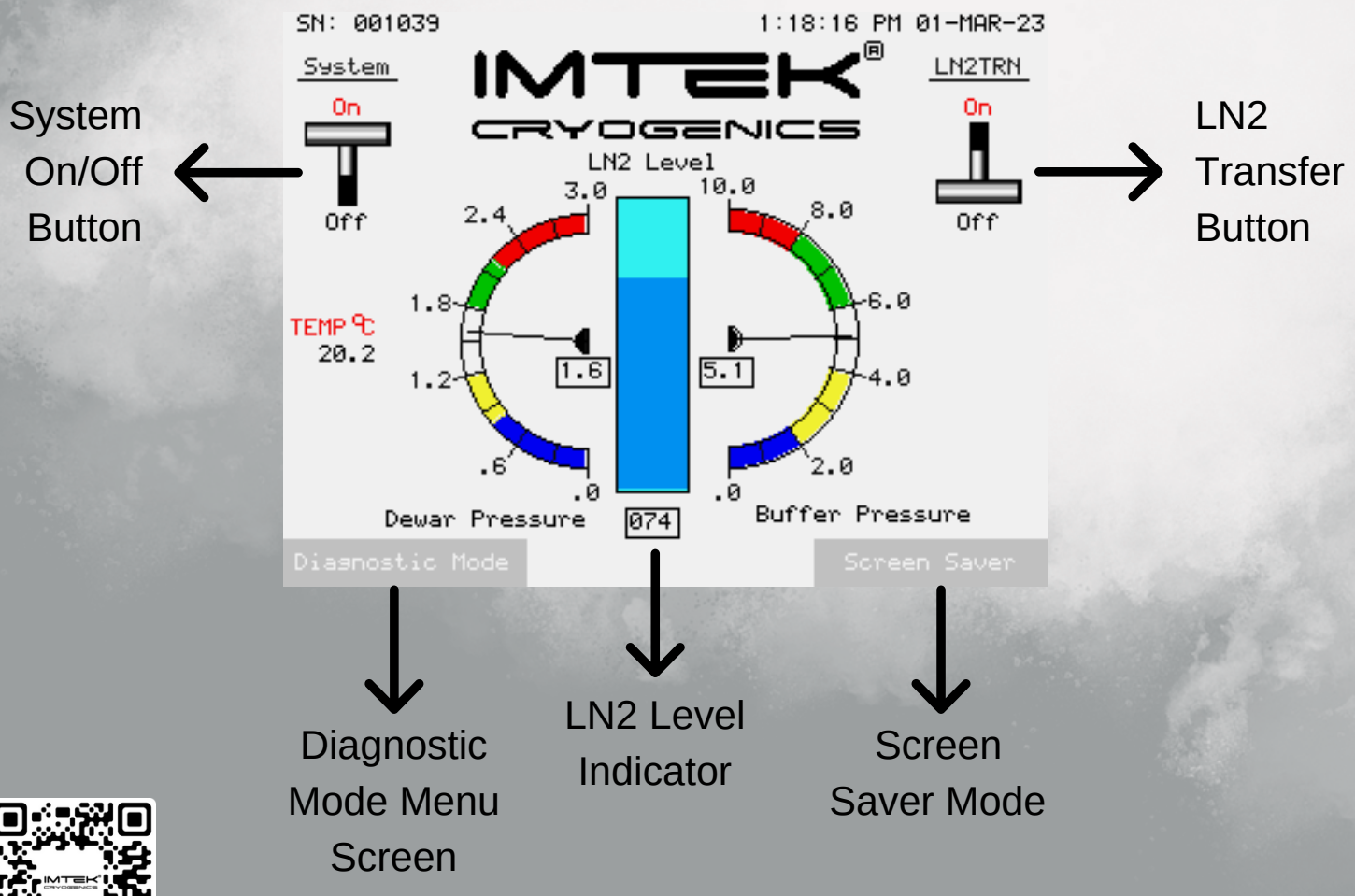
NEW GENERATION CRYOGENIC NITROGEN PLANTS

Your nitrogen, our priority.

