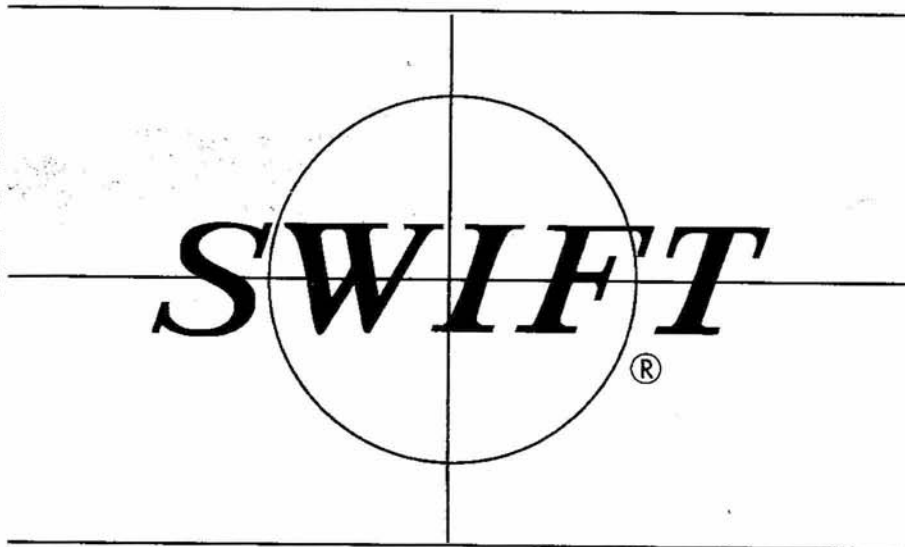


# USE AND CARE OF SWIFT M27 TRI POWER STEREO MICROSCOPE



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**THE USE AND CARE OF YOUR SWIFT STEREO M27**  
**FEATURES OF YOUR SWIFT M27 TRI POWER STEREO MICROSCOPE**

**OPTICAL SYSTEM:** Only the highest quality prisms are used in Swift optical systems. All optical surfaces are hard coated to reduce reflection and increase light transmission.

**EYEPIECES:** Your M27 Stereo Microscope eyepieces are interchangeable with those for the M26 Stereo Microscope.

The M27 Stereo Microscope has an easily adjusted interpupillary control to space the eyepieces exactly the proper distance apart.

**FOCUS CONTROLS:** The focus knobs are located on both sides of the microscope and may be used with either hand.

These coarse focusing controls allow a sensitive adjustment of the focus on the specimen to permit ease of use, this mechanism is provided with strong stops to prevent the rack and pinion from disengaging at either end of the focus range. When either limit is reached, the clutch system will slip to prevent damage to mechanical parts.

The incident illuminator is used for opaque specimens. Note that the entire contrast plate is illuminated which prevents shadows and more evenly exposes the specimen.

All wiring is tamper-proof. The three-wire, grounded system which includes a molded plug, meets the requirements of the most critical electrical and safety codes.

**OBJECTIVE:** M27 TRI POWER Stereo Microscope gives three (3) different magnifications; 1X, 2X, 3X (model M27B123) or 1X, 2X, 4X (model M27B124), all parfocal and parcentered.

**ROTATABLE HEAD:** The head is 180 degree rotatable and can be positioned forward or backward as desired.

**OPENING THE PACKAGE AND SETTING UP YOUR  
SERIES M27 STEREO MICROSCOPE**

1. Open the styrofoam with care. Notice that the microscope is packed in a compact way so that it fits into the styrofoam. See the illustration.

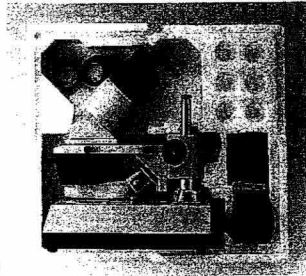


Illustration 1

2. Carefully remove the instrument from the styrofoam and set it up on a stable bench or desk. Make sure that all the accessories, such as the stage plate, eyeguards, wrench, dust cover and care manual, are included in the package.
3. Loosen the large black screw in the back of the post to free the focusing block for up and down movement. Secure the focusing block approximately in the middle of the post. See illustration 2.

