



FLEXIBLE PRODUCTS AND WIPER SYSTEMS

|||||HENNIG®
perfect machine protection.



GLOBAL, COMPETENT AND INNOVATIVE

||||| HENNIG®
perfect machine protection.

To ensure long life and efficient performance, machines must be protected against metal chips, grinding swarf, dirt and coolants.

Hennig has been dealing with the protection of machines since 1950. During this period several million folded bellows, telescopic steel covers, roll-up covers, apron covers, way wipers and accessories were manufactured for machine and plant manufacturers worldwide. This accumulated know-how benefits our customers in the every day production process, since their machines are optimally protected.

Hennig offers numerous new technical developments, such as telescopic steel covers designed for accelerations of up to 2.5g and operating speeds of up to 200 m/min, depending on their geometry and size. Way wiper systems allow wipers to be directly replaced on the machine, decreasing down time.

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FLEX PROTECT – SYSTEMS

FLEX PROTECT aluminum lamella systems protect machining centers against oil, coolants, polluted water, chips and dust. A world-wide sales and service network ensure fast completion of orders, fast delivery of spare parts and repair service near the customer's facility.

FLEXIBLE MODULAR SYSTEM

- Design: Movable aluminum lamellas connected by polyurethane hinges.
- Extension up to 6 m per system.
- Reliable sealing against oil, chips, coolants and splash due to the close contact between the lamellas and polyurethane hinges.
- Lamella height up to 3 m.
- Lamellas available in three widths:
 - 46 mm (single element)
 - 92 mm (double element)
 - 138 mm (triple element)
- Quick and easy assembly – the end lamellas are screwed on to the adjacent machine part.
- A variety of rails and guide profiles are available for high speeds.
- Optimum ratio between extended and compressed lengths.

GUIDES

Profile C14H

Profile C15V

Top guide

Guide roller

Bolt

Polyurethane hinge

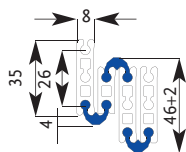
Flex Protect lamella

- Each lamella moves in a top and bottom guide. A flat steel guide at the bottom keeps the lamellas in alignment.

Bottom guide

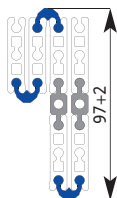
Bottom guide rail

FLEX PROTECT – SYSTEMS



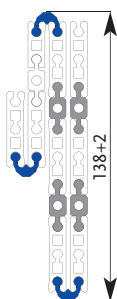
Single element 46 mm

$L_{\min} : L_{\max} \approx 1 : 4$



Double element 92 mm

$L_{\min} : L_{\max} \approx 1 : 7.5$



Triple element 138 mm

$L_{\min} : L_{\max} \approx 1 : 11.5$

XY-MODULES

Several options are available depending on space limitations:

X-axis: Flex Protect, Lamella bellows, aprons, steel covers.

Y-axis: Lamella bellows, aprons, roll-up covers.

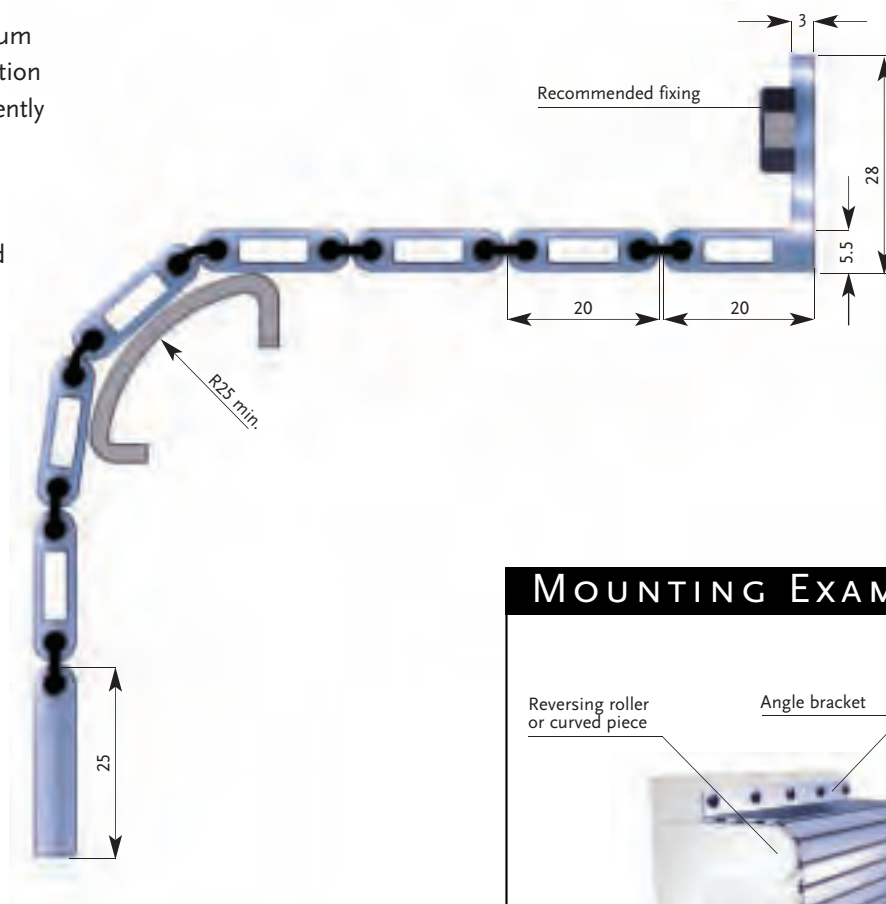
- Developed for high dynamic loads.
- Completely assembled unit (modular system) – Components individually replaceable.



FLEXIBLE APRON COVERS

ALUFLEX (HINGE-TYPE APRON)

- Light, highly flexible hinge-type aluminum apron, particularly suited for the protection of machine parts which are not permanently exposed to hot chips.
- Made of anodized aluminum precision profiles which are positively interlocked with polyurethane hinges (joints).
- The symmetric design of the aluminum profile enclosing the flexible hinges assures a high flexibility in both bending directions.
- The distance between the profiles is small so that the hinges are protected.
- A simple but effective connection technique enables the users to easily assemble the aprons themselves. Profiles and hinges are available to lengthen existing aprons.
- Splash-proof.



