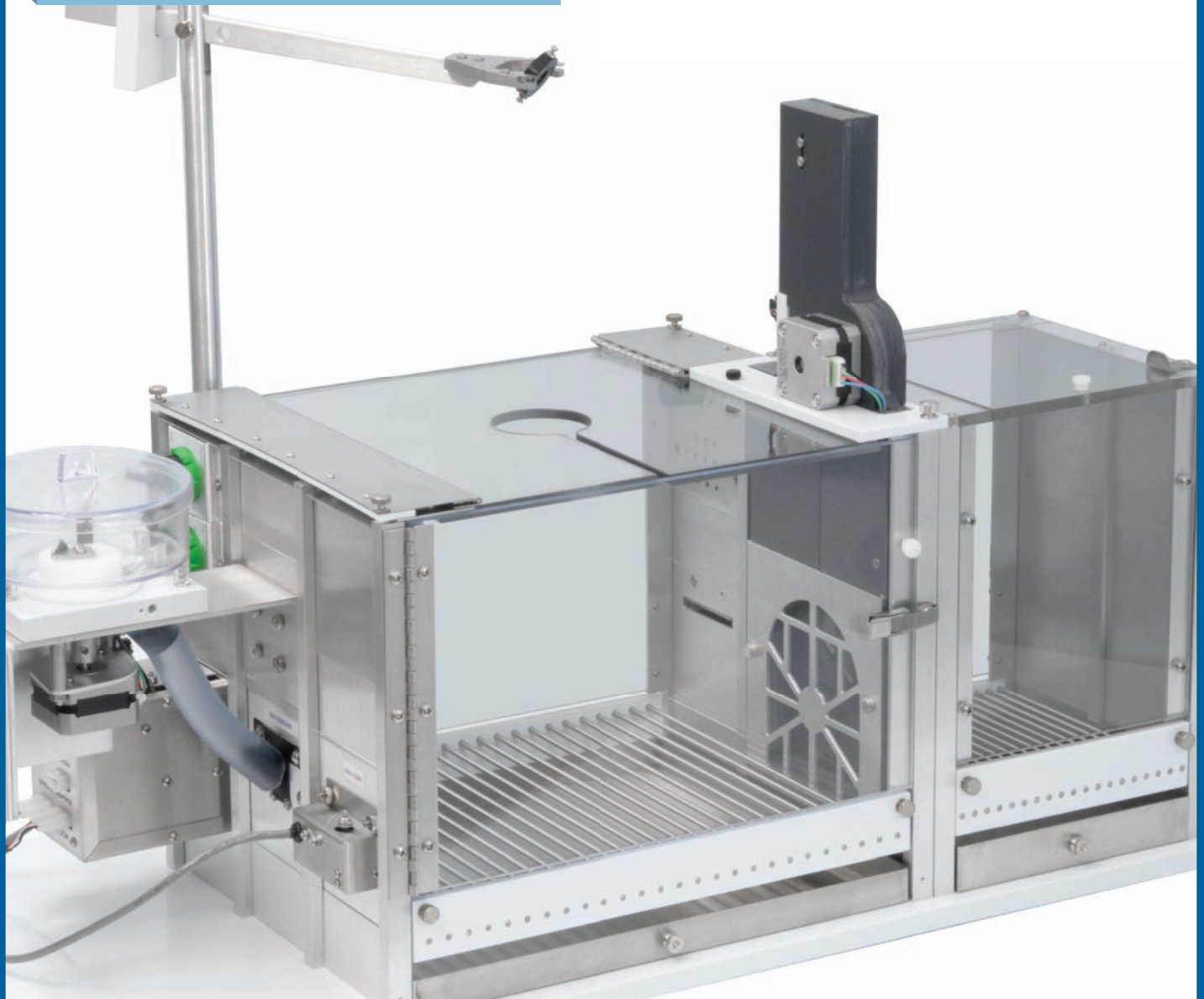




SCAN FOR
