 (76.8")	1950 (76.8")	1950 (76.8")	1950 (76.8")	1950 (76.8")
1950 (76.8")	1950 (76.8")	1950 (76.8")	1950 (76.8")	1950 (76.8")
1800 (70.8")	1800 (70.8")	1800 (70.8")	1800 (70.8")	1800 (70.8")
2300 (90.5")	2300 (90.5")	2300 (90.5")	2300 (90.5")	2300 (90.5")



SUPER TWO HEADS

SPECIFICATIONS

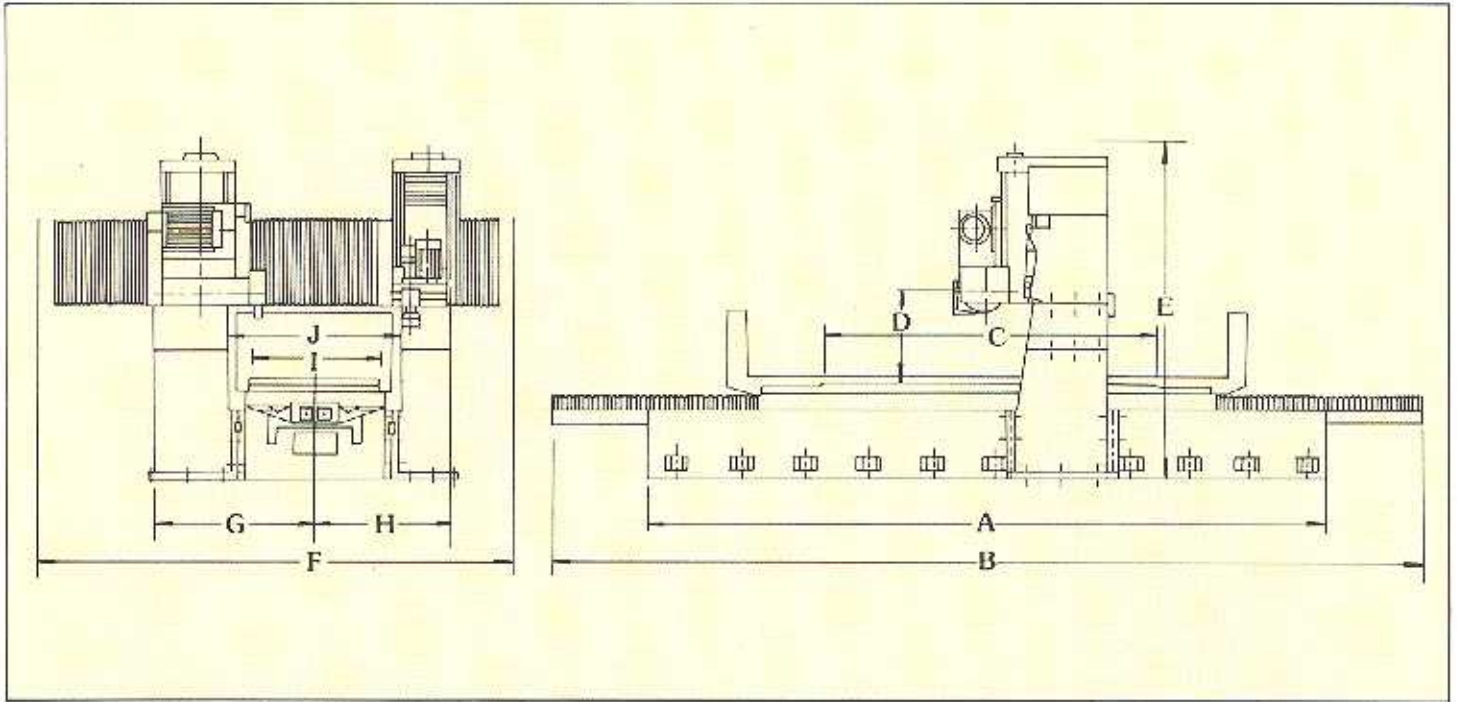
ITEM	MODEL	SGS-T4018	SGS-T5018	SGS-T6018
TABLE SURFACE (W. × L.)		1800 × 4000 (70¾" × 157½")	1800 × 5000 (70¾" × 197")	1800 × 6000 (70¾" × 236¼")
MAX. GRINDING SURFACE (W. × L.)		2200 × 4100 (86½" × 161½")	2200 × 5100 (86½" × 200¾")	2200 × 6100 (86½" × 240")
MAX. TABLE LONGITUDINAL TRAVEL		4200 (165¼")	5200 (204¾")	6200 (244")
MAX. WHEEL HEAD CROSS TRAVEL				
MAX. DISTANCE BETWEEN SPINDLE CENTER AND TABLE SURFACE (H. AXLE)				
MAX. DISTANCE BETWEEN WHEEL TOP AND TABLE SURFACE (V. AXLE)				
INCLINATION OF UNIVERSAL HEAD				
VARIABLE TABLE SPEED BY OIL CYLINDER				
AUTOMATIC CROSS MOVEMENT				
DOWNFEED HANDWHEEL MIN. SCALE				
CROSSFEED HANDWHEEL MIN. SCALE				
LONGITUDINAL ADJUSTABLE TRAVEL		150 ~ 4200 (6" ~ 165¼")	150 ~ 5200 (6" ~ 204¾")	1500 ~ 6200 (6" ~ 244")
CROSS ADJUSTABLE TRAVEL				
SPINDLE MOTOR (H. AXLE)				
SPINDLE MOTOR (V. AXLE)				
HYDRAULIC PUMP MOTOR			25HP 6P	
AUTO CROSSFEED MOTOR				
AUTO DOWNFEED MOTOR				
GRINDING WHEEL (H. AXLE) (OD × ID × H)				
GRINDING WHEEL (V. AXLE) (OD × ID × H)				
ROTATION SPEED OF SPINDLE (H. AXLE)				
ROTATION SPEED OF SPINDLE (V. AXLE)				
FLOW RATE OF COOLANT PUMP			180l/min	
MAX. LOAD CAPACITY IN ADDITION TO MAGNETIC CHUCK		8000kgs	10000kgs	12000kgs
MACHINE WEIGHT		45000kgs	55000kgs	65000kgs

