



2021 CATALOG

# 1000 SERIES VALVES & TWIG® WIRELESS CONTROLS





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23 First Generation TWIG®

# A PERFECT MATCH

Each component of an irrigation system, including how it's operated, plays a vital role in raising a healthy crop. That's why we've engineered the industry's most efficient and accurate valves, the 1000 Series, and paired them with reliable TWIG® wireless controls to bring you the most hydraulically advanced yet operationally simple irrigation system available.

# TWIG®

the most **reliable**  
wireless controls





# 1000

S E R I E S

the most **efficient**  
**& accurate** valves



# 1000

## S E R I E S

### EFFICIENT - ACCURATE - RELIABLE

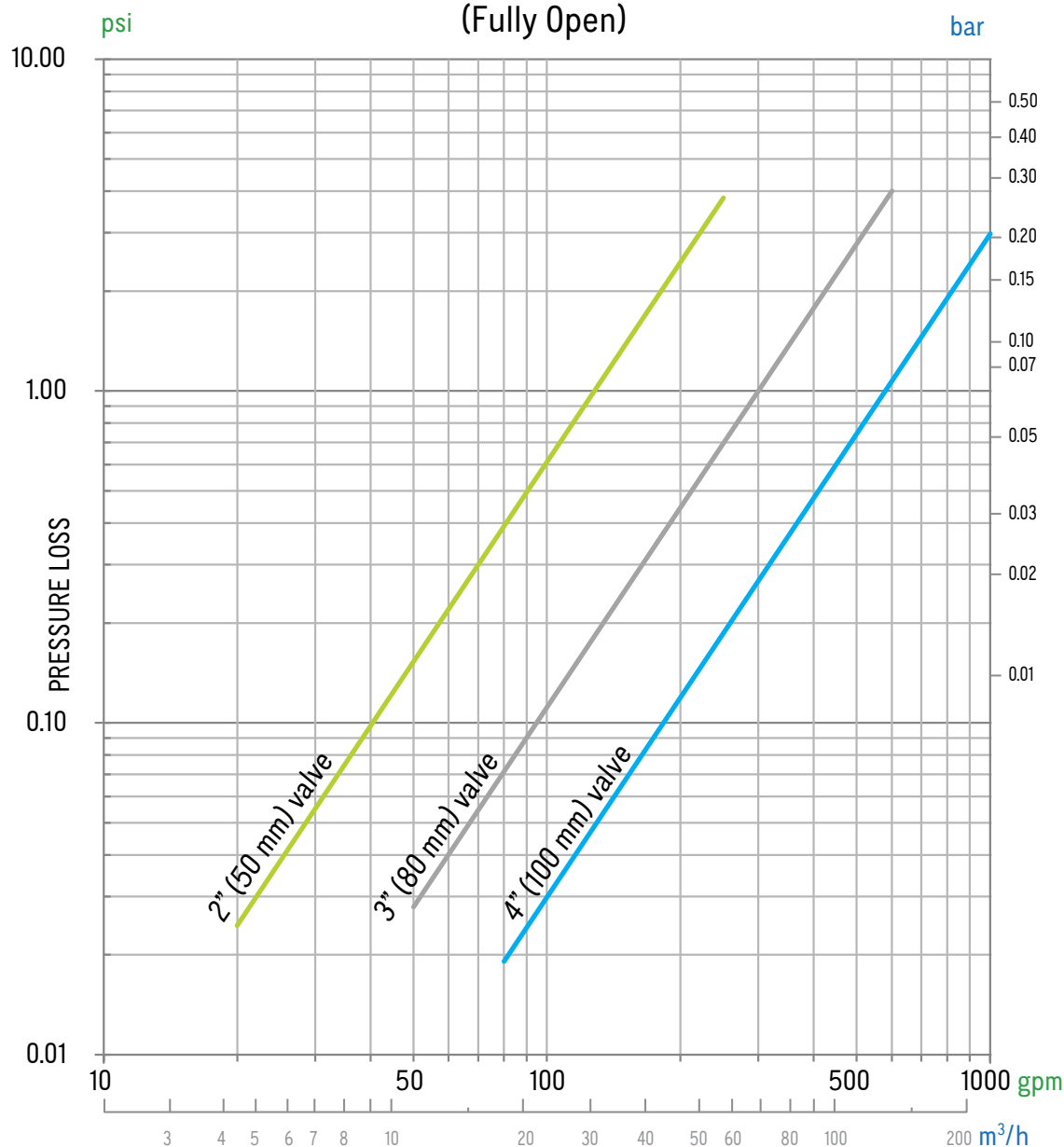
The 1000 Series is geared to handle tough agricultural environments. High flow capacity and a modular design provide ultimate flexibility in valve style and connection type while simplifying installation, troubleshooting and maintenance —great for the grower, installer and system designer!



# Pressure Loss Data

## 1000 Series Inline Valves

(Fully Open)



|             | <b>Cv</b><br>(gpm @ 1 psi loss) | <b>Kv</b><br>(m³/hr @ 1 bar loss) |
|-------------|---------------------------------|-----------------------------------|
| 2" (50 mm)  | 130                             | 112                               |
| 3" (80 mm)  | 300                             | 259                               |
| 4" (100 mm) | 580                             | 501                               |

$$\text{Pressure Loss (psi)} = \frac{\text{Flow (gpm)}^2}{Cv^2}$$

$$\text{Pressure Loss (bar)} = \frac{\text{Flow (m}^3/\text{h)}^2}{Kv^2}$$

# 1000 SERIES

TO ORDER: Select one option from each of the seven sections to build the valve description code.

| SECTION     | 1. SIZE              | 2. STYLE   | 3. PRESSURE        | 4. CONNECTIONS | 5. ON/OFF CONTROL    | 6. PRESSURE CONTROL        | 7. FILTER       |
|-------------|----------------------|------------|--------------------|----------------|----------------------|----------------------------|-----------------|
| CODE        | <b>1000V2</b>        | <b>INL</b> | <b>MED</b>         | <b>B03</b>     | <b>E01</b>           | <b>R60</b>                 | <b>H3</b>       |
| DESCRIPTION | 1000 Series 2" Valve | Inline     | Medium (18-80 psi) | 2" PVC Socket  | Manual Selector Only | Pressure Reducing 5-60 psi | Internal Filter |

| 1. SIZE       |      |
|---------------|------|
| CODE          | SIZE |
| <b>1000V2</b> | 2"   |
| <b>1000V3</b> | 3"   |
| <b>1000V4</b> | 4"   |

| 2. STYLE    |                |
|-------------|----------------|
| CODE        | STYLE          |
| <b>INL</b>  | Inline         |
| <b>BGV</b>  | Big Gun® Valve |
| <b>TEE*</b> | Tee            |
| <b>ELB*</b> | Elbow          |

