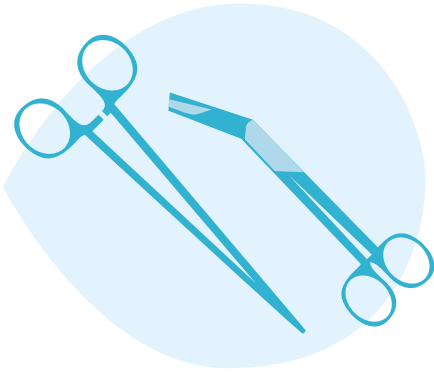# DEKO D32 X2
Washer Disinfector

DEKO
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Preventing infections since 1976.
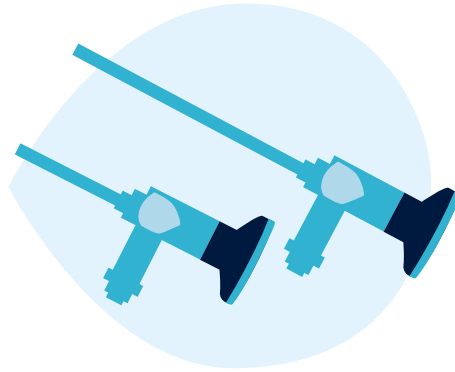
Intended use

The DEKO D32 X2 Washer Disinfector ensures automatic cleaning and thermal disinfection of reusable surgical and MIS instruments, rigid scopes, anaesthetic and respiratory equipment, hollowware, glassware, transit containers, rubber and plastic goods and other similar and related equipment used in medical, pharmaceutical, veterinary and laboratory applications. In addition, DEKO D32 X2 B-variant (extra high model) can accommodate mobility aids.
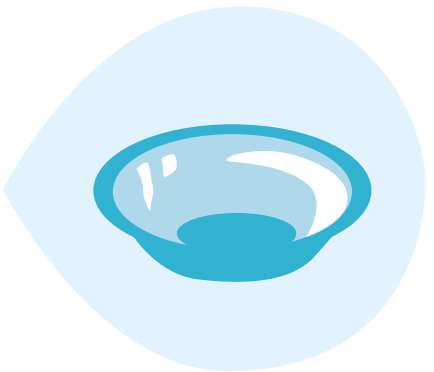
Reusable surgical and MIS instruments

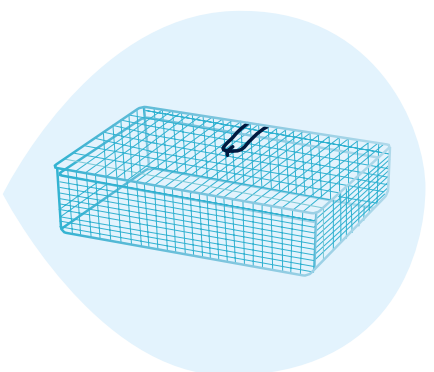Rigid scopes

Anaesthetic and respiratory equipment

Hospital bowls and other plasticware

Glassware

Transit containers

Instrument trays

Mobility aids (D32 B)

Main Features

DEKO D32 is a fully EN ISO 15883 Part 1 & 2 certified washer disinfector available in three variants: N, C and B to match varied capacity requirements. All machines are equipped with a high powered washing pump for maximum soil removal efficiency and a pre-set wash program library with fully adjustable parameters.

In addition to instrument reprocessing, DEKO D32 B with a 440 L chamber is designed especially for washing and disinfecting transit containers, mobility aids and similar larger items.

DEKO D32 N
220 l chamber

Width: 800 mm
Depth: 725 mm
Height: 1970 mm

DEKO D32 C
360 l chamber

Width: 970 mm
Depth: 895 mm
Height: 1970 mm

DEKO D32 B
440 l chamber

Width: 970 mm
Depth: 895 mm
Height: 2120 mm

Features and functionalities
– benefits for the user

Model variants
DEKO D32 series washer disinfectors provide an extended capacity for reprocessing items in demanding medical and laboratory environments. Choice of 3 chamber sizes: 220, 360 and 440 litres for different user requirements.

Washing mechanics
Independently removable, sliding washing levels with rotating washing arms. Large chamber can simultaneously accommodate dedicated washing racks on bottom level with sliding washing level(s) above. Automatically connecting / closing wash arm connectors. Chamber roof and bottom equipped with rotating washing arms. Wash arms with removable end caps.

DEKO D32 N and C variants with 4 washing levels and maximum usable chamber height 605 mm. DEKO D32 B with 3 removable washing levels and maximum usable chamber height 750 mm with bottom washing level only for accommodating transit containers, mobility aids and other sizeable items.

High-powered circulation washing pump with a soft start for efficient and gentle processing of items. Water consumption: D32 X2 N approximately 24 l/water process phase, D32 X2 C and B approximately 32 l/water process phase.

Efficient drying
Fast dryer with HEPA filter EU13. D32 C and B variants equipped with double dryer. Automatic filter quality monitoring and change indication. Drying temperature adjustable between 50-95°C, time range 15-90 min. Available on request without dryer when combined with a drying cabinet.

Panels and door(s)
Framework, panels and wash chamber all made of stainless EN 1.4301 steel and fully recyclable. All outer panels and tempered window(s) heat and sound insulated. Interlocking hinged door(s) with shockproof, thermally insulated double glass and safety locks. Door(s) open 90° serving as a loading level for racks allowing fast, convenient and ergonomic working.

