

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Brakes**with type designation(s)
Multi disc brakes

Issued to

Reggiana Riduttori S.r.l.
San Polo d'Enza, RE, Italy

is found to comply with

DNV GL standard DNVGL-ST-0378 – Standard for offshore and platform lifting appliances**Application :****Spring activated disc brakes with hydraulic release**Issued at **Høvik** on **2019-12-12**This Certificate is valid until **2024-12-11**.for **DNV GL**DNV GL local station: **Italy/Malta CMC**Approval Engineer: **Antonio Sendin Alvarez**.....
Aldo Matteucci
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-008890-3**
Certificate No: **TAS000008E**
Revision No: **2**

Product description

Parking and emergency brakes. The brakes are spring activated with hydraulic release. The braking momentum is added up of frictional forces acting on several discs and connected to the rotating shaft. Different number of springs and discs gives different brake torque for each brake type.

RF5:

Brake type	RF5-21	RF5-29	RF5-43	RF5-65	RF5-85	RF5-110	RF5-130	RF5-150
Brake torque (N*m)	210	290	430	650	850	1100	1300	1500

Number of brake sizes and brake torques are as given for RF5 for the following brake types:

- RFF5
- DG-RF/313
- DG-RF/314
- DG-RF/315
- DG-RF/316
- DG-RFF/396

RF2:

Brake type	RF2/7	RF2/14	RF2/21	RF2/32	RF2/43	RF2/60
Brake torque (N*m)	70	140	210	320	430	600

Number of brake sizes and brake torques are as given for RF2 for the following brake types:

- DG-RF/288
- DG-RF/289
- DG-RF/290

RF170-290:

Brake type	RF170	RF200	RF230	RF290
Brake torque (N*m)	1700	1980	2260	2830

Maximum design pressure for all brakes are 250 bar.
Above torques are based on a friction coefficient of 0.135.

Application/Limitation


1. All load-bearing materials are to be delivered with 3.1 certificates, documenting mechanical properties and chemical composition in accordance with the DNVGL-ST-0378 Sec. 3
2. Support and fixation of the brakes are not covered by this type approval and are to be separately considered/ approved in each case.
3. The friction factor has not been evaluated, the value is provided by the manufacturer.
4. There is no limitation for design temperature (Td) given by the manufacturer, as working temperature is specified to be approximately 100 degrees Celsius.

Type Approval documentation

Tests to be carried out

When DNV GL product certificate is required, each item is to be function and pressure tested. Manufacturing survey and tests witnessing to be carried out by a DNV GL surveyor.

Marking of product



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Each brake shall be marked according to DNVGL-ST-0378 Sec.14.5.

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNVGL-CP-0338.

END OF CERTIFICATE