

1

00:00:00,000 --> 00:00:07,000

Please, don't try anything that you're about to see us do at home.

2

00:00:07,000 --> 00:00:09,000

Ever.

3

00:00:09,000 --> 00:00:11,000

Take cover.

4

00:00:11,000 --> 00:00:16,000

On this episode of Mythbusters, Jamie and Adam get all steamed up.

5

00:00:16,000 --> 00:00:17,000

Woo!

6

00:00:17,000 --> 00:00:26,000

As they test if an ordinary water heater has the extraordinary ability to fly right through your house like a rocket.

7

00:00:26,000 --> 00:00:33,000

And our Rebel Trio try on some riveting, all-American legends about blue jeans.

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00:00:33,000 --> 00:00:34,000

Oh, those are good.

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00:00:34,000 --> 00:00:41,000

Charging off with, if you're dragged along the ground by a horse, could your jeans patch fire?

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00:00:41,000 --> 00:00:44,000

Do you feel any heat in your pants? I mean.

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00:00:44,000 --> 00:00:55,000

Then there's the blood-curdling tale that shrinking your jeans by sitting in a bath could squeeze the life right out of you.

12

00:00:55,000 --> 00:00:57,000

Oh my God!

13

00:00:57,000 --> 00:00:59,000

Are we gonna have to amp the tail to his leg?

14

00:01:02,000 --> 00:01:04,000

Who are the Mythbusters?

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00:01:04,000 --> 00:01:06,000

It's time to blow some stuff up!

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00:01:06,000 --> 00:01:10,000

Adam Savage and Jamie Heinemann.

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00:01:10,000 --> 00:01:11,000

That was fun.

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00:01:11,000 --> 00:01:15,000

Between them more than 30 years of special effects experience.

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00:01:15,000 --> 00:01:18,000

This is the kind of thing I do on the weekend.

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00:01:18,000 --> 00:01:21,000

Joining them, Carrie Byron.

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00:01:21,000 --> 00:01:23,000

Come over here, you smell that?

22

00:01:23,000 --> 00:01:25,000

He's alive!

23

00:01:25,000 --> 00:01:27,000

And Tori Belichi.

24

00:01:27,000 --> 00:01:29,000

He's starting to feel like a bad idea.

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00:01:29,000 --> 00:01:33,000

They don't just tell the myths, they put them to the test.

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00:01:48,000 --> 00:01:50,000

I bet you're wondering why I'm standing here with a plunger.

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00:01:50,000 --> 00:01:52,000

No, but I'm sure you're gonna tell me.

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00:01:52,000 --> 00:01:55,000

Absolutely right. We have a plumbing myth.

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00:01:55,000 --> 00:01:59,000

Picture, an old house and in that house is an old hot water heater.

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00:01:59,000 --> 00:02:03,000

The hot water heater is neglected. It's beyond neglected.

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00:02:03,000 --> 00:02:05,000

In fact, so badly that it blows up.

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00:02:05,000 --> 00:02:07,000

But it doesn't just blow up.

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00:02:07,000 --> 00:02:11,000

No, this hot water heater blows up like a rocket shooting up through the roof of the house.

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00:02:11,000 --> 00:02:14,000

Hundreds of feet into the air, landing 500 feet away.

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00:02:14,000 --> 00:02:18,000

The fans are going nuts about this on the website. They want us to test it out.

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00:02:18,000 --> 00:02:21,000

Sounds like fun to me. It gets me all steamed up just thinking about it.

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00:02:22,000 --> 00:02:25,000

Water heaters are fitted with two main safety devices.

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00:02:25,000 --> 00:02:30,000

A thermostat and emergency cutoff switch to prevent the water from overheating.

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00:02:30,000 --> 00:02:35,000

And a temperature and pressure relief valve to release excessive pressure.

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00:02:36,000 --> 00:02:40,000

To find out what needs to happen to make good water heaters go bad,

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00:02:40,000 --> 00:02:45,000

Jamie and Adam are conducting scale tests using small six gallon tanks.

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00:02:45,000 --> 00:02:50,000

We're going to set this thing up using instrumentation that monitors both temperature and pressure.

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00:02:50,000 --> 00:02:54,000

Then we're going to make each component, each safety component of this water heater

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00:02:54,000 --> 00:02:57,000

fail until we get the entire tank to fail.

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00:02:57,000 --> 00:02:59,000

Anyone have to go to the bathroom?

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00:02:59,000 --> 00:03:05,000

Improper installation or lack of regular maintenance can really cause the safety devices to fail.

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00:03:05,000 --> 00:03:08,000

Jamie and Adam are just simplifying the process.

48

00:03:08,000 --> 00:03:13,000

This is the thermostat and the emergency cutoff switch, which the water heater normally comes with.

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00:03:13,000 --> 00:03:17,000

We've taken it off. So we've got no emergency shut off.

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00:03:17,000 --> 00:03:23,000

The TNP valve is now the only functioning safety device. So here's how it works.

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00:03:23,000 --> 00:03:29,000

When heated inside a closed environment, water expands and causes an increase in pressure.

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00:03:29,000 --> 00:03:35,000

If the temperature or pressure gets too high, the TNP valve opens.

53

00:03:35,000 --> 00:03:41,000

So in theory, once this thing reaches the pressure relief or the temperature relief valve activates that,

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00:03:41,000 --> 00:03:44,000

we should just see it start to spew some water.

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00:03:44,000 --> 00:03:49,000

So people don't get scalded. The recommended set temperature for water heaters

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00:03:49,000 --> 00:03:53,000

is well below boiling point of 212 degrees Fahrenheit.

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00:03:53,000 --> 00:03:56,000

Look at how fast the temperature is rising, man.

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00:03:56,000 --> 00:03:59,000

Yeah, it won't take long.

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00:03:59,000 --> 00:04:06,000

When the water gets up to a dangerous 165 degrees, the TNP valve comes to the rescue.

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00:04:06,000 --> 00:04:08,000

Oh, there it goes.

61

00:04:08,000 --> 00:04:12,000

Really? Oh, yeah, look, it's spewing. That's what it's supposed to do.

62

00:04:13,000 --> 00:04:15,000

That's better.

63

00:04:16,000 --> 00:04:20,000

For their next test, they're really putting themselves in hot water.

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00:04:20,000 --> 00:04:21,000

What's next?

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00:04:21,000 --> 00:04:28,000

Well, next, I think we pull the TNP valve and we start the final failure analysis test

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00:04:28,000 --> 00:04:32,000

in which nobody approaches this bunker until we hear boom or all clear.

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00:04:32,000 --> 00:04:35,000

Now, you might wonder exactly how that's going to happen in real life,

68

00:04:35,000 --> 00:04:37,000

and I'm going to play it out for you.

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00:04:37,000 --> 00:04:42,000

A homeowner looks at his hot water heater and sees that there's this thing sticking out in a pipe

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00:04:42,000 --> 00:04:46,000

that doesn't go anywhere, and he thinks, well, maybe that's from some old plumbing.

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00:04:46,000 --> 00:04:50,000

It's dripping water, too, so I'll just cap it, stop it from dripping water.

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00:04:50,000 --> 00:04:53,000

It's happened all the time.

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00:04:53,000 --> 00:04:57,000

Removing the TNP valve could cause a serious explosion,

74

00:04:57,000 --> 00:05:04,000

so Jamie rigs up an external emergency release so they can defuse the system immediately.

75

00:05:04,000 --> 00:05:06,000

Are we live? We're live.

76

00:05:06,000 --> 00:05:08,000

All right, let's get everyone in the safety zone.

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00:05:08,000 --> 00:05:10,000

The pressure slowly builds.

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00:05:10,000 --> 00:05:15,000

Normally, a TNP valve is set to release at about 150 psi.

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00:05:15,000 --> 00:05:18,000

Now, the sky's the limit.

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00:05:19,000 --> 00:05:21,000

This is excruciating.

81

00:05:21,000 --> 00:05:24,000

Tell me about it. 400 psi.

82

00:05:24,000 --> 00:05:27,000

250 degrees Fahrenheit.

