



ppb engineering technology

Engineering Solutions in all Materials

PPB Engineering Technology is the trading style of Production Pattern (Bristol) Limited, a Bristol based company which continues the tradition of engineering excellence serving the aerospace, automotive and general engineering industries, built up over the last 40 years.

With a highly skilled and dedicated workforce combined with exceptional quality, reliability and pricing, we are able to offer a high level of personal service, responding quickly and efficiently to customers needs, thus ensuring complete client satisfaction.



Just a few of the disciplines supported :

Tool Making
Model Making
CNC Machining
Small Batch Production
Prototype Tooling

Fluid Cell Development
Prototypes
Design Concepts
Mock Ups
Jigs and Fixtures

Recent clients have included :

Bae Systems
Dunlop Aerospace
Aston Martin Lagonda
Agusta
Westland Helicopters
Racal Radar Defence Systems
Thorn-EMI
Beagle Aircraft

Short Brothers
Rolls-Royce
Airbus UK
Hewlett Packard
Pilkington Aerospace
British Airways
Fiskar UK
Thales Defence



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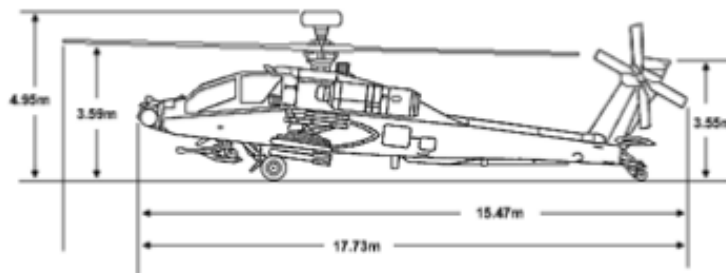


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Design & Manufacturing

Working closely with clients own design departments or external designers, PPB can draw on it's extensive experience when faced with total engineering requirements. Utilising the CAD/CAM and solid modelling technology, many projects can be viewed prior to manufacture. The benefits in prototyping are obvious.

PPB takes great pride in being on the leading edge of CAD/CAM, office management, and computer technologies. PPB supports all major CAD/CAM file formats, including DXF, IGES, STL, STEP, DWG, ACIS, and Parasolids file formats (ie. Solidworks, Solidedge, Unigraphics Solutions). We can also utilize native Pro/E and Catia file. Our ability to work with many different types of programs allows the customer to e-mail us their CAD models which in turn greatly reduces turn around times.



Development

Over the years, PPB has established a reputation for working within strict design parameters, and is always keen to work in partnership with its customers, developing new products or ideas to meet specific needs.

Total Solution

In many instances customers require a total project management solution and PPB can offer an on-site installation calibration and testing service for all of its products, indicative of its commitment to total support.

Quality, investment and a policy of constant improvement are the key ingredients to PPB's continued success.

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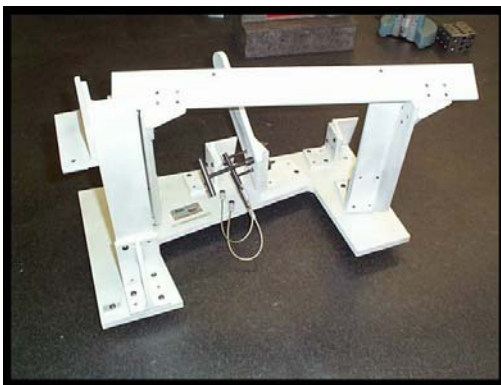
Information Sheet : Jigs & Fixtures



Jigs and Fixtures in all materials for :

- Assembly
- Machining
- Work Holding
- Checking
- Welding

Manufactured to customer's specific requirements from CAD information,
Master Models or Components with particular reference to :



