



HARDWARE MOUNTING / HOLE BORING GUIDE FOR METAL RAILINGS

2021

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The Cable Connection
2801 Arrowhead Drive, Carson City, NV 89706
800.851.2961 | 775.885.1443 | Fax 775.885.2734
info@ultra-tec.com | www.ultra-tec.com

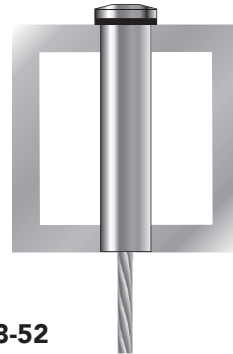
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THROUGH-THE-POST MOUNTED FITTINGS

Invisiware® Receiver

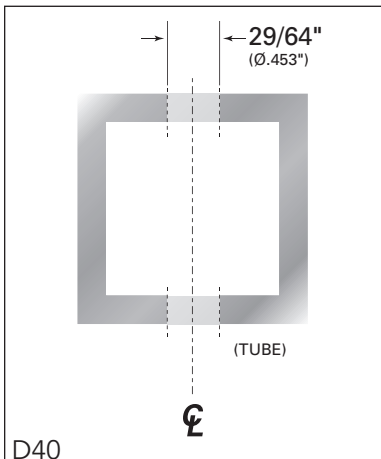
Used with square or rectangular tubing.

We recommend a minimum 1/4" wall.

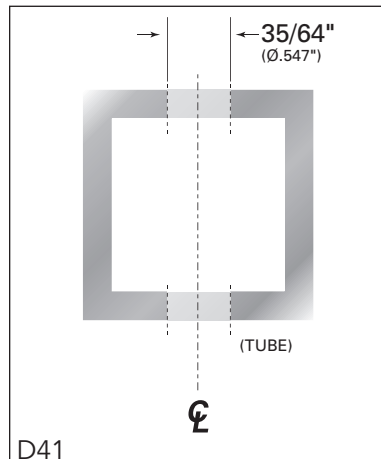


Invisiware® Receivers are also available in Phosphor Bronze.

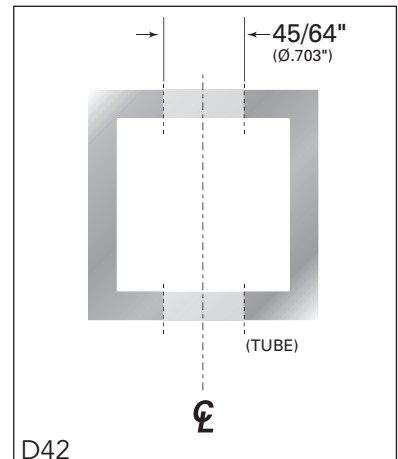
Part Nos.
R-6-12 through R-6-82
Cable Dia: 1/8" and 3/16"
Drill 2 places



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

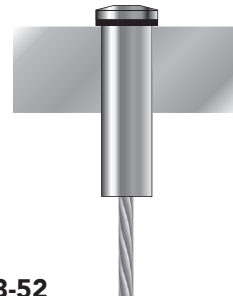


Part Nos.
R-12-32 through R-12-52
Cable Dia: 5/16" and 3/8"
Drill 2 places

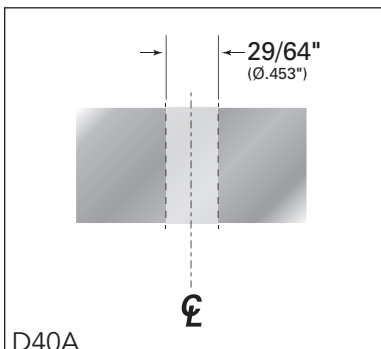


Invisiware® Receiver

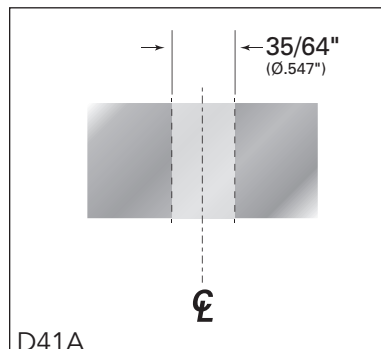
Used with flat bar or steel plate.



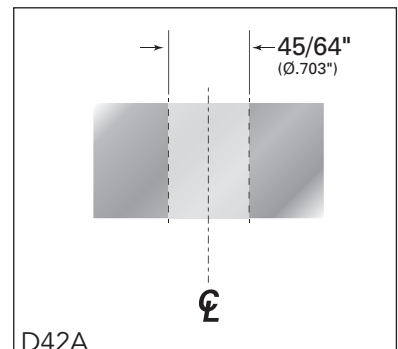
Part Nos.
R-6-12 through R-6-82
Cable Dia: 1/8" and 3/16"



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"

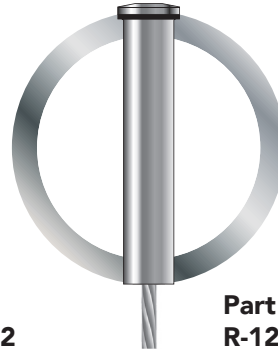


Invisiware® Receiver

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.

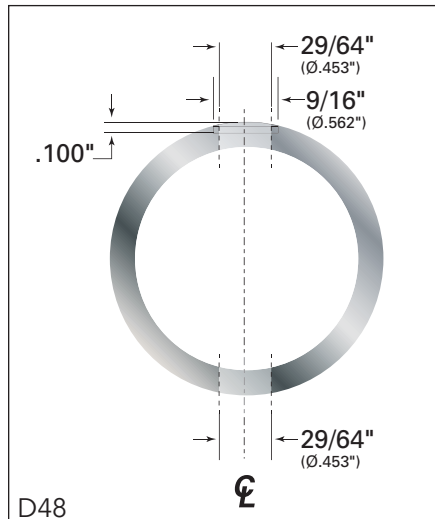


Invisiware® Receivers are also available in Phosphor Bronze.

Part Nos.

