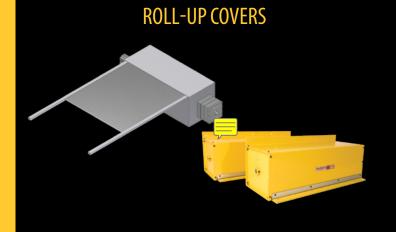




# MACHINE PROTECTION







# **PRODUCT INDEX**









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# **COMPANY INTRODUCTION**



# **HEADQUARTERS**

#### **DYNATECT ASIA**

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#### **DYNATECT USA**

Dynatect Manufacturing, Inc 2300 South Calhoun Road New Berlin, Wisconsin 53151 USA Tel: +1 (262) 786-1500

#### **DYNATECT EUROPE**

Dynatect Europe GmbH Rosenheimer Str.64 83059 Kolbermoor, Germany Tel: +49(0)8031/22205-71



# GLOBAL LEADERS IN ENGINEERED MACHINE PROTECTION

Dynatect is one of the leading providers of machine protection products and offers a comprehensive range of industrial equipment protection with tailor-made solutions for all industrial sectors. Founded in 1945, Dynatect's developed flexible protective covers for the machine tool industry.

Today, Dynatect is a market leader in industrial equipment protection with six production facilities and over 500 employees worldwide. Dynatect provides customer proximity all over the world.

Dynatect provides engineering and manufacturing for custom applications which improve human-machine safety and machine uptime.

#### ABOUT THODACON

Founded in 2007, Thodacon quickly established a well-known brand in machine tool protection. Thodacon became a Dynatect brand in 2019.

Thodacon started by manufacturing providing state of the art, high quality way wipers, and has expanded production to include telescopic steel covers, XY covers, rollup covers, pit covers, machine roof covers, bellows, metal cable carrier and roll up doors.

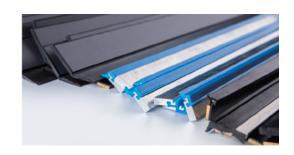
In addition to manufacturing, Thodacon has its own research, development, and design. This provides Thodacon with maximum flexibility to develop, design and manufacture with short lead time.

# **WAY WIPERS**



### **DOWNLOAD OUR WIPER LITERATURE FOR DETAILS**

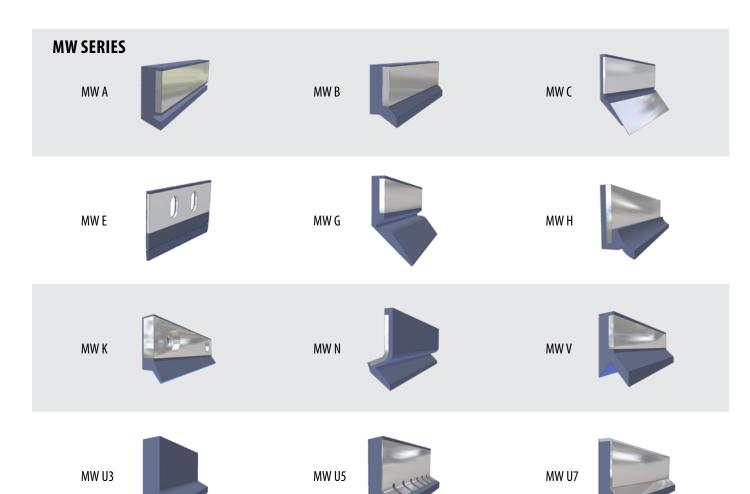
- Any special shape according to your requirement is possible
- Selection for telescopic covers (TW Series)
- Selection of guideway wipers (AW, SW, MW Series)
- Resistant to the machine tool requirements
- Large range of stock wipers available
- Highly durable



