WHEATON SCIENCE PRODUCTS

CELSTIR
CATALOG NUMBER 356873-356987

INSTRUCTION MANUAL

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Warranty

Wheaton Science Products warrants this product to be free from defects in material and workmanship for a period of one (1) year from the date of shipment. If repair or adjustment is necessary within the warranty period and has not been the result of mishandling or abuse, you may return the unit freight prepaid, provided that return authorization has been obtained. Wheaton Science Products will correct the defect or adjust the unit at no charge.

Items returned for repair or adjustment should be packed very carefully to prevent damage in transit and also should be insured for your protection. Should damage occur in transit, all claims should be made against the carrier. The shipping carton should not be discarded but retained until inspection by a representative of the carrier is made.

Wheaton Science Products will repair or adjust out-of-warranty products at a nominal charge.

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INTRODUCTION

The **Wheaton Celstir** suspension culture spinner flask system is designed to provide an ideal, totally inert cell growth environment for many types and varieties of cells such as insect cells, hybridomas, and adapted cell lines. The **Wheaton Celstir** is available in nine sizes from 50 ml to 8000 ml, and consists of a borosilicate glass flask with an integral cap and magnetic impeller assembly. The impeller is adjustable and does not protrude through the top cap, thereby maximizing incubator space. On sizes from 125 to 8000 ml, the addition of a concave dimple in the bottom of the flask prevents the crushing of cells beneath the magnetic impeller and improves circulation. An additional feature of the 125 to 8000 ml size range is a Teflon® paddle blade incorporated into the impeller which significantly increases agitation and turbulence within the vessel, providing a greater degree of gas mixing.

Sizes from 500 to 8000 ml feature larger 45 mm side arms to facilitate the use of probes, ports, vents, and inlet / outlet lines. In addition to standard cell culture applications, Wheaton spinner flasks are routinely used for developing monoclonal antibodies and genetic therapy procedures. The newly redesigned **Wheaton Celstir** features vessels with a 1:1 headspace ratio to insure actual working volumes are equal to advertised volumes. The new integral impeller assembly is constructed entirely of a glass or 316 stainless steel shaft and Teflon® holders, paddle and bearings, to eliminate the possibility of cell damage and contamination. The entire **Celstir** may be steam autoclaved as a unit at 121^{O} C.

SAFETY SYMBOLS USED IN THIS MANUAL

A **Warning** symbol indicates attention to an operation which can cause operator injury, improper function of, or damage to the equipment and possible problems with the process.

A **Danger** symbol indicates attention to an operation which could cause electrocution, severe injury, or death!

SAFETY INSTRUCTIONS

GENERAL SAFETY INSTRUCTIONS

NOTE: EVEN THE SAFEST EQUIPMENT CAN CAUSE INJURY IF THE USER IS CARELESS

1. KNOW YOUR INSTRUMENT - Read the operating manual carefully. Learn the equipment's application and limitations as well as the specific potential hazards peculiar to this instrument.

2. GROUND ALL EQUIPMENT - If electrical, this instrument is equipped with an approved 3-conductor cord and a 3-prong grounding type plug to fit the proper grounding type receptacle. The green conductor in the cord is the grounding wire, and should never be connected to a live terminal.

3. AVOID DANGEROUS ENVIRONMENT - Electrical instruments designed to process liquids must be operated with extreme caution. If liquid comes in contact with internal components or wires, fire or electric shock may occur. Adequate surrounding work space should be provided during use. Do not operate electrical instrumentation in a combustible atmosphere.

4. WORK SURFACE - Keep area well lighted. Be certain the work surface is clean, level, and sturdy enough to support the weight of the unit, particularly if it is to be filled with liquid.

5. WEAR PROPER APPAREL - Do not wear loose clothing, neckties, or jewelry that might get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.

6. WEAR SAFETY GOGGLES - Wear safety goggles at all times. Everyday eyeglasses only have impact resistant lenses; they are NOT safety glasses.

7. DON'T OVERREACH - Keep proper footing and balance at all times. Do not place instrument in an area or position that would hinder access to or proper operation of the instrument.