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UNIT:MM

SGS-T7018	SGS-T8018	SGS-T9018	SGS-T10018	SGS-T11018	SGS-T12018
1800 × 7000 (70¾" × 275½")	1800 × 8000 (70¾" × 315")	1800 × 9000 (70¾" × 354¼")	1800 × 10000 (70¾" × 393¾")	1800 × 11000 (70¾" × 433")	1800 × 12000 (70¾" × 472½")
2200 × 7100 (86½" × 279½")	2200 × 8100 (86½" × 319")	2200 × 9100 (86½" × 358¼")	2200 × 10100 (86½" × 397½")	2200 × 11100 (86½" × 437")	2200 × 12100 (86½" × 476¼")
7200 (283½")	8200 (322¾")	9200 (362¼")	10200 (401½")	11200 (441")	12200 (480¼")
2300 (90½")					
1200 (47¼")					
950 (37½")					
± 90°					
5 ~ 25M/min (16 ~ 80fpm)					
0 ~ 50 (0 ~ 2")					
0.005 (0.0002")					
0.005 (0.0002")					
150 ~ 7200 (6" ~ 283½")	150 ~ 8200 (6" ~ 322¾")	150 ~ 9200 (6" ~ 362¼")	150 ~ 10200 (6" ~ 401½")	150 ~ 11200 (6" ~ 441")	150 ~ 12200 (6" ~ 480¼")
2300 (90½")					
25HP 4P					
10HP 4P					
30HP 6P					
850W DC SERVO MOTOR					
850W DC SERVO MOTOR					
610 × 254 × 100 (24" × 10" × 4")					
406 × 127 × 50 (16" × 5" × 2")					
1050RPM					
1700RPM					
250ℓ/min			300ℓ/min		
14000kgs	16000kgs	18000kgs	20000kgs	22000kgs	24000kgs
75000kgs	85000kgs	95000kgs	105000kgs	115000kgs	125000kgs

