



BELLCO
GLASS, INC

BELLCO BIOREACTORS

TECHNOLOGY CATALOG



DESIGNED FOR HOW YOU WORK

MADE IN ★ ★ ★
USA — — —

3L Metric Bioreactor & Fermenter Systems	57
7L Metric Bioreactor & Fermenter	58
15L Metric Bioreactor & Fermenter	59

BIOREACTOR 60

Single CellTrol pH DO Temperature	60
Dual CellTrol pH DO Temperature	60
CellTrol Speed Control Box Tethered	61
Low Speed CellTrol Motor 10L 115v	61
CellTrol Drive Stem	61
CellTrol Foam Probe Cable	61
CellTrol Motor 115v	61
CellTrol Drive Stem	61
CellTrol Speed Cable Over Head Drive 115v	61
Large Flange Omni Vessels	
5L-36L Flat & Round Bottom	62
Flask Carrier	62
Large Flange Vessel Stand 5L – 36L	62
Cooling Valve	62
Bioreactor Stand with Bolts	63
Metric Bioreactor Stand	63
Bioreactor Vessel	63
Water Jacketed Bioreactor Vessel	63
Bioreactor Heating Blanket	64
Bellco Heating Blanket	64
Valley Instruments Heating Blankets	64
Heat Coil	65
Stainless Steel Bioreactor Headplate	65
Large Flange Headplate Assembly	65
Metric Headplate	66
Headplate Bioreactor Stand Setup	66
LH Pitch Blade Impeller	66
Silicone Headplate O-Ring	66
RH Pitch Blade Impeller	67
Round Bottom Marine Impeller	67
Rushton Impeller Assembly	67
Vertical Disk Impeller	67
Stainless Steel Hi-Torq Over Head Drive Impeller	
Full & Short Width	68
Stainless Steel Marine Shaft with Clip	69
Stainless Steel Pitch Blade Impeller 7L	69



Low Profile Stainless Steel Impeller 3L Impeller 7L	69
4 Marine Prop with 1/2" Bore Impeller 7L	69
Pump Drive	69
Easy Pump Head Only	70
Air Supply Pump 115v Impeller 7L	70
Masterflex Low Speed Peristaltic Pump	70
Broadley James pH Probe with HP Cable	71
Broadley James pH Fermprobe®	71
Broadley James OxyProbe DO Probe	72
Broadley James D4 Lemo DO Probe Cable	72
Mettler Ingold pH Probe & Cable	73
Mettler Ingold pH Probe with VP Connector	73
Mettler Ingold DO Probe PTFE	73
Mettler Ingold DO Probe PTFE with VP Connector	74
Foam Probe Fitting	74
PTFE Ferule for Foam Probe	74
Foam Level Cable	74
CellTrol Foam Probe Cable	74
Hamilton EasyFerm pH Probe with VP Connector	75
Hamilton Oxyferm polarographic DO Probe	
Only with VP Connector	75
Foam Level Probe	75
Hamilton Do Probe Membrane Kit	75
Stainless Steel Probe Adapter Extension	76
Probe Holder	76
Stainless Steel Probe Cap-Seal with PTFE IOB	76
DO Polarizer Station	77

Continued on page 56

Continued from page 55

DO Tester Cable.....	77
Probe Replacement (Inner Body) New Style Probes	77
Glass Probe Chamber.....	77

BIOREACTOR KITS & ACCESSORIES

78

O-Ring Replacement Kit.....	78
BCS Starter Kit	78
DO & pH Simulator Kit	78
DO Membrane Kit.....	78
Gas Liquid Addition Assembly.....	79
Glass Filter Tube Assembly.....	79
Coldfinger Assembly.....	79
Cooling Finger Assembly.....	79
Triple & Quad Universal Addition Assembly	80
Baffle Assembly	80
Stainless Steel Removable Baffle.....	80
Large Flange Omni Paddle.....	81
Large Flange Z/Z Paddle.....	81
Large Flange Stainless Steel CIAMP.....	81
Large Flange O-Ring Only	81
Flange Gasket for Bioreactor Vessels.....	81
Compression Fittings.....	82
Large Flange Drive Adapter.....	82
Bellco Control System, Flat Bottom.....	82
RTD Temperature Sensor with Cable	83
Stainless Steel Weight Platform	83

Metric Drive Stem Assembly	83
Over Head Drive Metric Drive Stem Assembly.....	84
Metric Condenser Assembly.....	84
Vertical Sidearm Sample System	84
Acrodisc Filter.....	84
Stainless Steel Straight Harvesting Pipe Assembly.....	85
Angled Harvest Pipe Assembly	85
Straight Sample Pipe Assembly	85
Angled Sample Pipe Assembly.....	85
Anti Foam Level Probe Assembly	86
Cable Ties	86
Additional Vent Pipe Assembly	86
Adjusted Sample 1/8"	86
Pipe Assembly	86
Hi-Torque Over Head Drive Adapter	86
Pressure Relief Valve	87
Stainless Steel Fitting with Cap.....	87
Bioreactor Hose Barb Assembly	87
Stainless Steel Shaft Assembly.....	88
Aseptic Sampler System.....	88
STD Over Head Drive	88
Adapter	88

FLOOR EQUIPMENT

89

3L METRIC BIOREACTOR & FERMENTER SYSTEMS

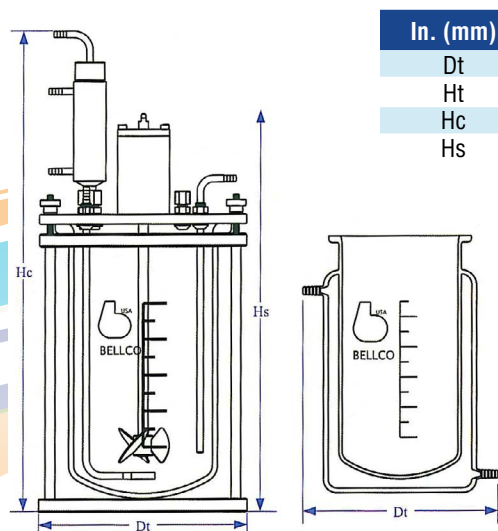
Key Features & Benefits

No thread head plate ports:	Sanitary design
Ring and tripod stand design:	Very Stable
Ample headplate ports:	Flexible configurations
Superior single mechanical seal:	Simple to maintain
High quality FDA approved materials:	Sanitary and long life
Custom headplate & vessel configurations:	Flexible design
High-speed & torque motor:	Ideal for all applications
Standard vessel geometries:	Optimizes mixing & scaling
Numerous accessories available:	Ideal for all cell cultures

Specifications:

- Total Volume: 3.6L
- Working Volume: 2L @ H/D=1, 2.8L @ H/D=1.5
- Minimum Volume: 0.7L
- Jacketed Vessel: Hose barb w/ 4mm ID x 12mm OD
- Stainless Steel: 316L Electropolished Finish of Ra 32 μ inch
- Stand: Aluminum / Stainless
- Glass: Type 1 Class A Borosilicate Glass
- Heating Blanket: 5"x20" (127mm x 508mm) 120W, Male IEC Plug
- Elastomers: Silicone, meets 21 CFR 177.2600
- Ports: 3ports-6mm 9ports-10mm 6ports-18mm 1-center port for drive shaft
- Seal Type: Single mechanical
- Graduations: 5mL to 2.5L in 500mL increments

Quotations for bioreactor systems are provided upon request. Contact cservice@bellcoglass.com or your local Bellco sales representative.



In. (mm)	Single Wall	Jacketed
Dt	8.0 (203.2)	9.5 (240.0)
Ht	24.1 (612.2)	24.3 (617.4)
Hc	18.4 (468.1)	18.7 (476.6)
Hs	15.4 (390.2)	15.6 (395.5)

3L System for Mammalian Cell Culture & Fermentation

Item Number	Description
7909-10003	3L Glass Vessel
7909-11003	3L Jacketed Glass Vessel
7909-30000	3L Head Plate
7909-00003	Drive Seal Assembly 3/4" Shaft
7909-00005	Rushton Impeller 2"
7909-00016	Pitch Blade Impeller 2" RH
7909-00032	Pitch Blade Impeller 2" LH
7909-10001	Marine Impeller 3" LH
7909-10002	Marine Impeller 3" RH
7909-00019	Bioreactor Stand
7909-00004	Split Flange Ring Stand (for jacketed vessel)
7909-00001	DO & pH Probe Holder
7909-00002	Septum Assembly 13mm
7909-00006	3 Port Inlet Assembly
7909-00008	Condenser
7909-00009	Large Harvest Pipe Angled
7909-00011	Cooling Finger
7909-00012	Sample System 1/2"
7909-00014	Adjustable Pipe Holder 1/4"
7909-00018	Adjustable Compression Fitting 1/8"
7909-00020	Harvest Pipe, Straight
7909-00021	Thermowell
7909-00022	Baffle Assembly
7909-00023	Harvest Pipe Angled
7909-00024	Sparger Pipe w/ Stainless Steel Frit
7909-00025	Sparger Pipe w/ .404" Holes
7909-00026	Sample Pipe Angled
7909-00027	Sample Pipe Straight
7909-00028	Addition / Vent Port
7909-00030	Adjustable Pipe Holder 12mm
7909-00057	6mm Port Plug
7909-00058	10mm Port Plug
7909-00059	18mm Port Plug
7909-00060	Liquid Addition Assembly
7909-00086	Level / Foam Probe Assembly
1964-10000	Head Plate Setup Stand
7909-23115	Heating Blanket 115v
7909-23230	Heating Blanket 230v
A555-59	# 359 Silicone Headplate O-Ring

