3) Remove the heat but continue to hold the conductor and contact rigid until solder cools and solidifies. A good solder connection is indicated by a bright shiny solder surface.

B) **Crimp** - ARK-trol connectors with crimp terminations are identified by the suffix "T" on the catalog number.

1) Insert conductor into crimp well as far as possible and crimp the connection.

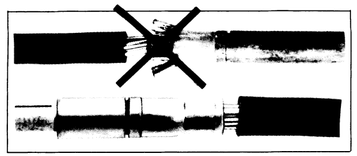
For #16 through #10 contacts, the recommended crimping tool is Crouse-Hinds catalog number RPE017-440. The crimping head is adjusted and sealed at the factory, eliminating the need for readjustment for various size contacts.

For #4 through 4/0 contacts, the recommended tools and dies are listed in Table 2.

Table 2

T&B Tool Cat. No.	Description	Contact Size	Die Cat. No.
TBM12	12-ton hydraulic head, all die heads included. Pump & hose - order separately.	4 1/0 4/0	Included Included Included
TBM15	15-ton hydraulic head. Dies, pump & hose - order separately.	4 1/0 4/0	15527 15508 15511
TBM14M	14-ton hydraulic head, "self-contained." No hose or pump required. Dies - order separately.	4 1/0 4/0	15527 15508 15511

2) Inspect the crimp connection: A good crimp termination should be a "hex" or "diamond" shape securely gripping the contact without any cracks or tears in the wire well or loose strands of the conductor. See Figure below.



Crimp Terminations

C) **Pressure** - ARK-trol connectors with pressure terminations are identified by the suffix "R" on the catalog number.

1) Insert conductor into wire well as far as possible.

2) Tighten set screws to torque valves in Table 3.

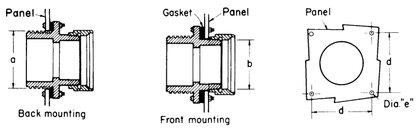
Table 3

Contact Size	Assem. Amperage	Minimum Required Contact Screw Torque (in. lb.)
12	20A	35
10	30A	35
4	60A	45
1/0	100A	50
4/0	200A	50

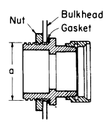
Section D — Panel Mounting Dimensions

Shell Size	Back Mounting a	d	e	Front Mounting b	d	e	Bulkhead Mounting a
017	1 19/32	1 3/8	3/16	1 17/32	1 3/8	3/16	1 19/32
021	2 1/32	1 3/4	3/16	1 31/32	1 3/4	3/16	2 1/32
033	2 21/32	2 3/8	7/32	2 21/32	2 3/8	7/32	2 21/32
041	3 7/32	2 13/16	1/4	3 5/32	2 13/16	1/4	3 7/32

Square flanged receptacle



Bulkhead receptacle



Section E — Electrical Testing

WARNING
DO NOT connect power until the following electrical tests have been performed.

- Make continuity checks of wiring to verify correct phasing and grounding connections.
- Check insulation resistance to be sure system does not have any short circuits or unwanted grounds.

Section F — Maintenance

Electrical and mechanical inspection of all components must be performed on a regular schedule determined by the environment and frequency of use. It is recommended that inspection be performed a minimum of once a year.

WARNING
If any parts of the plug, receptacle,or connector appear to be missing, broken, or show signs of damage,
DISCONTINUE USE IMMEDIATELY.
Replace the item(s) before continuing service.

1. Inspect all contact wire terminations for tightness. Discoloration due to excessive heat is an indicator of a possible problem and should be thoroughly investigated and repaired as necessary.

2. Electrically check all connections, making sure they are clean and tight and that the contacts make or break as required.

In addition to these required maintenance procedures, we recommend an Electrical Preventive Maintenance Program as described in the National Fire Protection Association Bulletin NFPA No. 70B.

Section G — Electrical Rating

The electrical ratings of ARK-trol connectors vary with the product series (RPC, RPE, RPX) and the contact configuration. Refer to the current Crouse-Hinds ECM Catalog or the ARK-trol Connector Specification and Selection Guide (Bulletin 3058-0489) for details.

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IF1222
New 1/93

CROUSE-HINDS® **ARK-trol®** ELECTRICAL CONNECTORS

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

IF1222

Installation & Maintenance Information

APPLICATION

ARK-trol® connectors are used with electrical and electronic equipment to provide quick connect and disconnect capability wherever a power, control or combination power and control connector is required. The lightweight, compact size makes it ideal for applications involving limited space.

