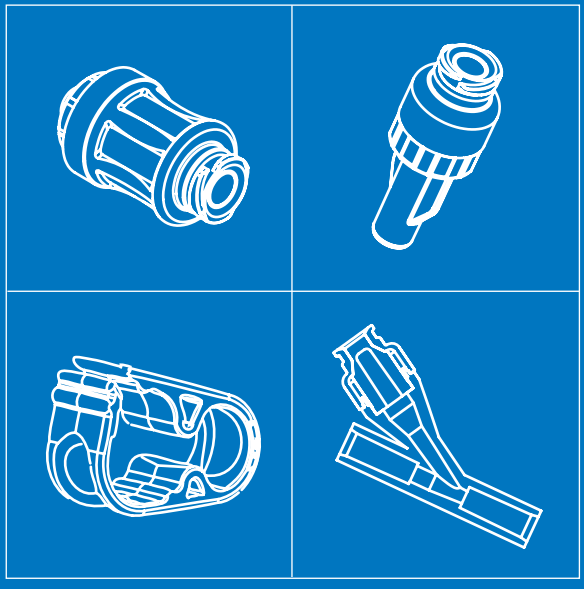

HALKEY | ROBERTS®

WWW.HALKEYROBERTS.COM

ISSUED: 2019

Contents

A History of Innovation

Halkey-Roberts is a global leader in the design and manufacture of valves for medical device companies whose products require precise delivery of fluids and gases.

Since 1941, Halkey-Roberts has focused innovation in the production of products to the highest quality standards. Our success in molding and high speed assembly of thermoplastics and silicones is rooted in our unwavering commitment to our customers, end-users, and employees. We constantly invest in our people, infrastructure, and technologies and every product we make is supported by R&D, Materials, Manufacturing, and Quality, Engineers. Every customer is supported by a responsive customer service team that is thoroughly educated about our products. Our state-of-the-art facility in St. Petersburg, Florida, USA, is outfitted with the very best equipment, and is staffed by highly trained associates. Our total dedication to what we do enables us to produce valves that far exceed Six Sigma quality standards, and makes us the choice of major medical device companies around the world.

Images herein are not to scale. For technical information and drawings, terms and conditions, product disclaimers and patent information, please visit our website: www.halkeyroberts.com


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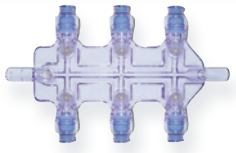
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Swabable Valves

A comprehensive line of high flow, split septum swabable valves for infection control and the elimination of needles.

The unique and innovative patented design allows the valve to be used in a wide variety of demanding applications where high flow and a closed system is a must.

The valves are DEHP free, made with ISO-10993 materials, and not made with natural rubber latex. Bodies are available in BPA-free materials and polycarbonate.

The valves mate securely with standard syringes and connectors.

Swabable Products

	Description
a.	Straight male threaded
b.	Y-port
c.	Tube End
d.	Bondable valve
e.	T-Port Large-Bore
f.	T-Port Small-Bore
g	Bag valve
h.	Bag Break-off valve
i.	Barb Valves
j.	20 mm vial cap
k.	13 mm vial cap
l.	Build-In Assembly
m.	Hi-Flo Lever Handle Stopcock
n.	Standard Lever Bondable Stopcock
o.	Standard Lever Handle Stopcock
p.	T-Handle Stopcock with 4.0 mm Tubing Pocket
q.	T-Connector valve
r.	Multiport Manifold

Images not to scale.

Straight Valves

245204024 polycarbonate
245204050 BPA-free copolyester

Utilize a female luer lock and male luer lock for ease of attachment to any luer connector.

Straight valves are available in polycarbonate (clear and red housing) and BPA-free copolyester.

245204524 polycarbonate
clear septum

Performance Characteristics
Priming Volume: 0.09 ml

Flow Rate Averages**
1 psi: 550 ml/minute
3 psi: 1050 ml/minute
5 psi: 1300 ml/minute

** 33,000 ml/hr @ 30 inch height

245204024R Red polycarbonate

Y-port Valves

245624024 polycarbonate
0.160 inch ID (4.01 mm)

245624050 BPA-free copolyester
0.160 inch ID (4.01 mm)

245634024 polycarbonate
0.142 inch ID (3.6 mm)

Available in two standard tubing sizes for maximum flexibility. Y-ports are available in polycarbonate and BPA-free copolyester materials.