R-6-12 through R-6-82

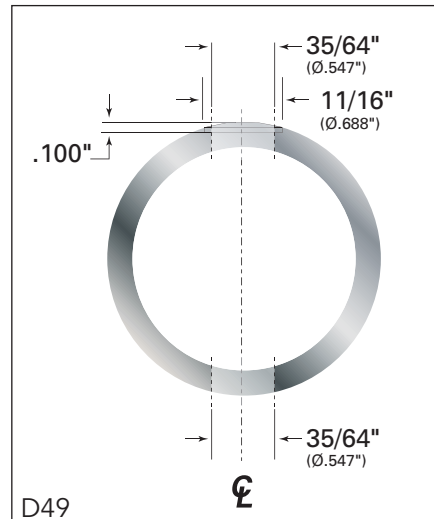
Cable Dia: 1/8" and 3/16"



Part Nos.

R-8-22 through R-8-52

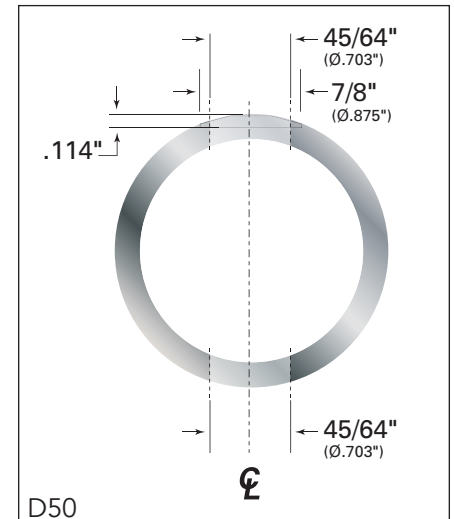
Cable Dia: 1/4"



Part Nos.

R-12-32 through R-12-52

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



Invisiware® Receiver

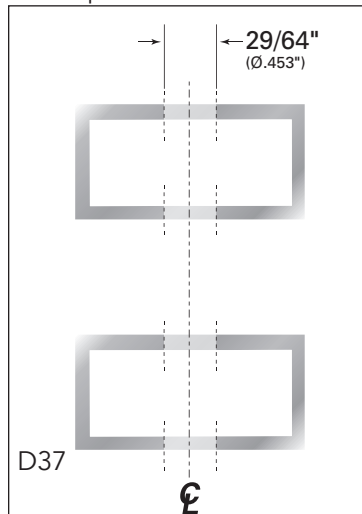
Used with double end post construction using 2"x1" or 3"x1" rectangular tubing with 1-inch spacers.

Part Nos.

R-6-52 and R-6-62

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

Drill 4 places

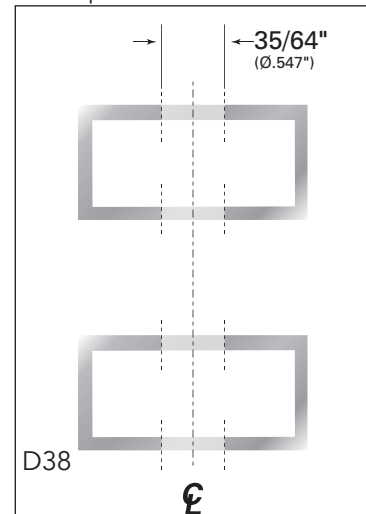


Part No.

R-8-52

Cable Dia: 1/4"

Drill 4 places

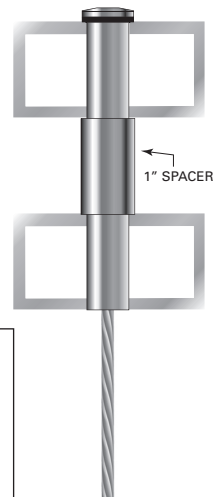
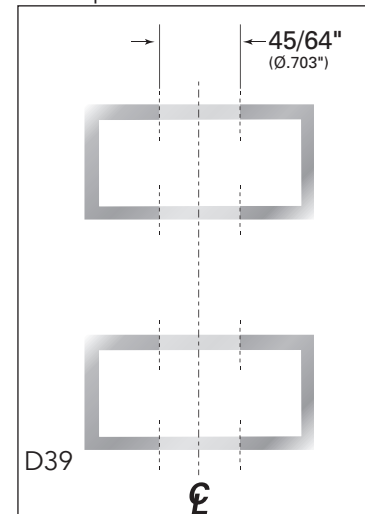


Part No.

R-12-52

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

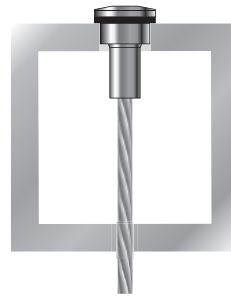
Drill 4 places



Invisiware® Radius Ferrule

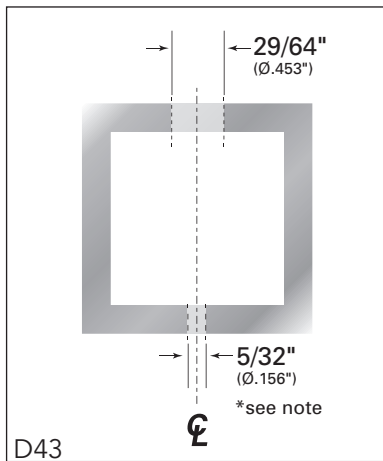
Used with square or rectangular tubing.

We recommend a minimum 1/4" wall.



