

# NIMET

WHERE  
INNOVATION  
LIVES

**H8**

CYLINDER TUBES, INSIDE HONED OR  
SKIVED AND ROLLER BURNISHED

## CYLINDER TUBES, INSIDE HONED OR SKIVED AND ROLLER BURNISHED

**H8**

NIMAX H8 - E355+SR, EN 10305-1  
NIMAX H8 - E355+C, EN 10305-2

Cylinder steel tubes are suitable for a variety of hydraulic cylinders, where tight tolerances and smooth surface finishing are critical.

Tubes either honed or skived and roller burnished are mainly characterized by a precise inside processed surface resulting into a superior finished product.

## STEEL GRADES CORRESPONDENTS

EN	Werkstoff	DIN	B.S.	UNI	JIS	GOST	AISI / SAE / ASTM
E355	1.0580	St52	CFS5	Fe510	STKM19A	St6sp	1524 / 1024

## CHEMICAL COMPOSITION - IN % BY WEIGHT

Steel grade	C	Si	Mn	P	S	Cr	Mo	Ni	V	Cu	N
E355	max. 0.22	max. 0.55	max. 1.60	max. 0.025	max. 0.025	-	-	-	-	-	-

\*Cr+Mo+Ni = max. 0.63

## MECHANICAL PROPERTIES

Steel grade	Tensile strength	Yield point	Elongation (longitudinal)	Impact energy (longitudinal direction)	Hardness ***	Norm
	R <sub>m</sub> N/mm <sup>2</sup>	R <sub>p0.2</sub> N/mm <sup>2</sup>	A <sub>5</sub> %	KV <sub>2</sub> J	Brinell N/mm <sup>2</sup>	
E355+SR	min. 580	min. 450	min. 10	(min. 27J / -20°C) **	min. 175	EN 10305-1
E355+C	min. 640	min. 540 ****	min. 4	-	min. 185	EN 10305-2

SR = stress-relieved, C = cold drawn

\* Wall thickness ≤ 12 mm

\*\* On request

\*\*\* The hardness values is for information only

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Outside diameter - OD  $\varnothing 50 - 245$  mm

Inside diameter - ID  $\varnothing 40 - 200$  mm

Inside tolerance - ID ISO H8 / ISO H9

Outside tolerance - OD according to EN 10305-1 / EN 10305-2

Roundness - ID within the limits of diameter tolerances

Standard lengths mill lengths / on request, cut to fix lengths pieces

Surface roughness - ID Ra: max.  $0.30 \mu\text{m}$  for skived and roller burnished surface

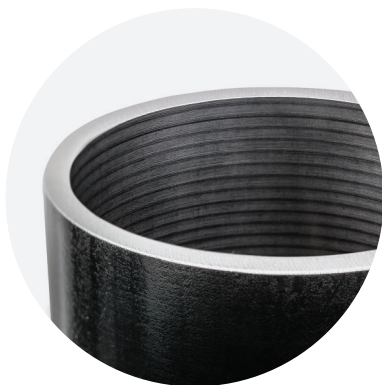
Ra: max.  $0.40 \mu\text{m}$  for honed surface

Straightness local deviation max.  $1 \text{ mm} / 1000 \text{ mm}$

Straightness total deviation max.  $3.5 \text{ mm}$  for tubes with length up to  $6000 \text{ mm}$   
for tubes with length more than  $6000 \text{ mm}$ , for each meter over this length, the tolerance must be increased by  $0.5 \text{ mm}$

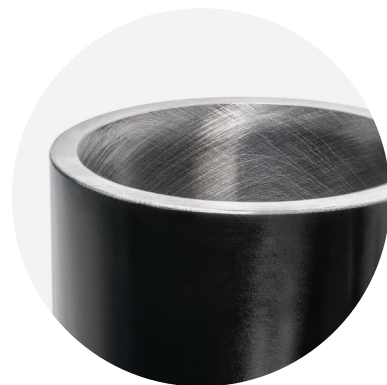
### TABLE OF DIMENSIONS ID TOLERANCE

Diameter mm	ISO H8 $\mu\text{m}$	ISO H9 $\mu\text{m}$
$30 < \varnothing \leq 50$	0 / +39	0 / +62
$50 < \varnothing \leq 80$	0 / +46	0 / +74
$80 < \varnothing \leq 120$	0 / +54	0 / +87
$120 < \varnothing \leq 180$	0 / +63	0 / +100
$180 < \varnothing \leq 200$	0 / +72	0 / +115



The skiving and roller burnishing production technique refers to a process consisting in micro-finishing metallic internal tube surfaces.

