MACHINE SPECIFICATION

	DFM410-R	DFM410-E
Capacity	Max. diameter of formable wheel	410mm
	Max. width of formable wheel (at auto-forming)	40mm
	Formable angle	±95°
Work spindle	Quill-type spindle with centering mechanism, Centering travel	±0.025mm
	Spindle bore	28mm
	Rotation speed	100～1000rpm
	Motor	1.5KW-4P
Work head	Cross travel (Z-axis)	160mm
	Traverse travel (X-axis)	85mm
	Subslide traverse travel (X-axis)	120mm
Wheel spindle	Wheel size (OD x Width x Bore)	φ205x20xφ50.8mm
	Rotation speed	200～2000rpm
	Motor	0.75KW-4p
	Angular offset angle (A-axis)	0～20°
Wheelhead	Swiveling angle (B-axis)	-95°～0°～+95° / -100°～0°～+100°
	Auto-swivel device(hydro-mechanism by rack and pinion, B-axis) swiveling speed	6°/sec～12°/sec
	Minimum unit of swivel angle digital display	5′
	Auto-infeed device intermittent feed (by interval timer)	0.0025～0.03mm
	Max. automatic infeed (set by counter and scale handle, U-axis)	50mm
	Manual infeed (U-axis) — Per revolution of handle	1mm
	Manual infeed (U-axis) — Per graduation of dial	0.005mm
	Oscillation stroke (V-axis)	0～40mm
	Oscillation travel (V-axis)	30mm
	Oscillation speed	15～40cycles/min.
	Oscillation motor	60W
Projector	Screen size (with special concentric circle screen)	φ250mm
	Magnification	20x
	Diascopic illumination light (with green filter)	50W halogen lamp
	Vertical travel	80mm
	Cross/traverse travel	13mm each
Machine gross weigh		1500kg

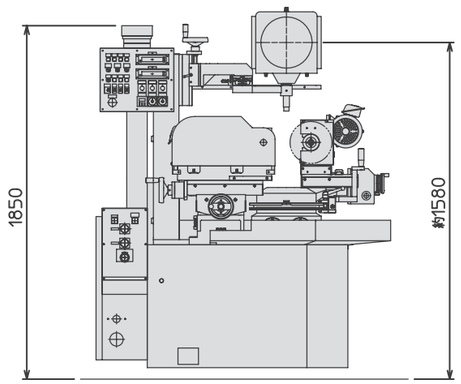
OPTIONS

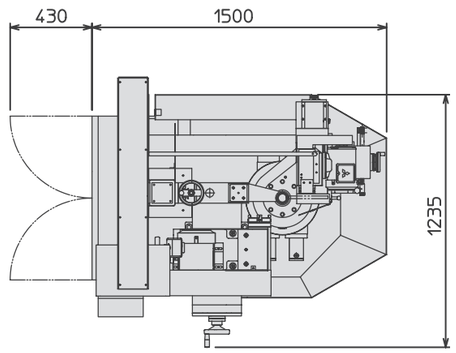
Minimum unit oh wheelhead swivel angle digital display		1′
Coolant equipment		60 liter tank, 60W pump
X-axis/ axis digital display		At 0.001mm increments
Spring collet holder		Chucking capacity: φ1～φ16mm Replaceable collet type
Spring collet device lever clamp/ unclamp type		With CHABRINE W20 collet
Scroll chuck holder		With 5-inch scroll chuck
Dummy grinding equipment for forming accuracy measurement A		Standard type
Higher magnification projector (Swiss, with special concentric circle screen)		φ150mm screen, 50x
Switchable magnification projector (Swiss, with special concentric circle screen)		φ250mm screen, 10x･20x
Straight arbor		Manufactured to fit the wheel bore
Taper arbor		Manufactured for each maker's wheel flange taper
Two dead centers		made for the specification
main spindle table for exchangeable spindle quill		
Digital CCD camera	CCD camera	1.4million pixel color 3CCD
	Flame rate	15fps
	High accuracy zoom icroscope	1～5x
	PC	OS-WIN-XP、HDD60G、DVD±R/RW、Keyboard、Mouse、USB2.0x2、LAN
	Monitor	17 inch color LCD（OP 22 inch color LCD）
	Magnification of monitor	40～200X（Zoom lens）（Magnification range is changeable by lens exchange）
	Drawing soft	Cross scale、Concentric circle、Semicircle
	Measuring function	Scale、Distance between two points、Radius、Angle、Calibration
	Drawing function	Cross scale、Concentric circle、Parallel lines
	Transmitted source of light	50W Halogen lamp（With Aillumination adjustment function）
simplified CCD camera		Transmitted lighting
		magnification 60x zoom lens specification

