



Notch Broaching Machine KRME

rational notch broaching impact test specimens ISO 148, ASTM E23, ASTM A370-NIST

Extract from comparative tests of SIEMENS AG Kraftwerk Union KWU (notch broached / milled samples)

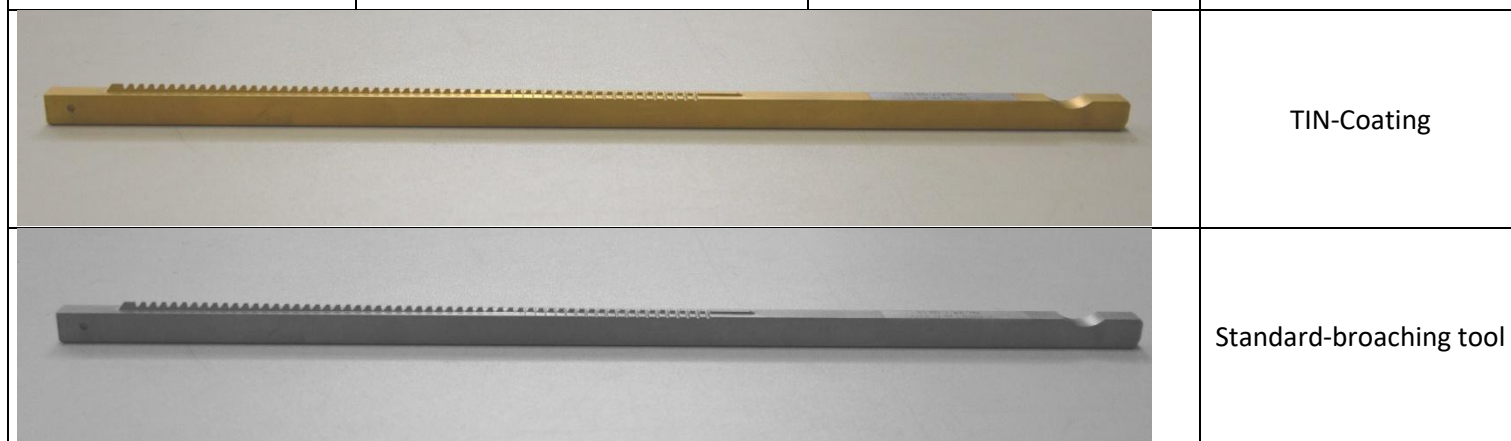
"The results of the impact tests on specimens with broached notch (impact energy, toughness fraction, also of the instrumented test) agree well with the results of the specimens with milled notch. Notch broaching machines are suitable for producing standard-compliant notches of ISO-V specimens."

SIEMENS AG		Notch Radius	Notch Angle	Notch ground height	Remark
Test-No.	Set point	0,25 +/- 0,025	45° +/- 2°	8,0 mm +/- 0,075	
1		+	+	8,00	fulfilled
2		+	+	8,01	fulfilled
3		+	+	8,02	fulfilled
4		+	+	8,01	fulfilled
5		+	+	7,99	fulfilled
6		+	+	8,01	fulfilled
7		+	+	8,02	fulfilled
8		+	+	8,01	fulfilled
9		+	+	8,02	fulfilled

Number of specimens that can be produced until re-sharpening/replacement of the broach

For alloys with high strength / hardness (max. 40 HRC), the use of titanium coated (TIN) broaches is required. However, this coating also significantly increases the service life of standard steels. The service lives given below are approximate guide values, as the grades of the steels can vary considerably due to alloying constituents. The service lives cannot be guaranteed - broaches are considered wear parts -.

Testing material made of	Tensile strength Rm MPa	Standard-broaching tool	Titan coated broaching tool
ST52-3 N	490 - 630	6.500 specimen	10.000 specimen
42 CrMo4 V	750 - 860	4.000 specimen	6.500 specimen
34 CrNiMo 6V	1.000 – 1.400	3.000 specimen	5.000 specimen
VA (18/10)	700 – 1.300	xxx	4.000 specimen
1.4548	1.200	xxx	2.000 specimen
1.3901 (24-28% Ni)		xxx	1.500 specimen
1.4986 WK	650 - 850	xxx	1.000 specimen
Titanium		xxx	500 specimen
Plastic		Hardly any wear	Not required



Machine data	
Machine type	: KRME 240 (240 mm broaching tool)
Specimen approximate	: 80 specimen / hour
Dimension width / depth / height ca. mm	: 500 / 310 / 1.050 broaching tool down / 1.290 up
Required space ca. mm	: 800 / 600 / 1.400
Weight ca. kg	: 90
Motor 230V	: 0,55 kW, 2.840 – 3.450 UPM, 120 stroke / hour Speed adjusting by potentiometer adjustment
Standard power supply	: 230V/50 Hz 1,5 A / 230V-Schutzkontakt-Stecker
Special power supply	: on request (110V/60Hz etc.)

