EDWIN LOWE LIMITED, BIRMINGHAM, UK.

WELDED STEEL ROLLERS INCORPORATING PREFABRICATED BEARING HOUSING ASSEMBLIES (CARTRIDGES) - INDICATION OF MAXIMUM BUDGET WELDING CYCLE TIMES – IMPERIAL/INCH VERSION

1. Based upon using the new design of twin headed welding lathe, used by most of our customers - a budget weld cycle time of approximately 36" (inches) per minute, is used by most welding machine manufacturers.

2. To calculate the circumference of a circle, we use the formula:

   Circumference = $2 \times \pi \times r$

   where 'r' is the radius of a circle, and where $\pi = \frac{22}{7} = 3.143$

EXAMPLE

On this basis, we can calculate the following budget cycle times i.e. actual dwell time. **

1. 4" / 102 MM DIAMETER ROLLERS

Circumference = (2 x 3.143 x 2) = 12.6"

Therefore weld time = $\frac{12.6"}{36.0"} \times 60$ seconds = 21 seconds

2. 5" / 127 MM DIAMETER ROLLERS

Circumference = (2 x 3.143 x 2.5) = 15.7"

Therefore weld time = $\frac{15.7"}{36.0"} \times 60$ seconds = 26 seconds

3. 6" / 152 MM DIAMETER ROLLERS

Circumference = (2 x 3.143 x 3) = 18.9"

Therefore weld time = $\frac{18.9"}{36.0"} \times 60$ seconds = 31.5 seconds

4. 8" / 200 MM DIAMETER ROLLERS

Circumference = (2 x 3.143 x 4.0) = 25.1"

Therefore weld time = $\frac{25.1"}{36"} \times 60$ seconds = 41.9 seconds

ADDITIONAL COMMENTS

1. ACTUAL DWELL TIME **

- This represents the actual time the guns are physically welding the roller circumference.
- To obtain a gross cycle time – we must add to this the roller preparation and eject cycle times.

2. CLEAN COMPONENTS ARE NECESSARY

All components should obviously be clean to provide good electrical contact during the welding process i.e. roller tube, roller shaft and bearing housing cartridge.

3. NO DAMAGE TO COMPONENTS - DURING THE WELDING PROCESS

Provided that these recommendations and budget cycle times are followed:

- There is no damage to the seal or to the bearing or to the grease within the prefabricated assembly cartridge.
- There is no problem with damage resulting from current arcing between the bearing race and the bearing balls.

This is based upon our customers' experience of manufacturing rollers with our cartridges for many years.

4. FASTER CYCLE TIMES ARE POSSIBLE

Faster weld cycle times are certainly possible and have been observed by us at some customers' factories. However, the figures outlined here give a good working basis for a preliminary evaluation exercise.

A V Cook
Edwin Lowe Ltd
Birmingham, England
05.03.14