



# HARDWARE MOUNTING / HOLE BORING GUIDE FOR METAL RAILINGS

June 2020

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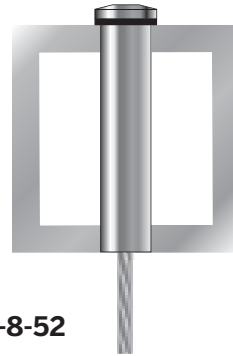
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# THROUGH-THE-POST MOUNTED FITTINGS

## Invisiware® Receiver

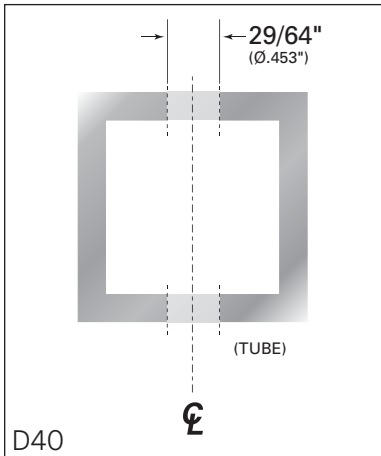
Used with square or rectangular tubing.

We recommend a minimum 1/4" wall.

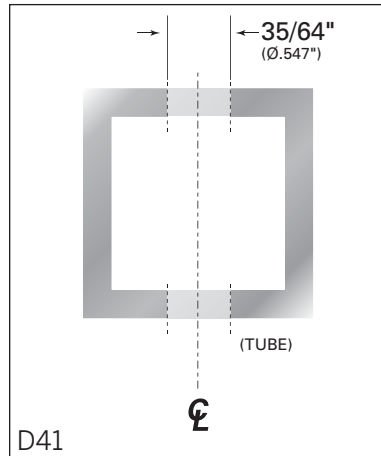


Invisiware® Receivers are also available in Bronze.

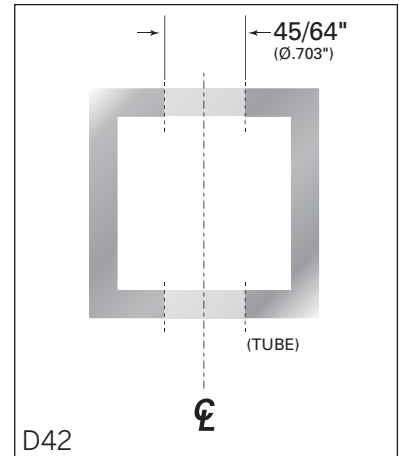
**Part Nos.**  
R-6-12 through R-6-82  
**Cable Dia:** 1/8" and 3/16"  
Drill 2 places



**Part Nos.**  
R-8-22 through R-8-52  
**Cable Dia:** 1/4"  
Drill 2 places

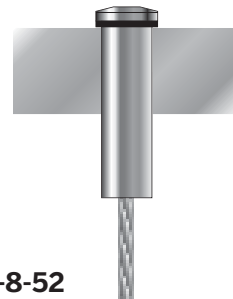


**Part Nos.**  
R-12-32 through R-12-52  
**Cable Dia:** 5/16" and 3/8"  
Drill 2 places

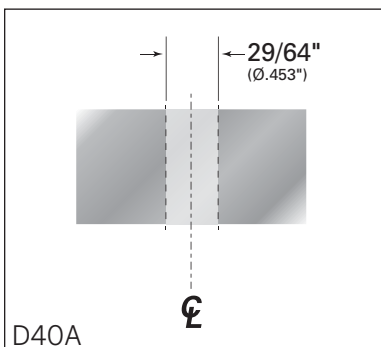


## Invisiware® Receiver

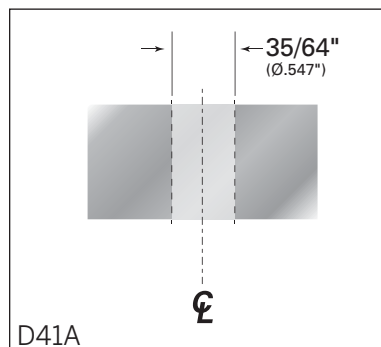
Used with flat bar or steel plate.



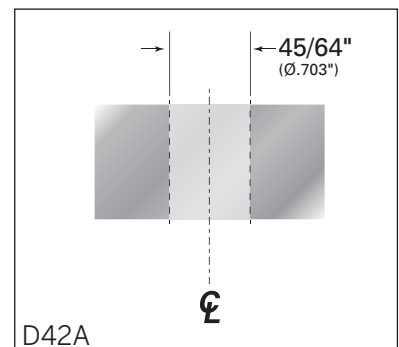
**Part Nos.**  
R-6-12 through R-6-82  
**Cable Dia:** 1/8" and 3/16"



**Part Nos.**  
R-8-22 through R-8-52  
**Cable Dia:** 1/4"



**Part Nos.**  
R-12-32 through R-12-52  
**Cable Dia:** 5/16" and 3/8"

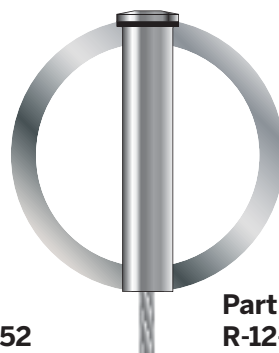


## Invisiware® Receiver

Used with minimum SC80

round pipe or round steel tubing.

If using round steel tubing, wall thickness should be at least comparable to SC80 pipe.

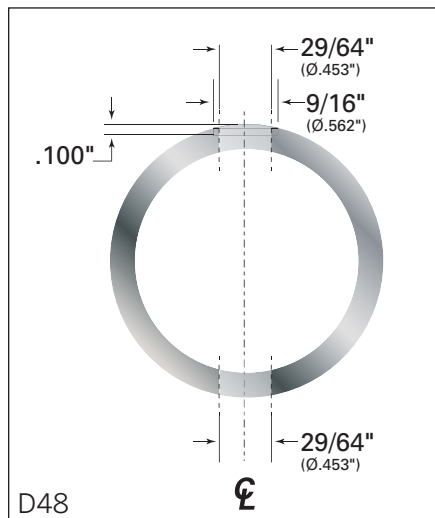


Invisiware® Receivers are also available in Bronze.

Part Nos.

