

**DEKORON POLY-COR I AND II  
AND  
PROTECTO-PAC TYPES B AND FB  
INSTALLATION INSTRUCTIONS**

**PC-101**

The information and data compiled in this booklet are the result of considerable field experience in installing Dekoron Poly-Cor and Protecto-Pac products. If these suggestions are followed in laying out the installation and in installing the tubing, a neat, economical installation can be obtained. We emphasize, however, that these suggestions are intended to supplement, not replace, procedures developed by experienced field men who make these installations. We realize that no two installations are exactly alike and thus these instructions are only a guide from which specific requirements can be evolved for a particular installation.

**DEKORON**

## HANDLING & STORAGE

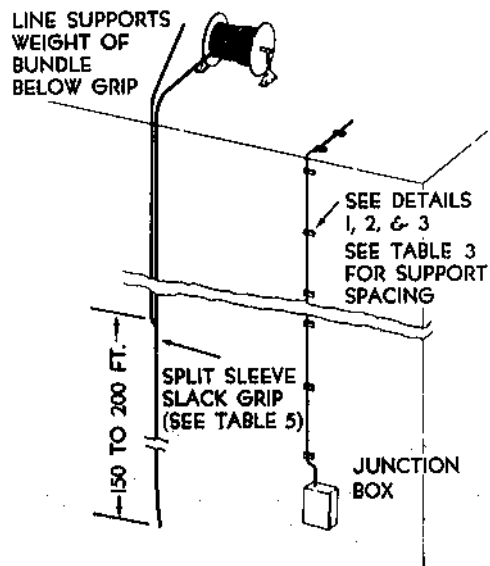
To minimize handling and handling costs, Poly-Cor and Protecto-Pac products are shipped on disposable, non-returnable reels. Refer to Table No. 1 of the appendix for the tables on net weights, shipping weights, standard shipping lengths, and reel dimensions.

Provision should be made to keep excessive moisture from the expendable reels during storage at the job site. If storage is out of doors, inexpensive polyethylene sheeting may be used to advantage and is recommended.

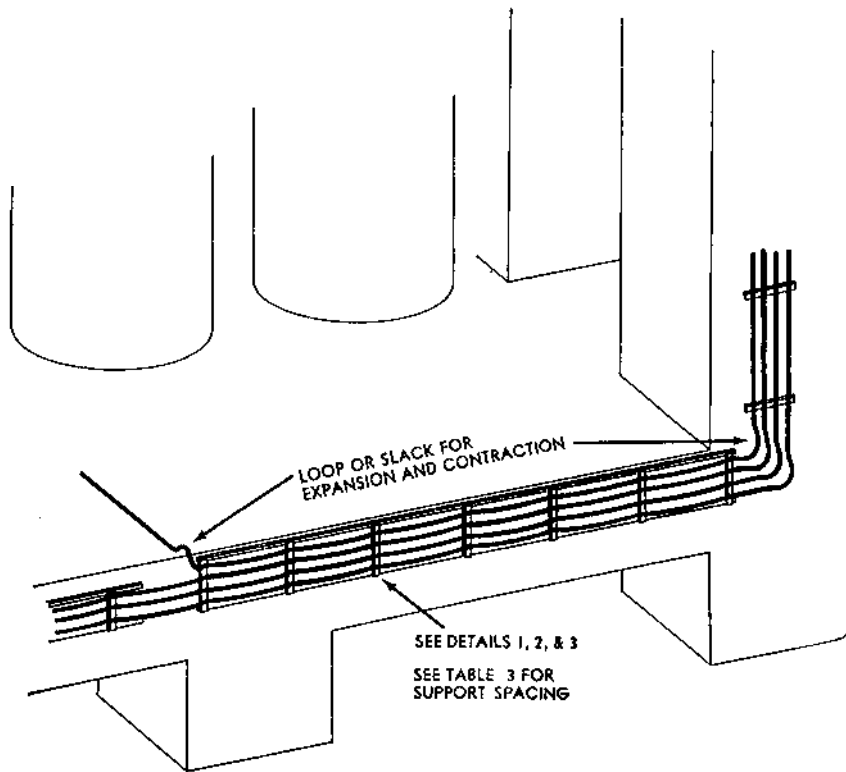
## PLANNING & PREPARATION

A substantial saving can be realized in the overall installation costs of instrument tubing by establishing definite routes in the early stages of construction planning. Many bends can be eliminated from the course by this preparation, thereby requiring less tubing and improving the signal response of the complete system.

The methods of supporting and clamping Poly-Cor and Protecto-Pac bundles are usually established early in the plans of the instrument course layout. Some of the several methods of supporting the bundles are shown in Sketches 1 thru 3. The use of some of the clamping devices available is shown in these sketches and in Details 1 thru 7. A tabulation of the sizes of several popular makes of clamps for the various sizes of Poly-Cor and Protecto-Pac bundle is shown in Table 2 of the appendix. Tabulations of the maximum bundle dimensions centers of support and bending radii are found in Table 3, and the conduit sizes required to house one or more bundles in Table 4 in the appendix.

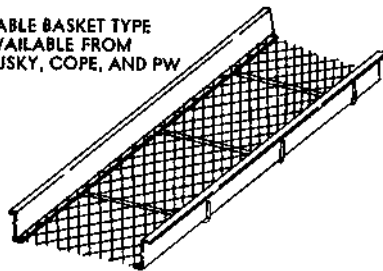


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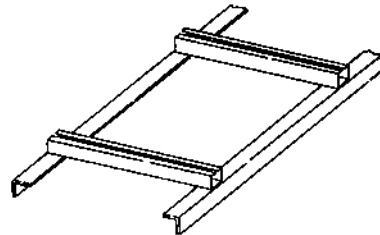


