



US Department
of Transportation
**Federal Highway
Administration**

JAN 26 1987

400 Seventh St., S.W.
Washington, D.C. 20590

REFER TO:
HNG- 14

Mr. William H. Coy
PrecisionForm Incorporated
148 West Airport Road
Lititz, Pennsylvania 17543

Dear Mr. Coy:

This is in response to your January 11 letter to Mr. James H. Hatton requesting acceptance by the Federal Highway Administration (FHWA) of the PrecisionForm breakaway coupler for use with luminaire supports on Federal-aid highway projects. You referenced tests conducted at the Federal Outdoor Impact Laboratory assessing compliance of these couplers with FHWA breakaway requirements, which cite Section 7 of the 1985 American Association of State Highway and Transportation Officials' (AASHTO) Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

The PrecisionForm coupler is a machined breakaway coupler which is somewhat similar to the "Alcoa coupler" currently manufactured by your company. Your designation for the PrecisionForm coupler is "PFI 200-1," while the designation for the Alcoa coupler is "PFI 100-1."

The tests were run with an instrumented 1,800-pound bogie vehicle fitted with a 10 stage crushable nose which simulates the left quarter point of a 1979 Volkswagen Rabbit. Details of the tested hardware and the test results are summarized below:

Test Number	87F073	87F074
Mounting Height	53 feet - 2 inches	53 feet - 2 inches
Pole Type	Aluminum	Aluminum
Bolt Circle Diameter	15 inches	15 inches
Pole Wall Thickness	0.25 inches	0.25 inches
Pole, Arm, & Lum. Wt.	523 pounds	523 pounds
Test Speed	20.7 m. p. h.	61.2 m. p. h.
Test Delta V	12.4 f. p. s.	10.3 f. p. s.
Stub Height	2.5 inches	2.5 inches

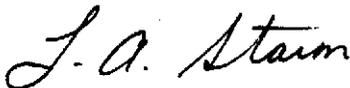
This information shows that the tested pole-coupler combinations will meet the change in velocity and stub-height requirements adopted by the FHWA.

The PrecisionForm breakaway couplers designated "PFI 200-1," as shown on the enclosed drawing, when used with conventional luminaire support and luminaire combinations weighing no more than 800 pounds, are acceptable for use on Federal-aid highway projects, if proposed by a State. 800-pound limitation on support weight is based on a mathematical extension of available data.)

This acceptance is limited to the breakaway characteristics of the couplers and does not cover their structural features. Presumably, you will supply potential users with sufficient information on structural limitations, including resistance to torsion and overturning, and on installation requirements to ensure proper performance. We anticipate that the States will require certification from PrecisionForm that the couplers furnished have essentially the same chemistry, mechanical properties, and geometry as those used in the tests, and that supports with the couplers will meet the FHWA breakaway requirements.