7L System for Mammalian Cell Culture & Fermentation

Item Number	Description
7909-10007	7L Glass Vessel
7909-11007	7L Jacketed Glass Vessel
7909-70000	7L Headplate
7909-07004	Drive Seal Assembly
7909-00040	Rushton Impeller 2.5"
7909-00033	Pitch Blade Impeller 2.75" RH
7909-00034	Pitch Blade Impeller 2.75" LH
7909-10001	Marine Impeller 3" LH
7909-10002	Marine Impeller 3" RH
7909-00043	Bioreactor Stand
7909-00044	Split Flange Ring (for jacketed vessel)
7909-00001	DO and pH Probe Holder
7909-00002	Septum Assembly 13mm
7909-00006	Inlet Assembly 3 Port
7909-00047	Condenser
7909-00101	Large Harvest Pipe Angled
7909-00036	Cooling Finger
7909-00012	Sample System
7909-00014	Adjustable Pipe Holder ¼"
7909-00018	Adjustable Pipe Holder ⅛"
7909-00035	Harvest Pipe Straight
7909-00041	Thermowell
7909-00039	Baffle Assembly
7909-00073	Harvest Pipe Angled
7909-00045	Sparger Pipe w/ Stainless Steel Frit
7909-00046	Sparger Pipe w/ .040" Holes
7909-00048	Sample Pipe Angled
7909-00072	Sample Pipe Straight
7909-00028	Addition / Vent Port
7909-00030	Adjustable Pipe Holder 12mm
7909-00058	10mm Port Plug
7909-00059	18mm Port Plug
7909-00060	Liquid Addition Assembly
7909-00102	Level / Foam Assembly
1964-10000	Headplate Setup Stand
7909-27115	Heating Blanket 115v
7909-27230	Heating Blanket 230v
A555-269	#442 Silicone Headplate O-Ring

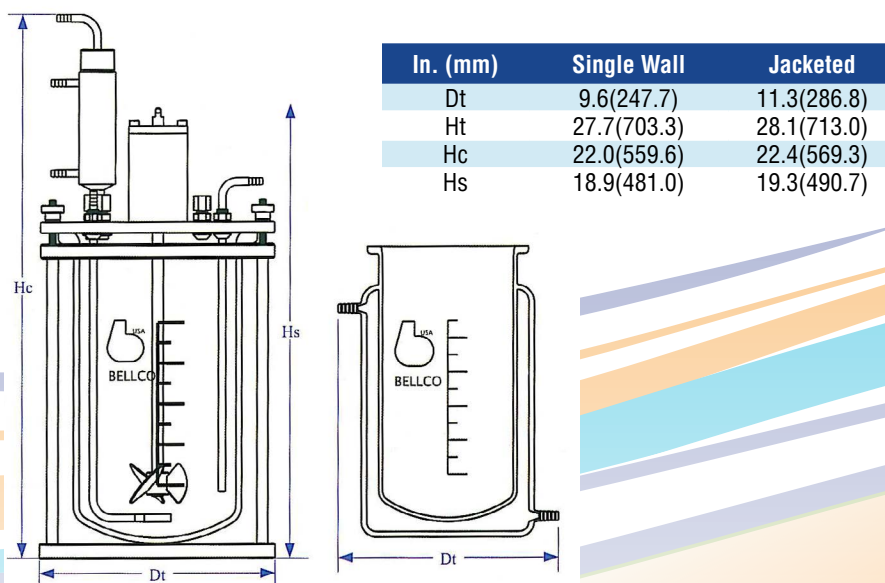
7L METRIC BIOREACTOR & FERMENTER

Key Features & Benefits	
No thread head plate ports:	Sanitary design
Ring and tripod stand design:	Very Stable
Ample headplate ports:	Flexible configurations
Superior single mechanical seal:	Simple to maintain
High quality FDA approved materials:	Sanitary and long life
Custom headplate & vessel configurations:	Flexible design
Standard vessel geometries:	Optimizes mixing & scaling

Specifications:

- Total Volume: 7.7L
- Working Volume: 5L @ H/
D=1.3
- Minimum Volume: 1L
- Jacketed Vessel: Hose barb
w/ 4mm ID x 12mm OD
- Stainless Steel: 316L
Electropolished Finish of Ra
32μ inch
- Stand: Aluminum rings with
stainless steel legs
- Glass: Type 1 Class A
Borosilicate Glass
- Heating Blanket: 7.25" x
24.25" (184mm x 616mm)
225W
- Elastomers: Silicone, meets
21 CFR 177.2600
- Ports: 10ports @ 10mm
8ports @ 18mm 1-center
port for drive shaft
- Seal Type: Single mechanical
- Graduations: 1L to 5.5L in
500mL increments

Quotations for bioreactor systems are provided upon request.
Contact cservice@bellcoglass.com or your local Bellco
sales representative.



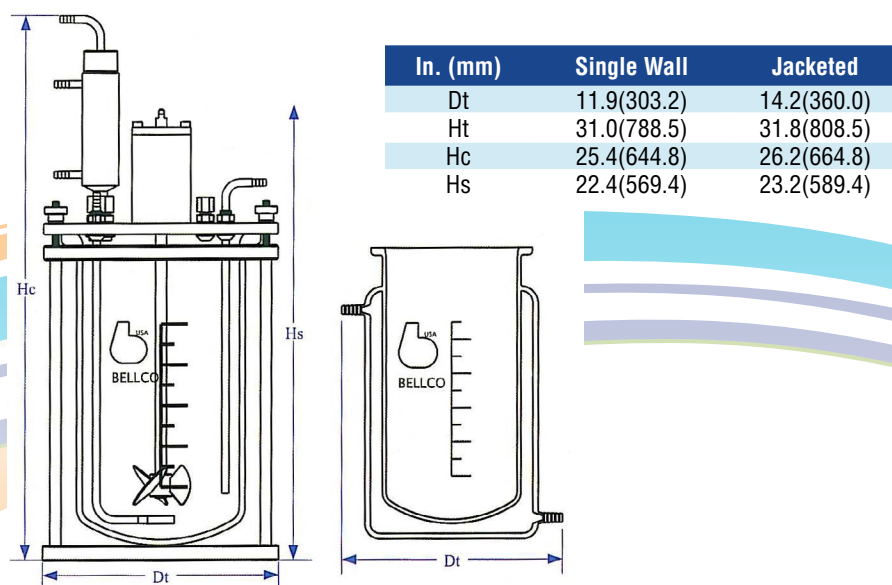
15L METRIC BIOREACTOR & FERMENTER

Key Features & Benefits	
No thread head plate ports:	Sanitary design
Ring and tripod stand design:	Very Stable
Ample headplate ports:	Flexible configurations
Superior single mechanical seal:	Simple to maintain
High quality FDA approved materials:	Sanitary and long life
Custom headplate & vessel configurations:	Flexible design
Standard vessel geometries:	Optimizes mixing & scaling

Specifications:

- Total Volume: 16.2L
- Working Volume: 10L @ H/
D=1.2
- Minimum Volume: 1.5L
- Jacketed Vessel: Hose barb
w/ 6mm ID x 12mm OD
- Stainless Steel: 316L
Electropolished Finish of Ra
32 μ inch
- Stand: Aluminum rings with
stainless steel legs
- Glass: Type 1 Class A
Borosilicate Glass
- Heating Blanket: 9" x 31.75"
(228.6mm x 806mm) 385W
- Elastomers: Silicone, meets
21 CFR 177.2600
- Ports: 12ports @ 10mm
8ports @ 18mm 1-center
port for drive shaft
- Seal Type: Single mechanical
- Graduations: 2L to 11L in 1L
increments

Quotations for bioreactor systems are provided upon request.
Contact cservice@bellcoglass.com or your local Bellco
sales representative.



15L System for Mammalian Cell Culture & Fermentation

Item Number	Description
7909-10015	15L Glass Vessel
7909-11015	15L Jacketed Glass Vessel
7909-15000	15L Headplate
7909-15051	Drive Seal Assembly
7909-15054	Rushton Impeller 3"
7909-15105	Pitch Blade Impeller 3.5" RH
7909-15106	Pitch Blade Impeller 3.55" LH
7909-10001	Marine Impeller 4" LH
7909-10002	Marine Impeller 4" RH
7909-00043	Bioreactor Stand
7909-00044	Split Flange Ring (for jacketed vessel)
7909-00001	DO and pH Probe Holder
7909-00002	Septum Assembly 13mm
7909-00006	Triple Inlet Assembly 3 Port
7909-15081	Condenser
7909-15091	Large Harvest Pipe Angled
7909-15007	Cooling Coil
7909-00012	Sample System
7909-00014	Adjustable Pipe Holder 1/4"
7909-15114	Adjustable Pipe Holder 1/8"
7909-15113	Harvest Pipe Straight
7909-15089	Thermowell
7909-15077	Baffle Assembly
7909-15090	Harvest Pipe Angled
7909-15052	Sparger Pipe w/ Stainless Steel Frit
7909-15053	Sparger Pipe w/ .040" Holes
7909-15006	Ring Sparger
7909-15108	Sample Pipe Angled
7909-15109	Sample Pipe Straight
7909-00028	Addition / Vent Port
7909-15110	Addition / Vent Port Large
7909-00030	Adjustable Pipe Holder 12mm
7909-00058	10mm Port Plug
7909-00059	18mm Port Plug
7909-00060	Liquid Addition Assembly
7909-15111	Level / Foam Assembly
1964-10000	Headplate Setup Stand
7909-25115	Heating Blanket 115v
7909-25230	Heating Blanket 230v
A555-376	#448 Silicone Headplate O-Ring

SINGLE CELLTROL PH DO TEMPERATURE

The CellTrol II can be configured to accept a variety of analog probe signals from a cell culture vessel. Standard signals include pH, dissolved oxygen, temperature, weight, redox, and tachometer feedback from the agitator. A digital input signal from a level probe can be used for anti-foam addition for level control.

The CellTrol II control module monitors bioreactor process valves and performs PLC (Allen-Bradley Programmable Logic Controller) based process control. A touch screen operator interface provides access to all based PLC control functions and allows viewing and modification of control parameters.

PLC control drives the inc/dec outlets assigned to each channel as well as to pumps mounted on the front of the unit. The pump assignments are user defined from the operator interface. Cell-Soft Software are also available, optional tethered speed drive, optional single support flow station and weight platforms are sold separately.

