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Safety Precautions

Warning

- This manual is an integral part of the product. Please read it carefully.
- Keep the manual for later use when maintaining the machine.
- This machine can only be used for the designed purpose. Never use it for any other purpose.
- The manufacturer is not responsible for any damage incurred by improper use or use for the purposes other than the intended one.

Before installing and adjusting the equipment, pay attention to the following:

- Read the two manuals carefully and thoroughly. Any modifications to any components or parts, or use the equipment for other purposes without either obtaining permission from the manufacturer or observing the instructions of the manuals may lead to direct or indirect damage to the machine.
- The installation and adjusting personnel should have basic electrical knowledge.
- Do not put KWB-408 in a place with extreme temperature or moisture, or near the heating system, water tap, air-humidifier or furnace.
- Keep the machine from dust, ammonia, alcohol, thinner or spray type binder.
- KWB-408 should be installed on the even and stable ground.
- Avoid putting KWB-408 close to objects that may cause vibration such as the air compressor.
- KWB-408 should use individual power supply socket. Do not plug other power supply wire into this socket. The socket must be grounded safely. If the socket does not have ground wire, please connect the ground wire first.
- Avoid any trample on power supply wire.
- Keep 60cm distance between the back panel and the wall for good ventilation. Enough room should be left on both sides of KWB-408 for convenient operation.
- Do not demount or refit the machine by yourself.
- Avoid any impact with the rotary shaft.
- Sundries should not be placed on the working desk.
- During the normal operation, if abnormal noise, fog or other noticeable phenomena occur, please turn off the power switch and unplug the machine. Then, contact relevant service personnel.
- Enough space should be kept in front of the power supply socket so that the plug can be quickly disconnected in case of emergency.
- Check the parts list carefully before installation. Please contact the dealer or LAUNCH immediately if you have any questions.

Tools

To ensure the smooth installation and adjustment, please get the following tools ready:
An adjustable wrench, a set of box wrenches, a pair of scissors, a set of screwdrivers and a digital multi-meter (measuring voltage).

Main Structure

Main structure spare parts are as shown in Fig 1:

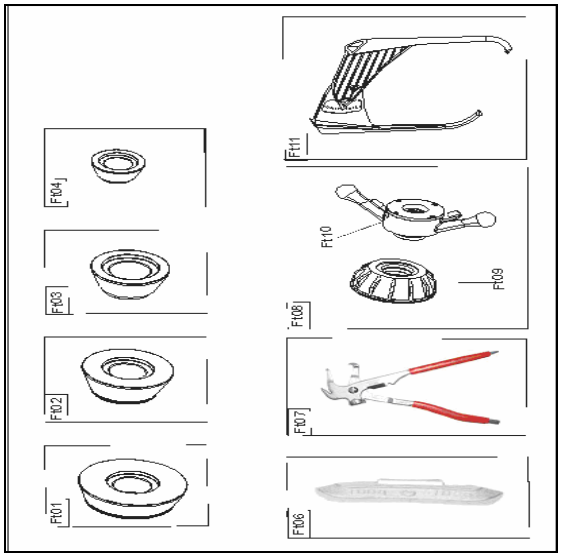


Fig 1

Main structure parts list

Serial No.	ERP No.	Description
Ft01	103200313	KWB-408 supper-big conical casing,45
Ft02	103200316	KWB-408 big conical casing,45
Ft03	103200315	KWB-408 medium conical casing,45
Ft04	103200297	KWB-408 small conical casing,45
Ft06	103990018	Balance lead weight, 100g
Ft07	110040030	(417302) wheel balance weight special pliers 10"
Ft08	104010485	KWB-408 quick locknut
Ft11	104010311	KWB-408, width scale, ABS

Figure

1. Measure scale — for automatic measurement of the installation distance of the wheel and rim diameter, and the accurate position of the sticking balance block.
2. Control panel — for man-machine dialogue.
3. Hanging handle-- For hanging conical casing, the wheel width scale and other spare parts.
4. Counterweight groove —holder of the counterweight lead block
5. Balance shaft — for supporting the wheel.
6. Wheel protection guard

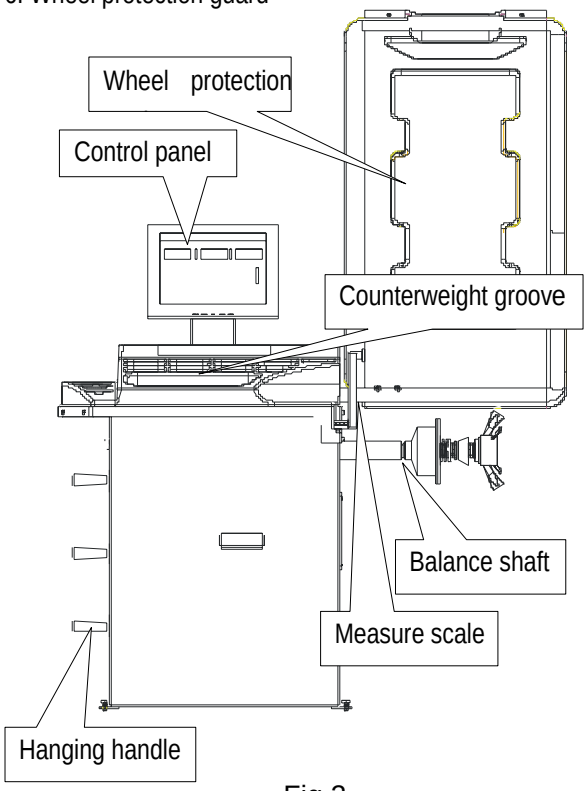


Fig 2

Installation

Transport

It is advisable to transport the machine with a forklift (Fig. 4)

- Pay attention to the barycenter of the machine. Do not tilt the machine much during the moving.
- Do not drive the forklift too fast.
- Keep the location of the machine on the forklift as low as possible.
- Do not overturn it during the moving (pay attention to the position of the barycenter).

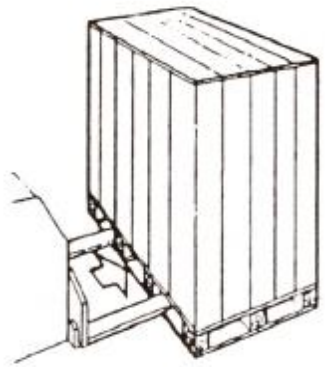


Fig.4

Unpacking

- Open the packing box according to the Instruction on it. Remove the packing materials (Fig. 5) and check whether the machine is damaged during the transportation. Confirm whether the main unit, accessory parts, and relative materials are all included.
- Keep packing materials away from children. If the packing materials may cause pollution, please dispose them properly.
- Remove accessories and spare parts supplied with the machine and place them on a safe place. Then, remove the cabinet fixed on bottom plate of packing box and place them at a safe place.

Fig. 5

⚠ Attention:
Special anti-rust oil applied on the precise parts may attract dust. Clean it when necessary.

Positioning

The installation position must satisfy the requirement of safe work.

- The machine should be installed close to the main power supply.
- The machine should be installed on the even concrete floor or other floors with hard surfaces. Adjust the anchor bolts till KWB-408 is level and stable (Fig.6). In order to fasten the machine reliably, use one M12×35 fastening bolt to fasten the machine on the floor tightly. Otherwise, it will cause vibration and noise.
- Enough spaces should be kept for operation and maintenance. The space should be not less than 1m at front and sides and 0.6m at rear to satisfy normal operation of the machine.
- If the machine is installed outdoors, the protective shelter is necessary.
- Keep the machine away from flammable gases.

Fig.6

Note:

- In order to use the machine safely and reasonably, LAUNCH suggests installing the machine at least 0.6m away from the wall.

Installation

⚠Attention:

- Please place, move, and store KWB-408 in accordance with safety signs on the package
- Never lift the rotary shaft when moving, installing or operating KWB-408. Otherwise, the rotary shaft may be damaged.

Make sure that the machine is stable and in good condition after installation. Then install KWB-408 according to the following Setup Instruction.

Step 1: Installation of the control panel

1. Take out the post board from the accessory box. Unscrew the four screws on the board (Fig. 7) and remove the rear cover of the board.

Fig. 7

2. Place the post pads between the cabinet and the post panel, and then install the post panel on the rear of the cabinet (Fig. 8).

Fig. 8

3. Take out the control panel from the accessory box. Remove the rear cover of the panel (Fig. 8) and install the control panel on the top of the post board.

   Insert the two cable plugs into the interfaces on the rear of the computer board correspondingly (Fig.9). Mount the rear cover of the control board.

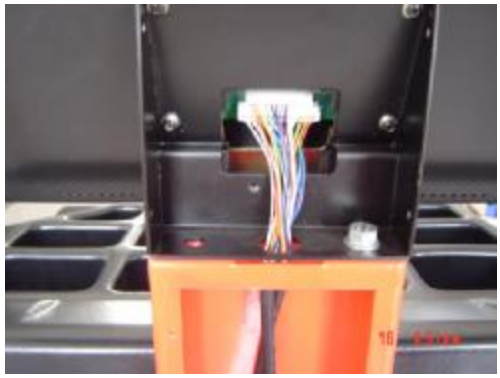


Fig.9

4. Install the rear panel of the post board (Fig. 10).

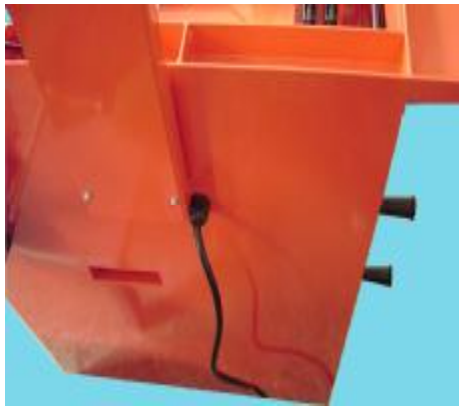


Fig. 10

5. Install the rear cover board of the display panel (Fig.11).

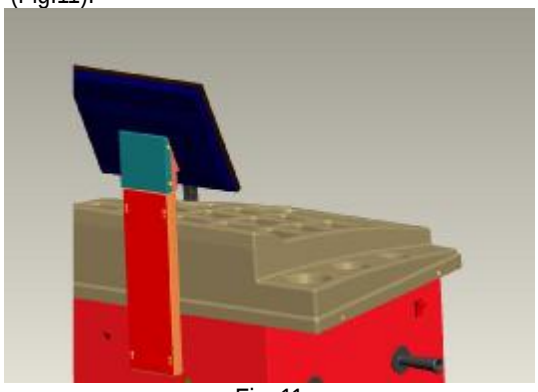


Fig. 11

Step 2: Installation of the wheel protection guard

1. Install the supporting bracket of the wheel protection guard on the rear part of the wheel balancer cabinet body. (Fig. 12).

