USBM CONTRACT NUMBER H-0110423

QUICK DISCONNECT COUPLERS FOR TRAILING CABLES

"The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies or recommendations of the Interior Department's Bureau of Mines or of the U. S. Government."

The PYLE-NATIONAL Company

USBM CONTRACT FINAL REPORT
(CONTRACT NUMBER H-0110423)
DATE: 11 MARCH 1974

DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON, D.C.

EBM-OMI-TR December 3, 1975

Memorandum

To: J.J. Yancik, Assistant Director - Mining

From: Chief, Division of Technical Reports

Subject: Open File Reports, Contract H0110423 (Pyle-National Co.)

Thank you for forwarding the two reports to this office. They have been assigned the following Open File Report numbers:

BuMines OFR 97(1)-75, Quick Disconnect Couplers for Trailing Cables.

BuMines OFR 97(2)-75, Report of Qualification Test, U.S. Bureau of Mines Connector.

Because much of the lettering on the drawings in the two reports is illegible, we are not placing the reports with the National Technical Information Service, U.S. Department of Commerce. The reports will be announced in the monthly list of New Publications - Bureau of Mines, and in the 1975 list of publications as available for reference during working hours at the Bureau of Mines libraries in Pittsburgh, Pennsylvania; Denver, Colorado; Spokane, Washington; Twin Cities, Minnesota; at the Energy Research and Development Administration library in Morgan town, West Virginia; and at the Central library, U.S. Department of the Interior, Washington, D.C.

Robert P. Willing

Robert P. Willing

cc: Samuel P. Shepard, Denver
Majorie Pass, Pittsburgh
Fern Caruso, Spokane
Merle T. Bernstein, Twin Cities
Dorothy Simon, Morgantown, WV
Joseph Patrick, 9038 CP
Margaret Frawley, Interior
R.O. Swenarton, 1033 CP
Files-OMI-TR

EBM:RPWilling:cmn:12/3/75:557-0320:932BT

United States Department of the Interior

BUREAU OF MINES
WASHINGTON, D.C. XXXXX 20241

July 17, 1975

Memorandum

To: Margaret Frawley, Chief, Cataloging Service, Interior Library
Samuel P. Shepard, Denver Facility Library
Marjorie C. Pass, Pittsburgh Facility Library
Fern E. Caruso, Spokane Facility Library
Evenlyn Chenoweth, Twin Cities Facility
Dorothy W. Simon, ERDA Facility Library, Morgantown

Subject: Open File Report: Final Report entitled "Quick Disconnect Couplers for Trailing Cables," Volumes I and II, dated March 11, 1974 by Pyle National Company

Approval has been granted as evidenced by the enclosed copy of memorandum dated July 10, 1975 to place the subject report on open file. Two copies of the report are enclosed to be placed on open file at your facility.

Please acknowledge receipt of this report by completing the information below and return a copy of this memorandum to Louise Kitts, Division of Mining Research--Health & Safety, 2401 E Street, N. W., Washington, D. C. 20241.

David R. Forshey

David R. Forshey

Enclosures

Received by: Marjorie G. Pass

Date: July 23, 1975

Library: Pittsburgh Facility

United States Department of the Interior

BUREAU OF MINES
WASHINGTON, D.C. ~~20240~~ 20241

July 10, 1975

Memorandum

To: Director, Bureau of Mines

Through: Acting Associate Director--Mineral and Materials Research and Development
Chief, Office of Mineral Information

From: Assistant Director--Mining

Subject: Open File Report

A copy of the Final Report entitled "Quick Disconnect Couplers for Trailing Cables," by The Pyle National Company, is enclosed. The report is in two volumes; Volume I - A.C. Couplers, dated February 1972, and Volume II - D.C. Couplers, dated March 1974. Also enclosed with the report are assembly instructions in four parts. This report was prepared under Bureau of Mines Contract Number H0110423 covering research work relating to the Coal Mine Health and Safety Act of 1969. A brief summary of the work covered is also enclosed. The report contains no patentable information.

It is recommended that two copies of the report be placed on open file for review in the Department of the Interior Library and two copies in each of the Bureau libraries at Denver, Pittsburgh, Spokane, Twin Cities, and the ERDA facility in Morgantown. We recommend that two copies be sent to the National Technical Information Service.

for Joseph J.Yancik

Enclosures

Recommended: JUL 15 1975
Chief, Office of Mineral Information
(no press release)

Approved: JUL 15 1975
Director, Bureau of Mines

I N D E X

N O T I C E

THE VIEWS AND CONCLUSIONS CONTAINED IN THIS DOCUMENT ARE THOSE OF THE AUTHORS AND SHOULD NOT BE INTERPRETED AS NECESSARILY REPRESENTING THE OFFICIAL POLICIES OR RECOMMENDATIONS OF THE INTERIOR DEPARTMENT'S BUREAU OF MINES OR OF THE U. S. GOVERNMENT.

F O R E W O R D

This report was prepared by The Pyle-National Co., Division Brand Rex, 1334 North Kostner, Chicago, Illinois. Under USBM CONTRACT NUMBER H-0110423. The contract was initiated under the Coal Mine Health and Safety Research Program. It was administered under the technical direction of the Pittsburgh Mining and Safety Research Center with Mr. Frank Lee, Jr. acting as the Technical Representative Project Engineer. Mr. Joseph A. Herickes was the Contracting Officer for the Bureau of Mines.

This report is a summary of the work recently completed as part of this contract during the period June 1973 to February 1974. This report was submitted by the authors on February 1, 1974.

Pyle-National

SUBJECT: INVENTIONS

CONTRACT #H0110423

No subject inventions resulted from the performance of any work under this contract. Pyle background patents were used, and these are identified below.

United States:	3,017,597
	3,029,407
	3,002,072
Canada:	595,195
	657,206

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

ADMINISTRATIVE DATA

ABSTRACT

Three complete connector assemblies and six separate contacts were submitted to a series of tests to establish the connectors permissibility and compliance with U. S. Bureau of Mines research Contract #H 0110423 D.C. portion. Test Procedure TPC-0118 was coordinated, and the test plan approved by the Bureau as fully complying with the intent of the contract for the direct current connectors.

The components and connector assemblies have been demonstrated in testing that they meet or exceed all the requirements of the test procedure.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

PURPOSE OF TEST

This test was conducted to demonstrate that the connectors meet the objectives as well as the design and performance requirements of the Bureau of Mines' Contract Document H 0110423 and USBM Schedule 2G for all direct current connectors specified.

MANUFACTURER

The Pyle-National Company - Division of Brand-Rex
1334 North Kostner
Chicago, Illinois 60651
Code Identification 49367

MANUFACTURER'S PART NUMBERS

PART NUMBER	DESCRIPTION
P-206040	Plug Connector
P-206041	Receptacle Connector

SPECIFICATIONS

TPC-0118	Qualification Test Procedure (Pyle-National)
Schedule 2G	Electric Motor-Driven Mine Equipment and Accessories (USBM)

QUANTITY OF ITEMS TESTED

Connectors:	(3) P-206040 (3) P-206041
Contacts:	(4) P-206042-S-1LL (4) P-206042-P-1LL (2) P-206042-S-2LK (2) P-206042-P-2LK

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

TEST CONDUCTED BY

Laboratory Technicians	E. Skudlarek E. Wicki
Test Engineer	J. Wade
Product Engineer	A. Walse
Program Manager	D. Reed

DISPOSITION OF TEST ITEMS

Retained at Pyle-National

APPROVED BY

E. Sulaski

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

FACTUAL DATA

TEST PROCEDURE

Pyle-National Qualification Test Procedure TPC-0118

DESCRIPTION OF TEST

The sequence of tests, and the samples on which the tests were performed are shown in Table I and Table II.

TABLE I

TEST SAMPLE IDENTIFICATION

GROUP	DESCRIPTION
1	Two (2) line contact pairs, part numbers P-206042-S-1LL and P-206042-P-1LL, with 100048 screws. One (1) ground contact pair, part numbers P-206042-S-2LK and P-206042-P-2LK, with 100048 screws.
2	Two (2) line contact pairs, part numbers P-206042-S-1LL and P-206042-P-1LL, with 100048 screws. One (1) ground contact pair, part numbers P-206042-S-2LK and P-206042-P-2LK, with 100048 screws.
3,4,5	One (1) plug assembly part number P-206040 One (1) receptacle assembly part number P-206041

This procedure is intended to qualify connectors for 550 V.D.C.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

TABLE II

TEST SEQUENCE

Test Description	TPC-0118 Test Method	Group 1	Group 2	Group 3	Group 4	Group 5
EXAMINATION OF PRODUCT	A.1	X	X			
ENGAGING AND SEPARATING FORCE	A.2	X	X			
HEAT RISE	A.3	X				
WIRE CLAMPING FORCE	A.4		X			
CONDUCTOR SECURENESS	A.5		X			
CONTACT DURABILITY	A.6	X				
FINAL HEAT RISE	A.7	X	X			
FINAL EXAM. OF PRODUCT	A.8	X	X			
EXAMINATION OF PRODUCT	B.1			X	X	X
COUPLING/UNCOUPLING	B.2			X		X
GROUND RESISTANCE	B.3			X		X
INSULATION RESISTANCE	B.4			X		X
DIELECTRIC WITHSTANDING VOLTAGE	B.5			X		X
EXPLOSION TEST	B.6				X	
HUMIDITY	B.7			X		
IMMERSION	B.8					X
PHYSICAL SHOCK	B.9				X	
CABLE PULLOUT	B.10					X
CONTACT RETENTION	B.11				X	
*FLAME TEST	B.12			-	-	-
FINAL EXAMINATION OF PRODUCT	B.13			X	X	X

* A Certificate of Compliance will be supplied stating all elastomeric material used in this connector is of a type previously approved by the Bureau of Mines U. S. Department of Interior.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

TEST SUMMARY

RESULTS OF TEST

The separate contacts and the assembled connectors met all the requirements of the test program. Additional testing was conducted to explore the limits of connector capability. All tests are described in detail in the following pages.

CONCLUSION

The connectors and contacts comply with the intent of the contract for the direct current connectors.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

EXAMINATION OF PRODUCT

REQUIREMENTS OF TEST METHOD A.1

The specimens must conform to all requirements, other than those covered by test.

SPECIMENS

Contact Part Numbers P-206042-S-1LL, -P-1LL,-S-2LK,-P-2LK

EQUIPMENT

Standard measuring instruments as required.

PROCEDURE

Perform a visual and dimensional inspection to assure compliance with:

1. The applicable Pyle-National standards and specifications.

2. The requirements listed under

   (a) Materials
   (b) Design and Construction

TEST RESULTS

The detail measurements are shown on the attached data sheets. A certificate stating compliance to the material requirements accompanies this report.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

ENGAGING AND SEPARATING FORCES

REQUIREMENTS OF TEST METHOD A.2

Contacts shall meet the engaging and separating forces shown in Table A, when randomly selected parts are mated to each other. In addition they shall meet the special extraction gaging force as shown.

Part No.	Insertion(lbs.)		Extraction(lbs.)		Insertion Depth(In.)	Mating Part No.
	Min.	Max.	Min.	Max.		
P-206042-S-1LL	3.00	15.00	3.00	15.00	0.500	P-206042-P-1LL
P-206042-S-2LK	2.66	14.33	2.66	14.33	0.500	P-206042-P-2LK

TABLE A

SPECIMENS

Group 1. and Group 2. Test specimens.

EQUIPMENT

Hunter Force Gages
Pyle holding fixtures and stops. Special steel gage.

PROCEDURE

Unwired sample contacts shall be engaged to the depth shown in Table I, and the insertion and extraction forces shall be measured.

TEST RESULTS

Test values fall within test requirements. Average values are as follows:

PART NO.	INSERTION	EXTRACTION
P-206042-S-1LL	8 lbs.	11 lbs.
P-206042-S-2LK	7 lbs.	10 lbs.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

HEAT RISE

REQUIREMENTS OF TEST METHOD A.3

The electrical resistance of individual contacts shall not cause the terminated conductors to exceed 60°C when carrying maximum current, 400 A.

SPECIMENS

Group 1. Test specimens.

EQUIPMENT

Ammeter
Timer
Powerstat
Potentiometer

PROCEDURE

The temperature rise of pin or socket contacts assembled in a connector, wired with cable of a size compatible with the current carried, shall be measured at the wire termination to the contact.

Ambient temperature may be considered to be 20°C and readings from actual ambient may be compensated for provided no more than 51°C difference between actual and 20°C exist.

Temperature readings are to be obtained by means of thermocouples consisting of No. 28-32 AWG iron and copper-nickel wires.

Three consecutive readings within 1°C taken 15 minutes apart will constitute a final value.

TEST RESULTS

The maximum temperature of any individual conductor was 70°C. It is recommended that when this connector is used with the current rating as tested, 75°C cable be used.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

WIRE CLAMPING FORCE

REQUIREMENTS OF TEST METHOD A.4

Wire termination by tightening of the contact clamping screws shall not cause stripping of threads or other damage to the contact or screw when normal torque is applied. Normal torque is that shown in Table B.

Contact Part No.	Torque Max. (ft. lbs.)	Wire Size AWG		Size (Ref.)
		Min.	Max.	
100048	25	1/0	4/0	1/2-20 UNF

TABLE B

SPECIMENS

Group 2. Test specimens.

EQUIPMENT

Torque Wrench
Pyle holding fixture

PROCEDURE

Contacts assembled with wire of the minimum size shown in Table B shall be tightened to the torque (max.) value shown. Following this, the same contacts shall be assembled with wire of the maximum size shown in Table B , and torqued to the torque (max.) value shown. Note: See Test Method A.5. Ferrules may be used, or an acceptable alternate, when minimum size wires are tested.

TEST RESULTS

The applied torque did not cause thread damage as determined by visual inspection.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

CONDUCTOR SECURENESS

REQUIREMENTS OF TEST METHOD A.5

Contacts shall withstand the pullout forces shown in Table C for the appropriate wire size when torqued to the values shown in Table B.

Contact Part No.	Wire Size AWG	Pullout (Min.Lbs.)
P-206042-S-1LL	1/0 4/0	200 450
P-206042-P-1LL	1/0 4/0	200 450
P-206042-S-2LK	1/0 4/0	200 450
P-206042-P-2LK	1/0 4/0	200 450

TABLE C

SPECIMENS

Group 2. Test specimens.

EQUIPMENT

Torque Wrench
Tensile Tester
Pyle holding fixtures

PROCEDURE

Wired contacts shall be torqued to the specified values and subjected to the pullout force shown in Table C . This test may be conducted in connection with Test Method A.4. of this procedure. Measure conductor displacement as related to fixed contact position at maximum load. Each conductor shall maintain 90% of full depth contact engagement at maximum load.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

CONDUCTOR SECURENESS (Cont'd)

TEST RESULTS

All contacts exceeded the minimum pullout values.

Minimum pullout recorded was 575 pounds for 4/0 wire, and 280 pounds for 1/0 wire.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

CONTACT DURABILITY

REQUIREMENTS OF TEST METHOD A.6

Contacts shall be subjected to 150 cycles of engaging and separating without detriment to the contact function, as determined by subsequent test and the engaging/separating force limits of previous tests.

SPECIMENS

Group 1. Test specimens.

EQUIPMENT

Pyle holding fixture
Force gage

PROCEDURE

Contacts assembled in a connector or individually, whichever is most convenient, shall be fully engaged and fully separated 150 times. Following this, they shall be measured for engaging and separating forces as shown in Table

TEST RESULTS

Test values fall within test requirements. Average values are as follows:

Part No.	Insertion	Extraction
P-206042-S-1LL	7.9	10.5
P-206042-S-2LK	6.2	8.6

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

FINAL HEAT RISE

REQUIREMENTS OF TEST METHOD A.7

The electrical resistance of individual contacts shall not cause the terminated conductors to exceed 60°C when carrying maximum current. This requirement is to be met after the conditioning tests specified in this document.

SPECIMENS

Group 1 and Group 2. Test specimens.

EQUIPMENT

See Test Method A.3.

PROCEDURE

See Test Method A.3.

TEST RESULTS

The conductor temperature remained within specification limits. Maximum temperature use recorded was 70°C. It is recommended that when this connector is used with the current rating as tested, 75°C cable used.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

FINAL EXAMINATION OF PRODUCT

REQUIREMENTS OF TEST METHOD A.8

The specimens must conform to the requirements of Test Method A.1. commensurate with the testing conducted. Potential or suspected failure modes shall be identified if uncovered by this test program.

SPECIMENS

Group 1 and Group 2. Test specimens.

EQUIPMENT

See Test Method A. 1.

PROCEDURE

See Test Method A.1.

TEST RESULTS

There was no evidence of damage or defect which would effect the functioning of the contacts as a result of the testing performed.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

EXAMINATION OF PRODUCT

REQUIREMENTS OF TEST METHOD B.1

The specimens must conform to all requirements, other than those covered by tests and performance requirements.

SPECIMENS

Three (3) sample plugs, part number P-206040 for Groups 3, 4, and 5.

Three (3) sample receptacles, part number P-206041

EQUIPMENT

Standard measuring instruments

PROCEDURE

Perform a visual, dimensional and mechanical inspection to assure compliance with:

1. The applicable Pyle-National standards and specifications.

2. The requirements listed under

   (a) Materials
   (b) Design and Construction

TEST RESULTS

The detailed measurements are shown on the attached data sheets. A Certificate of Compliance to the material requirements accompanies this report.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

COUPLING/UNCOUPLING FORCE

REQUIREMENTS OF TEST METHOD B.2

Assembled connectors, plug and receptacles shall be capable of full mating, including sealing, with an applied coupling torque of less than 50 foot pounds. Uncoupling forces shall not exceed coupling torque.

SPECIMENS

Group 3 and Group 5. Test Specimens.

EQUIPMENT

Pyle Holding Fixture
Torque Wrench

PROCEDURE

Connector assemblies shall be aligned and fully mated and unmated while measuring torque. Verification of full mating will be subsequently shown by Test Methods B.7. and B.8. Thread lubricant may be used.

TEST RESULTS

Maximum coupling/unclupling torque was 38 foot-pounds. Results fall within specification limits. Uncoupling forces do exceed coupling forces by an average of 3.5 foot pounds.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

GROUND RESISTANCE

REQUIREMENTS OF TEST METHOD B.3

The resistance of any grounding path including the coupled joint shall not exceed 0.5 ohms.

SPECIMENS

Group 3. and Group 4. Test Specimens.

EQUIPMENT

Powerstat
Transformer
Ammeter
Voltmeter

PROCEDURE

With a current of 10 amperes through the ground contacts of the mated connector, the voltage drop shall be measured from contact end to contact end, as well as from a point on the plug to a point on the receptacle. The test shall be repeated with the same current through the mated shells and the voltage drop measured from a point on the plug to point on the receptacle.

TEST RESULTS

Maximum resistance recorded was 0.1 ohms. Values fall within specification limits.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

INSULATION RESISTANCE

REQUIREMENTS OF TEST METHOD B.4

The insulation resistance when measured between any line contacts and between the line contacts and the shell, shall exceed 5000 megohms.

SPECIMENS

Group 3. and Group 5. Test Specimens.

EQUIPMENT

Megohm Bridge

PROCEDURE

Wired mated connectors shall be measured for insulation resistance with a test potential of 500 volts. Readings shall be taken after readings are stabilized, but in no case shall more than one minute electrification time be used.

TEST RESULTS

The lowest insulation resistance recorded was 12,800 megohms.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

DIELECTRIC WITHSTANDING VOLTAGE

REQUIREMENTS OF TEST METHOD B.5

Connectors shall withstand without breakdown or flashover a potential difference of 2800 volts applied between each contact and all other contacts and shells.

SPECIMENS

Group 3 and Group 4 Test Specimens.

EQUIPMENT

A.C. High Voltage Source

PROCEDURE

Apply the specified voltage at a rate of 500 volts per second. Maintain the required voltage for each location tested for one minute. Leakage current shall be recorded at the specified voltage.

TEST RESULTS

No dielectric breakdown occurred at any location.
The maximum leakage current was .0005 amperes.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

EXPLOSION TEST

REQUIREMENTS OF TEST METHOD B.6

With the line contact held at the touch break position, an explosion inside the connector shall not cause an explosion outside the connector enclosure.

SPECIMENS

Group 4 Test Specimen

EQUIPMENT

Wood box connected with control valves
Pressure Transducer

Oscilloscope

PROCEDURE

Mount the sealed mated connector inside the specially prepared wood box. Modify the ground contact to allow passage of gas inside the connector separate from the gas outside the connector. Establish a maximum explosive air/methane mixture, and ignite the mixture inside the connector. The gas mixture outside the connector must not explode. Following this, explode the mixture outside the connector to insure its volatility.

TEST RESULTS

The connectors do provide an explosion-proof enclosure since the explosion within the connector did not cause an explosion external to the connector. The external mixture was subsequently exploded. Maximum explosion pressure was 72 psi.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

HUMIDITY

REQUIREMENTS OF TEST METHOD B.7

Assembled unmated connectors shall withstand 96 hours at 90 to 95% relative humidity at a temperature of 40° ±2°C without loss of electrical properties.

SPECIMENS

Group 3 Test Specimens

EQUIPMENT

Humidity Chamber

PROCEDURE

The fully sealed connector assembly shall be subjected to the required humidity test. Following this, the specimens shall be conditioned four hours at ambient conditions after which the tests specified in B.4. and B.5. shall be repeated. Seal the cable ends of the mated connector to prevent moisture from entering the connector.

TEST RESULTS

Exposure to humidity did not cause the dielectric strength or insulation resistance to degrade below specification limits.

Max. Leakage current = .0002 Amperes
Min. I.R. = 12,900 Megohms

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

IMMERSION

REQUIREMENTS OF TEST METHOD B.8

Assembled mated connectors shall be completely immersed in water for a minimum period of 4 hours without loss of electrical properties.

SPECIMENS

Group 5 Test Specimens

EQUIPMENT

Water Tank

PROCEDURE

The sealed mated connector shall be subjected to the required immersion test followed by the tests specified in B.4. and B.5

TEST RESULTS

Complete immersion in water did not effect the dielectric strength or insulation resistance.

Minimum I.R. = 12,800 Megohms
Maximum Leakage current = .0001 Amperes

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

PHYSICAL SHOCK

REQUIREMENTS OF TEST METHOD B.9

Assembled unmated connectors shall withstand a one foot drop, in each of two mutually perpendicular planes, to a wood floor without damaging the mechanical integrity of the connector.

SPECIMENS

Group 4 Test Specimens

EQUIPMENT

As required.

PROCEDURE

Unwired, fully assembled mated connectors, shall be dropped in accord with the required procedure. Following this test the connector shall show no evidence of physical damage to the rigid insulations. The drop height shall be increased to three feet in one foot increments in each of two planes.

Following this the connectors shall be unmated and each connector half shall be dropped once with the major axis in a horizontal plane and once in such a manner that the front shell lip strikes at approximately 45^{o} to normal. Continued testing shall explore the maximum drop height capability.

TEST RESULTS

No damage as a result of the drop testing.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

'ULLOUT

REQUIREMENTS OF .10

Connector ass ot transmit externally applied loads to the c ss of contact secureness load.

SPECIMENS

Group 4 Test Spec.

EQUIPMENT

Tensile Tester

PROCEDURE

Cable adapters with cab ealing grommet in place with typical cable ly loaded. An applied load of 1000 pounds shall r conductor displacement in excess of the con ment specified in Test Method A.5. This tes ated using the hose type cable insulator. Foll reased axial loads shall be applied up to a max unds to explore the cable clamp limitations.

TEST RESULTS

No conductor displacement occurred at the 1000 pound level. 1500 pounds caused the conductor displacement.

Laboratory ENVIRONMENTAL

Test Report TRC-01554-01-QL

CONTACT RETENTION

REQUIREMENTS OF TEST METHOD B.11

Rigid insulations shall be capable of retaining contacts in either direction when loads equal to the Conductor Secureness Test A.5. are applied.

SPECIMENS

Group 4 Test Specimens

EQUIPMENT

Pyle Fixtures
Tensile Tester

PROCEDURE

Individually load the assembled connector contacts to the required values shown in Table C . Modified shells may be used to support the insulations as in a connector.

TEST RESULTS

All insulations sustained the required load values without visual damage.

FINAL EXAMINATION OF PRODUCT

REQUIREMENTS OF TEST METHOD B. 13

The specimens must conform to the requirements of Test Method B.1: Commensurate With The Testing Conducted. Potential or suspected failure modes shall be identified if uncovered by this test program.

SPECIMENS

Group 3, Group 4, and Group 5 Test Specimens.

EQUIPMENT

As required.

PROCEDURE

Perform a visual examination of each connector. Disassemble to the extent necessary to perform a detailed examination with a minimum of 3X magnification.

TEST RESULTS

The principal damage to the connector resulted during physical shock. The front faces of both the plug and receptacle were slightly distorted.

APPENDIX A

DATA SHEETS

TEST REPORT
TRC-01554-01-QL

PYLE-NATIONAL

DATA SHEET

Page ___ OF ___

IDENTIFICATION	EXAMINATION
GROUP 1	
SKT 1	✓
PIN 1	✓
SKT 2	✓
PIN 2	✓
SKT 3	✓
PIN 3	✓
GROUP 2	
SKT 4	✓
PIN 4	✓
SKT 5	✓
PIN 5	✓
SKT 6	✓
PIN 6	✓

TEST DESCRIPTION: EXAMINATION OF PRODUCT	GROUP NO.: 1, 2	REPORT NO.: TRC-01554-01-QL	COMMENTS: ✓, INDICATES PRODUCT CONFORMS TO ALL PRODUCT DRAWING DIMENSIONS
TEST ITEM (Including Revision Letter): GROUPS 1, 2		PROJECT NO.	
SPECIFICATION: TPC-0118	PARAGRAPH: A.1	CONDITIONING	
VOLTS: –	CURRENT: –	CYCLES: –	POWER FACTOR: –
SHUNT RES.: –			
TEMPERATURE: –	HUMIDITY: –	CHAMBER TEMP.: –	MEASUREMENT: –

INSTRUMENTS			
DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE

START DATE: 9/4/73	COMPL. DATE: 9/4/73	TESTED BY: E.W.
LAB. SUP.	SPECIAL INSTRUCTIONS	

FORM NO.- E-75. REVISION

PYLE-NATIONAL

DATA SHEET

IDENTIFICATION

	INSERTION	EXTRACTION
GROUP 1		
SKT 1	7	10
SKT 2	9	12
SKT 3	6	9
GROUP 2		
SKT 4	6	9
SKT 5	10	13
SKT 6	8	11

TEST DESCRIPTION: ENGAGING & SEPARATING FORCES	GROUP NO.: 1, 2	REPORT NO.: TRC-01554-01-QL	COMMENTS: SKT 1,2,4,5 = P-206042-5-1LL	START DATE: 9/4/73
TEST ITEM (including Revision Letter): GROUPS 1 & 2		PROJECT NO.:	SKT 3, 6 = P-206042-5-2LK	COMPL. DATE: 9/4/73
SPECIFICATION: TPC-0118	PARAGRAPH: A.2	CONDITIONING: —		TESTED BY: EW
VOLTS: —	CURRENT: —	CYCLES: —	POWER FACTOR: —	SHUNT RES.: —		LAB. SUP.
TEMPERATURE: 26°C	HUMIDITY: —	CHAMBER TEMP.: —	MEASUREMENT: lbs.			SPECIAL INSTRUCTIONS

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
FORCE GAGE	IT 540-2	5/24/73	HUNTER

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IDENTIFICATION

GROUP 1	SKT 1	SKT 2
TIME		
8:30	24.0	23.0
8:45	30.0	30.5
9:00	39.5	40.0
9:15	48.0	48.0
9:30	55.0	55.5
↓		
1:00	70.0	70.0
1:15	70.0	70.0
1:30	70.0	70.0

TEST DESCRIPTION: HEAT RISE

GROUP NO.: 1

REPORT NO.: TRC-01554-01-QL

COMMENTS: TEST A.3

START DATE: 9/4/73

TEST ITEM (Including Revision Letter): GROUP 1

PROJECT NO.:

COMPL. DATE: 9/4/73

SPECIFICATION: TPC-0118

PARAGRAPH: A.3

CONDITIONING: —

TESTED BY: E.W

VOLTS:

CURRENT: 400 A

CYCLES:

POWER FACTOR:

SHUNT RES.:

LAB. SUP.:

TEMPERATURE: 24°C

HUMIDITY:

CHAMBER TEMP.:

MEASUREMENT: °C

SPECIAL INSTRUCTIONS:

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
POWERSTAT	IT 684		SUPERIOR ELECT. CO.
AMMETER	IT 644	4/18/73	WESTON
POTETIOMETER	IT 725	"	LEEDS & NORTH RUP

FORM NO.- E-75.

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IDENTIFICATION	25 Ft-lbs.
GROUP 2	
SKT 4	X
PIN 4	X
SKT 5	X
PIN 5	X
SKT 6	X
PIN 6	X

TEST DESCRIPTION: WIRE CLAMPING FORCE	GROUP NO.: 2	REPORT NO.: TRC-01554-01-QL	COMMENTS:	START DATE: 9/4/73
TEST ITEM (Including Revision Letter): GROUPS 2		PROJECT NO.:	X, INDICATES TEST COMPLETE WITH NO VISUAL DAMAGE	COMPL. DATE: 9/4/73
SPECIFICATION: TPC-0118	PARAGRAPH: A,4	CONDITIONING:		TESTED BY: E.W
VOLTS: —	CURRENT: —	CYCLES: —	POWER FACTOR: —	SHUNT RES.: —		LAB. SUP.
TEMPERATURE: —	HUMIDITY: —	CHAMBER TEMP.: —	MEASUREMENT: Ft.-lbs.			SPECIAL INSTRUCTIONS

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
TORQUE WRENCH	IT-565-1	9/16/71	SNAP-ON TOOL CORP

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IDENTIFICATION	1/0 PULLOUT	4/0 PULLOUT
GROUP 2		
SKT 4	280	575
PIN 4	320	600
SKT 5	295	610
PIN 5	315	625
SKT 6	305	605
PIN 6	295	590

TEST DESCRIPTION: CONDUCTOR SECURENESS

GROUP NO.: 2

REPORT NO.: TRC-01554-01-QL

COMMENTS:

START DATE: 9/4/73

TEST ITEM (Including Revision Letter): GROUP 2

PROJECT NO.:

COMPL. DATE: 9/4/73

SPECIFICATION: TRC-0118

PARAGRAPH: A.5

CONDITIONING:

TESTED BY: E.W

VOLTS: —

CURRENT: —

CYCLES: —

POWER FACTOR: —

SHUNT RES.: —

LAB. SUP.:

TEMPERATURE: —

HUMIDITY: —

CHAMBER TEMP.: —

MEASUREMENT: LBS

SPECIAL INSTRUCTIONS

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
UNIV. TESTER	IT 1000	7/2/73	TINIUS-OLSEN

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IDENTIFICATION	50 CYCLES	100 CYCLES	150 CYCLES	INSERTION	EXTRACTION
GROUP 1					
SKT 1	X	X	X	7.5	9.7
SKT 2	X	X	X	8.3	11.3
SKT 3	X	X	X	6.2	8.6

TEST DESCRIPTION: CONTACT DURABILITY	GROUP NO.: 1	REPORT NO.: TRC-01554-01-QL	COMMENTS:	START DATE: 9/5/73
TEST ITEM (Including Revision Letter): GROUP 1		PROJECT NO.	X = CYCLES COMPLETE	COMPL. DATE: 9/5/73
SPECIFICATION: TPC-0118	PARAGRAPH: A.6	CONDITIONING: —		TESTED BY: E.W
VOLTS: —	CURRENT: —	CYCLES: —	POWER FACTOR: —	SHUNT RES.: —
TEMPERATURE: —	HUMIDITY: —	CHAMBER TEMP.: —	MEASUREMENT: lbs.	LAB. SUP.

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
FORCE GAGE	IT-540-2	5/24/73	HUNTER

SPECIAL INSTRUCTIONS

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IDENTIFICATION

GROUP 1						
TIME	10:00	10:15	10:30	2:00	2:15	2:30
SKT 1	24.0	29.5	40.0	70.0	70.0	70.0
SKT 2	23.5	30.0	40.5	70.0	70.0	70.0
GROUP 2						
SKT 4	24.0	30.5	40.5	70.0	70.0	70.0
SKT 5	24.0	31.0	41.0	70.0	70.0	70.0

TEST DESCRIPTION: FINAL HEAT RISE

GROUP NO.: 1, 2

REPORT NO.: TRC-01554-01-QL

COMMENTS:

START DATE: 9/5/73

TEST ITEM (Including Revision Letter): GROUPS 1 & 2

PROJECT NO.:

COMPL. DATE: 9/5/73

SPECIFICATION	PARAGRAPH	CONDITIONING
TPC-0118	A.7	

TESTED BY: E.W

LAB. SUP.:

VOLTS	CURRENT	CYCLES	POWER FACTOR	SHUNT RES.
–	400 A	–	–	–

TEMPERATURE	HUMIDITY	CHAMBER TEMP.	MEASUREMENT
24°C	–	–	°C

SPECIAL INSTRUCTIONS

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
POWERSTAT	IT 684		SUPERIOR ELECT Co
AMMETER	IT 644	4/18/73	WESTON
POTENTIOMETER	IT 725	"	LEEDS & NORTHRUP

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IDENTIFICATION

EXAMINATION	
GROUP 1	
SKT 1	✓
PIN 1	✓ *
SKT 2	✓
PIN 2	✓ *
SKT 3	✓
PIN 3	✓ *
GROUP 2	
SKT 4	✓
PIN 4	✓
SKT 5	✓
PIN 5	✓
SKT 6	✓
PIN 6	✓

TEST DESCRIPTION: FINIAL EXAM. OF PRODUCT

GROUP NO.: 1, 2

REPORT NO.: TRC-01554-01-QL

COMMENTS:

START DATE: 9/5/73

TEST ITEM (Including Revision Letter): GROUP 1, 2

PROJECT NO.:

COMPL. DATE: 9/5/73

SPECIFICATION: TPC-0118

PARAGRAPH: A.8

CONDITIONING:

TESTED BY: E.W

VOLTS: —

CURRENT: —

CYCLES: —

POWER FACTOR: —

SHUNT RES.: —

LAB. SUP.

TEMPERATURE: —

HUMIDITY: —

CHAMBER TEMP.: —

MEASUREMENT: —

✓ = EXAM. OK

* = SLIGHT WEAR FROM DURABILITY

SPECIAL INSTRUCTIONS

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE

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IDENTIFICATION	EXAMINATION
GROUP Nº	
3	✓
4	✓
5	✓

TEST DESCRIPTION: EXAMINATION OF PRODUCT	GROUP NO.: 3, 4, 5	REPORT NO.: TRC-01554-01-QL	COMMENTS:
TEST ITEM (including Revision Letter): GROUPS 3, 4, 5		PROJECT NO.	✓, INDICATES PRODUCT CONFORMS TO PRODUCT DRAWING DIMENSIONS
SPECIFICATION: TPC-0118	PARAGRAPH: B.1	CONDITIONING	

VOLTS	CURRENT	CYCLES	POWER FACTOR	SHUNT RES.
—	—	—	—	—

TEMPERATURE	HUMIDITY	CHAMBER TEMP.	MEASUREMENT
—	—	—	—

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE

START DATE: 9/6/73

COMPL. DATE: 9/6/73

TESTED BY: E.W.

LAB. SUP.

SPECIAL INSTRUCTIONS

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IDENTIFICATION

	COUPLING	UNCOUPLING
GROUP 3	30	34
GROUP 5	35	39

TEST DESCRIPTION	COUPLING/UNCOUPLING FORCE
GROUP NO.	3, 5
REPORT NO.	TRC-01554-01-QL
COMMENTS:	
START DATE	9/6/73
TEST ITEM (Including Revision Letter)	GROUP 3, 5
PROJECT NO.	
COMPL. DATE	9/6/73
SPECIFICATION	TPC-0118
PARAGRAPH	B. 2.
CONDITIONING	—
TESTED BY	E.W
VOLTS	—
CURRENT	—
CYCLES	—
POWER FACTOR	—
SHUNT RES.	—
LAB. SUP.	
TEMPERATURE	—
HUMIDITY	—
CHAMBER TEMP.	—
MEASUREMENT	Ft.-lbs.
SPECIAL INSTRUCTIONS	

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
TORQUE WRENCH	TT 565-1	9/16/73	SNAP-ON TOOL CORP

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IDENTIFICATION	CONT. to CONT.	PLUG to RCPT.
GROUP		
3	0.05	0.08
4	0.02	0.10

TEST DESCRIPTION: GROUND RESISTANCE	GROUP NO.: 3, 4	REPORT NO.: TRC-01554-01-QL	COMMENTS:	START DATE: 9/6/73
TEST ITEM (Including Revision Letter): GROUP 3, 4		PROJECT NO.:		COMPL. DATE: 9/6/73
SPECIFICATION: TPC-0118	PARAGRAPH: B.3	CONDITIONING:		TESTED BY: E.W
VOLTS:	CURRENT: 10 A.	CYCLES:	POWER FACTOR:	SHUNT RES.:
TEMPERATURE:	HUMIDITY:	CHAMBER TEMP.:	MEASUREMENT: OHMS	SPECIAL INSTRUCTIONS: Page 39 TRC-01554-01

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
POWER STAT	IT 684		SUPERIOR ELECT CO
AMMETER	IT 644	9/18/73	WESTON
VTVM	IT 627	"	H.P 400D

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IDENTIFICATION	LINE TO LINE	LINE to SHELL
GROUP		
3	13000	13000
5	12800	12800

TEST DESCRIPTION: INSULATION RESISTANCE	GROUP NO.: 3,5	REPORT NO.: TRC-01554-A-GL	COMMENTS:	START DATE: 9/6/73
TEST ITEM (Including Revision Letter): GROUP 3,5		PROJECT NO.		COMPL. DATE: 9/6/73
SPECIFICATION: TPC-0118	PARAGRAPH: 3.4	CONDITIONING		TESTED BY: E.W
VOLTS: 500 V.	CURRENT	CYCLES	POWER FACTOR	SHUNT RES.	LAB. SUP.
TEMPERATURE	HUMIDITY	CHAMBER TEMP.	MEASUREMENT: MEGOHMS		SPECIAL INSTRUCTIONS

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
IR TESTER	IT 724	1/19/73	SLAUGHTER CO.

