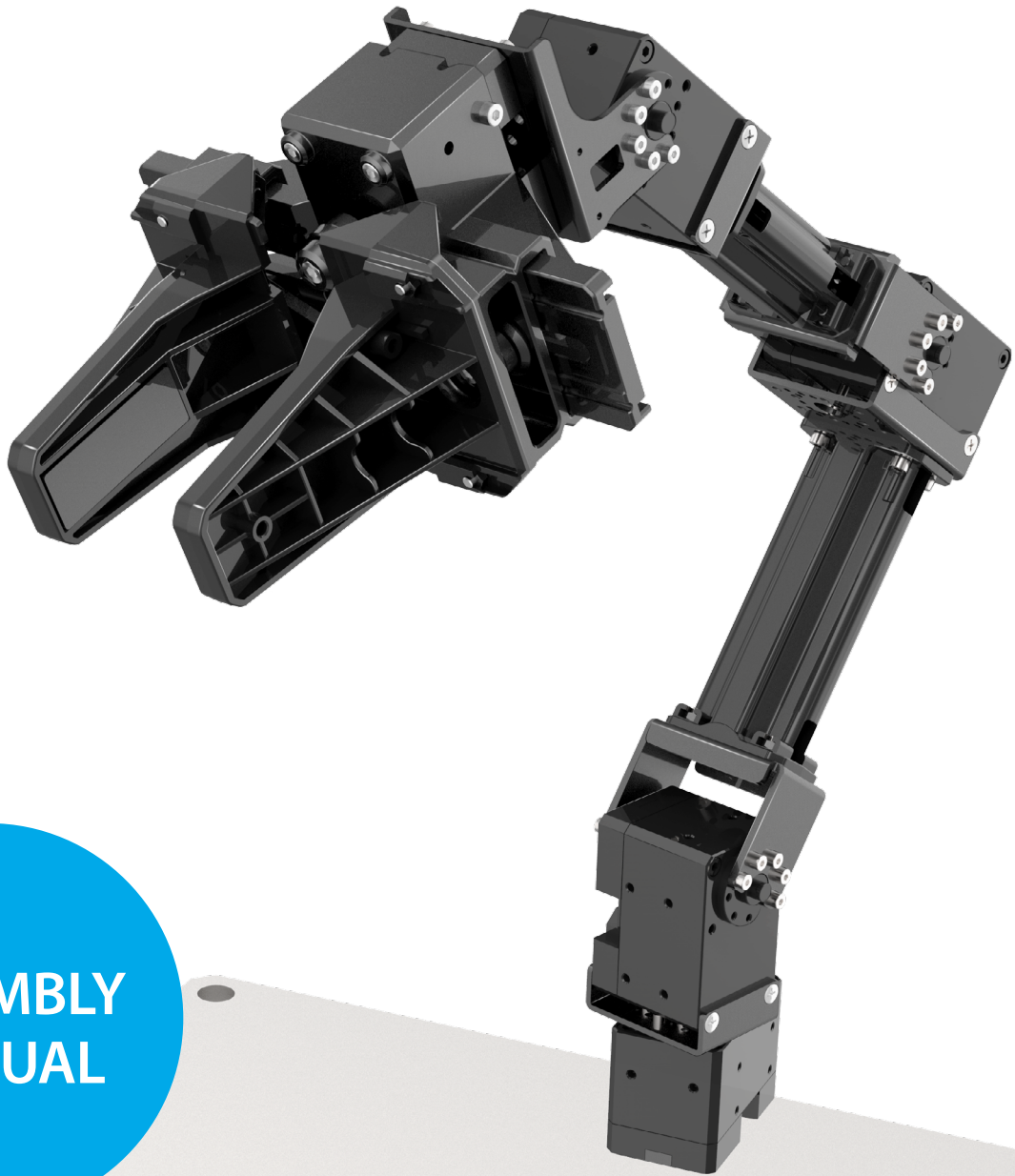


OpenManipulator



ASSEMBLY
MANUAL

ROBOTIS

DYNAMIXEL Preparations (XM430-W350-T)

⚠ CAUTION

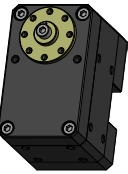
1. Please read the assembly manual carefully.

2. Please check DYNAMIXEL IDs and lengths of cables, and assemble DYNAMIXELs.

3. Please confirm the directions of DYNAMIXELs and the gripper are correct.

[DYNAMIXEL ID 11, ID 15] Remove described bolts.

[DYNAMIXEL ID 12, ID 13, ID 14] Pass the cable through hollow back case, DC12-IDLER, DC12-IDLER-CAP and DC12-P-BEARING and connect it into DYNAMIXEL.



XM430-W250T x5



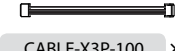
DC12-IDLER x3



DC12-P-BEARING x3



DC12-IDLER-CAP x3



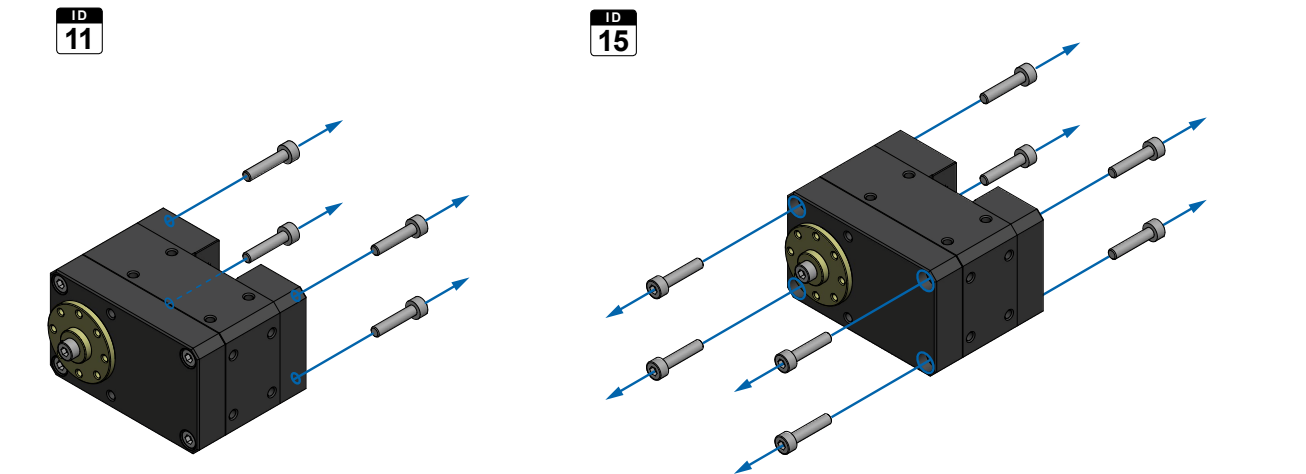
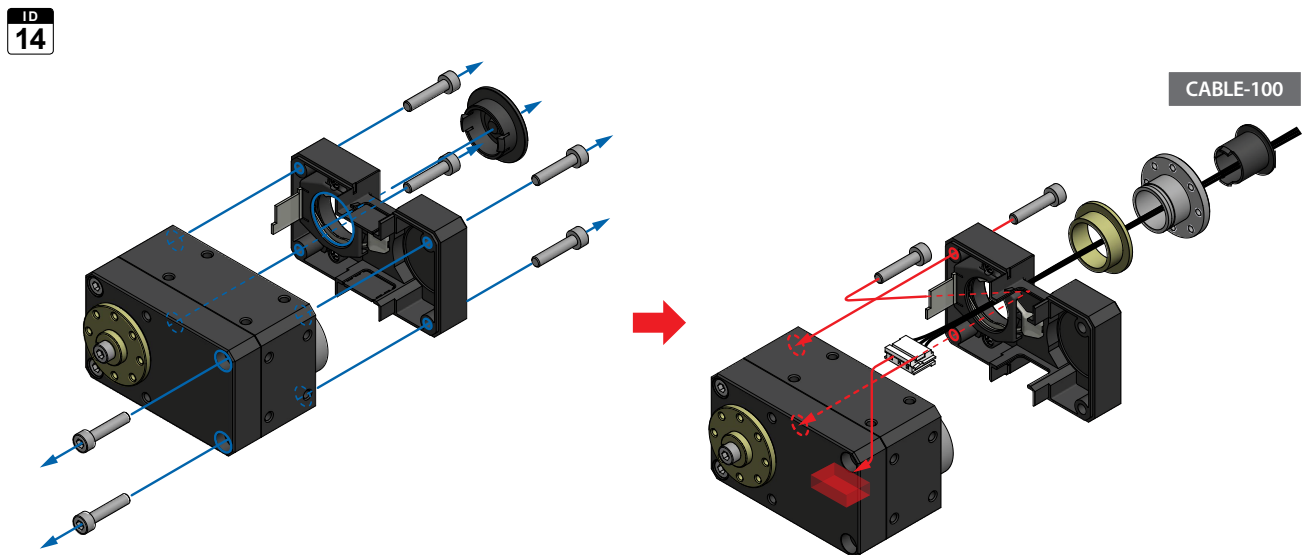
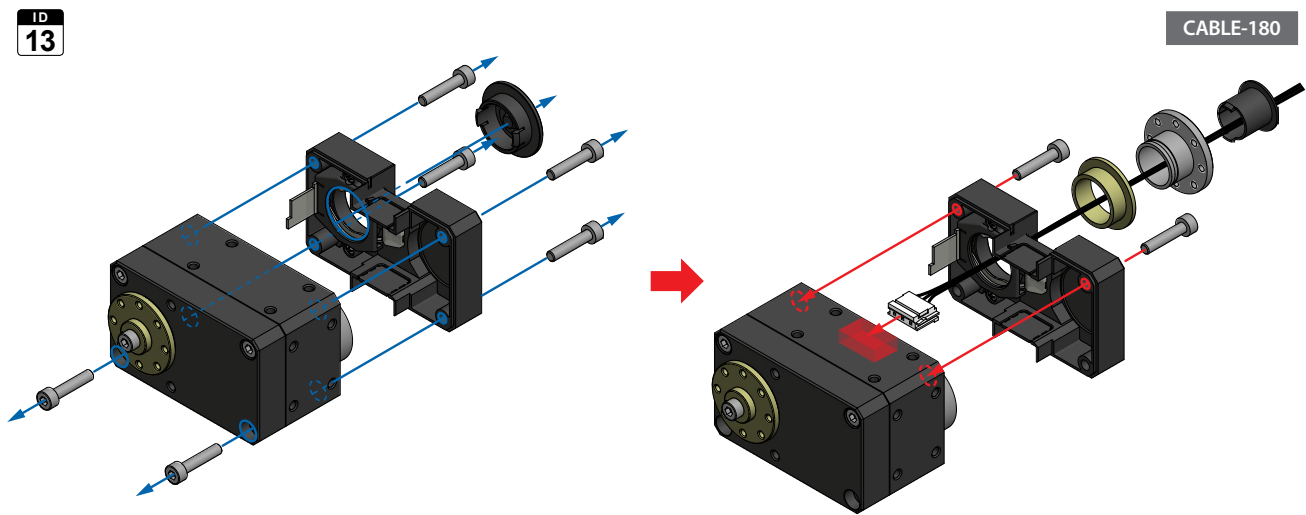
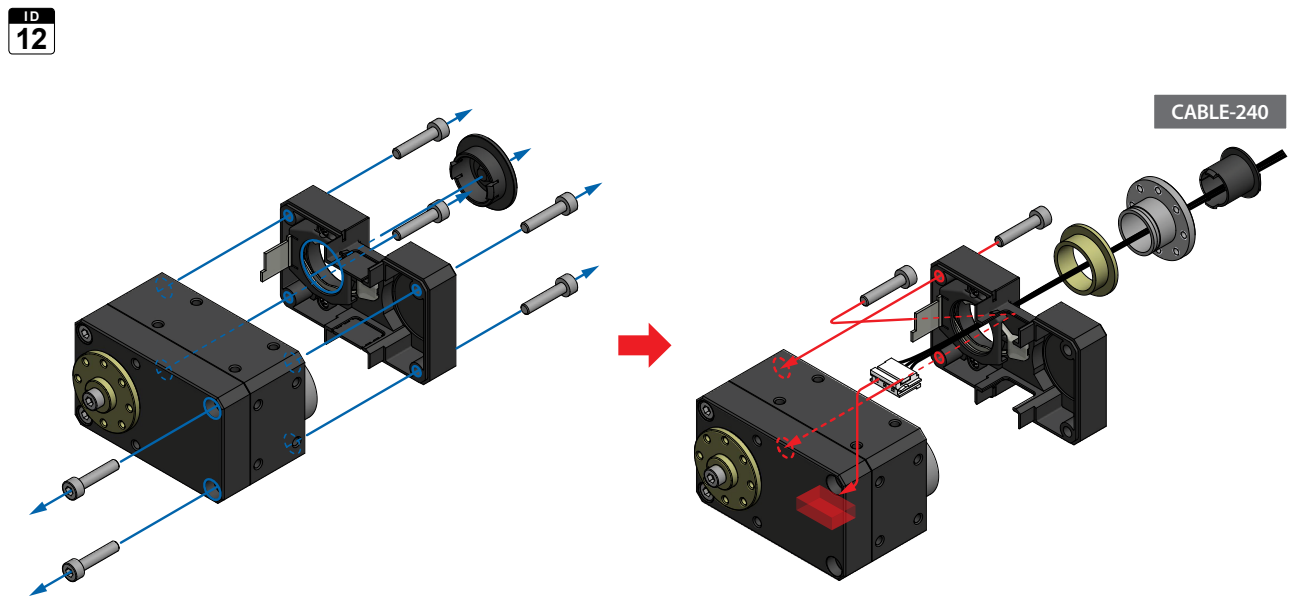
CABLE-X3P-100 x1

