

Neptune[®] 2

Waste Management System

Site Preparation, Installation, and Maintenance Guide

120 VAC Docking Station

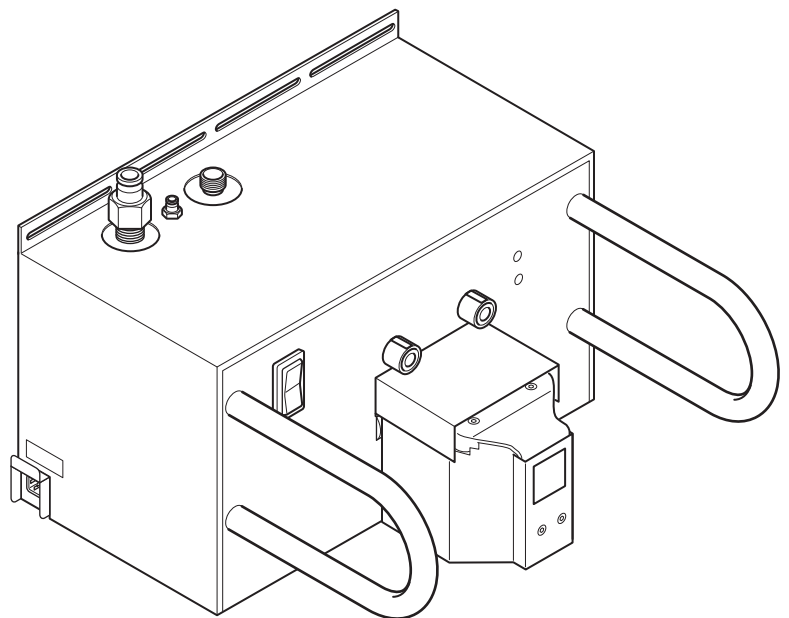
REF 0702-014-000

230 VAC Docking Station

REF 0702-015-000

Instructions For Use

R_x ONLY



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Introduction

This *Instructions For Use* manual is the most comprehensive source of information for your product. Keep and consult this reference manual during the life of the product.

Conventions

The following conventions are used in this manual:

WARNING	A warning highlights a safety-related issue. ALWAYS comply with this information to prevent patient or healthcare staff injury.
CAUTION	A caution highlights a product reliability issue. ALWAYS comply with this information to prevent product damage.
NOTE	A note supplements and/or clarifies procedural information.

Contact Information

For additional information, including safety information, or in-service training, contact your Stryker sales representative or call Stryker Neptune Customer Service at 1-800-550-7836. Outside the US, contact your nearest Stryker subsidiary.

Indications For Use

The Neptune 2 Waste Management System is intended to be used in the operating room, pathology, surgical centers, and doctor's offices to collect and dispose of surgical fluid waste as well as collect smoke generated from electrocautery or laser devices.

Contraindications

The Neptune 2 Waste Management System is **contraindicated against**:

- Connection directly to **chest tubes**.
- Connection to **closed wound drainage systems**.

For Use With

The following components must be used with the equipment described in this manual to create a complete system:

DESCRIPTION	REF
Neptune 2 Rover Ultra, 120 V (compatible with 120 VAC Neptune 2 Docking Station REF 0702-014-000)	0702-001-000
Neptune 2 Rover Ultra, 230 V (compatible with 230 VAC Neptune 2 Docking Station REF 0702-015-000)	0702-002-000
Neptune Docking Detergent	0700-001-026

Accessories

This section describes system components that may be ordered to replace original equipment that is damaged, worn, or must be replaced. This section may also contain optional components used with the system.

The following Stryker-approved accessories are sold separately:

DESCRIPTION	REF
Neptune Docking Detergent (2.5 gallon, 2 each)	0700-001-026
Domestic Power Cord	6000-115-160
Global Power Cord	6000-115-162
Neptune 2 Docking Station Instruction Poster	9100-001-179

NOTE: For a complete list of accessory information, contact your Stryker sales representative or call Stryker Neptune Customer Service. Outside the US, contact your nearest Stryker subsidiary.

Description

The Stryker Docking Station (docked) is a component of the Neptune 2 Waste Management System. The Stryker Rover (rover), another component of the system, is a mobile unit used to suction and collect fluid waste and surgical smoke from a surgical site in an operating room.

After collection, the rover is relocated and mated to the docked. Once the rover is connected to the docked, the emptying of the fluid waste and cleaning of the canisters occurs automatically (Figure 1).

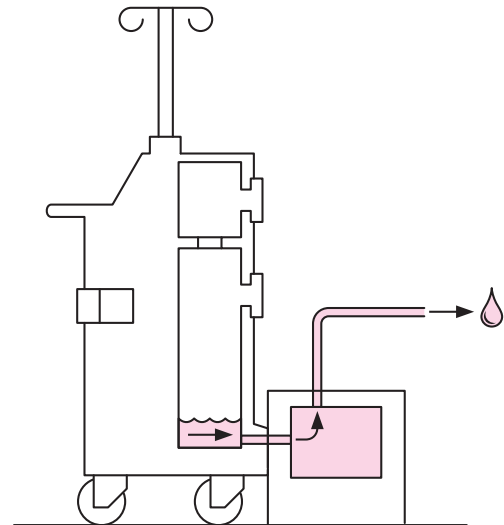


Figure 1 To Empty the Canisters

The rover canister(s) are rinsed with clean water and Neptune Docking Detergent REF 0700-001-026 to clean the canisters of any residual fluid waste. A bottle of detergent is connected to the docker (Figure 2).

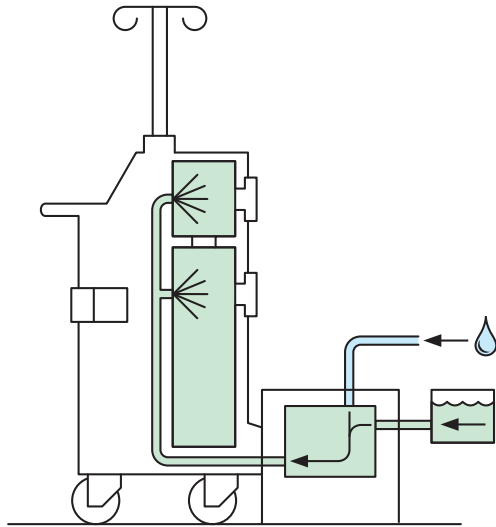


Figure 2 To Clean the Canisters

User/Patient Safety



WARNINGS:

General

- Before using any system component, or any component compatible with this system, read and understand the instructions. Pay particular attention to WARNING information. Become familiar with the system components prior to use.
- Only trained and experienced healthcare housekeeping staff should use this equipment.
- Healthcare professionals should be thoroughly familiar with the instructions for use, handling characteristics, and the indicated and intended uses of this equipment. Contact your Stryker sales representative or Stryker Neptune Customer Service for in-service training.
- Upon initial receipt and before each use, inspect each component for damage. DO NOT use any equipment if damage is apparent or the inspection criteria are not met. See the *Inspection and Maintenance* section for inspection criteria.
- DO NOT disassemble, modify, service, or repair any system component or accessory, unless otherwise specified. Call Stryker Neptune Customer Service.
- ALWAYS operate the equipment within the specified environmental condition values. See the *Specifications* section.

