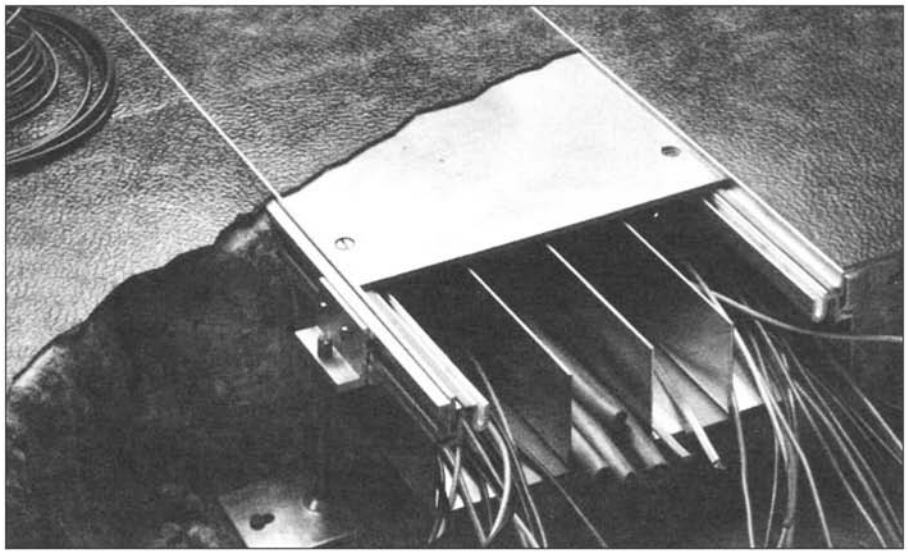
Raceway Solutions™

Trench Duct



Features

- High Capacity Duct
- 14 gauge galvanized steel
- Aluminum trim frame
- Total Adjustability
- Standard 3/16" steel cover plate
- Threaded groove track
- Feeds Wall Duct systems
- UL Listed No. 884

Applications

- Commercial Buildings
- Retail Outlets
- Office Buildings
- Schools, Universities
- Shopping Centers

A High-Capacity Trench System for In-Floor Wire Management

The Raceway Solutions Trench System is an in-floor wire management system that meets today's high-capacity wiring needs that require multiple circuit separation. This system provides the raceways for which power, telecommunication and electronic circuitry can be supplied to multiple point-of-sale checkout counters, particularly those where a scanner is used or may be proposed.

Because of its ability to protect dedicated power circuits to computers as well as distribute general power in the same system, it is ideal for use in all data processing centers. Ample additional capacity for electronic, telecommunications and local area network circuitry is available.

Multiple Compartments Provide More Capacity Than Conventional Ducts

The Raceway Solutions trench system provides more capacity than conventional conduits and ducts. It features a single, high-capacity duct with four compartments for easy placement of additional wiring.

Its open-top design allows wiring to be laid in the duct instead of being pulled, eliminating the need for junction boxes. Wiring can be run directly from the top of the duct to the outlet stations, eliminating service fittings that protrude above the floor.

Removable covers are 3/16" thick and lock into the track of the trench preventing deflection under heavy loads.

Removable covers allow free access to wiring and can be placed anywhere along the duct for easy wire exit relocation.

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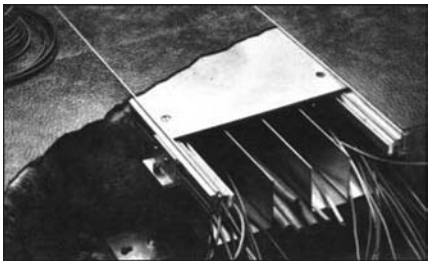
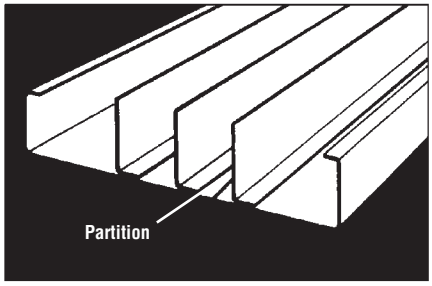


Duct Frame

Duct frame includes fixed metal partitions that create multiple compartments in the duct. This feature permits a single duct to distribute power, electronics and communications. Duct with fewer partitions is available to meet your specifications and can be located in strategic places to meet special distribution requirements.

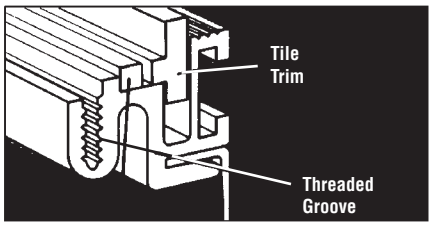
The duct frame is available in a variety of sizes. The frame is of 14 gauge galvanized steel and is supplied in standard 6' lengths. It can be cut to length which increases field flexibility and eliminates the need for ordering specialty fabricated material.