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IDENTIFICATION

GROUP	1 to ALL	2 to ALL	6 to ALL	SHELL to ALL
3	✓	✓	✓	✓
4	✓	✓	✓ ✱	✓

TEST DESCRIPTION: DIELECTRIC WITHSTAND VOLTAGE

GROUP NO.: 3,4

REPORT NO.: TRC-01554-01-QL

PROJECT NO.:

TEST ITEM (Including Revision Letter): GROUP 3,4

SPECIFICATION: TPC-0118

PARAGRAPH: 3.5

CONDITIONING: —

VOLTS	CURRENT	CYCLES	POWER FACTOR	SHUNT RES.
2800	—	—	—	—

TEMPERATURE	HUMIDITY	CHAMBER TEMP.	MEASUREMENT
—	—	—	

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
DWV TESTER	IT-672-1	6/7/[illegible]	BECKMAN

COMMENTS:
✓ = 2800 DWV
✱ = .0005 LEAKAGE CURRENT

START DATE: 9/6/73

COMPL. DATE: 9/6/73

TESTED BY: E.W.

LAB. SUP.:

SPECIAL INSTRUCTIONS

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IDENTIFICATION

SEE ATTACHED USBM TEST SUMMARY

TEST DESCRIPTION: EXPLOSION TESTS	GROUP NO.: 4	REPORT NO.: TRC-01554-01-AL	COMMENTS:
TEST ITEM (Including Revision Letter): GROUP 4		PROJECT NO.	
SPECIFICATION: TPC-0118	PARAGRAPH: B.6	CONDITIONING: —	
VOLTS: —	CURRENT: —	CYCLES: —	POWER FACTOR: —
SHUNT RES.: —			
TEMPERATURE: —	HUMIDITY: —	CHAMBER TEMP.: —	MEASUREMENT

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE

START DATE

COMPL. DATE

TESTED BY

LAB. SUP.

SPECIAL INSTRUCTIONS

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REVISION

United States Department of the Interior

MINING ENFORCEMENT AND SAFETY ADMINISTRATION

4800 FORBES AVENUE

PITTSBURGH, PENNSYLVANIA 15213

In reply refer to
EMS-PTSC-A&T

September 28, 1973

Pyle National Division
Attention: Mr. Donald J. Reed
1334 North Kostner Avenue
Chicago, Illinois 60651

Gentlemen:

With reference to your letter of April 17, 1973, concerning an investigation of the P-206041 Inline Receptacle Assembly:

Preliminary inspection and explosion testing of the Inline Receptacle Assembly have been completed. A report on the findings during the preliminary inspection and a summary of conditions and results of the explosion tests are enclosed.

These reports are for your information only and are not to be construed as certification of the Inline Receptacle Assembly or approval of any equipment with which this may be used.

Very truly yours,

Joseph J. Seman

Joseph J. Seman
Chief, Approval and Testing
Pittsburgh Technical Support Center

Enclosures

Investigation MR-4904.2

Summary of Explosion Tests of Pyle-National Division P-206041 Inline Receptacle Assembly

--0--

A. Nominal 7 Percent Gas Mixtures Without Coal Dust - 8 Tests

1. No smoke, sparks, or flames were seen in any of the tests.

2. The maximum indicated pressures ranged from 19 to 57 pounds per square inch (gage).

B. Nominal 8.6 Percent Gas Mixtures Without Coal Dust - 8 Tests

1. No smoke, sparks, or flames were seen in any of the tests.

2. The maximum indicated pressures ranged from 47 to 58 pounds per square inch (gage).

C. Nominal 7 Percent Gas Mixtures With Coal Dust - 2 Tests

1. No smoke, sparks, or flames were seen in any of the tests.

2. The maximum indicated pressures ranged from 43 to 44 pounds per square inch (gage).

D. Nominal 8.6 Percent Gas Mixtures With Coal Dust - 6 Tests

1. No smoke, sparks, or flames were seen in any of the tests.

2. The maximum indicated pressures ranged from 52 to 64 pounds per square inch (gage).

Investigation MR-4904.2

Preliminary Inspection

Pyle National Division
Inline Receptacle Assy.
No. P-206041

--0--

No conflicts with Schedule 2G were found during the detailed inspection.

United States Department of the Interior

MINING ENFORCEMENT AND SAFETY ADMINISTRATION

4800 FORBES AVENUE

PITTSBURGH, PENNSYLVANIA 15213

In reply refer to
EMS-PTSC-A&T

September 28, 1973

Pyle National Division
Attention: Mr. Donald J. Reed
1334 North Kostner Avenue
Chicago, Illinois, 60651

Gentlemen:

With reference to your letter of April 17, 1973, concerning an investigation of the P206040 and P206041 Plug and Receptacle Assemblies:

Preliminary inspection and explosion testing of the Plug and Receptacle Assemblies have been completed. A report on the findings during the preliminary inspection and a summary of conditions and results of the explosion tests are enclosed.

These reports are for your information only and are not to be construed as certification of the Plug and Receptacle Assemblies or approval of any equipment with which this may be used.

Very truly yours,

Joseph J. Seman
Chief, Approval and Testing
Pittsburgh Technical Support Center

Enclosures

Investigation MR-4904.2

Summary of Explosion Tests of Pyle-National Division
Inline P206040 & P206041 Plug & Receptacle Assemblies
Plug & Receptacle Coupled with Coupling Sleeve

--0--

A. Nominal 7 Percent Gas Mixtures Without Coal Dust - 7 Tests

1. No smoke, sparks, or flames were seen in any of the tests.

2. The maximum indicated pressures ranged from 15 to 65 pounds per square inch (gage).

B. Nominal 8.6 Percent Gas Mixtures Without Coal Dust - 6 Tests

1. No smoke, sparks, or flames were seen in any of the tests.

2. The maximum indicated pressures ranged from 50 to 72 pounds per square inch (gage).

C. Nominal 7 Percent Gas Mixtures With Coal Dust - 2 Tests

1. No smoke, sparks, or flames were seen in any of the tests.

2. The maximum indicated pressures ranged from 39 to 54 pounds per square inch (gage).

D. Nominal 8.6 Percent Gas Mixtures With Coal Dust - 2 Tests

1. No smoke, sparks, or flames were seen in any of the tests.

2. The maximum indicated pressures ranged from 63 to 64 pounds per square inch (gage).

A, B, C, D Tests were coupled with seals omitted, and 1-pin and 1 socket contact omitted to allow for gassing.

E. Nominal 8.6 Percent Gas Mixture With Coal Dust - 8 Tests

1. No smoke, sparks, or flames were seen in any of the tests.

2. The maximum indicated pressures ranged from 11 to 63 pounds per square inch (gage).

Test "E" was uncoupled - 2 threads from the point of separation of power pin.

Investigation MR-4904.2

Preliminary Inspection

Pyle-National Division
Inline Plug & Receptacle Assemblies
P206040 & P206041

--0--

No conflicts with Schedule 2G during the detailed inspection.

United States Department of the Interior

MINING ENFORCEMENT AND SAFETY ADMINISTRATION

4800 FORBES AVENUE

PITTSBURGH, PENNSYLVANIA 15213

In reply refer to
EMS-PTSC-A&T

September 27, 1973

Pyle National Division
Attention: Mr. Donald J. Reed
1334 North Kostner Avenue
Chicago, Illinois 60651

Gentlemen:

With reference to your letter of April 17, 1973, concerning an investigation of the P-206040 Inline Plug Assembly:

Preliminary inspection and explosion testing of the Inline Plug Assembly have been completed. A report on the findings during the preliminary inspection and a summary of conditions and results of the explosion tests are enclosed.

These reports are for your information only and are not to be construed as certification of the Inline Plug Assembly or approval of any equipment with which this may be used.

Very truly yours,

Joseph J. Seman
Chief, Approval and Testing
Pittsburgh Technical Support Center

Enclosures

Investigation MR-4904.2

Summary of Explosion Tests of Pyle National Division P206040 Inline Plug Assembly

--0--

A. Nominal 7 Percent Gas Mixtures Without Coal Dust-- 8 Tests

1. No smoke, sparks, or flames were seen in any of the tests.

2. The maximum indicated pressures ranged from 27 to 49 pounds per square inch (gage).

B. Nominal 8.6 Percent Gas Mixtures Without Coal Dust-- 8 Tests

1. No smoke, sparks, or flames were seen in any of the tests.

2. The maximum indicated pressures ranged from 18 to 48 pounds per square inch (gage).

C. Nominal 7 Percent Gas Mixtures With Coal Dust-- 2 Tests

1. No smoke, sparks, or flames were seen in any of the tests.

2. The maximum indicated pressures ranged from 18 to 48 pounds per square inch (gage).

D. Nominal 8.6 Percent Gas Mixtures With Coal Dust-- 6 Tests

1. No smoke, sparks, or flames were seen in any of the tests.

2. The maximum indicated pressures ranged from 43 to 53 pounds per square inch (gage).

Investigation MR-4904.2

Preliminary Inspection

Pyle National Division
Inline Plug Assy. P206040

--0--

No conflicts with Schedule 2G were found in the detail inspection with the following exceptions:

1. The adapter assembly drawing and parts list P-206040-2 do not agree with the adapter (plug assembly) as submitted for inspection. The adapter assembly and parts list shows no drawings for the lead gasket and the threaded retaining ring; and shows a silicon gasket. The plug submitted has an "O" ring seal. The bore for lens seating is not shown. A large detail drawing of the lens assembly (on the adapter) should be submitted.

2. Need drawing for receptacle assembly adapter weld to show machining.

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IDENTIFICATION

GROUP 3

IR	
LINE TO LINE	12900
LINE TO SHELL	12900
DWV	
1 to ALL	✓
2 to ALL	✓
G to ALL	✓.0002
SHELL to ALL	✓
EXPOSURE	X

TEST DESCRIPTION: HUMIDITY

GROUP NO.: 3

REPORT NO.: TRC-01554-01-QL

COMMENTS: X, INDICATES EXPOSURE TO HUMIDITY

START DATE: 9/7/73

TEST ITEM (Including Revision Letter): GROUP 3

PROJECT NO.:

COMPL. DATE: 9/7/73

SPECIFICATION: TPC-0118

PARAGRAPH: B.7

CONDITIONING: —

TESTED BY: E.W

VOLTS: —

CURRENT: —

CYCLES: —

POWER FACTOR: —

SHUNT RES.: —

LAB. SUP.

TEMPERATURE: —

HUMIDITY: —

CHAMBER TEMP.: —

MEASUREMENT: —

SPECIAL INSTRUCTIONS

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
HUMIDITY CHAMBER	IT 1027		BLUE-M
IR TESTER	IT 724	1/19/73	SLAUGHTER Co.
DWV TESTER	IT 672-1	6/7/73	BECKMAN

FORM NO.- E-75.

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IDENTIFICATION

GROUP 5

IR		
LINE to LINE	12800	
LINE to SHELL	12800	
DWV		
1 to ALL	✓	
2 to ALL	✓	
G to ALL	✓	.0001
SHELL to ALL	✓	
EXPOSURE	X	

TEST DESCRIPTION: IMMERSION	GROUP NO. 5	REPORT NO. TRC-01554-01-QL	COMMENTS:	START DATE 9/7/73
TEST ITEM (Including Revision Letter) GROUP 5		PROJECT NO.		COMPL. DATE 9/7/73
SPECIFICATION TPC-0118	PARAGRAPH 8.8	CONDITIONING —		TESTED BY E.W.
VOLTS —	CURRENT —	CYCLES —	POWER FACTOR —	SHUNT RES. —
TEMPERATURE —	HUMIDITY —	CHAMBER TEMP. —	MEASUREMENT —	LAB. SUP.

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
IR TESTER	IT 724	1/19/73	SLAUGHTER Co
DWV TESTER	IT 622-1	6/7/73	BECKMAN

SPECIAL INSTRUCTIONS

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HEIGHT

IDENTIFICATION

DIRECTION	1			2			3			4			5		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
GROUP 4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	X

TEST DESCRIPTION: PHYSICAL SHOCK

GROUP NO.: 4

REPORT NO.: TRC-01554-01-QL

TEST ITEM (Including Revision Letter): GROUP 4

PROJECT NO.:

SPECIFICATION: TPC-0118

PARAGRAPH: B.9

CONDITIONING:

VOLTS: -

CURRENT: -

CYCLES: -

POWER FACTOR: -

SHUNT RES.:

TEMPERATURE:

HUMIDITY:

CHAMBER TEMP.:

MEASUREMENT: Ft.

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE

COMMENTS:

A = DROP PARALLEL TO FLOOR

B = " PERPENDICULAR " "

C = 45° DROP TO FLOOR

✓ = NO DAMAGE

X = BENT NOSE

START DATE: 15 OCT 73

COMPL. DATE:

TESTED BY: E. W.

LAB. SUP.:

SPECIAL INSTRUCTIONS:

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IDENTIFICATION	1000 lbs	1000 lbs *	FAILURE *					
GROUP								
4	OK	OK	1500 lbs					

TEST DESCRIPTION: CABLE PULL OUT	GROUP NO.: 4	REPORT NO.: TRC-01554-01-QL	COMMENTS: * INDICATES HOSE OVER CABLE	START DATE: 15 OCT 73
TEST ITEM (Including Revision Letter): GROUP 4		PROJECT NO.:		COMPL. DATE:
SPECIFICATION: TPC-0118	PARAGRAPH: 3.10	CONDITIONING: -		TESTED BY: E.W.
VOLTS: -	CURRENT: -	CYCLES: -	POWER FACTOR: -	SHUNT RES.: -
TEMPERATURE: -	HUMIDITY: -	CHAMBER TEMP.: -	MEASUREMENT: lbs.	LAB. SUP.

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
UNIV. TESTER	IT 1000	7/2/73	TINIUS-OLSEN

SPECIAL INSTRUCTIONS

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IDENTIFICATION	GROUP 4	REQ.
SKT 1	✓	450
PIN 1	✓	450
SKT 2	✓	450
PIN 2	✓	450
SKT G	✓	450
PIN G	✓	450

TEST DESCRIPTION: CONTACT RETENTION	GROUP NO.: 4	REPORT NO.: TRC-01554-01-QL	COMMENTS: ✓, INDICATES COMPLETED TEST WITHOUT VISIBLE DAMAGE
TEST ITEM (Including Revision Letter): GROUP 4		PROJECT NO.	START DATE: 15 OCT 73
SPECIFICATION: TPC-0118	PARAGRAPH: B.11	CONDITIONING: —	COMPL. DATE
VOLTS: —	CURRENT: —	CYCLES: —	POWER FACTOR: —
SHUNT RES.: —			TESTED BY: E.W.
TEMPERATURE: —	HUMIDITY: —	CHAMBER TEMP.	MEASUREMENT: ✓
			LAB. SUP.
			SPECIAL INSTRUCTIONS

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE
UNIV. TESTER	IT 1000	7/2/73	TINIUS-OLSEN

Page 56
TRC-01554-01

FORM NO.- E-75. REVISION

PYLE-NATIONAL

DATA SHEET

Page ___ OF ___

IDENTIFICATION

EXAMINATION	
GROUP	
3	✓
4	✓
5	✓

TEST DESCRIPTION: FINAL EXAM OF PRODUCT	GROUP NO.: 3, 4, 5	REPORT NO.: TRC-01554-CX-01	START DATE: 16 OCT
TEST ITEM (Including Revision Letter): GROUPS 3, 4, 5		PROJECT NO.:	COMPL. DATE:
SPECIFICATION: TPC-011B	PARAGRAPH: 3.13	CONDITIONING:	TESTED BY: E.W.
VOLTS: —	CURRENT: —	CYCLES: —	POWER FACTOR: —
SHUNT RES.: —			LAB. SUP.
TEMPERATURE: —	HUMIDITY: —	CHAMBER TEMP.: —	MEASUREMENT: VISUAL

COMMENTS:

✓ INDICATES ASSEMBLIES ARE OK EXCEPT AS NOTED ELSEWHERE DUE TO DISTRUCTIVE TESTING

SPECIAL INSTRUCTIONS

INSTRUMENTS

DESCRIPTION	MODEL or SERIAL No.	CALIBRATION	MAKE

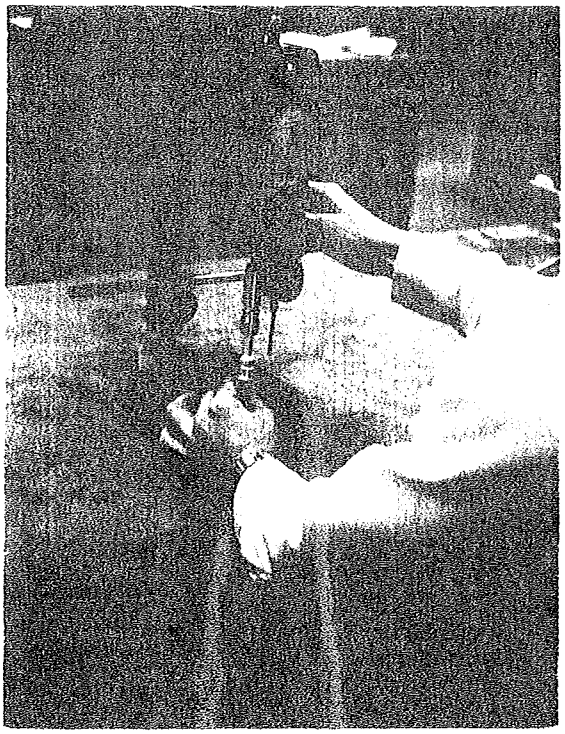
FORM NO.- E-75.

REVISION

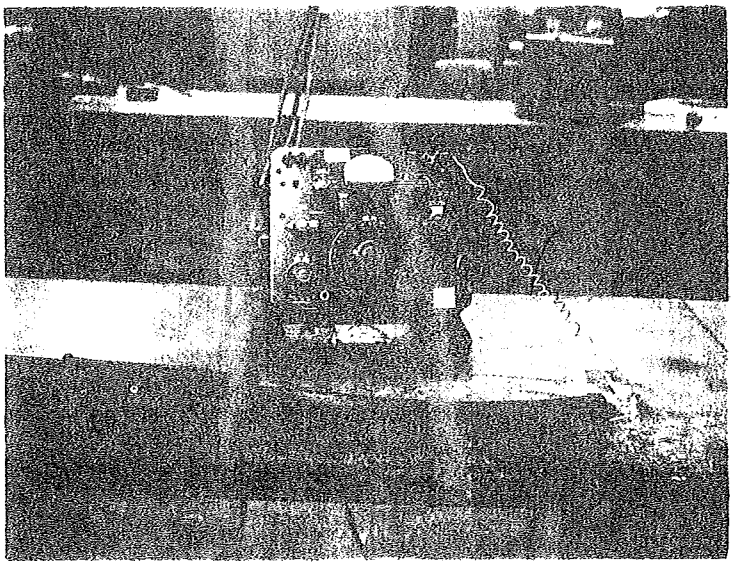
APPENDIX B

PHOTOGRAPHS

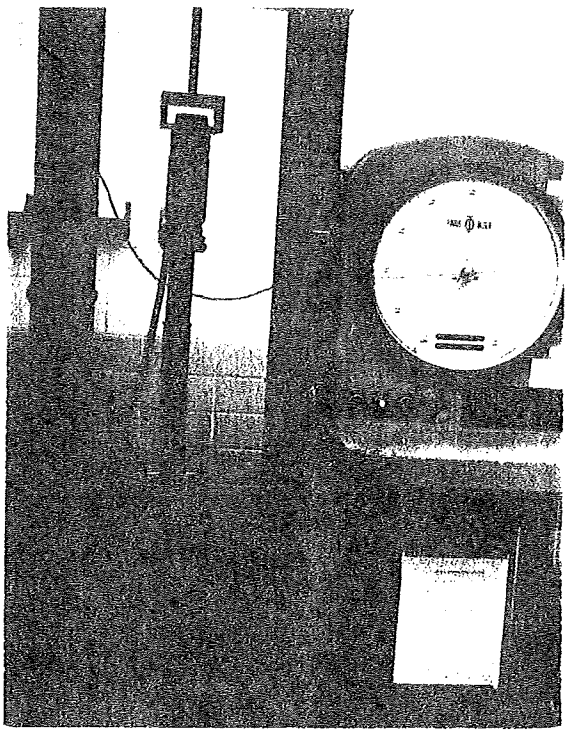
TEST REPORT
TRC-01554-01-QL



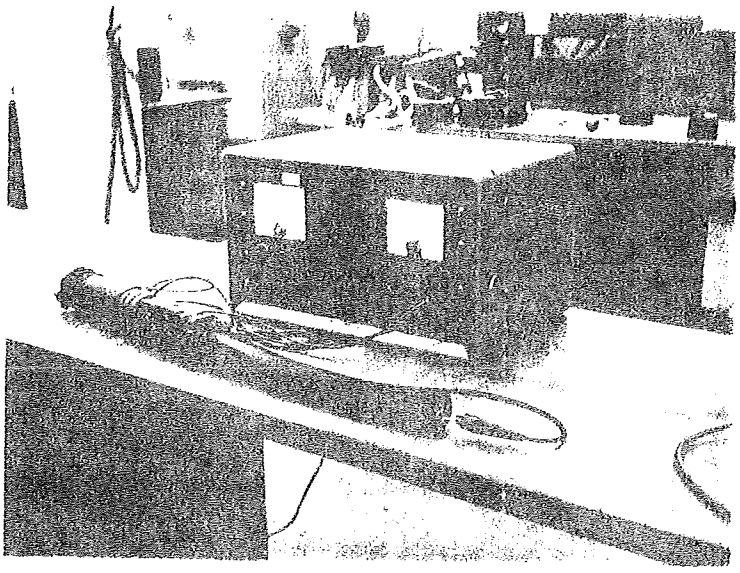
INSERTION FORCE



INSULATION RESISTANCE



CABLE PULL-OUT



DIELECTRIC WITHSTAND VOLTAGE

APPENDIX C

DRAWINGS, PARTS LISTS
&
ASSEMBLY INSTRUCTIONS

TEST REPORT
TRC-01554-01-QL

USBM CONTRACT #H0110423 D.C. PORTION
DRAWINGS & PART LIST INDEX

TYP	BM NO. OR DRAWING NO.	DWG SIZE	TYPE	BM NO. OR DRAWING NO.	DWG SIZE	TYPE	BM NO. OR DRAWING NO.	DWG SI
BM	P-206040		BM	P-206040-2			ZZM-W-5612	
BM	P-206042-60S			P-206040-2	C		ZZM-5624-A	
	P-206042-60S	B		P-206040-3	C	BM	ZZM-8500-10EA	
BM	GD10-3124-60			P-206040-4	B		ZZM-8512-10E	
	GD10-3124-60	B		P-206040-5	B		ZZM-8400-11E	
	GD-3124-60F	C		ZZM-B-6324-14	C		ZZM-8500-12E	
	GB-3324-60D	C		ZZM-6324-34C	A		ZZM-8512-20E	
	P-206042-37-60F	C		ZZM-8024-16E	A	BM	ZZM-W-2400	
	P-206042-S-1LL	B	BM	ZZM-W-5300			ZZM-W-24XX	
BM	P-206042-S-2LK			ZZM-W-53XX	A		ZZM-2012-10AO	
	P-206042-S-2LK	B		ZZM-5324-10A	B		Sheet 1 & 2	
	ZZM-4041-12H	A		ZZM-5324-11A	B		ZZM-6124-C	
BM	P-206042-1			ZZM-5324-12F	A		ZZM-8212-E	
	P-206042-1	B		P-205197-A	A		ZZM-9100-10	
	P-206042-2	A		P-206040-NP	A		ZZM-8712-10Z	
	P-206042-3	A		P-206040-6	A			
	P-206042-4	A		P-206040-7	A			
	P-206042-5	A	BM	P-206041				
	ZZM-1024-20A	C		P-206041	C			
	P-206040-1	B	BM	P-206042-60P				
	ZZM-6024-C	A		GB-3024-60F	C			
BM	ZZM-C-55XX-A5			P-206042-32-60F	C			
	ZZM-C5520-A5	A		P-206042-P-1LL	B			
	ZZM-5516-18A	C	BM	P-206042-P-2LK				
	ZZM-6620-18C	B		P-206042-P-2LK	B			
	A-40877-C	A		P-206041-1	C			
	GB10-8524	A	BM	ZZM-W-5600-A				

APPENDIX D

CERTIFICATES OF COMPLIANCE

TEST REPORT
TRC-01554-01-QL

E.T.S.U 2

STEEL SALES
CORPORATION

3348 SOUTH PULASKI ROAD
P. O. Box 7940A — Chicago, Illinois 60680
Telephone: Bishop 7-7700

☐ ACTUAL
☒ NOMINAL

CERTIFICATE OF TESTS

REPORT No.

Purchaser Pyle National Div.
Brand Rex Corp. ATTN: PURCHASING AGENT
Address 1334 N. Kostner Ave.
Chicago, Illinois 60651 Date JULY 31, 19

No. Item	Purchaser's Order No.	Our Order No.	DESCRIPTION	SPECIFICATION
1	D 2540	126119	1527 lbs. 1-3/4" Hex X 12 Ft. Rdm	QQA 225-3c
2	(PARTIAL)		Alum 6061-T651 Std Screw Mach Stk	B211-62
3				
4			PYLE 33 ACCEPT	
5				

CHEMICAL COMPOSITION

Item	Al.	Cu.	Fe.	Si.	Mn.	Mg.	Zn.	Cr.	Ni.	Pb.	Sn.	C	Sul.	PH.	Ti.
1		from 0.15 to 0.40	0.7	from 0.4 to 0.8	0.15	from 0.8 to 1.2	0.25	from 0.04 to 0.35							0.15
3										Other Elements: Each 0.05					
4										Total 0.15					
5										Remainder: Aluminum					

TEST RESULTS

Item		Tensile P.S.I.	Yield P.S.I.	Elong % 2 in.	Red in Area %	Bend Test
1		Ultimate	Minimum	Minimum		
2		Minimum	35,000	10		
3		42,000				
4						
5						

Subscribed and sworn to before me this _____ day of _____ 19_____

_____
NOTARY PUBLIC

RESULTS AS ABOVE CERTIFIED
STEEL SALES CORPORATION
Signed _____

PUD-9003 WXX 0160 05/08/73 10.28

ALUMINUM COMPANY OF AMERICA

PITTSBURGH, PA.

CRESSONA PA

CODE NUMBER	ALCOA NUMBER
120-724869	CH 81163 B

INVOICE NO.	INVOICE DATE
22126153	8/31/73

GROSS WEIGHT	B/L NO.	DATE SHIPPED
	17972	8/31/73

VIA
OHIO FF

F.O.B.
DESTINATION

THE PYLE NATIONAL CO
DIV OF BRAND REX
1334 NORTH KOSTNER AVE
CHICAGO, ILL 60651

THE PYLE NATIONAL CO
DIV OF BRAND REX
1334 NORTH KOSTNER AVE
CHICAGO, ILL 60651

12-031

CUSTOMER P.O. NO. GOVT. CONTRACT NO.

D 1930

AUTHORIZED SIGNATURE(S)
Earl J. Sebolter
PLANT CHIEF METALLURGIST

ALCOA *products as follows*

ALUM EXTRUDED CLASS 1 HOLLOW SHAPES
PER FED SPEC QQA 200/8D CONTINUOUS
MARKED

ALCOA NUMBER	ALLOY AND TEMPER
CH 81163 B	6061-T6

ITEM NO.	ITEM DESCRIPTION	ACCT. CODE	QUANTITY SHIPPED PCS., FT., ETC.	POUNDS		
1	SECT 81203 (2.057) X 12 FT (CUST PT ZZM-7316-10AX) C/06	4003		4210		
2	SECT 81198 (3.145) X 12 FT (CUST PT ZZM-2020-10AX) C/06	4003		6259		
3	SECT 81202 (2.338) X 12 FT (CUST PT ZZM 2016-10AX) C/06	4003		13617		
				24086		

PYLE 33 ACCEPT

ITEM NO.	TOTAL SHIPPED TO DATE PCS., FT., ETC.	POUNDS	PART. OR COMPLETE	PACKAGES	LOT NUMBERS

SUMMARY SHIPMENT

P = PARTIAL, C = COMPLETE, PP = PRIOR PARTIAL, O = NO SHIPMENTS, L = OVERSHIPMENT

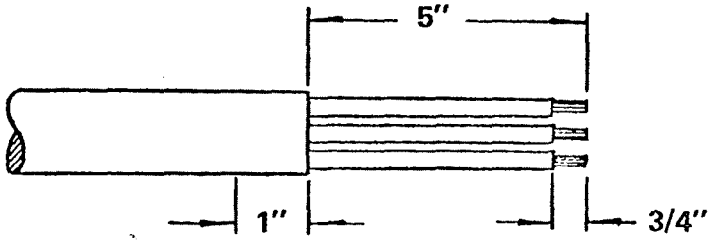
Pyle-National

D. C. Cable Reel Connector

Assembly and Terminating Instructions

A. Use suitable tools and strippers to remove cable sheath and conductor insulation. Be sure cable end is cut square.

Refer to drawing below for wire cutting and stripping dimensions.



Remove any ridges or grooves by scarfing the edges to provide a smooth surface on the cable to insure good grommet sealing.

B. Slide the gland nut, cable grip or anti-friction washer, grommet and cable adapter over the cable in the order named. Be sure the right size grommet has been selected to obtain a good grommet seal. If a dust cover with ring and chain is used, ring must be placed on cable barrel before terminating. See Figure 1.

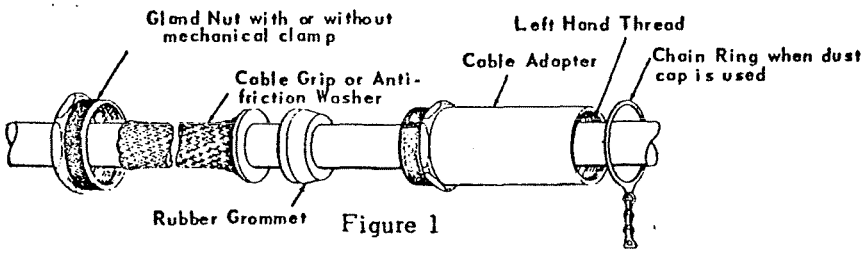


Figure 1

C. Place proper conductors in contact cavities and tighten all pressure screws to 25 foot/pounds torque. For insulations with indicator light assemblies, the following must be done before tightening: **Place white "Light" wire in positive contact cavity. Place black "light" wire in negative contact cavity. Tighten all pressure screws to 25 foot/pounds torque.**

D. Support the barrel assembly in a vise having smooth-faced jaws; shells with female skirt have flange for holding. Shells with male skirt but without flange should be held with dust cover or female shell as a holding fixture. The shell keys are designed to withstand the assembly torque.

E. Apply cable adapter or insulation clamp nut by hand, turning counter-clockwise (left hand thread) until hand-tight. **Apply wrench to cable adapter or insulation clamp and tighten until it shoulders fully on barrel.** See Figure 3.

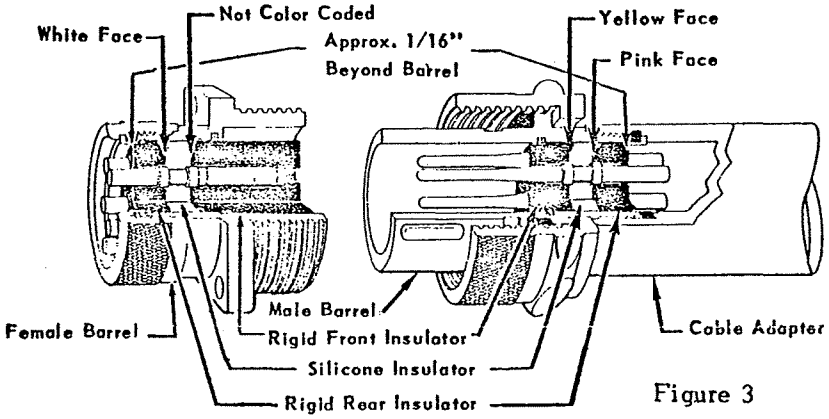


Figure 3

F. Slip grommet into cable adapter and engage either cable grip or gland washer in gland nut. **Draw up tight with wrench.** If split clamp nut is used, tighten clamp screws.

LIGHT BULB REPLACEMENT

G. Follow steps D to F in reverse order to replace light bulb. It is recommended, that any time the connector is entered, a new light bulb be inserted.

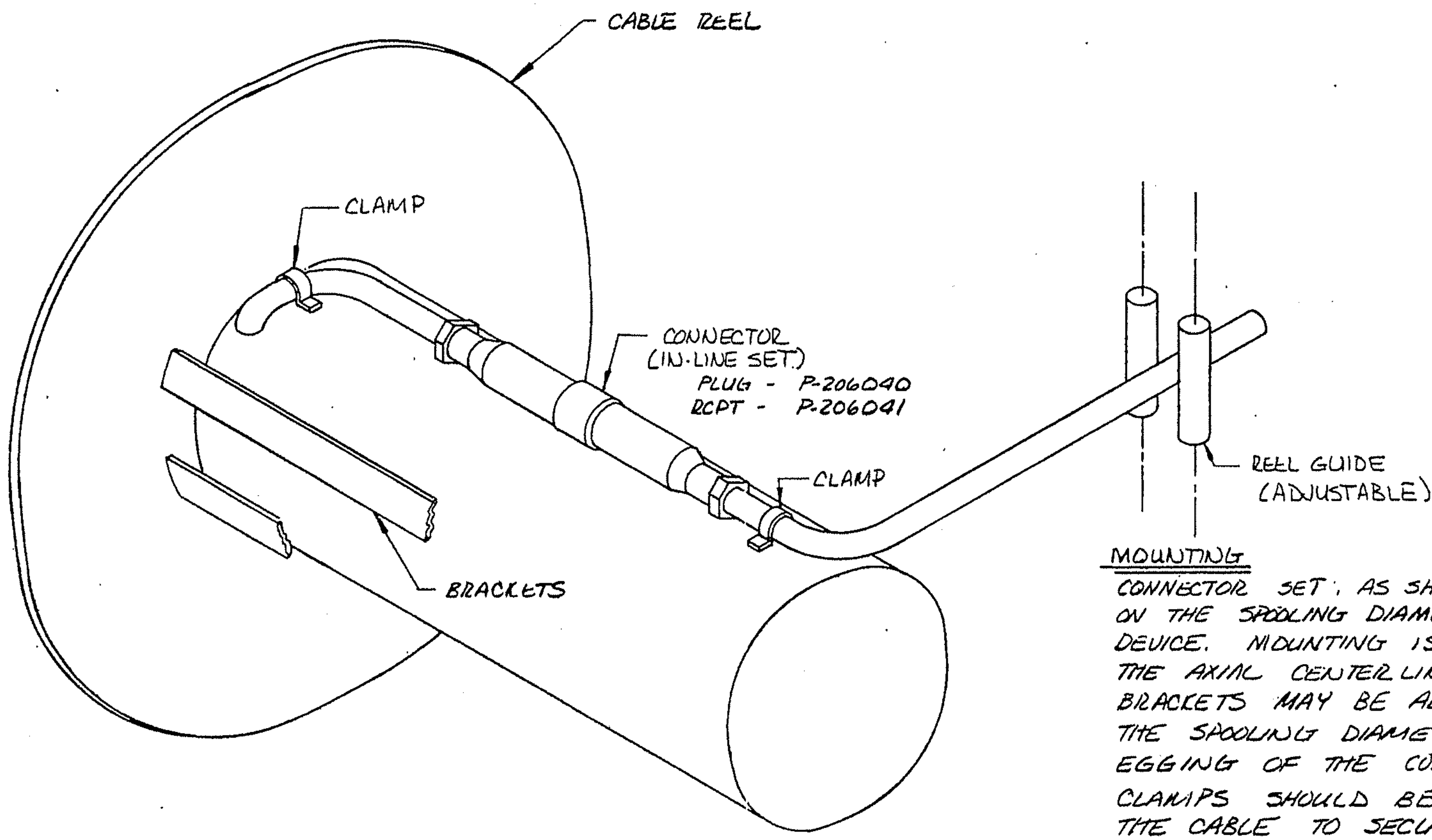
The following is a guide relative to our recommended practice for removing foreign matter from Pyle-Star-Line Neptune Series connectors when they become contaminated:

1. Blow-off surface material with compressed air.
2. Do Not Use Solvents of any kind to remove oil or grease. Use a solution consisting of 1-1 1/2 fluid ounces of Ninol 1281 detergent in 4 gallons of water. (Ninol is a product of Stepan Chemical Co., Edans and Winnetka Road, Northfield, Illinois, Phone: A.C.312 446-7500
3. For best results, the solution should be at a temperature of 160 to 180°.
4. A stiff bristle brush should be used to scour the surface.
5. Wash with a 50% solution of alcohol & water. Any potable water can be used.
6. Blow off surplus water and surface moisture.
7. Wash only with alcohol (not denatured).
8. Blow dry with air. Warm air from a heat gun can be used at a temperature tolerable to the touch of bare hands. Open flames of any kind must not be used.
9. After connector is thoroughly dry, check insulation resistance between contacts and between contacts and shell. The insulation resistance readings will be affected by the circuit conditions. This must be taken into consideration before energy is applied to the connectors.
10. If an oven is used for drying, temperature should be maintained at 160° to 180°.

PART DRWG. No. EXC-4165 SHEET 1 OF 1 SIZE (C)

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED

CLAMPS AND BRACKETS MAY BE MADE FROM GLASS REINFORCED INSULATING MATERIAL. USE INSULATED FASTNERS FOR ATTACHMENT.



MOUNTING

CONNECTOR SET, AS SHOWN, IS MOUNTED ON THE SPOOLING DIAMETER OF A REEL DEVICE. MOUNTING IS ORIENTED ON THE AXIAL CENTER LINE OF THE REEL. BRACKETS MAY BE ADDED TO RAISE THE SPOOLING DIAMETER TO PREVENT EGGING OF THE CONDUCTOR WRAP. CLAMPS SHOULD BE ATTACHED TO THE CABLE TO SECURE THE TOTAL ASSEMBLY TO THE REEL.

USBM CONTRACT NUMBER- H0110423

NOTE:
MOUNT RECEPTACLE TO EXISTING BRUSH SYSTEM. PLUG IS TO BE ATTACHED TO CABLE. MOUNT IN ACCORDANCE WITH USBM SCHEDULE 2 G.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	FRACTIONS —/— DECIMALS —/— ANGLES —/—
MATERIAL	—/—
FINISH	—/—
SUPERSEDES	DATED
NEXT ASSY.	USED ON
APPLICATION	
DRAWN	WALSE
DATE	15 Jan 73
CHECKED	
PRODUCT ENGINEER	ABW
PRODUCTION ENGINEERING	
QUALITY CONTROL	
ENGINEERING APPROVAL	
PART TYPE	

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS 60651

TITLE USBM D.C. REEL CONNECTOR TYPICAL ASSEMBLY MOUNTING 550 V.D.C. 400 A.