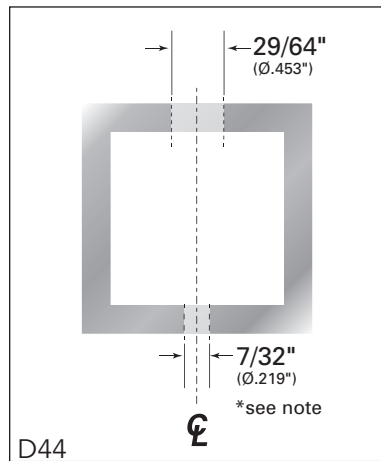
Part No. RF-4 Cable Dia: 1/8"

*see note if using grommets



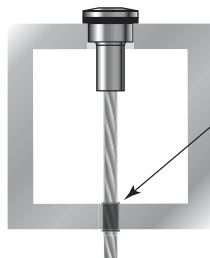
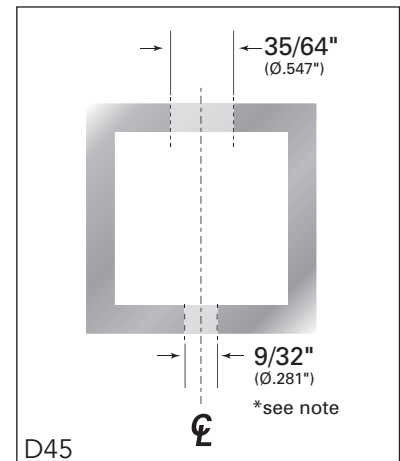
Part No. RF-6 Cable Dia: 3/16"

*see note if using grommets



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

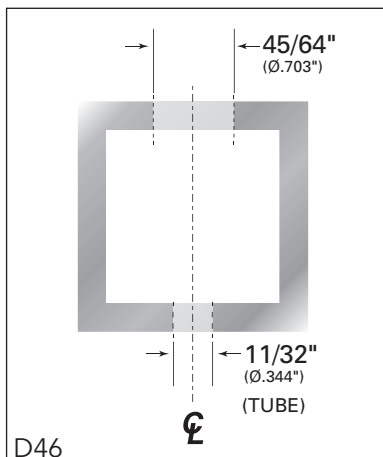
*see note if using grommets



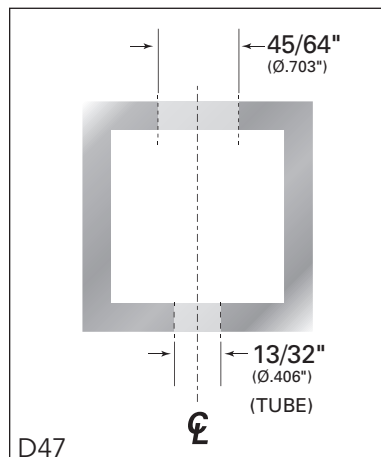
*Note: If grommets are being used, hole through which cable passes should be drilled as follows:

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

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



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



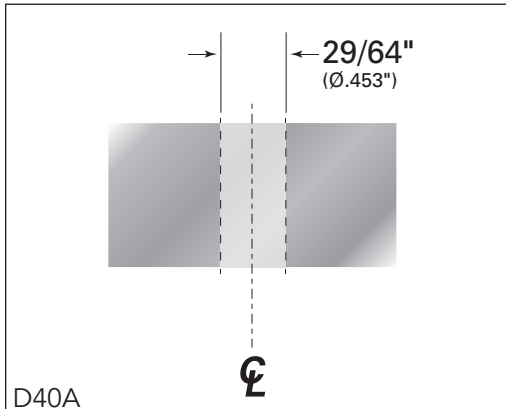
Grommets are not offered for use with RF-10 and RF-12 Radius Ferrules.

Invisiware® Radius Ferrule

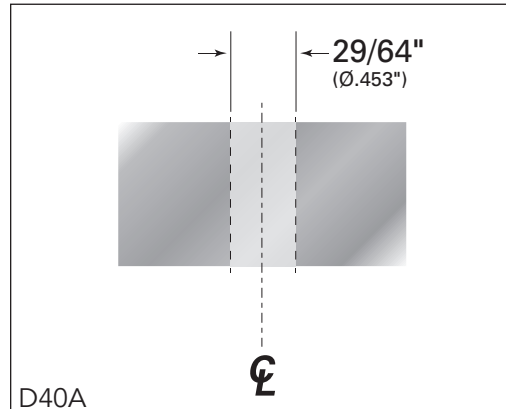
Used with flat bar or steel plate.



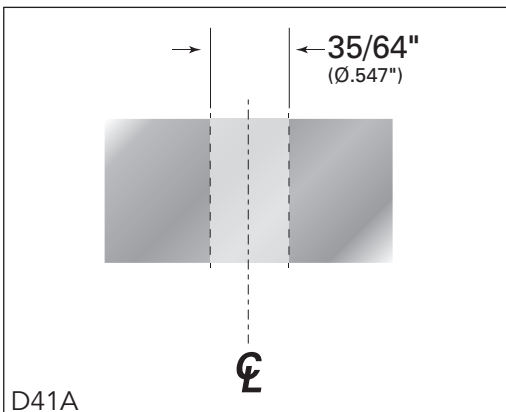
Part No. RF-4
Cable Dia: 1/8"



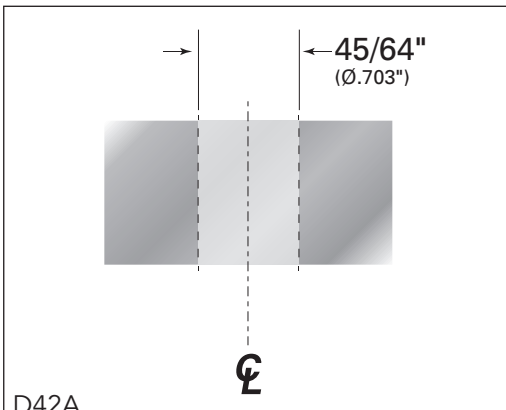
Part No. RF-6
Cable Dia: 3/16"



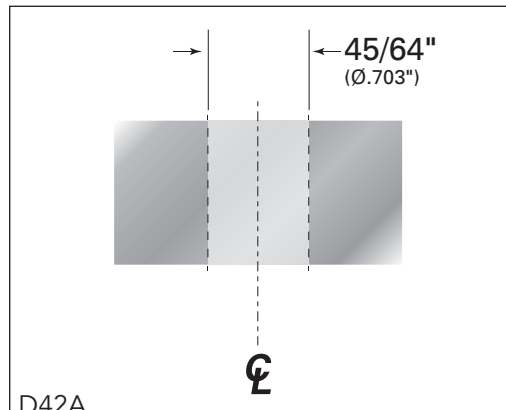
Part No. RF-8
Cable Dia: 1/4"