Track

The track of the structural assembly integrates the base aluminum profile with the tile trim, extruded rubber strip, and the duct support assembly. The track also provides the screed line for the concrete.

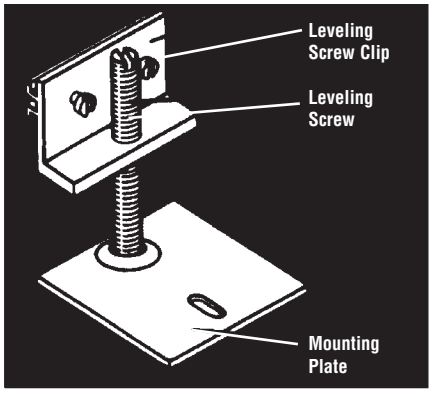
- The aluminum profile accepts and holds the duct frame, rubber cushion, and cover plate screws in addition to supporting the cover plate; it also acts as a runner for the leveling screw clips.



- The aluminum tile trim provides a finished edge for the tile, assists in cutting, and can be reversed when the trim is not required; can be reversed when carpet is used
- The extruded rubber gasket acts as a cushion, sound dampener and moisture barrier between the cover plate and the duct; meets U.L. moptight requirements

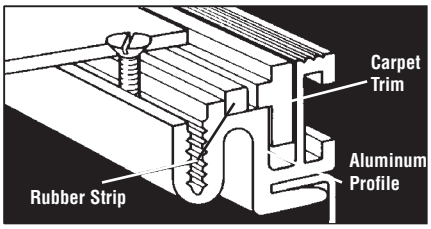
Duct Support Assembly

The unique duct support assembly provides one time leveling capability and acts as a splice for duct sections. The assembly consists of the leveling screw clip, mounting plate, and leveling screws, and is independent of the final support of the duct.



Leveling screw allows for 1" adjustment.

- The leveling screw clip integrates with the track and provides full adjustment along the length of the duct; it also acts as the splice for duct sections
- The heavy gauge mounting plate fastens duct to metal deck,rough slab,or wood/metal forms prior to pouring concrete; it adjusts to meet most floor and installation requirements.
- The leveling screws provide vertical adjustment of the duct prior to concrete pour; this allows the duct to be leveled to the screed line so only one pour is required



Cover

The cover plates for the Raceway Solutions Trench Duct are horizontally adjustable to any point along the duct. The 3/16" thick cover plates come in standard 24" lengths — three are provided per 6' duct section. A 1/4" thick cover plate is also available as a customer option.

A special threaded groove on the track accepts the cover plate screws at any point along the duct, providing the cover unlimited adjustment. This special design relieves the installer from matching the duct frame sections with the covers, eliminating field cutting in most instances. This can substantially reduce installation and maintenance costs.

The cable exit may be installed on an exit fitting cover allowing cable to be easily pulled out and activated. The cable exit is reversible to provide accessibility from either direction. The standard cover plates may be removed and exit fitting covers installed for the cable exit.

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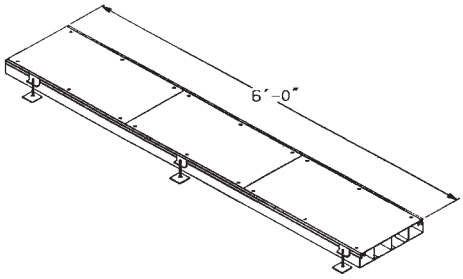
Trench Duct



Raceway Solutions Trench Duct is manufactured in 6 foot lengths complete with three leveling feet on each side (OK/F-2-1/2), three cover plates 24" long (OKC) and three cover joint protectors (OK/DSD). The leveling feet (screw clips) permit 1" of vertical adjustment and act as section couplers. Additional vertical adjustment is available on order by increasing the length of the screw in the OK/F.

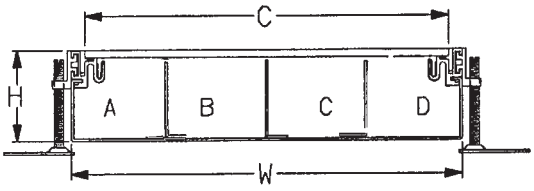
NOTE: All vertical adjustment should be made before the concrete is poured.