Performance Characteristics
Priming Volume: 0.19 ml

Flow Rate Averages**
1 psi: 410 ml/minute
3 psi: 710 ml/minute
5 psi: 930 ml/minute

** 24,600 ml/hr @ 30 inch height

Bondable Valves

245501024 No check valve

245551024 With integrated back check valve

Designed to bond to either 4 mm I.D. tubing or open luer connectors. Available in blue, green and red caps.

Also available with integrated back check valve.

Performance Characteristics
Priming Volume (without tubing): < 0.13 ml

Flow Rate Averages**
1 psi: 440 ml/minute no check valve
1 psi: 375 ml/minute with check valve

** 26,400 ml/hr @ 30 inch height

Tube End Valves

245520024 2.0 mm (0.078 inch)
245525024 2.5 mm (0.098 inch)
245528024 2.8 mm (0.110 inch)
245530024 3.0 mm (0.118 inch)
245537024 3.7 mm (0.145 inch)
245540024 4.1 mm (0.160 inch)

Designed to reduce assembly costs and enhance reliability for set manufacturers by eliminating a luer connector and a bonding operation.

Available in five sizes with clear or red caps.

Performance Characteristics
Priming Volumes (without tubing)
2.0, 2.5, 2.8, 3.0 mm = 0.12 ml
3.7 mm = 0.22 ml
4.1 mm = 0.24 ml

Flow Rate Averages			
	1 psi	3 psi	5 psi
2.0 mm (ml/min)	270	480	630
2.5 mm (ml/min)	380	700	900
2.8 mm (ml/min)	470	830	1070
3.0 mm (ml/min)	472	832	1090
3.7 mm (ml/min)	480	840	1110
4.1 mm (ml/min)	510	890	1190

T-Ports

245424024 6.6 mm T-Port

245425024 6.6 mm T-Port (red cap)
245425024B 6.6 mm T-Port (blue cap)

Can be bonded in line on tubing sets to provide an access port for taking samples or injecting medication.
A typical application is hemodialysis.

Performance Characteristics
Priming Volume: <0.15 ml

Flow Rate Averages**
1 psi: 540 ml/minute
3 psi: 950 ml/minute
5 psi: 1200 ml/minute

** 32,400 ml/hr @ 30 inch height

Small-Bore T-Ports

245454024 4.0/4.1 mm T-Port
245474024 3.2 mm T-Port

245464024 2.0 mm T-Port
245484024 2.35 mm T-Port

Can be bonded in line on tubing sets to provide an access port for taking samples or injecting medication.

Performance Characteristics
Priming Volume: <0.15 ml

Flow Rate Averages			
	1 psi	3 psi	5 psi
4.0/4.1 mm and 3.2 mm (ml/min)	540	950	1200
2.0 mm (ml/min)**	104	187	239

** Flow is with 1 mm ID tubing

Bag Access and Break-off Valves

245110024 Bag Valve

Our needlefree bag and break-off valves provide an innovative way to access and fill IV solution bags.

The valves provide a closed system with convenient luer access eliminating the need for spike ports and needles/sharps.

Break-off Valves
245112024 fits 6.0 mm I.D. tubing
245113024 fits 6.6 mm I.D. tubing

Performance Characteristics
Priming Volumes: Bag Valve 0.25 ml (without tubing) Break-off: 0.30 ml

Flow Rate Averages		
Pressure	Bag*	Break-off**
1 psi	520 ml/min	240 ml/min
3 psi	920 ml/min	430 ml/min
5 psi	1220 ml/min	550 ml/min

* 31,200 ml/hr @ 30 inch height
** 14,400 ml/hr @ 30 inch height

 Images not to scale.

Barbs

245504024 1/4 inch Barb
245516024 3/16 inch Barb

245508024 1/8 inch Barb

Our barbed valves are ideal for use as sampling ports in biopharmaceutical applications and are designed for easy assembly directly to tubing without the use of a luer connector or solvents and adhesives.

Performance Characteristics
Priming Volume: 0.30 ml

Flow Rate Averages			
	1 psi	3 psi	5 psi
1/4 in (ml/min)	559	1012	1334
3/16 in (ml/min)	658	1038	1108
1/8 in (ml/min)	367	654	857

Vial Caps

245720021 13 mm cap

245700021 20 mm cap

Our patented three-piece design simplifies removing or injecting fluids from/into vials and bags. Typical applications include pharmacy and home healthcare.

