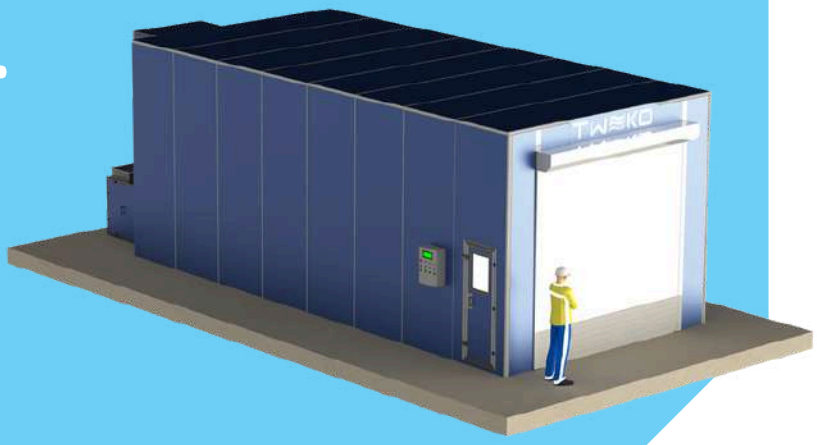
TWEKO
PAINTING EQUIPMENT FACTORY

DIAGONAL-AIRFLOW PAINT AND DRYING BOOTH

EC DECLARATION OF CONFORMITY
ISO 9001 CERTIFIED

LOWER AIRFLOW. LOWER ENERGY COSTS

INSTALLS ON ANY LEVEL FLOOR



The TWEKO IKFS Diagonal spray booth is a modern solution for professional paint shops, combining high-quality coating application with optimised energy consumption. Designed in accordance with European occupational safety requirements, it provides comfortable working conditions for the operator and improves paint shop productivity.

The diagonal airflow system provides the required air velocity at a lower ventilation capacity, reducing energy consumption without compromising coating quality. Balanced supply and exhaust ventilation keeps the booth under positive pressure, preventing dust from entering. Multi-stage EU5 supply-air filtration delivers clean incoming air, while two-stage dry EU3 exhaust filtration (a cardboard labyrinth filter and a fibreglass PaintStop filter) captures paint mist and overspray.

A programmable logic controller (PLC) and a variable-frequency drive on the exhaust fan automate the painting, flash-off, drying and cooling modes. In drying mode, heated air is recirculated inside the booth, which significantly reduces energy costs. The booth is installed on any level floor, with no underground air ducts or prepared foundation required.

PURPOSE OF THE BOOTH

The IKFS Diagonal spray booth is designed for the application and drying of protective and decorative coatings on vehicles and large workpieces made from a variety of materials. It is suitable for primers, paints, enamels and varnishes, including water-based coatings.

Depending on the configuration, the supply air is heated by a stainless steel heat exchanger with a diesel or gas burner, or by electric heaters. The temperature is set by the operator in the range of 16–80 °C. The PLC runs the full cycle automatically:

- **Painting**. Air in the booth is fully renewed, preventing the build-up of explosive concentrations of flammable vapours.
- **Flash-off (10–15 min)**. Temperature and airflow stay the same while solvent vapours are exhausted outdoors.
- **Drying**. Pneumatic dampers close the supply and exhaust and open recirculation, so heated air circulates inside the booth.
- **Cooling**. The dampers reopen, cooling the heat exchanger to extend its service life and bringing workpieces to a safe temperature.

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ADVANTAGES AND DESIGN FEATURES

One of the key advantages of the IKFS Diagonal is its reduced infrastructure requirements. The booth is installed directly on a level industrial floor, which reduces site preparation costs and makes future relocation considerably easier.

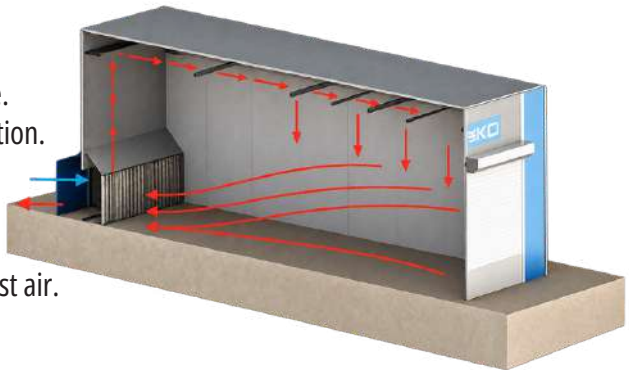
Each system is custom-engineered to suit the customer's production requirements. Before project implementation, TWEKO specialists assess the installation site and determine the optimum booth configuration and coating process together with the customer.

The booth is built from 1.5–3.0 mm steel and 60 mm sandwich panels, using components from established international manufacturers. Depending on the configuration, the electrical system includes variable-frequency drives or soft starters, contributing to reliable operation and longer equipment life.

The control panel provides clear process visualisation. Pressure sensors monitor filter loading, duct airflow and fan operation, and a pressure gauge shows the pressure inside the booth. The equipment is approved by the State Labour Service of Ukraine.

OPTIONAL EQUIPMENT

- **Frequency converters**: up to 40% energy savings, lower noise.
- **100 mm sandwich panels**: better insulation, outdoor installation.
- **Pneumatic painting equipment**: high-output paint sprayers.
- **LEL gas detector**: automatic protection against explosive concentrations.
- **Activated carbon filter**: removes solvent vapours from exhaust air.
- **Automatic fire suppression system**.
- **Lifting platforms for painters**.
- **Rail transfer cart**.



TECHNICAL SPECIFICATIONS. BASIC CONFIGURATION

Parameter	Unit	IKFS-D-5	IKFS-D-7	IKFS-D-9	IKFS-D-12	IKFS-D-15
OVERALL DIMENSIONS						
External dimensions of the booth (L×W×H)	m	6×3.7×3.0	8.4×4.1×3.2	10×4.6×3.5	13.5×5.1×4.5	16.5×6.1×5.5
Internal working area (L×W×H)	m	4.8×3.6×2.5	7×4×2.7	8.6×4.5×3	12×5×4	15×6×5
Personnel door (W×H)	mm	650×1900				
Entrance gate (W×H)	mm	2500×2000	2800×2500	3000×2800	3600×3500	4200×4500
AIRFLOW PARAMETERS						
Airflow capacity	m^3/h	11,000	16,000	22,000	26,000	30,000
Air velocity inside the booth (with workpiece)	m/s	0.25	0.30	0.30	0.27	0.25
Air temperature (set by operator)	°C	16–80				
VENTILATION SYSTEM POWER						
Exhaust ventilation unit power	kW	5.5	5.5	5.5	7.5	15
Supply ventilation unit power	kW	5.5	5.5	7.5	11	15
THERMAL ENERGY						
Diesel burner heat output	kW	40–85	80–160	80–200	115–310	115–310
Gas burner heat output	kW	35–85	60–170	85–200	95–300	95–300
Diesel fuel consumption	kg/h	3.4–7.2 *	7–13 *	7–13	8.6–26	8.6–26
Natural gas consumption	Sm^3/h	3.7–8.9 *	6.4–18 *	6.4–18	10–32	10–32
Electric heat exchanger power consumption	kW	30–90	36–108	40–120	50–150	60–180
ELECTRICITY CONSUMPTION						
Total electrical consumption (without electric heat exchanger)	kW	12	12	14	19	30
Power supply	—	3 phases / 380 V / 50 Hz				

* Energy consumption depends on the outdoor air temperature.

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