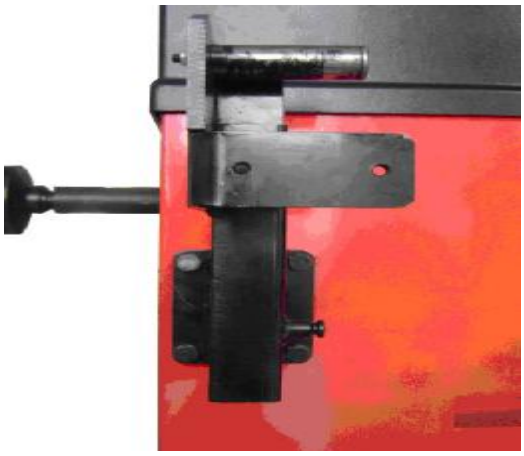


Fig. 12

2. Insert the protective pipe of the wheel protection guard into the supporting casing. (Fig. 13). Fasten the protective pipe on the supporting shaft by the washer and snap ring. (Fig. 13)

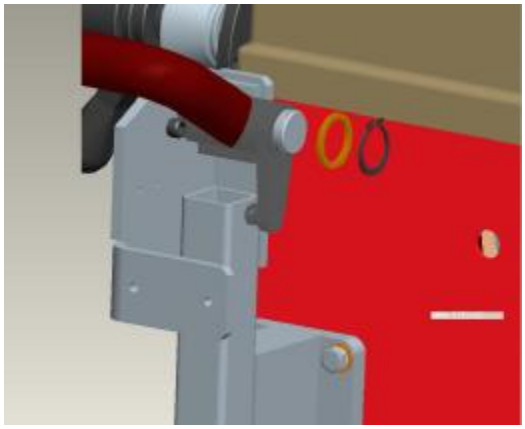


Fig.13

3. Install the extension spring of the wheel protection guard. (Fig. 14) Firstly, please hook the hanging pin of the wheel protection guard with one end of the extension spring, and then hook the pull screw on the supporting bracket of the wheel protection guard with the other end of the extension spring.

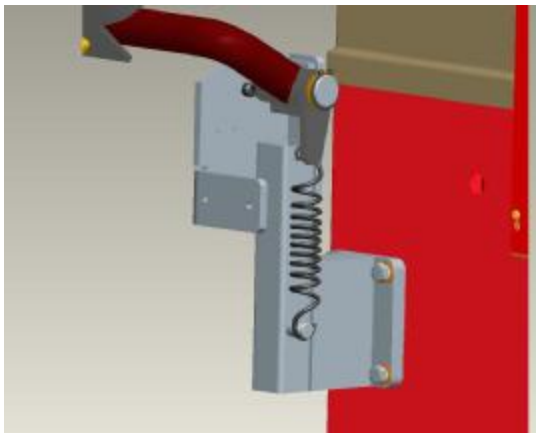


Fig.14

4. Install the on-position switch. Insert the plug of on-position switch on the supporting bracket of the wheel protection guard into the connector of the wheel balancer cabinet. (Fig. 15)

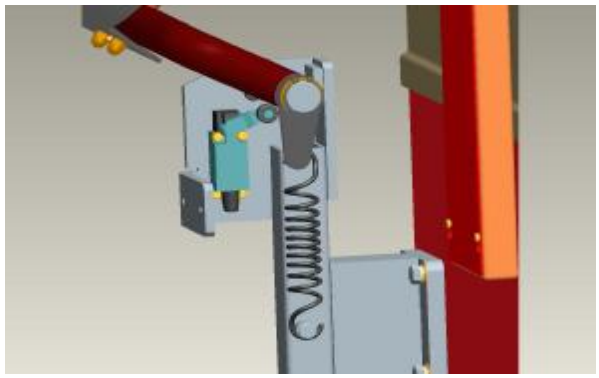


Fig. 15

Step 3: Lead screw assembly

Please see (Fig. 16): Also you can remove the lead screw, and then connect the flange pan to universal detent (optional).

Fig. 16

Step 4: Switch on the machine

- Check whether the power supply is in accordance with the requirements of the data plate on the machine before connection. All connection of circuit must be done by professional.
- The socket of the power supply must be installed within the reach of the operator. The height should be set at 0.6—1.7m.
- If the supplied voltage is not stable, please use a voltage regulator.
- The machine must have a good cabinet ground connection.

Now you have finished the installation of KWB-408 successfully.

Calibration and Adjustment

Self-calibration Program of the Balancer

⚠Attention:
The self-calibration program should be run after the equipment's first installation or if the measurement accuracy of the equipment is uncertain, to ensure the measurement accuracy of the balancer.

Turn on the power supply switch of the balancer, install a wheel with medium size (13″ --15″), input the data of the wheel rim and press key at the same time. The control panel will display the information as shown in Fig 17.

Fig 17

Release key, put down the wheel protection guard, and press START key to rotate the main-shaft. The control panel will display the information as shown in Fig 18 when the main-shaft stops rotating.

Fig 18

Put up the wheel protection guard, and attach 100g (3.5oz) counterweight on the outside of the wheel rim. Put down the wheel protection guard again, and press START key to re-rotate the main-shaft. The control panel will display the information as shown in Fig 19 when the main-shaft stops rotating.

Fig 19

The self-calibration is finished, and the self-calibration data is stored in computer memory, which cannot be lost even after the balancer shutdown. The wheel balance operation can be performed after above operating procedures.

Self-Testing Program (Testing Position Sensors and Indicators)

Press D key, from left to right, the indicators flash one by one, and the control panel will display the information as shown in Fig 20.

Fig 20

The position sensor can be tested at that moment. Rotate the wheel manually and slowly, indicator ALUI starts flashing, and "0" will appear on the right screen when "0" position on the main-shaft passes across the photoelectric sensor as shown in Fig 21.

Fig 21

Once the wheel turns by one circle, the [0] will appear on right screen one time. When the wheel rotates to the reverse direction, the indicator ALUS will start flashing.

Press ALU key, a number will be displayed on the right screen, which is the distance between the inner side wall of the wheel rim and the balancer cabinet. When moving the measure scale, this number is changed, too.

Press ALU key, a number will be displayed on the left screen, which is the diameter of the wheel rim. When swaying the measure scale, this number is changed, too.

Adjustment for Sensors and Inside Parameters

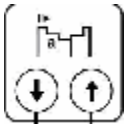
Sensor Adjustment
Level sensor adjustment (Calibrate it after adjustment each time, and then check it).
When the data at the inner side is larger, please move the level sensor to the right. Release the nut at the inner side first, and then screw the nut at the outside clockwise; when the data at the inner side is smaller, please move the level sensor to the left. Release the nut at the outside first, and then screw the nut at the inner side counterclockwise.

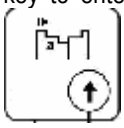
Adjustment for Inside Parameters

Press key, the control panel will display

the information as shown in Fig 22.

Fig 22

Press  key, the screen will be blackened, and then press 

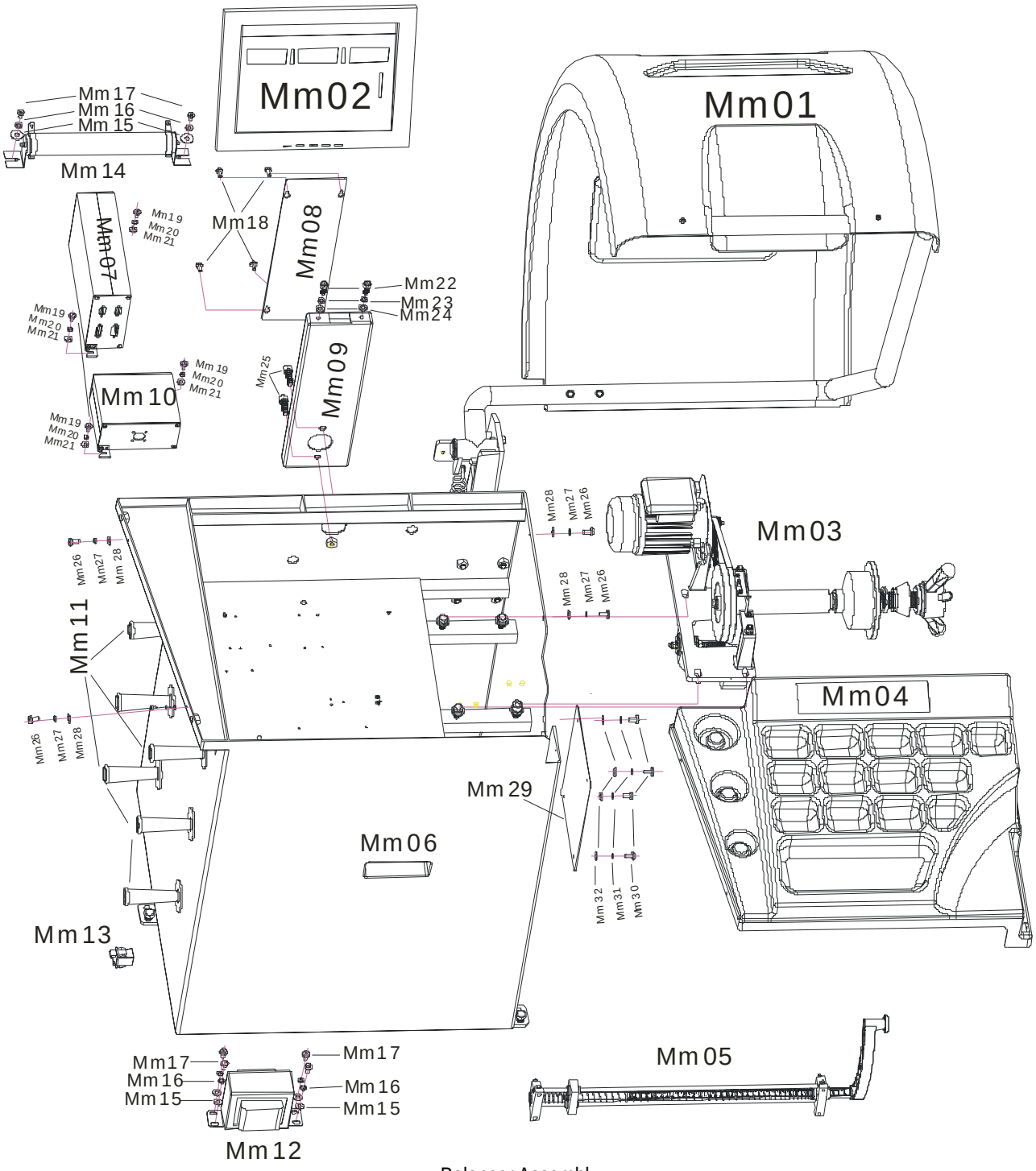
key to enter the adjustment for inside parameters; press  key to switch the inside parameters: AnP, 1.-1, PHA and Pro, etc.

