



CERTIFICATE NUMBER 22-2266968-PDA  
EFFECTIVE DATE 22-Jun-2022  
EXPIRATION DATE 21-Jun-2027  
ABS TECHNICAL OFFICE Singapore Engineering Services

## CERTIFICATE OF Product Design Assessment

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

**THOMPSON COUPLINGS LIMITED**

located at

**UNIT 3/14 RODWELL ST, ARCHERFILED, AUSTRALIA, QLD-4108**

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** Couplings

**Model** TCAE S-Series, TCAE R-Series & TCAE V-Series

This Product Design Assessment (PDA) Certificate remains valid until 21-Jun-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

Vibin Chandrabose, Senior 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

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**Tier: 5 - Unit Certification Required**

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**Product:** Couplings  
**Model:** TCAE S-Series, TCAE R-Series & TCAE V-Series  
**Endorsements:**

**Intended Service:**  
Marine & Offshore Applications

**Description:**  
TCAE S-Series: S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12  
TCAE R-Series: R-1, R-2, R-3, R-4, R-5, R-6, R-7, R-8  
TCAE V-Series: V-3, V-4, V-5, V-6, V-7, V-8, V-9, V-10, V-11, V-12, V-13, V-14

**Rating:**  
TCAE-S-1:  
Rated Power - 14 kW. Rated RPM - 1000  
TCAE-S-2:  
Rated Power - 28 kW. Rated RPM - 1000  
TCAE-S-3:  
Rated Power - 48 kW. Rated RPM - 1000  
TCAE-S-4:  
Rated Power - 74 kW. Rated RPM - 1000  
TCAE-S-5:  
Rated Power - 120 kW. Rated RPM - 1000  
TCAE-S-6:  
Rated Power - 124 kW. Rated RPM - 1000  
TCAE-S-7:  
Rated Power - 195 kW. Rated RPM - 1000  
TCAE-S-8:  
Rated Power - 253 kW. Rated RPM - 1000  
TCAE-S-9:  
Rated Power - 400 kW. Rated RPM - 1000  
TCAE-S-10:  
Rated Power - 594 kW. Rated RPM - 1000  
TCAE-S-11:  
Rated Power - 845 kW. Rated RPM - 1000  
TCAE-S-12:  
Rated Power - 1162 kW. Rated RPM - 1000

TCAE-R-1:  
Rated Power - 12 kW. Rated RPM - 1000  
TCAE-R-2:  
Rated Power - 29 kW. Rated RPM - 1000  
TCAE-R-3:  
Rated Power - 50 kW. Rated RPM - 1000  
TCAE-R-4:  
Rated Power - 79 kW. Rated RPM - 1000  
TCAE-R-5:  
Rated Power - 118 kW. Rated RPM - 1000  
TCAE-R-6:  
Rated Power - 169 kW. Rated RPM - 1000  
TCAE-R-7:  
Rated Power - 230 kW. Rated RPM - 1000  
TCAE-R-8:

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Rated Power - 305 kW. Rated RPM - 1000

TCAE-V-3:

Rated Power - 500 kW. Rated RPM - 3000

TCAE-V-4:

Rated Power - 750 kW. Rated RPM - 3000

TCAE-V-5:

Rated Power - 900 kW. Rated RPM - 3000

TCAE-V-6:

Rated Power - 1200 kW. Rated RPM - 2800

TCAE-V-7:

Rated Power - 1500 kW. Rated RPM - 2500

TCAE-V-8:

Rated Power - 2000 kW. Rated RPM - 2200

TCAE-V-9:

Rated Power - 2500 kW. Rated RPM - 2000

TCAE-V-10:

Rated Power - 3000 kW. Rated RPM - 1500

TCAE-V-11:

Rated Power - 3500 kW. Rated RPM - 1400

TCAE-V-12:

Rated Power - 4000 kW. Rated RPM - 1200

TCAE-V-13:

Rated Power - 4000 kW. Rated RPM - 1000

TCAE-V-14:

Rated Power - 5000 kW. Rated RPM - 800

### **Service Restriction:**

1. Unit Certification is required for this product as per 4-1-1/Table 2 of the 2022 Marine Vessel Rules.
2. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
3. Coupling is to be readily accessible. When intended to be installed in inaccessible location, calculations demonstrating a safety factor of 2.8 against slip under the worst operating conditions, including mean transmitted torque plus torque due to torsional vibration is to be submitted for our review. See 4-3-2/5.19.2 and 4-3-2/5.19.4 of ABS Marine Vessel Rules.
4. Ice-Class aspects remain to be specially considered on basis of a case-by-case approval.
5. The key is to be of equal or higher strength than the shaft material for TCAE S-Series couplings.

### **Comments:**

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Order related details of the coupling hubs including shrink-fit/key parameters (if any) and bolted input/output connections remain to be submitted for case-by-case approval as well as any deviation from series production.
3. The couplings are to be mounted in accordance with manufacturer's installation instructions considering the maximum allowable vibratory torque and maximum allowable axial, radial and angular misalignments.
4. Propulsion couplings transmitting 375 kW (500 hp) or more are to be material tested in the presence of ABS Surveyor as per 4-3-5/3.3.2 of Marine Vessel Rules.

