

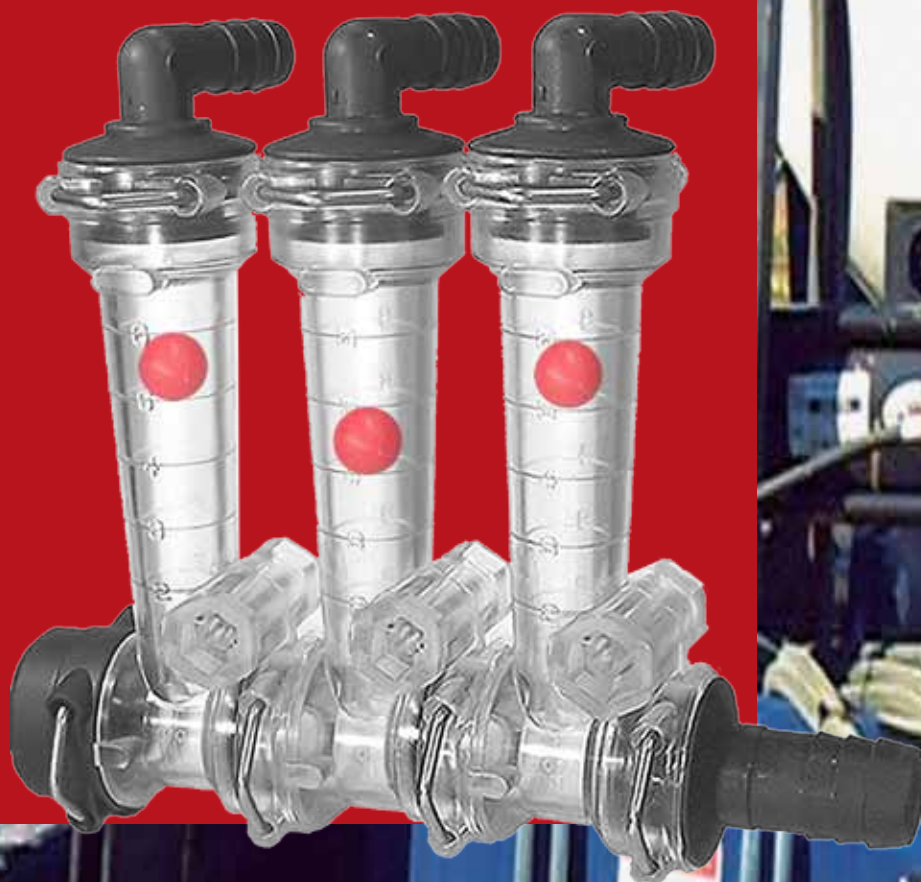


Seeing is Knowing

FLOW VIEW™ Ball Flow Indicators

**See your flow
from the cab.**

***Know
about plugs
immediately.***



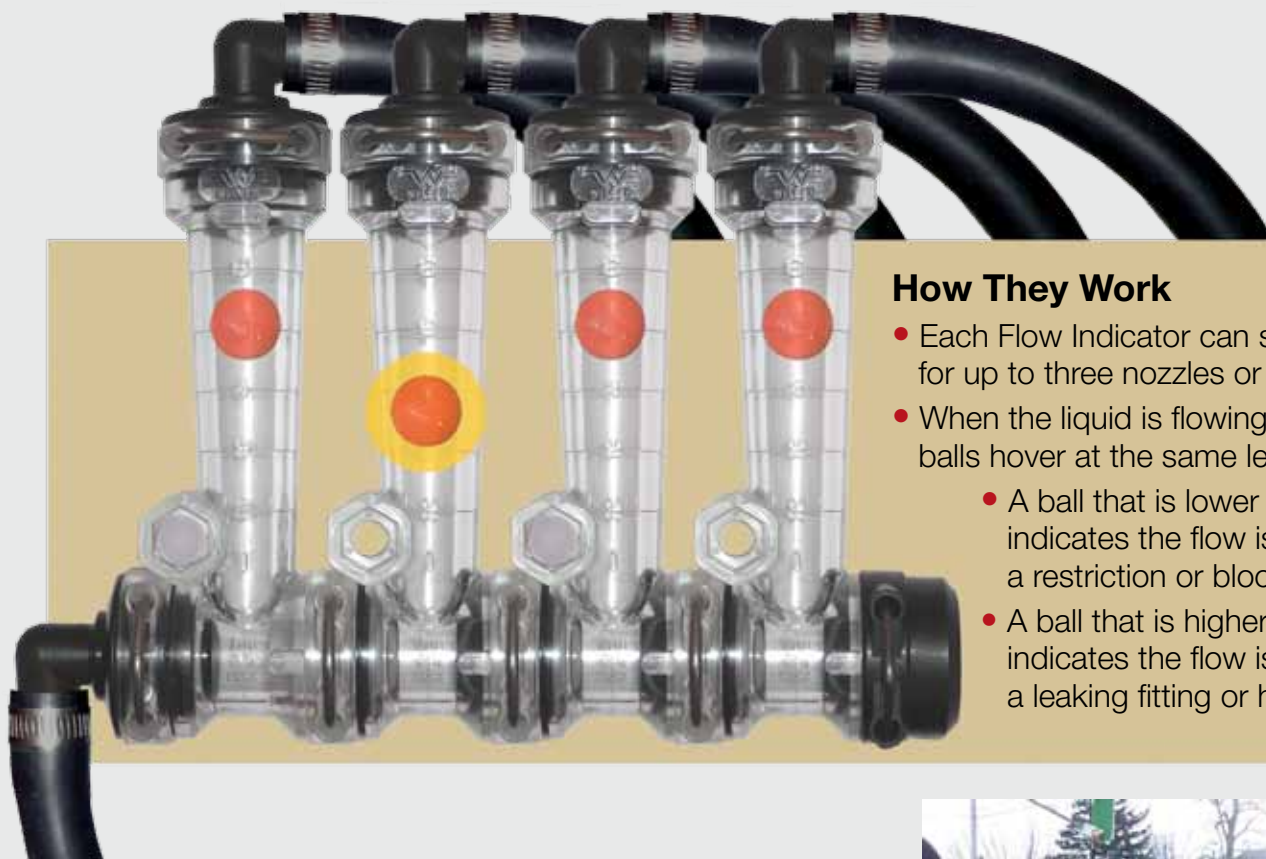
Better Engineered Sprayer Components for over 35 Years



Cost Effective, modular, flexible configuration

See The Flow

A glance is all it takes to know that the correct amount of liquid is flowing to the spray nozzles or outlets



How They Work

- Each Flow Indicator can supply liquid for up to three nozzles or outlets.
- When the liquid is flowing equally the balls hover at the same level.
 - A ball that is lower than the others indicates the flow is too low due to a restriction or blockage.
 - A ball that is higher than the others indicates the flow is too high due to a leaking fitting or hose.

Many Applications

- **Sprayers and Fertilizer Applicators**
Use as a manifold and monitor flow to multiple nozzles or outlets.
- **Isolated Feed Applications**
With isolated feed applications, individual feed lines can be monitored.
- **Optional Metering Orifices**
Allow flows ranging from 0.004 to 8.0 USGPM to be metered.
- **Watering, Cooling and Air Systems**
Control and monitor flow in various branches of a liquid or air distribution system.

Can be combined with WILGER **COMBO-RATE**® regulator and valve components.



Ball flow indicators

Get Exactly What Is Needed

