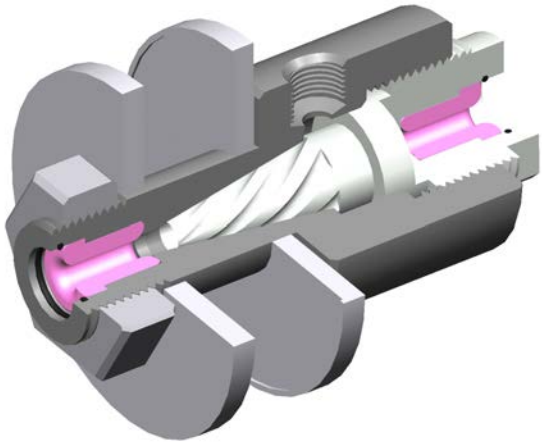
REINIGUNGSTECHNIK

AIR WIPES

for Wire, Cable & Stranded Wire

- Developed for Wire Industries
  - Highly Wear-Resistant Body
  - Controlled Air Flow
  - Efficient Drying at High Speed
- Seven sizes for diameters up to 17 mm available
- Low energy consumption

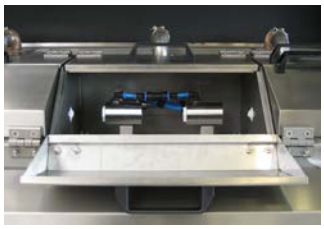


Benefits at a glance:

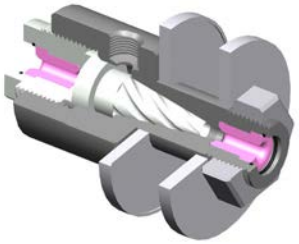
- Designed for the wire industry – optimal drying at high speed
- Low air consumption – save air and reduce noise
- Stainless steel body – robust, compact and easy to integrate
- Dismountable body – easy exchange of parts

All versions feature very efficient, economical and quiet operation.

GET YOUR WIRE DRIER!



For the drying of wire, strand, cable and small tubes GEO developed a stainless steel air wipe, which guaranties optimal drying even at high speed and rough handling. The stainless steel body of the nozzle is resistant to aggressive agents, unlike the usual plastic jets. It features protective ceramic inserts for bare wire applications and can be completely dismantled. Worn or broken pieces can be replaced. The compact design fits easily into compact process lines.



A surface is dried by an airstream, which is lead through a helical teflon body inside the nozzle. The airstream is accelerated, pushed into rotation and blown against the material running direction. This causes an enormous shear impulse on the interface between the profile surface and the water. It exceeds the interfacial energy of the adhering fluid.

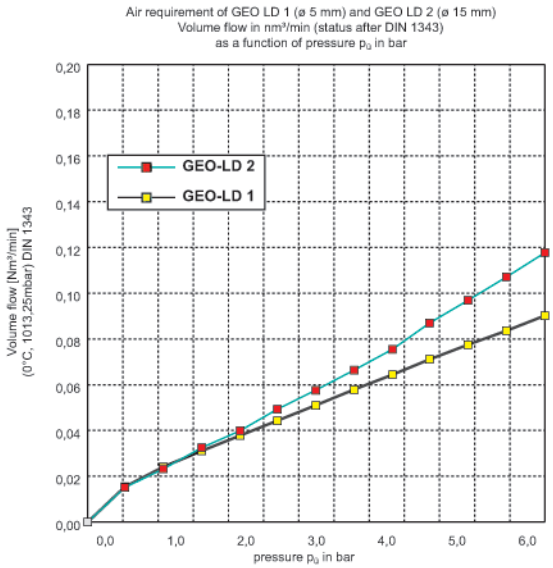
Both the shear impulse and the additional acceleration of the airstream by the injection effect leads to best drying results; with low air consumption and high speed processing. Alternative methods are clearly outclassed.

The air wipe model AW-C is available in seven sizes to achieve optimal drying results at different wire diameters.

