



ACCURA

Installation site requirements

Coordinate measuring machine (CMM)

Size: 16/24/15, 16/30/15, 16/42/15, 20/24/10, 20/30/10, 20/42/10, 20/24/15, 20/30/15, 20/42/15



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General

Safety during transport and installation

Requirements for safe working conditions:

- The hoisting equipment and lifting tackle (e.g. rope) used, must be in proper working order and checked in accordance with the applicable standards and directives.
- Personnel operating such equipment must be trained in the required work and be able to safely operate this hoisting equipment.
- The hoisting equipment must be designed to accommodate the size and weight of the transported material.

Delivery package

The CMM is comprised of the following components:

- Coordinate measuring machine (CMM)
- Controller cabinet
- Control console
- Data system and peripheral devices (optional)

Note on data systems



NOTE

Data systems for coordinate measuring machines are CMM-based systems and cannot be compared to computer systems for office applications. To ensure trouble-free operation of the coordinate measuring machine, you must only use computer systems tested and approved by ZEISS.

If the customer provides the computer systems, the computers must first be tested and approved by ZEISS. The customer is responsible for any additional costs.

Coordinate measuring machine parameters

Category	Parameter
Overvoltage category	III
Degree of contamination	2
Protection class	1

IP rating of the controller cabinet

Controller cabinet	Identifier
TCC	IP22
MCC 800 (option)	IP54

Logistics and In-plant Transport

Unloading/ in-plant transport

Requirements

- Sufficient floor and ceiling load capacity of the transport routes.
- Transport routes must be clear.
- The transport routes and doorways must be at least 10 cm wider and higher than the CMM assemblies, including transport equipment. The dimensions of the CMM assemblies can be found under "Shipping crates, boxes and pallets."
- The CMM assemblies may only be unloaded and transported using transport lugs or pallets.

Note: Ensure that you do not damage the insulated packaging during transport!

- To unload and transport to the storage location or installation site, suitable transportation equipment and operating personnel must be provided. The type of transport equipment depends on the local conditions and the weight of the CMM assembly being transported. The dimensions and weights can be found under Shipping crates, boxes and pallets.

Examples of suitable transportation equipment: overhead crane, mobile crane, forklift



WARNING

Risk of injury through falling components if they are improperly secured.

Crushing and severing of body parts.

- Secure the CMM assemblies being transported to prevent them from slipping and tipping.
A high center of gravity increases the risk of tipping.
 - Secure the individual loose parts so that they cannot move.
 - Move the CMM assembly very carefully, slowly and smoothly.
-

Shipping crates, boxes and pallets for ACCURA (X1600, X2000)



NOTE

The coordinate measuring machine comes disassembled on shipping pallets. The individual parts are wrapped in insulated packaging. For overseas shipping, the individual parts are packed in shipping crates.

Agenda Size	Shipping method	Packaging	Length	Width	Height	Volume	Tare weight	Gross
			[mm]	[mm]	[mm]	[m ³]	[kg]	[kg]
16/24/15	Air/sea	Crate	3880	2920	3360	38.0	1700	12700
	Truck	Pallet	3830	2920	3250	-	780	11780
16/30/15	Air/sea	Crate	4500	2920	3360	44.1	2000	15000
	Truck	Pallet	4500	2900	3250	-	1050	14050
16/42/15	Air/sea	Crate	5680	2920	3370	55.8	2200	20700
	Truck	Pallet	5680	2900	3250	-	1240	19740
20/24/10	Air/sea	Crate	3870	3180	2970	36.5	1665	14365
	Truck	Pallet	3870	3180	2800	-	960	13660
20/30/10	Air/sea	Crate	4500	3180	2970	42.5	2240	17240
	Truck	Pallet	4500	3180	2800	-	1400	16400
20/42/10	Air/sea	Crate	5690	3200	2970	54.0	2600	23000
	Truck	Pallet	5680	3180	2800	-	1400	21800
20/24/15	Air/sea	Crate	3870	3180	3360	41.3	1665	14365
	Truck	Pallet	3870	3180	3250	-	960	13660
20/30/15	Air/sea	Crate	4500	3180	3370	48.2	2240	17240
	Truck	Pallet	4500	3180	3250	-	1400	16400
20/42/15	Air/sea	Crate	5680	3200	3360	61.0	2500	26000
	Truck	Pallet	5690	3200	3200	-	1500	25000
MCC 800	Air/sea and truck	Crate	1300	2235	100	1.5	70	190

All values are maximum values. Unspecified values are not yet available.

For production reasons, the dimensions of the shipping crates may deviate by as much as 50 mm. Subject to change.

Intermediate storage/unpacking

After a desiccant is added, CMM assemblies are wrapped with an aluminum-coated foil and sealed (moisture protection).

- Store the packed CMM assemblies at 5-40°C as close as possible to the installation site. **Note:** The CMM assemblies wrapped in foil must be stored in closed, dry rooms.
- Provide a location to store the transport material and the packaging material.



NOTE

The shipping crates may only be opened by a ZEISS service engineer.
The foil may only be removed by a ZEISS service engineer.



NOTE

Packing materials such as disposable transport packaging for the covers, PC and accessories, foil or Styrofoam chips can be returned to ZEISS if they are clean.



NOTE

ZEISS recommends storing the disposable packaging and the transport braces in a safe location (to protect them against damage) in case the CMM has to be moved to another site at a later date.

Adaptation to room temperature

- If possible, move the CMM assemblies to a storage location with an ambient temperature of at least +15°C 2 days before the arrival of the ZEISS service engineer.

Relocating an installed CMM



NOTE

To avoid damage, the CMM may only be transported when a ZEISS service engineer is involved.

Planning and Measuring Lab Preparation

General protection measures

The CMM must be protected against heavy contamination. Deposits require additional cleaning and maintenance and can result in malfunctions and damage to the CMM.

Doorway dimensions in the measuring lab

The doorways to the measuring lab must be at least 10 cm wider and higher than the dimensions of the CMM.

The dimensions of the CMM can be found under "Shipping crates" and "Installation dimensions".

Room height of the measuring lab

The required room height is the sum of the height of the CMM and the minimum sub-ceiling installation clearance.

The required minimum room height above the floor or foundation is listed in the chapter on "installation dimensions".

Floor

The floor must be clean.

Maximum difference in level between the support surfaces: ± 4 mm.

The tolerances for the air dampers and leveling units can be found under Foundation and floor loads.

Floor plan

If you create a floor plan on a CAD system, you can produce a DXF and/or a DWG file containing the dimensions. If you require further assistance, please contact your ZEISS representative.

Note: When creating a floor plan, ensure that your coordinate measuring machine can be easily accessed from all sides. Installation near transport routes must be avoided.

Vibrations at the installation site

Vibrations are frequently caused by heavy machinery, transport equipment (cranes or forklifts), presses and forging machines in adjacent rooms and can impair measuring accuracy.

To prevent as many of these impairments as possible, the CMM is equipped with an integrated damping system and is therefore largely vibration-resistant.

A measurement is required to evaluate the extent of the floor vibrations.

ZEISS can be requested to complete a vibration analysis; If required, contact your ZEISS representative. The results must be made available to ZEISS.

Various parameters, such as frequency and amplitude of the prevalent acceleration, must be captured and analyzed for a comparable evaluation. The results of the vibration analysis will be subsequently evaluated by our specialists.

The diagrams for vibrations at the installation site can be found in the chapter on "limit curves of permissible floor vibrations".

Floor load

When calculating or planning any necessary floor reinforcements, we recommend consulting a structural engineer familiar with your local soil conditions. The floor load resulting from the CMM can be found in the chapter on "installation dimensions" ->"Foundation and floor load".

Environmental conditions

The operator must ensure that the required environmental conditions are maintained in the measuring lab and document them during the entire operating time (measuring operations, idle times and downtimes).



NOTE

The environmental conditions must be maintained to ensure that the accuracy specifications are met. These include:

- Avoid direct heat (e.g. controller cabinets of machine tools, heaters, lighting, sun).
- The flow of air must ensure that any heat emitted from existing heat sources (e.g. electronic devices or operators) is never directed towards the CMM.
- Avoid cold air and drafts (e.g. outside walls, windows, doors).
- Additional information can be found in VDI/VDE 2627.

Environmental conditions for operational readiness

The following conditions must be met to ensure proper operation of the coordinate measuring machine.

Relative humidity (without condensation)		40-70%
Note: Humidity values that exceed the permissible range require an additional air conditioner on the controller cabinet.		
Ambient temperature		10-35°C
Height above mean sea level:	100-125 V	3000 m
	220-240 V	2000 m
Sound pressure level at the installation site		<90 dBA
Sound pressure level on the probe	Discrete frequencies (50-2000 Hz)	75 dBA
	Mixed frequencies (50-2000 Hz)	80 dBA

Environmental conditions for measuring operations

To comply with the accuracy values, the following measures must be implemented:

- Enter the expansion coefficients of the workpiece in the measuring software.
- Comply with the temperature conditions. See table.

Note: Maintain the reference temperature for at least 48 hours before starting the measurements.

Measuring ranges:		16/24/15 to 20/42/15
Reference temperature selectable from		18-22°C
Temperature fluctuation	per day (K/d)	2.0
	per hour (K/h)	1.0
	spatial (K/m)	1.0



NOTE

If the reference temperature is not maintained, the accuracy values listed in the specifications are not guaranteed.

Please see the separate specifications brochure for information about permissible temperature variations.

Compressed Air

Compressed air supply



NOTE

If the compressed air requirements are not met, an additional air filtration unit and, if necessary, a membrane dryer must be connected upstream in the service unit. If the required air quality is still not achieved, ZEISS recommends involving a pneumatics specialist. If the required air quality is not provided, it can result in damage not covered by the warranty.

Requirements:	Pressure	6-8 bar	
	Air quality according to ISO 8573-1:2010 [6:4:4]	Max. particle concentration:	5 mg/m ³ (Class 6)
		Max. pressure dew point:	+3°C (Class 4)
		Max. oil concentration:	5 mg/m ³ (Class 4)
Air consumption:	max. 10 l/min at 5 bar (50 NI/min at 1 bar)		

Compressed air connection point

The compressed air line must be equipped with a lockable separator and a pressure release system for the compressed air connection on the CMM.

You must prepare the compressed air connection point in accordance with the specifications in this document.

A 7.5 m compressed air hose is included, which has a G3/8 inch outer thread and a quick-action coupling (connection to service unit on CMM).

Furthermore, an NW 7.2 compressed air quick-action coupling plug with a 3/8 inch inner thread is included to connect to the customer's compressed air system.

The compressed air hose is routed during installation.



NOTE

The compressed air hose must be protected.

The compressed air connection point must be easily accessible. If the connection point is on the floor, it must not be covered by the CMM base.

Electrical Specifications and Network Data

Safety instructions

Electric voltage



WARNING

Danger to life due to electric shock resulting from contact with electrical lines and components.

Cardiac arrest, burns, and death.

- ✓ Any work on the controller must be carried out only by a certified electrician. The cover of the controller may only be removed when the CMM is out of operation. The following measures need to be taken for this:
 - Turn off the drives and the controller.
 - Turn off the main switch on the controller and secure it against being turned on again unintentionally.
- Warning: some components in the controller cabinet remain live even when the main switch is turned off. These places are marked with warning signs. If necessary, completely disconnect the controller from the power supply (MCC 800 and MCC 1200, if provided).
- If you do not have a permanent connection, pull the power plug as well.

Routing the connecting cables



CAUTION

Tripping hazard due to exposed cables.

Light to moderate bruises and scrapes. Concussions also possible.

- Route the cables in a cable conduit or cable duct. The cable conduit is fastened to the floor. The cable duct is embedded in the floor.



NOTE

The cable conduit is not included with delivery. The cable conduit or cable duct must accommodate all cables and hoses.

Notes on electrical power supply



Malfunctions resulting from insufficient power supply.

Continuous power supply must be ensured to operate the CMM, particularly for the data system. Other systems with permanently high power consumption and systems with peak loads should not be connected to the same electrical circuit as the CMM. This avoids malfunctions.



Malfunctions resulting from stray radiation.

Stray radiation impairs the operation of the CMM.

- Do not operate the CMM near systems that emit strong stray radiation.
- Do not use mobile phones or walkie-talkies within 3 meters of the CMM.



NOTE

The CMM complies with the requirements of the following standard:

EN/IEC 61326-1: EMC-Interference immunity: Table 2; interference emission: Class A.

Information about electromagnetic compatibility (EMC)

The CMM is a class A device and may cause radio interference in living areas. In such cases, operators may be required to implement appropriate measures at their own expense.

For peripheral devices (e.g. computer, monitor, etc.), the specifications of the respective manufacturer apply.

Electrical power supply parameters

To ensure smooth data transmission between the CMM and the data system, the electrical power supply must meet the following specifications.

Category		Value		
Line voltage		100/110/115/120/125/230/240 V~ (±10%)		
Type of current		1/N/PE		
Frequency		50-60 Hz (±3.5%)		
Power consumption	TCC	Maximum	1600 VA	
		Typical	350 W	
	MCC 800	Maximum	2500 VA	
		Typical	380 W	
	Data systems and peripheral devices		Maximum	1000 VA
	Fuse	TCC	230-240 V	C 16 A
100 - 125 V			15 A	
MCC 800		230-240 V	C 16 A	
		100 - 125 V	25 A	

Power supply stabilization

A line-voltage analysis should be performed when brief, out-of-tolerance r.m.s. fluctuations of the nominal voltage occur. If required, please contact us for more information. We will be glad to assist you and recommend suitable measures. Usually, separate stub cables from the main distribution frame to the connection point of the CMM are sufficient.

Required connections

- A permanent connection must be provided for the system.
- Alternatively, a 3-pin CEE plug (in accordance with IEC/EN 60309 for 32A) can also be used.
- Shock-proof outlet for maintenance work.



NOTE

For maintenance work on the CMM with a permanent connection, an additional protective ground connection and an outlet must be provided due to ESDS and VDE regulations. Max. distance to controller: <1 m. (see connection diagram drawing)

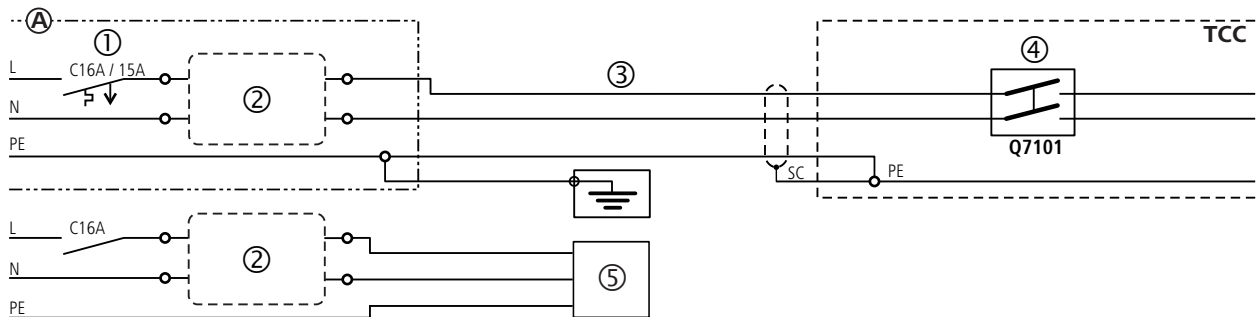
Protection

Protect the connection with a circuit breaker. Alternatively, equivalent protective equipment can also be used. We recommend installing a lightning arrester, e.g. Phoenix Flashtrab FLT 25-400, for general protection against overvoltage.

Wiring plan for TCC controller cabinet (standard)

We recommend installing the connection in accordance with the following diagram.

Note: Comply with applicable national regulations.

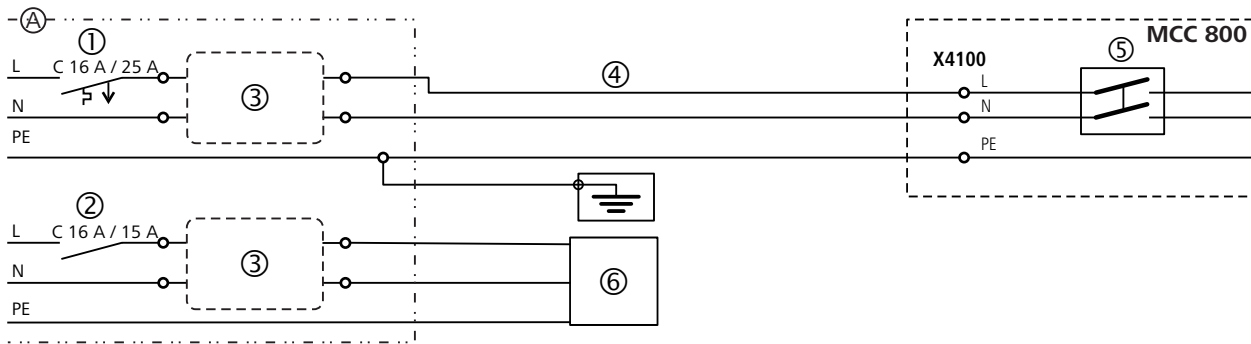


- A Customer installation of local voltage (suggested)
- ① Circuit breaker [C 16 A at 230-240 V], [15 A at 100-125 V]
 - ② Recommended: residual current circuit breaker
 - ③ Cable (included with delivery)
 - ④ Controller main switch
 - ⑤ Shock-proof outlet **Note:** For maintenance work on the CMM

Wiring diagram for MCC 800 controller cabinet

We recommend installing the connection in accordance with the following diagram.

Note: Comply with applicable national regulations.



- A Customer installation of local voltage (suggested)
- 1 Circuit breaker [C 16 A/ 25 A]
- 2 Circuit breaker [C 16 A/ 15 A]
- 3 Recommended: residual current circuit breaker
- 4 Cable (included with delivery)
- 5 Main switch
- 6 Shock-proof outlet **Note:** For maintenance work on the CMM

Network connection

A network connection is required for:

- Data backup
- Teleservice (this is a ZEISS-recommended service and requires an Internet connection).

An Internet connection is not required for the installation of the CMM.

Network topology

System components are networked during start-up by a ZEISS service engineer (or a specialist authorized by ZEISS) in accordance with the applicable specifications and must not be modified by the customer. Any change may lead to connection problems.