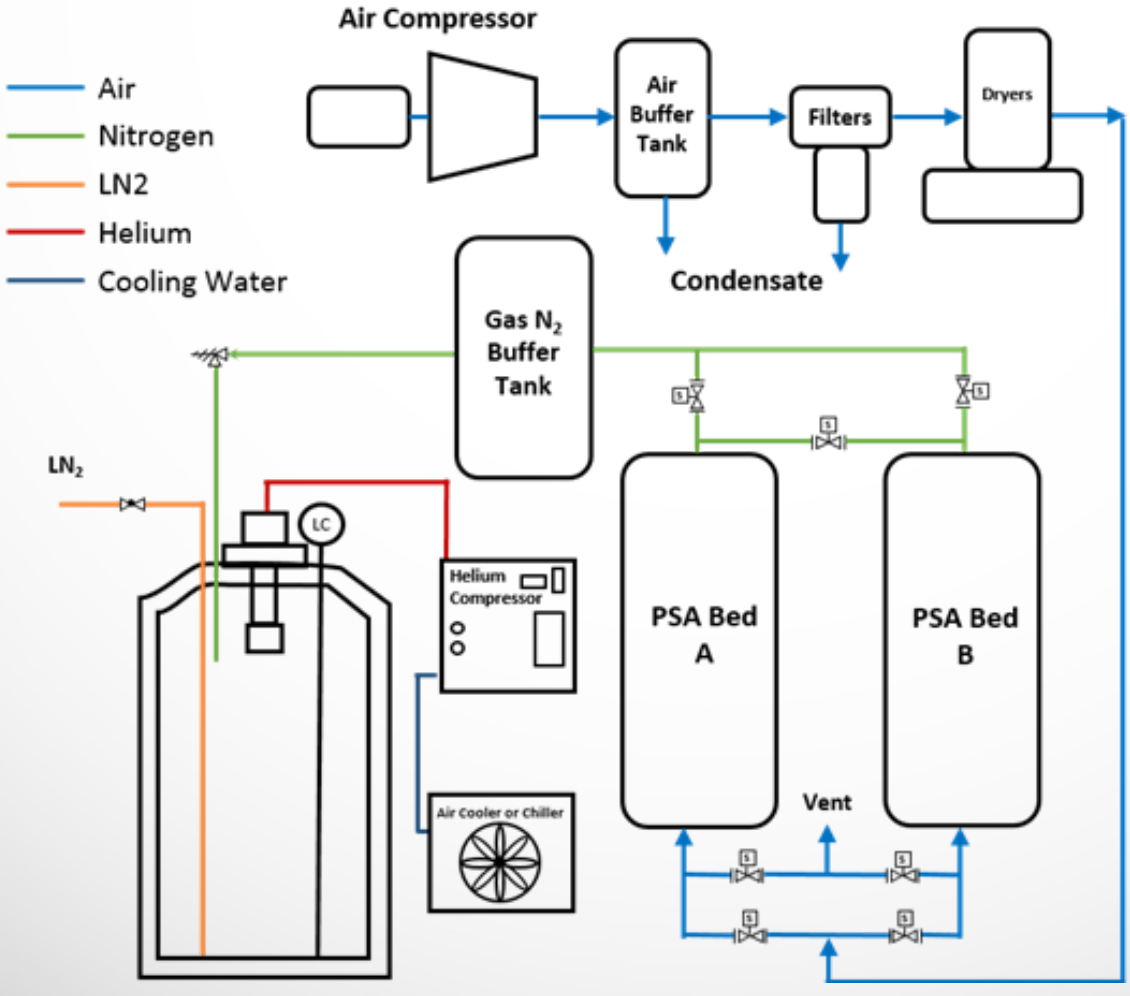
The CNP540 is a state-of-the-art liquid nitrogen plant with a production capacity of 540+ liters per day. This advanced system also offers a quick startup feature, expediting the process of nitrogen liquefaction while ensuring operational efficiency. Both attributes solidify its standing as a plug-and-liquefy system. Boasting a user-friendly interface and one-button operation, the CNP series liquefiers can be seamlessly integrated into any setup. The necessary electrical connections are all that's required for its fully automated operation, governed by the intelligent PLC controller. The operator's duties are restricted to changing filters and conducting routine checks at maintenance intervals of 8,000 operating hours.