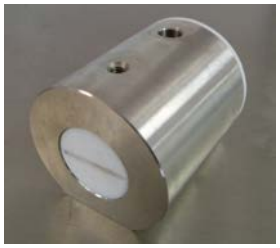
THE RIGHT CHOICE

Product	Inner Diameter	Wire Diamter*
AW04C	4,0 mm	0,0 – 2,0 mm
AW05C	5,0 mm	1,5 – 3,0 mm
AW06C	6,0 mm	2,5 – 4,0 mm
AW08C	8,0 mm	4,0 – 6,0 mm
AW10C	10,0 mm	6,0 – 8,0 mm
AW15C	14,5 mm	8,0 – 12,0 mm
AW19C	19,0 mm	12,0 – 17,0 mm

* recommended diameter range



CUSTOMIZED DESIGNS



Special designs e.g. with stainless steel insert and special forms made of plastic material complement the range of GEO's air wipes. For the drying of strips, profiles and pipes custom designs are available upon request.

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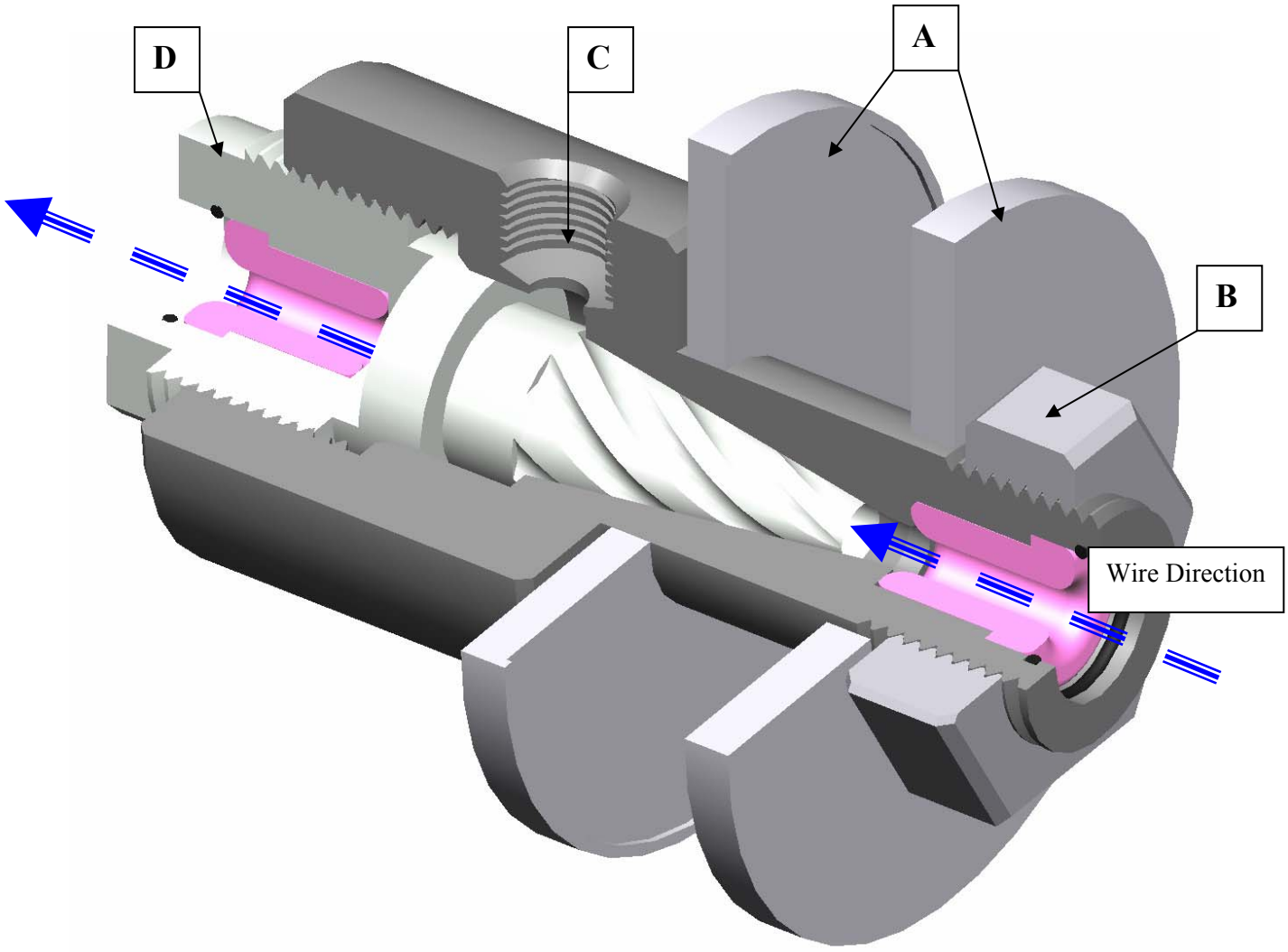
Assembly and Directions for Use

