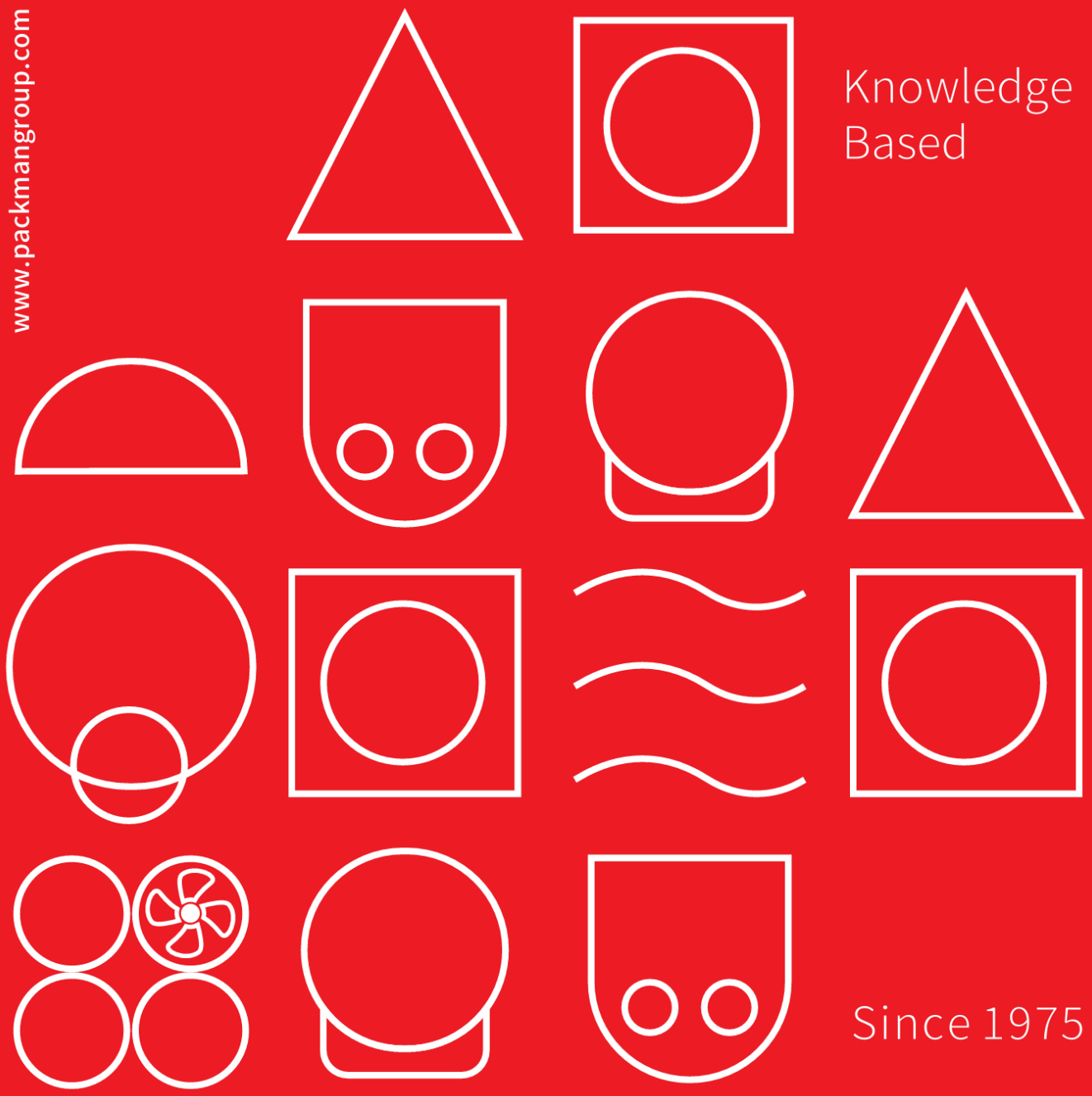
www.packmangroup.com

Knowledge
Based



Since 1975

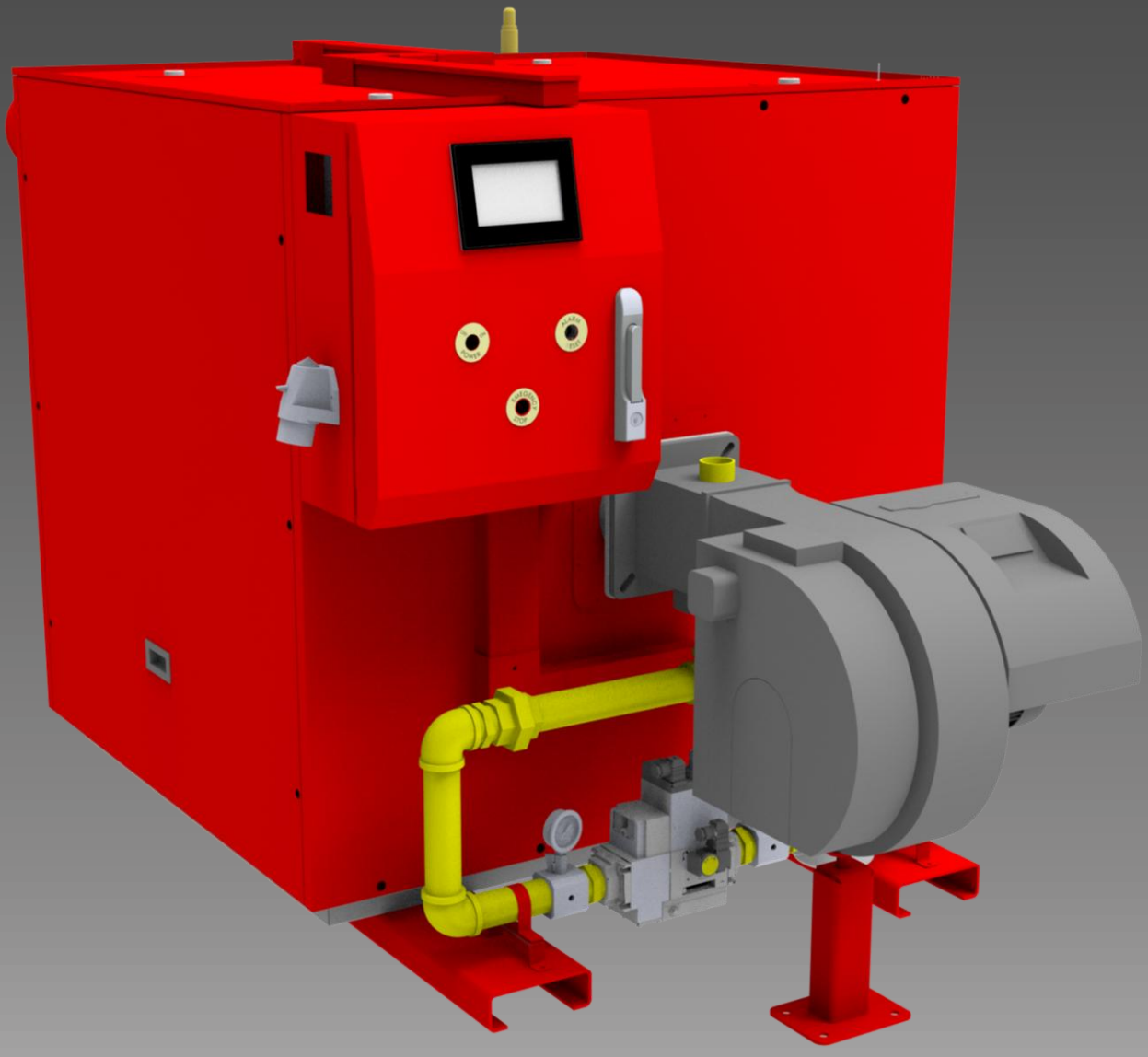
PACKMAN
Industrial Group

RAYKA Condensing Boiler
powered by PACKMAN industrial group

RAYKA

Condensing Boiler

Maximum Efficiency. Minimal Emissions. Compact Design



PACKMAN
Industrial Group

Description

RAYKA Condensing Boiler, developed by Packman Co., is a state-of-the-art heating solution designed based on the latest technologies and international standards. Operating on natural gas, this boiler achieves exceptional thermal efficiency ranging from 91% to 98%, by recovering the latent heat contained in the water vapor produced during combustion. By condensing the flue gases and capturing the residual heat, the Rayka boiler significantly reduces energy consumption and environmental emissions, making it a highly efficient and eco-friendly choice for modern heating systems. Rayka's design is the result of extensive engineering analysis, including thermal optimization and computational fluid dynamics (CFD) simulations. These engineering efforts are further supported by comprehensive lab testing and rigorous field trials, ensuring that every aspect of the boiler's performance—combustion, heat transfer, water circulation, and mechanical integrity—meets the highest standards of efficiency, durability, and safety. The boiler is equipped with a precise analog temperature control system, allowing the user to set the desired hot water temperature. A built-in temperature sensor constantly monitors the outlet temperature and sends data to the controller. The