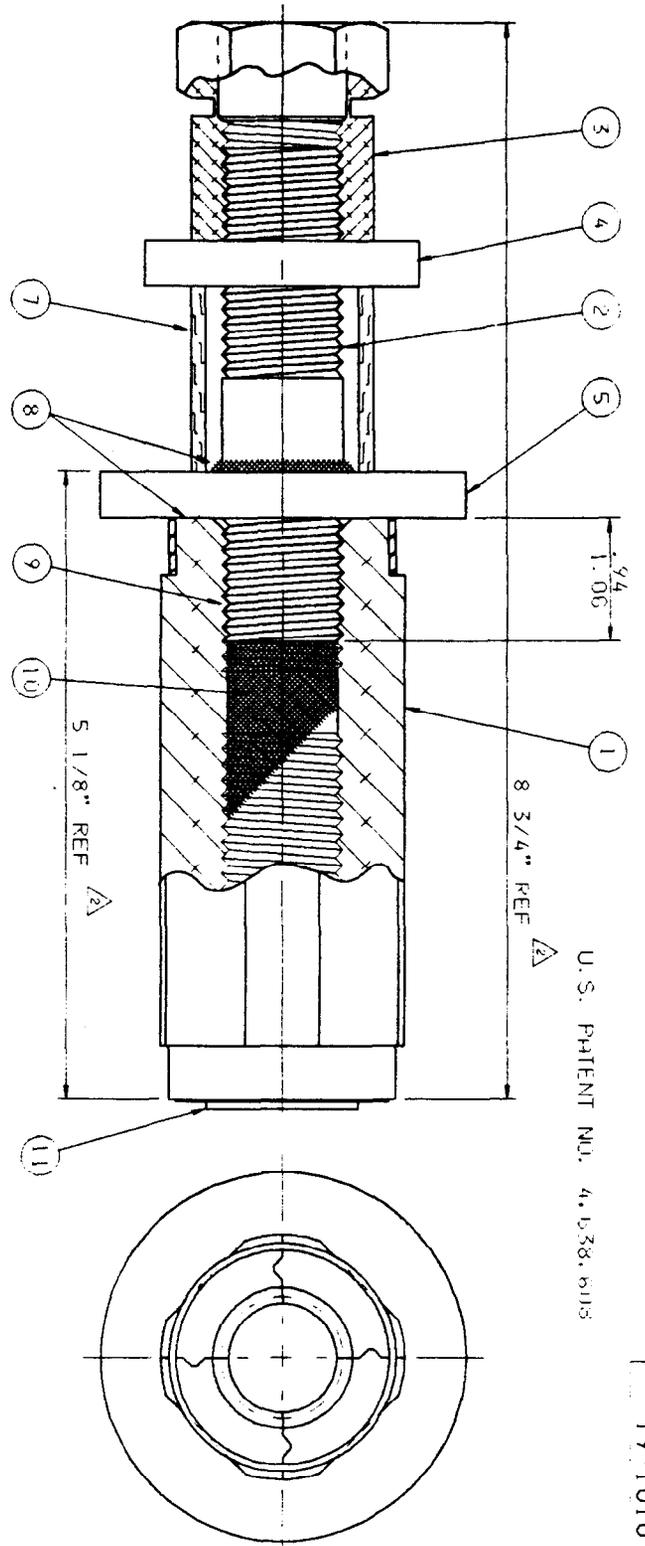
Since your company's coupler is a proprietary item, to be used in a Federal-aid highway project it; (a) must be supplied through competitive bidding with equally suitable unpatented items; (b) the specifying State highway agency must certify that it is essential for synchronization with existing highway facilities, or that no equally suitable alternate exists; or (c) it must be used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes. Our regulations concerning proprietary products are contained in Title 23, Code of Federal Regulations, Section 635.411, a copy of which is enclosed for your information.

Sincerely yours,



L. A. Staron
Chief, Federal-Aid and Design Division

Enclosures



U.S. PATENT NO. 4,638,605

ITEM NO.	DESCRIPTION	NO. REQ'D	DETAIL DWG. NO.	REMARKS
1	BREAKAWAY COUPLING ASSEMBLY	1	19-1011	ALUMINUM
2	1"-8 NC STUD	1	S-12381-2	ZINC COATED STEEL
3	1"-8 NC TORQUE CONTROL NUT	1	S-12381-3	ALUMINUM
4	2.0" O. D. FLAT WASHER	1	S-12381-4	HOT ZINC DIPPED STEEL
5	2.75" O. D. FLAT WASHER	1	S-12381-5	HOT ZINC DIPPED STEEL
6	INSTRUCTION SHEET	1		1 REQ'D PER 4 ASSEMBLIES.
7	1.50" O. D. X 1.50" LG. X .12" WALL CARDBOARD TUBE	1		1 REQ'D PER ASSEMBLY
8	SEALANT			DowCorning RTV SEALANT #1732
9	ADHESIVE			LOCTITE THREADLOCKER 262
10	GREASE			"UNOBA #2" UNION OIL
11	PLASTIC PLUG	1	12381-6	

