

RECD Type Approval Certificate No.	ARAI/MoEF/RECDDTA/PGIPL-R3/2023-04-E2	Date: 5 th January 2024
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EXTENSION-2
OF
TYPE APPROVAL

Cert	Rep	Spec + Drg	Total
13	7	166	186 Pgs

FOR

**COMPLIANCE TO PARTICULATE MATTER EMISSION NORMS
FOR RETROFIT EMISSION CONTROL DEVICE ON IN-USE
DIESEL GENSET ENGINE (up to 800 kW)**

1. In order to establish compliance to the provisions of Particulate Matter emission, applicable as on date, documental verification/ necessary testing was carried out on the following Retrofit Emission Control Device model(s), submitted by the manufacturer / supplier referred below:

Retrofit Emission Control Device Manufacturer (RECD Manufacturer, Assembler Type Approval Certificate Owner)		Retrofit Emission Control Device Manufacturing Plant			Test Report Reference
M/s. Pi Green Innovations Pvt. Ltd. Pune, Maharashtra.		M/s. Pi Green Innovations Pvt. Ltd. Gat. No. 95/5, 95/6, Muray Vasti, Kurali, Chakan, Pune- 410501 Maharashtra			ARAI/MoEF/RECDDTA/PGIPL-R3/2023-04-E2 dt. 26.12.2023
Retrofit Emission Control Device Model		RECD Class	RECD Family	System and Procedure	
Parent	CCM-F-400	Class I	R3	Pollution Control Series PCLS/12/2021-22	
Variant	CCM-FP-700				
Engine Manufacturer		Tested Engine Model/s	Engine Family	Gross Engine Power	Engine Type approval Certificate No.
Phase I	M/s. KIRLOSKAR OIL ENGINES LTD., PUNE	6KL12TASR1	F10	284 kW @1500 rpm	ARAI/MoEF/DGTA/IMP/KOEL-F10/2004-026
Total Exhaust Back pressure observed along with RECD					10.10 kPa
Exhaust Back pressure across the RECD					0.16 kPa
RECD suitable for Phase I/Phase II Certified Diesel Generator engine / engine families					See Annexure I & Annexure II
Retrofit Emission Control Device Model CCM-F-400 suitable for Genset engines power rating (Annexure-I)				Phase I	271 - 379 kW @ 1500 rpm
				Phase II	267 - 369 kW @ 1500 rpm
Retrofit Emission Control Device Model CCM-FP-700 suitable for Genset engines power rating (Annexure-II)				Phase I	475 - 797 kW @ 1500 rpm
				Phase II	493 - 799 kW @ 1500 rpm
Earlier RECD Type Approval Certificate No		ARAI/MoEF/RECDDTA/PGIPL-R3/2023-04 dt. 31.07.2023 ARAI/MoEF/RECDDTA/PGIPL-R3/2023-04-E1 dt. 29.09.2023			

2. It is certified that the above-mentioned Retrofit Emission Control Device family/models comply with the emission limits applicable for In-Use Genset Diesel Engines (upto 800 kW), as prescribed under NGT Order O.A. No. 681/2018 dt. 06.08.2019.
3. The above R3 RECD Family / model is suitable for retro fitment of In-use DG Set manufactured for Phase I - On or after 1st July 2004 till 1st July 2014 and Phase II - On or after 1st July 2014.
4. Validity of the Certificate:

This RECD Type Approval Certificate is Valid till	1. The validity of existing emission requirements as per NGT Order No. O.A. 681/2018 dated 06.08.2019 or until further amendment, whichever is earlier.
	2. No change in technical specification of the Retrofit Emission Control Device specified
	3. Explicitly the Type Approval Certificate withdrawn by the engine supplier
	4. Till CoP is not missed

5. Conformity of Production (CoP) requirements:

COP test shall be carried out every year (between the period 1st July and 30th June) as per "System and Procedure for Emission Compliance Testing of Retro-fit Emission Control Devices (RECD) For IN-USE Diesel Power Generating Set Engines Up to Gross Mechanical Power 800 kW" or further amendment.

AUTHORISED SIGNATORY



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SENIOR DEPUTY DIRECTOR & HEAD
HOMOLOGATION MANAGEMENT REGULATIONS,
VEHICLE CUM SAFETY EVALUATION & AUTO PLI CELL,
ARAI, PUNE.
Place of Issue: Pune



Dr. REJI MATHAI
DIRECTOR,
ARAI, PUNE.

