



CERTIFICATE NUMBER 22-2218009-1-PDA

EFFECTIVE DATE 17-May-2022

EXPIRATION DATE 07-Feb-2027

ABS TECHNICAL OFFICE Genoa Engineering Department

CERTIFICATE OF

Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

DINAMIC OIL S.P.A.

located at

VIA TOGLIATTI NO. 15, BOMPORTO, MODENA, Italy, 41030

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product Gearbox

Model RE 812 TR3 38.25 ST CF, RA 813 FS 99.7S ME132, RE 813 FS SPEC. 63.75 ST BB,
RE 813 FS SPEC. 87.35 ME132, RE 813 TR3 P10 Z15 75.43 ME132, RE 813 TR3 P12 Z14 75.43 ME 160,
RE 1022 DBS4 P12Z15 31.62 ST CF, RE 1022 DBS4 P12Z16 36.1 ST CH, RE 1522 DBS P13Z15 39.38 ST CF,
RE 1523 DBS P12Z17 100.3 ME160 and RE 1523 DBS P12Z17 100.3 ME180.

This Product Design Assessment (PDA) Certificate remains valid until 07/Feb/2027 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau of Shipping

Cristina Generale

Cristina Generale, Principal Engineer

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement

DINAMIC OIL S.P.A.

VIA TOGLIATTI NO. 15

BOMPORTO MODENA

Italy 41030

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Email: a.casali@dinamicoil.it

Web: www.dinamicoil.it

Tier: 5 - Unit Certification Required

Product: Gearbox
Model: RE 812 TR3 38.25 ST CF,
RA 813 FS 99.7S ME132,
RE 813 FS SPEC. 63.75 ST BB,
RE 813 FS SPEC. 87.35 ME132,
RE 813 TR3 P10 Z15 75.43 ME132,
RE 813 TR3 P12 Z14 75.43 ME 160,
RE 1022 DBS4 P12Z15 31.62 ST CF,
RE 1022 DBS4 P12Z16 36.1 ST CH,
RE 1522 DBS P13Z15 39.38 ST CF,
RE 1523 DBS P12Z17 100.3 ME160 and
RE 1523 DBS P12Z17 100.3 ME180.

Endorsements:

Intended Service:

Main Propulsion or Auxiliary Thruster Steering - Multiple arrangement only

Description:

In line and right angle, two and three stages, planetary reduction gears with overhung output pinion shafts.

Rating:

Nominal power from 8.2 to 38 kW.

For additional details, see Attachment.

Service Restriction:

- 1) As per 4-3-1/1.1 of ABS Marine Vessel Rules, Unit Certification is required for this product, regardless of power rating, when used on steering mechanism of certified thrusters (ref 4-3-5).
- 2) As per 4-3-1/3.1.3 of ABS Marine Vessel Rules, output pinions and relevant shafts which are intended to be used for steering of azimuth thruster are to be made of materials tested in the presence of the Surveyor.
- 3) Factory Acceptance Tests required for Unit Certification are as per 4-3-1/9.7.1 ii) of the Marine Vessels Rules, as applicable.
- 4) If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standard and tolerances, must be clearly defined

Comments:

- 1) Present approval is valid only in conjunction with service profile as per Attachment.
- 2) Output pinion teeth mesh are not covered by present certificate and are to be approved on a case-by-case basis.
- 3) Minimum operating temperature is -9.9°C. Where operation at lower temperature is requested, considerations shall be given to provision of adequate heating systems for entire reduction gear or for adoption of materials with adequate resilience. Relevant design data are to be submitted for review on a case-by-case basis.
- 4) Hydraulic motors driving pinions for thruster steering mechanisms are to be certified by the Surveyor at manufacturers' plants in accordance with 4-3-5/5.11 and 4-6-1/7.3 of ABS Marine Vessel Rules.
- 5) As per Manufacturer's recommendation, output pinion shafts of reduction gears RA 813 and RE 813 are to be installed with bearings on each side of the pinion teeth mesh and having each a dynamic load rating of, at least, C = 124 kN and a static load rating of, at least, Co = 117 kN.
- 6) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:

Reference technical drawings and test reports as per Attachment.