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00:05:27,000 --> 00:05:33,000

Both the temperature and the psi are climbing steadily when all of a sudden...

84

00:05:33,000 --> 00:05:38,000

Whoa! We just lost pressure. We lost half of our pressure there.

85

00:05:38,000 --> 00:05:42,000

Something in the system is causing the pressure to drop rapidly.

86

00:05:42,000 --> 00:05:49,000

We're at 300 degrees Fahrenheit. I think we're losing pressure somewhere we can't see, and we've just got to abort.

87

00:05:49,000 --> 00:05:52,000

All right, well, we'll pull the valve. That's what it's for.

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00:05:52,000 --> 00:05:54,000

All right, let's do it.

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00:05:54,000 --> 00:05:56,000

Jamie triggers his emergency release.

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00:05:57,000 --> 00:06:03,000

When water that's been heated beyond boiling point hits air, it turns instantly into vapor.

91

00:06:03,000 --> 00:06:06,000

Great for opening those pores.

92

00:06:07,000 --> 00:06:10,000

Okay, that is indicating it's fully depressured.

93

00:06:10,000 --> 00:06:14,000

The PSI gauge just failed. I don't know why, but the main thing is,

94

00:06:14,000 --> 00:06:18,000

neither Jamie or I feel comfortable doing the test here in the bunker anymore.

95

00:06:18,000 --> 00:06:20,000

After watching the amount of steam that came out,

96

00:06:20,000 --> 00:06:23,000

knowing how much pressure it takes to make a tank blow,

97

00:06:23,000 --> 00:06:25,000

we just want to be far away from this.

98

00:06:25,000 --> 00:06:31,000

The pent-up fury inside this tiny tank has got the guys running for cover.

99

00:06:31,000 --> 00:06:32,000

We need more room for sure.

100

00:06:32,000 --> 00:06:34,000

Let's pack up and move it out.

101

00:06:34,000 --> 00:06:35,000

Okay.

102

00:06:44,000 --> 00:06:47,000

Okay, guys, the next one is as American as baseball and apple pie.

103

00:06:47,000 --> 00:06:49,000

It's myths about blue jeans.

104

00:06:49,000 --> 00:06:51,000

Oh!

105

00:06:51,000 --> 00:06:53,000

Blue jean myths. That'll be cool.

106

00:06:53,000 --> 00:06:58,000

Since their creation during the rough and tumble days of the American Wild West,

107

00:06:58,000 --> 00:07:02,000

no one item of clothing has meant so much to so many.

108

00:07:02,000 --> 00:07:07,000

Practical, synonymous with rebellion, sexy and cool,

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00:07:07,000 --> 00:07:12,000

it's no wonder legends about jeans are bursting at the seams.

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00:07:12,000 --> 00:07:13,000

What's the first myth?

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00:07:13,000 --> 00:07:17,000

A cowboy falls off his horse and gets dragged by it,

112

00:07:17,000 --> 00:07:22,000

and the friction that's created actually causes the jeans to catch on fire.

113

00:07:22,000 --> 00:07:25,000

Okay, that has Tori written all over it.

114

00:07:25,000 --> 00:07:27,000

Why does it have me written all over it?

115

00:07:27,000 --> 00:07:30,000

Yee-haw!

116

00:07:30,000 --> 00:07:37,000

To get this tail off and running and to get the chance to talk like this,

117

00:07:37,000 --> 00:07:42,000

the team hightails it over to the groundy ranch in Red Bluff, California.

118

00:07:42,000 --> 00:07:44,000

Tori is going to be playing cowboy,

119

00:07:44,000 --> 00:07:48,000

so he gets himself kitted up in full body padding.

120

00:07:48,000 --> 00:07:53,000

While Carrie and Grant chat with renowned stockman John.

121

00:07:53,000 --> 00:07:55,000

So how do you get yourself in trouble?

122

00:07:55,000 --> 00:07:57,000

I mean, does your foot get caught in the stirrup?

123

00:07:57,000 --> 00:07:59,000

Does it get caught in the rains?

124

00:07:59,000 --> 00:08:00,000

I mean, how do you get dragged?

125

00:08:00,000 --> 00:08:02,000

The common thing is being caught in the stirrup,

126

00:08:02,000 --> 00:08:04,000

and in the old days being caught in the rope,

127

00:08:04,000 --> 00:08:06,000

and the rope would hang on to you long enough,

128

00:08:06,000 --> 00:08:10,000

or it would actually close in on you while it was wrapped around the saddle horn,

129

00:08:10,000 --> 00:08:12,000

and then just drag you off.

130

00:08:12,000 --> 00:08:17,000

With John being a former rodeo rider, Grant asks the burning question.

131

00:08:17,000 --> 00:08:20,000

John, have your jeans ever caught fire?

132

00:08:20,000 --> 00:08:26,000

Not... I could have really gone with a good one there, alright.

133

00:08:26,000 --> 00:08:27,000

Whatever you want.

134

00:08:27,000 --> 00:08:32,000

Well, I was going to tell a story one time, but, you know, my pants have been on fire,

135

00:08:32,000 --> 00:08:34,000

but not on fire.

136

00:08:34,000 --> 00:08:37,000

Seems like John's not one to tell tales.

137

00:08:37,000 --> 00:08:40,000

But someone else on the ranch sure is.

138

00:08:40,000 --> 00:08:44,000

Okay, so the ranch actually has a psychic horse.

139

00:08:44,000 --> 00:08:50,000

This is Pistol, and Pistol's going to be able to tell me to predict what's going to happen today.

140

00:08:50,000 --> 00:08:53,000

Is this a dangerous thing for us to do?

141

00:08:53,000 --> 00:08:55,000

Yeah.

142

00:08:55,000 --> 00:08:57,000

I knew it.

143

00:08:57,000 --> 00:08:58,000

I knew it.

144

00:08:58,000 --> 00:09:01,000

Are the jeans going to catch fire?

145

00:09:01,000 --> 00:09:04,000

Yes? No.

146

00:09:04,000 --> 00:09:06,000

Not sure. Okay.

147

00:09:06,000 --> 00:09:10,000

By Pistol's reckoning, things could go either way.

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00:09:10,000 --> 00:09:14,000

So to find out for sure, let's get this myth saddled up.

149

00:09:14,000 --> 00:09:21,000

Now, Tori's weight represents a downward force that's pushing the jeans onto the ground,

150

00:09:21,000 --> 00:09:27,000

and as the horse drags him along, the friction there is going to build up

151

00:09:27,000 --> 00:09:32,000

and hopefully cause the jeans to spontaneously combust.

152

00:09:32,000 --> 00:09:38,000

Faced with the bottom line, Tori's starting to feel all alone on the wide open plane.

153

00:09:38,000 --> 00:09:41,000

In the shop, they're like, oh, you're going to get dragged behind a horse,

154

00:09:41,000 --> 00:09:43,000

and I'm like, yeah, that sounds fun.

155

00:09:43,000 --> 00:09:49,000

But then you get out here and you go, God, this seems like a really stupid idea.

156

00:09:49,000 --> 00:09:54,000

And I'm starting to get that feeling more than that sounds like it's going to be fun.

157

00:09:54,000 --> 00:10:00,000

Next, Denim Desperado Tori literally puts his behind on the line.

158

00:10:01,000 --> 00:10:08,000

And soon, the guys find out if a water heater is really a rocket in disguise.

159

00:10:19,000 --> 00:10:23,000

The fans want to get the down low on this classic spaghetti western scenario.

160

00:10:23,000 --> 00:10:26,000

If you're dragged along the ground by an out of control horse,

161

00:10:26,000 --> 00:10:31,000

can the friction cause your jeans to catch fire?

162

00:10:32,000 --> 00:10:35,000

Tori is trying this Saturday matinee myth for real,

163

00:10:35,000 --> 00:10:39,000

but he's finding out it's a potential minefield.

164

00:10:39,000 --> 00:10:45,000

I'm looking around and I'm seeing rocks and I'm seeing horse dung.

165

00:10:45,000 --> 00:10:49,000

Not only is it going to hurt, it's going to be very, very unpleasant.