Electrical Safety

- Use only Stryker-approved system components and accessories, unless otherwise specified. Using other electronic components and accessories may result in increased electromagnetic emissions or decreased electromagnetic immunity of the system.
- Take special precautions regarding electromagnetic compatibility (EMC) when using medical electrical equipment like this system. Install and place this system into service according to the EMC information contained in this manual. See the *Specifications* section. Portable and mobile radio frequency (RF) communications equipment can affect the function of this system.
- ELECTRICAL SHOCK HAZARD – ALWAYS connect this equipment to a hospital-grade, facility power receptacle with protective earth (ground). Failure to comply may cause electrical shock and result in healthcare staff injury.

Environmental/Biological

- FIRE HAZARD – DO NOT use this equipment in areas in which flammable anesthetics or flammable agents are mixed with air, oxygen or nitrous oxide. Failure to comply may cause a fire and result in burn injury or property damage.
- BLOODBORNE PATHOGEN HAZARD
 - The Bloodborne Pathogens Standard provided by the United States Occupational Safety and Health Association (US OSHA 29 CFR 1910.1030) requires those with employees having occupational exposure to potentially infectious materials to establish a written Exposure Control Plan. The Exposure Control Plan is designed to eliminate or minimize employee exposure through use of personal protective equipment (PPE), appropriate vaccinations (e.g. hepatitis B), and other control measures.
 - ALWAYS wear PPE when operating or handling this equipment.
 - ALWAYS follow local regulations regarding proper handling and disposal of biohazard waste.
- Failure to comply may cause infection and result in healthcare staff injury.
- CONTAMINATION HAZARD – ALWAYS follow local regulations for safe handling, recycling, and disposal of biohazard fluid waste and equipment. See *Disposal/Recycle* section. Failure to comply may cause environmental contamination and result in injury.

Features (Figure 3)

