

THINKHEAD



数控螺纹磨床

CNC THREAD GRINDING MACHINE

公司大事记

Company Milestones

开发齿轮计算软件SN3及齿轮
刀具设计软件
Developed gear calculation software SN3
and gear cutting tool design software

获得进出口权，产品出口国外市场
Obtained export rights and exported
products to foreign markets

上海星合荣获高新技术企业
Honored as "High-tech Enterprise"

南通通州湾工厂开始建设
The Nantong factory has commenced
construction

上海星合认定省级专精特新
Shanghai Thinkhead Certified as
Provincial "Specialized & Innovative" SME

上海星合复杂曲面磨削联合实验
室成立
Establishment of Thinkhead Joint Labora-
tory for Complex Surface Grinding

✈️ 2008

✈️ 2009

✈️ 2011

✈️ 2012

✈️ 2013

✈️ 2014

✈️ 2016

✈️ 2017

✈️ 2019

✈️ 2021

✈️ 2023

✈️ 2025

公司注册成立，成立上海工厂，生产齿轮
倒棱刀、去毛刺刀等产品
Established Shanghai factory. Started production
of gear chamfering tools, deburring tools and
other products

齿轮剃齿刀研制成功
Successfully developed gear shaving cutters

剃刀刃磨机床和滚刀刃磨机床研制成功
Successfully developed shaving cutter sharpening
machine and hob sharpening machine

南通工厂投 入使用,成形磨齿机研制成功
Nantong factory put into operation. Successfully
developed profile grinding machines

成立上海磨齿中心
Established Gear Grinding Center

南通海门工厂开始建设
Nantong Haimen factory construction in progress



公司发展概况

Overview Of the Company's Development



上海星合机电有限公司成立于2009年，为成形磨齿机的头部企业，致力于研发制造精密机床。产品范围覆盖齿轮磨床、螺纹磨床、加工中心三大系列的精密机床矩阵，可广泛应用于汽车制造、机器人、风电、半导体零部件、精密减速机等行业领域。在上海宝山、南通通州湾、南通海门设有三大研发生产基地，总面积超10万平方米，形成"研发-生产-销售-服务"全产业链闭环。

目前，上海星合已掌握高速主轴、高精度分度头、修整轴、伺服尾座、数控系统等多项核心零部件的关键技术并实现量产，具备全流程自主可控的机床研发实力及生产能力。上海星合始终以研发创新为引擎，深度参与“高端数控机床与基础制造装备”国家科技重大专项，携手上海交通大学、东华大学成立联合研究中心，与西班牙发格自动化有限公司成立“复杂曲面磨削联合实验室”，不断突破技术极限。

展望未来，上海星合将始终坚持以机电控软一体化设计为主导，以微米级磨削和低应力制造为依托，以高速主轴、直驱重切为亮点，以数控系统和机床材料为底层突破方向，技术体系完整而系统，并快速迭代，向世界一流水平的方向高速推进。

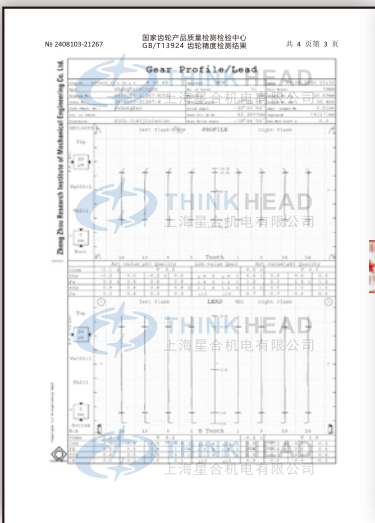
Shanghai Thinkhead M&E Co., Ltd. which was established in 2009 as a leading enterprise in profile grinding machine, dedicates to the research and manufacture of precision machine tools. Its products cover a precision machine tool matrix including three series of profile grinding machine, CNC thread grinding machine, and machining centers. It can be widely applied in industries such as automobile manufacturing, robotics, wind power, semiconductor components, precision reducers, etc. Three major R&D and production bases that are situated in Baoshan&Lingang in Shanghai, Tongzhou Bay&Haimen in Nantong, with a total area of over 100 thousand square meters have composed a complete supply chain "research-development-production-sales service".

