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**fives**  
Industry can do it

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**fives**

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HIGH PRECISION  
MACHINES

GRINDING | ULTRA PRECISION

**Giustina**  
grinding solutions  
for flat surfaces

Horizontal or Vertical



# ULTIMATE SURFACE GRINDING SOLUTIONS



## GRINDING | ULTRA PRECISION

Fives and its dedicated Grinding | Ultra Precision teams - over 700 people globally - offer a complete range of grinding and specialist ultra-precision machines, plus a comprehensive range of systems, grinding accessories and service/support programs.

Fives Giustina is located in Turin, Italy, a major European industrial area. Their prime location in the northern part of Italy provides a strong network of suppliers and manufacturing expertise including; assembly, quality, electrical and operations. In 2023, Fives Giustina celebrated 100 years of activity.

The Giustina team is composed of 50 highly skilled employees with an extensive experience in machine design and the manufacture of surface and centerless grinding machines.

Our team has the capacity to undertake projects ranging from R&D and process consultancy to complete machine design and manufacture.

The business area encompasses a very large range of single & double disc grinders for surface grinding and three sizes of centerless grinders.

1 VERTICAL DOUBLE DISC

2 HORIZONTAL DOUBLE DISC

3 VERTICAL SINGLE DISC



-  Aerospace
-  Air-conditioning
-  Automotive
-  Bearings
-  Defense
-  Energy
-  Heavy Equipment
-  Marine
-  Railroad
-  Transmission
-  Truck





# Vertical double disc

Our vertical machines allow for a large range of applications and highly efficient surface grinding with repeatable high quality.

## GIUSTINA VDD 305 / 355 / 455 / 510 / 585 / 760

Superior machine rigidity with high flexibility

Vertical double disc grinding is designed by preparing two grinding spindles facing each other vertically. When high precision grinding is required, Fives provides a large range of CNC machines built for high production and quality standards.

Fives’ vertical double disc grinding technology is second to none, and machines range in size from 305 mm wheel diameter up to 760 mm wheel diameter with spindle power as high as 45 kW.

- High rigidity 3 block cast iron box type framing structure
- Main spindle and wheel mounting flange is forged as one piece
- Simple and adjustable tilting system of wheel tilting

### APPLICATIONS

- Bearings
- Brake discs (standard and coated)
- Carbide plates
- Carbide inserts
- Compressor plates
- File blades
- Flanges
- Inner rings
- Knife blades
- Outer rings
- Piston rings
- Plates and rings
- Powder metal components
- Rotors-Stators
- Saw blades
- Various other components

### VARIOUS WORKING METHODS

Our VDD machines are used to surface grind workpieces with different working methods that include:



Rotary through-feed



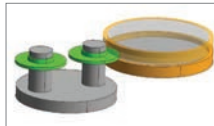
Index carrier



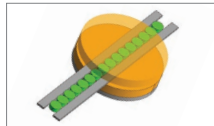
Oscillating infeed carrier



Workpiece rotating index



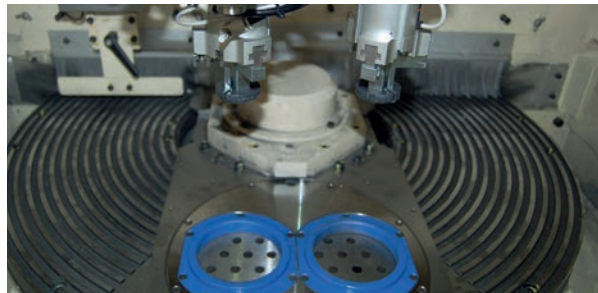
Index table work drive



Through-feed



Giustina VDD585



Vertical models			Giustina VDD305	Giustina VDD355	Giustina VDD455	Giustina VDD510	Giustina VDD585	Giustina VDD760
Wheelhead								
Wheel Ø	mm		305	355	455	510	585	760
Max. power grinding wheel	kW		7.5	11	15	15	37	45
Grinder workpiece capacity								
Max. OD	Infeed	mm	80	120	180	180	300	400
	Through-feed	mm	25	40	50	60	120	240
Max. thickness		mm	20	25	40	40	65	100
Min. thickness	Infeed	mm	2	2.5	2.5	2.5	2.5	2.5
	Through-feed	mm	0.8	0.8	0.8	1	1	1
Machine								
Width	mm		1,550	1,550	1,550	1,550	1,900	2,700
Depth	mm		1,625	1,625	1,625	1,625	2,700	2,700
Height	mm		2,200	2,200	2,200	2,200	2,800	3,200
Weight	kg		5,500	5,500	5,500	5,500	12,000	15,000





# Horizontal double disc

Our efficient, precise and robust solutions provide flat and parallel surface grinding on both sides of the component.