ANNEXURE-I

To

RECD Type Approval Certificate No.	ARAI/MoEF/RECDDTA/PGIPL-R3/2023-04-E2	Date: 5 th January 2024
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RECD Family	R3	RECD Models	Parent Variants	CCM-F-400 CCM-FP-700
RECD MODEL CCM-F-400 TESTED WITH AND FOR GSR 371(E)/CPCB I CERTIFIED ENGINES WITH APPLICABLE RATED POWER BETWEEN 271 kW @ 1500 RPM TO 379 kW @1500 RPM				
Manufacturer	Family	Engine Model	Declared Power	Certificate Reference
ALL	F28	ALV8TA G1	291.3 kW	ARAI/MoEF/DGTA/ALL-F28/2013-060 Dated: 23rd October 2013
ALL	F29	ALV12TA G1	356 kW	ARAI/MoEF/DGTA/ALL-F29/2013-061 Dated: 23rd October 2013
BEML	F5	BSA6D140G5 BSA6D140G3 BSA6D140G4 BSA6D140G2	327 kW 309 kW 314 kW 275 kW	ARAI/MOEF/DGTA/BEML-F5/2005-19 Dated: 1st June 2005
CIPL	F3	3406 DITA-GS-1 3406 DITA-GP-2 3406 DITA-GP-1	322 kW 319 kW 292 kW	ARAI/MOEF/DGTA/CIPL-F3/2008-019 Dated: 21st May 2008
CIUSA	F1	C15-GP-3 C15-GP-4 C15-GS-5 C15-GP-5	369 kW 342 kW 375 kW 331 kW	ARAI/MOEF/DGTA/IMP/CIUSA/F1/2010-011 Dated: 16th February 2010
CIUSA	F11	C13-2GP-1	367 kW	ARAI/MoEF/DGTA-II/IMP/CIUSA-F11/2013-068 Dated: 01 November 2013
CPIPL	F3	3406 DITA GS-2 3406 DITA GS-1 3406 DITA GP-2 3406 DITA GP-1	351 kW 322 kW 319 kW 292 kW	ARAI/MOEF/DGTA/CPIPL-F3/2007-004 Dated: 2nd December 2007
Cummins India Ltd.	F8	NTA-14-G3 NTA-14-RG3 NTA-14-G1 NTA-14-RG1	336 kW 336 kW 283 kW 283 kW	ARAI/MOEF/DGTA/CIL-F8/2007-026 Dated: 07th September 2007
Cummins India Ltd.	F13	KTA19-F5-I	366 kW	ARAI/MOEF/DGTA/CIL-F13/2004-07 Dated: 26th February 2004
Cummins India Ltd.	F16	KTA19-G5-I KTA19-G5-E	366 kW 366 kW	ARAI/MOEF/DGTA/CIL-F16/2007-053 Dated: 31st August 2007
Cummins India Ltd.	F20	NTA-855-G2-I	283 kW	ARAI/MOEF/DGTA/CIL-F20/2007-029 Dated: 7th September 2007
Cummins India Ltd.	F20	NTA-855-G2-I	283.4 kW	ARAI/MOEF/DGTA/CIL-F20/2004-058 Dated: 27 November 2004
Cummins India Ltd.	F21	NTA-855-G1-I	283.4 kW	ARAI/MOEF/DGTA/CIL-F21/2004-059 Dated: 27th November 2004
Cummins India Ltd.	F22	NTA-855-G-I	283.4 kW	ARAI/MOEF/DGTA/CIL-F22/2004-060 Dated: 27th November 2004
Cummins India Ltd.	F24	NTA-855-G4-I	325 kW	ARAI/MOEF/DGTA/CIL-F24/2006-004 Dated: 8th May 2004



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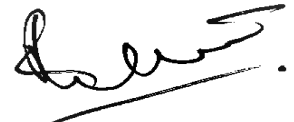
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RECD Family	R3	RECD Models	Parent Variants	CCM-F-400 CCM-FP-700
RECD MODEL CCM-F-400 TESTED WITH AND FOR GSR 371(E)/CPCB I CERTIFIED ENGINES WITH APPLICABLE RATED POWER BETWEEN 271 kW @ 1500 RPM TO 379 kW @1500 RPM				
Manufacturer	Family	Engine Model	Declared Power	Certificate Reference
Cummins India Ltd.	F25	NTA-14-G3-I NTA-14-RG2-I	336 kW 336 kW	ARAI/MOEF/DGTA/CIL-F25/2006-005 Dated: 08th May 2006
Cummins India Ltd.	F31	QSN14-G1 QSN14-G2 QSN14-G4 QSN14-G5	334 kW 363 kW 319 kW 346 kW	ARAI/MoEF/DGTA-II/CILP-F31/2012-024 Dated: 3rd October 2012
Cummins India Ltd.	F32	QSL9-G7 QSL9-G7.1	300 kW 271 kW	ARAI/MoEF/DGTA-II/CILP-F32/2012-029 Dated: 27th November 2012
DEU	F10	BF6M1015CP	365 kW	ARAI/MoEF/DGTA/IMP/DEU-F10/2011-034, Dated: 27th July 2011
DEU	F10	BF6M1015CP BF6M1015C BF6M1015C	365 kW 314 kW 345 kW	ARAI/MoEF/DGTA-II/IMP/DEU-F10/2013-39 Dated: 9th May 2013
DEU	F11	BF6M1015C	345 kW	ARAI/MoEF/DGTA/IMP/DEU-F10/2011-035 Dated: 27th July 2011
DICL	F1	P126T1 IN02	272 KW	ARAI/MOEF/DGTA/IMP/DICL-F1/2010-080 Dated: 3rd August 2010
DICL	F2	P158LE IN01	363 kW	ARAI/MOEF/DGTA/IMP/DICL-F2/2010-079 Dated: 3rd August 2010
Greaves Cotton Ltd.	F12	TBD2V12MKI TBD2V12MKI TBD2V12MKIIP	275.81 kW 291.258 kW 291.258 kW	ARAI/MOEF/DGTA/GCLP-F12/2005-24 Dated: 5th September 2005
Greaves Cotton Ltd.	F13	TBD3V12 TBD3V12 MK1	333.18 kW 356.7 kW	ARAI/MOEF/DGTA/GCLP-F13/2003-40 Dated: 31th December 2003
Greaves Cotton Ltd.	F18	TBD3V12 MK-I	356.7 kW	ARAI/MOEF/DGTA/GCLP-F18/2005-05 Dated: 31th March 2005
Greaves Cotton Ltd.	F19	TBD3V12P(P) TBD3V12(V)	379 kW 333.18 kW	ARAI/MOEF/DGTA/GCLP-F19/2005-10 Dated: 17th June 2005
Greaves Cotton Ltd.	F21	TBD2V12P	320.4 kW	ARAI/MOEF/DGTA/GCLP-F21/2005-34 Dated: 26th November 2005
Greaves Cotton Ltd.	F22	TBD4V8	292.73 KW	ARAI/MOEF/DGTA/GCLP-F22/2007-24 Dated: 2nd July 2007
Greaves Cotton Ltd.	F30	TBD3V8MK-II	291.3 KW	ARAI/MOEF/DGTA/GCLP-F30/2010-078 Dated: 9th August 2010
HPL	F3	3406DITA-GS-2 3406DITA-GP-2 3406DITA-GS-1 3406DITA-GP-1	351 kW 319 kW 322 kW 292 KW	ARAI/MOEF/DGTA/HPL-F3/2004-031 Dated: 28th July 2004



