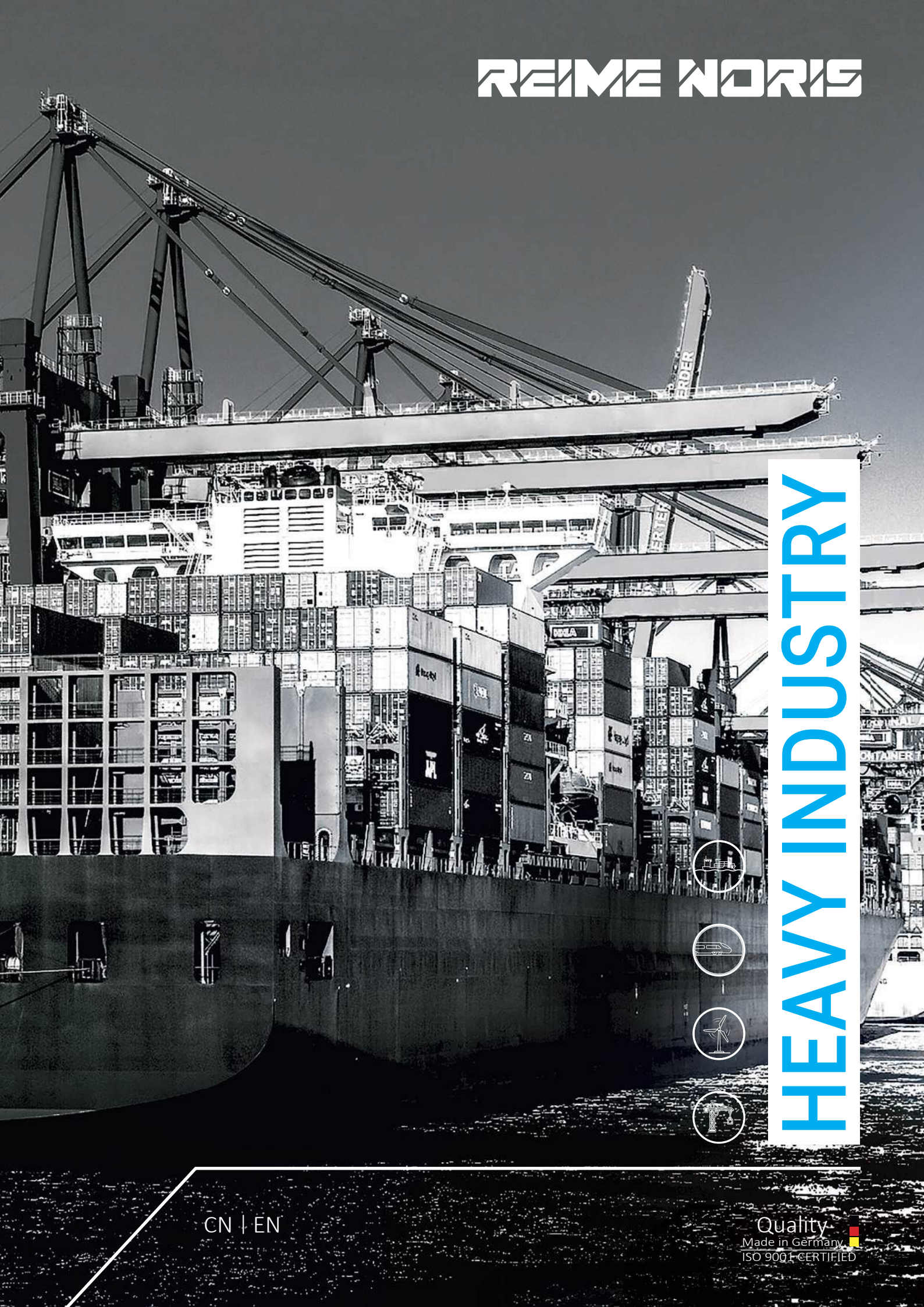
REIME NORIS



HEAVY INDUSTRY

CN | EN

Quality
Made in Germany
ISO 9001 CERTIFIED

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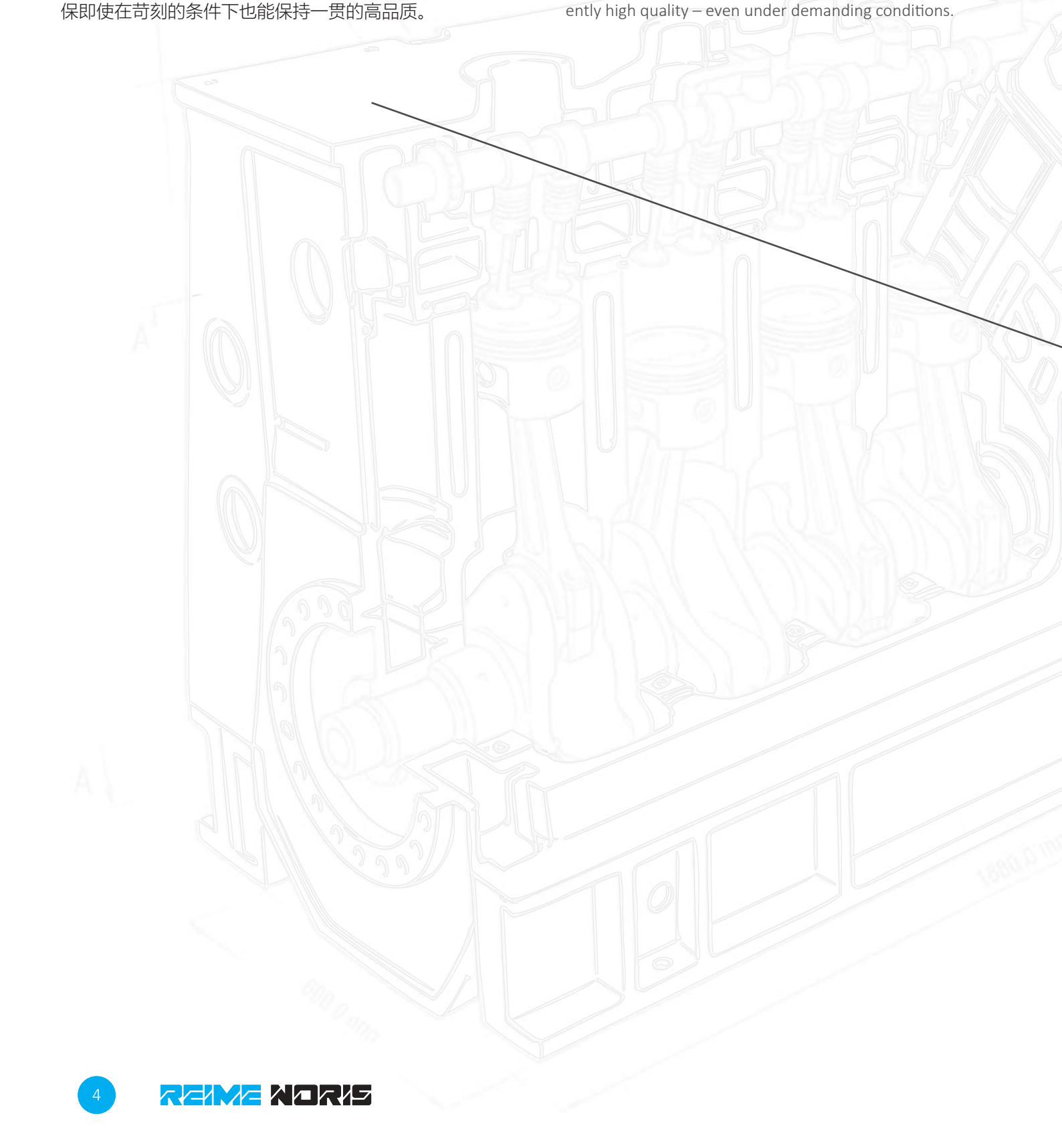
大型发动机中的GGG40材料
GGG40 MATERIAL IN LARGE ENGINES

在船舶发动机制造中，加工GGG40材料，尤其是在切削大而深的螺纹时，需要可靠的排屑能力，
NORIS INNENSPAN能有效去除加工区的切屑，确保螺纹生产的稳定性和可控性。其坚固的几何形状和耐磨表面确保即使在苛刻的条件下也能保持一贯的高品质。

In marine engine manufacturing, machining GGG40 requires reliable chip removal, particularly when cutting large and deep threads. The NORIS INNENSPAN effectively removes chips from the machining zone, ensuring stable and controlled thread production. Its robust geometry and wear-resistant surface ensure consistently high quality – even under demanding conditions.



