

CASE STUDY #3

Scope:

Demanding spring for medical device

Request:

The requested solution from the customer was to coil and deliver 240 springs per minute directly to the assembly line. All spring should be heat treated and also dimensionally checked before delivery.

Spring parameters:

- Outside diameter (D_e) = 10 mm
- Wire diameter (d) = 0,6 mm
- Free length (L_0) = 50 mm
- Number of coils (N_t) = 12
- Coil ratio (w) = 15,7
- Material = 302 Stainless steel spring wire
- Spring force 1,9 N @ 30 mm

Coiling these springs in-line is a better solution than handling them in another way. The springs had a tendency to entangle when collected in bulk and were difficult to separate. With the COLOMBI coiling system all springs are handled separately and never come in contact with each other. Springs are delivered directly into the product.

Solution:

Three CNC spring coiling systems with two outlets each, including all post manufacturing options. Each system delivers 80 springs per minute, giving a total of 240 springs per minute in six tubes. The post manufacturing options included diameter check with feedback, length check with feedback, COLOMBI patented in-line heat treatment, length control and load control.

Conclusion:

Three assembly lines are now running in full production, including nine COLOMBI in-line spring coiling systems.

The economical benefits with the COLOMBI in-line spring coiling system are substantial and have given the customer a significant competitive advantage over competitors.

Customer response: Our product wouldn't be competitive without the COLOMBI in-line spring coiling systems.