When properly installed and maintained, ARK-trol connectors provide reliable operation in application environments ranging from tough, industrial installations to temperature controlled clean rooms. The ARK-trol connector construction is designed to resist corrosion, keep moisture out, and operate in a wide range of temperatures; making it ideal for use indoors or out.

Three product series (RPC, RPE, RPX) make up the ARK-trol connector offering.

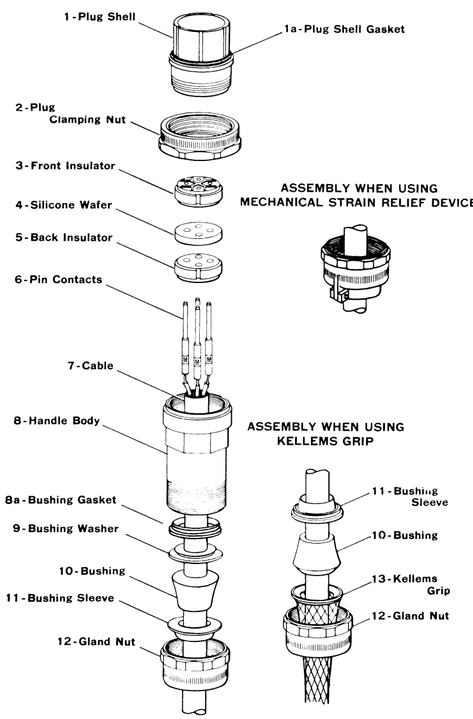
NOTE: The RPC Series of ARK-trol plugs and connectors are intended for use with the following flexible cord or cable as described in the National Electrical Code®, Article 400:

Portable Power Cable
Thermoset Jacketed Heater Cord
Hard Service Cord
Flexible Stage & Lighting Power Cable
Junior Hard Service Cord

RPC series connectors are load circuit breaking power connectors available with 2 to 5 contacts. RPE series connectors are for disconnect use only, available with 1 to 70 contacts. RPX series connectors are delayed action connectors suitable for hazardous (classified) areas due to the presence of gasoline or other gases or vapors of equivalent hazard, where construction and test procedures are required to meet applicable sections of MIL-E-5272C and MIL-E-4970A.

CAUTION
- RPE series connectors may only be connected or disconnected with the electrical power OFF.
- All ARK-trol connectors should be installed, inspected, maintained, and operated by qualified and competent personnel.

Section A — Plug Installation



1. Place over cable in order as pictured: gland nut (12), bushing sleeve (11), bushing (10) (see Table 1), bushing washer (9), bushing gasket (8a), handle body (8).

Table 1
RPC, RPE, or RPX Series for Plugs and Connectors Only (Not Required for Receptacles or Motor Plugs)

Shell Size	Cable Range Minimum	Cable Range Maximum	*Catalog Number (Bushing Only)
017	.125	.250	BUSH 92
	.250	.375	BUSH 93
	.375	.500	BUSH 94
	.500	.625	BUSH 05
	.625	.687	BUSH 310
	.687	.750	BUSH 311
	.750	.812	BUSH 312
	.812	.875	BUSH 313
021	.125	.250	BUSH 92
	.250	.375	BUSH 93
	.375	.500	BUSH 54
	.500	.625	BUSH 95
	.625	.750	BUSH 96
	.750	.875	BUSH 97
	.875	1.000	BUSH 239
	1.000	1.063	BUSH 314
	1.063	1.125	BUSH 315
	1.125	1.187	BUSH 316
033	.375	.500	BUSH 54
	.500	.625	BUSH 95
	.625	.750	BUSH 96
	.750	.875	BUSH 97
	.875	1.000	BUSH 239
	1.000	1.188	BUSH 99
	1.188	1.375	BUSH 911
	1.375	1.437	BUSH 317
	1.437	1.500	BUSH 318
	1.500	1.563	BUSH 319
	1.563	1.625	BUSH 320
	1.625	1.688	BUSH 321
	1.688	1.750	BUSH 322
	1.750	1.813	BUSH 323
	1.813	1.875	BUSH 324

Table 1 (continued)

RPC, RPE, or RPX Series for Plugs and Connectors Only (Not Required for Receptacles or Motor Plugs)

Shell Size	Cable Range Minimum	Cable Range Maximum	*Catalog Number (Bushing Only)
041	.875	1.000	BUSH 98
	1.000	1.188	BUSH 99
	1.188	1.375	BUSH 911
	1.375	1.625	BUSH 913
	1.625	1.875	BUSH 915
	1.875	1.938	BUSH 325
	1.938	2.000	BUSH 326
	2.000	2.063	BUSH 327
	2.063	2.125	BUSH 328
	2.125	2.188	BUSH 329
	2.188	2.250	BUSH 330

* The BUSHING catalog number is molded into the bushing. When several bushings are packed with a product to provide a selection for proper size always choose that bushing which gives the tightest fit on the cable being used.