NORIS INNENSPAN

加工方向 | Working direction	立式 | Vertical
刀柄 | Adaptor	攻丝刀柄 | Tapping chuck
切削液 | Lubricant	攻丝油 | Cutting Oil
切削速度 | Cutting speed	8 m/min
尺寸 | Size	M64x6
螺纹形状 | Thread form	盲孔 | blind hole thread
螺纹深度 | Thread depth	90 mm

您的获益 | YOUR BENEFITS

- **最大程度的工艺可靠性 | Maximum process reliability**
  可靠的排屑可防止切屑堆积、刀具破损和材料浪费，尤其是在切削深螺纹时。
  Reliable chip removal prevents chip buildup, tool breakage, and material waste—especially when cutting deep threads
- **刀具使用寿命长 | Long tool life**
  坚固的几何形状和耐磨表面确保了刀具寿命长，并降低了加工成本。
  Robust geometry and a wear-resistant surface ensure a long tool life and reduced tooling costs.
- **螺纹质量一致 | Consistent thread quality**
  即使在发动机制造的严苛条件下，也能确保螺纹清洁且尺寸精确。
  Clean, dimensionally accurate threads, even under demanding conditions in engine manufacturing

提高大尺寸螺纹的加工效率
INCREASING PRODUCTIVITY FOR LARGE THREADS

在轨道车辆变速箱的制造过程中，承受高负荷的部件需要既精确又经济高效的加工。特别是大螺纹和具有挑战性的材料，对刀具寿命和工艺稳定性提出了很高的要求。
NORIS NES可转位刀片系统通过特别高效的螺纹加工优化了这些应用。使用具有多个切削刃的可转位刀片可显著延长刀具寿命，从而提高成本效益。坚固的刀具设计还保证了在高切削力下进行可靠的加工。一个关键优势是，磨损的切削刃可以快速轻松地更换，而无需更换整个刀具。

In the manufacture of gearboxes for rail vehicles, components subjected to high loads require machining that is both precise andcost-effective. Particularly large threads and challenging materials place high demands on tool life and process stability.

The NORIS NES indexable insert system optimises these applications through particularly efficient thread machining. The use of indexable inserts with multiple cutting edges significantly increases tool life, thereby improving cost-effectiveness. The robust tool design also guarantees reliable machining under high cutting forces. A key advantage is that worn cutting edges can be replaced quickly and easily without having to change the entire tool.

NORIS NES

加工方向 | Working direction	立式 | Vertical
切削液 | Lubricant	乳化液 | Emulsion
切削速度/FZ | Cutting speed/FZ	230 m/min /0,13mm
尺寸 | Size	M36
螺纹形状 | Thread form	盲孔 | blind hole thread
螺纹深度 | Thread depth	55 mm

您的获益 | YOUR BENEFITS

- **高性价比 | High cost-effectiveness**
  每个刀片具有多个切削刃可显著降低刀具成本。
  Multiple cutting edges per insert significantly reduce tooling costs.
- **最大灵活性 | Maximum flexibility**
  无需更换刀具即可快速更换切削刀片。
  Quick change of cutting inserts without changing tools.
- **高工艺稳定性 | High process stability**
  即使在大直径和高负载的情况下，也能实现可靠的螺纹切削。
  Reliable thread cutting even with large diameters and high loads.

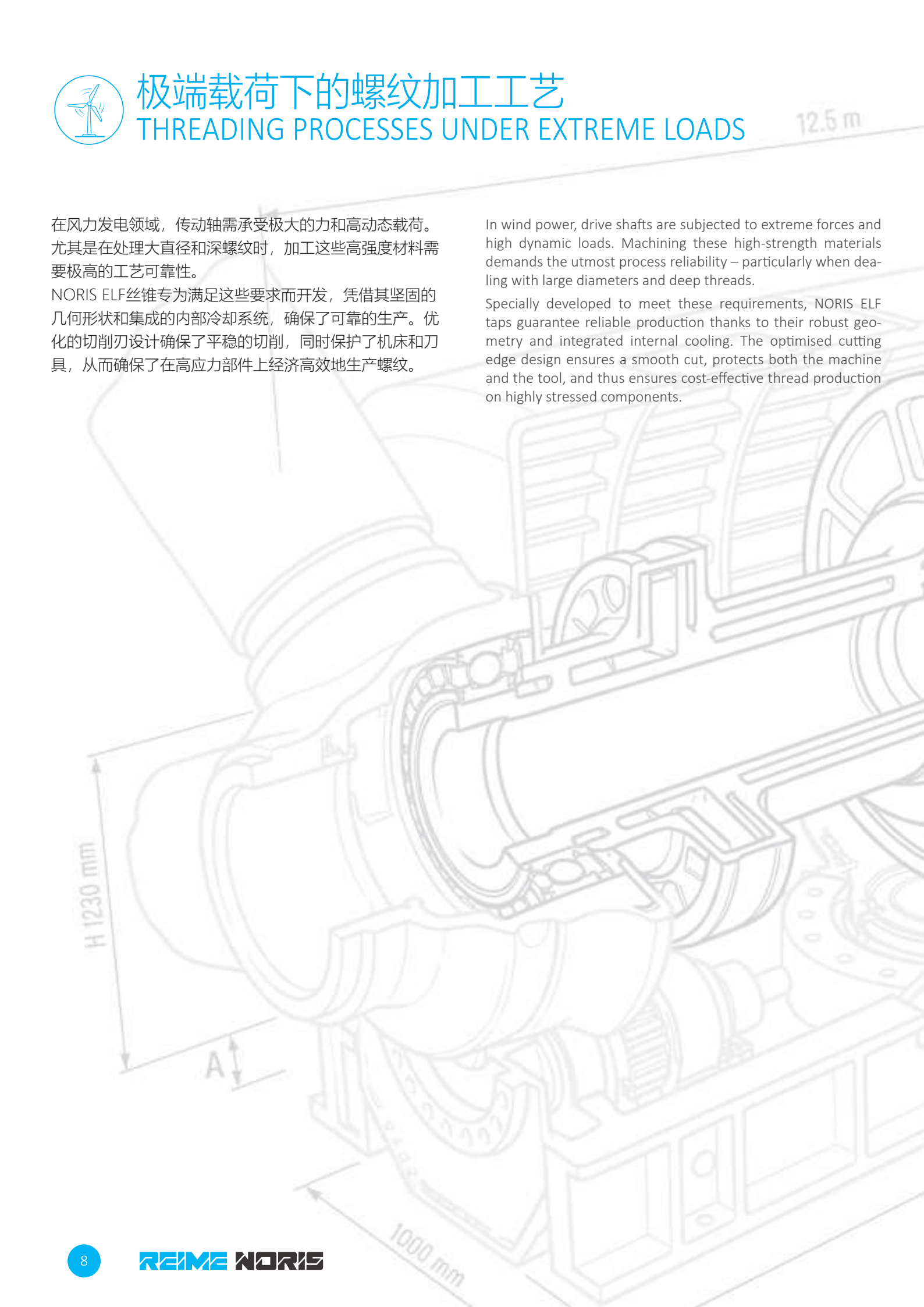
极端载荷下的螺纹加工工艺
THREADING PROCESSES UNDER EXTREME LOADS

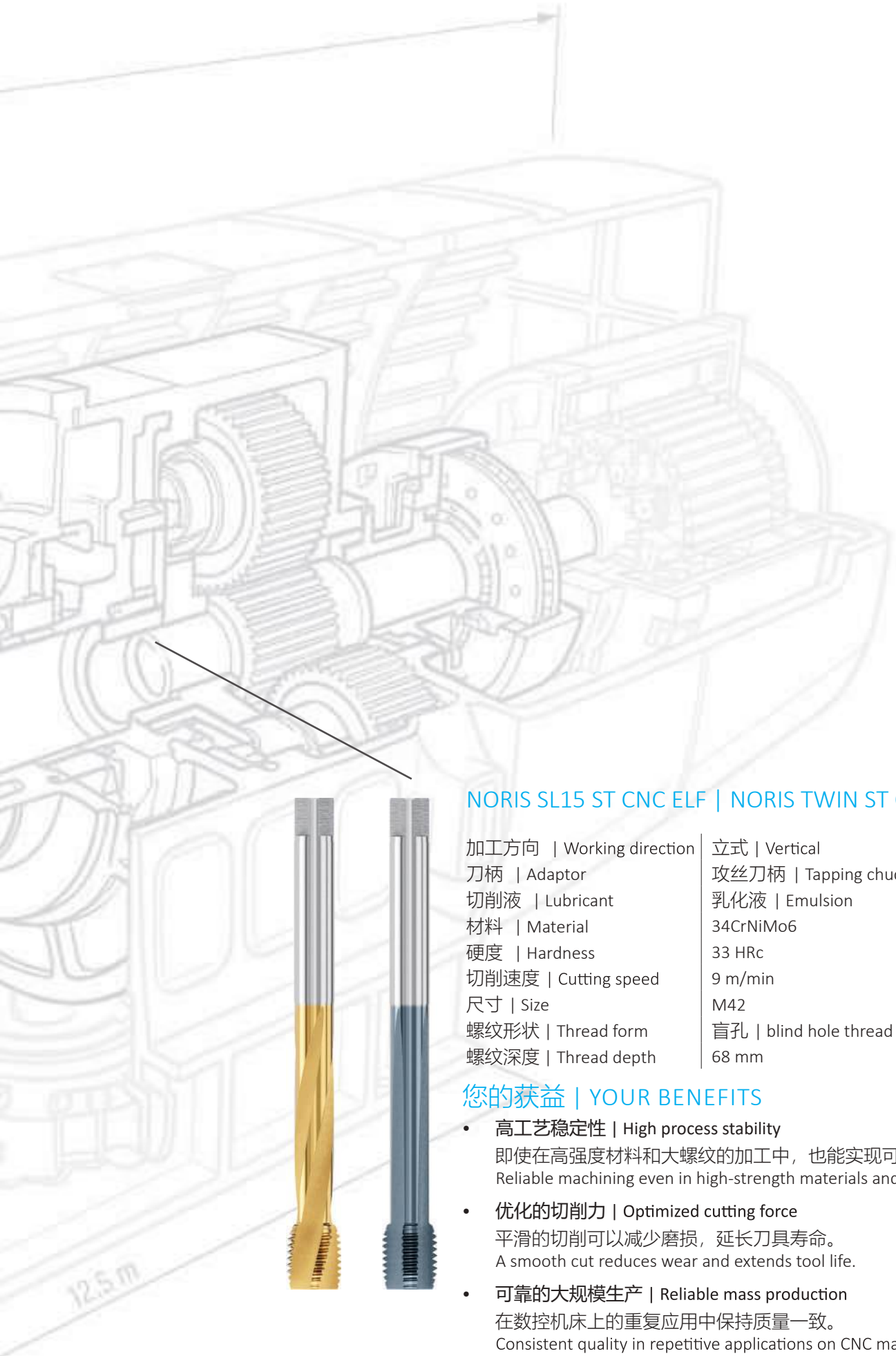
在风力发电领域，传动轴需承受极大的力和高动态载荷。尤其是在处理大直径和深螺纹时，加工这些高强度材料需要极高的工艺可靠性。

NORIS ELF丝锥专为满足这些要求而开发，凭借其坚固的几何形状和集成的内部冷却系统，确保了可靠的生产。优化的切削刃设计确保了平稳的切削，同时保护了机床和刀具，从而确保了在高应力部件上经济高效地生产螺纹。

In wind power, drive shafts are subjected to extreme forces and high dynamic loads. Machining these high-strength materials demands the utmost process reliability – particularly when dealing with large diameters and deep threads.

