

EXPERIENCE THE CARLISLE DIFFERENCE



HULK

Equipment Overview

4C's Home of the **HULK**



Overview of the machine's capabilities
and components

General instructions for operation,
shutdown, maintenance, and prevention



Basic Functions



**Able to dispense 2-part urethane,
low-rise adhesive**



**Accommodates 15-Gal Drums
and 50-Gal Drums**



**Intended to increase production compared to
Dual Cartridge, Dual Tanks, PaceCart**

HULK Cart



Customized cart capable of dispensing **Flexible FAST™**
15-Gal and **50-Gal** drums without additional
attachments or conversion kits

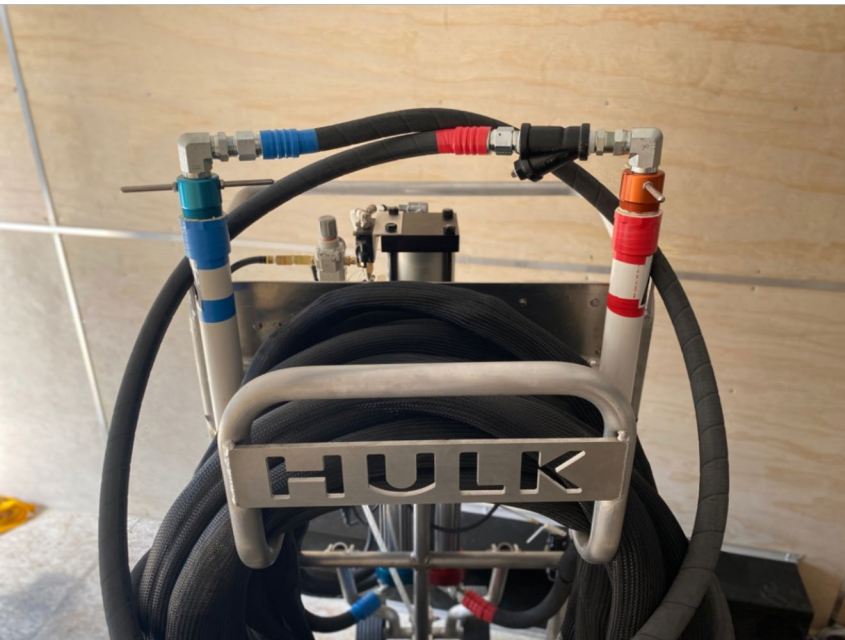
Includes a recirculation block that greatly reduces the time
it takes to warm up your adhesive

Easy-tilt design makes cart safe and easy to maneuver

34" wide frame allows the HULK to fit through any sized door

Suction Tubes

- Each HULK comes with a set of suction tubes that fit both 15-Gal and 50-Gal drums
- Suction tubes remove the need for additional connections or barrel pumps



HULK Hose

HULK Heated Hose Assembly (Recommended)

These are your primary hoses which moves material from pump to gun.

*Non-heated hoses are available.

Heated Hose



Gun Options

Gun Options	Bead Application	Splatter Application	Air Purge Feature
HULK Gun	X	X	X

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HULK Setup

Brand New HULK Setup

1

Follow the steps listed under
“Flexible FAST Drum Setup.”
This would include:

- Opening the drums
- Inserting the fluid draw tubes
- Installing desiccant driers



Brand New HULK Setup

2

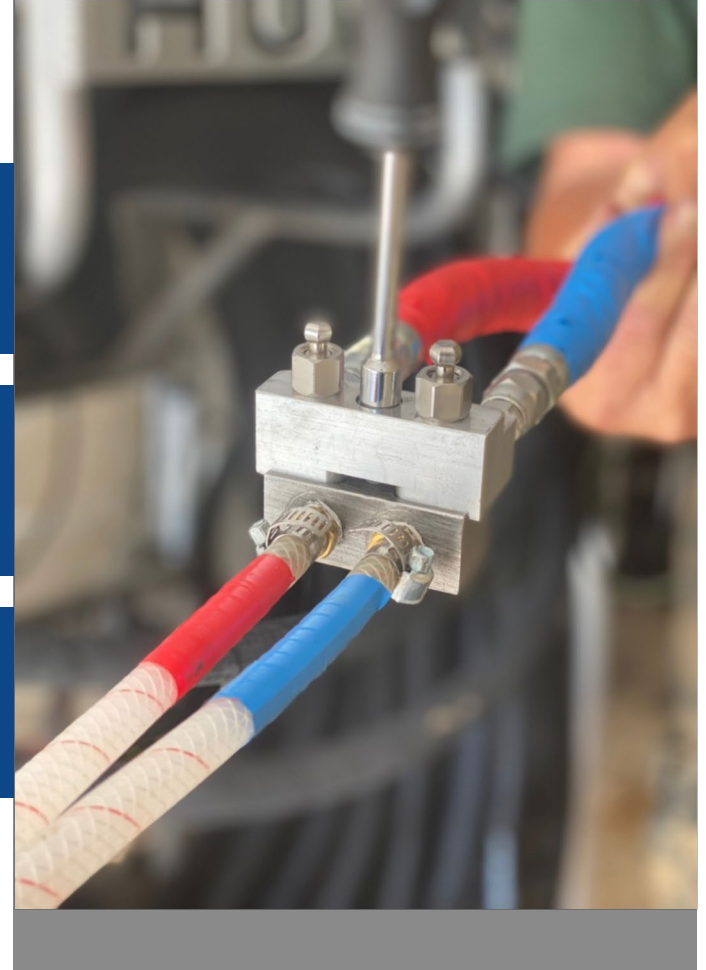
Attach the air hose between HULK machine and air compressor.