Performance Characteristics
Priming Volume: 0.06 ml

Flow Rate Averages**		
Pressure	13 mm	20 mm
1 psi	200 ml/min	200 ml/min
3 psi	400 ml/min	340 ml/min
5 psi	500 ml/min	420 ml/min

** 21,000 ml/hr @ 30 inch height

Images not to scale.

T-Connector Swabable Valve

The T-Connector Swabable Valve incorporates our valve technology in an extension set compatible component with a micro-bore tubing pocket (.088”/2.2mm).

It offers High Flow, Clear housing for enhanced visibility and is compatible with power injection up to 325 psi.

Performance Characteristics
Priming Volume 0.164 ml

Flow Rate Averages
1 psi: 390 ml/minute
3 psi: 690 ml/minute
5 psi: 890 ml/minute

245510024 T-Connector

Build-In Assembly

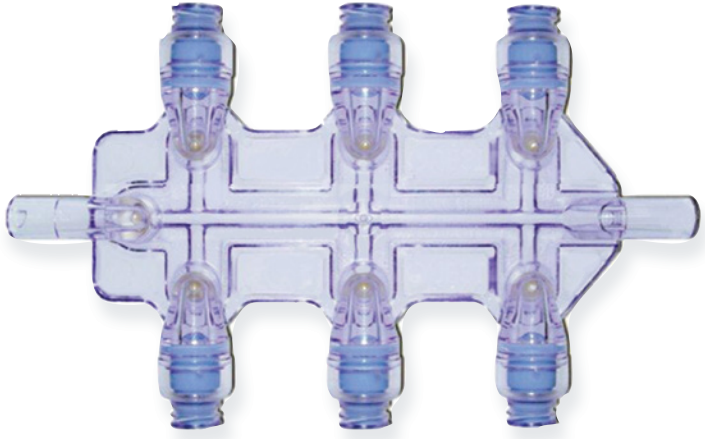
Needlefree build-in assembly valves are designed to create a low profile swabable access site that can be integrated into your product via sonic welding.

Performance Characteristics
Priming Volume: < 0.2 mL

Flow Rate Averages
1 psi: 656 ml/minute
3 psi: 1041 ml/minute
5 psi: 1319 ml/minute

245680024 Build-In Assembly

Multiport Manifold



245800912 Multiport Manifold

The Robertsite® Multiport Manifold includes six gravity activated check valves along with a flow controlled inlet port.

Ideal for OR/Surgery, ICU, Oncology, and CCU applications.

Performance Characteristics
Priming Volume (without tubing)
Manifold Only = 1.4 ml

Flow Rate Averages
1 psi: 229 ml/minute
3 psi: 407 ml/minute
5 psi: 525 ml/minute

Stopcocks

245824024 'T' Handle 'Hi-Flo'
245814024 Lever 'Hi-Flo'

Our low profile series stopcocks offer the safety of a closed system with the versatility of a 4-way stopcock.

They enhance infection control and help to prevent accidental blood loss or leakage.

245834024W Standard Lever Handle
245844024B Standard 'T' Handle

Performance Characteristics
Priming Volume: <0.35 ml

Hi-Flo Flow Rate Averages**
1 psi: 428 ml/minute
3 psi: 738 ml/minute
5 psi: 917 ml/minute

245864024B Standard 'T' Bondable
245854024W Standard Lever Bondable

Standard Flow Rate Averages**
1 psi: 396 ml/minute
3 psi: 587 ml/minute
5 psi: 687ml/minute

** 15,300 ml/hr @ 30 inch height

245874024W Tube Port Stopcock

Transfer Valve

The swabable transfer valve is ideal for stem cell, biopharmaceutical and drainage applications involving large volumes and/or viscous substances.

The transfer valve can be accessed with a standard catheter-tipped syringe.

Available with a polycarbonate body and silicone stem, the valve is made from ISO-10993 compliant, DEHP-free materials and not made with natural rubber latex.

255004024
transfer valve

transfer valve with catheter syringe

Images not to scale.

a.

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Male Luer Valves

Our Male Luer Valves (MLV) are ideal for flushing and drainage applications, IV solutions and home healthcare.

The MLV is designed to attach directly to tubing during set assembly. It eliminates dripping and leakage when disconnected and no clamping is required.

The valves can be used to access a mating female luer connector or luer activated valve.

