Machinability

	Materials	Coating	PXA30	P20-Mod.
Drilling	Carbides	Y	◎	◎
		N	◎	◎
	High Speed P/M	Y	◎	◎
	High speed	N	○	◎
Endmilling	Carbides	Y	◎	◎
		N	◎	◎

Compared to P20: ◎Better, ○Same

※Relative comparison is based on Daido's test data.

Physical properties

◆Thermal expansion coefficient

Temp.	30~100℃	30~200℃	30~300℃	30~400℃	30~600℃
×10⁻⁶/K	11.9	12.7	13.1	13.5	14.1

◆Thermal conductivity

Temp.	20℃	100℃	200℃	300℃	400℃
W/m·K	34.7	34.8	34.6	34.5	34.0

◆Specific heat

Temp.	20℃	100℃	200℃	300℃	400℃
J/kg·K [cal/g·℃]	481.4 [0.115]	489.8 [0.117]	540.0 [0.129]	552.6 [0.132]	627.9 [0.150]

◆Young modulus = 207GPa

※Hardened and tempered (30~33HRC)

Applications

◆Automotive parts (ex. Light cover)

◆Electric appliance, Audio equipments

◆Communication・Office automation equipments

◆Other: General use plastic molding molds

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■ Document Disclaimer

The product characteristics included in this brochure are the representative values based on the result of our measurements, and do not guarantee the performance in use of the products.
Please inquire the latest information to our department in charge as the information of this brochure is updated without previous notice as needed.

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SC1803
18.02.0,5(DLS)

Daido Plastic Mold Steel Series

PXA30

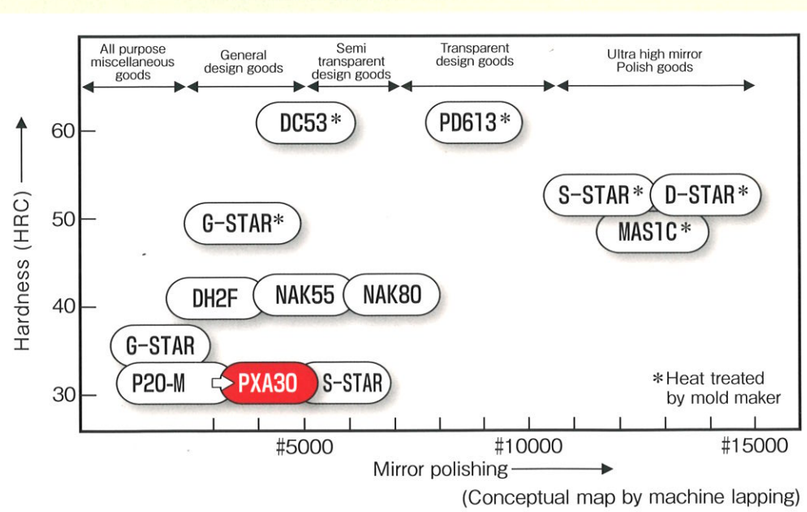
General use Plastic Mold steel

Features

Based on current P20 modified steel, PXA30 has been further improved especially in mirror polishing by reducing non metallic inclusions which cause pin holes.

◆Mirror polishing… Optimized production process reduces oxide type non metallic inclusions less than in current P20 modified, which contributes to stable quality in mirror polishing.

◆Other features… Hardness and nitiriding are the same as those of current P20 modified. Same or superb characteristics in mechanical properties and EDM.



(Conceptual map by machine lapping)

Chemistry

Daido brand	Supplied condition (Hardness)	Chemistry (%)					
		C	Si	Mn	Cr	Mo	V
PXA30	Pre-hardened (30~33HRC)	The same as those of current P20 modified					