Standard end pieces



Normal bar



Straight end piece

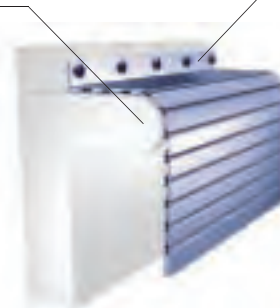


Angle bracket

MOUNTING EXAMPLES

Reversing roller or curved piece

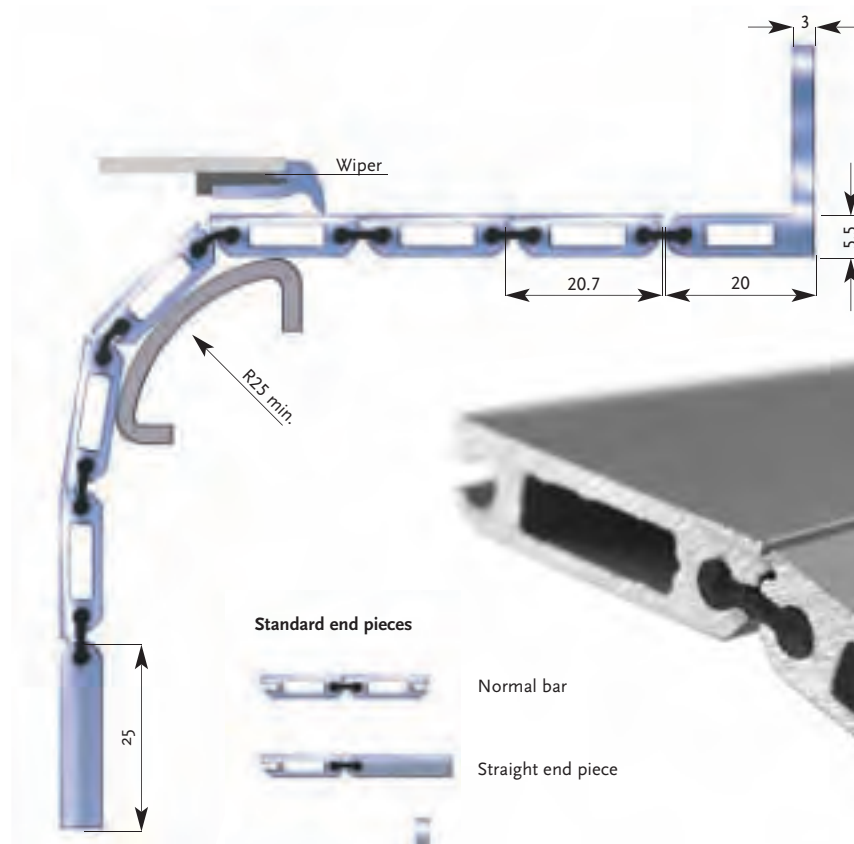
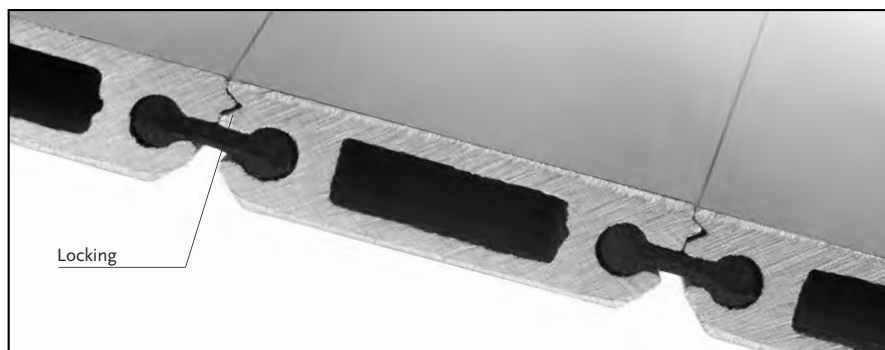
Angle bracket



FLEXIBLE APRON COVERS

GS 20 (HINGE-TYPE APRON)

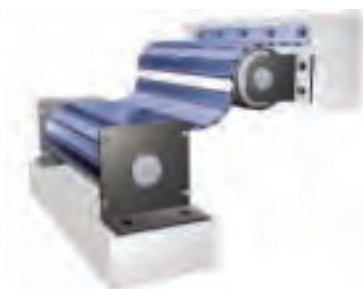
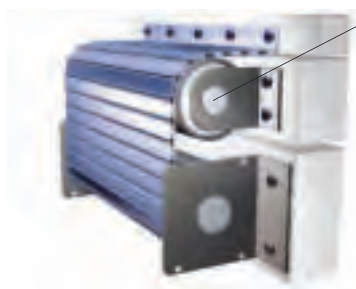
- Light aluminum apron with locking element. When rolled-out, creates flush surface which can be wiped clean using one of Hennig's wiper systems
- The locking element provides additional protection for the polyurethane hinge.
- High torsional stiffness.