Installation Dimensions/ Sample Installation/ Weights

Controller cabinet installation



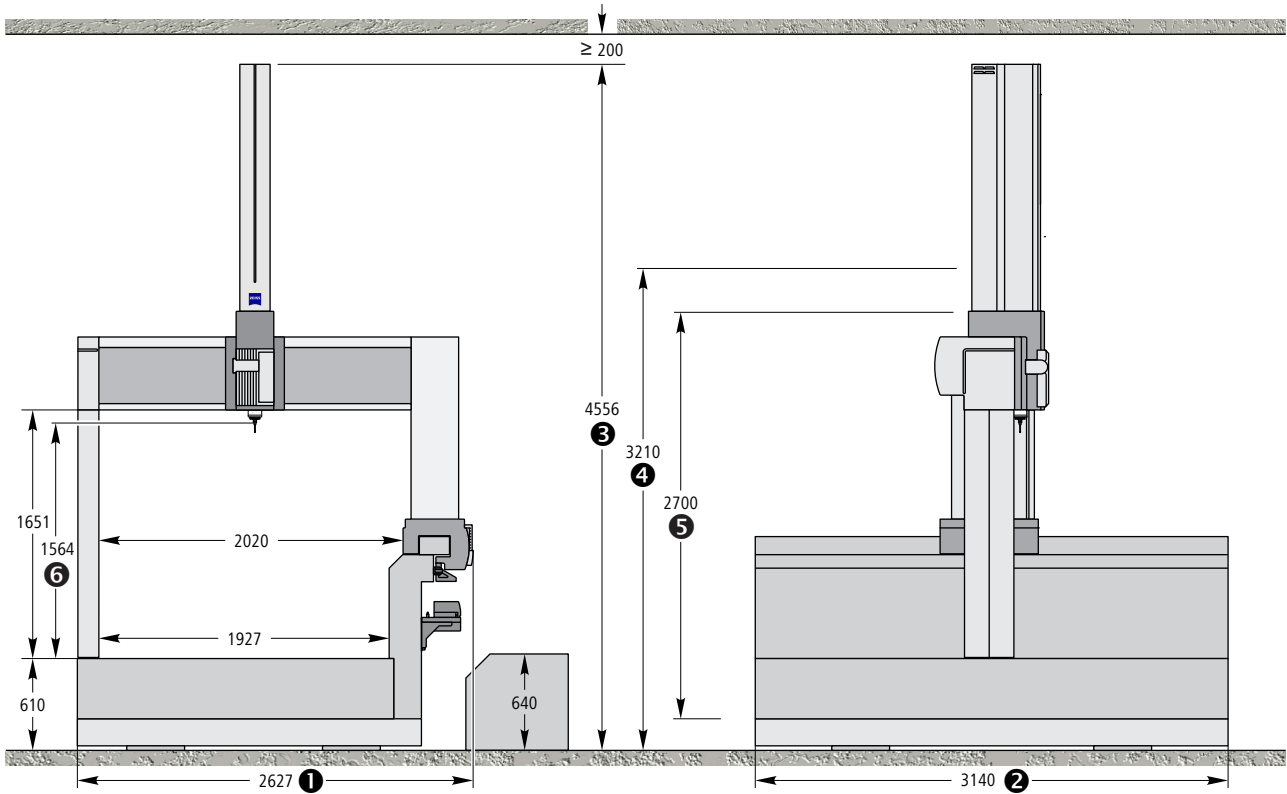
NOTE

Pay attention to the following when installing the controller cabinet:

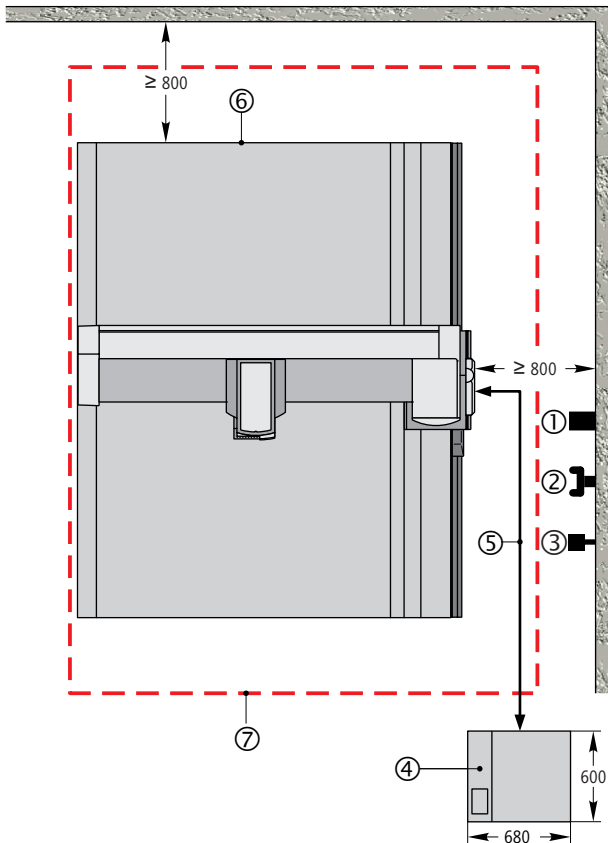
- The controller cabinet must be positioned so that the exhaust air from the controller cabinet is not directed towards the CMM.
- Only for MCC 800: the distance between the back of the controller cabinet and the wall must be at least 500 mm. When the back is fully open, the distance to the wall must be at least 800 mm.
- The air exchange between the controller cabinet and the environment must not be obstructed.

Dimensions	Height [mm]	Width [mm]	Depth [mm]
TCC controller cabinet (standard)	640	600	680
MCC 800 controller cabinet (optional)	800	800	800
MCC 800 controller cabinet (option) with cooling unit (back door)	800	800	1060

ACCURA 16/24/15 installation dimensions



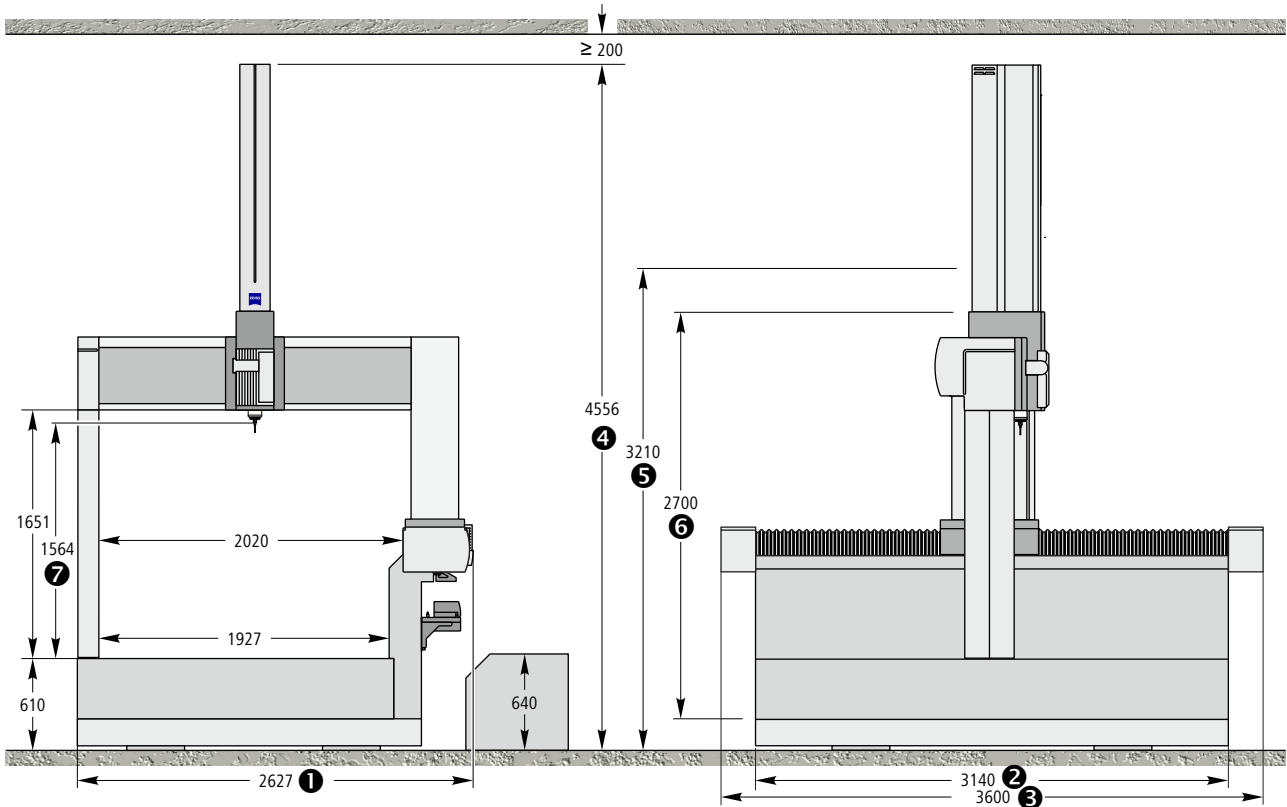
All dimensions in millimeters, scale 1:50



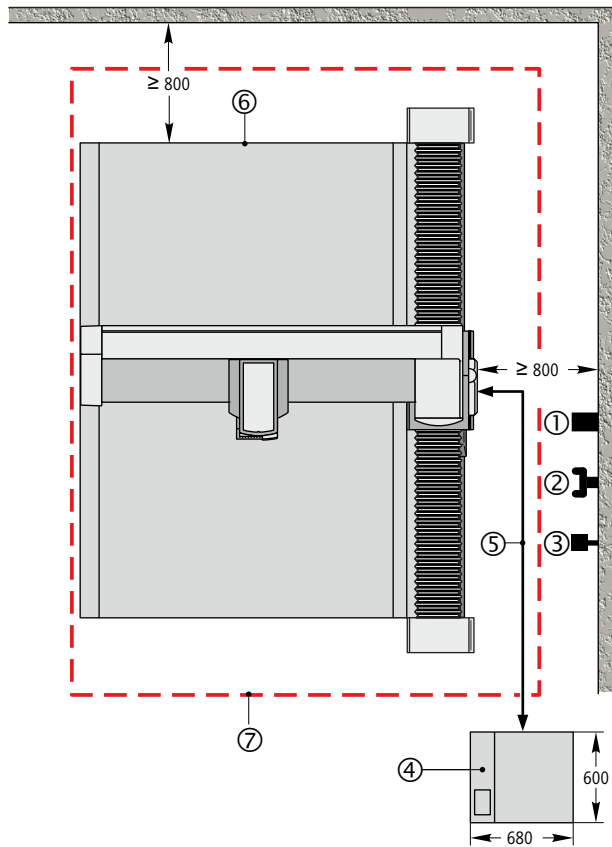
- ① CMM width
- ② Length of granite plate, approx. 130 mm extra for service unit.
- ③ CMM height
- ④ Height of secured CMM assembly with shipping pallet.
- ⑤ Height of secured CMM assembly from lower edge of granite plate.
- ⑥ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ⑦ Scanner protective field option
- ① Network connection for data backup and Internet (Teleservice)
- ② Power supply
- ③ Compressed air supply
- ④ TCC (standard) controller cabinet, MCC 800 (option) ➤ see *Controller cabinet installation* [↔ 18]
- ⑤ CMM ↔ controller connection cable (cable length approx. 3 m)
- ⑥ Compressed air connection on the CMM

Weight:	ACCURA (model 16/24/15)	11000 kg
	Workpiece, max.	4000 kg

ACCURA 16/24/15 (bellows cover) installation dimensions



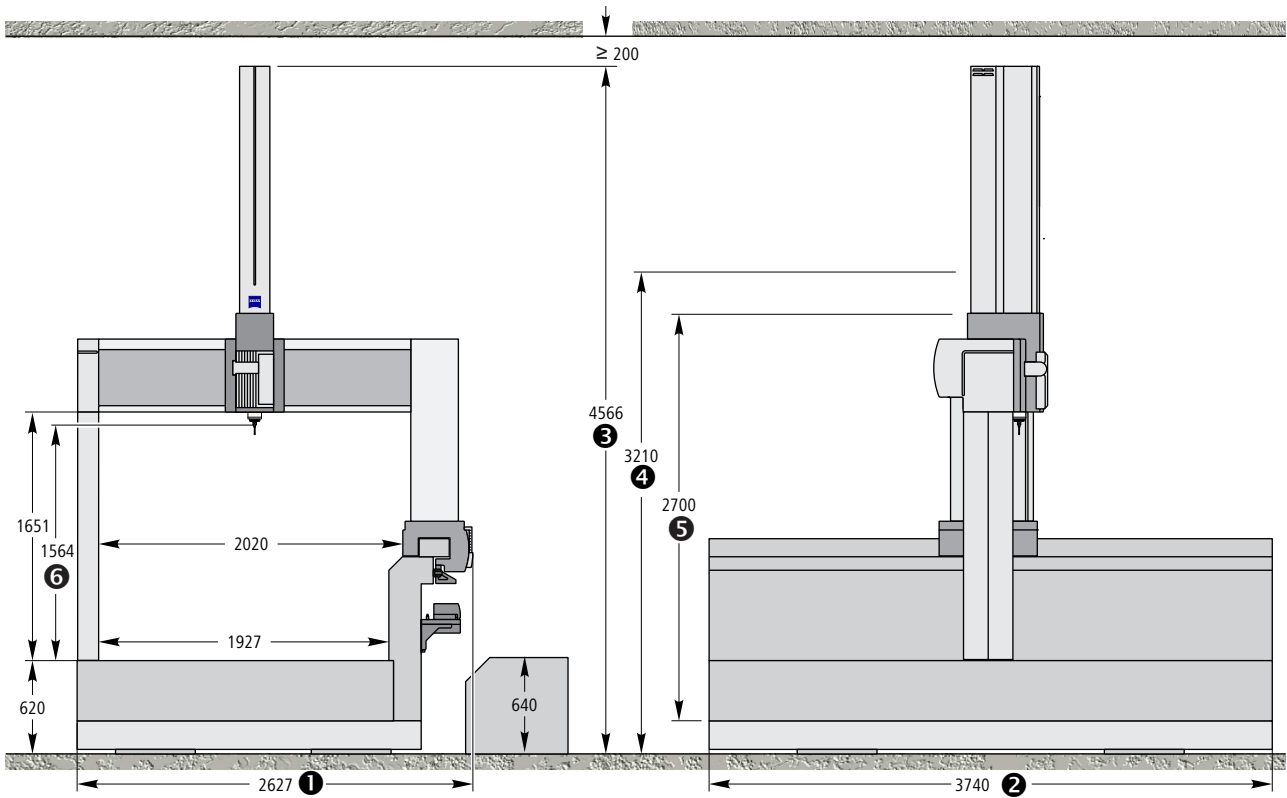
All dimensions in millimeters, scale 1:50



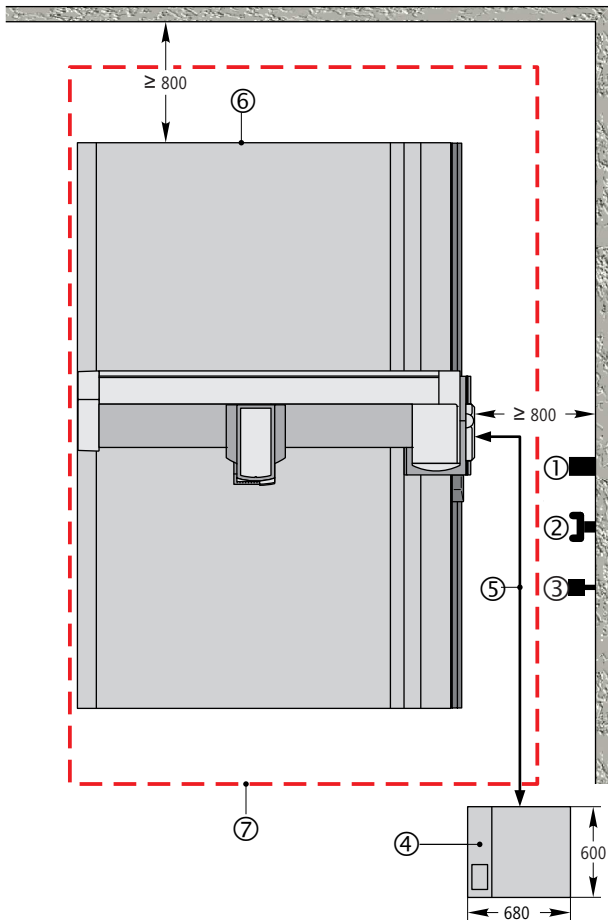
- ❶ CMM width
 - ❷ Length of granite plate, approx. 130 mm extra for service unit.
 - ❸ Length of the CMM with covers
 - ❹ CMM height
 - ❺ Height of secured CMM assembly with shipping pallet.
 - ❻ Height of secured CMM assembly from lower edge of granite plate.
 - ❼ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❶ Network connection for data backup and Internet (Teleservice)
 - ❷ Power supply
 - ❸ Compressed air supply
 - ❹ TCC (standard) controller cabinet, MCC 800 (option) ➤ see *Controller cabinet installation* [→ 18]
 - ❺ CMM ↔ controller connection cable (cable length approx. 3 m)
 - ❻ Compressed air connection on the CMM
 - ❼ Scanner protective field option

Weight:	ACCURA (size 16/24/15)	11040 kg
	Workpiece, max.	4000 kg

ACCURA 16/30/15 installation dimensions



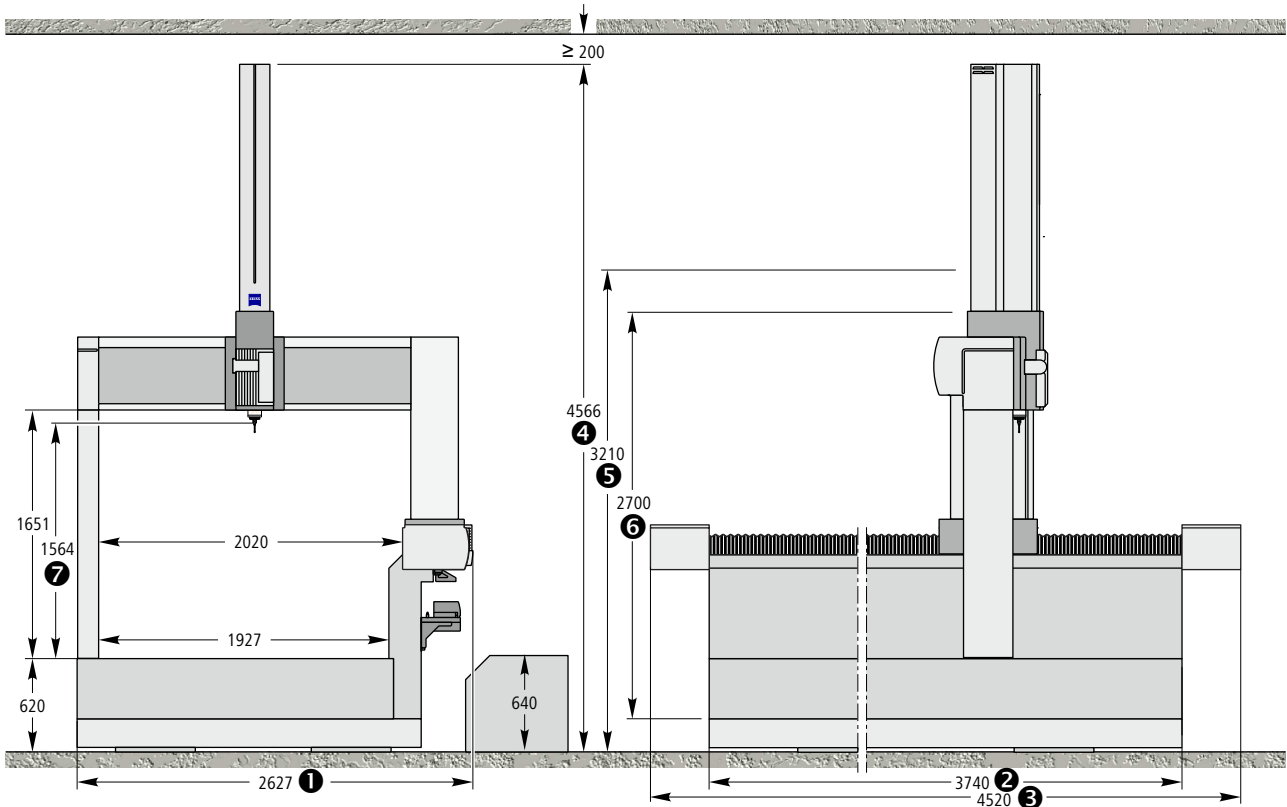
All dimensions in millimeters, scale 1:50



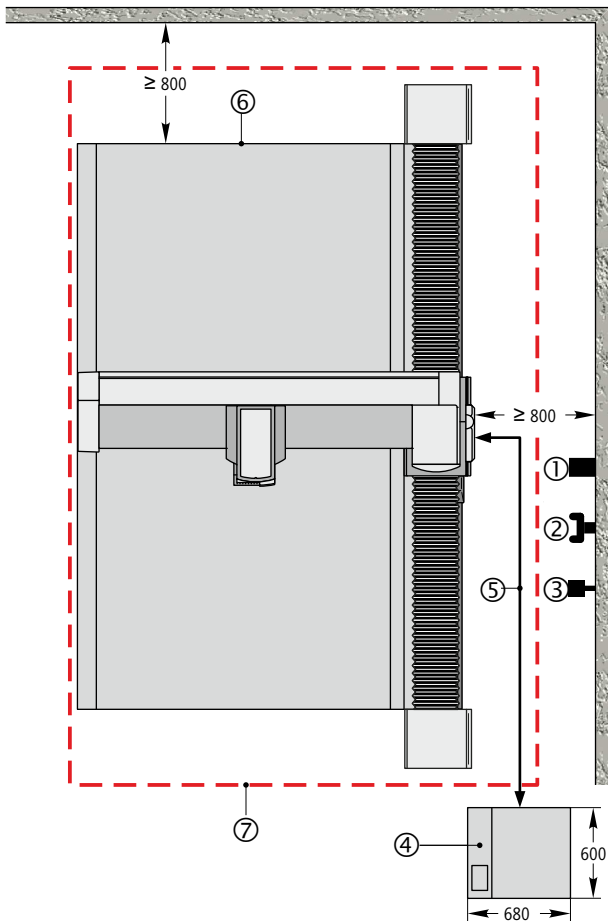
- ① CMM width
 - ② Length of granite plate, approx. 130 mm extra for service unit.
 - ③ CMM height
 - ④ Height of secured CMM assembly with shipping pallet.
 - ⑤ Height of secured CMM assembly from lower edge of granite plate.
 - ⑥ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
 - ⑦ Scanner protective field option
- ① Network connection for data backup and Internet (Teleservice)
 - ② Power supply
 - ③ Compressed air supply
 - ④ TCC (standard) controller cabinet, MCC 800 (option) ➤ see *Controller cabinet installation* [↔ 18]
 - ⑤ CMM ↔ controller connection cable (cable length approx. 3 m)

