

| REVISIONS |                            |          |       |
|-----------|----------------------------|----------|-------|
| REV       | DESCRIPTION, ECN, EAR NO.  | DATE     | APP'D |
| A         | PRODUCT DRAWING (EAR14988) | OCT15/21 | K.L.  |
|           |                            |          |       |

ORDERING CODE: **NDH-N3XX**

SERIES, INDUSTRIAL SQUARE  
PUSH/PULL DESIGN

IX INDUSTRIAL

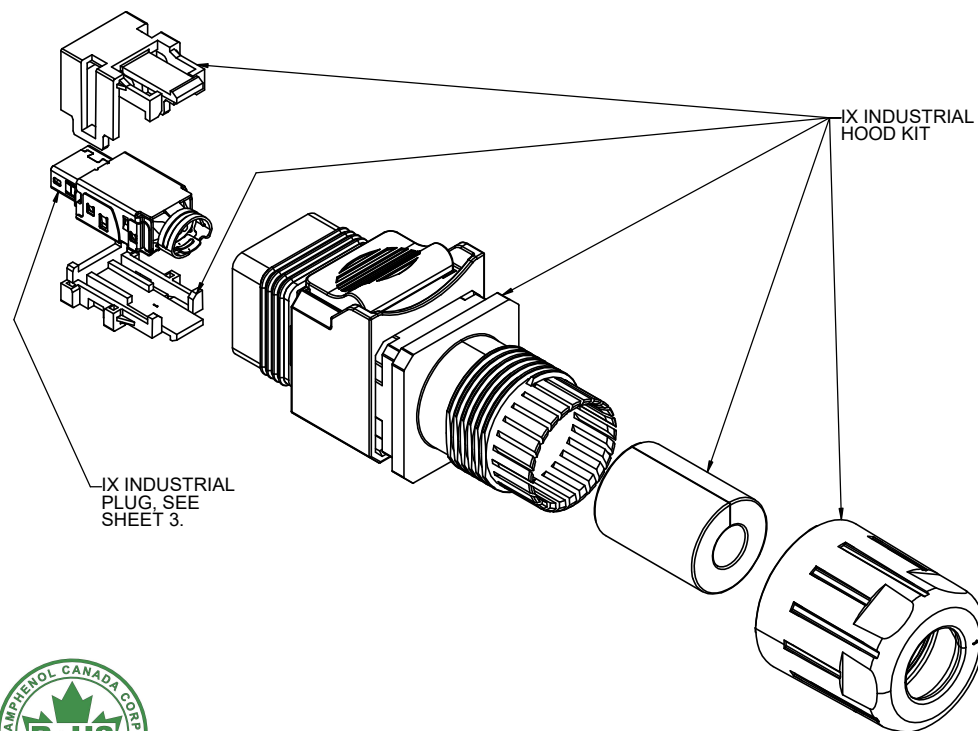
KIT CONFIGURATION:  
3 = HOOD + PLUG KIT

PLUG KEY TYPE & TERMINATION

A = A KEY SOLDER PAD  
B = B KEY SOLDER PAD  
D = A KEY 24AWG IDC  
E = B KEY 24AWG IDC  
G = A KEY 26-28AWG IDC  
H = B KEY 26-28AWG IDC

PLATING FOR IX PLUG MATING AREA

1 = GOLD FLASH  
2 = 0.20µm (8µ") GOLD  
3 = 0.76µm (30µ") GOLD  
4 = 1.27µm (50µ") GOLD  
7 = 0.76µm (30µ") PALLADIUM  
NICKEL WITH GOLD FLASH



