



**Adelphi
Manufacturing**

E-Liquid Industry
Machinery & Process Equipment
Product Guide



FILLING MACHINERY - E-LIQUIDS

SMALL BATCH PRODUCTION

XYZ Distributor

The XYZ Distributor is designed to be used in conjunction with the Accuramatic Peristaltic Dispenser, and enables small containers to be filled automatically in trays. The Z axis is the diving nozzle movement that allows e-liquid to be automatically filled from above the neck or into the neck.

Item code	Specification
3525000	XYZ DISTRIBUTOR
Electricity (selectable)	240V AC, 50/60 Hz, 500 W (120 V optional)
Movement space (mm)	X = 520, Y= 335, Z= 155
Electronics	Mircoprocessor
Weight (kg)	Control: 4.5. XYZ: 9.0
Distributor dimensions (mm)	790 × 625 × 390
Control dimensions (mm)	200 × 280 × 180
Drip delay	0.0–0.9 secs
Max vial height (mm)	200
Min neck opening (mm)	8
Tray fill area (mm)	410 × 265



Features:

- Control box remote from moving nozzle frame suitable for use in laminar flow cabinet
- Adjustable trays are supplied so that bottles are held in an orderly fashion
- Setting up is easy using the menu-driven LCD displays
- Special trays can be made to suit odd shaped bottles
- Fills straight rows or honeycombed configurations

Accuramatic Peristaltic Dispenser

This unit can be operated by hand, foot switch, or will cycle automatically with a delay of up to 10 seconds between fills. The pump runs at a constant speed for a precisely determined period of up to 100 seconds, can run forwards or backwards, and has a choice of three filling modes: Braked stop – Soft stop – Stop with suck back.

Like all peristaltic pumps the liquid only comes into contact with the inside of one uninterrupted length of silicone tubing

Item code	Specification
3510000	PERISTALTIC DISPENSER
Volumes (ml)	1 to 1,000
Repeatability	± 0.5%
Max flow rate (ml)	36 ml/sec (standard pump. Twin pump option available)
Electricity	240 V AC, 50 Hz, 50 W (120V optional)
Weight (kg)	Nett 8.5, Gross 10.5
Carton size (cm)	44 × 23 × 43

which will withstand repeated sterilisation. Bacteriological inline filtration can be performed at the outlet side of the pump. This peristaltic dispenser can be combined with our XYZ Distributor to offer quick, easy, and hygienic filling of whole trays of e-liquid bottles automatically.



FILLING MACHINERY - E-LIQUIDS

Response Benchtop Filler

Our Response range of filling machinery was developed in response to our customers' requests, hence the name!

Designed to meet pharmaceutical standards, all Response machines are versatile, hygienic and easy to use. Their stylish exteriors conceal well-engineered and robust filling systems.

The highly regarded Response Benchtop Filler is a semi-automatic filling machine, available in single or twin-head configurations, with a comprehensive range of nozzles, hoppers and other accessories available to meet your individual requirements. This pneumatically driven filler is perfect for filling e-liquids, thanks to its versatile filling head design.

The Response Benchtop Filler is ideally suited to those wanting to start automating a previously manual filling process, and those that don't currently require the output levels offered by a fully automated solution. However, once production demands increase, Response benchtop filling units can be up-scaled, by mounting the original filler onto a Response Monobloc or a Response Automation System, to create an extremely flexible fully automatic filling machine.



	Specification (single head)
Accuracy	±0.25%
Output	Up to 40 per minute (dependent on fill volume)
Height without hopper / tank	340mm
Depth	840mm
Width without conveyor	343 mm
Weight	41 kg
Air consumption per cycle	5 litres at 6 bar
Volume range	5 ml – 1 litre



FILLING MACHINERY - E-LIQUIDS

AUTOMATIC FILLING *Response* Monobloc Filler

Adelphi's Response Monobloc Filler provides many advantages for e-liquid manufacturers compared with traditional inline packaging systems.