Weight:	ACCURA (model 16/30/15)	13200 kg
	Workpiece, max.	4000 kg

ACCURA 16/30/15 (bellows cover) installation dimensions



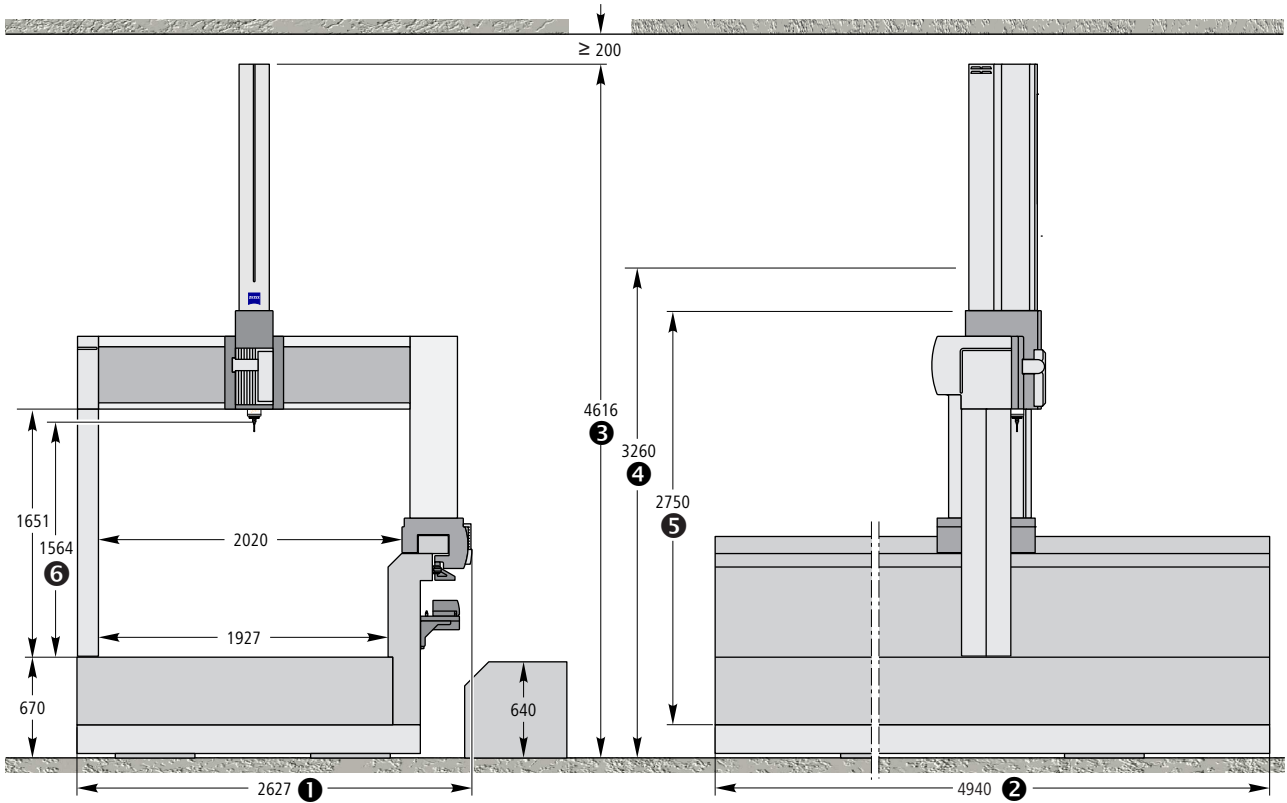
All dimensions in millimeters, scale 1:50



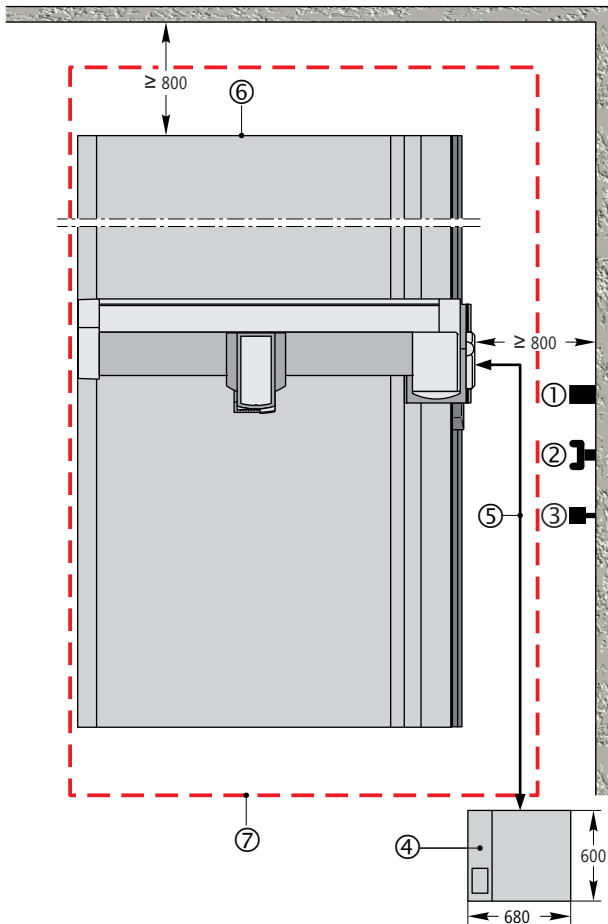
- ❶ CMM width
 - ❷ Length of granite plate, approx. 130 mm extra for service unit.
 - ❸ Length of the CMM with covers
 - ❹ CMM height
 - ❺ Height of secured CMM assembly with shipping pallet.
 - ❻ Height of secured CMM assembly from lower edge of granite plate.
 - ❼ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❶ Network connection for data backup and Internet (Tele-service)
 - ❷ Power supply
 - ❸ Compressed air supply
 - ❹ TCC (standard) controller cabinet, MCC 800 (option) ➤ see *Controller cabinet installation* [↗ 18]
 - ❺ CMM <-> controller connection cable (cable length approx. 3 m)
 - ❻ Compressed air connection on the CMM
 - ❼ Scanner protective field option

Weight:	ACCURA (size 16/30/15)	13240 kg
	Workpiece, max.	4000 kg

ACCURA 16/42/15 installation dimensions



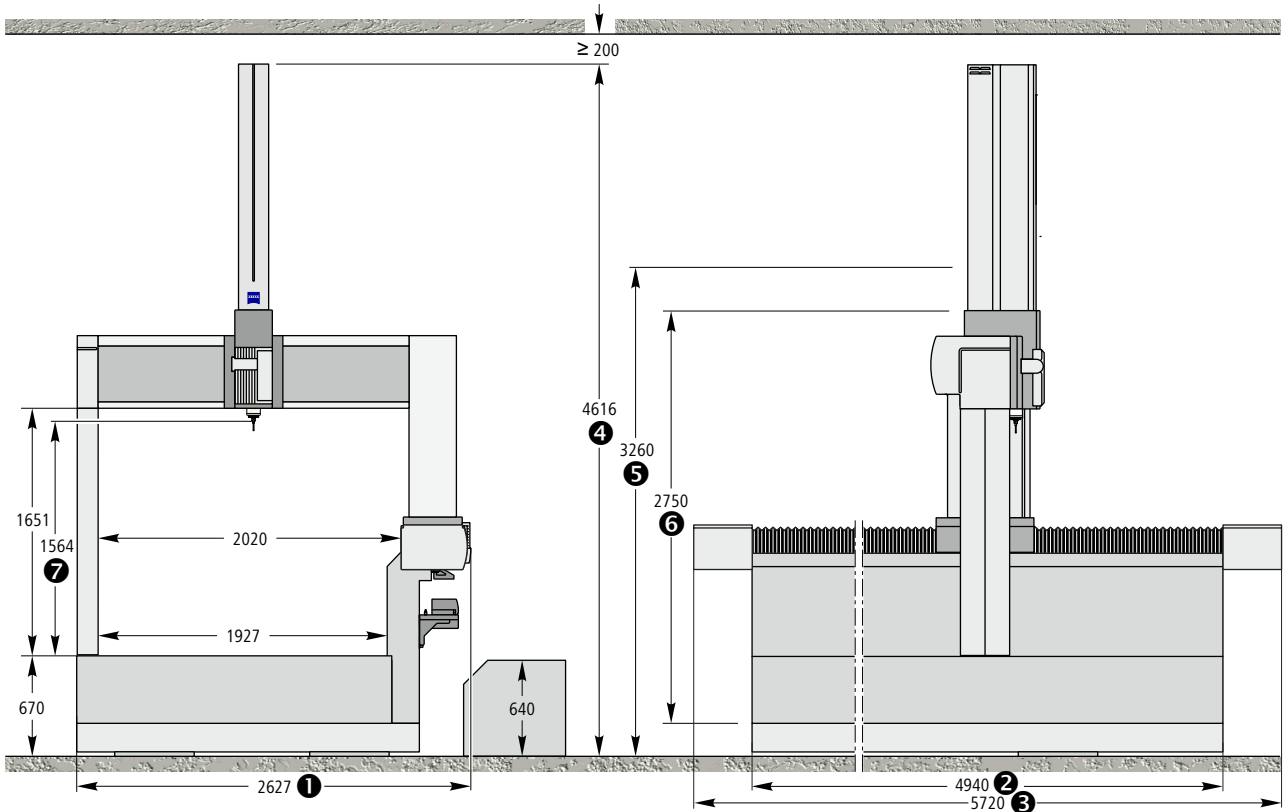
All dimensions in millimeters, scale 1:50



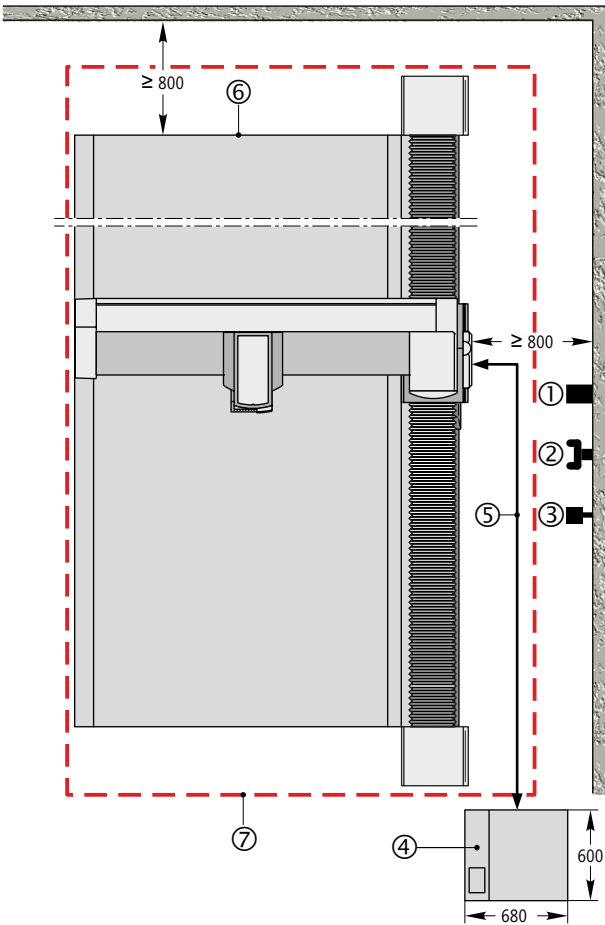
- ① CMM width
 - ② Length of granite plate, approx. 130 mm extra for service unit.
 - ③ CMM height
 - ④ Height of secured CMM assembly with shipping pallet.
 - ⑤ Height of secured CMM assembly from lower edge of granite plate.
 - ⑥ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
 - ⑦ Scanner protective field option
- ① Network connection for data backup and Internet (Teleservice)
 - ② Power supply
 - ③ Compressed air supply
 - ④ TCC (standard) controller cabinet, MCC 800 (option) ➤ see *Controller cabinet installation* [↔ 18]
 - ⑤ CMM ↔ controller connection cable (cable length approx. 3 m)
 - ⑥ Compressed air connection on the CMM
 - ⑦ Scanner protective field option

Weight:	ACCURA (model 16/42/15)	18500 kg
	Workpiece, max.	4000 kg

ACCURA 16/42/15 (bellows cover) installation dimensions



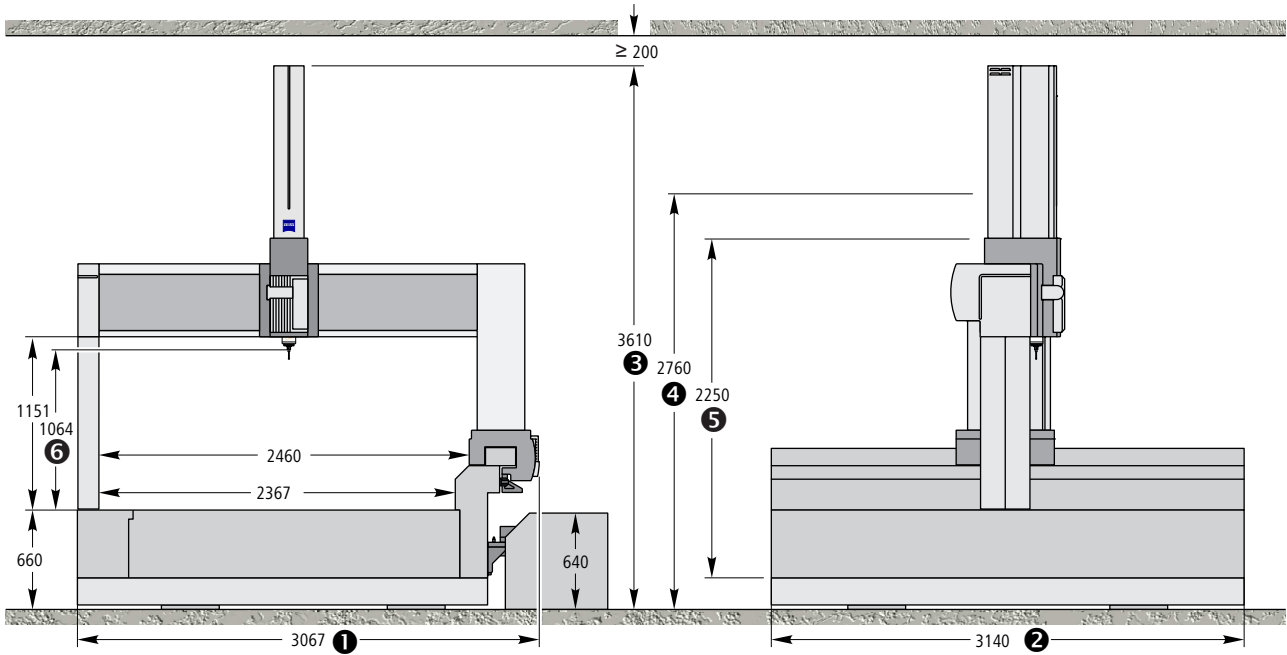
All dimensions in millimeters, scale 1:50



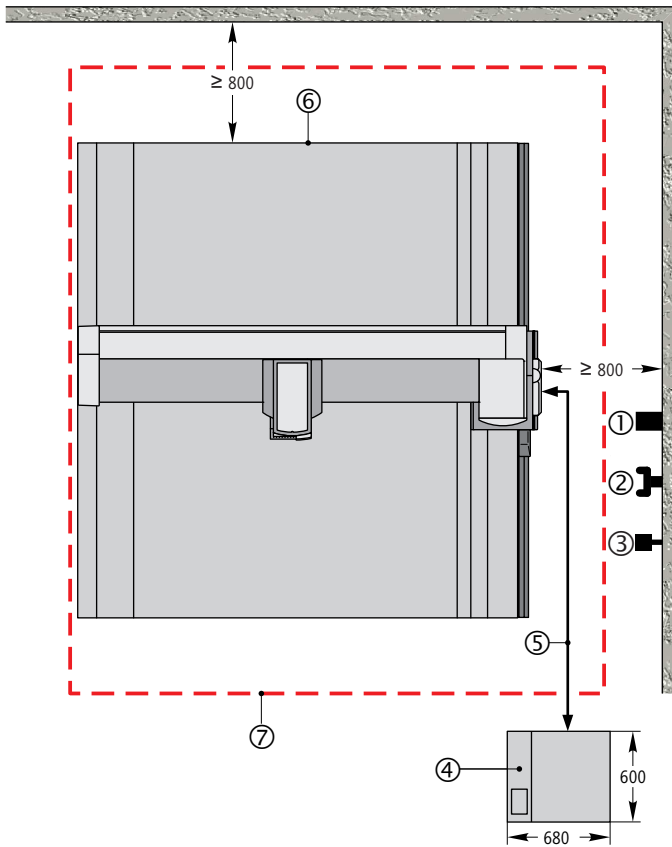
- ❶ CMM width
 - ❷ Length of granite plate, approx. 130 mm extra for service unit.
 - ❸ Length of the CMM with covers
 - ❹ CMM height
 - ❺ Height of secured CMM assembly with shipping pallet.
 - ❻ Height of secured CMM assembly from lower edge of granite plate.
 - ❼ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❶ Network connection for data backup and Internet (Tele-service)
 - ❷ Power supply
 - ❸ Compressed air supply
 - ❹ TCC (standard) controller cabinet, MCC 800 (option) ➤ see *Controller cabinet installation* [↔ 18]
 - ❺ CMM <-> controller connection cable (cable length approx. 3 m)
 - ❻ Compressed air connection on the CMM
 - ❼ Scanner protective field option

Weight:	ACCURA (size 16/42/15)	18540 kg
	Workpiece, max.	4000 kg

ACCURA 20/24/10 installation dimensions



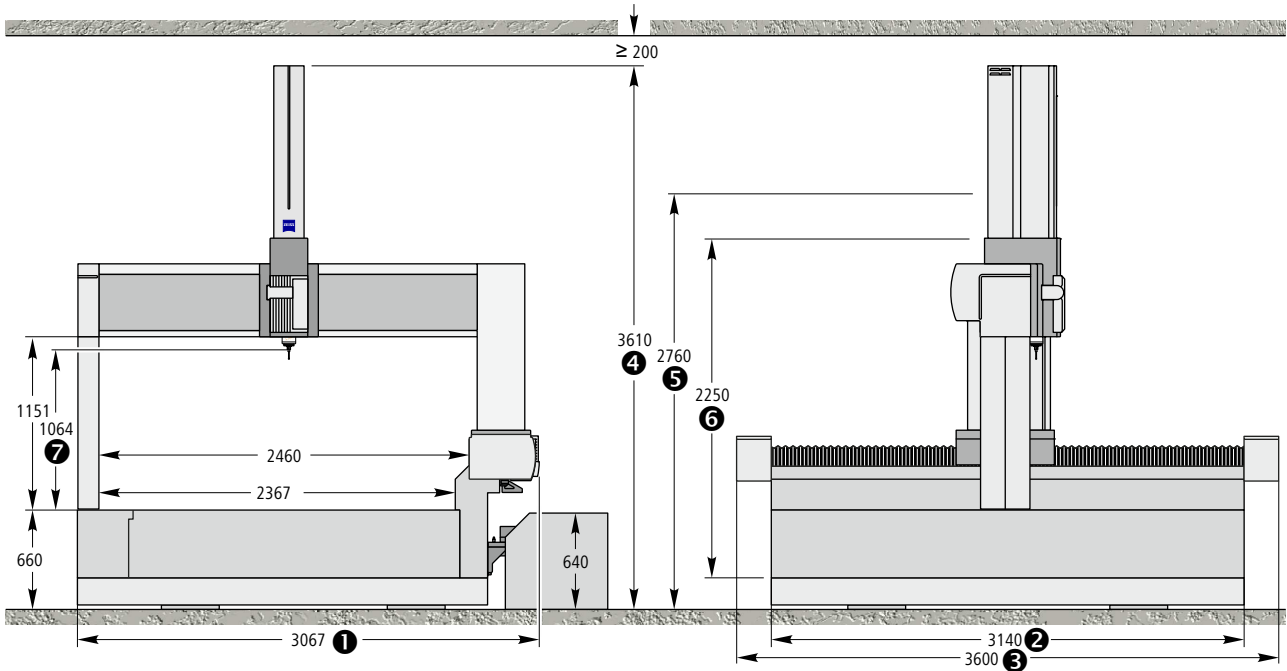
All dimensions in millimeters, scale 1:50



