



red dot winner 2020
innovative product



red dot winner 2020
product design

FREDERICK CROWTHER AND SON LTD

CROMAR

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ROTO CLEAR

For a Clear View from New Perspectives



Advantages

- ✓ Provides a permanent clear view of the production processes
- ✓ Developed for extremely harsh conditions in machine tools
- ✓ Can be retrofitted to almost any machine tool
- ✓ Simple installation
- ...plus many more

Vision Systems
for Demanding Applications

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How it works

The Rotoclear S3 Spin Window provides a clear view of the production process - even in the toughest machining conditions. The spinning window is an approved system, designed to keep the inspection window clean in order to allow continuous monitoring of the machining process. The system is suitable for all kinds of metal cutting machines, including turning centres, milling machines, machining centres and test stands.

The main principle

A transparent rotating disc repels coolant and swarf from the window surface. This allows the operator to always have a clear view of the machining area. The unit is compliant with current safety legislation. An integrated air purge keeps the system pressurised to avoid the ingress of cutting fluid and always operational.

The spin window is driven by a fully integrated direct-drive motor, which is automatically controlled using pre-set parameters for standard operation through the control unit. Overload safety, emergency shut-off and soft start are all executed automatically and ensure safely controlled operation.

Installation

The device is typically attached to the inside of the machine enclosure door at eye level. The inspection window can either be fixed by mounting bolts on a PCD or by an optional adhesive flange that is fixed by a cover and does not involve perforating the machine tool window. Both methods can be carried out by untrained staff following our specially developed procedures for maximum reliability. Alternatively, the installation can be completed during the machine's manufacture in the OEM's facility. For milling machines, it is recommended to use the bolt-on flange version, whereas the adhesive version is appropriate for turning centre applications.

Advantages

- ✓ Worldwide lowest installation height (33.5mm)
- ✓ Maximum field of view based on revolutionary patented drive concept
- ✓ Unobtrusive design: form follows function
- ✓ Dramatically reduced service and cleaning times: the rotating glass disc as a wear part can be changed in less than a minute without dismantling the entire device
- ✓ Simple device installation. Choose either bolt-on or adhesive-mounted version
- ✓ Maximum operational reliability by use of air bleed
- ✓ Low power consumption by use of linear drive technology
- ✓ High torque for the toughest conditions (laminated safety glass VSG)

Rotoclear vision – Option

The capability of the standard Rotoclear S3 Spin Window can be enhanced by incorporating a "bolt-on" Wi-Fi camera option, for wireless monitoring of the machine tool.



33.5mm

Worldwide lowest
installation height

How it works

The Rotoclear C2 camera system, winner of the Red Dot Awards 2020 for 'Product Design' and 'Innovative Product', was developed for use in extremely hostile conditions on machine tool applications. It is resistant to impact from cutting chips and provides a clear view through cooling lubricants and oils, thanks to the *rotating window on the lens design.

The main principle

The Rotoclear C2 can be mounted in the working space or directly on the spindle head. It is optimally equipped for the rapid movements and accelerations that occur on a machine tool. Regardless of whether machining takes place on the blind side of the workpiece, or standard traditional viewing methods are unable to provide an uninterrupted view of the process, the Rotoclear C2 ensures that the machining process is always in clear focus.

Installation

The Rotoclear C2 can be retrofitted to almost any machine tool. The control unit is mounted on a top-hat bracket in the machine's control cabinet, with the camera head located in the machining area. Camera head and control unit unit are connected via a data cable. This cable can be up to 20 metres long. It is resistant to mineral oils and cutting lubricants and suitable for use in drag-chains.

Data cable length options available on request.

Features



Camera solution for extremely harsh conditions in machine tools

4K
ULTRA HD

Stream in 4K, Full HD and HD



Suitable for spindle and working space monitoring



Connection with two camera heads up to 20 m away



Permanently clear view thanks to rotating window and LED lighting



HDMI, Ethernet, Wi-Fi, RTSP-Stream



Integrated online update



Supports multiple languages



Record informative videos onto USB storage devices or directly to the network.



Control unit - the 4K all-in-one solution

- ✓ The unit is equipped with an HDMI port to allow an image to be quickly and easily transmitted
- ✓ The controls are simple to operate with touch gestures or via a mouse
- ✓ The camera live streams directly into your device in a platform-independent manner
- ✓ Support for the RTSP protocol allows easy integration into your existing monitoring system/machine control system

Camera head options

The camera head is compliant to IP67 protection class. This means it is well protected against cooling lubricants, oils, and other media.

The camera head is fully encapsulated, protecting it from damage in even the most demanding of operating environments.

Choose from the following options:

1. **Focus F1 (close range / spindle)**
Lens with a focus range of 200-500 mm
2. **Focus F2 (far range)**
Lens with a focus range of 500-3000 mm
3. **Focus F1+F2 (near and far range)**
Two lenses with a focus range of 200-500 mm or 500-3000 mm

*Patent Pending

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