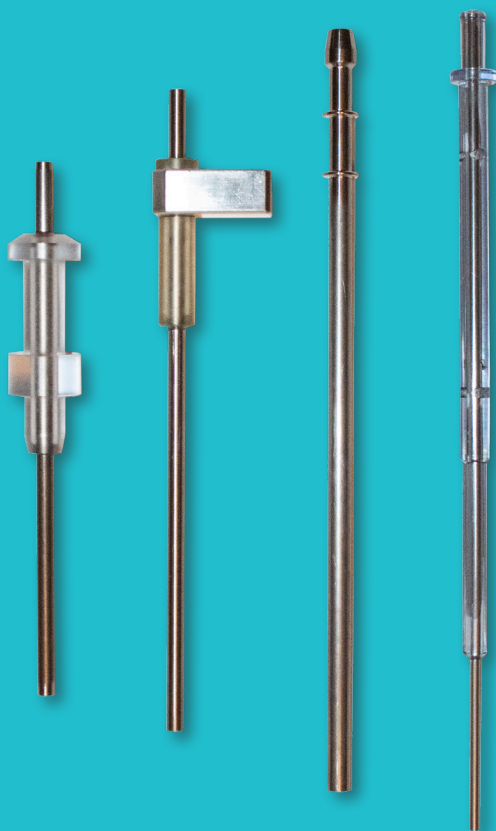


Single-Use Filling Needles Integrated into Mobius® Final Fill Assemblies



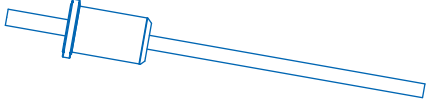
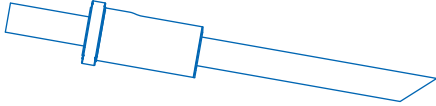
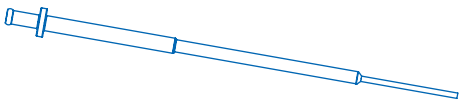
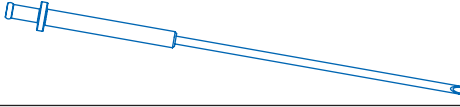
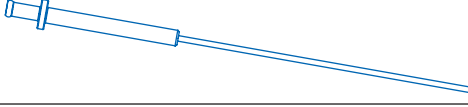
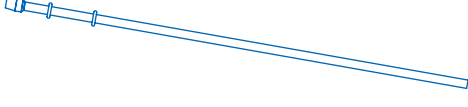
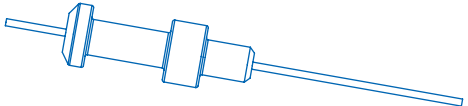
Mobius® single-use filling needles are available in four different styles, several different sizes, and are compatible with filling machines manufactured by various machine vendors. Unlike multi-use needles, our filling needles are provided to us precleaned and passivated, then included as part of a gamma irradiated, sterile Mobius® assembly. This eliminates the need for you to perform any cleaning or sterilization of the needles. The needles are validated to meet Mobius® Gold Certificate of Quality specifications, which include the following:


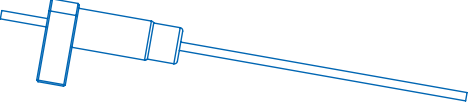
- Bacterial Endotoxin Test per USP <85> (harmonized with Ph. Eur. 2.6.14 and JP 4.01 compendial standards)
- Biological Reactivity, *in vivo* per USP <88>, Class VI criteria
- Plastic Materials characterization requirements per USP <661> (for polycarbonate only)
- Particulate Matter limits per USP <788> (harmonized with Ph. Eur. 2.9.19 and JP 6.07 compendial standards)
- Shipping Validation per ISTA 2A
- 2 Years Shelf Life
- Sterilization Validation per ANSI/AAMI/ISO 11137

Regardless of whether you are retro-fitting an existing filling machine or purchasing a brand new one, our Mobius® specialists can work with you and your machine vendor to ensure our needles integrate into your filling machine with ease.