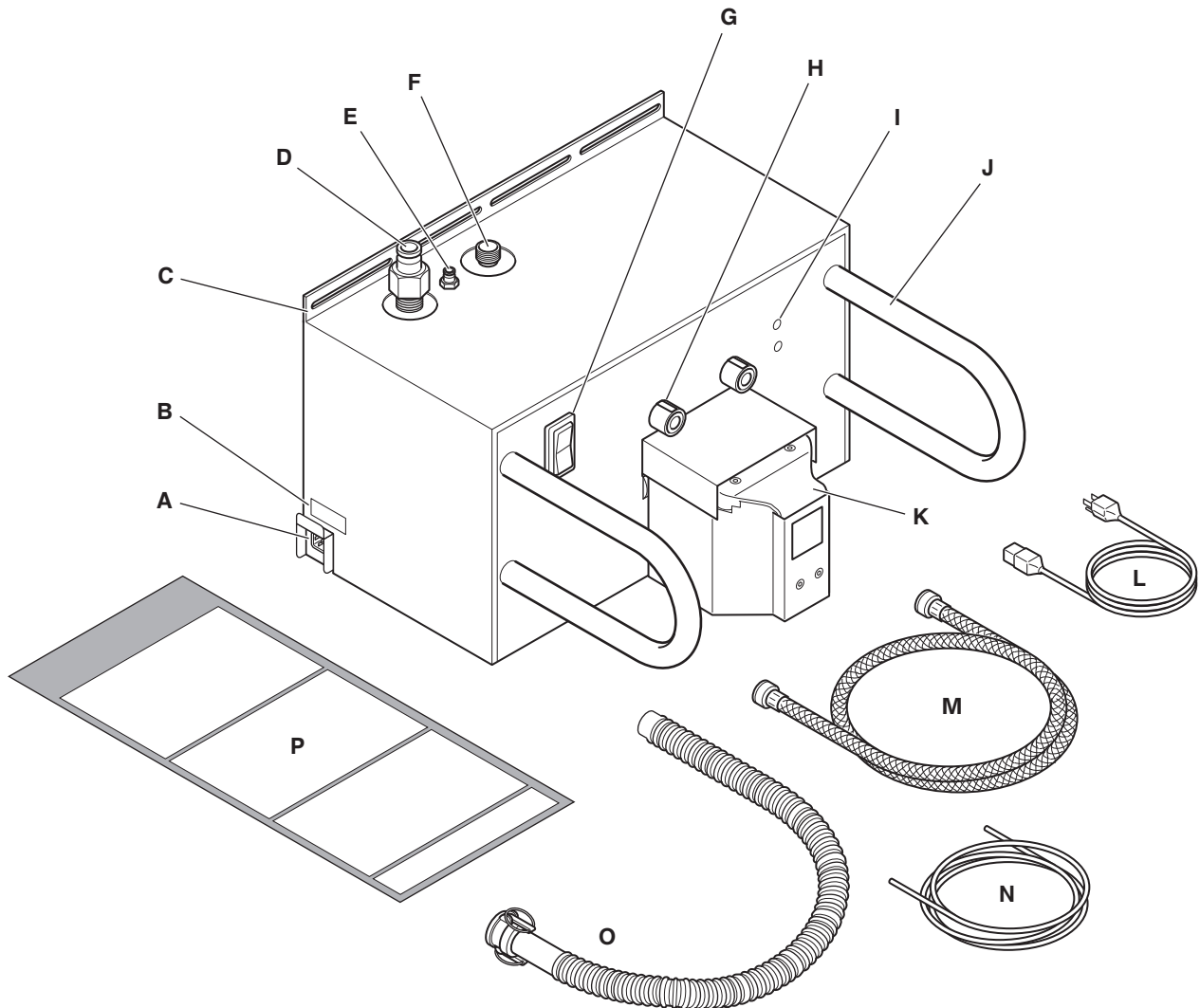












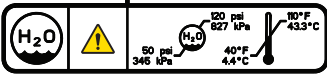

Figure 3 Docking Station Feature Locations

A	Power Cord Receptacle – Allows for the connection of facility power using the docker power cord.	E	Detergent Inlet Port – Allows detergent to enter the rover’s fluid collection system to facilitate cleaning when the rover is connected to the docker.
B	<p>Specification Label –</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>stryker[®] REF 0702-014-000</p> <p>Neptune® 2 Docking Station 120V ~ 60 Hz 3A</p> <p>R_x ONLY</p> <p> Stryker Instruments 4100 E. Milham Kalamazoo, Michigan USA 49001 (269) 323-7700 (800) 253-3210</p> </div>	F	Water Inlet Port – Allows fresh water to enter the rover when the rover is connected to the docker.
C	Mounting Bracket – Allows for the secure installation of the docker to a flat wall surface using mounting hardware (not supplied).	G	Power Switch – Allows for the application or removal of facility power.
D	Waste Outlet Port – Allows for the disposal of fluid waste from the rover when the rover is connected to the docker.	H	Magnets (two) – Provide for the automatic connection of the rover to the docker.
		I	Infrared Communication Ports (two) – Allow infrared data transfer between the docker and rover. Data transfer is necessary during the docking procedure.
		J	Guides (two) – Facilitate the alignment of the rover to the docker.

K	Power and Fluid Connectors – When the rover is connected to the docker, the rover receives power from the docker. Two fluid connectors are also present. One connector allows fresh water to enter the rover. The other connector provides for the disposal of waste water from the rover. The fluid connectors are located under a spring-loaded cover.
L	Power Cord – Allows for the connection of facility electrical power to the docker. Power cord configurations may vary. See the <i>Accessories</i> section for options.
M	Water Inlet Hose – Allows fresh water to flow from the facility water source to the docker water inlet port.
N	Detergent Inlet Tube – Allows detergent to flow from the detergent bottle to the docker detergent inlet port.
O	Waste Outlet Hose – Allows fluid waste to flow from the docker waste outlet port to the drain of the facility waste disposal system.
P	Neptune 2 Docking Station Instruction Poster – Provides rover and docker information to facilitate trouble-free operation.

Symbol Definitions

The symbols located on the equipment and/or labeling are defined in this section or in the *Symbol Definition Chart*. See the *Symbol Definition Chart* supplied with the equipment.

SYMBOL	DEFINITION
	POWER ON
	POWER OFF
	DIRECT CURRENT (DC)
	ALTERNATING CURRENT (AC)
	GENERAL WARNING SIGN
	REFER TO INSTRUCTION MANUAL/BOOKLET
	CONSULT INSTRUCTIONS FOR USE
	PINCH POINT KEEP HANDS OUT
	WASTE OUTLET PORT
	DETERGENT INLET PORT
	WATER INLET PORT
	PROTECTIVE EARTH GROUND

Instructions

To Install the Docker



WARNING: HEAVY EQUIPMENT – ALWAYS have more than one person lift this equipment from the shipping pallet using the lift points (Figure 4). See the *Specifications* section for docker weight. Failure to comply may result in personal injury.

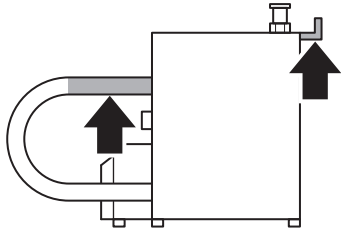


Figure 4 Docker Lift Points

CAUTIONS:

- Make sure the pressure and temperature values of the facility water supply are within the required specified ranges. See the *Specifications* section.
- If mounting the docker to a wall, make sure no gap exists between the docker mounting bracket and the wall. ALWAYS align the mounting hardware (not supplied) with the wall studs to make sure the docker is mounted to the wall securely. Failure to comply may cause inadvertent docker movement and result in wall or product damage.
- ALWAYS use the correct power cord. Configurations may vary. See the *Accessories* section for power cord options.

NOTES:

- Only individuals trained and experienced in the maintenance of reusable medical devices should install, inspect, and test this equipment.
- The docker is installed in a utility closet or disposal area with access to electrical power, a water supply, and a fluid waste drain. The healthcare facility is responsible for the preparation of the installation site and the availability of utilities. See the *Specifications* section for electrical power, water, and drainage requirements. Make sure the installation area meets utility and space requirements (Figure 5).
- If the installation site does not meet local ventilation requirements, obtain and install a ventilation device that will meet the necessary local requirements.

- The docker is equipped with an internal backflow prevention device. See the *Specifications* section for details. Refer to local plumbing codes to determine whether an external backflow prevention device is also required.
- Make sure the plumbing configuration is NOT susceptible to water hammer conditions.
- Make sure the waste outlet hose is connected properly to minimize the escape of noxious fumes and odors.

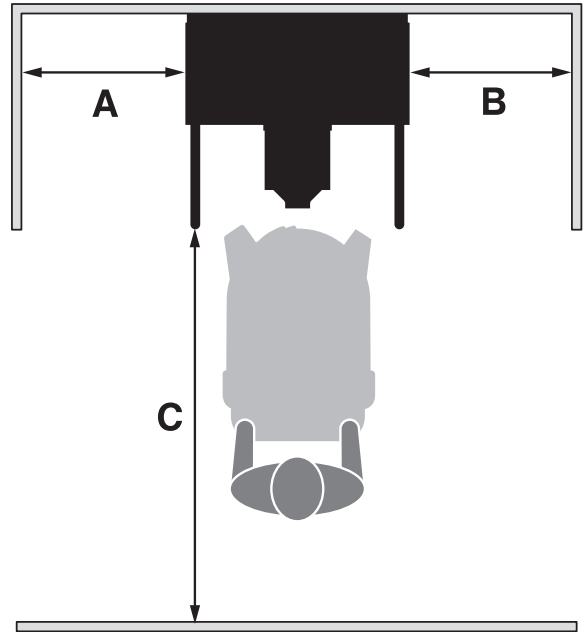


Figure 5 Minimum Floor Space Requirements

A	Left-Side Clearance	15.2 cm [6 inch]
B	Right-Side Clearance	No minimum requirement
C	Front Clearance	121.9 cm [48 inch]

1. To Install the Docker and Connect Utilities (Figures 6 and 7)

- Place the docker on the floor and against a wall with access to electrical power, water, and a fluid waste disposal drain.
- Recommended: Install mounting screws (not supplied) through the mounting bracket of the docker and secure the docker to the wall.

