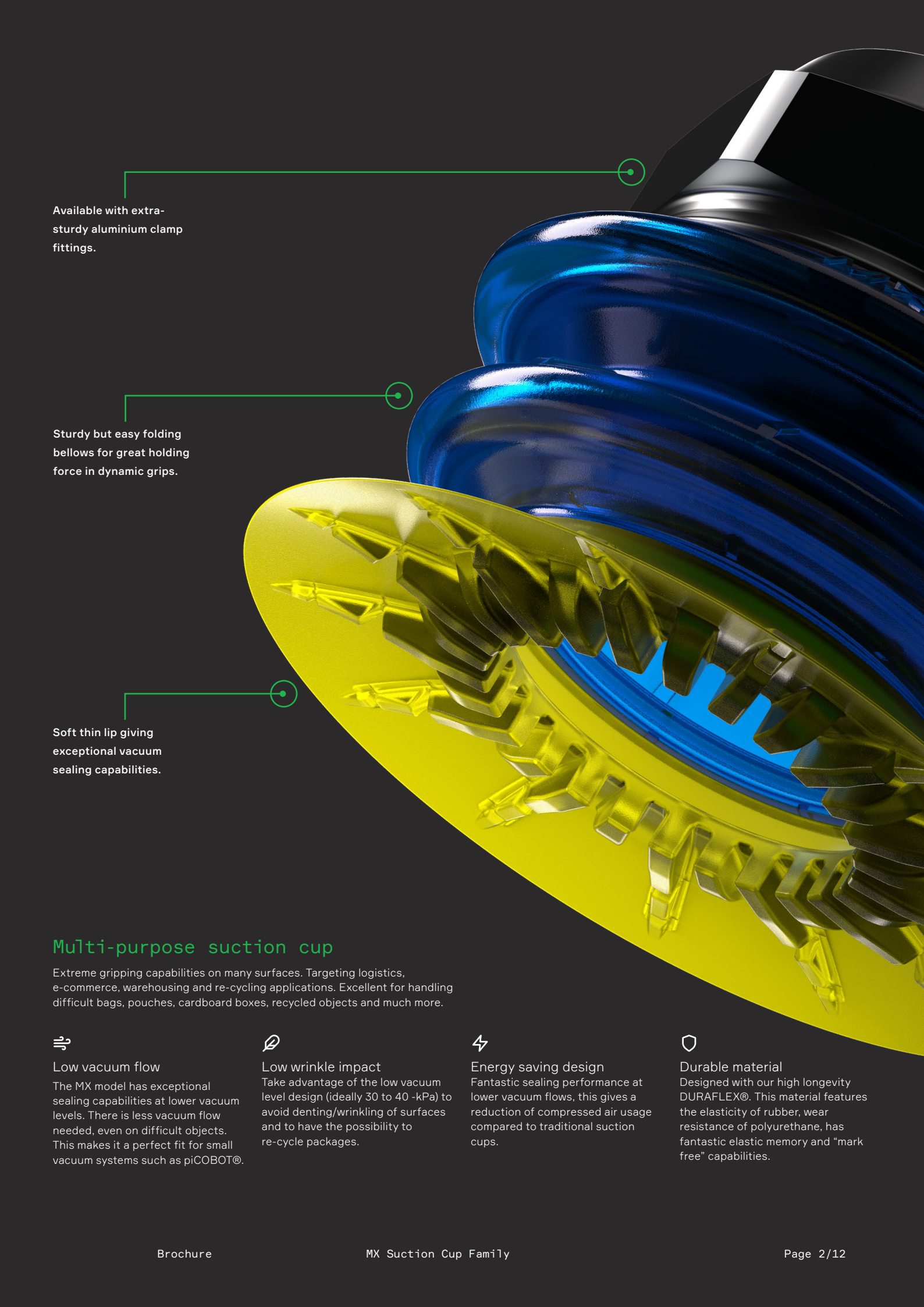


MX Suction  
Cup Family

The #1  
item picker

 piab Evolving automation



Available with extra-sturdy aluminium clamp fittings.

Sturdy but easy folding bellows for great holding force in dynamic grips.

