

कार्यालय परिवहन आयुक्त, उत्तराखण्ड,  
कुल्हान, सहस्त्रधारा रोड़, देहरादून।

संख्या-1780 / TR / 23-12/सी0एन0जी0किट/2022

दिनांक 18, मई, 2022

**आदेश**

केन्द्रीय मोटरयान नियमावली, 1989 के नियम 115 बी में in use वाहनों में सी0एन0जी0 किट लगाये जाने की व्यवस्था की गयी है। इस सम्बन्ध में कार्यालय ज्ञाप संख्या-3460/टी0आर0/5/CNGKIT/2019-2020 दिनांक 04-11-2019 के द्वारा सी0एन0जी0 किट के रिट्रोफिटमेंट हेतु अनुमोदन की प्रक्रिया निर्धारित की गयी है, जिसके अन्तर्गत M/s Jiolat Auto Gas Industries Cylinder Testing House द्वारा केन्द्रीय मोटरयान नियमावली 1989 के नियम 126 में वर्णित टेस्टिंग एजेंसी ICAT, Manesar द्वारा नार्म्स के अनुरूप होने के प्रमाण संख्या-CAOA-0257 Dated 04<sup>th</sup> November, 2019, CAOA-0257E01 Dated 18<sup>th</sup> February, 2022 & CAOA-0257 L01 Dated 25<sup>th</sup> August, 2021 प्राप्त कर लिये गये हैं। उक्त प्रमाण पत्र के आधार पर M/s Jiolat Auto Gas Industries Cylinder Testing House द्वारा निर्मित CNG KIT Identification--JAGI-TA (Engine Power-89.0kW @ 2200 rpm & Engine cm<sup>3</sup> -5760) को in use पेट्रोल चालित वाहन मॉडल Ashok Leyland bus में रिट्रोफिटमेंट कर प्रस्तुत की गयी, जिसका संयुक्त निरीक्षण सयुक्त परिवहन आयुक्त एवं सम्भागीय निरीक्षण (प्राविधिक) देहरादून द्वारा किया गया। उक्त सी0एन0जी0 किट एवं सिलेण्डर/वाल्व का संक्षिप्त विवरण निम्नानुसार है:-

- 1. Detail of Kit Manufacturer/ Supplier/ Installer-** M/s Jiolat Auto Gas Industries Cylinder Testing House, 2094/G-5, Gall No. 17, Prem Nagar, New Delhi
- 2. CNG Kit Identification no-** JAGI-TA  
(Engine Power-89.0kW @ 2200 rpm)  
(Engine Cm<sup>3</sup>-5760)

**3. CNG Cylinder (DOE Approved/Endorsed):**

Name of Manufacturer	Rama Cylinder Pvt. Ltd. Mumbai	Everest kanto cylinder Ltd. Mumbai	Jay Fe cylinders Ltd. Haryana	Euro India Cylinder Ltd. Gujrat	Sarju Impex Limited Nagpur	Anhui Clean Power Energy Co. China	Hengyang Jinhua High Pressure Container Co., China
Identification no	RAMA	EKC	JFC	EICL	SIL	LD	JINHUA
Type	Seamless Stell	Seamless Stell	Seamless Stell	Seamless Stell	Seamless Stell	Seamless Stell	Seamless Stell
Max test Pressure (kg/cm <sup>2</sup> )	340	340	340	340	340	340	340
Working Pressure (KG/cm <sup>2</sup> )	204	204	204	204	204	204	204
Cylinder Capacity (water Equivalent) and Dia in mm	60,80Ltr (Dia 267) 135Ltr (Dia356)	60,80Ltr (Dia 267) 135 Ltr (Dia356)	60,80Ltr (Dia 267) 135 Ltr (Dia356)	60,80Ltr (Dia 267) 135 Ltr (Dia356)	60/65,75,80 Lit, (Dia 267)	65,70,75,80 Lit, (Dia 356)	80 Ltr(Dia 279) 60,70,80 Ltr (Dia 323) 60,65,70,75,80,90,110 Lit,(Dia 356) 80,90,110 Ltr(Dia 406)
Approval Reference from DOE	G3(42)515/III Dt-08-03-2027 G3(42)515/V1 Dt-20-05-2011	G3(42)312/VII Dt:21-09-2011 G3(43)312/IX Dt:02-02-2017	G3(42)557/I Dt:21-09-2010 G.3(42)557/III Dated 14/02/2014	G3(42)572/I Dt:18-08-2011 G3(42)572/I Dt:19-01-2017	G3(42)901/I Dt:06-01-2022	G3(42)287 Dt:29-12-2021	G3(42)809 Dt:02-08-2021

**iv- Cylinder Valve (S) (DOE approved/endorsed):**

Name of manufacturer	Batra Associates Limited, Faridabad	Vanaz Engineers Ltd. Pune	Tekno Valve, Kolkata	Kamnath Engineers, Rajkot
Model name/Identification no	Batra	Vanaz	Tekno	Kamnath
Type	Burst Disc Assly & Fusible plug, Manual on/off type all valves	Burst Disc Assly & Fusible plug, Manual on/off type all valves	Burst Disc Assly & Fusible plug, Manual on/off type all valves	Burst Disc Assly & Fusible plug, Manual on/off type all valves
Working pressure (KG/Cm <sup>2</sup> )	204	204	204	204
Max Test pressure (kg/cm <sup>2</sup> )	300	300	300	300
Approval reference form DOE	G-3(40)87 Dt 23/11/2017	G-3(40)11/2003 Dt 31/01/2006	G-3(40)27/06 Dt 05/07/2013	G-3(40)240/ Dt 08/10/2018

5. ICAT, Manesar द्वारा प्रदत्त CAO-0257 Dated 04<sup>th</sup> November, 2019, CAO-0257E01 Dated 18<sup>th</sup> Febraury, 2022 & CAO-0257 L01 Dated 25<sup>th</sup> August, 2021 में उक्त सी0एन0जी0 किट एवं सलेन्डर/वाल्व को निम्न मॉडल वाहन पर लगाये जाने के उल्लेख किया गया है:-


Sl. No.	Approved Vehicle Model	Engine CC	Type & Category	ICAT Certificate No.	Vintage of Vehicles
1	ALPSV 4/186	5760	M3, Bus	CAOA-0257 Dated 04 <sup>th</sup> November 2019	1 <sup>st</sup> January 2005 to till validity of Bharat Stage III norms
2	Ashok Leyland, ALPSV 4/151	5760			
3	Ashok Leyland, ALPSV 4/157	5760			
4	Ashok Leyland, ALPSV 4/158	5760			
5	Ashok Leyland, ALPSV 4/159	5760			
6	Ashok Leyland, ALPSV 4/160	5760			
7	Ashok Leyland, ALPSV 4/161	5760			
8	Ashok Leyland, ALPSV 4/183	5760			
9	Ashok Leyland, ALPSV 4/184	5760			
10	Ashok Leyland, ALPSV 4/185	5760			
11	Ashok Leyland, ALPSV 4/164	5760			
12	Ashok Leyland, ALPSV 4/38	5760			
13	Ashok Leyland, ALPSV 4/100	5760		CAOA-0257 L01 Dated 25 <sup>th</sup> August 2021	

अतः उक्त सी0एन0जी0 किट/सिलेन्डर/वाल्व को प्रोटोटाइप एजेन्सी द्वारा अनुमोदित विशिष्टताओं के अनुसार उपरोक्त 13 मॉडल वाहनों पर रिट्रोफिटमेंट निम्नलिखित प्रतिबन्धों एवं शर्तों के अधीन किये जाने की अनुमति प्रदान की जाती है:-

1. किट रिट्रोफिटमेंट के साथ वाहन में लगाये जाने वाले ऑटो सीएनजी टैंक एवं मल्टीफंक्शन वाल्व के सुरक्षित होने के सम्बन्ध में सीसीओई के प्रमाण-पत्र की प्रति विक्रय के समय क्रेता को उपलब्ध करायी जाएगी, जिसे क्रेता द्वारा पंजीयन अधिकारी के समक्ष प्रस्तुत किया जाएगा।
2. वाहन में किट रिट्रोफिटमेंट किट निर्माता की अधिकृत कार्यशाला अथवा वाहन विनिर्माता द्वारा ही लगायी जायगी। इस प्रकार की कार्यशालाओं को जी0एस0टी0 प्रमाण-पत्र उपलब्ध कराना अनिवार्य होगा।
3. किट के स्पेसिफिकेशन अथवा ले आउट में किसी प्रकार का परिवर्तन हाने पर इसकी सूचना सम्बन्धित प्रोटोटाइप एजेन्सी को तत्काल देनी होगी और पुनः टाइप एप्रूवल प्राप्त कर प्रस्तुत करना होगा।

4. किट के सम्बन्ध में सुरक्षा प्राविधान केन्द्रीय मोटरयान नियमावली, 1989 के नियम 115ख के बिन्दु (ड) के एनेक्जर IX एआईएस024 और एआईएस028 (आरईवी-1) में समय-समय पर यथा संशोधित -विनिर्धारित सुरक्षा सम्बन्धी अपेक्षाओं का अनुपालन किया जायेगा।
5. प्रत्येक किट स्थापित करने वाला (kit installer) यह सुनिश्चित करेगा कि लगायी जाने वाली किट सुरक्षित है तथा लगाये गये पयूल टैंक एवं मल्टीफंक्शन वाल्व के सम्बन्ध में सीसीओई प्रमाण-पत्र प्राप्त कर लिया गया है।
6. ऑटो सीएनजी टैंक वाहन में स्थायी रूप से स्थापित किया जायेगा।
7. ऑटो सीएनजी टैंक निर्माता के स्पेसिफिकेशन के अनुरूप ही लगाया जायेगा।
8. प्रोटोटाइप एजेन्सी से अनुमोदित किट का वाहन में रिट्रोफिटमेंट के पश्चात् विनिर्माता द्वारा वाहन स्वामी को सर्विस मैनुअल आर्वतक निरीक्षण और अनुरक्षण की निर्देशिका, सर्विस, मरम्मत अनुरक्षण हेतु पर्याप्त बुनियादी संरचना प्रदान की जायेगी।
9. किट निर्माता द्वारा किट उपयोगकर्ताओं का समुचित प्रशिक्षण देने की व्यवस्था की जायेगी।
10. किट निर्माता द्वारा केन्द्रीय मोटरयान नियमावली, 1989 के नियम 115ख के बिन्दु (च) के एनेक्जर X के उपबन्धों का अनुपालन सुनिश्चित किया जायेगा।
11. किट निर्माता द्वारा सीएनजी किट के रिट्रोफिटमेंट के समय मोटरयान अधिनियम, 1988 केन्द्रीय मोटरयान नियमावली, 1989 एवं उत्तराखण्ड मोटरयान नियमावली, 2011 की व्यवस्थाओं का अनुपालन करना होगा।
12. किट निर्माता द्वारा मोटर वाहन में विधिमान्य तरीके से किट रिट्रोफिटमेंट न किये जाने और या विधि की व्यवस्थाओं का अनुपालन सुनिश्चित न करने की दशा में अनुमोदन रद्द कर दिया जायेगा।
13. मोटर वाहनों में किट रिट्रोफिटमेंट के सम्बन्ध में किट निर्माता द्वारा परिवहन विभाग के सक्षम अधिकारी द्वारा अपेक्षित सूचनाओं को निर्धारित समय के भीतर उपलब्ध कराना होगा। साथ ही इस विषय में परिवहन आयुक्त द्वारा समय-समय पर जारी आदेशों का अनुपालन सुनिश्चित किया जाएगा।
14. किट निर्माताओं द्वारा अनुमोदन प्राप्त किट ही वाहनों में फिट की जाएगी और ऐसी किट का विवरण सम्बन्धित पंजीयन अधिकारी द्वारा पंजीयन प्रमाण पत्र में प्रविष्ट किया जाएगा।


**संलग्न:- प्रोटोटाइप प्रमाण पत्र की प्रति।**

  
(एस0के0सिंह)  
संयुक्त परिवहन आयुक्त,  
उत्तराखण्ड।

**संख्या-1780/TR/CNG/2022 तददिनांकित।**

**प्रतिलिपि:- निम्नलिखित को अनुपालनार्थ हेतु प्रेषित।**

- 1-समस्त सम्भागीय/सहायक संभागीय परिवहन अधिकारी, उत्तराखण्ड।
- 2-समस्त संभागीय निरीक्षक (प्राविधिक) उत्तराखण्ड।
- 3-सम्बन्धित पत्रावली।
- 4- M/s Jiolat Auto Gas Industries Cylinder Testing House, 2094/G-5, Gall No. 17, Prem Nagar, New Delhi-110008

  
(एस0के0सिंह)  
संयुक्त परिवहन आयुक्त,  
उत्तराखण्ड।



# INTERNATIONAL CENTRE FOR AUTOMOTIVE TECHNOLOGY

[A Division of NATRIP Implementation Society (NATIS), Govt. of India]

C A O A 0257 E01

Date : 18<sup>th</sup> February 2022

## EXTENSION - 01

Cert	Brief	Dwg	Total
02	02	04	08 pgs

TO CERTIFICATE FOR

COMPLIANCE TO THE CENTRAL MOTOR VEHICLES RULES

1. Based on the verification of documents / additional trials conducted on the vehicle model given below, compliance to the provisions of the CMV Rules, 1989, as per the certificate referred below, is also applicable to the endorsed changes in the technical specifications.