NOTE: If allowed by current local building and electrical codes, mounting the docker to the wall is strongly recommended. The docker is not to be installed in a patient environment.

- Connect the water inlet hose between the water inlet port of the docker and the facility water supply.
- Connect the waste outlet hose to the waste outlet port of the docker and the drain emptying into the fluid waste disposal system.

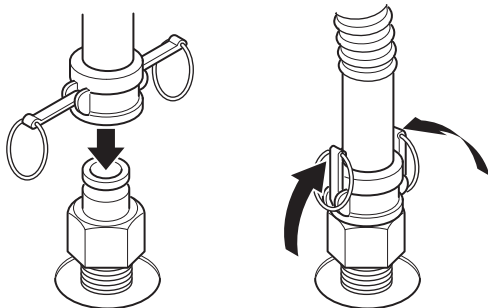


Figure 6 To Connect the Waste Outlet Hose

- Connect the power cord between the electrical receptacle of the docker and the facility electrical power source.

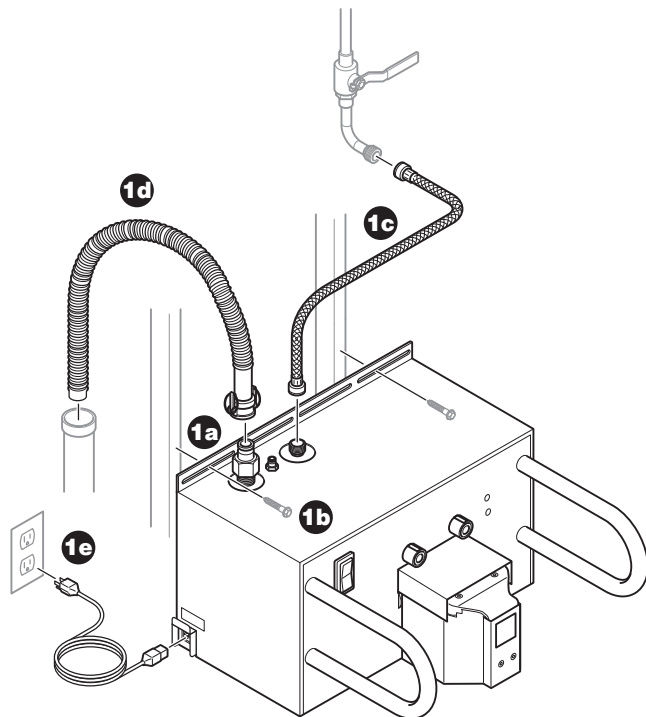


Figure 7 To Install the Docker and Connect Utilities

2. To Apply Power, Water, and Detergent (Figure 8)

- Press the power switch ON. Make sure the power switch illuminates.
- Open the facility water valve to allow water to flow to the docker. Inspect the water supply connections for any leaks. Repair any plumbing to stop leakage if necessary.
- Push the detergent inlet tube into the detergent inlet port of the docker until the tube stops.
- To connect the bottle of detergent, see the instructions for use supplied with the Stryker Neptune Docking Detergent REF 0700-001-026. See the *Accessories* section. Mounting the detergent bottle will facilitate effective detergent dispensing and optimal viewing of the detergent level.
- Mount the Neptune 2 Docking Station Instruction Poster to a wall near the docking station.

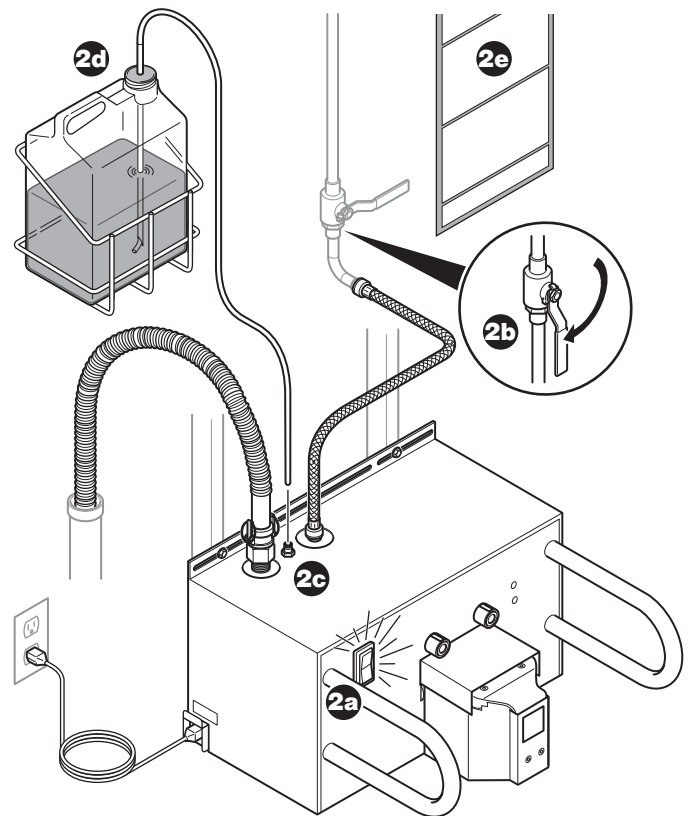


Figure 8 To Apply Power, Water, and Detergent

To Test the Docker



WARNING: ALWAYS keep hands out and away from the mating surfaces of the rover and docker during the docking procedure to avoid a pinch point hazard.

CAUTIONS:

- DO NOT put any objects, including hoses, tubes, towels or detergent bottles, on or over the docker enclosure. Failure to comply may cause corrosion or data transfer obstructions.
- DO NOT allow fluid of any kind to spill directly onto the exterior surface of the electrically-powered docker. Failure to comply may cause corrosion or product failure.

NOTES:

- Only individuals trained and experienced in the maintenance of reusable medical devices should install, inspect, and test this equipment.
- Make sure the rover is operating properly. See the instructions for use supplied with the rover.
- The docker provides power to the rover during the docking process.
- While the rover is docked, DO NOT lock the rover casters.

1. To Prepare the Rover (Figures 9, 10, 11, and 12)

- Install a disposable manifold into each manifold port.
- Attach a suction tube to one manifold port on each manifold. Make sure all the other manifold ports are capped.
- Connect the rover to facility electrical power using the power cord.
- Push the power switch to the ON position.