Soft thin lip giving exceptional vacuum sealing capabilities.

## Multi-purpose suction cup

Extreme gripping capabilities on many surfaces. Targeting logistics, e-commerce, warehousing and re-cycling applications. Excellent for handling difficult bags, pouches, cardboard boxes, recycled objects and much more.



### Low vacuum flow

The MX model has exceptional sealing capabilities at lower vacuum levels. There is less vacuum flow needed, even on difficult objects. This makes it a perfect fit for small vacuum systems such as piCOBOT®.



### Low wrinkle impact

Take advantage of the low vacuum level design (ideally 30 to 40 -kPa) to avoid denting/wrinkling of surfaces and to have the possibility to re-cycle packages.



### Energy saving design

Fantastic sealing performance at lower vacuum flows, this gives a reduction of compressed air usage compared to traditional suction cups.



### Durable material

Designed with our high longevity DURAFLEX®. This material features the elasticity of rubber, wear resistance of polyurethane, has fantastic elastic memory and "mark free" capabilities.

## The #1 item picker

# Piabab is introducing the MX suction cup family

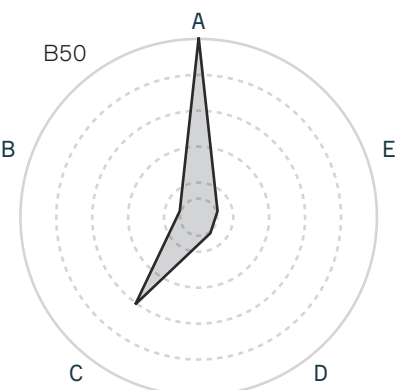
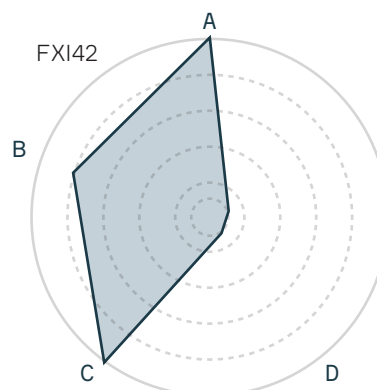
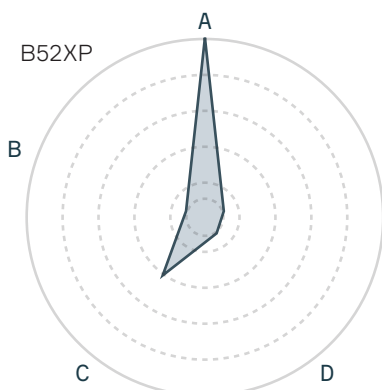
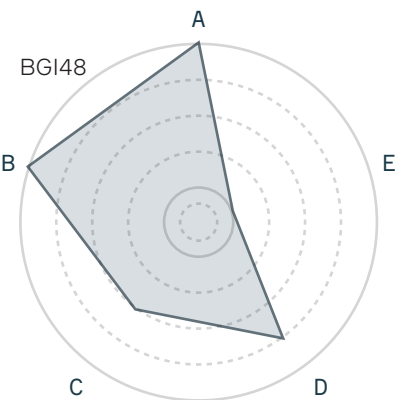
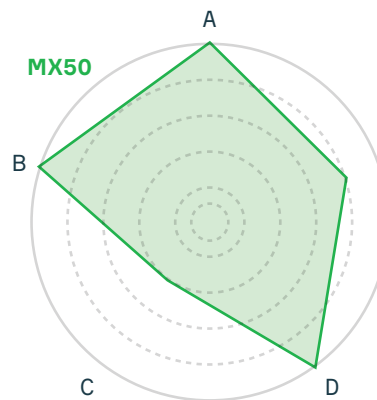


The MX suction cups are outstanding for picking various objects of different materials. Designed primarily for logistics, warehousing, e-commerce and re-cycling applications – this is a truly multi-purpose suction cup with extreme gripping capabilities on many different surfaces. The cups are highly engineered, created to support picking multiple types of objects. This new suction cup family is compatible with all piGRIP® fittings and their features.

### Pick grade (0 – 5 ☆)

Comparison between MX50 and purpose specific suction cups.

