

Sequential Compression Devices (SCDs) & Thromboembolic Deterrent Stockings (T.E.D.s), Application and Management of

Quick Links to:

- [Equipment & Supplies](#)
- Applying T.E.D Stockings ([Appendix A](#))
- Applying SCD Sleeves ([Appendix B](#))
- Sizing Charts ([Appendix C](#) & [Appendix D](#))
- [Removal and Reapplication](#)
- [Troubleshooting](#)
- Alarm Codes – SCD EXPRESS ([Appendix E](#))
- Alarm Codes – SCD RESPONSE ([Appendix F](#))

Site Applicability

All VCH & PHC Acute Sites

Practice Level

Basic Skills for the following professions (within their scope of practice):

- RN, LPN
- OT
- PT

Policy Statement

- Mechanical thromboprophylaxis should be prescribed by a physician using the regional Venous Thromboembolism (VTE) preprinted orders and [VCH-PHC Venous Thromboembolism Prevention Guideline: Thromboprophylaxis](#)
- Mechanical thromboprophylaxis should not be used alone except when contraindication to anticoagulant administration exists. Once all contraindications have resolved, pharmacological prophylaxis should be started
- T.E.D.s may be used in conjunction with SCDs. A physicians order should state if SCD sleeves should be applied over T.E.D. stockings
- SCD sleeves and T.E.D. stockings must be applied almost continuously to be effective. They should only be removed to allow for skin assessment, bathing, toileting, and mobilization
- Proper sizing and application must be ensured for optimal benefit of stockings. Incorrectly fitted T.E.D. stockings or SCD sleeves may lead to skin breakdown and the development of compartment syndrome
- Remove SCDs and T.E.D.s Q12H to assess and perform skin care
- If the patient is ambulating 3 or more times throughout the day consult with a physician to assess the need for continued mechanical thromboprophylaxis
- Monitor the patient for reports of pain and/ or discomfort and perform neurovascular (CWMS) checks at least Q12H
- Garments are SINGLE PATIENT USE ONLY. Stockings should be washed every 2 to 3 days or as needed and should be replaced every 2 to 3 months or after 30 washes

Note: This is a **controlled** document for VCH & PHC internal use. Any documents appearing in paper form should always be checked against the electronic version prior to use. The electronic version is always the current version.

Need to Know

The two methods available for thromboprophylaxis are pharmacological and mechanical. Although anticoagulant therapy is the first choice at VCH-PHC, mechanical methods are often prescribed because they **do not increase the risk of bleeding**.

Three elements contribute to the development of VTE; they are commonly referred to as Virchow's Triad. These elements are hypercoagulability of the blood, venous wall damage, and stasis of blood flow. The two types of mechanical methods used at VCH & PHC are **T.E.D. stockings** (a type of graduated compression stocking) and **SCDs** (also called intermittent pneumatic compression devices or calf compressors).

T.E.D. stockings help to reduce blood stasis and venous wall injury by preventing venous pooling and promoting venous return. It is also suggested that they decrease the risk of endothelial tears and thus reduce the incidence of VTE formation, by preventing passive dilation of the veins. T.E.D. stockings provide a graduated pressure pattern of 18 mmHg at the ankle, 14 mmHg at the calf, 8 mmHg at the popliteal, 10 mmHg at the lower thigh, and 8 mmHg at the upper thigh.

The SCD system helps to prevent VTE by applying intermittent pneumatic compression which increases venous blood flow in at-risk patients. The System consists of the Controller, the Tubing Sets (provided with the Controller) and single-patient use sleeves. The SCD sleeves sequentially compress the limbs to enhance venous blood movement by providing intermittent cycles of compressed air at selected pressures beginning at the ankle and moving up the leg. The result is a wave-like 'milking' action which empties the veins and increases blood flow velocity in the femoral vein. After the compression, the controller measures the time it takes for the limbs to refill with blood (vascular refill detection) and waits that period of time before the next compression is initiated. The preset sequential gradient pressures are 45 mmHg for leg sleeves.

Indications & Contraindications

Indications for Mechanical Thromboprophylaxis

- Patients deemed **very high risk** as per the [VCH-PHC Thromboprophylaxis Policy](#) (should be used in conjunction with pharmacological therapy unless contraindications exist)
- When **contraindications to pharmacological therapy** exist i.e. active bleeding of clinical significance, high risk of serious bleeding that might be life-threatening, high risk of bleeding into a critical site (e.g., intracranial, intraspinal, pericardial, intraocular, retroperitoneal), untreated major bleeding disorder, acquired systemic coagulopathy with bleeding, platelet count less than 50 x 10⁹/L
- Patients who **refuse** pharmacological VTE prophylaxis

Contraindications for Mechanical Thromboprophylaxis

- Acute stroke with immobility (unable to walk independently to the toilet)
- Peripheral vascular disease with absent pedal pulses, severe arteriosclerosis
- Severe peripheral neuropathy
- Skin breakdown, ulcers, gangrene, cellulitis, or dermatitis
- Skin grafting within the last 3 months
- Allergy to stocking or compression cuff materials
- Unable to size or apply properly due to leg deformity, severe edema, recent surgery, or trauma
- Suspected pre-existing DVT/ Acute DVT