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Tier: 5 - Unit Certification Required

Terms of Validity:

This Product Design Assessment (PDA) Certificate remains valid until 07/Feb/2027 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

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STANDARDS

ABS Rules:

- Rules for Condition of Classification (2022): 1-1-4/7.7, 1-1-A3 and A4, which covers the following:
- Rules for Building and Classing Marine Vessel Rules (2022): 4-3-1 and 4-3-5
- Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways (2022): 4-1-1

- Rules for Conditions of Classification – High-Speed Crafts (2022): 1-1-4/11.9, 1-1-A2 and 1-1-A3, which covers the following:
- Rules for Building and Classing High-Speed Craft (2022): 4-3-1

- Rules for Conditions of Classifications – Offshore Units and Structures (2022): 1.1.4/9.7, 1-1-A2 and A3, which covers the following:
- Rules for Building and Classing Mobile Offshore Units (2022) 4-1-2/3

- Guide for Dynamic Positioning Systems (2021), 4-1.

National:

NA

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA

Additional Product Details

PDA Certificate No. 22-2218009-1-PDA

Issued on 17th May 22
Expiring on 7th Feb. 27

**PLANETARY REDUCTION GEAR RE 812 TR3 38.25 ST CF
GEARBOX CODE: ABT91R6FP200380**

Ratings

Phase	Time percentage	Output torque T ₂	Output speed n ₂
	%	[Nm]	[rpm]
1	99.8	2272	27.6
2	0.2	5680	27.6

Gear ratio 1:38.25

Expected service life: 5x10⁷ cycles

Application factor K_a = 1

Maximum static output torque: 7400 Nm

Drawings List

Drawing No	Revision No	Drawing Title
ST6384	02	RE 812 TR3 38.25 ST CF SECTIONAL VIEW
DI14727	03	RE 812 TR3 P 38.25 ST CF DIMENSIONAL DRAWING
LR-3459	02	RE 812 TR3 38.2 ST CF SPARE PARTS LIST
40000654	01	SPLINED JOINT 16/32
2030024300	08	RE 310 SUN GEAR
20300228	04	RE 300 SPACER
2030021800	11	RE 310 PLANETARY GEAR
2030021300	20	RE 300 RING GEAR
025110280	02	MOTOR COUPLING FLANGE SAE'C'
025510100	01	RE 1020 BOTTOM
022610281ABT	01	RE 810 INTEGRAL PINON M10 Z15
022610281	03	RE 810 INTEGRAL PINON M10 Z15
022210475	04	RE 810 PLANETARY CARRIER
022010213	01	RE 810 BODY TR3
02741009	04	RE 810 SPACER
02741007	05	RE 310 SPACER
02731552	02	RE 810 STEEL INTERMEDIATE FLANGE
02621004	06	RE 810 PLANETARY GEAR
02611032	04	RE 810 SUN GEAR
02581025	02	RE 810 PLANETARY CARRIER PIN
02581006	13	RE 310 PLANETARY CARRIER PIN
02551015	03	RE 310 BOTTOM
02511108	05	MOTOR FLANGE
02501010	15	RE 300 INPUT SUPPORT
02251010	06	RE 810 FRONT CAP
02241005	11	INPUT SPLINED SHAFT
02231011	11	RE 810 RING GEAR
02221056	08	RE 310 PLANETARY CARRIER
STMC05-18-AB	02	PINION FOR THRUSTER – ABS SPECIFICATION – MQ
ABT91R6FP200380	00	ABS TYPE TEST REPOT DATED 30-MARCH-2016

Additional Product Details

PDA Certificate No. 22-2218009-1-PDA

Issued on 17th May 22
Expiring on 7th Feb. 27

**PLANETARY REDUCTION GEAR RE 813 TR3 75,43 P10 Z15 ME132 W35X2
GEARBOX CODE: ABT91R6FP000001**

Ratings

Phase	Time percentage	Output torque T ₂	Output speed n ₂
	%	[Nm]	[rpm]
1	99.8	2272	27.6
2	0.2	5680	27.6