## GIUSTINA HDD 610 / 760 / 915 / 1067

Compact design with high throughput

Horizontal double disc grinding is designed by preparing two grinding spindles facing each other horizontally. Enough rigidity and simple structure are adopted for precise and heavy duty grinding processes.

Fives offers a large range of CNC machines built for high production and quality standards, to process flat and parallel surfaces in various working modes.

Fives’ horizontal double disc grinding technology is second to none, and machines range in size from 355 mm wheel diameter up to 1,067 mm wheel diameter with spindle power as high as 75 kW.



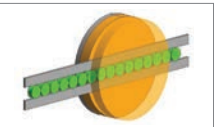
Giustina HDD1067

### APPLICATIONS

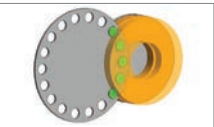
- Bearings
- Brake & clutch discs
- Compressor plates
- Connecting rods
- Covers
- Flanges
- Gears
- Motorcycle brake discs
- Magnets
- Various other components

### VARIOUS WORKING METHODS

Our HDD machines are used to surface grind workpieces with different working methods that include:



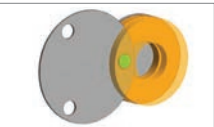
Linear through-feed



Rotary through-feed



Rotary carrier wire clamp



Index carrier



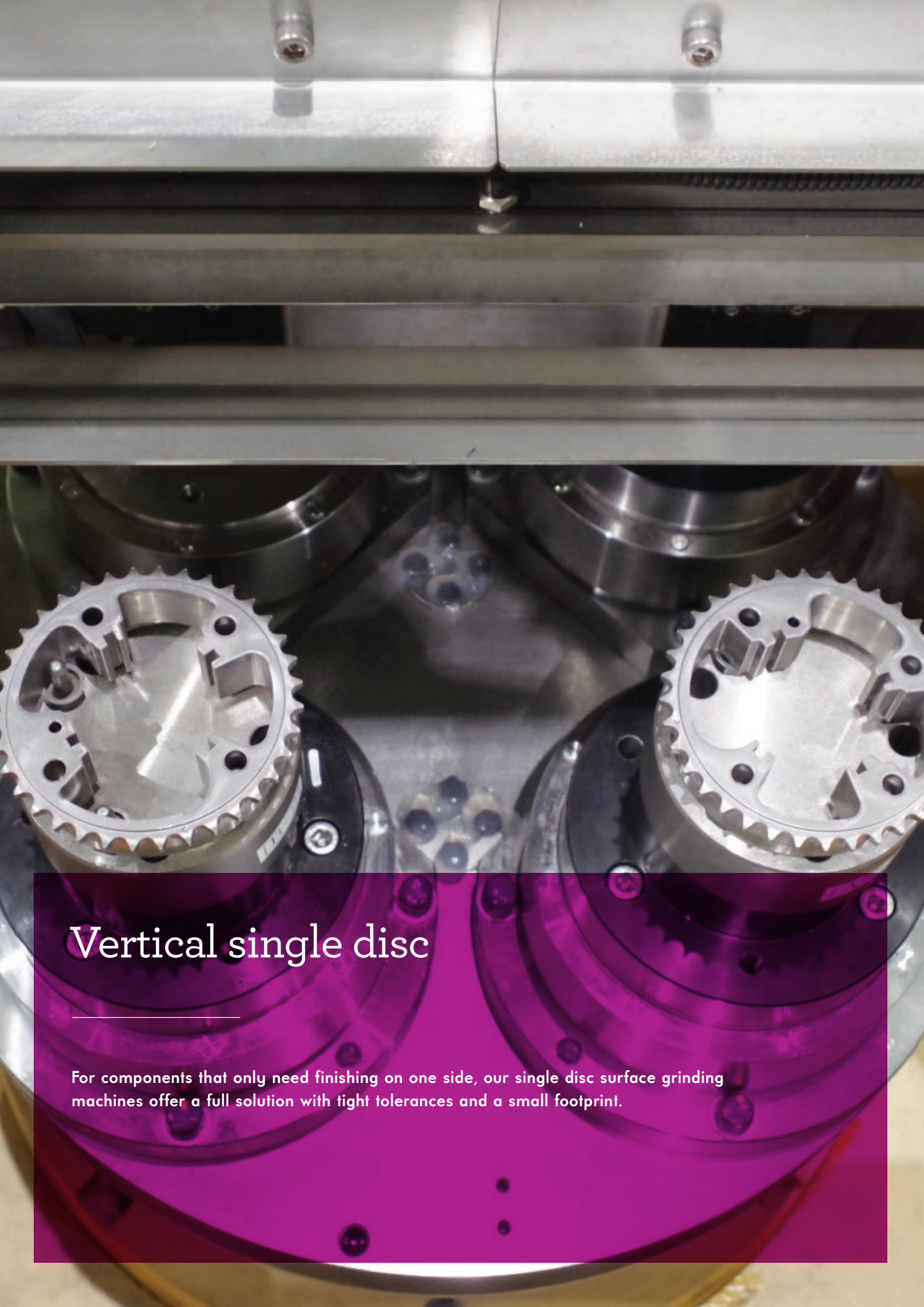
Reciprocating feeder carriage



Swing arm

Horizontal models			Giustina HDD355	Giustina HDD380	Giustina HDD610	Giustina HDD760	Giustina HDD800	Giustina HDD915	Giustina HDD1067
Wheelhead									
Wheel Ø		mm	355	380	610	760	800	915	1,067
Max. power grinding wheel		kW	7.5	11	22	75	75	75	75
Grinder workpiece capacity									
Max. OD	Infeed	mm	50	70	300	450	700	800	1,000
	Through-feed	mm	35	50	NA	200	NA	320	NA
