
Darwin

Air Filtration

Centrifugal Fan Unit
for mists and fumes



Darwin

The Darwin series is a line of centrifugal filters for the purification of air containing oily mists, micro-mists and fumes resulting from the use of coolants (emulsion or neat oil).

It can be used on all types of machine tools and for all removal operations.

It is available in 4 sizes with 3 different fully interchangeable filtration technologies. Available flow rates range from 600 to 3,000 m³/h, with various combinations of increasing filtration efficiency, up to an efficiency of 99.97%.

Patented in the USA and Europe (Italy, France, Germany, Great Britain, Luxembourg, Switzerland, Sweden, Spain).

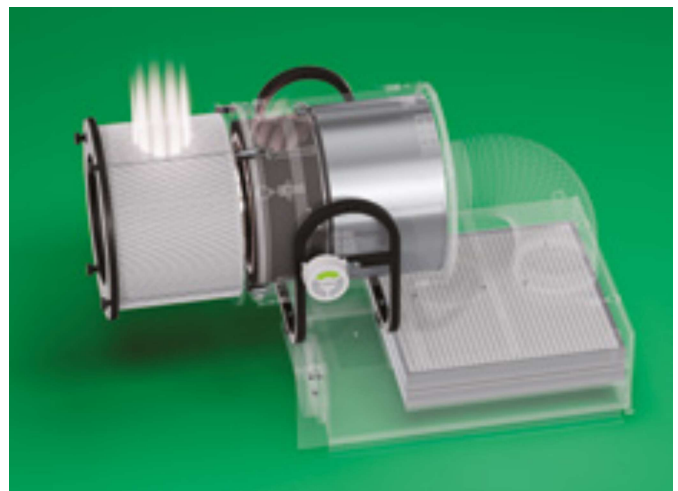
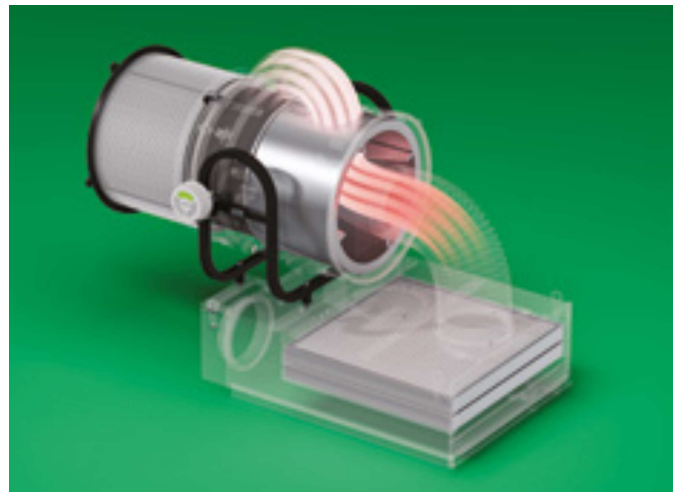
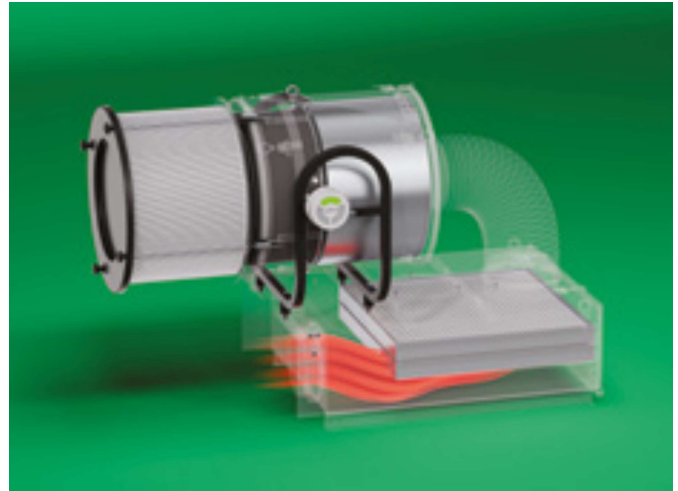
Losma guarantees that each filter unit is individually tested through rigorous control procedures. A quality and functional test certificate is issued for each unit.





Operation

- The polluted air is filtered thanks to the depression generated by the rotation of the centrifuge, which imparts a strong swirling movement to the air.
- This passes through special polyurethane foam sponges housed inside the centrifuge (only in the single and double versions) and then through a perforated mesh. The combination of all these elements facilitates the re-aggregation of even the finest oil mist particles.
- Finally, the air passes through a further static filtration stage before being returned to the working environment.
- The recondensed liquid is easily and efficiently discharged out of the filter unit by means of a drainage pipe with continuous overpressure.



