

Product Data Sheet

Coltec Industries



Components Operation
Central Moloney
Transformer Division

NPA: 001011

Product: Hi Well

Date: May 17, 1991

Availability: Immediate

HI WELL

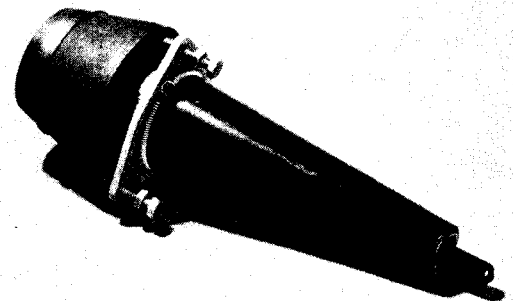
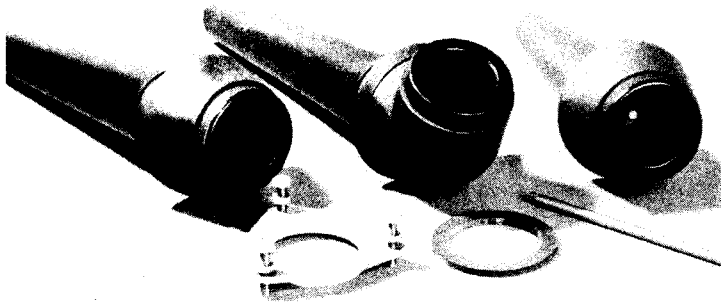
200 AMP

APPLICATION:

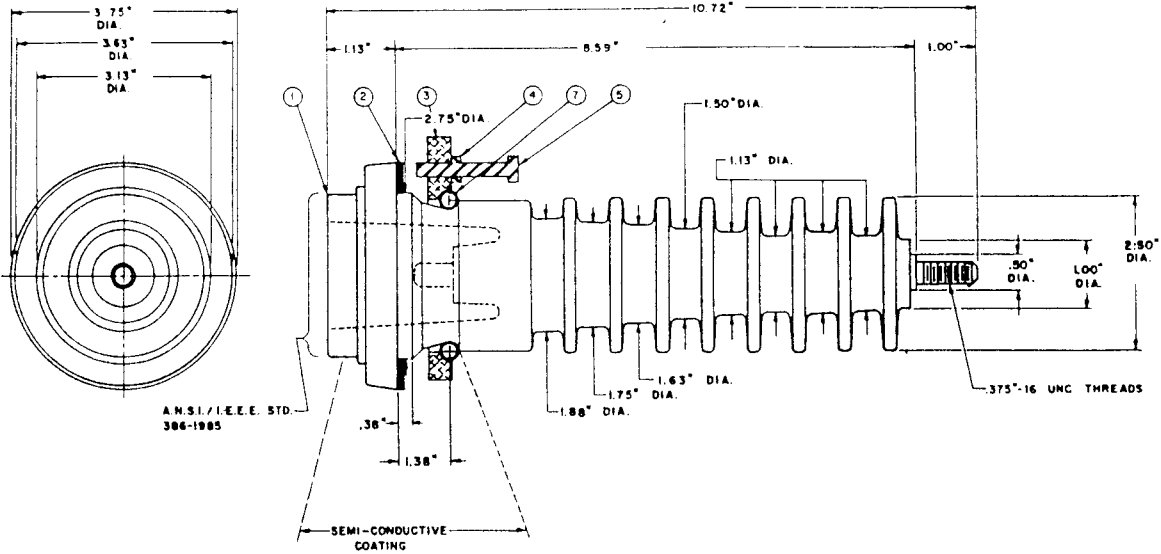
The 7021 series Hi Well is designed to fit the standard pole type tank cover opening (2.313" dia.) employed by Central Moloney. They will also fit the standard tank cover opening of numerous other transformer manufacturers without making costly modifications to the transformer cover. The same garter spring and clamping ring as used on Central Moloney's Standard High Voltage Bushing will accommodate the Hi Well.