Max. thickness	Infeed (Std)	mm	50	75	90	200	200	200	200
	Infeed (special bed)	mm	NA	NA	NA	Δ between min. & max.: 230	Δ between min. & max.: 230	Δ between min. & max.: 230	Δ between min. & max.: 230
	Through-feed	mm	25	25	NA	85	NA	130	NA
Min. thickness	Infeed	mm	15	15	2	12	12	15	20
	Through-feed	mm	1.5	1.5	NA	2	NA	2.5	NA
Machine									
Width		mm	2,280	2,280	3,700	4,800	4,800	4,800	4,800
Depth		mm	1,540	1,540	3,100	4,700	4,200	6,000	6,500
Height		mm	1,940	1,940	2,200	2,500	2,600	2,900	2,900
Weight		kg	4,500	4,500	7,000	14,500	15,000	17,000	17,500





# Vertical single disc

For components that only need finishing on one side, our single disc surface grinding machines offer a full solution with tight tolerances and a small footprint.

## GIUSTINA VSD 305 / 355 / 450

Superior machine rigidity with exceptional parallelism & flatness

The VSD 305-450 models are vertical single disc grinders with an ID/OD clamping system and specially developed for the processing of sun gears. The machine can be equipped with a multi workpiece clamping feature to reduce the cycle time and enhance productivity.

- Monoblock machine basement in cast iron
- Low footprint
- CBN grinding wheel
- Automatic robot loading / unloading system
- In-process measuring system
- Customized clamping system

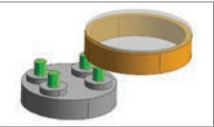
### APPLICATIONS

- Covers
- Flanges
- Gears
- Powder metal components
- Bearing rollers

### VARIOUS WORKING CLAMPING

Our VSD machines are used to surface grind workpieces improving the run-out during grinding process.

- 2 parts locations (part clamped on ID or OD)
- 4 parts locations (part clamped on ID or OD)