STANDARD ACCESSORIES

Standard wheel cover	1set
Standard wheel flange	1set
Standard coolant nozzle and Wheel change tool	1set
Instruction manual	1 copy

EXTERNAL DIMENSIONS





Dealership

Manufacture

KANEHIRA CORPORATION

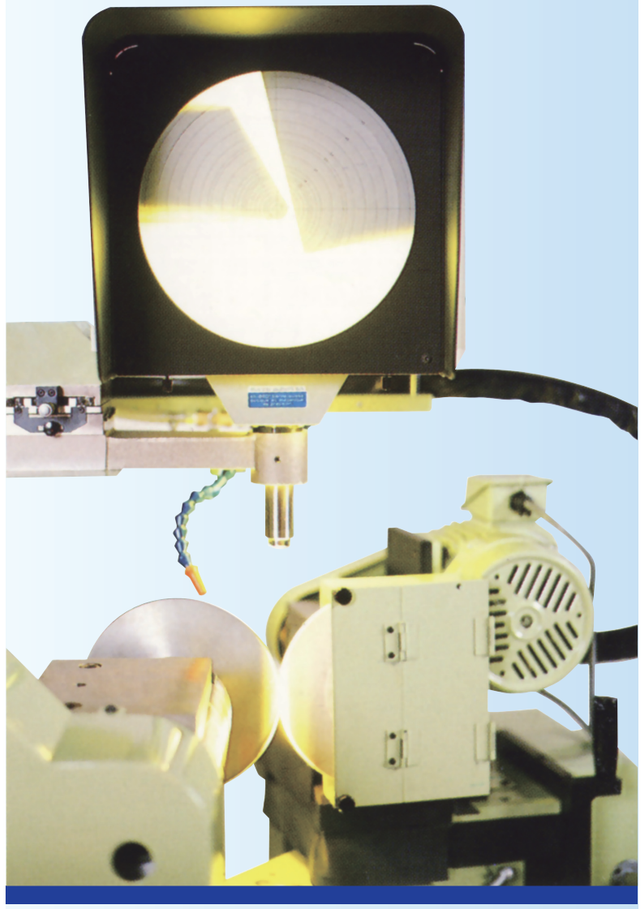
・Diamond wheel automatic forming machine
・Tool grinding machine
・Design & production of special purpose machine
・Design & production of precision measuring device

〒478-0069 2-29 Shinkatanaike Chita city Aichi Japan
TEL +81-562-56-6790 FAX +81-562-56-6791
HP:http://kanehira.biz E-mail:kanehira@kanehira.biz

● The machine specifications are subject to change without notice by reason of retrofit. 2011.06

DFM-410E,R

Diamond Wheel Form Dres & Truing Machine



KANEHIRA

KANEHIRA

DFM-410E,R

Diamond Wheel Form Dres & Truing Machine

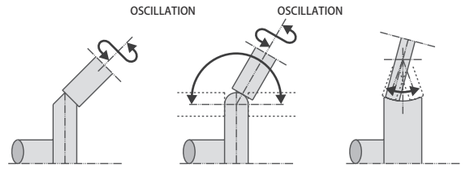
DFM410R

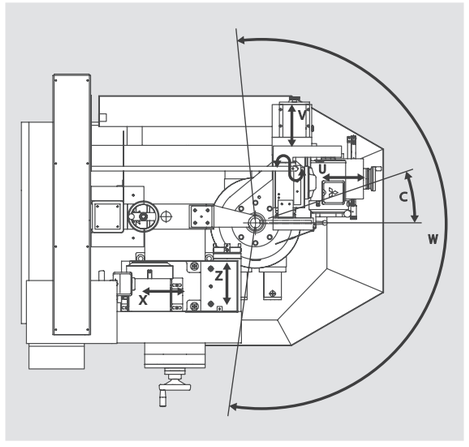
INCREASE OF PRODUCTIVITY, RATIONALIZATION, CUTDOWN OF COST AND HIGH ACCURACY. THE MACHINES THAT MAXIMIZE THE MERITS OF DIAMOND WHEELS