controller, in turn, regulates the air/gas ratio and burner capacity through a modulating actuator. This system ensures optimized and continuous boiler performance across its entire operating range. Rayka features Packman’s exclusive radial pulsed combustion technology, which enhances heat transfer by generating turbulent gas and water flows inside the heat exchanger. This results in a substantial increase in thermal efficiency and overall performance.

The Rayka condensing boiler is suitable for both open and closed-loop heating systems and complies with the following international standards:

- ANSI (American National Standards Institute) – for performance and safety testing
- ASME (American Society of Mechanical Engineers) – for pressure-bearing components
- ASTM (American Society for Testing and Materials) – for material selection

These certifications ensure high build quality, safety, and long-term reliability under various operating conditions.

Construction & Materials

Rayka condensing boilers are constructed with high-grade stainless steel (316L and 304) in all components that come into contact with combustion products or water, ensuring excellent resistance to corrosion and thermal stress. The outer casing is made of durable steel with protective coating to ensure structural integrity under harsh operating conditions. The vertical coil heat exchanger is designed to

maximize thermal performance and mechanical durability. The internal water circulation path is optimized to ensure complete flow through the coil surfaces, eliminating the risk of local overheating or coil burnout. This design also minimizes pressure drop, making the system efficient even at higher capacities.

Capacity & Operating Pressure

Rayka boilers are available in a wide range of capacities to meet industrial and commercial heating demands:

- Thermal output: 800,000 to 8,000,000 kcal/hr
- Operating pressure: Up to 25 bar (g)
- Efficiency: Up to 98% (based on HHV)

Control System & Connectivity

Rayka is equipped with a PLC-based intelligent control system, offering seamless integration into Building Management Systems (BMS).

- Full remote monitoring and control
- Real-time fault diagnostics and status reporting
- Load Modulation & Burner Control
- Fully modulating premix burner: 16% to 100% of full load
- Automatic adjustment of gas/air mixture for maximum efficiency
- Adjustable hot water flow rate
- Boiler operation controlled by return water temperature

Key Advantages

- High thermal efficiency up to 98% (HHV)
- 800,000 to 8,000,000 kcal/hr capacity range
- Operating pressure up to 16 bar
- Low pressure drop, compatible with low-power circulation pumps
- Compact design with minimal footprint
- High-quality 316L/304 stainless steel heat exchanger
- Corrosion-resistant materials for all water and flue-contacting parts
- Low NOx emissions using radial pulse combustion technology
- No need for long flue ducts — compatible with UPVC or other corrosion-resistant materials
- Significantly reduced fuel consumption and emissions
- Full modulation from 16% to 100% capacity
- Quiet operation with optimized acoustic insulation
- Smart PLC control panel with IoT and BMS compatibility