- A – Cardboard, normal
- B – Cardboard, rough
- C – Masonite, rough
- D – Bag, filled
- E – Bag, flimsy



Testing performed using low vacuum flow with COAX® MICRO Si cartridges.



# E-commerce

The problem is simple: as your business scales so do the demands, complexity, and repetition of daily tasks. Systems that might've worked previously, become increasingly inefficient over time. As E-commerce continues to rapidly evolve, your warehouse has been forced to face new challenges. One such challenge is the trend of higher volumes of smaller cartons and poly bags of different shapes and sizes. Manual operations struggle to keep up and order numbers can easily outnumber your stock-keeping unit. Speed and accuracy also suffer under the strain of the increased order volume and mixed types of objects to be handled. Solution? The MX suction cup.



Bin picking



Increased automation



One picking solution



Cost effective solution

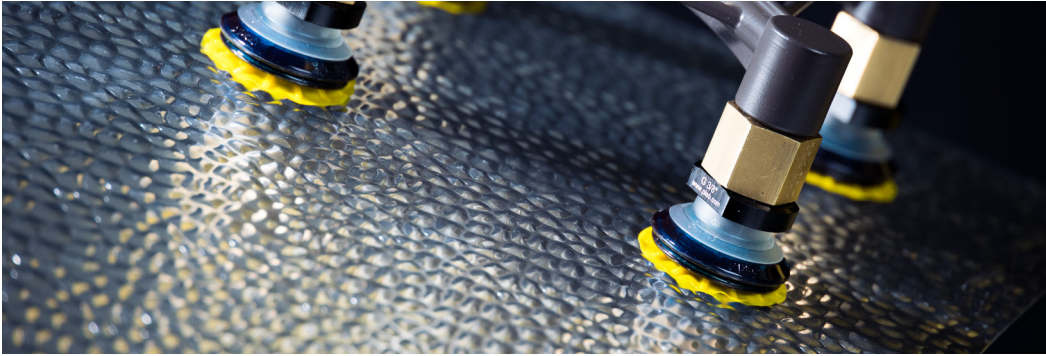


Energy saving

To support e-commerce automation, Piab is introducing a new series of suction cups – The MX family. The MX suction cups are specially developed to support the challenges of increased volumes and a variety of goods. The MX cup is a multi-object suction cup, suitable for picking objects with many different types of surfaces. The MX suction cup can pick cardboard boxes, even used ones as well as a multitude of different plastic bags, turdy as well as oversized flimsy bags. With this cup you can broaden your pick spectrum without changing tools or applications. The MX suction cup requires a low vacuum level which also means that there is a small impact of wrinkling or dents on objects. The cup has a unique design with a very thin lip which allows for a strong seal on a multitude of objects. The bellow is stiff enough to handle fast movements. The MX suction cup is made from our renowned DURAFLEX® material which offers high longevity, fantastic elastic memory and great tear resistance with “mark free” capabilities. When nothing else works – this is a strong candidate to sort out your pick challenges.

- One picking solution for the increased variety of goods
- Dynamic handling
- Reduced pick failures
- Cost effective solution
- Energy saving
- Designed with our well proven longevity material – DURAFLEX®
- Material offers “mark Free” capabilities





# Packaging and Logistics

As a manufacturer or distributor of goods, you may experience growing pains as your business handles both increased and different demands. These pains include bandwidth limitations, labor issues and timely product changeovers in the packaging/logistic lines. Mass customization of the goods handled can be a challenge and bottleneck as well as the singulation of parcels in the logistics flow. However, all of this could be easily solved with an increased speed and pick-rate.



No line adjustment time



Address more customers



Handle multiple types of products



Simplify/reduce maintenance cost



Energy saving

Piab supports multi-object picks with the new MX suction cup family. This allows for several new opportunities within packaging and logistics. This suction cup family is designed to handle different objects with many different types of surfaces. The cup has a unique design with a very thin lip, which gives an incredibly efficient seal on a multitude of objects, including re-cycled objects. The bellow is stiff enough to handle fast movements. The MX suction cup is made from our renowned DURAFLEX® material which offers high longevity, fantastic elastic memory and great tear resistance with "mark free" capabilities. With this new suction cup family, you can extend the capabilities of your automation and add new tasks to your line as well as increase your speed and pick-rate. The MX suction cup is designed to be energy efficient with a low vacuum-flow as well as low vacuum-levels.

