

HVAC TACTICAL

zac desjardins

the man behind the brand

Official 2024
HVAC TACTICAL
AWARDS Recap

Ask a Jerk!

MIRACLE MILE:
Making Miracles with
Brent & Kathleen Ridley

10 Qs with **Ashley Lynds**

INNOVATING WITH
NAVAC

INTERVIEW: JOSH COOLEY
SUPCO
TRADEFORX
TECHNICIAN-INVENTED. TECHNICIAN-PROVEN

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Awards Show Recap!

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What a night! Check out all the action from the red carpet and awards show!



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written by Dan Vastyan

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Zac Desjardins: the man behind the Quality HVACR brand.

spring 2024



Congratulations!!

Welcome to the spring 2024 episode of HVAC Tactical Magazine.

A voice of the people.

When we rolled out the very first issue of the magazine, we had a vision to bring the voice of the trenches and the movement to the mainstream. A magazine for the trenches, by the trenches.

Our goal is simple.

- Provide valuable, relevant content that our fellow tradesmen and tradeswomen in the trenches can appreciate.
- Build awareness of the movement happening on social media and highlight individuals making an impact in the HVACR community.

Content

If you or someone you know has great content that you'd like to see published in the magazine, feel free to reach out. We're always open to chat!

Email us at magazine@hvactactical.com

@hvactactical



Be sure to follow us on social media and get plugged into the community!

Thank you for your support and welcome to the movement!

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editorial team



Ben Poole
HVAC Tactical Founder

Ben Poole is an entrepreneur and 3rd Generation HVAC professional. He founded HVAC Tactical in 2018, the HVAC Tactical Awards in 2020 and the HVAC Tactical Magazine in 2023.

His goal is to simply elevate the industry, reignite the passion for the trade and motivate others to take on the personal responsibility of mastering their craft.



Giana Brucella
Editor-In-Chief

Giana Brucella is a passionate writer and editor, and has been in the marketing field for the last seven years.

Her keen eye for detail and organization skills help keep the HVAC Tactical magazine looking sharp, clean, and without typos.



Matthew Pryce
Managing Editor

Matthew Pryce is a published author, professional musician, and digital marketing guru.

He previously worked as a producer for NPR, and has written for several HVAC/r publications since joining the industry.

He sits on the HARDI marketing council, and handles marketing/communication for Centrotherm Eco Systems in Albany NY.





10 QUESTIONS

with *Ashley Lynds*

Director of Education & Brand Management
Refrigeration Technologies

How'd you get started in the refrigeration game?

It's not that cool of a story haha. I had taken a "semi-retirement" to travel the world and was having a hard time finding a job after my three year work gap. I had a friend in the industry and they happened to be looking for a sales person to join their team and here we are!

What's your favorite HVAC/R podcast?

I'm going to say *Power Women of the Trades*. I love the ladies who run it and it's awesome to see more focus on the ladies in the trades. There are some really amazing females out there.

What was your first job?

I worked at a bakery and sandwich shop and this actually created **my hate for mayo** haha.

LOL why the hate for mayonnaise?

I used to fill these small cups with mayo everyday at the sandwich shop, and the box that I scooped the mayo from would get crusty and discolored around the edges. It was disgusting! 🤢



Ash interviews Adam Nasser (@wolfhofhvac) at 2023 HVAC Tactical Awards



You can bring three people to a dinner party - who's coming along?

Cleopatra. She seems like a badass and hopefully she could tell me how they built the pyramids, Leonardo DiCaprio I feel like he would be really interesting to talk to and my boyfriend Devin. He would make everyone laugh.

What's your favorite movie, TV show, and band?

Honestly I don't have a favorite movie or tv show. My favorite group is Rufus Du Sol. I've seen them like 12 times. I like to be outside so I'd rather be traveling or hiking. Fun fact **I've been to 37 countries.**

Name an industry manufacturer other than RT that you really like/respect, and why?

RLS has a great team, everyone I've met over there is intelligent and hard working.

What's your top HVAC/R memory?

My first HVAC Tactical awards show in Vegas. Meeting all the people I had been interacting with on social in

person, giving Colleen an award, and meeting my boyfriend at the show. It was such a full circle moment of feeling like a real part of the community and cementing some long term relationships.

Who is your favorite IG personality in HVAC and OUTSIDE of HVAC?

This is hard because there are so many good ones! @wolfofhvac is one of my favs, I also love @hvac_sg, and watching @hvachicksjennifer blow up is really cool. Outside of hvac I love @loriharder and @codiesanchez.

Name your theme song! What sound would you want to play every time you entered a room?

"Savage" by Whethan. When the chorus hits it's bassy and up beat and fun and I mean who doesn't want to be a savage!



blue collar goes black tie.

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2024

HVAC
TACTICAL
AWARDS

HOSTED BY





Adler
PLANETARIUM

What a night in

This is the night of the year for HVAC/R, plumbing, and the trades in general.

Y'all proved it.

The 2024 HVAC Tactical awards, live from the Adler Planetarium in Chicago - it was probably the night of the year for the industry.

From the flashy tuxedos and gowns on the red carpet, the awards spectacular - honoring the industry's best - the 2024 awards was an event to remember.

It was freezing cold in Chicago. The temps and wind chill were down well below 0F at times. (That's -17C for you Canucks).

But, the action inside the planetarium was spicy. Everybody was mugging for the camera on the red carpet, snapping pics of their own, and generally, mingling with the top talent in all of the industry.

This community is uniquely supportive of one another, so the vibes were also incredibly high.

After some cocktails on the red carpet, it's time for the main event.

Kylen Brown kicked off the show laying out some ground rules and off the night went with the industry's top professionals taking to the podium to give and receive these coveted awards.

Some heartfelt moments here, a little comedy there and the 2024 HVAC Tactical Awards were in the books.

The after-party followed keeping the buzz alive before everybody grabbed their traditional HVAC Tactical bag (as always, jammed with such amazing %^#&!), and tried to grab a few ZZZs before AHR the next morning.

What a night!



Chicago!





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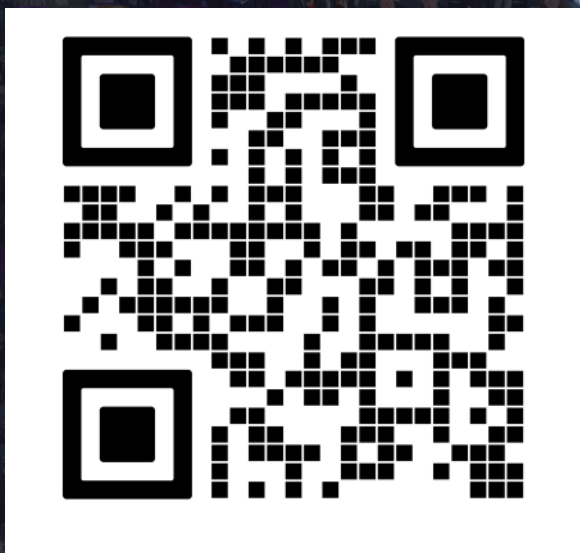
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ce the entire event





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**Tersh Blissett
&
Josh Crouch**



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the Year
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2024

*Lifetime Achievement
Award Winner*



Eugene Silberstein



Eugene really setting the bar high here – in terms of both his inimitable body of work, but also what swag in that suit!

Congratulations, Eugene!

Tyler Dynes



2024

Picture Perfect
Award Winner



Keep an eye on Tyler. Not only is his craftsmanship on par with anyone in the industry, he's truly one of the nicest, most supportive folks you'd be lucky to meet.



Adrian Garcia



2024

*Best Social Content
Award Winner*



From his great podcast, to the technical videos he shares - Adrian is at the top of his craft.

The upbeat and informative presentation give his content a unique energy that keeps us coming back.

Well deserved.

2024 HVAC Tactical Award Winners



*Join us in celebrating all the winners of the 2024 HVAC Tactical Awards!
See you in Orlando in 2025!*

Lady of the Trade



Jennifer Manzo

[@hvacchicksjennifer](#)

Behind the Scenes



Brandon Price

[@acservicetech](#)

Mentor of the Year



Brett Wetzel

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Hidden Gem



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Lifeline Tech



Dylan Roper

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Influencer of the Year



Ty Branaman

[@love2hvac](#)

Ask A Jerk | Spring 2024

"AND, WELCOME BACK, EVERYONE, TO THE HVAC JERKS WEEKLY POD...". Oh, sorry, it's just a habit. But this is a magazine article, not a podcast. However, we do actually have a podcast that's been around for about six years or so called *The HVAC Jerks*. Stupid, right? Well, maybe so, but what do you expect from a couple of jerks? Although, you have to admit that you can't forget our name, regardless of how hard you try!

Naturally, our next step to fortune and fame, we thought, should include sharing our limited and somewhat questionable wisdom with the trades through the printed word. You know, sort of like, if you put a monkey in front of a typewriter long enough he'll eventually type out a line from Shakespeare. Then we found our opportunity; we came across Ben Poole at a bar one evening and convinced him that a "Dear Abby" type of column was just what his new periodical and our industry was lacking. Surely one side of this conversation was decidedly inebriated, but which side was unclear. He agreed to consider our suggestion. (Ha! Fool.)

As much as our beloved industry MC may now regret his decision, the die is cast and here we are. Who are we exactly, and what qualifies us to spew technical, business, career and most importantly, advice on LOVE, you ask? We proudly say that we're only a couple of Jerks trying to figure out life in the trades, just like you. However, we have been around a while (which means some of us might be old, not me though),

and may have a clue of how not to do things. For instance, I can tell you with absolute confidence how not to size a steam boiler after making a very embarrassing ass out of myself 25 years ago, while Kevin can explain why not to give everyone in your company a credit card for "emergencies."

This group of industry outlaws (?) includes myself (Rich), Kevin, my on-air counterpart and Jon, the producer of our podcast mess. A little about me: I started out as a plumber's helper in Manhattan back in the early 1990s. We worked on everything from water tanks on top of tall buildings to sewer and condensate stoppages, leaks on brass and galvanized water pipes and even steam pilots and Spence valves where the steam was piped in from miles away. Later, I moved away from the big city and went to work for a few smaller HVAC and plumbing companies where I spent much of my career doing load calculations and designing duct and hydronic heating systems. I've worked in the field, managed the field, worked on the wholesale side as a salesman, manager, and regional manager and now as a manufacturer's rep. I've also written a few articles and books, and have done some other industry-related things that now make me say every day that I realize how much more there is to learn about this business.

Next, there is Kevin, and what a specimen of a human being he is. Name it and he's probably done it. From welder mechanic to roofer to haunted house set builder, the list is endless, and that's all



before he hit puberty! Before he decided that oil nozzle twister seemed like the right path, he was a hockey player, Speedo model and cauliflower farmer.

But off he went to perfect his oil burner skills, and then to conquer the world of hydronics along with air conditioning and heat pumps. It didn't take long for Kevin to realize that his big oil company employer and his own ideas about business and customer service were at odds, so they soon parted ways. Being the "never say die" type of guy that he is, Kevin decided it was as good a time as any to start his own business. With a house full of kids and a new mortgage on his back, there was no time to waste. He had to bring home the bacon right away, and so he did; nobody in that house ever went hungry. His tenacity and need to prevail made it happen.

Fast forward to today, he continues to improve his successful business, and looks back fondly at his days in a Speedo. One of the most caring and generous people that you'll ever meet.

Lastly, there is Jon. Not that there is anything last about Jon, in fact he won the "Best Behind the Scenes" award at the 2023 HVAC Tactical Awards for making our podcast sound like we have some idea of what we're doing. As a proud field technician for more than 20 years, most recently focusing on commercial systems, Jon has owned and operated his own recording studio for most of his entire adult life. He has recorded numerous albums and holds several television and movie credits as well. Jon is a secret stud; big smile and a bigger heart.

Well, there you have it, Fact and Smack.

Three Jerks ready and willing to solve all of your worldly problems, and to help get your love life back on track. Don't believe it? Give us a try. Ask us why you shouldn't spill your can of soda on that 460v contactor or why it's a bad idea to tell your boss to go f#%@ himself when he asks you to clean out your truck. And if you're having a spat with your spouse or girlfriend, just give us their phone number and we'll straighten it right out. Just send an email to the editor, or directly to us at theboys@thehvacjerks.com.

Peace!



Q) Hey, Jerks! I can't take working for my stupid boss anymore, and I think it's time for me to go out on my own. I've been an HVAC tech for 5 years now. How much is it going to cost me to start my own business?

Jake from Missouri

Well Jake, starting your own business is a great thing, and a big step for anyone. A lot of us underestimate how much is involved with starting a business, especially since most of us don't have any formal training on running a business. That doesn't mean you shouldn't do it, owning your own company can, and probably will do great things for you, but you need to be prepared. Aside from the obvious start-up expenses like a truck, office stuff, etc., make sure that you have some money set aside to help get you through the first 6 to 12 months.

Another critical point that almost all new business owners screw up is how much to charge. Don't just pick a number out of a hat to be cheaper than the other guy, figure out what ALL of your expenses will be and find out how much it really costs you per hour. We have a worksheet that can help you with that or ask an accountant. DO IT!!! Good Luck!

