

QUALITY IN ENGINEERING

FOX-VPS Ltd, based in Camberley, Surrey, specialises in the manufacture of precision machined castings, components and finished assemblies for the defence, aerospace, automotive, nuclear, oil and gas and other specialised industrial markets.

We also manufacture hydraulic actuators, valves, fire protection, bearings and associated equipment for the aerospace, automotive and specialised industrial markets worldwide.

With over 40 CNC machines of up to 7 axis, 3 CNC Coordinate measuring machines, OneCNC CAM, Solidworks CAD and 5 hydraulic test rigs, the company has invested heavily to serve its chosen markets. With a strong, technically competent and experienced team of people we seek to provide the highest standards of quality, design and manufacturing competence to our customer base.

Our Story

FOX-VPS

FOX-VPS was formed in January 2004 from the amalgamation of two long established companies; The Fox Engineering Co. (1939) and Visual Planning Systems (1946).

Fox Engineering, based in Bisley for over 70 years, started as a family run garage business that moved into engineering during the Second World War when there was a burgeoning demand for manufactured parts. After the war it started to manufacture for Kenwood, Hoover, Clark Equipment, Ferranti and Reynolds Boughton and other well-known companies.

In 1965, with the acquisition of Hydrogear Ltd based in Blackbushe, Fox expanded into hydraulic systems and equipment manufacture with its own design capability.

Visual Planning Systems started in north London making factory layout models to address the high levels of industrial reconstruction and modernization after the war. It exported planning boards and cast scale models of most machine tools and equipment all over the world. As computer modelling started to develop and reconstruction slowed, the company diversified into the manufacture of sand castings for the defence and aerospace industry. A machine shop followed in the 1960s, making it one of the first subcontractors to offer both casting and machining under one roof.

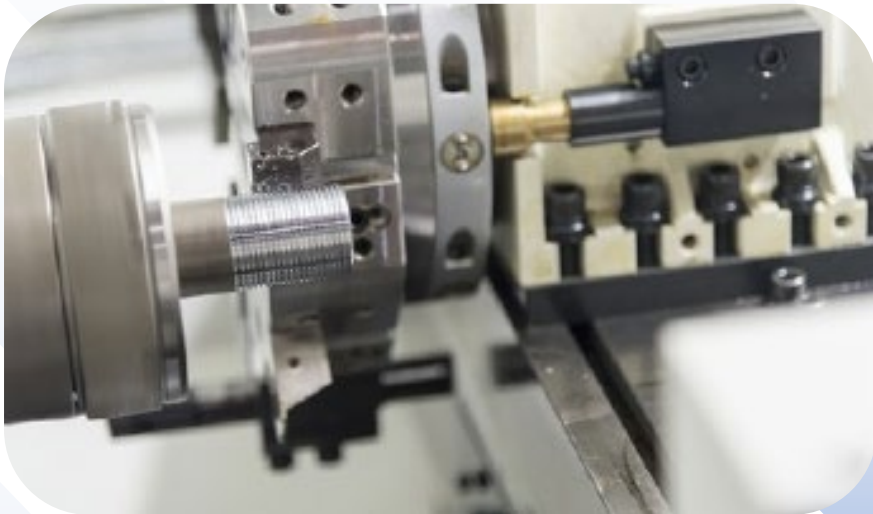
Since the businesses merged in 2004 the business has grown significantly and now has two sites in Camberley with over 50 employees, 40 CNC machines together with design, assembly and test facilities. **FOX-VPS** is part of a small group also offering non-ferrous sand, investment and gravity die castings. The group employs more than 80 people with an annual turnover of £7.5 million.

Since 2004, **FOX-VPS** has acquired a number of specialist businesses including Keyte, HAC and Turner engineering, giving it a broader capability base in the design and manufacture of hydraulic actuators, valves and associated equipment.

CNC Turning

FOX-VPS

FOX-VPS has had a long history in the application of turning techniques to small batch and production applications. In recent years, we have invested heavily in the latest semi automatic and multi axis production machines.



