ESCO HEALTHCARE

"Discovery to Delivery"

Streamline® Containment Isolator Class III

(Negative, Total Exhaust Model)

Your Containment Solution for Infectious / Biohazardous Material Handling

SCI-3G8-N3SL-III-EG

Introduction

Streamline® Containment Isolator Class III (SCI Class III) provides the highest level of personnel, product, and environmental protection against highly infectious microbiological agents and other hazardous biosafety level (BSL) 2+ to BSL-4 materials by isolating the main process in a negatively pressured system.

Key Benefits

- World's most certified Class III Isolator BSC, Compliant to all international biosafety standards
- Class 3 Leak Tight Containment, as per ISO 10648-2
- ISO Class 5 air cleanliness as per ISO 14644-1
- Fast purging time

SCI Electrogalvanized Steel Total Exhaust Unit*

SCI Stainless Steel Total Exhaust Unit*

**with BIBO Exhaust Filter below the work zone*

Comparison between SCI - Class III and AC3 units

Product	Streamline® Containment Isolator - Class III (SCI Class III)	Airstream® Class III Biological Safety Cabinet (AC3)
Design	BS EN 12469, NIOSH, OSHA, NSF/ANSI 49-2016, YY0569 Chinese standards, ISO 14644-1:2015, GMP, PIC/S	EN 12469, Europe
Containment Applications	Pressure tested as per Class 3 leakage tightness (ISO 10648-2) and can undergo daily in-situ pressure testing	Not possible for in-situ pressure hold test
Glove Leak Test	Pressure leak test can be done daily via quantifiable glove integrity tester (optional accessory)	Not applicable
Downflow Velocity	SCI III standard design with ducting and external exhaust fan has downflow velocity of 0.40m/s ± 20%	AC3 has no downflow velocity test as it does not have supply fan. It only has exhaust fan to create negative pressure in chamber.
Enhanced Ergonomics	Designed with a sloped front angle for enhanced ergonomics, and to allow personnel operation while seated and/or standing.	Ergonomically designed to allow personnel operation while in a seated position.
Controller	Sentinel Gold Microprocessor Controller	Sentinel Silver Microprocessor Controller
Pressure Display	Pressure value of process and pass chamber are displayed in the Sentinel Display	Pressure value of process chamber are displayed on Magnehelic Gauge
Pass box	Dynamic	Static

Main Features

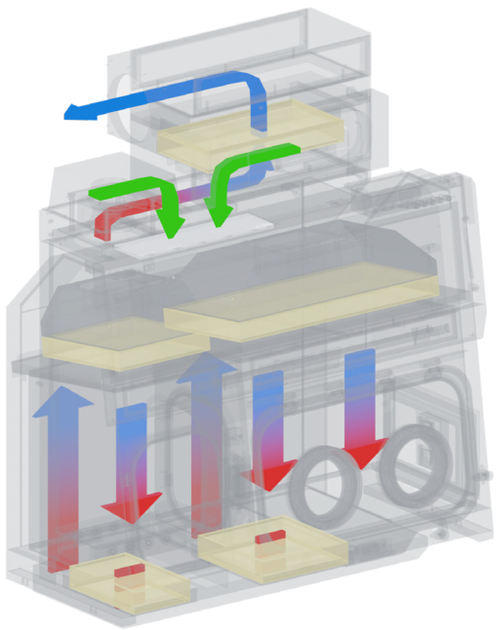
- HEPA (H14) filters with a typical efficiency of >99.995% at 0.1 to 0.3 microns, providing ISO Class 5 air cleanliness as per ISO 14644-1.
- Bag-In, Bag-Out (BIBO) filters with standard Exhaust Connection
- Sentinel™ Gold Microprocessor controller supervises all functions and monitors airflow and pressure in real-time
- Work zone and pass-through interchange are under negative pressure to the room to maintain operator protection in the event of a breach in the barrier isolation system
- Robust dual-wall construction. Unique Esco Dynamic Chamber™ plenum surrounds filter seals with negative pressure
- Electromagnetic interlocking door with time delayed ingress/egress control to minimize particle entry; assuring work sterility during material transfer
- Ergonomically angled front to improve reach and operator comfort
- Leak-tested assembly guarantees maximum protection and flame and abrasion resistant
- FDA-grade air-tight compression
- Work zone without crevices and easy to clean
- With drain pan at the bottom
- Options for external material of construction:
  - Electrogalvanized steel with ISOCIDE™ powder coating
  - Full stainless steel 304 exterior
- Foot switch to easily access inner doors