R-6-12 through R-6-82

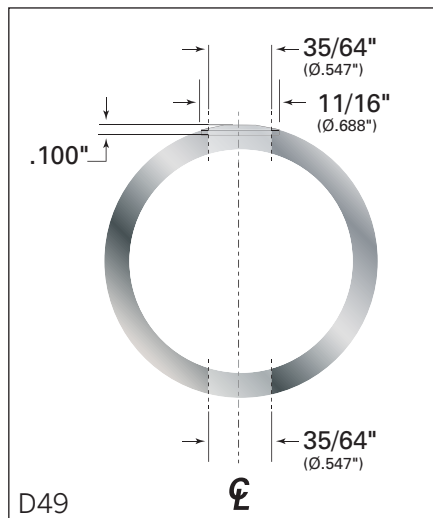
Cable Dia: 1/8" and 3/16"



Part Nos.

R-8-22 through R-8-52

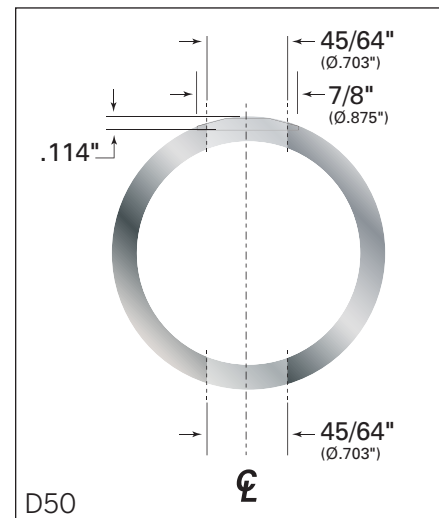
Cable Dia: 1/4"



Part Nos.

R-12-32 through R-12-52

Cable Dia: 5/16" and 3/8"



## Invisiware® Receiver

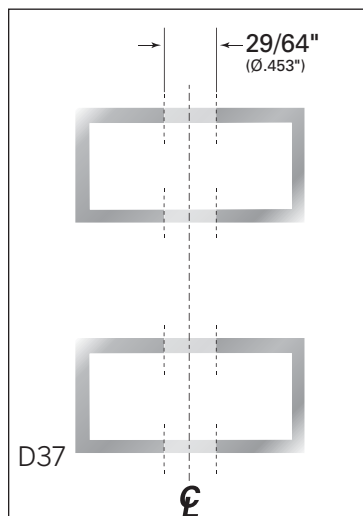
Used with double end post construction using 2"x1" or 3"x1" rectangular tubing with 1-inch spacers.

Part Nos.

R-6-52 and R-6-62

Cable Dia: 1/8" and 3/16"

Drill 4 places

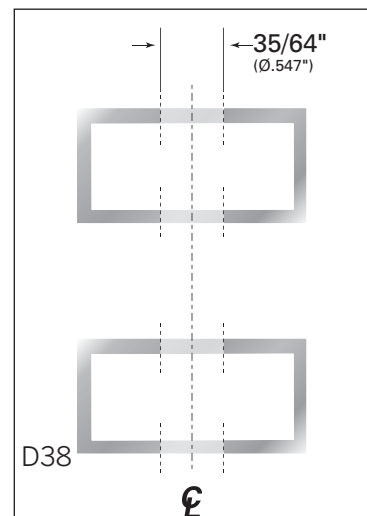


Part No.

R-8-52

Cable Dia: 1/4"

Drill 4 places

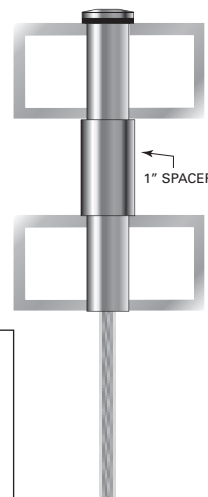
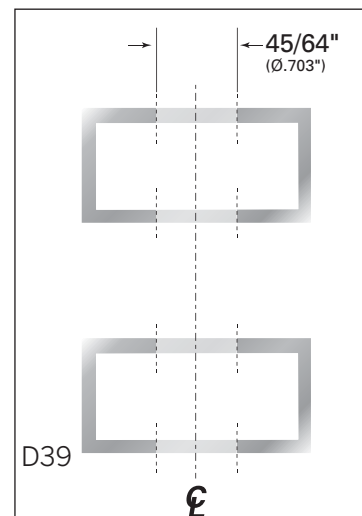


Part No.

R-12-52

Cable Dia: 5/16" and 3/8"

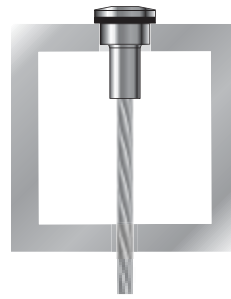
Drill 4 places



# Invisiware® Radius Ferrule

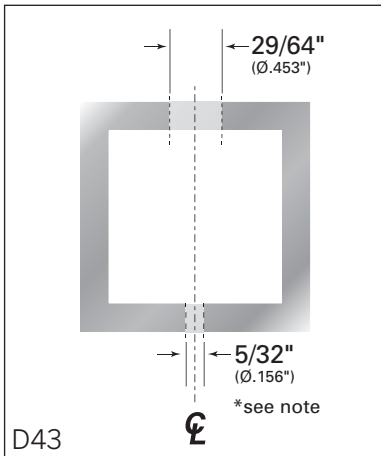
Used with square or rectangular tubing.

We recommend a minimum 1/4" wall.



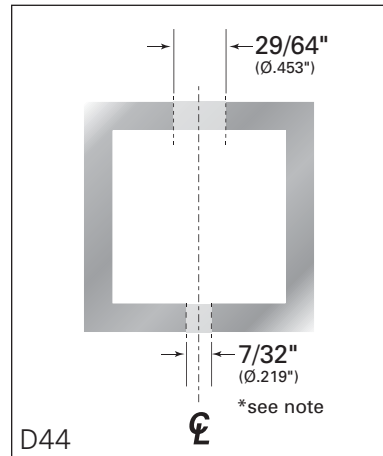
**Part No. RF-4**  
**Cable Dia: 1/8"**

\*see note if using grommets



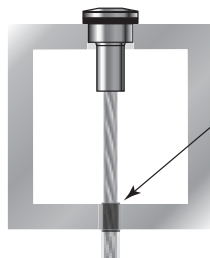
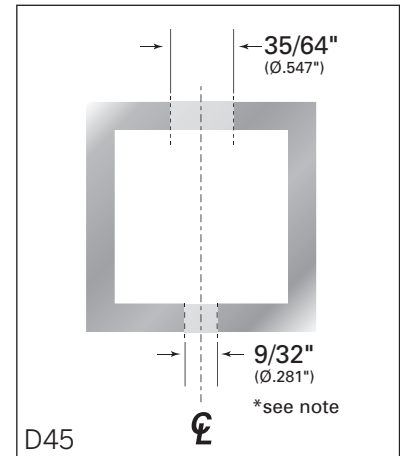
**Part No. RF-6**  
**Cable Dia: 3/16"**

