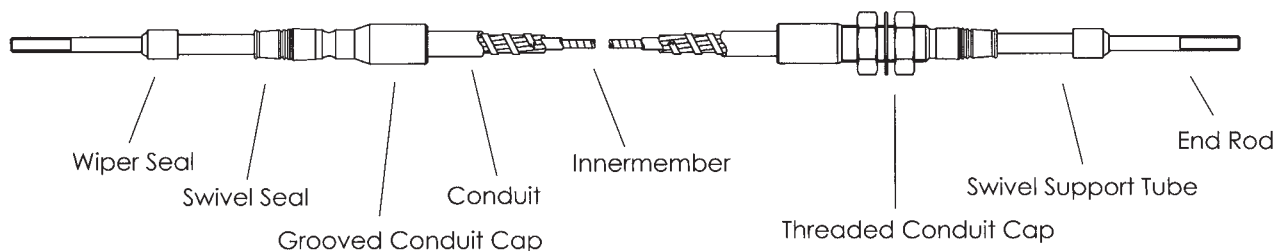


# Standard Push-Pull Cable Terminology



## How to Identify Push-Pull Cables

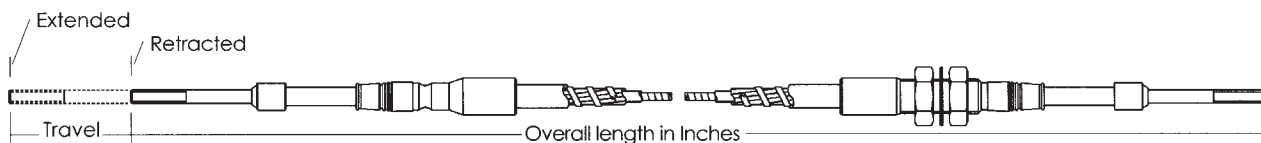
Your goal is to determine the information required to make up the “ordering code” or part number. An example of a typical ordering code is 173-VTG-3-144.

173 - VTG - 3 - 144

**Step 1:** Determine the “**duty**” (size) of the cable by the diameter and threads of the end rods. **V** = 10-32, **L** = 1/4-28, **M** = 5/16-24, **H** = 3/8-24.  
(Very light duty; Light duty; Medium duty; Heavy duty)

**Step 2:** Determine the type of **conduit end** fittings (conduit caps) for left end and right end. **T** = Threaded, **G** = Grooved. TT, GG or TG combinations.

**Step 3:** Determine the **travel** of the end rod. 1” through 6” in one inch increments.



**Step 4:** Determine the overall **length** of the cable.

**Step 5:** Determine cable materials depending on usage and conditions.  
See details of 173, 174, 175 Utility, 313, 314, 315 Low Friction EXT and 183, 184 and 185 Low Friction.

Utility: “The Rugged Gray Cable” is the industry-standard and is designed for a long life under rugged conditions (173, 174, 175).

Low Friction EXT: “The Green Cable” is the proper cable to use when superior efficiency is required. The extruded nylon cover over the innermember works very smoothly with the polyliner (313, 314, 315).

