

SOLENOIDS ONLY

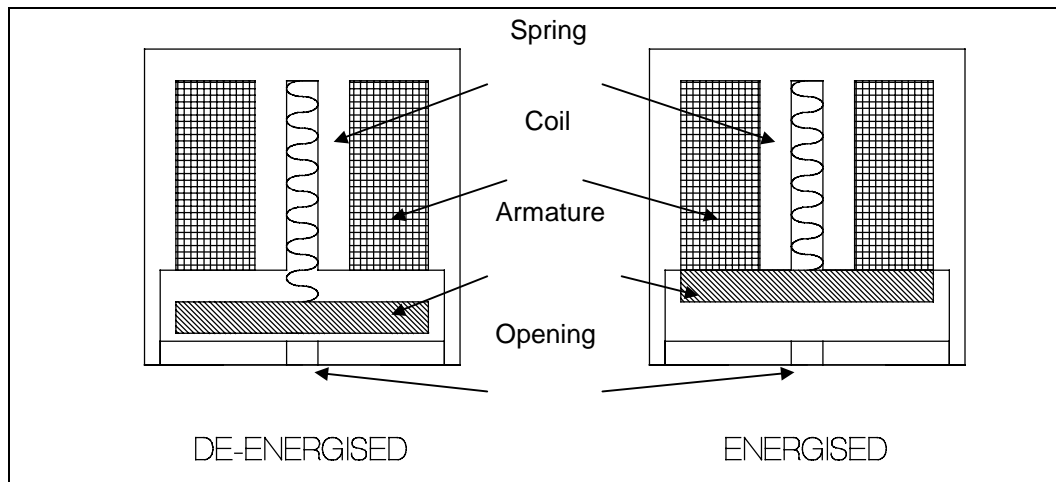
The NR range of PTFE solenoid valves have been developed around two basic principles, one is an efficient and powerful solenoid system, and the other, a patented poppet design.

We shall cover each of these parts in turn and then bring them together to see how the well conceived and adaptable product range has been developed for the specialist scientific industry.

THE SOLENOID COIL DESIGN

The solenoid comes in two basic forms, one is for pulling and the other for pushing. Which one is used depends on the method of operation required to actuate the valve itself. We will begin with the pulling version.

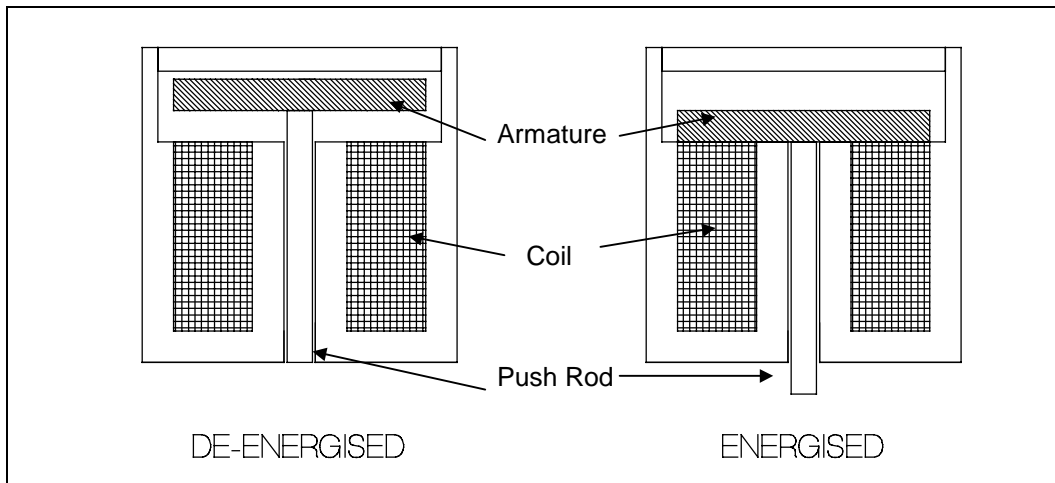
PULLING SOLENOID



When the coil is de-energised, the spring pushes the armature away from the face of the coil housing, and in consequence, any part attached to the armature through the opening in the coil cap also moves away from the coil.

When the coil is energised, the armature is attracted to the coil housing, compressing the spring and in doing so any part attached to the armature is pulled upwards as in the case shown above.

PUSHING SOLENOID



When the coil is de-energised, any external force on the end of the push-rod attached to the armature, pushes the armature away from the face of the coil housing. This type of coil can also have a small spring between the armature and the coil housing depending on the duty required.

When the coil is energised, the armature is attracted to the coil housing, and in doing so pushes the push-rod out of the coil housing to actuate the attached valve.

SUMMARY

The principle of this type of coils is simple, and by keeping the air gap to a minimum between the armature and the face of the coil housing, very powerful, with a low current consumption. Everything sounds fine, but there must be some less positive factors to consider,?. Well, lets just list the most obvious advantages and disadvantages over a conventional plunger type solenoid.

ADVANTAGES

- Small physical size.
- Powerful.
- Low power consumption.

DISADVANTAGES

- More expensive to produce.
- Only works over a short stroke.

Over all though, the advantages outweigh the disadvantages by virtue of the fact that if you couple all the advantages together, you end up with a unique product that others can not supply.