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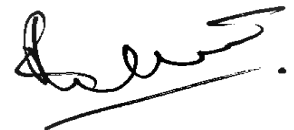
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Manufacturer	Family	Engine Model	Declared Power	Certificate Reference
HPPL	F3	3406 DITA-GS-2 3406 DITA GS-1 3406 DITA GP-2 3406 DITA GP-1	351 kW 322 kW 319 kW 292 kW	ARAI/MOEF/DGTA/ HPL-F3/2006-017 Dated: 07th June 2006
Kirloskar Electric Co. Ltd.	F23	12VKK135IAZLD	339 kW	ARAI/MOEF/DGTA/KECL-F23/2010-007 Dated: 16th February 2010
Kirloskar Electric Co. Ltd.	F22	12VKK135AZD	300 kW	ARAI/MOEF/DGTA/KECL/F22/2010-013 Dated: 16th February 2010
Kirloskar Oil Engines Ltd.	F9	8K15TA	363 kW	ARAI/MOEF/DGTA/KOEL-F9/2004-027 Dated: 2nd August 2004
Kirloskar Oil Engines Ltd.	F10	DV6ITA SRI DV6ITASRII	284 kW 272 kW	ARAI/MOEF/DGTA/IMP/KOEL-F10/2004-026-E2 Dated: 18th June 2012
Kirloskar Oil Engines Ltd.	F11	6SL8800TA	310 kW	ARAI/MOEF/DGTA/KOEL-F11/2004-052 Dated: 29th October 2004
Kirloskar Oil Engines Ltd.	F22	12VKK135AZD	300 kW	ARAI/MOEF/DGTA/KECL/F22/2010-013 Dated: 16th February 2010
Kirloskar Oil Engines Ltd.	F23	12VKK135IAZLD	339 kW	ARAI/MOEF/DGTA/KECL-F23/2010-007 Dated: 16th February 2010
Kirloskar Oil Engines Ltd.	F23	DV8	360 kW	ARAI/MOEF/DGTA/KOEL-F23/2007-047 Dated: 24th August 2007
Kirloskar Oil Engines Ltd.	F23	DV8 DV8SR1 DV10	360 kW 294 kW 346 kW	ARAI/MoEF/DGTA/KOELK-F23/2010-101-E1 Dated: 19th October 2011
M&M	F25	64205GC	280 kW	ARAI/MOEF/DGTA/IMP/M&M-F25/2009-019 Dated: 27th May 2009
M&M	F31	12V5105GC	339 kW	ARAI/MOEF/DGTA/IMP/M&M-F31/2010-074 Dated: 5th July 2010
MTU	F3	8V1600 G10F 8V1600 G20F 8V1600 G70F 8V1600 G80F	325 kW 358 kW 358 kW 301 kW	ARAI/MoEF/IMP/DGTA/MTU-F3/2010-098 Dated: 10th January 2011
MTU	F3	8V1600G10F 8V1600G20F 8V1600G70F	325 kW 358 kW 358 kW	ARAI/MoEF/IMP/DGTA/MTU-F3/2010-098-E2 Dated: 31st May 2012