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



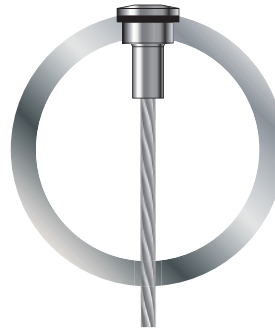
Part No. RF-12
Cable Dia: 3/8"



Invisiware® Radius Ferrule

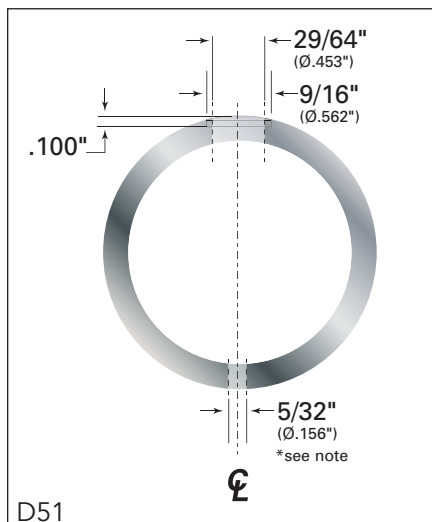
Used with minimum SC80
round pipe or round steel tubing.

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



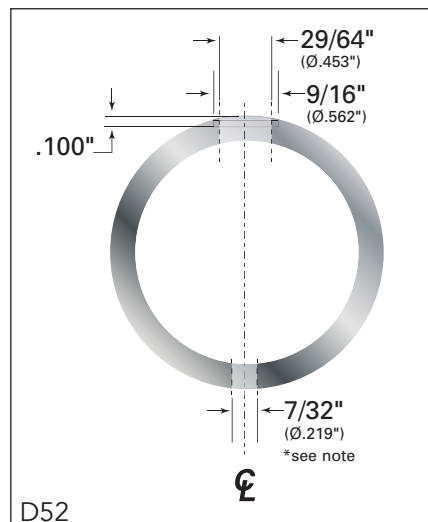
Part No. RF-4 Cable Dia: 1/8"

*see note if using grommets



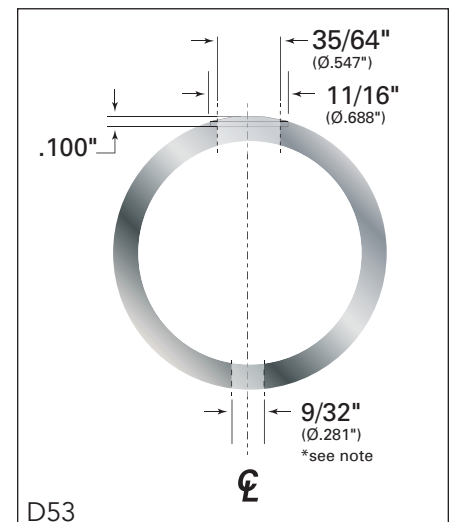
Part No. RF-6 Cable Dia: 3/16"

*see note if using grommets

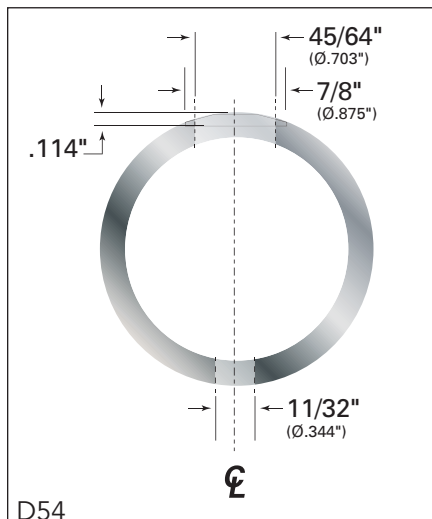


Part No. RF-8 Cable Dia: 1/4"

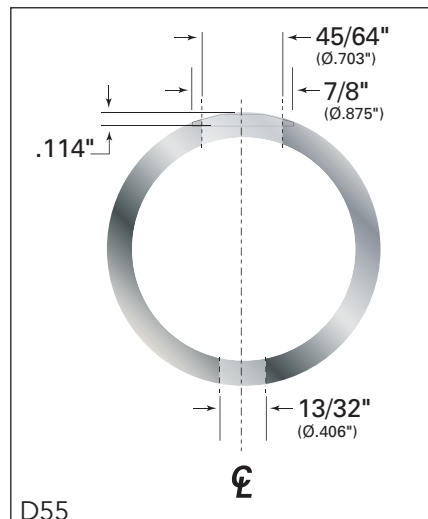
*see note if using grommets



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

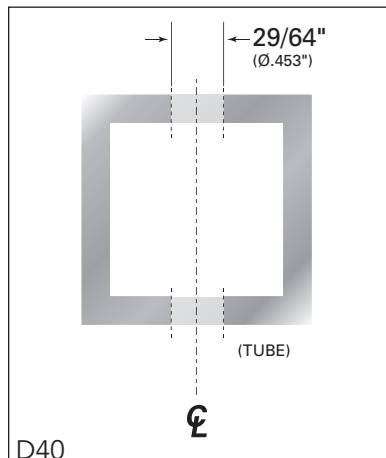
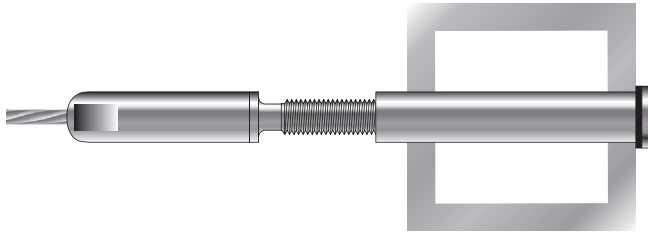
Cable Dia: 1/8" and 3/16"