Roll-up mechanism

Reversing roller
or curved piece

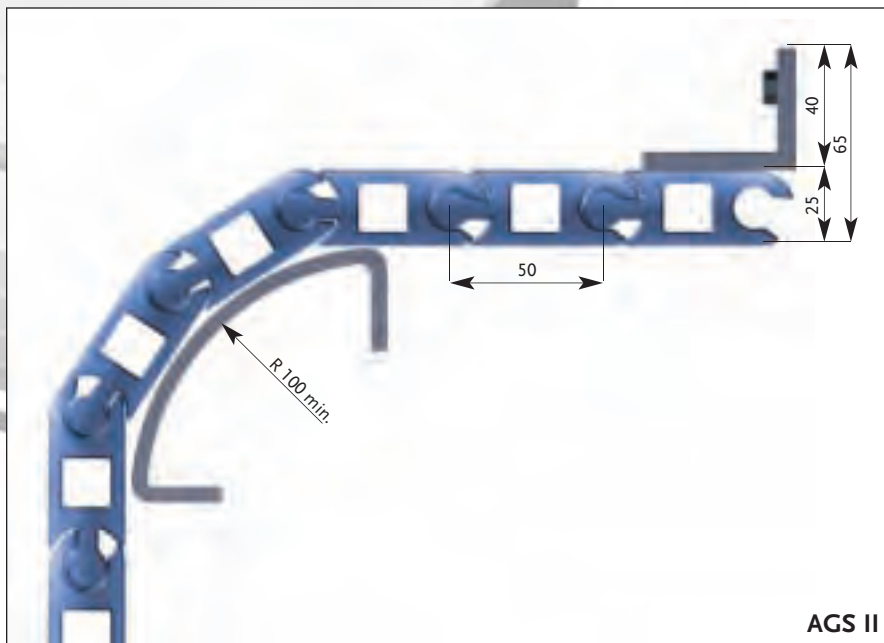
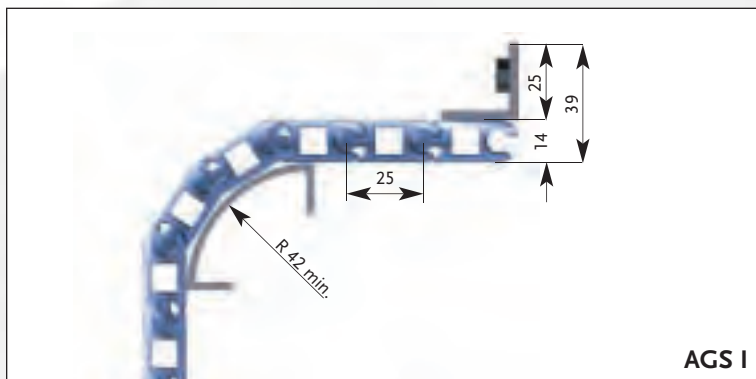
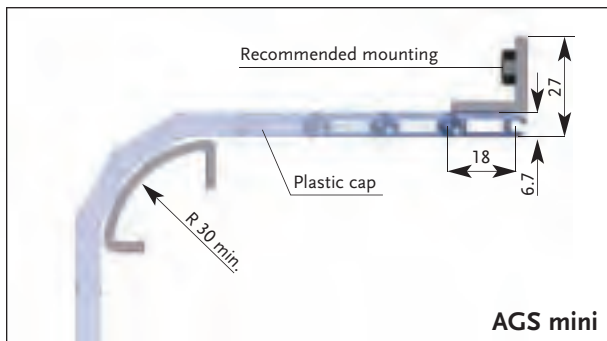
Reversible in two directions
(only for ALUFLEX)



FLEXIBLE APRON COVERS

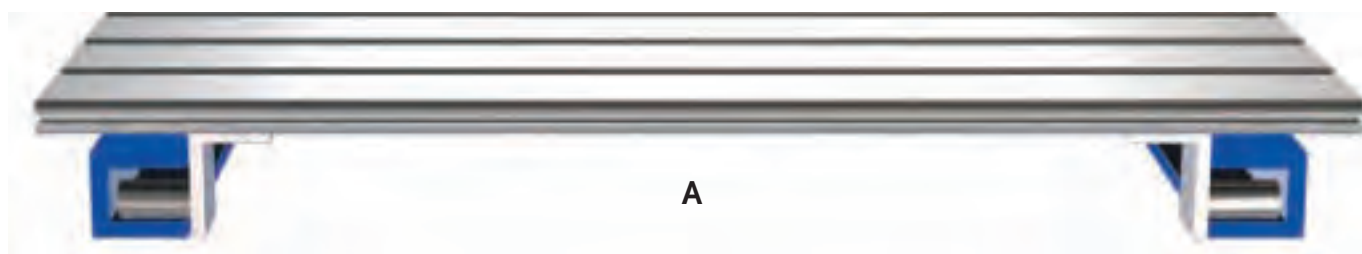
SERIES AGS MINI-AGS I-AGS II (LINK-TYPE APRON)

- Stable and flexible protection when space is limited.
- Made of anodized aluminum precision profiles which are perfectly interlocked.
- Special hinges prevent coarse dirt from entering and allow self-cleaning during the movement.
- Withstands high ambient temperatures.
- Resistant to corrosion by using anodized aluminum.
- High strain resistance, even in long lengths.
- Walk-on version:
AGS I for spans of up to 750 mm.
AGS II for spans of up to 2500 mm.
- Interchangeability of individual lamellas.
- Side guides not required.
- The AGS mini, AGS I and AGS II differ in their profile cross sections and loading capacity.
- The AGS I and AGS II are available with protruding or flat head rivets. The standard version comes with protruding rivets (2 mm on each side).
- Specially suitable for roll-up mechanisms.