\*Tee and Elbow in 2" only

| 3. PRESSURE |                    |
|-------------|--------------------|
| CODE        | OPERATING PRESSURE |
| <b>LO</b>   | Low (10-40 psi)    |
| <b>MED</b>  | Medium (18-80 psi) |
| <b>HI</b>   | High (30-150 psi)  |

| 4. CONNECTIONS            |                                      |
|---------------------------|--------------------------------------|
| CODE                      | CONNECTIONS                          |
| CONNECTIONS FOR 2" VALVES |                                      |
| <b>B01</b>                | None (wafer only, no stud kit)       |
| <b>B02</b>                | 2" FNPT (metal)                      |
| <b>B03</b>                | 2" PVC Socket                        |
| <b>B04</b>                | Wafer 3x2x3 (no stud kit)            |
| <b>B05</b>                | 2" Victaulic                         |
| <b>B06</b>                | 3" Victaulic (3x2x3)                 |
| <b>B08</b>                | 2" FNPT (plastic)                    |
| <b>B09</b>                | 3" OD Spline (Certa-Set)             |
| <b>B11</b>                | 1.5" FNPT                            |
| <b>B14</b>                | 2" FBSP (Plastic)                    |
| <b>B16</b>                | 3" PVC Socket (3x2x3)                |
| <b>B17</b>                | Wafer w/stud kit for 2" flanges      |
| <b>B19</b>                | Wafer w/stud kit for 75/100 Big Gun® |
| <b>B21</b>                | Wafer 3x2x3 w/stud kit               |
| CONNECTIONS FOR 3" VALVES |                                      |
| <b>B01</b>                | None (wafer only, no stud kit)       |
| <b>B15</b>                | 3" PVC Socket                        |
| <b>B18</b>                | Wafer w/stud kit for 3" flanges      |
| <b>B20</b>                | Wafer w/stud kit for 150 Big Gun®    |
| <b>B22</b>                | Wafer 4x3x4 w/stud kit               |
| <b>B23</b>                | Wafer 4x3x4 (no stud kit)            |
| <b>B24</b>                | 3" Victaulic                         |
| <b>B25</b>                | 4" PVC Socket (4x3x4)                |
| <b>B33</b>                | 4" Victaulic (4x3x4)                 |
| <b>B36</b>                | 3" FNPT (metal)                      |
| <b>B37</b>                | 3" FBSP (metal)                      |
| CONNECTIONS FOR 4" VALVES |                                      |
| <b>B01</b>                | None (wafer only, no stud kit)       |
| <b>B26</b>                | 4" PVC Socket                        |
| <b>B27</b>                | Wafer w/stud kit for 4" flanges      |
| <b>B29</b>                | Wafer 6x4x6 w/stud kit               |
| <b>B30</b>                | Wafer 6x4x6 (no stud kit)            |
| <b>B31</b>                | 6" PVC Socket (6x4x6)                |
| <b>B32</b>                | 4" Victaulic                         |

## PROTECT CONTROL TUBING FROM DAMAGE CAUSED BY COYOTES AND OTHER ANIMALS.

Available on any valve configuration by selecting option H4 (external filter with tubing protection) or H5 (internal filter with tubing protection)



| 5. ON/OFF CONTROLS* |  |                  |                   |
|---------------------|--|------------------|-------------------|
| CODE                | ON/OFF CONTROL                         | CODE             | SINGLE/DUAL CTRL. |
| E00                 | None                                   | Tee Valves Only: |                   |
| E01                 | Manual Selector Only                   | -1               | Single Control    |
| E11*                | Manual Sel. w/E11 Solenoid - 12VDC, NC | -2               | Dual Control      |
| E21                 | Manual Sel. w/E21 Sol. - 12VDC, 1.6 mm |                  |                   |
| E23                 | Manual Sel. w/E23 Solenoid - DC Lat.   |                  |                   |
| E29                 | Manual Sel. w/E29 Solenoid - DC Lat.   |                  |                   |
| E31                 | Manual Sel. w/E31 Window+ Controller   |                  |                   |
| E34                 | Manual Sel. w/E34 Solenoid - 24VDC     |                  |                   |
| E40                 | Manual Sel. w/E40 Solenoid - 24VAC     |                  |                   |
| E43                 | Manual Sel. w/E43 Solenoid - 24VAC     |                  |                   |
| E46                 | Manual Sel. w/E46 Solenoid - 24VAC     |                  |                   |
| E50                 | Manual Sel. w/E50 Solenoid - 120VAC    |                  |                   |
| E53                 | Manual Sel. w/E53 Solenoid - 110VAC    |                  |                   |

| 6. PRESSURE CONTROL |            |
|---------------------|------------|
| CODE                | ADJ. RANGE |
| PRESSURE REDUCING   |            |
| R0                  | None       |
| R30                 | 5-30 psi   |
| R60                 | 5-60 psi   |
| R120                | 10-120 psi |
| PRESSURE SUSTAINING |            |
| S0                  | None       |
| S60                 | 5-60 psi   |
| S120                | 10-120 psi |

| 7. FILTER                   |                 |
|-----------------------------|-----------------|
| CODE                        | FILTER          |
| H0                          | None            |
| H2                          | External Filter |
| H3                          | Internal Filter |
| FILTER W/ TUBING PROTECTION |                 |
| H4                          | External Filter |
| H5                          | Internal Filter |

\*Contact factory for full solenoid specifications.

\*Normally closed solenoid for pressure sustaining,  
normally open valve ("PSNO") applications at filter stations

Nelson Control Valves come standard normally closed. Use the following codes to specify special solenoid plumbing logic.

| OPTIONAL SOLENOID LOGIC |                 |              |                        |                 |              |                      |                 |              |                                 |                 |                     |
|-------------------------|-----------------|--------------|------------------------|-----------------|--------------|----------------------|-----------------|--------------|---------------------------------|-----------------|---------------------|
| SOLENOID ONLY           |                 |              | SUSTAINING W/ SOLENOID |                 |              | REDUCING W/ SOLENOID |                 |              | SUSTAINING/REDUCING W/ SOLENOID |                 |                     |
| CODE                    | SOLENOID STATUS | VALVE STATUS | CODE                   | SOLENOID STATUS | VALVE STATUS | CODE                 | SOLENOID STATUS | VALVE STATUS | CODE                            | SOLENOID STATUS | VALVE STATUS        |
| L01*                    | Energized       | Open         | L03                    | Energized       | Sustaining   | L07*                 | Energized       | Reducing     | L09                             | Energized       | Sustaining-Reducing |
|                         | De-energized    | Closed       |                        | De-energized    | Closed       |                      | De-energized    | Closed       |                                 | De-energized    | Closed              |
| L02                     | Energized       | Closed       | L04*                   | Energized       | Sustaining   | L08                  | Energized       | Closed       | L10                             | Energized       | Sustaining          |
|                         | De-energized    | Open         |                        | De-energized    | Open         |                      | De-energized    | Reducing     |                                 | De-energized    | Reducing            |
|                         |                 |              | L05                    | Energized       | Closed       | L13                  | Energized       | Reducing     | L11                             | Energized       | Reducing            |
|                         |                 |              |                        | De-energized    | Sustaining   |                      | De-energized    | Open         |                                 | De-energized    | Sustaining          |
|                         |                 |              | L06                    | Energized       | Open         | L14                  | Energized       | Open         | L12                             | Energized       | Open                |
|                         |                 |              |                        | De-energized    | Sustaining   |                      | De-energized    | Reducing     |                                 | De-energized    | Sustaining-Reducing |

\*Standard

\*Pressure Sustaining normally-open valve ("PSNO") for applications at filter stations.      \*Standard

# ► SOLID SET BIG GUN® VALVES

See page 12 for End Gun Valves.

## 2" (50 mm) & 3" (80 mm) Big Gun® Valves

TWIG®-READY 1000 SERIES BIG GUN® VALVE  
with 12-40VDC latching solenoid (E23), high pressure (30-150 psi)  
sleeve, and stud kit for ANSI Big Gun®

| ANSI Big Gun®    | Valve Size | Filter          | Valve Part Number |
|------------------|------------|-----------------|-------------------|
| 75 or 100 Series | 2"         | Internal Filter | 12255-0167        |
|                  |            | External Filter | 12255-0163        |
| 150 Series       | 3"         | Internal Filter | 12239-0152        |
|                  |            | External Filter | 12239-0041        |

See pages 6-7 to configure other options.

