



#### CONTENT

DEVICES AND ACCESSORIES	0 3
Numera Main Devices	0 4
General Accessories	0 6
Numera® Autosampler and Accessories	07
Printer, Labels and Scanner	11
Dip Tubes and Adapters	12
Aseptic Sampling Ports Assembly	13
Analyzer Accessories	15
CONSUMABLES	16
Filter Tapes	17
Sampling Sets and Reactor Connection Tubes	18
Diaphragm for Aseptic Sampling Port	2 4
WEAR PARTS	25
Replacement Tubing	26
Replacement Seals	26
Check Valves	27
Wear Parts for Autosampler	27
SPARE PARTS	28
Spare Parts for Dilution Module	29
Spare Parts for Autosampler and	
HPLC Injection Valve	30
Various Spare Parts and Tools	3 2
PREVENTIVE	34
MAINTENANCE KITS	

This brochure lists the components and parts currently available for the Numera® PAT System.

Please be aware that some wear and spare parts need special installation instructions and should be installed by a Securecell certified field engineer.

To order parts or book a service and preventive maintenance appointment please contact your local representative (see last page) or email to <u>orders.numera@securecell.ch</u>.



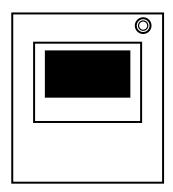
# DEVICES + ACCESSORIES



#### CONTROL MODULE V2.0

**PART NO. 000033** 

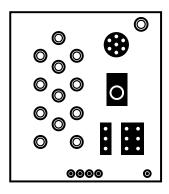
The Control Module contains the CPU with the firmware of the whole system. It offers a touch panel on the frontside for simple user interactions and status information, as well as various communication ports and a compressed air distribution on the backside.



#### MULTIPLEXER MODULE V2.1

PART NO. 001936

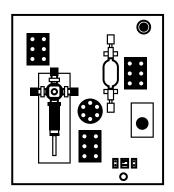
The Multiplexer Module is used to connect up to 4 bioreactors (or other sampling sources) to the Numera® PAT System. Sterility is ensured by pinch valves and additional ethanol rinsing.



## SAMPLE DILUTION MODULE V2.4

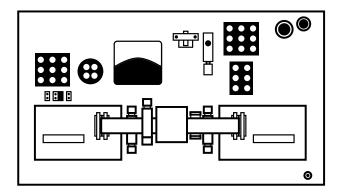
PART NO. 000446

The Sample Dilution Module dilutes the samples precisely and reproducibly with buffer in a range of 1:2 to 1:30. A reagent can furthermore be added to precipitate proteins, extract products or perform staining reactions.



#### TAPE FILTRATION MODULE V2.0

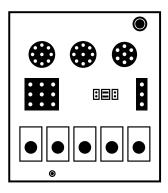
The Tape Filtration Module comes with a unique membrane-based tangential filtration technology. It enables gentle filtration of cell-loaded samples without clogging and cross-contamination. Filter tapes with various pore sizes are available (see consumables).



#### ROUTING MODULE V2.1

**PART NO. 000408** 

The Routing Module offers individual sample distribution within one process and connectivity to up to 4 analytical devices, such as biochemistry analyzers and cell counters.



#### LEVEL DETECTION SENSOR

Level detection sensors are available for the liquid bottles (cleaning solution and buffer) and for the waste bottle. In total 3 level sensors can be connected.



#### VICI-GL45 CAPS

4 port (1×1/16", 3×1/8")	PART	NO.	000222
6 port (1×1/16", 5×1/8")	PART	ΝΟ.	000223
<b>7 port</b> (1 × 1/16", 6 × 1/8")	PART	NO.	000538

GL45 caps for all bottles or canisters with GL45 thread. GL45 caps seal to the bottle/canister with an O-ring behind a PTFE lip, so the O-ring therefore is not a wetted part. One port is suitable for 1/16" tubing. All other ports can fit 1/8" and 1/16" OD tubing.

## The cap includes:

- 1 cap, GL45 thread
- 10-ring, EPDM
- 1 set: 1/16" nut/ferrule/color-sleeve adapter
- 3, 5, or 6 sets: 1/8" nut/ferrule/color-sleeve adapter





#### NUMERA® AUTOSAMPLER AND ACCESSORIES

Storage of retain samples or intermediate storage of samples for further processing is performed with the autosampler. In addition, manually taken samples can be stored here for processing with Numera® and/ or for transfer to analyzers. Cooling is guaranteed in a range of 4 to  $20\,^\circ\text{C}$ .

