INSTRUCTION MANUAL

TURNTABLE

MODEL EM-4714

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ELECTRO-METRICS

MODEL EM-4714

SERIAL NO: N/A

ELECTRO-METRICS CORPORATION

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WARRANTY

This Model EM-4714 Turntable is warranted for a period of 12 months (USA only) from date of shipment against defective materials and workmanship. This warranty is limited to the repair of or replacement of defective parts and is void if unauthorized repair or modification is attempted. Repairs for damage due to misuse or abnormal operating conditions will be performed at the factory and will be billed at our commercial hourly rates. Our estimate will be provided before the work is started.

DESCRIPTION AND USE--ELECTRO-METRICS MODEL EM-4714 TURNTABLE

1.0 Description

The Electro-Metrics Model EM-4714 Turntable is used in performing FCC compliance testing. The turntable is constructed of metal with an overall diameter of 2 m (6.7') and uses the unique Electro-Metrics Chain Mail Grounding Scheme (patent pending) to maintain the platform at ground potential.

The rotation drive system comprises a 0.25 hp motor, an electric brake, worm gear reduction system, and associated motor control circuitry. The table can rotate 370° before table motion is halted by firmware limits in the Controller Unit. These rotational limits can be modified using values enter via the Controller front panel.

The turntable base is constructed of 12.7 mm (0.5") steel while the platform is constructed of 12.7 mm (0.5") aluminum. The turntable platform comprises five (5) sections consisting of four (4) pie-shaped segments plus a circular center segment.

Attached to the base section are the rotation drive system and the center support constructed of power coated steel.

The rotation drive system is contained within a sealed water resistant enclosure. The AC power input and Controller interface input are via waterproof 3-pin and 17-pin connectors. The turntable drive uses a bushing to seal the motor shaft at the point where it exits the enclosure.

The rotation drive system enclosure does not contain an external power switch or fuse holder. A relay within the enclosure is activated by the EM-4700 Controller and applies the AC power to the drive system. Overcurrent protection is provided by the user. A ground-fault-interrupt circuit breaker is recommended for most applications.

The EM-4714 Turntable can not be operated independently of the EM-4700 Antenna Tower/Turntable Controller Module. The controller module must always be connected to the turntable for either manual or computer controlled operation.

To provide grounding for the metal top of the turntable, angular grounding ring sections are provided. Chain mail is attached to the outer edge of the platform. When installed around the edge of the turntable pit, the plates and chain mail form a unique method of grounding the metal turntable top.

For operation within a shielded enclosure, an EM-4730 series bulkhead filter is available to allow protected access for the control cables and power lines through the enclosure wall. Figure 1.0 shows the cutout and screw hole pattern required to install the bulkhead in the enclosure wall.

2.0 Specifications

2.1 Electrical

Motor Rating:	0.25 hp.
Turntable Rotation Rate (In Scan Mode):	0.75 rpm.
AC Power Source:	110 VAC, 50-60 Hz @ 6 A.

2.2 Mechanical

Turntable Diameter:	2.0 m (6.7').
Turntable Height (Overall):	267 mm (10.5").
Maximum Distributed Load	1818 kg (4000 lbs).
Turntable Weight:	364 kg (800 lbs).

3.0 Power Supply

3.1 Power Requirements

a. AC Power Source:

1) 105-130 VAC, 50-60 Hz.

3.2 Overcurrent Protection

To obtain overcurrent protection for the rotation drive system, it is recommended that the AC input line be connected via a ground-fault-interrupt breaker to the AC power source.

NOTE: **1.** The rotation drive system does not have an externally accessible fusing arrangement.

2. The AC input line to the internal power supply main transformer contains an in-line fuse permanently soldered in place on the transformer.

Fuse type: 2A/250 Volts LITTLEFUSE Tracor 230 Series.

CAUTION

FOR CONTINUOUS FIRE PROTECTION, REPLACE ONLY WITH 250 VAC 2 A FUSE.

3. An external ground-fault-interrupt breaker is recommended since the turntable can be used at an outside test site and moisture related problems are a possibility.

4.0 Turntable Drive System Module Connector-Description

4.1 AC Power Connector

Type: 3-pin PT Pygmy, plug (MS3102A-10SL-3P) with waterproof seal.

Function: Self explanatory.

4.2 Turntable/Controller Interface Connector

Type: 17-pin PT Pygmy, plug (MS3102A-20-16P) with waterproof seal.

Function: Interfacing the Turntable Drive System to the Controller Module.

5.0 Turntable Control and Operation

Control of the EM-4714 Turntable is accomplished using the Electro-Metrics EM-4700 Controller Module. Refer to the EM-4700 Controller Instruction Manual for information and instruction on operating the Controller and Turntable.

6.0 Maintenance

Maintenance on the EM-4714 Turntable is limited to periodic lubrication of the turntable drive motor, worm gear, main turntable rack gear, and roller wheels.

6.1 Drive Motor Lubrication Procedure

The drive motor should be lubricated as follows:

Light usage: Yearly basis.

Meduim usage: Every six months.

Heavy usage: Every three months.

A segment of the turntable top must be removed to perform this procedure.

NOTE: A minimum of two (2) people are required to perform the following procedure.

a. To remove a segment of the turntable top:

1) Using a 5/16 allen wrench, remove the four (4) allen-head screws from the circular center segment. Remove the center segment.

NOTE: Two of the segments have lower flanges on each side while the other two have upper flanges. For ease in gaining access, remove one of the segment with upper flanges.

2) Using a 5/16 allen wrench, remove the two (2) allen-head screws (one each side) at top of the selected pie-shaped segment.

