

HYDRAULIC ROBOTARM



Assembly & Instruction
Manual



Manual de Instruções & Montagem

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HYDRAULIC ROBOT ARM

Product Introduction

This Robot Arm has made a little more interesting and hydro-mechanically fun.

With Hydraulic Arm Edge, command six axes of varied movements: the gripper to open and close up to 1.89 inches, wrist rotation of 180 degrees, wrist mobility of 98 degrees, elbow range of 44 degrees, base rotation of 270 degrees, and shoulder motion of 45 degrees. With a vertical reach of 16.35 inches, horizontal reach of 12.42 inches, and lifting capacity of 50g, your robotic friend is ready for your genius to erupt. With the removal of the gripper, you can activate the suction apparatus. This feature enables the user to elevate objects with a larger surface area (like a small mobile phone). Another prodigious attribution is a braking system that is integrated in the lever controllers to execute all commands accurately. WOW!

How does Hydraulic Robot Arm equate to fun? Children will have total command and visual manipulation using the science principles of a Hydraulic system and its application. Easy to follow instructions with detailed graphic illustrations pave the way for successful and satisfying kit building of 229 pieces. Compliment your engineering, math, science, and technology learning strategy. No battery or motor required. It is powered by water; thus, the "Hydraulic" significance and how it manipulates axes movement via lever controllers. Hydraulic Robot Arm is recommended for ages 10 and up, but with its 229 assembly parts, it will challenge the beginner engineering enthusiasts.

Tools You May Need



Diagonal Cutter



Screwdriver



Scissors



Tissue Paper



Cup & Water



Marker Pen (Fine)



or



Tape Measure or Ruler

Apresentação do Produto

Este Braço Robótico veio tornar a hidro-mecânica um pouco mais divertida e interessante.

Com o Eixo do Braço Hidráulico, comande seis eixos de variados movimentos: a garra pode abrir e fechar até 1.89 polegadas, pulso com rotação de 180 graus, pulso com mobilidade de 98 graus, cotovelo com amplitude de 44 graus, base com uma rotação de 270 graus, ombro com uma mobilidade de 45 graus. Com um alcance vertical de

16.35 polegadas, alcance horizontal de 12.42 polegadas, capacidade de elevação de 50g, o seu amigo robótico para pronto para libertar o gênio que há em si. Com a remoção da garra poderá ativar o dispositivo de sucção. Esta funcionalidade permite ao utilizador elevar objetos com uma área de superfície maior (como um pequeno telemóvel). Outra característica prodigiosa é o sistema de travagem que está integrado nos controladores de alavanca para executar todas as instruções com precisão. UAU!

Por que razão é que o Braço Robótico Hidráulico é equivalente a diversão? As crianças vão ter o comando total e manipulação visual usando os princípios científicos de um sistema hidráulico e da sua aplicação. É fácil seguir as instruções graças às ilustrações pormenorizadas que preparam o caminho para que a construção deste kit de 229 peças seja bem sucedida. Complemente a sua estratégia de aprendizagem nas áreas da engenharia, matemática, ciência e tecnologia. Não é necessária bateria ou motor. Funciona a água: daí a designação "Hidráulico" e a forma como manipula o movimento dos eixos através dos controladores de alavanca. O Braço Robótico Hidráulico é recomendado para idades iguais ou superiores a 10 anos mas com as suas 229 peças é um desafio para os entusiastas da engenharia.

Ferramentas Que Pode Necessitar

Cortador Diagonal

Chave de Fendas

Tesouras

Papel

Copo & Água

Marcador (fino)

Fita Métrica ou Régua

Mechanical Parts List

! Product contains functional edges and sharp points.

P1 Tapping Screw(Short)



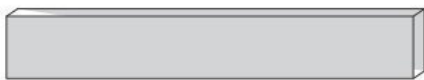
9 pcs

P2 Tapping Screw(Long)



28 pcs

P3 Iron Bar (Short)



1 pc

P4 Iron Bar (Long)



1 pc

P5 Brake Pad



10 pcs

P6 Cap (Small)



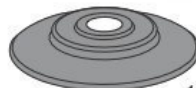
5 pcs

P7 Cap (Big)



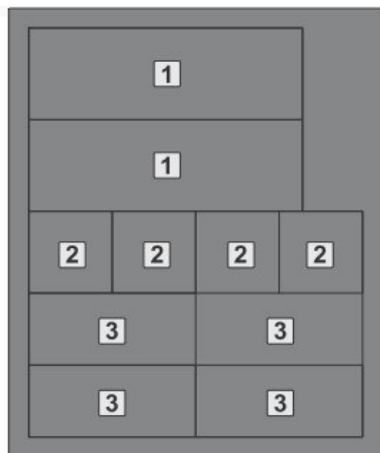
6 pcs

P8 Suction Cup



1 pc

P9 Sponge



1 pc

P10 Spring(Smallest)



5 pcs

P11 Spring(Short)



1 pc

P12 Spring(Medium)



1 pc

P13 Spring(Long)

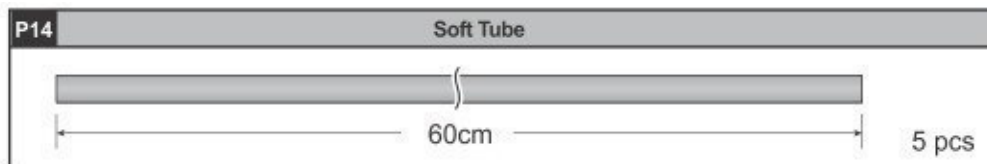


1 pc

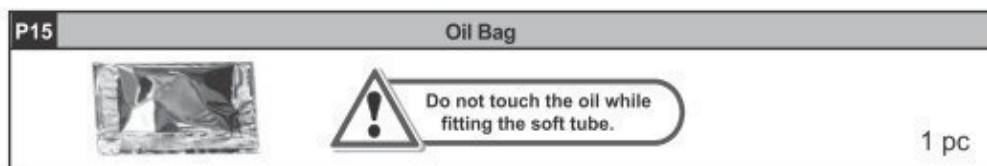
Lista das Peças Mecânicas

O produto tem arestas funcionais e pontos afiados.

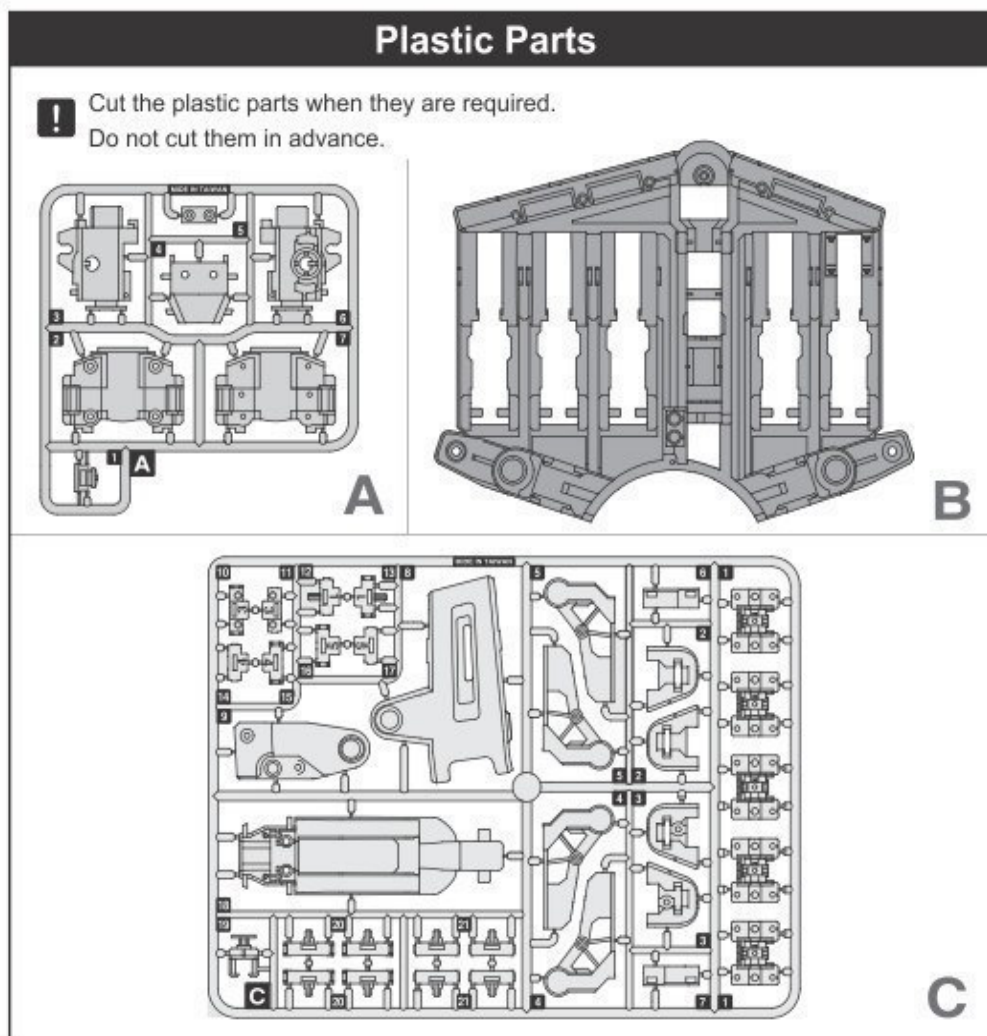
- P1 Parafuso (curto)
- P2 Parafuso (comprido)
- P3 Barra de Ferro (curto)
- P4 Barra de Ferro (longo)
- P5 Pastilha de Travão
- P6 Tampa (pequena)
- P7 Tampa (grande)
- P8 Ventosa
- P9 Esponja
- P10 Mola (muito pequena)
- P11 Mola (pequena)
- P12 Mola (média)
- P13 Mola (comprida)



P14 Tubo Macio
P15 Bolsa do Óleo

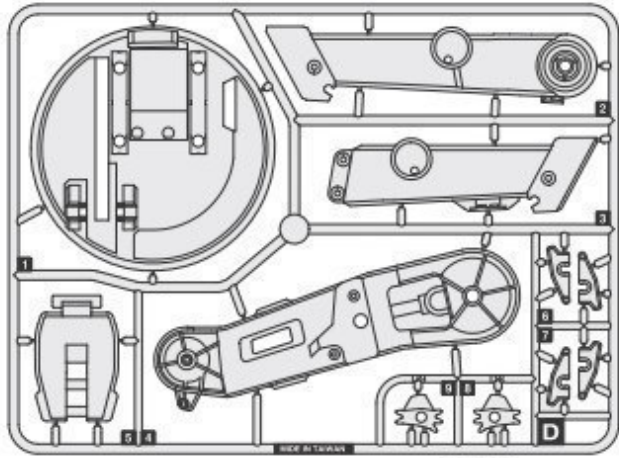


Não toque no óleo enquanto encaixa o tubo macio.

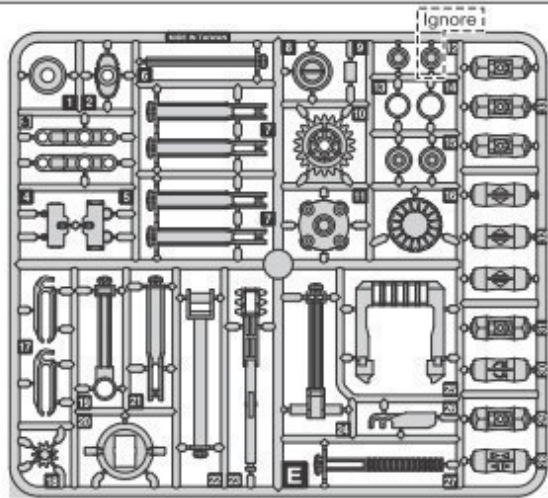


Peças Plásticas

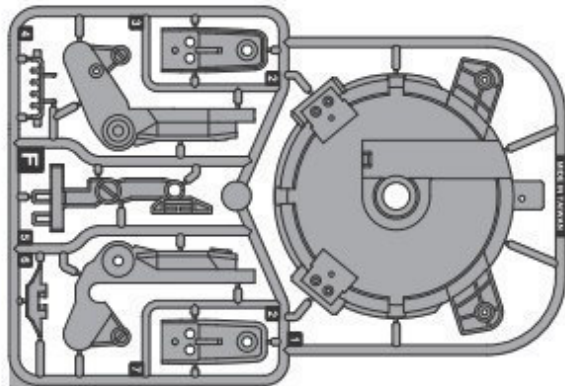
Corte as peças plásticas na altura em que tal for necessário.
Não as corte antecipadamente.



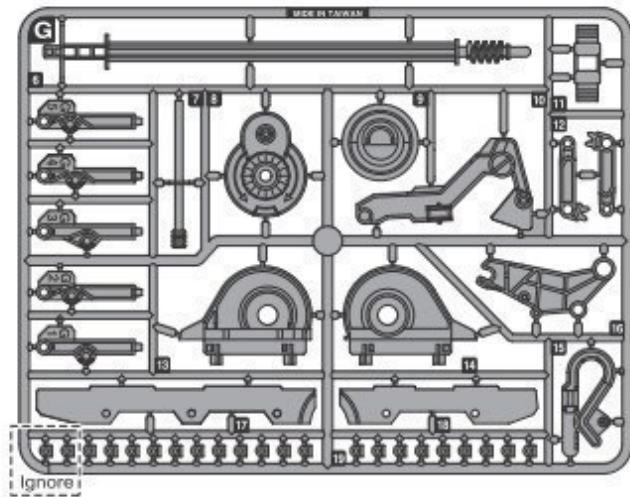
D



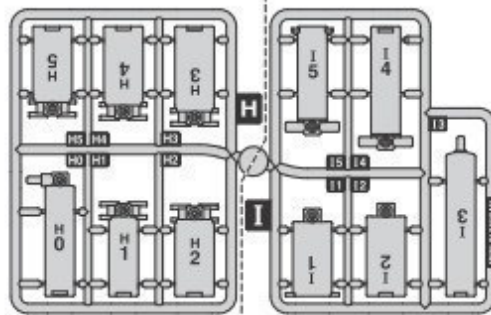
E



F

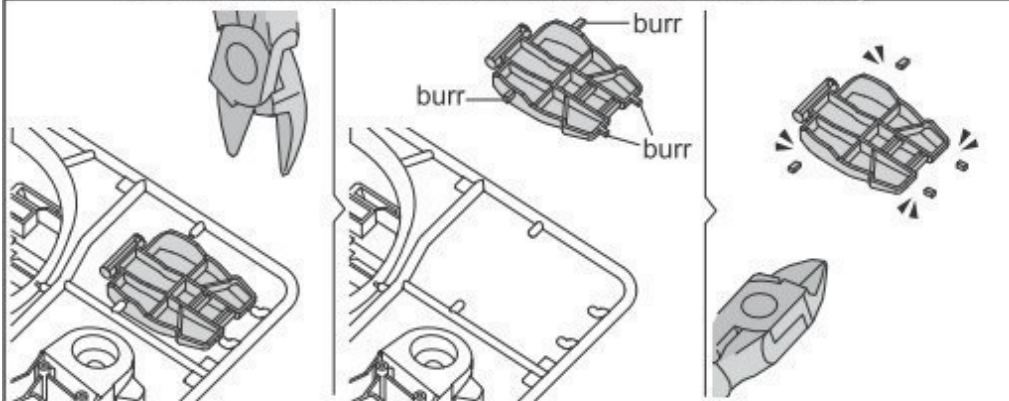


G



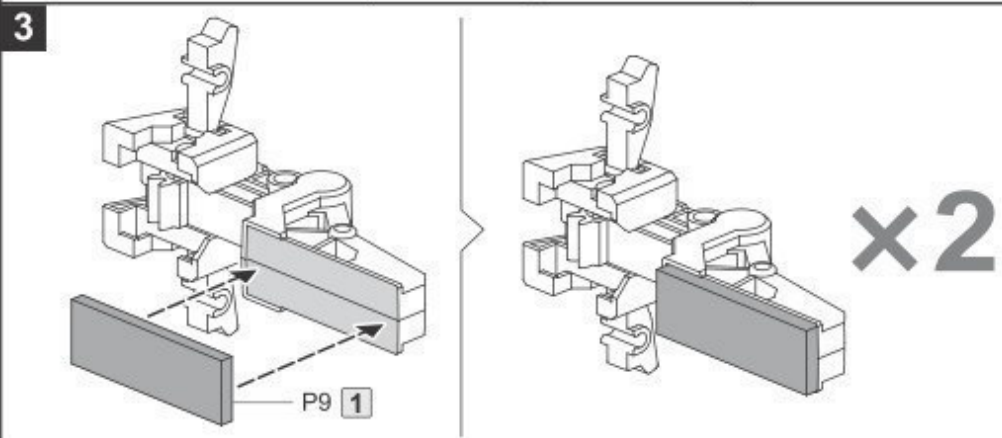
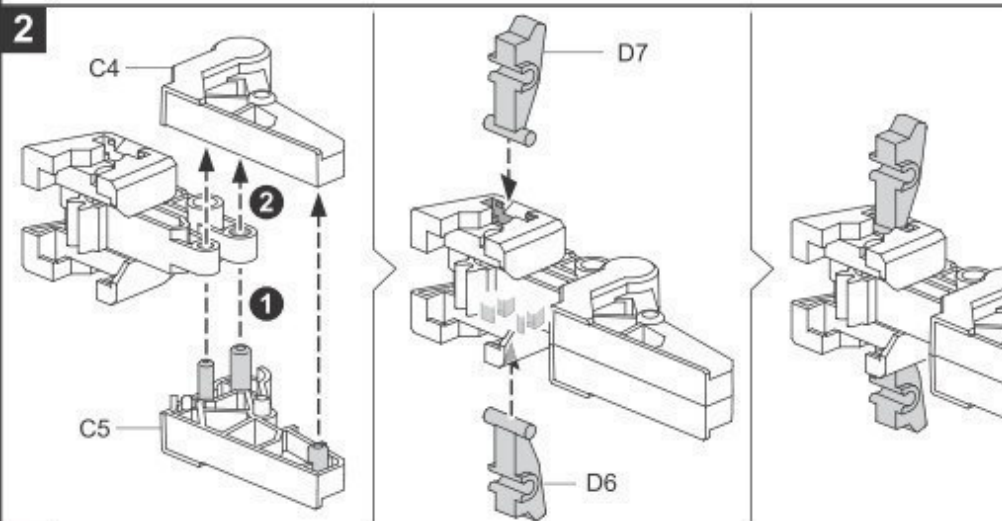
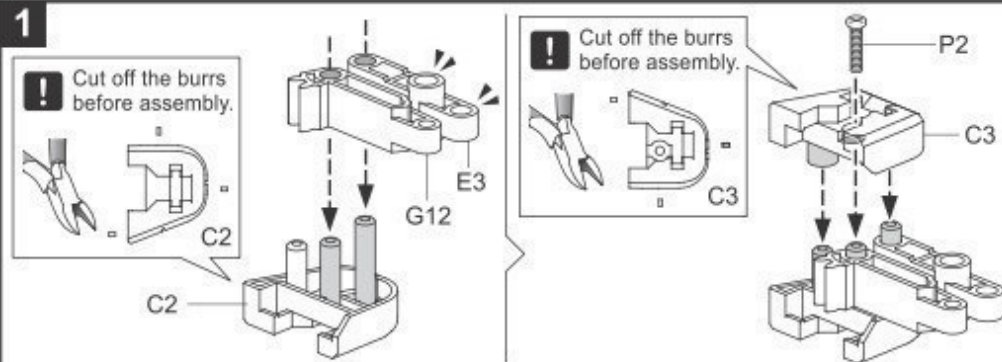
I

Tip: cut off the burrs before assembly



Sugestão: cortar as rebarbas antes da montagem

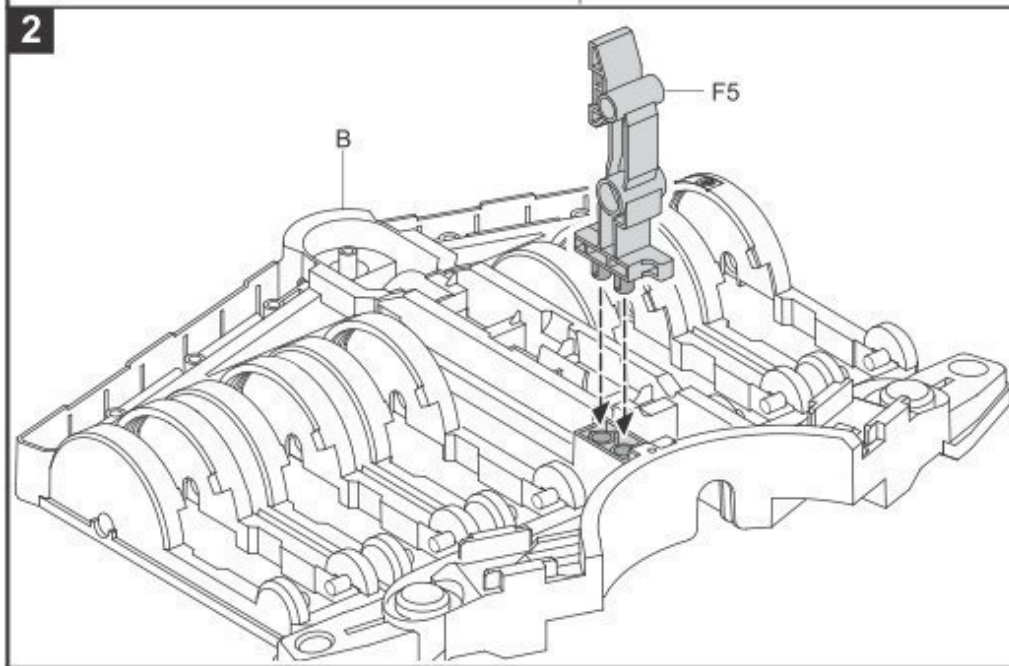
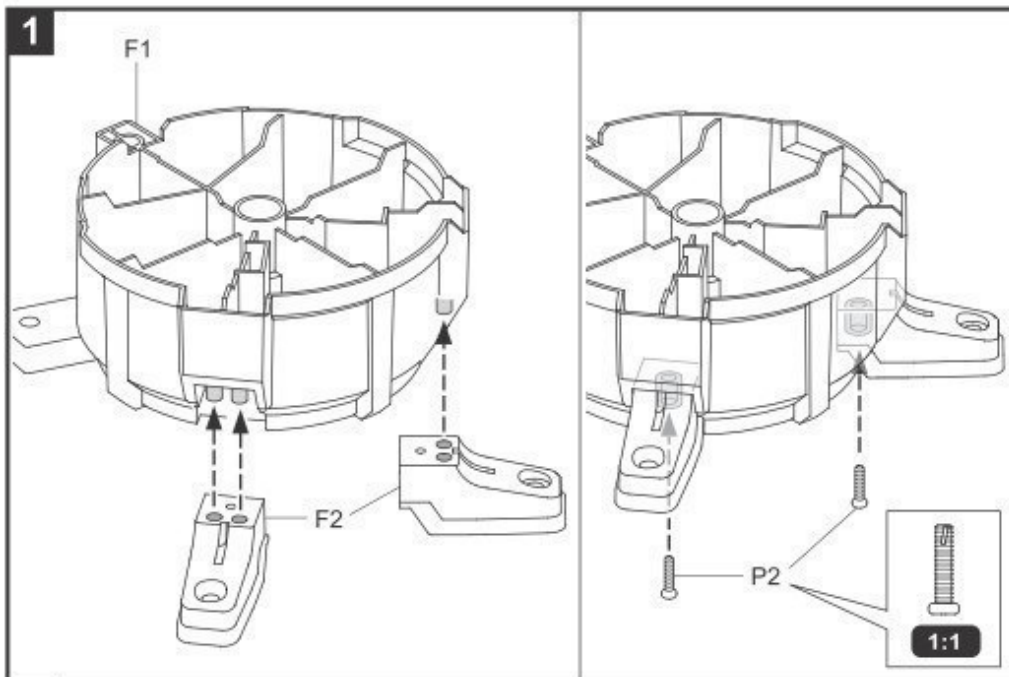
Gripper Unit Assembly



Montagem da Garra

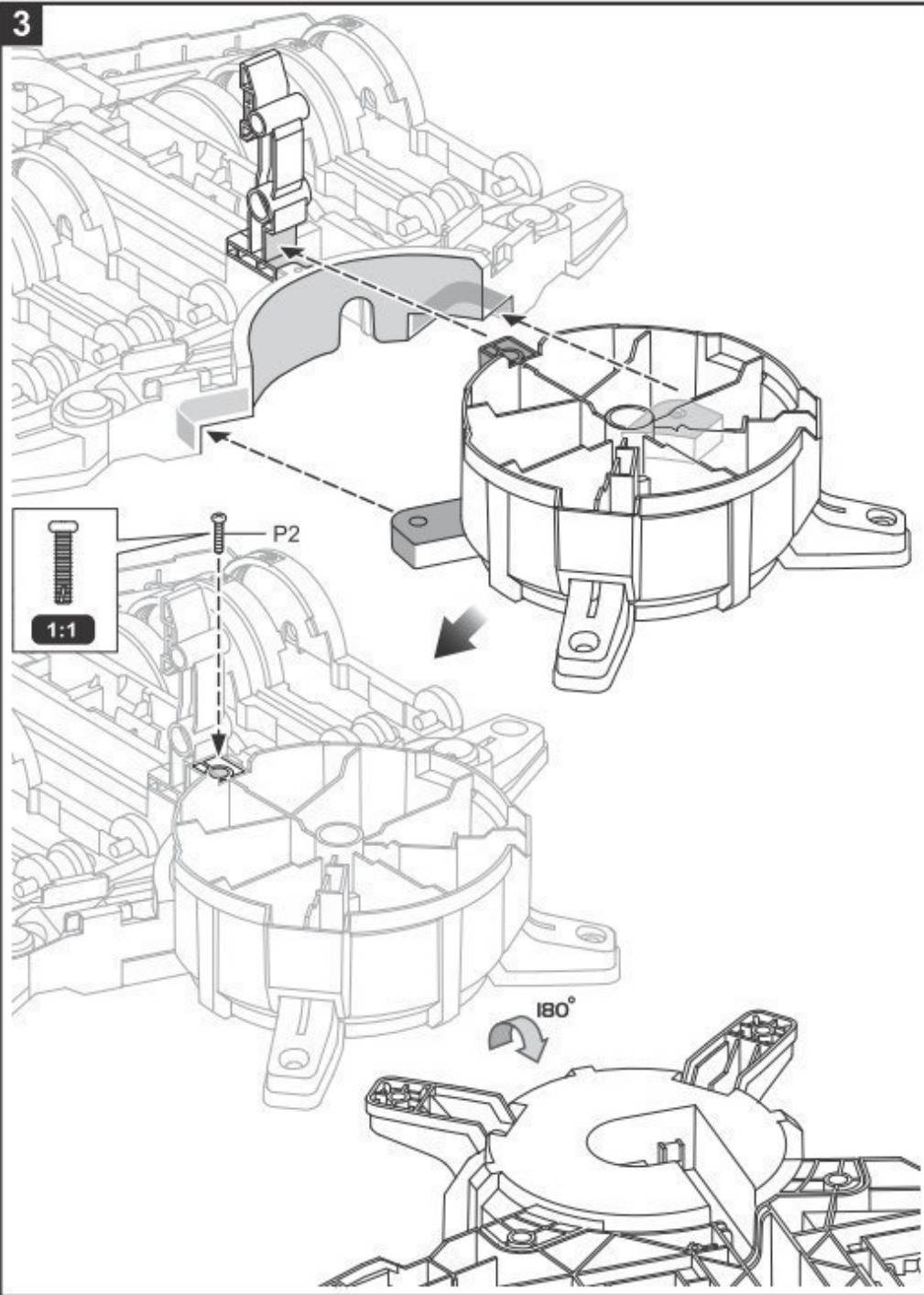
Cortar as rebarbas antes da montagem.