The air-wipes are mounted with the washers (A), usually to a partition wall or sheet metal. The air-wipe can be firmly fastened using the nut (B).

Before mounting the air-wipe, make sure the correct direction is selected.

The exact alignment of the air-wipe is important for its drying and blowing performance. The wire, cable, or braid should be passed through the air wipe as centrically as possible. Contact between the wire and the air-wipe should be prevented.

The compressed-air inlet (C) should be connected to the compressed air supply via a pressure regulator. The regulator should be adjusted to achieve the necessary drying performance. The volume flow can be controlled by the Teflon screw (D), which vortexes the compressed air. Initially, the screw should be screwed in as far as possible to reduce the volume flow.



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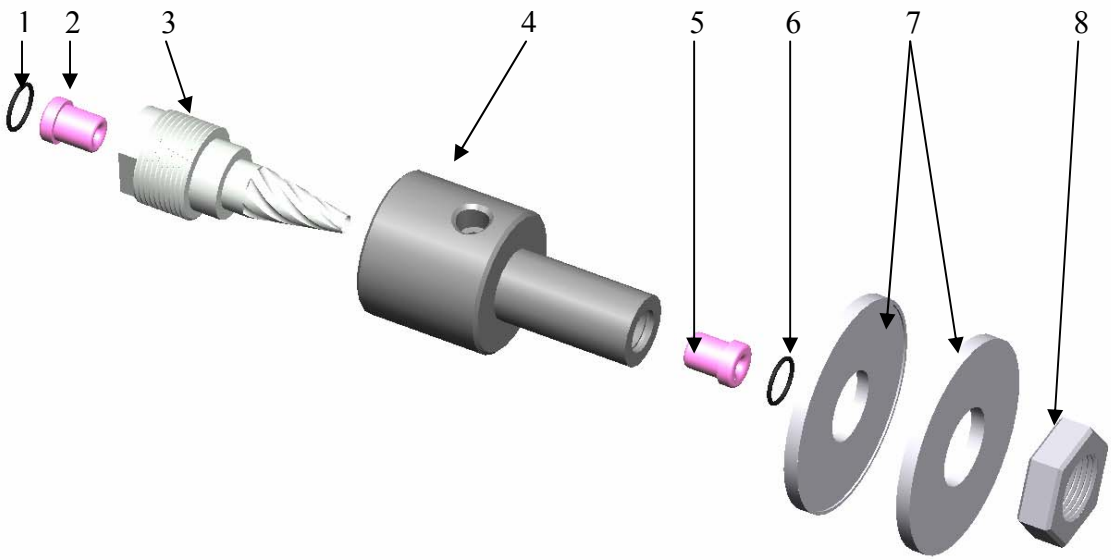
Air-Wipe Construction

1. Retainer (seal)
2. Ceramic guide
3. Adjusting screw (Teflon)
4. Air-wipe casing
5. Ceramic guide
6. Retainer (seal)
7. Washers for fixing
8. Nut