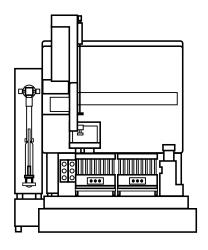
There are two different sizes of autosamplers available. Both are equipped with a syringe pump and a probe rinse station.



#### AUTOSAMPLER ASX-7200

**PART NO. 000297** 

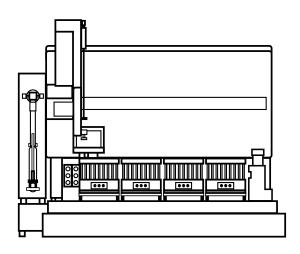
This version of the Autosampler comes with 2 Peltier Rack Modules offering capacity for in total 4 Well Plates.



#### AUTOSAMPLER ASX-7400

**PART NO. 000299** 

This version of the Autosampler comes with 4 Peltier Rack Modules offering capacity for in total 8 Well Plates.



## WELL PLATES

40×1.5 ml vials*	PART NO. 000304
24×4.0 ml vials*	PART NO. 000305

The Autosampler can be equipped with 2 Well Plates per Peltier Rack Module. Securecell offers Well Plates for 1.5 ml and 4.0 ml glass vials. Standard deep-well plates with 2, 5 or 10 ml can also be used.

 $\mbox{^*}\mbox{Note:}$  Recommendations for vials and septum caps for the Well Plates are available on request.



40 x 1.5ml well plate

Autosampler Well Plates should be equipped with sample vials and screw thread caps with pre-cut septum according to the recommendation below.

#### 1.5 ML VIALS

1.5 ml Vials Clear	ORDER	NO.	002300
Screw thread caps Septum silicone / PTFE, pre-cut	ORDER	NO.	002302

Sample vials with thread ND10, Ø 11.6 mm, height 32 mm (made of Borosilicate glass from hydrolytic class I) and screw thread caps ND10 with borehole and pre-slit septum.



#### 4.0 ML VIALS

4.0 ml Vials Clear	ORDER NO. 002303
Screw thread caps Natural rubber orange red / TEF transparent	ORDER NO. 002305
Screw thread caps Septum silicone / PTFE	0 N - D E M A N D

Sample vials with thread ND13, Ø 14.7 mm, height 45 mm (made of Borosilicate glass from hydrolytic class I) and screw thread caps ND13 with borehole.



#### HPLC / UHPLC INJECTION VALVES

## INJECTION VALVES ASSEMBLY

<b>HPLC 5.000 psi</b> including Vertical Injector Port and 20 μl Loop*	PART	ΝΟ.	000303
UHPLC 20.000 psi including Vertical Injector Port and 20 μl Loop*	PART	ΝΟ.	000430

The Autosampler can be equipped with one or two of the listed HPLC/UHPLC Injection Valves, including a Vertical Port Injector and Sample Loop (ID 0.14 mm).

\*Note: Sample Loops are listed in the Spare Parts section. Replacement seals for HPLC Injection Valves are listed in the Wear Part section.







## PRINTER, LABELS AND SCANNER

Barcode scanner Honeywell 1950 h	PART NO. 000566
<b>Labels for 1.5 ml vials</b> ( $34 \times 10$ mm, PP, white, $5 \times 5000$ pcs./roll)	PART NO. 000564
Label Printer Godex RT863i	PART NO. 002795

A label printer can be useful to print labels for the vials directly out of the Lucullus sample list. Labels can contain sample names, sample ID and Barcodes. The white labels have a dimension, that fits to standard 1.5 ml HPLC vials and are resistant to water, common solvents and can also be frozen at -20°C.

The barcode scanner is useful to read sample information from the barcode labels. If manually drawn samples are added for automated sample preparation and/ or measurements with Numera, the barcode can be used to enter sample ID's in Lucullus before placing the samples on the Autosampler. The scanner comes with an USB cable and can be used with any Lucullus computer.