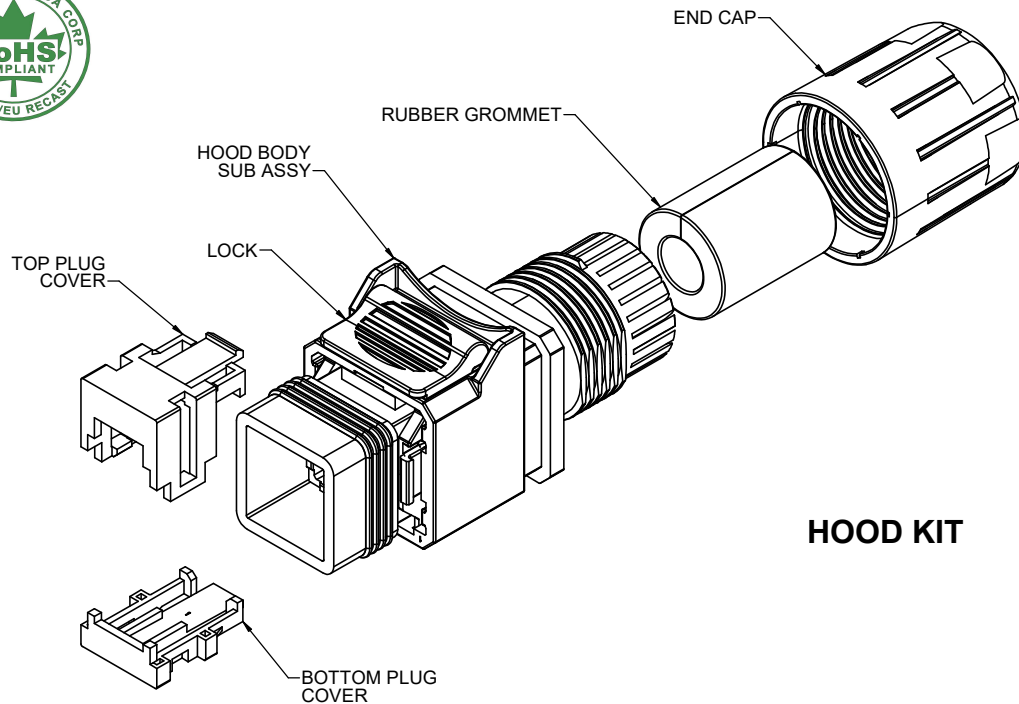
NOTES:

- MATERIAL: RoHS COMPLIANT PER EU DIRECTIVE 2011/65/EU AND AMENDMENTS.
  - HOOD COVERS, BODY, SLIDE & END CAP: PBT GLASS REINFORCED, COLOUR: BLACK
  - HOOD LOCK: PBT GLASS REINFORCED, COLOUR: RED
  - GASKETS & GROMMET: SILICONE RUBBER, COLOUR: BLACK
  - PLUG SHIELD: STAINLESS STEEL, NICKEL PLATED
  - PLUG INSERTS: HIGH TEMPERATURE RESISTANT ENGINEERING THERMOPLASTIC UL94V-0, BLACK
  - PLUG IDC WIRE GUIDES: POLYCARBONATE UL94V-0, CLEAR (WITH YELLOW TINT FOR 24 AWG SIZE). CONFIRM THAT ANY PROCESS CLEANERS ARE POLYCARBONATE COMPATIBLE.
  - CONTACTS: COPPER ALLOY PLATED WITH GOLD OR PALLADIUM-NICKEL (SEE ORDERING CODE) OVER 1.27µm (50µ") MINIMUM NICKEL ON THE MATING AREA AND MATTE TIN OVER NICKEL ON THE TERMINALS.
- IX CONNECTOR DESIGNED TO CONFORM TO REQUIREMENTS OF IEC 61076 PART 3-124 SPECIFICATION. THE TYPE A KEY FEATURE IS INTENDED FOR USE WITH ETHERNET APPLICATIONS, EITHER 10/100 MBIT/S OR 1 TO 10 GBIT/S (CAT 5e, 6 & 6A). THE ALTERNATIVE B KEY CAN BE USED IN A COMPLEX ETHERNET APPLICATION TO HELP CONTROL MATING PLUG INSTALLATIONS OR USED IN NON-ETHERNET APPLICATIONS UP TO 10 POSITIONS.
- CURRENT RATING: 1.5 AMPERES, VOLTAGE RATING: 50V AC rms OR 60V DC
- OPERATING TEMPERATURE -40°C TO +105°C.
- DIELECTRIC WITHSTANDING VOLTAGE: 500V DC
- INSULATION RESISTANCE: 500 MEGOHMS MINIMUM.
- NDH-N3XX HOOD & PLUG KIT IS PART OF AN IP67 SEALED SOLUTION WITH PUSH/PULL MATING FOR IX INDUSTRIAL APPLICATIONS. THE IP67 RATING APPLIES IN THE MATED CONDITION FOR BOTH THE ENCLOSURE AND THE MATING INTERFACE.
- FOR THE PCB MOUNTED MATING RECEPTACLE, REFER TO AMPHENOL DRAWINGS P-ND9-AS3X-00 AND P-ND9-BS3X-00. THE RECEPTACLE IS A HORIZONTAL STYLE RIGHT ANGLE IX INDUSTRIAL CONNECTOR.
- FOR THE BULKHEAD, REFER TO AMPHENOL DRAWING P-NDH-N200.
- CONSULT WITH AMPHENOL IF CABLE ASSEMBLY IS REQUIRED.