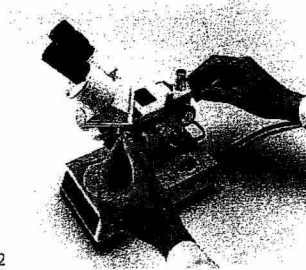


Illustration 2

4. Then loosen the thumb screw on the side of the pod which will allow the head to rotate freely. Tighten the thumb screw when the head is positioned as desired. Plug in the electrical cord and test the illuminators. Your microscope is now ready to operate.

**OPERATING YOUR SERIES M27 TRI POWER STEREO MICROSCOPE**

1. Place the specimen onto the contrast plate.
2. Rotate the objective cone to the highest magnification and view through the eyepieces. Rotate the focus controls until the specimen image is sharply in the field of view.

3. Grasp the eye tubes and move them either closer together or farther apart, until you see one field or view.
4. Addressing the microscope from the rear, close your left eye and adjust the diopter ring on the right eye tube to bring the image in focus with right eye.
5. Close your right eye and, while viewing with the left eye, adjust the diopter ring on the left eye tube to bring the image of the specimen into sharp focus.

The optical system is now adjusted to your particular vision.

6. Turn the objective cone to the lower power for a wider field of view.

**SERVICE**

The bulbs in the illuminators are 6 volt, 10 watt. Reorder Swift MA2619 bulb for replacement.

The focus tension adjustment is unique and exclusive, and is easily adjusted by using wrench No. MT202. This wrench fits the tension collar found on the focusing controls, between the knob and upright support. A clockwise turn of this collar moves it toward the upright support and increases tension, while a counter-clockwise turn moves the collar toward the knob and decreases tension.

**CLEANING**

Eyepieces should be cleaned as often as necessary to keep them in good condition. Clean the eyepieces by brushing away dust particles, with a soft, camel's hair brush; then moisten the lens by breathing onto it. Wipe the lens carefully with a good quality lens tissue folded several times. If dirt or other foreign matter still remains, it may be necessary to use a mild solvent such as Xylol. Note, the lens tissue should be moistened, not saturated, with Xylol for cleaning, after which the lens should be dried, also with a good quality lens tissue.

Painted surfaces should be cleaned frequently with mild detergent and a soft cloth.

**TROUBLE SHOOTING**

A. PROBLEM.....the image goes out of focus of its own volition.

CORRECTION.....use Swift Wrench MT202 to tighten the tension collar found on the spindle of the focus controls.

B. PROBLEM.....Inability to eliminate double image.

JUL 17 1997

**M27 TRI POWER SERIES  
OPTICAL DATA**

<b>MODEL M27B-123</b>				
<b>OBJECTIVE (turret type)</b>		<b>EYEPIECE</b>		
		<b>W5X (MA2608)</b>	<b>W10X (MA2610)</b>	<b>W15X (MA2609)</b>
<b>1X</b>	WD	50	50	50
	FOV	20	18	12
	MAG	5X	10X	15X
<b>2X</b>	WD	50	50	50
	FOV	10	9	6
	MAG	10X	20X	30X
<b>3X</b>	WD	50	50	50
	FOV	7	6.5	4
	MAG	15X	30X	45X
<b>M27B-124</b>				
<b>1X</b>	WD	43	43	43
	FOV	20	18	12
	MAG	5X	10X	15X
<b>2X</b>	WD	43	43	43
	FOV	10	9	6
	MAG	10X	20X	30X
<b>4X</b>	WD	43	43	43
	FOV	5.3	4.8	3
	MAG	20X	40X	60X