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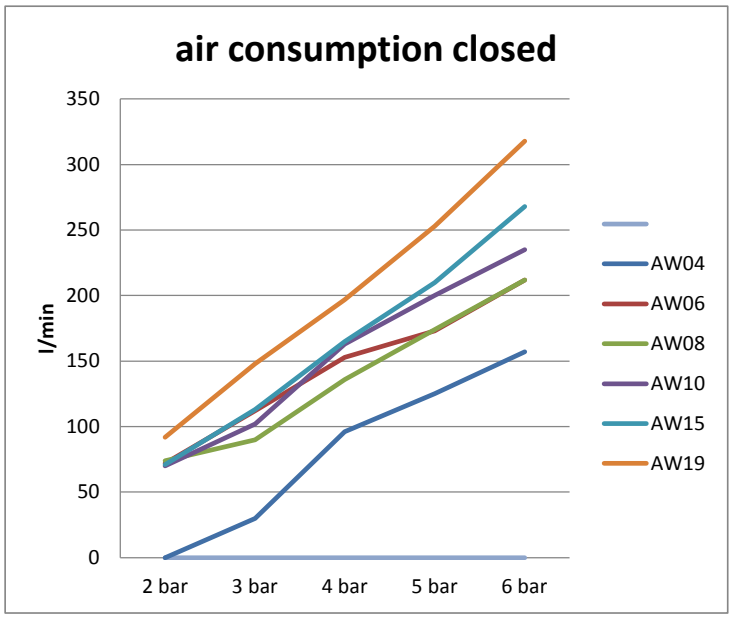
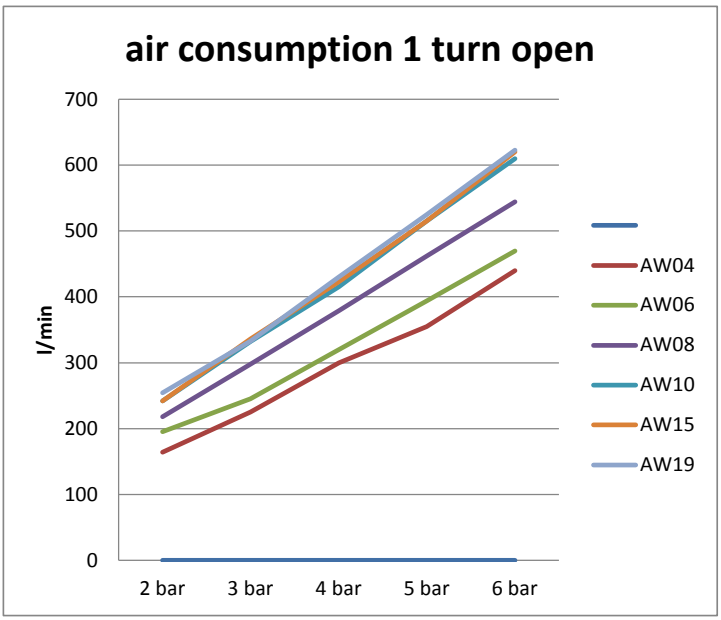
Air Consumption (l/min)

Nozzle / Type	closed nozzle					1 turn open				
	2 bar	**3 bar**	**4 bar**	**5 bar**	**6 bar**	**2 bar**	**3 bar**	**4 bar**	**5 bar**	**6 bar**
AW04	-	30	96	125	157	164	225	300	355	440
AW06	72	112	153	173	212	195	245	320	394	470
AW08	74	90	136	174	212	218	298	379	462	544
AW10	70	102	163	200	235	242	332	415	515	610
AW15	71	113	165	210	268	242	336	423	515	620
AW19	92	148	197	253	318	254	333	430	525	623
Ringnozzle Ø25 GEO	172	243	292	420	360					
Ringnozzle Ø Misumi	168	232	290	355	418					
Slotted Nozzle 25x2,5	240	325	419	516	625					
MV40R Ravebo	160	226	294	360	430					





REINIGUNGSTECHNIK

MECHANICAL CLEANING

for Pipes, Rods & Cable

- Cleaning with rotating round brushes
- Removal of loose adhering surface residues
- Continuous adjustment to material diameter ranging from 10 mm to 60 mm (depending on model)

Benefits at a glance:

- Effective, economical and environment friendly
- Small footprint / In-line cleaning within the smallest space
- Operator friendly
- Various round brushes from the standard range of various manufacturers available

BRUSHING MACHINE BMG-RBS

The BMG-RBS brush cleaning system is a compact, environmentally friendly and cost-effective system for polishing or to remove loose adhering surface contamination from pipes and rod in a continuous process.

