

Learn!



FINISHING EDUCATION



Knowledge is Power

The Brands You Trust





BGK[™] products deliver precision-engineered curing capabilities for a full range of coatings including liquid, powder, wax, UV and adhesives.



Binks[®] products boast innovative spray gun and air cap design along with industry leading pumps and controls.



DeVilbiss[®] products include low pressure manual and automatic spray guns and related spraying accessories. *DeVilbiss* products are widely acclaimed for ergonomics and innovative spray gun design.



Hosco[®] products deliver smooth bore, "cavity free" stainless steel fittings and accessories designed for use in paint circulating and application finishing systems.



ms[®] products include powder coating systems and equipment. ms is recognized throughout the world for quality, efficiency and durability.



Ransburg[®] manual and automatic electrostatic finishing products offer spray finishing solutions to industrial and automobile manufacturing markets.

2



Saving Material, Time, and Money over Hot Potting with IntelliFlow RM2

March 23rd, 2022







Introduction:

What we'll cover today:

- What are plural-component coatings?
- Costs of hot-potting
- ROI payback calculation
- Next-generation IntelliFlow product line
- IntelliFlow RM2 entry-level proportioner







What are plural component coatings, and why are they used?

What are plural component coatings?

- Coatings that involve mixing 2 or more components immediately prior to application
- Many different chemical compositions, such as urethanes, epoxies, water-based, and acidcatalyzed
- Why are these coatings becoming more popular?
 - 1. Lower VOC's
 - 2. Increased durability, chemical and UV resistance
 - 3. Reduced curing needs





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- $_{\rm O}$ Automotive
- o Industrial
- o Agriculture and Construction
- \circ Marine
- \circ Infrastructure
- $\circ \text{ Wood}$
- \circ Electronics
- o Electrostatic or conventional spray







Plural Component Metering and Mixing

What is electronic 2K equipment?

- Provides on-demand mixing and metering of plural-component coatings
- On-board controls automatically flush and change colors, regulate fluid pressure, and measure material usage and performance

Why should you use it?

- Mix on-ratio just as you need it: Eliminate wasted coating and off-ratio mixing
- Can save over \$50,000 per year vs. hot-potting by eliminating coating and solvent waste, and costly rework
- Precisely control flowrate to the applicator for automatic applications

When should you use it?

- Carlisle Fluid Technologies range of 2K equipment is extremely flexible and can be used in almost any application
- Automotive, Industrial, ACE, Aerospace, Marine, Electronics, Wood
- Solventborne, Waterborne, Electrostatic
- Manual or Automatic Spray, Low or High Pressure



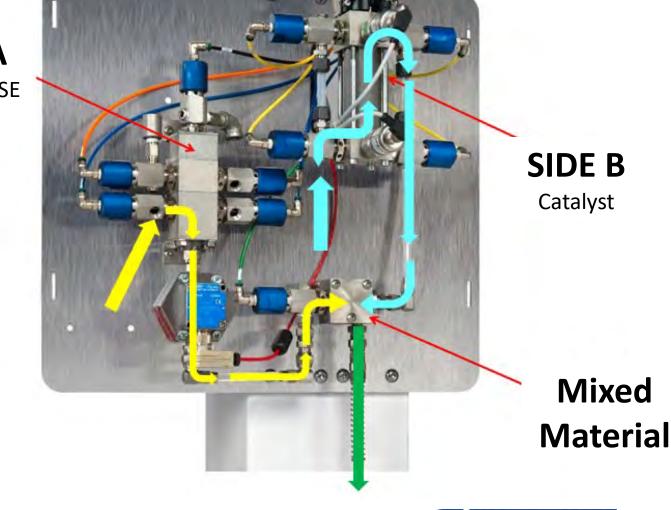




How do Electronic 2K Proportioners work for handgun spray?

- 1. Operator pulls gun trigger
- 2. A-side valve opens, material flows through flowmeter into mix block
- Based on data from flowmeter, proportioner injects an appropriate amount of B-side material into mix block to hit required ratio
- 4. A-side and B-side materials fully mix inside mix block and static mixer
- 5. When changing colors: solvent valve opens to flush out old color. Then new color valve is opened, color is automatically loaded based on hose length







Why use 2K proportioning equipment over hot-potting?

