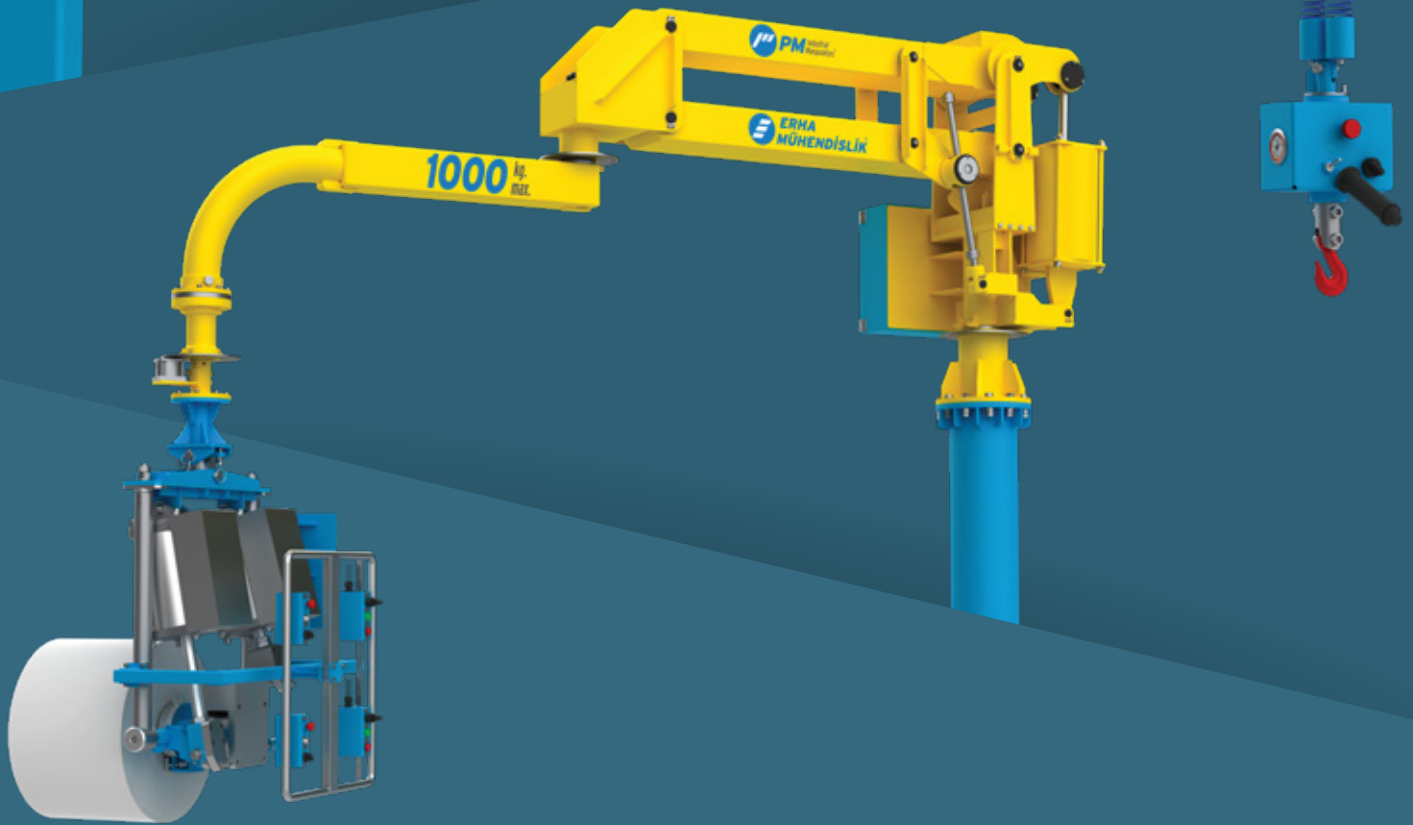




*Ergonomic,
safe and effective
handling.*



 **PM** Industrial Manipulators®

Here at PM

we design, weld, machine, paint, assemble
and quality check our products, all in one place!





ERHA ENGINEERING

ERHA ENGINEERING was established to support the developing country's industry with engineering services, the latest technology, new equipment and special designs.

Our company, which has reached the knowledge and capability in the field of pneumatic elements and pneumatic automation in the course of time, has started the domestic production of manipulator, which is one of the important needs of the modern industry, in Turkey.

Our company carries out all its designs and projects by performing simulations and tests in Solidworks Premium Office programs. With its ISO 9001 and ISO 3834 certification systems, it carries out manufacturing and application in CE standards.

ERHA ENGINEERING has all the equipment system that a modern company should have.

Our products are produced according to the following European standards:
MACHINES DIRECTIVE 2006/42/CE,
TS EN 14238:2004+A1:2009,
TS EN ISO 12100:2010 and TS EN ISO 4414:2010.



WHY PM MANIPULATORS

Our company, which has been applying design and technology in various production areas since 1988, has concentrated its experience and reliability of more than 35 years on the pneumatic manipulator, which is an indispensable product of modern production.

PM Manipulators provide ergonomic, safe and efficient handling of any product.

Working with compressed air, our products can carry all kinds of products weighing from 5 to 1.850 kilograms.

PM is the best solution for the need to handle different types of loads for processes such as production lines, packaging and production.

It balances loads perfectly, enabling almost weightless handling from any direction, gripping and carrying.

The operator can work effortlessly in maximum safety and ergonomic conditions. Our goal is to make the pneumatic manipulator, which is needed by our foreign dependent country in automation and modern production tools, a brand of Turkey and to appear as a Turkish brand in the world market.

Our company, which aims to be sustainable, continuous, high quality and development; It promises to be solution-oriented, with the most successful solution, on time delivery, after-installation service and revisions.

PM Supporter

Pneumatic Manipulators with Double Rope System



Supporter Pneumatic Manipulators are designed to move operator-centered loads within the work area with minimum effort. It balances the weight of the load, allowing the operator to carry the load quickly and safely.

The balance of the load to be carried is provided by connecting two steel cables to the balance unit. Manipulators, either floor mounted or ceiling mounted. Manipulators are produced with standard hooks, but they can also be produced with special holders designed according to needs. The manipulator, which consists of two arms, has a total of two brakes on the arm rotation axis.

Works with dry, filtrated (40 μm) and oil free compressed air (min. 0.7/0.8 MPa).

60 kg max. weight capacity. **3.000 mm** max. radius. **1.600 mm** vertical lift.
21 nl/min max. air consumption.

Mounting Options

Supporter Column Mounted SY



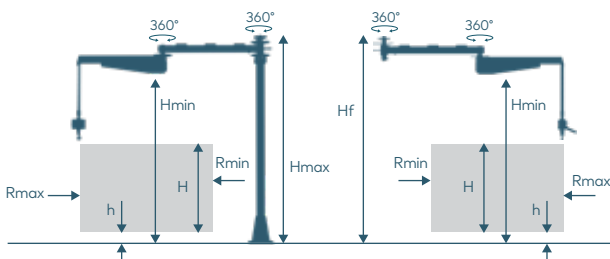
Supporter Overhead Mounted ST



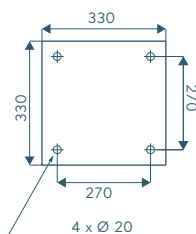
Supporter Overhead Trolley Mounted STA

Weight Capacity / kg		60	35
Max. Radius / mm	Rmax	2500	3000
Min. Radius / mm	Rmin	190	200
Vertical Lift / mm	H	1600	1600
Min. Vertical Lift / mm	*h	200	200
Max. Height / mm	*Hmax	2525	2525
Max. Ceiling Height / mm	*Hf	2505	2505
Min. Height / mm	*Hmin	2000	2000

* Marked dimensions can change according to the customer request.



Mounting Plate Dimensions (mm)



PM *Transporter*

Pneumatic Manipulators with Double Rope System



Transporter Pneumatic Manipulators are designed to move operator-centered loads within the work area with minimum effort. It balances the weight of the load, allowing the operator to carry the load quickly and safely.

The balance of the load to be carried is provided by connecting two steel cables to the balance unit. Manipulators, either floor mounted or ceiling mounted. Manipulators are produced with standard hooks, but they can also be produced with special holders designed according to needs. The manipulator, which consists of two arms, has a total of two brakes on the arm rotation axis.

Works with dry, filtrated (40 μm) and oil free compressed air (min. 0.7/0.8 MPa).

120 kg max. weight capacity. **4.500 mm** max. radius. **1.800 mm** vertical lift.
50 nl/min max. air consumption.

