

# POLE POSITION



**-86°C freezers:  
chest and  
upright models**

**Hettich**

FREEZER

## OPTIMAL CONDITIONS

You require safe, secure storage for your valuable samples. Tissue specimens, DNA, RNA, protein preparations and similar substances need to be stored in such a way as to ensure they are well preserved. With a constant temperature of  $-86^{\circ}\text{C}$ , Hettich freezers offer the optimal environment for your sensitive samples.

Inside doors and sectional covers enable selective access, so that other stored substances remain protected. Thanks to movable shelves, the interior of the upright freezers can be organised flexibly and according to your specific requirements. Removable trays are easy to pull out, as their special design prevents freezing. Your samples will be stored conveniently and trouble-free in suitable racks and boxes, designed to accommodate the most varied types of tubes.

We know how important it is that your freezer operates perfectly over the long term. That's why we manufacture our freezers using only the best materials of European origin and equip them with the most extensive range of security and control functions. Hettich freezers will guarantee optimal conditions for your samples for many years to come.

### Volumes

- Upright freezers:  
120 l, 244 l, 360 l, 480 l, 600 l, 711 l
- Chests:  
405 l, 568 l



# SOUND REASONS

## No defrosting

Ice can easily be wiped off the stainless steel interior surfaces. The insulation of the interior doors prevents the formation of ice.

## Economical in use

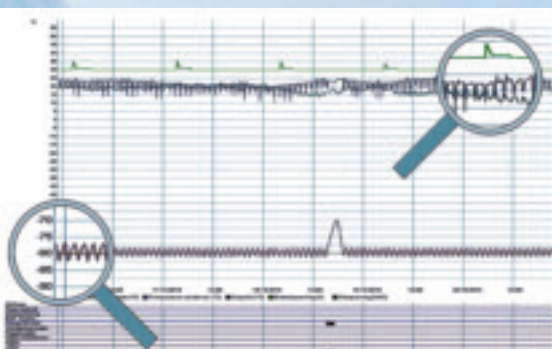
The compressor is smaller and consumes less energy, whilst delivering the same performance. The lower heat generation and excellent insulation reduce energy costs. The cooling system heats the plastic surround of the outer door and thus eliminates the need for electrical door heating. The door seal remains free of ice. The two inner doors have optimal insulation to minimise any rise in temperature when the outer door is opened.

## Advanced control and data recording

Modern communication technology is used for the web-based control system. Every Hettich freezer can be assigned its own IP address on the Internet. Communication with the freezer is possible in one of 3 ways:

- via a USB connection
- via a local network (Ethernet)
- via the Internet

The software is supplied on a flash drive.



The most important parameters are checked every 20 minutes. Data are stored on an internal SD card with storage capacity for up to approximately 6 months. The data are shown graphically and are retrievable. The temperature tolerance can be selected as desired. The temperature display is accurate to 0.5 °C.

## User friendly

- **Vacuum release** enables repeated opening and closing of the freezer door without long waiting periods.
- **Ergonomic door handle** allows the freezer to be opened and closed with a single forward or backward movement.
- **Variable configuration of interior space through movable partitions** for upright freezers. Racks from other manufacturers can also be used.
- **Low noise level**
- **Position of door hinges can be chosen** for upright freezers.
- **The lid of the chest freezers** can be opened through 85°, so that racks in the back row can be fully removed.
- **Mechanism to prevent lid from dropping** for chest freezers.

## Security

- **Alarm warning** – by means of an acoustic and optical signal in the case of:
  - defective temperature sensors on the condenser and/or in the interior
  - deviations in interior temperature
  - temperature increase in the condenser
  - defective fan at the condenser
  - power failure
  - dirty dust filter
  - deleted software data
  - ± 10% deviation from 240 V power supply
  - open door (upright freezers)
  - voltage drop in the supply battery for the control system
  - empty supply battery
- Alarm warnings can also be sent
  - to a PC via e-mail
  - to a remote monitoring system via potential-free contact
  - to max. 2 pre-programmed mobile phones via text message (option – on request)

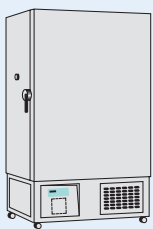
*All alarm values are adjustable. A user code safeguards against unauthorised changes of the parameters or alarm values. Alarm signals may be switched off.*