- The average high-production facility wastes \$50,000 -\$65,000 per booth every year hot potting: Electronic 2K units pay for themselves in less than 1 year
- What are the visible and hidden costs of hot potting:

 $_{\rm O}$ Wasted material

- o Wasted solvent
- $_{\odot}$ Wasted time spent mixing and switching colors
- $\,\circ\,$ Product rework and quality issues due to off-ratio mixing
- No guarantee your coating application is to spec
- \circ Increased VOC emissions and reporting
- Carlisle's Account Managers specialize in developing application-specific ROI calculations: We can prove the savings to the end-user





Cost of wasted material and solvent

- Each time you finish a batch of parts, excess mixed coating will go to waste as pot life expires
- Wasted coating costs you multiple times:
 - $_{\rm O}$ When you purchase it
 - \circ When you clean it up in your facility
 - $_{\odot}$ When you pay to dispose it
 - $_{\odot}$ When you have to report it to the EPA
- Solvent also wasted to clean up pots and mixing tools
- IntelliFlow proportioners automatically mix coatings on demand as gun is triggered – only mix what you need
- Proportioners minimize solvent usage when flushing and changing colors over manual cleanup







Cost of wasted time spent mixing and switching colors

- Properly measuring and hand mixing 2K coatings typically takes 5-20 minutes per batch, and is repeated multiple times per day
- Manually changing over colors typically takes 15 minutes – 1 hour each time for flushing, cleanup, mixing, and loading
 - You are wasting not just labor, but potential productivity of the spray booth too = \$100's or \$1,000's per hour
- An IntelliFlow RM2 unit can automatically change colors in as little as 1 minute, generating major time savings





Cost of rework due to improperly mixed coatings

- The top causes of coated part rework and warranty issues are spraying off-ratio, and spraying coatings past their pot life
 - Human error when measuring batches is bound to occur over time
 - Attempting to manually track pot life is cumbersome, and often skipped or roughly estimated
- A batch of out-of-spec parts can cost \$1000's in rework, and even more in reputation if it makes it to the customer
- IntelliFlow proportioners solve both these issues:
 - $_{\odot}$ Ratio is checked and adjusted 100 times per second
 - Pot life in the hose is automatically tracked, and alarms when it expires



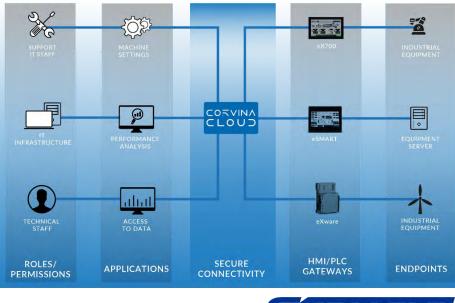


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Prove to your clients the coating was mixed correctly every time

- With an IntelliFlow proportioner, you can prove with data the coating was mixed right each time
- Use as selling tool to your customers: Give them the confidence to choose you over your competitors
- Export coating usage and mix data for each job via USB, ethernet, or Cloud