Stand & Control Base Assembly

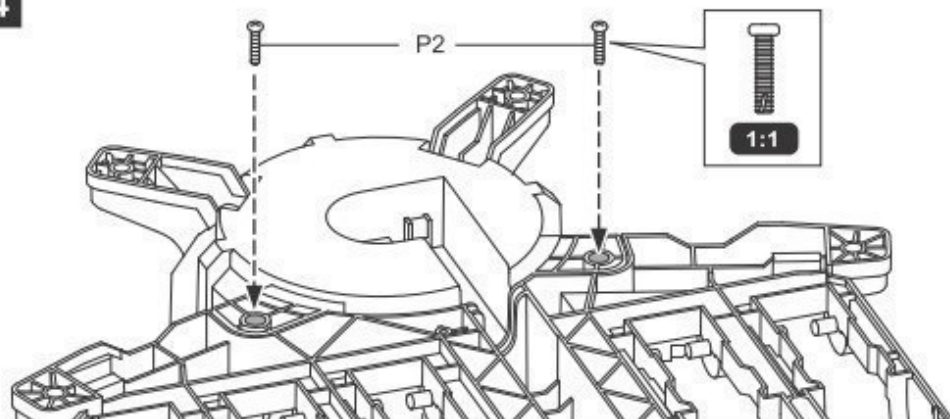


Montagem da Base de Controlo & Suporte

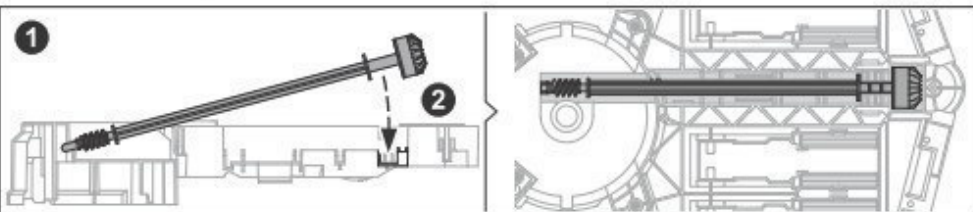
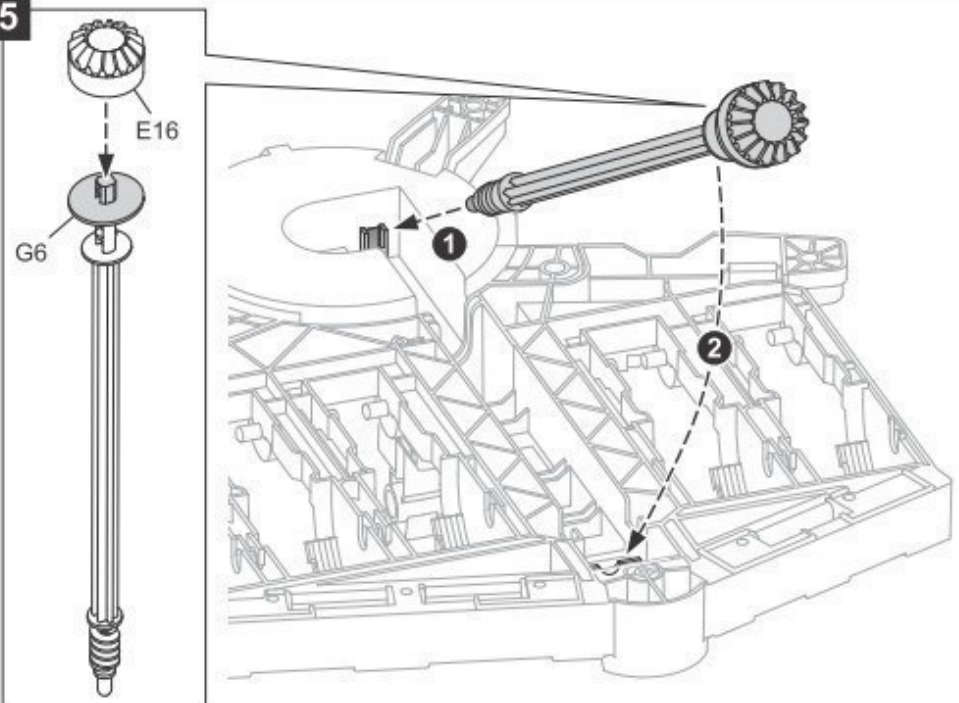
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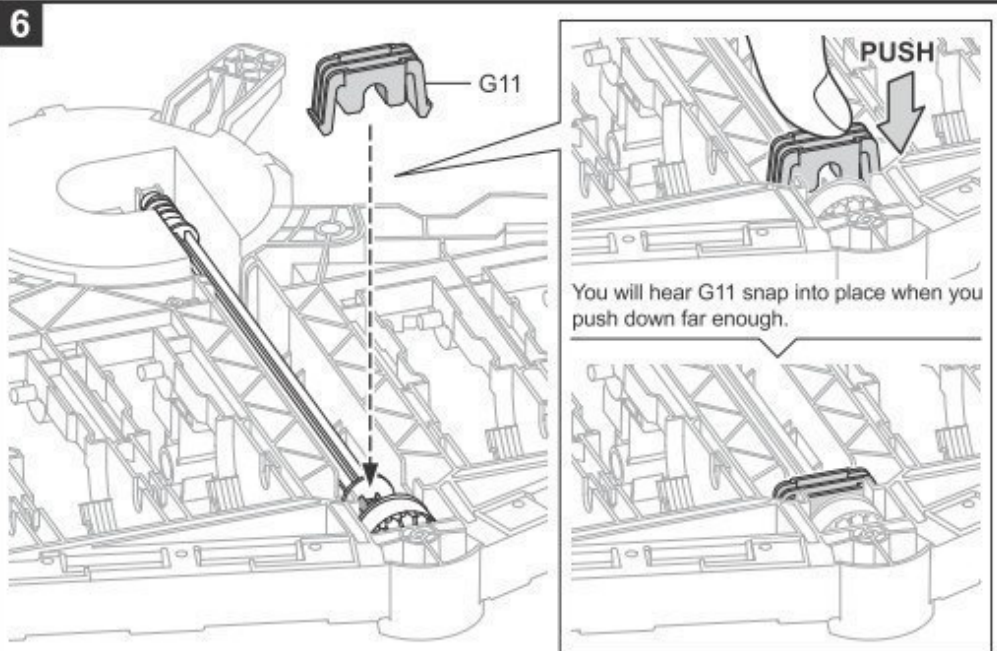


4



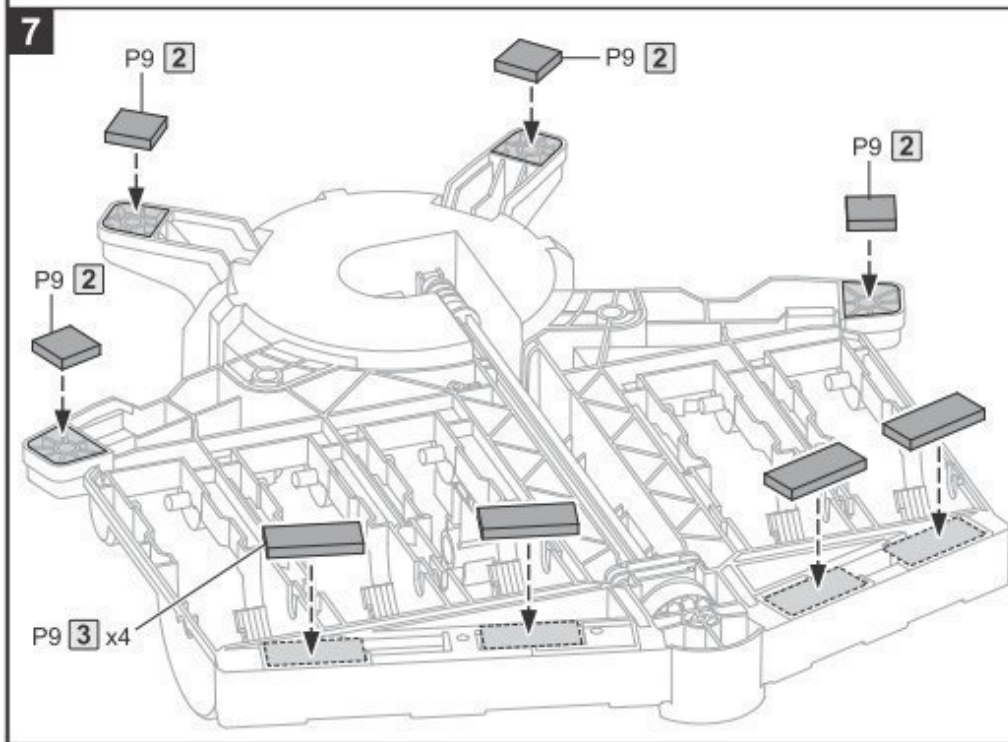
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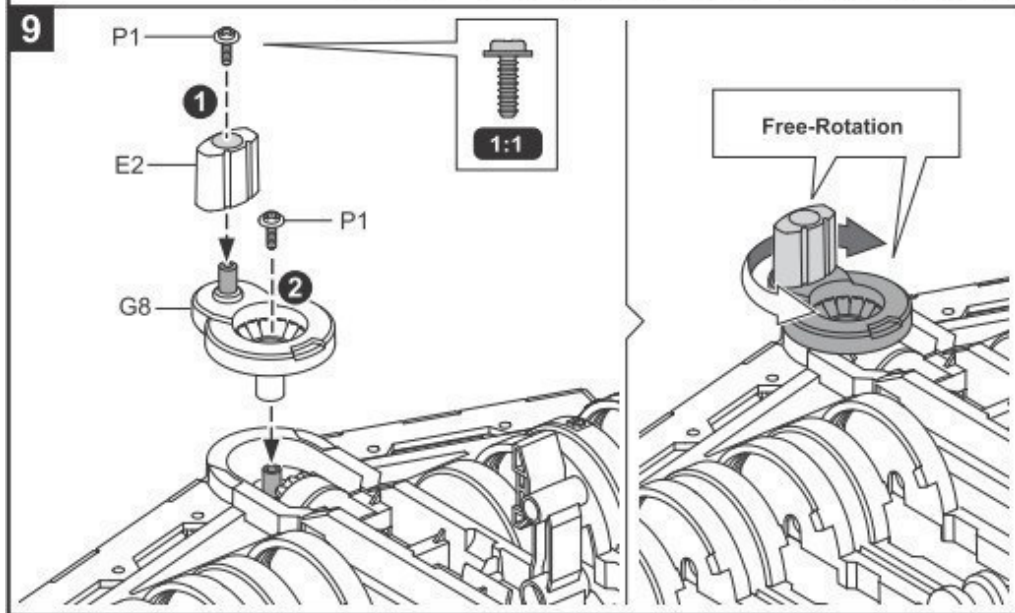
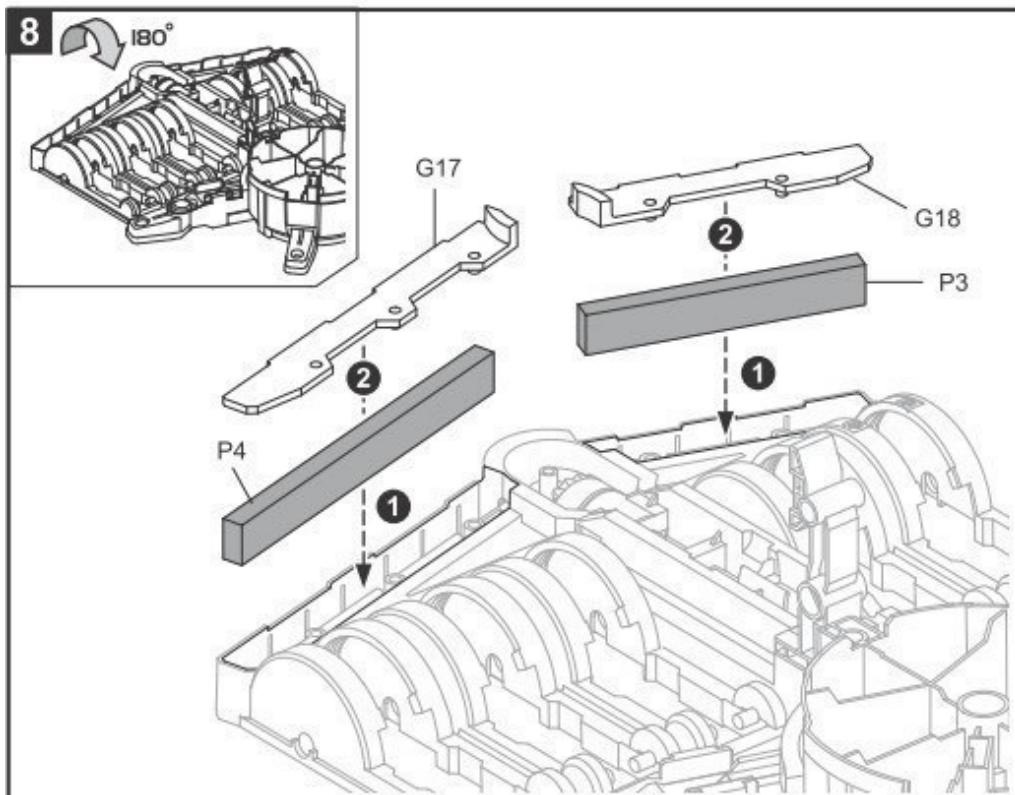




"PUSH"

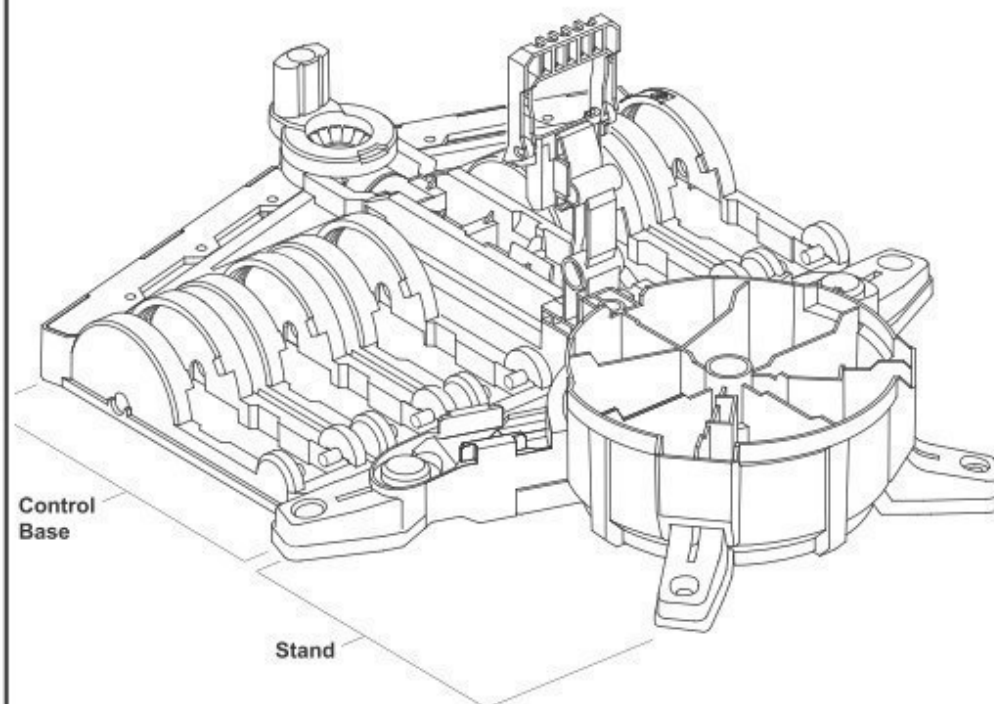
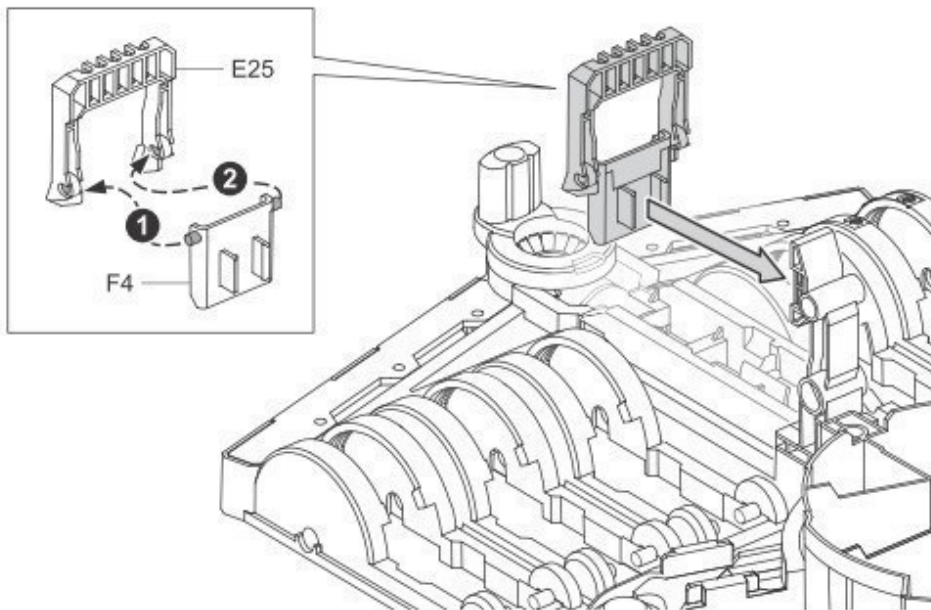
Irá ouvir o G11 encaixar no devido lugar assim que empurrar para baixo o suficiente.





Rotação livre

10

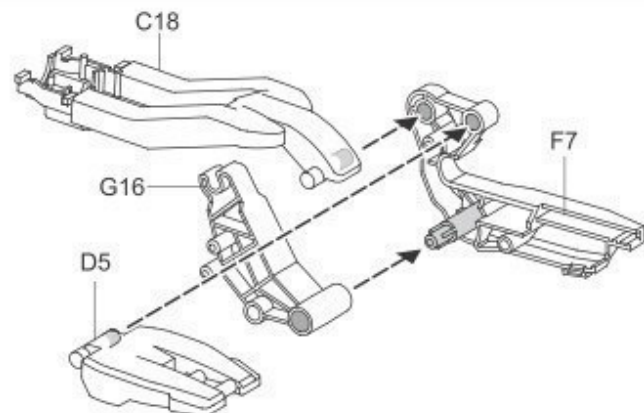


Base de Controlo

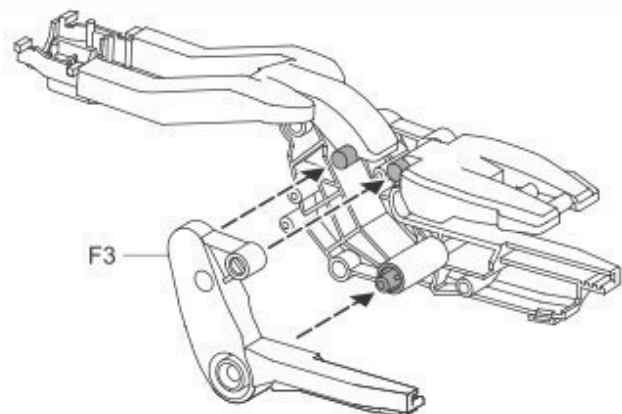
Suporte

Main Body Assembly

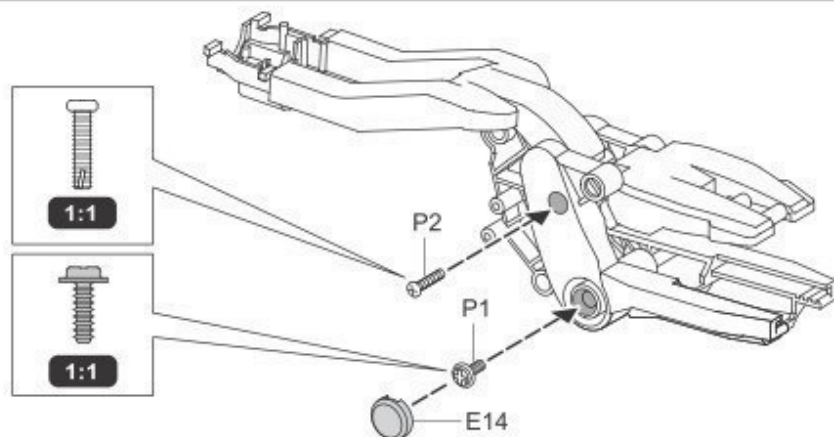
1



2

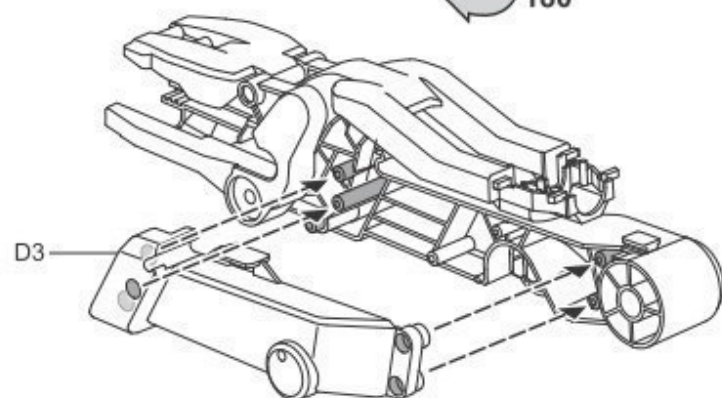
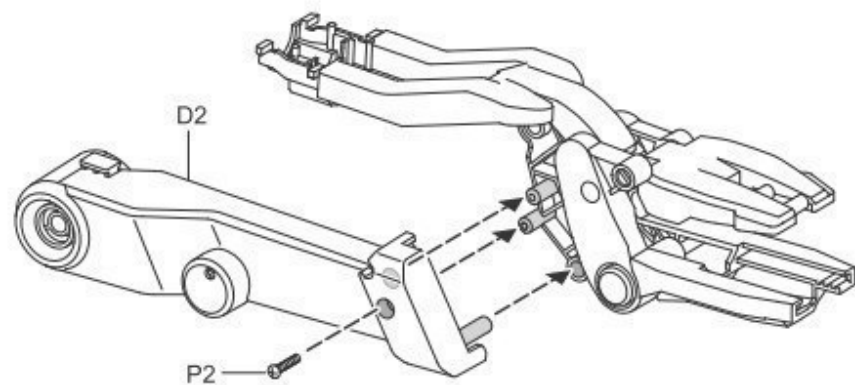


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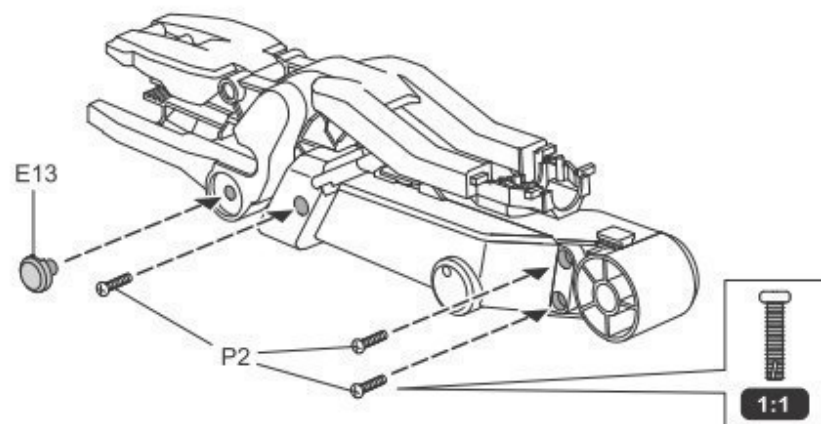


