
SERVICE BULLETIN

MAINTENANCE OF WAY EQUIPMENT

DATE: 12 - 2022

BULLETIN NO: 22-005

TITLE: BALLUFF / TEMPOSONICS TRANSDUCER REPLACEMENT

RATING:

DIRECTIVE
(Action Is Required)

ALERT
(Potential Problem)

INFORMATION
(Action Is Optional)

PRODUCT IMPROVEMENT
(Enhance Product)

PRODUCT SERIES / MODEL: Model 6700, Mark IV, Mark VI, TX16, STM and Drone Tampers

SUMMARY: Harsco Rail typically supplies Balluff brand 16 and 30 inch linear transducers used on 6700, Mark IV, Mark VI, TX16, STM, and Drone model Tampers. These transducers have become impossible to source at this time. As a provisional solution, Harsco Rail is installing Temposonics linear transducers on some new tampers and can offer Temposonics linear transducer kits to replace failed Balluff units. Temposonics are operationally equivalent to Balluff transducers and software updates are not required when switching from one to the other.

OPERATIONAL IMPACT:

Internal components for Balluff transducers have now become difficult for the OEM to acquire which makes it impossible for Harsco Rail to supply replacement parts and install the transducers on new equipment. If a Balluff 16 and/or 30 inch linear transducer requires replacement, follow the instructions in this service bulletin to substitute them with Temposonics kits.

ACTION:

If necessary to replace a Balluff transducer, order the necessary length Temposonics kit and follow the instructions on this service bulletin and the provided engineering print. Return the Balluff transducer to Harsco Rail for inspection and monitoring of replaced transducers. Replacement Temposonics kits will be provided as orders are received.

CONTACT:

When contacting the Harsco Rail Parts Department, please include the Machine Serial Number.

Harsco Rail Service Department
(803) 822-7546

Harsco Rail Parts Sales Department
(800) 800-6410

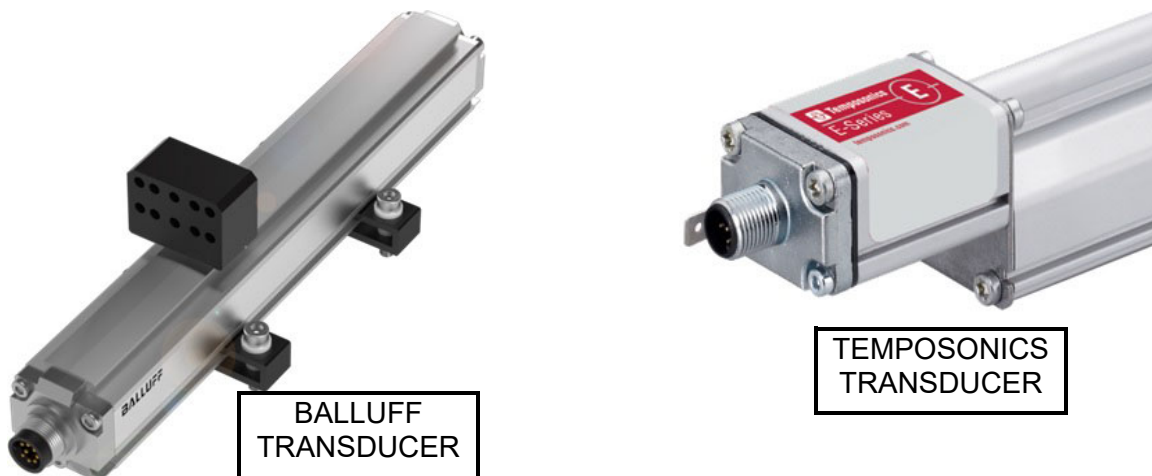
SAFETY INFORMATION

- Follow applicable railroad lockout - tagout procedures to disable energy sources when performing maintenance, making adjustments or repairs to the vehicle or equipment. Failure to heed this warning could result in severe bodily injury.

Transducer Comparison - See Figure 1

1. See Figure 1 below for general likeness of the linear transducers described in this service bulletin - Balluff and Temposonics.