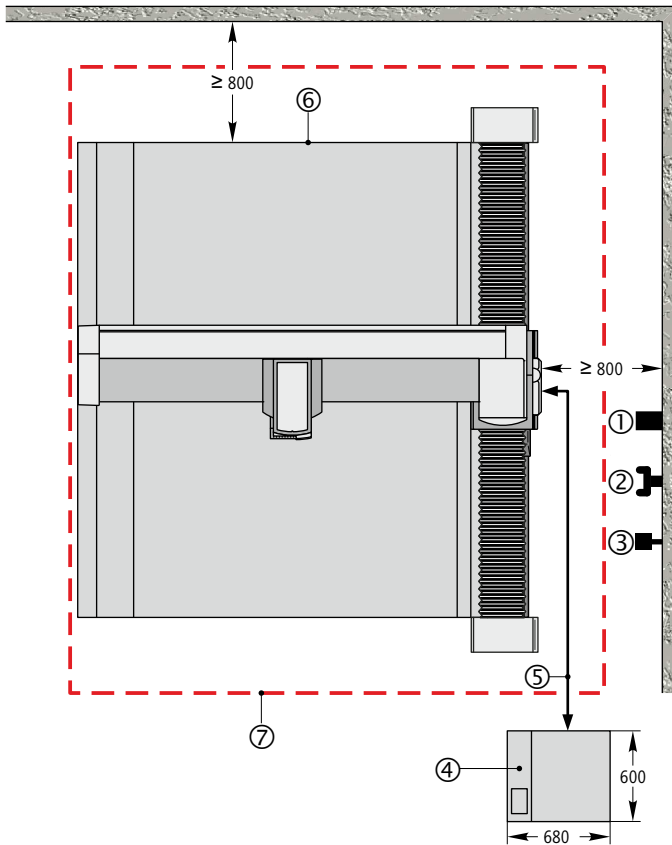
- ❶ CMM width
- ❷ Length of granite plate, approx. 130 mm extra for service unit.
- ❸ CMM height
- ❹ Height of secured CMM assembly with shipping pallet.
- ❺ Height of secured CMM assembly from lower edge of granite plate.
- ❻ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❼ Network connection for data backup and Internet (Teleservice)
- ❽ Power supply
- ❾ Compressed air supply
- ❼ TCC (standard) controller cabinet, MCC 800 (option)
➤ see *Controller cabinet installation* [⇒ 18]
- ❽ CMM <-> controller connection cable (cable length approx. 3 m)
- ❻ Compressed air connection on the CMM
- ❼ Scanner protective field option

Weight:	ACCURA (model 20/24/10)	13000 kg
	Workpiece, max.	5000 kg

ACCURA 20/24/10 (bellows cover) installation dimensions



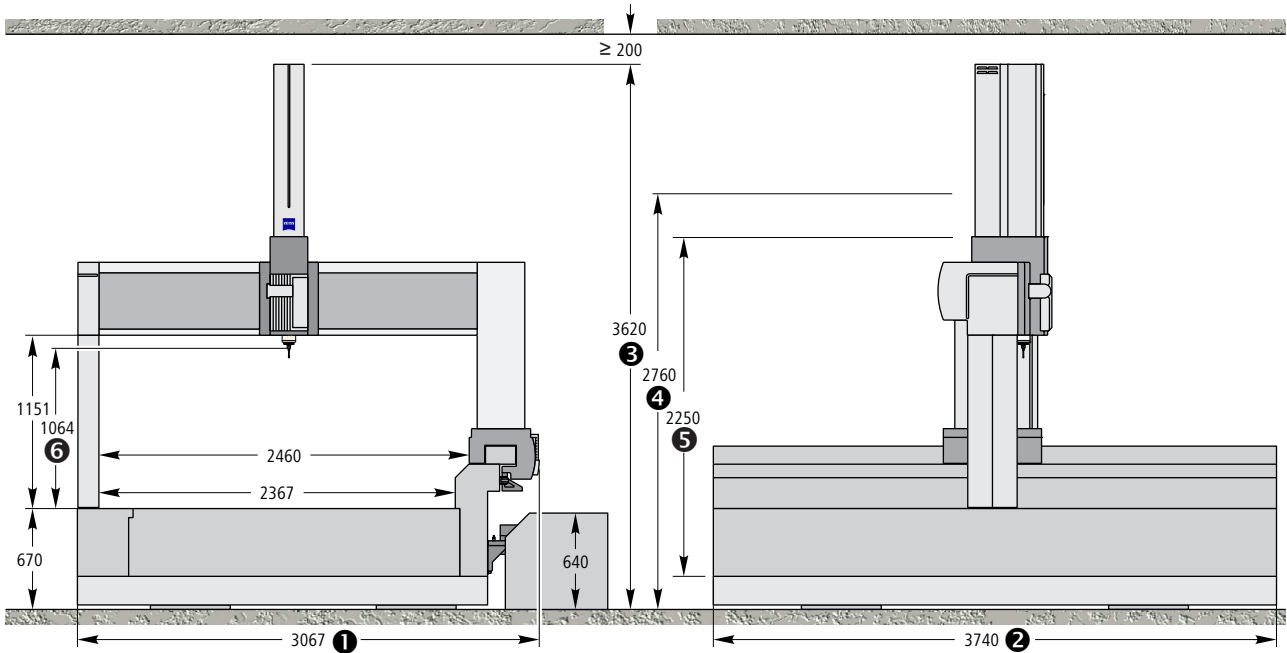
All dimensions in millimeters, scale 1:50



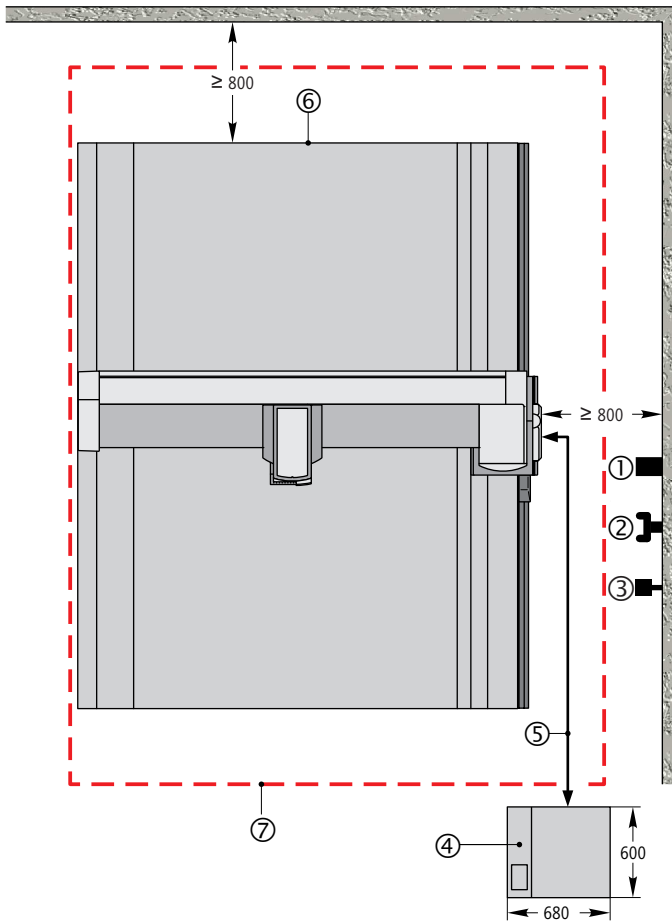
- ❶ CMM width
- ❷ Length of granite plate, approx. 130 mm extra for service unit.
- ❸ Length of the CMM with covers
- ❹ CMM height
- ❺ Height of secured CMM assembly with shipping pallet.
- ❻ Height of secured CMM assembly from lower edge of granite plate.
- ❼ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❶ Network connection for data backup and Internet (Teleservice)
- ❷ Power supply
- ❸ Compressed air supply
- ❹ TCC (standard) controller cabinet, MCC 800 (option)
➤ see *Controller cabinet installation* [⇒ 18]
- ❺ CMM <-> controller connection cable (cable length approx. 3 m)
- ❻ Compressed air connection on the CMM
- ❼ Scanner protective field option

Weight:	ACCURA (size 20/24/10)	13040 kg
	Workpiece, max.	5000 kg

ACCURA 20/30/10 installation dimensions



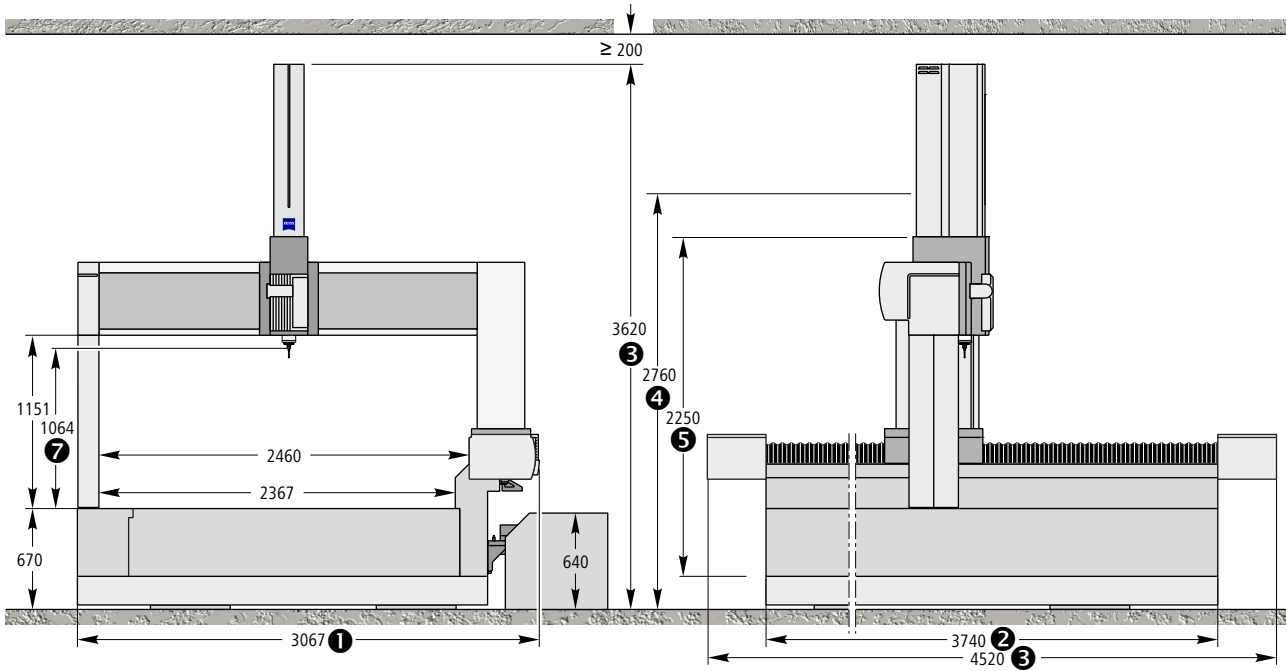
All dimensions in millimeters, scale 1:50



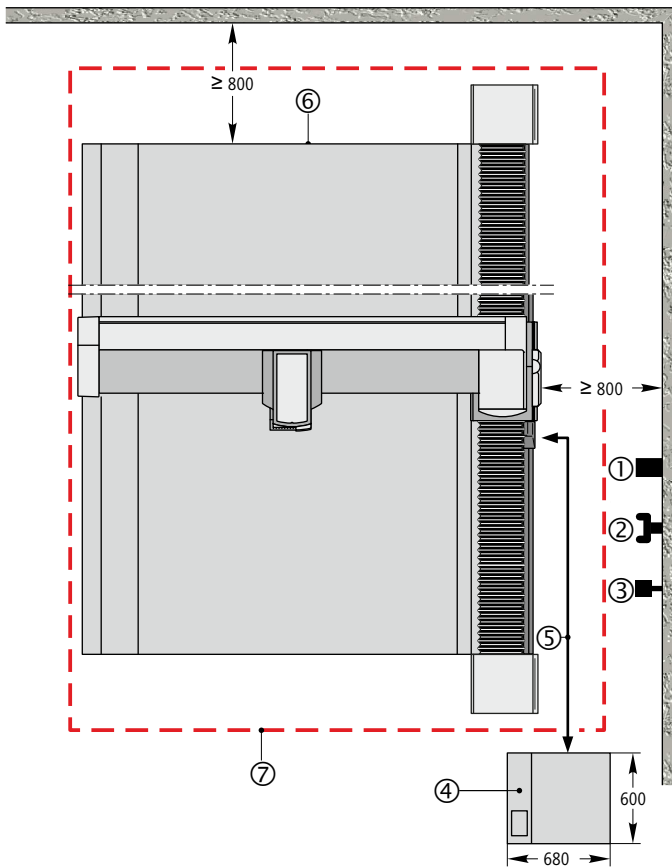
- ❶ CMM width
 - ❷ Length of granite plate, approx. 130 mm extra for service unit.
 - ❸ CMM height
 - ❹ Height of secured CMM assembly with shipping pallet.
 - ❺ Height of secured CMM assembly from lower edge of granite plate.
 - ❻ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❶ Network connection for data backup and Internet (Teleservice)
 - ❷ Power supply
 - ❸ Compressed air supply
 - ❹ TCC (standard) controller cabinet, MCC 800 (option)
➤ see *Controller cabinet installation* [→ 18]
 - ❺ CMM <-> controller connection cable (cable length approx. 3 m)
 - ❻ Compressed air connection on the CMM
 - ❼ Scanner protective field option

Weight:	ACCURA (model 20/30/10)	15400 kg
	Workpiece, max.	5000 kg

ACCURA 20/30/10 (bellows cover) installation dimensions



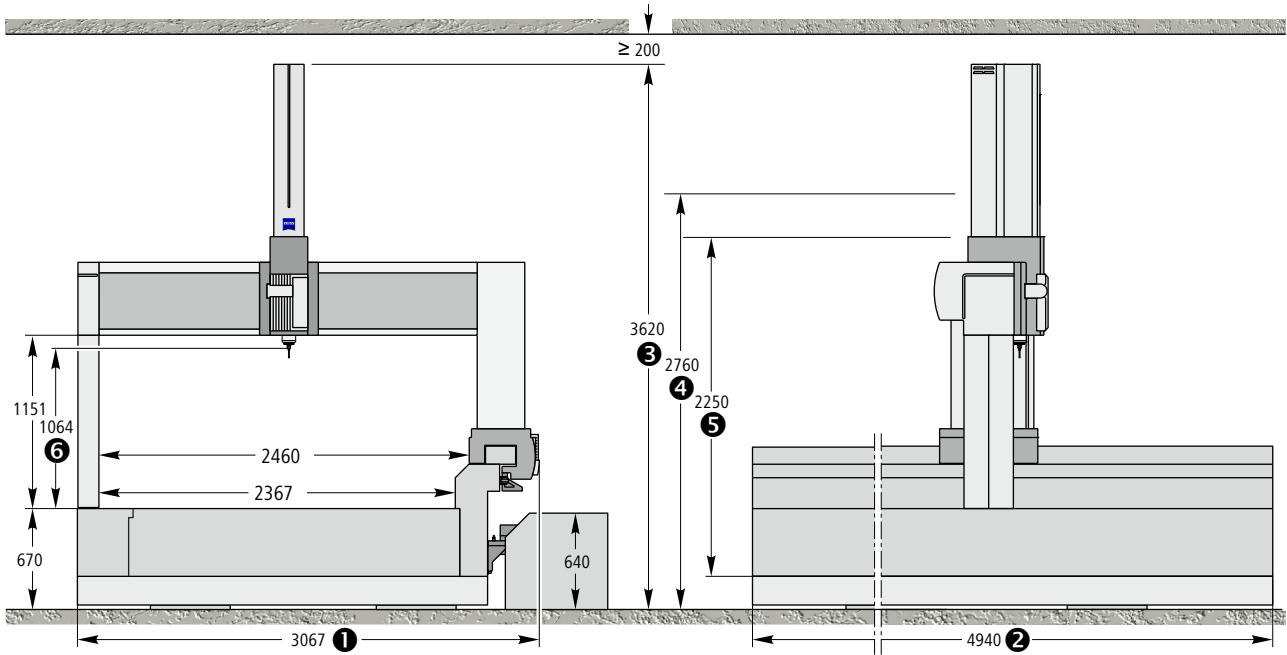
All dimensions in millimeters, scale 1:50



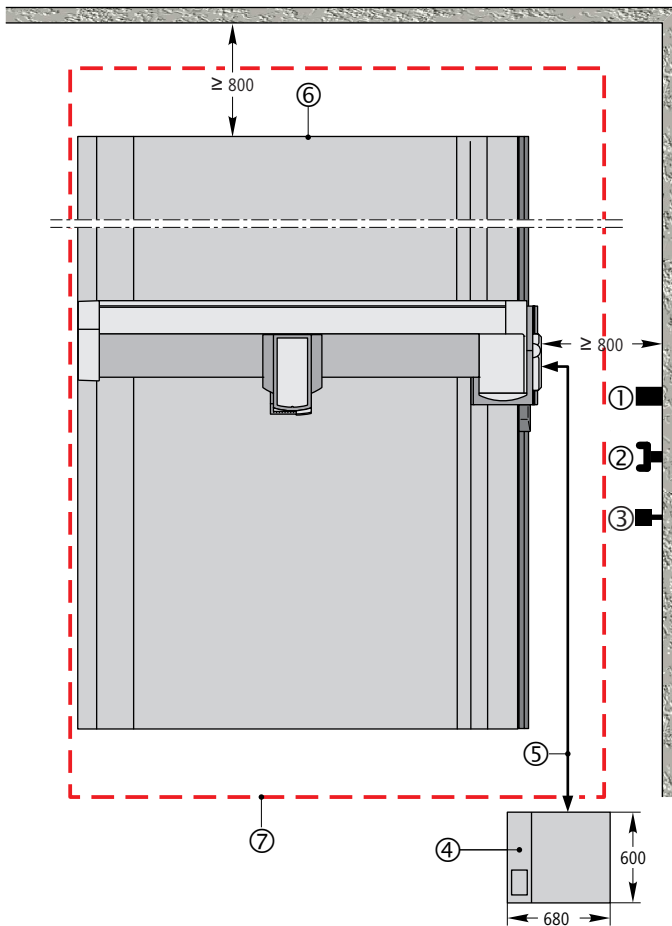
- ❶ CMM width
 - ❷ Length of granite plate, approx. 130 mm extra for service unit.
 - ❸ Length of the CMM with covers
 - ❹ CMM height
 - ❺ Height of secured CMM assembly with shipping pallet.
 - ❻ Height of secured CMM assembly from lower edge of granite plate.
 - ❼ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❶ Network connection for data backup and Internet (Teleservice)
 - ❷ Power supply
 - ❸ Compressed air supply
 - ❹ TCC (standard) controller cabinet, MCC 800 (option)
➤ see *Controller cabinet installation* [→ 18]
 - ❺ CMM <-> controller connection cable (cable length approx. 3 m)
 - ❻ Compressed air connection on the CMM
 - ❼ Scanner protective field option

Weight:	ACCURA (size 20/30/10)	15440 kg
	Workpiece, max.	5000 kg

ACCURA 20/42/10 installation dimensions



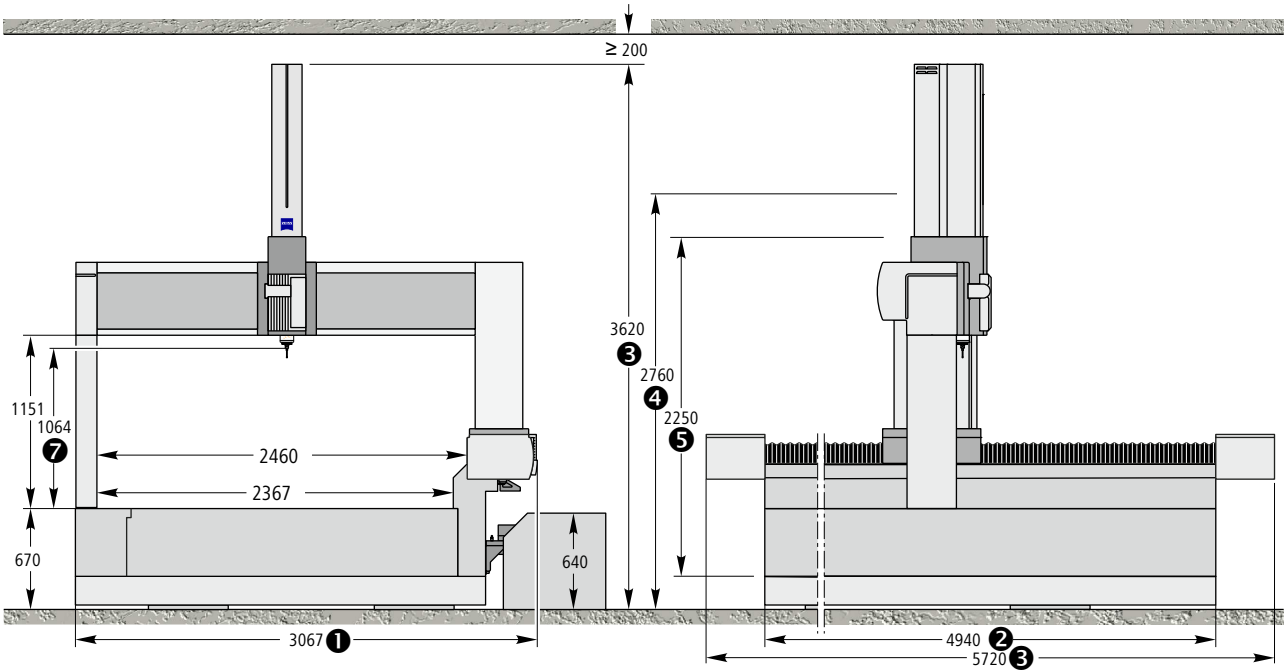
All dimensions in millimeters, scale 1:50