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

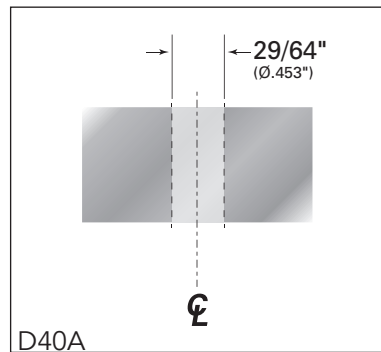
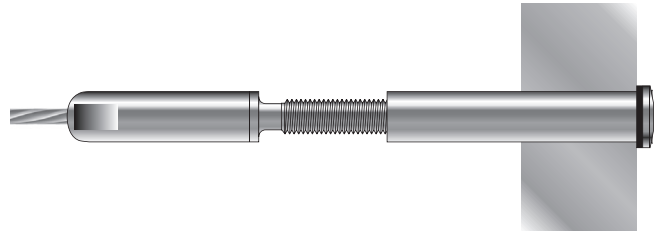
Stud Part No. PLST-6 for 3/16" cable

Used with square or rectangular tubing.

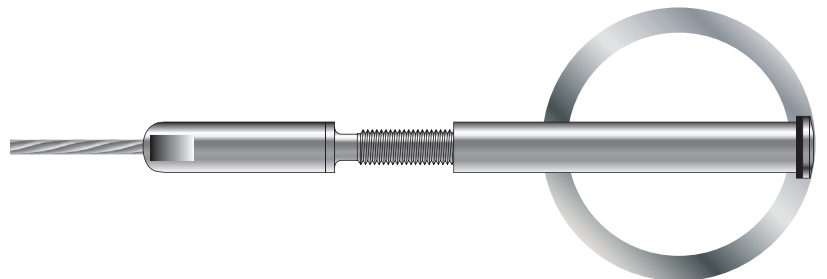
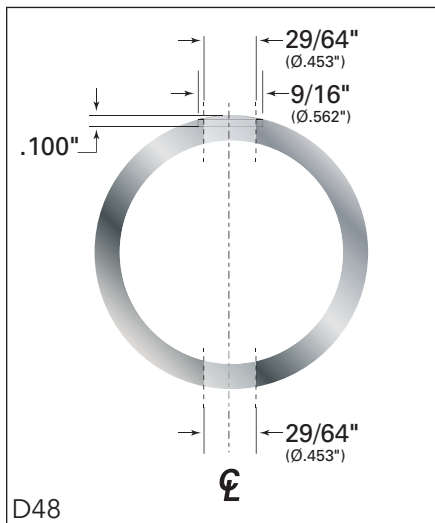
We recommend a minimum 1/4" wall.



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

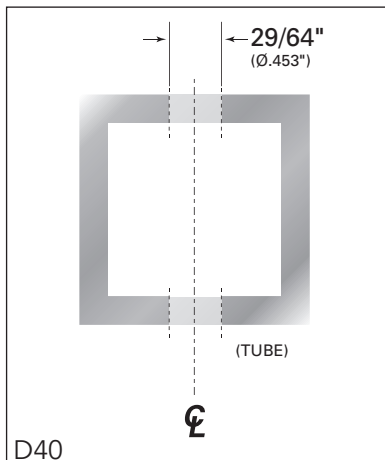
Push-Lock® Part Nos. PL-4-12/PL-6-12 through PL-4-3.030/PL-6-3.030

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

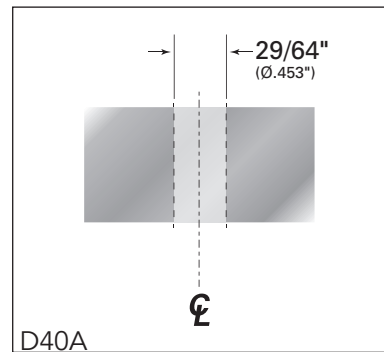
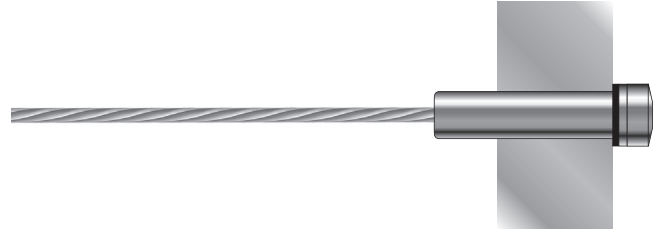
Cable Dia: 1/8" and 3/16"

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

We recommend a minimum 1/4" wall.

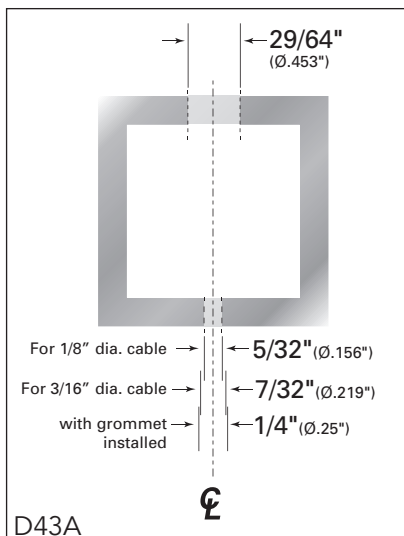


Used with flat bar or steel plate.



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

We recommend a minimum 1/4" wall.



