BYD AUTO OVERSEAS AFTERSALES SERVICE SHOP CONSTRUCTION STANDARD

AUTO AFTERSALES SERVICE DIVISON SERVICE ENGINEERING DEPARTMENT

2022.03

BYD Service

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PART Ⅰ. Channels Overview

1. Standard 4S shop

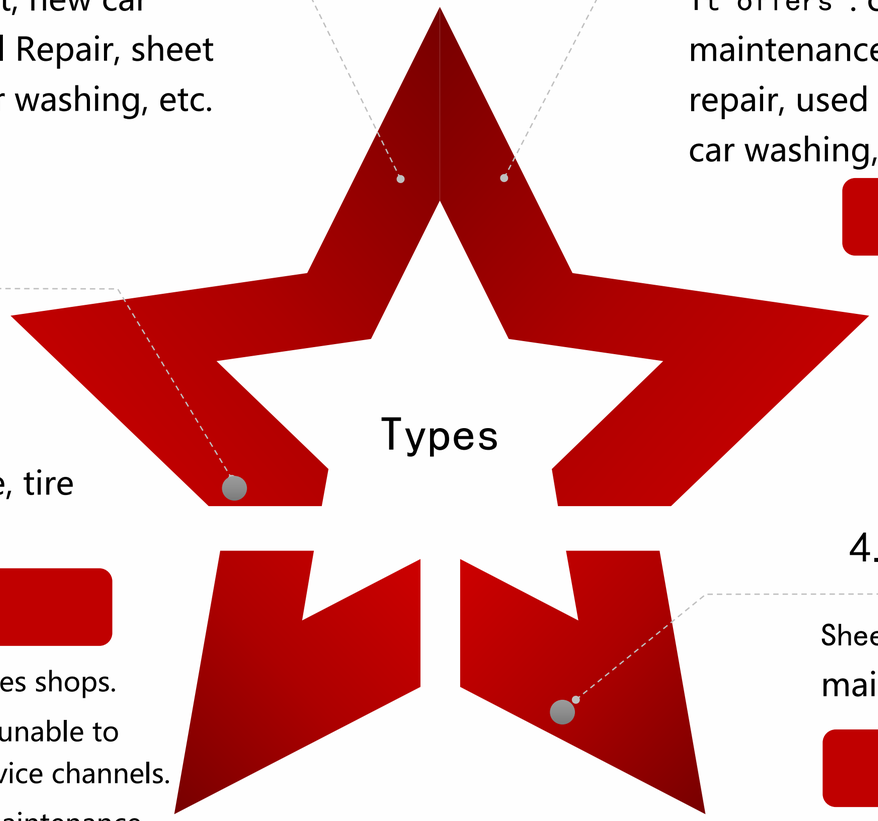
It offers : PDI , car storage management, new car delivery, maintenance, electromechanical Repair, sheet metal spray repair, car care, charging, car washing, etc.

2. Aftersales service center

It offers : car storage management, new car delivery, maintenance, electromechanical Repair, sheet metal spray repair, used car maintenance and sales, car care, charging, car washing, etc.

Channel Features

- Match with shopping mall and showroom saless shops.
- A comprehensive aftersales service channel can meet the various needs of customers.



3. Simplified channels

Franchised service shop offers : PDI , maintenance, electroMechanical Repair, charging, car washing, etc.

Quick service shop offers : maintenance, tire replacement, charging.

Channel Features

- Match with shopping mall and showroom sales shops.
- Suitable for some countries or cities that are unable to build large and comprehensive aftersales service channels.
- Guarantee new car delivery and offer basic maintenance and repair service.
- Quick service shop should be built in underground floors of the shopping mall or around residential area and building area.

4. Sheet metal spray center

Sheet metal spray center offers : sheet spray maintenance, charging, car washing, etc.

Channel Features

- It has all the functions related to sheet metal spray: intensive maintenance, reasonable integration and configuration, which is conducive to the improvement of service efficiency, internal process control and maintenance quality.

PART Ⅱ. Channels Design Principles

1

Capacity:

Aftersales service capacity can match with the sales growth in demand in the next 3-5 years.

2

Flow:

1. The personnel flow aims to improve the service efficiency of aftersales staff.
2. The vehicle flow aims to the improve maintenance efficiency.

3

Customer Experience:

The layout and decoration style of reception and customer rest area should consider customer experience and local cultural customs.

4

Environmental Protection:

1. The design of the sheet metal spray workshop (or center) should meet the local environmental protection requirements
2. The storage of paint, auxiliary materials, waste oil and waste should meet the local environmental protection requirements.

5

Safety:

1. All kinds of channel should be equipped with corresponding fire extinguishing equipment and facilities in accordance with the requirements of the local fire department.
2. The layout of workshop pipelines is in order and reasonable.
3. The layout of the workshop should ensure the safety of daily operations.

6

Employee Care:

1. Service shop should provide comfortable rest and office environment for employees
2. Service shop should be equipped with necessary cooling, drinking equipment and lockers,as well as heating equipment according to local temperature changes.

