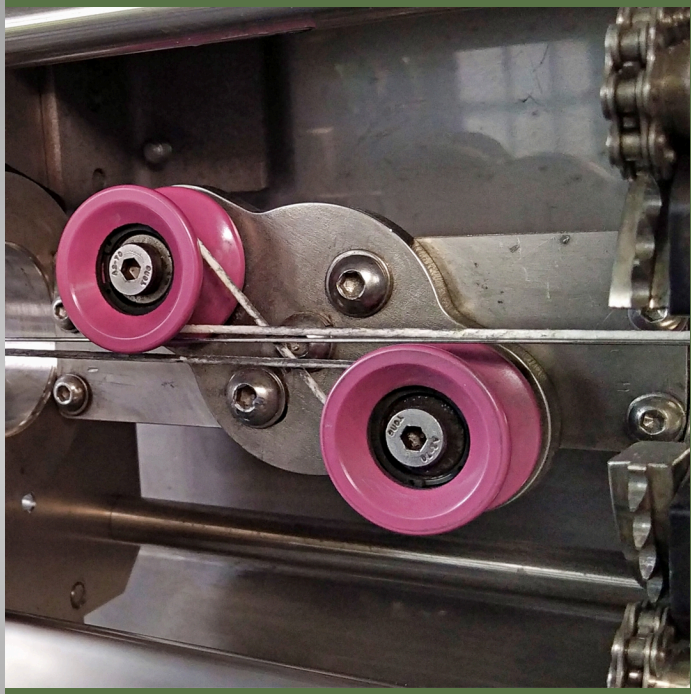
Boockmann
Engineering GmbH

2025



Multi Wire Cleaning

Made in Germany

www.boockmann.com

HELILUB®

HELICORD®

Table of Contents

I. Multi Wire Cleaning Machine

Field of application

For treatment of multi wire, fine wire and strip surface a multi wire cleaning machine is now available. It can be used to

- wipe off metal dust and particles as well as oily or other contamination from the surface of wire and strip, or
- evenly apply lubricant or a release agent as well as other functional substances.

The preferred field of application is the surface treatment of wire for strands with an individual diameter of 0.1 to 0.8 mm. Single wires of a diameter of 0.3 mm or bigger are preferably to be treated by HELICORD® because of the multiple 360° loops and higher process reliability. Furthermore, thin rectangular shaped wire, flat conductors, metal strips of a thickness up to 0.5 mm and widths of up to 300 mm can be treated. The material to be treated can be steel, copper, aluminum or other non-ferrous metal. The wire or strip can be bare or metallized.

Short description

The strand to be cleaned is fed through two parallel fleece strips pressed together by an adjustable force against the feed direction in the process zone (see picture 8).

For adjustment to the wire diameter, different strengths of fleece are available.

Picture 8: Multi wire cleaning machine

Picture 9: Fleece run

For an intensive contact between fleece and wire or strip as well as for setting the friction force, four rollers are arranged in pairs in the process zone and adjustable against each other in height.

Both fleece strips are fed through the process zone from the supply spool under dancer-controlled tension at a constant speed and wound onto a take-up spool.

Properties

The multi wire cleaning machine and HELICORD® technology have many advantages in common:

- energy input independent of wire speed for each unit of surface area
- continuous supply of fresh cleaning medium and the possibility of adding cleaning liquids or application (e. g. lubricants, anti-corrosives etc.)
- regulation of the fleece speed and possibly of the dosage quantity proportional to the speed of the strand during start-up or slowing down of the production line.

In order to use the entire surface of the fleece strip, the angle between the longitudinal axes of the fleece and process zone can be adjusted.

When cleaning rectangular profile wire or strips it is necessary to consider that for wire of a diameter of more than 0.5 mm, the sides where the two fleece layers touch are not treated properly due to the principle.

The machine is microprocessor-controlled. A touch panel is used as operator interface showing the operating status as well as possibly appearing error messages, and to enter setpoints for fleece tension and fleece speed.

In order to replace the fleece supply spool and to insert strips to be treated, the upper and lower part of the machine connected by a hinge joint can be opened (see picture 9).

Technical Data

1	Speed of wire or strip	≤ 20 m/s
2	Wire diameter	0.1 – 0.8 mm (AWG 20 to 38)
3	Height of the run of the wire or strip	1.0 – 1.2 m (adjustable)
4	Dimensions of fleece	Width: 300 mm Thickness: approx. 1 mm Length: 100 m Core diameter of the spool: 71 mm Outer diameter of the spool:320 mm
5	Adjustment range of fleece speed	1 – 1.000 mm/min
6	Adjustment range of pretension fleece	2 – 20 N
7	Electric outlet	115 – 230 VAC / 50 (60) Hz, 1 A
8	Primary protection	4 A
9	Input signal for speed of wire or strip from line control	0 – 10 VDC
10	Acoustic alarm	110 dB in 1 m distance, 2500 to 3000 Hz, acknowledgeable
11	Optical alarm	Red flash light
12	Dimensions H × B × T (mm)	1.600 – 1.800 × 1.000 × 700
13	Operating temperature	± 10 to + 45°C
14	storage and transport temperatures	– 20 to + 60°C
15	Relative air moisture	5 to 70 % at 25°C (non-condensing)
16	Ambient air pressure	860 to 1080 hPa