Advanced State-of-the-art control
Fully automatic PLC control including back-up batteries for full memory protection. Multi-level access code system protects any unauthorized changes to washing cycles and set parameters. Separate codes for user, maintenance and authorized person. Special service and maintenance control system restore valuable information for technical performance follow-up and evaluation and enables component testing. Process control and independent recording accuracy compliant with ISO EN 15883-1 & 2 for washer disinfectors.

Display (loading side)
Large 7" colour display showing selected cycle, batch number, current cycle phase, chamber temperature, washing pressure and remaining cycle time. Pressure and temperature indication available as graphs. Service instructions, warnings and error indications in signal colors.

Display and status indication, unloading side
Coloured led-indicators and text display on unloading side for clear and simple indication of machine status, ongoing process and remaining process time.

Pressure control for foam and washing water
To secure powerful washing efficacy, automatic foam and washing water pressure control ensure proper water pressure is maintained during water circulation and throughout the whole washing cycle. In case of excess foam or sudden drop of circulating water pressure, machine automatically drains the chamber and restarts the aborted process cycle step from the beginning (max. 3 times). Failure to reach the predefined parameters will result in an interruption of the cycle and an error notification on the display. Load temperature protection and overtemperature cut-outs for secure operation.

Independent tamper-proof process recorder
Machine is equipped with a temperature recorder, sensors and signal processing independent from the controller, to record the attainment of programmed washing and disinfection conditions.
Machine stores all cycle process data such as:
· name of institution
· date & time
· machine identification
· sequential cycle number
· cycle name and configuration
· cycle start and end time
· temperature
· water pressure
· detergent dosing

All process data is automatically recorded on SD memory card, transferable to external USB memory stick or throughout an optional network connectivity (FTP over Ethernet) to external fileserver.

By default, verification is executed according to EN ISO 15883-1, clause 5.11.4 level b). Level c) is attained when the machine is equipped with a conductivity meter.

Network connectivity (Ethernet) (optional feature)

Network connectivity feature allows:
· remote monitoring of the machine over network
· logging process events over network to email client
· sending process data printouts to local and network printer
· storing process data to external fileserver (FTP over Ethernet)

See "DEKO WD networking, System description" for more information.

Remote access (optional feature)

Capability for remote access allowing remote service support. See "Deko WD networking, System description" for more information.

Boss entry port

Machine is equipped with boss entry port to insert temperature sensors to perform IQ, OQ, PQ (when requested by the user).

Wash programs

Program library with 6 different factory-set programs tested and approved to meet standard EN ISO 15883 requirements. Programs are easily adaptable to suit special washing and disinfection requirements. Internal memory provides a pre-set cycle library for creating a practically unlimited number of programs. User adjustable audible indicator notifying end of cycle. Cycle duration typically between 30 – 65 minutes depending on the load items and cycle setup.

Media connections

Water connections with slow closing valves and flexible hoses prevent the transfer of sound and vibration. Media connections are located on the bottom half of the machine.

· Opaque cold and hot water connection hoses
· Drain outlet valve diameter 50 mm
· 20 mm when equipped with an outlet pump
· Pure water connection
· Back syphon Type A air gap protection
· Shut-off isolator valves
· Exhaust air condenser

Detergent dosing

· Suction tube: Adjustable suction tube to ensure fit for all types of detergent containers.

· Adjustable detergent pump: Dosing of process chemicals by means of detergent pump with flow sensor. Machine may be equipped with up to 2 additional detergent pumps with flow sensor and low level indicator.

· Flow meter for detergent dosing (optional feature): Measures the volume of dosed detergent and verifies the requested dosing volume.

· Detergent low-level indication: The detergent suction hose equipped with a float switch monitors sufficient detergent availability advising user to replace the container when detergent level is below minimum.

· Detergent dosing flushing cycle: Special flushing cycle to remove detergent build-up (precipitate) by hot water from the dosing system.

· Back syphon protection: Type A air gap solution to prevent back syphon from water supply.

· Sliding drawer for detergent containers: Fits 3 x 5 l detergent containers.

· Rinse aid pump (optional feature, max. 2): For dosing rinse aid to final rinse water.

Combined max. number of detergent/rinse aids pumps is 3:
· 3 detergent pumps or
· 2 detergent pumps and 1 rinse aid pump

Panel printer

Panel printer to print process data (see "Independent tamper-proof process recorder") by deafult on unloading side. Available on request without printer.

Purewater feed options (optional feature)

For purewater feed, machine may be equipped with a) a solenoid valve when connected to pressurized purewater resource or b) a pump and a solenoid valve when connected to unpressurized purewater feed. Purewater can be used in all water process phases.

Conductivity meter (optional feature)

Integrated conductivity meter for monitoring final rinse water. If conductivity is above pre-set control value, alarm is shown on display and washing cycle is terminated.

Emergency stop switch(-es) (optional feature)

Emergency stop switch(es) available on request for loading and unloading side.

Drip tray with leakage sensor (optional feature)

Separate stainless steel drip tray with leakage sensor for possible leakage recognition. Alarm shown on display.