FIGURE 1
TRANSDUCER COMPARISON
(Typical Application)

**Replacement Procedure - See Figures 2, 3, 4 and 5**

1. Disconnect cable attached to the end of the existing transducer.
2. Mark location on the machine where the existing Balluff Transducer's electrical connector ends as shown in Figures 2 and 3.

Note: This is necessary in order to mount the replacement transducer properly later.

3. Remove Fasteners (1) securing the Mounting Feet (2). Store mounting feet and fasteners in a secure location for re-use later - should replacement Balluff transducers become available again. Return the Balluff transducer to Harsco Rail for inspection and to monitor replaced transducers.

4. Using the Temposonics kit-supplied mounting feet and fasteners, mount the Temposonics Transducer where the Balluff unit previously was.
 - a. To account for a difference in null zones, the Temposonics Transducer must be offset 3/8 inch (9.5 mm) beyond the Balluff original mounting. See Note below.
 - b. Tighten fasteners securely. See also Harsco Rail assembly print 5135938 Conversion, Transducer, 16" or 5136873 Conversion, Transducer, 30" for assembly information.

*Note: If original Balluff transducer is mounted with the electrical connector at the **bottom**: Mount the Temposonics Transducer such that the connector is 3/8 inch (9.5 mm) **further downward** than the existing Balluff transducer as shown in Figure 2.*

*If original Balluff transducer is mounted with the electrical connector at the **top**: Mount the Temposonics Transducer such that the connector is 3/8 inch (9.5 mm) **further upward** than the existing Balluff transducer as shown in Figure 3.*

FIGURE 2
MOUNTING DETAIL
CONNECTOR AT BOTTOM
(Typical Application)

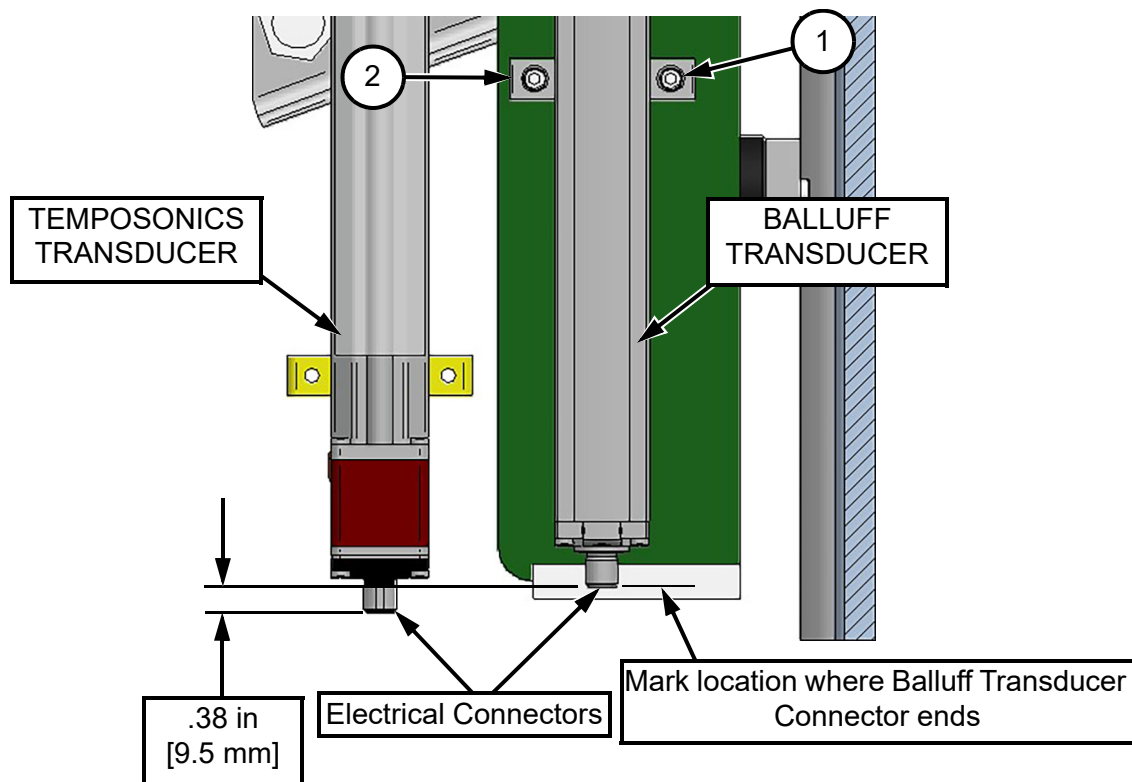
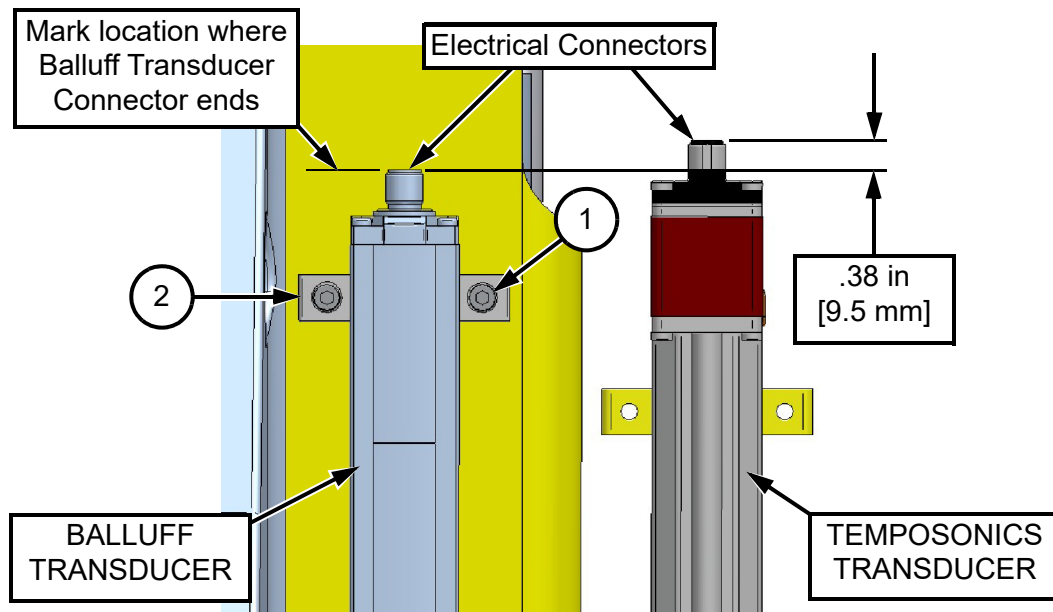


