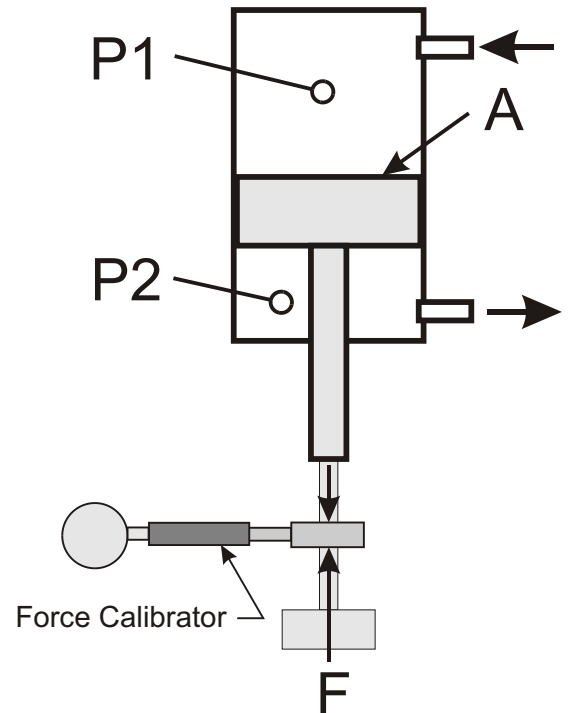


Force acting on a weld is usually applied to the workpiece through a pneumatic cylinder. The pressure in the cylinder acting on the area, A, creates a force at the weld tip. While the force is generally proportional to pressure, there are a number of influences that come into play.

Force, F, is related to P1, P2, the inertia of the ram and its acceleration, and cylinder wall friction. When the weld tips are in contact with the part, the basic generalized relationship is:

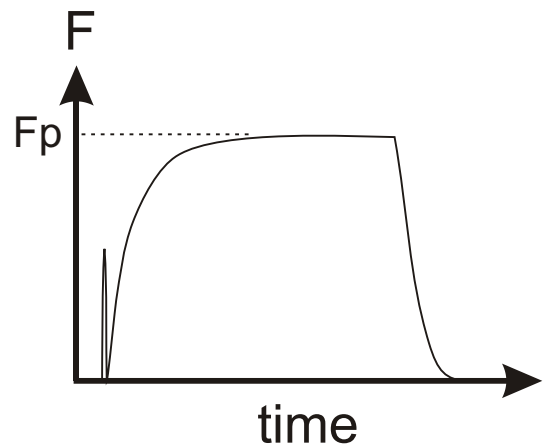
$$F = (P1 - P2) \times A$$

Where P1 is the pressure acting on the top of the cylinder, P2 is the pressure acting on the bottom of the cylinder, and A is the cylinder area.



To Calibrate Weld Force:

1. Select the correct WeldProbe Calibrator head for spot, projection, or seam welding and the correct force range.
2. Hold the force sensing head between the electrodes.
3. Turn current off and initiate weld cycle.
4. Read peak force, Fp, from display.
5. Adjust the pressure and repeat until correct force is reached repeatedly.



Typical force trace for one weld.

