

CALL US & MEET US, IF YOU ARE IN HIGH PRESSURE FLUID INDUSTRY WE HAVE RANGE OF PRODUCTS FOR YOU

- Compact & Portable
- Pressure up to 350 Bar
- Suitable for all GASES*
- Regulated Supply
- Gas Recycling
- Step Pressurization
- Fully Automatic OPTION
- Pneumatic Operated
- No Electrical Power required



YOU ALSO NEED IT



Due to its legendary quality & reliability under the toughest worldwide conditions combined with low weight and an excellent price quality ratio **PressurePAC™** their first choice test engineers & research scientist across industries.

In technical collaboration with



Company Profile



PASKALS is an advanced fluid systems company offering wide range of Products & custom built advanced fluid systems. We also provide engineering consultancy in High Pressure Fluid Systems DOMAIN for product development, testing & validation. We can test & validate your products/ systems in our High Pressure Fluid Systems LAB.

PASKALS has collaboration with HASKEL INC. USA (www.haskel.com), WORLD LEADER in high pressure Products. Haskel has a history of 60 YEARS in High Pressure engineering.

PASKALS offers complete range of advanced fluid systems. **You think of a fluid system and we can deliver it.** Our expertise spans all fluids (including specialty gases) and all applications. From Ultimate Vacuum Systems to systems with pressures up to 7000 Bars. We build systems for high technology industries like Aviation, Defense, R&D, Chemical, oil & Gas, Automotive, Shipping etc.

PASKALS has cumulative experience of more than 100 engineering years in this domain and an established niche Customer base in INDIA.

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We have supplied several systems with various types of gases including Oxygen/Helium/Nitrogen/Refrigerants and developed advanced Fluid Systems on them.

PASKALS customers are high end Application Users like Automotive, Chemical Industries, Oil & Gas, High Pressure Gases, Nuclear, Defense, and Space & R&D

PASKALS specialize in CNG Vigilant, CNG Circuit Leak Tester, CNG Circuit Component Tester, CNG Service Masters, CNG Dispensing Unit, PressurePAC, TestPAC, Gas Distribution Systems, Gas Generator & Plants, Special Gas Systems, Pilot Plant & Hydraulic Power Packs.

PASKALS - Industry & Applications

| Automotive Industry | High Pressure Industry | Nuclear, Defense, Space & R&D | Pharma Industry | Semiconductor Industry | Oil & Gas Industry | Chemical Industry |
|--|--|--|---|--|--|--|
| <ul style="list-style-type: none"> ▪ CNG Systems ▪ PressurePAC ▪ TestPAC ▪ Test Stands (Hydrostatic Testing) ▪ Refrigerant Charging & Recovery system ▪ Hydraulic Power Pack | <ul style="list-style-type: none"> ▪ Gas Booster Station ▪ Gas Distribution Systems ▪ Gas Cabinets ▪ Priority Panels ▪ Gas Control Panels ▪ Gas Filtration & conditioning Stations ▪ Nitrogen Generator & Plants ▪ Oxygen Generator & Plants ▪ Gas Skids & Trolleys | <ul style="list-style-type: none"> ▪ PressurePAC ▪ TestPAC ▪ Custom Engineered Test Equipment ▪ Gas Cabinets ▪ Priority Panels ▪ Gas Control Panels ▪ Gas Distribution Systems ▪ Special Gas Systems ▪ Engineering Projects | <ul style="list-style-type: none"> ▪ Pilot Plants ▪ Herbal Extraction Systems ▪ PressurePAC ▪ TestPAC | <ul style="list-style-type: none"> ▪ Gas Cabinets ▪ Priority Panels ▪ Gas Control Panels ▪ Gas Distribution Systems ▪ Special Gas Systems | <ul style="list-style-type: none"> ▪ Valve Actuation System ▪ PressurePAC ▪ TestPAC | <ul style="list-style-type: none"> ▪ Metering Skids ▪ Flushing Skids ▪ Injection Skid ▪ PressurePAC ▪ TestPAC |

