



AMERICAN SOCIETY OF SAFETY ENGINEERS NORTH FLORIDA CHAPTER

MARCH 2017 NEWSLETTER

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Hydraulic System Safety Hints

Do you have forklifts, front-end loaders, or aerial lifts that are being operated at your facility? Do you have large trash compactors? Have you ever seen fire/rescue personnel use the jaws of life to extract personnel from a crashed vehicle? The aforementioned are all examples of high-pressure hydraulics at work. And high-pressure hydraulic systems can be very hazardous under certain conditions.

Are you aware that a pinhole leak in a high-pressure hydraulic system

hose can release hydraulic fluid with enough pressure to penetrate clothing, PPE, and skin – all at once? When you consider that these systems can have pressures measured in the thousands of pounds per square inch, it likely begins to become clear exactly how hazardous this type of system can be. And often, the fluid is at elevated temperature.

Unfortunately, employees can sometimes become complacent around hydraulic systems and that is when mistakes have a higher likelihood of being made, maintenance can become neglected, and the chance for injuries to occur rises. When injuries do occur with these systems, they often fall into three categories: burns from hot hydraulic fluid spray; injuries sustained from falling or whipping hydraulic lines; and injection of hydraulic fluid into the skin.

A hydraulic fluid injection incident is perhaps the most dangerous of the three because it may appear to be

benign at the beginning, so the urgently needed medical care is sometimes postponed. The result of this inaction is likely to be painful, gruesome and life changing. Injected hydraulic oils are highly toxic to the human body; so in addition to a physical cut or stab, they can literally poison a person.

One of the most important things to remember when working around high-pressure hydraulics is to never touch a pressurized hose with your hand or any other body part. And if you suspect an injection injury has occurred, get the person to an emergency room as quickly as possible.

When taking someone to the hospital with an injection injury, it is highly important that the medical staff is immediately made aware that this specific type of injury has occurred. It is also important to ensure that safety data sheets of the injected liquid are taken along. Or, at least have the name of the specific fluid that was injected. Moreover, if it is possible, have someone find out as much as possible about



the hydraulic system pressure and estimated velocity of the leak that caused the injury and report these findings to the medical staff.

Keep in mind that the longer the period of time before treatment, the higher the risk. At first, injections may feel like a bee sting or wire prick. And the entry area may indeed look like just a pin prick. But do not be fooled by this. The size of the entry wound is a poor indicator of the seriousness of the injury. What looks like a simple puncture wound is in fact life threatening. The area around the injury typically turns red and swells within two hours. Throbbing and numbness soon follow. If left untreated, the injury can lead to amputation and even death.

To remain safe, hydraulic systems need to be properly maintained. All hydraulic hose assemblies need to be periodically replaced. A maintenance schedule should be established and followed consistently.

The schedule should include checking all hoses for cuts, abrasions, cracks, and other signs of damage. And remember to never touch a pressurized hydraulic hose assembly with any part of your

body. If you suspect a leak, use a piece of cardboard, wood or sheet metal to locate it. Also, check fittings; if they're damaged, they can also result in a failure and injury.

Here are some conditions to watch out for - and to avoid:

- Hoses rubbing against each other or against other parts - causes abrasion, leading to hose failure
- Twisted hoses
- Hose maximum working pressure rating below the system maximum pressure rating - including pressure spikes
- Incorrectly fabricated hose assemblies - hoses must be compatible with hose ends used and hoses must be inserted all the way into the fittings prior to crimping - only well trained personnel or a reputable supplier should be trusted with hose assembly fabrication
- Hose bend radius too tight - refer to manufacturer's specifications
- Hose bend beginning at the fitting.

When specifying hoses in the design process, or when replacing hose assemblies, remember the STAMP acronym. STAMP stands for: Size, Temperature, Media and

Pressure. And remember to only utilize fittings designed for use with your particular hose.

Hydraulic & Pneumatic Solutions

Danger of Hydraulic Oil Injection Injuries
May 07, 2010

Anaphylactic Shock

Spelling anaphylactic is a challenge in itself. Understanding what it is and how to treat it can be even more challenging.

When a person is exposed to something that they are allergic to, anaphylaxis sometimes occurs. Common things that people can be allergic to include food, insect stings, medications, and latex. Interestingly, in rare cases, exercise and aerobic activity can also trigger anaphylaxis.

As a result of being exposed to an allergen, the immune system goes into high-gear to release chemicals that flood the body to counteract the irritant. This in turn can lead to anaphylactic shock.

When someone goes into anaphylactic shock, their blood pressure drops suddenly and their airways narrow, possibly blocking normal breathing.

This condition is obviously dangerous and if it isn't treated



immediately, it can result in serious complications and unfortunately, even death.