Item Number	Size	Case Qty
7804-11002	2 pumps	1
7804-11004	4 pumps	1
7804-11012	2 pumps	1
7804-11014	4 pumps	1
7805-11102	2 pumps	1
7805-11104	4 pumps	1
7805-11112	2 pumps	1
7805-11114	4 pumps	1

DUAL CELLTROL PH DO TEMPERATURE

The CellTrol II control module monitors bioreactors process values and performs PLC (Allen-Bradley Programmable Logic Controller) based process control.

A touch screen operator interface provides access to all PLC based control functions and allows viewing and modification of control parameters. Signals types include temperature, pH, DO, speed, and foam/level.

PLC control drives the inc/dec outlets assigned to each channel as well as to pumps mounted on the front of the unit. The pump assignments are user defined from the operator interface. Cell-Soft Software are also available. Optional tethered speed drive, optional single support flow station and weight platforms are sold separately.

Item Number	Description	Size	Case Qty
7804-80200	—	2 pumps	1
7804-80420	—	4 pumps	1
7804-82200	—	2 pumps	1
7804-82224	For OHD Vessel	4 pumps	1
7804-82260	Foam 6 Pumps / No Weight	6 pumps	1
7804-82262	Foam 4 Pumps	4 pumps	1
7804-82400	Foam 4 Pumps	4 pumps	1
7805-20400	SP 4 Pumps	4 pumps	1
7805-20420	SP 4 Pumps, 2 Weight	4 pumps	1
7805-20620	SP 6 Pumps, 2 Weight	6 pumps	1
7805-22622	SP/FO 6 Pumps, 2 Weight	6 pumps	1

BIOREACTOR

CELLTROL SPEED CONTROL BOX TETHERED

7764-70300



Item Number	Description	Size	Case Qty
7805-01917	Manufactured from stainless steel Digital tech input 0-36 VDC power @ 15a 6' cable interface to CellTrol II"	12x12x16"	1

CELLTROL MOTOR 115V

Item Number	Size	Case Qty
7764-70300	115v	1

LOW SPEED CELLTROL MOTOR 10L 115V

Item Number	Size	Case Qty
7764-70400	115v	1

7764-77000

7764-73100



CELLTROL DRIVE STEM

Item Number	Description	Case Qty
7764-73100	CellTrol drive stem for 3L bioreactor	1
7764-77000	CellTrol drive stem for 7L bioreactor	1

CELLTROL DRIVE STEM

Item Number	Description	Size	Case Qty
7803-21600	Male end connector:6p Female end connector:6p Line cord: 20 awg type cl2 (ul) 300v"	6"	1

CELLTROL FOAM PROBE CABLE

Item Number	Size	Case Qty
7803-41655	10"	1

7805-80000



CELLTROL SPEED CABLE OVER HEAD DRIVE 115V

Item Number	Description	Case Qty
7805-80000	Cable used with over head drive that is compatible with the CellTrol II that has speed capability. Cable is included with the over head drive.	1

LARGE FLANGE OMNI VESSELS 5L-36L FLAT & ROUND BOTTOM

Heavy walled construction for cell culture and fermentation applications. Heavy duty O-Ring flange creates positive seal. For use with stainless steel headplate, O-Ring, and locking clamp.

1964-88050



Item Number	Description	Size	Case Qty
1964-88050	5L Flat Bottom	215x250mm	1
1964-88080	8L Flat Bottom	238x400mm	1
1964-88150	15L Flat Bottom	292x440mm	1
1964-88360	36L Flat Bottom	410x515mm	1
1964-88405	5L Round Bottom	215x300mm	1
1964-88408	8L Round Bottom	238x445mm	1
1964-88415	15L Round Bottom	292x500mm	1
1964-88436	36L Round Bottom	410x550mm	1

FLASK CARRIER

Stainless steel bottom base for extra strength includes four rubber feet for added stability. Carriers are dishwasher and oven safe. For use with 6L or 9L vessels or carboys.

7669-06000



Item Number	Description	Size	Case Qty
7669-06000	stainless steel	9x8" 6L	1
7669-08000	stainless steel	10 3/4" x9" 8L	1
7669-15000	stainless steel	2x11" 15L	1
7669-36000	stainless steel	17X13" 36L"	1

LARGE FLANGE VESSEL STAND 5L - 36L

Stainless steel stand for round bottom large flange omni vessels

7669-00005



Item Number	Description	Size	Case Qty
7669-00005	5L Omni Vessels	16.5x12"	1
7669-00008	8L Omni Vessels	18x14"	1
7669-00015	15L Omni Vessels	19.5x14"	1
7669-00036	36L Omni Vessels	24x14"	1

- Heavy duty 316L stainless with locking clamp
- Silicone cushion protects glass vessel
- Four legs provides stability

COOLING VALVE

Supplied with:

- Plastic hose connector (1 per valve)
- Push fitting (1 per valve)
- M3 x 5 screw & #5 int.
- Lock-washer (2 per valve)
- (1) Stainless Steel base plate
- (4) Rubber feet
- (1) Solenoid valve sub-assembly

7808-01001



Item Number	Size	Case Qty
7808-01001	115v	1
7808-01002	115v	1
7808-01003	115v	1
7808-02001	230v	1
7808-02002	230v	1
7808-02003	230v	1

BIOREACTOR

BIOREACTOR STAND WITH BOLTS

Vessel stand for 1964 series. Large flange omni vessel with round bottom.

7669-00003



Item Number	Description	Case Qty
7669-00003	Bioreactor Stand with 6 Bolts for 3L bioreactor	1
7669-00007	Bioreactor Stand with 6 Bolts for 7L bioreactor	1
7669-00010	10L Bioreactor Stand	1

METRIC BIOREACTOR STAND

Vessel stand for water jacketed metric bioreactor vessel has unique split ring design to fit around jacket and hose barbs. Manufactured from aluminum and stainless steel for durability and ease of cleaning. Bottom ring insures stability of vessel during operation.

7909-00043



Item Number	Description	Size	Case Qty
7909-00019	3L	10 7/8"	1
7909-00043	7L	-	1
7909-15088	15L	12 3/8"	1

BIOREACTOR VESSEL

Round bottom bioreactor vessel is manufactured of Type 1 Class A Borosilicate Glass. Graduations are 500mL to 2500mL every 500mL.

7909-10003



Item Number	Description	Size	Case Qty
7909-10003	3L	145x267mm	1
7909-10007	7L	180x355mm	1
7909-10015	15L	240x445mm	1

WATER JACKETED BIOREACTOR VESSEL

- Round bottom bioreactor vessel is manufactured of Type 1 Class A Borosilicate Glass
- Graduations are 500mL to 2500mL every 500mL
- Full range of accessories are available for this vessel

7909-11003



Item Number	Description	Size	Case Qty
7909-11003	3L	145x267mm	1
7909-11007	7L	225x375mm	1
7909-11015	15L	300x415mm	1

BIOREACTOR

BIOREACTOR HEATING BLANKET

The blanket has velcro closures for easy setup and a 6 power cable with IEC 60320 C14 plug.

7909-23115



BELLCO HEATING BLANKET

Male IEC connector for use with temperature controller and RTD sensor. Heating at 5 watts per square inch.

1964-55005



VALLEY INSTRUMENTS HEATING BLANKETS

Heating Blankets are designed to be used with a temperature controller and RTD temperature sensor for heating media inside a vessel to temperature.

1964-51007



Item Number	Description	Case Qty
7909-23115	3L Heating Blanket, 115V Bioreactor	1
7909-23230	3L Heating Blanket 230V Bioreactor	1
7909-25115	15L Heating Blanket 115V Bioreactor	1
7909-25230	15L Heating Blanket 230V Bioreactor	1
7909-27115	7L Heating Blanket 115V Bioreactor	1

Item Number	Description	Size	Case Qty
1964-55005	115v 500mL 50 watts	1x10.5"	1
1964-55010	115v 1L 75 watts	1x14"	1
1964-55030	115v 3L 150 watts	2x17.5"	1
1964-55060	115v 6L 300 watts	3x22"	1
1964-55080	115v 8L 375 watts	3x26.5"	1
1964-55150	115v 15L 750 watts	5x33"	1
1964-55360	115v 36L 1200 watts	5x48"	1
1964-56005	230v 500mL 50 watts	1x10.5"	1
1964-56010	230v 1L 75 watts	1x14"	1
1964-56030	230v 3L 150 watts	2x17.5"	1
1964-56060	230v 6L 300 watts	3x22"	1
1964-56080	230v 8L 375 watts	3x26.5"	1
1964-56150	230v 15L 750 watts	5x33"	1
1964-56360	230v 36L 1200 watts	5x48"	1
1964-57150	115v 15L 325 watts	5x33"	1
1964-57360	115v 36L 375 watts	5x48"	1
1964-57365	115v 36L 600 watts	5x48"	1
1964-58150	230v 15L 325 watts	5x33"	1
1964-58360	230v 36L 375 watts	5x48"	1
1964-58365	230v 36L 600 watts	5x48"	1

Item Number	Watts	Size	Case Qty
1964-51005	50	10 1/2" x 1 1/2"	1
1964-51007	180	22" x 2"	1
1964-51010	75	13 3/4" x 1 1/2"	1
1964-51030	150	17 1/2" x 2"	1
1964-51040	190	26 1/2" x 2"	1
1964-51060	300	22" x 3"	1
1964-51080	375	26 1/2" x 3"	1
1964-51360	1200	48" x 5"	1

HEAT COIL

Heating and cooling coils are used for cell culture temperature manipulation within the bioreactor vessel. Must be hooked up to a water circulating mechanism for heating or cooling.