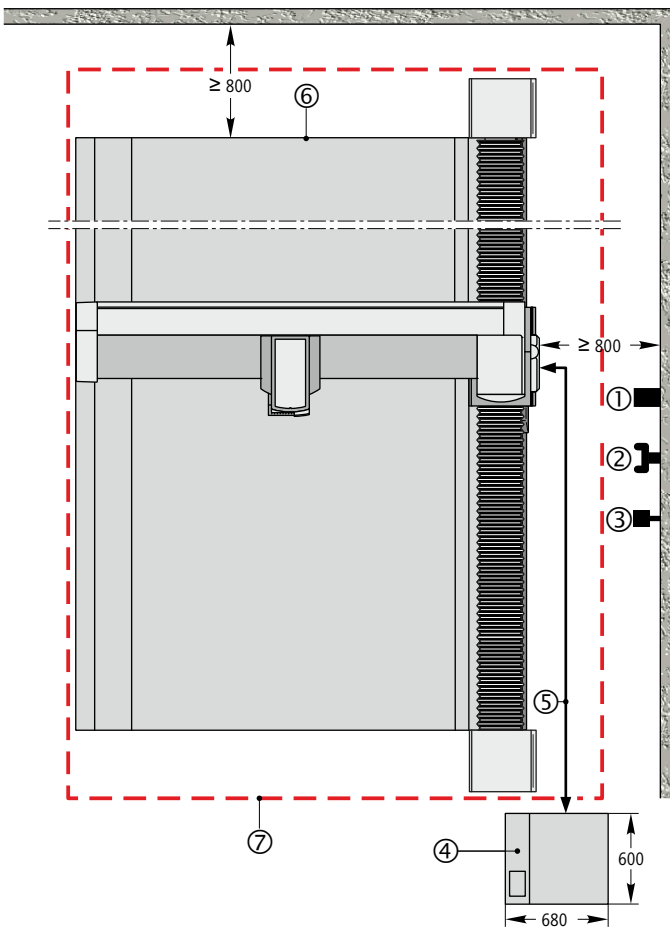
- ❶ CMM width
- ❷ Length of granite plate, approx. 130 mm extra for service unit.
- ❸ CMM height
- ❹ Height of secured CMM assembly with shipping pallet.
- ❺ Height of secured CMM assembly from lower edge of granite plate.
- ❻ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❶ Network connection for data backup and Internet (Teleservice)
- ❷ Power supply
- ❸ Compressed air supply
- ❹ TCC (standard) controller cabinet, MCC 800 (option)
➤ see *Controller cabinet installation* [→ 18]
- ❺ CMM ↔ controller connection cable (cable length approx. 3 m)
- ❻ Compressed air connection on the CMM
- ❼ Scanner protective field option

Weight:	ACCURA (model 20/42/10)	20000 kg
	Workpiece, max.	6000 kg

ACCURA 20/42/10 (bellows cover) installation dimensions



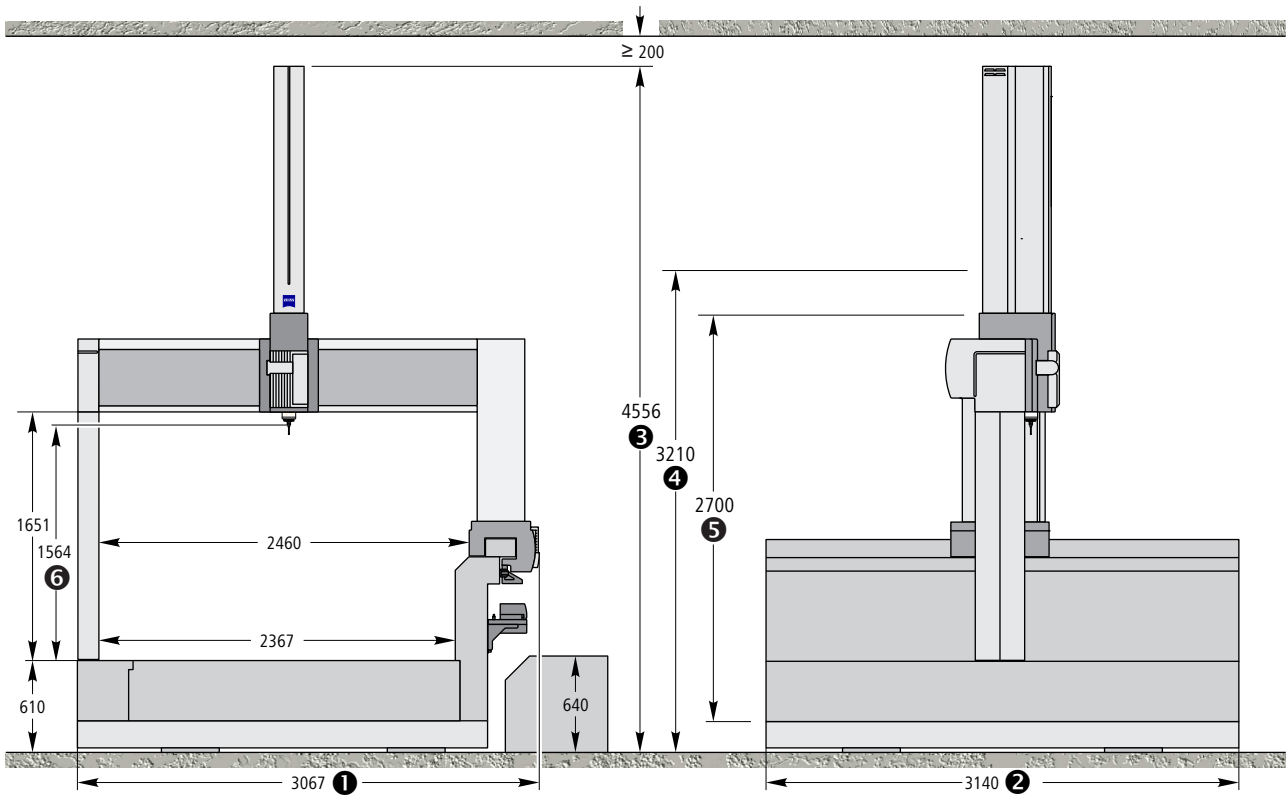
All dimensions in millimeters, scale 1:50



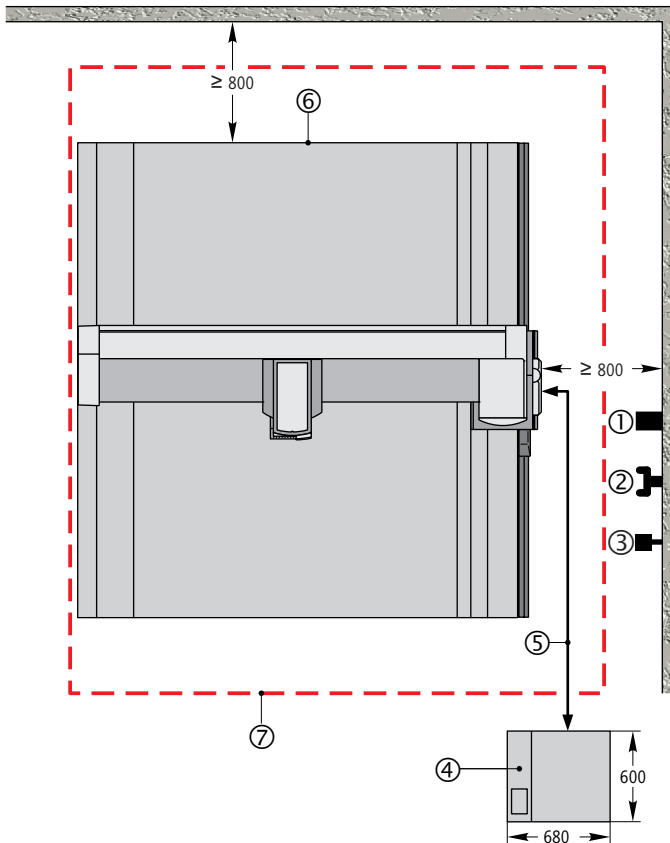
- ❶ CMM width
- ❷ Length of granite plate, approx. 130 mm extra for service unit.
- ❸ Length of the CMM with covers
- ❹ CMM height
- ❺ Height of secured CMM assembly with shipping pallet.
- ❻ Height of secured CMM assembly from lower edge of granite plate.
- ❼ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❶ Network connection for data backup and Internet (Teleservice)
- ❷ Power supply
- ❸ Compressed air supply
- ❹ TCC (standard) controller cabinet, MCC 800 (option)
➤ see *Controller cabinet installation* [↗ 18]
- ❺ CMM <-> controller connection cable (cable length approx. 3 m)
- ❻ Compressed air connection on the CMM
- ❼ Scanner protective field option

Weight:	ACCURA (size 20/42/10)	20040 kg
	Workpiece, max.	6000 kg

ACCURA 20/24/15 installation dimensions



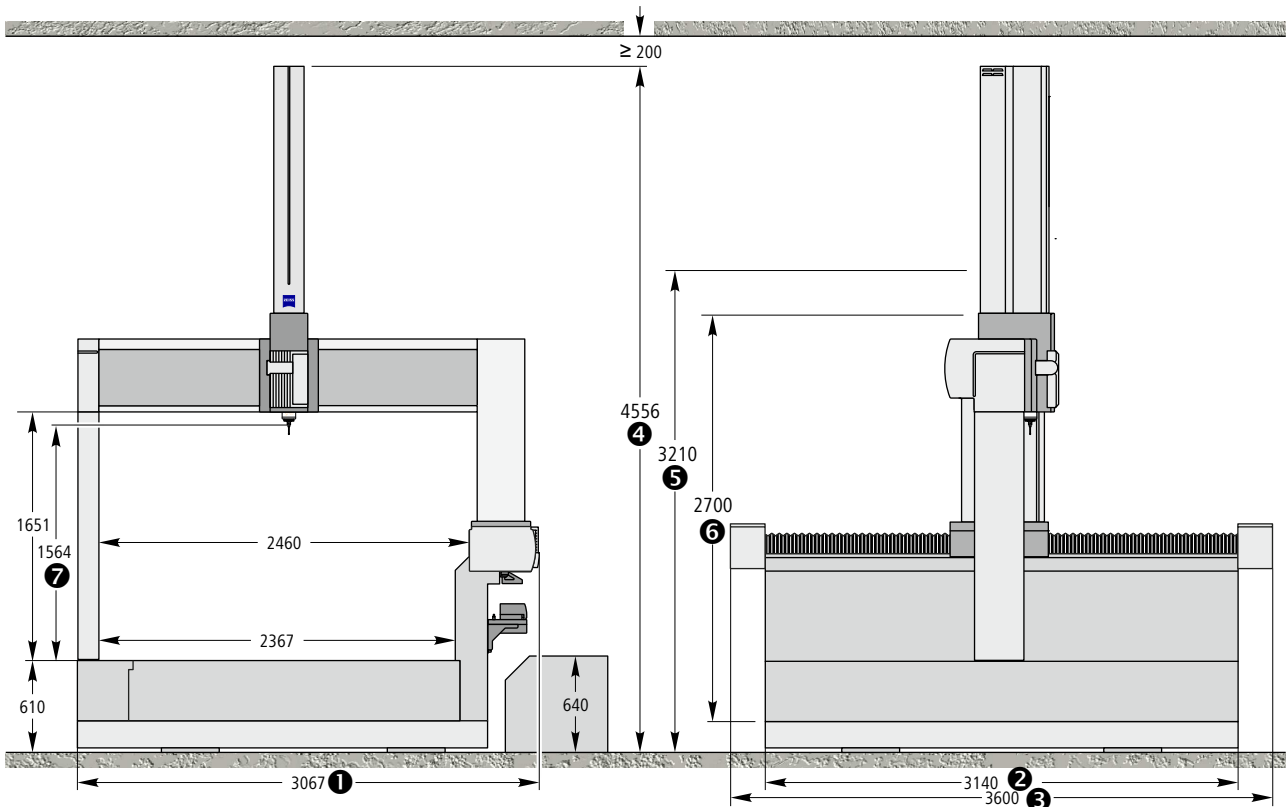
All dimensions in millimeters, scale 1:50



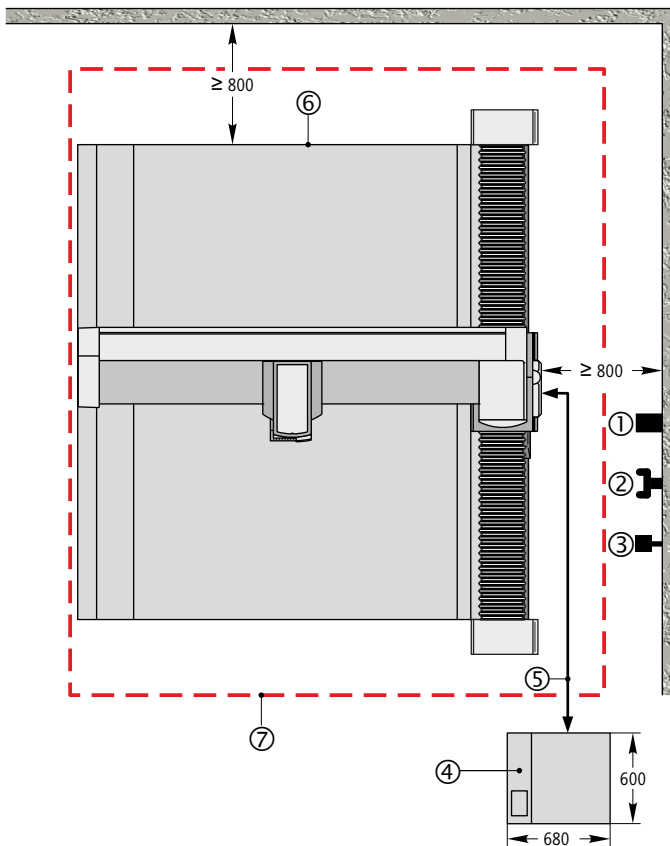
- ❶ CMM width
- ❷ Length of granite plate, approx. 130 mm extra for service unit.
- ❸ CMM height
- ❹ Height of secured CMM assembly with shipping pallet.
- ❺ Height of secured CMM assembly from lower edge of granite plate.
- ❻ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❶ Network connection for data backup and Internet (Teleservice)
- ❷ Power supply
- ❸ Compressed air supply
- ❹ TCC (standard) controller cabinet, MCC 800 (option)
➤ see *Controller cabinet installation* [↔ 18]
- ❺ CMM ↔ controller connection cable (cable length approx. 3 m)
- ❻ Compressed air connection on the CMM
- ❼ Scanner protective field option

Weight:	ACCURA (model 20/24/15)	12700 kg
	Workpiece, max.	5000 kg

ACCURA 20/24/15 (bellows cover) installation dimensions



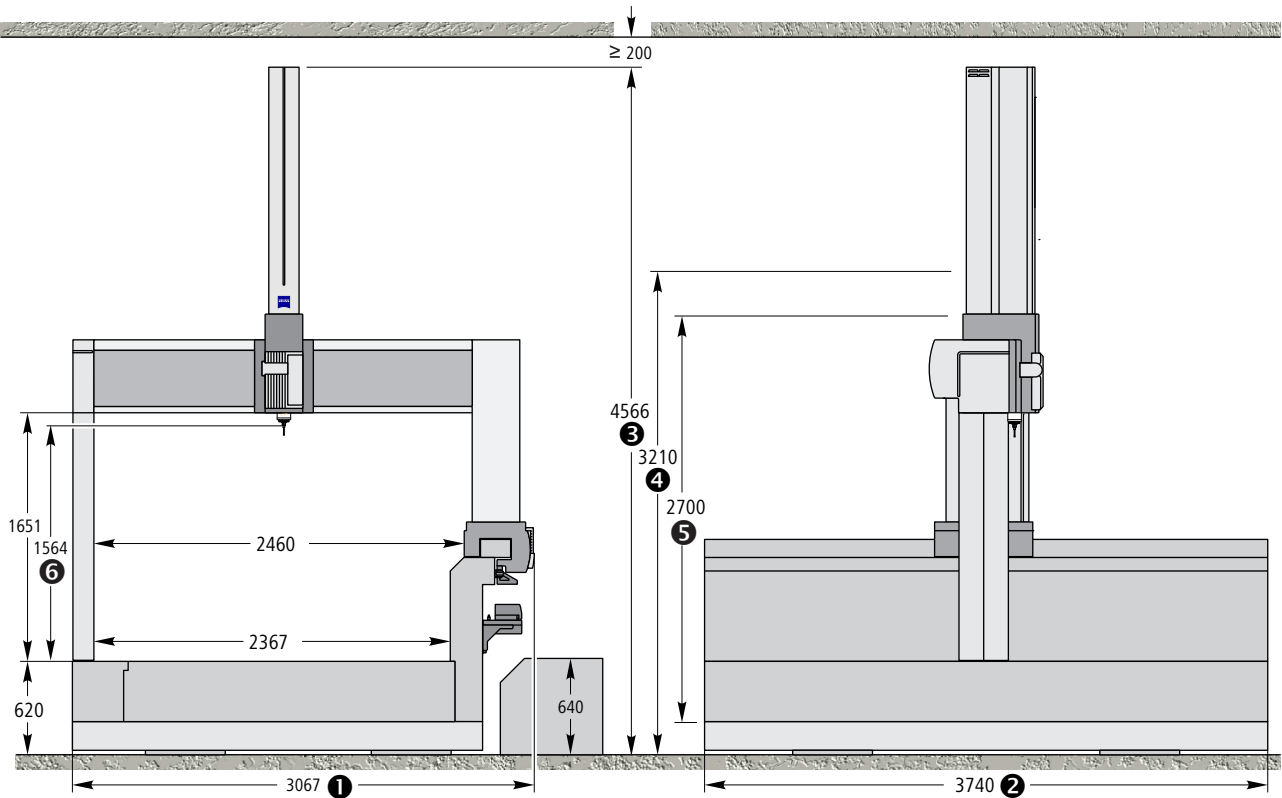
All dimensions in millimeters, scale 1:50