Currently, Thinkhead has mastered the key technologies of multiple core components including high-speed spindles, high-precision indexing heads, numerical control systems and so on, and has realized mass production, possessing independent and controllable full-process R&D and production capabilities. Thinkhead also participated in major national science and technology project of "High end CNC machine tools and basic manufacturing equipment", set up joint research centers with Shanghai Jiao Tong University and Donghua University, and established the "Joint Laboratory for Complex Surface Grinding" with Spanish Fagor to push the limits of technology continuously.

In future, Thinkhead will continue to be being guided by Integrated design of electromechanical control and software, supported by micron-level grinding and low-stress manufacturing, highlighted by high-speed spindles and direct-drive heavy cutting, and take numerical control systems and machine tool materials as the underlying breakthrough directions. Thinkhead possesses comprehensive technology system. It iterates quickly to advance toward the world-class level.

上海宝山磨齿研发中心

Shanghai Baoshan Gear Grinding R&D Center



与上海交通大学机动学院共建“精密加工装备及工艺联合研究中心”。

Co-establishment of "Joint Research Center for Precision Machining Equipment and Technology" with Shanghai Jiao Tong University school of Mechanical Engineering.

与西班牙发格自动化联合成立“复杂曲面磨削联合实验室”。

Co-creation of "United Laboratory for Complex Surface Grinding" with Fagor Automation España.

设有磨齿中心，配合客户试磨加工，在前沿领域探索，并承担公司硬件测试、软件优化等研发任务。

Thinkhead features a Gear Grinding Center that collaborates with clients on trial grinding operations, pioneers exploration in advanced fields, and undertakes corporate R&D missions including hardware testing and software optimization.

设有培训中心，覆盖机床操作，维护保养等多项培训内容。

The facility houses a Training Center delivering comprehensive programs covering machine operation, maintenance, warranty services and related technical training.



位于上海市宝山区。

Located in Shanghai's Baoshan District.

磨齿研发中心，承担公司硬件测试、软件优化、功能完善等研发任务。

Gear Grinding R&D Center conducts hardware validation testing, software algorithm optimization and functional enhancement development.

机床展示中心，面向客户开放参观。

Machine Tool Demonstration Center is Open for customer visits with live machining showcases.

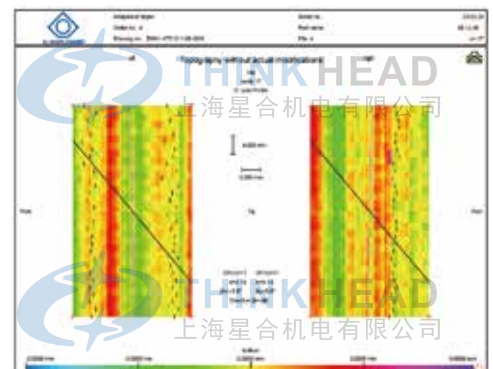
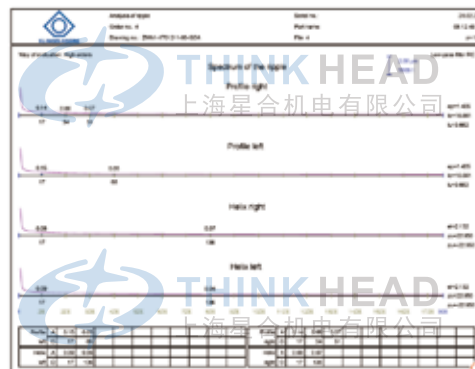
培训中心，覆盖机床操作，维护保养，齿轮加工等多项培训内容。

Technical Training Center covers machine operation certification, maintenance & warranty protocols and precision gear machining techniques.

客户试磨加工，NVH改善研发，产品试制磨齿。

Prototype grinding services, NVH improvement R&D, Trial production machining.

- 精益生产管理
Lean Production Management
- 强大的研发支持
Full-cycle R&D Capabilities
- 专业高效的生产团队
Elite Machining Team
- 充足的产能储备
Robust Production Capacity Reserves



南通通州湾生产基地

Nantong Tongzhou Bay Production Base



南通生产基地囊括了铸件加工，铸件回火，主轴制造，油箱制造，车铣钻磨等机床制造相关的绝大部分制造工艺。The Nantong production base encompasses the vast majority of manufacturing processes related to machine tool production, including casting processing, casting tempering, spindle manufacturing, oil tank manufacturing, turning, milling, drilling and grinding.