The valve is available in Polycarbonate. BPA free materials available.

All materials are Gamma resistant, ISO-10993 compliant, DEHP-free and not made with natural rubber latex.

Male Luer Valve Products

	Part No.	Description
a.	251001001	MLV with 4.0 mm tube end
b.	251001002	MLV with female luer lock
c.	251001003	MLV with 0.125 inch barb
d.	251001004	MLV with 6.6 mm tube end

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Luer Activated Valves

Our syringe check valves are designed to fill, hold and release controlled amounts of fluids and gases on demand.

They are used on endotracheal tubes, tracheostomy tubes, and gastric and urethral catheters for balloon inflation and deflation and specialized balloon catheter applications.

The valve stem and body mate securely with all standard luer syringes.

Luer Activated Products

	Part No.	Description	Materials
a.	V24500 series	two-piece crimp on check valve	Body: ABS Stem: Silicone
b.	V246 series	low profile luer check valve	Body: Polycarbonate Stem: Silicone Spring: Stainless steel
c.	24706300 series	short body luer check valve	Body: PVC Stem: Silicone Spring: Stainless steel
d.	V24300 series	luer syringe check valve	Body: Polypropylene, PVC, Polycarbonate, ABS Stem: Silicone
e.	V24200 series	luer activated check valve	Body: Polypropylene Stem: Silicone

Images not to scale.

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Luer Lock Access Valves

As replacements for needle ports, this comprehensive line of needlefree access sites can be used for drug delivery/IV administration applications.

They can also be used on a variety of balloon catheters such as endotrachael tubes, tracheostomy tubes, gastric feeding tubes as well as urethral catheters.

All materials are USP Class VI and not made with natural rubber latex.

Luer Lock Access Products

	Part No.	Description	Materials
a.	2471060 series	needlefree check valve	PVC
b.	2470100 series	needlefree check valve	PVC, polycarbonate, ABS, polypropylene
c.	2476000 series	needlefree T-port	PVC, polycarbonate
d.	2470600 series	needlefree short body check valve	Body: PVC, polycarbonate Stem: Silicone Spring: Stainless steel
e.	247280022	needlefree medium body check valve	Body: Polycarbonate Stem: Silicone Spring: Stainless steel
f.	2479000 series	needlefree Y-port	PVC
g.	2472000 series	needlefree check valve	PVC

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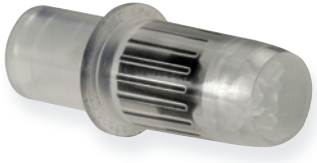

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One-Way Check Valves

Designed as dependable, in-line check valves or directional flow control valves for liquid and air.

For maximum flexibility, the valve stem and body mate securely with all standard luer syringes and various tubing sizes.

All materials are USP Class VI and not made with natural rubber latex.

One-Way Valve Products

	Part No.	Description	Materials
a.	240220424	one-way disc valve with luer lock	Polycarbonate housing Silicone seal disc
b.	240270524	one-way disc valve	Polycarbonate housing Silicone seal disc
c.	710ACLNF	one-way check valve	Body: Polypropylene Stem: Silicone
d.	V24310 series	one-way poppet valve	Body: Polypropylene, PVC Stem: Silicone
e.	V24300VG	one-way ball check valve	Body: PVC Ball: Nylon

Images not to scale.

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Pressure-Activated/Relief Valves

Designed to hold and release gases and/or fluids at predetermined pressures automatically.

The relief valves are used for a variety of purposes including tube-end and in-line pressure control, over or under pressure control, and IV drug delivery.

All plastic materials are USP Class VI and not made with natural rubber latex.

Pressure Activated Products

	Part No.	Description	Materials
a.	730ROAG series	pressure-activated relief valve	Housing: Medical grade acrylic Valve: Silicone Spring: Stainless steel
b.	730ROAR series	pressure-activated relief valve	Housing: Acetal Valve: Silicone Spring: Stainless steel
c.	24781 series	pressure relief T-port	Polycarbonate, PVC
d.	246 series	pressure-activated luer valve	Polycarbonate, PVC
e.	24630 series	pressure-activated barb valve	Polycarbonate, PVC
f.	24650 series	luer valve with MLS adapter	Polycarbonate, PVC
g.	246203 series	barb valve with MLL adapter	Polycarbonate, PVC
h.	24620 series	luer valve with MLL adapter	Polycarbonate, PVC

