

HOBGING MACHINE HS 32 CNC

HS32型CNC数控滚齿机

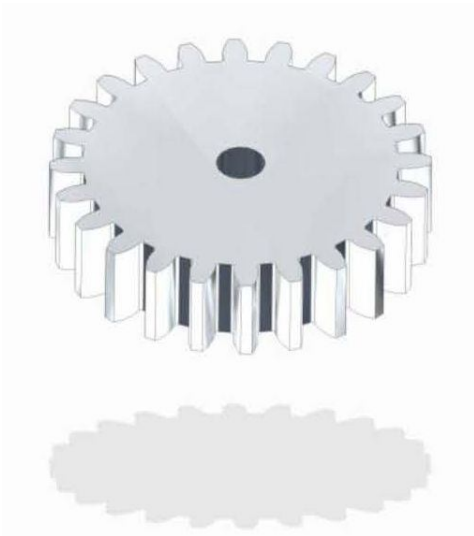


APPLICATION AND PART EXAMPLES

应用和产品实例说明

The hobbing machine HS 32 has been designed to hob gears and pinions at high speed and in the highest quality. Due to an adjustable hobbing spindle head, the machines can hob spur and helical gears. Thanks to the CNC-control and its memory function, the machine is suited to the production of large and small batches.

HS38型滚齿机是专门为高速生产加工各种高精密齿轮、齿轴而设计制造的专用设备。由于采用了可调整的滚刀主轴的设计方案，该机可以加工各种小模数齿轮和螺旋齿轮产品。CNC数控技术和记忆功能大大地提高了该机从大批量生产到小批量生产的灵活性。



