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FRIGHTPROPS

PNEUMATIC HANDBOOK

SCAN CODE TO VIEW AN INSTRUCTIONAL VIDEO FOR THIS KIT!

FP-9C1Z



FRIGHTPROPS

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SAFETY INSTRUCTIONS

These Safety Instructions aim to prevent injuries to human bodies and damage to properties by requiring proper use of pneumatic devices, Also the relevant requirements of ISO 4414 and JIS B8370 must be observed. ISO 4414: Pneumatic fluid power… Recommendations for the application of equipment to transmission and control systems. JIS B8370: General standards for pneumatic systems.

• Animated props are intended for intermittent use only. Many require a wall or handrail to separate them from your audience as they move quickly and may injure those too close. We accept no responsibility for the misuse of animated props.

• Special care must be taken with pneumatic props to avoid injury. Make sure that no more than 120psi is supplied to any of our props. Most of our props only require < 40psi to operate.

• Most of our timers and props run off of 110v AC. Please be aware that shock hazards may exist if water or other liquids are allowed contact with our timers and props.

• Protect from hearing damage! Staff should wear ear protection if repeatedly exposed to noise.

• Point air cannons and air blasters away from people. Massive quick air release could potentially project objects in direction of air flow.

REGULATORS

It is best for each prop to have its own regulator so that you can adjust the PSI to different levels for each prop. Your compressor will have a built in regulator to set the overall PSI for your system. If you are just running one pneumatic off of a single compressor, you can use the compressor's regulator to set the PSI.



PIPE THREAD SEALANT TAPE

Teflon pipe thread sealant tape is useful in helping prevent air leaks.

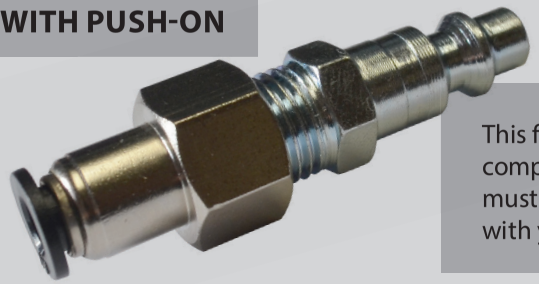


TUBE CUTTER

This tool is essential for getting clean right-angle cuts in airline.