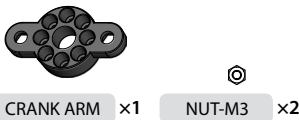


CABLE-X3P-180 x1



CABLE-X3P-240 x1

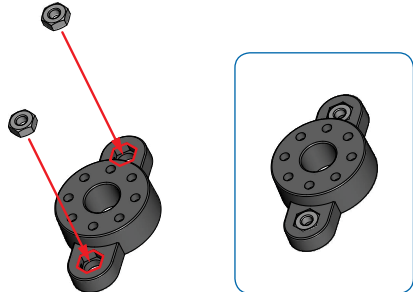


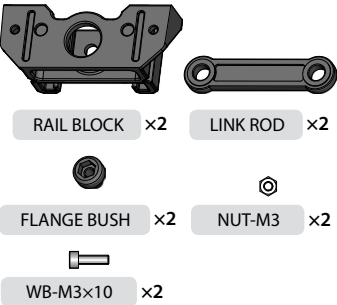


CRANK ARM x1 NUT-M3 x2

1

Insert **NUT-M3** from underneath the **CRANK ARM**





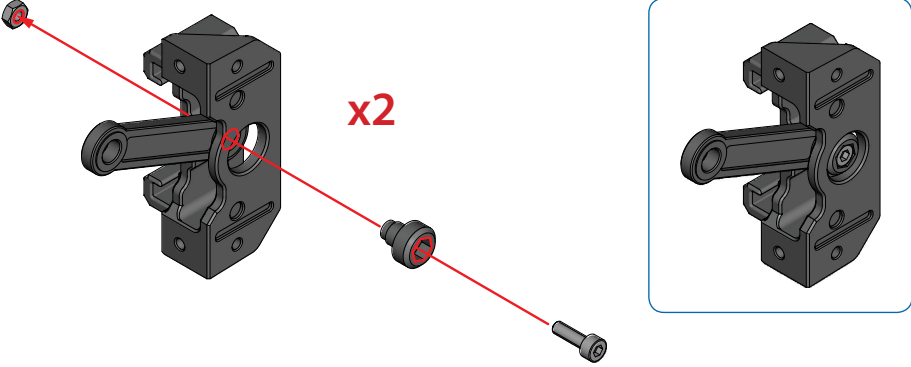
RAIL BLOCK x2 LINK ROD x2

FLANGE BUSH x2 NUT-M3 x2

WB-M3x10 x2

2

Assemble **LINK ROD** in the middle of the **RAIL BLOCK** using **FLANGE BUSH** and **WB-M3x10**



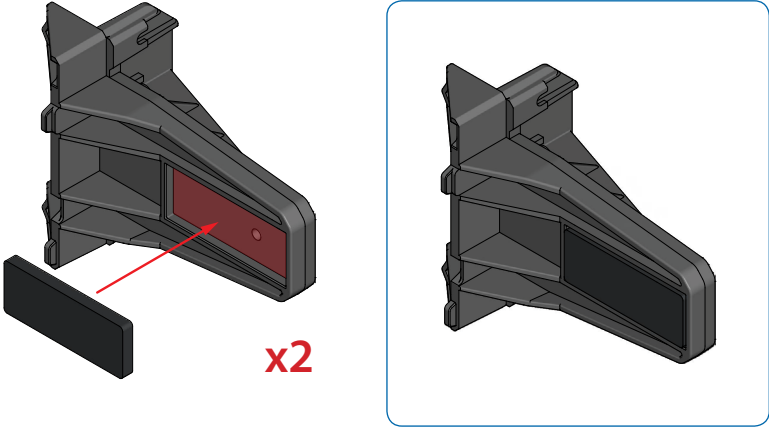


PALM GRIPPER x2

RUBBER PAD x2

3

Attach **RUBBER PAD** to the inner side of the **PALM GRIPPER**

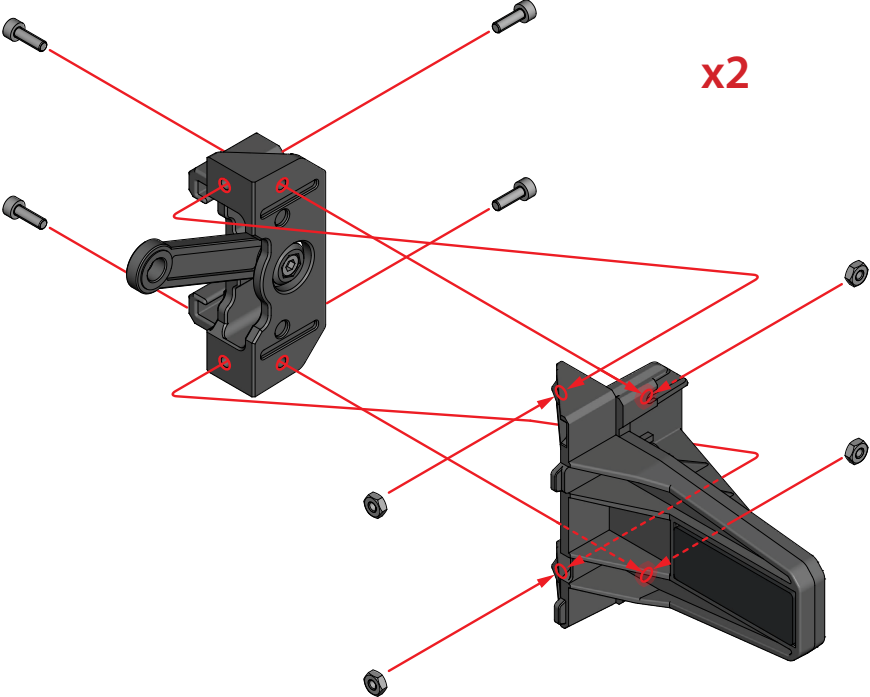


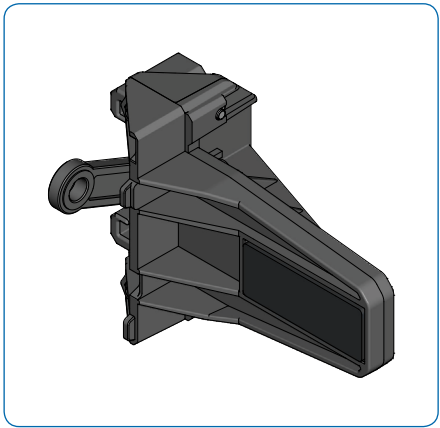


WB-M2.5x8 x8 NUT-M2.5 x8

4

Assemble **LINK ROD** + **RAIL BLOCK** and **PALM GRIPPER** using **WB-M2.5x8** and **NUT-M2.5**