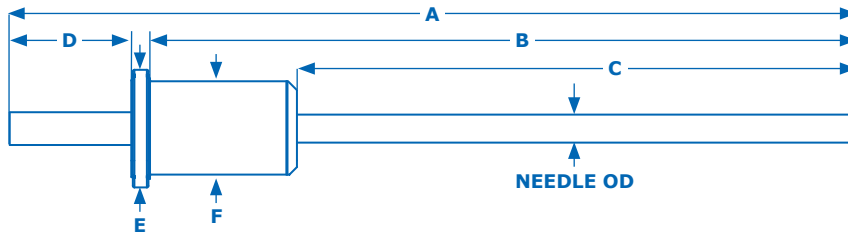
Risk Management

Our patent-pending needle and tubing packaging solution ensures that contact with the filling needle is minimized and the tubing attached to the needle can be easily managed during installation of the filling needle. This minimizes the risk to the filling process within the critical space of the filling environment.

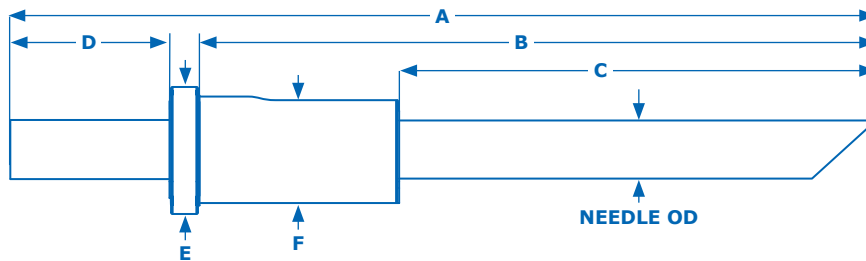
	Mobius® Assigned Part Number	Nominal Needle ID (mm)	Surface Finish (µin.)	Typical Container	Fluid Contact Material
 <p>Bausch-Stroebel Needles (Standard)</p>	20475653PU-1	1.0	≤32 Ra	Vial, Syringe, Cartridge, Ampoule	316L Stainless Steel
	20475653PU-2	1.6			
	20475653PU-3	2.1			
	20475653PU-4	2.5			
	20475653PU-5	3.2			
	20475653PU-6	4.0			
	20475653PU-7	5.0			
	20475653PU-9	7.0			
	 <p>Bausch-Stroebel Needles (Gas Overlay)</p>	20501544PU-1			
 <p>Syntegon (Bosch) Needles (Standard)</p>	00113834PU-1	1.2	≤32 Ra	Vial	316L Stainless Steel & Polycarbonate
	00113834PU-2	1.6			
	00113834PU-3	2.1			
	00113834PU-4	3.0			
	00113834PU-5	3.8			
	00113834PU-6	4.6			
	00113834PU-7	5.5			
	00113834PU-8	7.0			
 <p>Syntegon (Bosch) Needles (Basket Tip)</p>	20344153PU-3	2.5	≤32 Ra	Ampoule	
	20344153PU-5	3.4			
 <p>Syntegon (Bosch) Needles (Shorter Molding)</p>	20344152PU-3	1.6	≤32 Ra	Cartridge	
 <p>Groninger Needles</p>	00115178PU-8	0.8	≤16 Ra	Vial, Syringe, Cartridge, Ampoule	316L Stainless Steel
	00115178PU-1	1.6			
	00115178PU-2	2.6			
	00115178PU-3	3.0			
	00115178PU-4	4.0			
	00115178PU-5	5.0			
	00115178PU-6	7.0			
	00115178PU-7	5.0			
	00115178PU-9	7.0			
 <p>IMA Style Needles</p>	20231227PU-1	0.8	≤32 Ra	Vial	316L Stainless Steel
	20231227PU-2	1.0			
	20231227PU-3	1.5			
	20231227PU-4	3.0			
	20231227PU-5	4.0			
	20231227PU-6	5.0			
	20231227PU-7	6.0			
	20231227PU-8	7.0			

