

CO2 Gas Compressor - Model XQ3-600G-OL


**QUALITY
MANAGEMENT SYSTEM
ISO 9001**

**ENVIRONMENTAL
MANAGEMENT SYSTEM
ISO 14001**

**KHK
CERTIFIED**

**高圧ガス設備
試験・製造認定事業所**
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MAB 133

認定 脱硫器・往復動式圧縮機・管類・弁類
機器 その他の附属機器類・複合機器

1. Product Overview

The Model XQ3-600G-OL is a high-performance X-type, 3-stage reciprocating compressor specifically engineered for Carbon Dioxide (CO₂) gas service.

The specialized X-type cylinder arrangement offers superior dynamic balance for large capacity applications in a compact footprint. Featuring an oil-free design, this compressor ensures the highest gas purity, making it ideal for food-grade CO₂ production, beverage carbonation, and advanced carbon capture processes.

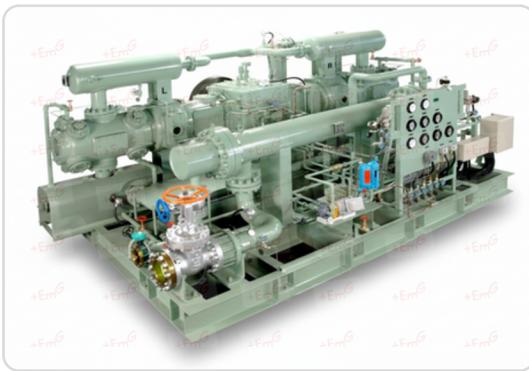


Figure 1: XQ3-600G-OL

2. Technical Specifications

2.1 A. Operational Conditions

Parameter	Value	Unit
Handled Gas	Carbon Dioxide (CO ₂)	-
Capacity (Flow Rate)	2,900	Nm ³ /h
Suction Pressure	0.035	MPaG
Discharge Pressure	2.45	MPaG

2.1 B. Mechanical Data

Parameter	Value	Unit
Compressor Type	X-Type Reciprocating	-
Number of Stages	3	Stages
Lubrication Type	Oil-Free	Cylinder
Cooling Method	Water-Cooled	-
Motor Output	500	kW

3. Key Design Features & Advantages

- X-Type Configuration:** Provides excellent balance of reciprocating forces, allowing for smooth operation at high power outputs (500 kW) with reduced vibration.
- 3-Stage Efficiency:** Multi-stage compression minimizes heat generation and power consumption when compressing CO₂ to 2.45 MPaG.
- Oil-Free Gas Path:** Prevents oil contamination, meeting stringent quality standards for food and beverage applications.
- CO₂ Material Compatibility:** Wetted parts are selected to resist corrosion common in wet CO₂ environments.

4. Applications

- Beverage Industry:** Production of carbonated drinks.
- Dry Ice Production:** Liquefaction and solidification processes.
- Carbon Capture & Storage (CCS):** Compression of captured CO₂ for transport or utilization.
- Chemical Processing: Urea production feedstock.

5. Scope of Supply

The standard package typically includes:

- XQ3 Compressor Bare Block (X-Type).
- 500 kW Main Driving Motor.
- Common Baseplate / Skid.
- Stainless Steel/Anti-corrosive Heat Exchangers.
- Pulsation Dampeners, Separators & Local Panel.

6. Project Reference

Air Water Inc. CO₂ Gas Compressor. Status successfully commissioned and operating.