PART Ⅲ. Different Channels Construction Standards

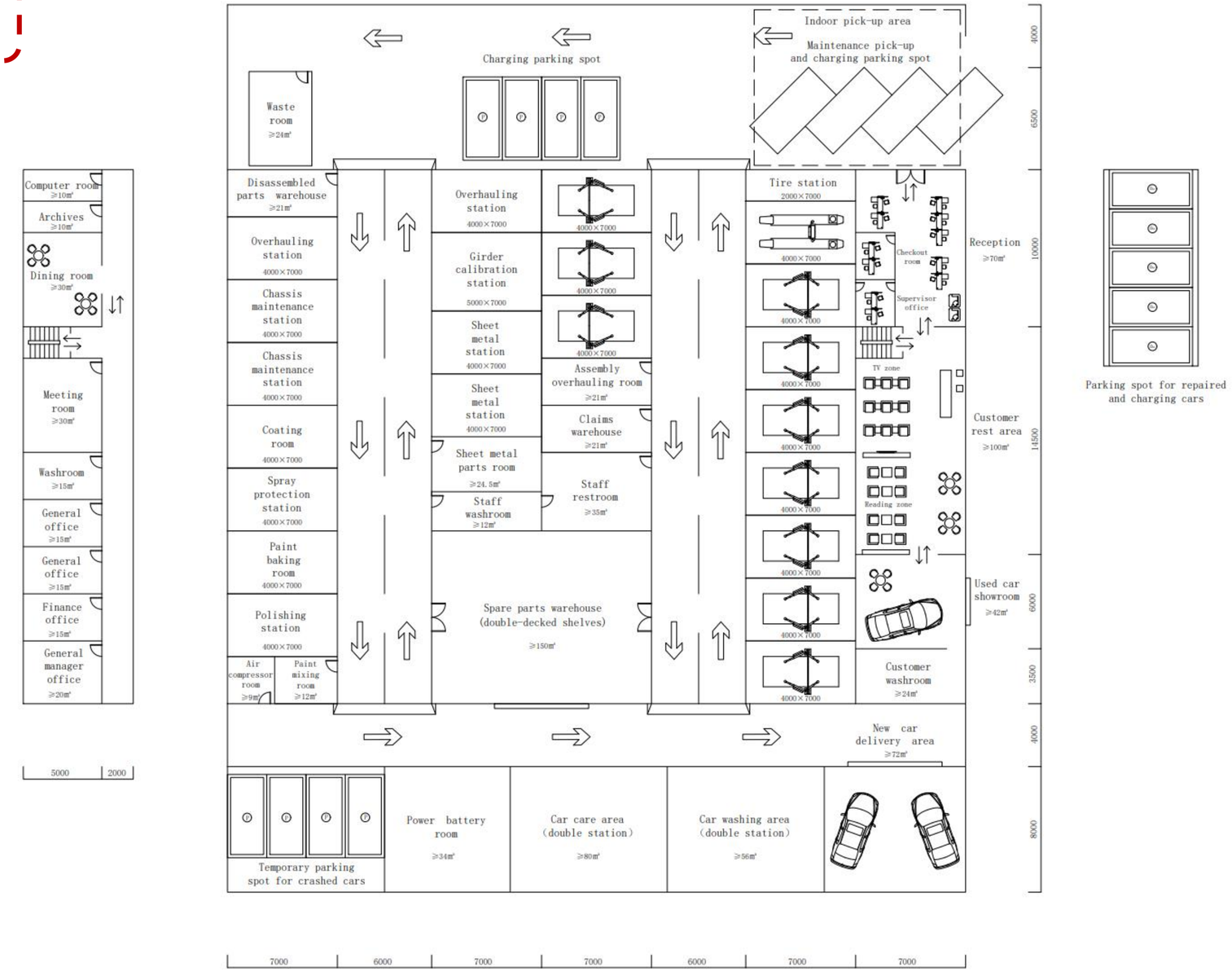
Key area criteria	4S shop			Aftersales service center		
	Class A	Class B	Class C	Class A	Class B	Class C
Building area (㎡)	≥3150	≥2260	≥1040	≥1600	≥1320	≥1035
New car delivery area (㎡)	≥72	≥72	≥40	≥72	≥72	≥40
Used car booth	√	√	▲	√	√	▲
Reception (㎡)	≥105	≥70	≥35	≥70	≥60	≥50
Customer rest area (㎡)	≥130	≥90	≥50	≥100	≥80	≥60
Reception and customer rest area headroom (m)	Headroom of reception and customer rest area is no less than 3m.					
Mechanical Repair workshop (㎡)	≥1400	≥1040	≥390	≥528	≥434	≥342
Sheet metal spray workshop (㎡)	≥600	≥360	≥300	≥528	≥427	≥335
Workshop headroom (m)	Headroom of Mechanical Repair workshop is not less than 4m; Headroom of sheet metal spray workshop is not less than 3.5m.					
Workshop station quantity (pcs)	≥32	≥22	≥13	≥22	≥18	≥14
Spare parts warehouse (㎡)	≥190	≥130	≥45	≥150	≥130	≥100
Functional area (㎡)	≥220	≥170	≥110	≥205	≥170	≥135
Car care workshop (㎡)	≥80	≥40	≥40	≥80	≥80	≥40
Accessories space (㎡)	√	√	√	√	√	√

PARTⅢ. Different Channels Construction Standards

Functional partitioning	4S shop			Service center		
	Class A	Class B	Class C	Class A	Class B	Class C
Supervisor office	√	√	√	√	√	√
Staff restroom	√	√	√	√	√	√
Staff washroom	√	√	√	√	√	√
New energy vehicles assembly maintenance room	√	√	√	√	√	√
Power battery room	√	√	√	√	√	√
Claim used parts warehouse	√	√	√	√	√	√
Hazardous waste room	√	√	√	√	√	√
Disassembled parts warehouse	√	√	√	√	√	√
Sheet metal room	√	√	√	√	√	√
Paint mixing room	√	√	√	√	√	√
Air compressor room	√	√	▲	√	√	▲
Tool room	√	▲	▲	√	▲	▲
Power distribution room	√	▲	▲	√	▲	▲
Staff training room	▲	▲	▲	▲	▲	▲
Staff dining area	▲	▲	▲	▲	▲	▲

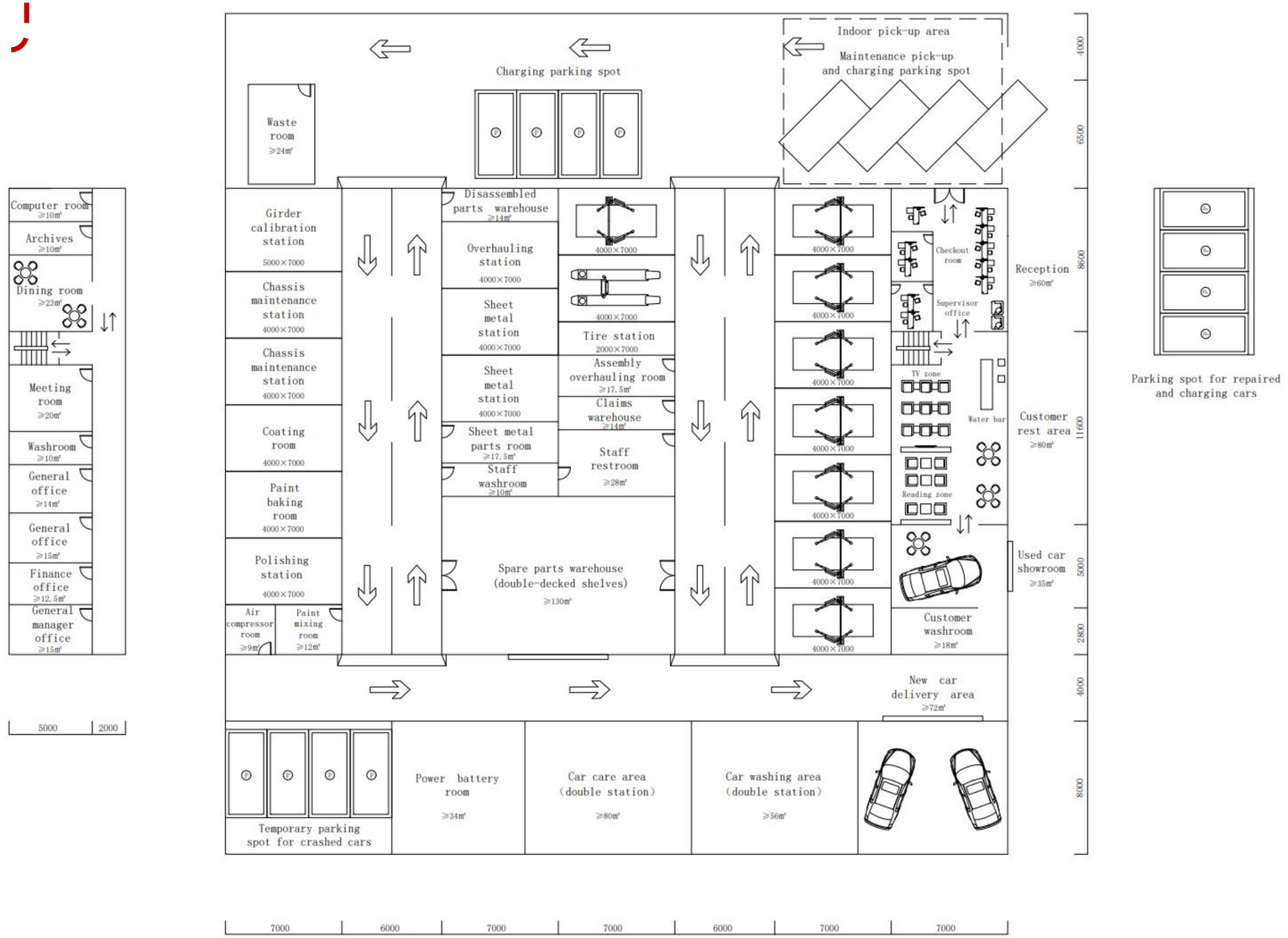
PART Ⅲ. Different Channels Construction Standards