Spur Gears

正齿轮

of pinions and gears

正齿轮和齿轴

Helical Gears

螺旋齿轮

Possible setting angle of the machine $\pm 12^\circ$

机床可调整的角度 $\pm 12^\circ$

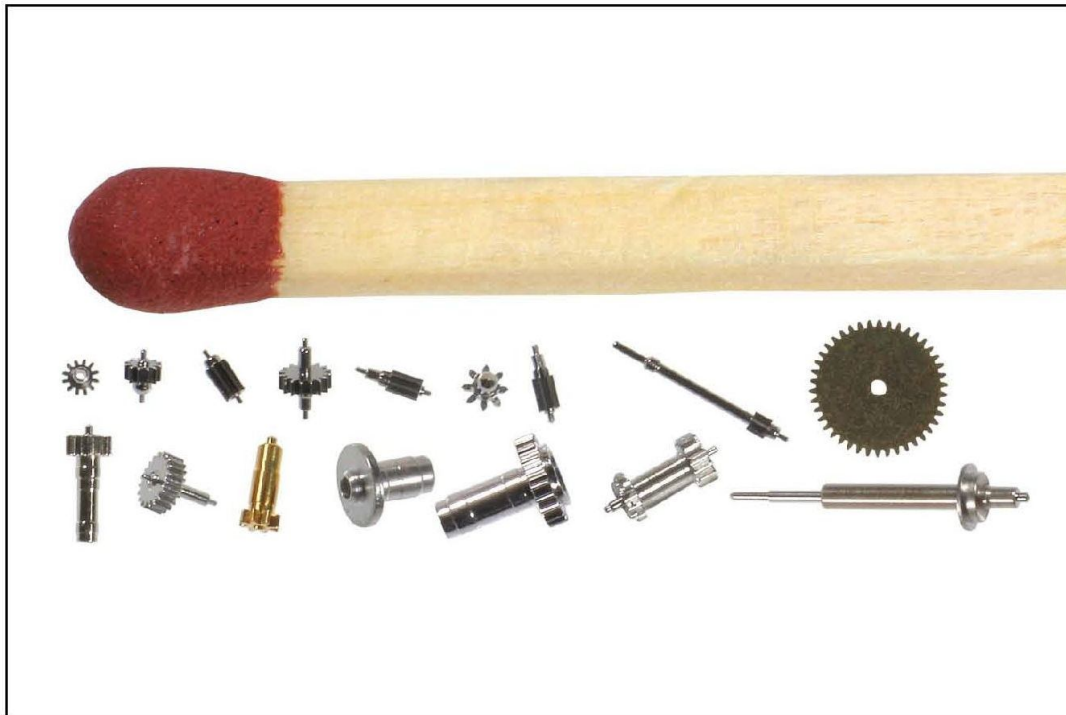




3-Hob Program
3次滚齿程序

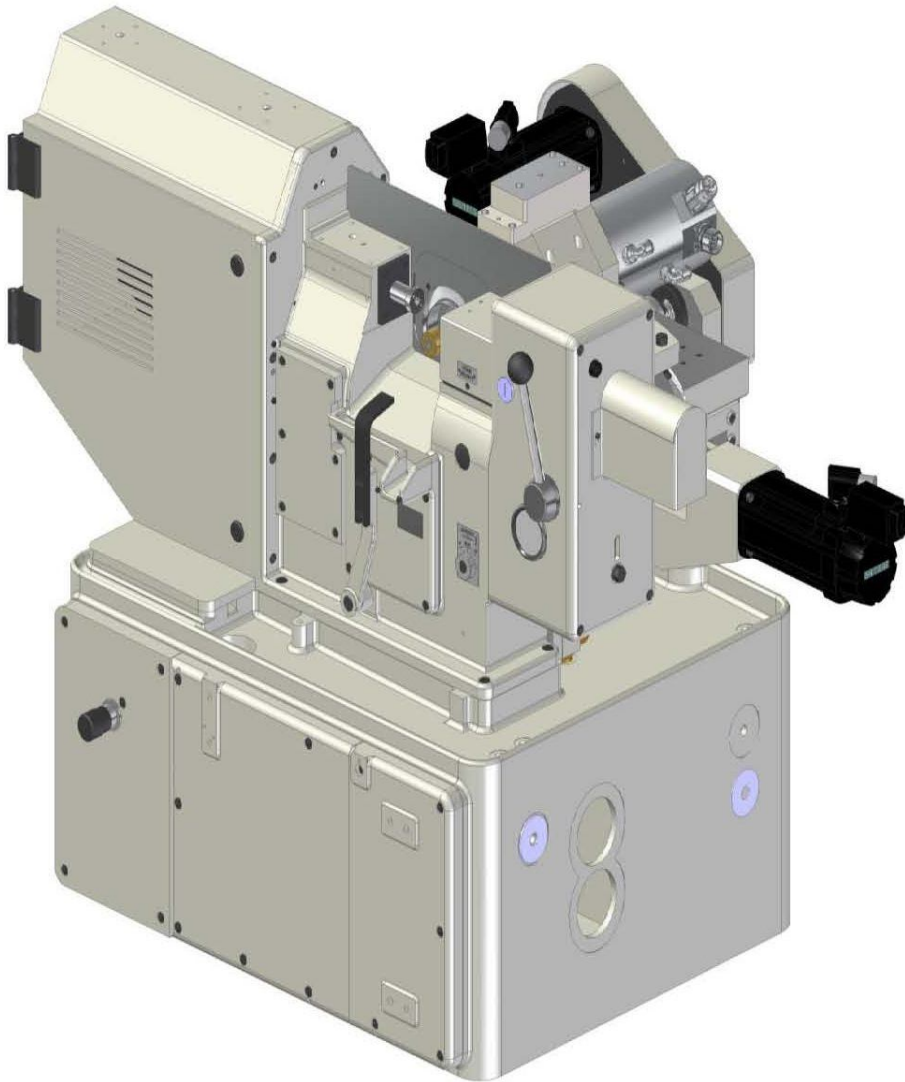
The HS 32 offers the possibility to hob a workpiece with 2 different gears in one set-up, completely without burrs.

HS32滚齿机提供在一次调试生产加工中在同一齿轴的两端加工两种不同模数的齿轮的可行性。



MACHINE UND TECHNOLOGY

主机和应用技术



DESIGN 设计特点

The design of the machines is extremely stable and vibration free. The HS 32 machine produces gears of the highest quality.