Right: example sequence taken from product operation video

FILTRATION TECHNOLOGIES

Darwin is available in 3 versions: turbine, single centrifuge and double centrifuge.

TURBINE

Suitable for all surface grinding operations (grinding, sharpening, honing, lapping and all similar finishing operations) even with small amounts of solid particles.

SINGLE CENTRIFUGE

Suitable for all removal operations (emulsion as whole oil).

DOUBLE CENTRIFUGE

Suitable for all machining operations (emulsion as whole oil), especially for harsh working conditions such as, for example, the use of high pressure that generates micro-mists and vapours.



Advantages

DUAL FILTRATION SYSTEM

The Darwin series uses a dual combination of filtration: dynamic (given by the rotation of the centrifuge) and static (with the integrated post-filtration system) to guarantee high performance.

VERSATILITY AND MODULARITY

The unique Darwin series offers 12 different possible combinations of filtration technology and relative suction power, making it easy to choose a solution that always fits your needs without wasting energy on oversized systems or, on the contrary, inefficient on inadequately sized systems.

STAINLESS STEEL VERSION

All models in the Darwin series can be supplied in satin-finished stainless steel for use in those applications where normal painted sheet metal is not suitable.

CONDENSATION AND DRAINAGE

Unlike common static filter systems, the Darwin series guarantees unparalleled recondensation and drainage capacity. In fact, it uses the overpressure generated inside the filter unit to continuously discharge the liquid, which can then be recovered and reused.





Optional

1. Guard pre-filter

2. Clipper post-filter

3. X-VIEW

1. Guard pre-filter

Pre-filter for chips and dust, equipped with metal and synthetic filter stages. Useful for maximising filtration efficiency at high outputs of oil mist mixed with metal chips and dust.



2. Clipper post-filter

Available with filtration F9 at 95 % or H13 at 99.95 % in accordance with EN 1822. Especially suitable in the presence of micro-mists or fumes.



3. X-VIEW

Filter clogging sensor

The X-VIEW Sensor is able to detect the progressive clogging state of the Darwin filters, signalling three main operating phases:

- GREEN: Clean Filters;
- YELLOW: Pre clogging;
- RED: Clogging.

Thanks to an integrated TIMER, the X-VIEW sensor allows to know when 15,000 working hours (i.e. 5 years/8 hours per day) have been achieved, which is the recommended threshold for changing the filter set. The X-VIEW sensor can be positioned on Darwin or in any other part of the machine tool where the operator is more comfortable reading the data.



X-View also displays:

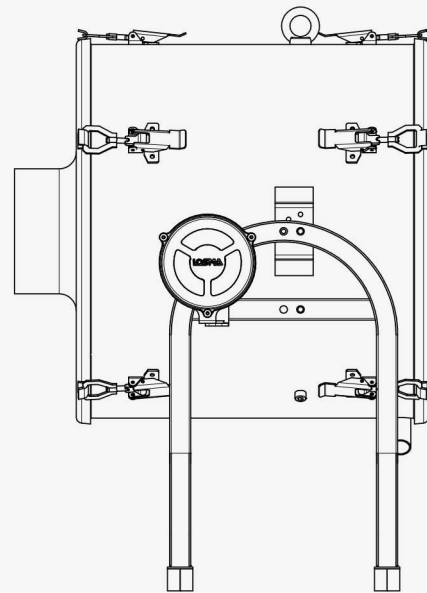
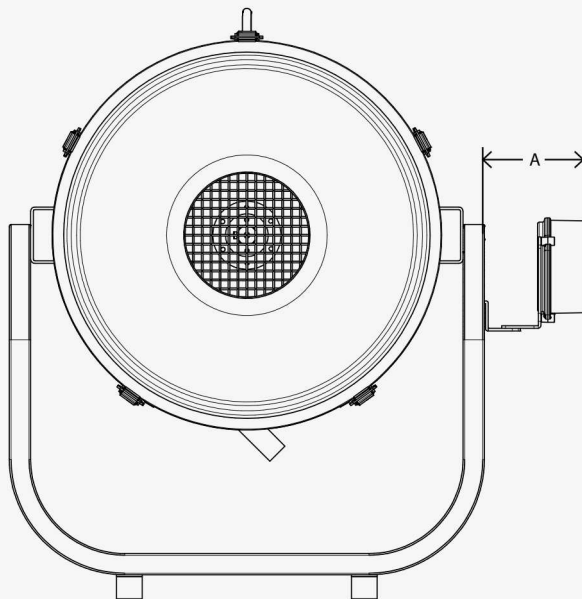
- possible upstream obstructions: whether by chip or liquid build-up. X-View is capable of detecting instantaneous or progressive clogging in the inlet pipe or suction grid of the machine tool cabin;
- zero flow alarm. For example, when Darwin is switched off or when the motor is not running or a pipe is disconnected;
- the timer indicates the achievement of 15,000 working hours - the threshold recommended for checking the filters.