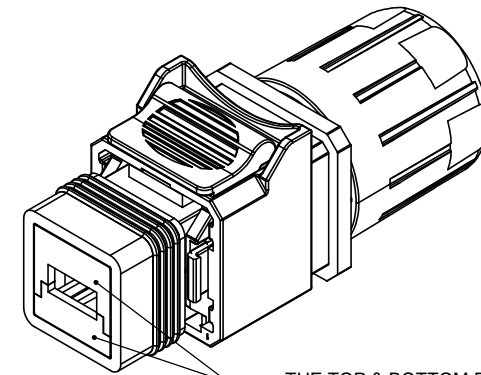


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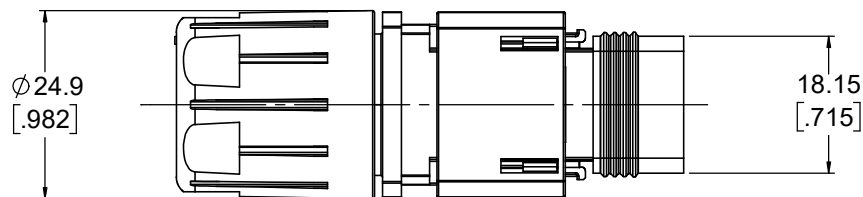
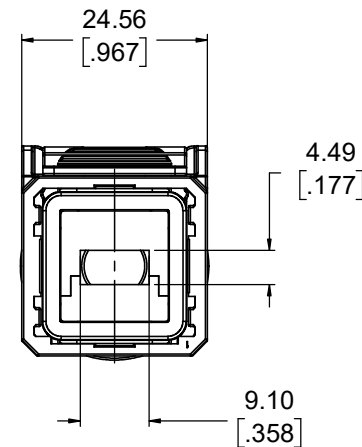
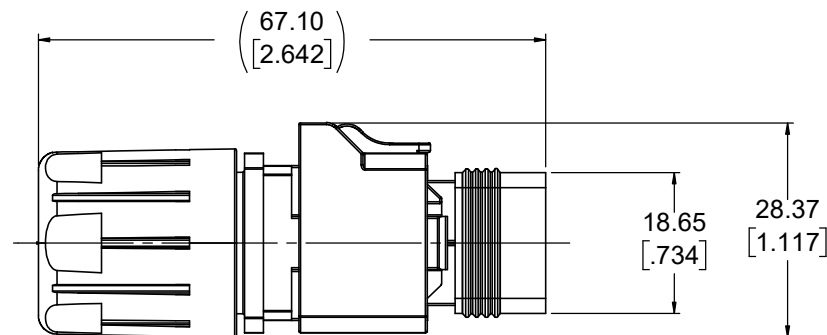
|                            |  |                                |           |          |   |  |
|----------------------------|--|--------------------------------|-----------|----------|---|--|
| UNLESS SPECIFIED OTHERWISE |  | DRAWN                          | T. TRAN   | SEP29/21 | <b>Amphenol Canada Corp.</b><br>Commercial Products                                     |  |
| PRIMARY UNITS MILLIMETRES  |  | CHECKED                        | K. LAMBIE | OCT15/21 |   |  |
| SECONDARY INCHES           |  | M.E. APP'D                     |           |          | NDH SERIES iX INDUSTRIAL HOOD & PLUG KIT, IP67 RATING, RoHS COMPLIANT                   |  |
| REFERENCE IN PARENTHESES   |  | O.A. APP'D                     |           |          |   |  |
| GENERAL TOLERANCES         |  | DWG APPR.                      |           |          | DWG. NO. <b>P-NDH-N3XX</b>  |  |
| 1 DECIMAL PLACE            |  | ENG. REL. NO. <b>EAR 14988</b> |           |          |   |  |
| 2 DECIMAL PLACES           |  | REF.                           |           |          | CODE ID NO. <b>03554</b>   DWG SIZE: <b>X</b>   SCALE: <b>2:1</b>   SHEET <b>1 OF 5</b> |  |
| 3 DECIMAL PLACES           |  | THIRD ANGLE PROJECTION         |           |          |   |  |
| ANGULAR DEGREES            |  | DO NOT SCALE DRAWING           |           |          | REV <b>A</b>  |  |