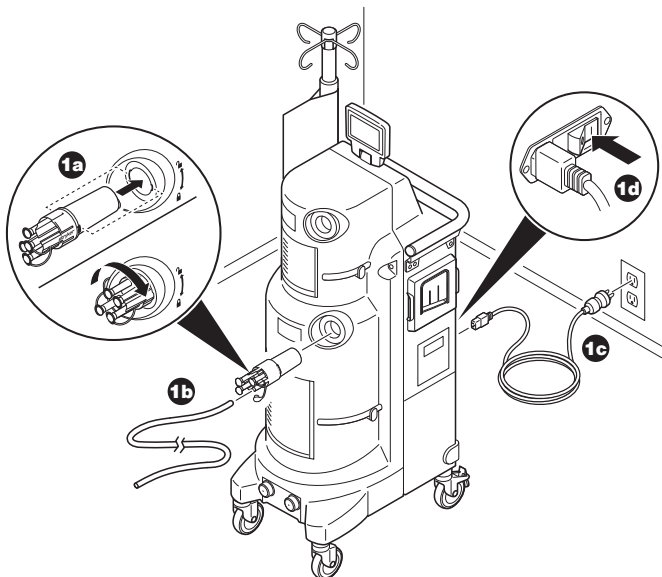


Figure 9 To Prepare the Rover

- Read the WARNING message on the control panel display, then push the control panel display button next to OK to access the CONTROL screen.

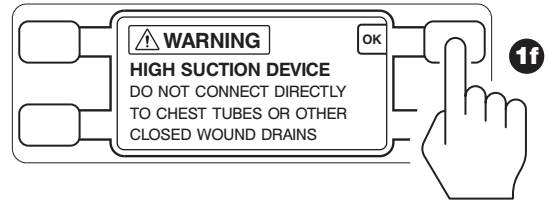


Figure 10 High Suction Device Warning

- Place the attached suction tubes into a sink filled with water.

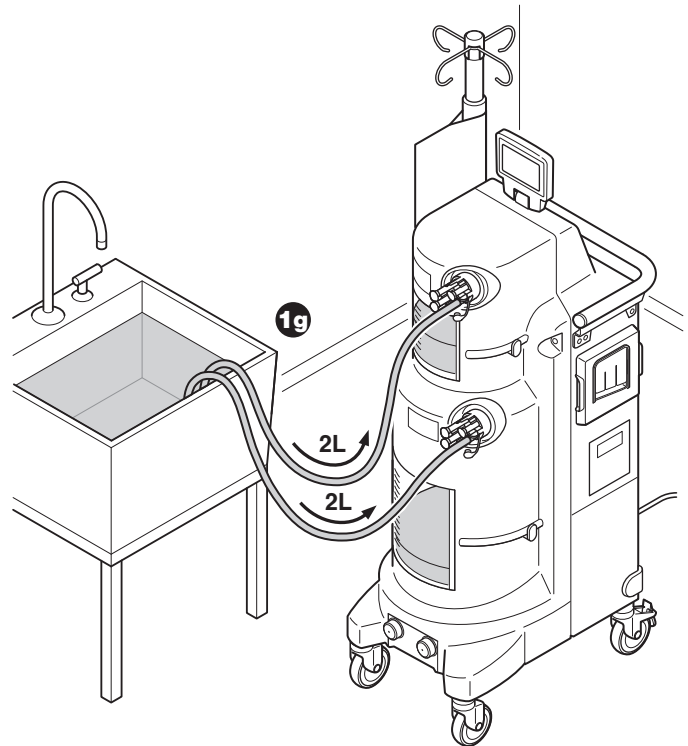


Figure 11 To Fill Rover Canisters

- Push the rover SUCTION button to start the vacuum pump.
- Adjust the SUCTION LIMIT SETTING dial of both canisters to initiate suction and transfer about two liters of water into each canister.

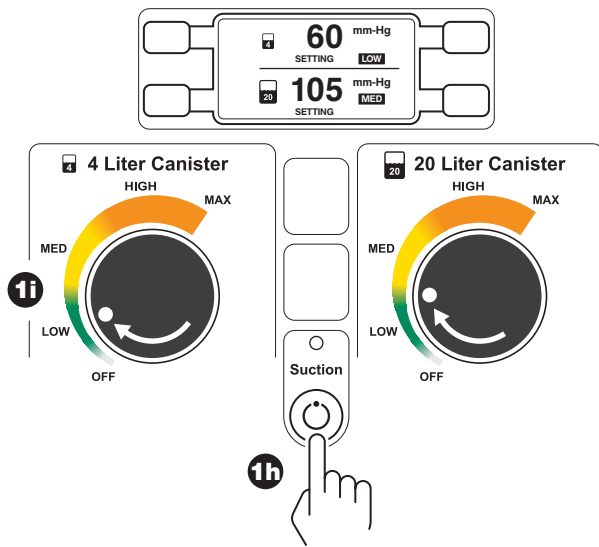


Figure 12 To Start and Adjust Rover Suction

- i. After each canister is filled with two liters of water, push the rover power switch to the OFF position.
- j. Disconnect the rover from facility electrical power. Wrap the power cord around the cord bracket.
- k. Remove the disposable manifolds and suction tubes.

2. To Prepare the Docker (Figure 13)

- a. Make sure the docker power switch is in the ON position and illuminated.
- b. Make sure the bottle of Neptune Docking Detergent REF 0700-001-026 is connected, has enough detergent to perform a wash cycle, and the end of the inlet tube is located at the bottom of the bottle. See the instructions for use supplied with the detergent bottle.

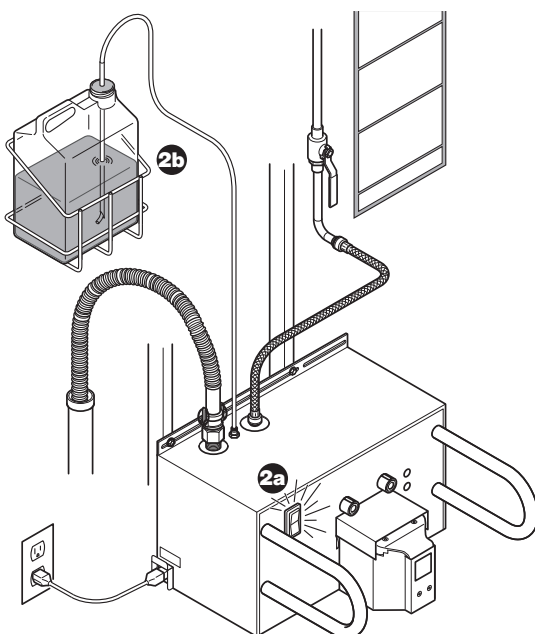


Figure 13 To Prepare the Docker

3. To Perform a Wash Cycle (Figures 14 and 15)

- a. Push the rover toward the docker and between the guides until the rover and docker connect automatically.

