

## CONSTRUCTION OF 384 WELL LIBRARY FROM 96 WELL PLATES

1. Place a LIBRARY COPIER™ (VP 381, VP 381D, VP 381M or VP 381N, VP 381NW) over a 96 well source plate "A" with the single alignment hole side of the device closest to the operator (see diagram in Figure 1). Slide the LIBRARY COPIER™ to make sure plate is seated and registered within the device.
2. Place a second LIBRARY COPIER™ (VP 381, VP 381M or VP 381N) over a 384 well reception plate with the four alignment hole side of the device closest to the operator (see Figure 1). Slide the LIBRARY COPIER™ to make sure the plate is seated and registered within the device.
3. Hold a sterile 96 MULTI-BLOT™ Replicator at a 45° angle to the source plate LIBRARY COPIER™ and 20° angle to the left alignment hole. Place the right guide pin into the right alignment hole. Then slowly decrease the 20° angle and place the left guide pin into the left alignment hole. Then rotate the Replicator forward until guide pins line up vertically and slide down the alignment holes and the Replicator pins drop into the wells (see Figure 1).
4. Hold the LIBRARY COPIER™ in one hand and mix contents of wells by raising and lowering the Replicator 3 times through the meniscus with the other hand. The speed at which the pins are removed from the wells on the final withdrawal will affect the size of the hanging drops and the amount of liquid on the sides of the pin. Removing the pins quickly from the source plate produces large, hanging drops on the tips of the pins and more liquid on the sides. It is recommended that the pins are removed on the final withdrawal at a slow even speed each time (~0.5 cm/sec). This action produces very uniform transfers from plate to plate and reduces the amount of liquid hanging on the tip and sides of the pins. Performing this operation with the LIBRARY COPIER keeps the pins in the middle of the well and prevents hanging drops from being accidentally "touched off" on the sides of the wells.
5. To deliver to the 384 well microplate hold the 96 MULTI-BLOT™ Replicator at a 45° angle to the recipient 384 well plate's LIBRARY COPIER™ and 20° angle to the left "A" alignment hole. Place the left guide pin into the left "A" alignment hole (see Figure 2). Then slowly decrease the 20° angle and place the right guide pin into the right "A" alignment hole. Then rotate the Replicator forward until guide pins line up vertically. Slide the guide pins down the alignment holes to allow the Replicator pins to drop into the wells. Dip and raise the pins 3 times through the recipient plate's meniscus. Blot the pins on lint free paper to reduce carry over if the pin tool is put back into the source plate or to the wash bath.

6. Repeat steps 3-5 for each replicate plate as needed (see diagram of condensing four 96 into 384).
7. Sterilize Replicator then repeat steps 3-5 using a new source plate "B" and use alignment hole "B" in the same reception plate. For more information on liquid transfers with pins and pin cleaning please see Technote #66B.
8. Repeat step 7 for source plates C and D into alignment holes C and D.
9. To convert 384 well libraries to larger volume 96 well libraries simply reverse the above process.
10. The LIBRARY COPIER™ may be disinfect by wiping with alcohol or bleach.

Figure 1. Overview of using LIBRARY COPIER™ with a MULTI-BLOT™ Replicator.