166

00:10:49,000 --> 00:10:56,000

To reduce the hazards, Tori is decked out in top to toe denim with a padded safety suit underneath.

167

00:10:56,000 --> 00:10:58,000

Fashion please.

168

00:10:58,000 --> 00:11:01,000

Top 10 cardinal rules, denim on denim, nope.

169

00:11:01,000 --> 00:11:04,000

And paramedics are on site.

170

00:11:04,000 --> 00:11:09,000

Expert cowgirl, Neela will be riding pistol, the psychic horse.

171

00:11:09,000 --> 00:11:12,000

Wow, this ropes a lot shorter than I thought it was going to be.

172

00:11:12,000 --> 00:11:18,000

To calculate the hotness of Tori's rear, the team has got some specialized equipment.

173

00:11:18,000 --> 00:11:24,000

We have an infrared surface thermometer, so we'll measure how hot the jeans are before the run.

174

00:11:24,000 --> 00:11:29,000

103.5 and compare that to how hot they are after it.

175

00:11:31,000 --> 00:11:34,000

And I'll just be carrying this just in case.

176

00:11:34,000 --> 00:11:40,000

Stretched out 25 feet from pistol's back legs, Tori should be out of kicking range.

177

00:11:41,000 --> 00:11:43,000

Kidding out.

178

00:11:44,000 --> 00:11:49,000

Okay, you got to be on your back.

179

00:11:49,000 --> 00:11:57,000

As Tori is pulled across the ground, he realizes that being a movie stuntman is not as glamorous as he once thought.

180

00:11:57,000 --> 00:11:59,000

Oh, he had a patch of dung there.

181

00:11:59,000 --> 00:12:01,000

I was just trying to hold on to the rope.

182

00:12:01,000 --> 00:12:04,000

I was hoping that the horse would stop soon.

183

00:12:04,000 --> 00:12:07,000

I just kind of kept my eyes closed and my mouth shut.

184

00:12:07,000 --> 00:12:10,000

Tori's cheeks clock up some serious speed.

185

00:12:10,000 --> 00:12:13,000

All right, we're topping out at 20 miles an hour.

186

00:12:13,000 --> 00:12:16,000

But they don't even generate a puff of smoke.

187

00:12:16,000 --> 00:12:19,000

Okay, flip over, flip over.

188

00:12:19,000 --> 00:12:21,000

Okay, got it.

189

00:12:21,000 --> 00:12:22,000

That was great.

190

00:12:22,000 --> 00:12:24,000

Can we do that again?

191

00:12:24,000 --> 00:12:26,000

116.5.

192

00:12:26,000 --> 00:12:31,000

Post run, Tori's posterior temperature has increased by 13 degrees.

193

00:12:31,000 --> 00:12:34,000

Do you feel any heat in your pants?

194

00:12:34,000 --> 00:12:35,000

Yeah, definitely.

195

00:12:35,000 --> 00:12:40,000

The friction did add some heat, but I mean, these pants aren't smoking.

196

00:12:40,000 --> 00:12:43,000

Then let's ride again.

197

00:12:43,000 --> 00:12:44,000

Round two.

198

00:12:44,000 --> 00:12:47,000

Drag that no good varmin out of town.

199

00:12:47,000 --> 00:12:48,000

Pistol.

200

00:12:50,000 --> 00:12:51,000

At a quicker pace.

201

00:12:51,000 --> 00:12:53,000

They're going way faster this time.

202

00:12:54,000 --> 00:12:57,000

Tori and the dung are really flying.

203

00:12:57,000 --> 00:13:00,000

Oh my God, they're topping it 30.

204

00:13:00,000 --> 00:13:02,000

I sure hope he doesn't have a date tonight.

205

00:13:02,000 --> 00:13:05,000

This time, we went a little bit faster.

206

00:13:05,000 --> 00:13:06,000

A lot faster, I felt like.

207

00:13:06,000 --> 00:13:08,000

I felt like I was bouncing around a lot.

208

00:13:08,000 --> 00:13:10,000

My head was going all over the place.

209

00:13:10,000 --> 00:13:14,000

When his gluteus maximus finally grinds to a halt,

210

00:13:14,000 --> 00:13:18,000

our vigilant fanny assessor rushes in.

211

00:13:18,000 --> 00:13:20,000

It's 145.5 degrees.

212

00:13:20,000 --> 00:13:21,000

Whoa.

213

00:13:21,000 --> 00:13:23,000

So it increased to 34 degrees.

214

00:13:23,000 --> 00:13:25,000

Still didn't catch on fire.

215

00:13:25,000 --> 00:13:26,000

And that's kind of what I figured.

216

00:13:26,000 --> 00:13:30,000

I figured the jeans were just going to tear away before they caught on fire.

217

00:13:30,000 --> 00:13:34,000

Tori could sell his distressed denim for a fortune,

218

00:13:34,000 --> 00:13:37,000

but fire from friction was fiction.

219

00:13:37,000 --> 00:13:41,000

Tori did experience an increase in temperature of his clothing,

220

00:13:41,000 --> 00:13:43,000

but he did not burst in the flame.

221

00:13:43,000 --> 00:13:47,000

Both the jacket and the jeans are safe for now.

222

00:13:47,000 --> 00:13:50,000

But this myth isn't done and dusted yet.

223

00:13:50,000 --> 00:13:54,000

Teen Tail End has some final tests to rustle up.

224

00:13:55,000 --> 00:13:59,000

Explosion Danger

225

00:13:59,000 --> 00:14:04,000

Explosion Danger lurks in thousands of typical hot water heater installations

226

00:14:04,000 --> 00:14:11,000

because the great majority have either improper protection or no protection at all.

227

00:14:11,000 --> 00:14:18,000

Is the tale of the water heater rocket really true or just over the top scare tactics?

228

00:14:19,000 --> 00:14:25,000

To find out, Jamie and Adam have arrived at the wide open spaces of Alameda Naval Base.

229

00:14:25,000 --> 00:14:30,000

It may help you to think about this in terms of just a pure release of energy.

230

00:14:30,000 --> 00:14:35,000

All we're doing is putting energy into the water heater in the form of electricity converted to heat.

231

00:14:35,000 --> 00:14:38,000

We're not letting that energy out in any way.

232

00:14:38,000 --> 00:14:41,000

Now the difference between a rocket and a bomb,

233

00:14:41,000 --> 00:14:44,000

a bomb releases all of its energy in every direction at once,

234

00:14:44,000 --> 00:14:49,000

and a rocket releases all of its energy over a little bit longer period of time in one single direction.

235

00:14:49,000 --> 00:14:51,000

And that's what we're looking for here.

236

00:14:51,000 --> 00:14:55,000

The same as their scale tests, they're using a six gallon tank.

237

00:14:55,000 --> 00:15:02,000

And to recreate real life circumstances of shoddy installation and neglect have made a few adjustments.

238

00:15:02,000 --> 00:15:06,000

The electronic cutoff switches and thermostats, gone.

239

00:15:06,000 --> 00:15:08,000

The temperature and pressure valve, gone.

240

00:15:08,000 --> 00:15:12,000

The power from a remote generator is switched on.

241

00:15:12,000 --> 00:15:17,000

Okay, Adam, we're live. We're hooked up. We're running about 25 amps.

242

00:15:17,000 --> 00:15:20,000

So everybody be on alert. Over.

243

00:15:20,000 --> 00:15:23,000

And our little heater has his moment in the sun.

244

00:15:23,000 --> 00:15:26,000

Well, as far as I can tell, everything's good to go.

245

00:15:26,000 --> 00:15:28,000

I hope we get it to blow this time.

246

00:15:28,000 --> 00:15:29,000

Yep.

247

00:15:29,000 --> 00:15:32,000

I'm tired of watching a heater not do anything.

248

00:15:32,000 --> 00:15:34,000

Third time's a charm.

249

00:15:34,000 --> 00:15:42,000

In a healthy appliance, the cutoff switch would activate before boiling point and the pressure release valve at 150 psi.

250

00:15:42,000 --> 00:15:47,000

But our patient is sick and his temperatures rising rapidly.