1. Adjustment for gram number error
   When the displayed data is smaller than the actual data, please adjust AnP higher (about two times of the error value); adjust it smaller contrarily.
2. Keep 1.-1 between 0—5.
3. Phase error adjustment:
   Rotate the wheel until all five indicators at the inner side of the display panel are on. Observe whether the counterweight is at the bottom of the wheel rim or not. If it is, the phase value of PHA should not be changed; otherwise, the phase value of PHA should be increased or decreased.
4. Pro should be set to OFF.

Press  key to adjust the parameters.

Parts List

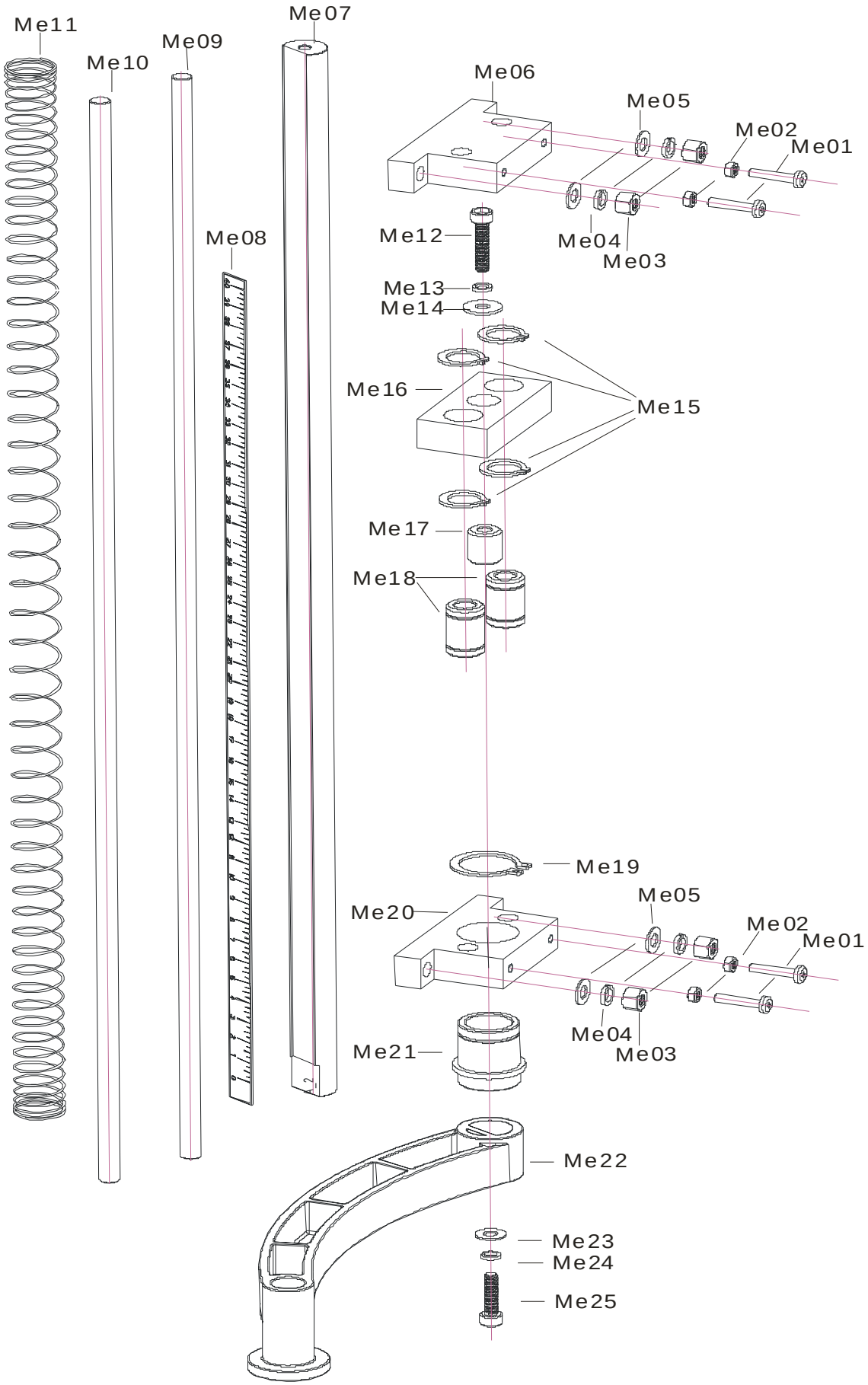
This list is only for the reference of the maintenance personnel. The manufacturer will not be held responsible for any use other than the designed purpose.
In case of any damage of components and parts, please contact your dealer or LAUNCH for replacement.



Balancer Assembly

Balancer assembly parts list

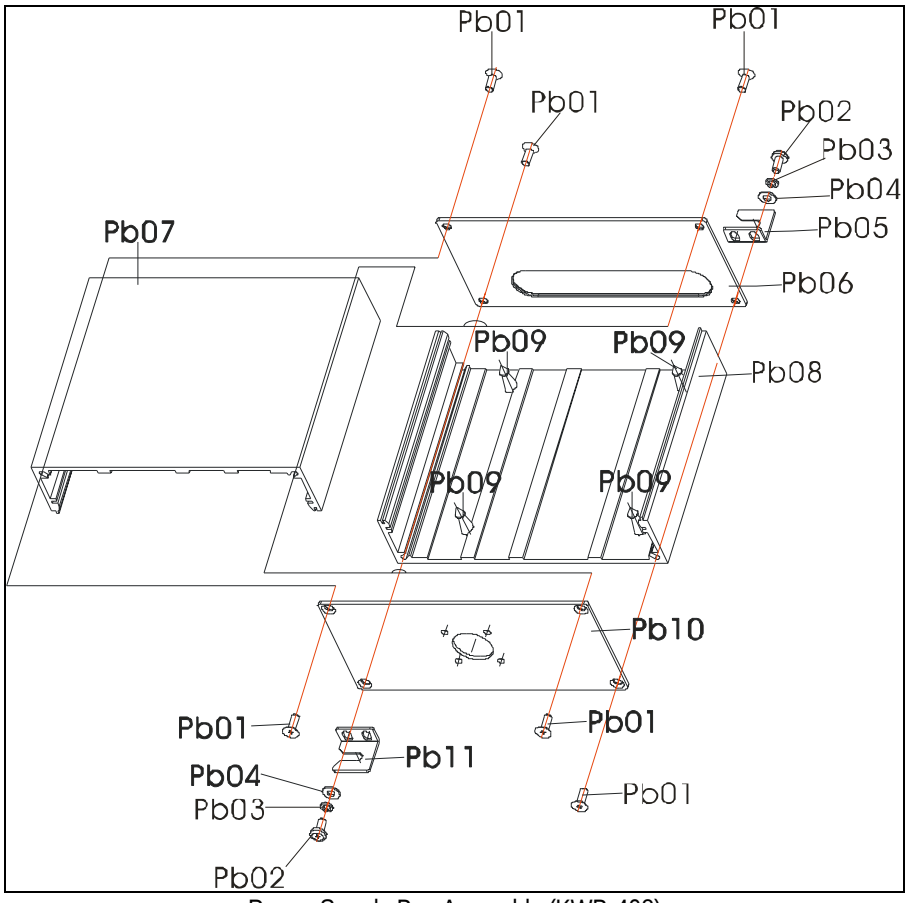
Serial No.	ERP No.	Description
Mm01	104010520	KWB-408 wheel balancer wheel protection guard
Mm02	206010276	KWB-408 wheel balancer display panel assembly
Mm03		KWB-408 wheel balancer main-shaft, motor and cast steel parts assemblies
Mm04	104010518	KWB-408 wheel balancer top cover
Mm05	206010336	KWB-408 wheel balancer measure scale assembly
Mm06	103201973	KWB-408 wheel balancer cabinet
Mm07	206010334	KWB-408 wheel balancer main board box assembly
Mm08	103201720	KWB-408 display panel post rear cover board
Mm09	103201706	KWB-408 display panel post
Mm10	206010280	KWB-408 wheel balancer power supply box assembly
Mm11	104010481	KWB-408 hanging handle
Mm12	102130018	Transformer 110V-60Hz ±9V or 220V-50Hz ±9V 30W
Mm13	102100110	Ship shape switch, 32*25*33mm，R210-C5L-BR，16A/250VAC
Mm14	102020313	High-power dissipation resistance (insert plug-in), 4.2Ω,400W,±5%,Diameter: 47mm; Distance between installation holes: 300mm, with surface screw thread.
Mm15	103040012	Plain washer, GB97.1-85-4.0 (Nickel plated)
Mm16	103040011	Spring washer,GB/T93-1987,4.0(White zinc plated)
Mm17	103010077	Cross recessed pan head screw,GB818-85,M4*8 (Nickel plated)
Mm18	103020161	Hexagon socket cap head bolt, GB/T70-2000,M10*35 (Black zinc plated)
Mm19	103010077	Cross recessed pan head screw,GB818-85,M4*8 (Nickel plated)
Mm20	103040011	Spring washer,GB/T93-1987,4.0(White zinc plated)
Mm21	103040096	Plain washer, GB/T97.1-1985,10(White zinc plated)
Mm22	103040100	Spring washer, GB/T93-1976,10 (White zinc plated)
Mm23	103020147	Hexagon socket cap head bolt, GB/T5783-1986,M10*20(White zinc plated)
Mm24	103020079	Hexagon head bolt GB/T5781-1986 M12*35 (White zinc plated)
Mm25	103020161	Hexagon socket cap head bolt, GB/T70-2000,M10*35 (Black zinc plated)
Mm26	103010056	Cross recessed pan head screw, GB818-85,M4*12 (Black zinc plated)
Mm27	103040011	Spring washer, GB/T93-1987,4.0(White zinc plated)
Mm28	103040012	Plain washer, GB97.1-85-4.0 (Nickel plated)
Mm29	103201726	KWB-408 cabinet cover board
Mm30	103040012	Plain washer, GB97.1-85-4.0 (Nickel plated)
Mm31	103040011	Spring washer, GB/T93-1987,4.0(White zinc plated)
Mm32	103010077	Cross recessed pan head screw,GB818-85,M4*8 (Nickel plated)