SIZE	CODE IDENT. NO.	DRAWING NUMBER
C	49367	EXC-4165

SCALE —/— SHEET 1 OF 1

K & E CO. 10-7184

PARTS LIST

THE PYLE-NATIONAL CO.

Code Ident. No. 49367

RELEASE STATUS		SERIAL NO.
LIMITED		374-L
PROCESSING		
PRODUCTION		

PART NO.	P-206040
NAME	PLUG CONNECTOR D.C. REEL CONNECTOR
DWG. NO.	P-206040

DATE: 19 FEB 73 BY: ASW CHECK _____ SHEET 1 OF 1

QTY.	PART NUMBER	DESCRIPTION	ITEM
1	P-206042-605	INSERT S.A.	1.
1	ZZM-1024-20A	SHELL, PLUG	2.
1	P-206040-1	NUT	3.
1	ZZM-6024-C	BARREL SEAL	4.
1	ZZM-C-5524-A	DUST COVER S.A.	5.
1	P-206040-2	ADAPTER S.A.	6.
1	ZZM-B-6324-34	GROMMET S.A.	7.
1	ZZM-8024-34E	GLAND WASHER	8.
1	ZZM-W-5324	CABLE CLAMP S.A.	9.
1	P-205197-A	NAME PLATE	10.
1	P-206040-NP	NAME PLATE	11.

REV.	DATE	DESCRIPTION	ECO	REV.	DATE	DESCRIPTION
A	6-15-73	ADDED ITEM 11	13940			

The Pyle-National Company

INSERTS COMPOSITE PARTS LIST

PART DRWG. NO. P-206042-605 (

NAME FEMALE INSERT ASSEMBLY

SIZE 24-

BY ASW DATE 16 FEB.

CHK. APPR.

Note 1. To construct a particular insert, use the components shown in the vertical columns below the desired Insert Suffix Numbers.

Note 2. To construct an insert assembly with an alternate key position, such as GB/GD10-24-60S2L03, add the 03 alternate suffix to the Female and Back-Cap insulations only, so that the Female Insulation number becomes GB/GD10-3124-6003, and the Back-Cap Insulation number becomes GB/GD3924-60F03 (The center insulation is molded with all keys).

QTY.	Basic Component NUMBER & NAME	Component Suffix Number - Add to Basic Number															
		SIL	SIK	SIV	SID	SIG	S2L	S2K	S2V	S2D	S2G	S3L	S3K	S3V	S3D	S3G	
1	GD10-3124- Female Insulation											60					
1	GB-3324- Center Insulation											60D					
1	P-206042-37- Back-Cap Insulation											60F					
	Back-Cap Insula																
2	P-206042-5- Socket Contact											1LL					
1	P-206042-5- Socket Contact S.A.											2LK					
3	100048 TERMINAL SCREW			SOCKET	SET	SCRW.	STL	CUP PT.					1/2-20 UNF-3A x 1/2				
1	P-206042-1 LIGHT ASSY.																
	Socket Contact ZZM- Hex Key																
	Assembly Labor																
	Assembly Burden																
	Total Cost																

Form No. E-34 10/64

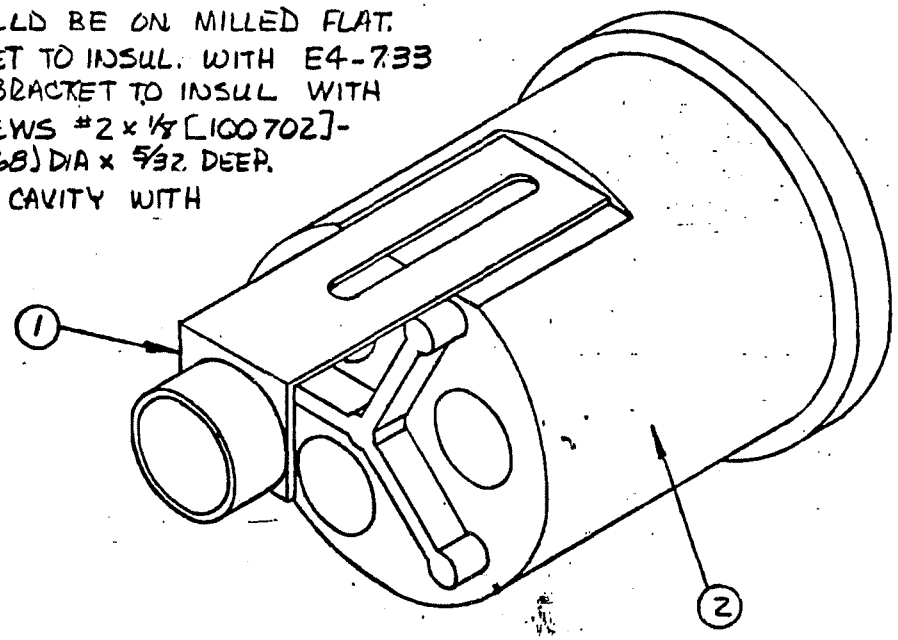
SEE D # SAME FOR ASSEMBLY

LIMITED RELEASE *ZL-L

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED

SIZE (B) | SHEET OF | PART DWG. No.

NOTE:
BEFORE INSERT STACK ASSEMBLY,
PLACE RESISTORS ON LIGHT ASSEMBLY
IN 3/8 DIA. HOLE IN REAR INSULATION.
BRACKET SHOULD BE ON MILLED FLAT.
BOND BRACKET TO INSUL. WITH E4-7.33
OR FASTEN BRACKET TO INSUL WITH
(4) DRIVE SCREWS #2 x 1/8 [100702]-
DRILL #44 (.086) DIA x 5/32 DEEP.
FILL RESISTOR CAVITY WITH
E4-7.33



ITEM	PART NUMBER
1	P-206042-1
2	P-206042-37-60F

LIMITED RELEASE 374-L

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRAC ± DEC ± ANG ±	DRAWN WALSE PBR	THE PYLE-NATIONAL COMPANY CHICAGO, ILLINOIS 60651	
			DATE 30 MAR 73		
			CHECKED	TITLE USBM REEL CONNECTOR INSULATION ASSEMBLY	
		MATERIAL ±	PRODUCT ENGINEER ASW		
			PRODUCTION ENGINEERING		
		FINISH ±	QUALITY CONTROL	SIZE B	CODE IDENT. NO. 49367
NEXT ASSY.	USED ON	SUPERSEDES DATED	ENGINEERING APPROVAL		DRAWING NUMBER P-206042-60S
APPLICATION			PART TYPE	SCALE ±	SHEET 1 OF 1

PARTS LIST

THE PYLE-NATIONAL CO.

Code Ident. No. 49367

RELEASE STATUS	
PRODUCTION	X
SPECIALTY	

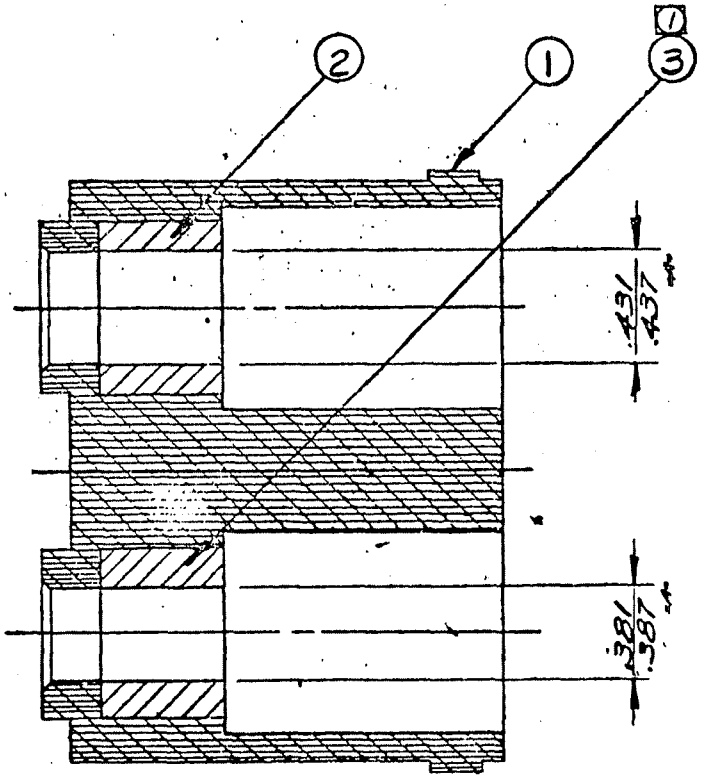
PART NO.	GD 10-3124-60
NAME	INSULATION ASSY, FEMALE FRONT - 2W3P, SIZE #24
DWG. NO.	GD 10-3124-60

DATE: 1-14-64 BY: WRH CHECK _____ SHEET 1 OF 1

QTY.	PART NUMBER	DESCRIPTION	ITEM
		DETAIL PARTS	
1	GD-3124-60F	INSUL., FEMALE FRONT	1
2	GD-3841-10V	INSERT, "PYLEXNAL"	2
		#4/0 STD. CONTACT	
1	GD-3841-11V	INSERT "PYLEXNAL"	3
		#4/0 POLARIZING CONTACT	
	NOTE: LOCATE ITEM 3 IN CAVITY 3 G.		

REV.	DATE	ECO	DESCRIPTION	REV.	DATE	DESCRIPTION
A	2-3-67	11939	GD WAS AE			

NOTE: [1] ITEM 3 TO BE INSERTED IN CAVITY 3 G.

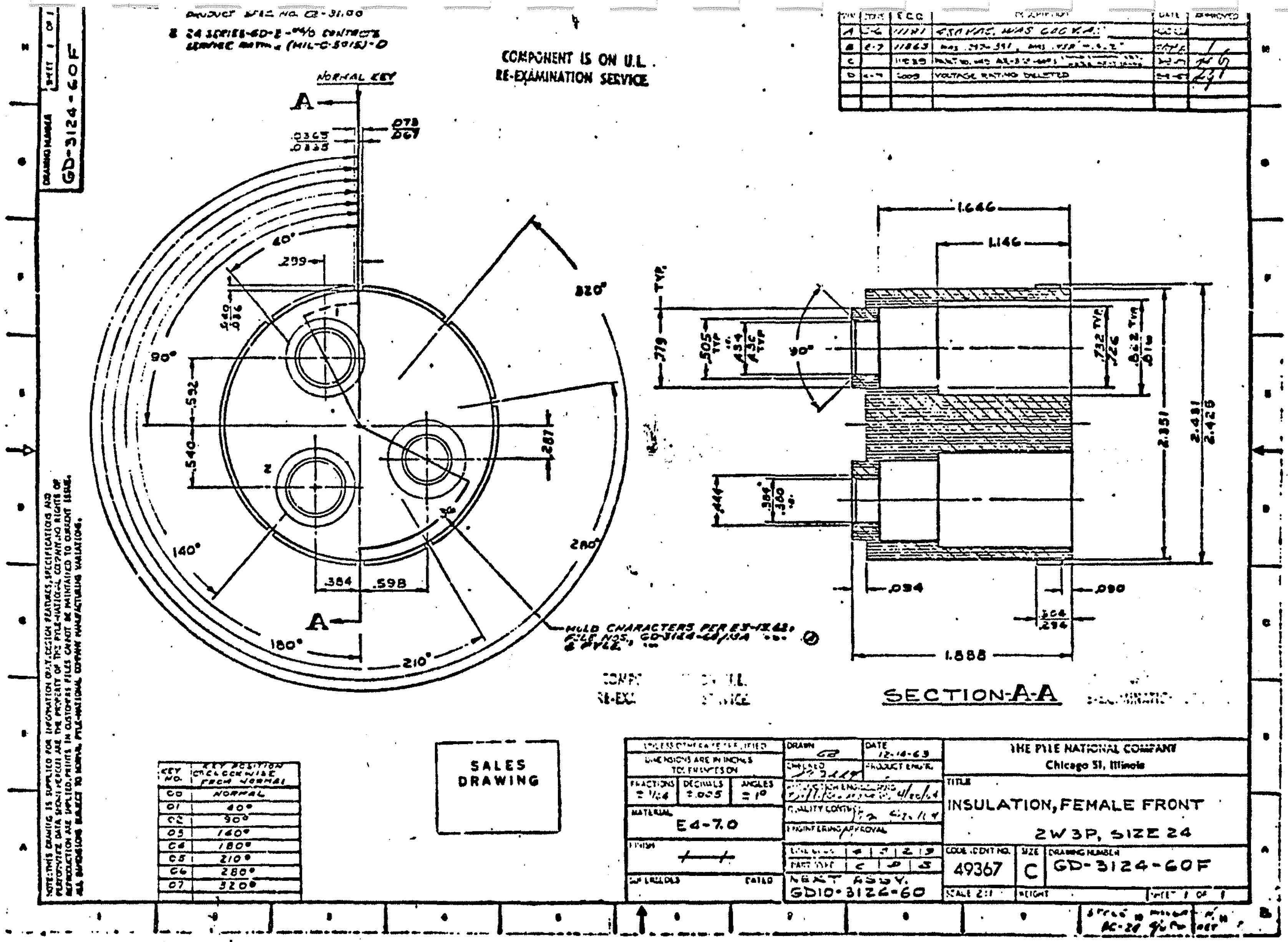


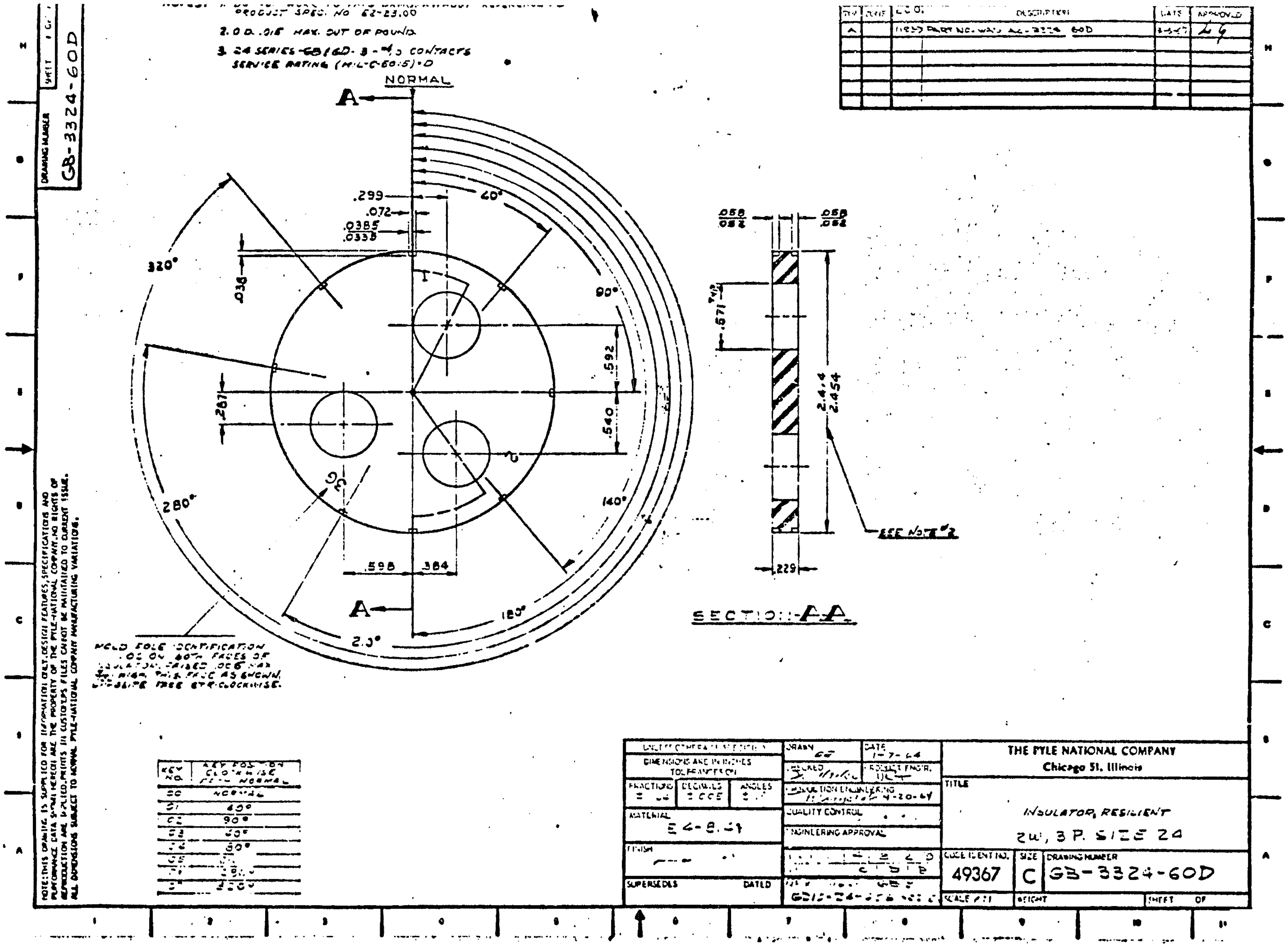
REVISIONS					
SYM	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
A	D-5 C-5	11165	ADDED .431/.437 & .381/.387	12-9-64	
B		11939	PART NO. WAS AE10-3124-60	3-2-67	

ITEM	DESCRIPTION	PART NO.	QTY.
		11V	1
2	PYLEXNAL INSERT	GD-3841-10V	2
1	FEMALE INSULATION	GD-3124-60F	1

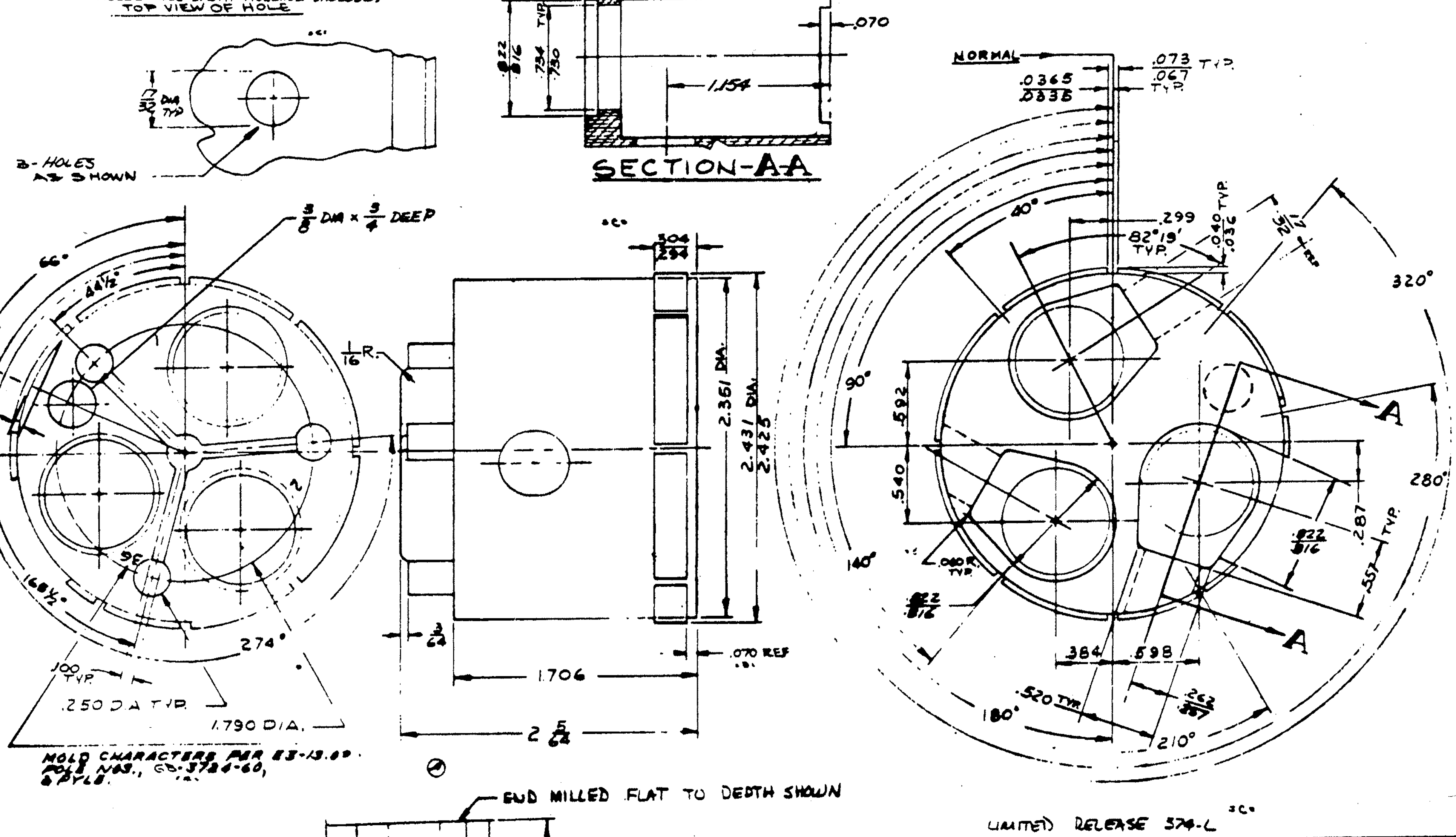
UNLESS OTHERWISE SPECIFIED	DRAWN	DATE 2-3-64	THE PYLE NATIONAL COMPANY Chicago 51, Illinois
DIMENSIONS ARE IN INCHES TOLERANCES ON	CHECKED WRH	PRODUCT ENG'R. WRH	
FRACTIONS — DECIMALS — ANGLES —	PRODUCTION ENGINEERING O.A. Kayatek 4-20-64		TITLE INSULATION ASS'Y, FEMALE FRONT 2W, 3P, SIZE 24
MATERIAL —	QUALITY CONTROL Bm 4-20-64		
FINISH —	ENGINEERING APPROVAL	4399 C D D	CODE IDENT NO. 49367 / SIZE B / DRAWING NUMBER GD10-3124-60
SUPERSEDES — DATED	NEXT ASS'Y. GD10-24-60 S SERIES		SCALE 2:1 / WEIGHT / SHEET 1 OF 1

DRAWING NUMBER GD10-3124-60


COMPONENT IS ON U.L. RE-EXAMINATION SERVICE
NORMAL KEY
SECTION-A-A
MOLD CHARACTERS PER E3-1242, FILE NOS. GD-3124-60/UA
SALES DRAWING
THE PYLE NATIONAL COMPANY
Chicago 51, Illinois
INSULATION, FEMALE FRONT
2W3P, SIZE 24
49367
C
GD-3124-60F
MATERIAL E4-7.0
NEXT ASSY. GD10-3124-60
KEY NO. | KEY POSITION CLOCKWISE FROM NORMAL
00 NORMAL
01 40°
02 90°
03 140°
04 180°
05 210°
06 280°
07 320°
VOLTAGE RATING DELETED
NOTE: THIS DRAWING IS SUPPLIED FOR INFORMATION ONLY. DESIGN FEATURES, SPECIFICATIONS AND PERFORMANCE DATA SHOWN HEREON ARE THE PROPERTY OF THE PYLE-NATIONAL COMPANY. NO RIGHTS OF REPRODUCTION ARE IMPLIED. PRINTS IN CUSTOMERS FILES CANNOT BE MAINTAINED TO CURRENT ISSUE. ALL DIMENSIONS SUBJECT TO NORMAL PYLE-NATIONAL COMPANY MANUFACTURING VARIATIONS.


PRODUCT SPEC. NO 62-23.00
2. O.D. .015 MAX. OUT OF ROUND
3. 24 SERIES-GB(6D-3-#) CONTACTS SERVICE RATING (MIL-C-60:5)-D
NORMAL
A
.299
.072
.0385
.0335
.038
.281
.598
.384
.592
.540
20°
90°
140°
180°
230°
280°
320°
SEE NOTE #2
2.4.4
2.454
.229
.058
.052
.671
SECTION A-A
THE PYLE NATIONAL COMPANY
Chicago 51, Illinois
TITLE
INSULATOR, RESILIENT
2W, 3P, SIZE 24
49367
C
GB-3324-60D
DRAWING NUMBER
DIMENSIONS ARE IN INCHES
FRACTIONS
DECIMALS
ANGLES
MATERIAL
FINISH
SUPERSEDES
DATED
DRAWN
DATE
1-7-64
CHECKED
QUALITY CONTROL
ENGINEERING APPROVAL
SCALE
WEIGHT
SHEET
OF
DESCRIPTION
DATE
APPROVED
KEY NO.
NORMAL
60°
90°
NOTE: THIS DRAWING IS SUPPLIED FOR INFORMATION ONLY. DESIGN FEATURES, SPECIFICATIONS AND PERFORMANCE DATA SHOWN HEREON ARE THE PROPERTY OF THE PYLE-NATIONAL COMPANY. NO RIGHTS OF REPRODUCTION ARE IMPLIED. PRINTS IN CUSTOMERS FILES CANNOT BE MAINTAINED TO CURRENT ISSUE. ALL DIMENSIONS SUBJECT TO NORMAL PYLE-NATIONAL COMPANY MANUFACTURING VARIATIONS.

NOTES: DO NOT WORK TO THIS DRWG. WITHOUT REFERENCE TO PRODUCT SPEC. NO. E2-30.00
2. FORM -24 SERIES GB & GD..
3- #4/0 CONTACTS
3 IDENTICAL TO GB-3724-60F EXCEPT PRESSURE SCREW HOLES AND LIGHT HOUSING GROOVE.



KEY NO.	KEY POSITION CLOCKWISE FROM NORMAL
00	NORMAL
01	40°
02	90°
03	140°
04	180°
05	210°
06	280°
07	320°

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS ±1/64	DECIMALS ±.005	ANGLES ±1°
MATERIAL E4-7.0		
FINISH		
SUPERSEDES	DATED	

DRAWN | DATE 2-20-64
CHECKED | PRODUCT ENG'R.
PRODUCTION ENGINEERING
QUALITY CONTROL 4-20-64
ENGINEERING APPROVAL

THE PYLE NATIONAL COMPANY
Chicago 51, Illinois

TITLE
INSULATION BACKCAP FEMALE #4/0 CONTACT 2W, 3P

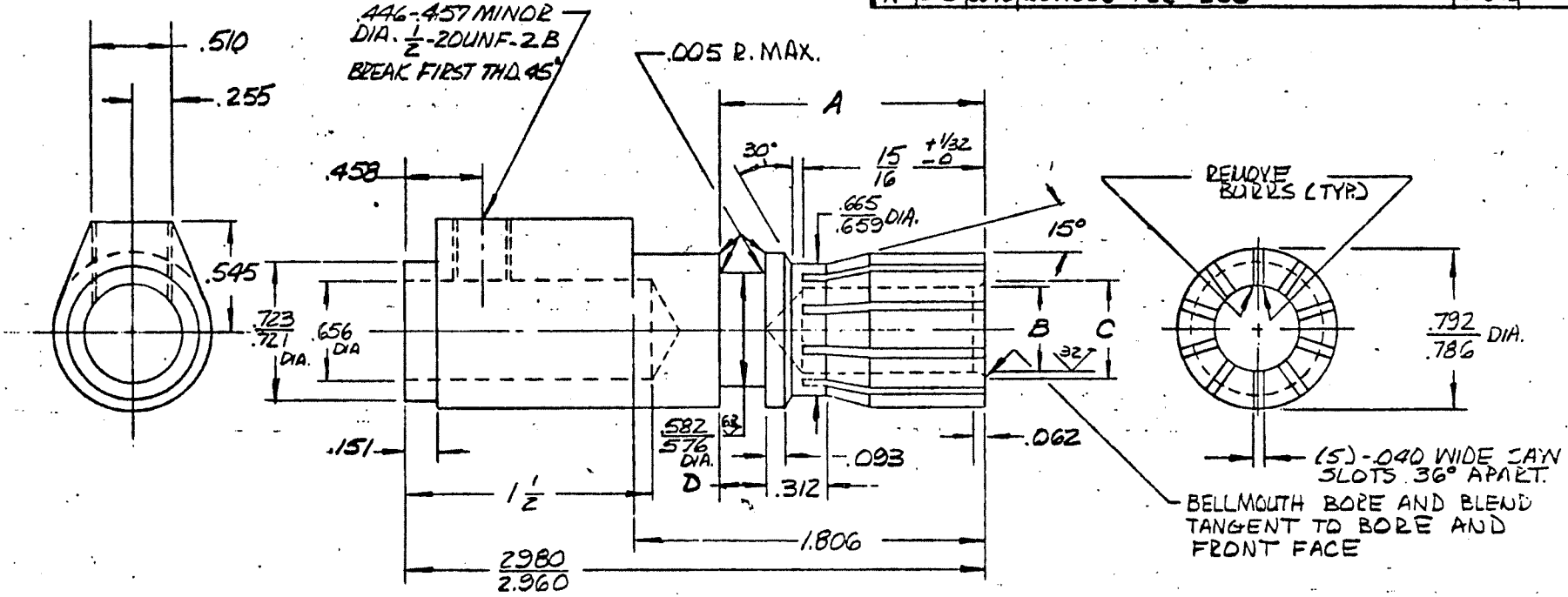
CODE IDENT NO.	SIZE	DRAWING NUMBER
49367	C	P-206092-37-60F

SCALE | WEIGHT | SHEET OF

DRAWING NUMBER P206092-37-60F SHEET 1 OF

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
A	D-3	8340	REVISED PER ECO	6-15-73	

SIZE (B) PART DRWG. No. SHEET OF



NOTE:
1.) DO NOT WORK TO THIS DWG. WITHOUT REFERENCE TO PROD. SPEC. E2-40.00

PART NUMBER	A	B±.001	C	D	FINISH
P-206042-5-1LL	1.355	.428	.490	.234	E4-9.01 CL2
P-206042-5-2	1.382	.378	.440	.261	NEXT ASSY.

LIMITED RELEASE 374-L

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON	DRAWN WALSE	THE PYLE-NATIONAL COMPANY	
		FRAC ±V64 | DEC ±.005 | ANG ±1°	DATE 7 FEB 73	CHICAGO, ILLINOIS 60651	
		MATERIAL E4-2.00	CHECKED	TITLE USBM REEL CONNECTOR FEMALE CONTACTS	
		FINISH SEE TABLE	PRODUCT ENGINEER ASW		
		SUPERSEDES	DATED	PRODUCTION ENGINEERING	
			QUALITY CONTROL	SIZE B | CODE IDENT. NO. 49367 | DRAWING NUMBER (ISSUED) P-206042-5-1LL	
NEXT ASSY.	USED ON		ENGINEERING APPROVAL		
APPLICATION			PART TYPE C E A	SCALE H	SHEET 1 OF 1

PARTS LIST

THE PYLE-NATIONAL CO.

Code Ident. No. 49367

RELEASE STATUS		SERIAL NO.
LIMITED		374-L
PROCESSING		
PRODUCTION		

PART NO.	P-206042-5-2LK
NAME	GROUND CONTACT, SOCKET
DWG. NO.	P-206042-5-2LK

DATE: 2-16-73 BY: ASW CHECK _____ SHEET 1 OF 1

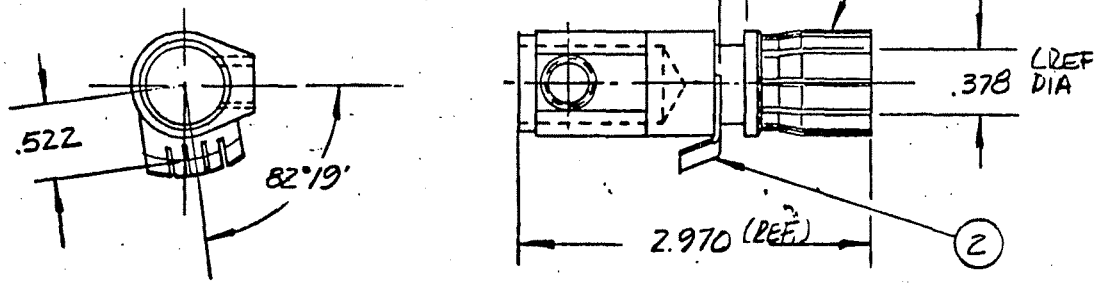
QTY.	PART NUMBER	DESCRIPTION	ITEM
1	P-206042-5-2	GROUND CONTACT SKT	1
1	ZZM-4041-12H	GROUND CLIP	2

REV.	DATE	DESCRIPTION	REV.	DATE	DESCRIPTION

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED

SHEET OF SIZE (B)

PART DRWG. NO.



P-206042-5-2LK	P-206042-5-2	ZZM-4091-12H
ASSY PART NUMBER	ITEM #1 GRID CONTACT	ITEM #2 GRID CLIP

LIMITED RELEASE 374-L

NOTE: THIS DRAWING IS SUPPLIED FOR INFORMATION ONLY. PRINTS IN CUSTOMERS FILES CANNOT BE MAINTAINED TO CURRENT ISSUE. ALL DIMENSIONS SUBJECT TO NORMAL PYLE-NATIONAL COMPANY MANUFACTURING VARIATIONS.

NEXT ASSY.	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON

FRAC	DEC	ANG
—	±.005	±1°

MATERIAL —

FINISH E3-9.02 CL.K

SUPERSEDES DATED

DRAWN	WALSE P.B.R.
DATE	16 FEB 73
CHECKED	ASW
PRODUCT ENGINEER	ASW
PRODUCTION ENGINEERING	
QUALITY CONTROL	
ENGINEERING APPROVAL	
PART TYPE	C E A

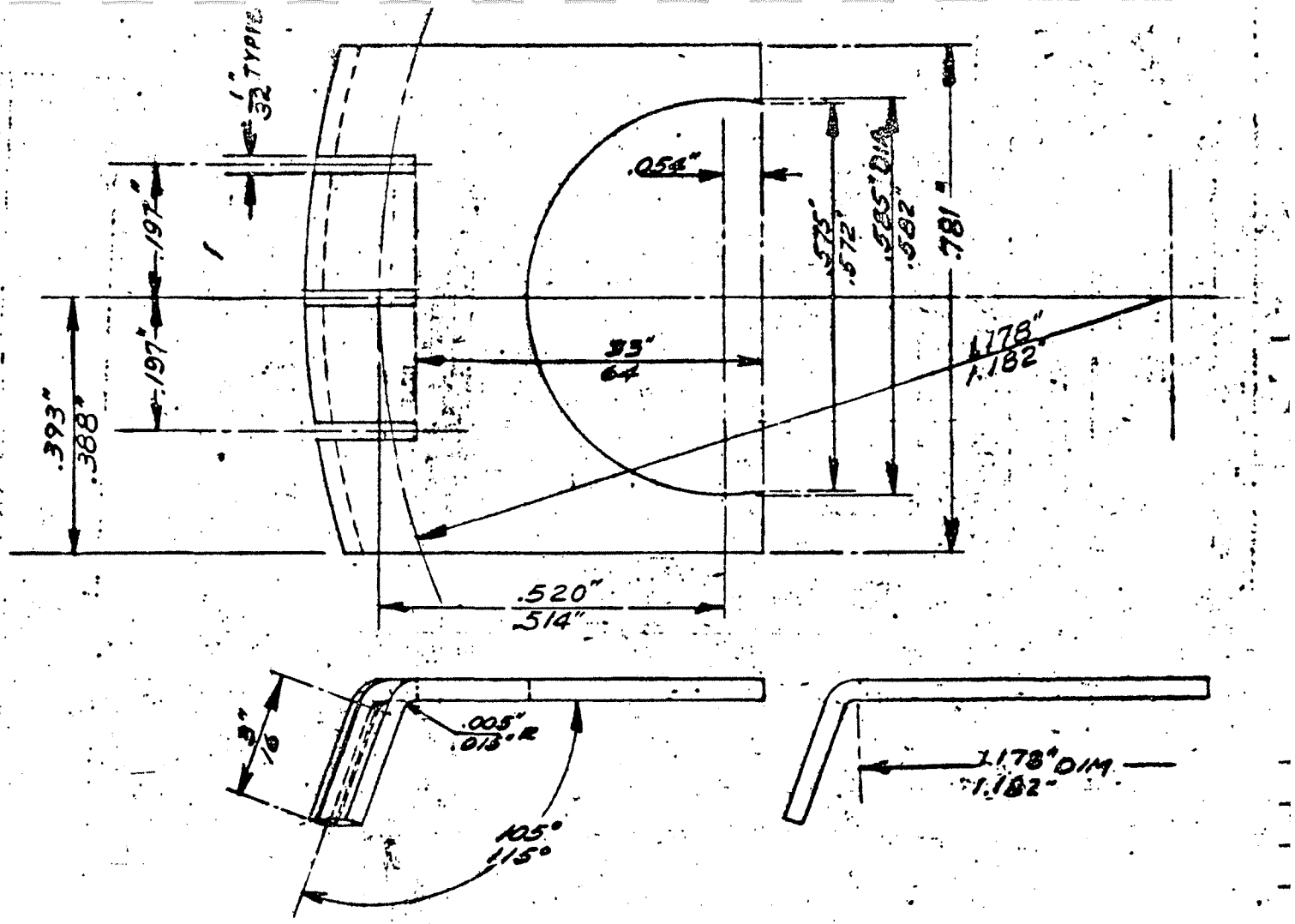
THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS 60651

TITLE USBM REEL CONNECTOR
FEMALE GRID CONTACT ASSY

SIZE	CODE IDENT. NO.	DRAWING NUMBER
B	49367	P-206042-5-2LK

SCALE — SHEET 1 OF 1

ZZM-4041-12H(A)



INTERIM DESIGN

REV.	DATE	BY	C.O.	CHANGE

UNLESS OTHERWISE SHOWN

TOLERANCES

FRACTIONAL ± 1/64"

DECIMAL ± .005"

ANGULAR ± 1°

SURFACE FINISH

MACHINED SURFACE 125

ROUGH FILE OR GRIND 250

EXCEPT ROUGH CASTINGS

SEE P. N. STD. 99.010-T

ITEM	DESCRIPTION	PART NO.	Q'TY

FINISH H

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS

MATERIAL
PER PN STD. E4-2.2
#22 (.025±.002") GAGE

NAME OF PART
#4/0 GROUND CLIP
CONFIG. 24-24 & 24-96

SUPERSEDES	PRODUCT ENGR. DATE	PROCESS ENGR. DATE	PATTERN NO.	SCALE
	4/19/57			4 = 1
FIRST USED ON	DRAWN DATE	CHECKED DATE	PART NO.	SIZE
	G KEITH 4-19-57	ES 4/22/57	ZZM-4	11-12H (A)

PARTS LIST

THE PYLE-NATIONAL CO.