Plant Overview

Maximum CNC turning diameter - 1100mm

Maximum CNC turning length - 2000mm

Maximum CNC bar feed diameter - 80mm

Normal batch sizes up to 5000

900 hours per week capacity on single shift

Additional hours on extended day or double day shift

Plant - CNC Turning

FOX-VPS



Nakamura WT150 (Twin Spindle/Twin Turret) Barfeed	
Quantity	1
Distance between centres (mm)	515
Max Swing (mm)	190
Spindle Bore (mm)	65
Max Length (mm)	515
Axis	7



Doosan Puma 2000SY Barfeed	
Quantity	2
Distance between centres (mm)	510
Max Swing (mm)	780(Bed), 630(Saddle)
Spindle Bore (mm)	65
Max Length (mm)	510/760
Axis	2



XYZ Proturm SLX425 Chuck	
Quantity	2
Distance between centres (mm)	1250/2000
Max Swing (mm)	700(Gap), 480(Bed)
Spindle Bore (mm)	80
Max Length (mm)	1080
Axis	2

Plant - CNC Turning

FOX-VPS



Doosan Puma 280M Chuck	
Quantity	1
Distance between centres (mm)	630
Max Swing (mm)	630(Bed), 500(Saddle)
Spindle Bore (mm)	76
Max Length (mm)	610
Axis	4

Doosan Puma 2600M Chuck	
Quantity	1
Distance between centres (mm)	850
Max Swing (mm)	780(Bed), 630(Saddle)
Spindle Bore (mm)	76
Max Length (mm)	760
Axis	4

Doosan Puma 300M Chuck	
Quantity	1
Distance between centres (mm)	850
Max Swing (mm)	550 (Bed)
Spindle Bore (mm)	77
Max Length (mm)	595
Axis	3

Plant - CNC Turning

FOX-VPS



Hyundai 18S Chuck	
Quantity	1
Distance between centres (mm)	673
Max Swing (mm)	440
Spindle Bore (mm)	69
Max Length (mm)	500
Axis	2

Hyundai 18S Barfeed	
Quantity	1
Distance between centres (mm)	500
Max Swing (mm)	439.9
Spindle Bore (mm)	69.85
Max Length (mm)	508
Axis	2



Hyundai 8S Barfeed	
Quantity	1
Distance between centres (mm)	285
Max Swing (mm)	300
Spindle Bore (mm)	40
Max Length (mm)	500
Axis	2

Plant - CNC Turning

FOX-VPS



Doosan Lynx 220 Barfeed	
Quantity	1
Distance between centres (mm)	525
Max Swing (mm)	600(Bed), 400(Saddle)
Spindle Bore (mm)	51
Max Length (mm)	510
Axis	4



Colchester Combi 4000 Chuck	
Quantity	1
Distance between centres (mm)	2000
Max Swing (mm)	736(Gap), 600(Bed), 553(Saddle)
Spindle Bore (mm)	88
Max Length (mm)	1700
Axis	2



Leadwell LTC20-AP Chuck	
Quantity	1
Distance between centres (mm)	750
Max Swing (mm)	449.6 (Saddle)
Spindle Bore (mm)	50.8
Max Length (mm)	497.8
Axis	2

Plant - CNC Turning

FOX-VPS



You Ji YV800 ATC Chuck	
Quantity	1
Distance between centres (mm)	700
Max Swing (mm)	1100
Spindle Bore (mm)	x
Max Length (mm)	700
Axis	2

Goodway CGL3 Chuck	
Quantity	1
Distance between centres (mm)	600
Max Swing (mm)	450.1
Spindle Bore (mm)	79
Max Length (mm)	600
Axis	2

Spinner TC52 Barfeed	
Quantity	1
Distance between centres (mm)	550
Max Swing (mm)	400
Spindle Bore (mm)	52
Max Length (mm)	550
Axis	3

Spinner TC46 Barfeed	
Quantity	1
Distance between centres (mm)	580
Max Swing (mm)	400
Spindle Bore (mm)	45
Max Length (mm)	580
Axis	3

Plant - CNC Turning (Manual)

FOX-VPS



Colchester Triumph 2500 Chuck	
Quantity	1
Distance between centres (mm)	500
Max Swing (mm)	380
Spindle Bore (mm)	55
Max Length (mm)	500
Axis	2

FOX-VPS has invested heavily during recent years in expanding and enhancing its CNC and conventional milling capability. In addition, careful attention to fixturing and tooling systems as well as operator training has produced considerable increases in productive capacity.



