

**GOVERNMENT OF NATIONAL CAPITAL TERRITORY OF DELHI
TRANSPORT DEPARTMENT : OPERATION BRANCH
5/9, UNDER HILL ROAD: DELHI – 110054.**

No. 20(214)/DC/OPS/TPT/2011/ 118 7-89

Dated : May 20, 2016

CIRCULAR

The Competent Authority, Transport Department, Government of NCT of Delhi is pleased to allow the registration approval of vehicles, as per details given below, manufactured by M/s VE Commercial Vehicles Ltd in National Capital Territory of Delhi, as per the details contained in the Type Approval Certificate issued by designated testing agency ARAI, Pune for compliance to the Central Motor Vehicles Rules, 1989.

Base model & Variants		Wheel base (mm)	Seating Capacity (Incl. Driver)	Gvw kgs	Goods Carrying Capacity Kg.
EICHER Pro 1075 CNG E CAB & HSD		3515	3		3941
1	EICHER Pro 1075 CNG E CAB & FSD/DSD	3515	3	7450	4101
2	EICHER Pro 1075 CNG E CAB & ALC	3515			4126
3	EICHER Pro 1075 CNG E CAB & CASSIS	3515			#
4	EICHER Pro 1075 CNG F CAB & HSD	3765			3756
5	EICHER Pro 1075 CNG F CAB & FSD/DSD	3765			3956
6	EICHER Pro 1075 CNG F CAB & ALC	3765			4056
7	EICHER Pro 11075 CNG F CAB & CASSIS	3765			#
8	EICHER Pro 1075 CNG H CAB & HSD	4065			3511
9	EICHER Pro 1075 CNG H CAB & FSD/DSD	4065			3776
10	EICHER Pro 1075 CNG H CAB & ALC	4065			3926
11	EICHER Pro 1075 CNG H CAB & CHASSIS	4065			#
Certificate No./date / agency		AAFA 0282 F01 dated 20.04.2016 issued by ARAI, Pune			
This certificate superceeds		AAFA 0282 dated 15.07.2010			
Engine(model / type)		E483-CNG-62-4, 4 CYLINDER, WATER-COOLED, POSITIVE IGNITION, Naturally Aspirated Engine (Dedicated CNG)			
Power		62 kW @ 32000 rpm 3298 cc			
Type / Category		Fully Built –up Goods vehicle –N2			
Tyres size /type (Front / Rear)		Fr. & Rr: Single 7.50x16-16PR/8.25x16-16PR Make: Ceat/Apollo/JK/MRF/Birla			
Vehicle manufacturer		M/s VE Commercial Vehicles Ltd., (A Volvo Group & Eicher Motors Joint Venture), 102, Industrial Area No.1, Pithampur-454775, Distt-Dhar(M.P.), Plant: Pithampur			
Engine manufacturer		M/s VE Commercial Vehicles Ltd., , Plant: Pithampur			
Dimensions in mm		Base Model	Length	Width	Height
			6214	2140	2798
	Variant 1		6114	2140	2220
	Variant 2		6201	2102	3060
	Variant 3		5987	2020	2220
	Variant 4		6834	2140	2798
	Variant 5		6834	2140	2220
	Variant 6		7127	2102	3060
	Variant 7		6585	2020	2220
	Variant 8		7245	2140	2798
	Variant 9		7245	2140	2220
	Variant 10		7527	2102	3060
	Variant 11		7035	2020	2220
Technical Specifications of CNG Conversion Kit		Copies of Annexure-1 to AIS:024 – AAFA 0282 F01 dated 20.04.2016 issued by ARAI, Pune are enclosed (4 pages)			

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Vide Type approval certificate No.(s) detailed above, the testing agency ARAI, Pune has certified that the above base model and its variants comply with the provisions of the CMVR, 1989, (as detailed in Annexure-I, IA and IB to TAC No. AAFA 0282 F01 dated 20.04.2016, including following requirements:

Provisions			Notification	Date	Effective from	Applicable CMVR
CNG with OE fitment			GSR 853 (E)	19.11.2001	19.05.2002	115-B (i)
			GSR 589 (E)	16.09.2005	16.09.2005	
Prevalent Approval norms for Diesel Vehicles	Bharat Stage-III	All over India	GSR 686 (E)	20.10.2014	01.04.2005	115 (14)(D)
			GSR 443(E)	21.06.2010	01.10.2010	115 (14), (G),
	Bharat Stage-IV	As per notified areas	GSR 84(E)	09.02.2009	OBD-I 1.4.10	115 (15)
					OBD-II 1.4.13	(a),(b)(ii)(A)
Idling CO & NMHC			GSR 103 (E)	23.02.2012	23.02.2013	115 (2)(i)
Passby Noise Limits			GSR 111 (E)	10.02.2004	01.04.2005	120(2)
Brakes/Lamps/Reflex Reflectors / Category of Vehicle / Tyres / VIN Number / Horn and other Safety components			S.O. 1365(E)	13.12.2004	Notified dates	Annexure-I Annexure-IA Annexure IB
			GSR 589 (E)	16.09.2005		
			GSR 784 (E)	12.11.2008		
			S.O. 436 (E)	15.03.2012		
			GSR 290(E)	15.04.2015		
			GSR 291(E)	24.04.2014		
			GSR 389 (E)	09.06.2014		
Safety Checks for use of CNG Fuels in internal combustion engine vehicles (as per AIS 028) and Indian Gas Cylinder Rules, 2004			GSR 225 (E)	26.03.2015		
			GSR 534 (E)	24.07.2014	24.07.2015	115 B E

The approval is accorded subject to the responsibility of the manufacturer for ensuring the fitment of the same component, parts/ assemblies etc details of which are given in the detailed specifications duly endorsed by the ARAI, at the time of submission of vehicle for COF/Registration and no element of local body building is involved.

All MLO(HQ)/CMVI (Burari) are requested to accept the **Base Model EICHER Pro 1075 CNG E CAB & HSD & its 11 variants, complying with BS-IV emission norms (Dedicated CNG)**, Fully Built -up Goods vehicle -N2 manufactured by M/s VE Commercial Vehicles Ltd (A Volvo Group & Eicher Motors Joint Adventure) in NCT of Delhi subject to compliance of Motor Vehicles Act and Rules made there under and department's instructions/order issued from time to time in this regard.

No. 20(214)/DC/OPS/TPT/2011/

1187-8e

(PRAWIN DESAI)
MLO (OPERATIONS)
Dated: May 20, 2016

Copy forwarded for information and necessary action to:-

- All MLOs/CMVI (Burari)/Programmer, Transport Department
- VE Commercial Vehicles Ltd, (A Volvo Group & Eicher Motors Joint Adventure), 102, Industrial Area No. 1, Pithampur - 454775, District-Dhar (M.P.)
- Sr.SA, Computer Branch, Transport Department for uploading this order on the website of the department.
- Guard File

Mr. Munde
21/05/2016

Encl: Technical specifications of CNG
Annexure-I to AIS:024 - AAFA 0282 F01
dated 20.04.2016 of ARAI, Pune (4 Sheets).

(PRAWIN DESAI)
MLO (OPERATIONS)

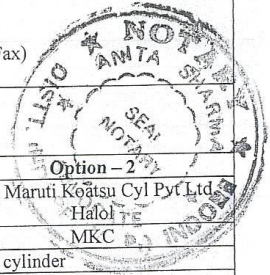
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**Annexure I to AIS:024
TECHNICAL SPECIFICATION OF CNG CONVERSION KIT**