Montagem do Corpo Principal

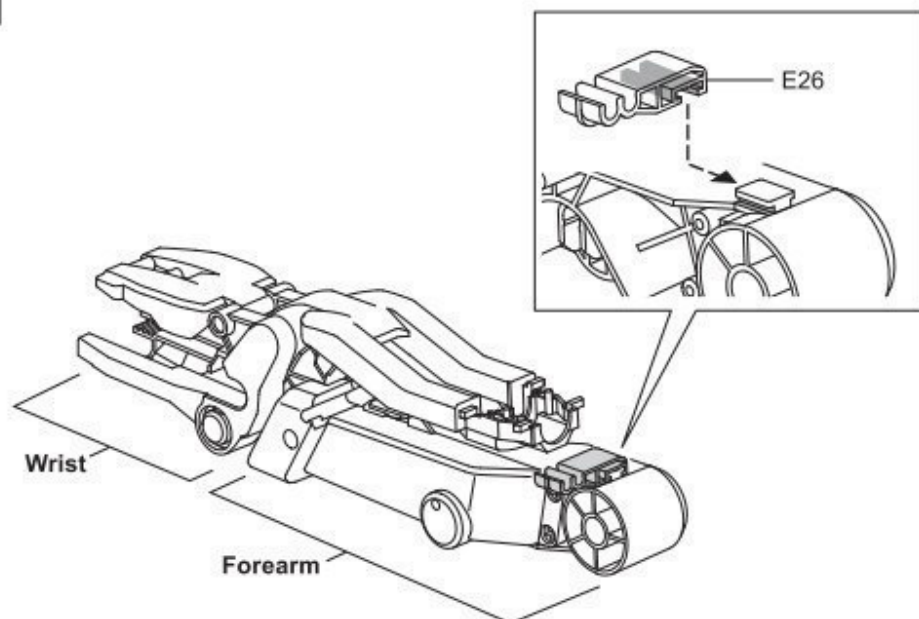
4



5



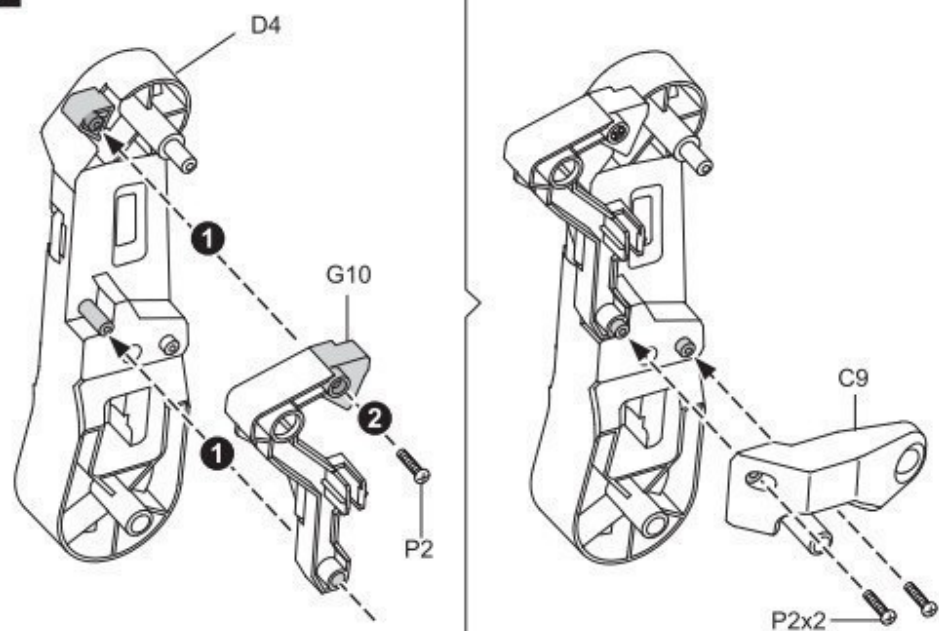
6

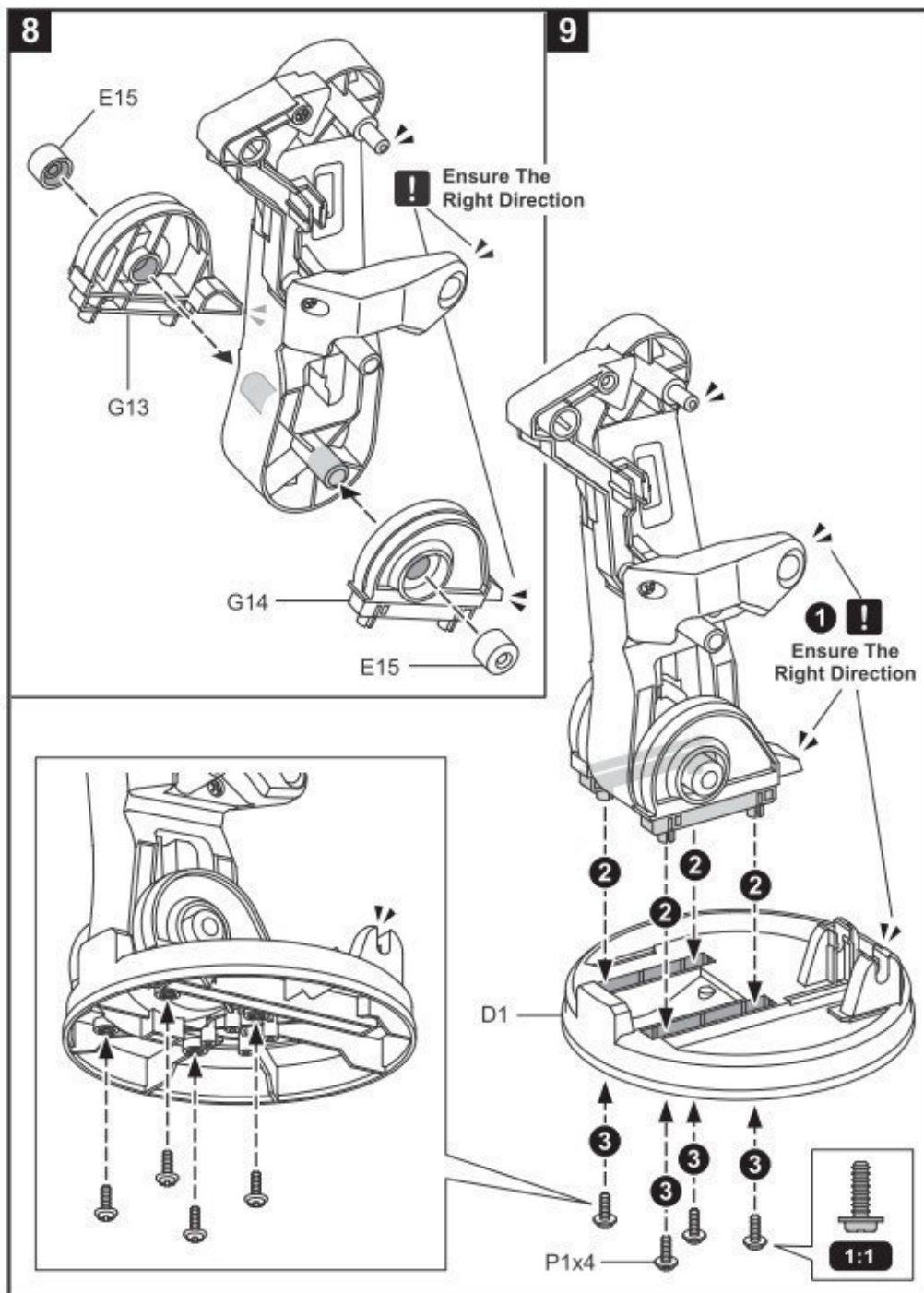


Pulso

Antebraço

7

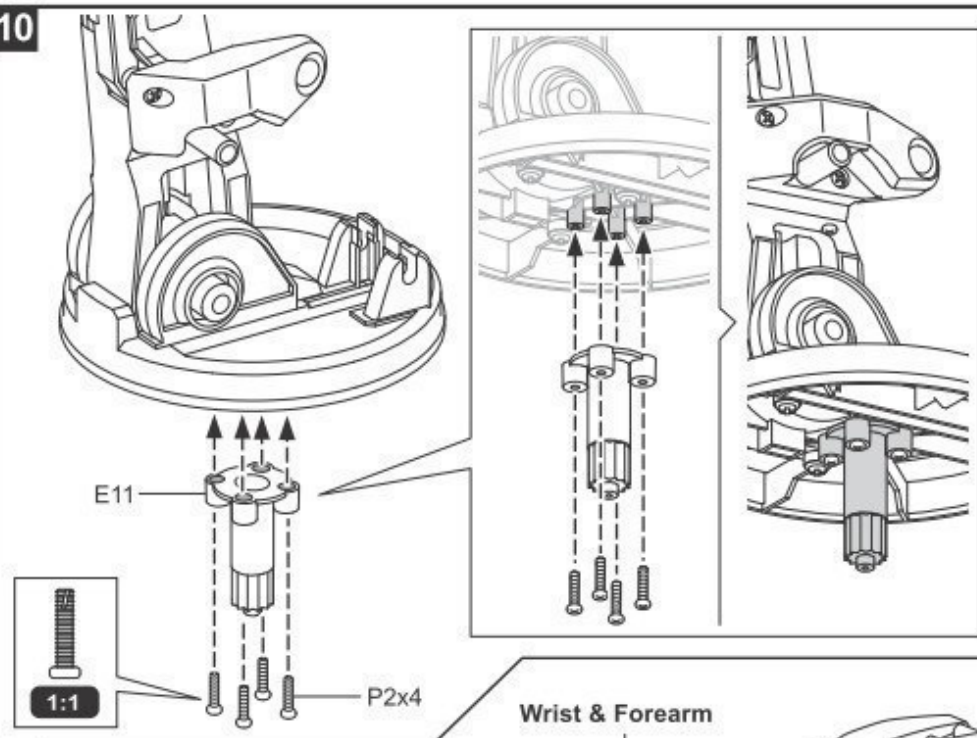




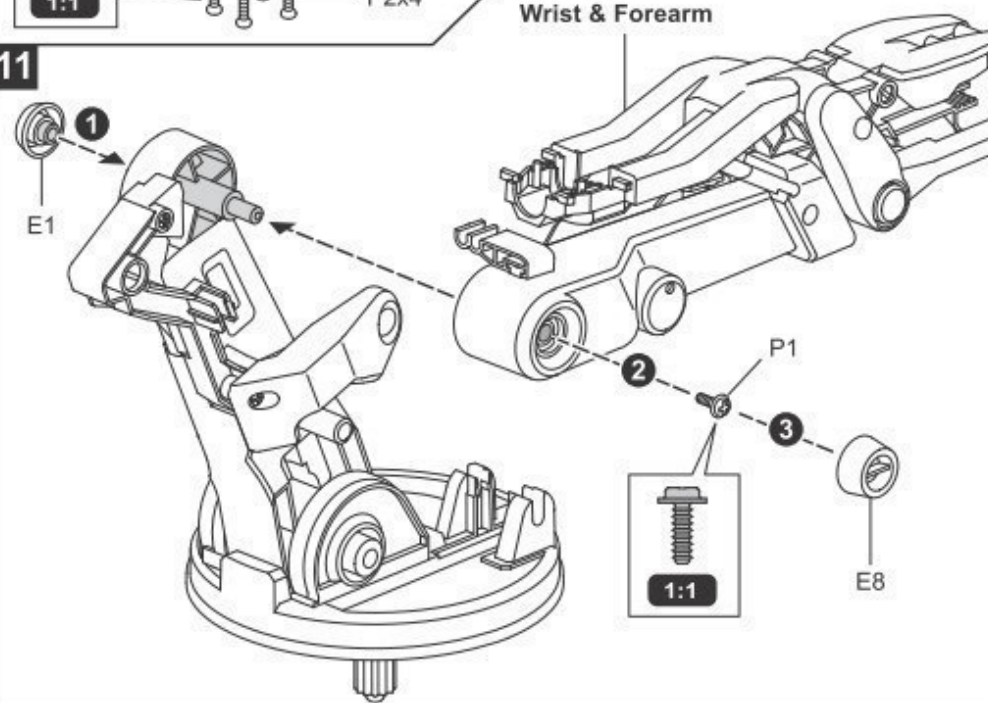
Certifique-se que a direção é a correta.

Certifique-se que a direção é a correta.

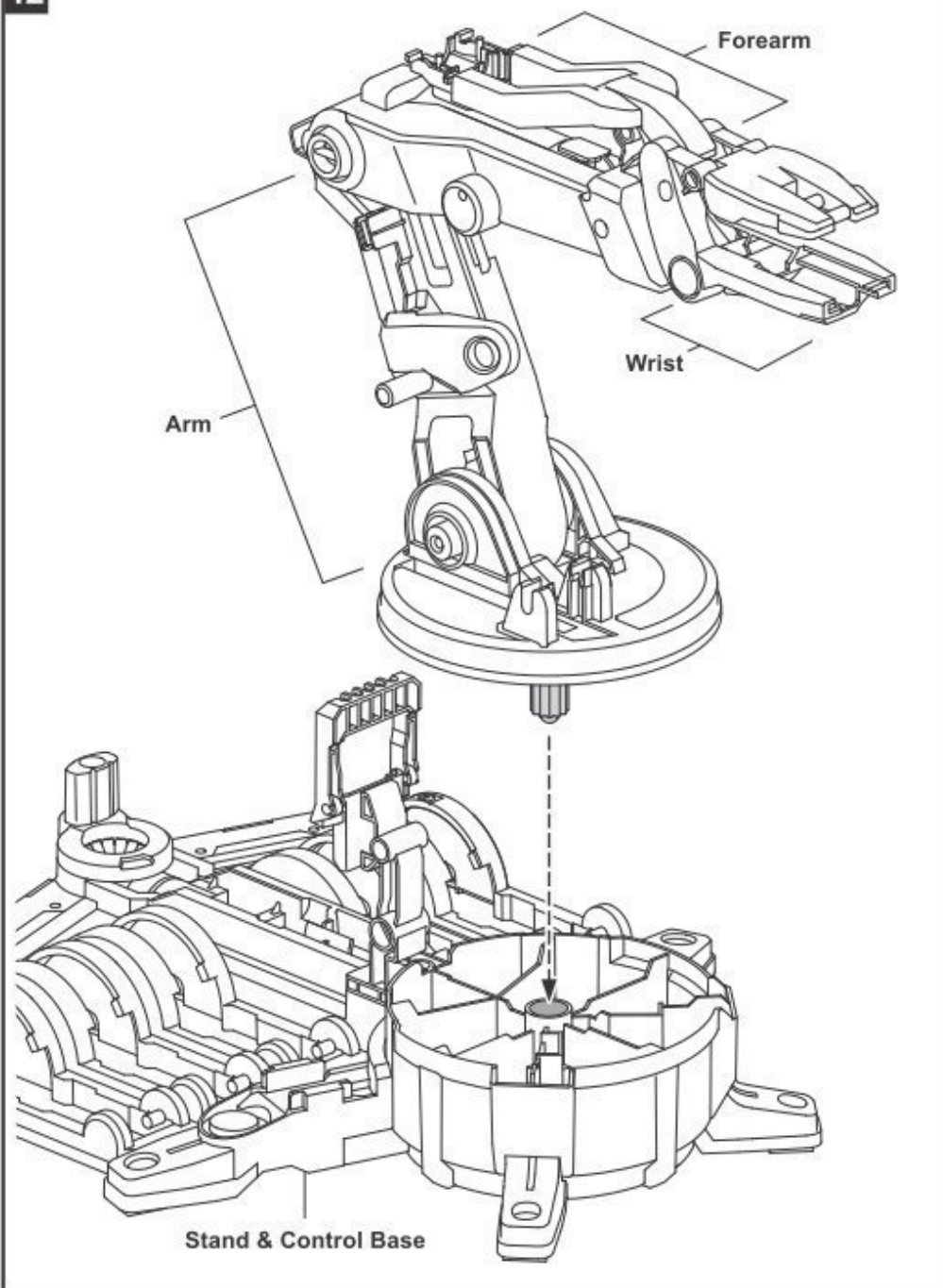
10



11



Pulso & Antebraço



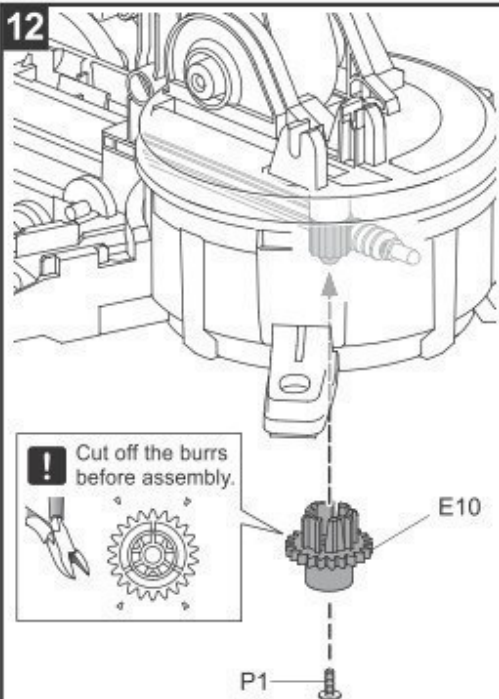
Antebraço

Pulso

Falha de alimentação AC

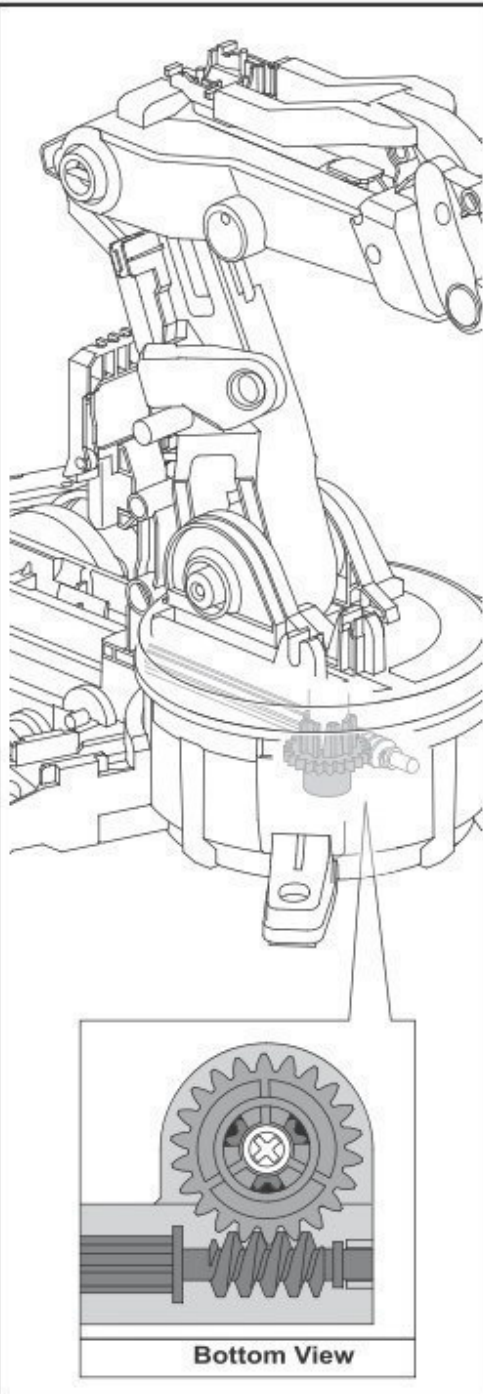
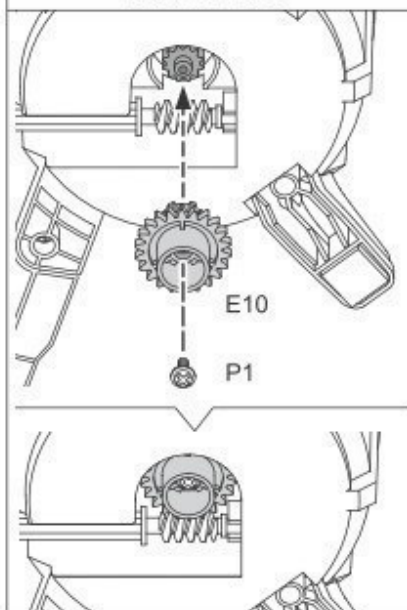
Base de Controle & Suporte

12



! Make sure E10 is not inserted upside down.

Bottom View

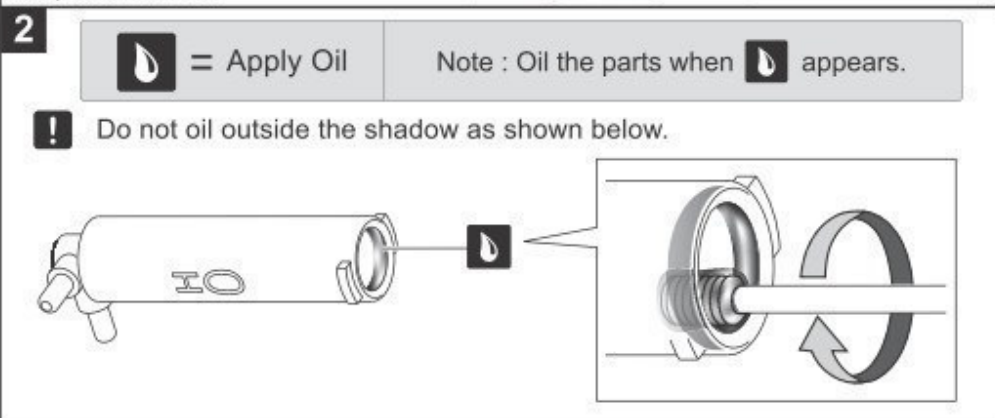
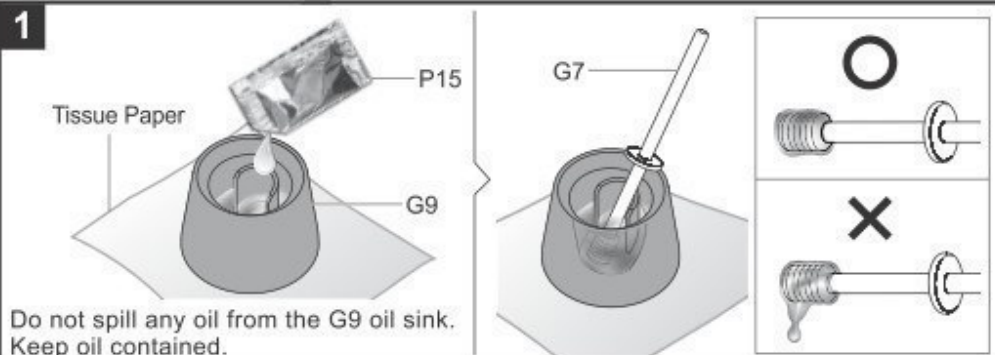


Cortar as rebarbas antes da montagem.

Verifique se o E10 não está introduzido na posição inversa.

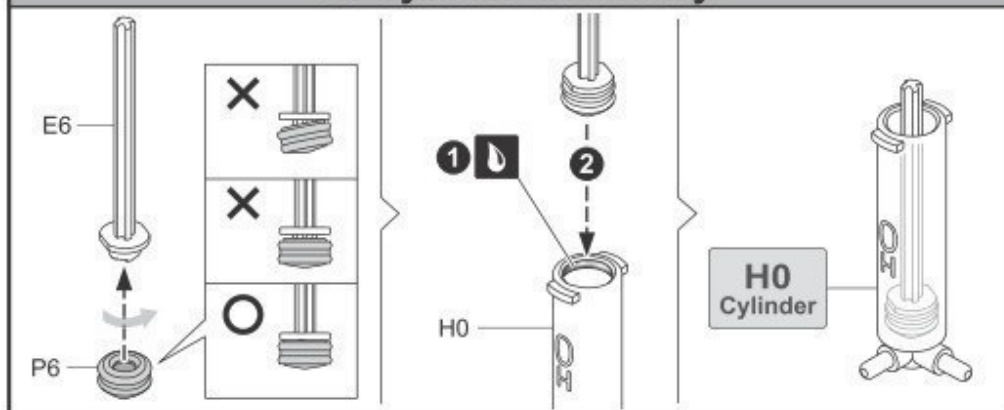
Vista da Parte de Baixo

How To Oil The Parts



H0~H5 Cylinder Assembly

H0 Cylinder Assembly



Como Lubrificar as Peças

Papel

Não derramar óleo a partir do dissipador de óleo G9.
Conserve o óleo contido.

