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Human Factors and Fletcher

The process of designing and manufacturing coal mining equipment focuses on how the equipment is to be used by the operator, the sequence of use, and which functions are most important or most frequently used. This is what is called Human Factors or Ergonomics.

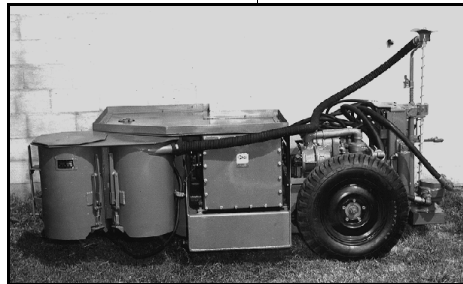
The National Institute for Occupational Safety and Health (NIOSH) defines human factors as “that field involving research into human psychological, social, physical, and biological characteristics, maintaining the information obtained from that research, and working to apply that information with respect to the design, operation or use of products or systems for optimizing human performance, health, safety, and or habitability”.

J. H. Fletcher & Co. considers human factors important in the design and operation of Fletcher mining equipment. Through ongoing research involving observation, surveys, onsite evaluations and investigation, as well as working with NIOSH and MSHA, we are developing equipment designed to maximize safety and productivity.

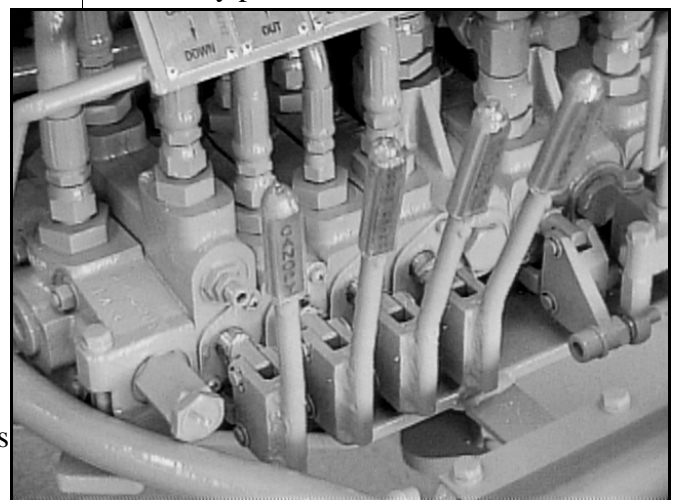
One of the areas Fletcher has tried to focus attention is Standardization. According to NIOSH, standardization means

to maintain the relative placement of controls and displays for similar types of equipment. This takes advantage of established habits and helps to eliminate unnecessary retraining. Fletcher has utilized standard handle

arrangements on machines for some time. Replacement handles to maintain this standardization are available and can be ordered by part number.



Early Roof Bolter



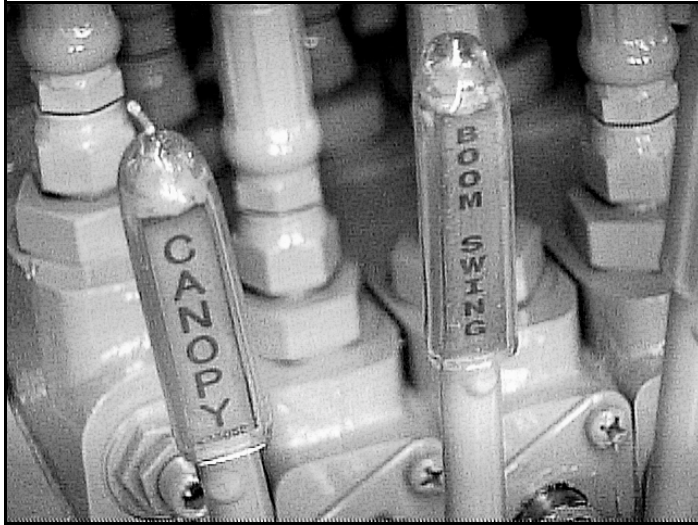
Typical Standardized Handles on RRII

When working with mining equipment, the operator must be able to

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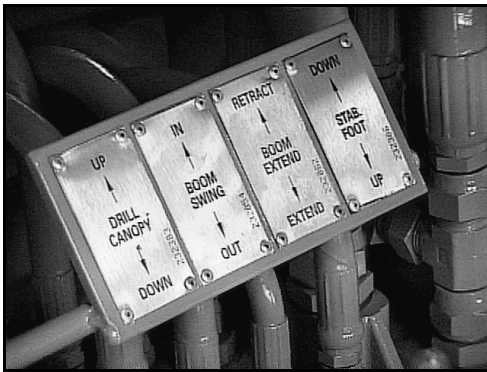
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identify controls accurately to avoid activating the wrong control. Fletcher control handles are designed with a clear polyurethane handle grip which clearly identifies the function of the control.