PASKALS PRODUCTS

| | | | | | |
|--|--|--|---|--|---|
| CNG Vigilant <ul style="list-style-type: none"> • CNG Circuit Leak Tester | CNG Circuit Component Testers <ul style="list-style-type: none"> ✓ CNG Regulator Tester ✓ Cylinder Valve Leak Tester | CNG Service Master <ul style="list-style-type: none"> ✓ CNG Service Masters | CNG Stations <ul style="list-style-type: none"> ✓ CNG Booster Stations ✓ Custom CNG Systems | PressurePAC <ul style="list-style-type: none"> ✓ PressurePAC-Industrial ✓ PressurePAC-Lab and R & D | TestPAC <ul style="list-style-type: none"> ✓ Hydrostatic Pressure Testing ✓ Pressure Generators (Up to 4000 Bar) |
| Gas Distribution Systems <ul style="list-style-type: none"> ✓ Gas Booster Stations ✓ Gas Cabinets ✓ Priority Panels ✓ Gas Control Panels ✓ Gas Filtration & Conditioning Skids | Gas Generator & Plants <ul style="list-style-type: none"> ✓ Nitrogen Generator & Plants ✓ Oxygen Generator & Plants ✓ Gas Booster Stations ✓ Gas Filtration & Conditioning ✓ Gas Skids | Special Gas Systems <ul style="list-style-type: none"> ✓ Refrigerant Recovery & Charging Systems ✓ Pure Oxygen Systems ✓ Helium Systems ✓ Argon Gas Systems ✓ Gas Booster Stations | Pilot Plants & Skids <ul style="list-style-type: none"> ✓ Customized Pilot Plants ✓ Metering Skids ✓ Flushing Skids ✓ Chemical Injection Skids | Test Stands <ul style="list-style-type: none"> ✓ Hose Leak Test Stands ✓ Valve Test Stands ✓ Servo Hydraulic Test Stands ✓ Customized Test Stands | Hydraulic Power Packs <ul style="list-style-type: none"> ✓ Hydraulic Power Packs |

PressurePACTM

IN HIGH PRESSURE FLUID INDUSTRY YOU NEED IT IN ALL YOUR ENGINEERING DEPARTMENTS A MUST HAVE FOR R&D, Maintenance, Production Floor

“State of the art technology (Fully Pneumatic) has allowed the engineers at Paskals to design and develop a range of Compact & Safe Systems for the compression of gases such as Natural Gases, Nitrogen, Argon, and Helium”.

There are innumerable applications in various industries that have driven us to manufacture a product that provides you single & portable solution for all your High Pressure Needs.

It runs on just plant air so no more hassling electrical wires to limit the mobility of the instrument.

It is not just a gas booster but a complete system to fit your continuously changing High Pressure Requirement. Here are some features that will get your attention.

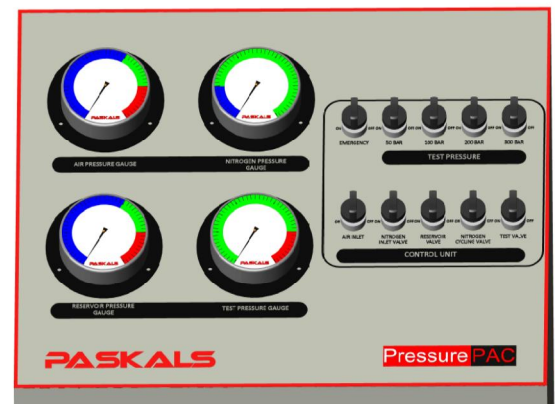
PRODUCT FEATURES

- ✓ Fully Automatic Pneumatic Operated
- ✓ No Electrical Power Required
- ✓ Pneumatic logic controlled operation
- ✓ Safety interlocking
- ✓ Pressurization up to 350 bar
- ✓ Fully Mobile
- ✓ Ergonomic Panel
- ✓ Gas Recycling
- ✓ Compact
- ✓ Trusted Performance
- ✓ Recommended for CNG vehicle OEMs,
- ✓ OEMs CNG R&D centers/Labs
- ✓ CNG components i.e. Valves, regulator
- Immediate pressure testing requirement



“OUR PRESSUREPAC ARE USED IN VARIOUS APPLICATIONS”

- CNG R&D Set ups in AUTOMOTIVE OEMs & LABS
- CNG Circuit Leakage test *
- CNG Circuit component prototype testing.
- As intensifier to High Pressure gases.
- R&D labs immediate High Pressure Requirements.