251

00:15:47,000 --> 00:15:52,000

All right. So we're at seven minutes, almost 40 psi and 250 degrees Fahrenheit.

252

00:15:52,000 --> 00:15:56,000

270 degrees, 53 psi.

253

00:15:56,000 --> 00:16:03,000

Okay, we're at 20 minutes, 370 degrees and 190 psi.

254

00:16:04,000 --> 00:16:08,000

Suddenly his fever breaks.

255

00:16:08,000 --> 00:16:11,000

That's a failure, but that's not an explosion.

256

00:16:11,000 --> 00:16:13,000

It was pretty spectacular.

257

00:16:13,000 --> 00:16:19,000

This thing bathed in a cloud of hot scalding steam and 300, 400 degree water.

258

00:16:19,000 --> 00:16:22,000

It's ludicrously dangerous.

259

00:16:22,000 --> 00:16:28,000

Six gallons of water turned into 9,600 gallons of fishing vapor.

260

00:16:28,000 --> 00:16:33,000

But even with all that force, the tank didn't go for a ride.

261

00:16:33,000 --> 00:16:35,000

Let's get a bigger heater out here. Try this again.

262

00:16:35,000 --> 00:16:37,000

Okay. Let's do it.

263

00:16:37,000 --> 00:16:43,000

A bigger tank may give the guys the heave-ho they need.

264

00:16:43,000 --> 00:16:46,000

Coming right up, besides looking killer.

265

00:16:46,000 --> 00:16:48,000

Oh, those are good.

266

00:16:48,000 --> 00:16:50,000

Can tight jeans kill you?

267

00:16:50,000 --> 00:16:55,000

And soon you'll never look at your water heater the same way again.

268

00:17:03,000 --> 00:17:10,000

All right. Death by shrinkage.

269

00:17:10,000 --> 00:17:15,000

This is the one where the woman puts on a very tight pair of jeans and sits in a bathtub for six hours.

270

00:17:15,000 --> 00:17:17,000

Yeah, I've heard that's how you get the perfect fit.

271

00:17:17,000 --> 00:17:19,000

However, they end up killing her.

272

00:17:19,000 --> 00:17:22,000

Oh, maybe not the perfect fit.

273

00:17:22,000 --> 00:17:25,000

This is a fan-side denim demand.

274

00:17:25,000 --> 00:17:31,000

A woman trying to get her jeans to fit just right sat in a hot bath for six hours.

275

00:17:31,000 --> 00:17:35,000

The heat caused her jeans to shrink and legs to swell.

276

00:17:35,000 --> 00:17:38,000

And the pressure cut off her blood circulation.

277

00:17:38,000 --> 00:17:40,000

Then it was curtains.

278

00:17:40,000 --> 00:17:46,000

To find out how this Death by Denim scenario might be possible, Carrie has an appointment.

279

00:17:46,000 --> 00:17:47,000

Hi.

280

00:17:47,000 --> 00:17:53,000

Dr. Edward Kirsch, MD, explains why constriction on the legs can be harmful to your health.

281

00:17:53,000 --> 00:17:56,000

So, is this even possible?

282

00:17:56,000 --> 00:17:59,000

Well, I hate to say that it is possible.

283

00:17:59,000 --> 00:18:00,000

Really?

284

00:18:00,000 --> 00:18:03,000

Really, because I do love tight jeans.

285

00:18:03,000 --> 00:18:06,000

But there is the possibility that you could do yourself some damage.

286

00:18:06,000 --> 00:18:10,000

There are two types of circulations in the legs.

287

00:18:10,000 --> 00:18:12,000

One is the arterial circulation.

288

00:18:12,000 --> 00:18:17,000

That's the high pressure circulation of blood flowing down into your legs.

289

00:18:17,000 --> 00:18:20,000

But once that's done, the blood has to come back up.

290

00:18:20,000 --> 00:18:23,000

That's a low pressure situation.

291

00:18:23,000 --> 00:18:25,000

You could create a clot.

292

00:18:25,000 --> 00:18:32,000

Then that could travel back up and hit your lungs and produce something called a pulmonary embolism.

293

00:18:32,000 --> 00:18:34,000

You mean like DVTs that can really kill you?

294

00:18:34,000 --> 00:18:35,000

Exactly.

295

00:18:35,000 --> 00:18:38,000

DVT and it can be a fatal occurrence.

296

00:18:38,000 --> 00:18:46,000

Armed with her alarming information, it's back to M7 to recreate this potentially fatal bath time scene.

297

00:18:46,000 --> 00:18:47,000

I'm ready.

298

00:18:47,000 --> 00:18:52,000

Using Grant as the model, their first task is to make a realistic pair of jeans.

299

00:18:52,000 --> 00:18:55,000

A realistic pair of fake human legs.

300

00:18:55,000 --> 00:18:58,000

Jim Morrison, eat your heart out.

301

00:19:01,000 --> 00:19:02,000

Okay, I'm sorry.

302

00:19:02,000 --> 00:19:05,000

What I need to do is make a cast of his legs.

303

00:19:05,000 --> 00:19:08,000

We're going to fill it with a material that's similar to flesh.

304

00:19:08,000 --> 00:19:15,000

We're going to put veins in there so that way we can see if those jeans do start constricting around those legs, it cuts off the blood circulation.

305

00:19:15,000 --> 00:19:16,000

About those giants.

306

00:19:16,000 --> 00:19:17,000

Yeah.

307

00:19:17,000 --> 00:19:19,000

When the plaster hardens,

308

00:19:21,000 --> 00:19:28,000

Tori continues making the molds while Grant rigs up an old tub with a blood pumping system.

309

00:19:28,000 --> 00:19:35,000

It starts out with an aquarium pump with this vessel and it will be filled with actual blood.

310

00:19:35,000 --> 00:19:40,000

Blood's going to be pumped through this tube to valve number one, which regulates the pressure.

311

00:19:40,000 --> 00:19:45,000

Now this goes into the tube that will lead to the leg, which is inside the tub.

312

00:19:45,000 --> 00:19:48,000

Jeans are constricting.

313

00:19:48,000 --> 00:19:51,000

Finally, comes out here.

314

00:19:51,000 --> 00:19:57,000

Meanwhile, Tori inserts surgical tubing that will act as the low pressure veins in each limb.

315

00:19:57,000 --> 00:20:02,000

He places them two inches below the surface, just like in the human body.

316

00:20:02,000 --> 00:20:05,000

Then he fills up the hollows with permigill.

317

00:20:05,000 --> 00:20:10,000

Now to dress Grant's legs in a pair of new, shrinkable jeans.

318

00:20:10,000 --> 00:20:12,000

There's no way of doing this without it looking creepy.

319

00:20:12,000 --> 00:20:13,000

I know.

320

00:20:13,000 --> 00:20:17,000

Next, they place the legs into the tub and attach them to the valves.

321

00:20:17,000 --> 00:20:22,000

Then, Carrie and Grant fill up the reservoir for the veins with pig's blood.

322

00:20:22,000 --> 00:20:26,000

Grant is like Dr. Frankenstein.

323

00:20:26,000 --> 00:20:28,000

He's a genius.

324

00:20:28,000 --> 00:20:30,000

A demented genius.

325

00:20:30,000 --> 00:20:37,000

Grant checks the flow to make sure it's running through the veins at the normal human rate of about a liter a minute.

326

00:20:37,000 --> 00:20:41,000

Alright, 475 milliliters.

327

00:20:41,000 --> 00:20:46,000

So this, from now on, is going to be our level of regular flow.

328

00:20:46,000 --> 00:20:56,000

If there's any deviation from this, then we'll know that the jeans are causing constriction and possibly potential death.

329

00:21:01,000 --> 00:21:03,000

So I guess this would be a good time to explain.

330

00:21:03,000 --> 00:21:05,000

Why do jeans shrink?

331

00:21:05,000 --> 00:21:07,000

Yeah, shrinkage is all about chemical bonding.

332

00:21:07,000 --> 00:21:09,000

Your jeans are composed of cotton fibers.