**Sketch 2 (A) Horizontal Installation on Vertical Surface**

CABLE BASKET TYPE  
AVAILABLE FROM  
HUSKY, COPE, AND PW



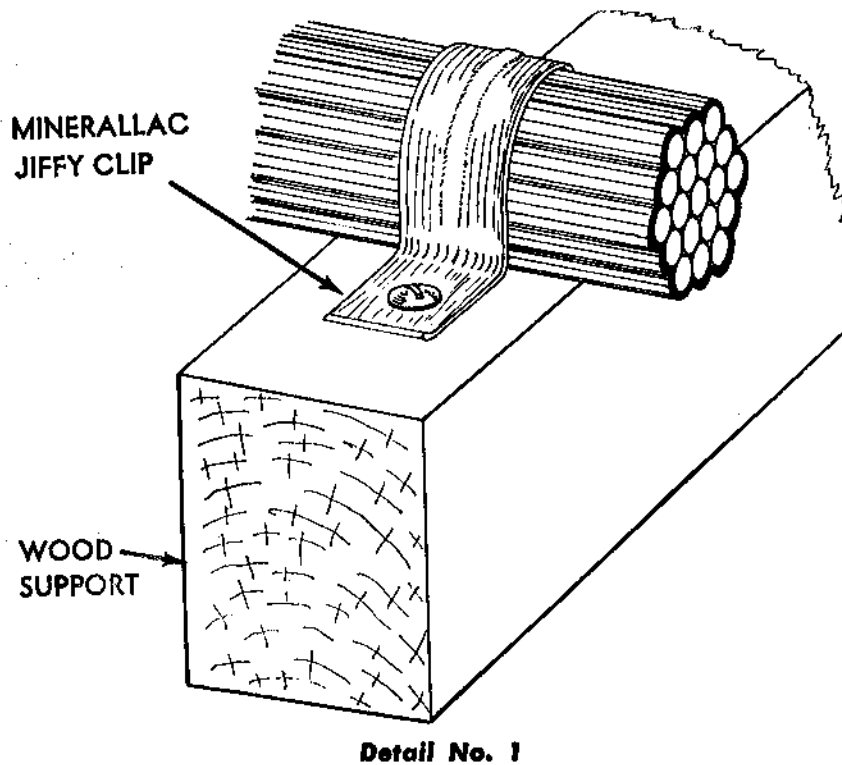
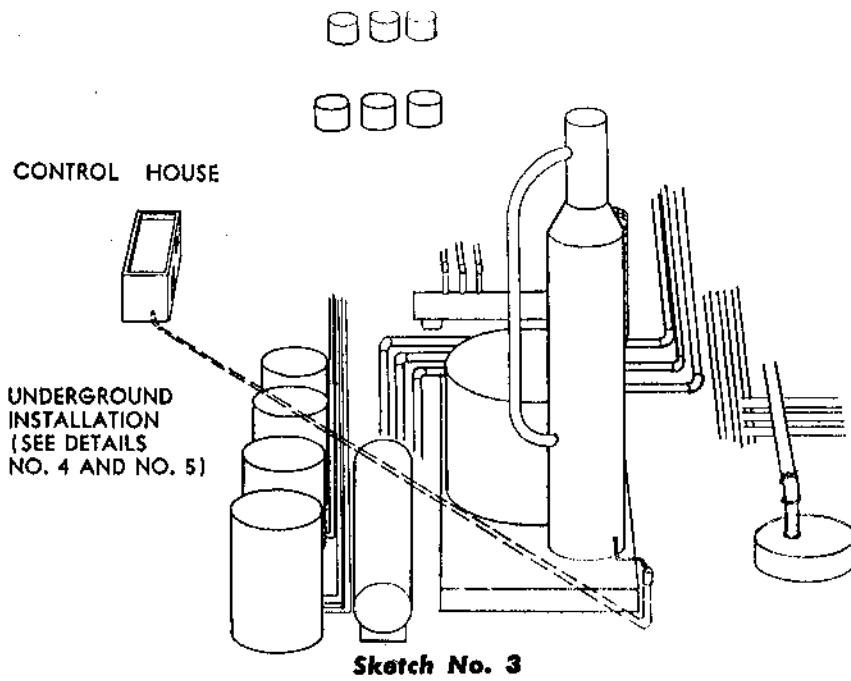
RACK TYPE JOB SITE FABRICATION  
USING UNISTRUT OR SIMILAR

