

Equipment Selection Rules of Thumb

1st Rule of Thumb - Regardless of the style of equipment employed or the number of product features included or the level of skill an operator may possess; the consistency of the wire plays a very important role in achieving successful performance. If the wire is supplied with a wide diameter tolerance band or varies in tensile value along its length, the straightening device will not provide consistent results. As they say about computer programming; *garbage in – garbage out.*

<p>Roll Straighteners</p>	<p>Number of bearing “rolls”</p>	<p>There is a ratio of degree of straightness and the number of rolls, but it is not one to one. Usually a “standard grade” straightener will use 5 or less and a precision grade will usually be 7 to 12 rolls.</p>
	<p>Roll Diameter</p>	<p>The diameter of the straightening rolls should be as small as possible for the wire size to be straightened . High quality roll bearings must be used as the “loads” will be greater but the performance will offset the cost.</p>
	<p>Roll Position</p>	<p>The closer the center line positioning of the bearing rolls the better the performance and the shorter the distance required to straighten the wire. Precision grade straighteners usually have this feature and therefore their physical length (even in a 4 plane configuration) will be shorter which is good for tight installations.</p>
	<p>Roll / Bearing Shape</p>	<p>The roll bearings should be of good quality, capable of being ground to a shallow angle “V”, radius value, or shape. The bearing rolls should have “relief” cuts, radius edges, and a small trough or “hollow” in the base. They should also be rated for high speed operation to at least 1,000 feet / min.</p>
	<p>Straightener Set-up</p>	<p>The set-up of roll straighteners has historically been a bit of “black art” in that most common designs had no means of knowing what roll positions did what and what configuration was best for each application. Precision grade straighteners usually have some form of measuring method for set up. Typically a 2 plane configuration is good for removing “cast” or coil set and good for straightening softer wire. A 4 plane configuration is used when your tensile is greater or you wire has a “helix” in in.</p>
	<p>Configuration / Flexibility</p>	<p>A precision grade straightener offers far more features and operating flexibility than a standard grade. It can be configured with multiple planes and has more adjustments. Each bearing roll should be independently adjustable, have a “forgiving” “V” groove, and at least be a shielded type.</p>
<p>Rotary Straighteners</p>	<p>Configuration / Flexibility</p>	<p>A basic rotary straightener will have a motorized wire feeder, rotating arbor, and adjustable guide tooling. More advanced systems will include a motor assisted wire payoff with adjustable back tension, an anti-twist device, a wire cleaner / lubricator, counter-rotating arbors with independent speed settings, a motorized feed drive with variable ramping speeds, and even a cutting head.</p>
	<p>Straightener Set-up</p>	<p>Set up of the rotary straightener is basically a matter of setting the right speeds and feeds of the unit. The rotating guides must be of the correct material for the application and their setting must be compatible with the wire size wishing to be straightened. The system with the fewest “recordable” setting features will require more time, and material, to achieve success.</p>
	<p>Options</p>	<p>Many standard features on one suppliers unit may be options on another's. Some extra features may include cutter heads, dump trays, or even re-winders.</p>