Sample drawing tap (optional feature)

For testing final rinse water quality, machine is equipped with a sample drawing tap. Final rinse is paused shortly to allow water sample drawing after which process is continued.

Laboratory applications

DEKO D32 X2 laboratory model is specially equipped for processing laboratory utensils: including specialized wash shelves & wash arms for laboratory glassware and solenoid valve for purewater feed.

Loading capacity	D32 N	D32 C	D32 B
DIN 480 x 255 x 50 mm	max. 4x2 = 8	max. 4x4 = 16	max. 3x4 = 12
DIN 240 x 255 x 50 mm	max. 4x4 = 16	max. 4x9 = 36	max. 3x9 = 27
DIN 120 x 255 x 50 mm	max. 4x8 = 32	max. 4x18 = 72	max. 3x18 = 54
SPRI I 450 x 340 x 70 mm	max. 4x1 = 4 + max. 4x4 = 16 SPRI III	max. 4x2 = 8 + max. 4x2 = 8 SPRI II	NB! Designed primarily for large items (eg. containers, mobility aids)
SPRI II 340 x 250 x 70 mm	max. 4x4 = 16	max. 4x6 = 24	
SPRI III 250 x 170 x 70 mm	max. 4x8 = 32	max. 4x13 =52	

Electrical connection		
D32 N	**D32 C**	**D32 B**
U 400-415V 3N AC 50/60Hz 3x25A	U 400V 3N AC 50/60Hz 3x25A	U 400V 3N AC 50/60Hz 3x25A
U 400V 3N AC 50/60Hz 3x16	U 400V 3N AC 50/60Hz 3x16A	U 400V 3N AC 50/60Hz 3x16A
U 400-415V 3N AC 50/60Hz 3x16A (s)	U 400V 3N AC 50/60Hz 3x16A (s)	U 400V 3N AC 50/60Hz 3x16A (s)
U 400-415V 3N AC 50/60Hz 3x10A (s, nd)	U 400V 3N AC 50/60Hz 3x10A (s, nd)	U 400V 3N AC 50/60Hz 3x10A (s, nd)
U 200-240V 3PH AC 50/60Hz 3x35A		
U 200-240V 3PH AC 50/60Hz 3x16A (s)		
U 200-240V 3PH AC 50/60Hz 3x10A (s, nd)		

s = steam-heated   nd = without dryer

Technical info

Model	DEKO D32 X2		
Variant	**N**	**C**	**B**
Material	Stainless EN 1.4301 steel	Stainless EN 1.4301 steel	Stainless EN 1.4301 steel
7" colour Touch-Screen	X	X	X
Unloading side: text display and status led-indicators	X	X	X
Door functioning			
Manual hinged door	X	X	X
Single door model with door interlock	X	X	X
Double doors / pass-through model with door interlock	X	X	X
Washing mechanics			
Rotating washing arms	max. 5	max. 5	max. 4
Removable washing levels	1 – 4	1 – 4	1 – 3
Wash arms equipped with easily removable end caps	X	X	X
Measurements			
Width (mm)	800	970	970
Depth (mm)	725	895	895
Height (mm)	1970	1970	2120
Chamber volume, l (gross)	332	526	636
Chamber volume, l (effective)	220	360	440
Wash chamber dimensions, mm (gross)	W 700 x D 620 x H 765	W 870 x D 790 x H 765	W 870 x D 790 x H 925
Wash level dimensions, mm (effective)	W 605 x D 605 x H 95-600	W 775 x D 775 x H 95-600	W 775 x D 775 x H 200-750
Wash levels, max load (trays/baskets)	See separate chart	See separate chart	See separate chart
Loading height, mm	850	850	850
Weight, kg (w/o drying unit)	290 (270)	340 (320)	360 (340)
Floor loading, kN/cm^2	0,06	0,07	0,07
Adjustable feet for levelling ±10 mm	X	X	X
Media connections and consumption			
Back syphon protection	Back syphon Type A air gap protection	Back syphon Type A air gap protection	Back syphon Type A air gap protection
Cold water (CW, 5-20°C) inlet hose	R1/2" female thread, l. 3 m	R1/2" female thread, l. 3 m	R1/2" female thread, l. 3 m
Hot water (HW, 45-65°C) inlet hose	R1/2" female thread, l. 3 m	R1/2" female thread, l. 3 m	R1/2" female thread, l. 3 m
Min – max water pressure, bar	1–8	1–8	1–8
Min. water flow (CW/HW), l/s	0,5	0,5	0,5
Steam heated models:			
Steam, st/st hose	R1/2" male thread, l. 1,2 m	R1/2" male thread, l. 1,2 m	R1/2" male thread, l. 1,2 m
Exhaust, st/st hose	R1/2" male thread, l. 1,2 m	R1/2" male thread, l. 1,2 m	R1/2" male thread, l. 1,2 m
Min – max steam pressure, bar	2–3	2–3	2–3
Steam consumption, kg/min	0,5	0,5	0,5
Condense return, kg/min	0,5	0,5	0,5
Pure water inlet	Valve R3/4" male thread	Valve R3/4" male thread	Valve R3/4" male thread
Pure water min – max water pressure, bar	0-6	0-6	0-6
Pure water min – max water pressure, bar	0-6	0-6	0-6
Water volume per cycle, l	24	32	32
Floor drain outlet	ø 50 mm	ø 50 mm	ø 50 mm
Drain outlet pump	O	O	O
Floor drain outlet, with outlet pump	ø 20 mm	ø 20 mm	ø 20 mm
Exhaust air condenser	X	X	X
Exhaust duct	ø 90 mm	ø 90 mm	ø 90 mm
Required property ventilation (exhaust air) capacity, l/s	30	30	30