Plant Overview

Maximum 'X' travel - 1660mm

Maximum 'Y' travel - 670mm

Maximum 'Z' travel - 625mm

Maximum work piece weight - 1360kg

Typical batch sizes up to 5000

1000 hours per week capacity on single shift

Additional hours on extended day or double shift.

Accuracy

Positional 5 microns

Production repeatable bores 10 microns

Small batch bores 5 microns

Air gauging and CMM support

Surface finish 0.2 micrometres

Plant - CNC Milling

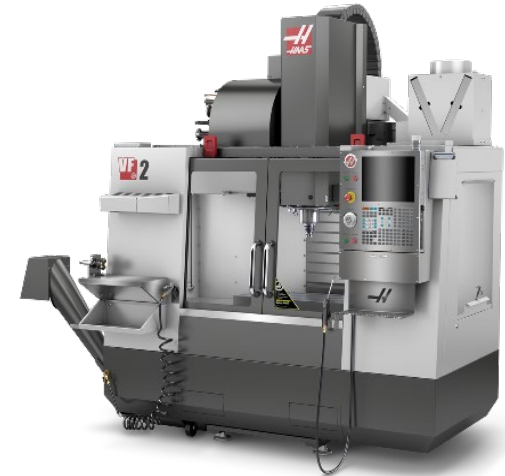
FOX-VPS



Hass UMC-750 (5 axis)	
Quantity	1
X (mm)	762
Y (mm)	508
Z (mm)	508
Max Load (kg)	300
Table Size	914x356mm



Haas VF2 – TR (5 axis)	
Quantity	2
X (mm)	762
Y (mm)	406
Z (mm)	508
Max Load (kg)	1361
Table Size	914x356mm



Haas VF2-DCE (4 axis)	
Quantity	7
X (mm)	762
Y (mm)	406
Z (mm)	508
Max Load (kg)	1361
Table Size	914x356mm

Plant - CNC Milling

FOX-VPS



Haas Mini Mill (4 axis)	
Quantity	1
X (mm)	406
Y (mm)	305
Z (mm)	254
Max Load (kg)	227
Table Size	914x305mm



Doosan DNM650 (4 axis)	
Quantity	1
X (mm)	1270
Y (mm)	670
Z (mm)	625
Max Load (kg)	1000
Table Size	1300 X 670mm



Mazak VTC200C (4 axis)	
Quantity	1
X (mm)	1660
Y (mm)	510
Z (mm)	510
Max Load (kg)	997.9
Table Size	2000x510mm

Plant - CNC Milling (Manual)

FOX-VPS



Bridgeport BR2J	
Quantity	2
X (mm)	762
Y (mm)	305
Z (mm)	406
Max Load (kg)	340
Table Size	229x1067mm



XYZ CMX3500	
Quantity	2
X (mm)	770
Y (mm)	550
Z (mm)	500
Max Load (kg)	600
Table Size	1370 x 356mm



XYZ EMZ 1500	
Quantity	1
X (mm)	660
Y (mm)	305
Z (mm)	406
Max Load (kg)	350
Table Size	1069 x 228 mm

Production Planning

FOX-VPS

FOX-VPS installed Seiki dynamic scheduling software in 2016 to complement our Progress Plus MRP system in order to bring sophisticated manufacturing planning tools to production.

The Works Order output from Progress Plus feeds into a graphic scheduling board that can be interrogated, modified and analysed to give us a clear picture of cell and machine loadings, allowing us to achieve much improved On Time Delivery performance and forecast lead times with much higher accuracy.