WARNING

Do not use a cable having a diameter smaller than the minimum specified for the bushing selected. (Refer to N E Code.)

2. Terminate conductors using appropriate method. See Section C "Cable Preparation and Conductor Termination" (page 3) for details.

3. Place the plug clamping nut (2) on the plug shell (1).

4. Assemble the interior assembly as follows:

For configurations with contacts #16 through #4:

The front insulator always contains the digits "024" in the part number and should be installed into the shell with the part number facing **away** from the assembler.

A) Place the front insulator (3) in the plug shell lining up the machined keyway on the insulator with the key on the inner surface of the plug shell.

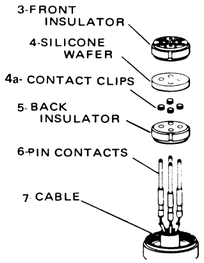
B) Place the silicone wafer (4) in the plug shell lining up the proper polarity letter designation on the wafer with the key on the inner surface of the plug shell. Install the wafer with the side marked "Pin Contact Rear" facing **toward** the assembler. The ports for the contacts will be aligned with the front insulator.

The rear insulator always contains the digits "023" in the part number and should be installed into the plug shell with the part number facing **toward** the assembler.

C) Place the back insulator (5) in the plug shell, again lining up the machined keyway of the insulator with the key on the inner surface of the plug shell. All contact parts will be aligned.

D) Insert pin contacts (6) (previously assembled to cable) into the insulator assembly from the rear, according to your predetermined wiring pattern. When fully inserted, contacts are self-retaining.

For configurations with contacts 1/0 & 4/0:



The front insulator always contains the digits "024" in the part number and should be installed into the shell with the part number facing **away** from the assembler.

A) Place the front insulator (3) in the plug shell lining up the machined keyway on the insulator with the key on the inner surface of the plug shell.

B) Place the silicone wafer (4) in the plug shell lining up the proper polarity letter designation on the wafer with the key on the inner surface of the plug shell. Install the wafer with the side marked "Pin Contact Rear" facing **toward** the assembler. Contact ports for the wafer and front insulator will be aligned.

C) Insert pin contacts (6) (previously assembled to cable and without retaining clips) into the back insulator (5), according to your predetermined wiring pattern.

D) Snap round retaining ring clips (4a) into contact clip groove on each contact from the pin end of the contact as shown above.

E) Place the back insulator (5) and contact assembly into the plug shell using the machined keyway on the insulator and key on the plug shell as a guide. Contacts will be aligned with contact ports in front insulator and silicone wafer.

5. Tighten the handle body (8) to the plug shell. This is a left hand thread. Use the chart below for determining appropriate torque.

RECOMMENDED TORQUE FOR LEFT HAND THREADS

Shell Size

017	021	033	041
15 to 20 ft. lbs.	20 to 25 ft. lbs.	25 to 35 ft. lbs.	35 to 45 ft. lbs.

NOTE: No lubricant should be used.

6. Position remaining components [bushing gasket (8a) through gland nut (12)] to handle body and tighten gland nut to the handle body. This is a right hand thread. Proper torque should be determined by the physical characteristics of the cable to form a good seal and grip. Handle body should be held by a wrench or other suitable means while tightening gland nut.

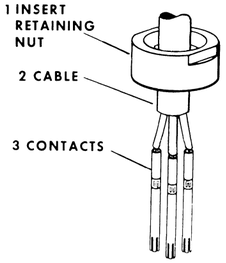
For mechanical cord clamping grip only: Tighten screws in mechanical clamping grip to attain adequate strain relief without damaging cable sheath.

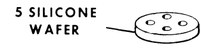
CAUTION

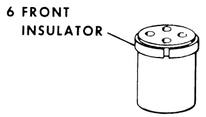
Care should be used not to allow any twisting or pulling of cable while tightening.

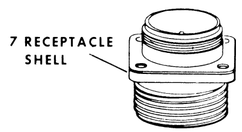
Section B — Receptacle Installation

NOTE: For Panel Mounting Dimensions see Section D (page 4).









1. Place insert retaining nut (1) over cable.

2. Terminate conductors using appropriate method. See Section C "Cable Preparation and Conductor Termination" for details.

3. Assemble the interior assembly as follows:

For configurations with contacts #16 through #4:

The front insulator always contains the digits "024" in the part number and should be installed into the shell with the part number facing **away** from the assembler.