Reference TA Certificate	Kit Installer / Manufacturer		
1. C A O A 0257 dt. 04.11.2019	M/s.Jiolat Auto Gas Industries Cylinder Testing House 2094/G-5, Gali No. 17, Prem Nagar, New Delhi- 110 008		
Ref. Certificate No. / Valid Extension	Refer ANNEXURE - I		
"IN-USE" BASE MODEL	Type & Category	Engine cm <sup>3</sup>	GVW (kg)
ALPSV 4/186	M3 - BUS	5760	15660

2. The changes in the Technical Specifications, of the CNG converted, "In-Use" model as declared by the kit installer, are given in Annexure - I for the updations as given below:

Nature of Change	
<p>1. Inclusion of CNG Cylinder Capacity for M/s.Rama Cylinders Ltd &amp; M/s. Everest Kanto Cylinder Ltd</p> <p>2. Addition of Optional make of Cylinder. M/s. Sarju Impex Ltd M/s. Anhui Clean Power Energy Co. Ltd M/s. Hengyang Jinhua High Pressure Container Co.Ltd</p> <p>3. Addition of Optional make of Cylinder Valve M/s. Tekno Valves &amp; M/s. Kamnath Engineers.</p>	
3. All conditions and compliance requirements, including validity, given in the certificate under reference are also applicable for this certificate.	
Emission Report No.	CT0EO 0341 dt. 25.10.2019 (Spark Plug-BOSCH (YR7DC), Catcon-Jiolat Auto Gas Industries (GC990001.))
ICAT Ref No.	2021-2134; IOCS No. 156308

Please turn over for DISCLAIMER

### AUTHORISED SIGNATORY

 ICAT <b>PRASHANT VIJAY</b> DEPUTY GENERAL MANAGER		 ICAT <b>DINESH TYAGI</b> DIRECTOR	 Page 1 of 2
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Office Address : Centre-I : Plot No.-26, Sector-3, HSIIDC, IMT-Manesar, Gurugram-122050. Haryana (India)  
 Centre-II : Plot No.-01, Sector-M-11, HSIIDC, IMT-Manesar, Gurugram-122051. Haryana (India)  
 Phone : 0124-4586111, Fax : +91-124-2290005. E-mail: team@icat.in, Website : www.icat.in  
 (An ISO 9001, ISO 14001 and OHSAS 18001 certified, scope wise NABL accredited and BIS recognised Test House)

C A O A 0257 E01





Date : 18<sup>th</sup> February 2022

ANNEXURE - I

Changes in Specifications				
Sr. No.	Specifications Clause No.	Description of Clause	Parameter (Earlier)	Parameter (New)
1.1	Specifications as mentioned in Table-12	Respective clauses as per Table-12	As per earlier Specifications: JAG/ICAT/2019/AL dt. 06.08.2019	Changes as per modified specifications & Table 12 (enclosed) – (JAG/ICAT/2019/AL Rev-01 dt. 17/02/2022) Specification No. JAG/ICAT/2019/AL Rev-01 dt. 17/02/2022)

TA / Other Ref. Certificate No. / Latest Valid Extension	Specification Number
C A O A 0257 dt. 04.11.2019	JAG/ICAT/2019/AL dt. 06.08.2019
C A O A 0257 E01 dt 18.02.2022	Refer to specifications in Clause 1 of Annexure I

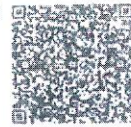
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AUTHORISED SIGNATORY			
 ICAT <b>PRASHANT VIJAY</b> DEPUTY GENERAL MANAGER	 NATIONAL CENTRE FOR AUTOMOTIVE TESTING MANESAR	 ICAT <b>DINESH TYAGI</b> DIRECTOR	 Page 2 of 2



# JIOLAT AUTO GAS INDUSTRIES<sup>®</sup>

## CYLINDER TESTING HOUSE



Head Office : HR-18A, Gali No. 10, Industrial Area (Near Police Station), Anand Parbat, Delhi-110005  
 Works : Seed Farm Road, Plot of Ram, Chander, V.P.O., Alipur, New Delhi-110036  
 Mob. : +91-9811286222, 9350834469, Ph. No. + 91-11-28764977, 28764979  
 Website : jiolatautogas.com, E-mail : jiolat.newdelhi@gmail.com

Ref.....

Dated.....

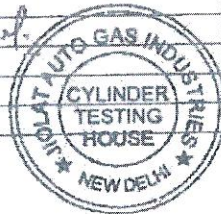
### TECHNICAL SPECIFICATION CNG CONVERSION KIT

Annexure - I

3. CNG Cylinder (DOE approved/endorsed)		
Inclusion of CNG Cylinder Capacity		
a. Name of manufacture	Rama Cylinders Ltd. Mumbai	Everest Kanto Cylinder Ltd. Mumbai
b. Identification No.	Rama Ref. Drg. No. R-SC-267-200-6.0 Rama Ref. Drg. No. R-SC-356-200-7.4	EKC Ref. Drg. No. 52283720 EKC Ref. Drg. No. 52283760R-1
c. Type	Seamless Steel	Seamless Steel
d. Working Pressure (kg/cm <sup>2</sup> )	204 kg/cm <sup>2</sup>	204 kg/cm <sup>2</sup>
e. Max. test pressure (kg/cm <sup>2</sup> )	340 kg/cm <sup>2</sup>	340 kg/cm <sup>2</sup>
f. Approval reference from DOE	G.3(42)515/III dated 08/03/2007 G.3(42)515/VI dated 20/05/2011 60, 65, 80 Ltr. (Dia 267) 60, 65, 75, 80, 90, 110, 135 Ltr. (Dia 356),	G.3(42)312/VII dated 21/09/2011 G.3(42)312/IX dated 02/02/2017 60, 65, 75, 80 Ltr. (Dia 267) 60, 65, 75, 80, 90, 110, 135 Ltr. (Dia 356)
Addition of Optional make of		
	Option 1	Option 2
a. Name of manufacture	Sarju Impex Limited, Nagpur	Anhui Clean Power Energy Co., China
b. Identification No.	SIL (Ref. Drg. No. SIL/B/002)	LD (Ref. Drg. No. LD-QP1-TY-D-01)
c. Type	Seamless Steel	Seamless Steel
d. Working Pressure (kg/cm <sup>2</sup> )	204 kg/cm <sup>2</sup>	204 kg/cm <sup>2</sup>
e. Max. test pressure (kg/cm <sup>2</sup> )	340 kg/cm <sup>2</sup>	340 kg/cm <sup>2</sup>
f. Approval reference from DOE	G.3(42)901/I dated 06/01/2022 60, 65, 75, 80, Ltr. (Dia 267)	G.3(42)827 dated 29/12/2021 65, 70, 75, 80, Ltr. (Dia 356)
Option 3		
a. Name of manufacture	Hengyang Jinhua High Pressure Container Co., China	
b. Identification No.	JINHUA (Ref. Drg. No. HG-QP-TT.DC-01 Rev.0, HG-QP-TT.EC-01 Rev.0, HG-QP-TT.GC-01 Rev.0 & HG-QP-TT.FC-01 Rev.0)	
c. Type	Seamless Steel	
d. Working Pressure (kg/cm <sup>2</sup> )	204 kg/cm <sup>2</sup>	
e. Max. test pressure (kg/cm <sup>2</sup> )	340 kg/cm <sup>2</sup>	
f. Approval reference from DOE	G.3(42)809, dated. 02/08/2021, 80, Ltr. (Dia 279), 60,70, 80, Ltr. (Dia 356) 60, 65, 70, 75, 80, 90, 110 Ltr. (Dia 356) & 80, 90, 110 Ltr. (Dia 406)	



Test Agency : International Centre for Automotive Technology	Manufacturer : Jiolat Auto Gas Industries Cylinder Testing House	Document No. JAGI/ICAT/2019/AL Rev-01
Signature :	Signature :	
Name :	Name : Amit Chaudhary	
Designation :	Designation : Officer	
Date : 17/02/2022	Date : 17/02/2022	



4. Cylinder valve(s)(DOE approved/ endorsed)		
Addition of Optional make of	Option 1	Option 2
a. Name of manufacture	Tekno Valve, Kolkata	Kamnath Engineers, Rajkot
b. model name/ Identification No.	Tekno, Ref. Drg. No. TVS/DR-2467/2012 KE/CNG/00	Kamnath, Ref. Drg. No.
c. Type	Burst Disc Assembly & fusible plug, Manual on/off type all valves	
d. Working Pressure(kg/cm <sup>2</sup> )	204 kg/cm <sup>2</sup>	204 kg/cm <sup>2</sup>
e. Max. test pressure (kg/cm <sup>2</sup> )	300 kg/cm <sup>2</sup>	300 kg/cm <sup>2</sup>
d. Approval reference from DOE	G.3(40)27/06-07 dated 05/07/2013	G.3(40)240 dated 08/18/2018



Test Agency : International Centre for Automotive Technology	Manufacturer : Jiolat Auto Gas Industries Cylinder Testing House	Document No.
Signature : Name : Prashant Vijay	Signature : Name : Amit Chaudhary	JAGI/ICAT/2019/AL Rev-01
Designation : Prashant Vijay	Designation : Officer	
Date : Delhi Certification Business Unit	Date : 17/02/2022	Page 2 of 2

Table 12 of AIS-007 (Revision 5)

DETAILS OF CHANGE IN TECHNICIE SPECIFICATION

1. Manufacturer Name and Address		Jiolat Auto Gas Industries Cylinder Testing House, 2094/G-5, Gali No-17, Prem Nagar, New Delhi-110008		
2. Name of the Model and Variants		Ashok Leyland-ALPSV 4/186		
3. CMVR Certificate No.		Date	Specification No.	
3.1	CAOA 0257	04/11/2019	JAGI/ICAT/2019/AL, dated 06/08/2019	
3.2	CAOA 0257 L01	25/08/2021		
Valid Extension		NA		
4.1	Dated	NA		
4.2	Specification Revision	Refer Specification Under Clause 3 & Clause 4		
Nature of Change				
1- Inclusion of CNG Cylinder Capacity for M/s Rama Cylinders Pvt. Ltd. And M/s Everest Kanto Cylinder Limited 2- Addition of Optional make of Cylinder M/s Sarju Impex Limited, M/s Anhui Clean Power Energy Co., & M/s Hengyang Jinhua High Pressure Container Co. 3- Addition of Optional make of Cylinder Valve M/s Tekno Valve & M/s Kamnath Engineers				
Changes in the Specification				
Srl. No.	Specification No. and clause	Description	Parameter (Earlier)	Parameter (New Extension)
5	JAGI/ICAT/2019/AL dated 06/08/2019 Clause No. 3	CNG CYLINDER  Make capacity (Ltr. & Dia)	1. Rama Cylinders Limited, Mumbai 60, 80 Ltr. (267 Dia) 135, (356 Dia)  2. Everest Kanto Cylinder Ltd, Mumbai 60, 80 Ltr. (267 Dia) 135, (356 Dia)  3. Jay te Cylinders Limited, Haryana 60, 80 Ltr. (267 Dia) 135, (356 Dia)	1. Rama Cylinders Limited, Mumbai 60, 65, 80 Ltr. (267 Dia) 60, 65, 75, 80, 90, 110, 135, Ltr. (356 Dia)  2. Everest Kanto Cylinder Ltd, Mumbai 60, 65, 75, 80 Ltr. (267 Dia) 60, 65, 75, 80, 90, 110, 135, Ltr. (356 Dia)  3. Jay te Cylinders Limited, Haryana 60, 80 Ltr. (267 Dia) 135 Ltr. (356 Dia)
Test Agency : ICAI		Manufacturer : Jiolat Auto Gas Industries Cylinder Testing House		
Signature :		Signature :		
Name :		Name : Amit K. Chaudhary		
Designation :		Designation : Officer		
Date :		Date : 17/02/2022		
		Document No. JAGI/ICAT/2019/AL Rev-01		
		Page 1 of 2		



CAOA 0257 E01 18 FEBRUARY 2023 2021-2134



<p>5</p> <p>JAGI/ICAT/2019/AL dated 06/08/2019</p> <p>Clause No. 3</p>	<p>CNG CYLINDER</p>	<p>Make capacity (Ltr. &amp; Dia)</p>	<p>4. Euro India Cylinders Limited, Gujrat 60, 80 Ltr. (267 Dia) 135, (356 Dia)</p>	<p>4. Euro India Cylinders Limited, Gujrat 60, 80 Ltr. (267 Dia) 135 Ltr.(356 Dia)</p>
<p>6</p> <p>JAGI/ICAT/2019/AL dated 06/08/2019</p> <p>Clause No. 4</p>	<p>Cylinder Valve</p>	<p>Make</p>	<p>1. Batra Associates Limited, Faridabad. 2. Vanaz Engineers Limited, Pune.</p>	<p>1. Batra Associates Limited, Faridabad. 2. Vanaz Engineers Limited, Pune. 3. Tekno Valves, West Bengal. 4. Kamnath Engineers, Rajkot.</p>

