GILSON COMPANY, INC.

OPERATING MANUAL

ATTERBERG LIQUID LIMIT MACHINE
MODELS SA-60, SA-60F, SA-61, SA-62

SA-60

Rev: 04/2020

PHONE: 800-444-1508
740-548-7298

P.O. Box 200, Lewis Center, Ohio 43035-0200
E-mail: customerservice@gilsonco.com **Product Web Page:** www.globalgilson.com

FAX: 800-255-5314
740-548-5314

I. GENERAL INFORMATION

The Atterberg Liquid Limit Machine is a device designed to determine the liquid limit of soils. The hard rubber base is formed in a mold to maintain the uniformity of hardness, size and density of all devices. Precision molded cam control parts and nylon bearings provide accurate cup drop and smooth operation.

• All models include a removable pin cup assembly for easy cleaning and inspection and ten precision molded Plastic Grooving Tools. The SA-60, SA-60F and SA-62 models incorporates a mechanical counter which automatically records the number of cup drops during testing. The SA-60 and SA-60F model incorporates a totally enclosed gear motor system which drives the liquid limit device and mechanical counter assembly. The SA-61 model is a hand operated unit without a mechanical counter.

II. RELATED USER DOCUMENTATION

These operating instructions do not contain the necessary information on the specific test procedures. Please refer to ASTM D4318 or AASHTO T89 for additional testing information.

Accessories

SAA-8 Liquid Limit AASHTO Grooving Tool

SAA-10 Liquid Limit Casagrande ASTM Grooving Tool w/ Gauge Block (Metal)

SAA-10P Liquid Limit Casagrande ASTM Grooving Tool (Plastic)

SA-65 Liquid Limit / Plastic Limit Test Accessory Set

SAA-11 Brass Cup with Mounting Holes

SAA-12 Brass Cup with Holder

III. OPERATION

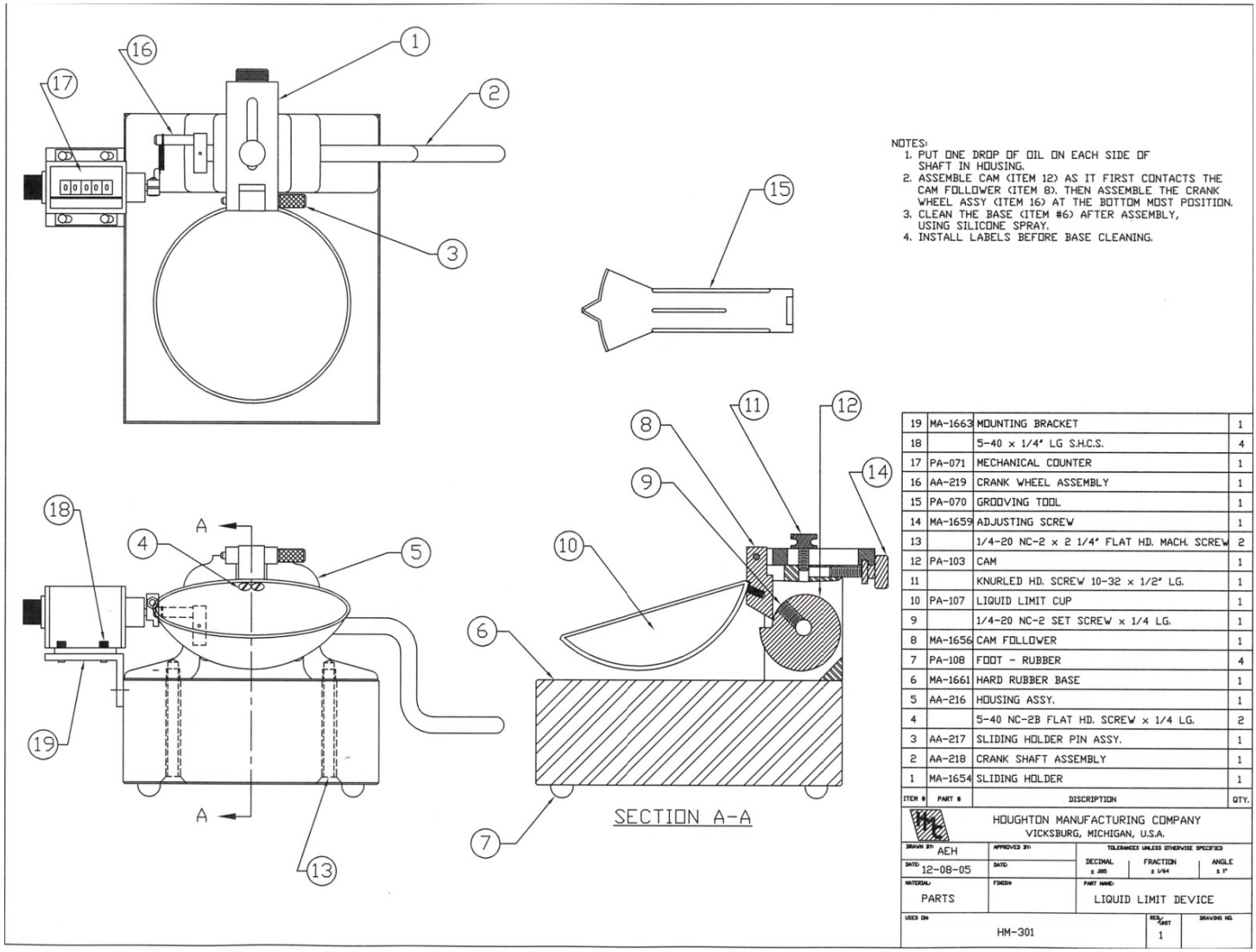
A. Follow test procedure and operation as given in appropriate documentation.