#### DIP TUBES AND ADAPTERS

#### [C] IMMERSION TUBE

ID 0.75 mm 30 cm (with Luer-Lock, female)	PART	ΝΟ.	000307
ID 0.75 mm 50 cm (with Luer-Lock, female)	PART	NO.	000575
ID 1.50 mm 30 cm (with Luer-Lock, female)	PART	ΝΟ.	000607
ID 1.50 mm 50 cm (with Luer-Lock, female)	PART	NO.	000608

Stainless steel dip tubes are used in combination with a suitable reactor adapter to sample from bench top (glass) bioreactors. They are available with two different inner diameters and in two different lengths. For cell culture and microbial processes we recommend the inner diameter 1.5 mm. The same inner diameter must be chosen for reactor connection tubes (see consumables). An alternative choice is the 0.75 mm inner diameter dip tube, which can minimize sample volume consumption in specific scenarios. Replacement recommended after 3 sterilization cycles.



#### REACTOR ADAPTERS

6 mm	PART NO. 001676
10 mm Applikon	PART NO. 001680
10 mm	PART NO. 000553
11 mm	PART NO. 000559
12 mm	PART NO. 001852
PG 13.5	PART NO. 001675

The immersion tubes are installed with a suitable adapter. Choose the right adapter for your bench top (glass) bioreactor. Check the specifications of the head plate of your reactor manufacturer.

From left to right: 10 mm adapter (Applikon), 10+11 mm adapter, 12 mm adapter, PG 13.5 adapter









# ASEPTIC SAMPLING PORTS ASSEMBLY

The Aseptic Sampling Port enables sampling from stainless steel bioreactors using the 25 mm side port. It is available in two typical dimensions for B. Braun safety ports and for standard Ingold ports.

#### DIMENSIONS B. BRAUN SAFETY PORT

Size	D[mm]	Da (e8)[mm]	L[mm]	M[mm]	S[mm]
DN25	52.00	25.00	68.00	46.00	17.00

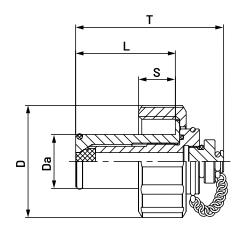
# DIMENSIONS STANDARD 25 MM SIDE PORT (INGOLD)

Size	D[mm]	Da(e8)[mm]	L[mm]	M[mm]	S[mm]
DN25	52.00	25.00	52.00	30.00	17.00

#### SPECIFICATIONS

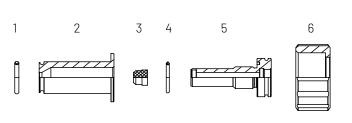
Material (medium contact)	Stainless steel 1.4435 BN2 (316L)
Material (medium separated)	1.4305 or equivalent
Diaphragm material	Silicone
Seals	O-Ring, EPDM
Surface quality	Medium contacted surface < Ra 0.76 μm
Operating temperature	-20 to +80 °C
Operating pressure	-1 to +16 bar (depending on temperature)
Certifications	FDA specified for all sealing materials USP Class VI





# Asepto sampling socket

- 1 O-Ring
- 2 Sampling Port Insert
- 3 Diaphragm can be ordered as spare part see p. 24
- 4 O-Ring
- 5 Union Nut
- 6 Sampling Socket



#### SEPTUM PIERCING NEEDLE FOR ASEPTIC SAMPLING PORT

#### ASEPTIC SAMPLING PORTS ASSEMBLY INCLUDING SEPTUM PIERCING NEEDLES

Aseptic Port Ingold, Length = 30 mm incl. Septum Piercing Needle and holder	PART NO. 002062
Aseptic Port B. Braun, Length = 46 mm incl. Septum Piercing Needle and holder	PART NO. 001644

The connection to the Numera® PAT System is made with a Septum Piercing Needle with side entry. The needle comes with a holder that fits to the Aseptic Sampling Port and with a Luer-Lock connector for attaching the Reactor Connection Tube.

\*Note: Replacement diaphragms are listed in the Spare Parts section.



Sample Piercing Needle Assembly (with Luer Lock connector and Reactor Connection Tubing)



Sample Piercing Needle Assembly (disassembled)



Aseptic Sampling Port Assembly including Septum Piercing Needle

Numera can be used in combination with various analyzers to perform online analytics. For some analyzers, a sample transfer module is necessary. Talk to your sales representative to choose the right option and to check if an integration of a specific analyzer is supported.

