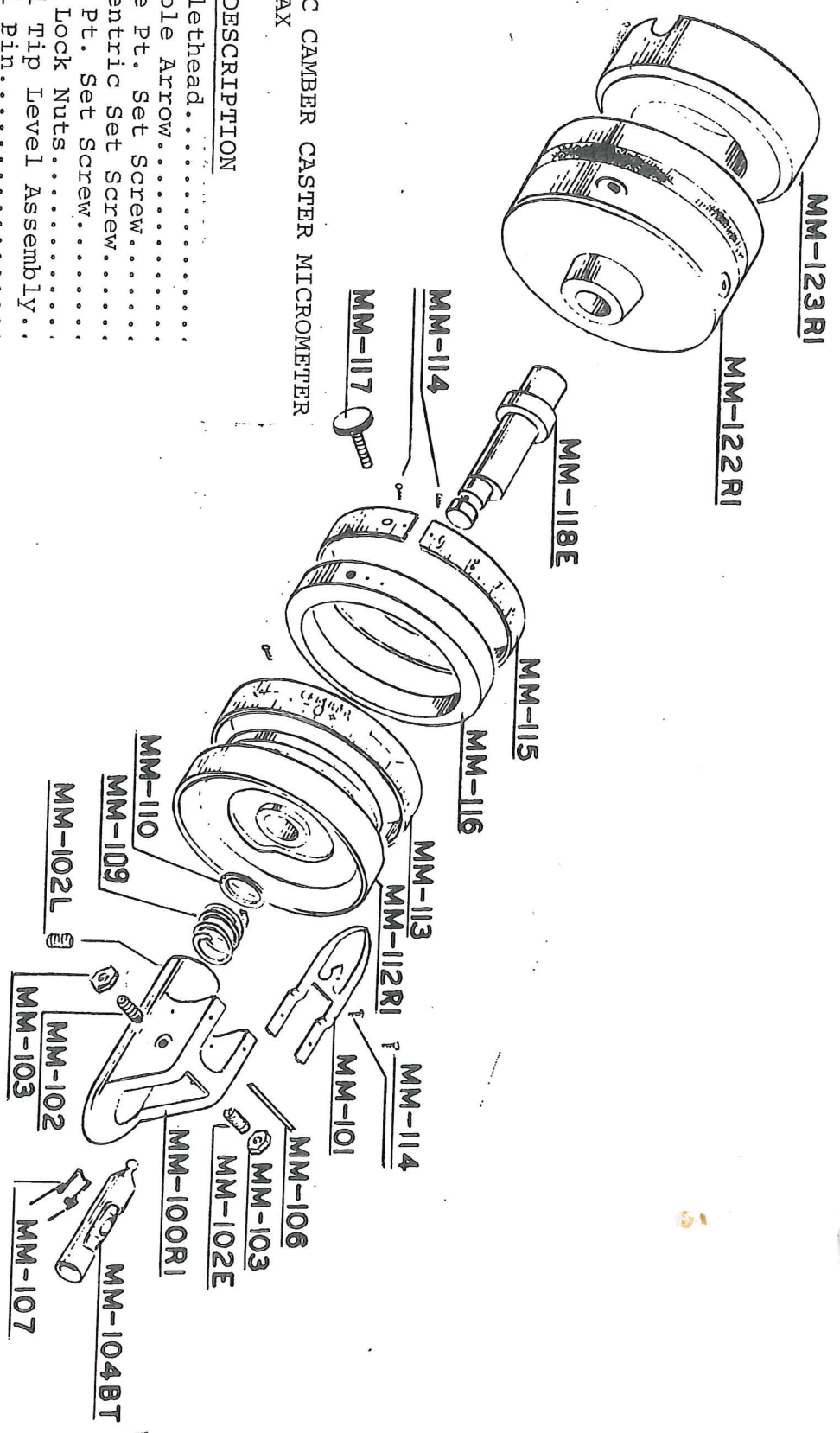


11/73

PARTS LIST MAGNETIC CAMBER CASTER MICROMETER
MODEL M-3A AND M-3AX

PART NO.	QTY	DESCRIPTION
MM-100RI	1	Bullethead.....
MM-101	1	Double Arrow.....
MM-102	1	Cone Pt. Set Screw.....
MM-102E	1	Eccentric Set Screw.....
MM-102L	1	Cup Pt. Set Screw.....
MM-103	2	Hex Lock Nuts.....
MM-104BT	1	Ball Tip Level Assembly..
MM-106	1	Roll Pin.....
MM-107	1	Torsion Spring.....
MM-109	1	Coil Compression Spring..
MM-110	1	Washer.....
MM-112RI	1	Cam.....
MM-113	1	Camber-Dial.....
MM-114	8	Drive Screws.....
MM-115	1	Caster Dial.....
MM-116	1	Caster Ring.....
MM-117	1	Lock Screw, Knurled.....
MM-118E	1	Shaft Type E.....
MM-122RI	1	Magnetic Cup Assembly....
W/MM-123R	1	Mag. cup assembly for model M-3A.....



Prices subject to change without notice.

Minimum order \$15.00 F.O.B. Westbury, N. Y.

SCALE		APPROVED BY:	
DATE: 1964		DRAWN BY: H.	
KWIK-EZEE INC. WESTBURY N.Y.		REVISED #3	
M3A Parts Assembly		DRAWING NUMBER 1800	

FIELD CHECKING M-3 MAGNETIC MICROMETERS

I PROCEDURE FOR CHECKING PAIRED GAGES

1. Join gages back to back (see fig. 1)
2. Place both gages, as a unit, on a fairly level surface.
3. Set Zeros of both Camber scales in line with their respective Pointers.
