Certificate no.:
TAS000051E

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Slewing Bearing

with type designation(s)
V92-4800-002-COMM

issued to
Galperti Tech Forged Products S.p.A.
Colico LC, **Italy**

is found to comply with
DNV standard DNV-ST-0378 – Offshore and platform lifting appliances

Application:

See next page

Issued at **Høvik** on **2025-10-20**
This Certificate is valid until **2030-10-19**.
DNV local unit: **Italy/Malta CMC**

for **DNV**

Approval Engineer: **Peder Bendik Møll**

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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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

3- row roller Slewing bearing for offshore crane

Application/Limitation

Minimum design temperature: -20°C
Slewing bearing is approved for the loads specified below which are to including all dynamic factors and additional offshore safety factors SF1 as specified in DNV-ST-0378 Sec.8 if applicable.

Max static loads for DNV-ST-0378 Loadcase I and Loadcase II

	Axial Force kN	Radial Force kN	Tilting Moment kNm
LC1	7417	0	53086
LC2	9574	0	50948
LC3	8287	0	50065
LC4	9574	0	47312
LC5	8898	0	55492
LC6	10829	0	46176

Max static loads for DNV-ST-0378 Loadcase III

	Axial Force kN	Radial Force kN	Tilting Moment kNm
LC1	10335	1479	66840
LC2	8091	1110	61041
LC3	11634	1678	62613
LC4	11368	1752	72018
LC5	8792	1232	63289

Fatigue spectrum raceway

	Time %	Speed rpm	Axial Force kN	Radial Force kN	Tilting Moment kNm
LC1	8.33	0.7	6934	0	25186
LC2	8.33	0.7	8159	0	20315
LC3	8.33	0.7	6880	0	23812
LC4	8.33	0.7	8159	0	18519
LC5	8.34	0.7	6951	0	25632
LC6	8.34	0.7	8833	0	17219
LC7	8.33	0.7	6345	0	10237
LC8	8.33	0.7	6345	0	368
LC9	8.33	0.7	6345	0	10237
LC10	8.33	0.7	6345	0	442
LC11	8.34	0.7	6319	0	9578
LC12	8.34	0.7	6301	0	2152

Calculated lifetime for raceway: 137 000 full revolutions

Fatigue spectrum for geared ring:

	Time %	Speed rpm	Slewing Moment* kNm
LC1	16.6	0.7	6073.2
LC2	16.7	0.7	4451.4
LC2	16.7	0.7	2836.2
LC3	50	0.7	1214.4
LC4	-	Static	8617.8

*) Total slewing moment on slewing bearing, to be divided equally on 6 pinions

Lifetime for geared ring: 1500hours

Number of teeth in slewing bearing -227
Module 18

1. Flanges and adjacent structure have not been evaluated nor covered by this approval.

2. Slewing Bearing Mounting bolts M52 to be class 10.9 in both inner and outer ring.
3. Slewing Bearing Mounting bolts shall be permanently pretensioned to 75% of yield strength.
4. The slewing ring and slewing ring fastener material needs to be delivered with 3.2 material certificate, documenting compliance with DNV material requirements.

Type Approval documentation

Marking of product
Each slewing bearing is to be marked according to DNV-ST-0378 Sec.14.5

Periodical assessment
For retention of the Type Approval, a DNV 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 DNV-CP-0338.

Manufactured by:
Galperti Tech Forged Products S.p.A.
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23823 Colico