Measure Scale Assembly (KWB-408)

Measure scale assembly (KWB-408) parts list

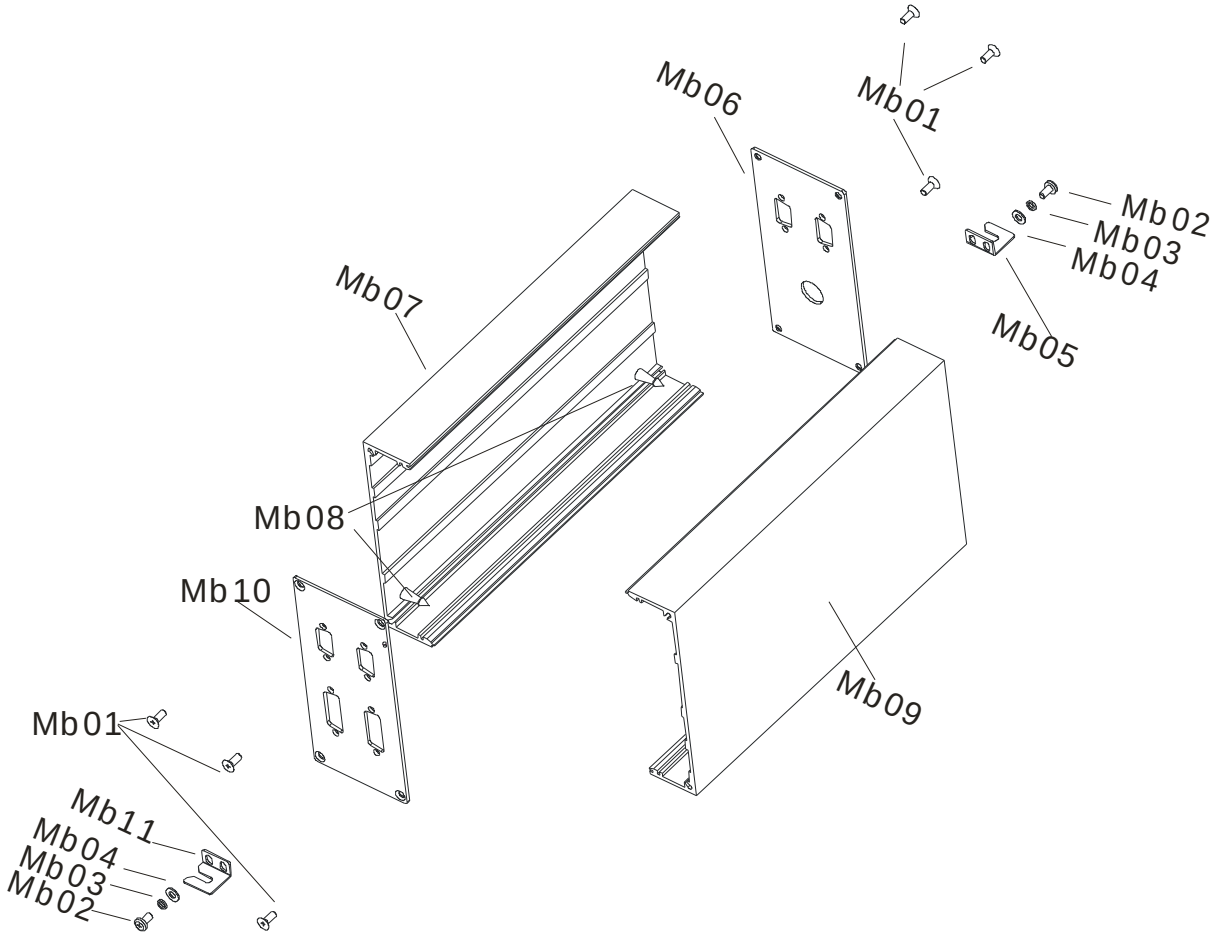
Serial No.	ERP No.	Description
Me01	103010380	Hexagon socket cap head bolt, GB/T70-1985, M4*24
Me02	103010570	Hexagon socket cap head nut, GB/T70-1985, M4
Me03	103030039	Hexagon nut, GB41-86-M6 (Black zinc plated)
Me04	103040027	Spring washer, GB/T93-1987, 6
Me05	103040063	Plain washer, GB/T97.1-1985,6 (White zinc plated)
Me06	103230197	KWB-408 measure scale rear support base
Me07	103230192	KWB-408 measure scale tie rod, L=526mm
Me08	104020069	KWB-408 scale, L=416mm
Me09	103201983	KWB-408 measure scale chrome-plate smooth shaft, L=540mm
Me10	103201983	KWB-408 measure scale chrome-plate smooth shaft, L=540mm
Me11	103110089	KWB-408 Tension spring, wire diameter: 0.8mm; outer diameter: 20mm*; total length: 730mm
Me12	103010210	Hexagon socket cap head bolt, GB/T70-1985, M5*25 (White zinc plated)
Me13	103040099	Plain washer, GB/T97.1-1985,5 (White zinc plated)
Me14	103040073	Big washer GB/T96-1985,5 (White zinc plated)
Me15	103050006	Shaft using spring ring GB/T894.1-1986 15
Me16	103230196	KWB-408 measure scale slide base
Me17	103201984	KWB-408 measure scale slide bushing
Me18	103230198	KWB-408 measure scale linear bearing, inner D=8mm*outer D=15mm*L=24mm
Me19	103050012	Shaft using spring ring GB/T894.1-1986 24
Me20	103230195	KWB-408 measure scale front support base
Me21	104070064	KWB-408 measure scale fixing bushing, nylon
Me22	104010517	KWB-408 measure scale handle, ABS
Me23	103040099	Plain washer, GB/T97.1-1985,5 (White zinc plated)
Me24	103040027	Spring washer, GB/T93-1987, 6
Me25	103020160	Hexagon socket cap head bolt, GB/T70-1985, M5*14 (White zinc plated)



Power Supply Box Assembly (KWB-408)

Power supply box assembly (KWB-408) parts list

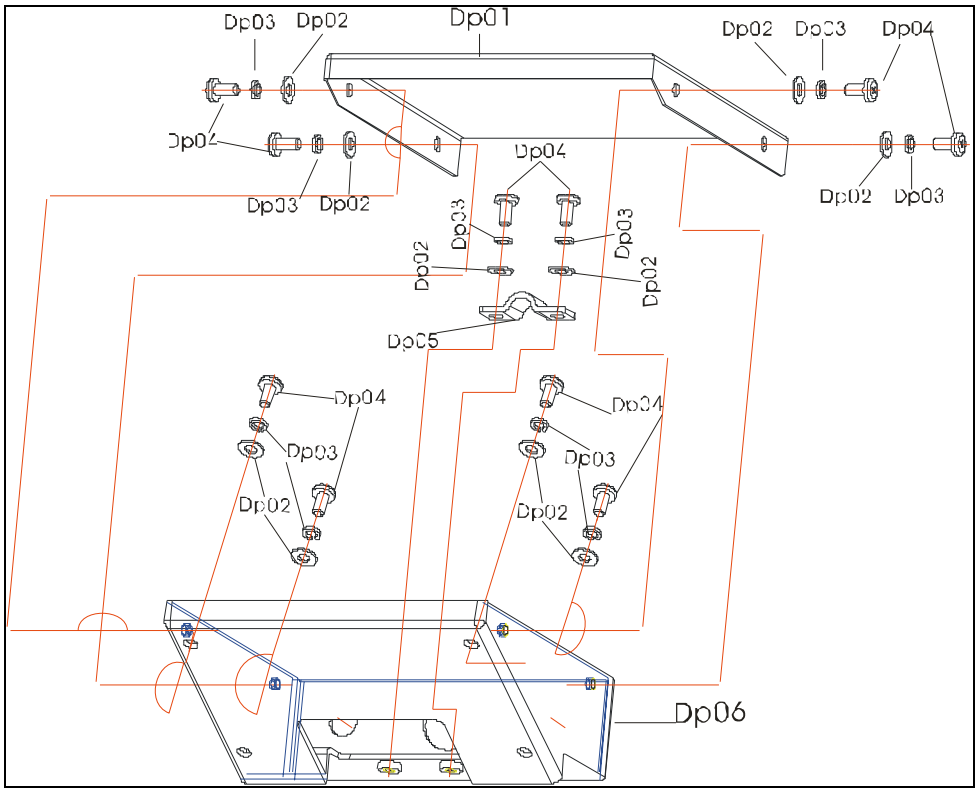
Serial No.	ERP No.	Description
Pb01	103010087	Cross recessed countersunk head screw GB819.85, M4*10(White zinc plated)
Pb02	103010553	Cross recessed pan head screw, GB818-85,M4*12 (White zinc plated)
Pb03	103040011	Spring washer, GB/T93-1987,4.0 (White zinc plated)
Pb04	103040012	Plain washer, GB97.1-85-4.0 (Nickel plated)
Pb05	103201712	Right fixing plate
Pb06 Pb07 Pb08 Pb10	103230152	KWB-408 wheel balancer power supply box
Pb09	102160358	Hexagon head plastic clip button, height: 18mm， up Φ3mm， down Φ8mm
Pb11	103201712	Left fixing plate