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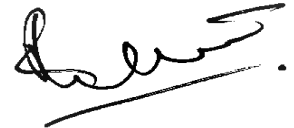
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RECD Family	R3	RECD Models	Parent Variants	CCM-F-400 CCM-FP-700
RECD MODEL CCM-F-400 TESTED WITH AND FOR GSR 371(E)/CPCB I CERTIFIED ENGINES WITH APPLICABLE RATED POWER BETWEEN 271 kW @ 1500 RPM TO 379 kW @1500 RPM				
Manufacturer	Family	Engine Model	Declared Power	Certificate Reference
MTU	F4	6R1600 G80F 6R1600 G20F 6R1600 G70F	301 kW 274 kW 274 kW	ARAI/MoEF/IMP/DGTA/MTU-F4/2010-099 Dated: 10th January 2011
MTU	F5	6R1600G80F 6R1600G20F 6R1600G70F	301 kW 274 kW 274 kW	ARAI/MoEF/IDGTA-II/IMP/MTU-F5/2013-34 Dated: 30th April 2013
MTU	F6	8V1600G10F 8V1600G20F 8V1600G70F	325 kW 358 kW 358 kW	ARAI/MoEF/DGTA-II/IMP/MTU-F6/2013-35 Dated: 30th April 2013
SDEC	F4	12V135AZLD	339 kW	ARAI/MOEF/IMP/DGTA/SDEC/F4/2010-004 Dated: 16th February 2010
SDEC	F6	12V135AZD	300 kW	ARAI/MOEF/IMP/DGTA/SDEC/F6/2010-006 Dated: 16th February 2010
Volvo	F2	TAD1242GE(P) TAD1241GE	351.9 kW 323 kW	ARAI/MOEF/DGTA/VOLVO-F2/2005-04 Dated: 03rd March 2005
Volvo	F3	TAB941GE	280 kW	ARAI/MOEF/DGTA/VOLVO-F3/2005-17 Dated: 03rd March 2005
Volvo	F7	TAD1344GE	354 kW	ARAI/MOEF/DGTA/IMP/VOLVO-F7/2010- 073 Dated: 28th June 2010
Volvo	F8	TAD 1343 GE TAD 1342 GE TAD1341GE	325 kW 303 kW 271 kW	ARAI/MOEF/DGTA/IMP/VOLVO-F8/2010- 083 Dated: 19th August 2010
Volvo	F13	TAD1355GE TAD1352GE TAD1354GE TAD1351GE	369 kW 325 kW 339 kW 286 kW	ARAI/MOEF/DGTA-II/IMP/VOLVO-F13/2013-067 Dated: 13th December 2013



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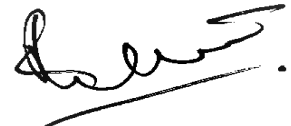
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RECD Family	R3	RECD Models	Parent Variants	CCM-F-400 CCM-FP-700
RECD MODEL CCM-F-400 TETSED WITH AND FOR GSR 771(E)/CPCB II CERTIFIED ENGINES WITH APPLICABLE RATED POWER BETWEEN 267 kW @ 1500 to 369 kW @1500 RPM				
Manufacturer	Family	Engine Model	Declared Power	Certificate Reference
Baudouin (Weifang) Power Co. Ltd	6M21G	6M21G440/5e3	365 kW	ICAT/MoEFCC/DGTA/ IMP/BWPCL - 6M21G/P -1726 Dated: 30th September 2020
Baudouin (Weifang) Power Co. Ltd.	6M21G	6M21G500/5e3	290 kW	ICAT/MoEFCC/DGTA/IMP/BWPCL- 6M21G/P-1726 Dated: 30th November 2020
Baudouin (Weifang) Power Co. Ltd	6M21G5	6M21G2D2/5	365 kW	C O Q G 0652 Dated: 02nd August 2021
Baudouin (Weifang) Power Co. Ltd.	F11	6M19G320/5E3	290 kW	ICAT/MoEFCC/DGTA/IMP/BWPCL- F11/N- 2138 Dated: 16th November 2018
Baudouin (Weifang) Power Co. Ltd.	6M16G	6M16G4D2/5	290 kW	ICAT/MoEFCC/DGTA/IMP/BWPCL- 6M16G/P-0838 Dated: 06th July 2020
Caterpillar India Pvt. Ltd.	F11	CAT-C13-2GP-1	367 kW	ARAI/MoEF/DGTA/CIPL-F11/2019- 06-E1 Dated: 28th June 2019
Cummins India Ltd.	F31	QSN14-G1 QSN14-G2 QSN14-G4 QSN14-G5	334 kW 363 kW 319 kW 346 kW	ARAI/MoEF/DGTA/CILP-F31/2014- 04 Dated: 25th March 2014
Cummins India Ltd.	F32	QSL9-G7 QSL9-G7.1	300 kW 271 kW	ARAI/MoEF/DGTA-II/CILP-F32/2012-029 Dated: 27th November 2012
Cummins India Ltd.	F32	QSL9-G7 QSL9-G7.1	300 kW 271 kW	ARAI/MOEF/DGTA/CILP-F32/2017-26-E3 Dated: 4th January 2019
Cummins India Ltd.	F50	QSL9 G15	298 kW	ARAI/MoEF/DGTA/CILP-F50/2017-27-E3 Dated: 4th January 2019
Greaves Cotton Ltd.	F321	D3V8TAG21	284 kW	ARAI/MoEF/DGTA/GCLPF321/2016-13-E1 Dated: 18th August 2021
Greaves Cotton Ltd.	F500	12V14TAG22 12V14TAG21	356 kW 284 kW	ARAI/MoEF/DGTA/GCLP-F500/2014-01-E4 Dated: 18th August 2021
Kirloskar Oil Engines Ltd.	F115	DV8TA G1 DV8TA G2 DV8TA G3	294.2 kW 345.6 kW 360.3 kW	ARAI/MoEF/DGTA/KOEL - F115/2014 -01 - E1 Dated: 11th September 2019
Mahindra Heavy Engines Pvt Ltd.	F23	mPower 63905G mPower 63655G	287 kW 269 kW	ARAI/MoEF/DGTA/MHELF23/2017-06 Dated: 27th June 2017



