



# ***DOWELL***®

## High Precision Surface Grinders

**Abrasive grinding solutions for manufacturing and machining applications throughout North America. Our experienced staff and network of resources are consolidated to provide a one-stop experience.**

**- Surface Grinding -**

GMSi Group, Inc.



## High Precision Grinding Machines

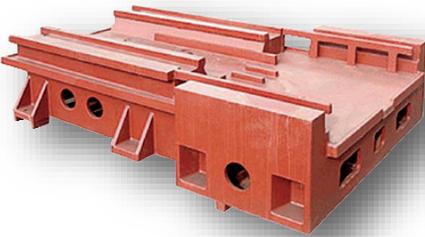
Our full series includes saddle type, moving column and double column machines. All models uphold the highest standards in machine tool manufacturing methods yielding decades of accuracy, rigidity and operator ease of operation.

Continued investments are made in our methods of manufacturing. Our newest manufacturing plant incorporates the latest in environment controls, quality inspection and continued partnerships with world-leading OEM suppliers.



### GMSi Group, Inc.

As with all GMSi supported equipment it will come with our **Total Cooperation Policy** where the factory, our US based support-team and multiple domestic resources are aligned and bound to keeping your equipment operating at maximum efficiency.



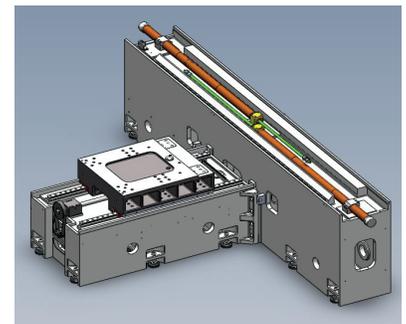
All machine castings are manufactured from high quality **MEEHANITE** class FC cast iron. A patented method only available to select foundries. The Chang Iron (Dowell owned) foundry is the only one licensed in Taiwan.

A dense fine grain structure assures casting solidity and consistent physical properties making Dowell machine bases far superior to competing brands.

### 3D Simulation

We use the latest 3D simulation and analysis software to obtain the best machine layout assuring the highest rigidity and strength of the cast iron.

Continuous developments to reduce harmonic frequency and maximized loads and feed pressures.



### Double V-ways

Precision hand scraped double V-ways in both the longitudinal and cross feed axis. Standard design for semi-auto and **AND** models. Larger DSG-3060/3080AND and CNC models will use linear ways.

## Our Base Models

Machines for supplemental production, tool room applications or as a budget solutions

All levels of automation are held to the highest standards of manufacturing using only high quality components. Even our most basic models use the Meehanite casting technology.

Manual machines such as our DSG-618B uses "AA" grade steel roller guide ways for the smoothest X-axis manual traverse.



### Specification Levels

- H** Manual Pulse Generator
- 1A** Longitudinal Hydraulic Table Drive
- 2A** 1A + Cross Motor Device
- 3A** 2A + Rapid up/dn, Motorized
- CAHD** Full Automation in 3-axis
- AND** PLC Automation in 3-axis with LCD Display

### Standard Accessories

- Factory tolerance report.
- Tool box with all necessary tools
- Leveling pads and bolts
- Diamond dresser and base
- Grinding wheel and flange
- Touch up paint

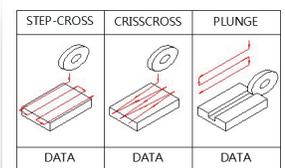
- Factory one-year warranty
- Operator manual and schematics



### AND Operator Control

PLC automation in 3-Axes (X, Y, Z) reach high efficiency, accuracy and repeatability.

The AND color LCD touch screen makes application set-up simple and easy for any operator level of experience.



Setting screen for grinding

CRISSCROSS Y: 0000,000 [RESET]

TOTAL STOCK REMOVAL 000,000mm FEED SELECT [SEND] [SELECT]

FINE FEEDING AMOUNT 000,000mm FEED SELECT [FRONT] [REAR]

COARSE INCREMENT 000,000mm FEED SELECT [PARK SELECT]

FINE INCREMENT 000,000mm FEED SELECT [LEFT] [RIGHT]

SPARKOUT PASSES 000,000mm RETRACT [YES/NO]

CLEARANCE 000,000mm

CYCLE (S) PER ADDRESS 000,000mm

[BACK] CYCLE TIME: 00.325 SEC PARTS COUNTER: 00.325

Data input

7	8	9	↑
4	5	6	↓
1	2	3	CLR
0	-	ENT	

SETTING [DRESS]

