

**LASICO**

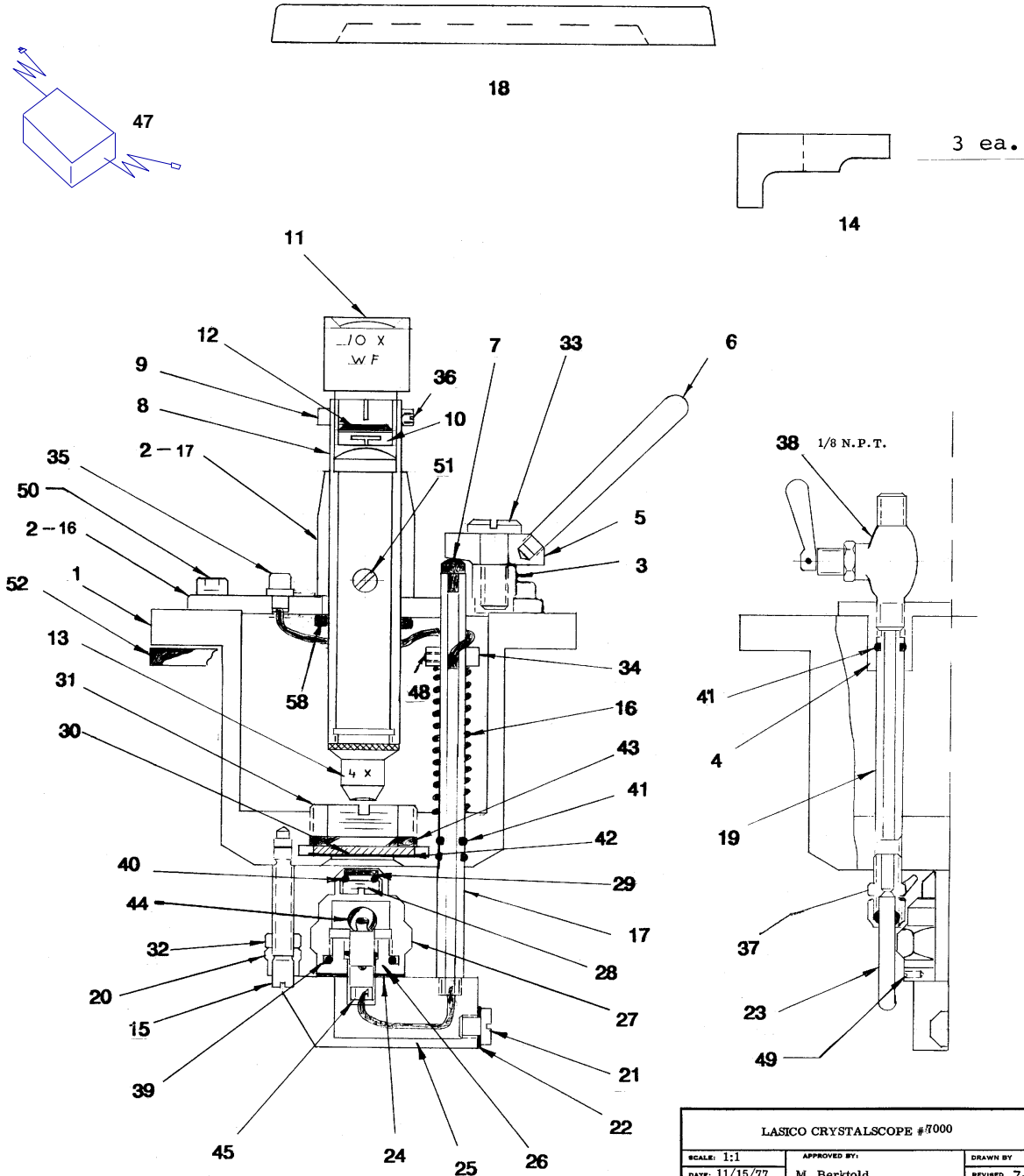
**Los Angeles Scientific Instrument Co. Inc.**