- Accuracy
- Reliability
- Ease of Use



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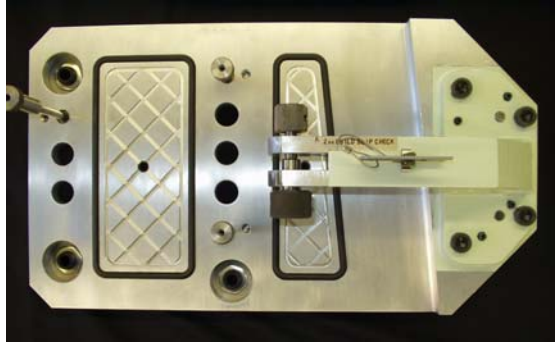
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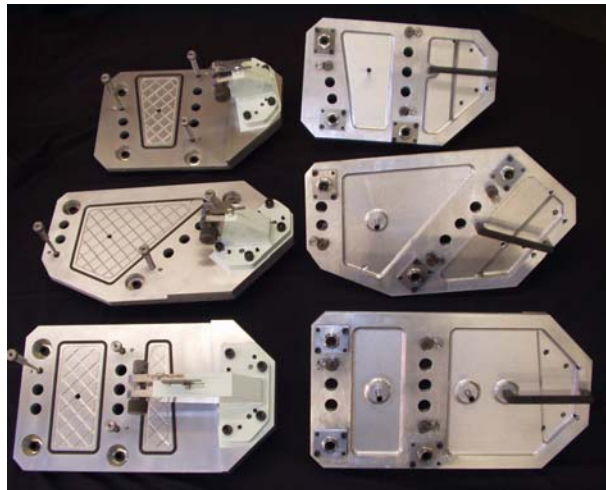


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Information Sheet : Checking Fixtures



Laser Setting Jigs produced in aluminium as part of the Airbus A380 Wing Build programme. This requirement was placed by GKN Aerospace Services, Isle of Wight under our status as strategic supplier.



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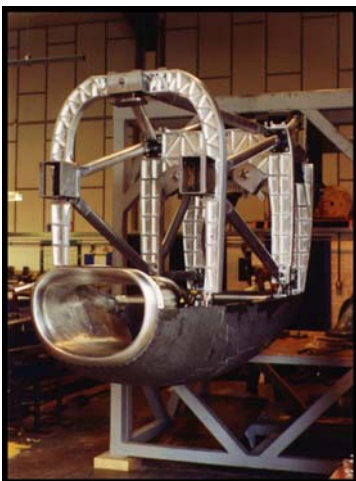


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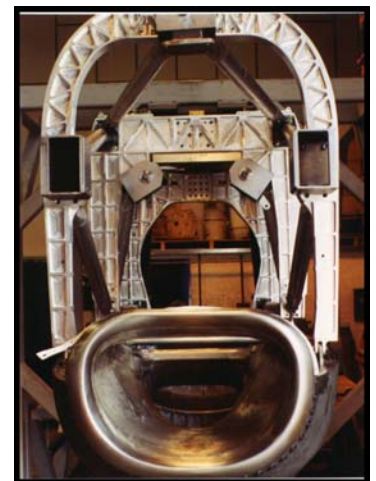
Information Sheet : Mock ups



Commissioned by Short Brothers of Belfast, this full sized mock up of a Passenger Door was conceived and built for Bombardier of Canada's Global Express. The project was completed ahead of schedule and in time for production approval.



This Engine Nacelle Mock Up for the Alenia C37 was designed and manufactured in house and installed at customer's premises, working to exacting standards and time scales.



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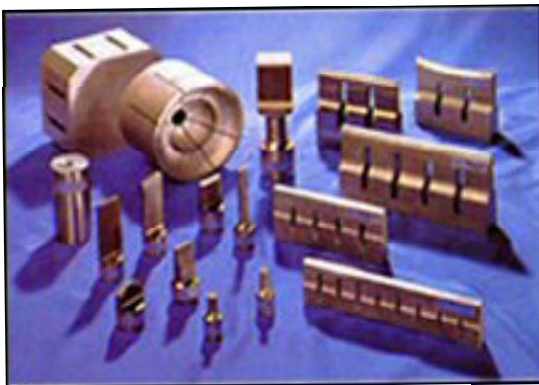
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Information Sheet : Small Batch Production



For Research and Development or for Pre-Production styling purposes, we are willing to undertake small batch productions runs at competitive pricing rates, and quick turnaround timescales, to ensure production deadlines are met. Small or medium scale production runs using CNC or manual machines can also be offered.

