

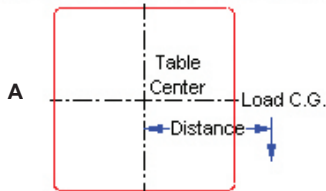


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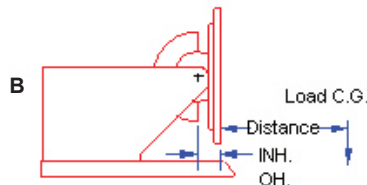
### Selecting The Proper Positioner

#### POSITIONER ROTATING CAPACITY



Load x Distance = Rotational Torque Rating  
(Lbs.) (Inches) = (Lbs. - Inches)

#### POSITIONER TILT CAPACITY



Load x (Distance + INH OH) = Tilt Torque Rating  
(Lbs.) (Inches) = (Lbs. - Inches)

- Determine the total weight you will be positioning, including fixtures.
- Calculate the center of gravity of the work.
  - Distance from rotational center.
  - Distance from face of table.
- Using the distance found in step 2-A, calculate the rotational torque required. (Illustration A)
- Using the distance found in step 2-B, calculate the tilt torque required. (Illustration B)
- Compare the required rotational and tilt torque with the chart. Select a Positioner with a load capacity equal to or greater than your requirements.

Pipe Weight Per Linear Foot		
Nominal Pipe Size	Thickness Schedule 40	Standard Pipe Weight
½	0.109	.851
¾	0.113	1.131
1	0.133	1.679
1¼	0.140	2.273
1½	0.145	2.718
2	0.154	3.653
2½	0.203	5.794
3	0.216	7.580
3½	0.226	9.110
4	0.237	10.790
5	0.258	14.620
6	0.280	18.980
8	0.322	28.560
10	0.365	40.500
12	0.406	49.600
14	0.438	54.600
16	0.500	62.600
18	0.562	70.600
20	0.594	78.600
24	0.688	94.600
30	0.688	118.700

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### Positioner Cost Analysis

Deposition rates for welding a ¼" single 45° bevel, single-pass fillet weld in two 1 inch thick carbon steel plates. Average deposition rates in lb/hr are for one-hour period. Average deposition rates for eight-hour shift will be lower. Average rates for manual welding will be significantly lower over an eight-hour shift due to operator fatigue.

		Positioned for automated downhand (flat) welding	Positioned for manual downhand (flat) welding	Manual vertical	Manual overhead
Stick electrodes	Instantaneous Actual arc-hrs.	- -	12 lb/hr (5.4 kg/hr) 6 lb/hr (2.7 kg/hr)	3 lb/hr (1.4 kg/hr) 1.5 lb/hr (0.68 kg/hr)	1.5 lb/hr (0.68 kg/hr) 0.75 lb/hr (0.34 kg/hr)
MIG-Argon	Instantaneous Actual arc-hrs.	20 lb/hr (9 kg/hr) 20 lb/hr (9 kg/hr)	12 lb/hr (5.4 kg/hr) 10 lb/hr (4.5 kg/hr)	3 lb/hr (1.4 kg/hr) 2.5 lb/hr (1.1 kg/hr)	1.5 lb/hr (0.68 kg/hr) 1.3 lb/hr (0.59 kg/hr)
Flux-cored, CO <sub>2</sub> shielded	Instantaneous Actual arc-hrs.	20 lb/hr (9 kg/hr) 20 lb/hr (9 kg/hr)	20 lb/hr (9 kg/hr) 10 lb/hr (4.5 kg/hr)	5 lb/hr (2.3 kg/hr) 2.5 lb/hr (1.1 kg/hr)	2.5 lb/hr (1.1 kg/hr) 1.2 lb/hr (0.54 kg/hr)
Submerged arc	Instantaneous Actual arc-hrs.	55 lb/hr (25 kg/hr) 55 lb/hr (25 kg/hr)	55 lb/hr (25 kg/hr) 27 lb/hr (12 kg/hr)	- -	- -