#### SAMPLE TRANSFER UNIT

PART NO. 001559

Sample transfer for Cedex HiRes (Roche Diagnostics) or ViCELL XR (Beckmann Coulter). Tubing included.

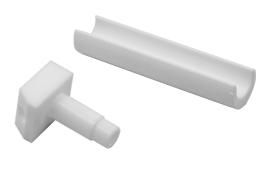


#### CEDEX BIO HT CUVETTE INSTALLATION KIT

PART NO. 003026

(Items 002980 and 001961 combined)

PTFE cuvette for sample transfer to Cedex Bio HT (Roche Diagnostics International Ltd). Tubing included.



Bio HT Cuvette v.04 PTFE



1-port serial device server



# CONSUMABLES



#### FILTER TAPES

# FILTER COILS

Filter tape 0.22 µm MasterFilter PES Membrane* on coil	PART NO. 000270
Filter tape 0.45 μm Pall Supor® PES Membrane* on coil	PART NO. 000269
Filter tape 0.65 μm MasterFilter PES Membrane* on coil	PART NO. 001985
Filter tape with 1.20 μm MasterFilter PES Membrane* on coil	PART NO. 001986
Filter coil without filter tape	PART NO. 000610

Filter Tape is available on coils containing 30 m (~100 ft).

\*Note: PES (Polyethersulfone) is a hydrophobic membrane, designed to remove particulates during filtration, and its low protein and drug binding characteristics make it ideally suited for life science applications.

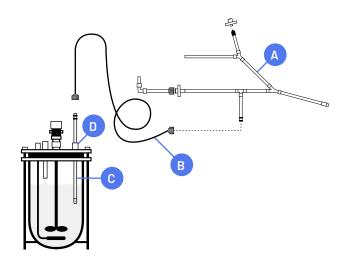


For sterile connection of bioreactors, using the stainelss steel dip tubes for benchtop bioreactors, for single use bioreactors using the existing Luer-Lock connection, for stainless steel bioreactos equipped with the Aseptic Sampling Port, various combinations of autoclavable sampling sets and reactor connection tubes are available.

#### SETUP EXAMPLES

#### For Benchtop Bioreactors with stainless steel dip tubes

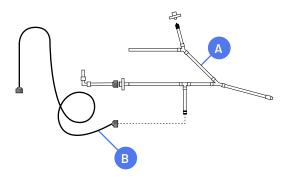
- Sampling Set for Multiplexer Modules - see page 19, section [A]
- Tube for reactor connection (available with ID 0.75 mm or 1.5 mm and lengths of 1-10 m)
- see pages 20-21-22-23, section [B] Stainless Steel Dip Tube with Dip Tube Connection (available with ID 0.75 mm or 1.5 mm and length 300 or 500 mm)
- see page 11, section [C] Reactor Adapter (various types available), - see page 11



## For Single Use Bioreactors (SUB), ambr<sup>®</sup> Modular Systems and for stainless steel bioreactors (with the Aseptic Sampling Port)

- Sampling Set for Multiplexer Modules V2.1
- see page 19, section [A] Tube for reactor connection (available with ID 0.75 mm or 1.5 mm and length 1-10 m) - see page 20-21-22-23, section [B]





Example of a Single Use Bioreactor with a Luer-Lock connection

#### [A] SAMPLING SET for Multiplexer Modules V2.1

**PART NO. 002031** 

The set contains 4 sampling sets for channel 1 to 4 of the Multiplexer Module V2.1. Replacement recommended after 3 sterilizations.

The set does not include the Ethanol lines and adapters - those can be ordered separately. The lines and adapters can be sterilized several times and therefore do not need to be replaced regularly.



# [A] PH SENSITIVE SAMPLING SET for Multiplexer Modules V2.1

**PART NO. 002670** 

The set contains 4 sampling sets for channel 1 to 4 of the Multiplexer Module V2.1. Replacement recommended after 3 sterilizations.

The set does not include the Ethanol lines and adapters - those can be ordered separately. The lines and adapters can be sterilized several times and therefore do not need to be replaced regularly.