Gear ratio 1:75.43

Expected service life: 5x10⁷ cycles

Application factor K_a = 1

Maximum static output torque: 7952 Nm

Drawings List

Drawing No	Revision No	Drawing Title
DI26683	00	RE 813 TR3 P10 Z15 75,43 ME132 DIMENSIONAL DRAWING
ST9827	01	RE 813 TR3 P10 Z15 75,43 ME132 ASSEMBLY DRAWING
6143	00	RE 813 TR3 P10 Z15 75,43 ME132 SPARE PARTS CATALOGUE
029711458	00	INTERMEDIATE FLANGE
022610281ABT	01	RE 810 TR3 INTEGRAL PINION M10 Z15
2030021500	11	RE 310 PLANETARY GEAR R 4,2
2030024000	06	RE 310 SUN GEAR 2ST R=4,25
022010213	01	RE 810 BODY TR3
02621004	06	RE 810 PLANET GEAR R=5,1
029710427	02	RE110/210 MOTOR CAP EL.132
022210475	04	PLANETARY CARRIER RE810 (TURNED)
02501039	06	RE 110/210 DIRECT INPUT SUPPORT ME 132
02551010	03	RE 110-210 END PLATE
402004000	04	RE110 FIFTH WHEEL CPS 1506
02731552	02	RE810/1020 STEEL INT. FLANGE
02231011	11	RE 810 RING GEAR
02581034	03	RE 110 PLANETARY CARRIER PIN
02221019	01	RE 110-210 PLANETARY CARRIER R=3.48
025510100	01	RE 1020-1520 END PLATE RE1520
027310487	01	RE310/510 STEEL INT. FLANGE
2030001500	04	RE 110 PLANETARY GEAR R=3.4
02221056	08	RE310 PLANETARY CARRIER
02231006	10	RE 110 RING GEAR
02611032	04	RE 810 SUN GEAR R=5.1
02581025	02	RE 810 PLANETARY CARRIER PIN
02251010	06	RE 810 FRONT CAP
02581006	13	RE 310 PLANETARY CARRIER PIN
02741009	04	RE 810 FIFTH WHEEL 33.5X53.5X2
022610281	03	INTEGRAL PINION M10 Z15

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02241190	01	RE110/210 INPUT COUPLING ME132
02611021	07	RE 110 SUN GEAR 2 ND STAGE R=1:3.48
02551015	03	RE 310-510 END PLATE
2030021300	20	RE 300 RING GEAR
02741007	05	RE310-510 SHIM SDJUSTMENT FIFTH WHEEL
STMC05-18-AB	02	PINION FOR THRUSTER – ABS SPECIFICATION – MQ

Additional Product Details

PDA Certificate No. 22-2218009-1-PDA

Issued on 17th May 22
Expiring on 7th Feb. 27

**PLANETARY REDUCTION GEAR RE 813 TR3 75,43 P12 Z14 ME160 W45X2
GEARBOX CODE: ABT91R6FP000005**

Ratings

Phase	Time percentage	Output torque T ₂	Output speed n ₂
	%	[Nm]	[rpm]
1	99.8	2159	21
2	0.2	5397	21

Gear ratio 1:75.43

Expected service life: 5x10⁷ cycles

Application factor K_a = 1

Maximum static output torque: 6746 Nm

Drawings List

Drawing No	Revision No	Drawing Title
DI21932	00	RE 813 TR3 P12 Z14 75,43 ME160 DIMENSIONAL DRAWING
ST10534	01	RE 813 TR3 P12 Z14 75,43 ME160 ASSEMBLY DRAWING
6144	00	RE 813 TR3 P12 Z14 75,43 ME160 SPARE PARTS CATALOGUE
029711458	00	INTERMEDIATE FLANGE RE310/510
022610446ABT	00	RE 810 TR3 INTEGRAL PINION M12 Z14
2030021500	11	RE 310 PLANETARY GEAR R 4,2
2030024000	06	RE 310 SUN GEAR 2ST R=4,25
022010213	01	RE 810 BODY TR3
02621004	06	RE 810 PLANET GEAR R=5,1
029710423	02	RE110/210 MOTOR CAP EL.160
022210475	04	PLANETARY CARRIER RE810 (TURNED)
2029992300	12	RE 110/210 DIRECT INPUT SUPPORT ME 160
02551010	03	RE 110-210 END PLATE
402004000	04	RE110 FIFTH WHEEL CPS 1506
02731552	02	RE810/1020 STEEL INT. FLANGE
02231011	11	RE 810 RING GEAR
02581034	03	RE 110 PLANETARY CARRIER PIN
02221019	01	RE 110-210 PLANETARY CARRIER R=3.48
025510100	01	RE 1020-1520 END PLATE RE1520
027310487	01	RE310/510 STEEL INT. FLANGE
2030001500	04	RE 110 PLANETARY GEAR R=3.4
02221056	08	RE310 PLANETARY CARRIER
02231006	10	RE 110 RING GEAR
02611032	04	RE 810 SUN GEAR R=5.1
02581025	02	RE 810 PLANETARY CARRIER PIN
02251010	06	RE 810 FRONT CAP
02581006	13	RE 310 PLANETARY CARRIER PIN
02741009	04	RE 810 FIFTH WHEEL 33.5X53.5X2