Variant	N	C	B
Power and other technical features			
Total power, kW	12,8 / 10,3	15,4 / 13 / 10,5	15,4 / 13 / 10,5
Heating power, kW	10 / 7,5 *	10 / 7,5 *	10 / 7,5 *
Dryer total power, kW	2,9	5,8 (2x2,9)	5,8 (2x2,9)
Dryer fan, kW	2 x 0,4	0,8 (2x0,4)	0,8 (2x0,4)
Air throughput, m³/h	110	220 (2x110)	220 (2x110)
Wash pump, kW	2,6	2,9	2,9
Wash pump capacity, l/min	800	900	900
Pure water pump, kW	0,57	0,57	0,57
Pure water pump capacity, l/min	260	260	260
Total maximum heat transmission (W)	174	174	174
Maximum fascia heat transmission (W)	120	120	120
Mean sound power level (A), dB	72	72	72
Peak sound power level (A), dB	75	75	75
Electric connection *	see page 7	see page 7	see page 7
Controls/Programmes			
Programmability	X	X	X
Pre-set programmes	6	6	6
Customizable programme positions	unlimited	unlimited	unlimited
Cycle status display	X	X	X
Cycle complete indication with mutable buzzer	X	X	X
Password protected modes	3	3	3
Automatic detergent dosing system			
Suction tube	Adjustable / Telescopic	Adjustable / Telescopic	Adjustable / Telescopic
Sliding drawer for detergent containers, 3 x 5 l containers	X	X	X
Detergent low level indication	X	X	X
Independent detergent volume verification	X	X	X
Additional detergent pump incl. flow sensor and low level indicator	O	O	O
Rinse aid pump	O	O	O
Process control			
Load temperature protection and over temperature cut-outs	X	X	X
Pressure control for foam and washing water	X	X	X
Boss entry port for test temperature sensor leads	X	X	X
Independent tamper-proof process verification	X	X	X
Independent tamper-proof process recorder	X	X	X
Panel printer	X	X	X
Network connectivity (Ethernet)	O	O	O
Remote access	O	O	O
Emergency stop switch(es)	O	O	O
Sample drawing tap	O	O	O
Solenoid valve for purewater/distilled water feed	O (L)	O (L)	O (L)
Pump & solenoid valve for unpressurized purewater feed	O	O	O
Integrated conductivity meter	O	O	O
Coupling to conductivity measuring	L	L	L
Drip tray with leakage sensor	O	O	O
Automatic maintenance reminder	X	X	X
Standard compliance			
EN ISO 15883	EN ISO 15883-1, -2	EN ISO 15883-1, -2	EN ISO 15883-1, -2
IEC 61010-1	X	X	X
IEC 61010-2-040	X	X	X
IEC 61326-1	X	X	X
CE 0537	X	X	X
EN ISO 14971	X	X	X
EN ISO 13485	X	X	X
EN 1717	X	X	X

X = Standard   O = Optional   (L) = Standard in laboratory model   (2 = Double door (pass-through) model   * = Regional options
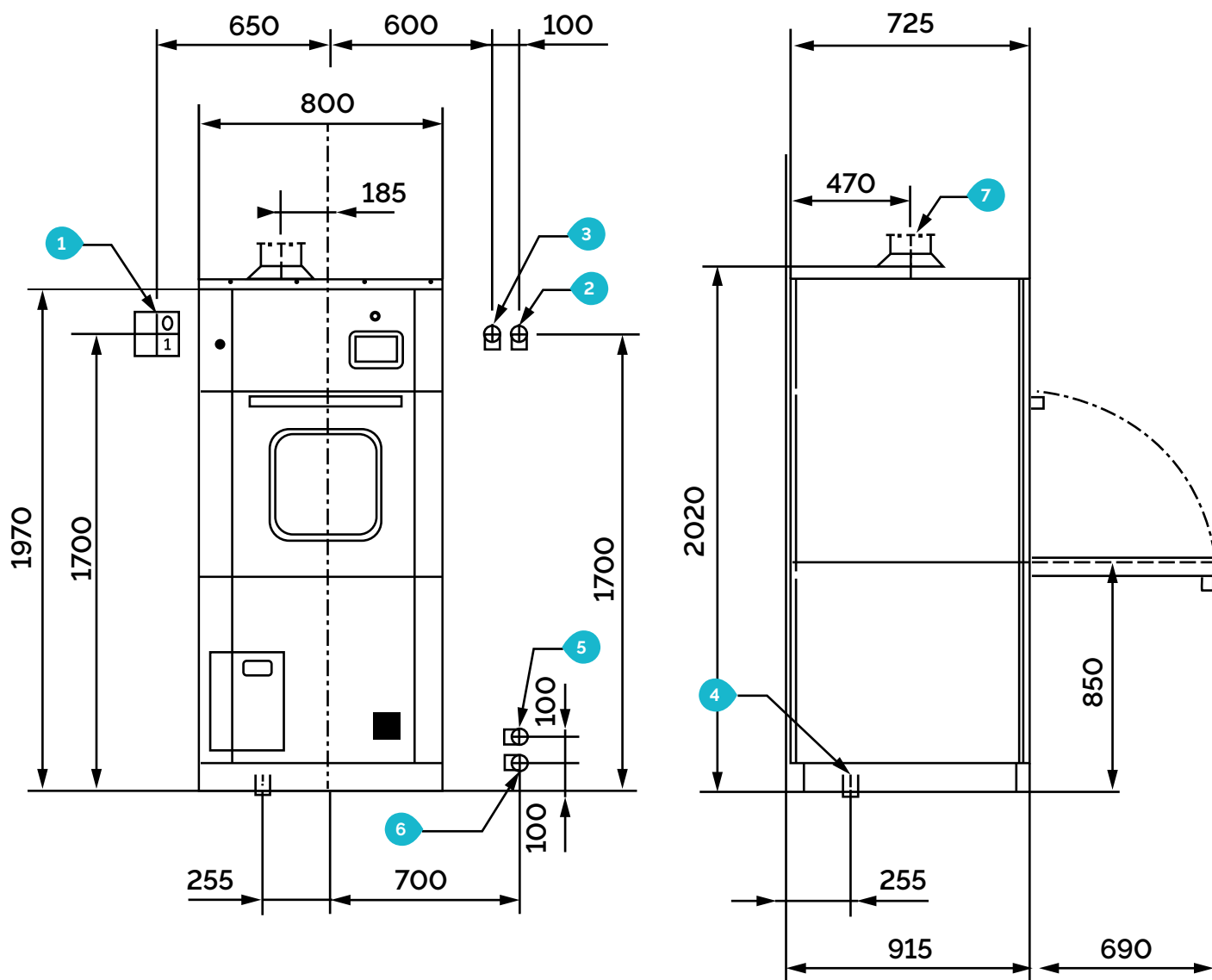
Installation, DEKO D32 X2 N
Single door model

