



PRODUCT STANDARD
TURBINES AND COMPRESSORS
HYDERABAD

TC-6-2629

REV No.: **00**

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TECHNICAL DETAILS OF DRY FLEXIBLE DIAPHRAGM COUPLINGS
PROJECT: M/s RCF THAL AMMONIA GAS COMPRESSOR

1.0 SCOPE

The specification covers the requirement of DRY FLEXIBLE DIAPHRAGM COUPLINGS

2.0 DETAILS OF MACHINES

FIGURE-I: GENERAL ARRANGEMENT OF MACHINES

(Coupling is referred as C1 & C2 in the arrangement given below)

"FIGURE 1"
CONFIGURATION

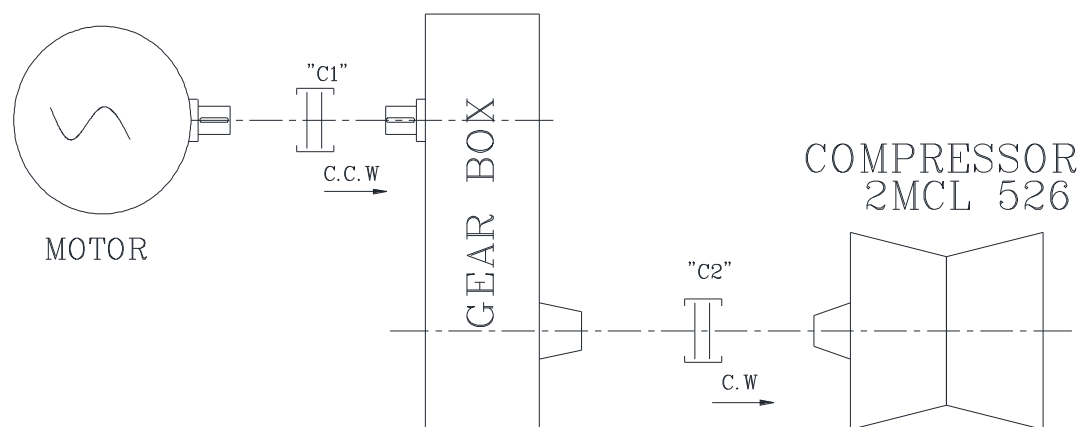
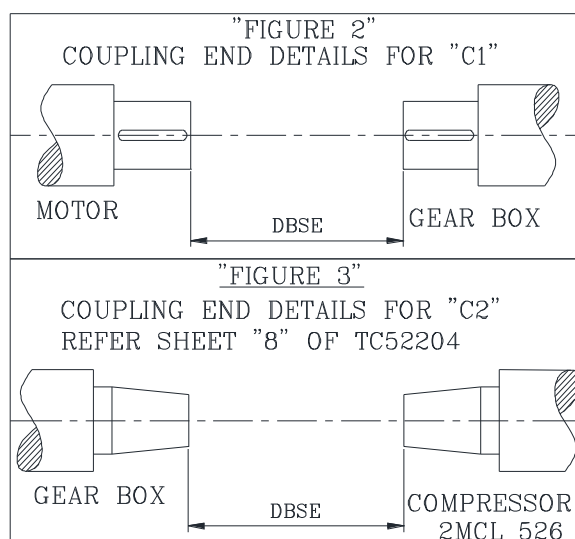


FIGURE-II: END DETAILS (See TC 52204 for mounting details for C2 Coupling)



Rev. No.	Revisions	Prepared	Approved	Date
00	Refer to record of revisions	KVS	YVRL	31.05.2018

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3.0 SITE AMBIENT CONDITIONS													
<table border="1"> <tr> <td>TEMPERATURE</td> <td>MAX</td> <td>MIN</td> </tr> <tr> <td>AT SITE</td> <td>45 °C</td> <td>9 °C</td> </tr> <tr> <td>RELATIVE HUMIDITY</td> <td colspan="2">100% @ 45 °C</td> </tr> </table>					TEMPERATURE	MAX	MIN	AT SITE	45 °C	9 °C	RELATIVE HUMIDITY	100% @ 45 °C	
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AT SITE	45 °C	9 °C											
RELATIVE HUMIDITY	100% @ 45 °C												
4.0 DESIGN INPUTS													
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	1.	Description	:	C1	C2								
	2.	Applicable standards	:	API671 4 th Edition & TC52204									
	3.	Configuration	:	Between Motor & GB	Between GB & Comp 2MCL526								
	4.	Minimum speed	:	1188 RPM	7796 RPM								
	5.	Rated speed	:	1485 RPM	9745 RPM								
	6.	Max cont. speed	:	1559 RPM	10232 RPM								
	7.	Torque at rated condition	:	2570 kgf-m @1485rpm	392 kgf-m @9745rpm								
	8.	a) Rated torque (Based on Driver Rating)	:	3146 kgf-m @1485rpm	480 kgf-m @9745rpm								
		b) Min. Coupling rated torque (With S.F 1.75 on 8-a))	:	5506 kgf-m @1485rpm	840 kgf-m @9745rpm								
	9.	DBSE* (mm)	:	460	460								
	10.	Shaft Dia (mm)	:	On Motor ø 220	90								
			:	On Gear Box ø 220									
	11.	Shaft taper	:	NA	Taper, 1 in 20 diametrical (both sides)								
		Shaft Cylindrical	:	Refer Clause No.6	-								
		No. of Keys	:	Single Key – Motor Side Double Key – Gear Box Side	-								
	12.	Shaft taper Interference	:	NA	2.5% on Diameter (both sides)								
		Shaft Cylindrical Interference	:	H6 / m6 fit	-								
	13.	Max. Shortening and lengthening of shaft ends	:	Motor – Nil Gear Box – Preliminary values are given. Final values will be given after order receipt Refer sketch	Refer sketch in page 4 of 6								
	COMP. FILE NAME												
Ref. Doc.													