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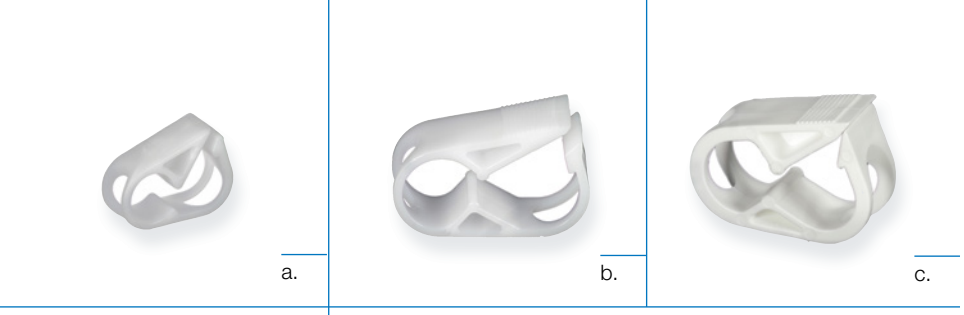
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Tubing Clamps

Halkey-Roberts invented the precision plastic tubing clamp almost 50 years ago. Although widely copied, no company can match our expertise. Our clamps are designed for both standard and specialized applications.

Available in open/closed single position and multi-position models with fine or coarse teeth adjustment, they provide one hand control from totally open through gradual occlusion, to completely closed.

The clamps are precision molded in a variety of materials to maximize effectiveness to suit your sterilization needs.

Assorted colors are available. Please visit our website for additional information.

Tubing Clamp Products

	Part No.	Description	Tubing (Max O.D.)	Materials
a.	340TS series	micro clamp	0.16 inch (4.1 mm)	polypropylene, acetal
b.	340TCS series	small	0.25 inch (6.3 mm)	acetal, ABS polyester
c.	340TCSP series	small	0.25 inch (6.3 mm)	polypropylene
d.	340TCSxx series	micro-bore	0.11 inch (2.8 mm)	acetal, ABS
e.	340TCOP2 series	medium, 1-position	0.50 inch (12.7 mm)	polypropylene, polyester
f.	340TCP2 series	medium, 6-position	0.45 inch (11.4 mm)	polypropylene, polyester
g.	340TC series	medium, 12-position	0.45 inch (11.4 mm)	polypropylene, polyester, acetal
h.	340TCL series	large, 12-position	0.75 inch (19 mm)	polyester

Images not to scale.

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Images not to scale.

Hand Pumps and Fittings

Molded from materials not made with natural rubber latex, our hand pumps are designed for fast response and comfort.

Our pumps are available with a wide variety of end fittings and check valves.

Unlike others, our pumps are designed for user comfort and are found on a wide variety of infusion cuffs, blood pressure cuffs, air bladders, air cushions, and air sampling devices.

Hand Pumps and Fittings

	Part No.	Description	Materials
a.	V15500 series	hand pump	black PVC
b.	V15600 series	80 cc hand pump	black or dark blue DEHP-free PVC
c.	V15700 series	50 cc hand pump	dark blue PVC clear, dark blue or green urethane
d.	V15900 series	50 cc hand pump	dark blue PVC
e.	V15910BP series	bleed valve	polypropylene
f.	V15940LPGC	bleed valve	polypropylene
g.	V15610 series	bleed valve	polypropylene
h.	646AP	stepped hand pump nozzle	PVC
i.	646APSC	ML hand pump nozzle	PVC

Images not to scale.

Tube End Drain Valves and Closures

The 320TET drain valve is designed as a controlled method for fluid and air release.

Closures 650 and 1020 are designed for disposable medical bags. The 1020 features automatic reverse flow checking with a flapper and a large dumping capacity.

320TET

650 series

1020 series

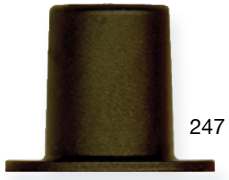
Flanges

Typically used to connect tubing to drainage, collection sets and inflatable cushions and mattresses.

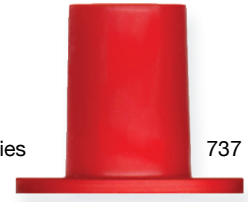
47 series

147 series

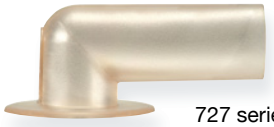
167 series



247 series



737 series



727 series

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