Mounting Options

Transporter Column Mounted TY



Transporter Overhead Mounted TT



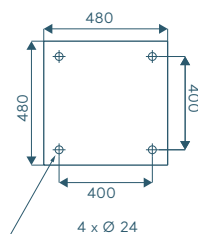
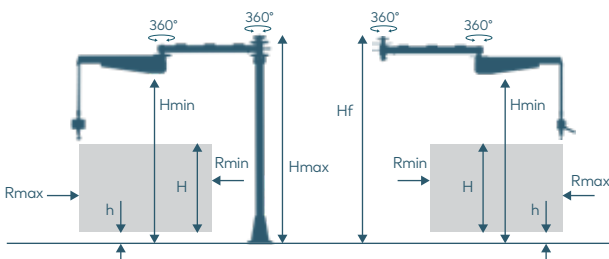
Transporter Overhead Trolley Mounted TTA

Weight Capacity / kg

		120	100	85	75
Max. Radius / mm	Rmax	3000	3500	4000	4500
Min. Radius / mm	Rmin	420	530	640	750
Vertical Lift / mm	H	1800	1800	1800	1800
Min. Vertical Lift / mm	*h	200	200	200	200
Max. Height / mm	*Hmax	2635	2635	2635	2635
Max. Ceiling Height / mm	*Hf	2550	2550	2550	2550
Min. Height / mm	*Hmin	2000	2000	2000	2000

* Marked dimensions can change according to the customer request.

Mounting Plate Dimensions (mm)





*Gentle Pneumatic Manipulator,
300 kg carrying capacity version,
displayed with a clamp fixture.*

Gentle Pneumatic Manipulators are designed to move operator-centered loads within the work area with minimum effort. It balances the weight of the load, allowing the operator to carry the load quickly and safely.

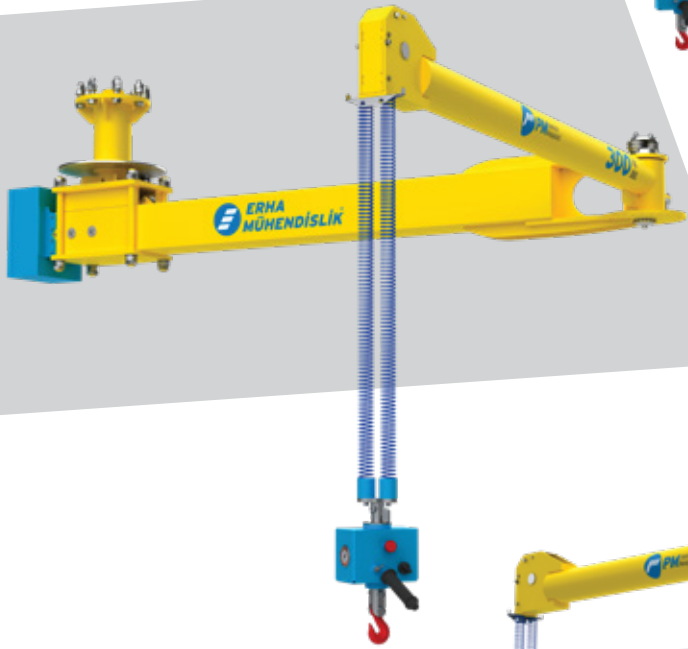
The balance of the load to be carried is provided by connecting two steel cables to the balance unit. Manipulators, either floor mounted or ceiling mounted. Manipulators are produced with standard hooks, but they can also be produced with special holders designed according to needs. The manipulator, which consists of two arms, has a total of two brakes on the arm rotation axis.

Works with dry, filtrated (40 μm) and oil free compressed air (min. 0.7/0.8 MPa).

300 kg max. weight capacity. **4.500 mm** max. radius. **2.000 mm** vertical lift.
140 nl/min max. air consumption.

Mounting Options

Gentle Column Mounted GY



Gentle Overhead Mounted GT



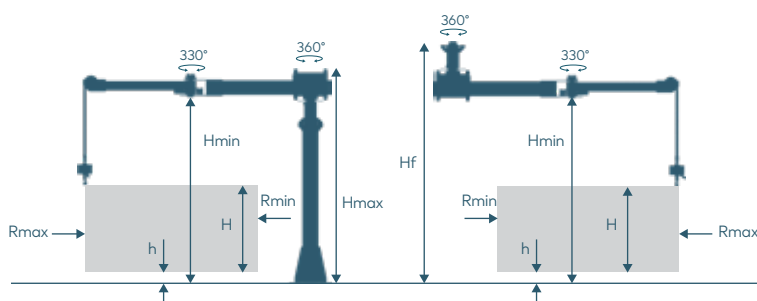
Gentle Overhead Trolley Mounted GTA



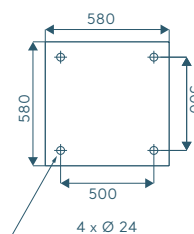
Weight Capacity / kg

		Gentle 200				Gentle 300			
		200	200	200	200	300	300	275	250
Max. Radius / mm	Rmax	3000	3500	4000	4500	3000	3500	4000	4500
Min. Radius / mm	Rmin	650	760	870	980	650	760	870	980
Vertical Lift / mm	H	2000	2000	2000	2000	2000	2000	2000	2000
Min. Vertical Lift / mm	*h	200	200	200	200	200	200	200	200
Max. Height / mm	*Hmax	2900	2900	2900	2900	2900	2900	2900	2900
Max. Ceiling Height / mm	*Hf	3300	3300	3300	3300	3300	3300	3300	3300
Min. Height / mm	*Hmin	2550	2550	2550	2550	2550	2550	2550	2550

* Marked dimensions can change according to the customer request.



Mounting Plate Dimensions (mm)



www.pmmanipulators.com



Pneumatic Manipulators with Double Rope System



Helpful Pneumatic Manipulators are designed to move operator-centered loads within the work area with minimum effort. It balances the weight of the load, allowing the operator to carry the load quickly and safely.

The balance of the load to be carried is provided by connecting two steel cables to the balance unit. Manipulators, either floor mounted or ceiling mounted. Manipulators are produced with standard hooks, but they can also be produced with special holders designed according to needs. The manipulator moves under aluminium rails which makes it easy to handle and gives precision throughout the working area.

Works with dry, filtrated (40 μm) and oil free compressed air (min. 0.7/0.8 MPa).

180 kg max. weight capacity. **6.000 mm** max. radius. **1.600 mm** vertical lift.
68 nl/min max. air consumption.

Mounting Options

Helpful Jib Arm HP

Weight Capacity / kg

Max. Radius / mm

Min. Radius / mm

Vertical Lift / mm

Min. Vertical Lift / mm

Max. Height / mm

Min. Height / mm

Rmax

Rmin

H

*h

*Hmax

*Hmin

90 / 180

4000 / 6000

1350

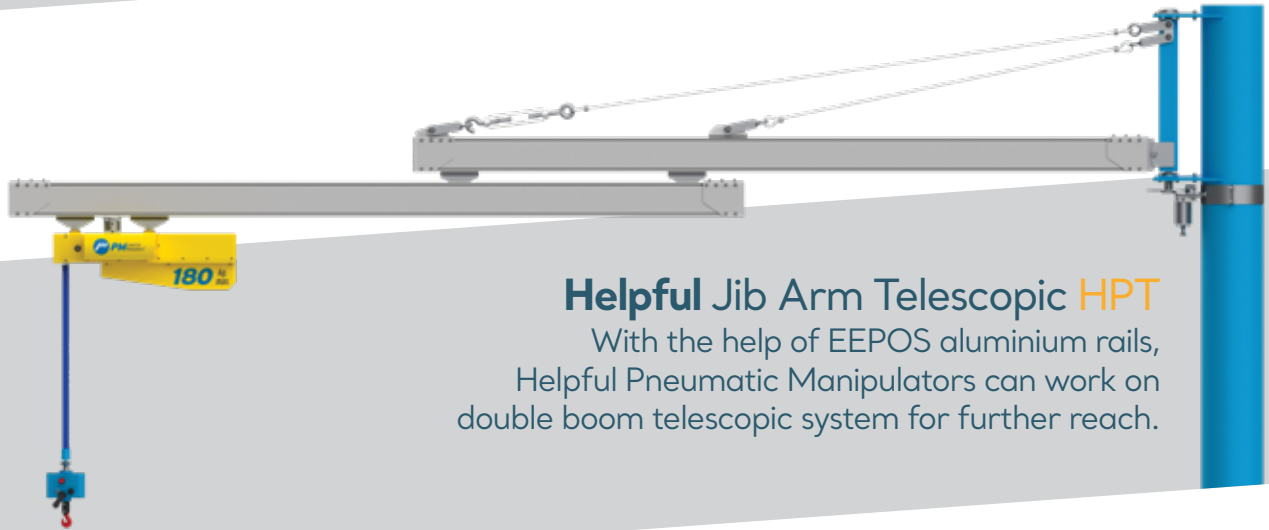
1600

200

3870

2600

* Marked dimensions can change according to the customer request.