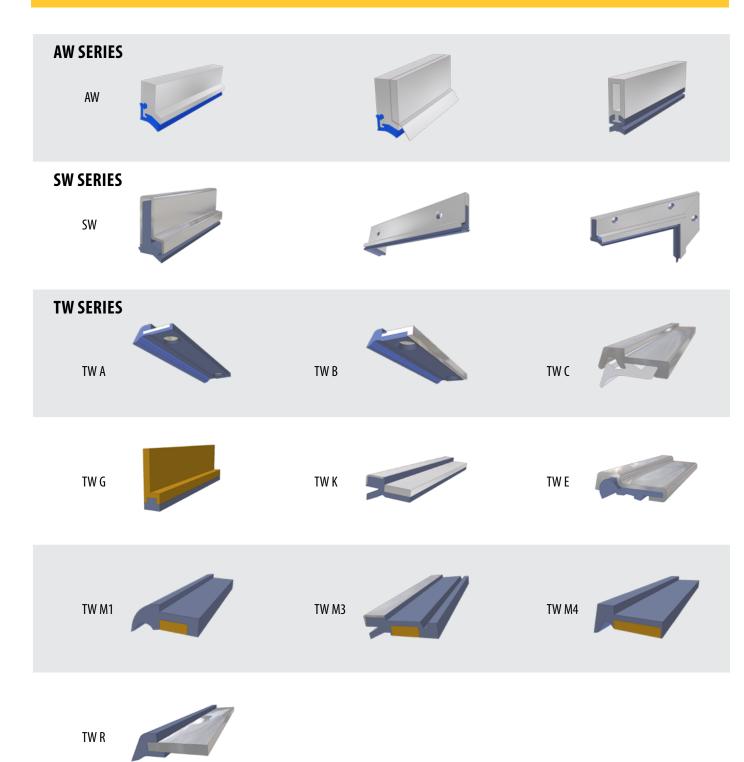














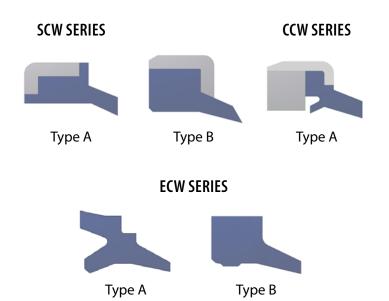




# CYLINDER WIPERS OVERVIEW



#### DOWNLOAD OUR WIPER LITERATURE FOR DETAILS



- · Abrasion resistance, long working life
- Simple and economical solution
- · A variety of standard ranges
- Metal case enables the wiper fitted in the groove (Series SCW Wipers)
- Implemented imbued Capilub® self-lubrication unit (Series CCW Wipers)
- Highly durable

Cylinder wipers are used for wiping away dirt, foreign particles, chips, moisture, etc. from piston rods in hydraulic and pneumatic applications, and avoiding contamination of the hydraulic fluid, which would damage other components.

The regular elastomer compositions are NBR and FPM with a hardness of 83A. The standard color is black. Rings to other sizes, or in special materials and colors, are manufactured to order.

Dynatect offers engineering assistance with your quote request and can provide 3D CAD files to implement our wipers into your design.





# **BELLOWS COVERS**



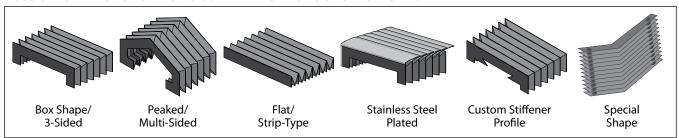
#### FINNED AND REGULAR DESIGNS

- Typical applications include linear guideways or box guideways
- Offers light- to medium-duty protection for important precision transmission and motion control parts against light abrasives, occasional oil/chips/liquid
- High-quality materials chosen based on operating requirements for maximum life
- For added protection against sparks and hot chips, a regular bellows can be turned into a finned bellows cover, accomplished by attaching protective stainless steel plates to the top of each convolution





#### POSSIBLE SHAPES FOR BELLOWS COVER - MADE TO YOUR SPECIFICATION



#### **KEY BENEFITS**

- Smooth running and good stability: cover retains shape throughout travel
- Stiffener profile can be designed to match any way or rail geometry
- No stitch holes, seams or breaks
- Attractive, clean, uniform appearance

- Excellent protection for linear bearings and other precision equipment
- May prevent guideways from being damaged by external forces or pollution and help reduce drag force by parts movement