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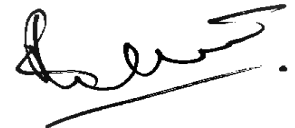
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RECD MODEL CCM-F-400 TETSED WITH AND FOR GSR 771(E)/CPCB II CERTIFIED ENGINES WITH APPLICABLE RATED POWER BETWEEN 267 kW @ 1500 to 369 kW @1500 RPM				
Manufacturer	Family	Engine Model	Declared Power	Certificate Reference
Perkins India Pvt. Ltd.	F11	2206DE13TAG3	367 kW	ARAI/MoEF/DGTA/PIPL-F11/2019- 09-E1 Dated: 28th June 2019
Scania Commercial Vehicles India Pvt. Ltd.	F1	DC13071A 364 DC13 071A 325 DC09 071A 289 DC09 071A 267	364 kW 325 kW 289 kW 267 kW	ARAI/MoEF/DGTA/IMP/SCANIAF1/2015-01-E1 Dated: 25th July 2017
Shandong Heavy Industry India Pvt. Ltd.	F11	6M19G320/5E3	290 kW	ICAT/MoEFCC/DGTA/SHIPL- F11/N-2137 Dated: 16th November 2018
Shandong Heavy Industry India Pvt. Ltd.	6M16G	6M16G4D2/5	290 kW	ICAT/MoEFCC/DGTA/SHIPL-6M16G/P0837 Dated: 06th July 2020
Shandong Heavy Industry India Pvt. Ltd.	6M21G5	6M21G2D2/5	365 kW	C O Q G 0651 Dated: 02nd August 2021
Shandong Heavy Industry India Pvt. Ltd.	6M21G	6M21G500/5e3	290 kW	ICAT/MoEFCC/DGTA/SHIPL- 6M21G/P-1725 Dated: 30th November 2020
Volvo India Private Limited	F13	TAD1351GE TAD1355GE TAD1352GE TAD1354GE	286 kW 369 kW 325 kW 339 kW	ARAI/MoEF/DGTA/IMP/VOLVO-F13/2014-03-E1 Dated: 30th June 2015



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ANNEXURE-II

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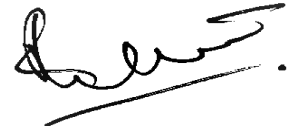
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RECD Family	R3	RECD Models	Parent Variants	CCM-F-400 CCM-FP-700
RECD MODEL CCM-FP-700 APPLICABLE FOR GSR 371(E)/CPCB I CERTIFIED ENGINES FOR RATED POWER BETWEEN 475 kW @ 1500 RPM TO 797 kW @1500 RPM				
Manufacturer	Family	Engine Model	Declared Power	Certificate Reference
AB VOLVO PENTA	F9	TAD1642GE	504 kW	ARAI/MOEF/DGTA/IMP/VOLVO- F9/2011-016 Dated: 2nd May 2011
AB VOLVO PENTA	F10	TWD 1643 GE	553 kW	ARAI/MOEF/DGTA/IMP/VOLVO- F10/2012-014 Dated: 13th June 2012
AB VOLVO PENTA	F12	TWD1653GE TWD1652GE	564 kW 522 kW	ARAI/MOEF/DGTA-II/IMP/VOLVO-F12/2013-066 Dated: 13th December 2013
CIPL	F4	3412 DITA-GS-2 3412 DITA-GS-1 3412 DITA-GP-2	586 kW 494 kW 533 kW	ARAI/MOEF/DGTA/CIPL-F4/2008-020 Dated: 21st May 2008
CIPL	F6	C-18-GS-3 C-18-GS-1 C-18-GP-2 C-18-GS-2 C-18-GP-3	592 kW 509 kW 498 kW 548 kW 527 kW	ARAI/MOEF/DGTA/CIPL-F6/2008-022 Dated: 21st May 2008
CIUSA	F1	C-15-GS-1	495 kW	ARAI/MOEF/DGTA/IMP/CIUSA/F1/2010-011 Dated: 16th February 2010
CIUSA	F12	C18-2GP-1	540 kW	ARAI/MoEF/DGTA-II/IMP/CIUSA-F12/2013-069 Dated: 1st November 2013
CPIPL	F4	3412 DITA GS-2 3412 DITA GS-1 3412 DITA GP-2	586 kW 494 kW 533 kW	ARAI/MOEF/DGTA/CPIPL-F4/2007-005 Dated: 2nd December 2007
CPIPL	F5	3412 DITA GS-3 3412 DITA GP-3	696 kW 633 kW	ARAI/MOEF/DGTA/CPIPL-F5/2007-006 Dated: 2nd December 2007
CPIPL	F6	C-18-GS-3 C-18-GS-1 C-18-GP-2 C-18-GS-2 C-18-GP-3	592 kW 509 kW 498 kW 548 kW 527 kW	ARAI/MOEF/DGTA/CPIPL-F6/2007-007 Dated: 2nd December 2007