Key Features

- Capable of filling 5ml to 250ml e-liquid containers
- Space-saving design
- Ten-minute strip down time for cleaning
- Hygienic stainless steel construction; all wetted parts are 316 stainless steel
- Exceptional fill accuracy at +/- 0.25%
- Easy-to-use intuitive HMI touch screen controls for your operator
- Speed of operation in the region of 35 per minute
- Offers reduced labour costs
- Scalable - can incorporate an existing Response Benchtop Filler, enabling cost-efficient growth

The Response Monobloc Filler can incorporate the following elements to give a complete turnkey packaging line:

In-feed table, Bottle blower, Filler, Automatic cap placement
Capper, Labeller, Collection table

	Specification
Accuracy	±0.25%
Output (per minute)	30 - 35 (dependent on fill volume)
Height without hopper / tank	2032 mm
Depth	860 mm
Width without conveyor	1152 mm
Weight	265 kg (plus Response base unit and hopper)
Air consumption per cycle	7.5 litres at 6 bar
Volume range	5 ml – 250ml
Electrical consumption	Single phase 240VAC, 13A supply
Maximum bottle diameter	85 mm (outer diameter)
Maximum bottle height	250 mm
Maximum cap diameter	45 mm



FILLING MACHINERY - E-LIQUIDS

Response Automation System

With the addition of an Automation Base, your Response Benchtop Filler(s) can be utilised to create a fully automated filling machine with up to eight heads. By doing this, you have the option of increasing output whilst retaining the ability to revert to running your Response Benchtop Fillers individually, as your e-liquid production demands dictate.

Alternatively you may choose to exclusively run the benchtop units within the automated filler, but both options remove the need to write-off your investment in the original benchtop fillers. More information regarding these scalability options is available upon request.

	Specification
Accuracy	±0.25%
Output (per minute)	Dependent
Height without hopper / tank	1800 mm
Depth	1070 mm
Width without conveyor	1650 mm
Weight	396 kg + Responses
Air consumption per cycle	40 litres per cycle
Volume range	5ml-1 litre

Key Features and Options

- Variable speed conveyor with adjustable guides, rails, and delrin or stainless steel slats
- Logic controls for gating and sensing systems and up to four Response Benchtop Fillers
- Neck location system
- Pneumatic cut-off nozzles to ensure a clean fill with no dripping
- 'Rise while fill' or 'bottom up fill' of container, into neck or fixed nozzle fill system
- Fully interlocked guarding around operating area
- Frame mounted hopper or tank with up to four triclover outlets, manifold and heated jacket
- Other bespoke additions depending on your requirements



Response Automation System
with three benchtop units fitted:
Seen from the rear



Response Automation Base with three benchtop
units fitted: Operator's view from the front



STORAGE & MIXING - E-LIQUIDS

PHARMA HYGIENE PRODUCTS

Pharma Hygiene Products (part of the Adelphi Group of Companies) supply stainless steel process equipment to e-liquid manufacturers who need to obtain the optimum levels of hygiene with their production processes.

From storage of e-liquid to mixing of flavours, Pharma Hygiene Products' range is manufactured to the highest quality, and is designed to suit every stage of the production process.

Mixing and Storage Containers

Manufactured from 316 and 304 grade stainless steel, these containers can be supplied either plain or graduated, and come complete with side handles and skirtband. They have hygienic crevice and pit-free interiors, and are polished throughout. An optional lid is available for all sizes.

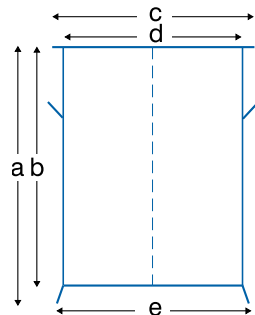
Integrated mixers can also be incorporated into the lids of these containers.