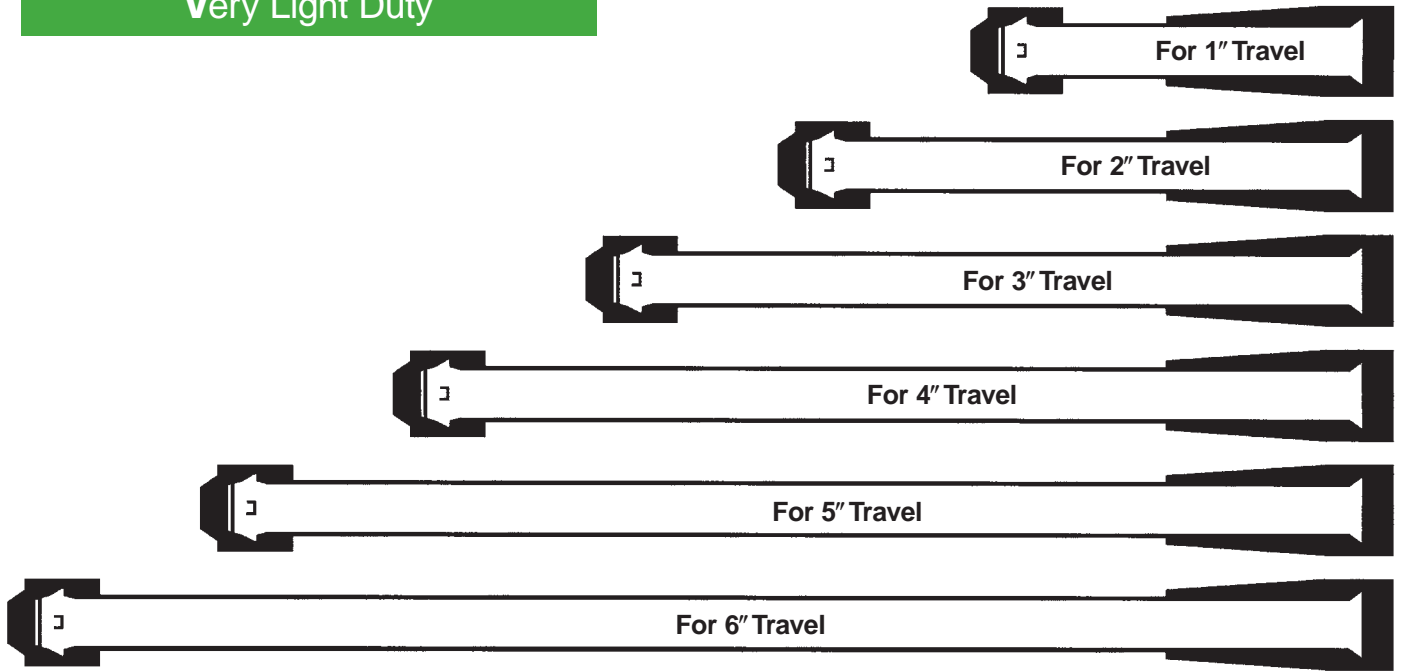
Low Friction: The proper cable to use when superior efficiency is required. The bonded PTFE cover over the inner operating member works very smoothly with the plastic liner (183, 184, 185).