The system can create optimal sequences of production based on a realistic model of true available capacity, as well as provide a clear visual indication of the impact of unforeseen changes in order to prevent late deliveries.

WO Op Status Report

Outstanding Only = True AND Show WO Notes = False AND Customer = Sonardyne International Limited Due Date

WO No	Part No: Description	Qty (OS)	Master WO SO No	Due Date	SO Recd Date	Op - WC - Time OS - Qty Booked - Status
16897	710-0173: Housing Max Comatt 6K	2	75944/1	10/12/19	10/12/19	10/INSPCT - BK - 0.83h 20/STORES - 3h 30/2001 - 140 40/COMBI - 4.6h 50/COMBI - 3h 60/COMBI - 3h 70/INSPCT - BK - 0.83h
16896	8195-029: OPENING TOOL 6G DATA LOGGER	10	75943/1	07/02/20	07/02/20	10/INSPCT - BK - 0.42h 20/STORES - 3h 30/HAAS-B7-MM - 8h 40/HAAS-B7-MM - 8h 50/INSPCT - BK - 0.28h

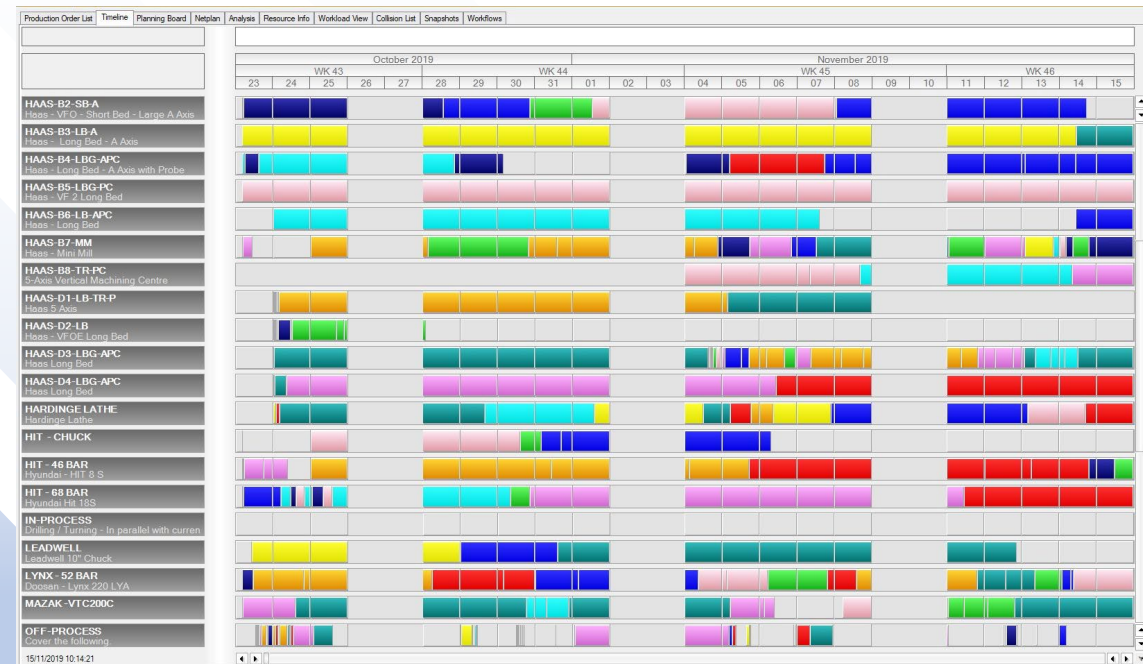
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Colour Coding:

Not Started Subcon Op WIP Complete
Subcon Op in WIP if a WO has been raised and not fully received. Date is Promised Date from PO.
Op in WIP if either Time or Qty has been booked, or the Op is currently being booked to in SPC.