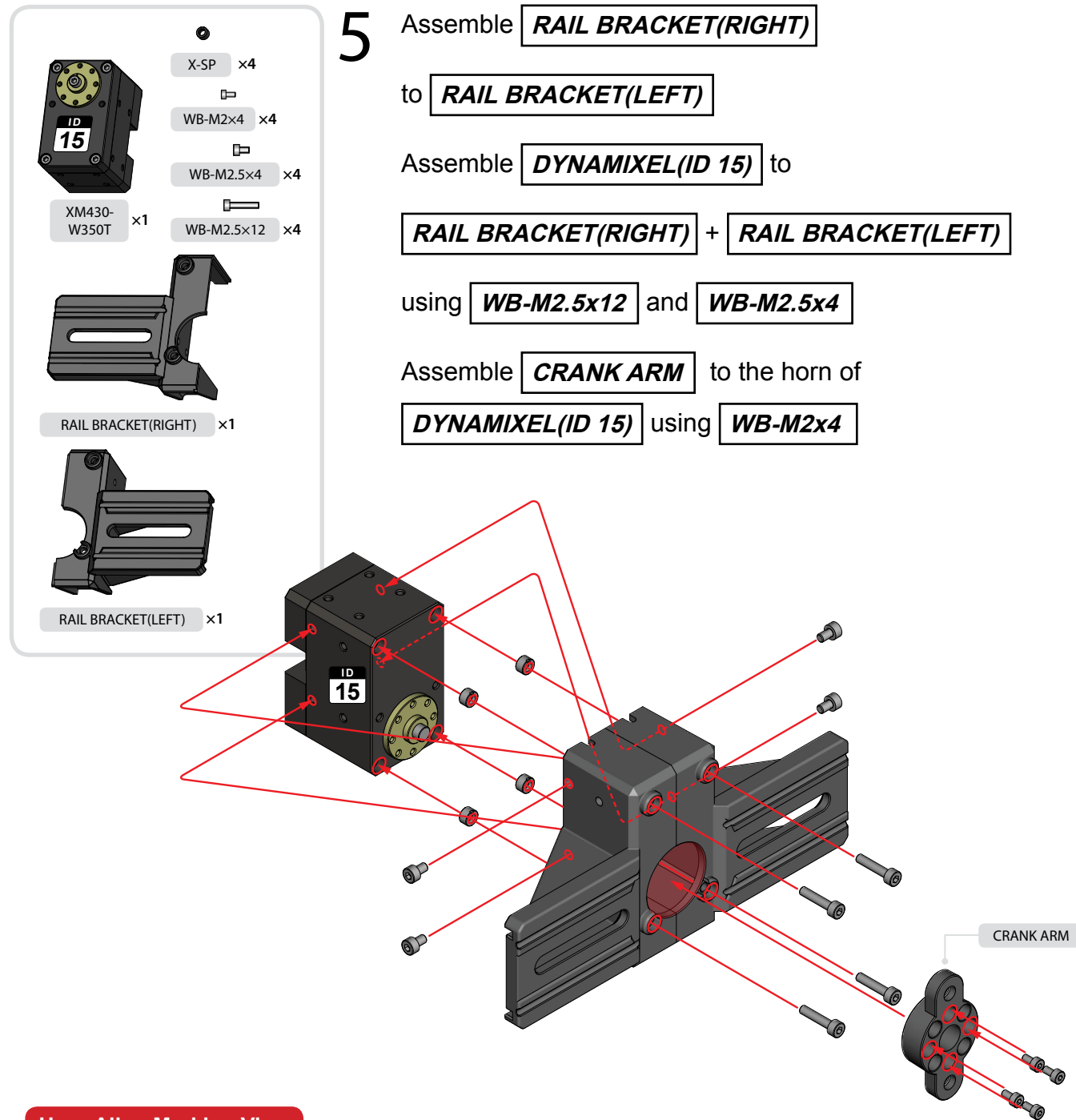
5 Assemble **RAIL BRACKET(RIGHT)**
to **RAIL BRACKET(LEFT)**

Assemble **DYNAMIXEL(ID 15)** to

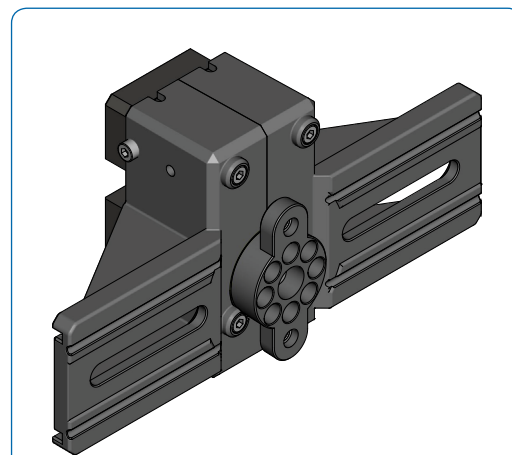
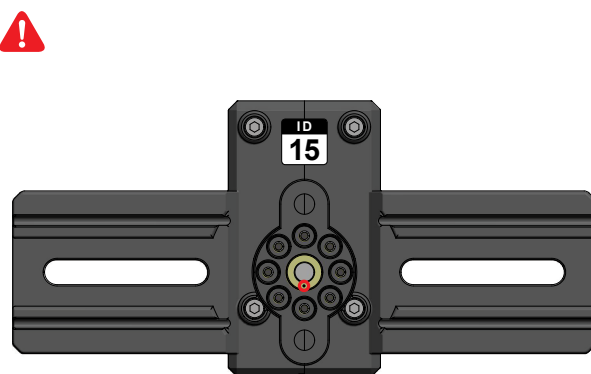
$$\boxed{RAIL\ BRACKET(RIGHT)} + \boxed{RAIL\ BRACKET(LEFT)}$$

using **WB-M2.5x12** and **WB-M2.5x4**

Assemble **CRANK ARM** to the horn of
DYNAMIXEL(ID 15) using **WB-M2x4**

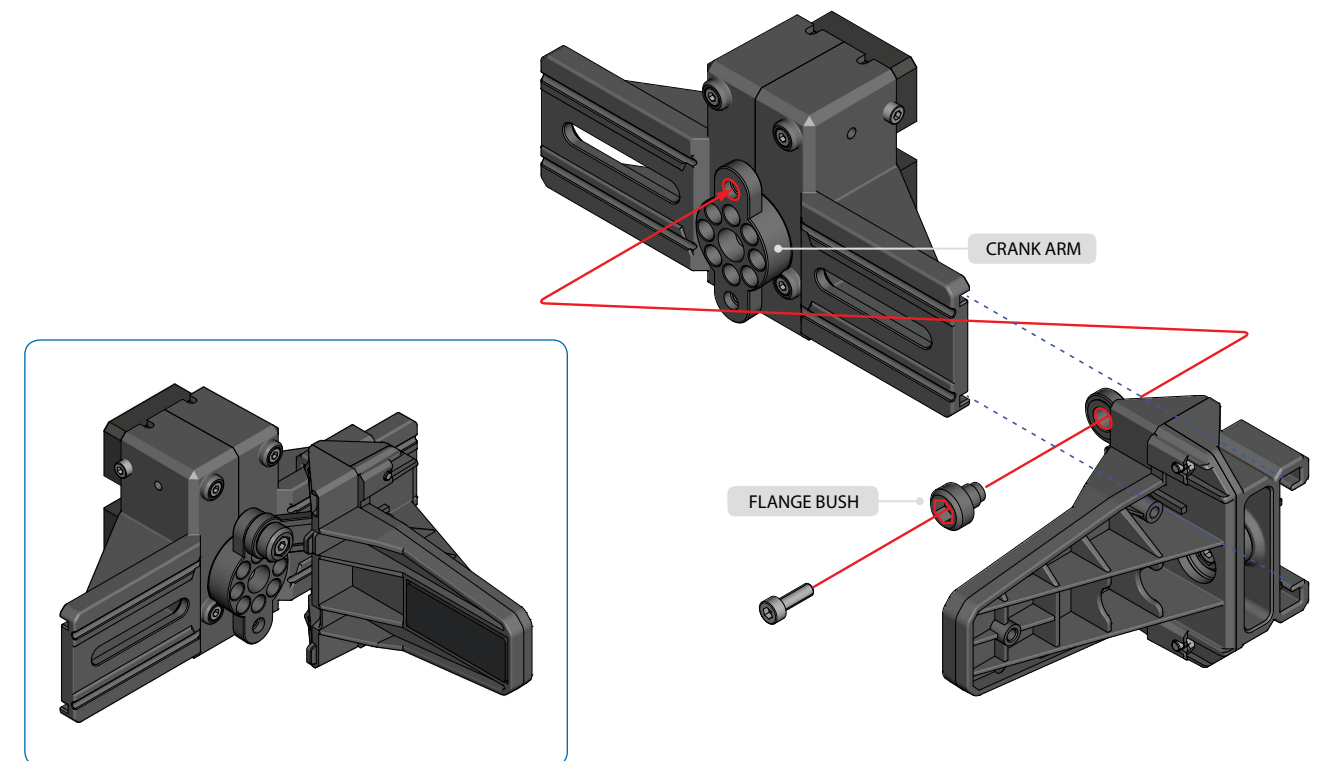
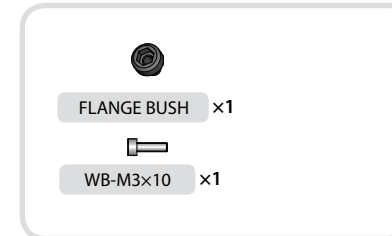