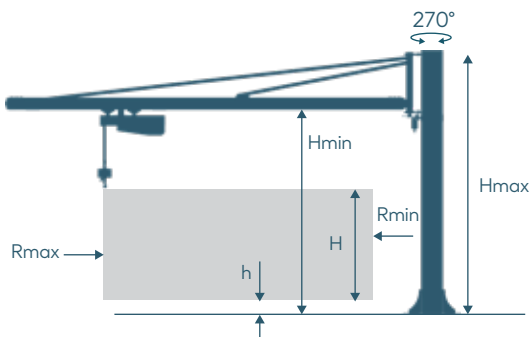
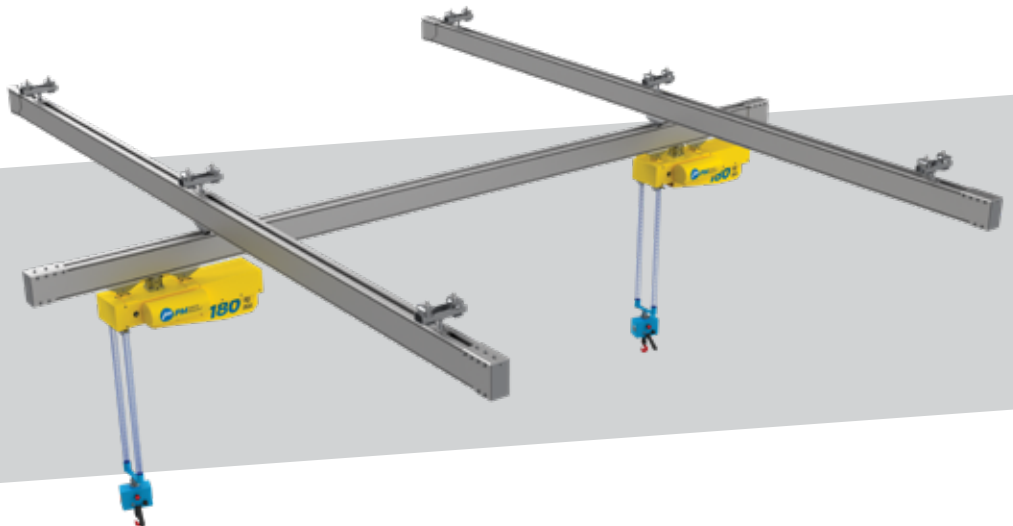


Helpful Jib Arm Telescopic HPT

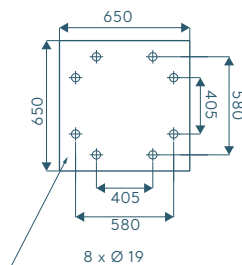
With the help of EEPOS aluminium rails, Helpful Pneumatic Manipulators can work on double boom telescopic system for further reach.

Helpful Rail System HR

With our partnership with EEPOS Cranes, we can deliver special designs for your special needs.



Mounting Plate Dimensions (mm)





*Forceful Pneumatic Manipulator,
375 kg carrying capacity version,
displayed with the vacuum operated fixture
designed to carry glass panels.*

Forceful Pneumatic Manipulators are designed to move operator-centered loads within the work area with minimum effort. It balances the weight of the load, allowing the operator to carry the load quickly and safely.

Manipulators, either floor mounted or ceiling mounted. Forceful is equipped with special gripping tools which are particularly suitable to manually handle center offset loads in any direction, in a weightless condition. The manipulator, which consists of two arms, has a total of two brakes on the arm rotation axis. It's versatile structure allows it to fit in any working environment.

Works with dry, filtrated (40 μm) and oil free compressed air (min. 0.7/0.8 MPa).

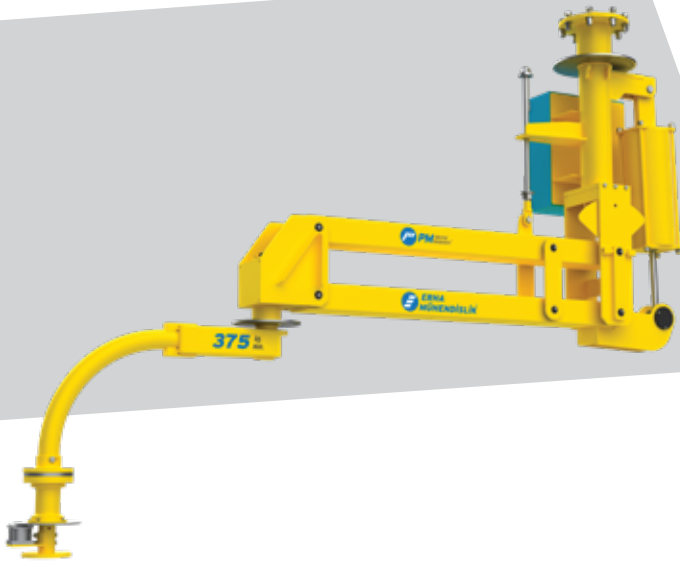
375 kg max. weight capacity. **4.000 mm** max. radius. **2.450 mm** vertical lift.
140 nl/min max. air consumption.

Mounting Options

Forceful Column Mounted **FY**



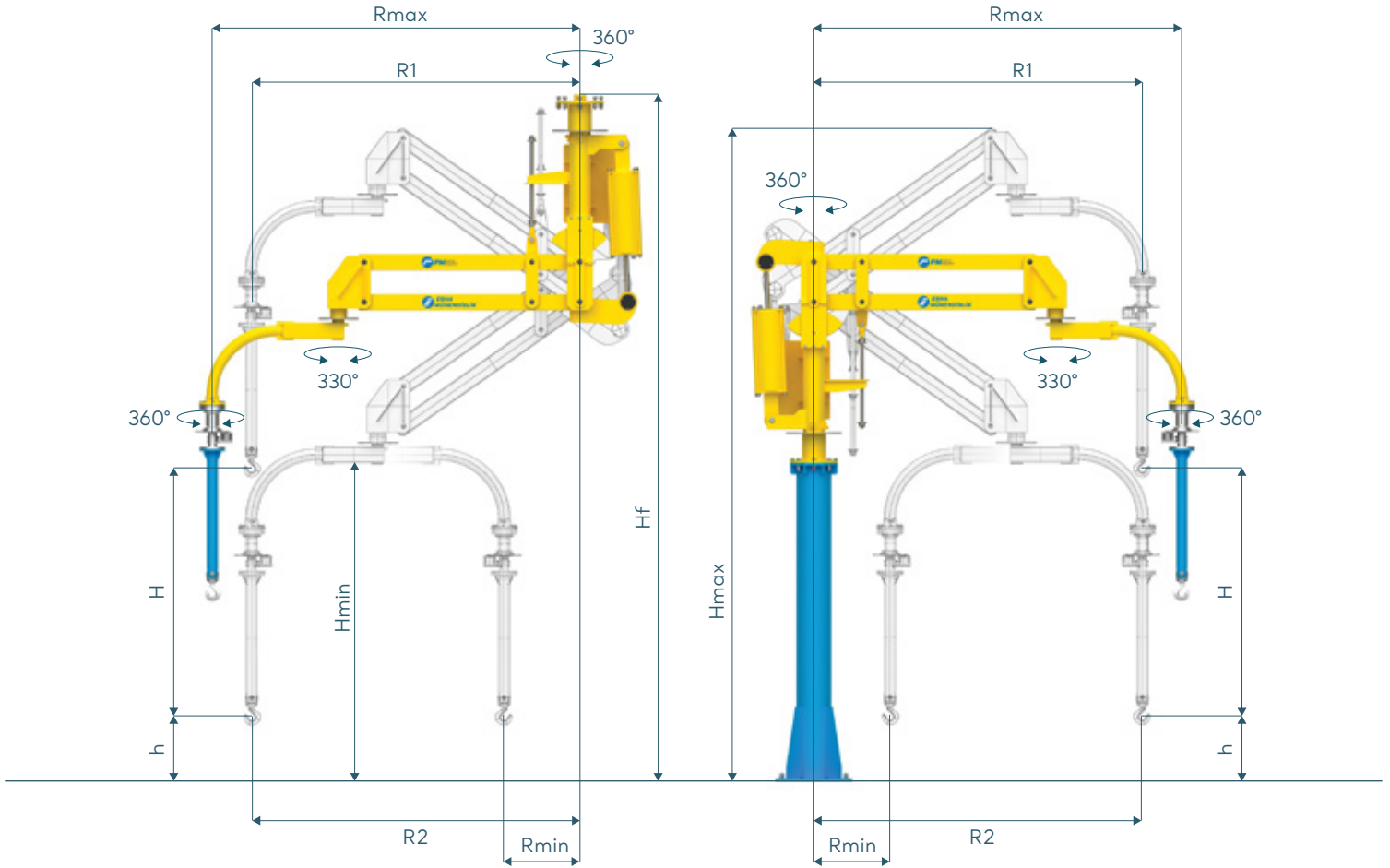
Forceful Overhead Mounted **FT**



Forceful Overhead Trolley Mounted **FTA**

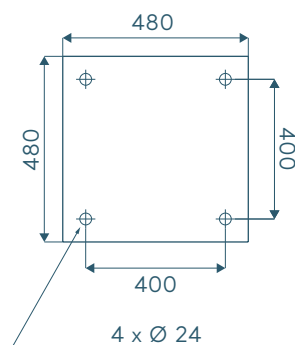


Forceful Technical Details



Weight Capacity / kg		375	250	175	110	60
Max. Radius / mm	Rmax	2000	2500	3000	3500	4000
Min. Radius / mm	Rmin	580	755	850	1000	1150
Vertical Lift / mm	H	1300	1700	2000	2400	2450
Min. Vertical Lift / mm	*h	200	200	200	200	200
Max. Height / mm	*Hmax	3860	4070	4225	4420	4610
Max. Ceiling Height / mm	*Hf	4100	4100	4800	5000	5000
Min. Height / mm	*Hmin	2000	2000	2000	2000	2000
Radius 1	R1	1750	2170	2610	3035	3465
Radius 2	R2	1750	2170	2610	3035	3465