Modular Components are used to build a customized flow monitoring system.

- Modular design has individual columns and fittings to build a system tailored specifically to meet the design requirements.
- Components are easy to assemble and service.
- Wide flow range indicating capability:
Low Flow model - 0.03 to 0.7 USGPM / Standard model - 0.05 to 2.7 USGPM
- Molded from special UV and chemically resistant material, stays clear longer than PVC.
- Components are interchangeable with other indicator brands.
- Accommodates a wide range of liquid viscosities.



Isolated Feed Flow Indicators

- Allow individual feed lines to be monitored.
- Individual Flow Indicators fit together, so fewer mounting fasteners are required.
- Metering orifices can be utilized to control flow.
- Ideal for squeeze pump applications.
- Utilize O-ring seal & U-clip for outlet fitting.
- Hose barb, NPTF and push-in outlet fittings available.
- **Radialock** inlet fitting accepts wide range of **Radialock** cap fittings.



Manifold Flow Indicators

- Multiple Flow Indicators can be connected together so that one feed hose can supply multiple outlets.
- Connect multiple bodies together with WILGER's innovative O-ring seal and U-clip.
- Up to 3 nozzles or openers can be monitored by a single flow indicator.
- Metering orifices can be utilized to control flow.
- Utilize O-ring seal and U-clip for inlet and outlet fittings.
- Wide range of inlet and outlet fittings available.