1. Circuit breaker [1]
2. Cold water R1/2" (female), shut off valve [1]
3. Warm water R1/2" (female), shut off valve [1]
4. Drain outlet NS dia 50 mm
   4.1 Alternative drain outlet dia 20 mm with outlet pump [2]
5. Steam connection R1/2" (male) – only steam heated models!
6. Exhaust connection R1/2" (male) – only steam heated models!
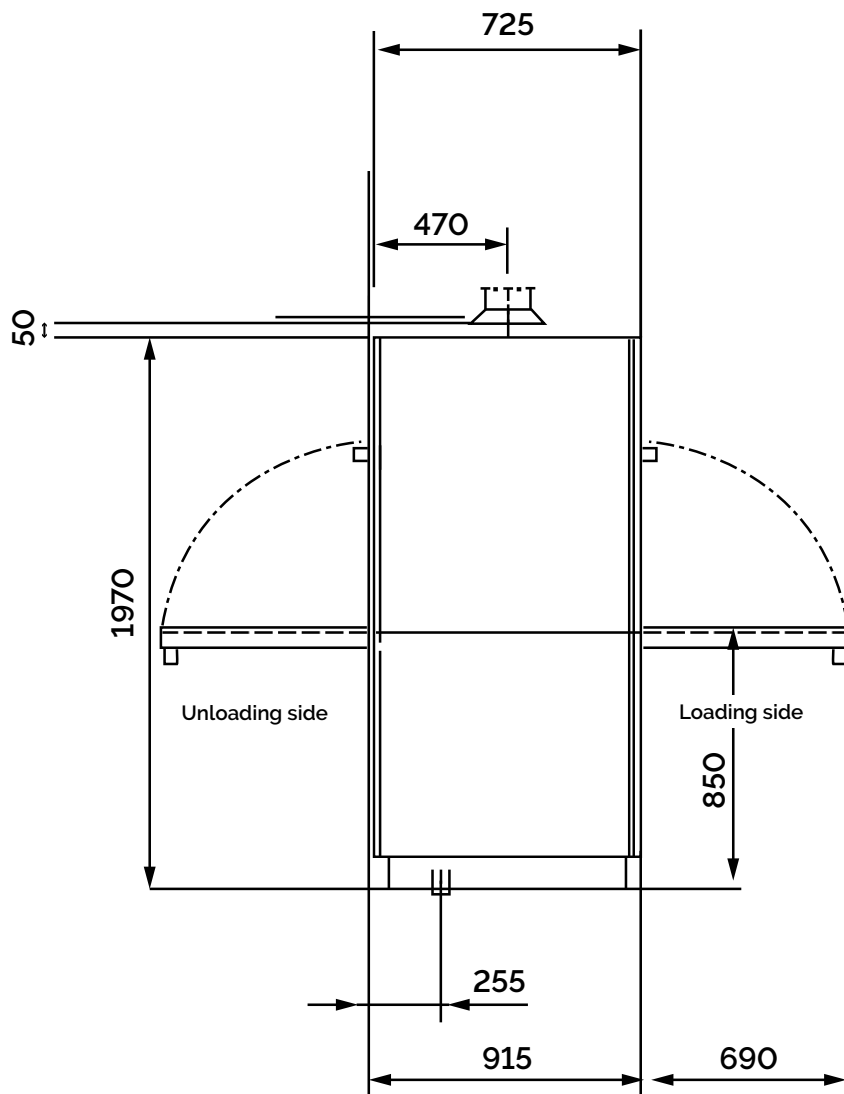7. Exhaust duct dia 90 mm