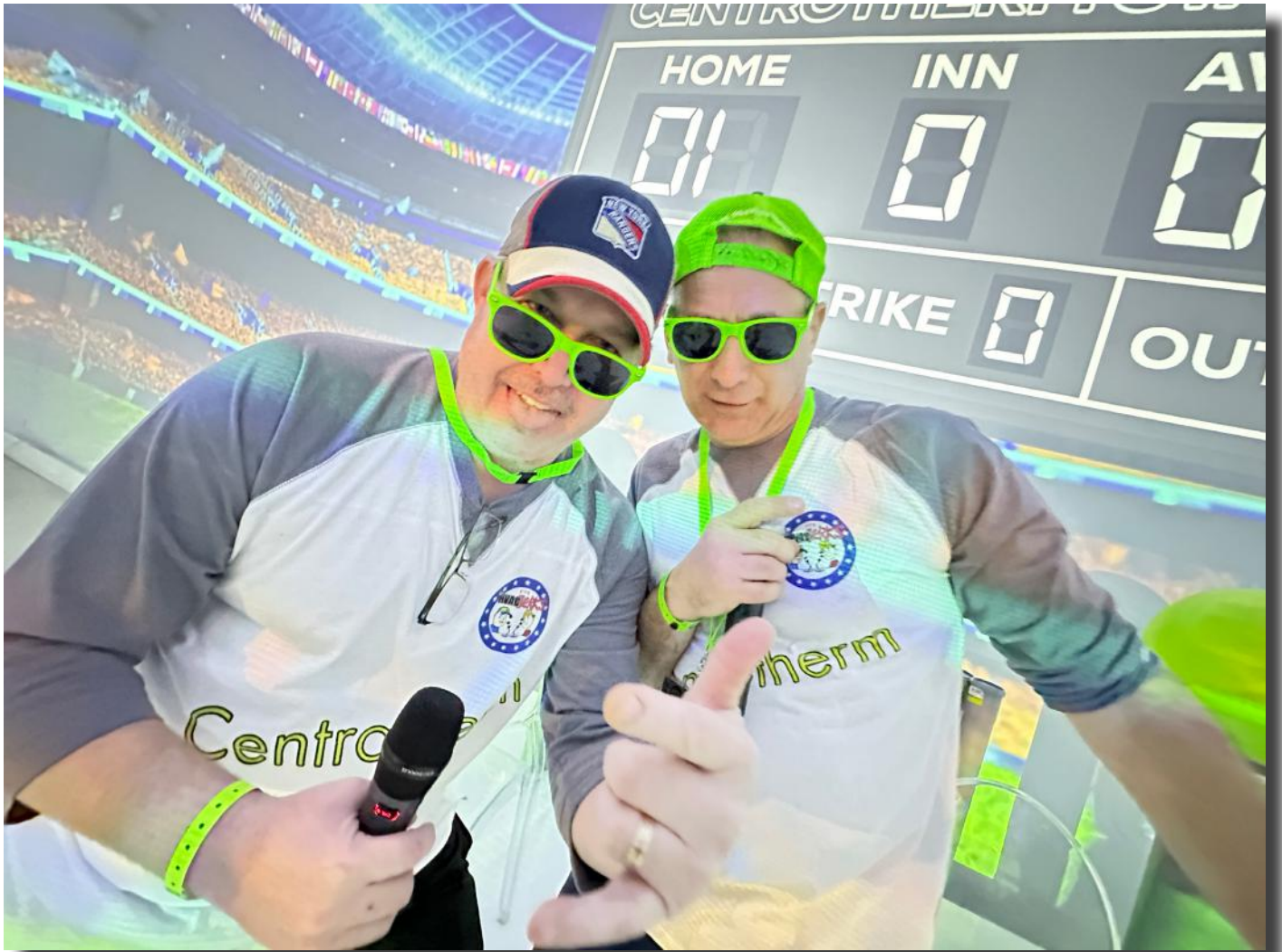
Q) Dear Jerks, I was just wondering, why do we have to change orifices or a gas valve when switching from natural gas to liquid propane? Does it have something to do with the liquid part?

**Thank you, and I love the podcast!
Green Mike from Atison, NJ**

Mike,

We're glad you're enjoying the podcast! Propane is a liquid under -44 degrees F, or if it's under pressure, like it is in a tank. As soon as you depressurize it though, it immediately reverts to a gas. The difference is in the amount of energy contained in the gas. As you know, gas in the HVAC world is commonly measured in cubic feet. A cubic foot of natural gas contains about 1,038 BTUs, but one cubic foot of LP contains about 2,516 BTUs. So, if you were to use the same size hole (orifice) to deliver LP as we do for natural gas, you would

burn about 2 ½ times as many BTUs. In other words, a 100,000 BTU furnace or boiler unconverted would now run as a 250,000 BTU system. As fun as it is to watch flames blowing through that little hole where the sight glass used to be, homeowners usually have a different opinion that typically involves some sort of high-pitched scream. Best practices include changing the orifice and leaving the flame on the inside of the combustion chamber.



Q) Dear HVAC Jerks, I've been married for three years, and my wife still gets mad at me when I bring an oil burner in to rebuild on our kitchen table. I almost never work on them when we have company over, and if I do, I'm pretty careful not to let any oil or cleaner splash on to the food. Also, whenever I let our baby help out so she can learn something, I always make sure she wears the little baby eye goggles I got her to protect her eyes, but my wife still yells and tries to hit me with the remote control! Is there some kind of a class I can send my wife to?

**Lumpy head Ernie
Beumont, TN**

Dear Lumpy head,

To be honest, we can see why your wife could be a little ticked at you. To start with, you sound like a nice guy, but maybe just a little unrefined, what do you think? Let's begin by leaving the squirrel jerky in your truck so that you're not spitting it at her when you apologize for having your guests eat wild boar burgers basted with Gumout. Next, we think that child rearing may not be your strong suit, so perhaps consulting with your wife before introducing your baby to new career paths might make sense. Better yet, try to spend an extra 80 or 90 hours per week at work; that should make your wife much happier. Peace! 🍷

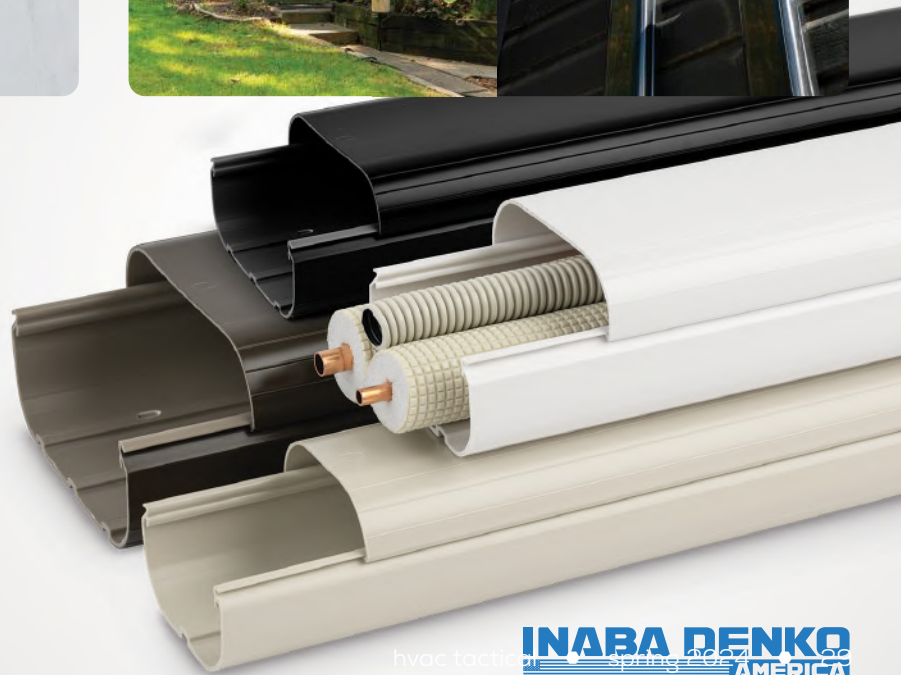


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Quality HVACR:

the man behind the brand



Dan Vastyan spoke to Zac about the trades, making content, and so much more.



Tennessee
QUALITY HVAC/R

MADE
IN THE
RING



Zac DesJardins is most broadly known for his YouTube channel, *Quality HVACR*, where he strives to educate, coach, and motivate through the videos he creates. His in-the-field, hands-on approach resonates with people in and out of the industry. Nearly 90,000 subscribers on YouTube, all from within the past two-and-a-half years, are a testament to the content's value. You can also find Zac on Instagram under the same name.

The lessons, insight, and tips he shares on YouTube come from years of experience in the field and as an entrepreneur. Zac spent 10 years working for someone else before he set out on his own, when he established his one-man heating and cooling company, Quality Comfort, Inc., just outside Nashville, TN.

Founding and operating a successful HVAC company and YouTube channel are no small feat, especially operating solo. Dedication, drive, and an obsession with efficiency have enabled Zac to do both, though he took different approaches for each. He went into the trade with the goal of owning his own company. He started his career as a YouTuber with less direction.

"My parents were self-employed, so naturally I grew up thinking I'd do the same," said Zac. "I graduated high school in 2002 and began working for a general contractor, who tasked me with installing the HVAC systems for the homes he was building. Within six months, I knew HVAC was my calling. I liked it because it provided variety. It includes elements of plumbing, electrical, refrigerant and general mechanical knowledge."

From there, he started working as an installer for Air Conditioning Services, in Nashville. This is where he gained most of his experience.

"They really let me spread my wings as a residential installer," said Zac. "I worked my way up to commercial projects and eventually dabbled in building automation, which I really enjoyed. When my supervisor left the company, I followed him. Later, I became a controls technician at Johnson Controls."

Zac realized his goal of being self-employed in 2012, after leaving Johnson Controls and founding Quality Comfort, Inc., in 2012. He wanted to remain a one-man shop, and he has. He knew this would let him set his own schedule, remain extremely efficient, and prioritize family time.

"I'm very particular," he said. "I wanted to-and still do- offer my very best to each and every customer. That's my differentiating factor. The only way I maintain 100 percent control of my product is if I'm the only employee, aside from a helper or two I'll bring on for bigger demo projects."

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Building a name for himself by being unique is a common thread between his HVAC company and his YouTube channel.

To YouTube

Unlike the very intentional steps he took toward entrepreneurship early in his career, Zac's path toward YouTube notoriety was less defined.

Growing up, his father was an amateur photographer, always documenting family trips, events, and taking landscape photos. As a result, Zac wanted to film and photograph his own family.

"I wanted to become proficient with a video camera, so I started filming my HVAC work simply for practice," he explained. "It was a hobby until I realized there was already a strong skilled trades community on YouTube. This was in 2020."

At that point, he began to formulate a plan. If he was going to "do" YouTube, he was going to do it well. He learned as much as he could about video production and kept challenging himself to create better content. He knew he had to find a way to stand out from the crowd. He learned how to use a camera, how to edit and how to tell a story. He found video styles he liked and began to apply them to his content.

"Some people laughed at me when they learned I was a YouTuber," he said. "But I also had a lot of support and encouragement early on. Viewers gave me feedback that reinforced my decision to pursue content creation."

Today, the *Quality HVACR* channel has about 150 videos and almost 90,000 followers. The content is designed to showcase all sides of the HVAC industry, from his perspective.

Some of the videos are business-oriented, covering the operation of a successful mechanical firm. Others are tool and van-based content. How-



to videos and installation films quickly became follower favorites. Some of the films discuss having pride in his work and delivering a quality product, and others talk about how everyone in a company can add value to the business and the customer.

All the content is remarkably well produced, especially considering it's filmed and assembled by a solo business owner with another full-time job and four kids at home.

Efficiency and Impact

"People often ask how I make time for my HVAC work, my content creation, and my family," said Zac. "Efficiency is something I often preach about. I take pride in my work, I value my family time and I'm passionate about content creation. So, I make those three things my priority. Becoming efficient is less about working faster than it is learning how to not waste time. You'll be amazed how much you can accomplish when you prioritize and eliminate distractions."

Zac pours himself into content creation because he wants to bring more awareness to this industry. He wants people of all ages to see how much opportunity there really is in the mechanical business.

"The HVAC industry doesn't just consist of working like a dog and going home at the end of the day," he explained. "It can be that if you let it. But if you approach it with a plan and a passion to do it to the best of your ability, there's no limit to what you can accomplish. Being self-made drives me more than anything else. I wasn't going to let anyone dictate who and what I could become or how much money I could make. I use YouTube as the platform to spread that message, and to provide viewers some of the tools to reach their goals."

The *Quality HVACR* channel frequently receives messages to that effect, letting Zac know that he's making an impact.

"Hey man, I was getting really



burned out until I saw your videos. They helped me gain new perspective and get out of that rut."

"You've helped me raise the bar!"

"Thanks for the drive to become a better technician."

"You gave me the push I needed to start my own business."

"I see my true value now, and I recently asked for and got a raise. It's made a real difference for my family!"