EST.1929

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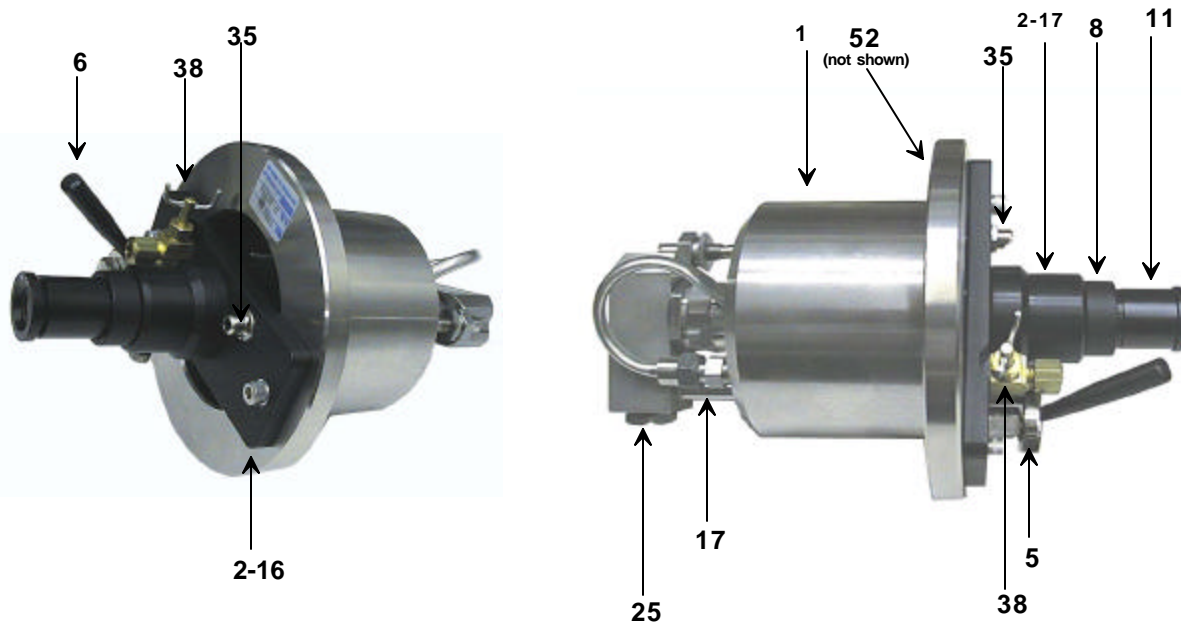
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LASICO CRYSTALSCOPE #7000		
SCALE: 1:1	APPROVED BY:	DRAWN BY:
DATE: 11/15/77	M. Berkold	REVISED 7-1-93
PARTS LIST DRAWING		
t7\inst17000		DRAWING NUMBER 784



## SERIES 7000 CRYSTALSCOPE

Made in USA



### The Instrument and its Components

The instrument consists of a housing (1) with a 6" dia. flange.

The bottom side of the housing contains a pyrex glass window which functions like an object glass cover under a microscope.

The flange of the housing carries a bridge assembly (2-16 and 2-17) onto which the microscope and its controls are mounted.

The microscope consists of a 10x ocular (11) which is equipped with a measuring reticle which is divided into 0.05mm intervals and a 4x achromatic objective lens.

The total magnification is 40x .

Optical components to provide a different magnification level are available on special request.

The electrical connection (35) is located next to the microscope sleeve. (2-17)

A 6 volt, 0.5 amp or higher AC or DC power supply (like the optional #47-60 with connector cable # 60-61) is needed to operate the built in light source.

(bulbs used are: 6V.GE # 51AF)

To adjust the space between the pyrex glass window and the lamp housing (25) handle # 6 must be activated. A spring loaded rack lifter (17) keeps the tension between clamp (5) and the lamp housing.

The spacing may be adjusted from 0.003" / 0.08mm to 0.125" / 3.18mm.

To clean the pyrex glass window from dried up substances, a water spray tube is employed and controlled by valve # 38. (1/8 NPT male thread)

An internal spout also washes the seal and rack lifter. (17)

## **Mounting Instructions**

1. Locate the Crystalscope at a convenient height but low enough so that it will splash with syrup at time of graining. Do not mount more than 12" above graining level.
2. Cut a 4 1/8 " dia. hole into pan.
3. Tap or weld 3 bolts 3/8 - 16 x 1 1/2 long onto the pan at 3 3/8" radius.
4. Insert neoprene seal (52) and Crystalscope, with handle (6) on the right and secure with clamps (14) which are supplied with the instrument.
5. Connect 1/4" water line to control valve (38)

The Crystalscope is now ready for operation. If the Crystalscope needs to be removed from the pan, close the opening with a 6 " dia.

## **Operation of the Crystalscope**

### **To view crystals :**

When using the crystalscope, leave lamp housing retracted to it's maximum (. 125") so that massecuite flows freely between the pyrex glass window (30) and light cover glass (29). To view, move handle down slowly until crystal movement is almost halted. If the light source is moved too far, crystals will be crushed between the glasses and give the appearance of false grain. Raise handle, wash glass and lower handle more carefully. Minimum spacing between glasses is set at .003" but this can be increased without removing crystalscope from pan by tightening the large shoulder screw (33).

