

under power between the dies in a press. This is what can and does happen when the electrical plug-in safety feature is not incorporated in the press.

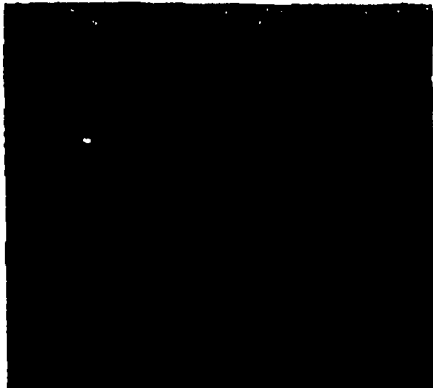


Figure 5

Figure 5 shows three different types of metal safety blocks. Each block is 30 inches high, and each has the electrical plug-in attachment. The point of interest in this picture is the weight factor:

1. The block on the left is made of steel and weighs 54 pounds.
2. The center block is black pipe and weighs 34 pounds.
3. The block on the right is made of magnesium; same height and wall thickness, one inch less in diameter, total weight only 9 pounds.

With the adoption of the new magnesium tubular safety block, an important reduction in weight lifting has been achieved for employees who use these blocks, particularly in the three-eighth inch wall blocks. Note the difference in the plug-in arrangements which are fastened to the blocks. Each one is the same in principle; the variation is a result of assembly in two different plants. Some of our plants attach the wood wedges to the safety block in the manner shown as a convenience to the employees.

The actual compression tests were made in the General Motors Technical Center in Detroit.

Figure 6 is a photograph of the compression tester we used at the research laboratory. This machine is hydraulically-powered and will compress up to 300,000 pounds maximum compression load. As the pressure

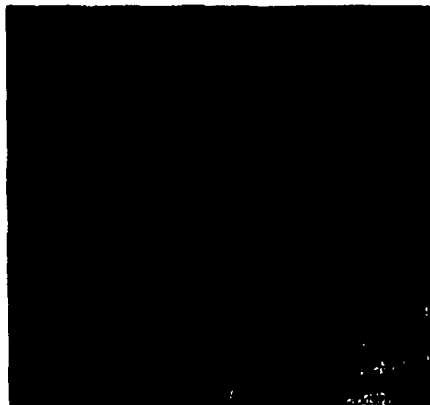


Figure 6

is applied gradually to the block between the platens, the dial indicator registers the pressure in pounds. The 30 inch—34 pound black-pipe block which is shown here between the platens was compressed to 124,000 pounds, at which time it began to bend and distort. Also, paint and metal fragments began to flake off the side of the tube.

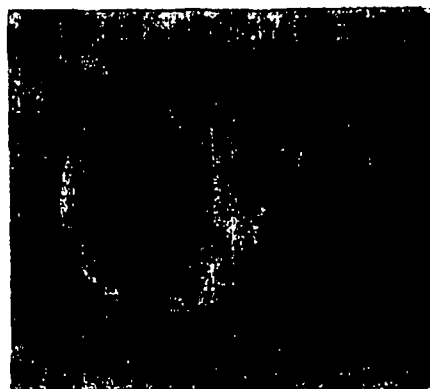


Figure 7

Figure 7 is a close up view of the black pipe block after 124,000 pounds test. The tube has bent under the terrific compression and the paint and particles of metal have flaked off the sides of the pipe. We did not compress this block to complete failure because we know from experience how the black pipe reacts when complete failure takes place.

With the tests we made on magnesium blocks, we feel we have exploded a myth about magnesium safety blocks. There was a feeling in some quarters that the tubular