3

Power up the air compressor.

4

Install recirculation block and ensure fittings are tight, secure, and absent of fluid or air leaks.



Brand New HULK Setup

5

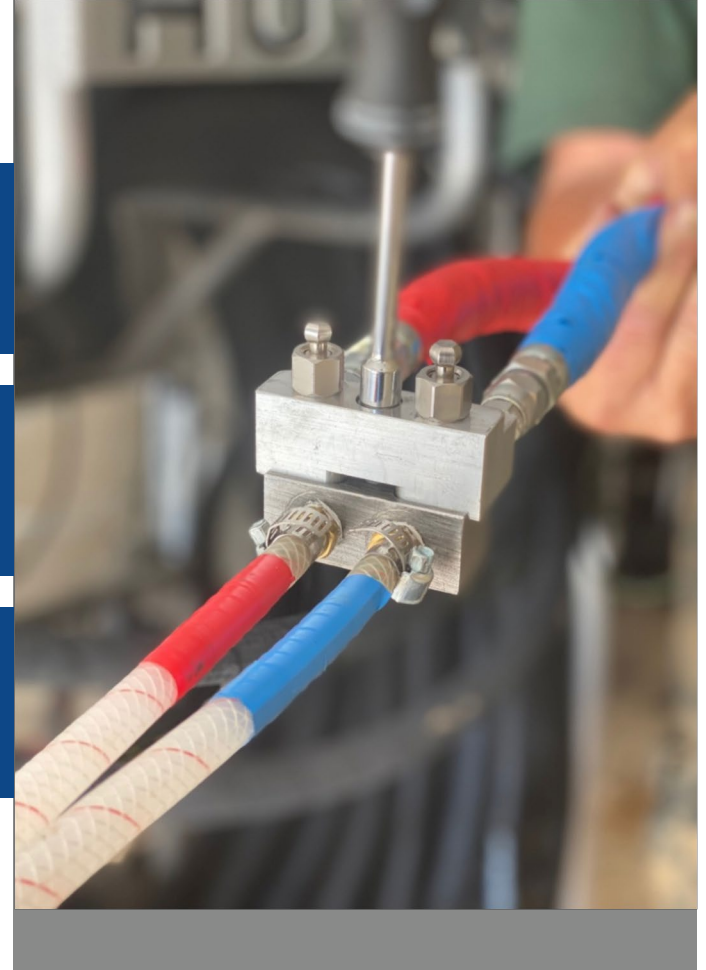
Tighten pump packing.

6

Place both ends of recirculation block into an empty trash receptacle.

7

Open manifold shutoff valves.



Brand New HULK Setup



8

Slowly raise air regulator until machine begins to cycle (low pressure).

9

Let the material flow through the entire hose assembly until there is continuous flow with no air pockets.

10

Lower air regulator to 0psi.

11

Close both manifold valves.

12

Remove recirculation block.

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Flexible FAST Drum Setup

Flexible FAST Drum Setup

1

Set drums “A” and “B” on the correct sides of the machine. Color-coded labels are placed on each storage tube located on each side of the machine.

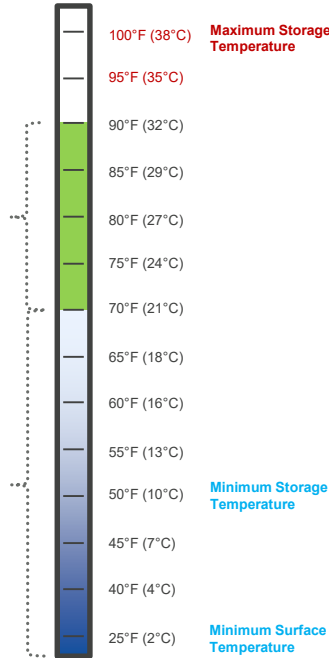
NOTE: 15-Gallon Drums can be placed directly on the HULK’s drum rack if desired.



Material Temperature

Optimum Chemical Temperature
at Time of Application
(Process core chemical temperature)

Temperature Range



Material temperature
for Flexible FAST
adhesive must be at
least **70°F** for proper
application to occur.

Flexible FAST Drum Setup

2

Ensure material temperature is correct and, if needed, apply heated blankets to ensure proper temperatures are retained.