Aftersales service center - class A



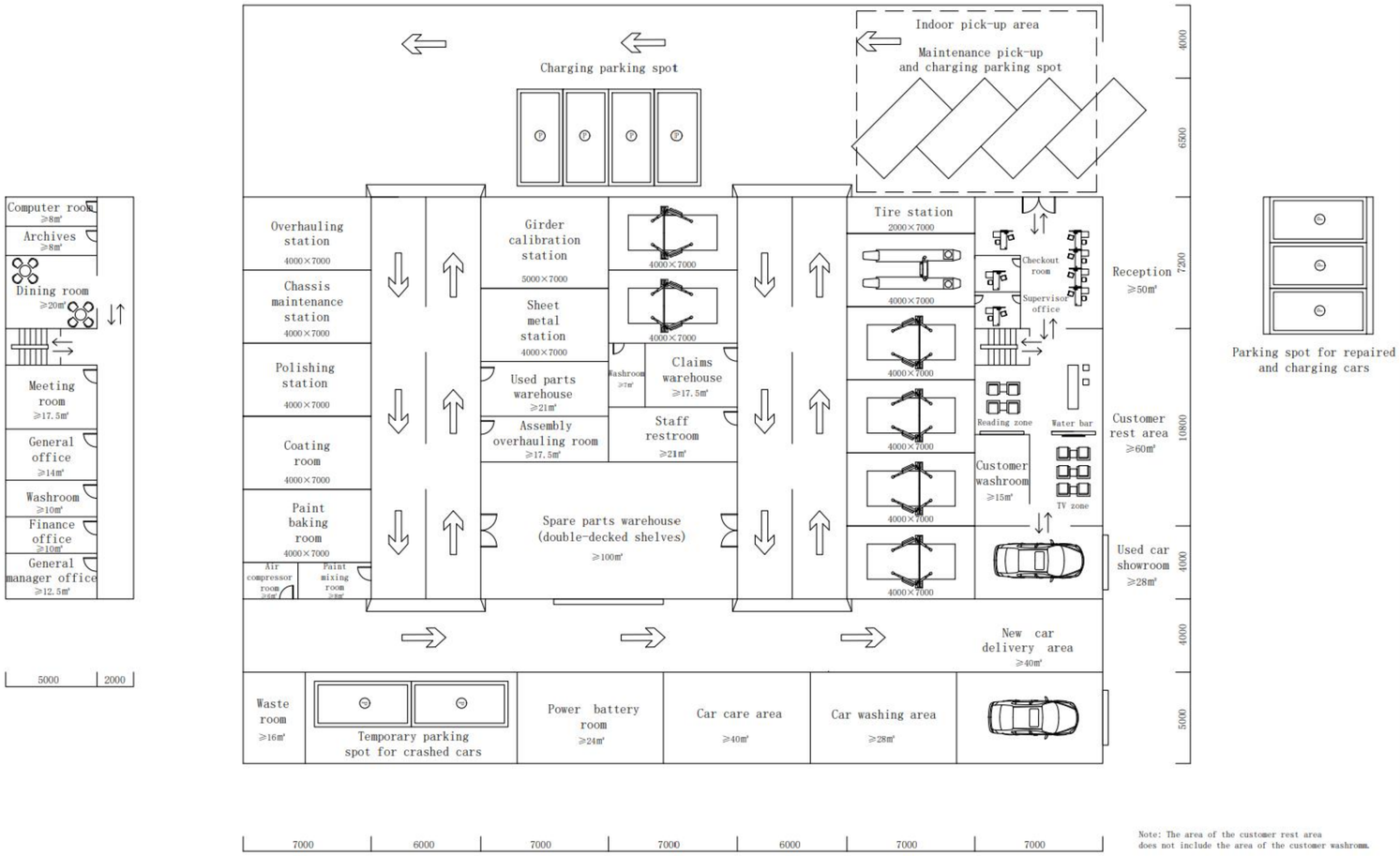
PART Ⅲ. Different Channels Construction Standards

Aftersales service center - class B



PART Ⅲ. Different Channels Construction Standards

Aftersales service center - class C



facade

Figure 1:



Figure 2:

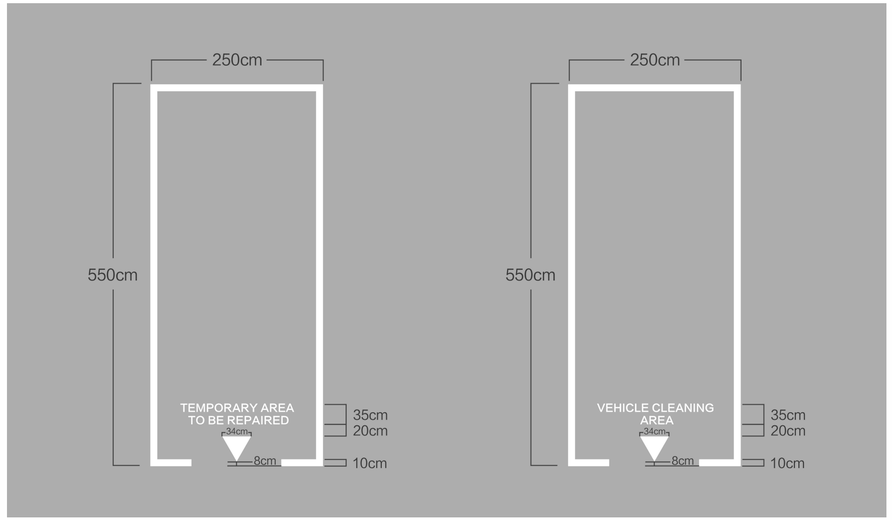


01



02

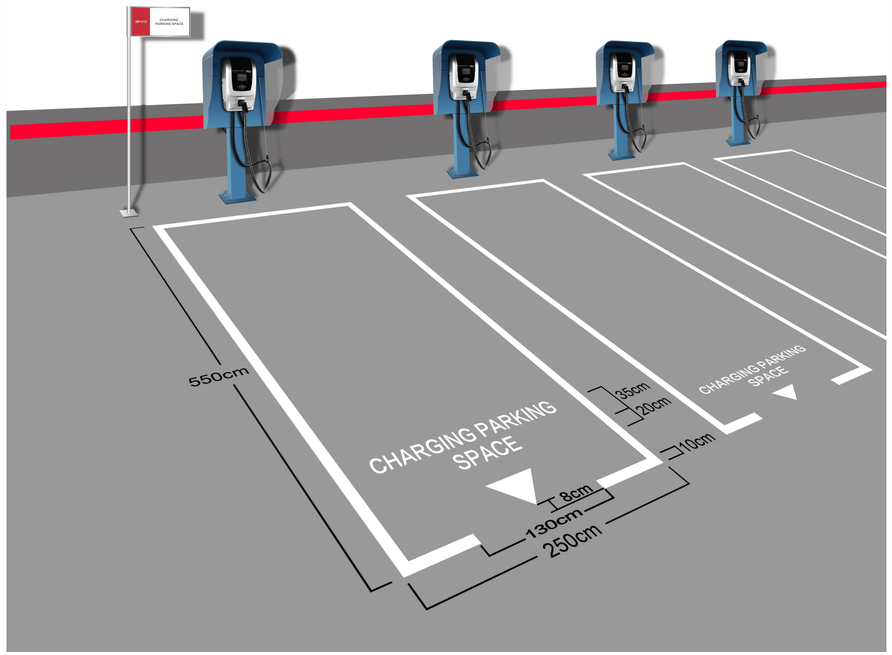
PART Ⅲ. Different Channels Construction Standards



outdoor functional area

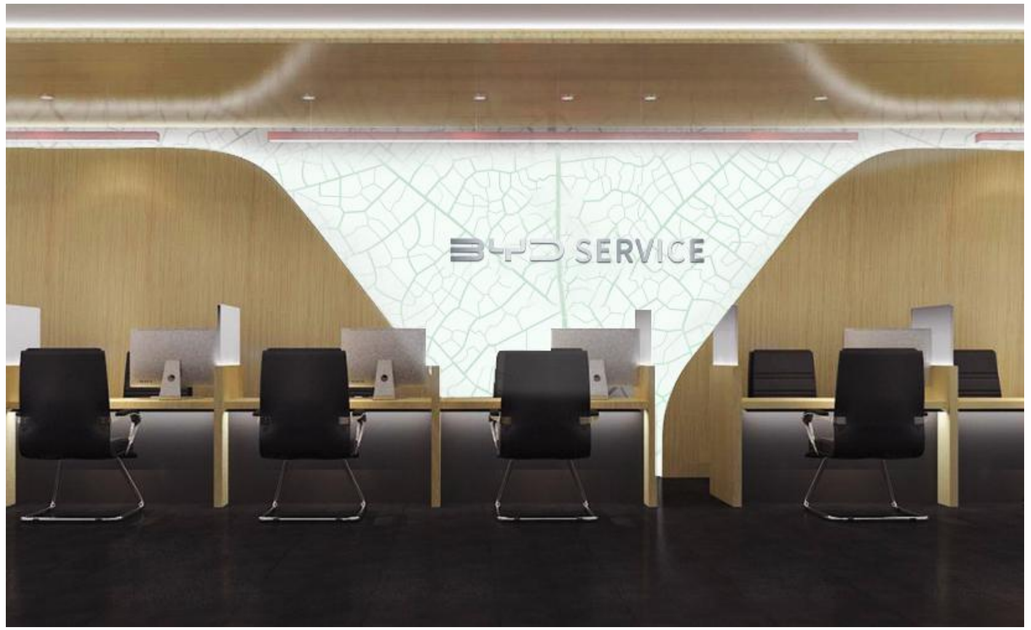
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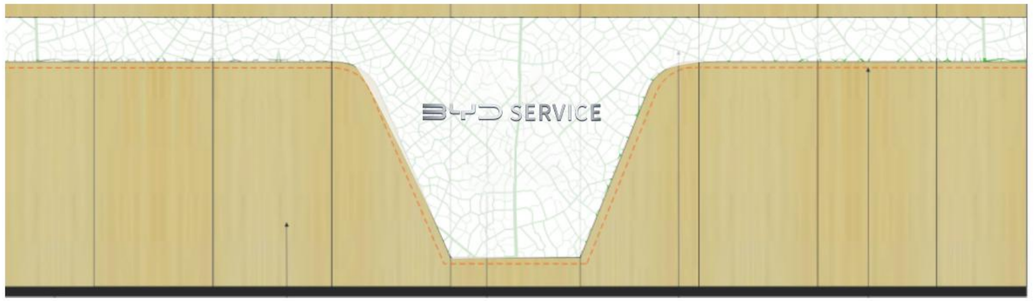
Size: Every functional area mark is at the bottom of the parking spot frame. Every mark is 35 centimeters high and 20 centimeters away from vehicle heading directional arrow, which is 34 centimeters high triangle and 8 centimeters away from the bottom of the outer borderline.



Outdoor functional areas need to set up charging piles , and at least one 60KW DC fast charging pile should be set up in the maintenance pick-up spot.

Reception





Reception background wall:

The most stunning BYD Superior and Sincere Service brand logo is the one on the reception background wall for customers visually.

The brand logo on the reception background wall in service shop is an acrylic engraving in BYD special red and gray colourway. This logo is at the horizontal center of the reception background wall and its upper side is 2.145 meters off the ground vertically.

BYD Superior and Sincere Service brand logo is subject to the subsequent notification issued by BYD.

Reception illumination value is not less than 300 lux.