A complete solution can include prototype production and manufacture, small batch production or even prototype production, utilising CAD-CAM links to CNC machines.



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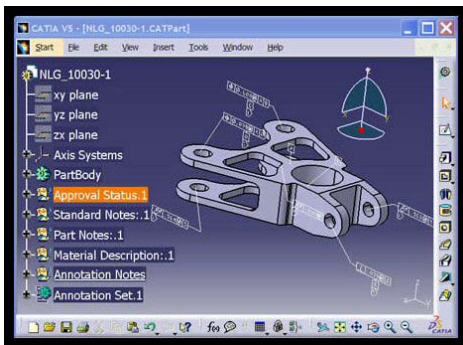


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Information Sheet : CNC

Over recent years, major advances have been experienced in engineering, none more so than the evolution in the field of CNC Machining.

Utilising the latest CAD/CAM Software, PPB are able to keep abreast of technology and adapt to client's needs.



PPB has made a commitment to provide comprehensive services to our customers. Our CNC Machining capabilities allow us to provide complex, close tolerance, items at economical prices. We are committed to continually update and broaden our Machine Tool technology.



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Information Sheet : Inspection

LK Wenzel Co-Ordinate Measuring Machine x 2000 y 800 z 1000 QCT2000
Inspect2CAD 3D Surface Software

3600 x 2500 Portage Surface Table Inspection (Calibrated)

3-axis CMM Inspection Machine with Sony SL130 scales, Renishaw MH8 probe and 3D Surface Software

Capacity - x 3600 y 2500 z 1200



On Site Inspection and Calibration

We are now able to provide a unique service to our customers with the recent purchase of the highly acclaimed Platinum FaroArm, the world's most accurate and advanced portable measurement arm in manufacturing history, together with Faro's own CAM2 Measure software.

Our highly trained personnel can now visit customers' premises with the FaroArm measurement system and can quickly gather large amounts of 3D surface coordinate data with a precision in the order of +/- 0.006 mm. The FaroArm system includes software for measurement system operation and data analysis and presentation. The supported analyses include typical geometric best-fit shape (circle, cylinder, plane, etc.) computations, coordinate system management (translating, scaling, etc.) and other basic calculations (distance, angle, etc.). Additionally, deviations of measured data from the design CAD file can be obtained.

From hole patterns to complex curved surfaces, CAM2 Measure answers the shop floor measurement and fit questions that cost manufacturers money. CAM2 Measure specializes in feature measurement/inspection and CAD-to-part comparison, where every measured part can be compared to engineering design files.

As a powerful inspection and measurement tool, CAM2 Measure can identify and verify feature locations such as holes, spheres and arcs for first article inspection or alignment. Because CAM2 Measure draws features as they are measured, process control becomes instantaneous. The software can be used with many measurement devices including portable or fixed-base coordinate measurement machines (CMMs), laser trackers and photogrammetry systems.



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Capacity - Tool Room/Machine Shop

Anayak VH2200 CNC Bed Mill	2500 x 1000 x 1200 TNC 426PB Control
Haas VF-4 Vertical Machining Centre	1270 x 508 x 635 Fanuc Compatible 32 bit Control
VMC1010 Vertical Machining Centre	1010 x 500 x 500 Siemens 810D Control
DPM 4000 CNC Bed Type Milling Machine	1016 x 508 x 584 ProtoTRAK Control
SMX 4000 CNC Bed Type Milling Machine	1016 x 596 x 584 ProTrak SMX3 Control
2 EMX 2000 CNC Turret Milling Machines	ProTrak Edge 2 Control
4 Bridgeport BR2J Turret Milling Machines with DRO	
BoKo Hydromill WF2 Vertical Milling Machine	1200 x 800
Huron M6 Universal Mill	1800 x 400
Proturn SLX 1630 CNC Lathe	760 bed x 400 swing ProTRAK Control
Hardinge Toolroom Lathe	
Jones and Shipman 540L Surface Grinder	
Jones and Shipman 1300 Universal Cylindrical Grinder	
XYZ 2612 26" Throat Vertical Band Saw	
Delapena Horizontal Honing Machine	
Various Sheet Metal Equipment	
Mig and Tig Welding Plant	
10' x 5' Grade "A" Granite Surface Plate	
4' x 2' Grade "A" Inspection Granite Table	
Fully equipped Inspection Area	