WEBSITE

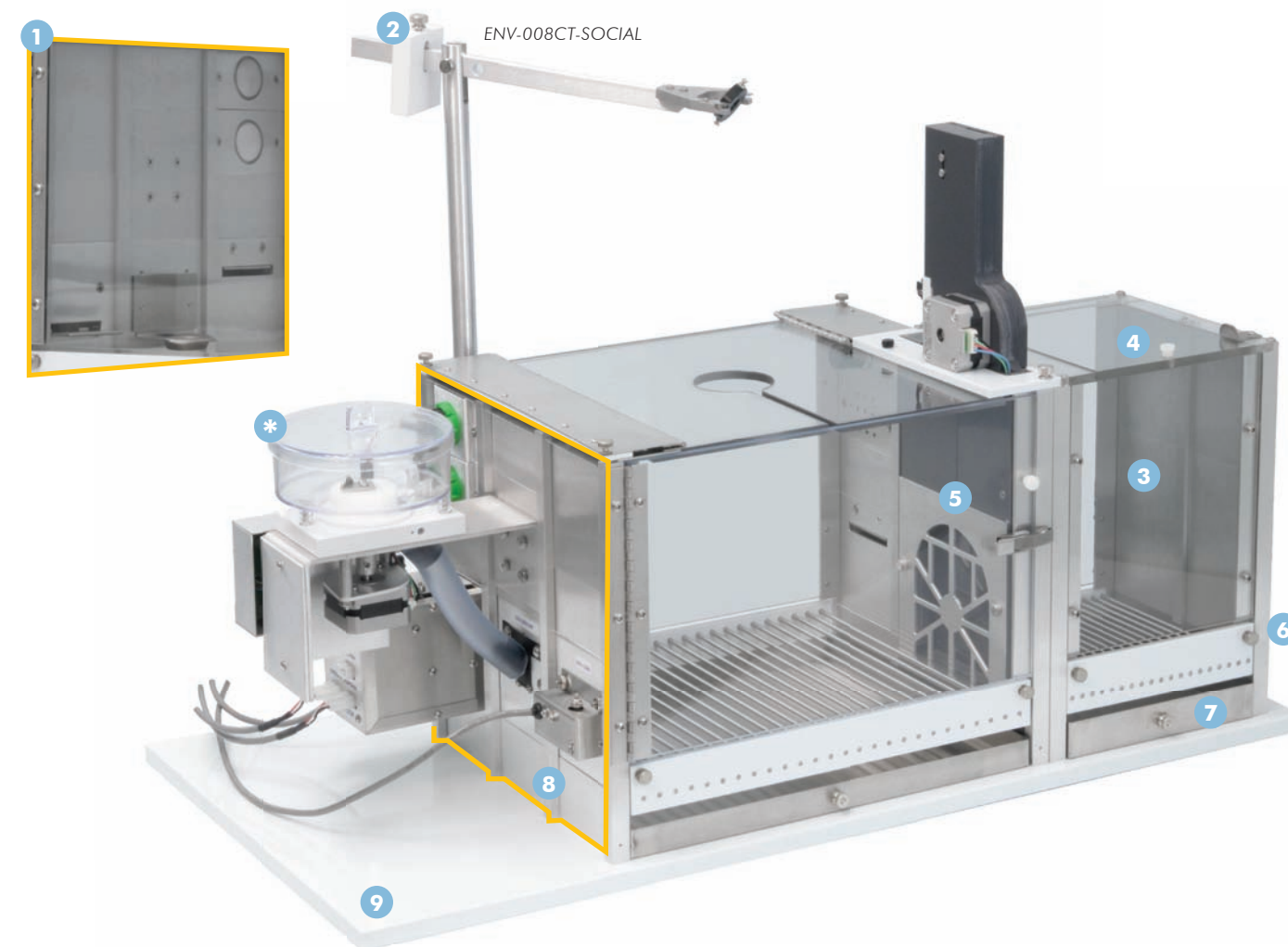