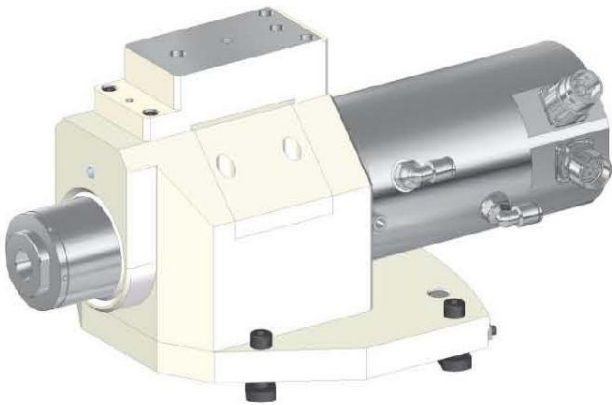
该机的设计上采用了稳固和消震的技术，可使该机生产出高级的精密齿轮。



MACHINE CONTROL 机床的控制系统

The machine is equipped with a SIEMENS SIMATIC control, which is remarkable for its reliability. The control, thanks to input masks, operator prompt and graphic display is very simple to use. The control needs a very short tuition time.

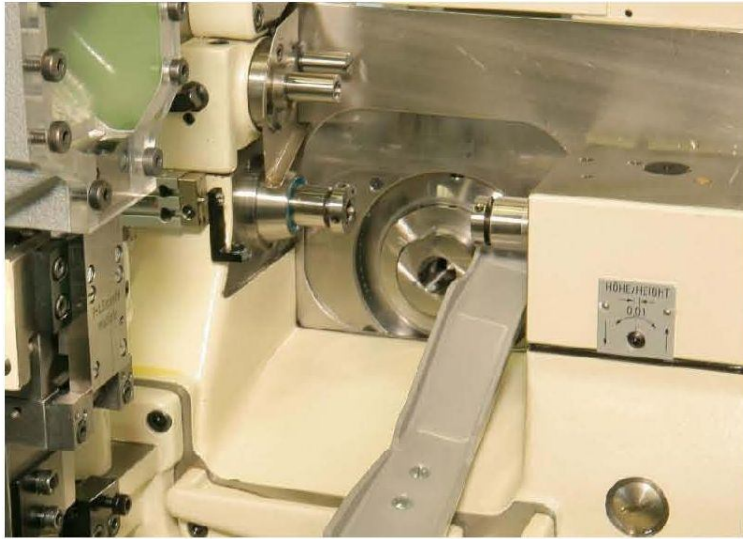
该机装备了以操作稳定著称西门子 SIMATIC的控制系统。由于采用了输入键盘一体设计方案，操作者会很方便快捷地显示各种操作步骤，图形和方案，使用简单方便。系统的培训和教学时间短暂，在短时间内可熟悉掌握。



HOBBING SPINDLE 滚刀轴

The machine works with a direct drive hobbing spindle which can work at 12'000 rpm. Thanks to an integrated cooling of the spindle, high stability of the machine is guaranteed.

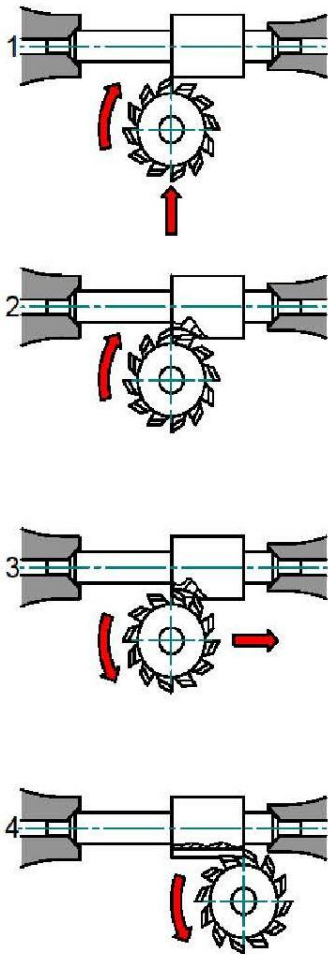
该机装备了直驱滚刀主轴，可以每分钟12000转的速度加工生产。由于采用了一体化内冷技术，保证了该机的高可靠稳定性。



MAIN & COUNTER SPINDLES 主卡具轴和副卡具轴

The main and counter spindles can be aligned to each other within 0.001 mm. The counter spindle is driven synchronously to the main spindle.

