



HYPERCOMP CNG COMPRESSOR (3W815)



- ❖ Dedicated natural gas compressor design.
- ❖ W-Type arrangement utilizing gas load balancing.
- ❖ Efficient even in high ambient temperatures.
- ❖ Low vibration, requiring no specific foundations.
- ❖ Longer service intervals due to reduced wear.
- ❖ Low energy consumption due to high inertia.
- ❖ Simple site installation.
- ❖ Minimum space requirement.



HYPERCOMP

High Pressure Compressors

Islamabad, Pakistan

At Hypercomp, a highly motivated team of qualified engineers and workers who are courageously plunged in to the field of manufacturing of high pressure Air & Gas compressors in Pakistan for the first time.

For the last 20 years, our team has been involved with the compression technology. This long association and dedication provides us the opportunity to deeply study various designs, technology and the materials used in the manufacturing of the most successful and durable compressors of the world.

The journey started from the manufacturing of the key parts for the most popular makes of the compressors world like Ingersoll Rand, Atlas Copco, Rix, CompAir, Broom & Wade etc. the proven quality of our parts and the response from the customer were highly encouraging.

In 2004, the company became confident enough to design and manufacture high pressure Natural Gas Compressor of 250 barg for CNG industry indigenously. Our firm commitment and continuous endeavor to bring home high pressure gas compression technology has been successful and after years of diligent work, Hypercomp produced Pakistan's first Natural Gas Compressor in 2008.

Accreditations



OIL & GAS REGULATORY AUTHORITY
No. OGRA/CNG-18/4108/Approval/Shipping February 08, 2010

M/s Hypercomp (Pvt) Ltd.
Head Office: Suite # 28, Services Plaza, The Mall,
Rawalpindi

Subject: LOCAL MANUFACTURING/ASSEMBLING OF CNG COMPRESSOR MODEL NO. JPM21
MANUFACTURED BY M/S. HYPERCOMP (PVT) LTD.

Dear Sir,

I am directed to refer to your request dated 29th July, 2009 on the subject and to state that on the basis of technical evaluation carried out by Technical Evaluation Committee, you are permitted to manufacture the following compressors:-

- that the manufacturer shall strictly comply with its warranty conditions, delivery liability period or any other sales service applicable under any agreement in its writing with the consumer/customer;
- that the characteristics of the CNG Compressor model No. JPM21 is as provided, and any alteration/modification or deviation from the approved model etc. at any stage, will not be done without obtaining prior permission of the Authority;
- that for all new and standard components, certified by approved third party inspection agency, meeting the requirements of Pakistan CNG Rules, 1992, will be used;
- that for all standard CNG Compressor will be subject to 1st party fitness certificate from SPS Limited, RDS, ARI or Bureau Veritas that the machine meets the specifications laid down in Pakistan CNG Rules and is safe for operation and the certificate will be presented prior to the license for production or the issue of inspection of CNG station under Rule 14(2) of CNG Rules 1992;
- that the relevant 3rd party certificate will be submitted to the Oil & Gas Regulatory Authority within six months;
- that the manufacturer will keep the complete record of procurement/liberation of local and imported parts of the compressor during production and/or performance given in the manual alongside the manual of use report;
- that the manufacturer will keep the proper documentation regarding quality control/assurance through the parts inspection record and will retain available for any future inspection of TCC and for any inspection team/individual nominated by OGRA;
- that the manufacturer will enroll the adequate technical manpower for the smooth operation of their production plant;
- that you will keep good standard of working environment and maintain excellent industrial standard for producing good quality machine;
- in case of any accident due to manufacturing fault of the equipment as verified by the 1st party inspector (s), the manufacturer shall be responsible and pay compensation as determined by Authority;
- All modifications of the above Compressor at CNG station (s) during any year shall be submitted clearly by you;
- Non-compliance of the compliance report shall be furnished to OGRA on an monthly basis;

2. In case the equipment fails to meet the above requirements as well as requisite standards, the above certification/permission will be withdrawn.