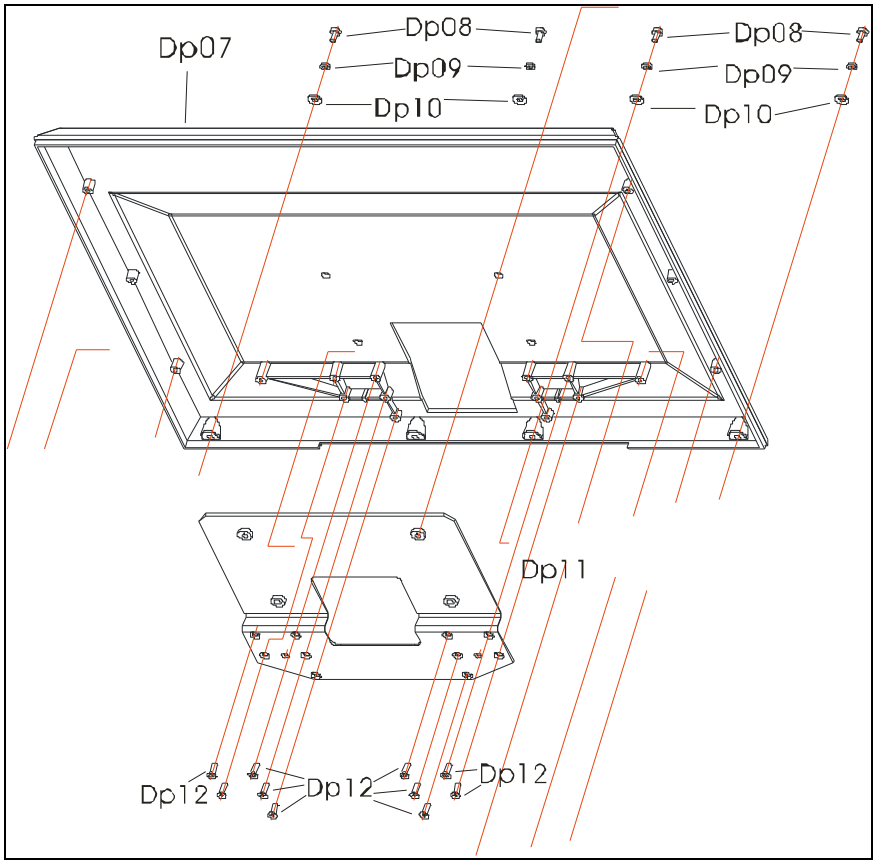
Main Board Box Assembly (KWB-408)

Main board box assembly (KWB-408)

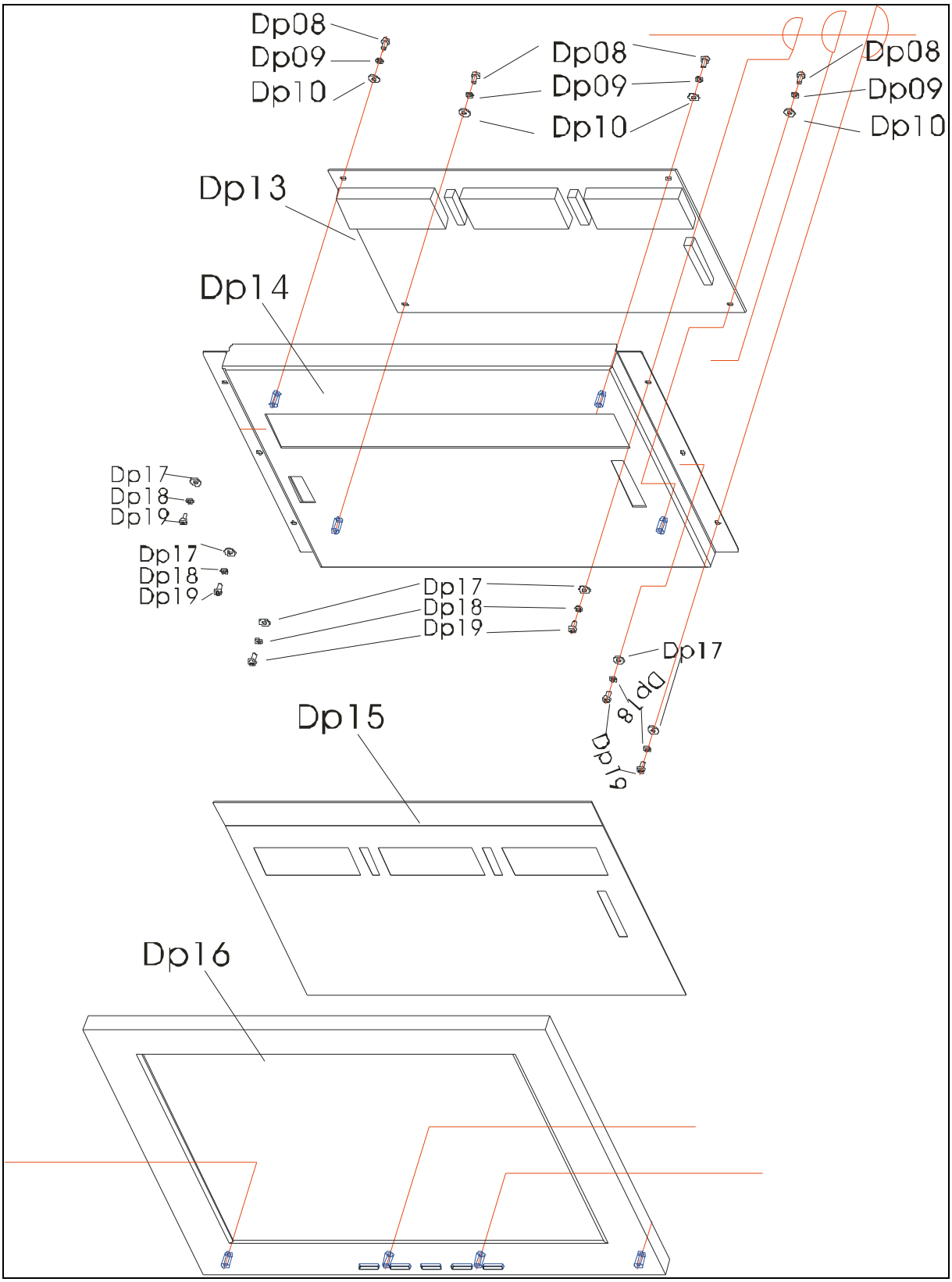
Serial No.	ERP No.	Description
Mb01	103010087	Cross recessed countersunk head screw GB819.85, M4*10(White zinc plated)
Mb02	103010553	Cross recessed pan head screw, GB818-85,M4*12 (White zinc plated)
Mb03	103040011	Spring washer, GB/T93-1987,4.0 (White zinc plated)
Mb04	103040012	Plain washer, GB97.1-85-4.0 (Nickel plated)
Mb05	103201712	Right fixing plate
Mb06 Mb07 Mb09 Mb10	103230194	KWB-408 wheel balancer main board box
Mb08	102160358	Hexagon head plastic clip button, height: 18mm，up Φ3mm，down Φ8mm
Mb11	103201712	Left fixing plate