Safety and Certification

	Design	Cabinet Performance	Air Cleanliness	Electrical Safety
Standard Compliance	BS EN 12469*, NIOSH, OSHA, NSF*/ANSI 49-2016, YY0569 Chinese standards*, ISO 14644-1:2015, GMP, PIC/S	Class 3 Leak Tight Containment as per ISO 10648-2, IESTRP-CC034.1, Worldwide CETA CAG-002-2006, NSF49:2002	ISO 14644-1, Class 5 (in operation), EU GMP Grade A, IESTG-CC1001, USA, IEST-G-CC1002, USA, IEST-RP-CC007.1, Worldwide, IEST-RP-CC001.3, Worldwide	IEC 61010-1, Worldwide EN 61010-1, Europe UL 61010-1, USA CAN/CSA-22.2, No. 61010-1

All components used in Esco products meet or exceed all applicable safety requirements.

** To comply with biosafety standards, NSF 49, BS EN 12469, YY0569 Chinese standards, or other local standards, the unit must be linked to external blower or building exhaust to meet each standard's negative pressure requirement.*



- HEPA-filtered air
- Unfiltered/potentially contaminated air
- Room air / inflow air

Total Exhaust

- Ambient air is pulled through the inlet pre-filter and main filter via the main fans at the top of the isolator. This creates positive pressure on the plenum which provides the downflow of air.
  - The pre-filter extends the life of the filters by trapping larger particulates that can easily clog the main filters.
- This downflow supply then provides an ISO Class 5 environment and unidirectional airflow inside the isolator; thus, protecting the materials inside the main chamber and pass-through.
- Air from the work zone and pass-through is then quickly purged by the fans to keep the area clean. The purge is completely exhausted through HEPA filters as well; ensuring that only clean air is exhausted back to the environment.

The **Streamline® Containment Isolator Class III (SCI Class III)** in ducted or single pass configuration solely operates in a negative pressure, with its on-board fan providing -37 Pa (min) to -125 Pa (max) in the process chamber.

It provides an ISO Class 5 unidirectional total exhaust airflow, ensuring the sterility of the work zone during the whole manufacturing process. It is also equipped with double exhaust HEPA filters via Bag-In, Bag-Out (BIBO) system to prevent untoward exposure during filter change procedures.

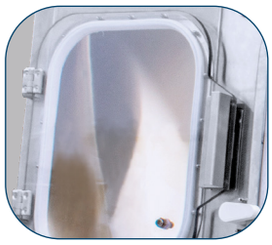
Isolator Class III Models

SCI-2G8-N3SL-III-EG

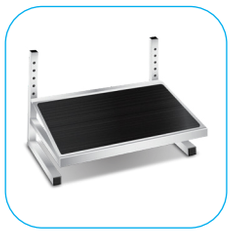
Isolator Unit	Model	No. of gloves - Nominal Width		Electrical Requirements	
Streamline® Containment Isolator	**SCI**	**2G**	5 ft (1.6m)	**R**	220-240 V AC, 50/60Hz, 1Ø
		3G	6 ft (1.95m)	**S**	110-120 V AC, 50/60Hz, 1Ø

Upon ordering, input material of construction at the end of the model code: SCI-2G_-N3SL-III-SS or -EG
••- SS: Full stainless steel exterior
•• -EG: Electrogalvanized steel with ISOCIDE™ coating