Duct Sections

Cat. No.	Cover Width (c)	Outside Dimensions (in.) H	W	Compartment Area (sq.in.) A	B	C	D	Cell Width (in.) A	B	C	D
Four Compartment											
OKA/B12-4C	12	2½	12⅞	6.6	6.6	6.6	6.6	3.15	3.15	3.15	3.15
Three Compartment											
OKA/B9-3C	9	2½	9⅞	6.7	6.7	6.7	—	3.2	3.2	3.2	—
OKA/B12-3C	12	2½	12⅞	8.8	8.8	8.8	—	4.2	4.2	4.2	—
OKA/C12-3C	12	3	12⅞	10.9	10.9	10.9	—	4.2	4.2	4.2	—

UL Listing No. 884

Catalog Number System



OKA / B 12 4C - AL 1/4

Trench Product
OKA–Trench
OKB–Pull Box
OKC–Exit Cover
OKE–End Cap
OKL–Horizontal L
OKR–Vertical Riser
OKT–"T" Junction Box
OKX–"X" Junction Box

Depth
½" Increments
A = 2"
B = 2½"
C = 3"
D = 3½"
E = 4"
J = 6"
N = 8"

*Other Depths Available

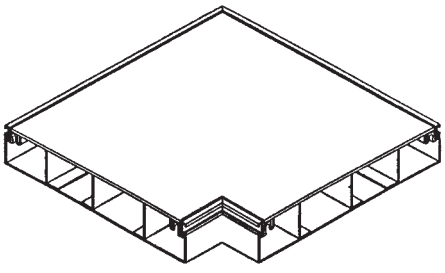
Width
9, 12, 18, & 24 Standard
(Other Widths Available)

Number of Compartments
1C = 1 Compartment
2C = 2 Compartment
3C = 3 Compartment
4C = 4 Compartment

Aluminum (optional)

¼" Thick Cover Plate (optional)

Note: *Other depths and widths are available. Please consult factory for details. Also available in Aluminum.



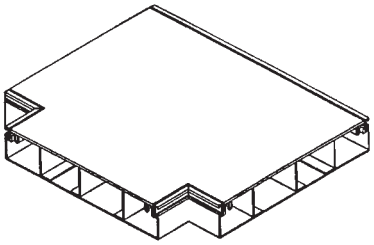
Manufactured with a single cover and matching compartments to form a 90° Horizontal L.

Horizontal L Fitting

Cat. No.	Associated Trench	Outside Cover Dimension	No.of Compartments
OKL/B9-3C	OKA/B9-3C	12" x 12"	3
OKL/B12-4C	OKA/B12-4C	15" x 15"	4
OKL/C12-3C	OKA/C12-3C	15" x 15"	3
OKL/B12-3C	OKA/B12-3C	15" x 15"	3

Note: Table only an example of available sizes. Please refer to above for catalog number system.

Trench Duct

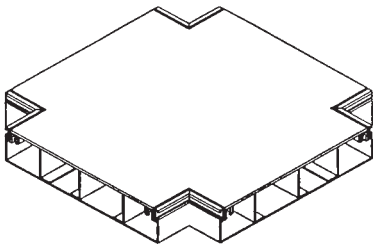


Manufactured with internal partitions and crossovers to isolate power and communication.

Single Level "T " Junction Fitting

Cat. No.	Cover Dimensions	Associated Trench
OKT/B9-3C	15" x 12"	OKA/B9-3C
OKT/B12-4C	18" x 15"	OKA/B12-4C
OKT/B12-3C	18" x 15"	OKA/B12-3C
OKT/C12-3C	18" x 15"	OKA/C12-3C

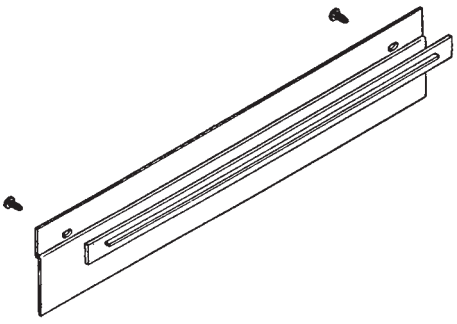
Note: Table only an example of available sizes. Please refer to page 26 for catalog number system.



Manufactured with internal partitions and crossovers to isolate power and communication.

Single Level "X " Junction Fitting

Cat. No.	Cover Dimensions	Associated Trench
OKX/B9-3C	15" x 15"	OKA/B9-3C
OKX/B12-4C	18" x 18"	OKA/B12-4C
OKX/B12-3C	18" x 18"	OKA/B12-3C
OKX/C12-3C	18" x 18"	OKA/C12-3C



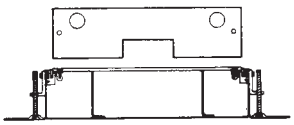
Fits over end of trench run to close trench and prevent foreign material from entering. End cap may be drilled to accept conduit.

End Cap

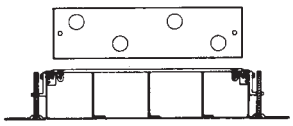
Cat. No.	Width	Maximum Conduit	Depth
OKE/B9	10"	1¼"	2 9/16"
OKE/B12	13"	1¼"	2 9/16"
OKE/C12	13"	2"	3 1/16"

Trench Duct

Type A



Type C

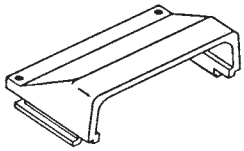


Designed to provide exit and feed for Raceway Solutions Trench Duct trench. Conduit openings are provided for power and communication exit or feed using conventional fittings or service fittings. Cable exit cap (OKSK) is for communication cable only. Exit fittings cover may be spaced anywhere along the length of the trench. All exit fitting covers are 6" long.