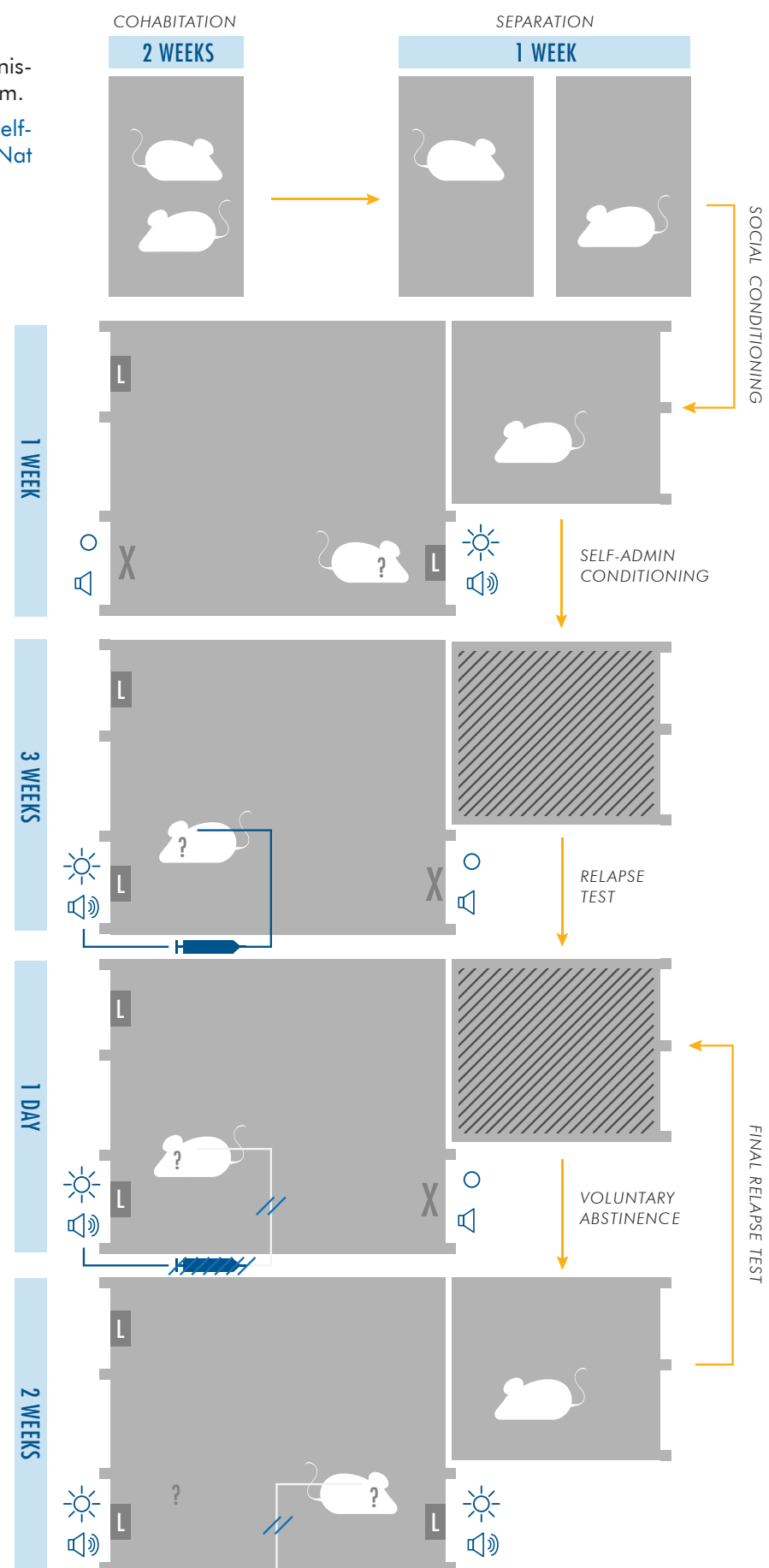
SOCIAL SELF ADMINISTRATION