Specially developed to meet these requirements, NORIS ELF taps guarantee reliable production thanks to their robust geometry and integrated internal cooling. The optimised cutting edge design ensures a smooth cut, protects both the machine and the tool, and thus ensures cost-effective thread production on highly stressed components.





NORIS SL15 ST CNC ELF | NORIS TWIN ST CNC ELF

加工方向 | Working direction	立式 | Vertical
刀柄 | Adaptor	攻丝刀柄 | Tapping chuck
切削液 | Lubricant	乳化液 | Emulsion
材料 | Material	34CrNiMo6
硬度 | Hardness	33 HRc
切削速度 | Cutting speed	9 m/min
尺寸 | Size	M42
螺纹形状 | Thread form	盲孔 | blind hole thread
螺纹深度 | Thread depth	68 mm

您的获益 | YOUR BENEFITS

- **高工艺稳定性 | High process stability**
  即使在高强度材料和大螺纹的加工中，也能实现可靠加工。
  Reliable machining even in high-strength materials and large threads.
- **优化的切削力 | Optimized cutting force**
  平滑的切削可以减少磨损，延长刀具寿命。
  A smooth cut reduces wear and extends tool life.
- **可靠的大规模生产 | Reliable mass production**
  在数控机床上的重复应用中保持质量一致。
  Consistent quality in repetitive applications on CNC machines.

承重结构中的可靠螺纹
RELIABLE THREADS IN LOAD-BEARING STRUCTURES

在起重机制造中，由高强度钢材制成的大型结构部件需要进行螺纹加工，这些螺纹需能承受极端的静态和动态载荷。这些材料对工具的稳定性和耐磨性提出了极高的要求。

得益于其坚固的几何结构和高效涂层，NORIS SALOREX UNI S非常适合通用用途。其优化的排屑槽可确保可靠的排屑效果，即使在复杂的工件几何形状下也能保持稳定的切削条件。这使其成为结构部件的完美工具，在这些部件中，始终保持高螺纹质量和工艺可靠性至关重要。

In crane construction, large-scale structural components made from high-strength steels require threading that can withstand extreme static and dynamic loads. These materials place the highest demands on tool stability and wear resistance.

Thanks to its robust geometry and high-performance coating, the NORIS SALOREX UNI S is ideally suited for universal use. Its optimised flute ensures reliable chip evacuation and maintains stable cutting conditions even with complex component geometries. This makes it the perfect tool for structural components where consistently high thread quality and process reliability are essential.

NORIS SALOREX UNI CNC S

加工方向 | Working direction	水平 | Horizontal
刀柄 | Adaptor	攻丝刀柄 | Tapping chuck
切削液 | Lubricant	乳化液 | Emulsion
切削速度 | Cutting speed	6,8 m/min
尺寸 | Size	M36
螺纹形状 | Thread form	盲孔 | blind hole thread
螺纹深度 | Thread depth	72 mm

您的获益 | YOUR BENEFITS

- **适合普遍使用 | Suitable for universal use**
  适用于起重机结构中使用的各种材料。
  Suitable for a variety of materials used in crane construction.
- **刀具使用寿命长 | Long tool life**
  耐磨涂层确保工具经久耐用。
  A wear-resistant coating ensures long-lasting tools.
- **稳定加工 | Stable machining**
  即使在加工复杂部件时，也能确保可靠的切屑去除，保障加工安全。
  Reliable chip removal for safe processes, even with complex components.

分类汇总

列出的切削速度（Vc，单位为M/MIN）为标准值.
该值必须根据实际加工情况进行调整
* 对于锥形螺纹和梯形螺纹，切削速度必须减少50%

SUMMARY OF ASSORTMENT

THE LISTED CUTTING DATA ARE STANDARD VALUES.
THIS VALUES HAVE TO BE ADJUSTED TO INDIVIDUAL WORK CONDITIONS.

● 合适的 • SUITABLE

○ 有条件适合 • CONDITIONALLY SUITABLE

P	钢件材料	STEEL MATERIALS
	非合金钢和低合金钢	Unalloyed and low-alloy steels
	高合金钢	High alloy steels
M	耐腐蚀和耐酸钢	CORROSION AND ACID PROOF STEELS
	奥氏体不锈钢和双相不锈钢	Stainless austenitic steels + DUPLEX steels
K	铸件材料	CAST MATERIALS
	铸铁、球墨铸铁、蠕墨铸铁、可锻铸铁	Cast iron, nodular cast iron, Vermicular graphite cast iron, malleable cast iron
	奥铁素体铸铁（ADI）+硬质铸件	Ausferritic cast iron (ADI) + Hard casting
N	有色金属材料	NON FERROUS MATERIALS
	锻铝合金	Aluminium wrought alloys
	铸铝合金	Aluminium cast alloys
	黄铜+铜合金（长屑）	Copper + Copper alloys (long-chip.)
	铜合金（短屑）	Copper alloys (short-chip.)
	高强度铜合金	High-strength copper alloys
	锌合金	Zinc alloys
	锻镁合金	Magnesium wrought alloys
	热塑性塑料	Thermoplastics
	纤维强化合成材料+硬质体塑料	Fibre-reinforced synthetics + Duroplastics
S	特殊材料	SPECIAL MATERIALS
	镍基/铁基/钴基合金	Ni-, Fe- or Co-based superalloys
	钛+钛合金	Titanium + Titanium alloys
H	淬硬钢	HARDENED STEELS
	淬硬钢	Hardened steels

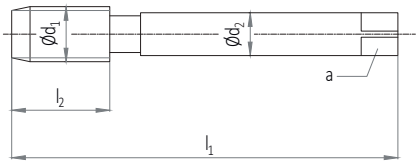
	SALOREX	SL15	TWIN	INNENSPAN	WP		NES	NES-TS
	UNI CNC	ST CNC	ST CNC	RA15				
								
	S	EL	EL					
时效优势 TIME ADVANTAGE	•	•	•	○				○
灵活性 FLEXIBILITY							•	•
工艺可靠性 PROCESS RELIABILITY							•	•
修磨服务 REGRINDING SERVICE		○	•	•				
螺纹质量 THREAD QUALITY	○	○	○	•			•	•
表面处理和涂层 · SURFACE	ALTINHD	TIN	TICN	VAP	TIN	TIALN		
材料 · MATERIAL	HSSE	HSSE	HSSE	HSSE	K20	K20		
M	14	15	15	16	20	20		
MF				16	20	20		
UNC					20	20	18	19
UNF					20	20		
G					20	20		

MAT.				Vc [m/min]	Vc [m/min]	Vc [m/min]	Vc [m/min]	Vc [m/min]		fz [mm]	
≤ 800N/mm²	P1.1			10- 18	10- 18	10- 18	6- 12	200- 350	250- 400	0,15- 0,30	0,15- 0,30
≤ 1200N/mm²	P1.2			6- 10	6- 10	6- 10	2- 6	150- 250	200- 300	0,10- 0,25	0,10- 0,25
≤ 1400N/mm²	P1.3			4- 8				100- 150	150- 200	0,06- 0,12	0,06- 0,12
≤ 1400N/mm²	P2.1			2- 10	2- 10	2- 10		80- 160	100- 180	0,08- 0,12	0,08- 0,12
≤ 800N/mm²	M1.1			6- 10	6- 10		2- 6	80- 120	80- 120	0,06- 0,12	0,06- 0,12
≤ 1300N/mm²	M1.2			2- 6	2- 6			50- 100	50- 100	0,04- 0,10	0,04- 0,10
≤ 800N/mm²	K1.1			10- 20	10- 20	10- 20		200- 350	250- 400	0,15- 0,30	0,15- 0,30
≤ 1400N/mm²	K2.1							100- 250	150- 300	0,08- 0,12	0,08- 0,12
	N1.1							300- 500	300- 500	0,15- 0,30	0,15- 0,30
≤ 12%Si	N1.2			15- 20	15- 20	15- 20		300- 500	300- 500	0,15- 0,30	0,15- 0,30
≥ 12%Si	N1.3							250- 350	300- 450	0,15- 0,25	0,15- 0,25
	N2.1			15- 20	15- 20	15- 20		300- 400	300- 400	0,15- 0,30	0,15- 0,30
	N2.2			20- 30	20- 30	20- 30		300- 400	300- 400	0,15- 0,30	0,15- 0,30
≥ 800N/mm²	N2.3				6- 12			100- 250	150- 300	0,08- 0,12	0,08- 0,12
	N3.1			20- 30	20- 30	20- 30		300- 400	300- 400	0,15- 0,30	0,15- 0,30
	N4.1			15- 20	15- 20	15- 20		300- 400	300- 400	0,15- 0,30	0,15- 0,30
	N5.1							300- 400	300- 400	0,15- 0,30	0,15- 0,30
	N5.2							250- 350	250- 350	0,15- 0,30	0,15- 0,30
≤ 800N/mm²	S1.1							60- 120	60- 120	0,06- 0,10	0,06- 0,10
≤ 1600N/mm²	S1.2							50- 80	50- 80	0,04- 0,08	0,04- 0,08
≤ 800N/mm²	S2.1							80- 140	80- 140	0,08- 0,12	0,08- 0,12
≤ 1300N/mm²	S2.2							60- 100	60- 100	0,06- 0,10	0,06- 0,10
≤ 55HRc	H1.1							30- 60	30- 60	0,04- 0,08	0,04- 0,08
≤ 63HRc	H1.2										
≤ 65HRc	H1.3										