Ball flow indicators

Meter Your Flow

Metering Orifices provide a simple, leak-free solution that eliminates the need for additional components.

- Orifice is placed into Flow Indicator outlet fitting.
- Ribs on bottom of Metering Orifice prevent ball from restricting flow, eliminating need for Ball Retainer.
- Orifices available to meter flows ranging from 0.004 to 8.0 USGPM.

Orifice plate is also available as Check Valve (substitute 24xxx instead of 21xxx).

To select a Metering Orifice from the chart below, follow these steps:

Step 1/ Calculate the Flow Rate required per flow indicator with the following formula:

$$\text{Flow Rate} = \text{Application Rate (US gal/acre)} \times \text{Speed (mph)} \times \text{Outlet Spacing (inches)} \times \text{\# of Outlets per Flow Indicator} \times \text{Conversion Factor}^* \div 5940$$

* The Metering Orifice selection chart is based on water. Fertilizer is more viscous than water, so a larger orifice is required for a given flow rate of fertilizer, compared to water. To determine the conversion factor for a given fertilizer, obtain the weight for one US gallon or the specific gravity of the fertilizer and select the applicable conversion factor below. The Conversion Factor can also be calculated using the Conversion Factor Calculator which is included with the Flow Indicator Ball and Metering Disc Selector, which can be downloaded from the FLOW VIEW Ball Flow Indicators section of the *Downloads* page of www.wilger.net.

Weight (lbs/US Gallon)	10.00	10.50	11.00	11.50	12.00	12.50	13.00	13.50	14.00
Specific Gravity	1.20	1.26	1.32	1.38	1.44	1.50	1.56	1.62	1.68
Conversion Factor	1.10	1.12	1.15	1.17	1.20	1.22	1.25	1.27	1.30

Step 2/ Select a Metering Orifice and operating pressure. On the chart below, locate the flow rates closest to your requirement. Select a Metering Orifice with an operating pressure in the middle of its range.

Part Number	Pressure (psi)					
	5	10	15	20	30	40
21009-XX	0.004	0.005	0.006	0.007	0.009	0.010
21011-XX	0.006	0.008	0.010	0.011	0.014	0.016
21013-XX	0.008	0.011	0.013	0.016	0.019	0.022
21015-XX	0.010	0.014	0.018	0.020	0.025	0.029
21018-XX	0.015	0.021	0.025	0.029	0.036	0.042
21020-XX	0.018	0.026	0.032	0.037	0.045	0.052
21022-XX	0.022	0.031	0.037	0.043	0.053	0.061
21025-XX	0.028	0.039	0.048	0.056	0.068	0.079
21026-XX	0.030	0.043	0.052	0.060	0.074	0.085
21028-XX	0.035	0.049	0.060	0.069	0.085	0.098
21029-XX	0.038	0.054	0.066	0.077	0.094	0.11
21031-XX	0.043	0.061	0.075	0.087	0.11	0.12
21033-XX	0.052	0.073	0.090	0.10	0.13	0.15
21035-XX	0.056	0.079	0.096	0.11	0.14	0.16
21037-XX	0.061	0.086	0.11	0.12	0.15	0.17
21039-XX	0.067	0.095	0.12	0.13	0.17	0.19
21040-XX	0.072	0.10	0.13	0.14	0.18	0.20
21043-XX	0.082	0.12	0.14	0.16	0.20	0.23
21047-XX	0.097	0.14	0.17	0.19	0.24	0.27
21049-XX	0.10	0.15	0.18	0.21	0.26	0.29
21052-XX	0.12	0.17	0.21	0.24	0.29	0.33
21053-XX	0.12	0.17	0.21	0.24	0.30	0.35
21055-XX	0.13	0.19	0.23	0.27	0.33	0.38
21057-XX	0.14	0.20	0.24	0.28	0.35	0.40