\*see note if using grommets



**Part No. RF-8**  
**Cable Dia: 1/4"**

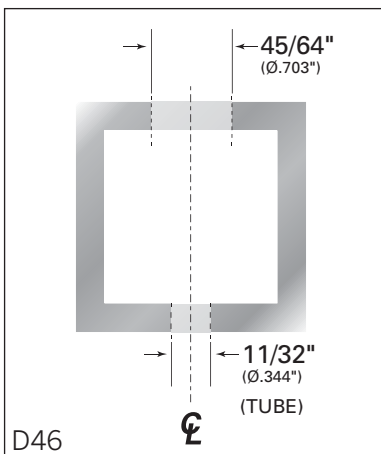
\*see note if using grommets



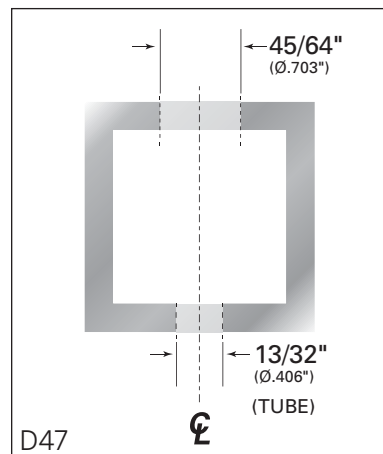
\*Note: If grommets are being used, hole through which cable passes should be drilled as follows:

<b>RF-4:</b>	1/4"	(.250")
<b>RF-6:</b>	1/4"	(.250")
<b>RF-8:</b>	5/16"	(.312")

**Part No. RF-10**  
**Cable Dia: 5/16"**



**Part No. RF-12**  
**Cable Dia: 3/8"**



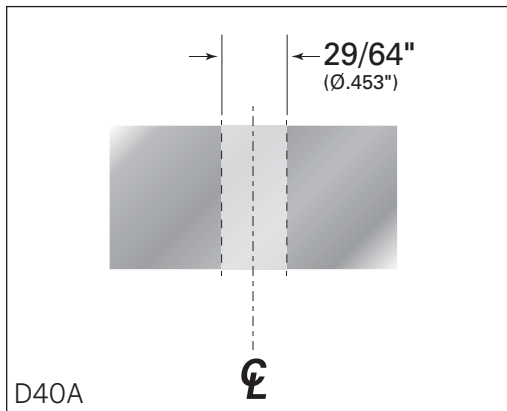
Grommets are not offered for use with RF-10 and RF-12 Radius Ferrules.

# Invisiware® Radius Ferrule

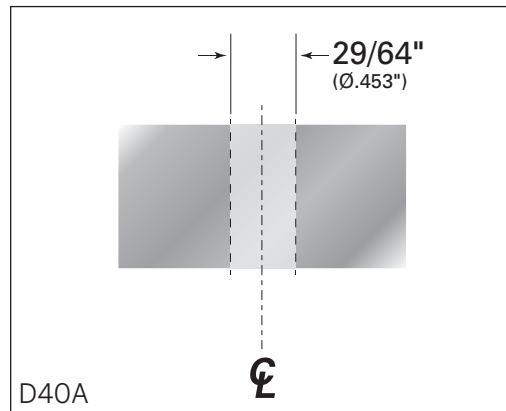
Used with flat bar or steel plate.



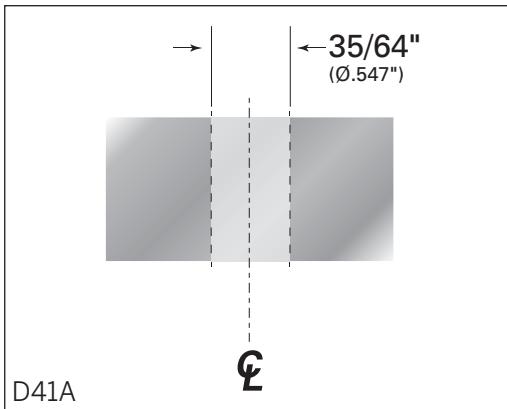
**Part No. RF-4**  
**Cable Dia: 1/8"**



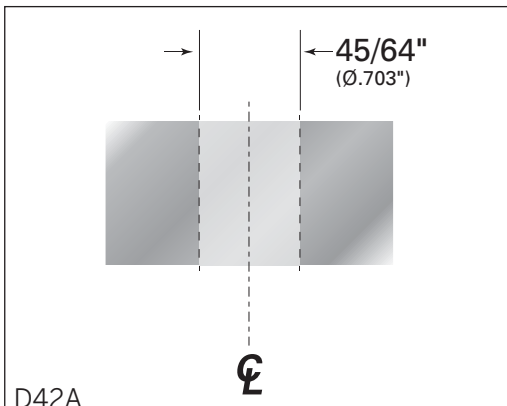
**Part No. RF-6**  
**Cable Dia: 3/16"**



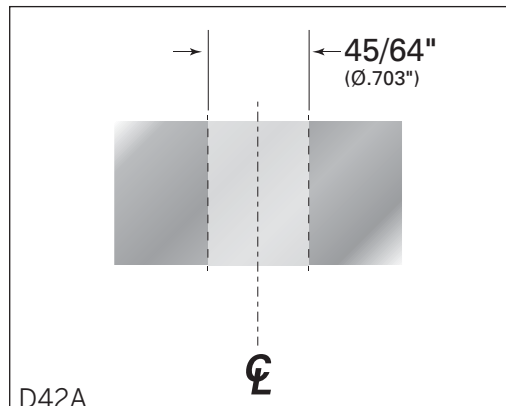
**Part No. RF-8**  
**Cable Dia: 1/4"**



**Part No. RF-10**  
**Cable Dia: 5/16"**



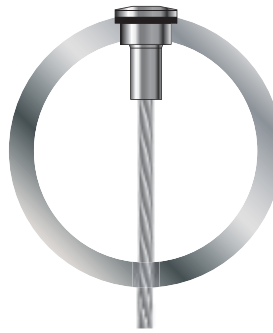
**Part No. RF-12**  
**Cable Dia: 3/8"**



# Invisiware® Radius Ferrule

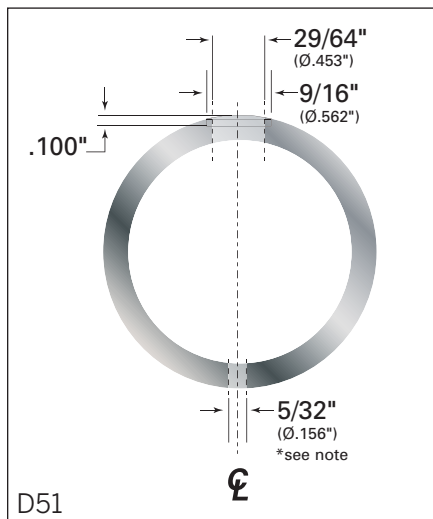
Used with minimum SC80  
round pipe or round steel tubing.