## HOOD KIT





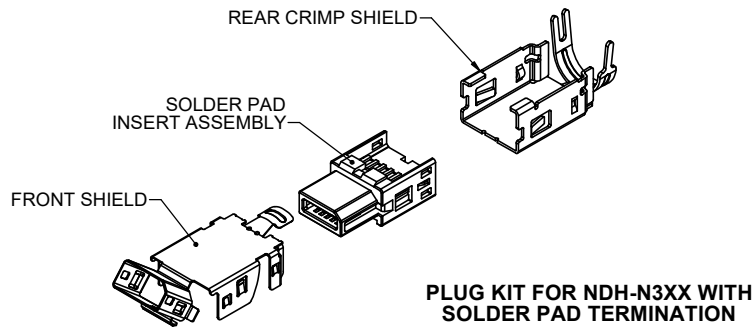
THE TOP & BOTTOM PLUG COVERS HAVE A POKE-YOKE FEATURE. THEY CAN ONLY BE ASSEMBLED ONTO THE PLUG AND INTO THE HOOD BODY IN ONE WAY. AT FINAL ASSEMBLY THE HOOD & COVER FRONT FACES WILL BE FLUSH.



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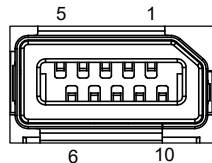
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| PRIMARY UNITS MILLIMETRES  |  | CHECKED K. LAMBIE   |  | OCT15/21  |  |   |  |  |  |  |
| SECONDARY INCHES           |  | M.E. APP'D  |  |   |  | NDH SERIES iX INDUSTRIAL HOOD & PLUG KIT, IP67 RATING, RoHS COMPLIANT |  |  |  |  |
| REFERENCE IN PARENTHESES   |  | Q.A. APP'D  |  |   |  |   |  |  |  |  |
| GENERAL TOLERANCES         |  | DWG APPR.   |  |   |  | DWG. NO. P-NDH-N3XX   |  |  |  |  |
| 1 DECIMAL PLACE            |  | ENG. REL. NO. EAR 14988   |  |   |  |   |  |  |  |  |
| 2 DECIMAL PLACES           |  | REF.  |  |   |  | CODE ID NO. 03554 DWG SIZE: X SCALE: 2:1 SHEET 2 OF 5                 |  |  |  |  |
| 3 DECIMAL PLACES           |  | THIRD ANGLE PROJECTION  |  | DO NOT SCALE DRAWING  |  |   |  |  |  |  |
| ANGULAR DEGREES            |  |  |  |  |  | REV A   |  |  |  |  |