Horn Align Marking View



6

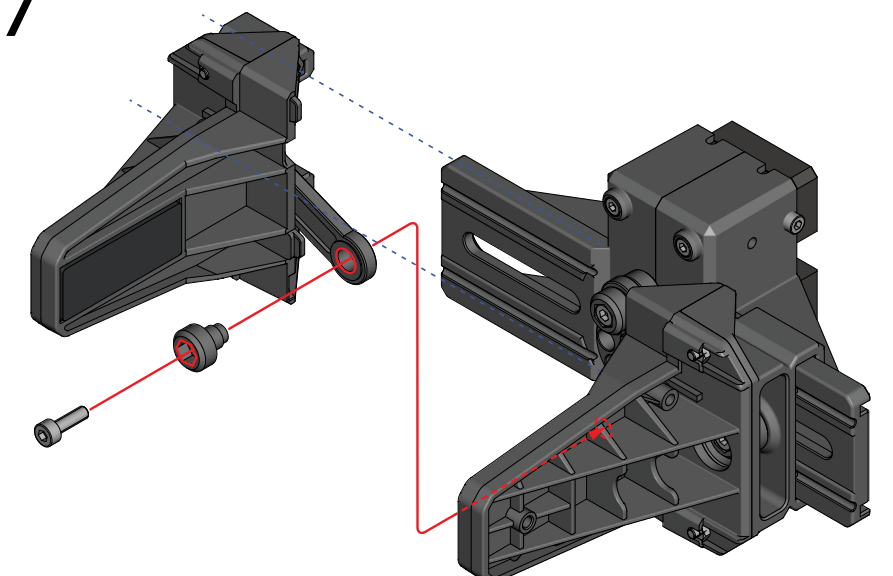
6 Slide **LINK ROD** + **RAIL BLOCK** + **PALM GRIPPER** into **RAIL BRACKET** Assemble **FLANGE BUSH** to **CRANK ARM** and **LINK ROD** using **WB-M3x10**



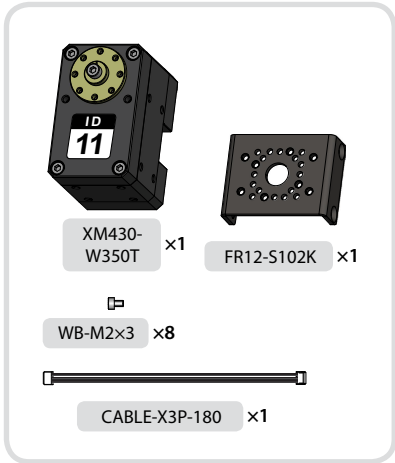
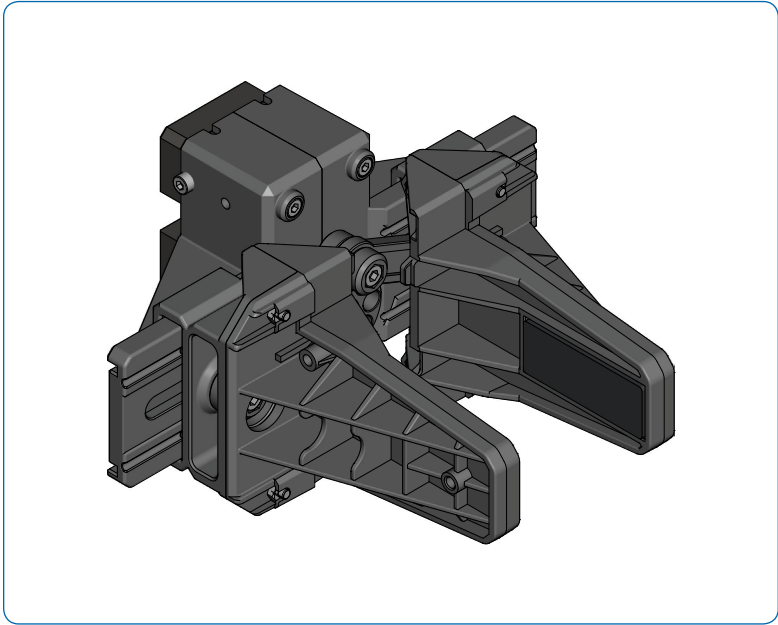
FLANGE BUSH x1

WB-M3x10 x1

7

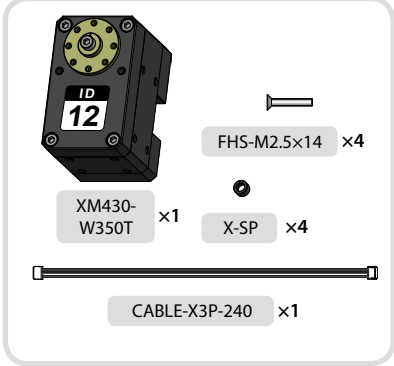
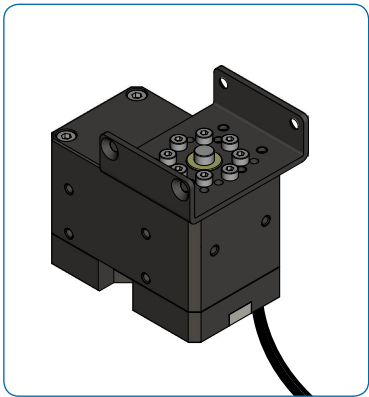
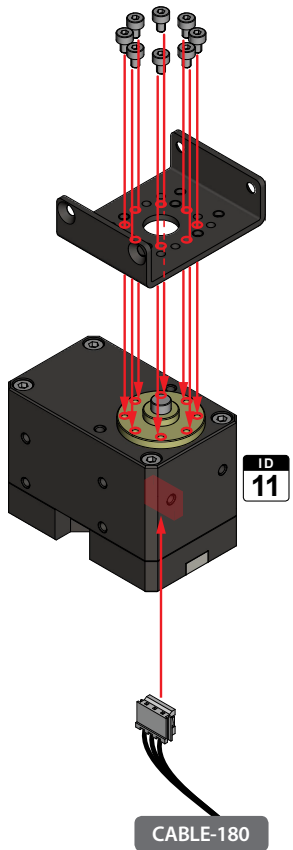


7



8 Assemble **FR12-S102K** and **DYNAMIXEL(ID 11)** using **WB-M2x3**

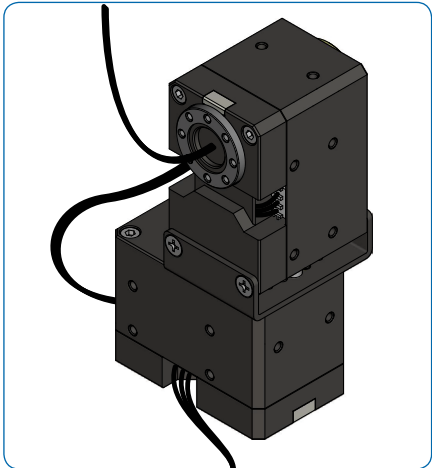
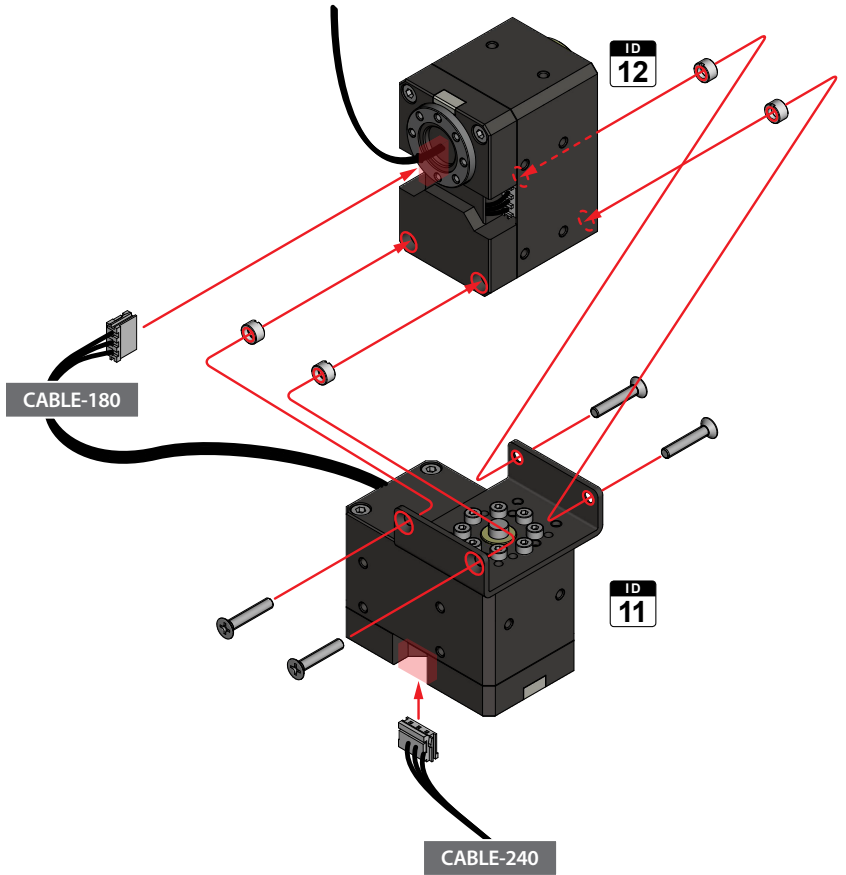
Connect **CABLE-X3P-180** to **DYNAMIXEL(ID 11)**