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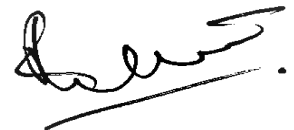
RECD Type Approval Certificate No.	ARAI/MoEF/RECDTA/PGIPL-R3/2023-04-E2	Date: 5 th January 2024
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RECD Family	R3	RECD Models	Parent Variants	CCM-F-400 CCM-FP-700
RECD MODEL CCM-FP-700 APPLICABLE FOR GSR 371(E)/CPCB I CERTIFIED ENGINES FOR RATED POWER BETWEEN 475 kW @ 1500 RPM TO 797 kW @1500 RPM				
Manufacturer	Family	Engine Model	Declared Power	Certificate Reference
Cummins India Ltd.	F14	KTA.38-G2.I	663.9 kW	ARAI/MOEF/DGTA/CIL-F14/2004-014 Dated: 26th July 2004
Cummins India Ltd.	F14	KTA38G2-I KTA38G3-I	663.9 kW 709 kW	ARAI/MOEF/DGTACIL-F14/2007-046 Dated: 8th July 2007
Cummins India Ltd.	F15	VTA-28-G5-I	559.5 kW	ARAI/MOEF/DGTA/CIL-F15/2004-018 Dated: 2nd June 2004
Cummins India Ltd.	F15	VTA28-G5I VTA28-G3I	560 kW 530 kW	ARAI/MOEF/DGTA/CIL-F15/2005-16 Dated: 1st June 2005
Cummins India Ltd.	F15	VTA28-G5I VTA28-G3I	560 kW 530 kW	ARAI/MOEF/DGTA/CIL-F15/2007-055 Dated: 31st August 2007
Cummins India Ltd.	F26	QSK-23-G3 QSK-23-G3I	701 kW 656 kW	ARAI/MOEF/DGTA/CIL-F26/2007-059 Dated: 20th September 2007
Cummins India Ltd.	F30	KTA38-G11 KTA38-G10	797 kW 736 kW	ARAI/MoEF/DGTA-II/CILP-F30/2013-043 Dated: 05th June 2013
Cummins India Ltd.	F33	QSK19-G7-S QSK19-G6-P QSK19-G6-S QSK19-G7-P	618 kW 531 kW 583 kW 564 kW	ARAI/MoEF/DGTA-II/CILP-F33/2012-026 Dated: 5th October 2012
Cummins India Ltd.	F33	QSK19-G7 QSK19-G6	618 kW 583 kW	ARAI/MoEF/DGTA-II/CILP-F33/2012-026-E1 Dated: 18th April 2013
DEUTZ AG Otto Str	F10	BF8M1015CP	490 kW	ARAI/MoEF/DGTA/IMP/DEU-F10/2011-034 Dated: 27th July 2011
Deutz AG	F10	BF8M1015CP	490 kW	ARAI/MoEF/DGTA-II/IMP/DEU-F10/2013-39 Dated: 9th May 2013
Doosan Infracore Co. Ltd	F2	P180LE IN02 P222LE IN01 P222LE IN02	496 Kw 532 KW 574 kW	ARAI/MOEF/DGTA/IMP/DICL-F2/2010-079 Dated: 3rd August 2010



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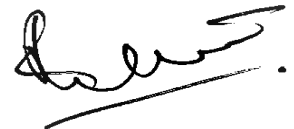
RECD Type Approval Certificate No.	ARAI/MoEF/RECDDTA/PGIPL-R3/2023-04-E2	Date: 5 th January 2024
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RECD Family	R3	RECD Models	Parent Variants	CCM-F-400 CCM-FP-700
RECD MODEL CCM-FP-700 APPLICABLE FOR GSR 371(E)/CPCB I CERTIFIED ENGINES FOR RATED POWER BETWEEN 475 kW @ 1500 RPM TO 797 kW @1500 RPM				
Manufacturer	Family	Engine Model	Declared Power	Certificate Reference
Greaves Cotton Ltd	F22	TBD4 IV12P	488 kW	ARAI/MOEF/DGTA/GCLP-F22/2007-24 Dated: 02 nd July 2007
Greaves Cotton Ltd.	F22	TBD4IV12P	488 kW	ARAI/MOEF/DGTA/GCLP-F22/2005-33 Dated 27th October 2005
HPL	F4	3412DITA-GS-2 3412DITA-GP-2 3412DITA-GS-1	586 kW 553 KW 494 KW	ARAI/MOEF/DGTA/HPL-F4/2004-032 Dated 28th July 2004
HPL	F4	3412DITA-GP-1 3412DITA-GP-2 3412DITA-GS-2	586 kW 533 kW 586 kW	ARAI/MOEF/DGTA/HPL-F4/2006-018 Dated: 18th August 2006
HPL	F5	3412DITA-GS-3 3412DITA-GP-3	696 kW 633 kW	ARAI/MOEF/DGTA/HPL/F5/2004-033 Dated 28th July 2004
Kirloskar Electric Co. Ltd.	F24	12VKK135IBZLD2	475 kW	ARAI/MOEF/DGTA/KECL-F24/2010-008 Dated: 16th February 2010
Kirloskar Oil Engines Ltd.	F9	10K18TASR1 12K22TA 12K22TA SR1	496 KW 532 KW 574 KW	ARAI/MOEF/DGTA/KOEL-F9/2004-027 Dated: 2nd August 2004
Kirloskar Oil Engines Ltd.	F23	DV12	559 kW	ARAI/MOEF/DGTA/KOEL-F23/2007-047 Dated: 24th August 2007
Kirloskar Oil Engines Ltd.	F23	DV12	532 kW	ARAI/MoEF/DGTA/KOELK-F23/2010-101-E1 Dated: 19th October 2011
Kirloskar Oil Engines Ltd.	F27	12K22TA-4V 12K22 TA4VSR1	569 KW 612 kW	ARAI/MOEF/DGTA/KOEL-F27/2008-045 Dated: 25th August 2008
Kirloskar Oil Engines Ltd.	F36	DV12SR1	552 kW	ARAI/MoEF/DGTA/KOELK-F36/2010-102 Dated: 17th January 2011



