

## HPLC & UHPLC OEM SYSTEMS

In the following pages you will find replacement components designed specifically for OEM HPLC/UHPLC solvent delivery systems. At Optimize, all components are precision machined to the most exacting standards in the industry. All phases of the manufacturing process are controlled to ensure the highest quality. From the individual matching of check valve ball and seat sets to the proprietary blend of materials in our seals – experience Optimize quality.

**EVERY REPLACEMENT COMPONENT WE OFFER IS DESIGNED TO MEET OR EXCEED ORIGINAL EQUIPMENT SPECIFICATIONS. GUARANTEED.**

### Optimize and OEM Components

Most instrument manufacturers will insist optimal instrument performance depends on exclusively using components that match their performance specifications. We could not agree more. Every Optimize replacement component is guaranteed to meet or exceed original equipment specifications. For example, several major OEM manufacturers incorporate Optimize components as original equipment on new HPLC and UHPLC instruments. Optimize OEM partners appreciate the positive impact Optimize products have on instrument performance.

### Optimize Innovation

Innovation is our driving force. We offer a comprehensive selection of components for most brands of HPLC systems and are always developing new products to save customers time and money. Should you need a product that is not listed in this catalog, please call us to discuss your fluid handling needs.

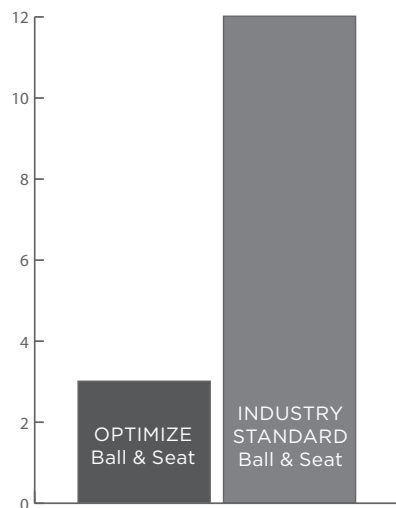


# OPTI-MAX<sup>®</sup> CHECK VALVES



A properly functioning check valve is virtually unnoticeable. An improperly functioning check valve can lead to a noisy baseline, pressure fluctuations and inconsistent flow. A check valve can have a large impact on the performance of your pump. It is imperative when choosing replacement check valves to select the very best. The OPTI-MAX Check Valve System is the very best. Read on to discover the innovations in our OPTI-MAX Check Valve line.

## CHECK VALVES ARE A CRUCIAL, YET OFTEN OVERLOOKED COMPONENT OF THE HPLC SYSTEM.



Bubbles of nitrogen/  
minute at 90 psi  
which leak from  
ball & seat.

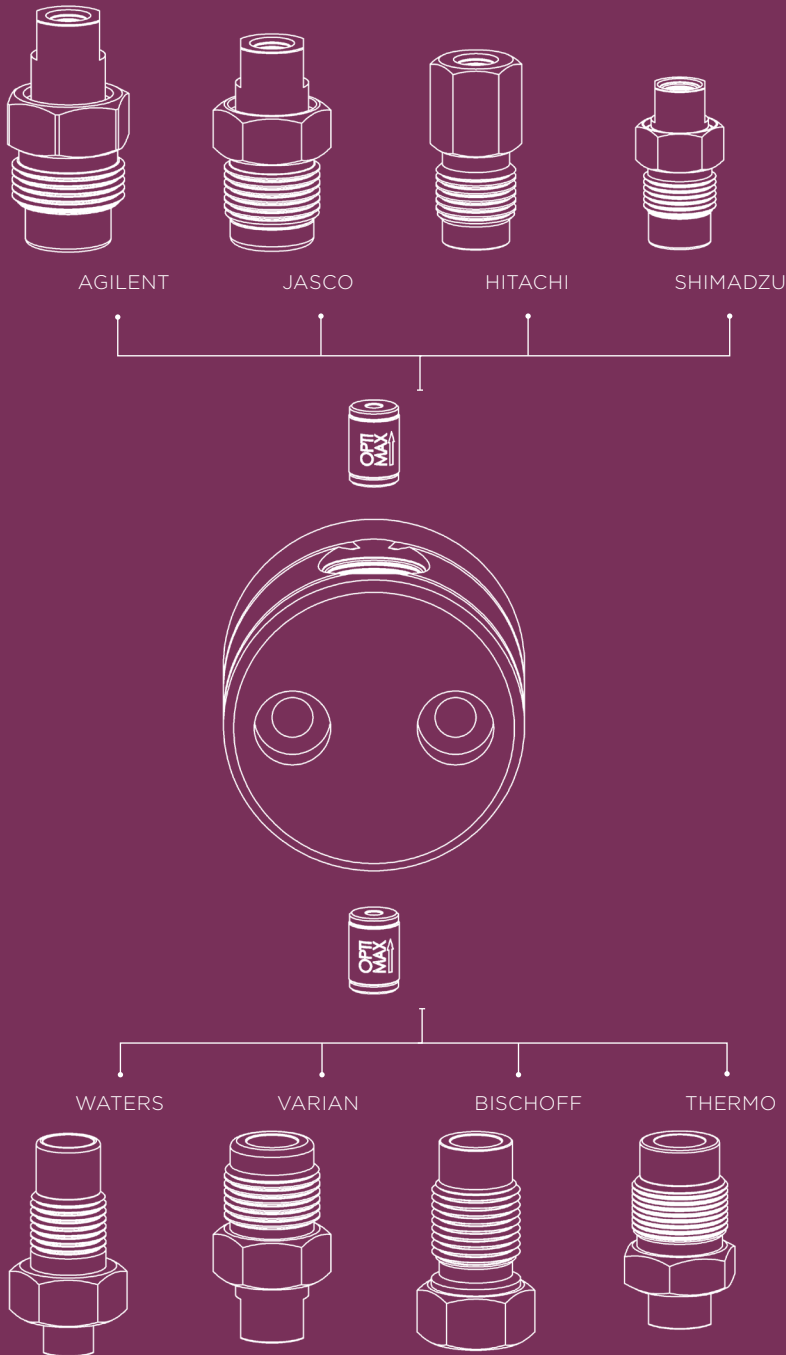
### A BETTER CHECK VALVE

Tighter specifications make a better valve. A check valve can only function effectively if it activates and seals properly in response to the piston cycle. The seating process is fairly simple. The ball lands on the seat and creates a seal. However, there are many factors that contribute to optimal seating. Optimize check valves are designed and engineered to be the most responsive in the industry.

Each ball and seat set is individually matched to ensure a lock-and-key fit. This guarantees 3 bubbles/minute or less in the industry standard nitrogen bubble test. Common acceptable standards are 12 bubbles or less. Optimize check valves minimize the ball travel distance within the check valve. Less travel distance equals quicker seating and more accurate pump metering.

# OPTI-MAX®

## A UNIVERSAL SOLUTION




A single OPTI-MAX cartridge is interchangeable across multiple pump brands and can function in either the inlet or outlet position.

The same OPTI-MAX cartridge fits into OPTI-MAX housings for pumps manufactured by Waters, Shimadzu, Agilent/HP, and many other OEM solvent delivery systems.

The modular cartridge system allows you to minimize the number of spare check valve cartridges you keep on hand and dramatically reduce the cost of inventory required to cover maintenance needs.

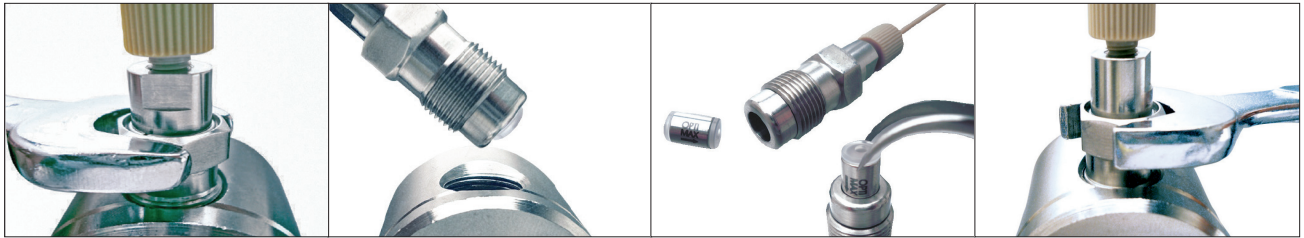
# OPTI-MAX® FREE-TURN® HOUSING

Optimize was the first in the industry to introduce the concept of the OPTI-MAX Free-Turn® housing. The thread tightens a check valve housing into the pump head and spins independently from the inner housing body. The check valve can then be changed without disconnecting any tubing. An idea born in efficiency.

