

# CRYOPRESERVATION EQUIPMENT

## MVE HE SERIES, -190°C / -150°C VAPOUR STORAGE

### KEY PRODUCT FEATURES AND BENEFITS

- Dry (vapour) storage system
- Storage capacity from 15,600 to 94,500 vials
  - Also suitable for a wide variety of blood bag systems
- Lowest under lid temperature in the industry
- Lowest liquid usage in the industry
  - LN2 cost savings of up to 70%
- Offset neck and free moving sample turn tray
  - Easy sample access and user convenience
- Two supply solenoids to reduce risk of overfilling
- Available with TEC 3000 electronic controller
  - Integrated hot gas by-pass system
  - Keyless security system
  - Level and temperature controls with both visible and audible alarms
  - Interface to external system via serial communications with RS-485
  - Stores time and date stamped information on 30,000 most recent events
  - Optional Battery Back-up
- Systems available which conform to MMD 93/42/EEC, the Medical Device Directive for the EU
- 2 tier 816P unit for IVF



### PRODUCT DESCRIPTION:

The MVE HE range of liquid nitrogen dry vapour freezers have been specifically design for dry vapour storage of valuable biological samples. Their efficient thermal design ensures that 95% of system surface area is enclosed by vacuum, compared to typically 60% in standard freezers. There is virtually no temperature gradient throughout the vessel and the temperature under the lid is certified to -190°C (-150°C version also available). Therefore there is no need for any artificial aids, such as copper cylinders, which greatly increase the LN2 consumption.

The -190°C under lid temperature provides a greater safety margin below the Glass Transition Temperature giving increased long term sample viability in true vapour storage. The liquid reservoir below the sample platform will typically maintain the temperature for up to 25 days in vapour use should the supply of LN2 cease. The vessels are validated to maintain temperature of samples for at least two hours with the lid removed.

**Lower Lifetime Costs** - The HE range has the lowest liquid usage compared to other dry or liquid nitrogen vapour freezers on the market today and the lowest running cost/sample. LN2 cost savings of up to 70% can be achieved when compared to standard storage units of equivalent capacity.

**Sample Integrity** - The HE series not only reduces the running costs of the system but more importantly increases the safety of your stored samples. With the lowest possible vapour storage temperatures and a very low evaporation rate your samples will be held in the safest environment available on the market.

**User Friendly** - The offset neck and free moving sample turn tray provides a single sample retrieval point eliminating the reaching and stretching required with standard freezers. The 'lift over height' has been kept to a minimum, aided by either a single or double step external platform.

**Efficient Use of Space** - The compact design of the HE range gives you the highest number of vials stored per square foot of laboratory space compared to other freezers on the market. Extra height models are also available which further increase the capacity per square foot without impinging on valuable laboratory space.

**State-Of-The Art Electronic Controller Unit** - The MVE TEC 3000 system is supplied with all versions of the HE with the exception of the basic model. It offers integrated gas by-pass system, password protection, twin platinum RTD temperature probes, high and low level alarms and LN2 usage statistics. A 72 hour battery backup is available as an option.

**Warranty** - There is a standard 2 year warranty on all equipment (parts and labour) and a **5 year vacuum warranty**. Chart MVE's products have a rugged design, high quality welds and advanced vacuum technology.

**CryoService Deliver a Total Solution** - *to meet a wide variety of Cryopreservation requirements. This includes liquid gases and associated storage vessels, super insulated vacuum transfer pipelines, the best liquid nitrogen vapour storage freezers on the market, oxygen depletion systems and business management outputs – a total package from one provider. The Chart MVE range extends from a broad line of liquid and vapour phase freezers for straw, ampoule & blood bag storage to lightweight aluminium shippers and Dewars.*

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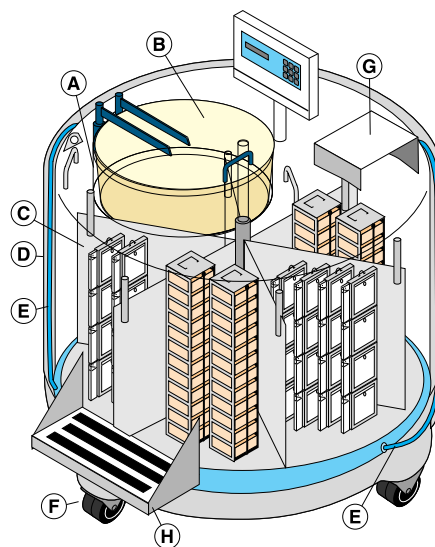
### AT A GLANCE COMPARISON OF RANGE