# TUBING FOR ETHANOL LINES 2m

**PART NO. 002618** 

ID 0.75 FEP tubings with UNF Cheminert Nut, white, Set of 4



# [B] TUBES FOR REACTOR CONNECTION ID 0.75 mm (with double Luer-Lock, male)

1 m	PART NO. 002011
2 m	PART NO. 002012
3 m	PART NO. 002013
4 m	PART NO. 002014
5 m	PART NO. 002015
6 m	PART NO. 002016
7 m	PART NO. 002017
8 m	PART NO. 002018
9 m	PART NO. 002019
10 m	PART NO. 002020

The Reactor Connection Tubes with an inner diameter of 0.75 mm are available in lengths from 1 to 10 m. Replacement recommended after 3 sterilizations.



<sup>\*</sup> Note Color code for Luer-Lock connections: white = ID 0.75 mm black = ID 1.50 mm

# [B] TUBES FOR REACTOR CONNECTION ID 1.50 mm (with double Luer-Lock, male)

1 m	PART NO. 002021
2 m	PART NO. 002022
3 m	PART NO. 002023
4 m	PART NO. 002024
5 m	PART NO. 002025
6 m	PART NO. 002026
7 m	PART NO. 002027
8 m	PART NO. 002028
9 m	PART NO. 002029
10 m	PART NO. 002030

The Reactor Connection Tubes with an inner diameter of 1.50 mm are available in lengths from 1 to 10 m. Replacement recommended after 3 sterilizations.



<sup>\*</sup> Note Color code for Luer-Lock connections: white = ID 0.75 mm black = ID 1.50 mm

# [B] TUBES FOR REACTOR CONNECTION PH SENSITIVE ID 0.75 MM (with double Luer-Lock, male)

1 m	PART	ΝΟ.	003716
2 m	PART	NO.	003717
3 m	PART	NO.	003718
4 m	PART	NO.	002970
5 m	PART	NO.	003719
6 m	PART	NO.	003720
7 m	PART	NO.	003721
8 m	PART	NO.	003722
9 m	PART	NO.	002958
10 m	PART	NO.	003723

The pH Sensitive Reactor Connection Tubes with an inner diameter of 0.75 mm are available in lengths from 1 to 10 m. Replacement recommended after 3 sterilizations.

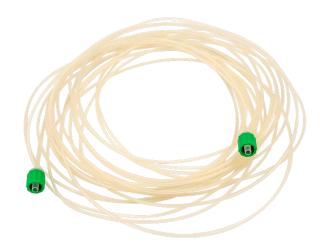


<sup>\*</sup> Note: Color code for Luer-Lock connections is green

# [B] Tubes for Reactor Connection PH SENSITIVE ID 1.50 mm (with double Luer-Lock, male)

1 m	PART NO. 003724
2 m	PART NO. 003725
3 m	PART NO. 003726
4 m	PART NO. 002994
5 m	PART NO. 003727
6 m	PART NO. 003728
7 m	PART NO. 003729
8 m	PART NO. 003730
9 m	PART NO. 002993
10 m	PART NO. 003731

The pH sensitive Reactor Connection Tubes with an inner diameter of 1.50 mm are available in lengths from 1 to 10 m. Replacement recommended after 3sterilizations.



<sup>\*</sup> Note: Color code for Luer-Lock connections is green

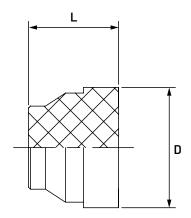
# **Diaphragm for Aseptic Sampling Port** (1 pc.)

PART NO. 002312

For the Aseptic Sampling Port, a silicone Replacement Diaphragm is available. Replacement recommended after each process.