Exit Covers

Cat. No.	Conduit Hole Size	Trench Width
OKC/9-3/4A	3/4 "	9"
OKC/12-3/4A	3/4 "	12"
OKC/9-3/4C	3/4 "	9"
OKC/12-3/4C	3/4 "	12"

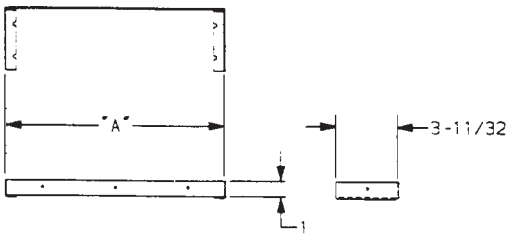
Note: Table only an example of available sizes. Please refer to page 26 for catalog number system.

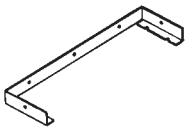


Fits opening on Exit Cover. Provides outlet for communication cable. Debris barrier included. Cable Exit Cap constructed from die cast aluminum. For use with Type A exit covers only.

Cable Exit Cap

Cat. No.	Description
OKSK	Cable Exit Cap





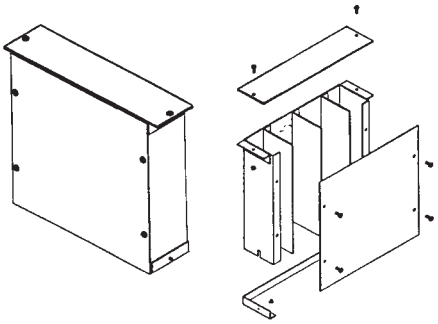
Trench to Wallduct Adapter

Cat. No.	A
OWV/D12	11⅞"
OWV/D18	17⅞"

Screws included.

Material: 14 gauge pre-galvanized steel.
UL Listing No. E116245

Trench Duct

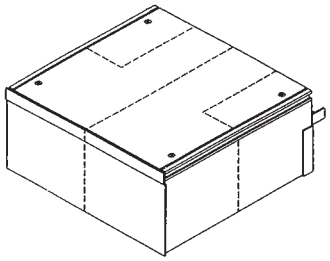


Manufactured to mount on trench in place of cover.Partitioned to separate cells and flanged to attach to pull box. Removable front cover and top cover. Standard height above finish floor —12 inches. Standard depth —3½" inches.

Vertical Riser Fitting

Cat. No.	Associated Trench	No.of Compartments	D	W	H
OKR/D9-3C	OKA/B9-3C	3	3½"	9"	12"
OKR/D12-4C	OKA/B12-4C	4	3½"	12"	12"
OKR/D12-3C	OKA/B12-3C OKA/C12-3C	3	3½"	12"	12"

Note: Table only an example of available sizes. Please refer to page 26 for catalog number system.

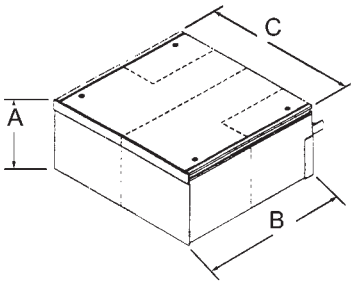


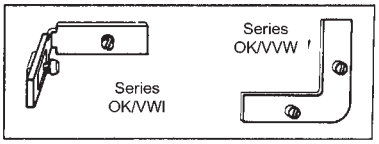
Manufactured to attach to trench section replacing end cap. Divided into compartment as shown.Additional depth permits attachment of larger conduit. Will accept up to 4" conduit. Box is field punched.

Pull Box

Cat. No.	Associated Trench	Dimensions A	B	C
OKB/B9-3C	OKA/B9-3C	6"	12"	9"
OKB/B12-4C	OKA/B12-4C	6"	12"	12"
OKB/B12-3C	OKA/B12-3C	6"	12"	12"
OKB/C12-3C	OKA/C12-3C	6"	12"	12"

UL Listing No. 884





Accessories to join trench sections for field fabrication of horizontal and vertical assemblies.

Fastening Angles

Cat. No.	Description
OK/VWI	Horizontal Angle
OK/VVW	Vertical Angle

Specifications

Raceway Solution Trench Duct has been designed to offer the most complete in-floor wire management system for computer terminals. The particular use for retail store checkout counters using scanners has been selected for this catalog. Its potential capacity, unlimited point-of-delivery, and wire compartmentalization provide flexibility for current requirements as well as future needs.