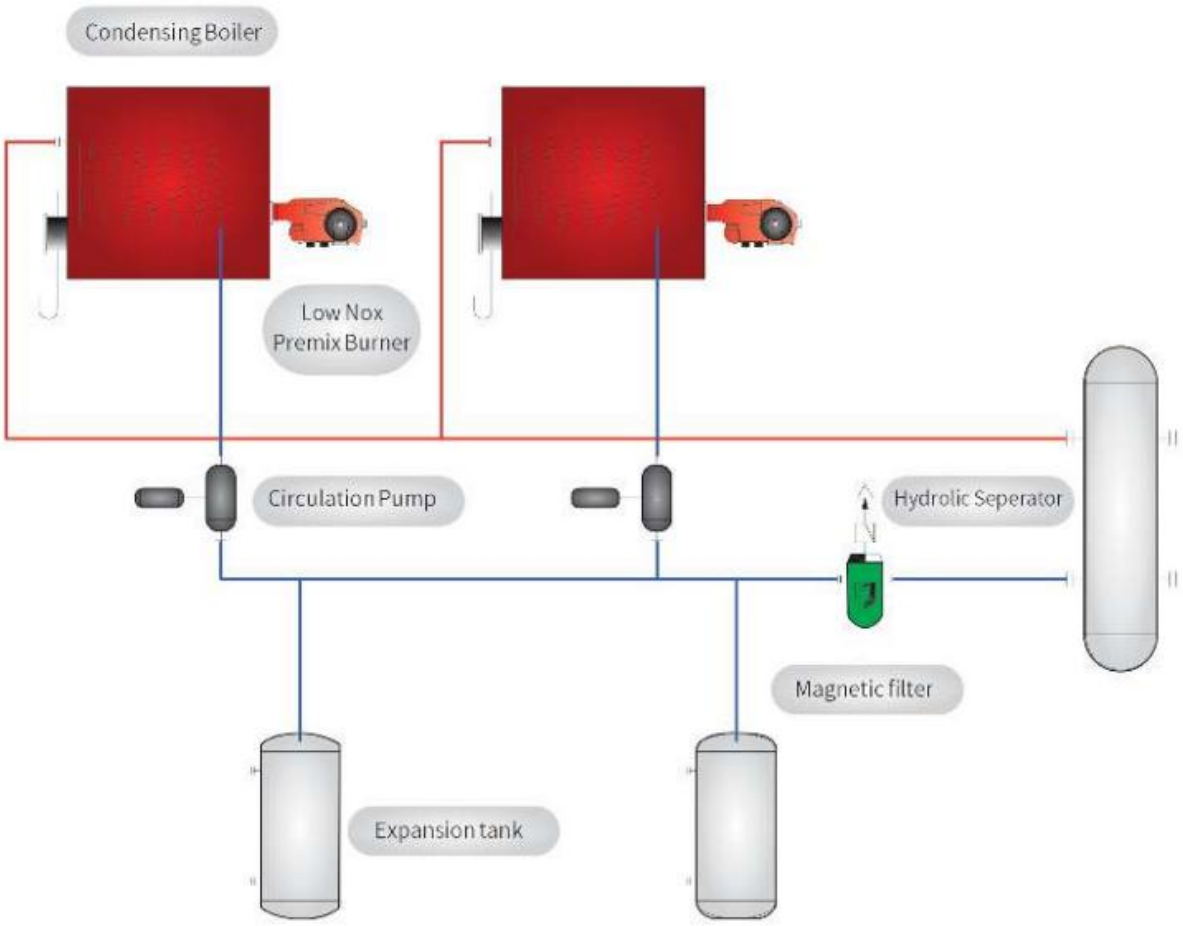
- Suitable for open and closed loop systems
- Easy installation, commissioning, and maintenance

Applications

Rayka boilers are engineered for a wide range of heating and hot water applications, including:

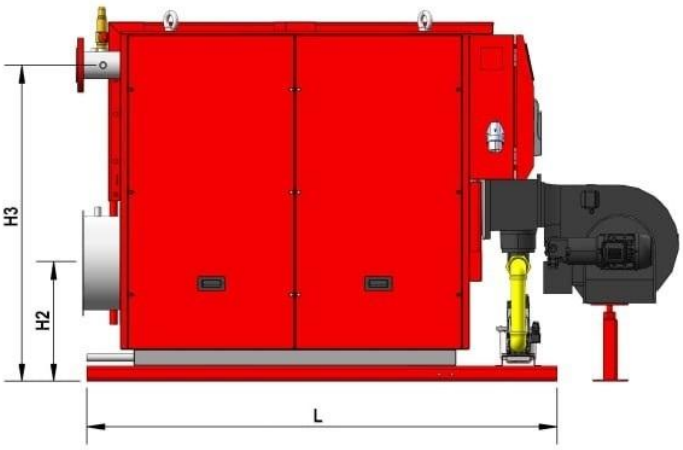
- Residential and commercial buildings
- Schools and public facilities
- Desalination plants
- Swimming pools and spa heating
- Industrial process heating systems

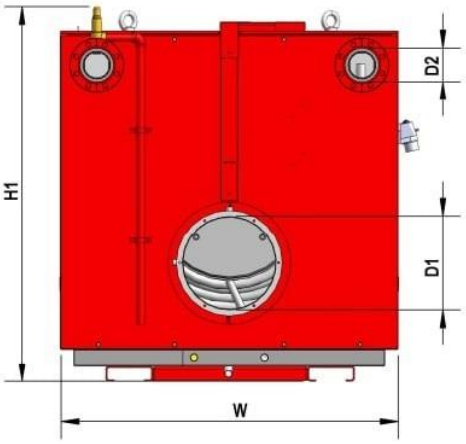
Installation Diagram



Technical Data

Model	Unit	Rayka 800	Rayka 1000	Rayka 1250	Rayka 1500	Rayka 2000	Rayka 2500	Rayka 3000	Rayka 4000	Rayka 5000
Specification										
Max Heat Output	kW	800	1000	1250	1500	2000	2500	3000	4000	5000
Min Heat Output	kW	200	250	312	375	500	625	750	1000	1250
Efficiency at (30-40°C)	%	98								
Efficiency at (70-80°C)	%	91								
Max Working Pressure	bar	25								
Water Temperature Range	°C	30-85								
Water Flowrate at ΔT=10 °C	m^3/h	69	86	108	129	172	215	258	344	430
Water Flowrate at ΔT=15 °C	m^3/h	46	58	72	86	115	144	172	230	287
Water Flowrate at ΔT=20 °C	m^3/h	35	43	54	65	86	108	129	172	215
Pressure Drop at ΔT=10 °C	mbar	950	1000	1100	1250	1400	1550	1800	1900	2000
Pressure Drop at ΔT=15 °C	mbar	750	800	900	1000	1150	1300	1500	1600	1750
Pressure Drop at ΔT=20 °C	mbar	600	650	700	800	900	1000	1200	1300	1400
Water Content	L	312	372	468	528	894	1090	1396	1800	2300
Max Condensate	L/h	96	120	150	180	240	300	360	480	600
Fire Side Pressure Drop	mbar	2.5	3.5	3.5	4	5	6	7	8	8
Condensate PH	-	4.4-5								
Stack Material	-	Stainless Steel 304L or Polymer according to ISIRI 19279								
NOx Emissions	mg/kWh	<150 (Class 2)								
CO Emissions	ppm	<100								
Electric Supply	V/Hz	380/50								
Sound Noise Level	dB	85								
Connection Size										
Water Inlet	in	3	3	4	4	5	5	6	8	8
Water Outlet	in	3	3	4	4	5	5	6	8	8
Stack	mm	300	300	400	400	500	500	600	700	700
Gas Connection	in	2	2	2	2	3	3	3	3	3
Condensate Drain	in	1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Boiler Drain	in	1 1/4	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Safety Valve	in	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2	1 1/2	2	2
Water Temperature Sensor	in	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Flue Temperature Sensor	in	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2