FLEXIBLE APRON COVERS

EXAMPLES OF GUIDES



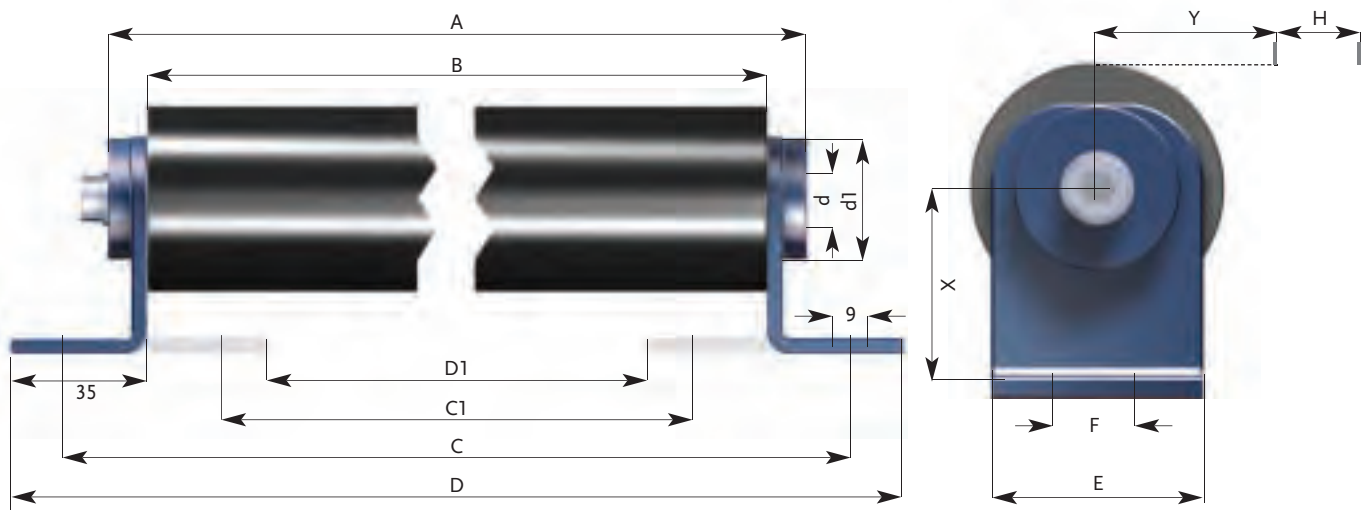
SUMMARY OF TYPES ALUMINUM APRONS

Series		Aluflex	GS 20	AGS mini	AGS I	AGS II
Type						
Material	Profile/Hinge	AL/PU	AL/PU	AL/-	AL/-	AL/-
Technical Data	Width x thickness (mm)	20 x 5.5	20.7 x 5.5	22.4 x 6.7	34.9 x 13.8	68.3 x 25
	Return radius (min)	25	25	30	42	100
	Net weight N/m ²	80	80	120	240	380
	Max. contact temperature (°C)	150	350	500	500	500
	Resistance to permanent contact temp. (°C)	120	120	200	500	500
	Coil radius ≥ R	25	25	30	42	100
Properties	Water tightness	●	●	●	●	●
	Resistance to emulsions	●	●	●	●	●
	Suited for chip production areas	●	●	●	●	●

● Very good ● Good ● Suited under certain conditions

ROLL-UP COVERS

SERIES R-38, R-51, R-76



Legend:

A = B + 30 mm
 B = Band width
 C = Hole pattern: B + 55 mm
 C1 = Hole pattern: B - 15 mm
 D = B + 80 mm
 D1 = B - 40 mm
 d = Diameter of shaft

d1 = Diameter of tube
 E = Width of lateral brackets
 F = Hole pattern
 H* = Stroke
 X = Distance between shaft center and bracket
 Y* = Pre-travel
 * To be indicated in the inquiry.



mm Type	d ₁	d	E	F	X
R-32	38	9.5	40	20	40
R-46	51	2.7	50	30	60
R-60	76	19	60	40	75

ROLL-UP COVERS



- Simple, low-priced roll-up cover version.
- High-quality springs ensure high operational safety.
- Driven with a special spring which is mounted in a dustproof casing.
- Max. traverse speed of 80 m/min.
- A metal casing for protection against swarf can be supplied upon request.
- The max. stroke is directly dependent on the width of the cover band.

Roll-up covers in steel band design on request!

TABLE OF DIMENSIONS FOR ROLL-UP COVER SERIES R-38, R-51, R-76

R-38	Band width	≥100	≥150	≥200	≥250	≥300	≥350	≥400	≥450								
	Stroke H	200	300	400	500	600	750	850	950								
	Pre-load/windings	1	1	1	1.5	1.5	2	2.5	2.5								
R-51	Band width		≥150	≥200	≥250	≥300	≥350	≥400	≥450	≥500	≥600	≥700	≥800	≥900	≥1000		
	Stroke H		400	500	600	750	875	1025	1150	1300	1500	1700	2000	2300	2600		
	Pre-load/windings		1.5	2	2.5	2.5	3	3.5	3.5	4	4	4.5	4.5	5	5		
R-76	Band width			≥200	≥250	≥300	≥350	≥400	≥450	≥500	≥600	≥700	≥800	≥900	≥1000	≥1150	≥1300
	Stroke H			500	600	900	1050	1200	1350	1550	1750	2000	2325	2650	3000	3400	4000
	Pre-load/windings			2.5	3	3	3.5	4	4	4.5	4.5	5	5.5	5.5	6	7	8

ROLL-UP COVERS DATA SHEET

To order or request a quotation complete the applicable information on this page and fax or mail a copy of it, along with any sketches or notes, to HENNIG, Inc.

Company (complete address)

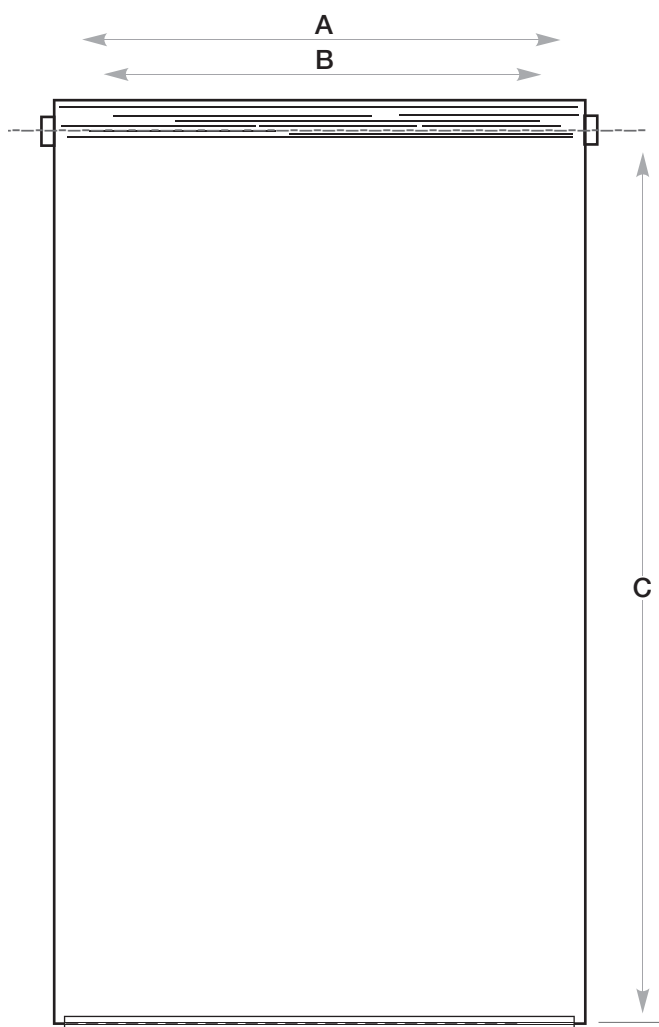
Date

Contact

E-Mail

Phone/Fax

PO# (if applicable)



Machine make/model

Cover is exposed to what kind of elements:

Maximum width allowable with mounting brackets or cannister - A

Cover width - B

Fully extended cover length - C

Length of machine travel

Include mounting brackets:

☐ Yes ☐ No

Open Reel

☐

Cannister Type

☐

Material Type:

Fabric

☐

Extruded Aluminum:

Aluflex

☐

GS-20

☐

AGS-mini

☐

AGS-I

☐

AGS-II

☐

Mounting Type:

Normal

☐

Straight

☐

Angle

☐

Hinge

☐

DO YOU NEED TECHNICAL HELP?

