303 stainless steel is a non-magnetic austenitic stainless steel which is not hardenable by heat treatment. It is the free-machining modification of the basic 18% chromium – 8% nickel stainless steel.

Specifications

UNS: S30300 **W. Nr./EN:** 1.4305 **ASTM:** A 582, A 314, A 484 **AMS:** 5640R

Chemical Composition, %

	Cr	Ni	C	Mn	P	S	Si	Fe	Mo
MIN	17.0	8.0	–	–	–	0.15	–	–	–
MAX	19.0	10.0	0.15	2.0	0.2	–	1.0	balance	0.6 (optional)

Features

- Improved machinability over 304/304L and 316/316L stainless
- Melted and processed to maximize machinability

Applications

- Conveyor systems
- Automatic screw machines

Physical Properties

Density: 0.290 lb/in^3 **Melting Point:** 2552 °F **Thermal Conductivity at 212°F:** 113.2 (Btu x in)/(hr x ft^2 x °F)

Mechanical Properties

Typical Tensile Properties

Tensile Strength, ksi	75
Yield Strength, ksi	30
% Elongation in 2 inches	35
% Reduction of area	50

Feeds and Speeds

Starting Feeds and speeds with high speed tooling (Annealed Type 303*)

Tool	Inch	Speed, sfpm**	Feed, inches/revolution
Form Tool (width)	¼	110	0.0026
	½	105	0.0022
	¾	100	0.0019
Box Tool (depth)	1	115	0.0065
	⅛	105	0.0060
	¼	100	0.0055
Twisting Drill (diameter)	¼	65	0.0045
	½	70	0.0050
	¾	75	0.0055
Sizing Reamer	½ and under	90	0.0055
	½ and over	90	0.0085
Finishing Reamer	All	35	0.0035
Tapping (Cut Threads)	–	15/30	–

** As Processed for Best Machinability, **sfpm = Surface feet per minute*

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