Carlisle Fluid Technologies ROI Calculator

		Application		
	Questions:	Data	Example	
Question 1	Number of Shifts Per Day	1	1 Shift Per Day	
Question 2	Number of Working Days Per Year	250	250 Per Year	
Question 3	Average Cost of A Material per gallon	\$ 30.00	\$30.00 per gallon	
Question 4	Average Cost of B Material per gallon	\$ 40.00	\$40.00 per gallon	
Question 5	Material Ratio (X:1)	4	Use 4 for 4:1	
Question 6	Average Cost of Solvent per gallon	\$ 10.00	\$10.00 per gallon	
Question 7	Applicator Labor Rate Per Hour (Including Benefits)	\$ 35.00	\$35.00 per hour	
Question 8	Waste Disposal Cost per gallon	\$ 11.00	\$11.00 per gallon	
Question 9	Average Mixed Material (A+B) usage per shift, gallons	10.00	10.00 gallons per shift	
Question 10	Average Mixed Material Waste per shift, gallons	2.00	2.00 gallons per shift	
Question 11	Average Solvent Usage per shift	2.00	2.00 gallons per shift	
Question 12	# of flushes and color changes per shift	10	10 color changes and flushes	
	Time to measure and mix each refill of mixed material,	10	10 minutes	
Question 13	minutes	10	10 minutes	
	Time to clean current application equipment between	5	5 minutes	
Question 14	color changes or flushes, minutes	5	5 minutes	
Question 15	Hose Length, feet	25	25.00 feet	
Question 16	Hose Inner Diameter (I.D.), inches	0.250	.250" ID	
Question 17	Production Downtime Cost Per Shift of current	\$ 50.00	\$50 per shift	
	Number of parts requiring rework due to off-ratio or	20	20 parts par month	
Question 18	uncatalyzed material, per month	20	20 parts per month	
	Average cost to rework each part, including time and	\$ 150.00	\$250.00 per part	
Question 19	materials	Ş 130.00	szoulu per part	

Application Costs	Current Application	RM2 Application	
Total Cost Per Gallon of Mixed Material	al Cost Per Gallon of Mixed Material \$32.00		
Material Waste Cost Per Shift	al Waste Cost Per Shift \$64.00		
Solvent Usage Cost Per Shift	\$20.00	\$16.54	
Waste Disposal Cost Per Shift	\$22.00	\$2.64	
Total Mixing Labor Cost Per Shift	\$58.33	\$11.67	
Total Cleaning Labor Cost Per Shift	\$29.17	\$11.67	
Production Downtime Cost Per Shift	\$50.00	\$0.00	
Rework costs per shift	\$144.00	\$0.00	
Application Costs Per Shift	\$387.50	\$63.02	
Application Costs Per Year	\$96,875.00	\$15,754.87	
Estimated Annual Savings	\$81,1	20.13	
Mixing Equipment Part #	RM2-11121		
Equipment Cost	\$19,900.00		
Kits, Accessories, Supporting Equipment Cost		\$12,000.00	
Total Investment Costs		\$31,900.00	
Annual Depreciation	\$6,380.00		
Annual Savings After Depreciation	\$74,740.13		
Profit After Taxes	\$51,196.99		
Annual Cash Savings		76.99	
Return on Investment	180%		
Payback Period (months)	6.65		



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ROI Example 1: Trailer manufacturer

Customer manufacturers open and enclosed trailers

Process Audit:

- o 1 8-hour shift per day
- \circ Coating cost \$40-\$60 per gallon
- $_{\odot}$ Uses ~10 gallons per shift, wastes ~1 gallon
- $\circ\,8$ color changes per day
- Manual color change process takes 20 minutes
 Reworks 5 parts per month, at \$300 per part
- New equipment:
 - $_{\odot}$ \$23,000 for new IntelliFlow RM2 proportioner $_{\odot}$ \$8,000 in accessories
- Result:

Cash savings of \$42,000 per year
Payback in 8-9 months



	Ap	plication	
Questions:		Data	
Number of Shifts Per Day		1	
Number of Working Days Per Year		250	
Average Cost of A Material per gallon	\$	40.00	
Average Cost of B Material per gallon	\$	60.00	
Material Ratio (X:1)		4	
Average Cost of Solvent per gallon	\$	10.00	
Applicator Labor Rate Per Hour (Including Benefits)	\$	32.00	
Waste Disposal Cost per gallon	\$	11.00	
Average Mixed Material (A+B) usage per shift, gallons		10.00	
Average Mixed Material Waste per shift, gallons	1.00		
Average Solvent Usage per shift		2.00	
# of flushes and color changes per shift		8	
Time to measure and mix each refill of mixed material,		10	
minutes	10		
Time to clean current application equipment between		20	
color changes or flushes, minutes		20	
Hose Length, feet		25	
Hose Inner Diameter (I.D.), inches	0.250		
Production Downtime Cost Per Shift of current	\$	-	
Number of parts requiring rework due to off-ratio or		5	
uncatalyzed material, per month		5	
Average cost to rework each part, including time and	Ś	200.00	
materials	Ş	300.00	