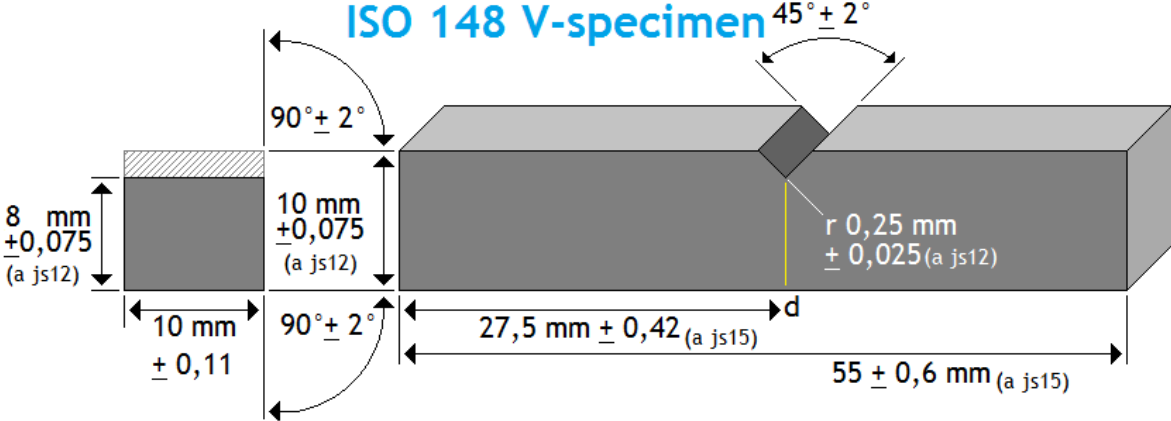
speeds depending on material		Speed m / min. (from – to)		Position
Stainless steel, Inconel		0,5	0,8	2
Aluminum / Titanium		1,1	1,3	4
Carbon steel		1,6	1,9	6
Cast iron		2,1	2,4	8
GRP / CFRP plastic		2,7	2,7	10

Clean and lubricate the broach every stroke

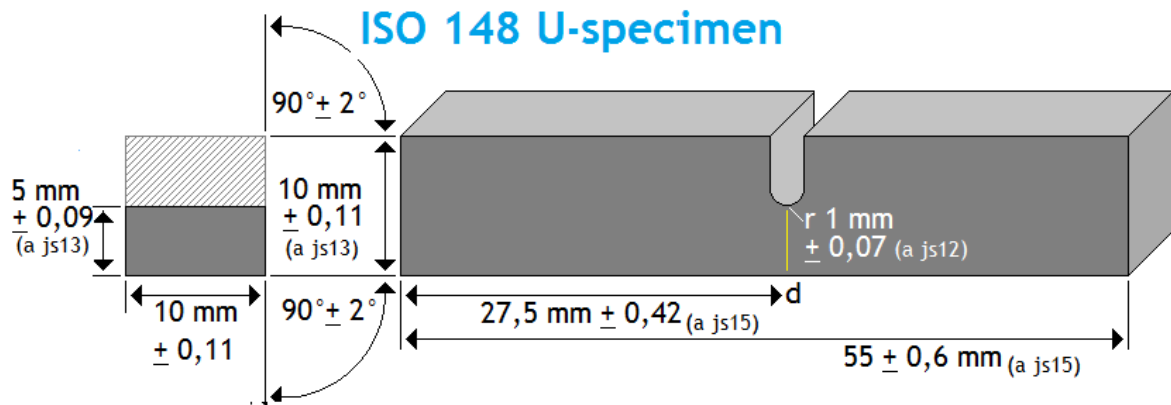


Specimen geometry ISO148 Notched bar impact specimens

ISO 148 V-specimen



ISO 148 U-specimen



a (js) : Tolerance = ISO286-1 © Wolfram Schütz 2013

b : surface roughness: <math>< 5 \mu\text{m Ra}</math> (not required for end surface)

c : If different specimen height will be defined (2 / 3 mm) also limits of accuracy has to be defined

d : At impact testing machines with automatic centring devices a centricity tolerance of $\pm 0,165$ mm (instead $\pm 0,42$) is recommended.

Video – Link to YouTube (or copy string to your browser)