See pages 18-23 for TWIG® pricing.

THREADED FLANGE:

2" FNPT - 10356PV

2" FBSP - 12940

3" FNPT - 13233-001

3" FBSP - 13233-002

## SOLID SET BIG GUN® IRRIGATION REINVENTED

Easier and more efficient than ever before by combining TWIG® automation  
with 1000 Series Control Valves directly under an ANSI Big Gun®.





## ► TEE & ELBOW VALVES

### 2" (50 mm) Tee and Elbow Valves

3" Certa-Lok Inlet x 3" Certa-Set Outlet(s) - Includes Splines

(See pages 6-7 to configure other options.)

#### TWIG®-READY TEE & ELBOW VALVES

Electric on/off with manual selector(s) and solenoid(s) as indicated below. 30-150 psi (2.1-10.3 bar), w/ 3" OD spline (Certa-Set) outlet(s) and internal filter.

| VALVE WITH SOLENOID             | Part Number |
|---------------------------------|-------------|
| <b>Elbow Valve</b>              |             |
| E23 Solenoid (9/12VDC latch)    | 12217-0004  |
| E29 Solenoid (12-40VDC latch)   | 12217-0007  |
| <b>Single Control Tee Valve</b> |             |
| E23 Solenoid (9/12VDC latch)    | 11614-0014  |
| E29 Solenoid (12-40VDC latch)   | 11614-0011  |
| <b>Dual Control Tee Valve</b>   |             |
| E23 Solenoids (9/12VDC latch)   | 11614-0008  |
| E29 Solenoids (12-40VDC latch)  | 11614-0010  |

#### MANUAL ON/OFF TEE & ELBOW VALVES

30-150 psi (2.1-10.3 bar), w/ 3" OD Spline (Certa-Set) Outlet, Manual Selector(s) & Internal Filter

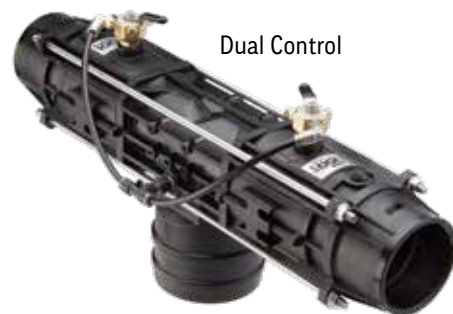
| VALVE                    | Part Number |
|--------------------------|-------------|
| Elbow Valve              | 12217-0001  |
| Single Control Tee Valve | 11614-0001  |
| Dual Control Tee Valve   | 11614-0004  |



Elbow



Single Control



Dual Control

# ► MANUAL & TWIG® READY INLINE VALVES

**ELECTRIC ON/OFF VALVES** are used to open or close a valve electrically. They are commonly used to automate zone control. Common configurations are shown below. Other options available. (See pages 6-7.)

## TWIG®-READY ELECTRIC ON/OFF INLINE VALVES

9-12VDC latching solenoid (E23), medium sleeve (18-80 psi), and internal filter.

| Size | Connections            | Part Number |
|------|------------------------|-------------|
| 2"   | (B03) 2" PVC Socket    | 12255-0360  |
|      | (B16) 3" PVC Socket    | 12255-0325  |
| 3"   | (B15) 3" PVC Socket    | 12239-0139  |
|      | (B25) 4" PVC Socket    | 12239-0324  |
| 4"   | (B26) 4" PVC Socket    | 12531-0205  |
|      | (B27) Wafer w/stud kit | 12531-0206  |
|      | (B31) 6" PVC Socket    | 12531-0368  |



**PRESSURE REDUCING VALVES** accurately maintain a constant downstream pressure regardless of changing flow rate or pressure. Nelson pressure reducing valves are the most accurate in the industry and regulate across a wide flow range. Common configurations are shown below. Other options available. (See pages 6-7.)

## TWIG®-READY ELECTRIC ON/OFF, PRESSURE REDUCING (5-60 PSI) INLINE VALVES

9-12VDC latching solenoid (E23), medium sleeve (18-80 psi), and internal filter.

| Size | Connections            | Part Number |
|------|------------------------|-------------|
| 2"   | (B03) 2" PVC Socket    | 12255-0363  |
|      | (B16) 3" PVC Socket    | 12255-0328  |
| 3"   | (B15) 3" PVC Socket    | 12239-0107  |
|      | (B25) 4" PVC Socket    | 12239-0252  |
| 4"   | (B26) 4" PVC Socket    | 12531-0080  |
|      | (B27) Wafer w/stud kit | 12531-0023  |
|      | (B31) 6" PVC Socket    | 12531-0325  |



## MANUAL ON/OFF, PRESSURE REDUCING (5-60 PSI) INLINE VALVES

Manual selector, medium sleeve (18-80 psi), and internal filter.

| Size | Connections            | Part Number |
|------|------------------------|-------------|
| 2"   | (B03) 2" PVC Socket    | 12255-0361  |
|      | (B16) 3" PVC Socket    | 12255-0326  |
| 3"   | (B15) 3" PVC Socket    | 12239-0095  |
|      | (B25) 4" PVC Socket    | 12239-0200  |
| 4"   | (B26) 4" PVC Socket    | 12531-0004  |
|      | (B27) Wafer w/stud kit | 12531-0061  |
|      | (B31) 6" PVC Socket    | 12531-0194  |





## ► PRESSURE SUSTAINING & COMBO VALVES

**PRESSURE SUSTAINING VALVES** are closed until the upstream pressure exceeds the set point on the control pilot, then open to relieve pressure as required. They are often used as relief valves to prevent damage to system components, or downstream of filter stations to provide adequate backflush pressure. Common configurations are shown below. Other options available. (See pages 6-7.)

### PRESSURE SUSTAINING (5-60 PSI) INLINE VALVES

Manual selector, medium sleeve (18-80 psi), and internal filter.

| Size | Connections            | Part Number |
|------|------------------------|-------------|
| 2"   | (B03) 2" PVC Socket    | 12255-0364  |
|      | (B16) 3" PVC Socket    | 12255-0329  |
| 3"   | (B15) 3" PVC Socket    | 12239-0140  |
|      | (B25) 4" PVC Socket    | 12239-0238  |
| 4"   | (B26) 4" PVC Socket    | 12531-0047  |
|      | (B27) Wafer w/stud kit | 12531-0175  |
|      | (B31) 6" PVC Socket    | 12531-0369  |



**COMBINATION PRESSURE SUSTAINING/REDUCING VALVES** combine the functions of the pressure sustaining and pressure reducing in one valve. They are often used to prevent system drain-down in undulating terrain, or downstream of filter stations to automatically transition between supplying adequate backflush pressure and regulating downstream pressure. Common configurations are shown below. Other options available. (See pages 6-7.)

### PRESSURE SUSTAINING (5-60 PSI) & PRESSURE REDUCING (5-60 PSI) INLINE VALVES

Manual selector, medium sleeve (18-80 psi), and internal filter.

| Size | Connections            | Part Number |
|------|------------------------|-------------|
| 2"   | (B03) 2" PVC Socket    | 12255-0365  |
|      | (B16) 3" PVC Socket    | 12255-0330  |
| 3"   | (B15) 3" PVC Socket    | 12239-0141  |
|      | (B25) 4" PVC Socket    | 12239-0277  |
| 4"   | (B26) 4" PVC Socket    | 12531-0036  |
|      | (B27) Wafer w/stud kit | 12531-0026  |
|      | (B31) 6" PVC Socket    | 12531-0370  |



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## ► PIVOT POINT CONTROL VALVES

**PIVOT POINT CONTROL VALVES** open and close at the command of the pivot point, making pivot automation possible by eliminating trips to the pivot point to start and stop the pivot. The high flow capacity of the 4" valve together with the 6x4x6 flange adapter kit saves money by allowing the use of a smaller valve that fits easily within 6" flanges. Common configurations are shown below. Other options available. (See pages 6-7.)