乳化液 • Emulsion　攻丝油 • Cutting oil　干式 • Dry

M DIN 13

3xD CNC



NORIS SALOREX

UNI CNC S

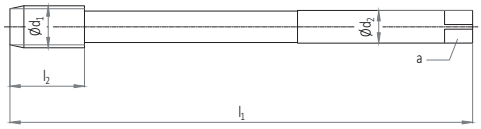
S

表面处理和涂层 · SURFACE	ALTINHD
材料 · MATERIAL	HSSE
切削锥类型 · CHAMFER FORM	C / 2-3
公差 · TOLERANCE	ISO2
	RH

DIN 376

d_1 [mm]	P [mm]	[mm]	l_1 [mm]	l_2 [mm]	l_3 [mm]	Ø d_2 [mm]	a [mm]	
M 20	2,5	17,5	140	25	-	16	12	
M 22	2,5	19,5	140	27	-	18	14,5	
M 24	3	21	160	30	-	18	14,5	7655.0B090124
M 27	3	24	160	30	-	20	16	7655.0B090127
M 30	3,5	26,5	180	35	-	22	18	7655.0B090130
M 33	3,5	29,5	180	35	-	25	20	7655.0B090133
M 36	4	32	200	40	-	28	22	7655.0B090136
M 39	4	35	200	40	-	32	24	7655.0B090139
M 42	4,5	37,5	200	45	-	32	24	7655.0B090142
M 45	4,5	40,5	220	45	-	36	29	7655.0B090145
M 48	5	43	250	50	-	36	29	7655.0B090148
M 52	5	47	250	50	-	40	32	7655.0B090152

4xD CNC ELF



NORIS SL15

ST CNC ELF MKB

NORIS TWIN

ST CNC ELF MKB

表面处理和涂层 · SURFACE	TIN	TICN
材料 · MATERIAL	HSSE	HSSE
切削锥类型 · CHAMFER FORM	C / 2-3	C / 2-3
公差 · TOLERANCE	ISO2X	ISO2X
	RH	RH

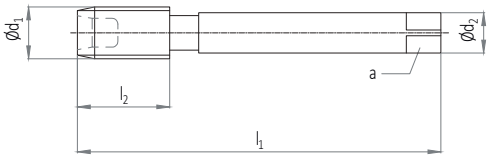
DIN 376 ELF

d_1 [mm]	P [mm]	[mm]	l_1 [mm]	l_2 [mm]	l_3 [mm]	Ø d_2 [mm]	a [mm]		
M 20	2,5	17,5	190	25	-	16	12	984C.0B040120	981C.0B050120
M 22	2,5	19,5	230	27	-	18	14,5	984C.0B040122	981C.0B050122
M 24	3	21	240	30	-	18	14,5	984C.0B040124	981C.0B050124
M 27	3	24	250	30	-	20	16	984C.0B040127	981C.0B050127
M 30	3,5	26,5	270	35	-	22	18	984C.0B040130	981C.0B050130
M 33	3,5	29,5	290	35	-	25	20	984C.0B040133	981C.0B050133
M 36	4	32	310	40	-	28	22	984C.0B040136	981C.0B050136
M 42	4,5	37,5	340	45	-	32	24	984C.0B040142	981C.0B050142
M 45	4,5	40,5	360	45	-	36	29	984C.0B040145	981C.0B050145

M DIN 13 | MF DIN 13

1,5xD

2xD



NORIS INNENSPAN

RA15

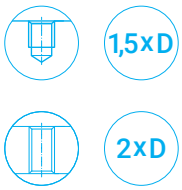
表面处理和涂层 · SURFACE	VAP
材料 · MATERIAL	HSSE
切削锥类型 · CHAMFER FORM	C / 2-3
公差 · TOLERANCE	ISO2X
	RH

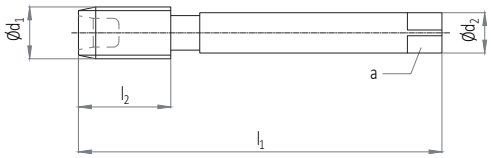
DIN 376

	d_1	P		l_1	l_2	l_3	Ø d_2	a	
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
M	30	3,5	26,5	180	40	-	22	18	7682.0B010130
M	33	3,5	29,5	180	40	-	25	20	7682.0B010133
M	36	4	32	200	50	-	28	22	7682.0B010136
M	39	4	35	200	50	-	32	24	7682.0B010139
M	42	4,5	37,5	200	56	-	32	24	7682.0B010142
M	45	4,5	40,5	220	58	-	36	29	7682.0B010145
M	48	5	43	250	65	-	36	29	7682.0B010148
M	52	5	47	250	65	-	40	32	7682.0B010152
M	56	5,5	50,5	250	70	-	40	32	7682.0B010156
M	60	5,5	54,5	280	70	-	45	35	7682.0B010160
M	64	6	58	315	75	-	50	39	7682.0B010164

DIN 374

	d_1	x	P		l_1	l_2	l_3	Ø d_2	a	
	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
MF	20	x	1,5	18,5	125	25	-	16	12	7682.0B010422
MF	22	x	1,5	20,5	125	25	-	18	14,5	7682.0B010438
MF	24	x	1,5	22,5	140	27	-	18	14,5	7682.0B010452
MF	24	x	2	22	140	27	-	18	14,5	7682.0B010453
MF	27	x	1,5	25,5	140	28	-	20	16	7682.0B010470
MF	27	x	2	25	140	28	-	20	16	7682.0B010471
MF	30	x	1,5	28,5	150	28	-	22	18	7682.0B010490
MF	30	x	2	28	150	28	-	22	18	7682.0B010491
MF	33	x	1,5	31,5	160	30	-	25	20	7682.0B010511
MF	33	x	2	31	160	30	-	25	20	7682.0B010512
MF	36	x	1,5	34,5	170	30	-	28	22	7682.0B010532
MF	36	x	2	34	170	30	-	28	22	7682.0B010533
MF	36	x	3	33	200	42	-	28	22	7682.0B010534
MF	38	x	1,5	36,5	170	30	-	28	22	7682.0B010546
MF	39	x	3	36	200	42	-	32	24	7682.0B010555
MF	40	x	2	38	170	30	-	32	24	7682.0B010561
MF	42	x	1,5	40,5	170	30	-	32	24	7682.0B010574
MF	42	x	2	40	170	30	-	32	24	7682.0B010575
MF	42	x	3	39	200	45	-	32	24	7682.0B010576





NORIS INNENSPAN

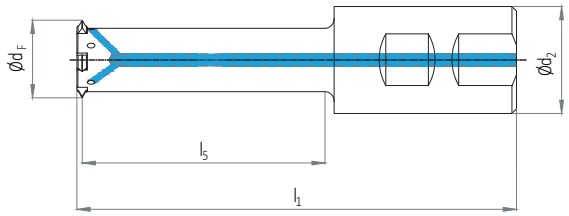
RA15

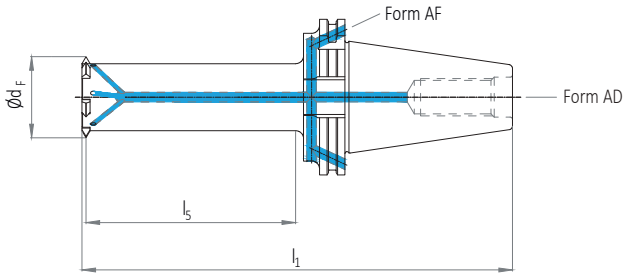
表面处理和涂层 · SURFACE	VAP
材料 · MATERIAL	HSSE
切削锥类型 · CHAMFER FORM	C / 2-3
公差 · TOLERANCE	ISO2X
	RH