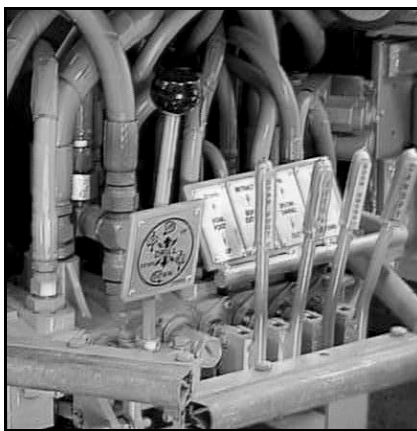


Typical Clear Handle Grip with ID Tag

Separate handle tags are also included on the machine. Each tag has a part number for ordering replacement tags. Of course, these handle tags as well as all other tags must be maintained to be effective.



Example of Handle Identification Tags



Joystick Control

Feed and rotation functions are the most commonly used functions on a roof bolter. Fletcher has combined these two functions into a single “joystick” control. This makes operation of these functions more convenient for the operator.

To assure that the operator is seated in the tram deck while operating the tram controls, Fletcher provides a “man in position” foot pedal in the tram deck. For the tram controls to operate, this pedal must be pushed in. When the pedal is released, the hydraulic oil is directed to other circuits.



Of course the most important factor for safe and efficient operation of equipment is training. Under state and federal regulations each mine has the responsibility of training machine operators. Fletcher offers materials to assist in this training.

As you can see, a great deal of time and energy goes into designing equipment with human factors taken into account. Optimizing human performance, health and safety as well as the productivity of the machine are all factors involved when designing and building mining equipment.

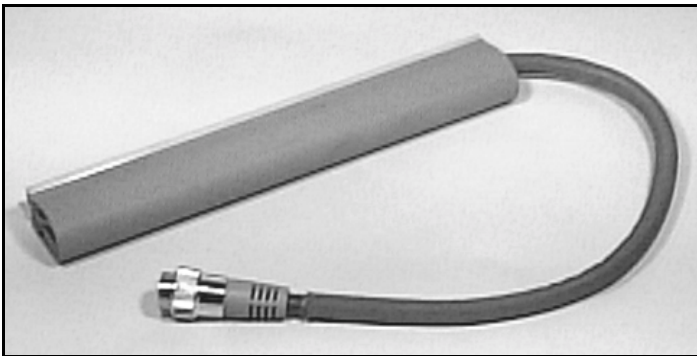
Through ongoing research and working with organizations such as NIOSH and MSHA, J. H. Fletcher & Co. is making an effort to design the best equipment available. To facilitate this effort we would welcome any input you may have into the design of Fletcher mining equipment. You may contact our Risk Management Department at 304-525-7811.

To Learn More About Human Factors

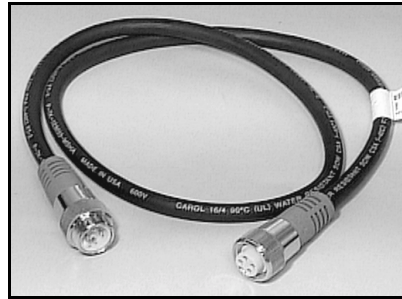
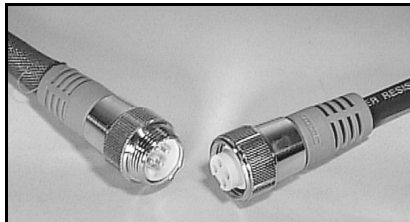
NIOSH has an informative website dealing with Human Factors and the research they are doing in this important field. Go to: <http://www.cdc.gov/niosh/pit> and click on “Worker Safety”.