= Aplicar Óleo

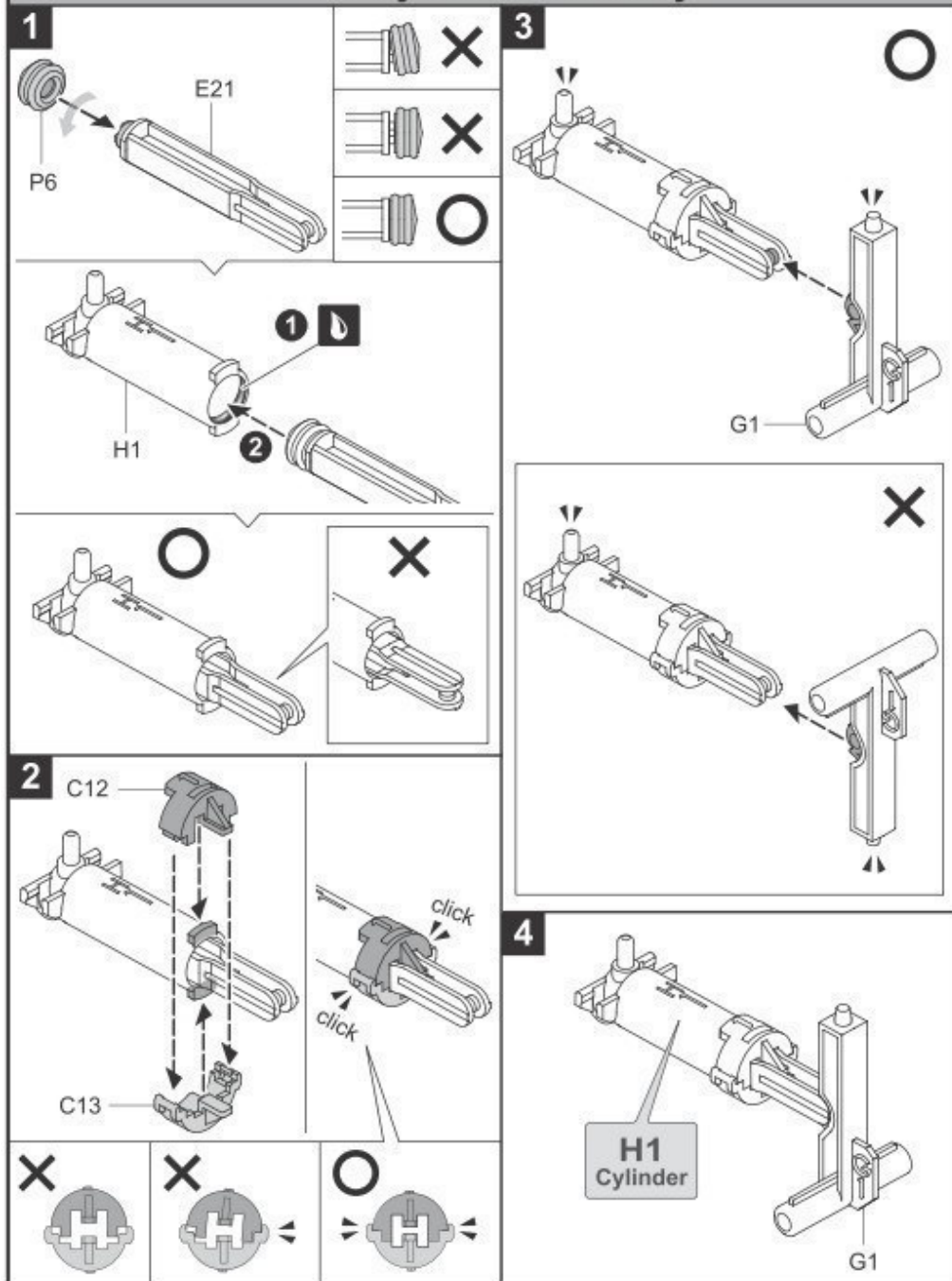
Nota: Lubrifique as peças quando aparecer -- .

Não aplciar óleo fora do sombreado, conforme mostrado abaixo.

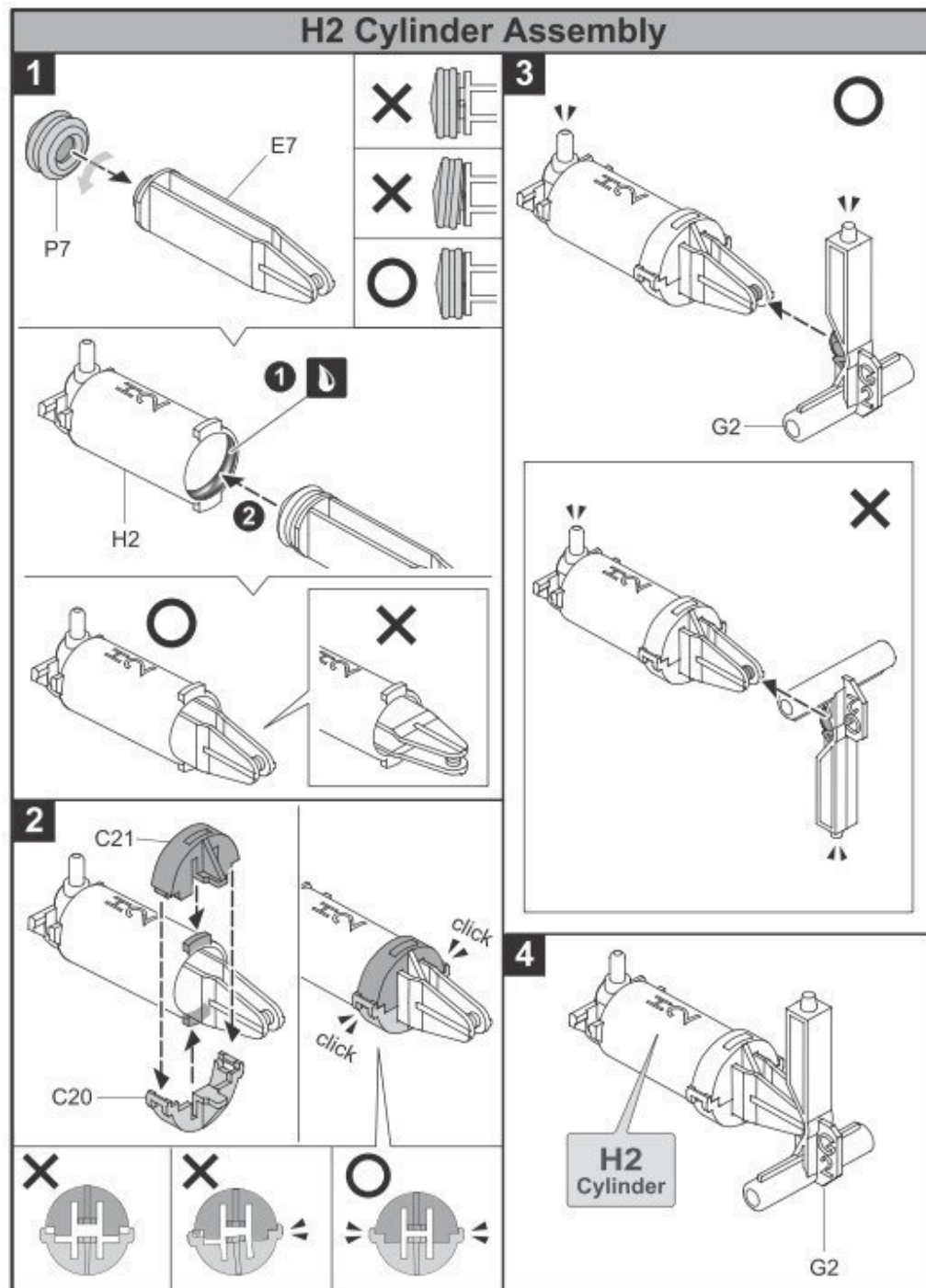
Montagem do Cilindro HO-H5

Montagem do Cilindro H0

H1 Cylinder Assembly

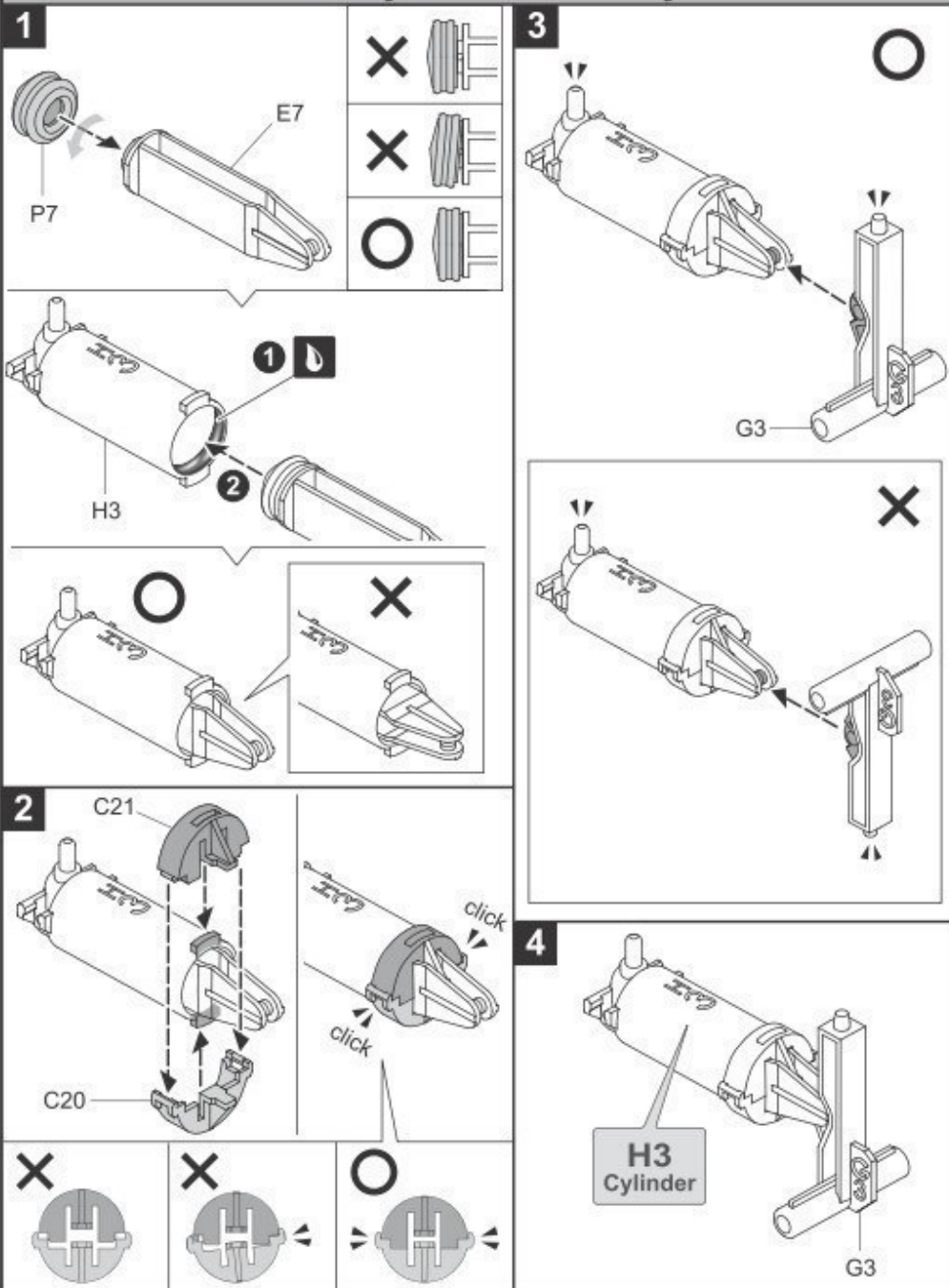


Montagem do Cilindro H1



Montagem do Cilindro H2

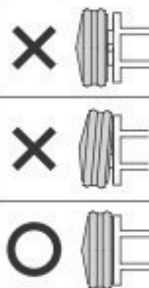
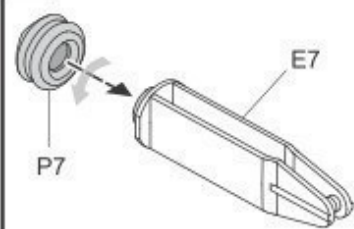
H3 Cylinder Assembly



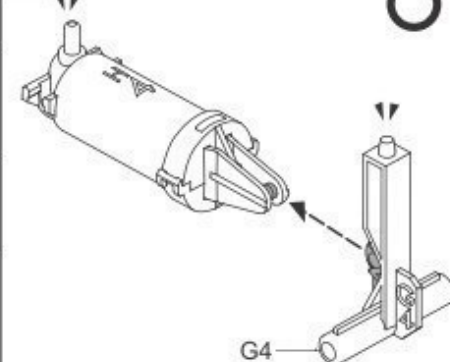
Montagem do Cilindro H3

H4 Cylinder Assembly

1

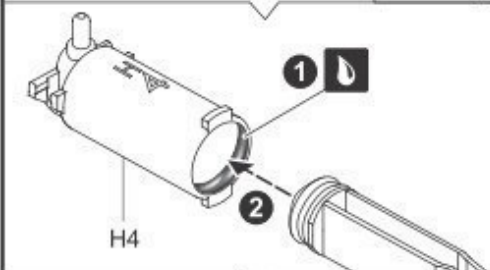


3

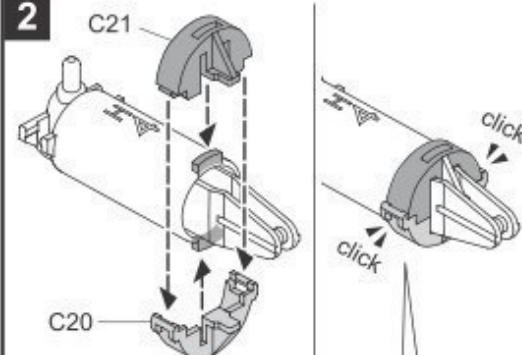


1

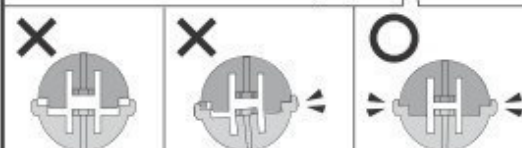
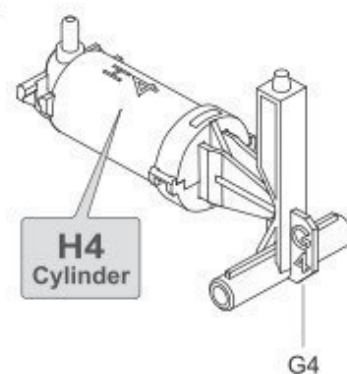
2



2



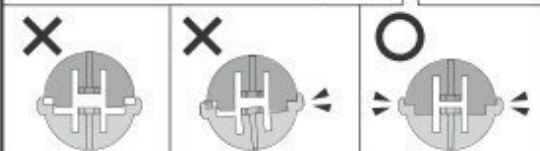
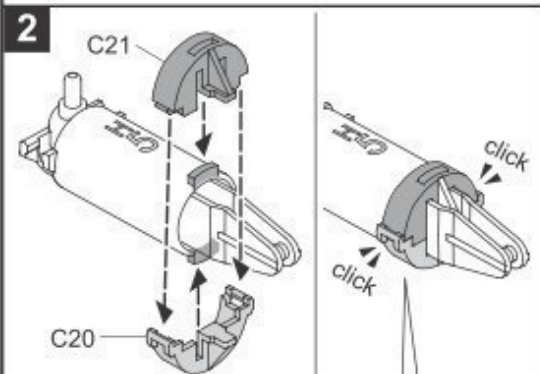
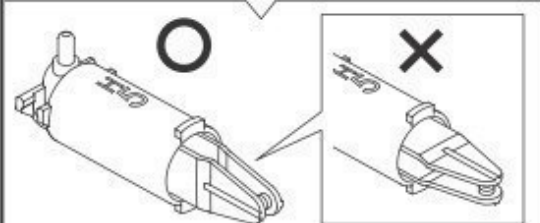
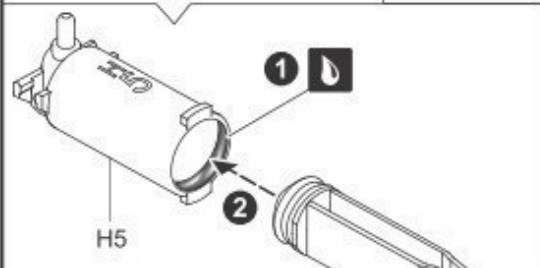
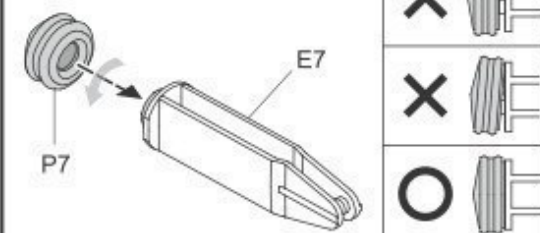
4



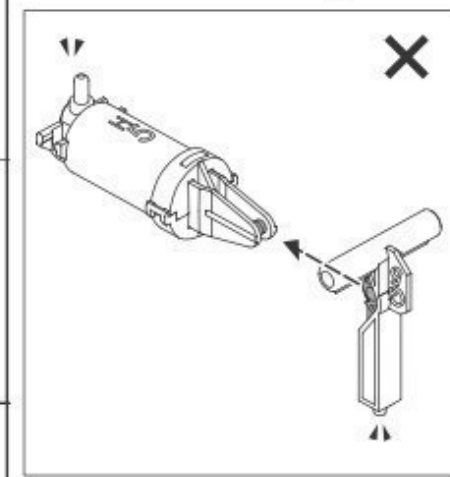
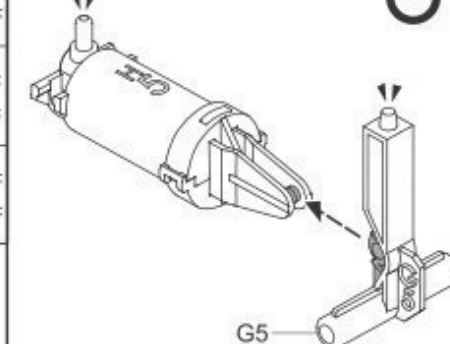
Montagem do Cilindro H4

H5 Cylinder Assembly

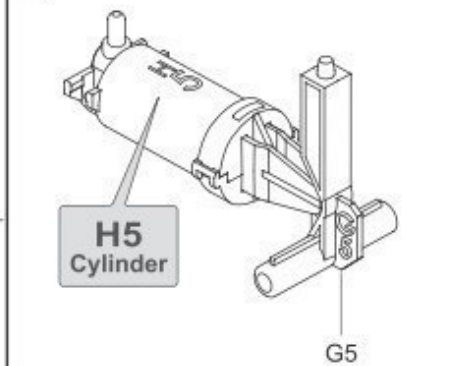
1



3



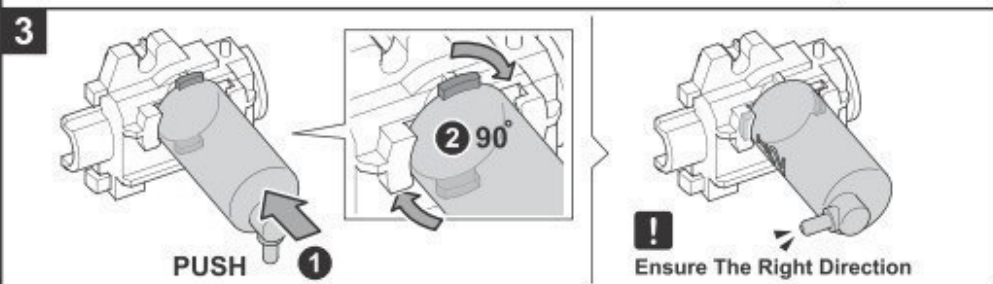
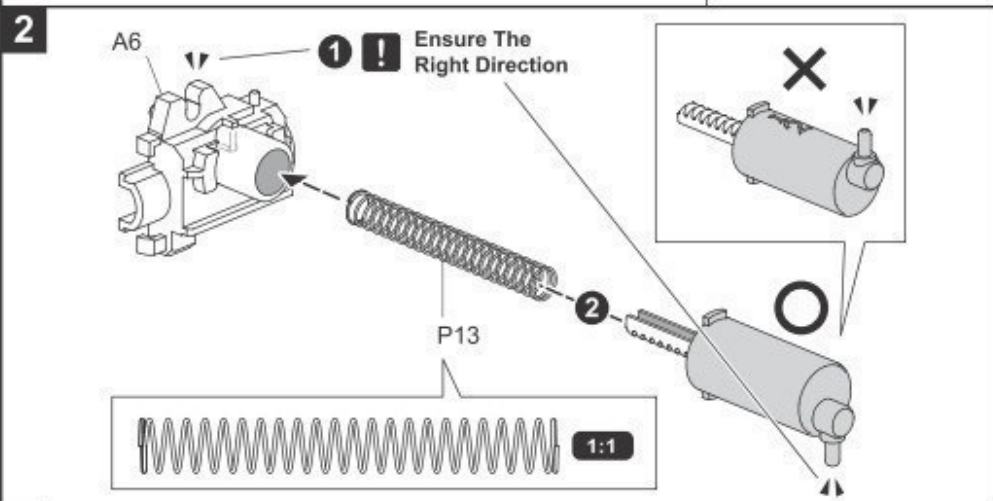
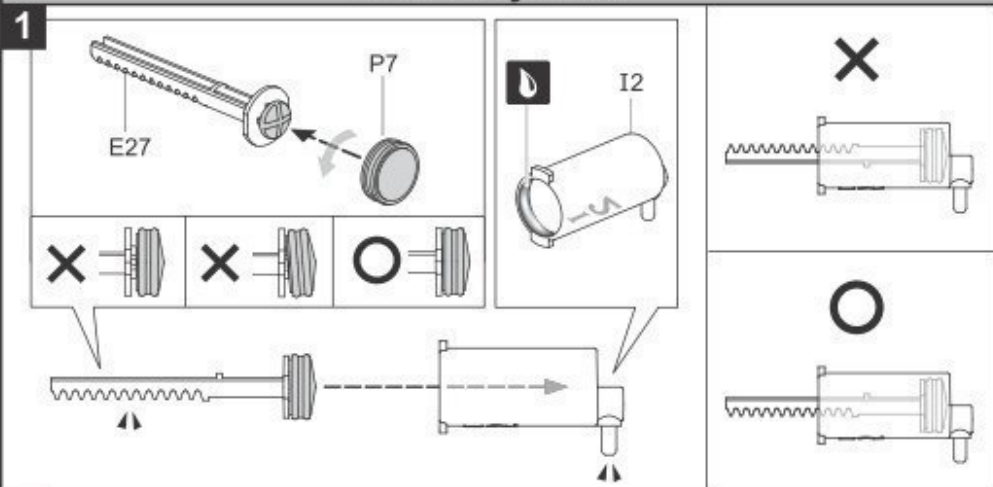
4



Montagem do Cilindro H5

I1 ~ I5 Cylinder Assembly

I1 & I2 Cylinder



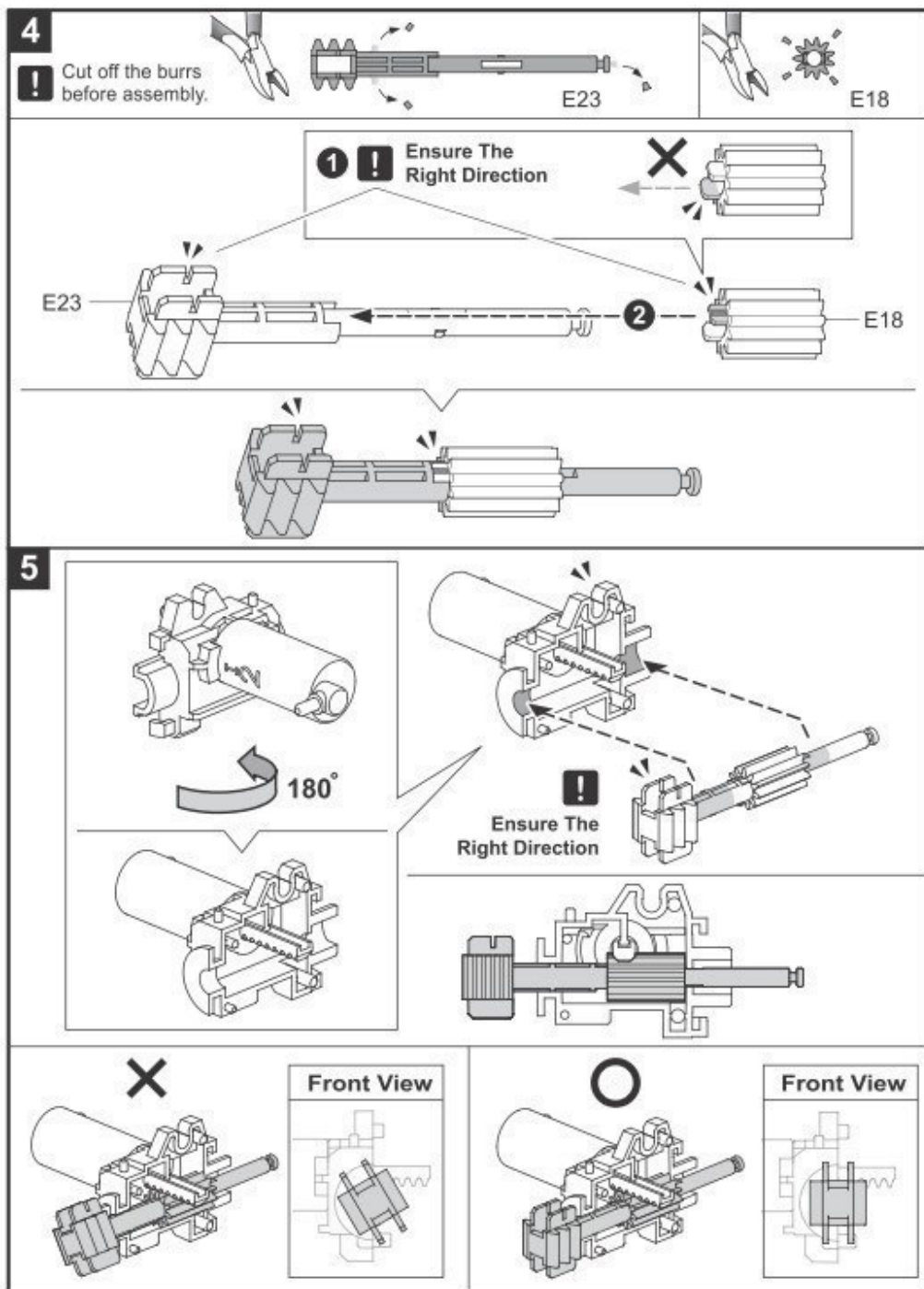
Montagem do Cilindro I1-I5

Cilindro I1-I2

Certifique-se que a direção é a correta.

"PUSH"

Certifique-se que a direção é a correta.