PARTⅢ. Different Channels Construction Standards

Customer rest area





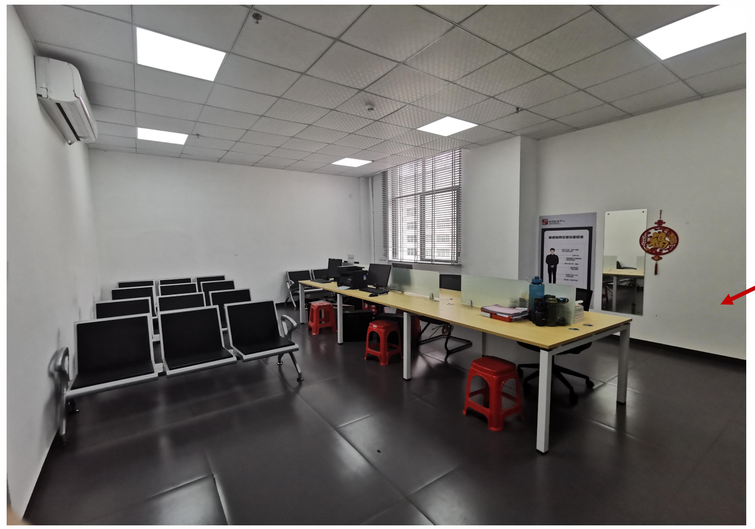


1. Function description: Service shop has to provide customers with a variety of leisure methods, including but not limited to leisure and entertainment, free drinks, reading, etc. when it takes long time for customers to get maintenance service in shop.
2. Layout requirements
   - ① Customer rest area position should be convenient for service personnel and customers to enter from reception and have no interference on other flow lines.
   - ② Common functional zones should be set up around the main pathway of customer rest area, including but not limited to the bar and coffee zone, reading rest zone, TV zone, negotiation zone, etc.
   - ③ The wall of customer rest area that is next to those workshops should be glass wall so that customers can watch the vehicle maintenance progress in the customer rest area.
   - ④ The lighten lines contrive of customer rest area should be paid more attention to. Different zones should be with different illuminance and color temperature and the overall illumination value is not less than 200 lux.
   - ⑤ Floor tiles of customer rest area should be anti-slip and easily cleanable as well as the floor tiles of customer washroom.

PARTⅢ. Different Channels Construction Standards

Functional area

Staff restroom



1. Environmental requirements

① Staff restroom should be set with windows to receive natural lights and ensure that overall illumination level is not less than 300 lux.

② Stall restroom walls should be painted white.

③ Floor tiles of customer rest area should be anti-slip and easily cleanable.

2. Equipment requirements

① Air conditioning is required and heating equipment is also necessary for some regions with cold winters. The indoor temperature is 22℃-28℃（71.6℉-82.4℉） in summer and 16℃-24℃ （60.8℉-75.2℉）in winter.

② Heating water dispenser,staff lockers and rest seats are required.

Assembly overhauling room



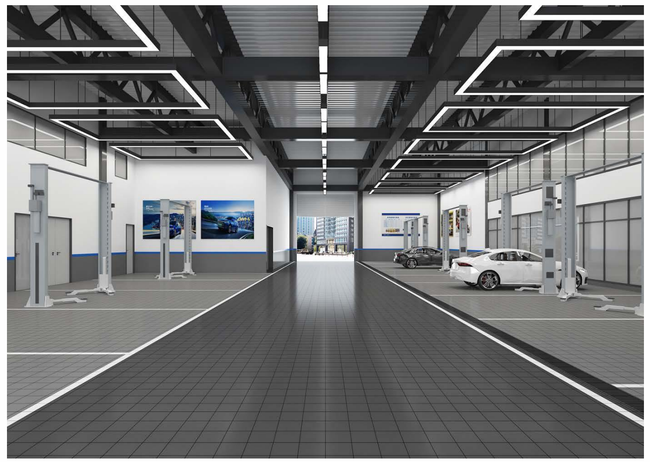
Power battery room

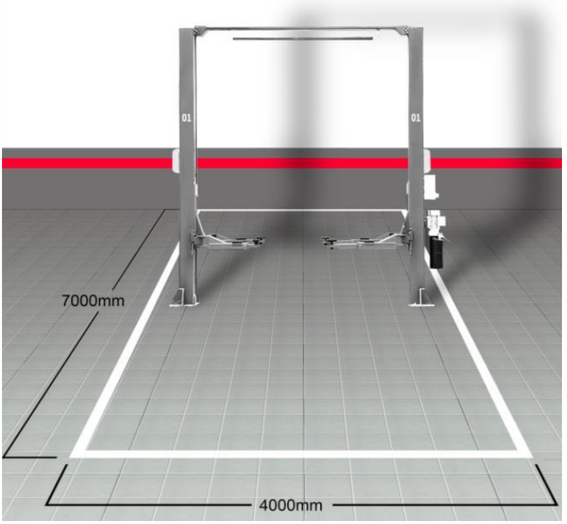
Serial No.	Items	Requiremnet
1	Fire shutter door	At least 6.8 meters wide and 3 meters high
2	Internal dimensions	At least 8 meters wide, 4.2 meters deep and 3.5 meters high
3	Fire Safety	Mainly choose water, dry powder and carbon dioxide fire extinguishers , with at least one fire hydrant or one fire equipment point and two fire extinguishers.
4	Security Monitoring System	Automatic fire alarm system and dead-zone free monitoring system
5	Environment	Power battery room should be decorated with refractory materials and equipped with explosion-proof lighting and explosion-proof exhaust fans.

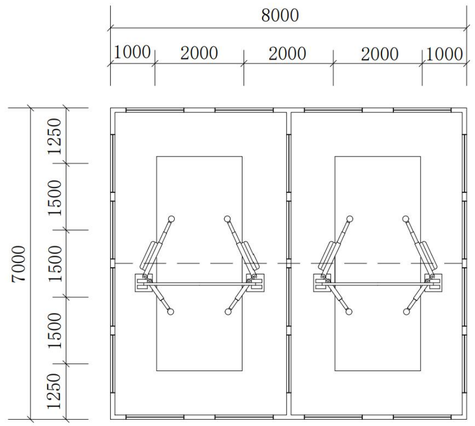
PART Ⅲ. Different Channels Construction Standards

Maintenance workshop









One truss for two station

1. Workshop facade design principles

Workshop facade is made of steel plate, which is clean and tidy without stains and damage.

2. Ground design principles

① Use the special floor tiles for the workshop, gray(No.RAL9010) floor tiles for workstation and white floor tiles for workstation frame-line.

② Station is 7 meters long and 4 meters wide.

③ The station number is marked on both sides of the lift with Source Han Sans Bold font.

④ Use white floor tiles for guide arrow.

3. Wall design principles

① Use wall tiles for dado.

② Dado could be 1.2 meters or 1.8 meters high and the wall part beyond dado can be painted white while the paint is stain resistant,durable, beautiful, easily cleanable, etc.