Index table work drive

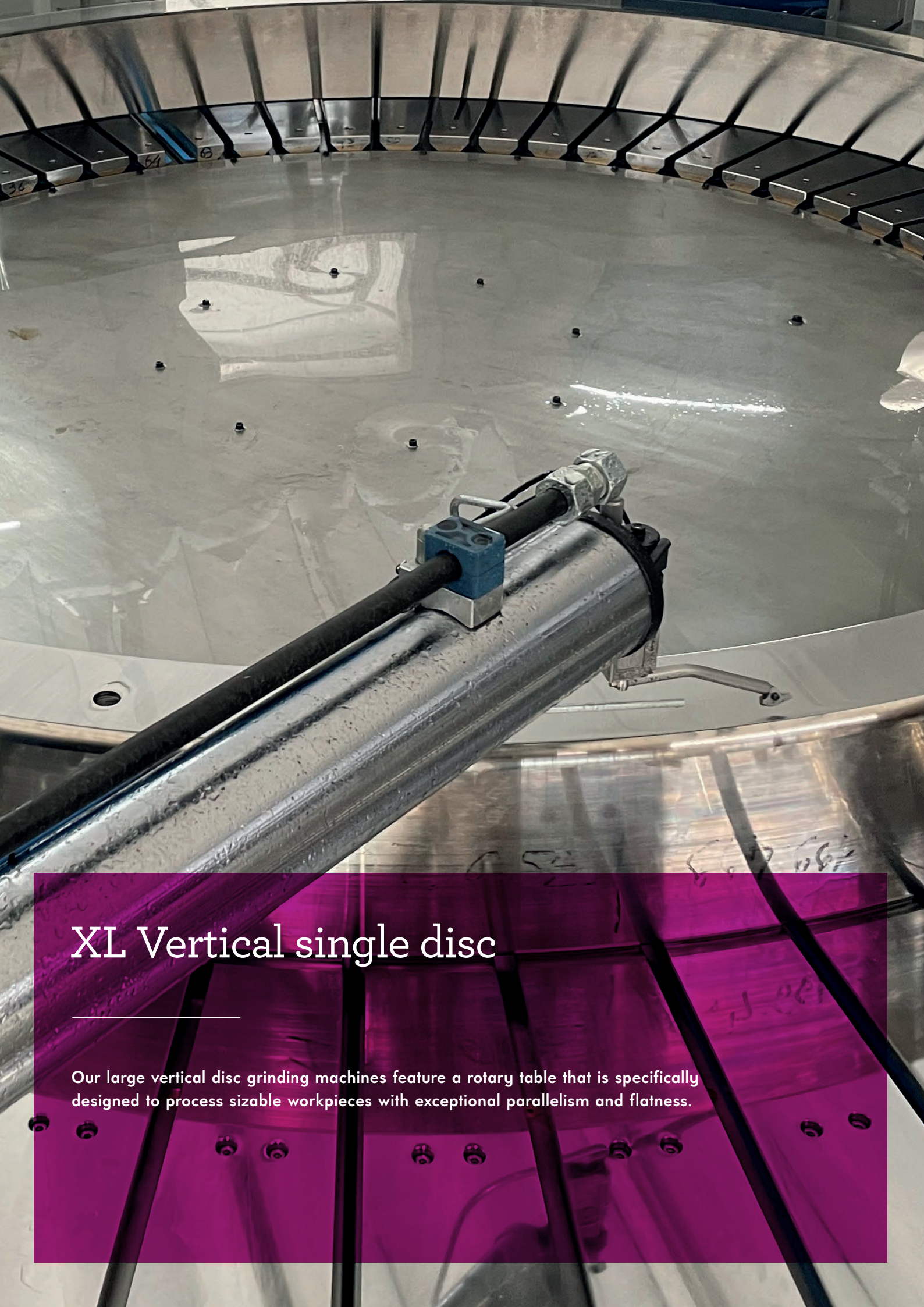


Giustina VSD 585



Model		Giustina VSD355		Giustina VSD450	
		IT-2	IT-4	IT-2	IT-4
Wheelhead					
Wheel Ø	mm	355		455	
Max. power	kW	11		15	
Grinder workpiece capacity					
Max. workpiece OD	mm	175	100	200	150
Max. workpiece thickness	mm	70	70	70	70
Machine					
Width	mm	1,400		1,900	
Depth	mm	1,500		2,640	
Height	mm	2,540		2,540	
Weight	kg	5,500		5,500	





# XL Vertical single disc

Our large vertical disc grinding machines feature a rotary table that is specifically designed to process sizable workpieces with exceptional parallelism and flatness.

## GIUSTINA XL-VSD 1000 / 1600 / 2000 / 2500 / 4000

Superior machine rigidity with exceptional parallelism & flatness

The XL-VSD 1000-4000 models are vertical single disc grinders with a magnetic rotary table and specially developed for the processing of big workpieces like large bearings, plates, hydraulics motor flanges, transmission crown gears and pump covers. The machine's multiple workpiece clamping feature helps to reduce cycle time and enhance productivity.