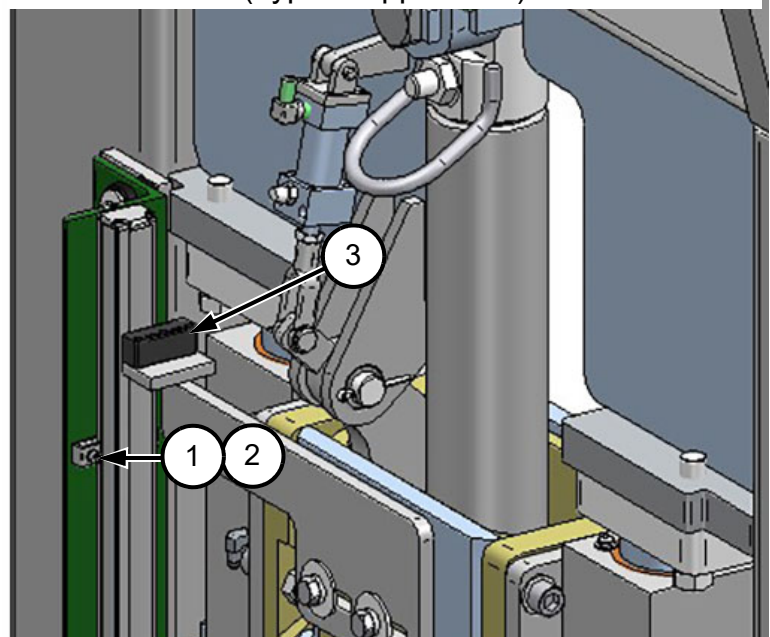
FIGURE 3
MOUNTING DETAIL
CONNECTOR AT TOP
(Typical Application)



5. Locate and remove the existing Magnet (3) that was paired with the Balluff transducer. Store Balluff magnet and fasteners in a secure location for re-use later should replacement Balluff transducers become available again.
6. Using the Temposonics kit-supplied Magnet and Stainless-Steel Fasteners, mount the Temposonics Magnet where the Balluff magnet was previously. Tighten fasteners securely. See also Harsco Rail assembly print 5135938 Conversion, Transducer, 16" or 5136873 Conversion, Transducer, 30" for assembly information.