DIN 374

d_1	x	P		l_1	l_2	l_3	Ø d_2	a	
[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
MF 45	x	3	42	200	45	-	36	29	7682.0B010597
MF 48	x	1,5	46,5	190	32	-	36	29	7682.0B010616
MF 48	x	2	46	190	32	-	36	29	7682.0B010617
MF 48	x	3	45	225	50	-	36	29	7682.0B010618
MF 52	x	3	49	225	50	-	40	32	7682.0B010646
MF 56	x	3	53	225	50	-	40	32	7682.0B010661
MF 56	x	4	52	250	60	-	40	32	7682.0B010662
MF 60	x	4	56	280	60	-	45	35	7682.0B010672
MF 64	x	3	61	275	55	-	50	39	7682.0B010681
MF 64	x	4	60	315	65	-	50	39	7682.0B010682
MF 68	x	4	64	315	65	-	50	39	7682.0B010692
MF 70	x	3	67	275	55	-	50	39	7682.0B010696
MF 70	x	4	66	340	65	-	50	39	7682.0B010697
MF 72	x	3	69	275	55	-	50	39	7682.0B010702
MF 72	x	4	68	340	65	-	50	39	7682.0B010703
MF 72	x	6	66	340	80	-	50	39	7682.0B010704
MF 76	x	3	73	275	55	-	50	39	7682.0B010714
MF 76	x	4	72	340	65	-	50	39	7682.0B010715
MF 76	x	6	70	340	80	-	50	39	7682.0B010716
MF 80	x	4	76	360	65	-	50	39	7682.0B010727
MF 80	x	6	74	360	80	-	50	39	7682.0B010728
MF 85	x	3	82	325	60	-	50	39	7682.0B010736
MF 85	x	4	81	380	70	-	50	39	7682.0B010737
MF 90	x	3	87	325	60	-	50	39	7682.0B010746
MF 90	x	4	86	380	70	-	50	39	7682.0B010747
MF 90	x	6	84	380	80	-	50	39	7682.0B010748
MF 95	x	6	89	400	85	-	56	44	7682.0B010758
MF 100	x	4	96	400	70	-	56	44	7682.0B010767
MF 100	x	6	94	400	85	-	56	44	7682.0B010768
MF 110	x	6	104	400	85	-	56	44	7682.0B010788
MF 115	x	3	112	350	65	-	56	44	7682.0B010791
MF 120	x	4	116	400	75	-	56	44	7682.0B010797
MF 120	x	6	114	400	90	-	56	44	7682.0B010798

M DIN 13 | MF DIN 13 | UN ASME B1.1 | G (BSP) DIN EN ISO 228





NORIS NES MKBR

NORIS NES MKBR

DIN 1835-1 B+E

M | MF Ø d$_{1\ min}$ [mm]	M | MF P [mm]	UN | UNC | UNF Ø d$_{1\ min}$ [inch]	UN | UNC | UNF Gg/1" [tpi]	G Ø d$_{1\ min}$	G Gg/1" [tpi]			Ø d$_F$ [mm]	l$_1$ [mm]	l$_5$ [mm]	Ø d$_2$ [mm]	z			
≥ M 20	1,5 - 3	≥ UNC 3/4	16 - 9	≥ G 1/2	28 - 9	F521	-	16,5	100	45	20	2	M2,5	F501F0003	
≥ M 22	2,5 - 3,5	≥ UNC 7/8	10 - 7	-	- - -	F522	-	18	100	45	20	2	M2,5	F501F0003	
≥ M 20	1,5 - 3	≥ UNC 3/4	16 - 9	≥ G 1/2	28 - 9	F521	-	16,5	114	60	20	2	M2,5	F501F0005	
≥ M 22	2,5 - 3,5	≥ UNC 7/8	10 - 7	-	- - -	F522	-	18	114	60	20	2	M2,5	F501F0005	
≥ M 24	1,5 - 3	≥ UNC 1"	16 - 9	≥ G 5/8	28 - 9	F521	-	20,5	100	50	16	3	M2,5	F501F0019	
≥ M 27	2,5 - 3,5	≥ UNC 1"	10 - 7	-	- - -	F522	-	22	100	50	16	3	M2,5	F501F0019	
≥ M 27	1 - 4	≥ UNC 1 1/8	24 - 6	≥ G 3/4	28 - 9	-	F510	23,85	124	60	32	3	M2,5	F501AANAA	
≥ M 27	1 - 4	≥ UNC 1 1/8	24 - 6	≥ G 3/4	28 - 9	-	F510	23,85	140	80	25	3	M2,5	F501F0011	
≥ M 27	1 - 4	≥ UNC 1 1/8	24 - 6	≥ G 3/4	28 - 9	-	F510	23,85	144	80	32	3	M2,5	F501AARAA	
≥ M 27	1 - 4	≥ UNC 1 1/8	24 - 6	≥ G 3/4	28 - 9	-	F510	23,85	154	90	32	3	M2,5	F501AA8AA	
≥ M 33	1 - 4	≥ UNC 1 1/4	24 - 6	≥ G 1"	28 - 9	-	F510	29,27	159	95	32	3	M2,5	F501E0841	
≥ M 39	1,5 - 5,5	≥ UNC 1 1/2	16 - 4,5	≥ G 1 1/8	28 - 9	-	F511	32,85	155	95	25	3	M3	F501F0012	
≥ M 39	1,5 - 5,5	≥ UNC 1 1/2	16 - 4,5	≥ G 1 1/8	28 - 9	-	F511	32,85	159	95	32	3	M3	F501AAPAA	
≥ M 39	1,5 - 5,5	≥ UNC 1 1/2	16 - 4,5	≥ G 1 1/8	28 - 9	-	F511	32,85	179	115	32	3	M3	F501F0007	
≥ M 48	1,5 - 6	≥ UNC 1 3/4	16 - 4	≥ G 1 1/4	12 - 4,5	-	F512	40,25	173	110	32	4	M4	F501F0013	
≥ M 48	1,5 - 6	≥ UNC 1 3/4	16 - 4	≥ G 1 1/4	12 - 4,5	-	F512	40,25	208	145	32	4	M4	F501F0010	

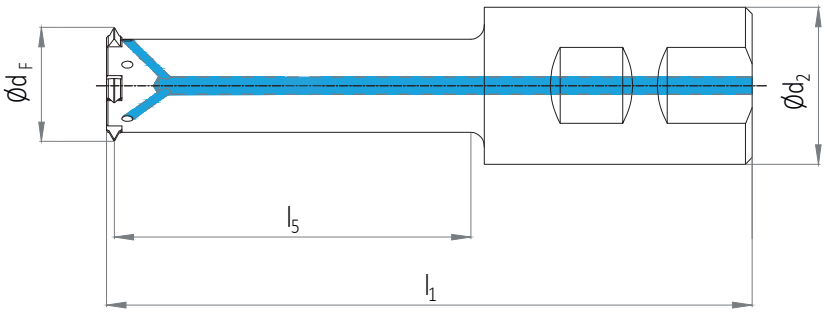
DIN ISO 7388-1 AD/AF

M | MF Ø d$_{1\ min}$ [mm]	M | MF P [mm]	UN | UNC | UNF Ø d$_{1\ min}$ [inch]	UN | UNC | UNF Gg/1" [tpi]	G Ø d$_{1\ min}$	G Gg/1" [tpi]			Ø d$_F$ [mm]	l$_1$ [mm]	l$_5$ [mm]	Ø d$_2$ [mm]	z			
≥ M 48	1,5 - 6	≥ UNC 1 3/4	16 - 4	≥ G 1 1/4	12 - 4,5	-	F512	40,25	212	110	SK40	4	M4		F505AADAA
≥ M 48	1,5 - 6	≥ UNC 1 3/4	16 - 4	≥ G 1 1/4	12 - 4,5	-	F512	40,25	245	110	SK50	4	M4		F505AADAC
≥ M 48	1,5 - 6	≥ UNC 1 3/4	16 - 4	≥ G 1 1/4	12 - 4,5	-	F512	40,25	247	145	SK40	4	M4		F505AAWAA
≥ M 48	1,5 - 6	≥ UNC 1 3/4	16 - 4	≥ G 1 1/4	12 - 4,5	-	F512	40,25	280	145	SK50	4	M4		F505AAWAB
≥ M 60	1,5 - 6	≥ UNC 2 1/4	16 - 4	≥ G 2"	12 - 3,5	-	F513	52,55	286	150	SK50	4	M5		F505AAEAB
≥ M 60	1,5 - 6	≥ UNC 2 1/4	16 - 4	≥ G 2"	12 - 3,5	-	F513	52,55	331	195	SK50	4	M5		F505F0007
≥ M 72	1,5 - 6	≥ UNC 3"	16 - 4	≥ G 2 1/2	12 - 3,5	-	F513	66,55	308	170	SK50	7	M5		F505AACAA
≥ M 72	1,5 - 6	≥ UNC 3"	16 - 4	≥ G 2 1/2	12 - 3,5	-	F513	66,55	398	260	SK50	7	M5		F505E5553
≥ M 120	6 - 8	≥ UNC -	4 - -	-	- - -	-	F514	92	341	204	SK50	7	M5		F505AA2AA
≥ M 120	6 - 8	≥ UNC -	4 - -	-	- - -	-	F514	92	497	360	SK50	7	M5		F505F0008

