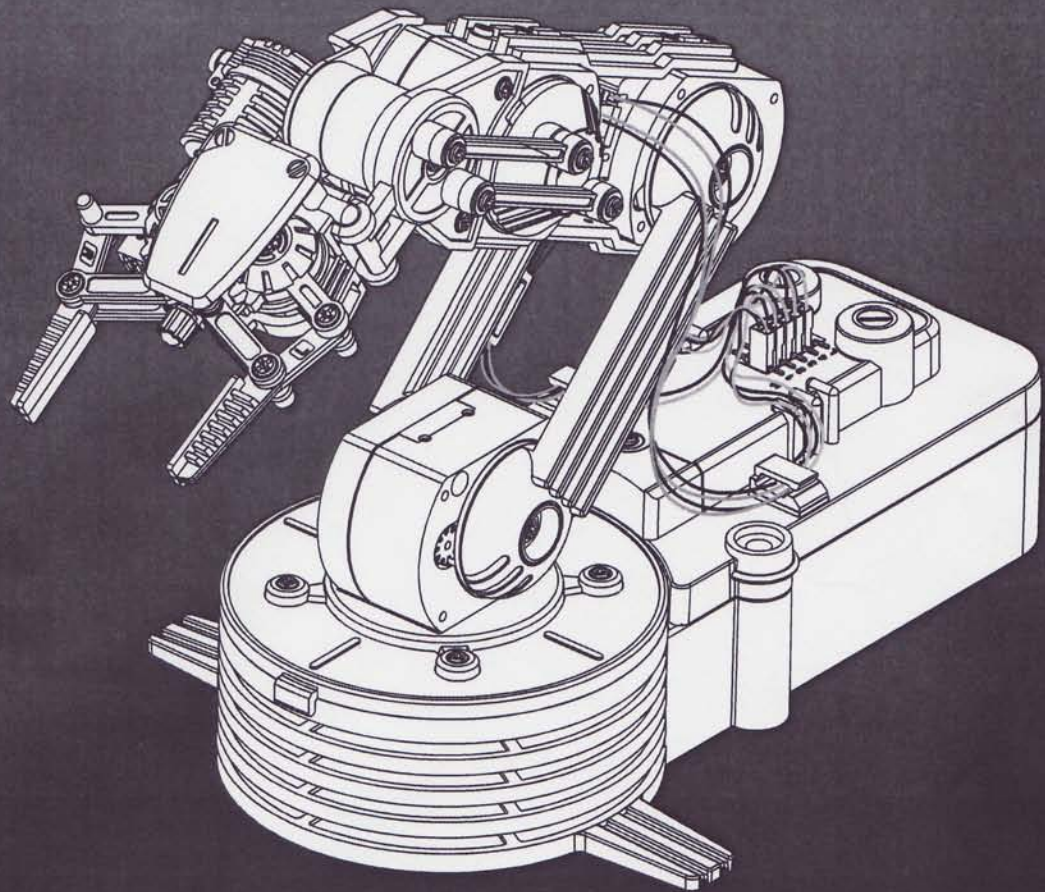


ROBOTIC ARM-EDGE

wired control robotic arm KIT



FEB. 21 2008

Assembly and Instruction Manual



For SAFETY during Assembly

**To safely assemble and use this robot,
please be careful of the following points:**

- Read the instruction manual thoroughly and be sure that you understand it before beginning assembly. Follow the instructions carefully to ensure correct assembly.
- Exercise sufficient care when using tools.
- To provide the required functions, some kit parts may be small, have sharp edges, or be made of metal or glass. Parts should be handled carefully around small children to prevent them from putting the parts in their mouth or injuring themselves with the parts. If a child swallows a part or bag, consult a doctor immediately. Also, be sure to tear the bags which contains the parts and discard them where they cannot be reached by children.
- Follow the instructions regarding heat dispersion for parts which generate heat.
- Assemble the kit according to the instructions in this manual.
Attempting to change the product specifications (pressure resistance, electric current, etc.) from those specified by this company at the time of design may result in malfunction or an accident.
- ROBOTIC ARM EDGE specifications, shape ,etc. are subject to change without notice.

For SAFETY during Assembly

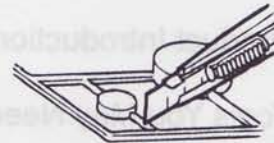
Additional cautions regarding ROBOTIC ARM EDGE

- When using batteries, please be careful of the following points:
 1. Insert batteries with the polarity(+/-) terminals positioned correctly
 2. Do not short-circuit battery terminals, disassemble batteries, apply heat to them, or discard them in fire. Doing so may result in heat generation, liquid leakage, or explosion.
 3. After use, be sure to remove the batteries.
 4. Keep batteries and the battery holder from getting wet. If they get wet, remove the batteries and wipe the batteries and battery holder dry with a cloth.

HELPFUL HINTS Before ASSEMBLING

● Cutting of parts

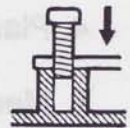
Use a penknife to cut small parts off the runners. Cut the parts so that burrs remain on the parts, and then file off the burrs from the small parts after cutting them free off the runners.



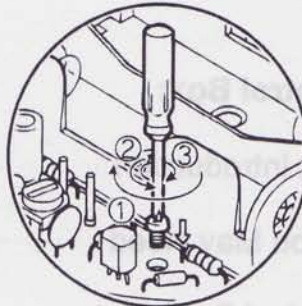
● Using tapping screws

tapping screws, like wood screws, can cut threads in the materials they are screwed into at the same time as they fasten parts to that material.

If you tighten a tapping screw in one motion, it will become hard to turn the screw at a certain point, it may become impossible to fully tighten the screw, and the screw head may break. A better way is to tighten the screw until it becomes difficult to tighten further, then loosen the screw slightly before retightening it further. Repeat this action several times until the screw is completely tightened.



a. A good way of tightening the tapping screws



1. Screw in.
2. Loosen a little.
3. Screw in again.

● Tightening of screws and nuts

If screws and nuts are not tightened sufficiently, they may loosen when ROBOTIC ARM EDGE is operated, resulting in parts falling off during operation. On the other hand, overtightening may cause parts to become warped, making movement difficult, or in the worst cases, impossible. Tighten screws and nuts sufficiently, but without overtightening.

Screws



Nuts



● Mechanical Parts List

Parts required for assembly are maintained in the mechanical parts list. This will help identify parts in the assembly process.

Contents

ROBOTIC ARM EDGE :

1. Product Introduction	P.1
2. Tools You May Need	P.1
3. Mechanical Parts List	P.2
4. Plastic Parts	P.3
5. Mechanical Assembly	P.5

Wired Control Box:

1. Product Introduction	P.27
2. Tools You May Need	P.27
3. Mechanical Parts List	P.27
4. Plastic Parts	P.28
5. Mechanical Assembly	P.28

How it Works	P.31
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Trouble Shooting	P.33
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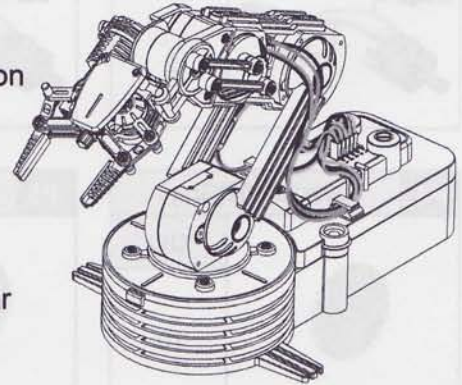
Circuit Diagram	P.33
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ROBOTIC ARM EDGE

1 Product Introduction:

With Robotic Arm Edge, command the gripper to open and close, wrist motion of 120 degrees, an extensive elbow range of 300 degrees, base rotation of 270 degrees, base motion of 180 degrees, vertical reach of 15 inches, horizontal reach of 12.6 inches, and lifting capacity of 100g.

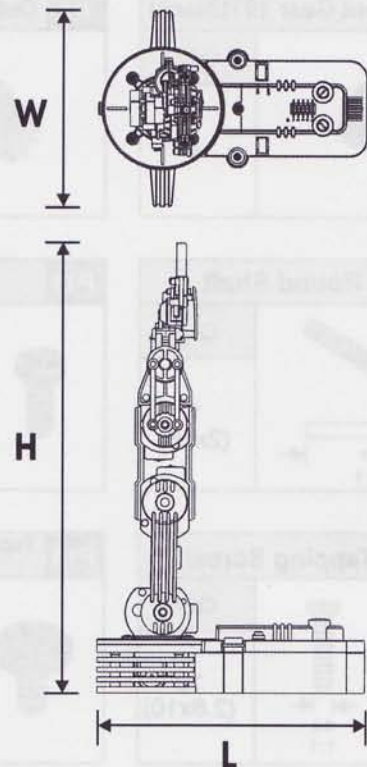
WOW! Some of the added features include a search light design on the gripper and a safety gear audible indicator is included on all five gear boxes to prevent any potential injury or gear breakage during operation.



Maximum lift: 100g.

Dimensions: 9" L x 6.3" W x 15" H

Weight: 658 g



Power source required:

4 x "D" batteries(not included)

2 Tools You May Need:

Long Nose Pliers



Diagonal Cutter



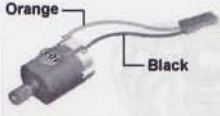
Screwdriver

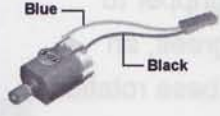


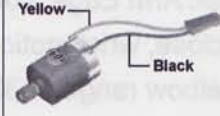
"D" Battery (4pcs)



3 Mechanical Parts List:

P1	Motor(M4.M5)	Qty
		2

P2	Motor(M2.M3)	Qty
		2

P3	Motor(M1)	Qty
		1

P4	Gear 32/10T(Gray)	Qty
		10

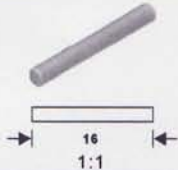
P5	Gear 32/10T(Brown)	Qty
		5

P6	Gear 32T(Blue)	Qty
		5

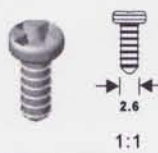
P7	Output Gear 10T(Black)	Qty
		4

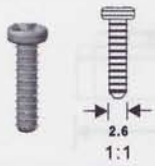
P8	Output Gear 10T(White)	Qty
		1

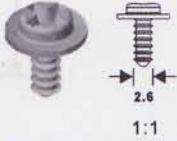
P9	Round Shaft	Qty
		9 (2x20)

P10	Round Shaft	Qty
		1 (2x16)

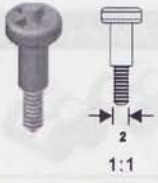
P11	Tapping Screw	Qty
		5 (2.3x7)

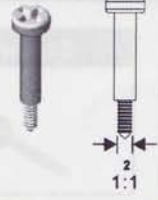
P12	Tapping Screw	Qty
		11 (2.6x6)

P13	Tapping Screw	Qty
		19 (2.6x10)

P14	Tapping Screw with Washer Attached	Qty
		12 (2.6x6)

P15	Machine Screw	Qty
		10 (2.6x6)

P16	Self Tapping Screw	Qty
		4 (3x11)

P17	Self Tapping Screw	Qty
		3 (3x16)

P18	Nut	Qty
		16

P19	Washer
	Qty
	3

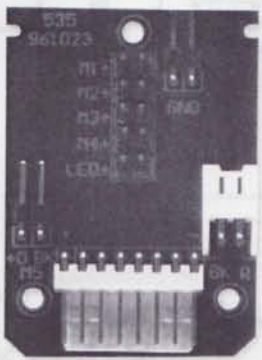
P20	Battery Terminal With Wire
	Qty
	1

P21	Battery Terminal With Connector
	Qty
	1

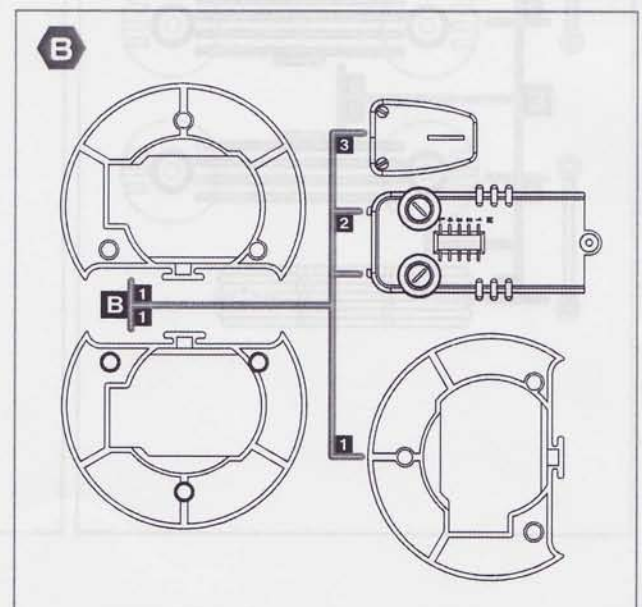
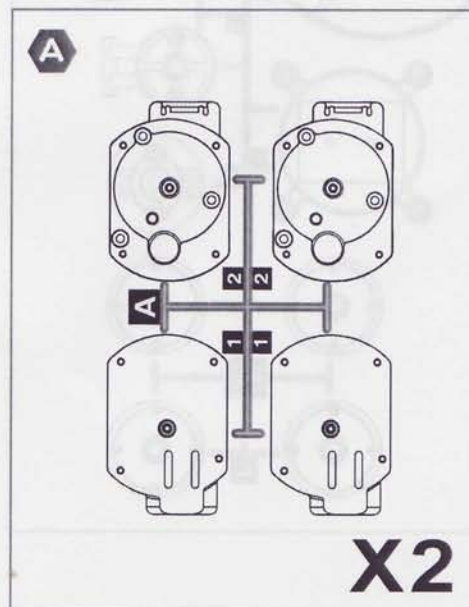
P22	LED With Wire
	Qty
	1

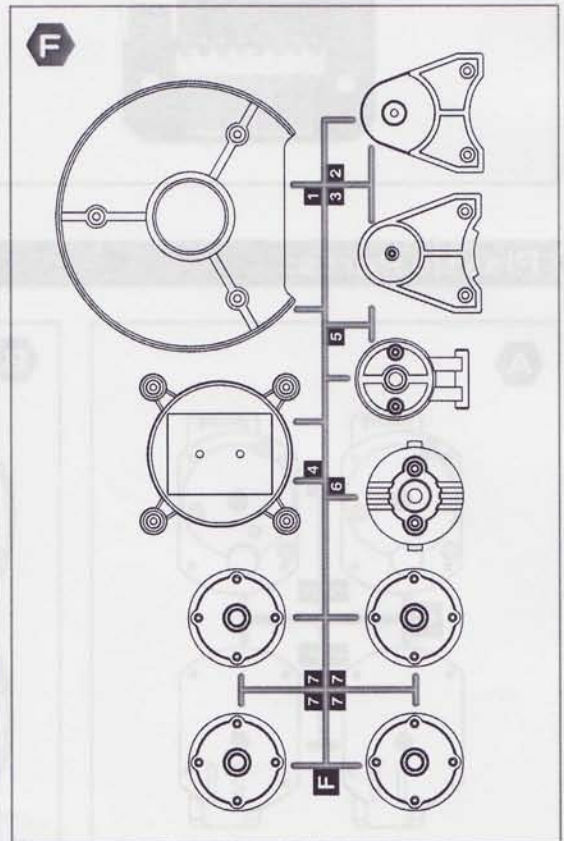
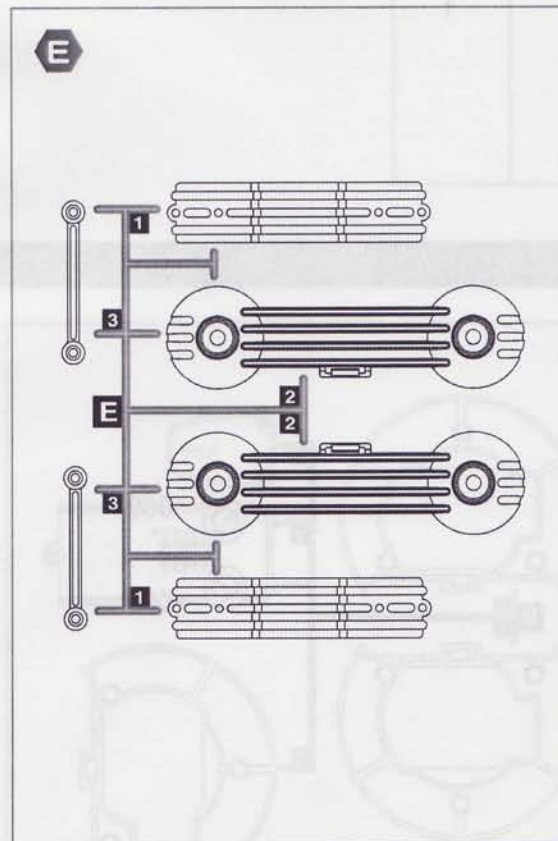
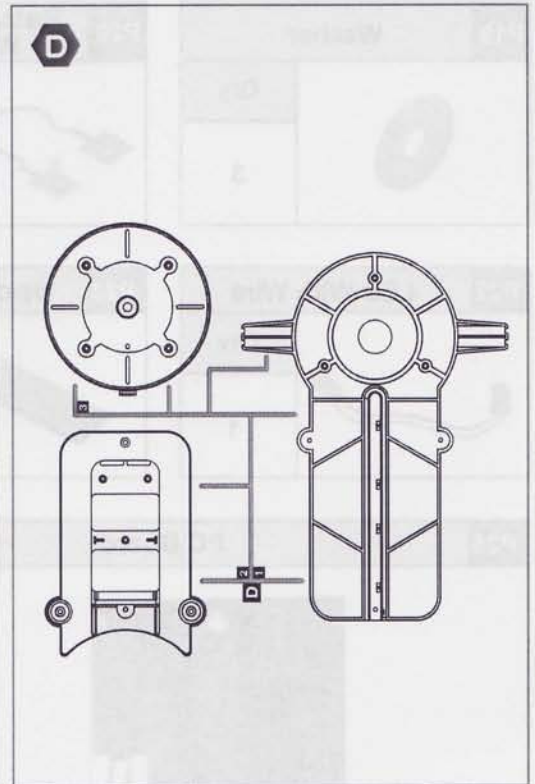
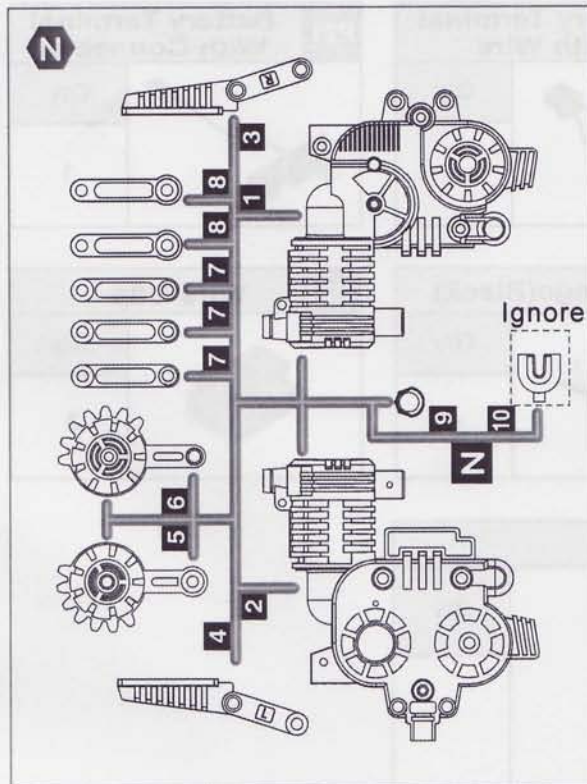
P23	Sponge(Black)
	Qty
	2