A Day in the Life

"I think the channel has grown because it's full of relatable content and it's well delivered," said Zac. "The HVAC industry is very demanding, and if you can show that you're out in the trenches, sweating on a hot day but you're enjoying it, people can relate to that, and it can help change their perspective. Optimism is contagious."

Zac sees himself as an educator, motivator and business coach, at least at some level. It's fulfilling in much the same way his other two priorities are fulfilling.

At 39 years old, Zac's four kids are aged 6 months to 12 years. His wife, Trisha, spent a few years in the field with him, but now stays more than busy with the kids. His oldest boy, Jax, joins Dad on the jobsite from time to time and has even made some cameo appearances on YouTube.

"The family is great, and so is the HVAC business," said Zac. "I'm happy where I'm at. I don't want to grow the company and I don't advertise. I prefer to build relationships via return customers and referrals."

Until more recently, Zac kept his YouTube presence and his HVAC company separate. Today, he's open about that, and the *Quality HVACR* channel has become a lead generation tool for Quality Comfort, the mechanical company.

When Zac interacts with a new customer that's collecting quotes, he reminds them that the most important decision they'll make is which HVAC company to hire. Then he shows them the YouTube channel. It usually closes the deal.

While Zac is happy continuing his mechanical work at the pace he's going, he's pursuing growth for his content creation.

"I want this to evolve into a full-blown production company that really knows the HVAC space," he said. "I'd like to showcase other contractors and their work, their innovation, their systems. I think that exposing viewers to the whole industry - not just my little slice of it in Tennessee - will provide a lot of positive impact for the trade."

Eric Cook

55 ♦ cleveland oh

years in the trade

23 years and still learning!

favorite brands

Fieldpiece Brand

hobbies

working out ♦ reading



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- 2) **NRDD**
Digital Recovery Unit
- 3) **NX1**
Nexus Digital Manifold Gauge
- 4) **NH5L**
A2L Charging Hose



LEARN MORE

The Trades Take Over Miami Beach: **Cen**



Centrotherm knows how to throw a party.

For a couple of days in February, the HVAC and plumbing worlds collided down in Miami Beach for a some fun in the sun, a test of wills, a 4D immersive experience, some rooftop galas, and a whole lotta laughs.

For two days, the South Beach combatants played games on the beach, participated in a scavenger hunt throughout the city - and the event culminated with a day of plumbing games at The Temple House and a party on the hotel roof.

Day one was beach day. The weather was pretty cooperative and a bunch of people actually got in the water though having a few beers on the sand may have contributed to that.

Mike Sokaris, aka "The Front Man" oversaw the game, tallied the scores, and helped draw up the teams for the rest of contest.

That evening, the HVAC elite were set into the city for a scavenger hunt in the downtown of Miami Beach.

Ask anybody who was there for some hilarious details. A lot of this stuff made it to the internet, so maybe you even saw some of it.

Dinner and drinks, and night one was in the books.

Day Two took the squad to The Temple House.

The Temple House is an event space with immersive projection technology.

ntrotherm South Beach Season 2



The outer walls of arena seamlessly transitioned between large sporting arenas, the high seas, the Roman colosseum, outer space, and whatever else suited the theme of the games.

The accompany music added to the gravitas. The sound of giant stadium organs echoed during the wiffle ball challenge and the Interstellaar theme song took the group into the furthest reaches of the galaxy,

The entire thing was an action-packed field day for the top installers in the industry and they all kept the tattoo artist busy.

Louie the Boilerman even got his first ever tat at the event.

Another incredibly memorable moment, without doubt, was Roger Wakefield hosting

the HVAC & plumbing version of Family Feud.

The teams were split, contractors and technicians were surveyed, and the top 100 answers were on the board.

The challenges culminated with two complete build-outs.

The final four each took a crack at installing the exhaust venting for three cascaded tankless water heaters.

Once pared down to two, the remaining contestants installed a Centrotherm ventilation system in a head-to-head showdown.

Alexander Bishoff (@howardmechanical) and Jason Wynder (@jayyy_the_plumber)



were the final remaining installers, and the competition was tight.

Both Alex & Jay do incredibly professional work and both had a ton of experience installing the products featured in the game.

It was an incredible tight final match, but Wynder emerged victorious cementing his

place as Season 2 champ.

Season 2 in Miami Beach was one of those things that will remain a real industry highlight for those lucky enough to participate.

Will there be a Season 3?

You'll have to ask The Front Man.







WHERE TECHNICIANS
**BECOME
LEGENDS**



QUALIFY IN 5 MINUTES



scan to enter



SEPTEMBER 11-14, 2024 WEST PALM BEACH, FL



Rex Schwab

37 ♦ hooper ut

years in the trade

20

favorite brands

all things VRF

hobbies

family ♦ cars ♦ bikes ♦
anything that goes fast!

 @vrf_rex

“burn
the ships”

HOW HEAT PUMPS CAN HELP YOU GROW YOUR HVAC BUSINESS

Increasing demand for heat pumps is more than just a passing trend. Today, heat pumps are an outstanding choice for homeowners seeking an energy-efficient, sustainable option that provides personalized comfort.

The global market for heat pumps is **projected to reach over \$62.58 billion in 2023 and \$99.87 billion by 2028**. Meanwhile, the options are rapidly evolving. From air-to-air units to heat pumps, these mechanical systems are transforming the HVAC landscape.

But how can heat pumps help HVAC contractors better serve their customers while growing their businesses? Learn what's driving this homeowner demand, and meet them where they are with product knowledge and expertise.



Not only do we have solutions that answer homeowners' needs, but also we offer easy-to-install and easy-to-service product designs that put the pro first.

Andrew Twitty,

Director of product management, HVAC,
at GE Appliances Air & Water Solutions.



WHY HOMEOWNERS ARE MAKING THE SWITCH FROM TRADITIONAL HEATING AND COOLING SYSTEMS

GOVERNMENT INCENTIVES AND REGULATIONS: Policymakers have started to offer incentives and rebates for homeowners who install energy-efficient HVAC systems. A broad selection of Energy Star–certified equipment, such as the GE ducted heat pumps, GE side discharge heat pumps and many GE ductless systems, are eligible for federal tax credits and other rebates.

INCREASED ENERGY EFFICIENCY: Unlike furnaces or boilers, which generate heat through burning fossil fuels, heat pumps transfer existing heat from one location to another. To heat, they extract heat from the outdoor air or ground and transfer it indoors. To cool, heat pumps remove heat from indoors and release it outside. This process can significantly decrease energy consumption, resulting in lower energy bills.

PRODUCT VERSATILITY: Heat pumps can provide both heating and cooling capabilities in a single system, eliminating the need for separate heating and cooling systems. This versatility makes them suitable for a wide range of applications, from residential homes to commercial buildings. With ducted and ductless options, homeowners can receive heat pump benefits with and without ductwork. Additionally, for homeowners who aren't sold on replacing their entire system, there is also the option for a dual fuel approach, in which both a heat pump and gas furnace can work together to reap cost-savings benefits.

REDUCED ENVIRONMENTAL IMPACT: Heat pumps transfer heat rather than burn fossil fuels such as natural gas, oil or coal, resulting in lower carbon emissions and reduced environmental impact. Consumers are becoming more aware of their environmental impact and are willing to pay extra for sustainable solutions.

ENHANCED COMFORT: Heat pumps are capable of more than just heating or cooling a space — they also act as dehumidifiers, with inverter models able to dial in exact run speeds to keep your homeowners comfortable. This is because the mechanisms that save energy in heat pumps also moderate temperature swings, ensuring comfort levels remain stable. Homeowners who opt for ductless heat pumps also have the option to choose single- or multi-zone application, allowing better temperature control over multiroom spaces.





GET TO KNOW GE APPLIANCES HEAT PUMPS

If your customers want to take advantage of these benefits, GE Appliances Air & Water Solutions offers a comprehensive array of heat pumps to suit the needs of HVAC contractors and homeowners alike.

“We’ve rolled out some exciting new products that meet new energy-efficiency standards. These solutions fit into the same spaces where homeowners want to either convert their old gas furnaces to an all-electric solution or upgrade from an air conditioner to a rebate-achieving heat pump system while leaving their gas furnace in place for backup heat,” said Andrew Twitty, director of product management, HVAC, at GE Appliances Air & Water Solutions.

GE Appliances Air & Water Solutions’ heat pump portfolio includes state-of-the-art technology in both ducted and ductless options, spanning from standard efficiency to some of the most efficient products on the market.

On the ductless side, high-efficiency performance extends up to 30 SEER2 and 14 HSPF2 in the Arctic Series Mini-Split Outdoor Heat Pump, which offers 100%-rated heating capacity at 5°F and comfortably warm air down to -31°F.

As for ducted performance, the Connect Series Heat Pump performs down to -22°F with a capacity maintenance of over 90% at 5°F and up to 9 HSPF2, meaning quality performance at lower temperatures and suitability for customers in a broad range of climates. Additionally, operation as low as 45 dB makes it one of the quietest on the market.

But it’s not just homeowners who are pleased with our heat pump performance. **“Not only do we have solutions that answer homeowners’ needs, but also we offer easy-to-install and easy-to-service product designs that put the pro first,”** Twitty said. These considerations include ducted heat pumps with 45-degree service valves and ductless products with mounting brackets, extended kickstands and accessible parts that make serviceability a breeze.

OUR PRO-CENTRIC APPROACH

GE Appliances Air & Water Solutions is committed to being a trusted partner to contractors on the job, and that starts with listening to their needs.

System performance during harsh winters and performance with minimal backup are two of the biggest fears shared by HVAC contractors. But Cory Furkey, an HVAC technician with Rapid City Repair, says that the best heat pumps make these long-held concerns a thing of the past.

“The GE Appliances and Haier heat pumps can run at lower temperatures than other products on the market,” Furkey said. **“That gives me a major advantage over my competitors,** especially in our colder Canadian climate.

“We recently tested a pilot program with a customer who builds sustainable houses run from a solar-powered generator. We installed an Arctic Single-Zone Heat Pump that can run on 1,000 watts of power or less. It runs perfectly off the solar generator without draining its power.”

Decades after first hitting the market, GE Appliances Air & Water Solutions heat pumps are still changing the game.

“

I think a lot of it comes down to the GE Appliances brand. I like that it’s a household name that puts people at ease right away. It does that for me too. I know I’m dealing with an established, reputable brand that has a lot of products, and I know I’ll be able to talk to someone about the products if needed.

Corey Furkey,
HVAC technician at Rapid City Repair



To learn how GE Appliances Air & Water Solutions is changing the current state of business, visit GEAppliancesAirAndWater.com or scan the QR code.

Open your smartphone camera app to scan QR code link.

Are you ready to take advantage of the growing heat pump market? Learn more about how GE Appliances Air & Water Solutions is making changes that make pros’ lives easier at GEAppliancesAirAndWater.com.



AIR & WATER
SOLUTIONS

BRENT & KATHLEEN RIDLEY



MAKING MIRACLES HAPPEN



One HVAC/Plumbing Repair at a Time



MIRACLE MECHANICAL



In January of 2021, Brent Ridley, co-owner of the social media brand "Tool Pros," approached his wife with an idea that would soon restore hope to North Georgian homeowners in need. That idea was Miracle Mechanical, a charitable organization where the Ridleys and their crew started teaming up with corporate sponsors to complete major HVAC and plumbing repairs for homeowners facing hardship at no cost to them.

As a licensed HVAC/plumbing contractor with a successful social media platform, Brent felt a responsibility to use his expertise and connections as a way to give back to his community. "Free tools and trips are great but let's do something that really matters. We live in the greatest country in the world. I believe everyone should have access to clean running water and heating/cooling at a minimum," says Brent.

Since 2021, Brent and Kathleen have completed eight projects with three more planned for 2024. The Ridleys are extremely grateful to have partnered with some of the most well known brands in the industry, like Ridgid Tools, RLS, Lowe's, Viega and many others. Brent says, "Our corporate sponsors are incredibly important with their financial help. We are not only able to complete major HVAC and plumbing repairs but fulfill other needs as well, like appliances, groceries and landscaping."

What does the future of Miracle Mechanical look like? The answer is simple: keep helping families in need until no one is without proper plumbing and HVAC. While Brent and Kathleen are dedicated to uplifting their local community, the goal is to expand and take Miracle Mechanical on the road. Until they make it to a town near you, you can follow Miracle Mechanical on Instagram @miraclemechanical and Youtube @toolpros.

MIRACLE MECHANICAL



HVAC
TACTICAL
★★★★★

Centrophem
SOUTH BEACH
A Top 100 Event in 2018
Joey
OAG

Joey Yepez

26 ♦ edison nj

“

Seek to be better
than **yourself**”

years in the trade

6 1/2

favorite brands

Fujitsu ♦ Mitsubishi ♦ Trane

hobbies

basketball ♦ gaming ♦ spending time with family



@hvackombat

hvac educational differences

matt waxer

The path to becoming a fully licensed hvac technician varies widely depending on where in the world you live and work. Even within the United States there are substantial differences from state to state in terms of what is required to become a licensed hvac technician. However, in contrast to the United States, the Canadian training and licensing model takes a bit of a different approach.