TWO HEADS



SPECIFICATIONS

UNIT-MM

ITEM \ MODEL	SGS-T2012	SGS-T3012	SGS-T4012	SGS-T5012	SGS-T6012
A	4200 (165")	6200 (244")	8200 (323")	10200 (402")	12200 (480")
B	6200 (244")	8600 (339")	10900 (430")	13200 (520")	15500 (610")
C	2000 (79")	3000 (118")	4000 (158")	5000 (197")	6000 (236")
D	150-850 (6"-33.5")	150-850 (6"-33.5")	150-850 (6"-33.5")	150-850 (6"-33.5")	150-850 (6"-33.5")
E	3500 (138")	3500 (138")	3500 (138")	3500 (138")	3500 (138")
F	4300 (169")	4300 (169")	4300 (169")	4300 (169")	4300 (169")
G	1400 (55")	1400 (55")	1400 (55")	1400 (55")	1400 (55")
H	1200 (47")	1200 (47")	1200 (47")	1200 (47")	1200 (47")
I	1200 (47")	1200 (47")	1200 (47")	1200 (47")	1200 (47")
J	1600 (63")	1600 (63")	1600 (63")	1600 (63")	1600 (63")

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TWO HEADS

SPECIFICATIONS

(☞ OPTIONAL)

UNIT:MM

ITEM	MODEL	SGS-T2012	SGS-T3012	SGS-T4012	SGS-T5012	SGS-T6012
TABLE SURFACE (W. × L.)		1200 × 2000 (47¼" × 79")	1200 × 3000 (47¼" × 118¼")	1200 × 4000 (47¼" × 157¼")	1200 × 5000 (47¼" × 197")	1200 × 6000 (47¼" × 236¼")
MAX. GRINDING SURFACE (W. × L.)		1220 × 2030 (48" × 80")	1220 × 3050 (48" × 120")	1220 × 4050 (48" × 159¼")	1220 × 5050 (48" × 198¼")	1220 × 6050 (48" × 238")
MAX. TABLE LONGITUDINAL TRAVEL		2100 (82¼")	3100 (122")	4100 (161½")	5100 (200¼")	6100 (240")
MAX. WHEEL HEAD CROSS TRAVEL		1.270 (50")				
MAX. DISTANCE BETWEEN SPINDLE CENTER AND TABLE SURFACE (H. AXLE)		850 (33¼")				
MAX. DISTANCE BETWEEN WHEEL TOP AND TABLE SURFACE (V. AXLE)		650 (25½")				
INCLINATION OF UNIVERSAL HEAD		+90°				
VARIABLE TABLE SPEED BY OIL CYLINDER		5 - 25m/min (16 - 80fpm)				
AUTOMATIC CROSS MOVEMENT		0 - 25 (0 - 1")				
DOWNFEED HANDWHEEL MIN. SCALE		0.005 (0.0002")				
CROSSFEED HANDWHEEL DIAL	PER GRADUATION	0.02 (0.001")				
	PER REVOLUTION	5 (0.2")				
LONGITUDINAL ADJUSTABLE TRAVEL		150 - 2100 (6" - 82¼")	150 - 3100 (6" - 122")	150 - 4100 (6" - 161½")	150 - 5100 (6" - 200¼")	150 - 6100 (6" - 240¼")
CROSS ADJUSTABLE TRAVEL		0 - 1240 (0 - 48¾")				
SPINDLE MOTOR (H. AXLE)		15HP 4P * 20HP 4P				
SPINDLE MOTOR (V. AXLE)		7½HP 4P				
HYDRAULIC PUMP MOTOR		10HP 6P	15HP 6P			25HP 6P
AUTO. CROSSFEED MOTOR		1/4 HP 4P				
AUTO. DOWNFEED MOTOR		850W DC SERVO MOTOR				
GRINDING WHEEL (H. AXLE) (OD × ID × H)		406 × 127 × 50 * 510 × 127 × 100 (16" × 5" × 2") (20" × 5" × 4")				
GRINDING WHEEL (V. AXLE) (OD × ID × H)		406 × 127 × 50 (16" × 5" × 2")				
ROTATION SPEED OF SPINDLE (H. AXLE)		1500 RPM				
ROTATION SPEED OF SPINDLE (V. AXLE)		1700 RPM				
FLOW RATE OF COOLANT PUMP		90ℓ/min		135ℓ/min		180ℓ/min
MAX. LOAD CAPACITY IN ADDITION TO MAGNETIC CHUCK		3800kgs	4800kgs	5600kgs	7000kgs	8400kgs
MACHINE WEIGHT		23000kgs	26000kgs	29000kgs	32000kgs	35000kgs