Technical data

Voltage: 24V DC

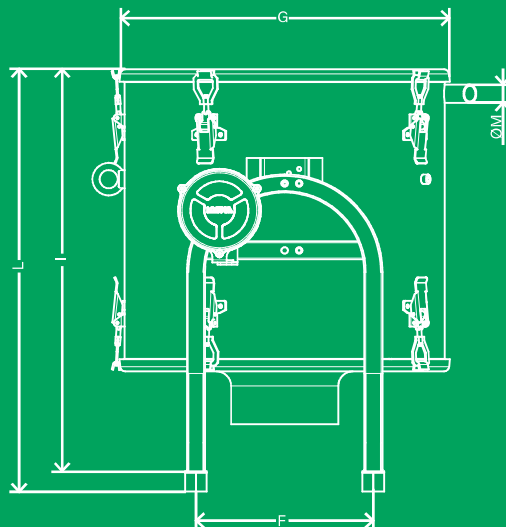
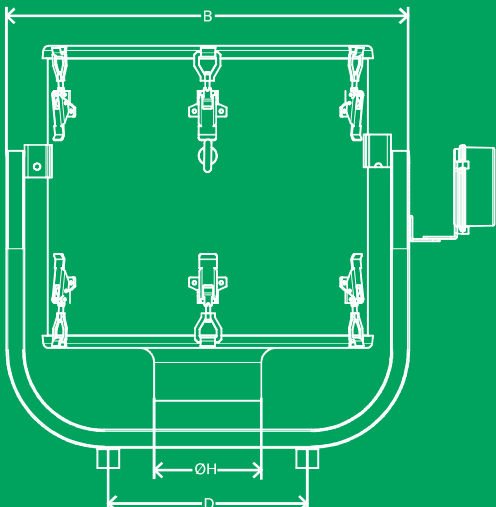
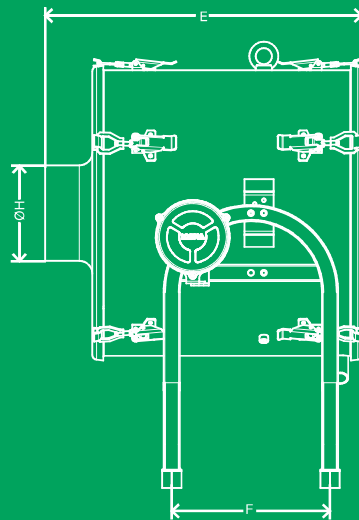
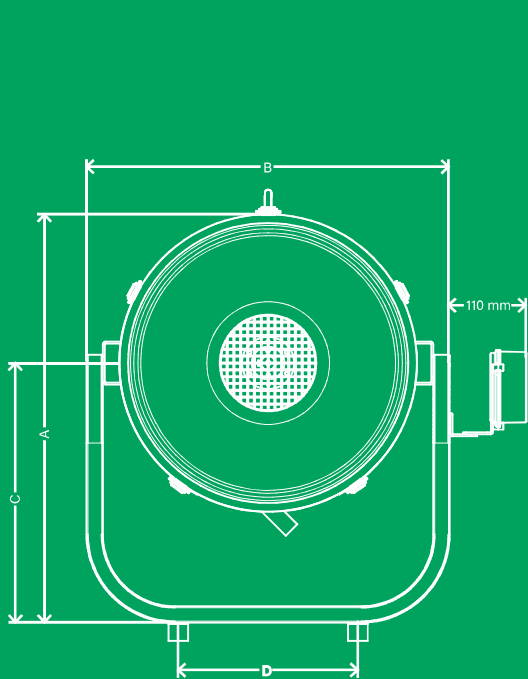
Signal type: LED display