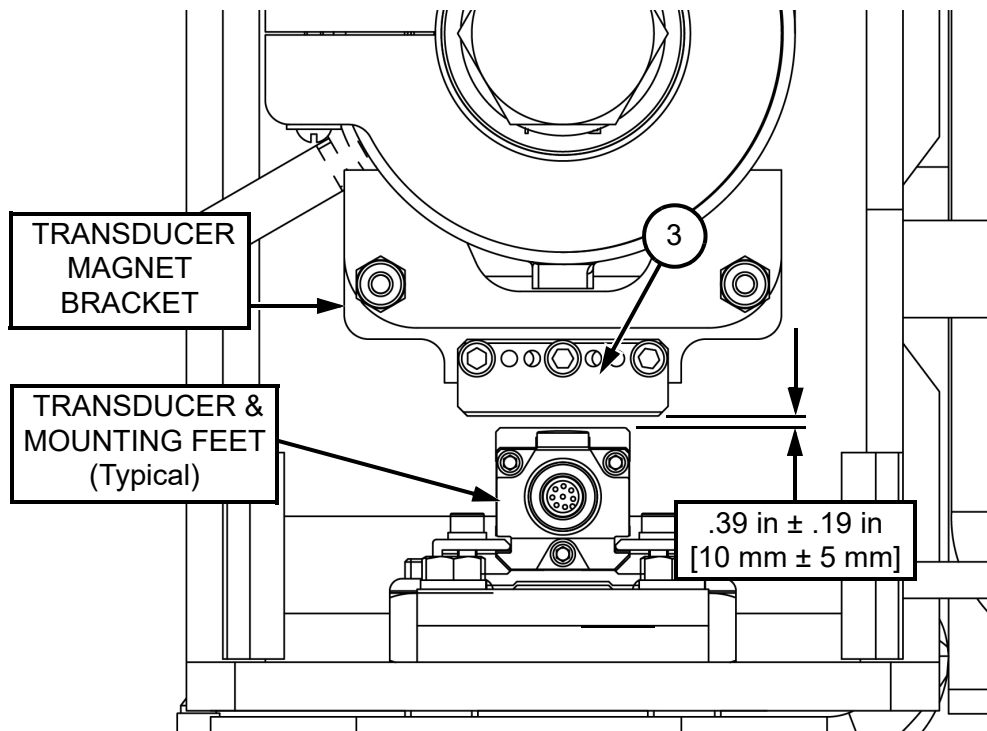
Note: It is important to use the Temposonics Magnet with the Temposonics Transducer. The new replacement magnet is identical to the Balluff magnet in fit, but not function, so the new magnet must be used.

FIGURE 4
TRANSDUCER MAGNET DISASSEMBLY
(Typical Application)



7. There must be a gap (or clearance) of $.39 \text{ in} \pm .19 \text{ in}$ [$10 \text{ mm} \pm 5 \text{ mm}$] between the linear transducer and magnet.
 - a. If the gap is too large the linear transducer may not function properly.
 - b. If the gap is too small, the magnet may rub the linear transducer and both components could be damaged.
 - c. Adjust the magnet to transducer distance to $.39 \text{ in} \pm .19 \text{ in}$ [$10 \text{ mm} \pm 5 \text{ mm}$].
 - See Figure 5

FIGURE 5
SETTING MAGNET / TRANSDUCER DISTANCE
(Typical Application)



8. Calibrate the new linear transducer as described in the Adjustments section of the Operator's Manual for the machine.

Replacement Parts / Kits:

PART NO	DESCRIPTION	QTY
5135938	Conversion, Transducer, 16"	1
5136873	Conversion, Transducer, 30"	1
SB22-005	Balluff / Temposonics Transducer Replacement	1

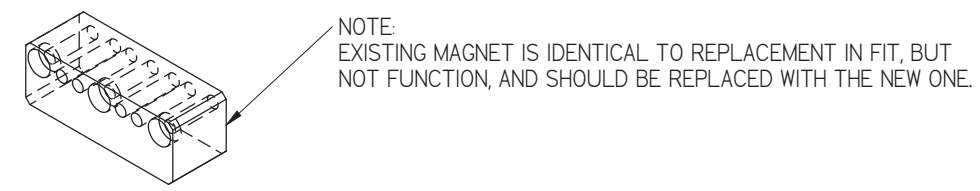
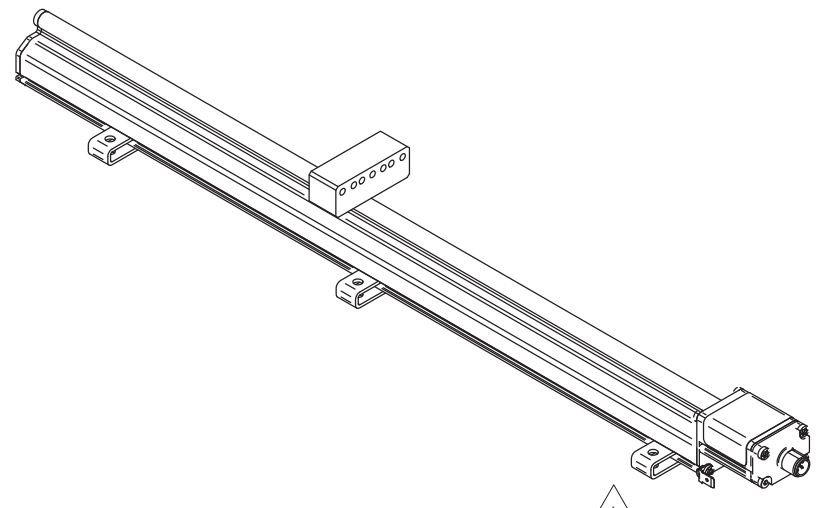
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Fairmont, MN
56031-1837
Tel: (507) 235-7376
Parts: (800) 800-6410
Fax: (507) 235-7372

2401 Edmund Road, Box 20
Cayce-West Columbia, SC
29171-0020
Tel: (803) 822-7420
Parts: (800) 800-6410
Fax: (803) 822-7403

200 South Jackson Road
Ludington, MI
49431
Tel: (231) 843-3431
Parts: (800) 800-6410
Fax: (231) 843-1644

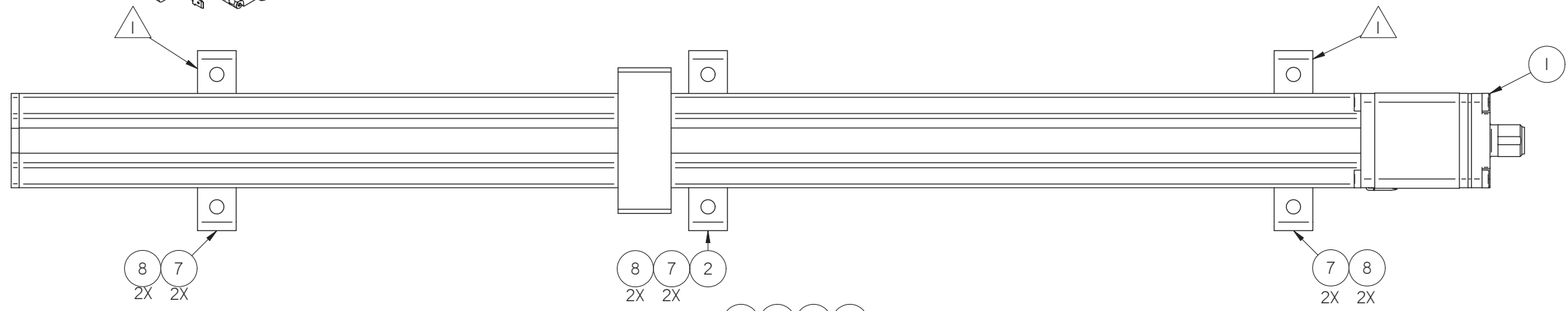
Printed In USA



NOTE:
EXISTING MAGNET IS IDENTICAL TO REPLACEMENT IN FIT, BUT NOT FUNCTION, AND SHOULD BE REPLACED WITH THE NEW ONE.