B. Position cup to desired distance from base. The hinge position of the cup can be moved forward or backward by loosening the top knurled head screw (Fig. 1-3; #11) and turning the knurled adjusting screw (Fig. 1-3, #14). This raises and lowers the cup so its distance from the base is adjustable. After adjustment, secure the desired position by tightening the top knurled head screw.

C. On models SA-60, SA-60F, and SA-62, zero the counter by turning the black knob clockwise.

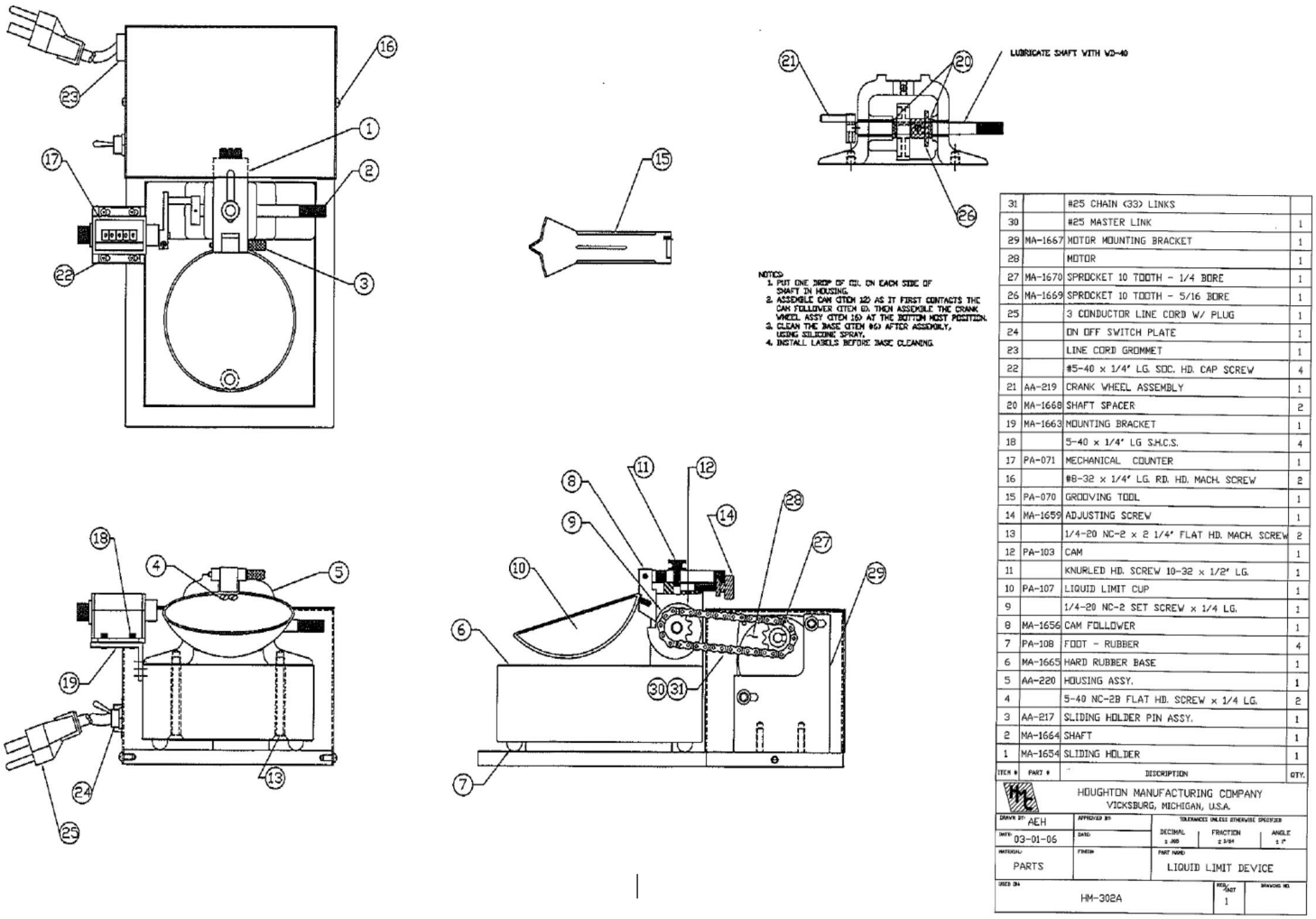
D. To start the motorized model, SA-60, SA-60F, turn the switch to “ON” after connecting the power cord to a power line of appropriate voltage. Model SA-60 requires 110v and Model SA-60F requires 220v.