1. Details of Kit Manufacturer / Supplier / Installer		M/s SQT Pvt. Ltd. Plot No. 227, Udyog Vihar Phase-IV Gurgaon, Haryana- 122019 0124-4386990 & 0124-4386995 (Fax) Mr.Gagan Agrawal						
2. CNG Kit Identification		PBOM0181						
3. CNG Cylinder (DOE approved/endorsed)		Option - 1			Option - 2			
a) Name of manufacturer		M/s Everest Kanto Cylinder Ltd., Tarapur			M/s Maruti Koatsu Cyl Pvt Ltd Halol			
b) Identification No.		EKCT R80			MKC			
c) Type		Seamless steel cylinder						
d) Working pressure (kg/cm ²) / (MPa)		204 at 15 °C						
e) Max. test pressure (kg/cm ²) / (MPa)		340						
f) Cylinder capacity (water equivalent)		E-W/B 60litres-2nos & 80litres-2nos(Total 280 Ltr) F & H-W/B 80litres 4nos (Total 320 Ltr)						
g) Approval reference from DOE		G.3(42)312/IV Dated 09.01.2001			G.3(42)277/V Dated. 16/01/2006			
4. Cylinder Valve(s)(DOE approved/endorsed)		Option - 1	Option-2	Option-3	Option-4			
a. Name of manufacturer		M/s Vanaz Engineers	M/s EMER	M/s OMB	M/s.Rotarex			
b. Model name/Identification No.		V-0146 / CM/L 0258746 CNG cyl. valve	KR 102 CNG cyl valve	Saleri BS 341 CNG cyl valve	Y841 CNG cyl valve			
c. Type		200 kg/cm ²	200 kg/cm ²	260 Bar	260 Bar			
d. Working pressure (kg/cm ²)/(MPa)		300 kg/cm ²	450 kg/cm ²	275 bar	260 Bar			
e. Max. test pressure (kg/cm ²)/(MPa)		Letter no. G.3(40)11/2003 dtd.29.07.2003	Letter No. G.3 (4)140 dt. 10/08/07	Letter no. G.3(4)166 dtd.16.03.07	Docket no. G3(4)201			
f. Approval reference from DOE								
5. CNG Solenoid Valve		M/s AFC,USA ZEBR-IS-1898 Electric Solenoid 10 bar 1600 psi						
6. Petrol Solenoid Valve		Not Applicable						
7. Refilling valve		Option-1	Option-2	Option-3	Option-4	Option-5	Option-6	Option-7
a. Name of the manufacturer		Emer,	M/s Vanaz	3	OPWSHER	M/s	OPW	WEH
b. Model name/Identification No.		Italy	V-0161	M/s	EX	EMER	SHEREX	GmbH
c. Type		P30	NGV1	Vanaz	CL 50	VAL14159	CL 40	TN5-CI-
d. Working pressure (kg/cm ²) / (MPa)		NGV1		W1/06	NGV	NZS	NGV	84169
e. Max test pressure (kg/cm ²) / (MPa)				NZS	258 kg/cm ²	220	250	200 Bar
					345 kg/cm ²	kg/cm ²	345	450Bar
						kg/cm ²	kg/cm ²	
8. Pressure Regulator		M/s.M.T.M. s.r.l. Italy						
a. Name of manufacturer								
b. Model name/Identification No.								



Manufacturer: Signature, Name & Designation	Document No:	Test Agency: A.A. BADUSha CHIEF ENGINEER, DIRECTOR'S HEAD, RESEARCH MANAGEMENT & REGISTRATION, ARAI, PUNE	Cert No:
VE Commercial Vehicles Ltd (A Volvo Group & Eicher Motors Joint Venture)	Pro 1075_CNG-4\CBB\ 16\00\00 Rev-00	True Copy ATTESTED	THE AUTOMOTIVE RESEARCH ASSOCIATION OF INDIA
Sheet No : 1 of 4	Date : 11.01.2016	ANITA SHARMA NOTARY	Transport Department Under Hill Road, Delhi-110054

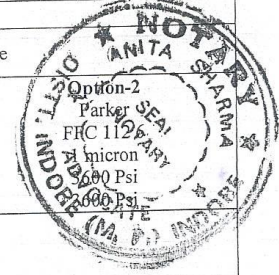
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TECHNICAL SPECIFICATION OF CNG CONVERSION KIT

