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# ISO13849, Safety of Machinery Safety-related parts of control systems

Cartridge valves from HydraForce are designed and manufactured in compliance with the basic and well-tried safety principles according to ISO 13849-2:2012. In the various sections of our literature, HydraForce establishes the basic principles (i.e. ratings, operation, materials, etc.) which must be observed by the equipment designers and users of this equipment.

If the fundamental and proven safety principles outlined under ISO 13849-2:2012 are adhered to, a MTTF<sub>D</sub> value can be presumed per ISO 13849-1:2015 according to table shown below:

	Basic and well-tried safety priciples according to ISO 13849-2:2012	Relevant Standards	Typical Values MTTF <sub>D</sub> (years) B <sub>10D</sub> (cycles)
Hydraulic components with n <sub>op</sub> ≥ 1,000,000 cycles per year	Tables C.1 and C.2	ISO 4413	MTTF <sub>D</sub> = 150
Hydraulic components with 1,000,000 cycles per year > n <sub>op</sub> ≥ 500,000 cycles per year	Tables C.1 and C.2	ISO 4413	MTTF <sub>D</sub> = 300
Hydraulic components with 500,000 cycles per year > n₀p ≥ 250,000 cycles per year	Tables C.1 and C.2	ISO 4413	MTTF <sub>D</sub> = 600
Hydraulic components with 250,000 cycles per year > nop	Tables C.1 and C.2	ISO 4413	MTTF <sub>D</sub> = 1200

For questions regarding HydraForce products or product availability, please contact your HydraForce representative, one of our authorized business partners, or email us from our website at www.hydraforce.com.

For detailed information and specifications, visit www.hydraforce.com or contact your local HydraForce representative at www.hydraforce.com/distributors

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