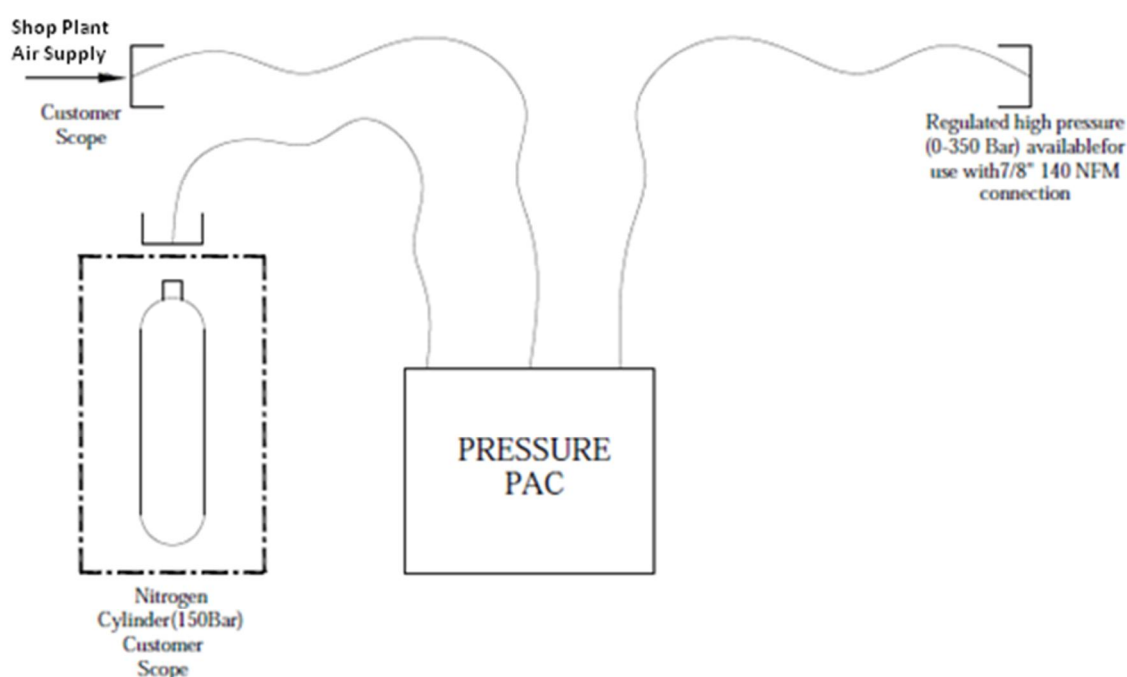


WORKING OF THE SYSTEM

PressurePAC runs on the basic principle of gas booster. Plant air of minimum 4 bars is used to boost the inlet gas up to 350 bar.

Gas Booster consists of a large area reciprocating air drive piston directly coupled to a connecting rod to a small area gas piston. The gas piston operates in a high-pressure gas barrel section. Each gas barrel end cap contains high pressure inlet and outlet check valves. The air drive section consists of a cyclic spool and pilot valves that provides continuous reciprocating action when air is supplied to the air drive inlet.

PressurePAC is working on Second law of thermodynamics and energy here is given by a Gas Booster. Automation is implemented in the machine for ease of operator. Filtered and regulated air supply of 4 Bar capacity comes to the PressurePAC air Inlet section. Dry Nitrogen up to -40° C and 30-140 baris supplied to the inlet gas section of PressurePAC and boosted up to a maximum pressure of 350 Bar.



System Requirements

| Drive | Drive Pressure (Bar) | Inlet Gas Pressure (Bar) | Outlet Gas Pressure (Bar) | Regulated Gas Pressure (Bar) | Reject Gas Pressure (Bar) |
|-------|----------------------|--------------------------|---------------------------|------------------------------|---------------------------|
| Air | 4 | 10-150 | 350 | 0-350 | 10 |

Applications Notes

1. CIRCUIT CHARGING:

In automotive industry, vehicles circuit are to be tested sometimes on assembly line itself and High Pressure Supply and charging system are not available there.

PressurePAC can be used for this particular application. It can charge the circuit up to 350 bar. It is done by safe and reliable step pressurization method. Circuit is charged gradually at a controlled flow rate to different pressure stages to ensure safety of the circuit.

2. CYLINDER FILLING:

Cylinder filling is a common process in various industries and charging stations are set up to accomplish this task. Charging stations are efficient but they have the limitation of mobility. Such systems are rigid and moving them is not an option.