8. MAINTAIN INSTRUMENT WITH CARE - Keep screws tight and unit clean. Check periodically for worn or damaged parts. Inspect the plug and cord before each use. Do not operate this instrument if there are signs of damage.

9. AVOID ACCIDENTAL STARTUP - If electrical, always make sure switch is in the "OFF" position before plugging the instrument into outlet.

10. DISCONNECT INSTRUMENT - Always disconnect the instrument from the power source before servicing.

11. DO NOT BLOCK COOLING VENTS IF PROVIDED.

12. DO NOT OPERATE THIS EQUIPMENT IN ANY MANNER NOT SPECIFIED IN THIS MANUAL.

13. KEEP THE OPERATING MANUAL - Keep the operating manual for this instrument in a safe place near the instrument for quick and easy reference.

14. FIRE EXTINGUISHER - It is recommended that a fire extinguisher always be located in areas where electrical instruments are being used.

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SET-UP (refer to figs. A & B)

WARNING! CARE SHOULD BE EXERCISED WHEN HANDLING GLASS COMPONENTS TO REDUCE THE POSSIBILITY OF PERSONAL INJURY. THE GLASS IMPELLER ROD INCLUDED WITH THE CELSTIR SHOULD NOT BE FORCED OR SUBJECTED TO EXCESSIVE PRESSURE BY HAND.

1. Carefully unpack unit, being sure to save the shipping carton and packing materials facilitate returning the unit in the event it should require servicing.

2. Slip the glass rod (10) through the magnet holder (7) and the compression cap (6) as shown, with threads facing away from the magnet holder. Slip the "O'-Rings (5) onto the glass rod approximately 1" down from the end.

WARNING! CARE MUST BE TAKEN NOT TO APPLY SIDE PRESSURE TO THE GLASS ROD OR THE POSSIBILITY OF BREAKAGE AND/OR INJURY COULD OCCUR.

3. Thread the compression cap (6) onto the bearing (4), and lightly tighten.

4. Push the paddle (8) through the slot in the magnet holder (7) until the holes align.

IMPORTANT! 25 AND 50 ml CELSTIRS ARE NOT FITTED WITH A PADDLE. PLEASE DISREGARD STEP 4 IF YOU ARE ASSEMBLING A 25 OR 50 ml CELSTIR.

5. Insert the magnet (9) through the hole in the magnet holder (7) and the paddle (8), if applicable.

6. Adjust the length of the impeller assembly by pushing the glass rod in or pulling it out of the compression cap. Under normal operating conditions, the bottom of the impeller assembly should be approximately 1/8" to 1/4" from the bottom of the vessel. Carefully tighten the compression fitting, but do not over-tighten.

WARNING! CARE MUST BE TAKEN NOT TO APPLY SIDE PRESSURE TO THE GLASS ROD OR THE POSSIBILITY OF BREAKAGE AND/OR INJURY COULD OCCUR.

AUTOCLAVING

All Wheaton Celstirs are fully steam autoclavable as an assembled unit at 121^{O} C. Autoclave with the top cap (1) and the side arm caps (11) loosened to allow the escape of steam.

OPERATION

1. The Celstir may be filled with culture media through a side arm, or the top cap if desired.

2. Place the Celstir on a suitable stirring unit, such as a Wheaton Biostir or Microstir magnetic stirrer. Be certain the flask is centered on the stirrer to assure proper magnetic coupling.

3. Turn on the stirrer, and gradually increase the speed to the desired degree of stirring. If the speed is increased too rapidly, or if the speed is raised beyond the range of the Celstir, magnetic decoupling will result.

MAINTENANCE

The Celstir should be cleaned regularly with an anionic cleansing agent such as Alconox. All impeller parts should be inspected regularly and replaced if signs of wear or damage are evident.