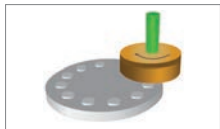
- Variation of table magnetism during process
- Table rotation on hydrostatic bearings
- Segmented grinding wheel
- In-process measuring system

### APPLICATIONS

- Pump housings
- Large bearings
- Plates
- Slew bearing rings

### WORKING METHODS

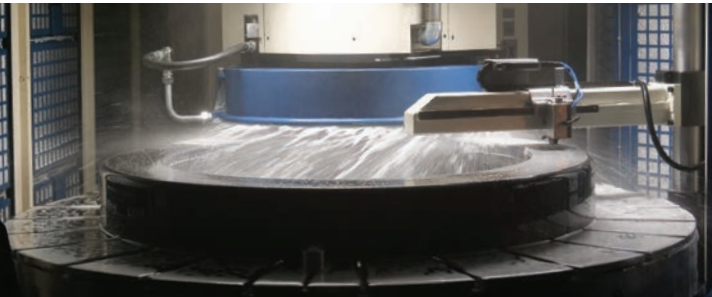
Our XL-VSD are used to surface grind workpieces with rotary table and plunge infeed of the grinding wheel.



Rotary table



Giustina XL-VSD1000



Model		XL-VSD1000	XL-VSD1600	XL-VSD2000	XL-VSD2500	XL-VSD4000
Machining capacity						
Max. workpiece diameter	mm	1,000	1,600	2,000	2,500	4,000
Max. workpiece thickness	mm	500	710	710	710	710
Wheelhead						
Wheel Ø	mm	762	762	915	1,220	1,220
Max. power	kW	59	59	59	86	109
Machine						
Width	mm	1,700	2,000	2,400	2,900	4,900
Depth	mm	5,000	5,900	6,300	7,500	9,000
Height	mm	4,500	4,900	4,900	6,200	6,300
Weight	kg	25,700	26,500	40,000	76,500	110,000





# GrinderCare

Our GrinderCare team provides a full range of life cycle solutions aimed to maximize your grinders performance. From extending your products life to maintaining peak efficiency, we help you maximize your grinders performance through our diverse range of services.

## GRINDER CARE

Complete life cycle solutions for grinding machines around the globe:

- Extend product life
- Maintain peak efficiency
- Reduce the cost of machine ownership
- Maximize performance through a full range of services



### Operation

From commissioning to maintenance, the GrinderCare team will keep your machine running for longer.

- Machine commissioning
- Warranty periods
- Spare parts
- Preventive maintenance



### Optimization

Our technical support enables customers to adjust for changing requirements and continually make improvements to maximize machine capabilities.

- Customizable training
- Machine evaluations
- Technical support & consultations



### Evolution

GrinderCare enables us to provide ongoing research and adjustments to the machine with the opportunity to bring new technologies into place to further enhance the machine capabilities and performance.

- Retools & refurbishment
- Remanufacturing
- Machine relocations
- Up-to-date technologies



GrinderCare supports the full and maximum product life of the following brands:

- |              |                       |              |                   |
|--------------|-----------------------|--------------|-------------------|
| — Besly      | — Cranfield Precision | — Giustina   | — Norton          |
| — Bryant     | — Daisho              | — Gold Crown | — Pratt & Whitney |
| — Cincinnati | — Gardner             | — Landis     | — Warner Swasey   |



# AUTOMATION & TURNKEY SOLUTIONS

Years of experience providing automation & turnkey solutions that are specifically tailored to the needs of the customer and today's production requirements.

- Market specific solutions
- Engineered in-house
- Easy implementation into your current production processes
- Eliminate all possible project management headaches
- Gaging



## AUTOMATION - MAXIMUM FLEXIBILITY

- Loading/unloading: manual, conveyors, pushing devices, robots, portals
- Machine integration in new and existing production lines
- Automatic parts detection and adaptation to mixed part types

# GLOBAL SERVICES

Providing parts and services around the world



# COMMITMENT TO THE ENVIRONMENT

Our commitment is to respect and protect the environment

Fives strives to reduce their impact on the environment by optimizing multiple elements in our manufacturing process including:

- Particular care for materials selection
- Correct dimensioning of components (motors, cables, etc. ...)
- Motor drives with energy regeneration within main
- High-efficiency motors
- Cable reduction: equals less copper and plastic isolation used
- Halogen-free cables isolation
- Automatic switch off lights



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