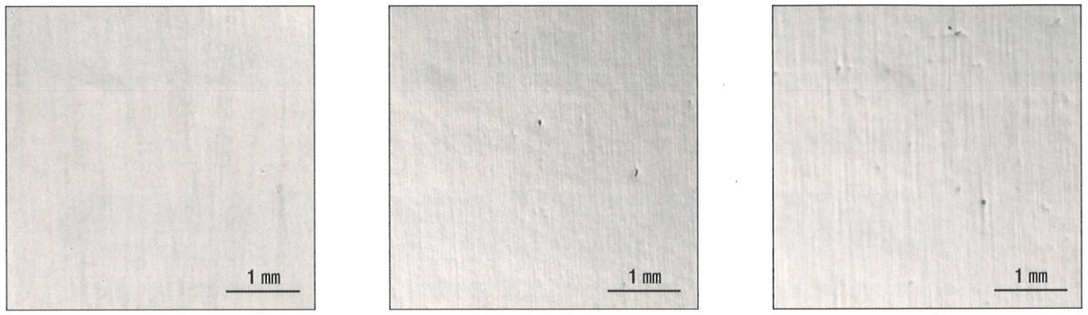
DAIDO STEEL

Features

Specimen : 350H×1000W

Mirror polishing

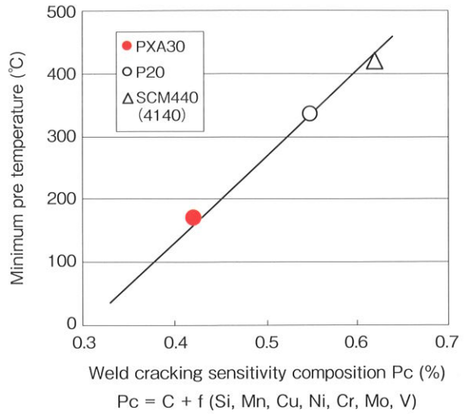
Observed by differential interference method on #5000 mirror polished surface



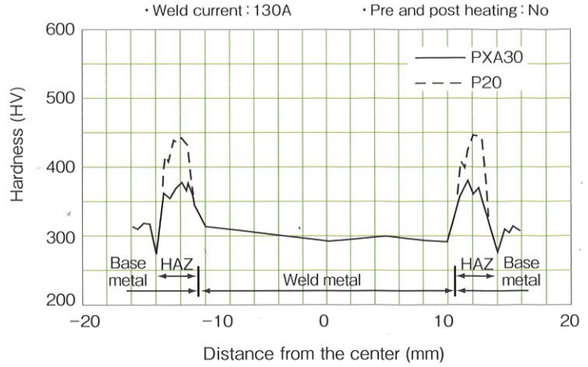
PXA30　　P20 Modified　　P20

《General polish procedures》　Turning, milling→Wet stone (#220 - #320 - #400)
→Sand paper (#320 - #400 - #600 - #800 - #1000 - #1200 - #1500)
→Diamond paste (#1200 - #1800 - #3000 - #5000)

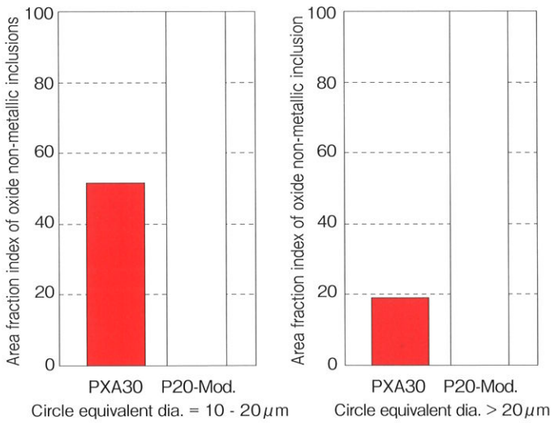
Repair welding



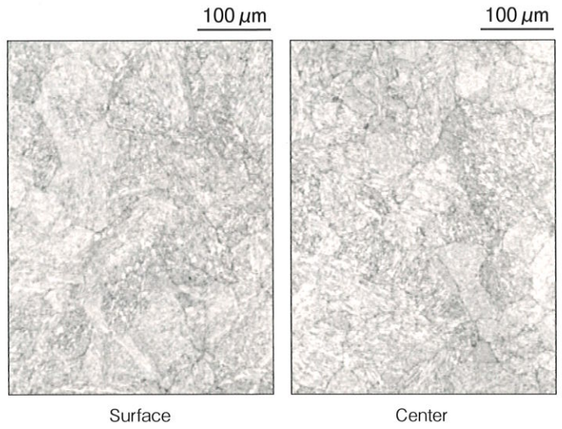
Welding conditions
・Method : TIG
・Filler : PX5-W, φ2.4
・Weld current : 130A
・Gas flow : 100L/min.
・TP : 50mm Thick
・Pre and post heating : No



