



Finkl Steel

HVX[®]

High Quality
Stainless Steel

Typical Applications

- Fluid Ends for Hydraulic Fracturing
- Mining equipment
- Shafts and spindles
- Valve seats
- Fasteners
- Beater bars

Characteristics

- Higher abrasion resistance than 17-4/15-5 stainless steels
- Better machinability than 17-4/15-5 stainless steels
- Optimized alloy content to lower manufacturing costs

General

Delivery condition: Hardened and tempered, EFVD

HVX[®] is a high quality stainless steel optimized for hydraulic fracturing fluid end applications. Melted and forged in the USA, it provides the lowest total cost of ownership by delivering long pump life and increased affordability. HVX relies on both martensitic transformation and precipitation hardening for strengthening. The patented composition of HVX makes for a grade tougher than 410 SS at an equivalent hardness, but also makes it capable of higher strength levels through larger cross-sections. The composition also allows for carbides to form that improve the wear and erosion resistance when compared to other stainless steel grades.

Welding

The base metal should be preheated to 400/600°F (205/315°C) and the temperature maintained at 400°F (205°C) during welding. A post-weld treatment at 1050°F (565°C) should be carried out on the weldment as soon as possible after cooling to room temperature. Chromium and carbon content of the filler metal should generally match those elements in the base metal.

Typical Chemical Analysis* – % weight

C	Mn	Si	Ni	Cr	Mo	Cu	PREN
0.15	0.40	0.40	0.85	12.5	0.50	1.00	>14

*Covered under the following U.S. Patent: 10,344,758

Tensile Properties

Tensile Strength ksi (MPa), Min	Yield Strength ksi (MPa), Min	Elongation %, Min	Reduction of Area %, Min	Surface Hardness HBW
116 (800)	102 (700)	18	50	248-285

Impact Properties

Longitudinal Impact Strength at 72°F (22°C) Ft-Lb (J), Typical	Transverse Impact Strength at -22°F (-30°C) Ft-Lb (J), Typical
35 (48)	15 (20)

Nitriding

HVX is suitable for nitriding in the temperature range of 765°F (470°C) to 1000°F (538°C). The case depth is time and temperature dependent. Removal of the brittle “white layer” after nitriding is recommended.



Finkl Steel

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*Note: Provided technical data and information in this data sheet are typical values. Normal variations in chemistry, size and conditions of heat treatment may cause deviations from these values. We suggest that information be verified at time of inquiry or order. For additional data or metallurgical assistance, please contact us.