Overview	2-3
Packages	4-5
Sound Attenuating Cubicles	6
Modular Chambers	7
Swivels & Tethers	8-9
Syringe Pumps	10-11



Summary of the original social self-administration protocol used by Venniro & Shaham.

Venniro M, Shaham Y. An operant social self-administration and choice model in rats. *Nat Protoc.* 2020 Apr;15(4):1542-1559.

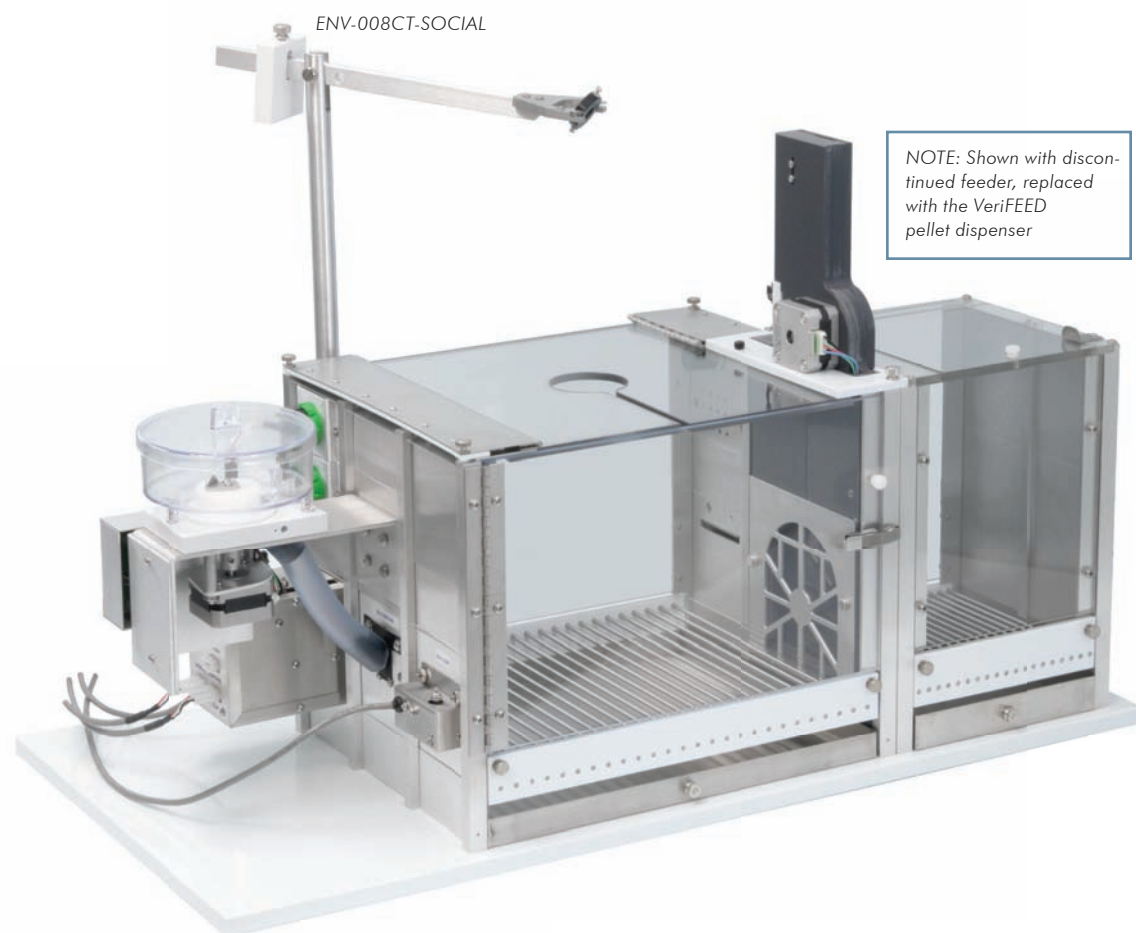


1. Two retractable levers help focus self-administration conditioning, by removing access to them or adding as a reward. In this example, one opens the social door, the other administers pellet reward. In addition, one fixed lever as control, additional reward, or event trigger, and one pellet dispenser and receptacle.
2. One single speed syringe pump, drug delivery arm, magnetic vascular access button (VAB), and single channel magnetic VAB tether kit create a drug delivery reward system to model chemical dependency and addiction through the blood.
3. Operant partner chamber provides an experimental environment to condition subject animals to perform various experimental actions to produce predictable effects.
4. Clear polycarbonate access doors.

5. A solid auto door with a specialized grid in front of it, completely blocks contact when closed. When opened, it enables the animal to see, smell, and hear the partner animal, but prevents contact.
6. Stainless steel grid floors supported with polypropylene walls come out in one piece with only two thumb screws.
7. Autoclavable stainless steel waste pans help to create an experimentally replicable environment.
8. Aluminum channels affixed to the base support the easy-to-clean stainless steel modular components, which are designed to be easily changed out for all your current and future experimental needs.
9. White polypropylene base is easy-to-clean and chemical resistant.