星合一直重视先进设备的引进，现已拥有克林贝格测量中心、蔡司三坐标、三丰圆度仪、尼古拉斯龙门五面体加工中心、日本高端工业母机等世界一流的测量设备和加工设备。

Thinkhead has always attached great importance to the introduction of advanced equipment, and now owns a range of world-class measuring and machining equipment, including Klingelnberg measuring centers, Zeiss coordinate measuring machines, Mitutoyo roundness testers, Nicolas gantry-type five-face machining centers, and high-end industrial machine tools from Japan.

机床铸件经过四道去应力时效处理，实现了可与国外一流机床相媲美的低应力制造，确保设备经久耐用。

The machine tool castings undergo four stress-relief aging treatments, achieving low-stress manufacturing that is comparable to that of first-class foreign machine tools and ensuring the equipment is durable and long-lasting.

南通海门研发生产基地

Nantong Haimen Production Base



海门生产基地在建，为星合第4个生产基地，占地150亩。可进一步扩大产能，满足客户对高端工业母机的市场需求。
Haimen Production Base is under construction. As Thinkhead's fourth production base, the 150-acre facility has the capacity to increase its output to meet market demands for premium gear manufacturing machines.

一期占地50亩，可实现200台轻型机床和100台重型机床的年产能。2026年5月开始投产，可实现800台高端机床的年产能。

Phase I covers an area of 50 mu (approximately 3.33 hectares) and can achieve an annual production capacity of 200 light machine tools and 100 heavy machine tools. It will start production in May 2026, with an annual production capacity of 800 high-end machine tools.

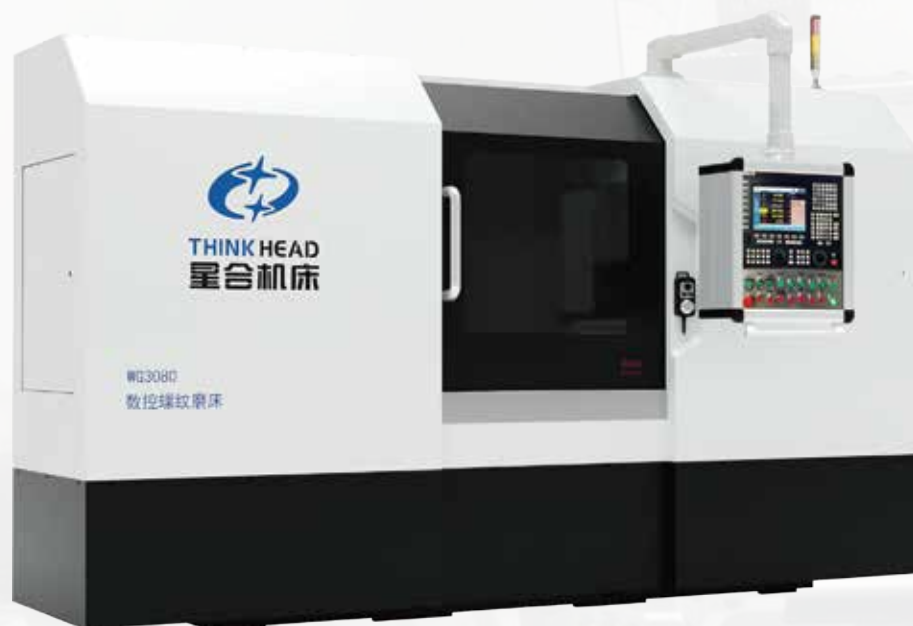
厂区采用太阳能和地源热泵，实现低碳排放，成为绿色工厂。

The facility utilizes solar power and ground-source heat pumps to achieve low-carbon operations, certified as a green factory.

WG3080

数控螺纹磨床

Profile Grinding Machine



机床型号 Machine Model

WG3080

工件驱动方式 Workpiece Drive Method	直驱 Direct Drive
ZY直线轴传动方式 ZY Linear Axis Drive Type	丝杆 Lead Screw
控制系统和驱动 Control System & Drives	发格 Fagor
光栅尺 Linear Encoder	发格 Fagor
控制软件 Control Software	星合嵌入式螺纹磨软件 Embedded Thinkhead profile grinding software
数控轴数 Number of CNC Axes	4
机床尾座 Machine Tailstock	电动尾座 Electric Tailstock
外形尺寸（不含过滤机，含操纵箱） Overall Dimensions (excl. filtration unit, incl. control cabinet)	3718×2262×2445mm
重量 Weight	7吨 7T
配电功率（不含过滤机） Power Rating (Excluding filtration System)	30KVA

