



Binding European provisions and standards on the topic: Hydraulic hose lines - Danger if a hose rips

Many hydraulic hose lines present significant danger to life and limb. Therefore, it is entirely possible that new and old hose lines burst or are torn out of the crimp fitting with enormous energy and can whip around.

That's why machines sold in the EU must fulfil the safety requirements cited below.

In simple terms, the provisions state: "If a hose line causes a hazard due to whipping or bursting, the hose line must be restrained by suitable means."

The European parliament describes general protective goals for machines when placing onto the market in the European economic area as well as Switzerland and Turkey in the [Machine Directive 2006/42/EC](#), which states:

"Both rigid and flexible pipes carrying fluids, particularly those under high pressure, must be able to withstand the foreseen internal and external stresses and must be firmly attached and/or protected to ensure that no risk is posed by a rupture."

The above regulation must be strictly observed by every manufacturer. If he does not observe it, the affixing of the CE plate is NOT PERMITTED.

The general protective goals in accordance with above-mentioned Machine Directive 2006/42/EC are substantiated by supplementary [safety standards such as DIN EN ISO](#). Even in the substantiating standards, the use of hose safety catches is clearly requested. Some respective standards excerpts appear in the following:

DIN EN ISO 12100 Safety of machines:

"Pneumatic and hydraulic equipment of machines must be designed in such a way that:
- leaks or component failure do not lead to danger due to liquids spurting out or due to suddenly endangering movement of hoses (whips)."

DIN EN ISO 4413 Hydraulic fluid power: General rules and safety requirements for systems and their components:

"If the failure of a hose line causes a hazard due to whipping, the hose line must be restrained or shielded by suitable means. If this is not possible due to intended machine movements, information on residual risks must be provided."

DIN EN 201 Plastic and rubber machines - Injection moulding machines - Safety requirements:

"The dangerous thrashing about of hose lines with pressures of more than 5 MPa (50 bar) must be prevented by stationary housings (see EN 953:1997, 3.2.1) and/or additional fastenings of the hose lines, e.g. by chains, cables or clamps."

The above sets of regulations have been compiled to the best of our knowledge and express the contents accordingly. However, sets of regulations can change, which is why no guarantee can be made for accuracy. Therefore, please also check every individual case on your own responsibility.