



NIMET

WHERE
INNOVATION
LIVES

LINEAR SHAFTS



2008
Production start-up
of chrome plated
bars and tubes

2010
Manufacturing of the
first nickel-chrome
plated bars
and tubes

2012
Launching of the first
endless chrome
plating line

2013
New in-house
laboratory
investment

2018
Start-up
of NIMET 2

2023
Facts and figures

Employees: 700
Production capacity:
5.200 tons of chrome
plated bars and tubes
per month



Founded by a mechanical engineer, as a niche producer of piston rods and tubes for hydraulic lifting, loading and handling systems, **NIMET** had in the beginning only 10 employees and a production facility of around 500 sqm.

Shortly after the start-up, the Austrian giant, **PALFINGER**, the global market leader in cranes, entered into a joint venture with the Romanian company. In less than 10 years, the small East European manufacturer morphed into one of the most respected industry leaders, with a global presence.

NIMET is present in more than 90 countries worldwide, having a well-developed sales network through its distribution partners on all 6 continents.



ON TIME DELIVERY



360 DEGREES PRODUCTS



HIGH PRODUCT QUALITY



6 CONTINENTS



90 COUNTRIES



5.200 TONS/MONTH PRODUCED MATERIAL



MARKET PRESENCE



NIMET has reached in 2018, with the opening of the second factory in Targoviste, a production capacity of over 5.200 tons of chrome plated material each month. Having the necessary resources, the company can further expand in case of increased market demand.

The state of the art technology enables **NIMET** to respond to both standard commodity requirements as well as customized demands, being always concerned with satisfying its customers' needs at excellent level of service.



Operațională sub sarcină!

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Germany

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With a skilful team of engineers who designed and built the main production facilities, **NIMET** is innovating continuously. The machines were built tailored to the customers' needs so that the requirements are satisfied with maximum efficiency. The success lies in flexible automation, being able to switch in an instance from one specification to another.

RESEARCH AND DEVELOPMENT

Working only with selected reputable mills, considered to be the best producers in the world of steel, the raw material is supplied in 100% ultra-sonic and anti-mixture testing conditions.

All manufacturing processes are controlled by automated and active laser measurement systems. Following strict procedures of quality assurance, set by the certified international Management System standards, **NIMET** is able to ensure a constant and stable production.

All production parameters and results are tested in **NIMET's** modern laboratories, successfully contributing to delivering a high-quality product.

Starting with 2017, **NIMET** has embraced the Lean Kaizen philosophy, its principles currently being implemented throughout all administrative and procedural activities.

EN ISO
9001:2015



EN ISO
14001:2015



ISO
45001:2018



QUALITY
ASSURANCE

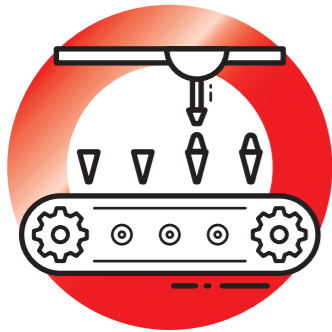
- ✓ Engineering and design in accordance with our customers' requirements
- ✓ Control of surface hardness, Vickers micro hardness, metallography and structural characteristics of the hardened layer, measurements of chrome layer (thickness, number of micro cracks, chrome micro hardness) in our own laboratory.
- ✓ Roundness with uniform distribution of bearing loads ensuring longer service life.
- ✓ Exceptional straightness and high quality surface finish as valuable assets in linear motion systems.
- ✓ Control of chemical composition with portable spectrometer.