Application Costs Per Shift Application Costs Per Year	\$275.00 \$68,750.00	\$55.46 \$13,865.75	
Estimated Annual Savings	\$54,8	84.25	
Mixing Equipment Part #	RM2-11121		
Equipment Cost	\$22,900.00		
Kits, Accessories, Supporting Equipment Cost	\$8,000.00		
Total Investment Costs	\$30,900.00		
Annual Depreciation \$6,180.00		30.00	
Annual Savings After Depreciation \$48,704.25		04.25	
Profit After Taxes	\$36,528.19		
Annual Cash Savings	\$42,7	08.19	
Return on Investment	13	8%	
Payback Period (months)	8.68		



ROI Example 2: Wood door manufacturer

Customer manufacturers wood doors and trim pieces

Process Audit:

o 2 8-hour shifts per day

Coating cost \$15-\$20 per gallon

o Uses ~8 gallons per shift, wastes ~1.2 gallons

o 20 color changes per day

• Manual color change process takes 8 minutes o Reworks 8 parts per month, at \$150 per part

New equipment:

○ \$23,000 for new IntelliFlow RM2 proportioner \circ \$12,000 in accessories

Result:

 Cash savings of \$56,000 per year • Payback in 7 months



nnual Cash Savings

eturn on Investment

avback Period (months)

Profit After Taxes

Annual Savings After Depreciation

	Application	
Questions:	Data	
Number of Shifts Per Day	2	
Number of Working Days Per Year	250	
Average Cost of A Material per gallon	\$ 15.00	
Average Cost of B Material per gallon	\$ 20.00	
Material Ratio (X:1)	5	
Average Cost of Solvent per gallon	\$ 10.00	
Applicator Labor Rate Per Hour (Including Benefits)	\$ 30.00	
Waste Disposal Cost per gallon	\$ 11.00	
Average Mixed Material (A+B) usage per shift, gallons	8.00	
Average Mixed Material Waste per shift, gallons	1.20	
Average Solvent Usage per shift	2.00	
# of flushes and color changes per shift	20	
Time to measure and mix each refill of mixed material, minutes	l, 8	
Time to clean current application equipment between color changes or flushes, minutes	ו 8	
Hose Length, feet	25	
Hose Inner Diameter (I.D.), inches	0.250	
Production Downtime Cost Per Shift of current	\$ -	
Number of parts requiring rework due to off-ratio or uncatalyzed material, per month	8	
verage cost to rework each part, including time and staterials		
Application Costs Per Shift \$241.00	\$96.12	
Application Costs Per Year \$120,500.00		
	\$72,438.72	
Mixing Equipment Part # RM2	RM2-11121	
ipment Cost \$22,900.00		
its, Accessories, Supporting Equipment Cost \$12,000.00		
Total Investment Costs \$34,900.00		
Annual Depreciation \$6,9	980.00	



\$65.458.72 \$49.094.04

\$56,074.04

161%

7.47

Carlisle Fluid Technologies Next-gen 2K Family: IntelliFlow

The new IntelliFlow product family represents best-in-class 2K performance and connectivity

Next-gen performance:

Large, intuitive, full-color touchscreens
Seamless communication and integration
Dynamic mixing reduces coating and solvent waste
Modular, scalable architecture

Launching complete line through 2021-2022







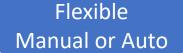
Ransburg Electronic 2K Offerings





IntelliFlow RM2:

- Entry-level manual spray
- 2 hand guns
- 7 colors, 1 catalyst
- Moving up from hotpotting
- Touch up or full production
- Distributed product



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IntelliFlow RF2:

- Flexible Manual or Automatic Spray
- Hand guns, reciprocators, or robots
- 30 colors, 6 catalysts
- 1K, 2K, or 3K
- Up to 4 fluid panels
- Seamless communication and integration
- Distributed or custom configured product

