

# “The rigidity and accuracy of the **Pulsar** gave us three to four times the tool life we were getting before.”

—Robert Esten  
Manufacturing Manager  
ITT - Cannon Electric Division

ITT Cannon is a worldwide producer of precision contacts and connectors for aerospace products and computer peripheral equipment. The Santa Ana, California, stamping facility supplies the Fountain Valley, California, and Santa Ana assembly division plants as well as facilities in Phoenix, Arizona, and Whitby, Ontario, Canada.

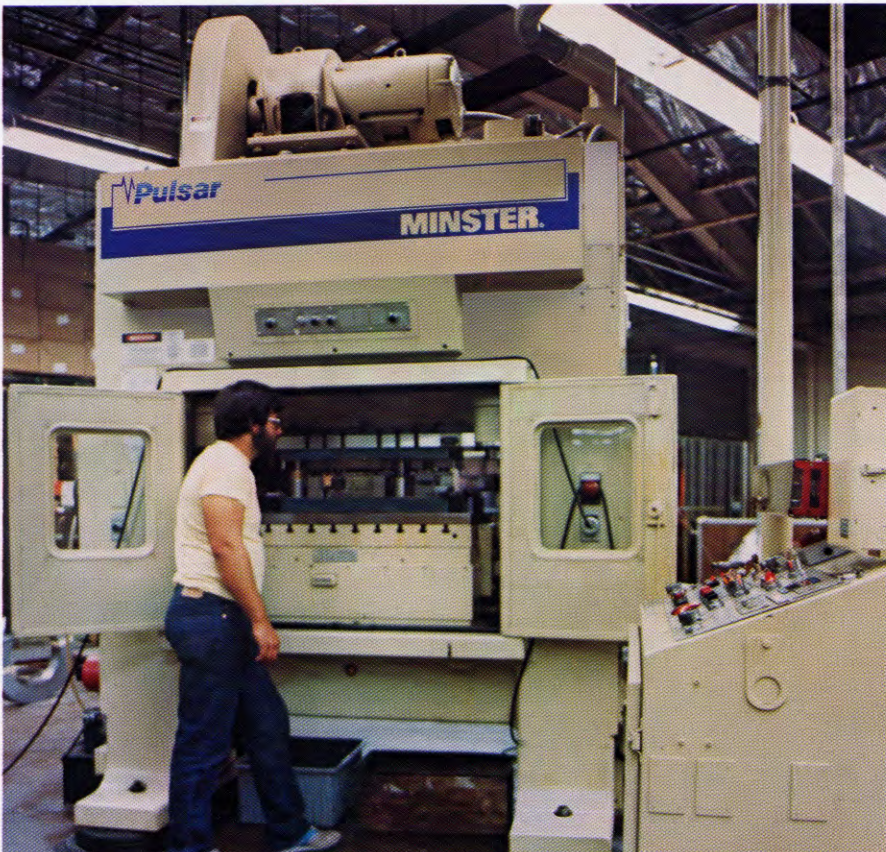
In 1980, Cannon's Manufacturing Manager, Robert Esten, was given the assignment to evaluate stamping production alternatives at the Santa Ana plant and recommend new, more productive approaches. Says Esten, "At that time all our high volume contact stamping at Santa Ana was being purchased from outside suppliers. We did a year's worth of research on all high speed presses available in the world before we made a decision. Other Cannon Division plants around the world were using a very well-known high speed press at that time, but I knew I didn't want another one of those if I could help it.

"It was during this period that Minster was developing the **Pulsar**. We saw enough early data on the machine that we decided to 'stick our neck out' and go with the **Pulsar**. Sometimes you have to take a chance to get ahead. The **Pulsar** decision turned out very well for us. We not only became up-to-date, we actually jumped ahead in technology in 'one fell swoop.'"

Within less than a week after its arrival at the Santa Ana plant, the first **Pulsar** was producing parts at 900 strokes-per-minute. In less than four months, two more **Pulsars** were ordered.