3

Carefully open the Flexible FAST drums. **USE WHITE LITHIUM GREASE AT EVERY CONNECTION BEFORE FITTINGS ARE INSTALLED.**

- a. The large bung connects the drum to the machine.
- b. The small bung connects to the desiccant dryer.

Flexible FAST Drum Setup

4

Insert fluid draw tubes in corresponding
“A” and “B” drums.

NOTE: Once the A- and B-sides
have been designated, do not
cross contaminate with opposite
chemical at any time.



Flexible FAST Drum Setup

5

Remove tape from both ends and
install the desiccant driers to both
A- and **B-**side drums.



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Changing Drums

Switching out Flexible FAST Drums

1

Ensure dispensing has completely stopped and the HULK gun is in its “**off**” position.

2

Place the new set of Flexible FAST “**A**” and “**B**” drums on the correct sides of the machine.

Switching out Flexible FAST Drums

3

Carefully open the new **Part A** drum of Flexible FAST.

- Remove the desiccant drier from the empty drum of **Part A** and install it into the small bung on the newly opened drum of **Part A**.
- Remove the pickup tube from the empty drum of **Part A** and install it into the large bung on the newly opened drum of **Part A**.

4

Carefully open the new **Part B** drum of Flexible FAST.

- Remove the desiccant drier from the empty drum of **Part B** and install it into the small bung on the newly opened drum of **Part B**.
- Remove the pickup tube from the empty drum of **Part B** and install it into the large bung on the newly opened drum of **Part B**.

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Startup and Dispensing

Daily Startup and Dispensing Procedures

1

Ensure air compressor and generator are set up properly according to manufacturer's instructions.

2

Ensure tape has been removed on desiccant driers and they remain completely **open** during rig use.



Daily Startup and Dispensing Procedures

3

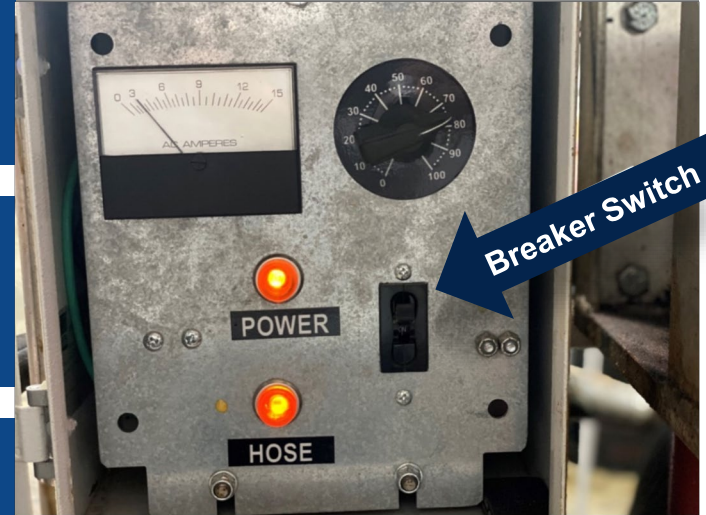
If using a heated hoses, attach extension cord between generator and the HULK. If not, skip to **Step #6**.

4

Power up generator.

5

Turn on breaker and adjust dial to appropriate setting for jobsite conditions.



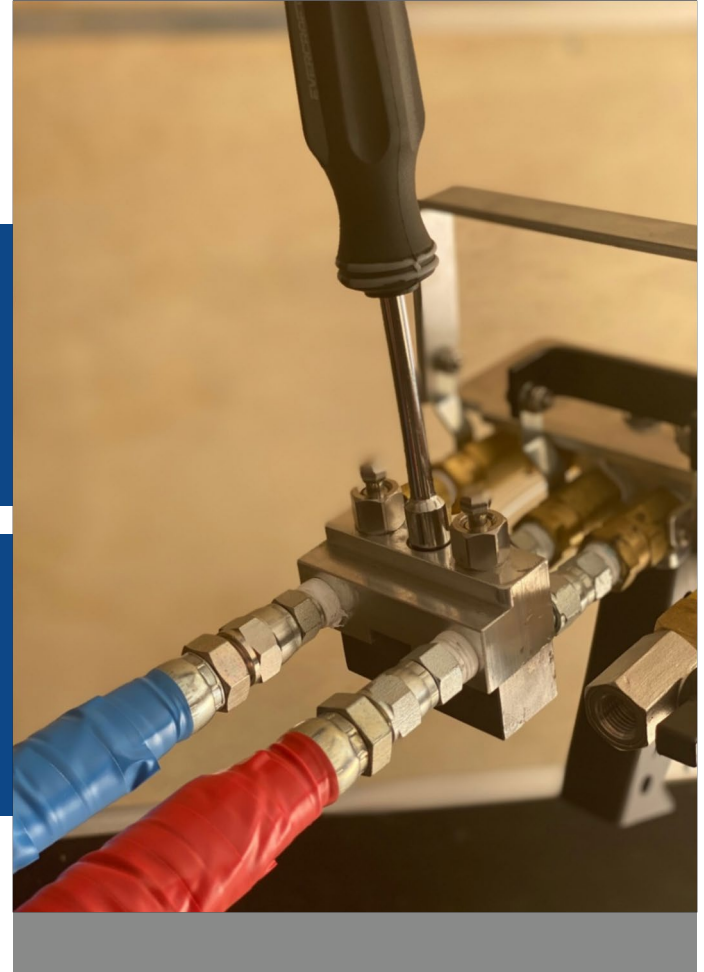
Daily Startup and Dispensing Procedures

6

Attach air hose between HULK machine and air compressor.