技术参数 Technical Parameters

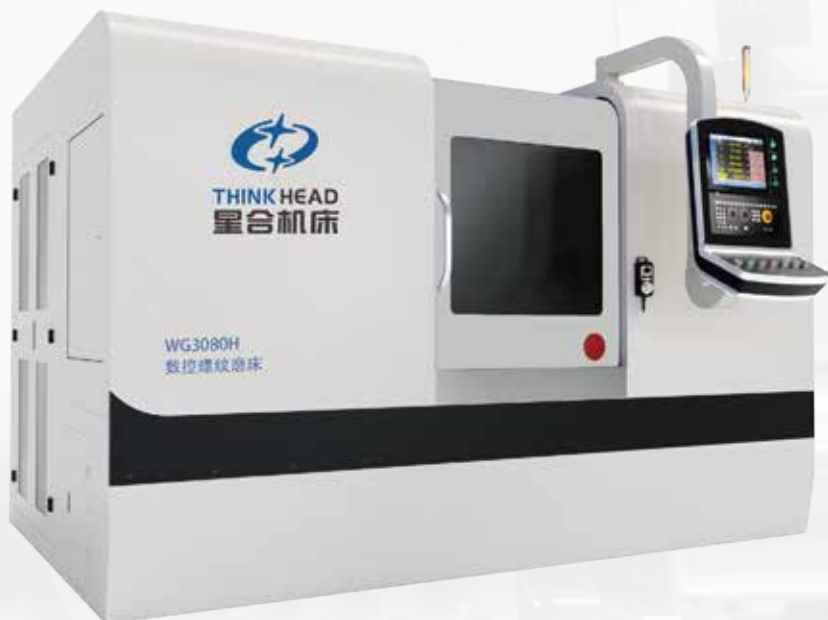
加工外径 Workpiece Diameter	Φ10-Φ300mm
磨削长度 Grinding Length	700mm
装夹长度 Clamping Length	700mm
模数 Module	0.5-8mm
螺纹升角 Thread Helix Angle	左旋45°/右旋30° Left rotation / Right rotation
最高精度 Highest Accuracy	DIN2
量产精度 Production Accuracy	DIN4
最大砂轮直径 Max. Grinding Wheel Diameter	Φ500mm
砂轮最高线速度 Max. Grinding Wheel Periphery Speed	50m/s
砂轮最高转速 Max. Grinding Wheel RPM	6000rpm
工件重量 Workpiece Weight	50kg

WG3080H



数控螺纹磨床

Profile Grinding Machine



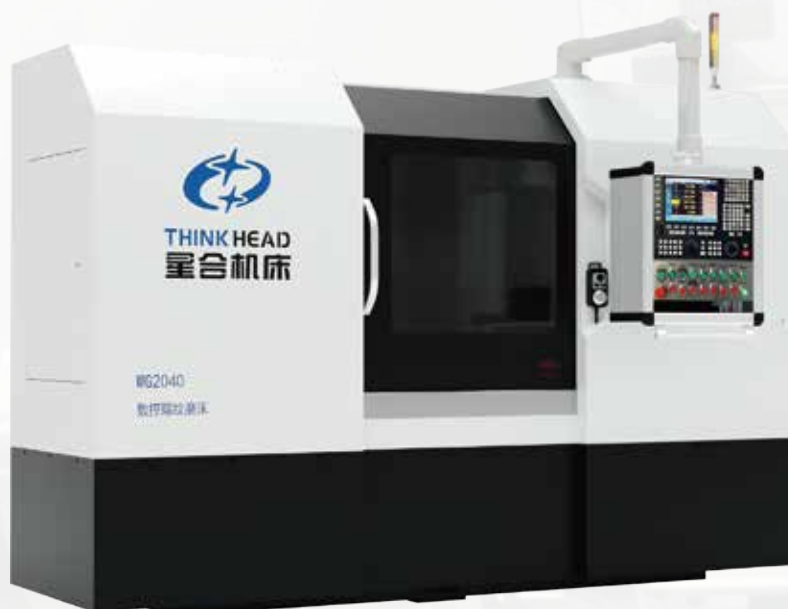
机床型号 Machine Model	WG3080H
工件驱动方式 Workpiece Drive Method	直驱 Direct Drive
ZY直线轴传动方式 ZY Linear Axis Drive Type	直线电机 Linear Motor
控制系统和驱动 Control System & Drives	发格8070 Fagor 8070
光栅尺 Linear Encoder	发格 Fagor
控制软件 Control Software	星合嵌入式螺纹磨软件 Embedded Thinkhead profile grinding software
数控轴数 Number of CNC Axes	5
机床尾座 Machine Tailstock	伺服尾座 Servo Tailstock
外形尺寸（不含过滤机，含操纵箱） Overall Dimensions (excl. filtration unit, incl. control cabinet)	3581×2363×2450mm
重量 Weight	7.5吨 7.5T
配电功率（不含过滤机） Power Rating (Excluding filtration System)	40KVA