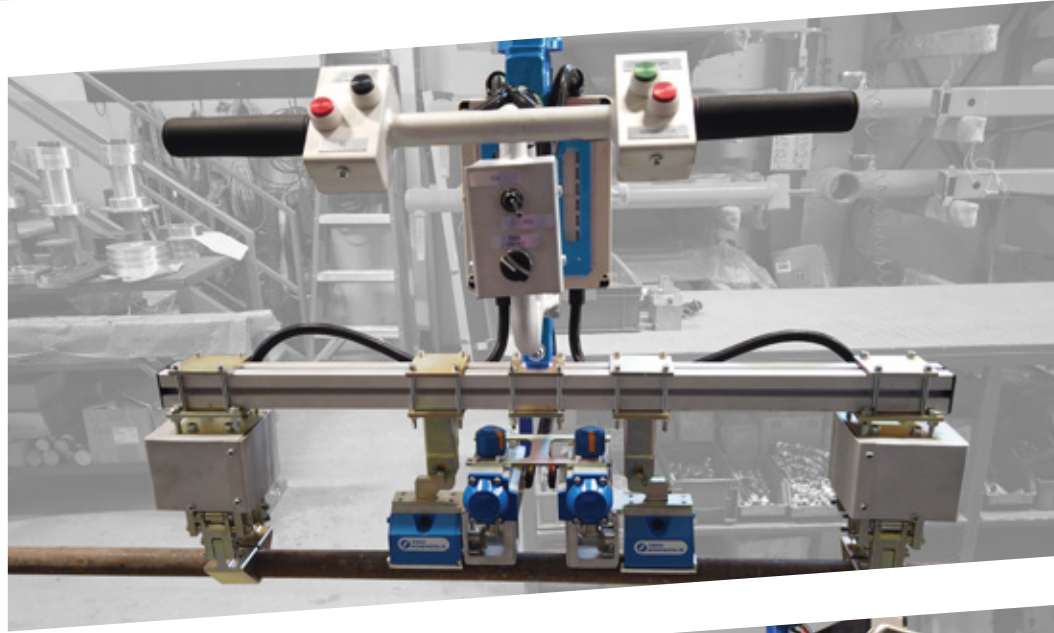
* Marked dimensions can change according to the customer request.



Mounting Plate Dimensions (mm)

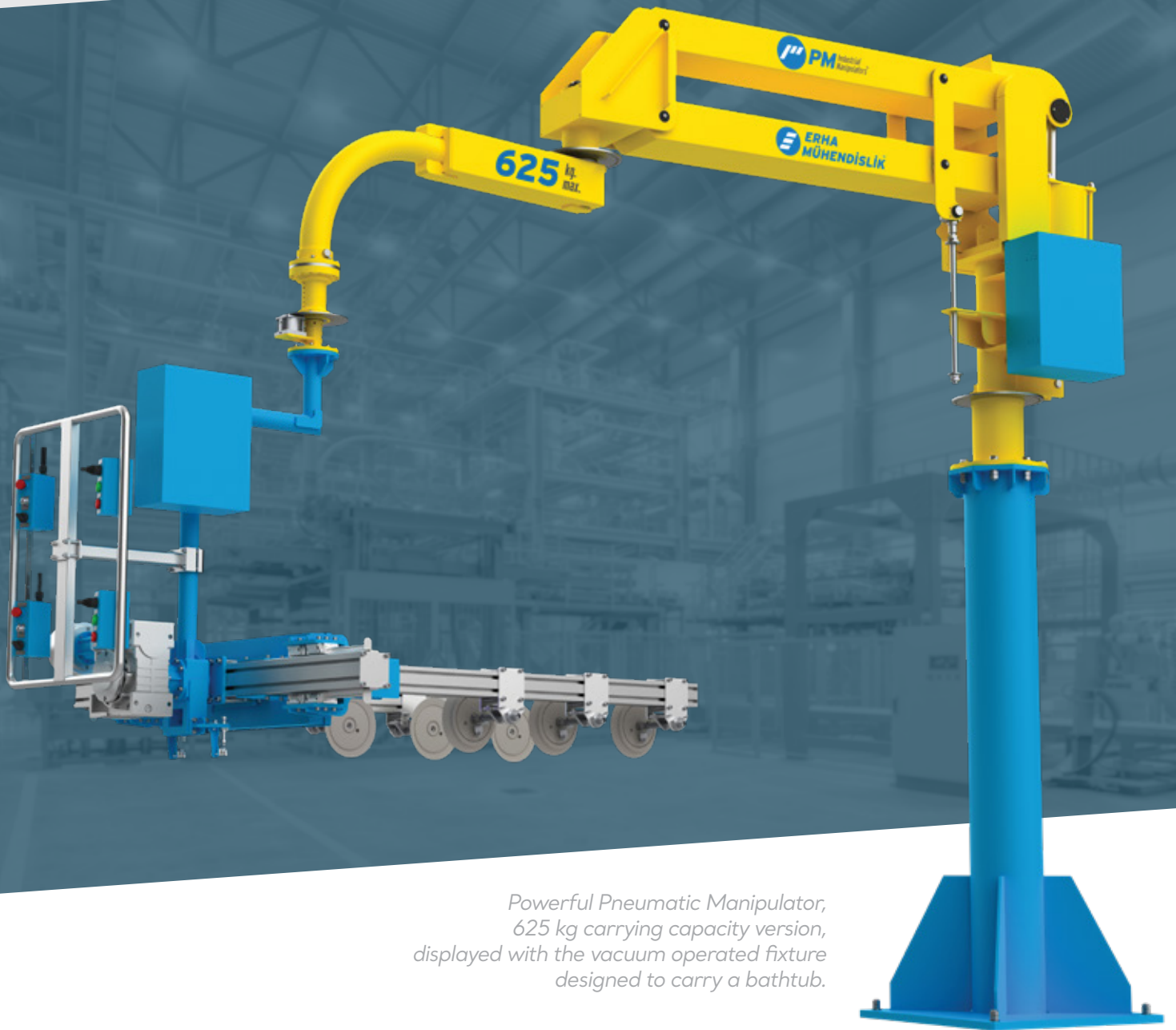
Custom Design Fixtures

With PM Manipulators, whatever load you carry, we develop a load-specific fixture design. Ergonomic, robust and for safe transport, we produce special fixtures with vacuum, pneumatic or magnetic catchers. They will carry any load with ease and comfort.





Pneumatic Manipulators with Rigid Arms



*Powerful Pneumatic Manipulator,
625 kg carrying capacity version,
displayed with the vacuum operated fixture
designed to carry a bathtub.*

Powerful Pneumatic Manipulators are designed to move operator-centered loads within the work area with minimum effort. It balances the weight of the load, allowing the operator to carry the load quickly and safely.

Manipulators, either floor mounted or ceiling mounted. Powerful is equipped with special gripping tools which are particularly suitable to manually handle center offset loads in any direction, in a weightless condition. The manipulator, which consists of two arms, has a total of two brakes on the arm rotation axis. It's versatile structure allows it to fit in any working environment.

Works with dry, filtrated (40 μm) and oil free compressed air (min. 0.7/0.8 MPa).

625 kg max. weight capacity. **4.500 mm** max. radius. **2.450 mm** vertical lift.
270 nl/min max. air consumption.