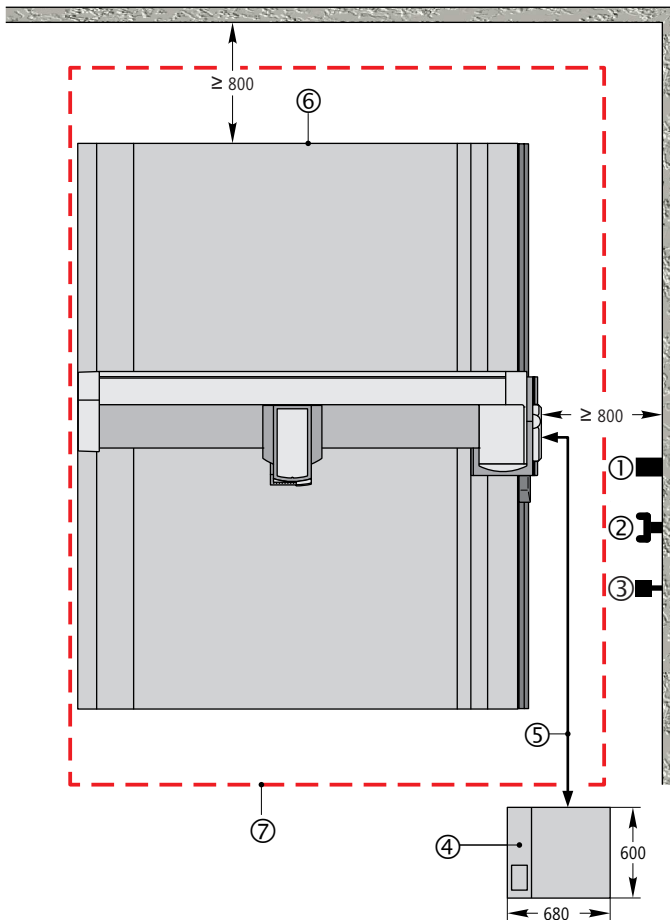
- ❶ CMM width
 - ❷ Length of granite plate, approx. 130 mm extra for service unit.
 - ❸ Length of the CMM with covers
 - ❹ CMM height
 - ❺ Height of secured CMM assembly with shipping pallet.
 - ❻ Height of secured CMM assembly from lower edge of granite plate.
 - ❼ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❶ Network connection for data backup and Internet (Teleservice)
 - ❷ Power supply
 - ❸ Compressed air supply
 - ❹ TCC (standard) controller cabinet, MCC 800 (option)
➤ see *Controller cabinet installation* [↔ 18]
 - ❺ CMM ↔ controller connection cable (cable length approx. 3 m)
 - ❻ Compressed air connection on the CMM
 - ❼ Scanner protective field option

Weight:	ACCURA (size 20/24/15)	12740 kg
	Workpiece, max.	5000 kg

ACCURA 20/30/15 installation dimensions



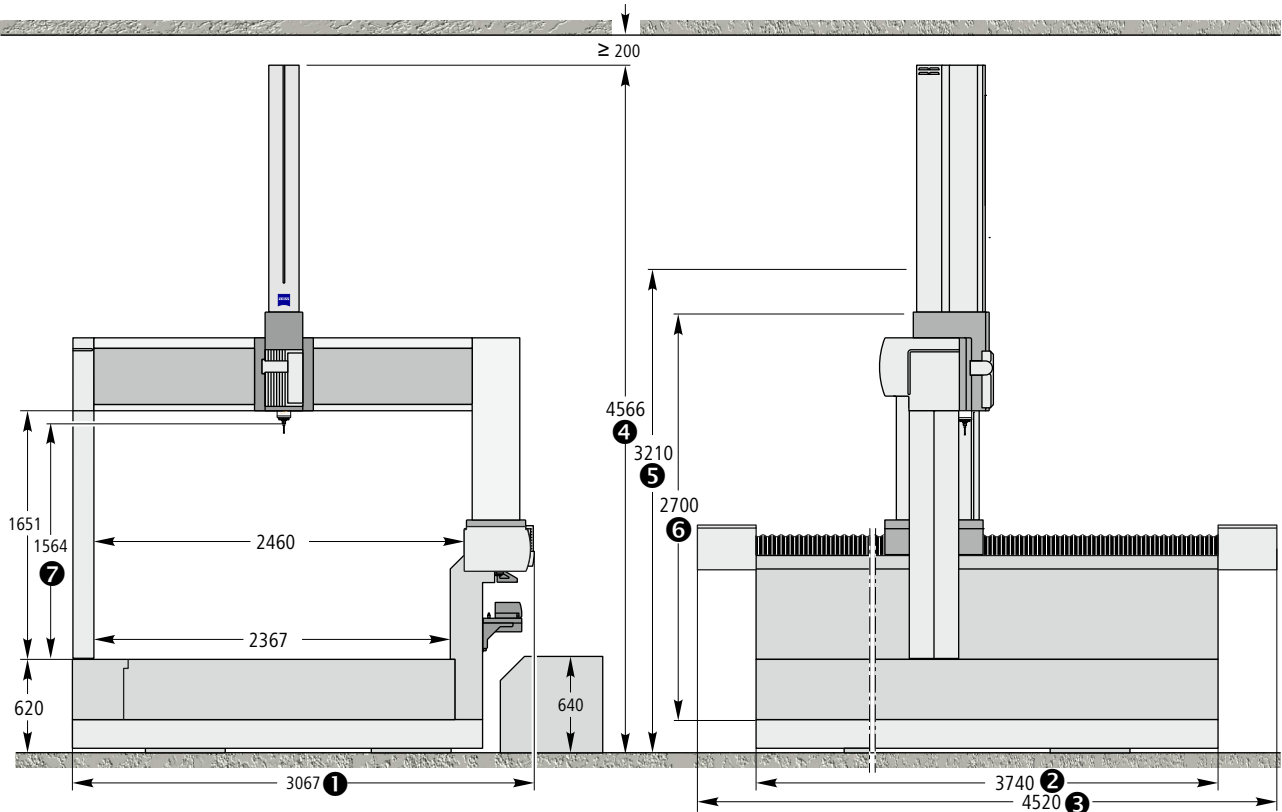
All dimensions in millimeters, scale 1:50



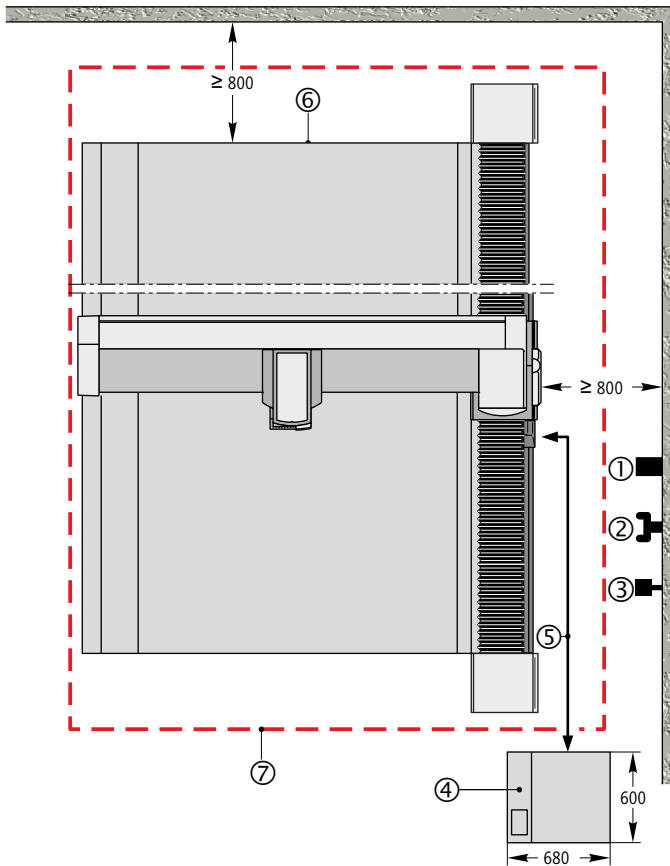
- ❶ CMM width
- ❷ Length of granite plate, approx. 130 mm extra for service unit.
- ❸ CMM height
- ❹ Height of secured CMM assembly with shipping pallet.
- ❺ Height of secured CMM assembly from lower edge of granite plate.
- ❻ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❼ Network connection for data backup and Internet (Teleservice)
- ❽ Power supply
- ❾ Compressed air supply
- ❿ TCC (standard) controller cabinet, MCC 800 (option)
➤ see *Controller cabinet installation* [→ 18]
- ⓫ CMM ↔ controller connection cable (cable length approx. 3 m)
- ⓬ Compressed air connection on the CMM
- ⓭ Scanner protective field option

Weight:	ACCURA (model 20/30/15)	15100 kg
	Workpiece, max.	5000 kg

ACCURA 20/30/15 (bellows cover) installation dimensions



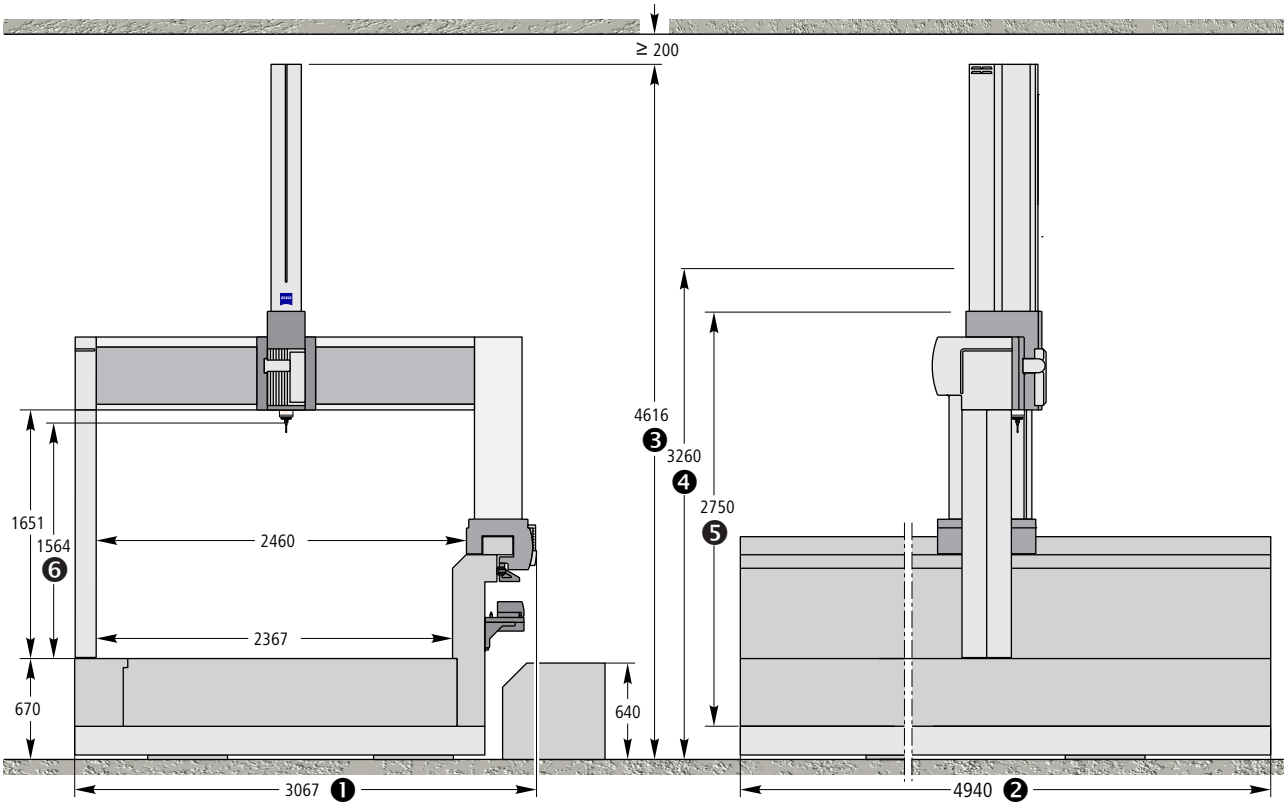
All dimensions in millimeters, scale 1:50



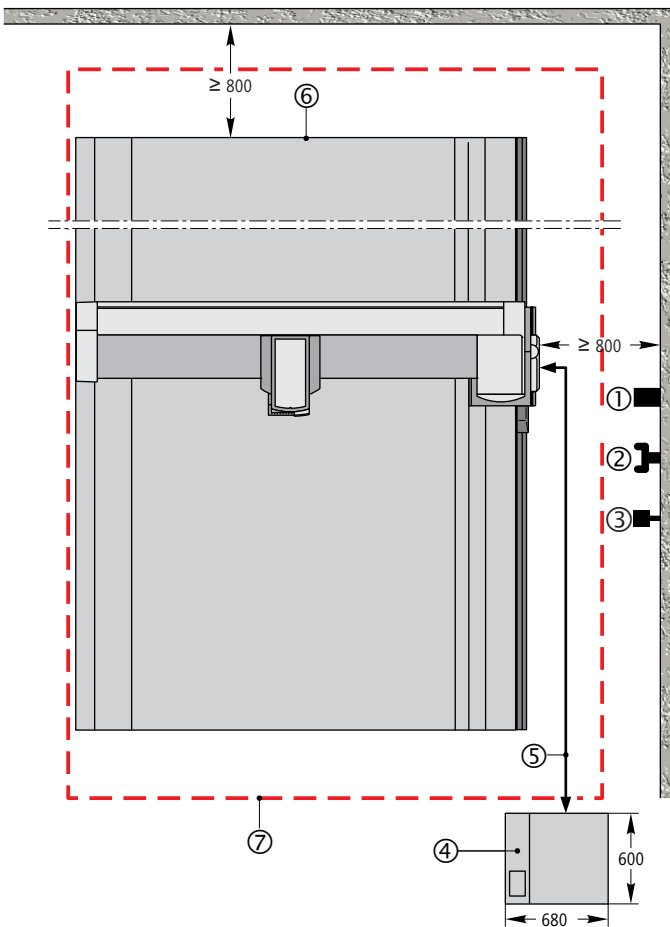
- ❶ CMM width
- ❷ Length of granite plate, approx. 130 mm extra for service unit.
- ❸ Length of the CMM with covers
- ❹ CMM height
- ❺ Height of secured CMM assembly with shipping pallet.
- ❻ Height of secured CMM assembly from lower edge of granite plate.
- ❼ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❶ Network connection for data backup and Internet (Teleservice)
- ❷ Power supply
- ❸ Compressed air supply
- ❹ TCC (standard) controller cabinet, MCC 800 (option)
➤ see *Controller cabinet installation* [↔ 18]
- ❺ CMM ↔ controller connection cable (cable length approx. 3 m)
- ❻ Compressed air connection on the CMM
- ❼ Scanner protective field option

Weight:	ACCURA (size 20/30/15)	15140 kg
	Workpiece, max.	5000 kg

ACCURA 20/42/15 installation dimensions



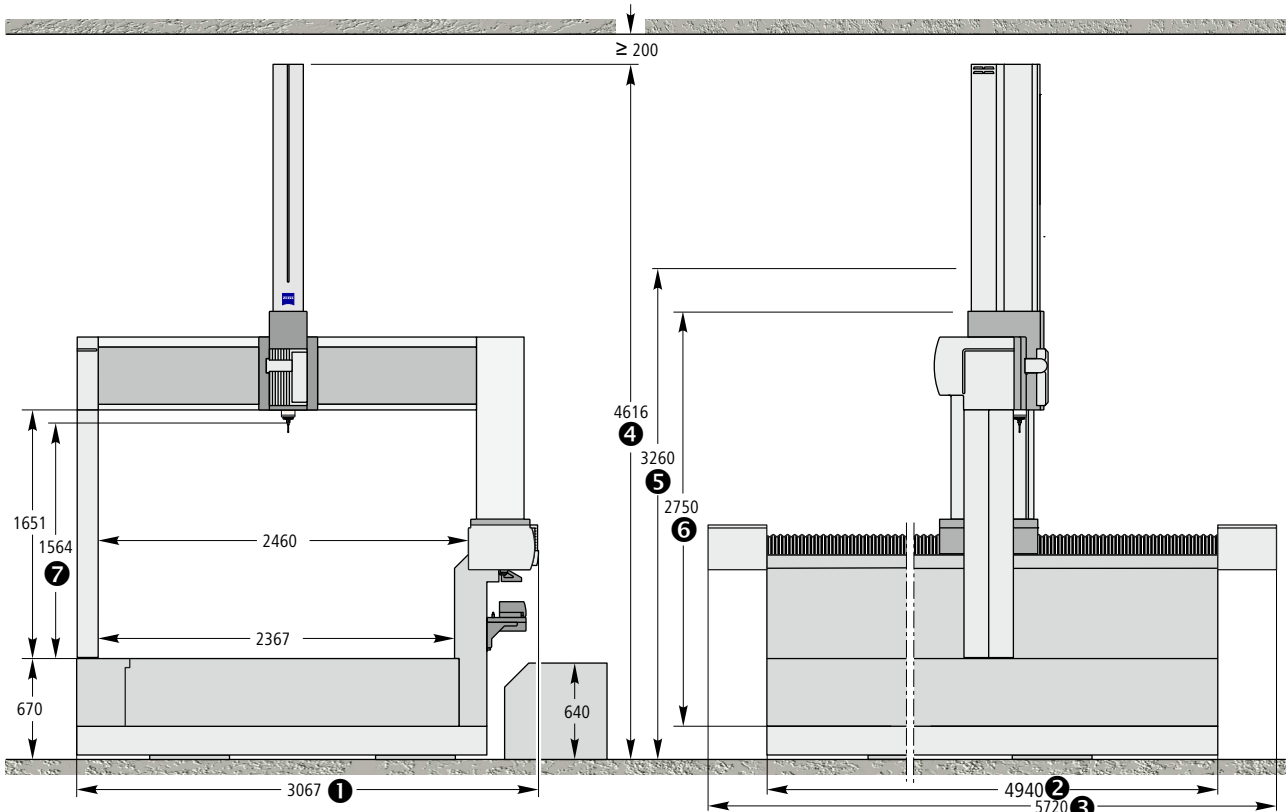
All dimensions in millimeters, scale 1:50



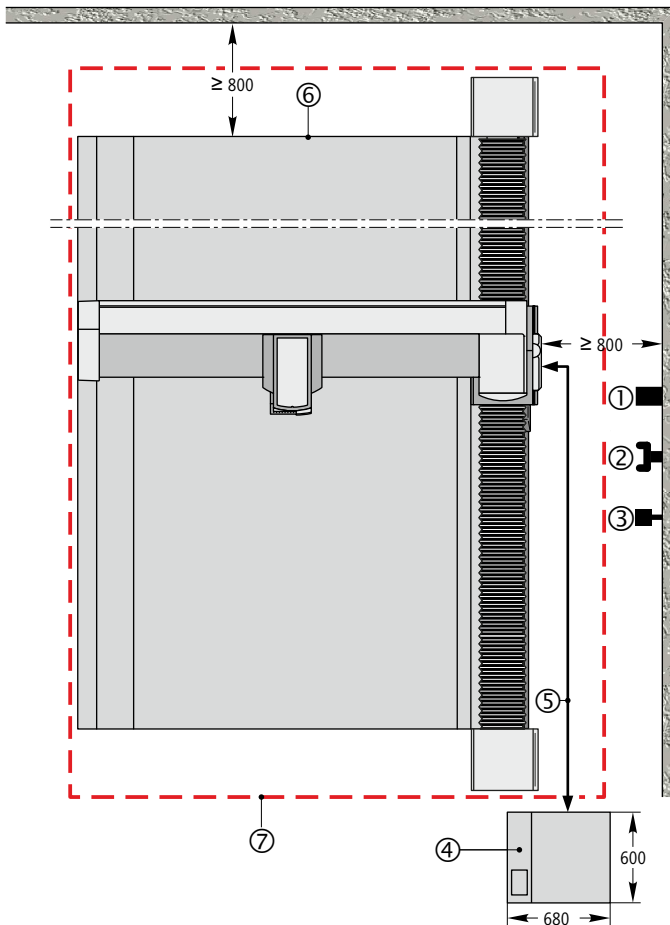
- ❶ CMM width
- ❷ Length of granite plate, approx. 130 mm extra for service unit.
- ❸ CMM height
- ❹ Height of secured CMM assembly with shipping pallet.
- ❺ Height of secured CMM assembly from lower edge of granite plate.
- ❻ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❼ Network connection for data backup and Internet (Teleservice)
- ❽ Power supply
- ❾ Compressed air supply
- ❿ TCC (standard) controller cabinet, MCC 800 (option)
➤ see *Controller cabinet installation* [↗ 18]
- ⓫ CMM ↔ controller connection cable (cable length approx. 3 m)
- ⓬ Compressed air connection on the CMM
- ⓭ Scanner protective field option

Weight:	ACCURA (model 20/42/15)	21500 kg
	Workpiece, max.	7000 kg

ACCURA 20/42/15 (bellows cover) installation dimensions



All dimensions in millimeters, scale 1:50



- ❶ CMM width
- ❷ Length of granite plate, approx. 130 mm extra for service unit.
- ❸ Length of the CMM with covers
- ❹ CMM height
- ❺ Height of secured CMM assembly with shipping pallet.
- ❻ Height of secured CMM assembly from lower edge of granite plate.
- ❼ Height between the granite plate and lower edge of the stylus mounting cube on the VAST XT gold probe.
With other VAST gold or RDS probe types, the height is somewhat less.
- ❶ Network connection for data backup and Internet (Teleservice)
- ❷ Power supply
- ❸ Compressed air supply
- ❹ TCC (standard) controller cabinet, MCC 800 (option)
➤ see *Controller cabinet installation* [⇒ 18]
- ❺ CMM <-> controller connection cable (cable length approx. 3 m)
- ❻ Compressed air connection on the CMM
- ❼ Scanner protective field option

Weight:	ACCURA (size 20/42/15)	21540 kg
	Workpiece, max.	7000 kg

Safety zone



NOTE

CMM operation without external protective equipment is not permitted.