MAGNET DETAIL

ITEM	PART NO	QTY	DESCRIPTION
1	5134664	1	TRANSDUCER, LINEAR, 16" MOD
2	5133780	1	FEET-MOUNTING, TEMPOSONICS
3	5134875	1	MAGNET, LINEAR TRANSDUCER
4	5134884	3	SCREW, SHC, M4 X 0.7 X 30L SS
5	5075446	3	WASHER, FLAT, M4, DIN I25, SS
6	252028-28SS	3	NUT, HEX, M4 x 0.7, A2, SS
7	250630-32	6	SCREW-SOC HD CAP, M5X0.8 F X 2
8	252048-ISS	6	WASHER, FLAT, M5, DINI25, SS

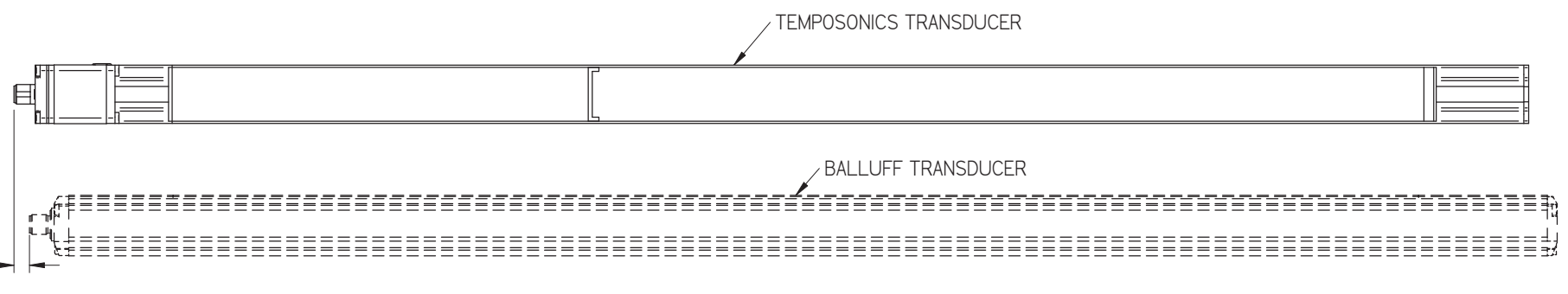


USE EXISTING MAGNET MOUNT

NOTE:
TEMPOSONICS TRANSDUCER DOES NOT HAVE LED INDICATORS.

NOTE: USE MOUNTING HOLES OF EXISTING TRANSDUCER.

MOUNTING DETAIL



MARK LOCATION OF WHERE EXISTING BALLUFF TRANSDUCER'S CONNECTOR ENDS.

