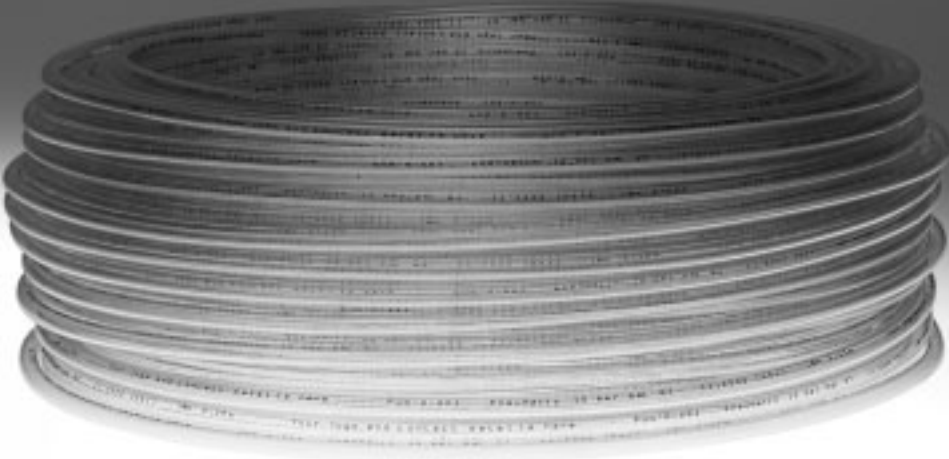



Plastic tubing, standard O.D., NPT




# Plastic tubing, standard O.D., NPT

Product range overview



Version	Type	Outside diameter [inch]	Colour									Operating medium		
			Silver	Blue	Black	Yellow	Green	Red	Brown	White	Natural	Compressed air	Vacuum	Water
	<b>PEN</b> Polyethylene	(5/32) <sup>1)</sup> , 3/16, 1/4, 5/16, 3/8, 1/2, 5/8	(■) <sup>1)</sup>	■	■	(■) <sup>1)</sup>	(■) <sup>1)</sup>	(■) <sup>1)</sup>	(■) <sup>1)</sup>	(■) <sup>1)</sup>	(■) <sup>1)</sup>	■	■	■
	<b>PLN</b> Polyethylene	(5/32) <sup>1)</sup> , 3/16, 1/4, 5/16, 3/8, (1/2) <sup>1)</sup> , 5/8	(■) <sup>1)</sup>	■	■	(■) <sup>1)</sup>	(■) <sup>1)</sup>	(■) <sup>1)</sup>	(■) <sup>1)</sup>	(■) <sup>1)</sup>	■	■	■	-
	<b>PUN-H</b> Polyurethane	1/8, 5/32, 3/16, 1/4, 5/16, 3/8, 1/2, 5/8	■	■	■	■	■	■	■	■	■	■	■	■

1) Please note the information below.

-  - Note

Product options in brackets can only be ordered using the modular product system.  
Please note the minimum ordering quantity of 10,000 ft.

There is a modular product system for plastic tubing.

- PEN → 8
- PLN → 10
- PUN → 14

# Plastic tubing, standard O.D., NPT

Product range overview

Type	Suitability for use in the food industry	Halogen-free	Contact with electric cables	PWIS-free to FN 942 010	Suitable for chain link trunking	Resistance				Flexibility	Shore hardness <sup>3)</sup>	→ Page/Internet
						Chemicals	Microbes	UV radiation	Hydrolysis			
PEN	-	■	■	■	+++	++	++	++ <sup>2)</sup>	+++	++	D 52 ±3	6
PLN	■	■	■	■	-	++	++	++ <sup>2)</sup>	+++	+	D 52 ±3	9
PUN-H	■	■	■	■	++	+	++	++ <sup>2)</sup>	++	+++	D 52 ±3	11

+++ Highly suitable  
++ Suitable

+ Limited suitability (upon request)  
- Unsuitable

2) Applies to black colour  
3) Values are determined using test boards. Values determined using tubing may vary.