4. Workshop lighting design principles

① Workshop should have windows on the ceiling to receive natural lights to ensure the environment is bright and the overall illuminance value is not less than 200 lux.

② Station needs to be equipped with a ring light strip. local lighting is optional.

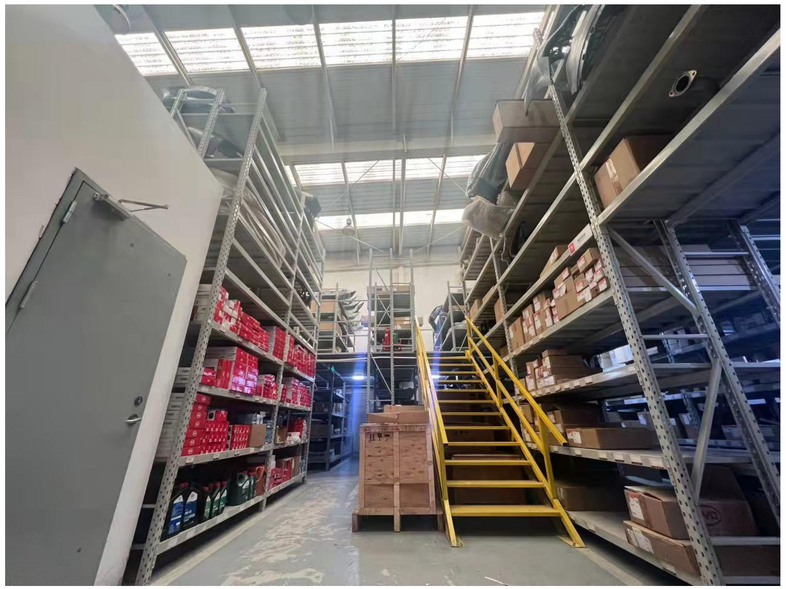
③ The illuminance value of mechanical station should not be lower than 300 lux, the illuminance of sheet metal station should not be lower than 600 lux, the illuminance of regular sheet metal maintenance station should not be lower than 800 lux while the illuminance of polishing and quality inspection station should not be lower than 1000 lux

5. Workshop temperature design principles

① Air conditioning is required and heating equipment is also necessary for some regions with cold winters.

② The indoor temperature is 22℃-28℃（71.6℉-82.4℉） in summer and 16℃-24℃ （60.8℉-75.2℉） in winter.

Spare parts warehouse

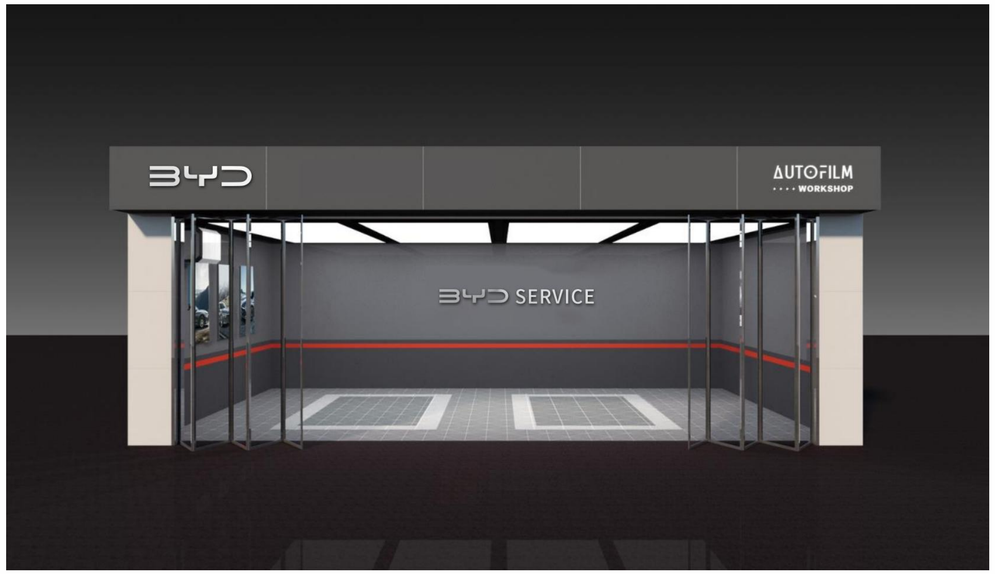




- Attic multi-storey shelves are recommended for spare parts warehouse . If it is impossible to set up attic multi-storey shelves due to the height limits, independent multi-storey shelves are required.
- Spare parts warehouse illuminance value is not less than 200 lux.
- The spare parts warehouse always keeps ventilated and has to be equipped with exhaust fans and essential equipment for moisture-proof and anti-corrosion.
- Spare parts warehouse should be equipped with corresponding fire extinguishing equipment and facilities in accordance with overseas fire department. Inflammable and explosive spare parts should be stored in an independent storage area or an area close to fire equipment.
- A material-dispatching operation table should be set up at the connection part between the spare parts warehouse and workshop,which is a whole table with a layer of transparent rubber pad. The clear width of dispatching window is not less than 1.2 meters and height is 0.9 meters.

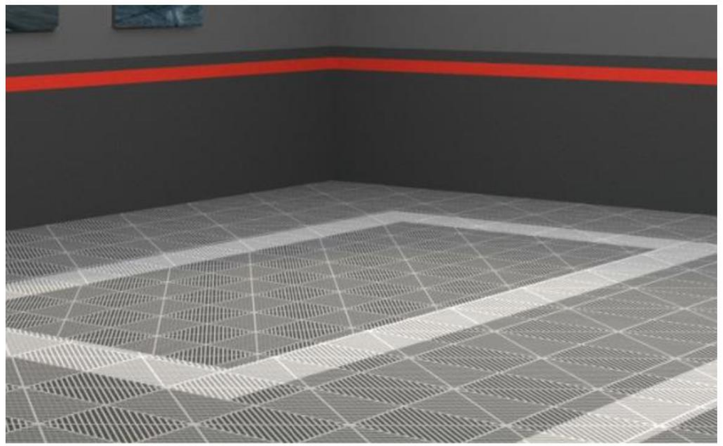
PART Ⅲ. Different Channels Construction Standards

Car care area



- The workstation area is equipped with air source (air drum), power supply (electric drum), water source (water drum)
- Standard workstation size: 4000×7000 mm
- Pave with ground joist and drainage pipelines.
- Wall should be made of waterproof material. It is recommended to pave wall tiles to ensure no water seepage and easy cleaning.
- Illuminance value ≥ 300 lux , generally including grid light (zipper light)
- Each station must be equipped with atomization equipment, such as atomization pipelines, etc.