Boundary for safety laser scanner

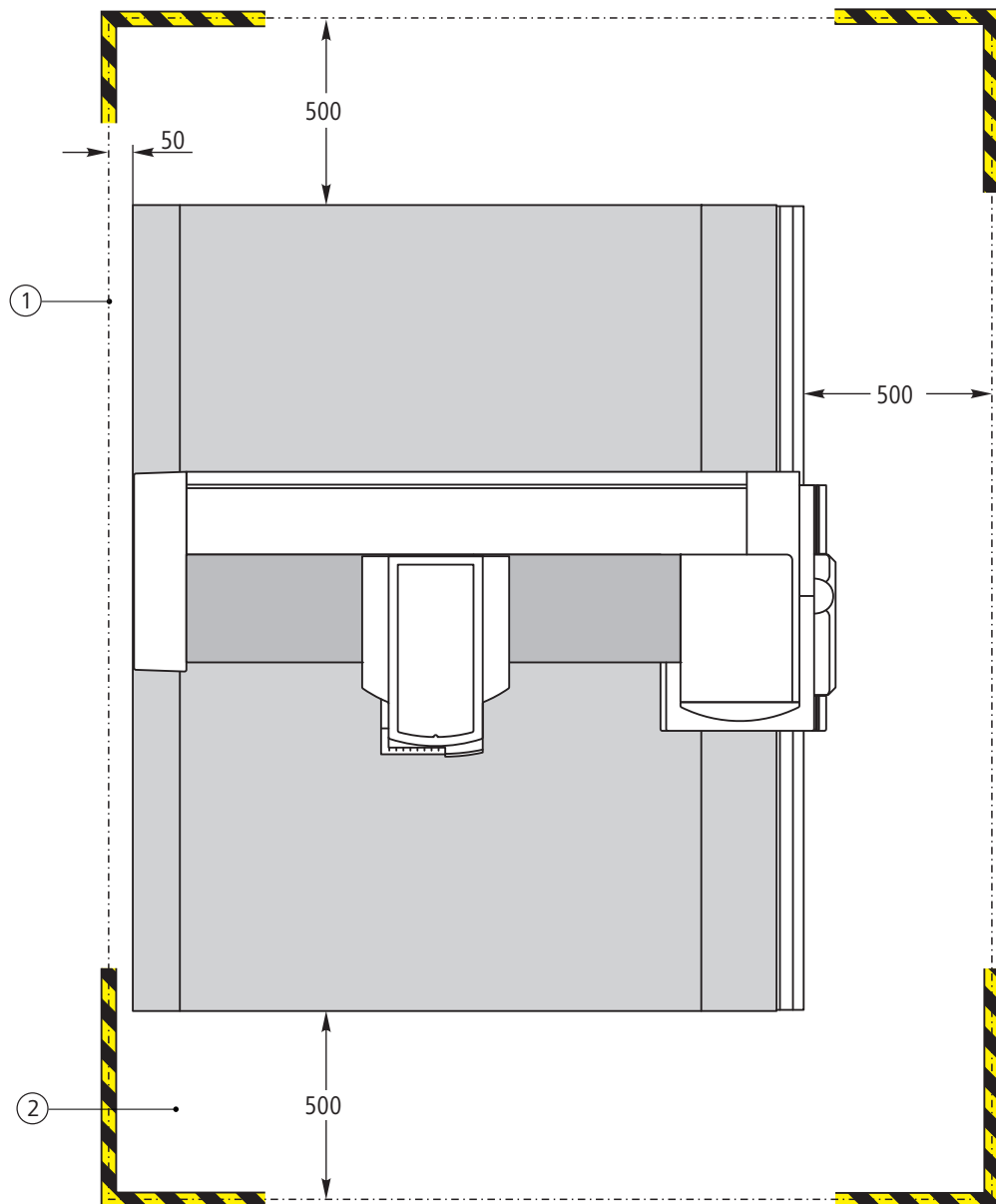


NOTE

The laser scanner monitors the danger zone of the CMM. As soon as a person or an object breaches the protective field, the travel speed is reduced in all axes and safely monitored. A risk due to travel movements is thus reduced to a minimum. Once the protected area is cleared, the CMM moves again at maximum speed.

- Using floor markings, mark the boundary of the protective field of the safety laser scanner to clearly identify the protected area around the CMM.

It is important to maintain the clearance distances on all sides of the CMM. See illustration.



- 1 Floor marking or barrier tape (black/yellow).
- 2 Scanner protective field (50 mm left and 500 mm right, top and bottom around the CMM must be clear)

Foundation and floor load

Information about surface pressure



NOTE

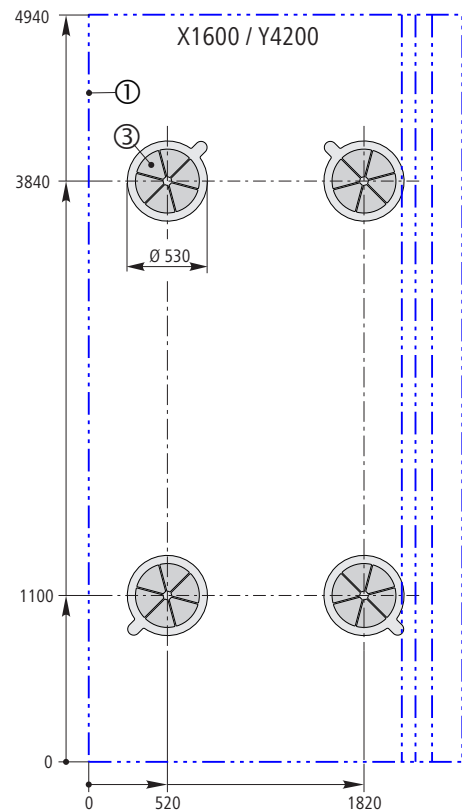
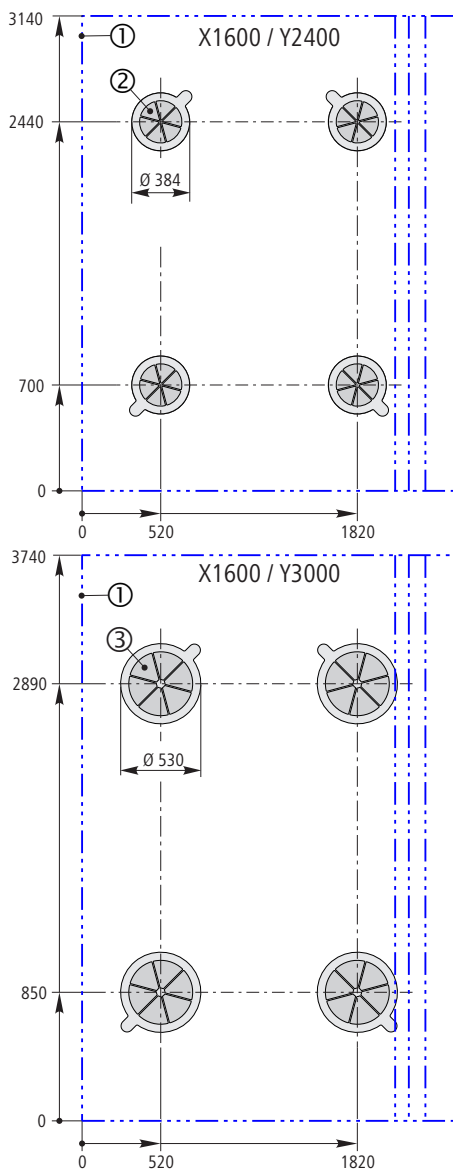
The specified surface pressure indicates the maximum load applied to the floor covering. This value must not be used to calculate the permissible floor or ceiling load. The load conditions at the installation site vary individually and must be clarified and/or calculated by a structural engineer before installation of the CMM. See the chapter on installation dimensions for the required information.

ACCURA with active damping

Alignment of air dampers for X1600

The base is comprised of four air dampers and four leveling units which are suitable for screed floors as per DIN 18560. The air dampers and leveling unit are only placed on the foundation (floor) as shown in the illustration.

If the quality specified in DIN 18560 is not guaranteed or the foundation is in poor condition, then the enclosed spacer plates (1 or 3 mm thick) are required.



- 1 Outer edge of granite table
- 2 Air damper (BiAir3) with leveling unit
- 3 Air damper (BiAir4) with leveling unit

Tolerances for the air dampers and leveling units

Maximum difference in level between the support surfaces: ± 1 mm

Tolerance for center-to-center distance of the air dampers: ± 10 mm

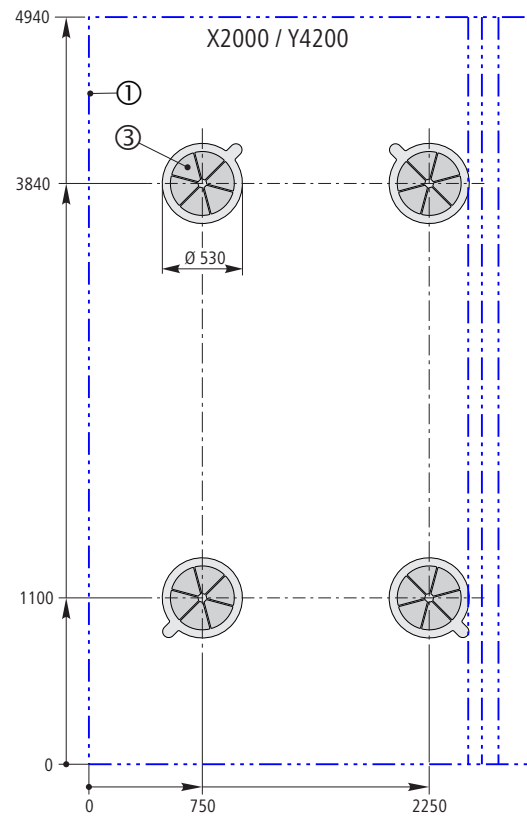
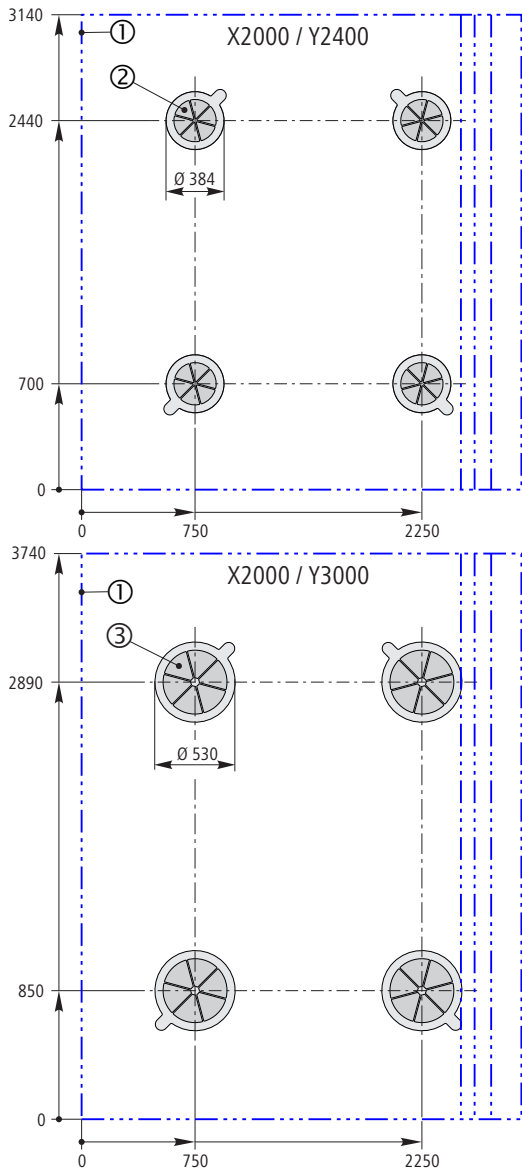
Note: The tolerances must not be exceeded.

Floor load	Measuring range X/Y/Z [mm]	Value [N/mm ²]
Mean surface pressure on the 4 support surfaces:	1600/2400/1500	2.5
	1600/3000/1500	2.5
	1600/4200/1500	3.0
Determined from CMM weight and maximum permissible workpiece weight distributed over the 4 support surfaces.		

Position and alignment of air dampers for X2000

The base is comprised of air dampers and four leveling units which are suitable for screed floors as per DIN 18560. The air dampers and leveling unit are only placed on the foundation (floor) as shown in the illustration.

If the quality specified in DIN 18560 is not guaranteed or the foundation is in poor condition, then the enclosed spacer plates (1 or 3 mm thick) are required.



- 1 Outer edge of granite table
- 2 Air damper (BiAir3) with leveling unit
- 3 Air damper (BiAir4) with leveling unit

Tolerances for the air dampers and leveling units

Maximum difference in level between the support surfaces: ± 1 mm

Tolerance for center-to-center distance of the air dampers: ± 10 mm

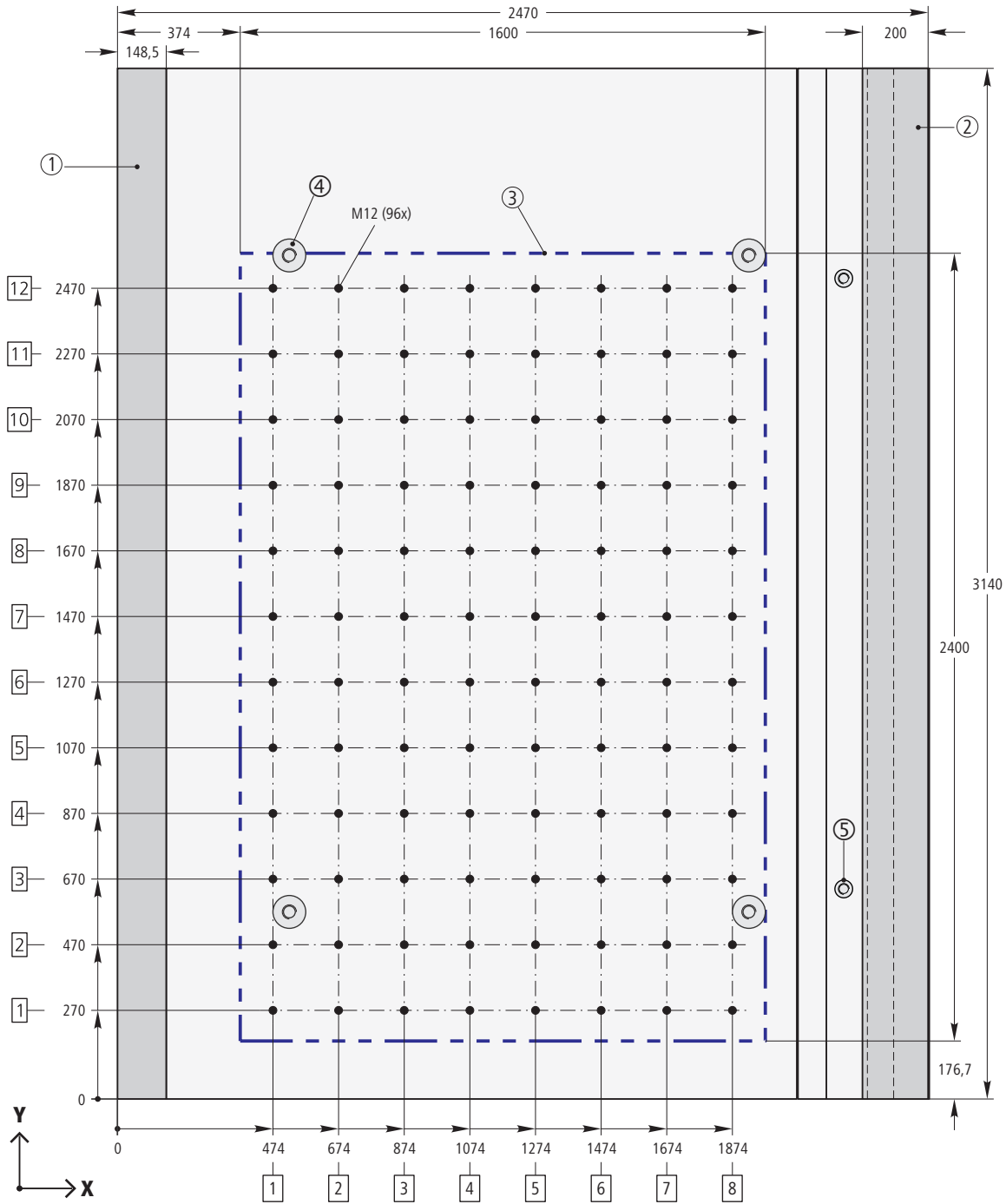
Note: The tolerances must not be exceeded.

Floor load	Measuring range X/Y/Z [mm]	Value [N/mm ²]
Mean surface pressure on the 4 support surfaces:	2000/2400/1000 and 2000/2400/1500	3.0
	2000/3000/1000 and 2000/3000/1500	3.0
	2000/4200/1000 and 2000/4200/1500	3.5

Determined from CMM weight and maximum permissible workpiece weight distributed over the 4 support surfaces.

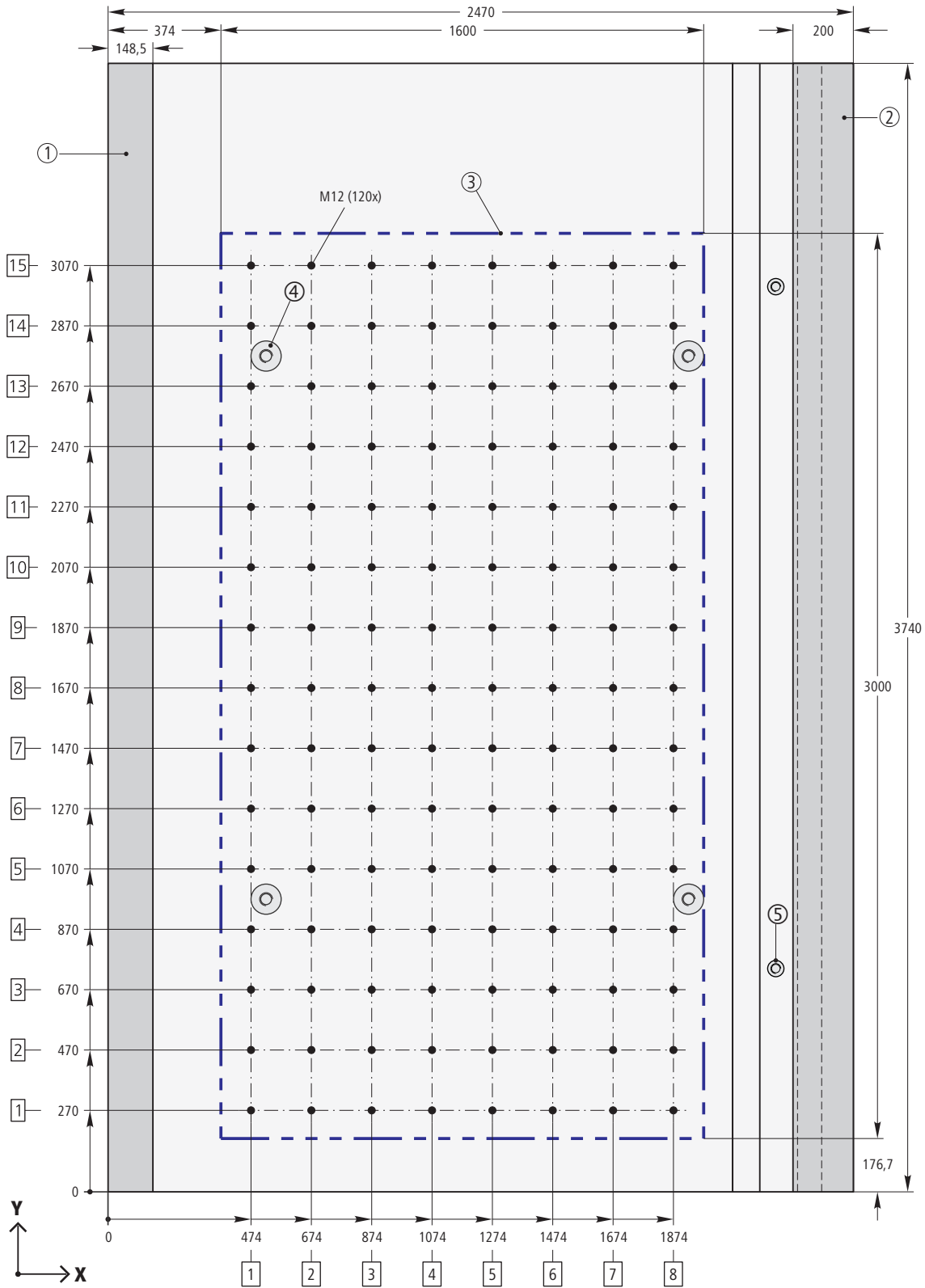
Granite table dimensions and fastening holes

