



# Young Regulator Co.

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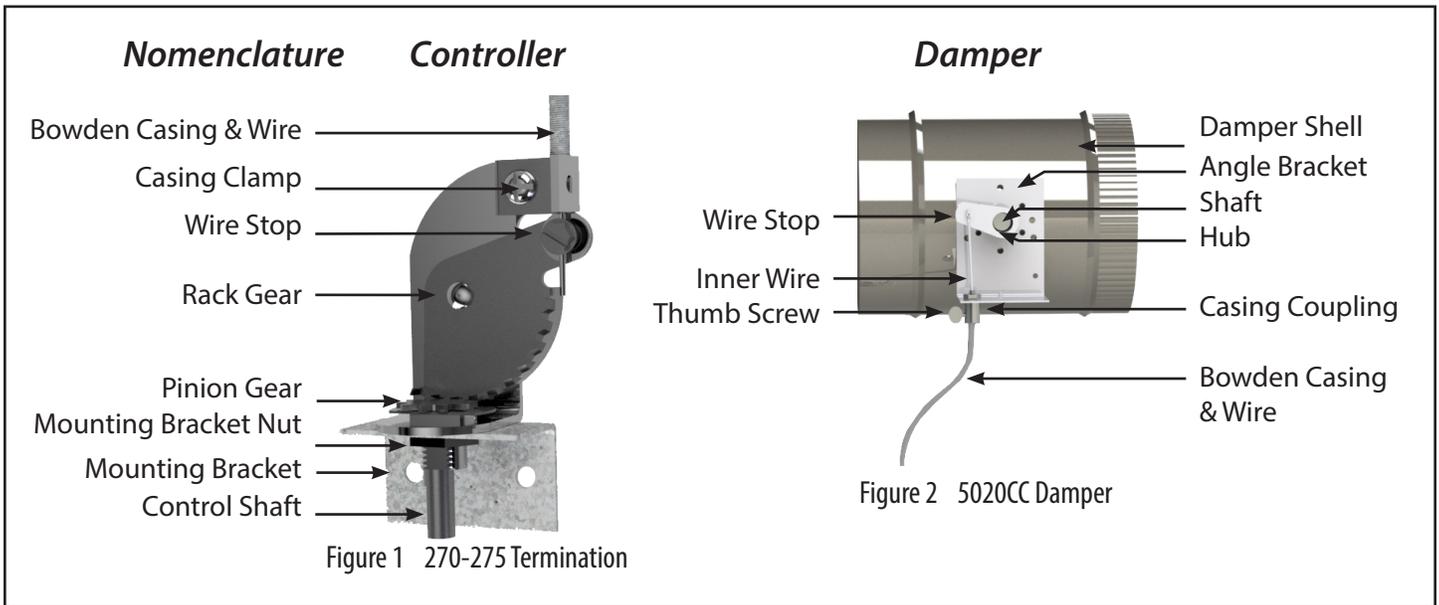
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YR-IOM-Bowden 9-2018

## Bowden Installation Instructions

*Bowden Controllers/ Wire & Casing / B-Kits*

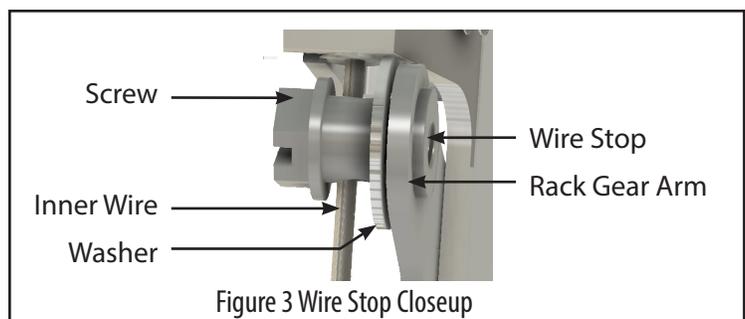


### Step 1 Run Wire

- Run the casing from the location where the controller will be to the damper.
  - It should be as straight as practical and **Should be secured to the building structure at least every 5 feet.**
  - Any turns should have at least a 3 foot radius in order to ease the inner wire through the turn.
  - Limit cable length to no more than 50 feet. For a longer reach use Young Regulator Electronic Balancing Dampers.
- Casing can be cut to length with a pair of wire cutters.
- Feed the inner wire through the casing. It should slide easily.
- Leave at least 3" of inner wire on each end.