Model	Unit	Rayka 800	Rayka 1000	Rayka 1250	Rayka 1500	Rayka 2000	Rayka 2500	Rayka 3000	Rayka 4000	Rayka 5000
Dimension										
L	mm	1620	1760	2000	2170	2200	2400	2560	2900	3200
W	mm	1380	1380	1440	1440	1960	1960	1960	2500	2500
H1	mm	1600	1600	1600	1600	2110	2110	2110	2850	2850
H2	mm	600	600	600	600	600	600	600	600	600
H3	mm	1350	1350	1350	1350	1750	1750	1750	2450	2450
D1	mm	300	300	400	400	500	500	600	700	700
D2	in	3	3	4	4	5	5	6	8	8
Boiler Room Clearances										
Min Front Clearance (FC)	mm	500 + Length of Burner								
Min Rear Clearance (RC)	mm	500								
Min Side Clearance (SC)	mm	500								
Min Boiler Room Length	mm	3620	3760	4000	4170	4200	4400	4560	4900	5200
Weight										
Shipping Weight	kg	1300	1450	1700	1900	2800	3100	3450	5700	6200
Service Weight	kg	1612	1822	2168	2428	3694	4190	4846	7500	8500

PACKMAN GROUP

History

The Packman Company was founded in February 1975, and was soon afterwards registered in companies Registration Office. In early years the Packman construction and service branch focused on building installations. Different mega power plants were built by cooperating with Brown Boveri and Asseck companies in 1976.

The company started its official activities in construction of High-Pressure Vessels such as Hot-Water Boilers, Steam Boilers , Storage Tanks, Softeners and Heat Exchangers from 1984.

Packman Company is one of the first companies which supplied the high quality and standard hot water boilers to the customers.

Packman has exported its products to countries such as Uzbekistan, United Arab Emirates and other countries in the Middle East. It is one of the largest producers of hot-water and steam boilers in the Middle East.

Now we are proud to announce that the Packman industrial group has five major sub-brands that have product titles in all field of HVAC equipment and engineering services, and we do not know this success except with the help and support of our customers.

1. Construction Services Industry Association
2. Industry Association
3. Construction Companies' Syndicate
4. Technical Department Association
5. Mechanical Engineering Association
6. Engineering Standard Association

Departements:

Sales Deps:

- ∩ Power Plant & Petrochemical
- ∩ Industrial
- ∩ Hospitally Service
- ∩ Commercial & Residential
- ∩ Sport Complex & Pool

Technical Deps:

- ≡ Manufacturing R&D
- ≡ Innovation Center
- ≡ EPC Execute Unit
- ≡ Product Develop Unit
- ≡ Sales Engineering Dep.

Others:

- ≈ After Sales Service
- ≈ Project Control
- ≈ Financial Office
- ≈ Commercial Office
- ≈ Marketing Department

PACKMAN GROUP
Brands

PACKMAN
Industrial Group

Designer&manufacturer of Condensing, Hot Water, Steam, Hot Oil& Waste Heat Boilers, Heat Exchangers, Autoclave Pressure&Storage Vessels&etc

GREENMAN
Green mindset, green future

Engineering& Designing Commercial Greenhouse Plant, CO2 Dosing System, Flue gas Condenser& Special HVAC Systems, Sustainable Agriculture &etc

ROMAN
Water solution

Designer&manufacturer Reverse Osmosis Plant& Package, Water Treatment, Softener& Filters and Chemical Dosing Systems&etc

RAADMAN
a look to the future

Designer&manufacturer of Industrial Mono&Dual Block Gas, LPG, Light& Heavy Oil Burners, Premixed&Postmixed Burners, Watertube burners, Process burners, Special application burners&Combustion Solutions&etc

CHILLMAN
Coolest hvac around

Designer&manufacturer of Air&Water Cooled Chillers, Air Handling Units, Fancoil, HVAC Equipment, Cold Storage Room&etc


1. Isfahan Factory


2. Vilashahr Factory


3. Parand Factory


4. Parand (2) Factory


5. Bonyad Factory