QUICK-CONNECT WITH PUSH-ON

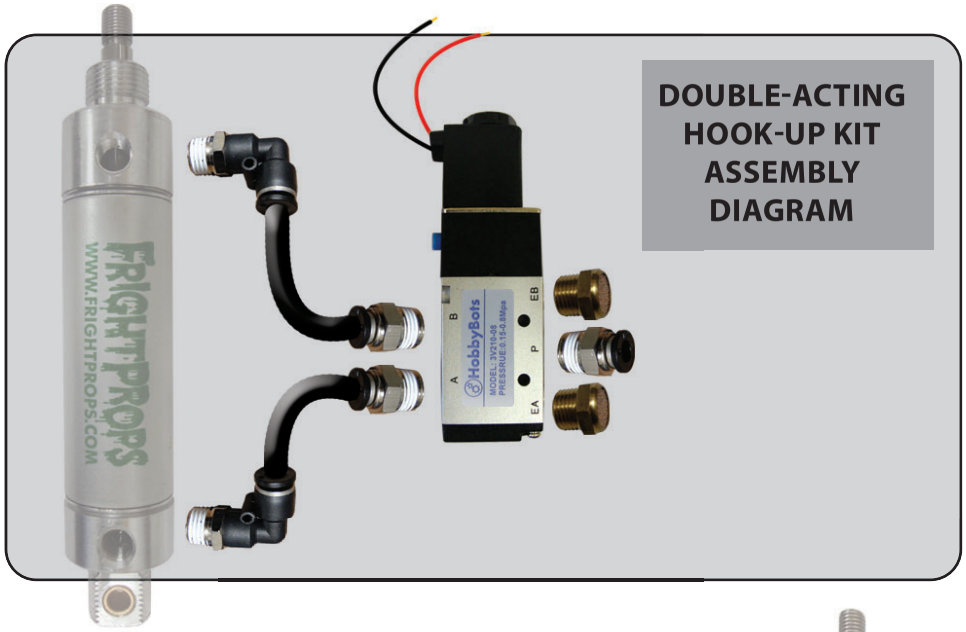


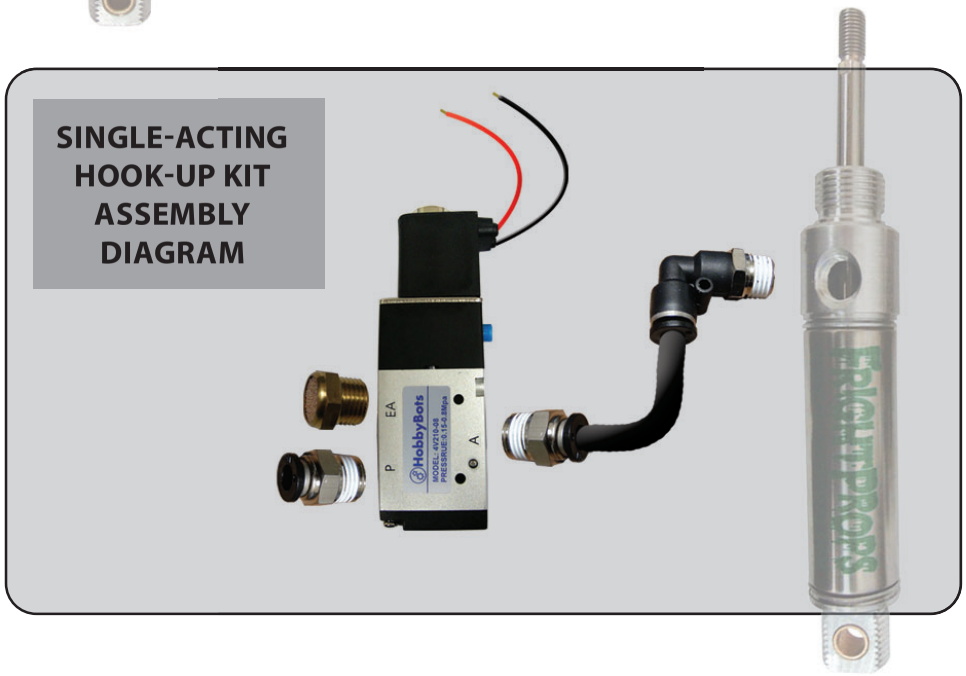
This fitting adapts your air compressor to use airline. This is a must have for using pneumatics with your compressor.

CONTROLLER

Once you have your pneumatics set-up and installed, you need something to tell them what to do. That's where a controller comes in. There are a wide range of controllers available and which one you choose depends on what your overall needs are. You can have multiple outputs, trigger inputs, audio and other features.







RECOMMENDED PSI SETTINGS

There is no exact PSI requirement for your prop. We recommend that you start at a low PSI (such as 20psi) and try the prop. If it does not function as desired then slowly increase the PSI until you find a setting that works for you. The lower the PSI the better because this will prevent excessive wear on the prop and related components. Never go over 120psi

PUSH-ON FITTING INSTRUCTIONS

1. Never use these fittings with fluids or gases other than air

2. Do not use with equipment designed for sustenance or control of people's health or lives, the movement or transport of people, or equipment designed specifically to ensure safety.

3. Do not allow tension, twist or bending to act on the fitting. Undue force may damage the fitting body.

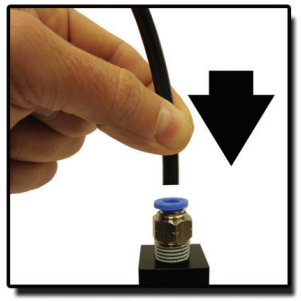
4. Make certain that the end of the airline is cut at right angles, the airline surface is free of flaws, and the airline is not deformed into an ellipse.

5. On completion of fitting, make certain the airline does not come out of the fitting when pulled on.

6. Before removing airline form the fitting, make sure air pressure inside the airline is at zero and there is no air in your system.

7. When releasing airline from the fitting, make sure and depress the ring fully. Failing to do so may result in scrapings of airline being left inside the fitting.

8. When installing the fitting body, tighten with a proper tool.


AIRLINE INSERTION

TO INSERT: Make certain the tube is cut perfectly straight (we recommend a tube cutter for this). Do not use scissors as this make crimp the airline.

Insert airline into the end of the fitting. Locking claws inside the fitting will hold the airline in place.