The system is offered in different variations, as a dry and wet cleaning. The wet cleaning system is expanded by spray nozzles inside the working chamber, a liquid circuit with tank, filter unit and a pump. In both cases the material to be cleaned passes through a rotating unit with two or three, likewise rotating brush rows. The rotary movement of the brushes boosts the wiping effect of this well-proven tool. Further contamination removed from the wire does not clog-up the brush because centrifugal force throws a major part of the removed contamination into the base of the unit.

Depending on the application and material the brushes come from the standard range of different manufacturers and can have soft, hard or abrasive bristles. The brush packages can quickly and easily be replaced.

The system consists of a sturdy, clad steel frame with working box. Inside the lidded box the rotation unit is mounted. Removed dirt is caught in the trough and collected in a removable, draw type, container or circulated through a filter unit (wet cleaning). Optionally the system can be equipped with a suction channel.

FEATURES:

- Continuous manual or pneumatic brush shafts infeed
- Rotation speed continuously adjustable by frequency converter; digital speed display; motor brake
- Cover fastening with locking; control cabinet; operation panel
- Maintenance-free, dust-protected bearings and gear units
- Removable dirt container (dry cleaning)
- Heated and insulated tank; pump; filter unit; level and temperature sensors; floor pan (wet cleaning)
- Spray nozzles; blower drying (wet cleaning)

TECHNICAL DATA:

- Material-Ø: 10,0 mm - 60,0 mm (depending on the design)
- Max. line speed: depending on the application
- Wire centerline height: approx. 1000 mm
- Brush-Ø 100 mm; length max. 300 mm
- Gear Motor: 2,2 kW
- RPM System/brush shafts: 25 – 200 1/min / 100 - 800 1/min
- Electrical connection: 400 V AC; 16 A, 50 Hz
- Dimensions (LxW): 1000 x max. 1400 mm

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REINIGUNGSTECHNIK

MECHANICAL CLEANING

for Wire, Cable & Tube

Brushing system with rotating spiral brush

- Reduction of drawing agent residues, dust, metal particles after the drawing process
- Removal of scale residues after breaking scale
- Leveling and reduction of powder coatings on wire and cable surfaces

Benefits at a glance:

- Effective, economical and environment friendly
- Small footprint / In-line cleaning within the smallest space
- Operator friendly

BRUSHING MACHINE DRB-WCS

The DRB-WCS brush cleaning system for wires, cables and pipes is a compact, environmentally friendly and cost-effective system for the mechanical treatment of round materials in a continuous process. For this purpose the material passes through a rotating spiral brush. The rotary movement of the brush boosts the wiping effect of this well-proven tool. Furthermore, contamination removed from the wire does not clog-up the brush because centrifugal force throws a major part of the removed contamination into the base of the unit. Depending on the application and material the brushes can have synthetic, brass or steel bristles. The system consists of a sturdy, clad steel frame with a working box made of stainless steel. Inside the lidded box a separate compartment houses a rotating unit to fix one cut-to-length spiral brush. If required, an optional air nozzle type AW-C can be installed in another chamber to finally blow off any remaining loose particles. Removed dirt can be collected or extracted via an exhaust connector. To change a used spiral brush the two-part rotation unit can be opened and a new brush inserted.

The DRB-WCS brush cleaning system has been successfully used for:

- Removal of scale residues, metal particles and dust
- Reduction of drawing agent residues such as calcium and sodium stearate
- Reduction and uniform leveling of release agents such as talcum on insulated conductors

FEATURES:

- Working chamber made entirely of stainless steel
- Rotating unit for clamping a cut to length spiral brush made from stainless steel
- Rotation speed continuously adjustable by frequency converter; Digital speed display; Motor brake
- Cover fastening with electrical interlock
- Compartments with brush seal (input and output side)
- 1 x spiral brush from the GEO standard range at buyer's option (length 1 m)
- Compressed air maintenance unit (only with option air wipe type AW-C)

TECHNICAL DATA:

- Recommended wire-/tube-Ø: 0,5 - 17,0 mm
- Max. line speed: depending on the application
- Wire centerline height: 800 - 1200 mm (infinitely variable)
- Selectable throughput direction: left>right or right>left
- Rotating unit to fix one spiral brush with a diameter of Ø 57 mm; length approx. 300 mm
- Electrical connection: 400 V AC; 16 A
- Dimensions (l xw): 850 x 860 mm

