

Cleaner than clean-air, dust extractors!

The Felder RL 125 and RL 160 will provide your workshop with air that's cleaner than what most of us breathe. To find out how, please read on.



written by John Renzetti

The Felder RL160 is a powerful, compact, and very well constructed dust extractor. Owners of this dust extractor that I have spoken to, have universally praised its capabilities and performance. One owner even called it „Felder's Hidden Gem“ of all the machines they produce.

The main benefit of the RL160 is the fact that the air that is returned to the shop after the extractor, is certifiably CLEAN. Prior to going into full production, Felder in Austria, had the machine tested and certified by the German Government Health Department. The tests require the machine to perform under the most difficult conditions—dirty filters, long lengths of flexible duct hose with four (4) ninety degree bends. The cfm and air quality output are then measured, and the final result is that the RL160 (and also the RL125) receives a certificate of compliance from the German authorities in that it meets the very strict German Indoor Air Quality Standards. Unlike a lot of manufacturers and dealers of dust collectors who make many claims as to the efficiency of their collectors, only the Felder has the certification from an outside Government agency.

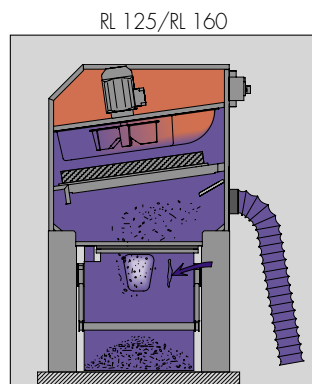
The development of the RL160 came about due to a health risk that was associated with fine wood dust in German Woodworking shops. A few years ago a study showed that there was an elevated incidence of nasal cancer among workers in woodworking shops, especially those whose dust extractor systems returned the air to the shop. Because of this high incidence of cancer, Germany introduced and enforced very strict rules concerning fine dust emission in woodworking shops. The RL160 is proven capable of removing fine dust particles at ten times the efficiency of a normal dust collector, and satisfies the emission requirements of the German government

Almost all dust collectors use a blower fan to create the suction to pull the chips and dust through the fan blades and into the collector. The action of these abrasive particles and chips does cause the fan blades of a conventional collector to wear. The Felder RL160 operates in a completely different manner. The fan motor and fan is located in the upper corner of the machine opposite from the intake port, and positioned after the HEPA filter bank, located just above the intake port. Powered by a 5.5hp motor the fan creates both suction and a vacuum

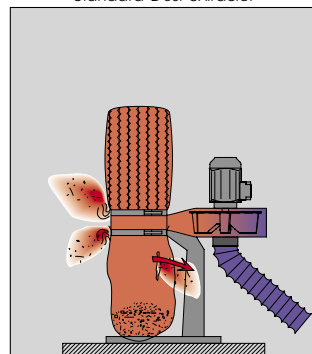
force. The chips and dust are pulled into the RL160. The heavier chips are pulled into the bins below while the dust laden air is pulled through the filter banks. The clean air is then exhausted through the fan and out the exhaust area on the top of the machine. **For those interested in the actual numbers, the dust emission quality of the air is < 0.2 mg/m³. This is probably better than the air that most of us breathe.**

The design of the unit and the way it collects the chips and filters the fine dust is rather unique in that the design also prevents dust and chips from being blown through leaks and gaps in the unit. On conventional dust collection systems there is a lot of pressure created against the chip bags and filter bags as well as the connection points. This pressure causes dust laden air to be blown back into the room. On the RL160 the only high pressure area is found where the fan is mounted and this is after the fine dust has already been filtered. With this design only clean air exits the machine, even if there is a slight tear in the side of a chip bag.

This is shown by the following drawing. The pressure area is shown in red. (The drawing shows the smaller RL125)



Standard Dust extractor



Like everything Felder builds in their Austrian factory, the RL160 is heavy and well made. It is made entirely of steel and weighs in at 484lbs. It has two chip bins with a capacity of 53 gallons each. This high capacity means you won't be making that many trips to empty out the chip bins.