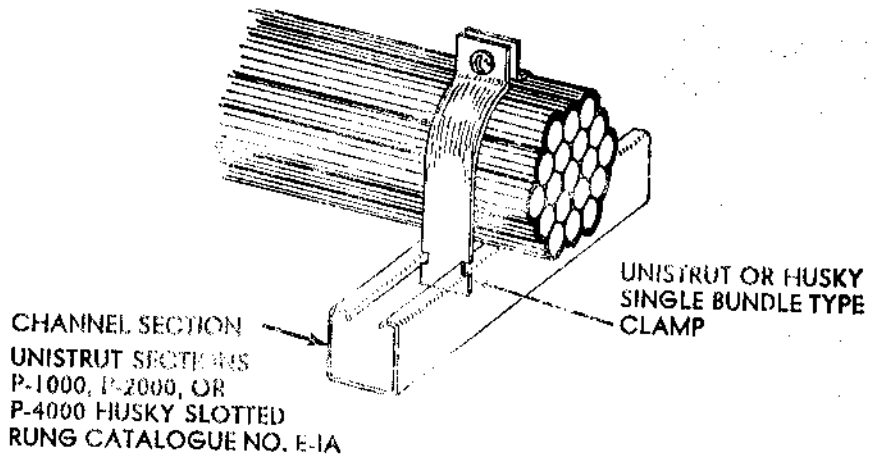


SEE TABLE 2 FOR  
RECOMMENDED CLAMPS

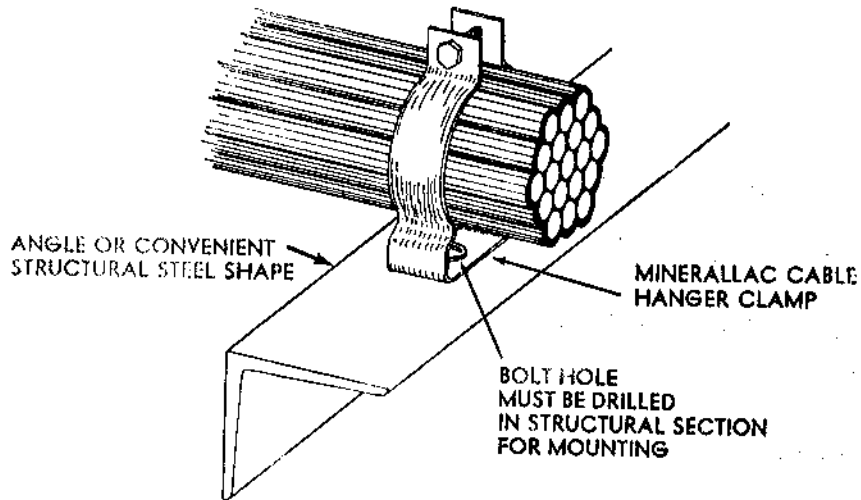


**Sketch 2 (B) Alternate Racking For Horizontal Installation**

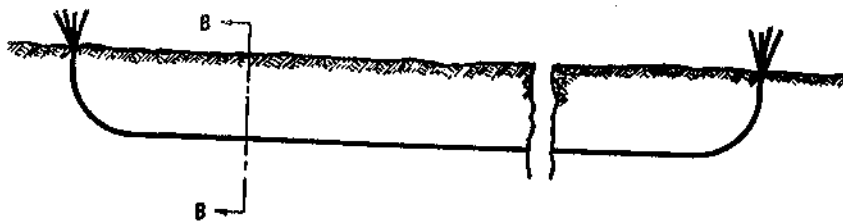




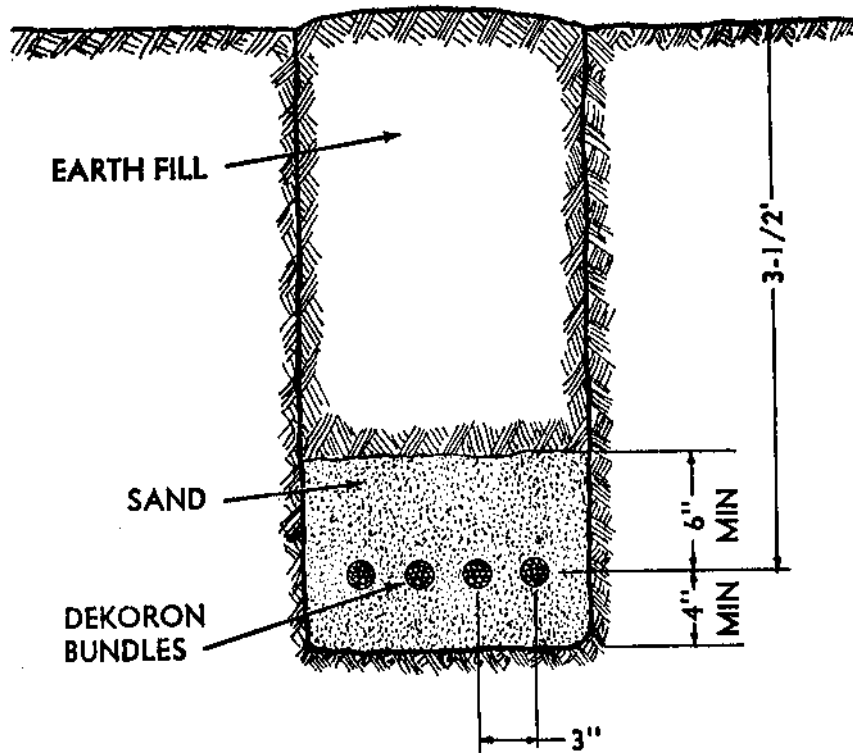
**Detail No. 2**



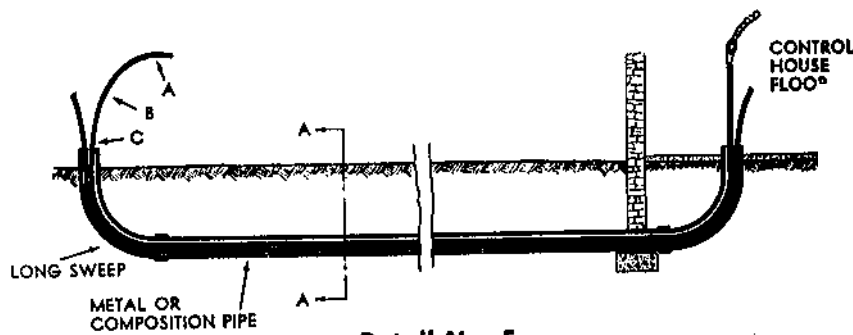
**Detail No. 3**



**Detail No. 4**  
**Direct Burial Installation (Sand Fill)**



**Detail No. 4 (Sec. B-B)**  
**Recommendations for Underground Burial Installation**

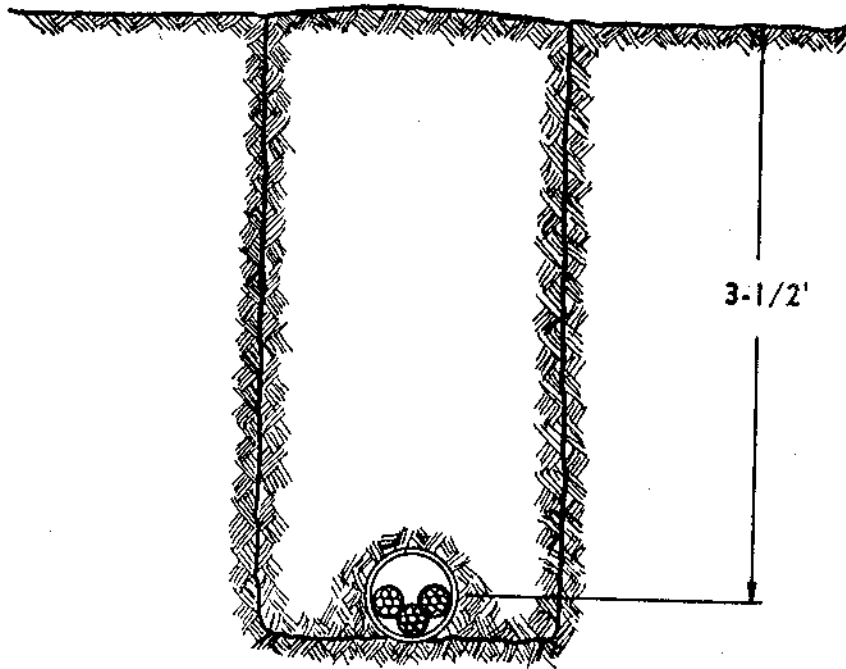


**Detail No. 5**

**NOTE:** During pulling operation, use cable lubricant.

**NOTE:** While pulling bundles through pipe, one man maintains large radius at point A (about 4 feet). One man feeds bundle into pipe at point B and one man applies lubricant at point C.

**NOTE:** If more than one Dekoron bundle is to be placed in pipe, the installation will be simplified by pulling multiple bundles simultaneously.



**Detail 5 (Sec. A-A)**

### **METHODS OF INSTALLATION**

A decision will have to be made in the planning stage as to the method of installing the Poly-Cor or Protecto-Pac bundles to obtain the lowest cost. A study of the fundamental requirements of the particular job will generally aid the project engineer in determining the best procedure. A few of the important considerations are: length of course, length of vertical runs, fastening or housing devices being used, the number of bundles being installed over a single course, and the size of the bundles involved.

### **OUR RECOMMENDATIONS ARE AS FOLLOWS:**

A. Whenever possible, make use of the flexibility and light weight of the Poly-Cor and Protecto-Pac bundles by installing without the use of auxiliary power equipment. Hand installation requires the least preparation for the actual pulling of the bundles in place.

B. Use roll-type guides in inaccessible locations where the bundle might be damaged by improper handling. See Detail 8.

C. Tower or other long, vertical installations are usually best made by starting at the top with the full reel and paying out the bundle down the installation, making use of a split slack grip every 150 to 200 ft. to reduce the weight on the bundle at the reel. (See Sketch No. 1 for the details of this type installation.)

D. Long installations in conduit can generally be made with greater ease by making use of mechanical pulling devices. A certain degree of care must be exercised to assure the maximum pull on a bundle will not exceed 15 pounds per tube and 35 pounds per tube for 1/4" and 3/8" bundles respectively. (See Table 4 for conduit sizes.)

E. Please refer to the special section entitled "Installation Instructions for Poly-Cor II" for our recommendations for installing this product with the expansion loop assembly. Otherwise, Poly-Cor II would be handled during installation the same as Poly-Cor I.

F. The following is a list of the products and their source that may be required to facilitate handling the Poly-Cor and Protecto-Pac bundles with greater ease during their installation.

**Pulling Grips:**

Kellems Company, Stonington, Connecticut  
(See Table 5 in appendix)  
Graybar Electric (Reliable Pulling Grips)  
(See Table 5 in appendix)

**Bundle Guides and Pulleys:**

P-W Industries  
Duncan and Melrose Streets  
Philadelphia 24, Pa.  
Husky Products, Inc.  
5300 Vine Street  
Cincinnati 17, Ohio  
T. J. Cope  
Collegeville, Pa.

**Cable Reel Jacks:**

Graybar Electric

**Tugger or Winch and Pulling Cable:**

Usually at job site or equipment rental agency.

**Pulling Lubricant:**

Y-ER-EAS  
Electro Compound Company, Cleveland, Ohio  
Wirelube  
Ideal Industries, Inc., Sycamore, Illinois  
Pull-In-Compound  
Minerallac Electric Co., Chicago, Illinois

## **INSTALLATION**

The actual installation of Dekoron Poly-Cor and Protecto-Pac is simple and fast when adequate planning and preparation have preceded it. Sketches 1, 2, and 3 show the plastic tube bundles installed over different courses. Each is self-explanatory. The pulling procedure is as follows:

1. Mount the bundle reel on reel jacks and station a man at each directional change along the course of the installation.
  - a. Dekoron bundles of less than 200 ft. in length are shipped in coils, not on reels. Bundles in coil form are most easily handled by first uncoiling them into a straight length on the ground and then pulling into position.

2. Pulling by hand does not generally require a pulling rope. However, if one is used, either for making use of mechanical pulling power or for pulls through conduit and other inaccessible locations, attach the rope to the bundle and use recommended sizes of pulling grip. See Table 5.
3. The average installation is completed by men carrying the end of the bundle along the complete course of the installation, the trailing bundle being fed and guided by other men stationed along the course at directional changes.
4. Conduit installations are made with the aid of a pulling lubricant to reduce the friction as the bundle is pulled through the conduit. Relatively long installations can be made without the necessity of mechanical power.

### **METHODS OF BENDING**

All of the bends required in Poly-Cor and Protecto-Pac bundles can be made by hand. The bend radius should be equal to or exceed the values in Table 3.