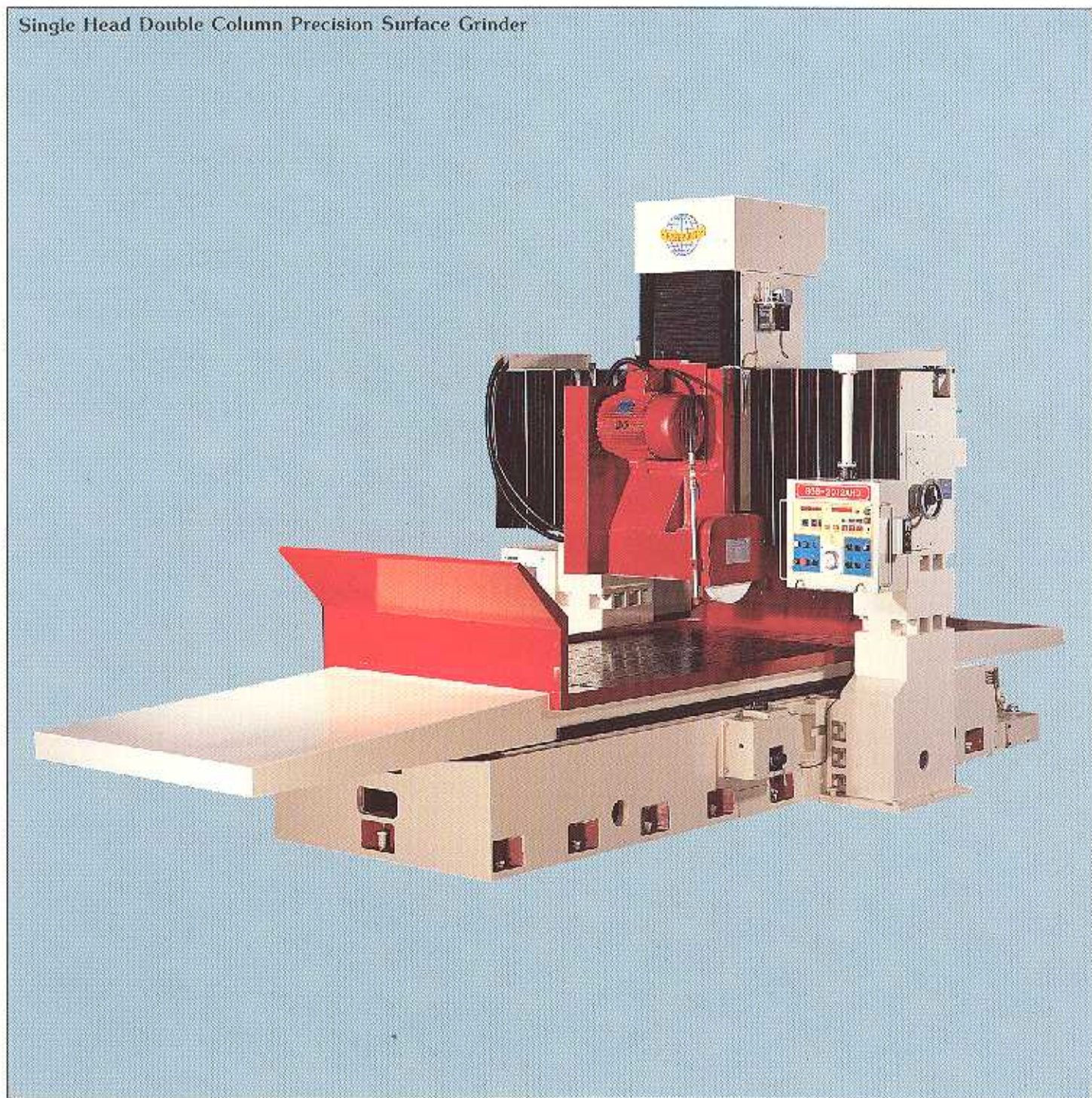
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