A) Place the front insulator (6) in the receptacle shell (7) lining up the machined keyway on the insulator with the key on the inner surface of the receptacle shell.

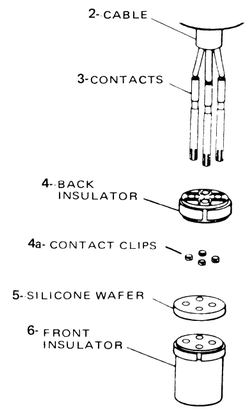
B) Place the silicone wafer (5) in the receptacle shell lining up the proper polarity letter designation on the wafer with the key on the inner surface of the receptacle shell. Install the wafer with the side marked "Socket Contact Rear" facing **toward** the assembler. The contact ports for the wafer and front insulator will be aligned.

The rear insulator always contains the digits "023" in the part number and should be installed into the receptacle shell with the part number facing **toward** the assembler.

C) Place the back insulator (4) in the receptacle shell, again lining up the machined keyway of the insulator with the key on the inner surface of the receptacle shell. All contact ports will be aligned.

D) Insert socket contacts (3) (previously assembled to cable) into the insulator assembly, according to your predetermined wiring pattern. When fully inserted, contacts are self-retaining.

For configurations with contacts 1/0 & 4/0:



The front insulator always contains the digits "024" in the part number and should be installed into the shell with the part number facing **away** from the assembler.

A) Place the front insulator (6) in the receptacle shell lining up the machined keyway on the insulator with the key on the inner surface of the receptacle shell.

B) Place the silicone wafer (5) in the receptacle shell lining up the proper polarity letter designation on the wafer with the key on the inner surface of the receptacle shell. Install the wafer with the side marked "Socket Contact Rear" facing **toward** the assembler. The contact ports for the wafer and front insulator will be aligned.

C) Insert socket contacts (3) (previously assembled to cable and without retaining clips) into the back insulator (4) according to your predetermined wiring pattern.

D) Snap round retaining ring clips (4a) into contact clip groove on each contact from the socket end of the contact.

E) Place the back insulator and contact assembly into the receptacle shell using machined keyway on the insulator and key on the receptacle shell as a guide. Contacts will be aligned with contact ports in front insulator and silicone wafer.

4. Tighten the insert retaining nut (1) to the receptacle shell. This is a left hand thread. Use the chart below for determining appropriate torque.

RECOMMENDED TORQUE FOR LEFT HAND THREADS

Shell Size

017	021	033	041
15 to 20 ft. lbs.	20 to 25 ft. lbs.	25 to 35 ft. lbs.	35 to 45 ft. lbs.

NOTE: No lubricant should be used.

Section C — Cable Preparation and Wire Termination

WARNING

Electrical power must be turned OFF before and during installation and maintenance.

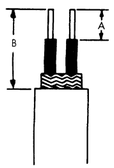
CAUTION

1. ARK-trol contacts, (solder, crimp or pressure types) are intended for use with copper conductors only.
2. Avoid bending slotted ends of socket contacts while terminating and reassembling. These are set and gaged at the factory. Disturbing the setting can cause poor or obstracted pin and socket contact engagement.

1. Establish a wiring pattern.

2. Strip cable per cable stripping chart and diagram below.

Shell Size	Contact Size A 16	12	10	4	1/0	4/0	"B"
17	5/16	7/16	7/16	5/8			2-3/16
21	5/16	7/16	7/16	5/8			2-3/16
33	5/16	7/16	7/16	5/8	11/16	7/8	2-7/8
41	5/16	7/16	7/16	5/8	11/16	7/8	3-3/8



3. Terminate conductor using appropriate method.

A) **Solder** - Solder terminations are standard on all ARK-trol connectors, unless otherwise specified. Reliable solder connections require the use of proper soldering techniques.

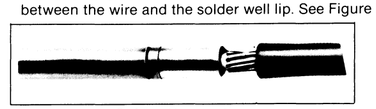
CAUTION

Do not attempt to crimp a contact with a solder well. An unreliable termination will result.

1) Using solder with a minimum of 50% tin, tin the exposed conductors by dipping into a pot of molten solder coming no closer to the insulation than 1/16 inch.

NOTE: A high heat source is required for good soldering. A torch may be used only if the surrounding conductor insulation is adequately protected.

2) Hold contact securely with solder well in upright position. Insert conductor into solder well as far as possible while applying heat to the well. Add solder slowly by melting on conductor; moving the conductor back and forth in the solder well. Continue adding solder slowly until the well fills and a smooth concave surface of solder forms between the wire and the solder well lip. See Figure below.



Solder Connection