4. Observe both spirit levels. At this point, both bubbles should assume corresponding positions in their glass vials, indicating that both gages are in perfect working condition. Note: Gages may be tilted as a unit until bubble of one level is centered between the two black lines, bubble of 2nd level should also be centered. Any variation of position between the two bubbles is an indication that one or both of the gages are in need of adjustment.

II PROCEDURE FOR CHECKING SINGLE GAGES

1. Clamp a piece of steel ground stock (Approx. 1/4" x 3" x 8") in a vise.
2. Attach magnetic gage to one side of ground stock (see fig. 2). Be sure all surfaces are clean.
3. Take a Camber reading. Write Camber reading down.
4. Remove gage and attach to opposite side of same piece of ground stock (see fig. 3).
5. Take a Camber reading. Write this second Camber reading down.
6. Compare the two Camber readings. With gage in perfect working condition, the amounts should be equal, but of opposite signs (positive and negative).
7. If the two readings vary, the difference should be divided in HALF to determine the amount and direction of error.

EXAMPLE:

- | | | |
|-------------------|----------|-------------------------|
| 1st reading | 1 degree | NEGATIVE CAMBER |
| 2nd reading | 3/4 " | POSITIVE CAMBER |
| Difference | 1/4 " | NEGATIVE CAMBER |
| One Half of 1/4 " | | equals 1/8 degree error |
| | | in NEGATIVE direction. |
8. For recalibration instructions, see section II of Service Bulletin #2.