### **FINAL ASSEMBLY**

The field engineer in charge of the installations can best decide when to fasten down the Poly-Cor or Protecto-Pac bundles. Many times it will be easier to pull all the bundles over a horizontal course before fastening any. In other cases, such as shown in Sketch 2, horizontal pulls where the bundles will be stacked vertically must be fastened immediately to make room for the next pull on the supporting equipment.

A sag of approximately 1" should be allowed between suspension points on installations of Poly-Cor and Protecto-Pac to permit contraction of the bundles during colder weather. Installations in troughs should be made as loose as can be tolerated. A good general rule to follow is never to install the plastic tube bundles so that they are tight between two adjacent supports. Always allow room for contraction. (See Sketch 2(A) and Details 6 and 7)

### **UNDERGROUND INSTALLATIONS**

Underground installations, either in conduit or direct burial, are generally lower in cost than other methods. Savings are realized in material by the elimination of many bends, thereby reducing the bundle footage and labor by eliminating the necessity of fastening down the underground portion of the instrument tube runs. Sketch No. 3 illustrates this type of installation.

Methods of installation in conduit are outlined in Detail 5. The procedure for direct burial is shown in sketch form in Detail 4.

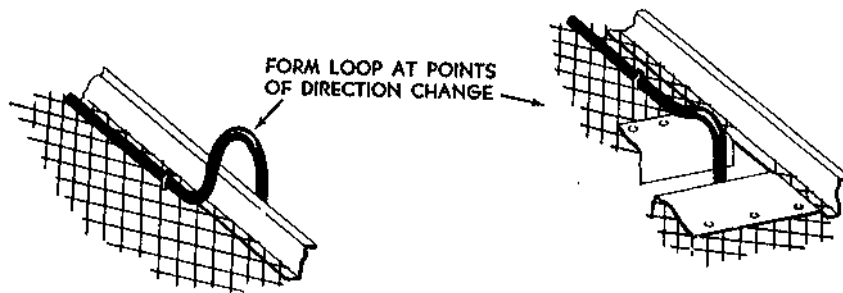
### **RULES ON PREPARATION FOR JUNCTIONS**

A certain degree of care must be exercised in preparing Dekoron Poly-Cor and Protecto-Pac bundles for junctions. Nicks and cuts in the tubing made while removing the protective sheath are potential points of failure. Polyethylene tubing other than black in color must be protected from ultra-violet light (sunlight). If the sheath is removed at any point, some auxiliary means of protection must be provided. Junction boxes or

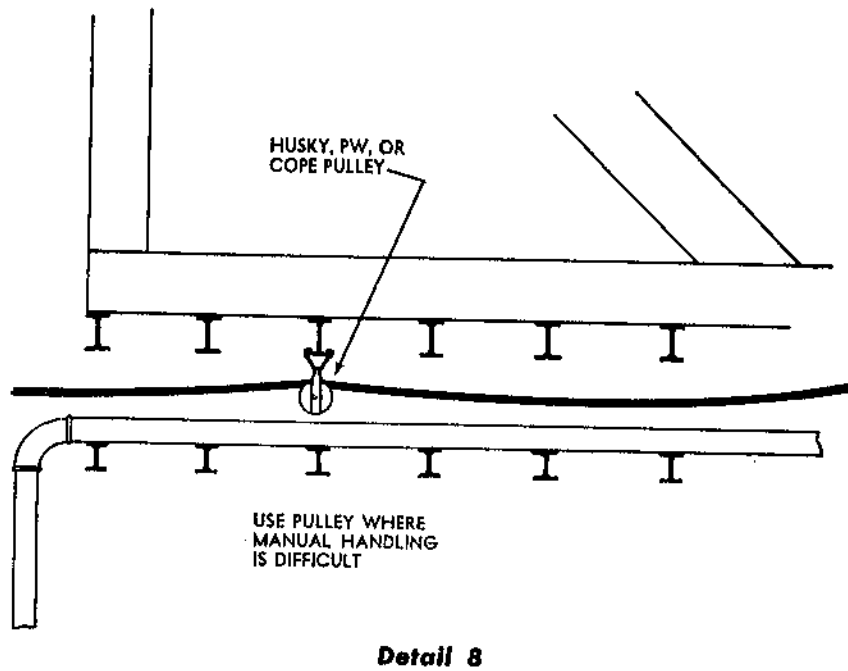
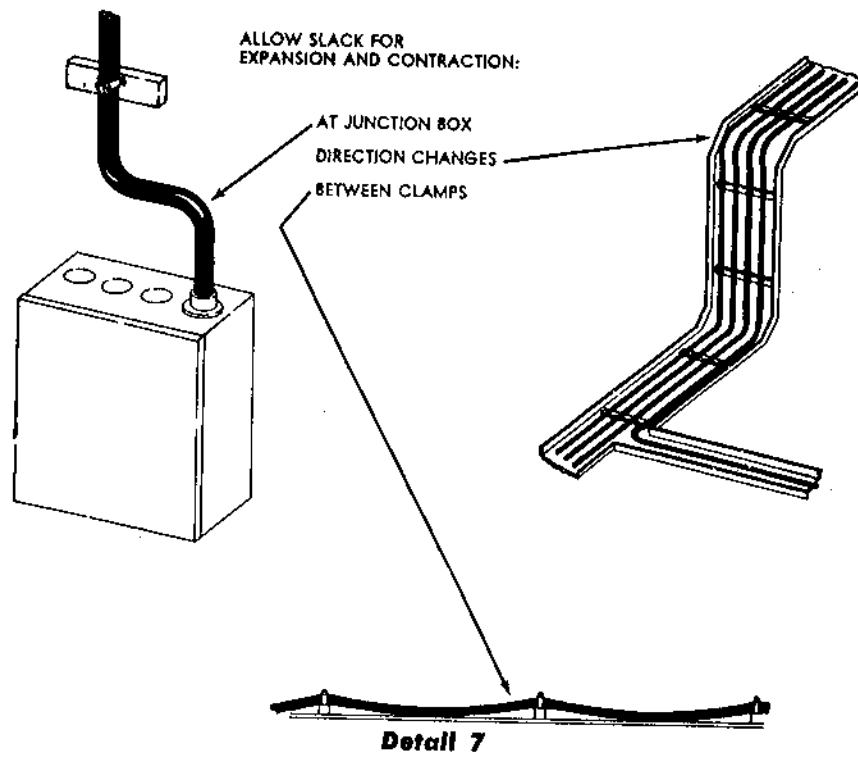
union boxes fulfill this requirement and are easier to work on than other protective mediums, particularly at a later date in the event of circuit changes. (See Details 9 and 10.)

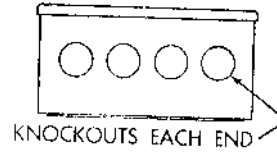
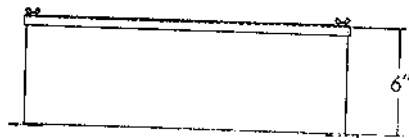
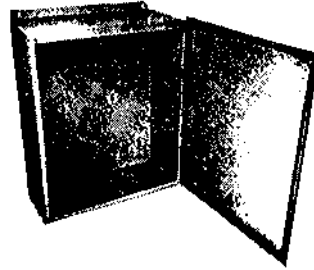
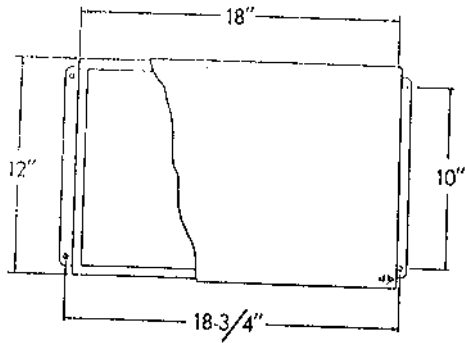
To prepare the bundle for installation in a junction box or union box:

1. Install the grommet (see Detail 11) in the preferred knockout hole. The grommet is installed from the inside of the box with the aid of a screwdriver.
2. Lubricate the Poly-Cor or Protecto-Pac bundle with a pulling lubricant suitable for synthetic sheathed cables to reduce friction and facilitate pushing the bundle through the grommet.
3. Push the bundle into the box a distance equal to or 1-1/2 times the box length. This will provide enough tubing to reach any location in the box.
4. Tighten the clamp on the grommet so that it tightly grips the bundle to seal and keep the bundle from being inadvertently pulled out.
5. Strip the plastic sheath from the bundle starting at a point approximately 2" inside the box. See Detail 16 for tools to aid in this job. Commercial tools are available such as from  
Mathias Klein and Sons  
7200 McCormack Road Skokie  
Chicago 45, Ill.
6. Make the necessary hook-ups in the box, cutting the tubing to the desired lengths.