Most OPTI-MAX Check Valve housings feature the Free-Turn design. To see if housings are available for your system, look for the Free-Turn logo .

OPTI-MAX® FREE-TURN® HOUSINGS  
CAN BE REMOVED WITH THE TUBING STILL ATTACHED,  
ACCELERATING CHECK VALVE MAINTENANCE WHILE  
REDUCING FITTING WEAR.

## FREE-TURN® IN ACTION



Place wrench on the hex nut and turn. The hex nut or thread ring will turn independently of the fitting connection.

Continue to unscrew the thread ring until the entire check valve assembly is removed from the pump head.

Discard old check valve cartridge & replace with new cartridge.

Install entire assembly into pump head.

# OPTI-MAX<sup>®</sup> MATERIALS

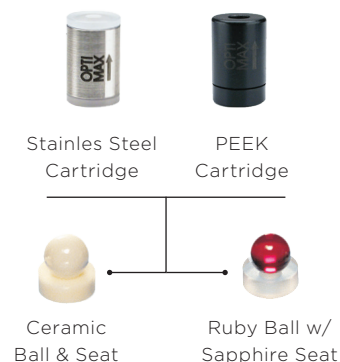
OPTI-MAX cartridges are available in several different sizes and combinations of body and ball/seat materials. All cartridges are manufactured and leak tested to meet the highest performance standards.

## OUR RECOMMENDATION: STAINLESS/CERAMIC

For high mechanical strength, stainless steel cartridges are the best choice. Ceramic ball & seat sets have a higher density, which can make the valve more responsive and help the ball seat faster in lighter solvents.

For biocompatible HPLC systems with nonmetallic flow paths or high percentages of THF, use PEEK cartridges with ceramic balls & seats.

The cartridge body materials listed above are also available with ruby and sapphire ball & seat combinations.



## CARTRIDGE MATERIAL OPTIONS | 2 PACKS

HPLC

**1/32"** **10-39-02004** Cartridge fits in all housings using 1/16" and 1/8" cartridge. Only available in PEEK/PPS body with ruby sapphire ball & seat.

**1/16"** **10-46-02004** **Recommended:** Microbore stainless steel cartridge with ceramic ball & seat

**10-48-02004** Microbore PEEK cartridge with ceramic ball & seat

**10-47-02004** Microbore stainless steel cartridge with ruby ball & sapphire seat

**10-49-02004** Microbore PEEK cartridge with ruby ball & sapphire seat

**1/8"** **10-56-02004** **Recommended:** Standard stainless steel cartridge with ceramic ball & seat

**10-58-02004** Standard PEEK cartridge with ceramic ball & seat

**10-57-02004** Standard stainless steel cartridge with ruby ball & sapphire seat

**10-59-02004** Standard PEEK cartridge with ruby ball & sapphire seat

**3/16"** **10-66-02005** **Recommended:** stainless steel cartridge with ceramic ball & seat

**10-68-02005** PEEK cartridge with ceramic ball & seat

**10-67-02005** Stainless steel cartridge with ruby ball & sapphire seat

**10-69-02005** PEEK cartridge with ruby ball & sapphire seat

UHPLC

**1/16"** **10-76-02004** OPTI-MAX EXP stainless steel cartridge with ceramic ball & seat

**10-77-02004** OPTI-MAX EXP stainless steel cartridge with ruby ball & sapphire seat

**10-86-02004** OPTI-MAX EXP stainless steel cartridge with double ceramic balls & seats

We cannot guarantee the OPTI-MAX check valve cartridge will fit in OEM housings. OPTI-MAX cartridges must be used with OPTI-MAX housing for optimal results.

# SEALS & PISTONS

By design, seals and pistons are a consumable part of an HPLC pump and should be replaced on a regular preventative maintenance schedule. To maintain peak performance and avoid unplanned downtime, piston seals should be replaced every three to six months. While sapphire pistons require inspection every six months with yearly or as-needed replacement.

## SEALS

Optimize piston seals are the longest lasting seals on the market. Machined from either of two proprietary polymer blends, UHMW-PE or ITB, Optimize seals provide ultimate high pressure sealing capacity. For mostly aqueous buffered mobile phases, OPTI-SEAL UHMW-polyethylene is the preferred choice. Specially designed to be more resistant to abrasion and wear than standard polyethylene seals, the seals can last up to seven times longer under mostly aqueous conditions. Despite the UHMW-PE's durability, the material has a coefficient of friction approaching that of PTFE. The homogenous polymer nature leads to less shedding. When it does occur, a larger, more fibrous particle is produced and is easily caught by a filter frit.



PTFE-based Improved Blend (ITB) seals are a superior choice for applications with elevated temperatures, high organic content, or when the broadest possible solvent compatibility is required. ITB seals tend to be softer than those made from UHMW-PE, making the seals more forgiving at high pressures where piston side-loading or misalignment may occur. This softer nature also leads to more shedding. However, the ITB proprietary blend is designed to shed particles that are large enough to be caught at the surface of a standard 2 $\mu$ m frit and not embed within the frit.



## PISTONS

Optimize sapphire pistons offer optimal concentricity and resistance to wear. Each sapphire rod is specifically cut in relation to the grain of the crystal lattice, yielding maximum resistance to breakage with superior wear characteristics. Attachment of the rod to the piston ferrule is performed through a proprietary process ensuring concentricity. This is an important and often overlooked procedure that has a direct effect on seal lifetime.



# SEAL FORM TOOL KIT

Installing a piston seal can be a tricky undertaking. A relatively small seal must fit into the seal cavity in such a way to ensure the seal is inserted evenly without distortion or damage. The Optimize Seal Forming/Insertion Tool Kit is specifically designed for easy and successful installation.

The kit contains three tools to accommodate all HPLC piston seals. One end has a beveled cavity for seal forming while the other end is an insertion support for perfect seal installation. Each kit contains instructions for maximizing seal life and a Solvent Compatibility Guide to aid in seal material selection.

THE KIT INCLUDES THREE SIZES ASSURING  
THE PERFECT SEAL FIT EVERY TIME



Forming cavities are available in three different sizes allowing the user to choose the best tool for seal installation.

The piston seal is formed by pressing the tool onto the seal jacket.

The seal is then pressed into the pump head seal cavity using the insertion support.

## Seal Forming/Insertion Tools

<b>10-10-02695</b>	Seal Forming/Insertion Tool Kit Includes three Forming/Insertion Tools (Small, Medium, Large), instruction booklet & Solvent Compatibility Guide
<b>10-10-02699</b>	Small Seal Forming/Insertion Tool
<b>10-10-02700</b>	Medium Seal Forming/Insertion Tool
<b>10-10-02701</b>	Large Seal Forming/Insertion Tool



**TIP:** For best performance, always use methanol or isopropanol to presoak piston seals for five to ten minutes prior to installation. Wet all mating surfaces (seal, piston, seal cavity) as the seal is formed and installed.

OPTI-MAX<sup>®</sup> CONVERSION KITS

Dionex  
25-58-01242



Hitachi  
28-46-02148



LDC  
31-56-02153

OPTI-MAX Conversion Kits contain all the check valves necessary for your HPLC pump. Kits are grouped under single part numbers and priced up to 20% off list.

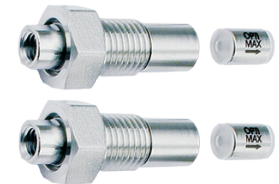
Each kit includes all the OPTI-MAX check valve housings and cartridges needed to convert an HPLC instrument. Simply find your HPLC pump/brand model in the list below and use the conversion kit part number. Each kit includes our recommended stainless steel/ceramic OPTI-MAX cartridges. Please note, OPTI-MAX PEEK cartridges are supplied for listed biocompatible systems. It is also possible to substitute an alternate cartridge material at the same kit price.