Code Ident. No. 49367

RELEASE STATUS		SERIAL NO.
LIMITED		374-L
PROCESSING		
PRODUCTION		

PART NO.	P-206042-1
NAME	USBM REEL CONNECTOR LIGHT ASSEMBLY
DWG. NO.	P-206042-1

DATE: 29 MAR 73 BY: ASW CHECK _____ SHEET 1 OF 1

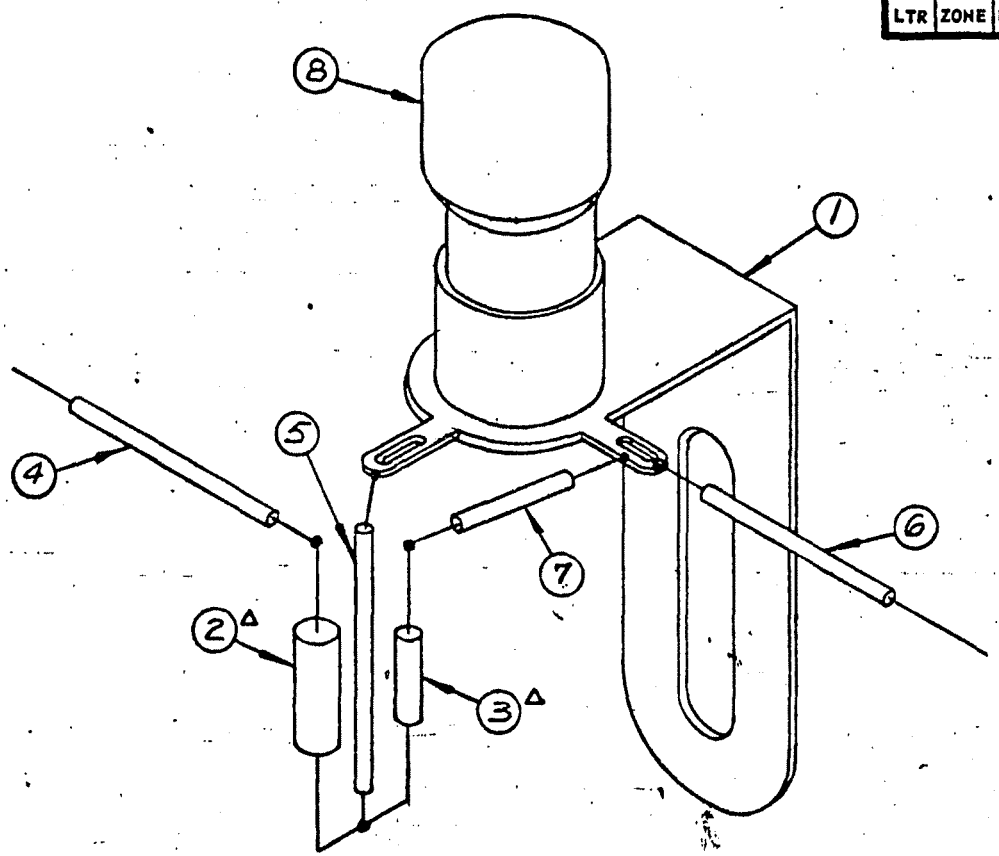
QTY.	PART NUMBER	DESCRIPTION	ITEM
1	P-206042-2	LIGHT BRACKET	1.
1	P-206042-4	RESISTOR	2.
1	P-206042-5	RESISTOR	3.
9"	E4-1002 #18 GA.	WIRE-COLOR WHITE	4.
9"	E4-1002 #18 GA.	WIRE-COLOR BLACK	5.
1	P-206042-3	NEON LIGHT	6.

REV.	DATE	DESCRIPTION	REV.	DATE	DESCRIPTION

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED

SHEET OF SIZE (B)

PART DRWG. No.



ITEM	PART NUMBER
1	P-206042-2
2	P-206042-4
3	P-206042-5
4 *	E4-10.02 WHITE 6" #18 GA.
5 *	E4-10.02 WHITE 3" #18 GA.
6 *	E4-10.02 6" #18 GA.
7 *	E4-10.02 3" #18 GA.
8	P-206042-3

NOTES

1. * DENOTES BOTH ENDS OF WIRE STRIPPED BACK ½".
2. • DENOTES SOLDER JOINT.
3. Δ DENOTES RESISTOR LEADS ½" LONG

LIMITED RELEASE 374-L

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NEXT ASSY.	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON FRAC | DEC | ANG

MATERIAL —//—

FINISH —//—

SUPERSEDES DATED

DRAWN	WALSE EBR
DATE	29 MAR 73
CHECKED	
PRODUCT ENGINEER	ASW
PRODUCTION ENGINEERING	
QUALITY CONTROL	
ENGINEERING APPROVAL	
PART TYPE	

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS 60651

TITLE USBM REEL CONNECTOR LIGHT ASSEMBLY

SIZE	CODE IDENT. NO.	DRAWING NUMBER
B	49367	P-206042-1

SCALE —//— SHEET 1 OF 1

SIZE (A)

PART DRWG NO.

PURCHASED PART

REVISIONS				
LTR	ECO	DESCRIPTION	DATE	APPROVED

VENDOR:
ALLIED ELECTRONICS
2400 W. WASHINGTON BLVD.
CHICAGO, ILL.
OR EQUIV.

VENDOR CATALOG NO.:
730

NOMENCLATURE:
LIGHT SOCKET
SERIES 600
CANDELABRA SCREW W/ 90° BRACKET

SPECIFICATIONS:

PART NO.:
844-2503

LIMITED RELEASE 374-L

NEXT ASSY.	USE ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± | DECIMALS ± | ANGLES ±
MATERIAL —
FINISH —
SUPERSEDES DATED

DRAWN WALSE	DATE 29 MAR 73		
CHECKED	ENGINEER ASW	P.R. B	
PRODUCTION ENGINEERING			
QUALITY CONTROL			
ENGINEERING APPROVAL			
LINE CODE			
PART TYPE			

THE PYLE-NATIONAL COMPANY
Chicago, Illinois 60651

TITLE USBM REEL CONNECTOR
LIGHT BRACKET

SIZE	CODE IDENT. NO.	DRAWING NO.
A	49367	P-206042-2

SCALE — SHEET 1 OF 1

SIZE (A)

PART DRWG No.

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REVISIONS				
LTR	ECO	DESCRIPTION	DATE	APPROVED

PURCHASED PART

VENDOR:

ALLIED ELECTRONICS
2400 W. WASHINGTON BLVD.
CHICAGO, ILL.
OR EQUIV

VENDOR CATALOG NO.:

730

NOMENCLATURE:

N-58
NEON LIGHT

SPECIFICATIONS:

210-250 V.D.C.
100K Ω RESISTOR IN BASE

PART NO.:

749-8316

LIMITED RELEASE 374-L

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ON	DRAWN WALSE	DATE 29 MAR 73	THE PYLE-NATIONAL COMPANY Chicago, Illinois 60651
		FRACTIONS ± DECIMALS ± ANGLES ±	CHECKED ASW	ENGINEER	P.R. B
			PRODUCTION ENGINEERING		TITLE USBM REEL CONNECTOR LIGHT
		MATERIAL ±	QUALITY CONTROL		
			ENGINEERING APPROVAL		
		FINISH ±			SIZE A | CODE IDENT. NO. 49367 | DRAWING NO. P-206042-3
NEXT ASSY.	USE ON		LINE CODE		
APPLICATION		SUPERSEDES DATED	PART TYPE		SCALE ± | SHEET OF 1

SIZE (A)

PART DRWG NO.

PURCHASED PART

REVISIONS				
LTR	ECO	DESCRIPTION	DATE	APPROVED

VENDOR:

ALLIED ELECTRONICS
2400 W. WASHINGTON BLVD.
CHICAGO, ILL.
OR EQUIV.

VENDOR CATALOG NO.:

730

NOMENCLATURE:

120 KΩ, 1 WATT, RESISTOR

SPECIFICATIONS:

5% TOLERANCE

PART NO.:

824-5727

LIMITED RELEASE 374-C

NEXT ASSY.	USE ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± | DECIMALS ± | ANGLES ±
MATERIAL —//—
FINISH —//—
SUPERSEDES DATED

DRAWN	WALSE	DATE	29 MAR 73
CHECKED		ENGINEER	P.R. B
PRODUCTION ENGINEERING			
QUALITY CONTROL			
ENGINEERING APPROVAL			
LINE CODE			
PART TYPE			

THE PYLE-NATIONAL COMPANY
Chicago, Illinois 60651

TITLE USBM REEL CONNECTOR
RESISTOR

SIZE	CODE IDENT. NO.	DRAWING NO.
A	49367	P-206042-4

SCALE —//— SHEET 1 OF 1

F 122 Rev 2/66

SIZ (A

PART DRWG NO.

REVISIONS

LTR	ECO	DESCRIPTION	DATE	APPROVED

PURCHASED PART

VENDOR:

ALLIED ELECTRONICS
2400 W. WASHINGTON BLVD.
CHICAGO, ILL
OR EQUIV.

VENDOR CATALOG NO.:

730

NOMENCLATURE: **SPECIFICATIONS:**

330 KΩ, 1/4 WATT, 5% TOLERANCE
RESISTOR

PART NO.:

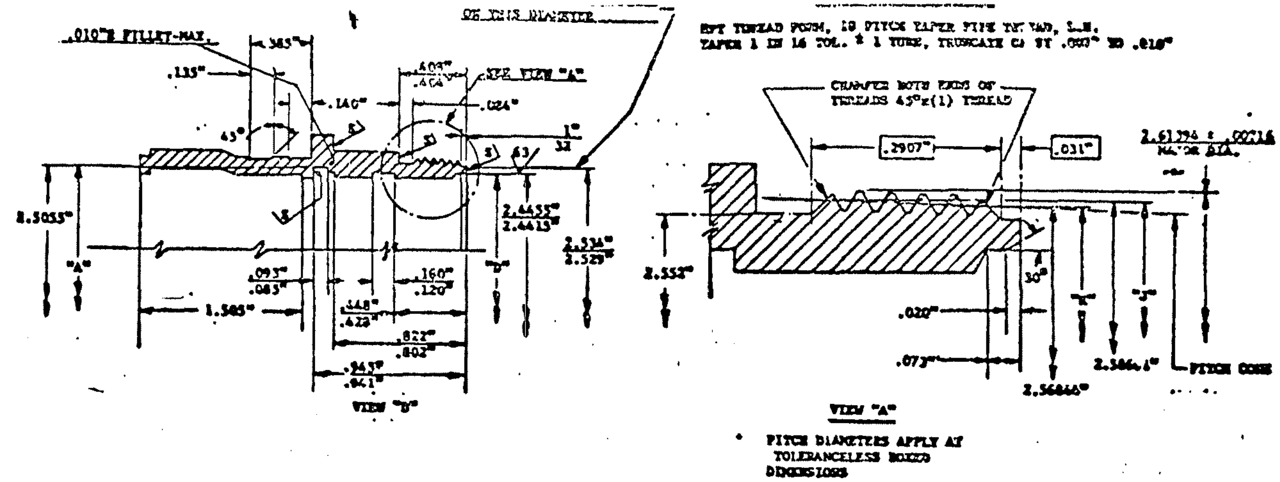
824-1796

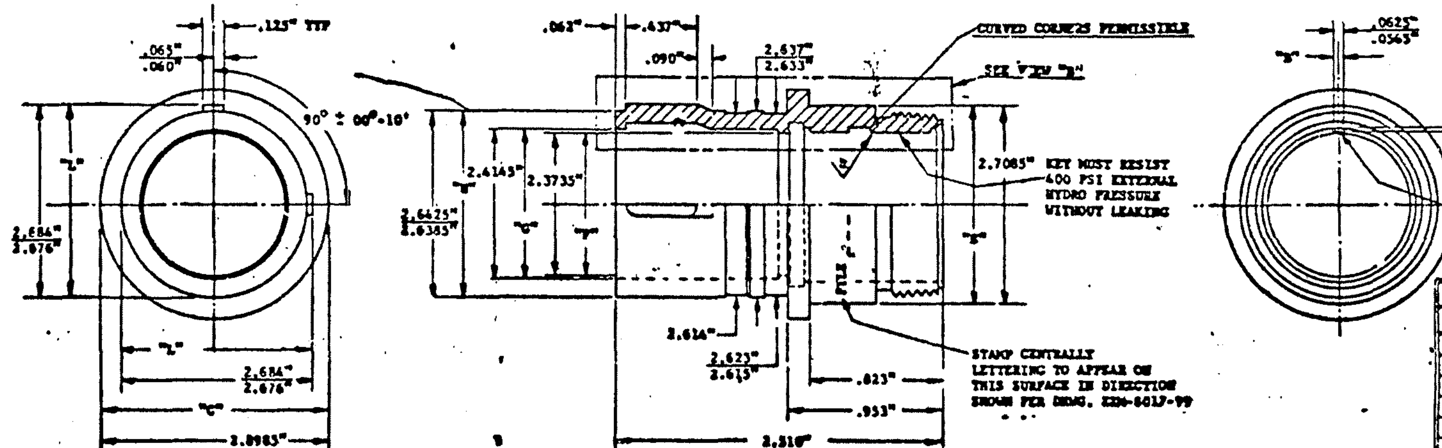
LIMITED RELEASE 374-L

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	DRAWN WALSE	DATE 29 MAR 73	THE PYLE-NATIONAL COMPANY Chicago, Illinois 60651
			CHECKED	ENGINEER P.R. B	
			PRODUCTION ENGINEERING		TITLE USRM REEL CONNECTOR RESISTOR
		MATERIAL —	QUALITY CONTROL		
			ENGINEERING APPROVAL		
		FINISH —			SIZE A / CODE IDENT. NO. 49367 / DRAWING NO. P-206042-5
NEXT ASSY.	USE ON		LINE CODE		SCALE — / SHEET 1 OF 1
APPLICATION		SUPERSEDES DATED	PART TYPE		

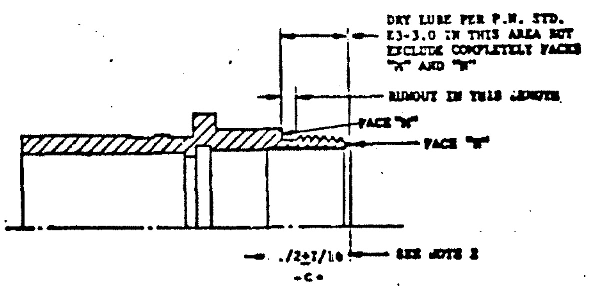
1. DO NOT WORK TO THIS DRAWING WITHOUT REFERENCE TO PRODUCT SPEC. NO. Z2-18.

2. MASK A CIRCULAR AREA AS SHOWN TO AVOID HARDCOATING WITHIN THE DIMENSION SHOWN AND END SURFACE.





HARDCOAT FINISH DATA	
LOCATION	DIMENSION
A	2.503"
B	.065"-.059"
C	2.901"
D	2.443-2.439"
E	2.711"
F	2.371"
G	2.412"
H	2.645"-2.641"
J	2.59161"
K	2.57364"
L	2.6863"-2.6783"



MASKING AND DRY LUBE AREAS

REV	DATE	BY	ECO	CHANGE
C				ADDED ".1/16"
B				REMOVED "P" FROM HARDCOAT FINISH TABLE
A				REVISED REDRAWN FOR MOD I

FINISH: P.N. STD. E4-3.3, .0025" ± .0002" THICK
MATERIAL: E4-3.2
PTN'L DWG. ZZN-1074-AE(A)

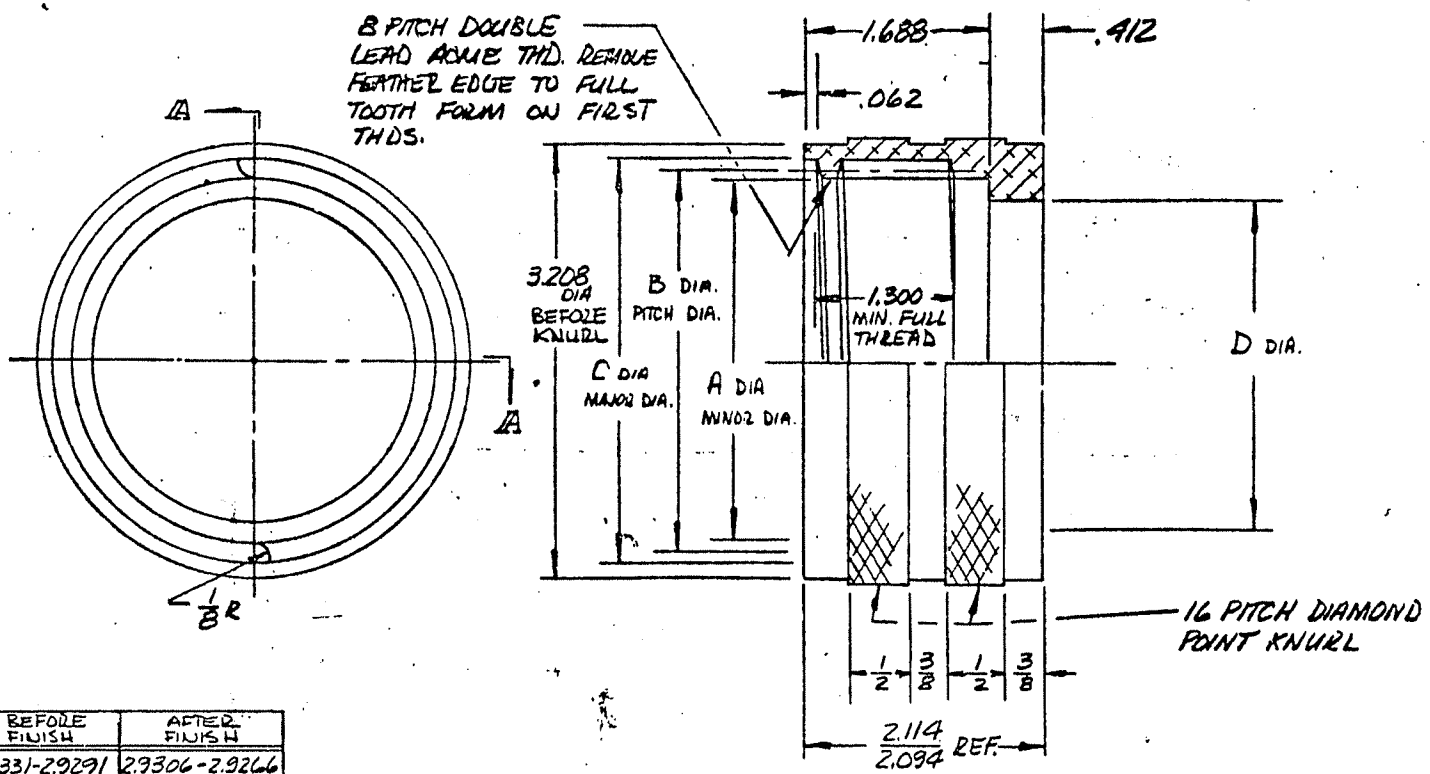
THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS

NAME OF PART: MALE SHELL
"C" SERIES NON-RFI MOD I

DWG NO. ZZN-1024-20 A (C)

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED

NOTE:
1. BREAK ALL SHARP EDGES
2. DO NOT WORK TO THIS DRAWING WITHOUT REFERENCE TO PROD. SPEC. E2-70.00



SECTION A-A

LIMITED RELEASE 374-C

DIMENSION	BEFORE FINISH	AFTER FINISH
A	2.9331-2.9291	2.9306-2.9266
B	2.9781-2.9681	2.9683-2.9583
C	3.025-3.015	3.020-3.010
D	2.7285-2.7235	2.726-2.721

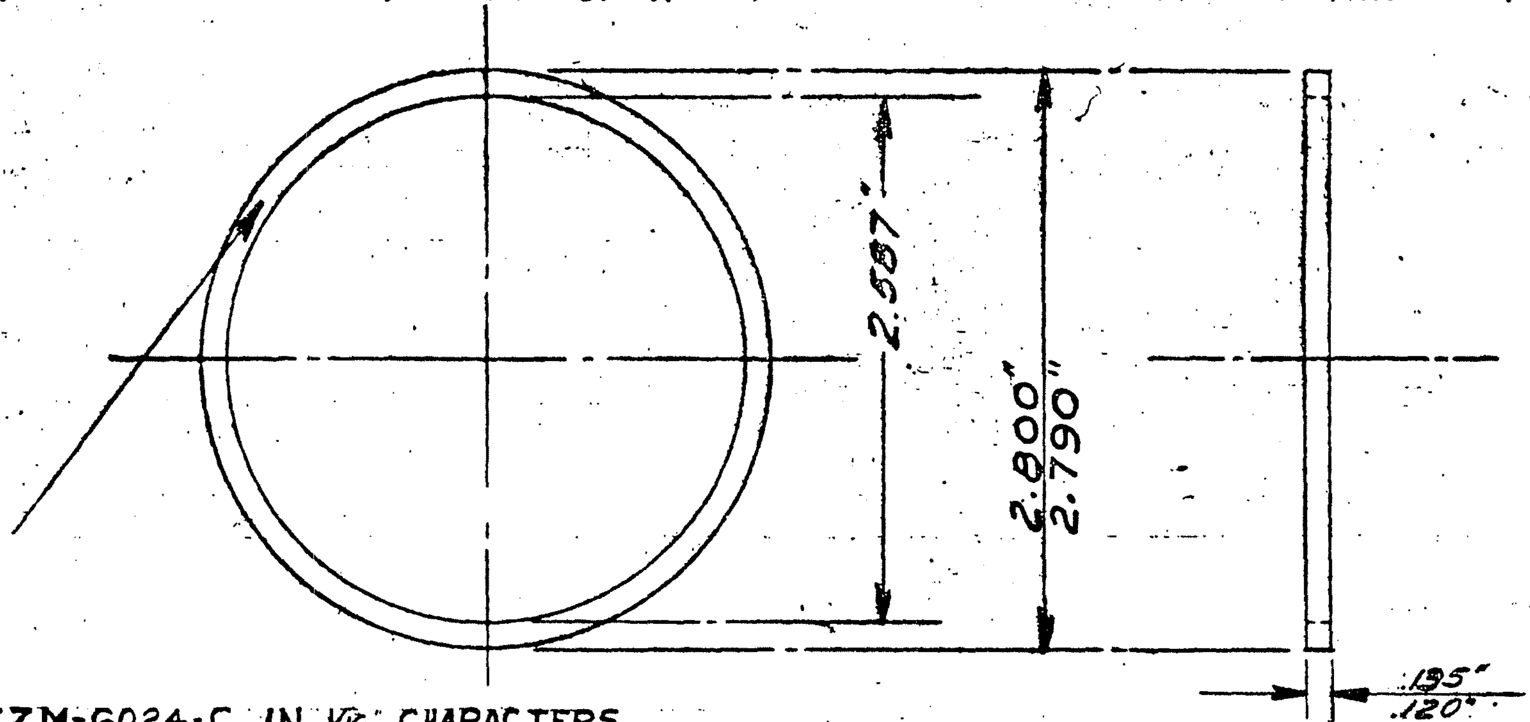
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON	DRAWN WALSE	P.R. B	THE PYLE-NATIONAL COMPANY
		FRAC ±1/64 | DEC ±.005 | ANG ±1°	DATE 20 FEB 72		CHICAGO, ILLINOIS 60651
			CHECKED		TITLE USBM D.C. REEL CONDUCTOR NUT
		MATERIAL E4-3.02	PRODUCT ENGINEER ASU		
			PRODUCTION ENGINEERING		
		FINISH E4-3.03	QUALITY CONTROL		SIZE B | CODE IDENT. NO. 49367 | DRAWING NUMBER P-206040-1
NEXT ASSY.	USED ON	SUPERSEDES DATED	ENGINEERING APPROVAL		
APPLICATION			PART TYPE		SCALE — | SHEET 1 OF 1

SHEET OF SIZE (B)

PART DWG. No.

PART NO. ZZM-6024-C (A)

1. REVIEWED AND REVISED FOR PRODUCTION. FINAL SPECIFICATIONS APPROVED BY PRODUCT ENGR'G, PROCESS ENGR'G. AND QUALITY CONTROL
2. SEE QUALITY CONTROL PROCEDURES FOR A.Q.L'S METHOD OF INSPECTION AND INSPECTION OF NON MEASUREABLE CHARACTERISTIC.



MOLD ZZM-6024-C IN 1/16" CHARACTERS RAISED .005-.008 WHEN USING E4-8.06 MATERIAL

MOLD ZZM-6024-L IN 1/16" CHARACTERS RAISED .005-.008 WHEN USING E4-8.16 MATERIAL

SUFFIX	MATERIAL	DURO
C	PN STD E4-8.06	50 ± 5
L	PN STD E4-8.16	50 ± 5

REV.	DATE	BY	E.C.O.	CHANGE
F	11/13/62	R.H.	10688	WAS MOLD ZZM-6024 - - DELETED SUFFIX "D"
E	11/6/62	Y.A	10,206	1/16 WAS 3/32.
D	9/3/62	G.B	10116	WAS 2.859/2.849
C	12-7-61	RJK	4066	ZZM-6024-L ADDED
B	2/11/61	GK	3616	E4-8.6 was 90204 E4-8.4 was 90205
A	6-5-57	GK	1981	NEW TECG. REVISED NOTES AND ADDED MATERIAL REFERENCE TABLE

UNLESS OTHERWISE SHOWN
TOLERANCES
FRACTIONAL ± 1/64"
DECIMAL ± .005"
ANGULAR ± 1°

SURFACE FINISH
MACHINED SURFACE 100
ROUGH FILE OR GRIND 250
EXCEPT ROUGH CASTINGS SEE P. N. STD. 90.910-7

ITEM	DESCRIPTION	PART NO.	Q'TY

FINISH: —

MATERIAL: SEE TABLE ABOVE

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS

NAME OF PART: SEAL - BARREL

SUPERSEDES	PRODUCT ENGR. / DATE	PROCESS ENGR. / DATE	PATTERN NO.	SCALE
ZZM-6024C 8-29-55	J. NAVA 5-8-57	5/1/57	—	1=1

QUALITY CONTROL / DATE	DRAWN / DATE	CHECKED / DATE	PART NO.	SIZE
6-1-57	G. KEITH 4-29-57	5-7-57	NOTED ZZM-6[illegible]-C	(A)

The Pyle-National Company

ENGINEERING DEPARTMENT

PARTS LIST

SERIES NO. ZZM-C-55XX-AS

NAME COVER ASSEMBLY

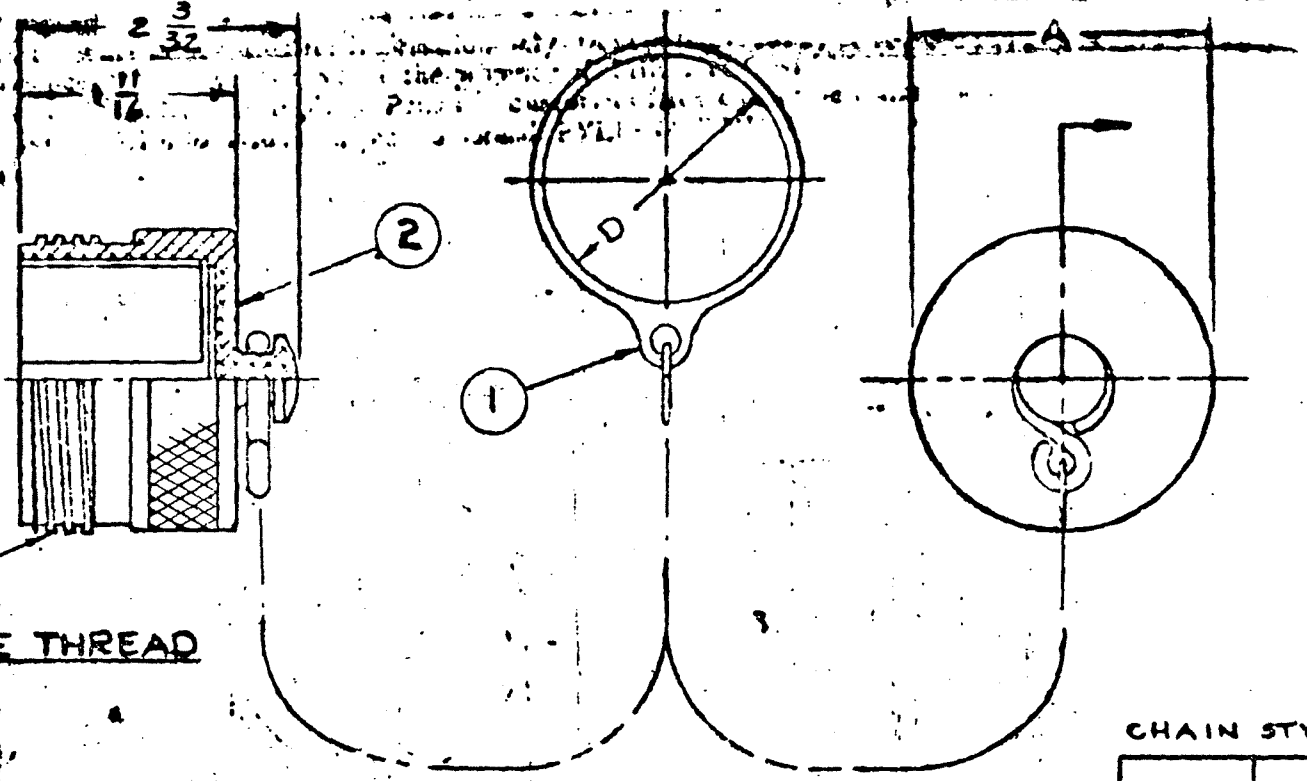
DRAWING NO. ZZM-C-5516-AS (B)

ORIGINATED BY L.A CHECKED BY WG DATE 4-20-71 REV. _____

SHEET 1 OF 1

QTY.	DESCRIPTION	ASSEMBLY NUMBER			
		ZZM-C-5516-AS	ZZM-C-5520-AS	ZZM-C-5524-AS	ZZM-C-5528-AS
1	COVER	ZZM-5516-18A	ZZM-5520-18A	ZZM-5524-18A	ZZM-5528-18A
1	CASKET	N-61-4C	ZZM-6620-18C	ZZM-6624-18C	ZZM-6628-18C
1	STUD	A-40877-A	A-40877-A	A-40877-A	A-40877-A
			SUB-ASSEMBLY		
1	CHAIN ASSEM.	ZZM 8516-51EA	GB10-8520	GB10-8524	GB10-8528
	ASSEMBLY LABOR				
	ASSEMBLY BURDEN				
	TOTAL COST				

FORM NO. E-52



CHAIN STYLES

	SASH
	

ITEM NO.	ASSEMBLY PART NUMBER	1 CHAIN & RING ASSEM.	CHAIN STYLE	2 MALE COVER
D	ZZM-C-5520-A5	ZZM-8520-10EA	SASH	ZZM-5520-18A
4	ZZM-C-5524-A5	ZZM-8524-10EA	SASH	ZZM-5524-18A
8	ZZM-C-5528-A5	ZZM-8528-10EA	SASH	ZZM-5528-18A

ITEM NO.	A	B	C	D
D	2.500		2.500	2.250
4	3.000		3.000	2.750
8	3.500		3.500	3.250

LENGTH OF CHAIN	
	SASH
	6 1/4

WARNING - Make no design changes without authority from U. S. Bureau of Mines

THE PYLE NATIONAL COMPANY
CHICAGO 51, ILLINOIS

DR.	DATE
LA	4-1-71

CK.	ENG.	APP.

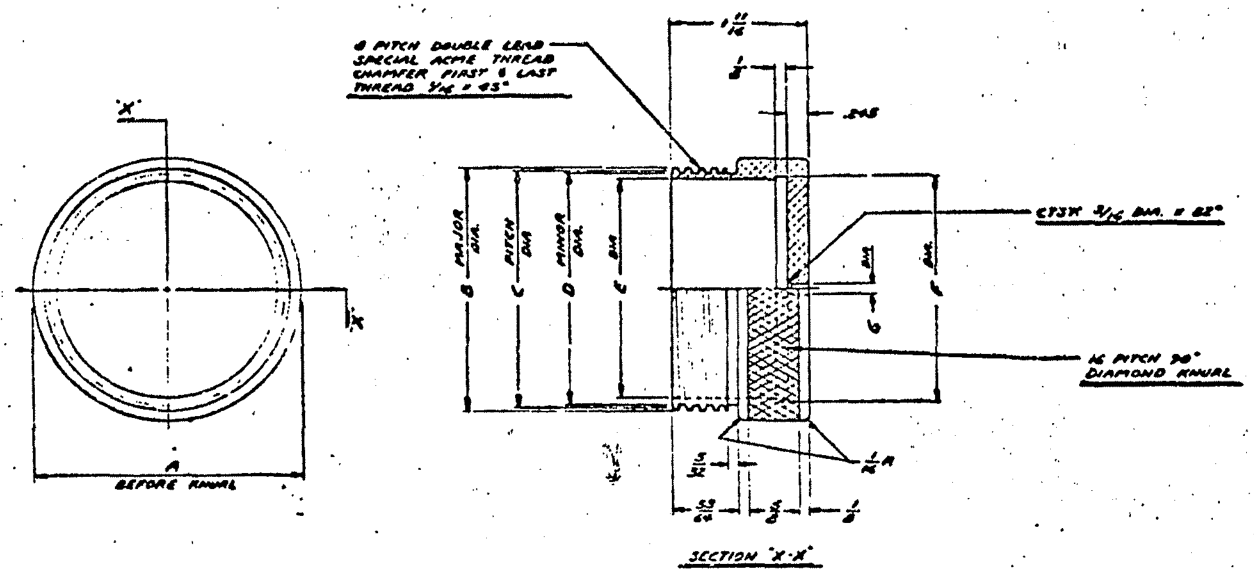
DRAWING TITLE
MALE BARREL COVER ASSEM.

CODE IDENT NO.	SIZE	DRAWING NO.
49367	A	ZZM-C-5520-A5 (NOTED)

SCALE | REV. A 4-19-71 | SHEET 1 OF 1

PART DWG. (NOTED) No. 22M-5516-18A SHEET 1 OF 1

NOTES:
1. SEE PRODUCT SPEC. NO. 22-55.00



PART NO.	A	B	C	D	E	F	G
22M-5516-18A	2 1/16	MACHINED 1.9975 - 1.9933 HARDCOAT 2.0000 - 1.9958	MACHINED 1.9365 - 1.9265 HARDCOAT 1.9463 - 1.9363	MACHINED 1.9016 - 1.8916 HARDCOAT 1.9066 - 1.8966	MACHINED 1.8035 - 1.7985 HARDCOAT 1.801 - 1.796	MACHINED 1.8575 - 1.8495 HARDCOAT 1.857 - 1.847	MACHINED .133 - .126 HARDCOAT .130 - .123
22M-5520-18A	2 9/16	MACHINED 2.4975 - 2.4933 HARDCOAT 2.5000 - 2.4958	MACHINED 2.4365 - 2.4265 HARDCOAT 2.4463 - 2.4363	MACHINED 2.4016 - 2.3916 HARDCOAT 2.4066 - 2.3966	MACHINED 2.3035 - 2.2985 HARDCOAT 2.301 - 2.296	MACHINED 2.3595 - 2.3495 HARDCOAT 2.357 - 2.347	MACHINED .133 - .126 HARDCOAT .130 - .123
22M-5524-18A	3 1/16	MACHINED 2.9975 - 2.9933 HARDCOAT 3.0000 - 2.9958	MACHINED 2.9365 - 2.9265 HARDCOAT 2.9463 - 2.9363	MACHINED 2.9016 - 2.8916 HARDCOAT 2.9066 - 2.8966	MACHINED 2.8035 - 2.7985 HARDCOAT 2.801 - 2.796	MACHINED 2.8595 - 2.8495 HARDCOAT 2.857 - 2.847	MACHINED .133 - .126 HARDCOAT .130 - .123
22M-5528-18A	3 9/16	MACHINED 3.4975 - 3.4933 HARDCOAT 3.5000 - 3.4958	MACHINED 3.4365 - 3.4265 HARDCOAT 3.4463 - 3.4363	MACHINED 3.4016 - 3.3916 HARDCOAT 3.4066 - 3.3966	MACHINED 3.3035 - 3.2985 HARDCOAT 3.301 - 3.296	MACHINED 3.3595 - 3.3495 HARDCOAT 3.357 - 3.347	MACHINED .133 - .126 HARDCOAT .130 - .123

RELEASED APR 26 1971 FOR PROCESSING

RELEASED MAY - 1 1973 FOR PROCESSING

RELEASED MAY - 1 1973 FOR PRODUCTION

NEXT ASSY. | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
FRACTIONS ± 1/64 | DECIMALS ± .005 | ANGLES ± 1°

MATERIAL: 24-3.02
FINISH: 24-3.03
SUPERSEDES: — DATED

DRAWN L.A. | F.R. C
DATE 4-16-71
CHECKED
PRODUCT ENGINEER
PRODUCTION ENGINEERING
QUALITY CONTROL
ENGINEERING APPROVAL
PART TYPE C B D

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS 60651

TITLE: COVER "C" LENGTH

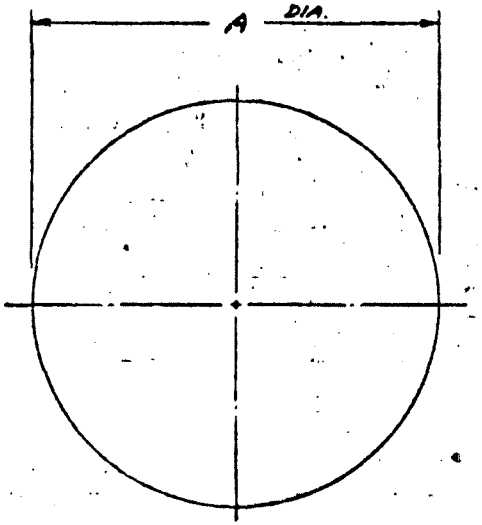
SIZE C | CODE IDENT. NO. 49367 | DRAWING NUMBER (NOTED) 22M-5516-18A

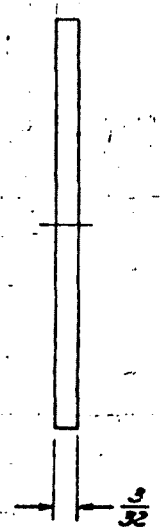
SCALE — | SHEET 1 OF 1

LTR | ZONE | E.C.O. | DESCRIPTION | DATE | APPROVED

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
A		13647	ADDED PART NO'S 22M-6612-18C & 6616-18C	9-1-72	

SIZE (B) | SHEET 1 OF 1 | PART DRWG. (NOTED) | No. 22M-6620-18C



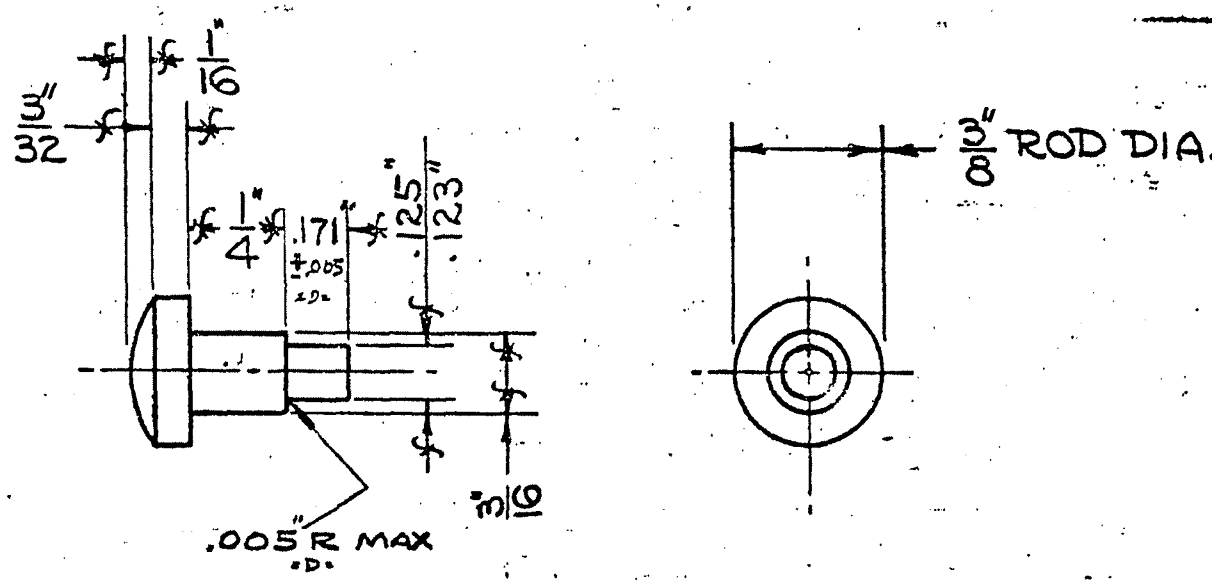


PART NO.	A
22M-6620-18C	2 21/64
22M-6624-18C	2 53/64
22M-6628-18C	3 21/64
22M-6612-18C	1 21/64
22M-6616-18C	USE PT. NO. N-61-4C

RELEASED
APR 26 1971
FOR PROCESSING

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON	DRAWN L.A	P.R. C	THE PYLE-NATIONAL COMPANY CHICAGO, ILLINOIS 60651
FRAC ± 1/64 | DEC ± .005 | ANG ± 1°	DATE 9-19-71		TITLE CASKET
MATERIAL E4-8.06	CHECKED		SIZE B | CODE IDENT. NO. 49367 | DRAWING NUMBER (NOTED) 22M-6620-18C
FINISH —	PRODUCT ENGINEER		SCALE — | SHEET OF
SUPERSEDES — DATED —	PRODUCTION ENGINEERING		
	QUALITY CONTROL		
	ENGINEERING APPROVAL		
	PART TYPE C | F | A		

CORROSION RESISTING STEEL, CLASS 303 COND A
COLD DRAWN/SPEC. QQ-S-763. FINISH: 5.5 MIL-STD-171.