P24	Wire Clip
	Qty
	3

P25	PC Board
	Qty
	1

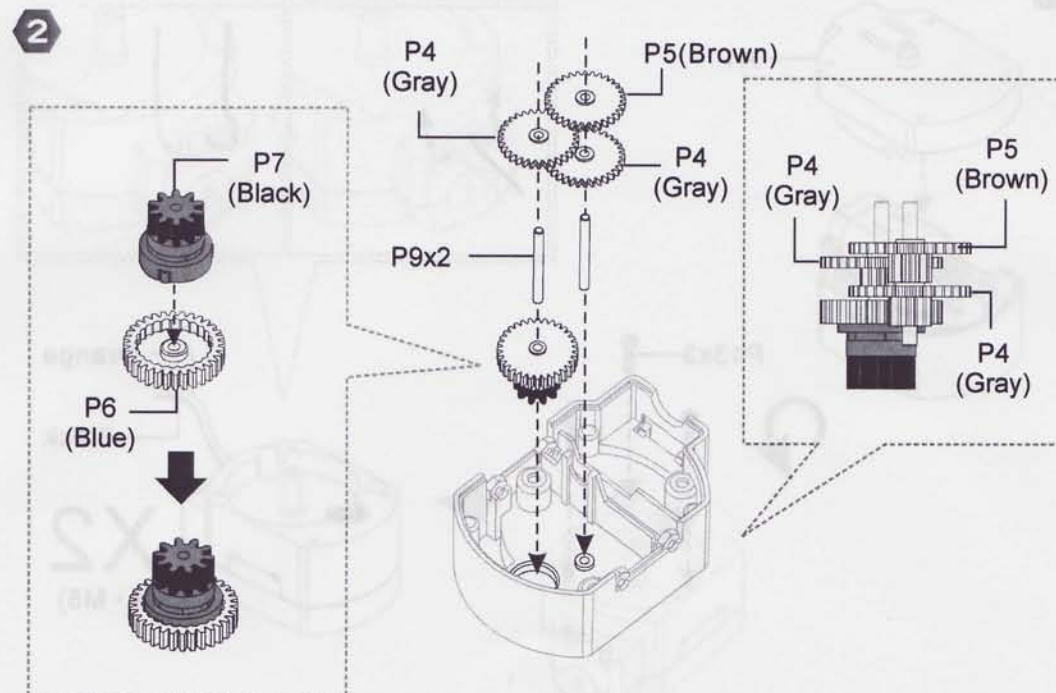
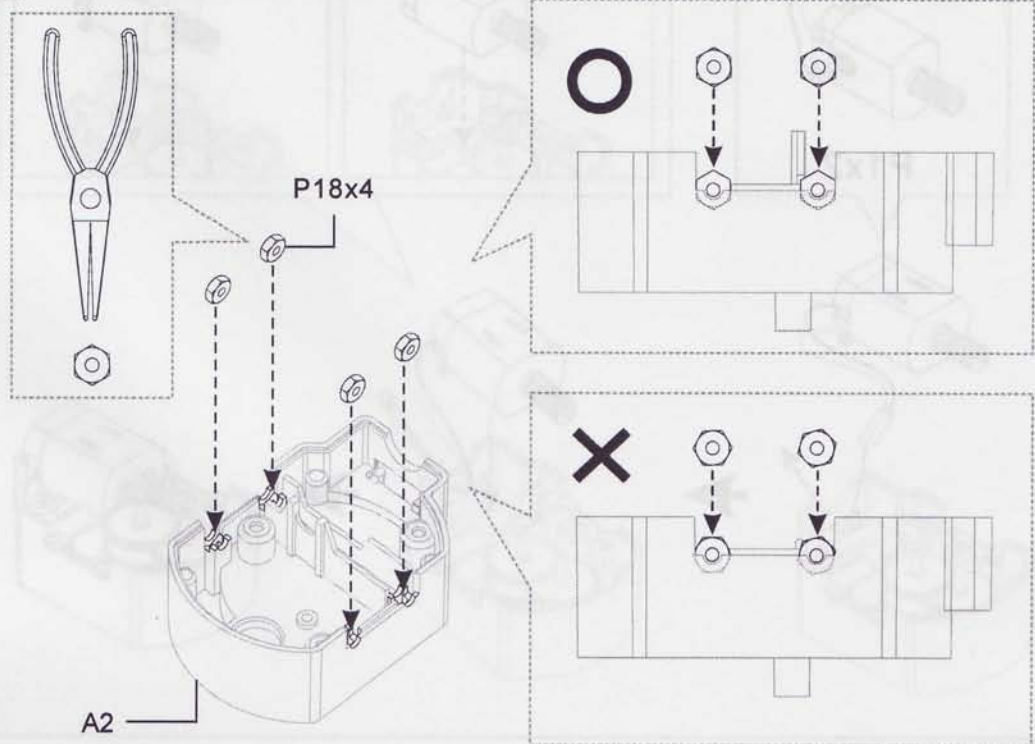
4 Plastic Parts:

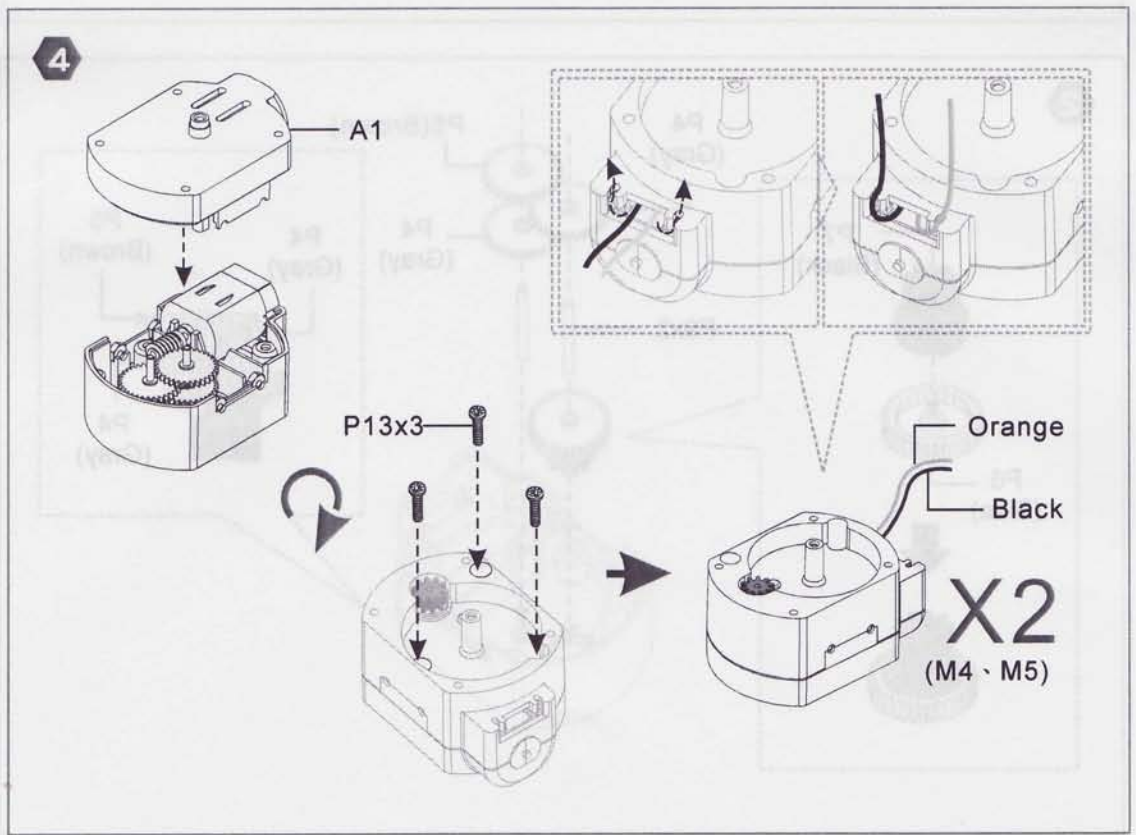
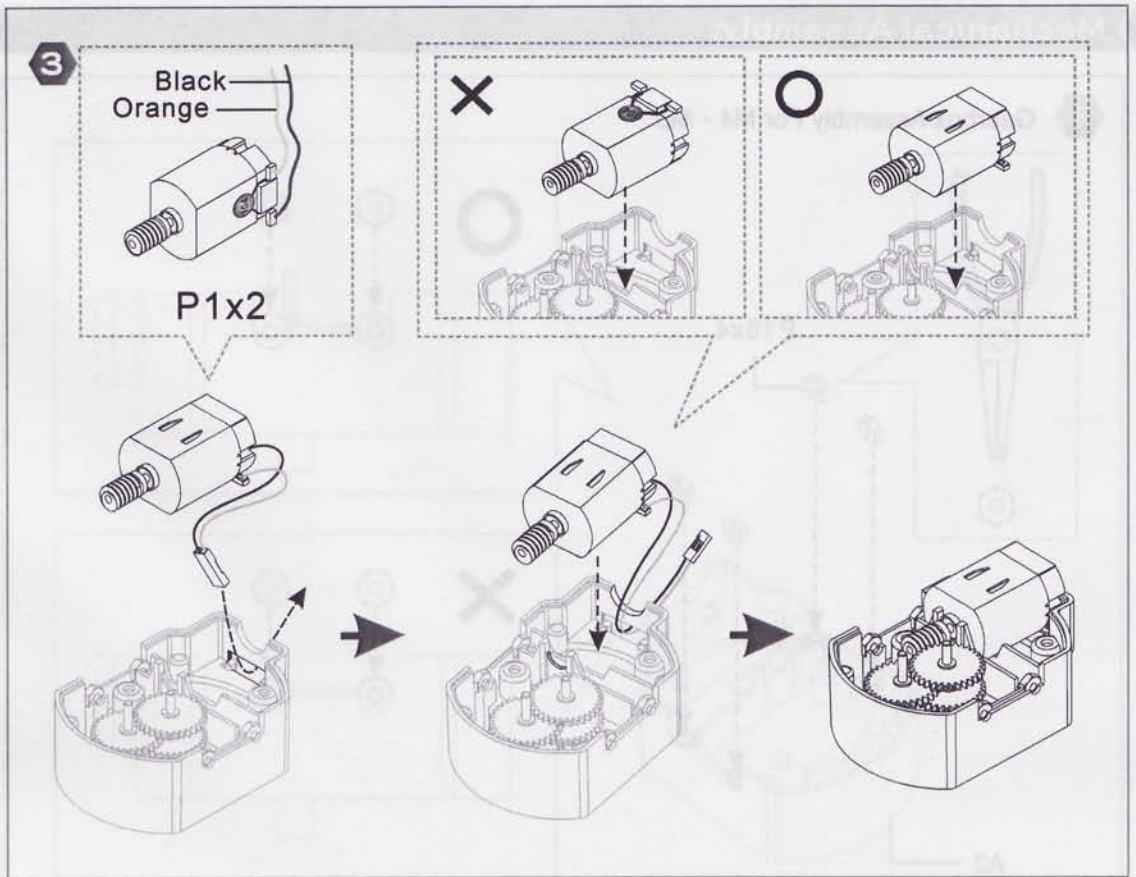




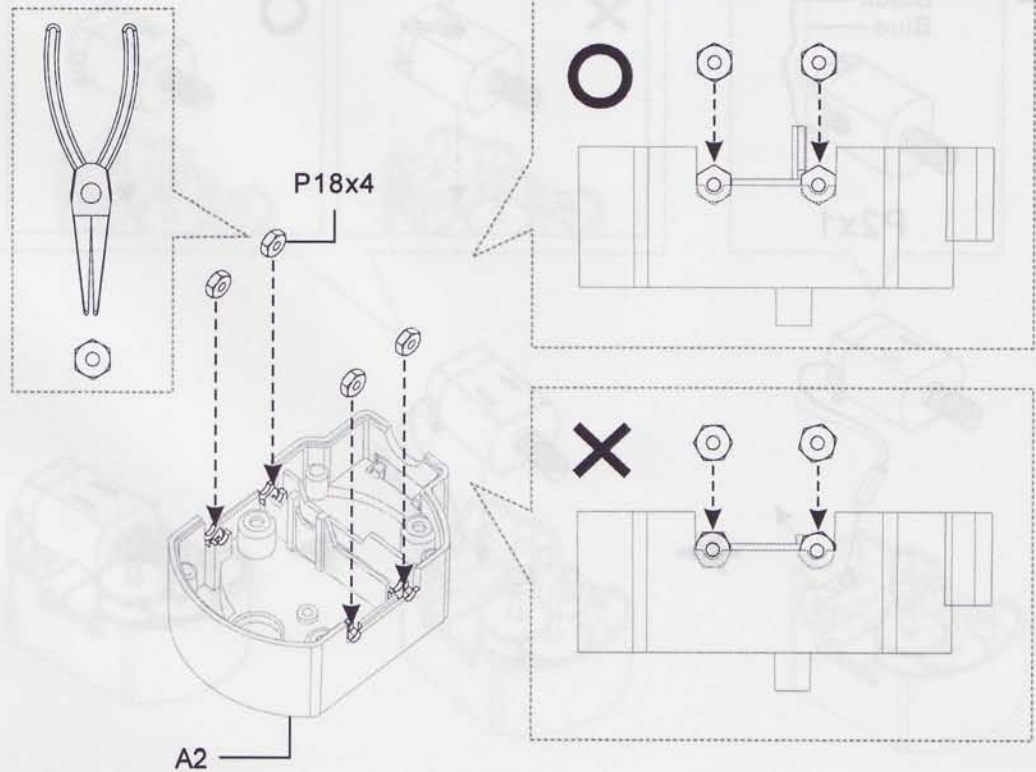
5 Mechanical Assembly:

1 Gearbox Assembly For M4 - M5

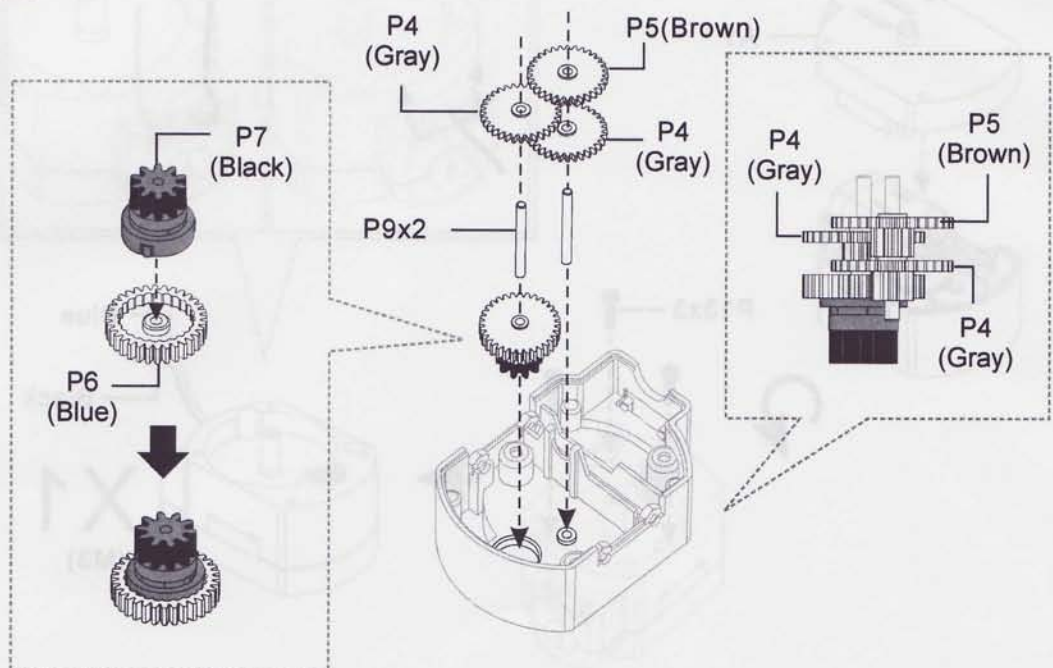


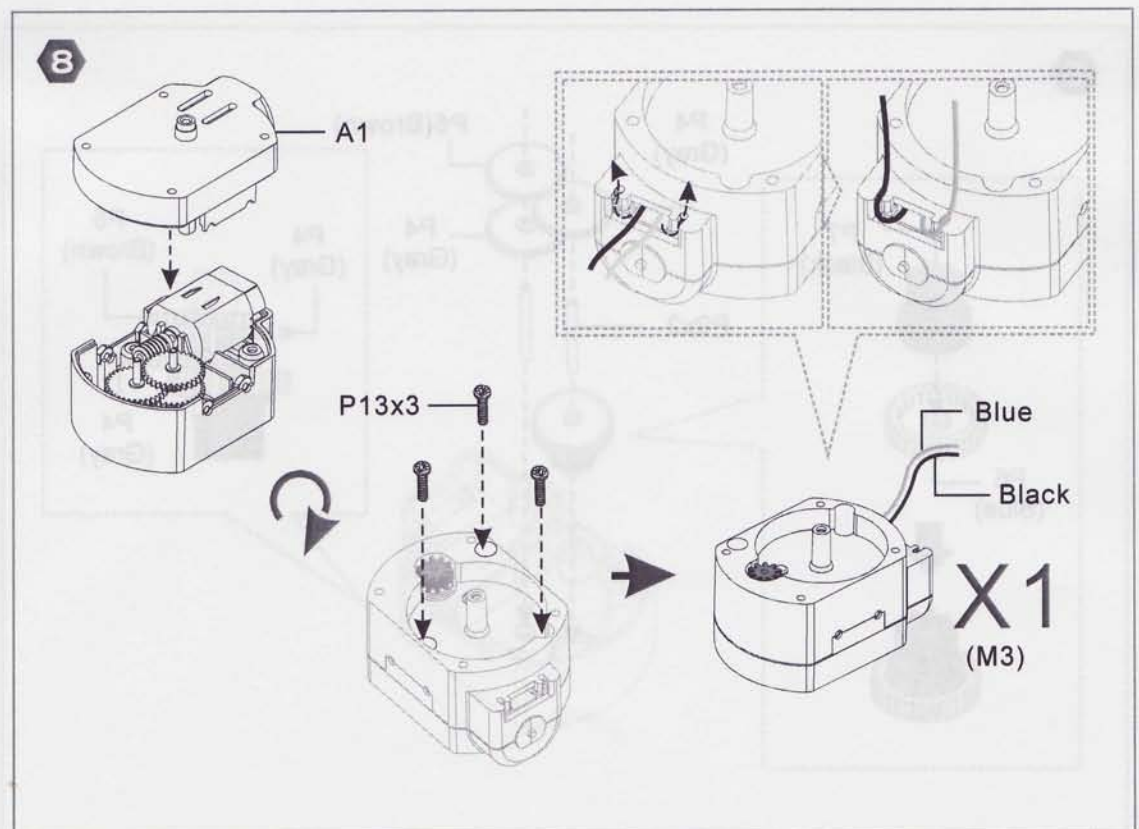
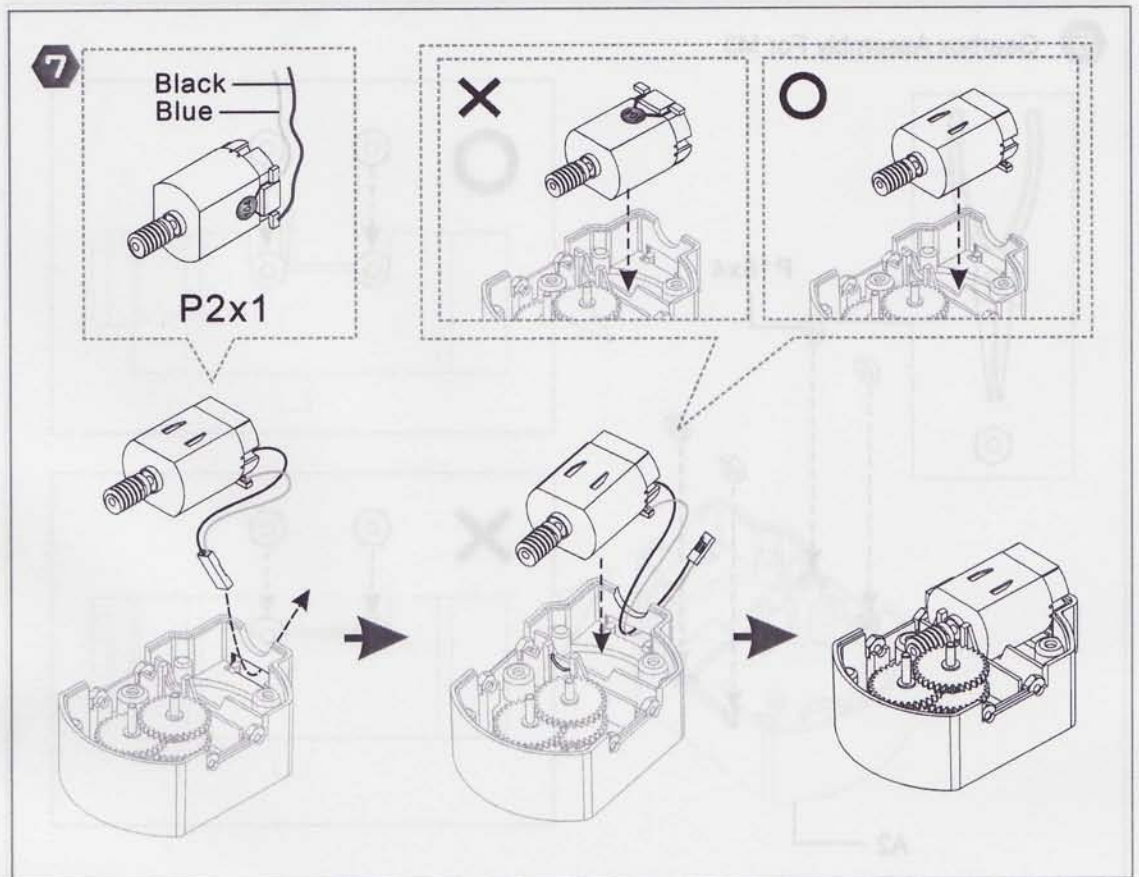