Polypropylene splicing grille

colour： grey （reference color ： C0，M0.Y0，K50 ）
size: 400×400mm

Polypropylene splicing grille

colour： light grey （reference color ： C0，M0.Y0，K20 ）
size: 400×400mm

New car delivery area



- New car delivery area needs to set up a soft film light box above the delivery spots and luminance is greater than 300 lux.
- New car delivery area should be equipped with glass partition door as well as sunshade curtains if this area is facing the sun.
- New car delivery area should have background wall or screen.
- New car delivery area needs to be equipped with a corresponding number of 7kw AC wall-mounted slow charging piles according to delivery spots quantity.
- Air conditioning is required to ensure the indoor temperature is 22℃-28℃（71.6℉-82.4℉）in summer and 16℃-24℃（60.8℉-75.2℉） in winter inside the new car delivery area.

PARTⅢ. Different Channels Construction Standards

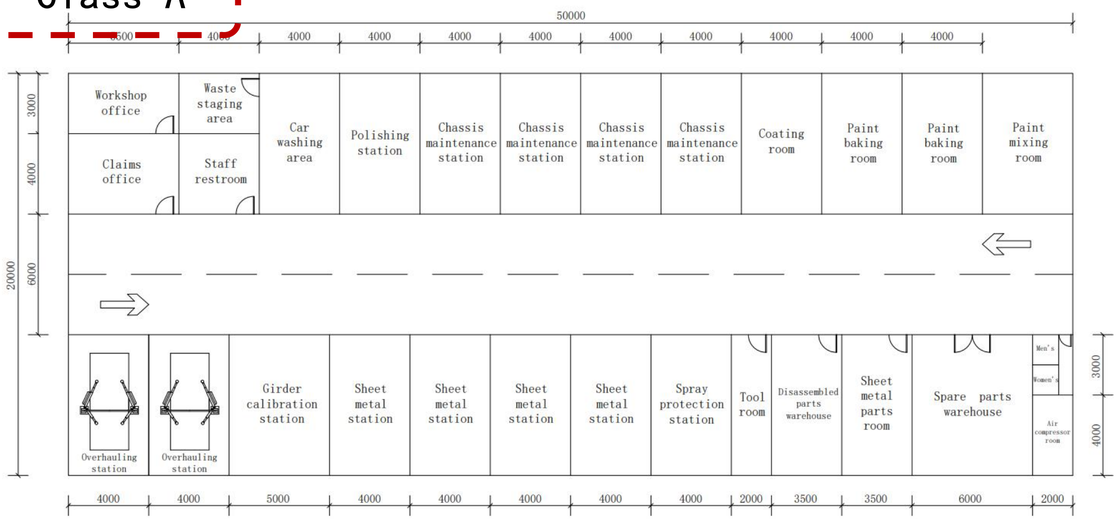
Sheet metal spray center is divided into two classes according to scales. Average monthly maintenance throughput of Class A is around 300 units and Class B is around150 units.

Functional partitioning(pcs)	Sheet metal spray center	
	Class A	Class B
Building area（㎡）	≥ 1000	≥ 660
Claims office	1	1
Workshop office	1	1
Damage assessment office	0	0
Air compressor room	1	1
Spare parts warehouse	1	1
Tool room	1	1
Disassembled parts warehouse	1	1
Sheet metal parts room	1	1
Staff restroom	1	1
Waste staging area	1	1
Paint mixing room	1	1

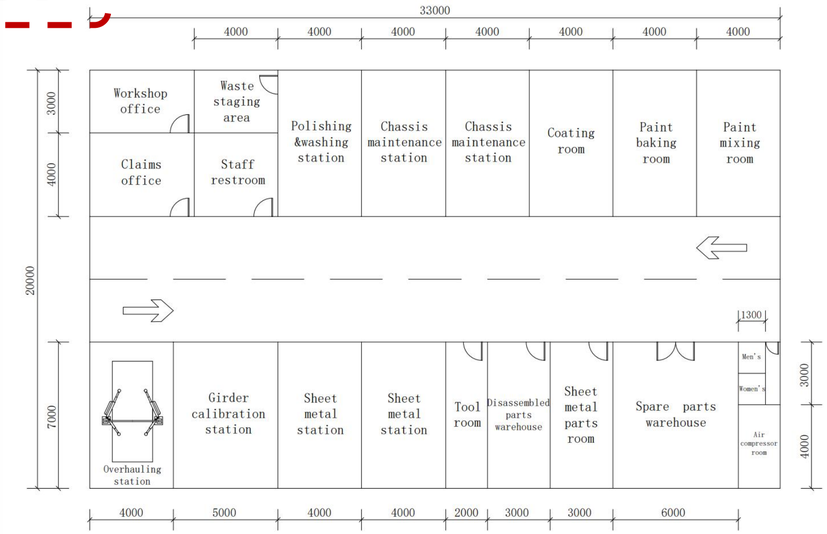
Stations (pcs)	Sheet metal spray center	
	Class A	Class B
Overhauling station	2	1
Sheet metal station	4	2
Girder calibration station	1	1
Chassis maintenance station	4	2
Coating room	1	1
Spray protection station	1	0
Paint baking room	2	1
Polishing station	1	1
Car washing area	1	1

PART Ⅲ. Different Channels Construction Standards

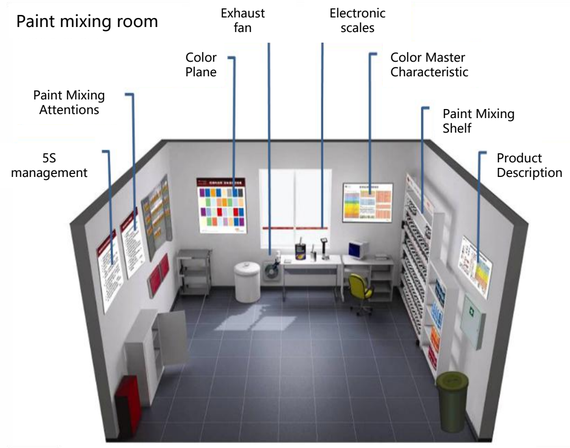
Class A



Class B



Paint mixing room



- Paint mixing room and paint warehouse are located around the paint baking room and the inside is exposed to sunlight..
- Install power supply and switch socket, lighting with explosion-proof function
- Paint warehouse and paint mixing room are separated by solid walls
- Ventilation system is 0.5 meters off the ground.
- Double-opening fireproof safety door with a width of at least 1.5m.
- If inner temperature is below 5℃（41℉） and above 35℃（95℉）, a thermostat system must be installed.
- Paint mixing process flow chart, etc. are hanging on the obvious place indoors.
- Corresponding fire-fighting equipment should be equipped with according to requirements of the regional environmental protection and safety supervision department.