If using round steel tubing, wall thickness should be  
at least comparable to SC80 pipe.



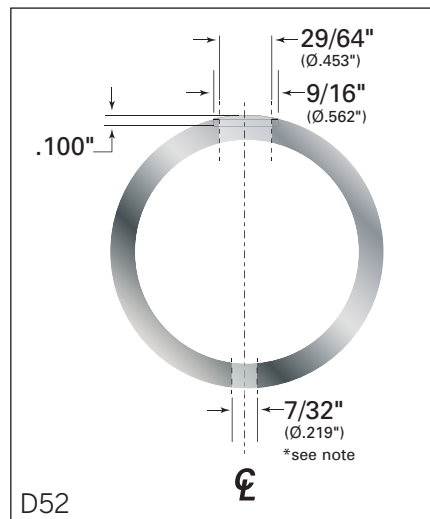
## Part No. RF-4 Cable Dia: 1/8"

\*see note if using grommets



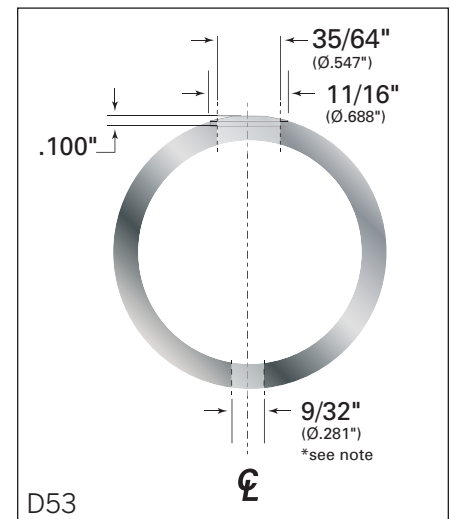
## Part No. RF-6 Cable Dia: 3/16"

\*see note if using grommets

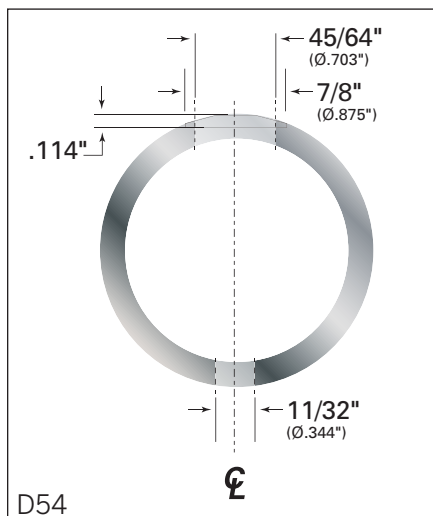


## Part No. RF-8 Cable Dia: 1/4"

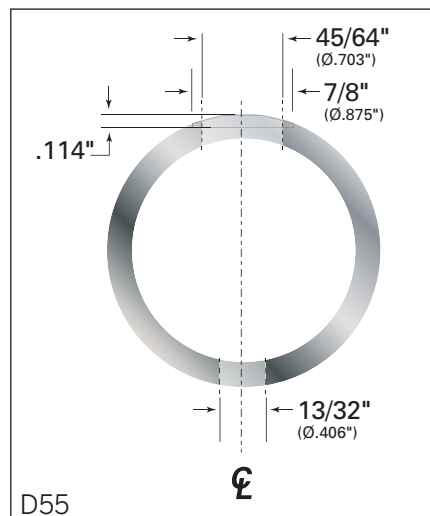
\*see note if using grommets



## Part No. RF-10 Cable Dia: 5/16"



## Part No. RF-12 Cable Dia: 3/8"



\*Note: If grommets are being used, hole  
through which cable passes should be  
drilled as follows:

RF-4:	1/4"	(.250")
RF-6:	1/4"	(.250")
RF-8:	5/16"	(.312")

Grommets are not offered for  
use with RF-10 and RF-12  
Radius Ferrules.

## Receiver with Push-Lock® Stud

Receiver Part Nos. R-6-12 through R-6-82

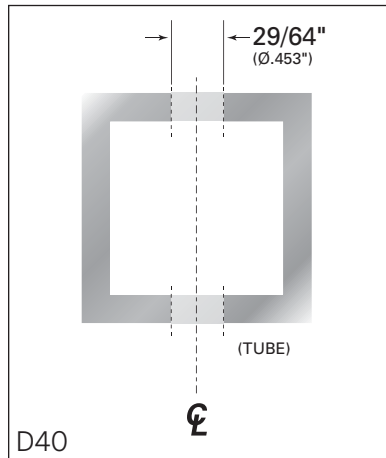
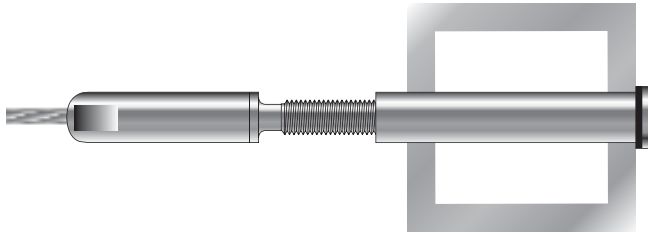
Cable Dia: 1/8" and 3/16"

Stud Part No. PLST-4 for 1/8" cable

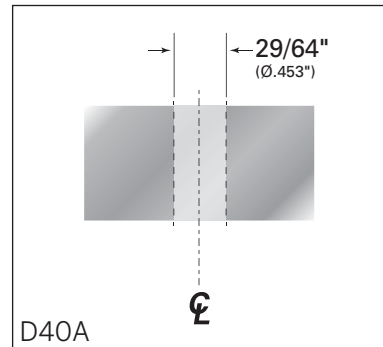
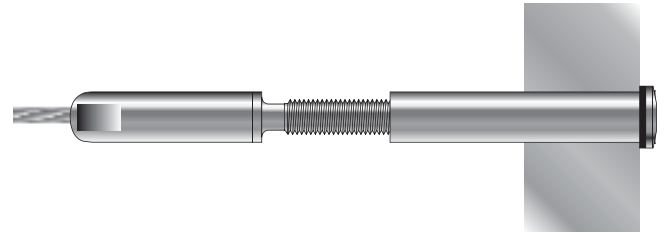
Stud Part No. PLST-6 for 3/16" cable

