

# WP Orbital Milling Machines 70 - 177"



# **KEY FEATURES**

- High torque anti backlash drive for operation in with anti backlash gearing
- Mounting system options for standard flanges or blade production
- Fast mount patented hydraulic clamp
- · Minimal blade distortion
- · Accurate and repeatable process time
- Trolley systems available no need for cranes
- Adjustable drive facing arm

### **DESCRIPTION**

A range of orbital milling machines designed specifically for the wind power manufacturing industry. The machines have an in-built degree of flexibility to cope with new blade designs.

#### **APPLICATIONS**

Applications for Mirage WP and OM machines include: wind turbine blade root end milling and wind tower flange machining.

#### **DRIVE SYSTEMS**

Machine Name			
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
WP4500-H	Min Blade PCD - 2800mm	Max Blade PCD - 4700mm	Weight - 3610 kgs

## **DRIVE SYSTEM DETAILS**

Rotational Drive	Hydraulic	
Milling Spindle	Hydraulic	
Typical Cutting Speed (0.7mm depth of cut)	150 - 200mm/minute	
Max Traverse Speed	300mm/min	
Typical Spindle R.P.M	350mm	
Flatness Tolerance	Achieves current industry flatness for root diameters of +/-0.15mm (Flatness requirements can fluctuate relative to the root diameter).	
Spindle Travel	80mm 3.15"	
Minimum Hydraulic Supply required @ 100 bar (1450 p.s.i)	70 L/min	

### **BLADE CLAMPING MODULES**

Blade Bolt P.C.D	Minin Clamping		Maxim Clamping D		Weigh	nt	Part No.
1800mm	1695mm	66"	1745mm	68"	990 Kgs	2183lb	WP2500-7
2100mm	2010mm	79"	2060mm	81"	2902 Kgs	6397 lb	WP2500-6
2450mm	2335mm	94"	2410mm	96"	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

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#### STANDARD WITH A WP MACHINE

- Rotational drive motor & reduction gearbox
- ✓ Machining facing arm
- √ 90mm dia column milling spindle
- ✓ Internal hydraulic chuck base assembly
- Jaw blocks, fixed and hydraulically actuated clamping jaws
- ✓ Toolkit, Face Mill Cutter and inserts
- ✓ Shipping box
- ✓ CE certificate, packing list
- ✓ Operation / maintenance manual

#### SET UP AND OPERATION

The operator must be:

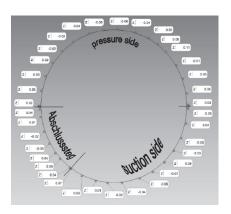
- Trained and conversant with the product
- Able to identify the correct and incorrect use of static or portable machines.
- Comply with all local and internationally recognised regulations regarding safe use of powered machines.

#### FLATNESS TOLERANCE

Example check for flatness of machined flange. Measurement accuracy +/- 0.15mm.

Result of flatness check ("Best Fit" calculation): Minimum = -0.07mm/maximum = +0.11mm.

Flatness tolerances achieved are independently third party verified by laser on a 61.5m blade root end with the WP3500 drive, a WP3500 6 hydraulic clamping base and PP3 hydraulic power pack.



SHIPPING WEIGHTS			
Machine name	kg	lbs	
WP2500	4159	9169	
WP3500	4440	9789	
WP4500	8590	18938	

SHIPPING DIMENSIONS			
	Length	Width	Height
WP2500	267cm	172cm	96cm
machine	(105")	(68")	(38")
WP2500	237cm	237cm	54cm
Base(typical)	(93")	(93")54	(21.2")
WP3500	291cm	181cm	102cm
machine	(115")	(71")	(40")
WP3500	236cm	226cm	230cm
Base(typical)	(93")	(89")	(91")
WP4500	482cm	247cm	97cm
machine	(190")	(97")	(38")
WP4500	262cm	252cm	76cm
Base(typical)	(103")	(99")	(30")
WP4500	267cm	257cm	72cm
legs	(105")	(101")	(28")

MACHINE AND STANDARD BASE WEIGHTS			
Machine name	kg	Ibs	
WP2500	3730	8223	
WP3500	3948	8704	
WP4500	7480	16491	

Weights and dimensions are approximate and provided for guidance only.



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# WP ORBITAL MILLING OPTIONS & ACCESSORIES

#### PP3 HYDRAULIC POWER PACK 15kw

50 Lpm / 20 Lpm @ 100 bar-380/440v 3 phase -pendant control Oil cooler Frame with lifting points Supplied without oil Shipping details: 135 x 70 x 135cm



#### 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



#### **TOOLING**

Weight: 350kgs

Mirage can supply all inserted face mills & inserts and special form tools on request