Item code	Capacity	a	b	c	d	e	Skirt	Handle	Grad.	Weight (kg)	Lid code	Lid weight (kg)
VES4020P	20	390	380	350	265	275	YES	SIDE	-	3.4	VEL4020P	0.6
VES*020G	20	390	380	350	265	275	YES	SIDE	5-20/5	3.4	VEL*020P	0.6
VES4025P	25	390	380	380	300	305	YES	SIDE	-	3.8	VEL4025P	0.8
VES*025G	25	390	380	380	300	305	YES	SIDE	5-25/5	3.8	VEL*025P	0.8
VES4030P	30	460	445	380	300	305	YES	SIDE	-	4.4	VEL4030P	0.8
VES*030G	30	460	445	380	300	305	YES	SIDE	5-30/5	4.4	VEL*030P	0.8
VES4050P	50	560	535	435	350	355	YES	SIDE	-	6.4	VEL4050P	1
VES*050G	50	560	535	435	350	355	YES	SIDE	5-50/5	6.4	VEL*050P	1
VES4075P	75	625	600	480	400	405	YES	SIDE	-	8.5	VEL4075P	1.3
VES*075G	75	625	600	480	400	405	YES	SIDE	5-75/5	8.5	VEL*075P	1.3
VES4100P	100	675	650	520	445	455	YES	SIDE	-	12	VEL4100P	1.6
VES*100G	100	675	650	520	445	455	YES	SIDE	10-100/10	12	VEL*100P	1.6
VES4150P	150	675	650	620	550	555	YES	SIDE	-	16	VEL4150P	2.3
VES*150G	150	675	650	620	550	555	YES	SIDE	10-150/10	16	VEL*150P	2.3
VES6240P	240	890	850	730	600	625	YES	SIDE	-	26	VEL6240S	3

- Notes:
1. Graduations: 5-20/5 = graduated from 5 litres to 20 litres in 5 litre intervals.
 2. In the data table, replace the * with 4 if 304 grade is required, or with 6 if 316L grade is required.
 3. Where no * occurs in the item code, material is 304 grade.

A number of optional modifications are available, please speak to a sales representative for further details.



STORAGE & MIXING - E-LIQUIDS

Mobile Frames for Containers

Manufactured from 304 stainless steel, Pharma Hygiene Products offer both a standard range of mobile frames on castors for containers 20 - 240L, as well as tilted mobile frames for decanting from your container, designed specifically for e-liquid manufacturers. A single frame fits both our standard 75L and 150L vessels. The angle of tilt means that when decanting e-liquid, the container can drain completely with no liquid pooling.



Standard mobile frames for 20L - 240L containers



Mobile frame with 75L container (left) and 150L container

Cans with Lids

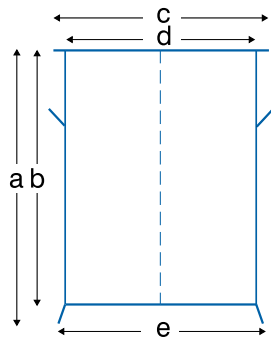
Manufactured from either 304 or 316 grade stainless steel, these cans come complete with lids and swing handles. They have hygienic crevice and pit-free interiors, and are polished throughout.

Note: in the data table below, replace * with a 4 if 304 grade is required, or with a 6 if 316 grade is required.

A number of optional modifications are available, please contact a sales representative for further details.



Item code	Capacity (litres)	a	b	c	d	e	Skirt	Handle	Weight (kg)
CWL*001P	1	155	150	125	100	N/A	NO	SWING	0.4
CWL*002P	2	175	170	160	130	N/A	NO	SWING	0.7
CWL*003P	3	185	180	185	155	N/A	NO	SWING	1
CWL*004P	4	200	185	186	170	173	YES	SWING	1.3
CWL*005P	5	240	230	205	175	180	YES	SWING	1.4
CWL*006P	6	280	270	205	175	180	YES	SWING	1.7
CWL*008P	8	285	270	235	200	205	YES	SWING	2
CWL*010P	10	295	280	250	220	225	YES	SWING	2.5





STORAGE & MIXING - E-LIQUIDS

Buckets and Pails

(A) Buckets

Manufactured from 304 grade stainless steel with one size available in 316 stainless steel, these buckets are polished throughout, graduated in 1 litre intervals and come complete with swing handle. Skirtbands are standard as shown. Buckets without a skirtband are available to special order. Lids are available as an option.