### Used with square or rectangular tubing.

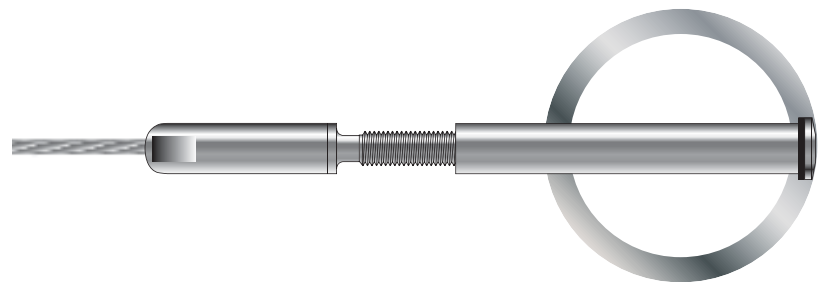
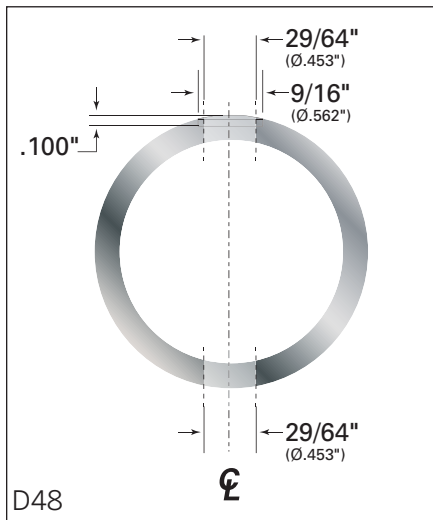
We recommend a minimum 1/4" wall.



### Used with flat bar or steel plate.



### Used with minimum SC80 1-1/4" or larger round pipe or round steel tubing with comparable dimensions.



## Push-Lock® and Pull-Lock® Stop-End Fittings

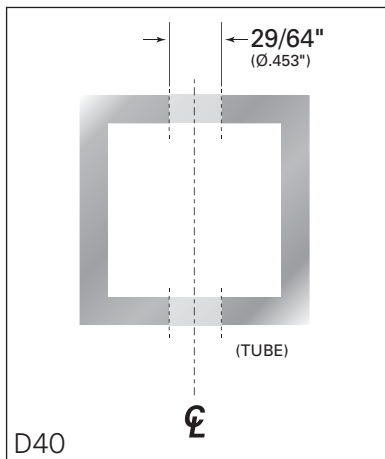
Push-Lock® Part Nos. PL-4-12/PL-6-12 through PL-4-3.030/PL-6-3.030

Pull-Lock® Part Nos. PUL-4-12/PUL-6-12 through PUL-4-3.030/PUL-6-3.030

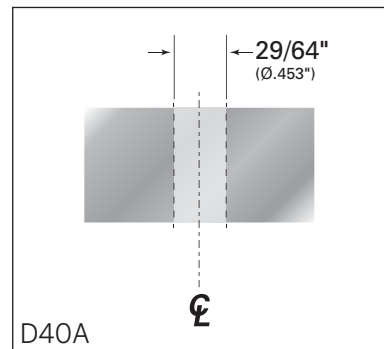
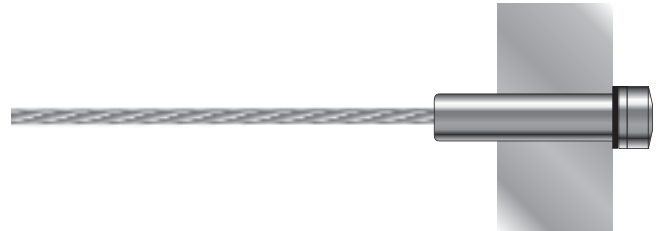
Cable Dia: 1/8" and 3/16"

**Used with square or rectangular tubing up to 1-1/2" in through dimension.**

We recommend a minimum 1/4" wall.

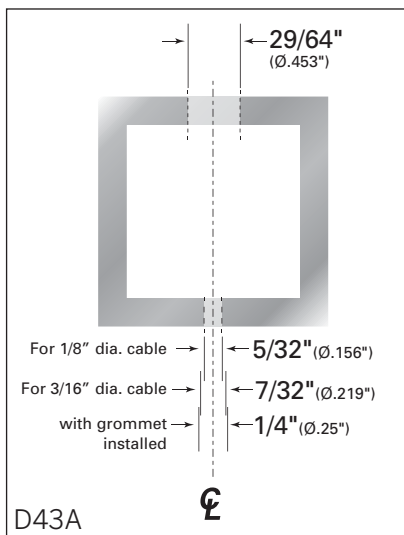


**Used with flat bar or steel plate.**



**Used with square or rectangular tubing up to 1-1/2" in through dimension.**

We recommend a minimum 1/4" wall.





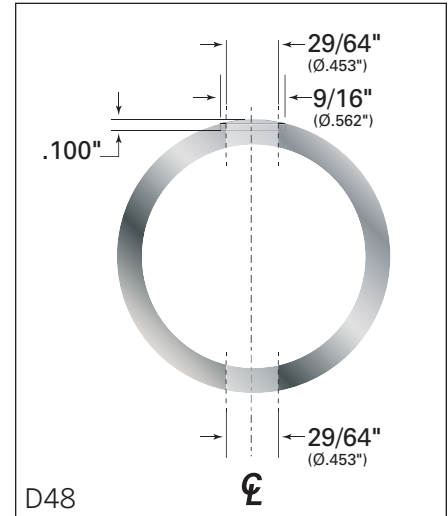
## Push-Lock® and Pull-Lock® Stop-End Fittings

Push-Lock® Part Nos. PL-4-12/PL-6-12 through PL-4-3.030/PL-6-3.030

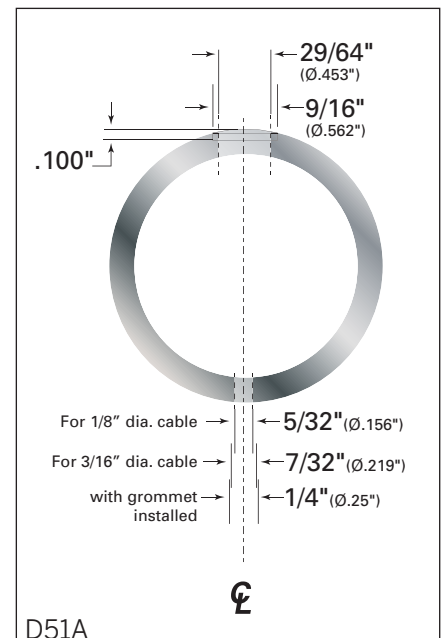
Pull-Lock® Part Nos. PUL-4-12/PUL-6-12 through PUL-4-3.030/PUL-6-3.030

Cable Dia: 1/8" and 3/16"

Used with minimum SC80 round pipe or round steel tubing  
with dimensions the same or smaller than the fitting.