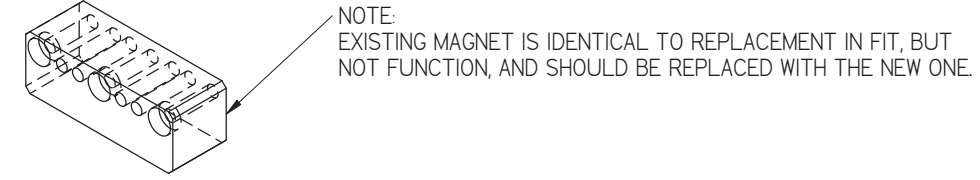
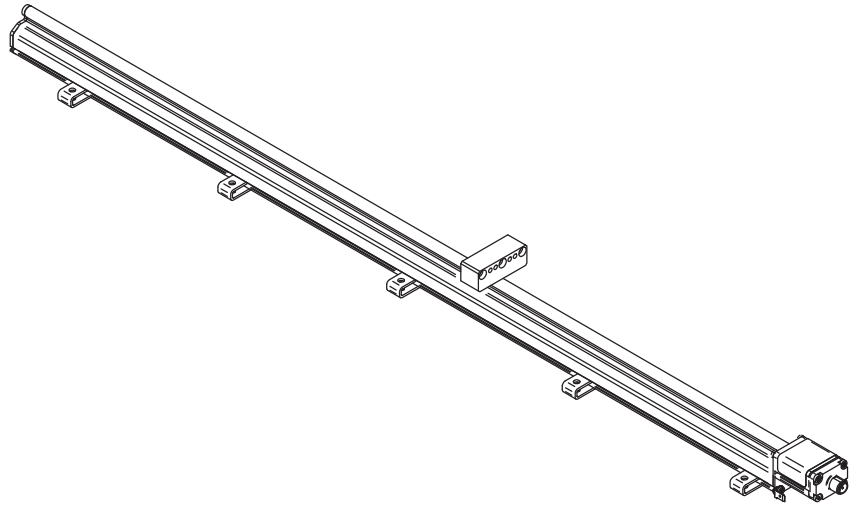
TO ACCOUNT FOR A DIFFERENCE IN NULL ZONES, MOUNT TEMPOSONICS TRANSDUCER SUCH THAT THE CONNECTOR IS 3/8" FURTHER IN THE DIRECTION OF THE CONNECTOR THAN THE EXISTING TRANSDUCER. SEE ABOVE VIEW.

NOTE:
TWO MOUNTING FEET ARE INCLUDED WITH 5134664 TRANSDUCER.

REPLACEMENT FOR 2006052 TRANSDUCER.

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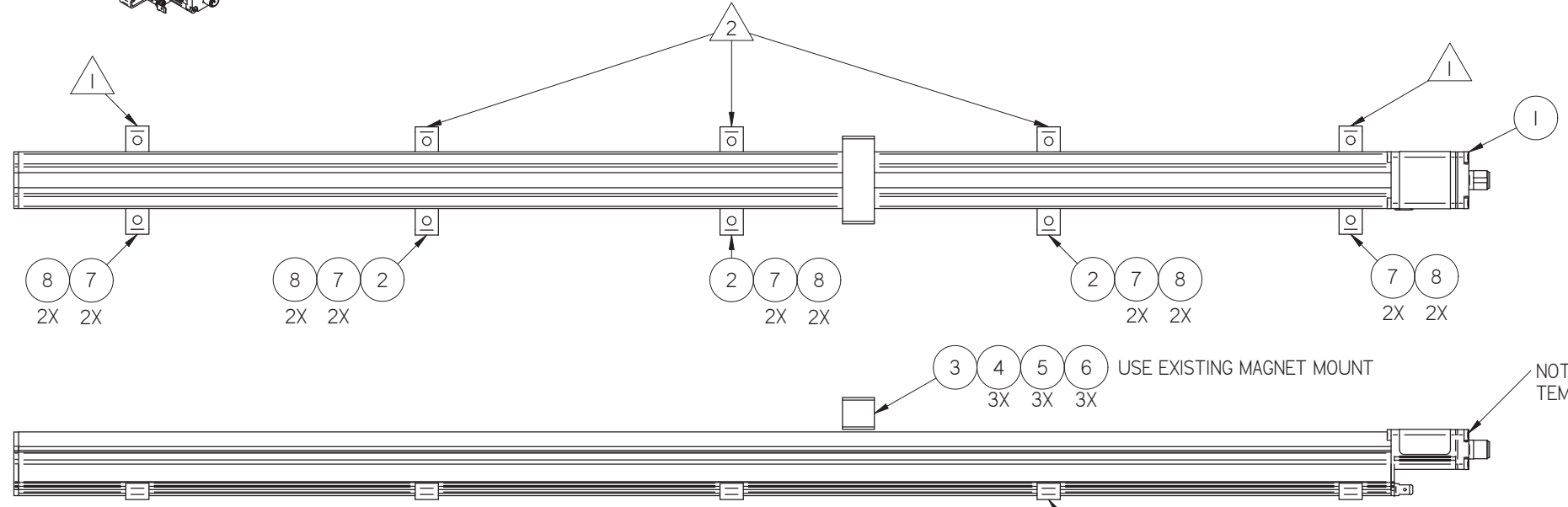
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NOTE:
EXISTING MAGNET IS IDENTICAL TO REPLACEMENT IN FIT, BUT NOT FUNCTION, AND SHOULD BE REPLACED WITH THE NEW ONE.