	Mobius® Assigned Part Number	Nominal Needle ID (mm)	Surface Finish (µin.)	Typical Container	Fluid Contact Material
OPTIMA (Inova) Style Needles (Small Hub) 	20274105PU-8	1.1	≤32 Ra	Syringe	316L Stainless Steel
	20274105PU-3	1.2			
	20274105PU-4	1.5			
	20274105PU-5	2.1			
	20274105PU-6	2.5			
	20274105PU-1	3.0			
	20274105PU-7	3.5			
OPTIMA (Inova) Style Needles (Large Hub) 	20441916PU-3	2.1	≤32 Ra	Vial	316L Stainless Steel
	20441916PU-4	2.5			
	20441916PU-5	3.0			
	20441916PU-6	3.7			
	20441916PU-7	4.6			

Bausch-Stroebel Needles



Mobius® Assigned Part Number	Nominal Needle ID mm [in.]	Needle OD mm [in.]	A	B	C	D	E	F
			mm [in.]					
Standard								
20475653PU-1	1.0 [0.039]	1.5 [0.059]	107.8 [4.243]	90 ± 0.25 [3.54 ± 0.01]	71.0 [2.796]	2.5 [0.100]	14.7 ± 0.1 [0.579]	11.928 ± 0.013 [0.470]
20475653PU-2	1.6 [0.063]	2.1 [0.083]						
20475653PU-3	2.1 [0.085]	2.8 [0.109]						
20475653PU-4	2.5 [0.100]	3.0 [0.120]						
20475653PU-5	3.2 [0.125]	4.0 [0.157]						
20475653PU-6	4.0 [0.157]	5.0 [0.197]						
20475653PU-7	5.0 [0.197]	6.0 [0.236]	111.6 [4.393]					
20475653PU-9	7.0 [0.257]	8.0 [0.313]						



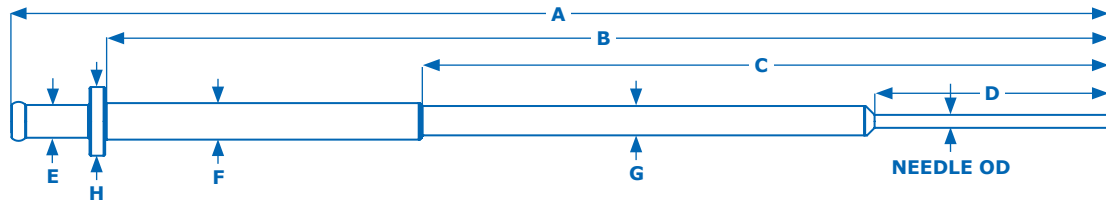
Mobius® Assigned Part Number	Nominal Needle ID mm [in.]	Needle OD mm [in.]	A	B	C	D	E	F
			mm [in.]					
Gas Overlay								
20501544PU-1	6.0 [0.236]	7.0 [0.276]	108.97 [4.290]	84.99 ± 0.25 [3.346 ± 0.010]	59.94 [2.360]	20.0 [0.787]	15.8 [0.622]	13.147 ± 0.013 [0.518]