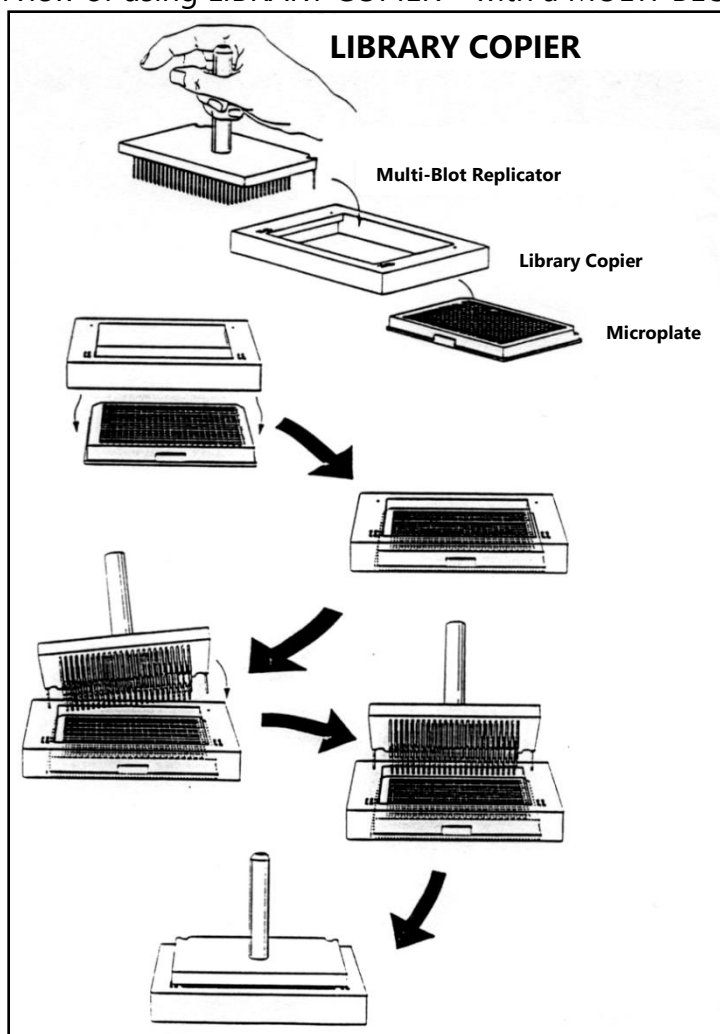


Figure 2. Alignment hole pattern for using LIBRARY COPIER™ with a 96 MULTI-BLOT™ Replicator to consolidate four 96 well plates to one 384 well plate or vice versa.

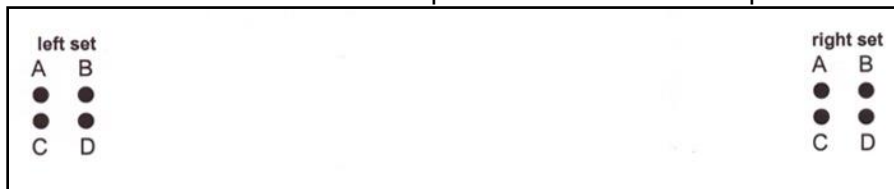


Figure 3. Overview of using LIBRARY COPIER™ with a 96 MULTI-BLOT™ Replicator to consolidate four 96 well plates to one 384 well. See map of well locations in Figure 4.