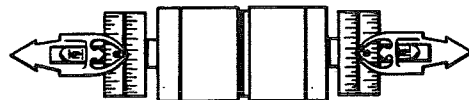


FIG.1

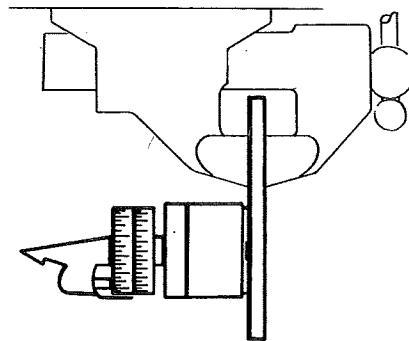


FIG.2

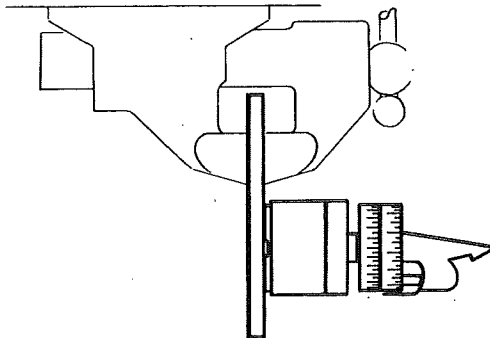


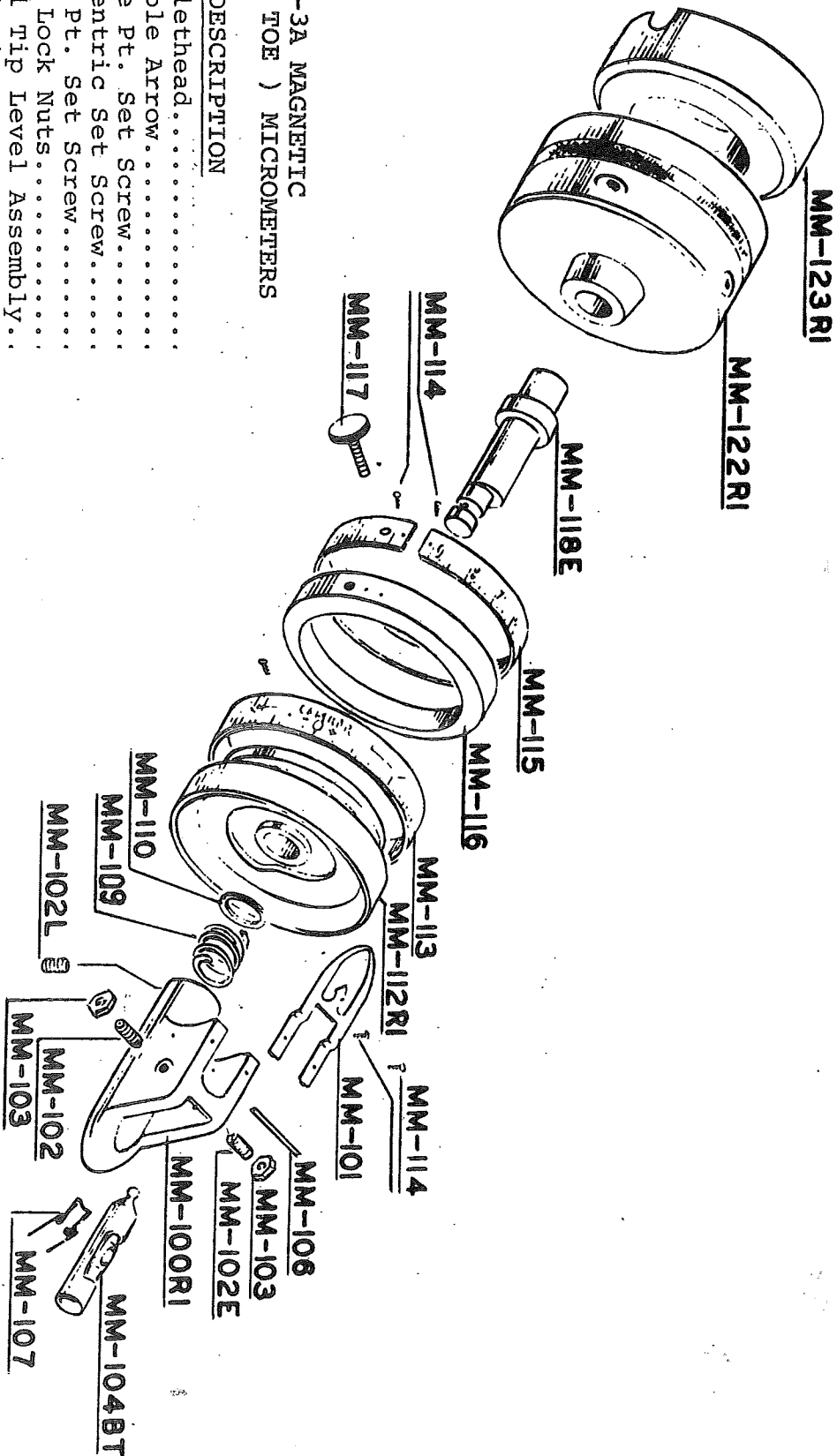
FIG.3

PARTS LIST

MODELS M-3AX AND M-3A MAGNETIC
CAMBER-CASTER (OR TOE) MICROMETERS

PART NO.	QTY	DESCRIPTION
MM-100R1	1	Bullethead.....
MM-101	1	Double Arrow.....
MM-102	1	Cone Pt. Set Screw.....
MM-102E	1	Eccentric Set Screw.....
MM-102L	1	Cup Pt. Set Screw.....
MM-103	2	Hex Lock Nuts.....
MM-104BT	1	Ball Tip Level Assembly..
MM-106	1	Roll Pin.....
MM-107	1	Torsion Spring.....
MM-109	1	Coil Compression Spring..
MM-110	1	Washer.....
MM-112R1	1	Cam.....
MM-113	1	Camber-Dial.....
MM-114	8	Drive Screws.....
MM-115	1	Caster Dial.....
MM-116	1	Caster Ring.....
MM-117	1	Lock Screw, Knurled.....
MM-118E	1	Shaft Type E.....
MM-122R1	1	Magnetic Cup Assembly....
W/MM-123R	1	Mag. cup assembly for model M-3A.....

SEE GENERAL PARTS PRICE LIST
FOR PRICES-BY PART NUMBER



CAMBER CASTER MICROMETER MODEL				M 3A
				M-3AX
SCALE	APPROVED BY:		DRAWN BY: <i>H</i>	
DATE: 3-79			REVISED: # 3	
KWIK-EZEE INC. WESTBURY N.Y.				
PARTS Assembly				DRAWING NUMBER 1800

LEVEL INSTALLATION & RECALIBRATION INSTRUCTIONS

(For Model M-3 Magnetic Micrometers purchased after January, 1958 and bearing serial numbers 645 and higher).

SUGGESTED TOOLS:

- Two - No. 6 Allen Wrenches 3/32"
- One - 3/8" Open End or Box Wrench
- One - 10" Adjustable Wrench
- One - Carpenter or machinist level (Accurate)
- One - Bench vise
- One - Steel plate approximately 1/4" x 3" x 8" (Ground stock preferred)