9 Insert **X-SP** into the bolt holes of **DYNAMIXEL(ID 12)** and assemble to **FR12-S102K** using **FHS-M2.5x14**

Connect **DYNAMIXEL(ID 12)** and **DYNAMIXEL(ID 11)** using **CABLE-X3P-180**

Connect **CABLE-X3P-240** to **DYNAMIXEL(ID 11)**

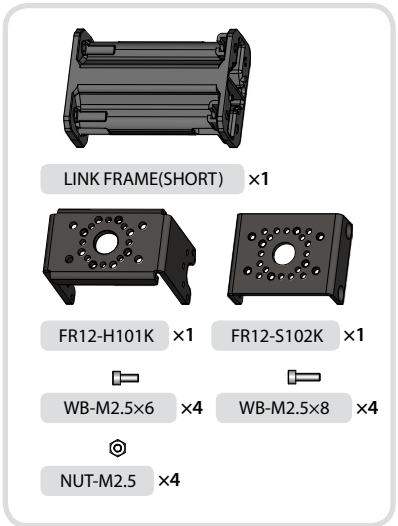
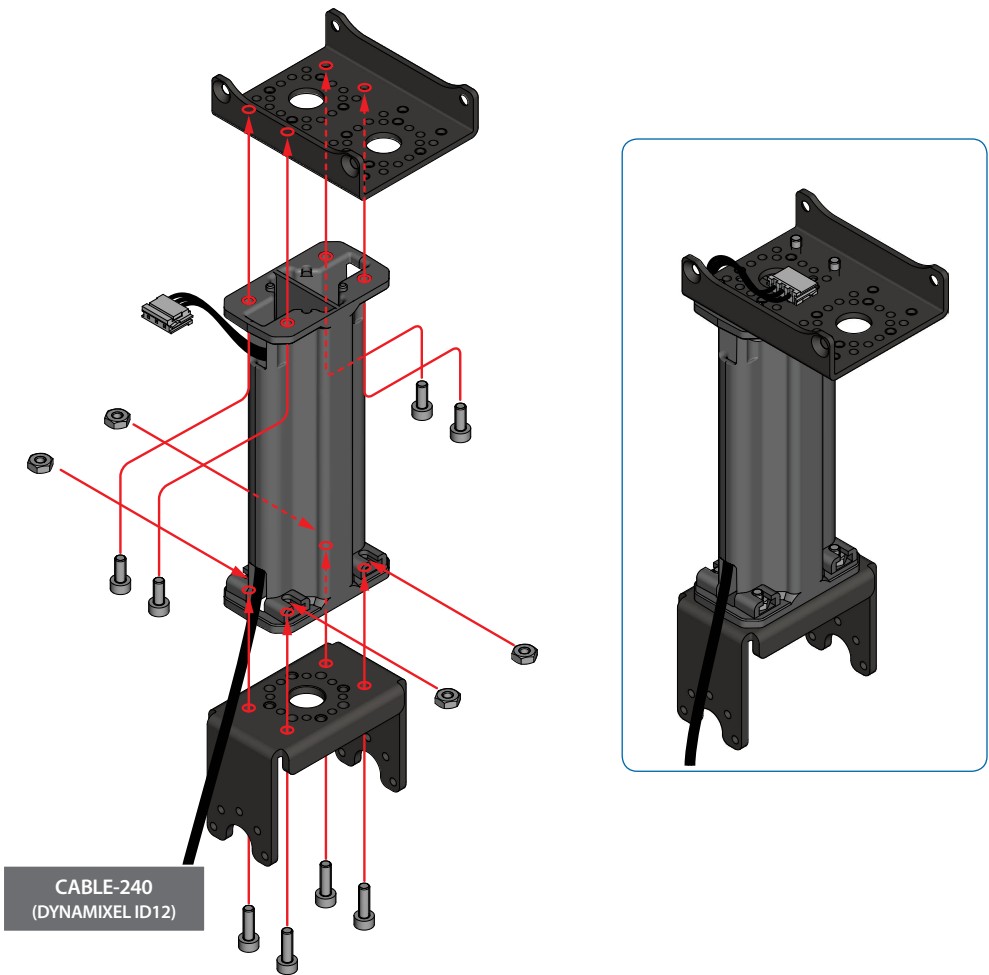




10 Pass **CABLE-X3P-240** from **DYNAMIXEL(ID 12)** through the hole of **LINK FRAME(LONG)**

Assemble **FR12-H101K** to **LINK FRAME(LONG)** using **WB-M2.5x8** and **NUT-M2.5**

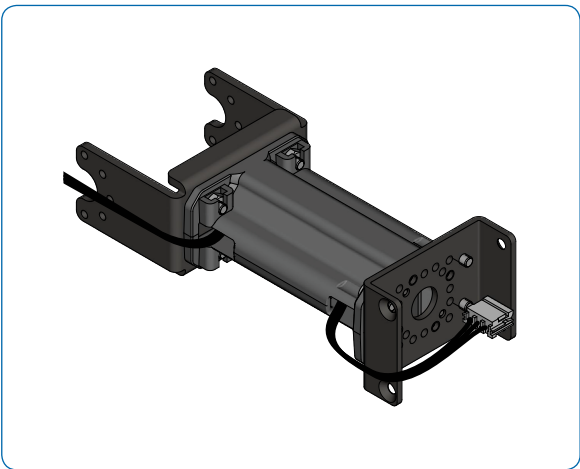
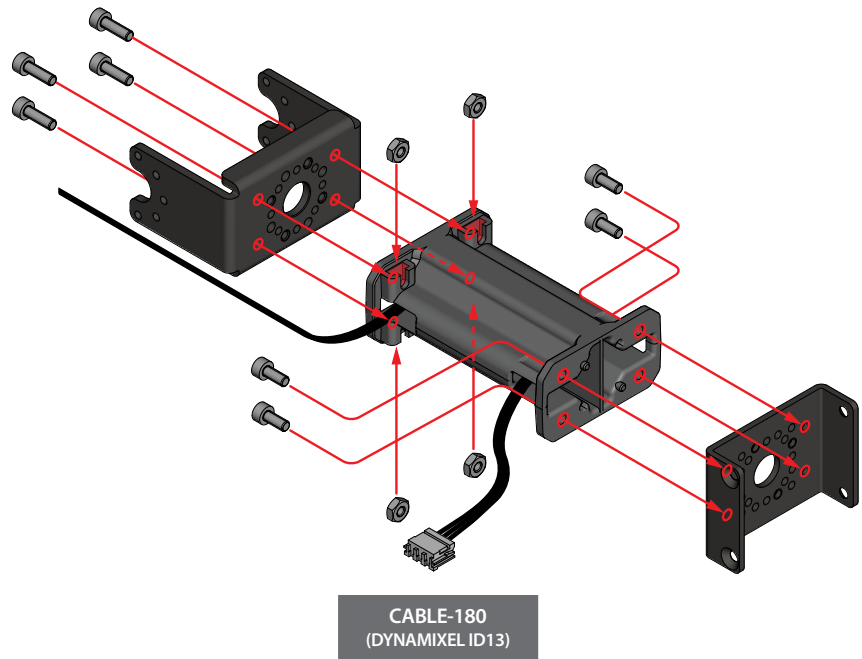
Assemble **LINK FRAME(LONG)** to **FR12-S101K** using **WB-M2.5x6**

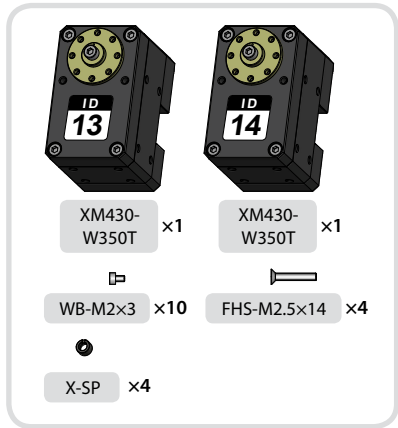


11 Pass **CABLE-X3P-180** from **DYNAMIXEL(ID 13)** through the hole of **LINK FRAME(SHORT)**

Assemble **FR12-H101K** to **LINK FRAME(SHORT)** using **WB-M2.5x8** and **NUT-M2.5**