Equipment & Supplies

- Measuring Tape
- SCD Controller:



- Tubing Sets (comes with the controller and is NON-DISPOSABLE)
 - SCD EXPRESS: Tubing 9528
 - SCD RESPONSE: Tubing 9918
- Thigh or Calf SCD sleeves (Single use only)



- T.E.D. stockings (if required)



Controller and tubing sets are usually collected and stored in the Medical Device Reprocessing department (MDR). Ordering of T.E.D. stockings may be required if they are not a regularly stocked item. For other collection/storage procedures refer to unit specific practices.

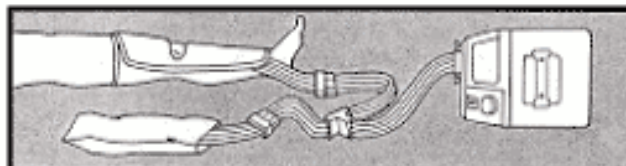
Procedure

For T.E.D. stocking application and measurement see [Appendix A](#) & [Appendix D](#)

For SCD application and measurement see [Appendix B](#) & [Appendix C](#)

To Use Only One Sleeve

1. **For SCD EXPRESS controller:** apply a single sleeve to the leg and connect it to the corresponding tubing. Continue procedure as above
2. **For SCD RESPONSE controller:** an unused sleeve must be attached to the second sleeve connector. The unused sleeve should remain in the plastic bag to ensure proper compression. Simply plug the remaining tubing assembly connector into its mating connector at the end of the bag and continue procedure as above



Note: This is a **controlled** document for VCH & PHC internal use. Any documents appearing in paper form should always be checked against the electronic version prior to use. The electronic version is always the current version.

Removal and Reapplication

- Remove SCDs and T.E.D. stockings at least Q12H to inspect stockings as well as assess and perform skin care. Increase frequency of assessments as appropriate.
- Monitor patient for signs of pain and/ or discomfort and perform neurovascular (CWMS) checks including pedal pulses at least Q12H. Increase frequency of assessments for high risk patients and/ or patients with signs and symptoms of tissue damage
- Remove garments if the patient experiences any numbness, tingling, cyanosis, blanching, decrease pedal pulses or pain to lower extremity. Notify a physician immediately
- SCDs and T.E.D.s need to be applied almost continuously to be effective. They should only be removed for a short time each day to allow for skin assessment, bathing, toileting, and mobilization. It is recommended that the garments not be removed for more than one hour during a 24 hour period
- Use caution when mobilizing patients as they are at an increased risk of falling. When ambulating patients, SCD sleeves need to be removed and T.E.D. stockings (if required) can remain in place so long as appropriate footwear and/or non slip socks are applied
- If the patient is ambulating 3 times or more throughout the day consult with a physician to assess the need for continued mechanical thromboprophylaxis
- Before transport, ensure that the SCD EXPRESS controller is fully charged (The SCD RESPONSE does not have battery power). A fully charged battery will provide up to 6 to 8 hours of power. A completely drained battery will take 4 hours to fully charge

Specific Practices: Peri-Operative, OR & PACU

1. Physicians must evaluate all patients admitted to hospital for risk of VTE. Pharmacological or mechanical thromboprophylaxis should be prescribed according to the level of risk as per the regional thromboprophylaxis guidelines
2. For at risk patients, mechanical prophylaxis should be applied preoperatively, continue during surgery and in the post-anesthetic care unit
3. Assess for any skin breakdown on admission to the PACU and within 30 minutes before discharge
4. In the PACU neurovascular and pain assessments should be performed as per the unit guidelines
5. Document on the appropriate record:
 - the time and date of application
 - the make/model/tracking number of the SCD machine
 - the types and size of sleeves and/or T.E.D.s used
 - application to one or both legs
 - patients tolerance to treatment
 - in the event the machine has to be turned off, the time this happened and the time restarted
6. SCD sleeves and T.E.D. stockings need to be applied almost continuously to be effective. To minimize disruption to treatment, prior to patient transfer, ensure that the SCD controller is fully charged. The SCD EXPRESS controller provides up to 8 hours of battery power (fully charged). The SCD RESPONSE does not have battery power.
7. Notify a physician immediately of any signs of neurovascular compromise and/or increased pain

Troubleshooting

ALARMS will show on the display screen as a code. Refer to the top or front of the controller.

- For **SCD EXPRESS**: See [Appendix E](#)
- For **SCD RESPONSE**: See [Appendix F](#)

Cleaning Instructions

The controller and tubing sets should be sent to the Medical Device Reprocessing department (MDR) for cleaning and redistribution unless otherwise indicated. For other cleaning and storage procedures refer to unit specific practices.