Manual selector with E50 solenoid (120 VAC, 1.6mm), high sleeve (30-150 psi), and H5 internal filter with tubing protection.

| Size | Connections                  | Reducing   | Part Number |
|------|------------------------------|------------|-------------|
| 4"   | (B27) Wafer w/stud kit       | No         | 12531-0382  |
|      | (B29) Wafer 6x4x6 w/stud kit | No         | 12531-0251  |
| 4"   | (B27) Wafer w/stud kit       | 10-120 psi | 12531-0383  |
|      | (B29) Wafer 6x4x6 w/stud kit | 10-120 psi | 12531-0384  |



## ► END OF PIVOT VALVES FOR SR75 & SR100

### 1000P – 2” (50 mm) Pivot End Gun Valve (Booster Pump Controlled – no solenoid required)

| Model   | Description                                   | PN (18-80 psi) |
|---|---|----------------|
| <b>STANDARD</b> — FOR ALL PIVOT BRANDS EXCEPT VALLEY (includes ball drain/vent, 2 rubber drains (#9800 and #9800-100PV), and 1/4” tube fitting) |   |                |
| <b>1000P</b>  | Valve   | 12254-0007     |
|   | Valve with Stud Kit                           | 12254-0001     |
| <b>FOR VALLEY PIVOTS</b> (includes ball drain/vent, 1 rubber drain (#9800), and two 1/4” tube fittings)   |   |                |
| <b>1000P-V</b>  | Valve with Stud Kit and 2” FNPT Metal Flanges | 12254-0013     |

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#### 1000P

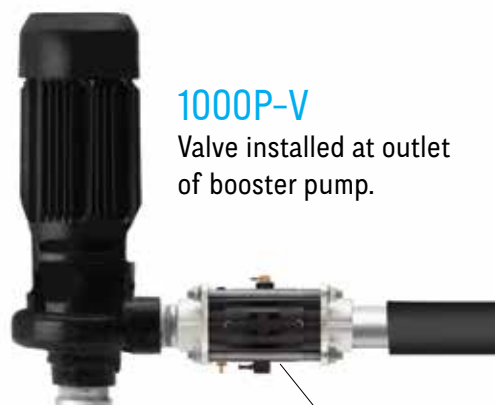
Valve installed directly below ANSI-flanged Big Gun®. Order lower 2” metal flange (#10356PV) separately.



#10753PV – Ball Vent Kit for 1000P (included)



Rubber Drain (included)



#### 1000P-V

Valve installed at outlet of booster pump.

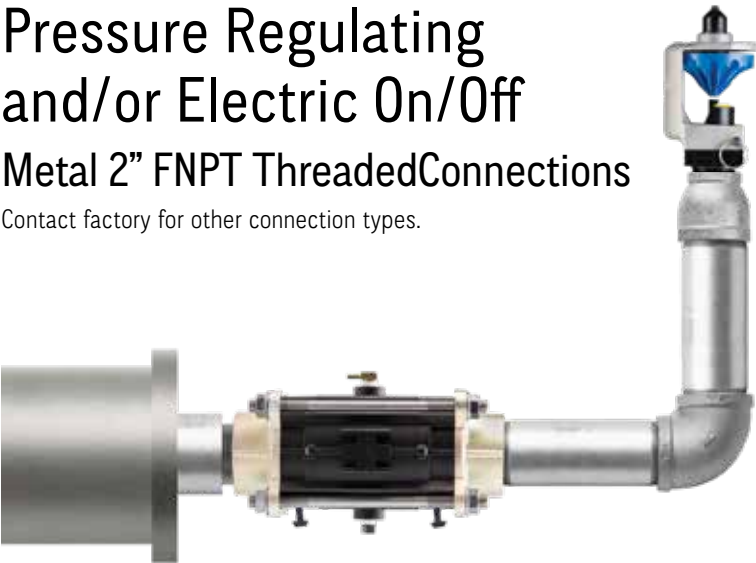




► **END OF PIVOT VALVES FOR R55 & R75**

1000P – 2” (50 mm) End of Pivot  
Pressure Regulating  
and/or Electric On/Off  
Metal 2” FNPT Threaded Connections

Contact factory for other connection types.



| Model     | Valve Function  | Internal Filter | Rubber Drains QTY 2 | On/off             | Press. Reg. Adjust. Range (psi) | Part Number |
|-----------|---|-----------------|---------------------|--------------------|---------------------------------|-------------|
| 1000P-R   | Pressure regulating only. No on/off control.                                      | ✓               | ✓                   | -                  | 5-60                            | 12254-0036  |
| 1000P-X*  | Electric on/off by solenoid located at pivot tower box*.                          | -               | ✓                   | solenoid at tower* | -                               | 12254-0037  |
| 1000P-RX* | Pressure regulating with electric on/off by solenoid located at pivot tower box*. | ✓               | ✓                   | solenoid at tower* | 5-60                            | 12254-0038  |

\*1000P-X and 1000P-RX models have electric on/off capability, but do not include a solenoid. The solenoid is provided by others and typically is located at the last tower on the pivot.



1000P-R



1000P-X



1000P-RX

## ► BASE VALVE PARTS

| Description            | 2" Valve    | 3" Valve    | 4" Valve    |
|------------------------|-------------|-------------|-------------|
|                        | Part Number | Part Number | Part Number |
| Base Valve, 10-40 psi  | 12255-0001  | 12239-0090  | 12531-0001  |
| Base Valve, 18-80 psi  | 12255-0002  | 12239-0001  | 12531-0002  |
| Base Valve, 30-150 psi | 12255-0003  | 12239-0091  | 12531-0003  |
| Sleeve, 10-40 psi      | 11624-002   | 11909-002   | 12516-002   |
| Sleeve, 18-80 psi      | 11624-003   | 11909-003   | 12516-003   |
| Sleeve, 30-150 psi     | 11624-001   | 11909-001   | 12516-001   |
| Spacer Assy.           | 12236       | 12349       | 12528       |
| Cage/Barrier Assy.     | 11630       | 12348       | 12529       |
| O-Ring                 | 12352       | 9484PV      | 11416PV     |
| Jacket                 | 12767       | 12766       | 13109       |



## ► SOLENOIDS

### 3-Way Solenoid Specifications

(For Electric On/Off choose from DC, DC Latching or AC Solenoids.)