PressurePAC has overcome this limitation and provide you complete mobility. It is compact & portable so you can take it anywhere and fill your cylinders to the desired pressure. It can also be used to transfer gas from one cylinder to other which is a general requirement in automotive industry.

3. GAS DISTRIBUTION SYSTEM:

In a gas distribution system pressure drops below the desired value after it has been used to charge a particular number of systems and cannot be used to charge the systems anymore even when a significant volume of gas is still remaining in it.

PressurePAC can be used to increase the efficiency of this system. PressurePAC can be installed in line with the distribution system to boost the remaining gas and fill the systems to desired pressure.

4. VALVE TESTING:

PressurePAC can also be used for testing of High Pressure Valves such as cylinder valves, Check Valves, filling valves etc. for leakage and performance. These valves can be charged to the Test Pressure using PressurePAC and Leak can be found by applying snoop solution to the leak points.

5. LEAKAGE TESTING:

Pressure can be used to test leakage in circuits, cylinders, valves or other components that operate on high pressure. PressurePAC can charge these units to the test pressure and hold it. In case of leak there will be a pressure drop in the unit. Leak point can be detected by applying snoop solution to leak points.

6. HIGH PRESSURE SUPPLY:

This is the basic application of PressurePAC. It is a source of continuous supply of High Pressure wherever you need. Portability & zero electrical power requirement of PressurePAC make it possible to carry it anywhere in the plant.

7. CHARGING OF ESCAPE CHUTE INFLATION BOTTLES:

The PressurePAC ensure that the optimum use is made of commercially bottled gauge down to as low as 150 PSI or vaporized liquid (cryogenic) supplies while producing pressure at high as 39,000 PSI depending on the gas type.

8. AEROSPACE INDUSTRY:

PressurePAC is widely used in High purity applications that are very common in aero space industry. Highly pure oxygen is used in various processes in aerospace at high pressure. PressurePAC is suitable for these applications.

9. HELIUM GAS INDUSTRY:

PressurePAC is commonly used in Helium gas industry for boosting Helium Gas

10. AIR CONDITIONING / REFRIGERATION:

PressurePAC are used for supply High Pressure gas or mixture or gases for the pneumatic testing of refrigerant coils

11. TESTING OF SUSPENSION:

This testing is mostly done for Aircraft, Trucks, and off road equipment. The PressurePAC ensures that the optimum use is made of aircraft hydro suspension system. PressurePAC provide fast efficient & economical method for testing aircraft suspension system.

12. LABORATORY APPLICATION (R&D):

PressurePAC is also used in Laboratory, (R & D) Lab for High pressure gas.

13. DIVING/ SUB AQUA:

The same application as for gas bottles, breathing tanks for the diving/ Sub Aqua Industry have to be tested and re-charged with gas. PressurePAC are used for this purpose. Purpose built systems are available to measure the expansion or 'permanent' stretch in the vessel, ensuring they are within acceptable limits. Other industries using high pressure gas bottles are

A: Fire B: Mining C: Diving D: Aircraft E: Gas Manufacturers

14. AIR CONDITIONING / REFRIGERATION

PressurePAC are used for supplying high pressure gas or mixtures or gases for the pneumatic testing of refrigerant coils

Other Featured Product

TestPAC™

Paskals TestPAC is designed to provide on-site High Pressure testing. These units are self-contained and powered by compressed Air.

These units can generate Liquid Pressure up to 4000 bar * and for gases we have PressurePAC which can generate gas pressure up to 2000 bar*.



Ability to set at any predetermined pressure and hold this fixed pressure without consuming power or generating heat

- ✓ No heat, flame or risk of spark
- ✓ Infinity Variable cycling speed (flow rate)
- ✓ No limit or adverse effect to continuous stop / start application
- ✓ Pump seals are self-lubricated requiring no external airline Lubricator
- ✓ Reliable, Easy to maintain, compact and robust.
- ✓ Stainless steel frame standard
- ✓ Portable Configuration

“OUR TESTPAC ARE USED IN VARIOUS INDUSTRIES & APPLICATIONS”