Mounting Options

Powerful Column Mounted PY



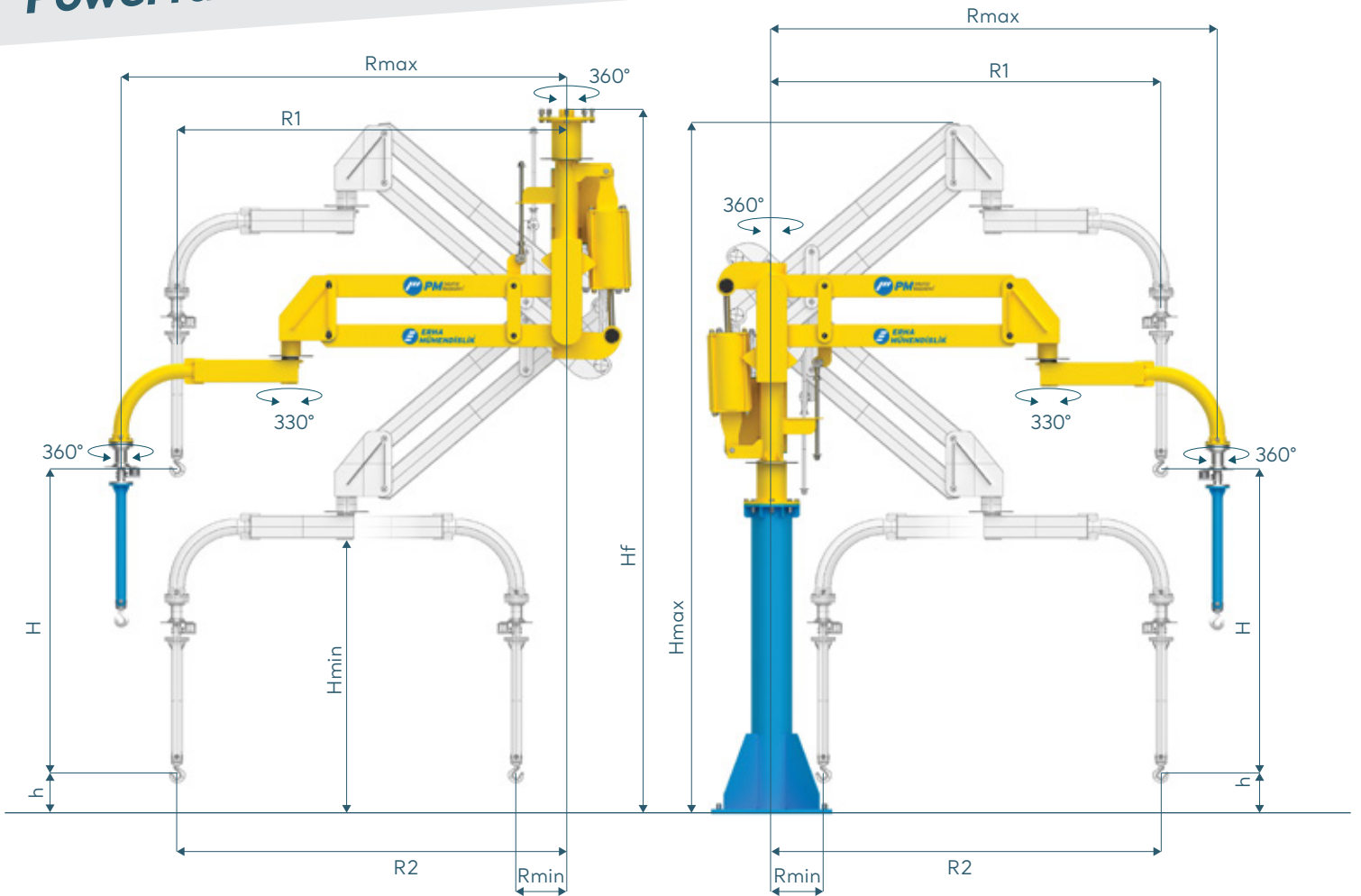
Powerful Overhead Mounted PT



Powerful Overhead Trolley Mounted PTA

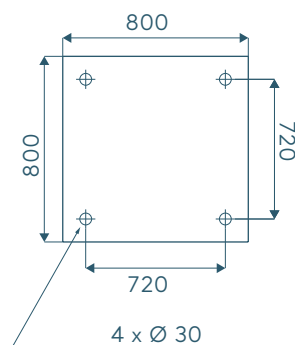


Powerful Technical Details



Weight Capacity / kg		625	475	350	260	185
Max. Radius / mm	Rmax	2500	3000	3500	4000	4500
Min. Radius / mm	Rmin	755	850	1000	1150	1300
Vertical Lift / mm	H	1600	1900	2300	2450	2450
Min. Vertical Lift / mm	*h	200	200	200	200	200
Max. Height / mm	*Hmax	4215	4370	4560	4755	4950
Max. Ceiling Height / mm	*Hf	4200	4900	5000	5100	5100
Min. Height / mm	*Hmin	2000	2000	2000	2000	2000
Radius 1	R1	2195	2635	3060	3485	3915
Radius 2	R2	2195	2635	3060	3485	3915

* Marked dimensions can change according to the customer request.



Mounting Plate Dimensions (mm)

Custom Design Fixtures



PM Hercules

Pneumatic Manipulators with Rigid Arms



*Hercules Pneumatic Manipulator,
1.000 kg carrying capacity version,
displayed with the paper coil fixture.*

Hercules Pneumatic Manipulators are designed to move operator-centered loads within the work area with minimum effort. It balances the weight of the load, allowing the operator to carry the load quickly and safely.

Manipulators, either floor mounted or ceiling mounted. Hercules is equipped with special gripping tools which are particularly suitable to manually handle center offset loads in any direction, in a weightless condition. The manipulator, which consists of two arms, has a total of two brakes on the arm rotation axis. It's versatile structure allows it to fit in any working environment.

Works with dry, filtrated (40 μ m) and oil free compressed air (min. 0.7/0.8 MPa).

1.000 kg max. weight capacity. **4.500 mm** max. radius. **2.200 mm** vertical lift.
475 nl/min max. air consumption.

