Leak-free hydraulic systems?

It seems that leaks have always been a part of the picture when it comes to hydraulic systems. Although this may have been true in the past, new designs, technology and material now make it possible for your hydraulic system to be completely leak-free.

Why is my hydraulic system leaking?

You have probably read multiple articles on the subject. So let's assume that you are already using the correct hose for your application, that you have chosen the correct connectors (the connectors with an elastomeric seal such as BSPP, ORB, ORFS offer more reliability), that your hoses and seals are in good shape, and that all of your fittings are torqued properly.

You have done all of these things right… right? Your system is now perfect and temporarily leak free, but you know it will not remain that way. Why is that?

You system is going to leak again. It will not run perfectly for long. In fact, 80% of hose failures are attributable to external physical damage, with abrasion and torsion being responsible for most of the damage.

Once at work, the movement of your machine will induce torsion in your hoses and the torsion is not only induced by a rotating attachment. Multi plane bending will also induce torsion. This will shorten the hose life significantly. (It is common knowledge that twisting a high-pressure hose only 5° can reduce service life by 70%, and a 7° twist can reduce the service life up to 90%.)

My hoses are not moving, so why are my fittings constantly loosening?

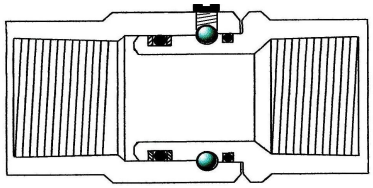
It is very difficult not to induce a little torsion in the hose when torquing the fitting. Even with swivel ends, the swivelling action is stopped when you reach a certain torque…. When you start working, the vibration combined with the fact that the twisted hose will want to "untwist", will loosen your fitting to the point that a leak could occur.

Is there a solution?

A good solution is the addition of swivel joints on your hoses. A swivel joint accommodates relative motion between the hose and the component to which it is connected. It relieves torsion in the hose. The hose will last much longer and the connectors will not tend to loosen.

But swivel joints tend to leak easily don't they?

Ordinary ball bearing swivels do tend to not last long and do leak easily. This is because they rely on small ball bearings to allow rotation and secure moving parts. These balls are exposed to heavy loads causing damage to spheres and races, loosening the assembly structure with time and eventually tearing apart when completely worn out, causing heavy spills.



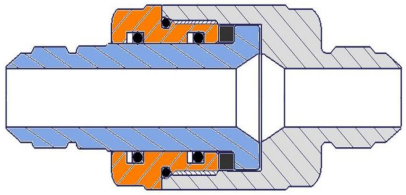
BALL BEARING SWIVEL

And you call this a solution?

The addition of a live-swivel is a good idea. It is the reliability of the swivels that was the problem…Up until now.

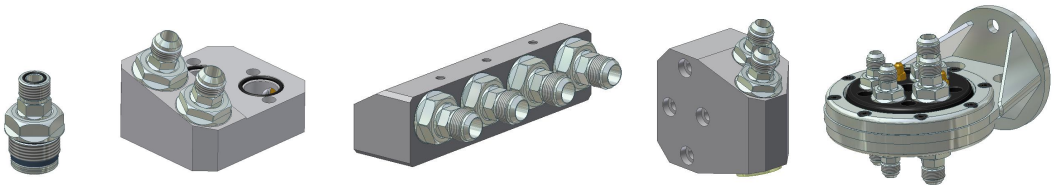
New technology has recently solved this problem by providing an incredibly "Ball-Less" swivel that is extremely robust and durable even in the most demanding operating conditions.

Furthermore, this sturdier swivel is impossible to pull apart. This increases safety and eliminates the chance for hydraulic fluid spills. It is more resistant to wear and side loads than ordinary ball bearing swivels, and will last, leak free, for an incredible 10 times longer.



TAIMI "BALL-LESS" SWIVEL

This technology, by Taimi Hydraulics, is available in the form of live-swivels, but also can be adapted to manifolds, pumps, cylinders, motors**,** etc.



TAIMI Hydraulics began developing a reliable method of eliminating torsion in hydraulic hoses back in 2005. They developed a patented solution that:

- Eliminates torsion
- Is impossible to pull apart (increasing safety and eliminating the chance for hydraulic fluid spills)
- Is long lasting
- Is easy to rebuild
- Is compact
- Is self-lubricating
- Is easily adaptable to multiple situations on any machine

They invented the Swiwell Cartridge ™. This simple and robust product uses no ball or needle bearing. It is extremely efficient against hydraulic shocks. It copes well with side loads that destroy ordinary swivels. The Swiwell Cartridge ™ is the base product used to build their other products.

The Swiwell ™ in-line swivel is extremely robust and durable even in the most demanding operating conditions.

The Swiwell Cartridge ™ is so durable that it can be installed on fixed surfaces such as manifolds, cylinders, motors, pumps, rotors, etc.

In areas where the movement dynamic causes the hoses to twist, their self-lubricating swivels and cartridges are efficient and durable coupling assemblies that improve efficiency, reduce downtime, reduce oil consumption and improve safety.

Installing TAIMI products on your hydraulic system will increase up-time, reduce or completely eliminate leaks and spills and extend the life of your hydraulic hoses and fittings.

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