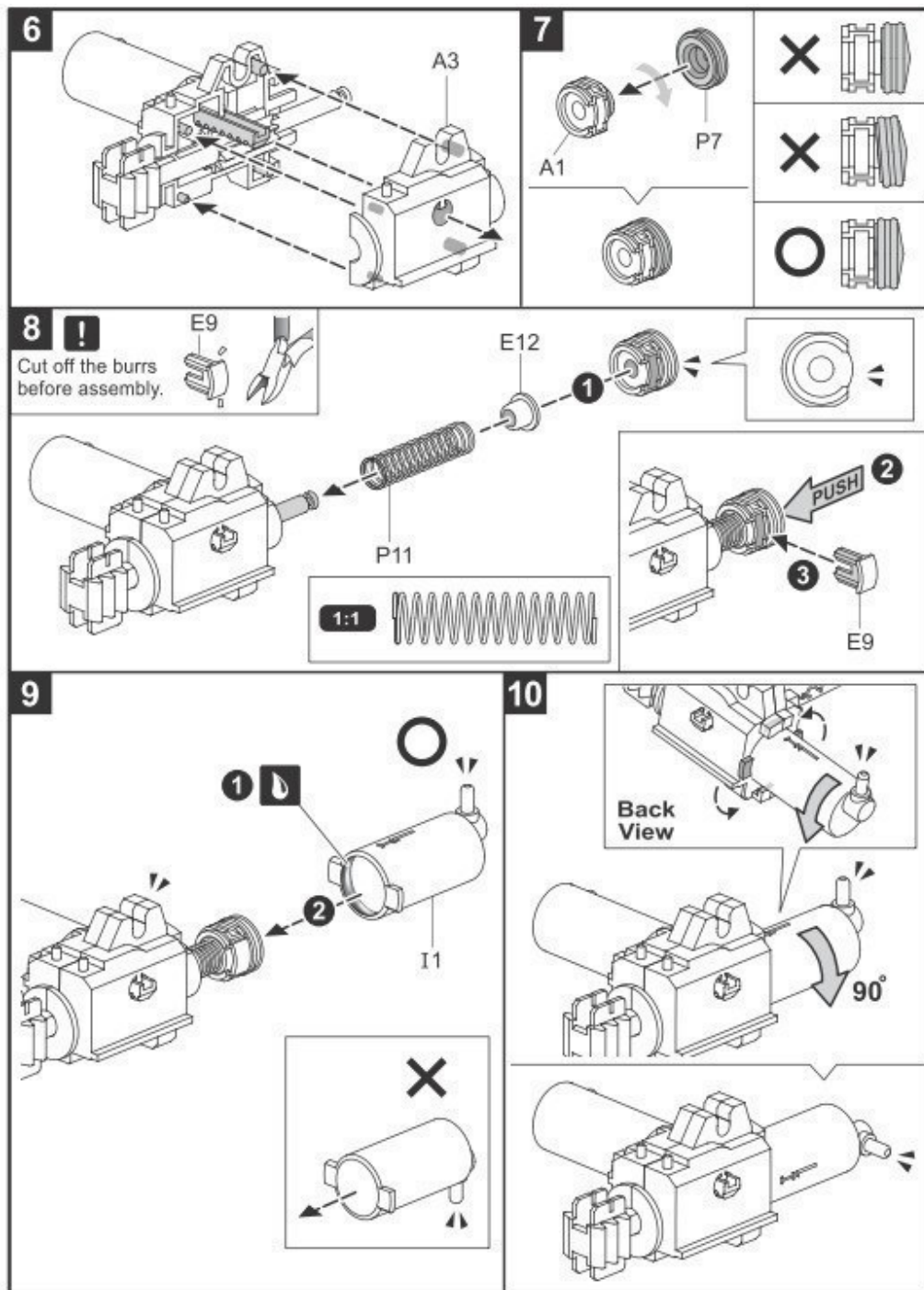


Cortar as rebarbas antes da montagem.

Certifique-se que a direção é a correta.

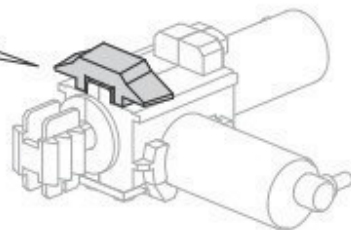
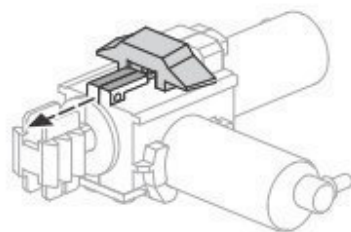
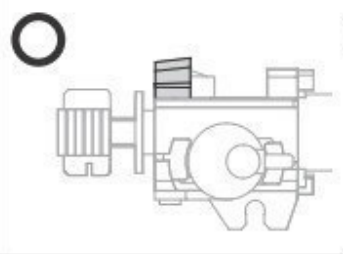
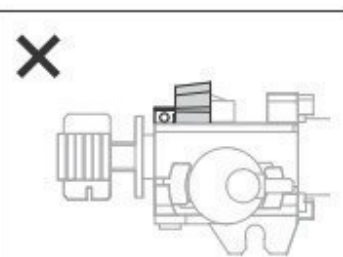
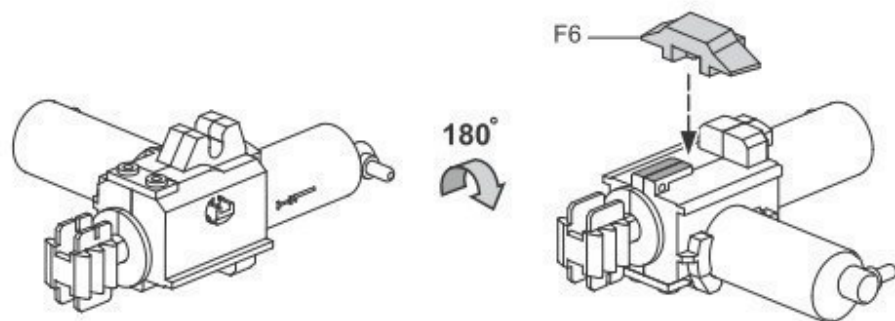
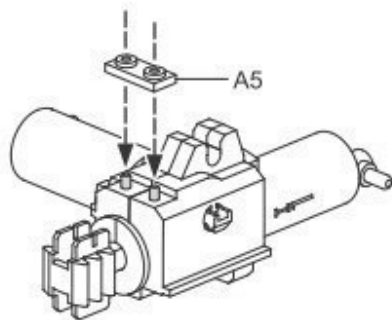
Certifique-se que a direção é a correta.

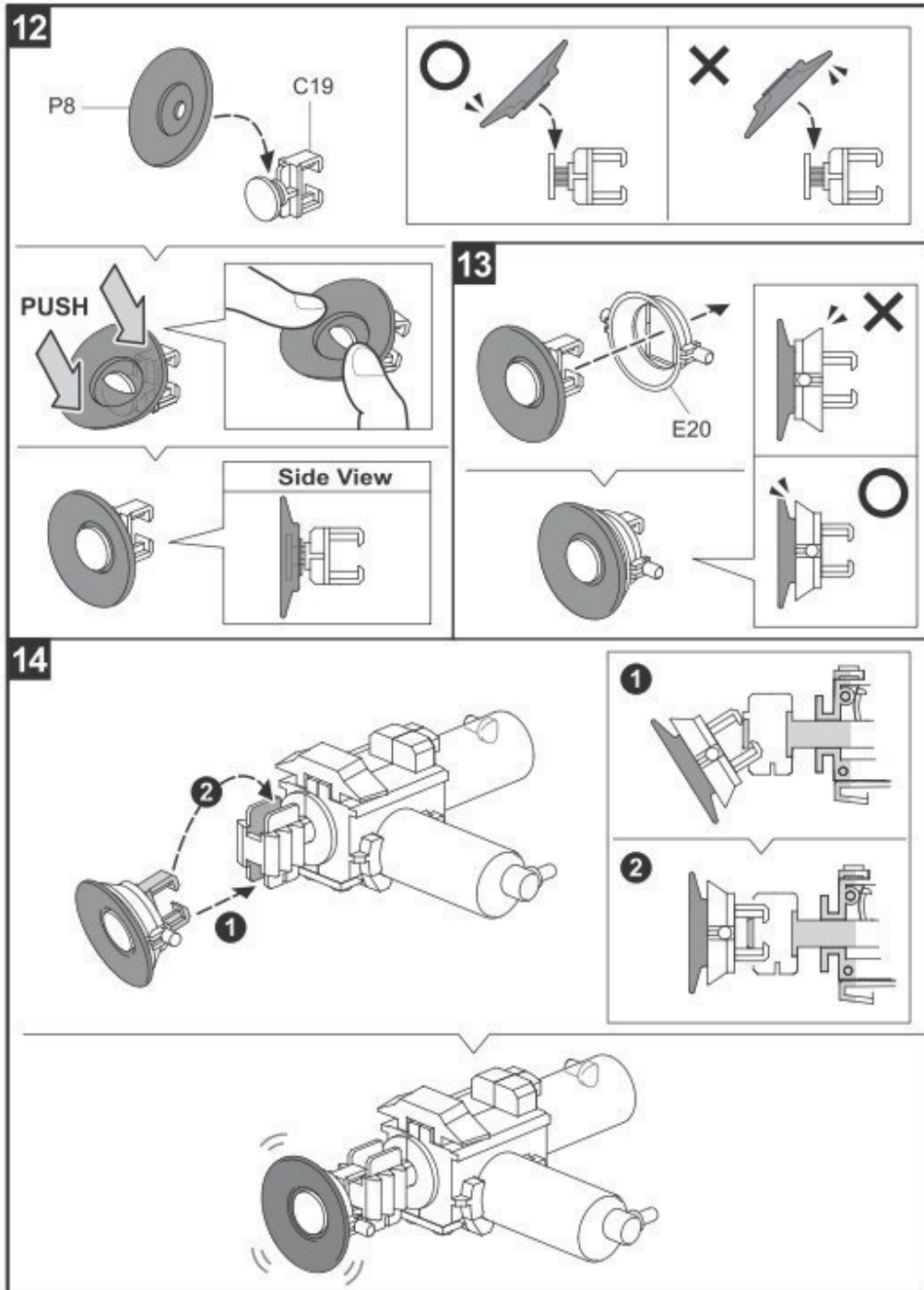
Vista Frontal



Cortar as rebarbas antes da montagem.

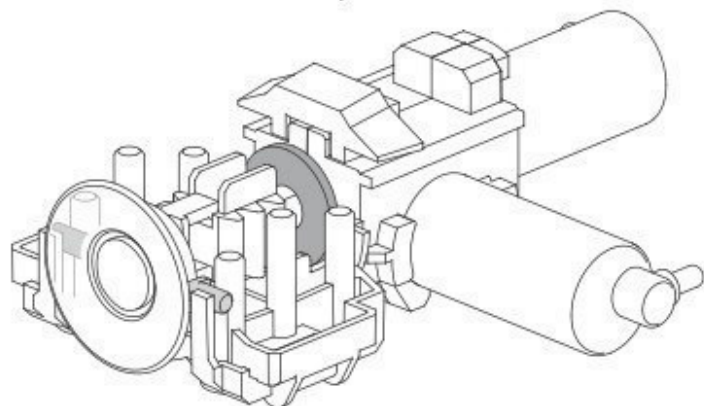
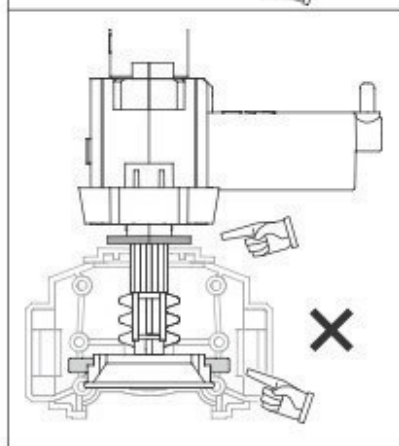
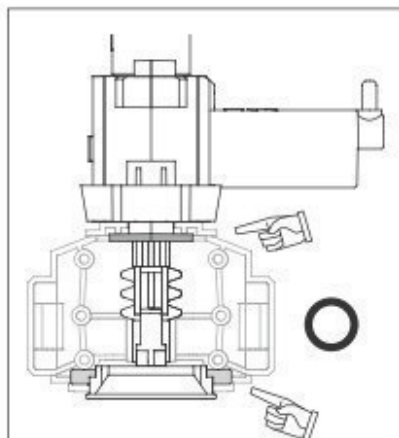
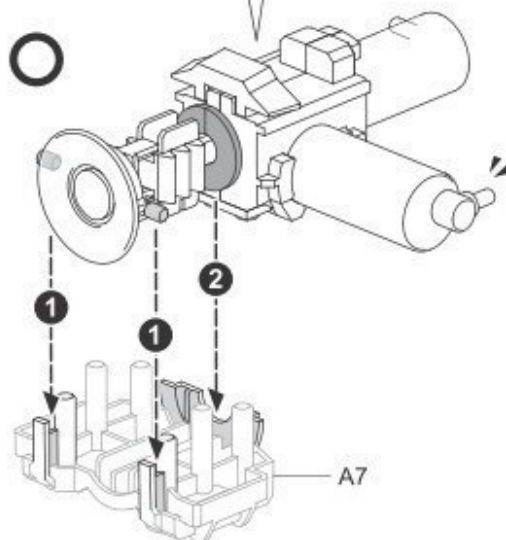
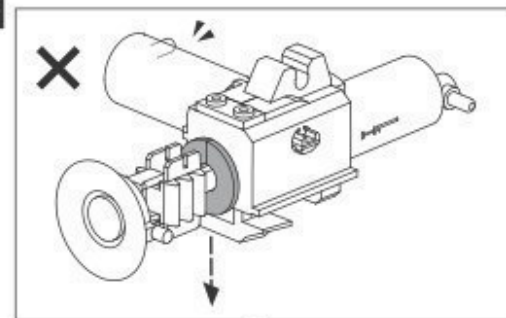
Vista Traseira





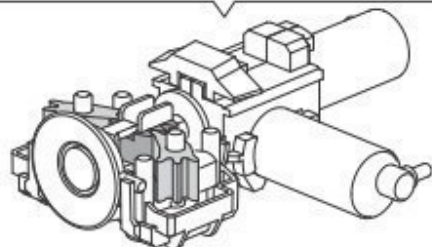
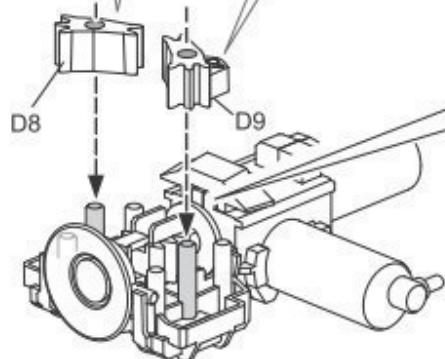
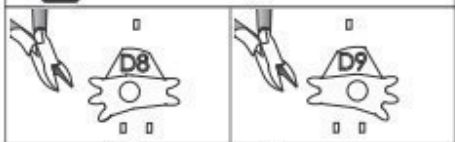
"PUSH"

Vista Lateral

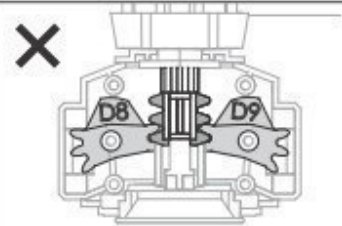
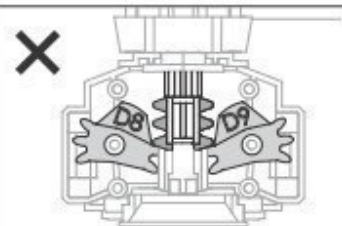
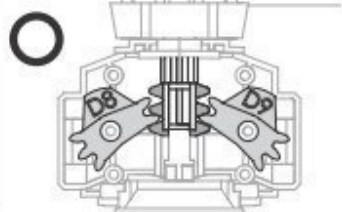


16

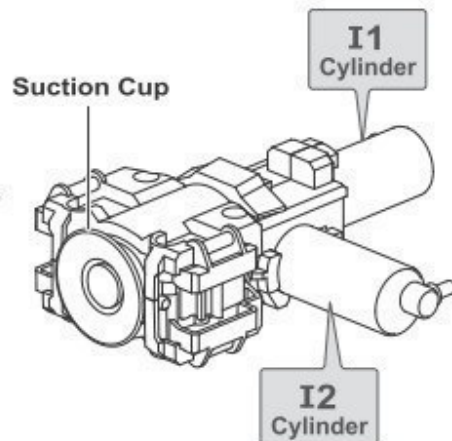
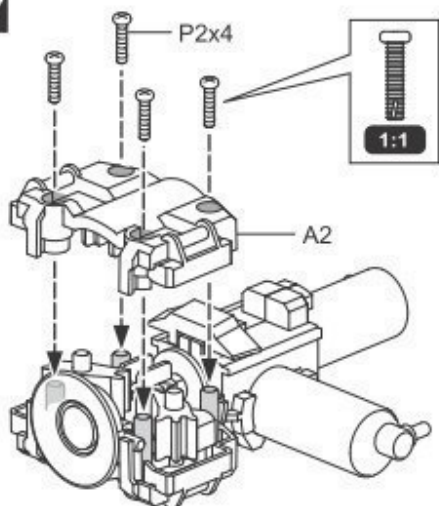
! Cut off the burrs before assembly.



! Very Important



17

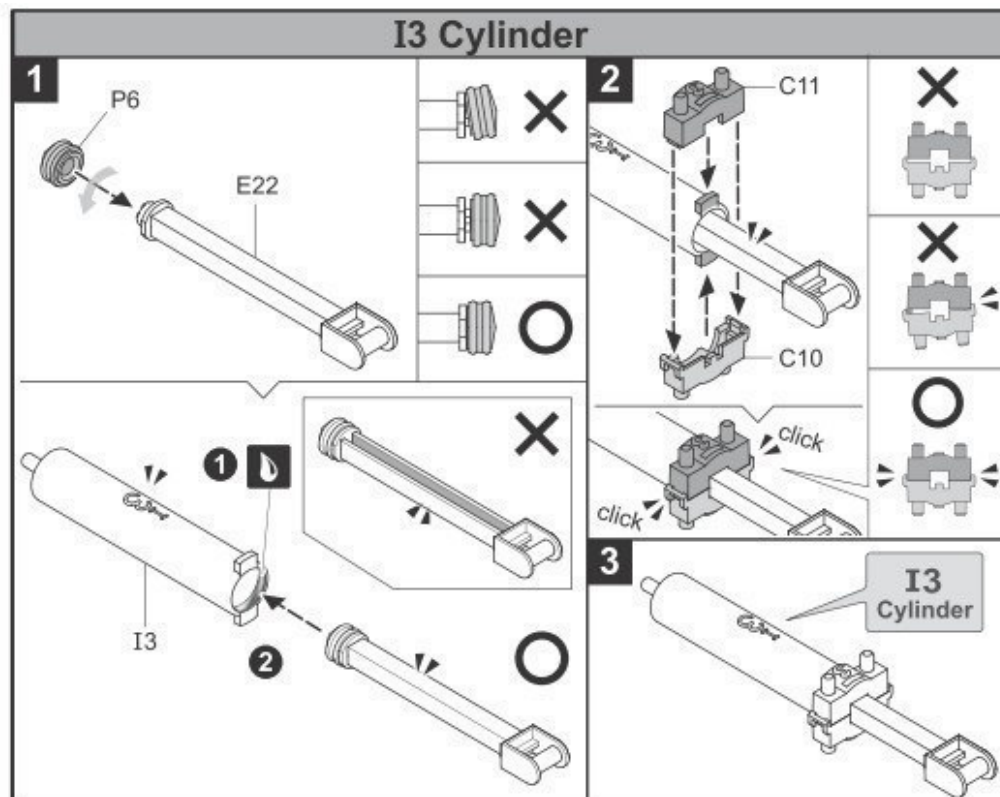


Cortar as rebarbas antes da montagem.

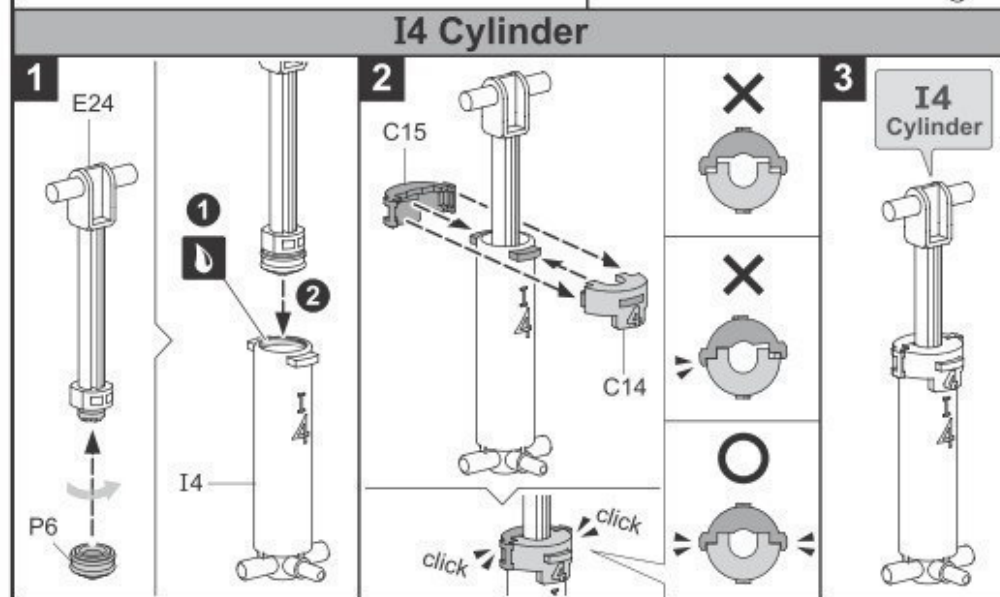


Muito Importante

Ventosa



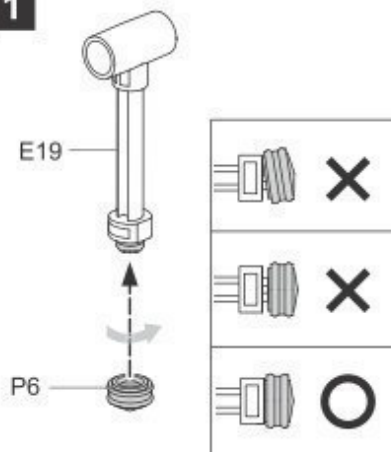
Cilindro I3



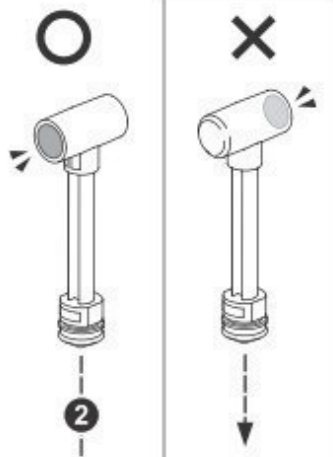
Cilindro I4

I5 Cylinder

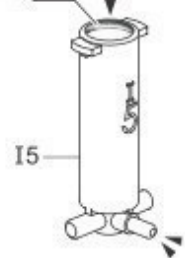
1



! Ensure The Right Direction

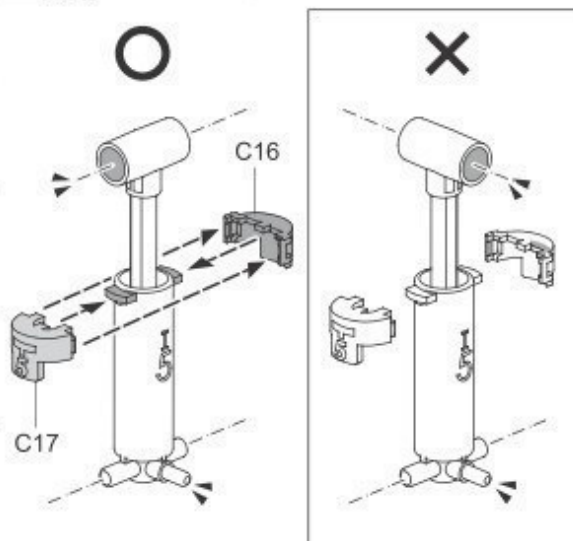


1

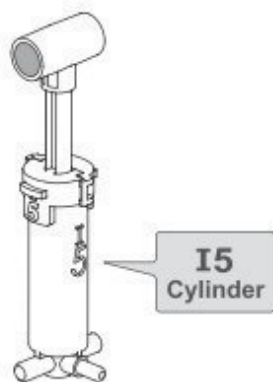


2

! Ensure The Right Direction



3



Cilindro I5

Certifique-se que a direção é a correta.

Certifique-se que a direção é a correta.