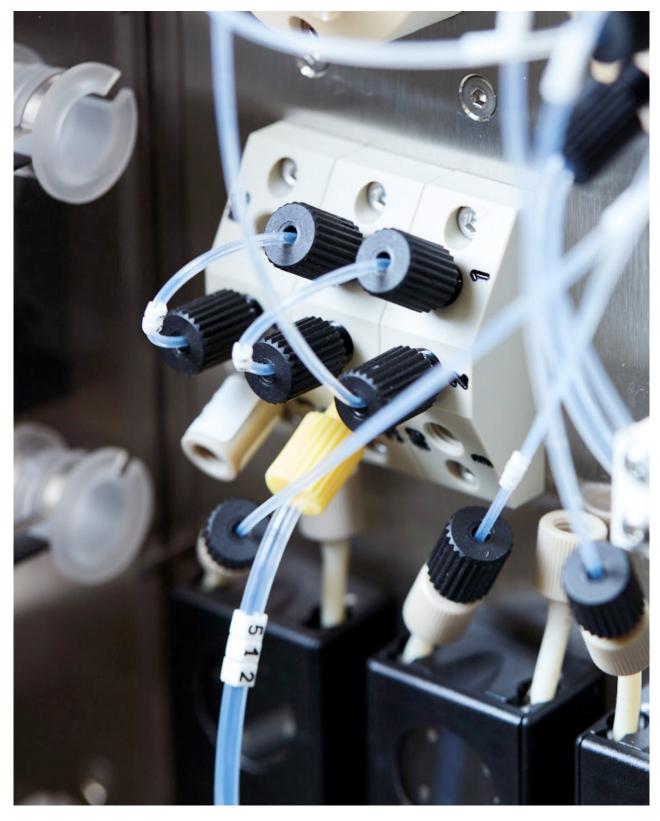
## Dimensions

Size	D[mm]	L[mm]
DN25	12.00	8.50





# WEAR PARTS



FEP tubing is recommended to exchange once a year. The peristaltic pump tubing should be replaced more often depending on the frequency of use. We highly recommend annual preventive maintenance. Please contact your local representative for more information.

#### REPLACEMENT TUBING SETS FOR MODULES

Tubing Set Multiplexer Module	PART	ΝΟ.	001710
Tubing Set Dilution Module	PART	ΝΟ.	001711
Tubing Set Routing Module	PART	ΝΟ.	001712
Tubing Set Filtration Module	PART	ΝΟ.	001713
Tubing Set Autosampler ASX-7200	PART	ΝΟ.	001714
Tubing Set Autosampler ASX-7400	PART	ΝΟ.	001715

Tubing Sets containing all FEP tubing within the module incl. waste and CIP lines and peristaltic pump tubing.

#### REPLACEMENT PERISTALTIC PUMP TUBING

Peristaltic Pump Tubing for Multiplexer, Dilution or Routing Module (one piece)	PART NO. 001950
Peristaltic Pump Tubing for Tape Filtration Module (one piece)	PART NO. 001949

Tubing for peristaltic pumps, including the connection pieces can be ordered for replacement separately.

## REPLACEMENT SEALS

#### REPLACEMENT SEALS FOR HPLC INJECTION PORT

**PART NO. 002337** 

1.5 mm seal, PTFE (ASPEC/221/222X), recommended to be exchanged once a year.



CHECK VALVE PART NO. 000114

In-line UNF 1/4-28 check valve, PEEK housing, EPDM check elements, 100 psi.



#### WEAR PARTS FOR AUTOSAMPLER

#### TYGON RINSE/DRAIN HOOKUP KIT

**PART NO. 001977** 

Includes all tubing for the rinse station of the Autosampler, recommended to be exchanged once a year.



# 2-CHANNEL PERISTALTIC PUMP TUBING

**PART NO. 001951** 

Spare tube for Autosampler peristaltic pump (back side), equivalent to PharMed®, recommended to be exchanged once a year.





# SPARE PARTS



#### SPARE PARTS FOR DILUTION MODULE

## SYRINGE FOR DILUTION MODULE

PART NO. 000130

PSD/4 Syringe, PE, 30mm, 5ml



#### SYRINGE VALVE FOR DILUTION MODULE

PART NO. 000131

PSD/4 Valve, Ceramic, 3-5 Alu Body



## MIXING CHAMBER FOR DILUTION MODULE

PART NO. 000476

Glass mixing chamber with UNF 1/4-28 connectors



#### SPARE PARTS FOR AUTOSAMPLER AND HPLC INJECTION VALVE

#### AUTOSAMPLER PROBE

**PART NO. 001948** 

with ventilation and BEV-Tip, 6" for Autosampler ASX



# PELTIER RACK MODULE

**PART NO. 001954** 

for mounting sample racks and well plates



RINSE STATION PART NO. 001953

Complete Rinse station, without tubes



SYRINGE FOR AUTOSAMPLER SYRINGE PUMP

**PART NO. 001970** 

500µL for Syringe Pump Module SPM-700+



3-WAY VALVE FOR AUTOSAMPLER SYRINGE PUMP

PART NO. 001975

Module SPM-700+



## SAMPLE LOOPS FOR HPLC INJECTION VALVE

	PART NO. 000249
10 µl	PART NO. 002309
20 µl	PART NO. 000504
50 µl	PART NO. 000505

