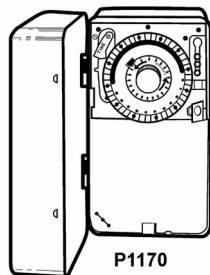


## COMMERCIAL REFRIGERATION DEFROST CONTROLS

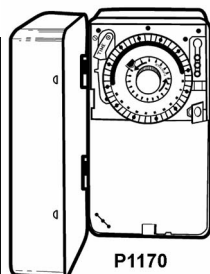
### 8040 SERIES



- Frequency of defrost initiation is adjustable from 1-6 cycles per day. Minimum of 4 hours between successive operations.
- Duration of defrost cycle is adjustable from 4-110 minutes in 2 minute increments.
- Accuracy of defrost duration  $\pm 2$  minutes.
- Choice of 4 contact arrangements for electric heat, hot gas or compressor shutdown defrost.
- Positive switch action slider bar.
- Heavy duty synchronous motor.
- Heavy steel enclosure. Grey finish. Knockouts on bottom, back and sides. Hasp and staple for padlock. Available on bracket for sub-panel mounting.

PART NO	AC LINE 60 HZ VOLTS	SWITCH ARRANGEMENT CONTACTS			ADJ LENGTH OF DEFROST
		2-4	1-3	3-N	
8041-00	120	Closed	Open	Closed	4-110 Min.
8041-20	208-240	Closed	Open	Closed	4-110 Min.
8045-00	120	Closed	Open	None	4-110 Min.
8045-20	208-240	Closed	Open	None	4-110 Min.
8047-00	120	Open	Open	Closed	4-110 Min.
8047-20	208-240	Open	Open	Closed	4-110 Min.

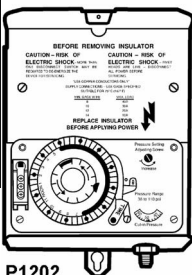
### 8140 SERIES



- Frequency of defrost is 1-6 cycles per day. Minimum of 4 hours between successive defrost cycles.
- Adjustable back-up defrost termination from 4-110 minutes in 2 minute increments.
- Control works with an external temperature or pressure sensor.
- Choice of 3 contact arrangements for electric heat, compressor shutdown defrost or hot gas defrost.
- Positive switch action slider bar.
- Heavy duty synchronous industrial type motor.
- Heavy steel enclosure. Grey finish. Knockouts on bottom, back and sides. Hasp and staple for padlock. Available on bracket for sub-panel mounting.

PART NO	AC LINE 60 HZ VOLTS	NORMAL POSITION OF CONTACTS DURING REFRIGERATION CYCLE		
		CONTACT N-3	CONTACT 1-3	CONTACT 2-4
8141-00	120	Closed	Open	Closed
8141-20	208-240	Closed	Open	Closed
8143-00	120	Open	Closed	Open
8143-20	208-240	Open	Closed	Open
8145-00	120	None	Open	Closed
8145-20	208-240	None	Open	Closed

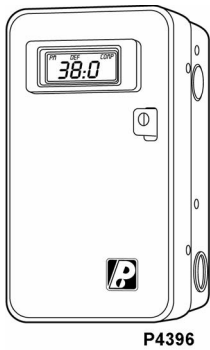
### 8240 SERIES



- Frequency of defrost is 1-6 cycles per day. Minimum of 4 hours between successive defrost cycles.
- Adjustable back-up defrost termination from 4-110 minutes in 2 minute increments.
- Choice of 3 contact arrangements for electric heat, compressor shutdown defrost or hot gas defrost.
- Positive switch action slider bar.
- Heavy duty synchronous industrial type motor.
- Heavy steel enclosure. Grey finish. Knockouts on top. Available on bracket for sub-panel mounting.
- Time Initiated, Pressure Terminated, 40 Amp

PART NO	UPC NO79046	AC LINE 60 HZ VOLTS	NORMAL POSITION OF CONTACTS DURING REFRIGERATION CYCLE		
			CONTACT N-3	CONTACT 1-3	CONTACT 2-4
8245-00	00580	120	Closed	Open	None
8245-20	00590	208-240	Closed	Open	None
8247-20	00610	208-240	Open	Open	Closed