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022610446	00	INTEGRAL PINION M12 Z14
022410210	01	RE110/210 INPUT COUPLING ME180
02611021	07	RE 110 SUN GEAR 2 ND STAGE R=1:3.48
02551015	03	RE 310-510 END PLATE
2030021300	20	RE 300 RING GEAR
02741007	05	RE310-510 SHIM SDJUSTMENT FIFTH WHEEL
STMC05-18-AB	02	PINION FOR THRUSTER – ABS SPECIFICATION – MQ

Additional Product Details

PDA Certificate No. 22-2218009-1-PDA

Issued on 17th May 22
Expiring on 7th Feb. 27

**PLANETARY REDUCTION GEAR RA 813 FS 99.7S ME132 W35X2 ST CF
GEARBOX CODE: 91R6FF000002**

Ratings

Phase	Time percentage	Output torque T ₂	Output speed n ₂
	%	[Nm]	[rpm]
1	99.6	1868	16.8
2	0.4	4670	16.8

Gear ratio 1:99.7

Expected service life: 5x10⁷ cycles

Application factor K_a = 1

Maximum static output torque: 5837 Nm

Drawings List

Drawing No	Revision No	Drawing Title
DI23897	04	RA 813 FS 99.7S ME132 W35X2 DIMENSIONAL DRAWING
ST11588	03	RA 813 FS 99.7S ME132 W35X2 ASSEMBLY DRAWING
5904	00	RA 813 FS 99.7S ME132 W35X2 SPARE PARTS CATALOGUE
02741009	04	FIFTH WHEEL 33.5X53.5X2
02611031	04	RE 810 SUN GEAR
02731025	07	LITTLE BEVEL GEAR PAIR FLANGE
02731054	02	RE 310-510 INTERMEDIATE FLANGE
02731043	10	RE 810/1020 INTERMEDIATE FLANGE
02631018	00	BEVEL GEAR PAIR CONNECTION COUPLING
02741007	05	SHIM ADJUSTMENT FIFTH WHEEL
02621003	06	RE 810 PLANETARY GEAR
02771000	01	BEVEL GEAR KEY 16X10X30
025710366	02	RE 810 FS PINION M10 Z15 X0.6
029710427	02	MOTOR FLANGE ME132
2030030600	22	RE 500 RING GEAR
2030031100	09	RE 510 PLANETARY GEAR
2030032200	08	RE 510 SUN GEAR
025710366ABT	00	RE 810 FS PINION M10 Z15 X0.6
02201034	04	BODY F RE 810
02201357	03	BEVEL GEAR PAIR HOUSING
02211005	00	BEVEL GEAR COVER
02221036	09	RE 810 PLANETARY CARRIER (TURNED)
02221161	04	RE 510 PLANETARY CARRIER
02221156	05	RE 510 PLANETARY CARRIER
02231007	08	CC30 RING GEAR
02231011	11	RE 810 RING GEAR
02241190	01	RE 110/210 INPUT COUPLING ME132
02261008	04	LITTLE BEVEL GEAR SHAFT
02501039	06	DIRECT INPUT SUPPORT ME132

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02551015	03	RE 310 END PLATE
02551022	00	RE 810 END PLATE
02581014	05	RE 510 PLANETARY CARRIER PIN
02581025	02	RE 810 PLANETARY CARRIER PIN
02611014	02	LITTLE BEVEL GEAR PINION
STMC05-18-AB	02	PINION FOR THRUSTER – ABS SPECIFICATION – MQ

Additional Product Details

PDA Certificate No. 22-2218009-1-PDA

Issued on 17th May 22
Expiring on 7th Feb. 27

**PLANETARY REDUCTION GEAR RE 813 FS SPEC. 63.75 ST BB
GEARBOX CODE: 91R6FF000000**

Ratings

Phase	Time percentage	Output torque T ₂	Output speed n ₂
	%	[Nm]	[rpm]
1	99.6	1868	16.8
2	0.4	4670	16.8