- One picking solution
- Dynamic handling
- Increased variety of picked goods
- Reduced pick failures
- Cost effective solution
- Energy saving
- Designed with our well proven longevity material – DURAFLEX®
- Material offers "mark Free" capabilities







# Infrastructure boost

If you want to boost your infrastructure, high-performing automation systems can help manufacturers and distributors to maximize productivity and efficiencies to remain competitive. Improved flexibility to accommodate larger product varieties and more diverse packaging sizes is also important. Smart technologies help to reduce the complexity, time, and cost of updating the machinery. Automated equipment for E-commerce, Logistics and Warehousing must be flexible enough to keep up with frequent line changes and scalable enough to handle new products and volumes. All this can be achieved with the new MX suction cups without re-building any existing infrastructure.



Enhance gripping capabilities



Simple change to implement



One picking solution



Increased output using same energy



Energy saving

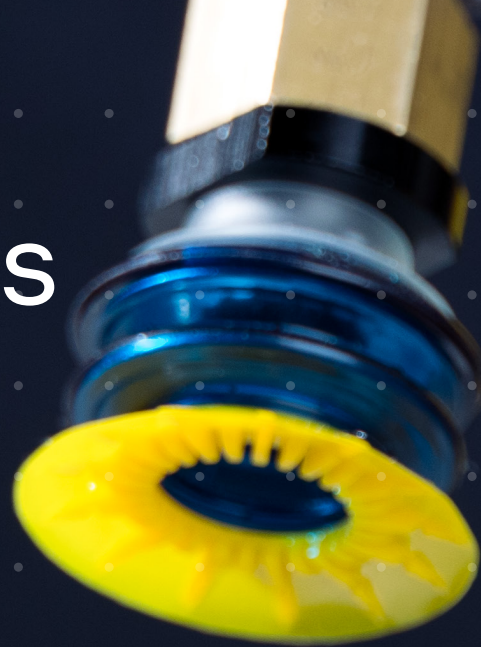
The new MX suction cup family supports multi-object pick with its low vacuum flow design and energy saving features. It is a perfect boost to your existing automation applications. The cup has a unique design with a very thin lip, which gives an incredibly efficient seal on a multitude of objects. The bellow is stiff enough to handle fast movements. The MX suction cup is made from our renowned DURAFLEX® material which offers high longevity, fantastic elastic memory, and great tear resistance with “mark free” capabilities.

With this new cup family, you can extend the capabilities of your automation adding new tasks to your line.

- Increased variety of picked goods
- Increase capabilities in existing applications
- One picking solution
- Reduced pick failures
- Dynamic handling
- Energy saving
- Low vacuum flow design
- Designed in with our well proven longevity material – DURAFLEX®
- Cost effective solution



# Specifications



## ☐☐ Fitting options & build height

Build heights for a selection of available fitting types.