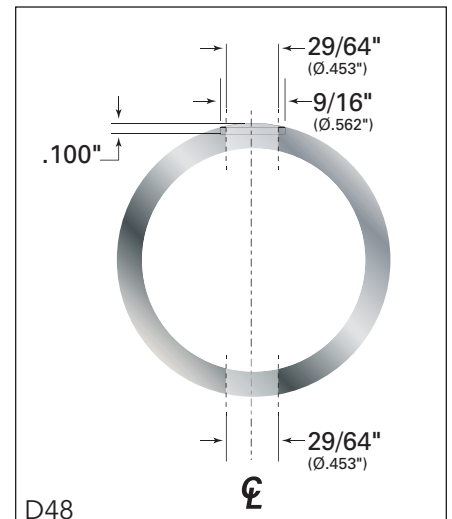
Push-Lock® and Pull-Lock® Stop-End Fittings

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

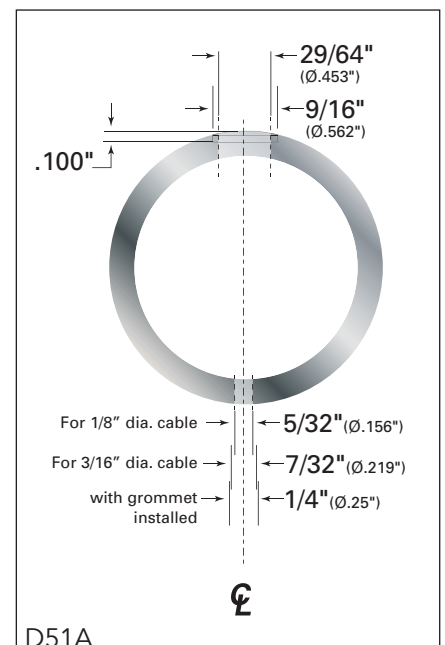
Pull-Lock® Part Nos. PUL-4-12/PUL-6-12 through PUL-4-3.030/PUL-6-3.030

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 |

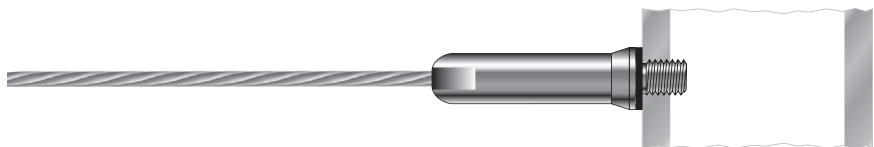
| CONSTRUCTION MATERIAL | *NOTE: Recommended minimum wall thickness |
|---|--|
| Pipe | Minimum Schedule 80 |
| Round Steel Tubing | At least equivalent to Schedule 80 Pipe |
| Square or Rectangular Structural Steel Tubing | .250" |
| Steel Flat Bar or Plate | .250" or heavier to support a load of 1,537 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 |



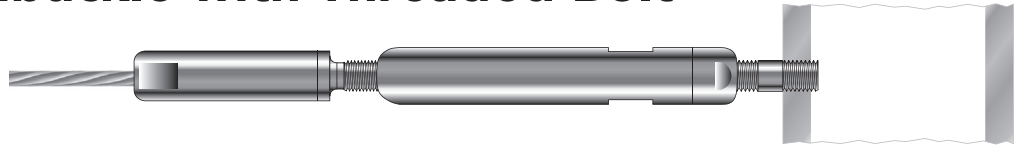
Push-Lock® Tensioner with Threaded Bolt

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



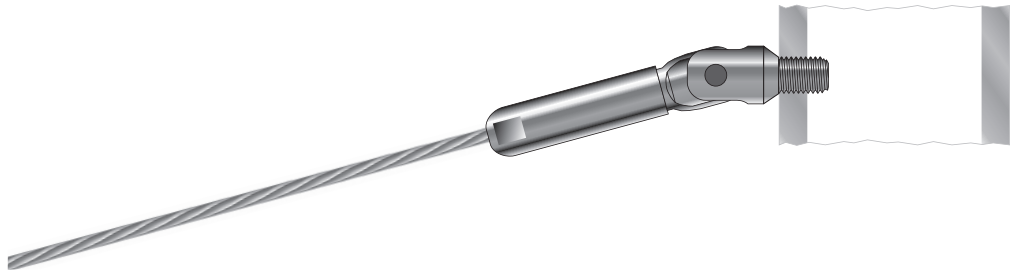
Push-Lock® Turnbuckle with Threaded Bolt

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



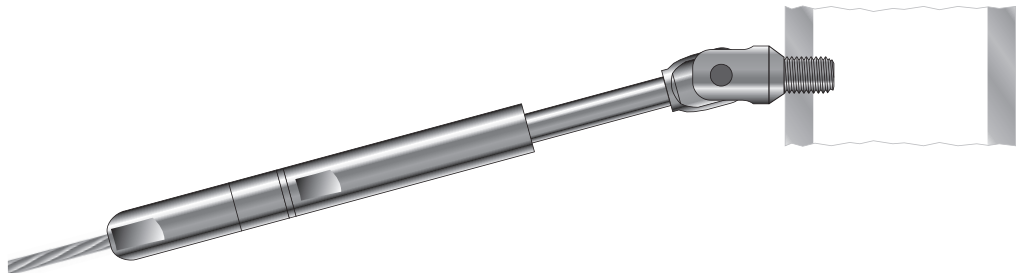
Push-Lock® Threaded Clevis

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



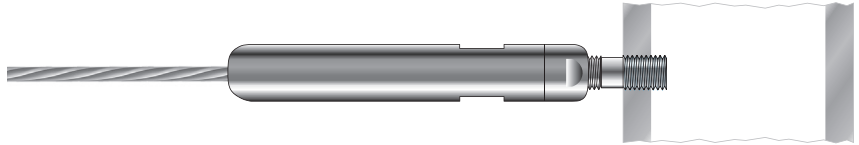
Push-Lock® Tensioner with Threaded Clevis

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



Adjust-A-Body with Threaded Bolt

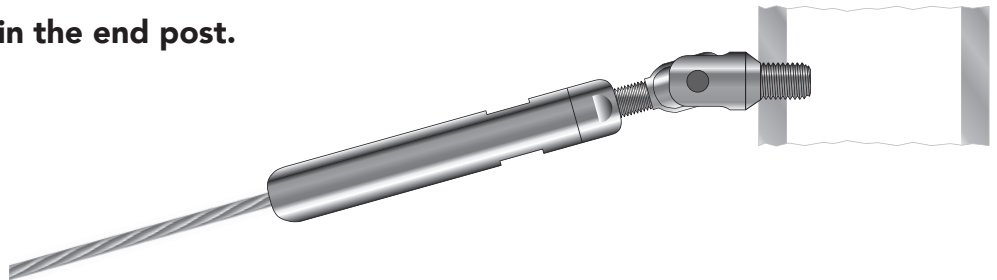
| CABLE DIA. | PART NO. | DRILL AND TAP HOLE |
|------------|----------|--------------------|
| 1/8" | A-JTB6 | 5/16-24 |
| 3/16" | | |
| 1/4" | A-JTB8 | 5/16-24 |
| 5/16" | A-JTB12 | 1/2-20 |
| 3/8" | | |



