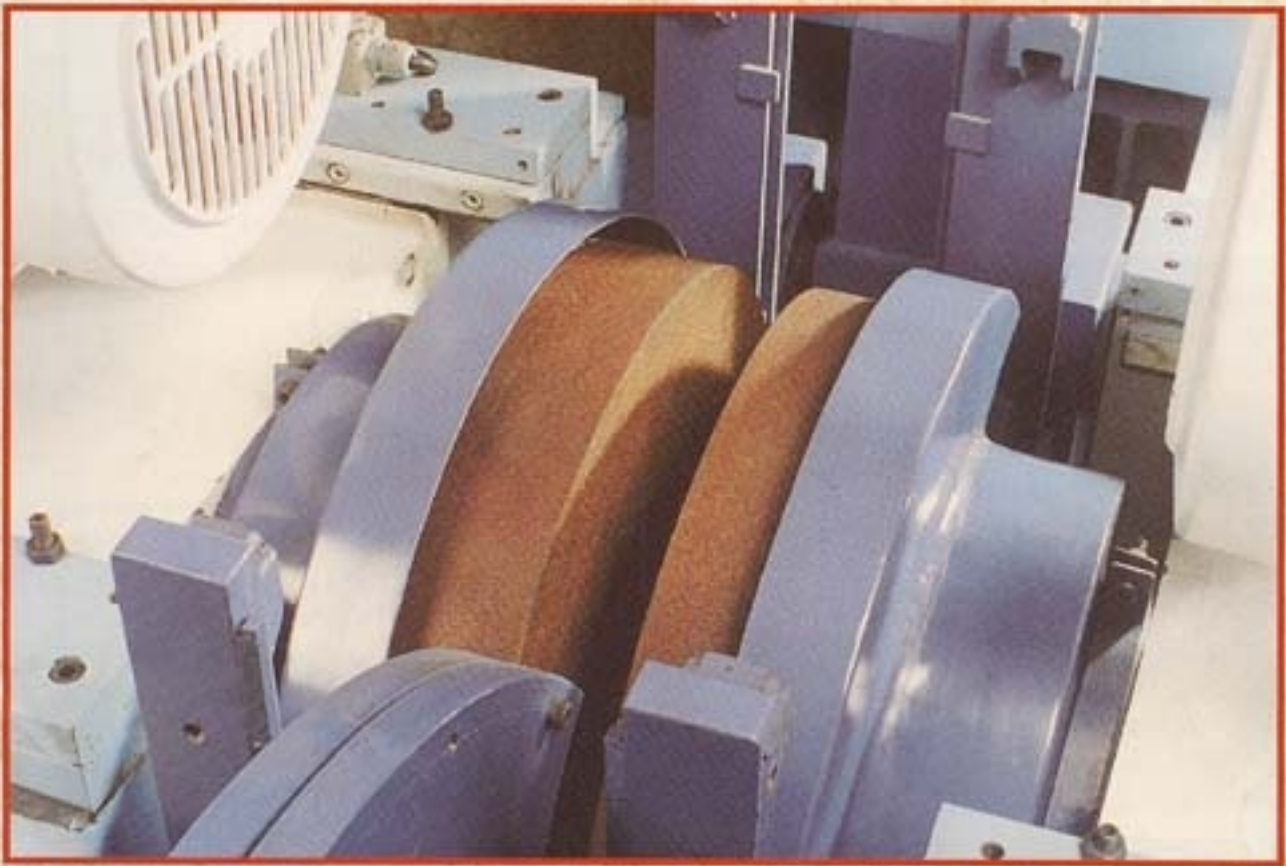


HORIZONTAL SPINDLE
DOUBLE DISC GRINDER



THE
RUGGED ★ ROBUST ★ RELIABLE
WORK HORSE

PRINCIPLE OF OPERATION

Double Disc Grinders have been developed to grind, two parallel flat surfaces, with the help of two grinding wheel faces, opposed to each other. The workpiece is advanced between the wheels by various methods,

either free floating, or clamped, depending on the shapes, sizes, quantities as well as the stock removals required.