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14.	Axial force (recommended)	:	536 kg	200 kg
15.	Inertia (WK2) (kgm2)	:	Vendor to indicate	Vendor to indicate
16.	Limited end float	:	1mm on each side	NA
17.	Wt of coupling shall be limited to	:	Vendor to indicate	31.8 kg
18.	Solo cum Adaptor plate with attachment bolts (For high speed balancing of Steam turbine)	:	NA	NA
19.	Solo cum Adaptor plate with attachment bolts (For high speed balancing of Compressor)	:	NA	1
20.	Moment simulator cum Adaptor plate.	:	-NA-	-NA-
21.	Set of Plug & Ring Gauges	:	-NA-	-NA-
22.	Type	:	Flexible Disc Coupling with Shear Pin Design	Flexible Disc Coupling
23.	Shear Pin Breaking Torque (kNm)	:	Shall be intimated after order placement (during detail engineering)	NA

5.0 Material Codes

Var No	Description	Material Code
01	Dry Flex. Cplg (C1) Between Motor & Gear Box	TC9762629019
02	Dry Flex. Cplg (C2) Between Gear Box & Compressor 2MCL526	TC9762629027

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RESTRICTED USE





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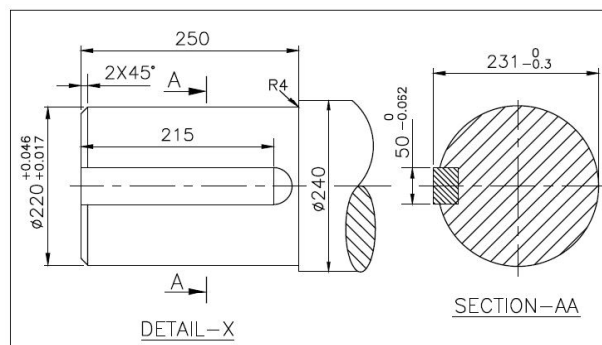
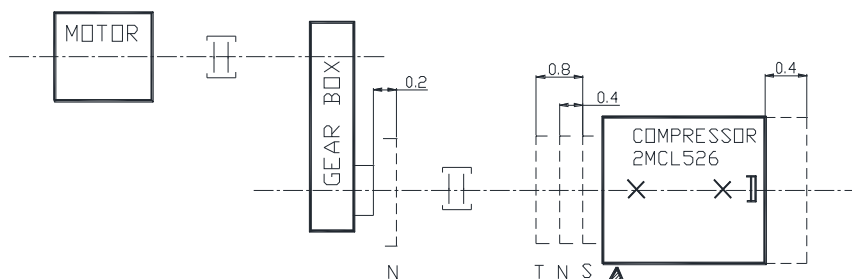
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6.0 Notes:

- 6.1 Coupling shall be flexible diaphragm type and diaphragm material shall be SS.
- 6.2 Coupling shall be suitable for Ammonia service application.
- 6.3 Checklist as per **Annexure-I** shall be submitted duly filled in.
- 6.4 The Torsional analysis of whole compressor train shall be carried out by BHEL after receiving the technical data from coupling vendor. Vendor shall be in a position to modify, if required, the same as per requirement.
- 6.5 The review of quality plan, inspection & testing requirements shall be as per the equipment categorisation plan for the job. Vendor to note the same.

7.0 Shaft end Detail:

Vendor shall note that following figure shows the shaft end detail for coupling between Motor and Gear Box. Gear Box side coupling hub shall have two keys

**8.0 Lengthening and shortening of shaft ends**

- × : JOURNAL BEARING POSITION S : POSITION IN COLD STAND STILL CONDITION
- ┌ : THRUST BEARING POSITION T : POSITION IN COLD TRANSIENT CONDITION
- ▲ : FIXED POINT OF CASING N : POSITION IN COLD NORMAL CONDITION

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(Signature of the vendor)



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RECORD OF REVISIONS

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