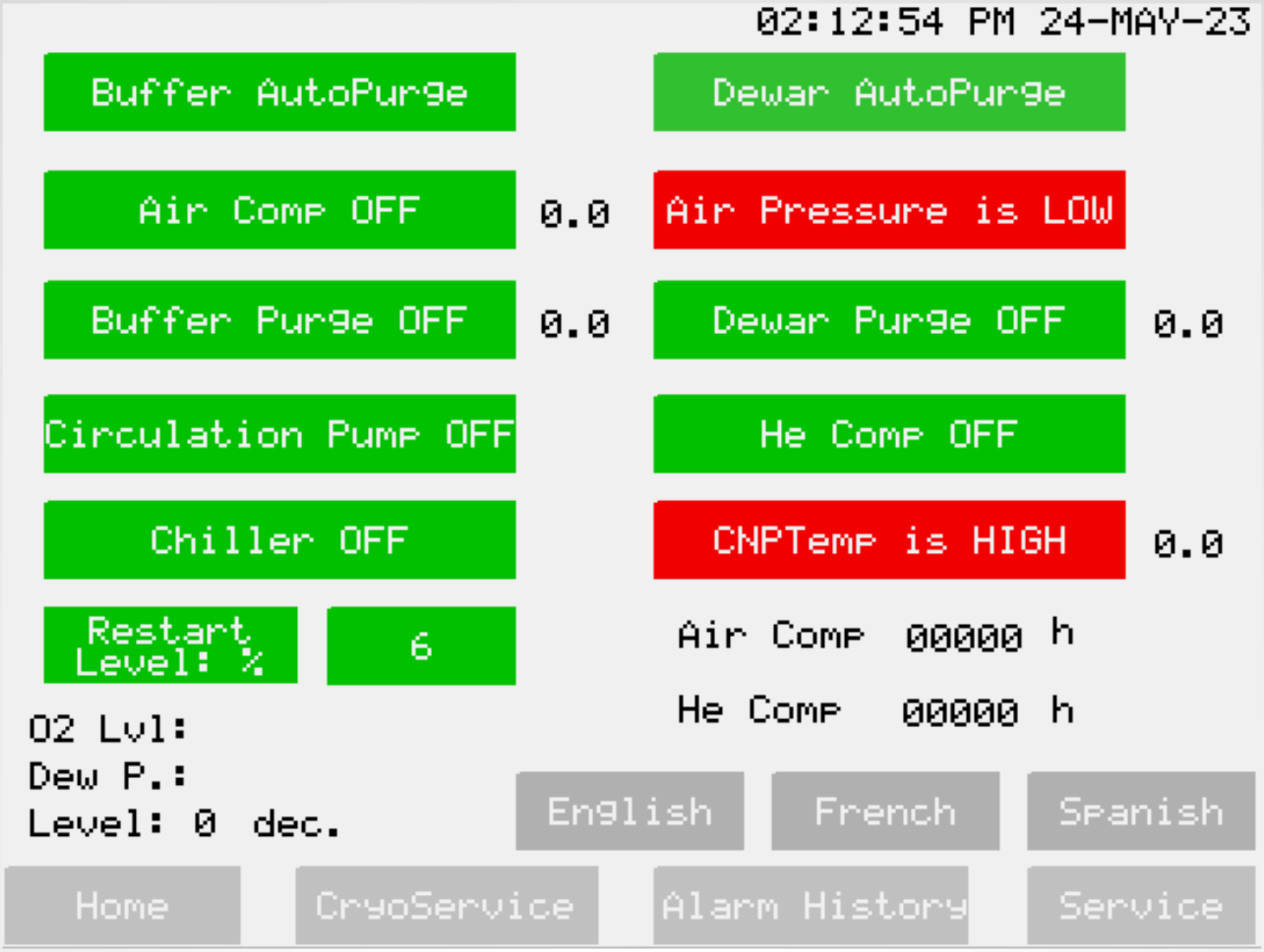
The production of liquid nitrogen is achieved through liquefaction from air, which is then stored in an internal Dewar with capacity of your choice. The availability of liquid nitrogen is ensured at all times, allowing for convenient filling of the dispensing thermos or transfer to external Dewars via a flexible hose with a simple activation. The transfer of liquid nitrogen is independent of the system's operating mode, and the programmable logic controller (PLC) automatically initiates production when the Dewar level drops to 70%. The plant will stop production when the Dewar is full, entering standby mode until liquid nitrogen is transferred.