How To Cut The Tube

1 Measuring & Marking

2 Cutting

3 Coding

4 **!** Use the same tube to cut Tube 1 & Tube 0. Images below not to scale

Tube 0	8cm (3.15 inches)	
Tube 1	50cm (19.69 inches)	
Tube 2	56cm (22.05 inches)	
Tube 3	38cm (14.96 inches)	
Tube 4	42cm (16.54 inches)	
Tube 5	53cm (20.87 inches)	

Como Cortar o Tubo

1

Medição & Marcação

Tubo Suave P14

Marcador (fino)

2

Corte

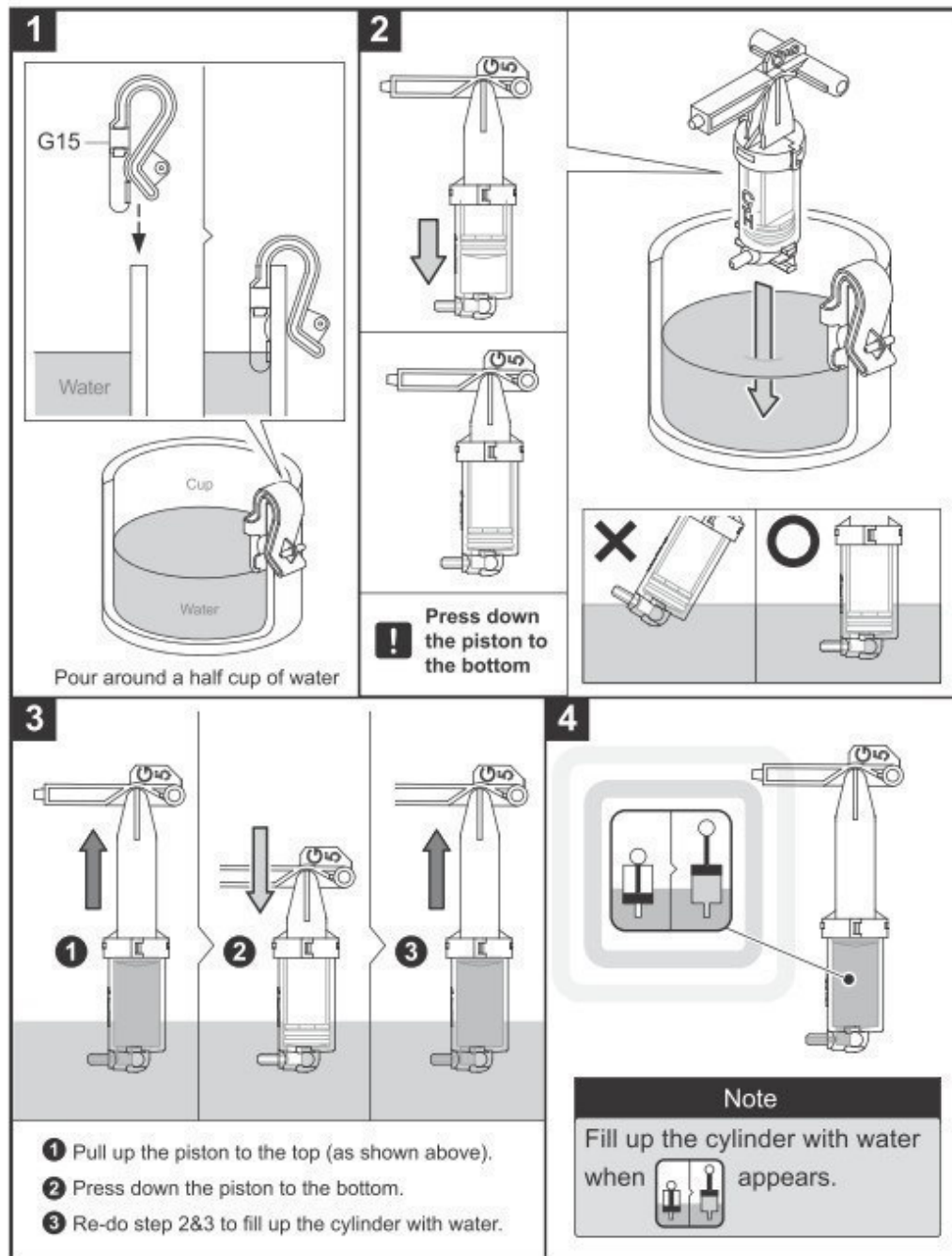
3

Codificação

4

Use o mesmo tubo para cortar o Tubo 1 e o Tubo 0. As imagens abaixo não estão à escala.

How To Fill Up The Cylinder With Water



Como Encher o Cilindro com Água

1

Despeje cerca de meio copo de água

!

Pressionar o pistão para baixo até ao fundo.

3

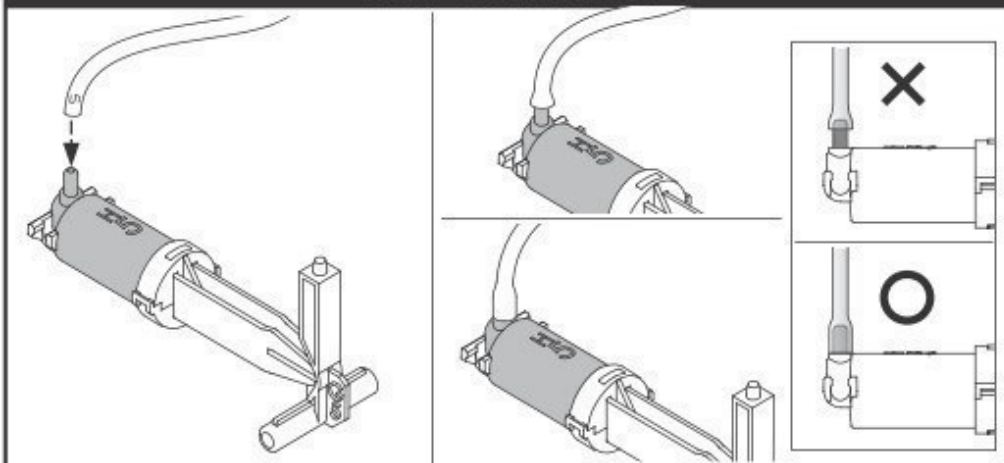
1. Puxar o pistão para a parte de cima (como indicado acima).
2. Pressionar o pistão para baixo até ao fundo.
3. Repetir passos 2 & 3 para encher o cilindro com água.

4

Nota

Encha o cilindro com água sempre que aparecer --.

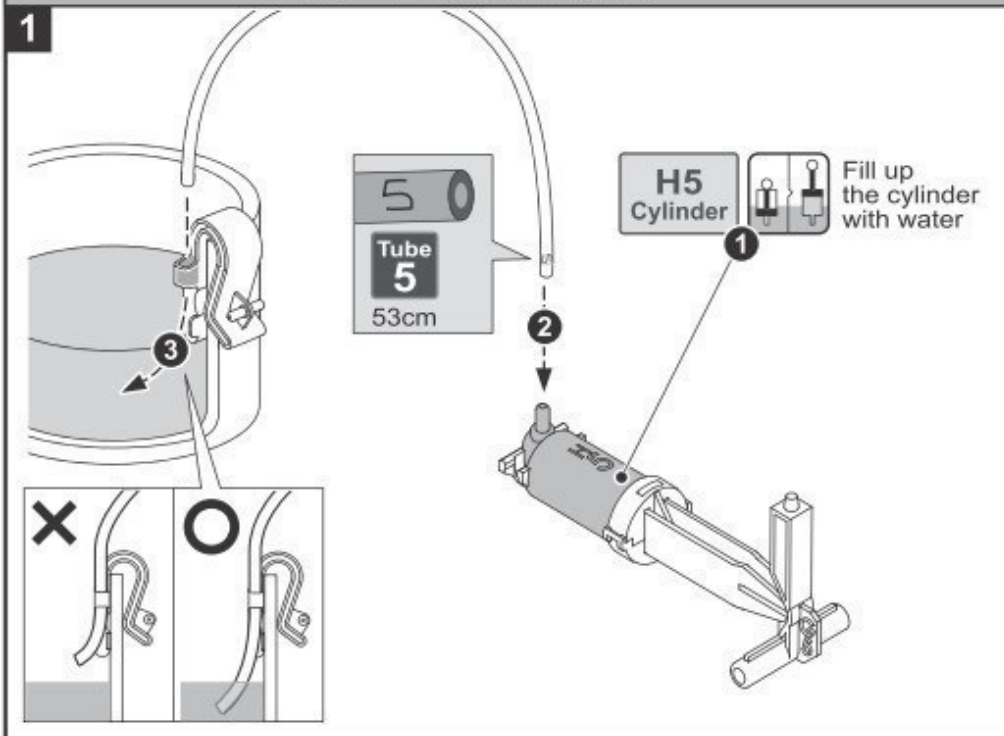
How To Fit Tube



Como Encaixar o Tubo

Hydraulic Cylinder Module Assembly

Connect H5 With I5

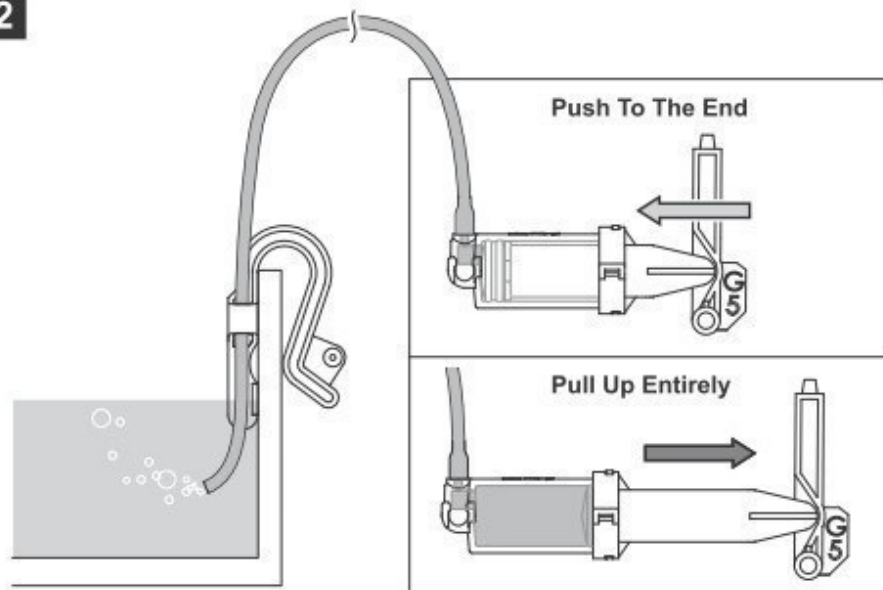


Montagem do Módulo do Cilindro Hidráulico

Ligar H5 com I5

Encher o cilindro com água

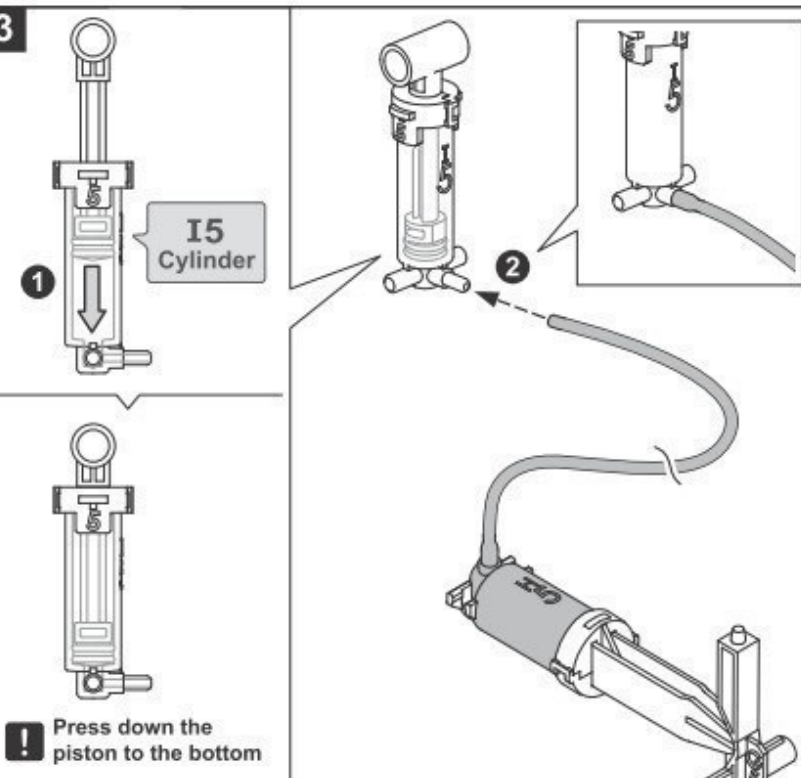
2



Empurrar até ao fim

Puxar para cima totalmente

3



Pressionar o pistão para baixo até ao fundo.

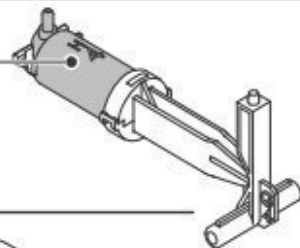
Connect H4 With I4

1

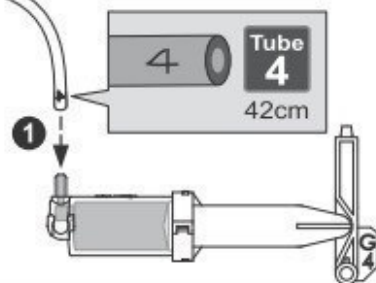
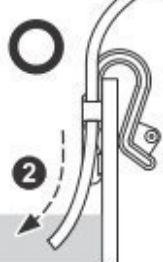
H4
Cylinder



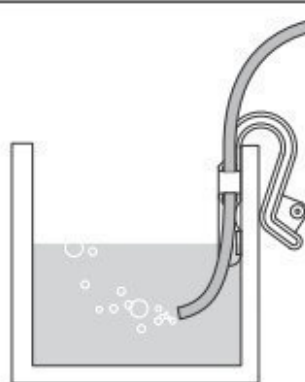
Fill up the cylinder
with water



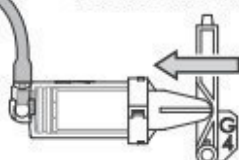
2



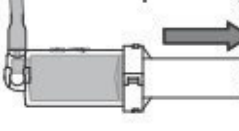
3



Push To The End



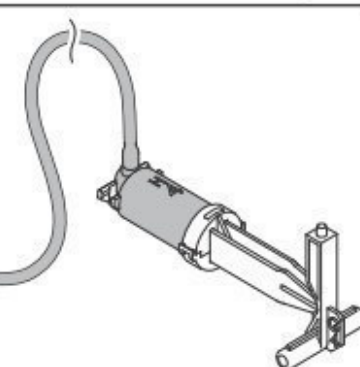
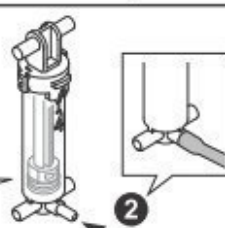
Pull Up Entirely



4



I4
Cylinder



! Press down the
piston to the bottom

Ligar H4 com I4

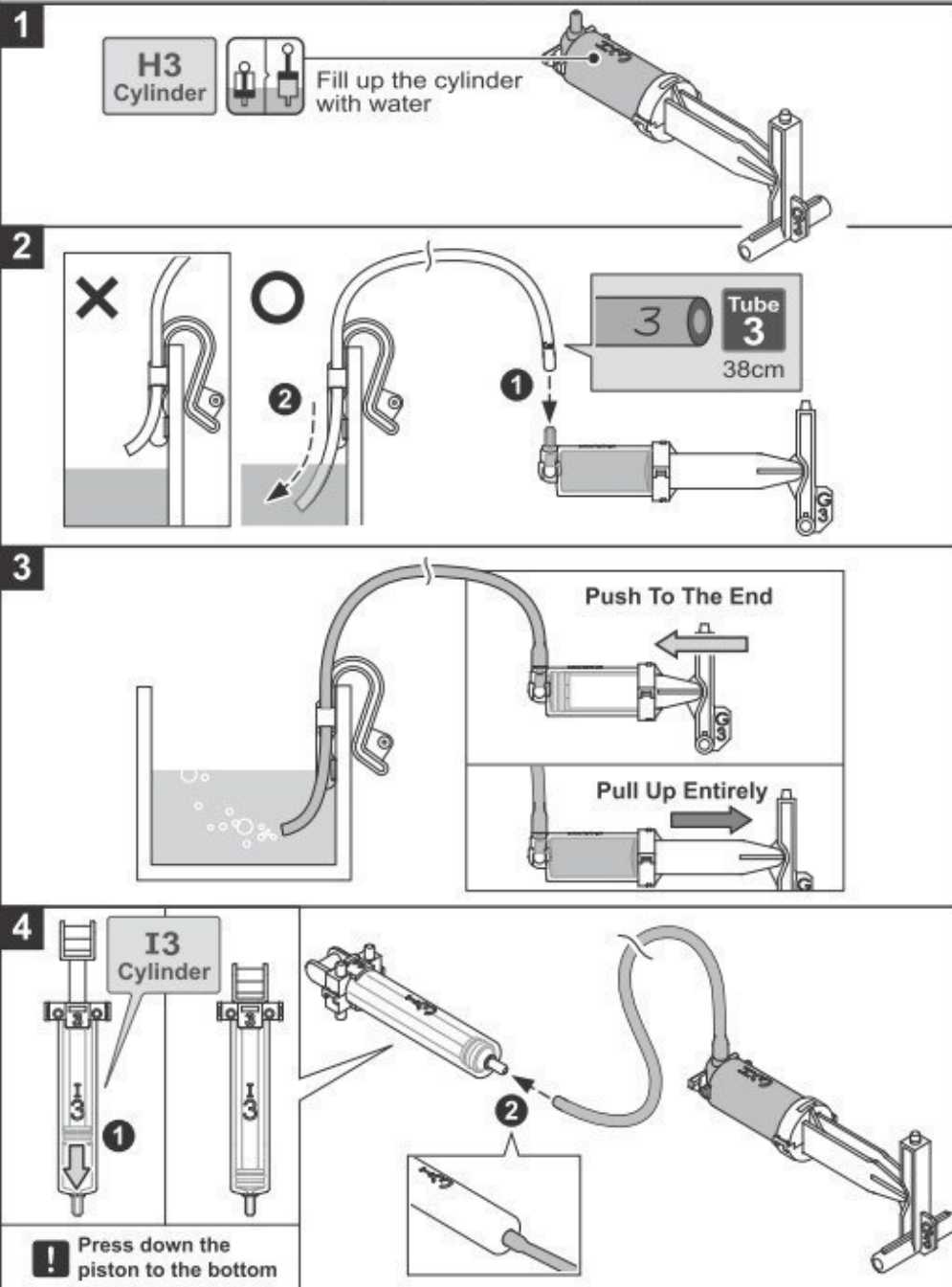
Encher o cilindro com água

Empurrar até ao fim

Puxar para cima totalmente

Pressionar o pistão para baixo até ao fundo.

Connect H3 With I3



Ligar H3 com I3

Encher o cilindro com água

Empurrar até ao fim

Puxar para cima totalmente

Pressionar o pistão para baixo até ao fundo.

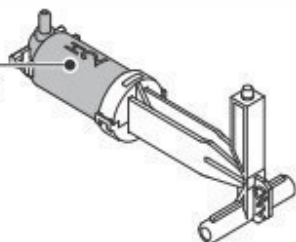
Connect H2 With I2

1

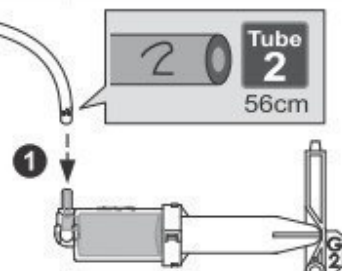
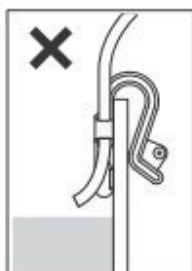
H2
Cylinder