[1] Supply by the buyer / installation party
[2] Option

Installation, DEKO D32 X2 N
Double door (pass-through) model

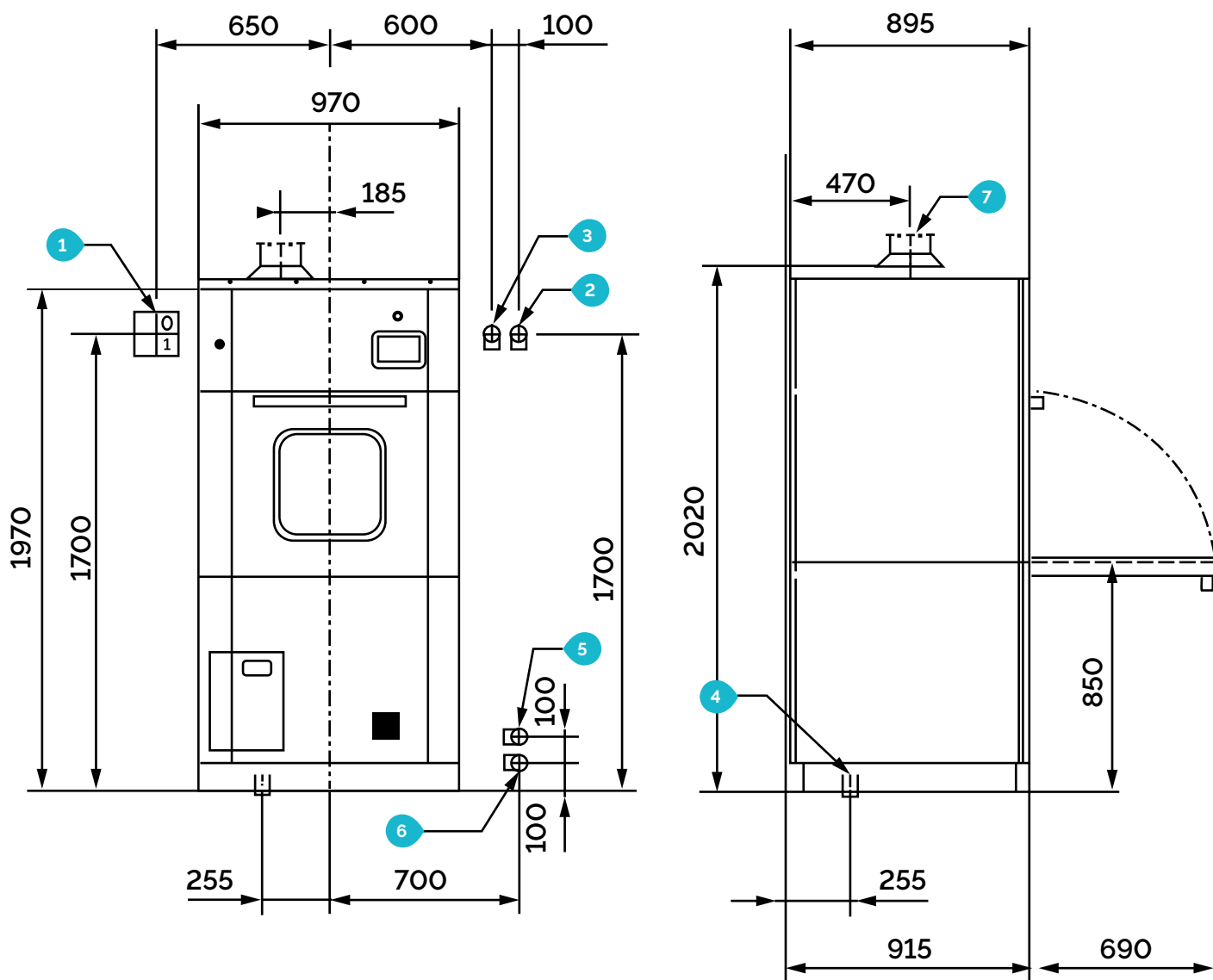Wall opening width: 800 mm / machine + 40 mm, height: 2020 mm.