ERC-2 ELECTRONIC REFRIGERATION DEFROST CONTROL



- Real “time” clock for defrost control
- Integrated Control
  - Temperature Control Function
  - Defrost Control Function
- Output Relays [4]
  - Compressor
  - Defrost
  - Evaporator fan
  - Alarm
- Digital temperature display
- Keypad programming
- Two Temperature sensors [supplied]
  - Terminate defrost cycle
  - Refrigeration cycle
- Safe Mode Operation
  - Continues operation based on performance average in the event sensor fails
- Power Failure Recovery
  - All settings retained in memory
  - “Time-of-day” carried over for 100 hours
- NSF certified
- C-UR-us recognized component  
Rating equivalent to UL and CSA
- Voltage input – 120/208/240VAC, 50 or 60 cycles

PART NO	DESCRIPTION
ERC-2-212111-370	ERC-2 With NEMA 1 Case and Integrated Display
ERC-2-222111-370	ERC-2 With NEMA 1 Case and Remote Display

# UNIVERSAL DEFROST TIMER

## 9145-9045 SERIES - MULTI-VOLTAGE 120/208-240 VAC



### GENERAL INFORMATION

#### Input power

120/208-240 VAC 60 Hz (+10, -15%)

#### Power consumption

6VA max, Defrost termination switch (terminal "G") input impedance to terminal C: 85kΩ +/- 5%

#### Operating voltage

102 VAC min to 132 VAC max @ 60 Hz

176.8 VAC min to 264 VAC max @ 60Hz

NOTE: No user-required adjustments to switch between the high and low voltage.

#### Ambient operating conditions

-40°F to 131°F (-40°C to 55°C); 0 to 95% RH (non condensing)

#### Storage temperature

-40°F to 140°F (-40°C to 60°C)

#### Outside dimensions

Individual unit 4.40"W x 7.82"H x 3.80"D

Individual unit (in shipping box)

4.75"W x 8.875"H x 4.75"D

Individual case shipping weight

3.2 lbs

#### Agency approvals

c-UR-us Recognized Component – Models 9045-00M & 9145-00M

c-UR-us Listed Product – Models 9045-00 & 9145-00

Terminal	A	B	C	D	E	F	G
Relay	SPDT	SPDT	SPDT	SPST	SPST	L2/N	Defrost Termination
Contact	NC Contact	NO Contact	COM/M Contact	NO Contact	COM/M Contact	Power in to timer	Device Input L2/N side
Relay Rating	15A resistive @ 120 VAC to 240 VAC 1/4HP @ 120 VAC, 1/2HP @ 208 VAC to 240 VAC	30A resistive @ 120 VAC to 240 VAC 1HP @ 120 VAC, 2HP @ 208 VAC to 240 VAC			30A resistive @ 120 VAC to 240 VAC 1HP @ 120 VAC, 2HP @ 208 VAC to 240 VAC		
Device Connections	Fan (Typical) Compressor (Optional)	Defrost Device (Typical)	L1 Power to timer and to Defrost Termination Device		Compressor (Typical) Fan (Optional)		Defrost Termination Switch

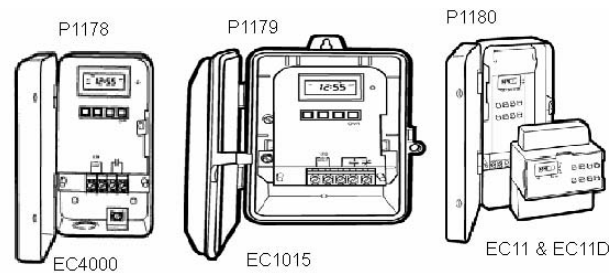
\* 9145 is a general purpose defrost timer & can be used for both Time Initiate/Time Terminate & Time Initiate/Temperature, Pressure Terminate

Terminal	A	B	C	D	E	F	G
Relay	SPST #1	SPST #1	L1	SPST #2	SPST #2	L2/N	No Connection
Contact	NC Contact	COM/M Contact	Power in to timer	NO Contact	COM/M Contact	Power in to timer	
Relay Rating	30A resistive @ 120VAC to 240 VAC 1HP @ 120 VAC, 2HP @208 VAC to 240VAC				30A resistive @ 120 VAC to 240 VAC 1HP @ 120 VAC, 2HP @208 VAC to 240 VAC		
Device Connections	Compressor (Typical)				Defrost Device (Typical)		