A POLE TYPE PRIMARY BUSHING REPLACEMENT

One of Components more mature products is the Hi Well. This well is employed by many utility customers to convert conventional pole type transformers from live top to dead top primary application. This is accomplished by removing the standard primary bushings from the cover of the pole type unit and replacing them with Components Hi Wells. The Hi Well will accept standard load break bushing inserts and elbows. These modified transformers are normally used in three phase banking operation in dry vaults, building vaults or fenced substations where live top primary would be deemed hazardous.

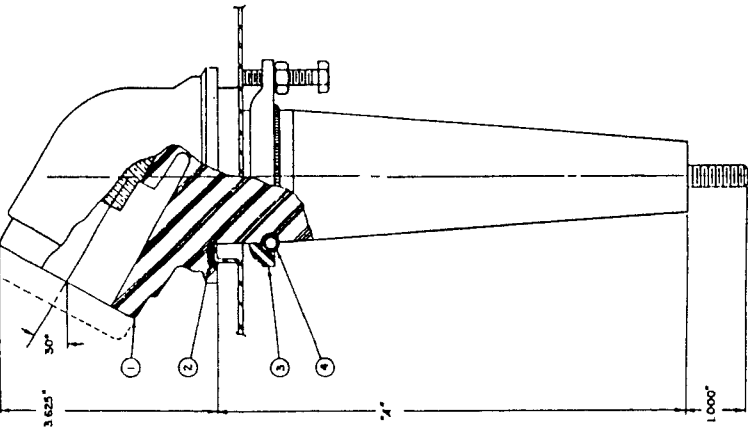
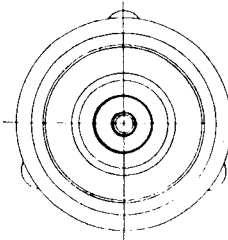
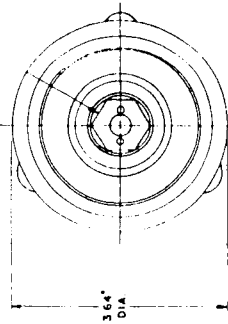
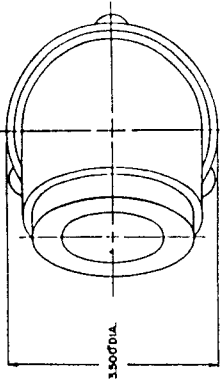


MECHANICAL CHARACTERISTICS



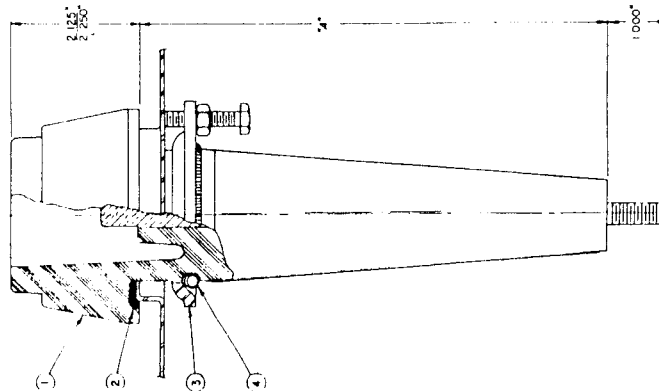
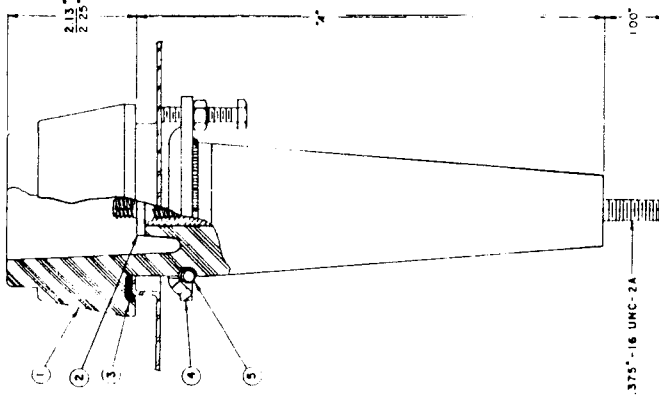
ANSI/IEEE STD.
386-1985