125/ FIN. ALL OVER

[illegible]	
[illegible]	C / J / D

				REV.	DATE	BY	CHANGE
G				C	8.29.69	F.K.	ECO 12676 CL 303 COND A WAS 7 TYPE A, .171 WAS 5/32, .005 R ADDED
F				B	3/11/57	BHG	SEE ECO 1875
E				A	4-1-52	CM	ADD: MATL SPEC. AS ORD. DRWG. ADD. PRO. 25.01 & 125/ FIN ALL OVER
D							

SCALE	DRAWN BY	TRACED BY	CHECKED BY	SUPERSEDES DRWG.	SUPERSEDED BY DRWG.
2" = 1"	NHM	NHM	AU		

PART NO.	DRAWING NO.	FILE
A-40877-C	18158-A	1018

STUD

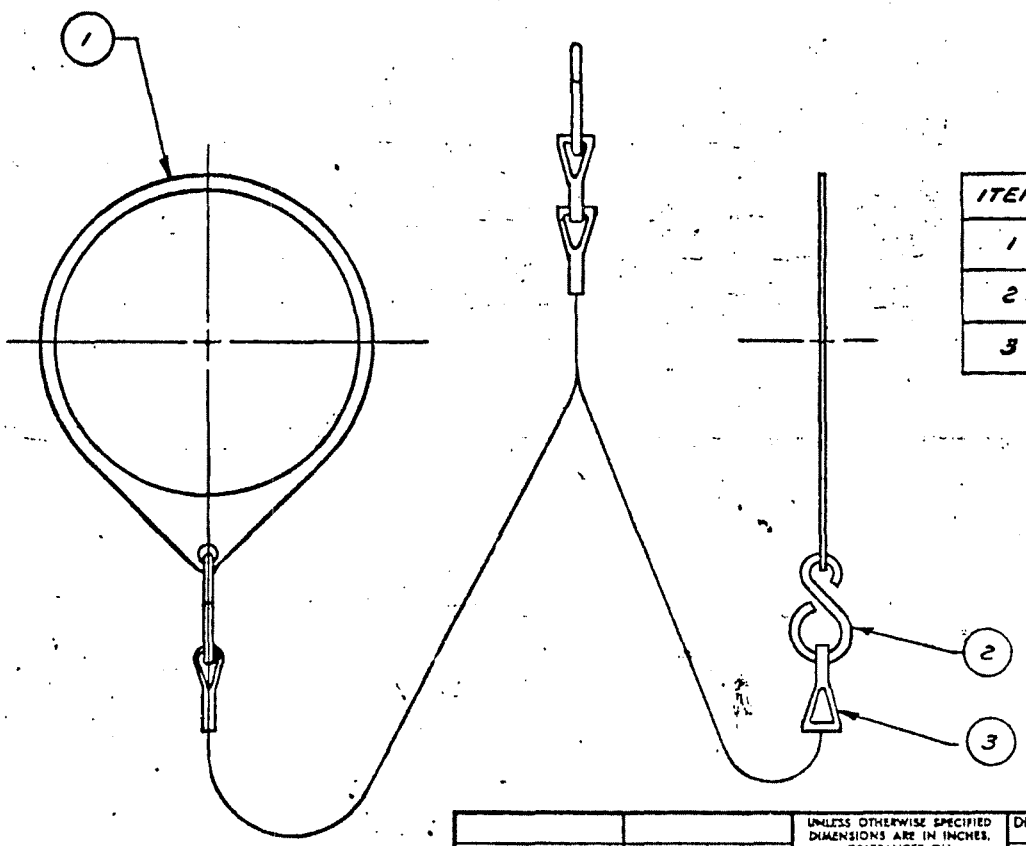
THE PYLE-NATIONAL COMPANY
CHICAGO, ILL. DATE SEPT. 1, 1943.

POST 23078—800—12-42

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
A	~~X~~	13969	REDRAWN - NO CHANGE	7-2-73	

PART DRWG. (if diff.) | SHEET 1 OF 1 | SIZE (B)

No. GB10-8520



			ASSEMBLY NO.		
ITEM	PART	QTY	GB10-8520	GB10-8524	GB10-8528
1	RING	1	ZZM-8520-50E	ZZM-8524-50E	ZZM-8528-50E
2	5" HOOK	1	ZZM-8500-12E	ZZM-8500-12E	ZZM-8500-12E
3	CHAIN	1	GB-8400-10E	GB-8400-11E	GB-8400-11E

NOTE: THIS DRAWING IS SUPPLIED FOR INFORMATION ONLY. PRINTS & MICROFILMED FILES CANNOT BE MAINTAINED TO CURRENT ISSUE. ALL DIMENSIONS SUBJECT TO NORMAL PYLE-NATIONAL COMPANY MANUFACTURING VARIATIONS.

AC10-D5524	ZZM E.P.
NEXT ASSY.	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON
FRAC ±1/64 | DEC ±.005 | ANG ±1°
MATERIAL
FINISH
SUPERSEDES SEE ECO | DATED

DRAWN R.C. GARNESS | P. & B.
DATE 7-2-73
CHECKED 7-17-73
PRODUCT ENGINEER
PRODUCTION ENGINEERING
QUALITY CONTROL
ENGINEERING APPROVAL
PART TYPE C | B | E

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS 60651

TITLE
RING & CHAIN ASM

SIZE B | CODE IDENT. NO. 49367 | DRAWING NUMBER (NO-ED) GB10-8520
SCALE ~~X~~ | SHEET 1 OF 1

PARTS LIST

THE PYLE-NATIONAL CO.

Code Ident. No. 49367

RELEASE STATUS		SERIAL NO.
LIMITED		374-L
PROCESSING		
PRODUCTION		

PART NO.	P-206040-2
NAME	USBM REEL CONNECTOR ADAPTER S.A.
DWG. NO.	P-206040-2

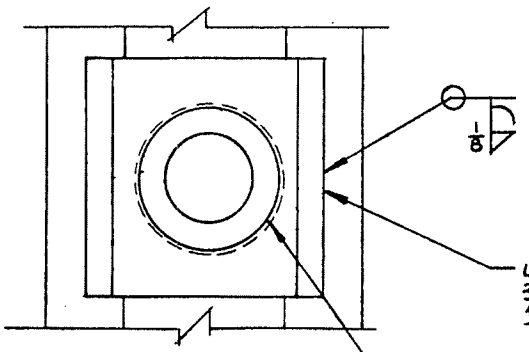
DATE: 28 MAR 73 BY: ASW CHECK _____ SHEET 1 OF 1

QTY.	PART NUMBER	DESCRIPTION	ITEM
1	P-206040-3	ADAPTER BODY	1.
1.	P-206040-4	LENS	2.
1.	P-206040-5	LENS COVER	3.
1.	P-206040-6	LENS SCREW	4.
1	ZZL-6518-13D	'O' RING	5.
1	ZZM-6124-C	SEAL	6.
1	ZZM-8224-E	WASHER	7.
1	ZZM-9100-10	DECAL	8.
1	ZZM-8724-10Z	INSUL SLEEVE	9.
2	P-206040-7	LEAD WASHER	10

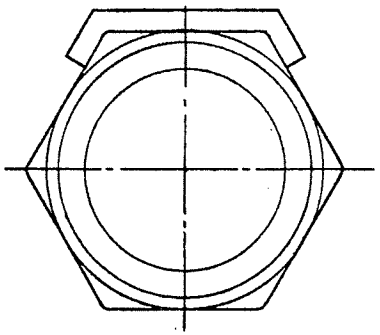
REV.	DATE	DESCRIPTION	E.C.O.	REV.	DATE	DESCRIPTION	E.C.O.
A	6-16-73	ADDED ITEMS 6-9	13827				
B	8-17-73	PER ECO	13978				
C	10-24-73	PER ECO	14024				

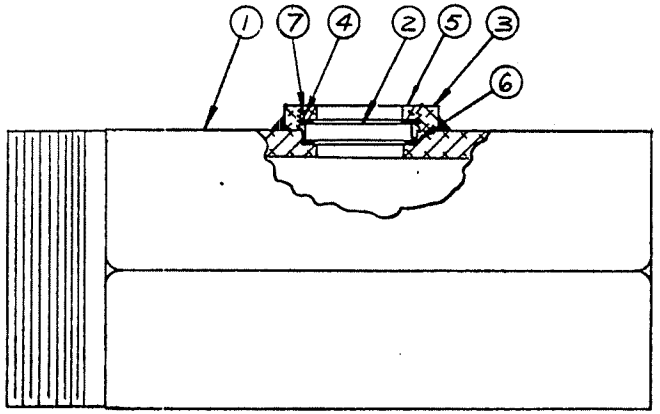
PART DRWG. No. P206040-2 SHEET 1 OF 1 SIZE (C)

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
A	--	13898	REVISED PER ECO	5-17-73	
B	--	14054	ITEM 4 WAS SILICONE GASKET/MESA	10-24-73	



LOCATE ITEM 3 AS SHOWN. WELD ITEM 1 TO ITEM 3 ALONG PERIMETER. ℄ OF HOLES ON ITEMS 1 & 3 TO BE CONCENTRIC WITHIN .010 TIR.





NOTE:

1. E4-3.03 AFTER WELDING OF ITEMS 1 AND 3, BUT BEFORE ASSEMBLY OF REMAINDER OF ITEMS.
2. PEEN THREADS ON ITEM 5 SO THAT ITEM 2 CAN NOT BE REMOVED

ITEM	P-N PART NUMBER
1	P-206040-3
2	P-206040-4
3	P-206040-5
4	P-206040-7
5	P-206040-6
6	P-206040-7
7	ZZL-6518-13D

LIMITED RELEASE 374-L

NEXT ASSY.	USE ON		
APPLICATION			

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS -- DECIMALS -- ANGLES --
MATERIAL --
FINISH SEE NOTE 1
SUPERSEDES DATED

DRAWN WALSE DATE 28 MAR 73
CHECKED ENGINEER ASW P.R. B
PRODUCTION ENGINEERING
QUALITY CONTROL
ENGINEERING APPROVAL
PART TYPE

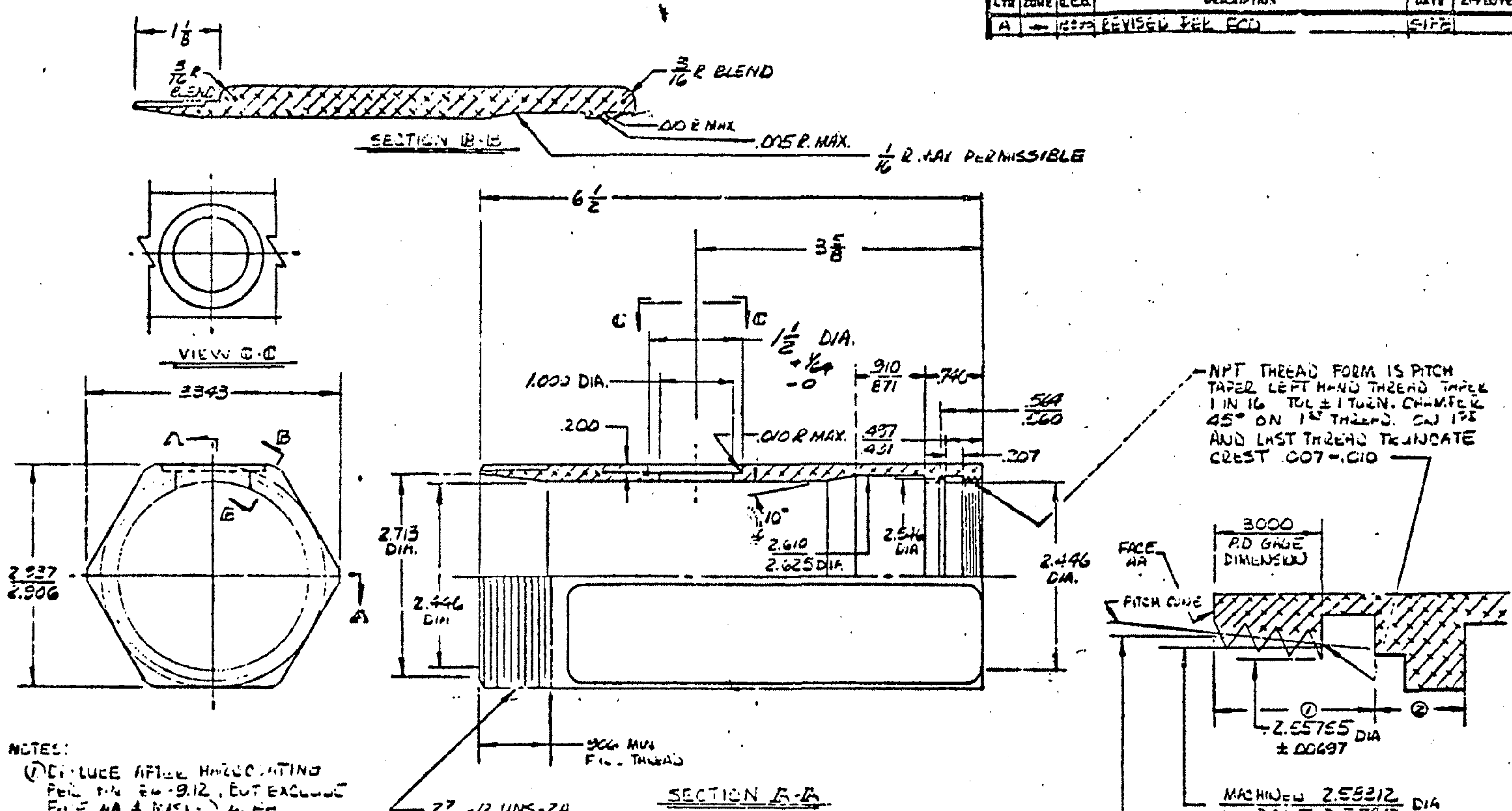
THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS 60651

TITLE USBM REEL CONNECTOR
ADAPTER ASSEMBLY

SIZE C | CODE IDENT. NO. 49367 | DRAWING NUMBER P-206040-2
SCALE -- SHEET 1 OF 1

K & E CO. 10-7186

LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
A	—	[illegible]	REVISED PER ECO	[illegible]	



NOTES:

1. DEBURR AFTER HARDCOATING PER P/N E4-9.12, BUT EXCLUDE FACE AA & MASKED AREA
2. MASK CONTINUOUS CIRCULAR AREA AS SHOWN TO AVOID HARDCOATING
* DO NOT WORK TO THIS DWG WITHOUT REFERENCE TO P/N E2-20.62

2 7/8 -12 UNS-2A

DIA	MACHINED	HARDCOAT
MAJOR	2.8722-2.8622	2.875-2.864
PITCH	2.5153-2.5056	2.5233-2.5156
MINOR	2.7653-2.7543	2.7129-2.7618

LIMITED RELEASE 274-L

UNLESS OTHERWISE SPECIFIED	DIMENSIONS ARE IN INCHES TOLERANCES ON
FRACTIONS	± 1/64
DECIMALS	± .01
ANGLES	± 1°
MATERIAL	E4-3.02
FINISH	SEE P-206040-2
SUPERSEDES	DATED
DRAWN	
DATE	[illegible] 74
CHECKED	
ENGINEER	
PRODUCTION ENGINEERING	
QUALITY CONTROL	
ENGINEERING APPROVAL	
PART TYPE	C / F / A
NEXT ASSY. / USED ON	APPLICATION

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS 60651

TITLE [illegible] CONNECTOR

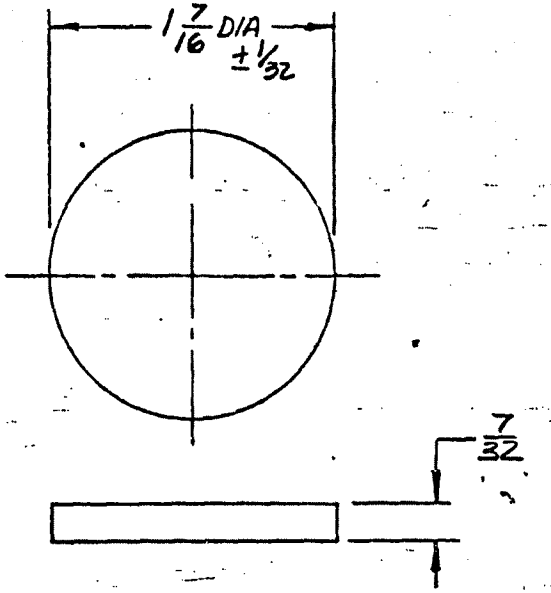
ADAPTER BODY

SIZE	CODE IDENT. NO.	DRAWING NUMBER
C	49367	P-206040-3

SCALE — SHEET 1 OF 1

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED

SIZE (B) SHEET OF PART DRWG. No.



NOTES:

1. PARTS TO BE ROUND WITHIN DIAMETRAL TOLERANCE.
2. PARTS TO BE FLAT WITHIN .001.
3. SODA LIME GLASS, TEMPERED TO WITHSTAND:
   A. THERMAL – 302°F, 15 MIN., QUENCH 59-68°F WATER
   B. PHYSICAL SHOCK – 2 Ft-Lbs.

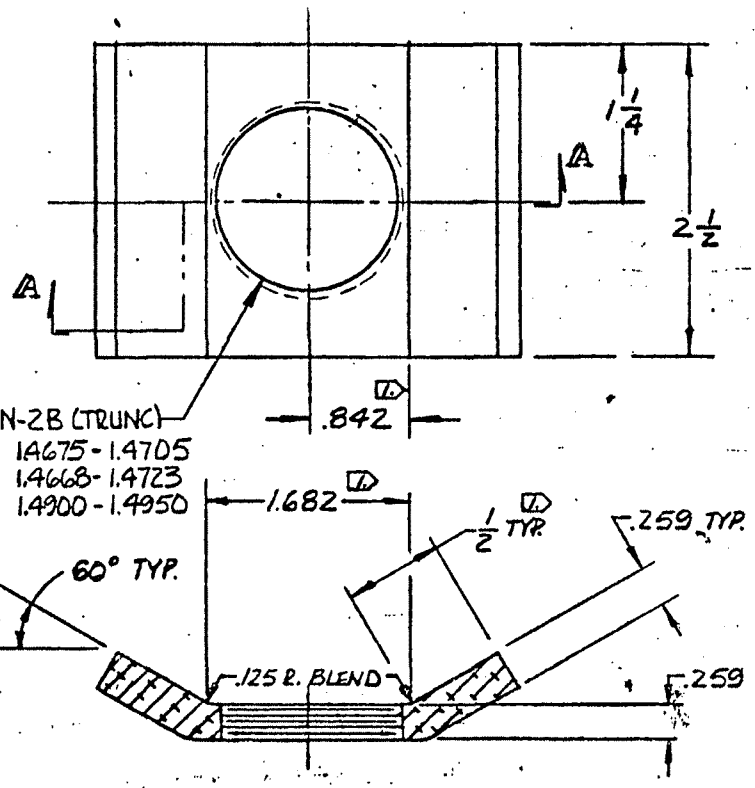
LIMITED RELEASE 374-L

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON	DRAWN WALSE	THE PYLE-NATIONAL COMPANY
		FRAC ±1/64 | DEC ± | ANG ±	DATE 28 MAR 73	CHICAGO, ILLINOIS 60651
			CHECKED ASW	TITLE USBM REEL CONNECTOR LENS
		MATERIAL SEE NOTE 3.	PRODUCT ENGINEER	
			PRODUCTION ENGINEERING	
		FINISH ±	QUALITY CONTROL	SIZE B | CODE IDENT. NO. 49367 | DRAWING NUMBER P-206040-4
NEXT ASSY.	USED ON	SUPERSEDES DATED	ENGINEERING APPROVAL	
APPLICATION			PART TYPE	SCALE ± | SHEET 1 OF 1

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
A	--	13898	REVISED PER ECO	5-17-73	

SHEET OF SIZE (8)

PART DRWG. No.



SECTION A-A

NOTES:

1. MEASURED TO THEORETICAL SHARP CORNER.
2. BREAK ALL SHARP EDGES.

LIMITED RELEASE 374-L

NEXT ASSY.	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON

FRAC	DEC	ANG
± 1/64	± .005	± 1°

MATERIAL ZZM-2028-10AX

FINISH SEE P-206040-2

SUPERSEDES DATED

DRAWN WALSE P.R.B.

DATE 28 MAR 73

CHECKED ASW

PRODUCT ENGINEER

PRODUCTION ENGINEERING

QUALITY CONTROL

ENGINEERING APPROVAL

PART TYPE

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS 60651

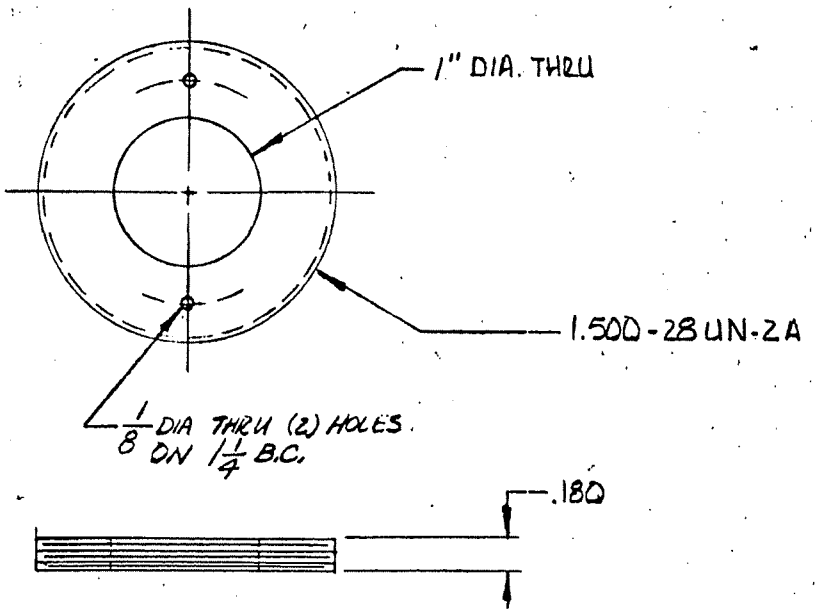
TITLE USBM REEL CONNECTOR
LENS COVER

SIZE	CODE IDENT. NO.	DRAWING NUMBER
B	49367	P-206040-5

SCALE -- SHEET 1 OF 1

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED

SIZE (B) | SHEET OF | PART DRWG. No.



	BEFORE FINISH	AFTER FINISH
MAJOR DIA.	1.4862-1.4797	1.4887-1.4822
PITCH DIA.	1.4655-1.4613	1.4755-1.4713
MINOR DIA.	1.4499 1.4399	1.4549-1.4449

UM. REL. 374-L

NEXT ASSY.	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON	DRAWN WALSE P.B.R.
APPLICATION		FRAC ±1/64 | DEC ±.005 | ANG ±1°	DATE 17 MAY 73
		MATERIAL E4-3.02	CHECKED
		FINISH E4-3.03	PRODUCT ENGINEER ASW
		SUPERSEDES	DATED PRODUCTION ENGINEERING
			QUALITY CONTROL
			ENGINEERING APPROVAL
			PART TYPE

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS 60651

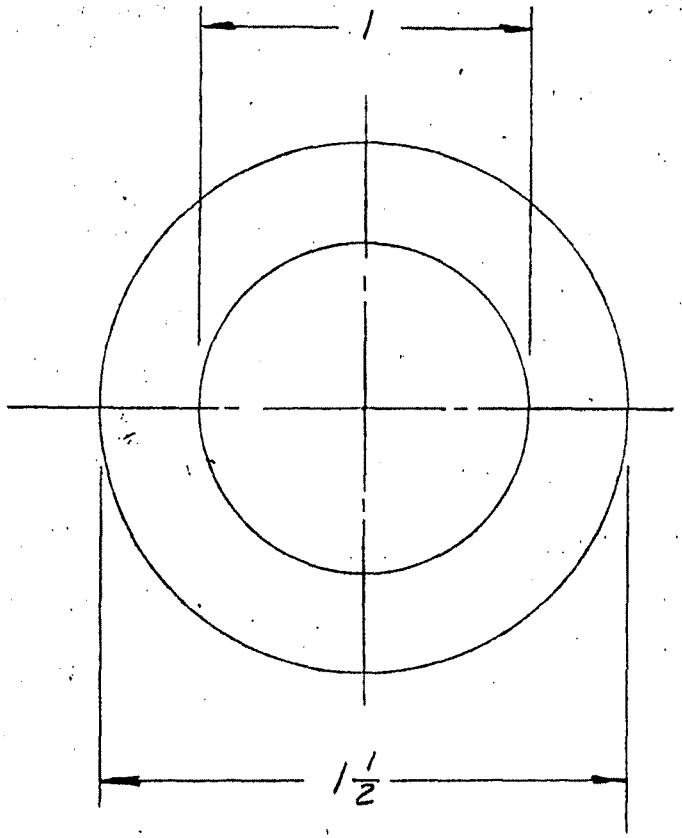
TITLE USBM D.C. REEL CONN.
LENS SCREW

SIZE	CODE IDENT. NO.	DRAWING NUMBER
B	49367	P-206040-6

SCALE —11— SHEET 1 OF 1

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED

SIZE (B) | SHEET OF | PART DRWG. No.



NOTE: THIS DRAWING IS SUPPLIED FOR INFORMATION ONLY. PRINTS IN CUSTOMERS FILES CANNOT BE MAINTAINED TO CURRENT ISSUE. ALL DIMENSIONS SUBJECT TO NORMAL PYLE-NATIONAL COMPANY MANUFACTURING VARIATIONS.

LIMREL 374-L

NEXT ASSY.	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON
FRAC ±1/64 | DEC -- | ANG --
MATERIAL LEAD SHEET-.062 THICK
FINISH --
SUPERSEDES | DATED

DRAWN WILSE | P.B.R.
DATE 17 MAY 73
CHECKED
PRODUCT ENGINEER ASW
PRODUCTION ENGINEERING
QUALITY CONTROL
ENGINEERING APPROVAL
PART TYPE

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS 60651

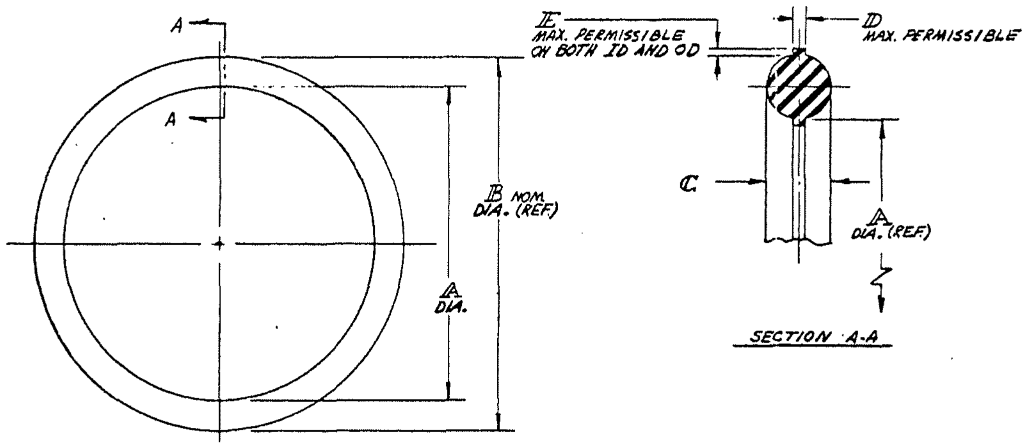
TITLE USBM D.C. REEL CONN.
LEAD WASHER

SIZE	CODE IDENT. NO.	DRAWING NUMBER
B	49367	P-206040-7

SCALE -- | SHEET 1 OF 1

PART DRWG. No. ZZL-6508-13D (NOTED) SHEET OF SIZE (C)

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
J	—	13311	SUPERSEDES DWGS. ZZL-6510-13D, REV. D; ZZL-6514-13D, REV. H; P-204626-08, REV. A.	6-21-71	



2.	MA

NOTES
1. INSPECT VISUAL CHARACTERISTICS PER P-N PRODUCT SPECIFICATION E2-160.20.
2. FOR SYMBOLS USED IN CLASSIFICATION LEGEND SEE PRODUCT SPECIFICATION E2-120.20.

2. QA AQL CLASS			—	QA AQL CLASS			—		MA	—	MA	OT	OT
RELEASE NUMBER	RELEASE DATE	PART NUMBER	MATERIAL	RELEASE NUMBER	RELEASE DATE	PART NUMBER	MATERIAL	FORM SIZE	A DIA. ±.005	B DIA. (REF.)	C ±.003	D MAX.	E MAX.
10,044-P¢T	12-6-67	ZZL-6508-13D	E4-8.22.20			P-204626-08	E4-8.64.20	08	.687	.827	.070	.003	.005
RLSED		ZZL-6510-13D				P-204626-10		10	.812	.952			
		ZZL-6512-13D		10,171-P¢T	6-18-68	P-204626-12		12	1.000	1.140			
		ZZL-6514-13D				P-204626-14		14	1.062	1.202			
		ZZL-6516-13D		10,171-P¢T	6-18-68	P-204626-16		16	1.187	1.327			
RLSED		ZZL-6518-13D				P-204626-18		18	1.312	1.452			
10,045-P¢T	12-6-67	ZZL-6520-13D				P-204626-20		20	1.437	1.577			
RLSED		ZZL-6522-13D		10,171-P¢T	6-18-68	P-204625-22		22	1.562	1.702			
759-P¢T	7-28-67	ZZL-6524-13D				P-204626-24		24	1.687	1.827			
10,361-P¢T	6-5-69	ZZL-6528-13D						28	1.937	2.077			

	SB-19xx-xx P/S
	P-204606-xx-xxP
NEXT ASSY.	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
FRACTIONS ±1/64 | DECIMALS ±.005 | ANGLES ±1°
MATERIAL: SEE TABLE
FINISH: —
SUPERSEDES ZZL-6510-13D, 8-6-64; ZZL-6514-13D, 11-4-55; P-204626-08 | DATED 6-12-68

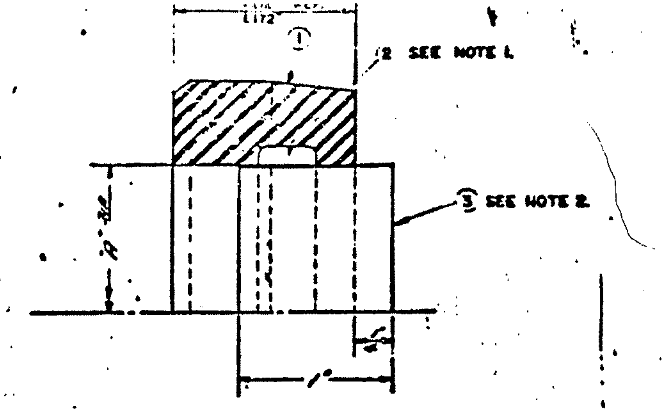
DRAWN: A.S.W. P.R. D
DATE: 21 JUNE 71
CHECKED: ASW 22 July 71
PRODUCT ENGINEER: 26 Jul 71
PRODUCTION ENGINEERING: 7-26-71
QUALITY CONTROL: 7/27/71
ENGINEERING APPROVAL: MMO 7-28-71
PART TYPE: C | F | A

PYLE-NATIONAL DIVISION
HARVEY HUBBELL INCORPORATED
CHICAGO, ILLINOIS 60651

TITLE: MINIATURE CONNECTOR
"O" RING-PANEL

SIZE: C | CODE IDENT. NO. 49367 | DRAWING NUMBER (NOTED) ZZL-6508-13D
SCALE: — | 01-306-810-MMO | SHEET 1 OF 1

K&E CO. 10-7184



ASSEMBLY PART NUMBER	ITEM No.1 GROMMET	ITEM No.2 E4-865 COMPOUND	ITEM No.3 POLYETHYLENE FILM 1" WIDE .001/.002" THICK	"A" DIA.
ZZM-B-6324-14	ZZM-6324-14 BK	130269 AS REQD.	KC0313 LENGTH A.R.	.875"
ZZM-B-6324-16	ZZM-6324-16 BK			1.000"
ZZM-B-6324-18	ZZM-6324-18 BK			1.125"
ZZM-B-6324-20	ZZM-6324-20 BK			1.250"
ZZM-B-6324-22	ZZM-6324-22 BK			1.375"
ZZM-B-6324-24	ZZM-6324-24 BK			1.500"
ZZM-B-6324-26	ZZM-6324-26 BK			1.625"
ZZM-B-6324-28	ZZM-6324-28 BK			1.750"
ZZM-B-6324-30	ZZM-6324-30 BK			1.875"
ZZM-B-6324-34	ZZM-6324-34 BK			2.125"

NOTES:
1. FILL RECESS CAVITY WITH COMPOUND PER PN STD. E4-865 FLUSH WITH OR 1/64" BELOW "A" DIA. SURFACE. NO VOIDS PERMITTED IN COMPOUND AFTER FILLING OPERATION HAS BEEN COMPLETED.
2. USING ITEM NO.3 FILM, APPLY TO "A" DIA. SURFACE PER DIMENSIONS SHOWN AS A PROTECTIVE COVERING FOR COMPOUND.