**Ordering Information:** 9145-00 Time Initiate/Temperature, Pressure Terminate Defrost Timer with Metal Enclosure

9045-00 Time Initiate/Time Terminate Defrost Timer with Metal Enclosure

ELECTRONIC TIME CONTROLS  
EC4000 SERIES 24-HOUR OR 7-DAY



EC4000 Series - 24-hour, single-channel, capacitor carry-over

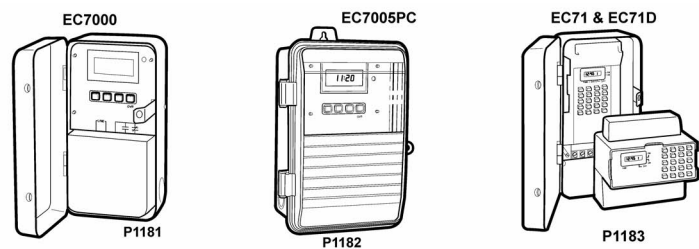
The EC4000 Series are 24-hour, single-channel, electronic time controls that provide simple, inexpensive control of electrical loads with a time-of-day schedule. As a 24-hr. control, the same ON/OFF schedule is utilized each day Saturday and/or Sunday, or any other day(s) of the week may be skipped. The skipped day(s) can be either load on all day or load OFF all day, depending upon application. Sixteen events are available to provide programming versatility. An event defines an activity either load ON or load OFF. The EC4000 Series are available in either a NEMA 1 steel enclosure or a NEMA Type 3R non-metallic enclosure for indoor or outdoor use.

- 24-hr. programming with skip-a-day.
- Four-day minimum power outage carry-over without the use of a battery.
- 20 amp ballast switch rating on DPST model (UL only).
- 16 ON or OFFs per day.
- SPST, SPDT and DPST switching.
- NEMA 1 or NEMA Type 3R enclosure.
- Large display & simple programming with just 4 keys.

PART NO	RATING PER POLE	TYPE OF OUTPUT	ENCLOSURE TYPE NEMA	SHIPPING	
				WGT Lb	WGT Kg
EC4000/120V	20A	SPDT	1	2	0.9
EC4000PC/120V	20A	SPDT	3R	2-1/2	1.1
EC4000/208-277V	20A	SPDT	1	2	0.9
EC4000PC/208-277V	30A	SPDT	3R	2-1/2	1.1
EC4004/120V	30A	SPST	1	2	0.9
EC4004PC/120V	30A	SPST	3R	2-1/2	1.1
EC4004/208-277V	30A	SPST	1	2	0.9
EC4004PC/208-277V	30A	SPST	3R	2-1/2	1.1
EC4005PC/120, 208-240V	30A	DPST	3R	2-1/2	1.1

ELECTRONIC TIME CONTROLS  
EC7000 SERIES 24-HOUR OR 7-DAY

EC7000 Series - 24-hour and 7-day, single-channel, capacitor carry-over



EC7000 Series are single-channel, electronic time controls that provide simple, inexpensive control of electrical loads with a time-of-day schedule. When schedules vary from day to day, the 7-day programming capability allows a different schedule for each day of the week. With 16 set points available, the EC7000 Series provides programming versatility. Models are also available to provide two individually programmable durations of one to 59 seconds in addition to the maintained ON and OFF set points. This provides ideal control for bell or chime ringing in schools and factories. The EC7000 Series Controls are ideal for indoor and outdoor lighting, billboard and security lighting, school crossing lights, heating, ventilating, bell, chime and buzzer ringing, water heater and security system control.

- 24-hr. or 7-day programming - 7-day programming allows greater flexibility thus added energy savings by allowing loads to remain on only when needed.
- 4-day minimum power outage carry-over without the use of batteries. Eliminates the need to replace batteries and the environmental concerns of battery disposal. 16 set points, 30 amp heavy duty relay-output allows switching most electrical loads without the use of contactors.
- To-the-minute programming with just four keys and a large easy to read display that uses visual prompts for ease of programming.
- SPST, SPDT, DPST switching designed for high immunity to electrical noise. Momentary feature available.
- Recessed reset button
- Available in NEMA Type 3R (EC7005) or NEMA 1 enclosures.

NOTE:

- Also available in 50 amp.
- Contact your nearest branch for details and other available models.
- PC= Non Metallic Enclosure NEMA 3R may be used Indoor or Outdoor.