技术参数 Technical Parameters	
加工外径 Workpiece Diameter	Φ5-Φ300mm
磨削长度 Grinding Length	700mm
装夹长度 Clamping Length	700mm
模数 Module	0.5-8mm
螺纹升角 Thread Helix Angle	左旋45°/右旋30° Left rotation / Right rotation
最高精度 Highest Accuracy	DIN1
量产精度 Production Accuracy	DIN3
最大砂轮直径 Max. Grinding Wheel Diameter	Φ500mm
砂轮最高线速度 Max. Grinding Wheel Periphery Speed	50m/s
砂轮最高转速 Max. Grinding Wheel RPM	7000rpm
工件重量 Workpiece Weight	50kg

WG2040

数控螺纹磨床

Profile Grinding Machine



机床型号	Machine Model	WG2040
工件驱动方式	Workpiece Drive Method	直驱 Direct Drive
ZY直线轴传动方式	ZY Linear Axis Drive Type	丝杆 Lead Screw
控制系统和驱动	Control System & Drives	发格 Fagor
光栅尺	Linear Encoder	发格 Fagor
控制软件	Control Software	星合嵌入式螺纹磨软件 Embedded Thinkhead profile grinding software
数控轴数	Number of CNC Axes	4
机床尾座	Machine Tailstock	电动尾座 Electric Tailstock
外形尺寸 (不含过滤机, 含操纵箱)	Overall Dimensions (excl. filtration unit, incl. control cabinet)	3210×2100×2396mm
重量	Weight	6.5吨
配电功率 (不含过滤机)	Power Rating (Excluding filtration System)	30KVA

技术参数	Technical Parameters	
加工外径	Workpiece Diameter	Φ2-Φ200mm
磨削长度	Grinding Length	400mm
装夹长度	Clamping Length	400mm
模数	Module	0.5-4mm
螺纹升角	Thread Helix Angle	左旋45°/右旋30° Left rotation / Right rotation
最高精度	Highest Accuracy	DIN3
量产精度	Production Accuracy	DIN4
最大砂轮直径	Max. Grinding Wheel Diameter	Φ400mm
砂轮最高线速度	Max. Grinding Wheel Periphery Speed	50m/s
砂轮最高转速	Max. Grinding Wheel RPM	10000rpm
工件重量	Workpiece Weight	20kg