Can choose three grinding modes

# DOWELL

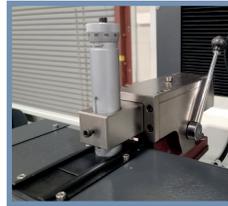
AND Automatic Feed  
Easy to navigate



Micro Cross Feed



Fagor DRO Display



Overhead Dressing

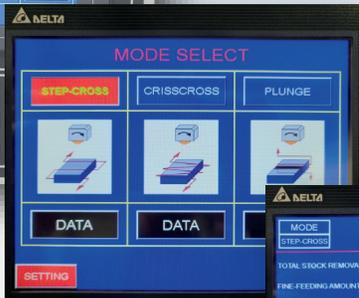


Wheel Balancing

## Specifications

Model		DSG-618	DSG-818	DSG-820	DSG-1224	DSG-
General	Standard Mag Chuck	150 x 450mm	200 x 450mm	200 x 500mm	300 x 600mm	400 x 8
	Max Grinding Capacity (L x W)	475 x 160mm	475 x 210mm	550 x 220mm	650 x 340mm	850 x 4
	Table to Spindle Center	400mm	400mm	380mm		
Longitudinal	Manual Travel	485mm		600mm	700mm	900
	Hydraulic Traverse	485mm		510mm	650mm	850
	Hydraulic Feed Rate	1 ~ 25m /min.			1 ~ 19m /min.	
	Hydraulic Motor	1hp			2hp	
Cross Movement	Cross Feed (Manual / Auto)	180 / 180mm	210 / 210mm	230 / 230mm	340 / 310mm	450 / 4
	Hand Feed / Revolution	5mm				
	Hand Feed / Graduation	0,02mm				
	Continuous Cross Feed (60Hz)	650 mm /min.			1100mm /min.	
	Incremental Cross Feed	0,5 ~ 10mm /min.				
Cross Feed Motor	25w	25w	40w	80w	80	
Down Feed	Rapid Feed (Slow Feed)	230 (29)mm /min.			230 (29)mm /min.	
	Hand Feed / Revolution	1mm	AND: 0,1mm /MPG		1mm	AND: 0,1mm /MPG
	Hand Feed / Graduation	0,005mm	AND: 0,001mm /MPG		0,005mm	AND: 0,001mm /MPG
Spindle	Grinding Wheel	180 x 13 x 31.75mm			355 x 38 x 127mm	
	Spindle Speed (60Hz)	3600 rpm			1750 rpm	
	Spindle Drive Motor	1.5hp	1.5hp	2hp (3hp)	5hp (7.5hp Opt.)	

PLC Surface Grinders  
 Integrate touch-screen display



Choose grinding mode



Grind Cycle Parameters



Variable Electromagnet



Manual Pulse Generator  
 x1, x5, x10

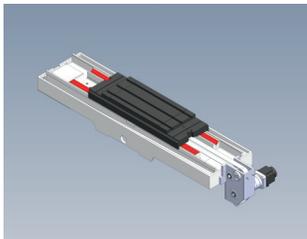
1632	DSG-2040	DSG-2060	DSG-2450	DSG-2460	DSG-3060	DSG-3080
1000mm	500 x 1000mm	500 x 1500mm	600 x 1200mm	600 x 1500mm	750 x 1500mm	750 x 2000mm
1500mm	1050 x 500mm	1550 x 500mm	1250 x 600mm	1500 x 600mm	1500 x 750mm	2000 x 750mm
	600mm (700mm Opt.)					
1100mm	1100mm	1600mm	1300mm	1600mm	1600mm	2100mm
	3 ~ 25m /min.					
	3hp	5hp	5hp	5hp	7.5hp	7.5hp
20mm	575 / 550mm	575 / 550mm	675 / 650mm	675 / 650mm	800 / 800mm	800 / 800mm
	5mm				AND: 0.1mm / MPG	
	0,02mm				AND: 0.001mm / MPG	
		1000mm /min.			1000mm /min.	
	1 ~ 20mm /min.				1 ~ 20mm /min.	
		1/4hp (Siemens)			500w (AC Servo)	
		500mm /min.			500mm /min.	
		AND: 0,1mm /MPG			AND: 0,1mm /MPG	
		AND: 0,001mm /MPG			AND: 0,001mm /MPG	
	355 x 38 x 127mm		406 x 50 x 127mm		510 x 50 x 203mm	
	1750 rpm		1750 rpm		1750 rpm	
	7.5hp (10hp Opt.)		10hp		15hp	15hp (20hp Opt.)

Higher than stated grinding motor HP are available

# CNC and ANDII Surface Grinders

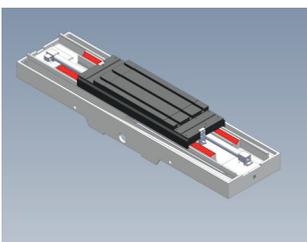


## Table Drive Options



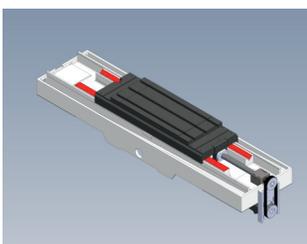
### X-Axis, Belt Drive

One V and one Flat slide way  
1 ~ 32 m/min.



### X-Axis, Hydraulic Drive

One V and one Flat slide way  
5 ~ 25 m/min.



### X-Axis, Servo Drive

One V and one Flat slide way  
1 ~ 15 m/min.