# UPRIGHT FREEZERS -86° C



## Temperature range -50 °C to -86 °C



Voltage: 220–240 V, 1 ~  
Frequency: 50 Hz

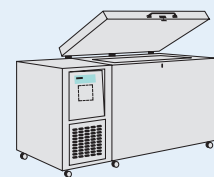
Cat. No.	HS 1286-A	HS 2486-A	HS 3686	HS 4886	HS 6086	HS 7186
Content in litres	120	244	360	480	600	711
Interior dimensions (H x W x D mm)	549 x 450 x 488	1111 x 450 x 488	1276 x 450 x 626	1276 x 600 x 626	1276 x 750 x 626	1276 x 890 x 626
Exterior dimensions (H x W x D mm)	1270 x 755 x 740	1832 x 755 x 740	1992 x 755 x 890	1992 x 905 x 890	1992 x 1055 x 890	1992 x 1195 x 890
Exterior dimensions with 90° open door (H x W x D mm)	1270 x 790 x 1422	1832 x 790 x 1422	1992 x 792 x 1572	1992 x 940 x 1720	1992 x 1085 x 1850	1992 x 1279 x 2010
Dimensions without door	1260 x 700 x 740	1822 x 700 x 740	1982 x 700 x 865	1982 x 850 x 865	1982 x 1000 x 865	1982 x 1140 x 865
Shelves delivered as standard	1	3	3	3	3	3
Shelf dimensions (W x D mm)	450 x 454	450 x 454	450 x 592	600 x 592	750 x 592	890 x 592
Number of interior doors	1	2	2	2	2	2
Max. shelf load kg	ca. 125	ca. 125	ca. 125	ca. 125	ca. 125	ca. 125
Net weight kg	190	245	285	315	360	375
Shipping weight kg	255	330	369	410	470	540
Current consumption A	3.47	4	5	5.4	6	6.5
Circuit protection A	16	16	16	16	16	16
Power consumption kWh	0.42	0.43	0.51	0.54	0.57	0.6

## CHEST FREEZERS -86° C



### Temperature range -50°C to -86°C

Cat. No.	HT 4086	HT 5786-A
Content in litres	405	568
Interior dimensions (H x W x D mm)	751 x 947 x 570	751 x 1327 x 570
Exterior dimensions with closed lid (H x W x D mm)	1098 x 1680 x 950	1098 x 2060 x 950
Exterior depth with open lid (mm)	975	975
Exterior height with open lid (mm)	1940	1940
Net weight kg	290	335
Shipping weight kg	430	505
Current consumption A	4.56	5
Circuit protection A	16	16
Power consumption kWh	0.45	0.46



Voltage: 220–240 V, 1 ~  
Frequency: 50 Hz

## ACCESSORIES

### Racks of stainless steel for upright freezers

With handle:

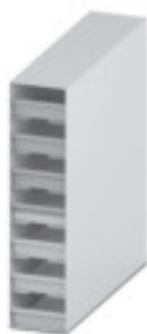


HR-4-5-53E

Cat. No.	Number	H mm	Max. number of racks / cryo boxes in upright freezers with capacity in litres						Dimensions H x W x D mm
			120	244	360	480	600	711	
<i>For cryo boxes</i>									
HR-3-4-53E	12	50	6/72	12/144					237 x 139 x 427
HR-3-3-76E	9	75	6/54	12/108					252 x 139 x 427
HR-4-5-53E	20	50			12/240	16/320	20/400	24/480	293 x 139 x 566
HR-4-3-76E	12	75			12/144	16/192	20/240	24/288	252 x 139 x 566

### Racks of aluminium for upright freezers

With individually removable trays:



DSA-7844-136GE

Cat. No.	Number	H mm	Max. number of racks / cryo boxes in upright freezers with capacity in litres						Dimensions H x W x D mm
			120	244	360	480	600	711	
<i>For cryo boxes</i>									
DSA-4603-136GE	12	50	6/72	12/144					261 x 145 x 420
DSA-9573-136GE	27	50	3/81	6/162					536.5 x 145 x 420
DSA-3813-136GE	9	75	6/54	12/108					261 x 145 x 420
DSA-6833-136GE	18	75	3/54	6/108					529 x 145 x 420
DSA-5534-136GE	20	50			12/240	16/320	20/400	24/480	291 x 145 x 560
DSA-11524-136GE	44	50			6/264	8/352	10/440	12/528	626 x 145 x 560
DSA-D211524-136GE	88	50			2+2 <sup>1</sup> /264	4/352	2+4 <sup>2</sup> /440	6/528	626 x 290 x 560
DSA-3914-136GE	12	75			12/144	16/192	20/240	24/288	291 x 145 x 560
DSA-7844-136GE	28	75			6/168	8/224	10/280	12/336	626 x 145 x 560
DSA-D27844-136GE	56	75			2+2 <sup>1</sup> /168	4/224	2+4 <sup>2</sup> /280	6/336	626 x 289 x 560
<i>For microtitre plates</i>									
DSA-4603-136GE	48	15	6/288	12/576					261 x 145 x 420
DSA-9573-136GE	108	15	3/324	6/648					536.5 x 145 x 420
DSA-5534-136GE	90	15			12/1080	16/1440	20/1800	24/2160	291 x 145 x 560
DSA-11524-136GE	198	15			6/1188	8/1584	10/1980	12/2376	626 x 145 x 560
DSA-D211524-136GE	396	15			2+2 <sup>1</sup> /1188	4/1584	2+4 <sup>2</sup> /1980	6/2376	626 x 290 x 560
<i>For Micronic systems</i>									
DSA-4603-136GE	16	50	6/96	12/192					261 x 145 x 420
DSA-9573-136GE	36	50	3/108	6/216					536.5 x 145 x 420
DSA-5534-136GE	30	50			12/360	16/480	20/600	24/720	291 x 145 x 560
DSA-11524-136GE	66	50			6/396	8/528	10/660	12/792	626 x 145 x 560
DSA-D211524-136GE	132	50			2+2 <sup>1</sup> /396	4/528	2+4 <sup>2</sup> /660	6/792	626 x 290 x 560