5 Gearbox Assembly For M3

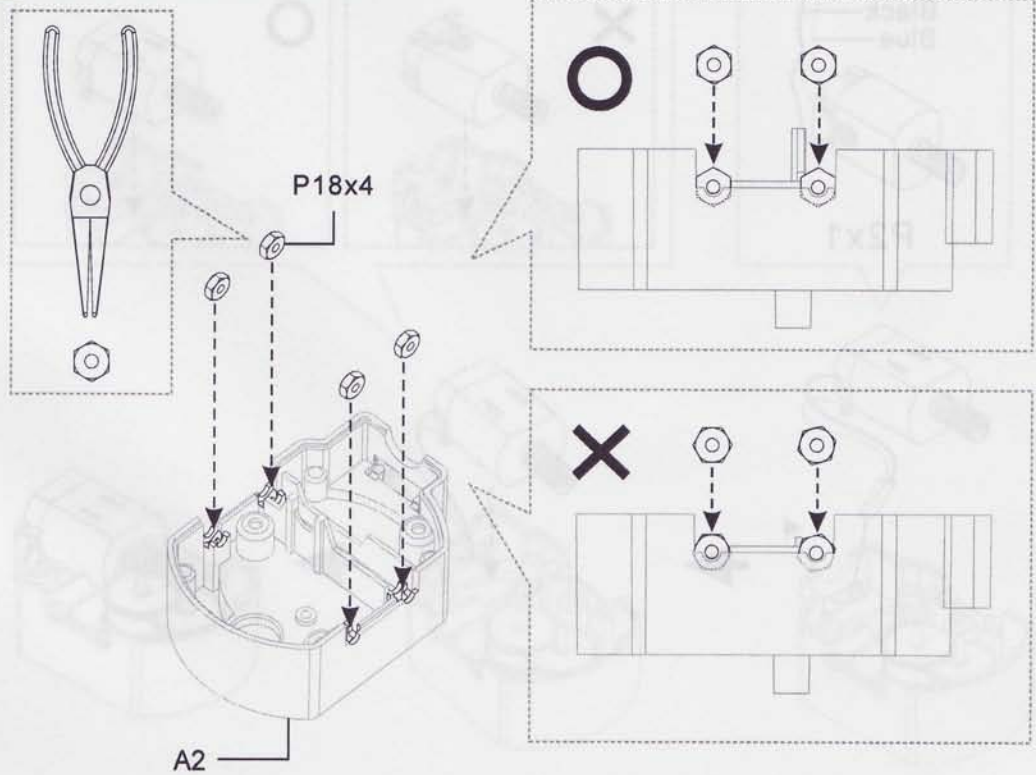


6

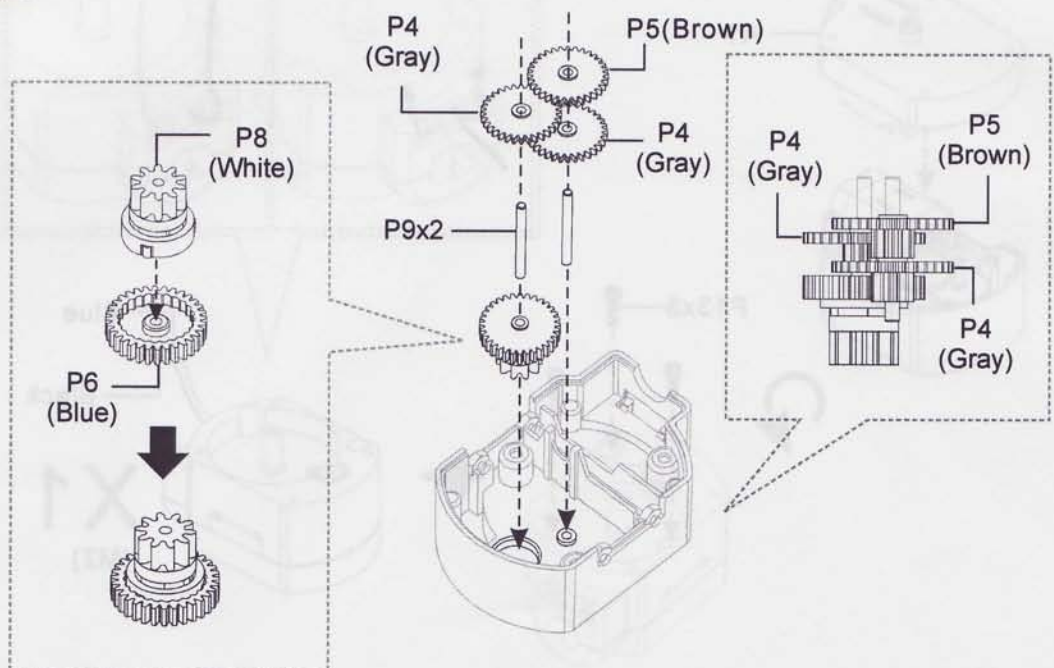




9 Gearbox Assembly For M2



10



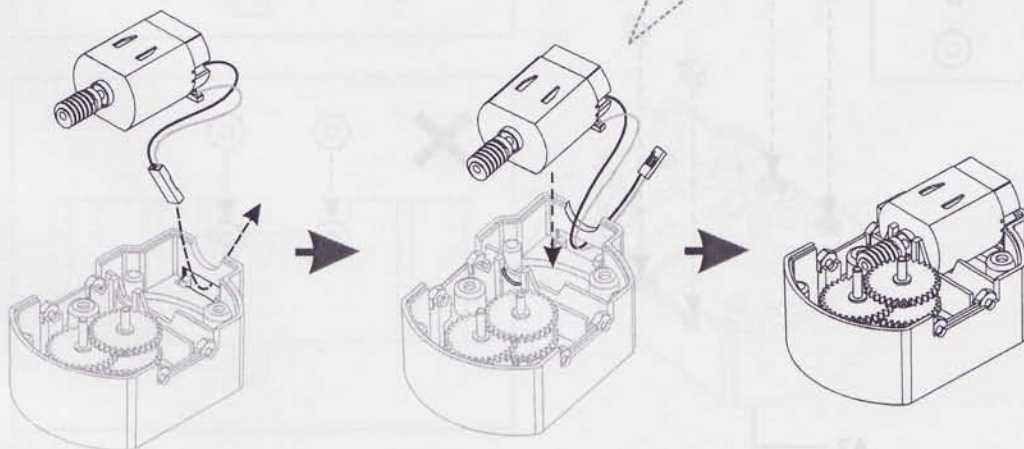
11

Black
Blue

P2x1

×

○



12

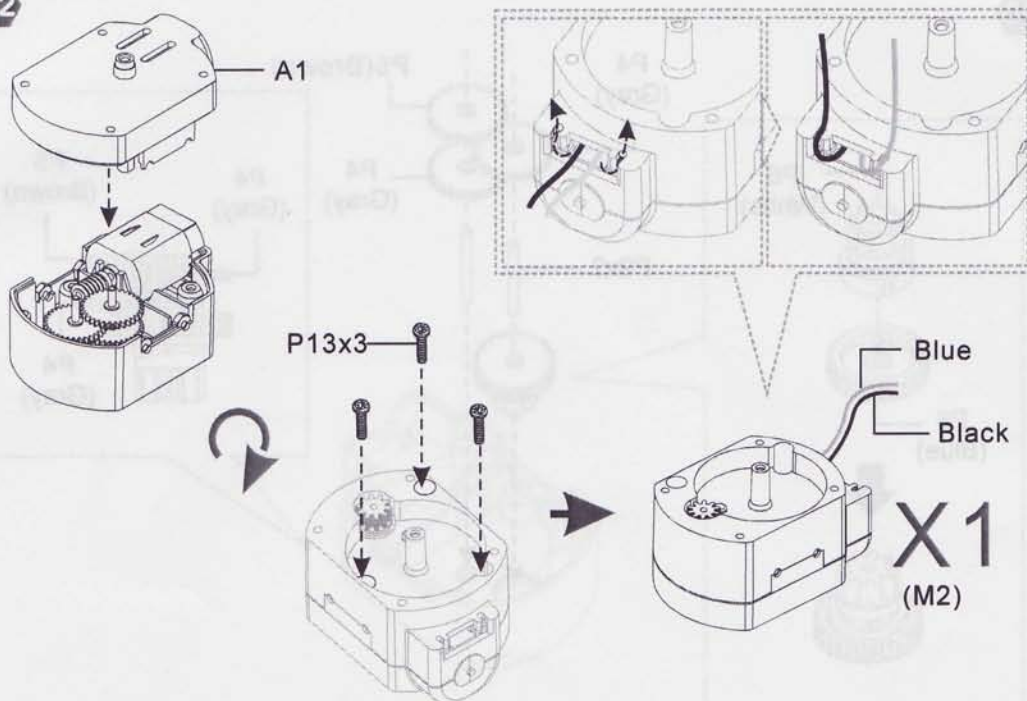
A1

P13x3

Blue

Black

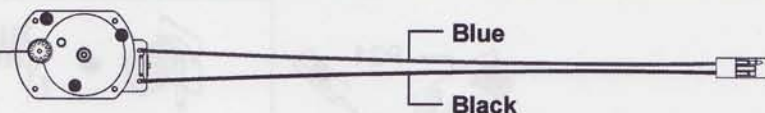
X1
(M2)



13

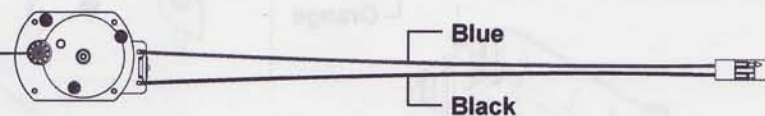
M2

"White"



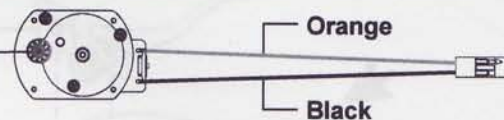
M3

"Black"



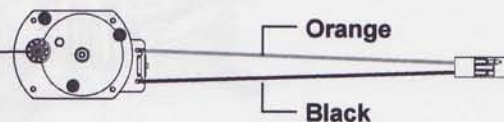
M4

"Black"

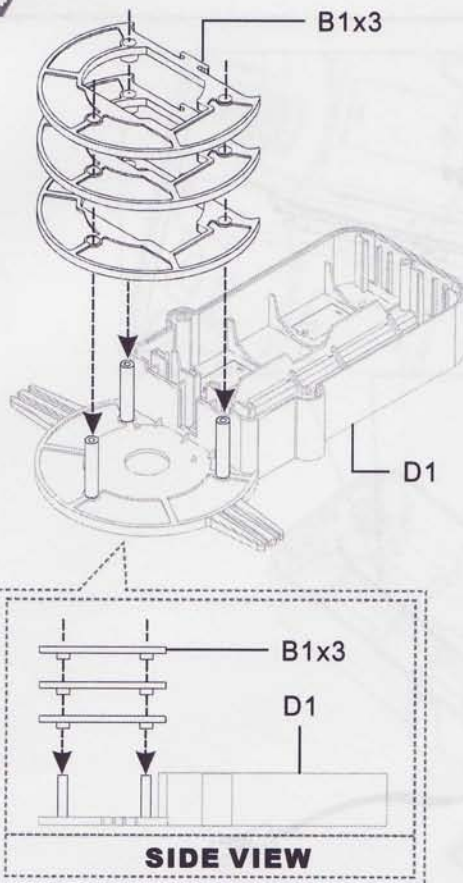


M5

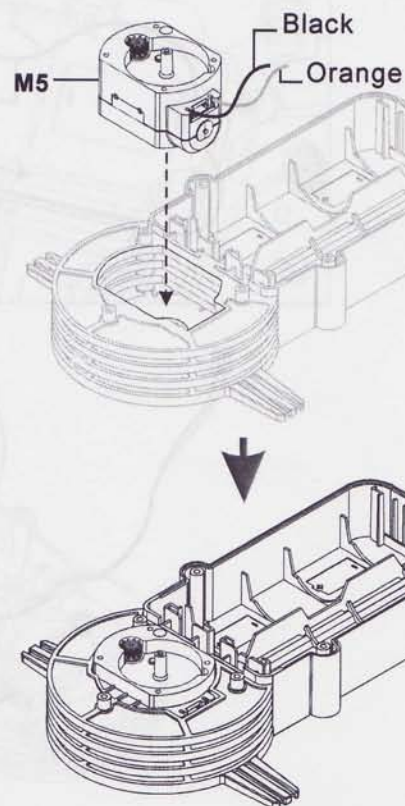
"Black"

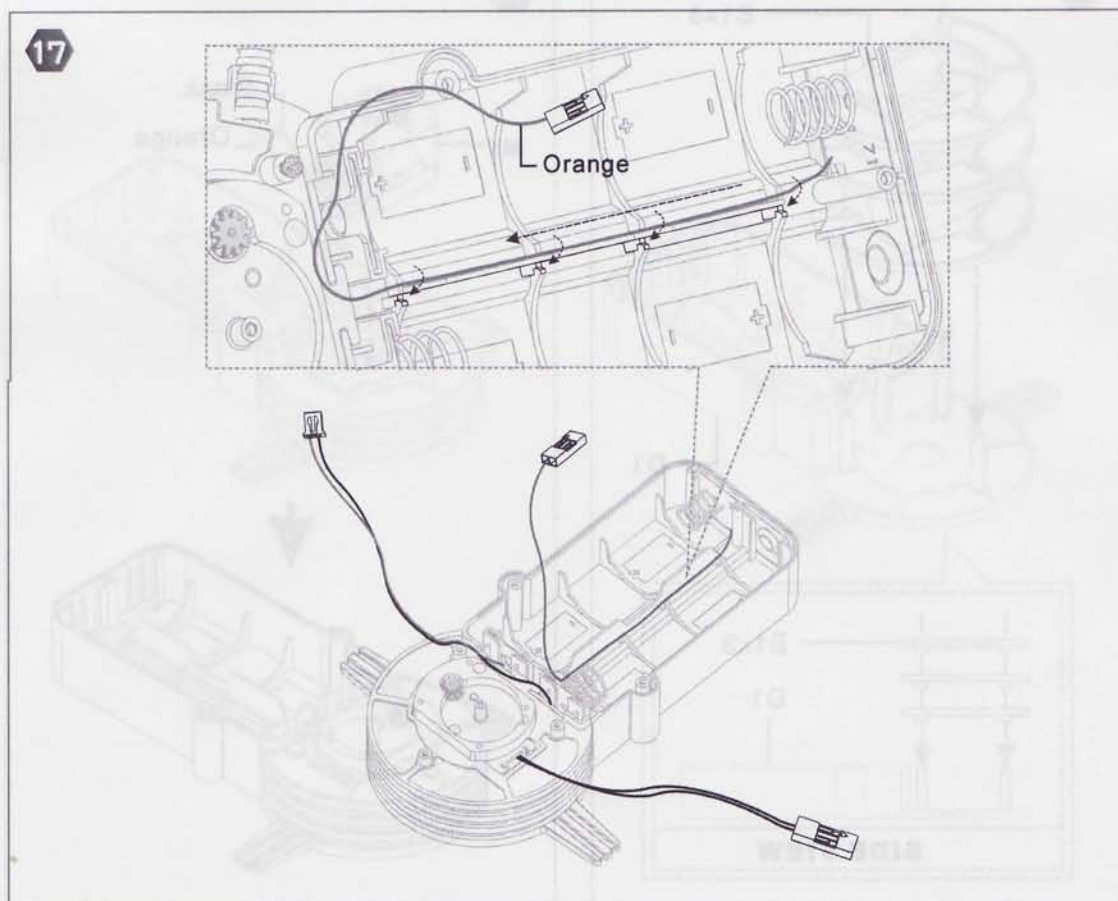
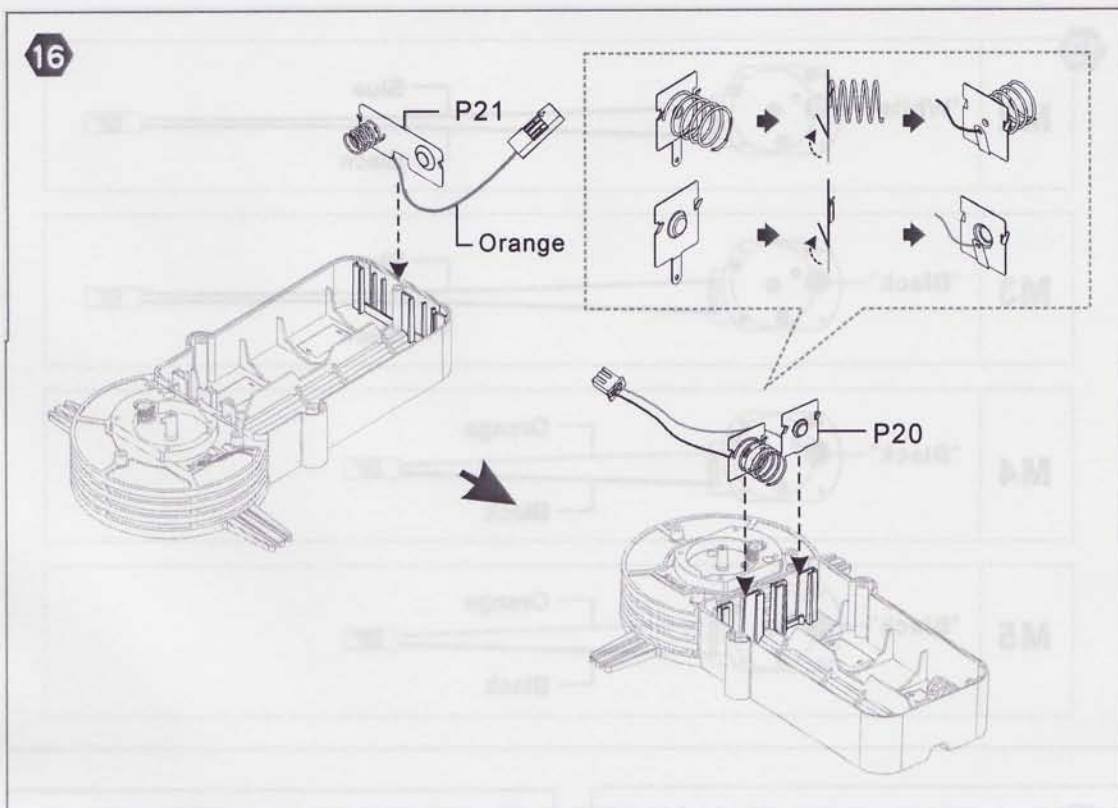