333

00:21:09,000 --> 00:21:12,000

The cotton fibers are composed of molecules.

334

00:21:12,000 --> 00:21:16,000

The molecules join together to form long chains called polymers.

335

00:21:16,000 --> 00:21:23,000

The polymers themselves are quite strong, but the forces that hold them next to each other, they're much weaker hydrogen bonds.

336

00:21:23,000 --> 00:21:24,000

That's right.

337

00:21:24,000 --> 00:21:29,000

And when your jeans are first made, the cotton fibers are spun and stretched out on a loom.

338

00:21:29,000 --> 00:21:33,000

It's a huge amount of stress to put on those hydrogen bonds and many of them break.

339

00:21:33,000 --> 00:21:38,000

But new ones are formed in their place, but keeping the cotton fibers in that stressed out state.

340

00:21:38,000 --> 00:21:46,000

And the thing is, the jeans want to return to their natural or lack state, but it requires a large amount of energy to break the hydrogen bonds.

341

00:21:46,000 --> 00:21:52,000

And throwing your clothes in the washing machine with the heat and the detergent and the dryer, even a hot bath, will do just that.

342

00:21:52,000 --> 00:21:56,000

And the result of broken hydrogen bonds is shrinkage.

343

00:21:56,000 --> 00:22:03,000

In the team's shrinking jeans of death bath test, the final step is to fill the tub with piping hot water.

344

00:22:03,000 --> 00:22:10,000

Time for a nice relaxing bath for six hours, and possibly all eternity.

345

00:22:13,000 --> 00:22:16,000

Coming up, Grant gets a lethal new look.

346

00:22:16,000 --> 00:22:18,000

We're going to have to have potatoes life.

347

00:22:18,000 --> 00:22:23,000

But next, Jamie and Adam become water heater astronauts.

348

00:22:23,000 --> 00:22:24,000

Wow.

349

00:22:24,000 --> 00:22:25,000

The boosters were separated.

350

00:22:25,000 --> 00:22:26,000

Yeah, exactly.

351

00:22:36,000 --> 00:22:43,000

Can an ordinary everyday water heater become a rocket so powerful it can blast through a building?

352

00:22:43,000 --> 00:22:47,000

So far, Jamie and Adam have let off a lot of steam.

353

00:22:47,000 --> 00:22:48,000

There we go.

354

00:22:48,000 --> 00:22:49,000

Whoa!

355

00:22:49,000 --> 00:22:53,000

But couldn't send a small six-gallon tank skyward.

356

00:22:55,000 --> 00:23:02,000

This time, they're using a 30-gallon tank and have a new strategy to add some extra thrust.

357

00:23:02,000 --> 00:23:04,000

I'd like to fill this 80% full.

358

00:23:04,000 --> 00:23:05,000

Okay.

359

00:23:05,000 --> 00:23:07,000

So let's put 24 gallons in here.

360

00:23:07,000 --> 00:23:12,000

We may find this like perfect relationship between water and steam for getting the maximum amount of pressure.

361

00:23:12,000 --> 00:23:18,000

In daily life, a water heater is an appliance nobody normally takes any notice of.

362

00:23:18,000 --> 00:23:25,000

So to mimic one in serious neglect, Jamie and Adam disable its safety devices.

363

00:23:25,000 --> 00:23:30,000

Once again, it's time for launch and to man bunker boiling over.

364

00:23:30,000 --> 00:23:34,000

By the time we're done with this, we'll actually know what we're doing.

365

00:23:34,000 --> 00:23:38,000

At least one of our crew seems to think they'll get it this time.

366

00:23:38,000 --> 00:23:42,000

Never has a single water heater been covered from so many angles.

367

00:23:42,000 --> 00:23:47,000

Maybe all this attention will raise them from their D-list apparatus status.

368

00:23:47,000 --> 00:23:50,000

Okay, now we're at 160 psi.

369

00:23:50,000 --> 00:23:52,000

It's officially a no-go zone.

370

00:23:52,000 --> 00:23:57,000

Anything goes from here on in, so stay clear.

371

00:23:57,000 --> 00:24:03,000

These pressure vessel ones are really difficult because they involve tons and tons of waiting and waiting.

372

00:24:03,000 --> 00:24:04,000

It's excruciating.

373

00:24:04,000 --> 00:24:05,000

It's really boring.

374

00:24:05,000 --> 00:24:08,000

This is killing me.

375

00:24:08,000 --> 00:24:16,000

After an excruciating 50-minute wait, they achieve lift-off.

376

00:24:16,000 --> 00:24:17,000

Wow!

377

00:24:17,000 --> 00:24:22,000

That was at about 350 psi.

378

00:24:22,000 --> 00:24:27,000

The heater travels in a straight trajectory into the air so high,

379

00:24:27,000 --> 00:24:33,000

he could order a pizza while you're waiting for it to come back down.

380

00:24:33,000 --> 00:24:35,000

Wow, no, it just came down.

381

00:24:35,000 --> 00:24:36,000

There it is.

382

00:24:36,000 --> 00:24:40,000

It came down like 40 seconds later.

383

00:24:40,000 --> 00:24:42,000

Oh my God.

384

00:24:42,000 --> 00:24:45,000

This was a really serious explosion.

385

00:24:46,000 --> 00:24:49,000

I mean, even though this is just a water heater,

386

00:24:49,000 --> 00:24:53,000

you would be in danger of shrapnel hitting you.

387

00:24:53,000 --> 00:24:55,000

You could get severe burns from the steam,

388

00:24:55,000 --> 00:24:59,000

and not only that, the shockwave was really significant.

389

00:24:59,000 --> 00:25:02,000

I mean, the whole area was reverberating.

390

00:25:04,000 --> 00:25:09,000

Adams just seen the most beautiful thing we've ever filmed on the high speed.

391

00:25:09,000 --> 00:25:14,000

Oh, that's one of my favorite booms we've ever done.

392

00:25:14,000 --> 00:25:16,000

Just water and pressure.

393

00:25:16,000 --> 00:25:20,000

Look up top, you can see the tank breaking through the casing.

394

00:25:20,000 --> 00:25:23,000

There it goes.

395

00:25:27,000 --> 00:25:28,000

Wow.

396

00:25:28,000 --> 00:25:30,000

The boosters were separated.

397

00:25:30,000 --> 00:25:31,000

Yeah, exactly.

398

00:25:31,000 --> 00:25:38,000

But there's one even more spectacular way for the guys to push this myth through the roof.

399

00:25:38,000 --> 00:25:41,000

Put the water heater into the house.

400

00:25:41,000 --> 00:25:42,000

Do we have a house?

401

00:25:42,000 --> 00:25:43,000

No, we've got to build one.

402

00:25:43,000 --> 00:25:44,000

You ready?

403

00:25:45,000 --> 00:25:46,000

Damn.

404

00:26:12,000 --> 00:26:15,000

This is where we're at with the shrinking genes of death.

405

00:26:15,000 --> 00:26:17,000

We have our fake legs with our veins running through them,

406

00:26:17,000 --> 00:26:19,000

and the bloods running through the veins.

407

00:26:19,000 --> 00:26:23,000

We have the genes on the legs, and the legs are submerged in the hot bathtub water.

408

00:26:23,000 --> 00:26:25,000

We're going to leave them there for six hours,

409

00:26:25,000 --> 00:26:28,000

because if the genes are constricting and the blood flow slows down,

410

00:26:28,000 --> 00:26:30,000

it could potentially kill you.

411

00:26:30,000 --> 00:26:35,000

With unwashed, shrinkable genes able to constrict up to three inches in hot water,

412

00:26:35,000 --> 00:26:39,000

and the veins lying two inches beneath the surface of their legs,

413

00:26:39,000 --> 00:26:43,000

enough of a squeeze to slow the flow could be possible.

414

00:26:43,000 --> 00:26:44,000

We got a bleeder.

415

00:26:48,000 --> 00:26:52,000

You know, our researchers found a lot of interesting facts about tight clothing.

416

00:26:52,000 --> 00:26:57,000

In New Zealand, in 2006, a kid was trying to shrink his genes by wearing them in the bathtub.