*NOTE: Pictured with old feeder, now includes VeriFEED pellet dispenser

	BASE (L*W*H)	MAIN CHAMBER (L*W*H)	SIDE CHAMBER (L*W*H)	FITS IN SAC
ENV-008CT-SOCIAL	27" x 13.75" x 0.5" (68.58 x 34.93 x 1.27 cm)	11.63" x 9.78" x 7.35" (53.34 x 24.84 x 18.67 cm)	6.1" x 6.3" x 7.35" (53.34 x 24.84 x 18.67 cm)	SAC-302216-27
ENV-307WCT-SOCIAL	27" x 13.75" x 0.5" (68.58 x 34.93 x 1.27 cm)	8.5" x 7.12" x 5" (21.59 x 18.08 x 12.7 cm)	6.1" x 4.9" x 5" (15.5 x 12.4 x 12.7 cm)	ENV-018MD



SOCIAL SELF ADMINISTRATION PACKAGE BASIC

MED-008-CT-SOCIAL **RAT** | STANDARD | FIXED+RETRACT. LEVERS | SINGLE SPEED
 MED-307W-CT-SOCIAL **MOUSE** | WIDE | FIXED+RETRACT. LEVERS | SINGLE SPEED

Originally created for Marco Venniro and Yavin Shaham* as a custom build, the social self-administration chamber is now available as a standard product.

This chamber was crafted to run an operant model in which the rodent engages in lever pressing, rewarded with either social interaction, or a drug infusion. This model is intended for studying the role of operant social reward in addiction, as well as addiction vulnerability.

- A chamber with a modified top for the resident (drug user) rodent is conjoined with a smaller chamber that houses their drug naïve social partner.

- The automatic door linking the two has a custom-designed grate to prevent the rodents from being able to touch, but can still see, smell, and hear each other

*Venniro, M., Shaham, Y. An operant social self-administration and choice model in rats. *Nat Protoc* 15, 1542–1559 (2020).

SUMMARY OF CONTENTS

- An MDF SAC, a social chamber w/modified top, house light and stimulus lights, fixed lever, retractable levers (x2), pellet dispenser with a cup, single speed syringe pump, sonalert module, 8in/16out SmartCtrl package, drug delivery arm, and an Instech VAB setup.

PACKAGE CONTENTS

A = MED-008-CT-SOCIAL B = MED-307W-CT-SOCIAL

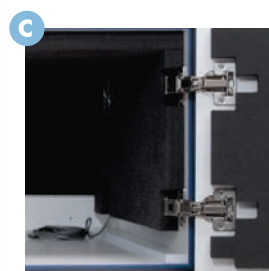
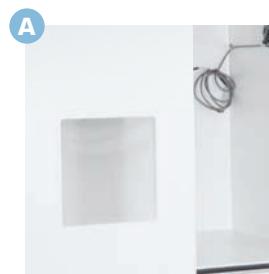
#	SKU	DESCRIPTION	A	B
1	SAC-302216-27	MDF SAC	A	
1	ENV-018MD	MDF SAC		B
1	ENV-008CT-SOCIAL	Social Self-Admin Chamber for Rat	A	
1	ENV-307WCT-SOCIAL	Social Self-Admin Chamber for Mouse		B
1	ENV-010B2-SOC	Auto Door for Rat	A	
1	ENV-3015BD2-SOCIAL	Auto Door for Mouse		B
1	ENV-005	Grid Floor	A	
1	ENV-307A-GFW-SOC	Grid Floor*	A	B
1	ENV-307W-GFW-SOC	Grid Floor		B
1	ENV-215M-LED	LED House Light	A	
2	ENV-221M-LED	LED Stimulus Light White	A	
1	ENV-221RD-LED	LED Stimulus Light Red	A	
1	ENV-315W-LED	LED House Light		B
2	ENV-321W	LED Stimulus Light Yellow		B
1	ENV-321DW	Dual LED Stimulus Light Yellow		B
1	ENV-110M	Standard Fixed Lever for Rat	A	
2	ENV-112CM	Retractable Lever for Rat	A	
1	ENV-310W	Standard Fixed Lever for Mouse		B
2	ENV-312-3W	Retractable Lever for Mouse		B
1	ENV-204	VeriFEED Pellet Dispenser	A	B
1	ENV-200R1AM	Pellet Cup Receptacle for Rat	A	
1	ENV-300R1AW	Pellet Cup Receptacle for Mouse		B
1	PHM-200	Single Speed Syringe Pump	A	B
1	PHM-110-SAI	Drug Delivery Arm for Rat	A	
1	PHM-124A	Drug Delivery Arm for Mouse		B
1	PHM-KVABR1T/MED	1 Channel Magnetic VAB Tether Kit for Rat	A	
1	PHM-KVABM1T/MED	1 Channel Magnetic VAB Tether Kit for Mouse		B
1	PHM-VABR1B/22	Magnetic Vascular Access Button 22ga	A	
1	ENV-223AM	Sonalert Module w/Volume Control for Rat	A	
1	ENV-323AW	Sonalert Module w/Volume Control for Mouse		B
1	DIG-716B	SmartCtrl Interface Module	A	B
1	SG-716B	SmartCtrl Connection Panel (8 In/16 Out)	A	B
1	SG-210CB	DB-25 SmartCtrl Cable, M/F, 25' (7.6 m)	A	B
5	SG-216A-2	3-Pin Mini-Molex Extension, 2' (61 cm)	A	B
3	SG-216A-3	3-Pin Mini-Molex Extension, 3' (91.4 cm)	A	B