Assemble **LINK FRAME(SHORT)** to **FR12-S102K** to using **WB-M2.5x6**

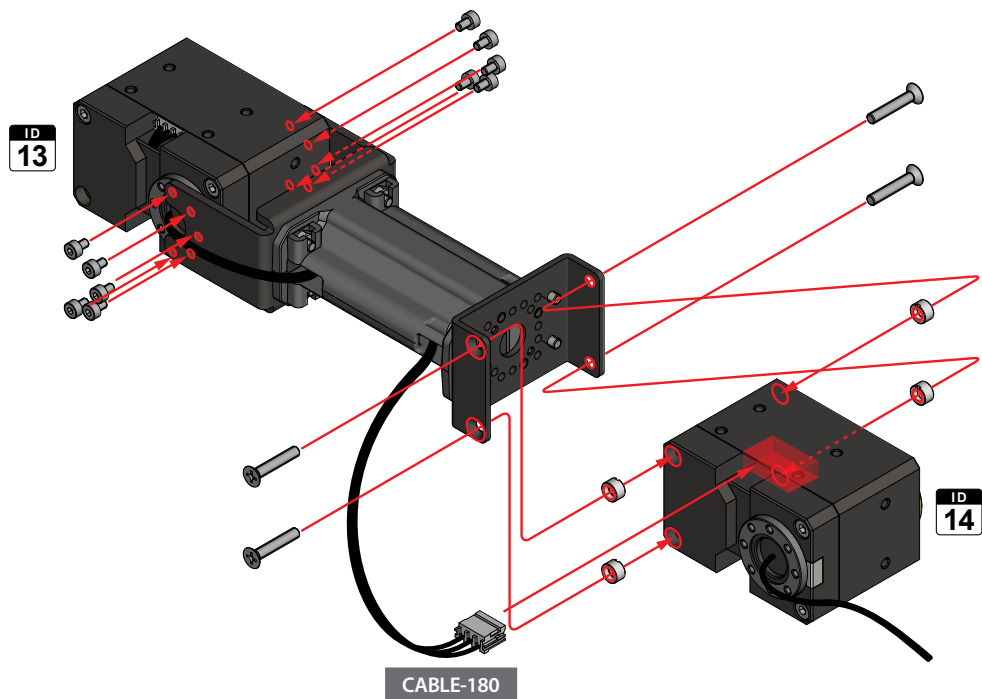




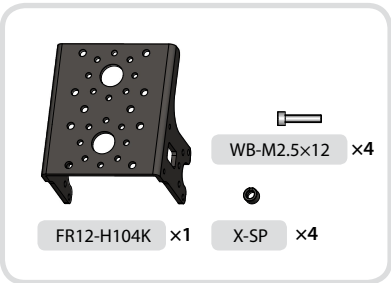
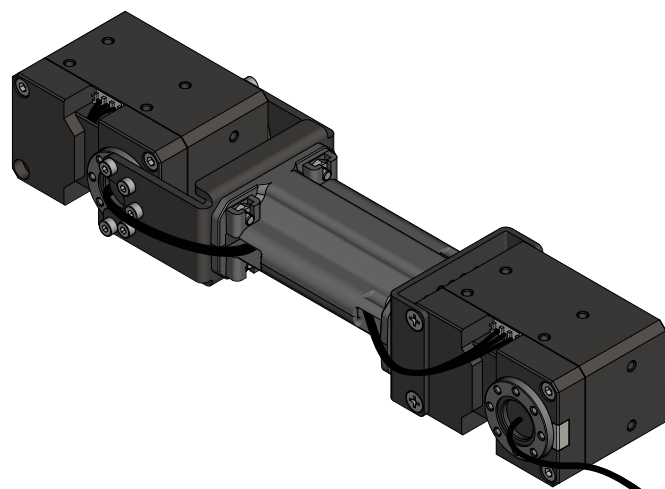
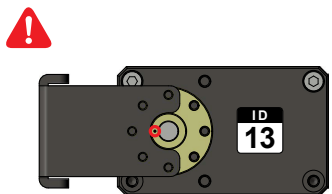
12 Assemble **DYNAMIXEL(ID 13)** to **FR12-H101K** using **WB-M2x3**

Insert **X-SP** into the bolt holes of **DYNAMIXEL(ID 14)** and assemble to **FR12-S102K** using **FHS-M2.5x14**

Connect **DYNAMIXEL(ID 13)** and **DYNAMIXEL(ID 14)** using **CABLE-X3P-180**

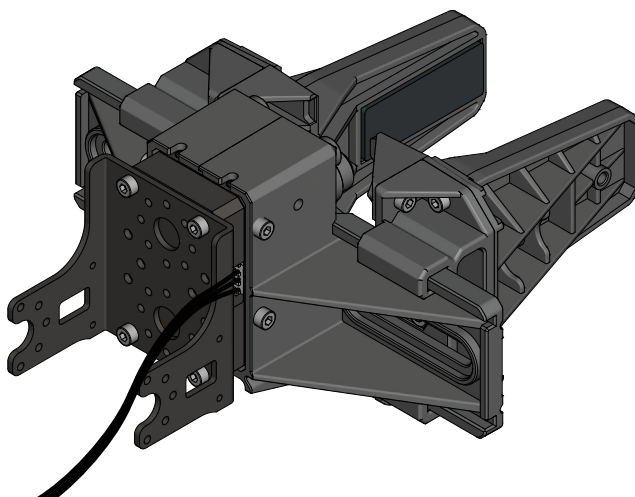
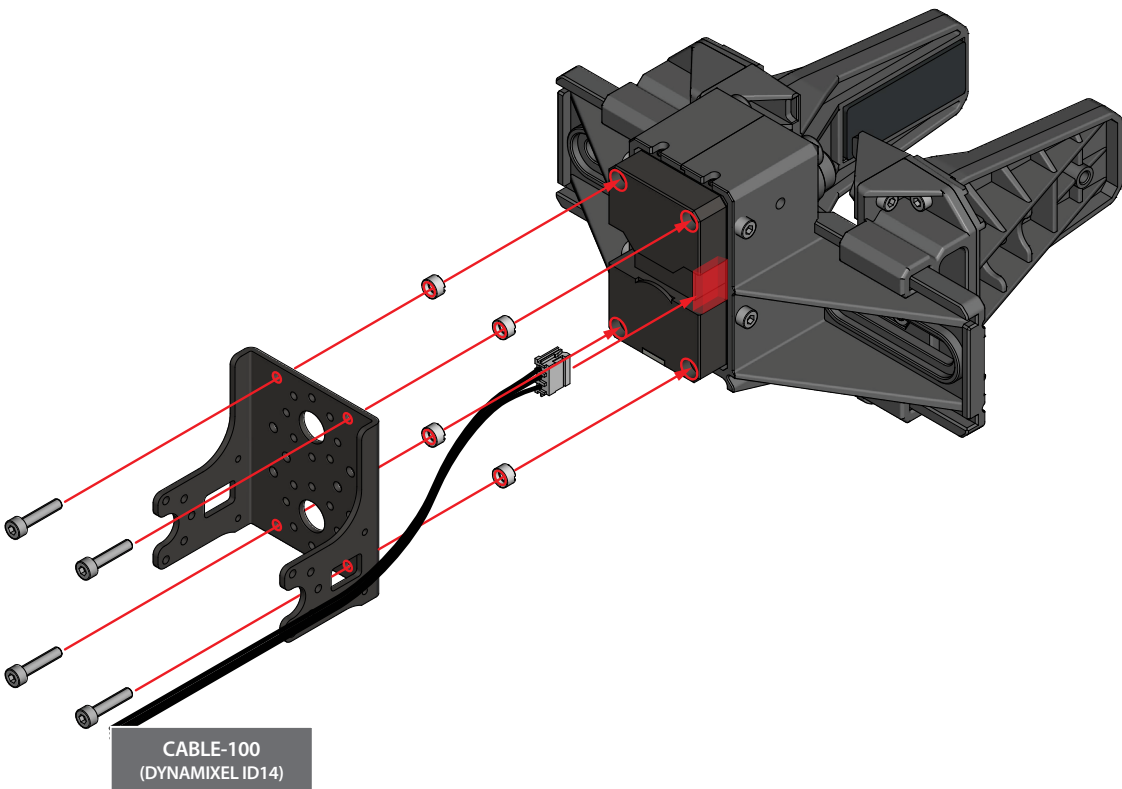


Horn Align Marking View



13 Connect **DYNAMIXEL(ID 14)** and **DYNAMIXEL(ID 15)** using **CABLE-X3P-100**

Insert **X-SP** into the bolt holes of **DYNAMIXEL(ID 15)** and assemble **FR12-H104K** to Gripper using **WB-M2.5x12**