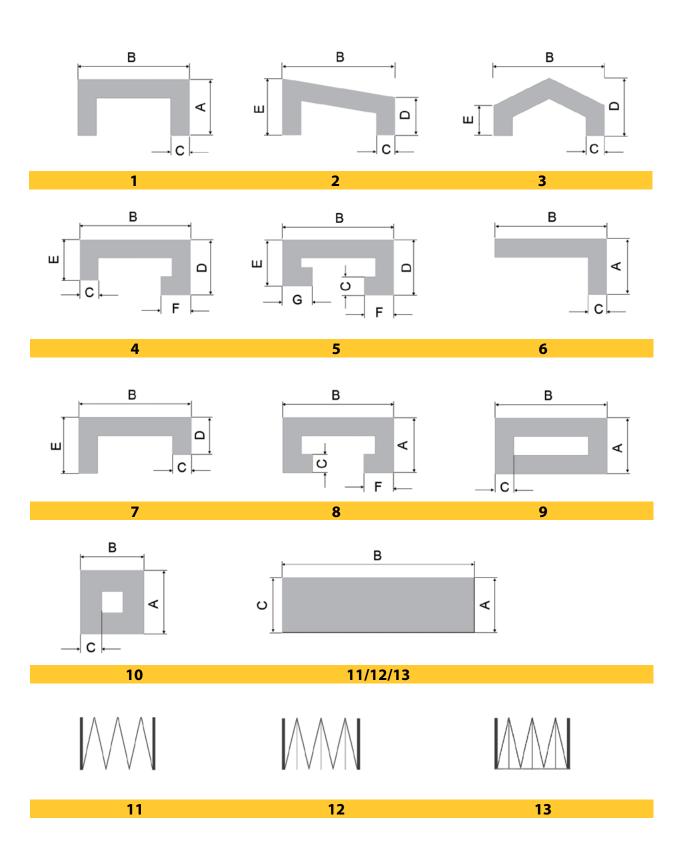




# **BELLOWS COVERS - SHAPES**



# PLEASE REFERENCE ON INQUIRY FORM

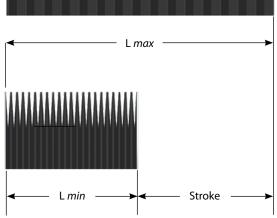


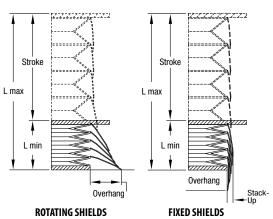
# **INQUIRY FORM • BELLOWS COVERS**



### FOR REGULAR AND FINNED BELLOWS COVERS

Date				Address				
Email				Telefax				
APPLICATION INI	FORMAT	ION						
Quantity Required _		(units)						
Type of Bellows Cove	er: 🗆 Reg	gular 🗆 Finne	d ( steel-plated)*	*Shields: ☐ Rotating	□Fi	ixed (see diagram l	pelow)	
Working Position:	☐ Horizon	tal 🗆 Vertical	☐ Frontal					
Use of Bellows (desc	ribe)							
Ambient Temperatur	re (Continu	ious)	C°			· ·		
Temperature Range,	Temporary	/ (Minimum - M	laximum)	C°	0		•	
Stroke (mm)	Max	. Speed (m/mir	n)			<b>J</b> .		
Max. Acceleration (m	n/s²)	Workin	g hours per day (h)		٦			
Environment - check	all that ap	ply:						
☐ Chips, type:		_ amount of ch	nips: tem	perature of chips:	(	C°		
☐ Water - Permane	ntly —O	R— □ Water	- Sporadically					
☐ Coolant - Permar	nently —	-OR— □ Coc	lant - Sporadically	Type of Coolant:				
☐ Dust - Permanen	tly —OR	— □ Dust - :	Sporadically					
☐ Other (describe)			_	_				
COVER INFORMA	TION					- M		
Desired Shape		(refer to pag	je 8)				The state of the s	
Desired Cover Mater	ial							
			uminum	Steel				
Extension	L max	=	mm	Bellows height, right*	D	=	mm	
Compression	L min	=	mm	Bellows height, left*	Е	=	mm	
Bellows height*	Α	=	mm	Glide shoe, right*	F	=	mm	
Bellows width*	В	=	mm	Glide shoe, left*	G	=	mm	
Fold width*	C	=	mm					
*See diagrams on pag	je 9							
14444				FINNED BELLO	WS (	COVER		
	Ш			6-6-6-6-6-6	Ì			





# TRANSPORTATION BELLOWS



#### SPECIALIZED DESIGN FOR THE VENTILATION OF TRACTION MOTORS

#### **KEY BENEFITS/FEATURES**

- Longer life and low maintenance Durable, abrasionresistant and high-elasticity materials
- Meet industry safety standards Materials available to meet regulatory compliance for flame, smoke, and toxicity (NFPA 130, EN45545)
- Optimal design for your application –
   Material and features matched to your specific requirements
- Designed to maintain shape and airflow Integrated pressure compensating components
- Accommodates difficult motion Designs for multi-axial/high-shear movement
- Easy installation Customized mounting features
- Air and water-tight constructions Integrated mounting seals

#### **APPLICATIONS**

- Traction Motor Boot Component of the cooling system located between the traction motor blower and drive motor
- Cable Ducting Barrier to protect critical cabling from exposure to liquids, dirt, debris, and UV
- HVAC Ducting Component of the HVAC system ducting used to route airflow



#### **INQUIRY / NEW APPLICATION**

➤ To discuss your requirements, please contact our sales department

# **MOULDED BELLOWS**



- Applications Used for protecting lead screws, precision shafts, moving air cylinders, various round shafts and irregular-shape parts
- Purpose Provide resistance to water, oil, temperature and chemicals
- Mounting Several types are offered to select from.
- Customization Any other requirements can be made according to drawings
- Shapes Various configurations can be made, such as square, elliptical and others