Mounting Options

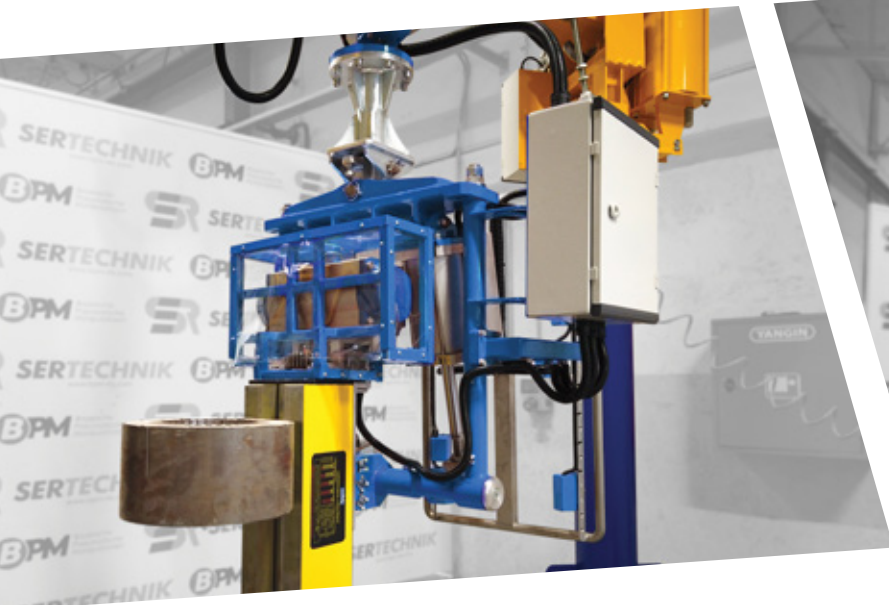
Hercules Column Mounted HY



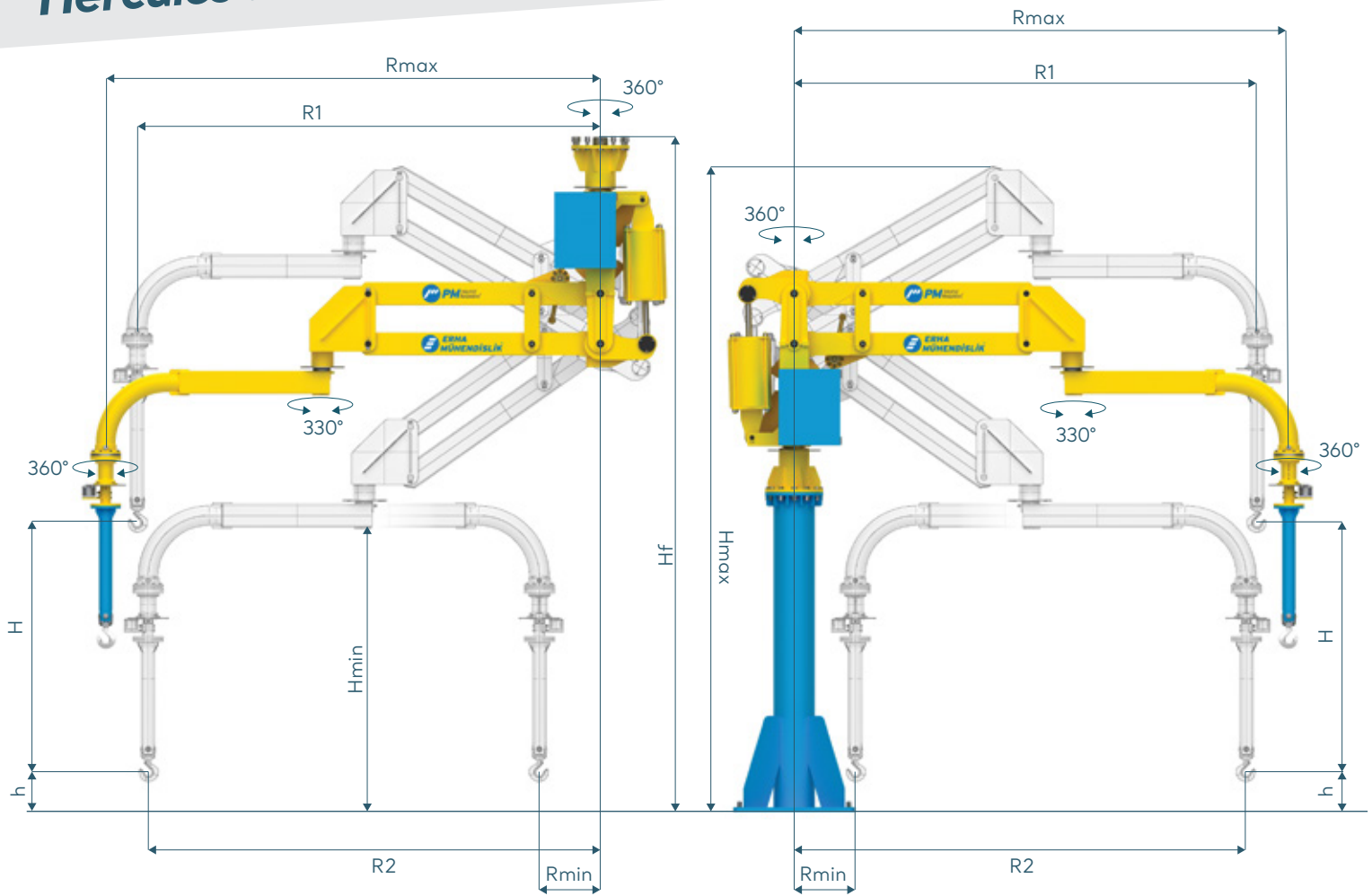
Hercules Overhead Mounted HT



Hercules Overhead Trolley Mounted HTA

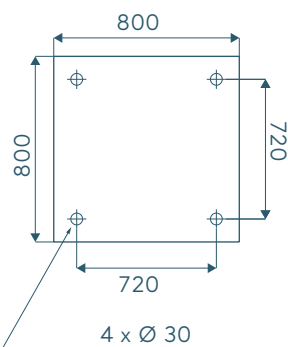


Hercules Technical Details

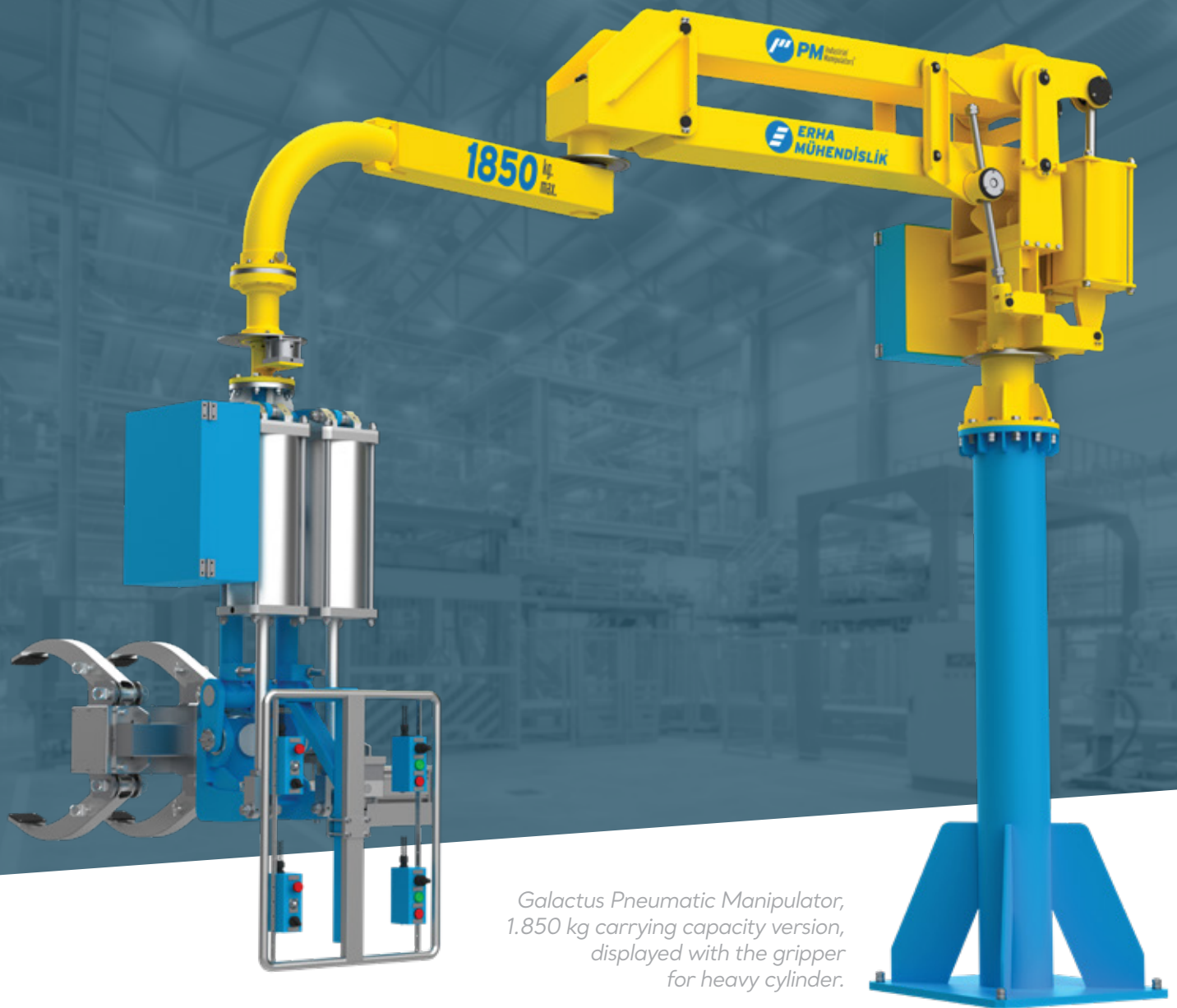


Weight Capacity / kg		1000	805	625	525	435
Max. Radius / mm	Rmax	2500	3000	3500	4000	4500
Min. Radius / mm	Rmin	832	882	990	1049	1167
Vertical Lift / mm	H	1400	1625	1900	2050	2200
Min. Vertical Lift / mm	*h	200	200	200	200	200
Max. Height / mm	*Hmax	4152	4375	4650	4800	4949
Max. Ceiling Height / mm	*Hf	4300	4415	4545	4616	4690
Min. Height / mm	*Hmin	2000	2000	2000	2000	2000
Radius 1	R1	2302	2771	3232	3711	4190
Radius 2	R2	2254	2715	3166	3640	4114

* Marked dimensions can change according to the customer request.



Mounting Plate Dimensions (mm)



*Galactus Pneumatic Manipulator,
1.850 kg carrying capacity version,
displayed with the gripper
for heavy cylinder.*

Galactus Pneumatic Manipulators are designed to move operator-centered loads within the work area with minimum effort. It balances the weight of the load, allowing the operator to carry the load quickly and safely.

Manipulators, either floor mounted or ceiling mounted. Galactus is equipped with special gripping tools which are particularly suitable to manually handle center offset loads in any direction, in a weightless condition. The manipulator, which consists of two arms, has a total of two brakes on the arm rotation axis. It's versatile structure allows it to fit in any working environment.

Works with dry, filtrated (40 μ m) and oil free compressed air (min. 0.7/0.8 MPa).

1.850 kg max. weight capacity. **5.000 mm** max. radius. **3.000 mm** vertical lift.
995 nl/min max. air consumption.