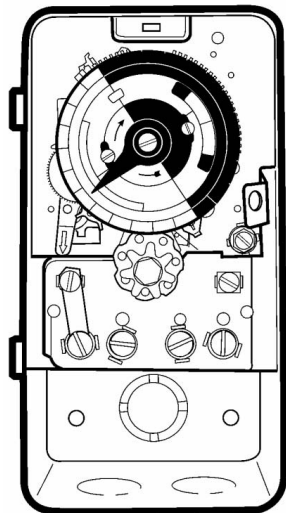
PART NO	RATING PER POLE	TYPE OF OUTPUT	ENCLOSURE TYPE NEMA	SHIPPING	
				WGT Lb	WGT Kg
EC7000/24V	20A	SPDT	1	2	0.9
EC7000/120V	20A	SPDT	1	2	0.9
EC7000/208-277V	20A	SPDT	1	2	0.9
EC7001PC/12VDC	10A	SPDT	3R	1-1/2	0.7
EC7001/24V	20A	SPDT	1	2	0.9
EC7001/120V	20A	SPDT	1	2	0.9
EC7001/208-277V	20A	SPDT	1	2	0.9
EC7004/120V	30A	SPST	1	2	0.9
EC7004/208-277V	30A	SPST	1	2	0.9
EC7005PC/120V, 208-240V	30A	DPST	3R	2	0.9

## 24-HOUR TIME SWITCHES

### 4000 & 4000S SERIES 24-HOUR

#### 4000, 4010 AND 4210 SERIES

4000 Series - Standard NEMA 1 indoor metal enclosure



P1203

The 4000 series has a 24-hour dial with 2 to 14 replaceable trippers for 1 to 7 “On” and “Off” operations per day. The 4000-S series is the same as the 4000 series but with “Skip-A-Day” feature to allow skipping operations on any day or days of the week without disturbing the preset schedule.

- 1/2 hour minimum On or Off time; 22-1/2 hour maximum On or Off time.
- Manual On/Off lever transfers switch operation without disturbing preset schedule.
- Switch slider bar assures positive switching.
- Heavy duty terminals accommodate up to AWG #8 wire.
- NEMA type 1 indoor case with combination 1/2-3/4 in. knockouts in bottom and sides; hasp for padlock or seal.

**1-1/2 Hour Minimum On or Off Time, 1 to 7 On/Off Operations Per Day**

PART NO	SWITCH TYPE	HP	AC LINE VOLTS	ENCLOSURE TYPE NEMA	SHIPPING WGT	
					Lb	Kg
4001-00	SPST	1	120	1	2-1/2	1.1
4001-00B	SPST	1	120	--	2-1/2	1.1
4001-00M	SPST	1	120	--	1-1/8	0.5
4002-71	SPST	1	208-277	1	2-1/2	1.1
4002-71B	SPST	1	208-277	--	2-1/2	1.1
4003-00	DPST	1	120	1	2-1/2	1.1
4003-00M	DPST	1	208-277	--	1-1/8	0.5
4004-71	DPST	1	208-277	--	2-1/2	1.1
4004-71B	DPST	1	208-277	1	2-1/2	1.1
4004-71M	DPST	1	208-277	--	1-1/8	0.5
4005-00B	SPDT	1	120	--	2-1/2	1.1

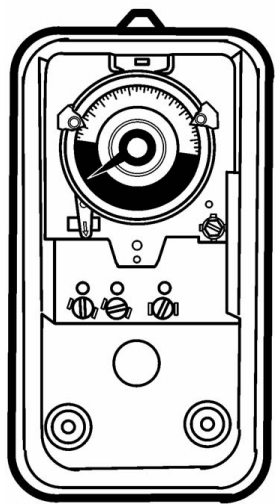
**With skip-a-day, allows schedule to be omitted on any day(s) without permanently disturbing preset schedule**

PART NO	SWITCH TYPE	HP	AC LINE VOLTS	ENCLOSURE TYPE NEMA	SHIPPING WGT	
					Lb	Kg
4003-00S	DPST	1	120	1	2-1/2	1.1
4003-00SB	DPST	1	120	--	2-1/2	1.1
4003-00SM	DPST	1	120	--	1-1/8	0.5
4004-06S	DPST	--	24	1	2-1/2	1.1
4004-71S	DPST	1	208-277	1	2-1/2	1.1
4005-00S	SPDT	1	120	1	2-1/2	1.1
4005-00B	SPDT	1	120	--	2-1/2	1.1
4006-71S	SPDT	1	208-277	1	2-1/2	1.1
4007-06S	SPDT	--	24	1	3-1/2	1.6
4007-06SB	SPDT	--	24	--	2	1.1