One question that I receive a lot from technicians and company owners from other countries including the United States, is how long it takes to become a licensed technician in Canada. While there are some minor differences between the provinces, I can speak directly to the topic of what it takes to become a fully licensed hvac technician in Ontario, Canada, and which licenses can be used to work across the country.

In Ontario, an HVAC technician requires two different licenses to legally practice the trade. The first license is a gas fitter license and the second is a refrigeration and air conditioning system mechanic license (313A) or an air conditioning system mechanic license (313D). I will get to the differences between the 313A and 313D licenses shortly, but first let's discuss the gas fitter licensing process.

In Ontario, the Technical Standards and Safety Authority (TSSA) oversees the gas fitter licenses. There are three different licensing levels to being able to work on natural gas and propane fired equipment. The first is the G3 license. This license allows its holder to work as a helper for a G2 or G1 licensed technician. The G3 course requires the completion of approximately 280 hours of coursework. To obtain the license, the individual must pass the TSSA G3 exam with at least a 75%.

The next level of licensing is the G2 license. The G2 course is approximately 480 hours of coursework where the individual must pass the TSSA G2 exam with at least a 75%. A G2 licensed technician can legally service and work on natural gas and propane fired appliances up to 400,000 BTU independently. The G2 license is where some technicians stop if they only ever intend to work on residential equipment. The final level of licensing is the G1, which permits the holder to work on any natural gas or propane fired appliance.

The G1 license requires that an individual have had a G2 license for a minimum of two years (or 4,000 hours worked), during which 500 hours must have been completed and documented working on equipment over 400,000 BTUH under direct supervision of a G1 technician. Once that prerequisite has been met, the G1 course takes around 140 hours to complete and requires a TSSA exam score of at least 75%. Overall, just for the heating side of an HVAC license in Ontario, one can expect to invest 4,900 hours of their time into obtaining a G1 license. It is also worth noting that the TSSA gas fitter licenses are only valid in the province of Ontario. If someone wanted to work in a different province, they would have to apply for an equivalency license or pass an equivalency examination.

Now that we have gotten through the heating side of the license process, let's discuss the air conditioning and refrigeration side of things. At the beginning of this article I mentioned that there is a 313A license and a 313D license. Both licenses require an individual to complete a registered apprenticeship with a sponsoring company. The 313D license is for technicians that only want to work on residential equipment, and they are limited to working on equipment up to five tons of cooling capacity and only single phase electrical equipment. The holder of a 313A license, on the other hand, can work on polyphase equipment and equipment of any tonnage capacity.

While there are differences in the number of apprenticeship hours and levels of schooling that must be completed between the 313A and 313D license, I will be discussing the requirements to obtain a 313A refrigeration and air conditioning system mechanic license. The 313A license requires the completion of a 9,000 hour apprenticeship. During those 9,000 hours of training, three levels (basic, intermediate and advanced) of schooling must be completed.

Each level of schooling is two months of full time education at an accredited college. After completing all required levels of schooling and apprenticeship hours, an individual can apply to write the Certificate of Qualifications exam (CofQ). To pass the CofQ exam, a score of at least 70%

must be obtained. The 313A and 313D licenses in Canada are interprovincial red seal licenses, which means that the holder of a red seal license can go anywhere in Canada and legally work in the trade.

The time commitment to becoming a fully licensed HVAC technician across Canada is a substantial one. While working towards obtaining a G1 license and a 313A license is done at the same time, an individual is looking at 5 to 6 years minimum to become a fully licensed technician. At the end of the day, if HVAC is your passion, time flies by very quickly while being an apprentice. But once all those licenses have been obtained, don't think for a single second that the learning process is over.

Just because you have a license to practice a trade, you must continue your education in the industry to keep striving towards mastering your craft.



AUTHOR BIO

Matt Waxer is the lead service and startup technician for a commercial HVAC equipment rep firm. He holds both a 313A and G1 license. Matt also holds a Ph.D. in Psychology specialized in developmental cognitive neuroscience from Western University. Additionally, he was the recipient of the HVAC Tactical Lifeline tech award in 2023. Follow Matt on IG @the_hvac_doctor.

MADE FOR HVAC PROS

Open	Closed	Unassigned	Archived
Project			
	Status	Date	Completion
Dental Associates of Dallas	Installation phase	Wed, Feb 22 → Fri, Mar 8	20%
Apartment AC Replacement	Planning	Wed, Feb 22 → Fri, Mar 8	0%
Fixing Oil Leak	Openwork	Wed, Feb 22 → Fri, Mar 8	0%
Beach House	Installation phase	Wed, Feb 22 → Fri, Mar 8	55%

Leader
WINTER
2024

Most Implementable
WINTER
2024

Best Results
WINTER
2024

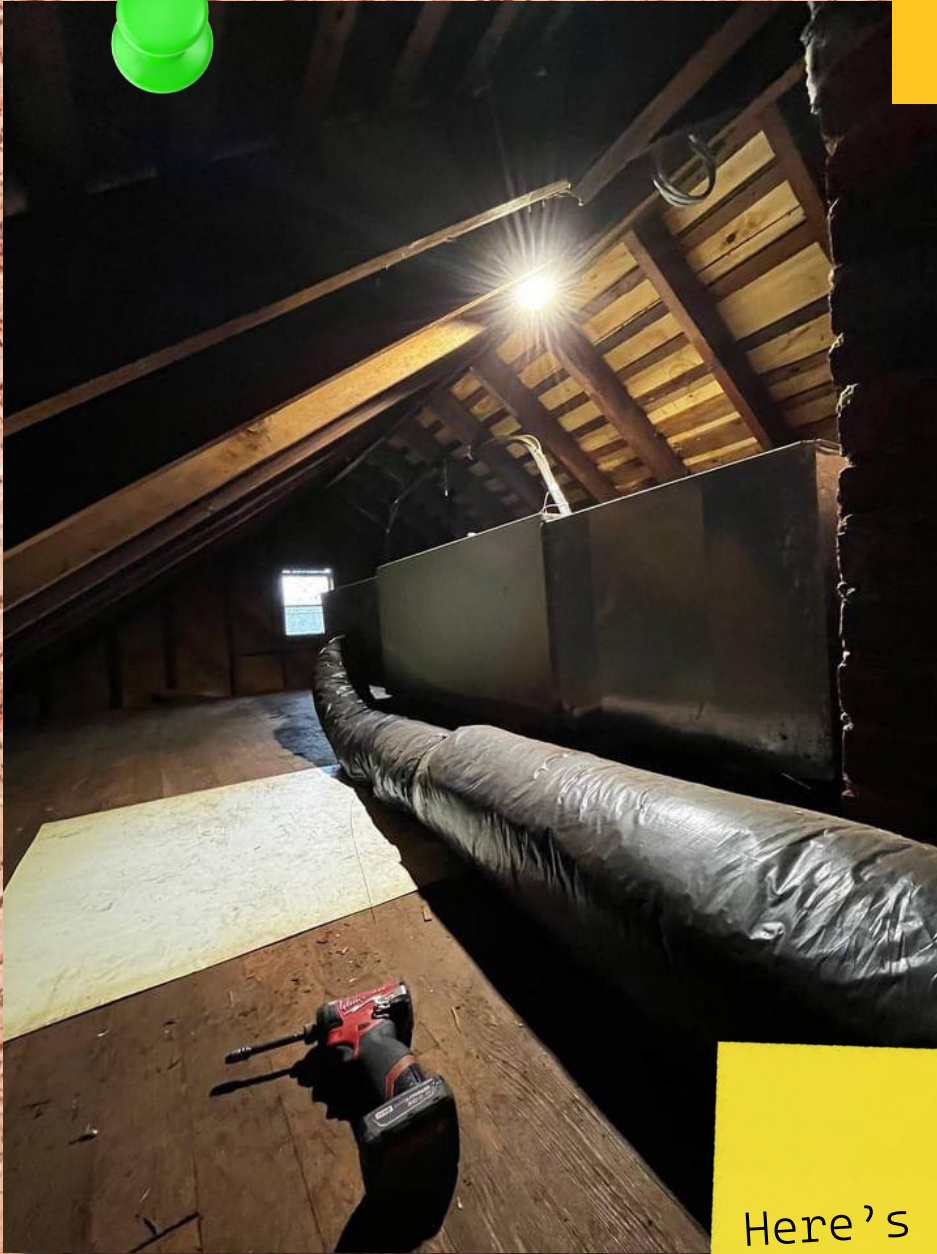
Best Relationship
WINTER
2024

Best Usability
WINTER
2024

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BEFO



Here's a slick before & after, sent in by **Joey Yopez**, and last month's HVAC Tactical cover superstar, **Jeff DeMassari**.

Follow them on IG!

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@jeffjdemhvac

BEFORE

AFTER



Protection for Homes, Health, Customers, and Your Bottom Line

Think about the most valuable items in your home. What's the first thing that comes to mind? Did you envision your TV, appliances, computer or other electronics? We use them every day, and most people take steps to protect them. Who wants to be without a TV, a refrigerator or a laptop? Insurance is one way to protect such assets, but there's another, more proactive option you should consider: surge protective devices (SPDs).

Surge protective devices safeguard appliances and electronics from power surges and spikes by limiting voltage surges that occur in the normal electrical system while power is supplied to a home or business. This is accomplished by diverting surge current and limiting any unwanted voltages to a level that will not damage the protected equipment. Research shows SPDs prolong the life of electronics and appliances as even small surges, which occur daily, can eventually cause extensive damage.

Let's go back to that list of most valuable items in a home—did your HVAC system make the cut? It should, and you know that if you work in the industry. An HVAC system is far more than just a simple "system." It's a complete home and business comfort solution that provides improved indoor airflow and quality. It also directly impacts the health of anyone living or working within the property. An HVAC system is vital to prevent the development of excessive moisture that can lead to the growth of toxic mold in a home or building. HVACs are no longer an aspirational household luxury; they are a necessity that few people want to be without.

Consider the costs of replacing a TV or microwave. Now calculate the cost of replacing an HVAC system. Did dollar signs just float through your head? Could you envision the quote being provided to a homeowner? With the replacement of the equipment, as well as the accompanying labor costs, a new HVAC system can be expensive. It's a big-ticket item

that most would rather avoid buying again and again. We all want to feel confident that our system is high-quality and protected.

Let's not forget the inconvenience of being without a functioning HVAC while waiting for a new one to arrive and be installed. Not only is it inconvenient, but it's costly. Surge protection for the HVAC is not simply a nice add-on, it's a necessity that just makes sense.

Developers affirm that an HVAC system with healthy indoor airflow is an expectation in modern homes and businesses. These days, most new home developers consider surge protection on an HVAC system to be essential as well. Even if you're not building a new home or business, installing a surge protective device is a simple, preventative addition to the HVAC system that can save owners lots of money, protect the properties from the inconvenience of being without heat or air conditioning for days and help keep a business or home's air quality clean. With a qualified installer, having surge protection installed on an HVAC system is easy.

Why are HVAC systems so costly and even challenging to replace anyway? HVACs typically involve sensitive electronic components such as circuit boards, controllers and compressors. A power surge can potentially damage or destroy these components, leading to costly repairs or replacements. Surge protection helps safeguard these critical parts, extending the lifespan of the HVAC equipment and ensuring that the HVAC system continues to operate efficiently and effectively.

In addition to standard surge protection, intelligent voltage monitoring safeguards a device by reading the input voltage going to the equipment. Voltage monitors are designed to safely disconnect the circuit if the voltage goes outside of the set high and low limits, which protects the system from damage or destruction.

HVAC installers typically strive to provide reliable and long-lasting solutions for their clients. Including

surge protection in the installation process demonstrates a commitment to customer satisfaction and builds trust. Customers appreciate the extra step taken to protect their investment and ensure the uninterrupted operation of their HVAC system.

If an HVAC installer fails to consider surge protection and electrical issues that can cause damage to the system or other property, the installer may face liability. Taking proactive steps to install surge protection can mitigate the risk of being held responsible for damages caused by power surges. In some regions, electrical codes and regulations may require surge protection for certain types of equipment. HVAC installers should be familiar with local codes and standards to ensure compliance with safety and electrical regulations. Provided a region does not have codes in place to require surge protection, installers should strive to be informed of the best practices.

Studies show that with society's increasing dependency on the electrical grid, our homes and businesses are experiencing more and more electrical surges every day. As these surges accumulate over time, they cause prolonged damage to appliances, electronics, and yes, HVAC systems. An SPD is simply insurance to protect your assets (or products) and extend

their lifespan.

Compared to the potential costs of repairing or replacing HVAC components, surge protection is a relatively low-cost investment and it's generally a one-time expenditure (with a good SPD protecting the HVAC system for many years). By preventing damage from electrical surges, installers can save both their customers and themselves from unnecessary expenses.

Surge protection also enhances the reliability of electronics, appliances and HVAC systems. Unprotected systems are vulnerable to electrical fluctuations, which can lead to breakdowns or reduced performance. By installing surge protection, HVAC systems are less likely to experience disruptions, ensuring consistent operation and customer satisfaction.