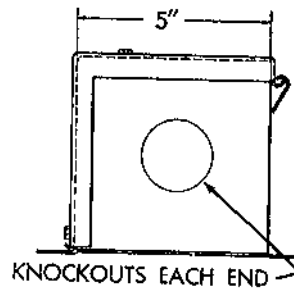
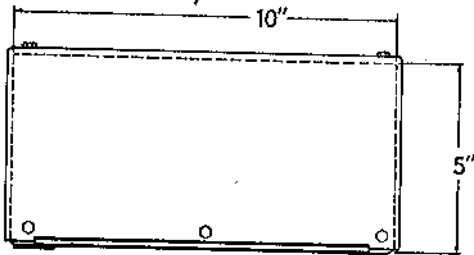
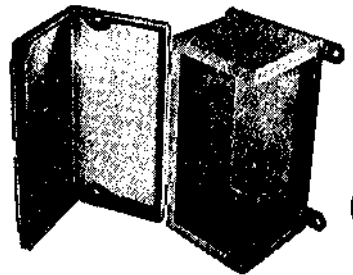
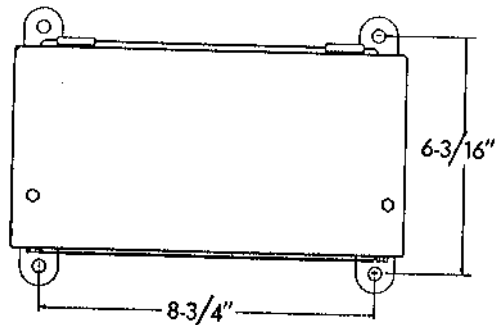


**Detail 6**

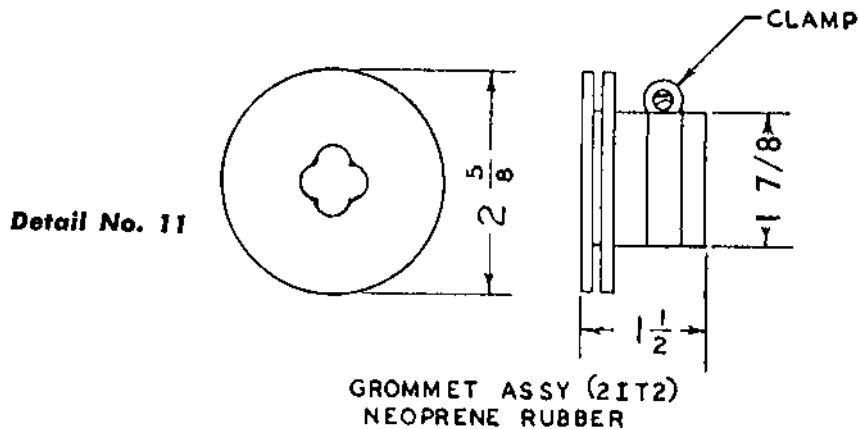




**Detail 9**



**Detail 10**



### MESSENGER CABLE INSTALLATION

where the cost of racking to support the Dekoron bundles would be extremely high. Messenger Cable installations are found to be most advantageous where there is no existing structure onto which the Dekoron bundle can be clamped at recommended intervals and where the cost of racking would greatly increase the installed cost per tube foot, the Messenger Cable is ideal.

There are no tables listing the various Messenger Cable Rings or methods of supporting the Dekoron bundle on Messenger Cable because of the wide choice of rings and clamping devices. The 1/4" stranded Messenger Cable supported each fifty feet is a good average figure to use. This cable and all the necessary hardware is in stock at various electrical wholesalers, such as Graybar, Westinghouse Supply, General Electric Supply and independent electrical wholesalers.

There are a number of ways of attaching the bundle to the Messenger Cable. Lashing is currently preferred by the Bell Telephone Systems around the country. However, this requires a rather costly piece of specialized equipment, and it's doubtful that general industry would have sufficient bundles to install using a lasher to invest in one.

Messenger Cable Rings and Saddles or simple hooks with hemp rope have been used for many years by the electrical and telephone industries to good advantage. Since there are so many types, we are not attempting to list them here. When ordering Messenger Cable Rings and Saddles from the previously mentioned electrical wholesalers, merely state the approximate size of the bundle (diameter) and ask for the proper Messenger Cable Ring and Saddle for that size bundle. If you intend to install more than one bundle, approximate the diameter of the group of bundles and order the Messenger Cable Ring and Saddle as though the group of bundles were one bundle.

We recommend that Dekoron bundles be installed using an 18" to 24" spacing between the supporting rings.

Our representatives and our Engineering Department at the factory will be pleased to supply information regarding specific installations that you may have using this system of support.

## INSTALLATION INSTRUCTIONS FOR POLY-COR II

### INTRODUCTION

The methods and techniques described in the preceding pages are for our standard Poly-Cor and Protecto-Pac with a vinyl outer sheath. A new Poly-Cor product has been designed and designated as Poly-Cor II. Poly-Cor II is the polyethylene Dekoron "P" tubes but with a polyethylene outer sheath instead of the vinyl in our standard Poly-Cor. The reasons for adding this Poly-Cor variation are numerous, but one of the most important is to take advantage of the expansion loop method in installing this plastic instrument harness. (See Details 12 thru 15.)

Poly-Cor II can be installed in the same manner as the standard Poly-Cor as previously described. The techniques described in the following paragraphs are, in our belief, ones which will provide the most trouble-free plastic harness installation. The system was designed for use with Poly-Cor II because unlike standard Poly-Cor, its sheath resists creep with respect to the tubes.

Standard Poly-Cor bundles can be installed using this system but may require adjustment after a few months of service because of the creeping of the more rubbery vinyl outer sheath.