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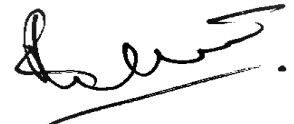
RECD Type Approval Certificate No.	ARAI/MoEF/RECDTA/PGIPL-R3/2023-04-E2	Date: 5 th January 2024
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RECD Family	R3	RECD Models	Parent Variants	CCM-F-400 CCM-FP-700
RECD MODEL CCM-FP-700 APPLICABLE FOR GSR 371(E)/CPCB I CERTIFIED ENGINES FOR RATED POWER BETWEEN 475 kW @ 1500 RPM TO 797 kW @1500 RPM				
Manufacturer	Family	Engine Model	Declared Power	Certificate Reference
MTU	F1	12V2000G23TD13B 12V2000G23TD/3D 12V2000G63TD/3D 12V2000G63TD/3D	565 kW 625 kW 625 kW 680 kW	ARAI/MoEF/DGTA/MTU-F1/2006-027 Dated: 18th October 2006
MTU	F2	12V2000G65-TD/3D 12V2000G65-TD/3B 12V2000G25-TD/3B 12V2000G25-TD/3D	765 kW 695 kW 580 kW 635 kW	ARAI/MoEF/DGTA/IMP/MTU-F2/2008-060 Dated: 30th September 2008
MTU	F2	12V2000G65 TD/3D 12V2000G25 TD/3D 12V2000G25 TD/3B 12V2000G65 TD/3B 12V2000G25 TB/3B 12V2000G25 TB/3D 12V2000G65 TB/3B 12V2000G65 TB/3D	765 kW 635 kW 580 kW 695 kW 580 kW 635 kW 695 kW 765 kW	ARAI/MoEF/DGTA/IMP/MTU-F2/2008-060-E2 Dated: 30th April 2013
MTU	F3	12V1600G80F 10V1600G80F 12V1600G10F 12V1600G20F 12V1600G70F	634 kW 493 kW 524 kW 576 kW 576 kW	ARAI/MoEF/IMP/DGTA/MTU-F3/2010-098- E2 Dated: 31st May 2012



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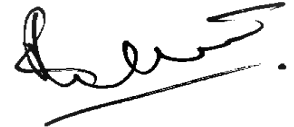
RECD Type Approval Certificate No.	ARAI/MoEF/RECDDTA/PGIPL-R3/2023-04-E2	Date: 5 th January 2024
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RECD Family	R3	RECD Models	Parent Variants	CCM-F-400 CCM-FP-700
RECD MODEL CCM-FP-700 APPLICABLE FOR GSR 371(E)/CPCB I CERTIFIED ENGINES FOR RATED POWER BETWEEN 475 kW @ 1500 RPM TO 797 kW @1500 RPM				
Manufacturer	Family	Engine Model	Declared Power	Certificate Reference
MTU	F6	10V1600G80F	493 kW	ARAI/MoEF/DGTA-II/IMP/MTU-F6/2013-35 Dated: 30th April 2013
MTU	F7	12V2000G66F 12V2000G56F	709 kW 665 kW	ARAI/MoEF/DGTA-II/IMP/MTU-F7/2013-36 Dated: 30th April 2013
Perkins Engines Company Ltd.	F3	4006-23TAG3AS 4006-23TAG3AP 400623TAG2AS 4006-23TAG2AP	786 kW 705 kW 721 kW 658 kW	ARAI/MoEF/IMP/DGTAPECL-F3/2010-012 Dated: 19th February 2010
Perkins Engines Company Ltd.	F13	4006D-23TAG	667 kW	ARAI/MoEF/DGTA-II/IMP/PECL-F13/2014-002 Dated: 13th January 2014
Volvo	F1	TAD1642GE(P)	485.1 kW	ARAI/MoEF/DGTA/VOLVO-F1/2005-03 Dated: 3rd March 2005
Volvo	F6	TWD1643GE	536 kW	ARAI/MoEF/DGTA/VOLVO-F6/2007-056 Dated: 22nd August 2007