417

00:26:57,000 --> 00:27:00,000

And to get them even tighter, he laid out in the sun wearing them.

418

00:27:00,000 --> 00:27:03,000

They got so tight, he couldn't get them off, and they had to rush them to the hospital.

419

00:27:03,000 --> 00:27:08,000

Yeah, actually, the doctors were saying that he was in danger of losing his legs.

420

00:27:08,000 --> 00:27:13,000

If you cut off circulation too long, the muscles can die within a matter of hours.

421

00:27:13,000 --> 00:27:17,000

It's a very real, very serious condition called compartment syndrome.

422

00:27:17,000 --> 00:27:20,000

Who knew tight clothes could be so dangerous?

423

00:27:20,000 --> 00:27:22,000

Maybe we should just go back to wearing fig leaves.

424

00:27:22,000 --> 00:27:25,000

As the team continues to monitor their tub test,

425

00:27:25,000 --> 00:27:29,000

it seems to be bringing out the creature of the night in Carrie.

426

00:27:29,000 --> 00:27:32,000

This myth is actually kind of beautiful to me.

427

00:27:32,000 --> 00:27:37,000

For some reason, I just think blood's really pretty, so this isn't grossing me out at all.

428

00:27:37,000 --> 00:27:40,000

It's just kind of a neat little blood fountain.

429

00:27:40,000 --> 00:27:46,000

But after a full six hours of constantly monitoring their neat little blood fountain,

430

00:27:46,000 --> 00:27:48,000

there's barely any change in the rate.

431

00:27:48,000 --> 00:27:52,000

And that means there's not enough constriction to kill.

432

00:27:52,000 --> 00:27:59,000

Well, we ran the blood through our veins and our mock legs for six hours.

433

00:27:59,000 --> 00:28:05,000

And unfortunately, or fortunately, we did not get any decrease in flow.

434

00:28:05,000 --> 00:28:10,000

And this was with stock shrinkable genes.

435

00:28:10,000 --> 00:28:16,000

The only way to try and ring some results out of this myth is to do it for real.

436

00:28:16,000 --> 00:28:17,000

So what's your weight size?

437

00:28:17,000 --> 00:28:19,000

Uh, 32.

438

00:28:19,000 --> 00:28:20,000

So 30.

439

00:28:20,000 --> 00:28:25,000

So Carrie goes to help Grant pick out a form-fitting pair of dentals.

440

00:28:25,000 --> 00:28:26,000

Oh, that was perfect.

441

00:28:26,000 --> 00:28:31,000

This is going to be an excruciating three-hour experience.

442

00:28:31,000 --> 00:28:36,000

Grant, you have no idea how excruciating.

443

00:28:36,000 --> 00:28:43,000

This isn't happening.

444

00:28:43,000 --> 00:28:45,000

Oh, those are good.

445

00:28:45,000 --> 00:28:51,000

Normally, the biggest worry about buying designer genes is the price, but not this time.

446

00:28:51,000 --> 00:28:59,000

My worries are the potential for death due to a blood clot forming in my leg

447

00:28:59,000 --> 00:29:02,000

because the genes have cut off my circulation.

448

00:29:02,000 --> 00:29:04,000

Other than that, it should be easy.

449

00:29:04,000 --> 00:29:11,000

Soon, Carrie, Tori and Grant discover if a muffin top is the worst effect of tight genes.

450

00:29:11,000 --> 00:29:13,000

But right after the break...

451

00:29:13,000 --> 00:29:25,000

A little steam batch.

452

00:29:25,000 --> 00:29:30,000

Since prehistoric times, friction has been used to set things aflame.

453

00:29:30,000 --> 00:29:36,000

But the fans want to know if this force can also set fire to your genes.

454

00:29:36,000 --> 00:29:46,000

To answer this burning question, Tori gravely had his denim clad derriere dragged along the ground by a galloping horse.

455

00:29:46,000 --> 00:29:49,000

But all he got was the manure wash glue.

456

00:29:49,000 --> 00:29:51,000

I think I've had enough.

457

00:29:51,000 --> 00:29:55,000

To reproduce the speed of a horse in full galloping stride,

458

00:29:55,000 --> 00:30:00,000

Tori sets up a belt-sanding rig to represent the bumpy surface of the ground.

459

00:30:00,000 --> 00:30:04,000

And to represent a human, he outfits a ham-hawk.

460

00:30:04,000 --> 00:30:09,000

I can honestly say I've never stuck a piece of pork in a pair of jeans.

461

00:30:09,000 --> 00:30:12,000

Their cool swine is secured in place.

462

00:30:12,000 --> 00:30:14,000

Then they take its temperature.

463

00:30:14,000 --> 00:30:18,000

69 degrees. Ready? Here we go.

464

00:30:18,000 --> 00:30:21,000

The ignition point of cotton is about 250 degrees.

465

00:30:21,000 --> 00:30:26,000

The belt sander provides a consistent surface that the denim can be graded across.

466

00:30:26,000 --> 00:30:29,000

Hopefully upping the friction factor.

467

00:30:29,000 --> 00:30:32,000

I can see the jeans are starting to fray.

468

00:30:32,000 --> 00:30:35,000

The smell of smoky bacon is in the air.

469

00:30:35,000 --> 00:30:38,000

Get some of this, man. You're missing out.

470

00:30:38,000 --> 00:30:41,000

But it's still not being cooked.

471

00:30:41,000 --> 00:30:44,000

Alright, shut it off.

472

00:30:44,000 --> 00:30:48,000

This is why cut-priced dermabrasion is never a good idea.

473

00:30:48,000 --> 00:30:51,000

We turned it into leather.

474

00:30:51,000 --> 00:30:53,000

Still only 138.5.

475

00:30:53,000 --> 00:30:57,000

138. It actually ripped through the jeans.

476

00:30:57,000 --> 00:31:01,000

The jeans are no longer in existence.

477

00:31:01,000 --> 00:31:03,000

Jeans are shredded.

478

00:31:03,000 --> 00:31:09,000

They've doubled their temperature increase from their experiment with Tori and pistol the psychic horse.

479

00:31:09,000 --> 00:31:12,000

However, your jeans are going to disintegrate before they catch on fire.

480

00:31:12,000 --> 00:31:17,000

Unless we've got something else that catches it on fire, it's not going to be friction.

481

00:31:17,000 --> 00:31:22,000

But nothing comes between the mythbusters and a result.

482

00:31:26,000 --> 00:31:29,000

Finally, they've got the look.

483

00:31:32,000 --> 00:31:36,000

And that, my friend, is what it takes to set your jeans on fire.

484

00:31:36,000 --> 00:31:37,000

Yeah.

485

00:31:37,000 --> 00:31:39,000

Torch.

486

00:31:42,000 --> 00:31:49,000

Can this kind of damage be caused by your water heater?

487

00:31:49,000 --> 00:31:57,000

To find out, Jamie and Adam have successfully launched a 30-gallon water heater 500 feet into the open air.

488

00:31:57,000 --> 00:32:03,000

Now, to really blow the lid off this myth.

489

00:32:03,000 --> 00:32:06,000

That hot water heater flew into the air. That's amazing.

490

00:32:06,000 --> 00:32:08,000

It wasn't contained.

491

00:32:08,000 --> 00:32:11,000

It doesn't tell us whether it would make it through a building or not.

492

00:32:11,000 --> 00:32:17,000

Well, and that's our next step, I think. Let's build a building around that hot water heater and get it to fail and see what happens.

493

00:32:17,000 --> 00:32:19,000

And we'll have to build the roof to code.

494

00:32:19,000 --> 00:32:21,000

Absolutely. I totally agree.

495

00:32:21,000 --> 00:32:24,000

Then we'll know if it happens in our building, it would happen in your house.

496

00:32:24,000 --> 00:32:26,000

I can't wait.

497

00:32:26,000 --> 00:32:34,000

Only the mythbusters would take delight in building a house from scratch in anticipation of destroying it.

498

00:32:35,000 --> 00:32:42,000

It's going to take me a few hours to build it, but you'll get to watch it in all of about 10, 15 seconds.