RELEASED FOR PROCESSING

MATERIAL: SEE TABLE ABOVE

DRAWN: G KEITH
DATE: 11-30-71

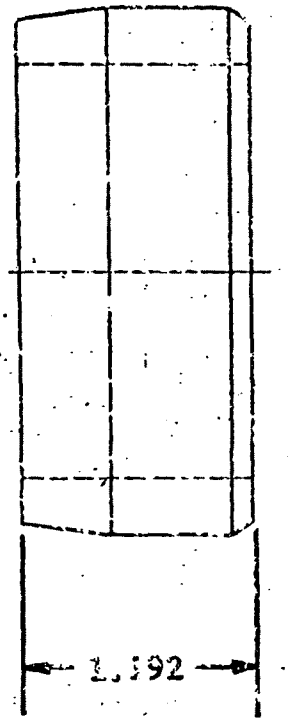
TITLE: GROMMET ASSEMBLY

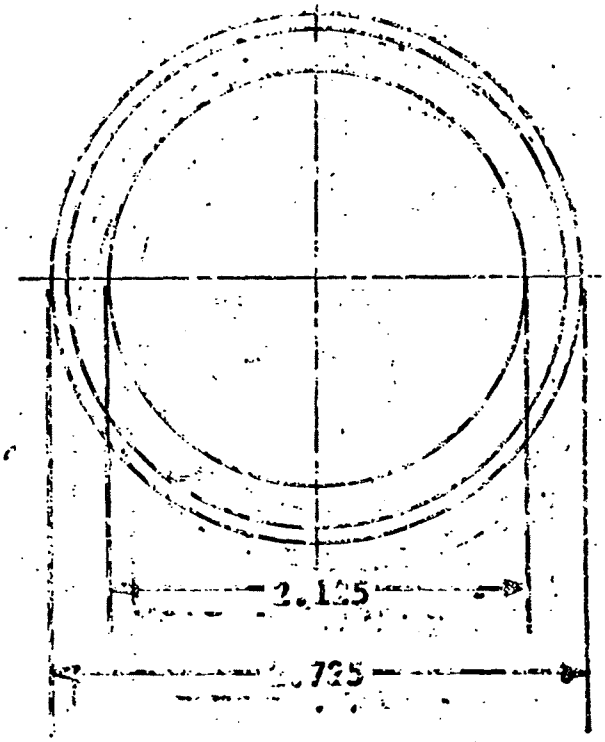
SIZE: C
CODE IDENT NO.: 49367
DRAWING NUMBER: ZZM-B-6324-14

SURFACE: None

PART DWG. No. ZZM-B-6324-14

MATERIAL-BUNA "N" RUBBER





OTES:

1. THE PART NUMBER FOR THIS PART IS THE SAME AS THE DRAWING NUMBER.
2. FOR PURPOSES OF DOCUMENTATION, THIS ITEM IS CONSIDERED TO BE NON-REPAIRABLE.
3. THIS PART IS DESIGNED TO OPERATE IN TEMPERATURES OF -80°F TO 225°F.

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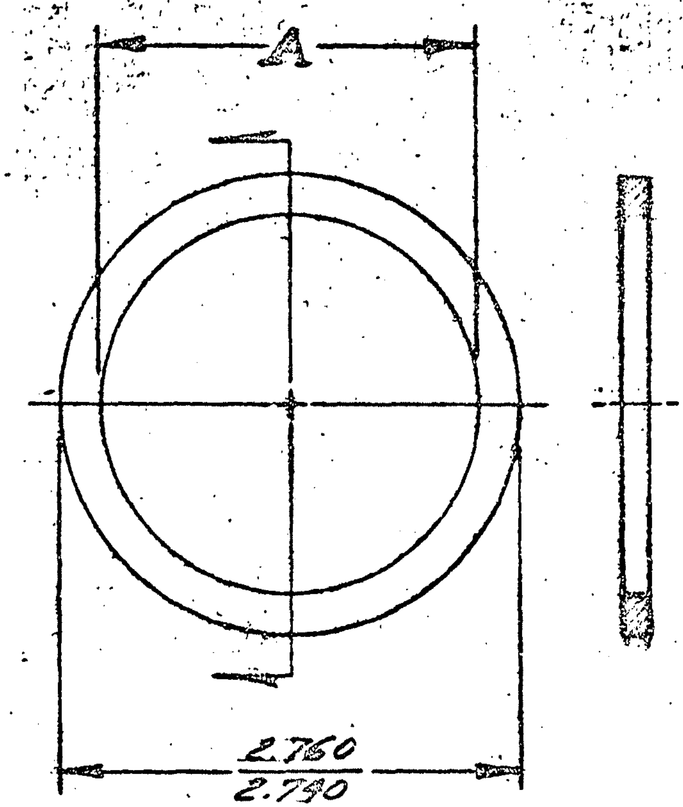
THE PYLE NATIONAL COMPANY CHICAGO 51, ILLINOIS		DR. M.M.	DATE 9-11-63
DRAWING TITLE GROMMET, SHELL SIZE 24		CK.	ENG. CK. / APP.
CODE IDENT NO. 49367	SIZE A	DRAWING NO. 22X-6324-34C	
SCALE	WEIGHT	SHEET 1 OF 1	

1. PRODUCT SPEC. E2-80

ZZM-	MIN.	MAX.	STEEL INCLUSIVE	DIM.	FINISH	MAT'L.
-8024 -16E	3/4	1	16	1.072 -1.052	E3-2.00 CAD. PLT.	E4-1.00 STEEL
-8024 -20E	1	1 1/4	18 TO 20	1.322 -1.302		
-8024 -24E	1 1/4	1 1/2	22 TO 24	1.572 -1.552		
-8024 -28E	1 1/2	1 3/4	26 TO 28	1.822 -1.802		
-8024 -32E	1 3/4	2	30 TO 32	2.072 -2.052		
-8024 -36E	2	2 1/4	34 TO 36	2.322 -2.302		
-8024 -39E	2 1/4	2 7/16	38 TO 39	2.488 -2.468		
-8024 -OE-B-	—	—	16 TO 39	—		
-B-8024 -16E	3/4	1	16	1.072 -1.052	—	E4-1.09 STAINLESS STEEL
-B-8024 -20E	1	1 1/4	18 TO 20	1.322 -1.302		
-B-8024 -24E	1 1/4	1 1/2	22 TO 24	1.572 -1.552		
-B-8024 -28E	1 1/2	1 3/4	26 TO 28	1.822 -1.802		
-B-8024 -32E	1 3/4	2	30 TO 32	2.072 -2.052		
-B-8024 -36E	2	2 1/4	34 TO 36	2.322 -2.302		
-B-8024 -39E	2 1/4	2 7/16	38 TO 39	2.488 -2.468		

LINE CODE				
PART TYPE	S	C		



REV.	DATE	BY	E.C.O.	CHANGE
C	4-5-70	LA	—	MAT'L. WAS E4-1.9 & E4-1.0 FINISH WAS E3-2
B	8-13-62		—	ADDED PART "OE"
A			2233	NEW TITLING, PART'L "B"
—	—	—	—	SUFFIX PART NO'S ADDED

UNLESS OTHERWISE SHOWN TOLERANCES
FRACTIONAL ± 1/64"
DECIMAL ± .005
ANGULAR ± 1°
SURFACE FINISH
MACHINED SURFACE
ROUGH FILE OR GRIND
EXCEPT ROUGH CASTINGS
DATED 4-24-56

ITEM	DESCRIPTION	PART NO.	QTY.

FINISH PER P.N. STD. NO.: SEE TABLE
MATERIAL PER P.N. STD. NO.: SEE TABLE

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS

NAME OF PART: GLAND WASHER

ENGR'G. CHK.: Joe 8/30/61
PROCESS ENGR. DATE
PATTERN NO.
PRODUCT ENGR. DATE
QUALITY CONT'L. DATE
NEXT ASSM.
1ST USE
CHECKED DATE 8/30/61
DRAWN DATE RK 8-24-61

PART DRWG. NO. ZZM-8024 (NOTED) -E (A)

ENGINEERING DEPT.

PARTS LIST

THE PYLE-NATIONAL CO.
CHICAGO, ILL.

SERIES NO. ZZM-W-5300

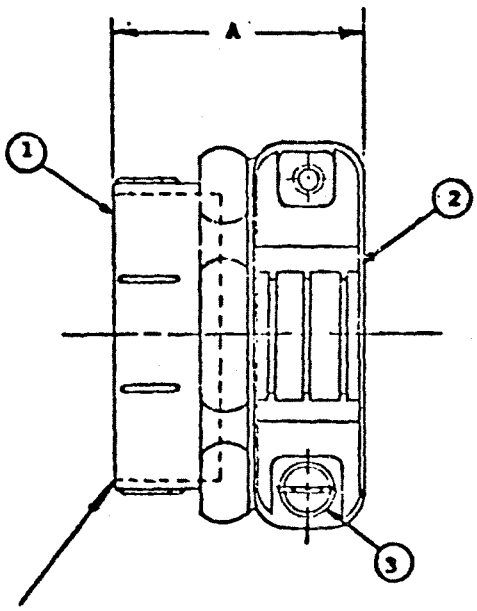
NAME CABLE CLAMP ASSEMBLY

DRAWING NO. ZZM-W-5312 B

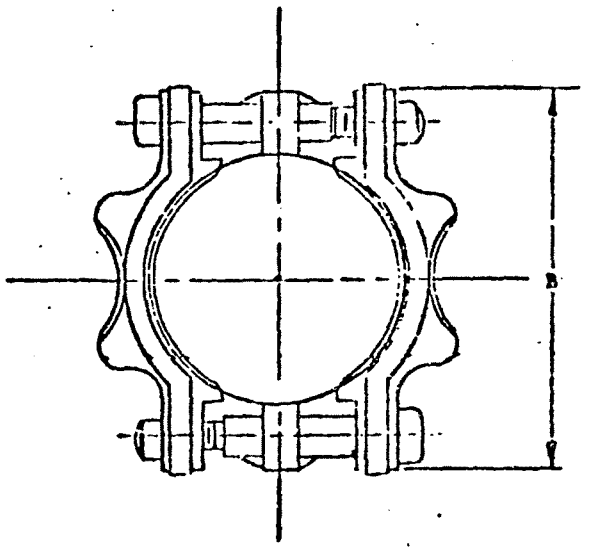
ORIGINATED BY A.B. CHECKED BY [signature] DATE 8-9-61 REV. A

SHEET 1 OF 1

QTY.	DESCRIPTION	ASSEMBLY NUMBER ZZM-W-5312	ZZM-W-5316	ZZM-W-5320	ZZM-W-5324	ZZM-W-5328
1	CABLE CLAMP NUT	ZZM-5312-10A	ZZM-5316-10A	ZZM-5320-10A	ZZM-5324-10A	ZZM-5328-10A
2	CABLE CLAMP STRAP	ZZM-5312-11A	ZZM-5316-11A	ZZM-5320-11A	ZZM-5324-11A	ZZM-5328-11A
2	TUBULAR NUT	ZZM-5312-12F	ZZM-5316-12F	ZZM-5320-12F	ZZM-5324-12F	ZZM-5328-12F
			HARDWARE			
2	FILLISTER HD. ST'LESS STL. SCREW	#10-24 x 7/8"	#10-24 x 1"	1/4"-20 x 1 1/4"	1/4"-20 x 1 1/2"	5/16"-18x1 3/4"
	ASSEMBLY LABOR					
	ASSEMBLY BURDEN					
	TOTAL COST					



C-12 UNS-2B THREAD



PART NUMBER	CABLE RANGE MAX.	CABLE RANGE MIN.	A	B	C NOM.
ZZM-W-5312	.937	.250	1.875	1.953	1.375
ZZM-W-5316	1.437	.250	1.937	2.484	1.875
ZZM-W-5320	1.937	.500	2.000	3.031	2.375
ZZM-W-5324	2.437	.875	2.062	3.562	2.875
ZZM-W-5328	2.875	1.375	2.125	4.078	3.375

ITEM NO.	MATERIAL DESCRIPTION	MATERIAL SPECIFICATION	FINISH DESCRIPTION	FINISH SPECIFICATION
1	ALUMINUM ALLOY DIE CAST	QQ-A-591	ALUMINUM OXIDE HARDCOATING	PYLE STD. E4-3.5
2	ALUMINUM ALLOY DIE CAST	QQ-A-591	ALUMINUM OXID. HARDCOATING	PYLE STD. E4-3.5
3	STAINLESS STEEL	-	NATURAL	-

WARNING - Make no design changes without authorization from U. S. Bureau of Mines.

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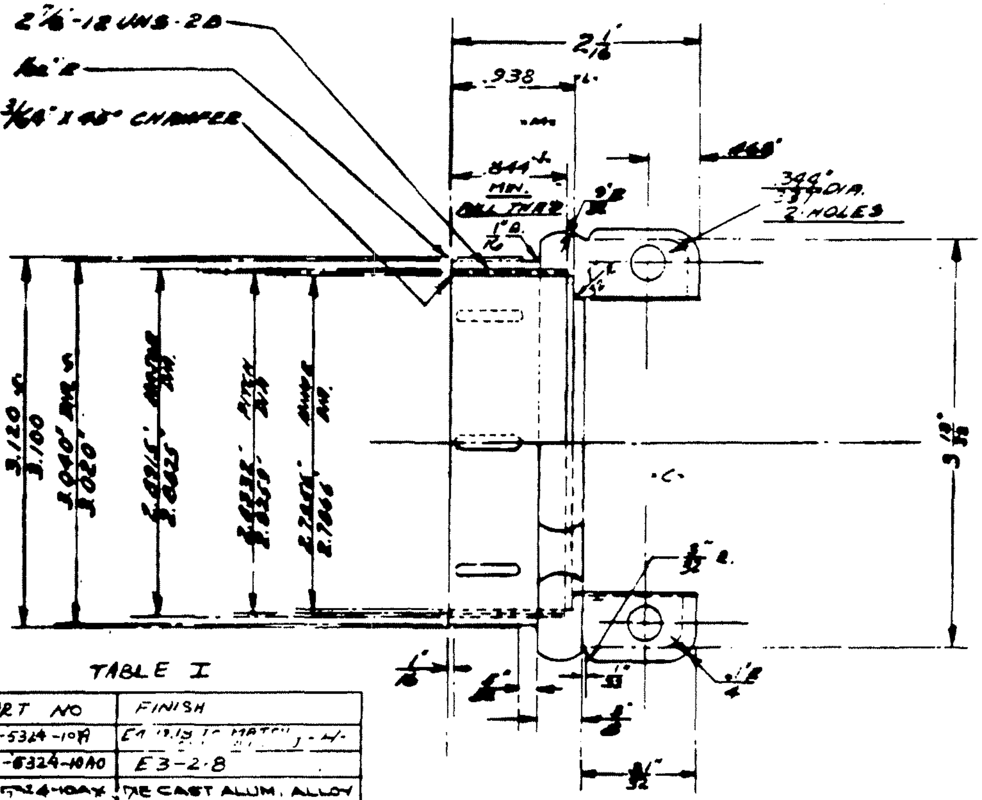
THE PYLE NATIONAL COMPANY CHICAGO 51, ILLINOIS	DR. M.M.	DATE 2-7-64
DRAWING TITLE: CABLE CLAMP ASSEMBLY	CK.	ENG. CK. / APP.
CODE IDENT NO. 49367	SIZE A	DRAWING NO. ZZM-W-53XX
SCALE		SHEET 1 OF 1

(orig. date) nov. 4-70

3. TOLERANCE FOR DIE BLOW ACROSS PARTING TO BE ±.005" MAX.
4. MAX. FLASH TO BE .010"

PART NO. (NOTED) SIZE ZZM-5324-10A (B)

NOTE: 1. DO NOT WORK TO THIS DRAWING WITHOUT REFERENCE TO PRODUCT SPEC. E2-70
2. MATERIAL TO COMPLY WITH QQA-591c-11 CERTIFICATE OF COMPLIANCE WITH CHEMICAL AND PHYSICAL PROPERTIES ON RAW MAT'L. REQUIRED.



SECTION A-A

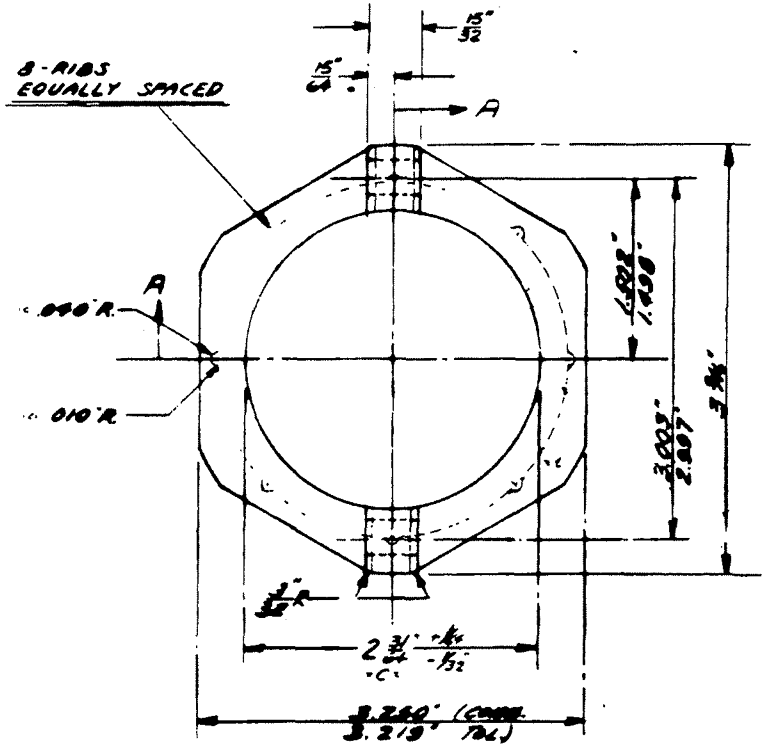


TABLE I

PART NO	FINISH
ZZM-5324-10A	[illegible]
ZZM-5324-10AO	E3-2-8
ZZM-5324-10AX	DIE CAST ALUM. ALLOY

REV.	DATE	BY	E.C.O.	CHANGE
M	[illegible]	F.C.	13652	[illegible] THD
L	1.3.72	NM	13455	1.000 WAS [illegible]
K	[illegible]	NM	12970	REMVD. HARDCOAT DIMS.
J	[illegible]	NM	12945	WAS 1.004, .937 .906 & E4.3.3
N	3-6-65	GB		E4.3.3 WAS E4-3.5; E4.6.30 WAS E4.6.31 [illegible]

REV.	DATE	BY	E.C.O.	CHANGE
G	[illegible]	GENE	11242	ADDED ZZM-5324-10AX
F	[illegible]	NH	11203	PART NO. ZZM-5324-10AO FINISH E3-2-8 ADDED
E	[illegible]	GK		DETAIL BROUGHT UP TO DATE [illegible]
D	2.26.[illegible]	[illegible]	—	2 7/8 WAS 2 3/8
C	9/9/61	LA	3518	[illegible]
A	[illegible]	ES		REVISED MATERIAL
A	[illegible]	GK		.344-.337 WAS .341-.336

UNLESS OTHERWISE SHOWN TOLERANCES: FRACTIONAL ± 1/64; DECIMAL ± .005; ANGULAR ± 1°
SURFACE FINISH: MACHINED SURFACE 125
DRAFT [illegible]
EXCEPT [illegible]
SEE P. N. STD. [illegible]

ITEM	DESCRIPTION	PART NO.	QTY

FINISH: SEE TABLE I
MATERIAL: [illegible]

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS

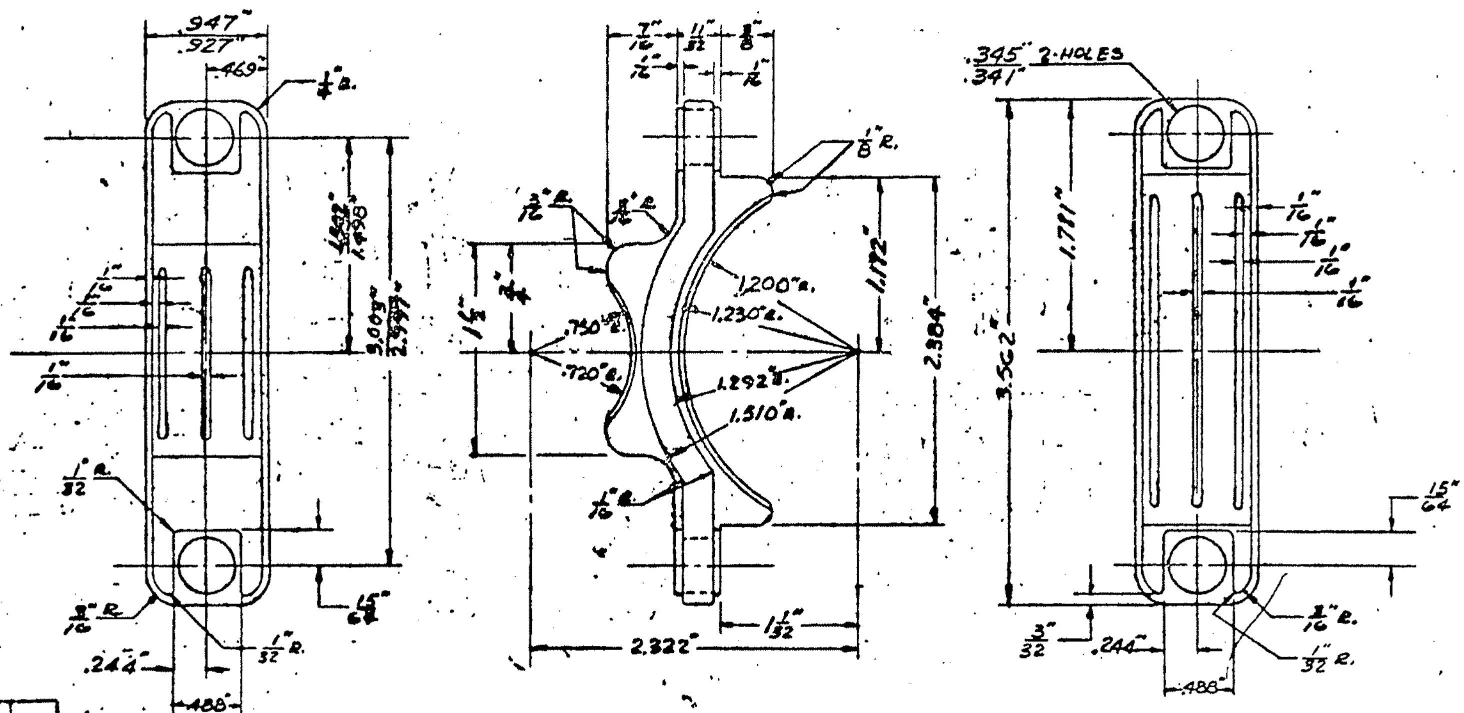
NAME OF PART: CABLE CLAMP NUT

SUPERSEDES | PRODUCT ENGR. | DATE | PROCESS ENGR. | DATE | PATTERN NO. | SCALE
FIRST USED ON | DRAWN G. KEITH 3-16-59 | CHECKED [illegible] /59

PART NO. ZZM-5324-10A (B)

PYLE NATIONAL FORM NO. [illegible]

PART DWG NO. ZZM-5324-11A (B)



...				
...		C	B	A

TABLE-I

PART NO	FINISH & COLOR
ZZM-5324-11A	E4-19.18 TO MATCH HARD COAT
ZZM-5324-11AO	E3-2-8

NOTES:

1. ALL EDGES AND FILLETS .015" R. UNLESS OTHERWISE SPECIFIED.
2. BLEND ALL RADII.
3. MATERIAL TO COMPLY WITH QQ-A-591-a II CERTIFICATE OF COMPLIANCE WITH CHEMICAL AND PHYSICAL PROPERTIES ON RAW MATERIALS REQUIRED
4. TOLERANCE FOR DIE BLOW ACROSS PARTING TO BE ±.005" MAX.
5. MAX. FLASH TO BE .010"

REV.	DATE	BY	E.C.O.	CHANGE
J	6.5.70	WH	12945	WAS E4-3.3
H	[illegible]	[illegible]	[illegible]	REMOVED ZZM-5324-11AX
G	3-5-65	[illegible]		[illegible] ECO 11265
F	[illegible]	[illegible]	11242	ADDED ZZM-5324-11AX
E	1-20-65	WH	11203	PART NO: ZZM-5324-11AO FINISH: E3-2-8 ADDED
D	[illegible]	RQ	[illegible]	PICTORIAL CORRECTION ON [illegible]
C	[illegible]	[illegible]		[illegible]
B	[illegible]	[illegible]		REVISED MATERIAL
A	[illegible]	[illegible]		.345-.341 WAS [illegible]

UNLESS OTHERWISE SHOWN TOLERANCES
FRACTIONAL ± 1/64"
DECIMAL ± .005
ANGULAR ± 1°
SURFACE FINISH
MACHINED SURFACE
ROUGH FILE OR GRIND
EXCEPT ROUGH CASTINGS SEE P.N. STD. NO.
SUPERSEDES DWG. NO.
DATED

ITEM	DESCRIPTION	PART NO.	QTY

FINISH PER P.N. STD. NO.: SEE TABLE I.

MATERIAL PER P.N. STD. NO.: E4-6.30

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS

NAME OF PART: CABLE CLAMP SIZE 24

QUALITY CONT'L. DATE | PRODUCTION ENG. DATE | PROCESS ENGR. DATE | PATTERN NO. | SCALE: ±1"

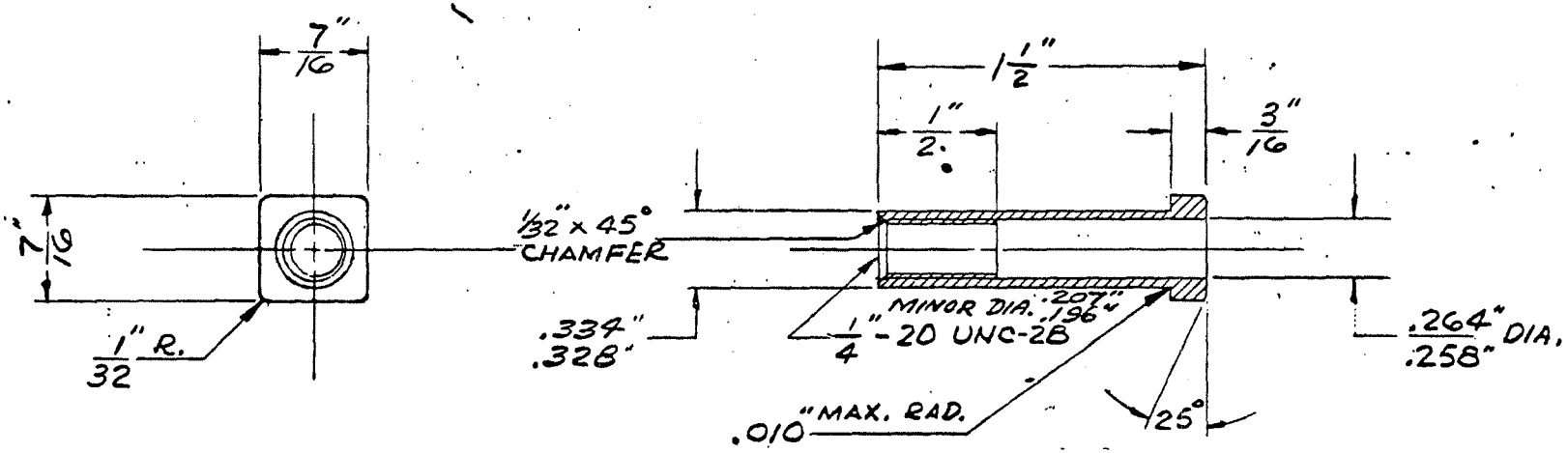
CHECKED | DATE | DRAWN | DATE: AB. 6-13-59

(NOTED)
PART DWG NO. ZZM-5324-11A (B)

PYLE NATIONAL FORM NO. E 90 1968

PART DRWG. NO. ZZM-5324-12F(A)

NOTE:
1. ALL DIA. TO BE CONCENTRIC WITHIN .005" T. I. R.
2. ALL EDGES & CORNERS TO BE FREE OF BURRS.



	3	8	0	9
	C	J	C	

REV.	DATE	BY	E.C.O.	CHANGE
C	11-21-72	LA	13702	WAS MATL E4-1.10
B	10-27-66	V.B.	11807	E4-1.10 WAS TYPE 304 STAINLESS. (REMOVED NOTE #3
A	9/30/60	GL		ADDED NOTE 3 AND REVD MATL NOTE.

UNLESS OTHERWISE SHOWN TOLERANCES
FRACTIONAL ± 1/64"
DECIMAL ± .005
ANGULAR ± 1°
SURFACE FINISH
MACHINED SURFACE 100
ROUGH FILE OR GRIND 180
EXCEPT ROUGH CASTINGS

SUPERSEDES DRWG. NO.
DATED

ITEM	DESCRIPTION	PART NO.	Q'TY.

FINISH PER P.N. STD. NO.

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS

MATERIAL PER P.N. STD. NO.
30 3 FREE MACHINING
E4-1.10

NAME OF PART
TUBULAR NUT
SIZE 24

ENGR'G. CHK. DATE	PROCESS ENGR. DATE	PATTERN NO.	
L. Nov. 6/23/59			
PRODUCT ENGR. DATE	QUALITY CONT'L. DATE	NEXT ASSM.	1ST USE
J. Hoover			
CHECKED DATE	DRAWN DATE		SCALE =1"
7/2/59	AB 6-18-59		

PART DRWG. NO. ZZM-5324-12F(A) DRWG. SIZE

NE PHOENIX

SIZE (A)

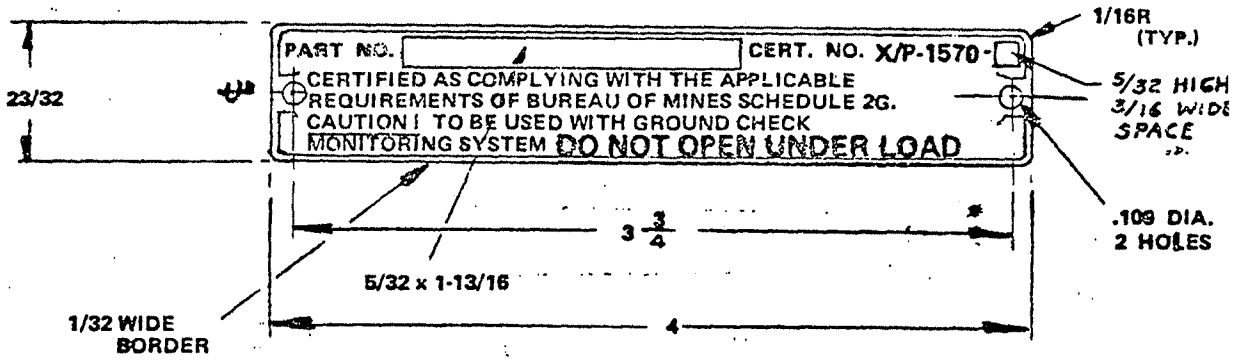
PART NO. P-205197

PURCHASED PART

REVISIONS				
LTR	ECO	DESCRIPTION	DATE	APPROVEI
D	13485	ADDED 5/32 x 3/16 SPACE. REMVD -1	2-1-72	

VENDOR:

VENDOR CATALOG NO.:



NOMENCLATURE:

SPECIFICATIONS: 1/16, 5/64 AND 3/32 HIGH (AS SHOWN) LETTERS, BLOCKS AND BORDERS TO BE NATURAL BLACK SCREENED ENAMEL.

PART NO.:

RELEASED
AUG 11 1971
FOR PRODUCTION

WARNING - Make no design changes without authorization from U. S. Bureau of Mines.

RELEASED
APR 26 1971
FOR PROCESSING

NEXT ASSY.	USE ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS | DECIMALS | ANGLES

MATERIAL
THICK (.022TH.)
BRIGHT ANODIZED ALUMINUM

FINISH

SUPERSEDES DATED

DRAWN FK RA — DATE 3-26-71
CHECKED — ENGINEER — P.R. ℄
PRODUCTION ENGINEERING
QUALITY CONTROL
ENGINEERING APPROVAL

LINE CODE
PART TYPE C H A

THE PYLE-NATIONAL COMPANY
Chicago, Illinois 60651

TITLE
NAME PLATE

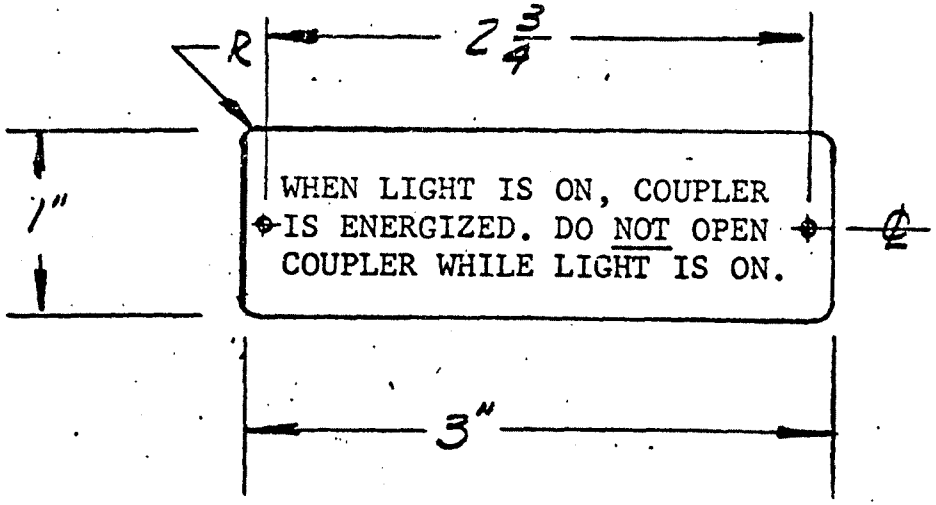
SIZE	CODE IDENT. NO.	DRAWING NO.
A	49367	P-205197

SCALE — SHEET OF

PART NO. DRWG

REVISIONS

LTR	ECO	DESCRIPTION	DATE	APPROVED



NOTE:

1. LARGE LEDGIBLE LETTERS AS SHOWN TO BE NATURAL ON BLACK BACKROUND.

LIMITED RELEASE 374-L

NEXT ASSY.	USE ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±1/64 | DECIMALS | ANGLES
MATERIAL: ALUM. SHEET .022 THICK
FINISH: —
SUPERSEDES | DATED

DRAWN: WALSE | DATE: 15 JUNE 73
CHECKED: ASW | ENGINEER | P.R. C
PRODUCTION ENGINEERING
QUALITY CONTROL
ENGINEERING APPROVAL
LINE CODE | PART TYPE: C H A

THE PYLE-NATIONAL COMPANY
Chicago, Illinois 60651

TITLE: USBM REEL CONNECTOR NAME PLATE

SIZE	CODE IDENT. NO.	DRAWING NO.
A	49367	P-206040-NP

SCALE: — | SHEET 1 / 1

PARTS LIST

THE PYLE-NATIONAL CO.

Code Ident. No. 49367

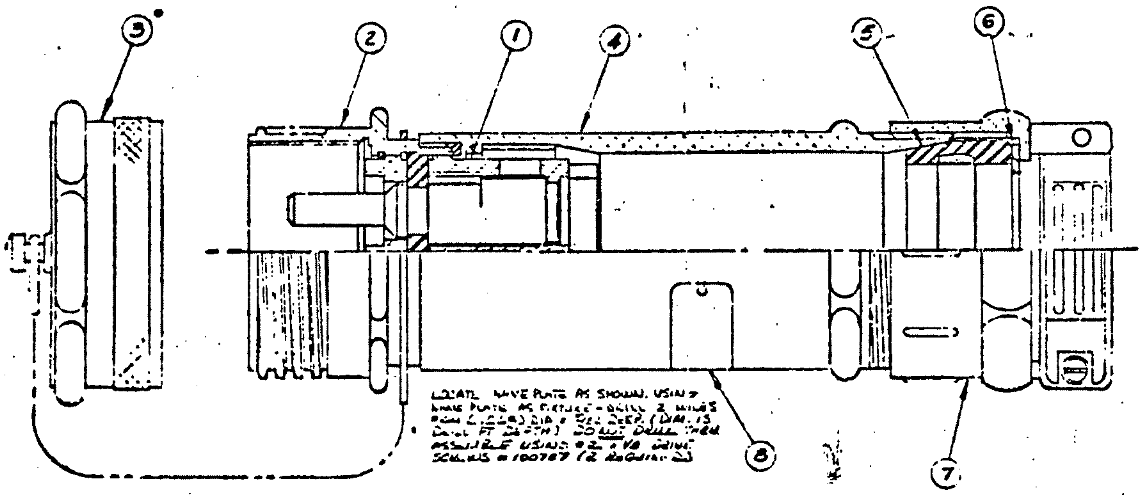
RELEASE STATUS		SERIAL NO.
LIMITED		374-L
PROCESSING		
PRODUCTION		

PART NO.	P-206041
NAME	RECEPTACLE CONN. D.C. REEL CONNECTOR
DWG. NO.	P-206041

DATE: 19 FEB 73 BY: ASW CHECK _____ SHEET 1 OF 1

QTY.	PART NUMBER	DESCRIPTION	ITEM
1	P-206042-60P	INSERT S.A.	1.
1	P-206041-1	SHELL, RCPT	2.
1	ZZM-W-5624-A	DUST COVER S.A.	3.
1	ZZM-W-2424	ADAPTER S.A.	4.
1	ZZM-B-6324-34	GROMMET S.A.	5.
1	ZZM-8024-34E	GLAND WASHER	6.
1	ZZM-W-5324	CABLE CLAMP S.A.	7.
1	P-205197-A	NAME PLATE	8.

REV.	DATE	DESCRIPTION	REV.	DATE	DESCRIPTION



FORM SIZE	ASSEMBLY PART NUMBER (WITH COVER)	ITEM #1 INSERT ASSY	ITEM #2 LOFT SHELL	ITEM #3 DUST COVER ASSY	ITEM #4 ADAPTER ASSY	ITEM #5 GROMMET ASSY	ITEM #6 GLAND WASHER	ITEM #7 CABLE CLAMP ASSY	ITEM #8 NAME-PLATE
24	R206041	R206041-A	R206041-1	22M-W524-A	22M-W-2424	22M-B-632434	22M-524-34E	22M-W-5524	R-225117-A

LIMITED RELEASE 276-6

DRAWN	DATE
CHECKED	ENGINEER
PRODUCTION ENGINEERING	
QUALITY CONTROL	
ENGINEERING APPROVAL	
PART TYPE	

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS 60651

TITLE USAN DC REEL CONNECTOR RECEPTACLE ASSEMBLY

SIZE	CODE IDENT. NO.	DRAWING NUMBER
C	49367	R206041

SCALE — SHEET 1 OF 1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES

MATERIAL —
FINISH —
SUPERSEDES DATED
NEXT ASSY. USED ON
APPLICATION

The Pyle-National Company

INSERTS COMPOSITE PARTS LIST

PART DRWG. NO. P-206042-60P (

NAME MALE INSERT ASSEMBLY

SIZE 24-

BY ASW DATE 16FEB73

CHK. _____ APPR. _____

Note 1. To construct a particular insert, use the components shown in the vertical columns below the desired Insert Suffix Numbers.

Note 2. To construct an insert assembly with an alternate key position, such as GB/GD10-24-60P2L03 add the 03 alternate suffix to the Male and Back-Cap insulations only, so that the Male Insulation number becomes GB/GD3024-60F03, and the Back-Cap Insulation number becomes GB/GD3424-60F03 (The center insulation is molded with all keys).