M DIN 13 | MF DIN 13 | UN ASME B1.1 | G (BSP) DIN EN ISO 228

NORIS NES-TS

MKBR

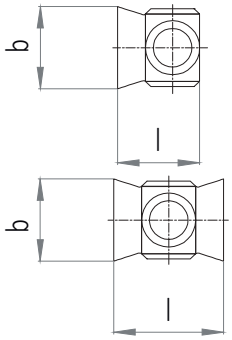


	M | MF		UN | UNC | UNF		G											
	Ø d$_{1\ min}$ [mm]	P [mm]	Ø d$_{1\ min}$ [inch]	Gg/1" [tpi]	Ø d$_{1\ min}$	Gg/1" [tpi]			Ø d$_F$ [mm]	l$_1$ [mm]	l$_5$ [mm]	Ø d$_2$ [mm]	z			
DIN 1835-1 B+E	≥ M 24	1,5 - 3	≥ UNC 1"	16 - 9	≥ G 5/8	28 - 9	F521	-	20,5	100	50	16	4	M2,5	F701F0016	
	≥ M 27	2,5 - 3,5	≥ UNC 1"	10 - 7	- -	- - -	F522	-	22	100	50	16	4	M2,5	F701F0016	
	≥ M 27	2,5 - 4,5	≥ UNC 1 1/8	10 - 6	- -	- - -	F710	-	23,85	124	60	32	5	M2,5	F701F0015	
	≥ M 33	2,5 - 4	≥ UNC 1 1/4	10 - 6	- -	- - -	-	F750	27	153	90	32	5	M2,5	F701F0003	
	≥ M 39	2,5 - 5,5	≥ UNC 1 1/2	10 - 4,5	- -	- - -	F711	-	32,85	179	115	32	5	M3	F701F0001	

其他螺纹系统可应要求提供
Other thread standards upon request

特殊轮廓可按要求定制
Special contours upon request

M DIN 13 | MF DIN 13 | UN ASME B1.1 | G (BSP) DIN EN ISO 228



	NORIS WP UNI	NORIS WP UNI
		
		
表面处理和涂层 · SURFACE	TIN	TIALN
材料 · MATERIAL	K20	K20

		P [mm]	Gg/1“ [tpi]	l [mm]	b [mm]	h [mm]		
M | MF | UN	F521		1,5 - 3,00	16 - 9	7	5	3,18	F521F0002	F521F0004
	F522		2,5 - 3,5	10 - 7	7,8	5	3,18	F522F0001	F522F0002
		F510	1 - 2,5	24 - 10	9,52	6,35	3,3		F510F0012
		F510	1,5 - 2,5	16 - 10	9,52	6,35	3,3	F510AAAAA	F510F0003
		F510	2,5 - 4	10 - 6	9,52	6,35	3,3	F510AABAA	F510F0004
		F511	1,5 - 2,5	16 - 10	13,5	8,5	3,97	F511AAAAA	F511F0001
		F511	2,5 - 5,5	10 - 4,5	13,5	8,5	3,97	F511AABAA	F511F0002
		F512	1,5 - 3	16 - 9	15,5	9,5	5	F512AAAAA	F512F0001
		F512	3 - 6	9 - 4	15,5	9,5	5	F512AABAA	F512F0002
		F513	1,5 - 3	16 - 9	19	12,5	6	F513AAAAA	F513F0001
		F513	3 - 6	9 - 4	19	12,5	6	F513AABAA	F513F0002
		F514	6 - 8	4	28,58	14,3	9,5	F514AAAAA	F514F0005
	F710		2,5 - 4,5	10 - 6	9,52	5	3,3		F710F0001
		F750	2,5 - 4	10 - 6	9,52	5	3,3		F750F0002
	F711		2,5 - 5,5	10 - 4,5	10	7	3,97		F711F0001

			Gg/1“ [tpi]	l [mm]	b [mm]	h [mm]		
G | W	F521		28 - 9	7	5	3,18	F521F0005	F521F0008
		F510	28 - 9	9,52	6,35	3,3	F510AACAA	F510F0005
		F511	28 - 9	13,5	8,5	3,97	F511AACAA	F511F0003
		F512	12 - 4,5	15,5	9,5	5	F512AACAA	F512F0003
		F513	12 - 3,5	19	12,5	6	F513AACAA	F513F0003

其他螺纹系统可应要求提供
Other thread standards upon request

特殊轮廓可按要求定制
Special contours upon request

		NORIS NES SCHRAUBE · SCREW	NORIS SCHRAUBENDREHER · SCREWDRIVER
			
	M_d [Nm]		
M2,5 x 8,5	7 IP	0,9	F550F0001	1033F0001
M3 x 11	9 IP	2,5	F550F0002	1033F0002
M4 x 13	15 IP	5,5	F550F0003	1033F0003
M5 x 15	20 IP	8	F550F0004	1033F0004

拧紧螺栓时，必须遵守推荐的扭矩值
When tightening the screw, the recommended torque must be used

NORIS UNI

刀柄类型 · SHANK		DIN 1835-1 B+E	HSK-A DIN 69893-1	DIN 228-1 B
夹持范围 · RANGE		M1- M48 (7/8- 1 3/4)	M1- M48 (7/8- 1 3/4)	M1- M48 (7/8- 1 3/4)
页数 · PAGE		26	26	27
应用范围 · APPLICATION RANGE	适用于配备同步主轴的机床 For use on machines with synchronous spindle	○	○	○
	适用于其他类型的机床 For use on other machine tools	•	•	•
	适用于摇臂钻 For use on pillar drilling machines	•	•	•
冷却和润滑 COOLING AND LUBRICATION				
功能 FUNCTIONS				
夹套 ADAPTATION				

● 合适的 • SUITABLE

○ 有条件适合 • CONDITIONALLY SUITABLE

NORIS HELIXPRO

NORIS ISP

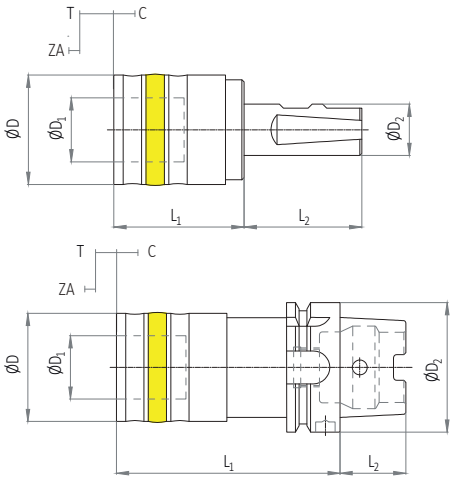
DIN 1835-1 B+E	HSK-A DIN 69893-1	HSK-A DIN 69893-1	DIN 2080-1	DIN 228-1 B
M0,5- M30 (Nr.0- 1 1/8)	M0,5- M48 (Nr.0- 1 3/4)	M45- M76 (1 3/8- 2 3/8)	M24- M160 (1"- 3 1/2)	
28	28	29	30	
•	•	•		
			•	
			•	

		NORIS WE	NORIS WE E	NORIS WE-U
				
页数 · PAGE		32	33	34
攻丝刀柄类型 · TAP HOLDERS TYP	NORIS UNI	•	•	•
	NORIS UNI HP	•	•	•
	NORIS UNI HP ER			
	NORIS HELIXPRO µ- 5			
	NORIS HELIXPRO 6			
	NORIS ISP			
冷却和润滑 COOLING AND LUBRICATION				
功能 FUNCTIONS				
夹套 ADAPTATION				

● 合适的 • SUITABLE

○ 有条件适合 • CONDITIONALLY SUITABLE

NORIS WE-U E	NORIS ER | ER GB NORIS DS	NORIS IE
	 	
35	36	38
•		
•		
	•	
	•	
		•
		•
		IE 20+ HELIXPRO 6

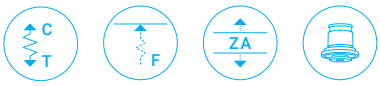


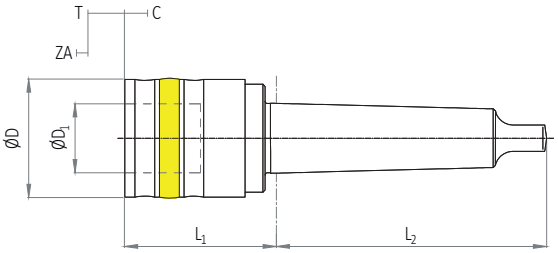
NORIS UNI

NORIS UNI

	Nr.			Ø D_1 [mm]	Ø D_2 [mm]	Ø D [mm]	L_1 [mm]	L_2 [mm]	C [mm]	T [mm]	ZA [mm]		
DIN 1835-1 B+E	4	M14- M36 (9/16- 1 3/8)	WE 04	48	ø 32	78	124	61	15	23,5	4,1	A170E0432	
	5	M22- M48 (7/8- 1 3/4)	WE 05	60	Ø 40	96	135,5	71	16,5	25	5,7	A170E0540	

	Nr.			Ø D_1 [mm]	Ø D_2	Ø D [mm]	L_1 [mm]	L_2 [mm]	C [mm]	T [mm]	ZA [mm]		
DIN 69893-1	4	M14- M36 (9/16- 1 3/8)	WE 04	48	HSK-A63	78	164	32	15	23,5	4,1		A190E0463
				48	HSK-A100	78	170,5	50	15	23,5	4,1		A190E0400
	5	M22- M48 (7/8- 1 3/4)	WE 05	60	HSK-A100	96	205	50	16,5	25	5,7		A190E0500



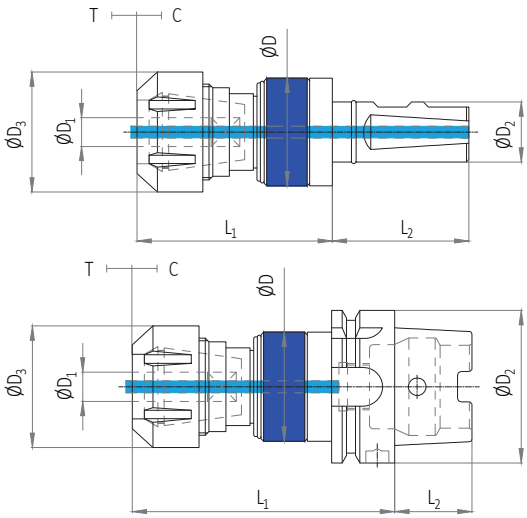


NORIS UNI

Nr.				Ø D_1 [mm]	Ø D_2	Ø D [mm]	L_1 [mm]	L_2 [mm]	C [mm]	T [mm]	ZA [mm]	
DIN 228-1 B	4	M14- M36 (9/16- 1 3/8)	WE 04	48	MK 4	78	105	117,5	15	23,5	4,1	A110E0404
				48	MK 5	78	105,5	149,5	15	23,5	4,1	A110E0405
	5	M22- M48 (7/8- 1 3/4)	WE 05	60	MK 5	96	116,5	149,5	16,5	25	5,7	A110E0505
				60	MK 6	96	118,5	210	16,5	25	5,7	A110E0506