Add-Ons and Accessories

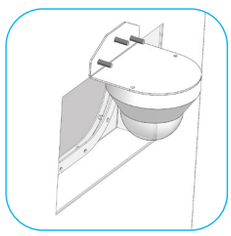


- Monitor System
  - — Access to rear view monitor system
  - — Beside the front panel; equipped with a keyboard and mouse arm
- Manual Glove Leak Tester
- Automated pressure hold testing (APHT) with on-board pump (contact Esco for more information)
  - — With on-board compressed air
- CCTV integration
  - — On right side of process chamber with acrylic viewing panel
- Back-up battery for the electromagnetic interlocks (contact Esco for more information)
- UV Lamp
- Alarm Package
- Manual Latches
- Manual Volumetric Damper
- Anti Blowback Valve



Adjustable foot rest

Manual Glove Leak Tester



CCTV

Laboratory cart

Granite Slab

- SS 316 Frame
- Leveling Feet

IV bar with hooks

MiniBioAtom Biodecontamination System capable of achieving a 6 log reduction in bioburden.

	Code		External Construction	
	N3	Process zone: - 125 Pa (max) Pass -through zone: - 75 Pa (max)	EG	Electrogalvanized steel
			SS	Stainless steel 304

Electrical Outlets and Utility Fittings

- Electrical outlet, ground fault, North America
- Electrical outlet, Euro/Worldwide

Support Stands

- Fixed height, available 720 mm (28”) or 860 mm (34”) - With levelling feet, or With caster wheels
- Telescoping height stand for levelling feet, nominal range 660 mm to 960 mm (26”to 37.8”)
- Motorized Hydraulic Adjustable Support Stand, nominal range 685 mm to 935 mm

GENERAL SPECIFICATIONS - Streamline® Containment Isolator

Note to customer: Insert the electrical voltage number into the last model number digit _ when ordering.

Model			SCI-2G_-_	SCI-3G_-_
Unit Nominal Size (Width)			1645 mm (5')	1950 mm (6')
External Dimensions (Wx D x H) - with 1 left pass chamber*	**Exhaust Type -3 (Single Exhaust, Top BIBO)****	Without stand	1645 x 825 x 1650 mm (64.76 x 33.27 x 64.57")	1950 x 825 x 1650 (76.77 x 33.27 x 64.57")
		With SPC-A/ SPL-A (720mm, 28")	1645 x 825 x 2370 mm (64.76 x 33.27 x 92.91")	1950 x 825 x 2370 mm (76.77 x 33.27 x 92.91")
		With SPC-B/ SPL-B (860mm, 34")	1645 x 825 x 2510 mm (64.76 x 33.27 x 98.43")	1950 x 825 x 2510 mm (76.77 x 33.27 x 98.43")
		With STL (660 to 960 mm)	1645 x 825 x 2310 to 2610 mm (64.76 x 33.27 x 90.55 to 102.36")	1950 x 825 x 2310 to 2610 mm (76.77 x 33.27 x 90.55 to 102.36")
		With SHM (685 to 935 mm)	1645 x 825 x 2335 to 2580 mm (64.76 x 33.27 x 91.54 to 101.18")	1950 x 825 x 2335 to 2580 mm (76.77 x 33.27 x 91.54 to 101.18")
Process Chamber Internal Dimension (W x D x H)			960 x 625 x 625 mm (37.80 x 24.61 x 24.61")	1265 x 625 x 625 mm (49.80 x 24.61 x 24.61")
Pass Chamber Internal Dimension (W x D x H)			450 x 625 x 625 mm (17.72 x 24.61 x 24.6 ")	
Pass Chamber Opening Dimension (W x H)		Inner door	315 x 445 mm (12.40 x 17.52")	
		Outer door	355 x 445 mm (13.98 x 17.52")	
Pass Chamber and Process Chamber Door Material			Polycarbonate	
Airflow Regime			Factory Configured Single Pass	
Pressurization			Factory Configured Negative Pressure	
Glove Port Diameter			200 mm (Circular) or 200 x 300 mm (Oval)	
Glove Port Quantity			2	3
Chamber Environment			ISO Class 5 for all chambers (Grade A)	
Process Chamber Downflow Velocity			0.4 +/- 20% m/s (1.31 fps)	
Pre-filter			G4, panel, polyester fiber media	
Downflow and Exhaust Filter Type			HEPA (H14) Filter with Integral Metal Guards and Filter Frame Gaskets; Fully Compliant With EN 1822 (H14) and IEST-RPCC001.3 Requirements	
Filter Efficiency			>99.995% for particle 0.1-0.2 microns (MPPS, as per EN1822)	
Lighting Level			>650 Lux	
Sound Level			≤ 67 dBA	
Isolator Construction		Main Body	1.2 mm (0.05") 18 gauge electro-galvanized steel with white oven-baked epoxy-polyester antimicrobial powder-coated finish	
		Work Tray	1.5 mm (0.06") 16 gauge stainless steel, type 316L, with 4B finish	
Electrical	**220-240V, AC, 50 Hz, 1Ø**		**SCI-2G8-_ _ _ - _**	**SCI-3G8_-_ _ _ - _**
	Cabinet Full Load Amps (FLA)		10 A	11 A
	Optional Outlets FLA		5 A	5 A
	Cabinet Nominal Power		238 W, 1.5 A	333 W, 2.3 A
	Cabinet BTU		812 BTU/hr	1136 BTU/hr
	110-120V, AC, 50 Hz, 1Ø		**SCI-2G9-_ _ _ - _**	**SCI-3G9_-_ _ _ - _**
	Cabinet Full Load Amps (FLA)		Contact Esco for more details	
	Optional Outlets FLA			
	Cabinet Nominal Power			
	Cabinet BTU			