# $\underline{Main\ Material}\ (\text{additional\ materials\ may}\ be\ available\ upon\ request)$

No.	Type of Material	Thermal Properties C° Min. — Max.	Hardness Range Shore A	General Resistance to
01	NBR	-30° C - +110° C	40 — 75	Gasoline, Mineral Oil
02	FPM	-20° C - +200° C	40 — 75	Gasoline, Mineral Oil, Acids, Lyes, Water, Weathering, Ozone, Air Impermeability
03	CR	-35°C — +100 C	40 — 75	Weathering, Ozone
04	EPDM	-50° C - +130° C	40 — 75	Acids, Lyes, Water, Weathering, Ozone
05	SILICONE	-40 — +200° C	40 — 75	Weak Acids, Weak Bases

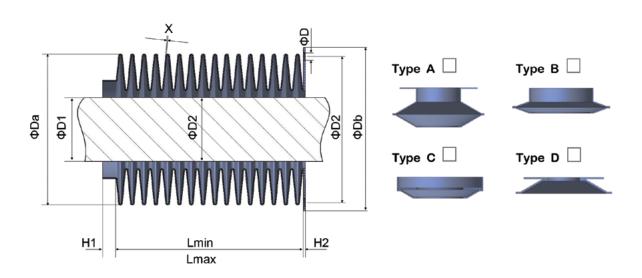




# **INQUIRY FORM • MOULDED BELLOWS**



Date				Address			
Your Company $\_$				Place/Country			
Contact Name							
Email				Telefax			
APPLICATION IN	NFORMATIO	N					
Quantity Required		(units)					
Working Position:	☐ Horizonta	l □ Vertical					
Use of Bellows (des	cribe)						
Ambient Temperat	ure (Continuo	us)	C°				
Temperature Range	e, Temporary (	Minimum - Ma	aximum)	C°	The same of the sa		
Max. Speed (m/mir	n)						
	Inside	Outside	Permanently	Sporadically			
☐ Dust							
$\square$ Water							
$\square$ Oil/Grease							
$\square$ Acid							
☐ Bases							
$\square$ Other							
Describe Fluids/Cl	nemicals:						
COVED INFORM	ATION AND	DIMENSIO	NS				
COVER INFORM	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						



# **RUBBER DISK BELLOWS**



- Applications Perfect for general industrial purposes such as pistons, spindles, hydraulic or pneumatic bars, and measuring machines
- Affordable Can be produced without mold cost; economical solution for lower quantities
- Mounting Choose from collars or flanges to accommodate any mounting configuration
- Customization Any other requirements can be made according to drawings
- Great compression ratio between L min & L max







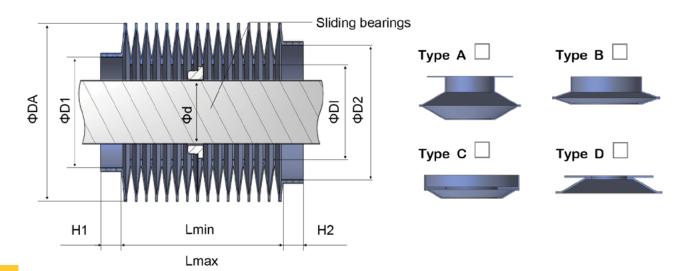


13

# **INQUIRY FORM • RUBBER DISK BELLOWS**



Date				Addre	SS	
Your Company					Country	
Contact Name					one	
Email					(	
APPLICATION IN	NFORMATIO	)N				
Quantity Required		(units)				
Working Position:	☐ Horizonta	l □ Vertical				
Use of Bellows (des	cribe)					
Ambient Temperati						
Temperature Range						
Working hours per						
Max. Speed (m/mir	n)					
	Inside	Outside	Permanently	Sporadically		
☐ Dust						
□ Water						
$\square$ Oil/Grease						
☐ Acid						
☐ Bases						
☐ Other						
Describe Fluids/Cl	hemicals:					
☐ Sliding bearing	s, number:		_			
☐ Air vents						
DIMENSIONS						
d =	mn	า		DI	= mm	
L max =				DA	= mm	
L <i>min</i> =				DA1	= mm	
	m			H1	= mm	



# **ROLLER COVER**



A roller cover consist of durable, industrial material attached to an industrial spring roller. Metal housing protects the roll-up mechanism against occasional liquid or debris.

Roller covers are a simple and cost-effective solution for helping to prevent unintentional contact with machine components.