Display Panel Assembly 1



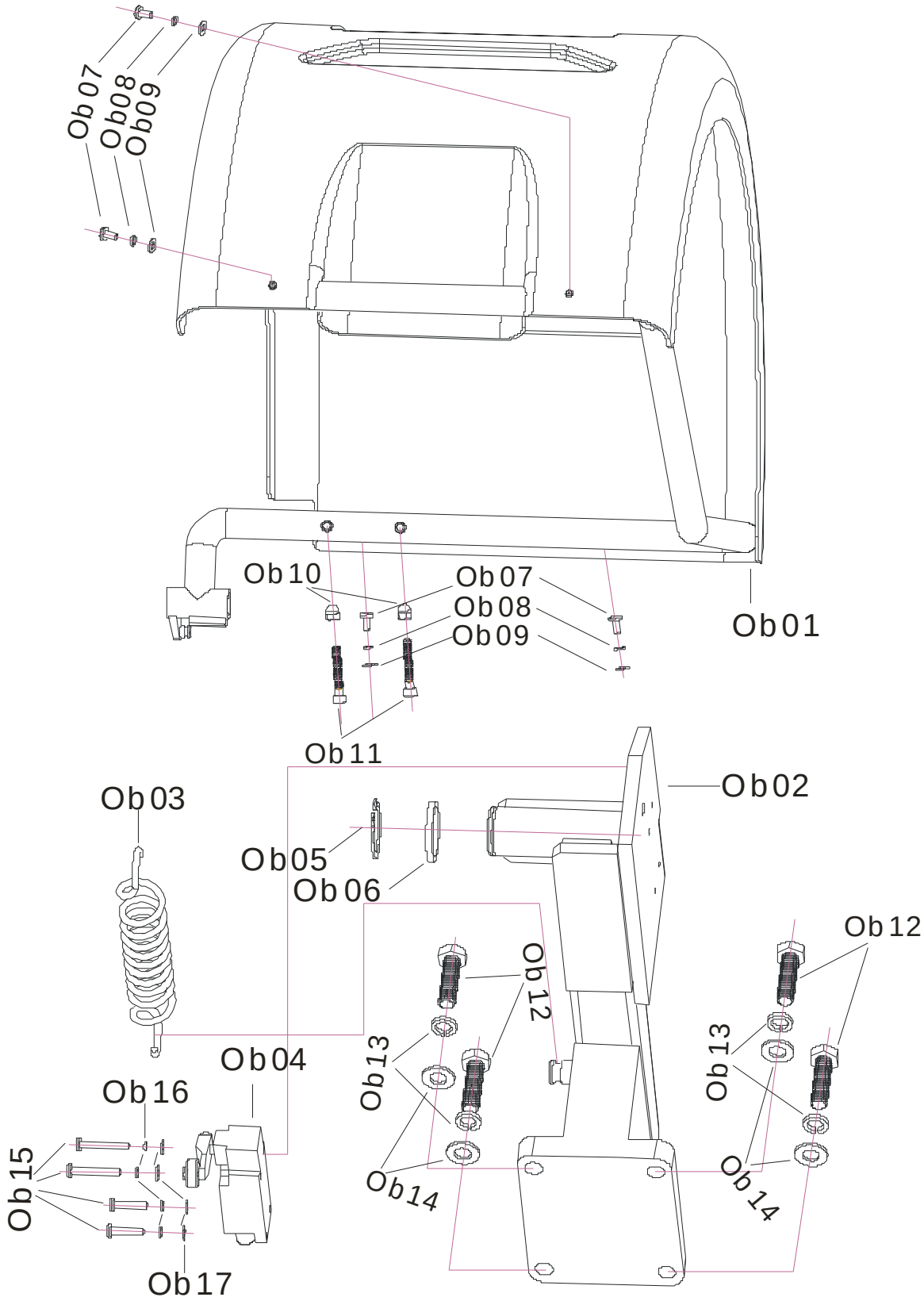
Display Panel Assembly 2



Display Panel Assembly 3

Display panel assembly parts list

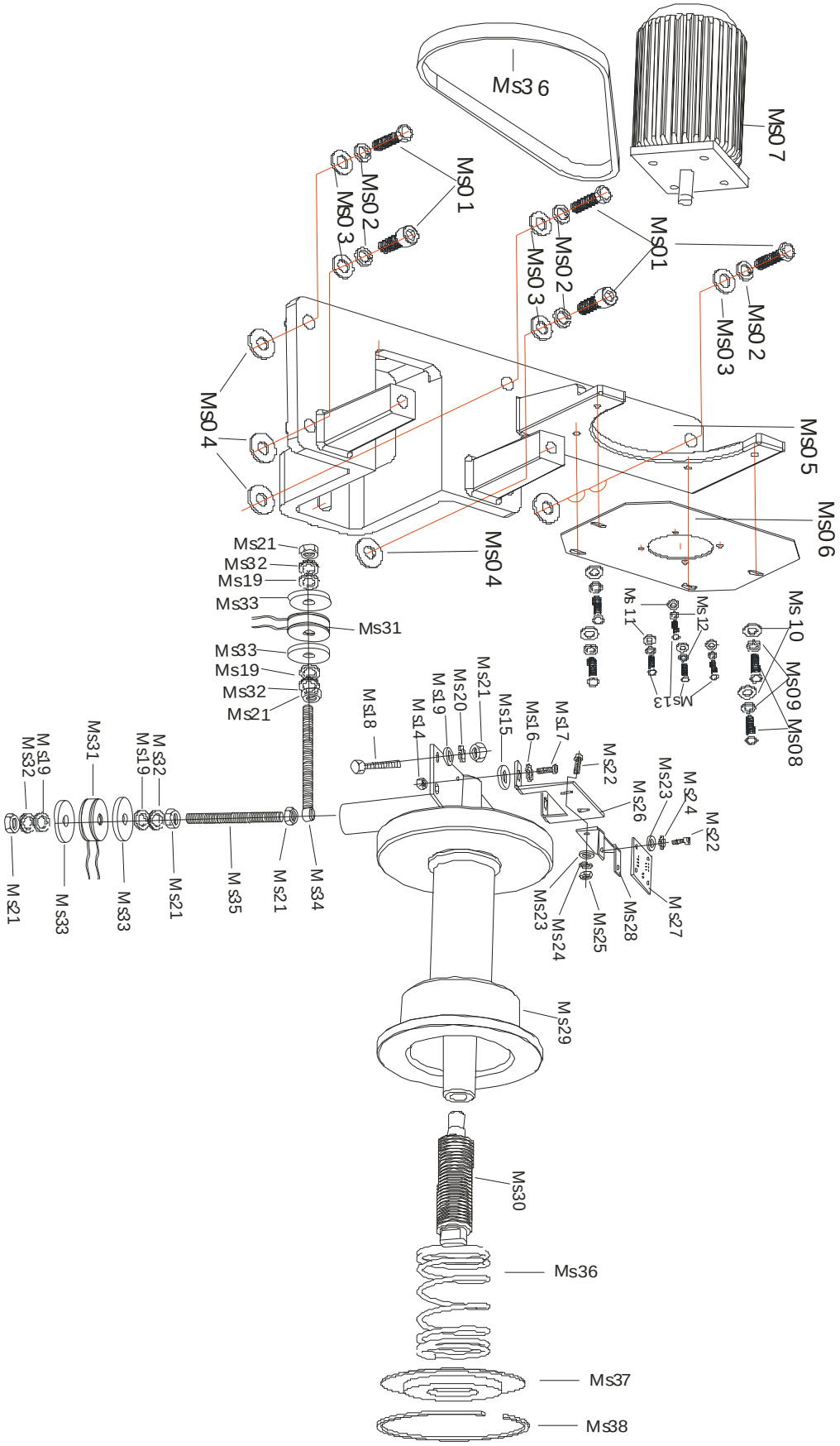
Serial No.	ERP No.	Description
Dp01	103201725	KWB-408 display panel mount rear cover
Dp02	103040012	Plain washer, GB97.1-85-4.0 (Nickel plated)
Dp03	103040011	Spring washer, GB/T93-1987,4.0 (White zinc plated)
Dp04	103010056	Cross recessed pan head screw, GB818-85,M4*12 (Black zinc plated)
Dp05	103201723	KWB-408 display panel wire clip
Dp06	103201724	KWB-408 display panel casing mount
Dp07	104010486	KWB-408 display panel bottom casing, ABS
Dp08	103010063	Cross recessed pan head screw,GB819-85,M3*6 (White zinc plated)
Dp09	103040009	Spring washer, GB/T93-1987, 3.0 (Nickel plated)
Dp10	103040016	Plain washer, GB97.1-1985-3.0, silver color (Nickel plated)
Dp11	103201722	KWB-408 display panel inner scale-board
Dp12	103010045	Cross recessed pan head tapping screw, GB845-85,ST3*12(Brunofix)
Dp13	205010328	KWB-412 wheel balancer display circuit board
Dp14	103201721	KWB-408 film support plate
Dp15	107040085	KWB-408 display panel film
Dp16	104010482	KWB-408 display panel surface shell, ABS
Dp17	103040012	Plain washer, GB97.1-85-4.0 (Nickel plated)
Dp18	103040011	Spring washer, GB/T93-1987,4.0 (White zinc plated)
Dp19	103010056	Cross recessed pan head tapping screw,M4*12



Turnover Case Assembly

Turnover case assembly parts list

Serial No.	ERP No.	Description
Ob01	104010520	KWB-408 wheel balancer wheel protection guard
Ob02	103201980	KWB-408 wheel protection guard turnover bracket
Ob03	103110090	KWB-408 wheel protection guard extension spring, wire D= 4mm* outer D=29mm*total L=134mm
Ob04	102100121	Stroke switch, ME-8104
Ob05	103050044	Spring ring, GB/T894.2-1986 30
Ob06	103050052	KWB-408 wheel protection guard big washer, Φ37
Ob07	103010056	Cross recessed pan head screw, GB818-85, M4*12 (Black zinc plated)
Ob08	103040011	Spring washer, GB/T93-1987, 4.0 (White zinc plated)
Ob09	103040012	Plain washer, GB/T97.1-1985,6 (Nickel plated)
Ob10	103030061	Hexagon nut (Zinc plated), GB/T6170-1986 M8
Ob11	103010260	Hexagon stud head screw, GB/T70-1985 M8*20
Ob12	103020056	Hexagon bolt, GB/T5783-1986 M10*30 (Brunofix)
Ob13	103040100	Spring washer, GB/T93-1976, 10 (plated)
Ob14	103040096	Plain washer, GB/T97.1-1985, 10 (White zinc plated)
Ob15	103010380	Hexagon stud head screw, GB/T70-1985 M4*20
Ob16	103010570	Hexagon stud head screw, GB/T70-1985 M4*30
Ob17	103040012	Plain washer, GB/T97.1-1985,6 (Nickel plated)



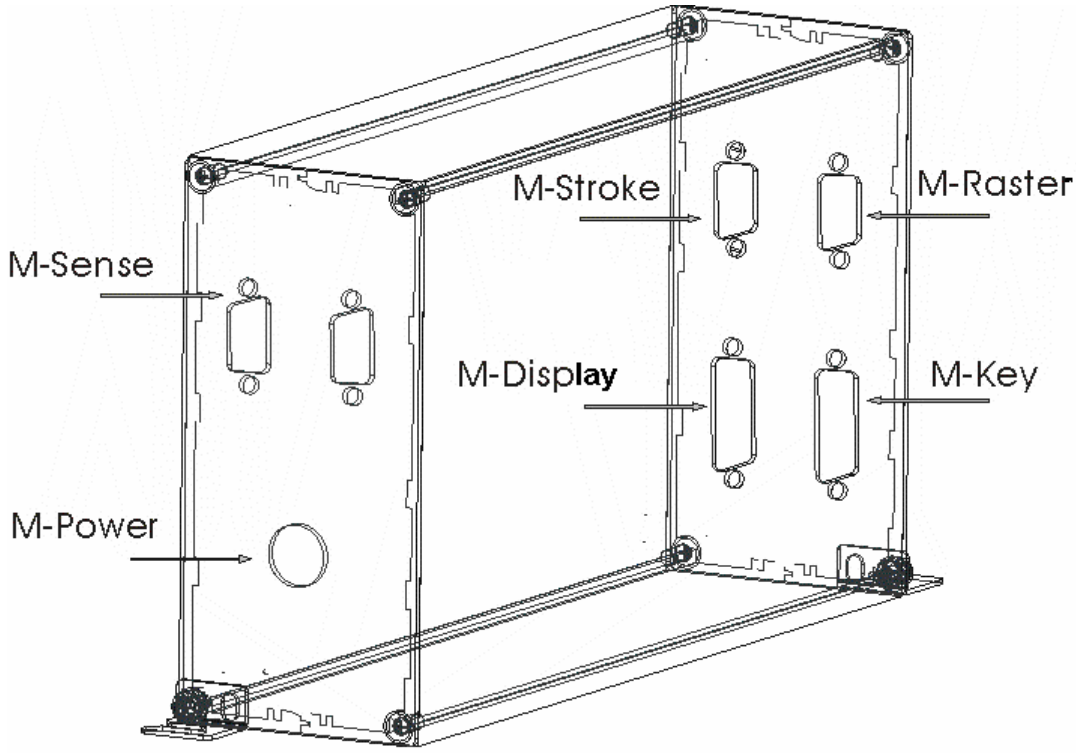
Cast Steel Parts, Motor and Shaft Assemblies