NIMET PRODUCTS

APPLICATIONS

Food industry



Textile industry



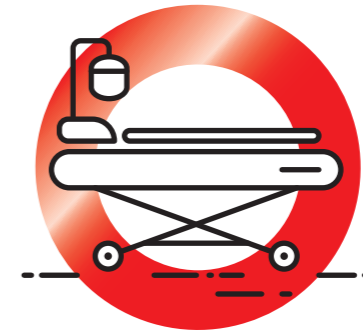
Wood and aluminium working machines



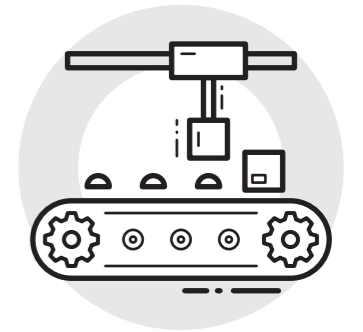
Door opening systems



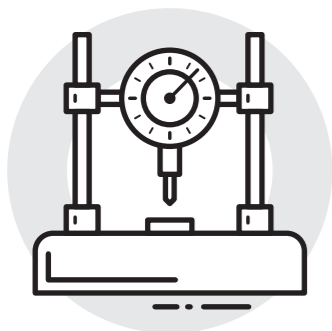
Medical equipments



Automatic packaging machines



Checking and measuring equipment



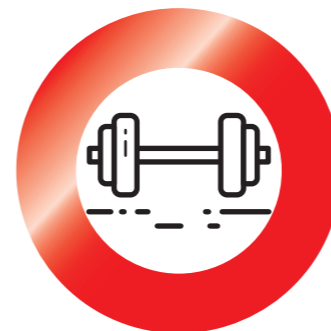
Printing machines



Handling systems



Fitness equipment

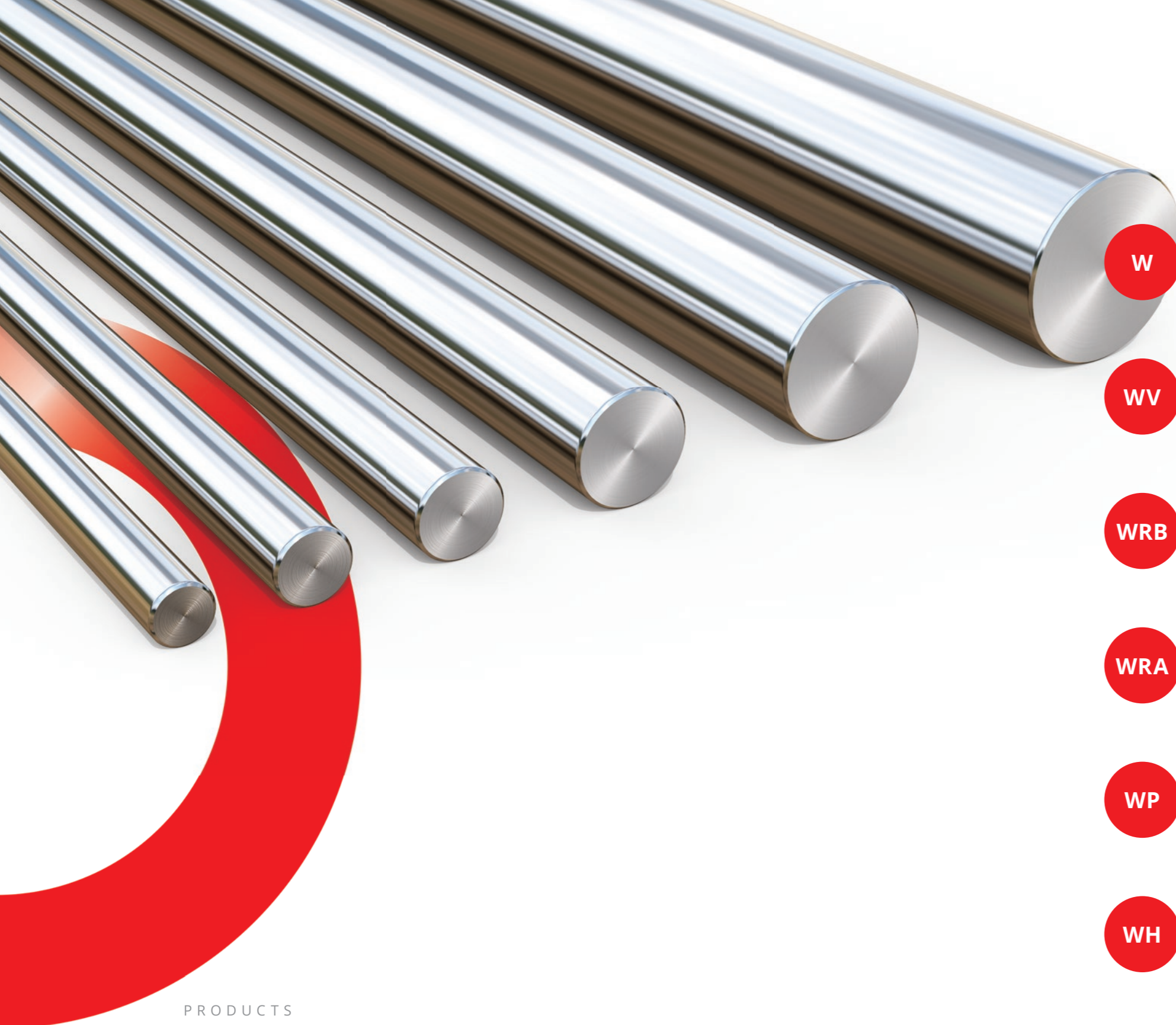


Robots



Tool machines





PRODUCTS

LINEAR SHAFTS AND CUSTOMIZED PRECISION SHAFTS

for Linear Motion Systems

W

INDUCTION HARDENED AND GROUND
LINEAR SHAFTS
steel grade: Cf53, C55E, C45E
Ø4 - 100 mm / Ø1/4" - 4"

WV

INDUCTION HARDENED AND CHROME PLATED
LINEAR SHAFTS
steel grade: Cf53, C55E, C45E
Ø4 - 100 mm / Ø1/4" - 4"

WRB

INDUCTION HARDENED AND GROUND
STAINLESS STEEL LINEAR SHAFTS
steel grade: X46Cr13 (W1.4034)
Ø4 - 50 mm / Ø1/4" - 2"

WRA

INDUCTION HARDENED AND GROUND
STAINLESS STEEL LINEAR SHAFTS
steel grade: X90CrMoV18 (W1.4112)
Ø4 - 50 mm / Ø1/4" - 2"

WP

DEEP CASE HARDENED AND GROUND
SHAFTS FOR BALL SCREWS
steel grade: Cf53, C55E, 42CrMo4, 50CrMo4
Ø20 - 100 mm / Ø3/4" - 4"

WH

INDUCTION HARDENED AND GROUND
HOLLOW LINEAR SHAFTS
steel grade: C60E
OD: Ø12 - 80 mm / Ø5/8" - 2"

WHV

INDUCTION HARDENED AND CHROME PLATED
HOLLOW LINEAR SHAFTS
steel grade: C60E
OD: Ø12 - 80 mm / Ø5/8" - 2"



INDUCTION HARDENED AND GROUND LINEAR SHAFTS

W

WV

INDUCTION HARDENED AND CHROME PLATED LINEAR SHAFTS

INDUCTION HARDENED AND GROUND STAINLESS STEEL LINEAR SHAFTS

WRB

WRA

INDUCTION HARDENED AND GROUND STAINLESS STEEL LINEAR SHAFTS

INDUCTION HARDENED AND GROUND HOLLOW LINEAR SHAFTS

WH

WHV

INDUCTION HARDENED AND CHROME PLATED HOLLOW LINEAR SHAFTS

DEEP CASE HARDENED AND GROUND SHAFTS FOR BALL SCREWS

WP

STEEL GRADES CORRESPONDENTS

EN	Werkstoff	DIN	B.S.	UNI	JIS	GOST	AISI / SAE / ASTM
C53	1.1213	Cf53 (C53G)	070M55	C53	S50C	50	1050
C55E	1.1203	Ck55	060A57, 070M55	C55	S55C, S55CM	55	1055
C45E	1.1191	Ck45	080M46	C45	S45C	45	1045
X46Cr13	1.4034	X46Cr13	(420S45)	X40Cr14	-	40Ch13	420C
X90CrMoV18	1.4112	X90CrMoV18	-	-	-	-	440B
42CrMo4	1.7725	42CrMo4	708M40	42CrMo4	SCM440(H)	35KHM	4140
50CrMo4	1.7228	50CrMo4	708M50	-	SCM445(H)	-	4150, 4147
C60E	1.1221	Ck60	060A62, 070M60	C60	S58C	60, 60G, 60GA	1060

CHEMICAL COMPOSITION - IN % BY WEIGHT

Steel grade	C	Si	Mn	P	S	Cr	Ni	Mo	V
Cf53	0.50 ÷ 0.57	0.15 ÷ 0.35	0.40 ÷ 0.70	max. 0.025	max. 0.035	-	-	-	-
C55E	0.52 ÷ 0.60	0.10 ÷ 0.40	0.60 ÷ 0.90	max. 0.025	max. 0.035	max. 0.4	max. 0.4	max. 0.1	-
C45E	0.42 ÷ 0.50	0.10 ÷ 0.40	0.50 ÷ 0.80	max. 0.025	max. 0.035	max. 0.4	max. 0.4	max. 0.1	-
X46Cr13	0.43 ÷ 0.50	max. 1.0	max. 1.0	max. 0.040	max. 0.030	12.5 ÷ 14.5	-	-	-
X90CrMoV18	0.85 ÷ 0.95	max. 1.0	max. 1.0	max. 0.040	max. 0.030	17.0 ÷ 19.0	-	0.90 ÷ 1.30	0.07 ÷ 0.12
42CrMo4	0.38 ÷ 0.45	max. 0.4	0.60 ÷ 0.90	max. 0.025	max. 0.035	0.90 ÷ 1.20	-	0.15 ÷ 0.30	-
50CrMo4	0.46 ÷ 0.54	max. 0.4	0.50 ÷ 0.80	max. 0.025	max. 0.035	0.90 ÷ 1.20	-	0.15 ÷ 0.30	-
C60E	0.57 ÷ 0.65	0.10 ÷ 0.40	0.60 ÷ 0.90	max. 0.025	max. 0.035	max. 0.4	max. 0.4	max. 0.1	-

HARDENABILITY

Steel grade	Surface hardness HRC min.
Cf53	60
C55E	60
C45E	55
X46Cr13+A	54
X90CrMoV18+A	55
42CrMo4+QT	60
50CrMo4+QT	60
C60E	60

A = annealed
QT = quenched and tempered

NI SERIES

The hardening depth (SHD according to EN ISO 15787 or Rht according to DIN 6773) is defined as the distance from the steel surface up to the point where the hardness value is 80% of the minimum guaranteed value of the surface hardness and it is established in accordance with ISO 13012, depending on the shaft's size.

The minimum guaranteed value of the surface hardness varies depending the steel grade.