Gear ratio 1:63.75

Expected service life: 5x10⁷ cycles

Application factor K_a = 1

Maximum static output torque: 5837 Nm

Drawings List

Drawing No	Revision No	Drawing Title
DI23820	02	RE 813 FS SPEC. 63.75 ST BB DIMENSIONAL DRAWING
ST11689	02	RE 813 FS SPEC. 63.75 ST BB ASSEMBLY DRAWING
5658	01	RE 813 FS SPEC. 63.75 ST BB SPARE PARTS CATALOGUE
02581034	03	RE 110 PLANETARY CARRIER PIN
02611031	04	RE 810 SUN GEAR
02611022	06	RE 110 SUN GEAR
02621003	06	RE 810 PLANETARY GEAR
02741007	05	SHIM ADJUSTMENT FIFTH WHEEL
02741009	04	FIFTH WHEEL 33.5X53.5X2
402004000	04	FIFTH WHEEL CPS 1506
025710366ABT	00	RE 810 FS PINION M10 Z15 X0.6
025710366	02	RE 810 FS PINION M10 Z15 X0.6
2030001600	04	RE 110 PLANETARY GEAR
2030021400	11	RE 310 PLANETARY GEAR
2030022800	04	RE 310 BLANK WASHER
2030023900	06	RE 310 SUN GEAR
2030021300	20	RE 300 RING GEAR
4000063500	04	RE 110-210 MOTOR COUPLING FLANGE
4000067100	03	SPLINED COUPLING 16/32DP
02221019	01	RE 110 PLANETARY CARRIER
02231006	10	RE 110 RING GEAR
02221056	08	RE 310 PLANETARY CARRIER
02551010	03	RE 110 END PLATE
02221036	09	RE 810 PLANETARY CARRIER (TURNED)
02241005	11	INPUT COUPLING X ST
02231011	11	RE 810 RING GEAR
02581006	13	RE 310 PLANETARY CARRIER PIN
02551022	00	RE 810 END PLATE
02551015	03	RE 310 END PLATE
02581025	02	RE 810 PLANETARY CARRIER PIN
STMCO5-18-AB	02	PINION FOR THRUSTER – ABS SPECIFICATION – MQ

Additional Product Details

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Issued on 17th May 22
Expiring on 7th Feb. 27

**PLANETARY REDUCTION GEAR RE 813 FS SPEC. 87.35 ME132
GEARBOX CODE: 91R6FF000001**

Ratings

Phase	Time percentage	Output torque T ₂	Output speed n ₂
	%	[Nm]	[rpm]
1	99.6	1868	16.8
2	0.4	4670	16.8

Gear ratio 1:87.35

Expected service life: 5x10⁷ cycles

Application factor K_a = 1

Maximum static output torque: 5837 Nm

Drawings List

Drawing No	Revision No	Drawing Title
DI23821	03	RE 813 FS SPEC. 87.35 M132 DIMENSIONAL DRAWING
ST11817	01	RE 813 FS SPEC. 87.35 M132 ASSEMBLY DRAWING
5657	01	RE 813 FS SPEC. 87.35 M132 SPARE PARTS CATALOGUE
02551022	00	RE 810 END PLATE
02581034	03	RE 110 PLANETARY CARRIER PIN
02581025	02	RE 810 PLANETARY CARRIER PIN
02621002	06	RE 810 PLANETARY GEAR
02611030	04	RE 810 SUN GEAR
02581006	13	RE 310 PLANETARY CARRIER PIN
02731043	10	RE 810 INTERMEDIATE FLANGE
025710366	02	RE 810 FS PINION M10 Z15 X0.6
025710366ABT	00	RE 810 FS PINION M10 Z15 X0.6
02741007	05	SHIM ADJUSTMENT FIFTH WHEEL
402004000	04	FIFTH WHEEL CPS 1506
02741009	04	FIFTH WHEEL 33.5X53.5X2
2030001700	04	RE 110 PLANETARY GEAR
029710427	02	RE 110 MOTOR FLANGE CAP EL. 132
2030021300	20	RE 300 RING GEAR
2030021500	11	RE 310 PLANETARY GEAR
2030022800	04	RE 310 BLANK WASHER FOR PIN
2030022400	16	RE 310 INTERMEDIATE FLANGE
2030024000	06	RE 310 SUN GEAR
02221036	09	RE 810 PLANETARY CARRIER (TURNED)
02231011	11	RE 810 RING GEAR
02201034	04	BODY F RE 810
02221056	08	RE 310 PLANETARY CARRIER
02231006	10	RE 110 RING GEAR
02221019	01	RE 110 PLANETARY CARRIER
02241190	01	RE 110 INPUT COUPLING ME132
02501039	06	RE 110 DIRECT INPUT SUPPORT ME132
02551010	03	RE 110 END PLATE

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02551015	03	RE 310 END PLATE
02611023	06	RE 110 SUN GEAR
STMC05-18-AB	02	PINION FOR THRUSTER – ABS SPECIFICATION – MQ