Nominal dimensions in mm, [X] dimensions in inches

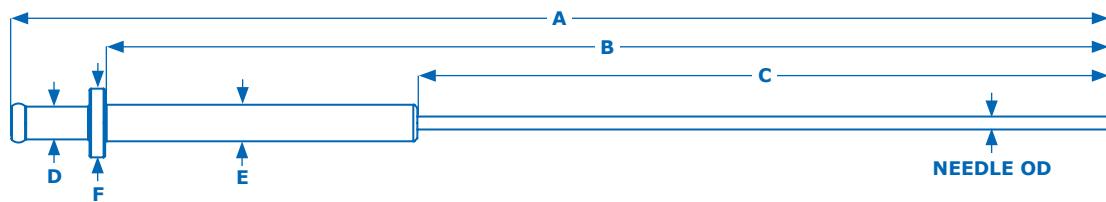
Tolerances unless otherwise specified

Decimals	Tolerance
X.X	± 0.25
X.XX	± 0.127

Syntegon (Bosch) Needle Dimensions



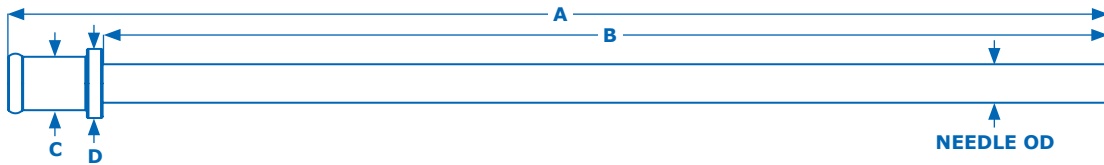
Mobius® Assigned Part Number	Nominal Needle ID mm [in.]	Needle OD mm [in.]	A	B	C	D	E	F	G	H
			mm [in.]							
Standard										
00113834PU-1	1.2 [0.05]	1.65 ± 0.01 [0.06]	177.80 [7.00]	162.6 [6.4]	81.3 [3.2]	38.1 [1.5]	5.33 [0.21]	6.274 ± 0.051 [0.247]	5.33 [0.21]	10.16 [0.40]
00113834PU-2	1.6 [0.06]	2.11 ± 0.03 [0.08]								
00113834PU-3	2.1 [0.08]	2.77 ± 0.03 [0.11]								
00113834PU-4	3.0 [0.12]	3.76 ± 0.03 [0.15]								



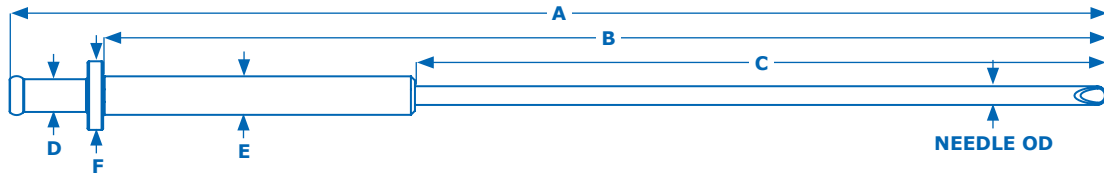
Mobius® Assigned Part Number	Nominal Needle ID mm [in.]	Needle OD mm [in.]	A	B	C	D	E	F
			mm [in.]					
Standard								
00113834PU-5	3.8 [0.15]	4.57 ± 0.03 [0.18]	177.80 [7.00]	162.6 [6.4]	111.8 [4.4]	8.64 [0.34]	6.274 ± 0.051 [0.247]	11.18 [0.44]
00113834PU-8	7.0 [0.28]	7.73 ± 0.09 [0.30]			137.2 [5.4]	10.16 [0.40]	9.957 [0.392]	13.46 [0.53]
Shorter Molding								
20344152PU-3	1.6 [0.06]	2.11 ± 0.03 [0.08]	145.29 [5.72]	130.05 [5.12]	79.25 [3.12]	5.33 [0.21]	6.274 ± 0.051 [0.247]	10.16 [0.40]

Tolerances unless otherwise specified

Decimals	Tolerance
X.X	0.5
X.XX	0.25



Mobius® Assigned Part Number	Nominal Needle ID mm [in.]	Needle OD mm [in.]	A mm [in.]	B mm [in.]	C mm [in.]	D mm [in.]
Standard						
00113834PU-6	4.6 [0.18]	6.25 ± 0.03 [0.246]	177.80 [7.00]	162.6 [6.4]	8.64 [0.34]	11.18 [0.44]
00113834PU-7	5.5 [0.22]					

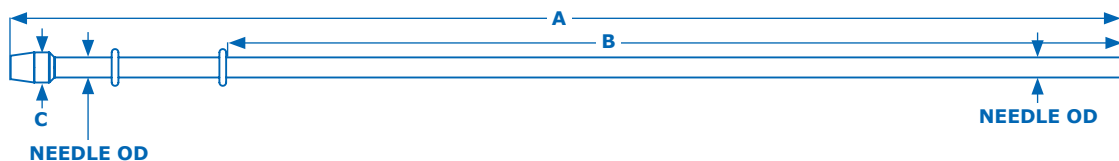


Mobius® Assigned Part Number	Nominal Needle ID mm [in.]	Needle OD mm [in.]	A mm [in.]	B mm [in.]	C mm [in.]	D mm [in.]	E mm [in.]	F mm [in.]
Basket Tip								
20344153PU-3	2.5 [0.10]	3.05 ± 0.03 [0.12]	177.80 [7.00]	162.6 [6.4]	111.8 [4.4]	5.33 [0.21]	6.274 ± 0.051 [0.247]	10.16 [0.40]
20344153PU-5	3.4 [0.13]	3.96 ± 0.03 [0.16]						