| Model # | Manu-<br>facturer | Voltage <sup>1</sup>         | Inrush<br>Amps | Hold-<br>ing<br>Amps | Resis-<br>tance<br>(ohm) | Watts | Inlet Orifice     | Electrical<br>Connection | Solenoid<br>Only Part<br>Number | Kit<br>Part<br>Number* |
|---------|-------------------|------------------------------|----------------|----------------------|--------------------------|-------|-------------------|--------------------------|---------------------------------|------------------------|
| E11     | GEM-SOL           | 12 VDC,<br>normally closed** | -              | 0.83                 | 14.3                     | 10    | 1/16"<br>(1.6 mm) | 1/2" FNPT<br>w/Leads     | 7510-011                        | 12575-011              |
| E21     | PARKER            | 12 VDC                       | -              | 0.6                  | 20                       | 8     | 1/16"<br>(1.6 mm) | 1/2" FNPT<br>w/Leads     | 7510-001                        | 12575-021              |
| E23     | BACCARA           | 9/12 VDC Lat                 | -              | -                    | 4.2                      | 3     | 3/64"<br>(1.2 mm) | >12" Leads               | 7510-052                        | 12575-023              |
| E29     | —                 | 12-40 VDC Lat                | -              | -                    | -                        | -     | 5/64"<br>(2.0 mm) | 47" Leads                | 7510-029                        | 12575-029              |
| E31     | BACCARA           | 18-21 VDC Lat                | -              | -                    | 23                       | 3     | 3/64"<br>(1.2 mm) | Window+<br>Controller    | 7510-053                        | 11253-003              |
| E34     | BACCARA           | 24 VDC                       | 0.125          | 0.125                | 119                      | 3     | 3/64"<br>(1.2 mm) | >12" Leads               | 7510-054                        | 12575-034              |
| E40     | GEM-SOL           | 24 VAC                       | 0.15           | 0.15                 | -                        | 2.5   | 1/16"<br>(1.6 mm) | 1/2" FNPT<br>w/Leads     | 7510-015                        | 12575-040              |
| E43     | BACCARA           | 24 VAC                       | 0.125          | 0.125                | -                        | 3     | 3/64"<br>(1.2 mm) | >12" Leads               | 7510-050                        | 12575-043              |
| E46     | GEM-SOL           | 24 VAC                       | 0.8            | 0.43                 | 9                        | 5.5   | 1/16"<br>(1.6 mm) | 1/2" FNPT<br>w/Leads     | 7510-016                        | 12575-046              |
| E50     | PARKER            | 120 VAC                      | 0.2            | 0.1                  | 184                      | 8     | 1/16"<br>(1.6 mm) | 1/2" FNPT<br>w/Leads     | 7510-004                        | 12575-050              |
| E53     | GEM-SOL           | 110 VAC                      | 0.15           | 0.11                 | 230                      | 5.5   | 1/16"<br>(1.6 mm) | 1/2" FNPT<br>Plug-In     | 7510-051                        | 12575-053              |



\*Solenoid kits include mounting clip and all necessary fittings/parts for retrofitting an existing 1000 Series valve.

\*\*E11 solenoid is normally closed, used for logic L02, L04, L05, and L08.



# ► PRESSURE CONTROL

## Accurate and Easy

Nelson Irrigation's pressure control pilot is engineered and tuned to the unique geometry of the 1000 Series valve, resulting in the most accurate pressure control valves in the industry. And the convenient labels make setting the pressure and connecting the tubes easy for just about anyone.

| Function   | Adjustment Range | For 2" Valves <sup>1</sup> |             | For 3" and 4" Valves <sup>2</sup> |             |
|------------|------------------|----------------------------|-------------|-----------------------------------|-------------|
|            |                  | Pilot Part #               | Kit* Part # | Pilot Part #                      | Kit* Part # |
| Reducing   | 5-30 psi         | 12342-009                  | 12262-006   | 12342-003                         | 12262-003   |
| Reducing   | 5-60 psi         | 12342-007                  | 12262-004   | 12342-001                         | 12262-001   |
| Reducing   | 10-120 psi       | 12342-008                  | 12262-005   | 12342-002                         | 12262-002   |
| Sustaining | 5-60 psi         | 12342-010                  | 12262-010   | 12342-004                         | 12262-007   |
| Sustaining | 10-120 psi       | 12342-011                  | 12262-011   | 12342-005                         | 12262-008   |

1. Pressure control pilot for 2" valves contains a bushing with 1 hole (hex retainer painted gray).

2. Pressure control pilot for 3" and 4" valves contains a bushing with 4 holes (hex retainer is brass, unpainted).

\*Kit includes mounting clip and all necessary fittings/parts for retrofitting an existing Nelson 1000 Series Valve.



**PRESSURE CONTROL KIT**  
(See table for part number.)

**ADJUSTMENT CAP**  
Fine-tune the pressure by hand; no tools required.

**ADJUSTMENT LABEL**  
Simplifies setting the regulated pressure before installation.

**FUNCTION LABEL**  
Clearly marked ports make plumbing easy.



**PRESSURE CONTROL PILOT**  
(See table for part number.)

**SENSITIVITY BUSHING**  
Engineered to valve size, and easily replaceable to customize performance for unique hydraulic conditions.

# ► CONNECTIONS & STUD KITS

| Code                      | Connection Type                        | Connection Part Number | Stud Dia.                      | Stud Length     | Nuts (Qty) | Stud Kit Part Number |
|---------------------------|--|------------------------|--------------------------------|-----------------|------------|----------------------|
| CONNECTIONS FOR 2" VALVES |  |                        | STUD KITS FOR 2" INLINE VALVES |                 |            |                      |
| B02                       | 2" FNPT (metal)                        | 10356PV                | 1/2" (12 mm)                   | 8.25" (210 mm)  | 8          | 10142-101            |
| B03                       | 2" PVC Socket                          | 12334                  | 1/2" (12 mm)                   | 9.75" (248 mm)  | 8          | 10142-102            |
| B04                       | Wafer 3x2x3 (no stud kit)              | 12167                  | -                              | -               | -          | -                    |
| B05                       | 2" Victaulic                           | 12165                  | 5/16" (8 mm)                   | 7.5" (190 mm)   | 8          | 12264-002            |
| B06                       | 3" Victaulic (3x2x3)                   | 12163                  | 5/16" (8 mm)                   | 7.5" (190 mm)   | 8          | 12264-002            |
| B08                       | 2" FNPT (plastic)                      | 12156                  | 5/16" (8 mm)                   | 7.5" (190 mm)   | 8          | 12264-002            |
| B09                       | 3" OD Spline (Certa-Set)               | 11635                  | 5/16" (8 mm)                   | 7.5" (190 mm)   | 8          | 12264-002            |
| B14                       | 2" FBSP (plastic)                      | 12475                  | 5/16" (8 mm)                   | 7.5" (190 mm)   | 8          | 12264-002            |
| B16                       | 3" PVC Socket (3x2x3 adapter)          | 12489<br>12167         | 1/2" (12 mm)                   | 10.75" (273 mm) | 8          | 10142-103            |
| B17                       | Wafer w/stud kit for 2" flanges        | -                      | 1/2" (12 mm)                   | 9.75" (248 mm)  | 8          | 10142-102            |
| B19                       | Wafer w/stud kit for 75/100 Big Gun®   | -                      | 1/2" (12 mm)                   | 8.25" (210 mm)  | 4          | 10142-001PV          |
| B21                       | Wafer 3x2x3 w/stud kit                 | 12167                  | 1/2" (12 mm)                   | 11.5" (292 mm)  | 8          | 10142-104            |
| CONNECTIONS FOR 3" VALVES |  |                        | STUD KITS FOR 3" INLINE VALVES |                 |            |                      |
| B15                       | 3" PVC Socket                          | 12489                  | 1/2" (12 mm)                   | 10.75" (273 mm) | 8          | 10142-103            |
| B18                       | Wafer w/stud kit for 3" flanges        | -                      | 1/2" (12 mm)                   | 11.5" (292 mm)  | 8          | 10142-104            |
| B20                       | Wafer w/stud kit for 150 Big Gun®      | -                      | 1/2" (12 mm)                   | 9.75" (248 mm)  | 4          | 10142-002PV          |
| B22                       | Wafer 4x3x4 w/stud kit                 | 12518                  | 1/2" (12 mm)                   | 12" (305 mm)    | 8          | 10142-105            |
| B23                       | Wafer 4x3x4 (no stud kit)              | 12518                  | -                              | -               | -          | -                    |
| B24                       | 3" Victaulic                           | 12785                  | 1/2" (12 mm)                   | 10.75" (273 mm) | 8          | 10142-103            |
| B25                       | 4" PVC Socket (4x3x4 adapter)          | 12515<br>12518         | 1/2" (12 mm)                   | 11.5" (292 mm)  | 8          | 10142-104            |
| B33                       | 4" PVC Victaulic (4x3x4 adapter)       | 12824<br>12518         | 1/2" (12 mm)                   | 11.5" (292 mm)  | 8          | 10142-104            |
| B36                       | 3" FNPT (metal)                        | 13233-001              | 1/2" (12 mm)                   | 9.75" (248 mm)  | 8          | 10142-102            |
| B37                       | 3" FBSP (metal)                        | 13233-002              | 1/2" (12 mm)                   | 9.75" (248 mm)  | 8          | 10142-102            |
| CONNECTIONS FOR 4" VALVES |  |                        | STUD KITS FOR 4" INLINE VALVES |                 |            |                      |
| B26                       | 4" PVC Socket                          | 12515                  | 1/2" (12 mm)                   | 11.5" (292 mm)  | 8          | 10142-104            |
| B27                       | Wafer w/stud kit for 4" flanges        | -                      | 1/2" (12 mm)                   | 12" (305 mm)    | 16         | 10142-205            |
| B29                       | Wafer 6x4x6 w/stud kit                 | 13217                  | 3/4" (19 mm)                   | 13.5" (343 mm)  | 16         | 8976PV               |
| B30                       | Wafer 6x4x6 (no stud kit)              | 13217                  | -                              | -               | -          | -                    |
| B31                       | 6" PVC Socket (6x4x6 adapter, plastic) | 13039<br>12991*        | 1/2" (12 mm)                   | 13.5" (343 mm)  | 16         | 10142-206            |
| B32                       | 4" Victaulic                           | 12824                  | 1/2" (12 mm)                   | 11.5" (292 mm)  | 8          | 10142-104            |