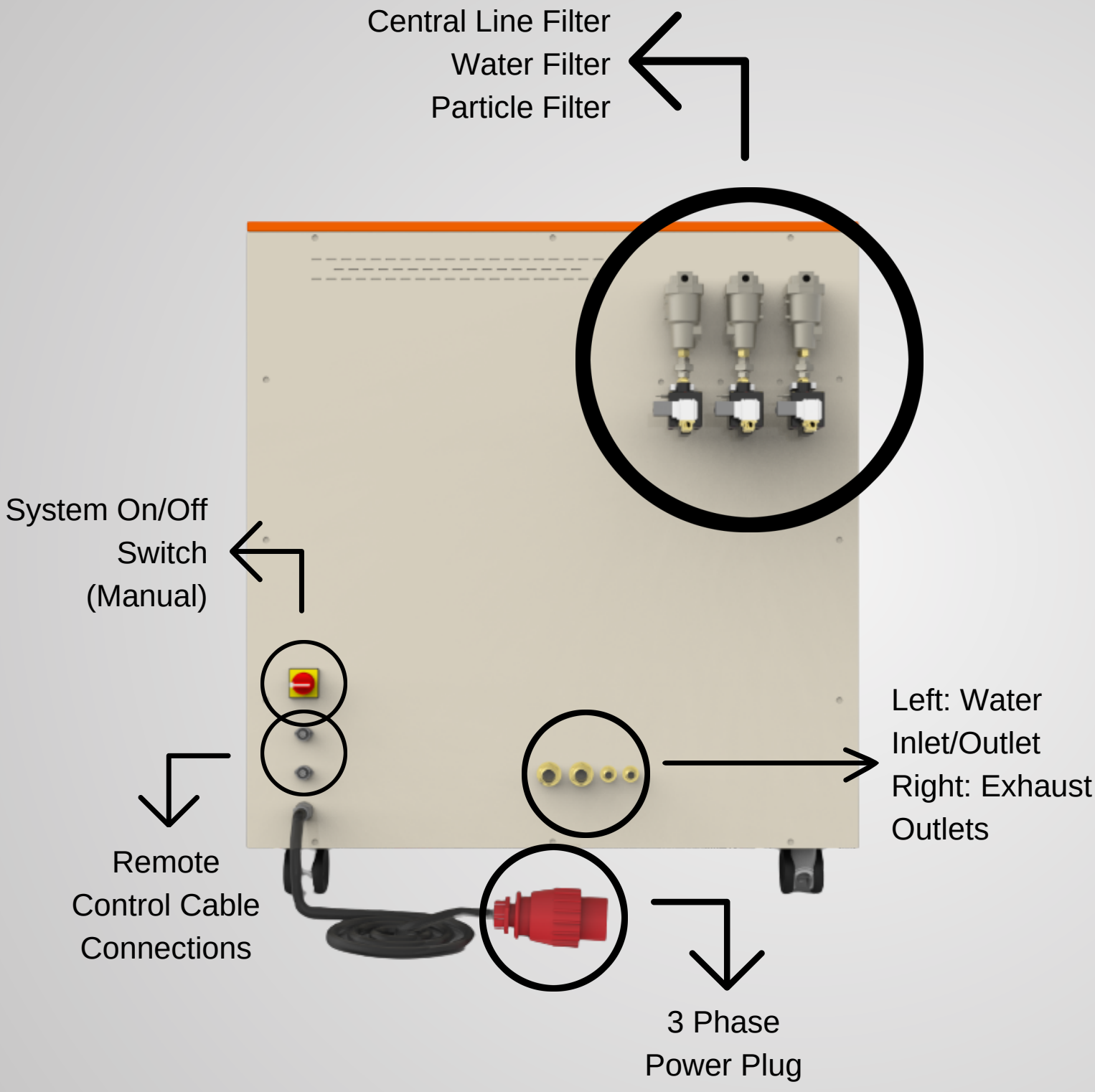
Atmospheric air is compressed to high pressure by an oil-free built-in compressor and subsequently directed to a Buffer Tank. The high-pressure air within the Buffer Tank is then directed to a filter group located behind the unit in order to remove water droplets and particles from the air. Subsequently, an internal air dryer eliminates any remaining moisture within the gas phase. The resulting treated dry and clean air, with a dew point of up to -40°C, is then directed to one of the adsorber beds located within the Pressure Swing Adsorption (PSA) module.