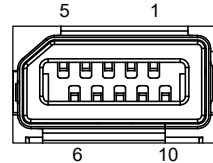


PLUG KIT FOR NDH-N3XX WITH  
SOLDER PAD TERMINATION

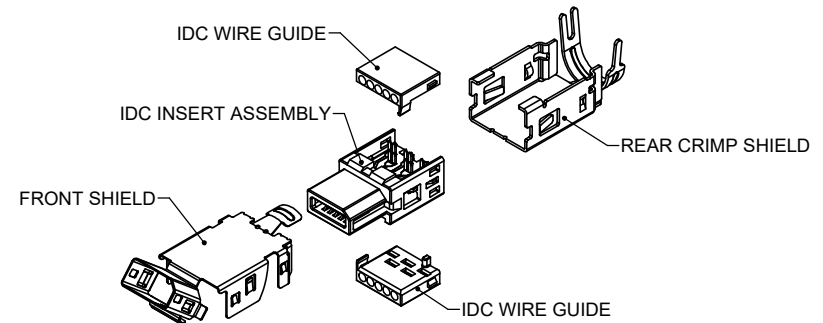
TYPE A KEY  
CUT CORNER AT POSITION 1



TYPE B KEY  
CUT CORNER AT POSITION 5



## PLUG KIT



PLUG KIT FOR NDH-N3XX WITH  
IDC CONTACT TERMINATION

### CONNECTOR PIN ASSIGNMENT FOR ETHERNET

| POSITION NUMBER | PIN ASSIGNMENT<br>10 OR 100 MBIT/S<br>ETHERNET | PIN ASSIGNMENT<br>1, 2.5, 5 OR 10<br>GBIT/S ETHERNET | WIRE COLOUR<br>(TIA/EIA 568-A) | WIRE COLOUR<br>(TIA/EIA 568-B) |
|-----------------|--|--|--------------------------------|--------------------------------|
| 1               | TX +   | BI_DA +  | WHITE/GREEN                    | WHITE/ORANGE                   |
| 2               | TX -   | BI_DA -  | GREEN                          | ORANGE                         |
| 3               | NOT USED                                       | -  | -                              | -                              |
| 4               | NOT USED                                       | BI_DC +  | BLUE                           | BLUE                           |
| 5               | NOT USED                                       | BI_DC -  | WHITE/BLUE                     | WHITE/BLUE                     |
| 6               | RX +   | BI_DB +  | WHITE/ORANGE                   | WHITE/GREEN                    |
| 7               | RX -   | BI_DB -  | ORANGE                         | GREEN                          |
| 8               | NOT USED                                       | -  | -                              | -                              |
| 9               | NOT USED                                       | BI_DD +  | WHITE/BROWN                    | WHITE/BROWN                    |
| 10              | NOT USED                                       | BI_DD -  | BROWN                          | BROWN                          |

**NOTE:** CONTACTS #3 & #8 ARE NOT CONNECTED FOR ETHERNET,  
BUT ALL MAY BE USED FOR A 10 CONTACT APPLICATION.

### RECOMMENDED CABLE SPECIFICATIONS

| ITEMS                       |          | IDC 26 -28 AWG                      | IDC 24 AWG                          | SOLDER PAD                    |
|-----------------------------|----------|-------------------------------------|-------------------------------------|-------------------------------|
| CONDUCTORS                  | SIZE     | 26 - 28 AWG                         | 24 AWG                              | 22 - 28 AWG                   |
|                             | STRANDS  | 7 STRANDS PER WIRE                  |                                     | -                             |
|                             | MATERIAL | ANNEALED COPPER WIRE                |                                     | -                             |
| INSULATION OUTSIDE DIAMETER |          | Ø 0.95 - 1.05mm<br>(Ø .037 - .041") | Ø 1.10 - 1.25mm<br>(Ø .043 - .049") | Ø 1.55mm MAX<br>(Ø .061" MAX) |
| BRAIDED SHIELD              |          | TIN PLATED                          |                                     |                               |
| JACKET OUTSIDE DIAMETER     |          | Ø 6.30 - 7.20mm (Ø .248 - .283")    |                                     |                               |

|                            |                        |           |          |
|----------------------------|------------------------|-----------|----------|
| UNLESS SPECIFIED OTHERWISE | DRAWN                  | T. TRAN   | SEP29/21 |
| PRIMARY UNITS MILLIMETRES  | CHECKED                | K. LAMBIE | OCT15/21 |
| SECONDARY INCHES           | M.E. APP'D             |           |          |
| REFERENCE IN PARENTHESES   | Q.A. APP'D             |           |          |
| GENERAL TOLERANCES         | DWG APPR.              |           |          |
| 1 DECIMAL PLACE            | ENG. REL. NO.          | EAR 14988 |          |
| 2 DECIMAL PLACES           | REF.                   |           |          |
| 3 DECIMAL PLACES           | THIRD ANGLE PROJECTION |           |          |
| ANGULAR DEGREES            |                        |           |          |