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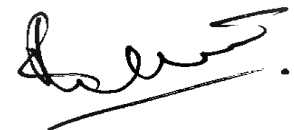
RECD Type Approval Certificate No.	ARAI/MoEF/RECDDTA/PGIPL-R3/2023-04-E2	Date: 5 th January 2024
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RECD Family	R3	RECD Models	Parent Variants	CCM-F-400 CCM-FP-700
RECD MODEL CCM-FP-700 APPLICABLE FOR GSR 771(E)/CPCB II CERTIFIED ENGINES FOR RATED POWER BETWEEN 493 kW @1500 TO 799 kW@1500 RPM				
Manufacturer	Family	Engine Model	Declared Power	Certificate Reference
Baudouin (Weifang) Power Co. Ltd.	6M33D	6M33D660E310 6M33D63 3E310 6M33D57 2E310	660 kW 575 kW 520 kW	ICAT/MOEF/DGTA/IM P/BWPCL -6M33D/M-1736 -E01 Dated: 5th June 2018
Baudouin (Weifang) Power Co. Ltd.	8M21G	8M21G688/5e3	550 kW	ICAT/MoEFCC/DGTA/ IMP/BWPCL-8M21G/P-0401 Dated: 28th February 2020
Caterpillar India Pvt. Ltd.	F12	CAT-C18-2GP-1	540 kW	ARAI/MoEF/DGTA/CIPL-F12/2017- 05-E2 Dated: 28th June 2019
Cummins India Limited	F30	KTA38-G17 KTA38-G11 KTA38-G10	797 kW 797 kW 736 kW	ARAI/MoEF/DGTA/CILP-F30/2018- 30-E1 Dated: 28th June 2019
Cummins India Limited	F33	QSK 19-G7 QSK 19-G6	618 kW 583 kW	ARAI/MoEF/DGTA/CILP-F33/2014- 07-E1 Dated: 26th March 2015
Cummins India Limited	F54	KTA38-G12 KTA38-G13	797 kW 736 kW	ARAI/MoEF/DGTA/CILP-F54/2015-24 Dated: 03rd December 2015
Cummins India Limited	F57	KTAA19-G13 KTAA19-G12	551 kW 532 kW	ARAI/MoEF/DGTA/CILP-F57/2017-28-E2 Dated: 7th October 2019
FMTU power system Pvt. Ltd.	F6	10V1600G80F/3D 12V1600G80F/3D 12V1600G10F/3B 12V1600G20F/3B 12V1600G70F/3D	493 kW 634 kW 524 kW 576 kW 576 kW	ARAI/MoEF/DGTA/FMTUF6/2021-01 Dated: 07th June 2021
Kirloskar Oil Engines Ltd.	F119	DV12ETA G11 DV16ETA G2	663 kW 799 kW	ARAI/MoEF/DGTA/KOEL - F119/2016 -19 -E2 Dated: 29th January 2019
Kirloskar Oil Engines Ltd.	F115	DV12TA G2 DV12TA G1	551.6 kW 531.7 kW	ARAI/MoEF/DGTA/KOEL - F115/2014 -01 -E1 Dated: 11th September 2019
Perkins India Private Limited	F12	Perkins-2806D-E18TAG1A	540 kW	ARAI/MoEF/DGTA/PIPL/- F12/2017-07-E2 Dated: 28th June 2019
Perkins India Private Limited	F14	4006D-E23TAG2S 4006D-E23TAG2P 4008D-E30TAG2P 4008D-E30TAG1P	732 kW 668 kW 799 kW 720 kW	ARAI/MoEF/DGTA/PEL/-F14/2018- 08-E2 Dated: 16th May 2019
Volvo India Private Limited	F12	TWD1653GE TWD1652GE	564 kW 522 kW	ARAI/MoEF/DGTA/IMP/VOLVOF12/2014-02-E1 Dated: 30th June 2015



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1. ARAI issues "Type Approval Certificates" (TAC) for RECD suitable for retrofitment of IN-USE Diesel Genset engine(s)/ components/ parts/ assemblies etc. based on the documents produced and /or prototype/s submitted by the applicant and testing thereof.
2. ARAI issues TAC in compliance to "System and Procedure For Emission Compliance Testing of Retro-fit Emission Control Devices (RECD) For Diesel Power Generating Set Engines Up to Gross Mechanical Power 800 kW" published by CPCB (MoEF, Govt. of India) and their provisions as amended from time to time or any other statutory orders under which ARAI is authorised. Other Rules/ Acts are outside the purview/ scope of TAC.
3. Test(s) on prototype(s) is/are carried out on the basis of standard procedures as notified under specific rules. Results of such tests are the property of bearer of TAC. These results cannot be disclosed unless specifically so ordered by Government, Court, etc.
4. The bearer of the TAC is under obligation to ensure production strictly as per the provisions of the specific TAC.
5. ARAI is not responsible for testing each RECD / components/ parts/ assemblies etc. for which TAC is issued. Further, ARAI is not responsible for ensuring manufacturing quality of the type approved RECD / components/ parts/ assemblies etc.
6. ARAI is in no way responsible for any misuse or copying of any design/ type/ system in connection with entire RECD / components/ parts and assemblies covered under the TAC.
7. Breach of any statutory provision of Indian laws or laws of other countries, will be the sole responsibility of the bearer of TAC and ARAI shall not be liable for any claims or damages. The bearer shall alone be liable for the same, and shall undertake to indemnify ARAI in this regard.
8. ARAI has the right, but not under obligation, to initiate cancellation/ withdrawal of the certificate issued, in case of any fraud, misrepresentation, when it surfaces and comes in the knowledge of ARAI.

The appropriate local courts at Pune shall have the jurisdiction in respect of any dispute, claim or liability arising out of this certificate / Report.