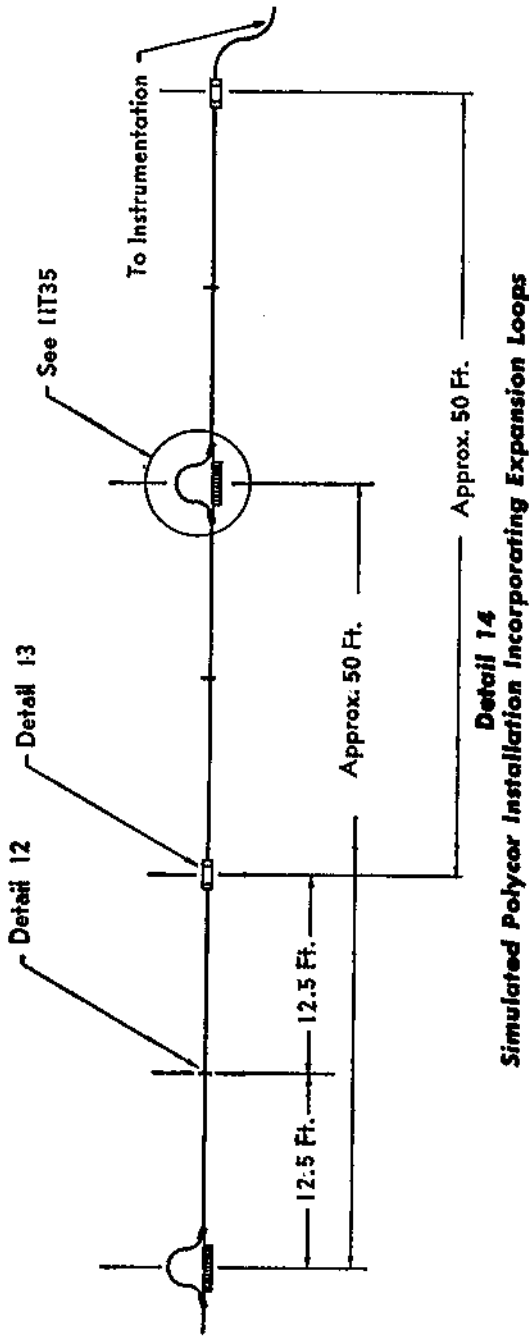
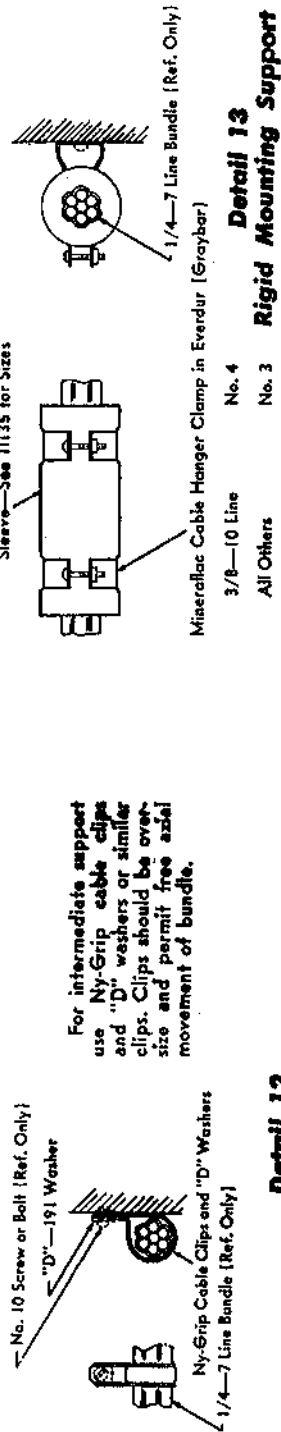
### PREPARATION FOR INSTALLATION

Expansion and contraction in the length of the plastic harness caused by temperature variations normally produces festooning. Dekoron expansion loop assembly (see Detail No. 15), when installed properly at approximately 50-ft. intervals will automatically compensate for this expansion and contraction, thus keeping the bundle tight and straight at all times.

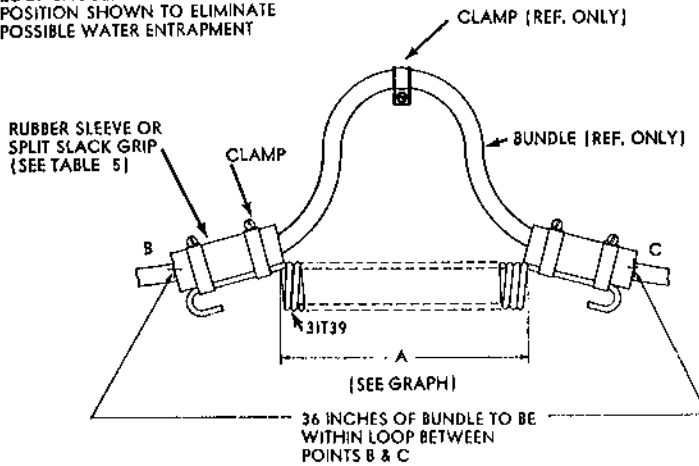
Rigid mounting should be provided for each bundle at approximately 50-ft. intervals with the expansion loop located at mid-point. Other supports which will permit axial movement of the bundle but limit lateral motion should be installed approximately midway between the expansion loops and the rigid mounting points. This will divide each 50-ft. span into four nearly equal sections. Some variation in the length of each section can be tolerated so as to make use of as many existing support structures as possible. The expansion loop will function best if located as near as possible to the mid-point between the rigid mountings.

### SECURING INSTALLATION

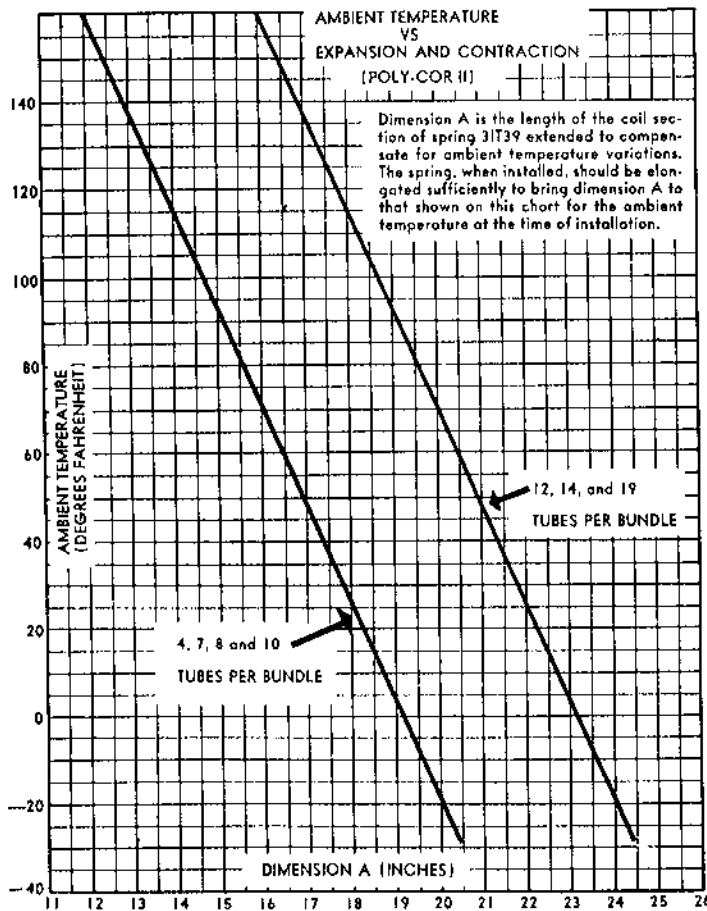
An installation using expansion loops should be secured, working from one end to the other. The bundle should be fastened rigidly at the start of the first span, the expansion spring installed in the center of the intended span, and the bundle placed in the second rigid mounting. The Poly-Cor II harness should be pulled through the second rigid mounting until the coils of the spring are extended to the length shown on the graph on Detail 15, corresponding to the ambient temperature at the time of installation. When the correct dimension is obtained, the clamp in the second rigid mounting point is secured. The intermediate supports may then be attached, making sure the bundle is allowed free axial movement. In expansion loop installations, the Poly-Cor II should be mounted rigidly wherever a directional change occurs. Slack grips may be substituted for the rigid mounting clamps. (See Table 5.)