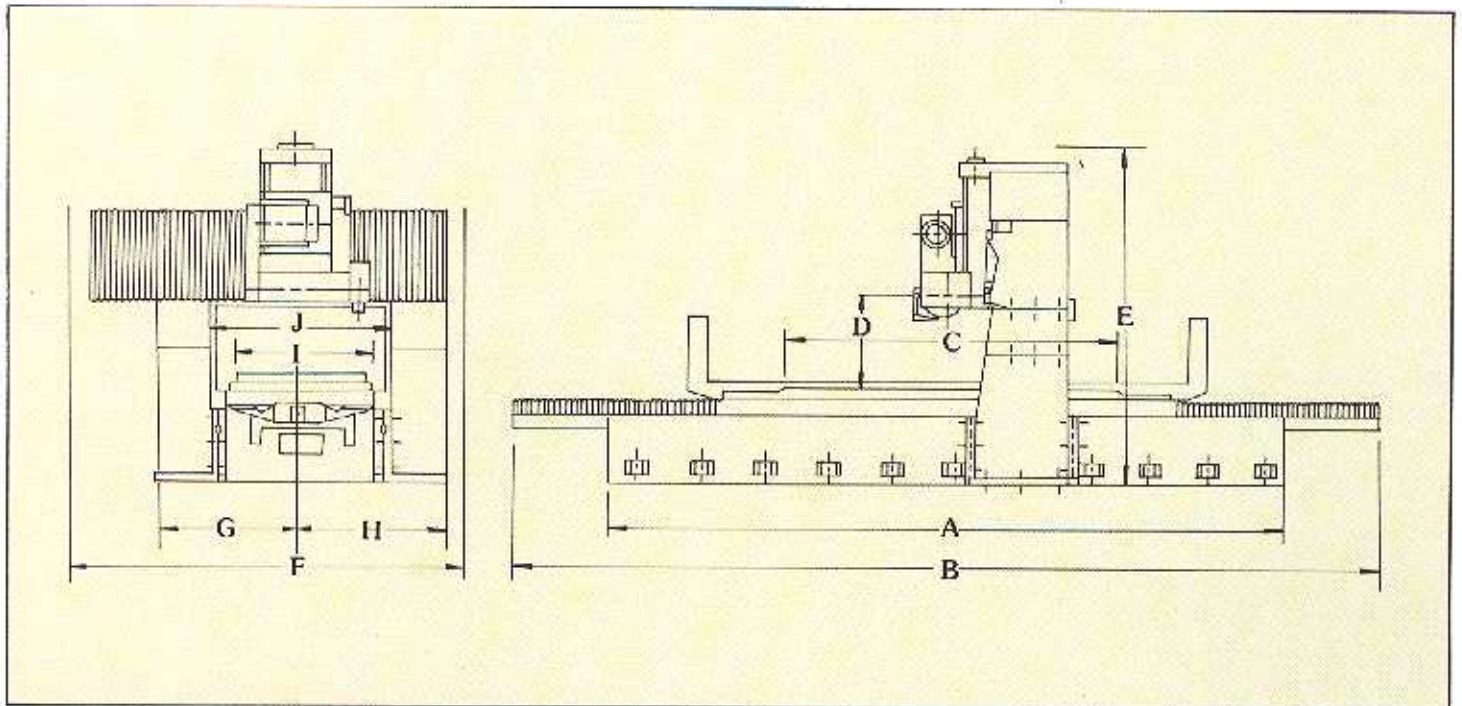
MACHINERY