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Capacity - Model/Pattern Shop

Wadkin 30" Double Disc Sander

Zimmerman 12" Disc Sander Universal

Phillipson CBS1 Profile Sander

Wadkin 30" Band Saw

Wadkin 12" Circular Saw Bench

Wadkin 4 Station Blade Grinder

8' x 4' Cast Iron Grade "B" Surface Table

10' x 6' Cast Iron Grade "B" Surface Table (Calibrated)

Oliver 30" Disc Sander and Bobbin

GRP Shop

20' x 20' Resin Shop

Fully enclosed with Extraction

Fume Cabinet

Down Draught Extraction Cabinet

All above conform to latest Health and Safety and COSHH regulations

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Capacity - Sundries

Design/Planning Office

Catia Version 5

A0 size Riefler Action Manual Board

MasterCam Mill Version 6 & 7, Level 3 for 2-5 axis milling. IGES, VDA, DXF, CADL, NFL, ASCII and CATIA compatible

MasterCam Design Version 7

Calcomp A0 Plotter

Canon W6400 A1 Plotter

Inspection

LK Wenzel Co-Ordinate Measuring Machine x 2000 y 800 z 1000 QCT2000 Inspect2CAD 3D Surface Software

3600 x 2500 Portage Surface Table Inspection (Calibrated)

Platinum Faro Arm with CAM2 Measure Software

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How to find us:

Directions from M5 Junction 19 - Gordano Services

Acc.	Dist	Route	Directions
0.00	0.00	A369	Leaving Gordano Services exit Follow signs Clifton (Toll) to leave by A369
0.90	0.90	A369	(edge of) Easton-in-Gordano ("Rudgeleigh Inn")
2.70	1.80	A369	Abbots Leigh ("The George Inn")
4.00	1.30	A369	Junction with B3129 At traffic signals forward (signposted Bristol) In 0.2 mile descend (1 in 7)
5.30	1.30	A3029	Junction with A370/A3029 At roundabout follow signs Taunton (A38) to join A3029
5.40	0.10	A3029	Bristol City Football Club (on left) Ashton Vale Road is on the right at traffic lights (no turning - take a U-turn at first roundabout and then filter left - see below)
6.30			Arrive PPB

Directions from M4 Junction 19 - M32 exit

Acc.	Dist	Route	Directions
0.00	0.00	M32	Follow signs Bristol to join Motorway M32
3.70	3.70	A4032	Junction 3 (A4032/A4320/B4051) End of Motorway Forward A4032 (signposted City Centre)
4.30	0.60	A4044	Junction with A4044 (Bristol) At traffic signals turn right into Inner Circuit Road A4044
4.50	0.20	A4044	St James Barton Roundabout At roundabout take 1st exit into Inner Circuit Road A4044
5.10	0.60	A4	BRISTOL Follow signs Avonmouth A4, (M5 South)
5.40	0.30	A4	Travelodge (Bristol Central) (on right)
5.60	0.20	A4	Junction with B4468 At roundabout forward
6.20	0.60	A3029	Junction with A3029 Take right-hand lane into Brunel Way (signposted Weston S Mare) to join A3029 and cross
6.30	0.10	A3029	Cumberland Basin Swing Bridge
6.80	0.50	A3029	Junction with A3029/A370 Branch left (signposted Taunton A38)
6.90	0.10	A3029	Bristol City Football Club (on left) Ashton Vale Road is on the right at traffic lights (no turning - take a U-turn at first roundabout and then filter left - see below)

The last mile.

As you cannot turn right into Ashton Vale Road, once on the Ashton Gate underpass, Ashton Vale Road is situated on the right at the traffic lights. Keep in right hand lane through these lights to first roundabout, take a U-turn at the roundabout and then filter left back at the traffic lights into Ashton Vale Road.

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