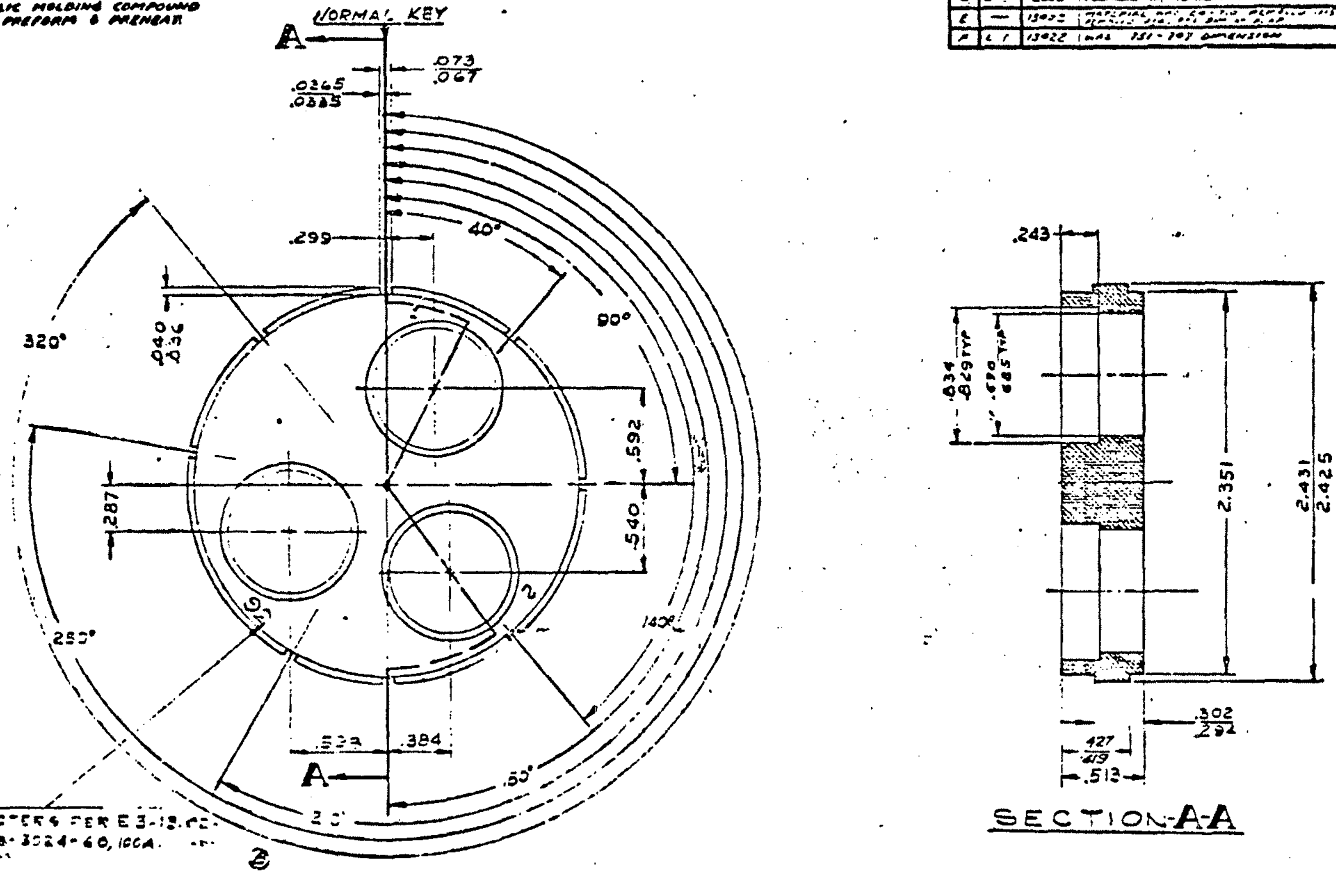
QTY.	Basic Component NUMBER & NAME	Component Suffix Number - Add to Basic Number															
		P1L	P1K	P1V	P1D	P1G	P2L	P2K	P2V	P2D	P2G	P3L	P3K	P3V	P3D	P3G	
1	GB-3024- Male Insulation											60F					
1	GB-3324- Center Insulation											60D					
1	P-206042-32 Back-Cap Insulation											60F					
	Back-Cap Insulation																
2	P-206042-P- Pin Contact											1LL					
1	P-206042-P- Pin Contact S.A.											2LK					
3	100048 TERMINAL SCREW		SOCKET SET SCRW. STL. CUP PT.									½-20UNF-3A x 1½					
	Pin Contact																
	Pin Contact																
	ZZM- Hex Key																
	Assembly Labor																
	Assembly Burden																
	Total Cost																

NOTE: THIS DRAWING IS SUPPLIED FOR INFORMATION ONLY. DESIGN FEATURES, SPECIFICATIONS AND PERFORMANCE DATA SHOWN HEREON ARE THE PROPERTY OF THE PYLE-NATIONAL COMPANY. NO RIGHTS OF REPRODUCTION ARE IMPLIED. PRINTS IN CUSTOMERS FILES CANNOT BE MAINTAINED TO CURRENT ISSUE. ALL DIMENSIONS SUBJECT TO NORMAL PYLE-NATIONAL COMPANY MANUFACTURING VARIATIONS.

DRAWING NUMBER GB-3024.60F — SHEET 1 OF 1

NOTES: 1. DO NOT WORK TO THIS DRWG. WITHOUT REFERENCE TO PRODUCT SPEC NO. E2-30.00
2. ECRY-24 SERIES GB & GD
3. #? CONTACTS
SERVICE RATING (MIL-C-5015) = D
3. MATERIAL PER P.N. STD. E4-7.51 PHENOLIC MOLDING COMPOUND NOTE PREFORM & PREHEAT.

LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
A			DART NO WAS -30FY	[illegible]	[illegible]
B	C-3	11121	480 WAS 500	[illegible]	
C		[illegible]	[illegible]	[illegible]	[illegible]
D		[illegible]	VOLTAGE RATING DELETED	[illegible]	[illegible]
E	—	13095	[illegible]	[illegible]	
F		13922	WAS .381-.397 DIMENSION	[illegible]	



MOLD CHARACTERS PER E3-13.00 [illegible] GB-3024-60, 100A [illegible] PYLE.

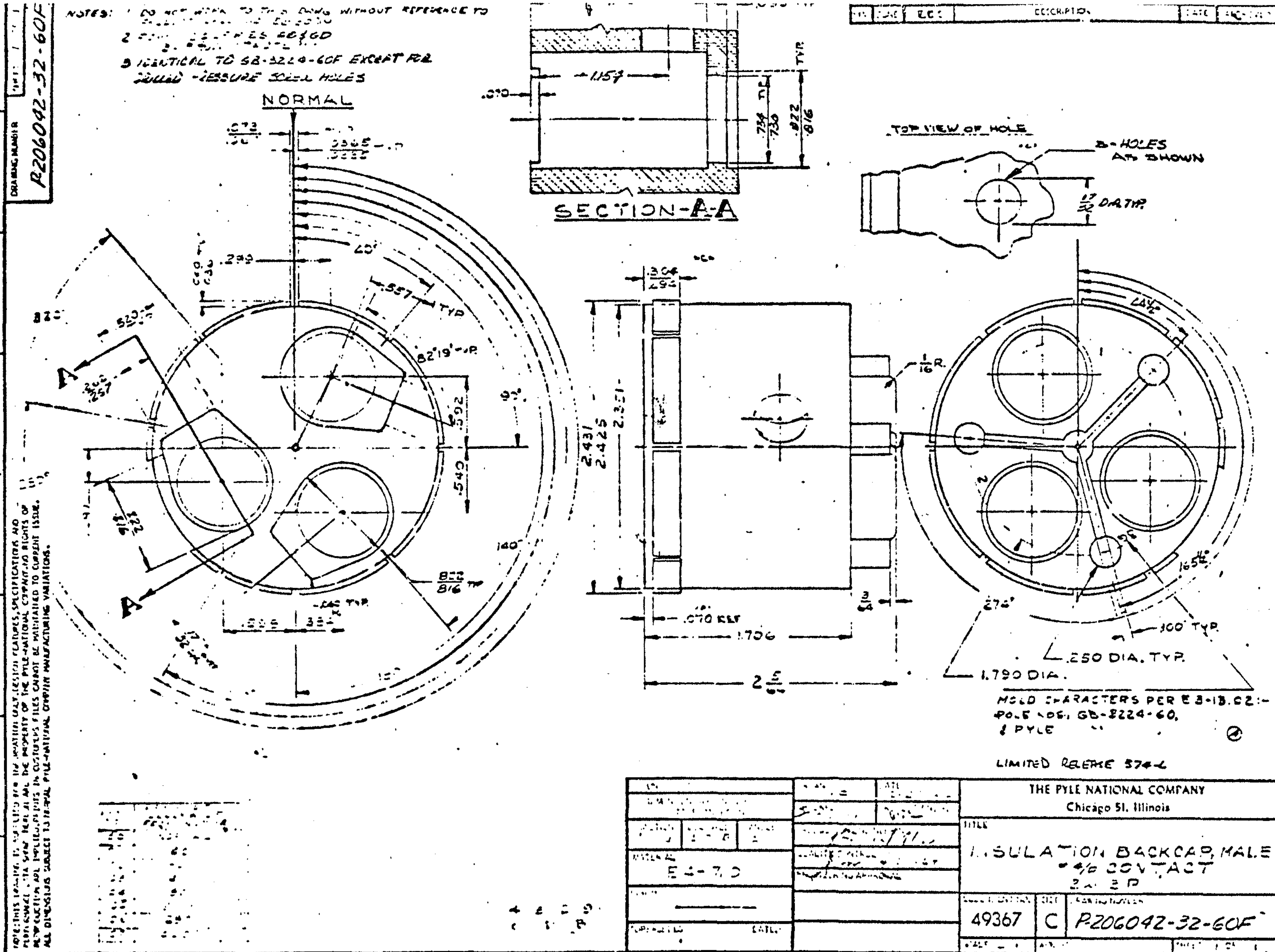
KEY NO	KEY POSITION CLOCKWISE FROM NORMAL
00	NORMAL
01	40°
02	90°
03	140°
04	120°
05	210°
06	280°
07	320°

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: FRACTIONS ±1/64, DECIMALS ±.005, ANGLES ±1°	DRAWN [illegible]	DATE 12-17-62
MATERIAL SEE NOTE 3	CHECKED [illegible]	[illegible]
FINISH —/—	PRODUCTION ENGINEERING [illegible]	
SUPERSEDES — DATED	QUALITY CONTROL [illegible]	
	ENGINEERING APPROVAL	
	NEXT ASSY GB10.2460P SERIES	

THE PYLE NATIONAL COMPANY
Chicago 51, Illinois

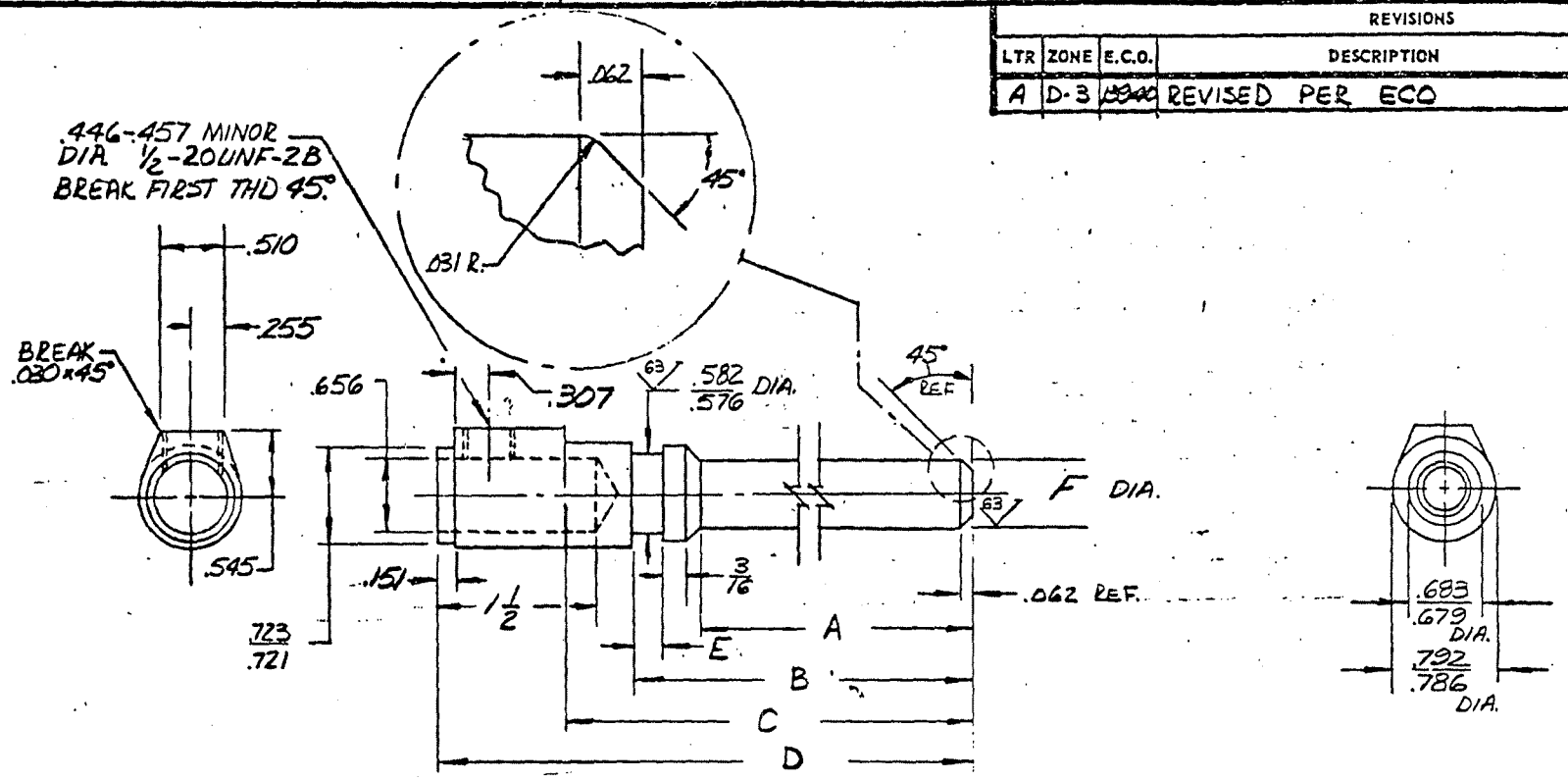
TITLE: INSULATION, MALE FRONT [illegible]P, SIZE 24

CODE IDENT NO.	SIZE	DRAWING NUMBER
49367	C	GB-3024-60F
SCALE 2:1	WEIGHT	SHEET 1 OF 1


NOTE: THIS DRAWING IS SUPPLIED FOR INFORMATION ONLY. DESIGN FEATURES, SPECIFICATIONS AND PERFORMANCE DATA SHOWN HEREIN ARE THE PROPERTY OF THE PYLE-NATIONAL COMPANY AND RIGHTS OF REPRODUCTION ARE IMPLIED. PRINTS IN CUSTOMERS FILES CANNOT BE MAINTAINED TO CURRENT ISSUE. ALL DIMENSIONS SUBJECT TO NORMAL PYLE-NATIONAL COMPANY MANUFACTURING VARIATIONS.
DRAWING NUMBER
P206042-32-60F
NOTES:
9 IDENTICAL TO GB-3224-60F EXCEPT FOR
NORMAL
SECTION-A-A
TOP VIEW OF HOLE
3-HOLES AS SHOWN
DIA TYP
2.431
2.425
2.351
.304
.294
1.706
.070 REF
1/16 R.
.250 DIA. TYP.
1.790 DIA.
.100 TYP.
MOLD CHARACTERS PER E3-13.02:-
POLE NOS. GB-3224-60,
& PYLE
LIMITED RELEASE 574-L
THE PYLE NATIONAL COMPANY
Chicago 51, Illinois
TITLE
INSULATION BACKCAP, MALE
49367
C
P206042-32-60F
.734
.730
.822
.816
.1157
.540
.592
.299
140°
DESCRIPTION

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
A	D-3	[illegible]	REVISED PER ECO	6-15-73	

SIZE (B) SHEET OF PART DRWG. No.



NOTE:

1.) DO NOT WORK TO THIS DWG. WITHOUT REFERENCE TO PROD. SPEC. E2-40.00.

2.) BREAK EDGES .005 MAX.

PART NUMBER	A	B	C	D±.010	FINISH	E	F±.001
P-206042-P-1LL	1 11/32	1.918	2.369	3.530	E4-9.01 CL.2	.234	.425
P-206042-P-2	1 3/32	2.070	2.479	3.655	NEXT ASSY.	.261	.375

LIMITED RELEASE 374-L

NOTE: THIS DRAWING IS SUPPLIED FOR INFORMATION ONLY. PRINTS IN CUSTOMER'S FILES CANNOT BE MAINTAINED TO CURRENT ISSUE. ALL DIMENSIONS SUBJECT TO NORMAL PYLE-NATIONAL COMPANY MANUFACTURING VARIATIONS.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON	DRAWN WALSE	PER B	THE PYLE-NATIONAL COMPANY
			DATE 7 Feb 73		CHICAGO, ILLINOIS 60651
		FRAC ±1/64 / DEC ±.005 / ANG ±1°	CHECKED		TITLE USEM REEL CONNECTOR. MALE CONTACTS
		MATERIAL E4-2.01	PRODUCT ENGINEER ASW		
			PRODUCTION ENGINEERING		
		FINISH SEE TABLE	QUALITY CONTROL		SIZE B / CODE IDENT. NO. 49367 / DRAWING NUMBER (LIMITED) P-206042-P-1LL
NEXT ASSY.	USED ON	SUPERSEDES	DATED	ENGINEERING APPROVAL	
APPLICATION				PART TYPE C E A	SCALE H / SHEET 1 OF 1

PARTS LIST

THE PYLE-NATIONAL CO.

Code Ident. No. 49367

RELEASE STATUS		SERIAL NO.
LIMITED		374-L
PROCESSING		
PRODUCTION		

PART NO.	P-206042-P-2LK
NAME	GROUND CONTACT PIN
DWG. NO.	P-206042-P-2LK

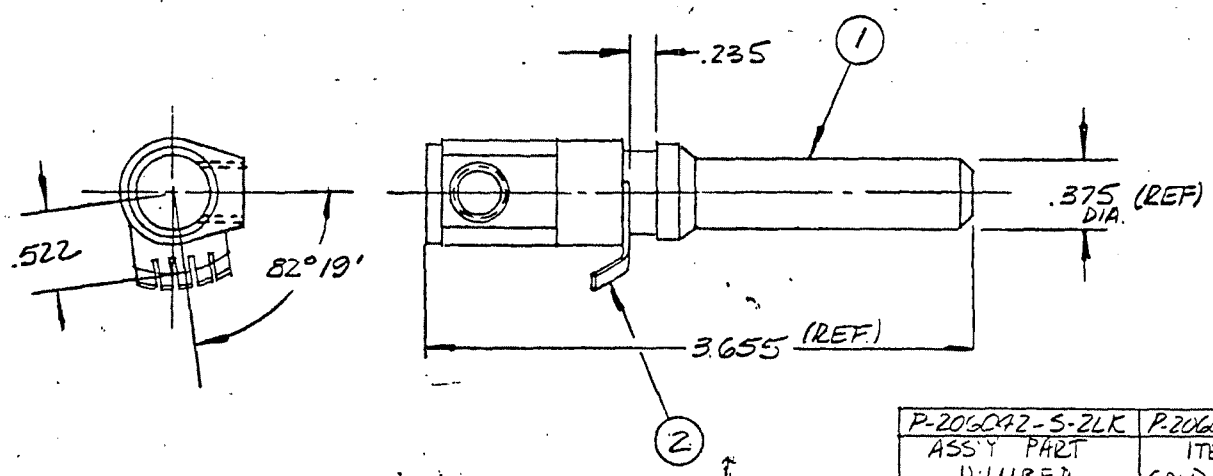
DATE: 2-16-73 BY: AGW CHECK _____ SHEET 1 OF 1

QTY.	PART NUMBER	DESCRIPTION	ITEM
1	P-206042-P-2	GROUND CONTACT PIN	1
1	ZZM-4041-12H	GROUND CLIP	2

REV.	DATE	DESCRIPTION	REV.	DATE	DESCRIPTION

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED

SIZE (B) | SHEET OF | PART DRWG. No.



P-206042-S-2LK	P-206042-S-2	ZZM-4041-12H
ASS'Y PART NUMBER	ITEM #1 GR'D CONTACT	ITEM #2 GR'D CLIP

LIMITED RELEASE 374-L

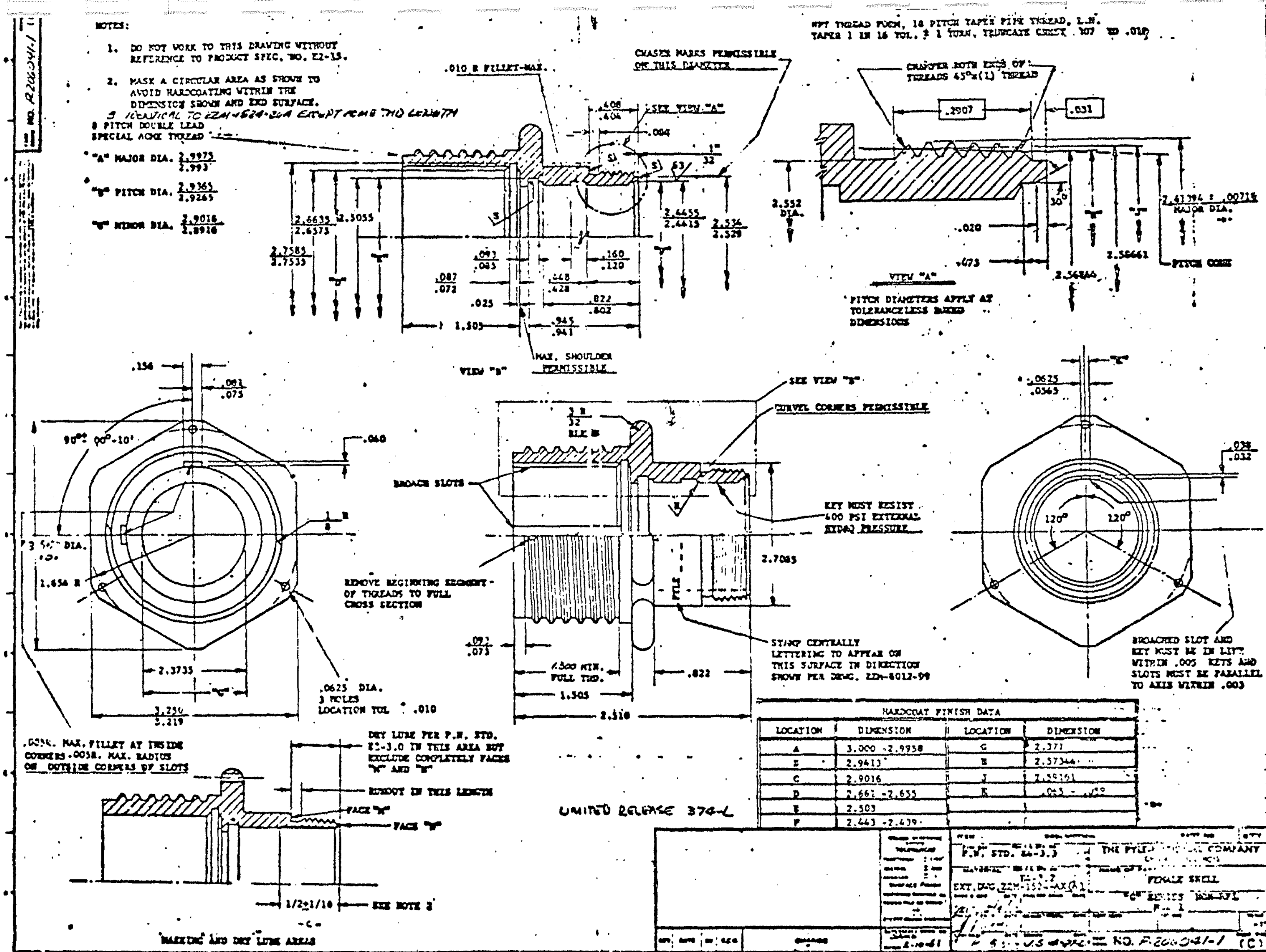
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON	DRAWN WALSE P. R.	THE PYLE-NATIONAL COMPANY
			DATE 16 FEB 73	CHICAGO, ILLINOIS 60651
		FRAC ± DEC ±.005 ANG ±1°	CHECKED	TITLE USEM REEL CONNECTOR
		MATERIAL — # —	PRODUCT ENGINEER ASW	MALE GROUND CONTACT ASSY
			PRODUCTION ENGINEERING	
		FINISH EE-9.02-CL.K	QUALITY CONTROL	SIZE B / CODE IDENT. NO. 49367 / DRAWING NUMBER P-206042-F-2LK
NEXT ASSY.	USED ON	SUPERSEDES DATED	ENGINEERING APPROVAL	
APPLICATION			PART TYPE C E A	SCALE — # — / SHEET 1 OF 1

NOTES:

1. DO NOT WORK TO THIS DRAWING WITHOUT REFERENCE TO PRODUCT SPEC. NO. E2-15.
2. MASK A CIRCULAR AREA AS SHOWN TO AVOID HARDCOATING WITHIN THE DIMENSION SHOWN AND END SURFACE.
3. IDENTICAL TO EZM-624-20A EXCEPT ACME THD LENGTH

8 PITCH DOUBLE LEAD SPECIAL ACME THREAD

* "A" MAJOR DIA. 2.9975 / 2.993
* "B" PITCH DIA. 2.9365 / 2.9265
* "C" MINOR DIA. 2.9016 / 2.8916



NPT THREAD FORM, 18 PITCH TAPER PIPE THREAD, L.H. TAPER 1 IN 16 TOL. ± 1 TURN, TRUNCATE CREST .107 TO .010
CHASER MARKS PERMISSIBLE ON THIS DIAMETER
CHAMFER BOTH ENDS OF THREADS 45°x(1) THREAD
.010 R FILLET-MAX.
SEE VIEW "A"
VIEW "A"
PITCH DIAMETERS APPLY AT TOLERANCELESS BASED DIMENSIONS
PITCH CONE
MAJOR DIA.
MAX. SHOULDER PERMISSIBLE
VIEW "B"
SEE VIEW "B"
CURVED CORNERS PERMISSIBLE
BROACH SLOTS
KEY MUST RESIST 600 PSI EXTERNAL HYDRO PRESSURE
REMOVE BEGINNING SEGMENT OF THREADS TO FULL CROSS SECTION
STAMP CENTRALLY LETTERING TO APPEAR ON THIS SURFACE IN DIRECTION SHOWN PER DWG. EZM-8012-99
.500 MIN. FULL THD.
BROACHED SLOT AND KEY MUST BE IN LINE WITHIN .005 KEYS AND SLOTS MUST BE PARALLEL TO AXIS WITHIN .003
.0625 DIA. 3 HOLES LOCATION TOL ± .010
.005R. MAX. FILLET AT INSIDE CORNERS .005R. MAX. RADIUS ON OUTSIDE CORNERS OF SLOTS
DRY LUBE PER P.N. STD. E2-3.0 IN THIS AREA BUT EXCLUDE COMPLETELY FACES "H" AND "E"
RUNOUT IN THIS LENGTH
FACE "H"
FACE "E"
SEE NOTE 2
MARKING AND DRY LUBE AREAS

UNITED RELEASE 374-L

HARDCOAT FINISH DATA			
LOCATION	DIMENSION	LOCATION	DIMENSION
A	3.000 -2.9958	G	2.371
B	2.9413	H	2.57344
C	2.9016	J	2.55161
D	2.661 -2.655	K	.045 - [illegible]
E	2.503		
F	2.443 -2.439		

P.N. STD. E4-3.3

EXT. DWG. EZM-155-AX(A)

THE PYLE-NATIONAL COMPANY

FEMALE SHELL "C" SERIES NON-EXP.

NO. R2020341-1 (C)

ENGINEERING DEPT.

PARTS LIST

THE PYLE-NATIONAL CO.
CHICAGO, ILL.

SERIES NO. ZZM-W-5600-A

NAME COVER ASSEMBLY

DRAWING NO. ZZM-W-5612 (B)

ORIGINATED BY J.P. CHECKED BY _____ DATE 6-4-59 REV. _____

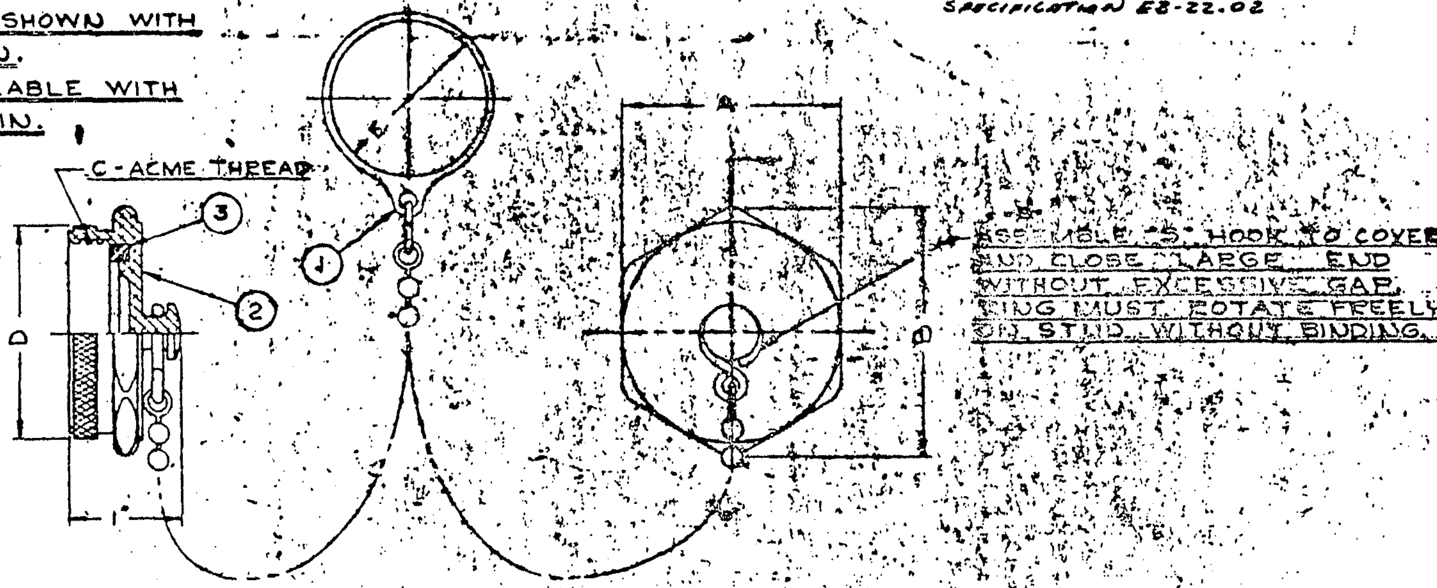
SHEET 1 OF 1

TY.	DESCRIPTION	ASSEMBLY NUMBER				
		ZZM-W-5612-A	ZZM-W-5616-A	ZZM-W-5620-A	ZZM-W-5624-A	ZZM-W-5628-A
1	COVER	ZZM-5612-A	ZZM-5616-A	ZZM-5620-A	ZZM-5624-A	ZZM-5628-A
1	SEAL	ZZM-6012-C	ZZM-6016-C	ZZM-6020-C	ZZM-6024-C	ZZM-6028-C
			SUB ASSEMBLIES			
	CHAIN-RING ASSEM.	ZZM-8512-10EA	ZZM-8516-10EA	ZZM-8520-10EA	ZZM-8524-10EA	ZZM-8528-10EA
	ASSEMBLY LABOR					
	ASSEMBLY BURDEN					
	TOTAL COST					

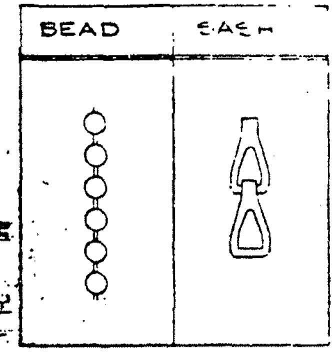
PART NO. (NOTED) ZZM-W-5616 (B)

NOTE:
ASSEMBLY OF ITEM 1 & ITEM 2 SHALL BE IN ACCORDANCE WITH PROCESS SPECIFICATION E8-22.02

ASSEMBLY SHOWN WITH BEAD CHAIN.
ALSO AVAILABLE WITH SASH CHAIN.



CHAIN STYLES



WARNING - Make no design changes without authorization from U. S. Bureau of Mines.

FORM NO.	ASSEMBLY PART NUMBER	1 CHAIN & RING ASSY	CHAIN STYLE	2 FEMALE COVER	3 SEAL	A	B	C	D	E
2	ZZM-W-5612	ZZM-B512-10E	BEAD	ZZM-5612	ZZM-6012-C	1 3/4"	1 61/64"	1 1/2"	1 23/32"	1 1/4"
	ZZM-W-5612-A	ZZM-B512-10EA	SASH							
16	ZZM-W-5616	ZZM-B516-10E	BEAD	ZZM-5616	ZZM-6016-C	2 1/4"	2 31/64"	2"	2 7/32"	1 3/4"
	ZZM-W-5616-A	ZZM-B516-10EA	SASH							
20	ZZM-W-5620	ZZM-B520-10E	BEAD	ZZM-5620	ZZM-6020-C	2 3/4"	3 1/32"	2 1/2"	2 23/32"	2 1/4"
	ZZM-W-5620-A	ZZM-B520-10EA	SASH							
[illegible]	ZZM-W-5624	ZZM-B524-10E	BEAD	ZZM-5624	ZZM-6024-C	3 1/4"	3 9/16"	3"	3 7/32"	2 3/4"
	ZZM-W-5624-A	ZZM-B524-10EA	SASH							
28	ZZM-W-5628	ZZM-B528-10E	BEAD	ZZM-5628	ZZM-6028-C	3 3/4"	4 7/32"	3 1/2"	3 23/32"	3 1/4"
	ZZM-W-5628-A	ZZM-B528-10EA	SASH							

REV.	DATE	BY	E.C.O.	CHANGE
C	10/18	AP	11478	ADDED PROCESS SPECIFICATION
B	[illegible]	W.B.	2777	ADDED NOTE.
A	[illegible]	W.B.	2695	REDRAWN, SASH CHAIN ADDED.

ITEM | DESCRIPTION | PART NO. | QTY

FINISH

MATERIAL: SEE B/M ABOVE

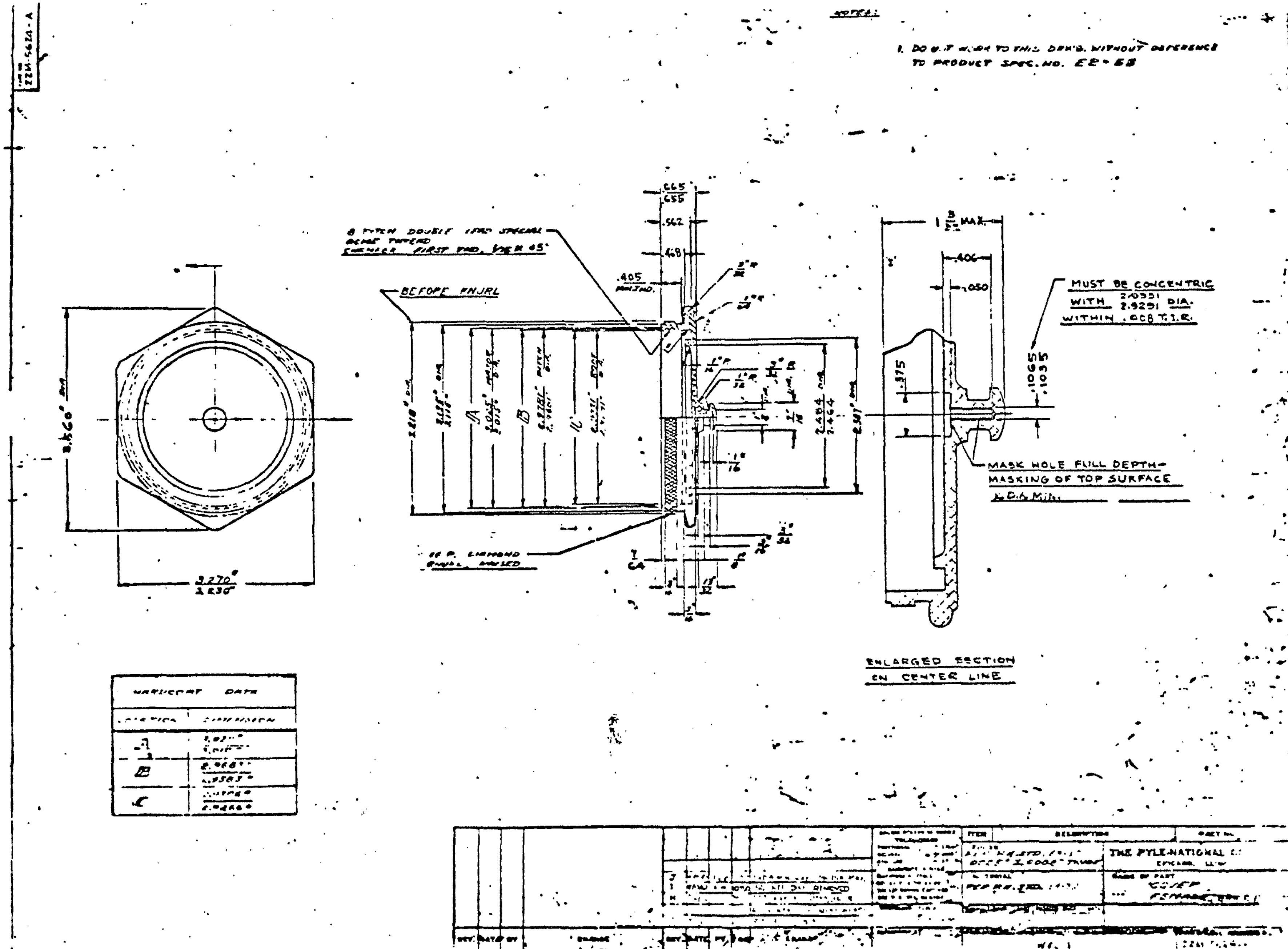
THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS

NAME OF PART: FEMALE BARREL COVER ASSEMBLY

DRAWN: BICKEL 11-14-52
CHECKED: 12/5/52

PART NO. (NOTE) ZZM-W-5612 (B)

PYLE NATIONAL FORM NO. 280-1



NOTES:
1. DO NOT WORK TO THIS DRW'G. WITHOUT REFERENCE TO PRODUCT SPEC. NO. EE-EB
BEFORE KNURL
MUST BE CONCENTRIC WITH 2.9351 2.9291 DIA. WITHIN .008 T.I.R.
MASK HOLE FULL DEPTH-MASKING OF TOP SURFACE
ENLARGED SECTION ON CENTER LINE
.1065
.1035
2.484
2.464
.405
.665
.655
.562
.48
.406
.050
.375
3.270
3.230
THE PYLE-NATIONAL CO.
COVER

ENGINEERING DEPT.