ANSI/IEEE STD.
386-1985 FIG NO. 3



ANSI 386 1985
200 AMP BUSHING
WELL INTERFACE

ANSI 386 1977
200 AMP BUSHING
WELL INTERFACE



WELL		1	2	3	4	5	6
3-702341-50		1	1	1	1	1	1
3-702352-50		1	1	1	1	1	1
1-321618-14		1	1	1	1	1	1
1-310221-09		1	1	1	1	1	1
1-310034-02		1	1	1	1	1	1
1-700002-59		1	1	1	1	1	1
PROTECTION CAP		1	1	1	1	1	1

ELECTRICAL RATING	WELL	
	1	2
125 KV	7.09	8.59
19.0		

WELL		1	2	3	4	5
3-702122-50		1	1	1	1	1
3-702132-50		1	1	1	1	1
GASKET 1-310248-00		1	1	1	1	1
CLAMPING RING ASSEMBLY		1	1	1	1	1
GARTER SPRING		1	1	1	1	1
1-310034-01		1	1	1	1	1
PROTECTIVE CAP		1	1	1	1	1

ELECTRICAL RATINGS	WELL	
	1	2
15.2 KV	7.75	10.0
19KV		

WELL		1	2	3	4	5	6
3-70213181		1	1	1	1	1	1
3-70213182		1	1	1	1	1	1
3-70213183		1	1	1	1	1	1
3-70213184		1	1	1	1	1	1
WELL W/110 COOPER STUD		1	1	1	1	1	1
WELL W/110 GREEN STUD		1	1	1	1	1	1
HEAT REMOVABLE STUD GASKET		1	1	1	1	1	1
CLAMPING RING ASSEMBLY		1	1	1	1	1	1
GASKET 1-310248-00		1	1	1	1	1	1
CLAMPING RING ASSEMBLY		1	1	1	1	1	1
GARTER SPRING		1	1	1	1	1	1
PROTECTIVE CAP		1	1	1	1	1	1

ELECTRICAL RATINGS	WELL	
	1	2
15.2 KV	7.75	10.0
19.0		

WELL		1	2	3	4	5
3-70213181		1	1	1	1	1
3-70213182		1	1	1	1	1
3-70213183		1	1	1	1	1
3-70213184		1	1	1	1	1
WELL W/110 COOPER STUD		1	1	1	1	1
WELL W/110 GREEN STUD		1	1	1	1	1
HEAT REMOVABLE STUD GASKET		1	1	1	1	1
CLAMPING RING ASSEMBLY		1	1	1	1	1
GASKET 1-310248-00		1	1	1	1	1
CLAMPING RING ASSEMBLY		1	1	1	1	1
GARTER SPRING		1	1	1	1	1
PROTECTIVE CAP		1	1	1	1	1

ELECTRICAL RATINGS	WELL	
	1	2
15.2 KV	7.75	10.0
19		

REMOVABLE STUD

The Removable Stud Design developed by Central Moloney Components is also available in the Hi Well Bushing. This Concept eliminates costly transformer change out and shop repair caused by over torquing the Bushing insert and shearing the Well Stud. During installation it also reduces customer outage time since there is no need to break the seal on the transformer to replace a complete bushing assembly. One person can easily replace the broken stud in seconds. Numerous major utilities are already specifying the Central Moloney Removable Stud Bushing concept.



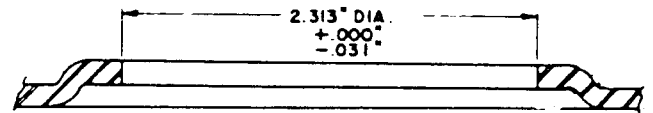
ELECTRICAL RATING

Maximum line to ground 15.2 KV
impulse level 125 KV B.I.L.