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

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

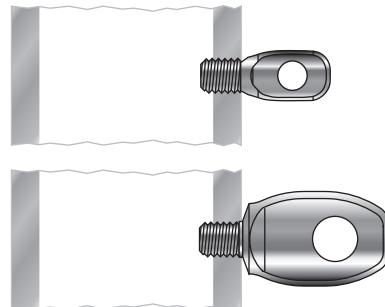
| CABLE DIA. | PART NO. |
|------------|-----------|
| 1/8" | A-JB-CL-M |
| 3/16" | |



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" | | |

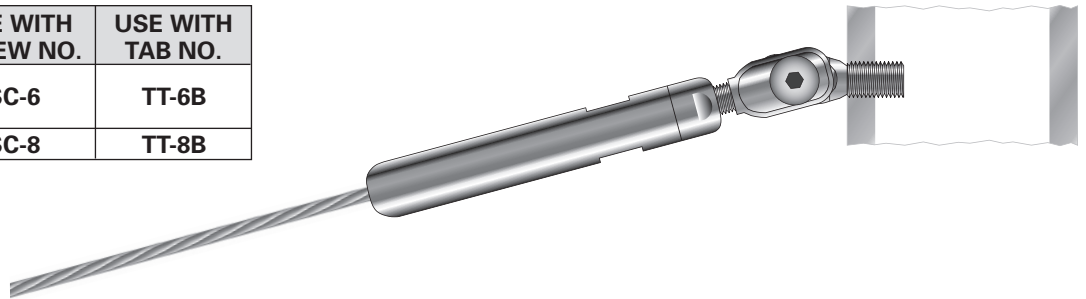


| CONSTRUCTION MATERIAL | *NOTE: Recommended minimum wall thickness |
|---|--|
| Pipe | Minimum Schedule 80 |
| Round Steel Tubing | At least equivalent to Schedule 80 Pipe |
| Square or Rectangular Structural Steel Tubing | .250" |