ADVANTAGES

COMPARED TO CONVENTIONAL, FLAT SURFACE GRINDERS

- High production rate
- High Parallelism
- Heavy stock removals
- Close tolerances
- Better surface finish
- Easy accessibility
- Low down time
- Low operating costs
- Facilitates easy automation
- Suitable for ferrous & non ferrous materials
- Thin components can be ground without damaging them
- Gradual stock removal throughout the work path, across the grinding wheels, permits heavy stock removal, in a single pass



INDICATIVE LIST OF COMPONENTS THAT CAN BE GROUND:-

- Alnico Magnets
- Blanking Dies
- Bearing Rings/Rollers/Needles
- Brake Linings
- Bricks
- Carbide Tips/inserts
- Castings
- Ceramic Seals
- Connecting rods
- Circlips
- Circular segmented saws
- Circular Knives
- Clutch plates
- Carbon brushes
- Compressor valves
- Crank cases
- Ceramic seals
- Cylinder blocks
- Engine valves
- Engineers' Files



- Flat ground steel or metal bars
- Ferrite magnets
- Hammers
- HSS toolbits
- Hard Disc Drive components
- Hand tools – pliers, spanners
- Keys
- Machine knives
- Piston rings
- Propeller shaft forks
- Piston pins
- Pump components/valves
- Press tool dies
- Striker forks
- Spring ends
- Segmented grinding blocks
- Screw driver ends
- Thrust washers
- Universal joint spiders
- Valve plates

CONSTRUCTIONAL FEATURES OF THE BASIC MACHINE

BASE

Welded and stress relieved silicon steel base with cross ribbings to provide a balanced compensation for thermal expansions. Rigid construction to absorb vibrations. The base is precision machine in a single setting to achieve necessary accuracies.

SLIDE WAYS

Axially sliding wheel heads, glide on V-shaped needle cages Linear Guide Systems, with highly accurate feeding of wheel heads, without any stick and slip.

SPINDLES & HOUSINGS

SPINDLE SHAFTS

Heat treated for toughness, dynamically balanced and ground spindle shafts, ensure distortion - free operations, over prolonged usage. These hollow spindle shafts have a rotary joint to allow coolant flow to the centre of grinding wheels, for efficient cooling of wheels and work pieces.

SPINDLE HOUSINGS

Shafts are housed in a robust steel housing and mounted on pre-loaded high precision angular contact ball bearings which are lubricated for life.

SPINDLE SWIVEL

Both, vertically and horizontally adjustable spindle bushings allow the spindles to be swivelled according to need.

SPINDLE FEED

Rigid, ground and nitrided lead screws driven by a worm wheel, ensure rapid and precise micro displacements of the spindles. These are operated by variable speed drive motors or manually.

DRESSING DEVICE

Rigidly mounted on precision ground mating surfaces, the dresser is coupled to a variable speed reversible motor and limit switches, which provides a rigid-arm motion for chatter-free dressing of individual, or both wheels, simultaneously.

SAFETY GUARD

A robust compartment enclosing the grinding wheels, guards the machine and the operator against the unlikely event of wheel breakage or disengagement.

FLANGES

Spindles are provided with precision flanges to accommodate nut-inserted grinding wheels.



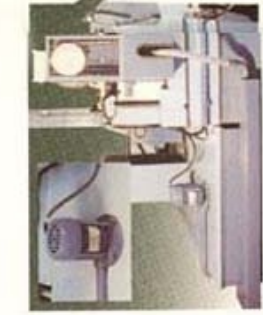


OVERHEAD CABLE BUSS BARS.
Fully encased to avoid
dangling or loose wires

CONTROL PANEL
Housing variable speed
drives, DKO's, Ammeters,
Voltsmeters and Control
Devices.