E. The cup is attached to the sliding holder by a removable pin (Fig. 1,-3; #3). Pull the pin out to remove the cup assembly for cleaning and inspection.



ITEM #	PART #	DISCRIPTION	QTY.
19	MA-1663	MOUNTING BRACKET	1
18		5-40 x 1/4" LG S.H.C.S.	4
17	PA-071	MECHANICAL COUNTER	1
16	AA-219	CRANK WHEEL ASSEMBLY	1
15	PA-070	GROOVING TOOL	1
14	MA-1659	ADJUSTING SCREW	1
13		1/4-20 NC-2 x 2 1/4" FLAT HD. MACH. SCREW	2
12	PA-103	CAM	1
11		KNURLED HD. SCREW 10-32 x 1/2" LG.	1
10	PA-107	LIQUID LIMIT CUP	1
9		1/4-20 NC-2 SET SCREW x 1/4 LG.	1
8	MA-1656	CAM FOLLOWER	1
7	PA-108	FOOT - RUBBER	4
6	MA-1661	HARD RUBBER BASE	1
5	AA-216	HOUSING ASSY.	1
4		5-40 NC-2B FLAT HD. SCREW x 1/4 LG.	2
3	AA-217	SLIDING HOLDER PIN ASSY.	1
2	AA-218	CRANK SHAFT ASSEMBLY	1
1	MA-1654	SLIDING HOLDER	1