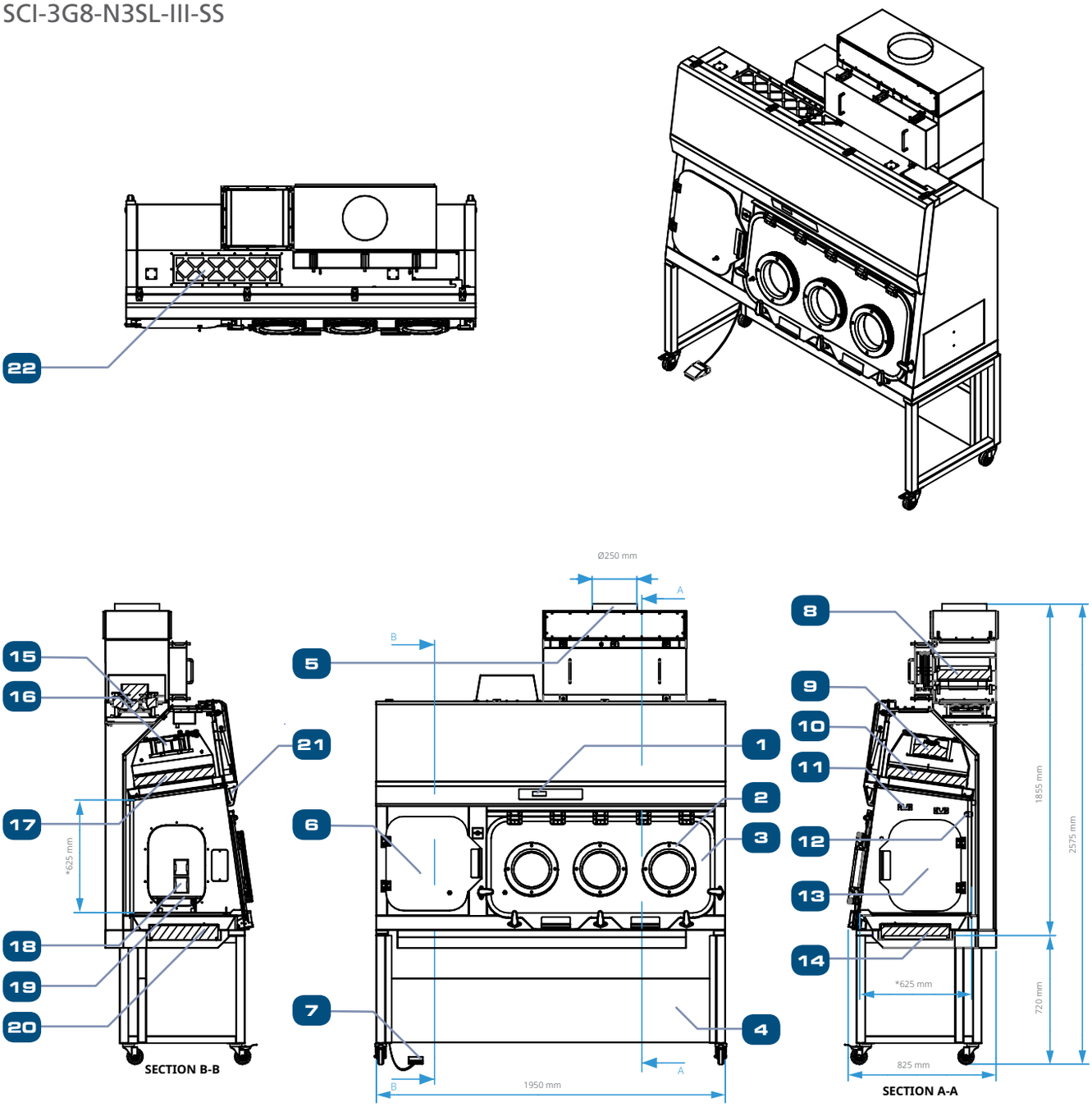
Options	**Carbon Filter**	Contact Esco for more details	
	Oval glove port	5180345	
	Circular glove port	5180345	
	CCTV Provision	5180345	
	Drain	Contact Esco for more details	
	Electrical Outlet	Contact Esco for more details	
	Alarm package	5170227	
	Pre-filter, G4	5090114	
	Glove Leak Tester - Circular	With client-supplied compressed air: 5180311 With Mobile Compressor: 5180312	
	Glove Leak Tester - Oval	With client-supplied compressed air: 5180313 With Mobile Compressor: 5180314	
	IV Bar with S hooks	5170930	5170931
	UV Lamp	5170251	5170255
	Rear View Screen Adaptation	5180033	
	Multiple-piece Trays	Contact Esco for more details	
	Anti-blow Back Valve (ABBV)	EG-Steel: 5170352 Stainless Steel: 5170354	
	Additional Manual Latches	5180038	
	Top Exhaust Collar	EG-Steel: 5171251 Stainless Steel: 5171253	
	Side Exhaust Collar	EG-Steel: 5171252 Stainless Steel: 5171254	
	Minibioatom decontamination	2021410	
	Automated Pressure Hold Test	With client-supplied compressed air: 5180031 With Mobile Compressor: 5180032	
	Sharps Disposal Container, 18.7 L	Negative pressure: 5170224	
Shipping Weight		500 kg (1102.31 lbs)	700 kg (1543.68 lbs)
Shipping Dimensions, Maximum (W x D x H)		1720 x 900 x 2250 mm (67.72 x 35.43 x 88.58 ")	2100 x 1150 x 2250 mm (82.68 x 45.28 x 88.58")