Size: A=110mm Ø=115mm





Technical Data



1. Darwin



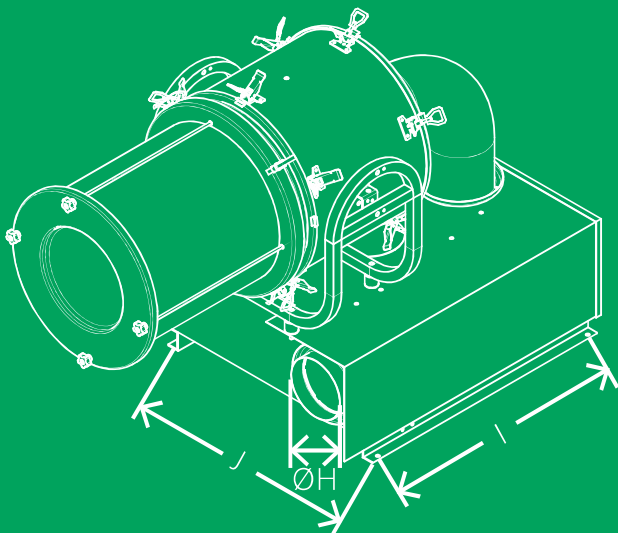
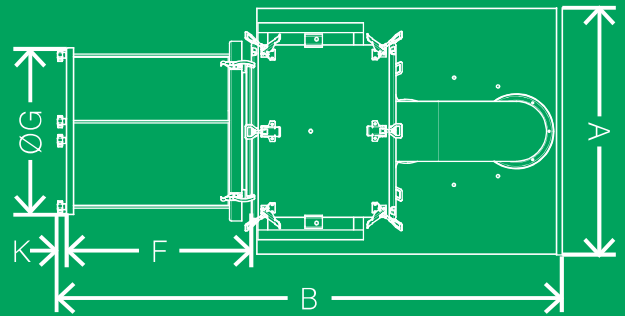
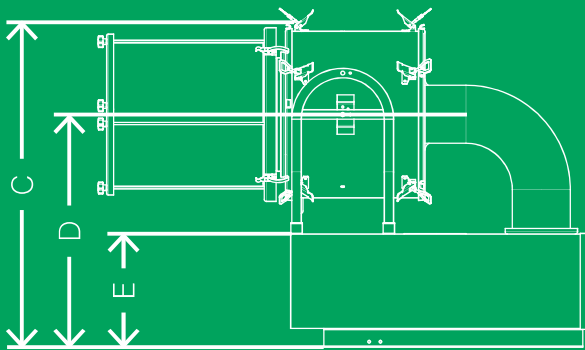
Models	Dimensions (mm)										
	A	B	C	D	E	F	G	ØH	I	L	ØM
Darwin 600	487	457	300	180	324	170	365	100	382	412	25
Darwin 1200	563	574	428	275	460	245	457	150	589	619	25
Darwin 2000	563	574	428	275	510	245	457	150	614	644	25
Darwin 3000	576	665	505	275	594	245	523	200	684	714	25

Models	Maximum air flow (m ³ /h) * 50/60 Hz		Maximum noise level (dbA)		Opening inlet (mm)	RPM (rpm)		Net Weight (kg)	Power (kW)	
	From	To	From	To		50 Hz	60 Hz		50 Hz	60 Hz
Darwin 600 T	500	600	67	72	100	2800	3400	21	0,37	0,43
Darwin 600 M	500	600	62	67	100	2800	3400	21	0,37	0,43
Darwin 600 D	500	600	62	67	100	2800	3400	21	0,37	0,43
Darwin 1200 T	1350	1650	71	76	150	2800	3400	35	1,50	1,75
Darwin 1200 M	1270	1500	71	76	150	2800	3400	35	1,50	1,75
Darwin 1200 D	1270	1500	71	76	150	2800	3400	35	1,50	1,75
Darwin 2000 T	1920	2370	73	78	150	2800	3400	39	2,20	2,55
Darwin 2000 M	1950	2430	73	78	150	2800	3400	39	2,20	2,55
Darwin 2000 D	1800	2180	73	78	150	2800	3400	39	2,20	2,55
Darwin 3000 T	3000	3300	74	79	200	2800	3400	62	3,00	3,45
Darwin 3000 M	2900	3200	72	77	200	2800	3400	62	3,00	3,45
Darwin 3000 D	2900	3200	71	76	200	2800	3400	65	3,00	3,45

* Free inlet

Standard voltage: 50 HZ 230V/400V - 60 Hz 265V/400V

Technical Data



2. Guard and Clipper

Models	Dimensions (mm)										
	A	B	C	D	E	F	ØG	ØH	I	J	K
Guard + Darwin 600 + Clipper	550	1074	860	612	300	363	365	98	542	513	19,5
Guard + Darwin 1200 + Clipper	655	1338	860	618	300	483	407	148	642	608	19,5
Guard + Darwin 2000 + Clipper	655	1364	860	618	300	483	407	148	642	608	19,5
Guard + Darwin 3000 + Clipper	655	1382	905	631	300	388	523	198	765	608	19,5