Do you have a question or a unique configuration? Our customer service department is eager to help you. Tell us about your needs and let the most experienced engineers and technical support people in the industry create the perfect solution.

FLEXIBLE APRON COVERS DATA SHEET

To order or request a quotation complete the applicable information on this page and fax or mail a copy of it, along with any sketches or notes, to HENNIG, Inc.

Company (complete address)

Date

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Contact

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E-Mail

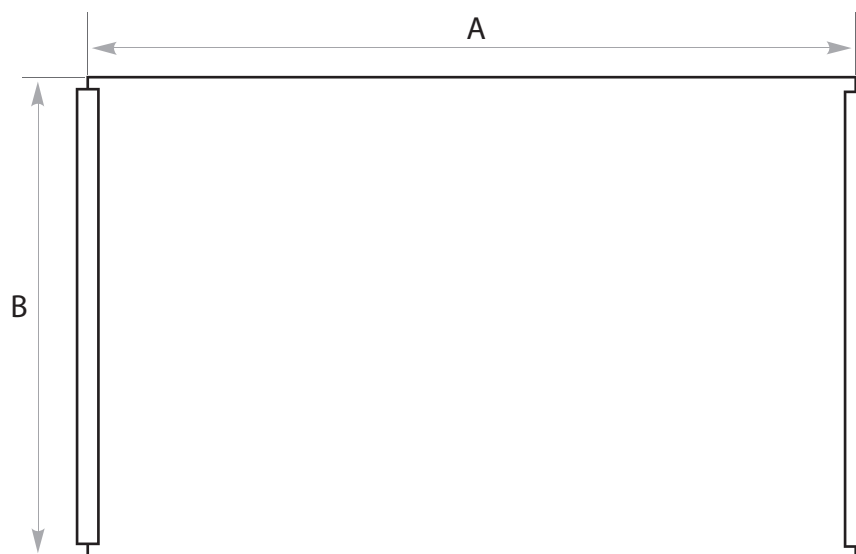
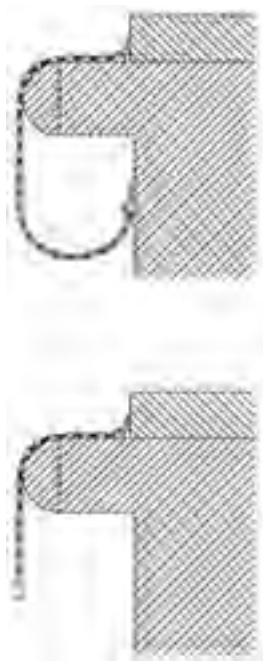
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Phone/Fax

--

PO# (if applicable)

--



Machine make/model

--

Cover is exposed to what kind of elements:

--

Fully extended cover length - A

--

Cover width - B

--

Length of machine travel

--

Mounting Configuration

--

Material Type:

Fabric

--

Extruded Aluminum:

Aluflex

--

GS-20

--

AGS-mini

--

AGS-I

--

AGS-II

--

Mounting Type:

Normal

--

Straight

--

Angle

--

Hinge

--

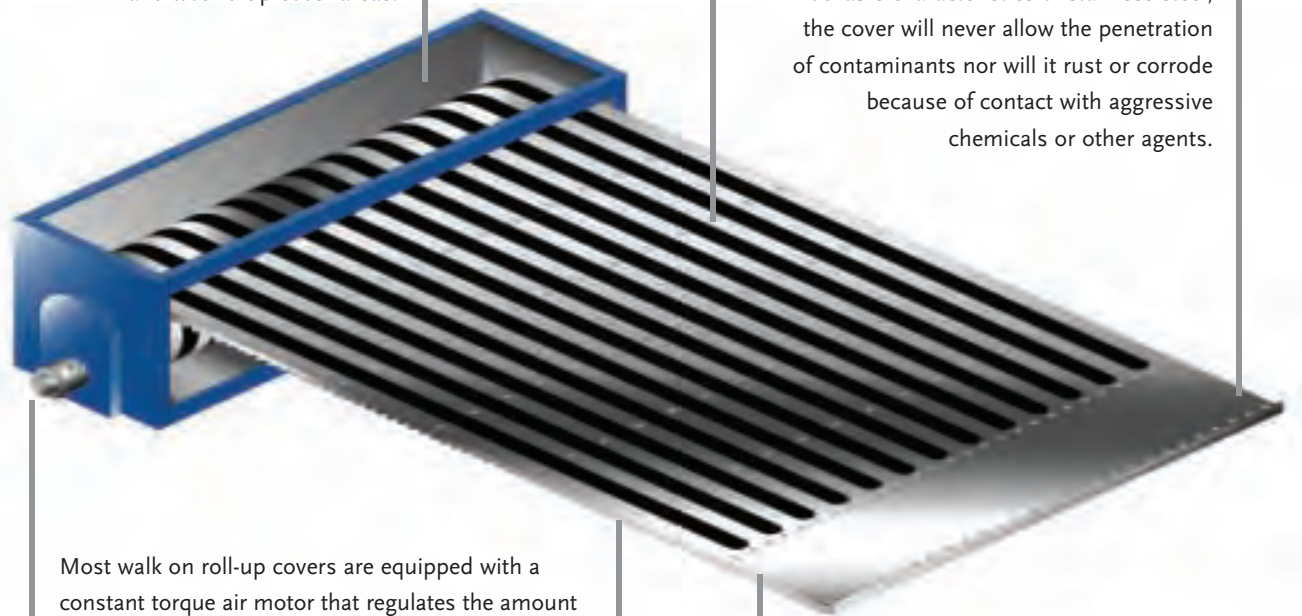
WALK ON ROLL-UP COVERS

HENNIG walk on roll-up covers are specially engineered to cover large machine tool way surfaces and open pits. Regardless of the size of the area being protected, these covers will easily endure constant use and support the weight of heavy chip loads and personnel. Additionally, by utilizing a flat stainless steel top surface, the contents under the cover are completely protected and contaminants such as cutting lubricants, hot chips, and dust cannot penetrate into the machine's interior.

A non-slip surface is added so that personnel may walk across the cover's surface with greater safety than walking across the cover's slippery stainless steel surface.

Protective cannister housings can be provided to add protection to the roll-up cover's gearing, spindle, and wound-up cover areas.

The stainless steel top surface is an extremely resilient feature of HENNIG's walk on roll-up covers. Because of the durable characteristics of stainless steel, the cover will never allow the penetration of contaminants nor will it rust or corrode because of contact with aggressive chemicals or other agents.