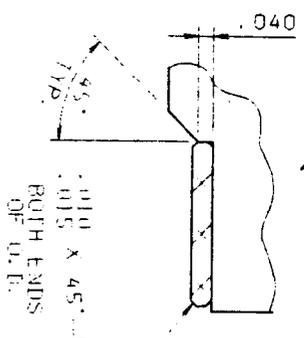
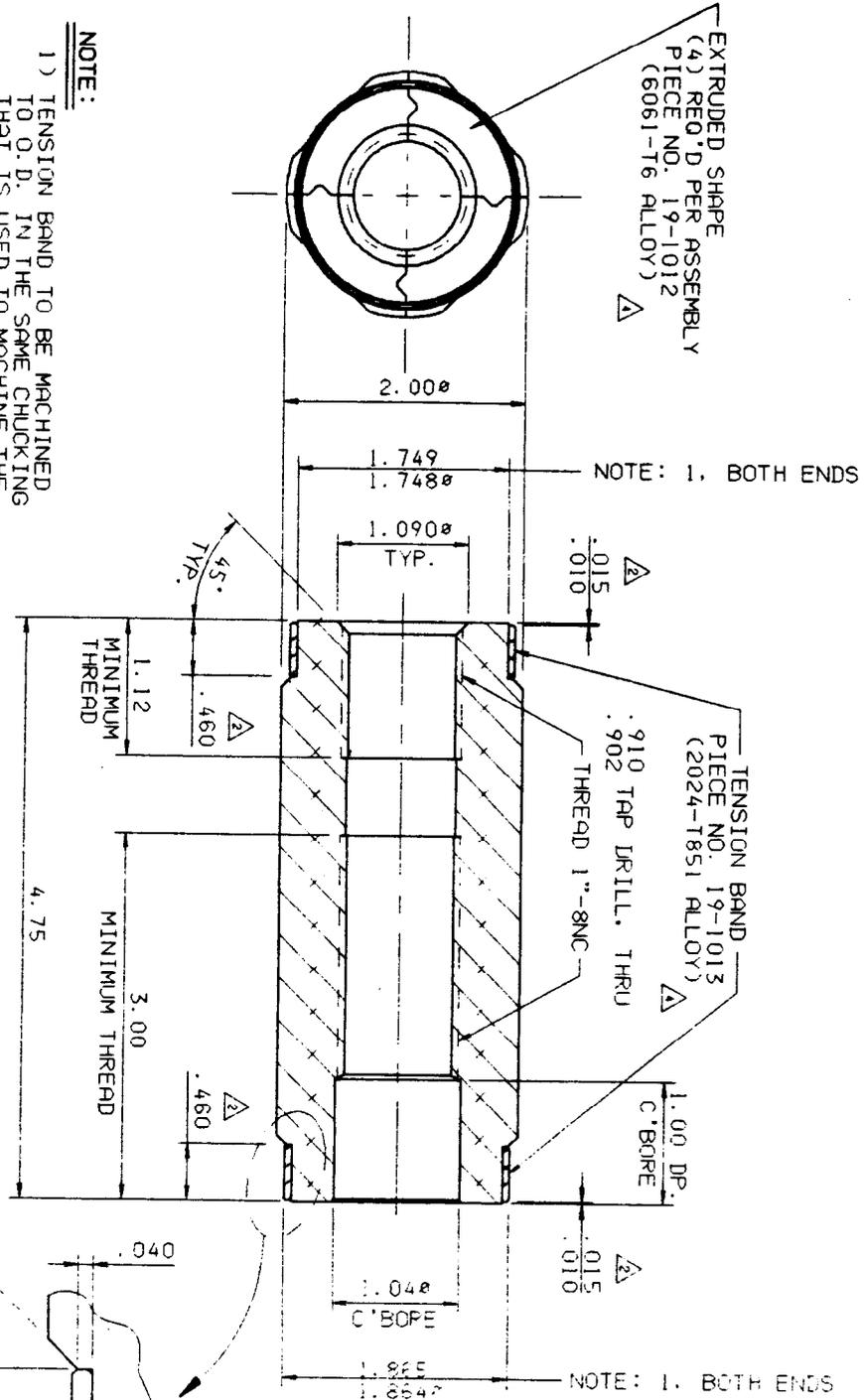
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TOLERANCE UNLESS OTHERWISE SPECIFIED	FINISH	RELDT
X ±	ANGLES ±	
XX +		

02	ADDED 8 3/4" REF & 5 1/8" REF	ECN-299	900123
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JAN 23 1990

NOTE:
 1) TENSION BAND TO BE MACHINED TO O.D. IN THE SAME CHUCKING THAT IS USED TO MACHINE THE 1.749/1.748 DIA. ON THE ASSEMBLY



This dwg not included as an enclosure

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04	ADDED (6061-T6 ALLOY) & (2024-T851 ALLOY)	ECN-299	900123	TOLERANCE UNLESS OTHERWISE SPECIFIED	FINISH	IRRIDITE	ALLOY
03	RE-DRAWN-ADDED FINISHED DIM FOR RING	ECN-218	870630	A ± .1	ANGLES	± 1°	
02	.460 WAS .50 & .010/.015 WAS .04	ECN-056	870513	XX ± .01	DO NOT SCALE THIS DRAWING		
01	PIECE NO. WAS KK-1011	ECN-049	870424	XXX ± .002	PRECISIONFORM INC. LITITZ, PA.		
NO.	REVISION RECORD	AUTHORITY	DATE				

REV. 19-1011 04