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GoatThroat Technical Pump Evaluation

The most common injuries faced during the use of industrial pumps is known as RSI (Repetitive Strain Injuries), these injuries are as follows:

- Bursitis
- Tendonitis
- Tendinosis
- Carpal tunnel syndrome
- Raynaud's disease cubital tunnel syndrome
- De Quervain syndrome
- Thoracic outlet syndrome
- Intersection syndrome
- Rotator cuff syndrome
- Medial or lateral epicondylitis
- Stenosing tenosynovitis

These injuries can range from minor to severe including surgeries as well as potential lifetime injuries leading to elevated costs in Workers Compensation.

In an effort to improve functionality and safety GoatThroat Pumps for their clients they have employed S&S Safety Consulting to evaluate and review their pumps to ensure a safe and effective product. The following is the evaluation of the equipment alone, the equipment with the 12" standoff and the equipment with the pneumatic adapter for use on a 50/55-gallon drum.

Installation of the pump is very simple and easy; no special tools are needed and there is minimal exertion and/or impact to the body for installation into a 50/55-gallon drum. The functional use of the pump using a standard viscosity fluid is very simple. An approximate use of 5-7 lbs of pressure are required for use in a downward motion against the pump head and with proper body positioning there is minimal strain on the elbow/elbows, shoulder, neck, back (both upper and lower back areas) and no notable stresses to the legs or knees. The pump



resets on its own so there is no return stresses to the body to reset the pump back to its starting point. The action of the pump is designed with minimal pinch points and with proper use poses minimal risk to the end user.

The next option is adding the 12" stand off to the standard set up. With this option it improves the posture and position of the pump head allowing for a much more ergonomic stance while operating. As there was already a minimal stress on the elbow/elbows, shoulders, neck and back this positioning helps to even further reduce the impact to the user's shoulders, neck and back. Upon ergonomic review it has been determined that this substantially decreases the risks of long-term injuries to the end user of the device.

The last adaptation that can be used is, in our opinion, the best option for any user which is the BGA pneumatic adapter. This attachment eliminates pretty much all outside stressors to the user's body. The BGA pneumatic adapter is connected to an air supply and allows for virtually continuous pumping with only the application of approximately 2-3 pounds of pressure from the users' finger. The only stressors the user would face is positioning of the receiving device being pumped into. Our recommendation is to ensure that the user places the new container in an ergonomically functional position for optimal lifting and transport of the product post pumping. The use of the adapter removes virtually all stresses to the elbow/elbows, shoulders, neck, back (upper and lower regions) and ensures that there is safe and functional use during operation.

After reviewing the GoatThroat pumps against other potential competitors including a rotary style pump and a lever action pump here is our assessment. The GoatThroat pump eliminates most of the repetitive motion injury potential in comparison to the standard rotary style pumps. This help to reduce the likely hood of neck, shoulder, and back injuries for the end user. In comparison to a level action style pump the GoatThroat pump helps to substantially reduce the impact to the elbow/elbows, shoulder, neck and back (both upper and lower areas) by eliminating the large range of motion required as well as repetitive motion risks.

After an in-depth review of the equipment and comparison to other equipment it is our understanding that GoatThroat pumps with the either the 12" stand off and even more so with the pneumatic adapter is one of the safest and most functional pumps available for industrial use on the market. The product is well built, ergonomically sound and safe to use.