A Buckets
B Heavy duty bucket
C Pails
D Buckets with spouts

Item code	Capacity (litres)	a	b	c	Skirt	Handle	Grad.	Weight (kg)	Lid Code	Lid Weight (kg)
BUC4007P	7	240	160	250	No	Swing	N/A	1	BUL4007P	0.4
BUC4008G	8	285	200	200	No	Swing	1-8/1	1.05	BUL4008P	0.55
BUC4010G	10	295	175	270	YES	SWING	1-10/1	1.4	BUL4010P	0.4
BUC4012G	12	320	210	260	YES	SWING	2-12/1	1.6	BUL4012P	0.5
BUC6012G	12	320	210	260	YES	SWING	2-12/1	1.6	BUL4012P	0.5
BUC4015G	15	325	202	340	YES	SWING	2-15/1	1.8	BUL4015P	0.6

(B) Heavy Duty Bucket

Manufactured from 304 grade stainless steel, this bucket is designed for heavy duty applications. It comes complete with a skirtband and swing handle

and is graduated. The interior is crevice- and pit-free and it is polished throughout.

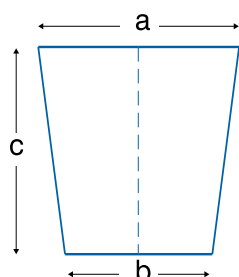
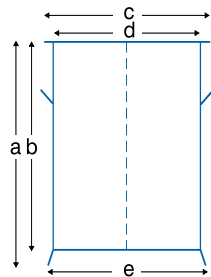
Item code	Capacity (litres)	a	b	c	d	e	Skirt	Handle	Grad.	Weight (kg)
BHD4015G	15	255	240	340	320	295	YES	SWING	2-15/1	2.7

(C) Pails

Manufactured from either 304 or 316L grade stainless steel, these pails come complete with a skirtband and swing handle. They have crevice- and pit-free

interiors and are polished throughout. Lids are available as an option.

Item code	Capacity (litres)	a	b	c	d	e	Skirt	Handle	Grad.	Weight (kg)	Lid code	Lid weight (kg)
PAI*010P	10	255	240	275	237	245	YES	SWING	N/A	2.1	PAL*010P	0.5
PAI*012P	12	283	273	275	237	245	YES	SWING	N/A	2.5	PAL*012P	0.5
PA*015P	15	285	275	305	267	275	YES	SWING	N/A	2.8	PAL*015P	0.6



STORAGE & MIXING - E-LIQUIDS

(D) Buckets with Spouts

Manufactured from 304 grade stainless steel, these straight sided buckets are graduated, come complete with pouring spout, swing handle, bottom steadying handle, and skirtband. They have crevice-

and pit-free interiors and are polished throughout. Lids that are extended to cover the spout are available as an option.

Item code	Capacity (litres)	a	b	c	d	e	Skirt	Handle	Grad.	Weight (kg)	Lid code	Lid weight (kg)
BUS4010G	10	275	265	297	237	245	YES	SWING	1-10/0.5	2.3	BSL4010P	0.5
BUS4015G	15	308	295	320	267	272	YES	SWING	2-15/0.5	2.7	BSL4015P	0.6
BUS4020G	20	395	380	328	267	272	YES	SWING	2-20/1	3.4	BSL4020P	0.6

Note: In the data tables replace the * with 4 if 304 grade is required, or with 6 if 316L grade is required.

A number of optional modifications are available, please speak to a sales representative for further details.

Polypropylene Vessels

Pharma Hygiene Products can supply a range of mobile polypropylene vessels for products that cannot come into contact with stainless steel.

These vessels have welded seams and are supplied with drop on lids. An external stainless steel band can be added with two carrying handles to aid moving when empty. A mobile frame set on four castors (two braked) is an optional extra.