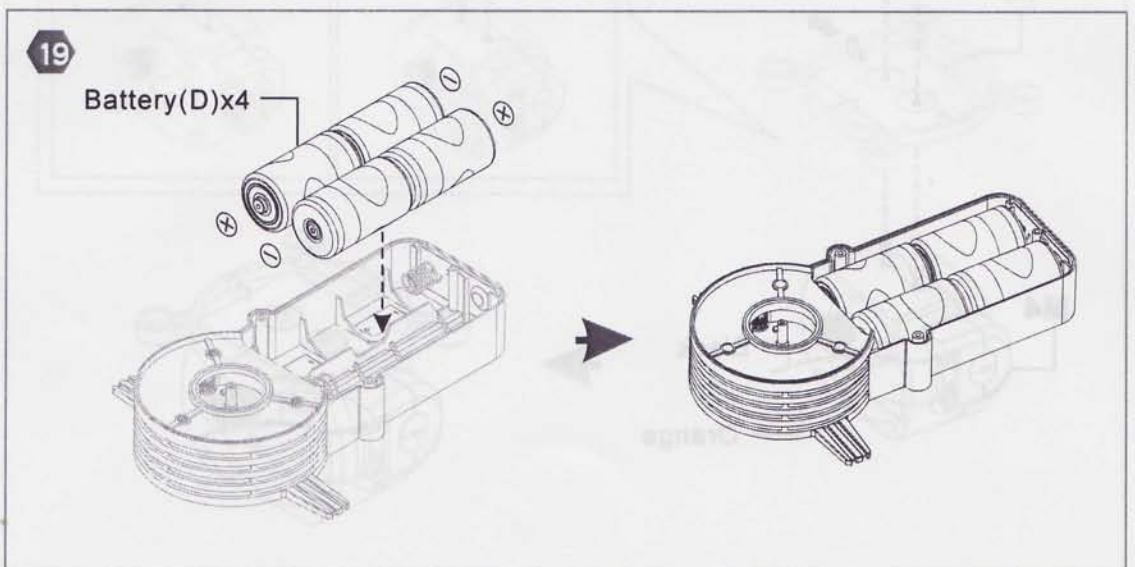
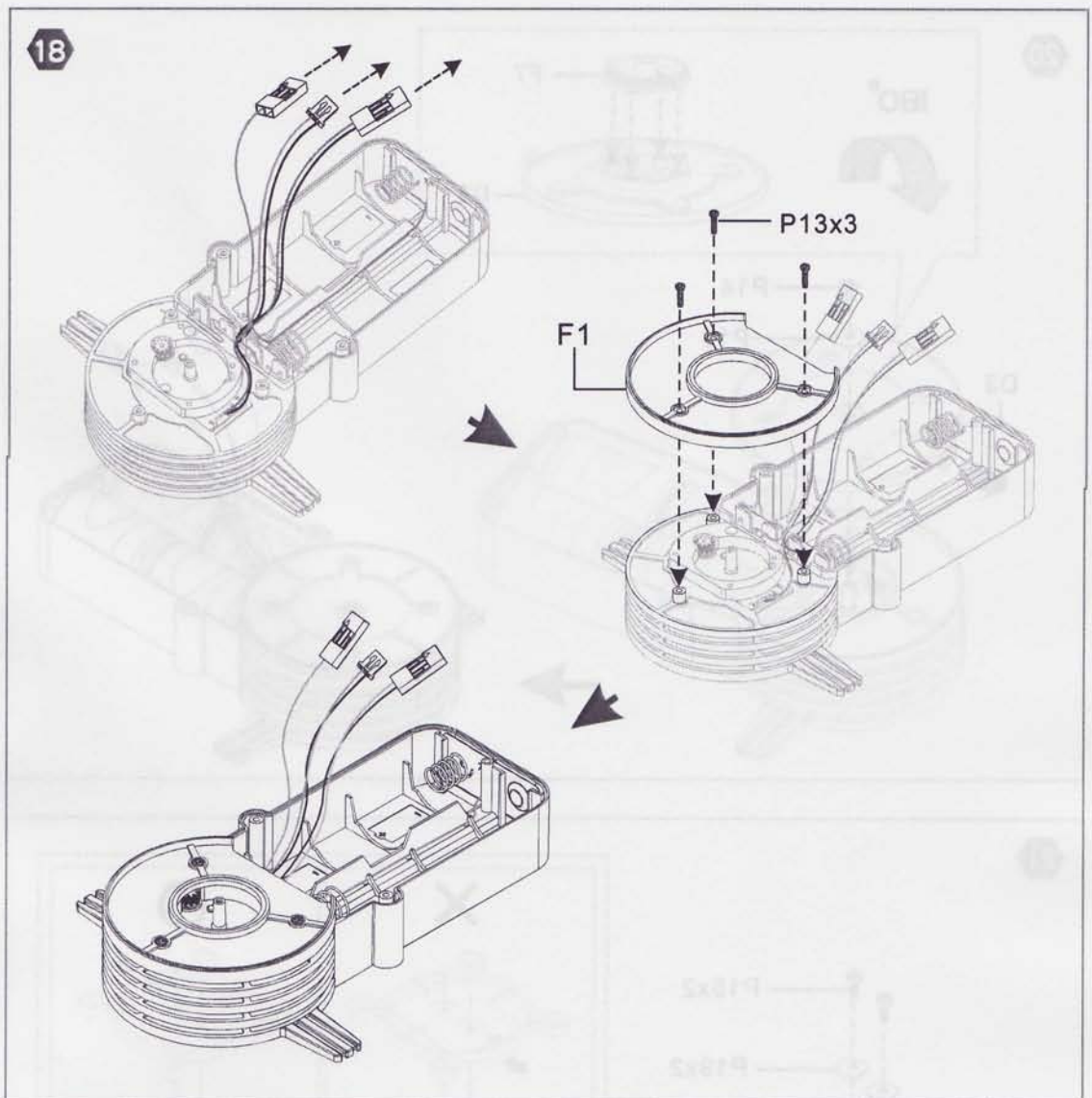
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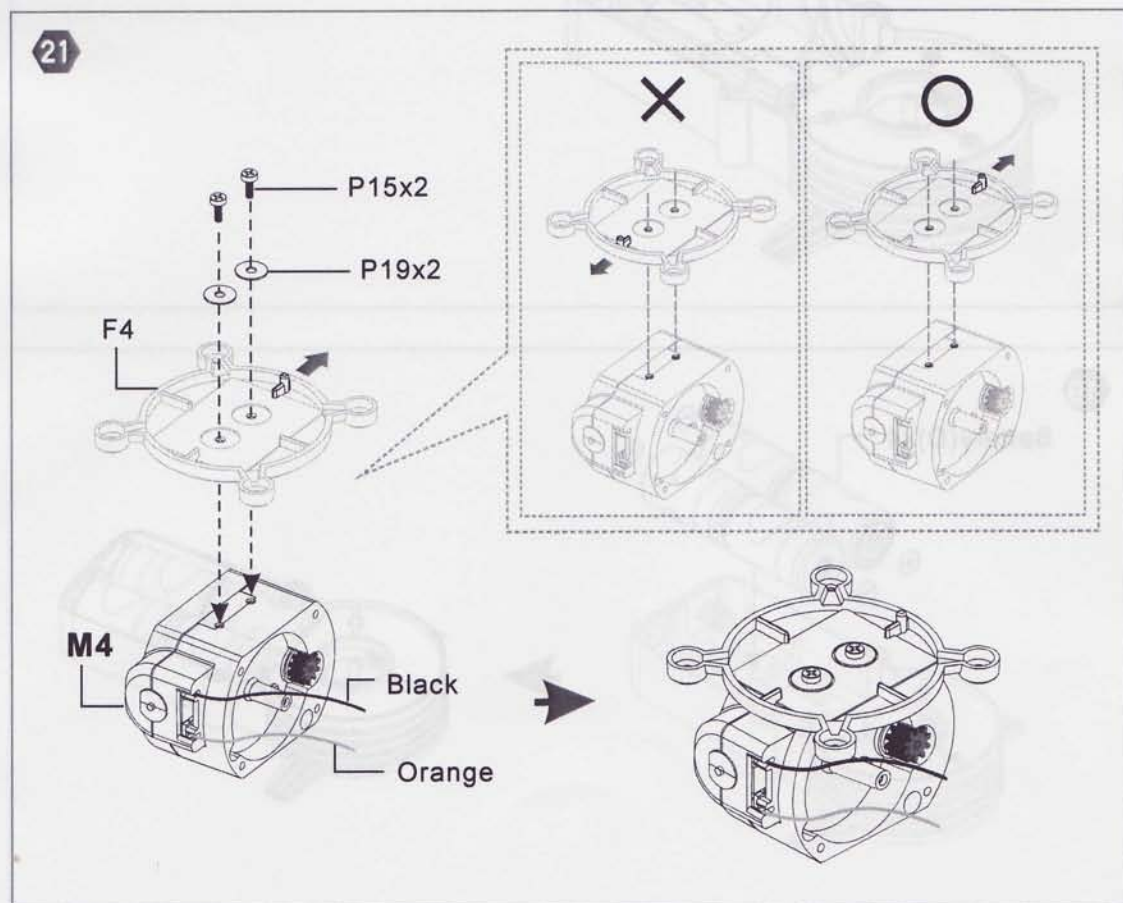
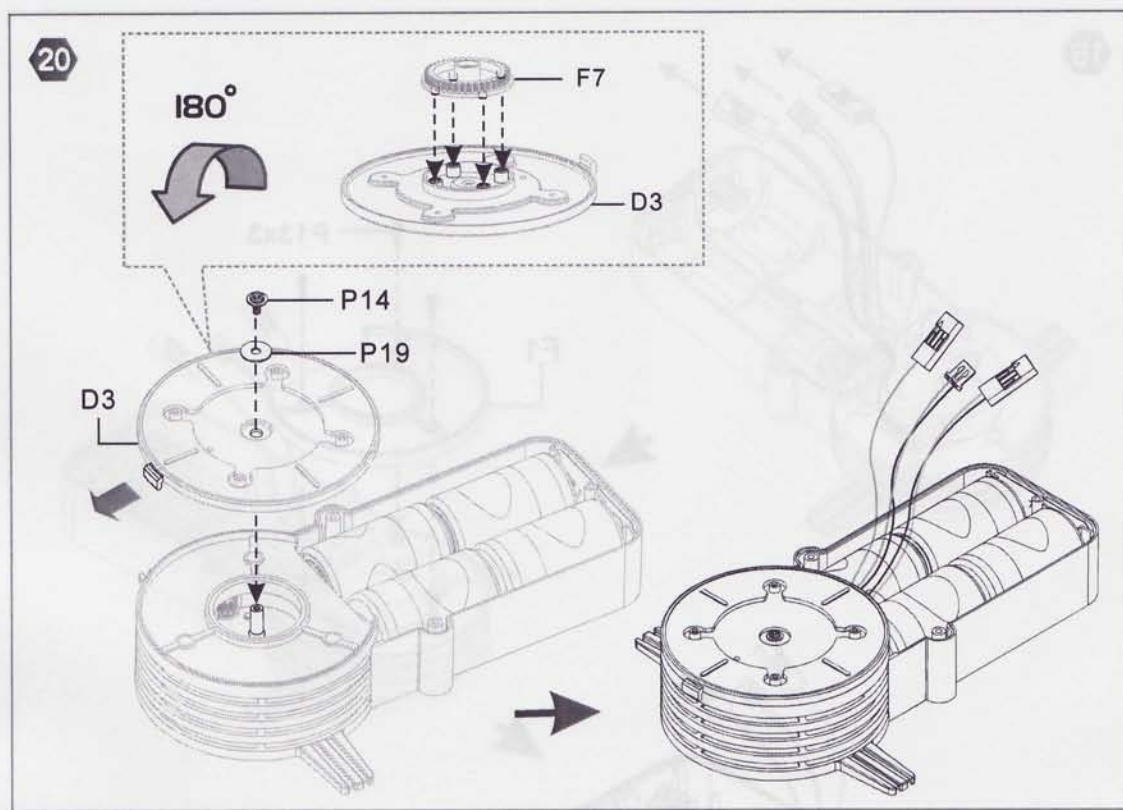


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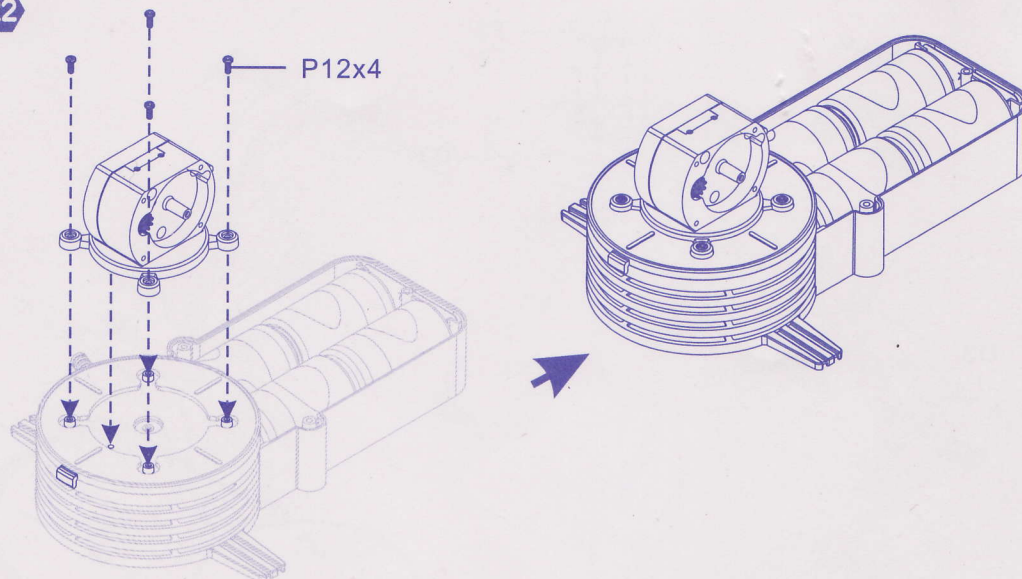




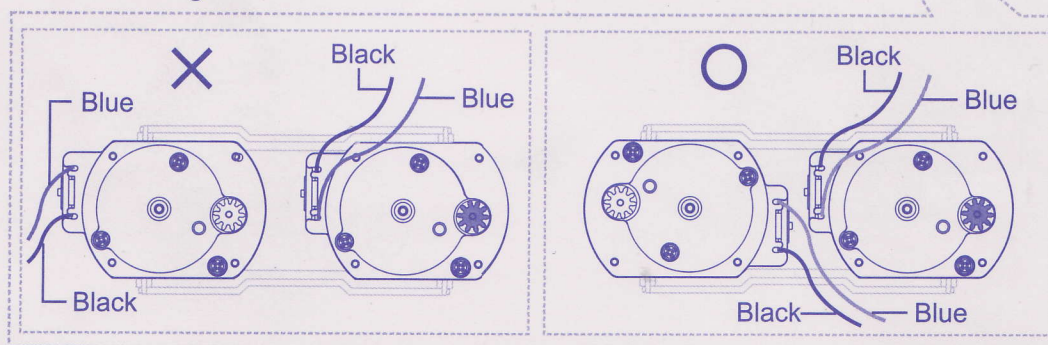
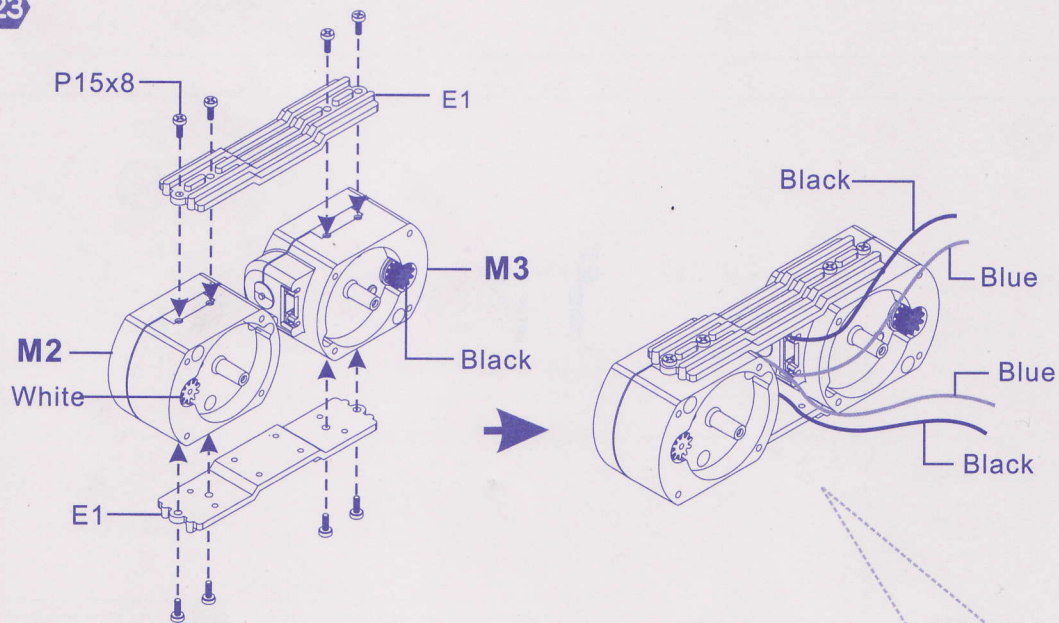