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WHEATON CELSTIR CAT. #356873-356987 – FLASK SIZE / PART NO. (FIG. A-B)

ITEM #	DESCRIPTION	QTY	25ML	50ML	125ML	250ML	500ML	1000ML	3000ML	6000ML	8000ML
	IMPELLER COMPLETE	1	356893	356895	356896	356899	356902	356904	356907	356909	356910
1	TOP CAP	1	I056001 (38-430)	I056001 (38-430)	I056002 (51-400)	I056002 (51-400)	I056003 (100-400)	I056003 (100-400)	I056003 (100-400)	I056003 (100-400)	I056003 (100-400)
2	SILICONE LINER	1	I056004	I056004	I056005	I056005	I056006	I056006	I056006	I056006	I056006
3	TEFLON LINER	1	I056007	I056007	I056008	I056008	I056009	I056009	I056009	I056009	I056009
4	TEFLON BEARING	1	I057433 (6.4cm)	I057433 (6.4cm)	I057433 (6.4cm)	I057433 (6.4cm)	I057433 (6.4cm)	I057433 (6.4cm)	I050095 (14.6cm)	I050095 (14.6cm)	I050095 (14.6cm)
5	O-RING	2	WI056082	WI056082	WI056082	WI056082	WI056082	WI056082	WI056082	WI056082	WI056082
6	COMPRESSION CAP	1	I057432	I057432	I057432	I057432	I057432	I057432	I057432	I057432	I057432
7	TEFLON MAGNET HOLDER	1	WL050085 (3.8cm)	WL050085 (3.8cm)	I050086 (5.4cm)	I050086 (5.4cm)	I050087 (7.6cm)	I057431 (10.2cm)	I050094 (15.2cm)	I050094 (15.2cm)	I050094 (15.2cm)
8	TEFLON PADDLE	1	N/A	N/A	I050088	I050088	I057434	I057434	I050093	I050093	I050093
9	TEFLON COATED MAGNET	1	I051892	I051892	I051893	I051893	I051894	I051894	I051894	I051894	I051894
10	GLASS SHAFT	1	I050089 (7.7cm)	I050089 (7.7cm)	I050089 (7.7cm)	I050089 (7.7cm)	I050089 (7.7cm)	I057435 (12.7cm)	I057435 (12.7cm)	I050091 (19.2cm)	I050091 (19.2cm)
11	SIDE ARM CAP	2	I052956 (15-415)	I052956 (15-415)	W000269 (33-430)	W000269 (33-430)	I050054 45mm	I050054 45mm	I050054 45mm	I050054 45mm	I050054 45mm
12	GLASS VESSEL (Standard)	1	356913	356915	356916	356919	356922	356924	356927	356929	356930
12	GLASS VESSEL (Jacketed)	1	356963	356965	356966	356969	356972	356974	N/A	N/A	N/A
12	GLASS VESSEL	1						WL054377	WL054376		