* NOTE: The same grid floor ENV-307A-GFW-SOC is used in both rat and mouse companion compartments.

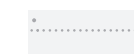
	INTERIOR (W×H×D)	EXTERIOR (W×H×D)	USE WITH
SAC-302216-27	30" x 21" x 16" (76.2 x 53.3 x 40.6 cm)	31.5" x 24" x 18" (80 x 60.9 x 45.7 cm)	Rats
ENV-018MD	21.81" x 21.88" x 15.94" (65.56 x 55.58 x 40.49 cm)	25.94" x 24" x 19" (65.89 x 60.96 x 48.26 cm)	Mice



SAC-302216-27



ENV-005



ENV-307A-GFW



ENV-307W-GFW

	RODS	ROD SIZE (OD)	ROD SPACING	HARNESS	WASTE PAN
ENV-005	19	0.187" (0.47 cm)	0.62" (1.57 cm)	ENV-005-QD	ENV-007A3
ENV-307A-SOC	19	0.125" (0.32 cm)	0.31" (0.79 cm)	ENV-307A-QD	ENV-307-07
ENV-307W-SOC	24	0.125" (0.32 cm)	0.35" (0.89 cm)	ENV-307W-QD	ENV-307W-07

MODULAR CHAMBERS

ENV-008CT-SOC | **RAT** | **STANDARD**
ENV-307WCT-SOC | **MOUSE** | **WIDE**

Stainless steel grid rods mounted in white polypropylene supports.

- Floor is easily removed via two thumbscrews for cleaning
 - Stainless steel waste pan is autoclavable
- Add the quick disconnect harness for aversive stimulation and/or contact lickometer applications
- For information about modular components such as lights, levers, audio stimulus, food + water delivery and more, refer to the [Operant Conditioning + General Behavior](#) brochure

GRID FLOOR

ENV-005 | **RAT** | **STANDARD**
ENV-307A-GFW-SOC | **MOUSE + RAT** | **CLASSIC**
ENV-307W-GFW-SOC | **MOUSE** | **WIDE**

Stainless steel grid rods mounted in white polypropylene supports.

- Floor is easily removed via two thumbscrews for cleaning
 - Stainless steel waste pan is autoclavable
- Add the quick disconnect harness for aversive stimulation and/or contact lickometer applications
- Classic mouse size grid floor (ENV-307A-GFW-SOC) used in companion compartment for both models

SOUND ATTENUATING CUBICLE MDF

ENV-018MD | **XTALL** | **UN-LINED**
SAC-302216-27 | **XTALL** | **UN-LINED** | **PULL-OUT**

Constructed from MDF, a high density wood composite with thermally fused high pressure white laminate inside and out.

- A) Replace the standard peephole with a single pane polycarbonate viewing window.
- Available in small, large, and full sizes
 - Full windows replace the standard double door with a single door, and is ideal for applications such as group viewing or video taping
- B) Pre-drilled holes for installing a Universal Camera Mount (ENV-598) for overhead video camera footage
- C) Add a layer of 1" thick micro-cell acoustical foam (crosslink polyethylene) to the inside of the cubicle and doors to increase attenuation performance.