MAGNET DETAIL

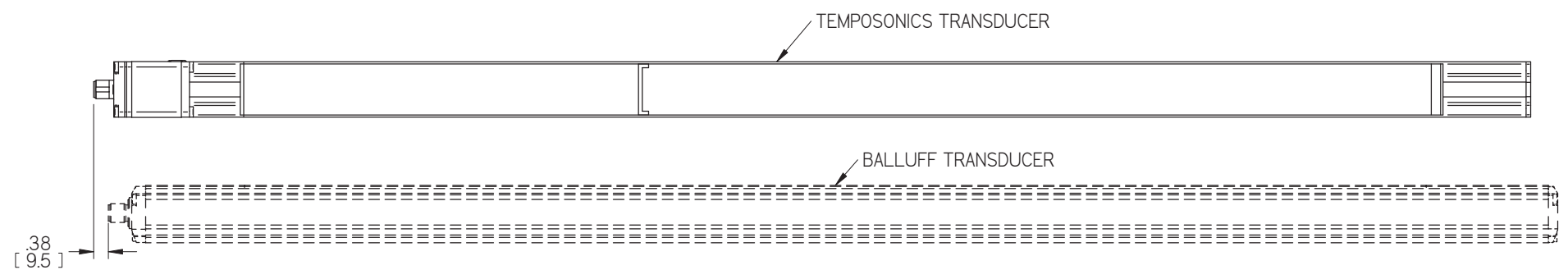
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2	5133780	3	FEET-MOUNTING, TEMPOSONICS
3	5134875	1	MAGNET, LINEAR TRANSDUCER
4	5134884	3	SCREW, SHC, M4 X 0.7 X 30L SS
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NOTE:
TEMPOSONICS TRANSDUCER DOES NOT HAVE LED INDICATORS

NOTE: USE MOUNTING HOLES OF EXISTING TRANSDUCER.

MOUNTING DETAIL



MARK LOCATION OF WHERE EXISTING BALLUFF TRANSDUCER'S CONNECTOR ENDS.

TO ACCOUNT FOR A DIFFERENCE IN NULL ZONES, MOUNT TEMPOSONICS TRANSDUCER SUCH THAT THE CONNECTOR IS 3/8" FURTHER IN THE DIRECTION OF THE CONNECTOR THAN THE EXISTING TRANSDUCER. SEE ABOVE VIEW.

NOTES:

- 1 TWO MOUNTING FEET ARE INCLUDED WITH 5134663 TRANSDUCER.
- 2 USE AS NEEDED, SOME MACHINES MAY NOT REQUIRE ALL MOUNTING FEET.

REPLACEMENT FOR 2006042 TRANSDUCER

CONFIDENTIAL				<small>FEATURES ENCLOSED IN □ ARE KEY CHARACTERISTICS</small> <small>UNLESS OTHERWISE SPECIFIED:</small> 1. REMOVE BURRS AND BREAK SHARP EDGES 2. ALL MACHINED SURFACES WILL BE: A SURFACE FINISH OF 32 MICRONS CONCENTRICITY WITHIN .010 3. ALL HOLE SURFACES SHALL ADHERE TO THE MOST GENEROUS AM & MILLING STANDARDS 4. TORQUE ALL FASTENERS PER STD-1600 5. TORQUE ALL FITTINGS PER STD-1598 6. THIRD ANGLE PROJECTION <small>DRAFTED PER HARSCO RAIL STANDARD STD-1601D</small>		CHANGE EC618073	R/L A	REVISION NEW RELEASE	DR ATF	DATE 10/10/22	Description CONVERSION, TRANSDUCER, 30"	HARSOCO RAIL																								
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