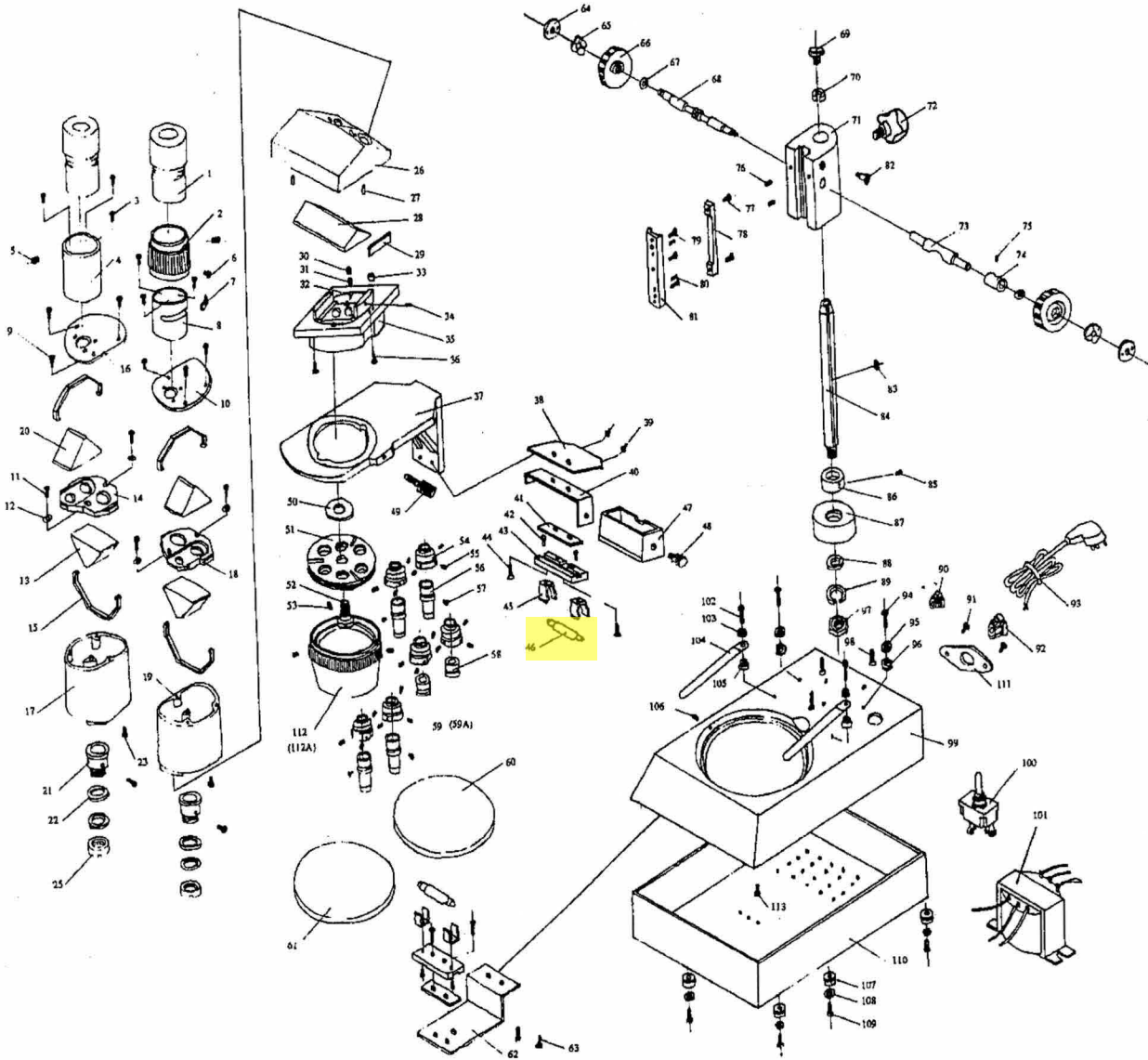
WD: Working Distance in millimeters

FV: Field of View in millimeters

MAG: Total Magnification

No auxiliary lenses available

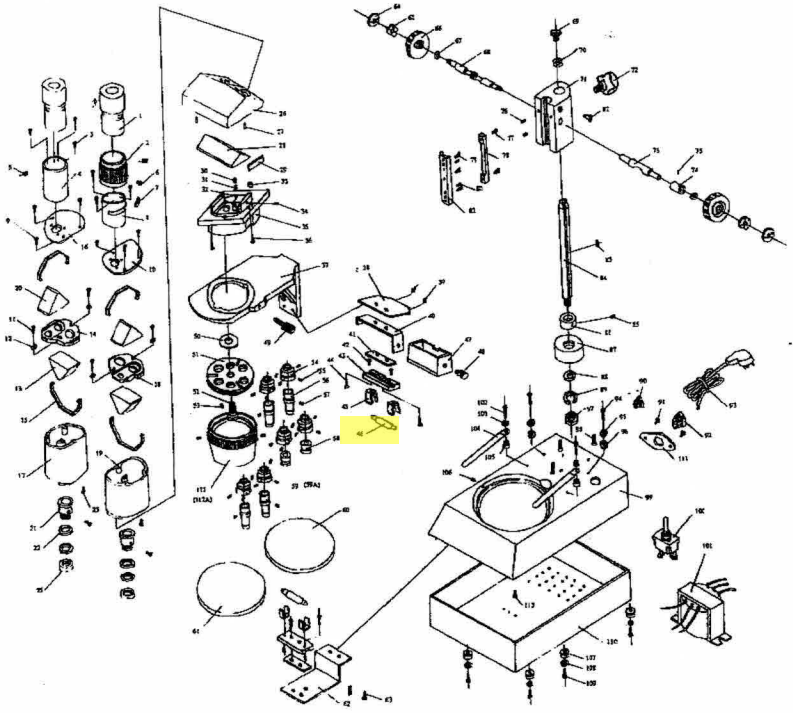
### PARTS LIST OF SWIFT M27 TRI POWER STEREO MICROSCOPE



PARTS LIST OF SWIFT M27 TRI POWER STEREO MICROSCOPE

PARTS NO.	PARTS NAME				
		45	BULB HOLDER	91	SCREW
		46	BULB	92	LARGE GROMMET
1	EYEPIECE	47	ILLUMINATOR HOUSING	93	POWER CORD
2	DIOPTER TUBE	48	THUMB SCREW	94	SCREW
3	SET SCREW	49	SET SCREW (THUMB SCREW)	95	WASHER
4	FIXED EYE TUBE	50	WASHER	96	NUT
5	SCREW (P-1)	51	ROTATION PLATE	97	NUT
6	SPHERICAL HEAD SCREW	52	ROTATION AXLE	98	SCREW
7	SPRING SLIDE BLOCK	53	SET SCREW	99	BASE (TOP)
8	INNER CAM TUBE	54	OBJECTIVE SEAT	100	ON-OFF SWITCH
9	SCREW	55	SET SCREW	101	TRANSFORMER
10	LEFT PLATE	56	1X OBJECTIVE	102	SCREW
11	SCREW	57	SCREW	103	WASHER
12	WASHER	58	2X OBJECTIVE	104	STAGE CLIP
13	PRISM (LARGE)	59	3X OBJECTIVE	105	BOTTOM COLLAR
14	RIGHT PRISM SEAT	59A	4X OBJECTIVE	106	SET SCREW
15	PRISM HOLDER	60	BLACK & WHITE PLATE	107	RUBBER FEET