BRAND	PUMP MODEL	KIT PART #	INLETS	OUTLETS
Agilent/HP	1090 Systems	<b>27-38-01959</b>	1	1
	1050/1100/1200/1220/1260	<b>27-56-01330</b>	0	1
Beckman	100A, 126,	<b>22-66-02137</b>	2	2
	110A/B, 112/112M, 114/114M, 116	<b>22-66-02138</b>	1	1
Bischoff	2200 Microbore	<b>24-46-02141</b>	1	1
	2200, SM909, 760	<b>24-56-02140</b>	1	1
Dionex	DXP, GP-50/IP-25 DQP,	<b>25-58-02143</b>	1	1
	GPM-1, GPM-2, DRP,		1	1
	AGP, 2000, 4000		1	1
Gilson/Rainin	5, 10 & 25mL Head	<b>26-56-02144</b>	1	1
Hitachi	L-7100, L-2130	<b>28-46-02148</b>	1	1
Jasco	BIP-1	<b>42-56-02150</b>	2	2
	880, 980	<b>42-56-02151</b>	1	1



OPTI-MAX<sup>®</sup> CONVERSION KITS

BRAND	PUMP MODEL	KIT PART #	INLETS	OUTLETS
LDC/Milton Roy	Minipump, Minimetric	<b>31-56-02152</b>	1	1
	Constametric, Mini Duplex	<b>31-56-02153</b>	2	2
LKB/Amersham/ Pharmacia	2150, 2248, 2500	<b>32-46-02154</b>	2	2
PerkinElmer	4, 200, 250, 400, 410, 620, 4000	<b>33-56-02157</b>	2	1
Shimadzu	LC-10A, 9A, 600	<b>34-46-02158</b>	2	2
	LC-AT, ATPV	<b>34-46-02160</b>	1	1
	LC-20AB, AD, ADsp, ADnano AT, LC-10ADVP, 2010, GPC-20 & 50 (100µL Head), ESA 582 & 584	<b>34-46-02627</b>	2	2
	LC-10AS, 6A	<b>34-56-02159</b>	1	1
	LC-20AP, 8A	<b>34-66-02114</b>	2	2
	LC-2040, LC-2040C, LC-2030, LC-2030C LC-30ADSF, i-Series, LC-20ABXR/ ADXR	<b>34-86-04139</b>	2	2
	LC-30	<b>34-86-05140</b>	2	2
Spectra-Physics	8700, 8800, 8810	<b>35-56-02161</b>	1	1
	IsoChrom, P-Series	<b>35-56-02162</b>	1	1
Thermo	Surveyor L-Pump	<b>50-46-03645</b>	1	1
Varian	9000 Star, 9010, 9012 ProStar 220, 230, 240	<b>38-56-01704</b>	0	1
	2010	<b>38-56-02164</b>	2	2
	2510	<b>38-56-02165</b>	1	1
Waters	616	<b>39-46-02168</b>	2	2
	625/626	<b>39-48-02170</b>	2	2
	Alliance 2690, 2695, 2790, 2795	<b>39-46-02187</b>	2	0
	100µL/Dual Head Systems	<b>39-56-02166</b>	2	2
	100µL/Single Head Systems	<b>39-56-02186</b>	1	1
	Extended Flow Systems	<b>39-66-01712</b>	1	1
	225µL/Head	<b>39-66-02167</b>	2	2
	400µL & 900µL/Head	<b>39-66-02169</b>	0	2

PerkinElmer  
33-56-02157Shimadzu  
34-46-02158Waters  
39-46-02187Waters  
39-48-02170

# AGILENT / HEWLETT PACKARD

Optimize has developed the new OPTI-MAX 600 bar Active Inlet replacement cartridge (AIV). The AIV is comparable in price to the 400 bar active inlet cartridge offered by Agilent.

The OPTI-MAX 600 bar AIV utilizes the proprietary OPTI-MAX technology with wetted materials of 316 SS, PEEK and zirconia (ceramic) for complete compatibility and reliability in both 400 bar and 600 bar applications. The OPTI-MAX Zirconia ball/seat sets are the best in the industry and are individually tested to perform at 3 bubbles or less in the industry-standard 90 psi nitrogen leak test. The OPTI-MAX AIV withstands well over 20,000 psi as an assembled cartridge. Ball travel is minimized allowing the cartridge to exhibit extremely low pulsation in both 600 bar and 400 bar applications. The rugged 316 stainless steel OPTI-MAX AIV cartridge body is easily inserted and tightened for the higher pressure application of 600 bar instruments. The cartridge is completely compatible with both 600 and 400 bar instruments.

By choosing the OPTI-MAX 600 bar AIV cartridge, laboratories with multiple Agilent 400 bar and 600 bar instruments need only purchase and inventory one OPTI-MAX AIV cartridge. Maintenance and repair become much simpler and less costly.

Please note: this cartridge is not compatible with valve body 0491-0131

## OPTI-MAX® 600 BAR AIV CHECK VALVE CARTRIDGE FOR AGILENT SYSTEMS

Part #	OEM #
27-38-04713	G1312-60020, 5062-8562



### Compatible Pumps

Agilent 1100 Quaternary Pump (G1311A)  
 Agilent 1100 Binary Pump (G1312A)  
 Agilent 1100 Capillary Pump (G1376A)  
 Agilent 1200 Isocratic Pump (G1310A)  
 Agilent 1200 Binary Pump (G1312C)  
 Agilent 1260 Infinity Binary Pump (G1312B)  
 Agilent 1260 Infinity Isocratic Pump (G1310B)  
 Agilent 1260 Infinity Quaternary Pump (G1311B)  
 Agilent 1260 Infinity Quaternary Pump VL (G1311C)

### Key Features

- Wetted materials: 316 SS, PEEK and zirconia (ceramic)
- Compatible with both 400 bar and 600 bar applications
- Rated to 20,000+ psi
- OPTI-MAX Zirconia (ceramic) ball/seat set individually tested
- Reduces inventory
- Comparable in price to the standard 400 bar Agilent replacement cartridge

## AGILENT / HEWLETT PACKARD

## OPTI-MAX® CHECK VALVES

Agilent/HP 1050, 1100, 1200, 1220, 1260 

		OEM #
<b>27-56-01330</b>	OPTI-MAX Outlet Housing & Cartridge	G1311-60012, G1312-60012
<b>10-56-02004</b>	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk	
<b>27-38-04713</b>	OPTI-MAX 600 bar AIV Replacement Cartridge	G1312-60020, 5062-8562
<b>27-46-05033</b>	OPTI-MAX Passive Inlet Housing & Cartridge for Agilent 1220 and 1260 only	G1312-60066
<b>10-46-02004</b>	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pk	

OPTIONS: Stainless steel/ceramic OPTI-MAX Cartridges are listed above.  
For other options, please see page 50.

## Agilent/HP 1090

		OEM #
<b>27-38-00680</b>	Inlet Housing & Cartridge	79835-25211
<b>27-38-00682</b>	Outlet Housing & Cartridge	79835-25211
<b>27-38-00672</b>	Replacement Cartridges, 2/Pk	79835-67101

## SEALS, PISTONS &amp; OTHER PARTS

## Agilent/HP 1050, 1100

		OEM #
<b>27-36-01570</b>	OPTI-SEAL UHMW-PE* Piston Seal	0905-1420
<b>27-36-01571</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>27-36-01572</b>	ITB PTFE** Piston Seal	5063-6589
<b>27-36-01573</b>	ITB PTFE** Piston Seal, 10/Pk	
<b>27-36-03073</b>	PTFE*** Pump Seal, Green, Premium Grade	
<b>27-36-03074</b>	PTFE*** Pump Seal, Green, Premium Grade, 10/Pk	
<b>27-36-02364</b>	OPTI-SEAL UHMW-PE* Wash Seal	0905-1175
<b>27-36-02365</b>	OPTI-SEAL UHMW-PE* Wash Seal, 10/Pk	
<b>27-36-02366</b>	ITB PTFE** Wash Seal	0905-1175
<b>27-36-02367</b>	ITB PTFE** Wash Seal, 10/Pk	
<b>27-36-02851</b>	Gasket Wash Seal, 6/Pk	5062-2484
<b>27-04-02852</b>	PTFE Frits, 5/Pk	01018-22707
<b>27-31-02853</b>	2-in-1 Seal Cap (Replaces OEM Gold Seal - see next page for details)	5067-4728, 5062-2485
<b>27-34-00658</b>	Sapphire Piston	5063-6586

\*UHMW-PE - Ultra High Molecular Weight Polyethylene

\*\*ITB PTFE - Improved PTFE Blend

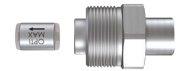
\*\*\*Premium grade PTFE for maximum chemical compatibility and wear resistance



OPTI-MAX for Agilent



AIV Replacement Cartridge



Agilent Passive inlet



Agilent/HP 1090, Outlet Housing &amp; Cartridge



27-36-01570



27-36-02364



27-36-02366

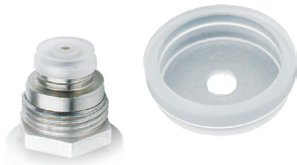


27-36-01572



27-34-00658

## AGILENT / HEWLETT PACKARD



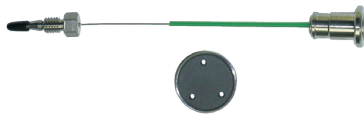
2-in-1 Seal Cap on Agilent

**2-IN-1 SEAL CAP FOR 1050/1100/1200**

The 2-in-1 Seal Cap replaces both the OEM outlet gold seal and outlet cap with a single component. Use it on purge valves, OEM outlet check valves or anywhere on 1050/1100/1200 systems where gold seals and outlet caps are required.