Fitting	Size		Build height (mm)									
			MX35		MX42		MX50		MX57		MX65	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
G-Thread	1/8"	1/8"	28.7	30.7	32.0	34.0	34.2	36.2	37.5	39.5	39.8	41.8
	1/4"	1/4"	29.7	33.7	33.0	37.0	35.2	39.2	38.5	42.5	40.8	44.8
	3/8"	3/8"	29.7	36.7	33.0	40.0	35.2	42.2	38.5	45.5	40.8	47.8
	1/2"	1/2"	29.7	37.7	33.0	41.0	35.2	43.2	38.5	46.5	40.8	48.8
		5 x 1/8"	29.7	43.7	33.0	47.0	35.2	49.2	38.5	52.5	40.8	54.8
Clamp Ring (G-Thread)	1/4"	-	29.3	-	31.6	-	33.4	-	38.4	-	40.5	-
	3/8"	-	28.7	-	30.6	-	32.4	-	36.5	-	38.6	-
G-Thread Low	1/8"	-	25.2	-	28.5	-	30.7	-	34.0	-	36.3	-
	1/4"	-	25.2	-	28.5	-	30.7	-	34.0	-	36.3	-
	3/8"	-	25.2	-	28.5	-	30.7	-	34.0	-	36.3	-
NPT-Thread	1/8"	1/4" 3/8"	28.7	-	32.0	-	34.2	-	37.5	-	39.8	-
	1/4"		35.7	33.0	39.0	35.2	41.2	38.5	44.5	40.8	46.8	
	3/8"		36.7	33.0	40.0	35.2	42.2	38.5	45.5	40.8	47.8	
	1/2"		29.7	33.0	35.2	38.5	40.8	-	-	-	-	
NPT-Thread Low	1/8"	-	25.2	-	28.5	-	30.7	-	34.0	-	36.3	-
	1/4"	-	25.2	-	28.5	-	30.7	-	34.0	-	36.3	-
	3/8"	-	25.2	-	28.5	-	30.7	-	34.0	-	36.3	-
NPSF-Thread	-	1/8"	-	30.7	-	34.0	-	36.2	-	39.5	-	41.8
	-	1/4"	-	33.7	-	37.0	-	39.2	-	42.5	-	44.8
	-	3/8"	-	36.7	-	40.0	-	42.2	-	45.5	-	47.8
	-	1/2"	-	37.7	-	41.0	-	43.2	-	46.5	-	48.8
	-	5 x 1/8"	-	43.7	-	47.0	-	49.2	-	52.5	-	54.8
M-Thread	M6	M5	28.7	29.7	32.0	33.0	34.2	35.2	37.5	38.5	39.8	40.8
	M8	M6	28.7	30.7	32.0	34.0	34.2	36.2	37.5	39.5	39.8	41.8
	M10	M8	29.7	30.7	33.0	34.0	35.2	36.2	38.5	39.5	40.8	41.8
	M12	M10	29.7	30.7	33.0	34.0	35.2	36.2	38.5	39.5	40.8	41.8
	M14	M12	29.7	35.7	33.0	39.0	35.2	41.2	38.5	44.5	40.8	46.8
	M16	M16	29.7	36.7	33.0	40.0	35.2	42.2	38.5	45.5	40.8	47.8
UNC-Thread	-	1/2"	-	35.7	-	39.0	-	41.2	-	44.5	-	46.8
Push-on	ø8 mm		27.7		31.0		33.2		36.5		38.8	
	ø10 mm		27.7		31.0		33.2		36.5		38.8	
	ø11 mm		27.7		31.0		33.2		36.5		38.8	



### Lifting forces

Values applicable for any kind of object, such as corrugated cardboard, plastic bag, etc.

Model	↑ Vertical			↔ Parallel		
	20 -kPa	40 -kPa	60 -kPa	20 -kPa	40 -kPa	60 -kPa
MX35	9.4 N	15.0 N	17.0 N	6.6 N	10.5 N	11.9 N
MX42	12.6 N	18.4 N	23.0 N	8.8 N	12.9 N	16.1 N
MX50	19.8 N	24.9 N	33.0 N	13.9 N	17.4 N	23.1 N
MX57	23.1 N	36.3 N	47.6 N	16.2 N	25.4 N	33.3 N
MX65	29.1 N	42.0 N	52.2 N	20.4 N	29.4 N	36.5 N

### ☰ Dimensions

Recommended vacuum level 20 – 60 -kPa.

Model	Diameter	Stroke	Actuated diameter	Min. curve radius <sup>1)</sup>
MX35	35.0 mm	7.5 mm	34.0 mm	14.0 mm
MX42	42.0 mm	10.1 mm	40.5 mm	18.0 mm
MX50	52.0 mm	11.4 mm	50.0 mm	25.0 mm
MX57	57.0 mm	12.1 mm	54.5 mm	27.0 mm
MX65	65.0 mm	14.0 mm	61.0 mm	32.0 mm

1) At 60 -kPa.

### 🌡 Temperature

Large functional temperature span.

Model	Range
MX35	10 – 50 °C
MX42	10 – 50 °C
MX50	10 – 50 °C
MX57	10 – 50 °C
MX65	10 – 50 °C

# Evolving around the world

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