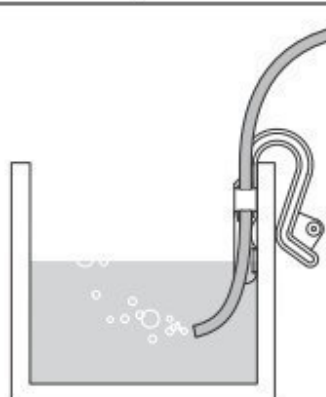
Fill up the cylinder
with water



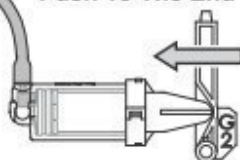
2



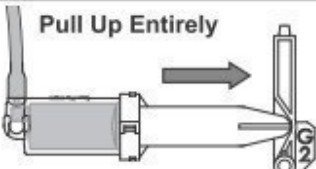
3



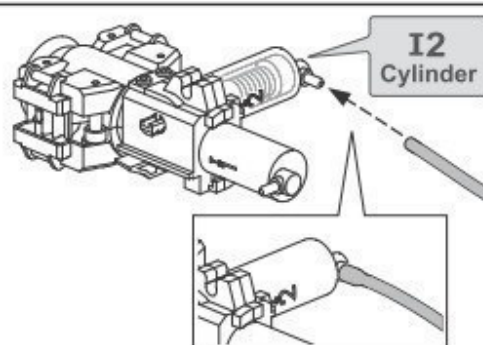
Push To The End



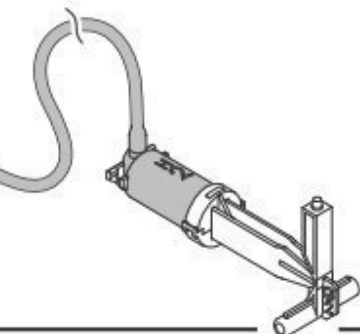
Pull Up Entirely



4



I2
Cylinder



Ligar H2 com I2

Encher o cilindro com água

Empurrar até ao fim

Puxar para cima totalmente

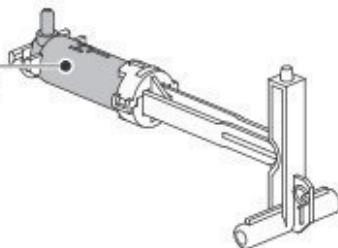
Connect H1 、 H0 With I1

1

H1
Cylinder



Fill up the cylinder
with water



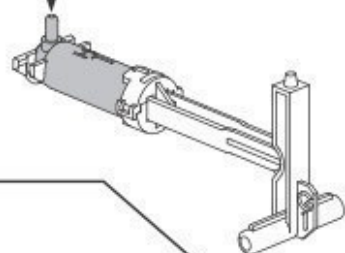
2

Tube
0

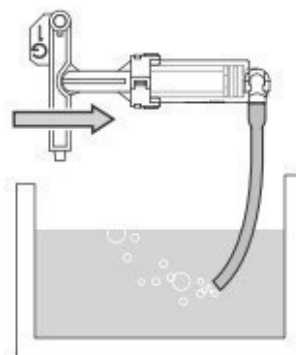
1:1



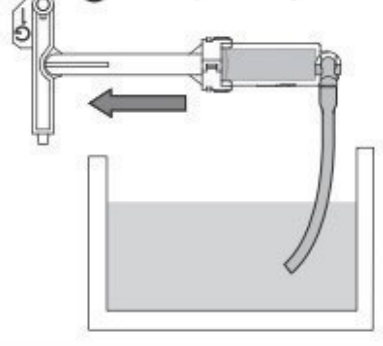
1



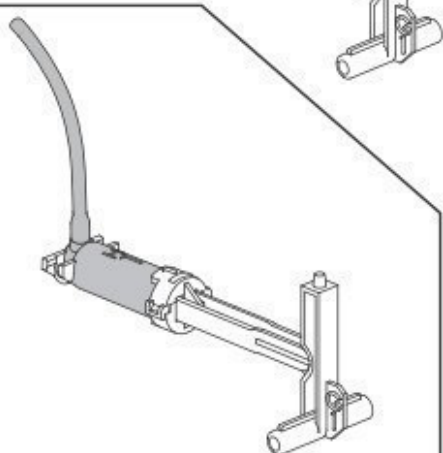
2 Push To The End



3 Pull Up Entirely



3

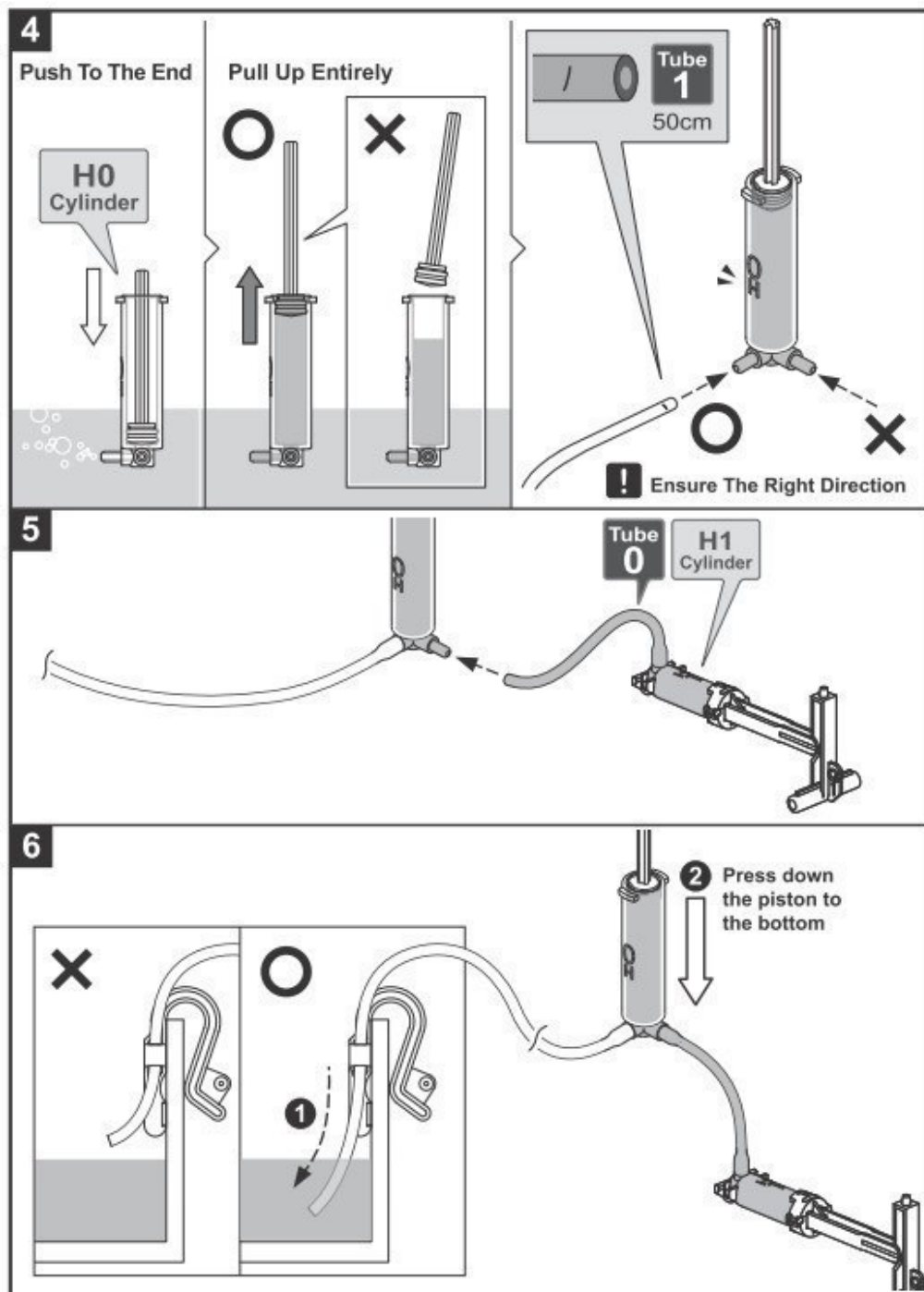


Ligar H1 H0 com I1

Encher o cilindro com água

Empurrar até ao fim

Puxar para cima totalmente

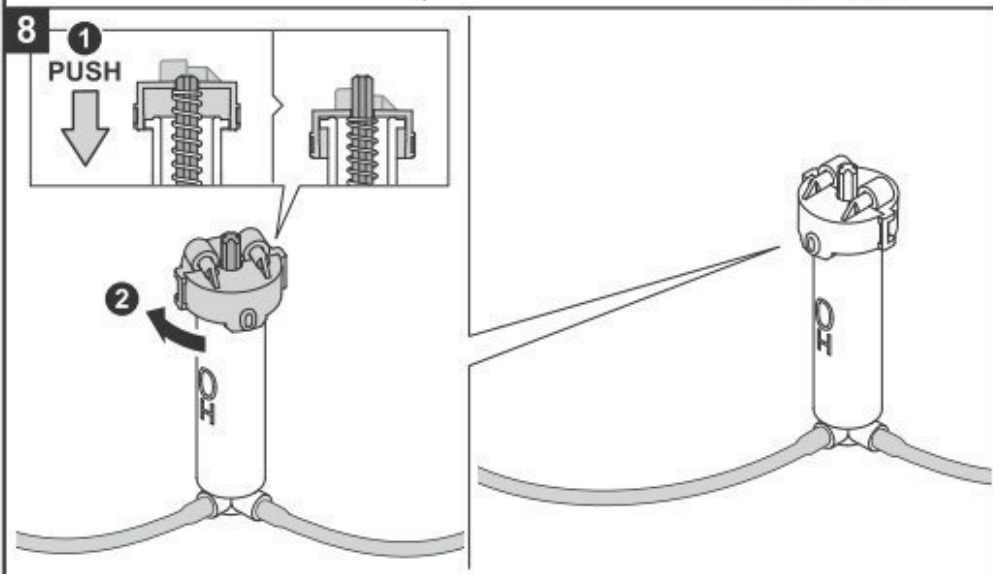
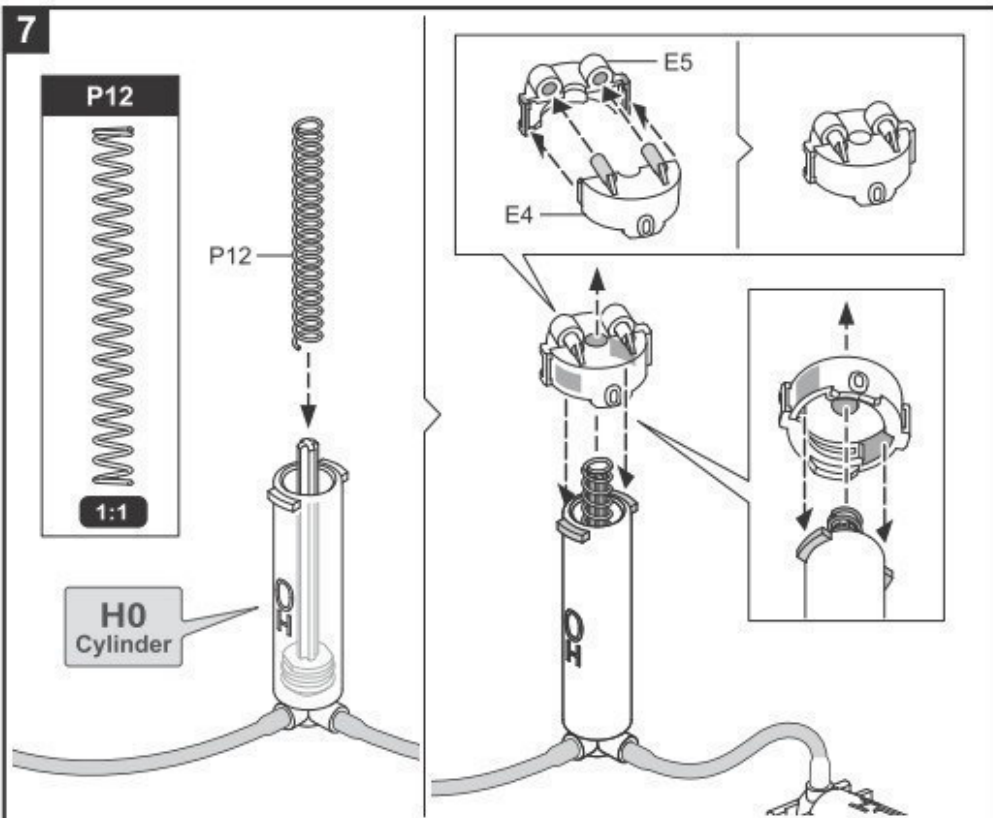


Empurrar até ao fim

Puxar para cima totalmente

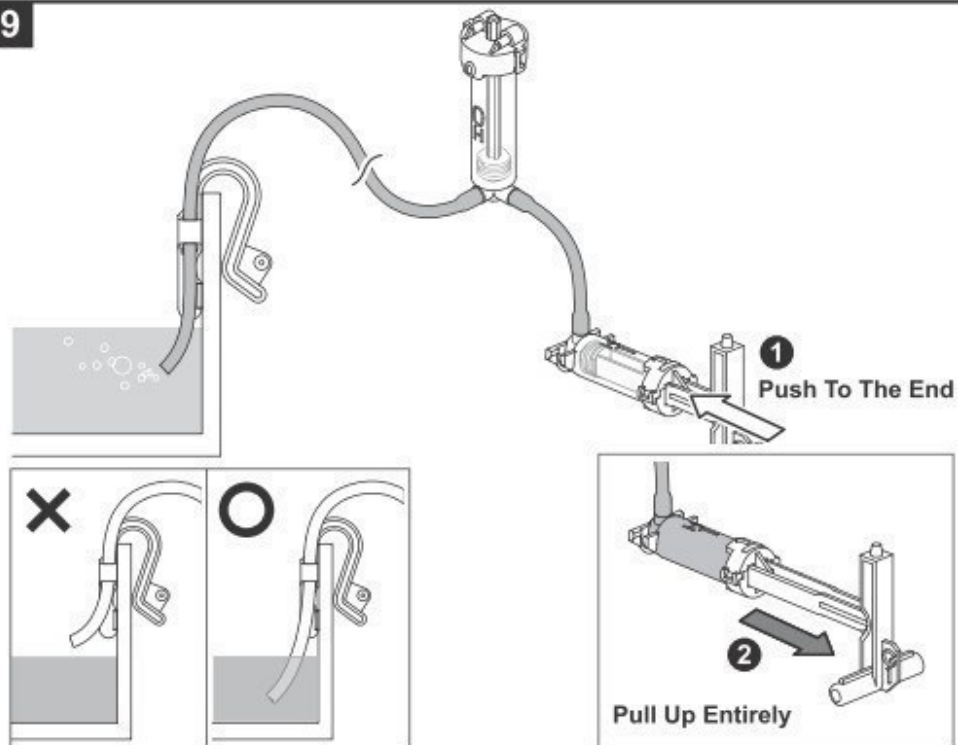
Certificar-se de que a direção é a correta.

Pressionar o pistão para baixo até ao fundo.



"PUSH"

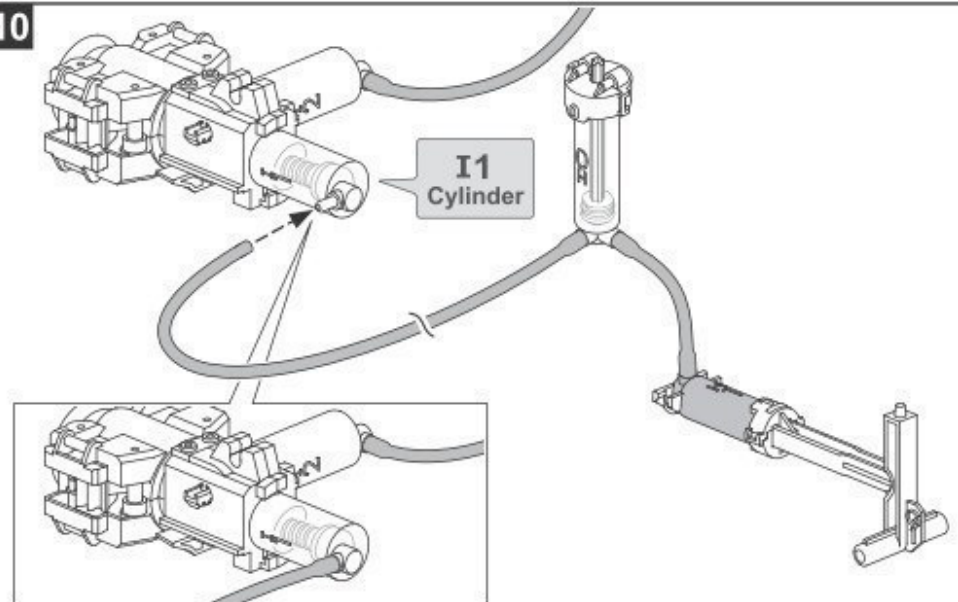
9



Empurrar até ao fim

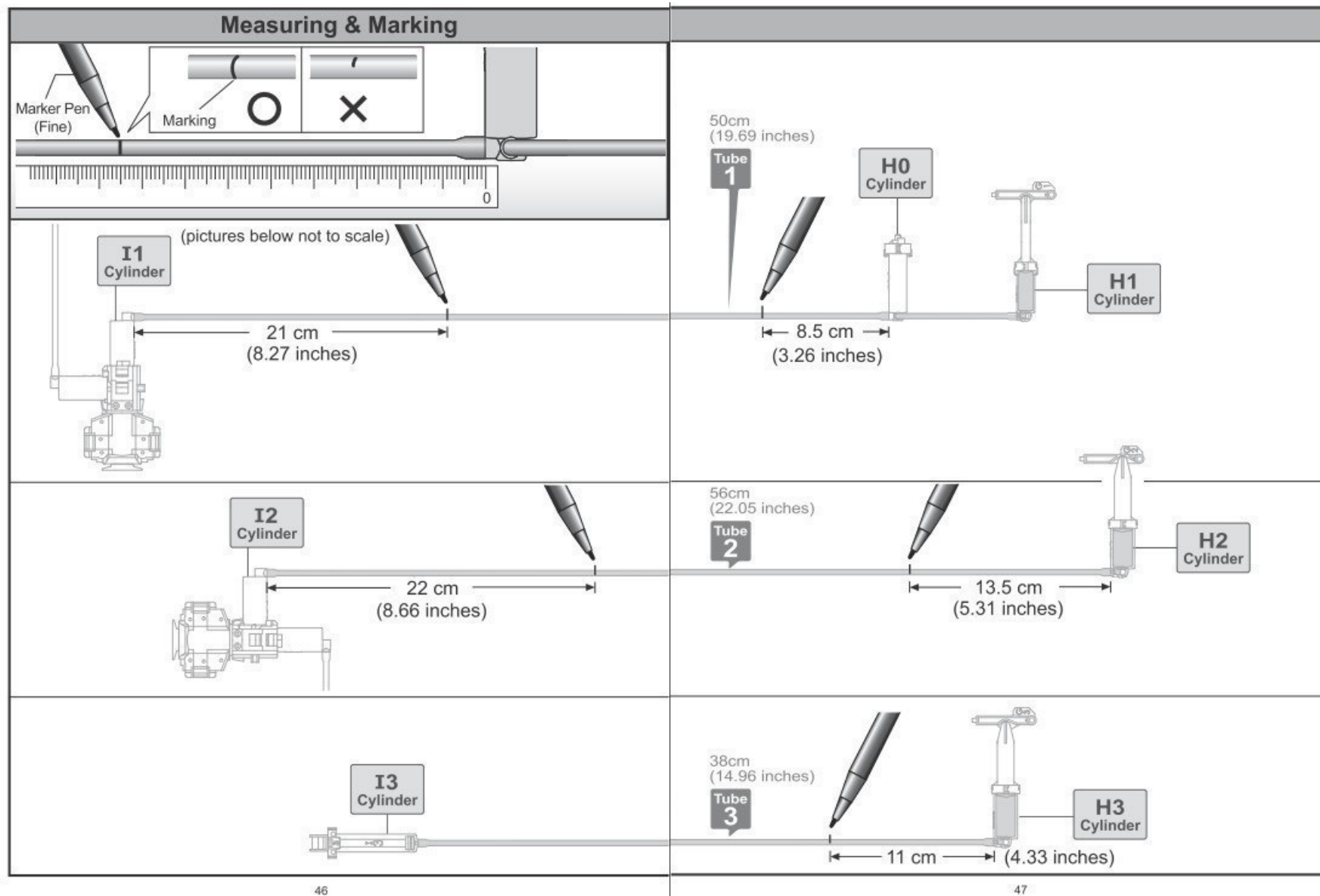
Puxar para cima totalmente

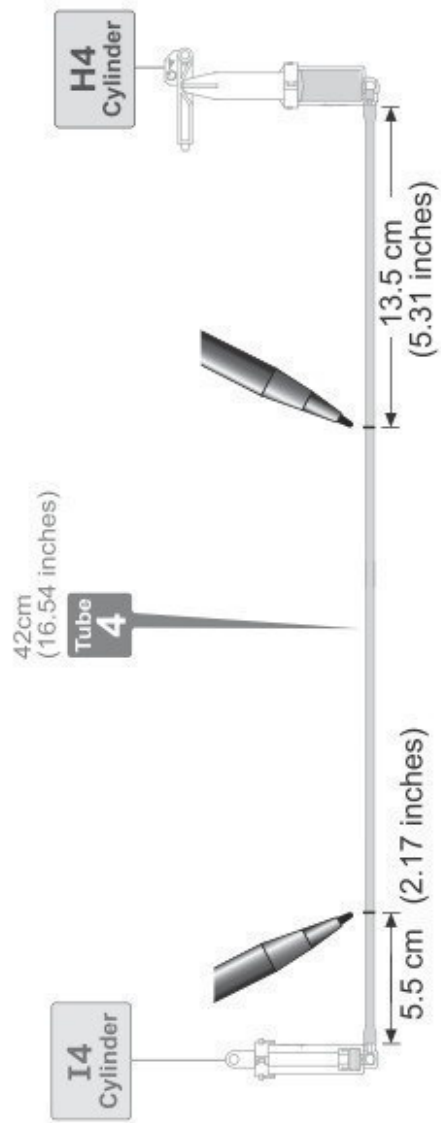
10



Medição & Marcação

As imagens abaixo não estão à escala.



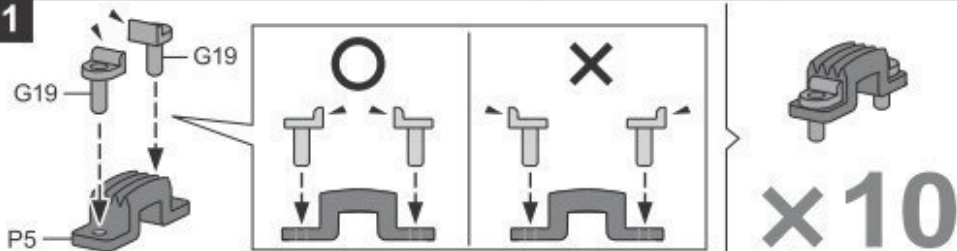


Lever Controller Assembly

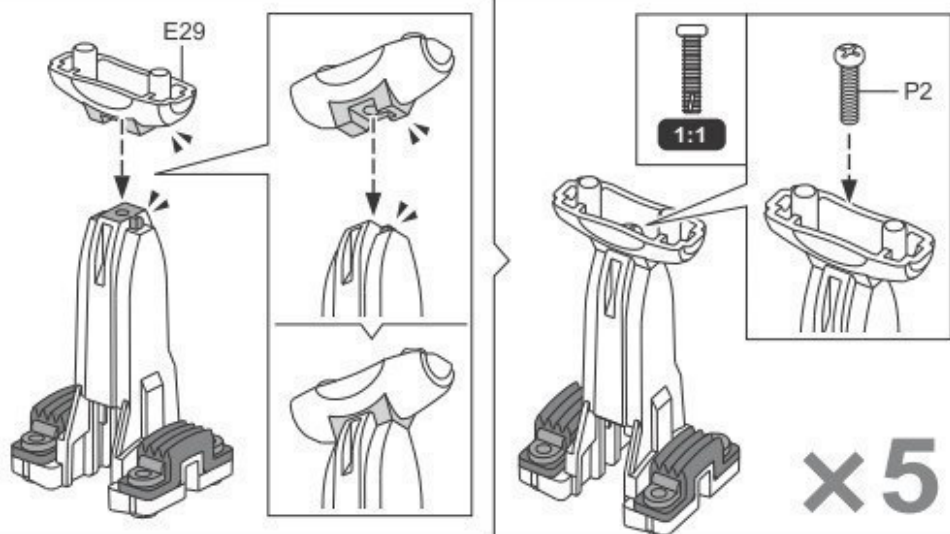
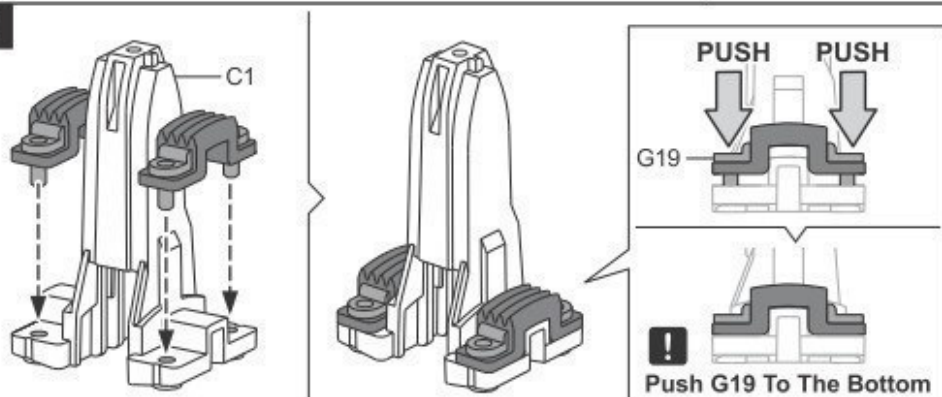


Very Important ! P5 (Brake Pad) must be clean and not stained by oil.
Make sure to hand clean and dry P5 before assembly.

1



2



Montagem do Controlador de Alavanca

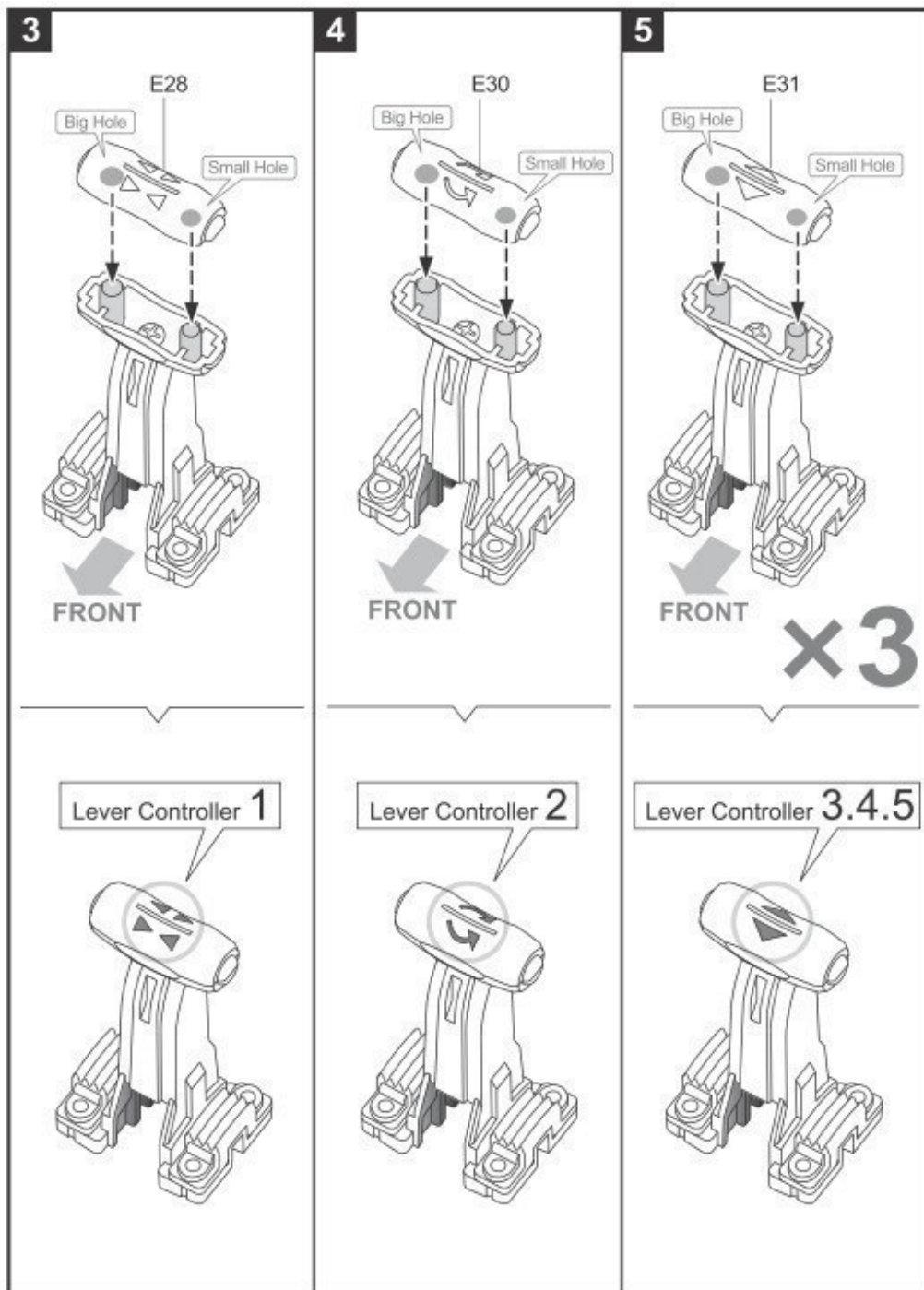
Muito importante

P5 (Pastilha de Travão) tem de estar sempre limpa e sem vestígios de óleo.

Limpe e seque o P5 antes da montagem.

"PUSH"

Empurre o G19 até ao fundo.