WO Op Status Report. Page 1



Casting

FOX-VPS

FOX-VPS has been supplying investment, sand and gravity die castings for over thirty years via our group company Engineering & Developments, combining traditional process skills with continuous improvements in technology. A broad customer base is served across a diverse range of markets with the capability of producing high quality components.

Sand and gravity die castings up to 200kg and investment casting up to 20kg.

Typical batch sizes 1-500.

Materials used include aluminium, phosphor bronze, and other yellow metals.

Full spectrographic melt analysis, dye penetrant NDT, x-ray, and mechanical testing is available as well as in-house heat treatment.



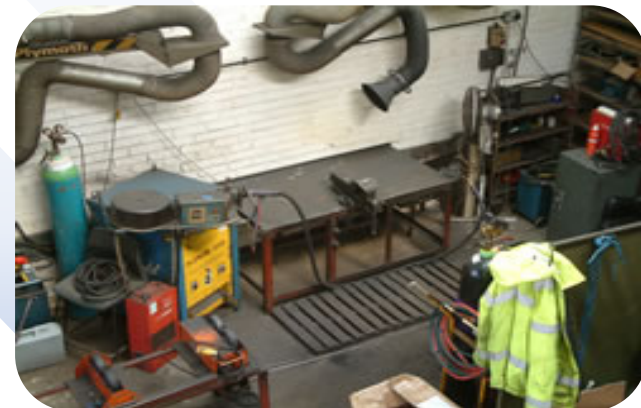
Welding

FOX-VPS

FOX-VPS offer a fabrication service in support of its machining and casting capability. This includes coded welding to BS EN ISO 15614 and BS EN ISO 9606.

- 2 x MIG welding set.
- 1 x TIG welding set.
- 1 x Manual metal arc set.
- 1 x Oxy/Acetylene welding set.
- 1 set powered rollers for handling large hydraulic cylinders during welding.

We have pre-welding and post-welding heat treatment facilities.



EQUIPMENT

Our dedicated quality control department is equipped with the following:

CMM: Aberlink Axiom Too HS and Zenith 3 CNC CMM

Air Gauging: For measurement of tapers and holes.

Other Equipment: Shadowgraph, surface finish measurement, hardness testing and conventional metrology measuring devices.

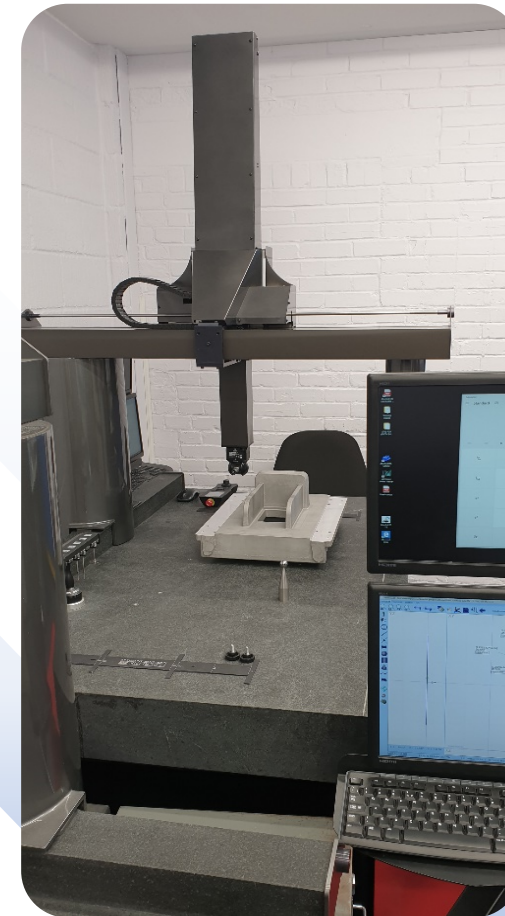
CMM Inspection: $\pm 2\mu\text{m}$

CMM On Machine: $\pm 2\mu\text{m}$

Surface Finish: $2\mu\text{m}$

FAIR Reports: To AS9102 standard

Traceability: We offer full traceability on all items and Certification when requested.