\*Only for use with PVC flanges; for metal flanges, use #13217 instead.

## Flange Adapter Kits

Cost-effective way of installing a Nelson 1000 Series valve in the next larger pipe size. (Includes stud kit and two flange adapters. The 6x4x6 kit also includes hardware to extend the manual selector above the studs.)



| Description                               | Stud Dia.    | Stud Length    | Nuts (QTY) | Part Number |
|---|--------------|----------------|------------|-------------|
| Stud Kit with 3x2x3 flange adapters       | 1/2" (12 mm) | 11.5" (292 mm) | 8          | 12323       |
| Stud Kit with 6x4x6 alum. flange adapters | 3/4" (19 mm) | 13.5" (343 mm) | 16         | 13065       |



# ► ACCESSORIES

## Fittings, Filters, Clips & Kits

| Part Description  | Part Number |
|---|-------------|
| <b>Mounting Clips</b>   |             |
| Solenoid to 2" & 3" valves  | 12637       |
| Solenoid to 4" Valve  | 12637-001   |
| Press. Control Pilot or External Filter to 2" & 3"                          | 12443       |
| Press. Control Pilot or External Filter to 4" valve                         | 12498       |
| <b>Filters</b>  |             |
| Internal Filter, 1/4" MNPT x 1/8" FNPT                                      | 11632       |
| External Filter Kit (2" & 3")   | 12454       |
| External Filter Kit (4")  | 12454-002   |
| <b>1/4" Plastic Tube Fittings</b>   |             |
| 1/4" Threaded Plug  | 12964       |
| Vent Restrictor, 1/4" barb  | 12818       |
| <b>Pressure Gauge</b>   |             |
| Gauge (specify range: 0-30psi = -001;<br>0-60 psi = -002; 0-100 psi = -003) | 8968-XXX    |
| Schrader Valve Chuck  | 10103       |
| <b>Spline Fittings</b>  |             |
| 3" IPS Spline x 3" IPS Male Slip  | 12482       |
| 3" IPS Spline x 3" IPS Female Slip  | 12495       |
| 3" IPS Spline x 3" MNPT (9" long)   | 12496       |
| 3" OD (Certa-Set) Spline x 3" Hose Barb                                     | 12359       |
| Spline  | 12347       |
| <b>Tubing Protection</b>  |             |
| Tubing Protection Kit   | 13038       |



4" jacket mounting design with improved clip is more secure yet easier to use.



12637 (to 2" and 3" valves)  
12637-001 (to 4" valves)  
Mounting Clip Assy  
for Solenoid



12443 (to 2" and 3" valves)  
12498 (to 4" valves)  
Mounting Clip for  
Pilot or External Filter



8968-XXX Pressure Gauge  
10103 Schrader Valve Chuck



12818  
Vent restrictor, 1/4" barb



12964  
1/4" threaded plug



11632  
Internal Filter



12454 External Filter Kit (2" & 3")  
12454-002 External Filter Kit (4")



12482  
3" IPS Spline  
(Certa-Lok) x 3"  
IPS Male Slip



12495  
3" IPS Spline  
(Certa-Lok) x 3"  
IPS Female Slip



12496  
3" IPS Spline  
(Certa-Lok) x 3"  
MNPT (9" long)



12359  
3" OD  
(Certa-Set) Spline  
x 3" Hose Barb



12347  
Spline



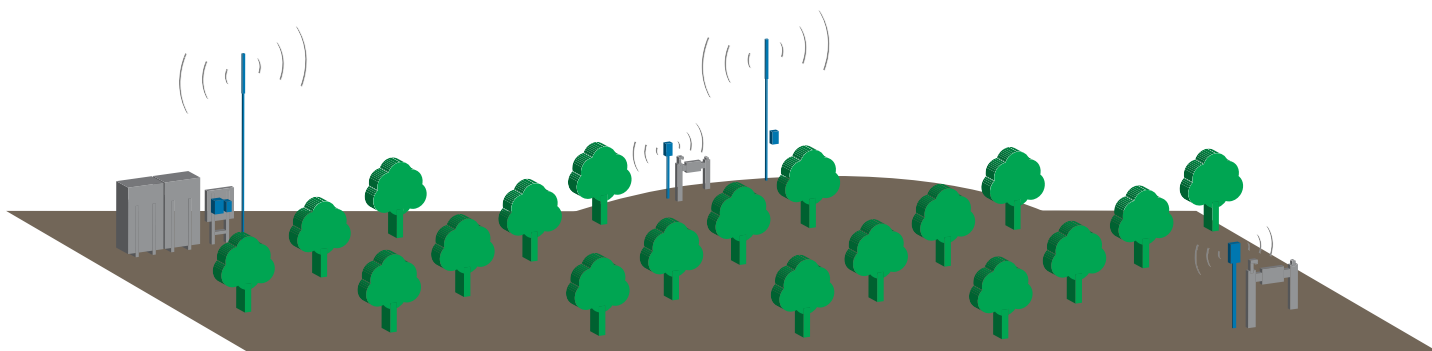
13038  
Tubing Protection Kit

## ► WIRELESS AUTOMATION

# TWIG®

### WIRELESS VALVE CONTROL YOU CAN TRUST.

Since 2014 Nelson Irrigation has offered TWIG® Wireless Controls for system automation. The purpose of the TWIG® system is simple – turn valves on and off in the most reliable way possible. It eliminates unnecessary features and troublesome wires that cause other systems to be quickly abandoned. The new TWIG-MC master controller brings remote, mobile control to both TWIG-V or first generation TWIG® devices.