Premium Manual or Auto



Ransburg RCS2

- Premium Automatic or Manual spray
- Robots or premium manual applicators
- 10 colors, 1 catalyst
- Rapid triggering and responsiveness
- Custom configured product



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Intuitive Controls

Large, full color touchscreens

- $\circ~$ 10" or 15" screen depending on model
- o Scratch-resistant and resists all major solvents

Easy to learn and use

- o App-like interfaces will feel natural to both new and experienced operators
- o Both visual and numeric readouts to quickly visualize equipment status
- Simplified primary operation screens in front of full-functionality configuration and diagnostic screens

Automate common processes and avoid costly mistakes

- Common operations like color changes, flushes, and flow adjustments can be done in 3 presses or less using customizable recipes
- o Multi-level password protection to avoid accidental or unwanted process adjustments

Visible alarms tell you what's wrong and how to fix it

- o Visual and audible alarms with on-screen notifications
- $\circ\,$ Alarm pop-ups tell you what's wrong, and give step-by-step instructions to correct





Seamless Connectivity

All IntelliFlow units come standard with Ethernet I/P connectivity

o Profinet, EtherCat, Device Net, CC Link and more also available

Export process data in real-time or batches

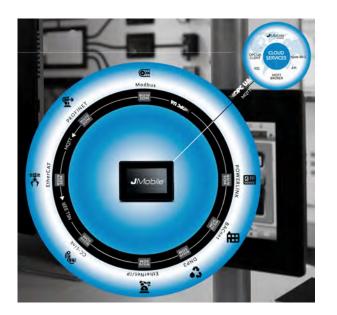
o Track material and solvent usage, VOC's, ratio and flowrate actuals

Send/receive data and control from central PLC or SCADA system

- o Open PLC architecture can be quickly configured for retrofits or new installs
- $\circ~$ Send color change, ratio, and flowrate commands to the unit
- o Easily monitor equipment as a part of your whole process

Remote monitoring capability for real-time diagnostics

- If enabled, Carlisle Fluid Technologies or your authorized distributor can remotely login to your equipment for troubleshooting and support
- o Don't wait for a service tech to arrive, get it fixed right away







Best-In-Class Fluid Performance

Dynamic mixing reduces waste and maintenance time

- o Continuous ratio and flow control eliminates need for Integrator
- $\circ~$ Saves coating and solvent waste on every flush
- o Simple mix blocks flush well and are easy to maintain

Fluid solutions to meet any process requirement

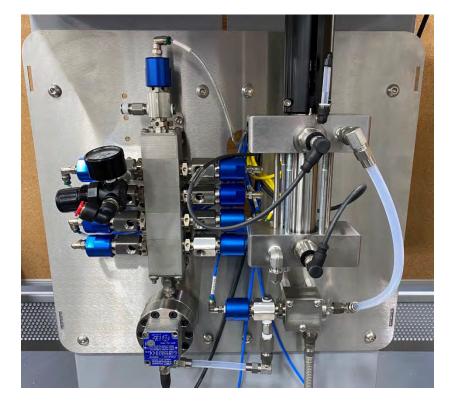
- o Solvent or waterborne, electrostatic or non-electrostatic
- $\circ~$ Wide range of flow control devices available to match your process and budget
- o 1K, 2K, or 3K flow and/or ratio control

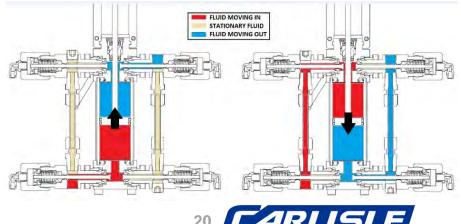
New standard flowmeters increase ratio and flow control accuracy

- o Higher resolution for faster response rates and increased control
- o Abrasion resistant internals, with option for acid-catalysts
- o Coriolis meters also available for highly abrasive or sensitive materials

High-speed processors increase responsiveness and reduce lag

• Improved fluid components combined with faster controllers provides precise process control, even rapid triggering, low flowrates, and high ratio operation.