7

Attach the HULK gun to the hose assembly and ensure fittings are tight, secure, and absent of fluid or air leaks.



Daily Startup and Dispensing Procedures

8

Power up air compressor

9

Check gauges for equal pressure on **A-** and **B-** sides.

10

Apply white lithium grease to the threads on a **NEW** static mixing tip and install the mixing tip onto the gun.

Bead Application

11

When beads or ribbons are specified at 4", 6", or 12" on-center.



Daily Startup and Dispensing Procedures

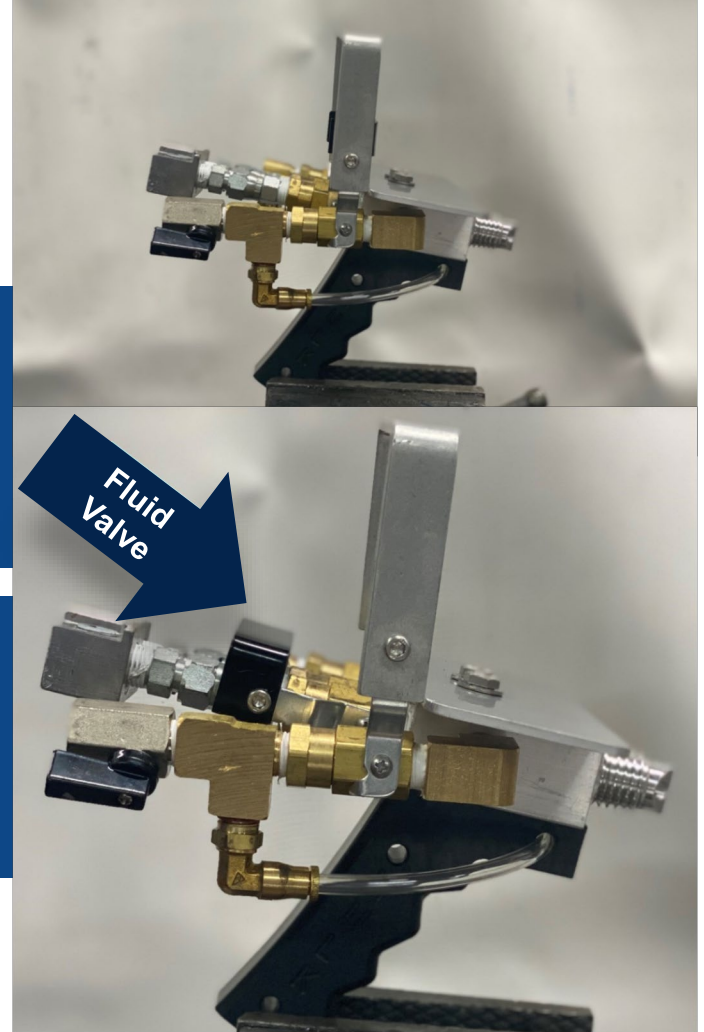
a

Raise air pressure to appropriate setting. Manufacturer recommendation is 50psi.

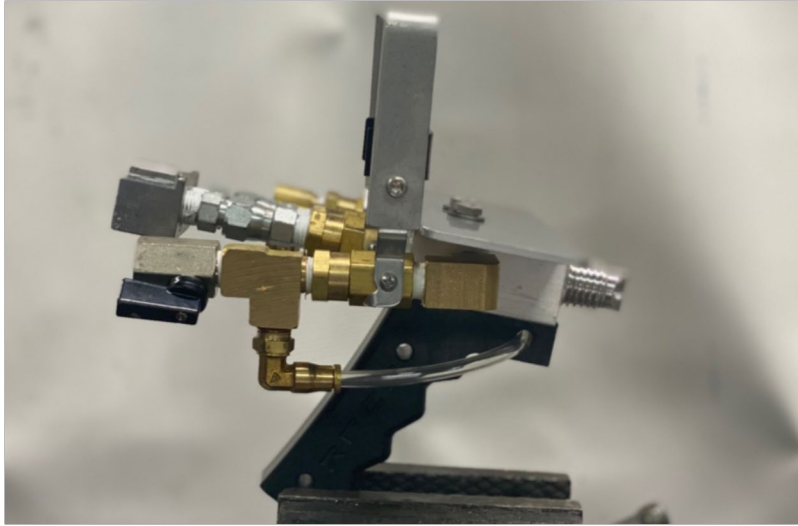
- **Lower** settings provide a slower speed of application.
- **Higher** settings provide a faster speed of application.