**Agilent/HP 1050, 1100, 1200****27-31-02853**

2-in-1 Seal Cap

**OEM #**5062-2485,  
5001-3707,  
5067-4728Autosampler  
Replacement Parts

## AUTOSAMPLER REPLACEMENT PARTS

**Agilent/HP 1100, 1200****27-31-03212**

Rotor Seal Assembly

**OEM #**

0100-1853

**27-31-03329**

Needle Seat Assembly

G1313-87101

**Agilent/HP 1050****27-31-03603**

Rotor Seal

**OEM #**

0101-0626

**Agilent/HP 1090****27-31-03649**

Rotor Seal, 3 Grooves, Polyimide

**OEM #**

7010-039

**27-31-03670**

Rotor Seal, 2 Grooves, Polyimide

0101-0623

Rotor Seal  
27-31-03603

## LAMPS

**Agilent/HP****27-32-02844**Deuterium Lamp, 1050C,  
1050DAD, 1090, 1040**OEM #**

79883-60002

**27-32-02845**DoubleLife Deuterium Lamp,  
1100, 1200 DAD5181-1530,  
2140-0813**27-32-02846**DoubleLife Deuterium Lamp,  
1100, 1200 VWD

G1314-60100

**27-32-02715**Deuterium Lamp,  
1100 VWD G1314A

G1314-60100

**27-32-04038**


Doublelife Deuterium Lamp, 1050

79883-60002

Agilent 1100 DAD  
27-32-02845

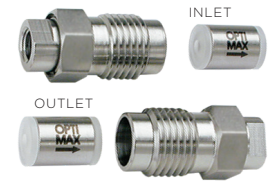
## BECKMAN / ALTEX

## OPTI-MAX® CHECK VALVES

**100A, 110A/B, 112/112M, 114/114M,  
116, 118, 125, 126, 127, 128** 

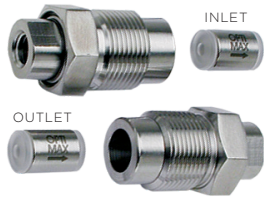
		OEM #
<b>22-66-00516</b>	OPTI-MAX Inlet Housing & Cartridge	240720
<b>22-66-00520</b>	OPTI-MAX Outlet Housing & Cartridge	240721
<b>10-66-02005</b>	OPTI-MAX Replacement Cartridges, 3/16" Ball, 2/Pk	

OPTIONS: Stainless steel/ceramic OPTI-MAX Cartridges are listed above.  
For other options, please see page 50.



OPTI-MAX for Beckman/Altex

# BISCHOFF



OPTI-MAX  
For Bischoff



24-34-00559



24-36-00573



24-36-00574

## OPTI-MAX® CHECK VALVES

### Bischoff 2200, 2250, Anspec SM909, Alcott Micromeritics 760, 765 (Analytical Versions)

		OEM #
<b>24-56-00576</b>	OPTI-MAX Inlet Housing & Cartridge	2200-0220, 760/25602/00
<b>24-56-00581</b>	OPTI-MAX Outlet Housing & Cartridge	2200-0230, 760/25604/00
<b>10-56-02004</b>	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk	

### Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 (Microbore Versions), 765

		OEM #
<b>24-46-00585</b>	OPTI-MAX Inlet Housing & Cartridge	2200-0120, 760/25602/01
<b>24-46-00589</b>	OPTI-MAX Outlet Housing & Cartridge	2200-0130, 760/25604/01
<b>10-46-02004</b>	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pk	

OPTIONS: Stainless steel/ceramic OPTI-MAX Cartridges are listed above. For other options, please see page 50.

## SEALS & PISTONS

### Bischoff 2200, Anspec SM909, Alcott Micromeritics 760, 765 (Analytical Versions)

		OEM #
<b>24-34-00559</b>	Sapphire Piston	2200-0210, 760/25803/00

### Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 (Microbore Versions), 765

		OEM #
<b>24-36-00573</b>	ITB PTFE** Piston Seal	2200-0112, 760/25601/01
<b>24-36-00575</b>	ITB PTFE** Piston Seal, 10/Pk	
<b>24-36-00574</b>	Piston Seal Support Ring	2200-0111, 760/25603/01

\*\*ITB PTFE - Improved PTFE Blend

## DIONEX

## OPTI-MAX® CHECK VALVES

**GP-40\*/IP-20\*, DQP, GPM-1, DRP, GPM-2, DXP, AGP (Analytical), 2000, 4000, GP-50/IP-25**

		OEM #
<b>25-58-00613</b>	OPTI-MAX Inlet Housing & Cartridge	047660, 38273
<b>25-58-00612</b>	OPTI-MAX Outlet Housing & Cartridge	047661, 42761
<b>10-58-02004</b>	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk	

OPTIONS: PEEK/ceramic OPTI-MAX Cartridges are listed above. For other options, please see page 50.

\*The OPTI-MAX Check Valves above fit GP-40/IP-20 pumps. Users of microbore versions of these pumps should order OPTI-MAX microbore (1/16") cartridges. Please see page 50.



## PISTONS &amp; SEALS

**GP-40/IP-20 (Analytical), DQP, GPM-1, DRP, GPM-2, DXP, AGP (Analytical), 2000, 4000**

		OEM #
<b>25-36-00597</b>	OPTI-SEAL UHMW-PE* Piston Seal (Hastelloy C® Spring)	40859
<b>25-36-00598</b>	OPTI-SEAL UHMW-PE* Piston Seal (Hastelloy C® Spring), 10/Pk	
<b>25-36-00599</b>	UHMW-PE* Piston Seal, (Elastomer O-Ring)	35686
<b>25-36-00600</b>	UHMW-PE* Piston Seal, (Elastomer O-Ring), 10/Pk	
<b>25-36-00601</b>	Back-Up Seal, for all models except GP40/IP20	36901
<b>25-36-00602</b>	Back-Up Seal, for all models except GP40/IP20, 10/Pk	

\*UHMW-PE - Ultra High Molecular Weight Polyethylene



25-36-00597



25-36-00599



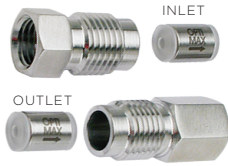
25-36-00601

## LAMPS

Dionex		OEM #
<b>25-32-02081</b>	Deuterium Lamp, Dionex VDM-1, DSA-1	
<b>25-32-02820</b>	Deuterium Lamp, Dionex CES 1, VDM-2	40651



Dionex  
25-32-02081



OPTI-MAX for L-7100



28-36-00690



28-36-00691

# HITACHI

## OPTI-MAX® CHECK VALVES

### L-7100 (LaChrom), L-2130

		OEM #
<b>28-46-02092</b>	OPTI-MAX Inlet Housing & Cartridge	ANO-0836, 810-1004, 809-1408
<b>28-46-02094</b>	OPTI-MAX Outlet Housing & Cartridge	ANO-0837, 810-1005, 809-1409
<b>10-46-02004</b>	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pk	

OPTIONS: Stainless steel/ceramic OPTI-MAX Cartridges are listed above. For other options, please see page 45.