499

00:32:42,000 --> 00:32:45,000

So let's get this time-lapse started.

500

00:32:45,000 --> 00:32:50,000

First goes down the floor, which they tile in Deco-inspired black and white.

501

00:32:50,000 --> 00:32:54,000

Next, they unpack their shining centerpiece.

502

00:32:54,000 --> 00:32:56,000

Bada bing, bada boom.

503

00:32:56,000 --> 00:32:58,000

A 52-gallon water heater.

504

00:32:58,000 --> 00:33:02,000

This size would typically be used by a family of four.

505

00:33:02,000 --> 00:33:07,000

Once again, they disconnected safety devices as if it's faulty or needs a service.

506

00:33:07,000 --> 00:33:09,000

There we go.

507

00:33:09,000 --> 00:33:13,000

It does add a charming focal point to the room, doesn't it?

508

00:33:13,000 --> 00:33:17,000

Then they close it in with walls and windows.

509

00:33:17,000 --> 00:33:19,000

Here's hoping they're double glazed.

510

00:33:19,000 --> 00:33:22,000

Hi everybody, welcome to the Mythbusters Clubhouse.

511

00:33:22,000 --> 00:33:29,000

Now to create a typical water heater home scene with the lady of the house enjoying a relaxing bath.

512

00:33:29,000 --> 00:33:31,000

A little steam bath.

513

00:33:31,000 --> 00:33:37,000

Remember, their cozy cottage is no balsa wood and hobby glue construction.

514

00:33:37,000 --> 00:33:43,000

Jamie and Adam are building the roof to exact California code building regulations.

515

00:33:43,000 --> 00:33:46,000

The roof is lowered in place and secure.

516

00:33:46,000 --> 00:33:48,000

Now for the final touch.

517

00:33:48,000 --> 00:33:51,000

All right, everybody, we're going to paint this thing.

518

00:33:51,000 --> 00:33:56,000

You want to start from the bottom and move to the top and paint everything except the bottom.

519

00:33:56,000 --> 00:34:01,000

You want to start from the bottom and move to the top and paint everything except the black shingles.

520

00:34:01,000 --> 00:34:03,000

Everything you can see.

521

00:34:03,000 --> 00:34:05,000

Neatness does not count.

522

00:34:05,000 --> 00:34:11,000

It's not exactly a subtle shade, but salmon just doesn't say Mythbusters.

523

00:34:11,000 --> 00:34:20,000

Jamie and Adam's impressive construction skills have created a house fit for the likes of Little Red Riding Hood.

524

00:34:20,000 --> 00:34:23,000

It's almost a shame to make it go, whoa!

525

00:34:27,000 --> 00:34:30,000

Those jeans are so tight.

526

00:34:30,000 --> 00:34:32,000

They were clinging into her skin.

527

00:34:32,000 --> 00:34:38,000

Tight jeans look very foxy, but can they strangle the very life out of you?

528

00:34:38,000 --> 00:34:48,000

The theory is if you sit in a hot bath trying to get your jeans to shrink, the pressure could cut off your circulation, causing a blood clot that kills you.

529

00:34:48,000 --> 00:34:55,000

Grant is courageously offering his own legs to experiment on, but the team is taking no chances.

530

00:34:55,000 --> 00:34:57,000

Grant is going to be our guinea pig.

531

00:34:57,000 --> 00:35:06,000

He's going to put on the tight jeans, sit in a hot tub, but we brought him here to a hospital so in case anything goes wrong, if a clot starts forming, the doctors will be here.

532

00:35:06,000 --> 00:35:09,000

They'll be monitoring him, make sure that he doesn't die.

533

00:35:09,000 --> 00:35:14,000

First, Grant changes into his brand new, unwashed, shrinkable jeans.

534

00:35:14,000 --> 00:35:18,000

An unfortunate result of size denial is emerging already.

535

00:35:18,000 --> 00:35:22,000

A hot bath has been prepared for Grant to slip into.

536

00:35:22,000 --> 00:35:24,000

Do you want to back in and we'll just lower you down?

537

00:35:24,000 --> 00:35:27,000

It's nice.

538

00:35:27,000 --> 00:35:29,000

Nice.

539

00:35:29,000 --> 00:35:30,000

Yeah?

540

00:35:30,000 --> 00:35:31,000

Yeah.

541

00:35:31,000 --> 00:35:36,000

All he has to do is sit back, relax, and wait for any warning signs.

542

00:35:36,000 --> 00:35:39,000

Why is there all those air bubbles coming out of your pants?

543

00:35:39,000 --> 00:35:45,000

So how's he feeling so far?

544

00:35:45,000 --> 00:35:52,000

I have to say I'm feeling a little bit of discomfort in my stomach, but nothing that's unbearable.

545

00:35:52,000 --> 00:35:53,000

It's tight.

546

00:35:53,000 --> 00:36:00,000

No doubt about that, but I don't think it's life-threatening at this point.

547

00:36:00,000 --> 00:36:09,000

To make absolutely sure there are no blockages forming, medical technician Keith checks his condition using a Doppler machine.

548

00:36:09,000 --> 00:36:13,000

So if a clot was forming, what would it look like on that?

549

00:36:13,000 --> 00:36:19,000

In the veins, you would not be able to see the blue venous blood flow because it would just be obstructed.

550

00:36:19,000 --> 00:36:22,000

There would be no way of blood getting down or up.

551

00:36:22,000 --> 00:36:26,000

In the arteries, you would see just no flow.

552

00:36:26,000 --> 00:36:35,000

But fortunately, Grant's leg veins are flowing freely after six long hours of being submerged and continual monitoring throughout.

553

00:36:35,000 --> 00:36:36,000

How you doing, sir?

554

00:36:36,000 --> 00:36:37,000

Fantastic.

555

00:36:37,000 --> 00:36:39,000

This is a good day at work?

556

00:36:39,000 --> 00:36:41,000

Excellent day.

557

00:36:41,000 --> 00:36:44,000

Keith gives his final verdict on Grant's condition.

558

00:36:44,000 --> 00:36:46,000

Are you seeing constriction?

559

00:36:46,000 --> 00:36:49,000

No, it's got beautiful flow still.

560

00:36:49,000 --> 00:36:53,000

Absolutely no obstructions or restrictions.

561

00:36:53,000 --> 00:36:55,000

Are we going to have to amp potatoes' legs?

562

00:36:55,000 --> 00:36:57,000

I don't think you're going to have to.

563

00:36:57,000 --> 00:36:58,000

Well, that's good news.

564

00:36:58,000 --> 00:37:02,000

Now all they have to do is get Grant out of this denim shrink wrap.

565

00:37:02,000 --> 00:37:04,000

You know, you may have to cut me out of these.

566

00:37:04,000 --> 00:37:05,000

Let's see.

567

00:37:05,000 --> 00:37:06,000

That's what I've done.

568

00:37:06,000 --> 00:37:07,000

Oh, see how tight they are.

569

00:37:07,000 --> 00:37:09,000

Oh my God!

570

00:37:09,000 --> 00:37:11,000

Look how tight those are!

571

00:37:11,000 --> 00:37:14,000

They're capris now.

572

00:37:14,000 --> 00:37:19,000

So how are they going to summarize this gripping life-or-death jeans legend?

573

00:37:19,000 --> 00:37:21,000

Well, I guess this one's looking busted.

574

00:37:21,000 --> 00:37:24,000

Grant didn't die and we didn't have to amputate his legs.

575

00:37:24,000 --> 00:37:25,000

You sound a little disappointed.

576

00:37:25,000 --> 00:37:27,000

Yeah, I'm not going to lie.

577

00:37:27,000 --> 00:37:31,000

Well, we didn't have any loss of flow in either the fake Grant legs or the real Grant legs.

578

00:37:31,000 --> 00:37:38,000

Well, perhaps someone who wasn't in as peak physical condition as me might experience some loss of blood flow.

579

00:37:38,000 --> 00:37:42,000

Well, if that's the case, then we're going to have to test hundreds more people to really find out.