Most walk on roll-up covers are equipped with a constant torque air motor that regulates the amount of tension on the cover's surface. The device ensures consistent tension over the cover's entire surface, thus preventing unwanted binding of the cover's surface. In special situations, HENNIG can also outfit the cover with a high tension steel spring roll-up device.

Walk-on roll up covers are supported by square extruded aluminum tubing. Besides being extremely strong, it is lightweight, and its square shape offers tremendous support. As an extruded aluminum, it has outstanding physical characteristics and will never rust or corrode with age.

Occasionally, a roll up cover's top surface may become damaged because of an accident. Fortunately, HENNIG's roll up covers are manufactured in sections and if an accident should occur, only the damaged section, and not the entire cover, need be replaced. Additionally, all seams between individual cover sections are securely sealed to prevent unwanted seepages of liquid, coolant, or oil.

WALK ON ROLL-UP COVERS DATA SHEET

To order or request a quotation complete the applicable information on this page and fax or mail a copy of it, along with any sketches or notes, to HENNIG, Inc.

Company (complete address)

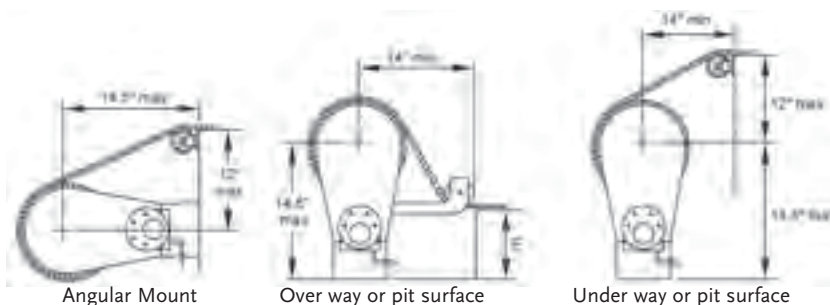
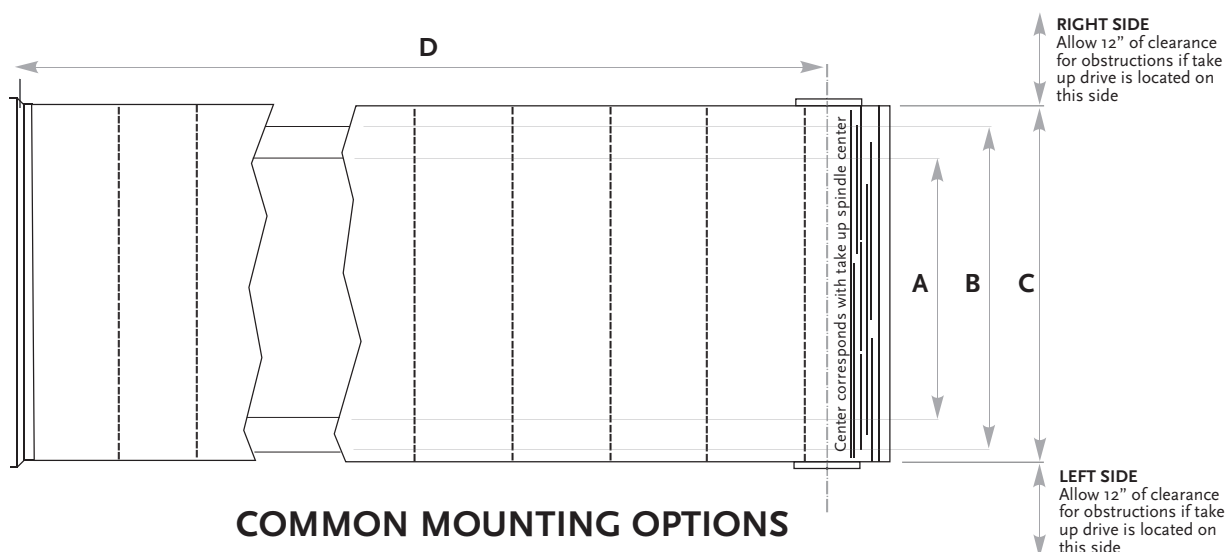
Date

Contact

E-Mail

Phone/Fax

PO# (if applicable)



Unsupported span - A

Width of area being covered - B

Cover width - C

Extended cover length - D

Height (if applicable) - E

Side of take up drive:

Left

Right

Machine make/model

Length of machine travel

Mounting type

Include air filter, lubricator, and regulator:

Yes

No

Non-slip surface:

Yes

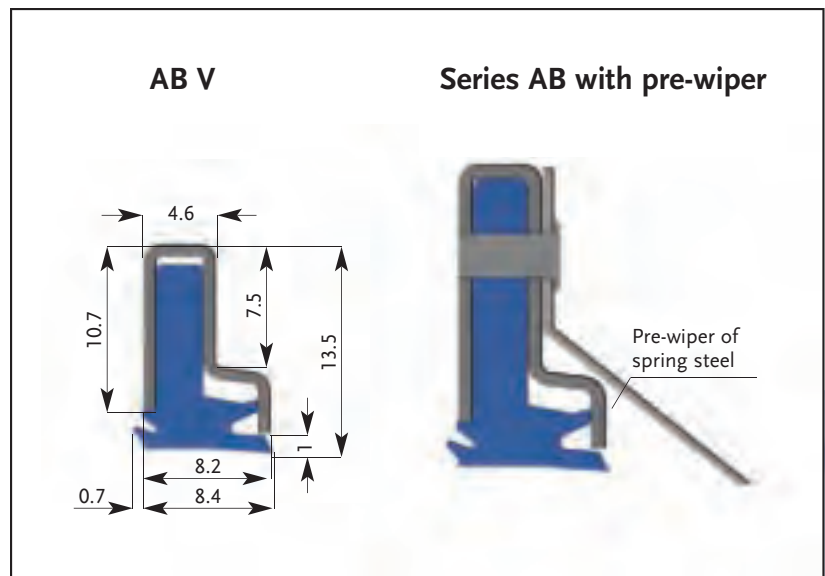
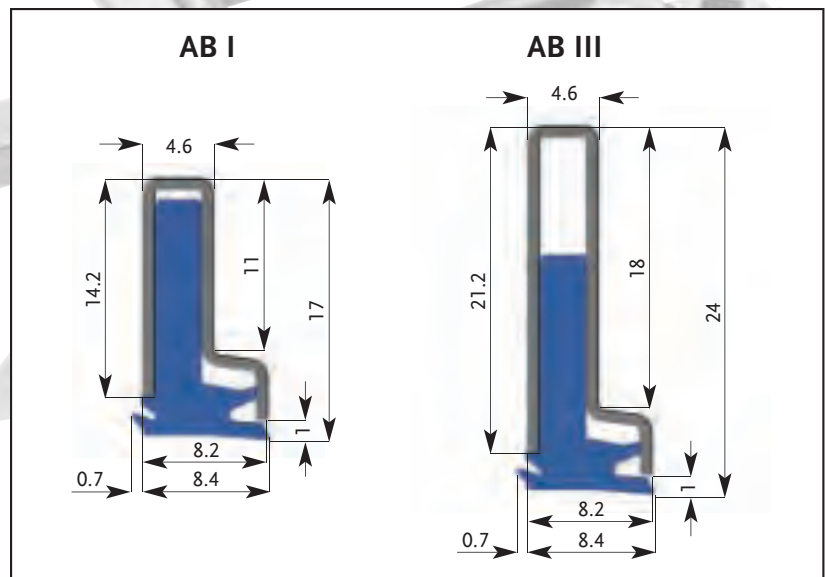
No