Disassembled parts warehouse sheet metal room, tool room

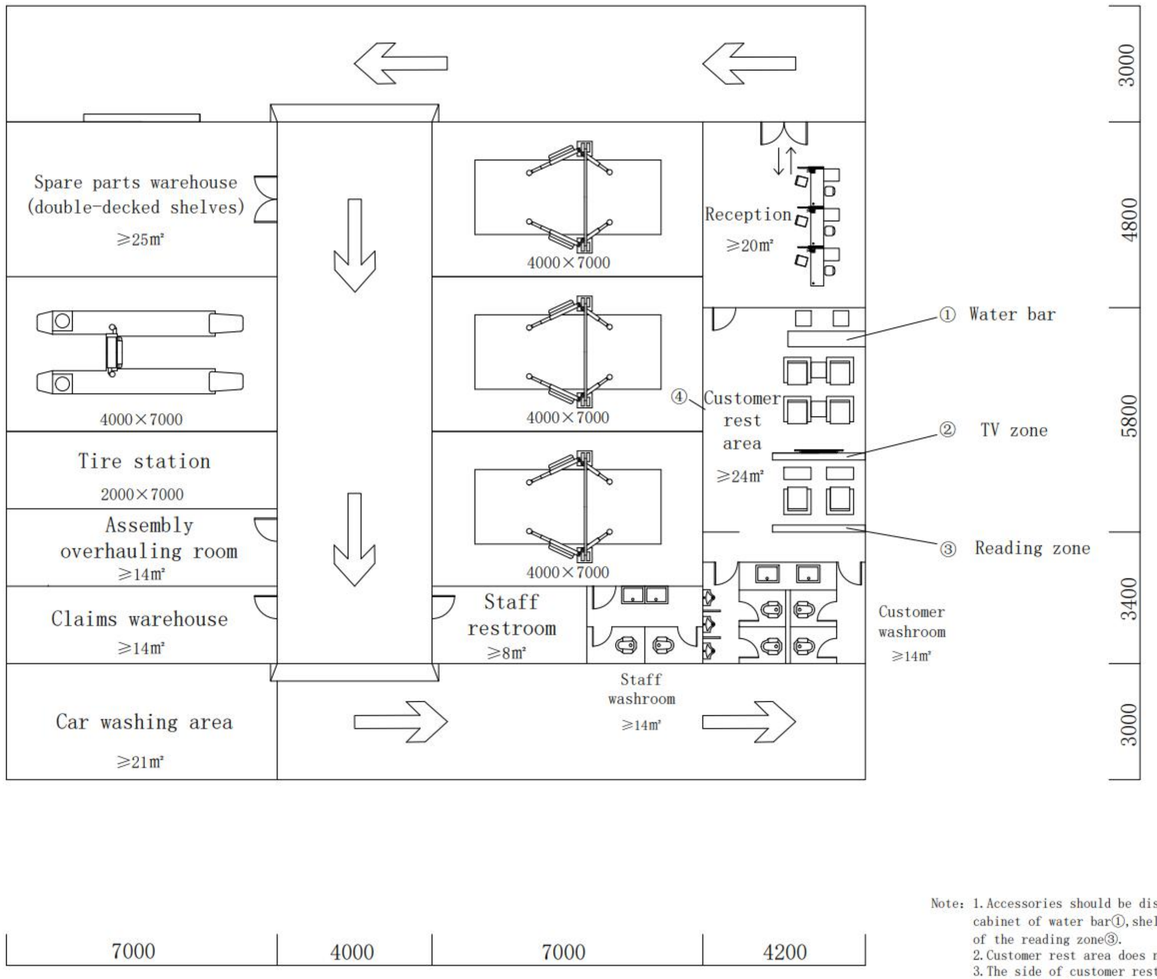


- Double-opening fireproof safety door
- Independent multi-layer shelves
- Illuminance value is not less than 200 lux

PARTⅢ. Different Channels Construction Standards

Key factor criteria	Franchised service shop	Quick service shop
Building area (㎡)	≥310	≥70
Reception(㎡)	≥21	-
Customer rest area (㎡)	≥24	-
Reception and customer rest area headroom (m)	at least 3m	-
Mechanical Repair workshop (㎡)	≥182	≥28
Mechanical Repair workshop headroom (m)	at least 4m	
Workshop stations quantity (pcs)	≥3	≥1
Spare parts warehouse (㎡)	≥25	At least one multi-storey shelf
After-sales workshop functional area (㎡)	≥72	-
Car care area (㎡)	≥28	≥28
Accessories area	√	√
Workshop staff restroom	√	-
Workshop staff washroom	√	-
New energy vehicles assembly repair room	√	-
Claim used parts warehouse	√	-

The standard specifications of aftersales franchised service shop are lower than aftersales service centers. Franchised service shop could only meet some basic and key maintenance need without sheet metal spray workshop.

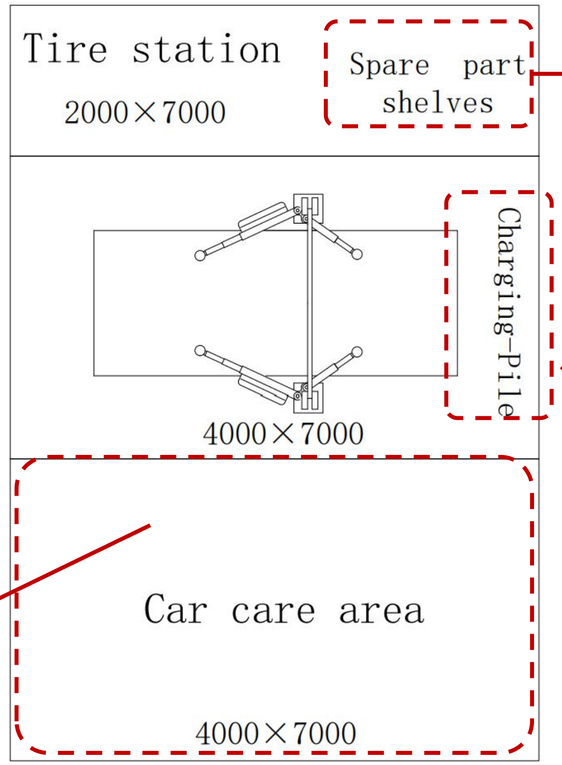


Note: 1. Accessories should be displayed on the background cabinet of water bar①, shelf of TV zone② and bookshelf of the reading zone③.
2. Customer rest area does not contain customer washroom.
3. The side of customer rest area next to workshop should be equipped with glass window.

Quick service shop should set up at least one Mechanical Repair station and the number of the station can be increased according to local market and site conditions.

- Tire station needs to be equipped with a tire removing machine and a dynamic balancing machine







- Quick service shop needs to set up special shelves for storing tires, common maintenance parts, etc.



- Equipped with fast charging pile(≥ 60KW)

BYD Service