Raceway Solution Trench Duct may be specified for stores that are being retrofitted for the use of scanners as well as new stores.

The specifier should consider the following:

1. The two outer compartments for the 12" size (2½" deep) have 6.6 in^2 wiring capacity. (This provides greater capacity than 2½" conduit). Two power compartments are offered:

- One for computer dedicated circuits
- One for general purpose power

2. The outer compartments should be chosen for the power since runs of conduit can be tapped off the sides of the duct (¾" and 1") to specially placed floor boxes or stubbed out of the concrete to provide power at locations to the left or right of the trench.

3. The inside compartments of the four compartment 12" wide duct (OKA/B12-4C) each have 6.6 in^2 wiring capacity in a cross-sectional area that is 3.0" x 2¼" on sides. The largest electronic connector can pass through this area and exit with ease. One of these can be designated for computer cables and the other for intercommunication or telephone. Depending on the sensitivity of the system, these two compartments may be used interchangeably.

4. Covers may be adjusted to any location as well as the exit fitting covers. Therefore, predetermination of exit locations is not required and future access to the wiring at any location is available.

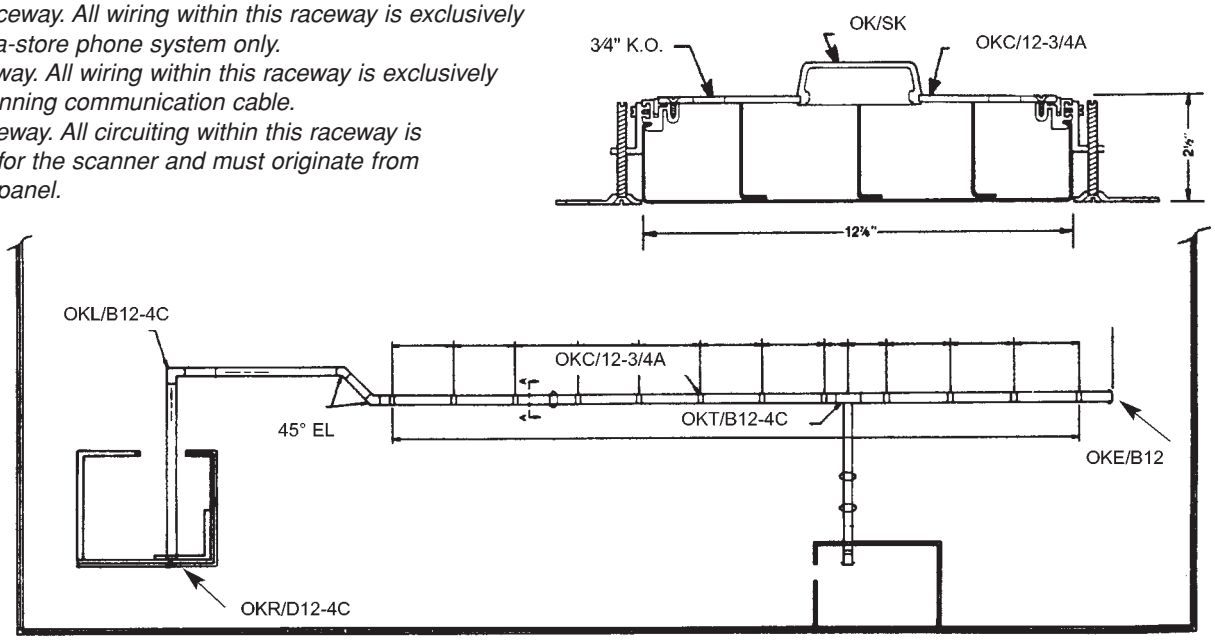
5. To feed the computer location or checkout counter, service fittings with receptacles may be used or the exit fitting cover hard wired to the point of delivery. For example, flexible metallic conduit or liquidtight conduit may be used between the exit fitting cover and a utility box with a receptacle directly under the counter.

6. Cable exit caps may be used for computer, telephone, or intercommunication cables. In certain cases, armored or other approved cable may be permitted with the cable exit cap.

Raceway Solutions™

Trench Duct Installation Instructions

A. First raceway. Circuiting within this raceway shall not originate or in any way be connected or routed through dedicated panel.
B Second raceway. All wiring within this raceway is exclusively for the intra-store phone system only.
C. Third raceway. All wiring within this raceway is exclusively for the scanning communication cable.
D. Fourth raceway. All circuiting within this raceway is dedicated for the scanner and must originate from dedicated panel.