Table 18

II. Appendix

1 Checklist – Information on Shipment of Wire Samples for Tests to Boockmann Engineering

CHECKLIST – Information on Shipment of Wire Samples for Tests to Boockmann Engineering

Pos	Information Point	Details				Remarks
I	**Adress and Customs Information**					
1.	Delivery Address	Boockmann Engineering GmbH Eckartspfad 6 97708 Bad Bocklet / OT Steinach, Germany Phone: 0049-9708-7046-0				
2.	Remarks on the shipping documents (invoice / waybill)	Incoterms: DDP "Delivered duty paid" Permanent duty paid entry – wire samples free of charge. No commercial value. Not for sale! Customs tariff number Value for customs purpose only: 1US$ / spool				To avoid charges for customs clearance and tax, the value should be as low as possible.
II	**Required Quantity of Wire Samples and Useful Information**					
1.	Wire length for infrared spectrometric **analysis**	About **10m**				Analysis of hydrocarbon surface contamination.
2.	Wire length for **trials** on our laboratory HELICORD® or HELIFIL equipment:	- minimum **2,000 m** per trial - 1 reference sample of minimum **10 m** for analysis, or - minimum **200 m** for welding tests				This requirement should be discussed with the customer and stipulated according to their special application before dispatch.
3.	**Expectations** of the customer	- determination of amount of impurities - cleaning degree / tolerable residual contamination with hydrocarbons in mg / m^2 - finish application (type and amount - welding tests				The customer should describe their expectations for treatment with HELICORD® or HELIFIL of each wire sample
III	**Technical Requirements for Treatment in Our Laboratory**					
1.	Range of wire diameter	- from **0.1 to 2.0 mm** for steel wire and hard wire made of non-ferrous metals - from **0.3 to 3.0 mm** for soft metal wire made of non-ferrous metals (alloys of Al, Cu etc.) - from **1.0 to 6.0 mm** for flexible insulated conductors				
2.	Maximum wire speed	- 100 m/min.				Limited by the winder of the laboratory equipment
3.	Dimensions of pay-off spools of the wire to be treated	Outer Ø **mm**:	<760			
		Width Ø **mm**:	<400			
		Arbor Ø **mm**:	20 to 51 – on small spools Ø <400 mm 40 to 127 – on large spools Ø >400 mm or 215 for basket spools			
4.	- Dimensions of take-up spools or - winding with a drum coiler into a drum	Spool type	**K100**	**SD300K**	**K355**	K355 for bigger wire sizes and cables
		Outer Ø **mm**	100	300	355	
		Core Ø **mm**	63	212	224	
		Width outer/inner Ø - **mm**	100 / 80	103 / 91	200 / 160	
		Arborhole Ø **mm**	16	50.5	36	
		Winding volume **cm^3**	379	3220	9530	
		Wire weight for copper alloy wire **kg / spool**	1.6	16	48	

2 Decision Diagram for Wire Surface Cleaning and Coating Machines

Decision Diagram for Wire Surface Cleaning and Coating Machines

This table is intended as non-binding guidelines only. No guarantee of feasibility can be derived from it.

Wire size	Fine			Medium			Big			
Process	Coat		Clean	Coat		Clean	Coat		Clean	
Wire Ø-range [mm]	0.03 – 0.3		0.03 – 0.3	0.1 – 2		0.1 – 1	0.3 – 25		0.3 – 3 or 8	
Material state	solid	liquid	liquid	solid	liquid	liquid	solid	liquid	solid	liquid
Required cord tension range [N]	0,2 - 5 N	0,2 - 5 N	0,2 - 10 N	1 – 30 N	1 – 30 N	1 – 30 N	10 – 250 N	10 – 250 N	10 – 250 N	10 – 250 N
Machine recommendation	NB56G0 (no yarn/cord looping) NB56G1 (yarn/cord looping) (Both optionally with liquid pump or in-situ yarn/cord impregnation) NB56G6 (heated process zone, yarn/cord looping)			NB59 (Optionally with liquid pump)			NB57 NB57W (space-saving; Ø ≤ 3,2 mm) (Optionally each with liquid pump)		NB57; NB57W (space-saving; Ø*) NB58, NB58W (space-saving; Ø*) (Optionally each with liquid pump)	
		NB56G0 (no yarn/cord looping) NB56G1 (yarn/cord looping) (Optionally each with liquid pump)		NB59 (Optionally with liquid pump or in-situ yarn/cord impregnation)			NB55 (drum coiler) NB57 NB57W (space-saving; Ø ≤ 3,2 mm) (Optionally each with liquid pump)			
			NB56G0 (no yarn/cord looping) NB56G1 (yarn/cord looping) (Optionally each with liquid pump)							
									NB57 (Optionally each with liquid pump)	

* NB57W / NB58W: see chapter 3.1(„HELICORD® - Standard Models"), have the following limitations in diameter:
- Soft metals: Ø ≤ 8 mm
- Hard metals: Ø ≤ 1,6 mm
- Cored / tubular wire: Ø ≤ 3,2 mm

Boockmann Engineering GmbH

Eckartspfad 6
97708 Bad Bocklet / OT Steinach
Germany

info@helicord.de