Type	Single regulator (2 stage regulation)	
d. Inlet pressure (kg/cm ²) / (MPa)	26 Mpa	
e. Outlet pressure (kg/cm ²) / (MPa)	0.2 Mpa	
f. No. of stages	Dual Stage	
9. CNG Filter	Option-1	Option-2
a. Name of manufacturer	WEH GmbH	Parker
b. Model name/Identification No.	CI - 82999	PFC 1126
c. Type	1 micron	1 micron
d. Inlet pressure (kg/cm ²) / (MPa)	200 ~ 300 Bar	200 ~ 300 Bar
e. Outlet pressure (kg/cm ²) / (MPa)	200 Bar	200 Bar
10. Oil Pump or Lubrication System, if any	Not applicable	
a. Name of manufacturer		
b. Type		
11. High Pressure Tubing	Option -1	Option-2
a. Name of manufacturer	M/s. Parker Hannifin, China	M/s. Sandvik, Canada
b. Model name/Identification No.	GTST-JS-3295	TP 316
c. Type	--	--
d. Working pressure (kg/cm ²) / (MPa)	5100 PSI	200 bar
e. Max. test pressure (kg/cm ²) / (MPa)	70 Mpa	70 Mpa
f. Outer diameter/Inner Diameter	6.35mm / 4.57 mm	6.35mm / 4.57mm
g. Protection quality (material used)	--	--
12. Low Pressure Tubing	M/s Super seal Flexible Hose Ltd.	
a. Name of manufacturer	Fuel supply hose	
b. Model name/Identification No.	MISC 161 (Drg.No.)	
c. Type	12 bar	
d. Working pressure (kg/cm ²) / (KPa)	48 bar	
e. Max test pressure (kg/cm ²) / (KPa)	19.84mm / 12.70 mm	
f. Outer diameter/Inner Diameter	--	
g. Protection quality (material used)	--	
13. Gas-Air Mixer	Not applicable (no air mixer)	
a. Name of manufacturer		
b. Model name/Identification No		
c. Type & drawing		
d. Venturi Size		
14. ON/OFF Switch	Not applicable	
a. Name of manufacturer		
b. Model name/Identification No		
c. Type		
15. Ignition System & Wiring Harness (for CNG system) (Ref. Clause A11 of Table 2 of AIS 007)	M/s Delphi, India / M/s. Malhotra Cables Pvt.Ltd.	
a. Name of manufacturer	Distributor Less Ignition system (plug on top ignition coil	
a. Type of Ignition System	Champion (RG4HC); 0.7 ± 0.05	
b. Spark plug gap, mm	Enclosed (for Ignition system & Interface unit)	
c. Electrical circuit diagram / Detail Layout		
16. Interfacing Unit (for closed loop engines)	M/s AEC, Australia	M/s Delphi, India
a. Name of manufacturer	Part No - 01-01-010-560-002	Controller for Ignition and
b. Model name/Identification No.	Controller for Ignition and	injection control
c. Type	injection control	
17. Ignition Timing Advancer	For details Refer Table 4 of application.	
a. Name of manufacturer	--do--	
b. Type		



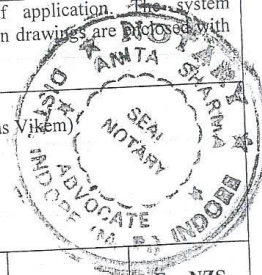
Manufacturer: Signature, Name & Designation VE Commercial Vehicles Ltd (A Volvo Group & Eicher Motors Joint Venture) Shyam Bute - DGM - PDD	Document No: Pro 1075_CNG-4\CBB\ 16\0001 Rev-00	Test Agency: A. A. BADUSHA FUEL INJECTION SYSTEMS HEAD, REGULATIONS MANAGEMENT ASSOCIATION OF INDIA, PUNE	Cert No: THE AUTOMOTIVE RESEARCH ASSOCIATION OF INDIA Transport Department Under Hill Road, Delhi-110016
	Sheet No : 2 of 4 Date : 11.01.2016	True Copy ATTESTED ANITA SHARMA NOTARY District-INDORE (M.P.)	

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**Annexure I to AIS:024
TECHNICAL SPECIFICATION OF CNG CONVERSION KIT**