### **Ideal for Applications Where:**

- There is little room for other protective cover options
- Simple mounting and retrofitting are required
- Cost and delivery time are important factors
- High speed and acceleration are needed
- The complete seal of a bellows is not required









# **INQUIRY FORM • ROLLER COVER**



Date	Address
Your Company	
Contact Name	
Email	•
APPLICATION INFORMATION	
Quantity Required (units)	
Max. Speed (m/min) Max. Acceleration (m/s²)	_
COVER DIMENSIONS	
L max =mm	Y = W + 26
L min = mm	•
Stroke = mm	
X1 = mm \times X	in the second se
D may - mm	
W = mm	Lmir
X2 = mm	٠
See References on Page 17-18	
STEP 1. ROLLER TYPE*	
☐ A - Roller and Shade Only	φ   -
☐ B - With Bearing Pedestal	Stroke
☐ C - With Housing	र्छ
STEP 2. HOUSING TYPE*	
☐ S - Wiper Position Straight to Band	
☐ F - Wiper Position Flat to Band	
☐ P - Wiper Position Flat to Band with Pulley	. W
STEP 3. MOUNTING POSITION*	·
☐ HO - Horizontal Operation	
☐ FO - Frontal Operation	
☐ VO - Vertical Operation	STEP 4. ATTACHMENT OF BAND
STEP 4. BAND ATTACHMENT	
Select on Diagram (right)	a b c d e f g
STEP 5. CONNECTION PLATE*	
□ F1 □ F2 □ F3 □ F4	1 1
STEP 6. POSITION OF CONNECTION PLATE*	
□ S1 □ S2 □ S3 □ S4	STEPS COMPLETING INQUIRY FORM
*Refer to reference sheet diagrams on page 17	Step 1 Step 2 Step 3 Step 4 Step 5 Step 6 Step 7
STEP 7. MATERIAL PREFERENCE	
No Refer to material chart on page 18	
	EXAMPLE
	Step 1 Step 2 Step 3 Step 4 Step 5 Step 6 Step 7

# **INQUIRY FORM • ROLLER COVER**



# **INQUIRY FORM REFERENCE SHEET**

#### **ROLLER TYPE**



☐ A - Roller and Shade Only



 $\square$  B - With Bearing Pedestal



☐ C - With Housing

#### **HOUSING TYPE**



 $\square$  S - Wiper Position Straight to Band



☐ F - Wiper Position Flat to Band

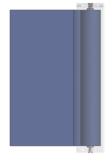


☐ P - Wiper Position Flat to Band with Pulley

## **MOUNTING POSITIONS**



 $\square$  HO - Horizontal Operation



 $\hfill\square$  FO - Frontal Operation



 $\square$  VO - Vertical Operation

#### **CONNECTION PLATE**



□ F1

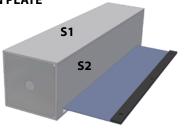
POSITION OF CONNECTION PLATE







□ F4



□ F2

S3 S4

# **COVER MATERIALS**



### **REFERENCE SHEET**

# Bellows and Roller Cover Fabrics

No.	Usage	Order No.	Front/Middle/Back	Color	Thick- ness (mm)	Width (mm)	Thermal Properties C° Min. Max. Short Term	General Resistance to
01	R	1001414	PUR/PES/-	Glossy Black	0.9	2000	- 35° + 80° +120°	
02	R	1001413	PUR/PES/-	Glossy White	0.9	2000	- 35° + 80° +120°	Dust Oil
03	R	1004164	PUR/PES/-	Glossy Green	0.9	2000	- 35° + 80° +120°	Coolants Water
04	R	1004170	PUR/PES/-	Glossy Green	1.5	2000	- 35° + 80° +120°	
05	R	1002547	PUR/PES/PUR	Matt Black	0.34	1500	- 35° + 90° +180°	Acids
06	R/B	1003939	PUR/PES/PUR	Matt Black	0.21	1500	- 35° + 90° +140°	Oil Coolants
07	R/B	1003940	PUR/Nomex® /PUR	Matt Black	0.35	1500	-35° +120° +230°	Water
08	R/B	1007493	PVC/PES/PVC	Glossy Black	0.26	1500	- 25° + 80° +120°	
09	R/B	1007492	PVC/PES/PVC	Glossy Black	0.5	2000	- 25° + 80° +120°	Dust
10	R	1001412	PVC/PES/-	Glossy Black	0.9	2000	- 25° + 80° +120°	Water
11	R	1001411	PVC/PES/-	Glossy White	0.9	2000	- 25° + 80° +120°	
12	R	1004184	PVC	Trans- parent	1.0	1500	- 25° + 80° +100°	Acids
13	R	1002471	FPM/PES/-	Matt Black	1.2	1200	-40° +120° +200°	Dust Oil
14	R	1002547	Stainless Steel	Silver	0.25	600	-40° +100° +300°	Coolants Water Alkaline
15	R	1002667	Stainless Steel	Silver	0.2	1200	-40° +100° +300°	Alkalille