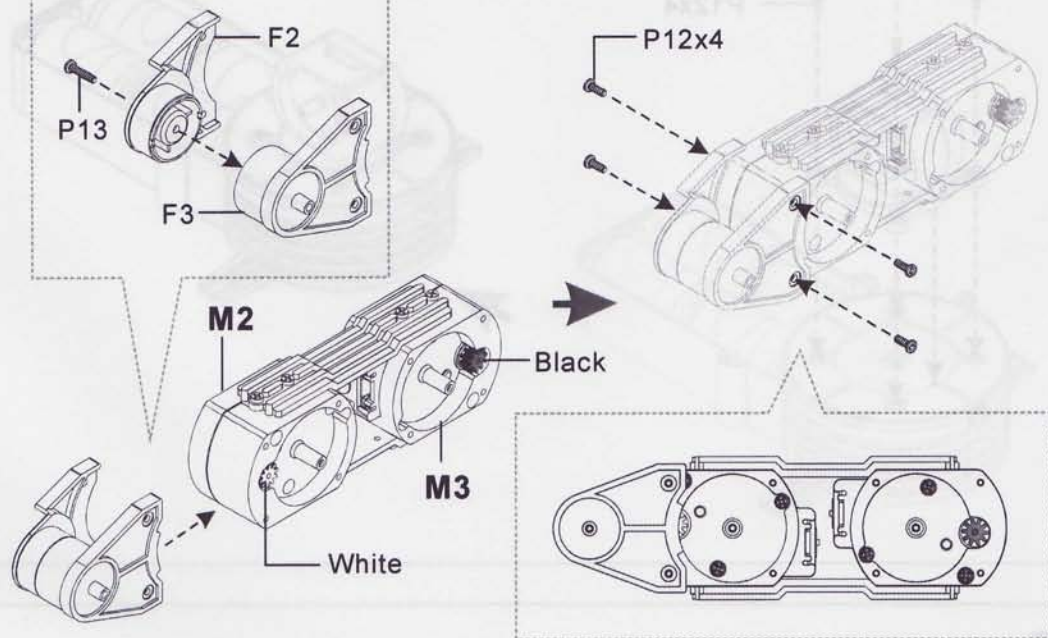
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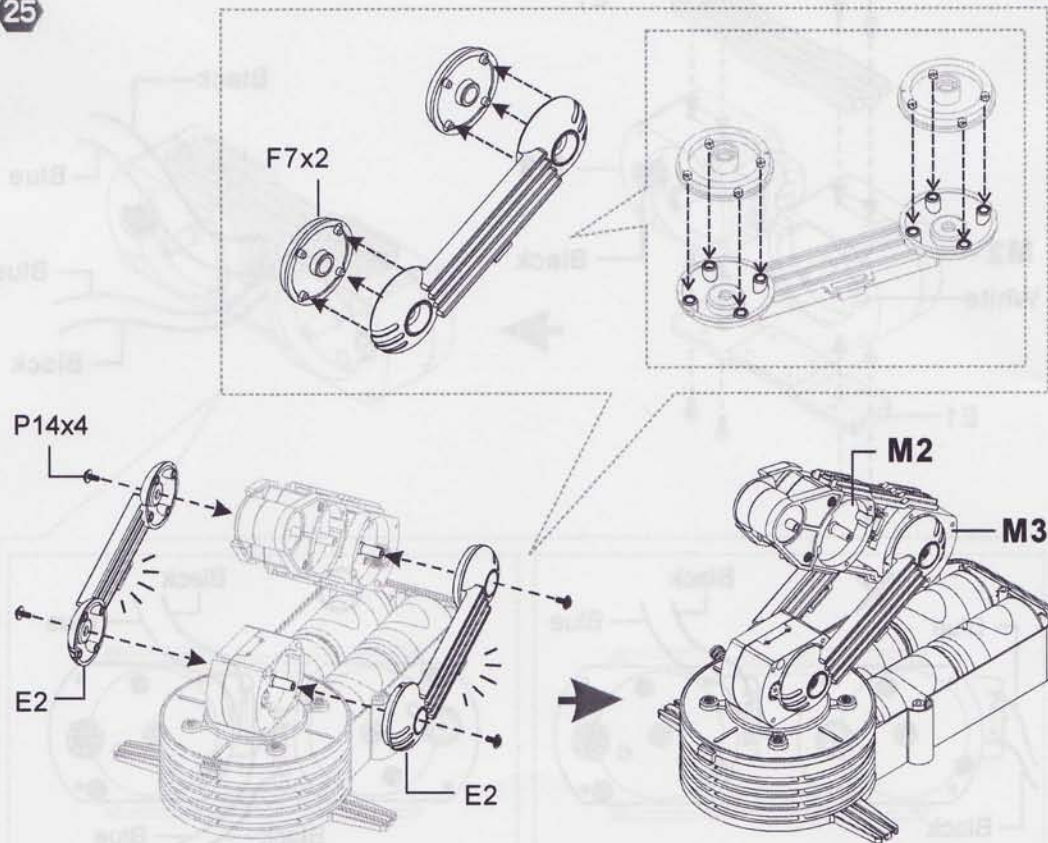
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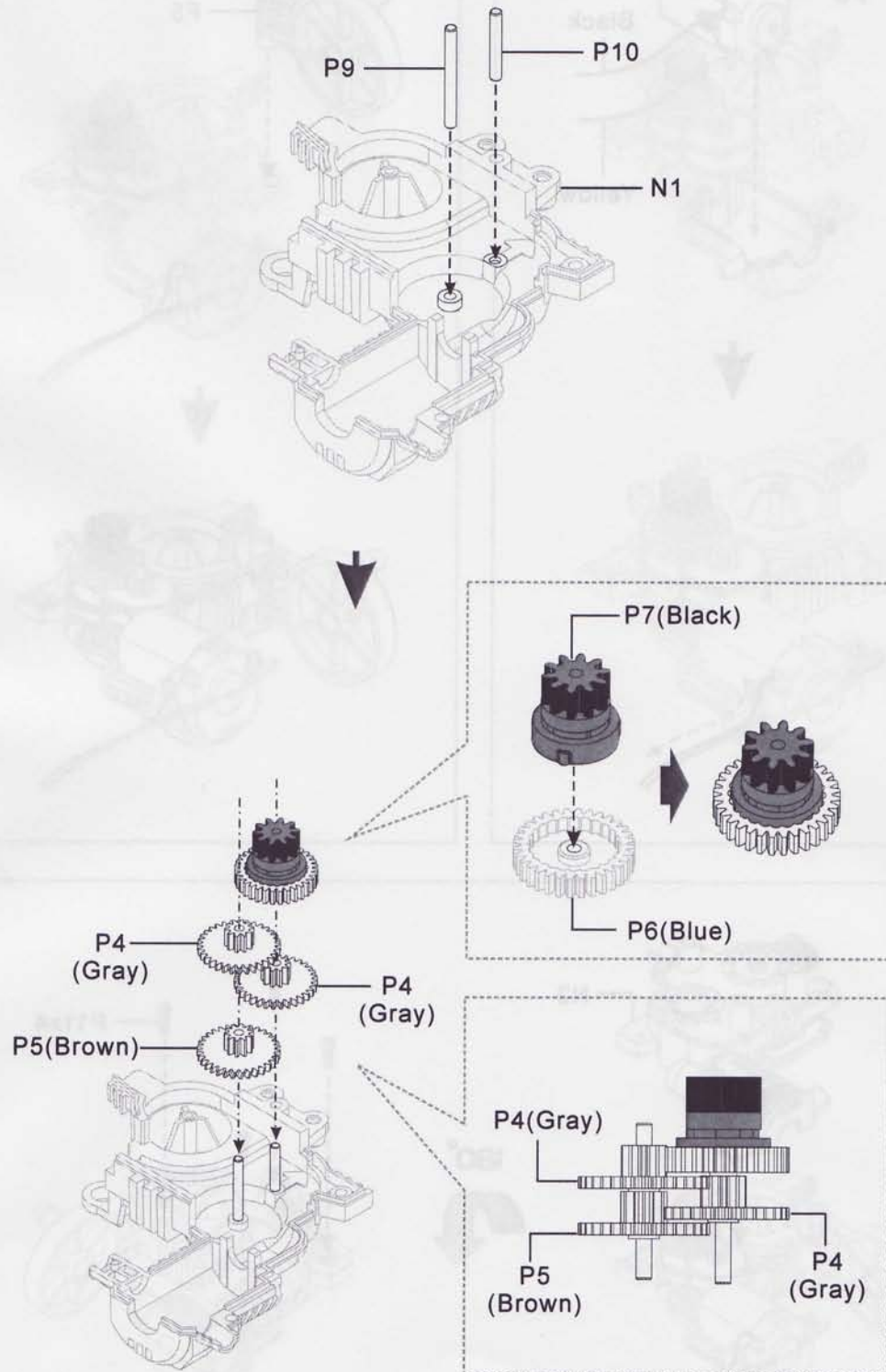
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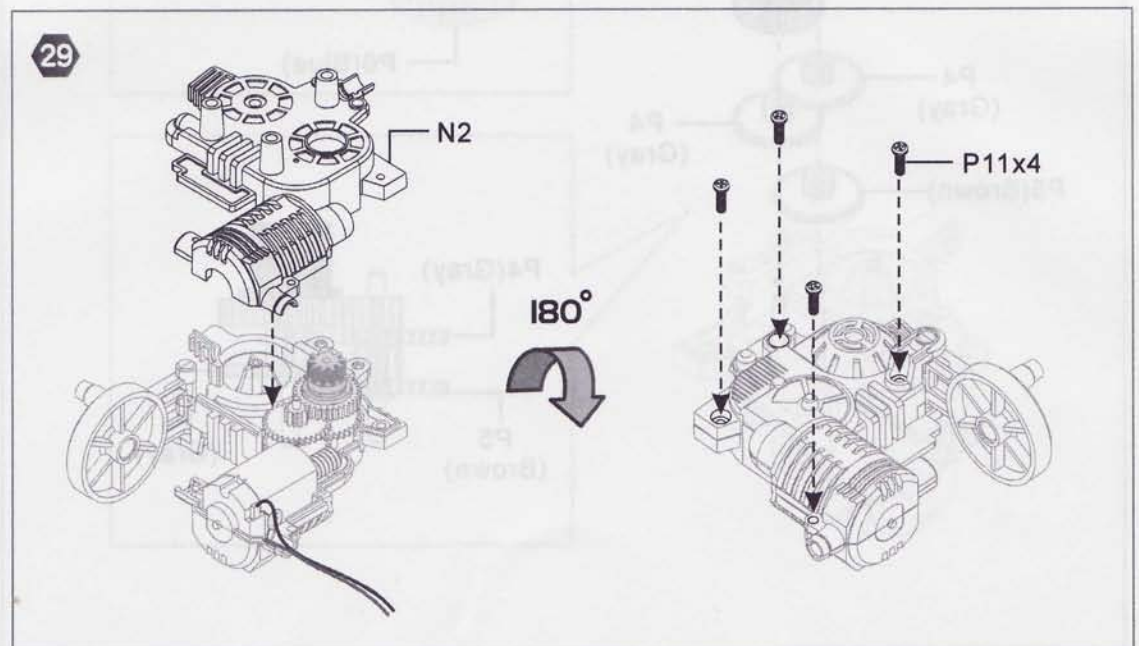
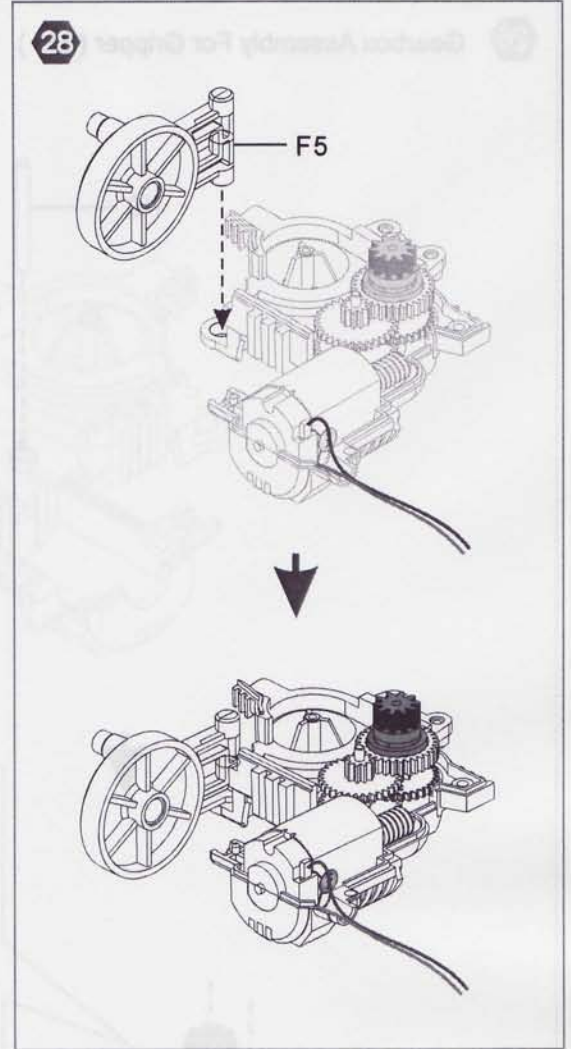
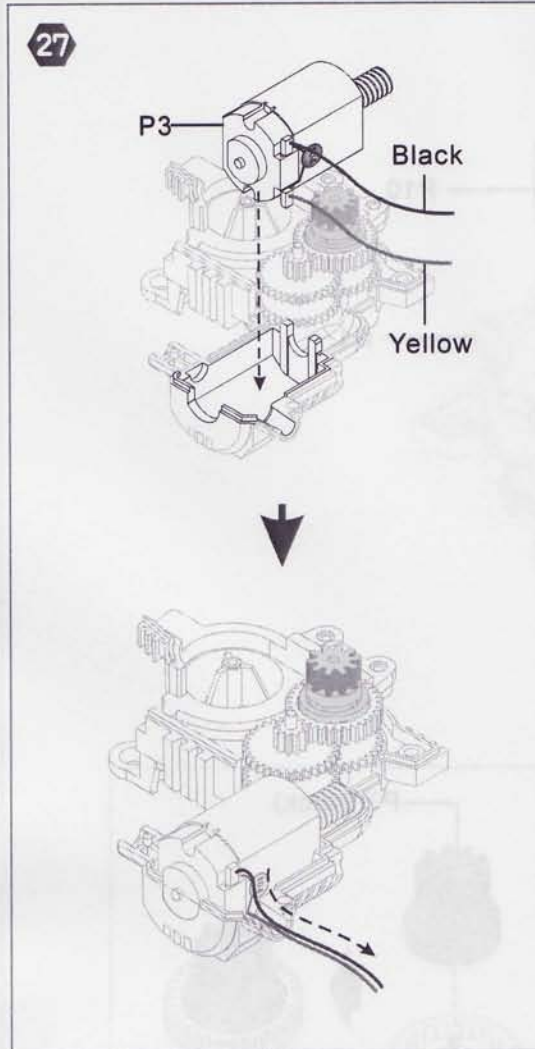


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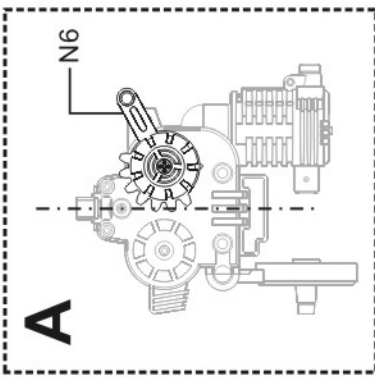


26 Gearbox Assembly For Gripper (M1)

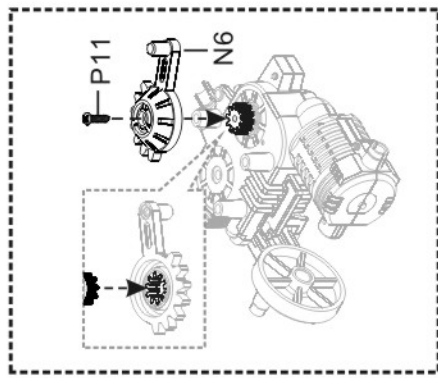




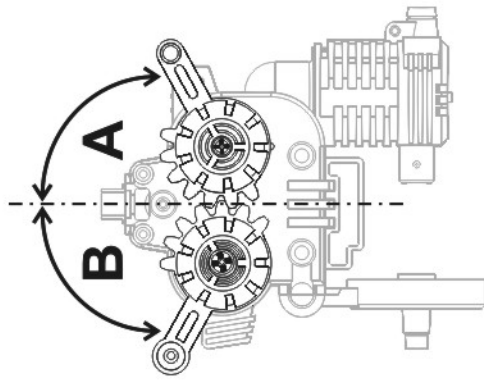
Step 1



Step 2

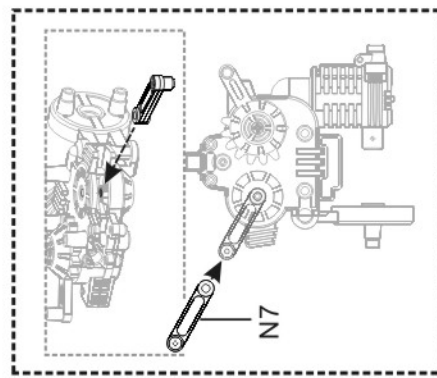


Important!

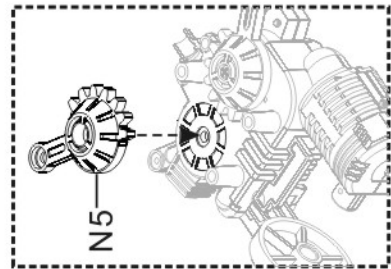


A and B must be same distance to the central.

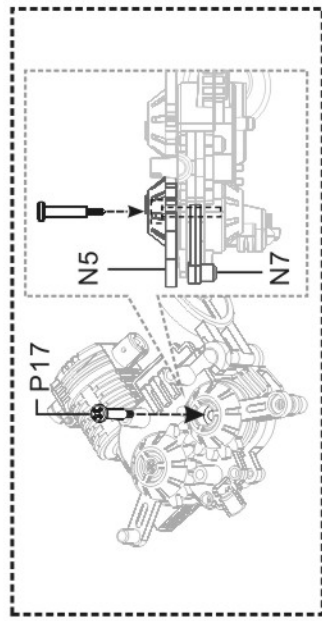
Step 3

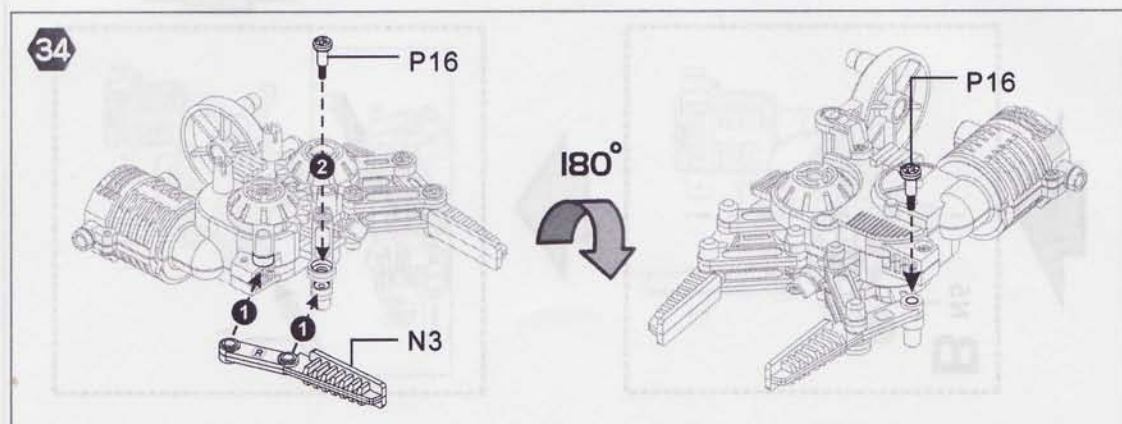
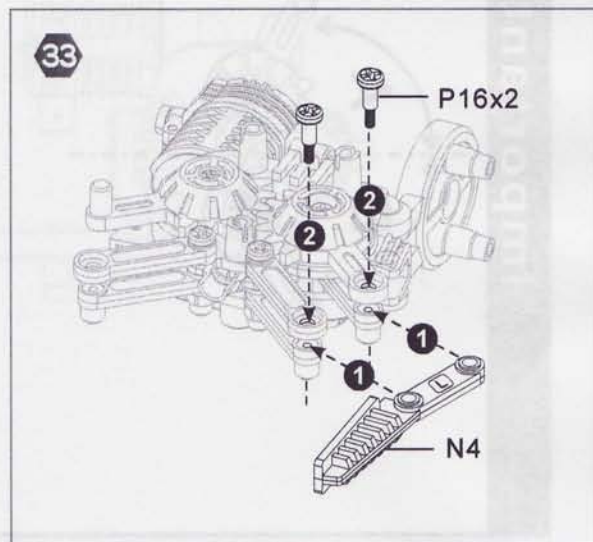
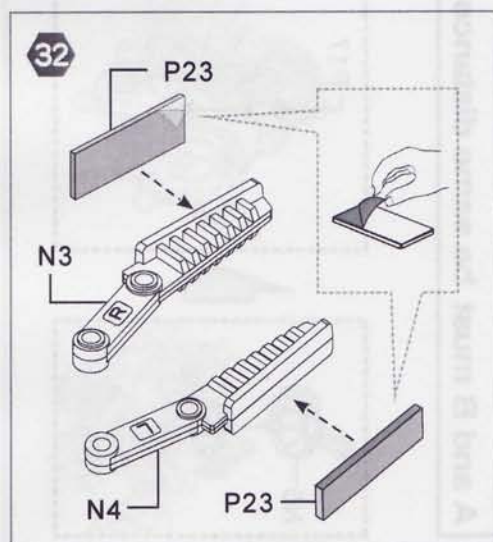
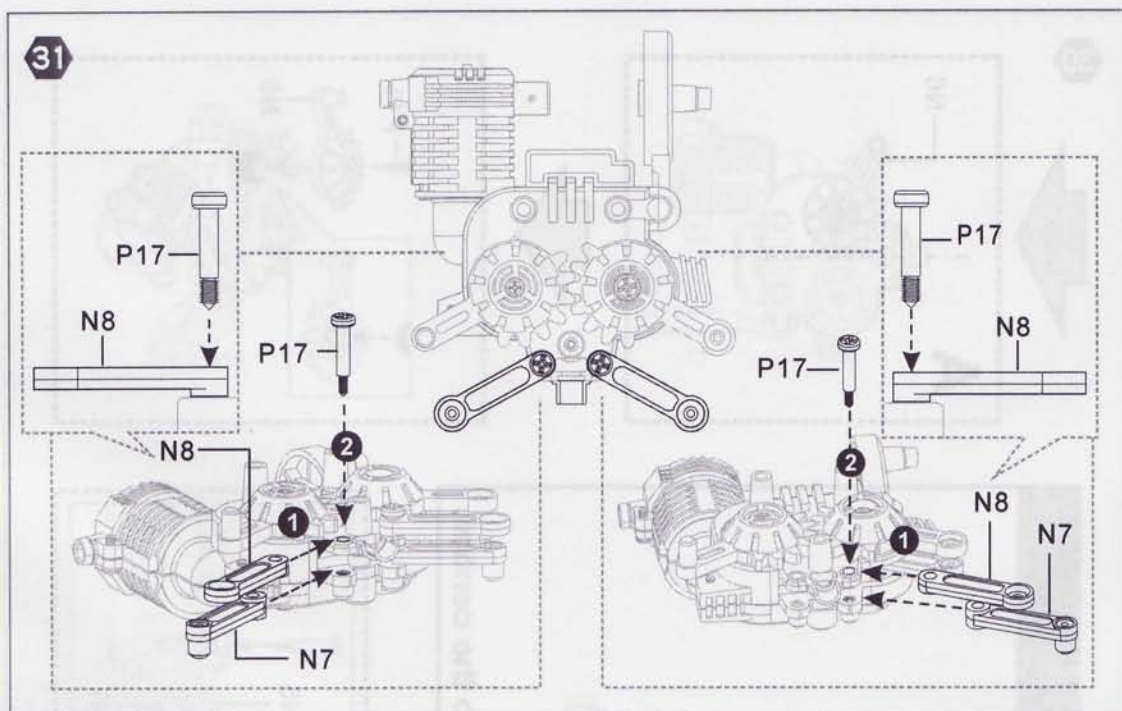