MECHANICAL PROPERTIES FOR STEEL BARS / NI-W / NI-WV / NI-WRB / NI-WRA / NI-WRC / NI-WP

Steel grade	Diameter Ø mm	Tensile strength R _m N/mm ²	Yield strength R _{p0.2} N/mm ²	Elongation A ₅ %	Hardness Brinell HB	Norm
C45E+N	Ø ≤ 16	min. 620	min. 340	min. 14	min. 190	EN ISO 683-1
	16 < Ø ≤ 100	min. 580	min. 305	min. 16	min. 172	
Cf53+N	Ø ≤ 16	610 - 760	min. 340	min. 16	min. 183	DIN 17212
	16 < Ø ≤ 100	610 - 760	min. 340	min. 16	-	
C55E+N	Ø ≤ 16	min. 680	min. 370	min. 11	min. 208	EN ISO 683-1
	16 < Ø ≤ 100	min. 640	min. 330	min. 12	min. 198	
X46Cr13+A	4 < Ø ≤ 50	max. 800	-	-	max. 245	EN 10088-3
X90CrMoV18+A	4 < Ø ≤ 50	min. 738	min. 427	min. 9	max. 285	EN 10088-3
	Ø ≤ 16	1100 - 1300	min. 900	min. 10	298 - 359	
42CrMo4+QT	16 < Ø ≤ 40	1000 - 1200	min. 750	min. 11	298 - 359	EN ISO 683-2
	40 < Ø ≤ 100	900 - 1100	min. 650	min. 12	271 - 331	
50CrMo4+QT	Ø ≤ 16	1100 - 1300	min. 900	min. 9	330 - 380	EN ISO 683-2
	16 < Ø ≤ 40	1000 - 1200	min. 780	min. 10	325 - 360	
	40 < Ø ≤ 100	900 - 1100	min. 700	min. 12	265 - 330	

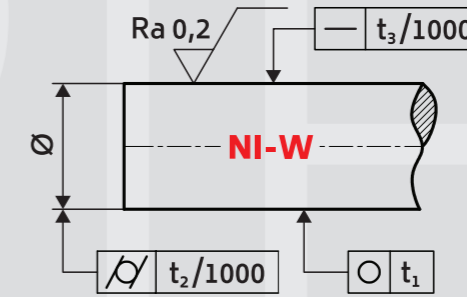
N=normalized, QT=quenched and tempered, A=annealed

MECHANICAL PROPERTIES FOR STEEL TUBES / NI-WH / NI-WHV

Steel grade	Tensile strength R _m N/mm ²	Yield strength R _{p0.2} N/mm ²	Elongation A ₅ %
C60+NBK	720 - 900	min. 390	min. 13

NBK = normalized in a protective atmosphere.

INDUCTION HARDENED AND GROUND LINEAR SHAFTS



Steel grades	Cf53, C55E, alternative C45E
Surface hardness	62±2 HRC
Surface roughness	Ra max. 0.20 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions

Steel grades	Cf53, C55E, alternative C45E
Surface hardness	62±2 HRC
Surface roughness	Ra max. 0.20 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions

NI-W / METRIC

Shaft Diameter Ø	Weight	Series	Standard length	Surface hardening depth SHD (min. + tol.)	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance
					t ₁ max. µm	t ₂ max. µm	t ₃ max. mm/m	ISO h6 µm
mm	kg/m		mm	mm				
4	0.10	NI-W 4	4000	min. 0.4	4	6	0.30	0 / -8
5	0.15	NI-W 5	4000	min. 0.4	4	6	0.25	0 / -8
6	0.22	NI-W 6	6000	0.4 + 0.4	4	6	0.25	0 / -8
8	0.39	NI-W 8	6000	0.4 + 0.4	4	6	0.20	0 / -9
10	0.62	NI-W 10	6000	0.4 + 0.4	4	6	0.20	0 / -9
12	0.89	NI-W 12	6000	0.6 + 0.6	5	8	0.20	0 / -11
14	1.21	NI-W 14	6000	0.6 + 0.6	5	8	0.20	0 / -11
15	1.39	NI-W 15	6000	0.6 + 0.6	5	8	0.20	0 / -11
16	1.58	NI-W 16	6000	0.6 + 0.6	5	8	0.20	0 / -11
18	2.00	NI-W 18	6000	0.6 + 0.6	5	8	0.20	0 / -11
20	2.46	NI-W 20	6000	0.9 + 0.8	6	9	0.20	0 / -13
25	3.85	NI-W 25	6000	0.9 + 0.8	6	9	0.15	0 / -13
30	5.55	NI-W 30	6000	0.9 + 0.8	6	9	0.15	0 / -13
35	7.55	NI-W 35	6000	1.5 + 1.3	7	11	0.15	0 / -16
40	9.86	NI-W 40	6000	1.5 + 1.3	7	11	0.15	0 / -16
45	12.48	NI-W 45	6000	1.5 + 1.3	7	11	0.15	0 / -16
50	15.41	NI-W 50	6000	1.5 + 1.3	7	11	0.15	0 / -16
60	22.18	NI-W 60	6000	2.2 + 1.6	8	13	0.15	0 / -19
70	30.19	NI-W 70	6000	2.2 + 1.6	8	13	0.15	0 / -19
80	39.44	NI-W 80	6000	2.2 + 1.6	8	13	0.15	0 / -19
90	49.91	NI-W 90	6000	2.2 + 1.6	10	15	0.15	0 / -22
100	61.62	NI-W 100	6000	3.2 + 2.0	10	15	0.15	0 / -22

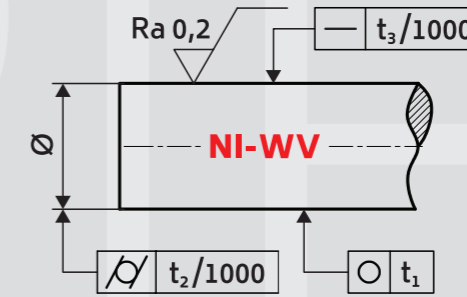
The hardening depth (SHD according to EN ISO 15787 or Rht according to DIN 6773) is defined as the distance from the steel surface up to the point where the hardness value is 80% of the minimum guaranteed value of the surface hardness and it is established in accordance with ISO 13012, depending on the shaft's size. The minimum guaranteed value of the surface hardness varies depending the steel grade.

NI-W / IMPERIAL

Shaft Diameter Ø	Weight	Series	Standard length	Surface hardening depth SHD (min. + tol.)	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance	
					t ₁ max. inch	t ₂ max. inch	t ₃ max. in/ft	Class "L" inch	
mm	inch	kg/m	inch	inch					
6.35	0.25	0.25	NI-W 6.35	236.22	0.016 + 0.016	0.00016	0.00023	0.00308	-0.0005 / -0.001
9.525	0.375	0.56	NI-W 9.525	236.22	0.016 + 0.016	0.00016	0.00023	0.00246	-0.0005 / -0.001
12.7	0.5	0.99	NI-W 12.7	236.22	0.024 + 0.024	0.00020	0.00031	0.00246	-0.0005 / -0.001
15.875	0.625	1.55	NI-W 15.875	236.22	0.024 + 0.024	0.00020	0.00031	0.00246	-0.0005 / -0.001
19.05	0.75	2.24	NI-W 19.05	236.22	0.035 + 0.032	0.00024	0.00035	0.00246	-0.0005 / -0.001
22.225	0.875	3.04	NI-W 22.225	236.22	0.035 + 0.032	0.00024	0.00035	0.00185	-0.0005 / -0.001
25.4	1	3.98	NI-W 25.4	236.22	0.035 + 0.032	0.00024	0.00035	0.00185	-0.0005 / -0.001
28.575	1.125	5.03	NI-W 28.575	236.22	0.035 + 0.032	0.00024	0.00035	0.00185	-0.0005 / -0.001
31.75	1.25	6.21	NI-W 31.75	236.22	0.059 + 0.051	0.00028	0.00043	0.00185	-0.0005 / -0.001
34.925	1.375	7.52	NI-W 34.925	236.22	0.059 + 0.051	0.00028	0.00043	0.00185	-0.0005 / -0.001
38.1	1.5	8.94	NI-W 38.1	236.22	0.059 + 0.051	0.00028	0.00043	0.00185	-0.0006 / -0.0011
44.45	1.75	12.17	NI-W 44.45	236.22	0.059 + 0.051	0.00028	0.00043	0.00185	-0.0006 / -0.0011
50.8	2	15.90	NI-W 50.8	236.22	0.087 + 0.063	0.00028	0.00043	0.00185	-0.0006 / -0.0013
57.15	2.25	20.13	NI-W 57.15	236.22	0.087 + 0.063	0.00031	0.00051	0.00185	-0.0007 / -0.0015
63.5	2.5	24.85	NI-W 63.5	236.22	0.087 + 0.063	0.00031	0.00051	0.00185	-0.0007 / -0.0015
76.2	3	35.78	NI-W 76.2	236.22	0.087 + 0.063	0.00031	0.00051	0.00185	-0.0008 / -0.0017
88.9	3.5	48.70	NI-W 88.9	236.22	0.087 + 0.063	0.00039	0.00059	0.00185	-0.0010 / -0.0020
101.6	4	63.61	NI-W 101.6	236.22	0.126 + 0.079	0.00039	0.00059	0.00185	-0.0012 / -0.0024