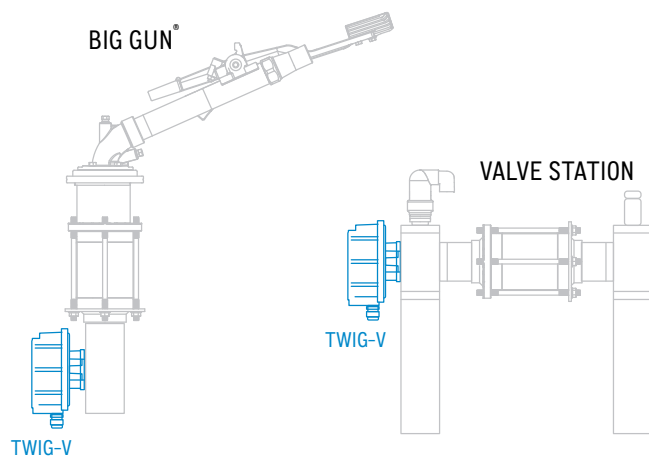
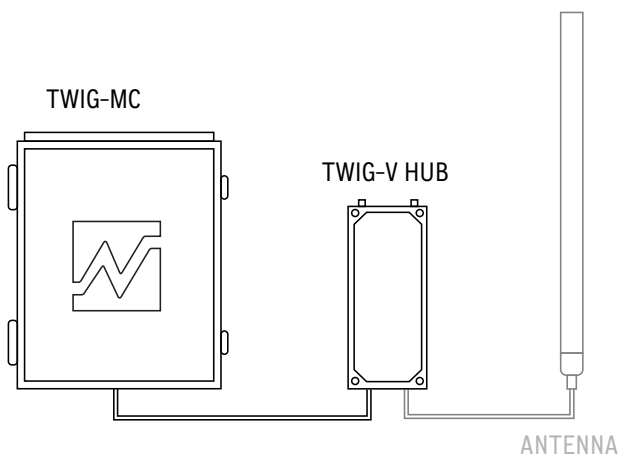
## 18 | TWIG-V Network Components

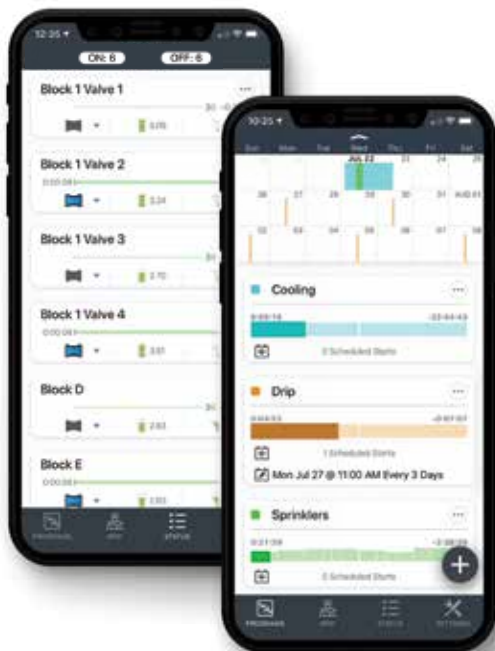
### MASTER CONTROLLER

Connect to the TWIG-MC master controller via Bluetooth® or over the internet to operate your irrigation system with your iOS or Android enabled tablet or phone. The TWIG-V Hub communicates via line-of-sight 900 MHz radio signal with the TWIG-V radios in the field.

### AUTOMATED IRRIGATION

The TWIG-V radios are connected to DC latching solenoid-operated valves and communicate with the TWIG-V Hub to turn valves on/off at the command of the TWIG-MC. Even portable systems can be automated thanks to the low-power design of the TWIG-V.





Remotely control and monitor your irrigation system from anywhere with our new TWIG Controller and mobile app.

Easily create watering schedules; edit by drag and drop; start, stop or pause a schedule; map irrigation blocks to verify field operation; and monitor pressure and flow.



## ► WIRELESS AUTOMATION

# TWIG

## HOW TO ORDER\*:

### **STEP 1** — CONTROLLER + HUB

- Select power option. (Order solar power kit if necessary.)
- Order antenna kit.

### **STEP 2** — TWIG® RADIO MODULES

- Specify internal or external antennas.
- Specify how many valves each TWIG® will control (1 or 2).

### **STEP 3** — REPEATER

If necessary to extend the range of the radio network.

- Select power option. (Order solar power kit if necessary.)
- Order antenna kit.



TWIG® Wireless Control products available in select countries. Go to TWIG FAQ at [nelsonirrigation.com](http://nelsonirrigation.com). Available to select dealers. Contact the factory for purchasing terms and conditions.

## ► TWIG® CONTROLLER

| Model                  | PartNumber | Description   |
|------------------------|------------|---|
| <b>TWIG-MC, 110VAC</b> | 12957-001  | Master Controller - 110VAC.   |
| <b>TWIG-MC, 12VDC</b>  | 12957-003  | Master Controller - 12VDC. Order solar kit separately. See page 22.     |
| <b>TWIG-V HUB</b>      | 13206      | Manages TWIG-V network, connects to TWIG-MC using included cable.*      |
| <b>TWIG HUB</b>        | 13207      | Manages legacy TWIG network, connects to TWIG-MC using included cable.* |

\*Order Antenna Kit separately.



TWIG Hub



TWIG-V Hub



### Hub

- » Manages the radio network; use TWIG-V Hub for TWIG-V devices, and/or TWIG Hub for first generation devices\
- » Connects to MC controller using included cable.
- » Order antenna kit separately.



### TWIG-MC

- » Full mobile control using iOS or Android App over Bluetooth
- » No subscriptions
- » Internet ready (user provided connection or cell modem)
- » 2 pressure sensor inputs
- » Flow meter input
- » 2 pump start contacts
- » Backwards compatible with legacy TWIGs using the TWIG Hub.

## ► TWIG® RADIO MODULE

| Model            | PartNumber | Description  |
|------------------|------------|--|
| <b>TWIG-V 1i</b> | 13457-001  | Internal Antenna, w/bracket. Operates one valve                        |
| <b>TWIG-V 2i</b> | 13457-002  | Internal Antenna, w/bracket. Operates up to two valves, independently  |
| <b>TWIG-V 1e</b> | 13457-011  | External Antenna,* w/bracket. Operates one valve                       |
| <b>TWIG-V 2e</b> | 13457-012  | External Antenna,* w/bracket. Operates up to two valves, independently |

\*Order Antenna Kit separately.



### TWIG-V

- » Sealed enclosure
- » Bluetooth setup using the TWIG-V app
- » Fast-response radio network communicates within 3 seconds
- » Low-power design uses off-the shelf D-cell batteries
- » Includes mounting bracket

## ► TWIG® REPEATER

| Model                      | PartNumber | Description   |
|----------------------------|------------|---|
| <b>TWIG-V Repeater, AC</b> | 12966-001  | TWIG-V Repeater - 110VAC power. Order antenna kit separately.           |
| <b>TWIG-V Repeater, DC</b> | 12966-002  | TWIG-V Repeater - 12VDC power. Order antenna and solar kits separately. |



### TWIG-V Repeater

- » Extends the radio network by creating "sub-networks" that tie back to the Hub.
- » Facilitates radio communication directly between the Hub and the TWIG-V; cannot communicate to other repeaters.
- » Up to 8 repeaters in a network.