You protect your home, business investments and assets with locks, insurance and maybe even a security system, right? You wouldn't think twice about protecting your new television with a surge protector, and yet, many people wait until the damage is done to consider protection for a home's most valuable asset—its HVAC system. It's a small price to pay to protect your home, your health, your customers and your bottom line.

Mike Molinari

Director of Business Development
DITEK Surge Protection





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Fieldpiece

testo





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Supco



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A man with glasses and a goatee, wearing a green t-shirt with an HVAC logo, stands in front of a large, pixelated image of himself. The background image is a close-up of his face, while the foreground image is a full-body shot. The t-shirt has the text 'HVAC FACTICAL' on it.

Bruno Friedman

52 • germany

years in the trade

32+ years

favorite brands

Veto Pro Pac

hobbies

photography



@nample

“You don’t have to be perfect
to **inspire others**”

Indoor Air Quality (IAQ)

We care, but do we care enough?

As a society in general we are taught to take good care of ourselves. More and more attention is being given to what we eat, that we consume sufficient water, get regular exercise and give up or reduce harmful habits that can cause damage to our bodies. While these things are worth considering, more attention should be given to the air we breathe; a typical human breathes 20,000 to 22,000 times a day after all.

The COVID pandemic increased awareness on improving or addressing indoor air quality (IAQ) issues. There were many “magic solutions” thrust into the world market that had little or no research to substantiate their credibility to be effective. Money, lots of money, was spent and much of it wasted on useless, unsuccessful solutions that did little more than briefly mitigate the risk.

Of course, there were and still are a host of IAQ improvement systems that do work and should be looked at seriously, not only because we lived through a pandemic, but because IAQ is just poor overall. In reality, COVID still exists and the threat of new, more serious viruses is cause for concern.

Bad air quality causes things like Sick Building Syndrome (SBS), a condition where people develop symptoms of illness or become infected from the building that they work or live in. There’s also Monday Syndrome, which consists of fatigue, dizziness, chest tightness, abdominal distension, loss of appetite, body aches, inattention and other issues experienced on a Monday. Although the latter is often attributed to psychological factors, bad indoor air can cause most of these symptoms as well.

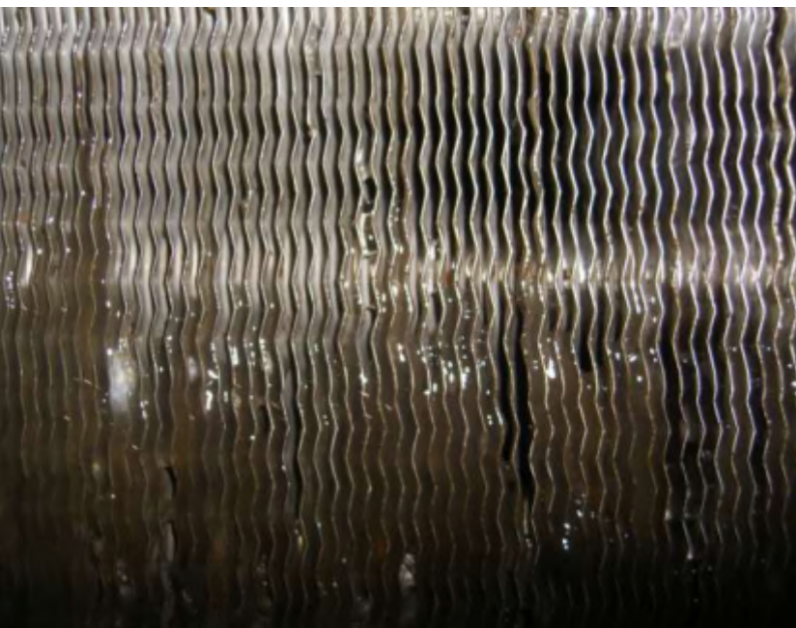
When we talk about IAQ we refer to the air that is inside. This includes all of its components, such as air pollutants from indoor combustion, radon, carbon monoxide, volatile organic compounds (VOCs), asbestos fibers, carbon dioxide and ozone and particulates, most of which we have monitoring systems for. All these compounds make up the air that we breathe and are considered an integral share of IAQ. However,

what is sometimes forgotten is that there are other, more lethal microbial components in our air that we do not consider when looking for solutions to IAQ issues. These living, airborne contaminants are not so easy to confirm or eliminate. Things like mold, bacteria and viruses are not only actively present in HVAC systems but also reside, grow and reproduce in equipment, intensifying the problem exponentially. A mold colony can grow on a moisture laden surface in 24–48 hours. Since mold is a microscopic organism, its presence isn’t visible until the mycelium (root-like structure of a fungus) is formed. Spores will typically germinate and colonize in 3–12 days and become clear in 18–21 days.

This mold forms a sticky layer on the surface of the AC cooling coil that adheres to its aluminum fins, and traps passing bacteria and particles that have not been caught by the pre-filter. This compound of mold, bacteria and particles is commonly known as biofilm, which forms an isolation layer of living organisms on the face of the coil fins.

The first thing we will see is that the layer of biofilm gets thicker as the mold and bacteria continue to multiply. This has two negative effects on the AC system’s operational efficiency and a huge knock-on effect on the air quality coming from this coil. First, there is a buildup of back pressure due to a smaller gap between the fins, so not as much air is getting through the coil as designed to do. Second, the insulating layer around the coil fins is greatly reducing the coil efficiency and not allowing successful heat transfer, so the actual air that manages to get through is not as cool or as dry as it should be. You now not only have the normal, natural load of microorganisms, but you also have an added component made up of the biofilm that is breaking off the coil itself, getting in the airstream and posing a serious health hazard.

When it comes to addressing HVAC system issues related to IAQ, much has been said about ventilation and filtering. While both are important to consider, little attention has been given to total coil, drain pan, air duct cleaning and air disinfection. There are several solutions to help reduce microbial count in the air. For example, Photocatalytic Oxidation Ionization tackles the issue of airborne contaminants, but it is the Ultraviolet Germicidal Solution that will most effectively



Before UVC



After UVC

attack the problem at source—the accumulation of biofilm on the coil. This solution is based on the use of very high-intensity ultraviolet-C (UV-C) and -B (UV-B) with lamps placed close to the cooling coil, effectively cleaning and reducing airborne microbes. The UV-C light attacks and deactivates the DNA of microorganisms like mold and bacteria, disrupting their ability to multiply and feed and kills them. This process happens on the face and interior of the coils so effectively that air flow and thermal transfer are mostly returned to manufacturer specification (assuming there is no serious physical damage to the coil). This gives the AC system a new lease of life and in some cases manages to extend the working life of the equipment. Ultimately, this technology is efficient,

cost effective and very easy to implement.

While these lamp systems are easy to install, they should in no way be considered a replacement for any filters that the AC equipment possesses. On the contrary, these lamp systems complement the downstream filtering systems by deactivating microorganisms in the air stream, thus reducing the number of harmful contaminants that reach the filter.

UV-C technology solutions should seriously be considered as a necessity and not an option; they better indoor air while simultaneously improving equipment efficiency, reducing operational costs and making the treated area safer.

AUTHOR BIO

Tony Ghiraldo graduated as an Electrical and Electronics Engineer from Plymouth University in the UK. He has been working with IAQ Solutions for over 10 years, focusing on the implementation of Ultraviolet Germicidal Solutions. He has successfully worked on developing markets in the United States, Canada, Latin America and the Caribbean. He has participated in events in all these regions, successfully presenting to large and small audiences alike about the advantages and benefits of this technology and how it can change and even save lives.

Currently, he works for Universal UV Solutions out of New Jersey as Director of International Sales.

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If you make mention to the HVAC/R hardcorest there might be alternatives to brazing (that work), you might get one of those mad face emojis thrown up at your comment! The fact is, brazing is a solid connection that lasts for many years and is a fundamental skill that all HVAC/R professionals need to carry out their work.

One thing I'm not convinced of is the "brazing is an art" comment. Art is a unique expression, and brazing is "supposed" to be a repeatable process with the same result over and over. Okay, some braze joints look like they should be in an art gallery, but not for a good reason. There are some in the social media world that tend to think I don't like brazing or perhaps don't believe in it. That can't be further from the truth. I just enjoy looking at and experimenting with new technology at any level to boost my knowledge in the HVAC/R trade. I have been impressed with the SolderWeld products lately and how well the rods flow.

Why Not Brazing?

There are some good reasons that brazing alternatives have been developed and will continue to be. I remember one facility I worked at many years ago required a four hour fire watch after the torch went out. I understand why the building was constructed with wooden beams. Although I understand why, that long of a fire watch is very time-consuming and not practical for many busy techs in most situations.

Other reasons why brazing alternatives have been developed also have to do with fire. Fire is dangerous and expensive. "Hot work" fires happen more often than you think. You may now understand why more and more buildings are tightening rules around torch lighting. There are health issues that surround brazing, especially indoors with little ventilation. Brazing/welding fumes in the air contain many substances that we shouldn't breathe in.

I used to work in many data centers; these rooms are typically sealed to keep the environment at a constant temperature and humidity with specialized equipment. If I were brazing in these rooms, the fumes would linger for hours, leaving myself, the IT staff and other occupants to breathe in. Industries like medical or pharmaceutical may not allow brazing due to the surrounding environment.

Alternatives

When I discuss brazing alternatives, I can only talk about the products I have checked out and put my hands on personally; I will go through a few of these.

Pro Fit Quick Connect

The RectorSeal PRO-Fit Quick Connect is the first one we'll tackle here. My experience at the time of writing this article is only on a bench. I have not field-installed one yet. However, I have had many peers online talk positively about them and used them in situations, such as repairs in attic or crawl spaces where it may be difficult to get a set or torches into.

Like all pipe fitting procedures, the pipe must be thoroughly cleaned before use. The pipe must also be marked with a depth gauge to ensure the "push" fitting is inserted to the correct depth on the pipe. I can see an advantage to using the PRO-Fit in scenarios where a quick repair is needed. But, if a torch can't be lit or if too much time is needed to pull a fire permit, collect torches, nitrogen and all other fire mitigation gear, the environment to be cooled or heated is put in jeopardy. This is especially true for places like server rooms and labs.

AC Smart Seal External

The first time I used AC Smart Seal External in a real-life application was a few years

back inside a server room or data center, as some may call it. There was a rub-through on a capillary line on a water regulator valve, and the system lost its charge. This was a perfect scenario to try this product. Instead of lugging torches up to the room, I applied the putty-like substance around the leak site. It held under a pressure test and evacuation. It also held charge for an entire year until the whole valve was replaced. I avoided pulling fire permits and brazing in a sealed room with little to no ventilation and breathing in fumes created by the brazing process.

FixQuick

FixQuick is an interesting product that I have only bench tested, but it held approximately 400 PSI. It's a two-part system that consists of a liquid and a powder accelerant. I believe it would be a great alternative to brazing in certain situations. One that comes to mind is repairing a pinhole evaporator leak that has succumbed to corrosion and would be in jeopardy of further damage if a flame were to come into contact with it.

Rapid Locking System

For repair and installation projects, Rapid Locking System (RLS) definitely has the versatility to conquer both. With a large lineup of fittings,

valves, filter driers and sight glass assemblies, most projects can be completed with their press tool and jaws. Personally, I haven't completed a full install project but have talked to many that have had positive results.

I was mainly a service tech with my former company until I launched McCreadie HVAC. I have completed many repairs with RLS and also replaced filter driers and completed a couple of unfinished install projects done by others. I personally enjoyed every minute of prepping and pressing with RLS. It's definitely a technology that one must get used to, but more importantly, experiment with to understand better.

RLS does extensive training with their product, and I suggest you reach out to them if you are interested in more information.

Conclusion

These are just a few brazing alternatives out there, and I believe this just scratches the surface. The technology will advance, improve and become more available once trust and traction begin to dig their heels. My prediction, on a grand scale, is less and less torches will be lit over the coming years. My advice, stay up to date on new technology as it hits the market. Knowledge is power!

HVAC

KNOW IT ALL

Gary McCreadie

Creator of HVAC Know It All, hvacknowitall.com and the HVAC Know It All Podcast. President at McCreadie HVAC And Refrigeration Services Inc.





The EH-TEAM is much more than a group of skilled tradespeople. They are Canadian brand ambassadors, educators, and most importantly, a family. Together with other members of the fast-growing EH-TEAM, they represent the best of what the Canadian HVAC-R industry has to offer.

The HVAC industry in Canada is riding a wave of technological innovation, fueled by a growing community of skilled technicians. Leading the charge is the EH-TEAM, a collective of industry talents who are not just embracing change but driving it.

At the core of the EH-TEAM's success is its dynamic mix of talents. Known collectively as the "Canadian HVAC misfits," this group of skilled tradespeople from diverse backgrounds and experiences has cultivated a culture of 'community over competition'. The result is a strong, cohesive team that thrives on collaboration and mutual support.

What really sets the EH-TEAM apart is its members. Each brings a unique perspective and skillset to the table, contributing to the team's overall success. The EH-TEAM is a shining example of what can be achieved when a group of skilled, passionate individuals collaborate toward a common goal. Their remarkable achievements and the community that supports them are a testament to the bright future of the Canadian HVAC industry.