Used with minimum SC80 round pipe or round steel tubing  
with dimensions larger than the fitting.



# FACE-MOUNTED FITTINGS

## Invisiware® Stud

Used with drilled and tapped hole in end post. See \*Note below.



CABLE DIA.	PART NO.	DRILL AND TAP HOLE
1/8"	S-4	5/16-24
3/16"	S-6	5/16-24
1/4"	S-8	7/16-20
5/16"	S-10	9/16-18
3/8"	S-12	9/16-18

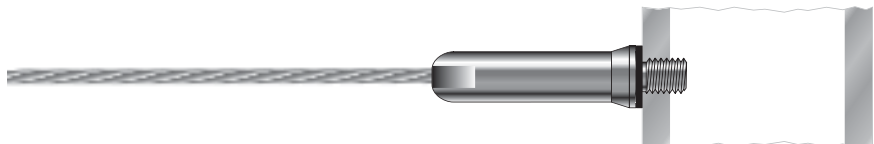
CONSTRUCTION MATERIAL	*NOTE: Recommended minimum wall thickness
Pipe	Minimum Schedule 80
Round Steel Tubing	At least equivalent to Schedule 80 Pipe
Square or Rectangular Structural Steel Tubing	.250"
Steel Flat Bar or Plate	.250" or heavier to support a load of 1,537 lbs. on the Stud. <i>We do not recommend 1/4" flat bar as an end post.</i>

For the following Push-Lock® fittings, drill and tap 5/16-24 holes in the end post. See \*Note below.

CONSTRUCTION MATERIAL	*NOTE: Recommended minimum wall thickness
Pipe	Minimum Schedule 80
Round Steel Tubing	At least equivalent to Schedule 80 Pipe
Square or Rectangular Structural Steel Tubing	.250"

## Push-Lock® Threaded Bolt

CABLE DIA.	PART NO.
1/8"	PL-FM-MS-4
3/16"	PL-FM-MS-6



## Push-Lock® Tensioner with Threaded Bolt

CABLE DIA.	PART NO.
1/8"	PL-SFC-MS-4
3/16"	PL-SFC-MS-6



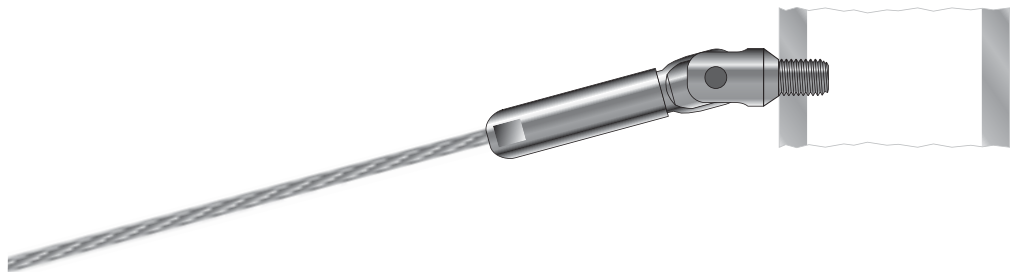
## Push-Lock® Turnbuckle with Threaded Bolt

CABLE DIA.	PART NO.
1/8"	PL-TB-TB-4
3/16"	PL-TB-TB-6



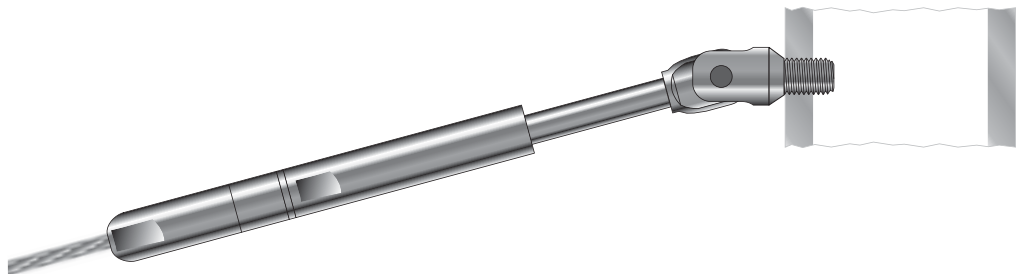
## Push-Lock® Threaded Clevis

CABLE DIA.	PART NO.
1/8"	PL-CL-RP-4
3/16"	PL-CL-RP-6



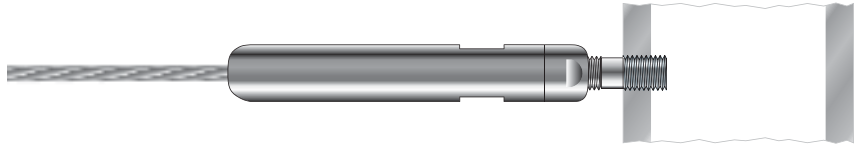
## Push-Lock® Tensioner with Threaded Clevis

CABLE DIA.	PART NO.
1/8"	PL-SFC-MP-4
3/16"	PL-SFC-MP-6



## Adjust-A-Body with Threaded Bolt

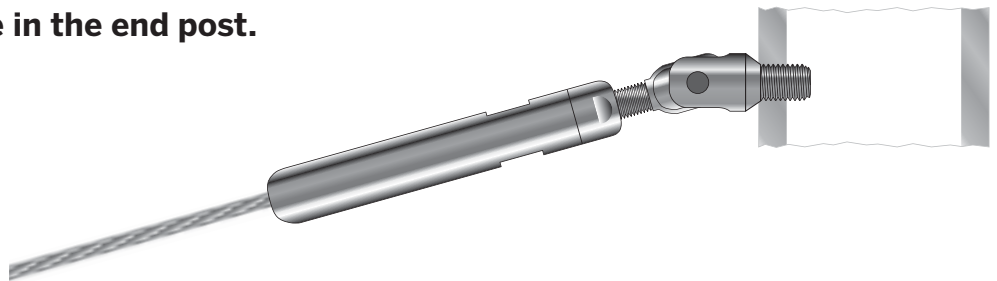
CABLE DIA.	PART NO.	DRILL AND TAP HOLE
1/8"	A-JTB6	5/16-24
3/16"		
1/4"	A-JTB8	5/16-24
5/16"	A-JTB12	1/2-20
3/8"		



## Adjust-A-Body® with Threaded Clevis — NEW!

Drill and tap 5/16-24 hole in the end post.