ONE HEAD

Single Head Double Column Precision Surface Grinder



ONE HEAD



SPECIFICATIONS

UNIT:MM

ITEM \ MODEL	SGS-1512	SGS-2012	SGS-2512	SGS-3012
A	3200 (126")	4200 (165")	5200 (205")	6200 (244")
B	4700 (185")	6200 (244")	7700 (303")	9200 (362")
C	1500 (59")	2000 (79")	2500 (98")	5000 (118")
D	130-645 (5"-25")	130-645 (5"-25")	130-645 (5"-25")	130-645 (5"-25")
E	2600 (102")	2600 (102")	2600 (102")	2600 (120")
F	3050 (120")	3050 (120")	3050 (120")	3050 (120")
G	1100 (43")	1100 (43")	1100 (43")	1100 (43")
H	1100 (43")	1100 (43")	1100 (43")	1100 (43")
I	1200 (47")	1200 (47")	1200 (47")	1200 (47")
J	1600 (63")	1600 (63")	1600 (63")	1600 (63")

We follow a policy of continuous improvement of all our products, reserving the right to change specifications, mechanics, or designs at any time without notice or obligation.



MACHINERY

ONE HEAD

SPECIFICATIONS

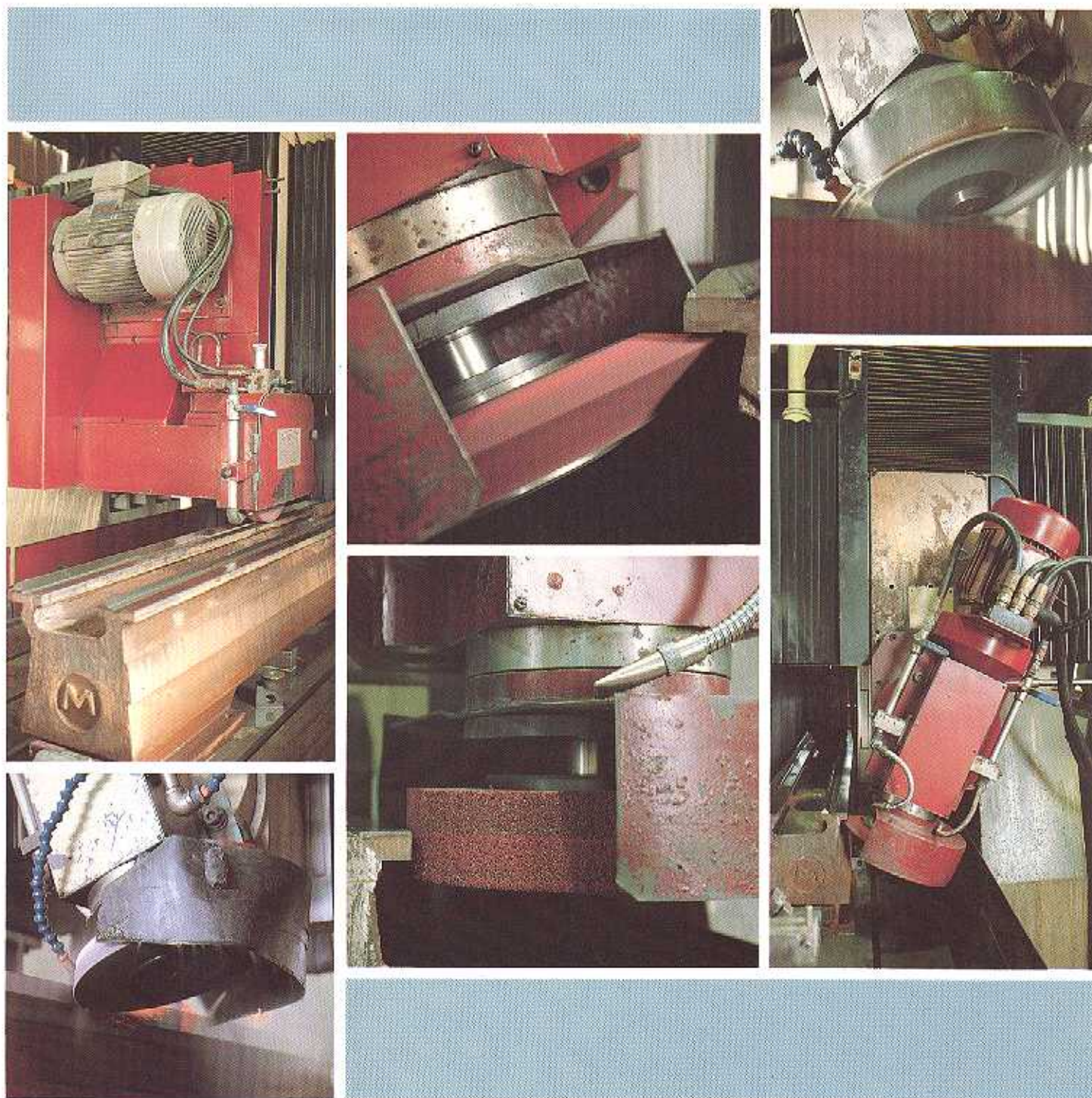
{ * OPTIONAL }

UNIT:MM

MODEL		SGS-1512	SGS-2012	SGS-2512	SGS-3012
ITEM					
TABLE SURFACE (W. × L.)		1200 × 1500 (47¼" × 59¼")	1200 × 2000 (47¼" × 79")	1200 × 2500 (47¼" × 98½")	1200 × 3000 (47¼" × 118¼")