Note:
** No different of height for the unit with and without sharps bin disposal below the workzone*
** To add ABBV, please add +420mm for the overall height*
** To add Top Exhaust collar with/without Exhaust Carbon Filter, please add +205mm for the overall height*
** To add Side Exhaust collar with/without Exhaust Carbon Filter, please add +165mm for the overall height*

*** To comply with biosafety standards, NSF 49, BS EN 12469, YY0569 Chinese standards, or other local standards, the unit must be linked to external blower or building exhaust to meet each standard's negative pressure requirement*

ENGINEERING DRAWING

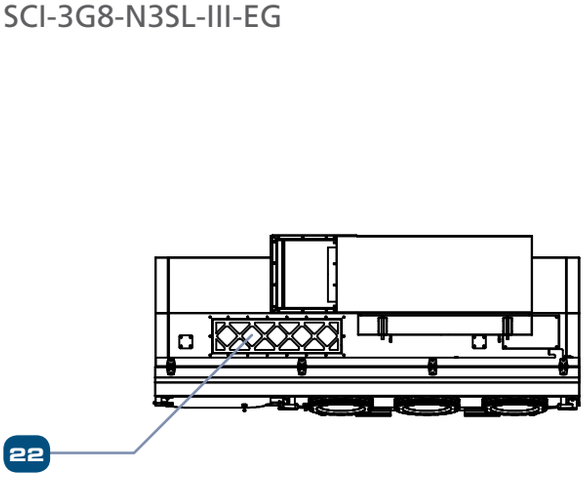
SCI-3G8-N3SL-III-SS

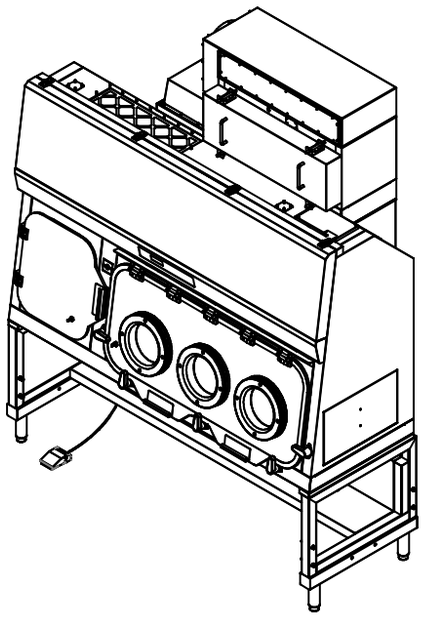


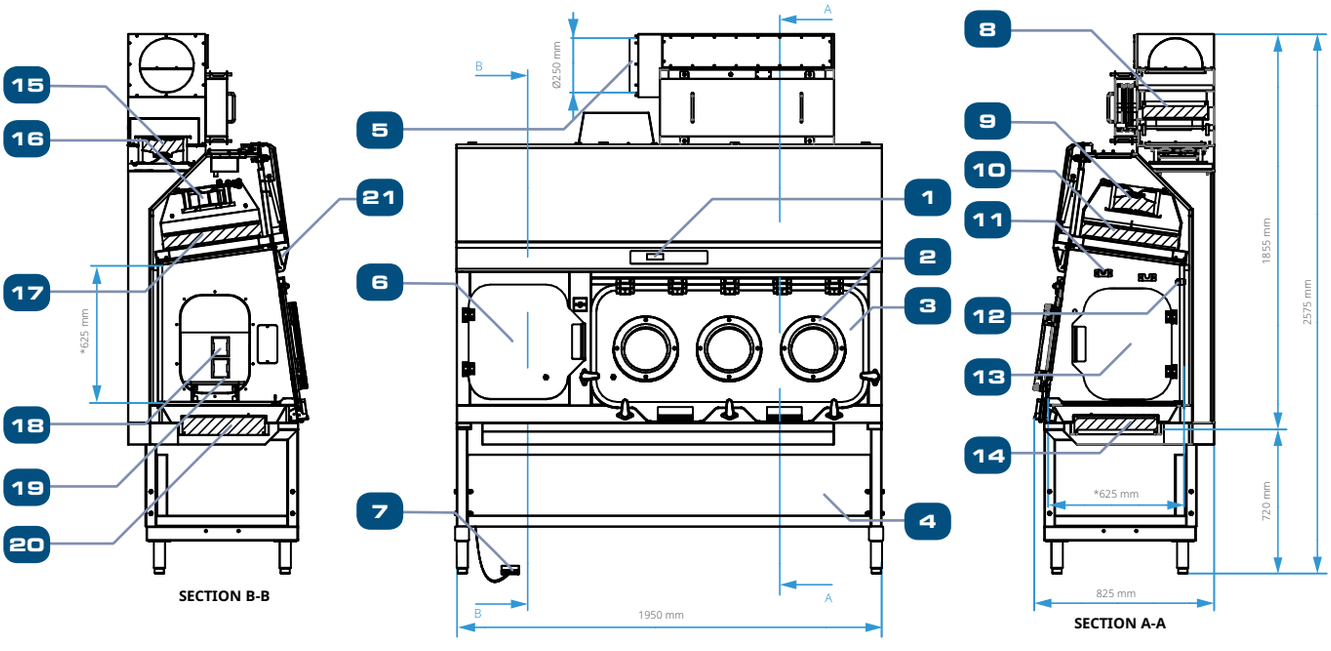
1. *Esco Sentinel Microprocessor Control System*
2. *Circular Glove Ports 200x200mm*
3. *Main Chamber Polycarbonate Door*
4. *Support Stand SPC-6A0-S-SS G2*
5. *Exhaust Collar (Top of unit)*
6. *Pass Chamber Polycarbonate Outer Door*
7. *Inner Door Foot Switch*
8. *2nd Exhaust HEPA Filter, Bag-in Bag-out (BIBO)*
9. *Main Chamber Supply Fan*
10. *Main Chamber Supply Hepa H14 Filter*
11. *IV Bar (Provision Only)*
12. *UV Tube (Optional)*
13. *Pass Chamber Polycarbonate Inner Door*
14. *Main Chamber 1st Exhaust HEPA H14 Filter*
15. *Exhaust Fan*
16. *Pass Chamber Supply Fan*
17. *Pass Chamber Supply HEPA H14 Filter*
18. *Electrical Outlets (Provision Only)*
19. *Pass Chamber Sliding Tray*
20. *Pass Chamber 1st Exhaust HEPA H14 Filter*
21. *LED Light*
22. *G4-Air Inlet Pre-filter*