### **Using the eyepiece reticle for measurement of grain sizes:**

The reticle is divided into 50 intervals. Each interval equals 0.05mm.

To measure align count the number of intervals which fit onto a crystal.

Example: If you counted 27 intervals, then the size of the crystal is  $27 \times 0.05 = 1.35$  mm

## **Crystalscope Maintenance**

### **Changing the Light Bulb**

To replace light bulb (44), remove instrument from pan, pull lamp housing (25) back until it clears adjusting bolt (15) and swing it around 180 degrees. Unscrew lens housing (27) and insert new bulb. Replace lens housing and tighten securely. Swing back into place.

### **REPLACING "O" RING:**

If lamp housing sticks it may indicate syrup leakage through "O" ring on rack lifter. To replace the "O" ring the crystalscope must be removed from the pan. Take off the clamp (5) and remove the two Allen head

screws that hold the bridge ( 2-16 / 2-17) to the housing (1).

Pull the bridge straight outward.

Remove the nylon button (7) and move the wire out of the slot and into the center hole of the rack lifter. Loosen Allen head screw in stop ring (34) and pull lamp housing out through back of housing.

Remove "O" ring and replace with new one (41). Before reassembling inspect the inside of the 3/8" dia. hole for any sharp edges that could damage the new "O" ring. Grease tube and "O" ring and reassemble.

# Price List for Lasico Crystalscopes / Replacement Parts

Effective Jan 1. 2003

## New Instruments

**Model 7000 SS Crystalscope with stainless steel pan and power supply US \$ 1895.00**

For Replacement Parts:

Minimum Order is US \$ 50.00

Numbers in parenthesis are old part numbers Which may still appear on your parts list.

\*) In order to assure precise reticle calibration, parts No. 8, 9, 10, 11, 12 and 13 should be ordered at the same time or the assembly returned to us for calibration.

\*\*) Instruments with serial number D-03209 or later add "n" to part numbers 24, 35, 44, and 47 .

## Replacement Parts

1 (S-1)	Housing, stainless steel	800.00
2 (16,17)	Bridge Assy.	125.00
3 (23)	Spacer	19.50
4 (30)	Bushing	19.50
5 (24)	Clamp release	55.00
6 (25)	Handle	19.50
7 (52)	Cap (delrin)	6.00
8*(32)	Microscope tube	75.00
9*(37)	Stop ring	17.50
10*(38)	Reticle mount 19mm	30.00
11*(33)	10x WF , focusing eyepiece	170.00
12*(35)	Reticle , 19mm , for above	50.00
13*(31)	4x objective	160.00
14 (58)	Mounting bracket	9.00
15 (3)	Adjustment bolt	45.00
16 (55)	Coil spring	10.00
17 (57)	Rack lifter	115.00
18 (59)	Cover plate 6"dia	20.00
19 (11)	Connector tube	30.00
20 (4)	Spacer nut	18.00
21 (39)	Plug screw 17/32-32	22.50
22 (40)	O-ring R-43	0.75
23 (12)	Spray tube 1/4	18.50
24 **n(42)	R 54 O- ring	0.75
25 (41)	Lamp housing	125.00
26 (44)	Bulb socket mount	65.00
27 (48)	Lens housing	80.00
28 (51)	Lock nut, small	16.00
29 (49)	Lens, 1/2 dia.	19.50
30 (7)	Lens, 1-7/16"dia	22.00
31 (9)	Lock nut (large)	21.00
32 (5)	Hex nut , 5/16-32	9.50
33 (26)	Pivot screw	25.50
34 (53)	Lock ring	12.00
35 **n(21)	Power Jack	9.00
36	6-32x1/8" set screw	0.75
37 (13/14/15)	Compression fitting	30.00
38 (29)	Valve 1/8 NPT Assy.	20.00
39 (43)	O-ring R-54	0.75
40(50)	O-ring R-57	0.75
41	O-ring R-46	0.75
42 (6)	Gasket 1 (cork)	2.50
43 (8)	Gasket 2 (neoprene)	2.50
44 **n(47)	Bulb, 7.5V, frosted	4.25
45 (46)	Bulb-socket w/cord	12.00
47**n(60)	Power Supply (for 44-47)	29.50
48 (36)	8-32x3/16 set screw	0.75
49 (54)	6-32x3/16 set screw	0.75
50 (2)	1/4"x-20x1/2" hex bolt	1.00
51 (18)	Clamp screw 12-40	7.50
52 (1A)	Seal 5-1/4"O.D. (neoprene)	22.50
53 (63)	Instructions	n/c
58	4-40x5/8 cap screw	0.75