Intermediate Speedmount

Pole Type Secondary Bushing

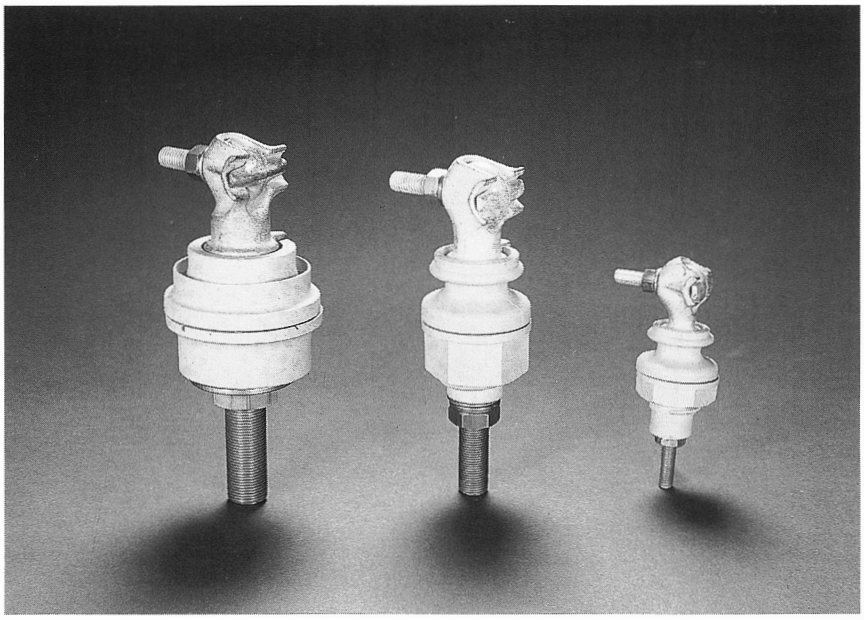
Central Moloney, Inc.
Components Operation

Product Data Sheet

File No.	PDS1018	Revised:	August 1, 1996
Availability:	Immediate	Supercedes:	9/91

Innovation Flexibility Design Quality

Those aren't just buzz words at Central Moloney Components . . .The Intermediate Speedmount Secondary Bushing for Pole Type Transformers was designed around the many advantages afforded by its "Little Brother," the Speedmount I. The Intermediate Speedmount is typically rated for 75-100 KVA Pole Mounted Transformers and will accommodate 5/8" and 3/4" conductors.



Intermediate Speedmount Advantages

- ❑ **Fully captive and retained gaskets with controlled compression**
- ❑ **Completely UV shielded gasket construction**
- ❑ **Superior cantilever strength (over 300 ft/lbs)**
- ❑ **High impact resistant engineered material**
- ❑ **Molded mounting nut**

Advantages. . .

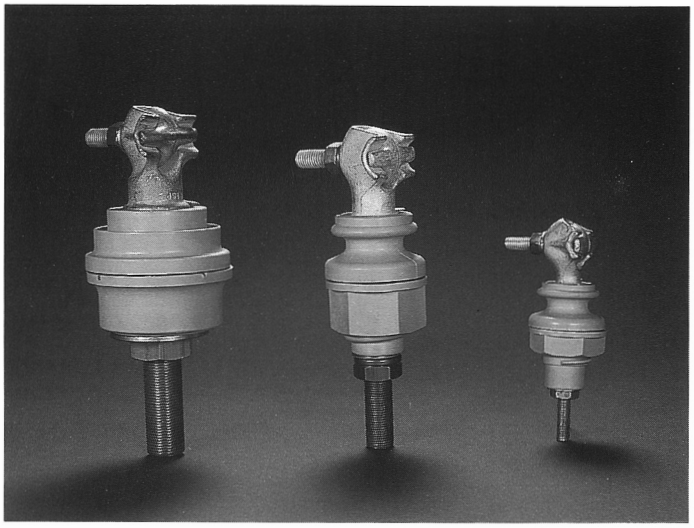
The seal geometry of the Intermediate Speedmount Bushing Assembly features a fully captive and retained gasket with controlled compression, independent of the force on the bushing body caused by cable loading. The body design provides positive stops to limit gasket compression. The bushing flange protects the gasket from ultra-violet exposure as well as contaminants. Since the intermediate speedmount body is in direct contact with the tank surface, cantilever loads are transferred to the tank without disturbing the seal.