ENGINEERING DRAWING

SCI-3G8-N3SL-III-EG







1. *Esco Sentinel Microprocessor Control System*
2. *Circular Glove Ports 200x200mm*
3. *Main Chamber Polycarbonate Door*
4. *Support Stand STL-6A0*
5. *Exhaust Collar (Left side of unit)*
6. *Pass Chamber Polycarbonate Outer Door*
7. *Inner Door Foot Switch*
8. *2nd Exhaust HEPA Filter, Bag-in Bag-out (BIBO)*
9. *Main Chamber Supply Fan*
10. *Main Chamber Supply Hepa H14 Filter*
11. *IV Bar (Provision Only)*
12. *UV Tube (Optional)*
13. *Pass Chamber Polycarbonate Inner Door*
14. *Main Chamber 1st Exhaust HEPA H14 Filter*
15. *Exhaust Fan*
16. *Pass Chamber Supply Fan*
17. *Pass Chamber Supply HEPA H14 Filter*
18. *Electrical Outlets Code H*
19. *Pass Chamber Sliding Tray*
20. *Pass Chamber 1st Exhaust HEPA H14 Filter*
21. *LED Light*
22. *G4-Air Inlet Pre-filter*

SAFE GLOVE CHANGE PROCEDURE: REPLACING DISPOSABLE GLOVES

Safe change design system allows glove change at the middle of a process or when the equipment is in operation.

1. Pull the Glove/Sleeve outside the isolator.

2. Fold the fingers of the glove inside the cuff ring.

3. Remove the outer ring.

4. Carefully roll the gloves from the middle groove to the outer groove.

5. Take the new glove and ensure the thumb is at the top. Stretch the ring of the new glove over the port and over the old glove onto the middle groove.

6. Install the ring up to the middle groove.

7. Carefully loosen the old glove from the outer groove.

8. Put the glove/sleeve inside the isolator.

9. Working with one hand in the adjacent glove, carefully pull the old glove.

10. The procedure is now complete.

SAFE GLOVE CHANGE PROCEDURE: REPLACING THE SLEEVES

1. Remove the screws that secure the glove port cover

2. Remove the outer glove port cover

3. Remove the “O” ring

4. Carefully roll the ring of the sleeves/gloves from the inner groove to the outer groove of the port

5. Ensure that the old sleeves/gloves is inside the isolator

6. Take the new sleeves and ensure the thumb is at the top and stretch the “O” ring of the new sleeves over the port and over the old sleeves into the inner groove