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INDUCTION HARDENED AND CHROME PLATED LINEAR SHAFTS



Steel grades	Cf53, C55E, alternative C45E
Surface hardness	62±2 HRC
Chrome layer thickness	12±5 µm
Chrome layer microhardness	900-1100HV0.1
Surface roughness	Ra max. 0.20 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions

Steel grades	Cf53, C55E, alternative C45E
Surface hardness	62±2 HRC
Chrome layer thickness	12±5 µm
Chrome layer microhardness	900-1100HV0.1
Surface roughness	Ra max. 0.20 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions

NI-WV / METRIC

Shaft Diameter Ø	Weight	Series	Standard length	Surface hardening depth SHD (min. + tol.)	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance
					t ₁ max.	t ₂ max.	t ₃ max.	ISO h7
mm	kg/m		mm	mm	µm	µm	mm/m	µm
4	0.10	NI-WV 4	4000	min. 0.4	5	10	0.30	0 / -12
5	0.15	NI-WV 5	4000	min. 0.4	5	10	0.25	0 / -12
6	0.22	NI-WV 6	6000	0.4 + 0.4	5	10	0.25	0 / -12
8	0.39	NI-WV 8	6000	0.4 + 0.4	6	10	0.20	0 / -15
10	0.62	NI-WV 10	6000	0.4 + 0.4	6	10	0.20	0 / -15
12	0.89	NI-WV 12	6000	0.6 + 0.6	8	12	0.20	0 / -18
14	1.21	NI-WV 14	6000	0.6 + 0.6	8	12	0.20	0 / -18
15	1.39	NI-WV 15	6000	0.6 + 0.6	8	12	0.20	0 / -18
16	1.58	NI-WV 16	6000	0.6 + 0.6	8	12	0.20	0 / -18
18	2.00	NI-WV 18	6000	0.6 + 0.6	8	12	0.20	0 / -18
20	2.46	NI-WV 20	6000	0.9 + 0.8	9	12	0.20	0 / -21
25	3.85	NI-WV 25	6000	0.9 + 0.8	9	12	0.15	0 / -21
30	5.55	NI-WV 30	6000	0.9 + 0.8	9	12	0.15	0 / -21
35	7.55	NI-WV 35	6000	1.5 + 1.3	11	15	0.15	0 / -25
40	9.86	NI-WV 40	6000	1.5 + 1.3	11	15	0.15	0 / -25
45	12.48	NI-WV 45	6000	1.5 + 1.3	11	15	0.15	0 / -25
50	15.41	NI-WV 50	6000	1.5 + 1.3	11	15	0.15	0 / -25
60	22.18	NI-WV 60	6000	2.2 + 1.6	13	15	0.15	0 / -30
70	30.19	NI-WV 70	6000	2.2 + 1.6	13	15	0.15	0 / -30
80	39.44	NI-WV 80	6000	2.2 + 1.6	13	15	0.15	0 / -30
90	49.91	NI-WV 90	6000	2.2 + 1.6	15	18	0.15	0 / -35
100	61.62	NI-WV 100	6000	3.2 + 2.0	15	18	0.15	0 / -35

The hardening depth (SHD according to EN ISO 15787 or Rht according to DIN 6773) is defined as the distance from the steel surface up to the point where the hardness value is 80% of the minimum guaranteed value of the surface hardness and it is established in accordance with ISO 13012, depending on the shaft's size. The minimum guaranteed value of the surface hardness varies depending the steel grade.

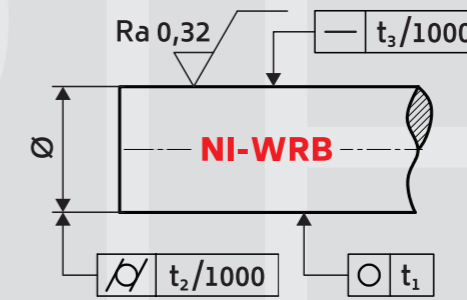
NI-WV / IMPERIAL

Shaft Diameter Ø	Weight	Series	Standard length	Surface hardening depth SHD (min. + tol.)	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance
					t ₁ max.	t ₂ max.	t ₃ max.	Class "L"
mm inch	kg/m		inch	inch	inch	inch	in/ft	inch
6.35 0.25	0.25	NI-WV 6.35	236.22	0.016 + 0.016	0.00020	0.00039	0.00308	-0.0005 / -0.001
9.525 0.375	0.56	NI-WV 9.525	236.22	0.016 + 0.016	0.00024	0.00039	0.00246	-0.0005 / -0.001
12.7 0.5	0.99	NI-WV 12.7	236.22	0.024 + 0.024	0.00031	0.00047	0.00246	-0.0005 / -0.001
15.875 0.625	1.55	NI-WV 15.875	236.22	0.024 + 0.024	0.00031	0.00047	0.00246	-0.0005 / -0.001
19.05 0.75	2.24	NI-WV 19.05	236.22	0.035 + 0.032	0.00035	0.00047	0.00246	-0.0005 / -0.001
22.225 0.875	3.04	NI-WV 22.225	236.22	0.035 + 0.032	0.00035	0.00047	0.00185	-0.0005 / -0.001
25.4 1	3.98	NI-WV 25.4	236.22	0.035 + 0.032	0.00035	0.00047	0.00185	-0.0005 / -0.001
28.575 1.125	5.03	NI-WV 28.575	236.22	0.035 + 0.032	0.00035	0.00047	0.00185	-0.0005 / -0.001
31.75 1.25	6.21	NI-WV 31.75	236.22	0.059 + 0.051	0.00043	0.00059	0.00185	-0.0005 / -0.001
34.925 1.375	7.52	NI-WV 34.925	236.22	0.059 + 0.051	0.00043	0.00059	0.00185	-0.0005 / -0.001
38.1 1.5	8.94	NI-WV 38.1	236.22	0.059 + 0.051	0.00043	0.00059	0.00185	-0.0006 / -0.0011
44.45 1.75	12.17	NI-WV 44.45	236.22	0.059 + 0.051	0.00043	0.00059	0.00185	-0.0006 / -0.0011
50.8 2	15.90	NI-WV 50.8	236.22	0.087 + 0.063	0.00043	0.00059	0.00185	-0.0006 / -0.0013
57.15 2.25	20.13	NI-WV 57.15	236.22	0.087 + 0.063	0.00051	0.00059	0.00185	-0.0007 / -0.0015
63.5 2.5	24.85	NI-WV 63.5	236.22	0.087 + 0.063	0.00051	0.00059	0.00185	-0.0007 / -0.0015
76.2 3	35.78	NI-WV 76.2	236.22	0.087 + 0.063	0.00051	0.00059	0.00185	-0.0008 / -0.0017
88.9 3.5	48.70	NI-WV 88.9	236.22	0.087 + 0.063	0.00059	0.00070	0.00185	-0.0010 / -0.0020
101.6 4	63.61	NI-WV 101.6	236.22	0.126 + 0.079	0.00059	0.00070	0.00185	-0.0012 / -0.0024

The hardening depth (SHD according to EN ISO 15787 or Rht according to DIN 6773) is defined as the distance from the steel surface up to the point where the hardness value is 80% of the minimum guaranteed value of the surface hardness and it is established in accordance with ISO 13012, depending on the shaft's size. The minimum guaranteed value of the surface hardness varies depending the steel grade.