3. The acceptance of this letter shall be furnished within 15 days please.

Yours Faithfully,
Chairman
Joint Executive Director

CC:

- Secretary Machinery, Federal Board of Revenue, Islamabad;
- Chairman, Engineering Development Board, R-28, R-47, G-4/3, Islamabad;
- ISI/ISIET, Islamabad;
- M/S Bureau Veritas, House #177, Block-7/8, Minerva Cooperative Housing Society, Karachi;
- M/S Bureau Veritas Ltd, M/S. Minerva House, 1st Floor, 102, Khayaban-e-Ruhani, Phase VI, Dabulistan Housing Authority, Karachi;

Tariq Chambers, Civil Centre, Sector G-6, Islamabad, Pakistan
Tel: +92-51-8204516-7, 8204516-7, 8204752, 8204533, Fax: +92-51-8205050

OGRA's Approval Letter

BUREAU VERITAS
Certification

Certificate

issued to
HYPERCOMP (PVT) LTD
PLOT # 18/INDUSTRIAL TRIANGLE/HUMAN
ISLAMABAD - PAKISTAN

Bureau Veritas Certification confirms that the Management System of the above organization has been assessed and found to be in accordance with the requirements of the standards detailed below:

Standard
ISO 9001:2008

Scope of supply
HIGH PRESSURE AIR AND NATURAL GAS COMPRESSORS

Original approval date: **29th MARCH 2011**

Date of audit: **4th FEBRUARY 2011** Date of next recertification: **3rd FEBRUARY 2014**

Date of certification: **29th MARCH 2011** Valid until: **29th MARCH 2012**

To check this certificate validity please call: +92 21 111 786 011, after monitoring the performance of the organization's management system in accordance. Under the certificate validity will be renewed after every one year to maintain it in accordance with the date of approval.

Further clarifications regarding the scope of this certificate and the applicability of the Management System requirements may be obtained by consulting the organization.

Date: **29.03.2011**
Certificate number: **PAK000467**

Bureau Veritas Certification
using the standards
reference number
001

ISO 9001:2008 Certificate

Standards & Approvals:

1. Overall Design:
 - a) American Petroleum Institute Standard (API) 618
 - b) Pakistan CNG Rules 1992
2. Heat Exchanger's Design:
TEMA Class R, ASME Section VIII Div. I
3. Welding & Fabrication of Heat Exchangers, Piping and Pressure Vessels:
ASME Section VIII, IX and B31.3

Hypercomp runs a fully enclosed test facility by simulating CNG station's conditions. Every compressor sold is fully performance and safety function tested on natural gas with Independent International 3rd party certification.

Technical Specifications

Compressor configuration	W- 60°
No. of cylinders	03 No.
No. of stages	03 No.
Compressor design	Single throw, cross head design, atmospheric crankcase, water cooled
Gas inlet pressure (min-max)	08-15 Psig
Gas discharge pressure	3625 Psig
Gas discharge capacity@ 15 Psig	270 m ³ /hr ± 5% (at 30°C)
Gas discharge capacity@ 08 Psig	225 m ³ /hr ± 5% (at 30°C)
Compressor speed	795-900 RPM
Piston stroke	127 mm
Mean piston speed	3.36 m/s @ 795 RPM 3.81 m/s @ 900 RPM
Cylinder cooling	Water
Inter stage gas cooling	Water
Cooling system	Cooling tower (70RT min.) Closed circuit optional
Electric motor size	75KW (100hp)
Oil capacity (Crankcase)	13 Liters
Oil capacity (Lubricator)	1.5 Liters
Ambient temperature	Up to 50°C

Cylinder Bore Sizes

1 st stage	8.125" (206.375)
2 nd stage	3.5" (88.9mm)
3 rd stage	1.5" (38.1mm)

Dimensions

Overall dimensions (LXWXH)	2135 X 1190 X 1730 (mm)
Weight (without motor)	Approx. 1750Kg
Overall weight	Approx.2400Kg

Core Features



Pulsation dampners at each stage for extended valve life and condensate collection.



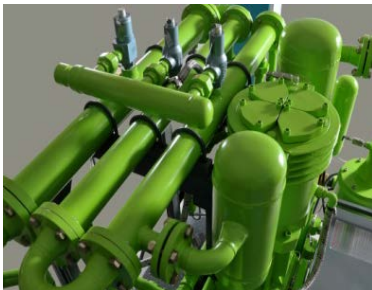
Built-in suction filter housing.



High quality, high flow relief valves for sure safety.