# ► ANTENNAS, SOLAR KITS, RELAYS, PARTS

## Antenna Kits For Hubs, Repeaters, External Antenna TWIG® devices, and TD200

| Model                       | Part Number | Description  |
|-----------------------------|-------------|--|
| <b>Omni w/ 10' of cable</b> | 12000-010   | Multi-directional Omni antenna (6 dBi) with cable assembly, mounting hardware, lightning arrestor*, and coax tape, for connecting antenna to HUB, external antenna TWIG-V, or TWIG-V Repeater. |
| <b>Omni w/ 20' of cable</b> | 12000-020   |  |
| <b>Omni w/ 30' of cable</b> | 12000-030   |  |
| <b>Omni w/ 40' of cable</b> | 12000-040   |  |
| <b>Omni w/ 50' of cable</b> | 12000-050   |  |

Note: A grounding rod (supplied by others) must be used in conjunction with the lightning arrestor.



## Solar Power Kits for TWIG-MC or TWIG-V Repeater



| Model   | Part Number | Description  |
|---|-------------|--|
| <b>Solar Kit for TWIG-MC, with Battery</b>                  | 13438       | 90 Watt, 12VDC solar kit with mounting hardware for solar panel, battery and charge controller in weather resistant enclosure. For TWIG-MC.                  |
| <b>Solar Kit for TWIG® or TWIG-V Repeater, with Battery</b> | 12075-002   | 10 Watt, 12VDC solar kit with mounting hardware for solar panel, battery and charge controller in weather resistant enclosure. For TWIG® or TWIG-V Repeater. |

## Relay

Connect a standard TWIG® or TWIG-V to this relay assembly to start a remote pump or other device by closing a contact at the command of the TWIG-MC.

| Model               | Part Number | Description  |
|---------------------|-------------|--|
| <b>Single Relay</b> | 13108-001   | One latching relay in a weather resistant enclosure  |
| <b>Dual Relay</b>   | 13108-002   | Two latching relays in a weather resistant enclosure |



## Replacement Parts

| Model                           | Part Number | Description  |
|---------------------------------|-------------|--|
| <b>RP-SMA to N, 10' cable</b>   | 11865-010   | 10' cable connects TD200/TWIG-e/TWIG Repeater to lightning arrestor                  |
| <b>RP-SMA to N, 20' cable</b>   | 11865-020   | 20' cable connects TD200/TWIG-e/TWIG Repeater to lightning arrestor                  |
| <b>N to N, 20' cable</b>        | 11996-020   | 20' cable connects antenna to lightning arrestor                                     |
| <b>N to N, 30' cable</b>        | 11996-030   | 30' cable connects antenna to lightning arrestor                                     |
| <b>Lightning Arrestor</b>       | 11997       | Replacement lightning arrestor used in the antenna kits                              |
| <b>Solar Charge Controller</b>  | 12330       | Replacement 12VDC charge controller for TD200 and Repeaters only                     |
| <b>TD200 Serial Cable Kit</b>   | 12647       | Connects TD200 to devices from Priva and Measuretek (Contact Factory for details)    |
| <b>TD200 to AG1000X Cable</b>   | 12729       | Connects TD200 to the Baseline AG1000X Controller                                    |
| <b>RS-232 to RS-485 Adapter</b> | 12988       | Connects TD200 to devices from Jain Logic and WiseConn (Contact Factory for details) |
| <b>MC to Hub Cord Set</b>       | 13264       | 8 Pole Ethernet Cord Set (from MC Controller to Hub)                                 |
| <b>Wire Connector</b>           | 10145       | Compression connector for stranded wire. Gel filled.                                 |



# ► FIRST GENERATION TWIG®



TD200 Controller



TWIG®



Repeater

| Model                                    | Part Number | Description  |
|--|-------------|--|
| <b>TD200 Controller 110 VAC</b>          | 11953-001   | 110 VAC Power  |
| <b>TD200 Controller 12 VDC</b>           | 11953-005   | 12 Volt DC Power (Order solar kit separately).   |
| <b>Solar Kit for TD200, with Battery</b> | 12075-001   | 10 Watt, 12VDC solar kit with mounting hardware for solar panel and TD200, battery and charge controller in weather resistant enclosure. |
| <b>TWIG-1i</b>                           | 11737-001   | TWIG-i (Internal Antenna) - Operates one valve   |
| <b>TWIG-2i</b>                           | 11737-002   | TWIG-i (Internal Antenna) - Operates up to two valves independently  |
| <b>TWIG-4i</b>                           | 11737-004   | TWIG-i (Internal Antenna) - Operates up to four valves independently   |
| <b>TWIG-1iT</b>                          | 11737-005   | TWIG-1i for Single Control Tee Valve or Elbow  |
| <b>TWIG-2iT</b>                          | 11737-006   | TWIG 2i for Dual Control Tee Valve   |
| <b>TWIG-1e</b>                           | 12110-001   | TWIG-e (External Antenna) - Operates one valve   |
| <b>TWIG-2e</b>                           | 12110-002   | TWIG-e (External Antenna) - Operates up to two valves independently  |
| <b>TWIG-4e</b>                           | 12110-004   | TWIG-e (External Antenna) - Operates up to four valves independently   |
| <b>800V Mount Bracket</b>                | 11948-001   | Mount TWIG® to 800 Series Valves   |
| <b>1000V Mount Bracket</b>               | 11948-003   | Mount TWIG® to 2" & 3" 1000 Series Inline Valves (4" and BGV style valves use mount 13245.)  |
| <b>Post/Wall Mount Bracket</b>           | 11948-002   | Mount TWIG® to post/wall.  |
| <b>Pipe/Riser Mount Bracket</b>          | 13245       | Mount TWIG® to pipe/riser.   |
| <b>1000V-T/E Plastic Bracket</b>         | 11950       | Mount TWIG® to 1000 Series Tee/Elbow Valve   |
| <b>QC Key Mounting Kit</b>               | 11949-001   | Used to attach TWIG® bracket 11948-001 to a QC Key   |
| <b>Factory Mounting</b>                  | ASSY-T      | Mount TWIG® to valve (does not include brackets or wire connectors). Not available for 4" 1000 Series, or BGV style.                     |
| <b>TWIG-Repeater, AC</b>                 | 12025-001   | Repeater for first generation TWIG® - 110VAC Power   |
| <b>TWIG-Repeater, DC</b>                 | 12025-002   | Repeater for first generation TWIG® - 12VDC Power (Order solar kit separately).  |



11948-001 and 11948-003 Mounting Bracket for installation on valve (800V or 1000V2/3 INL only)



11948-002 Mounting Bracket for installation on post/wall.



11950 Mounting Bracket for installation on 1000 Series Tee/Elbow Valve



13245 Mounting Bracket for installation on pipe/riser, especially for Big Gun risers. Use band clamps or zip ties, not included.



10145 Gel-filled Wire Connector (sold individually)

# BETTER TOGETHER

Nelson Irrigation makes a full range of products for agricultural and industrial irrigation. All development and testing is performed with the big picture in mind. No product operates independently. Our sprinklers, regulators, valves and controllers are developed together and made to deliver water as efficiently and effectively as possible. Whether you're irrigating strawberries or cooling cattle, think of not only us but our products as a team.

**SAVE WATER, SAVE ENERGY, SAVE LABOR AND DO A BETTER JOB OF IRRIGATING WITH NELSON PRODUCTS.**



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