Intermediate Speedmount - The Preferred Industry Standard

Material. . .

Since the inception of the molded secondary bushing, significant improvements have been made in the design of the bushing assembly. The bushing body and nut are now molded from a high strength, engineered, heat resistant material that performs exceptionally well after accelerated 20-year UV aging.

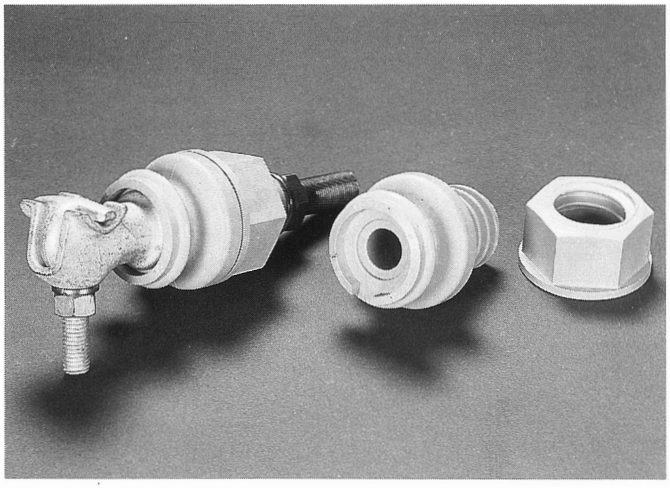
Central Moloney Components has been manufacturing molded pole type secondary bushings since 1975. The present assembly in most respects is interchangeable with the most commonly used molded and porcelain designs in the industry. Conductor assemblies are the same as those used in porcelain bushings and are available in either 5/8" or 3/4" conductors.



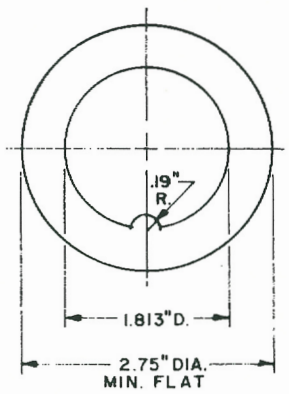
A Variety Of Intermediate Speedmount Termination. . .

The Intermediate Speedmount bushing is available with 5/8" or 3/4" diameter #110 alloy copper conductor with the following terminals.

- ❑ Single Eyebolt — Cable range #2 solid to 500 MCM
- ❑ Double Eyebolt — Cable range 2/0 solid to 1000 MCM
- ❑ Spade Terminal — ANSI H

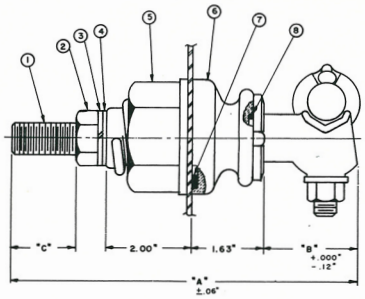


Mounting Detail. . .

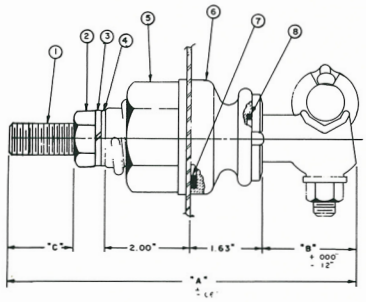


RECOMMENDED TANK PUNCH AND BOSS DETAIL

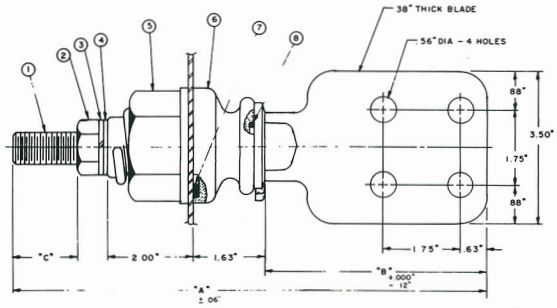
Intermediate Speedmount - Mechanical Characteristics