- | | |
|--|--|
| ● Hydrostatic Pressure Testing | ● Fire Industry (Washing, Cutting , Curving & Purging of ICs & PCBs) |
| ● Isostatic pressing | ● Railways |
| ● Crimping and small power tools | ● Tunnel / Mining / Quarrying |
| ● Hydraulic Presses | ● Lubrication |
| ● Water Injection blast cleaning | ● Automotive Industry |
| ● Valve Actuation | ● Universities (Laboratory Applications) |
| ● Roller Tensioning | ● Diving / Sub aqua |
| ● Liquid Chromatography | ● Clamping |
| ● Filter Presses | ● CNG Market- Transportation |
| ● Chemical Injection & Metering | ● Diesel Engines |
| ● Foam Manufacturer | ● Military Aircraft |
| ● Hydraulic Tube Pulling / Swaging | ● Plastic Injection Moulding & Die casting |
| ● Armament Manufacturers (Isostatic & Hydrostatic Testing) | ● Jacking / Lifting |
| ● Air-conditioning / Refrigeration | |
| ● Die Casting | |

Other Featured Product

“Our Innovative **CNG Vigilant** is a must for every CNG vehicle manufacturer for end of line testing. It is a complete solution for your entire Leak testing needs and features like Temperature Compensation & Nitrogen Recycling makes it Best Leak Testers available in market.

**Leak Testing Technologies**

- **Pressure Decay + Differential Pressure** with Innovative TTLIV
- Temperature Compensation Circuitry & inbuilt Temperature Compensation Software
- Helium Mass Spectrometry (OPTIONAL)
- Leak detection up 1×10^{-7} atm cc/sec (using Helium mass spectrometry)



| CNG CIRCUIT LEAK TEST REPORT | |
|------------------------------|--|
| Model No. | |
| Test Date | |
| Test Pressure | |
| Test Result | |
| Test by: | |
| Verified By: | |
| Comments: | |

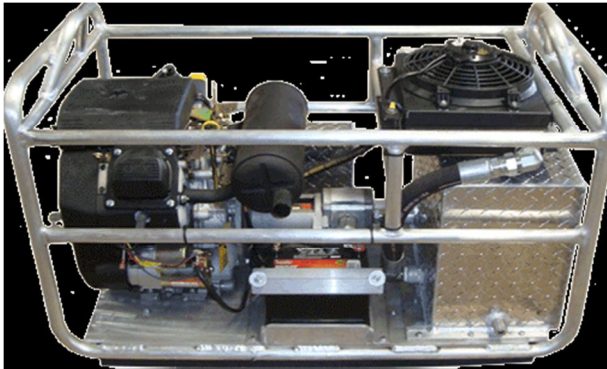
**Attractive Features***

- ✓ **Pressure Decay & Differential Pressure** technology for Leak Detection of Gas.
- ✓ **Single point operation**
- ✓ **LCD Display** of operation
- ✓ **Fully Automatic Function**
- ✓ **Step Pressurization (3 stages)** to 300 bar
- ✓ **Flow Control**
- ✓ **precision**
- ✓ **Nitrogen Recycling / Reuse**
- ✓ **High Pressure storage**
- ✓ **Calibrated rate of filling of the Test Volume.**
- ✓ **Independent programs for various Test Volumes (up to 5 types)**
- ✓ **High Pressure Gas Safety Interlocking**
- ✓ **Inbuilt air & Nitrogen filtration**
- ✓ **Most desired product for Mass Production set ups (OEMs).**
- ✓ **Printed Test report & data entry of the test schedule**
- ✓ **System will comply Poke yoke quality assurance.**

Other Featured Product



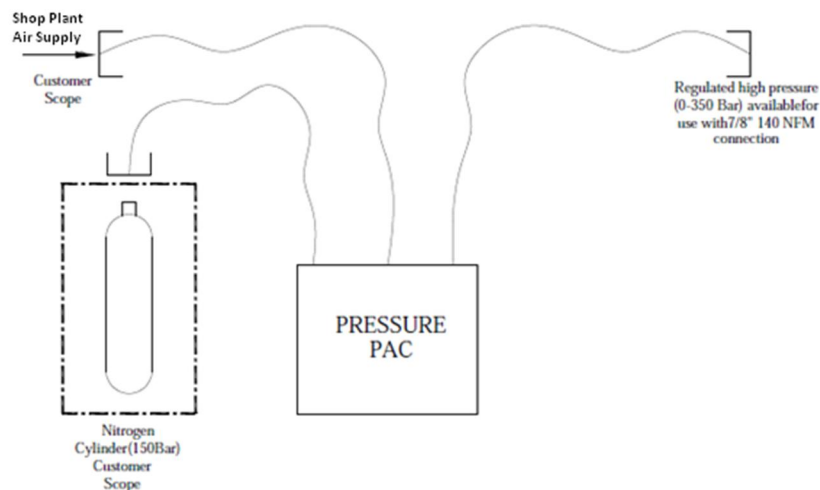
“State of the art technology (Hydraulic Driven) has allowed the engineers at Paskals to design and develop a range of Compact & Safe Systems for the compression of Non-reactive gases such as Nitrogen, Argon, and Helium”.