Store Layout Example —Checkout Counter

Material

1.1 General inspection of shipment.
1.1.1 Inspect all parts for visible damage.
1.1.2 Determine that the proper number of parts were received. Notify factory immediately if a discrepancy is found.
1.1.3 If shop drawings were provided, installer must familiarize himself with all details.
1.1.3.1 Installer must compare shop drawings with actual jobsite conditions.
1.2 Inspection of Trench Components.
1.2.1 Examine trench for proper number and placement of partitions.
1.2.2 If trench is factory marked, confirm markings.
1.2.3 Do not remove covers from trench. Covers remain on trench during pour.

Before Pour

2.1 General Jobsite Conditions.
2.1.1 Determine a reference point for the start of assembly work. This includes an elevation mark as well as horizontal placement. Confirm by shop drawings when available.
2.1.2 Clear the site of obstructions so installer has a clear working area.
2.1.3 If installation is on grade, prepare the grade and check specifications for type of footing.
Note: It is useful to install a rough slab the length of the run. The slab should be 24" wide and poured 2½" to 3½" below the finished floor screed. This will assure fast installation and assure accuracy of positioning.
2.2 Installation Sequence of Trench.
2.2.1 Position trench section being careful of location of the power compartment. (See Store Layout Example above.)
2.2.2 Install and assemble duct to trench if required. (see Part 3.2.6) Refer to installation shop drawings.
2.2.3 Couple trench sections. (See Part 3.2).
2.2.4 Carefully align the trench as shown on the plans.
2.2.5 Fasten the support feet securely to the concrete form, structure or grade.
2.2.6 Install end caps as required.

Part 3 —Assembly of Components
3.1 General Assembly Requirements
3.1.1 The power compartment of trench must match and be as shown on the plans.
3.1.2 Continuity of ground must be assured in all metal parts.
3.2 Trench Components.
3.2.1 Do not remove covers before pour.
3.2.2 Trench sections are coupled using coupling clip furnished on the aluminum profile at the end of the trench. Clip may be part of the support assembly.
3.2.3 Check match of internal partition before completing couple.
3.2.4 Set screws on trench coupling clip must be tightened to assure continuity of ground.
3.2.5 If rough slab is not available (see 2.1.3 Note) special care must be taken to assure support of mounting feet and protect against movement during pour.
3.2.6 Junction fittings to adapt trench to underfloor raceway do not require rough slab (see 2.1.3 Note) but must be secure.
3.2.7 Underfloor raceway requires concrete around supports (couplers) and under raceway.
3.2.8 Tape underfloor raceway if ingress of concrete could occur.
3.2.9 Field modification of trench.
3.2.9.1 Where necessary trench can be cut on the jobsite. For this purpose, bandsaws, hacksaws, or cutting wheels can be used.
3.2.9.2 When field cutting, do not remove cover to assure a proper finished joint.
3.2.9.3 Horizontal Ell 's or offsets may be field fabricated by cutting equal angles from each of the pieces to be joined.
a. 45° cuts from axis of trench join to make a 90° horizontal offset.
b. 22½° cuts join to make a 45° horizontal offset.
c. Partitions must match.
d. Use OK/VWI to join pieces.
3.2.9.4 A vertical Ell may be field fabricated using a section of trench cut to desired height and OK/VVW fastening angles used to join sections.