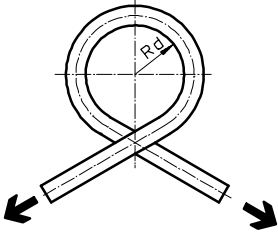
# Plastic tubing, standard O.D., NPT

Technical data

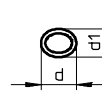
FESTO

## Method of measurement

Bending radius relevant for flow rate  $R_d$



The tubing is bent in the direction of its curvature until a flattening corresponding to 5% of the tubing O.D. occurs.  
 $R_d$  is then calculated mathematically. The flow rate is not reduced until  $R_d$  is reached.

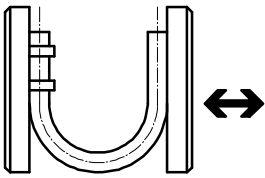


Cross section flattened by bending the tubing.

$d$  = Non-deformed tubing O.D.

$d_1$  = Deformed tubing O.D.

## Minimum bending radius $R_{min}$



The tubing fixed to the base plate is bent until the deformation results in a kink. The measured value is the minimum bending radius  $R_{min}$ . This  $R_{min}$  results in significant reductions in flow rate.

# Plastic tubing, standard O.D., NPT

Type codes

PEN – [ ] – 3/8 – BL – 150 – CB

**Material**

PEN	Polyethylene
PLN	Polyethylene
PUN	Polyurethane

**Approval**

H	Hydrolysis-resistant
---	----------------------

**Outside diameter [inch]**

**Colour**

SW	Black
BL	Blue
GN	Green
RT	Red
WS	White
GE	Yellow
BR	Brown
SI	Silver
NT	Natural

**Packaging unit [feet]**

**Packaging**

CB	Cardboard box
HA	Reel

# Plastic tubing PEN, NPT

Technical data



## Plastic tubing PEN

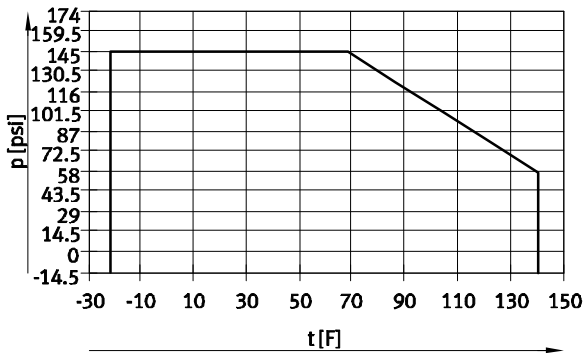
Compressed air tubing made of polyethylene is distinguished by great resistance to chemicals and hydrolysis. It is resistant to most cleaning agents and lubricants.




Operating and environmental conditions		
Temperature dependent operating pressure	[Psi]	-14.4 ... +145 → diagram
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:-:-]
		Water as per manufacturer's declaration <sup>1)</sup>
Ambient temperature	[°F]	-22 ... +140
Tubing characteristics		Suitable for energy chains for applications with a high cycle rate
Tubing test conditions		Suitable for energy chains: > 5 million cycles to Festo standard 942021

1) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.


### Operating pressure p as a function of temperature t



### Possible fittings



Push-in fitting QS-U,  
Quick Star  
→ Internet: [qs\\*-u](http://qs*-u)



Push-in fitting QB-U,  
Quick Basic  
→ Internet: [qb\\*-u](http://qb*-u)

### Materials

Shore hardness	D 52 ±3
Tubing	PE
Note on materials	Conforms to RoHS
	Free of copper and PTFE

# Plastic tubing PEN, NPT

Technical data

Dimensions and ordering data							
Outside diameter	Min. bending radius	Bending radius relevant for flow rate	Weight	Colour	Part No.	Type	PU <sup>1)</sup>
[inch]	[ft]	[ft]	[oz/ft]				[ft]
3/16	0.039	0.075	0.100	Black	569882	PEN-3/16-SW-150-CB	150
1/4	0.041	0.085	0.186	Black	569883	PEN-1/4-SW-150-CB	150
				Blue	569891	PEN-1/4-BL-150-CB	150
5/16	0.073	0.114	0.250	Black	569884	PEN-5/16-SW-150-CB	150
				Blue	569892	PEN-5/16-BL-150-CB	150
3/8	0.088	0.131	0.376	Black	569885	PEN-3/8-SW-150-CB	150
				Blue	569893	PEN-3/8-BL-150-CB	150
1/2	0.108	0.196	0.848	Black	569886	PEN-1/2-SW-150-CB	150
				Blue	569894	PEN-1/2-BL-150-CB	150
5/8	0.196	0.410	1.158	Black	569887	PEN-5/8-SW-150-CB	150
				Blue	569895	PEN-5/8-BL-150-CB	150