<sup>\*</sup> Survey of main fabrics for usage: R (Roller Covers), B (Bellow Covers)

# STEPS COMPLETING ROLLER COVER INQUIRY FORM Step 1 Step 2 Step 3 Step 4 Step 5 Step 6 Step 7 EXAMPLE Step 1 Step 2 Step 3 Step 4 Step 5 Step 6 Step 7 C S HO e F1 S3 01

# **ALUMINUM COVER/ALC**



#### **FLEXIBLE FOR A VARIETY OF USES**

### **ALC COVERS: OVERVIEW**

- Designed for high-speed machine tools
- Suitable for chip-protection
- Constructed of strong but lightweight aluminum profiles with polyurethan hinge suitable for high tensile stress (90 Pa)
- For very large covers (up to 6000 mm height) the internal strength of the aluminum profiles (335 Pa) will provide a long life cycle
- Can be integrated with guide tracks for a complete cover system

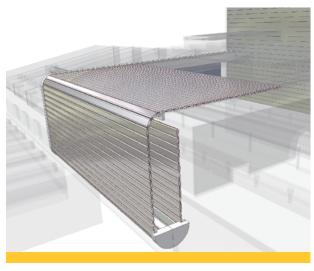




**FLEXIBLE**Use as a roll-up cover or apron cover







**ALC R**Easy to fold in two directions



**ALC** Work in combination with roll-aways



**ALC F**Easy to combine with Thodacon Wipers

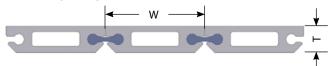


# **ALUMINUM COVER/ALC**

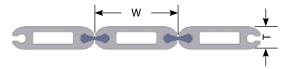


### **ALC PROFILES**

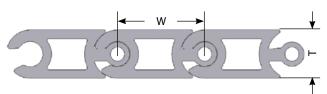
#### ALC F / 8 (FLAT)



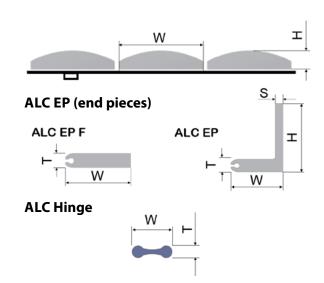
## **ALC R (ROUND)**



#### **ALC 14 / 25**



#### ALC L to be riveted on fabrics



Type.	Mat No.	Material	W	Ţ	Н	S	Length	Coating
ALC F	1002093	Alu	20.8	5.5	-	-	1000	anodized
ALC F	1000039	Alu	20.8	5.5	-	-	3000	anodized
ALC R	1001530	Alu	20.5	5.5	-	-	1000	anodized
ALC R	1000040	Alu	20.5	5.5	-	-	3000	anodized
ALC 8	1023969	Alu	25	8	-	-	1000	anodized
ALC 8	1008839	Alu	25	8	-	-	2500	anodized
ALC 14	1004392	Alu	25	14	-	-	1000	anodized
ALC 14	1003223	Alu	25	14	-	-	3000	anodized
ALC 25	1006251	Alu	50	25	-	-	1000	anodized
ALC 25	1003251	Alu	50	25	-	-	3000	anodized
ALC L	1006252	Alu	16	1.5	3.5	-	1000	anodized
ALC L	1005424	Alu	16	1.5	3.5	-	3000	anodized
ALC EP F	1003330	Alu	25	5.5	-	-	1000	anodized
ALC EP F	1000828	Alu	25	5.5	-	-	3000	anodized
ALC EP A	1003331	Alu	20	5.5	30	3	1000	anodized
ALC EP A	1000785	Alu	20	5.5	30	3	3000	anodized
ALC Hinge	1000041	PU	7.1	2.1	-	-	endless	-

# **PIT COVER**



#### **OVERVIEW**

- Unrolling lengths up to 20 meters and widths (dependent on supported weight) up to 3 meters
- Choice of roll-up mechanism / drive (see examples below)
- Walkable and non-walkable versions available
- Walkable version available with optional anti-slip Griptape
- SSC Aluminum profile used with pit covers (see next page)



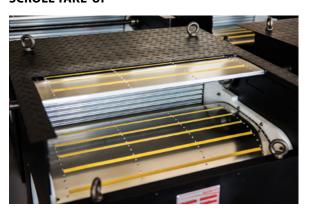
➤ To discuss your requirements, please contact our sales department