PSA technology can effectively deliver nitrogen at the requisite purity level for liquefaction. The carbon molecular sieve located within the PSA beds selectively adsorbs oxygen and carbon dioxide molecules until the bed becomes saturated. Once saturation occurs, the feed flow process valves are switched to the second adsorption bed while the first adsorption bed is rapidly depressurized and purged to remove adsorbed oxygen. By continuing to switch between the two beds, a constant flow of pure nitrogen gas is generated. The purified nitrogen is then directed through a nitrogen buffer tank and ultimately into a cryogenic storage tank where it is stored alongside the cryocooler and other associated instrumentation.





Experience enhanced accessibility and convenience with the CNP540's advanced PLC screen interface. This innovative system not only centralizes control and offers comprehensive monitoring capabilities, but it also enables remote monitoring from your personal computer! Moreover, the Diagnostic's Screen pictured above allows for monitoring of the Air Pressure in the Air Compressor and Buffer Tank as well to ensure safe operation. There is close monitoring of the purity level of the Liquid Nitrogen produced through the O2 Level indicator as well!


Central Line Filter
Water Filter
Particle Filter
System On/Off
Switch
(Manual)
Left: Water
Inlet/Outlet
Right: Exhaust
Outlets
Remote
Control Cable
Connections
3 Phase
Power Plug

MODEL	CNP540
Requires External Air Compressor & Water Source (Chiller)	
Production Rate	≥ 540 liter/day (≥560 liter/day @ 23 °C)
Electrical Options	380 - 415 (±10%) V3~ @50Hz 460 - 480 (±10%) V3~ @60Hz
Power Consumption (Steady State)	39.6 kW @ 50Hz 45 kW @ 60Hz
Dimensions (W x L x H)	1245 mm x 4000 mm x 1439 mm
Weight	750kg
Suggested Installation Area	3m (W) x 5m (L) x 3m (H)
Req. External Compressor	Oil-Free Rotary Screw Compressor, ≥ 67.5 m^3 / hour @8 - 10 bar
Cryocooler	GM Type Cryocooler Mounted on Dewar
Req. Cooling Water Flow Rate	36-54 L/min
Req. Chiller Capacity	42-46 kW
Built-In Nitrogen Generator	
Purity	≥ 99%
Dew Point	up to -40°C
Flow Rate	≥ 30 m^3 / hour
PLC Interface	8” Color Graphic Touch Screen
Dewar Volume	1000 Liters (Liters + Option)
Operating Pressure	2 bars
Dewar Level Control	Capacitive Level Sensor
Ambient Temperature Range (Inner Temperature)	+4°C to +40°C
Maximum Altitude	3000 meters
Noise Level	< 65 dB @ 1 meter
Conformities	CE Conformance, ISO 12100:2010, IEC 60204-1, 2006/42/EC, 97/23/EC; ISO9001:2015