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REINIGUNGSTECHNIK

MECHANICAL CLEANING

for Wire, Cable & Tube

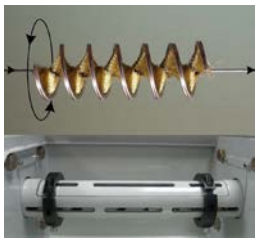
In-line brushing system with rotating spiral brush & liquid application by spray nozzles

- Reduction of drawing agent residues, dust, metal particles after the drawing process
- Leveling and reducing of powder coatings on wire and cable surfaces

Benefits at a glance:

- Effective, economical
- Small footprint / In-line cleaning within the smallest space
- Operator friendly

BRUSHING MACHINE DRB-WCS-W



The DRB-WCSW brush cleaning system is a compact, cost-effective and eco-friendly system for the mechanical treatment of round materials in a continuous process. For this purpose the material passes through a rotating spiral brush. The rotary movement of the brush and the additional supply of hot liquid boosts the wiping effect of this well-proven tool and reduces dirt build-up on the bristles. Depending on the application and material the brushes can have synthetic, brass or steel bristles.

The system consists of a sturdy, clad steel frame with working box. Inside the lidded box two separate compartments include a rotating unit to fix a cut to length spiral brush and an air wipe. Liquid from the heated storage tank is applied by spray nozzles onto the spiral brush. The contaminated medium is caught at the bottom of the box and returned to the storage tank where it is filtered. Finally an air jet nozzle blows remaining loose particles and residual moisture off.

To change a used spiral brush the two-part rotation unit can be opened and a new brush inserted.

The system has been successfully used for:

- Removal of scale residues, particles and dust
- Reduction of drawing agent residues such as calcium and sodium stearate
- Reduction of release agents such as talcum on insulated conductors

FEATURES:

- Stainless steel design
- Rotation speed continuously adjustable by frequency converter; Digital speed display; Motor brake
- Cleaning circuit comprising a heated storage tank; pump; cartridge filter unit, level and temperature control
- Liquid feed with stainless steel nozzles
- Compartments with brush seal (input and output side)
- Cover fastening with electrical locking
- 1 x spiral brush from the GEO standard range at buyer's option (length 1 m); 1 x air wipe type AW-C at buyer's option

TECHNICAL DATA:

- Recommended wire-/tube-Ø: 0,5 - 17,0 mm
- Max. line speed: depending on the application
- Throughput height: approx. 1000 mm
- Tank capacity: 100 - 200 l
- Heating power 6 kW (max. 80 °C)
- Rotating unit for the accommodation of one spiral brush with Ø 57 mm; length 300 mm
- Electrical connection: 400 V AC; 16 A
- Dimensions: (l x w) 1200 x 1400 mm

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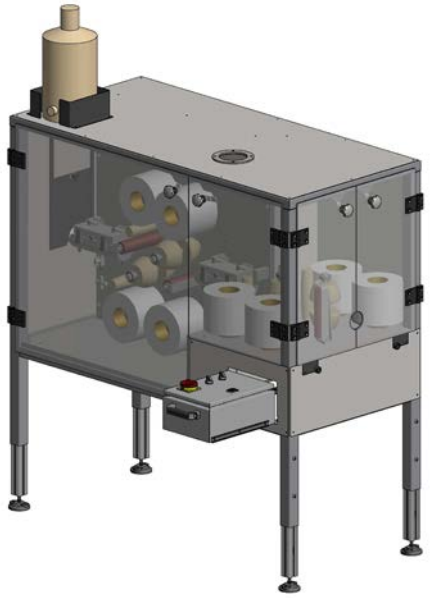
REINIGUNGSTECHNIK

REMOVAL OF MISPRINTED TEXT

from Cable & Plastic Tubing

- Removal of misprinted text from cable & plastic tubing with nonwoven tapes
- Suitable for cable diameters ranging from 5 mm to 25 mm (others on request)



Benefits at a glance:

- Effective, economical and environment friendly
- Small footprint / Treatment within the smallest space
- Operator friendly