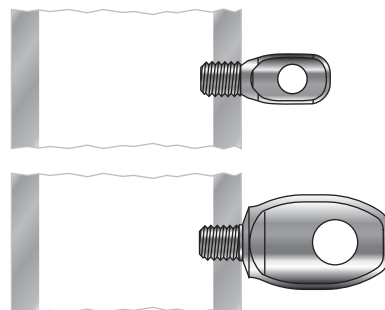
CABLE DIA.	PART NO.
1/8"	A-JB-CL-M
3/16"	



## Invisiware® Threaded Tab

Used with drilled and tapped hole in end post. See \*Note below.

CABLE DIA.	PART NO.	DRILL AND TAP HOLE
1/8"	TT-6B	5/16-24
3/16"		
1/4"	TT-8B	
5/16"		
3/8"		

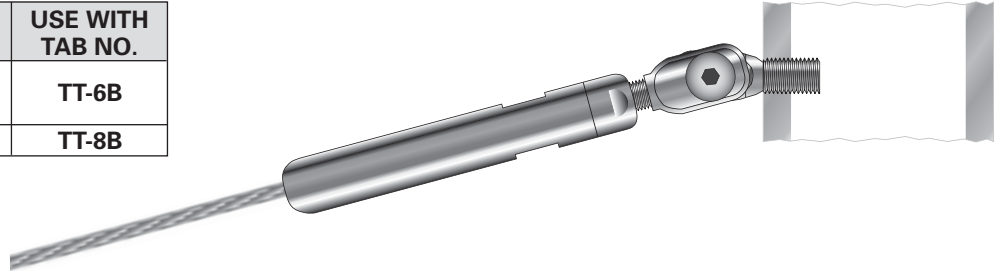


CONSTRUCTION MATERIAL	*NOTE: Recommended minimum wall thickness
Pipe	Minimum Schedule 80
Round Steel Tubing	At least equivalent to Schedule 80 Pipe
Square or Rectangular Structural Steel Tubing	.250"

The following fittings attach to the Threaded Tab with a Mounting Screw (see page 12).

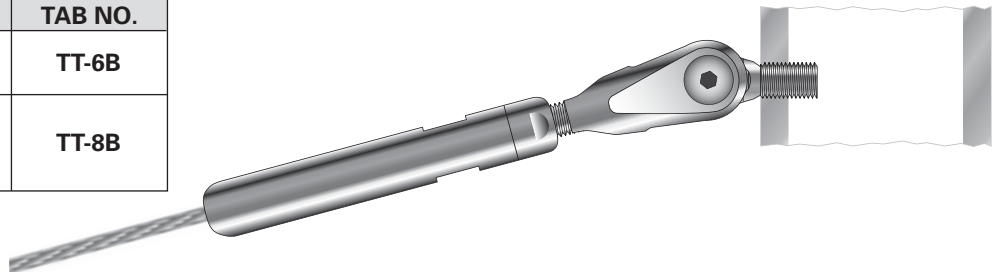
## Adjust-A-Body® with Threaded Eye

CABLE DIA.	PART NO.	USE WITH SCREW NO.	USE WITH TAB NO.
1/8"	A-JTE6	SC-6	TT-6B
3/16"			
1/4"	A-JTE8	SC-8	TT-8B



## Adjust-A-Jaw®

CABLE DIA.	PART NO.	USE WITH SCREW NO.	USE WITH TAB NO.
1/8"	A-J62	SC-6	TT-6B
3/16"			
1/4"	A-J82	SC-8	TT-8B
5/16"	A-J122		
3/8"			



## Fixed Jaw

CABLE DIA.	PART NO.	USE WITH SCREW NO.	USE WITH TAB NO.
1/8"	F-J62	SC-6	TT-6B
3/16"			
1/4"	F-J82	SC-8	TT-8B
5/16"	F-J122		
3/8"			



## Clip-On Fixed Jaw

CABLE DIA.	PART NO.	USE WITH SCREW NO.	USE WITH TAB NO.
1/8"	F-JC2-4	SC-6	TT-6B
3/16"	F-JC2-6	SC-6	TT-6B



# HOLES FOR POSTS AND CABLE BRACES

## Boring and slotting where grommets are NOT being used

If you will be using grommets, see next page.

### Intermediate Post and Cable Brace Hole Diameters for LEVEL RUNS

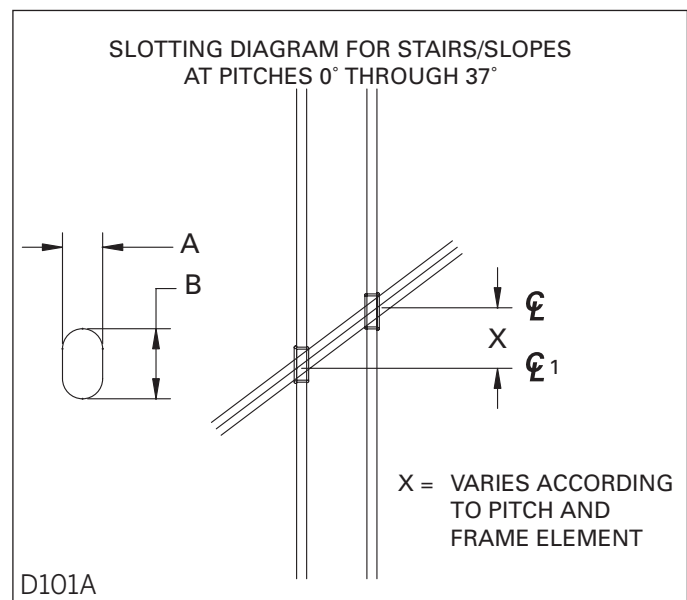
HOLE DIAMETERS FOR LEVEL RUNS  
GROMMETS **NOT** BEING USED

CABLE DIA.	Fittings FIELD Swaged	Fittings <b>FACTORY</b> Swaged	
		Using Threaded Stud	Using Swaging Ferrule
1/8"	5/32" (.156")	11/32" (.344")	17/64" (.265")
3/16"	7/32" (.219")		
1/4"	9/32" (.281")	15/32" (.469")	25/64" (.390")
5/16"	11/32" (.344")	19/32" (.594")	33/64" (.516")
3/8"	13/32" (.406")		