Minimum corona extinction level 19.0 KV

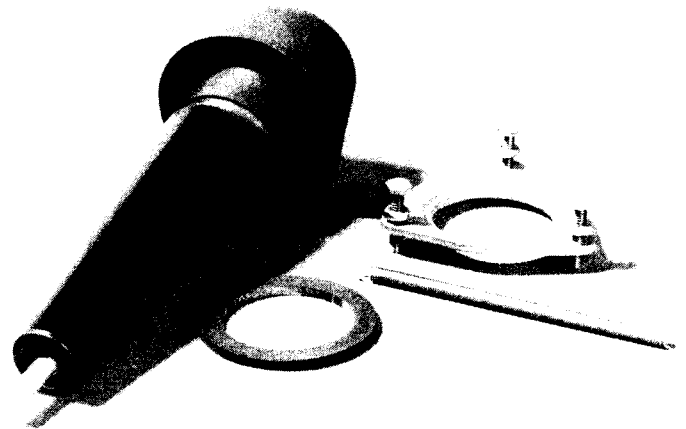
200 Amps continuous current

MOUNTING HOLE



REMOVABLE STUD BENEFITS

- Eliminates costly transformer change out due to stud breakage
- Eliminates installation delay
- Slashes repair time
- Reduced customer outage time
- No special wrenches required
- No special personnel required
- Fully rated bushing wells
- Wide selection of bushing well types



CERTIFIED TEST RESULTS
STANDARD HI WELL & A-30 HI WELL

OBJECTIVE:

Testing of Components Operation A-30 Hi Well bushing P/N 702122-50 for conformance with A.N.S.I./I.E.E.E. standard 386-1985 for voltage associated with the maximum operating level of 15.2 kV line to ground.

TEST PROCEDURE:

A. SET UP

Nine bushings were selected and mounted into a 14 gauge steel test plate. Mounting hardware included: one gasket P/N 321618-01, one clamp ring P/N 310221-04, three 1/4" - 20 x 1 1/4" bolts and one garter spring P/N 310034-01. Test plate was then placed into an oil filled tank to simulate operating conditions. Oil level in tank was adjusted to leave an air gap of 6 1/4" from bottom of plate to top of oil. Silicone grease was applied to bushing well and a test plug P/N 703712-75 was inserted into well. Potential lead was attached to test plug and ground lead was attached to test plate. (See attached sheets).

B. TEST AND RESULTS

1. CORONA VOLTAGE LEVEL TEST:

All nine bushings were tested as outlined in A.N.S.I./I.E.E.E. standard 386-1985 Sec. 7.4 which states "test voltage shall be raised to 23 kV. If corona exceeds 3 pC the test voltage shall be lowered to 19 kV and shall be maintained at this level for at least 3 seconds but not more than 60 seconds. Corona readings during this time shall not exceed 3 pC. Results of test met or exceeded set standards.

2. ALTERNATING CURRENT WITHSTAND TEST:

On each bushing the test voltage was increased to 40 kV in less than 30 seconds and maintained this level for one minute without flashover or puncture. Bushings met A.N.S.I./I.E.E.E. standard 386-1985 Sec. 7.5.1.

3. IMPULSE WITHSTAND VOLTAGE TEST:

Each bushing was subjected to three positive and three negative impulses without flashover or puncture at 125 kV B.I.L. As set fourth in A.N.S.I./I.E.E.E. standard 386-1985 Sec. 7.5.3.

INTERCHANGEABILITY (Sec. 6.4 and Fig. No.3)

The dimensions of the bushing well interface has been measured and found to be in accordance with A.N.S.I./I.E.E.E. standard 386-1985 Fig. No. 1 and 3.

CONCLUSIONS:

Components Operation A-30 Hi Well bushing (P/N 702122-51) satisfied the test requirements for properties outlined above as specified by A.N.S.I./I.E.E.E. 386-1985 for the rating of 15.2 kV maximum line-to-ground voltage.

Supporting data is on file at Central Moloney, Inc., Components Operation.

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