Measuring table for measuring range of X1600/Y2400



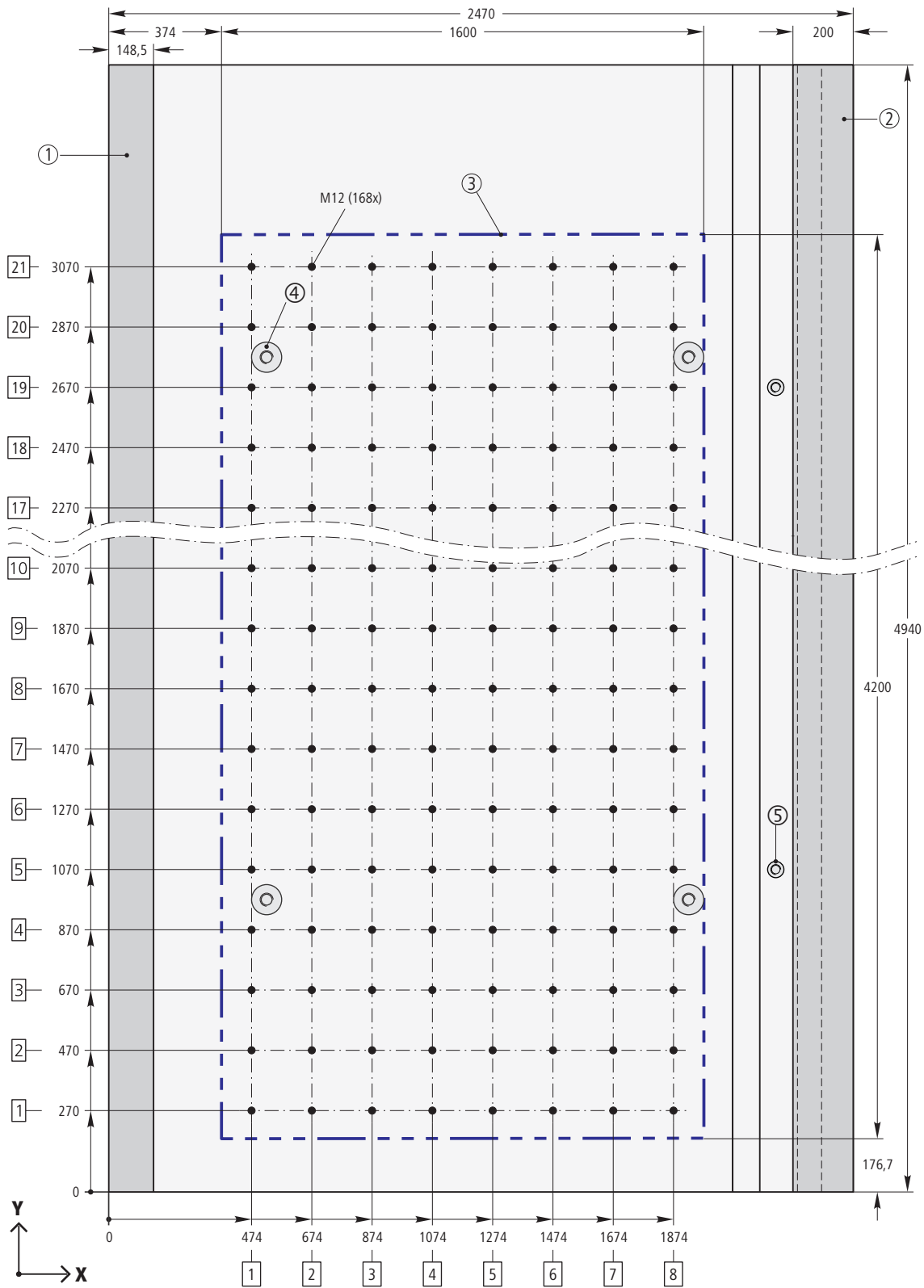
- ① Left Y guideway
- ② Right Y guideway
- ③ Measuring range
- ④ Threaded insert (4 x M36) for the ring bolts (to lift the granite plate)
- ⑤ Threaded insert (2 x M30) **Note: must not be used to lift the complete granite plate.**
- X Grid positions
- Y Grid positions

Measuring table for measuring range of X1600/Y3000



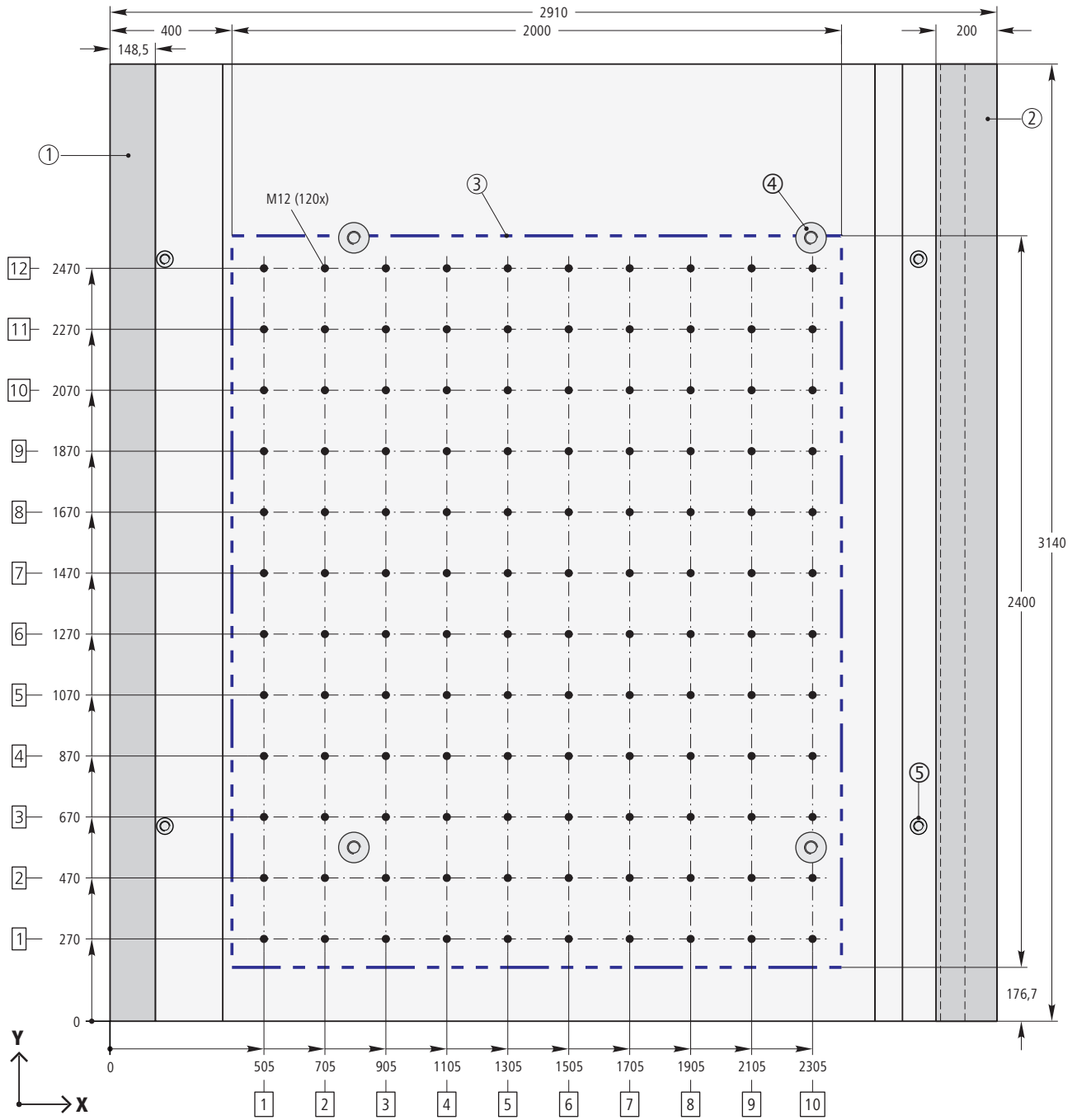
- ① Left Y guideway
- ② Right Y guideway
- ③ Measuring range
- ④ Threaded insert (4 x M36) for the ring bolts (to lift the granite plate)
- ⑤ Threaded insert (2 x M30) **Note:** must not be used to lift the complete granite plate.
- X Grid positions
- Y Grid positions

Measuring table for measuring range of X1600/Y4200

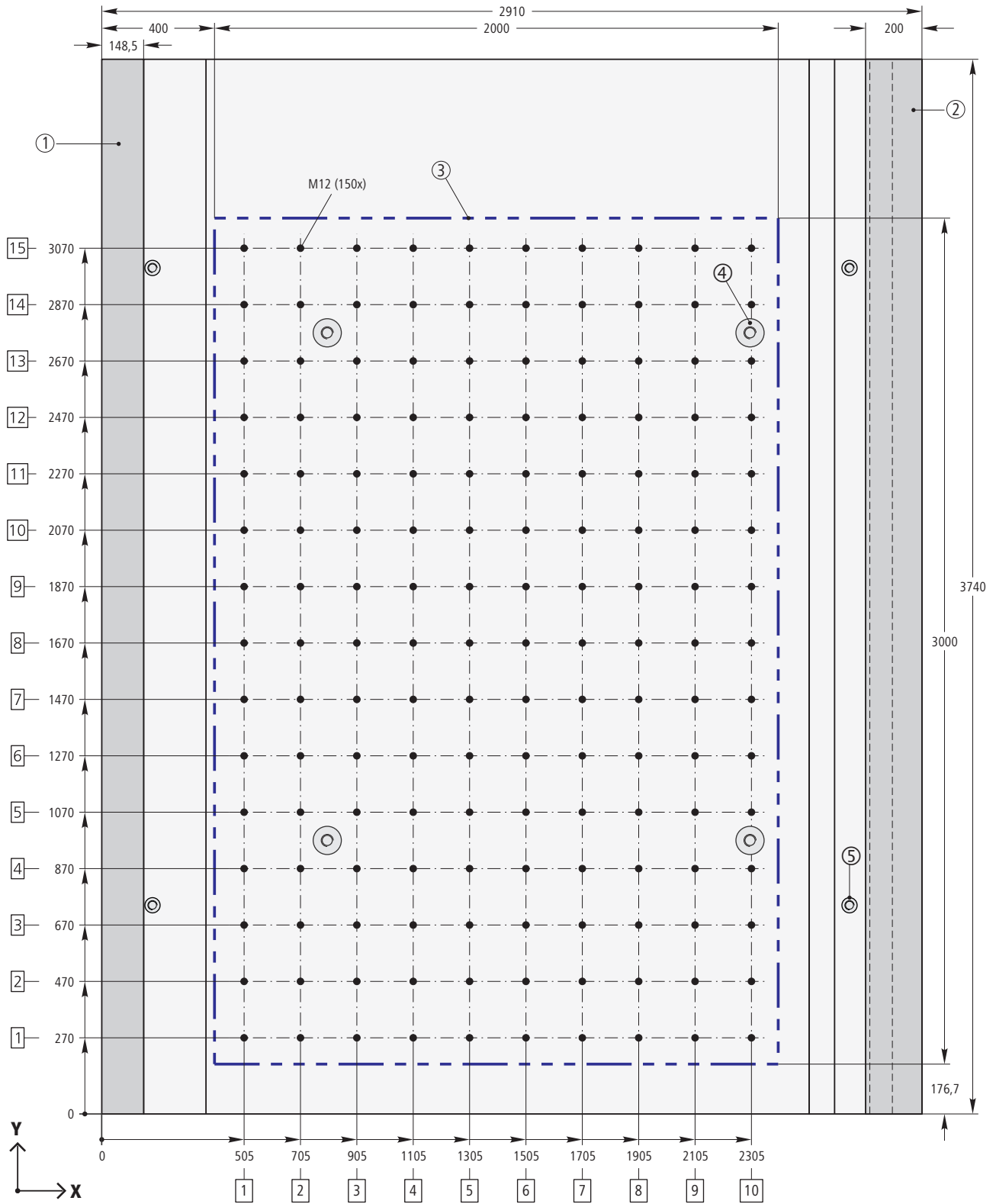


- ① Left Y guideway
- ② Right Y guideway
- ③ Measuring range
- ④ Threaded insert (4 x M36) for the ring bolts (to lift the granite plate)
- ⑤ Threaded insert (2 x M30) **Note:** must not be used to lift the complete granite plate.
- X Grid positions
- Y Grid positions

Measuring table for measuring range of X2000/Y2400

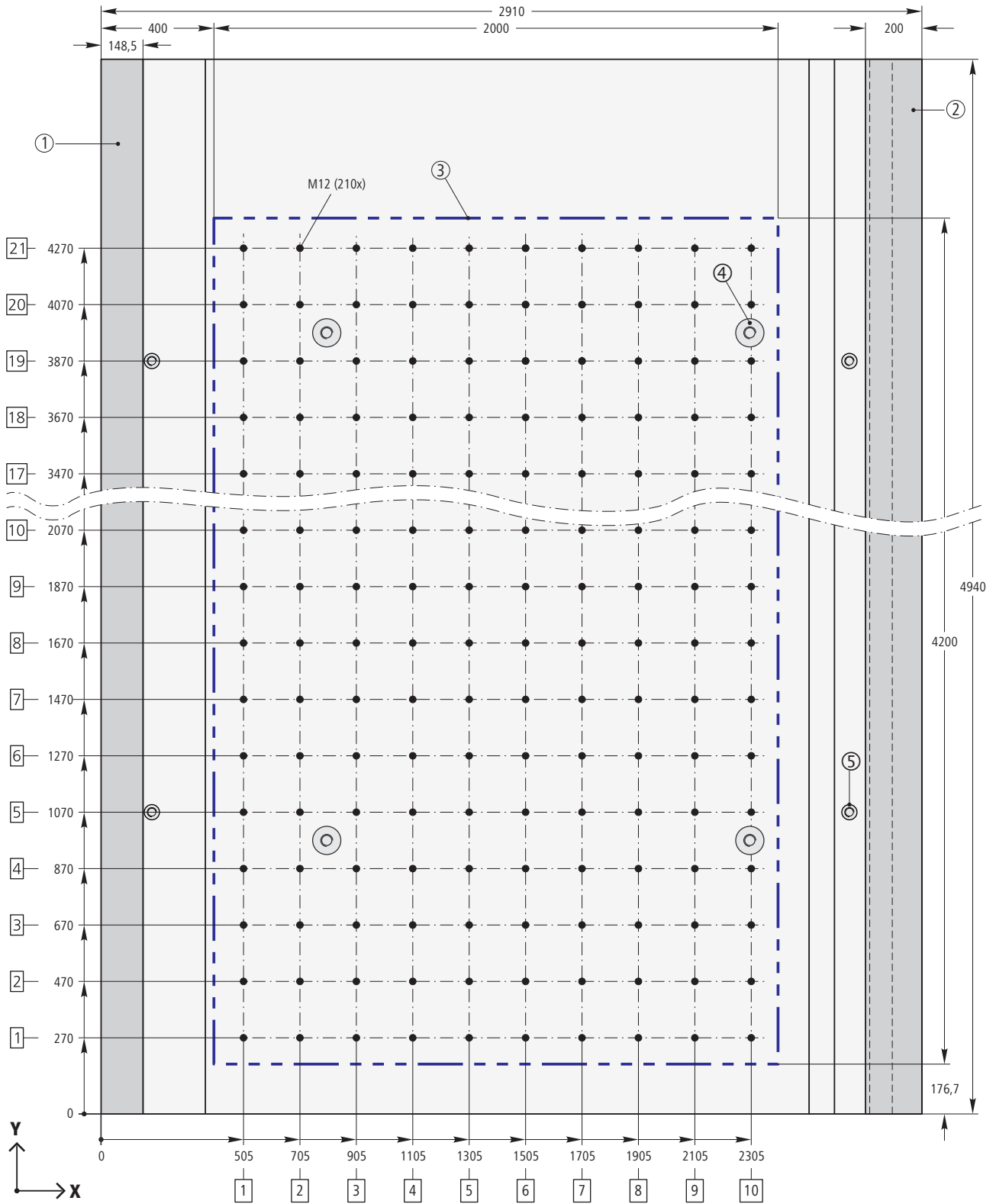


Measuring table for measuring range of X2000/Y3000



- ① Left Y guideway
- ② Right Y guideway
- ③ Measuring range
- ④ Threaded insert (4 x M36) for the ring bolts (to lift the granite plate)
- ⑤ Threaded insert (4 x M30) **Note:** must not be used to lift the complete granite plate.
- X Grid positions
- Y Grid positions

Measuring table for measuring range of X2000/Y4200

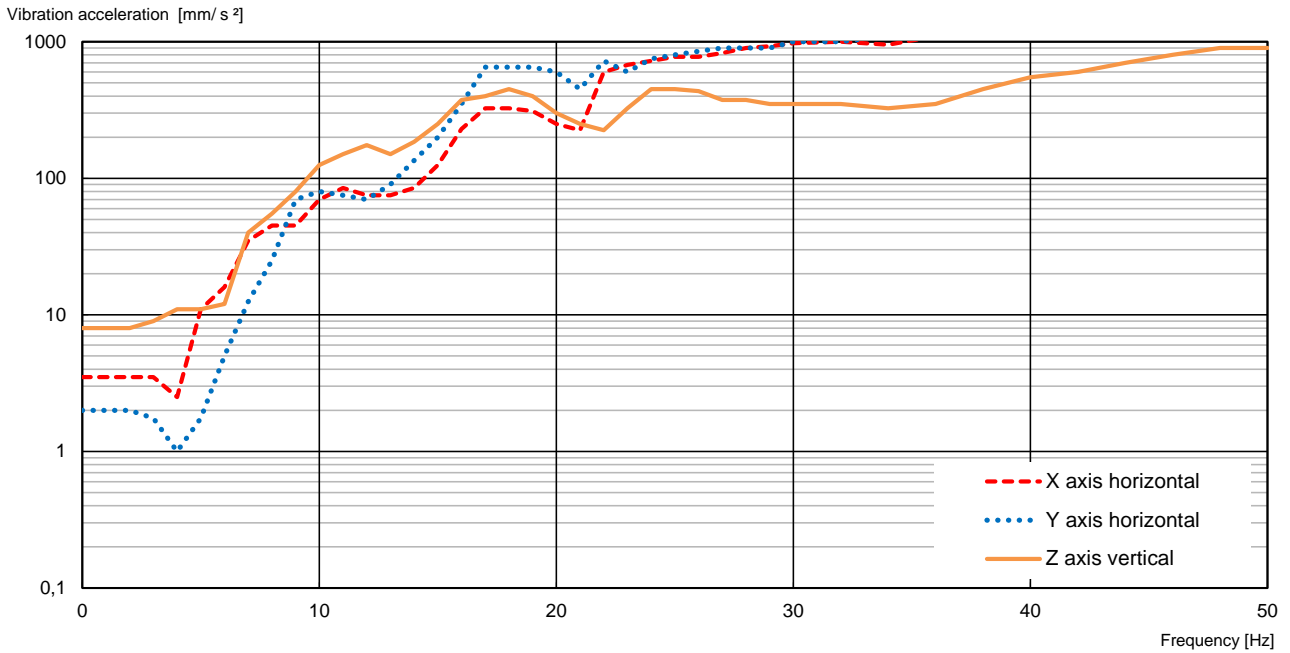


- ① Left Y guideway
- ② Right Y guideway
- ③ Measuring range
- ④ Threaded insert (4 x M36) for the ring bolts (to lift the granite plate)
- ⑤ Threaded insert (4 x M30) **Note:** must not be used to lift the complete granite plate.
- X Grid positions
- Y Grid positions

Limit curves of permissible floor vibrations at the installation site

Permissible foundation acceleration for ACCURA X1600 with active damping

Note: Acceleration values above the corresponding curve require an additional foundation.



Permissible foundation acceleration for ACCURA X2000 with active damping

Note: Acceleration values above the corresponding curve require an additional foundation.