MAX. GRINDING SURFACE (W. × L.)		1220 × 1520 (48" × 60")	1220 × 2030 (48" × 80")	1200 × 2540 (48" × 100")	1220 × 3050 (48" × 120")
MAX. TABLE LONGITUDINAL TRAVEL		1600 (63")	2100 (83")	2600 (102¼")	3100 (122")
MAX. WHEEL HEAD CROSS TRAVEL		1,270 (50")			
MAX. DISTANCE BETWEEN SPINDLE CENTER AND TABLE SURFACE		130 ~ 645 (5" ~ 25½")			
VARIABLE TABLE SPEED BY OIL CYLINDER		5 ~ 25 m/min (16 ~ 80 fpm)			
AUTOMATIC CROSS MOVEMENT		0 ~ 25 (0 ~ 1")			
DOWNFEED HANDWHEEL MIN. SCALE		0.005 (0.0002")			
CROSSFEED HANDWHEEL DIAL	PER GRADUATION	0.02 (0.001")			
	PER REVOLUTION	5 (0.2")			
LONGITUDINAL ADJUSTABLE TRAVEL		150 ~ 1600 (6" ~ 63")	150 ~ 2100 (6" ~ 83")	150 ~ 2600 (6" ~ 102¼")	150 ~ 3100 (6" ~ 122")
CROSS ADJUSTABLE TRAVEL		0 ~ 1240 (0 ~ 49")			
SPINDLE MOTOR		10HP 4P * 15HP 4P			
HYDRAULIC PUMP MOTOR		7½HP 6P	10HP 6P		15HP 6P
AUTO CROSSFEED MOTOR		1/4HP 4P			
AUTO DOWNFEED MOTOR		850W DC SERVO MOTOR			
GRINDING WHEEL (OD × ID × H)		406 × 127 × 50 (16" × 5" × 2") * 510 × 127 × 50 (20" × 5" × 2")			
ROTATION SPEED OF SPINDLE		1700 RPM			
FLOW RATE OF COOLANT PUMP		60ℓ/min	90ℓ/min		
MAX. LOAD CAPACITY IN ADDITION TO MAGNETIC CHUCK		2100kgs	2800kgs	3500kgs	4200kgs
MACHINE WEIGHT		12000kgs	14000kgs	16000kgs	18000kgs