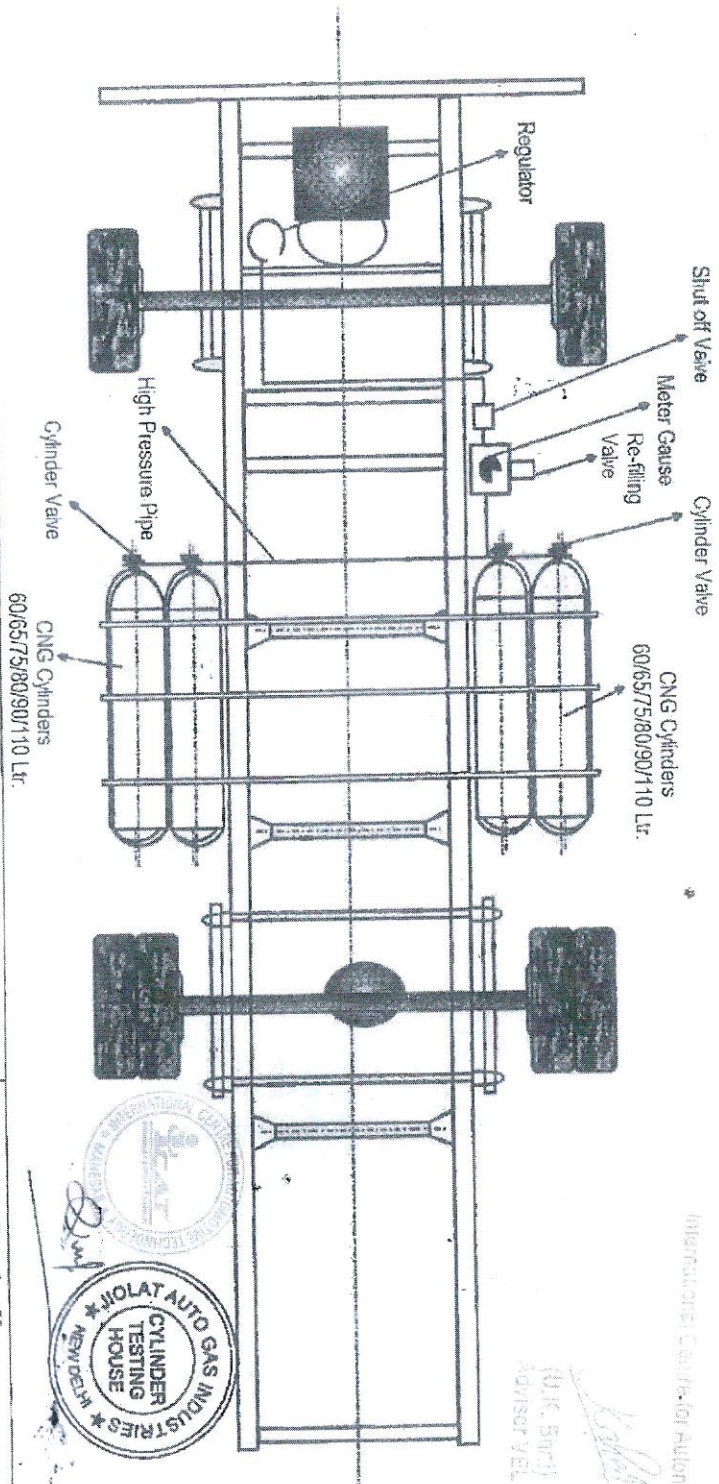


International Centre for Automotive Technology

Prashant Vijay  
DGM Certification Business Unit

<p>Test Agency: ICAT</p>	<p>Signature: [Signature]</p>	<p>Name: Prashant Vijay</p>	<p>Designation: DGM Certification Business Unit</p>	<p>Date: 17/02/2022</p>	<p>Manufacturer: Jiolat Auto Gas Industries Cylinder Testing House</p>	<p>Signature: [Signature]</p>	<p>Name: Amit K. Chaudhary</p>	<p>Designation: Officer</p>	<p>Date: 17/02/2022</p>	<p>Document No.</p>	<p>JAGI/ICAT/2019/AL Rev-01</p>	<p>Page 2 of 2</p>
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LAYOUT OF CYLINDER MOUNTING



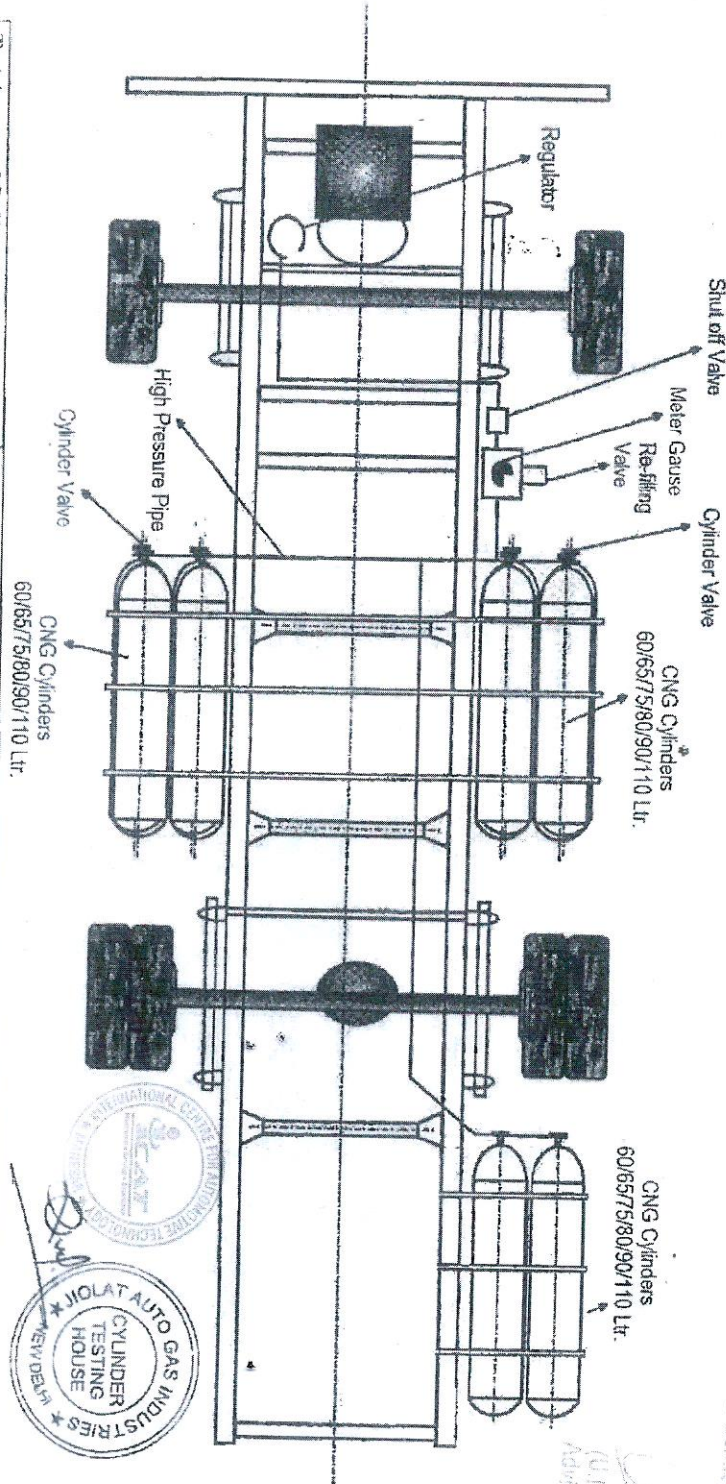
Interactions Centre for Automotive Technology

(H.K. Singh)  
Advisor VET

Test Agency : ICAT Signature : Name: Designation: Date : Drawing Valid for following Vehicle Models.		Kit Manufacturer : <b>JIOLAT AUTO GAS IND. CYLINDER TESTING HOUSE / NEW DELHI - 08</b>		Drawing No.: <b>JAGVICAT/AL/01</b>	
Drawing Valid for following Vehicle Models.		Cylinder Make DASHMESH	Valve Make BATRA / VANAZ TENNO / KAMNATH	No. of Valve 8 Valves in all Option	
ALPSV 4/186, ALPSV 4/151, ALPSV 4/157 ALPSV 4/158, ALPSV 4/159, ALPSV 4/160 ALPSV 4/161, ALPSV 4/183, ALPSV 4/184 ALPSV 4/185, ALPSV 4/164, ALPSV 4/38 ALPSV 4/100		No. of Cylinder Option 1- Option 2- Option 3- Option 4- Option 5- Option 6-	60 X 8 Cylinders, Total WC 480 liters 65 X 8 Cylinders, Total WC 520 liters 75 X 8 Cylinders, Total WC 600 liters 80 X 8 Cylinders, Total WC 640 liters 90 X 8 Cylinders, Total WC 720 liters 110 X 8 Cylinders, Total WC 880 liters	Prepared By : Signature: <i>Rajendra</i> Approved By: Signature: <i>Amit Chaudhary</i>	

LAYOUT OF CYLINDER MOUNTING

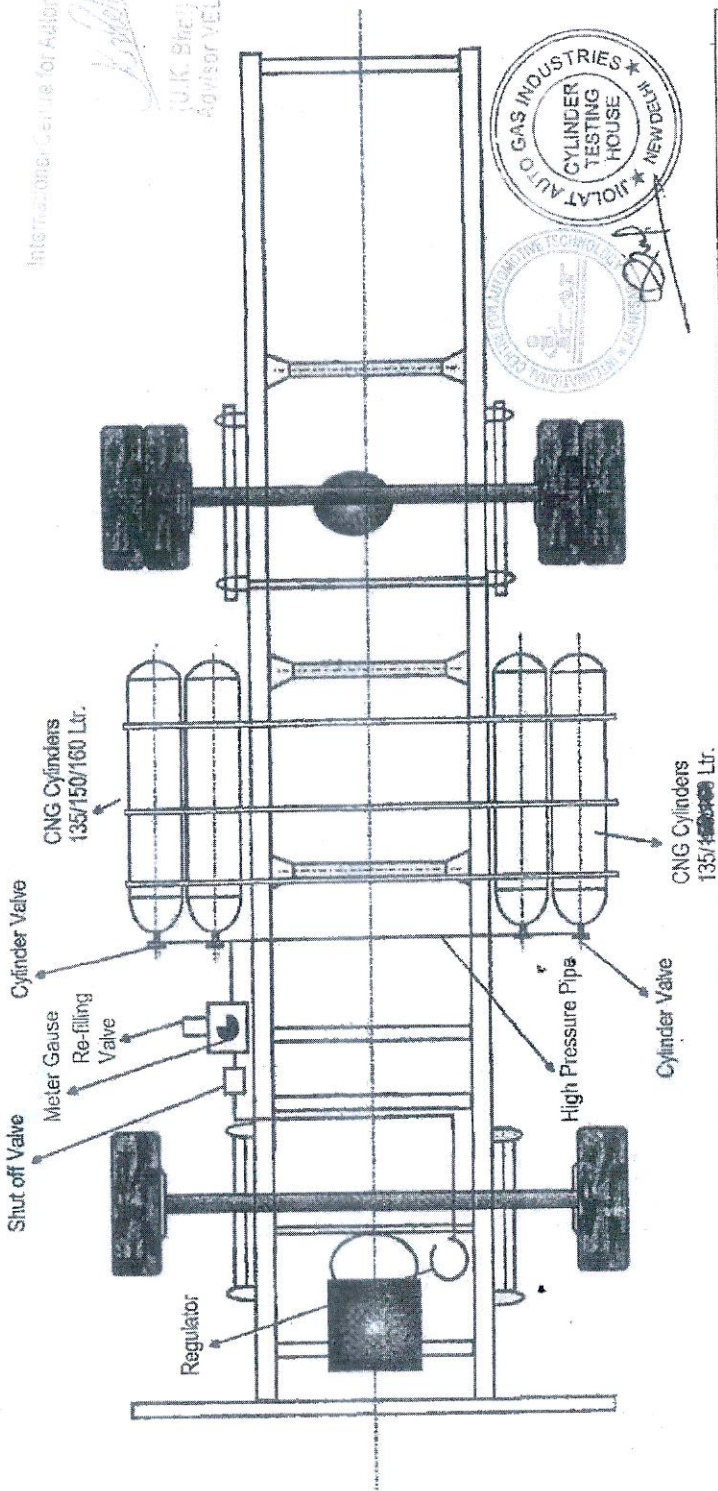
International Centre for Automotive Technology



(Utk. Bh?)  
Adm/501 VET

Test Agency : ICAT Signature : Name : Designation : Date : Drawing Valid for following Vehicle Models :		Kit Manufacturer : <b>JIOLAT AUTO GAS IND. CYLINDER TESTING HOUSE / NEW DELHI - 08</b>		Drawing No. : <b>JAGI/ICAT/VAL/02</b>		
ALPSV 4/186, ALPSV 4/151, ALPSV 4/157 ALPSV 4/158, ALPSV 4/159, ALPSV 4/160 ALPSV 4/161, ALPSV 4/183, ALPSV 4/184 ALPSV 4/185, ALPSV 4/164, ALPSV 4/38 ALPSV 4/100		Cylinder Make No. of Cylinder Option Option Option Option	RAMA / EKC / JFC / EICL / SIL / NI-HON / DASHMESH 7- 8 9- 10 11- 12-	Total WC 600 liters 650 liters 750 liters 800 liters 900 liters 1100 liters	Valve Make No. of Valve Prepared By : Signature : Approved By : Signature :	BATRA / VANAZ TEKNO / KAMNATH 10 Valves in all Option Rajendra Anit Chaudhary