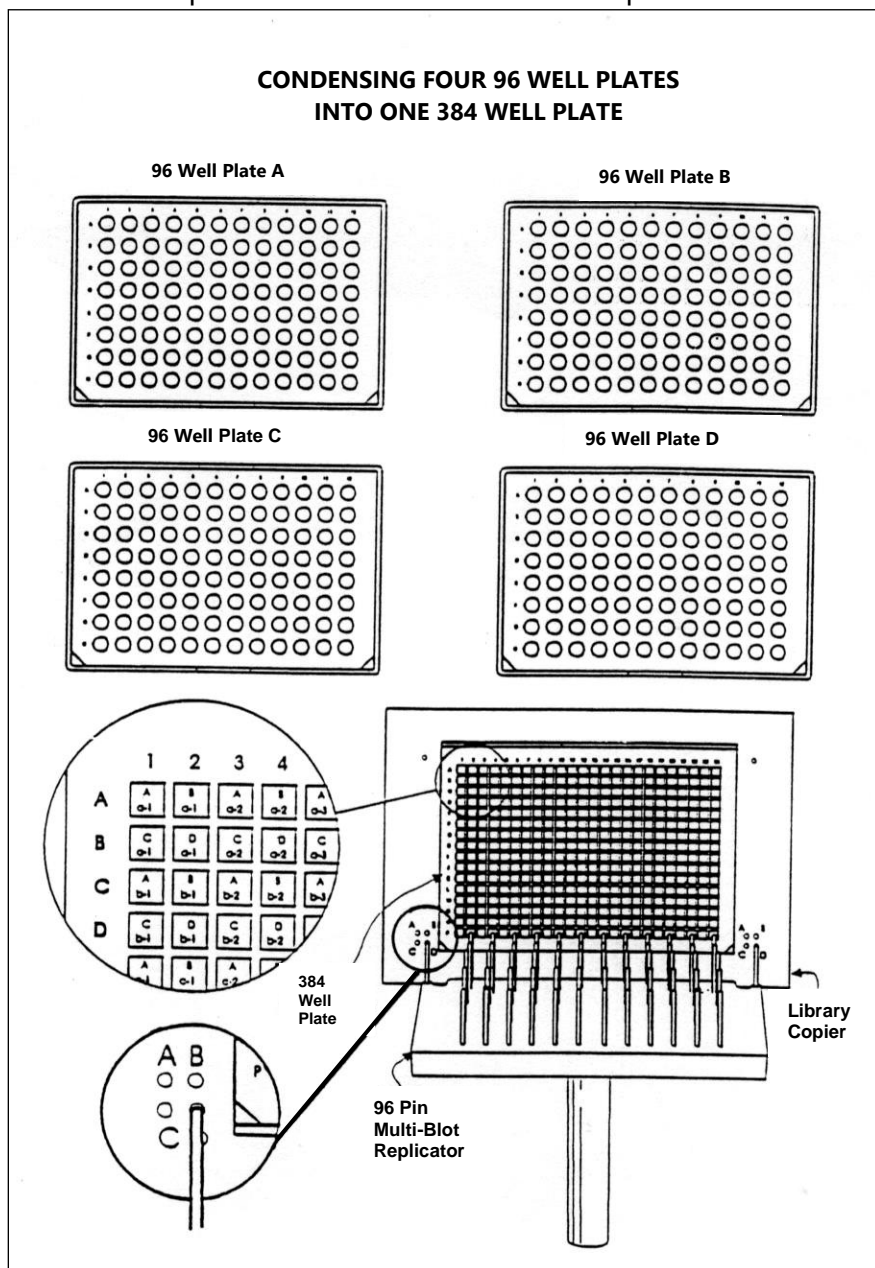


Figure 4. Map of source 96 well plates and well locations in 384 well plate

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>A</b>	A*	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	a-1#	a-1	a-2	a-2	a-3	a-3	a-4	a-4	a-5	a-5	a-6	a-6	a-7	a-7	a-8	a-8	a-9	a-9	a-10	a-10	a-11	a-11	a-12	a-12
<b>B</b>	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
	a-1	a-1	a-2	a-2	a-3	a-3	a-4	a-4	a-5	a-5	a-6	a-6	a-7	a-7	a-8	a-8	a-9	a-9	a-10	a-10	a-11	a-11	a-12	a-12
<b>C</b>	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	b-1	b-1	b-2	b-2	b-3	b-3	b-4	b-4	b-5	b-5	b-6	b-6	b-7	b-7	b-8	b-8	b-9	b-9	b-10	b-10	b-11	b-11	b-12	b-12
<b>D</b>	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
	b-1	b-1	b-2	b-2	b-3	b-3	b-4	b-4	b-5	b-5	b-6	b-6	b-7	b-7	b-8	b-8	b-9	b-9	b-10	b-10	b-11	b-11	b-12	b-12
<b>E</b>	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	c-1	c-1	c-2	c-2	c-3	c-3	c-4	c-4	c-5	c-5	c-6	c-6	c-7	c-7	c-8	c-8	c-9	c-9	c-10	c-10	c-11	c-11	c-12	c-12
<b>F</b>	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
	c-1	c-1	c-2	c-2	c-3	c-3	c-4	c-4	c-5	c-5	c-6	c-6	c-7	c-7	c-8	c-8	c-9	c-9	c-10	c-10	c-11	c-11	c-12	c-12
<b>G</b>	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	d-1	d-1	d-2	d-2	d-3	d-3	d-4	d-4	d-5	d-5	d-6	d-6	d-7	d-7	d-8	d-8	d-9	d-9	d-10	d-10	d-11	d-11	d-12	d-12
<b>H</b>	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
	d-1	d-1	d-2	d-2	d-3	d-3	d-4	d-4	d-5	d-5	d-6	d-6	d-7	d-7	d-8	d-8	d-9	d-9	d-10	d-10	d-11	d-11	d-12	d-12
<b>I</b>	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	e-1	e-1	e-2	e-2	e-3	e-3	e-4	e-4	e-5	e-5	e-6	e-6	e-7	e-7	e-8	e-8	e-9	e-9	e-10	e-10	e-11	e-11	e-12	e-12
<b>J</b>	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
	e-1	e-1	e-2	e-2	e-3	e-3	e-4	e-4	e-5	e-5	e-6	e-6	e-7	e-7	e-8	e-8	e-9	e-9	e-10	e-10	e-11	e-11	e-12	e-12
<b>K</b>	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	f-1	f-1	f-2	f-2	f-3	f-3	f-4	f-4	f-5	f-5	f-6	f-6	f-7	f-7	f-8	f-8	f-9	f-9	f-10	f-10	f-11	f-11	f-12	f-12
<b>L</b>	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
	f-1	f-1	f-2	f-2	f-3	f-3	f-4	f-4	f-5	f-5	f-6	f-6	f-7	f-7	f-8	f-8	f-9	f-9	f-10	f-10	f-11	f-11	f-12	f-12
<b>M</b>	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	g-1	g-1	g-2	g-2	g-3	g-3	g-4	g-4	g-5	g-5	g-6	g-6	g-7	g-7	g-8	g-8	g-9	g-9	g-10	g-10	g-11	g-11	g-12	g-12
<b>N</b>	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
	g-1	g-1	g-2	g-2	g-3	g-3	g-4	g-4	g-5	g-5	g-6	g-6	g-7	g-7	g-8	g-8	g-9	g-9	g-10	g-10	g-11	g-11	g-12	g-12
<b>O</b>	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	h-1	h-1	h-2	h-2	h-3	h-3	h-4	h-4	h-5	h-5	h-6	h-6	h-7	h-7	h-8	h-8	h-9	h-9	h-10	h-10	h-11	h-11	h-12	h-12
<b>P</b>	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
	h-1	h-1	h-2	h-2	h-3	h-3	h-4	h-4	h-5	h-5	h-6	h-6	h-7	h-7	h-8	h-8	h-9	h-9	h-10	h-10	h-11	h-11	h-12	h-12

\* = Source Plate

# = Well Location in Source Plate