### L-2100, Smash Pump, L-2130

<b>28-39-02092</b>	OPTI-MAX Inlet Housing & Cartridge
<b>28-39-02094</b>	OPTI-MAX Outlet Housing & Cartridge
<b>10-39-02004</b>	OPTI-MAX Check Valve Cartridge Replacement, Microbore 1/32", 2/Pk

## SEALS

### 655, L-6000, L-6200/L-6200A, L-7100 (LaChrom), L-2100, Smash Pump

		OEM #
<b>28-36-00690</b>	OPTI-SEAL UHMW-PE* Piston Seal	655-1080
<b>28-36-00692</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>28-36-00691</b>	OPTI-SEAL UHMW-PE* Piston Seal (Hastelloy C® Spring)	
<b>28-36-00693</b>	OPTI-SEAL UHMW-PE* Piston Seal (Hastelloy C® Spring), 10/Pk	

\*UHMW-PE - Ultra High Molecular Weight Polyethylene



# JASCO

## OPTI-MAX® CHECK VALVES

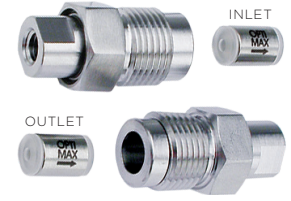
### BIP 1

		OEM #
<b>42-56-01038</b>	OPTI-MAX Inlet Housing & Cartridge	6260-H101A
<b>42-56-01043</b>	OPTI-MAX Outlet Housing & Cartridge	6260-H102A
<b>10-56-02004</b>	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk	

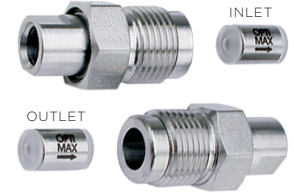
### 880/980 Series

		OEM #
<b>42-56-01544</b>	OPTI-MAX Inlet Housing & Cartridge	6560-H405A
<b>42-56-01546</b>	OPTI-MAX Outlet Housing & Cartridge	6560-H404A
<b>10-56-02004</b>	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk	

OPTIONS: Stainless steel/ceramic OPTI-MAX Cartridges are listed above.  
For other options, please see page 50.



OPTI-MAX for BIP 1



OPTI-MAX  
for 880/980 Series

## SEALS & PISTONS

### BIP-1, PU-2080, 2085, 2089, 1580-C02, 980, 880, 1586, 2086, 986

		OEM #
<b>42-36-01357</b>	OPTI-SEAL UHMW-PE* Piston Seal	6560-H148, H149A
<b>42-36-01358</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>42-36-01355</b>	ITB PTFE** Piston Seal	6560-H148-PE, H149A
<b>42-36-01356</b>	ITB PTFE** Piston Seal, 10/Pk	
<b>42-34-01354</b>	Sapphire Piston	2305-0005A

\*UHMW-PE - Ultra High Molecular Weight Polyethylene

\*\*ITB PTFE - Improved PTFE Blend



42-36-01357



42-36-01355

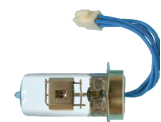
## LAMPS

### Jasco

		OEM #
<b>42-32-02841</b>	DoubleLife Deuterium Lamp, 870, 875	5330-0097
<b>42-32-02842</b>	DoubleLife Deuterium Lamp, UV-1570, -1575, -2070, -2075, 975 B/C Series	5330-0091



42-34-01354



42-32-02842

## LKB / AMERSHAM / PHARMACIA



## OPTI-MAX® CHECK VALVES

**LKB 2150, 2248, 2500** **OEM #**

<b>32-46-00782</b>	OPTI-MAX Inlet Housing & Cartridge	80-1035-19
<b>32-46-00787</b>	OPTI-MAX Outlet Housing & Cartridge	2150-300
<b>10-46-02004</b>	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pk	

OPTIONS: Stainless steel/ceramic OPTI-MAX Cartridges are listed above.  
For other options, please see page 50.



## SEALS &amp; PISTONS

**LKB 2150, 2248, 2500****OEM #**

<b>32-36-01303</b>	ITB PTFE** Piston Seal, with Back-Up Ring	80-1037-39
<b>32-36-01304</b>	ITB PTFE** Piston Seal, with Back-Up Rings, 10/Pk	
<b>32-34-00771</b>	Sapphire Piston, 2150	80-1035-52

\*\*ITB PTFE - Improved PTFE Blend



## LAMPS

**LKB/Amersham/Pharmacia**

<b>32-32-02821</b>	Deuterium Lamp, LKB Ultraspec I, II, III, Plus, 4050, 4051, 4054, 2141, 2151
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## PERKINELMER

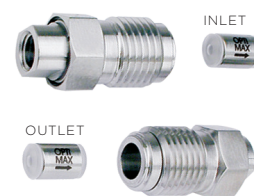
## OPTI-MAX® CHECK VALVES

**Series 4, Model 250, 200\*, 400, 410, 620, Integral 4000\***

		OEM #
<b>33-56-00830</b>	OPTI-MAX Inlet Housing & Cartridge	0254-0177
<b>33-56-00835</b>	OPTI-MAX Outlet Housing & Cartridge	0254-0197
<b>10-56-02004</b>	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk	

OPTIONS: Stainless steel/ceramic OPTI-MAX Cartridges are listed above.  
For other options, please see page 50.

\*These pumps have an intermediate check valve which is identical to the inlet check valve.  
To order a replacement intermediate valve, use the OPTI-MAX inlet part number.



Model 250, Series 4, 200, 400, 410, 620, Integral 4000

## SEALS &amp; PISTONS

**Model 200, 250, 410, 620, Integral 4000 (Mfd. After 12/89)**

		OEM #
<b>33-34-00798</b>	Piston (High Pressure)	N260-0124



33-34-00798

**Series 1, 2, 3, 3B, 10, Model 200, 250, 400, 410, 620, Integral 4000**

		OEM #
<b>33-36-01301</b>	OPTI-SEAL UHMW-PE* Piston Seal (High Pressure)	0990-7324
<b>33-36-01302</b>	OPTI-SEAL UHMW-PE* Piston Seal (High Pressure), 10/Pk	



33-36-01301

**Series 4, Model 400, 410, 620, Integral 4000**

		OEM #
<b>33-36-00804</b>	OPTI-SEAL UHMW-PE* Piston Seal (Low Pressure)	0990-7330
<b>33-36-00805</b>	OPTI-SEAL UHMW-PE* Piston Seal (Low Pressure), 10/Pk	



33-36-00804

**Series 100**

		OEM #
<b>33-36-00806</b>	OPTI-SEAL UHMW-PE* Piston Seal	N260-0108
<b>33-36-00807</b>	OPTI-SEAL UHMW-PE* Piston Seal , 10/Pk	
<b>33-36-00808</b>	ITB PTFE** Piston Seal	N260-0109
<b>33-36-00809</b>	ITB PTFE** Piston Seal, 10/Pk	



33-36-00806

\*UHMW-PE - Ultra High Molecular Weight Polyethylene

\*\*ITB PTFE - Improved PTFE Blend



33-36-00808

## LAMPS

**PerkinElmer**

		OEM #
<b>33-32-03117</b>	Deuterium Lamp, 200 UV/Vis	N292-0149
<b>33-32-03114</b>	DoubleLife Deuterium Lamp, Series 200 DAD	N292-2046



33-32-03114

## SHIMADZU

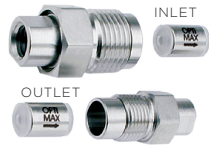
## OPTI-MAX® CHECK VALVES

**LC-30**

Part #	Description	Shimadzu #
<b>34-76-05135</b>	OPTI-MAX Inlet Housing & Cartridge	228-52964-95
<b>10-76-02004</b>	OPTI-MAX Replacement Cartridges (for Inlet), 1/16" Ball, 2/Pk	
<b>34-86-05139</b>	OPTI-MAX Outlet Housing & Cartridge	228-53334-96
<b>10-86-02004</b>	OPTI-MAX Replacement Cartridges (for Outlet), 1/16" Double Ball, 2/Pk	

**LC-30ADSF, i-Series, LC-2040/C, LC-2030/C  
LC-20ABXR, ADXR**

Part #	Description	Shimadzu #
<b>34-86-02644</b>	OPTI-MAX Inlet Housing & Cartridge	228-48249-91 228-48249-96
<b>34-86-00893</b>	OPTI-MAX Outlet Housing & Cartridge	228-45705-91
<b>10-86-02004</b>	OPTI-MAX Replacement Cartridges 1/16" Ball, 2/Pk	