TO REMOVE: Make sure no air pressure remains in the system. Press down on the plastic ring. The internal lock claws release and the airline can be pulled free.



AIRLINE RELEASE

WHICH AIR COMPRESSOR DO I BUY?
This is often the first question we get from people looking to start working with pneumatics, and it's one of the hardest to answer. The short answer is always, 'The biggest one you can afford!". That isn't always that helpful, though, so we've developed some general guidelines.

The first thing to know is that there is no special compressors designed for Halloween props. The compressor you will be using is the same type you can buy at any major home store. It's the same type you might already have or used on a job site if your work with air powered tools.

The main factor we'll be looking at is the size of the tank on the air compressor. This is usually a good way to quickly evaluate how useful a compressor will be. A bigger tank means the compressor can store more air and usually also means it can compress air more quickly.

Choosing a compressor really comes down to a couple of factors:

• How many props are you going to be running and how often will they be going off?

Are you just running one small cylinder? Then a relatively small air compressor is going to be fine. Do you have several large animatronics that you want going all the time? You're going to need a pretty beefy compressor for that!

• How much air do the props need?

Pneumatic cylinders don't typically require a ton of air. The internal volume of the cylinder is usually relatively low (unless the cylinder is really huge or long). Things like air blasters or air bags tend to use a lot more air.

• How far away from my air compressor are my props?

The longer your airline will be the more air capacity and pressure you're going to need. So if you need to run a lot of airline over a long distance, you're going to want a bigger compressor!

The chart below gives some basic guidlines for compressors based on your requirements. Remember, when it comes to compressors: bigger is better!



Mini Compressor - Not recommended for Halloween props.



Pancake Compressor - One or two small props. No air blasters.



Medium Sized Compressor - Several props. Air blasters OK.



Large Sized Compressor - Many props and air blasters.

TANK SIZE	0	3	5	10		30	50	60+ --->				
CFM	0	.5			5		7	11	15+ --->			
PROPS	NONE	~2		~3	~6		~15			~UNLIMITED		
	NO AIR BLASTERS			HOME HAUNT			SMALL/MED HAUNT			LARGE COMMERCIAL HAUNT		

COMMON TERMS
Here is a glossary of common terms you might encounter when shopping for a compressor and definitions that provide some guidance specific to Halloween applications.

PSI: POUNDS PER SQUARE INCH
This is the amount of air pressure that the compressor can output. A device called a regulator is used to turn up and down the PSI. Most compressors have a regulator built right on them. You can also use additional regulators to control the PSI for each prop or cluster of props.

The majority of Halloween props operate in the 20 to 100 psi range and most air compressors from the smallest to the largest can easily produce this much pressure and so the real deciding factor in selecting the proper size air compressor is the CFM that it can produce and the tank size (see below).

"What PSI do I need to run my prop at?": We recommend that you use a regulator to set the PSI as low as possible to run the prop. Start low then slowly turn up the pressure until the prop operates as you would like it to. Setting the PSI too high will add more stress and diminish the life of the prop. Too low and it will not function.

CFM: CUBIC FEET PER MINUTE
CFM is the Cubic Feet per Minute that a particular tool (or in our case a prop) needs to operate. It is a measurement of volume. Generally the larger the tank on an air compressor the more CFM it can produce. The more CFM the better because the more volume a compressor can produce the less it has to work and will be able to keep up with prop air demands.

LUBRICATION: OIL-FREE (OR OIL-LESS)
Some compressors require oil to be added to the engine every so often. Oil-free means that the compressor does not require this. Only small compressors are oil-free.

VOLTAGE
The power required to run the compressor. Home outlets are 120volts. Some garages and warehouses can run 220v compressors. 220v is more efficient but requires a special electrical outlet.

AMPS
The amount of power draw a compressor will pull is measured in amps. If the compressor requires 20amps to operate yet the outlet you put it on can only handle 10amps then you will blow the breaker. So make sure you plug the compressor into an outlet that can handle it. Extension cords should not be used with compressors. If you must then make sure that only very heavy duty extension cords are used.

TANK SIZE
The larger the air holding tank the less the compressor has to work because there will be more air available at all times. All things being equal, it is always best to get a compressor with a larger tank.

HORSEPOWER (HP)
The size of the engine that produces the air. The more HP the quicker the compressor can make air and has to work less to keep up with multiple props.