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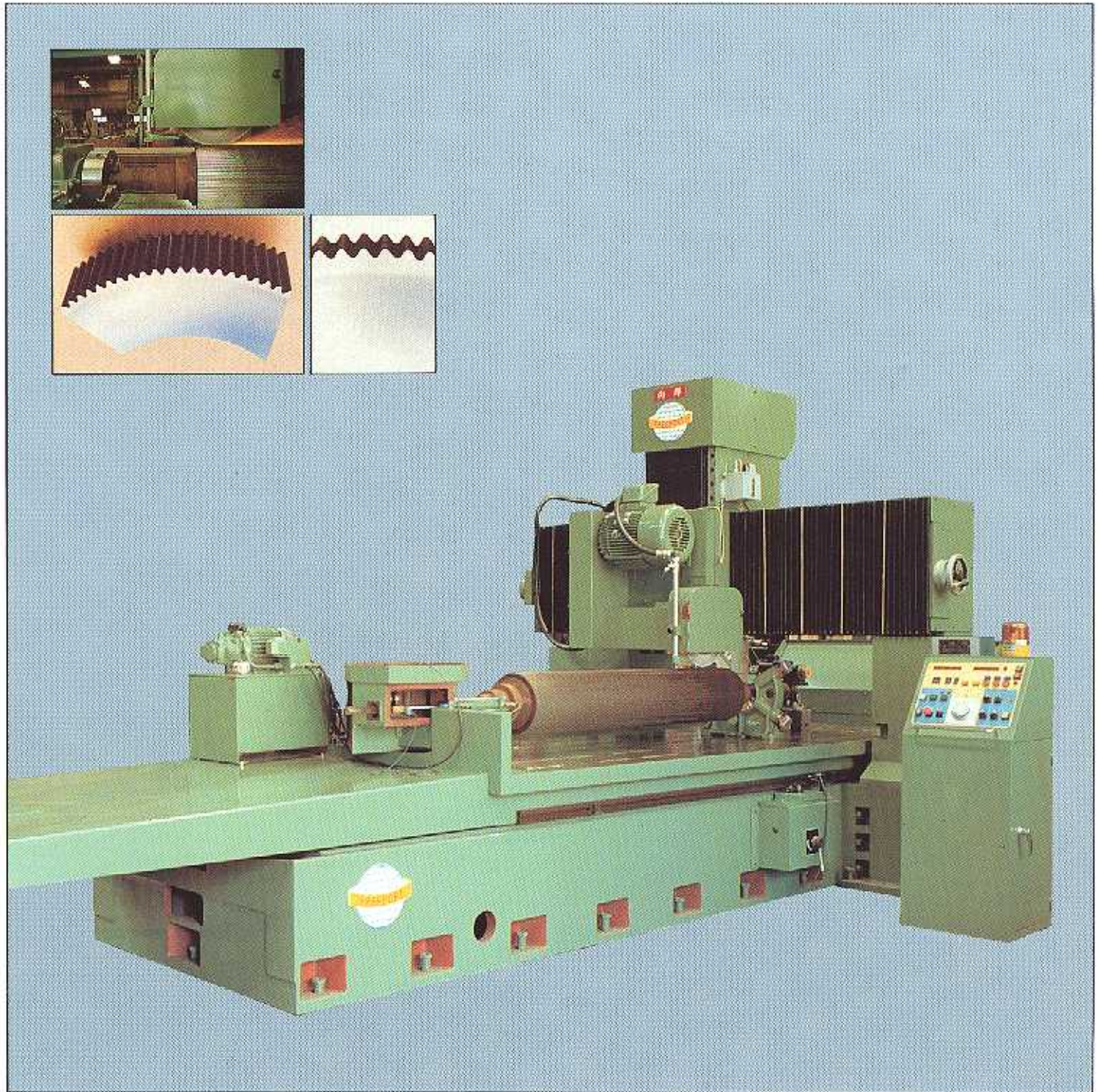
PROCESS EXAMPLE





MACHINERY

PRECISION CORRUGATING ROLL MACHINE



CNC DOUBLE COLUMN SURFACE GRINDER

