

# Research & Development



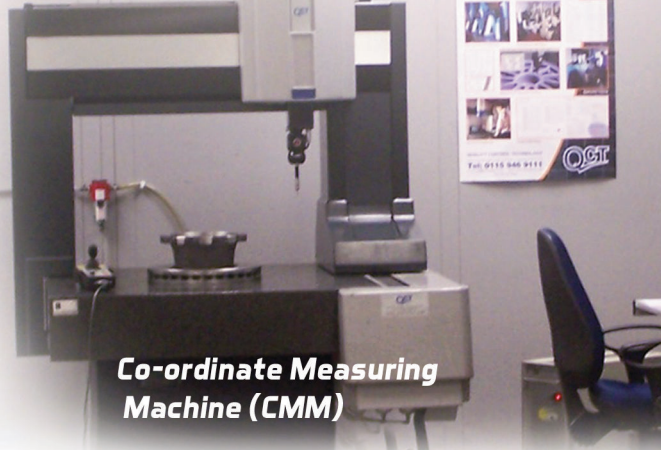
At Juratek, we pride ourselves on the first class quality of our products. We are in full control of the development and quality processes.

Our Research & Development process includes the following steps:

## 1. OEM sample measured on CMM Machine

## 2. OEM sample chemically analysed

Independently test OE sample for Metalurgical composition and Mechanical analysis (tensile strength).



Co-ordinate Measuring Machine (CMM)

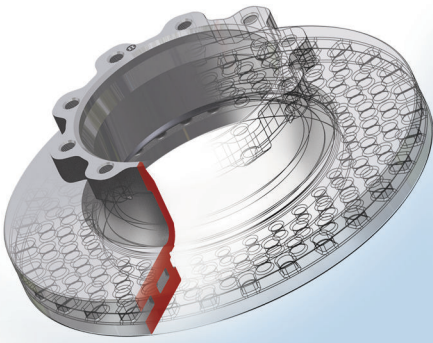
JURATEK STANDARD MATERIAL											
Chemical Analysis											
Element	Carbon	Silicon	Manganese	Phosphorus	Sulphur	Chromium	Molybdenum	Nickel	Copper	Tin	
	C	Si	Mn	Ph	S	Cr	Mo	NI	Cu	Sn	
Juratek	3.20%	1.90%	0.60%	0.15%	0.15%	0.05%	0.01%	0.005%	0.050%	-	-
Specification	3.50%	2.30%	0.90%	MAX	MAX	0.12%	0.015%	0.030%	0.150%	-	-
Micro Structure											
Pearlite	95% Min					Ferrite	5% MAX				
Graphite											
Type A size 3-5	85% Min					Type B, C, D & E	15% MAX				
Mechanical Properties											
Tensile Strength	210N/mm <sup>2</sup>					Hardness	187 - 241				
Quality											
<small>The castings shall be free from cracks, fins, blows, shrinkage or gas porosity, inclusions, chilled areas, burnt in sand and any other casting defects of any nature. Castings ventilation wells must be equal distance throughout. Thickness of ventilation well must be the same with tolerance of ± 0.7mm. Casting shall not be repaired by welding, plugging or any other method.</small>											
		<b>Juratek is a QSM ISO 9001 : 2000 registered company</b>									



Keighley Laboratories Limited

## 3. Measurements entered onto CAD software to create 3D model

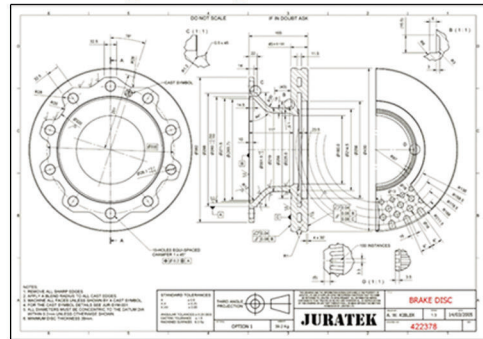
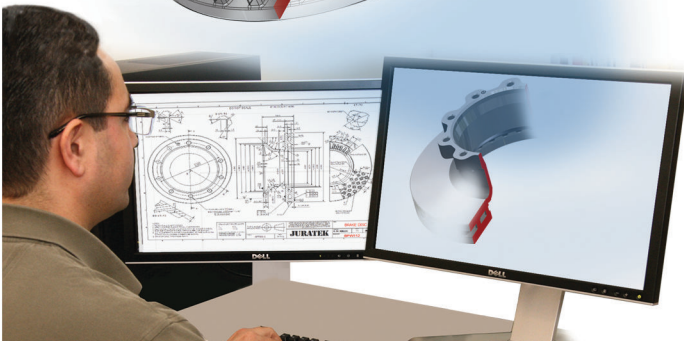
Using the latest Computer aided design software 3D models are produced based on measurements taken from our coordinate measuring machine (CMM).



These models are then converted into 2D manufacturing drawings.

These models are also used in the routine inspection of the products once manufactured, to ensure conformity to the original design.

## 4. Create a 2D manufacturing drawing from the 3D model



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