I INSTALLING A NEW LEVEL

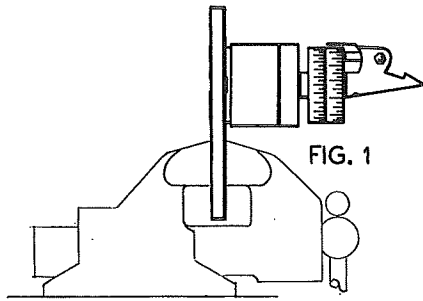


FIG. 1

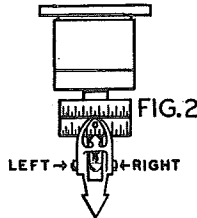


FIG. 2

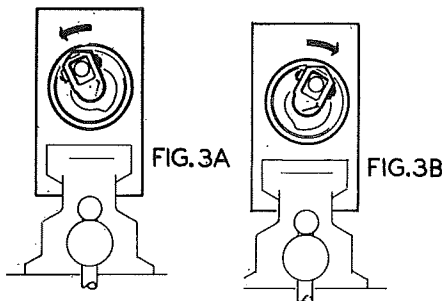


FIG. 3A

FIG. 3B

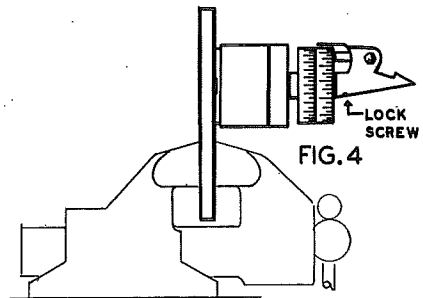


FIG. 4

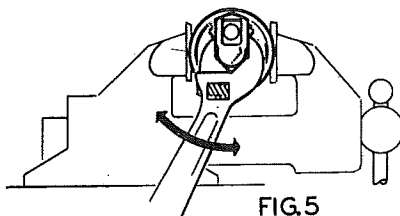


FIG. 5

1. Place gage against a known plumb reference point, such as a 1/4" thick plate of steel clamped in a vise and leveled vertically (see fig. 1). Be sure surface of steel plate and magnet are clean.
2. Loosen hex nut and cone point allen set screw on left side of gage (see fig. 2) and remove old level assembly.
3. Depress torsion spring and install new level assembly so that the ball tip of the level lies in cam groove and pivot holes of level housing are in line with set screws.
4. Tighten left cone point set screw until all lateral play is eliminated and torsion spring permits ball tip of level to ride to top of cam - without sticking. Level housing should be approximately centered.
5. Turn dial drum to level bubble as in taking a Camber reading.
6. Rotate entire gage against steel reference plate, approximately 10 degrees to the left (see fig. 3-A) observing position of bubble in vial as gage is turned. Then, rotate gage an equal amount to the right see (see fig. 3-B) and notice position of bubble. Air bubble should remain stationary (within the two black lines) during this movement. Any drift can be adjusted by loosening the hex lock nut and turning the right eccentric set screw. NOTE: If adjustment of right eccentric set screw is necessary the left set screw will also have to be adjusted to prevent bind or excessive looseness of level.
7. After each adjustment of the eccentric set screw recheck for air bubble drift as described in steps 5 and 6. NOTE: This eccentric adjustment will also vary the height relationship of the level to the cam thereby changing the position at which the bubble becomes level. For this reason, the right eccentric set screw should not be tampered with unless absolutely necessary and then only to correct for level drift as described above.
8. Tighten all lock nuts while holding allen set screws in position as follows: right lock nut first, make any final adjustments for lateral play and freedom of level movement with left set screw, lock left lock nut.
9. Gage is now ready for calibration.

II CALIBRATING GAGE

10. Take a Camber reading against known plumb reference plate as in step # 1. If gage does not read Zero Camber proceed as follows:
11. Loosen the small allen locking screw located in the bottom of the Arrowhead assembly (see fig. 4).
12. Twist entire Arrowhead assembly in the direction of Zero on the Camber dial drum as indicated by the Double Pointer while holding the magnetic end of the gage from turning. If Arrowhead cannot be turned by hand, clamp the magnetic end of gage in a vise (without disturbing position of Camber dial). Protect finish of gage with padding, and use an adjustable wrench on Arrowhead to twist the position of Double Pointer left or right towards Zero on Camber dial as shown in fig. 5.
13. When Double Pointer indicates Zero Camber against plumb reference point gage is calibrated.
14. Tighten allen lock screw. Recheck.
15. Place a drop of light machine oil at the following points: set screw pivots, torsion spring pin, ball tip of level and between cam and shaft at coil spring.
16. Note: There is no field adjustment for Caster.

Kwik-Eye Inc.

PIONEERING PRECISION PRODUCTS FOR ACCURATE WHEEL CONTROL

54 BROOKLYN AVENUE

WESTBURY, LONG ISLAND, NEW YORK