LC-10AT, LC-10ATVP

**LC-10AT, ATVP**

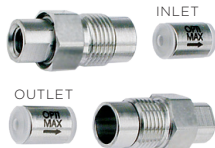
Part #	Description	Shimadzu #
<b>34-46-01983</b>	OPTI-MAX Inlet Housing & Cartridge	228-32166-91 228-39093-92
<b>34-46-00893</b>	OPTI-MAX Outlet Housing & Cartridge	228-32531-92 228-34976-91
<b>10-46-02004</b>	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pk	



LC-10ADVP

**LC-20AB, AD, ADsp, ADnano, AT, LC-10ADVP, 2010,  
GPC-20 & 50 (100µL Head), ESA 582 & 584**

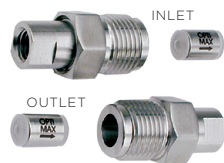
Part #	Description	ESA#	Shimadzu #
<b>34-46-02644</b>	OPTI-MAX Inlet Housing & Cartridge	70-4056	228-39093-92 228-45704-91
<b>34-46-00893</b>	OPTI-MAX Outlet Housing & Cartridge	70-4057	228-34976-91 228-45705-91 228-37147-93
<b>10-46-02004</b>	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pk		



LC-10AD, LC-600, LC-9A

**LC-10AD, 9A, 600 (also ESA Model 580)**

Part #	Description	ESA#	Shimadzu #
<b>34-46-00885</b>	OPTI-MAX Inlet Housing & Cartridge	70-0734	228-18522-91 228-33492-91
<b>34-46-00893</b>	OPTI-MAX Outlet Housing & Cartridge	70-0735	228-18522-92 228-32531-92
<b>10-46-02004</b>	OPTI-MAX Replacement Cartridges, 1/16" Ball, 2/Pk		



LC-10AS, LC-6A

**LC-10AS, 6A**

Part #	Description	Shimadzu #
<b>34-56-00902</b>	OPTI-MAX Inlet Housing & Cartridge	228-12353-91
<b>34-56-00907</b>	OPTI-MAX Outlet Housing & Cartridge	228-09054-93
<b>10-56-02004</b>	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk	



LC-8A

**LC-20AP, 8A**

Part #	Description	Shimadzu #
<b>34-66-02112</b>	OPTI-MAX Inlet Housing & Cartridge	228-20256-91
<b>10-66-02005</b>	OPTI-MAX Replacement Cartridges (for LC-8A Inlet), 3/16" Ball, 2/Pk	
<b>34-56-00907</b>	OPTI-MAX Outlet Housing & Cartridge	228-09054-93 228-50955-41
<b>10-56-02004</b>	OPTI-MAX Replacement Cartridges (for LC-8A Outlet), 1/8" Ball, 2/Pk	

OPTIONS: Stainless steel/ceramic OPTI-MAX cartridges are listed above.  
For other options, please see page 50.

## SHIMADZU

## SEALS &amp; PISTONS

**LC-20ABXR, ADXR, LC-20AB, AD, AT,  
LC-2010, LC-10ADVP, ESA 582 & 584**

	ESA#	Shimadzu #
<b>34-36-00855</b> OPTI-SEAL UHMW-PE* Piston Seal		228-32628-00 228-18745-00 228-35146-00
<b>34-36-00856</b> OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk		
<b>34-36-04711</b> ITB PTFE** Piston Seal		228-18745-00 228-35146-00
<b>34-36-04712</b> ITB PTFE** Piston Seal, 10/Pk		
<b>34-34-02645</b> Sapphire Piston for LC-10ADVP, 2010, 20AD (can be used for LC-10AT if user has Plunger Holder P/N 34-34-01991)	70-4052	228-35601-91 228-35601-92 228-35601-93



34-36-00855



34-34-02645



34-36-00865



34-36-00863

**LC-20AT, 10AT, 10ATVP, 10AS, 7A, 6A,  
SIL-10ADVP, GFP**

	Shimadzu #
<b>34-36-00865</b> OPTI-SEAL UHMW-PE* Piston Seal	228-11999-00 228-21975-00 228-35145-00
<b>34-36-00866</b> OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>34-36-00863</b> ITB PTFE** Piston Seal	228-11999-00 228-21975-00 228-35145-00
<b>34-36-00864</b> ITB PTFE** Piston Seal, 10/Pk	
<b>34-34-01345</b> Sapphire Piston for LC-10AS	228-17019-93
<b>34-34-02650</b> Sapphire Piston for LC-10ATVP	228-35009-92

Piston Wash Users: The above seals can also be used as Back Seals (OEM# 228-28499-00)



34-34-01345



34-34-02650

**LC-10AD, 9A, 600, ESA 580**

	Shimadzu #
<b>34-36-00855</b> OPTI-SEAL UHMW-PE* Piston Seal	228-18745-00 228-35146-00
<b>34-36-00856</b> OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>34-36-00857</b> UHMW-PE* Elastomer Energized Seal	228-18745-00 228-35146-00
<b>34-36-00858</b> UHMW-PE* Elastomer Energized Seal, 10/Pk	

\*UHMW-PE - Ultra High Molecular Weight Polyethylene

\*\*ITB PTFE - Improved PTFE Blend



34-36-00857



34-04-03881

## FILTRATION

**LC-10AD, 10AS, 10AT, 9A, 6A, 6AD, 6AEF, 610**

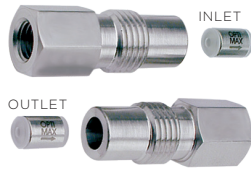
	Shimadzu #
<b>34-04-03881</b> In-Line Filter Assembly	228-12642-93

## LAMPS

	Shimadzu #
<b>34-32-02837</b> DoubleLife Deuterium Lamp, SPD-10A, -10AV, -M10A, -10AS, -10AVP, -M10AVP, -20AV	228-34016-02
<b>34-32-03102</b> DoubleLife Deuterium Lamp, LC 2010, LC- 2010HT	228-37401-00

Shimadzu  
34-32-02837

## THERMO: LDC / MILTON ROY



OPTI-MAX for LDC

## OPTI-MAX® CHECK VALVES

**All Analytical**

(including Constametric, Minimetric, Minipump, Mini Duplex)

		OEM #
<b>31-56-00759</b>	OPTI-MAX Inlet Housing & Cartridge	900947001
<b>31-56-00764</b>	OPTI-MAX Outlet Housing & Cartridge	900947002
<b>10-56-02004</b>	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk	

OPTIONS: Stainless steel/ceramic OPTI-MAX Cartridges are listed above.

For other options, please see page 50.



31-36-00806



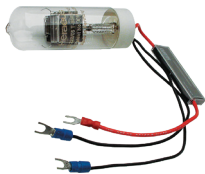
31-36-00808



31-36-00745



31-34-00738



31-32-01295

## SEALS &amp; PISTONS

**All Analytical**

(including Constametric, Minimetric, Minipump, Mini Duplex)

		OEM #
<b>31-36-00806</b>	OPTI-SEAL UHMW-PE* Piston Seal	206234
<b>31-36-00807</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>31-36-00808</b>	ITB PTFE** Piston Seal, Black	206129001
<b>31-36-00809</b>	ITB PTFE** Piston Seal, Black, 10/Pk	
<b>31-36-00745</b>	UHMW-PE* Piston Seal, Gold	206234
<b>31-36-00746</b>	UHMW-PE* Piston Seal, Gold, 10/Pk	
<b>31-34-00738</b>	Sapphire Piston	801306

\*UHMW-PE - Ultra High Molecular Weight Polyethylene

\*\*ITB PTFE - Improved PTFE Blend

## LAMPS

**LDC/Milton Roy**

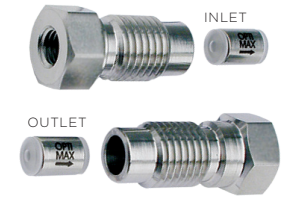
		OEM #
<b>31-32-01295</b>	Deuterium Lamp, 3000 and 4000 Series, Spectromonitor I-II-III-D	108035

## THERMO: SPECTRA-PHYSICS

## OPTI-MAX® CHECK VALVES

<b>8700, 8800, 8810, IsoChrom, P-Series</b>		<b>OEM #</b>
<b>35-56-00956</b>	OPTI-MAX Inlet Housing & Cartridge	A3495-010
<b>35-56-00961</b>	OPTI-MAX Outlet Housing & Cartridge	A3490-010
<b>35-56-00952</b>	OPTI-MAX Transducer Housing & Cartridge	A3990-010
<b>10-56-02004</b>	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk	

OPTIONS: Stainless steel/ceramic OPTI-MAX Cartridges are listed above.  
For other options, please see page 50.



