HOW TO MAKE A GOOD BLOW BAR

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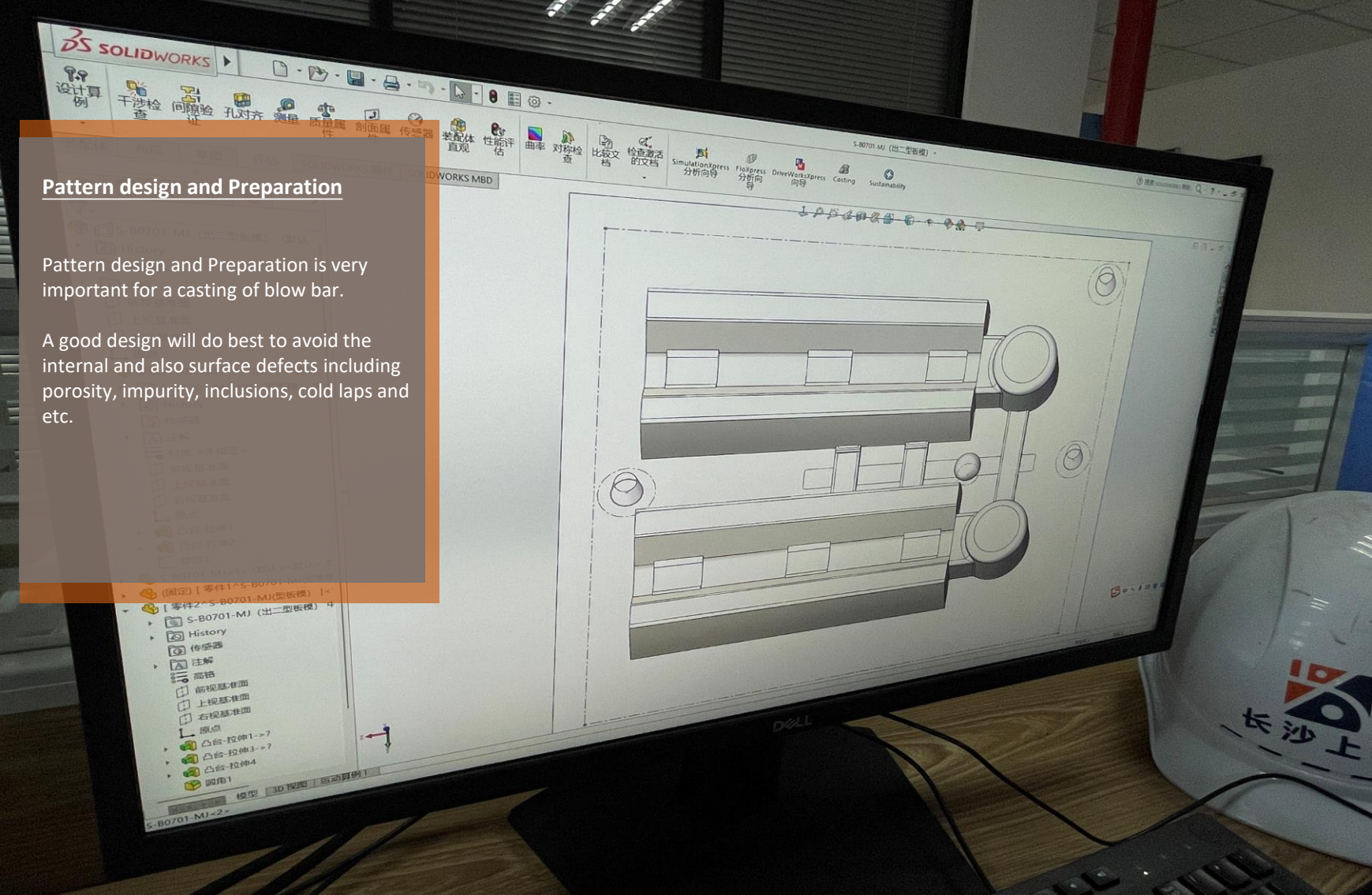
Chemicals

Blow bars are normally made of manganese steel , martensitic steel, chrome white iron and their ceramic composites, with Chemical as below respectively:

Material	Main Chemicals									
Manganese steel	Fe	C	Si	Cr	Mn	/	/	S	P	Others
Martensitic steel	Fe	C	Si	Cr	Mn	Mo	Ni	S	P	Others
Chrome white iron	Fe	C	Si	Cr	Mn	Mo	Ni	S	P	Others

- The correctness of chemical content is decisive to the natures of the material.
- Sulfur(S) and Phosphorus(P) must be controlled as little as possible in Martensitic steel and chrome white iron because they are a negative to the impact-resistant ability of blow bars whereas Moly and Nickel are positive.
- Phosphorus(P) is destructive in manganese steel so it must be controlled under the limit.



Pattern design and Preparation

Pattern design and Preparation is very important for a casting of blow bar.

A good design will do best to avoid the internal and also surface defects including porosity, impurity, inclusions, cold laps and etc.