INDUCTION HARDENED AND GROUND
STAINLESS STEEL LINEAR SHAFTS

WRB



Steel grade	X46Cr13 (W1.4034)
Surface hardness	56±2 HRC
Surface roughness	Ra max. 0.32 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions chrome plating

Steel grade	X46Cr13 (W1.4034)
Surface hardness	56±2 HRC
Surface roughness	Ra max. 0.32 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions chrome plating

NI-WRB / METRIC

Shaft Diameter Ø	Weight	Series	Standard length	Surface hardening depth SHD (min. + tol.)	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance ISO h6
					t1 max.	t2 max.	t3 max.	
mm	kg/m		mm	mm	µm	µm	mm/m	µm
4	0.10	NI-WRB 4	3000	min. 0.4	4	6	0.25	0 / -8
5	0.15	NI-WRB 5	3000	min. 0.4	4	6	0.25	0 / -8
6	0.22	NI-WRB 6	3000	0.4 + 0.9	4	6	0.25	0 / -8
8	0.39	NI-WRB 8	6000	0.4 + 0.9	4	6	0.20	0 / -9
10	0.62	NI-WRB 10	6000	0.4 + 0.9	4	6	0.20	0 / -9
12	0.89	NI-WRB 12	6000	0.6 + 0.9	5	8	0.20	0 / -11
14	1.21	NI-WRB 14	6000	0.6 + 0.9	5	8	0.20	0 / -11
15	1.39	NI-WRB 15	6000	0.6 + 0.9	5	8	0.20	0 / -11
16	1.58	NI-WRB 16	6000	0.6 + 0.9	5	8	0.20	0 / -11
20	2.46	NI-WRB 20	6000	0.8 + 0.8	6	9	0.20	0 / -13
25	3.85	NI-WRB 25	6000	0.9 + 0.8	6	9	0.15	0 / -13
30	5.55	NI-WRB 30	6000	0.9 + 0.8	6	9	0.15	0 / -13
35	7.55	NI-WRB 35	6000	1.5 + 1.3	7	11	0.15	0 / -16
40	9.86	NI-WRB 40	6000	1.5 + 1.3	7	11	0.15	0 / -16
50	15.41	NI-WRB 50	6000	1.5 + 1.3	7	11	0.15	0 / -16

The hardening depth (SHD according to EN ISO 15787 or Rht according to DIN 6773) is defined as the distance from the steel surface up to the point where the hardness value is 80% of the minimum guaranteed value of the surface hardness and it is established in accordance with ISO 13012, depending on the shaft's size. The minimum guaranteed value of the surface hardness varies depending the steel grade.

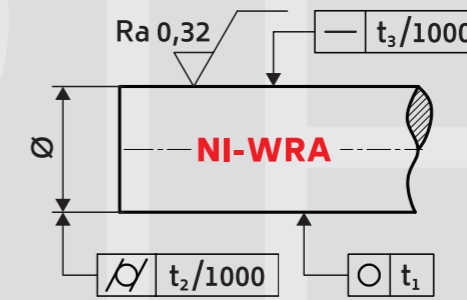
NI-WRB / IMPERIAL

Shaft Diameter Ø	Weight	Series	Standard length	Surface hardening depth SHD (min. + tol.)	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance Class "L"	
					t1 max.	t2 max.	t3 max.		
mm	inch	kg/m	inch	inch	inch	inch	in/ft	inch	
6.35	0.25	0.25	NI-WRB 6.35	118.11	0.016 + 0.035	0.00016	0.00024	0.00308	-0.0005 / -0.001
9.525	0.375	0.56	NI-WRB 9.525	236.22	0.016 + 0.035	0.00016	0.00024	0.00246	-0.0005 / -0.001
12.7	0.5	0.99	NI-WRB 12.7	236.22	0.024 + 0.035	0.00020	0.00031	0.00246	-0.0005 / -0.001
15.875	0.625	1.55	NI-WRB 15.875	236.22	0.024 + 0.035	0.00020	0.00031	0.00246	-0.0005 / -0.001
19.05	0.75	2.24	NI-WRB 19.05	236.22	0.032 + 0.032	0.00024	0.00035	0.00246	-0.0005 / -0.001
25.4	1	3.98	NI-WRB 25.4	236.22	0.032 + 0.032	0.00024	0.00035	0.00185	-0.0005 / -0.001
31.75	1.25	6.21	NI-WRB 31.75	236.22	0.059 + 0.051	0.00028	0.00043	0.00185	-0.0005 / -0.001
38.1	1.5	8.94	NI-WRB 38.1	236.22	0.059 + 0.051	0.00028	0.00043	0.00185	-0.0006 / -0.0011
50.8	2	15.90	NI-WRB 50.8	236.22	0.087 + 0.063	0.00028	0.00043	0.00185	-0.0006 / -0.0013

The hardening depth (SHD according to EN ISO 15787 or Rht according to DIN 6773) is defined as the distance from the steel surface up to the point where the hardness value is 80% of the minimum guaranteed value of the surface hardness and it is established in accordance with ISO 13012, depending on the shaft's size. The minimum guaranteed value of the surface hardness varies depending the steel grade.

INDUCTION HARDENED AND GROUND
STAINLESS STEEL LINEAR SHAFTS

WRA



Steel grade	X90CrMoV18 (W1.4112)
Surface hardness	57±2 HRC
Surface roughness	Ra max. 0.32 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions chrome plating

Steel grade	X90CrMoV18 (W1.4112)
Surface hardness	57±2 HRC
Surface roughness	Ra max. 0.32 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions chrome plating

NI-WRA / METRIC

Shaft Diameter Ø	Weight	Series	Standard length	Surface hardening depth SHD (min. + tol.)	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance ISO h6
					t ₁ max. µm	t ₂ max. µm	t ₃ max. mm/m	
4	0.10	NI-WRA 4	3000	min. 0.4	4	6	0.25	0 / -8
5	0.15	NI-WRA 5	3000	min. 0.4	4	6	0.25	0 / -8
6	0.22	NI-WRA 6	3000	0.4 + 0.9	4	6	0.25	0 / -8
8	0.39	NI-WRA 8	6000	0.4 + 0.9	4	6	0.20	0 / -9
10	0.62	NI-WRA 10	6000	0.4 + 0.9	4	6	0.20	0 / -9
12	0.89	NI-WRA 12	6000	0.6 + 0.9	5	8	0.20	0 / -11
14	1.21	NI-WRA 14	6000	0.6 + 0.9	5	8	0.20	0 / -11
15	1.39	NI-WRA 15	6000	0.6 + 0.9	5	8	0.20	0 / -11
16	1.58	NI-WRA 16	6000	0.6 + 0.9	5	8	0.20	0 / -11
20	2.46	NI-WRA 20	6000	0.8 + 0.8	6	9	0.20	0 / -13
25	3.85	NI-WRA 25	6000	0.9 + 0.8	6	9	0.15	0 / -13
30	5.55	NI-WRA 30	6000	0.9 + 0.8	6	9	0.15	0 / -13
35	7.55	NI-WRA 35	6000	1.5 + 1.3	7	11	0.15	0 / -16
40	9.86	NI-WRA 40	6000	1.5 + 1.3	7	11	0.15	0 / -16
50	15.41	NI-WRA 50	6000	1.5 + 1.3	7	11	0.15	0 / -16

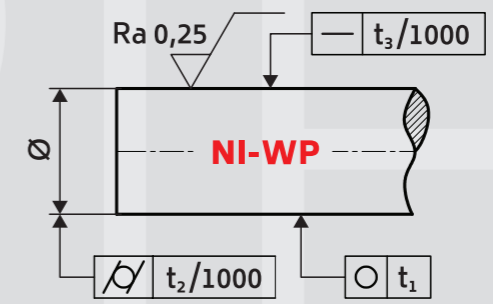
The hardening depth (SHD according to EN ISO 15787 or Rht according to DIN 6773) is defined as the distance from the steel surface up to the point where the hardness value is 80% of the minimum guaranteed value of the surface hardness and it is established in accordance with ISO 13012, depending on the shaft's size. The minimum guaranteed value of the surface hardness varies depending the steel grade.

