

## J.H. FLETCHER & CO.

# PRODUCT NEWSLETTER

2016 ISSUE 3

### DRY AIR SCRUBBER



J. H. Fletcher & Co. releases new product to improve roof bolter operator environment. The machine, known as a Dry Scrubber is supported by field testing, and backed by a long history in dust suppression. The Dry Scrubber is MSHA permissible and has the ability to operate in a variety of applications, making it a compliment to the Fletcher roof bolting product line.

The need for this product is evident, as dust concentrations downwind of the continuous miner can exceed regulatory standards and overexpose roof bolter operators. In coal mining, on-board flooded bed scrubbers are utilized on continuous mining machines for respirable dust collection. Though these systems are proven, dust by-passing the continuous miner scrubber happens and may expose roof bolter operators to high levels of respirable dust when working downwind of the continuous miner.

J.H. Fletcher & Co. was a pioneer in dust collection, receiving patents as early as the 1950's. When maintained, Fletcher MSHA approved onboard dry dust collectors on roof bolters are proven in removing the respirable dust generated from roof bolting. With this background, Fletcher's research and development department developed the MSHA approved Fletcher dry air scrubber. The machine is a stand-alone, self-propelled, electrically powered fan. The machine has two

operating modes: tram and filter air mode. While in tram mode, the fan cannot be operated. The dry air scrubber is engineered to be positioned between the rib and vent curtain. The unit then works to clean contaminated air before it enters the roof bolter work space, working to provide roof bolter operators with a cleaner air supply and lowering their exposure to respirable dust.

The design reflects Fletcher's diversity in the underground mining sector, with the ability to fit into a wide variety of mines and applications. The dry scrubber is 16'6" (5.03 M) in length and 4'6" wide (1.37 M), equipped with 12" (305 mm) crawler pads.

The dry scrubber pulls a portion (up to 9000 cfm) (255 cubic meters/minute) of the air flowing between the rib and the vent curtain into the filters on the inlet side of the fan. Filtered air is directed out of the machine and back into the main air stream. A pressure sensor arrangement is used to monitor filter conditions to alert the operator when the filters need replaced. A hydraulically operated hood and pivoting electrical controller allows access to the air filters.

The fan speed and resulting airflow is controlled by a variable frequency drive (VFD). This allows the mine to select an air-flow controlled with a feedback loop to automatically adjust the fan speed to maintain a constant airflow output as the filters are loaded with dust.

NIOSH laboratory tests found that the dry scrubber averaged greater than 95% respirable coal dust removal while being operated at two different fan airflow speed quantities of 3,000-9,000 cfm. Underground studies found a collection efficiency of 99.2%.

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**Other potential applications the dry scrubber include: belt conveyor transfers, underground truck dumps, single entry air cleaning, and diesel particulate matter removal. For additional information on this product contact Fletcher sales department.**



## **MINEXPO 2016**

MINExpo is a trade show sponsored by the National Mining Association. The show is held once, every four years, and showcases the latest in mining technologies. MINExpo 2016, was held this past September, from the 26<sup>th</sup> through the 28<sup>th</sup>. The show boasted a total registration of over 44,000. The exhibit space included 1,950 exhibitors, and spanned 840,000 ft<sup>2</sup>.

### **Fletcher Booth Space #2615**

In the middle of this, J.H. Fletcher could easily be found. Fletcher was proud to present their largest display yet, including six machines spanning over 4,500 ft<sup>2</sup> of booth space.

Fletcher featured two roof bolters from their world renowned roof control product line. Both models, the N3016-AD/E and the N3112-AD/E, are designed for operation in narrow heading conditions. The 3112 is a highly versatile machine that position the operator by the drill for steel changes and bolt installation while protecting from back and wall hazards. It features dual diesel/electric power with lower noise and vibration exposure than drilling using a jackleg. The 2016 is a remotely operated machine that can install 1.8 meter bolts in a 3 meter by 3 meter slope. It is also fully diesel/electric for easy place changing and no exhaust in the slope.

Fletcher also featured three drill jumbos of varying sizes. The J101-AD/E single boom drill jumbo is designed for use in narrow vein applications. Also featured, was the J152-D/E dual boom drill jumbo designed for development and production drilling in mid-size headings. The third displayed was a single boom drill jumbo, model J251-LS. This machine is built for larger headings and designed to handle face, bench, and roof bolt drilling requirements. Each of these machines featured PERB (fully parallel, extending and rolling boom) booms and a CANBUS fully integrated electronic backbone.

Also featured was the Fletcher Dry Air Scrubber; this is a narrow machine designed to be positioned between the rib and vent curtain. There the machine pulls flowing air into the filters and directs the filtered air back into the main air stream.

In addition to the display of complete machines, Fletcher featured display modules of some of their latest innovations. One featured the new larger crawlers, along with highlighting their new forged track pads. The other display module featured the latest in air filtration in regards to the Fletcher dust system. A filtered canopy for use where cabs are not practical demonstrates another tool a mine can use to reduce operator exposure to dust. A drill dust collection system complete with a improved dust collection tank using pinned doors and an improved flow path downstream of the final filter, the optional dust collection bag to reduce exposure cleaning the tank, and the precleaner to dump heavy particles on the ground and reduce the quantity of collected dust that is removed from the tank.

## Achievements

While MINExpo 2016 was a proud moment for Fletcher, even more could be said for their presence in many of the educational sessions. Fletcher lead three educational sessions during the week, featuring Mechanizing the Bolting Cycle in Narrow Stopes, Innovations in Underground Dust Collection, and the Advancement in Automated Remote Roof Bolting in South Africa. The broad range of topics only touches the surface of the wide range of capabilities Fletcher has to offer.