As previously alluded to, anaphylaxis occurs prior to anaphylactic shock. So it is important to know the symptoms of anaphylaxis. These symptoms should not be ignored and include:

- skin reactions such as hives, flushed skin, or pale skin
- suddenly feeling too warm
- feeling like you have a lump in your throat or difficulty swallowing
- nausea, vomiting, or diarrhea
- abdominal pain
- a weak and rapid pulse
- runny nose and sneezing
- swollen tongue or lips
- wheezing or difficulty breathing
- a sense that something is wrong with your body
- tingling hands, feet, mouth, or scalp.

If you think that either you or someone else is experiencing anaphylaxis, seek medical attention immediately.

Also, you should be aware of the symptoms of anaphylactic shock. These symptoms can indicate a life-threatening condition and include:

- struggling to breathe
- dizziness
- confusion
- sudden feeling of weakness
- loss of consciousness.

As with anaphylaxis, if you think that either you or someone else is experiencing anaphylactic shock, medical attention should be sought immediately.

Risk factors for severe anaphylaxis and anaphylactic shock include:

- a previous anaphylactic reaction
- allergies or asthma
- a family history of anaphylaxis.

Anaphylactic shock is very serious. This condition can block someone's airway and prevent them from breathing. It can also stop their heart as the decrease in blood pressure prevents the heart from receiving sufficient oxygen.

Other potential complications from anaphylactic shock include:

- brain damage
- kidney failure
- cardiogenic shock - a condition that causes your heart to pump an insufficient amount of blood through the body

- arrhythmia - a type of heartbeat that is either too fast or too slow
- heart attacks
- death
- worsening of pre-existing medical conditions - especially of the respiratory system.

So, you may ask, what should be done if someone is experiencing severe anaphylaxis? As you might guess, seek emergency care immediately. And if someone has an epinephrine auto-injector pen (EpiPen), it should be used on them at the onset of symptoms. And the individual should not try to take any type of oral medication if they are having difficulty breathing.

And be aware, even if they seem better after using the EpiPen, they must still seek prompt medical attention. This is because there is a significant risk of the reaction returning when the medication wears off.

If someone appears to be going into full blown anaphylactic shock, call 911 immediately and then:

- Get them into a comfortable position. Elevate their legs to keep a sufficient supply of blood flowing to the vital organs.



- If they have an EpiPen, administer it to them immediately.
- If they have stopped breathing, administer CPR until the emergency medical team arrives.

Healthline

Online Edition

January 13, 2016

<http://www.healthline.com/health/naphylaxis#Overview1>

OSHA NEWS

National Safety Stand-Down to Prevent Falls set for May 8-12

Employers and workers are invited to participate in the fourth annual National Safety Stand-Down to prevent falls in construction; the stand down will be held from May 8 to May 12. Sponsored by OSHA and CPWR - The Center for Construction Research and Training, the weeklong outreach event encourages employers and workers to pause during the work day to talk about fall hazards and prevention.

Falls are the leading cause of death in the construction industry – accounting for 37 percent of fatalities industry-wide. In past years, more than 1 million workers participated

in these events. They have worked for public and private sector employees and small and large businesses. The event has recently been expanded to include industries beyond construction. For more information on how to join in this year's stand-down, access free training and education resources in English and Spanish, as well as receive a personalized certificate of participation, visit [OSHA's webpage](#).

OSHA QuickTakes

Online Edition

March 1, 2017

<https://www.osha.gov/as/opa/quicktakes/qt030117.html>

Job Market Links

- [ASSE](#)
- [BCSP](#)
- [EHS Careers](#)

ASSE Chapter Links

Find us on the web at:

[ASSE NFL](#)

Find us on Facebook at:

[ASSE NFL](#)

Local Chapter Officers and Chairs

- Dan Hemsall – President
- TBA – President Elect

- Anne Rogers – Past President
- Steve Wilson – Secretary
- Yaniv Zagagi – Treasurer
- Paul Thomas – Delegate
- Dawn Dixon – Membership Chair
- Bob Dooley – Newsletter Chair
- Steve Brown – SPY Chair
- Tom Drygas – Program Chair
- Vernon Adams – Social Media Chair

Local Chapter Meeting Schedule

April 19, 2017

Worker's Compensation

Location: NEFSC

1725 Art Museum Drive
Building B, Classroom D
Jacksonville, FL 32207

11:30 Lunch & Networking

12 Noon Meeting

April 28, 2017

Worker's Memorial Day

Location: NEFSC

1725 Art Museum Drive
Building B, Classroom D
Jacksonville, FL 32207

10:00 a.m. to noon

Please RSVP to Steve Wilson for all meetings at

steven_wilson1@me.com.

Cost: Members: \$15

Non-Members: \$20