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TÜV ®

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Erbusco, 9th March 2022

**Subject: Third Party inspections according to Shell DEP 32.36.01.18-Gen.
(February 2018) and Shell DEP 31.36.10.30-Gen. (February 2017)**

Dear Sirs

With reference to what in subject, herewith we confirm that the actuator models BYHS-05S-28-1H-CL, BYHS-05S-22-1H-CL, BYHS-50C-45-3H-CL, BYHS-50C-36-3H-CL have been tested, with our witnessing, according to Shell DEP 32.36.01.18-Gen. (February 2018) (clause 9), and therefore in conformity with standard EN 15714-4 (for pressure rating = 34,5 MPa according to Table 1 of EN 15714-4).

All the tests gave satisfactory result.

According to § 5.2 of EN 15714-4, every actuator based on the same design of the aforementioned models and having a nominal output torque between $x/2$ (or 50% x) and $2x$ (or 200% x) has to be considered qualified.

Therefore, based on nominal output torque value of the actuators tested, the following torque range is qualified:

- lower limit: 288 Nm
- upper limit: 16424 Nm

The actuators model BYHS-05S-28-1H-CL and BYHS-50C-45-3H-CL, equipped with cylinders with secondary metal seal for fire safe design according to § 16.1.3 of Shell DEP 31.36.10.30-Gen. (February 2017), have additionally been tested for metal seal leakage according to §18.2.2 of Shell DEP 31.36.10.30-Gen. (February 2017).

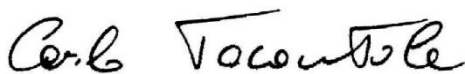
All the tests gave satisfactory result.

According to § 18.2.2 point 2.c of Shell DEP 31.36.10.30-Gen. (February 2017), each type test will cover the range from the tested piston diameter and stroke length to double the tested piston diameter and double the tested stroke length.

Therefore, the following piston rod diameter range and actuator stroke range are covered by type test:

- 1) piston diameter:
 - qualified range: from 28 mm to 90 mm
- 2) actuator stroke:
 - qualified range: from 70 mm to 336 mm

Best regards



Carlo Tarantola