ASSY. NO.	1 STUD-TERM. ASSY. .625"-11UNC-2 THDS. 70521I-00	1 STUD-TERM. ASSY. .750"-16 UNF-2 THDS. 70522-00	2 BRASS HEX. NUT .750" 200001-06	2 BRASS HEX. NUT .750" 200001-08	3 STAINLESS LOCK WASHER .750" 200010-09	3 STAINLESS LOCK WASHER .750" 200010-10	4 STAINLESS FLAT WASHER .625" 200007-54	4 STAINLESS FLAT WASHER .750" 200007-55	5 MOUNTING NUT 70520I-01	6 BUSHING BODY 70520I-00	7 GASKET BUNA 'N' 321618-55	8 TERM. GASKET .625" BUNA 'N' 321618-53	8 TERM. GASKET .750" BUNA 'N' 321618-54	DIMENSIONS IN INCHES "A"	"B"	"C"	CABLE RANGE	STUD THREAD	STUD MATERIAL
70521150														8.00	2.19	1.59	#2 SOL. TO 500 MCM	.625"-11UNC-2	NO. 110 COPPER
70522250														8.25	2.19	1.76		.750"-16UNC-2	



ASSY. NO.	1 STUD-TERM. ASSY. .750"-16UNF-2THDS. 70522A-00	2 BRASS HEX. NUT .750" 200001-08	3 STAINLESS LOCK WASHER .750" 200010-10	4 STAINLESS FLAT WASHER .750" 200007-55	5 MOUNTING NUT 70520I-01	6 BUSHING BODY 70520I-00	7 GASKET BUNA 'N' 321618-55	8 TERM. GASKET .750" BUNA 'N' 321618-54	DIMENSIONS IN INCHES "A"	"B"	"C"	CABLE RANGE	STUD THREAD	STUD MATERIAL
70522450									8.25	2.19	1.76	2/0SOL.-1000MCM	.75"-16UNF-2	NO. 110 COPPER



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70521350														10.75	4.94	1.59	.625"-11 UNC-2	NO 110 COPPER
70522350														11.00	4.94	1.76	.75"-16 UNF-2	

Intermediate Speedmount -
Certified Test Results

Intermediate Speedmount LV Bushing
705200 Series
Electrical and Mechanical Testing

Objective: To evaluate the electrical and mechanical integrity of the 705200 series intermediate speedmount secondary bushing and molded mounting nut.

Dielectric Tests: Ten bushing assemblies were made up on 12" by 12" plates using body #705200-00, mounting nut #705200-01, and the various stud and terminal assemblies for this bushing series. All were tested for corona inception and extinction voltage, 60 Hz dry withstand, and impulse withstand. Two assemblies were tested for 60 Hz wet withstand. Results were as shown.

Corona Inception/Extinction Voltage
(No Standard Requirement)
Inception 4.2 to 8.4 KV, average 6.5 KV
Extinction 3.9 to 8.0 KV, average 6.0 KV

60 Hz Dry Withstand, 1 minute
(10 KV Requirement)
Withstood 25 KV, 1 minute
Flashed at 27 KV to 28.5 KV

All flashovers were from terminal to mounting plate with no damage to the bushings.

Impulse withstand, 1.2 X 50 Microsecond Full Wave (30 KV Requirement). All bushings withstood three impulses of each polarity at 30 KV. Impulses at voltage increasing by 3 KV per shot were applied until flashover occurred. One bushing flashed to ground at 63 KV, five at 67 KV, and four at 70 KV.