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Commercial Products

NDH SERIES iX INDUSTRIAL HOOD & PLUG  
KIT, IP67 RATING, RoHS COMPLIANT

|                   |             |          |              |
|-------------------|-------------|----------|--------------|
| DWG. NO.          | P-NDH-N3XX  | REV      | A            |
| CODE ID NO. 03554 | DWG SIZE: X | SCALE: X | SHEET 3 OF 5 |

Technical drawing showing a top-down view of a 2x2 array of connectors. The drawing includes dimensions for the overall size and the spacing between the connectors. The overall width is dimensioned as 26.00 (1.024). The overall height is dimensioned as 26.00 (1.024). The spacing between the centers of the connectors is dimensioned as 12.50 (0.500). The drawing also shows the 6mm centering of the board connector with the bulkhead cavity.

1. IF A CAST OR MOULDED PANEL IS NOT DESIRED TO ACHIEVE A BLIND HOLE SUITABLE FOR THE 6mm THREAD LENGTH, BLIND SEALED PEM NUTS OR MOUNTING SCREWS WITH A BUILT IN O-RING UNDER THE SEALING HEAD CAN ALSO BE USED TO ACHIEVE A PROPER MOUNTING HOLE SEAL.

A side view of the cable connector assembly. The diagram shows the cable on the left, the bulkhead in the middle, and the connector on the right. Key dimensions and components are labeled:
 

- 9.00**  $[.354]$ : Dimension for the bulkhead opening.
- SUITABLE FOR 6mm THREAD LENGTH SEE NOTE**: Label for the bulkhead opening.
- BULKHEAD SEE SHEET 1, NOTE 9**: Label for the bulkhead component.
- 6.00**  $[.236]$ : Dimension for the connector assembly.
- IX INDUSTRIAL BOARD CONNECTOR SEE SHEET 1, NOTE 8.**: Label for the connector.
- 2.82±0.40**  $[.111±.016]$ : Dimension for the connector assembly.
- CENTERLINE OF CONNECTOR SHIELD TAIL**: Label for the centerline of the connector shield tail.
- CUSTOMER PANEL**: Label for the customer panel.
- 20.65±0.30**  $[.813±.012]$ : Dimension for the connector assembly.
- 78.89**  $[3.106]$ : Total dimension for the assembly.
- 6.30 TO 7.20**  $(.248 \text{ TO } .283)$  **O.D. CABLE**: Dimension for the outer diameter of the cable.
- BULKHEAD OPENING CENTERLINE**: Label for the centerline of the bulkhead opening.
- CUSTOMER SUPPLIED M3 X 0.5 X 6mm LG SCREW**: Label for the screw used to secure the bulkhead.

**PACKING C**  
**ND**

EACH OF THE ITEMS  
OR TRAY PACKED. E  
EQUAL NUMBER OF  
CONTACT TERMINAT

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**M3 x 0.5 THREADED BLIND HOLES (4 PLCS)  
THREAD DEPTH 4.00 (.157)  
TO SUIT SCREWS**