Tolerances unless otherwise specified

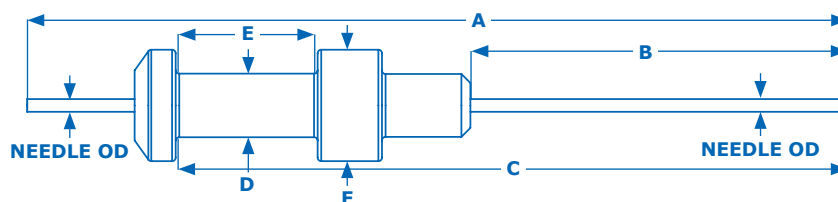
Decimals	Tolerance
X.X	0.5
X.XX	0.25

Groninger Needle Dimensions



Mobius® Assigned Part Number	Nominal Needle ID mm [in.]	Needle OD (± 0.2) mm [in.]	A (Ref)	B (± 0.5) mm [in.]	C (± 0.5)
00115178PU-8	0.8 [0.03]	1.8 [0.07]	165.0 [6.5]	133.0 [5.2]	2.4 [0.09]
00115178PU-1	1.6 [0.06]	2.0 [0.08]			3.5 [0.14]
00115178PU-2	2.6 [1.0]	3.0 [0.12]			4.5 [0.17]
00115178PU-3	3.0 [0.12]	4.0 [0.16]			6.0 [0.24]
00115178PU-4	4.0 [0.16]	5.0 [0.20]			7.0 [0.28]
00115178PU-5	5.0 [0.20]	6.0 [0.24]			8.0 [0.31]
00115178PU-6	7.0 [0.28]	8.0 [0.31]			10.0 [0.39]
00115178PU-7	5.0 [0.20]	6.0 [0.24]	244.0 [9.6]	212.0 [8.3]	8.0 [0.31]
00115178PU-9	7.0 [0.28]	8.0 [0.31]			10.0 [0.39]

IMA Style Needle Dimensions

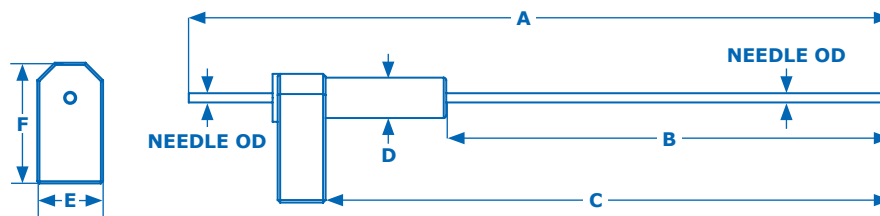


Mobius® Assigned Part Number	Nominal Needle ID mm [in.]	Needle OD mm [in.]	A (Ref)	B (Ref)	C	D	E	F (Ref)
20231227PU-1	0.8 [0.03]	1.270 ± 0.013 [0.050]	115.82 [4.56]	53.60 [2.11]	95.00 [3.74]	8.915 ± 0.025 [0.351]	20.142 ± 0.051 [0.793]	15.75 [0.62]
20231227PU-2	1.0 [0.04]	1.473 ± 0.013 [0.058]						
20231227PU-3	1.5 [0.06]	1.829 ± 0.013 [0.072]						
20231227PU-4	3.0 [0.12]	3.759 ± 0.025 [0.148]						
20231227PU-5	4.0 [0.16]	5.000 [0.197]						
20231227PU-6	5.0 [0.20]	6.000 [0.236]						
20231227PU-7	6.0 [0.24]	7.000 [0.276]						
20231227PU-8	7.0 [0.28]	9.525 [0.375]		66.04 [2.60]				