# LAYOUT OF CYLINDER MOUNTING



International Centre for Automotive Technology

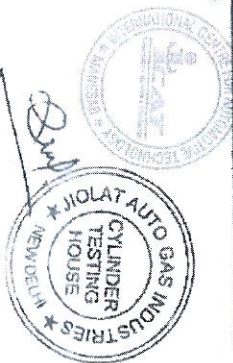
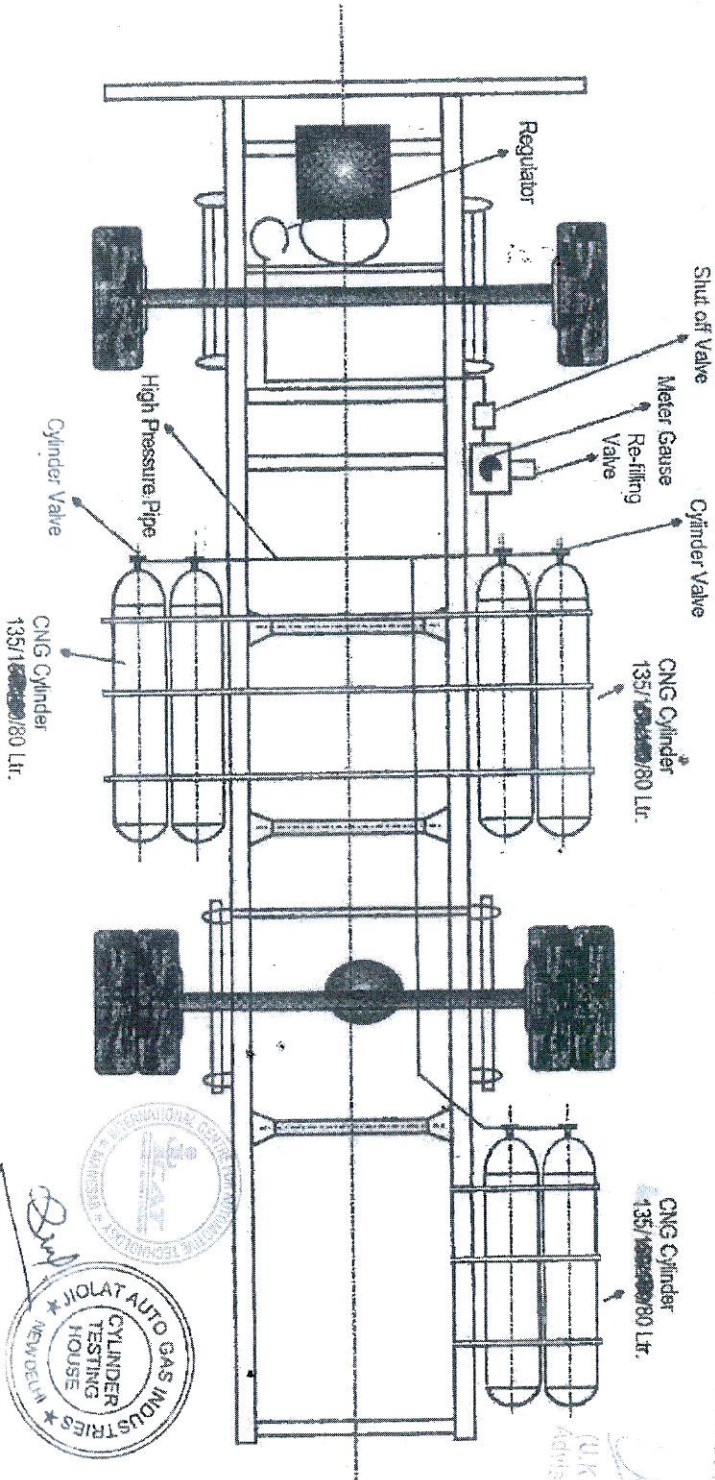
*[Handwritten Signature]*

(U.K. Site)  
Advisor VCL

Test Agency : ICAT Signature : Name : Designation :	Kit Manufacturer : <b>JIO LAT AUTO GAS IND. CYLINDER TESTING HOUSE / NEW DELHI - 08</b>	Drawing No : <b>JAGI/CAT/AL/03</b>
Drawing Valid for following Vehicle Models:	Cylinder Make <b>RAMA / EKC / JFC / EICL / SIL / NI-HON / DASHIMESH</b>	Valve Make <b>BATRA / VANAZ TEKNO / KAMNATHI</b>
ALPSV 4/186, ALPSV 4/151, ALPSV 4/157 ALPSV 4/158, ALPSV 4/159, ALPSV 4/160 ALPSV 4/161, ALPSV 4/183, ALPSV 4/184 ALPSV 4/185, ALPSV 4/164, ALPSV 4/38 ALPSV 4/100	No. of Cylinder <b>13</b>	No. of Valve <b>4 Valves in all Option</b>
	Options <b>13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100</b>	Prepared By : <b>Rajendra</b>
	Options <b>13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100</b>	Signature: <i>[Handwritten Signature]</i>
		Approved By: <b>Amit Chaudhary</b>
		Signature:

LAYOUT OF CYLINDER MOUNTING

Manufacturing Centre for Automotive Technology



Test Agency : ICAI Signature : Name : Designation : Date : Drawing Valid for following Vehicle Models :		Kit Manufacturer : <b>JIOLAT AUTO GAS IND. CYLINDER TESTING HOUSE / NEW DELHI - 08</b>		Drawing No.: <b>JAG/ICAT/L/04</b>	
Drawing Valid for following Vehicle Models : ALPSV 4/186, ALPSV 4/151, ALPSV 4/157 ALPSV 4/158, ALPSV 4/159, ALPSV 4/160 ALPSV 4/161, ALPSV 4/183, ALPSV 4/184 ALPSV 4/185, ALPSV 4/164, ALPSV 4/38 ALPSV 4/100		Cylinder Make : RAMA / EKC / JFC / EICL / SIL / NI-HON / DASHMESH		Valve Make : BATRA / VANAZ TEKNO / KAMNATH	
No. of Cylinder Option : 16- <del>135 X 6 Cylinders, Total WC 810 liters</del>		Prepared By : Rajendra		No. of Valve : 6 Valves in all Option	
Option : 19- 80 X 6 Cylinders, Total WC 480 liters		Signature : (Signature)		Approved By : Amit Chaudhary	
Signature : (Signature)				Signature : (Signature)	

**CERTIFIED COPY OF ORIGINAL**

Certificate No. CAOA 0257 Dated 4/11/2019  
 Mobile No. 9990877704  
 Name R. Chaudhary  
 Designation Sub Sign  
 Date 26/04/2019



**INTERNATIONAL CENTRE FOR AUTOMOTIVE TECHNOLOGY**  
 [A Division of NATRIP Implementation Society (NATIS), Govt. of India]

CAOA 0257

Date : 04<sup>th</sup> November 2019

**CERTIFICATE**

FOR

Cert	Brief	Dwg	Total
04	06	07	17 pgs

COMPLIANCE TO THE CENTRAL MOTOR VEHICLES RULES

1. In order to establish compliance to the provisions of CMVR, 1989, applicable as on date, documental verification / necessary testing was carried out, on the following **CNG converted, "In-Use" model**, by the retrofitter submitted by the CNG Installer referred below:

Documental Reference	Kit Installer / Manufacturer		
Current Certificate	M/s. Jiolat Auto Gas Industries Cylinder Testing House 2094/G-5, Gali No. 17, Prem Nagar, New Delhi- 110 008		
Kit identification	Engine Power (CNG)	Engine cm <sup>3</sup>	Year of Manufacture
JAGI-TA	89.0 kW @ 2200 rpm	5760	Jul-05
"IN-USE" BASE MODEL	Type & Category	Seating Capacity (incl driver)	GVW (kg)
ALPSV 4/186	M3 - BUS	52 persons	15660

1a Brief technical specifications No. JAGI/ICAT/2019/AL dt. 06.08.2019 the In-Use vehicle model, as declared by the by the CNG Kit Installer are enclosed with this certificate. CNG Kit Specification No. JAGI/ICAT/2019/AL dt. 06.08.2019 the In-Use vehicle model, are also separately issued to the by the CNG Kit Installer.

2. It is certified that the above **vehicle model** comply with the provisions of the CMVR, 1989, as amended up-to-date, including following requirements, (as detailed at ANNEXURE - I, IA & II):

Standards	Notification	Date	Effective From	Applicable CMVR
Prevalent Type Approval norms -For conversion by modification of engine of In-use Diesel Vehicle (as amended by GSR 1151(E))	GSR 686(E)	20.10.2004	01.04.2005	115B(1) B. (II) & 115 (14) (D)
Bharat Stage-III Idling CO & NMHC	GSR 103(E)	23.02.2012	23.02.2013	115 (2) (i)

Refer ANNEXURE - II

3. This certificate is valid for 3 years from the date of its issue or until further amendment in CMV Rules, which ever is earlier.
4. This Certificate is issued as per CMV Rule 126, to establish compliance with the Central Motor Vehicles Rules, 1989, and shall not be construed as a certificate of compliance to any rules other than those listed in ANNEXURE - I, IA & II. Compliance to these rules has been verified based on the use of specific components / parts / assemblies etc. details of which are given in the detailed specifications duly endorsed by ICAT as mentioned at Para. 1a above. It is the **Kit Installer's** responsibility to ensure fitment of same components / parts / assemblies etc. before submission of the vehicle for registration.
5. This Certificate is issued for the above "In-Use" base model subject to the conditions given at ANNEXURE-II.

Please turn over for DISCLAIMER

<b>AUTHORISED SIGNATORY</b>				
ICAT PRASHANT VIJAY DEPUTY GENERAL MANAGER				

Office Address : Centre-I : Plot No.-26, Sector-3, HSIIDC, IMT-Manesar, Gurugram-122050. Haryana (India)  
 Centre-II : Plot No.-01, Sector-M-11, HSIIDC, IMT-Manesar, Gurugram-122051. Haryana (India)  
 Phone : 0124-4586111, Fax : +91-124-2290005. E-mail: team@icat.in, Website : [www.icat.in](http://www.icat.in)  
 (An ISO 9001, ISO 14001 and OHSAS 18001 certified, scope wise NABL accredited and BIS recognised Test House)

Innovation • Service • Excellence

Certificate No. **CAOA 027** Dated **09-11-2019**  
 Mobile No. **9990877704**  
 Name **R. choudhary**  
 Designation **Sup.**  
 Date **26/11/2019**



Date : 04<sup>th</sup> November 2019

C A O A 0257

ANNEXURE - I

Rule No.	Sub Rule(s)	Compliance Verified For	Standard
94	(1), (2) & (3)	Condition of tyres	
95		Size & ply rating of tyres	
		Front & Rear 10 x 20 16PR	
112	-	Exhaust gases	
113	-	Location of exhaust pipes	
115	(1), (2)(i) & 115 [15 (a), (aa) & (b) (ii (B))]	Emission of smoke, vapour, etc. from motor vehicle (In CNG mode)	
115-B	B. (II)	Mass Emission Standards for CNG vehicles (For in-use Diesel Vehicle converted to CNG)	GSR 84 (E) & GSR 853 (E)
	(1) (E)	- CNG Safety Checks for CNG Kit Components and Installation on the vehicle	As per AIS 024 & 028 and respective standards referred in the Notification No. GSR 643(E) dt. 27.06.2017 & Gas Cylinder Rules, 2016
124	(1), Sr. No. 21 of the Notification	Safety standards of components as applicable	S. O. No. 873(E), dated 15.12.1997
	(4) Sl. No. 5	The procedure for Type Approval and establishing Conformity of production for components - CNG Pressure Regulator Model: BRC ME, TAC No. A 92596 dt. 18.06.2009, CoP certificate No. CC0BO 5061 dt. 26.03.2019	GSR 784(E)
Mass Emission Test, Fuel Consumption Test, Engine Performance, Gradeability, Electro Magnetic Interference and Cooling Performance (Ref: GSR 589(E) dt. 16-09-2005, GSR No. 853(E) dt. 19-11-2001 & GSR 84(E) dt. 09-02-2009)			Meets the requirement of sub clauses (i),(ii),(iii),(iv)) & (vii)

ANNEXURE - II

Standards	Notification	Date	Effective From	Applicable CMVR
Safety Checks for use of CNG Fuels in internal combustion engines (as per AIS 024 & 028) and Gas Cylinder Rules, 2016	GSR 643(E)	27.06.2017	27.06.2017	115-B (1)(E)
<b>Compliance of Mass Emission Standards &amp; Validity: (Ref. 115B(1) B.(II), Clause (c) as per GSR 589(E))</b>				
CNG converted "In-use" diesel vehicle "ALPSV 4/186 (July 2005 make)" fitted with H Series engine, when fitted catalytic converter as a part of CNG kit, meets the Bharat Stage - III norms, manufactured from 1 <sup>st</sup> January 2005 till validity of Bharat Stage III norms.				