- 1) Foam stripping
- 2) 28V DC Ventilation Fan provides a low steady amount of blocking noise (NOTE: AC powered model also available)
- 3) European style sag free self-closing hinges (open door angle 120°)
- 4) Magnifying "peep hole" style viewing port (Note: Viewing windows also available)
- 5) Cable routing port
- 6) A shelf on drawer slides makes the changing out of chambers much easier
(NOTE: It is recommended that the back of the cubicle be anchored down for increased stability)
- 7) Skid resistant rubber feet
- 8) Baffled air intake vent provides fresh air

QUICK DISCONNECT HARNESS

ENV-005-QD | **RAT** | **STANDARD** | **ENV-307W-QD** | **MOUSE** | **WIDE**

- Floor can be changed easily between subjects for improved throughput
- Spring-loaded contacts mounted in a polypropylene strip and wired in sequence to a DB-9 connector, when installed, each rod presses firmly against a contact for reliable shock delivery
- Attaches to the rear of the chamber and remains in place when the floor is removed for easy cleaning without wires

NOTE: Will not work with older floors that have been drilled and tapped.

- Use the:
 - SG-219G-10 | M/F DB-9 Shock Output Cable to connect with an aversive stimulator
 - SG-219G2M | Lickometer Controller Cable to connect with standard contact lickometers
 - SG-219G | M/F DB-9 Shock Output Cable to connect with switching lickometers

US Pat. No. 6412441 B1, Canadian Pat. No. 2,368,344, UK Pat. No. 1226750, Australian Patent 772111, France 1,226,750, Germany 602 05 143.6, Italy 1,226,750, The Netherlands 1,226,750, European Pat. No. 1226750, other foreign patents pending.



PHM-115IP

DISPOSABLE PLASTIC SWIVEL SINGLE CHANNEL

PHM-115IP **RAT** | 22 GAUGE

- Instech's plastic infusion swivels are designed for researchers that require components touching the fluid path to be replaced after each experiment
- Plastic swivels are shipped sterile and individually packaged
- Not autoclavable

STAINLESS STEEL SWIVEL SINGLE CHANNEL

PHM-115I **RAT** | 22 GAUGE

- Includes a universal swivel-to-tether clamp that connects to all of Instech's button, harness, and head block tethers
- Fully autoclavable



PHM-110-SAI

DRUG DELIVERY ARM 3/8" GIMBAL RING

PHM-110-SAI **RAT**
PHM-124A **MOUSE**

- Includes an aluminum block for mounting on most rat modular test chambers
 - The back wall on the modular test chambers is pre-drilled for this block, or it can be mounted on a modular panel
- The post adjusts to extend up to 8" (20.3 cm) above the chamber and 7" (17.8 cm) over the center with a pivot-arm and dual action gimbal
- An adjustable counterbalance weight maintains sufficient tension to keep the leash assembly away from the test animal



PHM-KVABR1T/MED



PHM-VABM1B/25

VASCULAR ACCESS BUTTON INSTECH

PHM-VABM1B/25 **MOUSE**
PHM-VABR1B/22 **RAT**

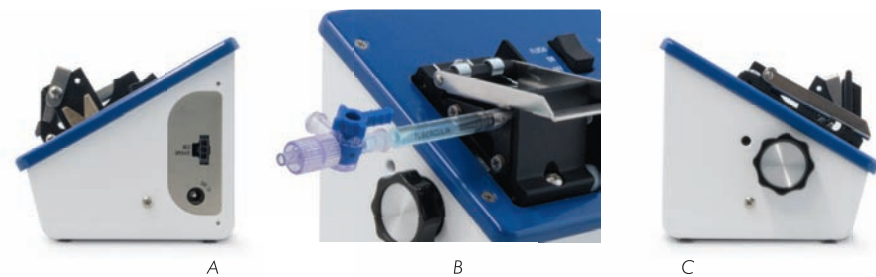
Instech's mouse VAB™ permits quick, aseptic connection and disconnection of a catheterized mouse and an infusion tether. This updated design uses magnets for ease of use and reduction of impact on animal welfare.

- Catheters attach to a 22 or 25 gauge connector under the felt, and Instech's mouse catheters are designed to be a perfect fit with these connectors
- Models are available for jugular vein, carotid artery and femoral vein/artery.
- Access the built-in port of the button using a syringe fitted with a mating PinPort or VAHLS25/30 injector
- A red aluminum cap (VABM1C) is available to protect the button stalk when group housing mice, sold separately.
- Also available in a 2 channel version for simultaneous infusion and sampling

TETHER KIT

PHM-KVABM1T/MED **MOUSE**
PHM-KVABR1T/MED **RAT**

- Septum permits aseptic technique
- Quick, low profile connection with minimal backflow



The next generation of our time-tested PHM-100 series syringe pump has significant improvements, including a complete redesign of the enclosure, anti-siphoning hardware, and a purge/flush feature.