Meet EH-TEAM members at trade shows, and events where they connect with HVAC Techs, educating them about innovative products which they have field-tested and believe in. They are also present for counter days at wholesale distributors, passionately advocating for techs to

have access to the latest tools. Stay updated by watching our social posts for opportunities to meet the EH-TEAM in person and share your unique story with them.

Last year, the Canadian HVAC techs and EH-TEAM members, excelled at the Tactical Awards Show, scooping numerous awards; a testament to their hard work and dedication. These accolades reflect the team's commitment to excellence and innovation in the HVAC industry.

HVAC TACTICAL Awards 2024 winners

For the 2024 HVAC Tactical Awards, Canadians demonstrated a strong presence once more, clinching three awards.

- **Hidden Gem Award** Mike Frass
@superiorgasinstallations
- **Lifeline Tech Award** Dylan Roper
@hvacdyl
- **Picture Perfect Install** Tyler Dynes
@dyneshvac

These awards acknowledge the hard work, dedication, and excellence demonstrated by EH-TEAM Members. They serve to inspire and motivate others in the industry to strive for greatness.

As we continue to encourage 'community over competition', we look forward to seeing more achievements and success stories from all of you. Together, we expect to thrive and make significant contributions to the HVAC industry in Canada and beyond.



"I pity the fool who messes with the EH-TEAM"

JESSICA BANNISTER
Port Coquitlam, BC
📷 @hvacjess

"The EH-TEAM is made by people, for the people. Very valuable to have team that can count on."



TERENCE CHAN
Vancouver, BC
📷 @the__impetus



"The EH-TEAM is without a doubt an elite skilled trades crew of crazy Canucks focused on bettering themselves each and every day."

MATT WAXER
Schomberg, ON
📷 @the_hvac_doctor

"We might say sorry lots, but we troubleshoot like a boss."



GARY MCCREADIE
Mississauga, ON
📷 @hvacknowitall1



"The team is an extremely skilled and knowledgeable group of tradesmen and women helping to educate the next generation any w-"eh" they can!"

BEN THOMSON
Prince George, BC
📷 @hvac_strong

"A tactical group of HVAC misfits each with our own special superpower ... Educating, inspiring and most importantly keeping y'all entertained."



BRANDI FERENC
Newmarket, ON
📷 @chlrrck

Mechanical Room Mastery.

We're all masters of our craft, right?

What a silly statement.

Innovations occur at such a breakneck speed these days, it's truly impossible to maintain proficiency in all corners of the mechanical room. As soon as a new product revolutionizes a specific part of the process, the complimentary systems must shift and evolve to accommodate.

Flue gas venting systems, my area of expertise, perfectly exemplifies this technological march onward – we can trace the development of heating appliances over the past few years and directly observe the transition from low-efficiency to high-efficiency boilers, water heaters, and furnaces.

As the machines become more efficient, the systems that support them must also rise to the occasion. Suffice to say, some of the traditional methods have become passe and even dangerous.

The real world example here regards more efficient appliances reducing heat-loss and requiring higher grade exhaust vent solutions. More and more, the appliance manufacturer mandates the superior technology. (UL-1738 listed vent systems, in this case).

So, how does a technician keep up on emerging trends and ensure the best quality installations?

One word: **training.**

Given the increasing tempo of innovation and improvement, every segment of the HVAC channel has shifted to a training model. It's necessary to keep installers in the know and abreast of any changes.

Wholesale distributors, manufacturer's reps, manufacturers (especially), code-writing bodies, and organizations like PHCC now offer comprehensive training classes featuring a litany of topics. Installation, sales, layout/design, various hardware and software tutorials, and everything in between can now be easily accessed – often from one's own home.

The Covid-19 pandemic did play a role in the prevalence of webinar form HVAC training, but the industry was moving in this direction already – and for good reason.

Obviously, homeowners hire technicians to make sure their homes are heated and have hot water. The obvious benefits of installation proficiency aside, the concept and results of training are so much more than that.

For the trainees, those who leave with a better understanding of the systems they install, it's an investment into their own personal growth.

As technicians level up their knowledge, they amass skills that make them invaluable as employees. The result is twofold.

Not only does the participating organization bolster productivity through best-practices and tips & tricks type training, but it's also an investment into the employees themselves – a critical component to keeping strong talent on the team.



Tragically, that second part is often overlooked. Some company owners still abide the WIIFM (what's-in-it-for-me) attitude and incorrectly see any time spent training as time away from the job site.

Participating in training classes, allocating work time for education and continuous improvement is clearly not wasted time. The outcome of training is a staff who feels their knowledge and skills are valued and will naturally result in improved productivity and company morale.

For contractors, there really is a clear-cut choice as technology marches forward. Skip training and sink, or train, train, train and swim.

Moore's Law, which began as an axiom describing the increasing density of transistors in an integrated circuit, has come to be a metaphorical stand-in for the exponentially accelerating rate of innovation and technological improvement.

It states, essentially, that the surging rate of technological innovation doubles every five years – that's an incredible pace that only picks up steam as it surges forward.

And Moore's Law is demonstrable in the HVAC industry. Though the HVAC industry is sometimes slow to adopt new technologies, or journeymen installers show a reticence to update to newfangled approaches, the march of progress cares not.

It's imperative to stay on top of new products and technology because the competition definitely will. Don't get left behind or be slow to adopt new, innovative techniques or products.

Everybody is counting pennies and every second counts. Training is an investment into both one's business and the personnel.

Make the most of it.

Matthew Pryce

Marketing & Communications Manager for Centrotherm Eco Systems in New York. Matthew is a frequent contributor to various HVAC publications and one of the editors of this one!

What other little spare time he's got is spent traveling with his wife Gabrielle and mastering new and exotic instruments.

@matthewfuntime



TYLER DYNES

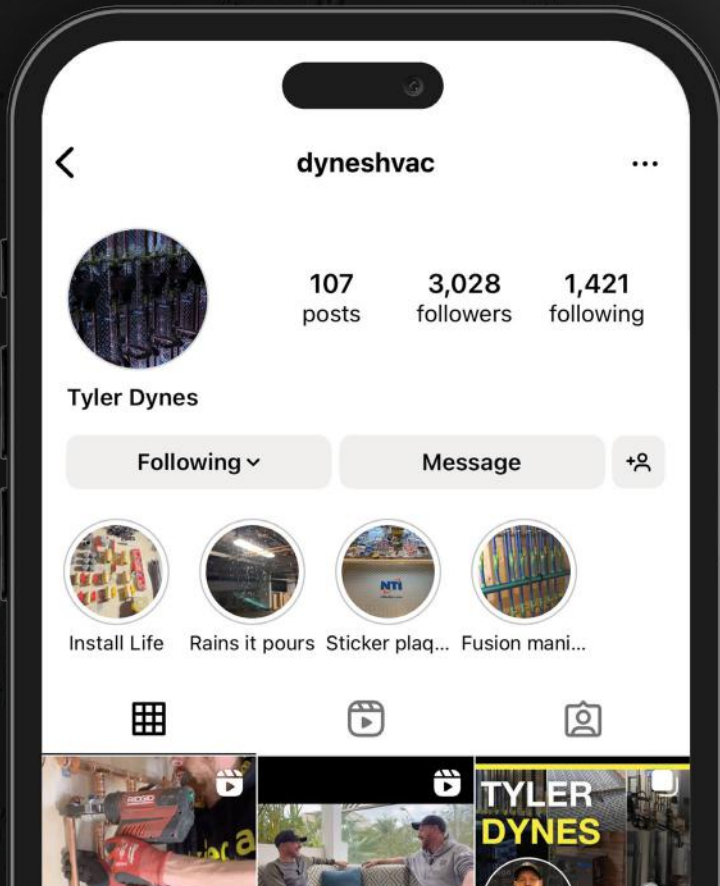
VIEGA® PRESS MASTER



MEET THE PRESS MASTER:

@DYNESHVAC

Tyler began his career right out of high school by training as an auto mechanic. After about a year and a half of working in an auto repair shop, he quickly realized it wasn't the path for him. One day, while changing the oil on a truck for a local HVAC fuel company, he asked the owner if they were hiring as he returned the vehicle to him, to which the owner replied, no. A few months later, that same owner returned to the shop and offered Tyler a job. Tyler worked for that local company for 11 years and now works as a Foreman and Lead Installer for Farr Mechanical in Toronto, Ontario.



WHAT COMES TO MIND WHEN YOU THINK OF VIEGA?

“

I know I can trust Viega products, not to mention how much fun it is to press knowing it is a fast, safe and secure system. I started using the ProPress system around 2017/2018 and quickly committed to using Viega products in all my installs. I had so many boiler and hydronic projects to complete that I was trying to find more efficient ways to increase the speed of my installations. Using Viega makes things go three times faster, allowing me to complete more projects while maintaining a high quality of work.

”



Viega Press Masters: Jonathan Cheever, Matt Fleming, Travis Abaire and Tyler Dynes. (not pictured: Evan Berns)

viega



hangin' with the jerks

Jennifer Manzo

@hvacchicksjennifer

Misfits of HVAC Podcast



INSIDE the HVAC/r PODCAST CIRCUIT

When I was commissioned to write an article about this iconic trio and their side-splitting show, to say I was excited would be an understatement!

Now, I'm not sure what I expected from my initial interview with this band of "Jerks," but what stood out about these three men was their charm, hilarity, and kindness. I quickly found that the name of their aforementioned podcast is ironic - completely contradicting their true personalities.

The podcast pairs Rich Schuster's, Kevin McCourt's, and sometimes Anonymous Joe's obvious charisma and chemistry with an unmatched passion for the HVAC industry. Jon Palmer produces some of the best quality audio I've ever had the pleasure of listening to. Together, the guys are able to somehow take their listeners from the pure exhaustion and burn out that comes with "doin' HVAC" all week to knee slapping

laughter and true engagement in a matter of minutes.

As a podcaster myself, this is something I haven't quite figured out yet, but admire so much about the trio. So let's dive into who these guys are that makes this show so renowned!

Enigmatic author of insanely helpful books, such as *101 Ways to Suck as an HVAC Tech* and *No Ducks in The Attic*, Rich Shuster is a force with more than 30 years of HVAC experience! It comes as no surprise to his listeners that many of his hobbies are tied to trades in one way or another. Rich is a car and bike enthusiast, who also loves woodworking and even farming blueberries to give away to his friends.

One of Rich's greatest passions is getting the youth into the trades. In the pre-Covid world, Rich and the rest of the Jerks were working with different sponsors and manufacturers



The HVAC Jerks podcasting on location in Miami as part of the Centrotherm South Beach event (Feb. 2024)

to create a road show that would allow them to tour the country and record at different schools in front of a live audience of kids who were interested in a career in the trades. I can't think of a job better suited for Rich, a man who cares so deeply for those around him.

Let's put the spotlight on Jon, for once...

During my phone call with the guys, they told me what may be the coolest creation story I've heard to date. It's 2018 and Jon's sitting in his recording studio where he solely works with musicians. Then, in walks this band of tradesmen telling him with far too much confidence that they want to start an HVAC podcast and want him, the music guy, to produce it.

Que Jon's "faith tank" flashing on empty. You see, prior to the Jerks, Jon's forte included producing music for albums, television and even movies. HVAC podcasts? No way! But the guys used that charm we all know and love to win him over and that's just where the story begins. At the time when Jon started producing the podcast, he also began helping Rich at the HVAC company he worked for. Now, Jon is just as much of a guru as the others! Rich credits Jon's ability to learn quickly and his thirst for knowledge that made

him soar up the ranks from being a helper to a Service Manager faster than most. (I have a feeling the podcast may have been a major catalyst for his newfound passion.) Aside from being the greatest technical producer the show could ever want, Jon loves to travel and still records music to this day!

Kevin is more than meets the eye...

He started out as a fiercely competitive hockey player, which is quite the entertaining sport. From what I've learned, Kevin was well on his way to becoming a pro in the hockey world when a knee injury changed his path and brought him into the beautiful world of HVAC. Like many with service-oriented minds, Kevin found HVAC to be the perfect fit. Growing up with a dad in the oil burner field, it's clear why Kevin bleeds kerosene—he was raised by this industry! For some of us, HVAC is fate. It makes so much sense that Kevin would go on to operate his own heating and cooling company and star on such a popular show of the same topic. When he's not in the studio busting Rich's chops, you can find Mr. McCourt pulled up to the Lake George car show in his prized Chevelle. If you're really lucky, he might even show you his baseball cards.



What about that Anonymous Joe character?

If you've been a fan of the Jerks for a while, you may be wondering about who Anonymous Joe is. As you can imagine, it wasn't easy finding information, yet his elusivity is no match for my investigative recourse. That being said, I learned that Joe immigrated to America from Italy as a child (my homeland!). After coming off the boat he grew to become a man of many adventures, one of them being HVAC. His passion for the podcast is matched by his skill at anonymity, remaining unfound and in secret for years. Anonymous Joe and his partner, Enzo the Dalmatian, have since been spotted test driving Ferraris, cooking 5 star

Italian food for the masses and even teaching about HVAC. Where is he now? That remains a mystery.