WIPER SYSTEMS

The accuracy and service life of high-quality machines depends to a large extent on the correct protection and suitable cleaning of the slideways. For optimum solutions, Hennig has developed various series of way wipers in co-operation with leading machine manufacturers.

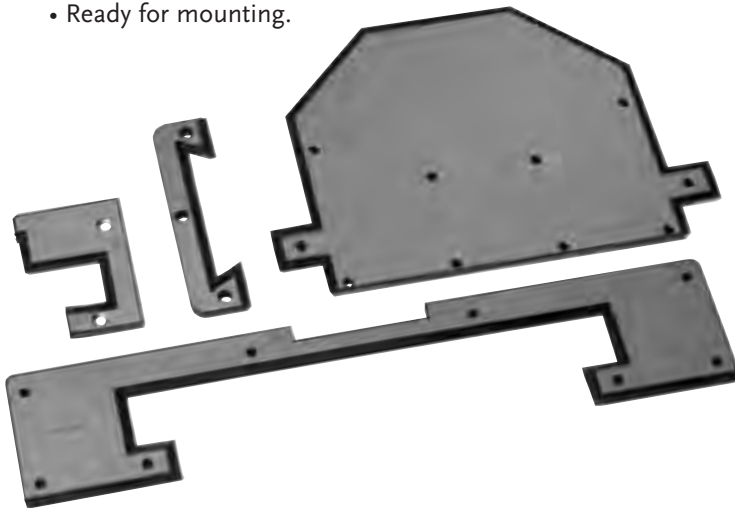
SERIES AB

- For use in metal-cutting machines with large volumes of chips and coolants.
- Standard lengths can be profiled by the customer for service and repairs.
- Factory-profiled forms ensure an excellent wiping performance.
- Stainless steel support profiles ensure high mechanical stability under permanent load.
- With elastic, highly abrasion-proof polyurethane wiper lips. Permanent temperature resistance 90°C. Partly resistant to acids, leaches, and gasoline.
- Easy to replace.
- The miter joints of the wiper casing are welded.
- 90° wiper lip with a 45° chamfer molded in one piece.
- Protected against hot chips and mechanical damage.
- Standard lengths of 530/1000/2000 mm are available in stock.
- Can be profiled to nearly any designs according to drawing or sketch.
- Mounting holes included upon request.

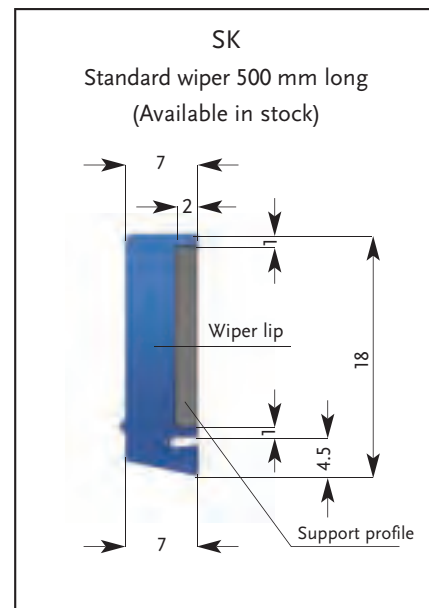
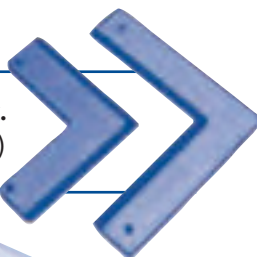


SERIES SK

- Molded wipers for use in various machine applications.
- High molding accuracy ensures excellent wiping results.
- The wipers consist of synthetic rubber vulcanized on a steel plate.
- Support profile materials: Steel (also galvanized), stainless steel or aluminum.
- Lip materials: NBR, silicone and NBR, silicone and Viton.
- Ready for mounting.
- Permanent temperature resistance 212°F, momentarily 275°F.
- Resistant to mineral oil and coolants.
- Resistant to micro-organisms.
- Can be manufactured in virtually any form.
- High dimensional accuracy.
- Good resistance to abrasion.
- Little deformation by compression.



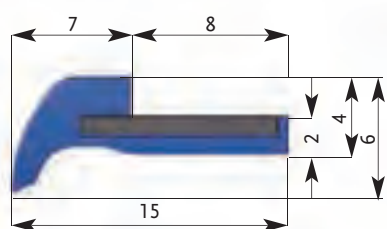
Molded Corners available in stock.
(3" inside and outside corner shown)



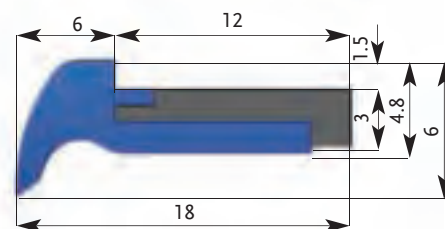
WIPER SYSTEMS

SERIES eN

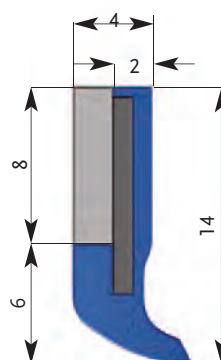
- Mainly used on telescopic steel covers as replacement or when space is limited.
- Particularly suitable for slideways with small cross-sections.
- With a highly wear-resistant polyurethane lip vulcanized on a flat steel profile.
- The wiper lip is resistant to oil, coolants and microbes.
- The wiper types eN1 – 8x2 and eN1 – 20x2 can be profiled by the customer.
- Profiled wipers can be manufactured for all technically feasible cross-sections, ready for mounting
- Standard lengths of 500 mm are available from stock.