Plant - Quality

FOX-VPS



Zenith 3 CNC CMM	
Precision	$\pm 2.7 \mu\text{m}$
Travel	X = 1000mm, Y = 1000mm, Z = 600mm



Axiom Too HS CMM		
	Model 1	Model 2
Precision	$\pm 2 \mu\text{m}$	$\pm 2 \mu\text{m}$
Travel	X = 640mm, Y = 600mm, Z = 500mm	X = 640mm, Y = 1200mm, Z = 500mm

Plant - Quality

FOX-VPS



Linear Height Gauge LH-600E/EG	
Precision	$\pm 5 \mu\text{m}$
Travel	600mm



PC-2200 Air/Electronic Column	
Precision	$\pm 0.1 \mu\text{m}$



Surtronic S-100 series	
Precision	$\pm(2\% + 0.004 \mu\text{m}) \text{ Ra}$



Mitutoyo Pj300 Profile Projector	
Precision	$\pm 0.001\text{mm}$

Assembly and Testing

FOX-VPS

FOX-VPS has a purpose built assembly area of 350 square metres complete with 2000KG overhead crane and a clean room. We assemble a wide range of servo actuators, valves, transducers, fire protection systems, tyre lifters and a wide range of electro mechanical and hydro mechanical assembly projects.

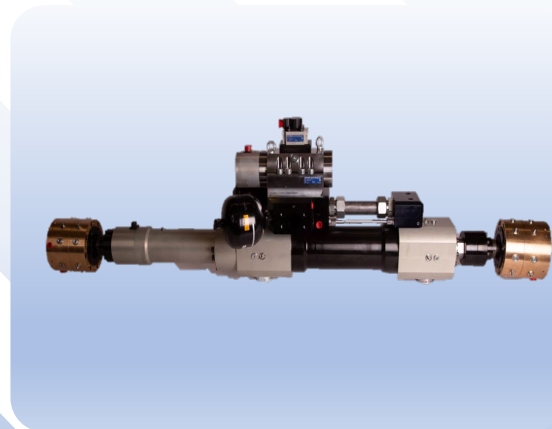
We can offer pressure testing in

Hydraulic Oil up to 700 Bar

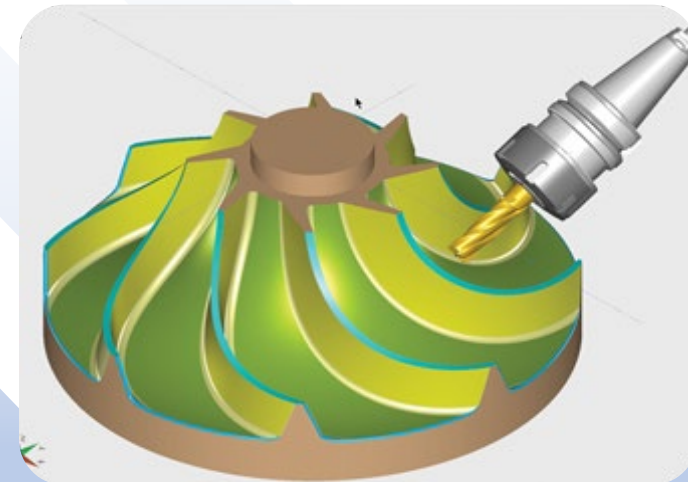
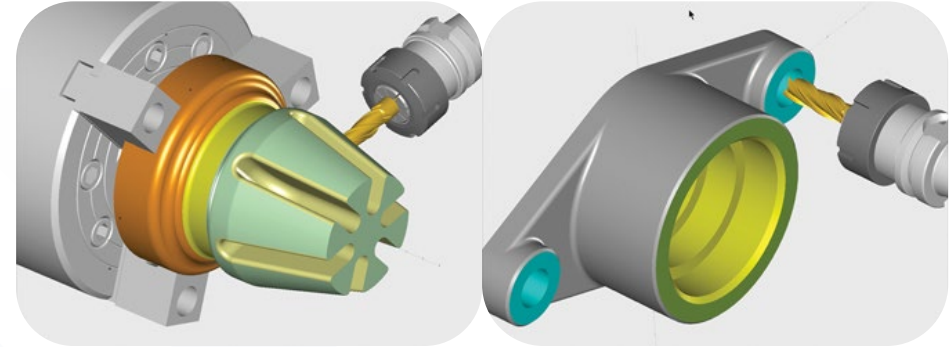
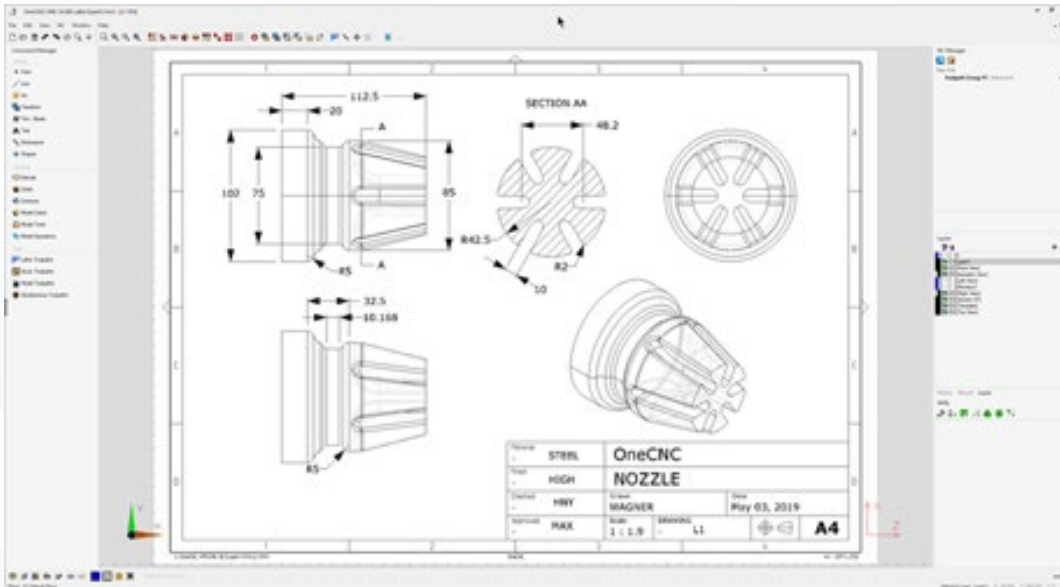
Water up to 700 Bar

Nitrogen up to 100 Bar

Other media available on request.



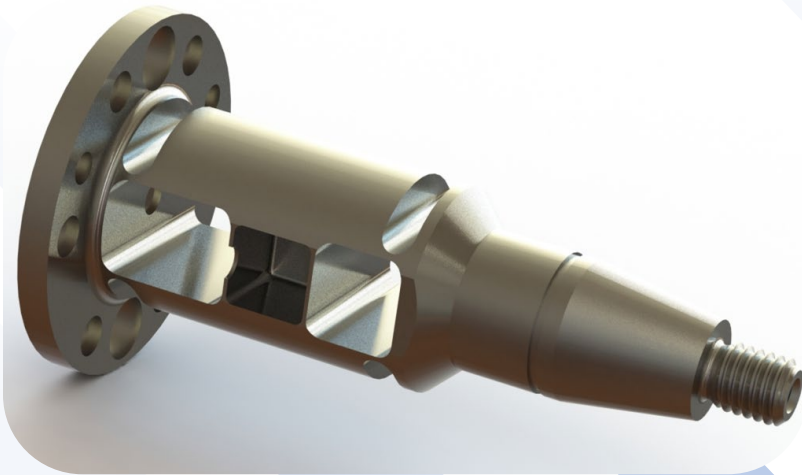
FOX-VPS uses OneCNC software for its CAD/CAM requirements. This is networked across our two sites to allow and easy programing in up to 5 simultaneous axes.