### Intermediate Posts and Cable Braces Hole Diameters for STAIRS / SLOPED RUNS

HOLE DIAMETERS FOR STAIRS/SLOPES  
GROMMETS **NOT** BEING USED

CABLE DIA.	A	B
1/8"	5/32" (.156")	23/64" (.359")
3/16"	7/32" (.219")	29/64" (.453")
1/4"	9/32" (.281")	17/32" (.531")
5/16"	11/32" (.344")	39/64" (.609")
3/8"	13/32" (.406")	11/16" (.688")



# HOLES FOR POSTS AND CABLE BRACES

## Boring and slotting where grommets ARE being used

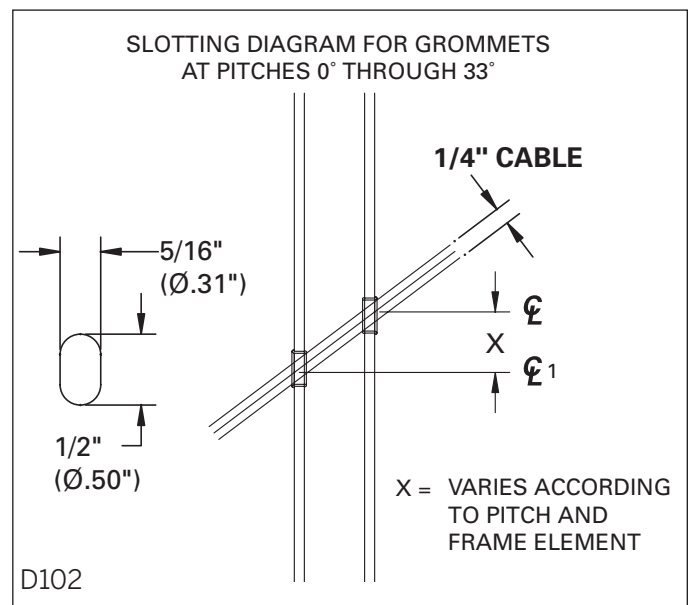
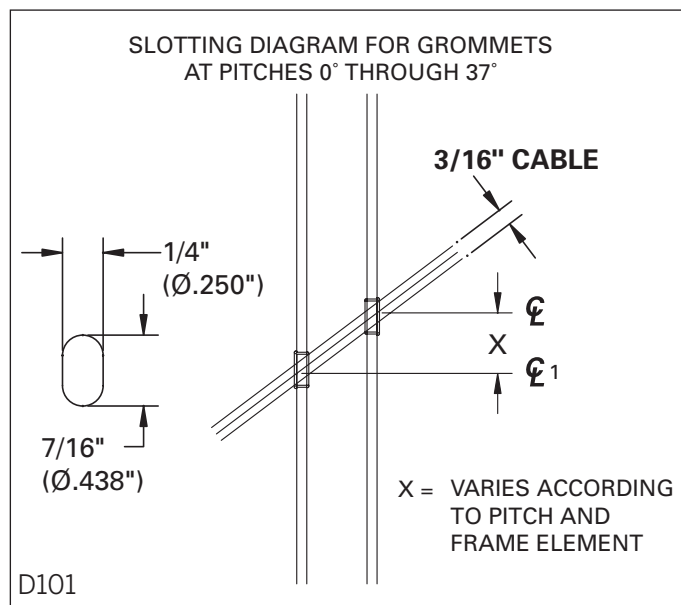
### Intermediate Post and Cable Brace Hole Diameters for LEVEL RUNS

HOLE DIAMETERS FOR LEVEL RUNS  
GROMMETS **ARE** BEING USED  
Grommets are not offered for diameters greater than 1/4".

CABLE OR FITTING DIA. PASSING THROUGH POST	Hole sizes are actual sizes AFTER finish is applied (*see note).
1/8"	1/4" (.250")
3/16"	
1/4"	5/16" (.312")

*\*Note: Grommets will not install properly in under- or over-sized holes.*

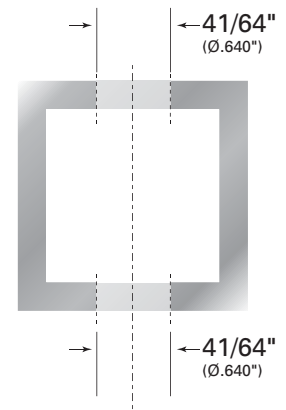
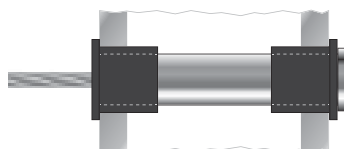
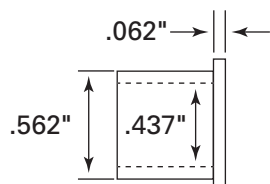
### Intermediate Posts and Cable Braces Hole Diameters for STAIRS / SLOPED RUNS



## Isolation Bushings for End Posts

Part No. B-687-562-437

The Isolation Bushing will go into the pre-drilled hole along with the Receiver in the post — one on each side of the post for Receivers and Pull-Locks®. Drill hole size is 37/64" (19/32" is okay if 37/64" bit can't be located).

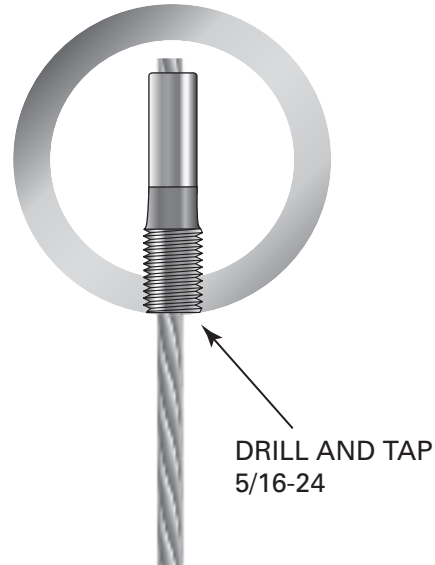


# VERTICAL RAILING BORING DIAGRAMS

## Top Rail Holes

The holes of the underside (only) of the top rail are drilled and tapped on 3.25" centers to accept Invisiware® 5/16-24 Threaded Studs for 1/8" or 3/16" diameter cable.

(Note that every eighth cable is replaced with a rail brace, to keep the top and bottom rails from bending).



## Bottom Rail Holes

Bottom rail holes are drilled 3.25" centers to accept Invisiware® Receivers for 1/8" or 3/16" diameter cable.

(Note that every eighth cable is replaced with a rail brace, to keep the top and bottom rails from bending).