# Push-Pull Identification Chart

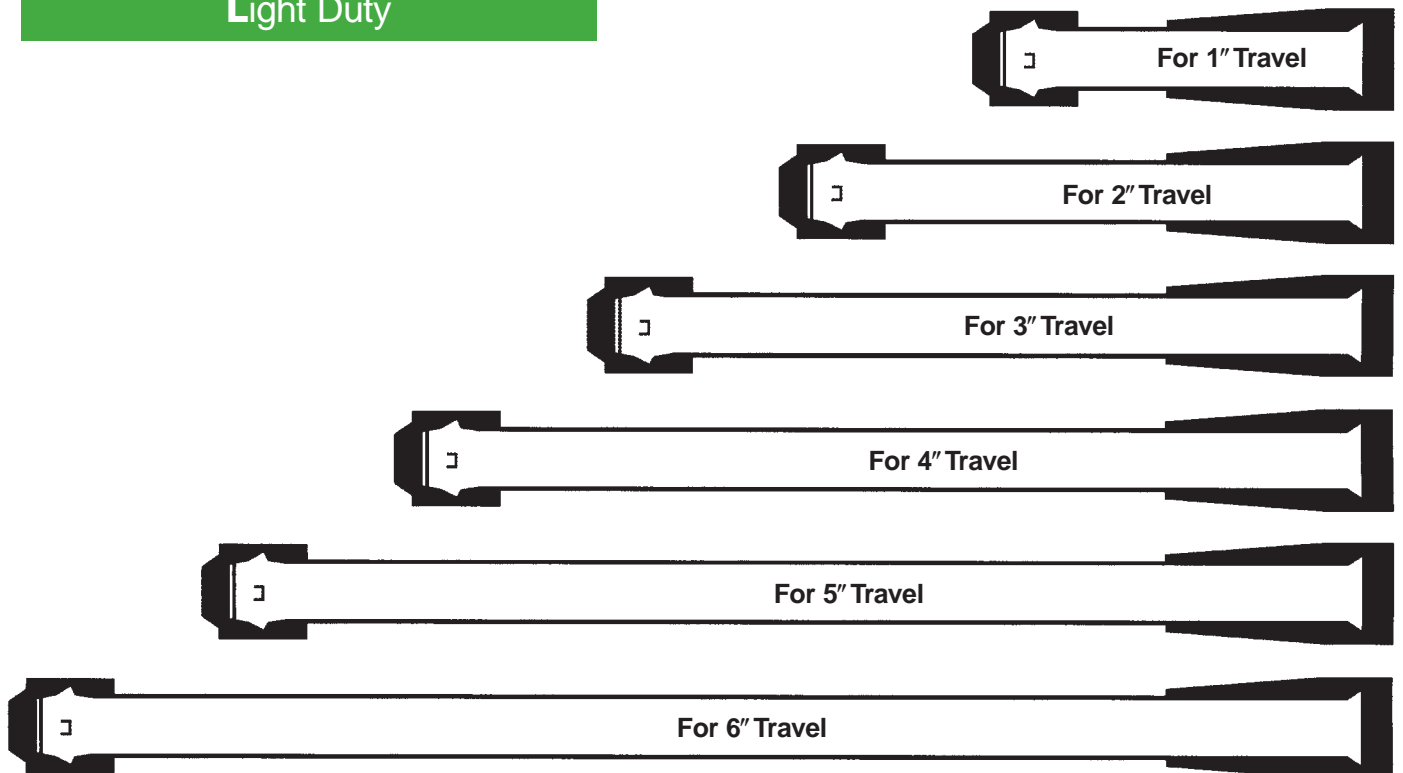
## Visual Comparison Chart for Determining Travel

To determine the "travel" on an existing cable, you can compare the length of the support tubes with the illustrations below and on the next page. Determine the "duty" (size) of the cable by the diameter and threads of the end rods. **V** = 10-32, **L** = 1/4-28, **M** = 5/16-24, **H** = 3/8-24. (Very light duty; Light duty; Medium duty; Heavy duty)