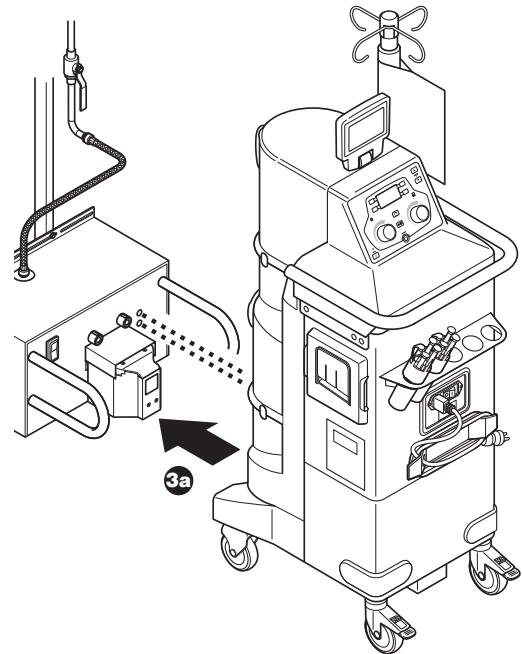


Figure 14 To Connect the Rover

- b. From the SELECT CYCLE screen on the rover control panel display, push the buttons next to the arrow icons to scroll and highlight the desired wash cycle. See *Wash Cycle Options* table.
- c. Push the button next to the OK icon to select the highlighted cycle.

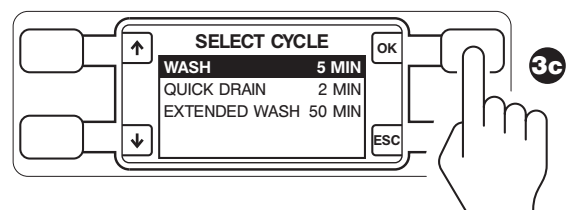


Figure 15 To Select Wash Cycle

NOTE: If a specific wash cycle is not selected within ten seconds, the “Wash” cycle will be performed automatically. See the *Wash Cycle Options* table.

3. To Perform a Wash Cycle (continued)

Wash Cycle Options

CYCLES	DESCRIPTION	TIME (approx.)
Wash	Cycle drains the contents, applies detergent to the interior walls of both canisters, and rinses the detergent with water.	5 minutes
Quick Drain	Cycle drains the contents of both canisters.	2 minutes
Extended Wash	Cycle drains the contents, applies detergent to the interior walls of both canisters, and rinses the detergent with water. Intermittent periods of soaking occur during the cycle.	50 minutes

- d. During the wash cycle, inspect all the docker plumbing and connections for any leakage. If leakage occurs, repair as required.
- e. After the cycle is complete, the DOCKING COMPLETE screen will appear on the control panel display (Figure 16). Push the button next to the OK icon to detach the rover from the docker. Pull the rover away from the docker.

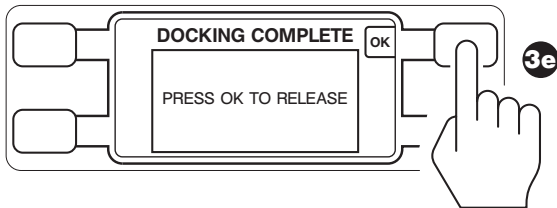


Figure 16 Docking Complete Screen

NOTE: After successfully testing, the docker is ready for use.

To Shut Down the Docker

The docker does not need to be shut down between uses. To remove facility power from the docker, push the power switch to the OFF position.

Inspection and Maintenance



WARNINGS:

- Upon initial receipt and before each use, inspect each component for damage. DO NOT use any equipment if damage is apparent or the inspection criteria are not met.
- DO NOT disassemble, modify, service, or repair any system component or accessory, unless otherwise specified. Call Stryker Neptune Customer Service.

NOTES:

- Only individuals trained and experienced in the maintenance of reusable medical devices should install, inspect, and test this equipment.
- For service, contact your Stryker sales representative or call Stryker Neptune Customer Service. Outside the US, contact your nearest Stryker subsidiary.
- Maintenance documentation for this equipment is available upon request to Stryker-authorized service personnel only.

INTERVAL	INSPECTION CRITERIA	ACTION
Before use	Make sure the equipment has been tested before first use.	See the <i>To Test the Docker</i> section.
Before use and after each cleaning	Check equipment for damage or missing components.	If damage is apparent, replace the equipment.
	Check power cord for cuts.	
	Check power cord receptacle for bent pins or bent contacts.	
Six months	Check the plumbing connections and hoses for leaks.	Repair any plumbing to stop leakage as required. Replace leaking hoses as required.
As required	Check the two infrared communication ports for any obstructions.	Remove any obstruction covering the infrared communication ports, including hoses, tubes, and towels.
	Check the level of the detergent in the dispensing bottle.	Replace the bottle of Neptune Docking Detergent REF 0700-001-026 as required. See the <i>To Replace the Detergent Bottle</i> section.

NOTE: If any component must be discarded, see the *Disposal/Recycle* section.

To Replace the Detergent Bottle



WARNINGS:

- The Neptune Docking Detergent REF 0700-001-026 is an irritant to eyes and skin. ALWAYS wear protective gloves and eye protection to avoid contact with skin and eyes.
- In case of contact with eyes, rinse eyes immediately with plenty of water. See the Material Safety Data Sheet (MSDS) supplied with the Neptune Docking Detergent for first aid information.
- DO NOT spill the detergent. Spills will be slippery and may result in a slip/fall hazard.
- ALWAYS follow the current local regulations governing environmental protection to recycle or dispose of the bottle. DO NOT reuse the empty container.

CAUTION: Use only Stryker Neptune Docking Detergent REF 0700-001-026 with the docker. Failure to comply will result in damage to rover and docker internal components.

1. Remove the detergent inlet tube from the empty detergent bottle.
2. Rinse the empty detergent bottle and dispose of the container properly.
3. Replace the detergent bottle. See the *Accessories* section. See the instructions for use on the label of the Neptune Docking Detergent to connect the detergent properly.