DSA-D27844-136G

### Racks of aluminium (VRA-) and stainless steel (VRS-) for chest freezers

With handle:



VRS/VRA-9-76E

Cat. No.	Number	H mm	Max. number of racks/cryo boxes or microtitre plates in chest freezers with capacity in litres		Dimensions H x W x D mm
			405	568	
<i>For cryo boxes</i>					
VRA-13-53E with locker	13	50	24/312	36/468	740 x 140 x 140
VRS-13-53E <sup>2)</sup>	13	50	24/312	36/468	741 x 139 x 139
VRA-9-76E with locker	9	75	24/216	36/324	722 x 140 x 140
VRS-9-76E <sup>2)</sup>	9	75	24/216	36/324	720 x 139 x 139
<i>For microtitre plates</i>					
VRA-14-50E with locker	14	50	42/588	60/840	740 x 133 x 93
	42	15	42/1764	60/2520	
VRS-14-50E	14	50	42/588	60/840	742 x 131 x 90
	42	15	42/1764	60/2520	

<sup>1)</sup> a combination of 2 racks DSA-11524-136GE or DSA-7844-136GE and 2 racks DSA-D211524-136GE or DSA-D27844-136GE

<sup>2)</sup> a combination of 2 racks DSA-11524-136GE or DSA-7844-136GE and 4 racks DSA-D211524-136GE or DSA-D27844-136GE

<sup>3)</sup> With Cat. No. VRA-... also available in aluminium.

## ACCESSORIES AND CAPACITIES

### Cryo boxes

Dividers for cryo boxes KE50-C1NE and KE75-C1NE, plastic-coated cardboard

Cat. No.	Division	Number of cryo tubes 50/75 mm
RE300808SE	8 x 8	64
RE300909SE	9 x 9	81
RE301010SE	10 x 10	100

Cryo boxes of polypropylene, transparent<sup>4)</sup>

Cat. No.	Dimensions H x W x D mm	For cryo tubes	
		Ø mm	Number
KE50-C81NE	52 x 133 x 133	13	81
KE50-C49NE	52 x 133 x 133	16	49
KE75-C81NE	75 x 133 x 133	13	81
KE75-C49NE	75 x 133 x 133	16	49
KE50-C064NE	52 x 133 x 133	for 64 microlitre tubes with safety lock	
KE50-C1NE	52 x 133 x 133	without dividers (suitable dividers, see page 6)	
KE75-C1NE	75 x 133 x 133		

### Capacities

Maximum number of tubes using boxes with 10 x 10 dividers (Ø 12 mm)

Rack/tubes in upright freezers	HS 1286-A 120 l	HS 2486-A 244 l	HS 3686 360 l	HS 4886 480 l	HS 6086 600 l	HS 7186 711 l
HR-3-4-53E (50 mm)	7,200	14,400				
HR-3-3-76E (75 mm)	5,400	10,800				
HR-4-5-53E (50 mm)			24,000	32,000	40,000	48,000
HR-4-3-76E (75 mm)			14,400	19,200	24,000	28,800
DSA-4603-136GE (50 mm)	7,200	14,400				
DSA-9573-136GE (50 mm)	8,100	16,200				
DSA-3813-136GE (75 mm)	5,400	10,800				
DSA-6833-136GE (75 mm)	5,400	10,800				
DSA-5534-136GE (50 mm)			24,000	32,000	40,000	48,000
DSA-11524-136GE (50 mm)			26,400	35,200	44,000	52,800
DSA-D211524-136GE (50 mm)			26,400	35,200	44,000	52,800
DSA-3914-136GE (75 mm)			14,400	19,200	24,000	28,800
DSA-7844-136GE (75 mm)			16,800	22,400	28,000	33,600
DSA-D27844-136GE (75 mm)			16,800	22,400	28,000	33,600
Rack/tubes in chest freezers	HT 4086 405 l	HT 5786-A 568 l				
VRA-13-53E / VRS-13-53E	31,200	46,800				
VRA-9-76E / VRS-9-76E	21,600	32,400				