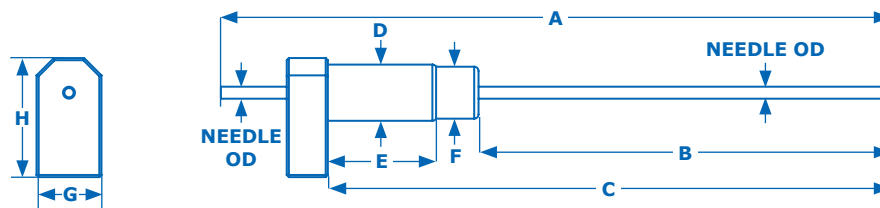
IMA needle tolerances unless otherwise specified

Decimals	Tolerance
X.XX	± 0.25
X.XXX	± 0.127

Optima (INOVA) Style Needle Dimensions



Mobius® Assigned Part Number	Nominal Needle ID mm [in.]	Needle OD mm [in.]	A	B	C	D	E	F
			mm [in.]					
Small Hub								
20274105PU-8	1.1 [0.04]	1.473 ± 0.013 [0.058]	139.19 [5.48]	87.88 [3.46]	111.912 ± 0.254 [4.406]	7.965 ± 0.015 [0.314]	15.00 [0.59]	25.50 [1.00]
20274105PU-3	1.2 [0.05]	1.651 ± 0.013 [0.065]						
20274105PU-4	1.5 [0.06]	1.829 ± 0.013 [0.072]						
20274105PU-5	2.1 [0.08]	2.769 ± 0.025 [0.109]						
20274105PU-6	2.5 [0.10]	3.048 ± 0.025 [0.120]						
20274105PU-1	3.0 [0.12]	3.759 ± 0.025 [0.148]						
20274105PU-7	3.5 [0.14]	4.191 ± 0.025 [0.165]						



Mobius® Assigned Part Number	Nominal Needle ID mm [in.]	Needle OD mm [in.]	A	B	C	D	E	F	G	H
			mm [in.]							
Large Hub										
20441916PU-3	2.1 [0.08]	2.769 ± 0.025 [0.109]	154.74 [6.09]	95.20 [3.75]	129.997 ± 0.254 [5.118]	12.979 ± 0.013 [0.511]	25.00 [0.98]	12.00 [0.47]	15.00 [0.59]	27.50 [1.08]
20441916PU-4	2.5 [0.10]	3.048 ± 0.025 [0.120]								
20441916PU-5	3.0 [0.118]									
20441916PU-6	3.7 [0.15]	4.763 ± 0.025 [0.188]								
20441916PU-7	4.6 [0.18]	6.350 ± 0.025 [0.250]	158.55 [6.24]							