Robert Esten, Manufacturing Manager,  
ITT - Cannon Electric Division



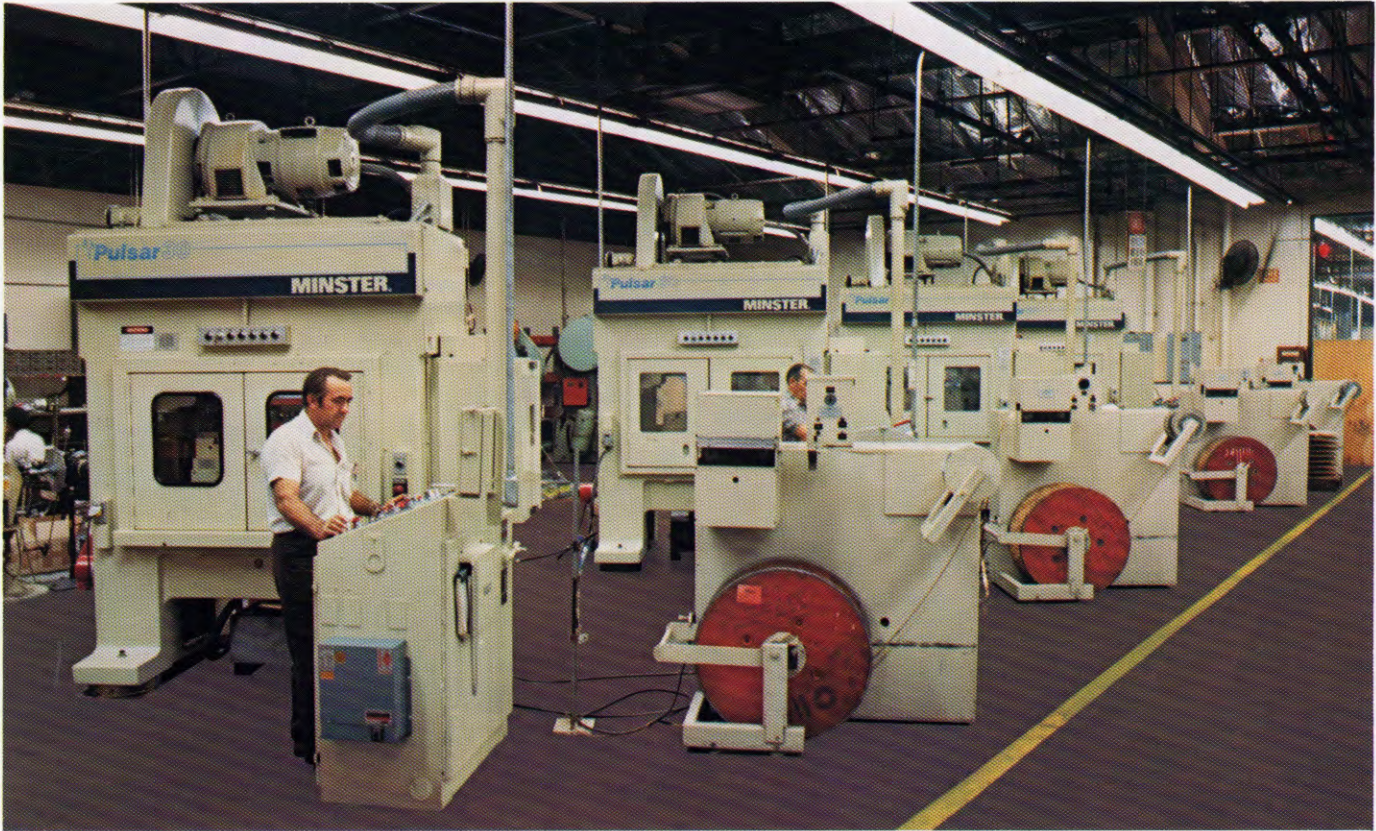
**Pulsar 60** produces connector hardware.

The Santa Ana plant now operates five **Pulsars** — four thirty-ton machines and one sixty-ton. The program has given Cannon greater control of its stamping production. Prior to installing the **Pulsars**, Cannon produced only 20% of its stampings in-house; they now turn out 75% of their parts. "The project turned out very well," says Esten. "The results have been so good we plan to accelerate the program."

Bob Esten has been involved with high speed, precision stamping for over 24 years. Based on that experience — which involved several types of high speed presses — Esten feels that the **Pulsar** has made the most positive impression of all. "The uptime we experience with the **Pulsars** is most impressive . . . day in and day out. Frame rigidity and accuracy of alignment also show in our results with the **Pulsar**. They've given us a magnitude of 3 to 4 times the tool life we used to experience."

ITT Cannon is now running a total of almost 80 dies in its five **Pulsars**. All material run is less than .025" thick, with much being less than .005" and with extremely close tolerances.

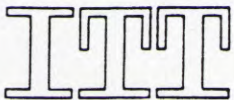
High volume parts (50% of total weight produced) run at up to 1400 strokes-per-minute. The average of all tools run in the **Pulsar 30's** is 900 spm.



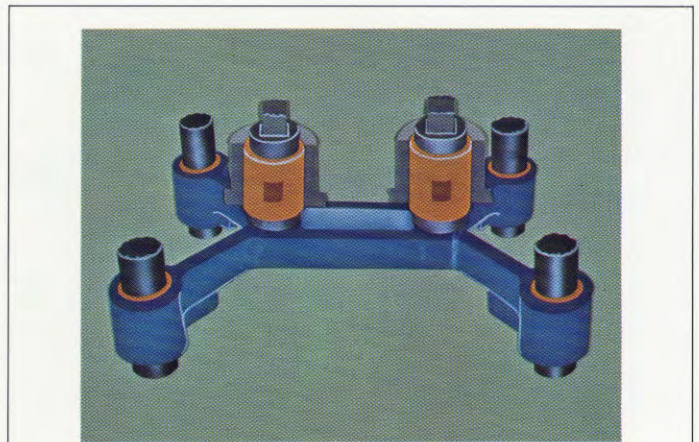
Four 30-ton **Pulsars** produce close-tolerance parts at up to 1400 spm.

"We had absolutely no problems in adapting to the **Pulsar**. The simplicity of the machine makes maintenance easy without extensive re-training of our people. A major unexpected benefit was the low noise level of the **Pulsars**, and that fits nicely with an ITT corporate objective of lowering noise."

Esten feels confident about Cannon's future with the **Pulsar**. "An interesting sidelight to the **Pulsar** story occurred when the Chairman of the Board of the ITT Corporation toured our plant," relates Esten. "We were producing a part from .004" material in our original 30-ton. As a demonstration, we retracted the bolster, brought it up again, and resumed producing parts . . . with no change in part dimension. I think he was impressed!"



*Cannon Electric Division*



#### **Accurate Slide-Guiding System**

The **Pulsar** guiding system surrounds the **Pulsar** slide. Extra-large diameter hydrodynamic guide posts provide stability and assure parallelism under the most severe operating condition.

The two inner slide pistons (one on the **Pulsar 20** provide hydrostatic guiding stiffness. The hydrostatic oil pockets are located so as to isolate the slide from the angular front-to-back movement of the connections as they are driven from the crankshaft.

This guiding system combination contributes to part accuracy and long tool life.