725

470

50

1970

Unloading side

Loading side

850

255

915

690

Installation, DEKO D32 X2 C
Single door model

1. Circuit breaker [1]
2. Cold water R1/2" (female), shut off valve [1]
3. Warm water R1/2" (female), shut off valve [1]
4. Drain outlet NS dia 50 mm
   4.1 Alternative drain outlet dia 20 mm with outlet pump [2]
5. Steam connection R1/2" (male) – only steam heated models!
6. Exhaust connection R1/2" (male) – only steam heated models!
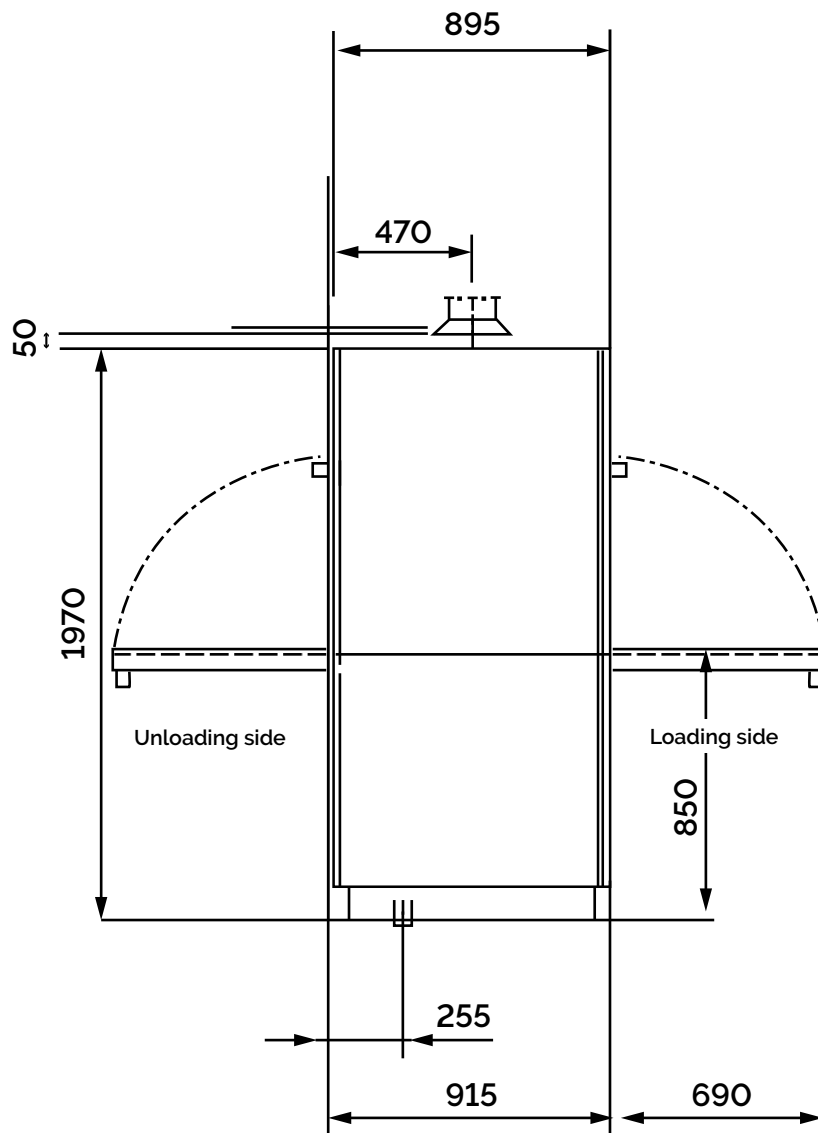7. Exhaust duct dia 90 mm

[1] Supply by the buyer / installation party
[2] Option

Installation, DEKO D32 X2 C
Double door (pass-through) model

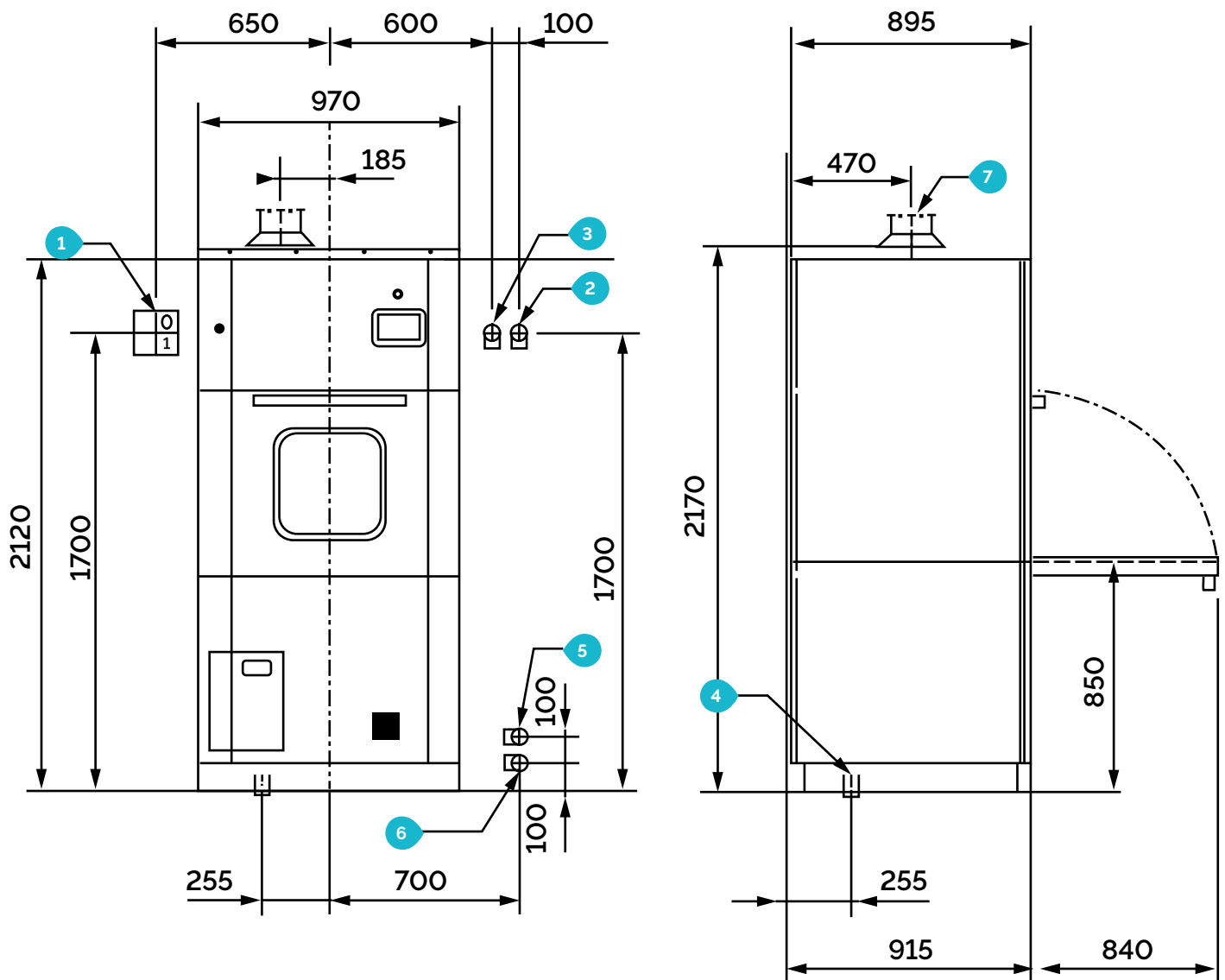Wall opening width: 970 mm / machine + 40 mm, height: 2020 mm.