PARTS LIST

THE PYLE-NATIONAL CO.
CHICAGO, ILL.

SERIES NO. ZZM-8500-10EA

NAME CHAIN RING ASSEMBLY

DRAWING NO. ZZM-8512-10E (B)

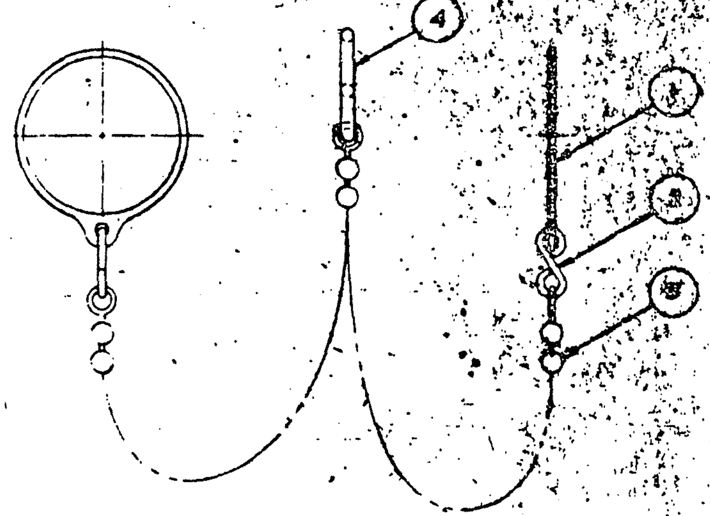
ORIGINATED BY J.P. CHECKED BY _____ DATE 2-20-59 REV. _____

SHEET 1 OF 1

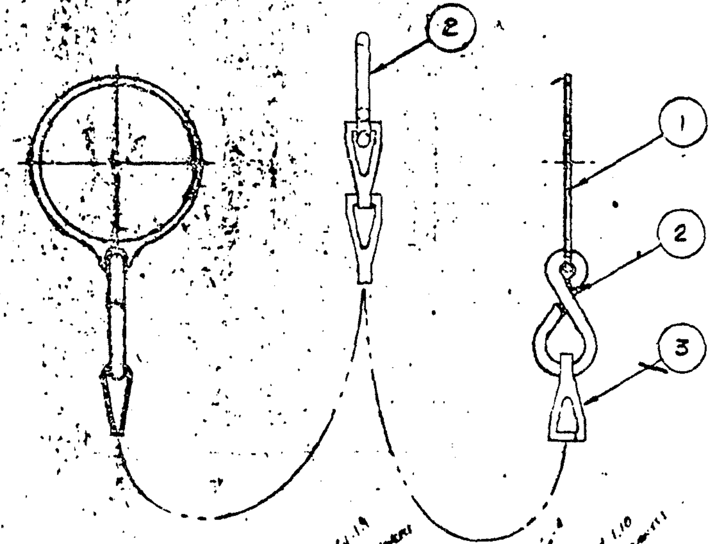
TY.	DESCRIPTION	ASSEMBLY NUMBER				
		ZZM-8512-10EA	ZZM-8516-10EA	ZZM-8520-10EA	ZZM-8524-10EA	ZZM-8528-10EA
1	CHAIN	ZZM-8400-11E	ZZM-8400-11E	ZZM-8400-11E	ZZM-8400-11E	ZZM-8400-11E
2	"S" HOOK	ZZM-8500-12E	ZZM-8500-12E	ZZM-8500-12E	ZZM-8500-12E	ZZM-8500-12E
1	RING	ZZM-8512-20E	ZZM-8516-20E	ZZM-8520-20E	ZZM-8524-20E	ZZM-8528-20E
	ASSEMBLY LABOR					
	ASSEMBLY BURDEN					
	TOTAL COST					

PART NO. (NOTED) SIZE
ZZM-8512-10E (B)

ASSEMBLY SHOWN WITH BEAD CHAIN



ASSEMBLY SHOWN WITH SASH CHAIN



ASSEMBLY NO.	1 RING	2 "S" HOOK	3 BEAD CHAIN	4 "S" HOOK
ZZM-8512-10E	ZZM-8512-20E	ZZM-8500-11E	ZZM-8400-10F	ZZM-8500-12E
ZZM-8516-10E	ZZM-8516-20E			
ZZM-8520-10E	ZZM-8520-20E			
ZZM-8524-10E	ZZM-8524-20E			
ZZM-8528-10E	ZZM-8528-20E			

ASSEMBLY NO.	1 RING	2 "S" HOOK	3 SASH CHAIN
ZZM-8512-10EA	ZZM-8512-20E	ZZM-8500-12E	ZZM-8400-11E
ZZM-8516-10EA	ZZM-8516-20E		
[illegible]	ZZM-8520-20E		
[illegible]	ZZM-8524-20E		
[illegible]	ZZM-8528-20E		

REV.	DATE	BY	E.C.O.	CHANGE	REV.	DATE	BY	E.C.O.	CHANGE
					B	[illegible]		[illegible]	Added Bead's To Both Views.
					A	[illegible]		[illegible]	[illegible], Sash Chain Added.

DESCRIPTION — PART NO. — Q'TY

MATERIAL: SEE B/M ABOVE

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS

NAME OF PART: CHAIN - RING ASSEMBLY

PRODUCT ENGR.: J. Havas
DRAWN: BICKEL 11-12-58
CHECKED: 12/5/58
PATTERN NO.
PART NO. (NOTED) SIZE: ZZM-8512-10E (B)

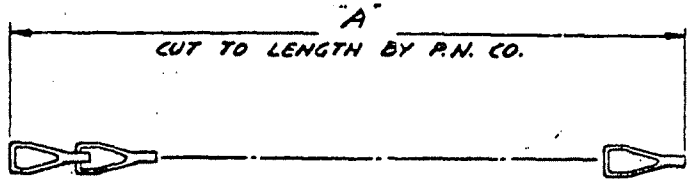
PYLE NATIONAL FORM NO. 230-1

NOTES

1. PURCHASE FROM AMERICAN CHAIN DIVISION YORK PA. OR EQUIVALENT

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
A	—	—	COMBINED ALL SASH CHAIN PART NO'S.	4-23-71	
B	B-2	13969	ADDED GB-8400-10E & -11E TO DRWG	7-16-73	

PART NO.	CHAIN LENGTH "A"	REMARKS
ZZM-8400-11E	6 1/4 INCHES	11 LINKS APPROX.
ZZM-8400-11EF	6 FEET	
ZZM-8400-11EFA	10 FEET	
ZZM-8400-11EFB	15 FEET	
ZZM-8400-11EFC	20 FEET	
ZZM-8400-11EFD	2 FEET	
ZZM-8400-50E	9 3/8 INCHES	17 LINKS APPROX.
B GB-8400-10E	10 5/8 INCHES	19 LINKS APPROX.
B GB-8400-11E	11 7/8 INCHES	21 LINKS APPROX.



WARNING - Make no design changes without authorization from U. S. Bureau of Mines.

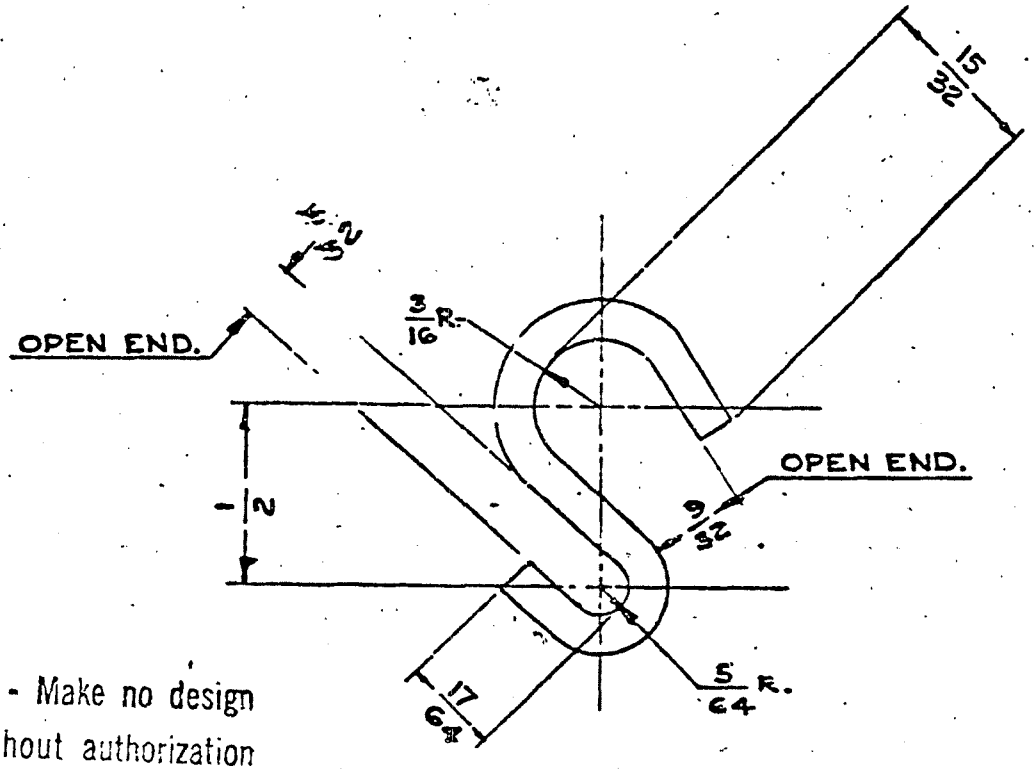
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: FRAC —, DEC —, ANG —	DRAWN L.A P.R. C	THE PYLE-NATIONAL COMPANY CHICAGO, ILLINOIS 60651
	DATE 4-22-71	
	CHECKED	TITLE SASH CHAIN
MATERIAL #8 STAINLESS STL. TYPE 302	PRODUCT ENGINEER	
	PRODUCTION ENGINEERING	
FINISH —	QUALITY CONTROL	SIZE B · CODE IDENT. NO. 49367 · DRAWING NUMBER (NOTED) ZZM-8400-11E
SUPERSEDES — DATED —	ENGINEERING APPROVAL	
	PART TYPE C B E	SCALE — · SHEET 1 OF 1

PART DRWG. (NOTED) SHEET OF SIZE (B) NO. ZZM-8400-11E

PART DWG. NO. ZZM-8500-12E(A) DWG. SIZE

NOTES:

1. PURCHASE PART.
2. ENDS TO BE FREE OF BURRS.



WARNING - Make no design changes without authorization from U. S. Bureau of Mines.

(DUPLICATE TRACING)

REV.	DATE	BY	E.C.O.	CHANGE
B	2-1-73	LA	13772	ADDED WARNING NOTE
A	2-18-63	AA	10336	RE-DESIGNED.

UNLESS OTHERWISE SHOWN TOLERANCES
FRACTIONAL ± 1/64"
DECIMAL ± .005
ANGULAR ± 1°
SURFACE FINISH
MACHINED SURFACE 125
ROUGH FILE OR GRIND 500
EXCEPT ROUGH CASTINGS

SUPERSEDES DRWG. NO. ZZM-8500-12E(A) DATED 4-30-'58

ITEM	DESCRIPTION	PART NO.	QTY.

FINISH PER P.R. STD. NO.: NONE

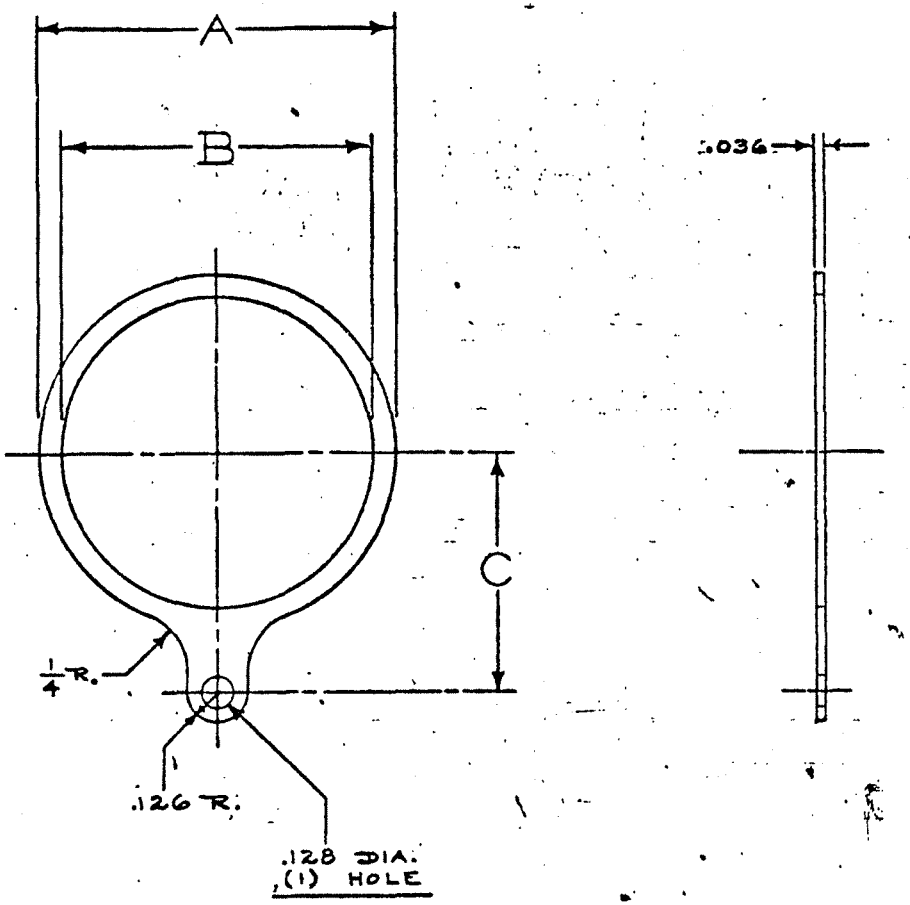
MATERIAL PER P.R. STD. NO.: E 4 - 1.10, .105 DIA.

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS

NAME OF PART: "S" HOOK SERIES

ENGR'G. CHK. DATE	PROCESS ENGR. DATE	PATTERN NO.
PRODUCT ENGR. DATE	QUALITY CONT. DATE	NEXT ASSM. / 1ST USE / SCALE 2 = 1"
CHECKED DATE: Int. G 2/19/63	DRAWN DATE: AHMAD 2-18-63	PART DWG. NO. ZZM-8500-12E(A) DWG. SIZE

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
A	—	13747	NEW DRAWING, SUPERSEDES INDIVIDUAL DRAWINGS. SEE E.C.O.	12/29/72	



NOTE:
REMOVE SHARP EDGES

PART NUMBER	MATERIAL	FINISH	DIM. A	DIM. B	DIM. C
ZZM-8512-20E	E4-1.09 HALF HARD	NONE	1.437	1.250	.960
ZZM-8516-20E	E4-1.09 HALF HARD	NONE	1.937	1.750	1.210
ZZM-8520-20E	E4-1.09 HALF HARD	NONE	2.437	2.250	1.460
ZZM-8524-20E	E4-1.09 HALF HARD	NONE	2.937	2.750	1.710
ZZM-8528-20E	E4-1.09 HALF HARD	NONE	3.437	3.250	1.960

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON
FRAC ± 1/64 | DEC ± .005 | ANG ± 1°

MATERIAL: SEE TABLE

FINISH: SEE TABLE

SUPERSEDES DATED
SEE E.C.O. 13747

DRAWN V. STOLLE
DATE 12-29-72
CHECKED
PRODUCT ENGINEER
PRODUCTION ENGINEERING
QUALITY CONTROL
ENGINEERING APPROVAL
PART TYPE C | D | E

PYLE-NATIONAL
CHICAGO, ILLINOIS 60651

TITLE: RING

SIZE B | CODE IDENT. NO. 49367 | DRAWING NUMBER (NOTE D) ZZM-8512-20E

SCALE | SHEET 1 OF 1

SIZE B1 NO. ZZM-8512-20E

ENGINEERING DEPT.

PARTS LIST

THE PYLE-NATIONAL CO.
CHICAGO, ILL.

SERIES NO. ZZM-W-2400

NAME LONG CABLE ADAPTER ASSEMBLY

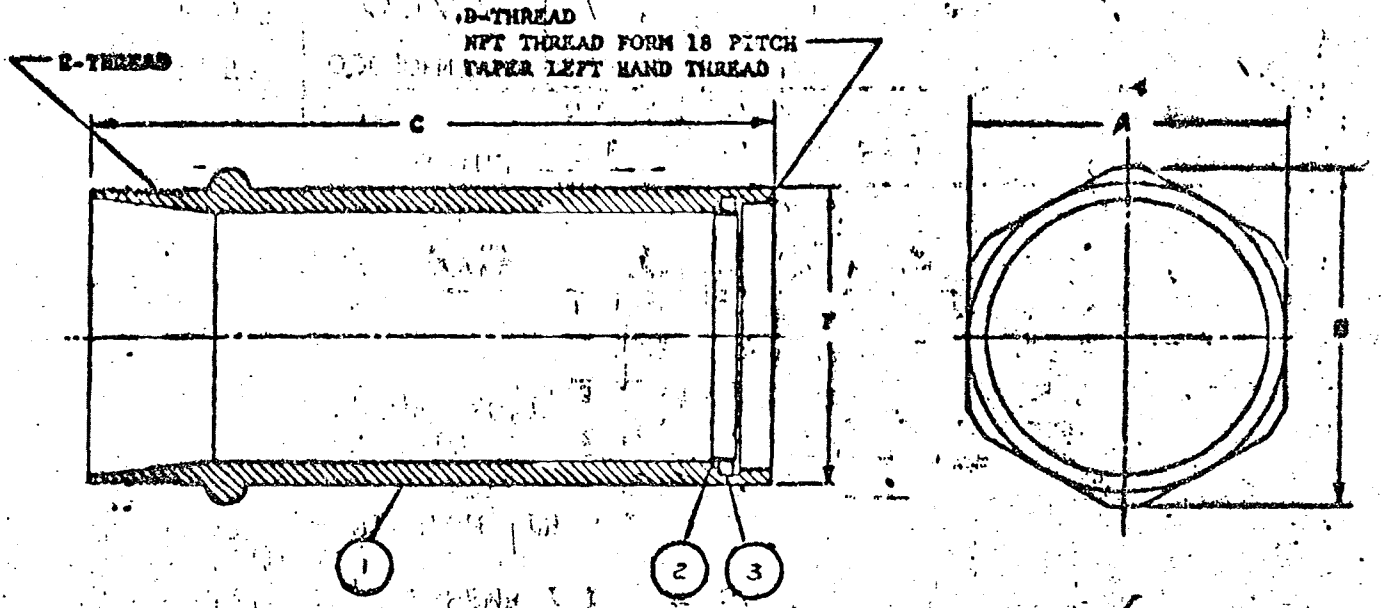
DRAWING NO. ( )

ORIGINATED BY J.P. CHECKED BY _____ DATE 4/1/63 REV. A

SHEET 1 OF 1

TY.	DESCRIPTION	ASSEMBLY NUMBER				
		ZZM-W-2412	ZZM-W-2416	ZZM-W-2420	ZZM-W-2424	ZZM-W-2428
1	CABLE ADAPTER	ZZM-2412-10A	ZZM-2416-10A	ZZM-2420-10A	ZZM-2424-10A	ZZM-2428-10A
1	SEAL ADAPTER	ZZM-6112-C	ZZM-6116-C	ZZM-6120-C	ZZM-6124-C	ZZM-6128-C
1	ADAPTER WASHER	ZZM-8212-E	ZZM-8216-E	ZZM-8220-E	ZZM-8224-E	ZZM-8228-E
1	DECAL	ZZM-9100-10	ZZM-9100-10	ZZM-9100-10	ZZM-9100-10	ZZM-9100-10
1	INSULATING SLEEVE	ZZM-8712-102	ZZM-8716-102	ZZM-8720 102	ZZM-8724-102	GD-8728-102
	ASSEMBLY LABOR					
	ASSEMBLY BURDEN					
	TOTAL COST					

A E.C.O. 10823 4-20-63



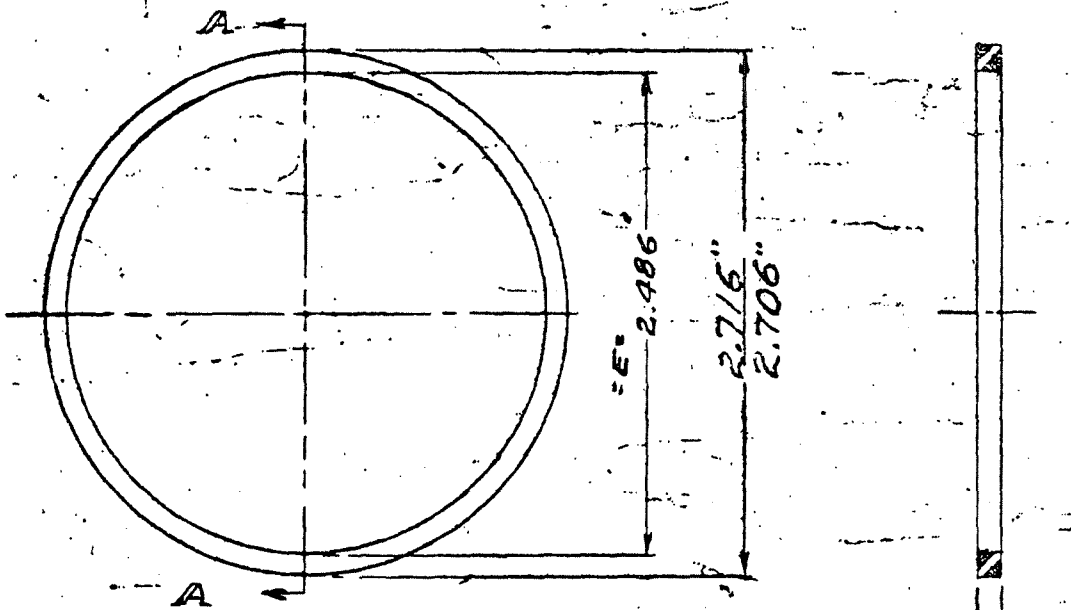
ITEM NO.	MATERIAL		FINISH	
	DESCRIPTION	SPECIFICATION	DESCRIPTION	SPECIFICATION
1	61S T6 OR 6061 T6 ALUMINUM	QQ-A-325 OR QQ-A-270	ALUMINUM OXIDE HARDCOATING	PYLE STD. P6-2.3
2	BRASS	ASTM-B-135 ALLOY A	TIN PLATE	
3	BUNA N RUBBER	MIL-R-3065D		

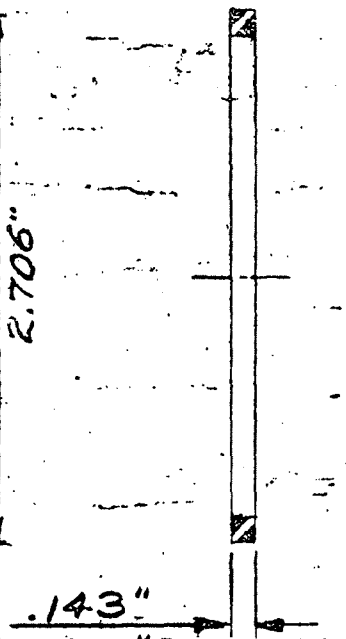
SHELL SIZE	A	B	C	D NOM.	E NOM.	F
12	1.422	1.610	5 1/4	1.056	1.375	1.300
16	1.922	2.150	5 1/2	1.506	1.875	1.800
20	2.422	2.688	6	1.906	2.375	2.250
24	2.922	3.234	6 1/2	2.406	2.875	2.750
28	3.422	3.781	6 3/4	2.906	3.375	3.250

THE PYLE NATIONAL COMPANY CHICAGO 51, ILLINOIS		DR. LA	DATE 11-2-70
DRAWING TITLE STANDARD CABLE ADAPTER ASSEMBLY WITH GLAND NUT		CK.	ENG. CK.
CODE IDENT NO. 49367	SIZE A	DRAWING NO. 22M-W-24XX	
SCALE	REV.	SHEET	

PART NO. NOTED 22M-C124-C

1. REVIEWED AND REVISED FOR PRODUCTION. FINAL SPECIFICATIONS APPROVED BY PRODUCT ENGR'G. PROCESS ENGR'G. AND QUALITY CONTROL
2. SEE QUALITY CONTROL PROCEDURES FOR A.Q.L'S METHOD OF INSPECTION AND INSPECTION OF NON MEASUREABLE CHARACTERISTICS





SECT. "A-A"

SUFFIX	MATERIAL	DURO
C	PN STD. E4-8.6 "E"	50 ± 5
D	PN STD E4-8.4 "E"	40 ± 5
L	PN STD E4-8.16	50 ± 5

"D"

REV.	DATE	BY	ECO	CHANGE
E	2-28-62	WT	4204	2.486 DIA. WAS 2.446
D	12-6-61	RWL	4066	22M-C124-L ADDED
C	9-1-59	ER	3689	.143" .128" WAS .138"
B	8-13-57	ER	3075	.138" WAS .128" REMOVED PART NO. NOTED
A	4-24-57	GK	1981	REVISED NOTES AND ADDED MATERIAL PURCHASE TABLE

UNLESS OTHERWISE SHOWN
TOLERANCES
FRACTIONAL ± 1/64"
DECIMAL ± .005"
ANGULAR ± 1°
SURFACE FINISH
MACHINED SURFACE 100
ROUGH FILE OR GRIND 250
EXCEPT ROUGH CASTINGS
SEE P. N. STD. 80,010-T

SUPERSEDES NONE

SUPERSEDED BY

ITEM	DESCRIPTION	PART NO.	QTY

FINISH AS MOULDED

MATERIAL SEE TABLE ABOVE

THE PYLE-NATIONAL COMPANY
CHICAGO, ILLINOIS

NAME OF PART SEAL, ADAPTER

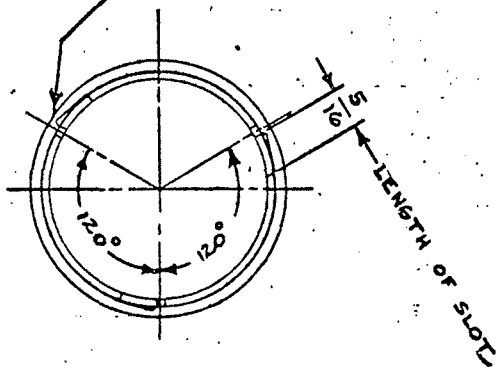
PRODUCT ENGR. DATE	PROCESS ENGR. DATE	QUALITY CONTROL DATE	PATTERN NO.	SCALE
8/21/57	8/21/57	JGM 5-8-57	—	1"=1"

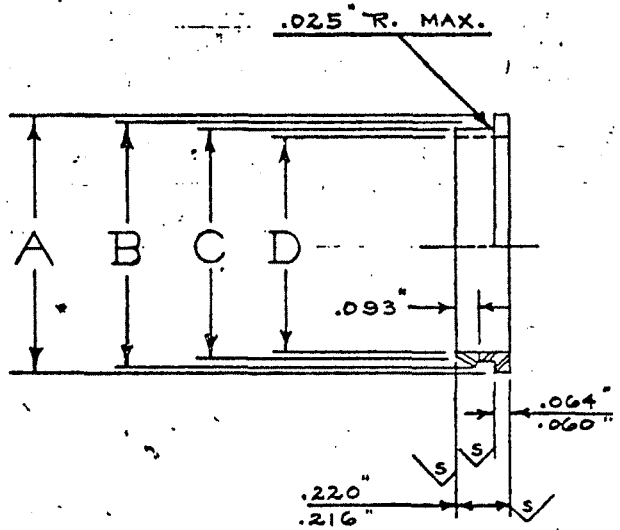
FIRST USED ON	DRAWN DATE	CHECKED DATE	PART NO. NOTED	SIZE
ZM	B.G. 8/21/57	8/21/57	22M-C124-C (A)	

NOTE: LEADING EDGE OF SKEWED EAR MUST NOT INTRUDE BELOW INNER DIAMETER OR PROTRUDE BEYOND OUTER DIAMETER IN EXCESS OF .005"

SHEAR EARS TO PRODUCE SMOOTHLY CURVED SURFACE

WARNING - Make no design changes without authorization from U. S. Bureau of Mines.





EARS MUST NOT PROTRUDE MORE THEN .015 MAX. BEYOND FACE

NOTE:
PRODUCT SPEC. E2-82.00 IS A PART OF THIS DRAWING.

REVISIONS					
LTR	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
A	—	13753	NEW DRAWING, SUPERSEDES OLD "B" SIZE DRAWINGS. SEE E.C.O.	1/10/73	
B	E-5	13772	ADDED WARNING NOTE	2-1-73	

PART NO.	DIM. A	DIM. B	DIM. C	DIM. D
ZZM-8212-E	1.034 / 1.029	.989 / .979	.931 / .925	.876 / .866
ZZM-8216-E	1.534 / 1.529	1.489 / 1.479	1.431 / 1.425	1.376 / 1.366
ZZM-8220-E	2.034 / 2.029	1.989 / 1.979	1.931 / 1.925	1.876 / 1.866
ZZM-8224-E	2.534 / 2.529	2.489 / 2.479	2.431 / 2.425	2.376 / 2.366
ZZM-8228-E	3.034 / 3.029	2.929 / 2.919	2.871 / 2.865	2.816 / 2.806

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: FRAC ± 1/64, DEC ± .005, ANG ± 1°
MATERIAL: E4-2.09
FINISH .00002" THICK TIN PLATE
SUPERSEDES SEE E.C.O 13753

DRAWN V. STOLLE
DATE 1-10-73
CHECKED CA
PRODUCT ENGINEER
PRODUCTION ENGINEERING
QUALITY CONTROL
ENGINEERING APPROVAL
PART TYPE C J B

PYLE-NATIONAL
CHICAGO, ILLINOIS 60651

TITLE: ADAPTOR WASHER

SIZE B | CODE IDENT. NO. 49367 | DRAWING NUMBER (NOTED) ZZM-8212-E
SCALE — | SHEET 1 OF 1

PART DRWG. NO. ZZM-8212-E SHEET 1 OF 1 SIZE (B)

PURCHASED PART

PART DRWG No ZZM-9100-10 (A SIZE

REVISIONS

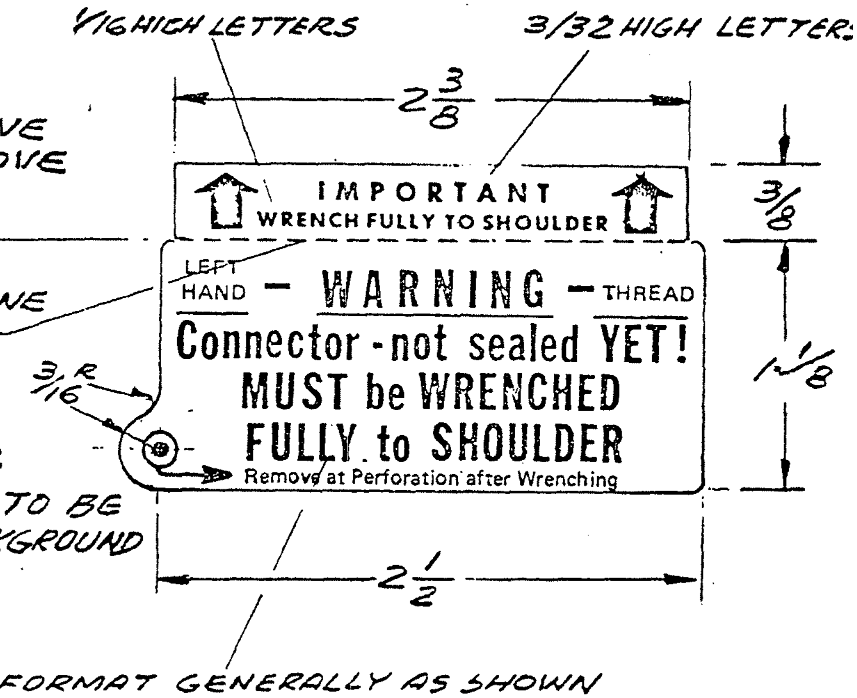
LTR	ECO	DESCRIPTION	DATE	APPROVED
B	13635	NEW DRWG. SUPSDG DATE 8/27/56. ACCT REDESIGN	7/27/72	

VENDOR:
LABELS AND DECALS INC.
OR EQUIV.

VENDOR CATALOG NO.:

PRESSURE SENSITIVE
GUMMED IN BACK, ABOVE
LINE ONLY.

PRINTED DOTTED LINE
& PERFORATED



NOMENCLATURE:
60 LB.
ENAMELED PAPER

SPECIFICATIONS:
LETTERS & CHARACTERS TO BE
BLACK ON YELLOW BACKGROUND

PART NO.:

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NEXT ASSY.	USE ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
± 1/64	—	

MATERIAL: SEE ABOVE

FINISH: —

SUPERSEDES DATED

DRAWN: [signature] DATE: 7-31-72
CHECKED ENGINEER P.R. B
PRODUCTION ENGINEERING
QUALITY CONTROL
ENGINEERING APPROVAL

LINE CODE
PART TYPE: C H A

THE PYLE-NATIONAL COMPANY
Chicago, Illinois 60651

TITLE: LABEL - INSTRUCTION

SIZE	CODE IDENT. NO.	DRAWING NO.
A	49367	ZZM-9100-10

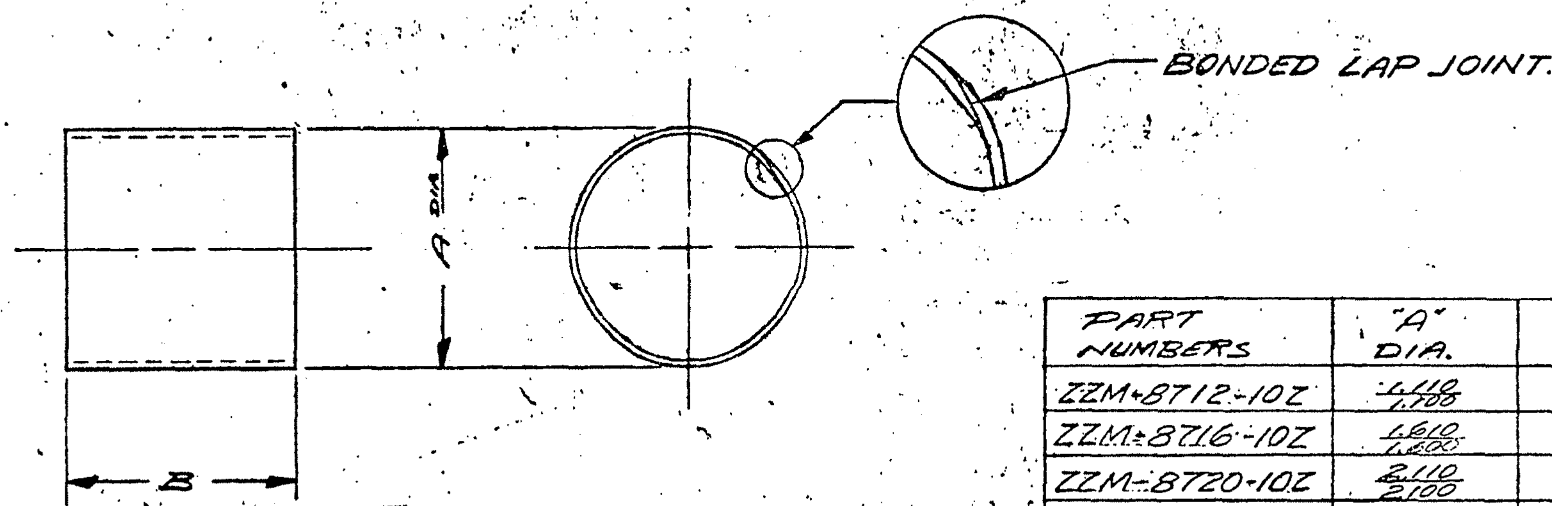
SCALE — SHEET OF

F... No. E-123 Rev.3/66

REVISIONS					
SYM	ZONE	E.C.O.	DESCRIPTION	DATE	APPROVED
A	—	10923	REMOVED NOTE 2: LAP JOINT THICKNESS .030 MAX AND [illegible] MAX OVER LAP PERMISSIBLE; WAS .015 [illegible] MATERIAL THICKNESS. REVISED COLUMN B.	4-20-63	
B	—	13400	CORRECTED PREVIOUS E.C.O DATE	10-25-71	

NOTES

1. MT'L: FISH-PAPER 1/32 MIN. THICK OR EQUIV. ELECTRICAL GRADE INSULATING MATERIAL.



PART NUMBERS	"A" DIA.	"B"
ZZM-8712-10Z	1.110 / 1.100	.681 / .661
ZZM-8716-10Z	1.610 / 1.600	.741 / .721
ZZM-8720-10Z	2.110 / 2.100	.775 / .755
ZZM-8724-10Z	2.610 / 2.600	.869 / .849

LINE CODE			
PART TYPE	C	B	E

RELEASED
AUG 2 1965
FOR PROCESSING

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON			DRAWN H. AHN	DATE 4-7-63
FRACTIONS ± 1/64	DECIMALS ±.005	ANGLES ±1°	CHECKED H.G.	PRODUCT ENG'R M. Gaccanto
MATERIAL SEE NOTE 1.			PRODUCTION ENGINEERING	
			QUALITY CONTROL	
FINISH —			ENGINEERING APPROVAL	
SUPERSEDES —		DATED		

THE PYLE NATIONAL COMPANY
Chicago 51, Illinois

TITLE
SLEEVE, INSULATION
(CABLE ADAPTER)

CODE IDENT NO.	SIZE	DRAWING NUMBER
49367	B	ZZM-8712-10Z (NOTED)
SCALE	WEIGHT	SHEET OF

DRAWING NUMBER ZZM-8712-10Z (NOTED) SHEET OF