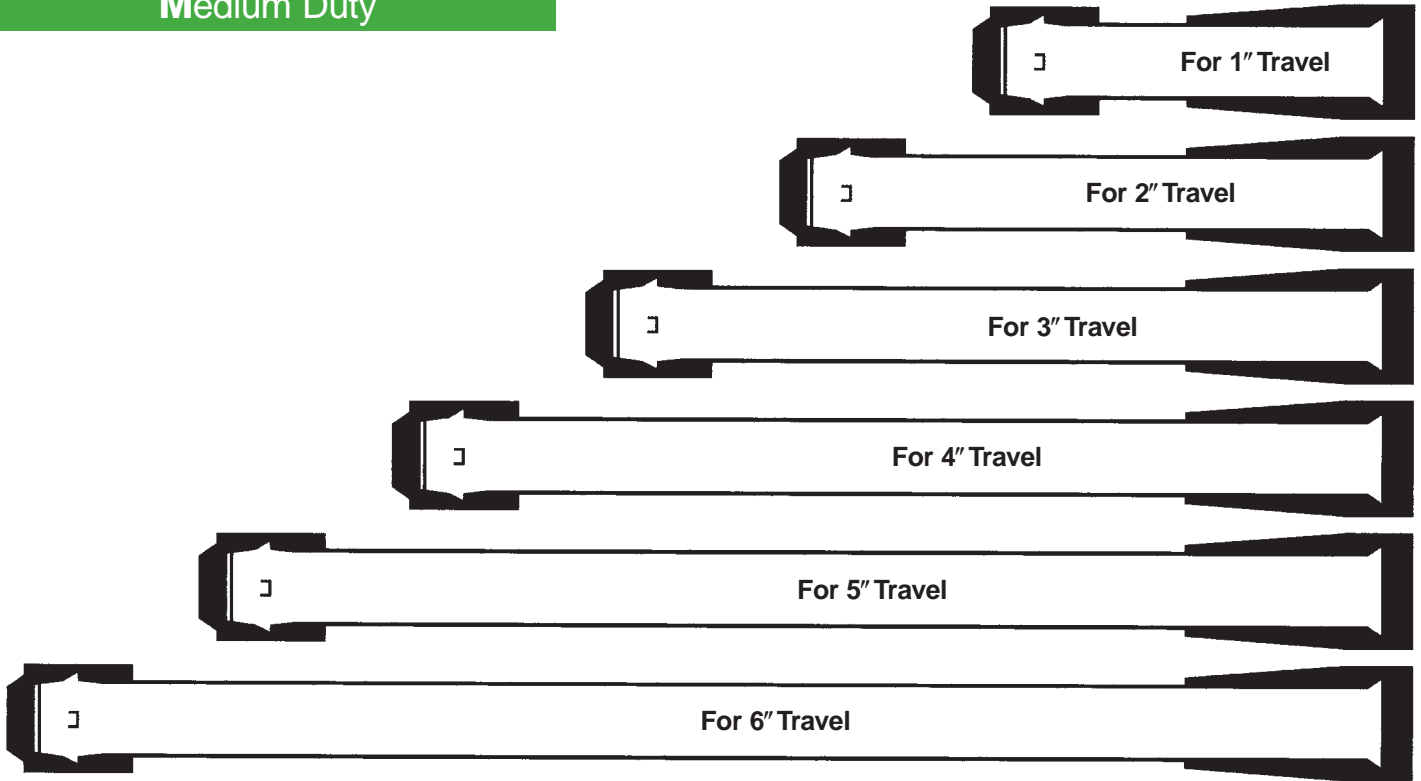
### Very Light Duty



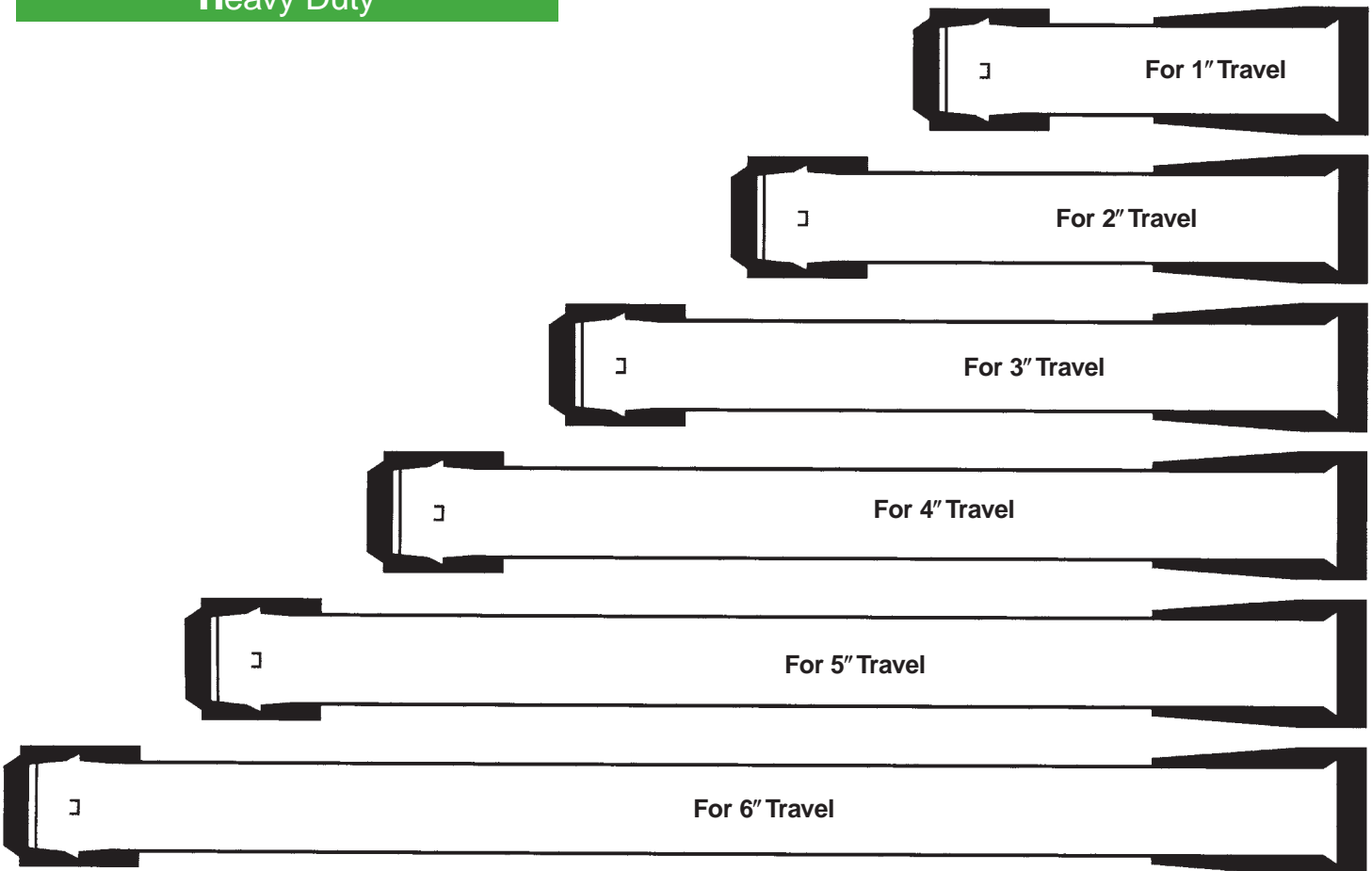
### Light Duty



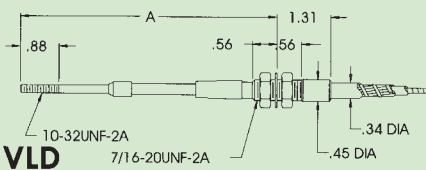
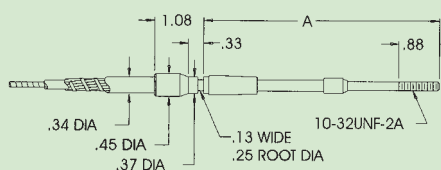
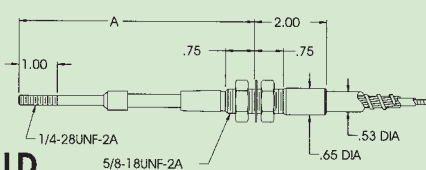