Non metallic inclusions



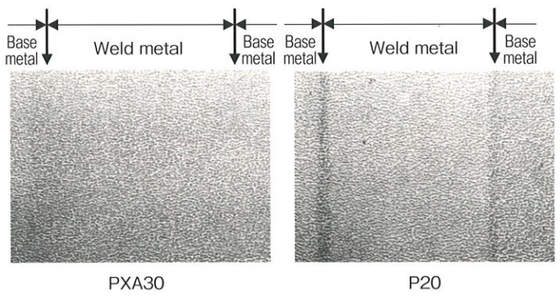
Optical micrographs



Texture

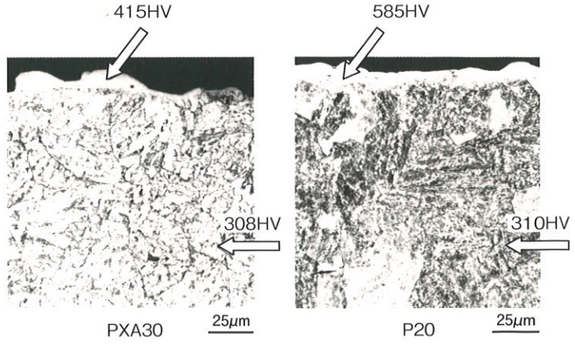
Photo etching of welded part (Pear pattern)

Welding conditions
・Method : TIG
・Filler : PX5-W, φ2.4
・Weld current : 125A
・Pre and post heated

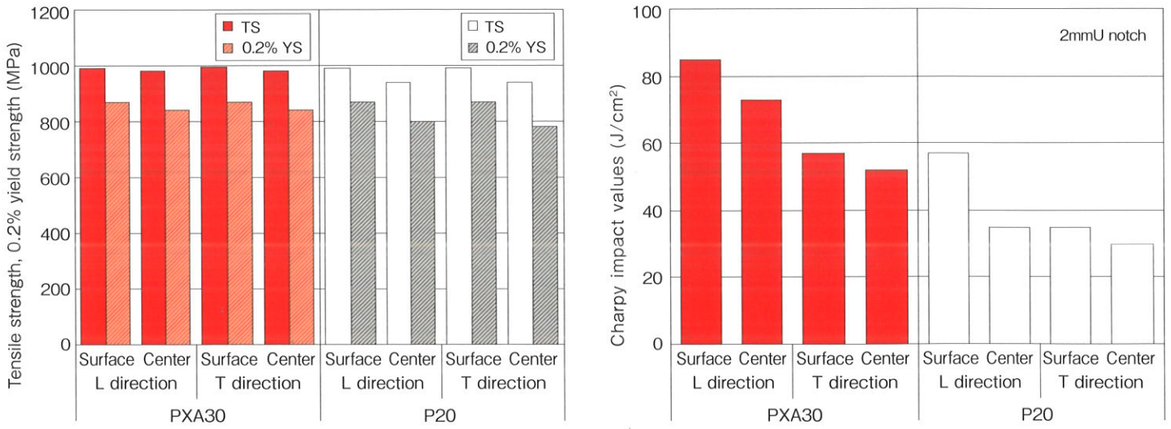


EDM

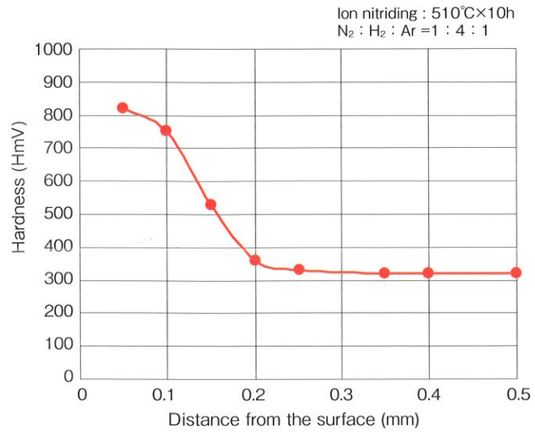
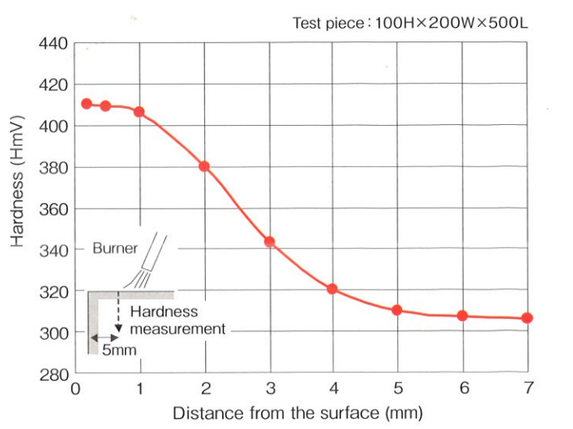
Easy to remove recast layer due to lower hardness.



Mechanical properties



Nitriding



Flame hardening