ICAT Ref No.	2019-1478; IOCS No: 71334		
Emission Report No.	CT0EO 0341 dt. 25.10.2019 (Spark Plug-BOSCH (YR7DC), Catcon-Jiolat Auto Gas Industries (CC990001.))		
<b>AUTHORISED SIGNATORY</b>			
ICAT <b>PRASHANT VIJAY</b> DEPUTY GENERAL MANAGER		ICAT <b>DINESH TYAGI</b> DIRECTOR	Page 2 of 4

CERTIFIED COPY OF ORIGINAL

Certificate No. **CAOA0257** Dated. **09/11/2019**  
 Mobile No. **9990877704**  
 Name **R. Choudhary**  
 Designation **SUP.** Sign. *[Signature]*  
 Date **26/09/2022**



**C A O A 0257**

Date : 04<sup>th</sup> November 2019

**ANNEXURE - IA**

This Certificate is issued subject to the following conditions:

- i The "In-Use" Diesel vehicle model "ALPSV 4/186 (July 2005 make)", retrofitted with CNG kit M/s. Jiolat Auto Gas Industries Cylinder Testing House, shall have CNG Cylinder and Cylinder Valve approved by PESO, Nagpur, for the following:
  - A) The cylinders are filled at a pressure not exceeding 204 kgf/cm<sup>2</sup> at 15° C.
  - B) The cylinders are subjected to hydrostatic stretch test at a pressure of 340 kgf/cm<sup>2</sup> as required under rule 35 of the Gas Cylinders Rules, 2016.
  - C) Other relevant provisions of the said rules are complied with.
- ii CNG Mixer is of the type and design (Ref. Point 13 of Technical Specifications of CNG system).
- iii Any Change in the CNG System Specifications or Layout will call for recertification.
- iv This Certificate is issued by ICAT exclusively for fitment of the CNG system of M/s. Jiolat Auto Gas Industries Cylinder Testing House, with following CNG Cylinders, on the CNG Converted "In-Use" diesel vehicle "ALPSV 4/186 (July 2005 make)". For details of CNG cylinder refer ANNEXURE III.
- v The onus of verification of fitness / proper functioning of CNG system on each and every vehicle, including endorsement as "operation on CNG" by the concerned Registering Authorities, under this Certificate lies with M/s. Jiolat Auto Gas Industries Cylinder Testing
- vi Registering Authorities shall, at the time of registration, verify the PESO approval for the CNG cylinder and Cylinder Valve, in respect of make / identification no. (as referred in Point 3 & 4 of Technical Specifications of CNG system) and documental reference for Quantity / Sr. No. cleared by PESO, time to time.
- vii. In addition, compliance to Safety Checks, Requirements shall be verified by the designated Authorities, as and whenever necessary, based on the following guidelines:

Annexure to AIS 024	Details	Responsibility	Applicable for CNG Vehicles
III	Checklist for fitness tests and certification for In-Use vehicles after fitment / conversion to CNG mode	Undertaking by Kit Installer, Verification by RTO	In-Use
IV	Safety checks for use of CNG fuels in internal combustion engined vehicles (as per AIS 028) & Gas cylinder rules, 2016	PESO / Test Agency	All
V	Criteria to authorize the kit installer and responsibility of vehicle / kit manufacturer / supplier / Installer (Including Inspection, Testing & Commissioning, Garaging & Repairs, etc.)	Vehicle Manufacturer (O.E.) Kit Manufacturer (In-Use)	All
VI	Installation Certificate for converted CNG vehicle (A checklist given in the APPENDIX-A under Version 5 may be referred by the Kit Installer at the time of inspection prior to issuing installation certificate).	Undertaking by Kit Installer, Verification by Designated Authority	All
VII	Checklist for third party checking or inspection of built-up CNG buses before registration	RTOs before Registration / Designated Authority	All Buses
VIII	Checklist for preventive maintenance of In-Use CNG vehicles	Workshop authorised by Kit Installer	In-Use
AIS - 024 & 028	Code of practice for use of CNG fuel in internal combustion engined vehicles-AIS 024 & 028 and respective standards referred in the Notification No. GSR 643(E) dt. 27.06.2017	PESO / Test Agency	All

Applicability of AIS 024 & AIS 028: Version 5 w.e.f. September 2017

**AUTHORISED SIGNATORY**

 ICAT <b>PRASHANT VIJAY</b> DEPUTY GENERAL MANAGER		 ICAT <b>DINESH TYAGI</b> DIRECTOR	 Page 3 of 4
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Innovation • Service • Excellence



CERTIFIED COPY OF ORIGINAL

Certificate No. **CAOA0257** Dated **04/11/2019**  
 Mobile No. **9990877704**  
 Name **R. Choudhary**  
 Designation **Sup.** Sign **[Signature]**  
 Date **26/04/2022**



**C A O A 0257**


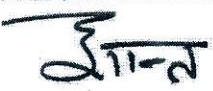


Date : 04<sup>th</sup> November 2019

ANNEXURE - III

CNG Cylinders Option	Manufacturer	Capacity, Ltr.
1	M/s. Euro India Cylinders Ltd	60,80 (267 mm dia) & 135 (356 mm dia)
2	M/s Everest Kanto Cylinder Ltd.	60,80 (267 mm dia) & 135 (356 mm dia)
3	M/s Rama Cylinder Pvt. Ltd	60,80 (267 mm dia) & 135 (356 mm dia)
4	M/s. Jay Fe Cylinder Ltd.	60,80 (267 mm dia) & 135 (356 mm dia)

\*\*\* END OF DOCUMENT \*\*\*

Innovation • Service • Excellence

AUTHORISED SIGNATORY			
 ICAT <b>PRASHANT VIJAY</b> DEPUTY GENERAL MANAGER		 ICAT <b>DINESH TYAGI</b> DIRECTOR	
			Page 4 of 4

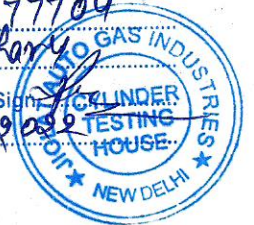


# JIOLAT AUTO GAS INDUSTRIES®

## CYLINDER TESTING HOUSE

Office : 2094/G-5, Gali No.17, Prem Nagar Delhi - 110 008 INDIA  
 Works : Seed Farm Road, Plot of Ram Chander, V.P.O., Alipur, New Delhi-110036  
 M. : +91-9811286222, 9990877702, 9350834469  
 Ph.: +91-11-27205153, 27205154, E-mail : jiolat.newdelhi@gmail.com  
 Website : www.jiolatautogas.com www.jiolatautogas.co.in

**CERTIFIED COPY OF ORIGINAL**  
 Certificate No. CAOA0257 Dated 04/11/2019  
 Mobile No. 9990877702  
 Name R. Chaudhary  
 Designation Sup.  
 Date 06/10/2019



### TECHNICAL SPECIFICATION CNG CONVERSION KIT

Annexure - I

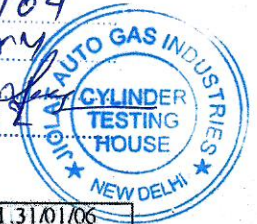
1. Details of Kit Manufacture / supplier / Installer		
a. name of Manufacture	M/s Jiolat Auto Gas Industries Cylinder Testing House	
b. Address	2094/G-5, Gali No.17, Prem Nagar, New Delhi-110008	
c. Telephone No.& Fax	011-27205153, 54	
d. Contact Person	Amit Chaudhary, Mo. 9990877702	
2. CNG Kit Identification		
a. Identification No.	JAGI-TA	
b. Variants, if any	NA	
3. CNG Cylinder (DOE approved/endorsed)		
	Option 1	Option 2
a. Name of manufacture	Rama Cylinders Ltd. Mumbai	Everest Kanto Cylinder Ltd. Mumbai
b. Identification No.	RAMA Ref. Drg. No. R-SC-267-200-6.0 RAMA Ref. Drg. R-SC-356-200-7.4 Rev.2	EKC Ref. Drg. No. 52283720 EKC Ref. Drg. No. 52283760 Rev.1
c. Type	Seamless Steel	Seamless Steel
d. Working Pressure (kg/cm <sup>2</sup> )	204 kg/cm <sup>2</sup>	204 kg/cm <sup>2</sup>
e. Max. test pressure (kg/cm <sup>2</sup> )	340 kg/cm <sup>2</sup>	340 kg/cm <sup>2</sup>
f. Approval reference from DOE	G-3(42)515/III dated 08/03/2007 G-3(42)515/VI dated 20/05/2011 60, 80, Ltr. (Dia 267) 135 Ltr. (Dia 356)	G-3(42)312/VII dated 21/09/2011 G-3(42)312/IX dated 02/02/2017 60, 80, Ltr. (Dia 267) 135 Ltr. (Dia 356)
	Option 3	Option 4
a. Name of manufacture	Jay Fe Cylinders Ltd. Haryana	Euro India Cylinder Limited. Gujrat
b. Identification No.	JFC Ref. Drg.No. JFE-267-200-6.5-A JFC Ref. Drg.No. JF:356:03:007	EICL Ref. Drg.No. 267-6.3-34CrMo4Rev1 EICL Ref. Drg.No. 356-8.2-34CrMo4 Rev1
c. Type	Seamless Steel	Seamless Steel
d. Working Pressure (kg/cm <sup>2</sup> )	204 kg/cm <sup>2</sup>	204 kg/cm <sup>2</sup>
e. Max. test pressure (kg/cm <sup>2</sup> )	340 kg/cm <sup>2</sup>	340 kg/cm <sup>2</sup>
f. Approval reference from DOE	G-3(42)557/I, dated. 08/01/2010 G-3(42)557/III, dated. 14/02/2014 60, 80, Ltr. (Dia 267) 135 Ltr. (Dia 356)	G-3(42)572 dated. 18/08/2011 G-3(42)572/I dated. 19/01/2017 60, 80, Ltr. (Dia 267) 135 Ltr. (Dia 356)
4. Cylinder valve(s)(DOE approved/ endorsed)		
a. Name of manufacture	Batra Associates Limited, Faridabad	Vanaz Engineers Ltd. Pune
b. model name/ Identification No.	Batra Ref. Drg. No. BV/06-00, BV/CNG-1/000	Vanaz Ref. Drg. No. V-0157b
c. Type	Burst Disc Assly& fusible plug, Manual on /off type all valves	
d. Working Pressure(kg/cm <sup>2</sup> )	204 kg/cm <sup>2</sup>	204 kg/cm <sup>2</sup>
e. Max. test pressure (kg/cm <sup>2</sup> )	300 kg/cm <sup>2</sup>	300 kg/cm <sup>2</sup>
International Centre for Automotive Technology	Manufacturer : Jiolat Auto Gas Industries Cylinder Testing House	Document No. JAGI/ICAT/2019/AI.
Signature :	Signature :	
Name : Prashant Vijay	Name : Amit Chaudhary	
Designation : Certification Business Unit	Designation : Officer	
Date :	Date : 06/08/2019	

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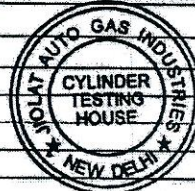


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Certificate No. CAOA0257 Dated 04/11/2019  
 Mobile No. 9990877704  
 Name R. Choudhary  
 Designation Sup. Sign. [Signature]  
 Date 26/04/2022



d. Approval reference from DOE	G-3(40)87 dated .23.11.17,	G-3(40)11/2003, dated .31.01/06
<b>5. CNG Solenoid valve</b>		
a. Name of Manufacture	Rohan BRC Gas Equipment Pvt Ltd.	
b. Model Name/Identification No.	In-built in the pressure reducer	
c. Type	12 V Electronic	
d. working pressure (kg/cm <sup>2</sup> )	220 bar	
e. Max test pressure (kg/cm <sup>2</sup> )	500 bar	
<b>6. Petrol Solenoid Valve</b>		
a. Name of Manufacture	Not Applicable	
b. Model Name/Identification No.		
c. Type		
e. Max test pressure (kg/cm <sup>2</sup> )		
<b>7. Refilling Valve</b>		
a. Name of Manufacture	Jiolat Auto Gas Industries/New Delhi, Jiolat Auto Gas Industries/New Delhi	
b. Model Name/Identification No.	J.A.G.I	J.A.G.I
c. Type	NZS TYPE	NGV
d. working pressure (kg/cm <sup>2</sup> )	200 Bar	200 Bar
e. Max test pressure (kg/cm <sup>2</sup> )	300 Bar	300 Bar
<b>8. Pressure Regulator</b>		
a. Name of Manufacture	Rohan BRC Gas Equipment Pvt Ltd.	
b. Model Name/Identification No.	BRC ME, TAC No. A 92596	
c. Type	12 V, Electronic	
d. Inlet pressure (kg/cm <sup>2</sup> )	200 Bar	
e. Outlet pressure (kg/cm <sup>2</sup> )	Aspiration of the engine	
f. No. of Stages	3	
<b>9. CNG filter</b>		
a. Name of Manufacture	Rohan BRC Gas Equipment Pvt Ltd.	
b. Model Name/Identification No.	Integral part of pressure regulator	
c. Type	Siev type,	
d. Inlet pressure (kg/cm <sup>2</sup> )	204	
e. Outlet pressure (kg/cm <sup>2</sup> )	200	
<b>10. Oil pump or Lubrication System if any</b>		
a. Name of Manufacture	No separate lubrication system	
b. Type	Engine lubrication system in-built with engine block	
<b>11. High Pressure Tubing</b>		
a. Name of manufacture	Jiolat Auto Gas Industries/New Delhi,	Jiolat Auto Gas Industries/New Delhi
b. Model Name/Identification no.	HPPSS-550007,	HPPSS-550006,
c. Type	Seamless Steel	stainless steel
d. working pressure (kg/cm <sup>2</sup> )	200	200
e. Max test pressure (kg/cm <sup>2</sup> )	300	300
f. Outer Diameter/inner Diameter	4 X 6 mm	4 X 6 mm
g. Protection quality (material Used)	PVC Sleeve	PVC Sleeve



International Centre for Automotive Technology	Manufacturer : Jiolat Auto Gas Industries Cylinder Testing House	Document No. JAGI/ICAT/2019/AL
Signature : <u>[Signature]</u>	Signature :	
Name : <u>Prashant Vijay</u>	Name : <u>AmitChaudhary</u>	
Designation : <u>CGM Certification Business Unit</u>	Designation : <u>Officer</u>	
Date :	Date : <u>06/08/2019</u>	Page 2 of 4