IWG2825



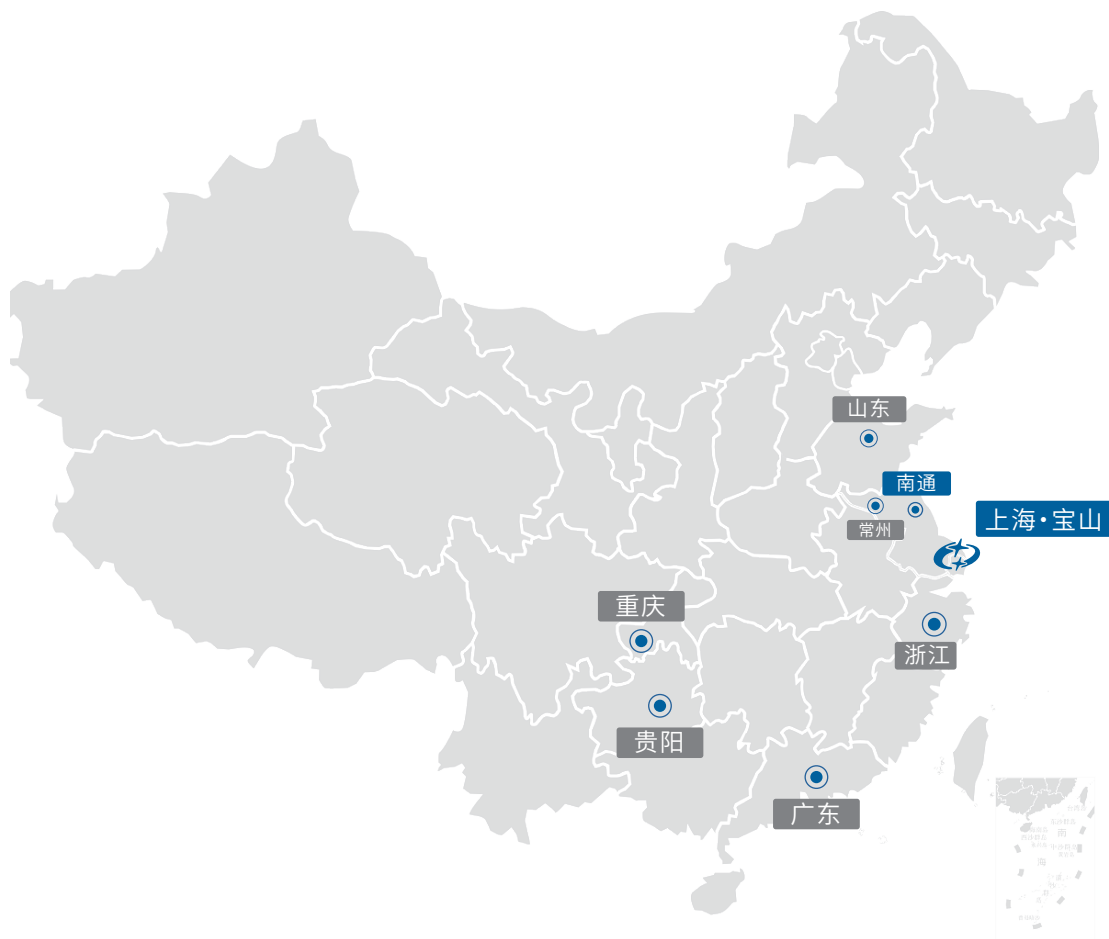
数控螺纹磨床

Profile Grinding Machine



机床型号 Machine Model		IWG2825
工件驱动方式 Workpiece Drive Method		直驱 Direct Drive
ZY直线轴传动方式 ZY Linear Axis Drive Type		丝杆 Lead Screw
控制系统和驱动 Control System & Drives		发格 Fagor
光栅尺 Linear Encoder		发格 Fagor
控制软件 Control Software		星合嵌入式螺纹磨软件 Embedded Thinkhead profile grinding software
数控轴数 Number of CNC Axes		4
机床尾座 Machine Tailstock		电动尾座 Electric Tailstock
外形尺寸 (不含过滤机, 含操纵箱) Overall Dimensions (excl. filtration unit, incl. control cabinet)		3816×2182×2325mm
重量 Weight		6.5吨 6.5T
配电功率 (不含过滤机) Power Rating (Excluding filtration System)		30KVA

技术参数 Technical Parameters	
最大外径 Maximum Outer Diameter	Φ280mm
最大长度 Maximum Length	200mm
可磨工件直径内螺纹 Grindable workpiece diameter and internal thread	20-250mm
外圆 Outer diameter	20-250mm
可磨螺纹螺距 Grindable thread pitch	1-24(公制) Metric
可磨内螺纹最大螺旋角 Maximum helix angle for grindable internal threads	±20°
工件主轴转速内螺纹 Workpiece spindle speed for internal threads	0-100rpm
外圆及肩面 Outer diameter and shoulder surface	50-150rpm
砂轮主轴转速内螺纹 Grinding wheel spindle speed for internal threads	25000rpm
外圆 Outer diameter	10000rpm
砂轮尺寸内螺纹 Grinding wheel size for internal threads	16-80mm
外圆 Outer diameter	250-350mm
砂轮线速度内螺纹 Grinding wheel linear speed for internal threads	28m/s
外圆 Outer diameter	45m/s



上海-宝山研发中心、上海-临港研发生产基地、南通-通州湾生产基地、南通-海门研发生产基地
Shanghai - Baoshan R&D Center, Shanghai - Lingang R&D production Base, Nantong - Tongzhou Bay Production Base, Nantong - Haimen R&D and Production Base

● 营销服务网络：重庆、南通、常州、山东、浙江、广东、贵阳

Marketing and Service Network: Chongqing, Nantong, Changzhou, Shandong, Zhejiang, Guangdong, Guiyang

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