If you're wondering what might be in store for the future of The HVAC Jerks, you're not alone. Luckily, I learned something that will delight you all. In this VERY issue of HVAC Tactical Magazine, there is a brand new column written by the Jerks—"Ask The HVAC Jerks!" How does it work? DM your questions to the guys and find the answers in THIS magazine!

To learn more about Rich, Kevin, Jon, flip to their "**Ask a Jerk!**" column on page 26.

Increase Reliability and Customer Satisfaction



HVAC performance impacts so much more than the comfort level of a building and its inhabitants.

Owning an HVAC system is a costly investment. What's more, their value extends beyond the unit itself — impacting air quality, managing moisture levels and protecting investors' financial integrity. As society becomes increasingly dependent on electricity, it's important to consider how increased use is linked to more unpredictable power surges. These undetectable surges can damage or destroy a system, inhibiting reliability. Surge protective devices safeguard these valuable assets and ensure the value of a reliable HVAC system. Surge protection is more than just a luxury, it's a necessity for every home and business.



Browse DITEK University modules to quickly learn the value of surge protection for leveraging a reliable power supply.

REDUCE DOWNTIME

EXTEND EQUIPMENT LIFE

IMPROVE CUSTOMER SATISFACTION



DITEKSurgeProtection.com

a few words with Josh Cooley

a tradesman advancing the trade

By Giana Brucella

How did you get started in HVAC?

My dad was in plumbing and his company did HVAC on the side. I worked with him in plumbing all the time, but HVAC interested me more. In Tennessee, you're in the dirt a lot. I didn't want to have to do that. But then my parents split and my mother's new boyfriend owned an HVAC company. He wanted me to learn the trade, so I started working with him and just went from there. I was about 17 at the time, now I'm 43. I've been doing this for over 20 years.

Now you're in Arizona. What brought you there?

I left Tennessee when I was 18 and moved to Michigan. There, I did cable work and construction and then HVAC, plumbing and electrical. I left after about five years and moved back to Tennessee and started my own construction company. I was doing big renovations and remodels, and HVAC as well within my scope of work.

I hit a point in my early 20s where I just needed some change. I stuck it out in Tennessee till about 28 and then wound up moving. Some friends of mine moved out here and said to visit, said I'd love it; that it was like a different world. So, I spontaneously visited and fell in love with it. Literally amazing—it was like a different world. After that trip I went home and three months later I sold my stuff, fit everything I could into the back of my truck and moved. I had all intentions of starting an HVAC company when I got here. It made sense, being in the hottest state in the country.

I got a job to get familiar with the area. I was very open with the company that I had full intentions of getting my contractor's license and going on my own. When I was taking classes, everything was fine. When I got my license, I got fired. I had about \$300 in the bank. I didn't have anything else. I lived paycheck to paycheck. I didn't have enough money

to start a business. All I had was an old Chevy blazer that I had redone. It was nice looking. I had it painted. I did that irresponsible stuff you do when you're young, focus on things like that versus saving money. That day, I listed it for sale and made the leap of selling everything I could to buy a work van and tools. I got a crappy Ford van for \$1,500 and bought a bunch of old tools I saw in a Craigslist ad for a yard sale in the west side of Phoenix. I went over there and took everything the guy had.

What I do now stems from all of this. It was out of necessity more than anything. I wanted to be better, to be more. I thought it was the worst thing that ever happened to me, when that guy fired me. But when I look back, it's one of the best things that's ever happened to me.

It's those unexpected changes in plans that can either help you or hurt you depending on what kind of person you are. So how did you get involved with Supco TradeFox?

It started in Tennessee. We'd be up on a roof in the rain and I got sick of the guy always trying to make me hold an umbrella right. I just got irritated with it because I'm like, "I'm not a damn umbrella holder!" So I took a speaker magnet and some zip ties and fashioned an umbrella to a condenser to keep out of the rain. The guy was like, "Dang, that's pretty cool." It worked like crap, but at least it worked. That was back in '97 or '98.

After so many years of working in the Arizona heat, I thought there's got to be more than a pop-up tent I could use to get out of the dang sun here because it's horrible. I came home one day, did a bunch of searching and couldn't find anything like the umbrella I had. I decided to just make it myself. I went online and started buying parts. Again, it looked like crap but it worked and was way better than what I had originally done. Over the next week,

I took it to work and started fine-tuning the function of it. About a month later, I got it pretty close to what it looks like today.

I took it to a Johnstone and stuck it on a condenser and said, "What do y'all think about this?" I have a relationship with a bunch of these guys. I've been in and out of there for years. They said it was awesome. Some contractors happened to walk by and were like, "Where can I get that?" I said, "Right here. I can sell it." I started taking orders and went to all the parts houses with the product I was making at my kitchen table. I had everyone—my family and friends helping me. I was getting so many orders so fast I couldn't do it by myself. Plus, I was still running my own AC company. I was in the field every day, all day long until it got dark and even after that sometimes. When I got home, I'd be sitting at my kitchen table with everyone putting these things together. Then we'd box them up and

I'd send them to ARS and different companies.

Lowes contacted me. They told me they wanted the product but wanted 20,000 of them, which was impossible. That showed me I was way in over my head with what I was doing. I would never have been able to get the umbrella to all the places it is now if not for Supco. Jim Adcox (Executive VP of Supco at the time) had reached out to me. He had some of his customers who were other wholesalers contact him asking if Supco could knock off the umbrella. Jim said they could, but that's not how it works. He reached out to me and explained what Supco could offer. We struck a deal, the Supco team took over and the rest is history.

Some years later, I had started talking to Melissa



Bennet who originally modeled the TradeFox program to what it is today. I said, "You know I've been doing design and engineering and creating products for years. I do this stuff all the time. I could really help the company with these inventors and products by vetting them and talking them through the process to help with the whole flow of stuff—make it more beneficial to everybody." I talked to the owner of Supco, Chris Mancusco, and we all hit it off. It was just a good fit.

I told them "I'm not trying to toot my horn, but I have the experience. I've worked in all the trades. I'm a business owner with a successful AC company. I've got 15 trucks. I've designed and engineered and created stuff for years." It just made sense. I started as a consultant, then became an employee and later was moved over to Director of Product Development, which is where I'm at now. I oversee the TradeFox process, vetting ideas and helping them get turned into good products.

Curious on how many tries until you got the umbrella right.

I probably had three or four versions of it. The reason I left it where it was, was for simplicity and cost. I wanted anyone to be able to buy it. That's the whole point of these products—to make jobs easier while being affordable.

How long did it take for the idea to become reality?

In 2017 is when I made my first deal with Supco. I had it patented in 2014, and then I tried doing it for a couple years.

Is there anything you're working on now?

Well, we're not really changing up too much of the way TradeFox is, we're just trying to make it more efficient, make it flow better. I always look for the end-user, the technician, to be my focus. It benefits everybody. I was a tech for years and I relate to them. I want to be able to take these ideas, these products guys bring over to us and turn them into something that really makes jobs easier and more efficient.

Why should techs get involved with the program?

Ideas can come at the most random times. When I

do trainings, I tell the guys, "We've all been up under an air handler or under a house and thought there's got to be an easier way to do these jobs." You have this epiphany at the most awkward time and you jot something down on a napkin or whatever you do with it. You've got this little idea, but you have no idea where to take it. That's why techs should come to us with their ideas, because we actually help turn their ideas into the best thing we possibly can. Other companies that have these programs take very little product because they're looking at the biggest revenue. That's not all we're about. It's about the technicians.

We don't want to release anything that's junk. We want our products to be really functional and really useful for the technician. I want to give them that opportunity, and I want the opportunity to be easily accessible.

Going off of that, what is your advice for techs who are innovating in the field?

Don't wait to submit an idea. Don't sit on it. Don't think and assume that it's already out there, because that's not always the case. The longer you wait, the more chance you have of somebody else going forward with the same idea. I say this because over the past three or four years, I've probably received ten of the same exact concept from people. So don't wait, don't. If you're innovative, you're innovative. If you think you have a good idea, try to get it submitted sooner than later. It holds your spot. Once it comes in, that's it. If somebody comes with the idea after you, that's too bad. We have a whole lot of integrity with this program and would never do somebody dirty.

What is the typical turn around time of an idea until it hits the market?

About a year. It's a process. It takes some time, especially when you're working on 30 products at once.

So what can we expect to see from TradeFox in 2024?

More innovative products, be more engaged with the technician and do as much as we can to help the industry overall.



"As iron sharpens iron, so one person sharpens another."
Proverbs 27:17

Kylen Brown

31 • dallas/ft worth tx

years in the trade
10+

favorite brands

mitsubishi • fujitsu

hobbies

coaching baseball
• skateboarding •
fishing • cheffn' on
the grill • creating
memories with my family
• expanding HVAC/
electrical knowledge

 **@kbhvac**

Pumps & Evacuation Innovation: **The Better Alternative**

In the last decade, the HVAC industry has evolved significantly. At NAVAC, our team of HVAC professionals is dedicated to enhancing technicians' vacuum practices, making them more effective and efficient. We believe in maximizing the technicians' abilities with innovative tools. This article overviews NAVAC vacuum pumps, including ranges, features, capabilities, applications, and more beyond the specifications.

EVACUATION

Any time a sealed refrigeration system is open to the atmosphere, whether for a repair, replacement, or outright leak, that system must be EVACUATED.

Evacuation accomplishes two things:

- Degassing the equipment (removing non-condensable gasses)
- Dehydrating the equipment (removing all moisture content).

In the HVAC industry, the standard is typically around 500 microns, but evolving technology now demands much lower levels, ranging from 2 to 300 microns. Once these levels are reached, the technician should turn off the vacuum pump, let the system equalize, and perform a "decay test" or "rise test." This test confirms whether the equipment is leak-free and void of all moisture content.



*NP7DP2-A2L Compatible Vacuum Pump

CHANGING THE EVACUATION STATUS QUO

Traditionally, HVAC evacuation standards involve a 3 to 4-port manifold gauge set with 1/4-inch hoses running from both the high and low sides of the equipment. These hoses pass through the manifold gauge and connect to the vacuum pump inlet. To make things worse, many technicians utilize the vacuum scale on their compound gauge rather than a purpose-built micron gauge. They rely on analog readings, rules of thumb, or rough estimates to determine completion.

ANALOG GAUGE READING IS PROBLEMATIC

The compound gauge on a manifold is simply inappropriate in all vacuum measurement situations. The gauge typically reads from 0 PSIG to 30 inches of mercury within a space of an inch or so. As a micron is a linear measurement, 1/25, 400th of an inch to be exact, the compound gauge's needle tip can represent hundreds if not more, microns. This makes using the gauge unreliable at best for evacuation applications. Additionally, field-used manifold gauge sets are frequently in poor condition and prone to calibration issues.

THE NEXT BIG SHIFT IN PROPER PRACTICES: VACUUM HOSES

While the standard 1/4-inch hose sets commonly found on manifold gauge sets work well for reading and interpreting the operational pressures of running HVAC equipment, they prove inadequate for purposes outside of the above, especially for evacuation. Smaller diameter hoses for long lengths increase evacuations dramatically while reducing conductance speed, which can be described as "friction" or the flow rate of evacuated gases.

SHORTER, LARGER DIAMETER TUBING PROVIDES MAXIMUM EFFICIENCY IN PUMP-DOWN TIME

For instance, if we use a 10-foot line at 1000 microns, we can move roughly:



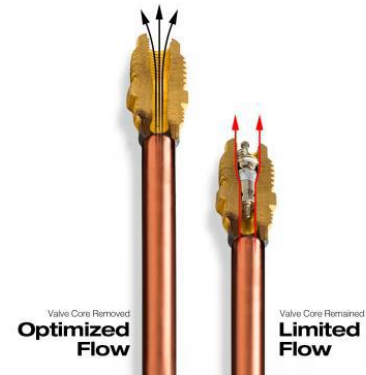
- 16 CFM with ¾ inch hose
- 4 CFM with a ½ inch hose
- 1.5 CFM with a ⅜ inch hose
- 0.5 CFM with a ¼ inch hose

As you can see, regardless of how much CFM a pump could pull if attached to an ¼ inch manifold set, you're essentially left with an expensive, heavy pump that operates at roughly 1 CFM. This explains why some technicians believe micron gauges are unreliable or find running a vacuum overnight in residential applications acceptable.

*NHB1 & NHB2-Big Boy High-Flow Hoses

VALVE CORE REMOVAL

For most residential applications or mini-splits with just one service port, a 1-hose setup is more than adequate. In this case, we connect a single, large-diameter hose directly to our vacuum pump's inlet. This hose then runs straight to the back of a core removal tool, which has already been installed on the service valve with the valve core removed.



ADD A DIGITAL MICRON GAUGE



For mini-splits, a digital micron gauge connects to the same core removal tool's side port. In residential systems, it's attached to the 2nd core removal tool on the opposite service valve. This placement, far from the pump, guarantees the most precise and real-time vacuum level. The 2-hose setup involves 2 large-diameter hoses from the pump to equipment core removal tools, with a micron gauge on one.