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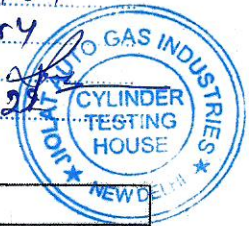
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Mobile No. 9990877704

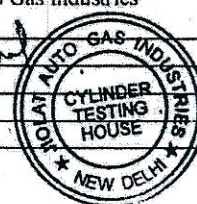
Name: R. Choudhary

Designation: Supt. Sign: [Signature]

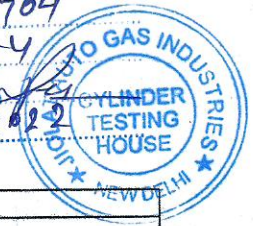
Date: 26/04/2020



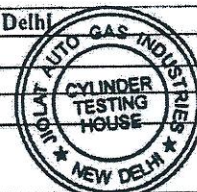
<b>12. Low pressure Hose</b>	
a. name of manufacture	Parker Hannifin India Pvt. Ltd.
b. model name /Identification no.	PARKER MARKWEL CNG / SAE J30 R6 .
c. Type	Flexible Rubber Hose,
d. working pressure (kg/cm <sup>2</sup> )	4Bar
e. Max test pressure (kg/cm <sup>2</sup> )	48 Bar
f. Outer Diameter/inner Diameter	OD 28.60 / ID 19.05 MM
g. Protection quality (material Used)	Reinforced Rubber
<b>13. Gas -Air mixer</b>	
a. name of manufacture	Jiolat Auto Gas Industries / New Delhi
b. model name /Identification no.	MIX-220001, ICAT Approved - CT0BM 5305 Dated 13-10-17
c. Type	Diffuser,
d. Ventures Size	drawing enclosed
<b>14. ON/OFF switch</b>	
a. name of manufacture	Not Applicable
b. model name /Identification no.	
c. Type	
<b>15. Ignition system</b>	
a. name of manufacture	Lucas , TVS Limited
b. type of Ignition system	Electronic Distributor ( Lucas )
c. spark plug gap mm & Make	0.8 mm , Bosh
d. Ignition Coil Make & Type	Lucas, oil type
e. Electrical circuit diagram/ layout	drawing enclosed
<b>16. Interfacing Unit. (Lambda)</b>	
a. name of manufacture	Jiolat Auto Gas Industries Cylinder Testing House / New Delhi
b. model name /Identification no.	WHL-001, Icat Approved -CT0GM 0392 dated 03-10-17
c. Type	Stepper motor type, Lambda control System
<b>17. Ignition timing advancer</b>	
a. name of manufacture	M/s Lucas TVS
b. Type	In-built in the Distributor
c. Timing on CNG mode	14 BTDC
d. Timing on base line fuel	Not Applicable
<b>18. brief Description of system Including Dimensional layout for cylinder and other kit component installation, Ventilation details etc.</b>	<p>CNG gas is stored in the cylinder at 200 bar and is fed to engine through the CNG regulator &amp; mixer fitted inside the engine compartment at atmospheric pressure. The gas flow is governed by the linear actuator, which has feed back available from the lambda sensor through lambda control, Dimensional layout attached. (Basic Layout of CNG Kit's Drawing No. JAGI/Ashok Leyland)</p> <p>Option ( 1 ) 80 x 8 = 640wc (267 dia)      ( 2 ) 60 x 8 = 480wc (267 dia)  ( 3 ) 80 x 6 = 480wc (267 dia)      ( 4 ) 80 x 10 = 800wc (267 dia)  ( 5 ) 80 x 12 = 800wc (267 dia)      ( 6 ) 135 x 4 = 540wc (356 dia)</p> <p>Installed Cylinders Srl Nos. BR-10724, BR-10658, BR-10744, BR-10690, BR-10748, BR-10759, BR-10655, BR-10768 (80 X 8 = 640 Ltrs.)</p>
<b>19. Catalytic converter</b>	
a. make	M/s Jiolat Auto Gas Industries / New Delhi
Test Agency : International Centre for Automotive Technology	Manufacturer : Jiolat Auto Gas Industries Cylinder Testing House
Signature : [Signature]	Signature : [Signature]
Name : Prashant Vijay	Name : Amit Chaudhary
Designation : Prashant Vijay	Designation : Officer
Date : DGM Certification Business Unit	Date : 06/08/2019
	Document No. JAGI/ICAT/2019/AL
	Page 3 of 4



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 Designation Sup. Sign [Signature]  
 Date 26/04/2022



b. Identification no	CC990001
c. model	Three Way
<b>20 Refilling valve interlocking switch</b>	
a. Name of manufacturer	Jiolat Auto Gas Industries/New Delhi Jiolat Auto Gas Industries/New Delhi
b. Identification no,	J.A.G.I/01 J.A.G.I.
c. Type	NZS TYPE NGV TYPE
<b>21 Current Limiting Device (fuse)</b>	
a. Name of manufacturer	Jiolat Auto Gas Industries Cylinder Testing House / New Delhi
b. Identification no,	F-15, ICAT Approved - CTOGM 0391 Dated 03-10-17
c. current rating	15amp
d. Type	Car Triage
<b>22. Pressure Indicator</b>	
a. Name of manufacturer	WIKA , India
b. Identification no,	Wika,
c. Type	Analog pressure indicator
<b>23. Service shut off valve</b>	
a. Name of manufacturer	Jiolat Auto Gas Industries / New Delhi
b. Identification no.	JAGI
c. Type	In built refilling valve Manually operated
<b>24. Compartement/sub-compartment/gas tight housing</b>	
a. Name of manufacturer	Not Applicable
b. Identification no,	
c. Type	
<b>25. Conduit</b>	
a. Name of manufacturer	Not Applicable
b. Identification no,	
c. Inner & Outer diameter	
<b>26. Details of Seat / Upholstery / roof and side Lining</b>	
a. Name of manufacturer	Standard fitment as per OEM's specifications
b. Identification no.	
c. Type	
<b>27. Details of non-moisture retaining hard rubber/equivalent material padding/lining provided for inner side of the cylinder mounting band(s)</b>	
a. Name of manufacturer	Navshakti Gas Energy Pvt. Ltd.
b. Identification no.	NGES-RUBB-01
c. Type	EPDM Rubber
<b>28 Battery cut off switch (if applicable)</b>	
a. Name of manufacturer	Jiolat Auto Gas Industries / Delhi
b. Identification no.	J.A.G.I.
c. Type	Cutout / on-off type
If Any other information	NO



Test Agency : International Centre for Automotive Technology	Manufacturer : Jiolat Auto Gas Industries Cylinder Testing House	Document No. JAGI/ICAT/2019/AL
Signature : <u>[Signature]</u>	Signature : <u>[Signature]</u>	
Name : <u>Prashant Vijay</u>	Name : <u>Amit Chaudhary</u>	
Designation : Prashant Vijay	Designation : Officer	Page 4 of 4
Date : DGM Certification Business Unit	Date : 06/08/2019	



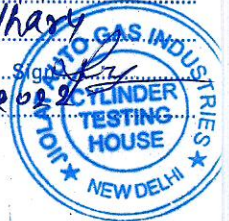
# JIOLAT AUTO GAS INDUSTRIES®

## CYLINDER TESTING HOUSE

Office : 2094/G-5, Gali No.17, Prem Nagar Delhi - 110 008 INDIA  
 Works : Seed Farm Road, Plot of Ram Chander, V.P.O., Allpur, New Delhi-110036  
 M. : +91-9811286222, 9990877702, 9350834469  
 Ph.: +91-11-27205153, 27205154, E-mail : jiolat.newdelhi@gmail.com  
 Website : www.jiolatautogas.com www.jiolatautogas.co.in

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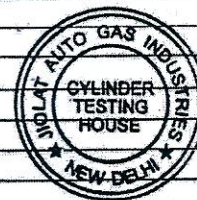
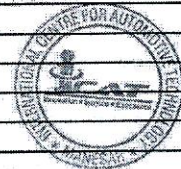
Certificate No. CAOA 0257 Dated 21/11/19  
 Mobile No. 9990877704  
 Name R. Choudhary  
 Designation Sup.  
 Date 26/04/2022



### TECHNICAL SPECIFICATION OF VEHICLE

Annexure II

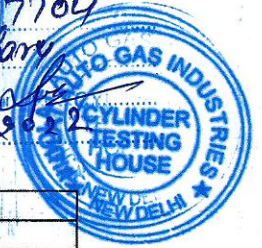
Manufacturer's Name and Address	M/s Ashok Leyland, Alwar
<b>1. Vehicle Data</b>	
Model	ALPSV 4/186
Type	CNG Converted BUS (M-3)
Engine No.	VWH254786
Chassis No.	VWA040922
Year of Manufacture	July, 2005
<b>2. Engine</b>	
Model	H Series
Type	water cooled, with turbocharged CNG converted engine
Bore X Stroke, mm	104 x 113
No. of Cylinders	6
Displacement	5760 cc
Compression ratio	10.9:1 in CNG
Max. Engine output	89 kW @ 2200 rpm
Max. Torque	498 Nm @ 1400 rpm
Air Cleaner	Dry type remote mounted
Oil filter	Full Flow Paper Type
Fuel filter	Single stage Fine Filtration.
Capacity of cooling system	16 Ltrs.
Oil sump capacity	15-17 Ltr.
Wight of Engine	350 kg ( Dry ) with flywheel and alternator
Radiator frontal area (core area)	2887 sq. cm
<b>3. Clutch</b>	
Type	Single Plate dry Friction type
Outside diameter	353 mm
<b>4. Gear Box</b>	
Model	Ashok Leyland ZS6.36
Type	Synchromesh
No. of gears	5 forward and 1 reverse
Gear ratio	1 <sup>st</sup> 6.93:1
	2 <sup>nd</sup> 443:1
	3 <sup>rd</sup> 2.63:1
	4 <sup>th</sup> 1.51:1
	5 <sup>th</sup> 1.00:1
	Rev 6.22:1
Front axle	Heavy Duty Forged I beam Eliot type
Rear axle	Heavy Duty Forged I beam Eliot type
Ratio	5.57:1



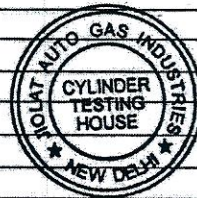
Test Agency International Centre for Automotive Technology	Manufacturer : Jiolat Auto Gas Industries. Cylinder Testing House	Document No. JAGI/ICAT/2019/AL
Signature : <u>[Signature]</u>	Signature : <u>[Signature]</u>	
Name : <u>Prashant Vijay</u>	Name : Amit Kumar Chaudhary	
Designation : Prashant Vijay	Designation : Officer	
Date : DGM Certification Business Unit	Date : 06/08/2019	



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 Mobile No. 9990877704  
 Name: R. Choudhary  
 Designation: Sup. Sign. [Signature]  
 Date: 26/09/2019



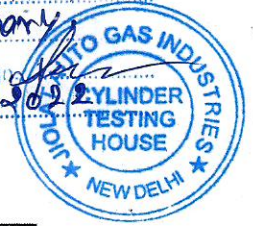
<b>5. Steering</b>	
Type	Manual steering – recirculating ball type
Ratio	20.2:1
<b>6. Frame</b>	
Long member size	228.6mm x 75mm x 6.3
Number of cross member	7
<b>7. Suspension</b>	
Type	Semi-elliptical multi-leaf spring at front and rear
Spring span front	1220 mm
Rear	1370 mm
Leaf width front	70 mm
Rear	70 mm
<b>8. Shock Absorbers</b>	
Hydraulic telescopic double acting shock absorbers.	
<b>9. Brake</b>	
Service brake	Full air brake
Brake drum dia	308 mm
Brake lining area front	2180 sq. cm
Brake lining area rear	2470 sq. cm
Total braking area	4145 sq. cm.
Parking brake type	Hand operated parking brake acting on rear wheels
Wheels & Tire	10.00*20 16 PR Diagonal ply
<b>10. Electrical System</b>	
OEM	
System Voltage	24V
Battery	12V x2
Alternator (max. output)	29 Amp
Make	Lucas TVS
Type	Dry type
Wiper motor	12 V
<b>11. Fuel Tank</b>	
CNG Cylinder as per drawing.	
<b>12. Dimensions</b>	
a. Wheel base, mm	5639mm
b. Overall width, mm	2580mm
c. Overall length, mm	10859mm
e. Front track, mm	1918mm
f. Rear track, mm	1816mm
h. Min. Ground Clearness	231 mm
i. Cargo Box Dimensions	NA
j. Load Body Platform Area	NA
<b>13. Weights</b>	
Maximum GVW	15660 kg
Maximum Permissible FAW	5470 kg
Maximum Permissible RAW	10190 kg
KERB weight with 90% fuel, spare wheel, tools	8970 kg
Maximum Gradeability in 1 <sup>st</sup> gear	7 degree.
Seating capacity	52 nos.



