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PX4

Highly Weldable General-Purpose Plastic Mold Steel

Features

- 1 As it is pre-hardened to 33 ~ 33 HRC, it is ready to be machined into mold.
- 2 With a uniform microstructure and hardness, PX4 shows the best surface finish characteristics: mirror surface polishability and photo etchability.
- 3 As Hardness of surface-hardened layer is low in electrical discharge machining, finishing operations becomes easy.
- 4 As it is alloy designed to decrease weld crack susceptibility, weldability is greatly improved.

Applications

- 1 **Electrical and audio visual related**
 - VTR body, TV body, cassette cases, fans, connectors, buttons, others.
- 2 **Automobile related**
 - Tail lamps, mirror cases, meter cases, wheel caps, air-con/heater cases, others.
- 3 **Communication, OA related**
 - Telephones, fax body, copier body, fans, gears, others.
- 4 **Others**
 - Toys, musical instruments, housing equipment, garment cases, miscellaneous goods, etc.



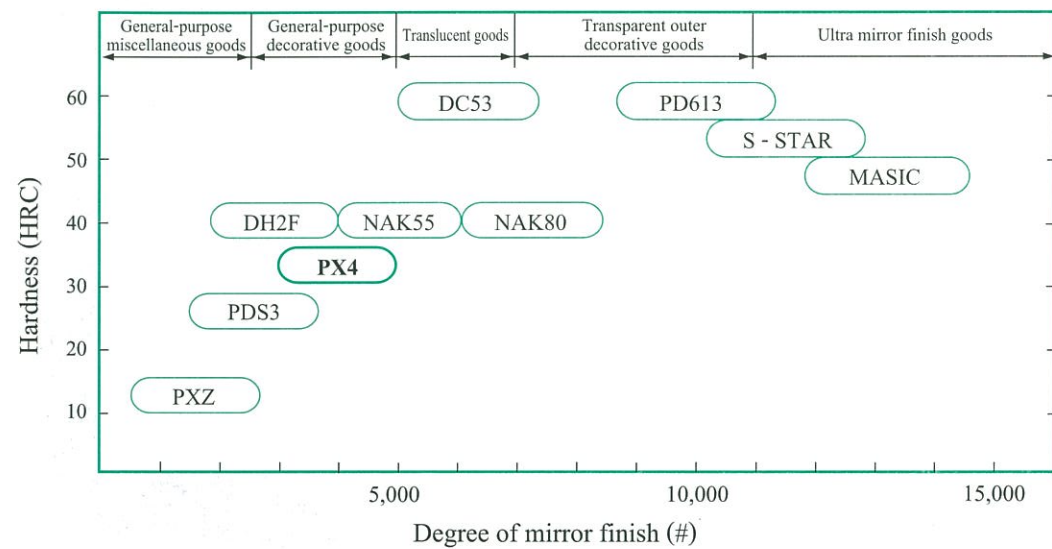
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Quality Characteristics II



Mirror surface polishability

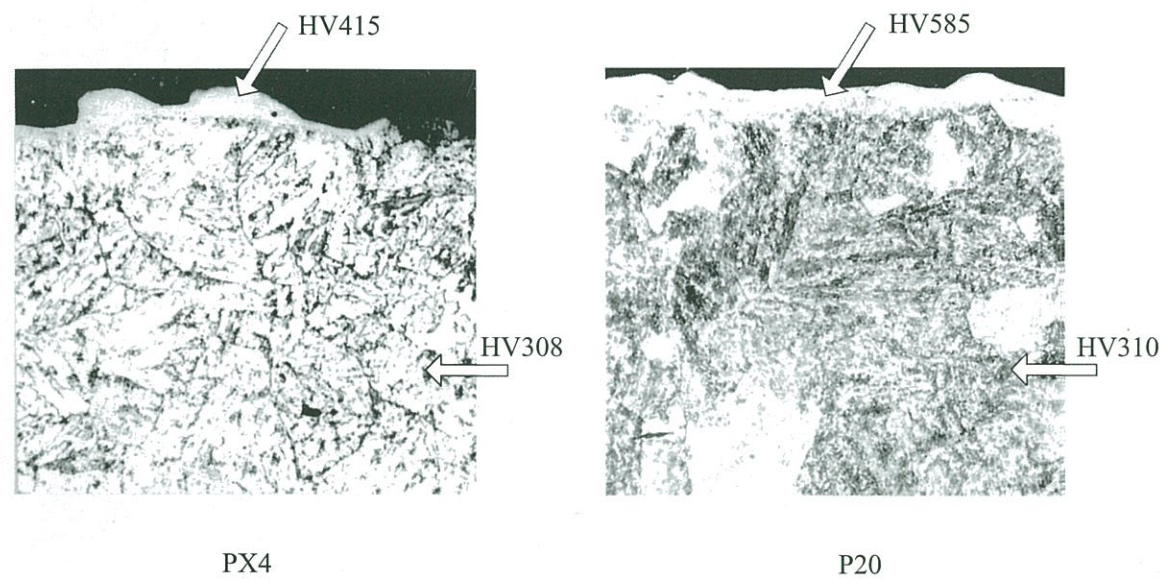
PX4 is uniformed in its microstructure and hardness and its mirror surface polishability is in the highest level among 30HRC type of materials.