580

00:37:42,000 --> 00:37:50,000

Well, we know the DVT and Compartment Syndrome are very real conditions and constricting blood flow to your legs for a long period of time is never a good idea.

581

00:37:50,000 --> 00:37:51,000

It's okay, it wasn't your look anyway.

582

00:37:51,000 --> 00:37:52,000

Good.

583

00:37:52,000 --> 00:37:53,000

I'm willing to let go of the muffin top.

584

00:37:53,000 --> 00:37:56,000

Yes, but is the muffin top willing to let go of you?

585

00:38:01,000 --> 00:38:04,000

Next, Adam and Jamie try to raise the roof.

586

00:38:04,000 --> 00:38:06,000

It's kind of stressful on a regular basis.

587

00:38:06,000 --> 00:38:07,000

Can't be good.

588

00:38:07,000 --> 00:38:09,000

With a water heater.

589

00:38:09,000 --> 00:38:10,000

Look at that house!

590

00:38:10,000 --> 00:38:23,000

The buildup of steam under pressure can cause many things to go off.

591

00:38:23,000 --> 00:38:28,000

But how about a water heater bursting right through your house?

592

00:38:28,000 --> 00:38:36,000

To mimic a real life situation, the roof of the house has been constructed to California Building Code specifications.

593

00:38:36,000 --> 00:38:40,000

And the water heater contains no explosives.

594

00:38:40,000 --> 00:38:44,000

They turn on the power, hunker down and wait.

595

00:38:44,000 --> 00:38:45,000

Do you feel ready?

596

00:38:45,000 --> 00:38:47,000

Everyone's in position, cameras are all rolling.

597

00:38:47,000 --> 00:38:53,000

Yeah, we've got a nice little red house out there sitting there, you know, like everything's rosy.

598

00:38:53,000 --> 00:38:57,000

Rosy on the outside, but roasting on the inside.

599

00:38:57,000 --> 00:39:01,000

Okay, everybody, we're at 300 psi.

600

00:39:01,000 --> 00:39:04,000

That's twice the tank rating.

601

00:39:04,000 --> 00:39:05,000

Keep your eyes peeled.

602

00:39:05,000 --> 00:39:10,000

As the pressure inside the tank mounts, so does Jamie and Adam's heart rate.

603

00:39:10,000 --> 00:39:12,000

315 psi.

604

00:39:12,000 --> 00:39:14,000

Oh, this is killing me.

605

00:39:14,000 --> 00:39:15,000

320.

606

00:39:15,000 --> 00:39:16,000

Any second.

607

00:39:16,000 --> 00:39:18,000

325.

608

00:39:20,000 --> 00:39:22,000

This is excruciating.

609

00:39:22,000 --> 00:39:25,000

This kind of stress on a regular basis can't be good.

610

00:39:25,000 --> 00:39:27,000

No, shortening our lifespan.

611

00:39:27,000 --> 00:39:30,000

We're going to make it 350.

612

00:39:35,000 --> 00:39:40,000

Suddenly the heater launches and tears through the roof like its tissue.

613

00:39:40,000 --> 00:39:46,000

You could practically have a three course meal while you're waiting for it to come back down.

614

00:39:46,000 --> 00:39:50,000

Look at the house.

615

00:39:50,000 --> 00:39:51,000

What house?

616

00:39:51,000 --> 00:39:53,000

I don't see a house.

617

00:39:53,000 --> 00:39:56,000

I don't know what you're going to be talking about.

618

00:39:56,000 --> 00:39:58,000

This actually surprised me.

619

00:39:58,000 --> 00:40:01,000

The house was no hindrance whatsoever to the rocket.

620

00:40:01,000 --> 00:40:05,000

It probably would have gone through several houses like this before it stopped going.

621

00:40:05,000 --> 00:40:08,000

It's like a fairy tale come true.

622

00:40:08,000 --> 00:40:13,000

The water heater huffed, it puffed, and it blew the house down.

623

00:40:13,000 --> 00:40:17,000

It just goes to show you, you know, there's danger everywhere.

624

00:40:17,000 --> 00:40:21,000

Did you know what was lurking in your basement?

625

00:40:21,000 --> 00:40:25,000

The guys inspect what's left of their once charming home.

626

00:40:25,000 --> 00:40:29,000

The bottom of the tank went from concave to convex.

627

00:40:29,000 --> 00:40:33,000

Probably in a split second, there's a hole in the roof.

628

00:40:33,000 --> 00:40:37,000

It had to go through two layers of two by four trusses.

629

00:40:37,000 --> 00:40:40,000

And we didn't make that hole, and yet it totally did.

630

00:40:40,000 --> 00:40:44,000

And it did it without breaking any of the three windows in here.

631

00:40:44,000 --> 00:40:46,000

That's a rocket, my friend.

632

00:40:46,000 --> 00:40:50,000

Not a bomb.

633

00:40:50,000 --> 00:40:58,000

The trajectory in form of the 500 foot high rocket like blast is revealed on the high speed.

634

00:40:58,000 --> 00:41:06,000

I gotta say it's more interesting than an actual explosive explosion.

635

00:41:06,000 --> 00:41:11,000

Because the steam is just erupting everywhere and completely disintegrating.

636

00:41:11,000 --> 00:41:13,000

It's different. It's more elegant.

637

00:41:13,000 --> 00:41:19,000

Yes, it was like a lovely, delicate water heater ballet. But deadly.

638

00:41:19,000 --> 00:41:22,000

So researchers have found cases of this actually happening.

639

00:41:22,000 --> 00:41:27,000

Indeed, in 2000, outside of Burrito Shop's hot water heater exploded,

640

00:41:27,000 --> 00:41:32,000

went right through the roof, and apparently flew 439 feet into the air.

641

00:41:32,000 --> 00:41:36,000

And there was one in Minnesota where the water heater went through all the floors of the house,

642

00:41:36,000 --> 00:41:38,000

continued 150 feet in the air.

643

00:41:38,000 --> 00:41:42,000

And it was so bad that it knocked the house off its foundation and it had to be condemned.

644

00:41:42,000 --> 00:41:45,000

Two people were injured, killed a dog.

645

00:41:45,000 --> 00:41:46,000

Bad stuff.

646

00:41:46,000 --> 00:41:50,000

So the moral of the myth is, even though you use them daily,

647

00:41:50,000 --> 00:41:52,000

don't take your water heater for granted.

648

00:41:52,000 --> 00:41:55,000

Or there may not be a happy ending.

649

00:41:55,000 --> 00:41:57,000

And test your relief valve.

650

00:41:57,000 --> 00:42:00,000

So what I hope that people get out of this episode is,

651

00:42:00,000 --> 00:42:03,000

when they see that pipe sticking out of the water heater that doesn't go anywhere,

652

00:42:03,000 --> 00:42:06,000

and it's dripping water, that they don't go, oh, maybe I should cap that.

653

00:42:06,000 --> 00:42:08,000

Hey, look!

654

00:42:08,000 --> 00:42:11,000

There's a hole in the roof!

655

00:42:11,000 --> 00:42:13,000

I can call that.

656

00:42:13,000 --> 00:42:15,000

Can I wrap this up yet?

657

00:42:15,000 --> 00:42:17,000

Myth confirmed.

658

00:42:23,000 --> 00:42:27,000

So Grant, you're not going to keep those skin tight rocker jeans, can I have them?

659

00:42:27,000 --> 00:42:31,000

Yeah, you can have them, because I'll be returning to my regular shop jeans.

660

00:42:31,000 --> 00:42:32,000

Thank you very much.

661

00:42:32,000 --> 00:42:35,000

Do either of you want my jeans that were dragged through horse manure?

662

00:42:35,000 --> 00:42:37,000

Absolutely not.

663

00:42:37,000 --> 00:42:41,000

But I would like a few more myths where I get to go shopping at vintage clothing stores.

664

00:42:41,000 --> 00:42:42,000

Hmm, alright.

665

00:42:42,000 --> 00:42:46,000

Well, if you have any ideas for myths that involve carry-going shopping,

666

00:42:46,000 --> 00:42:50,000

log on to discovery.com slash mythbusters and let us know.