- Can be operated standalone, or activated and de-activated by a Med-PC® 28 volt output (3-pin micro-fit molex)
- Time “on” determines the dose
- A built-in limit switch disconnects power when the plunger reaches the end of the syringe
- Stainless steel and aluminum construction

NOTE: A calibration sheet is included with every pump, which supplies a formula for calculating flow rate using any syringe.

IMAGES

- A) Right side (MED control and power connections)
- B) 1mL syringe with R-ACC micro syringe adapter (sold separately)
- C) Left side (drive screw adjustment knob)
- D) Single speed syringe pump (PHM-200) shown with 30mL syringe
- E) Variable speed syringe pump (PHM-210) shown with 30mL syringe

SINGLE SPEED SYRINGE PUMP

PHM-200

The motor is single fixed speed, the speed of the motor determines the infusion rate for the syringe.

- Speeds available: 0.1, 0.5, 1, 1.5, 2, 3.33*, 5, 10, 15, 20, 30 RPM
 - *NOTE: 3.33 RPM is standard

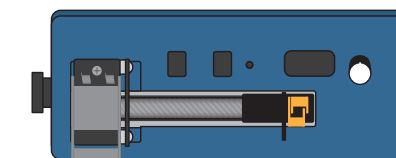
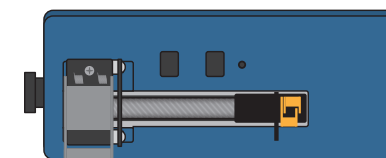
VARIABLE SPEED SYRINGE PUMP

PHM-210

The motor speed is adjustable, the speed of the motor determines the infusion rate for the syringe.

- Adjustable from 0.1 – 30 RPM in 0.1 increments

PHM-210 detail view



	PHM-200	PHM-210
COMPARABLE MODELS	PHM-100, PHM-108	PHM-100VS-2, PHM-107
OPERATION TYPE	◦ Standalone ◦ Remote via Med-PC, using 28 V Output (3-pin micro-fit Molex)	◦ Standalone ◦ Remote via Med-PC, using 28 V Output (3-pin micro-fit Molex)
MOTOR SPEED RANGE	3.33 RPM standard <i>(available: 0.1, 0.5, 1, 1.5, 2, 3.33, 5, 10, 15, 20, 30 RPM)</i>	0.1 - 30 RPM <i>(adjustable in 0.1 RPM increments)</i>
SPEED SELECTOR	N/A (factory set)	1.7" display with rotary encoder
INFUSION RATE RANGE 1	From 0.2 mL/hr (0.1 RPM + 1mL syringe) to 32.1 mL/min (30 RPM + 50mL syringe)	From 0.2 mL/hr (0.1 RPM + 1mL syringe) to 32.1 mL/min (30 RPM + 50mL syringe)
SYRINGE SIZES 2	1 - 50 mL <i>(small syringes require R-ACC adapter)</i>	1 - 50 mL <i>(small syringes require R-ACC adapter)</i>
SYRINGE TYPE	Plastic or Glass	Plastic or Glass
ELECTRICAL	100V - 240V AC, 50-60 Hz, 25W	100V - 240V AC, 50-60 Hz, 25W
ACCURACY	+/- 1.5%	+/- 1.5%
LIMIT SWITCH?	YES	YES
REVERSE?	NO	YES
PURGE/FLUSH SPEED	20 RPM	20 RPM
CONSTRUCTION	Stainless Steel, Aluminum	Stainless Steel, Aluminum
OVERALL SIZE	10.5" L x 4.3" W x 3.5" H (26.7 x 10.9 x 8.9 cm)	10.5" L x 4.3" W x 3.5" H (26.7 x 10.9 x 8.9 cm)
ACCESSORIES	R-ACC	R-ACC

1) Infusion range is approximate, calculated using example syringes (1mL = 0.174cm² / 50mL = 5.477cm²), different syringes may yield greater or lesser infusion rates.

2) Using syringes with plunger flanges greater than 1" OD requires removal of the plunger lock, which disables the syringe reversal feature.

$$\text{Flow Rate (mL/min)} = 0.19538 \times \text{Motor RPM} \times \text{Syringe Cross Sectional Area (cm}^2\text{)}$$



SCAN
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