Fletcher was also honored as a recipient of the 2016 NIOSH Mine Safety and Health Technology Innovations Award. The award was based on work between Small Mine Development and Fletcher, from defining coals through design build and utilization in the filed for hanging auxiliary fans in underground metal/nonmetal mines. The machine alleviates many of the hazards currently associated with working around a large, suspended load.

## Fletcher says Thanks

Fletcher would like to extend a big thank you to everyone that made MINExpo 2016 such a success. The incredible amount of work the National Mining Association puts into this event is always abundantly evident. The dedication and hard work of Fletcher employees both behind the scene and at the show, reveal the ethics behind J.H. Fletcher & Co. Most importantly “thank you,” to our customer for your commitment to our company and everything you do for the industry.

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## UNDERSTANDING THE PURPOSE OF THE BOLT TIGHTENER

Most of our customers will at some point want to install mechanical bolts with expansion shell anchors, torque tension bolts, cables with grouted anchoring or check fully grouted passive bolts for adequate anchorage. For this reason, nearly all J.H. Fletcher & Co. roof bolters are equipped with a bolt tightening circuit. The bolt tightening circuit has been designed in order to give a consistent bolt torque

The bolt tightener can be turned on or off using a detented diversion valve. When actuated, this circuit can only be used to reduce the feed and rotation pressures. Increasing pressures in the bolt tightener valve will not allow feed or rotation pressure to go above the settings for normal drilling.

The feed pressure is reduced in order to allow just enough thrust to elevate the drillhead and maintain the wrench against the bolt head. The thrust must be lowered in order to reduce the friction created by the bolt head against the plate. The rotation pressure is limited in order to give just enough pressure to apply the desired torque output on the bolt head.

The only proper way to check torque is to use a torque wrench on an already installed bolt.

For more information on this circuit, and how it works, refer to your machine’s service manual or call and ask for Darrin Cotton at J.H. Fletcher & Co.

## AFFIDAVIT : WHY HAVE THEM ?

J.H. Fletcher & Co. is frequently asked by our customer, why we have the affidavit program? J.H. Fletcher & Co., requests that the affidavit be completed by our customers when you are ordering a replacement certification tag for specific certified systems on your machine, such as canopies, TRS, electrical and dust tags. These affidavits are provided for you to review that specific certified system on your equipment and confirm that the components and its associated hardware are genuine Fletcher components as it was originally certified and documented in the parts manual.

Therefore, if a customer orders a certified component, such as canopy or a TRS, the tag will come with the serial number already stamped on the tag. This will ensure that the tag meets the certification tag that is located in your parts book for that machine. If you remove a tag from another machine, the canopy may not match the serial number and the canopy may not meet the original design specification for which the entire system had been approved. For example, the canopy is just one part of the system that makes up the certification. The support post, cylinder, foot and associated parts, make up the entire certification of the canopy approval.

Please keep in mind, if you are missing the 2G tag, we must inspect the entire machine, before we can reissue one of these tags to you. At Fletcher, if you need a certification tag we can help. When buying or rebuilding a Fletcher piece of equipment, make sure your tags are always on the machine.

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## OIL CLEANLINESS

J.H. Fletcher & Co. understands the importance of having clean oil in hydraulic systems to increase reliability, reduce wear and tear, and ensure greater resource availability due to less unscheduled down time. For this reason, Fletcher performs an oil cleanliness test on all new, rebuilt, and remanufactured equipment. The test results are measured in accordance with ISO Cleanliness Code 4406:1999 whereby the Oil Cleanliness Minimum Reading shall be 18/16/13. In comparison, new hydraulic oil straight from the drum has a typical cleanliness level of 23/21/18. It is important to note that each 1 number increase in the ISO code is double the contaminant level for that micron size. In addition, new oil stored in a large outdoor reservoir accumulates condensation which could translate to water saturation over time. Fletcher maintains in line filter media capable

of removing any water from the oil on its outdoor storage reservoirs. In addition, the hydraulic tanks on our equipment are filled by utilizing the return line filter in lieu of removing the clean out cover plate which would allow the ingress of external contaminants. The system is allowed to run for 10 to 15 minutes circulating the oil through all of the on board filters. Afterwards, all filter media is replaced with new filter media. Please adhere to a strict routine maintenance schedule and always replace the filter elements with genuine Fletcher OEM parts to ensure a clean hydraulic system is maintained to allow the equipment to continuously operate at peak performance levels. And the onboard auto fill system should always be used when either replenishing or replacing oil to eliminate the ingress of external contaminants during this process.

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## CUSTOMER SATISFACTION SURVEY

In keeping with the philosophy of continuous improvement and Fletcher's commitment to meeting the voice of the customer, we have established an online Customer Satisfaction Survey located on our website at: [www.jhfletcher.com/customerservice.html](http://www.jhfletcher.com/customerservice.html)

We will use your feedback to improve the quality of our products and services. In return for your time and opinion, we will provide you with a Fletcher Quality Assurance Sticker and the first 20 participants of each quarter will also receive a Fletcher hat.

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## JOB OPPORTUNITIES

Information on job opportunities and how to apply can be found on our website at [www.jhfletcher.com](http://www.jhfletcher.com).  
(AA/EEO Employer)

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## FLETCHER ON THE WEB

For the most up-to-date news, visit our website at [www.jhfletcher.com](http://www.jhfletcher.com)! There you can access our Literature, Newsletters, Bulletins, and Published Papers. Also, be sure to check out our newly added section featuring Technical Information Documents. Our site is constantly being updated, so check back often for the latest news and information.

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