New Intrinsically Safe Stop Switch

Fletcher is now offering as an option a new design for the stop switch on Fletcher roof bolters. The new stop switch design still uses the 1ft. and 2 ft. "strip switch" but allows for simple connections and troubleshooting by eliminating the need for junction boxes.



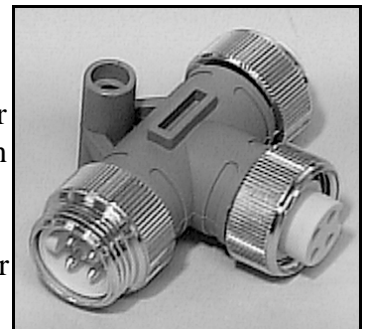
In place of the junction boxes, the switch connections are made by simple 4 Pin screw type molded connectors.



Wiring is made simple by connecting cordsets which come in 1, 2 and 3 meter lengths. Each cordset comes complete with male/female molded connectors allowing

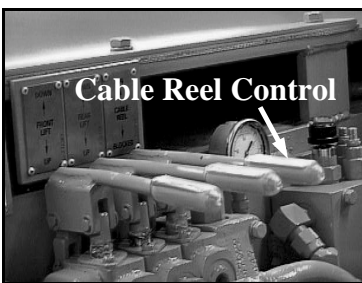
them to be chained together to the required length.

"T" Connectors are available for connecting multiple stop switches. To find out if you and your roof bolting equipment can benefit from the new Intrinsically Safe Stop Switch contact the Fletcher sales department at 304-525-7811.



Fletcher recommends using only OEM parts.

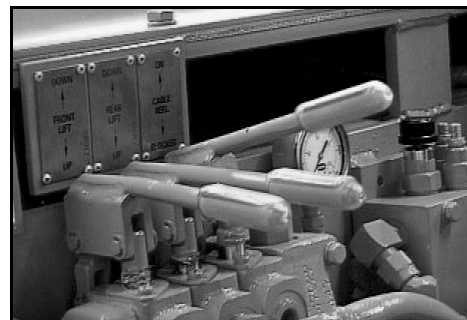
Announcing Change to Cable Reel Valve

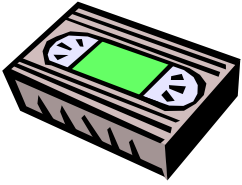


Until recently the cable reel on Fletcher equipment was actuated by pushing the cable reel control downward or inward. The current operational standard calls for pulling upward or outward to actuate the control. This change in handle direction has been made in an effort to prevent inadvertent actuation of the cable reel. By having the handle operate this way, the risk of inadvertent operation by material falling on the handle or an operator falling into a handle is significantly reduced.

All machines should be modified for this method of cable reel operation. The change requires a

new identification tag, control handle, and handle stop which can be ordered from Fletcher. J. H. Fletcher & Co. strongly recommends the use of OEM components when doing any kind of work on Fletcher equipment. For further information, contact the Risk Management department.





Video Programs

J. H. Fletcher & Co. has just completed production of three new video programs. The first is "MRS Operator Orientation" (PN 158075). This program provides information that is necessary for working with and around Mobile Roof Supports safely. The second video, titled "Safety Tips for MRS Maintenance Personnel" (PN 139042), stresses the importance of safety while performing maintenance on the Mobile Roof Support. The third is "The Fletcher Joystick Drill Feed and Rotation Control" (PN 158080). This 14 minute video demonstrates the operation of the the joystick feed and rotation control on Fletcher Roof Bolters and covers safety issues and start of shift inspection procedures of the joystick control mechanism. This tape is intended to supplement other programs covering machine

operation using separate feed and rotation handles. All three videos are available in VHS format and can be ordered by calling the Fletcher Risk Management department at 304-525-7811.

Fletcher Training videos should be used in conjunction with the operator's manual and the required task training. Do not use videos as the only method of training.

CORRECTION

In the last issue we gave the incorrect web site address for MSHA. The correct address is: www.msha.gov



The information contained in this newsletter has been obtained from sources believed to be reliable, and the editors have exercised reasonable care to assure its accuracy. However, J. H. Fletcher & Co. does not guarantee that contents of this publication are correct and statements attributed to other sources do not necessarily reflect the opinion or position of J. H. Fletcher & Co.

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