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

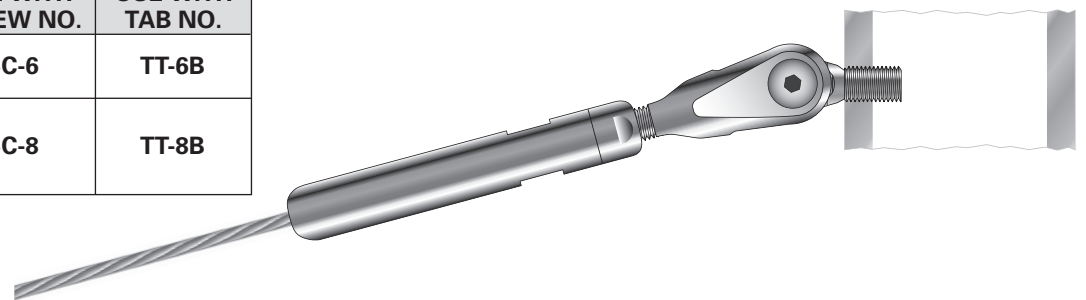
Adjust-A-Body® with Threaded Eye

| 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 |



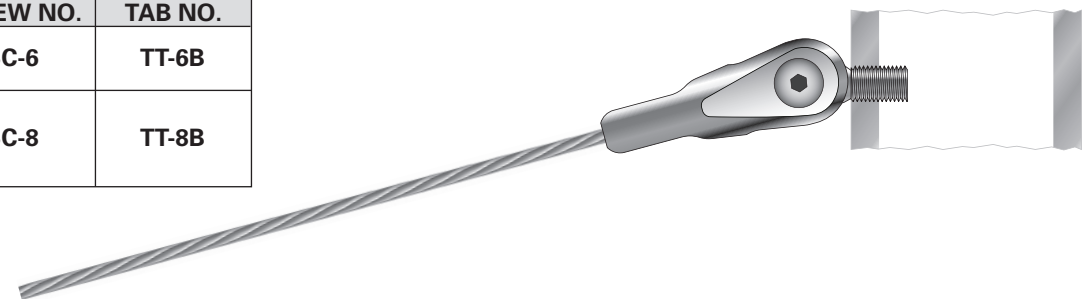
Adjust-A-Jaw®

| 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" | | | |



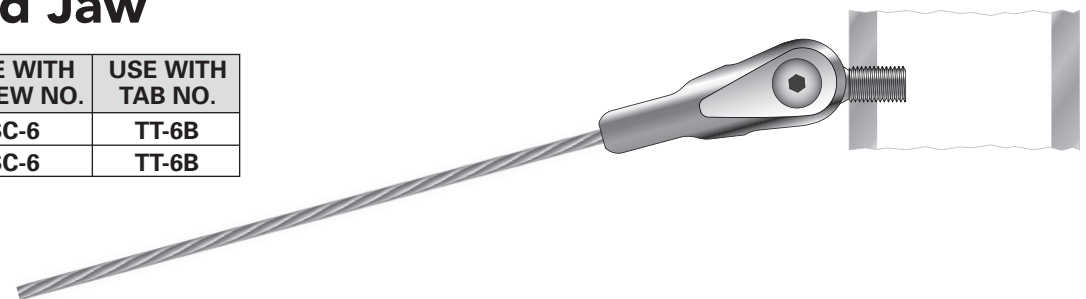
Fixed Jaw

| 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

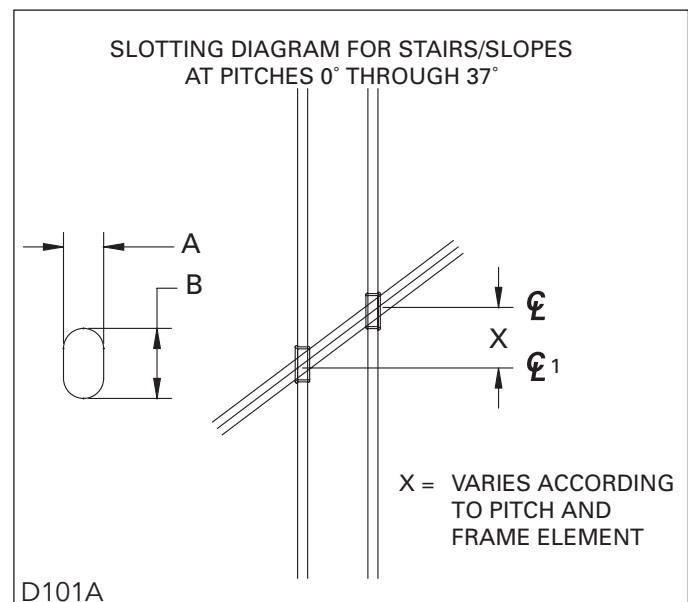
HOLE DIAMETERS FOR LEVEL RUNS
GROMMETS NOT BEING USED

| CABLE DIA. | Fittings FIELD Swaged | Fittings FACTORY 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

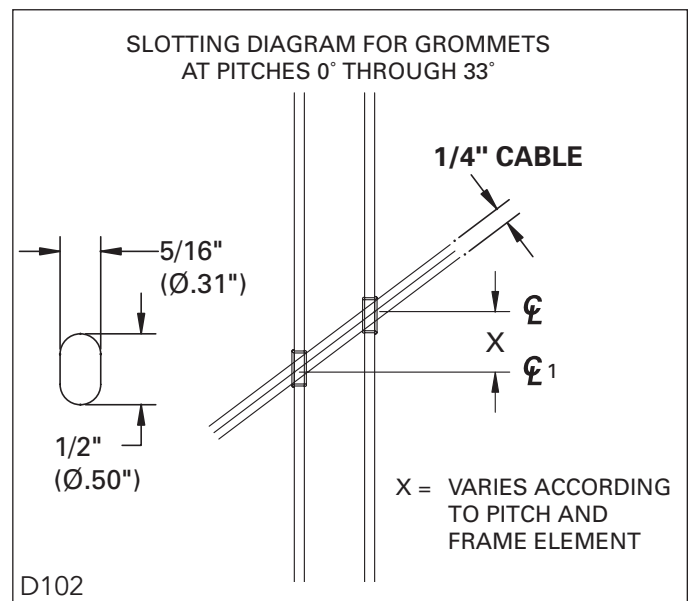
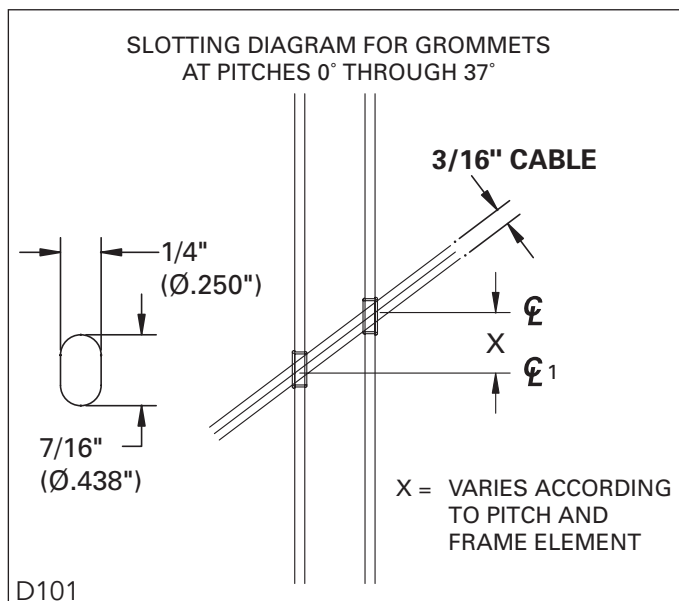
Intermediate Post and Cable Brace Hole Diameters for LEVEL RUNS

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

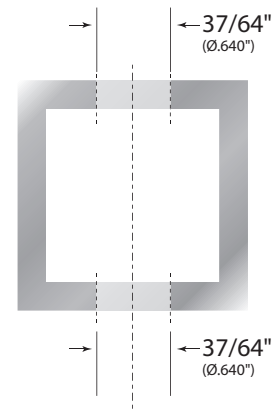
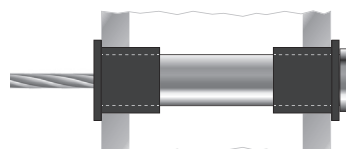
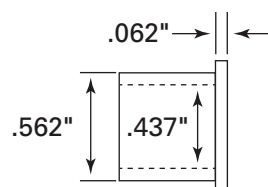


Isolation Bushings for End Posts

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).

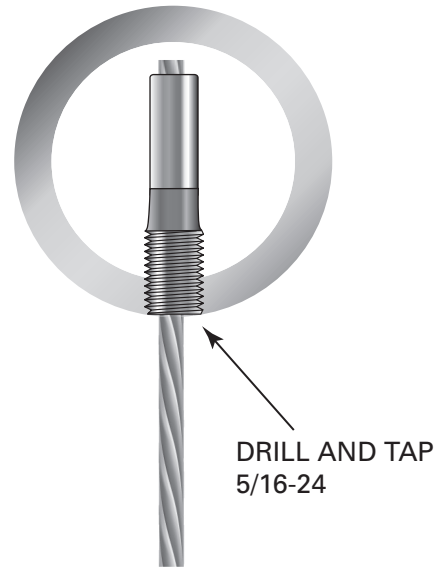


VERTICAL RAILING BORING DIAGRAMS

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).