NI-WRA / IMPERIAL

Shaft Diameter Ø	Weight	Series	Standard length	Surface hardening depth SHD (min. + tol.)	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance Class "L"	
					t ₁ max. inch	t ₂ max. inch	t ₃ max. in/ft		
6.35	0.25	0.25	NI-WRA 6.35	118.11	0.016 + 0.035	0.00016	0.00024	0.00308	-0.0005 / -0.001
9.525	0.375	0.56	NI-WRA 9.525	236.22	0.016 + 0.035	0.00016	0.00024	0.00246	-0.0005 / -0.001
12.7	0.5	0.99	NI-WRA 12.7	236.22	0.024 + 0.035	0.00020	0.00031	0.00246	-0.0005 / -0.001
15.875	0.625	1.55	NI-WRA 15.875	236.22	0.024 + 0.035	0.00020	0.00031	0.00246	-0.0005 / -0.001
19.05	0.75	2.24	NI-WRA 19.05	236.22	0.032 + 0.032	0.00024	0.00035	0.00246	-0.0005 / -0.001
25.4	1	3.98	NI-WRA 25.4	236.22	0.035 + 0.032	0.00024	0.00035	0.00185	-0.0005 / -0.001
31.75	1.25	6.21	NI-WRA 31.75	236.22	0.059 + 0.051	0.00028	0.00043	0.00185	-0.0005 / -0.001
38.1	1.5	8.94	NI-WRA 38.1	236.22	0.059 + 0.051	0.00028	0.00043	0.00185	-0.0006 / -0.0011
50.8	2	15.90	NI-WRA 50.8	236.22	0.087 + 0.063	0.00028	0.00043	0.00185	-0.0006 / -0.0013

The hardening depth (SHD according to EN ISO 15787 or Rht according to DIN 6773) is defined as the distance from the steel surface up to the point where the hardness value is 80% of the minimum guaranteed value of the surface hardness and it is established in accordance with ISO 13012, depending on the shaft's size. The minimum guaranteed value of the surface hardness varies depending the steel grade.

DEEP CASE HARDENED AND GROUND
SHAFTS FOR BALL SCREWS



Steel grades	Cf53, C55E, 42CrMo4+QT, 50CrMo4+QT
Surface hardness	min. 60 HRC
Surface roughness	Ra max. 0.25 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions

Steel grades	Cf53, C55E, 42CrMo4+QT, 50CrMo4+QT
Surface hardness	min. 60 HRC
Surface roughness	Ra max. 0.25 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions

NI-WP / METRIC

Shaft Diameter Ø	Weight	Series	Standard length	Surface hardening depth	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance
				SHD	t ₁	t ₂	t ₃	ISO h6
mm	kg/m		mm	min.	max.	max.	max.	µm
20	2.46	NI-WP 20	6000	4.0	6	9	0.3	0 / -13
25	3.85	NI-WP 25	6000	4.0	6	9	0.3	0 / -13
30	5.55	NI-WP 30	6000	5.0	6	9	0.3	0 / -13
35	7.55	NI-WP 35	6000	6.0	7	11	0.3	0 / -16
40	9.86	NI-WP 40	6000	6.0	7	11	0.3	0 / -16
45	12.48	NI-WP 45	6000	6.0	7	11	0.3	0 / -16
50	15.41	NI-WP 50	6000	6.0	7	11	0.3	0 / -16
60	22.18	NI-WP 60	6000	6.5	8	13	0.3	0 / -19
70	30.19	NI-WP 70	6000	6.5	8	13	0.3	0 / -19
80	39.44	NI-WP 80	6000	6.5	8	13	0.3	0 / -19
90	49.91	NI-WP 90	6000	6.5	10	15	0.4	0 / -22
100	61.62	NI-WP 100	6000	6.5	10	15	0.4	0 / -22

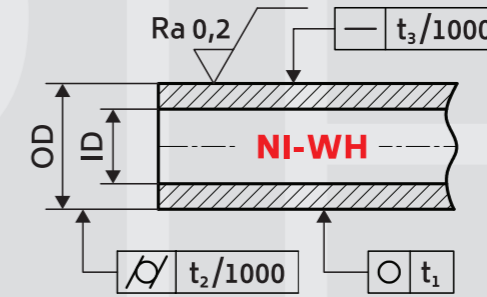
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NI-WP / IMPERIAL

Shaft Diameter Ø		Weight	Series	Standard length	Surface hardening depth	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance
					SHD	t ₁	t ₂	t ₃	Class "L"
mm	inch	kg/m		inch	min.	max.	max.	max.	inch
19.05	0.75	2.24	NI-WP 19.05	236.22	0.157	0.00024	0.00035	0.00360	-0.0005 / -0.001
25.4	1	3.98	NI-WP 25.4	236.22	0.157	0.00024	0.00035	0.00360	-0.0005 / -0.001
31.75	1.25	6.21	NI-WP 31.75	236.22	0.197	0.00024	0.00035	0.00360	-0.0005 / -0.001
34.925	1.375	7.52	NI-WP 34.925	236.22	0.236	0.00028	0.00043	0.00360	-0.0005 / -0.001
38.1	1.5	8.94	NI-WP 38.1	236.22	0.236	0.00028	0.00043	0.00360	-0.0006 / -0.0011
44.45	1.75	12.17	NI-WP 44.45	236.22	0.236	0.00028	0.00043	0.00360	-0.0006 / -0.0011
50.8	2	15.9	NI-WP 50.8	236.22	0.236	0.00028	0.00043	0.00360	-0.0006 / -0.0013
57.15	2.25	20.13	NI-WP 57.15	236.22	0.256	0.00031	0.00051	0.00360	-0.0007 / -0.0015
63.5	2.5	24.85	NI-WP 63.5	236.22	0.256	0.00031	0.00051	0.00360	-0.0007 / -0.0015
76.2	3	35.78	NI-WP 76.2	236.22	0.256	0.00031	0.00051	0.00360	-0.0008 / -0.0017
88.9	3.5	48.70	NI-WP 88.9	236.22	0.256	0.00039	0.00059	0.00480	-0.0010 / -0.0020
101.6	4	63.61	NI-WP 101.6	236.22	0.256	0.00039	0.00059	0.00480	-0.0012 / -0.0024

The hardening depth (SHD according to EN ISO 15787 or Rht according to DIN 6773) is defined as the distance from the steel surface up to the point where the hardness value is 80% of the minimum guaranteed value of the surface hardness and it is established in accordance with ISO 13012, depending on the shaft's size. The minimum guaranteed value of the surface hardness varies depending the steel grade.