Tolerances unless otherwise specified

Decimals	Machined
X.XX	± 0.25
X.XXX	± 0.127

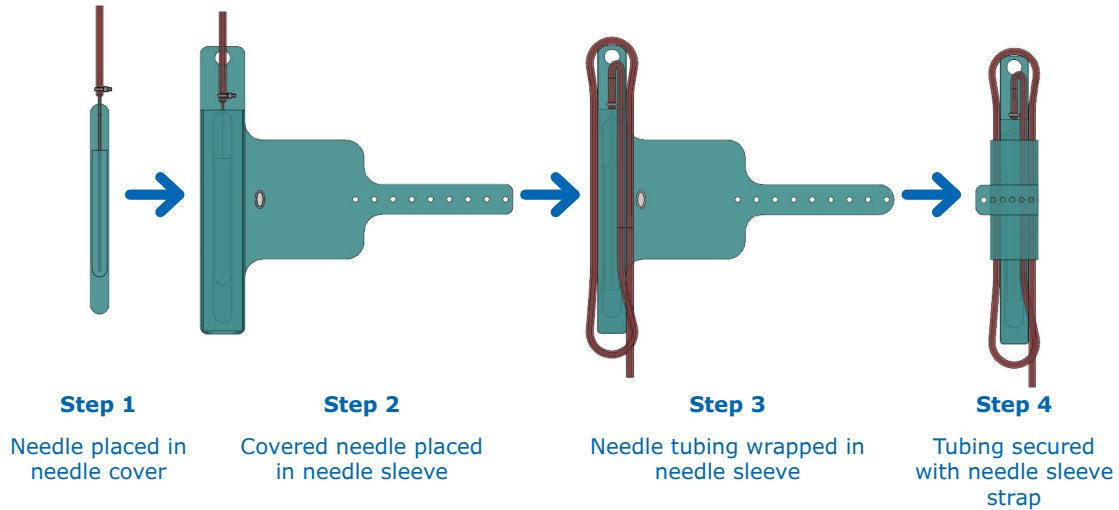
Needle Sleeve and Covers

Protecting

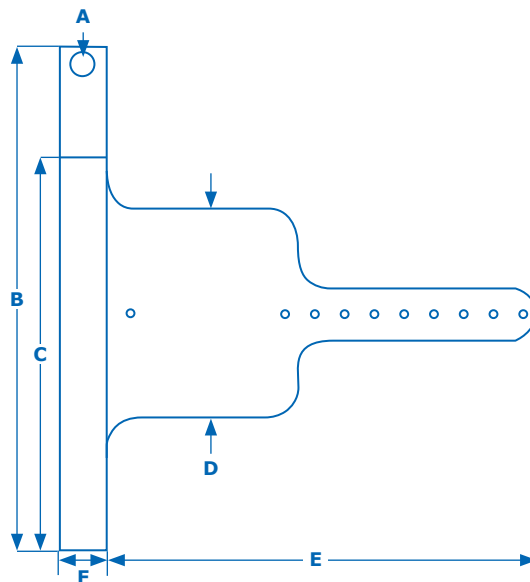
A needle cover is placed on each needle to minimize contact with isolator or RABS gloves during installation. The needle cover can typically remain on the needle until the needle is installed in the holder, then the cover can be removed.

Simplifying

The needle cover is placed in a needle sleeve that contains a tubing management strap. The tubing attached to the needle is consistently coiled and secured with the strap of the needle sleeve. This simplifies the installation process and handling of the filling needles, especially inside of an isolator or RABS filling machine.

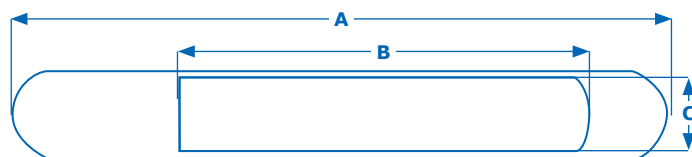


Needle Sleeve



Mobius® Assigned Part Number	Description	Material	A	B	C	D	E	F
			mm [in.]					
20356154PU-1	Needle Sleeve	Thermoplastic Polyurethane	12.7 [0.5]	244.6 [9.6]	190.5 [7.5]	101.6 [4.0]	228.6 [9.0]	38.1 [1.5]

Needle Covers



Mobius® Assigned Part Number	Description	Material	A	B	C
			mm [in.]		
20356152PU-1	Needle Tip Protector-Size 1	Thermoplastic Polyurethane	179.83 [7.08]	101.6 [4.0]	12.7 [0.50]
20356152PU-2	Needle Tip Protector-Size 2		182.88 [7.2]		15.75 [0.62]
20356152PU-3	Needle Tip Protector-Size 3		186.44 [7.34]		19.56 [0.77]
20356152PU-4	Needle Tip Protector-Size 4		105.66 [4.16]	63.5 [2.5]	13.46 [0.53]
20356152PU-5	Needle Tip Protector-Size 5		107.19 [4.22]		16.51 [0.65]

Groninger Needle Accessories

Groninger needles require a separate, multi-use adapter that mounts to their T-slotted needle holder. The holder dimensions do not change but different needle clips are needed for different size needles. The needle clips are not single-use items and must be purchased through Groninger: <https://www.groninger.de/en/company/contact.html>

Needle ID X OD (mm)	Groninger Article #
Groninger Needles	Needle Clip
0.8 X 1.8	7000361431
1.6 X 2.0	6427970200
2.6 X 3.0	6427970400
3.0 X 4.0	6427970500
4.0 X 5.0	6427970600
5.0 X 6.0	6427970700
7.0 X 8.0	6427970900

Merck KGaA
Frankfurter Strasse 250
64293 Darmstadt, Germany

For additional information, please visit:
[MerckMillipore.com](https://www.MerckMillipore.com)

To place an order or receive technical assistance, please visit:
[MerckMillipore.com/contactPS](https://www.MerckMillipore.com/contactPS)