Sample loops for injection valve on Autosampler. Loops (ID 0.14 mm) are electrolytically cut and electrochemically polished and include two stainless steel nuts and ferrules. Loops with other Volumes (from 2 to 500 μl) are available on request.







#### VARIOUS SPARE PARTS AND TOOLS

## MICROFUSE 10A (DELAYED)

PART NO. 000364

10 × Microfuse 10A (delayed), 110-240 VAC



# MICROFUSE 8A (DELAYED)

PART NO. 000365

10 × Microfuse 8A (delayed), 24 VDC



TUBE CUTTER PART NO. 000220

Clean-Cut Polymer Tubing Cutter



SETTING TOOL PART NO. 000296

Stainless steel, for flangeless nuts and ferrules



RELEASE TOOL PART NO. 002978

for disconnecting FESTO air tube fittings

For tubing 0.D. 4 mm For tubing O.D. 6 mm For tubing O.D. 8 mm For tubing 0.D. 10 mm



# FLANGELESS NUTS AND COLLAPSIBLE FERRULES

Flangeless 1/4-28 tube end fittings for 1/16" and 1/8" FEP tubes are available in various colors on request.



#### FEP TUBING

FEP Tubing with 1/16" OD (0.030", 0.75 mm) and 1/8" OD (0.060", 1.50 mm) is available in customs length on request.



#### PREVENTIVE MAINTENANCE KITS

## MULTIPLEXER MODULE PM KIT

PART NO. 001841

Includes all parts that are exchanged at MUX within PM.



## DILUTION MODULE PM KIT

PART NO. 001842

Includes all parts that are exchanged at SDU within PM.



#### FILTRATION MODULE PM KIT

**PART NO. 001843** 

Includes all parts that are exchanged at TFU within PM.



## ROUTING MODULE PM KIT

PART NO. 001844

Includes all parts that are exchanged at SRU within PM.



Includes all parts that are exchanged at ASX within PM.



# AUTOSAMPLER-7400 PM KIT

**PART NO. 002298** 

Includes all parts that are exchanged at ASX within PM.



#### ASX SAMPLE INJECTION PM KIT

PART NO. 002830

Includes all parts that are exchanged at ASX Sample Injection valve within PM

#### VICELL-HIRES FLUIDIC CONNECTION KIT/PM KIT

**PART NO. 002840** 

Includes all parts of the fluidic connection between Numera SRU and the Sample Transfer Unit.

# FLEX FLUIDIC CONNECTION KIT/PM KIT

PART NO. 002841

Includes all parts of the fluidic connection between Numera SRU and the inlet and outlet ports of the Flex analyzer.

Includes all parts of the fluidic connection between Numera SRU and the cuvette assembly of the BioHT.

# SAMPLE TRANSFER UNIT CONNECTION KIT/PM KIT

PART NO. 002946

Includes all parts that are exchanged at STU within PM

#### 6 MM REACTOR ADAPTER O-RING PM KIT

PART NO. 003041

Set of o-ring to exchange during maintenance of reactor adapter

#### 10 MM REACTOR ADAPTER O-RING PM KIT

**PART NO. 003042** 

Set of o-ring to exchange during maintenance of reactor adapter

# 11 MM REACTOR ADAPTER O-RING PM KIT

PART NO. 003043

Set of o-ring to exchange during maintenance of reactor adapter

Set of o-ring to exchange during maintenance of reactor adapter

# 13.5 MM REACTOR ADAPTER O-RING PM KIT

PART NO. 003045

Set of o-ring to exchange during maintenance of reactor adapter





SECURECELL AG

In der Luberzen 29, CH-8902 Urdorf Phone +41 44 732 90 70 contact@securecell.ch