**Leaves load on during day(s) scheduled to be skipped**

PART NO	SWITCH TYPE	HP	AC LINE VOLTS	ENCLOSURE TYPE NEMA	SHIPPING WGT	
					Lb	Kg
4008-20S	DPST	1	208-240	1	2-1/2	1.1

24-HOUR TIME SWITCHES  
4000 & 4000S SERIES 24-HOUR  
4000, 4010 AND 4210 SERIES



4010 Series -Standard NEMA 3 indoor/outdoor metal or NEMA type 3R plastic enclosure

P1204

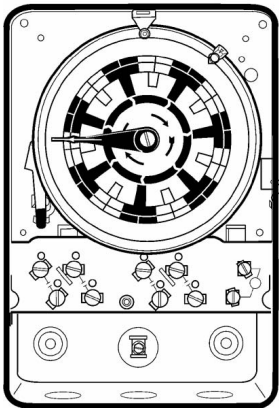
PART NO	SWITCH TYPE	HP	AC LINE VOLTS	ENCLOSURE TYPE NEMA	SHIPPING WGT	
					Lb	Kg
4011-00	SPST	1	120	3	4-3/4	2.2
4011-00P	SPST	1	120	3R	1-3/8	0.6
4013-00	DPST	1	120	3	4-3/4	2.2
4013-00P	DPST	1	120	3R	1-3/8	0.6
4014-71	DPST	2	208-277	3	4-3/4	2.2
4014-71P	DPST	2	208-277	3R	1-3/8	0.6

PART NO	SWITCH TYPE	HP	AC LINE VOLTS	ENCLOSURE TYPE NEMA	SHIPPING WGT	
					Lb	Kg
4013-00S	DPST	1	120	3	4-3/4	2.2
4014-71S	DPST	1	208-277	3	4-3/4	2.2

PARAGON®

7-DAY TIME SWITCHES

7000 SERIES



P1177

With skip-a-day, allows schedule to be omitted on any day(s) without permanently disturbing preset schedule

7-day calendar permits different “On/Off” schedules on different days of the week.  
Maximum of 4 On/Off operations per day and 28 per week.

- 3 hour minimum On or Off time per day; 21 hour maximum On or Off time per day.
- Independent 4-pole design allows for SPST, DPST or SPDT switching.
- Manual override lever temporarily reverses switch operation without permanently disturbing preset schedule.
- Switch slider bar assures positive switching
- Heavy duty industrial type synchronous motor.
- Heavy duty terminals accommodate up to AWG #8 wire.
- Standard NEMA 1 indoor metal enclosure side hinged with combination 1/2-3/4 in. knockouts in bottom and side. Hasp for padlock or seal.

4-Pole, 3 Hour Minimum On or Off Time, 4 On/Off Operations per Day, 28 per Week

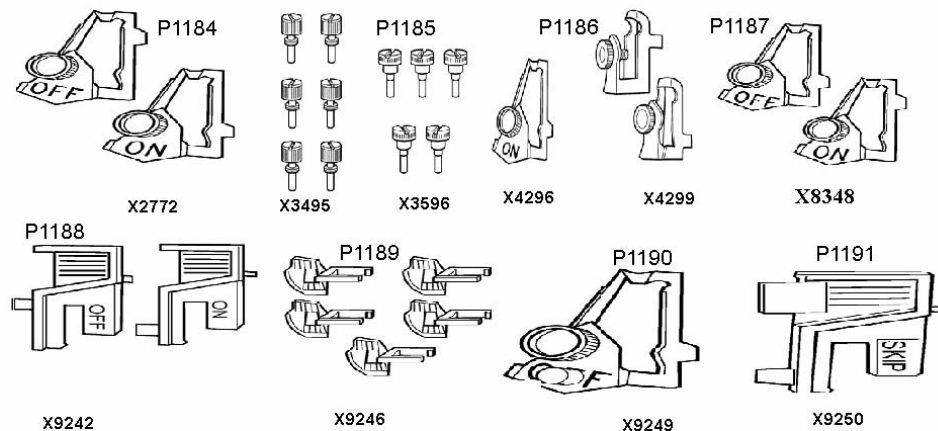
PART NO	SWITCH TYPE	AMP	SWITCH RATING PER POLE				AC LINE 60 HZ VOLTS	ENCLOSURE TYPE NEMA	SHIPPING WGT	
			AMP T	VA	HP	Lb			Kg	
7007-00	4PST-4 NO	40	40	690	--	120	1	6-1/2	2.9	
7007-06	4PST-4 NO	40	--	345	--	24	1	6-1/2	2.9	
7007-71	4PST-4 NO	40	40	690	--	208-277	1	6-1/2	2.9	
7008-00	2 NO-2 NC	40	--	690	1	120	1	6-1/2	2.9	
7008-00B	2 NO-2 NC	40	--	690	1	120	--	6-1/2	2.9	
7008-06	2 NO-2 NC	40	--	345	--	24	1	6-1/2	2.9	
7008-71	2 NO-2 NC	40	--	690	1	208-207	1	6-1/2	2.9	