The DFM-410 series diamond wheel from dressing and truing machines are full-dress forming machines that perform high-accuracy from dressing and truing of diamond wheels as well as CBN wheels with outstanding efficiency.

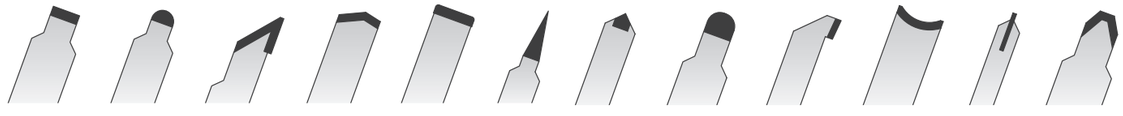
Each machine is made of high-rigidity mechanical parts and adopts a concrete-packed bed of high vibration damping property to enable high-accuracy machining of a wide range of wheel dimensions from φ1mm OD small wheel up to φ410mm OD large wheel. Further, the onboard profile projector allows direct measurement of the wheel in processing without removing it.

With the DFM-410 series machines, you can perform automatic high-accuracy forming and dressing of uneven shape ,circular shape,and angular shape as well as dressing figures of various diamond and CBN wheels.





〈Formed Work Samples〉



CHALLENGE TO THE HARDNESS BASICS AND CONTRIVANCES ARE OUR DESIGN CONCEPTS.

CONCRETE-PACKED BED
FOR OUTSTANDING RIGIDITY AND VIBRATION STABILITY

For form dressing of wheels made from diamond which is the hardest material on the earth and CBN (cubic boron nitride) that follows it, the machine body needs not only high rigidity but also excellence in vibration characteristics such as higher inner damping property, Compared with casting bed or welded construction bed of steel sheet, concrete bed has 6 to 10 times higher vibration damping property, about 40 times greater resistance of heat transfer and double heat capacity. The DFM-410's adopt a concrete-packed bed which makes the good use of high rigidity and mach inability of steel sheet construction and also has excellent property of concrete.

This bed construction completely eliminates chatter during forming, and assures heavy-duty high-accuracy forming performance for a long time.

HIGH-PRECISION PROJECTOR
THAT ASSURES ONBOARD WORK QUALITY CHECK

In forming of diamond and CBN wheels, it is indispensable for the machine to be capable of precisely checking the work figure during and after machining besides accurate work setting.

The DFM-410 series is equipped with a 20x high-precision large projector with φ250mm screen as a standard equipment so that high-accuracy wheel positioning as well as work checking during and after forming can be performed.

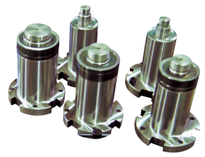
Further, 10x/20x switchable magnification projector with φ250mm or φ170mm screen and 50x or 100x higher magnification projector,etc. can be selected at your option according to the purposes.

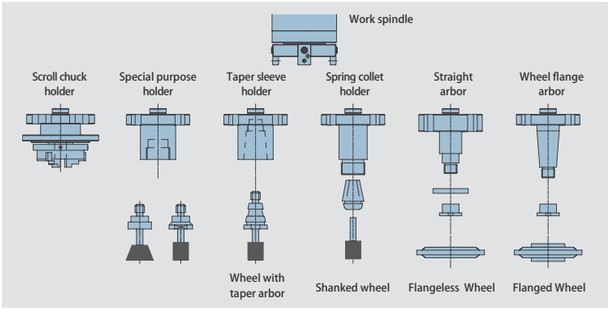
Due to a unique structure of these projectors that provides blurless image on the screen even with the50x projector, work checking can be performed while the machine is operating.