Heat treatment

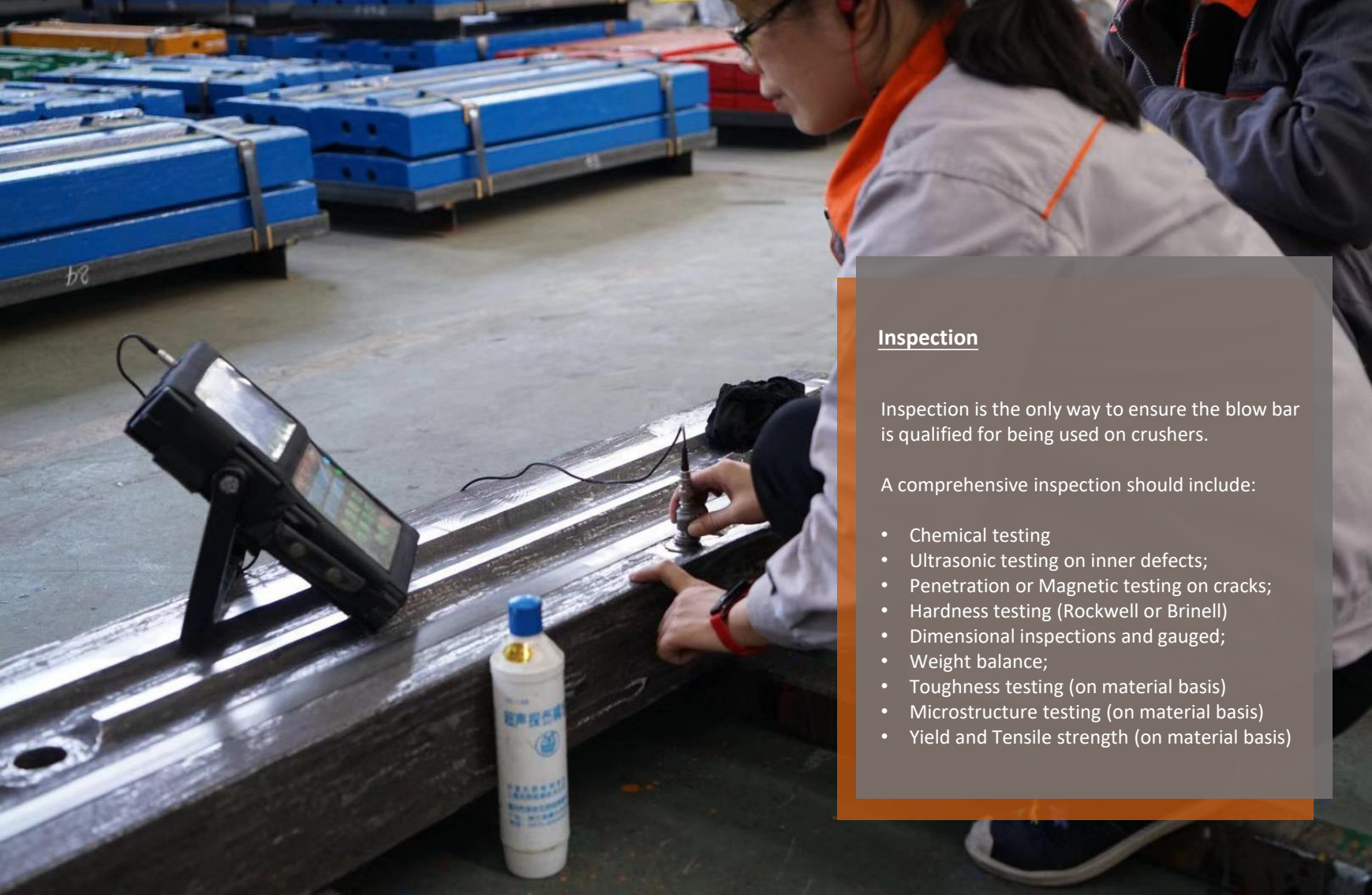
Heat treatment is vital to achieve the good quality and performance of blow bars.

- Manganese blow bars usually are water toughened only.
- Chrome white iron blow bars are quenched and tempered.
- Martensitic steel blow bars are annealed, quenched and tempered.

Heat treatment temperature and procedures must be carefully and precisely set in order to achieve expected hardness, toughness, microstructure, and also avoid cracking and deflecting on blow bars.

Machining

Machining is necessary for some blow bars to achieve good flatness, straightness and roughness on the mounting areas. Especially for long strip high chrome white iron blow bars, machining on mounting areas is always compulsory.



Inspection

Inspection is the only way to ensure the blow bar is qualified for being used on crushers.

A comprehensive inspection should include:

- Chemical testing
- Ultrasonic testing on inner defects;
- Penetration or Magnetic testing on cracks;
- Hardness testing (Rockwell or Brinell)
- Dimensional inspections and gauged;
- Weight balance;
- Toughness testing (on material basis)
- Microstructure testing (on material basis)
- Yield and Tensile strength (on material basis)

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