**R1.40  
[.055]  
TYP**

**19.80  
[.780]**

**11.80  
[.465]**

**18.82  
[.741]**

**32.00  
[1.260]**

**8.20  
[.323]**

**1.70  
[.067]**



**4.00  
[.157]**

**TOP OF PCB**

**RECOMENDED PANEL LAYOUT  
OUTSIDE PANEL VIEW  
SHOWN FOR IX INDUSTRIAL**

**AMPHENOL CANADA  
RoHS COMPLIANT  
2011**

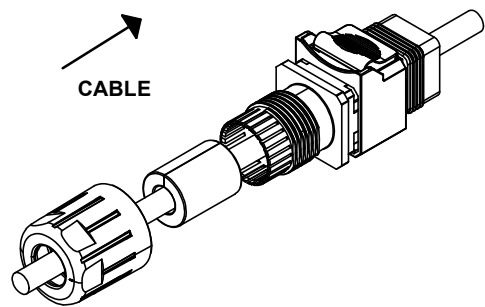


|                            |                        |   |                      |
|----------------------------|------------------------|---|----------------------|
| UNLESS SPECIFIED OTHERWISE | DRAWN                  | T. TRAN   | SEP29/21             |
| PRIMARY UNITS              | MILLIMETRES            | CHECKED   | K. LAMBIE            |
| SECONDARY                  | INCHES                 | M.E. APP'D  | OCT15/21             |
| REFERENCE IN PARENTHESES   | Q.A. APP'D             |   |                      |
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| 2 DECIMAL PLACES           | REF.                   |   |                      |
| 3 DECIMAL PLACES           | THIRD ANGLE PROJECTION |  | DO NOT SCALE DRAWING |
| ANGULAR DEGREES            |                        |  |                      |

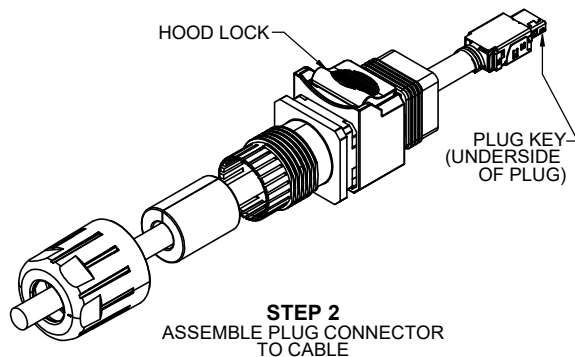
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NDH SERIES iX INDUSTRIAL HOOD & PLUG  
KIT, IP67 RATING, RoHS COMPLIANT

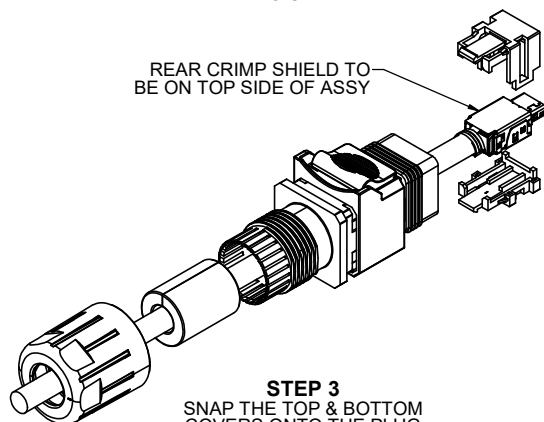
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|-------------|------------|-------------|----------|--------------|
| DWG. NO.    | P-NDH-N3XX |             |          | REV          |
|             |            |             |          | A            |
| CODE ID NO. | 03554      | DWG SIZE: X | SCALE: X | SHEET 4 OF 5 |



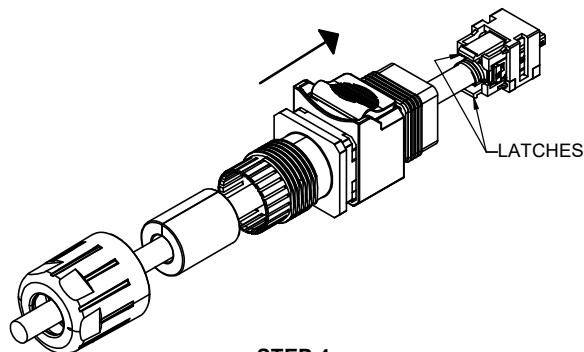
**STEP 1**  
SLIDE INDIVIDUAL COMPONENTS OF HOOD KIT  
(EXCLUDING TOP AND BOTTOM PLUG COVERS) ONTO  
THE BARE CABLE PRIOR TO PLUG INSTALLATION