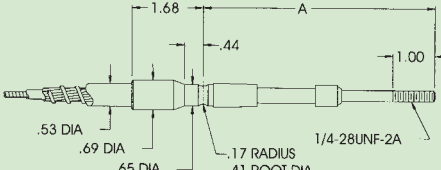
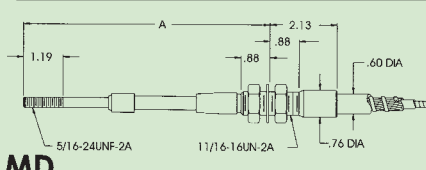
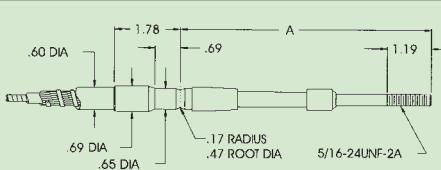
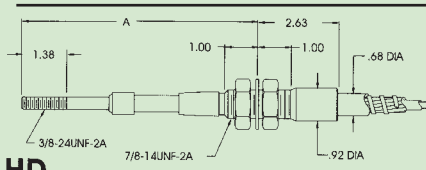
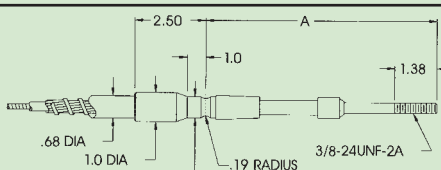
Medium Duty