7. Replace the “O” ring into the outer groove of the glove port

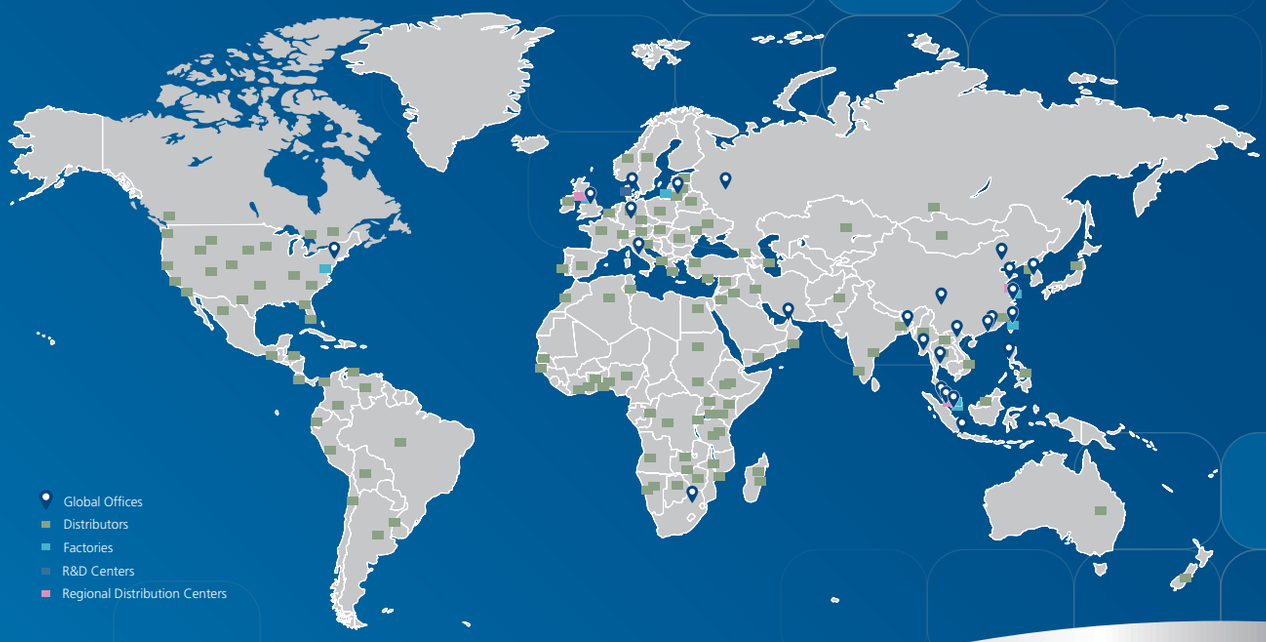
8. Working with one hand in the adjacent sleeves, carefully work from the outer ring and into the isolator. The old sleeves needs to be remove while under the new sleeves

9. Return the glove port outer cover.

10. Secure the port cover with the screws. The procedure is now complete

ESCO LIFESCIENCES GROUP NETWORK

42 Locations in 21 Countries All Over the World



Air Shower
Aseptic Containment Isolator (ACTI)
Ceiling Laminar Airflow Units
Cleanroom Transfer Hatch
Containment Barrier Isolator (CBI)
Downflow Booth (DFB)
Dynamic Floor Laminar Hatch
Dynamic Pass Box
Evidence Drying Cabinet
Garment Storage Cabinet
General Processing Platform Isolator (GPPI)
Laminar Flow Horizontal Trolley
Laminar Flow Straddle Units, Single and Double
Laminar Flow Vertical Trolley
Pass Box
Soft Wall Cleanroom
Sputum Booth
Ventilated Balance Enclosure (VBE)
Weighing and Dispensing Containment Isolator (WDCI)

Since 1978, Esco has emerged as a leader in the development of controlled environment, laboratory and pharmaceutical equipment solutions. Products sold in more than 100 countries include biological safety cabinets, fume hoods, ductless fume hoods, laminar flow clean benches, animal containment workstations, cytotoxic cabinets, hospital pharmacy isolators, and PCR cabinets and instrumentation. With the most extensive product line in the industry, Esco has passed more tests, in more languages, for more certifications, throughout more countries than any biosafety cabinet manufacturer in the world. Esco remains dedicated to delivering innovative solutions for the clinical, life science, research and industrial laboratory community.

ESCO HEALTHCARE "Discovery to Delivery"

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