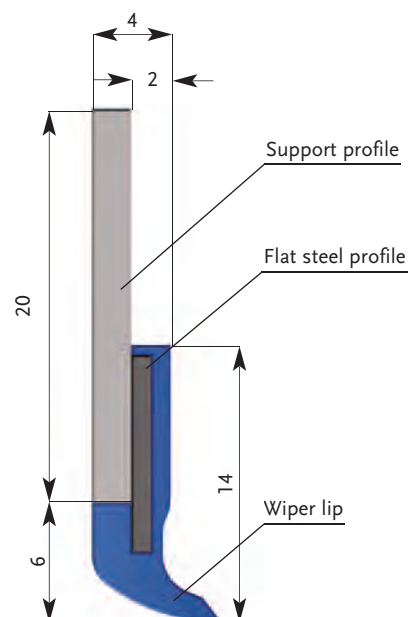
eN 1



eN 2

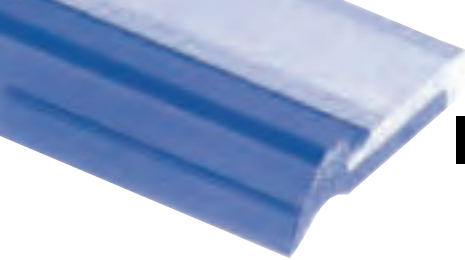


eN 1 - 8x2



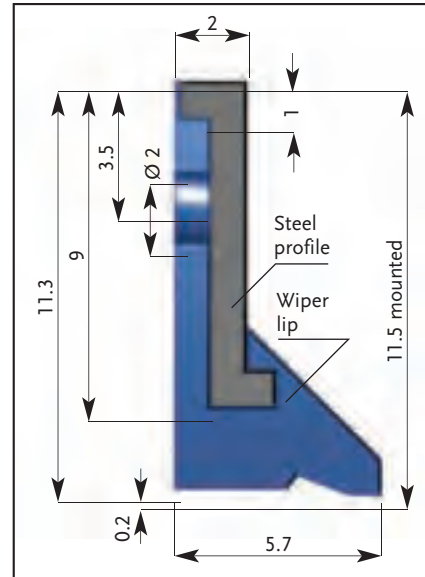
eN 1 - 20x2

WIPER SYSTEMS



SERIES F(MINI)

- Compact wiper with a height of only 11.5 mm.
- Especially useful where space is limited, e.g. on extractors or slides.
- Low priced wiper based on the proven SK-series.
- The wiper lip is vulcanized on a steel profile.
- Standard lengths of 500 mm are available in stock.



SUMMARY OF TYPES WAY WIPERS

Features Series	Design					Mount. position	Recommended use				Technical Data															
	Standard length ex stock	Profiled form ex works	Minimum quantities, profiled (pieces)	molding cost	Standard lengths with holes		Customer-profiled	Vertical (to wiping surface)	Horizontal (to wiping surface)	Prototype/samples	Series	On pallet changers	On telescopic steel covers	Material of support profile	Material of wiper lip	Recommended pre-load (mm)	Replaceable wiper lip	Lip for 90° angles	Joint at the fastening surface	Two-way wiper lip	Resistance to permanently high temperatures	Resistance to short-term high temperatures	Resistance to abrasion	Resistance to tear propagation	Resistance to acids, alkaline solutions, petrol	Resistance to oil, coolants, water
AB I / AB III	530 1000 2000	●	-	-	★	◐	●	○	●	●	◐	○	CrNi	PU	0.5-1	x	x	x	-	80	130	●	●	◐	●	◐
eN 1 eN 2	500		-	-	-	◐	●	●	●	◐	◐	◐	St	PU	0.5-1	-	-	-	-	80	130	●	●	◐	●	◐
eN 1-8x2 eN 1-20x2	500	◐	-	-	◆	◐	◐	●	●	◐	◐	○	St	PU	0.5-1	-	-	-	-	100	130	●	●	◐	●	◐
F1 mini	500		-	-	◆		●	○	●	◐	○	○	St	SK	0.5-1	-	-	x-	-	100	130	◐	◐	◐	●	◐
SK	-	●	50	x	-	○	●	○	★	●	●	◐	St	SK	0.5-1	-	x	x	-	100	130	◐	◐	◐	●	◐

Legend:

● Very good ● Good ● Suitable under certain conditions ○ Unsuitable ★ Upon request x Yes — No PU = Polyurethane SK = Synthetic rubber

(HSC) - Telescopic Steel Covers
Chip Conveyors
Chip Disc Filtration (CDF) Systems
Folded Bellows
Flex-Protect Systems
Machine Enclosures
Power Generator Enclosures
Roll-up & Flexible Apron Covers
Wiper Systems
Stabilastic Telescopic Springs
Stabiflex Cable Conduits
XYZ-Modules
Customer Specific Designs

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Cobsen-Hennig, Boituva, Brazil
Sur Hennig, Bangalore, India
Enomoto, Gifu, Japan
Gaden-Hennig, Mexico City, Mexico
Dalian-Hennig, Dalian, China
Osung Mechatronics Co., Masan, South Korea
Sermeto El, Creuzier le Neuf, France

Service Centers:

Machesney Park, Illinois
Chandler, Oklahoma
Cincinnati, Ohio
Livonia, Michigan
Mexico City, Mexico
Saltillo, Mexico

Perfect Machine Protection.

For 50 years, Hennig, has been designing and producing custom machine protection and chip / coolant management products for state-of-the-art machine tools. Hennig products are reliable, durable, and perfectly tailored to protect against corrosion, debris and common workplace contaminants. There's no better way to protect your investment on the shop floor.

Innovative Products and Services.

AME, Hennig's sister company, provides innovative and precision engineered components, machines and services. To learn more about AME and our innovative approach to precision machining, please call 815-962-6076 or visit www.ame.com.



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