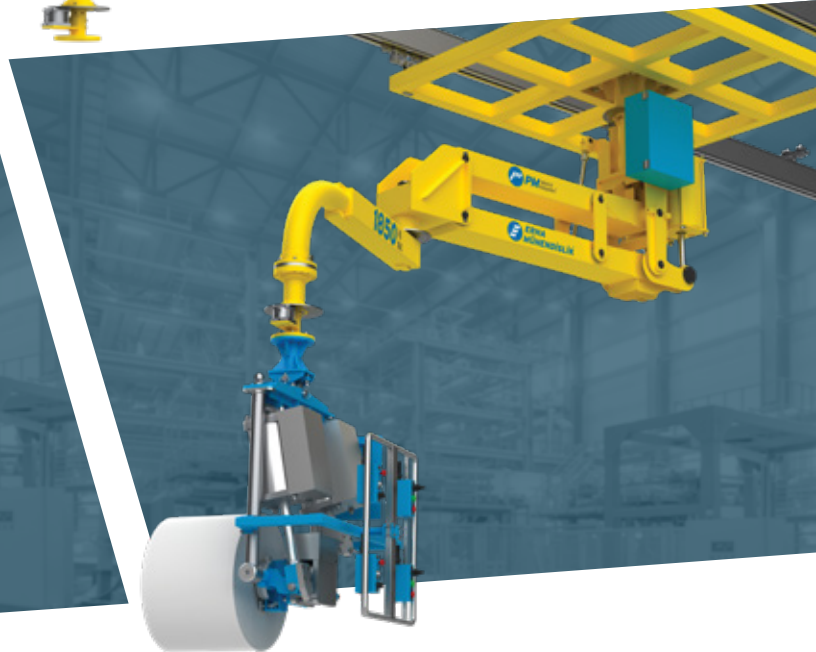
Mounting Options

Galactus Column Mounted **GLY**

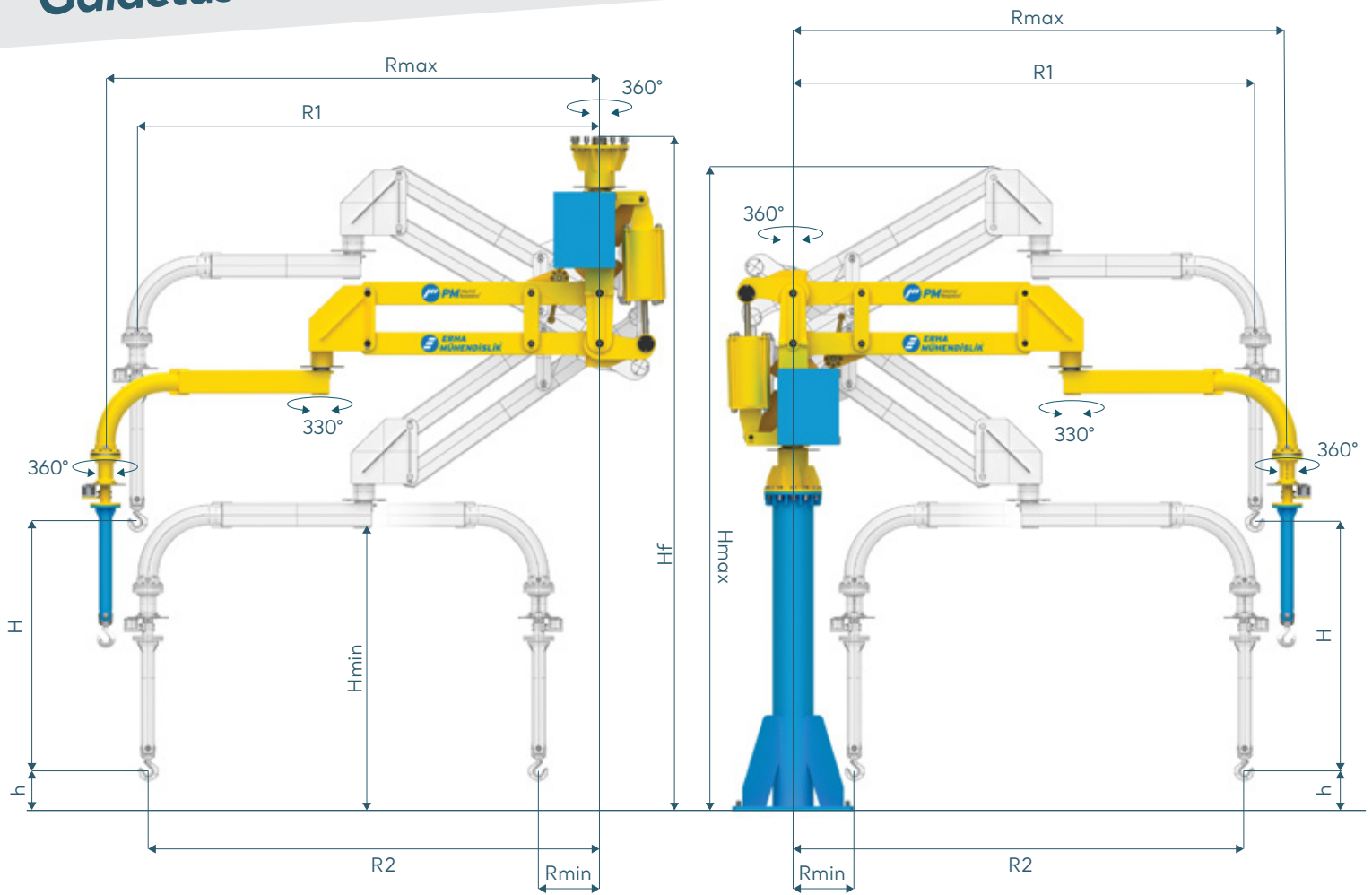


Galactus Overhead Mounted **GLT**

Galactus Overhead Trolley Mounted **GLTA**

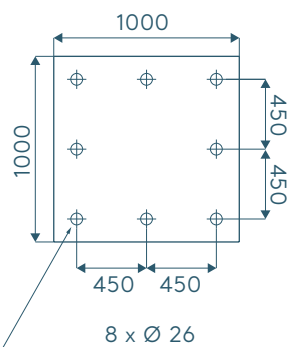


Galactus Technical Details



Weight Capacity / kg		1850	1600	1300	1100	950	780
Max. Radius / mm	Rmax	2500	3000	3500	4000	4500	5000
Min. Radius / mm	Rmin	800	920	1034	1139	1250	1342
Vertical Lift / mm	H	1500	1830	2150	2450	2750	3000
Min. Vertical Lift / mm	*h	200	200	200	200	200	200
Max. Height / mm	*Hmax	4405	4734	5052	5350	5652	5902
Max. Ceiling Height / mm	*Hf	4822	4980	5132	5275	5420	5540
Min. Height / mm	*Hmin	2000	2000	2000	2000	2000	2000
Radius 1	R1	2259	2707	3156	3608	4060	4520
Radius 2	R2	2207	2643	3081	3523	3964	4415

* Marked dimensions can change according to the customer request.



Mounting Plate Dimensions (mm)

Special solutions for special needs!

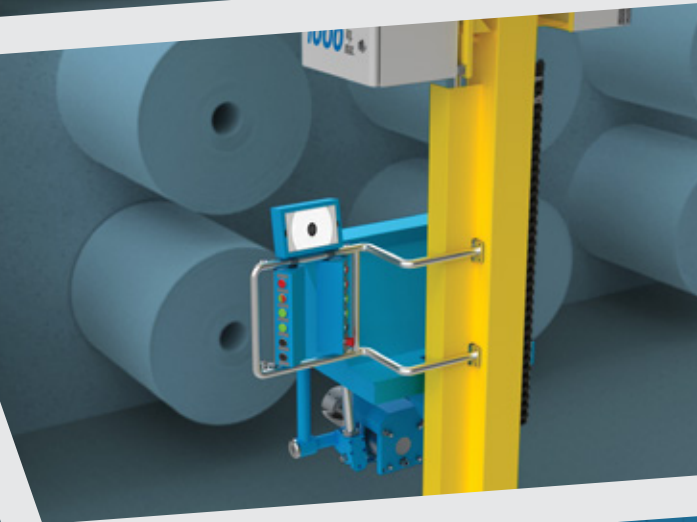
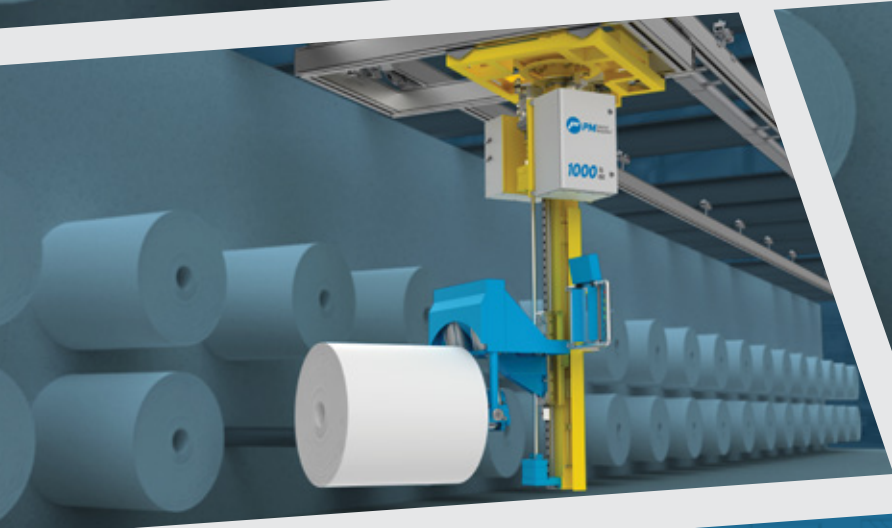
PM Reel Master Servo & Pneumatic Manipulator

Capacity up to 1.000 kg.