Part Number	Pressure (psi)					
	5	10	15	20	30	40
21060-XX	0.16	0.22	0.27	0.32	0.39	0.45
21061-XX	0.16	0.23	0.29	0.33	0.40	0.47
21063-XX	0.17	0.25	0.30	0.35	0.43	0.49
21064-XX	0.18	0.25	0.31	0.36	0.44	0.51
21065-XX	0.18	0.26	0.32	0.37	0.45	0.52
21067-XX	0.20	0.28	0.34	0.39	0.48	0.56
21070-XX	0.22	0.31	0.37	0.43	0.53	0.61
21073-XX	0.23	0.33	0.40	0.47	0.57	0.66
21075-XX	0.25	0.35	0.42	0.49	0.60	0.69
21078-XX	0.27	0.39	0.47	0.54	0.67	0.77
21081-XX	0.29	0.41	0.50	0.58	0.71	0.82
21086-XX	0.33	0.47	0.57	0.66	0.81	0.94
21089-XX	0.35	0.49	0.60	0.69	0.85	0.98
21091-XX	0.37	0.52	0.64	0.74	0.91	1.05
21093-XX	0.39	0.55	0.67	0.77	0.95	1.09
21096-XX	0.42	0.59	0.72	0.83	1.02	1.18
21097-XX	0.43	0.61	0.74	0.86	1.05	1.21
21098-XX	0.44	0.62	0.76	0.88	1.08	1.25
21103-XX	0.46	0.65	0.80	0.92	1.13	1.30
21104-XX	0.48	0.68	0.83	0.96	1.17	1.35
21107-XX	0.52	0.73	0.90	1.04	1.27	1.47
21110-XX	0.55	0.77	0.95	1.09	1.34	1.55
21113-XX	0.58	0.82	1.01	1.16	1.42	1.64
21116-XX	0.61	0.86	1.05	1.22	1.49	1.72

Part Number	Pressure (psi)					
	5	10	15	20	30	40
21120-XX	0.63	0.89	1.09	1.26	1.54	1.78
21125-XX	0.69	0.98	1.20	1.39	1.70	1.96
21128-XX	0.72	1.02	1.25	1.45	1.77	2.04
21130-XX	0.75	1.06	1.30	1.50	1.84	2.12
21132-XX	0.78	1.10	1.34	1.55	1.90	2.19
21136-XX	0.84	1.19	1.46	1.68	2.06	2.38
21140-XX	0.89	1.26	1.55	1.79	2.19	2.53
21144-XX	0.93	1.31	1.61	1.85	2.27	2.62
21147-XX	0.95	1.35	1.65	1.90	2.33	2.69
21150-XX	1.02	1.44	1.77	2.04	2.50	2.89
21152-XX	1.05	1.49	1.82	2.10	2.58	2.98
21156-XX	1.10	1.55	1.90	2.20	2.69	3.11
21161-XX	1.16	1.63	2.00	2.31	2.83	3.27
21166-XX	1.21	1.71	2.10	2.42	2.97	3.43
21171-XX	1.33	1.88	2.30	2.66	3.26	3.76
21177-XX	1.41	2.00	2.45	2.83	3.46	4.00
21182-XX	1.47	2.08	2.55	2.95	3.61	4.17
21187-XX	1.56	2.21	2.70	3.12	3.82	4.41
21196-XX	1.73	2.45	3.00	3.46	4.24	4.90
21205-XX	1.87	2.65	3.25	3.75	4.59	5.30
21213-XX	2.02	2.85	3.49	4.03	4.94	5.70
21218-XX	2.11	2.98	3.65	4.21	5.16	5.96
21234-XX	2.45	3.47	4.25	4.91	6.01	6.94
21250-XX	2.83	4.00	4.90	5.66	6.93	8.00

Part Number Code: The 3 numbers following 21 are the orifice size in 0.000"; Suffix (XX): -00 for Buna, -V0 for Viton.
Some orifice sizes are not shown. Please consult factory for additional orifice sizes.





Makers of Better Engineered
Sprayer Components for over 35 Years

FLOW VIEW™ Flow Indicator Assemblies, Fittings, Components, Metering Orifices and Accessories



SPECIFICATIONS

Materials:

Indicator Body: UV & chemically resistant

Fittings: Polypropylene and Celcon®

Indicator Balls:

Polypropylene (orange & green);
Celcon (red); Glass (maroon);
Stainless Steel (7/16" & 1/2")