3) Using a 3/16 allen wrench, remove the ten (10)(five each side) allen-head screws securing the segment.

4) Remove the segment.

5) If required, move the turntable platform until the opening provided by removing the segment is over the rotation drive enclosure.

b. Remove the top cover of the rotation drive enclosure by:

1) Remove the fourteen (14) screws that secures the cover to the enclosure.

2) Remove the cover.

c. Lubricate using 90 wt oil or any similar gearbox oil applied to the motor lubrication port..

d. Replace rotation drive enclosure cover by reversing the procedure in Step b.

e. Install Turntable segments by reversing the procedure in Step a.

6.2 Main Rack Gear Lubrication Procedure

a. **1)** Using a 5/16 allen wrench, remove the four (4) allen-head screws from the circular center segment. Remove the center segment.

b. Apply grease to the grease fitting on the main rack gear. **Do not over grease** as this can break the grease seals within the rack gear and cause the rack gear to eventually fail.

c. Replace center segment.

6.3 Roller Wheels Lubrication Procedure

a. Using a 3/16 allen wrench, remove the six (6) allen-head screws securing the access plate located at the end of one segment.

b. Lubricate each roller wheel by applying grease to each grease fitting on the inside face of each wheel. This should be done on a six month to yearly basis. **Do not**

over grease as this can break the grease seals within the wheel and cause the wheel to eventually fail.

c. Replace the access plate.

7.0 EM-4730 Bulkhead Filter Cutout Pattern

Figure 1.0 shows the cutout and screw hole pattern required to install the bulkhead in the enclosure wall.

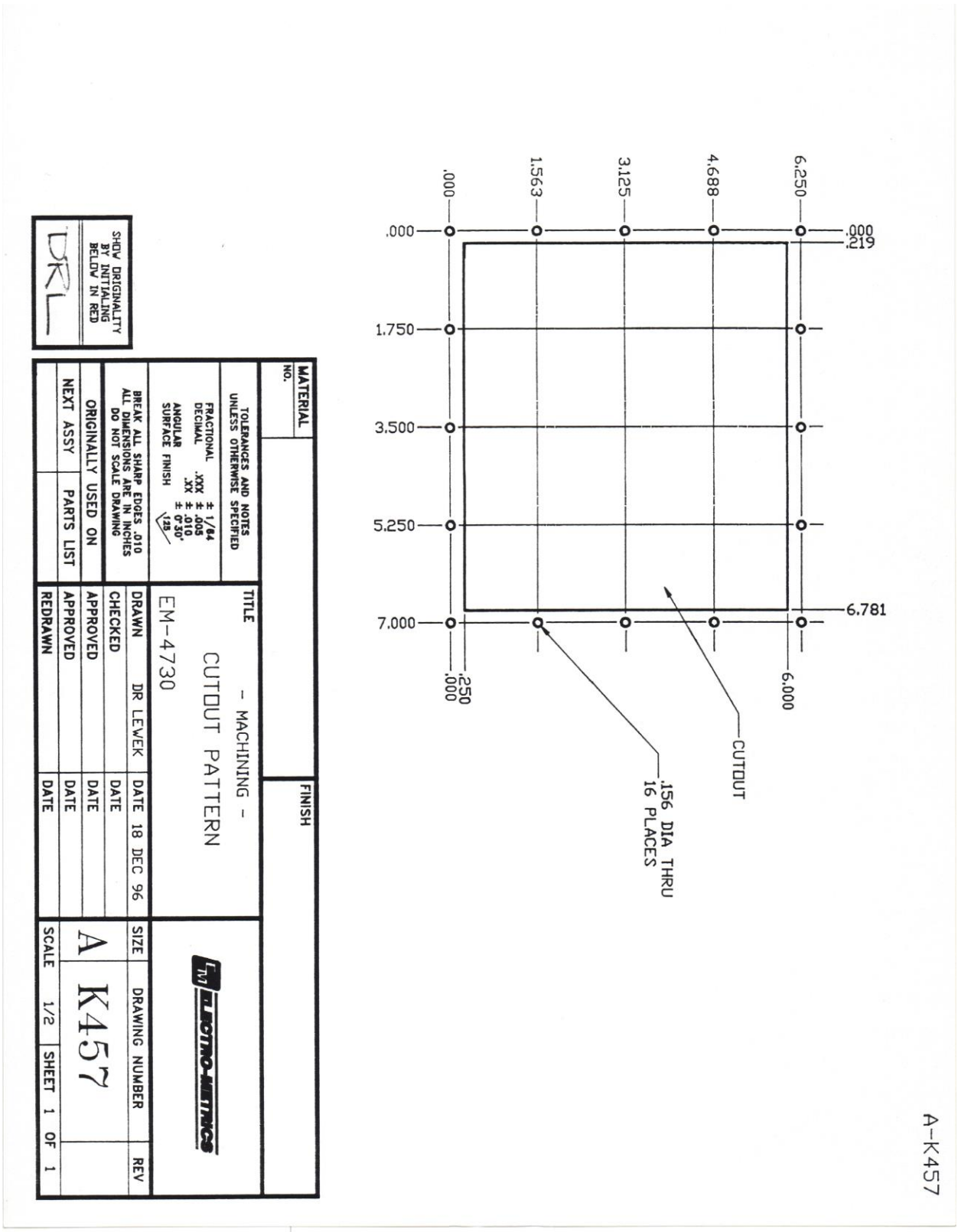

Figure 1.0
EM-4730 Bulkhead Filter Cutout Pattern