Item Number	Description	Size	Case Qty
1964-50115	Heating and Cooling Coils 15L 316L Electropolished Stainless Steel. For cell culture temperature manipulation. OD X OAL: 3 1/4 X 16 1/2" #Turns: 5 1/2 Fits 100mm cap assembly or large flange headplate	3 1/4 x 16 1/2"	1
1964-50136	Heating and Cooling Coils 36L 316L Electropolished Stainless Steel. For cell culture temperature manipulation. OD X OAL: 3 1/4 X 22" #Turns: 5 1/2 Fits 100mm Cap assembly or large flange headplate	3 1/4 x 22"	1

STAINLESS STEEL BIOREACTOR HEADPLATE

Manufactured from 316L stainless steel with RA 32 finish or better inside and out. Fittings are sold separately as part of the system.

1964-88503

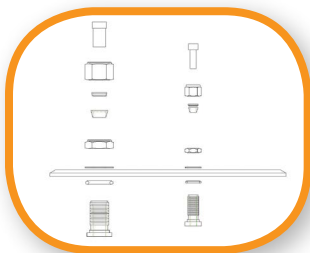


Item Number	Description	Case Qty
1964-88503	3L	1
1964-88507	7L	1

LARGE FLANGE HEADPLATE ASSEMBLY

Universal headplates can fit 5L to 36L vessels. Headplates are used with the large flange vessel to seal and to provide ports for access to the interior of the vessel. The 18-port headplate is most used since more components can be fitted into its ports. The impeller is always positioned in the center drive port and a variety of components, probes, harvesting tubes, and thermowells can be added as needed. Headplates and all stainless steel components of the bioreactor systems are electropolished to seal the surface against bacterial contamination that might occur with a rough surface. Includes red silicone O-Ring and 200mm t-bolt clamp.

1964-88505 Model



Item Number	Description	Case Qty
1964-88505	10 Holes 6@ 1/4" od 4@ 1/2" od 1 center for drive motor 1964-90115 1/4" compression fitting 1964-90120 1/2" compression fitting 1964-90125 5/16" compression fitting (Thermowell) O-Ring replacements (per mg 9/16) A554-30 6 each A554-42 4 each A554-13 1 each	1
1964-88510	18 Holes 6@ 1/4" od 4@ 1/2" od 1 center for drive motor 1964-90115 1/4" compression fitting 1964-90120 1/2" compression fitting 1964-90125 5/16" compression fitting (Thermowell) O-Ring replacements (per mg 9/16) A554-30 6 each A554-42 4 each A554-13 1 each	1

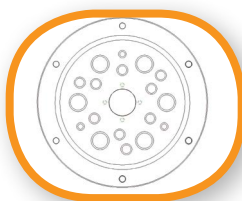
- 200mm large flange headplate 10-port

BIOREACTOR

METRIC HEADPLATE

- Material: 316L stainless steel
- Top finish: 400 mirror polish
- Bottom finish: RA32 electropolish
- Dimensions: 12" OD x 3/8" thick
- Number of holes: 20
- Hole design:

7909-30000
Model



Item Number	Description	Size	Case Qty
7909-30000	Metric Head Plate 3L	8x3/8"	1
7909-70000	Metric Head Plate 7L	9 3/4x 3/8"	1
7909-15000	Metric Head Plate 15L 20 Holes	12x3/8"	1

- 10mm hole: 12
- 18mm hole: 8
- Supply with a 555-376 – #448 O-Ring

HEADPLATE BIOREACTOR STAND SETUP

Headplate setup stand is for hands-free assembly of bioreactor headplates.

Manufactured from aluminum and measures 8"x8"x3" assembled. Headplate is inserted into the slot on the stand and secured into place with thumbscrews. It holds any headplate up to 6mm thick.

1964-10000



Item Number	Description	Size
1964-10000	Material: Aluminum	Size: 8"x8"x3"

1964-88803



1964-88810



SILICONE HEADPLATE O-RING

- Material: red silicone rubber
- Dimensions: OD x ID: 5.762"x 0.139" thick

Item Number	Description	Size	Case Qty
1964-88803	for 3L bioreactor systems	#254	1
1964-88807	for 7L bioreactor systems.	#264	1
1964-88810	for 10L bioreactor systems.	#274	1

LH PITCH BLADE IMPELLER

Stainless steel pitch blade impeller with left hand oriented blades 2"OD. Assemble one or more impellers into 3L – 15L drive shaft for mammalian cell culture.

7909-00032



Item Number	Description	Size	Case Qty
7909-00032	3L	2"	1
7909-00034	7L	2 3/4"	1
7909-15106	15L	3 1/2"	1

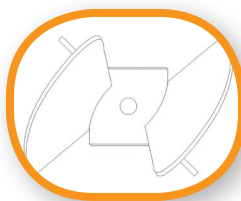
BIOREACTOR

RH PITCH BLADE IMPELLER

Stainless Steel pitched blade impeller with right hand oriented blades.

- Assemble one or more impellers onto 3L-15L drive shaft for mammalian cell culture
- 316L stainless steel construction

7909-00016
Model



Item Number	Description	Size	Case Qty
7909-00016	3L	2"	1
7909-00033	7L	2 ¾"	1
7909-15105	15L	3 ½"	1

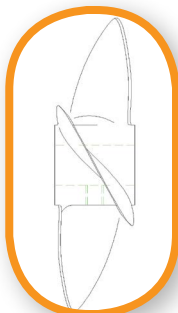
- RA finish 32 micro inch or better

ROUND BOTTOM MARINE IMPELLER

1964-73005

316L Stainless Steel Marine Impeller Complete for Round Bottom Vessels.

- Stainless steel 4" OD right hand pitch marine prop and e-clip
- Material: 316L stainless steel with electropolish finish
- For round bottom omni vessel (1964-88405)
- Need large flange head plate, over head drive motor



Item Number	Description	Size	Case Qty
1964-73005	Dimensions: 1/2" od x 7 1/2" long	½ x 7 ½"	1
1964-73008	Dimensions: 1/2" od x 12 1/2" long Size: 8L	½ x 12 ½"	1
1964-73015	Dimensions: 1/2" od x 14 1/2" long	½ x 14 ½"	1
1964-73036	Dimensions: 1/2" od x 16 1/2" long Size: 36L"	½" x 16 ½"	1
7764-76215	Shaft: 14 1/2"	½ x 14 ½"	1

RUSHTON IMPELLER ASSEMBLY

7909-00040

Rushton impeller 2"OD with 6 vertical blades

equally spaced around the center hub. Manufactured

from stainless steel and designed for high speed fermentation protocols. Assembled onto 3L metric bioreactor drive stem.



Item Number	Description	Size	Case Qty
7909-00005	3L	2" x .7031"	1
7909-00040	7L	2.5"	1
7909-15054	15L	3"	1

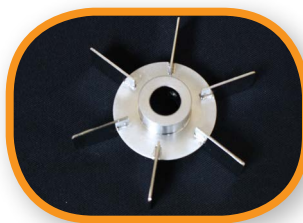
VERTICAL DISK IMPELLER

1964-02100

- For bioreactor systems

- English threads

- Material: 316L Stainless Steel with electropolish finish



1964-02300



Item Number	Description	Size	Case Qty
1964-02080	Vertical Disk Impeller 3L 2 1/4"	2 ¼"	1
1964-02100	Stainless Steel Vertical Disk Impeller 10L	3 ¼"	1
1964-02300	Vertical Disk Impeller 7L	2 ¾"	1

STAINLESS STEEL HI-TORQ OVER HEAD DRIVE IMPELLER FULL & SHORT WIDTH

- Material: 316L stainless steel RA 32 finish or better inside and out
- Includes: dust shield, impeller shaft folding paddle
- Locking ring secures paddle in horizontal position

Item Number	Description	Size	Case Qty
1964-74008	8L Full Width	3 x 8"	1
1964-74015	15L Full Width	3 x 9"	1
1964-74036	36L Full Width	3 x 14"	1
1964-74108	8L Short Width	3 x 6"	1
1964-74115	15L Short Width	3 x 7 ½"	1
1964-74136	36L Short Width	3 x 12"	1

1964-74008



1964-74015



1964-74036



1964-74108



1964-60003

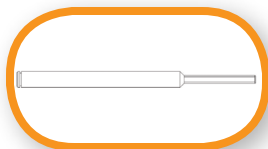


1964-60036



Item Number	Description	Size	Case Qty
1964-60003	Assembly 3L Full Width	3 x 5 ¼"	1
1964-60006	Assembly 6L Full Width	3 x 6 ¾"	1
1964-60008	Assembly 8L Full Width	3 x 8"	1
1964-60015	Assembly 15L Full Width	3 x 9"	1
1964-60036	Assembly 36L Full Width	3 x 14"	1
1964-60106	Assembly 6L Short Width	3 x 5 ¼"	1
1964-60108	Assembly 8L Short Width	3 x 6"	1
1964-60115	Assembly 15L Short Width	3 x 7 ½"	1
1964-60136	Assembly 36L Short Width	3 x 12"	1

7764-76205
Model



STAINLESS STEEL MARINE SHAFT WITH CLIP

- Manufactured from 316L stainless steel with electropolish finish.