\*Not UL or CSA listed. Hp rating one pole only. Furnished with 7 sets of on/off trippers. Switch rating per pole = 40 amp. Hertz = 60.



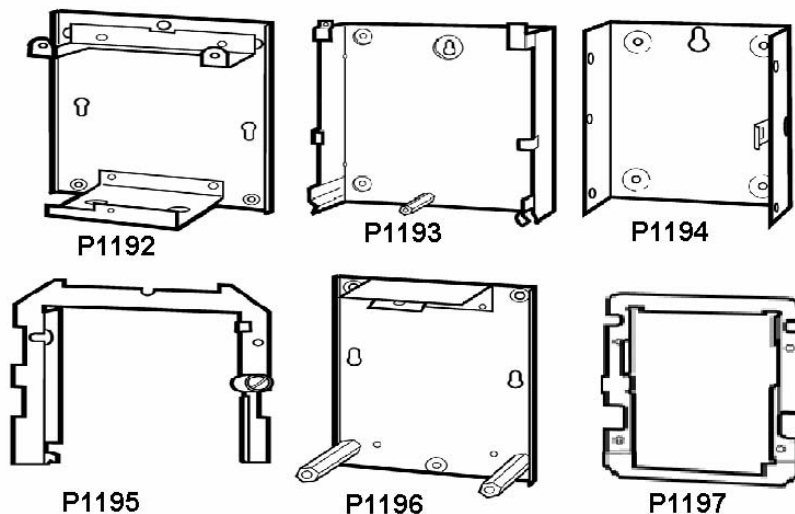
# REFRIGERATION DEFROST CONTROLS/ACCESSORIES

## DIAL TRIPPERS, PINS



PART NO	USE WITH SERIES	QUANTITY PER SET
X2772	4000 4010 4210 47017 47217	1 ON, 1 OFF
X3495	4000-S 4000-SZ 4210-S 4210-SZ 47017-S 47017-SZ	6 cutout pins
X3596	8025p 8040 8140 8240	5 trippers
X4296	4000-S 4210-S 47017-S 47217-S	Cutout index tripper (ON)
X4299	7000 7210	1 ON, 1 OFF
X8348	4008-S	1 ON, 1 OFF
X9242	P100	1 ON, 1 OFF
X9246	P100-S	Cutout pins (6)
X9249	4008-S	Cutout Index tripper (OFF)
X9250	P100-S	Cutout Index tripper (ON)

## Brackets For Panel Mounting



PART NO	USE WITH SERIES	NOTES	SHIPPING WGT	
			LB	KG
A454 (X2626)	8025 8040 8041	--	1-1/2	0.7
A536 (X4105)	4000 4000-S 4000-SZ 4010 4010-S 4010-SZ 41010 EC4000 P100 EC7000	not for carry-over models	1-1/2	0.7
A537-W (X3967)	623 1015 42010 1015-40TS	not for carry-over models	1-1/2	0.7
A569 (X5815)	47017 47217 7000 7010 7210	may be used with carry-over models	1-1/2	0.7
D874-99 Intermatic Adapter Bracket	4000 4000-S 4010 4010-S P100 EC4000 EC7000	not for carry-over models	3 oz.	0.1
A1408-99*	EC4000 EC4004 4010PC EC7000 EC7001 EC7004	--	3oz.	0.1

\*Must be used with 4010PC.