The SCD controller should be cleaned with a soft cloth dampened with soapy water and wiped clean with a dry cloth to remove any excess fluid. DO NOT immerse in any liquid. DO NOT use products containing ammonium chloride, acetone or other aromatic solvents e.g. Caviwipes as these chemicals will degrade the integrity of the case and cause it to become embrittled and possibly crack. The SCD system cannot be effectively sterilized by liquid immersion, autoclaving, or ETO sterilization, as irreparable damage to the system will occur.

Patient/Client/Resident Education

Inform the patient about the purpose and operation of the T.E.D. stockings and/ or SCD machine including:

- The type of sensation to expect
- To report any feelings of numbness, tingling or discomfort to lower limbs
- Not to reposition or remove stockings/sleeves
- Not to disconnect from the pump or turn the pump off without consulting the nurse
- The need to wear appropriate footwear and/ or non slip socks before ambulating
- Importance of reconnecting the system following ambulation

Documentation

1. The time and date of application, type and size of stocking and/or sleeve
2. The condition of the skin and circulatory status before applying and after removal i.e. colour, temperature, skin, capillary refill, and pulses
3. The removal of stockings and/ or sleeves. The reason for removal and the time of reapplication
4. General condition of stockings/sleeves and skin (at least once per shift)
5. Report and record any unexpected outcomes such as reactions/ sensitivity to garments, signs or symptoms of circulatory compromise

Related Documents

Resources:

- VCH-PHC: [Venous Thromboembolism Prevention Guideline: Thromboprophylaxis](#)
- SCD EXPRESS: [Operating Manual](#)
- SCD RESPONSE: [Operating Manual](#)
- SCD Express [Sleeves](#)
- Nursing Procedure [Guide](#) for TED Stockings (source: Covidien.com)
- SCD Express [alarm codes](#)

References

1. Bockheim, H; McAllen, K; Baker, R; Barletta, J. (2009) Mechanical prophylaxis to prevent thromboembolism in surgical patients: A prospective trial evaluating compliance. *Journal of Critical Care*, 24, 192-196.
2. Brady, D; Raingruber, B; Peterson, J; Varanu, W; Denman, J; Resuello, R; De Contreaus, R; Mahnke, J. (2007). The use of knee-length versus thigh-length compression stockings and sequential compression devices. *Critical Care Nursing Quarterly*, 30(3), 255-62.
3. Douketis, J & Pai, M. (2012). Prevention of venous thromboembolic disease in medical patients. Retrieved at [UpToDate](#)
4. Geerts et al (2008). 8th ACCP Guidelines on Antithrombotic Therapy. *Chest* June 2008.
5. Macatangay, C; Todd, S; Tyroch, A. (2008). Thromboembolic prophylaxis with intermittent pneumatic compression devices in trauma patients: false sense of security? *Journal of Trauma Nursing: The Official Journal of the Society of Trauma Nurses*, 15(1), 12-5.
6. Morris, R, & Woodcock, J. (2010). Intermittent pneumatic compression or graduated compression stockings for deep vein thrombosis prophylaxis? A systematic review of direct clinical comparisons. *Annals of Surgery* 251 (3), 393-6.
7. Perry, A. & Potter, P. (2002). *Clinical nursing skills and techniques*, Fifth edition. Mosby: St. Louis.
8. Providence Health Care Clinical Guideline NCS5420 (2010). Sequential Compression Devices: Application and Management, procedure for
9. Safer Healthcare Now. (May 2009). VTE prophylaxis. www.saferhealthcarenow.ca.
10. Skillman, J, & Thomas, S. (2011). An audit of pressure sores caused by intermittent compression devices used to prevent venous thromboembolism. *Journal of Perioperative Practice*, 21(12), 418-20.
11. Thompson, T & Hales, C. (2012) Overview of acute pulmonary embolism. Retrieved at [UpToDate](#)
12. Tyco Healthcare Group (2001). Kendall SCD Response Compression System Operation and Service Manual, Tyco Healthcare Group, Mansfield, USA
13. Tyco Healthcare Group (2007). Kendall SCD EXPRESS Compression System Operation and Service Manual, Tyco Healthcare Group, Mansfield, USA
14. Vancouver Coastal Health Clinical Guideline CA_3500 (2010). Regional Thromboprophylaxis Policy. Retrieved at [Regional Thromboprophylaxis Policy](#)
15. Vancouver Coastal Health Clinical Guideline VCH-V-0500 (2010). Regional Venous Thromboembolism Prevention Guideline: Thromboprophylaxis. Retrieved at [Prevention Guideline](#)
16. Vancouver Coastal Health - Coastal PCG S-03 (2007). Sequential Compression Devices
17. Vancouver Coastal Health - Richmond Guideline (2008). Sequential Compression Device (SCD) Management
18. Vancouver Coastal Health - VA PCG E-125 (1996). Compression Device: Operating Instructions.
19. Walker, L & Lamont, S. (2007). Use and application of graduated elastic compression stockings. *Nursing Standard*, 21 (42), 41-45.