- Includes: e-clip for mounting marine prop (1964-73000)

Item Number	Description	Size	Case Qty
7764-76205	Only 5L with Clip	½ x 7 ½"	1
7764-76208	Only 8L with Clip	½ x 12 ½"	1
7764-76215	Only 15L with Clip	½ x 14 ½"	1
7764-76236	Only 36L with Clip	½ x 16 ½"	1

1964-02310



STAINLESS STEEL PITCH BLADE IMPELLER 7L

- 316L Stainless Steel
- Ra 32 finish or better

Item Number	Case Qty
1964-02310	1

1964-03401

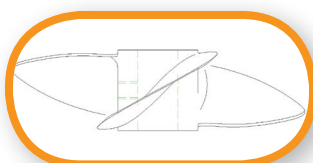


LOW PROFILE STAINLESS STEEL IMPELLER 3L IMPELLER 7L

- Stainless steel 3L low profile impeller assembly
- for low profile OHD vessel
- Material: SST 316L
- Electropolished finish, Ra 32 or better
- Fully assembled

Item Number	Size	Case Qty
1964-03401	Paddle dimensions 2" t x 5 1/4" w	1

1964-73000



4 MARINE PROP WITH 1/2" BORE IMPELLER 7L

4" OD 316L Stainless Steel, Ra 32 finish or better

Item Number	Size	Case Qty
1964-73000	4"	1

7807-11512



PUMP DRIVE

Must order the pump head to complete (7807-10000)

Item Number	Description	Size	Case Qty
7807-11501	Pump Drive Only 1rpm 115v	6 x 4 x 4.4"	1
7807-11506	Pump Drive Only 6rpm 115v	6 x 4 x 4.4"	1
7807-11512	Pump Drive Only 12rpm 115v	6 x 4 x 4.4"	1
7807-23001	Pump Drive Only 1rpm 230v	6 x 4 x 4.4"	1
7807-23005	Pump Drive Only 5rpm 230v	6 x 4 x 4.4"	1
7807-23010	Pump Drive Only 10rpm 230v	6 x 4 x 4.4"	1

BIOREACTOR

EASY PUMP HEAD ONLY

Masterflex pump is used with bioreactor or spinner flasks to add or withdraw fluids. It is a small compact and stackable power indicator.

Includes pump head (7807-10000) and pump drive (7807-11501).

Head accepts 13, 14, 16, 17, 18 and 25ft tubing.

- 6 pump drives to choose from
- 115v choices: 1, 6, 12rpm (see 7807-11501, 11506, 11512)
- 230v choices: 1, 5, 10rpm (see 7807-23001, 23005, 23010)
- Pump material: Polysulfone (PSU)
- Roller/bearing materials: cold rolled steel (crs)
- Occulsion: fixed
- Shaft length: short
- Operating temperature: 32°F to 104°F (0°C to 40°C)
- Humidity: 0 to 90% (non-condensing)
- Number of rollers: 3
- Max pump speed (rpm): 600
- Nominal torque load-running: up to 90 oz-in (6.5 kg-cm)

- Dimensions: (wxhxd); 4 9/16" x 4" x 2 3/16" (operating), 4 9/16" x 5 13/16" x 2 13/16" (open)
- Weight: 1lb (0.45kg)
- Typical flow, pressure
- Tubing size flow rate discharge pressure

.....			
@1rpm ml/Rev Contin.psig (bar) interm. psig (bar)			
13	0.06	25 (1.7)	40 (2.7)
14	0.21	25 (1.7)	40 (2.7)
16	0.80	25 (1.7)	40 (2.7)
25	1.7	20 (1.4)	35 (2.4)
17	2.8	15 (1.0)	20 (1.4)
18	3.8	10 (1.0)	15 (1.4)
15	1.7	25 (1.7)	40 (2.7)
24	2.8	25 (1.7)	40 (2.7)"

Item Number	Case Qty
7807-10000	1

AIR SUPPLY PUMP 115V IMPELLER 7L

The Bellco air supply pump is suitable to maintain two chambers. It supplies filtered air to CO2 incubators.

7725-00120



Item Number	Size	Case Qty
7725-00120	5 1/2 x 4 1/4"	1

MASTERFLEX LOW SPEED PERISTALTIC PUMP

Master-flex pump is used with bioreactor or spinner flasks to add or withdraw fluids. It is small, compact and stackable with a power indicator. Includes pump head (7807-10000) and pump drive (7807-11501). Head accepts 13, 14, 16, 17, 18 and 25ft tubing.

Item Number	Description	Size	Case Qty
7807-01115	1rpm 115v	11.8 x 13.4 x 15.2 + 6.4cm	1
7807-01230	1rpm 230v	11.8 x 13.4 x 15.2 + 6.4cm	1
7807-05230	5rpm 230v	11.8 x 13.4 x 15.2 + 6.4cm	1
7807-06115	6rpm 115v	11.8 x 13.4 x 15.2 + 6.4cm	1
7807-10230	10rpm 230v	11.8 x 13.4 x 15.2 + 6.4cm	1
7807-12115	12rpm 115v	11.8 x 13.4 x 15.2 + 6.4cm	1

BROADLEY JAMES pH PROBE WITH HP CABLE

The Fermprobe pH electrode with S8 metric cap features a standard S8 detachable cable connector on a metric threaded polymer cap. The



design requires the rotation of the electrode during installation. This style of pH Fermprobe is the first choice for small autoclavable bench-top vessels. All Fermprobe pH electrodes are designed to be used in bio-process applications where clean in place sterilize in place CIP, SIP procedures are used.

Built to withstand repeated steam sterilization cycles the Fermprobe quickly stabilizes after steam exposure to be on line in half the time of other electrodes. This rugged low-impedance pH electrode continues to provide fast and precise measurement.

Item Number	Size	Case Qty
7803-22540	3"	1
7803-22550	6"	1
7803-22560	10"	1

BROADLEY JAMES pH FERMPROBE®

The Fermprobe pH electrode with S8 metric cap features a standard S8 detachable cable connector on a metric threaded polymer cap. The design requires the rotation of the electrode during installation this style of pH. Fermprobe is the first choice for small autoclavable bench-top vessels.

All Fermprobe pH electrodes are designed to be used in bio-process applications where clean in place sterilize in place CIP, SIP procedures are used. Built to withstand repeated steam sterilization cycles the Fermprobe quickly stabilizes after steam exposure to be on line in half the time of other electrodes. This rugged low-impedance pH electrode continues to provide fast and precise measurement.

Item Number	Size	Case Qty
7803-22300	Mounting Diameter: 12mm Insertion Length: 225mm	1
7803-22500	Mounting Diameter: 12mm Insertion Length: 120mm	1
7803-22510	Mounting Diameter: 12mm Insertion Length: 200mm	1
7803-22520	Mounting Diameter: 12mm Insertion Length: 325mm	1
7803-22530	Mounting Diameter: 12mm Insertion Length: 420mm	1

- Metric Pg13.5 threaded disconnect cap
- pH Range: 0.13
- Steam sterilizable to 135°C
- 150 psig max. pressure
- Double junction, Ag-AgCl reference system

BROADLEY JAMES OXYPROBE DO PROBE

The OxyProbe 12mm dissolved oxygen sensors offer the most rugged and versatile design for benchtop vessels. The compact profile saves space and will fit directly into any port with standard compression fittings or threads. The small diameter facilitates DO measurement in small volumes such as spinner flasks and bottles. The polarographic sensor utilizes a long silver anode and small cathode (per the industry standard), it also uses the same gas permeable silicone PTFE composite membrane. Reinforced with stainless steel mesh the OxyProbe withstands steam in place and caustic clean in place applications. FDA compliant O-Rings are on all product contact surfaces.

Item Number	Size	Case Qty
7803-31330	12 x 120mm	1
7803-31340	12 x 220mm	1
7803-31350	12 x 320mm	1
7803-31360	12 x 420mm	1

7803-31330



BROADLEY JAMES D4 LEMO DO PROBE CABLE

The Broadley James D4-Lemo DO cable connector on a metric threaded polymer cap. The design requires the rotation of the electrode during installation. This style of pH Fermprobe is the first choice for small autoclavable bench-top vessels. All Fermprobe pH electrodes are designed to be used in bio-process applications where clean in place sterilize in place cip sip procedures are used. Built to withstand repeated steam sterilization cycles the Fermprobe quickly stabilizes after steam exposure to be on line in half the time of other electrodes. This rugged low-impedance pH electrode continues to provide fast and precise measurement.

Item Number	Description	Size	Case Qty
7803-31470	D4-Lemo 3 DO Cable 3"	3"	1
7803-31480	DO Cable, D4-Lemo 3, 6"	6"	1
7803-31490	DO Cable, D4-Lemo 3, 10"	10"	1

7803-31470



METTLER INGOLD pH PROBE & CABLE

7803-21550



The OxyProbe 12mm dissolved oxygen sensors offer the most rugged and versatile design for benchtop vessels. The compact profile saves space and will fit directly into any port with standard compression fittings or threads. The small diameter facilitates DO measurement in small volumes such as spinner flasks and bottles.

The polarographic sensor utilizes a long silver anode and small cathode (per the industry standard), and uses the same gas permeable silicone (PTFE) composite membrane reinforced with stainless steel mesh. The OxyProbe withstands steam in place, and caustic clean in place. Applications FDA compliant O-Rings are on all product contact surfaces.

Item Number	Description	Size	Case Qty
7803-21300	Probe and pH Cable	12x225mm	1
7803-21500	Probe	12 x 120mm	1
7803-21510	Probe	12 x 200mm	1
7803-21520	Probe	12 x 325mm	1
7803-21530	Probe	12 x 425mm	1
7803-21540	pH Cable	3"	1
7803-21550	pH Cable	6"	1
7803-21560	pH Cable	10"	1

METTLER INGOLD pH PROBE WITH VP CONNECTOR

- Low-maintenance pH-electrodes
- With vario pin connection
- pH range 0–12
- Temperature range 140°C
- Pressure resistance bar up to 4 bar over-pressure
- Pressure resistance psi up to 58psi over-pressure
- Diaphragm ceramic

Item Number	Size	Case Qty
7803-22120	12 x 120mm	1
7803-22225	12 x 225mm	1
7803-22325	12 x 325mm	1
7803-22425	12 x 425mm	1

- Number of diaphragms 1
- Reference system argentinal system
- Silver ion trap
- Sterilizable
- Autoclavable
- ISM

METTLER INGOLD DO PROBE PTFE

- Cathode platinum
- Anode silver
- Polarization 675mv
- Output 40 to 70na in air at 25°C
- Temperature 0 to 6°C sterilization to 130°C
- Stability 2 or readout per week at constant pressure temp 30°C
- Linearity better than $\pm 0.3\%$ of readout
- Pressure 60psi maximum
- Connector 4 pin Bendix
- Material welded parts 316L stainless steel