b

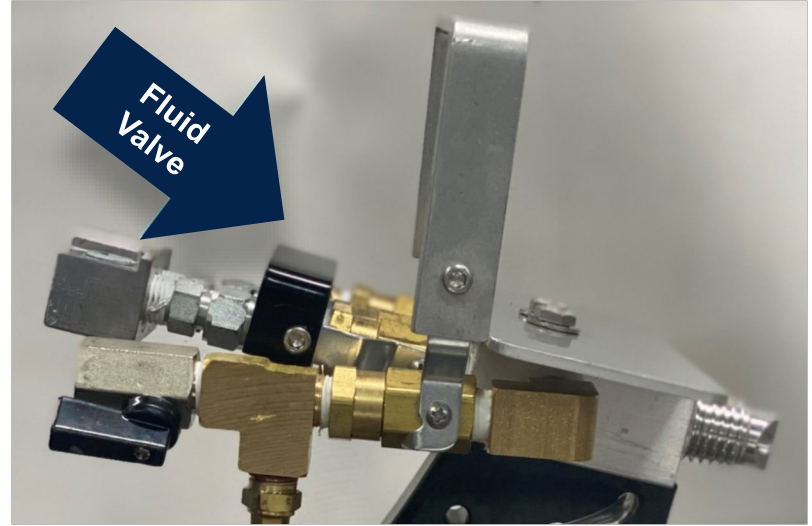
Open fluid handle completely to begin application of adhesive.



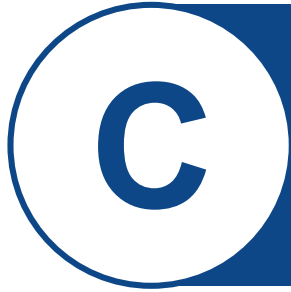
Closed



Open



Daily Startup and Dispensing Procedures



Ensure the adhesive is dispensed at a minimum $\frac{1}{2}$ " - $\frac{3}{4}$ " wet bead and proper spacing is followed.



Wet Bead



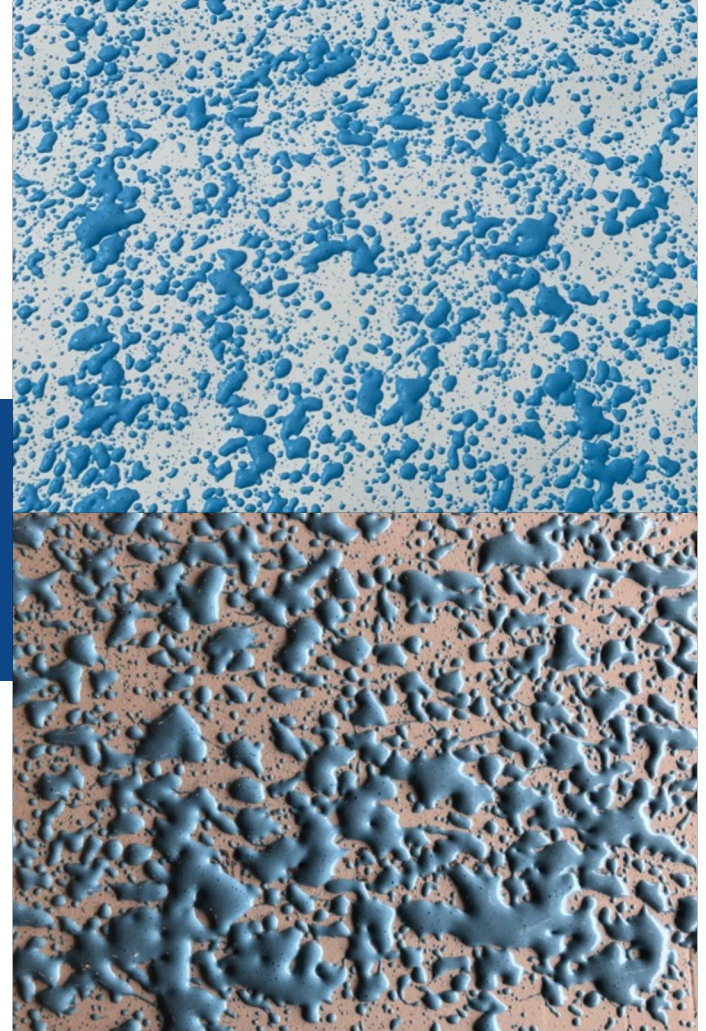
Foam Bead with String Time



Splatter Application

12

The following equipment and settings listed **MUST** be followed for approved splatter application.