O-ring Seal: Buna-N or Viton

U-Clip: Stainless steel

Max operating pressure: 100 psi / 7 Bar

Max operating temperature: 185F / 85C



Flow Indicator Body and Indicator Ball Selector Guide

PART #	BALL COLOR AND MATERIAL	FLOW	FLOW INDICATOR BODY	FLOW RATE - USGPM
20460-13	ORANGE POLYPROPYLENE	LOW	20470-00 and 20490-00	0.03 - 0.09
		STANDARD	20460-00 and 20480-00	0.05 - 0.18
20460-08	GREEN POLYPROPYLENE	LOW	20470-00 and 20490-00	0.03 - 0.09
		STANDARD	20460-00 and 20480-00	0.05 - 0.18
20460-07	RED CELCON	LOW	20470-00 and 20490-00	0.05 - 0.14
		STANDARD	20460-00 and 20480-00	0.09 - 0.30
20460-06	MAROON GLASS	LOW	20470-00 and 20490-00	0.10 - 0.18
		STANDARD	20460-00 and 20480-00	0.31 - 0.72
20460-05	1/2" STAINLESS STEEL 302	LOW	20470-00 and 20490-00	0.15 - 0.70
		STANDARD	20460-00 and 20480-00	0.40 - 1.33
20460-10	7/16" STAINLESS STEEL 302	LOW	20470-00 and 20490-00	N/A
		STANDARD	20460-00 and 20480-00	1.00 - 2.70

PART No.		FLOW INDICATOR ASSEMBLY and PARTS
with BUNA-N-SEAL	with VITON SEAL	
20460-00	20460-V0	FLOW INDICATOR ASSY (Includes Body, Ball Retainer, O-Ring, 2 Lock U-Clips and Green, Red & 1/2" Stainless Steel Balls)
20470-00	20470-00	FLOW INDICATOR ASSY - LOW FLOW (Includes Body, Ball Retainer, O-Ring, 2 Lock U-Clips; and Green, Red & 1/2" Stainless Steel Balls)
20480-00*	20480-00*	FLOW INDICATOR ASSY - ISOLATED FEED (Includes Body, Ball Retainer, 1 Lock U-Clip; and Green, Red & 1/2" Stainless Steel Balls)
20490-00*	20490-00*	FLOW INDICATOR ASSY - ISOLATED FEED - LOW FLOW (Includes Body, Ball Retainer, 1 Lock U-Clip; and Green, Red & 1/2" Stainless Steel Balls)
20460-01*	20460-01*	FLOW INDICATOR BODY
20470-01*	20470-01*	FLOW INDICATOR BODY - LOW FLOW
20480-01*	20480-01*	FLOW INDICATOR BODY - ISOLATED FEED
20490-01*	20490-01*	FLOW INDICATOR BODY - ISOLATED FEED - LOW FLOW
20460-04*	20460-04*	LOCK U-CLIP,302SS
20460-02*	20460-02*	BALL RETAINER
20460-03	20460-15	O-RING - #212 (for Indicator Body and Fittings)
		*Seal Not Applicable
		O-RING SEAL (ORS) FITTING ASSEMBLIES (includes required seals and/or U-clips)
20501-00	20501-V0	ORS x HOSE BARB - STRAIGHT - 3/8"
20502-00	20502-V0	ORS x HOSE BARB - STRAIGHT - 1/2"
20503-00	20503-V0	ORS x HOSE BARB - STRAIGHT - 3/4"
20511-00	20511-V0	ORS x HOSE BARB - 90 DEGREE - 3/8"
20512-00	20511-V0	ORS x HOSE BARB - 90 DEGREE - 1/2"
20514-00	20514-V0	ORS x HOSE BARB - 90 DEGREE - 5/8"
20513-00	20513-V0	ORS x HOSE BARB - 90 DEGREE - 3/4"
20516-00	20516-V0	ORS MALE x 1/4" PUSH-IN TUBE - 90 DEGREE
20517-00	20517-V0	ORS MALE x 3/8" PUSH-IN TUBE - 90 DEGREE
20518-00	20518-V0	ORS MALE x 1/4" NPTF - 90 DEGREE
20519-00	20519-V0	ORS MALE x 1/4" NPTF
		CONNECTOR TEES, STREET ELBOW and END CAP
20520-00	20520-V0	ORS MALE x ORS FEMALE - 90 DEGREE
20522-00	20522-V0	ORS MALE x ORS MALE x ORS FEMALE - TEE
20523-00	20523-V0	ORS MALE x ORS FEMALE (BLIND) x 3/8" NPTF - ISOLATOR TEE
20524-00	20524-V0	ORS MALE x ORS FEMALE x 3/8" NPTF - TEE
20525-00	20525-V0	ORS MALE x ORS MALE x 1" NPTF - TEE
20526-00	20526-V0	ORS MALE x ORS MALE x ORS FEMALE - TEE w 1/4" NPTF PORT
20521-00*	20521-00*	ORS CAP
20535-00*	20535-00*	FITTING ASSEMBLY - ORS FEMALE x 1/4" NPTF
20536-00*	20536-00*	FITTING ASSEMBLY - ORS FEMALE x 3/8" NPTF
20537-00*	20537-00*	FITTING ASSEMBLY - ORS FEMALE x 1/2" NPTF
		*Seal Not Applicable
		RADIALOCK INLET CAPS (ISOLATED FLOW MODELS) Requires 40261-00 Adapter when no pre-orifice is used
40273-05*		RADIALOCK CAP - 1/4" NPTF
40274-05*		RADIALOCK CAP - 1/4" NPTF, 45 DEGREE
40277-05*		RADIALOCK CAP - 1/8" NPTF
40420-05*		RADIALOCK CAP - 1/8" HOSE BARB
40422-05*		RADIALOCK CAP - 1/4" HOSE BARB
40424-05*		RADIALOCK CAP - 3/8" HOSE BARB
40426-05*		RADIALOCK CAP - 1/2" HOSE BARB
40435-05*		RADIALOCK CAP - 1/4" TUBE ADAPTER
40436-05*		RADIALOCK CAP - 3/8" TUBE ADAPTER
40260-00		NOZZLE SEAL (VITON recommended for fertilizer)
40261-00		SEAL / STRAINER ADAPTER