Modular, Scalable, Easy to Order

Start small, expand later

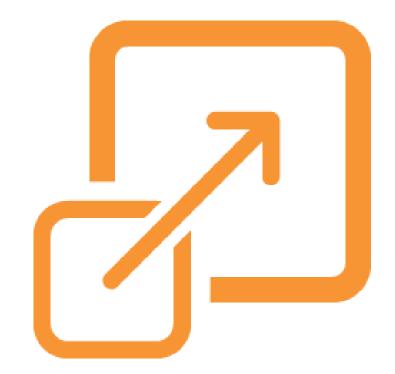
- Accessories and add-on kits available to expand the capabilities of your system after first installation
- Go from 1K to 2K, or 2K to 3K
- o Convert from manual to automatic spray
- o Swap to different fluid components as your process evolves

One control architecture for the whole product range

o Easily install and use multiple different IntelliFlow products throughout your process

Order turn-key configurations or custom-engineered solutions

- Single part number configurations, with shorter lead times and very competitive pricing, designed to meet the most common process needs
- $\circ~$ Or work with us to select a custom configuration





IntelliFlow RM2



IntelliFlow RM2: Entry-level electronic 2K with extremely simple operation and wide process capabilities

- Intuitive controls for easy operation by new or experienced users
 - o 10" full-color touchscreen controls all process functionality
 - o "3 presses or less for all common day-to-day operations"
 - o Built-in troubleshooting for faults and errors to stay up and running

Reliable fluid panel can handle almost all common 2K hand gun applications

- $\circ~$ Up to 7 colors and 1 catalyst
- $\,\circ\,$ 1:1 to 100:1 material ratios
- o Hardener flow rates as low as 2 cc/min
- o Low and high pressure (3,000 psi) capability
- o Coriolis flow meters also available for challenging materials

Increase efficiency and reduce coating and solvent waste

- **On-demand metering and mixing** with 1% ratio accuracy drives significant reductions in coating waste. No integrator means less waste.
- o Automatic color change and flushing with programming for each color
- o Standard air-solvent chop uses 65% less solvent
- **Track and export process data** such as paint and solvent usage, spray time, ratio and flowrates, alarms and faults





IntelliFlow RM2 is a good fit for almost any manual handgun application

Industries:

o Automotive (touch-up)

o Industrial

o Agriculture and Construction

 \circ Marine

 $\circ \text{Wood}$

- \circ Electronics
- Coatings:
 - \circ Solventborne

 \circ Waterborne

o Electrostatic (non waterborne)

 \circ Epoxy

 \circ Urethanes

o Acid-catalyst (coming June 2022)

- Applicators:
 - o Trophy
 - o **Tekna**
 - o Pro Lite
 - $\circ JGA$
 - \circ RansFlex
 - $\circ \, \text{Vector}$
- Optional Configurations:
 - o Remote fluid panel
 - $_{\rm O}$ In-booth color change
 - o Coriolis flowmeter
 - MCV or piggable color stack







RM2 Configurations and Accessories

How to select your configuration:

- 1. Choose 1 or 7 colors
- 2. Select pump size:
 - a) If max catalyst flow is less than 100cc/min, select 300 pump
 - b) If max catalyst flow is greater than 100cc/min, select 600 pump

Low Pressure (250 psi)

Number of Colors	Number of Catalysts	Catalyst Pump Size	Part Number
1	1	300	RM2-11121
1	1	600	RM2-11111
7	1	300	RM2-11127
7	1	600	RM2-11117

Recommended Accessories		
Floor Stand		
Gun Flush Box Kit		
2 Gun Manifold		
Remote Color Change Kit		
Solvent Flowmeter Kit		
Catalyst Flow Sensor Kit		

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All configurations include:

- Air cutoffs for 2 guns
- Solvent air/chop flushing
- Gear flowmeter
- Stack light with buzzer
- Wall mounting





