

Wind Turbine Rotor Blade – Root End Machining (1.8m – 4.5m diameters)

Rev 1.0

A portable orbital milling solution for wind turbine root end machining.



- **Fast mount patented hydraulic clamp**
- **Minimal blade distortion**
- **Accurate and repeatable process time**
- **Trolley system - no crane required**
- **Portable for blade production facility**
- **Adjustable drive for different bolt pcd's**

The Mirage WP range is designed for ease of use in machining 30 - 80m rotor blades (1800 - 4700mm bolt p.c.d) in a production environment.

Hydraulically driven with geared reduction rotational drive and milling spindle to accept industry standard tooling. The machines have the ability to machine the root end inserts to a precision flatness tolerance while maintaining a portable nature to enable ease of movement around the blade production facility.

As the length of blades increases and the bolt pcd's are relative to the increase in blade lengths, the Mirage orbital milling machines have an in built degree of flexibility in the drive and machining elements, to cope with the ever changing blade designs.

Technical Details – Drive Systems

WP2500-H	Min Blade PCD - 1836mm	Max Blade PCD - 2436mm	Weight – 1678.5 kgs
WP3500-H	Min Blade PCD - 2300mm	Max Blade PCD - 3200mm	Weight – 1668.7 kgs
WP4700-H	Min Blade PCD - 2800mm	Max Blade PCD - 4700mm	Weight - 3610 kgs

Drive System Details

Rotational Drive - Hydraulic	11 Kw	14.8 Hp
Milling Spindle - Hydraulic	11 Kw	14.8 Hp
Min / Max Drive Rotation R.P.M	0	615 rpm
Surface Cutting Speeds @ max diameters	0 – 56m/minute	0 – 185 ft /minute
Standard Cutting Speed (125mm face mill)	300 - 400 mm/minute	12 – 16 inch / minute
Min / Max Spindle R.P.M (standard)	25	265
Flatness Tolerance	0.05mm/Ø1m	0 - 3.5Ft/min
Spindle Travel	80mm	16 In/min
Hydraulic Supply required @ 100 bar (1450 p.s.i)	50 L/min	265

Blade Clamping Modules

Blade Bolt P.C.D	Min. Clamping Diameter		Max. Clamping Diameter		Weight		Part No.
	mm	in	mm	in	Kgs	lb	
2100mm	2010mm	79"	2060mm	81"	2901.8 Kgs	6397 lb	WP2500-6
1800mm	1695mm	66"	1745mm	68"	990 Kgs	2183lb	WP2500-7
2450mm	2335mm	96"	2410mm	94"	2021 Kgs	4456lb	WP2500-9
2500mm	2422mm	95"	2522mm	99"	2021kgs	4456lb	WP2500-10
3200mm	3116mm	123"	3216mm	127"	3070 Kgs	6768lb	WP3500-6
4200mm	4537mm	179"	4637mm	183"	3765 Kgs	8300lb	WP4700-5

(Blade PCD and clamping diameters can be modified to suit specific blade configurations)

The machine is supplied complete with:

- Rotational drive ring
- Rotational drive motor & reduction gearbox
- Machining facing arm
- 90mm column milling spindle
- Internal hydraulic chuck base assembly
- Jaw blocks and 3fixed and 3 hydraulically actuated clamping jaws
- Toolkit, 160mm face mill cutter and inserts
- Hose kit and centre hydraulic distributor
- All required bolts
- Storage / shipping box
- CE certificate, packing list
- Operation / maintenance manual

Optional Accessories



PP3 - Hydraulic Power Pack - 15 Kw

50 lpm / 20 lpm @ 100 bar
380/440v 3 phase
Pendant control for spindle and rotation
Oil cooler
Frame with lifting points
SUPPLIED WITHOUT OIL
Shipping details: 135 x 70 x 135cm
350 Kgs



Trolley - Machine Mounting and Positioning Trolley

Machine mounting and storage Hydraulic machine lift
Power pack spill tray
2 fixed and 2 free wheels
Fork lifting points
SUPPLIED WITHOUT MOVER
WP2500-20 for WP2500-H
WP3500-20 for WP3500-H
WP4700-20 for WP4700-H



Mover - Machine and Trolley Mover

5600 or 8000 Kgs capacity load mover
Pull or push force pedestrian operated
Electromagnetic brake
Battery operated - 6 hour charge time
160mm lift
Compact space envelope
Manufacturers 1 year guarantee
Shipping details: 150 x 65 x 125cm
405 Kgs



Laser-1 Laser for flange flatness

High precision laser system for measuring root end flatness once machined. Spin laser technology with target and portable reader