## High production and Diverse Range of Applications

**FANUC CNC** control and drives are available with a simple editing program to meet all grinding requirements in various work pieces.

Also available with Mitsubishi and SYNTEC.

## AND II:

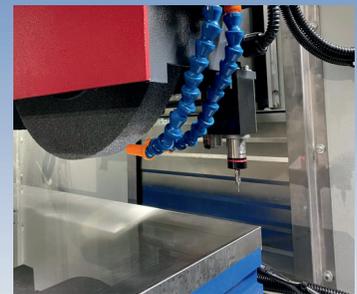
Our easy to operate conversational program with simple dialogue control makes advanced CNC applications achievable by all levels of experience.

## Profile Grinding:

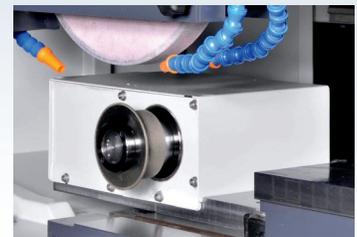
Combining 3-axis CNC drives, high precision spindles, powerful coolant supply and in-process dressing a multitude of profiles can be ground. Contact us with your application.

## Factory Tolerance Report:

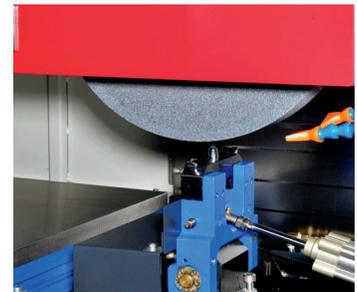
All machines are tested and measured at the factory for tolerances achieved. The report will be verified by our field technicians upon installation.



Renishaw In Process Probe



Roll Dressing Options



Multi point CNC dresser



Automatic Online Balancing



NC Indexing Tables  
and Tilting Tables



## CNC and AND II Surface Grinders

Uncompromised high precision and exact repeatability under demanding production requirements. We offer our open CNC controls and a menu of canned operations that can be chosen from an easy to navigate conversational program.

Dowell continues in design and technique development driven by our customers applications.

### High Stiffness, Accuracy, Efficiency and Superior Stability

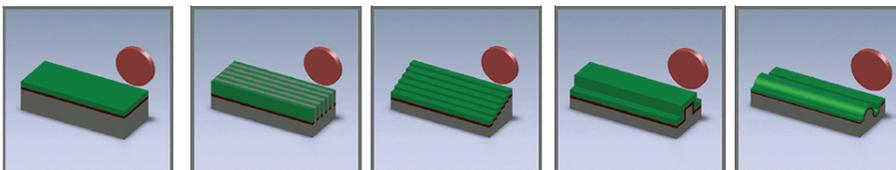
	DSG-820	DSG-1224	DSG-2032	DSG-1640	DSG-1660	DSG-2450	DSG-2460	DSG-2480
Table Size (L x W)	500 x 200mm	600 x 300mm	800 x 500mm	1000 x 450mm	1500 x 450mm	1200 x 600mm	1500 x 600mm	2000 x 600mm
Table to spindle center	450mm	680mm						
Hydraulic Table Feed	5 ~ 25 m/min.							
Servo Table Feed	1 ~ 15 m/min.							
Belt Table Feed	1 ~ 23 m/min.							
Cross & Vertical Feed	1000mm / min. (MPG: X1: 0.001mm / X5: 0.005mm / X10: 0.1mm)							
Grinding Wheel (mm)	180 x 13 x 31.75	355 x 38 x 127	405 x 50 x 127					
Spindle Speed (60hz)	3600-rpm	1750-rpm						
Spindle Grinding Motor	3-hp	10-hp	15-hp	10-hp	10-hp	15-hp	20-hp	20-hp
X-axis Hydraulic Motor	2-hp	3-hp	5-hp	5-hp	5-hp	7.5-hp	7.5-hp	10-hp
X-axis Servo Motor (opt.)	500w	750w	1kw	750w	750w	1kw	1kw	1kw
Y-axis Servo Motor	500w	500w	1kw	500w	500w	1kw	1kw	1kw
Z-axis Servo Motor	500w	1.5kw	2kw	2kw	3kw	3kw	3.5kw	4.5kw

Higher than stated grinding motor HP are available

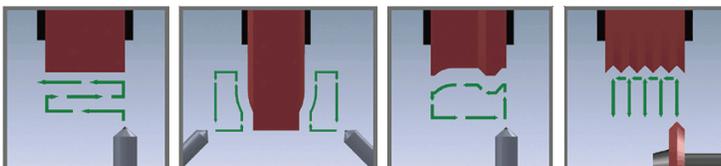
### AND II Surface Grinders

The AND II operator control system is a user-friendly solution that gives inexperienced operators the ability to master difficult applications. Our simple dialogue control only requires size inputs to start the grind cycle. The machine comes with our standard grinding and dressing modes but custom operations can be ordered per your application.

#### Grinding Modes



#### Dressing Modes



[www.gmsigroup.com](http://www.gmsigroup.com)



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