

机床刮板式排屑器设计

Graduation Design of Scraper Type Chip Cutter for Machine Tool

摘 要

机床在加工过程中会产生各种金属和非金属的废屑，为了收集再利用某些珍贵的金属碎屑，因此就有了排屑器，排屑器可在减速器的控制下收集各种形状和材料的废屑，多数为块状、卷状，材料则有铁、航空铝材、不锈钢等加工材料，排屑器主要应用于几个方面如配合不同种类的数控加工中心、生产线，也可用作各种小质量加工零件的传送装置，或者用于传统劳动密集型产业的输送上，如食品加工、药品生产等，起到减轻操作工人的劳动强度，改变纯手工为自动化的作用。

本论文是设计出一套机床刮板式排屑器。刮板式排屑器是排屑器中的一种，它用电动机驱动链条，然后用链驱动刮刀从刮板底部挂起废屑，达到收集和传送各种加工所产生的废屑的目的，刮板式排屑器可采用链条形式进行传送，链条形式可分为滚子输送链和模锻可拆链两种，模锻可拆链具有一定自由度，不易卡住，安装方便，在国外得到了广泛的应用。扭力限制设定，有效降低了操作不当所造成之损害，刮板的宽度与刮板的灵活性和使用效率有关。在水箱中工作时，可选的加时继电器是通过在机器的底层加入磁铁来加速铁屑的沉降，控制冷却剂的温度，以及减速电机的间歇运行，以达到方便水控制的目的。由于机器本身的结构有限，在清洗机床时必须防止大量的芯片进入除屑机，使上下刮板和大量的切屑混合在一起，造成故障。

关键词：排屑器 刮板式 链式传动

Abstract

Machine tool in machining process can produce all kinds of metal and nonmetal attle, in order to collect reuse some precious metal chips, so there will be a chip, chip removal device can be under the control of the speed reducer to collect scraps of various shapes and materials, mostly block, volume, shape, material have iron, aviation aluminum, stainless steel materials, such as chip removal device is mainly used in several aspects such as cooperate with different kinds of CNC machining centers, production lines, also can be used as a delivery mechanism for all sorts of small quality of machining parts, or to make on the transmission of traditional labor-intensive industries, such as food processing, pharmaceutical production, reduce the labor intensity of operators, change the pure manual to automatic.,

This paper is to design a set of machine tool scraper. Scraper chip removal is one of the chip removal device, it works for the motor driving chain, again by chain drag scrapings board will scraps from the bottom of the chip removal machine, so as to collect and transmit scraps produced by various processing, the purpose of the scraper chain form used for chip removal device, roller chain form can be divided into two removable chain conveyor chain and die forging, die forging removable chain has a certain degree of freedom, not easy to get stuck, and convenient installation, so this kind of form is widely used abroad. Torque limit set, effectively reduce the damage caused by improper operation of, the collocation of scraper width about scraper flexibility and application efficiency, strong combination of scraper, high strength, with accurate, stable and quiet, when you are working in a water tank, gear motor optional plus time relay is discontinuous work so as to achieve the purpose of convenient water control, also can accelerate the precipitation of iron in the bottom of the machine with magnet, also can add refrigerator cooling fluid temperature control. Because of the structure limitation of the machine, it is necessary to prevent the large amount of chip in the machine to enter the chip removal machine, so that the scraping board and a large amount of debris are mixed together to cause the failure.

Key words: Chip removal device Scraper The chain drive

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