Design

FOX-VPS

FOX-VPS offers a design service to our customers using SolidWorks CAD. Our design engineers have over 30 years experience in servo actuators, hydraulic valves, mechanical handling, fire protection and a variety of other areas.

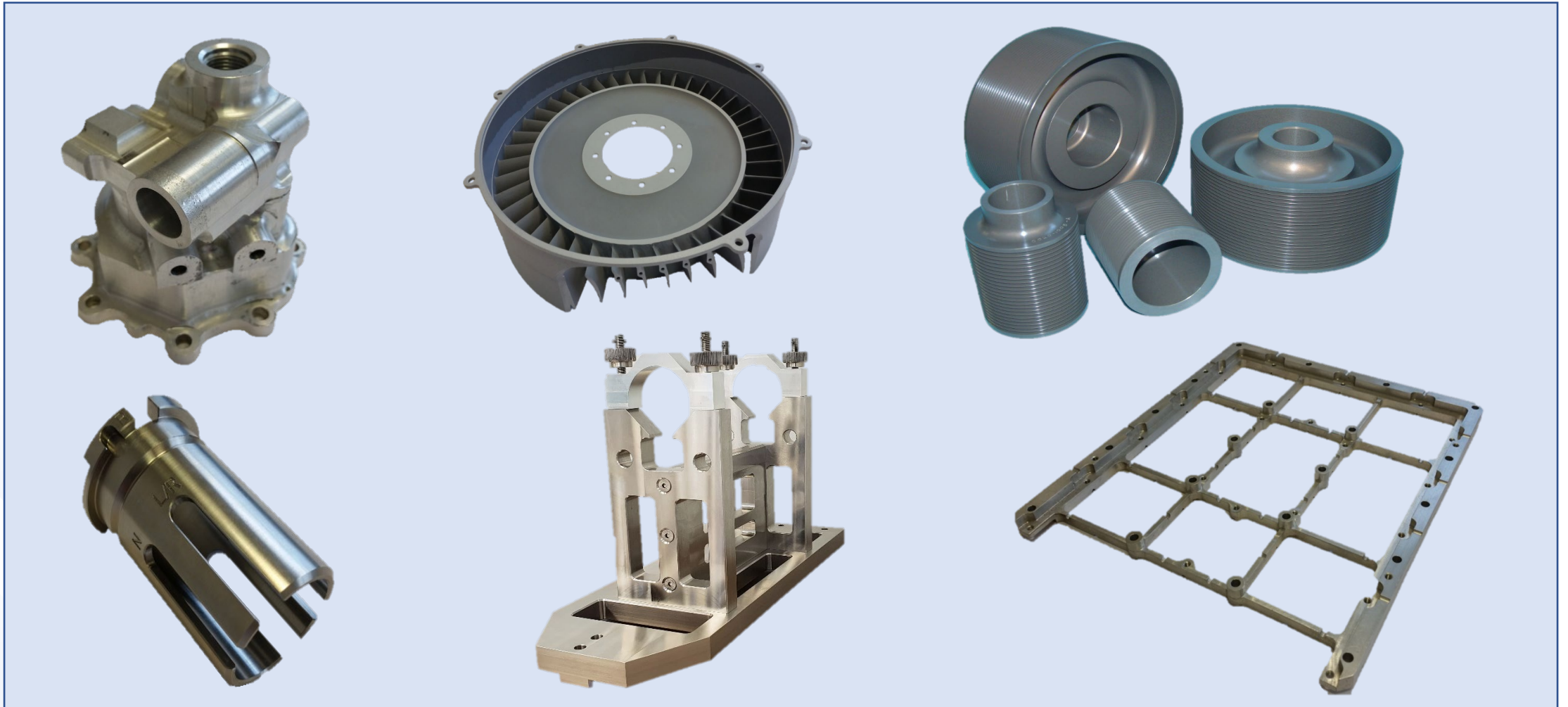


Gallery

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