Item Number	Size	Case Qty
7803-31535	12 x 120mm	1
7803-31545	12 x 220mm	1
7803-31555	12 x 320mm	1
7803-31565	12 x 420mm	1

METTLER INGOLD DO PROBE PTFE WITH VP CONNECTOR

- Measurement principle: Amperometric/ polarographic
- Pressure resistance measurement: 0.2 – 6 bar absolute
- Mechanical pressure resistance: max. 12 bar (174.0 psi) absolute
- Measuring temperature range: 0 – 80°C (32 – 176°F)
- Temperature range: -5 – 140°C (23 – 284°F)
- Temperature compensation: automatic with built in RTD
- Cable connection: vario pin (ip68)
- O-Ring material: Viton, silicone (FDA approved)
- Membrane material: Teflon / silicone / Teflon (reinforced with steel mesh)
- Quick disconnect interior body: standard

Item Number	Size	Case Qty
7803-32120	12 x 120mm	1
7803-32225	12 x 225mm	1
7803-32325	12 x 325mm	1
7803-32425	12 x 425mm	1

- Cathode: pt
- Anode: ag
- Guard ring: no
- Detection limit: 6ppb
- Accuracy: 1% or 4ppb
- Response time @ 25°C (air to n2): 98% of final value <90s
- Sensor signal in ambient air (25°C): 40 – 110na
- Residual signal in oxygen-free medium: <0.1% of the signal in ambient air.
- Max. Flow error: less than or equal to: 5%
- Certification: EHEDG, 3a, 3.1b (en 10204.3.1b)

FOAM PROBE FITTING

Item Number	Size	Case Qty
7803-41630	½"	1

PTFE FERULE FOR FOAM PROBE

Item Number	Size	Case Qty
7803-41640	½"	1

FOAM LEVEL CABLE

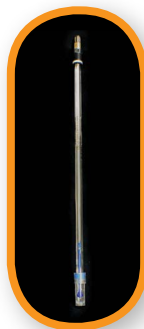
Item Number	Description	Size	Case Qty
7803-41650	for 500 Series Controller	10"	1

CELLTROL FOAM PROBE CABLE

Item Number	Size	Case Qty
7803-41655	10"	1

HAMILTON EASYFERM pH PROBE WITH VP CONNECTOR 7808-22425

- Gel-Filled pH Probe
- Size: 12mm OD X 425mm Insertion Length
- Vario-Pin Connector
- Borosilicate Glass
- PG 13.5 Threads
- pH Range: 2 - 12
- Temperature Range: 0 - 130°C



Item Number	Size	Case Qty
7808-21220	12 x 120mm	1
7808-21200	12 x 200mm	1
7808-21225	12 x 225mm	1
7808-21325	12 x 325mm	1
7808-21425	12 x 425mm	1
7808-22120	12 x 120mm	1
7808-22225	12 x 225mm	1
7808-22325	12 x 325mm	1
7808-22425	12 x 425mm	1

- Pressure: 4 Bar@ 130°C (Max.)

Bellco offers Hamilton Gel-Filled pH and stainless steel polarographic dissolved oxygen sensors with the standard 4 pin, T82, K8 and VP style connectors in 120 to 425mm lengths.

HAMILTON OXYFERM POLAROGRAPHIC DO PROBE ONLY WITH VP CONNECTOR

- Size: 12mm OD X 325mm Insertion Length
- PG13.5 Threads
- Material: 316L SST with RA Finish 16 Micro-Inch
- O-Ring: EPDM
- Membrane: PTFE
- Connector: Ingold 4-PIN

7808-31325



Item Number	Description	Size	Case Qty
7808-31120	Probe	12 x 120mm	1
7808-31225	Probe	12 x 225mm	1
7808-31325	Probe	12 x 325mm	1
7808-31425	Probe	12 x 425mm	1
7808-32120	Probe with VP	12 x 120mm	1
7808-32225	Probe with VP	12 x 225mm	1
7808-32325	Probe with VP	12 x 325mm	1
7808-32425	Probe with VP	12 x 425mm	1

- Uses Ingold Type Cables: 7803-31640-3', 7803-31650-6', 7803-31660-10'

Bellco offers Hamilton Gel-Filled pH and stainless steel polarographic dissolved oxygen sensors with the standard 4 pin, T82, K8 and VP style connectors in 120 to 425mm lengths.

7808-32000



HAMILTON DO PROBE MEMBRANE KIT

Item Number	Description	Case Qty
7808-32000	DO membrane kit	1

FOAM LEVEL PROBE

Foam Level Probes are used in fermentation bioreactors to detect the presence of foam or the liquid level within the bioreactor vessel. When the foam level or liquid level reaches the tip of the probe, a conductance path is created for the probe to trigger the controller to react and introduce anti-foaming agent.

7803-41590



Item Number	Size	Case Qty
7803-41590	½ x 6"	1
7803-41600	½ x 12"	1
7803-41610	½ x 18"	1
7803-41620	½ x 24"	1

STAINLESS STEEL PROBE ADAPTER EXTENSION

316L stainless steel probe adapter extension, threaded.

1964-91000



Item Number	Description	Size	Case Qty
1964-91000	Probe Adapter-old HP 1.5 Ext NPT Thread"	1 ½"	1
1964-91005	Probe Adapter 1.7"	1.7"	1
1964-92005	Probe Adapter 2.5"	2 ½"	1
1964-92010	Probe Adapter 3.25"	3 ¼"	1

PROBE HOLDER

Includes GL32 blue open top polypropylene cap and white silicone gasket. The probe holder is designed specifically for the bio-probe low volume spinner flask. Also designed to secure pH and DO probe into 32mm sidearms.

1965-97010



Item Number	Description	Size	Case Qty
1965-97010	-	32mm	1
1964-21580	Vertical 45mm Sidearms	12mm	1

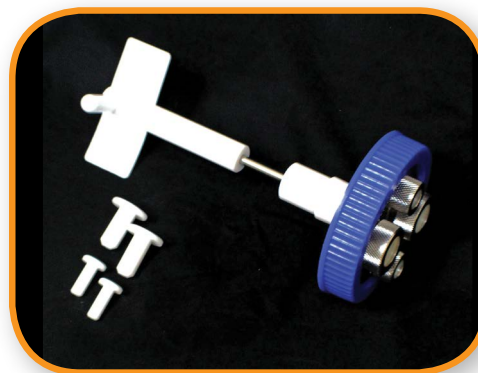
STAINLESS STEEL PROBE CAP-SEAL WITH PTFE IOB

The stainless steel 100mm IOB probe cap seal is manufactured from 316L stainless steel and has a red-silicone sealing gasket with a 100mm blue polypropylene screw cap. The stainless steel probe cap seal has four accessory ports surrounding a centrally located internal impeller assembly.

Two of these ports have a white silicone plug inside a threaded cap that acts as a compression fitting for probe insertion. The other ports accept accessories using the same silicone compression plugs and threaded caps. These compression plugs make it easy to adjust the insertion length of probes or straight tubes depending upon the working volume of the bioreactor flask. The stainless steel cap seal, stainless steel PTFE impeller and all fittings are steam autoclavable.

Item Number	Description	Size	Case Qty
1965-60014	4 Ports	1L	1
1965-60034	4 Ports	3L	1

1965-60014



DO POLARIZER STATION

Item Number	Size	Case Qty
7803-31720	115v	1

DO TESTER CABLE

Maintain dissolved levels to set point values and introduce oxygen or nitrogen as needed

Item Number	Size	Case Qty
7803-31755	12"	1

PROBE REPLACEMENT (INNER BODY) NEW STYLE PROBES

The PTFE and silicone membrane with integrated stainless steel mesh support, greatly enhances durability. It also extends expected membrane life and can be easily and quickly replaced without the need for tools. The most common problem seen over a period of time with DO sensors is the degradation of the membrane. This results in slow response time, drift, and inaccurate readings. The membrane and electrolyte are exposed to multiple sterilization cycles, physical impact, harsh solutions and clogged organic compounds. All of which result in normal wear and tear, resulting in replacement.

Item Number	Case Qty
7803-31670	1

GLASS PROBE CHAMBER

- Glass chamber with hose connections and compression fitting for 12mm OD probes.
- Used with any 12mm OD probes – to measure parameters from process such as an off line pH.
- Type 1 Borosilicate Glass Chamber
- Two Hose Barb Connections
- Replacement Cap: A12-1123
- Replacement Gasket: A12-1124
- Dimensions Approx. 35mm X 25mm OD
- Cap Material Hi-Temperature (PBT)

Item Number	Size	Case Qty
7808-00012	12mm	1

7808-00012



BIOREACTOR KITS & ACCESSORIES

O-RING REPLACEMENT KIT

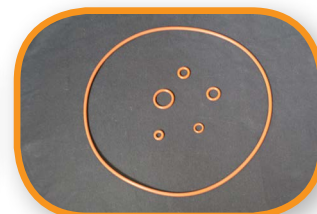
- Size: 3L - 10L
- A523-234 is for 3/8" accessories
- A523-407 is for 1/4" accessories
- A542-522 is for 5/16" Thermowell
- A542-521 is for 3/4" accessories
- A542-523 is the inner O-Ring for the probe holder
- 1964-88803 is the headplate O-Ring

Item Number	Size	Case Qty
1964-96000	3L	1
1964-96010	10L	1
1964-96070	7L	1

1964-96010



1964-96070



BCS STARTER KIT

Item Number	Case Qty
1964-00010	1

DO & pH SIMULATOR KIT

- Simulates pH and DO conductance readings.
- Test for pH and DO probe function and troubleshooting.

Item Number	Case Qty
7803-21570	1
7803-22570	1

DO MEMBRANE KIT

7803-31620



Item Number	Description	Size	Case Qty
7803-31620	Membrane replacement kits for do probes: 7803-31530 7803-31540 7803-31550 7803-31560	12mm	1
7803-31625	T-96 membrane replacement kit for: 7803-31625 7803-31535 7803-31545 7803-31555 7803-30565	12mm	1
7803-31635	DO Probe Membrane Kit Mettler A Type	n/a	1

GAS LIQUID ADDITION ASSEMBLY

Glass liquid addition assembly for use on 45mm side arms. Assembly simply screws on and seals with a silicone liner.