1) Packaging unit

# Plastic tubing PEN, NPT

Ordering data – Modular product



Ordering table (minimum order quantity 10,000 ft, rounding-off value 50 ft)											
Size	5/32	3/16	1/4	5/16	3/8	1/2	5/8	Condi- tions	Code	Enter code	
<b>M</b> Module No.	<b>567448</b>										
Function	Polyethylene tubing, standard O.D., economical								<b>PEN</b>	PEN	
Tubing O.D. [inch]	5/32	–	–	–	–	–	–	–	<b>-5/32</b>		
	–	3/16	–	–	–	–	–	–	<b>-3/16</b>		
	–	–	1/4	–	–	–	–	–	<b>-1/4</b>		
	–	–	–	5/16	–	–	–	–	<b>-5/16</b>		
	–	–	–	–	3/8	–	–	–	<b>-3/8</b>		
	–	–	–	–	–	1/2	–	–	<b>-1/2</b>		
	–	–	–	–	–	–	5/8	–	<b>-5/8</b>		
	–	–	–	–	–	–	–	–			
Colour	Silver								<b>-SI</b>		
	Blue								<b>-BL</b>		
	Black								<b>-SW</b>		
	Yellow								<b>-GE</b>		
	Green								<b>-GN</b>		
	Red								<b>-RT</b>		
	Brown								<b>-BR</b>		
	White								<b>-WS</b>		
	Natural								<b>-NT</b>		
<b>O</b> Inscription text (on request)	Standard										
	Customer-specific tubing inscription								<b>1</b>	<b>-TXT</b>	
<b>M</b> Packaging unit [ft]	150									<b>-150</b>	
	500									<b>-500</b>	
	1,000						–	–		<b>-1000</b>	
	1,500				–	–	–	–		<b>-1500</b>	
	Packaging	Cardboard box								<b>2</b>	<b>-CB</b>
Reel								<b>3</b>	<b>-HA</b>		

- 1** **TXT** Only on request
- 2** **CB** Only with packaging unit 150

- 3** **HA** Not with packaging unit 150

Transfer order code



# Plastic tubing PLN, NPT

Technical data



## Plastic tubing PLN

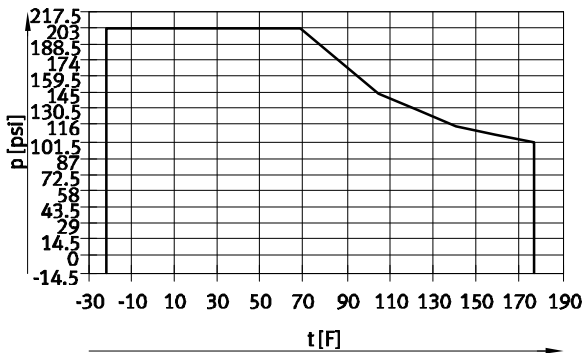
Compressed air tubing made of polyethylene is distinguished by great resistance to chemicals and hydrolysis. It is resistant to most cleaning agents and lubricants.



Operating and environmental conditions		
Temperature dependent operating pressure	[psi]	-14.4 ... +203 → diagram
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:--:-]
Ambient temperature	[°F]	-22 ... +176
Food-safe <sup>1)</sup>		See supplementary material information

1) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

### Operating pressure p as a function of temperature t



### Possible fittings



Push-in fitting QS-U,  
Quick Star  
→ Internet: [qs\\*-u](http://qs*-u)



Push-in fitting QB-U,  
Quick Basic  
→ Internet: [qb\\*-u](http://qb*-u)

Materials	
Shore hardness	D 52 ±3
Tubing	PE
Note on materials	Conforms to RoHS Free of copper and PTFE