Developed by

CPD Developer Lead: Clinical Educator, Professional Practice, Coastal

Other Members:

Clinical Educator, OR, VGH

Clinical Educator, Perioperative, LGH

Clinical Nurse Educator, Medicine, RH

Clinical Nurse Educator, Sechelt Hospital

Clinical Nurse Educator, Surgical Program, PHC

Clinical Nurse Educator, Trauma and Reconstructive Orthopaedics, VGH

Clinical Resource Nurse, OR, RH

Clinical Resource Nurse, PACU and Surgical Day Care, RH

Director Thrombosis Program, VCH

Nurse Clinician, PACU, VGH

Nurse Clinician, Surgery, LGH

Nurse Educator, Surgery, RH

Physiotherapist, Holy Family Hospital, PHC

Endorsed by

VCH: *(Regional SharePoint 2nd Reading)*

Health Authority Profession Specific Advisory Council Chairs (HAPSAC)

Health Authority & Area Specific Interprofessional Advisory Council Chairs (HAIAC)

Operations Directors

Professional Practice Directors

PHC: Professional Practice Standards Committee

Final Sign-off & Approved for Posting by

Chief Nursing Officer & Executive Lead Professional Practice – VCH

Professional Practice Standards Committee - PHC

Date of Approval/Review/Revision

Original Approved date: March 18, 2013

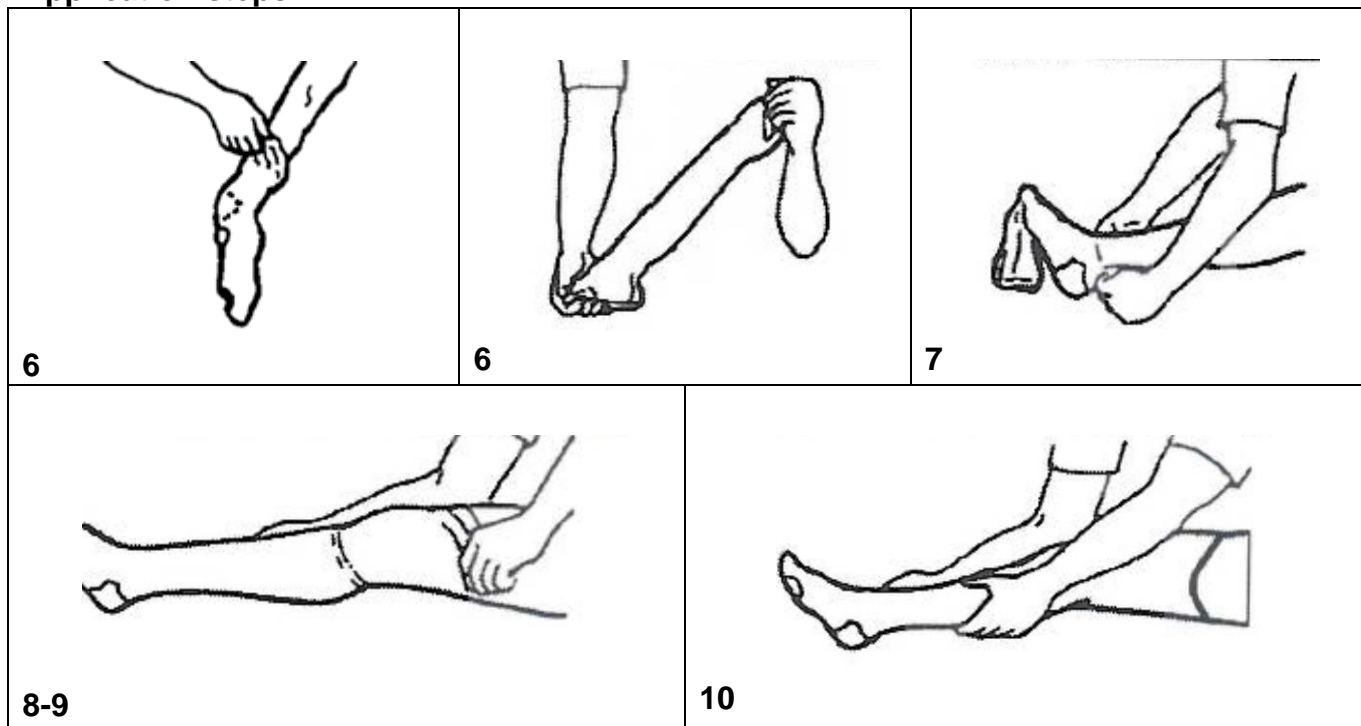
Original Posted date: March 21, 2013

Appendix A: Applying T.E.D. Stockings

Procedure:

1. Explain procedure to patient and provide teaching as required
2. Wash hands
3. Measure patient for correct sizing of garment (See [Appendix D](#)). Measure each leg separately.
There are 2 lengths of T.E.D. stockings (knee and thigh)
4. Position patient supine with head of bed elevated to 30 degrees
5. Cleanse legs- DO NOT USE OINTMENT
6. Turn elastic stocking inside out by placing one hand into stocking, holding toe piece with other hand, and pulling
7. Position stocking over foot and heel. Be sure that the patients heel is centered in the heel pocket
8. Pull remaining portion of stocking over patient's ankle and calf. The sock will now be right side out
9. Continue pulling stocking over patient's calf/thigh until sock is completely extended. The stitch change (change in fabric sheerness) should fall between 2.5 to 5cm below the popliteal fossa. As thigh portion of stocking is applied start rotating stocking inward so panel is centered over femoral artery. Panel is placed slightly towards the inside of the leg
10. Smooth out any wrinkles
11. Align inspection opening to fall under the toes. The toes should not stick out
12. Instruct the patient as to the proper positioning of stocking to ensure that they will not reposition the stocking incorrectly i.e. remind the patient not to roll stockings partially down as this can create a tourniquet effect
13. Reposition patient and wash hands

Application steps:

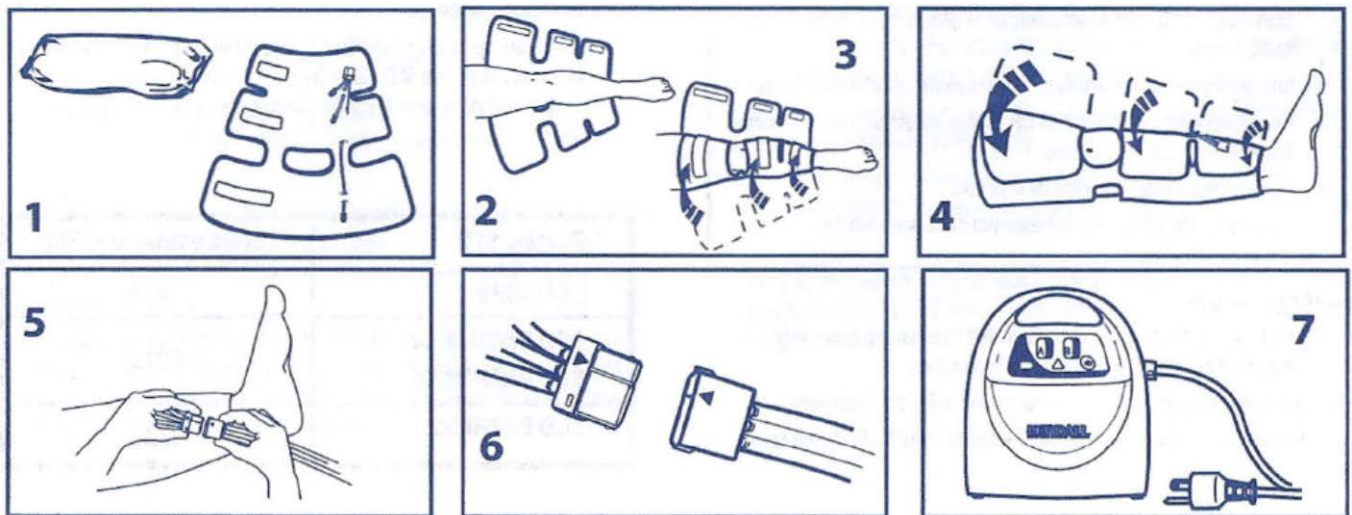


Note: This is a **controlled** document for VCH & PHC internal use. Any documents appearing in paper form should always be checked against the electronic version prior to use. The electronic version is always the current version.

Appendix B: Applying SCD Sleeves


Procedure:

1. Explain procedure to patient and provide teaching as required
2. Wash hands
3. Measure patient for correct sizing of garment (See [Appendix C](#))
There are 2 lengths of SCD sleeves (knee and thigh)
4. Place side of sleeve with printed instructions against the patient's leg. Position the sleeve so that the blue arrows printed on the sleeve are centered directly behind the patient's leg (popliteal fossa). For single sleeve application, see [To Use Only One Sleeve section](#)
5. Wrap the sleeve securely around the patients leg, beginning with the side without the hook tape
6. Holding the ankle section of the sleeve against the patient's ankle, wrap the sleeve securely around the ankle and calf, attaching the hook edge securely to the sleeve. Repeat this procedure on calf and then on the thigh section of the sleeve. The sleeve should fit securely, but not tightly, around all sections of the patient's leg allowing two fingers between the sleeve and the leg.
7. Place the SCD controller via the bed hook or on a horizontal surface
8. Connect the SCD system to the garment with the reusable tubing-plug the white sleeve connector into a mating connector on the tubing leading to the SCD controller. Ensure that the tubing is not kinked or twisted
9. Engage the connectors by aligning the arrows and push the white mating connectors together firmly. To uncouple the white connectors, firmly pull the mating connectors apart
10. Plug machine into AC outlet. Note that SCD EXPRESS system can operate on battery for 8hrs and charging a battery will take approximately 4 hrs
11. Select thigh or calf garment (SCD system can operate with 1or 2 garments)
12. Press the 'Power on/Standby' button



13. To mobilize the patient or disconnect from the machine, Press the 'Power on/Standby' button, remove the sleeves by releasing the velcro or firmly grasp and pull the connectors apart
14. To resume, reconnect the patient and Press the 'Power on/Standby' button

Appendix C: COVIDIEN – Vascular Therapy Sizing System


COVIDIEN
positive results for life™

Vascular Therapy Sizing System

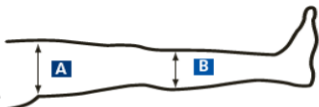
Patient Name _____

SCD™ COMPRESSION SLEEVES (100% Latex Free)

MEASURING INSTRUCTIONS

A. For thigh length, measure upper thigh circumference at buttock fold.

B. For knee length, measure calf circumference.



A. Thigh Circumference	Size	SCD™ Soft Sleeve Codes	SCD™ Express Sleeve Codes	SCD™ Comfort Sleeve Codes
Up to 40.6cm	X-Small			74010
40.6cm to 55cm	Small	5345	9545	74011
55cm to 71.1cm	Medium	5330	9530	74012
71.1cm to 91.4cm	Large	5480	9780	74013
Up to 71.1cm	Sterile	5336	9736	

B. Calf Circumference	Size	SCD Soft Sleeve Codes	SCD Express Sleeve Codes	SCD Comfort Sleeve Codes
Up to 35.6cm	Small			74021
35.6cm to 53.3cm	Medium	5329	9529	74022
48.2cm to 66cm	Large	5489	9789	74023
55cm to 81.2	X-Large	5490	9790	

SCD EXPRESS Foot Cuffs (100% Latex Free)


Women's Shoe Size	Men's Shoe Size	Size	Foot Cuff Codes
≤ 9	≤ 7 ½	Regular	5897
≥ 9 ½	≥ 8	Large	5898

A-V IMPULSE SYSTEM™* Foot Pump (100% Latex Free)

Women's Shoe Size	Men's Shoe Size	Circumference	Size	Foot Cover Codes
5 ½ – 9	4 ½ – 8	Up to 30cm	Regular	5065
9 ½ – 11 ½	8 ½ – 12 ½	Up to 33cm	Large	5075
9 ½ – 12 ½	8 ½ – 13 ½	33cm to 45.7cm	X-Large	5107

For moderate/high risk patients, use T.E.D. Stockings **plus** SCD System, A-V Impulse System Foot Pump and/or anticoagulant.


™* Trademarks of Novamedix Distribution Ltd.
 COVIDIEN, COVIDIEN with logo and Covidien logo are
 U.S. and internationally registered trademarks of Covidien AG.
 Other brands are Trademarks of a Covidien company. © 2011 Covidien.
 Currently licensed under Covidien LLC with Health Canada.
 Manufactured by: Covidien LLC, 15 Hampshire Street, Mansfield, MA, 02048 USA.
 CDN-P0007-E (H-6082) Rev. 2011/06


COVIDIEN

7300 TRANS-CANADA
POINTE-CLAIRE, QC
H9D 5C7
877-664-8926 [T]
800-567-1939 [F]
WWW.COVIDIEN.COM

Note: This is a controlled document for VCH & PHC internal use. Any documents appearing in paper form should always be checked against the electronic version prior to use. The electronic version is always the current version.

Appendix D: COVIDIEN – Vascular Therapy Sizing System


COVIDIEN
positive results for life™

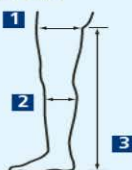
Vascular Therapy Sizing System

Patient Name _____

T.E.D.™ ANTI-EMBOLISM STOCKINGS

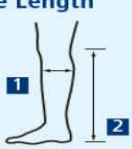
FITTING T.E.D. STOCKINGS

Thigh Length & Thigh Length With Belt



- Measure upper thigh circumference at the buttock fold.
NOTE: When thigh circumference measures greater than 36 inches, select Knee Length style.
- Measure calf circumference at greatest portion to determine size.
- Measure distance from buttock fold to base of heel to determine length. (If possible, measure length in standing position.)

Knee Length



- Measure calf circumference at greatest portion to determine size.
- Measure distance from bend of knee to bottom of heel to determine length. (If possible, measure length in standing position.)

Thigh Length			
1 Thigh Circ.	2 Calf Circ.	3 Length	Description / Item Code
< 30.5cm	< 30.5cm	< 74cm	Small Short / 3071LF
		74cm – 84cm	Small Regular / 3130LF
		> 84cm	Small Long / 3222LF
30.5cm - 38cm	30.5cm - 38cm	< 74cm	Medium Short / 3310LF
		74cm – 84cm	Medium Regular / 3416LF
		> 84cm	Medium Long / 3549LF
38cm - 44.5cm	38cm - 44.5cm	< 74cm	Large Short / 3634LF
		74cm – 84cm	Large Regular / 3728LF
		> 84cm	Large Long / 3856LF
44.5cm - 54.5cm	44.5cm - 54.5cm	< 74cm	X-Large Short / 3180
		74cm – 84cm	X-Large Regular / 3181
		> 84cm	X-Large Long / 3182
54.5cm - 66cm	54.5cm - 66cm	< 74cm	XX-Large Short / 3183
		74cm – 84cm	XX-Large Regular / 3184
		> 84cm	XX-Large Long / 3185

Thigh Length with Belt			
1 Thigh Circ.	2 Calf Circ.	3 Length	Description / Item Code
< 25.5cm	< 25.5cm	< 71cm	X-Small Regular / 3306
		> 71cm	X-Small Long / 3320
25.5cm - 30.5cm	25.5cm - 30.5cm	< 72.5cm	Small Regular / 3039
		> 72.5cm	Small Long / 3364
30.5cm - 38cm	30.5cm - 38cm	< 72.5cm	Medium Regular / 3144
		> 72.5cm	Medium Long / 3449
38cm - 44.5cm	38cm - 44.5cm	< 74cm	Large Regular / 3221
		> 74cm	Large Long / 3523
38cm - 44.5cm	38cm - 44.5cm	< 72.5cm	X-Large Regular / 3922-K
		> 72.5cm	X-Large Long / 3995

Knee Length			
1 Calf Circ.	2 Length	Description	Item Code
< 30.5cm	< 40.5cm	Small Regular	7071
	> 40.5cm	Small Long	7339
30.5cm - 38cm	< 43cm	Medium Regular	7115
	> 43cm	Medium Long	7480
38cm - 44.5cm	< 45.5cm	Large Regular	7203
	> 45.5cm	Large Long	7594
44.5cm - 51cm	< 45.5cm	X-Large Regular	7604
	> 45.5cm	X-Large Long	7802
51cm - 59.5cm	< 45.5cm	XX-Large Regular	7470
	> 45.5cm	XX-Large Long	7471
59.5cm - 66cm	< 45.5cm	XXX-Large Regular	7472
	> 45.5cm	XXX-Large Long	7473

All Stockings are Latex Free

MEASUREMENTS:

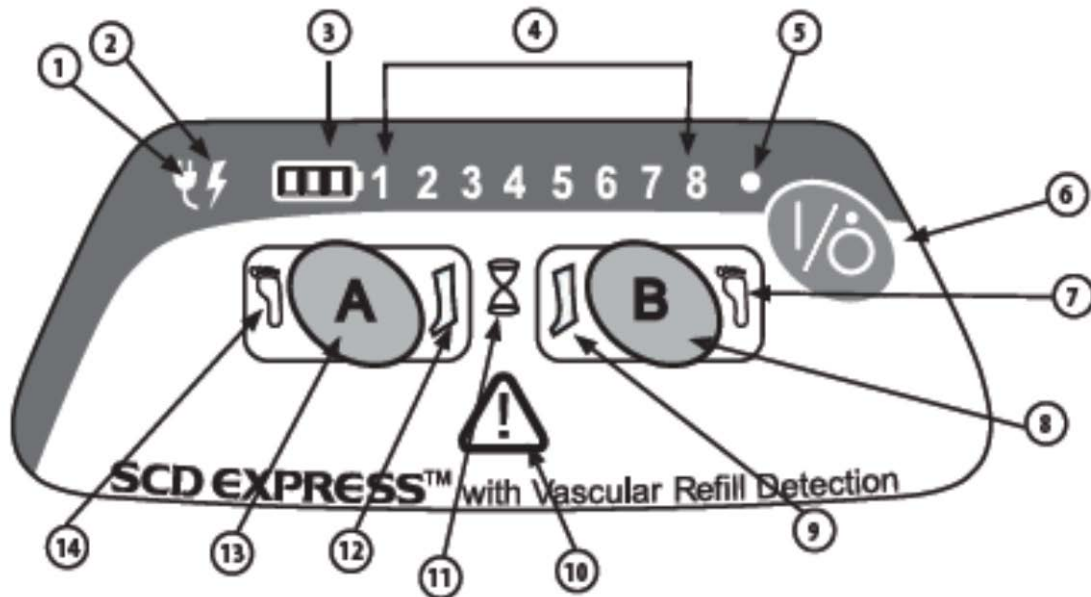
Thigh Circumference _____ Write in Code No. _____

Calf Circumference _____ No. of Pairs _____

(2 pairs recommended)

Note: This is a controlled document for VCH & PHC internal use. Any documents appearing in paper form should always be checked against the electronic version prior to use. The electronic version is always the current version.

Appendix E: SCD EXPRESS Alarm Codes and abbreviated instructions for use



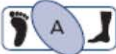
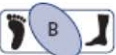






Item Explanation

1	AC Power Indicator
2	Battery Charging Indicator
3	Battery Status Indicators 1-3
4	Test Mode/Error Code Indicators 1-8
5	Power On Indicator
6	Power On/Standby Button
7	Port B Foot Indicator

Item Explanation

8	Port B Garment Configuration Button
9	Port B Leg Indicator
10	Service Required Error Indicator
11	Vascular Refill Assess Indicator
12	Port A Leg Indicator
13	Port A Garment Configuration Button
14	Port A Foot Indicator

Note: This is a **controlled** document for VCH & PHC internal use. Any documents appearing in paper form should always be checked against the electronic version prior to use. The electronic version is always the current version.

Alarm Code	Fault Type	Description	Troubleshooting
 	- Garment Mismatch	The Garment Detection procedure has detected a garment configuration (Leg or Foot flashing green) that does not match the User-selected configuration (Leg or Foot red).	<ul style="list-style-type: none"> - Press the port configuration button(s) to turn the foot selection on/off depending on what type of garment(s) is connected to the Controller. - If the proper garment is selected and the problem persists have the Controller serviced by a professional.
1	- System high	System pressure has exceeded 90mmHg (leg sleeve) or 180mmHg (Foot Cuff)	<ul style="list-style-type: none"> - Check tubing set for any kinks - Check garment application - Check tubing connections - Check for leaks in the garment(s) and the tubing. If suspect, substitute a new tubing set or garments(s) - Turn the Controller off and restart - If the problem persists have the Controller serviced by a professional
2	- High Pressure	Leg Sleeve pressure is greater than 47mmHg after 5 consecutive cycles; Foot Cuff pressure is greater than 135mmHg after 5 consecutive cycles.	
3	- Low Pressure	Leg Sleeve pressure is less than 43mmHg after 5 consecutive cycles; Foot Cuff pressure is less than 125mmHg after 5 consecutive cycles. This alarm will also be triggered when no garments are detected at either Controller port (A or B) during start-up.	
4	System Pressure	Leg sleeve pressure is not between 35 and 55 mmHg for 12 consecutive cycles; Foot Cuff pressure is not between 110 and 150 mmHg for 12 consecutive cycles.	<ul style="list-style-type: none"> - Check garment application (too loose or tight). - Turn the Controller off and restart.
5 	Valve Error	If a valve electrically malfunctions, this error will be displayed.	<ul style="list-style-type: none"> - Verify that the valve assembly is properly connected - Turn the Controller off and restart - If the problem persists have the Controller serviced by a professional
6 	Software Error	Upon start-up, the microprocessor performs diagnostic tests. If the Controller fails to pass these tests this error will be displayed	<ul style="list-style-type: none"> - Turn the Controller off and restart - If the problem persists have the Controller serviced by a professional
7 	Pump Error	If the pump electrically malfunctions, this error will be displayed	<ul style="list-style-type: none"> - Verify that the pump is properly connected - Turn the Controller off and restart - If the problem persists have the Controller serviced by a professional
8 	Vent Error	The pressure in a garment is greater than 20 mmHg at the end of any vent period. The pressure detected during an inflation cycle does not rise above 5 mmHg.	<ul style="list-style-type: none"> - Check tubing for kinks - Check garment application (too loose or tight) - Check to make sure there are no kinks in the internal tubing - Turn the Controller off and restart - If the problem persists have the Controller serviced by a professional
9 (Battery indicator 1)	Low Battery Alarm	There is less than 10 minutes of battery charge remaining. The pump and valves will continue to operate for as long as there is enough power.	<ul style="list-style-type: none"> - Plug the Controller into an AC power outlet
10 (Battery indicator 1) 	Battery Error	If a battery calibration error or battery cell failure is detected this error will be displayed.	<ul style="list-style-type: none"> - Turn the Controller off, plug it into an AC power outlet and restart - If the problem persists recalibrate or replace the battery pack
11 (Error Indicators 5 & 7) 	Temperature Error	If the internal case temperature of the Controller drops below 5°C (41°F) or exceeds 55°C (131°F).	<ul style="list-style-type: none"> - Make sure the Controller is not covered and that the fan port is not obstructed - Turn off the Controller, allow it to cool, and restart - Verify that the cooling fan is properly connected - Have the Controller serviced by a professional if the problem persists

Appendix F: SCD RESPONSE Alarm Codes

Alarm Code	Action
SL – pressure has fallen	Re-attach loose tubing. Turn the system OFF and ON
LO – pressure has fallen below 43 mmHg on 5 consecutive cycles	Re-attach tubing or tighten sleeves. Turn the system OFF and ON
SH or d5 – Pressure is more than 90 mmHg	Straighten the kinked tubing. Turn the system OFF and ON. If the tubing is not kinked, send the system for servicing.
HI – Pressure has exceeded 47 mmHg for 5 consecutive cycles	Loosen the sleeves to allow 2 fingers between sleeve and patient's leg. Turn the system OFF and ON
SP – Pressure has not been controlled between 33-55 mmHg for 12 consecutive cycles	Loosen the sleeves to allow 2 fingers A/A. Turn the system OFF and ON
d 1-4 or d 6-9 – The system requires servicing	Send to Biomedical Engineering for repair