- One glass addition tube
- Type 1 Class A Borosilicate
- One compression cap
- One front and rear nylon ferrule
- One compression fitting
- One blue pp screw cap and white silicone liner



Item Number	Description	Size	Case Qty
1964-00045	for Vertical Sidearm Vessels	45mm	1
7909-00060	for 18mm Port	18mm	1

GLASS FILTER TUBE ASSEMBLY

Assembly attaches to a bioreactor vessel or culture vessel.



Item Number	Description	Case Qty
1964-88600	for Omni Vessels	1

COLDFINGER ASSEMBLY

Used to generate a localized cold surface on the exterior of the finger. Commonly used for sublimation, and can also be used in reflux or distillation operations.



Item Number	Size	Case Qty
1964-02070	3L	1
1964-02075	7L	1

COOLING FINGER ASSEMBLY

Stainless steel cooling finger with internally placed water in and water out tubes that help to maintain internal bioreactor temperature.

- Fits into 18mm port on 3L metric headplate
- 316L Stainless Steel
- Electropolish Finish



Item Number	Size	Case Qty
7909-00011	3L	1
7909-00036	7L	1

BIOREACTOR

TRIPLE & QUAD UNIVERSAL ADDITION ASSEMBLY

1964-03250



Manufactured from 316L stainless steel with electropolish finish Ra 32 or better inside and out. Used for GL45 sidearms. Includes polypropylene blue open top screw cap and white silicone liner.

- Individual ports for liquid additions or redundant vent overlay.
- Supply with PP blue open top screw cap and white silicone liner
- All tubes: 1/4" OD x 4 1/4" long

Item Number	Description	Size	Case Qty
1964-03250	Triple Addition Assembly	45mm Universal	1
1964-04125	Quad Addition Assembly	45mm Universal	1

BAFFLE ASSEMBLY

316L stainless steel baffle assembly for use on large flange bioreactor vessel system. Attaches to the head plate. Used to change the mixing characteristics within the bioreactor.

- Size: 3L
- Baffle shaft: .250" OD x 6 1/4" long (1/4-28 tpi thread)
- Baffle plate: .625" OD x 7" long x .090" thick: 9 1/8"
- Insertion length 9 1/8"

Item Number	Description	Size	Case Qty
1964-53600	Large Flange	7L	1
7909-00022	for 6mm Port	3L	1
7909-00039	for 10mm Port	7L	1
7909-15077	for 10mm Port	15L	1

1964-53600



STAINLESS STEEL REMOVABLE BAFFLE

Removable baffle for large flange vessels.

- Material: SST 36L with electropolish finish
- Dimensions: 1 1/2" wide x 10 1/2" long
- Fits on any 1/4" OD SST tube inside vessel
- Recommend: 2 per vessel
- Z-shaped

Item Number	Size	Case Qty
1964-53400	11 1/2" x 10 1/2"	1

1964-53400



LARGE FLANGE OMNI PADDLE

316L stainless steel Omni Paddle Blade for use with large flange vessels. Constructed of 316L electropolished stainless steel Ra 32 finish or better.

- Blade Dimensions: 5 ¾" x 2"

1964-88082



Item Number	Description	Size	Case Qty
1964-88052	Paddle 5L	6 ¾"	1
1964-88082	Paddle 8L	12 ½"	1
1964-88362	Paddle 36L	17"	1

LARGE FLANGE Z/Z PADDLE

Manufactured from 316L stainless steel with electropolish finish. Ra 32 finish or better inside and out. Ideal use for cell culture and reduces shear in delicate cell culture.

- Blade dimension: 5 ¾" x 2 ½"

1964-88058



Item Number	Description	Size	Case Qty
1964-88058	Paddle 5L	6 ½"	1
1964-88088	Paddle 8L	12"	1
1964-88158	Paddle 15L	14 ¼"	1
1964-88368	Paddle 36L	16 ¾"	1

LARGE FLANGE STAINLESS STEEL CLAMP

200mm SST large flange headplate clamp fits headplates, 5 liter thru 36 liter vessels.

- Corrosion resistant 316L stainless steel
- Includes red silicone O-Ring and 200mm T-bolt clamp

Item Number	Size	Case Qty
1964-88700	8"	1

LARGE FLANGE O-RING ONLY

200mm large flange O-ring for use with SST flange clamps.

- 200mm O-ring
- Red silicone rubber construction
- Includes red silicone O-Ring and 200mm T-bolt clamp

Item Number	Size	Case Qty
1964-88800	200mm	1

FLANGE GASKET FOR BIOREACTOR VESSELS

1964-88900

1964-88910



Item Number	Description	Case Qty
1964-88900	Vessel Flange Gasket 3L	1
1964-88970	Vessel Flange Gasket 7L	1
1964-88910	Vessel Flange Gasket 10L	1

COMPRESSION FITTINGS

Bellco compression fittings are designed using our standard 45mm blue polypropylene open top caps and white silicone gaskets. A wide variety of fittings are available to allow pH and OD monitoring via insertion of these probes into sidearms or vessels. Bellco probe adapters are designed to allow introduction of threaded probes into vessels through 200mm stainless steel or a 45mm vertical sidearm.

7909-00014



Item Number	Description	Size	Case Qty
1964-90010	–	12mm	1
1964-90015	–	1/4"	1
1964-90020	–	1/2"	1
1964-90115	–	1/4"	1
1964-92000	–	2 1/2"	1
1964-90125	for 1/2 Hole"	5/16"	1
7909-00014	–	1/4"	1
7909-00018	–	1/4"	1
7909-00030	for 18mm Port	12mm	1
1964-90120	Large Flange - Replacement Part	1/2 "	1

LARGE FLANGE DRIVE ADAPTER

316 L stainless steel large flange drive adapter for use with omni vessels, for attachment of overhead drive motors.

- Heavy duty cap assembly for large flange vessels
- Adapt overhead drives to teflon or sst
- Folding impeller assembly 316L
- Stainless steel design with polyester stainless steel bearings

Item Number	Description	Size	Case Qty
7764-71000	Omni Vessels	5/8"	1
7764-72000	High Speed Drive Adapter	5/8"	1

7764-71000



BELLCO CONTROL SYSTEM, FLAT BOTTOM

The Bellco Large Flange Flat Bottom Vessel 'Startup' Control Systems feature bioreactors that are designed for the efficient growth of mammalian, insect and plant cultures.

The systems save both time and money due to the flexibility of design and ease of operation. Starting with the 5 liter size, these systems allow the user to scale up from traditional T-flasks, through Spinner flasks and finally to the Control systems.

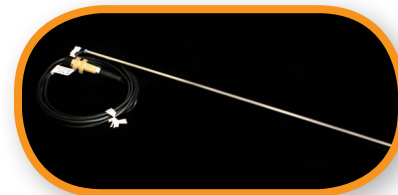
The 18-port headplate design accommodates standard pH, dissolved oxygen and temperature control probes while the aseptic sampler and dip tubes facilitate media addition, inoculation and harvesting. When attached to external controllers (e.g. Temperature, pH, DO) the Bellco 'startup' systems function as complete bioreactors having controlling and monitoring capabilities.

Item Number	Description	Size	Case Qty
7800-05510	5L BCS	115v	1
7800-05610	5L BCS	230v	1
7800-08510	8L BCS	115v	1
7800-08610	8L BCS	230v	1
7800-15510	15L BCS	115v	1
7800-15610	15L BCS	230v	1
7800-36510	36L BCS	115v	1
7800-36610	36L BCS	230v	1

RTD TEMPERATURE SENSOR WITH CABLE

7919-00004

RTD temperature sensor fits into a Thermowell to register the temperature of the media inside a vessel. This sensor connects to a temperature controller with solenoid valve to activate either a heating blanket for heating or a coil for cooling.



Item Number	Description	Size	Case Qty
7803-11500	Dimensions: 0.187" x 10"	with 8" cable	1
7803-11505	Dimensions: 17x10x1.75" (43x25x4cm) 0.87 x 3/4"	with 8" cable	1
7803-11510	Dimensions: 17x10x1.75" (43x25x4cm) 0.187x5"	with 10" cable	1
7803-11520	Dimensions: 17x10x1.75" (43x25x4cm) 0.187x5"	with 6" cable	1
7919-00004	RTD Temperature Sensor 14 for Controller	—	1
7919-00006	RTD Temperature Sensor 3/4 Controller and Angled Sidearms	—	1

STAINLESS STEEL WEIGHT PLATFORM

Weight platforms allow the user to monitor and/or control the weight of the reaction vessels. The platforms contain 4 load cells and plugs into the rear of the CellTrol II units having weight capability.

Item Number	Description	Size	Case Qty
7805-12125	Bioreactor - 50kg"	12 x 12 x 3"	1

METRIC DRIVE STEM ASSEMBLY

- Drive stem assembly with 3/4" OD shaft for use with 3L marine and pitched blade impellers.
- Fits into 27mm center port of 3L metric headplate.
- Multiple impellers may be assembled onto shaft as required.

Item Number	Description	Size	Case Qty
7909-00003	Metric Drive Stem Assembly 3L for Mag Motor	3/4"	1
7909-07004	Metric Drive Stem Assembly 7L	3/4"	1
7909-15051	Metric Drive Stem Assembly 15L for Mag motor	3/4"	1

BIOREACTOR

OVER HEAD DRIVE METRIC DRIVE STEM ASSEMBLY

Metric Drive Stem Assembly for 3-7 Liter OHD Drives. Use on Digital and Process OHD.