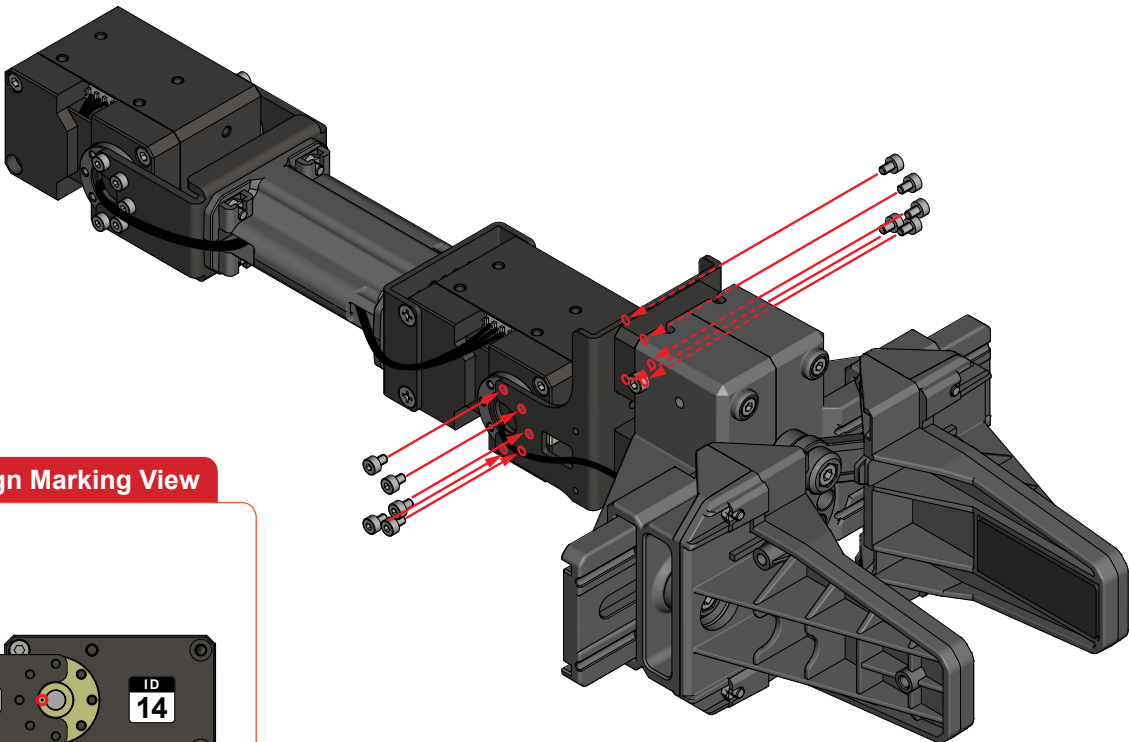


WB-M2x3

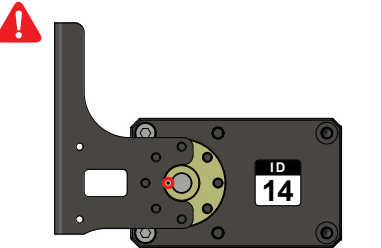
x10

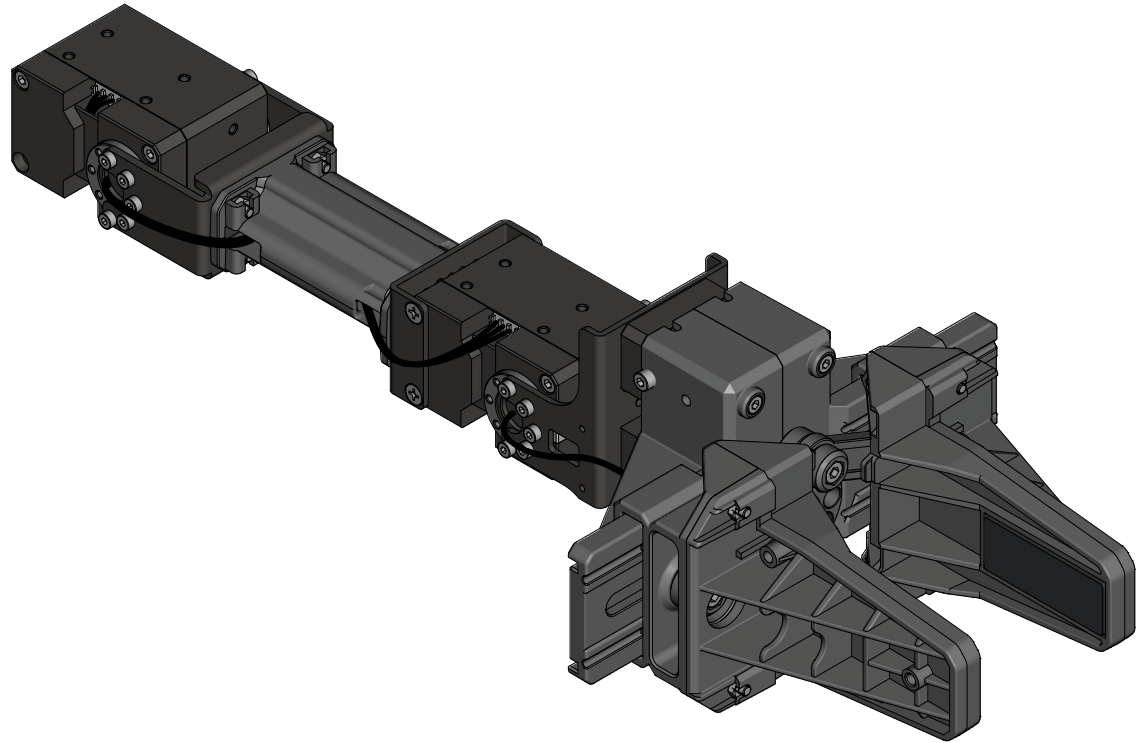
14

Assemble **DYNAMIXEL(ID 14)** and Gripper using **WB-M2x3**



Horn Align Marking View





WB-M2x3

x10

FHS-M2.5x14

x4

X-SP

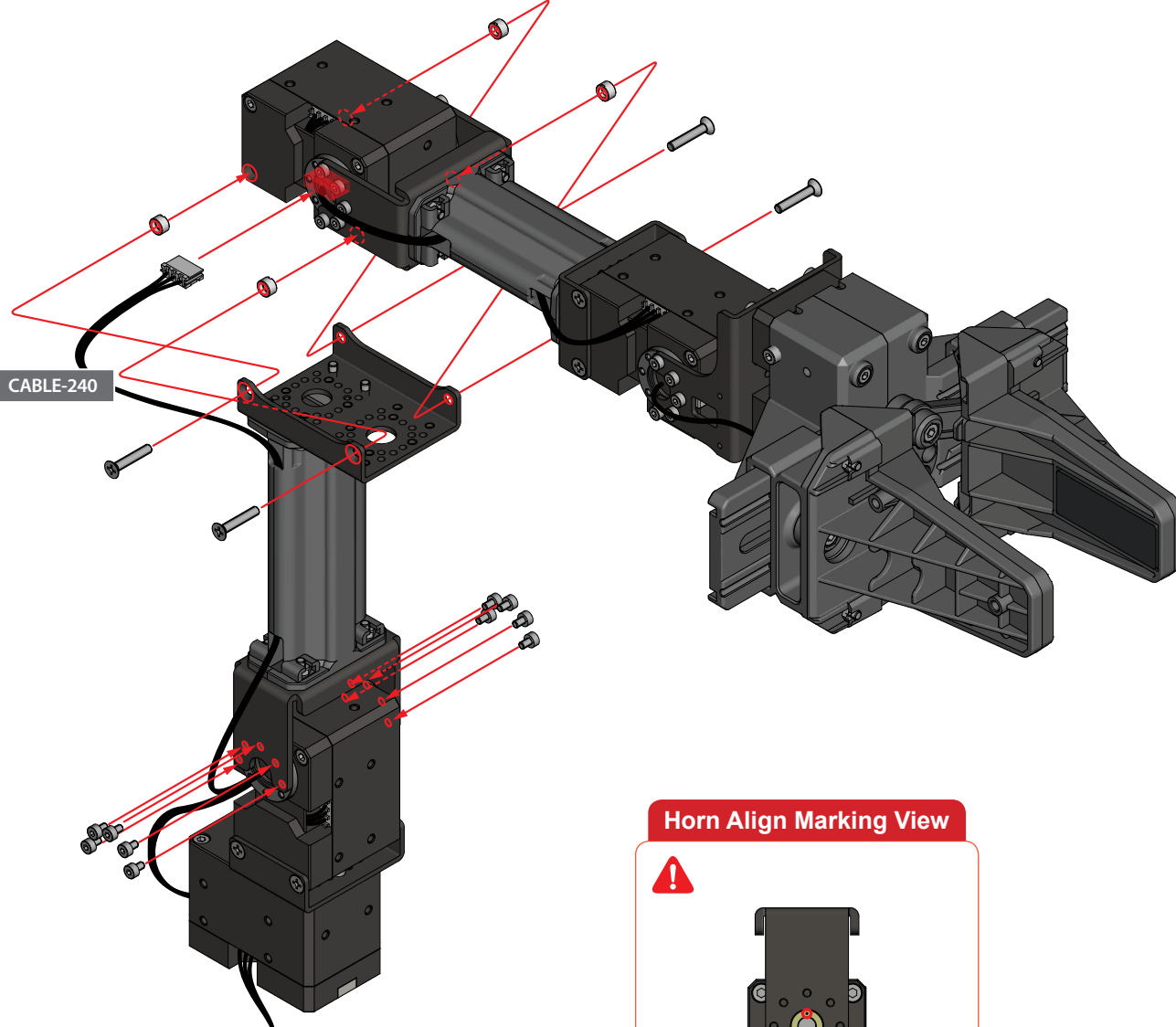
x4

15

Connect **DYNAMIXEL(ID 12)** and **DYNAMIXEL(ID 13)** using **CABLE-180**

Assemble **DYNAMIXEL(ID 12)** using **WB-M2x3**

Assemble **DYNAMIXEL(ID 13)** using **FHS-M2.5x14** through **X-SP**

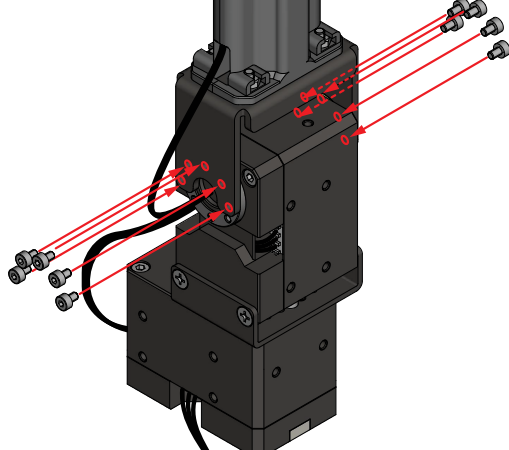


CABLE-240



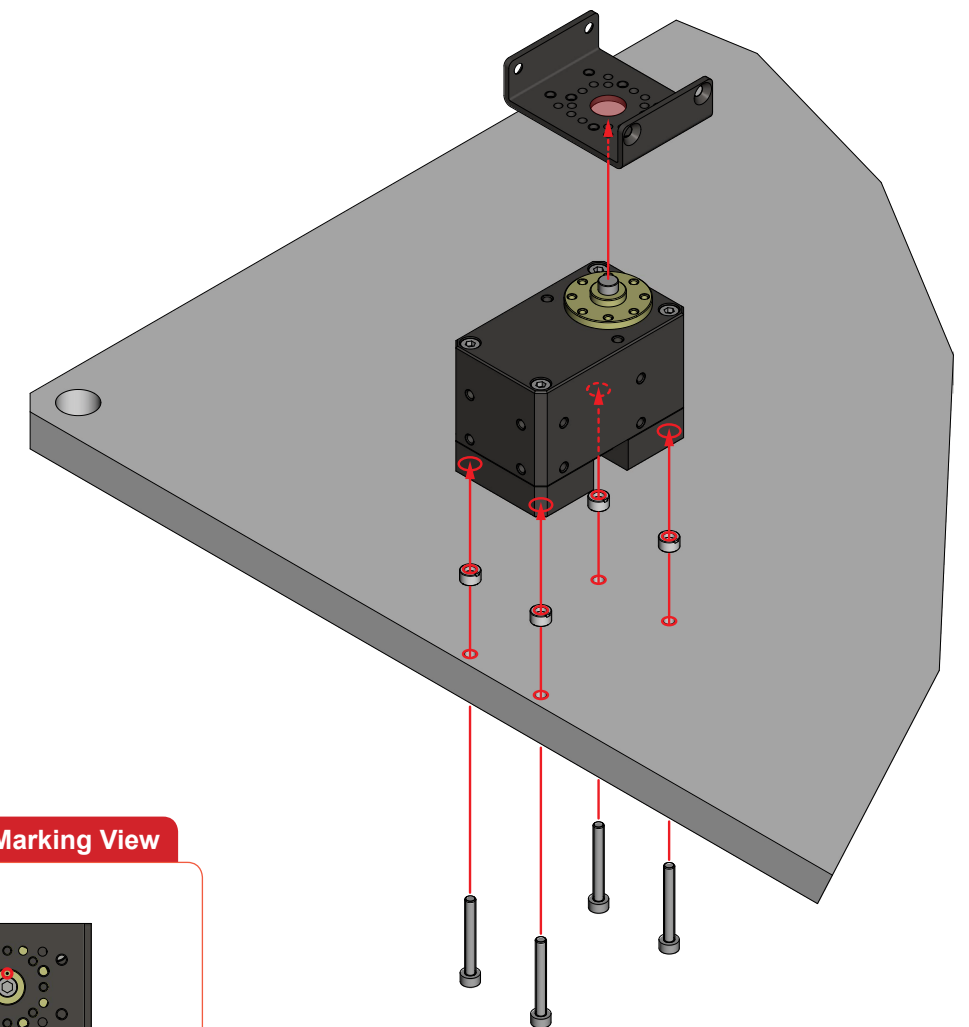
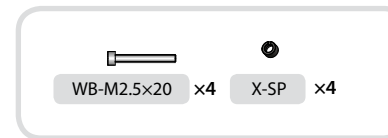
Horn Align Marking View



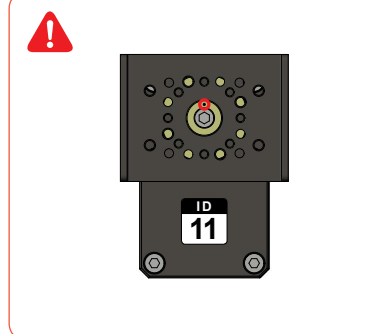


Appendix 1

Assemble **DYNAMIXEL(ID 11)** and **Base Plate-02** using **WB-M2.5x20**



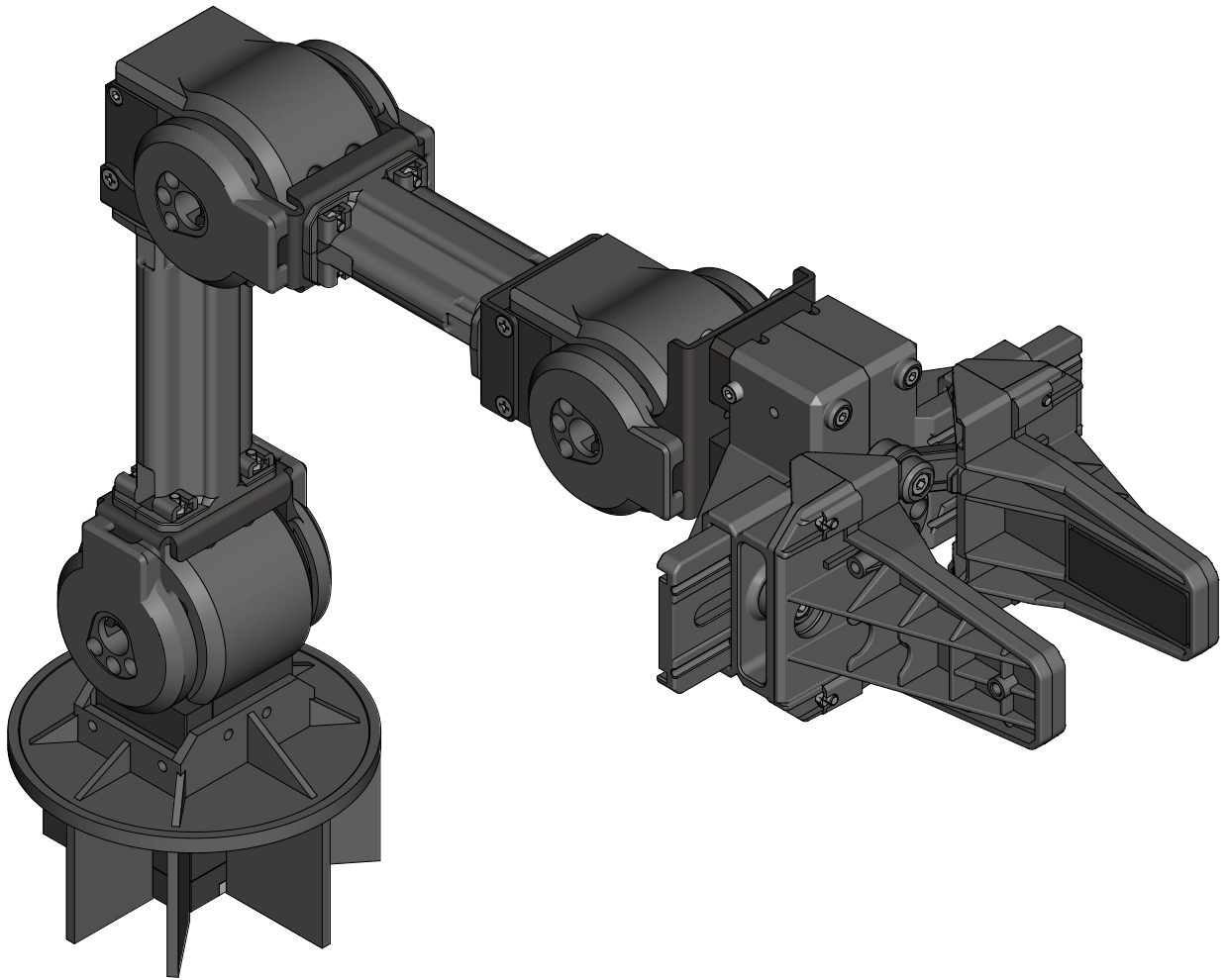
Horn Align Marking View



Appendix 2

To prevent substance from getting caught between the DYNAMIXEL and frame,

3D printed optional parts can be attached to OpenManipulator. These parts can be downloaded from Thingiverse or Onshape. Please check the QR codes below.