Dimensions and ordering data							
Outside diameter	Min. bending radius	Bending radius relevant for flow rate	Weight	Colour	Part No.	Type	PU <sup>1)</sup>
[inch]	[ft]	[ft]	[oz/ft]				[ft]
3/16	0.036	0.095	0.107	Natural	569898	PLN-3/16-NT-150-CB	150
				Blue	569914	PLN-3/16-BL-150-CB	150
1/4	0.039	0.105	0.180	Natural	569899	PLN-1/4-NT-150-CB	150
					575897	PLN-1/4-NT-500-HA	500
				Black	569907	PLN-1/4-SW-150-CB	150
				Blue	569915	PLN-1/4-BL-150-CB	150
5/16	0.082	0.164	0.231	Natural	569900	PLN-5/16-NT-150-CB	150
3/8	0.115	0.187	0.403	Natural	569901	PLN-3/8-NT-150-CB	150
				Black	569909	PLN-3/8-SW-150-CB	150
				Blue	569917	PLN-3/8-BL-150-CB	150
5/8	0.197	0.311	0.881	Natural	569903	PLN-5/8-NT-150-CB	150
				Black	569911	PLN-5/8-SW-150-CB	150

1) Packaging unit

# Plastic tubing PLN, NPT

Ordering data – Modular product



Ordering table (minimum order quantity 10,000 ft, rounding-off value 50 ft)										
Size	5/32	3/16	1/4	5/16	3/8	1/2	5/8	Condi- tions	Code	Enter code
<b>M</b> Module No.	<b>567449</b>									
Function	Polyethylene tubing, standard O.D., resistant to cleaning agents								<b>PLN</b>	PLN
Tubing O.D. [inch]	5/32	–	–	–	–	–	–		<b>-5/32</b>	
	–	3/16	–	–	–	–	–		<b>-3/16</b>	
	–	–	1/4	–	–	–	–		<b>-1/4</b>	
	–	–	–	5/16	–	–	–		<b>-5/16</b>	
	–	–	–	–	3/8	–	–		<b>-3/8</b>	
	–	–	–	–	–	1/2	–		<b>-1/2</b>	
	–	–	–	–	–	–	5/8		<b>-5/8</b>	
	–	–	–	–	–	–	–			
Colour	Silver								<b>-SI</b>	
	Blue								<b>-BL</b>	
	Black								<b>-SW</b>	
	Yellow								<b>-GE</b>	
	Green								<b>-GN</b>	
	Red								<b>-RT</b>	
	Brown								<b>-BR</b>	
	White								<b>-WS</b>	
Natural								<b>-NT</b>		
<b>O</b> Inscription text (on request)	Standard									
	Customer-specific tubing inscription							<b>1</b>	<b>-TXT</b>	
<b>M</b> Packaging unit [ft]	150								<b>-150</b>	
	500								<b>-500</b>	
	1,000					–	–		<b>-1000</b>	
	1,500				–	–	–	–	<b>-1500</b>	
	Packaging	Cardboard box							<b>2</b>	<b>-CB</b>
Reel							<b>3</b>	<b>-HA</b>		

- 1** **TXT** Only on request
- 2** **CB** Only with packaging unit 150

- 3** **HA** Not with packaging unit 150

Transfer order code

# Plastic tubing PUN-H, hydrolysis-resistant, NPT

Technical data

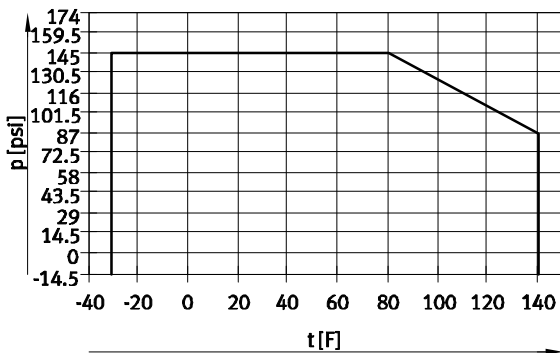
## Plastic tubing PUN-H



Operating and environmental conditions		
Temperature dependent operating pressure	[psi]	-14.4 ... +145 → diagram
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:--:-]
Ambient temperature	[°F]	-31 ... +145
Food-safe <sup>1)</sup>		See supplementary material information
Tubing characteristics		Suitable for energy chains for applications with a high cycle rate
Tubing test conditions		Suitable for energy chains: > 5 million cycles to Festo standard 942021

1) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

### Operating pressure p as a function of temperature t



### Possible fittings



Push-in fitting QS-U,  
Quick Star  
→ Internet: [qs\\*-u](#)



Push-in fitting QB-U,  
Quick Basic  
→ Internet: [qb\\*-u](#)

### Materials

Shore hardness	D 52 ±3
Tubing	TPE-U(PU)
Note on materials	Conforms to RoHS
	Free of copper and PTFE

# Plastic tubing PUN-H, hydrolysis-resistant, NPT

Technical data

Dimensions and ordering data											
Outside diameter	Min. bending radius	Bending radius relevant for flow rate	Weight	Colour	Part No.	Type	PU <sup>1)</sup>				
[inch]	[ft]	[ft]	[oz/ft]				[ft]				
1/8	0.020	0.039	0.060	Silver	567937	PUN-H-1/8-SI-150-CB	150				
				Blue	567945	PUN-H-1/8-BL-150-CB	150				
				Black	567953	PUN-H-1/8-SW-150-CB	150				
				Natural	567961	PUN-H-1/8-NT-150-CB	150				
				Green	567977	PUN-H-1/8-GN-150-CB	150				
				Brown	567993	PUN-H-1/8-BR-150-CB	150				
5/32	0.020	0.052	0.090	Blue	567946	PUN-H-5/32-BL-150-CB	150				
				Black	567954	PUN-H-5/32-SW-150-CB	150				
				Black	568017	PUN-H-5/32-SW-500-HA	500				
				Natural	567962	PUN-H-5/32-NT-150-CB	150				
				Brown	567994	PUN-H-5/32-BR-150-CB	150				
3/16	0.025	0.069	0.130	Blue	567947	PUN-H-3/16-BL-150-CB	150				
				Black	567955	PUN-H-3/16-SW-150-CB	150				
				Natural	567963	PUN-H-3/16-NT-150-CB	150				
				Yellow	567971	PUN-H-3/16-GE-150-CB	150				
				Green	567979	PUN-H-3/16-GN-150-CB	150				
				Brown	567995	PUN-H-3/16-BR-150-CB	150				
1/4	0.032	0.085	0.230	Silver	567940	PUN-H-1/4-SI-150-CB	150				
				Silver	568010	PUN-H-1/4-SI-500-HA	500				
				Blue	567948	PUN-H-1/4-BL-150-CB	150				
				Blue	568014	PUN-H-1/4-BL-500-HA	500				
				Blue	568021	PUN-H-1/4-BL-1000-HA	1000				
				Black	567956	PUN-H-1/4-SW-150-CB	150				
				Black	568018	PUN-H-1/4-SW-500-HA	500				
				Black	568023	PUN-H-1/4-SW-1000-HA	1000				
				Natural	567964	PUN-H-1/4-NT-150-CB	150				
				Natural	8003126	PUN-H-1/4-NT-500-HA	500				
				Yellow	567972	PUN-H-1/4-GE-150-CB	150				
				Green	567980	PUN-H-1/4-GN-150-CB	150				
				Red	567988	PUN-H-1/4-RT-150-CB	150				
				White	568004	PUN-H-1/4-WS-150-CB	150				
				5/16	0.065	0.121	0.310	Silver	568011	PUN-H-5/16-SI-500-HA	500
								Blue	567949	PUN-H-5/16-BL-150-CB	150
Blue	568022	PUN-H-5/16-BL-1000-HA	1000								
Black	567957	PUN-H-5/16-SW-150-CB	150								
Black	568024	PUN-H-5/16-SW-1000-HA	1000								
Natural	567965	PUN-H-5/16-NT-150-CB	150								
Natural	8003127	PUN-H-5/16-NT-500-HA	500								
Brown	567997	PUN-H-5/16-BR-150-CB	150								
3/8	0.081	0.171	0.480	Silver	567942	PUN-H-3/8-SI-150-CB	150				
				Blue	567950	PUN-H-3/8-BL-150-CB	150				
				Blue	568016	PUN-H-3/8-BL-500-HA	500				
				Black	567958	PUN-H-3/8-SW-150-CB	150				
				Black	568020	PUN-H-3/8-SW-500-HA	500				
				Natural	567966	PUN-H-3/8-NT-150-CB	150				
				Natural	8003128	PUN-H-3/8-NT-500-HA	500				
				Yellow	567974	PUN-H-3/8-GE-150-CB	150				
				Green	567982	PUN-H-3/8-GN-150-CB	150				
				Red	567990	PUN-H-3/8-RT-150-CB	150				
				Brown	567998	PUN-H-3/8-BR-150-CB	150				
				White	568006	PUN-H-3/8-WS-150-CB	150				