- ✓ Easy to operate just **Plug & Play** type, suits to your need of Regulated High Pressure Gas @300 bar
- ✓ Add Value to your CNG Vehicle Circuit servicing/maintenance needs by selecting Paskals CNG Service Master.
- ✓ Paskals Product support, Training,spares just a phone call away.

“OUR PRESSUREPAC ARE USED IN VARIOUS APPLICATIONS”

- CNG R&D Set ups in AUTOMOTIVE OEMs & LABS
- CNG Circuit Leakage test *
- CNG Circuit component prototype testing.
- As intensifier to High Pressure gases.
- R&D labs immediate High Pressure Requirements.



| ive | Drive Voltage (Volts)* | Inlet Gas Pressure (Bar) | Outlet Gas Pressure (Bar) | Regulated Gas Pressure (Bar) | Reject Gas Pressure (Bar) |
|----------|------------------------|--------------------------|---------------------------|------------------------------|---------------------------|
| Electric | 220V | 150 | 350 | 0-300 | 10 |

*Other Options in 24 V DC/12 VDC are also available .Please consult Factory.

CNG PRODUCTS

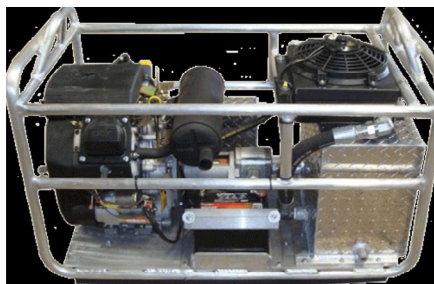
CNG VIGILANT™ LeakTesters



Attractive Features*

- ✓ Pressure Decay & Differential Pressure technology for Leak Detection of Gas.
- ✓ Single point operation
- ✓ LCD Display of operation
- ✓ Fully Automatic Function
- ✓ Step Pressurization (3 stages) to 300 bar
- ✓ Flow Control
- ✓ Nitrogen Recycling / Reuse
- ✓ High Pressure storage
- ✓ Calibrated rate of filling of the Test Volume.
- ✓ Independent programs for various Test Volumes (up to 5 types)
- ✓ High Pressure Gas Safety Interlocking
- ✓ Inbuilt air & Nitrogen filtration
- ✓ Most desired product for Mass Production set ups (OEMs).
- ✓ Printed Test report & data entry of the test schedule
- ✓ System will comply Poke yoke quality assurance.

CNG Service Master™



Attractive Features*

- ✓ Hydraulic operated
- ✓ Snoop/Soap solution for joints leak Check.
- ✓ Low voltage electric power required
- ✓ High Pressure storage
- ✓ Step Pressurization (3 stages) to 300 bar
- ✓ Manual Operation
- ✓ Mobile/Portable and easy handling
- ✓ Low cost /Economic Model
- ✓ Highly recommended for CNG Vehicle service stations/retrofitment centers/maintenance depots.

TestPAC™



Attractive Features*

- ✓ Fully Automatic
- ✓ Pneumatic Operated
- ✓ Up to 4000 Bar Pressure
- ✓ Intermeshed safety interlocks
- ✓ Step Pressurization
- ✓ Non electric pneumatic controlled model available
- ✓ Fully Mobile/Portable and easy handling
- ✓ Compact
- ✓ Rugged Performance
- ✓ User Friendly easy operation
- ✓ Low cost/Economic Model
- ✓ Multiple Applications in various industries

OUR PRODUCTS



IN TECHNICAL COLLABORATION WITH



For further assistance, please consult factory.

Paskals Fluid Systems Pvt. Ltd. E-148, Sector-63, Noida-201301