	815P	818P	819P	1536P	1539R	1539P	1542R	1879P	1881R	1892P	1894R	MVE 816P -2T-190
Total 1.2 & 2ml Vial capacity	15,600	18,200	19,500	36,400	39,000	39,200	42,000	79,950	81,900	92,250	94,500	10,600
Number of SUC-1 canisters (2.5"x2.5"x11")	-	-	-	-	-	-	-	-	-	-	-	115
Number of 1/2 cc straws 10/cane	-	-	-	-	-	-	-	-	-	-	-	35,650
Overall Height (mm)	1,245	1,353	1,449	1,393	1,393	1,445	1,445	1,539	1,556	1,704	1,683	1,271
Outer Diameter (mm)	813	813	813	1,066	1,066	1,066	1,066	1,524	1,524	1,524	1,524	813
Static Evaporation Rate	5.0	5.0	5.0	7.5	7.5	7.5	7.5	12.5	12.5	12.5	12.5	5.0
Holding Time (up to 'x' days)	10	11	11	18	18	18	15	21	25	24	24	11

### DETAILED SPECIFICATION

	815P	818P	819P	1536P	1539R	1539P	1542R	1879P	1881R	1892P	1894R	MVE 816P -2T-190
<b>UNIT DIMENSIONS</b>												
LN2 Capacity (litres)	370	420	463	756	756	797	797	1,672	1,745	1,829	1,770	381
LN2 Capacity (under platform (litres)	52	55	55	133	133	133	113	260	318	296	295	55
Neck Opening (mm)	317	317	317	445	445	-	445	635	635	635	635	317
Useable Internal Height (mm)	676	781	877	730	745	781	745	732	741	876	868	330 per level
Inner Diameter (mm)	731	731	731	978	983	978	983	1,429	1,391	1,422	1,391	728 top tray 702 bottom
Overall Height (mm)	1,245	1,353	1,449	1,393	1,939	1,445	1,445	1,539	1,556	1,704	1,683	1,271
Outer Diameter (mm)	813	813	813	1,066	1,066	1,066	1,066	1,524	1,524	1,524	1,524	813
Weight Empty (kg)	216	225	234	313	313	327	327	719	781	701	781	215
<b>UNIT CAPACITIES 1.2 &amp; 2ml Vials (Internally Threaded)</b>												
Number of Racks (100 cell boxes)	12	12	12	24	26	26	26	54	60	54	60	-
Number of Racks (25 cell boxes)	4	4	4	12	16	16	16	30	12	30	12	-
Number of Stages per Rack	12	14	15	13	13	14	14	13	13	15	15	-
<b>Total Vial Capacity</b>	<b>15,600</b>	<b>18,200</b>	<b>19,500</b>	<b>36,400</b>	<b>42,000</b>	<b>39,200</b>	<b>42,000</b>	<b>79,950</b>	<b>81,900</b>	<b>92,250</b>	<b>94,500</b>	<b>-</b>
<b>Blood Bag Capacities</b>												
Fenwall 4R9951 (50ml)	768	896	1,024	1,488	1,446	1,736	1,687	2,952	2,940	3,936	3,920	-
Fenwall 4R9953 (250ml)	416	416	520	812	768	812	960	1,584	1,608	1,980	2,010	-
Fenwall 4R9955 (500ml)	304	304	380	608	576	608	720	1,104	1,240	1,380	1,550	-

- A Offset neck design to maintain -190°C in vapour storage (-150°C version available) and provide low liquid nitrogen consumption with standard racks
- B Durable aluminium lid - designed for longer life
- C Rotating interior tray provides easy access to cryobiological samples
- D Low maintenance, all stainless steel construction
- E Annular filling lines reduces frost and ice formation near lid
- F Super-tough, durable casters
- G Rack Stand
- H Step-up platform (MVE HE 1500 and 1800 series) - latest version has fold up double step
- I Gas By-Pass - vents the incoming filling gas until liquid reaches the valve, minimising the normal filling losses associated with filling from long delivery pipes



### OPTIONAL FEATURES

**Battery Back-Up** - provides fill operation for 72 hours in the event of power supply failure

Systems available which conform to MMD 93/42/EEC, the Medical Device Directive for the EU