主副卡具轴的同轴度可以保证在0.001毫米范围内工作。副卡具轴与主卡具轴被同步驱动。



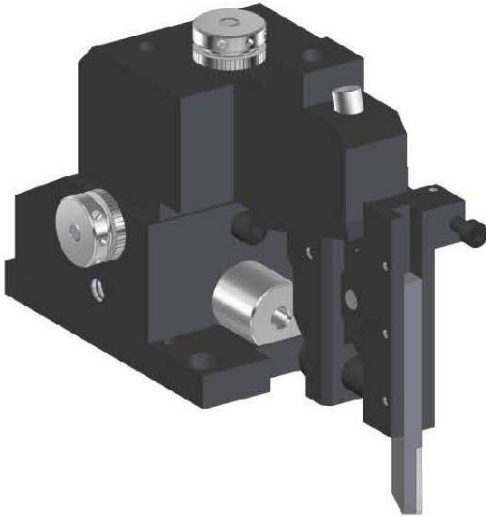
BURR FREE HOBBING 无毛刺滚齿加工

With this development from Strausak, two hobs are mounted on the one hob arbor, allowing the first hob to plunge in the front face of the gear and the second hob rotating in the opposite direction, to cut the profile without generating a burr.

由瑞士STRAUSAK公司自己开发的，在同一滚刀芯轴上正、反向安装的双滚刀技术，可以让第一把滚刀顺时针将齿形滚出来，第二把滚刀逆时针将全齿长无毛刺地完整加工完成。

OPTIONS AND LOADING DEVICES

随机选装项目和上料器系统



DEBURRING TOOL 去毛刺刀

The deburring tool can be ordered as an accessory. This tool is mounted on the main spindle side of the gear face removing the burr during the hobbing process.

这种去毛刺刀可以按照附件订货。这种被安装在主卡具轴一端去毛刺刀可以在滚齿的同时去除齿端的毛刺。



STRAUSAK LOADER TYPE 28 STRAUSAK 28型上料器

With this loader the majority of workpieces can be efficiently and automatically loaded. When the workpiece is changed one merely exchanges the magazine and the gripper on the loading arm.

使用这种上料器几乎可以对绝大多数齿轴类零件进行自动上料。但当齿轴零件从一种换为另外一种时，上料仓的料轨和上料机械手（卡爪）也需对应更换。



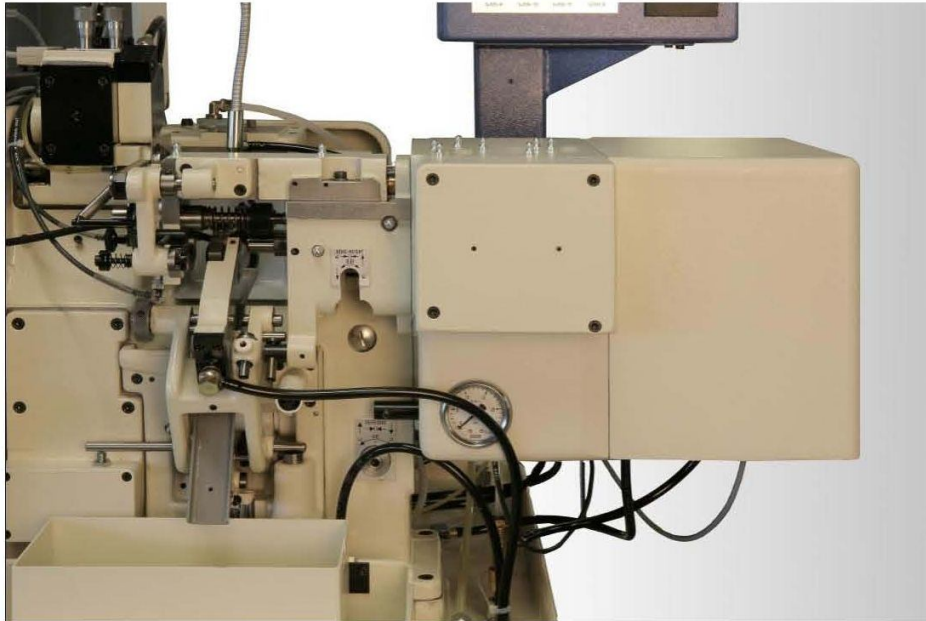
STRAUSAK LOADER TYPE 15
STRAUSAK 15型鼓轮式上料器。