Cleaning

CAUTIONS:

- DO NOT immerse any system component in liquid. DO NOT allow liquids or moisture to enter any electrical connection.
- DO NOT sterilize any system component.
- DO NOT use solvents, lubricants, or other chemicals, including glutaraldehyde or similar chemical cleaners, unless otherwise specified.
- Use of unapproved disinfectants may cause system damage.

Recommended Equipment

- Personal Protective Equipment (PPE) as recommended by the disinfectant supplier (minimum: gown, gloves, face/eye shield)
- Soft, lint-free cloth
- Environmental Protection Agency (EPA) registered disinfectant with a claim for activity against Hepatitis B. The following disinfectants have been validated for use with the Stryker Neptune 2 Waste Management System:

Sodium Hypochlorite Based - Clorox® Clean-Up® Disinfectant Cleaner with Bleach (EPA Reg. #67619-1)

Quaternary Ammonium Based - CaviCide® (EPA Reg. #46781-6)

1. Wipe the external surfaces of the docker with a soft, lint-free cloth moistened with a non-abrasive, hospital disinfectant prepared according to the manufacturer's instructions. Make sure all surfaces remain visibly wet at room temperature.
2. Remove any excess disinfectant solution using a soft, lint-free cloth moistened with water if required by the instructions supplied by the disinfectant manufacturer.
3. Thoroughly clean the docker's infrared communication ports to make sure the rover and docker can communicate and function properly (Figure 17).
4. Inspect the docker. See the *Inspection and Maintenance* section.

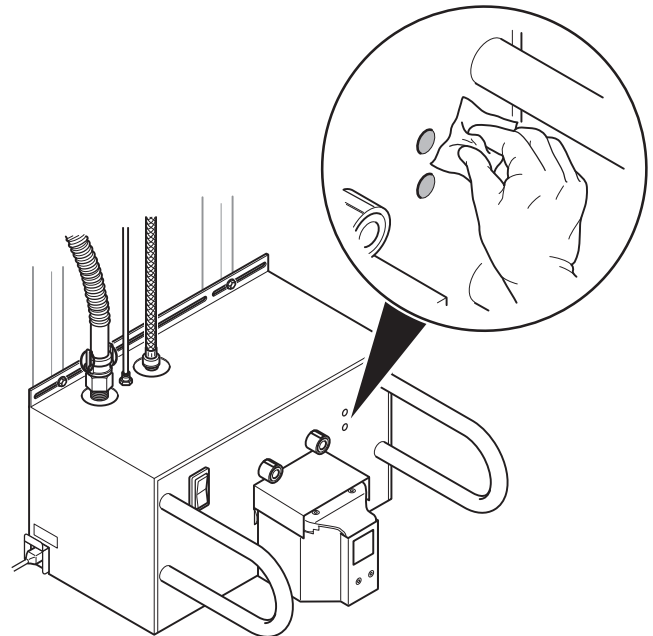


Figure 17 To Clean the Infrared Communication Ports

Storage and Handling

CAUTIONS:

- ALWAYS store and transport the equipment within the specified environmental condition values throughout its useful life. See the *Specifications* section.
- ALWAYS call Stryker Neptune Customer Service before transporting or storing this equipment in freezing conditions. Failure to comply will cause the expansion of frozen internal fluid to damage the equipment.

To ensure the longevity, performance and safety of this equipment, use of the original packaging material is recommended when storing or transporting this equipment.

Troubleshooting

NOTE: For service, contact your Stryker sales representative or call Stryker Neptune Customer Service. Outside the US, contact your nearest Stryker subsidiary.

PROBLEM	CAUSE	SOLUTION
Power switch does not illuminate in the ON position.	Power cord is not connected or is loosely connected.	Make sure the power cord is connected securely.
The rover will not dock or an error has occurred during the docking procedure.	The infrared communication ports are obstructed.	Make sure the docker's infrared communication ports are not obstructed by any tubes, hoses or towels. Remove any dirt or debris from the rover's infrared communication window.
	The facility water valve is shut off.	Turn on the facility water valve.
	The docker is damaged.	Contact Stryker Neptune Customer Service.
Water inlet hose is leaking.	Water inlet hose connection is not secure.	Make sure the water inlet hose connection is secure.
	Water inlet hose is damaged.	Replace the water inlet hose.
Waste outlet hose is leaking.	Waste outlet hose connection is not secure.	Make sure the waste outlet hose connection is secure.
	Waste outlet hose is damaged.	Replace the waste outlet hose.
The docker does not dispense detergent during the cleaning cycle.	The bottle of detergent is empty.	Replace the bottle of the detergent. See the <i>Accessories</i> section and the <i>To Replace the Detergent Bottle</i> section.
	The end of the detergent inlet tube is not immersed in the detergent.	Make sure the end of the detergent inlet tube is threaded completely through the tube stiffener and reaches the bottom of the detergent bottle.
	The detergent inlet tube is not connected securely to the detergent inlet port of the docker.	Connect the detergent inlet tube to the detergent inlet port of the docker securely.
	If the problem persists, the docker detergent pump may be damaged.	Contact Stryker Neptune Customer Service.
Sporadic electrical interference is experienced.	Electrical noise is present.	Turn off all the electrical equipment not in use in the room.
		Relocate the electrical equipment to maximize the distance between the equipment. Increase spatial distance.
		Plug equipment into different outlets.

Error Messages

NOTE: For error message information, see the instructions for use supplied with the rover.

Disposal/Recycle









WARNING: BLOODBORNE PATHOGEN AND CONTAMINATION HAZARDS – ALWAYS follow local regulations for safe handling, recycling, and disposal of biohazardous fluid waste and Neptune equipment. Call Neptune Customer Service for docker decontamination procedures. Failure to comply may cause environmental contamination or infection and result in personal injury.



To comply with European Community Waste Electrical and Electronic Equipment (WEEE) Directive 2012/19/EU, this device should be collected separately for recycling. Do not dispose of as unsorted municipal waste. Contact local distributor for disposal information. Ensure infected equipment is decontaminated prior to recycling.