16	RIGHT PLATE	61	FROSTED GLASS STAGE PLATE	108	WASHER
17	RIGHT PRISM HOUSING	62	ILLUMINATION HOLDER	109	SCREW
18	LEFT PRISM SEAT	63	SCREW	110	BASE (BOTTOM)
19	LEFT PRISM HOUSING	64	RING NUT	111	CORD PLATE
20	PRISM (SMALL)	65	WAVE SPRING WASHER	112	OBJECTIVE COVER (1X, 2X, 3X)
21	RING AXLE	66	KNOB	112A	OBJECTIVE COVER (1X, 2X, 4X)
22	WASHER	67	WASHER	113	SCREW
23	SCREW	68	PINION		
25	PRESSURE RING	69	POLE CAP		
26	EYEPIECE TUBE SEAT	70	TENSION RING		
27	PIN	71	COARSE ADJUST BLOCK		
28	PRISM	72	SET SCREW		
29	THIN PLATE	73	PINION-SHAFT SLEEVE		
30	SCREW	74	TENSION CONTROL NUT		
31	SPRING	75	SET SCREW		
32	STEEL BALL	76	SET SCREW		
33	JACKET	77	SET SCREW		
34	SCREW	78	RACK GEAR		
35	ROTATION SEAT	79	SCREW		
36	SCREW	80	KNOCK PIN		
37	SUPPORTER	81	RACK GUIDE		
38	SUPPORTER PLATE	82	SET SCREW		
39	SCREW	83	GUIDE SLIDE-BLOCK		
40	CONNECTING ANGLE PLATE	84	POLE		
41	INSULATING PLATE	85	SCREW		
42	HOLLOW SCREW	86	BACKING RING		
43	ILLUMINATING SEAT	87	POLE HOLDER		
44	SCREW	88	WASHER		
		89	SPRING WASHER		