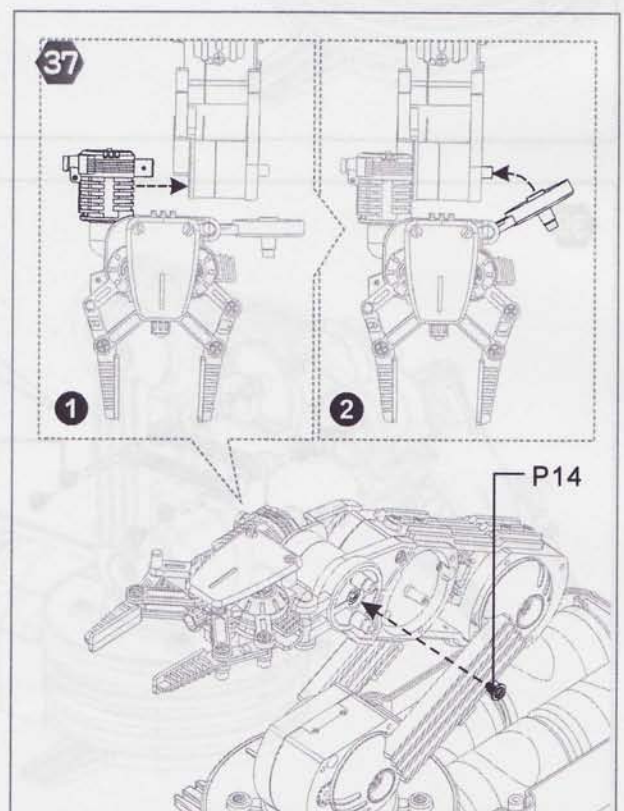
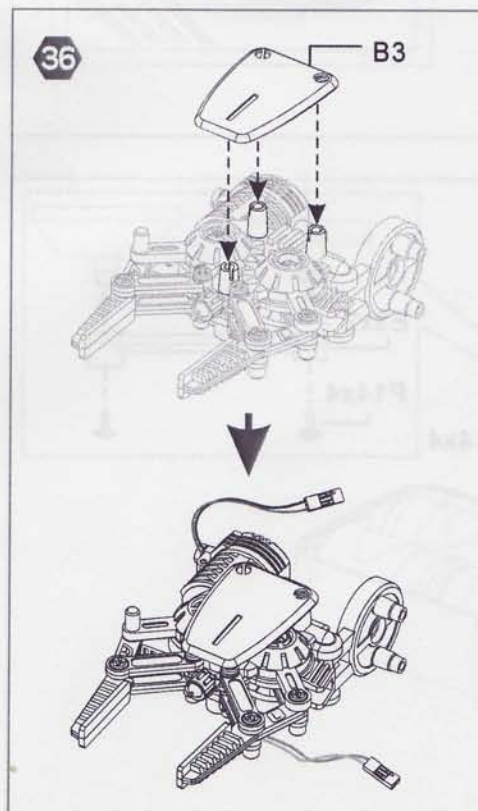
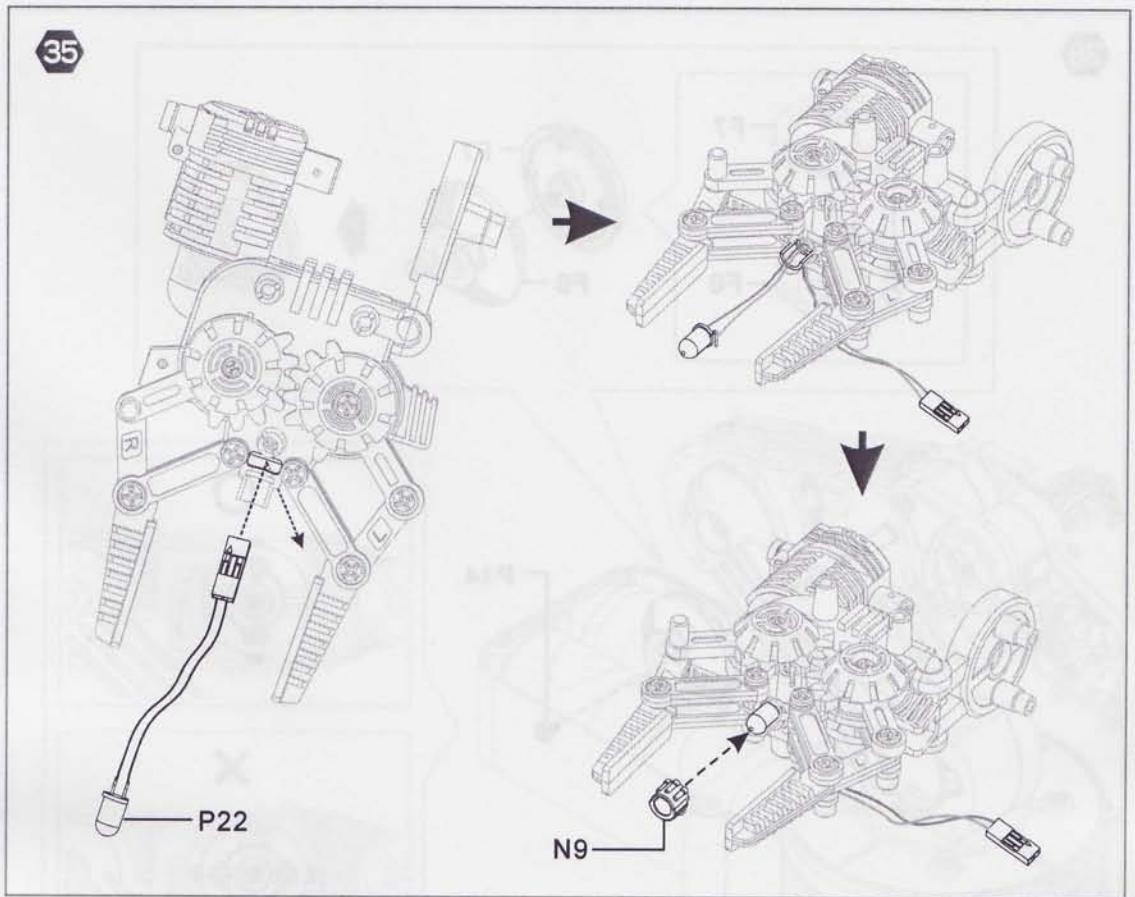
Step 4



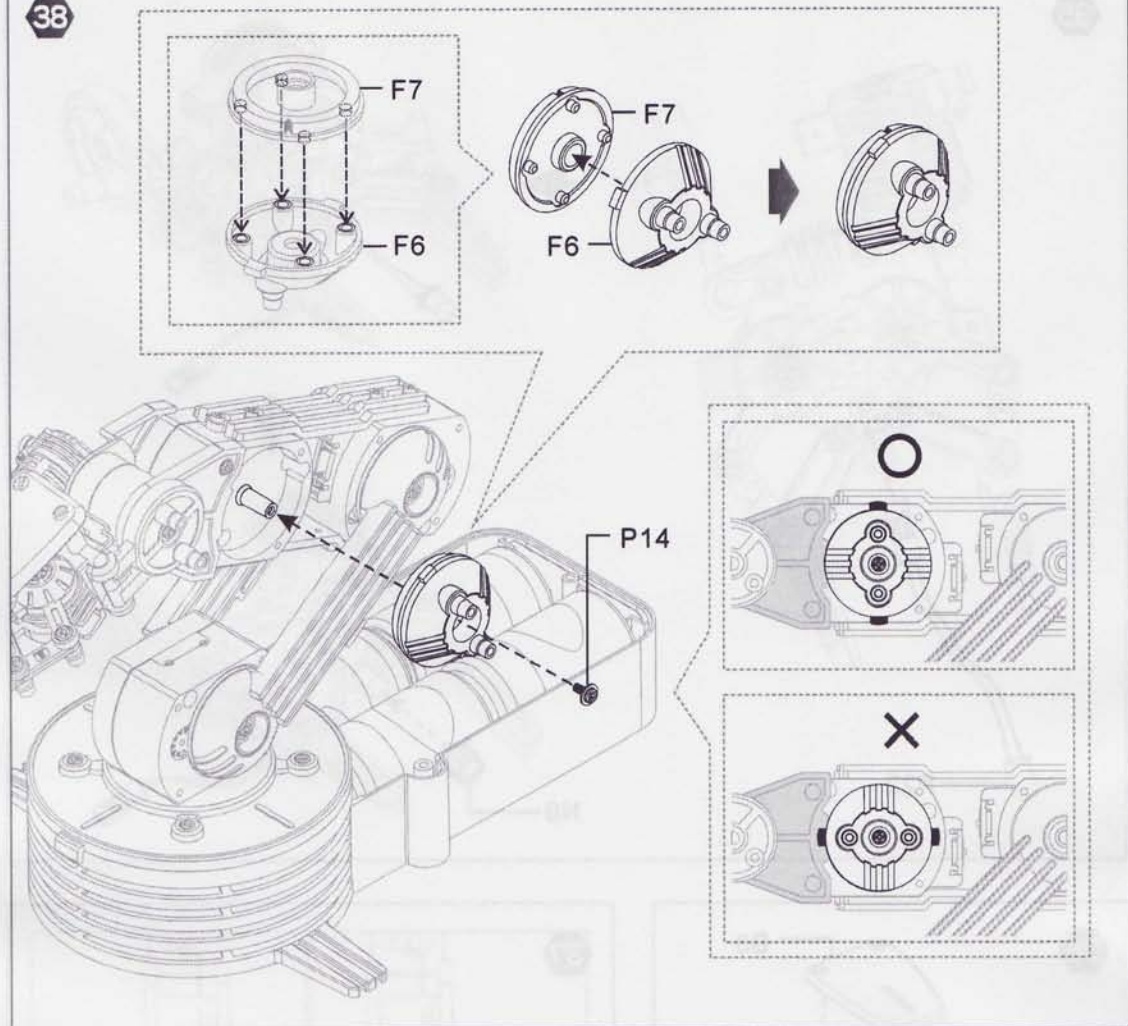
Step 5



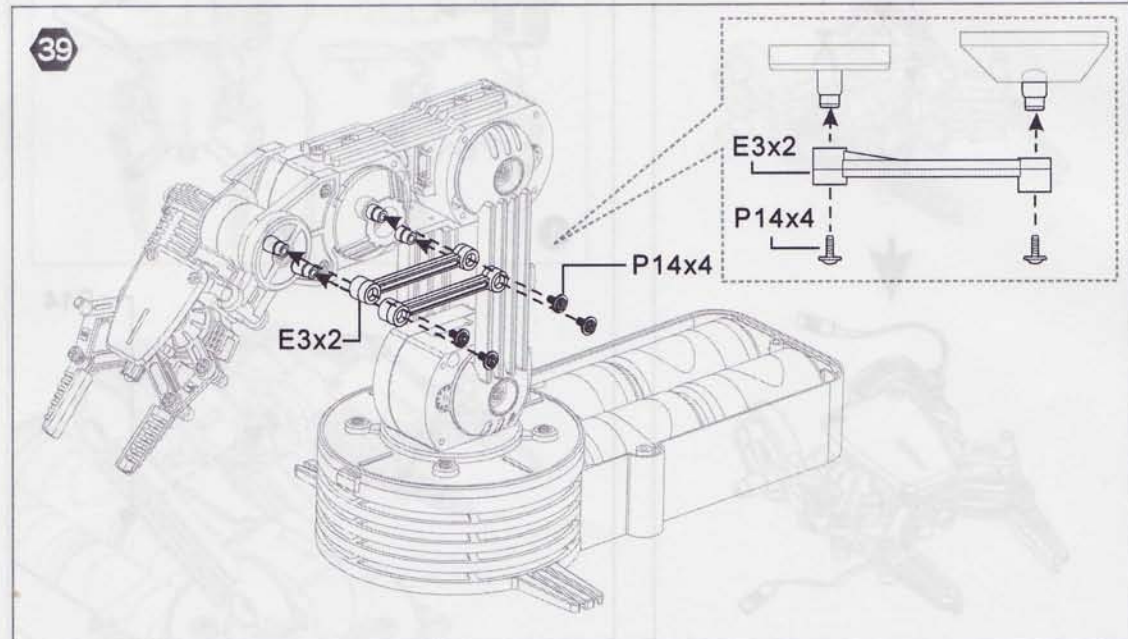


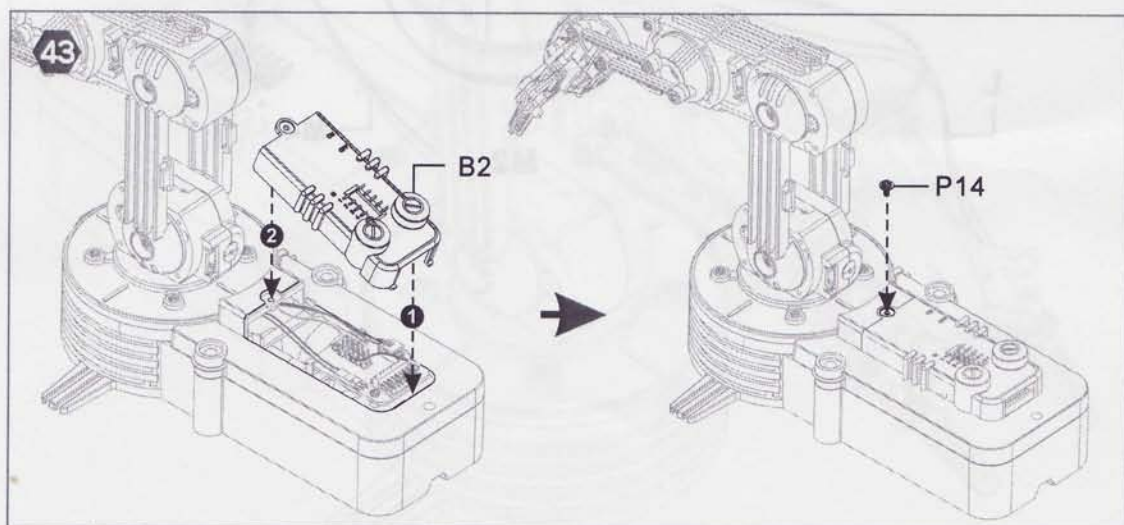
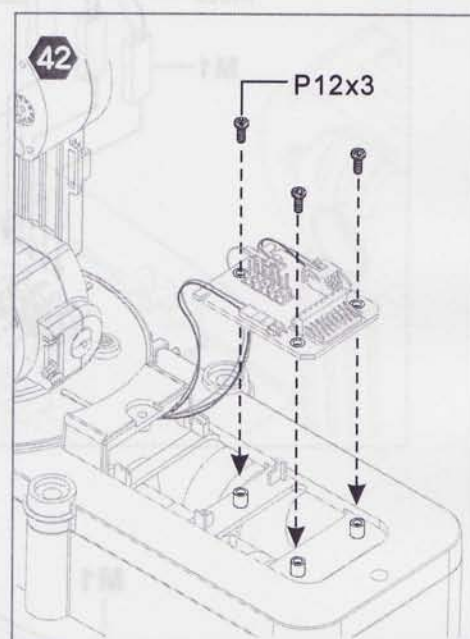
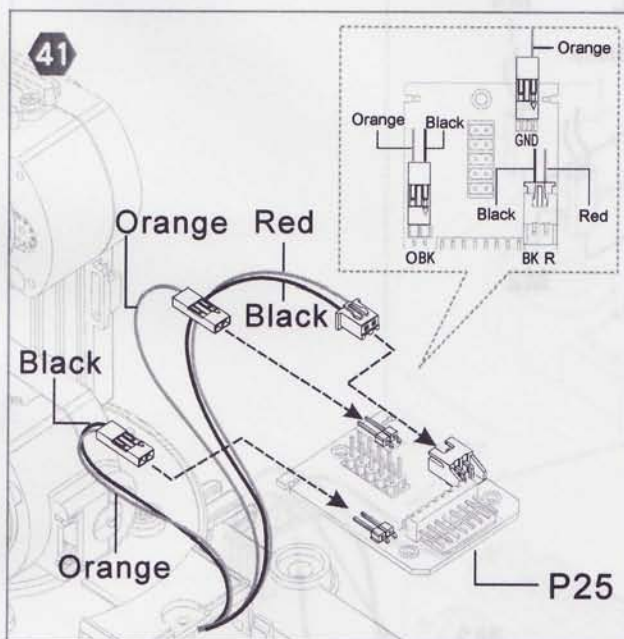
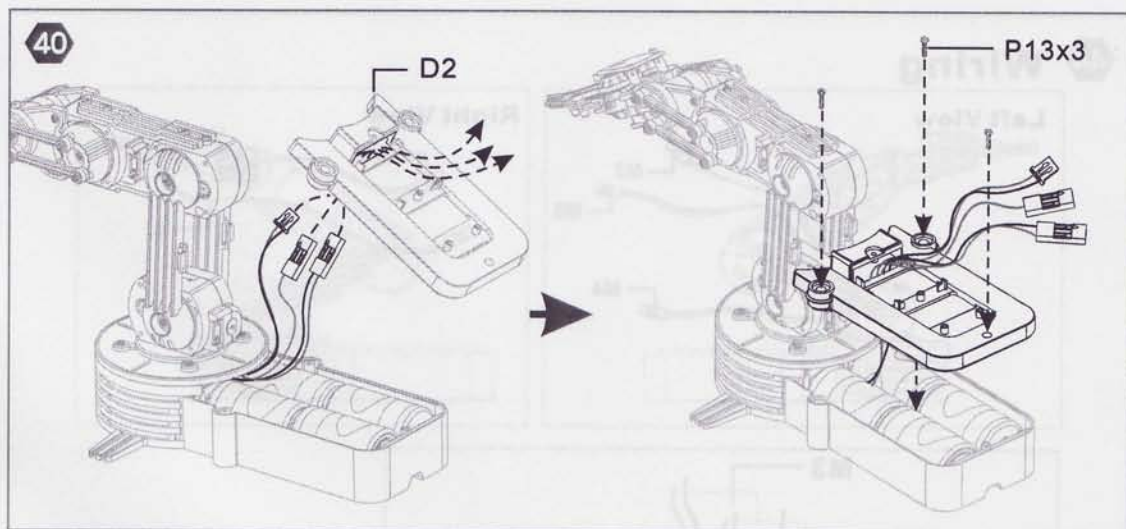