The resulted effect is a mirror surface finish with technical roughness advantages.



Producing cylinder tubes by honing results in having a cross-grinding pattern. The tubes in this case present an improved inside straightness.

The very precise and smooth surface reduce friction negative effects and extends the life of the cylinder's components.

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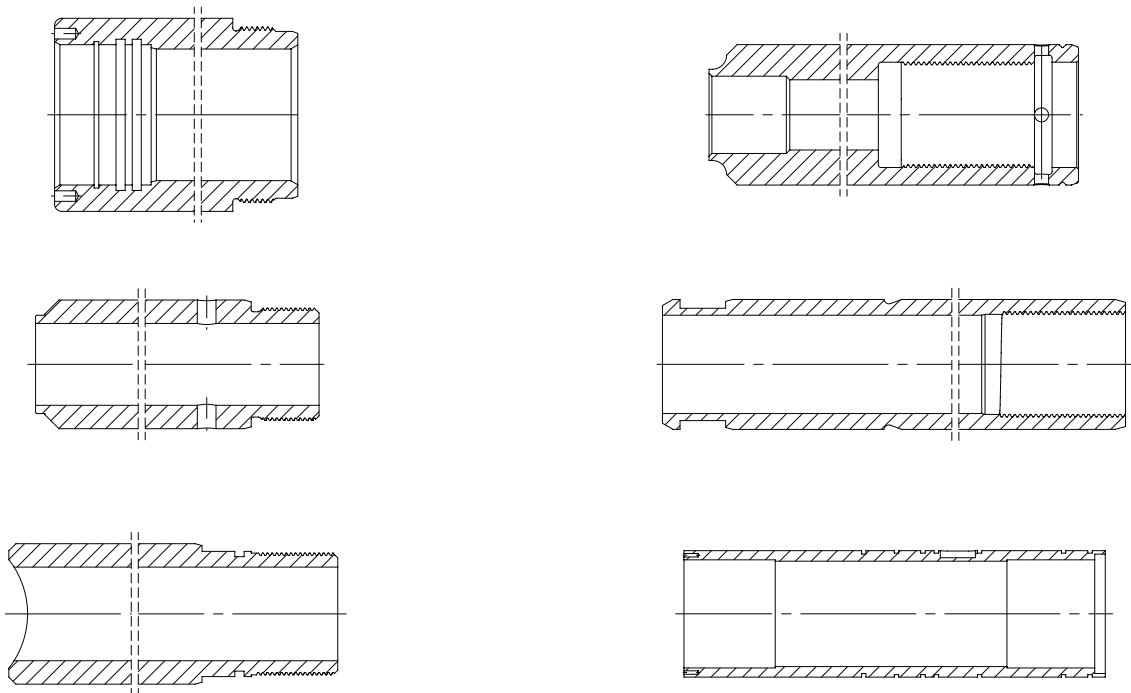
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## CUSTOMIZED MACHINING



## STORAGE AND HANDLING RECOMMENDATIONS

- Keep the products stored in dry and covered spaces.
- Do not expose for a long time the bars or tubes to the sunlight or to very low temperatures.
- For storage, preferable to use rubber supports or wood lined supports; direct contact with the floor and steel supports that are not lined with soft materials must be avoided.
- Whenever possible, please use the crane to load or unload the bundles; when you use the fork lifts please avoid the direct contact of the forks with the products.
- Always lift the bundles using textile slings. Don't use metal slings during handling of bundles.
- Always keep dry the cardboard tubes that protect the chromed products.



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