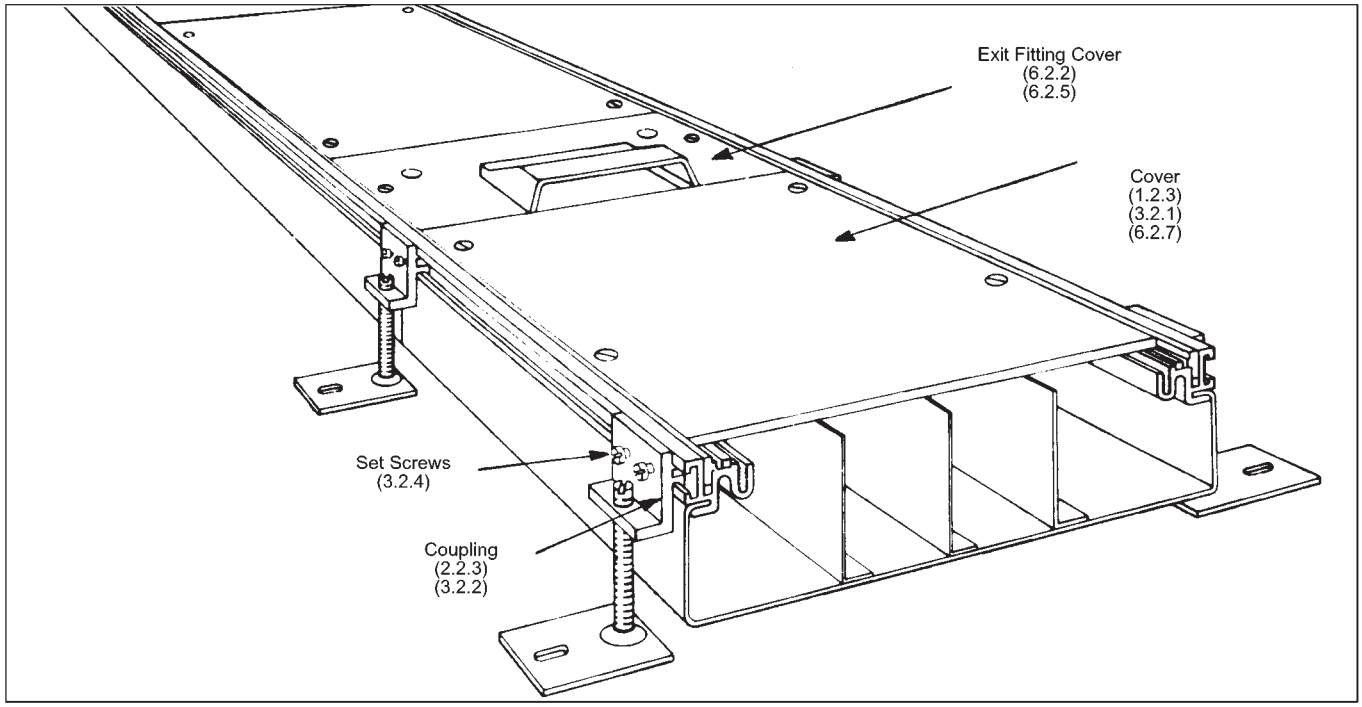
Part 4 —Securing,Elevating and Leveling System Prior to Pour
4.1 General. The top of the system must be at screed level. Specifically this includes the trench covers.
4.1.1 When elevating and leveling system use laser level, electronic level, transit, conventional level, or any approved system.
4.2 Leveling Trench.
4.2.1 Turn leveling screws of the trench support assembly to bring the cover of the trench to screed.
4.2.2 Level the trench in one direction to prevent distortion of system.

Part 5 —During and After Pour
5.1 General Considerations
5.1.1 Check installation for security, location and elevation.
CAUTION: The covers of the system serve as the screed line. They must be protected from accidental movement before and during pour. Correcting components for elevation after concrete has set requires extensive labor.
5.1.2 If concrete mix is especially thin (fluid), gaps and openings in the system should be sealed with duct tape or other approved method.
5.1.3 For aggregate greater than ¼ inch, concrete flow around components must be assured.
5.2 Trench Components.
5.2.1 Covers of trench serve as guide for pouring concrete the level of the finished floor.
5.2.2 Concrete must be inserted under trench by shovel or trowel.
5.2.3 Hand screed to top of trench.
5.2.4 The concrete must adhere tightly to the trench edges.
5.2.5 The covers of the trench must be exposed when the concrete floor is finished.
5.2.6 Remove sufficient covers to allow ventilation after concrete is set.