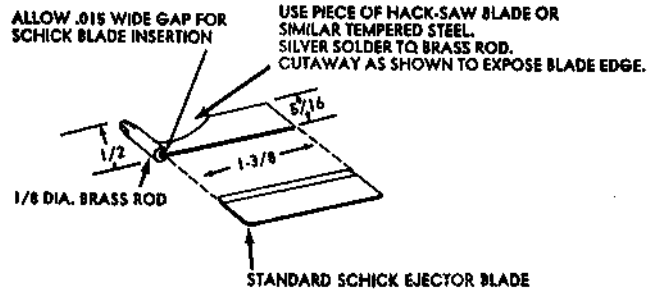
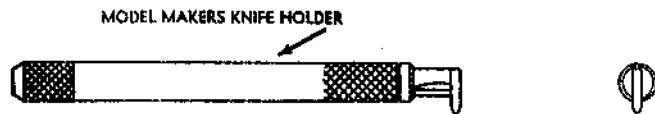
LOOP SHOULD BE IN POSITION SHOWN TO ELIMINATE POSSIBLE WATER ENTRAPMENT



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Detail 15



**Detail 16**

**TABLE 1**  
**SHIPPING WEIGHTS, REEL DIAMETERS, ETC.**  
**Poly-Cor Using As Core Tubes 1/4" O.D. x .040" Wall Dekoron "P" Tubes**

No. of Tubes	Net Wt. Per 100' in lbs	Standard Shipping Length in Feet	Shipping Reel Dimensions		Shipping Weight Incl. Reel in lbs. per Shipping Ls.
			Dia.	Width	
2	8.4	500	36"	30"	84
		1000	"	"	126
3	11.0	500	"	"	97
		1000	"	"	152
4	13.1	500	"	"	107
		1000	"	"	173
5	14.9	500	"	"	117
		1000	"	"	191
7	18.2	500	"	"	133
		1000	"	"	224
8	20.0	500	"	"	142
		1000	"	"	242
10	25.4	500	"	"	169
		1000	"	"	296
12	28.3	500	"	"	184
		1000	"	"	325
14	33.3	500	"	"	209
		1000	"	"	375
19	41.8	500	"	"	251
		1000	48"	"	474
37	81.2	500	74"	24"	648
		1000	74"	48"	1068

**Poly-Cor Using As Core Tubes 3/8" O.D. x .062" Wall Dekoron "P" Tubes**

2	14.3	500	36"	30"	114
		1000	"	"	185
3	19.4	500	"	"	139
		1000	"	"	236
4	20.9	500	"	"	147
		1000	"	"	251
7	31.3	500	"	"	199
		1000	48"	"	355
10	43.0	500	36"	"	257
		1000	48"	"	486
12	62.6	500	48"	"	369
		1000	48"	"	682

**Poly-Cor II Using As Core Tubes 1/4" O.D. x .040" Wall Dekoron "P" Tubes**

2	6.7	500	36"	30"	76
		1000	"	"	113
3	9.0	500	"	"	87
		1000	"	"	137
4	11.0	500	"	"	96
		1000	"	"	156
5	12.8	500	"	"	106
		1000	"	"	170
7	16.2	500	"	"	123
		1000	"	"	204
8	18.6	500	"	"	135
		1000	"	"	228
10	24.4	500	"	"	164
		1000	"	"	286
12	27.3	500	"	"	179
		1000	"	"	315
14	29.5	500	"	"	190
		1000	"	"	337
19	36.5	500	"	"	226
		1000	48"	"	427

**SHIPPING WEIGHTS, REEL DIAMETERS, ETC.**

**Poly-Cor II Using As Core Tubes 3/8" O.D. x .062" Wall Dekoron "P" Tubes**

No. of Tubes	Net Wt. Per 100' in lbs	Standard Shipping Length in Feet	Shipping Reel Dimensions		Shipping Weight Incl. Reel in lbs. per Std. Shipping Length
			Dia.	Width	
2	12	500	36"	30"	102
		1000	"	"	166
3	16	500	"	"	122
		1000	"	"	202
4	18	500	"	"	132
		1000	"	"	222
7	27.3	500	"	"	179
		1000	48"	"	329
10	37.3	500	36"	"	229
		1000	48"	"	429
12	40	500	48"	"	295
		1000	48"	"	545

**Protecto-Pac Type B**

4	29.7	500	36"	30"	188.5
		1000	48"	30"	357
7	40	500	36"	30"	245
		1000	48"	30"	460
8	42.5	500	36"	30"	275
		1000	48"	30"	490
10	52.2	500	36"	30"	301
		1000	48"	30"	582
12	54	500	36"	30"	310
		1000	48"	30"	600
14	57.8	500	48"	30"	330
		1000	74"	24"	834
19	68.7	500	48"	30"	406
		1000	74"	24"	943

**Type FB**

4	44	500	36"	30"	260
		1000	48"	30"	500
7	60	500	36"	30"	340
		1000	48"	30"	660
8	64	500	36"	30"	380
		1000	48"	30"	700
10	70	500	36"	30"	400
		1000	48"	30"	765
12	74.3	500	36"	30"	420
		1000	48"	30"	805
14	78.8	500	48"	30"	440
		1000	74"	24"	1044
19	91.7	500	48"	30"	521
		1000	74"	24"	1173

**TABLE 2**

**RECOMMENDED CLAMPS FOR DEKORON POLY-COR  
STD. and POLY COR II, 1/4" & 3/8" O.D. TUBES**

Tube Size	No. of Tubes in Bundle	Unistrut	Husky	Minerallac Cable Hanger Clamps	Minerallac Jiffy Clips
1/4	2	P2025			No. 125
1/4	3	P2027		No. 0	No. 125
1/4	4	P2028		No. 1 use with 3/16 Neoprene Rubber Bushing	No. 130 (3/8 Conduit)
1/4	5	P2028			No. 130
1/4	7	P2029		No. 0	No. 140 (1/2 Conduit)
1/4	8	P2028		No. 1	No. 150
1/4	10	P2030	SCR-10	No. 1	No. 150 (3/4 Conduit)
1/4	12	P2030	SCR-10	No. 1	No. 150 (1" EMT)
1/4	14	P2031	SCR-11	No. 2	No. 155
1/4	19	P2033	SCR-13	No. 2-1/2	No. 160 (1" Conduit)
1/4	37	P2037	SCR-18	No. 4	
3/8	2	P2028		No. 0	No. 140
3/8	3	P2028		No. 0	No. 140
3/4	4	P2029		No. 1	No. 150
3/8	5	P2030	SCR-10	No. 1	No. 155
3/8	7	P2031	SCR-11	No. 2	No. 155
3/8	10	P2032	SCR-12	No. 2	No. 160
3/8	12	P2034	SCR-15	No. 3	No. 165

**PROTECTO-PAC TYPE B**

1/4	2	P2028		No. 1	No. 130
1/4	3	P2028		No. 1	No. 140
1/4	4	P2030	SCR-10	No. 1	No. 150
1/4	7	P2030	SCR-10	No. 2	No. 150
1/4	8	P2031	SCR-11	No. 2	No. 155
1/4	10	P2032	SCR-12	No. 2	No. 160
1/4	12	P2032	SCR-12	No. 2	No. 160
1/4	19	P2034	SCR-15	No. 3	No. 165
1/4	37	P2038	SCR-20	No. 4	

**PROTECTO-PAC TYPE FB**

1/4	4	P2031	SCR-11	No. 2	No. 155
1/4	7	P2033	SCR-13	No. 2-1/2	No. 160
1/4	10	P2034	SCR-15	No. 3	No. 165
1/4	12	P2034	SCR-15	No. 3	No. 165
1/4	19	P1430	SCR-17	No. 4	
1/4	37	P2040	SCR-22	No. 4	