This loader is used for shaft type pinions.
这种上料器可用于各种齿轴类零件。



CONTINUOUS DRUM FEEDER
连续式鼓轮震动料斗式上料器

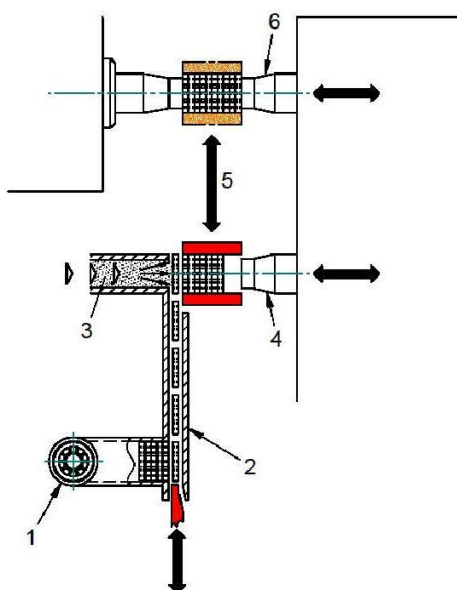
The drum feeder allows the production of larger workpieces and larger volumes of parts. The loader is placed outside of the machine and therefore can be refilled during the production process.
这种上料器可以在大批量生产连续上料过程中使用。由于料斗在机床加工区外置露着可以在加工过程中随时上料不间断地连续生产。



RPA Version
RPA型轮片滚齿机

For the manufacture of gear wheels in large batches, we offer the machine as a RPA-version. RPA is an abbreviation in the German language for Wheel Packeting Unit. The patented packeting unit is an integrated component of this machine which allows the centring and clamping of the gear wheels either in the spokes, round or profiled centre bores.

针对大批量生产轮片要求的客户，我们可以提供RPA型轮片串料式滚齿机。RPA是德语轮片串料单元的缩写。这是一款受专利保护的与主机安装在一体的串料单元，该串料单元可以对有中心孔的园轮片料或是有固定外形的片了进行以中心孔定位的串料绑定。