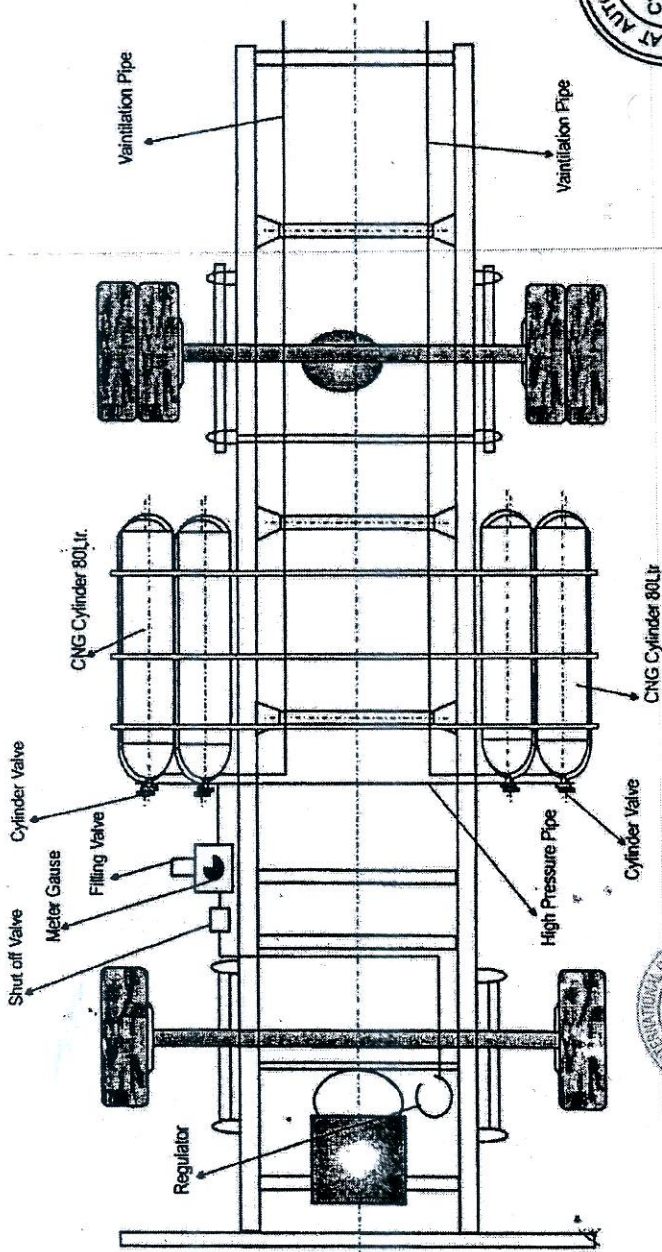
Test Agency International Centre for Automotive Technology	Manufacturer : Jiolat Auto Gas Industries. Cylinder Testing House	Document No. JAGI/ICAT/2019/AL
Signature : [Signature]	Signature :	
Name : Prashant Vijay	Name : Amit Kumar Chaudhary	
Designation : Prashant Vijay	Designation : Officer	
Date : DGM Certification Business Unit	Date : 06/08/2019 [Signature]	

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 Mobile No. 9990877704  
 Name. A. Chaudhary  
 Designation. SUP. Sign. [Signature]  
 Date. 26/04/2022



LAYOUT OF CYLINDER MOUNTING



International Centre for Automotive Technology

[Signature]  
 Prashant Vijay  
 DGM Certification Business Unit

<b>JIOLAT AUTO GAS INDUSTRIES CYLINDER TESTING HOUSE / NEW DELHI</b>	
Test Agency: ICAT	Cylinder Make: RAMA / EKC / JAY FE / EURO
Signature: [Signature]	No. of Cylinder: 80 X 8 Cylinders
Name: [Signature]	Total WC: 640 Ltr.
Designation: [Signature]	Valve Make: Vanaz / Batra
Date: [Signature]	No. of Valve: 8 Valve
Drawing No.:	JAGI/CAT/AL/01
Prepared By:	Rajendra Prasad
Signature:	[Signature]
Approved By:	Amit Chaudhary
Signature:	[Signature]



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Certificate No. CAOA0257 Dated 04/11/2019

Mobile No. 9990877704

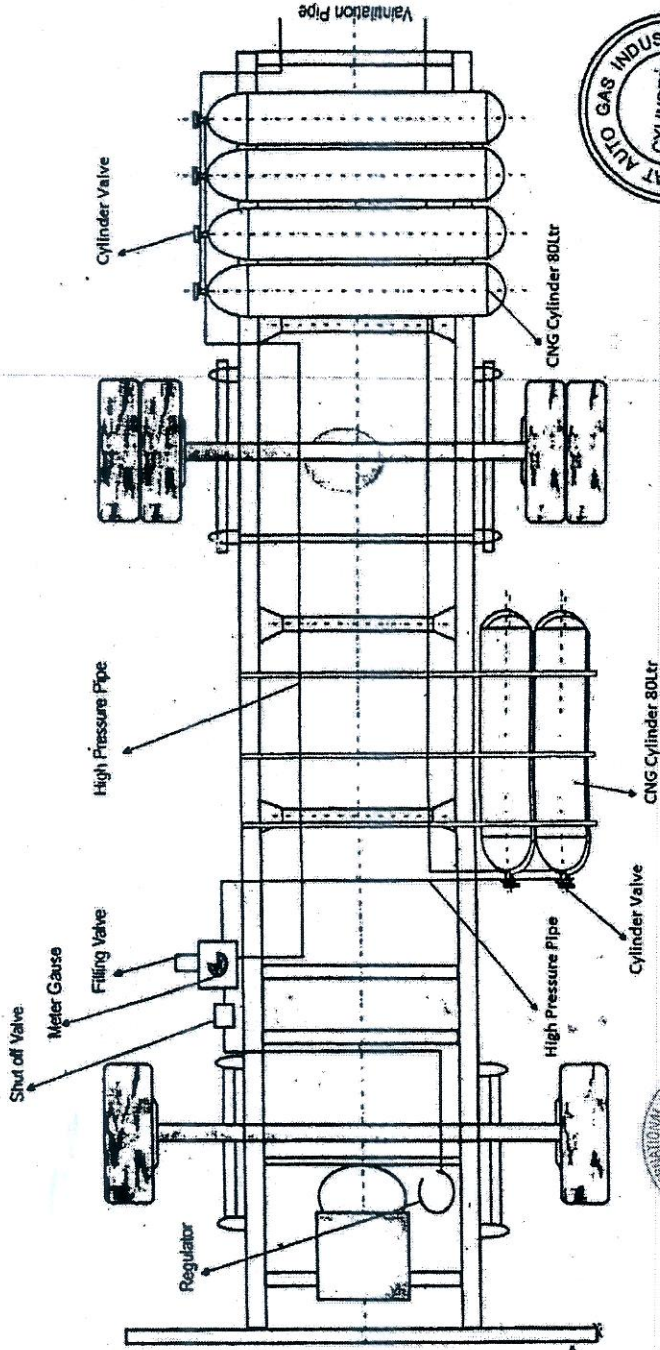
Name R. Choudhary

Designation Sup. Sign [Signature]

Date 06/09/2019



LAYOUT OF CYLINDER MOUNTING



International Centre for Automotive Technology

Prashant Vijay  
DGM Certification Business Unit

JIOLAT AUTO GAS INDUSTRIES CYLINDER TESTING HOUSE / NEW DELHI			
Test Agency : ICAT	Cylinder Make: RAMA / EKC / JAY FE / EURO	Drawing No.:	JAGI/CAT/AL/02
Signature :	No. of Cylinder : 80 X 8 Cylinders	Prepared By :	Rajendra Prasad
Name:	Total WC : 640 Ltr.	Signature:	[Signature]
Designation:	Valve Make: Vanaz / Batra	Approved By:	Amit Chaudhary
Date :	No. of Valve : 8 Valve	Signature:	[Signature]

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Certificate No. CAOA 0257 Date 04/11/2019

Mobile No. 9990877704

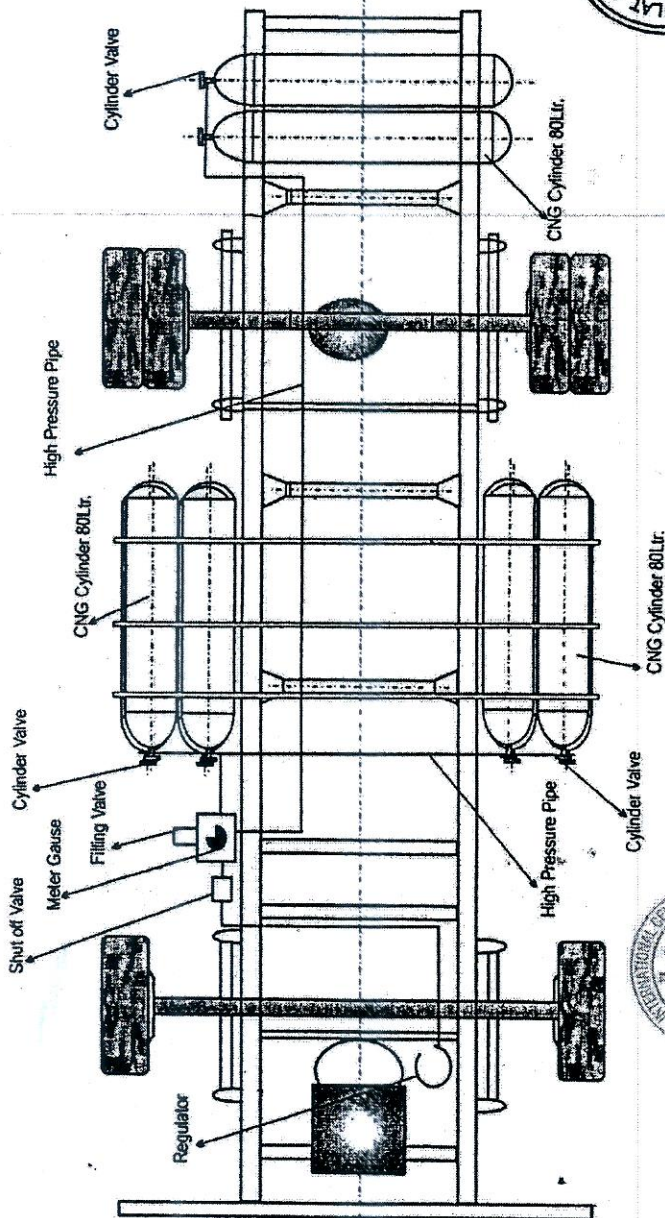
Name R. Chaudhary

Designation 84P Sign

Date 06/04/2022



LAYOUT OF CYLINDER MOUNTING



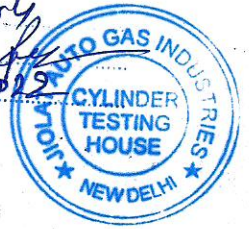
International Centre for Automotive Technology

Prashant Vijay  
DGM Certification Business Unit

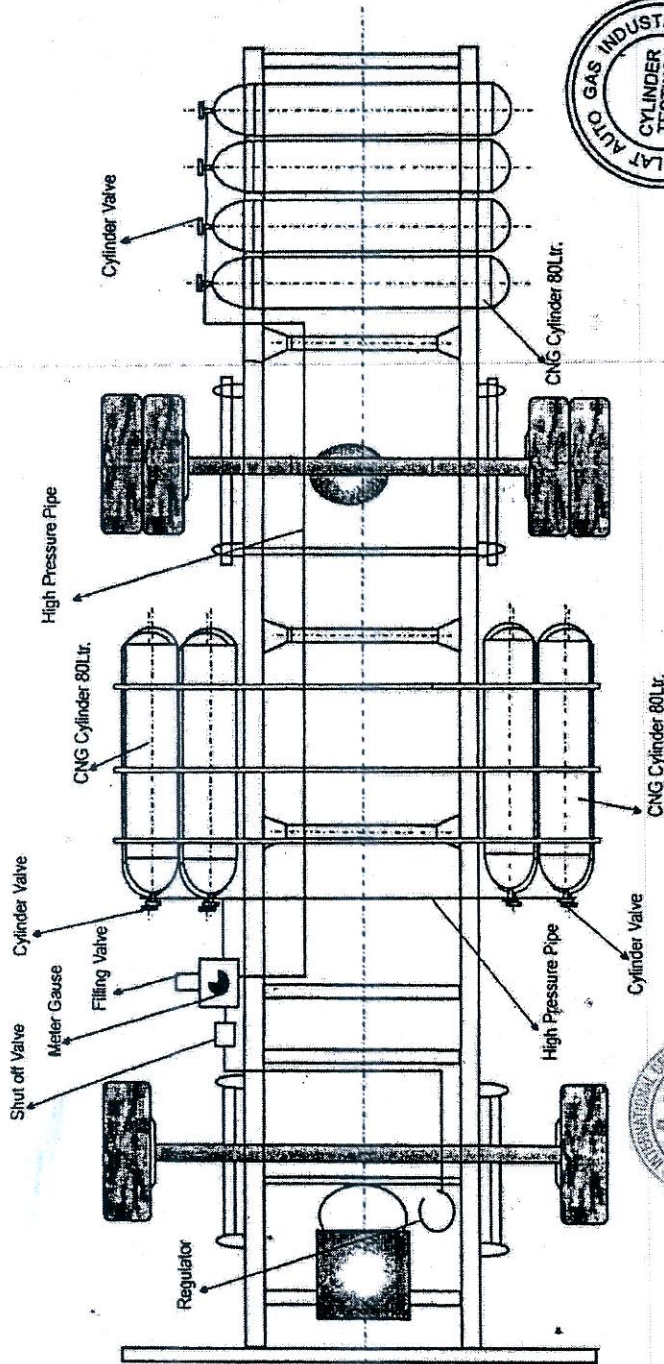
JIOLAT AUTO GAS INDUSTRIES CYLINDER TESTING HOUSE / NEW DELHI	
Test Agency : ICAT	Cylinder Make: RAMA / EKC / JAY FE / EURO
Signature :	Drawing No.: JAG/ICAT/AL/03
Name:	Prepared By : Rajendra Prasad
Designation:	Signature: <i>Rajendra Prasad</i>
Date :	Approved By: Amit Chaudhary
	Signature: <i>Amit Chaudhary</i>
	Cylinder Make: RAMA / EKC / JAY FE / EURO
	No. of Cylinder : 80 X 10 Cylinders
	Total WC : 800 Ltr.
	Valve Make: Vanaz / Batra
	No. of Valve : 10 Valve