38



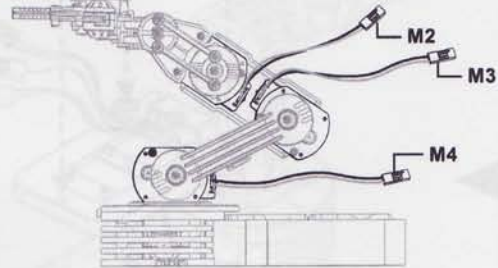
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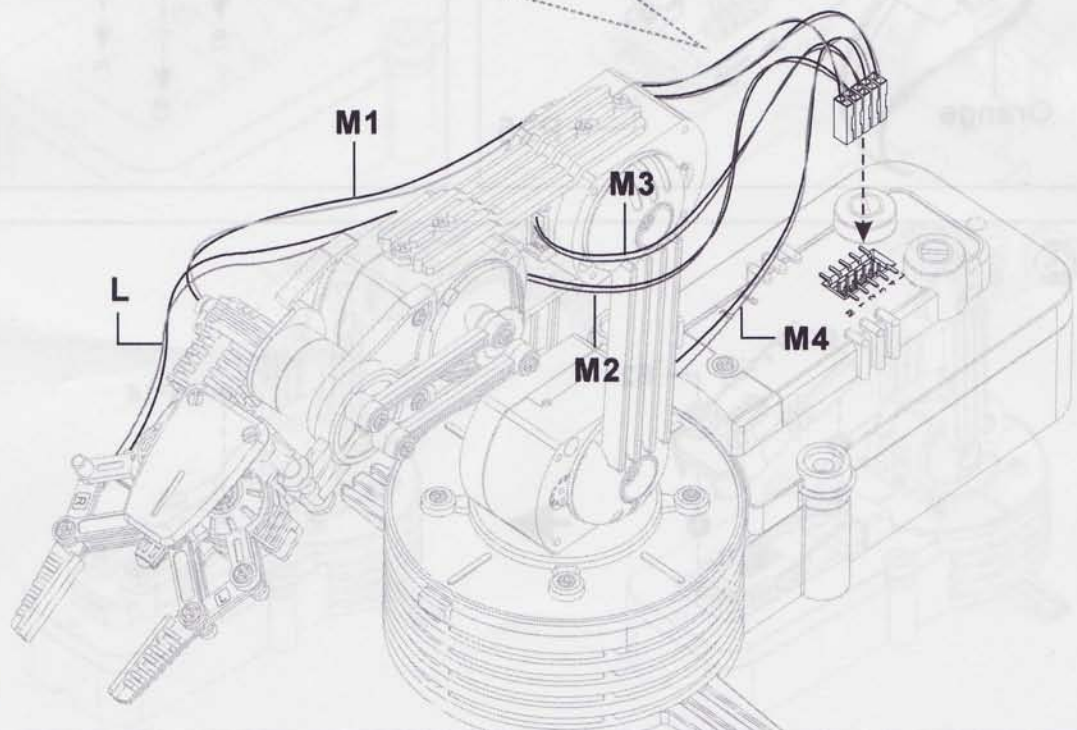
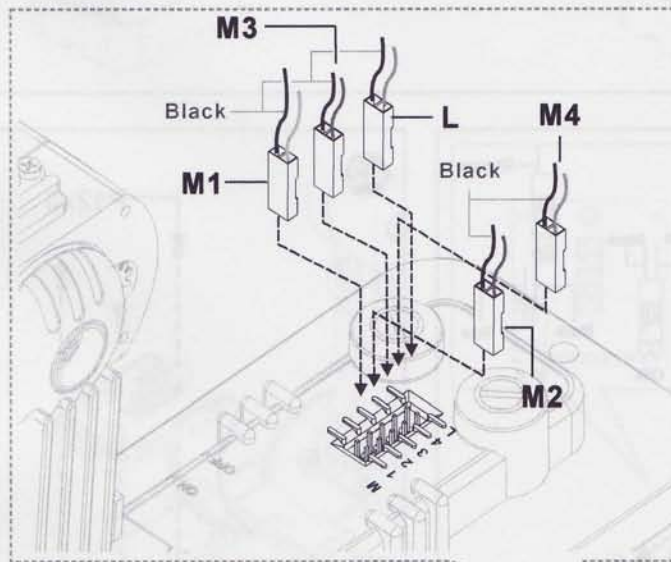
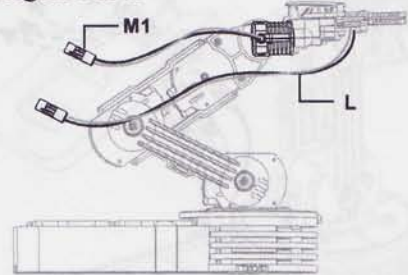


44 Wiring

Left View



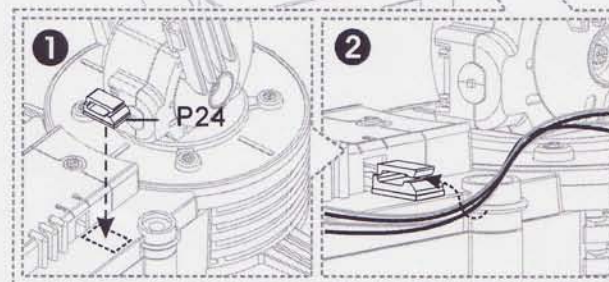
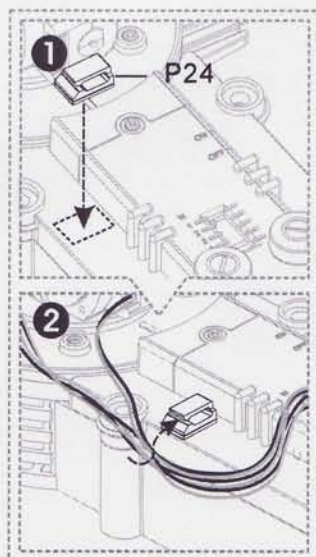
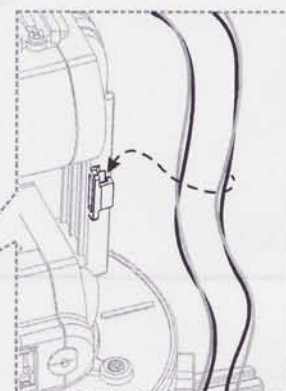
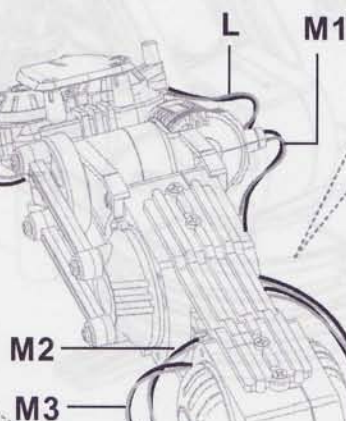
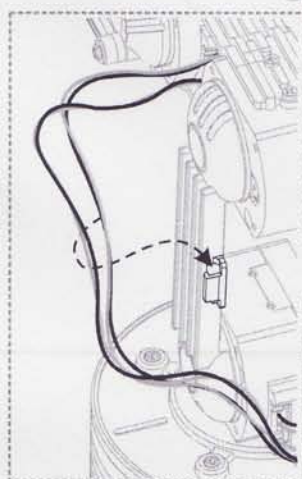
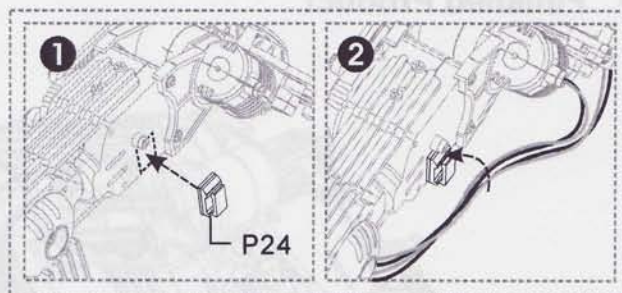
Right View



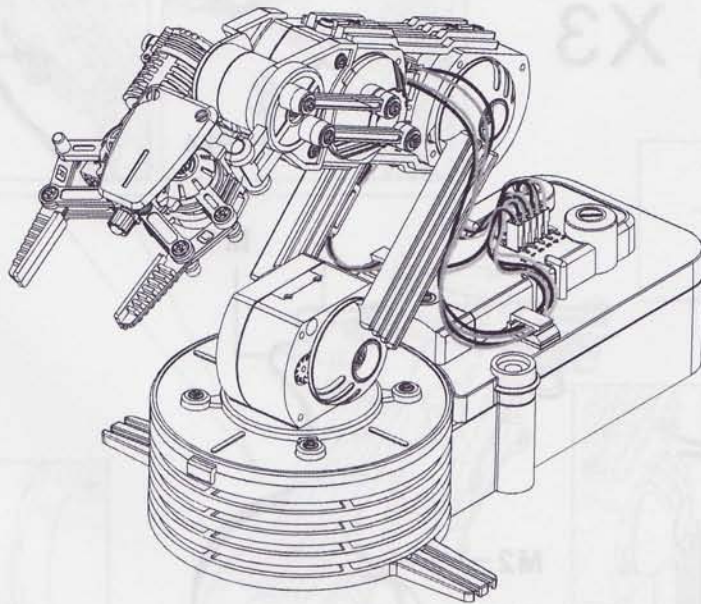
45



X3



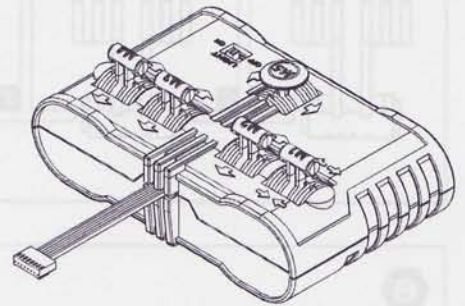
46 **Finished Product**



Wired Control Box

1 Product Introduction:

Using five levers to control the Robotic Arm Edge moves up and down, left and right, another on-off switch to control the search light.
Connect with main unit by a 100cm flat cable.



2 Tools You May Need:

Long Nose Pliers



Diagonal Cutter

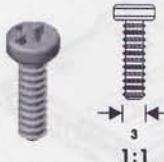


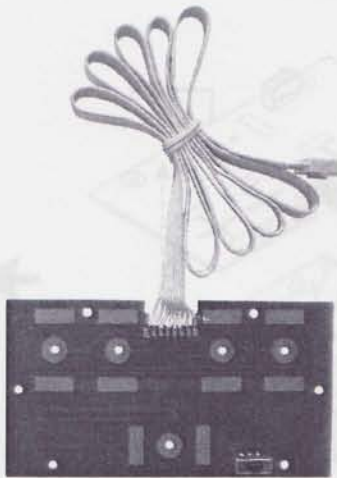
Screwdriver



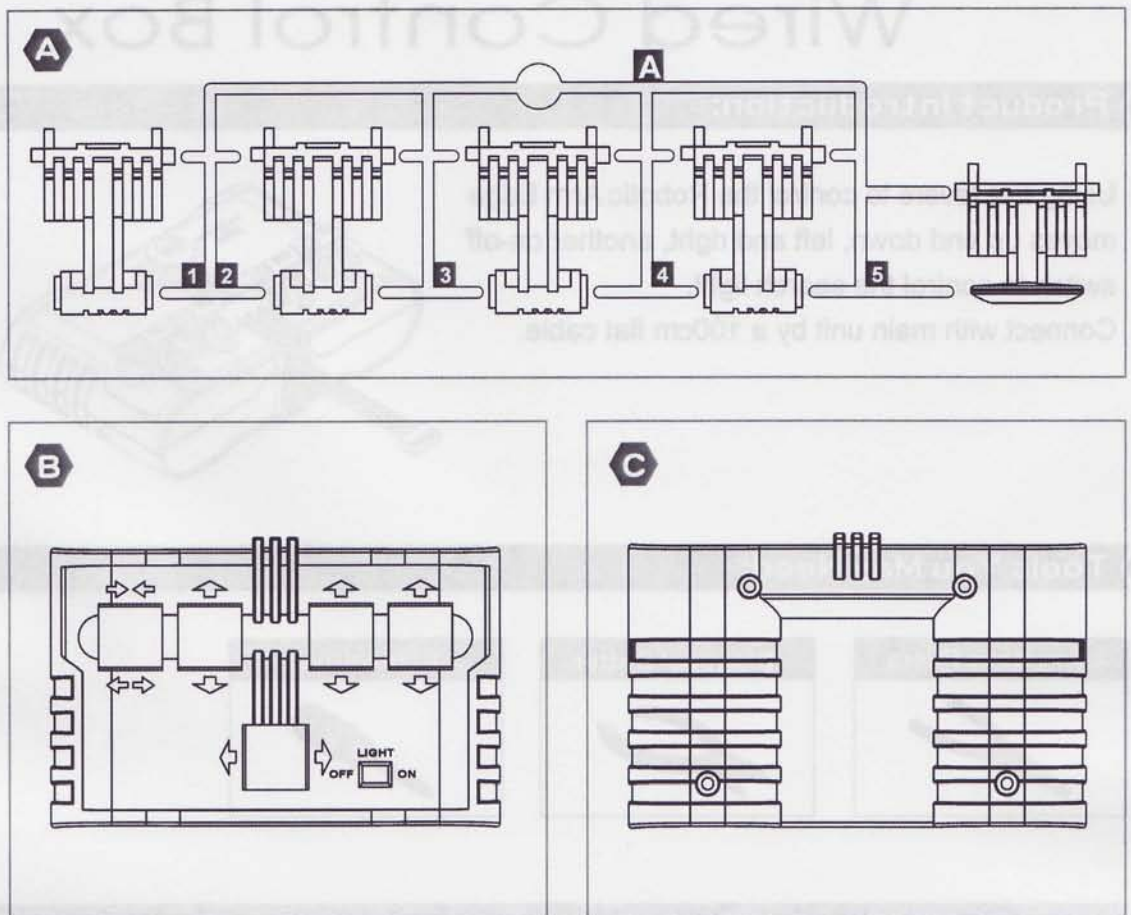
3 Mechanical Parts List:

P1	Metal Plate	
	Qty	
		5

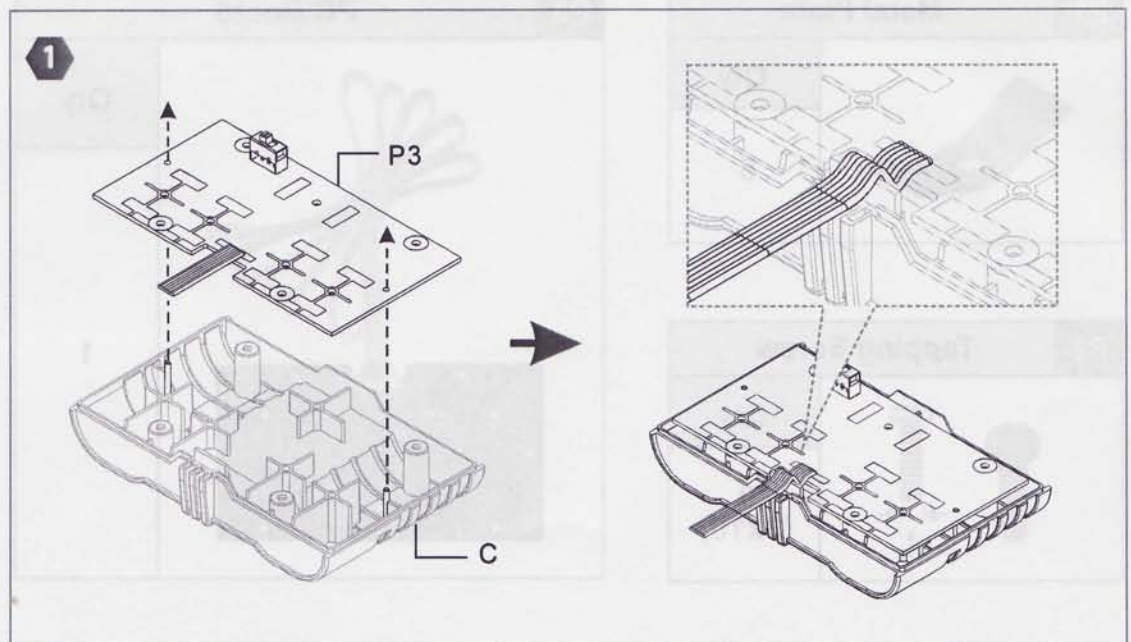
P2	Tapping Screw	
	Qty	
		9 (3x10)

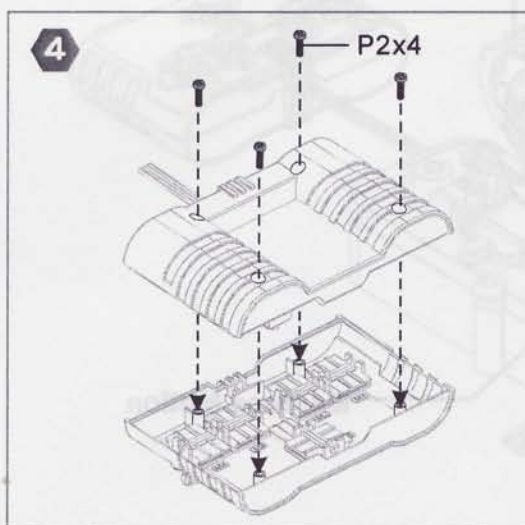
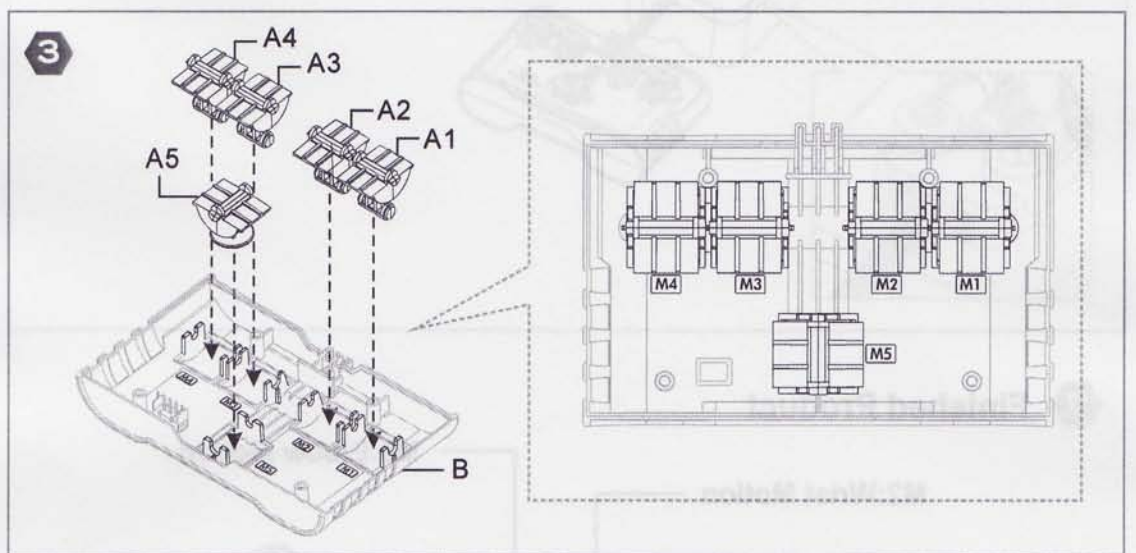
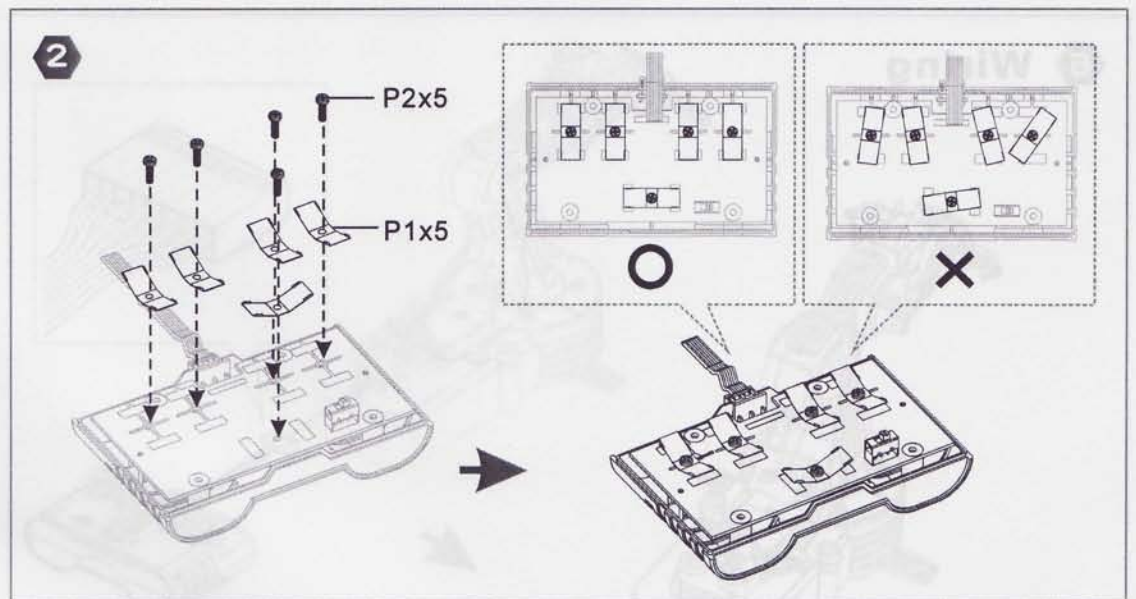
P3	PC Board	
	Qty	
		1