PARTS LIST OF SWIFT M27 TRI POWER STEREO MICROSCOPE



CORRECTION.....look at a distant object, then quickly view through the Stereo Microscope.

C. PROBLEM.....the focus knobs slip at either upper or lower limits of travel.

CORRECTION.....this is normal. A unique slip clutch is built in to prevent damage to precision gears. This is activated at both the upper and lower limits of travel.

Your Swift M27 Stereo Microscope is designed to function satisfactorily with only ordinary maintenance. The instrument should be periodically serviced by a qualified, authorized service technician, who will clean, relubricate and perform routine adjustments at that time. Unauthorized personnel should never disassemble lens assemblies or other precision components. For information regarding service, contact your authorized Swift dealer or write to: Swift Instruments, Inc., Scientific Instrument Division, P. O. Box 562, San Jose, California 95106.

Telephone: (408) 293-2380  
Fax: (408) 292-7967

**SPECIFICATIONS FOR STANDARD MODEL**

Magnification: 10X, 20X and 30X (M27B123); 10X, 20X and 40X (M27B124)

Eyepiece: Paired widefield 10X

Field of View: 10mm

Working Distance: M27B123 48mm  
M27B124 40mm

Stand: Incident and trans-base illumination, 6 volt, 10 watt, with stage clips

**PARTS AND ACCESSORIES**

- MA2609 W15X Eyepieces, pair
- MA2610 W10X Eyepieces, pair
- MA2615 Stage Clips, pair
- MA2616 Eyeshields, pair
- MA2619 6 volt, 10 watt bulb
- MA2620 Black and white stage plate for M27 series
- MA2621 Frosted stage plate for M27 series

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7	SPRING SLIDE BLOCK
8	INNER CAM TUBE
9	SCREW
10	LEFT PLATE
11	SCREW
12	WASHER
13	PRISM (LARGE)
14	RIGHT PRISM SEAT
15	PRISM HOLDER
16	RIGHT PLATE
17	RIGHT PRISM HOUSING
18	LEFT PRISM SEAT
19	LEFT PRISM HOUSING
20	PRISM (SMALL)
21	RING AXLE
22	WASHER
23	SCREW
25	PRESSURE RING
26	EYEPIECE TUBE SEAT
27	PIN
28	PRISM
29	THIN PLATE
30	SCREW
31	SPRING
32	STEEL BALL
33	JACKET
34	SCREW
35	ROTATION SEAT
36	SCREW
37	SUPPORTER
38	SUPPORTER PLATE
39	SCREW
40	CONNECTING ANGLE PLATE
41	INSULATING PLATE
42	HOLLOW SCREW
43	ILLUMINATING SEAT
44	SCREW



45	BULB HOLDER	91	SCREW
46	BULB	92	LARGE GROMMET
47	ILLUMINATOR HOUSING	93	POWER CORD
48	THUMB SCREW	94	SCREW
49	SET SCREW (THUMB SCREW)	95	WASHER
50	WASHER	96	NUT
51	ROTATION PLATE	97	NUT
52	ROTATION AXLE	98	SCREW
53	SET SCREW	99	BASE (TOP)
54	OBJECTIVE SEAT	100	ON-OFF SWITCH
55	SET SCREW	101	TRANSFORMER
56	1X OBJECTIVE	102	SCREW
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83	GUIDE SLIDE-BLOCK		
84	POLE		
85	SCREW		
86	BACKING RING		
87	POLE HOLDER		
88	WASHER		
89	SPRING WASHER		
90	SMALL GROMMET		