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Expiring on 7th Feb. 27

**PLANETARY REDUCTION GEAR RE 1022 DBS4 P12Z15 31,62 ST CF
GEARBOX CODE: ABT91R6GP000001**

Ratings

Phase	Time percentage	Output torque T ₂	Output speed n ₂
	%	[Nm]	[rpm]
1	99.8	2712	18.15
2	0.2	6780	18.15

Gear ratio 1:31.62

Expected service life: 5x10⁷ cycles

Application factor K_a = 1

Maximum static output torque: 9492 Nm

Drawings List

Drawing No	Revision No	Drawing Title
DI14992	06	RE 1022 DBS4 P12 Z15 X0.4252 B110 DIMENSIONAL DRAWING
ST6547	07	RE 1022 DBS4 P12 Z15 X0.4252 B110 SECTIONAL VIEW
LR-4759	01	RE 1022 DBS P12Z15 31.62 ST CF SPARE PARTS LIST
4000065400	01	SPLINED COUPLING 16/32DP Z21
2030032100	07	RE 510 SUN GEAR
2030031000	09	RE 510 PLANETARY GEAR
2030030600	22	RE 500 RING GEAR
025810102	02	RE 1020 PLANETARY CARRIER PIN
025510100	01	RE 1020 END PLATE
022610330ABT	00	RE 1020 DBS4 INTEGRAL PINION M12 Z15
022610330	02	RE 1020 DBS4 INTEGRAL PINION M12 Z15
022210126	05	RE 1020 PLANETARY CARRIER
022010251	02	RE 1020 BODY
02741009	04	RE 810 FIFTH WHEEL
02741007	05	RE 310 SHIM ADJUSTMENT FIFTH WHEEL
02731552	02	RE 810 STEEL INTERMEDIATE FLANGE
02621041	03	RE 1020 PLANETARY GEAR
02611123	05	RE 1020 SUN GEAR
02581014	05	RE 510 PLANETARY CARRIER PIN
02551015	03	RE 310 END PLATE
02511108	05	MOTOR COUPLING FLANGE SAE "C"
02501010	15	RE 300 INPUT SUPPORT
02241005	11	INPUT COUPLING ST
02231028	09	RE 1020 RING GEAR
02221156	06	RE 510 PLANETARY CARRIER
STMC05-18-AB	02	PINION FOR THRUSTER – ABS SPECIFICATION – MQ

Additional Product Details

PDA Certificate No. 22-2218009-1-PDA

Issued on 17th May 22
Expiring on 7th Feb. 27

**PLANETARY REDUCTION GEAR RE 1022 DBS4 P12Z16 36.15 ST CH
GEARBOX CODE: ABT91R6GP000004**

Ratings

Phase	Time percentage	Output torque T ₂	Output speed n ₂
	%	[Nm]	[rpm]
1	99.8	4043	20.25
2	0.2	10107	20.25

Gear ratio 1:36.1

Expected service life: 5x10⁷ cycles

Application factor K_a = 1

Maximum static output torque: 14150 Nm

Drawings List

Drawing No	Revision No	Drawing Title
DI22855	03	RE 1022 DBS4 P12 Z16 X0.5408 B105 DIMENSIONAL DRAWING
ST11027	02	RE 1022 DBS4 P12 Z16 X0.5408 B105 SECTIONAL VIEW
6146	01	RE 1022 DBS4 P12 Z16 36.15 ST CH SPARE PARTS LIST
4000686	00	COUPLING 16/32 DP Z23
02241005	11	INPUT COUPLING X ST
02551015	03	RE 310-510 END PLATE
2030030600	22	RE 500 RING GEAR
02611124	05	RE 1020 SUN GEAR R=5.82
4000181100	04	MOTOR COUPLING FLANGE FA 4
02741009	04	RE810 FIFTH WHEEL 33.5X53.5X2
02741007	05	RE310-510 SHIM ADJUSTMENT FIFTH WHEEL
022610481ABT	00	INTEGRAL PINION M12 Z16
022610481	00	INTEGRAL PINION M12 Z16
02231028	09	RE 1020 RING GEAR
02581014	05	RE 510 PLANETARY CARRIER PIN
2030031000	09	RE 510 PLANETARY GEAR R6.2
025810102	02	RE 1020 PLANETARY CARRIER PIN
02731552	02	RE 810/1020 STEEL INT. FLANGE
2030032100	07	RE 510 SUN GEAR 2ST R=6.2
022210126	05	RE 1020 PLANETARY CARRIER
02621042	03	RE1020 PLANETARY GEAR R=5.82
02221156	05	RE510 PLANETARY CARRIER (TURNED)
025510100	01	RE 1020-1520 END PLATE
02501010	15	RE 300-500 INPUT SUPPORT
022010251	02	RE 1020 BODY RE1020
STMC05-18-AB	02	PINION FOR THRUSTER – ABS SPECIFICATION – MQ