4 Plastic Parts :

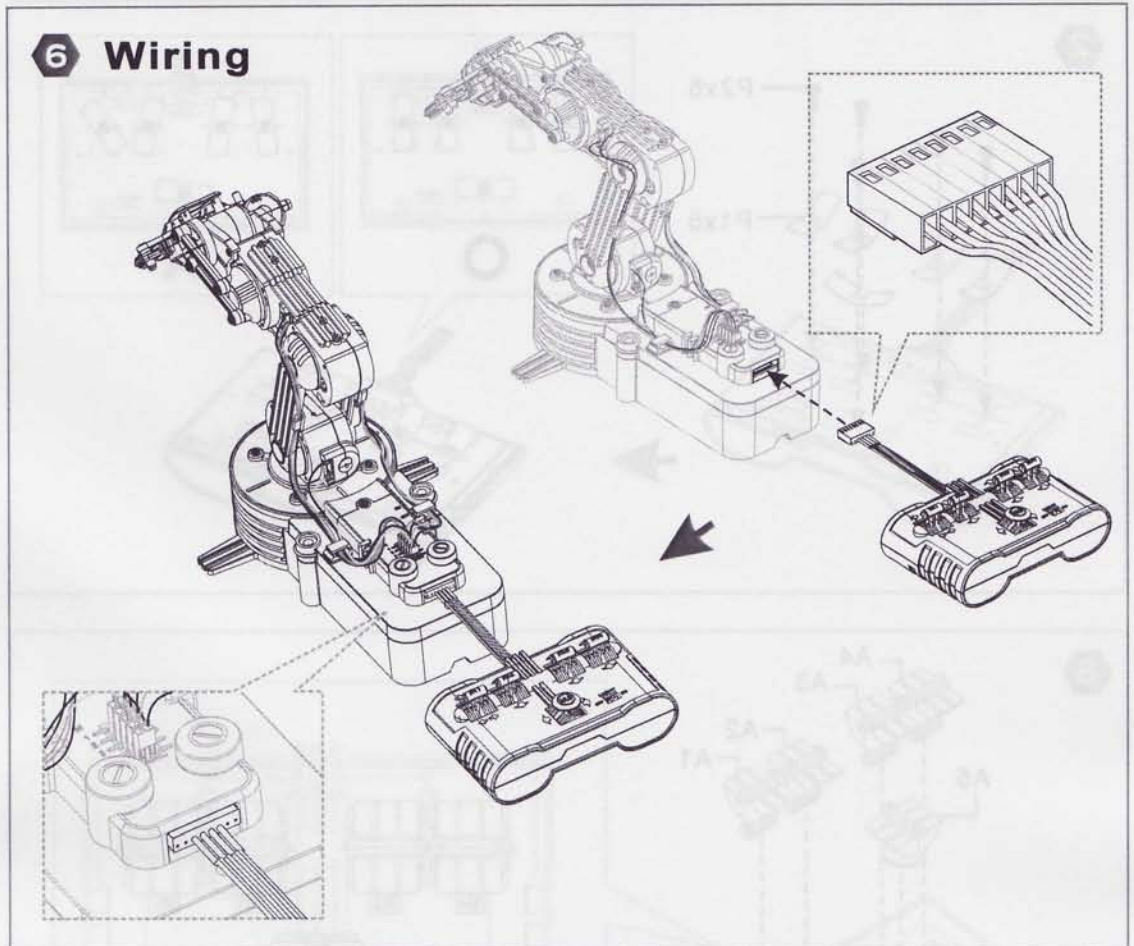


5 Mechanical Assembly:

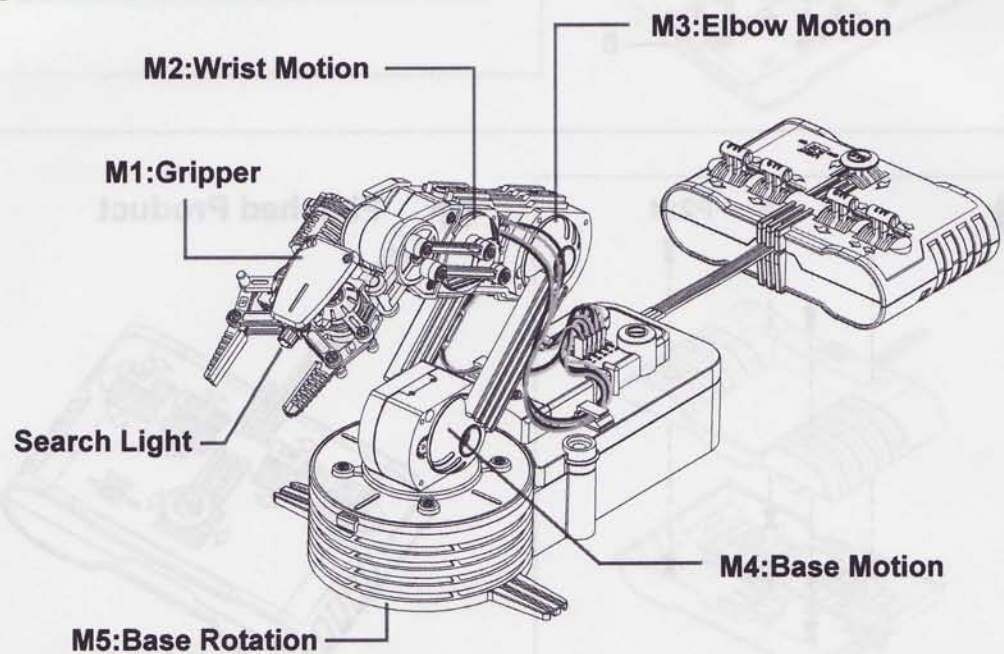




6 Wiring

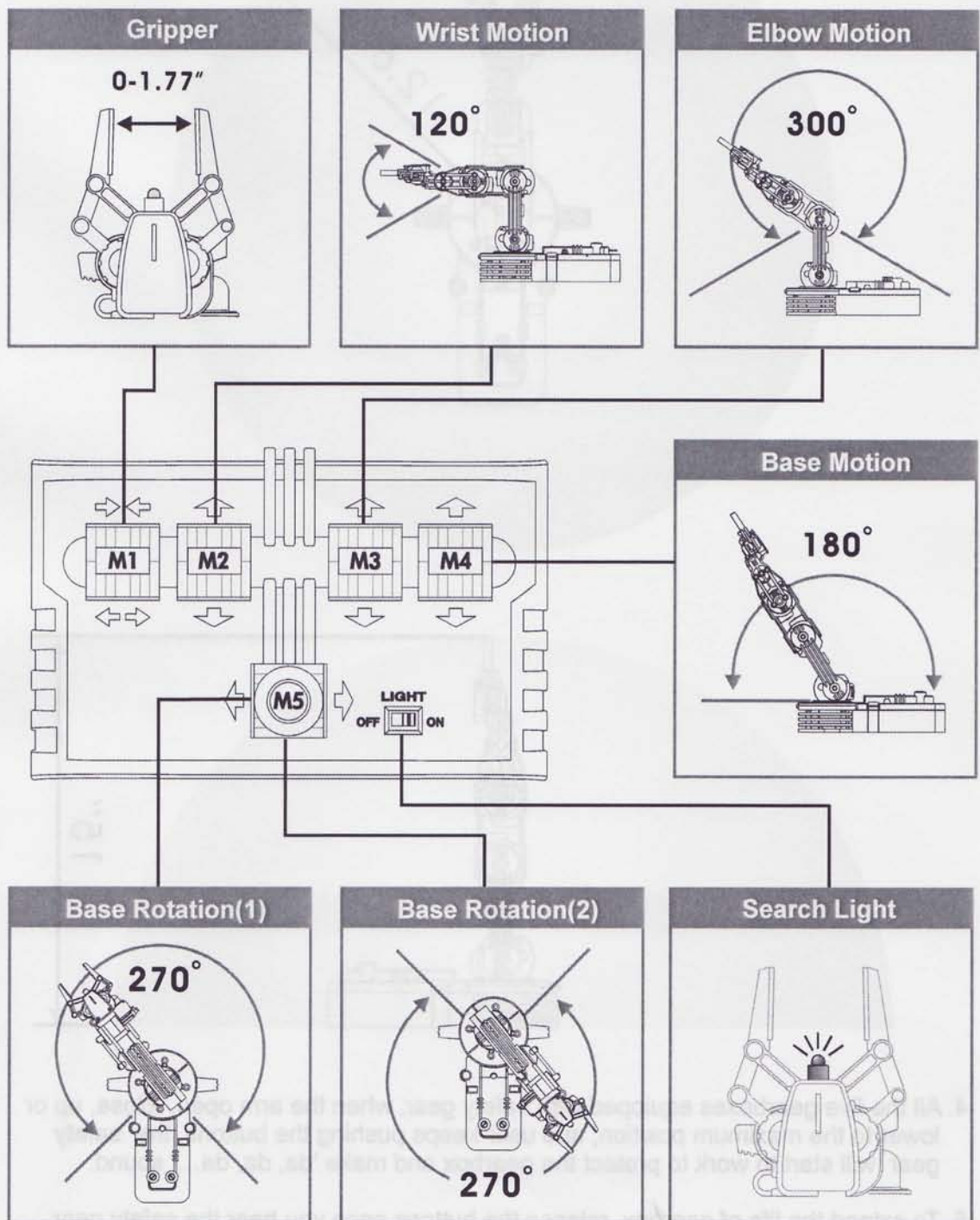


7 Finished Product

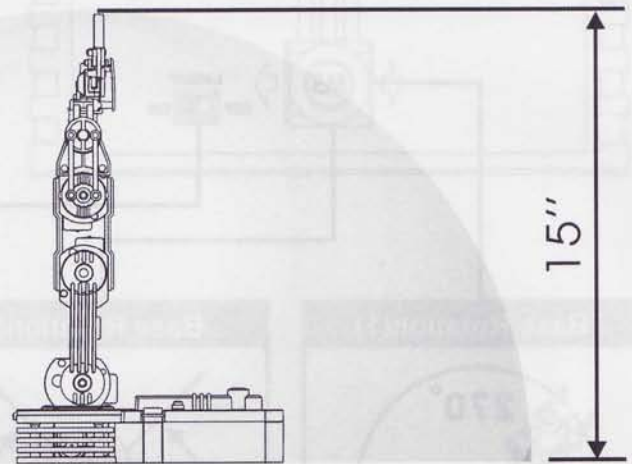
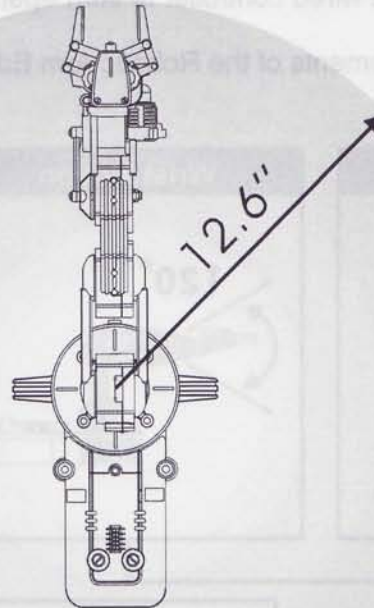


How it works:

1. Push any lever on the wired controller to start operation.
2. The different 12 movements of the Robotic Arm Edge as shown below:



3. Working area:

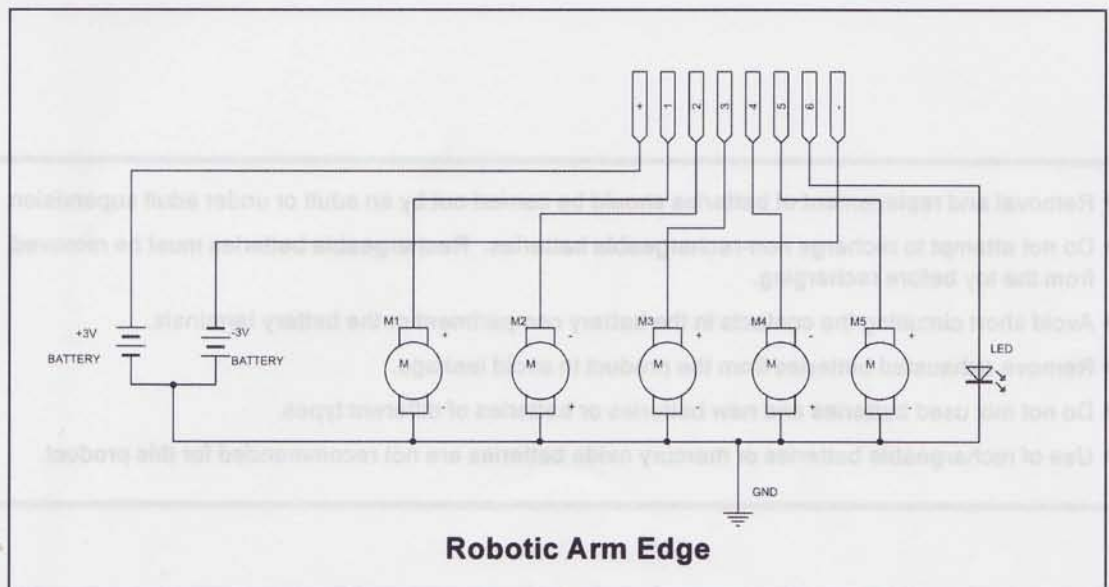
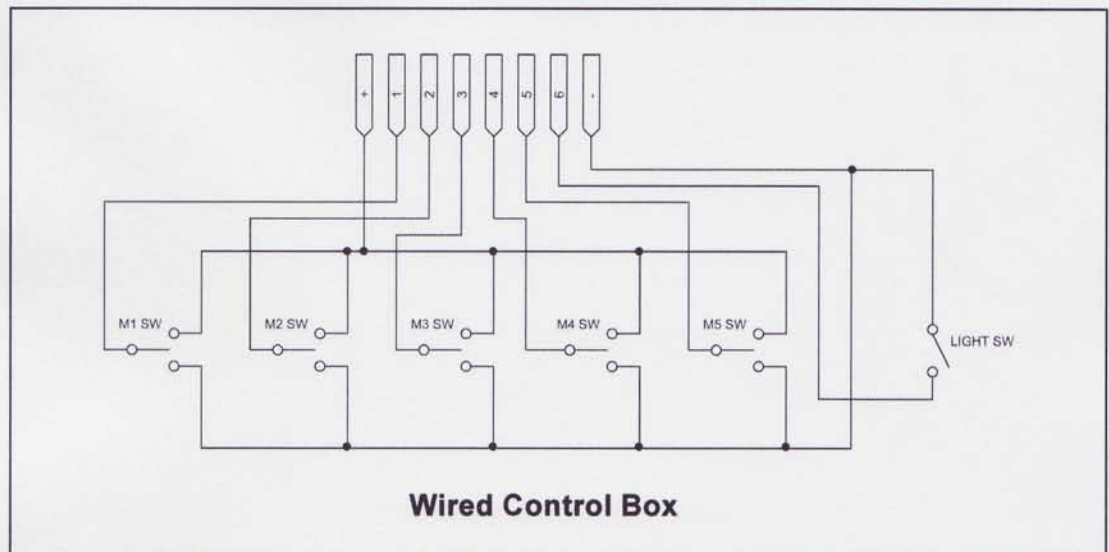


4. All the five gearboxes equipped with safety gear, when the arm open, close, up or lower to the maximum position, and user keeps pushing the buttons, the safety gear will start to work to protect the gearbox and make 'da, da, da...' sound.
5. To extend the life of gearbox, release the buttons once you hear the safety gear emit 'da, da, da' sound.

Trouble shooting:

1. Ensure all wirings are correct.(Please refer 41 44 on page 23,24)
2. If the Robotic Arm Edge does not have any response to the wired controller, please check if the 'BATTERY' and 'GND' connectors are in right position, and also if the batteries are placed in correct polarity.(Please refer 19 on page 13)
3. If the Robotic Arm Edge moves wrong direction, please check if wiring of M1, M2, M3, M4, M5 are reversed.(Please refer 41 44 on page 23,24)
4. If the searchlight does not light, please check if the 'L' connector is correct.
(Please refer 41 44 on page 23,24)

Circuit diagram:





PARTS LIST and ORDER FORM

When ordering parts, please include the following:

1. Name, address(no P.O.Box) and telephone number.
2. Model name and model number
3. Part number, part name, and quantity.

Make check or money order payable to OWI Inc., and mail with parts order. Please add \$5.00 for shipping and handling. California and New York residents, please add sales tax.

OWI Inc.

17141 Kingsview Avenue

Carson, California 90746

Attn:OWIKIT parts department

Telephone:310-515-1900

Fax: 310-515-1606

E-mail: info@owirobot.com

Part Number	Part Name	Price	Quantity
8800P1	Motor (M4,M5)(Org, Blk)	\$3.50	
8800P2	Motor (M2, M3)(Blu, Blk)	\$3.50	
8800P3	Motor (M1)(Ylw, Blk)	\$3.50	
8800P4	Gear (Gray)	\$0.50	
8800P5	Gear (Brown)	\$0.50	
8800P6	Gear (Blue)	\$0.50	
8800P7	Output gear (Black)	\$0.50	
8800P8	Output gear (White)	\$0.50	
8800P9	Round shaft (2x20)	\$1.00	
8800P10	Round shaft (2x16)	\$1.25	
8800P11	Tapping screw (2.3x7)	\$0.25	
8800P12	Tapping screw (2.6x6)	\$0.25	
8800P13	Tapping screw (2.6x10)	\$0.30	
8800P14	Tapping screw with washer	\$0.40	
8800P15	Machine screw	\$0.25	
8800P16	Self tapping screw (3x11)	\$0.35	
8800P17	Self tapping screw (3x16)	\$0.40	
8800P18	Nut	\$0.10	
8800P19	Washer	\$0.10	
8800P20	Battery Terminal with wire	\$2.00	
8800P21	Battery terminal with connector	\$2.00	
8800P22	LED with wire	\$2.50	
8800P23	Sponge	\$0.50	
8800P24	Wire clip	\$0.50	
8800P25	PC board	\$30.00	
8800PP1	Plastic part A	\$7.00	
8800PP2	Plastic part B	\$7.50	
8800PP3	Plastic part N	\$8.50	
8800PP4	Plastic part D	\$7.50	
8800PP5	Plastic part E	\$7.50	
8800PP6	Plastic part F	\$8.00	