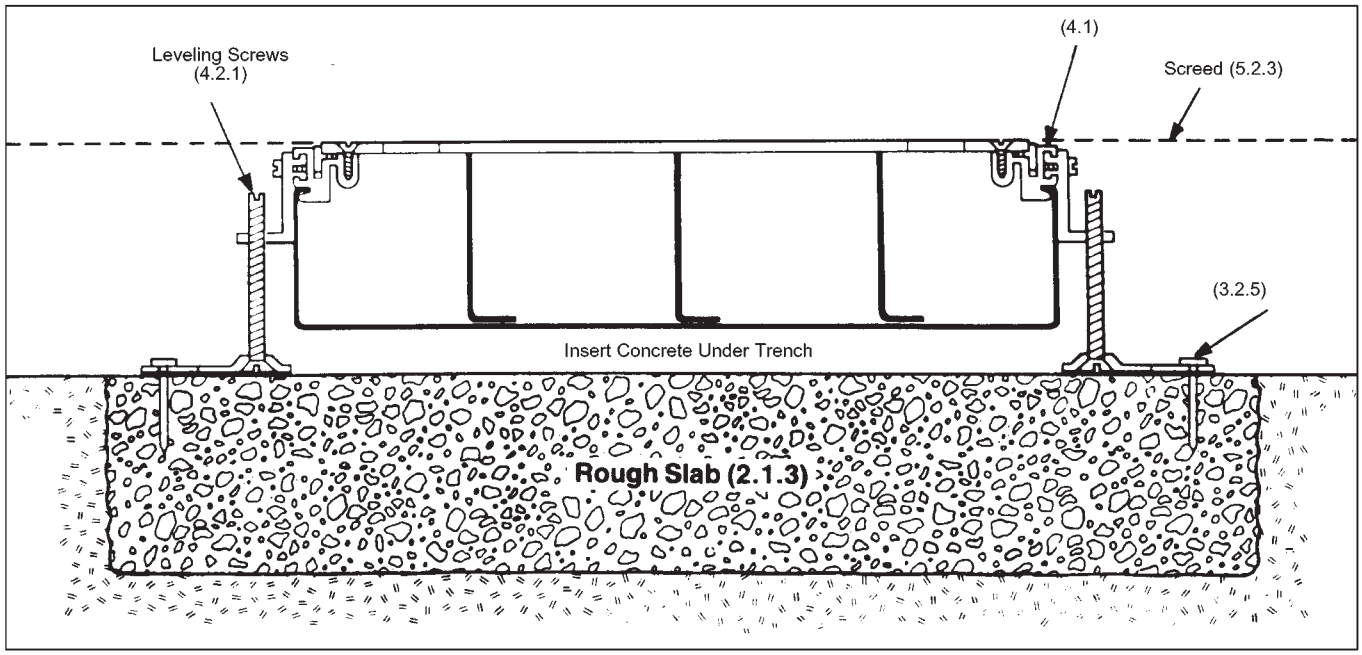
Part 6 —Activation
6.1 Activation Sequence.
6.1.1 Correct any variation in concrete pour along edges of trench.
6.1.2 Remove covers from trench, and inspect installation.
6.2 Activating Trench.
6.2.1 Upon removing covers 6.1.2, lay the covers beside the trench in their relative position.
6.2.2 Where exit fitting covers or other trench exit fittings are required, lay them beside the trench in their relative position.
6.2.3 If floor finish is not to be interrupted by tile trim to establish continuity of floor cover, tile trim is to remain in shipping position. Do not elevate.
6.2.4 Lay the required wiring in the trench.
6.2.5 Mount the exit fitting covers or other trench exit fittings on trench at proper location.
6.2.6 Install cover joint protectors. OK/DSD.
6.2.7 Install standard covers. Covers may be adjusted or cut if required to complete enclosure.
6.2.8 Remove cover adjacent to exit fittings to complete wiring.
6.2.9 Lay floor covering. Take care to assure level floor over trench. Use floor patch if necessary.
6.2.9.1 If tile trim is used, adhesion between outer tile and tile trim must be assured and tile on covers accurately positioned.

Trench Duct Specifications

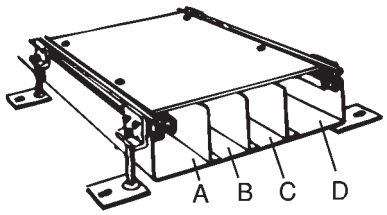
Components



Trench Position Prior to Pour



Trench Duct Wirefill Capacity



OKA/B12-4C

Dimensions – Trench Duct

	A	B	C	D	Total
OKA/B12-4C	6.6	6.6	6.6	6.6	26.4
OKA/B12-3C	8.8	8.8	8.8	—	26.4
OKA/B9-3C	6.7	6.7	6.7	—	20.1

	3.4 Sq.In.Compartment				
Conductor	**RHW/RHH**	**TW**	**THW**	**THWN**	**XHHW**
14	41	100	66	156	103
12	35	79	53	116	81
10	29	61	43	73	62
8	16	28	22	36	29
6	10	16	16	26	21

	5.0 Sq.In.Compartment				
Conductor	**RHW/RHH**	**TW**	**THW**	**THWN**	**XHHW**
14	61	148	97	229	152
12	52	116	79	170	119
10	43	90	64	108	92
8	23	42	33	53	43
6	16	24	24	38	32

	5.4 Sq.In.Compartment				
Conductor	**RHW/RHH**	**TW**	**THW**	**THWN**	**XHHW**
14	66	160	104	248	164
12	56	125	85	184	129
10	46	97	69	117	100
8	25	45	36	57	47
6	17	26	26	41	34

	7.8 Sq.In.Compartment				
Conductor	**RHW/RHH**	**TW**	**THW**	**THHN/THWN**	**XHHW**
14	95	231	151	358	238
12	81	181	123	266	186
10	67	140	100	169	144
8	36	66	52	83	68
6	25	38	38	60	49

	9.2 Sq.In.Compartment				
Conductor	**RHW/RHH**	**TW**	**THW**	**THHN/THWN**	**XHHW**
14	112	272	178	422	280
12	95	213	146	314	220
10	80	165	118	200	170
8	43	78	61	98	80
6	29	44	44	70	58

	13.7 Sq.In.Compartment				
Conductor	**RHW/RHH**	**TW**	**THW**	**THHN/THWN**	**XHHW**
14	167	405	266	629	418
12	142	318	217	468	328
10	119	246	176	297	253
8	64	116	91	146	120
6	44	66	66	105	87

	15.7 Sq.In.Compartment				
Conductor	**RHW/RHH**	**TW**	**THW**	**THHN/THWN**	**XHHW**
14	192	465	304	721	479
12	163	365	249	536	376
10	136	282	201	341	290
8	74	133	105	168	137
6	50	76	76	121	100