Additional Product Details

PDA Certificate No. 22-2218009-1-PDA

Issued on 17th May 22
Expiring on 7th Feb. 27

**PLANETARY REDUCTION GEAR RE 1522 DBS P13Z15 39.38 ST CF
GEARBOX CODE: ABT91R6HP200391**

Ratings

Phase	Time percentage	Output torque T ₂	Output speed n ₂
	%	[Nm]	[rpm]
1	99.8	3500	16.0
2	0.2	8750	16.0

Gear ratio 1:39.38

Expected service life: 5x10⁷ cycles

Application factor K_a = 1

Maximum static output torque: 12250 Nm

Drawings List

Drawing No	Revision No	Drawing Title
ST5901	02	RE 1522 DBS P13 Z15 ASSEMBLY DRWING
DI10643	03	RE 1522 DBS PIGN.M13 Z15 39.38 DIMENSIONAL DRAWING
LR-3149	01	RE 1522 DBS P13Z15 39.38 SPARE PARTS LIST
2030031100	09	RE 510 PLANETARY GEAR
40000654	01	SPLINED JOINT
027310104	00	SPACER
025510100	01	BOTTOM
022610209ABT	00	RE 1520 DBS PINION M13 Z15 X0.5
022610209	06	RE 1520 DBS INTEGRAL PINION M13 Z15
022010103	08	RE 1520 GEARBOX BODY
2030032200	08	RE 510 SUN GEAR
2030030600	22	RE 500 RING GEAR
4270176	03	SPACER
02741007	05	SPACER
027310485	03	RE 1520 STEEL INTERMEDIATE FLANGE
02621037	06	RE 1520 PLANETARY GEAR
02611117	05	RE 1520 SUN GEAR
02581021	04	RE 1520 PLANETARY CARRIER PIN
02581014	05	RE 510 PLANETARY CARRIER PIN
02551015	03	BOTTOM
02511108	05	MOTOR FLANGE
02501010	15	RE 500 INPUT SUPPORT
02241005	11	INPUT SHAFT
02231027	14	RE 1520 RING GEAR
02221260	07	RE 1520 MALE PLANETARY CARRIER
02221161	04	RE 510 PLANETARY CARRIER
02221156	06	RE 510 PLANETARY CARRIER (TURNED)
STMC05-18-AB	02	PINION FOR THRUSTER – ABS SPECIFICATION – MQ
ABT91R6HP200391	00	ABS TYPE TEST REPOT DATED 27-MAY-2015 at dinamic oil

Additional Product Details

PDA Certificate No. 22-2218009-1-PDA

Issued on 17th May 22
Expiring on 7th Feb. 27

**PLANETARY REDUCTION GEAR RE 1523 DBS P12Z17 100.3 ME180
GEARBOX CODE: ABT91R6HP301001**

Ratings

Phase	Time percentage	Output torque T ₂	Output speed n ₂
	%	[Nm]	[rpm]
1	99.8	5090	28.6
2	0.2	12724	28.6