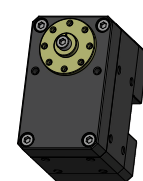
Thingiverse



Onshape



Parts List

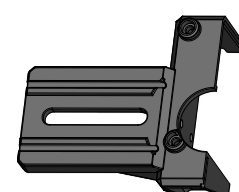


ID 11

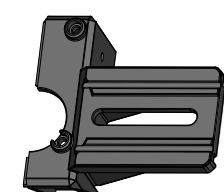
~

ID 15

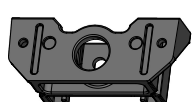
XM430-W350-T ×5



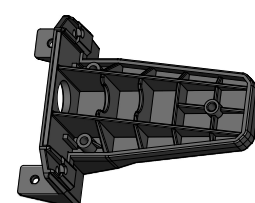
RAIL BRACKET(RIGHT) ×1



RAIL BRACKET(LEFT) ×1



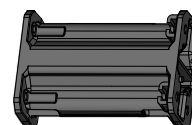
RAIL BLOCK ×2



PALM GRIPPER ×2



LINK FRAME(LONG) ×1



LINK FRAME(SHORT) ×1



CRANK ARM ×1



FLANGE BUSH ×4



LINK ROD ×2



RUBBER PAD ×2



X-SP ×24



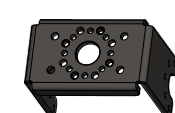
DC12-IDLER ×3



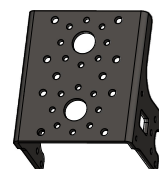
DC12-IDLER-CAP ×3



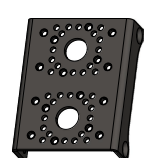
DC12-P-BEARING ×3



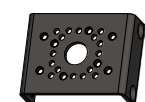
FR12-H101K ×2



FR12-H104K ×1



FR12-S101K ×1



FR12-S102K ×2

1:1

FHS-M2.5×14 ×12

WB-M2×3 ×38
WB-M2×4 ×4
WB-M2.5×4 ×4
WB-M2.5×6 ×8
WB-M2.5×8 ×16
WB-M2.5×12 ×8
WB-M2.5×20 ×4
WB-M3×10 ×4

NUT-M2.5 ×16
NUT-M3 ×4

1:1

CABLE-X3P-100 ×1

CABLE-X3P-180 ×2

CABLE-X3P-240 ×2