60 Hz Wet Withstand, 10 seconds
(6 KV Requirement)
Withstood 6 KV, 10 seconds
Withstood 8 KV, 10 seconds
Failed at 10 KV, discharge on surface of bushing

Mechanical Tests: Ten bushing assemblies each were tested for mounting nut torque withstand and cantilever force withstand at room temperature; seven were thermal-cycle tested; three were tested for cantilever to cause leakage at room temperature; and one was tested for cantilever to cause leakage at 100°C.

Mounting Nut Torque Withstand: Ten bushings were mounted in a 12 gauge steel plate with flange gaskets in place and molded mounting nuts were tightened to failure.

Bushing flanges cracked at 150 to 175 foot pounds, average 170 foot pounds. Gaskets were fully compressed at 20 foot pounds.

Thermal Cycle Tests: Seven bushing assemblies were mounted on 12 gauge steel plates and thermal cycled ten times between 100°C and -40°C. Each cycle consisted of 2 hours at 100°C and 3 hours at -40°C. At the end of the tenth cycle, all were leak checked at 20 psi for 2 minutes with no leaks occurring.

Cantilever Force Withstand, Room Temperature: Ten bushings were mounted on 7 gauge steel plates, attached to a cantilever test fixture, and force was applied to the terminal 6" out from the mounting plate.

Flanges cracked at 754 to 929 pounds force (377 to 464 foot pounds), average 837 pounds (418 ft/lbs).

Cantilever Force to Cause Leakage, Room Temperature: Two bushing assemblies with 3/4" copper studs and 4-hole "J" spade terminals and one assembly with 5/8" copper stud and single eyebolt terminal were mounted on 12 gauge steel plates, attached to a leak test fixture with 20 psi air pressure maintained, and cantilever force was applied to cause leakage at one of the gasket seals.

5/8" Eyebolt 1384 lbs, 3" out (346 ft/lbs) No leak
3/4" Spade 836 lbs, 6" out (418 ft/lbs) Leak at terminal
3/4" Spade 890 lbs, 6" out (445 ft/lbs) Leak at terminal;
force increased to 945 pounds and reduced to 800 lbs, gasket resealed.

The 12 gauge steel plates were badly distorted but no leakage occurred at the flange gaskets.

Cantilever Force to Cause Leakage, 100°C: One bushing assembly with 3/4" copper stud and spade terminal that had completed the thermal cycle test described above was heated to 100°C, mounted on the leak test fixture with 20 psi air pressure applied, and cantilever force was applied to the terminal 6" out from the mounting plate until leakage occurred. The flange gasket leaked at 614 pounds (307 foot pounds) and resealed as force was reduced.

Ultraviolet Exposure: Sample parts molded from the thermoplastic material used for these bushings were subjected to accelerated ultraviolet aging at an exposure ratio of 300 to 1 for 40 days, equivalent to 33 years sunlight exposure, in a Sunlighter model 150-300 test cabinet.

Other than yellowing of the surface, no change was noted. Cantilever tests to failure showed no decrease in mechanical strength.

Salt Fog Exposure: Six bushings, part #701012-53, were exposed to salt fog per ASTM B117 for 1032 hours (43 days). (Report No. 1000-20).

At the end of the test the bushings were inspected and tested electrically and mechanically.

Mechanical strength was found to be unaffected, and a glossy surface unaffected by exposure was exposed when the salt film was wiped away.

With the salt film undisturbed, wet withstand voltage was reduced approximately 30% from values for new parts. All other electrical test values were met without removing the salt.

Conclusions: This bushing meets the electrical requirements for pole type transformer bushings, 1.2 KV class, 30 KV impulse level, with a good margin of safety, for 5/8" and 3/4" diameter studs.

Cantilever forces up to 300 foot pounds can be supported by the terminals without leaks or damage to the bushing.

Recommended torque is 30 foot pounds for the molded mounting nut and 20 foot pounds for the brass nut on the stud.

Central Moloney, Inc.
Components Operation

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