OPTI-MAX for  
Spectra-Physics

## SEALS &amp; PISTONS

<b>8800, 8810, IsoChrom, P-Series</b>		<b>OEM #</b>
<b>35-36-00930</b>	OPTI-SEAL UHMW-PE* Piston Seal	A2962-010
<b>35-36-00931</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>35-36-00938</b>	ITB PTFE** Piston Seal	A2962-010
<b>35-36-00939</b>	ITB PTFE** Piston Seal, 10/Pk	
<b>35-36-00916</b>	Back-Up Seal, PCTFE	A4848-010
<b>35-36-00917</b>	Back-Up Seal, PCTFE, 10/Pk	
<b>35-36-00918</b>	OPTI-SEAL UHMW-PE* Flush Seal	A2963-010
<b>35-36-00919</b>	OPTI-SEAL UHMW-PE* Flush Seal, 10/Pk	
<b>35-36-00920</b>	ITB PTFE** Flush Seal	A2963-010
<b>35-36-00921</b>	ITB PTFE** Flush Seal, 10/Pk	
<b>35-34-00915</b>	Sapphire Piston	A3102-010

<b>8700, 8700XR, 8750</b>		<b>OEM #</b>
<b>35-36-00934</b>	OPTI-SEAL UHMW-PE* Piston Seal	A1703-020
<b>35-36-00935</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	

\*UHMW-PE - Ultra High Molecular Weight Polyethylene

\*\*ITB PTFE - Improved PTFE Blend

## LAMPS

<b>Spectra-Physics</b>		<b>OEM #</b>
<b>35-32-01333</b>	Deuterium Lamp, Spectra-Physics Focus, 100, 200, UV-100, -150, -200, -100, 2000, 3000, CE Series	9551-0023



35-36-00930



35-36-00938



35-36-00916



35-36-00918



35-36-00920

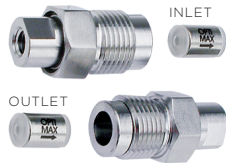


35-34-00915

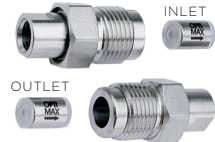


35-36-00934

# VARIAN, GILSON / RAININ



2010 for Varian



2510 for Varian



38-38-04790  
for Varian



38-56-01067  
OPTI-MAX for Varian



26-36-00632



26-36-00630



26-36-00634



26-36-00636



26-34-00625

## OPTI-MAX® CHECK VALVES

### 5, 10 & 25mL S/SC Heads

(Gilson, Rainin, ProStar 210/215, HP, HPX, HPXL, SD 200/300)

		OEM #
<b>26-56-00638</b>	OPTI-MAX Inlet Housing & Cartridge	R007101616, R007101678
<b>26-56-00647</b>	OPTI-MAX Outlet Housing & Cartridge	R007101617, R007101679
<b>10-56-02004</b>	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk	

### 2010 ↻

		OEM #
<b>38-56-01038</b>	OPTI-MAX Inlet Housing & Cartridge	00-997261-09
<b>38-56-01043</b>	OPTI-MAX Outlet Housing & Cartridge	00-997261-10
<b>10-56-02004</b>	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk	

### 2510 ↻

		OEM #
<b>38-56-01544</b>	OPTI-MAX Inlet Housing & Cartridge	00-997554-19
<b>38-56-01546</b>	OPTI-MAX Outlet Housing & Cartridge	00-997554-18
<b>10-56-02004</b>	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk	

### 9000 Star, 9010, 9012, ProStar 220, 230, 240 ↻

		OEM #
<b>38-38-04790</b>	Inlet Check Valve Assembly Includes Installation kit	03-919085-90
<b>38-56-01067</b>	OPTI-MAX Outlet Housing & Cartridge	03-919465-90
<b>10-56-02004</b>	OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk	

OPTIONS: Stainless steel/ceramic OPTI-MAX Cartridges are listed above.  
For other options, please see page 50.

## SEALS & PISTONS

### 10mL S/SC Heads (Gilson, Rainin, HP, HPX, HPXL, SD 200/300)

		OEM #
<b>26-36-00632</b>	OPTI-SEAL UHMW-PE* Piston Seal	5463125895, R007101447
<b>26-36-00633</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>26-36-00630</b>	ITB PTFE** Piston Seal	5463125095, R007101636
<b>26-36-00631</b>	ITB PTFE** Piston Seal, 10/Pk	

### 5mL S/SC Heads (Gilson, Rainin, HP, HPX, HPXL, SD 200/300)

		OEM #
<b>26-36-00634</b>	OPTI-SEAL UHMW-PE* Piston Seal	5463088863, R007101634
<b>26-36-00635</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>26-36-00636</b>	ITB PTFE** Piston Seal	5463088063, R007101633
<b>26-36-00637</b>	ITB PTFE** Piston Seal, 10/Pk	
<b>26-34-00625</b>	Piston, 5mL SC Head	3650008, R007101657

### ProStar 210/215 (10mL Heads)

		OEM #
<b>38-36-00632</b>	OPTI-SEAL UHMW-PE* Piston Seal	R007101447
<b>38-36-00633</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	



# VARIAN, GILSON / RAININ

## ProStar 210/215 (10mL Heads) (continued)

		OEM #
<b>38-36-00630</b>	ITB PTFE** Piston Seal	R007101636
<b>38-36-00631</b>	ITB PTFE** Piston Seal, 10/Pack	



38-36-01000

## ProStar 210/215 (5mL Heads)

		OEM #
<b>38-36-00634</b>	OPTI-SEAL UHMW-PE* Piston Seal	R007101634
<b>38-36-00635</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>38-36-00636</b>	ITB PTFE** Piston Seal	R007101633
<b>38-36-00637</b>	ITB PTFE** Piston Seal, 10/Pk	
<b>38-34-00625</b>	Sapphire Piston, 5mL Head	R007101657



38-36-01002

## 2010, 2510

		OEM #
<b>38-36-01000</b>	OPTI-SEAL UHMW-PE* Piston Seal	00-997261-37
<b>38-36-01001</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>38-36-01002</b>	ITB PTFE** Piston Seal	00-997261-37
<b>38-36-01003</b>	ITB PTFE** Piston Seal, 10/Pk	
<b>38-34-00999</b>	Sapphire Piston	00-997261-08



38-34-00999

## 9000 Star, 9010, 9012, 9020, 220, 230, 240

		OEM #
<b>38-36-01555</b>	OPTI-SEAL UHMW-PE* Piston Seal	03-919397-00
<b>38-36-01556</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>38-36-01553</b>	ITB PTFE** Piston Seal	03-919397-00
<b>38-36-01554</b>	ITB PTFE** Piston Seal, 10/Pk	
<b>38-34-01342</b>	Sapphire Piston	03-919180-00 03-919102-90



38-36-01555



38-36-01553

\*UHMW-PE - Ultra High Molecular Weight Polyethylene

\*\*ITB PTFE - Improved PTFE Blend

## LAMPS

### Gilson / Rainin Models

		OEM #
<b>26-32-03671</b>	Deuterium Lamp, Gilson/Rainin 115, 116, 117, 118, 119, 151, 152, 155, 156	100326
<b>26-32-03069</b>	Deuterium Lamp, Gilson/Rainin 170 DAD	2140-0590

### Varian Models

		OEM #
<b>38-32-01637</b>	Deuterium Lamp, Varian 2050, 2550, 5500	
<b>38-32-03673</b>	Deuterium Lamp, Varian ProStar 330 DAD	0393570502
<b>38-32-02831</b>	DoubleLife Deuterium Lamp, Vista 5000-5500, UV-50, -100, -200, -9050	0391615691
<b>38-32-02081</b>	Deuterium Lamp, Varian ProStar 340, 345, U-VC, UV-DII, UV-M, UVDII, UV	R000088515
<b>38-32-03654</b>	DoubleLife Deuterium Lamp, Varian ProStar 325, 335	110715400
<b>38-32-04022</b>	Xenon Lamp, Varian ProStar 363	392613102

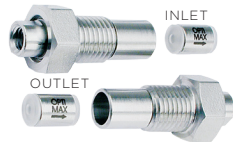


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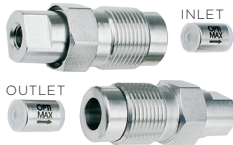


38-32-01637

## WATERS



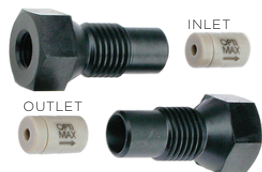
2690/Alliance



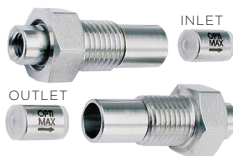
100µL Head Systems



225µL Head Systems

400µL, 500µL & 900µL  
Heads/Systems

625/626



616

## OPTI-MAX® CHECK VALVES

**2690, 2695, 2790, 2795, Alliance\*****39-46-01949** OPTI-MAX Inlet Housing & Cartridge**OEM #**

WAT027112, 700002332

**10-46-02004** OPTI-MAX Replacement Cartridges,  
1/16" Ball, 2/Pk

WAT270941, 700002761

\*2690/Alliance Systems have inlet check valves only - outlets are not required.