d. Timing on CNG mode d. Timing on baseline fuel.	--do-- --do--									
18. Brief Description of System Including Dimensional Layout for Cylinder and other kit components installation, ventilation details etc.	For details Refer Table 4 of application. The system description, Layouts & Installation drawings are enclosed with it.									
19. Catalytic Converter Make & Model a. Make b. Identification No. c. Type d. Substrate e. Relative Concentration, Pt:Pd:Rh f. Total Charge of Precious Metal, g/vehicle	M/s ECOCAT (formerly known as Vikem) ID204736 Three Way Metallic 5:0:1 5.33									
20. Refilling valve interlocking switch a. Name of manufacturer b. Identification No. c. Type	<table border="1"> <tr> <td>For NGV M/s EMER Italy APEM2-M0 NO/NC</td> <td>For NGV/NZS M/s Teknic or Sungho or GE (above name of manufacturer) NO/NC</td> <td>For NGV M/s CLH IEMM-JC-1539 NO/NC</td> <td>For NZS EMER Italy Part of valve NO/NC</td> </tr> </table>	For NGV M/s EMER Italy APEM2-M0 NO/NC	For NGV/NZS M/s Teknic or Sungho or GE (above name of manufacturer) NO/NC	For NGV M/s CLH IEMM-JC-1539 NO/NC	For NZS EMER Italy Part of valve NO/NC					
For NGV M/s EMER Italy APEM2-M0 NO/NC	For NGV/NZS M/s Teknic or Sungho or GE (above name of manufacturer) NO/NC	For NGV M/s CLH IEMM-JC-1539 NO/NC	For NZS EMER Italy Part of valve NO/NC							
21. Current limiting Device (Fuse) a. Name of manufacturer b. Identification No. c. Voltage/current rating d. Type	M/s MTA Italy 15 & 10 for 15A & 10A respectively. 12V - 15A & 10A Blade type									
22. Pressure Indicator a. Name of manufacturer b. Identification No. c. Type	<table border="1"> <tr> <td>Option-1 M/s AEB Italy AEB-561 Electronic</td> <td>Option-2 M/s Vanaz K0501-03-010 Electronic</td> <td>Option-3 M/s Deevee Electronics --- Electronic</td> <td>Option-4 M/s CLH IEPL-LC-2654 Electronic</td> </tr> </table>	Option-1 M/s AEB Italy AEB-561 Electronic	Option-2 M/s Vanaz K0501-03-010 Electronic	Option-3 M/s Deevee Electronics --- Electronic	Option-4 M/s CLH IEPL-LC-2654 Electronic					
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23. Service shut off valve a. Name of manufacturer b. Identification No. c. Type	<table border="1"> <tr> <td>M/s HYD AIR HYD AIR 3 Way Shut Off Valve</td> <td>M/s Swagelok SS-L83XPF4 3 Way Shut Off Valve</td> </tr> </table>	M/s HYD AIR HYD AIR 3 Way Shut Off Valve	M/s Swagelok SS-L83XPF4 3 Way Shut Off Valve							
M/s HYD AIR HYD AIR 3 Way Shut Off Valve	M/s Swagelok SS-L83XPF4 3 Way Shut Off Valve									
24. Compartment/Sub-compartment/Gas tight housing a. Name of manufacturer b. Identification No. c. Type	NOT APPLICABLE									
25. Conduit a. Name of manufacturer b. Identification No. c. Inner & Outer diameter d. Type	NOT APPLICABLE									
26. Details of Seat Upholstery/roof and side lining a. Name of manufacturer b. Model name/ Identification No. c. Type	<table border="1"> <tr> <td>Seat Upholstry M/s Mayur Uniquoters Ltd.</td> <td>Roof lining M/s Amco India Ltd. M/s Manjul Laminates</td> <td>Side lining Made of GI sheets</td> </tr> <tr> <td>--</td> <td>--</td> <td>--</td> </tr> <tr> <td>--</td> <td>--</td> <td>--</td> </tr> </table>	Seat Upholstry M/s Mayur Uniquoters Ltd.	Roof lining M/s Amco India Ltd. M/s Manjul Laminates	Side lining Made of GI sheets	--	--	--	--	--	--
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Manufacturer: Signature, Name & Designation	Document No:	Test Agency: Signature, Name & Designation	Cert No:
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Shyam Bute - DGM - PDD	Sheet No : 3 of 4 Date : 11.01.2016	True Copy ATTESTED ANITA SHARMA NOTARY District-INDORE (M.P.)	Page 14 of 15



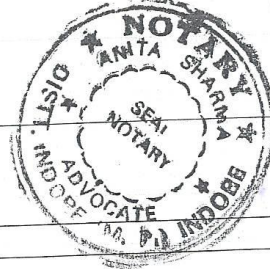
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27. Details of non-moisture retaining hard rubber/equivalent material padding/ lining provided for inner side of the cylinder mounting band(s) a. Name of manufacturer b. Identification No. c. Type	M/s Signet Rubber (I) Ltd -- EPDM
28. Battery cut off switch (if applicable) a. Name of manufacturer b. Identification No. c. Type	NOT APPLICABLE
29. Any other information	--



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AS
ANITA SHARMA
NOTARY
District-INDORE (M.P.)

Manufacturer: Signature, Name & Designation VE Commercial Vehicles Ltd (A Volvo Group & Eicher Motors Joint Venture) <i>AS</i> Shyam Bute - DGM - PDD	Document No: Pro 1075_CNG-4\CBB\ 16\00\01 Rev-00 Sheet No : 4 of 4 Date : 11.01.2016	Test Agency: Signature: <i>msl</i> A. A. BADUSHA SR. DEPT. DIRECTOR IN CHARGE, REGULATION MANAGEMENT & REGULATION, ARAI, PUNE	Cert No: THE AUTOMOTIVE RESEARCH ASSOCIATION OF INDIA Transport Department 53, Linear Hill Road, Delhi-110054 Page 15 of 15
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