#### **GEAR MOTOR AND CHAIN DRIVE**



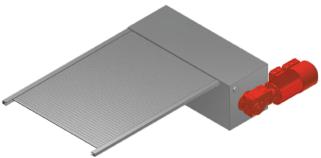
**SCROLL TAKE-UP** 



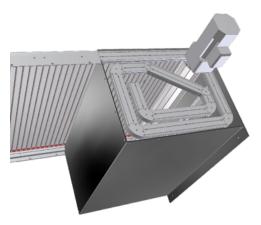
**AIR MOTOR** 



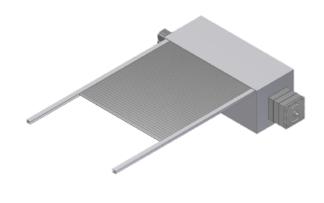
**ELECTRIC MOTOR** 



WORMWAY FOR SLIDING THE COVER IN



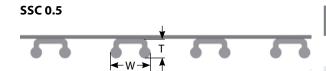
**SPRING MOTOR UNIT WITH HIGH TORQUE** 



# **PIT COVER**



# **SSC PROFILES FOR PIT COVERS**

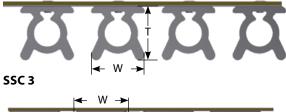


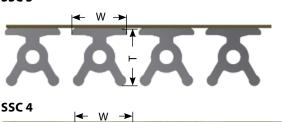
SSC 1

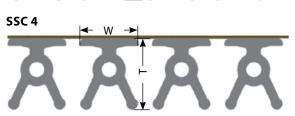


SSC 2

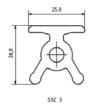
Type.	Mat No.	Material	W	T	Length	Coating
SSC 0.5	1082228	Alu	12.5	6	3000	-
SSC 1	1065207	Alu	15	12.7	3000	-
SSC 2	1065208	Alu	16	19	3000	-
SSC 3	1065210	Alu	25	26	3000	-
SSC 4	1104628	Alu	25	30	3000	-



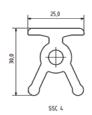


















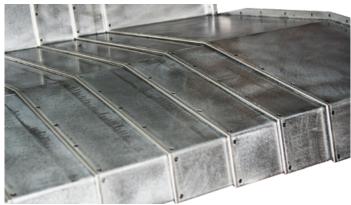
# **STEEL COVER**

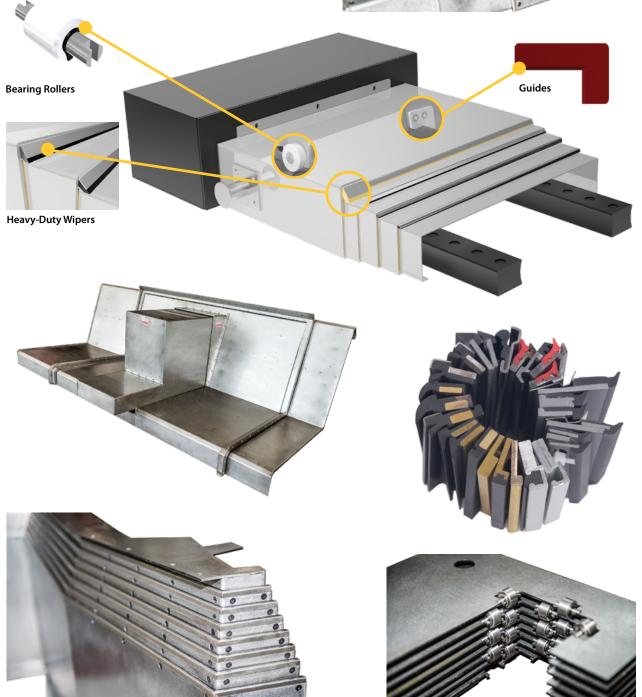


Steel covers are machine tool builder's long-preferred way of protecting machine ways or ball screws from dropped tools, heavy chip loads, cutting, oils, and coolants.

#### **OVERVIEW**

- Can be designed to move along any machine axis
- Full inventory of replacement wipers and accessories
- Shapes: flat (most common), peaked, slanted (to deflect coolant)
- Direction of movement can be horizontal, vertical, or frontal