KFP - V System

The KFP-V unit has been designed to remove misprinted text from insulated cables and plastic tubing. The two stage process consists of first dowsing the cable with a suitable, liquid agent and then passing it through two sets of driven nonwoven tapes that wipe off the print. The liquid agent is drip fed onto the cable or tubing and evenly spread via static brushes. The cable or tubing then passes through two sets of off-set nonwoven tapes that wipe off the print. The tapes are mechanically driven and run in the opposite direction to the cable flow. The continously moving, infinitely variable speed of the tapes ensures the tape in contact with the cable is always clean. As each pair of cleaning tapes is off-set by 90 degrees, this together with adjustable pressure rollers ensures the complete circumference of the cable is covered / wiped.

The complete unit is provided with operator friendly, hinged enclosures to which an extractor fan system can be fitted in order to keep the working area free of any fumes.

The KFP-V system is suitable for cable diameters ranging from 5 mm (.20'') to 25 mm (1") / (others on request).

The line speed and consumption of cleaning materials (liquid agent / nonwoven tape / brushes) will vary according the amount and density of the misprint to be removed.

TECHNICAL DATA:

- Recommended cable-Ø: 5,0 - 25,0 mm (others on request)
- Max. line speed: depending on the application
- Wire centerline height: adjustable
- Motor: step motor (4x)
- Dimensions: (LxW) 1200 x 650 mm
- Power supply: 230 V
- Brush-Ø (spiral brush): 40 mm or 57 mm; length max. 200 mm
- Non-woven tape: width 70 mm, Ø 200 mm

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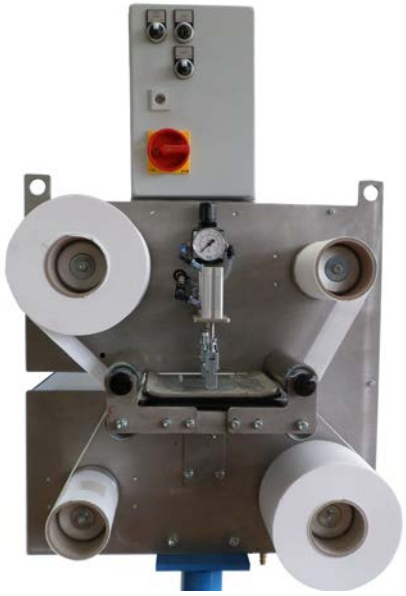
REINIGUNGSTECHNIK

MECHANICAL CLEANING

for Wire, Strand & Strip

Surface treatment by wiping with nonwoven tapes

Dry process or with targeted dosing of liquids

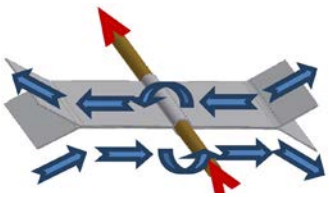


- Reduction of drawing agent residues
- Reduction of loosely adherent metal particles
- Applying of different types of lubricants and finishes

Benefits at a glance:

- Small footprint / Cleaning within the smallest space
- Ideal for the surface treatment of thin wire in single- or multi-wire lines, narrow strip and small diameter tubing
- Applying and uniform distribution of very small amounts of liquids
- Cost-efficient and environment-friendly cleaning system

PRIMARY WIRE WIPE SYSTEM



The patented Primary Wire Wipe (PWW) is a simple, environmentally friendly and cost-effective unit to remove visible residuals and excessive lubricant from thin wire, strand or small strips. Further the PWW has been proven successfully in applying different types of lubricants and finishes.

The Primary Wire Wipe employs a novel principle: The material to be cleaned passes two mirror-inverted arranged non-woven tapes moving in opposite directions at a predetermined creep speed. The constant traverse rate of the cleaning tape across the wire and the controlled contact pressure ensures a covering and continuous supply of fresh cleaning tape to the wire. The guiding of wire and strand is normally carried out transversely to the two cleaning tapes. Band material is passed in opposite direction along the strip material. In this manner the wire does not come into contact with contaminated wipers as is the case when traditional methods like rags, sponges or stationary felt pads are used. In some cases, the PWW provides a cost-effective alternative to costly and expensive cleaning system.