INDUCTION HARDENED AND GROUND
HOLLOW LINEAR SHAFTS



Steel grades	C60E
Surface hardness	62±2 HRC
Surface roughness	Ra max. 0.20 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions

Steel grades	C60E
Surface hardness	62±2 HRC
Surface roughness	Ra max. 0.20 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions

NI-WH / METRIC

Outside Diameter OD	Inside Diameter ID	Weight kg/m	Series	Standard length mm	Surface hardening depth SHD (min. + tol.) mm	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance
						t ₁ max. µm	t ₂ max. µm	t ₃ max. mm/m	ISO h6 µm
12	4	0.79	NI-WH 12x4	6000	0.4 + 0.4	5	8	0.20	0 / -11
12	7	0.59	NI-WH 12x7	6000	0.4 + 0.4	5	8	0.20	0 / -11
16	7	1.28	NI-WH 16x7	6000	0.4 + 0.4	5	8	0.20	0 / -11
20	14	1.25	NI-WH 20x14	6000	0.6 + 0.5	6	9	0.20	0 / -13
25	15	2.47	NI-WH 25x15	6000	0.8 + 0.8	6	9	0.15	0 / -13
30	18	3.55	NI-WH 30x18	6000	0.9 + 0.8	6	9	0.15	0 / -13
40	28	5.03	NI-WH 40x28	6000	1.2 + 1.1	7	11	0.15	0 / -16
40	26	5.70	NI-WH 40x26	6000	1.2 + 1.1	7	11	0.15	0 / -16
50	30	9.87	NI-WH 50x30	6000	1.5 + 1.2	7	11	0.15	0 / -16
60	36	14.20	NI-WH 60x36	6000	1.5 + 1.2	8	13	0.15	0 / -19
80	57	19.42	NI-WH 80x57	6000	1.6 + 1.3	10	13	0.20	0 / -19

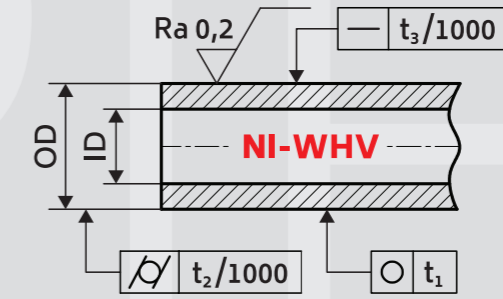
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NI-WH / IMPERIAL

Outside Diameter OD	Inside Diameter ID	Weight kg/m	Series	Standard length mm	Surface hardening depth SHD (min. + tol.) mm	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance		
						t ₁ max. inch	t ₂ max. inch	t ₃ max. in/ft	Class "L" inch		
15.875	0.625	6.35	0.25	1.30	NI-WH 15.875x6.35	236.22	0.024 + 0.020	0.000197	0.000315	0.00246	-0.0005 / -0.001
19.05	0.75	11.125	0.438	1.48	NI-WH 19.05x11.125	236.22	0.035 + 0.032	0.000236	0.000354	0.00246	-0.0005 / -0.001
25.4	1	15.494	0.61	2.50	NI-WH 25.4x15.494	236.22	0.035 + 0.032	0.000236	0.000354	0.00185	-0.0005 / -0.001
31.75	1.25	18.288	0.72	4.15	NI-WH 31.75x18.288	236.22	0.035 + 0.032	0.000236	0.000354	0.00185	-0.0005 / -0.001
38.1	1.5	22.606	0.89	5.80	NI-WH 38.1x22.606	236.22	0.047 + 0.043	0.000276	0.000433	0.00185	-0.0006 / -0.0011
50.8	2	31.75	1.25	9.69	NI-WH 50.8x31.75	236.22	0.059 + 0.043	0.000276	0.000433	0.00185	-0.0006 / -0.0013

The hardening depth (SHD according to EN ISO 15787 or Rht according to DIN 6773) is defined as the distance from the steel surface up to the point where the hardness value is 80% of the minimum guaranteed value of the surface hardness and it is established in accordance with ISO 13012, depending on the shaft's size. The minimum guaranteed value of the surface hardness varies depending the steel grade.

INDUCTION HARDENED AND CHROME
PLATED HOLLOW LINEAR SHAFTS



Steel grade	C60E
Surface hardness	62±2 HRC
Chrome layer thickness	12±5 µm
Chrome layer microhardness	900-1100HV0.1
Surface roughness	Ra max. 0.20 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions

Steel grade	C60E
Surface hardness	62±2 HRC
Chrome layer thickness	12±5 µm
Chrome layer microhardness	900-1100HV0.1
Surface roughness	Ra max. 0.20 µm
Length tolerance	±200 mm
Surface hardening depth, SHD	according to EN ISO 15787
On request	special lengths, tolerances and dimensions

NI-WHV / METRIC

Outside Diameter OD	Inside Diameter ID	Weight kg/m	Series	Standard length mm	Surface hardening depth SHD (min.+tol.) mm	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance ISO h7 µm
						t ₁ max. µm	t ₂ max. µm	t ₃ max. mm/m	
12	4	0.79	NI-WHV 12x4	6000	0.4 + 0.4	8	12	0.20	0 / -18
12	7	0.59	NI-WHV 12x7	6000	0.4 + 0.4	8	12	0.20	0 / -18
16	7	1.28	NI-WHV 16x7	6000	0.4 + 0.4	8	12	0.20	0 / -18
20	14	1.25	NI-WHV 20x14	6000	0.6 + 0.5	9	12	0.20	0 / -21
25	15	2.47	NI-WHV 25x15	6000	0.8 + 0.8	9	12	0.15	0 / -21
30	18	3.55	NI-WHV 30x18	6000	0.9 + 0.8	9	12	0.15	0 / -21
40	28	5.03	NI-WHV 40x28	6000	1.2 + 1.1	11	15	0.15	0 / -25
40	26	5.70	NI-WHV 40x26	6000	1.2 + 1.1	11	15	0.15	0 / -25
50	30	9.87	NI-WHV 50x30	6000	1.5 + 1.2	11	15	0.15	0 / -25
60	36	14.20	NI-WHV 60x36	6000	1.5 + 1.2	13	15	0.15	0 / -30
80	57	19.42	NI-WHV 80x57	6000	1.6 + 1.3	13	15	0.20	0 / -30

The hardening depth (SHD according to EN ISO 15787 or Rht according to DIN 6773) is defined as the distance from the steel surface up to the point where the hardness value is 80% of the minimum guaranteed value of the surface hardness and it is established in accordance with ISO 13012, depending on the shaft's size. The minimum guaranteed value of the surface hardness varies depending the steel grade.

NI-WHV / IMPERIAL

Outside Diameter OD		Inside Diameter ID		Weight kg/m	Series	Standard length inch	Surface hardening depth SHD (min.+tol.) inch	Roundness (circularity)	Parallelism (cylindricity)	Straightness	Standard tolerance Class "L" inch
mm	inch	mm	inch					t ₁ max. inch	t ₂ max. inch	t ₃ max. in/ft	
15.875	0.625	6.35	0.25	1.30	NI-WHV 15.875x6.35	236.22	0.024 + 0.020	0.000315	0.000472	0.00246	-0.0005 / -0.001
19.05	0.75	11.125	0.438	1.48	NI-WHV 19.05x11.125	236.22	0.035 + 0.032	0.000354	0.000472	0.00246	-0.0005 / -0.001
25.4	1	15.494	0.61	2.50	NI-WHV 25.4x15.494	236.22	0.035 + 0.032	0.000354	0.000472	0.00185	-0.0005 / -0.001
31.75	1.25	18.288	0.72	4.15	NI-WHV 31.75x18.288	236.22	0.035 + 0.032	0.000354	0.000472	0.00185	-0.0005 / -0.001
38.1	1.5	22.606	0.89	5.80	NI-WHV 38.1x22.606	236.22	0.047 + 0.043	0.000433	0.000591	0.00185	-0.0006 / -0.0011
50.8	2	31.75	1.25	9.69	NI-WHV 50.8x31.75	236.22	0.059 + 0.043	0.000433	0.000591	0.00185	-0.0006 / -0.0013

The hardening depth (SHD according to EN ISO 15787 or Rht according to DIN 6773) is defined as the distance from the steel surface up to the point where the hardness value is 80% of the minimum guaranteed value of the surface hardness and it is established in accordance with ISO 13012, depending on the shaft's size. The minimum guaranteed value of the surface hardness varies depending the steel grade.

Mazak

SMOOTH
TECHNOLOGY

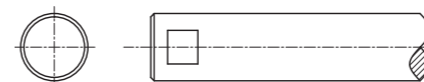
CUSTOMIZED
MACHINING





On request we can perform customized cutting and machining according to drawing. We work with the latest technology and our CNC machines can perform high quality turning, milling, threading and drilling.