7909-10100



Item Number	Size	Case Qty
7909-10100	3L	1
7909-10140	7L	1

METRIC CONDENSER ASSEMBLY

Stainless steel condenser mounted externally has internal baffle for efficient condensation of vapor into liquid for return to bioreactor vessel. Fits 18mm port on 3L metric headplate. 316L Stainless Steel Construction Ra 32 Finish Or Better

7909-00008



Item Number	Size	Case Qty
7909-00008	3L	1
7909-00047	7L	1
7909-15081	15L 18mm Port	1

VERTICAL SIDEARM SAMPLE SYSTEM

The bellco sample system attaches to GL45 nozzle allowing the user to take repeated samples into a standard 50mL disposable centrifuge tube. The sampler is designed to connect to an existing pipe by mounting under the open cap. Samples are taken by evacuating air with the supplied syringe and filter, thereby drawing culture into the 50mL disposable centrifuge tube.

1964-03000



Item Number	Size	Case Qty
1964-03000	45mm	1

ACRODISC FILTER

The PTFE 50mm Acrodisc Hydrophobic Filter with hose barbs can be used to sterilize non-aqueous solutions, vacuum line protection, venting and gas filtration. Hose barb end allows easy secure attachment of silicone tubing or other types of tubing. The filter is non sterile and is autoclavable. 0.2 Micron Hydrophobic PTFE Filter, 30 Psig Maximum Pressure, 50mm Diameter. Maximum Operating Temperature is 121 Degrees Celsius. Overall Length 71mm and 196 Centimeters Squared Filtration Area.

1964-12112



Item Number	Description	Size	Case Qty
1964-12112	Barbed Filter pkg. 4	71mm	1
1964-12922	Acrodisc Thread Filter pkg.8	71mm	1

BIOREACTOR

STAINLESS STEEL STRAIGHT HARVESTING PIPE ASSEMBLY

Used for withdraw of contents from 3L bioreactor vessel. Fits 10mm port on 3L metric headplate

7909-00035

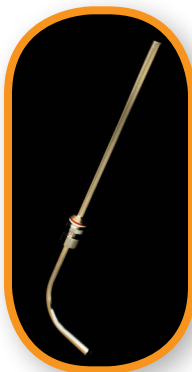


Item Number	Description	Size	Case Qty
7909-00020	3L for 10mm Port	9 ¾"	1
7909-00035	7L for 10mm Port	12 ½"	1
7909-15113	15L 10mm Port	15 ½"	1

ANGLED HARVEST PIPE ASSEMBLY

Stainless steel 12mm harvesting pipe with 90 degree angle for sampling contents in 3L – 15L bioreactor vessels. Fits 18mm port on 3L metric headplate.

7909-00009



Item Number	Description	Size	Case Qty
7909-00009	Large Volume 3L	12mm x 14" x 3 5/8"	1
7909-00023	Small Volume 3L	11 7/16"	1
7909-00073	Small Volume 7L for 18mm Port	14 ½"	1
7909-00101	Large Volume 7L	16 ¾"	1
7909-15090	Large Volume 15L for 18mm Port	18 ½"	1
7909-15091	Large Volume 15L	20"	1

STRAIGHT SAMPLE PIPE ASSEMBLY

Straight sampling pipe for removal of small volumes of media from bioreactor vessel. Fits into 10mm port on 3L metric headplate. 316L stainless steel material with electropolish finish Ra finish 32 or better inside and out supplied with O-Ring, stainless steel washer and nut.

7909-00072



Item Number	Description	Size	Case Qty
7909-00027	3L for 10mm Port	9 ¼"	1
7909-00072	7L for 10mm Port	13 7/16"	1
7909-15109	15L for 10mm Port	16 4/9"	1

ANGLED SAMPLE PIPE ASSEMBLY

Stainless steel angled sampling pipe for removal of small volumes of media from bioreactor vessel. Fits into 10mm port on 3L metric headplate. Comes with silicone O-ring, stainless steel washer and nut.

7909-00026



Item Number	Description	Size	Case Qty
7909-00026	3L for 10mm Port	10 5/8"	1
7909-15108	15L for 10mm Port	17 5/8"	1

HI-TORQUE OVER HEAD DRIVE ADAPTER

Hi-Torque Over Head Drive Adapter is used in conjunction with the Hi-Torque OHD Motor to drive the impeller assembly for mixing within a vessel. Used with 100mm cap assembly.

- 316L SST design with polyester/SST bearing
- Includes two (2) 1/4" NPT female plugged ports for optimal fittings
- Dimensions 3 3/4" l x 3 3/4" w x 1/2" t (including dust shield coupling)
- Designed to fit with OHD high torque setups
- Adapts all Bellco PTFE impeller assemblies or SST impeller assemblies

Item Number	Size	Case Qty
7764-74000	100mm	1

7764-74000



CABLE TIES

Nylon cable ties for securing tubing to hose barb connections.

1964-98000



Item Number	Case Qty
1964-98000	25
7786-53723	100

ADDITIONAL VENT PIPE ASSEMBLY

316 L stainless steel addition port with hose barb for attachment of silicone tubing. This can be used for the introduction of small volumes aseptically into the bioreactor vessel.

Item Number	Description	Size	Case Qty
7909-00028	for 10mm Port	2"	1

ADJUSTED SAMPLE 1/8" PIPE ASSEMBLY

Item Number	Description	Size	Case Qty
7909-15114	15L Bioreactor	1/8"	1

ANTI FOAM LEVEL PROBE ASSEMBLY

Adjustable anti-foam probe works by conductance. Rising level in bioreactor contacts the probe to trigger the controller for addition of anti-foam or addition / withdraw of media to maintain proper liquid level. Fits into 18mm port on 3L metric head plate. Supplied with nut, washers and O-Rings.

7909-00086



Item Number	Description	Size	Case Qty
7909-00086	for 18mm Port	3L	1
7909-00102	for 18mm Port	7L	1
7909-15111	—	15L	1

PRESSURE RELIEF VALVE

The pressure relief valve is a cartridge check valve incorporating an innovative guided poppet design.

This valve is the heart of the system and may be used alone or as a central component of the system. The valve has a low pressure drop. These valves are used to prevent flow of fluid (gas or liquid) in one direction and allows flow in the other direction. The material is BASF ULTRA FORM, an acetyl co-polymer as standard resin because of it's strength and chemical resistance. The poppet is made of stantoprene from advanced elastomer systems and has similar chemical resistance to EPDM.

- 1/4" connections
- Overall dimensions: 1.795"x 0.745" (l x od)
- White polypropylene housing with hose barb connections
- BASF ultraform material

Item Number	Size	Case Qty
1964-12000A	1/4"	1

STAINLESS STEEL FITTING WITH CAP

Bellco compression fittings are designed for our standard 45mm blue polypropylene open top screw caps and white silicone gaskets. A wide variety of fittings are available to allow pH and DO monitoring via insertion of these probes into the vessels sidearms. The probe adapters are designed to allow introduction of threaded probes into vessels through 200mm stainless steel headplate or a 45mm vertical sidearm. 45mm Polypropylene Caps, Silicone Rubber Gaskets, 316L Stainless Steel Construction. Fits 12mm OD Probes.

1965-21050



Item Number	Size	Case Qty
1965-21050	11mm	1
1965-21060	12mm	1
1965-21070	1/2 "	1



BIOREACTOR HOSE BARB ASSEMBLY

1965-45200

The Stainless Steel 45mm compression and hose barb cap assembly is designed with a 1/4" ID compression



fitting for insertion of tube accessories and 1/4" OD hose barb for silicone tubing attachment. The compression fitting is supplied with a nylon ferrule for easy adjustment of tubes. A blue polypropylene open top cap and white silicone gasket are included.

- 316L stainless steel compression fitting and hose barb
- Blue polypropylene 45mm screw cap with open top
- White silicone rubber gasket

Item Number	Size	Case Qty
1965-45200	45mm	1

STAINLESS STEEL SHAFT ASSEMBLY

The Bellco Stainless Steel Shaft Conversion Kit is designed to convert your standard glass shaft to stainless steel on 1967 and 1965 Spinner Flasks. Sizes range from 100 mL to 36 liters for 1965 spinners and 100 to 3000 mL for 1967 spinner flasks. Material: 316L Stainless Steel and polypropylene compression fitting.



1969-60100

Item Number	Size	Case Qty
1969-60100	100mL	1
1969-60250	250mL	1
1969-60500	500mL	1
1969-61000	1L	1
1969-61500	15-36L	1
1969-63000	3L	1
1969-66000	6-8L	1

ASEPTIC SAMPLER SYSTEM

The aseptic sample system attaches to the headplate of a metric bioreactor allowing the user to take repeated samples into a standard 50mL disposable conical tube. The sample assembly requires an existing sample pipe (not included) which connects to the inlet pipe with tubing. The device mounts easily under a closure nut of a vessel head plate stud. Samples are taken by evacuating air with the supplied syringe and filter, thereby drawing culture media into the 50mL disposable tube.

Item Number	Size	Case Qty
7909-00012	50mL	1

7909-00012



STD OVER HEAD DRIVE ADAPTER

The Bellco 100mm Overhead Drive Cap Assembly is manufactured from 316L SST with dual bearings and seals. A dust shield for paddle assemblies (1/4" shaft) is included. Cap assembly features two 1/4" NPT female ports for addition of optional fittings. Includes two 1/4" NPT male port plugs standard. The cap assembly utilizes the unique Bellco 100mm cap seal.

The Bellco 100mm Overhead Drive Cap Assembly is an integral part of many Bellco Overhead Drive Systems, and is designed to be used with a Bellco Overhead Drive, glass vessel with 100mm diameter center neck and impeller. Consult the instruction manuals provided with your Overhead Drive for set-up and system operation.

- 316L stainless steel construction
- 100mm polypropylene screw cap
- Silicone O-Ring
- Two 1/4" plugged ports

- Dimensions: 4 1/4" l x 4 1/4" w x 5 1/2" h (excluding dust shield)
- Weight: 2lbs. (0.9 kg)

Item Number	Description	Size	Case Qty
7909-15114	Adjusted Sample 1/8 Pipe Assembly 15L Bioreactor	1/8"	1
7764-70000	-	100mm	1