### **Notes/Drawing/Documentation:**

- TCAE-V-3, Complete Drawings TCAE-V-3, Revision: A, Pages: 5  
TCAE-V-4, Complete Drawings TCAE-V-4, Revision: A, Pages: 5  
TCAE-V-5, Complete Drawings TCAE-V-5, Revision: A, Pages: 5  
TCAE-V-6, Complete Drawings TCAE-V-6, Revision: A, Pages: 5  
TCAE-V-7, Complete Drawings TCAE-V-7, Revision: A, Pages: 5  
TCAE-V-8, Complete Drawings TCAE-V-8, Revision: A, Pages: 5

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TCAE-V-9, Complete Drawings TCAE-V-9, Revision: A, Pages: 4  
TCAE-V-10, Complete Drawings TCAE-V-10, Revision: A, Pages: 4  
TCAE-V-11, Complete Drawings TCAE-V-11, Revision: A, Pages: 4  
TCAE-V-12, Complete Drawings TCAE-V-12, Revision: A, Pages: 4  
TCAE-V-13, Complete Drawings TCAE-V-13, Revision: A, Pages: 4  
TCAE-V-14, Complete Drawings TCAE-V-14, Revision: A, Pages: 4  
TCAE-V-3 to 14, TCAE-V Series 3 to 14 Outer Rings, Revision: A, Pages: 12  
TCAE-V-5 to 14 Technical Specifications and Details, Revision: 3, Pages: 10  
TCAE-R-1 Combined Drawing, TCAE-R-1 Combined Drawing, Revision: 0, Pages: 11  
TCAE-R-2 Combined Drawing, TCAE-R-2 Combined Drawing, Revision: 0, Pages: 11  
TCAE-R-3 Combined Drawing, TCAE-R-3 Combined Drawing, Revision: 0, Pages: 12  
TCAE-R-4 Combined Drawing, TCAE-R-4 Combined Drawing, Revision: 0, Pages: 11  
TCAE-R-5 Combined Drawing, TCAE-R-5 Combined Drawing, Revision: 1, Pages: 11  
TCAE-R-6 Combined Drawing, TCAE-R-6 Combined Drawing, Revision: 1, Pages: 11  
TCAE-R-7 Combined Drawing, TCAE-R-7 Combined Drawing, Revision: 0, Pages: 11  
TCAE-R-8 Combined Drawing, TCAE-R-8 Combined Drawing, Revision: 0, Pages: 11  
TCAE-S-1 Combined Drawing, TCAE-S-1 Combined Drawing, Revision: 2, Pages: 11  
TCAE-S-2 Combined Drawing, TCAE-S-2 Combined Drawing, Revision: 2, Pages: 10  
TCAE-S-3 Combined Drawing, TCAE-S-3 Combined Drawing, Revision: 1, Pages: 9  
TCAE-S-4 Combined Drawing, TCAE-S-4 Combined Drawing, Revision: 1, Pages: 10  
TCAE-S-5 Combined Drawing, TCAE-S-5 Combined Drawing, Revision: 2, Pages: 10  
TCAE-S-6 Combined Drawing, TCAE-S-6 Combined Drawing, Revision: 2, Pages: 11  
TCAE-S-7 Combined Drawing, TCAE-S-7 Combined Drawing, Revision: 2, Pages: 10  
TCAE-S-8 Combined Drawing, TCAE-S-8 Combined Drawing, Revision: 2, Pages: 11  
TCAE-S-9 Combined Drawing, TCAE-S-9 Combined Drawing, Revision: 2, Pages: 11  
TCAE-S-10 Combined Drawing, TCAE-S-10 Combined Drawing, Revision: 2, Pages: 11  
TCAE-S-11 Combined Drawing, TCAE-S-11 Combined Drawing, Revision: 2, Pages: 11  
TCAE-S-12 Combined Drawing, TCAE-S-12 Combined Drawing, Revision: 2, Pages: 11  
Revised Dynamic Torque Rating and 1000 RPM v3, Revision: 3, Pages: 1  
Ratings for V series models v2, Revision: 2, Pages: 2  
Series Outer Race, S Series outer Race Details, Revision: 1, Pages: 1  
Viton Boot Guide, Rubber Boot Selection Guide, Revision: 0, Pages: 13  
Nitrile Boot Guide, Nitrile Selection Guide, Revision: 0, Pages: 6  
IATF 1694, Certification, Revision: 1, Pages: 1  
NTN CVJ - Industrial 2018, NTN Catalogue, Revision: 1, Pages: 63  
Sissy Xiangyang Yuqing Catalogue Chinese, Revision: 1, Pages: 64  
Xiangyang Yuqing Coupling Supplier Data Sheet, Revision: -, Pages: 2

### Terms of Validity:

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**STANDARDS**

**ABS Rules:**

2022 Rules for Conditions of Classification, Part 1, 2022 Marine Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2022 Rules for Building and Classing Marine Vessels Rules: 4-3-2/5.1, 4-3-2/5.3, 4-3-2/5.19.2, 4-3-2/5.19.3, 4-3-2/5.19.4

2022 Rules for Conditions of Classification - Offshore Units and Structures: 1-1-4/9.7, 1-1-A2 and A3, which covers the following:

2022 Rules for Building and Classing Mobile Offshore Units: 6-1-4/1, 6-1-4/3, 6-1-4/Table 1

2022 Rules for Conditions of Classification – Light and High Speed Craft 1-1-4/11.9, 1-1-A2 and A3

2022 Rules for Building and Classing High Speed Craft: 4-3-1/3, 4-3-1/7, 4-3-1/19.3, 4-3-1/19.5, 4-3-1/19.9

**National:**

NA

**International:**

NA

**Government:**

NA

**EUMED:**

NA

**OTHERS:**

NA

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