

## 1. Scope of Supply 供货范围

Nr. 序号	Descriptions 内容描述	Qty 数量
1	VECTOR Single Basic Machine 主机 VECTOR Single 型	2 sets 2 台
2	Work-piece transfer conveyor 工件自动传输装置	1 set 1 套
3	Automatic work-piece loading and unloading system 工件自动装卸系统	2 sets 2 套
4	Centralized Coolant filtering system for two machines 冷却集中过滤系统(供两台机床同时使用)	1 set 1 套
5	Oil mist extractor 油雾分离器	2 sets 2 套
6	Gap&Crash system 防撞系统	2 sets 2 套
7	Collet/Backstop for groove grinding of 6 types of work-pieces 用于六种转子槽磨削的夹头及定位块	7 sets 7 套
8	Collet/Backstop for thread grinding of 6 types of work-pieces 用于六种螺纹磨削的夹头及定位块	7 sets 7 套
9	Collet Change Tool 换夹头的工具	2 sets 2 套
10	Pallet for one type of work-piece 一种工件的托盘	5pcs 5 只

### 1) Automatic loading and unloading system

#### 自动上下料装置

This 3 axes automatic work-piece loading and unloading system can pick up the work-piece automatically from the pallet and mount the work-piece onto the work-holder. When completing the machining, it can move the work-piece automatically back to the relative pocket of the pallet. 三轴移动自动上下料系统，可以自动从托盘上抓取工件安装到工件夹头上，在加工完成后，自动抓取工件并放回到托盘相应位置上。

### 2) Equipment protection

#### 设备防护

The equipment has the functions of electricity breakage and protection against low voltage, high voltage and over-load. When electricity breakage, lower voltage, high voltage and over-load happen, it should not cause any damage on the equipment and work-piece, as well as danger to personal safety, no matter any conditions (i.e. stop, empty-run, machining, repairing and work-piece loading, etc.) the equipment are being. During the acceptance time, these conditions will be simulated manually.

设备应具备断电、低压、高压、过载等保护功能。当出现断电、电压过低、电压过高、负载过大等情况时，不论设备处于何种状态（停机、空运转、加工中、维修、装夹等），都不能因此造成设备、产品的损坏，以及危及人身安全。在验收过程中，将人为模拟这种情况进行验收。

### 3) Dressing of grinding wheel

#### 砂轮修型

The electro-plated CBN grinding wheel is employed on the machines. The positions of dressing unit on both grinding machines are reserved in case that the conventional aluminum grinding

wheel is employed in the future.

机床采用电镀 CBN 砂轮磨削工件。两台 VECTOR 机床预留了砂轮修型器的安装位置，以备将来使用普通氧化铝等砂轮进行磨削时可以配置砂轮修型器。

#### 4) Flow control

流量控制

The machine will stop when the coolant flow problem happens.

当冷却流量出现问题时将停机。

#### 5) Close-loop control

全闭环控制

Heidenhain linear glasses are equipped on X-and Z-axis.

X 轴 Z 轴配备海德汉测量光栅。

#### 6) Anti-crash system

防碰撞系统

Contactless sensor is equipped on the machine for preventing from crash of the grinding wheel when grinding and dressing.

配备无接触的传感器，用于磨削和修型时防止碰撞。

#### 7) Alarm system

报警系统

The alarm system consists of photic and literal methods. The alarm is not limited to fault alarm only, and it should include the alarm if the monitoring data of the equipment and management systems does not conform to the standard requirement.

报警系统采用光和文字等方式实现。报警类型不限于设备故障的报警，包括本文件规定的所有设备及管理系统监控参数不符合标准要求时的报警。

Photic alarm: when the equipment monitoring result does not conform to the data as required, the alarm light will be signaled with different colors.

光报警：系统将各种设备监控结果不符合标准的参数进行分类，用不同颜色的光及其组合通过设备的警报灯闪烁。

Literal alarm: when the equipment monitoring result does not conform to the data as required, the alarm wordings will be signaled on the control panel.

文字报警：系统将各种设备监控结果不符合标准的参数进行分类，用文字显示在控制屏上。

#### 8) Oil mist generated by the grinding in the machining areas will be extracted out of the machine.

用于抽吸加工区域中由于加工所产生的油雾，并经过过滤排放到机床外部。

#### 9) Coolant system

冷却系统

The machine is equipped with paper filtering system with coolant capacity 450 liters(total capacity 700 liters ).One pump with 20 bar is included. The filtering fineness is 20 um.

纸带式过滤系统，过滤系统的流量处理能力在 450 升（总的容量为 700 升），带一个 20 巴的泵，过滤精度达到 20um。

#### 10) Illumination system

照明系统

The illumination is equipped in the machine, which can enable the operator monitor the machining condition visually or via camera system.

设备具有机内照明系统。机内照明系统能让操作者通过目测或视频监控实时观察设备运行情况。