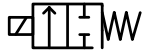


1.4105 IL, DIN EN 10088-3, UNS S43020, AISI 430FR, X6CrMoS17, ASTM 838, Ferritic Stainless Free-Cutting Steel Data Sheet

ZAPP

Zapp is certified to ISO 9001 | IATF 16949



Typical Applications of 1.4105 IL

Our material Zapp® 1.4105 IL is mainly used in solenoid valves for pneumatic, hydraulic and HVAC applications.

Processing and Usage Properties

Zapp® 1.4105 IL (similar to X6CrMoS17) is a stainless free cutting steel with excellent soft magnetic properties. It is designed for the volume production of precision turned parts. The grade is resistant in water, steam and other less aggressive media.

If welding is necessary, plasma- or laser-welding should be preferred. The steel is suitable for cold forming operations within certain limits.

Surface Finish

Crack tested according to DIN EN ISO 683-7, surface class 1-4

[Information about further automotive applications at Zapp](#)

Typical Chemical Analysis*

C	Si	Mn	S	Cr	Mo	Fe
≤ 0.03	1.0 – 1.5	≤ 0.8	0.25 – 0.35	17.25 – 18.00	0.20 – 0.50	bal.

* weight percentage/approximate value

Mechanical and Physical Properties

Tensile strength (soft annealed)	350 - 550 MPa
Specific electrical resistance p	≥ 0.79 µΩm
Yield strength Re	≥ 200 MPa
Elongation A5	≥ 20 %

Magnetic Properties of Round Bars of 1.4105 IL

Ø 4.0 – 27.0 mm*

	Standard	Improved
Coercitive strength H _c	≤ 200 A/m	≤ 170 A/m
Maximum relative permeability µ _{max}	≥ 1,700	≥ 2,500
Saturation polarization J _s	≥ 1.5 T	≥ 1.5 T
Remanence B _r	0.5 – 1.1 T	0.6 – 1.2 T

* other sizes on request

Delivery Forms

Round bars	annealed, ground
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[Information about further stainless steel alloys at Zapp.](#)

For **improved properties** in selective cases we recommend the following Zapp® grades:

Cold Heading

Zapp® 1.4003 IA
Zapp® 1.4016 IM

Corrosion Resistance

Zapp® 1.4113 IM
Zapp® 1.4523 IM

Magnetic Properties

Zapp® 9.9013 IL

Weldability

Zapp® 1.4511 IA

Overview Magnetic Properties



[Further information: Please see our linecard for precision wire products.](#)

Zapp Precision Metals GmbH

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Further information regarding our products and locations are available in our image brochure and under www.zapp.com

The illustrations, drawings, dimensional and weight data and other information included in this data sheet are intended only for the purposes of describing our products and represent non-binding average values. They do not constitute quality data, nor can they be used as the basis for any guarantee of quality or durability. The applications presented serve only as illustrations and can be construed neither as quality data nor as a guarantee in relation to the suitability of the material. This cannot substitute for comprehensive consultation on the selection of our products and on their use in a specific application. The data sheet is not subject to change control.
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*This data sheet is only available in English.