COOLANT PUMP
Rear View

MAIN SPINDLE MOTORS



DIAMOND DRESSER
Rear View



**BELT PULLEY
GUARD**

SLIDEWAYS

WHEEL HEAD
Manual Feeder

MOTOR & DRIVE SYSTEM
for work-piece carrier

ROTARY CARRIER SYSTEM
with forward and reverse
sliding arrangement

HORIZONTAL SPINDLE DOUBLE DISC GRINDEI

Model: DDG-500 Tooling up for Rotary Feed Arrangement

COOLING & FILTRATION SYSTEMS

An adequate capacity coolant tank and pump, feed the hollow spindles as well as the hose assembly, which forces coolant directly between the wheels.

Outlets of these systems empty back into the tank, which houses the sedimentation system comprising of various levels, baffles and meshes, to effectively cool and filter the coolant. Special filtering systems are offered as an option.

WORK-PIECE FEEDERS

THROUGH-FEED

Work-pieces are fed between two guide rails, one on top of the other, by means of a belt, chain or roller system. The workpiece path between the guide rails, is a straight line.

This gives the highest rate of output.

ROTARY-FEED

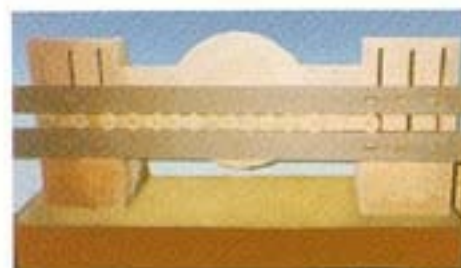
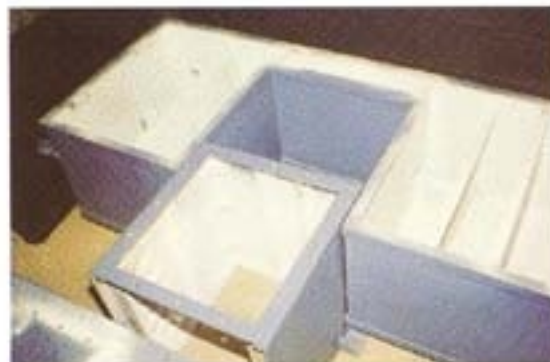
Work-pieces are fed between the grinding wheels, on a rotating carrier, and they trace an arc between the wheels. The carrier supports and guides the pieces, within the grinding zone. The carrier is driven by a variable speed drive motor.

This gives the second highest rate of output.

RECIPROCATING/OSCILLATING FEED

Work-pieces are supported and guided in an arm-like carrier, which either reciprocates, or oscillates between the grinding wheels. Ensures very close, dimensional tolerances and is particularly suited, where relative size, within the work-piece needs to be maintained. Also suited for large and odd shaped work-pieces.

This gives the lowest rate of output.



COOLANT TANK



ROTARY CARRIER GUIDES



ROTARY CARRIERS



BANK OF ROTARY CARRIERS

KINEMATIC DESIGN

Close grinding tolerances are obtained by minimizing the deflection created due to heavy grinding forces. A special design resolves these forces along the axis of the spindles. One of these special design features is to locate the centre of the wheel-head slides, and the spindles' axis at the same level.

LOW CENTRE OF GRAVITY

Care is taken to keep the centre of gravity of the machines, at the lowest level, making the machine extremely stable. It reduces vibrations and increases rigidity.