WORK SPINDLE ARBORS
TO ACCURATELY MEET ALL GRINDERS WHEEL FLANGES

By making use of high-precision replaceable arbors that fit various wheel flanges of different manufacturers' grinders, the work spindle can be adapted to many types of wheel flanges at low cost. The work spindle nose is equipped with a centering mechanism to facilitate high-accuracy centering of replaceable arbors.

The work spindle is designed to be large (φ100mm OD), highly accurate and extremely rigid. Both ends of the work spindle are firmly supported by preloaded duplex angular bearings so that it can steadily stand heavy radial load and/or thrust load during machining.





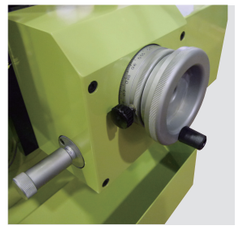
FUNCTIONS AND DURABILITY PROVE HANDLING EASE AND LONG SERVICE OF THE MACHINE.

AUTO-INFEED, AUTO-SWIVEL
OR LABOR-SAVING AND BETTER OPERABILITY

The DFM-410's incorporate an auto-infeed device by ratchet as a standard device. This ratchet feed mechanism allows intermittent automatic infeed within the range from 0.0025mm (minimum) to 0.03mm (maximum), with the maximum auto-infeed amount being 50mm.The performance of this device is significant when machining requires fine infeed or takes long time.

The auto-swivel function of the DFM-410R is very effective in forming of circular R figures. Swiveling angle is set by the stoppers which allow precise setting while eliminating errors due to repetition of swiveling return motions.

The swivel drive adopts am airhydro-mechanism to secure smooth rotation of the wheelhead and to minimize the thermal deformation at the same times.

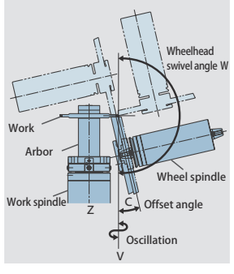


WHEEL SPINDLE ANGULAR OFFSET DEVICE
FOR SIDE FACE MACHINING OF SMALL DIA. WHEELS

The powerful work spindle of the DFM-410 series is as large as φ110mm in outer diameter. However, the more the work spindle is made powerful, the more it brings out drawbacks.

Namely, the side face of a small diameter wheel that faces the work spindle cannot be machined simultaneously. The DFM-410's settle this problem by allowing the wheel spindle to take an offset angle of a maximum of 20°.

This enables deviation-free continuous machining of the work surfaces from one side to another with one chucking even when the work diameter is smaller than the work spindle diameter.



LABYRINTH AND AIR PURGE SYSTEM
THAT IMPROVES THE MACHINE DURABILITY

It is true that the most cumbersome enemy against maintenance of accuracy and performance of a wheel forming machine are abrasive grains produced through forming operation.

Once abrasive grains that contain diamond or CBN particles enter the machine parts, they will invade and erode the movable parts and optical system soon like a virus.

We have given the utmost care to dustproof measures and coolant penetration for the DFM-410's, and still continue to provide further improvements.

For the most important wheelhead swivel mechanism, a combined system of labyrinth and air purge is adopted for dustproof and waterproof measures. The swivel base is internally pressurized with 99.99% or more moistureless air to provide an air curtain to prevent external coolant splash and abrasive grains from entering the inside.

The effectivity of this system greatly contributes for improvement of the machine durability.

DIGITAL DISPLAY FOR INFEED SWIVEL ANGLE
TO PROVIDE OUTSTANDING OPERABILITY

Every DFM-410 has a digital readout and display device for the swivel angle (and for the infeed as an option).

The minimum unit of this display is 5' (or optionally 1') for the swivel angle and 0.001mm for the infeed.

This device allows elimination of troublesome reading of the graduations and resultant errors so as to facilitate high-accuracy machining.

VARIABLE SPINDLES' SPEEDS
ROVIDE OPTIMUM MACHINING CONDITION

The work spindle and wheel spindle motors are controlled by digital inverters for stepless variable speed rotations.

The variable speed ranges being 200 to 2,000rpm for the wheel spindle and 100 to 1,000rpm for the work spindle make the optimum surface speeds for forming of the respective wheels selectable.

The oscillation speed can also be changed steplessly by the speed control motor.