FLOW INDICATOR BALLS

See Flow Indicator Body and Indicator Ball Selector Chart

20460-13	BALL-FLOW INDICATOR - ORANGE POLYPROPYLENE
20460-08	BALL-FLOW INDICATOR - GREEN POLYPROPYLENE
20460-07	BALL-FLOW INDICATOR - RED CELCON
20460-06	BALL-FLOW INDICATOR - MAROON GLASS
20460-05	BALL-FLOW INDICATOR - 1/2" STAINLESS STEEL 302
20460-10	BALL-FLOW INDICATOR - 7/16" STAINLESS STEEL 302

FLOW VIEW CHECK VALVES and FLOW INDICATOR FLOW METERING ORIFICES

21000-00	21000-V0	ORIFICE INSERT ASSEMBLY - BLANK
21XXX-00	21XXX-V0	ORIFICE INSERT ASSEMBLY**
40225-05	40225-05	O-RING - #015 (For Orifice Inserts)
24000-00	24000-V0	CHECK VALVE ASSEMBLY
24XXX-00	24XXX-V0	ORIFICE INSERT ASSEMBLY with CHECK VALVE**

**Please enquire for sizes and part numbers



Makers of Better Engineered
Sprayer Components for over 35 Years

Isolated Feed Models

Each Flow Indicator is fed separately and locks to the adjacent Indicator at two locations.



Nominal distance between holes	1-9/16"
Hole size to drill	9/32"
Bolt size to use (+ mount thickness)	1/4" x 2"+

*When mounting multiple units, measure the actual hole spacing to ensure correct hole placements.

Manifold Models

Multiple Flow Indicators are fed by a single line and lock to the adjacent Indicator with a U-clip.



Intended Use and Limits of Use

Wilger Ball Flow Indicators are designed to accommodate agricultural liquids, including water, fertilizers and pesticides. Wilger Flow Indicators are not designed to be used with flammable or combustible products. The maximum operating pressure (100 p.s.i.) and maximum operating temperature (185°F / 85°C) should not be exceeded. Use of Wilger Flow Indicators with liquids for which they are not designed to accommodate or pressures / temperatures in excess of maximum indicated limitations will void Wilger's warranty and liability. If you are unsure of a specific application, please contact Wilger.

COMBO-JET®
Tip-Caps and
Nozzle Bodies



COMBO-RATE®
Bodies and Turrets



COMBO-RATE II
Multi-Nozzle
Application



QUICK-NUT SST
Fluid Supply
System



TIP WIZARD
Digital Spray Tip
Selector



**BOOM END
FLUSH VALVE**
QN-SST and TWS
Styles



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