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Certificate No. CAOA0257 Dated 04/11/2019  
 Mobile No. 9990877703  
 Name R. Choudhary  
 Designation Sup. Sign [Signature]  
 Date 06/04/2019



LAYOUT OF CYLINDER MOUNTING



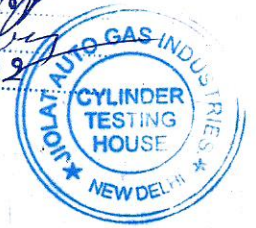
International Centre for Automotive Technology

[Signature]  
 Prashant Vijay  
 DGM Certification Business Unit

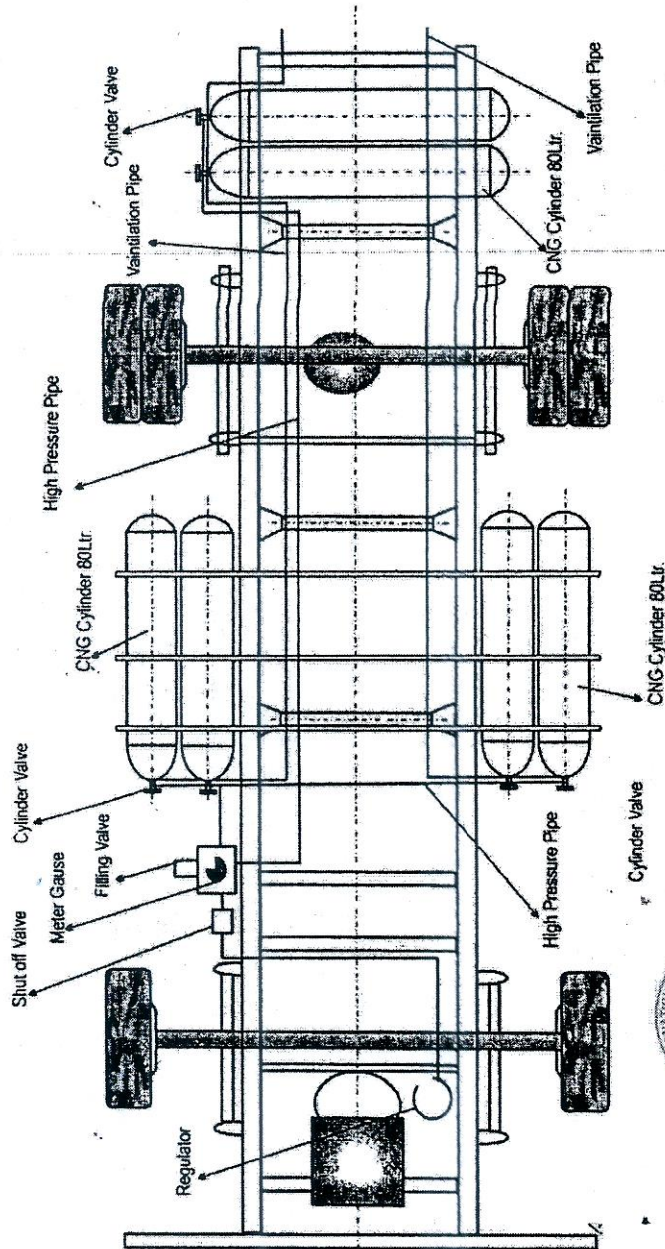
<b>JIOLAT AUTO GAS INDUSTRIES CYLINDER TESTING HOUSE / NEW DELHI</b>	
Test Agency : ICAT	Drawing No.: JAGI/ICAT/AL/04
Signature :	Prepared By : Rajendra Prasad
Name:	Signature: <u>[Signature]</u>
Designation:	Approved By: Amit Chaudhary
Date :	Signature: <u>[Signature]</u>
Cylinder Make: RAMA / EKC / JAY FE / EURO	Drawing No.: JAGI/ICAT/AL/04
No. of Cylinder : 80 X 12 Cylinders	Prepared By : Rajendra Prasad
Total WC : 960 Ltr.	Signature: <u>[Signature]</u>
Valve Make: Vanaz / Batra	Approved By: Amit Chaudhary
No. of Valve 12 Valve	Signature: <u>[Signature]</u>

CERTIFIED COPY OF ORIGINAL

Certificate No. CAOA 0257 Dated 09/11/2019  
 Mobile No. 9990877704  
 Name A. Choudhary  
 Designation SUP. Sign [Signature]  
 Date 06/09/2022



LAYOUT OF CYLINDER MOUNTING



International Centre for Automotive Technology

[Signature]  
 Prashant Vijay  
 DGM Certification Business Unit

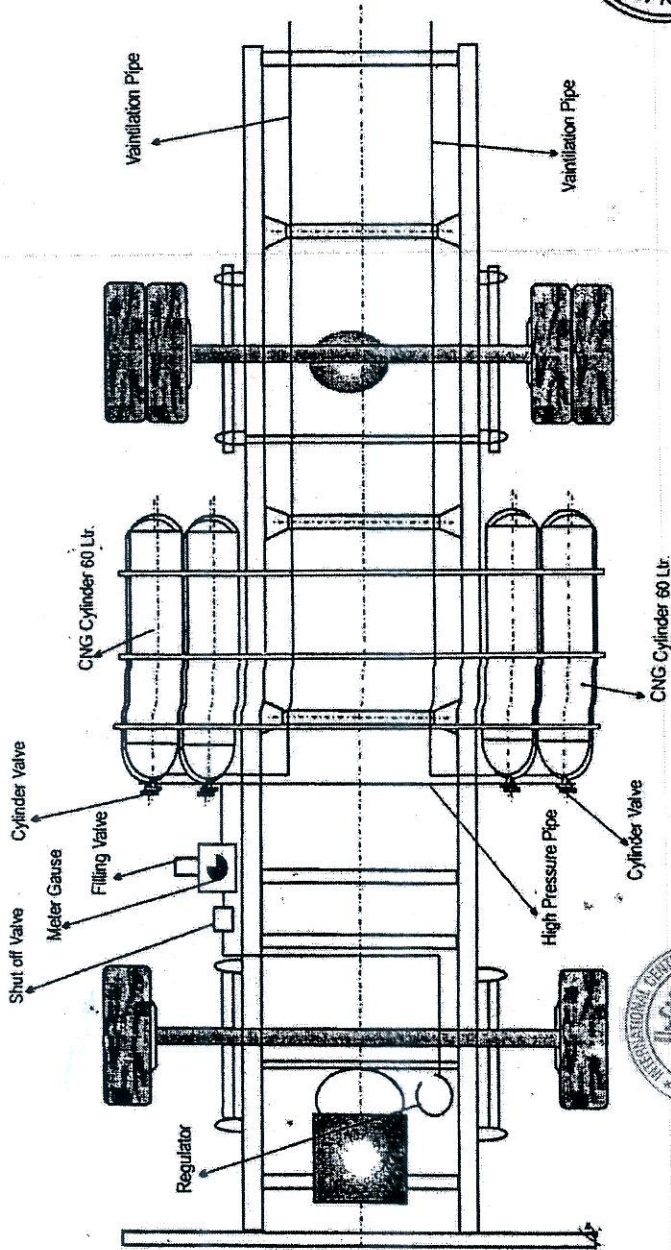
<b>JIOLAT AUTO GAS INDUSTRIES CYLINDER TESTING HOUSE / NEW DELHI</b>	
Test Agency : ICAT	Cylinder Make: RAMA / EKC / JAY FE / EURO
Signature :	No. of Cylinder : 80 X 6 Cylinders
Name:	Total WC : 480 Ltr.
Designation:	Valve Make: Vanaz / Batra
Date :	No. of Valve : 6 Valve
	Drawing No.: JAGI/CAT/ AL/05
	Prepared By : Rajendra Prasad
	Signature: <u>[Signature]</u>
	Approved By: Amit Chaudhary
	Signature: <u>[Signature]</u>

CERTIFIED COPY OF ORIGINAL

Certificate No. CAOA 0257, Date: 04/11/2019  
 Mobile No. 9990877704  
 Name: A. Chaudhary  
 Designation: SUP. Sign: 26/09/2019



LAYOUT OF CYLINDER MOUNTING



International Centre for Automotive Technology

Prashant Vijay  
 DGM Certification Business Unit

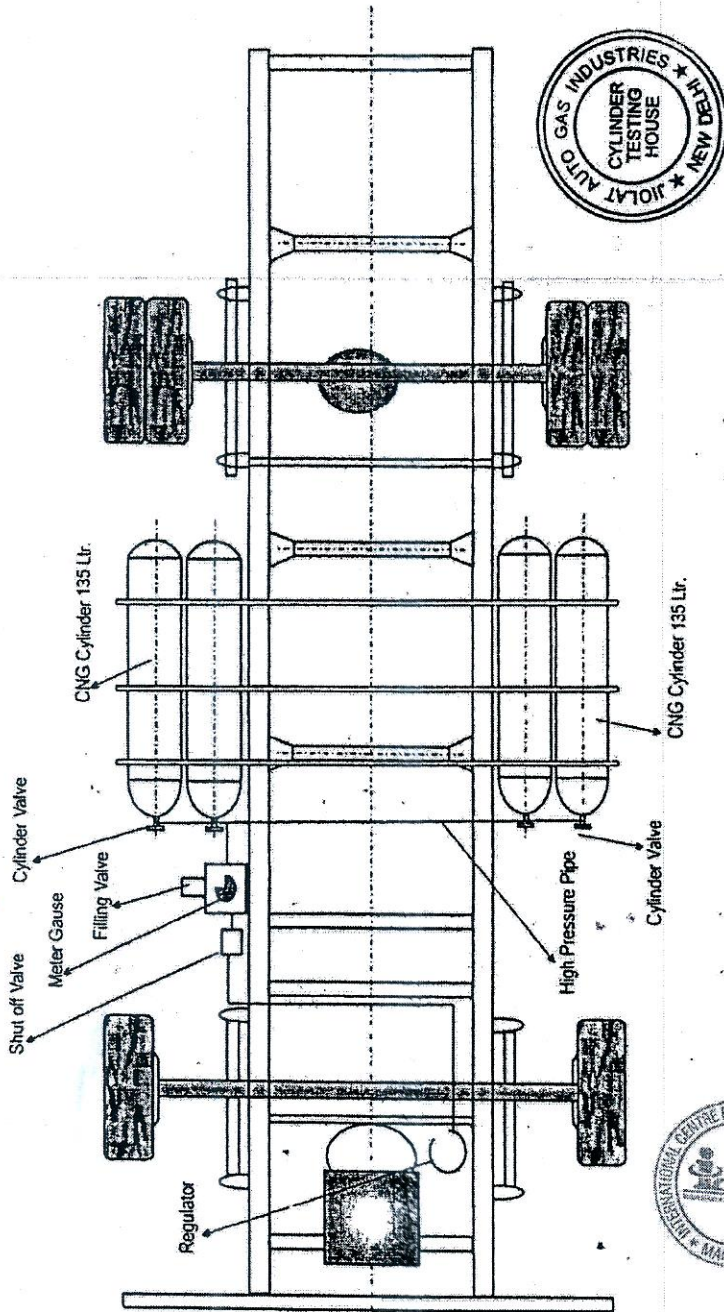
<b>JIOLAT AUTO GAS INDUSTRIES CYLINDER TESTING HOUSE / NEW DELHI</b>	
Test Agency : ICAT	Drawing No.: JAG/ICAT/ AL/06
Signature :	Prepared By: Rajendra Prasad
Name:	Signature: <i>Rajendra Prasad</i>
Designation:	Approved By: Amit Chaudhary
Date:	Signature: <i>Amit Chaudhary</i>
Cylinder Make: RAMA / EKC / JAY FE / EURO	
No. of Cylinder : 60 X 8 Cylinders	
Total WC : 480 Ltr.	
Valve Make: Vanaz / Batra	
No. of Valve : 8 Valve	

CERTIFIED COPY

Certificate No. CAOA 0257 Date 04/11/19  
 Mobile No. 9990877904  
 Name R. Choudhary  
 Designation Sup.  
 Date 26/04/2019



LAYOUT OF CYLINDER MOUNTING



International Centre for Automotive Technology

Prashant Vijay  
 DGM Certification Business Unit

Test Agency : ICAT	Cylinder Make: RAMA / EKC / JAY FE / EURO	Drawing No. : JIOLAT/ICAT/AL/07
Signature :	No. of Cylinder : 135 X 4 Cylinders	Prepared By : Rajendra Prasad
Name:	Total WC : 540 Ltr.	Signature: <u>R. Choudhary</u>
Designation:	Valve Make: Vanaz / Batra	Approved By: Amit Chaudhary
Date :	No. of Valve : 4 Valve	Signature: <u>[Signature]</u>