Cast steel parts, motor and shaft assemblies parts list

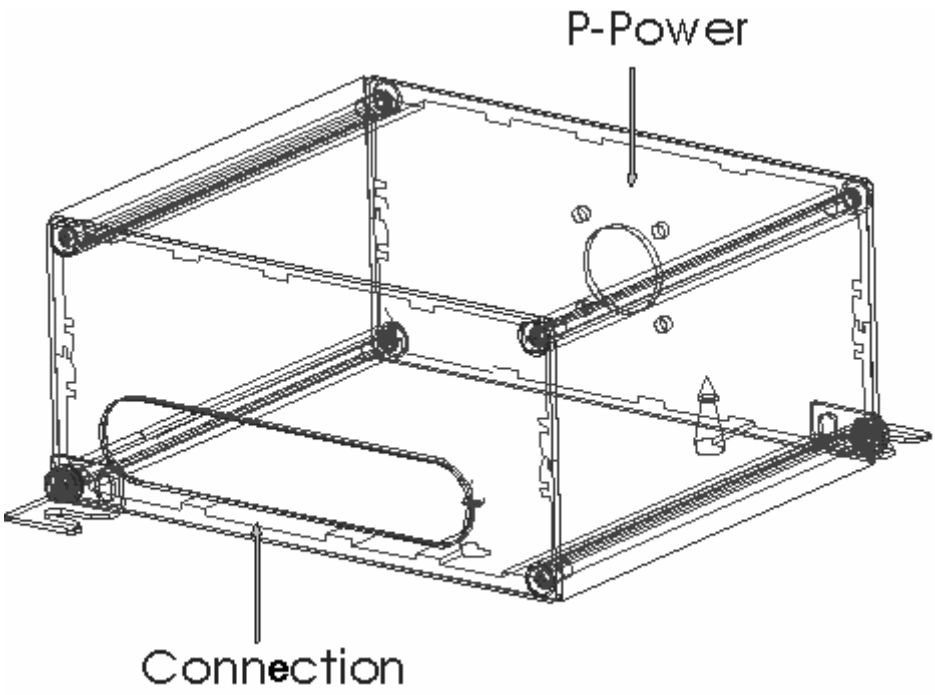
Serial No.	ERP No.	Description
Ms01	103020079	Hexagon head bolt GB/T5781-1986 M12*35 (White zinc plated)
Ms02	103040044	Spring washer (Zinc plated), GB/T93-1987 12
Ms03	103040112	Plain washer (Zinc plated), GB/T97.1-1985,12
Ms04	104130256	KWB-408 cast steel part cushion, ф30*3mm,
Ms05	103201699	KWB-408 wheel balancer cast steel parts
Ms06	103201700	KWB-408 motor fixing plate
Ms07	102990092	KWB-408 motor (110V,60HZ,1360r/min)0.37KW,MY7124/B14
Ms08	103010551	Hexagon socket cap screw M6*28
Ms09	103040027	Spring washer, GB/T93-1987 6
Ms10	103040063	Plain washer, GB/T97.1-1985,6 (White zinc plated)
Ms11	103010552	Hexagon socket cap screw M5*18
Ms12	103040003	Spring washer GB/T93-1987 5
Ms13	103040099	Plain washer, GB/T97.1-1985,5 (White zinc plated)
Ms14	103030009	Hexagon nut GB/T6170-1986 M4 (White zinc plated)
Ms15	103040012	Plain washer, GB97.1-85-4.0 (Nickel plated)
Ms16	103040011	Spring washer, GB/T93-1987,4.0 (White zinc plated)
Ms17	103010087	Cross recessed countersunk head screw,GB/T819-1985,M4*10 (White zinc plated)
Ms18	103020161	Hexagon socket cap bolt, GB/T70-2000,M10*35 (Black zinc plated)
Ms19	103040096	Plain washer, GB/T97.1-1985,10 (White zinc plated)
Ms20	103040100	Spring washer, GB/T93-1976,10 (White zinc plated)
Ms21	103030062	Hexagon nut, GB/T6170-1986,M10 (White zinc plated)
Ms22	103010035	Cross recessed pan head screw, GB818-85,M3*10 (Nickel plated)
Ms23	103040016	Plain washer, GB/T97.1-1985,3,silver color, (Nickel plated)
Ms24	103040009	Spring washer, GB/T93-1987,3.0, (Nickel plated)
Ms25	103030010	Nut, GB6170-86-M3 (White zinc plated)
Ms26		Fixing plate 2
Ms27	z205010327	KWB-412 wheel balancer raster board PCA
Ms28		Fixing plate 1
Ms29	206010335	KWB-408 wheel balancer main-shaft assembly
Ms30	103200304	KWB-408 thread bar (invented)
Ms31	102170042	KWB-408 piezoelectric pottery sensor set
Ms32	103040084	Outer gear lock washer,GB/T862.1-1987,10 (White zinc plated)
Ms33	101010058	KWB-408 sensor washer Q235
Ms34	103260061	KWB-408 sleeve screw
Ms35	103020052	KWB-408 sensor bolt
Ms36	X103110087	KWB-408 main compressed spring, 65Mn (invented)
Ms37	104070065	KWB-408 main shaft spring fixing washer, nylon
Ms38	103050053	KWB-408 Main shaft hole using spring ring, Φ125

KWB-408 Main Wiring Diagrams

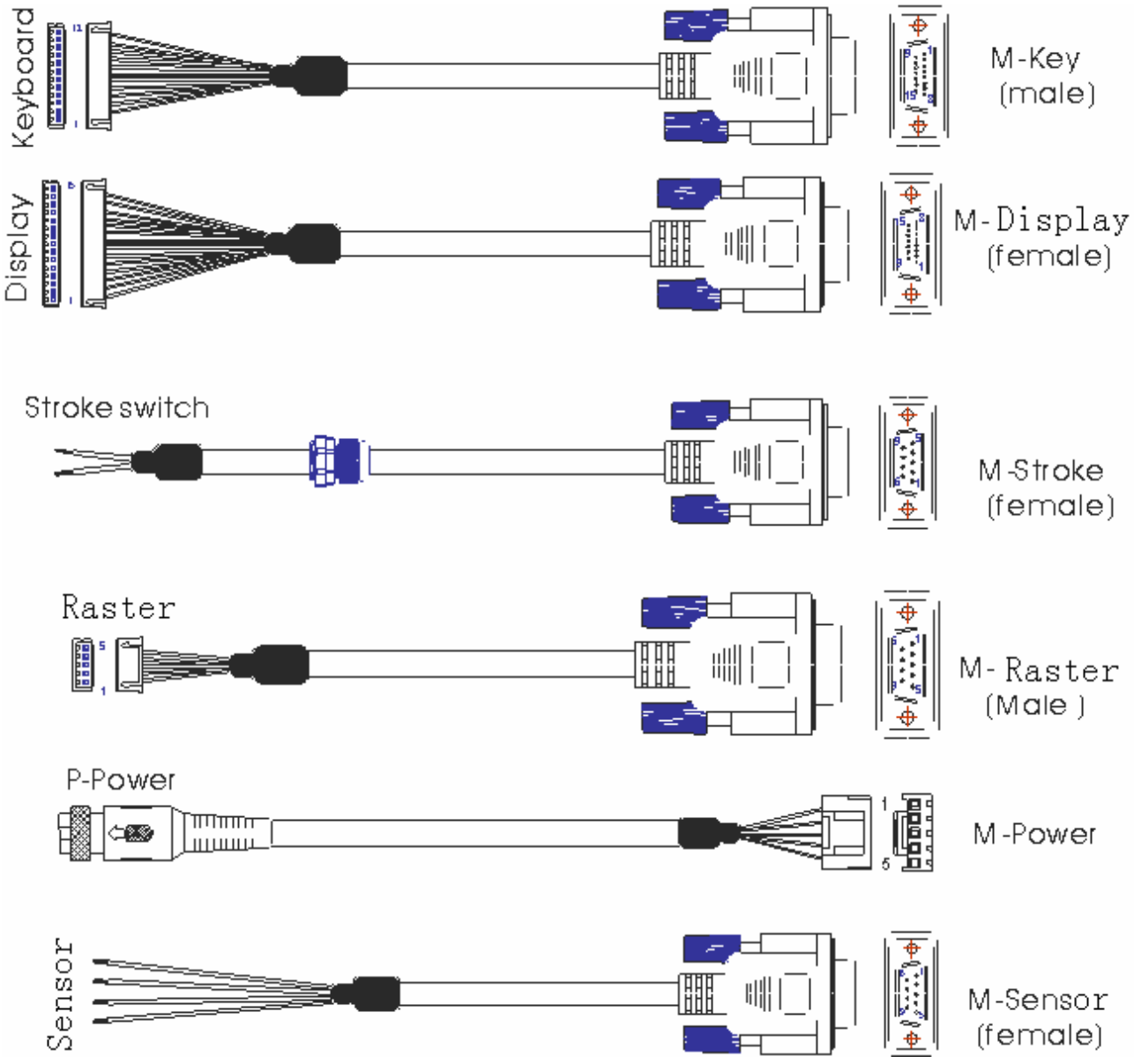
Main-board box interface diagram:



Power supply box interface diagram:



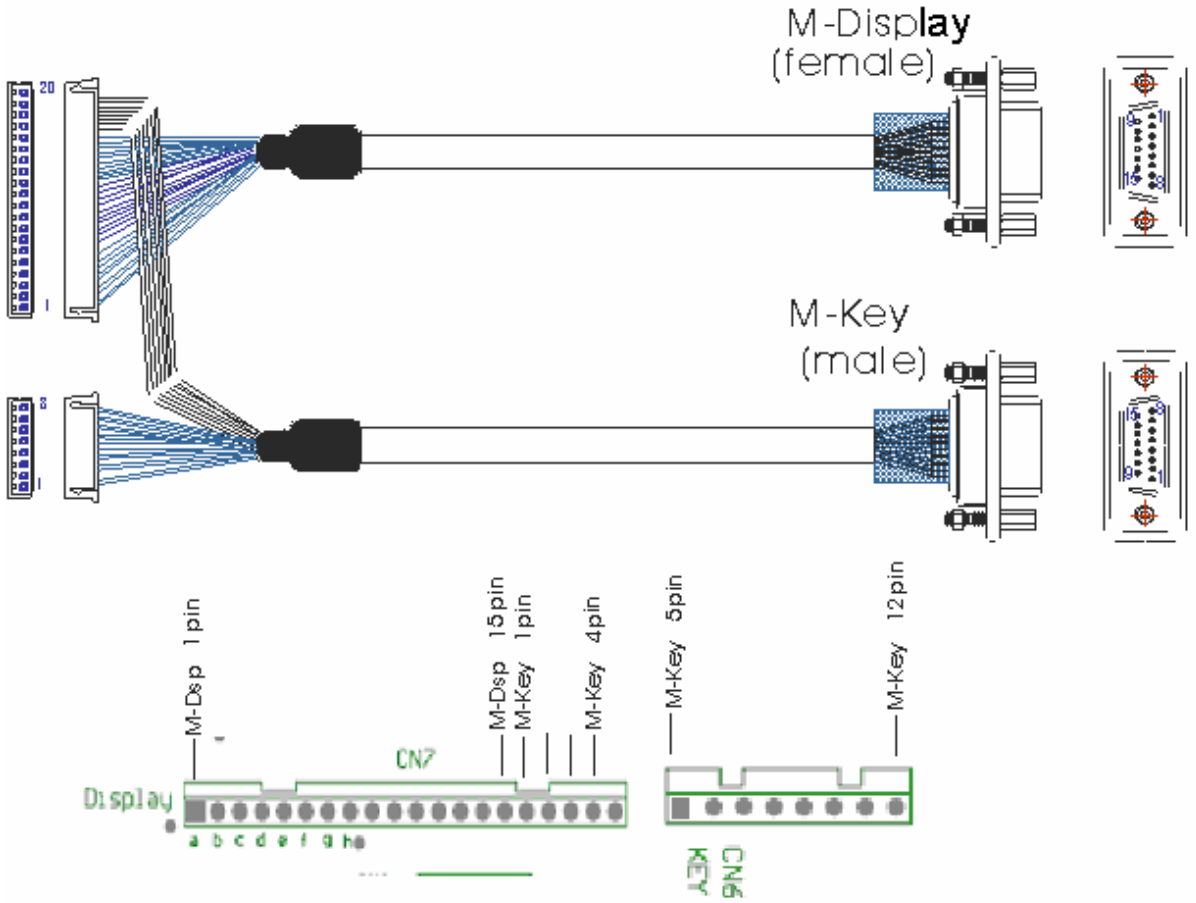
Cables connected to main-board box interface diagram:



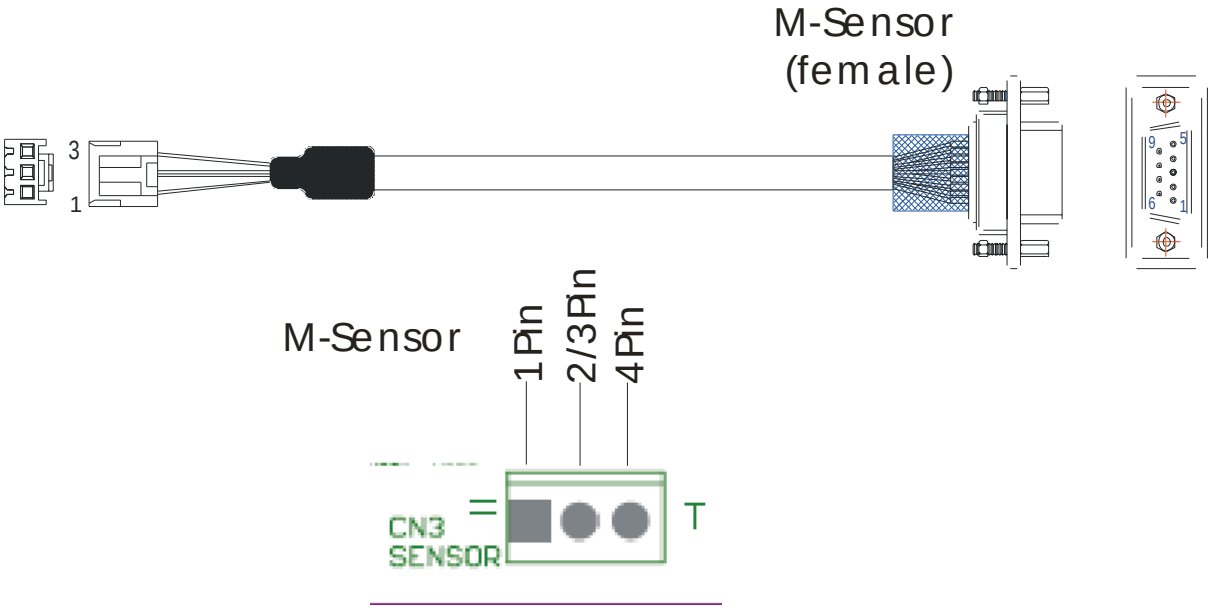
Wirings from DB9 of main-board to main-shaft sensor:

Color of Core cable	DB9 Male	Signal
Green	1Pin	Level Sensor (Positive)
Yellow	2Pin	Level Sensor (Negative)
Black	3Pin	Vertical Sensor (Negative)
Red	4Pin	Vertical Sensor (Positive)

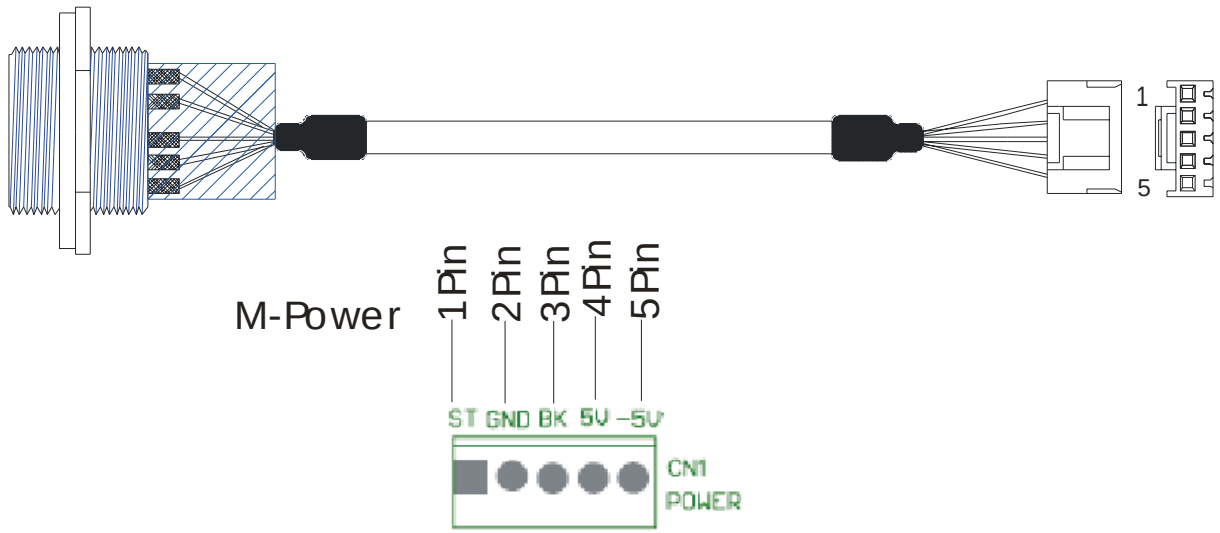
The diagram of interfaces at main-board box inside to the display and key-presses:



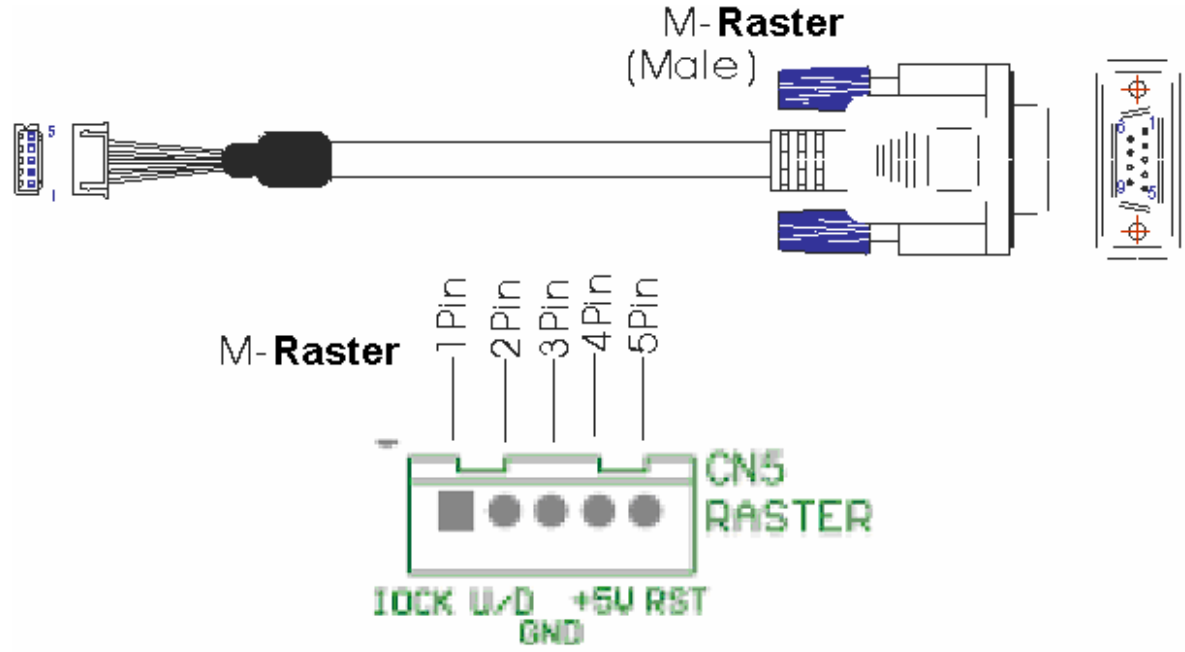
The diagram of the raster connector inside the main-board box:



The diagram of power supply connector inside the main-board box:



The diagram of raster connector inside the main-board box:



Power supply board to external components wiring diagram: