Hokanson Product Catalog

Serving the Medical Community with Vascular Technology Since 1973

Hokanson®

About Hokanson

Since 1973, D. E. Hokanson, Inc. has provided reliable noninvasive vascular diagnostic instruments of the highest quality to the medical community. We manufacture our instruments with a commitment to excellence in research, materials and workmanship. You, our customers, are a key factor in our research and development process. We invite you to contact us with feedback about your Hokanson products. Following this tradition we continue to update and add to our product line.

This catalog gives a general description of each of our products. For more specific information or for the name of your local Hokanson representative, please contact Hokanson directly or visit our website at www.hokanson.cc. We look forward to working with you in providing convenient, effective health care throughout the world.

Kyra Hokanson Gray, President

Quality at an Affordable Price

Exceptional value

Our goal with every instrument is to make it easy to use, accurate and reliable – all at a reasonable price. Your investment in Hokanson will serve you well and keep its value.

Ease of operation

Self explanatory buttons control the most important functions of each of our instruments. We design every instrument to ensure that the controls are logical, visible and easy to handle.

Outstanding quality

Our quality control program of mechanical and thermal shock testing for all Hokanson instruments helps to prevent many instrument failures and allows us to confidently offer a full five year warranty – the longest in the industry.

Accurate results

Hokanson instruments utilize the highest quality components. Each instrument is thoroughly tested for function and accuracy.

A history of reliability

Health care professionals have depended on Hokanson instruments since 1973. Today our instruments are at work in over 35 nations.

Hokanson is ISO 13485 certified.
All our products carry the European CE mark.

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Our Catalog

How to use this catalog

Hokanson became a company to meet the needs of the vascular community of researchers and clinicians and now has embraced the venous and primary care practitioners. Our catalog tailors the instruments to your professional specialty: Vascular, Phlebology, Primary Care/Hospital or Research. For ease of use, we have color coded our products to your specialty and reference them using tabs on right hand pages. At the end of the catalog is a display of all of our cuffs by type and some accessories.

Tests and applications

If you are more comfortable thinking in terms of the tests you perform, we have provided a matrix below that links each test to the appropriate instrument, also grouped by specialty. For sample reports, research papers and brochures on all of these instruments, please visit our website at www.hokanson.cc.

Hokanson provides you with a choice of Dopplers as well as photo, pneumo and strain gauge plethysmography instruments. Many tests can be performed using several modes with some modes working better than others depending on the site to be tested. Additionally Hokanson has cuff inflators including sphygmomanometers, automated and rapid inflation/deflation to meet your various testing needs. We are the major vascular cuff manufacturer with digit and segmental cuffs in a wide variety of sizes and types.

Hokanson instruments, cuffs, inflators and accessories are all made in the USA.

Key to matrix

Vascular: Includes vascular labs, vascular surgeons, cardiovascular surgeons and cardiologists.

Phlebology: Includes vein clinics, vein specialists and vascular surgeons.

Primary Care: Includes internists, family practice, home health or clinics and hospitals.

Research: Includes researchers in diabetes, endovascular function and arterial inflow studies.

Tests and Applications	Doppler	PPG	Pneumo	Strain Gauge	Specialty
Upper & Lower Extremity Arterial & Venous Doppler	√				Vascular
Upper & Lower Extremity Spectral Doppler	√				Vascular
Upper & Lower Extremity Segmental Blood Pressure	√	√	√		Vascular
Blood Pressure in All Digits		√		√	Vascular
Blood Pressure in All Limbs	√	√	√		Vascular
Digit and Limb Pulse Volume Recording			√		Vascular
Carotid Doppler	√				Vascular
Penile Pressure and Plethysmography	√	√	√	√	Vascular
Thoracic Outlet Syndrome		√			Vascular
Maximum Venous Outflow			√	√	Vascular
Venous Reflux	√	√		√	Vascular
Venous Insufficiency with Duplex Scanner					Phlebology
Venous Reflux with Duplex Scanner					Phlebology
Ankle Brachial Index	√	√	√		Primary Care
Toe Brachial Index	√	√			Primary Care
Toe Pressures		√			Primary Care
Post Exercise Pressures with Automatic ABI Calculation	√	√			Primary Care
Pulses	√				Hospital
Systolic BP	√				Hospital
Post Revascularization Pulse Check	√				Hospital

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Our Tests & Applications

Tests and Applications	Doppler	PPG	Pneumo	Strain Gauge	Specialty
Arterial Inflow Venous Occlusion Plethysmography/Endothelial Function		√		√	Research
Venous Outflow and Venous Capacitance		√		√	Research
Cold Sensitivity		√		√	Research
Arterial Pressures & Qualitative Waveform Analysis		√		√	Research
Automatic Reactive Hyperemia				√	Research

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In the chart below, all tests where a Doppler could be used to perform the test are listed first, followed by all tests that can use photo plethysmography, then all that can use pneumo plethysmography and, last, strain gauge plethysmography. Instruments are listed from simplest to most complex in the instrument fields.

Tests and Applications	Instrument	Doppler	PPG	Pneumo	Strain Gauge	Specialty
Upper & Lower Extremity Arterial & Venous Doppler	MD6 System – MD35 – CVS4	√				Vascular
Upper & Lower Extremity Spectral Doppler	CVS4	√				Vascular
Ankle Brachial Index	Portable ABI Kit – MD6 System – MD35 – CVS4	√	√	√		Primary Care
Toe Brachial Index	TBI Package – MD6 System – MD35 – CVS4	√	√			Primary Care
Post Exercise Pressures with Automatic ABI Calculation	MD35 – CVS4	√	√			Primary Care
Upper & Lower Extremity Segmental Blood Pressure	MD6 System – MD35 – CVS4	√	√	√		Vascular
Blood Pressure in All Limbs	Portable ABI Kit – MD6 System – MD35 – CVS4	√	√	√		Vascular
Carotid Doppler	MD6 Doppler – MD35 Doppler	√				Vascular
Penile Pressure and Plethysmography	MD35 – CVS4 – EC6	√	√	√	√	Vascular
Venous Reflux	MD35 – CVS4 – EC6	√	√		√	Vascular
Pulses	MD6 Doppler – UW7 Doppler	√				Hospital
Systolic BP	Portable ABI Kit – MD6 Doppler – UW7 Doppler	√				Hospital
Post Revascularization Pulse Check	MD6 Doppler – UW7 Doppler	√				Hospital

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Tests and Applications	Instrument	Doppler	PPG	Pneumo	Strain Gauge	Specialty
Thoracic Outlet Syndrome	MD6 – MD35 – CVS4		√			Vascular
Blood Pressure in All Digits	Toe Pressure Kit – MD6 System – MD35 – CVS4		√		√	Vascular
Toe Pressures	Toe Pressure Kit – MD6 System – MD35 – CVS4		√			Primary Care
Arterial Inflow Venous Occlusion Plethysmography	EC6 – AI6		√		√	Research
Venous Outflow and Venous Capacitance	EC6 – AI6		√		√	Research
Cold Sensitivity	MD6 – MD35 – CVS4		√		√	Research
Arterial Pressures and Qualitative Waveform Analysis	EC6 – AI6		√		√	Research
Maximum Venous Outflow	MD35 – CVS4 – EC6			√	√	Vascular
Digit and Limb Pulse Volume Recording	MD6 System – MD35 – CVS4			√		Vascular
Automatic Reactive Hyperemia	EC6 – AI6				√	Research

Index

The following index lists the location of every occurrence for each category, instrument or accessory in the catalog.

Where to find	Page

CVS4 | Everything you need

The CVS4 is a Complete Physiological Peripheral Vascular automated and computerized system for the vascular community. Everything you need to perform physiological studies using Doppler, photo plethysmography or pneumo plethysmography comes with this system. **Included with your purchase is one day of on-site set up and instrument training.**

The CVS4 for noninvasive peripheral vascular testing provides:

- Exceptional value
- Reliable, affordable technology
- Ease of operation
- Outstanding quality
- Accurate results

CVS4 components:

- Continuous Wave Doppler spectra and zero-crossing Doppler with bifocal lens for deep & superficial vessels with one transducer.
- Automatic cuff inflator and software remote control TD312
- Cuff selector MV10
- Complete set of cuffs for performing segmental pressures and PVR's
- Custom cart
- Flat panel monitor, mini desktop computer (Windows®) and HP Desk jet color printer

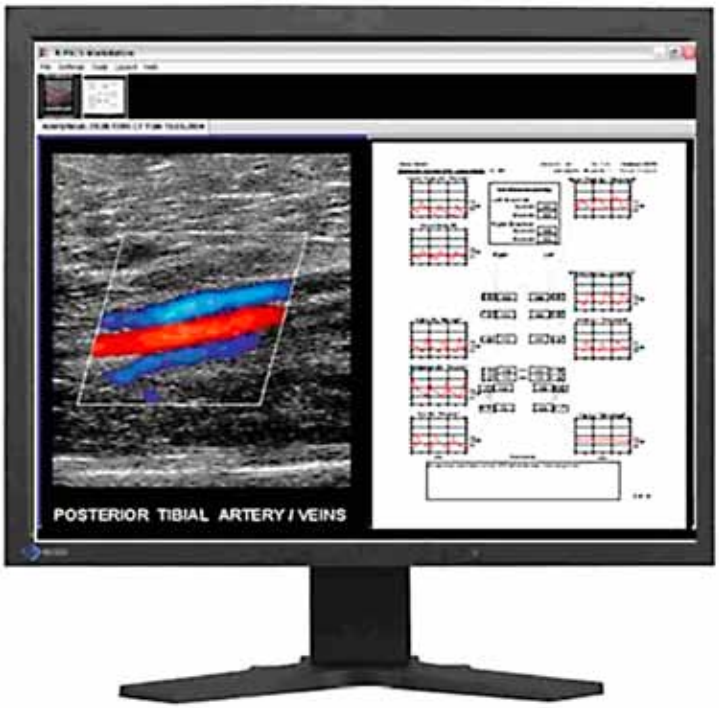
CVS4 computerized reports:

- Stores patient information, waveforms and pressures
- Printed color reports for all tests, with a feature that prints only the tests you want
- Includes multiple visit graphs for follow up patients
- The DICOM Extension is available as an add on to interface with your PACS system

Spectral analysis is included with the CVS4; spectral Doppler sounds are saved so that you can review both waveforms as well as the sounds, an excellent Doppler training tool. Representative normal waveforms are presented for both viewing and listening comparison.

For more information, sample reports and other supporting documents please go to our website: www.hokanson.cc

The DICOM Extension



— The physician can see both physiological and duplex information for the same patient on the same workstation

The DICOM Extension shares data with a PACS system and creates one record viewable on all DICOM workstations; additionally the information viewed on the screen can be printed. The physician can see both physiological and duplex information for the same patient on the same workstation. The NIVP3 data is available for viewing including playback of Spectral Doppler recordings with sound, if DICOM workstation is sound enabled. This application facilitates the sharing of the physiological peripheral vascular data including waveforms with another system or application that is also DICOM compatible. The WorkList Server function in NIVP3 allows you to populate the the patient demographics from the PACS system, parsing it and displaying it in the correct fields in NIVP3. This eliminates the hassle of duplicate data entry with the subsequent possibility of error.

For more information, sample reports and other supporting documents please go to our website: www.hokanson.cc

MD35 | Compact & user friendly

The MD35 is the Mobile physiological peripheral vascular system that is ideal for transporting the test to the patient via a van or car. You can build out the system to suit your practice including computerization. It is flexible, versatile and reliable. It is compact to meet your size constraints and can be computerized using your laptop or PC and printer. Compact size, light weight, and small footprint make it ideal to fit on a shelf in a self-contained lab, in a van or in carrying cases for grab-and-go to an office.

Included is a CW bidirectional Doppler with a bifocal lens for superficial and deep vessels, eliminating the need for two Doppler probes. The Doppler probe has controls for volume, waveform inversion and turning on/off the chart recorder on the handle, for your convenience. A photo plethysmography transducer and pneumo plethysmography are also provided. You can perform all of the standard peripheral vascular physiological tests with the MD35.

The MD35 has ten calibrated gain settings, selectable AC (artery) or DC (venous) coupling and a two speed chart recorder for obtaining the best waveforms.

For more information, sample reports and other supporting documents please go to our website: www.hokanson.cc

The following options were created to meet the typical customers' needs:

Option: MD35 Procord System

This system includes: 4 segmental cuffs and one contoured thigh cuff and several digit cuffs (for the basic tests) and the DS400 Aneroid sphygmomanometer and RD2 Rapid Cuff Deflator. This option takes the place of the basic MD35 instrument and includes everything in the basic MD35.

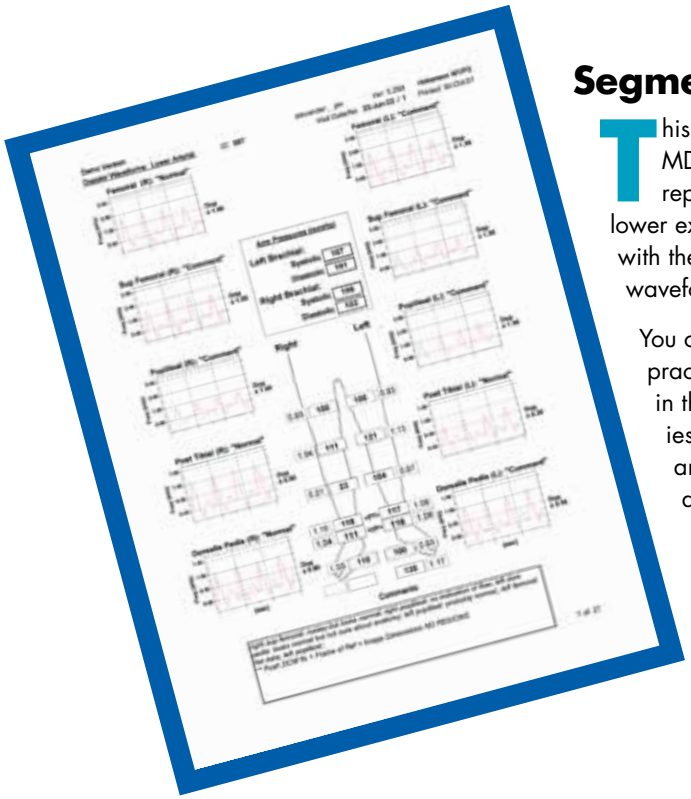
Option: MD35 Procord Basic

This is the basic MD35 instrument with transducers, and start-up supplies. This system is ideal for the lab with existing cuffs, or so you can choose your own custom cuff set.

Option: Segmental Pressure Package

Supplemental to the MD35 is the segmental pressure package with extra cuffs for complete segmental pressure and PVR studies and the MV10 segmental cuff selector.

NIVP3 Software | Consistent reporting



Segmental Arterial & Venous Exams Software

This software comes with the complete CVS4 system, and is available for the MD35 mobile unit to create consistent tests with computerized test results and reporting. NIVP3 captures, stores and prints physiologic studies of upper and lower extremity arteries and veins. There is a spectral Doppler option available for use with the MD35 Procord which includes the ability to record and playback the Doppler waveforms and associated audio.

You can edit the demographic data and signs & symptoms questions to meet your practice's needs. When printing out reports, you can choose which tests to include in the hard copy. Tracking ABI's, post exercise pressures and other vascular studies over time can be accomplished via graphs. When combined with the MD35 and the TD312 cuff inflator/software remote control, the clinician can inflate/deflate cuffs as well as enter data and navigate the software remotely.

This software is also compatible with legacy devices from Hokanson. For more information, sample reports and other supporting documents please go to our website: www.hokanson.cc

TD312 Cuff Inflator and Software Remote Control

The TD312 is ideal for inflating cuffs for the MD35. The thumb wheel is pushed forward (away from you) to inflate and pulled towards you to deflate, with no manual pumping, making cuff inflation easy. The rechargeable battery makes this automated cuff inflator ready at all times; just recharge overnight when the battery display says the charge is 11 Volts or under. A fully charged battery pack reads 14 Volts on the display. When used with the NIVP3 Arterial and Venous Software it provides a handy software remote control and facilitates the pressures and waveform data entry by pushing the Store button. The computer interface is available with either a wireless RF (radio frequency US only) or a wired connection (Data Link). It can inflate any size cuff and remember the pressure for you. The metal male Luer fitting fits all cuffs with a female Luer fitting and the MV10 Cuff Selector.

— Rechargeable battery makes it ready at all times

MD35 Cuffs | Exceptional durability and fit

A complete set of cuffs is offered in the CVS4 product line. You can purchase the optional Segmental Pressure Package or purchase specific cuffs based on your needs. Our cuffs are of the distinctive Hokanson blue with our logo on them; they offer exceptional quality, durability and fit.

The following types of cuffs are applicable for tests performed by the MD35. All of these cuffs have a female Luer fitting for inflation and will work with the DS400 or TD312 with or without the MV10 Cuff selector.

The Straight Segmental Cuffs are used in many exams. Choose cuff sizes according to the limb circumference. Cuffs should be 20% wider than the diameter of the limb where you will be applying the cuff. The wrong sized cuff will give an incorrect pressure.

After removing the bladders, these cuffs can be washed in a washing machine on gentle cycle with soap. Line dry and when completely dry insert the bladder. Bladders and covers are replaceable, and can be purchased from Hokanson.

	Model	Overall Cuff Size	Cuff Application
Straight Segmental Cuffs	SC10™	11 x 85 cm	Upper arm and lower leg for segmental pressure measurements and pulse volume recordings, four cuff method.
	SC12™	13 x 85 cm	Upper arm and upper leg for segmental pressure measurements and pulse volume recordings, four cuff method.
	SC12L™	13 x 124 cm	Upper thigh for segmental pressure measurements and pulse volume recordings, four cuff method on large patients.
	SC5™	6 x 83 cm	Arm or leg tourniquet cuff.
	TMC7™	7.5 x 40 cm	Metatarsus or wrist.
Contoured Cuffs	CC17™	18 x 108 cm	Small to middle adult thigh for standard thigh blood pressures, plethysmography, segmental pressure measurements and pulse volume recordings, three cuff method.
	CC22™	24 x 122.5 cm	Large adult thigh for standard thigh blood pressures, plethysmography, segmental pressure measurements and pulse volume recordings, three cuff method.

MD35 Cuffs | Digit or penile testing

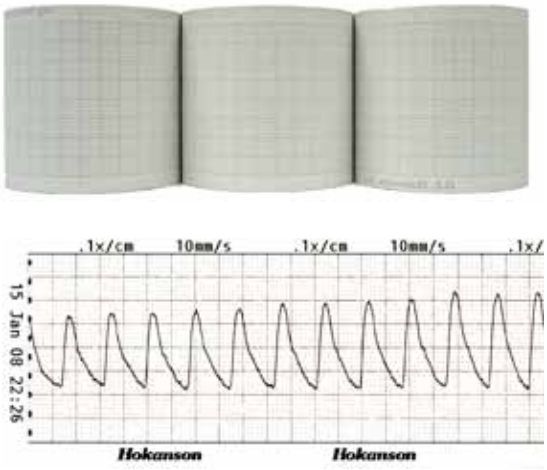
Durable digit cuffs can be used for all digit or penile testing. Please note that there is a choice between latex and latex free cuffs in the same sizes. Like limb cuffs, digit cuffs should fit well but not too snug or too loose. The length of the digit cuff should be longer than the circumference of the digit where the cuff will be applied. It is desirable for the cuff length to overlap itself in order to get an accurate pressure measurement. Digit cuffs can be cleaned by wiping with a soap and water solution and then rinsing.

*Do not clean latex cuffs with alcohol products; it will destroy them.

Durable latex free polyurethane cuffs	**Model**	**Overall Cuff Size**	**Cuff Application**
	UDC1.6™	1.6 x 9 cm	Small toes and fingers.
	UDC1.9™	1.9 x 9 cm	Middle toes and fingers.
	UDC2.5™	2.5 x 9 cm	Large fingers and middle toes.
	UPC2.5™	2.5 x 12 cm	Large toe or penis.
	UPC3.3™	3.3 x 12 cm	Very large toe or penis.
Durable latex cuff			
	DC1.6™	1.6 x 9 cm	Small toes and fingers.
	DC1.9™	1.9 x 9 cm	Middle toes and fingers.
	DC2.5™	2.5 x 9 cm	Large fingers and middle toes.
	PC2.5™	2.5 x 12 cm	Large toe or penis.
	PC3.3™	3.3 x 12 cm	Very large toe or penis.

For more information and supporting documents please go to our website: www.hokanson.cc

Thermal chart paper



TCPG60 (case of 60 rolls) and TCPG3 (box of 3 rolls) are the two thermal chart paper options for the MD35 chart recorder. This thermal chart paper comes with the grid pre-printed on it.

For more information and supporting documents please go to our website: www.hokanson.cc

RD2 Rapid Cuff Deflator

The RD2 plunger rapidly exhausts the air from a vascular cuff for venous outflow measurements; it can be used with the contoured thigh cuffs and rapid version straight cuffs. It works well with either the DS400 or the TD312 inflator. Pushing in the plunger quickly deflates the attached inflated cuff.

The RD2 uses the same unique connection system as the E20 Rapid Cuff Inflator for maximum exhaust rate.

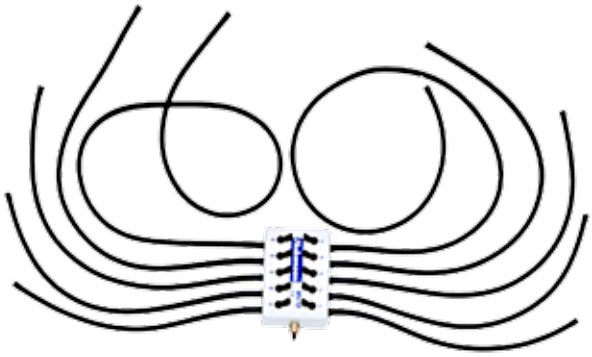
For more information and supporting documents please go to our website: www.hokanson.cc

— Pushing in the plunger quickly deflates the attached inflated cuff

MV10 Segmental Cuff Selector

The MV10 facilitates rapid switching from one cuff to another for pulse volume recordings (PVR's), segmental pressure exams, or even speeding up an ABI exam. The MV10 is compatible with the TD312 or the RS400.

The cuff inflator attaches to the connector at the base of the MV10 and up to 10 cuffs can be connected to the hoses. To switch between cuffs to inflate and deflate, flip the toggle switch. No power is required and it fits all sizes and types of Hokanson vascular cuffs.



— No power required and fits all sizes and types of Hokanson vascular cuffs

MD6 System | Portable, easy to use

Portable, compact and easy to use: The MD6 System is a complete physiological peripheral vascular testing system that you can take anywhere. It is not computerized and has a strip chart recorder for easy documentation. The chart recorder paper has an adhesive backing so you just print and press on the patient record. Both the Doppler and Chart Recorder run on rechargeable batteries so you do not need AC power when using the system.

— The red and green LEDs show the best place for a signal

MD6 Bidirectional Continuous Wave Doppler

At 9 ounces the MD6 is a small, compact pocket Doppler. The high quality audio signal uses Dynamic Noise Reduction (DNR®) and is easy to hear, even in a noisy room. The patented red and green LEDs on the end of the Doppler probe show you visually when the probe is over the best place for a signal. Green means flow towards the probe or arterial blood. When the probe is over a vein or detects retrograde flow, the red LED lights to indicate flow away from the probe. To get an audio stereo effect for distinguishing blood flow, purchasing optional stereo earphones allows you to hear flow towards the probe in the left ear and flow away from the probe in the right ear.

The controls for Doppler on/off and chart recorder on/off are conveniently on the probe for easy access with your index finger or thumb. The Doppler uses rechargeable NiCad batteries and is charged separately from the chart recorder. When inserted on the input jack of the MD6VR chart recorder, the waveforms from the Doppler can be recorded.

MD6RP Photo Plethysmograph

The Infrared based PPG photo plethysmograph facilitates digit pressures and waveforms with ease and accuracy. The diodes have a Velcro attachment for secure fitting to digits. The plethysmograph plugs into the input jack and draws its power from the chart recorder.

MD6PN Pneumo Plethysmograph

The MD6PN facilitates pulse volume recordings by detecting pressure changes in a sensing cuff applied to the patient's limb. The pulse volume recording waveform shapes and amplitudes can be compared between sites on the patient's body to indicate the segment where disease may be present. The MD6PN plugs into the input jack on the chart recorder and draws its power from the MD6VR. Real time waveforms and bloodflow information are produced for hard copy clinical reports.

MD6VR Chart Recorder

The MD6VR creates a real-time chart recording of bloodflow information or waveforms directly from the following instruments: the MD6 Doppler, the MD6RP Photo Plethysmograph and the MD6PN Pneumo Plethysmograph. This chart recorder has rechargeable batteries so you can use it anywhere. The controls are simple soft buttons and an LED bar graph indicates the waveform position and reflects pulsation. There are 5 print speed settings, six range settings for plethysmographs and three range settings for the Doppler. Date and time are printed at the start of each recording and the chart recorder speed and range are also printed along the edge of the chart paper.

For more information and other supporting documents please go to our website: www.hokanson.cc

TD312 Calculating Cuff Inflator

The TD312 Calculating Cuff Inflator is ideal for busy practices or large screening clinics. The thumb wheel is pushed forward (away from you) to inflate the attached cuff, and pulled towards you to deflate with no manual pumping, making cuff inflation easy. The rechargeable battery makes this automated cuff inflator ready at all times during your busy day, and can be left to charge overnight. When used with the NIVP3 Arterial and Venous Software it provides a handy software remote control. The TD312 can store pressures and perform the ABI calculations for you; this is very useful when doing ABI screening exams. It can inflate any size cuff and remember the detected pressure for you and calculate the ABI. The male metal fitting fits all standard Hokanson cuffs and the MV10 Cuff Selector.

For taking segmental pressures: during deflation of the cuff when the Doppler signal returns at each site, push the Store button to save the pressure reading; up to 12 pressures can be stored in the memory. You can recall the stored pressures when in memory mode as well as select the pressures to use to calculate the Ankle Brachial Index or Toe Brachial Index.

For more information, sample reports and other supporting documents please go to our website: www.hokanson.cc

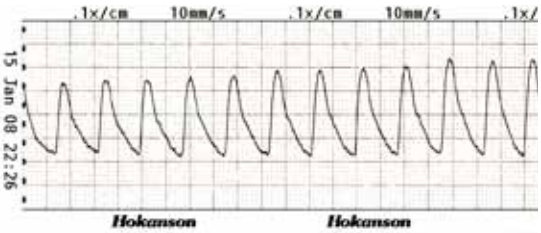
Thermal Chart Paper

TCP10 5 cm wide plain paper for MD6VR and legacy MD6R (package of 10 rolls)

ADP10 5 cm wide plain adhesive backed paper for MD6VR and legacy MD6R (package of 10 rolls)

Chart paper is available for the MD6VR Chart Recorder. The MD6VR has the option of adhesive backed thermal chart paper so you just print, remove the backing and adhere it to the patient record with no more taping or pasting and it adheres so well that it cannot be removed.

For more information please go to our website: www.hokanson.cc



TCPI0 ADP10

— No more taping or pasting. Adheres so well it cannot be removed.

MD6 Doppler

At 9 ounces (250 grams) the MD6 is a compact, convenient pocket Doppler. The high quality audio signal uses Dynamic Noise Reduction (DNR®) and is easy to hear, even in a noisy room. The patented red and green LEDs on the end of the Doppler probe show you visually when you are on the artery at the best place for a signal (it flashes a bright green LED light which is brightest when you are on the "sweet spot"). Green means flow towards the probe or arterial blood. When the probe is over a vein the LED flashes red to indicate flow away from the probe. To get an audio stereo effect for distinguishing blood flow, purchasing optional stereo earphones allows you to hear flow towards the probe in the left ear and flow away from the probe in the right ear.

The controls for Doppler on/off and chart recorder start/stop are on the probe. The Doppler uses rechargeable NiCad batteries and is charged separately from the chart recorder. When inserted on the input jack of the MD6VR chart recorder, the waveforms from the Doppler can be recorded.

MD6 Pocket Doppler with Detachable Transducer

This "twin" to the MD6 Doppler has a detachable cable that is 6 feet (1.8 meters) long. The controls and re-chargeable battery are identical to the MD6 Doppler. It can also be used with the MD6VR chart recorder for printing waveforms.

Handheld or pocket Dopplers: the MD6 and the MD6 with Detachable Transducer Dopplers are ideal for locating difficult to find pulses or checking post operative pulses on vascular stents or revascularized sites.

For more information, sample reports and other supporting documents please go to our website: www.hokanson.cc

Rapid Cuff Inflation System

— No need for a second person to do the compression, reducing costs

Improve your duplex scanning for Venous Reflux or Venous Insufficiency with the Rapid Cuff Inflation System. Get reproducible results and catch the reflux missed when using either Valsalva or hand augmentation. The Hokanson E20 eliminates squatting to squeeze the patient's leg, compressing all of the soft tissue, holding it for precisely the correct amount of time and rapidly releasing the pressure while you scan the leg for venous reflux. There is no need for a second person to do the compression, reducing the expense of performing this test. The E20 inflates any cuff in 0.3 sec, holds the pressure indefinitely or for whatever time your protocol needs and then instantaneously deflates the cuff. It works every time no matter the size of the cuff or limb. Simply dial in the pressure needed and push the button for inflation and then push the button to deflate.

The E20's large digital readout displays cuff pressures accurately to within 1 mmHg over a range of 0 to 300 mmHg. The E20 requires a source of clean compressed air and the AG101 is the perfect companion. The AG101 has the capacity to allow the E20 to inflate a large contoured thigh cuff every 12 seconds indefinitely. Special care has been taken to make the compressor quiet, compact and dependable so it is ideally suited for your exam room.

For more information and other supporting documents please go to our website: www.hokanson.cc

Along with the Rapid Cuff Inflation System you select the option to have a 3-Second Timer or a Foot Switch and also the cuffs that you will need to meet your patient needs.

3-Second Timer

Set the pressure on the E20 and when you are ready to scan the leg just push the button on the 3-Second Timer and the cuff inflates in 0.3 second, holds the pressure for 3 seconds and then deflates instantaneously; it is accurate, reliable and easy. No need for a second person and no worries about the consistency or reproducibility and accuracy of the pressure, timing or results. Saves time, money and your back.

For more information and other supporting documents please go to our website: www.hokanson.cc

Foot Switch

The Foot Switch provides remote inflation/deflation whenever you need it. Stepping on the Foot Switch either inflates or deflates, keeping your hands free for other tasks.

For more information and other supporting documents please go to our website: www.hokanson.cc

Rapid Version Cuffs

Rapid Version Cuffs have large inner diameter tubing so the cuff can inflate and deflate almost instantaneously. They are not designed for taking standard blood pressures, or for use with Luer fittings.

Rapid Version Straight Segmental Cuffs	Model	Overall Cuff Size	Cuff Application
 Fitted with "D" version tubing	SC10D™	11 x 85 cm	Upper arm and lower leg for plethysmography and venous reflux measurements.
	SC12D™	13 x 85 cm	Upper arm and lower leg for plethysmography and venous reflux measurements.

For large legs and arms that taper, this cuff gives a better fit with even pressure application around the limb. To use with the rapid cuff inflation system, cut off the Luer fittings on the large tubing.

Contoured Cuffs			
	CC17™	18 x 108 cm	Small to middle adult thigh for standard thigh blood pressures, plethysmography, segmental pressure measurements and pulse volume recordings, three cuff method.
	CC22™	24 x 122.5 cm	Large adult thigh for standard thigh blood pressures, plethysmography, segmental pressure measurements and pulse volume recordings, three cuff method.

For more information and other supporting documents please go to our website: www.hokanson.cc

Portable ABI Kit | Everything you need

The ABI is an easy, noninvasive exam for peripheral arterial disease (PAD) screening. This exam is recommended by the American Diabetes Association, the American Heart Association, the American College of Cardiology and the American College of Physicians as a basic screening examination for PAD. Please see our website: www.hokanson.cc for more information about PAD and ABI screening.

— Ideal for screening at the bedside and other places where portability is needed

The Portable ABI Kit

For the Primary Care Provider or Home Health or Clinic, the Portable ABI Kit has everything you need to perform accurate ABI's to identify patients with PAD who need further attention. Results are documented in real-time via the waveform printed on the strip chart recorder. The green colored LED's flash provides the clinician a means to identify the "sweet spot" where the maximum arterial flow is located.

This Kit provides all the instruments and accessories needed in a convenient carrying case including a chart recorder for documentation. It is ideal for clinics doing ABI screening, home health, physician's offices and hospitals that want to perform screening at the bedside and other places where portability is needed.

The Portable ABI Kit includes:

- MD6 Doppler: This continuous wave bidirectional Doppler detects peripheral bloodflow in the arm and ankle. The patented red and green LEDs on the end of the Doppler probe show you visually when the transducer is positioned over the artery at the best place for a signal (it flashes a bright green LED light which is at its maximum when you are on the "sweet spot").
- MD6VR Chart Recorder: Prints real-time Doppler waveforms from the MD6 (used for documentation).
- Four straight segmental blood pressure cuffs: One cuff for each arm and one for each ankle.
- DS400 Aneroid sphygmomanometer: Ambidextrous, rugged cuff inflator allows easily controlled cuff bleed rate.

For more information, sample reports and other supporting documents please go to our website: www.hokanson.cc

The TBI Package

The TBI Package adds the toe pressure to the Portable ABI Kit so patients with abnormally high ABI's (typically those greater than 1.3) can be examined properly. Calcification of the arterial blood vessels in the legs cause an abnormally high ABI and they are not considered accurate. For these patients, the Toe Brachial Index (TBI) gives an accurate assessment of the presence of PAD by using photo plethysmography to detect pulses and systolic pressures on toes. It is easy to perform and necessary for evaluation of patients with calcified vessels. It uses the Chart Recorder from the Portable ABI Kit. It can fit into the carrying case for easy transport.

For more information and sample reports and other supporting documents please go to our website: www.hokanson.cc

Toe Pressure Kit

— Excellent for the needs of diabetic patients

Toe Pressures are an excellent peripheral arterial check for diabetic patients, especially those with wounds or ulcers on their legs or feet. This easy to use kit is completely portable and you can document the associated waveform for comparison over time. It contains the photo plethysmograph, photo transducer, cuffs, chart recorder/battery charger (chart paper), carrying case and aneroid sphygmomanometer. This kit is excellent for evaluating patients with calcified vessels, non-healing wounds, diabetic feet or people who need toe pressures.

TD312 | For busy practices or clinics

The TD312 is ideal for busy practices or large screening clinics. The thumb wheel is pushed forward (away from you) to inflate and pulled towards you to deflate, with no manual pumping, making cuff inflation easy. The rechargeable battery makes this automated cuff inflator ready at all times; just recharge over night. When used with the NIVP3 Arterial and Venous Software the TD312 also provides a handy software remote control. When used as a standalone cuff inflator, or with other Hokanson products, the TD312 can store pressures and perform the ABI calculations for you; this is very useful when doing ABI screening exams. It can inflate any size cuff and remember the pressure for you. The male metal fitting fits all standard Hokanson cuffs and the MV10 Cuff Selector.

For taking segmental pressures: during deflation of the cuff when the Doppler signal returns at each site, you push the Store button to save the pressure reading; up to 12 pressures can be stored in the memory. You can recall the stored pressures when in memory mode as well as calculate the pressure indices, such as the ABI and TBI.

For more information, sample reports and other supporting documents please go to our website: www.hokanson.cc

Handheld Dopplers

MD6 Doppler

At 9 ounces (250 grams) the MD6 is a compact, convenient pocket Doppler. The high quality audio signal uses Dynamic Noise Reduction (DNR®) and is easy to hear, even in a noisy room. The patented red and green LEDs on the end of the Doppler probe show you visually when you are on the artery at the best place for a signal (it flashes a bright green LED light which is brightest when you are on the "sweet spot"). Green means flow towards the probe or arterial blood. When the probe is over a vein the LED flashes red to indicate flow away from the probe. To get an audio stereo effect for distinguishing blood flow, purchasing optional stereo earphones allows you to hear flow towards the probe in the left ear and flow away from the probe in the right ear.

The controls for Doppler on/off and chart recorder start/stop are on the probe. The Doppler uses rechargeable NiCad batteries and is charged separately from the chart recorder. When inserted on the input jack of the MD6VR chart recorder, the waveforms from the Doppler can be recorded.

MD6 Pocket Doppler with Detachable Transducer

This "twin" to the MD6 Doppler has a detachable cable that is 6 feet (1.8 meters) long. The controls and re-chargeable battery are identical to the MD6 Doppler. It can also be used with the MD6VR chart recorder for printing waveforms.

Handheld or pocket Dopplers: the MD6 and the MD6 with Detachable Transducer Dopplers are ideal for locating difficult to find pulses or checking post operative pulses on vascular stents or revascularized sites.

For more information, sample reports and other supporting documents please go to our website: www.hokanson.cc

UW7 Doppler

— Useful in teaching situations where students hear pulse sounds simultaneously

The UW7 Doppler provides both a removable Doppler transducer with an extra long cable and a large speaker for excellent sound. This Doppler is very useful in a teaching situation where the instructor can locate the pulse and all of the students hear the sound simultaneously. The UW7 does not have any print capabilities.

AI6 Automated Strain Gauge Plethysmography System

The AI6 is the ideal arterial inflow system for researchers who want a completely automated system with everything needed to perform the most advanced strain gauge plethysmography testing available today.

Using built in protocols you control the variables and can easily replicate the test with multiple patients. You can create your own standard protocols easily and save them for future use. The AI6 is the solution for simplifying and automating bilateral limb bloodflow studies. Once the protocols are set to your specifications and the patient prepared the AI6 does the rest for you. An ECG input is used to synchronize the venous occlusion cuff with the patient's heart beat to improve the consistency of the measurements. An invasive arterial line can be used to calculate arterial resistance. All testing is bilateral and some researchers use one limb as the control for the experiment. There is a wide range of test protocol options, all in the researcher's control. All test data is stored for you to review and the software assists you with the inflow rate measurements and data analysis. Once data is acquired, it is stored in a database for easy recall, edit and report print-outs.

The AI6 comes with standard protocols for measuring arterial inflow in one or two limbs simultaneously including automatic reactive hyperemia testing. You can control the inflation times and durations and the software controls the instruments and records the measurements automatically based on your settings.

The AI6 includes:

- Two strain gauge plethysmographs
- Two cuff inflators for inflation of four cuffs, to two separate pressures
- One ECG amplifier for timing
- One invasive arterial pressure transducer
- One auxiliary analog input for measurement of an extra parameter

Features that simplify testing:

- Two channels of calibrated strain gauge plethysmography to measure two limbs simultaneously.
- R-Wave trigger. An ECG amplifier detects the patient's heartbeat and the AI6 inflates the cuffs at the selected point in the heart cycle. The resulting inflow measurements are easier and more repeatable.
- All instrument controls are on the computer screen, making it easy to adjust cuff pressures, balance the plethysmographs, pause and restart measurements and add test comments to the data.

For more information, sample reports and other supporting documents please go to our website: www.hokanson.cc

EC6 Strain Gauge and Photo Plethysmograph

The EC6 provides researchers with the ability to build to suit the instrumentation they need for using either strain gauge or photo plethysmography for arterial inflow, venous testing and a wide variety of measurement applications. This is the lowest cost strain gauge plethysmograph with in-situ electrical calibration; this concept was invented by Hokanson and is unique. It has become well accepted and is an industry standard. Hokanson has both Mercury and Indium-Gallium strain gauges for limbs and digits and can build to suit special orders. The EC6 supports a Hokanson infrared photo transducer for pulse detection, for use in blood pressure and venous reflux testing. Choose the documentation method that best suits your application: The RS232 digital output connects to NIVP3 Software for documentation and automated controls of E20/AG101 or connect to their own third party software application. The analog output allows connectivity to a wide range of both software or strip chart recorder options from third parties.

The EC6 analog output may be AC or DC coupled for arterial and venous tests. The output is adjustable from ± 200 mV, and seven sensitivity ranges span 2% (8% full scale) to 0.02% volume change per division on the meter. Autobalance is available which resets the signal whenever it goes beyond the scale of the instrument's meter. Calibration and zeroing of the output is performed with one button or by a remote signal.

The NIVP3 Segmental Arterial & Venous Exams Software can be used with the EC6 Plethysmograph to perform penile pressures and plethysmography, venous reflux, and maximum venous outflow (MVO) exams.

E20/AG101 Rapid Cuff Inflation System

The E20/AG101 can be used in conjunction with the EC6 for arterial inflow testing. The E20 provides nearly instantaneous venous outflow facilitating the EC6's measurement of the arterial inflow rate. The E20/AG101 also deflates a cuff instantaneously so that it can be used for the maximum venous outflow (MVO) exam. The E20/AG101 may be used to perform reactive hyperemia, as its regulator will maintain the set cuff pressure as long as is desired. When used with the NIVP3 Software for arterial inflow or MVO tests, you can automate the inflation, hold, deflation to meet the needs of your study's protocol.

- **Cycle Timer**

The Cycle Timer is optionally installed inside the E20 at the factory. The cycle timer is ideal for arterial inflow studies, where the NIVP3 Arterial Inflow software is not used. The Cycle Timer has two timers accessible on the front of the instrument. With the Cycle Timer you can repeat the cycle of inflation/deflation automatically and indefinitely. First select the pressure for inflation with the dial on the E20, then select a time to maintain the inflation and the interval between inflations on the Cycle Timer and the E20 will perform this inflate/hold/deflate cycle.

For more information and other supporting documents please go to our website: www.hokanson.cc

Strain Gauges | The industry standard

Hokanson strain gauges are designed with a unique 4-wire construction that has been the industry standard for over 30 years. Strain Gauges are available in either Mercury or Indium-Gallium and are ordered by size and type (limb or digit). The strain gauges are designed so that the active portion of the gauge is the same as the circumference of the limb or digit being measured. This allows the Hokanson plethysmograph to relate resistance change to volume change. The size for limb strain gauges should be 1-3 cm less that the circumference of the limb so they will stretch slightly. Digits strain gauge should be 0.5 cm less than the circumference of the digit. Strain gauges have a shelf life due to oxidization so we build them to order, and they are warranted for one year.

For more information and other supporting documents please go to our website: www.hokanson.cc

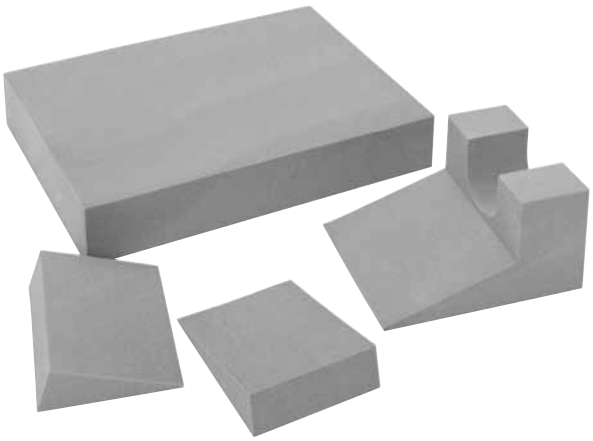
Strain Gauge Sets	Sizes
Limb Set	Eight gauges from 22 to 36 cm in 2 cm increments
Forearm Set	Eight gauges from 16 to 30 cm in 2 cm increments
Digit Set	Seven gauges from 4.5 to 7.5 cm in 0.5 cm increments

Positioning Aids

The active portion of the strain gauge should not touch anything outside of the limb during testing, and the limb or digit should not move to prevent artifact. Positioning foam blocks helps to position the patient in a comfortable way so they will not move during testing. All blocks are easily cleaned and can withstand years of use.

PAK8: An eight piece set of contoured foam blocks used to position the legs, arms, hands and feet for plethysmography studies. The PAK8 includes two of each piece shown here.

PAK5: A five piece set, similar to the PAK8, is designed for forearm plethysmography studies. It includes two of each size wedge and one U-shaped block.

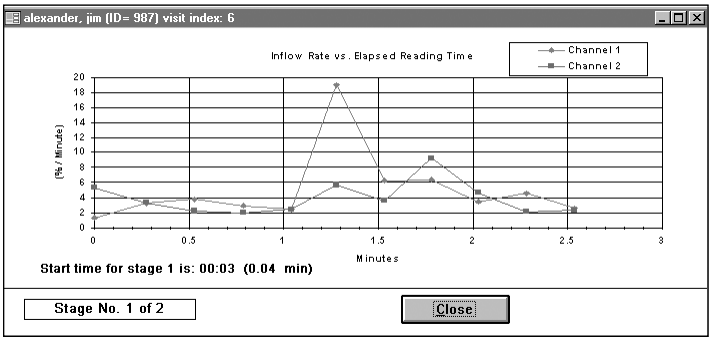


— Comfortable grip and easy to use trigger release

DS400 Aneroid Sphygmomanometer

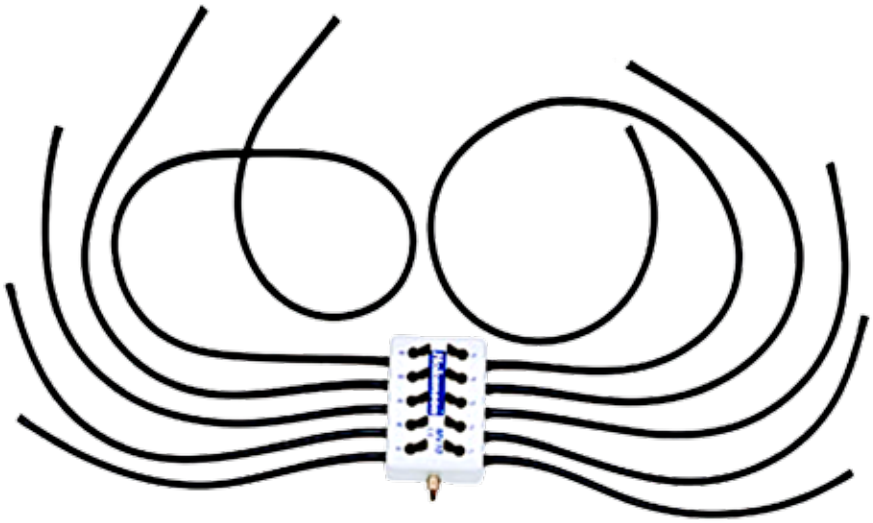
The DS400 is a reliable, sturdy handheld sphygmomanometer that has a 10 year warranty on the calibration. The grip is ambidextrous and very comfortable, and the trigger release is easy to use and gives you good control over the deflation rate. It can inflate all of our cuffs except those designed for rapid cuff inflation (non-Luer fitting). It can also be used with the MV10 Cuff Selector and the RD2 Rapid Cuff Deflator.

NIVP3 Arterial Inflow Software



— Generates complete patient reports with waveforms, demographics and tabular data

The NIVP3 Arterial Inflow Software simplifies your test protocols and inflow calculations and provides you with the automation of balancing the strain gauge plethysmograph cuff inflation and deflation (using the E20/AG101), and storing the inflow waveforms. The NIVP3 software assists you in making slope calculations to measure the inflow rate. It generates patient reports that are complete with plethysmographic waveforms, patient demographics and tabular data. Analyzing the waveform slope allows you to set the cursors (including a hotkey for locating the closest waveform peaks to the cursors) and calculates the slope based on the cursor positions.



MV10 Segmental Cuff Selector

The MV10 facilitates rapid switching from one cuff to another for segmental pressures, pulse volume recordings or even speeding up an ABI exam. This segmental cuff selector works well with TD312, the DS400 or the E20 Rapid Cuff Inflator. The cuff inflator attaches at the female Luer connector at the base of the MV10 and up to 10 cuffs can be connected to the hoses. To switch between cuffs to inflate and deflate, flip the toggle valve associated with the appropriate cuff. No power is required and it fits all of the sizes and types of vascular cuffs via the male Luer fitting on each hose.

RD2 Rapid Cuff Deflator

The RD2 plunger releases the air from a vascular cuff rapidly and completely for venous outflow measurements; it can be used with the contoured thigh cuffs and rapid version straight cuffs. The RD2 also works well with either the DS400 or the TD312. Pushing in the plunger quickly exhausts the pressure from the attached cuff. The unique connection system that is also used for the E20 Rapid Cuff Inflator provides maximum cuff exhaust rate. Note that the RD2 is not required if you are using the E20 Rapid Cuff Inflator.

— Works well with either the DS400 or TD312

Vascular Cuffs

Hokanson is the primary manufacturer of vascular cuffs for the vascular community, and our distinctive Hokanson blue cuffs have become the standard for peripheral vascular testing for both clinical and research use. They offer exceptional quality, durability and fit. We have a variety of sizes and types from straight segmental for arms and legs to digit/penile cuffs with and without latex. All Hokanson cuffs have a female Luer fitting for use with the TD312 or DS400 cuff inflators with or without the MV10 Cuff Selector. Additionally Hokanson can manufacture custom cuffs, for more information, please call or e-mail us with your needs.

When cuffs are washed, the bladders should be removed first. The bladders should not be replaced until the cuffs are completely dry. The vascular cuff blue covers can be washed on gentle cycle in a washing machine with mild soap (rinse well) and then line dried. NEVER AUTOCLAVE A CUFF as this will destroy it.

Straight Segmental Cuffs

All segmental cuffs are latex free and have a replaceable polyurethane bladder and washable blue nylon cover. Fit is important so measure each patient's limb in relationship to the cuff. The cuff width should be 20% larger than the limb diameter to compress all of the soft tissue evenly and completely, and to provide an accurate blood pressure measurement. Always put the cuffs on straight and snuggly, but not tight.

Model	Overall Cuff Size	Cuff Application
SC10™	11 x 85 cm	Upper arm and lower leg for segmental pressure measurements and pulse volume recordings, four cuff method.
SC12™	13 x 85 cm	Upper arm and upper leg for segmental pressure measurements and pulse volume recordings, four cuff method.
SC12L™	13 x 124 cm	Upper thigh for segmental pressure measurements and pulse volume recordings, four cuff method on large patients.
SC5™	6 x 83 cm	Arm or leg tourniquet cuff.
TMC7™	7.5 x 40 cm	Metatarsus or wrist.

Contoured Cuffs

Contoured Cuffs provide better fit for large tapering legs or upper arms. To use with E20 Rapid Cuff Inflation System or the RD2 Rapid Cuff Deflator, cut off the female Luer fitting and plug on the end of each hose. Contoured cuffs are also latex free and have a replaceable polyurethane bladder and washable blue nylon cover.

Model	Overall Cuff Size	Cuff Application
CC17™	18 x 108 cm	Small to middle adult thigh for standard thigh blood pressures, plethysmography, segmental pressure measurements and pulse volume recordings, three cuff method.
CC22™	24 x 122.5 cm	Large adult thigh for standard thigh blood pressures, plethysmography, segmental pressure measurements and pulse volume recordings, three cuff method.

Specialized Cuffs | Rapid version, digit, penile

Rapid Version Cuffs

Rapid Version Cuffs are essential to successful rapid cuff inflation for venous reflux or insufficiency tests, as well as for arterial inflow studies. The large inner diameter tubing facilitates almost instant inflation and deflation with the E20/AG101 Rapid Cuff Inflation System. These cuffs are made for use with the E20/AG101 or RD2 Rapid Cuff Deflator, and do not come with any Luer fittings.

Fitted with "D" version tubing

Model	Overall Cuff Size	Cuff Application
SC10D™	11 x 85 cm	Upper arm and lower leg for plethysmography and venous reflux measurements.
SC12D™	13 x 85 cm	Upper arm and lower leg for plethysmography and venous reflux measurements.

All new Hokanson cuffs come with durable polyurethane air bladders. Replacement bladders can also be purchased separately, for your straight, contoured, and rapid version cuffs.

Replacement Bladders

Replacement bladders add to the longevity of your cuffs. Bladders characteristically do not last as long as the covers, so you can purchase replacement bladders for those covers.

Model	Overall Bladder Size	Bladder Application
SC10RB™	10 x 41 cm	SC10™ Straight Segmental Cuff
SC12RB™	12 x 41 cm	SC12™ Straight Segmental Cuff
SC12LRB™	12 x 56 cm	SC12L™ Long Straight Segmental Cuff
SC5RB™	5 x 41 cm	SC5™ Tourniquet Cuff
TMC7RB™	6.5 x 23 cm	TMC7™ Transmetatarsal Cuff
CC17RB™	17 x 65 cm	CC17™ Contoured Thigh Cuff
CC22RB™	22 x 69.5 cm	CC22™ Contoured Thigh Cuff
SC10DRB™	10 x 41 cm	SC10D™ Rapid Version Straight Cuff
SC12DRB™	12 x 41 cm	SC12D™ Rapid Version Straight Cuff

Digit and Penile Cuffs

Digit and Penile cuffs are made to fit correctly and securely. They are used for taking measurements with photo and pneumo plethysmographs as well as strain gauges.

The durable cuffs include both latex and latex free polyurethane versions in the same sizes. These cuffs have one inlet tube with a plastic Luer fitting for inflation with either the TD312 or DS400 cuff inflators, with or without the MV10 Cuff Selector. With an adaptor Digit and Penile cuffs can also be inflated by the E20/AG101 for controlled inflation/deflation.

Durable latex free polyurethane cuffs

Model	Overall Cuff Size	Cuff Application
UDC1.6™	1.6 x 9 cm	Small toes and fingers.
UDC1.9™	1.9 x 9 cm	Middle toes and fingers.
UDC2.5™	2.5 x 9 cm	Large fingers and middle toes.
UPC2.5™	2.5 x 12 cm	Large toe or penis.
UPC3.3™	3.3 x 12 cm	Very large toe or penis.

Durable latex cuff

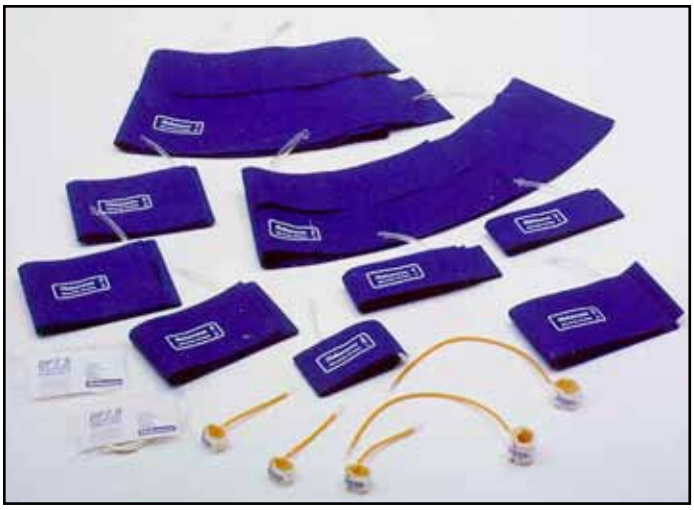
Model	Overall Cuff Size	Cuff Application
DC1.6™	1.6 x 9 cm	Small toes and fingers.
DC1.9™	1.9 x 9 cm	Middle toes and fingers.
DC2.5™	2.5 x 9 cm	Large fingers and middle toes.
PC2.5™	2.5 x 12 cm	Large toe or penis.
PC3.3™	3.3 x 12 cm	Very large toe or penis.

Disposable Digit or Penile Cuffs

Disposable cuffs are designed for peace of mind for you and your patients. These disposable cuffs are packaged and meant to be used for one patient; they can be used more than once on a patient and then disposed properly. They are made of PVC (poly vinyl chloride) and have a white latex tube with a female Luer fitting for connection with the TD312 or DS400 cuff inflator. They are packaged individually and come in packages of 10, 25 or 100.

Model	Overall Cuff Size	Cuff Application
DP2.0™	2.1 x 12.1 cm	Large and middle toes, or penis.
DP2.5™	3.0 x 12.1 cm	Large toe or penis.

Vascular Cuff Sets | A wide selection



Vascular Cuff Sets were designed to meet the general needs of peripheral vascular exams with a good selection of cuffs for nearly any sized limb or digit.

The VCS23 includes an assortment of cuff sizes and types to meet the requirements of any vascular lab: two CC22™ and two CC17™ contoured Thigh Cuffs; four SC10™ and four SC12™ Straight Segmental Cuffs; two SC5™ Tourniquet Cuffs; one TMC7™ Transmetatarsal Cuff; six Digit Cuffs (two in each width: 1.6, 1.9 and 2.5cm); one UPC2.5™ Digit Cuff and one UPC3.3™ Digit Cuff.

The VCS14 Segmental Vascular Cuff Set provides all of the cuffs needed to perform bilateral segmental pressures and pulse volume recordings: four SC10™ Straight Segmental Cuffs; six SC12™ Straight Segmental Cuffs; two TMC7™ Transmetatarsal Cuffs and two UPC2.5™ Digit Cuffs.

TCPG60 & TCPG3

Thermal Chart Paper

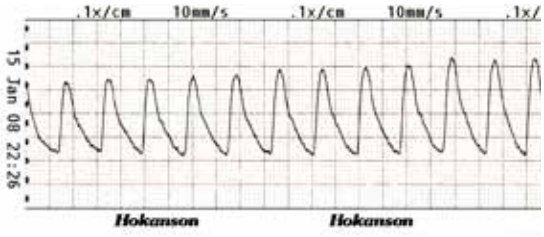
Chart paper is available for both the MD6VR Chart Recorder and the MD35 Chart Recorder. The MD6VR has two options for thermal chart paper. One option is the adhesive backed strip paper, the ADP10, that allows you to just print, remove the backing then adhere it to the patient record with no more taping or pasting and it adheres so well that it cannot be removed.

The MD35 uses the TCPG60 and TCPG3 thermal chart paper with a preprinted grid.

The MD6VR (and legacy MD6R) uses the TCP10 and the ADP10 thermal chart paper. The TCP10 and ADP10 do not have a preprinted grid.

TCPI0 ADP10

— No more taping or pasting. Adheres so well it cannot be removed.



Coupling Gel

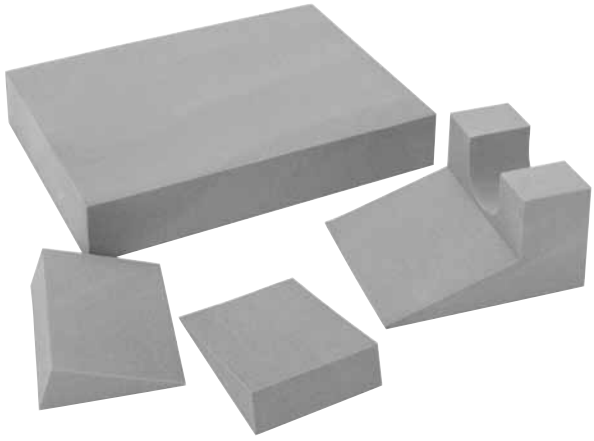
GEL60: 60 gram tubes are sold in a package of 12 tubes. Coupling gel removes the air between the transducer and the patient's skin; air is a poor transmitter of sound waves. The gel also aids in the propagation of the sound waves.

Positioning Aids

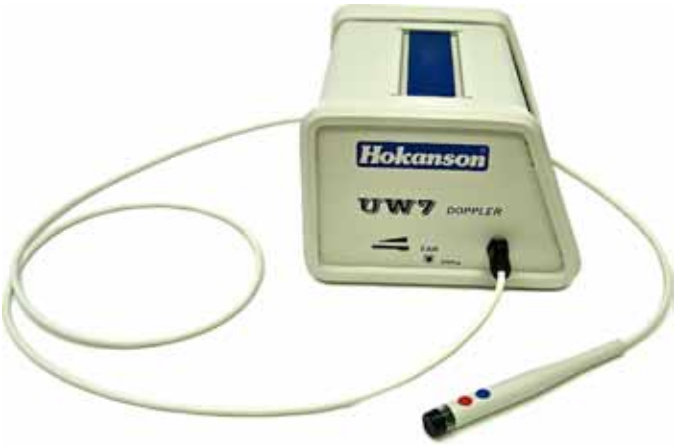
- Useful for holding patients in positions while performing strain gauge plethysmography. The active portion of the strain gauges must only be in contact with the limb to be measured. These blocks are made from dense foam and can be easily cleansed and withstand years of use.
- Two choices:

  PAK 8 which includes two of each shape shown here.

  PAK 5 includes two of each wedge size and one U-shaped block.



Doppler | For accurate blood pressure



— All Hokanson vascular Dopplers are bidirectional, using a variety of methods to show the direction of flow

Doppler bloodflow detectors have been used in medicine since their invention in Japan by Satomura in 1948. Innovations in Doppler technology have resulted in easily portable instruments, capable of sensing the direction as well as the velocity and location of bloodflow. Doppler output is always an audio signal with a pitch proportional to the velocity of the bloodflow and loudness proportional to the amount of blood. Additional outputs include quadrature audio for spectral analysis and analog signals for recording hard copy. Dopplers are useful in the measurement of systolic blood pressure, determining the patency of arterial grafts, tracing individual arteries and veins, and detecting fetal heartbeats.

Direction Sensing

Vascular Dopplers with direction sensing capability are typically called bidirectional. Bidirectional Dopplers allow you to distinguish between arterial and venous signals based on flow direction, and to identify reverse flow in the arteries. All Hokanson vascular Dopplers are bidirectional, and use a variety of methods to show the direction of flow.

One direction indicator found in many of our Dopplers is the patented use of red and green LED lights in the probe tip. The red lights illuminate to indicate flow away from the probe, and the green lights indicate flow toward the probe. Other flow direction indicators in Hokanson Dopplers are a bar graph display and printed strip chart. The bar graph display shows the level and direction of the flow signal that will be recorded when the chart paper runs.

Some of our Dopplers also provide an aural indication of flow direction through stereo headphones; flow toward the probe is heard in the left ear and flow away from the probe in the right ear.

Dynamic Noise Reduction

DNR® is a trademark of National Semiconductor for their patented noise reduction circuitry used in hi-fi audio applications to reduce background hiss. We were the first to license this technology for use in a Doppler instrument. As a result, our instruments eliminate hiss without using common filters which would limit high fidelity response. Accurate diagnosis often depends on clear, high-frequency audible signals.

Plethysmograph | To evaluate bloodflow

A plethysmograph is an instrument used to determine and register variations in the size of an organ or limb. Evaluation of bloodflow and diagnosis of vascular disease can be performed with several types of plethysmographs; each has its own advantages. We manufacture three types:

Photo Plethysmograph (PPG)

This instrument uses infrared sensors to detect skin color changes that occur with each heartbeat.

The output of the photo plethysmograph is a waveform showing volume changes in the measurement area. This instrument is typically used in the detection of bloodflow and the measurement of blood pressure. A limitation is that variations in skin color and the method of application preclude volume calibration.

Strain Gauge Plethysmograph (SPG)

A thin rubber tube, filled with Mercury or Indium-Gallium, is placed around the limb or digit of interest. As the volume of the limb changes with each heartbeat, the tube is stretched and the electrical resistance increases. The measurement is processed and sent as analog information to the display or chart recorder.

Advantages of our strain gauge plethysmographs are that they are easily and accurately calibrated in-situ, and can be used in a wide variety of applications.

Common uses of this instrument include measuring arterial bloodflow into the limbs and digits (sometimes called venous occlusion plethysmography), venous capacitance, maximum venous outflow to detect deep venous thrombosis in the legs, and blood pressure measurements in the extremities.

Pneumo Plethysmograph

This plethysmograph detects changes in limb or digit volume from the pressure changes in a sensing cuff. This cuff is placed around the limb or digit of interest, inflated to a low pressure and sealed off from the inflation device. Any change in volume under the cuff is reflected by a pressure change within the cuff. This is shown on a display or chart recorder.

The pneumo plethysmograph is generally used for evaluating waveform shapes and relative amplitude changes. It can be calibrated by adding or subtracting a known volume of air to the system and observing the corresponding output changes.

Advantages of pneumo plethysmography are that it is simple to use and clean waveforms are easy to obtain; multiple cuffs can be applied to several parts of the body and then measured in quick succession. Uses include pulse volume recording (PVR) and maximum venous outflow.

Hokanson Policies

Warranty

- Hokanson electronic instruments carry a five year warranty. Instruments are warranted against defects in parts, workmanship and performance for a period of five years from the date of delivery provided that they have not been abused or repaired by an unauthorized person.
- Transducers, strain gauges, blood pressure cuffs and accessories are warranted for one year.
- Batteries are excluded from this warranty.
- Repair is free of charge when the instrument is returned prepaid. Return shipment will be made at our expense in a manner similar to your shipment to us. If for any reason we are unable to repair your instrument within three working days we will provide a free loaner instrument at our expense.

Service Policy

Hokanson will service any instrument we have ever manufactured, regardless of the manufacture date.

Rental and loaner instruments are available to the customer under the following conditions:

1. If repair takes more than three working days, we will furnish a free rental instrument (loaner) at our expense. Freight charges will be the responsibility of D. E. Hokanson, Inc.
2. If the instrument is within the warranty period and the customer requires a rental instrument to continue lab operations during equipment repair, a loaner will be provided free of charge, but air freight charges will be the responsibility of the customer.
3. After the warranty period, if the customer requires a rental instrument to continue lab operations during equipment repair, standard charges are 10% of the instrument's value per month, plus all air freight charges. Minimum rental is one month.

Terms

Payment terms are net 30 days on approval of credit. Hokanson customers can also pay for orders with Visa, MasterCard, American Express, prepayment check, wire transfer, or orders can be shipped C.O.D. in the U.S. Past due bills will have 1.5% per month added. All prices quoted are F.O.B. Bellevue, Washington, U.S.A.

Items must be returned within 30 days of delivery for credit and will be subject to a 10% restocking fee. Please notify Hokanson prior to returning any items for repair or replacement.

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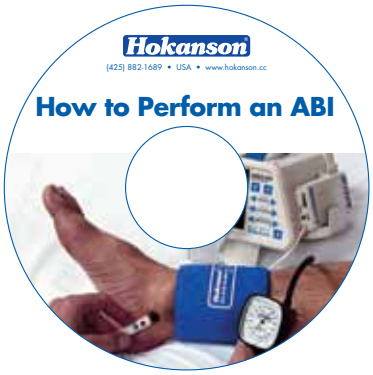

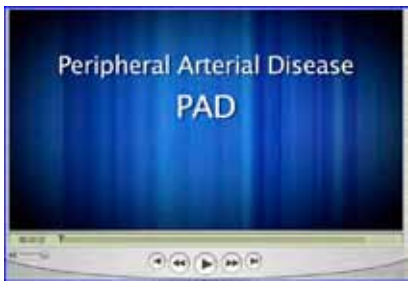

A complete line of advanced instruments and educational tools for the vascular community of researchers, clinicians, venous and primary care practitioners.

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