### Step 2 Assemble the 270 Controller

- Rotate the control shaft counter-clockwise until the rack is in the full-up position. **Then return clockwise two clicks.**
- Secure the outer casing in the casing clamp.
- Install stainless inner-wire into the hole in the wire stop. The washer must be between the controller rack gear and the hole. (See Figure 3)
- Tighten the screw until the wire starts to bend.
- Install controller to termination using the mounting bracket nut.
- Install the mounting bracket with the controller to a ceiling joist, plenum, diffuser or access panel.



### Step 3 Connect the Damper

Steps 1 - 5 for B-Kits  
Dampers by Others

- Slide angle bracket over the shaft.
- Align the angle bracket perpendicular to the damper shell and fasten securely to the damper shell.
- Slide the hub onto the shaft.
- Rotate the shaft until the damper is fully closed.
- Orient the hub so that it is 45° above the horizontal. (a little past 10:00 on a clock face) fasten the two set screws securely with a 1/8" allen wrench.
- Install the casing coupling to the middle hole in the bottom of the angle bracket. Secure with the keps nut.
- Slide the inner wire through the casing coupling then through the wire stop in the hub. Push the casing into the coupling until it bottoms out (approx. 0.5"). Tighten the thumb screw securely.
- Thread the inner wire through the wire stop attached to the hub. (This is the same as on the controller without a washer.)
- Confirm the Hub is positioned as shown in figure 4.
- Tighten the wire stop on the hub.
- Confirm proper operation of the damper by exercising the control from full opn to full closed.

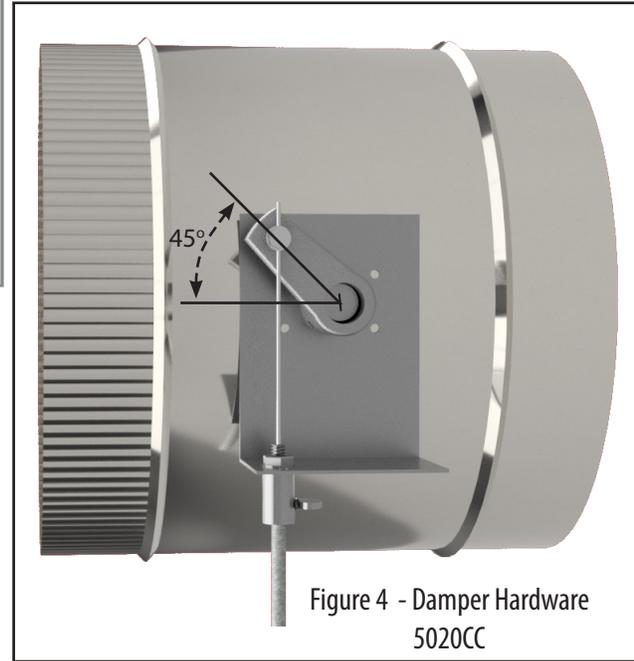


Figure 4 - Damper Hardware  
5020CC

### Installation Validation

- Rotate the controller clockwise with the 030-12 wrench. It should move freely. If it is **Hard to turn?** - Check the path of the casing. Ease any turns, ensure it is not moving as the inner wire tries to move up and down.
- When the controller is rotated full clockwise the damper should be full open. If it is **Not Fully Open?** - Adjust starting position of the hub. Release the inner wire and adjust the hub position on the shaft.
- Cut off any excess inner wire.