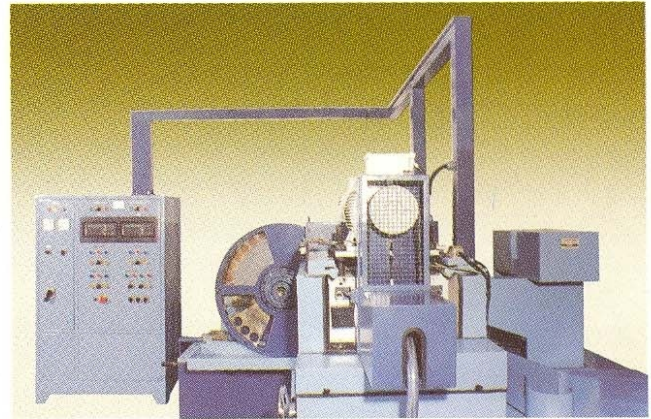
CONTROL PANEL

Dust-free, stand alone control panels house power and control systems with indicators, meters, DRO's, switches, variable speed drives etc. The cables leading to the machine are carried in an overhead conduit, thereby ensuring no hindrance around the machine.

OPTIONAL FEATURES

The following optional features are offered on request or need:

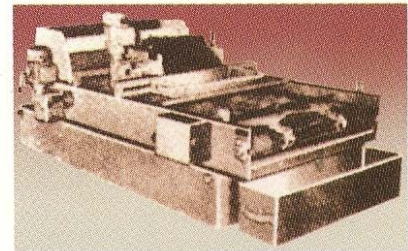
- Wheel wear indication
- Wheel wear compensation
- Pre process/post process measurement of work pieces
- Electronic variable speed drives to vary the peripheral speeds of one or both the wheels, work-piece feeder and dressing unit
- Digital readout (DRO) for micro feeding of spindles in accuracies of 1, 5, or 10 microns
- Hydraulic wheel dressing
- Hydraulic safety guard lifter
- Magnetic separator and 5 micron filter element system
- Automatic loading and unloading devices



DIGITAL READ OUTS



NUT INSERTED GRINDING WHEELS



FILTRATION SYSTEM & MAGNETIC SEPARATOR

TECHNICAL SPECIFICATIONS

MODEL	GRINDING WHEEL DIA mm	POWER PER SPINDLE kw	SPINDLE STROKE mm	WEIGHT APPROX Kg	GRINDING RANGE	
					THICKNESS mm	DIA/ L mm
DDG-300 DDG-300 HD	300	7 12	70	2000 2500	0.8 - 20	5 - 25 5 - 40
DDG-400 DDG-400 HD	400	10 15	100	3000 3750	1 - 50	7 - 50 7 - 75
DDG-500 DDG-500 HD	500	15 25	150	4000 5000	1 - 75	10 - 100 10 - 125
DDG-700 DDG-700 HD	700	25 40	175	6000 8500	2 - 150	15 - 140 15 - 200
DDG-900 DDG-900 HD	900	40 50	200	8000 10000	5 - 200	20 - 200 20 - 300

Note: Above Specifications are subject to change due to constant improvements.

HOW AMOLIK PRECISION MACHINES' DOUBLE DISC GRINDER IS DIFFERENT ?

To answer this all important question, one must delve deeper into the history of the promoters. They were the first in India, to design and develop these machines indigenously, in 1982. Since then, they have been continuously engaged in carrying out grinding operations on this machine, for various vendors of highly reputed OEM's, such as Maruti, Telco, Mahindras, Godrej, Bajaj Auto, Tandon Corporation etc. as well as a host of other applications, numbering over 200 different components. Some of them are shown on page 2 of this brochure.



1982 A D



1985 A D



2000 A D

This has resulted in acquiring a vast and enriching experience of grinding a widest possible range of components, from spring steel to bearing steel, copper to aluminium to brass, stainless steel, ceramics, carbon, alnico & ferrites. All of them ground successfully, in large quantities since 1982. The experience has provided the promoters with deep insight into the grinding processes, to solve all kinds of problems, and offer solutions for the best possible outputs for all applications.

THIS RICH & VARIED EXPERIENCE HAS GONE INTO THE DESIGNING OF THESE MACHINES, which is an advantage that can hardly be matched by any manufacturer of these machines, in the world.

MANUFACTURED BY

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MARKETED BY

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