895

470

50

1970

Unloading side

Loading side

850

255

915

690

Installation, DEKO D32 X2 B
Single door model

1. Circuit breaker [1]
2. Cold water R1/2" (female), shut off valve [1]
3. Warm water R1/2" (female), shut off valve [1]
4. Drain outlet NS dia 50 mm
   4.1 Alternative drain outlet dia 20 mm with outlet pump [2]
5. Steam connection R1/2" (male) – only steam heated models!
6. Exhaust connection R1/2" (male) – only steam heated models!
7. Exhaust duct dia 90 mm
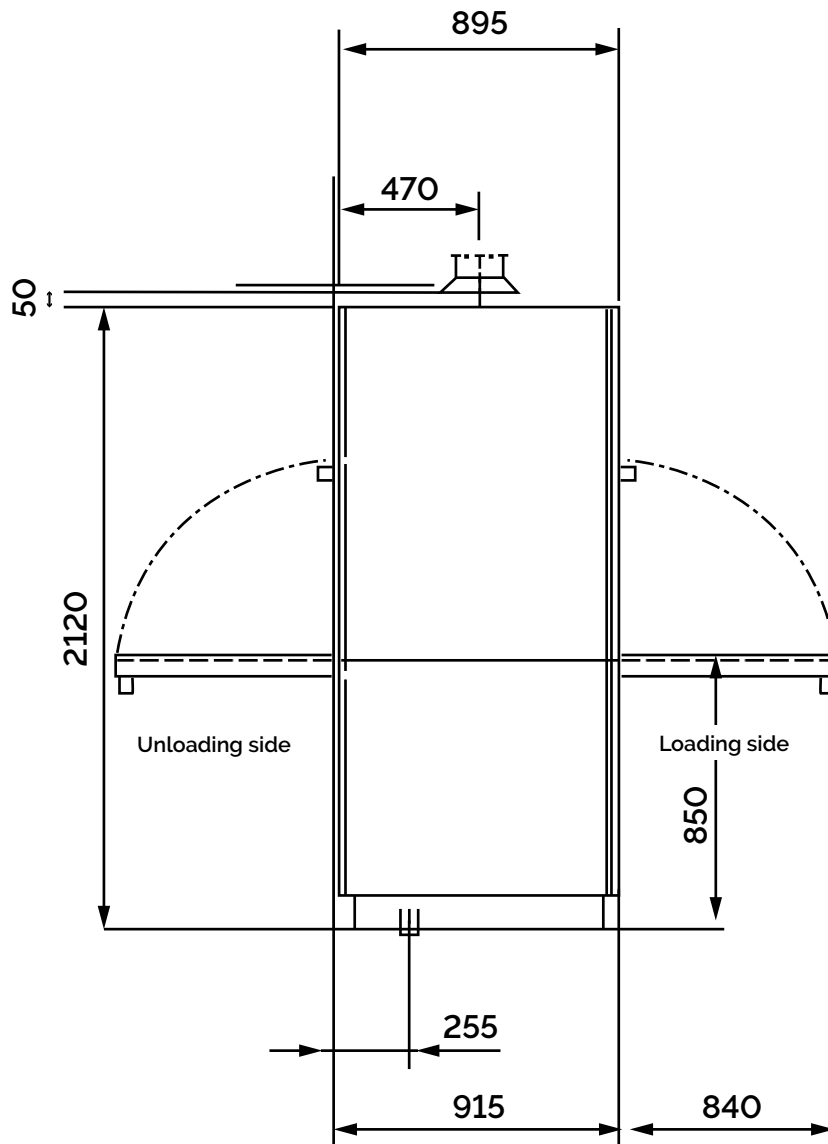
[1] Supply by the buyer / installation party
[2] Option

Installation, DEKO D32 X2 B Double door (pass-through) model

Wall opening width: 970 mm / machine + 40 mm, height: 2170 mm.

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Preventing infections since 1976.