Heavy Duty



# Push-Pull Cable Specifications

	A Dimension Threaded Swivel (in) (control at mid travel)	Minimum Travel Push-Pull (in)	Working Input Load (lbs) Push-Pull	Maximum Input Overload (lbs)	A Dimension Grooved Swivel (in) (control at mid travel)		
<b>VLD</b>		4.38 5.87 7.38 8.87 10.38 11.87	1" 2" 3" 4" 5" 6"	80/120 80/120 70/120 60/120 45/120 30/120	120/180 120/180 110/180 90/180 70/180 45/180	3.69 5.19 6.69 8.19 9.69 11.19	
<b>LD</b>		4.62 6.12 7.62 9.12 10.62 12.12	1" 2" 3" 4" 5" 6"	150/230 150/230 125/230 100/230 75/230 50/230	230/350 230/350 190/350 150/350 110/350 75/350	4.00 5.50 7.00 8.50 10.00 11.50	
<b>MD</b>		5.06 6.56 8.06 9.56 11.06 12.56	1" 2" 3" 4" 5" 6"	250/400 250/400 210/400 170/400 130/400 100/400	400/600 400/600 300/600 250/600 200/600 150/600	4.38 5.87 7.38 8.87 10.38 11.87	
<b>HD</b>		5.69 7.19 8.69 10.19 11.69 13.19	1" 2" 3" 4" 5" 6"	700/1000 700/1000 600/1000 500/1000 400/1000 300/1000	1000/1500 1000/1500 900/1500 750/1500 600/1500 450/1500	5.19 6.69 8.19 9.69 11.19 12.69	

## Low Friction-EXT and Utility Cables Design Criteria

### Efficiency:

Efficiency factor ratings are for comparative purposes and may vary due to length, rate of travel, direction of travel, bend radius and temperature.

To Compare Efficiency:

Input force = Output load (lbs) x total degrees of bend x efficiency factor + output load.

Efficiency Factors:

Low Friction-EXT .0012  
Utility .002

Duty	Minimum Bend Radius
VLD	2"
LD	3"
MD	5"
HD	6"

### Backlash:

Nominal Backlash = Backlash factor x total degrees of bend.

Backlash Factors:

VLD .00015                      MD .00025  
LD .00020                      HD .00030

Temperature Range: -65° to +230°F

# Push-Pull Standard Order Code

## Cablecraft® Ordering Codes

314 - (6) - L - TT - 3 - 144 - (AP)

### Control Type

#### Low Friction-EXT

- 313 with Stainless Steel End Rods
- 314 with Stainless Steel Support Tubes and End Rods
- 315 all Exposed Fittings/Parts are Stainless Steel

#### Utility

- 173 with Stainless Steel End Rods
- 174 with Stainless Steel Support Tubes, End Rods and Innermember Armor
- 175 all Exposed Fittings/Parts are Stainless Steel plus Stainless Innermember Armor

#### Low Friction

- 183 with Stainless Steel End Rods
- 184 with Stainless Steel Support Tubes and End Rods
- 185 all Exposed Fittings/Parts are Stainless Steel

### Seal Options

- 6 (Use this number only if requesting optional Model 6 wiper seal, optional on all controls)

### Cable Size

- Letter End Rod Thread
- V 10-32 UNF
- L 1/4-28 UNF
- M 5/16-24 UNF
- H 3/8-24 UNF

### End Fitting Combinations (Options: GG, TG, TT)

- T Threaded Swivel
- G Grooved Swivel

### Cable Travel: 1, 2, 3, 4, 5, 6 (inches)

### Length +/- .25 (inches)

### Suffix Letters for Additional Features

(Use only if requesting optional features)

- N End Rod Jam Nuts (2 each)
- W Extra Shakeproof Washers on Conduit Ends
- A Combination of N and W
- P Stamp with Customer Part Number
- S Stamp with Cablecraft and Customer Part Number
- M Metric End Rods (optional)
  - V M5 x .8
  - L M6 x 1.0
  - M M8 x 1.25
  - H M10 x 1.5