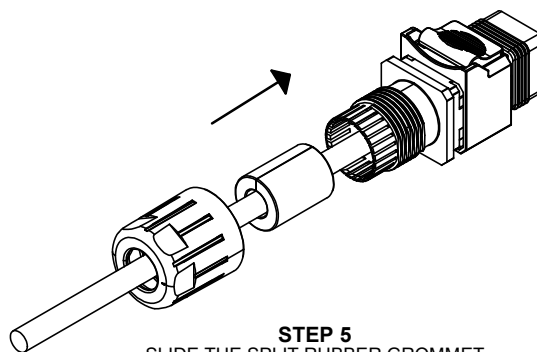
**STEP 2**  
ASSEMBLE PLUG CONNECTOR  
TO CABLE



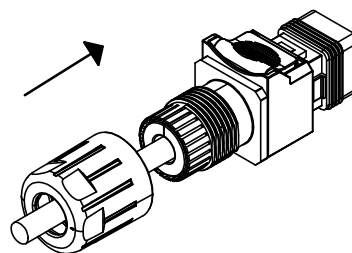
**STEP 3**  
SNAP THE TOP & BOTTOM  
COVERS ONTO THE PLUG  
ASSEMBLY



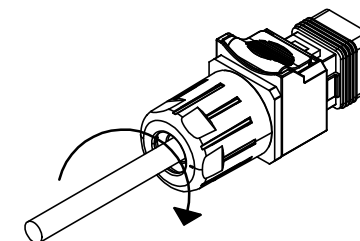
**STEP 4**  
SLIDE THE NDH HOOD BODY ONTO THE NEWLY  
CREATED PLUG COVER ASSEMBLY UNTIL THE TOP &  
BOTTOM LATCHES SNAP INTO PLACE  
CONFIRM THAT THE PLUG KEY IS AT THE BOTTOM  
AND THE HOOD LATCH IS AT THE TOP



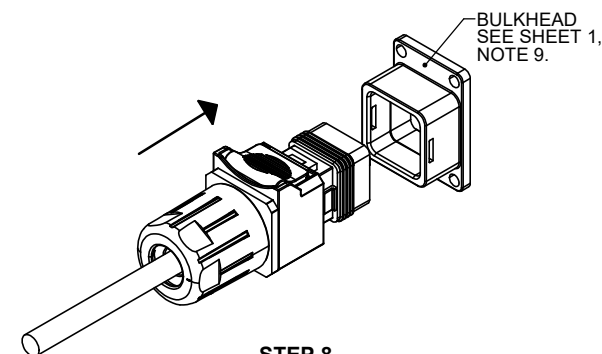
**STEP 5**  
SLIDE THE SPLIT RUBBER GROMMET  
ALONG THE CABLE INTO THE HOOD BODY  
UNTIL INSTALLED TO FULL DEPTH



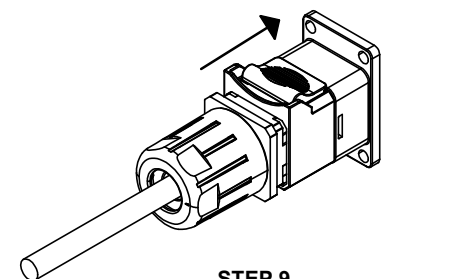
**STEP 6**  
SLIDE THE END CAP ONTO  
THE HOOD BODY



**STEP 7**  
SCREW THE END CAP UNTIL HAND TIGHT



**STEP 8**  
INSERT NDH ix INDUSTRIAL  
ASSEMBLY INTO BULKHEAD



**STEP 9**  
PUSH THE HOOD LOCK  
UNTIL ASSEMBLY SNAPS INTO POSITION.  
TO UN-MATE, PULL THE HOOD LOCK BACKWARD  
BEFORE PULLING ON THE HOOD / PLUG.

## FIELD ASSEMBLY PROCEDURE

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1 DECIMAL PLACE  
2 DECIMAL PLACES  
3 DECIMAL PLACES  
ANGULAR DEGREES

DRAWN T. TRAN  
CHECKED K. LAMBIE  
M.E. APP'D  
Q.A. APP'D  
DWG APPR.  
ENG. REL. NO. EAR 14988  
REF.  
THIRD ANGLE PROJECTION  
DO NOT SCALE DRAWING

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**NDH SERIES ix INDUSTRIAL HOOD & PLUG KIT, IP67 RATING, RoHS COMPLIANT**

DWG. NO. P-NDH-N3XX  
CODE ID NO. 03554 DWG SIZE: X SCALE: 1:1 SHEET 5 OF 5  
REV A