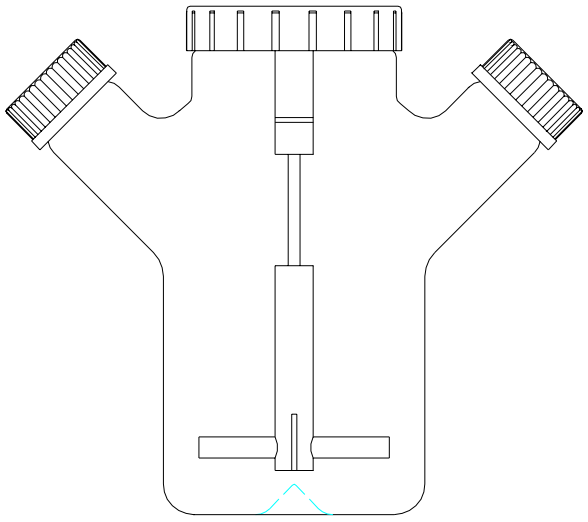

FIG. A

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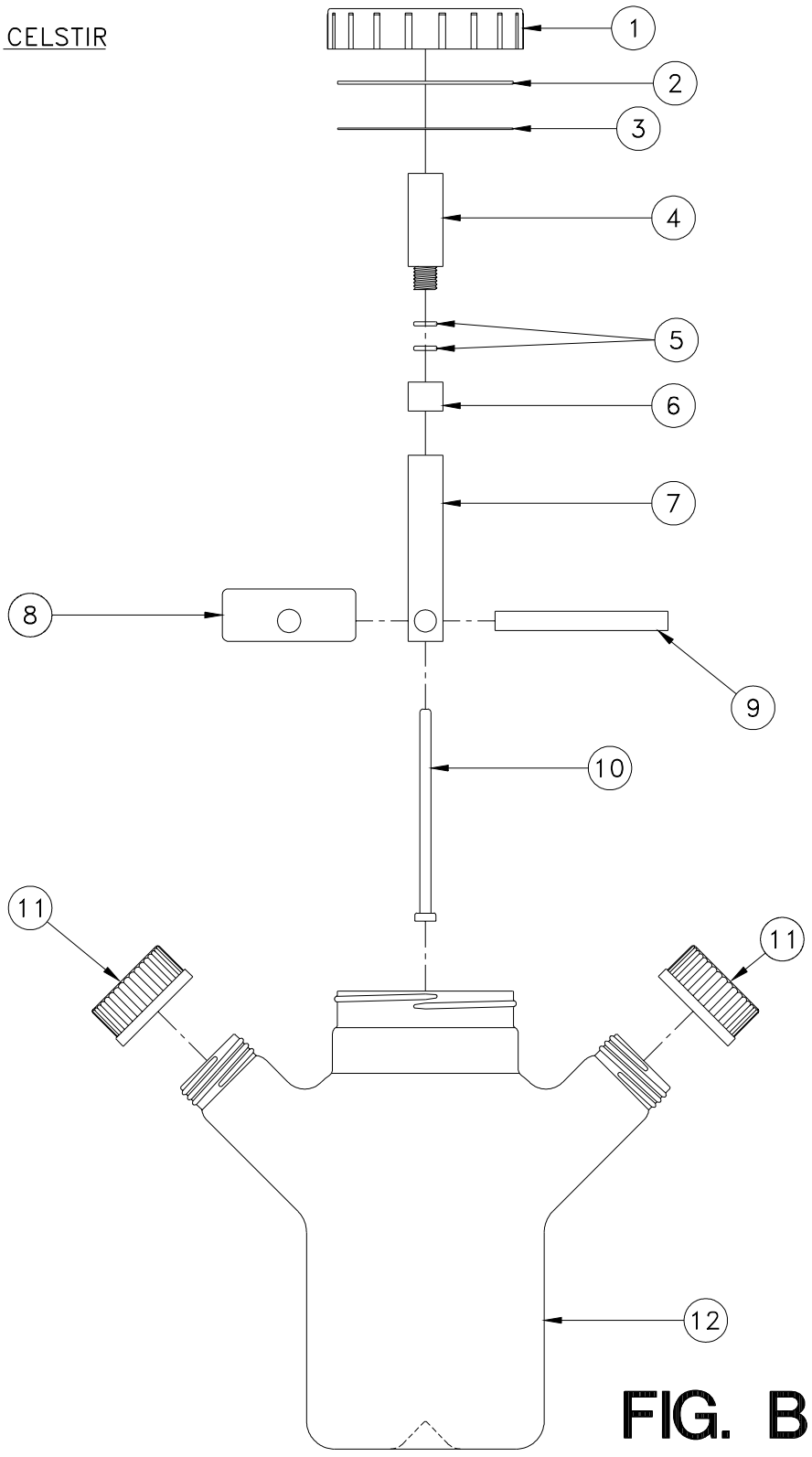

FIG. B

USE THE FOLLOWING TO USE A NEW IMPELLER IN AN OLDER WHEATON VESSEL

OLD CELSTIR SIZE	DESCRIPTION	CATALOG NUMBER	GLASS SHAFT
25mL	Use 25mL Impeller (as is)	356893	n/a
50mL	Use 50mL Impeller (as is)	356895	n/a
100mL	Use 50mL Impeller (as is)	356895	n/a
250mL	Use 250mL Impeller (as is)*	356899	n/a
500mL	Use 250mL Impeller & Med. Shaft	356899	I057435
1000mL	Use 1000mL Impeller & Short Shaft	356904	I050089
2000mL	Use 1000mL Impeller & Long Shaft	356904	I050091
3000mL	Use 1000mL Impeller & Long Shaft	356904	I050091
4000mL	Use 1000mL Impeller & Long Shaft	356904	I050091
8000mL	Use 3000mL Impeller & Long Shaft	356907	I050091

*Requires impeller to be shortened as much as possible on the shaft.