**TABLE 3**  
**POLY-COR I**

<u>Tube Size</u>	<u>No. of Tubes in Bundles</u>	<u>Dimensions</u>	<u>Support Centers</u>	<u>Minimum Bending Radius (inches)</u>
1/4	2	3/8 x 5/8	2 to 3 ft. — Horizontal 10 to 20 ft. — Enclosed Vertical 5 to 10 ft. — Open Vertical	1-1/2
1/4	3	19/32 x 5/8		1-1/2
1/4	4	13/16 x 5/8		2
1/4	5	19/32 x 7/8		2
1/4	7	7/8 x 13/16		2-1/2
1/4	8	1-1/16 x 7/8		2-1/2
1/4	10	13/16 x 1-1/16		3
1/4	12	1 x 1-1/8		3-1/2
1/4	14	1-1/4 x 1-1/8		4
1/4	19	1-3/16 x 1-3/8		5
1/4	37	1-49/64 x 1-61/64		9
3/8	2	1/2 x 7/8		2
3/8	3	27/32 x 7/8	2	
3/8	4	1-3/16 x 7/8	2-1/2	
3/8	5	45/64 x 1-1/4	2-1/2	
3/8	7	1-3/16 x 1-1/4	4	
3/8	10	1-3/16 x 1-5/8	5	
3/8	12	1-1/2 x 1-5/8	6	

**POLY-COR II**

<u>Tube Size</u>	<u>No. of Tubes in Bundles</u>	<u>Dimensions</u>	<u>Support Centers</u>	<u>Minimum Bending Radius (inches)</u>
1/4	2	3/8 x 5/8	2 to 3 ft. — Horizontal 10 to 20 ft. — Enclosed Vertical 5 to 10 ft. — Open Vertical (For installations without the expansion loop assy.)	3
1/4	3	19/32 x 5/8		3
1/4	4	13/16 x 5/8		3
1/4	5	19/32 x 7/8		3-1/2
1/4	7	7/8 x 13/16		3-1/2
1/4	8	1-1/16 x 7/8		3-1/2
1/4	10	13/16 x 1-1/16		4
1/4	12	1 x 1-1/8		4
1/4	14	1-1/4 x 1-1/8		4-1/2
1/4	19	1-3/16 x 1-3/8		5
1/4	37	1-49/64 x 1-61/64		9
3/8	2	1/2 x 7/8		3-1/2
3/8	3	27/32 x 7/8	3-1/2	
3/8	4	1-3/16 x 7/8	3-1/2	
3/8	5	45/64 x 1-1/4	3-1/2	
3/8	7	1-3/16 x 1-1/4	4-1/2	
3/8	10	1-3/16 x 1-5/8	6	
3/8	12	1-1/2 x 1-5/8	6-1/2	

**TABLE 3**  
(Continued)

**PROTECTO-PAC TYPE B**

<u>Tube Size</u>	<u>No. of Tubes in Bundles</u>	<u>Dimensions</u>	<u>Support Centers</u>	<u>Minimum Bending Radius (inches)</u>
1/4	2	7/8 x 5/8	2 to 3 ft. — Horizontal 10 to 20 ft. — Enclosed Vertical 5 to 10 ft. — Open Vertical	2
1/4	3	27/32 x 7/8		2
1/4	4	1-1/16 x 7/8		2-1/2
1/4	5	27/32 x 1-1/8		3
1/4	7	1-1/16 x 1-1/8		4
1/4	8	1-9/32 x 1-1/8		4-1/2
1/4	10	1-1/16 x 1-3/8		5
1/4	12	1-1/4 x 1-3/8		6
1/4	14	1-1/2 x 1-3/8		7
1/4	19	1-1/2 x 1-5/8		9

**PROTECTO-PAC TYPE FB**

<u>Tube Size</u>	<u>No. of Tubes in Bundle</u>	<u>Dimensions</u>	<u>Support Centers</u>	<u>Minimum Bending Radius (inches)</u>
1/4	4	1-1/16 x 1-1/4	2 to 3 ft. — Horizontal 10 to 20 ft. — Enclosed Vertical 5 to 10 ft. — Open Vertical	2-1/2
1/4	7	1-5/16 x 1-3/8		4
1/4	10	1-5/16 x 1-9/16		5
1/4	12	1-7/16 x 1-9/16		6
1/4	19	1-23/32 x 1-13/16		9

**TABLE 4**  
**NUMBER OF BUNDLES VS. CONDUIT SIZE**  
**Poly-Cor I & II 25% of Area Filled**

Conduit Nom. Size	Size Inside Dia.	1/4" O.D. Tubes							3/8" O.D. Tubes								
		2	3	4	5	7	8	10	12	14	19	37	2	3	4	7	10
1-1/2	1.610	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2.067	5	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2-1/2	2.469	7	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3
3	3.068	11	8	5	5	4	3	3	3	3	3	3	3	3	3	3	3
3-1/2	3.548	15	10	6	7	5	4	4	4	4	4	4	4	4	4	4	4
4	4.026	19	13	8	9	7	5	5	5	5	5	5	5	5	5	5	5
5	5.047	30	20	13	14	11	9	8	7	7	7	7	7	7	7	7	7
6	6.065	44	30	19	20	15	12	12	10	8	7	3	3	3	3	3	3

Conduit Nom. Size	Size Inside Dia.	PROTECTO-PAC TYPE B 1/4" O.D. Tubes							PROTECTO-PAC TYPE FB 1/4" O.D. Tubes									
		2	3	4	7	8	10	12	14	19	37	2	3	4	7	10	12	14
1-1/2	1.610	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2.067	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2-1/2	2.469	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3.068	5	4	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3-1/2	3.548	6	5	4	3	3	2	2	2	2	2	2	2	2	2	2	2	2
4	4.026	9	6	5	4	4	3	3	3	3	3	3	3	3	3	3	3	3
5	5.047	14	10	8	6	5	5	4	4	4	4	4	4	4	4	4	4	4
6	6.065	20	15	12	9	8	7	6	5	5	5	5	5	5	5	5	5	5

**TABLE 5**  
**POLY-COR TYPE I & II PULLING GRIPS**

Tube Size	No. of Tubes in Bundles	Kellems		Reliable	
		Plain	Split	Plain	Split
1/4	2	J50	UB075-A	821	1862
1/4	3	J50	UB075-A	821	1862
1/4	4	J62	UB075-A	822	1862
1/4	7	J75	UB075-A	822	1862
1/4	8	K075-P	UB075-A	823	1863
1/4	10	K075-P	UB100-A	823	1863
1/4	12	K100-P	UB100-A	823	1863
1/4	14	K100-P	UB125-A	823	1863
1/4	19	K100-P	UB125-A	823	1863
1/4	37	K150-P	UB175-A	825	1975
3/8	2	J62	UB075-A	821	1862
3/8	3	J75	UB075-A	822	1862
3/8	4	J75	UB075-A	823	1863
3/8	7	K100-P	UB100-A	823	1863
3/8	10	K100-P	UB125-A	824	1974

**PROTECTO-PAC TYPE B**

1/4	2	K075-P	UB075-A	822	1862
1/4	4	K075-P	UB075-A	823	1863
1/4	7	K100-P	UB100-A	823	1863
1/4	10	K100-P	UB100-A	823	1863
1/4	12	K100-P	UB100-A	823	1863
1/4	19	K150-P	UB150-A	824	1974

**PROTECTO-PAC TYPE FB**

1/4	2	K075-P	UB075-A	823	1863
1/4	4	K100-P	UB100-A	823	1863
1/4	7	K125-P	UB125-A	823	1863
1/4	10	K125-P	UB125-A	824	1974
1/4	12	K150-P	UB150-A	824	1974
1/4	19	K175-P	UB175-A	824	1974

**DEKORON DIVISION**

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