Fig. 1

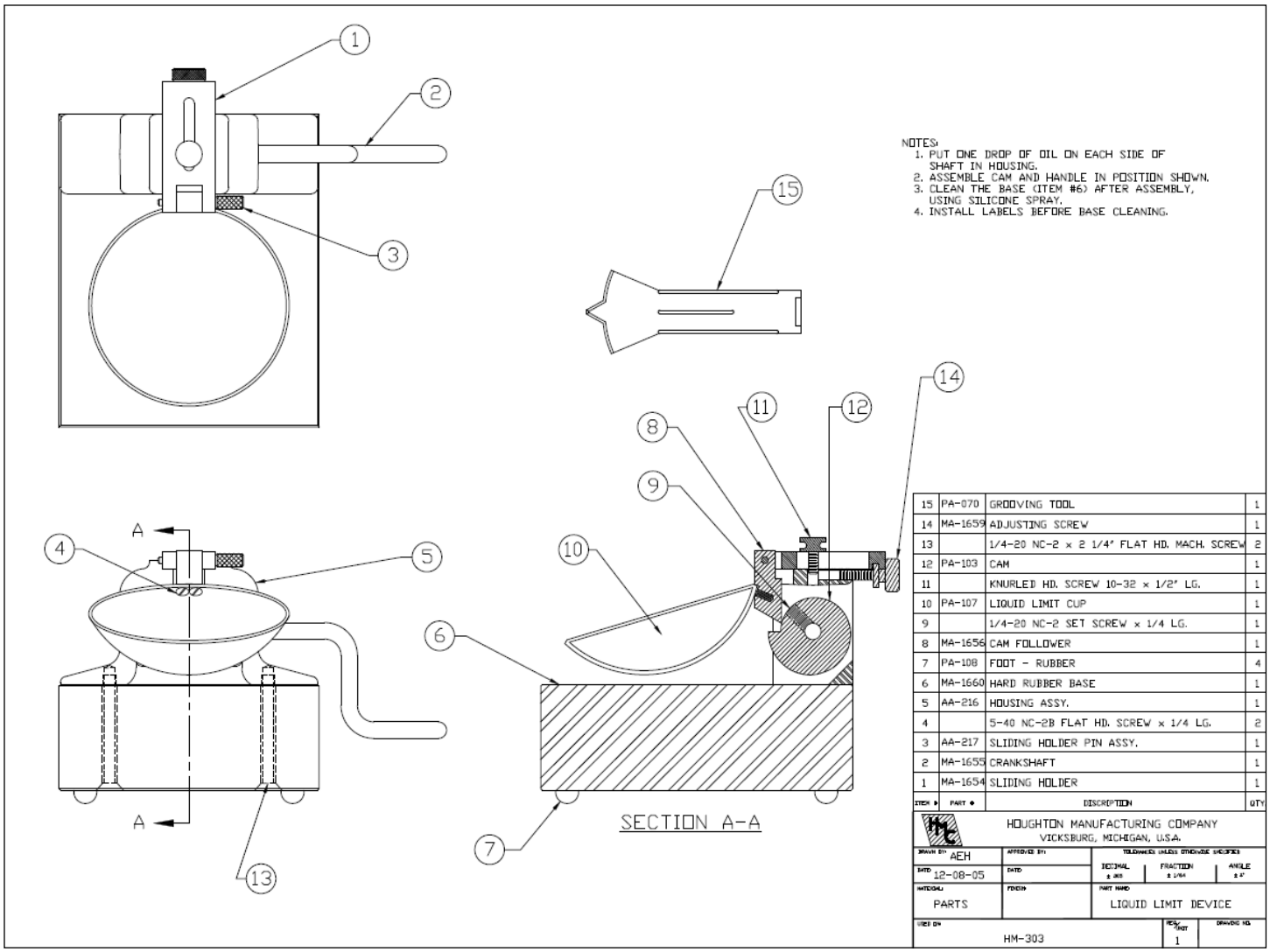


ITEM #	PART #	DESCRIPTION	QTY.
31		#25 CHAIN (33) LINKS	
30		#25 MASTER LINK	1
29	MA-1667	MOTOR MOUNTING BRACKET	1
28		MOTOR	1
27	MA-1670	SPROCKET 10 TOOTH - 1/4 BORE	1
26	MA-1669	SPROCKET 10 TOOTH - 5/16 BORE	1
25		3 CONDUCTOR LINE CORD W/ PLUG	1
24		ON OFF SWITCH PLATE	1
23		LINE CORD GROMMET	1
22		#5-40 x 1/4" LG. SOC. HD. CAP SCREW	4
21	AA-219	CRANK WHEEL ASSEMBLY	1
20	MA-1668	SHAFT SPACER	2
19	MA-1663	MOUNTING BRACKET	1
18		5-40 x 1/4" LG S.H.C.S.	4
17	PA-071	MECHANICAL COUNTER	1
16		#8-32 x 1/4" LG. RD. HD. MACH. SCREW	2
15	PA-070	GROOVING TOOL	1
14	MA-1659	ADJUSTING SCREW	1
13		1/4-20 NC-2 x 2 1/4" FLAT HD. MACH. SCREW	2
12	PA-103	CAM	1
11		KNURLED HD. SCREW 10-32 x 1/2" LG.	1
10	PA-107	LIQUID LIMIT CUP	1
9		1/4-20 NC-2 SET SCREW x 1/4 LG.	1
8	MA-1656	CAM FOLLOWER	1
7	PA-108	FOOT - RUBBER	4
6	MA-1665	HARD RUBBER BASE	1
5	AA-220	HOUSING ASSY.	1
4		5-40 NC-2B FLAT HD. SCREW x 1/4 LG.	2
3	AA-217	SLIDING HOLDER PIN ASSY.	1
2	MA-1664	SHAFT	1
1	MA-1654	SLIDING HOLDER	1

HOUGHTON MANUFACTURING COMPANY
VICKSBURG, MICHIGAN, U.S.A.

DRAWN BY	APPROVED BY	TOLERANCES UNLESS OTHERWISE SPECIFIED		
AEH		DECIMAL ± .005	FRACTION ± 1/64	ANGLE ± 1°
DATE 03-01-06	DATE			
MATERIAL PARTS	FINISH	PART NAME LIQUID LIMIT DEVICE		
USED ON HM-302A		REQ'D/UNIT 1	DRAWING NO.	

Fig. 2



ITEM	PART #	DESCRIPTION	QTY
15	PA-070	GROOVING TOOL	1
14	MA-1659	ADJUSTING SCREW	1
13		1/4-20 NC-2 x 2 1/4" FLAT HD. MACH. SCREW	2
12	PA-103	CAM	1
11		KNURLED HD. SCREW 10-32 x 1/2" LG.	1
10	PA-107	LIQUID LIMIT CUP	1
9		1/4-20 NC-2 SET SCREW x 1/4 LG.	1
8	MA-1656	CAM FOLLOWER	1
7	PA-108	FOOT - RUBBER	4
6	MA-1660	HARD RUBBER BASE	1
5	AA-216	HOUSING ASSY.	1
4		5-40 NC-2B FLAT HD. SCREW x 1/4 LG.	2
3	AA-217	SLIDING HOLDER PIN ASSY.	1
2	MA-1655	CRANKSHAFT	1
1	MA-1654	SLIDING HOLDER	1

Fig. 3