Ceiling Terminations	Description	Application
270-275	Rack and Pinion Controller w/angle bracket	Inside plenums, atop square diffusers, behind grille, above a drop ceiling or access panel
270-275 PH	As above, adjusted with phillips head screwdriver	Inside plenums or above drop ceilings
270-275ML	Angle bracket with extended control shaft	Inside plenums with Ice Tong style diffusers
270-301	Ceiling cup and 3" cover	Embedded in a Sheetrock ceiling
270-301BC	As above, with bracket to fasten cup to stud	Embedded in a Sheetrock ceiling
270-301EZ	Angle bracket and 3" cover plate	Above any ceiling
270-315	Cup and 2.25" threaded cap	Higher security cover
270-315BC	Cup, 2.25" threaded cap & 3" cover plate	Embedded in a Sheetrock ceiling
270-896	"C" bracket, screw cap 1" head	Embedded in a Sheetrock ceiling
4-Port	Four Position Balancing Station	Bring all of the cables for an area to one place
Ceiling Terminations	Description	Application
270-302	Cup and Cover plate - wall mount	Embedded in a plastered wall
270-700	4x4 box with Stainless Cover and attractive adjustment knob	Wall mount "Manual Thermostat"
270-896L0	"C" bracket, screw cap 1" head - Wall mount	Embedded in a plastered wall
B-Kits	Shaft Size	Application
270-XXXB	1/2" round or 3/8" square shafts	Dampers by Others
270-XXXQ	5/16" round or 1/4" square shafts	Dampers by Others

