

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	Minimum Clamping Diameter	Maximum Clamping Diameter	Weight	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

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:

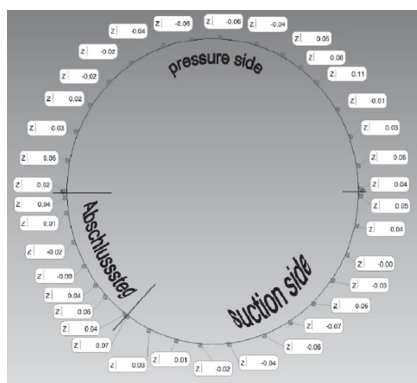
- Trained and conversant with the product
- Able to identify the correct and incorrect use of static or portable machines.
- Comply with all local and internationally recognised regulations regarding safe use of powered machines.

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

MACHINE AND STANDARD BASE WEIGHTS

Machine name	kg	lbs
WP2500	3730	8223
WP3500	3948	8704
WP4500	7480	16491

Weights and dimensions are approximate and provided for guidance only.

IMPORTANT
PLEASE REVIEW OPTIONS, ACCESSORIES
AND SPARE PARTS ON NEXT PAGES



WP ORBITAL MILLING OPTIONS & ACCESSORIES

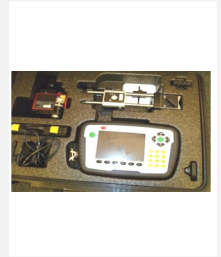
PP3 HYDRAULIC POWER PACK 15kw

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
Weight: 350kgs



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

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