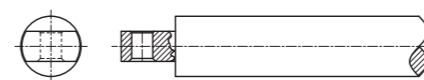
CROSSWISE GROOVE



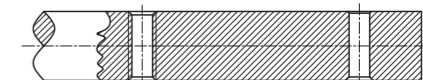
OUTSIDE DIAMETER THREAD



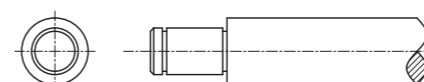
END FOR MOUNT WITH CLEVIS CLAMP



TAPPED OR DRILLED HOLES RADIALLY THROUGH SHAFT



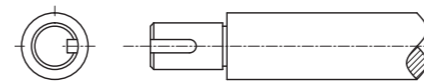
GROOVES FOR SNAP RING



RADIAL DRILLING HOLES, BORED



REDUCED DIAMETER WITH/WITHOUT FEATHER KEYWAY



REDUCED DIAMETER WITH THREADED END

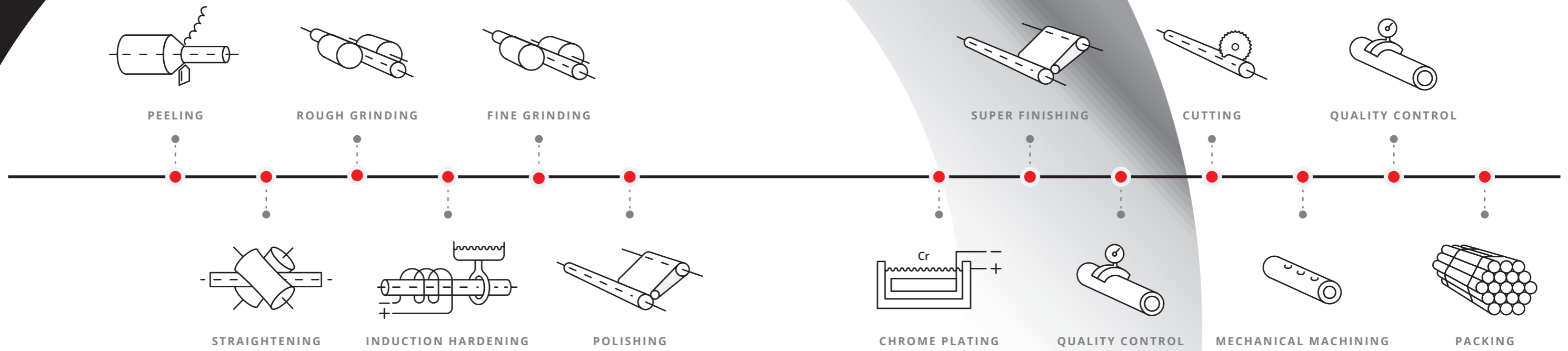


AXIAL DRILLED AND THREADED TO ENDS



D-CUT SHAPE





Nowadays, the market is more demanding and requires a high level of service which we are ready to sustain with solutions to the customers needs:

- ✓ materials with particular characteristics (chemical composition, mechanical properties, hardening parameters, surface finishing);
- ✓ special lengths and cutting to specific lengths;
- ✓ technical support;
- ✓ custom finished or semi-finished products based on the customer's drawing or our own design.

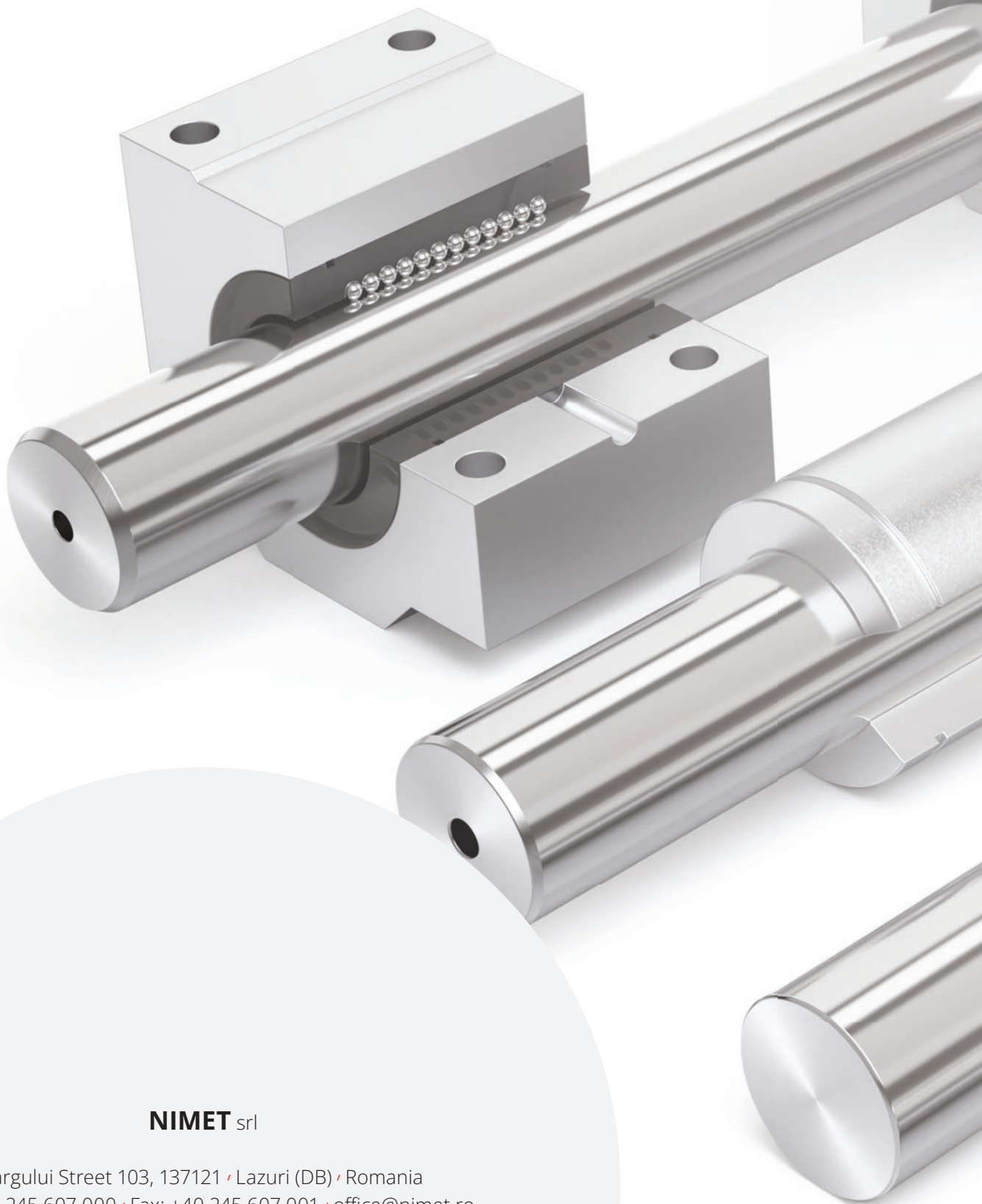
PACKING SOLUTIONS

- ✓ Branorost paper, spacer rings, raffia and wooden boxes for Ø 4 - 16 mm.
- ✓ Bundles protected with branorost paper, spacer rings and raffia for Ø over 16 mm. Same range but in chrome plated condition can be packed in individual cardboard tubes.
- ✓ Customized packaging solutions - wooden cases and wooden Euro-pallets.
- ✓ Aluminum foil vacuum bags extra protection of bundles for overseas transportation.

STORAGE AND HANDLING RECOMMENDATIONS

- ✓ Keep the products stored in dry and covered spaces.
- ✓ Whenever possible, please use the crane to load or unload the bundles; when you use the fork lift, please avoid the direct contact of the forks with the products.
- ✓ Always lift the bundles using textile slings. Do not use metal slings during handling of bundles.
- ✓ Always use gloves when handling the shafts.
- ✓ Always keep dry the cardboard tubes that protect the chromed products.





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NIMET LINEAR SHAFTS 2023