**Ceiling Terminations  
Bowden Cable Controls**



270-275



270-275PH

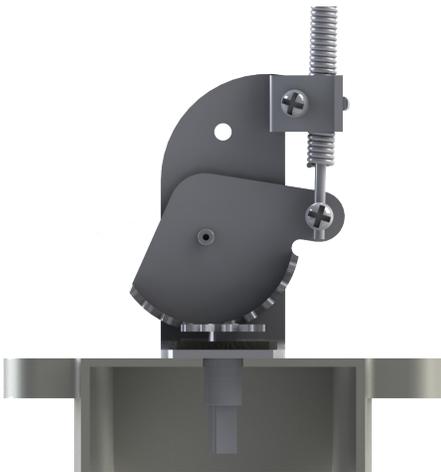


270-275ML

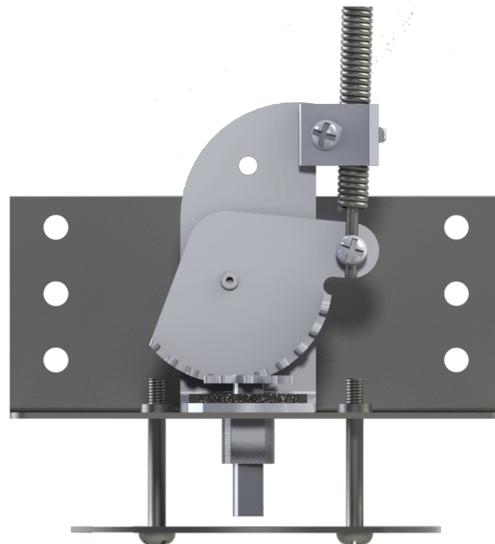


270-896

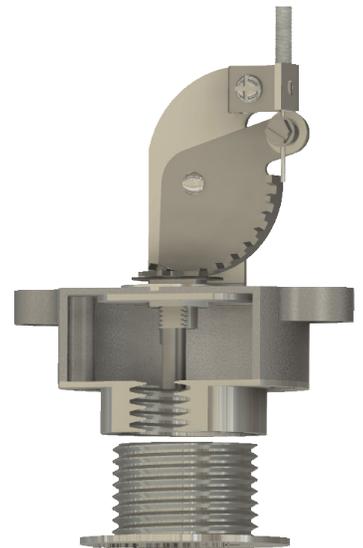
270-301 Cutaway



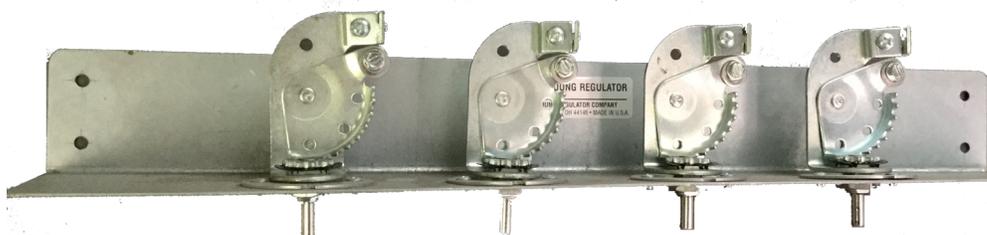
270-301EZ



270-315 Cutaway



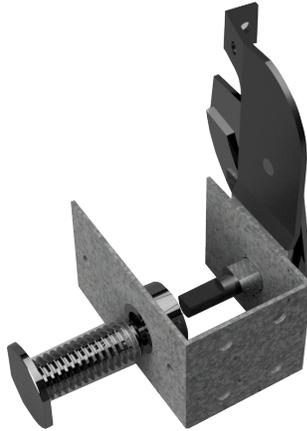
4-Port Balancing Station



## Wall Terminations Bowden Cable Controls



270-302 Wall Cup and Cover



270-896L0 Wall Controller



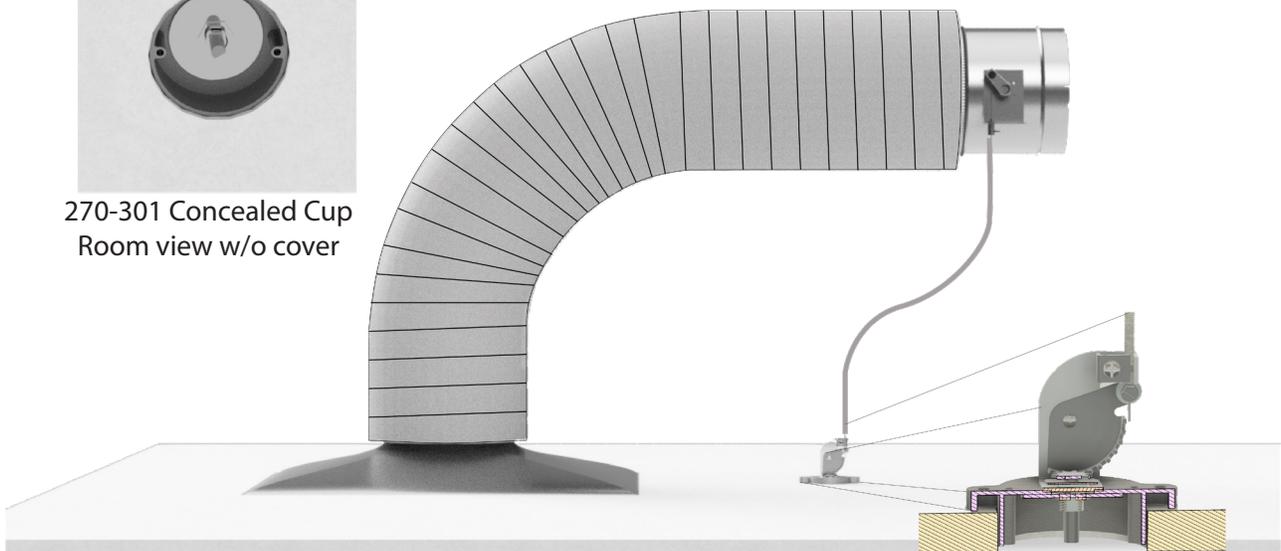
270-700 "Manual Thermostat"  
with 5020CC

Damper Family	Description	Direction of Operation
5020CC	Round Exterior Bowden	Push to Close
5020CC2	Round Interior Bowden	Push to Open
820ACC	OBD Bottom mount Bowden	Push to Close
830ACC	OBD Exterior Shaft Bowden	Push to Close

## Bowden Cable Controls Functional Drawing



270-301 Concealed Cup  
Room view w/o cover



Inset 270-301 Section View