Daily Startup and Dispensing Procedures

a

Equipment Setting:
60psi

b

HULK Gun Air Pressure:
80psi

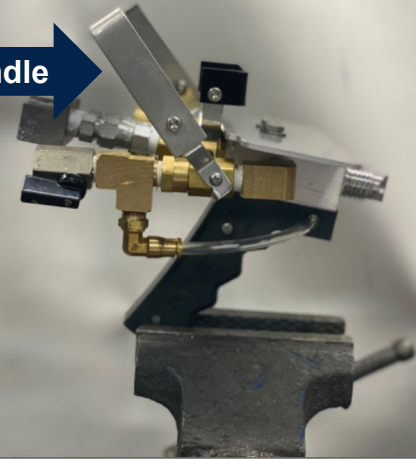
c

HULK Gun Air Handle:
Crack open 1/8

d

HULK Gun Fluid Handle:
100% Open

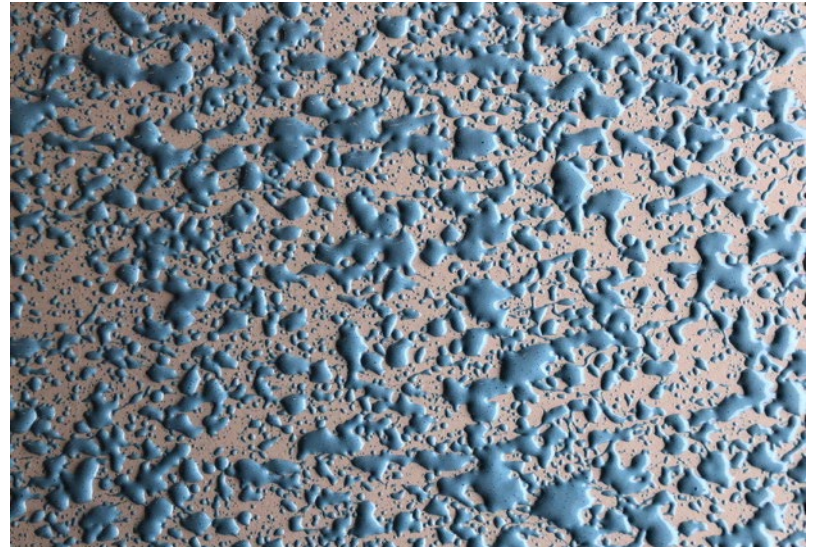
Air Handle



Initial Splatter



Splatter with String Time



Daily Startup and Dispensing Procedures

13

While dispensing, check to make sure the **A** and **B** pressures are within 300psi of one another. Adjust air pressure accordingly.

a. **NEVER** allow a pressure difference greater than 400psi between the **A** and the **B** side.

14

When you have reached a stopping point, ensure gun is pointed in a safe direction and close any open fluid valves on the air gun.

15

Once valves are closed, discard the used static mixing tip and replace with a new one.

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Short-Term Shutdown

Short-Term Shutdown Checklist

(overnight/lunch break)

1

Turn off hose heat.





Short-Term Shutdown Checklist

(overnight/lunch break)

2

Turn off generator.

3

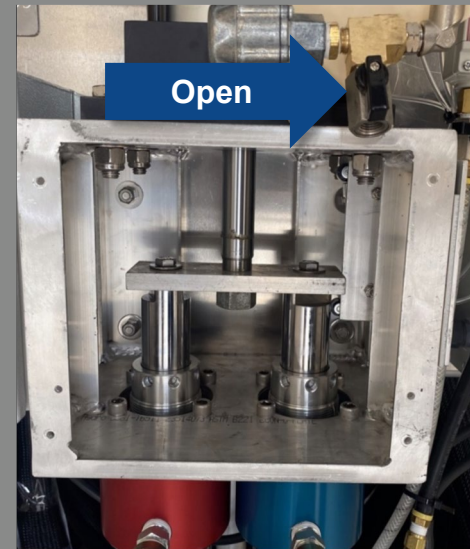
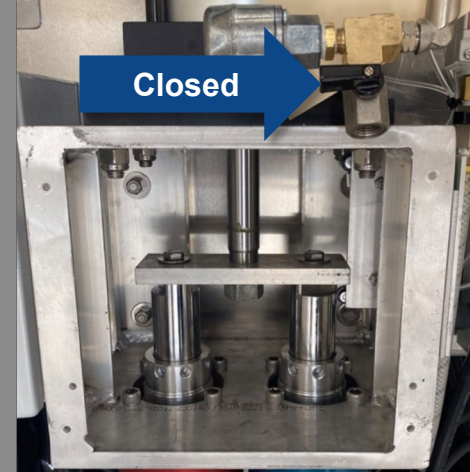
Back air pressure off to 20lbs.

4

In a safe direction, dispense excess material until both A and B gauges reach approximately 200 psi.

5

Open shut down valve by a quarter turn.