Propeller or high shear mixers can also be supplied, and the vessels are available in various sizes.

Please enquire for further information.



Paddle Stirrer

This paddle stirrer is formed in one piece and manufactured from 316 pharmaceutical grade stainless steel, ensuring the highest levels of hygiene when mixing e-liquids in a vessel.

Item code	a (mm)	b (mm)	c (mm)	Weight (kg)
PAD6200	1000	125	260	1.2
PAD6200-1300	1300	125	260	1.5





STORAGE & MIXING - E-LIQUIDS

Integrated Mixers & Agitators

Pharma Hygiene Products can supply a wide variety of mixers and agitators, and mount them on our standard and custom vessels and containers to meet your specific requirements.

We offer high-shear mixers for mixing emulsions, propeller mixers for free dissolving powders, as well as general mixing, and slow agitators for keeping products suspended. All can be supplied in varying power and speed specifications.

Please enquire for further information.



Mobile Mixers for Vessels & Containers

Manufactured from 304 grade stainless steel, with 316L grade contact parts, these mixers are designed for use with any open container of suitable dimensions.

Available with either high-shear mixing head (shown) for mixing emulsions, or a propeller mixing head for mixing free dissolving powders and for general mixing.

The mixing head is mounted on a mobile stand with painted hydraulic cylinder (manually operated), and the control panel is IP55 rated and constructed of stainless steel. Mixers can be specified with 3 phase or single phase power options.

Safety interlocks and a motor shroud are further options.



Item code	Model	Operating rpm
CSP-HM	Mobile high-shear mixer	2900
CSP-PM	Mobile propeller mixer	1400



MEASURING & POURING - E-LIQUIDS

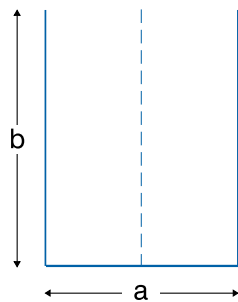


Measuring Jugs

Heavy duty measuring jugs (A)

Manufactured from 304 and 316L grade stainless steel, these jugs are straight sided, graduated and come with a pouring spout and closed side handle. They have crevice- and pit-free interiors and are polished throughout.

Item code	Capacity (litres)	a	b	Handle	Graduation	Weight (gm)
JUM*0.5G	0.5	75	135	SIDE	0.1-0.5/0.1	285
JUM*001G	1	100	135	SIDE	0.2-1/0.2	475
JUM*002G	2	135	170	SIDE	0.2-2/0.2	690

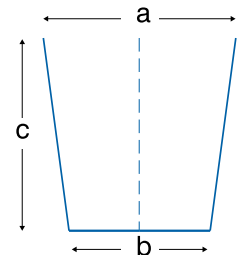


Note: In the table above replace the * with 4 if 304 grade is required, or with 6 if 316L grade is required.

Light Duty Measuring Jugs (B)

Manufactured from 304 grade, these jugs are tapered and come with either an open or closed handle. They are graduated in pints and litres, have crevice- and pit-free interiors and are polished throughout. The option of rimmed feet is available with the closed handle version from 0.5 litre upwards.

Item code	Capacity (litres)	a	b	c	Handle	Graduation	Weight (gm)
MEA40.1G	0.1	75	40	45	OPEN	0.05-0.1/0.05	40
MEA4.25G	0.25	100	50	70	OPEN	0.05-0.25/0.05	65
ME*40.5G	0.5	120	60	110	OPEN/CLOSED	0.05-0.5/0.1	120
ME*4001G	1	150	75	135	OPEN/CLOSED	0.1-1/0.1	200
ME*41.5G	1.5	155	85	150	OPEN/CLOSED	0.1-1.5/0.1	290
ME*4002G	2	170	85	200	OPEN/CLOSED	0.2-2/0.1	320



Note: In the table above replace the * with an A if an open handle is required, or with a C if a closed handle is required. For a rimmed foot, replace G with R.



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A personal approach, on a global scale

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