Principle
加工原理

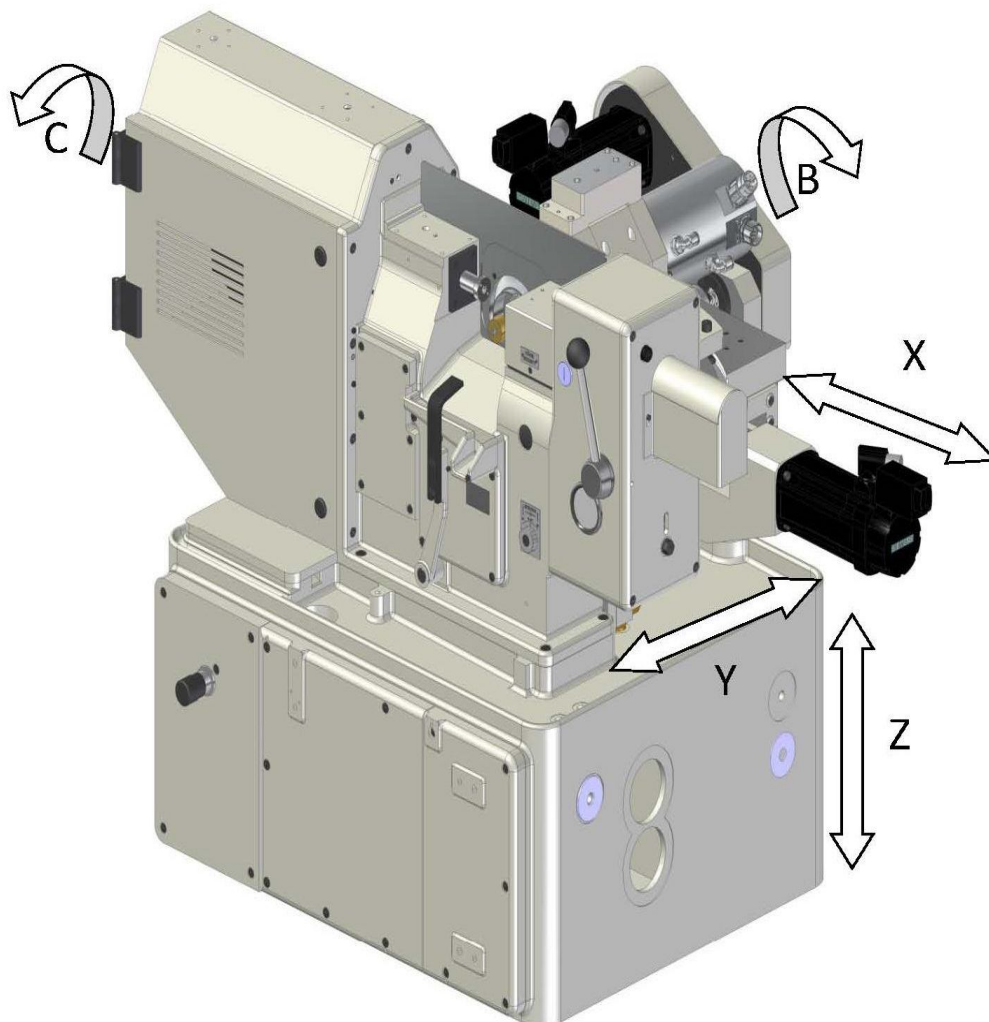
The loose blanks supplied from a drum feeder are fed into a plastic tube (1) and from there, fed into the loading rail (2) the parts are singled out to be fed to the loading position. An air jet(3) blows the parts in front of the rotating loading arbor (4) until the wheel packet length is reached. This function takes place during the hobbing of the previously loaded packet. When the machine completes

the hobbing process, the parts are unloaded and the new packet will be loaded between the spindles with the transport arm (5) The spindle (6) moves into the packet and clamps it tight for the next machining process.

放在震动料仓里的松散的片料被震动推送到与片料直径相仿的有机玻璃下料管里，并由重力作用被推送至料轨上后，再被一个一个单独推送至等待串料的位置上。气嘴（3）将轮片一一吹送进串料芯轴（4）里，但轮片累积厚度达到要求时停止。这一串料过程是在滚齿加工前一串料时同步进行的。当机床加工完一串轮片后，加工好的轮片被卸料，新串好的这组轮片被机械手（5）送入主副卡具轴之间，但副卡具轴关闭时将这组片料再次卡紧就可以进行下一步的滚齿加工了。

AXIS DESIGNATION AND TECHNICAL DATA

各个运动轴的定义和技术参数



B - B轴（刀轴）

Y - Y轴

X - X轴（横向走刀）

C - C轴（工件轴，主付卡具轴）

Z - Z轴（纵向进刀）

WORKPIECE 被加工零件的要求

Workpiece Diameter 被加工零件的直径	mm	0.4 - 35
Workpiece Length 被加工零件的长度	mm	0.3 - 45
Number of Teeth 被加工零件的齿数		1 - 500
Module in Steel 可加工钢材模数	mm	0.04 – 0.80
Module in Non-Ferrous Metal 可加工铜料模数	mm	0.04 – 1.00

WORKING RANGE 加工范围

Maximum Hob Length 最大滚齿长度	mm	20
Angle Setting of Hobbing Spindle 滚刀加工角度调整范围		+/- 12°
Hob Cutter Diameter 滚刀直径范围	mm	6 - 24
Hob Spindle Speed 滚刀转数范围	rpm	2'000 - 12'000

MACHINE DIMENSIONS 机床尺寸

Length x Width x Height 长X宽X高	mm	1'150 x 750 x 1'950
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WEIGHT 机床重量

Machine 主机重量	kg	900
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