Short-Term Shutdown Checklist

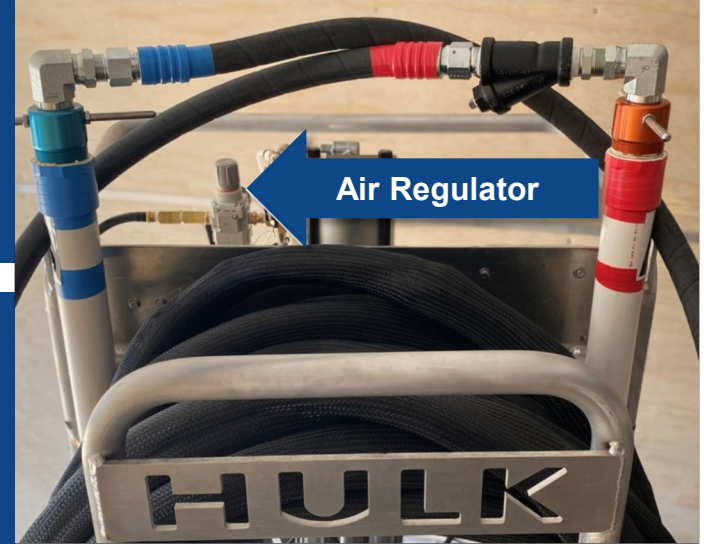
(overnight/lunch break)

6

Raise air pressure until blow off is complete.

7

Turn air regulator **OFF** 100%.





Short-Term Shutdown Checklist

(overnight/lunch break)

8

Close shut down valve completely.

9

Close both manifold valves on the HULK gun.

10

Disconnect air from the spray gun.

11

Remove and discard the used static mixing tip.

Short-Term Shutdown Checklist

(overnight/lunch break)

12

Disconnect HULK gun from the hose assembly.

13

With the fluid handle in the “open” position, clean HULK gun threads and clear fluid passages with non-chlorinated brake cleaner.

14

Shut down is now complete.

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Long-Term Shutdown

Long-Term Shutdown Checklist

(2 weeks or longer)

1

10 gallons of the proper pump lube from **4C's Spray Equipment** must be used for flushing the HULK.

2

Pour 2.5 gallons of pump lube into a clean 5-gallon bucket for the **A-Side** and repeat this step with the remaining pump lube for the **B-side**.

Long-Term Shutdown Checklist

(2 weeks or longer)

3

Remove the **A-Side** pickup tube from the Flexible FAST drum and wipe the outside of the tube with a clean cloth before inserting into the 2.5-gallon bucket of pump lube. Ensure the tube is in a vertical position.

- Repeat this step with the **B-Side** pickup tube





Long-Term Shutdown Checklist

(2 weeks or longer)

4

Raise the air pressure to 20 pounds.

5

Using an empty trash receptacle, open both liquid manifold valves on the HULK gun and begin dispensing until clear liquid comes out of both **A-** and **B-**side on the HULK gun.

6

Ensure buckets of pump lube do not run empty during flushing.

7

After about 50 strokes or when clear liquid is present, lower the air pressure to **zero**.

Long-Term Shutdown Checklist

(2 weeks or longer)

8

When both sides are clear, you may put the HULK into the park position (pumps are in the **DOWN** position).



Long-Term Shutdown Checklist

(2 weeks or longer)

9

Close both manifold valves.

10

Once manifold valves are closed, you must put 1 quart of CLEAN pump lube into the **A**-side storage tube. Repeat this step for the **B**-side storage tube.