# **STEEL COVER • INQUIRY FORM**

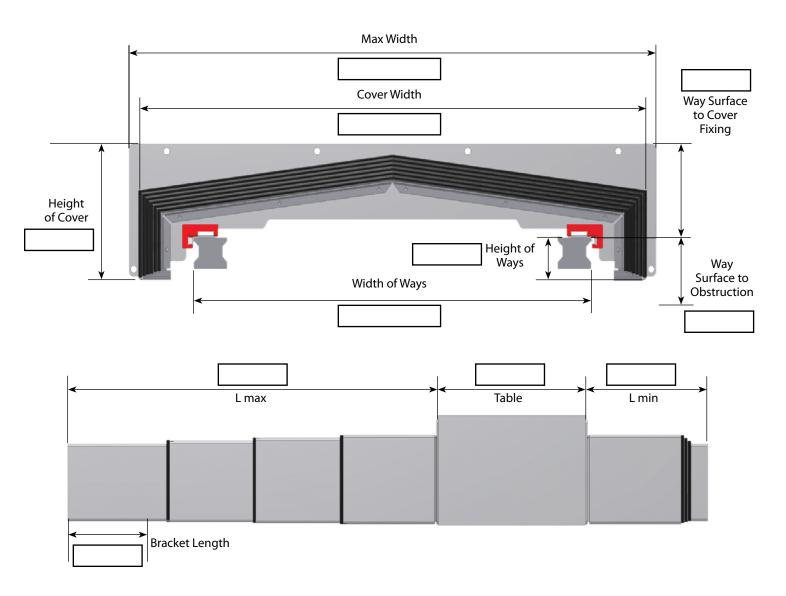


PAGE 1 OF 2				
Date			Address	
Your Company				
Contact Name				
Email			Telefax	
APPLICATION INFOR	MATION			
Quantity Required	(units)	Working Position:	☐ Horizontal ☐ Verti	cal 🗆 Frontal
Stroke (m/min)	Max. Speed (m/min) _	Max. Ac	cceleration (m/s²)	Working hours per day (h)
Use of Cover (describe) _				
Usage: ☐ Dry Usage ☐	☐ Regular Usage (coolant	/oil/debris)		

#### **COVER DIMENSIONS**

Type of Steel:  $\square$  Regular  $\square$  Stainless Steel

Please fill in dimensions in mm on sketch. Note: If other obstruction to obstruct the cover design, please add sketch in the drawing



Inquiry form continues on next page

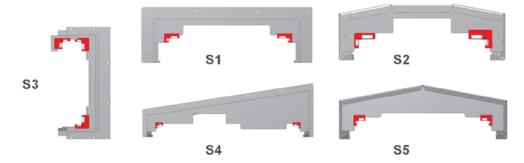
# **STEEL COVER • INQUIRY FORM**



### PAGE 2 OF 2

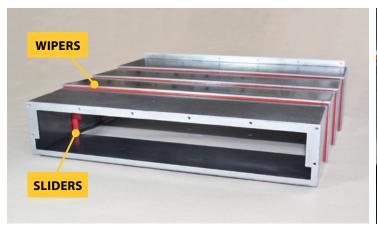
#### **COVER SHAPE**

Desired Shape:  $\square$  S1  $\square$  S2  $\square$  S3  $\square$  S4  $\square$  S5

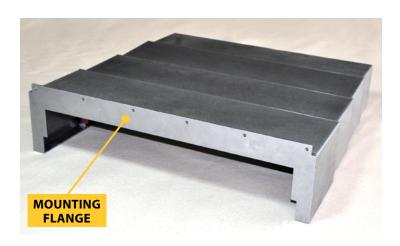


A variety of accessories are available. Dynatect will recommend accessories and wipers based on your application. To view all wipers specifications, see the Dynatect Wipers Catalog.









# **SPECIAL XY COVER DESIGNS**



#### **MULTI-AXIS SHIELD ASSEMBLY**

Dynatect provides solutions based on the environment and the mechanical requirements. We provide a wide range of solutions which can meet the needs of any application, ranging from a simple bellows to a complete assembly including an enclosure.

Dynatect's years of working with machine tool manufacturers gives us the knowledge to provide the most cost-effective application solution.

- Application: machining centers or any application needing simultaneous, dynamic protection for each axis of movement.
- Designs for high speed, high acceleration

- Various methods of protection: roller cover, bellows, or steel cover.
- Mounting arrangement to suit the customer's needs
- Wipers to clean debris and fluids from the surface of the shade

#### **INQUIRY / NEW APPLICATION**

➤ To discuss your requirements, please contact our sales department



➤ Example of Roller XY Cover



➤ Example of Bellows XY Cover



➤ Example of Finned Bellows XY Cover



➤ Example of Steel XY Cover

# **ADDITIONAL PRODUCTS**



### FOR LITERATURE > VISIT WWW.DYNATECT.COM/BRANDS/DYNATECT-ASIA









# **MECHANICAL AND PNEUMATIC SLIP CLUTCHES**







# **VEHICLE COMPARTMENT ROLL-UP DOORS**







# **ALUMINUM COVER**



# **COMPARTMENT ROLL-UP DOORS**



# **CABLE & HOSE CARRIERS**



# DYNATECT® DYNAMIC EQUIPMENT PROTECTION thodacon®

# **SLIP CLUTCHES**





#### THODACON MACHINE TOOL PROTECTION CO LTD

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