Maximum number of tubes using boxes with 9 x 9 dividers (Ø 13 mm)

Rack/tubes in upright freezers	HS 1286-A 120 l	HS 2486-A 244 l	HS 3686 360 l	HS 4886 480 l	HS 6086 600 l	HS 7186 711 l
HR-3-4-53E (50 mm)	5,832	11,664				
HR-3-3-76E (75 mm)	4,374	8,748				
HR-4-5-53E (50 mm)			19,440	25,920	32,400	38,880
HR-4-3-76E (75 mm)			11,664	15,552	19,440	23,328
DSA-4603-136GE (50 mm)	5,832	11,664				
DSA-9573-136GE (50 mm)	6,561	13,122				
DSA-3813-136GE (75 mm)	4,374	8,748				
DSA-6833-136GE (75 mm)	4,374	8,748				
DSA-5534-136GE (50 mm)			19,440	25,920	32,400	38,880
DSA-11524-136GE (50 mm)			21,384	28,512	35,640	42,768
DSA-D211524-136GE (50 mm)			21,384	28,512	35,640	42,768
DSA-3914-136GE (75 mm)			11,664	15,552	19,440	23,328
DSA-7844-136GE (75 mm)			13,608	18,144	22,680	27,216
DSA-D27844-136GE (75 mm)			13,608	18,144	22,680	27,216
Rack/tubes in chest freezers	HT 4086 405 l	HT 5786-A 568 l				
VRA-13-53E / VRS-13-53E	25,272	37,908				
VRA-9-76E / VRS-9-76E	17,496	26,244				

<sup>4)</sup> If you prefer coloured boxes, please add Y (= yellow), B (= blue), G (= green), P (= red/purple) or O (= orange) to the Cat. No.



VRA-13-53E with locker

## OPTIONS

	Cat. No.	Installation
<b>CO<sub>2</sub> backup system</b> (without CO <sub>2</sub> bottles) Emergency supply with liquid CO <sub>2</sub> when cabinet temperature rises to a preset level. With accumulator and magnetic valve.	<b>S700E</b>	factory-installed
<b>High pressure hose</b> Length: 2 m. To discharge the CO <sub>2</sub> into the freezer.	<b>AC0007E<sup>5)</sup></b>	
<b>Hose</b> Length: 1 m. To connect two CO <sub>2</sub> bottles.	<b>AC0006E<sup>6)</sup></b>	
<b>Coupling</b> Required for connecting 2 freezers/1 CO <sub>2</sub> bottle or 1 freezer/2 CO <sub>2</sub> bottles.	<b>AC0004E<sup>7)</sup></b>	
<b>LN<sub>2</sub> backup system</b> (without LN <sub>2</sub> bottles) Emergency supply with liquid nitrogen when cabinet temperature rises to a preset level. With accumulator and magnetic valve. Accessories on request.	<b>S600E</b>	factory-installed
<b>Accumulator and charger</b> for 72-hour alert in case of power failure when working with a back-up system.	<b>AC0031-32E</b>	
<b>Voltage stabiliser</b> Helps protect electrical equipment from damage by boosting low voltage automatically.	<b>5575E</b>	
<b>Temperature recorder</b> For recording the temperature for 7 days / 24 hours. Including 100 circular charts, 1 pen tip and battery.	<b>RU0005E</b>	factory-installed
<b>Chart paper for temperature recorder</b> for 7 days. Package of 100	<b>RU0006-7E</b>	
<b>Chart paper for temperature recorder</b> for 24 hours. Package of 100	<b>RU 0006-24E</b>	
<b>Pen tips</b> Package of 5. Colour: Blue	<b>RU0007-BE</b>	
<b>Pen tips</b> Package of 5. Colour: Black	<b>RU0007-ZE</b>	
<b>Pen tips</b> Package of 5. Colour: Red	<b>RU0007-RE</b>	
<b>Stainless steel shelf</b>	<b>on request</b>	Please specify quantity and freezer number
<b>Water cooling</b> Water-cooled condenser	<b>WCC-001E</b>	factory-installed

<sup>5)</sup> for 1 freezer and 1 CO<sub>2</sub> bottle: 1 x AC0007E

<sup>6)</sup> for 1 freezer and 2 CO<sub>2</sub> bottles: 1 x AC0007E, 1 x AC0006E, 1 x AC0004E

<sup>7)</sup> for 2 freezers and 1 CO<sub>2</sub> bottle: 2 x AC0007E, 1 x AC0004E

The CO<sub>2</sub> bottles must be equipped with a rising pipe.

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