The chip bin on the RL160 is a separate wheeled hopper that contains the two 53 gallon chip bags. On initial use the bags are placed inside the steel bins and the whole unit is rolled underneath the unit onto support tracks. The large locking bar is then pushed downward and the whole hopper is raised into place and locked into position. The operator has a selector knob which allows a choice of which side of the bin to fill first. When the bins are full as indicated by the easily viewed level windows, they can be quickly and easily removed and replaced. The locking arm on the hopper bin is raised which lowers the bin to the ground. Just pull the unit out from under the RL160 and removed the filled bags. The bags are sturdy and can be reused many times as long as care is taken to prevent tears. The operator has the choice of emptying the bags immediately and replacing them or setting them aside and using fresh bags. After the empty bags are inserted into the bins, the unit is again wheeled into position and locked into place. The RL160 is again ready to work.

Another benefit of the RL160 is that it will take up relatively little space in the shop. The footprint is only 61 1/2" wide by 30 3/4" deep. The height with the noise dampening muffler mounted is around 72." The machine is on heavy duty casters which allow even more mobility.

How powerful is this machine? With the 5.5hp motor for the USA version the RL160 can easily provide enough power to run several machines at once. The catalog lists cfm ratings of 1883, 1030, and 850. Compared to the published claims of other manufacturers these numbers don't seem that high for a machine with this much hp, but these figures don't come from Felder. They are taken from the actual test results from the BG test authority in Germany. As mentioned before these ratings are taken under controlled conditions with ducting, flex hose and even clogged filters.

From personal experience I have found that the RL160 can pick up dust brushes from over 3 feet away and pull them right into the dust bin. On one occasion I saw it completely retract the flex hose from a floor sweep that was at the end of a 32' run of ducting. Other owners have reported that they have left a number of blast open inadvertently with no loss of suction.

One of the questions that I had concerning this machine dealt with its ability to operate efficiently under difficult conditions such as continually picking up fine dust from man made materials such as MDF. This question was answered very satisfactorily during the IVF in Atlanta in 2002. Here the Austrian company Wintersteiger installed an RL160 for use on their demonstration machine—a gang rip saw, which was cutting mdf panels. This machine operated nearly all day throughout the show and the RL160 worked

without problem, even though the technicians from Wintersteiger never bothered to periodically clean the filter elements.

The filters do need to be kept clean and the RL160 provides an easy means of doing this. (The RL160 even has a clogged filter light which alerts the operator that it is time to clean the filters.) There is a handle on the intake side of the machine that is connected to brushes inside the machine. A pull on the handle moves the brushes against the filters. This dislodges the fine dust particles trapped by the filters. The dust then falls into the chip bins. Three or four pulls are usually all that is needed. I do this every time I enter the shop to work. Felder has an automatic cleaning system that uses compressed air to clean the filters. With the machine on you push a button and the high pressure air does the rest. One RL160 owner that I know hooked up an air cylinder operated by a remote switch. The air cylinder is activated, and moves the cleaning arm.

The noise level of the RL160 will depend on the amount of floor space in the shop and the ceiling height. With the sound muffler installed, I have measured around 80-82db in my shop, which has almost 9 foot ceilings. I've been in other shops with much higher ceilings and the sound seemed more muffled. You could still have a conversation with the dust collector running.

At the present time the only drawback to the RL160 is that it is not available with a single phase motor. However I do understand that a single phase motor will be available soon. Some customers who do not have utility company provided three phase power nor a phase converter has installed inverters on their RL160's to convert single phase input to three phase. The inverter also has an added advantage in that the speed of the fan can be controlled, thereby reducing power consumption and noise.

At \$3800 (\$3950) with the sound muffler, the RL160 is competitively priced with other dust collection systems in this horsepower range. With the added benefit of certified clean air exhaust, the RL160 adds a safety and health advantage that other dust collectors cannot match.