*NMV1S-Premium Micron Vacuum Gauge

GOOD PRACTICES MAXIMIZE EVACUATION SPEED BY ELIMINATING ALL RESTRICTIONS

- Use the shortest, appropriately sized hoses to match or surpass the pump's output.
- Valve cores are removed, eliminating most restrictions in the service valve.
- The high-quality digital micron gauge is placed far from the pump for accurate readings.
- Keep core removal tools on service valves; they act as isolation valves for the pump & system.

Implementing these changes in evacuation setups requires little effort but offers great results. In clean, well-installed systems, residential readings with decay tests can take 15 to 20 minutes, even as short as 5 to 10 minutes. Using larger-diameter hoses, core removal tools, and micron gauges with your vacuum pumps improves your service quality, extends equipment life, and boosts your team's productivity and profitability while preserving HVACR tool longevity.

lets meet ben's chiropractor!

Dr. Jimmy

dr. jimmy allgood

doctor and friend to hvac tactical

Hi, Dr. Jimmy; we'd love for you to start by introducing yourself.

I can still remember the billboard along Highway 183 in the back of my parent's car on our way to a little league baseball game like it was yesterday, even though it was almost 30 years ago. I know you have seen a version of it yourself: "Car Accident? See Dr. Blank for pain relief." This is the permanent image I have had of Chiropractic my entire life, and this is probably the first taste of Chiropractic you have also had. The truth is, yes, that version of Chiropractic works. It is great at getting people out of pain, but how? How does pushing on little spots along your back and neck help get you out of debilitating pain?

To get this answer, let's return to 6th-grade Jimmy on his way to a baseball game. It's a tie game; runners are on first and third, there are two outs, and the parents start cheering extra loud because, like them, we all know what's at stake. The tournament championship is riding on the quality of pitching that I can provide. With their lead-off batter at the plate, I reared back and delivered a fastball (probably the only pitch I had) only to fall to the ground. The cheering from the parents is immediately replaced with a harmonic gasp among players, coaches, and parents. I lay on the ground motionless because it was such a shock that I could not feel my legs from the waist down, no movement, no feeling, no command.

To this day, I still have no clue what happened or how it happened. What I do know is the life-altering event that happened next. Tyler's dad stepped onto the field and said, "Let me look." He was a Chiropractor in town, and that was all I knew about him. I studied his facial expressions as he felt my lower back with his hands as if scanning my spine for an anomaly. "Ah-ha!" he said with confidence. Still, to this day, I have no clue what he felt, but I am glad he did. He then proceeded to give me my first Chiropractic

Adjustment. Dr. Blank informed my parents that he believed there was a bone in my hips/lower back that had over-rotated and had put tremendous pressure on the nerves as they exited the spine. This resulted in losing function and sensation in my lower extremities almost 100%. He said, "Let's give it time to see if it improves."

If it doesn't show any signs of getting a little bit better by the end of the day, proceed to visit the emergency room or primary health care provider, depending on my condition." My parents agreed to give it time before continuing with their freak-out. After about an hour, I noticed the sensation coming back into my toes, and it felt as if I could move them. Slowly, that feeling traveled up my legs and to my hips. About five to six hours later, I was walking, and yes, walking! So, let's dissect that a little bit further:

Is Chiropractic really about pain?

At no point in that experience did I have pain. I had a loss of function, sensation, and a total freak-out. So, how did Dr. Blank play a vital role in restoring this function and sensation? To understand this, we must understand the anatomy first. We know the brain controls every single function in the body, period.

If you want to talk, it comes from your brain. If you're going to move your pinky, yup, from the brain. Suppose your heart beats faster because your crush repeatedly walks up to your brain. Bee sting? The reaction of pulling away, the swelling, and the naughty words, after all, brain. It is not even an argument that it is the most important thing in the body. Equally as important is its avenue for communication—the spinal cord.

The spinal cord carries any information from the brain to its destination, whether organ, cell, muscle, tissue, or gland. The spinal cord also carries information back to the brain. This all happens ridiculously fast. Want me to prove it?



While I don't recommend it, try stepping on a nail. Within the blink of an eye, your foot is off the nail and profanity follows. So, what happened?

You stepped on a nail, and a signal was sent to your brain about what damage had happened. The brain said, "Yowzers! Retreat!" It sends a signal down your spine through your neck, through your mid back, through your lower back, through your hip, past your knee, past your ankle, and into your foot. That signal immediately activates your hip flexor and foot to use every method possible to get your foot from that nail. This means you don't have to think about lifting your leg and ankle simultaneously while experiencing pain. Your brain does that for you and very fast.

So, where does Chiropractic come in?

The spine's bones can often become misaligned or "subluxated" to slow that signal from the brain down. If the brain works at 100% and there is a subluxation in the neck, that signal can drop to 80% (we don't know how much, but for this example, let's say it -20%). Then, if we find another subluxation in the mid back, we are down to 60%. Another in the low back, you say? We are down to 40%.

When that signal gets to the lower back, it's just a trickle of information to and from the brain through the spine. What is crazy is these nerves don't just control how you feel. They control the function of your digestive system; they control your heart, lungs, gall bladder, kidneys, life, and everything. So, imagine having digestive problems and low back pain and trying to chase two separate problems when there is a problem with your fuse box that supplies information on both issues. This is where chiropractic comes in. My job as a chiropractor is examining, analyzing, locating, and correcting subluxations. In doing so, we allow the brain to communicate 100% of its information to the rest of the body so that you may live a better and higher quality of life. My job is not to pop your back, crack your neck, or massage your neck but rather to let you express your genetic potential.

When you are in subluxation, your body works how it was designed. It's as simple as that. You don't get headaches; you don't get ear infections. (I'm looking at your toddlers!) You don't have digestive problems, and you certainly don't get allergies. I must admit that even I, the eventual chiropractor, had no idea what it was. It's not a billboard talking about pain relief from a car accident. Today, I serve



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The National Board of Chiropractic Examiners
NBCE
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ALL GOOD
CHIROPRACTIC
DR. JIMM

the Steiner Ranch and surrounding areas, primarily focusing on restoring function to every person's nervous system. I am one of the only certified prenatal and pediatric chiropractors in Austin. Yes, getting adjusted is safe and very beneficial for babies (even minutes after birth), toddlers, and pregnant moms. The research shows kids who get adjusted have a significantly stronger immune system and are said to require fewer sick visits to their pediatrician.

If you have any questions or are just curious about Chiropractic and if it can help serve you and your family, reach out to me! I'd love the opportunity to serve you.

Would it have been a smooth road, and if not, what are some of the biggest challenges you've faced along the way?

It always takes work. Every single day, I am confronted with, "Are you a real doctor?", "Are you going to kill me?" Over the years, I have become very good at understanding they are coming from an actual and authentic place of concern. I have become great at meeting them where they are and building a foundation of education on what we do and are trying to accomplish.

Thanks for sharing that. Could you tell us more about your work?

We are a family chiropractic facility that focuses on spinal correction and care. Chiropractic and Dentistry are very similar. We know that if you don't care for your teeth, they will eventually shift, hurt, decay, rot, or become irritated. This is the same for your spine. If you don't give that spine some love, it will shift, degenerate, compress, or put pressure on nerves, and it doesn't have to hurt for it to become a problem.

The same is also true for your teeth. In fact, if you go to the dentist when your teeth hurt, you are likely behind the ball, and some extensive work usually needs to be done. The same is true in Chiropractic. If you go to the Chiro when you are in pain and have the mindset, "I've never needed a Chiro before because it's never hurt," then you are setting yourself up for failure. You

certainly wouldn't say, "I've never needed to go to the dentist because my teeth aren't hurting." You can also replace teeth. You are stuck with his spine for life, so you better take care of it!

We base all of our care on X-rays, which we have in-house. We can analyze and correct the spine based on an X-ray! How cool is that? On the initial exam, we will take X-rays to get the spine's foundation and starting point. We develop an action plan for correction (much like getting braces on your teeth). When we have made significant progress, we will take an updated set of X-rays to show you the progress and make any necessary changes moving forward. Once the correction has met its maximum potential, we keep it there. (Like wearing a retainer when braces come off!). Simple enough.

How do you define success?

I define success by the people and lives that I can serve. Money has no measure of success in my world. It is the miraculous stories of how someone was able to get pregnant after seeing a Chiropractor, or someone finally found relief from debilitating headaches after 10 years of agony, or new parents that haven't slept in a week because their newborn won't sleep or get comfortable and seeing the amazement when the child falls asleep in my arms after their first adjustment. That is success. Not how much money I have or what car I'm driving.

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In 2018, an idea was brought to life.

An idea that HVAC guys who were passionate about their craft could wear cool gear that represented what they did for a living.

An idea that the brand itself would stand for something more than just a cool looking shirt or hat.

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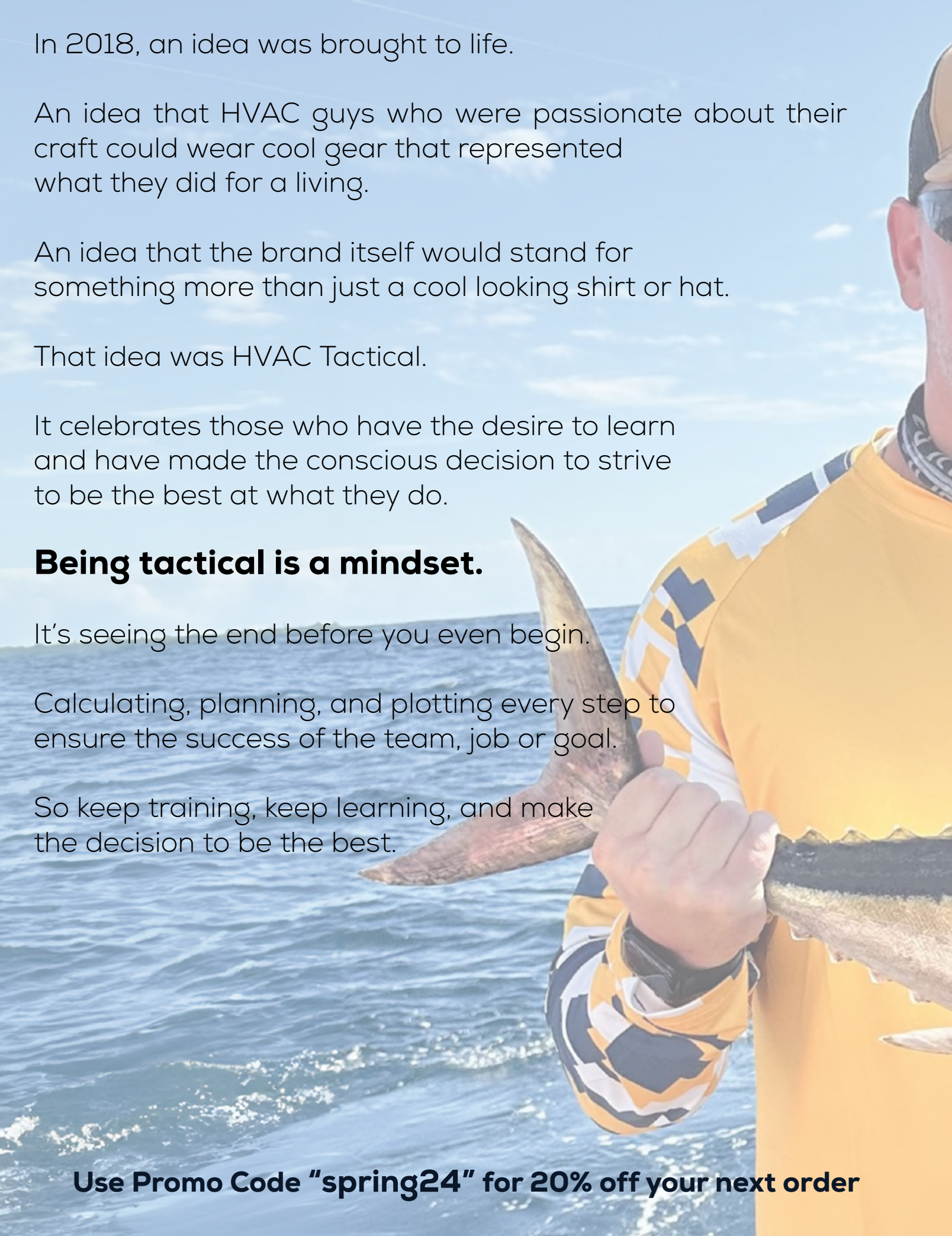
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As the owner of an HVAC service business, you know you have what it takes to be successful. Even so, you've hit a ceiling. Things aren't going smoothly in your business, or it just isn't growing as quickly as you'd like it to. Either way, you're hungry for that something more that always seems to be out of reach.

Meanwhile, while you're busy hunting for the magic formula for success...

- The trial and error approach is getting very expensive
- The feast or famine rollercoaster is getting old
- Your health and relationships are suffering
- You have no idea where you're going wrong

**GOOD NEWS:
You can have what you want**

My name is Matt Murray. I found the "magic formula" and went from being an HVAC/R technician to running an 8-figure HVAC/R business and living an amazing, abundantly fulfilled lifestyle. Now I've created tools, resources, workshops and coaching programs to help you overcome your obstacles, so that you can reach your highest goals, too.



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