Specifications

Model:	Neptune 2 Docking Station	
REF:	0702-014-000	0702-015-000
Electrical Power Requirements:	120 V  , 60 Hz, 3.0 A 15 A receptacle connection	230 V  , 50 Hz, 3.0 A 10 A [minimum] receptacle connection
European Conformity:	Not Applicable	 0197
Product Safety Certification:	 CSA International C US Canadian Standards Association (CSA) CAN/CSA-C22.2 No. 60601-1:08, <i>Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance</i> CAN/CSA-C22.2 No. 601.1-M90, <i>Medical Electrical Equipment – Part 1: General Requirements for Safety</i> American National Standards Institute (ANSI)/ Association for the Advancement of Medical Instrumentation (AAMI) ANSI/AAMI ES60601-1:2005, <i>Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance</i> ; Consolidated Reprint (2009); Amendment 2 (2010) Underwriters Laboratories (UL) UL 60601-1, <i>Medical Electrical Equipment, Part 1: General Requirements for Safety – First Edition</i> ; Revisions through and including April 26, 2006 International Electrotechnical Commission (IEC) IEC 60601-1:2005, <i>Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance</i> ; IEC Corrigendum 1 (2006); IEC Corrigendum 2 (2007) IEC 60601-1:1988, <i>Medical Electrical Equipment – Part 1: General Requirements for Safety - Second Edition</i> ; Amendment 1 (1991); Amendment 2 (1995); Corrigendum 1 (1995)	European Committee for Electrotechnical Standardization (CENELEC) EN 60601-1:2006, <i>Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance</i> IEC Corrigendum 1 (2006); IEC Corrigendum 2 (2007); CENELEC Corrigendum (2010); CENELEC Amendment A11 (2011)
Dimensions:		
Width:	58.4 cm [23 inch]	
Height:	40.6 cm [16 inch]	
Depth:	58.4 cm [23 inch]	
Mass:	43 kg [95 lb]	
Mode of Operation:	Continuous	
Equipment Classification:	Class 1 Medical Electrical (ME) Equipment	
Ingress Protection (IP):	IPX0	
Light Emitting Diode (LED) Classification (infrared communication ports):	 WARNING: INVISIBLE LED RADIATION DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS CLASS 1M LED PRODUCT — Viewing the laser output with certain optical instruments (for example, eye loupes, magnifiers and microscopes) within a distance of 100 mm may pose an eye hazard.	
Ground Type:		Protective Earth (ground)

Specifications (continued)

Water Requirements:

Pressure Range: 345 kPa to 827 kPa [50 to 120 psi]

Temperature Range: 4.4 to 43.3 °C [40 to 110 °F]

NOTE: For optimal cleaning of the rover canisters, use 37.8 to 43.3 °C [100 to 110 °F].

Fitting Connection: Facility source is equipped with a 3/4" Male (garden) Hose Thread (MHT) fitting and has a dedicated shutoff valve.

Water Quality: Potable tap water

Water Usage: Approximately 34 liters [9 gallons] per rinse cycle at default settings on standard cycle; water usage fluctuates due to selected cycle and facility flow.

Facility Backflow

Prevention Device: Refer to local plumbing codes to determine whether an external backflow prevention device is required.

Drainage Requirements:	Floor drain or permanent service connection per local plumbing codes; 2.44 m [8 feet] connection distance (maximum)
Internal Backflow Prevention Device:	Single check valve constructed of materials that comply with NSF/ANSI 61: Drinking Water System Components – Health Effects.
Water Inlet Hose:	1.27 cm [0.50 inch] inner diameter 1.83 m [6 feet] length
Waste Outlet Hose:	25.4 cm [1.0 inch] inner diameter 1.83 m [6 feet] length
Waste Pump Outlet Flow:	23.8 liters/minute [6.3 gallons/minute]
Detergent Inlet Tube:	0.635 cm [0.25 inch] outer diameter 1.2 m [4 feet] length


Environmental Conditions:	Operation	Storage and Transportation (BEFORE initial use)	Storage and Transportation (AFTER initial use)
Temperature Limitation:			
Humidity Limitation:			
Atmospheric Pressure Limitation:			

Guidance and manufacturer's declaration - electromagnetic emissions		
The Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, are intended for use in the electromagnetic environment specified below. The customer or the user of the Neptune 2 Docker, REF 0702-014-000 or REF 0702-015-000, should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, use RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	The Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, are suitable for use in all establishments other than domestic, and may be used in domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes, provided the following warning is heeded:
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/flicker emissions IEC 61000-3-3	Complies	<p>WARNING: This equipment/system is intended for use by healthcare professionals only. This equipment/system may cause radio interference or may disrupt the operation of nearby equipment. It may be necessary to take mitigation measures, such as reorienting or relocating the Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, or shielding the location.</p>

Specifications

Guidance and manufacturer's declaration - electromagnetic immunity			
The Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, are intended for use in the electromagnetic environment specified below. The customer or the user of the Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ±8 kV air	±6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	± 2 kV for power supply lines ± 1kV for input/output lines	± 2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 s	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, requires continued operation during power mains interruptions, it is recommended that the Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristics of a typical location in a typical commercial or hospital environment.
NOTE: U_T is the a.c. mains voltage prior to application of the test level.			

Specifications (continued)

Guidance and manufacturer's declaration - electromagnetic immunity			
The Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, are intended for use in the electromagnetic environment specified below. The customer or the user of the Neptune 2 Docker, REF 0702-014-000 or REF 0702-015-000, should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 V	<p>Portable and mobile RF communications equipment should be used no closer to any part of the Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d=1.2\sqrt{P}$ <p>150 kHz to 80 MHz</p> $d=1.2\sqrt{P}$ <p>80 MHz to 800 MHz</p> $d=2.3\sqrt{P}$ <p>800 MHz to 2.5 GHz</p> <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey^a should be less than the compliance level in each frequency range.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p>  <p>(Non-ionizing electromagnetic radiation)</p>
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	
NOTE 1: At 80 MHz and 800 MHz the higher frequency range applies.			
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			
^a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, are used exceeds the applicable RF compliance level above, the Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000.			
^b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.			

Specifications

Recommended separation distances between portable and mobile RF communications equipment and the Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000			
The Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, are intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Neptune 2 Dockers, REF 0702-014-000 and REF 0702-015-000, as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d=1.2\sqrt{P}$	80 MHz to 800 MHz $d=1.2\sqrt{P}$	800 MHz to 2.5 GHz $d=2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23
For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.			
NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.			
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

FR-CA 0702-015-712
ES/DE/FR/IT/NL 0702-015-717
ZH/KO 0702-015-720
SV/DA/FI/PT/NO 0702-015-730



Stryker Instruments
4100 E. Milham
Kalamazoo, Michigan
(USA) 49001
1-269-323-7700
1-800-253-3210

stryker[®]