The standard PWW is suitable for wire and strand

up to Ø 2,0 mm and strips up to 120 mm width. Traverse rate of the cleaning tape and line speed is dependent on wire diameter and contamination. The „Twin PWW" (picture left) is suitable for wire diameter up to 4 mm. Systems with wider tapes for multi-wire applications are available on request.

The Primary Wire Wipe has been successfully used for:

- Cleaning of Al-wire following the drawing process
- Removal of metal particles and applying of welding wire finish at the same time
- Reduction of drawing agent residues from strips and punched strip in the watch industry
- Installation in the production process, prior to extrusion lines or before forming machines for the production of staples, screws, brackets etc.

TECHNICAL DATA:

- Recommended wire-Ø range: 0,05 - 2,0 mm
- Strip width: 0,05 - 2,0 mm
- Tape thickness: 0,05 - 2,0 mm
- Materials: metal, plastic
- Wire centerline height: adjustable
- Power supply: 230 V
- Air pressure: 2,5 bar
- Dimensions: (l x w x h) 440 x 610 x 570 mm

Special Designs:

- Wire diameter: > 2,0 mm < 4,0 mm (Twin System)
- Multi-wire system with cleaning tape width 450 mm

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REINIGUNGSTECHNIK

TEST EQUIPMENT
for Welding Wire

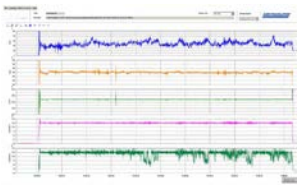
- Gauge & Record of:
  - Feed Resistance - F(N)
  - Welding Current - I(A)
  - Welding Stress - U(V)
  - Wire Speeds
- Suitable with standard MIG/MAG - welding equipment

Benefits at a glance:

- Suitable with standard MIG/MAG - welding equipment
- Simple measuring & assessing of the wire quality
- Measurement curves can be issued or printed individually or combined
- Simple operation

Welding Wire Test Equipment (WWTE)

The design of the Wire Welding Test Equipment (WWTE) is based on the fact that the quality of a weld is critically dependent on the quality of the welding wire and the arc. Apart from the metallurgical characteristics, the surface quality and their sliding and contact properties play a crucial role. The WWTE provides measurement curves that are relevant for assessing the quality such as feed resistance F (N), welding current I (A), the welding voltage U (V) and the wire speed both directly after the wire feed rollers as well as directly in front of the welding gun. It is precisely the ratio of those latter two parameters, which in addition to conveying resistance can provide information on the weldability of the wire.



Thanks to the rapid measurement of the wire speed immediately after the conveyor rollers and directly at the welding gun micro-welds in the contact tip and the slip in the conveyor rollers can be reliably detected and informed conclusions on improving the quality of wire can be drawn. The galvanically separated measuring signals are displayed and stored using special software as waveforms on a time axis. They can be issued or printed out separately, one above the other or superimposed. By creating reference measurements and the allocation of a tolerance range fast measurements can be made for quality assurance in the welding wire production.

Layout & Technical Data:

- The system can be used with all standard MIG/MAG – welding equipment to test all types of welding wire from Ø 0,8 to Ø 2,0 mm
- Welding time continuously to 20 min at 500 A
- Adjustable wire speed from 2 to 30 m/min
- Adjustable welding speed from 100 to 1000 mm/min
- Welding in all positions according to DIN EN ISO 6947 possible
- Simultaneous recording with 250 KBT/s of the measurement curves of:

1. F(N) – Feed resistance
2. I(A) – Welding current
3. U(V) – Welding stress
4. Speed 1 (m/min) - Wire speed immediately after the wire feed rollers
5. Speed 2 (m/min) - Wire speed in front of the welding gun

Welding seam length from 500 mm to 20.000 mm are welded on the exterior circumference of a water cooled rotating drum. The drum can be easily replaced. All parts in contact with water except the drum are made from stainless steel.

The nominal values for welding current and voltage can be adjusted on the welding machine.

Parameters such as wire speed, welding speed and step length during welding can be set to separate displays on the control cabinet and can also be changed during the welding process.

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