Electrical discharge machinability

As PX4's hardness of the hardened layer in electrical discharge machining is 70% of general Cr-Mo materials, finish grinding of the layer can be carried out more easily.

Hardness of electrical discharge machined surface



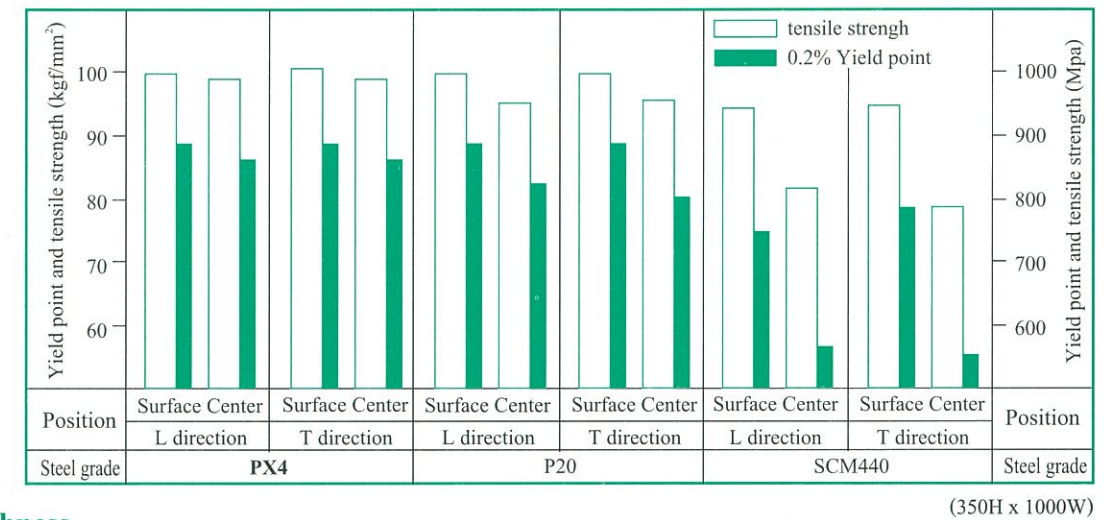
Quality Characteristics III



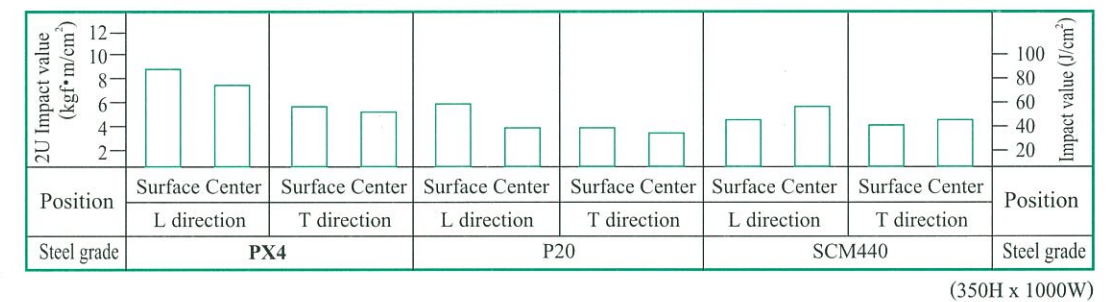
FEATURES

Isotropy and uniform strength:
PX4's strength is of the same level at the center and surface of the material and that isotropy (T/L) is at least 0.95. PX4 ranks in the highest toughness class among Cr-Mo materials.

Tensile properties



Toughness



Physical Properties

Thermal conductivity (W/m·°C) (() cal/cm·sec·°C)

	20°C	100°C	200°C	300°C	400°C
PX4	42.45 (0.1014)	42.36 (0.1012)	42.07 (0.1005)	39.22 (0.0937)	38.80 (0.0927)
SCM440	42.28 (0.1010)	41.61 (0.0994)	42.70 (0.1020)	39.39 (0.0941)	38.00 (0.0908)

Coefficient of thermal expansion (x 10⁻⁶/°C)

	30 ~ 100°C	30 ~ 200°C	30 ~ 300°C	30 ~ 400°C	30 ~ 600°C
PX4	11.9	12.7	13.1	13.5	14.1
SCM440	11.9	12.7	13.2	13.7	14.2

Specific heat (J/kg·°C) (() cal/g·°C)

	20°C	100°C	200°C	300°C	400°C
PX4	481.4 (0.115)	489.8 (0.117)	540.0 (0.129)	552.6 (0.132)	627.9 (0.150)
SCM440	481.4 (0.115)	514.9 (0.123)	581.9 (0.139)	590.2 (0.141)	607.0 (0.145)

Young's modulus (Mpa) (() kgf/mm²)

	20°C	100°C	200°C	300°C	400°C
PX4	207,482 (21,150)	204,048 (20,800)	198,162 (20,200)	192,276 (19,600)	184,919 (18,850)
SCM440	206,991 (21,100)	203,067 (20,700)	197,672 (20,150)	190,314 (19,400)	181,976 (18,550)