C Soft T

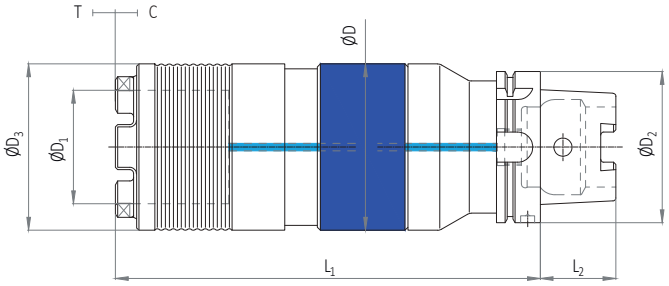
pmax 50 bar (700psi)



NORIS HELIXPRO

NORIS HELIXPRO

	Nr.				Ø D_1 [mm]	Ø D_2 [mm]	Ø D_3 [mm]	Ø D [mm]	L_1 ER [mm]	L_1 ER GB [mm]	L_2 [mm]	C [mm]	T [mm]		
DIN 1835-1 B+E	4	M12- M30 (7/16- 1 1/8)	ER 40	DS 40	9- 22	ø 32	63	63	–	113,5	61	0,7	0,7	A770Z4032	
DIN 69893-1	4	M12- M30 (7/16- 1 1/8)	ER 40	DS 40	9- 22	HSK-A63	63	63	–	146,5	32	0,7	0,7		A790Z4063
						HSK-A80	63	63	–	136	40	0,7	0,7		A790Z4080
						HSK-A100	63	63	–	138	50	0,7	0,7		A790Z4000
	5	M30- M48 (1 3/8- 1 3/4)	ER 50	DS 50	22- 36	HSK-A100	78	103	269	265,6	50	2	2		A790Z5000



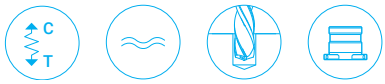
NORIS HELIXPRO

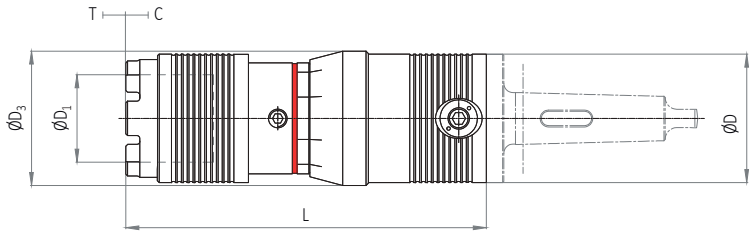
Nr.				Ø D_1 [mm]	Ø D_2	Ø D_3 [mm]	Ø D [mm]	L_1 [mm]	L_2 [mm]	C [mm]	T [mm]	
DIN 69893-1 6	M45- M76 (1 3/8- 2 3/8)	IE 20	-	75	HSK-A100	110	110	281	50	2	2	A790ZH200

根据需求可提供更多的配件
Further accessories on request

交付时包含夹紧螺母
Clamping nut is included in the delivery

夹套，密封盘和IE夹头，详见第190页
Collets, sealing disks and IE inserts, see page 31



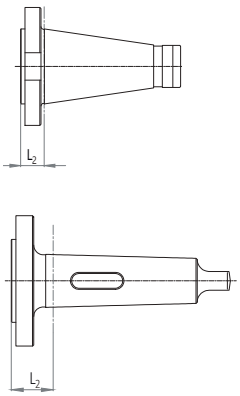


NORIS ISP

Nr.			[Nm]	Ø D_1 [mm]	Ø D_3 [mm]	Ø D [mm]	L [mm]	C [mm]	T [mm]	[kg]	
20	M24- M76 (1“- 2 1/2)	IE 20	1300 Nm	75	115	110	308	15	15	14,8	AFH0E0220
30	M36- M160 (1 3/8- 3 1/2)	IE 30	3000 Nm	90	160	160	372	20	20	36,5	AFH0E0330

IE夹头，详见第34页
IE inserts, see page 34

根据要求，可提供高达10巴的内部冷却液润滑剂供应
Available with internal coolant-lubricant supply up to 10 bar upon request



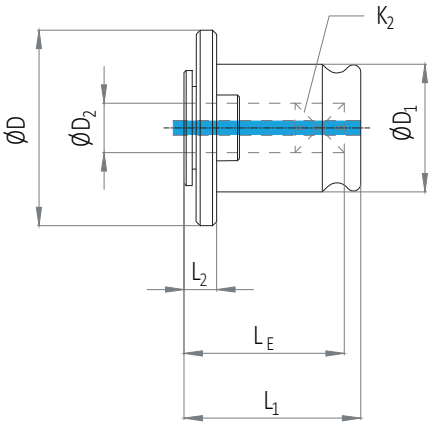
DIN 2080-1 A

Nr.	Ø D_2	L_2 [mm]	[kg]	NORIS FS	NORIS FS
20	SK 50	18	3	AFYH2E1850	
30	SK 50	19	4,3	AFYH3E1950	

DIN 228-1 B

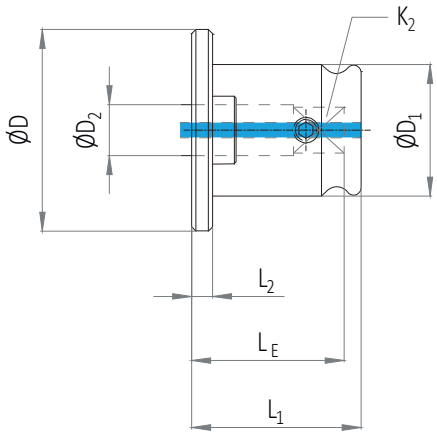
Nr.	Ø D_2	L_2 [mm]	[kg]		
20	MK 5	32	2,8		AFYH2E3205
	MK 6	31	4,8		AFYH2E3106
30	MK 5	30	3,9		AFYH3E3005
	MK 6	32	6,2		AFYH3E3206

NORIS WE



NR.			04	05
			M14 - M36	M22 - M48
Ø D		[mm]	70	92
Ø D1		[mm]	48	60
L1		[mm]	67	111
L2		[mm]	11	48

		Ø D_2 [mm]	K_2 [mm]	L_E [mm]		L_E [mm]	
DIN	M14	11	9	53	A1104E0411		
	M16	12	9	53	A1104E0412		
	M18	14	11	55	A1104E0413		
	M20	16	12	56	A1104E0414		
	M22- M24	18	14,5	58	A1104E0415	94	A1105E0515
	M27	20	16	60	A1104E0416	96	A1105E0516
	M30	22	18	62	A1104E0417	98	A1105E0517
	M33	25	20	64	A1104E0418	100	A1105E0518
	M36	28	22	66	A1104E0419	102	A1105E0519
	M39- M42	32	24			104	A1105E0520
	M45- M48	36	29			109	A1105E0521

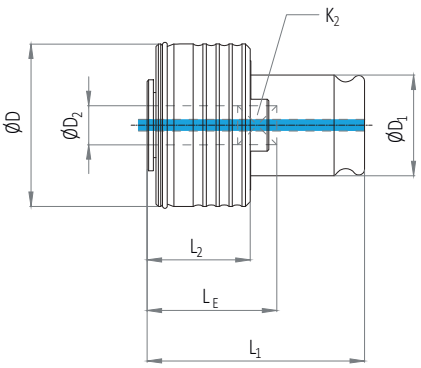


NORIS WE

E

	NR.		04	05
			M39- M48	M52 - M60
	Ø D	[mm]	70	92
	Ø D1	[mm]	48	60
	L1	[mm]	61,5	84
	L2	[mm]	6	21

			Ø D_2 [mm]	K_2 [mm]	L_E [mm]		L_E [mm]	
DIN		M39- M42	32	24	61	A1104E0420		
		M45- M48	36	29	60	A1104E0421		
		M52- M56	40	32			83	A1105E0522
		M68	45	35			83	A1105E0523



NORIS WE

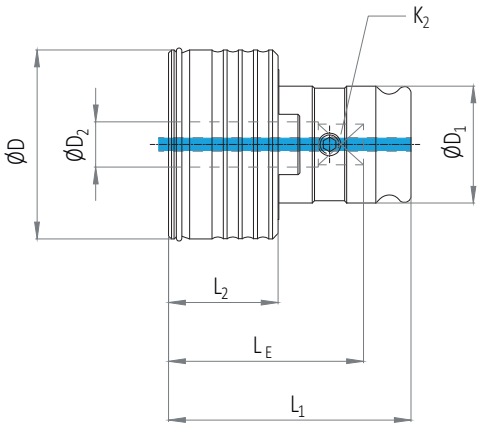
U

NR.			04	05
			M14 - M36	M22 - M48
Ø D		[mm]	72	95
Ø D1		[mm]	48	60
L1		[mm]	101	138
L2		[mm]	45	75