Gear ratio 1:100.3

Expected service life: 5x10⁷ cycles

Application factor K_a = 1

Maximum static output torque: 17814 Nm

Drawings List

Drawing No	Revision No	Drawing Title
DI6439	05	RE 1523 DBS P12Z17 100.3 ME180 DIMENSIONAL DRAWING
ST2593	04	RE 1523 DBS P12Z17 100.3 ME180 SECTIONAL DRAWING
6244	00	RE 1523 Spare parts catalogue
022010103	08	RE 1520 GEARBOX BODY
02221019	01	RE110-210 PLANETARY CARRIER R=3.48
02221156	05	RE510 PLANETARY CARRIER (TURNED)
02221260	07	RE1520 MALE PLANETARY CARRIER
02231009	10	RE210/240 RING GEAR
02231027	14	RE1520/2000 RING GEAR
022410210	01	RE110/210 INPUT COUPLING ME 180
022610189	04	INTEGRAL PINION M12Z17
022610189ABT	00	INTEGRAL PINION M12Z17
02551010	03	RE 110-210 END PLATE
025510100	01	RE 1020-1520 END PLATE
02551015	03	RE 310-510 END PLATE
02581014	05	RE510 PLANETARY CARRIER PIN
02581021	04	RE 1520 PLANETARY CARRIER PIN
02581035	03	RE 210 PLANETARY CARRIER PIN
02611019	05	RE 210 SUN GEAR
02611116	05	RE1520 SUN GEAR 1:4.09
02621036	03	RE1520 PLANETARY GEAR R4.09
02731044	10	RE1520/2000 INT. FLANGE
02741007	05	RE310-510 SHIM ADJUSTMENT FIFTH WHEEL
029710423	02	RE110/210 MOTOR CAP
029711455	01	RE310/510 INT. FLANGE
402004000	04	RE110 FIFTH WHEEL CPS
427017600	03	FIFTH WHEEL
2029992300	12	RE110-210 DIRECT INPUT SUPPORT ME160-180
2030010900	05	RE210 PLANETARY GEAR R1:5.7

Additional Product Details

PDA Certificate No. 22-2218009-1-PDA

Issued on 17th May 22
Expiring on 7th Feb. 27

2030022400	16	RE310/510 INT. FLANGE
2030030600	22	RE500 RING GEAR
2030030800	09	RE510 PLANETARY GEAR R4.25
2030031900	06	RE 510 SUN GEAR 2ST R4.25
STMC05-18-AB	02	PINION FOR THRUSTER – ABS SPECIFICATION – MQ

Additional Product Details

PDA Certificate No. 22-2218009-1-PDA

Issued on 17th May 22
Expiring on 7th Feb. 27

**PLANETARY REDUCTION GEAR RE 1523 DBS SEPC.m12 Z17 100.3 ME160
GEARBOX CODE: ABT91R6HP301005**

Ratings

Phase	Time percentage	Output torque T ₂	Output speed n ₂
	%	[Nm]	[rpm]
1	99.8	4980	28.6
2	0.2	12450	28.6

Gear ratio 1:100.3

Expected service life: 5x10⁷ cycles

Application factor K_a = 1

Maximum static output torque: 17430 Nm

Drawings List

Drawing No	Revision No	Drawing Title
DI11292	05	RE 1523 DBS SPEC.m12 z17 100.3 ME160 DIMENSIONAL DRAWING
ST4461	01	RE1523 DBS SEPC.m12z17 ME160 SECTIONAL DRAWING
6245	00	Spare parts catalogue
022010199	04	RE1520 GEARBOX BODY RE1520 DBS
02221019	01	RE110-210 PLANETARY CARRIER R3.48
02221156	05	RE510 PLANETARY CARRIER (TURNED)
02221260	07	RE1520 MALE PLAN. CARRIER
02231009	10	RE210/240 RING GEAR
02231027	14	RE 1520/2000 RING GEAR
022410259	02	RE110/210 INPUT COUPLING ME160
022610189	04	INTEGRAL PIGNON M12 Z17
022610189ABT	00	INTEGRL PIGNON M12 Z17
02551010	03	RE 110-210 END PLATE
025510100	01	RE1020-1520 END PLATE
02551015	03	RE310-510 END PLATE
02581014	05	RE510 PLANETARY CARRIER PIN
02581021	04	RE1520 PLANETRY CARRIER PIN
02581035	03	RE210 PLANETARY CARRIER PIN
02611019	05	RE210 SUN GEAR R5.77
02611116	05	RE1520 SUN GEAR R4.09
02621036	03	RE1520 PLANETARY GEAR R=4.09
02731044	10	RE1520/2000 INT. FLANGE
02741007	05	RE310-510 SHIM ADJUSTMENT FIFTH WHEEL
029710423	02	MOTOR CAP EL. 160-180
029711455	01	RE310/510 INT. FLANGE
402004000	04	RE110 FIFTH WHEEL CPS
427017600	03	FIFTH WHEEL
2029992300	12	RE110-210 DIRECT INPUTSUPPORT ME160-180

Additional Product Details

PDA Certificate No. 22-2218009-1-PDA

Issued on 17th May 22
Expiring on 7th Feb. 27

2030010900	05	RE210 PLANETARY GEAR R5.7
2030022400	16	RE310/510 INT. FLANGE
2030030600	22	RE500 RING GEAR
2030030800	09	RE510 PLANETARY GEAR R=4.25
2030031900	06	SUN GEAR 2ST R=4.25
STMC05-18-AB	02	PINION FOR THRUSTER – ABS SPECIFICATION – MQ