Very low vibration due to dynamically balanced rotating parts.



Specifically designed heat exchangers for high ambient conditions.



Depressurizing condensate (Blowdown) drain valves at each stage to make restart easy.



"Point to point" lubrication to significantly reduce wear on valves & rings while minimizing oil losses in the gas stream.



Full flow filtered pressurized lubrication.



Carbon Filled Teflon rings for low friction and long life for cylinder liners.



High quality valves from world's renowned manufacturers.



World's proven Wika contact gauges for safe operations.



Star Delta Electric Control Panel with following options

1. Relay Based
2. Micro Processor Based
3. PLC



Imported Parts Being Used

1.	Bearings (Main, Big & Small End)	USA
2.	Piston Pins	USA
3.	Piston Rods, Rod Seals	USA
4.	Compression & Rider Rings	USA
5.	Compressor Valves 1 st Stage	Hoerbiger, USA
6.	Pressure Safety Valves	Mercer, USA
7.	Explosion Proof Blow down Solenoid Valve	Burkert, France
8.	Explosion Proof Pressure & Temperature Switch Gauges	Wika, Germany
9.	Explosion Proof Electric Motor	Jiamusi, China
10.	Explosion Proof Terminal Box	Feel, UK
11.	Explosion Proof Inlet Solenoid Valve	Asco, USA
12.	Explosion Proof Water Flow Switch	Taiwan
13.	Explosion Proof Electrical Cable Glands	Peppers, UK
14.	Forced Feed Lubricator	Lincoln Industrial, USA
15.	High Pressure NRV's	Parker, UK
16.	Low Pressure Ball Valves & NRV's	Kitz, Japan
17.	Oil Filter at Suction	Parker, UK
18.	Final Filter at Discharge	Parker, UK
19.	Gas Suction Filter	Donaldson, USA
20.	Anti static Oil and Heat Resistant V-Belts	Gates, USA

Materials Used

ITEM DESCRIPTION	MATERIAL	FORM
Crankcase	Gray Cast Iron BS Grade 260	Cast
Crankshaft	SG Iron BS 700/3	Cast
Connecting Rods	SG Iron BS 700/3	Cast
Piston Pins	AISI-8620	Forged
Cross Head Pistons & Cylinders	Gray Cast Iron BS Grade 260	Cast
Compression Cylinder 1 st Stage	Gray Cast Iron BS Grade 260	Cast
Compression Cylinders 2 nd & 3 rd Stage	AISI-1045	Forged
Cylinder Liners	Gray Cast Iron BS Grade 260	Cast
Cylinder Head 1 st Stage	Gray Cast Iron BS Grade 260	Cast
Cylinder Heads 2 nd & 3 rd Stage	AISI-1045	Forged
Compression Piston 1 st Stage	Aluminum-8620	Extruded Bar
Compression Piston 2 nd Stage	Aluminum-7075	Extruded Bar
Compression Piston 3 rd Stage	AISI-4140	Bar Stock
Piston Rods	AISI-4140	Bar Stock
Valve Seats & Guards	Carbon Steel	Plate
Valve Plates	Stainless Steel AISI-304	Plate
Valve Springs	Stainless Steel AISI-304	Plate
Packing Cases	AISI-1045	Forged
Piston Rings, Rider Rings, Rod Seals	PTFE, PEEK	Bar Stock
Shell for Heat Exchangers	ASTM 106, Grade: B	Extruded Bar
Tubes & Tube Sheets for Heat Exchangers	AISI-304L	Extruded Bar

Hypercomp reserves the right to change any specification, parts material or origin at any time without prior information



Roshnee CNG Station, Sadohki (Gujranwala)



Hybrid Fuel CNG Station, Jhelum



Mario CNG Station, Sara-e-Alamgir



Al-Riaz International CNG Station, Rawat (Islamabad)



Save CNG Station, Gujar Khan

Advantages

- ❖ 100% parts availability round the clock.
- ❖ Minimum maintenance cost due to 3 stages,
- ❖ Longer parts life due to low RPM and mean piston speed.
- ❖ Accessible for easy and quick maintenance.
- ❖ No special tooling required for any maintenance operation.
- ❖ Fully equipped mobile workshop.
- ❖ Experienced technical staff.
- ❖ On site & in house training for operators.



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