1) Packaging unit

# Plastic tubing PUN-H, hydrolysis-resistant, NPT

Technical data

Dimensions and ordering data							
Outside diameter	Min. bending radius	Bending radius relevant for flow rate	Weight	Colour	Part No.	Type	PU <sup>1)</sup>
[inch]	[ft]	[ft]	[oz/ft]				[ft]
1/2	0.075	0.204	0.880	Silver	567943	PUN-H-1/2-SI-150-CB	150
				Blue	567951	PUN-H-1/2-BL-150-CB	150
				Black	567959	PUN-H-1/2-SW-150-CB	150
				Natural	567967	PUN-H-1/2-NT-150-CB	150
				Yellow	567975	PUN-H-1/2-GE-150-CB	150
				Green	567983	PUN-H-1/2-GN-150-CB	150
				Red	567991	PUN-H-1/2-RT-150-CB	150
				Brown	567999	PUN-H-1/2-BR-150-CB	150
				White	568007	PUN-H-1/2-WS-150-CB	150
5/8	0.125	0.288	1.380	Blue	567952	PUN-H-5/8-BL-150-CB	150
				Yellow	567976	PUN-H-5/8-GE-150-CB	150
				Green	567984	PUN-H-5/8-GN-150-CB	150
				Red	567992	PUN-H-5/8-RT-150-CB	150
				Brown	568000	PUN-H-5/8-BR-150-CB	150
				White	568008	PUN-H-5/8-WS-150-CB	150

1) Packaging unit

# Plastic tubing PUN-H, hydrolysis-resistant, NPT



Ordering data – Modular product

Ordering table (minimum order quantity 10,000 ft, rounding-off value 50 ft)											
Size	1/8	5/32	3/16	1/4	5/16	3/8	1/2	5/8	Condi- tions	Code	Enter code
<b>M</b> Module No.	<b>567446</b>										
Function	Polyurethane tubing, standard O.D.									<b>PUN</b>	PUN
Alternative material characteristic	Hydrolysis-resistant									<b>-H</b>	
<b>M</b> Tubing O.D. [inch]	1/8	–	–	–	–	–	–	–		<b>-1/8</b>	
	–	5/32	–	–	–	–	–	–		<b>-5/32</b>	
	–	–	3/16	–	–	–	–	–		<b>-3/16</b>	
	–	–	–	1/4	–	–	–	–		<b>-1/4</b>	
	–	–	–	–	5/16	–	–	–		<b>-5/16</b>	
	–	–	–	–	–	3/8	–	–		<b>-3/8</b>	
	–	–	–	–	–	–	1/2	–		<b>-1/2</b>	
	–	–	–	–	–	–	–	5/8		<b>-5/8</b>	
Colour	Silver									<b>-SI</b>	
	Blue									<b>-BL</b>	
	Black									<b>-SW</b>	
	Yellow									<b>-GE</b>	
	Green									<b>-GN</b>	
	Red									<b>-RT</b>	
	Brown									<b>-BR</b>	
	White									<b>-WS</b>	
	Natural									<b>[4]</b> <b>-NT</b>	
<b>O</b> Inscription text (on request)	Standard										
	Customer-specific tubing inscription									<b>[1]</b>	<b>-TXT</b>
<b>M</b> Packaging unit [ft]	150										<b>-150</b>
	500										<b>-500</b>
	1,000									–	<b>-1000</b>
	1,500									–	<b>-1500</b>
Packaging	Cardboard box									<b>[2]</b>	<b>-CB</b>
	Reel									<b>[3]</b>	<b>-HA</b>

- [1] TXT** Only on request
- [2] CB** Only with packaging unit 150

- [3] HA** Not with packaging unit 150
- [4] NT** Only with alternative material characteristic H

Transfer order code

# Festo - Your Partner in Automation



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