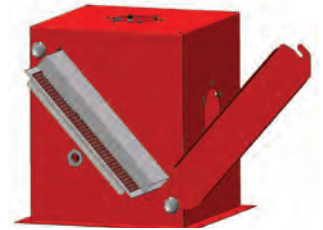
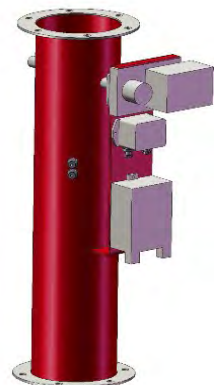


Components for Cutting Processes / Energy Savings



ProBox: Solid State Flame Barrier



ProFix: Automatic Airflow Damper

The Task

Multiple tasks must be managed when extracting cooling lubricants, which necessitate a controlled extraction process.

Several factors should be taken into consideration depending on whether the machine process uses combustible (oil-based) coolant or non-combustible (water-based) coolant:

Pre-separation of coolant directly at the machine in order to

- Reduce the concentration in the mist collection system
- Prevent accidental suction of chips into the extraction system
- Reduce energy consumption with adjustable air flow controls
- Control air flow as a safety measure
- Fire barrier within the extraction system or inside central systems linked to other machines when machining with combustible oil-based coolant

There is always the risk of fire when using combustible coolants in machine tools. An ignition source could be a broken tool or even glowing chips because of an inadequate supply of coolant.

Fire may spread from the source to other machinery within a centralized mist collection system.

The Solution

In the event of a fire, the ProBox ensures that flames from the machine tool are blocked from spreading through the

ductwork. In addition, the ProBox is equipped with a chip pre-separation device that ensures no flowing chips can

enter the mist collector. This improves the performance of the machine, and coolants can be pre-separated.

Scope of Applications

- Modular options for interfacing machine tools and extraction systems

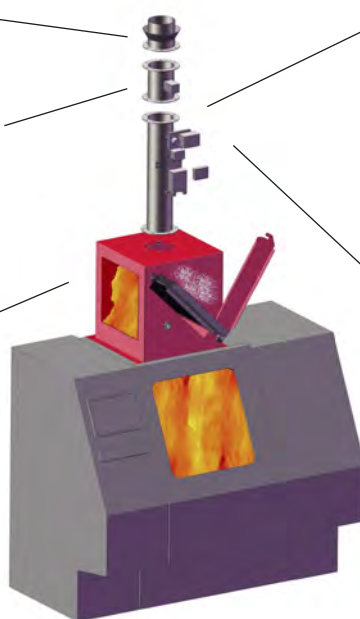
- Machining processing such as drilling, turning, milling, broaching, honing, and grinding

- CNC machine tools, machining centers
- CNC grinding machines

Hose connection without coolant drain

Fast closing damper for equipment with automatic extinguishing systems

- ProBox fire barrier for:
- Pre-separation of chips/glowing particles
 - Pre-separation of coolants
 - Isolation of fire and flames inside the machine tool



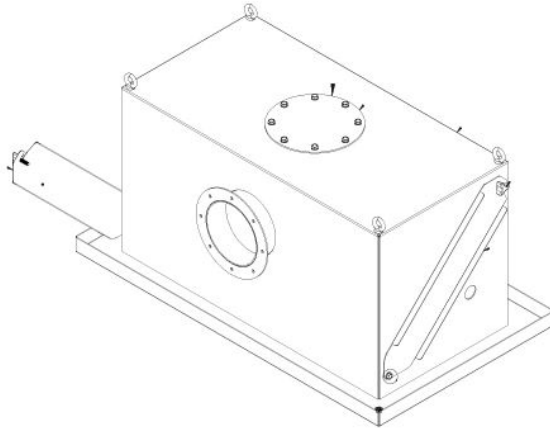
ProFix air flow control consisting of:

- Air flow measurement with improved pitot tube technology for maintenance-free operation
- Device for:
 - Measurement of air flow
 - Auto adjust to target air flow
 - Interface with machine tool
 - Butterfly damper control for uniform air flow
 - Electrical Butterfly damper for gradual adjustments of air flow
 - Additional parameter display panel (optional) for stand-alone systems

ProBox Solid State Flame Barrier



Function ProBox The ProBox is a solid-state flame barrier which consists of a cascaded deflector plate made of stainless steel, and an integrated chip pre-separator. The ProBox can either be attached directly to the machine tool or, for lack of space, integrated in the ductwork. Several air flows are feasible due to its modular design.



The chip pre-separator can be easily dismantled for maintenance, and is re-usable after cleaning.

Testing The ProBox was inspected and tested by an independent organization under actual operating conditions, in accordance with UL requirement 1046.

No flames escaped despite an air flow of 1 m/s with a ProBox that was saturated with combustible coolants. UL requirement 1046 was exceeded.