**100µL Head Systems****(M45/45G, M501, 510, 515, 590,  
600/600E, 610, 6K/6KA, 1515, 1525, LC Module 1)****39-56-01251** OPTI-MAX Inlet Housing & Cartridge**OEM #**

WAT033679, 700000253

**39-56-01256** OPTI-MAX Outlet Housing & Cartridge

700000253

**10-56-02004** OPTI-MAX Replacement Cartridges,  
1/8" Ball, 2/Pk

700000254, 700002399

**225µL Head (#3) Systems****(510, 515, 590, 600/600E, 610, 650, 6K/6KA)****39-66-01262** OPTI-MAX Inlet Housing & Cartridge**OEM #**

WAT033679, WAT060307

**10-66-02005** OPTI-MAX Replacement Cartridges,  
3/16" Ball, 2/Pk**39-56-01256** OPTI-MAX Outlet Housing & Cartridge

WAT025216

**10-56-02004** OPTI-MAX Replacement Cartridges,  
1/8" Ball, 2/Pk

700000254, 700002399

**400µL (#4), 500µL (#5), & 900µL (#6) Heads****(Delta Prep 3000, 600/600E, 650)****39-66-01267** OPTI-MAX Outlet Housing & Cartridge**OEM #**

WAT033326, WAT033325

**10-66-02005** OPTI-MAX Replacement Cartridges,  
3/16" Ball, 2/Pk**625/626****39-48-01907** OPTI-MAX Inlet Housing & Cartridge, PEEK**OEM #**

WAT030541

**39-48-01909** OPTI-MAX Outlet Housing & Cartridge, PEEK

WAT030543

**10-48-02004** OPTI-MAX Replacement Cartridges,  
1/16" Ball, 2/Pk

WAT024120

**616, 1525µ (Micro)****39-46-01949** OPTI-MAX Inlet Housing & Cartridge**OEM #**

WAT055845

**39-46-01950** OPTI-MAX Outlet Housing & Cartridge

WAT055845

**10-46-02004** OPTI-MAX Replacement Cartridges,  
1/16" Ball, 2/Pk

WAT270941, 700002761

OPTIONS: Stainless steel/ceramic OPTI-MAX cartridges are listed above (except for the 625/626, which requires PEEK housings and cartridges). For other options, please see page 50.

## WATERS

## SEALS &amp; PISTONS

**Alliance, 2690, 2695, 2790, 2795,  
2690D, 2695D, 2796, GPC, V2000**

		OEM #
<b>39-36-02596</b>	OPTI-SEAL UHMW-PE* Piston Seal	WAT270938
<b>39-36-02603</b>	OPTI-SEAL UHMW-PE* Piston Seal, 2/Pk	WAT270938
<b>39-36-02597</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>39-36-02855</b>	Face Seals Replacement Kit, 4/Pk	WAT270939
<b>39-36-02856</b>	Seal Wash Face Seal	WAT271017
<b>39-36-02858</b>	Seal Wash Tube Seals Replacement Kit, 4/Pk	WAT270940
<b>39-36-02860</b>	Seal Wash, Piston Seal, Replacement Kit, 2/Pk	WAT271018
<b>39-34-02180</b>	Sapphire Piston	WAT270959

## 100µL Head Systems

(M45/45G, M501, 510, 590, 600/600E,  
610, 6K/6KA, 1515, 1525, 515, LC Module 1)

		OEM #
<b>39-36-01305</b>	OPTI-SEAL UHMW-PE* Piston Seal	WAT022934 WAT022946
<b>39-36-01306</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>39-36-01206</b>	ITB PTFE** Piston Seal, Black	WAT026613
<b>39-36-01207</b>	ITB PTFE** Piston Seal, Black, 10/Pk	
<b>39-34-01188</b>	Piston, 510, 590, 600/600E, 610, 6K/6KA	WAT025656
<b>39-34-01191</b>	Piston, M45/45G, M501	WAT026524

## 225µL Head (#3) Extended Flow Systems

(510, 590, 600/600E, 610, 650, 6K/6KA, 515, 1525 EF, LC Module 1)

		OEM #
<b>39-36-01216</b>	OPTI-SEAL UHMW-PE* Piston Seal	WAT026644 700002282
<b>39-36-01217</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>39-36-01214</b>	ITB PTFE** Piston Seal	WAT026644 700002282
<b>39-36-01215</b>	ITB PTFE** Piston Seal, 10/Pk	
<b>39-34-01193</b>	Piston	WAT060304

## 616, 625/626

		OEM #
<b>39-36-02124</b>	OPTI-SEAL UHMW-PE* Piston Seal	
<b>39-36-02228</b>	OPTI-SEAL UHMW-PE* Piston Seal, 10/Pk	
<b>39-36-02127</b>	ITB PTFE** Piston Seal	WAT031790
<b>39-36-02229</b>	ITB PTFE** Piston Seal, 10/Pk	

\*UHMW-PE - Ultra High Molecular Weight Polyethylene

\*\*ITB PTFE - Improved PTFE Blend



39-36-02596



39-34-02180



39-36-01305



39-36-01206



39-34-01188



39-34-01191



39-36-01216



39-36-01214



39-34-01193

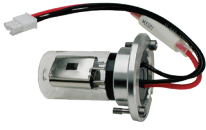


39-36-02124



39-36-02127

## WATERS (CONTINUED)



Waters  
39-32-02825



39-04-03524  
Filter Insert Assembly



10-04-03151  
Solvent Filter



39-31-01147  
Needle with Nut & Ferrule



39-31-01171  
Priming Syringe

## LAMPS

**Waters**

		<b>OEM #</b>
<b>39-32-01175</b>	Mercury Lamp, Waters 440, 441	WAT097323
<b>39-32-01179</b>	Deuterium Lamp, Waters 484	WAT080357
<b>39-32-01294</b>	Deuterium Lamp, Waters 450	WAT098946
<b>39-32-01295</b>	Deuterium Lamp, Waters 480, 481, 481AZ	WAT099499
<b>39-32-02823</b>	Deuterium Lamp, Waters 486	WAT080678
<b>39-32-02825</b>	ACQUITY, CapLC 2487, nanoACQUITY Deuterium Lamp, Waters 2487, 2488	WAS081142
<b>39-32-02835</b>	DoubleLife Deuterium Lamp, Waters 996, 2996, PDA	WAT052586
<b>39-32-02688</b>	Xenon Lamp, Waters 490E	WAT046660

## FILTRATION

		<b>OEM #</b>
<b>2690/2695, 2790/2795, 600</b>		
<b>39-04-03524</b>	2µm Filter Insert Assembly, In-Line	WAT088084
<b>10-04-03151</b>	Solvent Filter, 1/8", 10µm, 4/Pk	WAT025531

For additional filtration configurations, see page 23 for solvent reservoir filters.

## INLET MANIFOLD PARTS &amp; PRIMING ACCESSORIES

<b>Part No</b>	<b>Description</b>	<b>OEM #</b>
<b>39-31-01171</b>	Optimize Safety Syringe (for pump priming)	WAT027629
<b>39-31-01147</b>	Needle with Nut & Ferrule	WAT025559
<b>39-31-01151</b>	Priming Syringe Kit	

Includes Priming Syringe, Needle, Nut & Ferrule