			Ø D_2 [mm]	K_2 [mm]	L_E [mm]		L_E [mm]	
DIN	-	M14	11	9	56	A4104E04A1		
	-	M16	12	9	56	A4104E04A2		
	-	M18	14	11	58	A4104E04A3		
	-	M20	16	12	59	A4104E04A4		
	-	M22- M24	18	14,5	61	A4104E04A5	94	A4105E05A5
	-	M27	20	16	63	A4104E04A6	96	A4105E05A6
	-	M30	22	18	65	A4104E04A7	98	A4105E05A7
	-	M33	25	20	67	A4104E04A8	100	A4105E05A8
	-	M36	28	22	69	A4104E04A9	102	A4105E05A9
	-	M39- M42	32	24			104	A4105E05B0
	-	M45- M48	36	29			109	A4105E05B1
	-	M52- M56	40	32				

NORIS WE

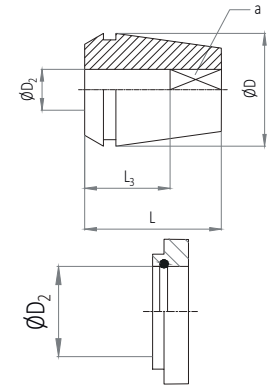
U E



	NR.		04	05
			M39- M48	M52 - M60
	Ø D	[mm]	72	95
	Ø D1	[mm]	48	60
	L1	[mm]	96	125
	L2	[mm]	40,5	62

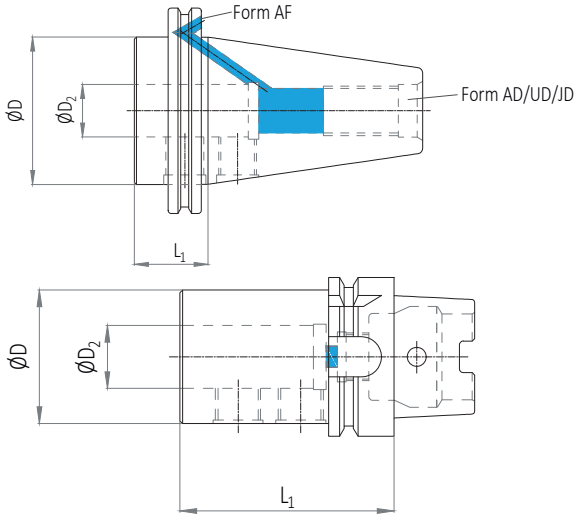
			Ø D_2 [mm]	K_2 [mm]	L_E [mm]		L_E [mm]	
DIN	-	M39- M42	32	24	66	A4104E04B0		
	-	M45- M48	36	29	71	A4104E04B1		
	-	M52- M56	40	32			91	A4105E05B2
	-	M60	45	35			94	A4105E05B3

NORIS ER | DS



NR.			40	50
			ER 40 GB	ER 50 GB
			DS 40	DS 50
			M 10 - M30	M30 - M42
Ø D		[mm]	40	51
L		[mm]	46	60

		Ø D_2 [mm]	K_2 [mm]		L_3 [mm]		L_3 [mm]	
M7	M9- M10	7	5,5	ER	18	AD440Z4070		
-	-	-	-	DS		AK7Z0Z4070		
M8	M11	8	6,2	ER	22	AD440Z4080		
-	-	-	-	DS		AK7Z0Z4080		
M9	M12	9	7	ER	22	AD440Z4090		
-	-	-	-	DS		AK7Z0Z4090		
M10	-	10	8	ER	25	AD440Z40A0		
-	-	-	-	DS		AK7Z0Z40A0		
-	M14	11	9	ER	25	AD440Z40B1		
-	-	-	-	DS		AK7Z0Z40B0		
-	M16	12	9	ER	25	AD440Z40C2		
-	-	-	-	DS		AK7Z0Z40C0		
-	M18	14	11	ER	25	AD440Z40E4		
-	-	-	-	DS		AK7Z0Z40E0		
-	M20	16	12	ER	25	AD440Z40G6		
-	-	-	-	DS		AK7Z0Z40G0		
-	M22- M24	18	14,5	ER	25	AD440Z40J8		
-	-	-	-	DS		AK7Z0Z40J0		
-	M27	20	16	ER	28	AD440Z40L0		
-	-	-	-	DS		AK7Z0Z40L0		
-	M30	22	18	ER	28	AD440Z40N0	41	AD450Z50B2
-	-	-	-	DS		AK7Z0Z4022		AK7Z0Z5022
-	M33	25	20	ER			41	AD450Z50B5
-	-	-	-	DS				AK7Z0Z5025
-	M36	28	22	ER			41	AD450Z50B8
-	-	-	-	DS				AK7Z0Z5028
-	M39- M42	32	24	ER			41	AD450Z50C2
-	-	-	-	DS				AK7Z0Z5032

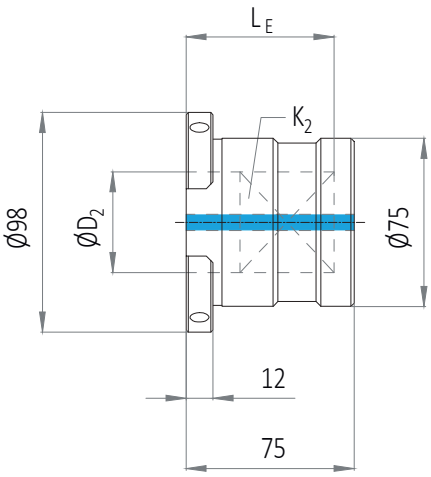


					NORIS AS DIN 1835 B	NORIS AS DIN 1835 B
	Ø D_2 [mm]	SK | HSK	Ø D [mm]	L_1 [mm]		
DIN 2080-1 AD	Ø 20	SK 30	36	34	AK41E0503	
	Ø 25	SK 40	44	22	AK41E0501	
	Ø 25	SK 50	70	16	AK41E0502	
	Ø 32	SK 50	70	16	AK41E0504	
	Ø D_2 [mm]	SK | HSK	Ø D [mm]	L_1 [mm]		
DIN 69893-1	Ø 20	HSK-A40	52	75		AK91E0C02
	Ø 20	HSK-A50	52	80		AK91E0C04
	Ø 25	HSK-A40	65	105		AK91E0C03
	Ø 25	HSK-A50	65	107		AK91E0C05
	Ø 25	HSK-A63	53	85		AK91E0C07
	Ø 25	HSK-A80	65	90		AK91E0C09
	Ø 25	HSK-A100	65	100		AK91E0C11
	Ø 32	HSK-A50	77	114		AK91E0C06
	Ø 32	HSK-A63	72	110		AK91E0C08
	Ø 32	HSK-A80	72	110		AK91E0C10
	Ø 32	HSK-A100	72	96		AK91E0C12

交付时包含夹紧螺丝
Clamping screws are included in the delivery

NORIS IE

20

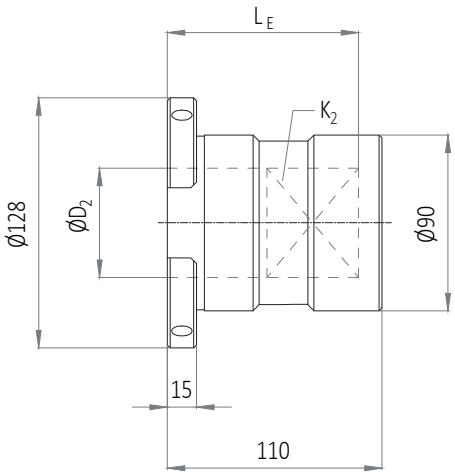


		Ø D_2 [mm]	K_2 [mm]	L_E [mm]	[kg]	
DIN	M24	18	14,5	53	2,2	AFXH2.E0501
	M27	20	16	53	2,2	AFXH2.E0502
	M30	22	18	53	2,1	AFXH2.E0503
	M33	25	20	53	2,1	AFXH2.E0504
	M36	28	22	53	2,1	AFXH2.E0505
	M39- M42	32	24	53	2	AFXH2.E0506
	M45- M48	36	29	66	1,9	AFXH2.E0507
	M52- M56	40	32	66	1,8	AFXH2.E0508
	M60	45	35	66	1,7	AFXH2.E0509
	M64- M76 | M80 [1]- M90 [1]	50	39	66	1,6	AFXH2.E0510
	M92 [1] - M120 [1]	56	44	66	1,4	AFXH2.E0511

1) 注意刀柄的最大扭矩
Take note of the maximum torque of the holder

NORIS IE

30



DIN

	Ø D 2 [mm]	K 2 [mm]	L E [mm]	[kg]	
M36	28	22	76	4,4	AFXH3E0101
M39- M42	32	24	76	4,3	AFXH3E0102
M45- M48	36	29	76	4,2	AFXH3E0103
M52- M56	40	32	76	4	AFXH3E0104
M60	45	35	76	3,9	AFXH3E0105
M64- M90	50	39	76	3,7	AFXH3E0106
M92- M120	56	44	98	3,4	AFXH3E0107
M122- M150	63	49	98	3	AFXH3E0108
M155- M160	70	55	98	2,7	AFXH3E0109

根据要求，可提供高达10巴的内部冷却液润滑剂供应
Available with internal coolant-lubricant supply up to 10 bar upon request

REIME NORIS Threading Tools (Shanghai) Co.,Ltd.
诺瑞思螺纹工具（上海）有限公司

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