ProBox Advantages

- Flame barrier, certified by an independent organization, according to UL 1046
- No flames downstream: UL 1046 regulations exceeded
- Solid-state design, i.e., no sensors or actuators necessary
- Easy access for chip pre-separator cleaning
- Pre-separation of coolants results in a reduced concentration on the mist collection system
- Ideal for top-mounted machine installation
- Retrofits easy to install
- Modular design for different air flows.



Connection Options

- | | |
|---|--|
| <p><u>Inlet</u></p> <ul style="list-style-type: none"> • On the side (round) • Bottom (rectangular, direct attachment to the machine tool) • Bottom (round, with transition piece) | <p><u>Outlet</u></p> <ul style="list-style-type: none"> • On the side • At the top |
|---|--|

ProBox TECHNICAL DATA	ProBox 1	ProBox 2	ProBox 4
Air flow:	each module max. 900 m ³ /h (550 cfm)	each module max. 1800 m ³ /h (1,000 cfm)	each module max. 3600 m ³ /h (2,100 cfm)
Pressure loss at max air flow:	approx. ca. 200 Pa	approx. 200 Pa	approx. 200 Pa
Dimensions:	510 x 510 x 560 mm 20 x 20 x 22 in	1020 x 510 x 560 mm 40 x 20 x 22 in	1020 x 1020 x 1120 mm 40 x 40 x 44 in
Weight:	approx. 40 kg (88 lbs)	approx. 75 kg (165 lbs)	approx. 150 kg (331 lbs)

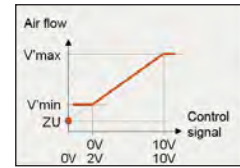
ProFix: Automatic Airflow Damper



Function ProFix

With ProFix it is possible to adjust a preset air flow, which is controlled and adjustable at several machines. The ProFix readjusts automatically to the air

flow variations within the system, such as during loading and unloading of the work-piece.



Use as flow control:

The active target air flow is indicated as a 0-10V signal. Upon a sudden decrease in target air flow, a time-delayed alarm is triggered at the machine tool control.

The mist collector is normally designed for the maximum air flow requirements of the machine tool. Depending on the machine process, lesser air flows are sufficient with closed doors during

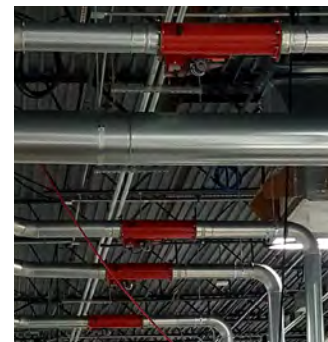
operation. It is possible to set the parameters in the ProFix individually according to the maximum (open) and minimum (closed) air flows gradually via a signal from 0-10V.

ProFix Advantages

- Adaptable control device optimizes settings automatically
- Constantly monitored air flow ensures reliable operation
- Energy savings thanks to the adjustable necessary air flow control
- Lower investment costs and reduced space requirements through smaller mist collection system

ProFix Technical Data

- Regulating time of the flap motor: max.
- 4 seconds
- Tolerance: approx. 10%
- 4 nominal values to be directly controlled
- (Closed, Vmin, Vmax, Opened)
- Continuous air flow adjustment through
- 0 - 10 V signal (e. g. through control of machine tool)
- Operating voltage: 24 VDC
- Horizontal or vertical attachment
- Flange according to DIN 24154/2 on both sides, welded
- Material black-welded, painted
- Paint: RAL 3000



Switch size	NW		Length		Measurement range		Measurement range with 10 % control tolerance	
	mm	in	mm	in	m ³ /h	cfm	m ³ /h	cfm
ProFix125	125	4.9	650	25.6	150 – 1,000	85 – 580	500 – 1,000	300 – 580
ProFix140	140	5.5	650	25.6	250 – 1,200	150 – 700	600 – 1,200	350 – 700
ProFix160	160	6.3	650	25.6	350 – 1,600	200 – 950	800 – 1,600	470 – 950
ProFix180	180	7.1	650	25.6	400 – 2,000	235 – 1,175	1,000 – 2,000	580 – 1,175
ProFix200	200	7.9	750	29.5	500 – 2,500	300 – 1,470	1,250 – 2,500	735 – 1,470
ProFix224	224	8.8	750	29.5	650 – 3,200	380 – 1,880	1,600 – 3,200	950 – 1,880
ProFix250	250	9.8	750	29.5	800 – 4,000	470 – 2,350	2,000 – 4,000	1,175 – 2,350
ProFix280	280	11.0	750	29.5	1,000 – 5,000	580 – 3,000	2,500 – 5,000	1,470 – 3,000



With the **GREEN BALANCE** initiative, Keller commits to Global Sustainability.

We balance Technological, Social, and Economic resources to sustain the environment.



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