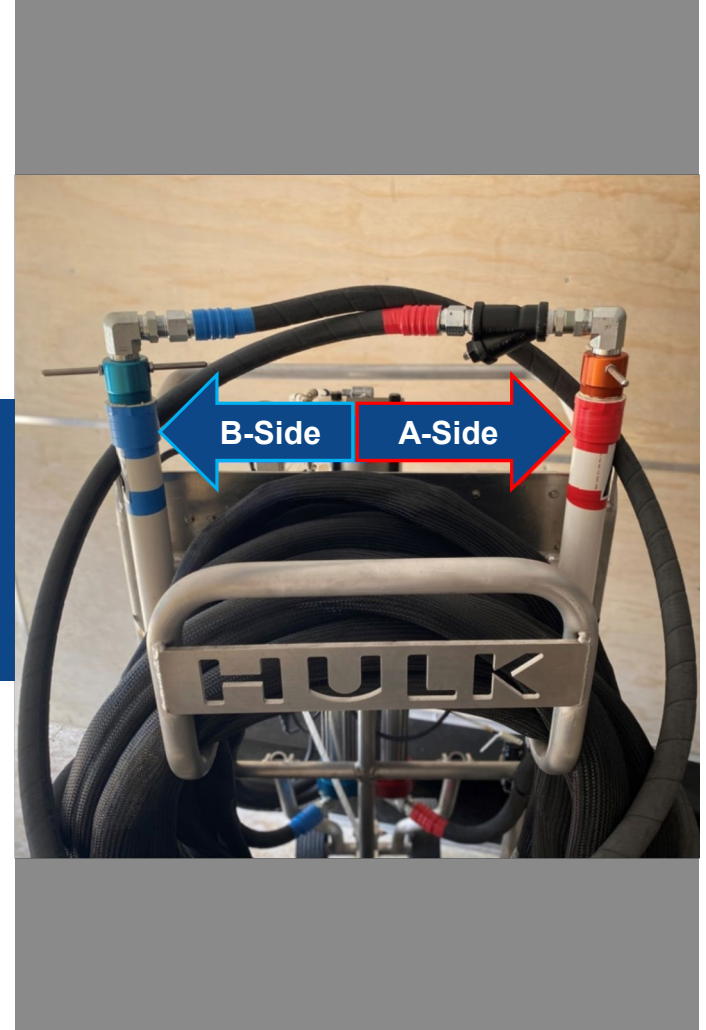
Long-Term Shutdown Checklist

(2 weeks or longer)

11

Put the **A**-side pickup tube from the bucket of pump lube into the **A**-side storage tube.

Put the **B**-side pickup tube from the bucket of pump lube into the **B**-side storage tube.





Long-Term Shutdown Checklist

(2 weeks or longer)

1

Install all bung lids on both Flexible FAST drums, making sure to use ***white lithium grease*** on the threads.

2

Disconnect HULK gun from hose assembly.

3

With the fluid handle in the “**open**” position, clean HULK gun threads and clear fluid passages with ***non-chlorinated break cleaner***.

4

Shutdown is now complete.

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Prevention and Troubleshooting

Prevention

1

Use white lithium grease for all fittings, and threads for static mixing tips. This helps prevent material buildup and seals all possible passages for air and moisture.

2

Letter-label or color-code fittings, desiccant driers, and containers. This helps ensure that fittings and accessories stay on their designated **A-** or **B-**side.

3

Ensure all openings have been plugged unless being vented properly.
*Replace desiccant driers when needed.

Blue = good
Pink = needs replaced

4

When in doubt, flush it out. Flushing your machine regularly will significantly increase the operating life of your HULK and reduce downtime on the jobsite.

Troubleshooting Tips

1

Proper storage of material is essential.
Ensure the material temperature of Flexible FAST is kept at 70°F at all times.

2

Ensure both ends of the desiccant driers are completely open.

3

Ensure the Y-Screen on the **A**-side is clear and free of debris or crystals.
Replace if needed.

4

Ensure gun & hose fittings are completely secure and tightened with no air leaks.

5

Ensure hoses are free of all kinks and twists.

6

Ensure a new static mixing tip is being used after stopping for 30 seconds or longer.

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Adhesive Cost Savings with the HULK

Customer Input		Manual Price Entry				
Roof Square Footage	100,000	Dual Cartridge	\$224.40			
Labor Rate (\$'s)	\$50.00	5 Gal Jug	\$510.00			
Inches On-Center	6	Dual Tank	\$1,020.00			
Flexible FAST	Flex FAST	15 Gal Drum	\$1,122.00			
		50 Gal Drum	\$3,431.28			
		Dual Cartridge	5 Gal Jug	Dual Tank	15 Gal Drum	50 Gal Drum
ADHESIVES	Adhesive Count Needed*	334	80	59	27	8
	Price per Sq. Ft.	\$0.748	\$0.408	\$0.600	\$0.299	\$0.275
	Total Adhesive Price \$	\$74,950	\$40,800	\$60,180	\$30,294	\$27,450

Customer Input		Manual Price Entry				
Roof Square Footage	500,000	Dual Cartridge	\$224.40			
Labor Rate (\$'s)	\$30.00	5 Gal Jug	\$510.00			
Inches On-Center	12	Dual Tank	\$1,020.00			
Flexible FAST	Flex FAST	15 Gal Drum	\$1,122.00			
		50 Gal Drum	\$3,431.28			
		Dual Cartridge	5 Gal Jug	Dual Tank	15 Gal Drum	50 Gal Drum
ADHESIVES	Adhesive Count Needed*	834	200	157	67	20
	Price per Sq. Ft.	\$0.374	\$0.204	\$0.319	\$0.150	\$0.137
	Total Adhesive Price \$	\$187,150	\$102,000	\$160,140	\$75,174	\$68,626

Customer Input	
Roof Square Footage	50,000
Labor Rate (\$'s)	\$40.00
Inches On-Center	4
Flexible FAST	Flex FAST

Manual Price Entry	
Dual Cartridge	\$224.40
5 Gal Jug	\$510.00
Dual Tank	\$1,020.00
15 Gal Drum	\$1,122.00
50 Gal Drum	\$3,431.28

		Dual Cartridge	5 Gal Jug	Dual Tank	15 Gal Drum	50 Gal Drum
ADHESIVES	Adhesive Count Needed*	250	56	42	19	6
	Price per Sq. Ft.	\$1.122	\$0.567	\$0.850	\$0.416	\$0.381
	Total Adhesive Price \$	\$56,100	\$28,560	\$42,840	\$21,318	\$20,588

Questions?

4C's Home of the
HULK