LET’S SPRAY!

A Chemist Enters the World of Polyurea Equipment and Application
Why buy a spray machine?

For me:

1. I was completely reliant on polyurea system house to do all my spraying (the system house was a great company to work with)!

2. I was completely reliant on an experienced applicator to do all the spraying (applicator was fantastic, but in high demand, and he moved to Washington state)!

3. It was a 400-mile round trip distance to get spraying done. (The drive “got old fast”!)

4. Greater project work load required much more polyurea output
Chad Matlock of Duck Crossing provided a great wealth of knowledge, expertise, and support to our project as a contract spray applicator and equipment expert.
Our story begins as the “epic barn find”!

Someone had an “oldie but a goodie” that has been sitting in covered storage for a long time.
Sure enough, the “barn find” of our old Polyurea Spray Machine quickly turned into an episode of American Pickers.

Seller is a very good friend

Seller spent over 20-years as an applicator of truck bed liners and foam insulation

Seller provided great advice on getting the machine back up and running

Seller continues to be a great resource!

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September 10 – 12
We have a deal!!
“The machine was working when it was put into a storage container SEVERAL YEARS AGO”.

The only other item included was 50-feet of heated hose, working condition “unknown”.

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The machine is an old Gusmer HV-20/35 from the 1990's.
While we are on the topic of the 1990’s........

Almost 2 decades ago I was a polyurea formulation chemist, but did not spend any time working with the application equipment.

Performance and Processing Enhancements of Aromatic Polyurea Elastomer Systems Prepared from High 2,4’-MDI Isocyanates

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ABSTRACT

Polyurea elastomer systems have been formulated to produce high performance, rapid curing coatings and caulks that can be applied in adverse climates that would normally inhibit the use of other conventional chemistries. It is the

INTRODUCTION

Polyurea spray technology continues to rapidly grow and is becoming increasingly visible due to its specification and use in several new, high-profile applications. The Boston Tunnel Project, the Lakeview Station Project in New York City, and....
Restoring an old Polyurea Spray Machine

It’s like a bad episode of American Choppers:

• Deadlines were tight!
• Tempers flared!
• Things got heated...!
Bound to have a few little surprises!
Fortunately the former “tenant” did not have an appetite for electrical wires!

Did I do that?
Now the real work begins!

- Where do we find all the parts to complete the spray machine package?

- Who will help us put it all together?

- Who can help us if something is not right with the machine?

- PDA members, of course!
Let's ask Google!

Search:

“gusmer hv 20/35”

Gusmer HV-20/35 Series Proportioning Unit - Diamond Liners Inc.

www.diamondliners.com/Gusmer-HV-20-35-Series-Proportioning-Unit

Part Name: Fitting: Union Swivel, Straight; 3/4” NPT; (I) Swivel x 3/4” NPT (M) For feed hose from transfer pump. List Price:$17.90. Add to cart. Part#157021.

You visited this page on 7/9/18.
First step: Pro electrician to hook it up. Angie’s List (had great ratings)
What about our 50-foot hose in “unknown working condition”?
Recommendation received:

1. Try to pump a fluid (motor oil) through both A and B sides. Check for obstructions.

2. Check for electrical continuity of heating element

No clogs!
Electrical Continuity Good!
Next step:
Try to find a person who knows a little something about polyurea machines. He might be able to drive over and take a look, and provide his professional opinion.

(He also might let your kid stand in front of his car for a picture)!
You’re gonna’ need a bigger air compressor!
7.5 Horse Power Minimum Size Air Compressor

Craiglist deal
Challenge: Seller had 2 forklifts, but both were broke!
No worries, he had a car wrecker! (check out the old guy with the stick!!)

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Challenge #2: We have no forklift at our shop!

Get creative, but be safe!!!
The unit required some electrical work

New relays (provided by seller) had to be installed. After-market hose heat controller had to be wired up (later found to be non-functional).
Hot Dog!!
She lights up!
Primary heaters were turned on
Hydraulic pumps were engaged; high pressure fluid flow to the block was checked
New transfer pumps were configured with supplied air hose harness
Hose was re-wrapped
Mechanical Purge Spray Gun was attached to hose
Instruction provided on preparing the gun to spray
THE MOMENT OF TRUTH!
“Houston, we have lift off!”

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Welcome to the world of Polyurea Spray Application!

Al, what took you so long?!
Not so fast!
What about that non-functioning hose heat controller?

Call a PDA member!

Jeff at SPI
Jim Flemming in Alaska!
John at Diamond Liners
Kurt DeRuiter
Murph Mahaffey at PMC
Robin at Intech Equipment & Supply
A brand new PROGRAMMED hose heat controller arrived at our place in less than 20 hours!
But wait!
There’s more!
Our front panel amp controller shorted out!
Easy fix by replacing potentiometer.
Construction of our custom walk-in fume hood
As The Beatles best put it:

“I get by with a little help from my friends”!
Special Thanks to:

PDA
Graco
PMC
SPI
Diamond Liners
Polycoat
Primeaux Associates, LLC
Ray Scott
Meredith Carr
The Hanson Group
Duck Crossing, LLC

And all our other FRIENDS at polyurea companies that we have worked with over the last 19 years!
Thank you for listening!
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Questions and Answers