Camera aided loading.

Servo precision with pneumatic system flexibility.

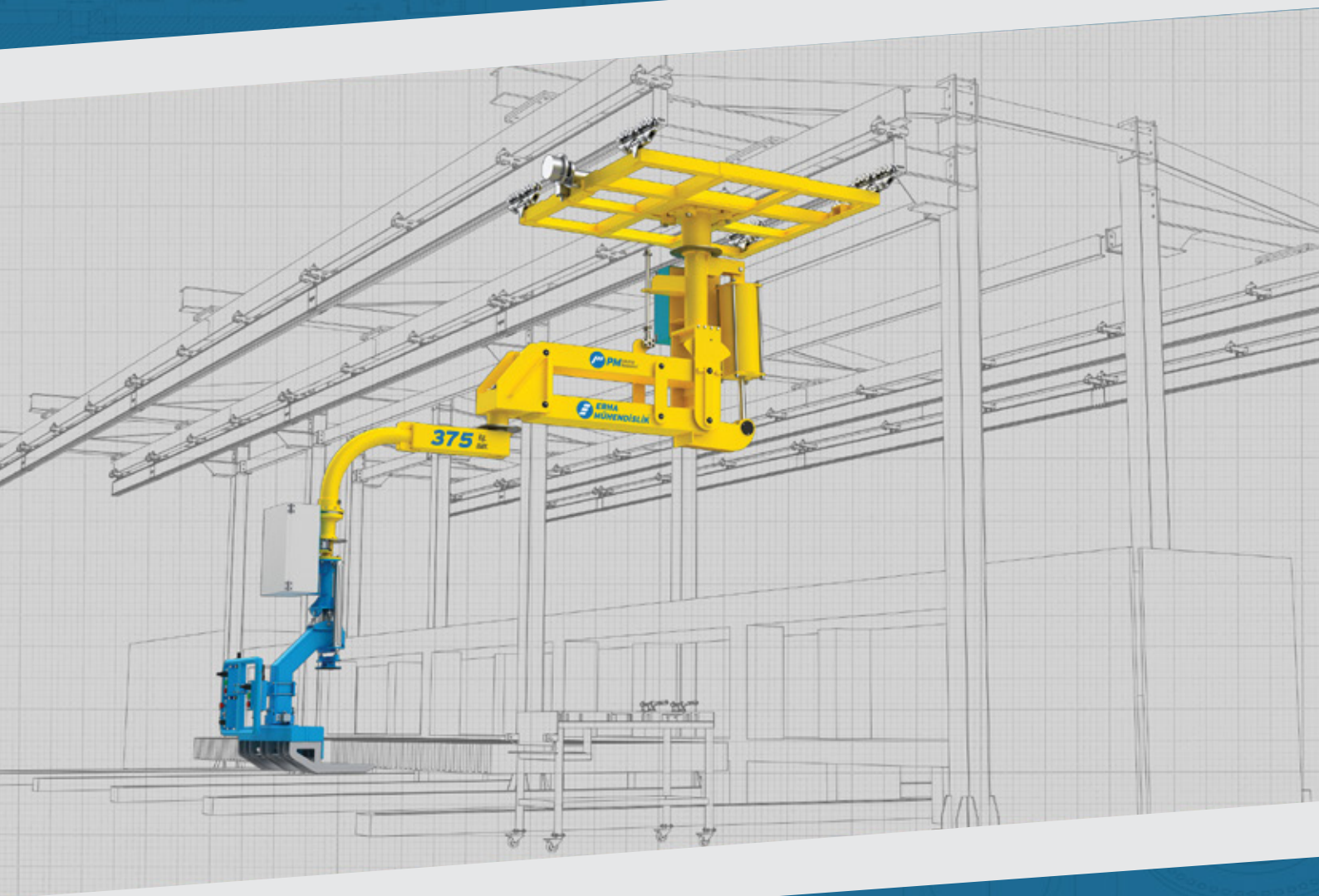
Serving capability up to 60 meters line.

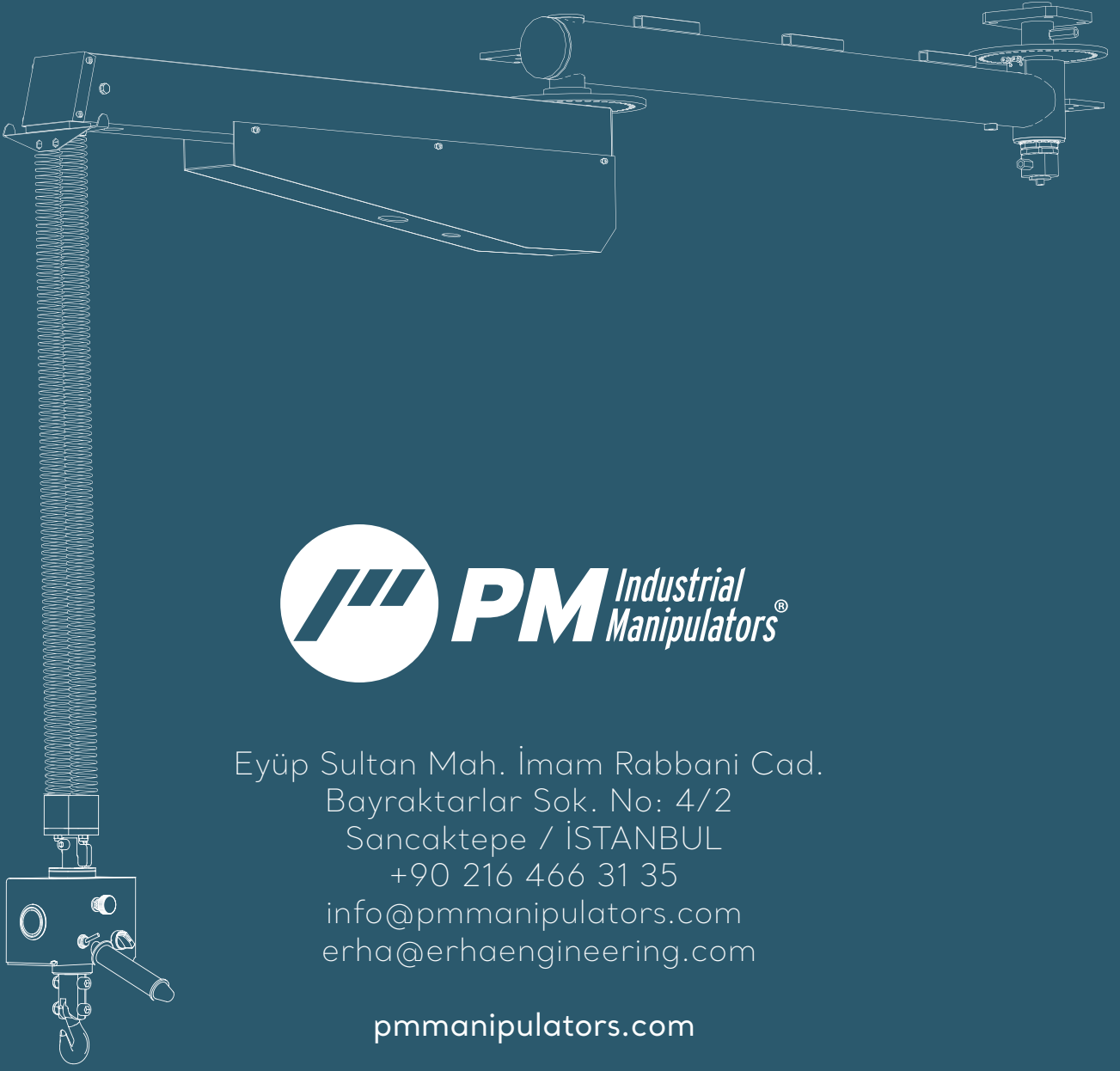


PM Reel Master is a tailor made solution where servo and pneumatics are used together for loading raw material bobbin's at continuously running lines such as carbon fiber, glass fiber, yarn and acrylic yarn.

It is possible!

Because we design and produce
just as you need.





Eyüp Sultan Mah. İmam Rabbani Cad.
Bayraktarlar Sok. No: 4/2
Sancaktepe / İSTANBUL
+90 216 466 31 35
info@pmmanipulators.com
erha@erhaengineering.com

pmmanipulators.com



PM Industrial Manipulators is a brand of Erha Engineering.