RM2 New Features: Touchscreen



Serial #: NaN	Patrix ray 2	9/03/2021 - 15:1 29/03/2021 -	
ENU admin	Select Mode	ALARM LOG	
Actual 1.46 : 1 99 ACB 99 Setpoint 4.00 : 1 With Check	43 PSI Out 99 9 999 PSI 999 99 951 99 951 1000	Pot Life Gun 1 Gun 2 24 min 29 min 24 min 29 min 30 du 12 3 31 du 14 du 16 31 du 16	
300 240	90 cc/min	*	
120 120 60 131314	151534 151554	151634	
STOP START RESET Recipe			

New Features:

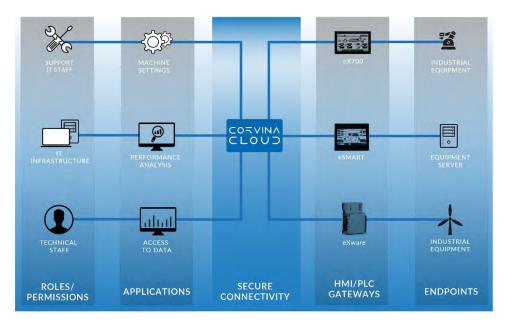
- 10" Touchscreen
- Ethernet and Cloud connectivity with remote troubleshooting
- Monitor process on main screen
- Switch to flush screen for flushing/purging
- Menu icon on top left allows easy access to all major operation and settings screens
- Multi-level password protection



Connectivity

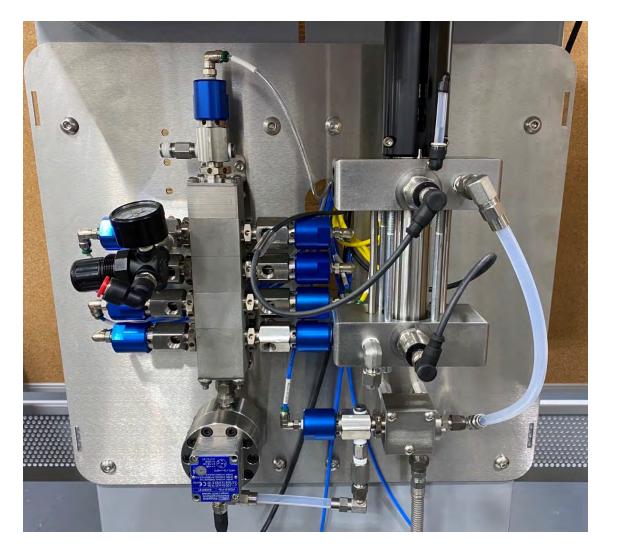
- All RM2's come standard with the ability to send process data to PLC's through Ethernet I/P:
 - \circ Send data out for tracking and logging purposes
 - \circ Can also download data through USB drive
- Remote access and troubleshooting through Corvina Cloud:
 - If RM2 is connected to the internet, end-user or their distributor can remotely log into unit to operate or troubleshoot remotely, anywhere in the world
 - Distributors will manage their customers, providing them with greater end-user interaction, and taking load off CFT







RM2 New Features: Fluid Panel



New Features:

- Dispense pump MCV valves mounted in new top and bottom blocks with TSL reservoirs
- 7 colors, up from 5 colors
- Programmable flush sequences for each color
- Air-solvent chop still standard
- New high-resolution flowmeter provides better ratio accuracy and lower minimum flowrate



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Accessories: Remote color change modules and gun flush boxes

Remote Color Change

 Allow operators to change colors, flush, and control equipment functions from inside the booth



 Increase efficiency and production speed



Gun Flush Boxes

- Automatically flush hand guns during color changes
- Avoid messes and simplify cleanup
- Increase production speed





What else do I need for an IntelliFlow RM2 install?

Feed system for coatings and solvent:

Pressure pots

 \circ Diaphragm pumps

- \circ Piston pumps
- Filtration and regulation:
 - Improperly filtered material is top cause of equipment issues
 - Inlet fluid pressure regulators ensure smooth performance
- Regulated air supply
- Existing hoses, guns, and air lines can often be reused





Marketing and Sales Tools Available

- Product Sell Sheet
- User Manual
- Pricing Configurator
- ROI Calculator
- Website









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Thank you!



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