Orifício Grande
Orifício Pequeno

"FRONT"

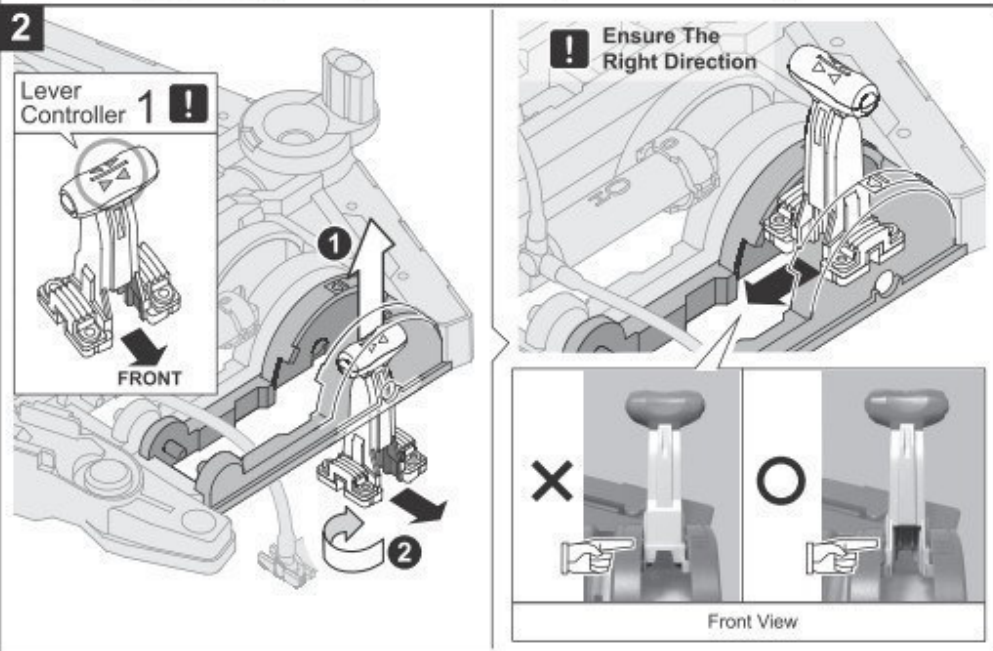
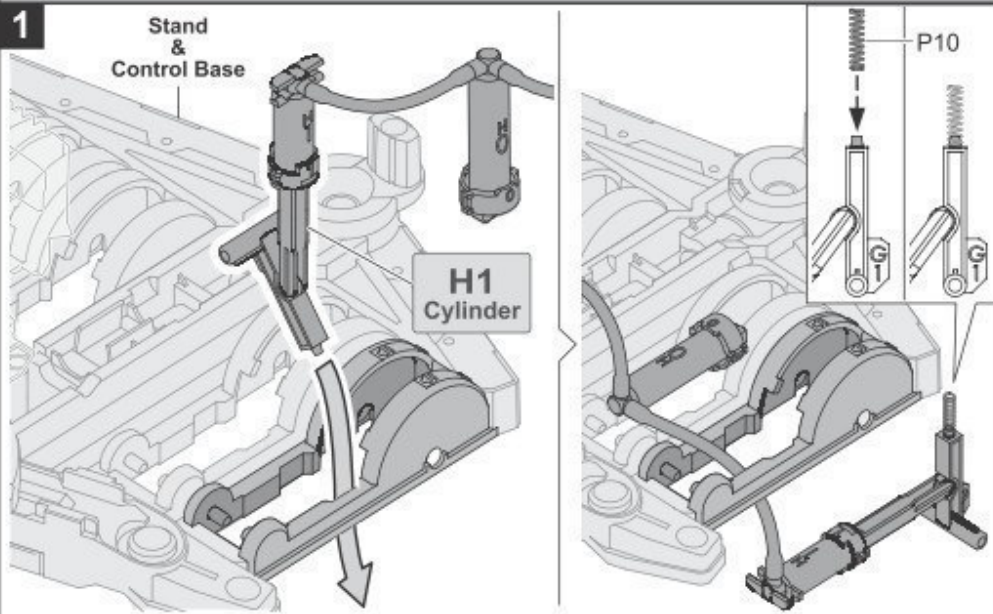
Controlador de Alavanca 1

Controlador de Alavanca 2

Controlador de Alavanca 3, 4, 5

Control Moduel Assembly

Unit 1: H0.H1 Cylinder & Lever Controller 1



Montagem do Módulo de Controlo

Unidade 1: Cilindro H0.H1 & Controlador de Alavanca 1

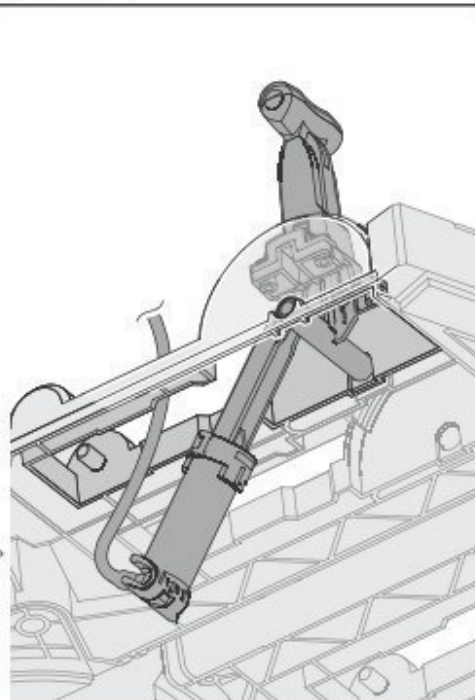
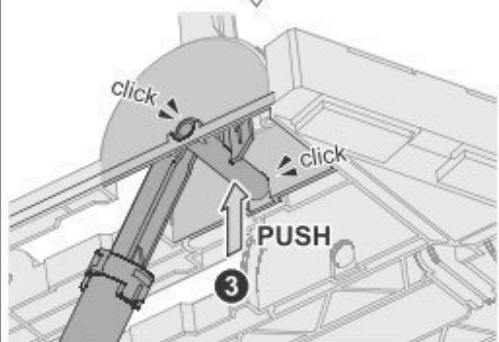
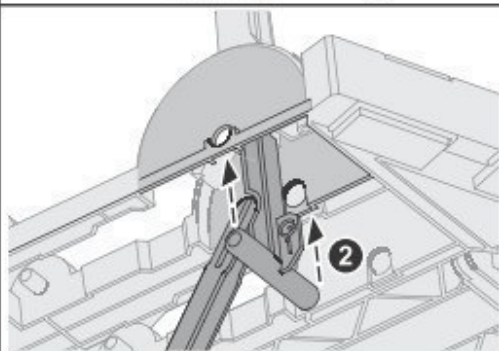
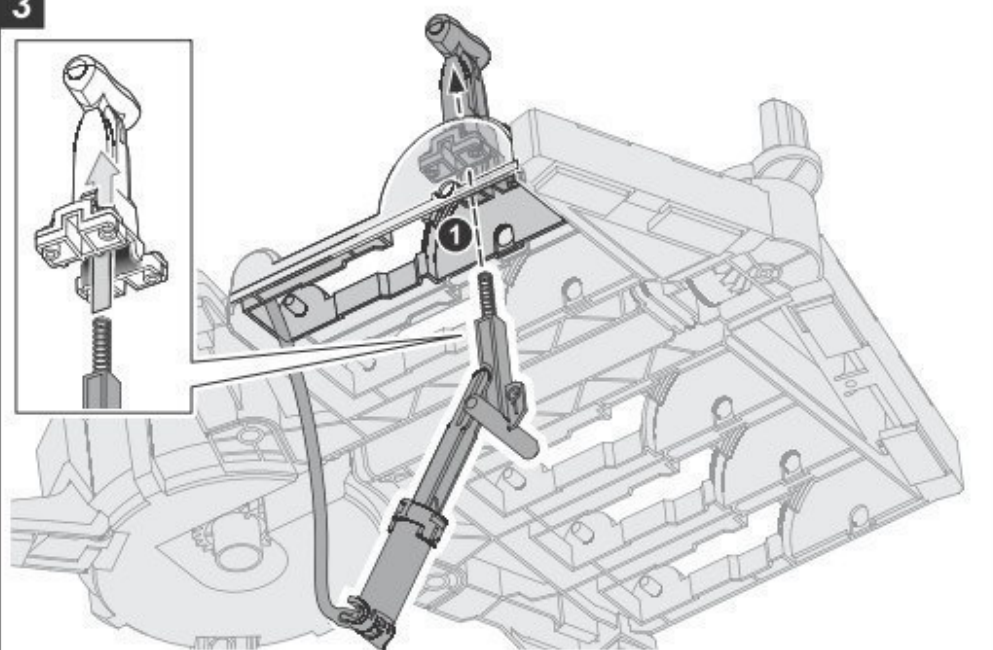
Suporte & Base de Controlo

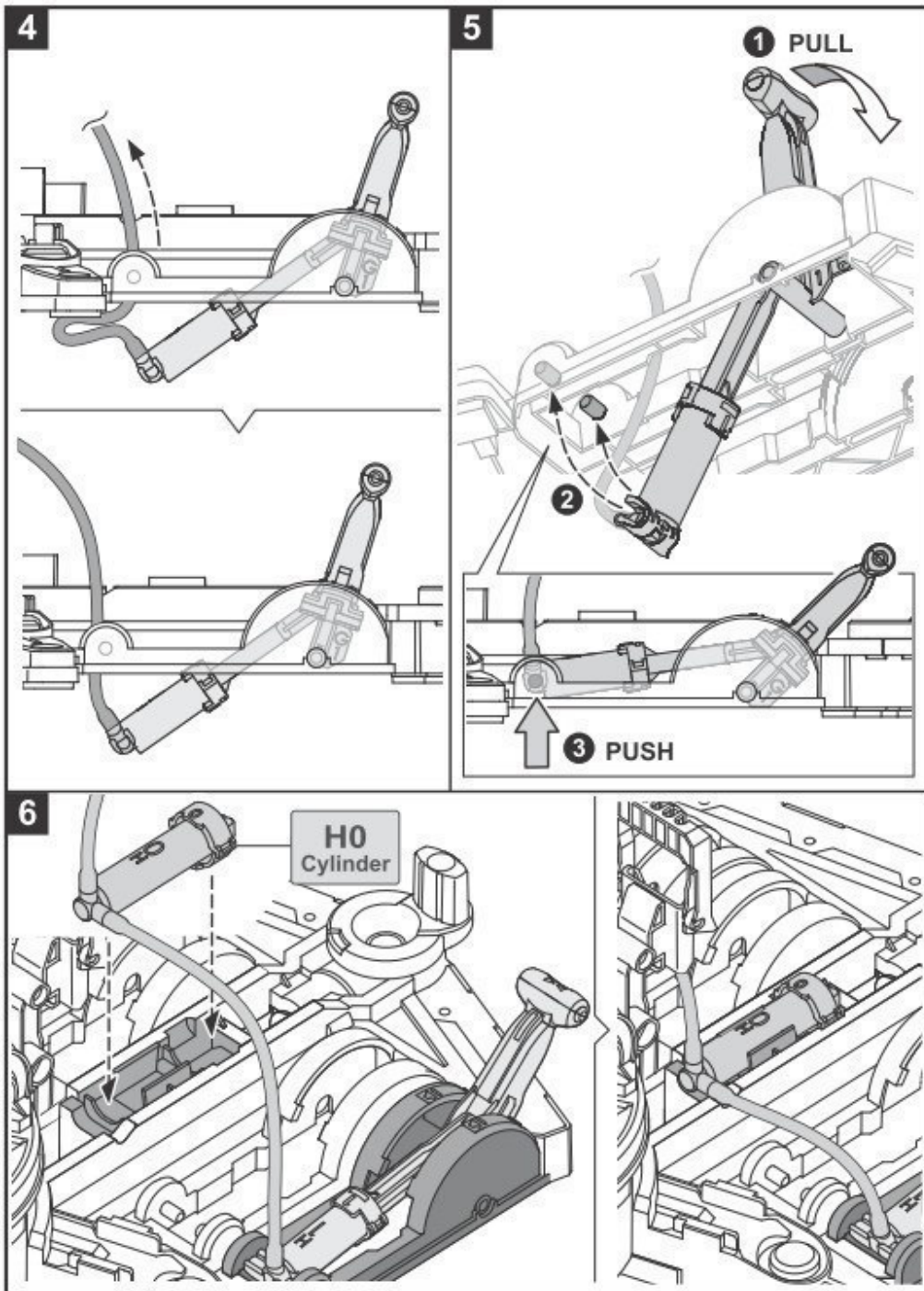
Controlador de Alavanca 1

Certificar-se de que a direção é a correta.

Vista frontal

3

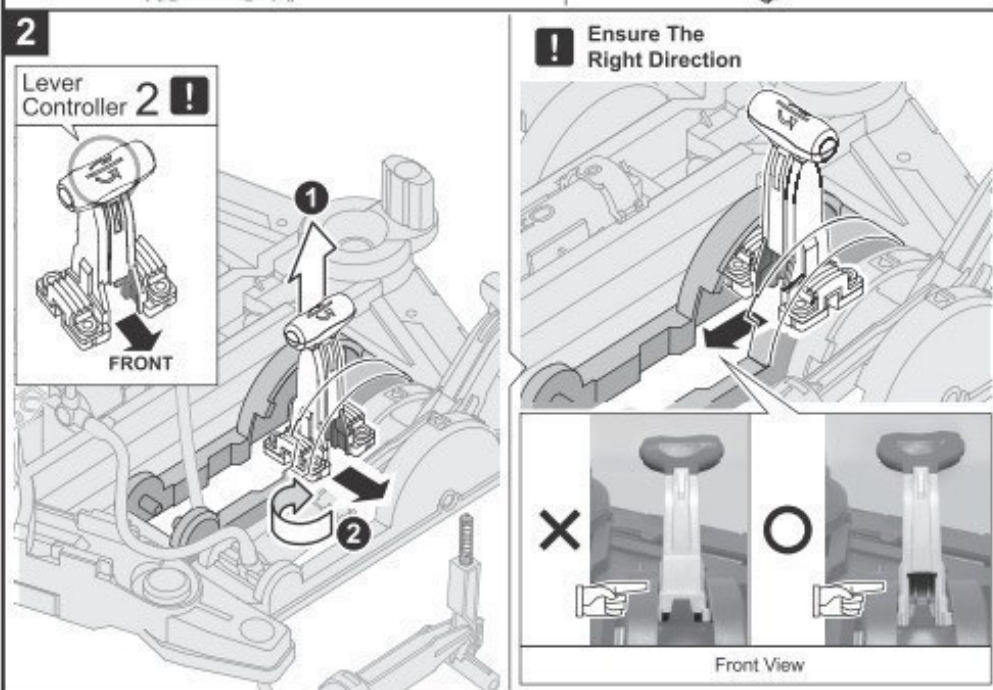
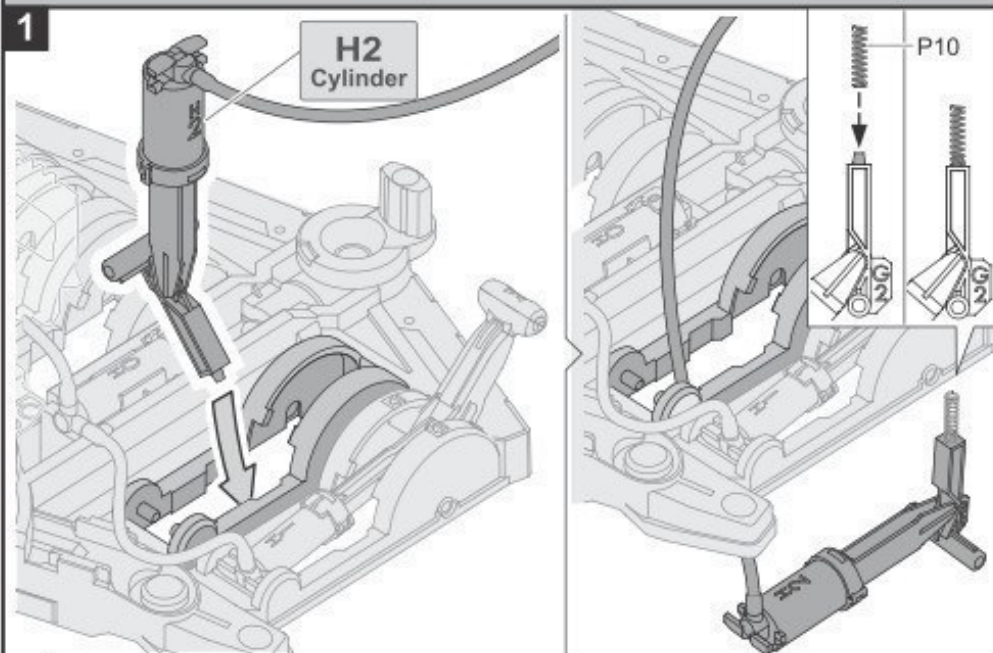




"PULL"

"PUSH"

Unit 2: H2 Cylinder & Lever Controller 2

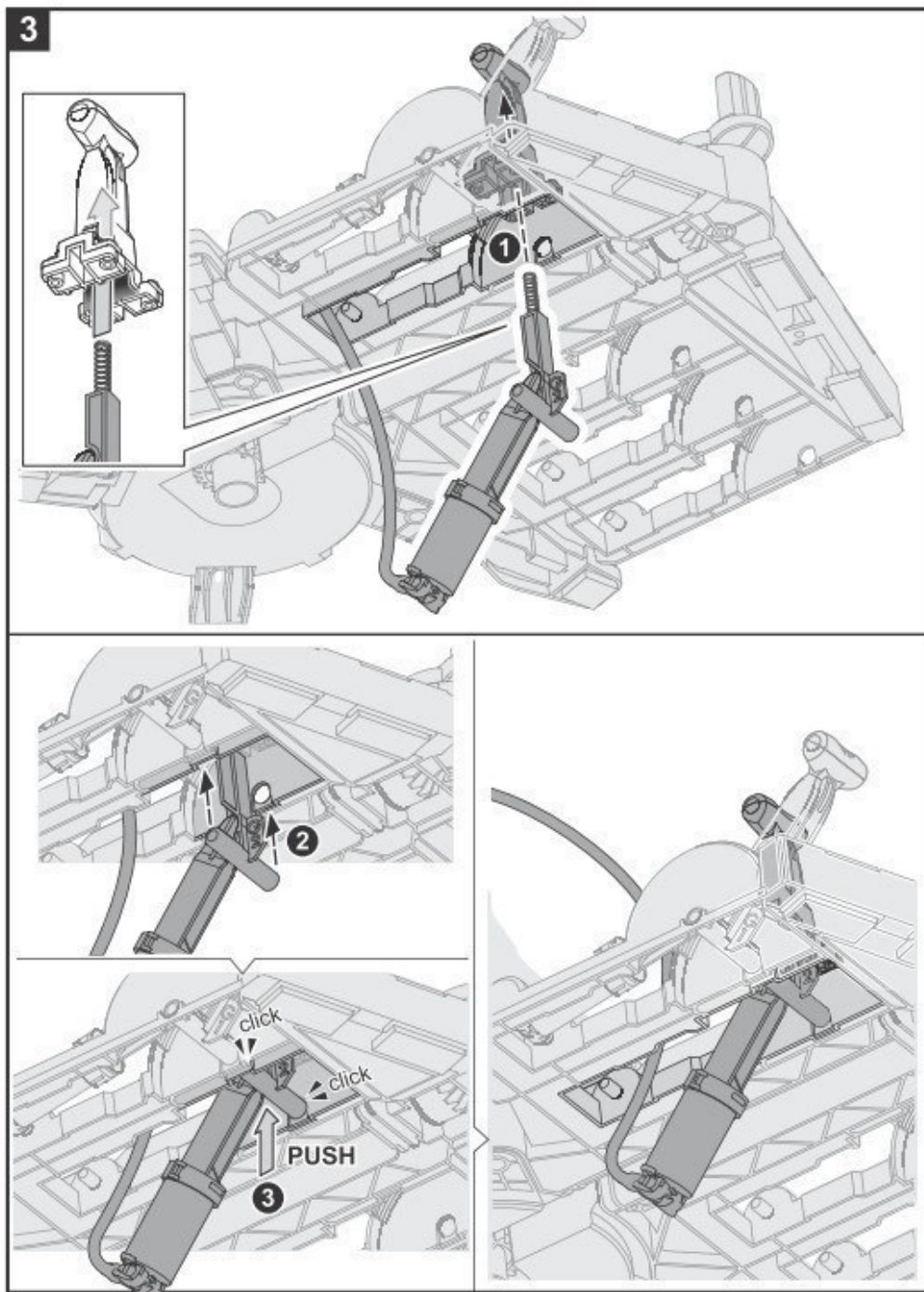


Unidade 2: Cilindro H2 & Controlador de Alavanca 2

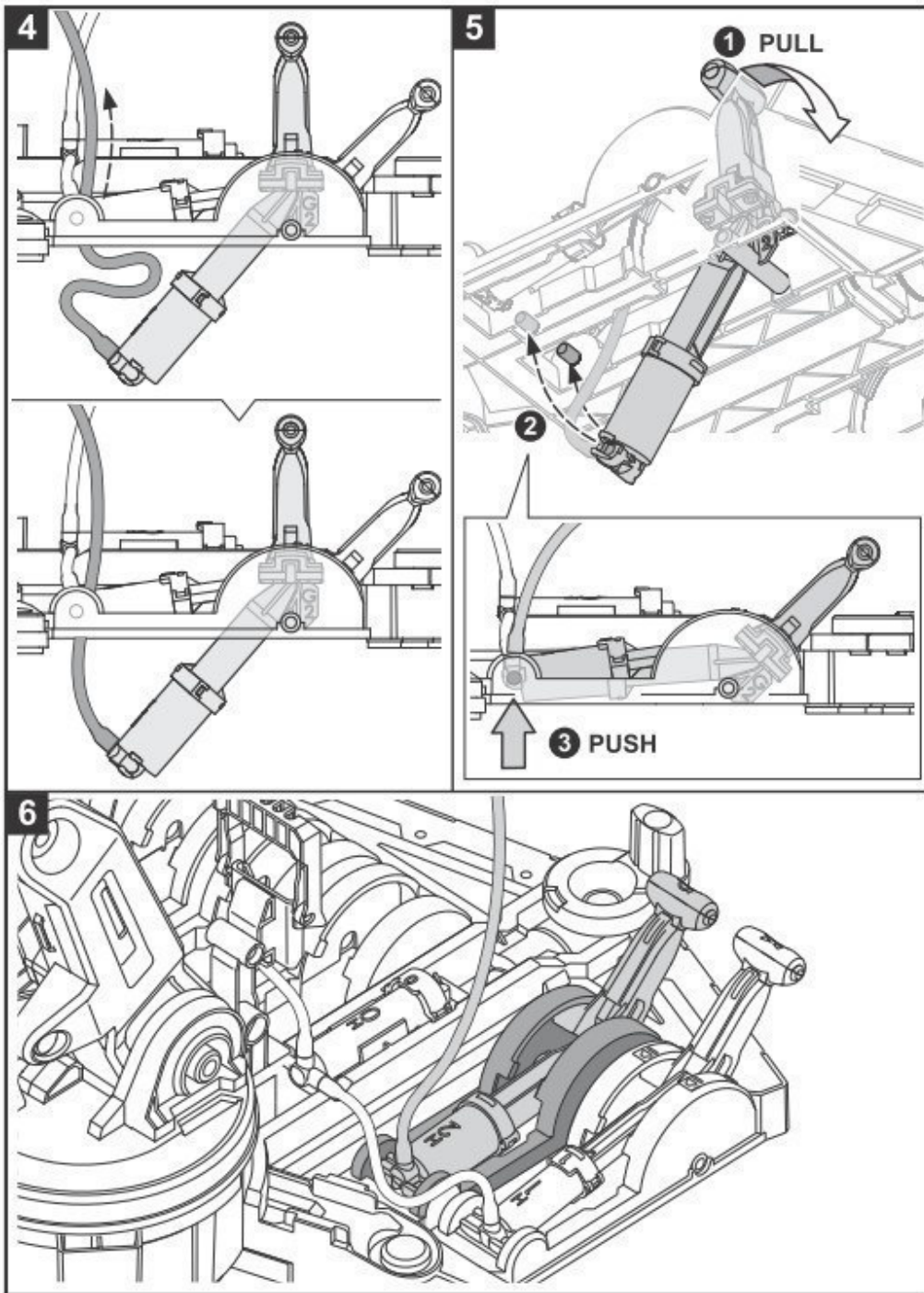
Controlador de Alavanca 2

Certificar-se de que a direção é a correta.

Vista frontal



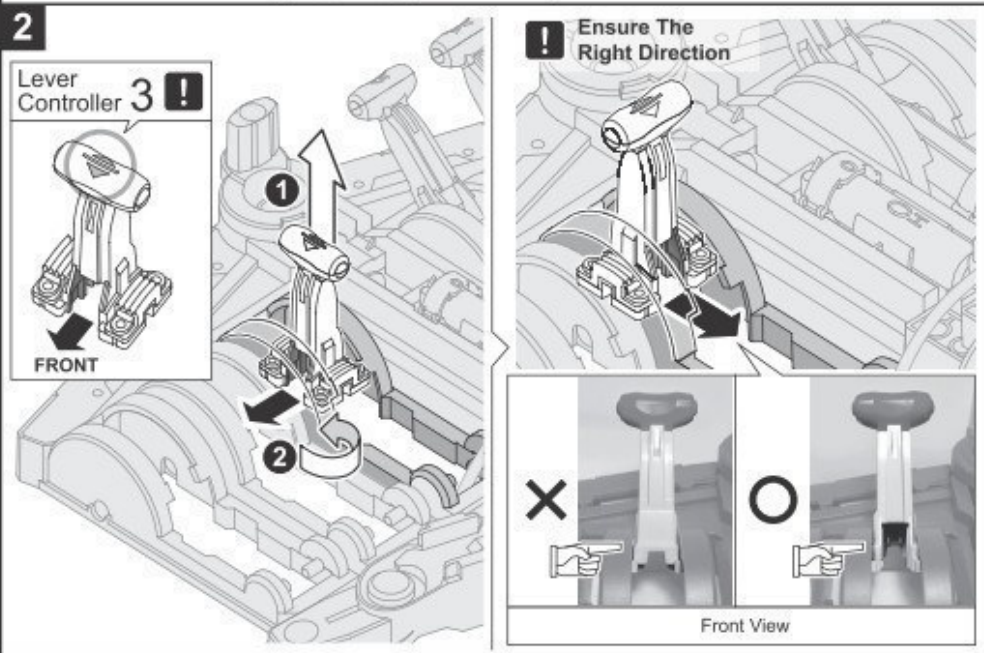
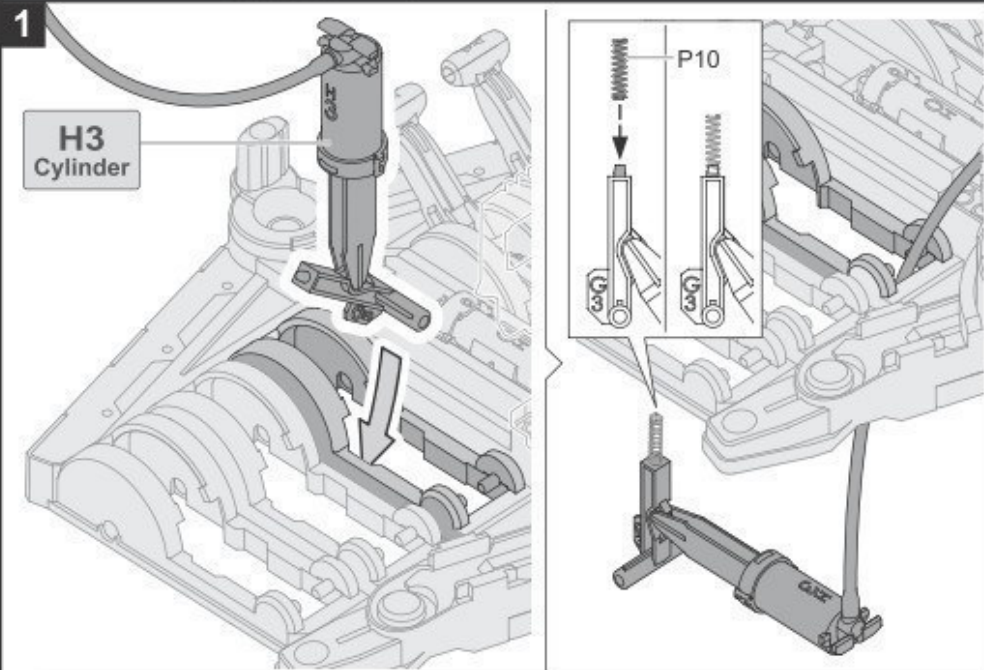
"PUSH"



"PULL"

"PUSH"

Unit 3: H3 Cylinder & Lever Controller 3

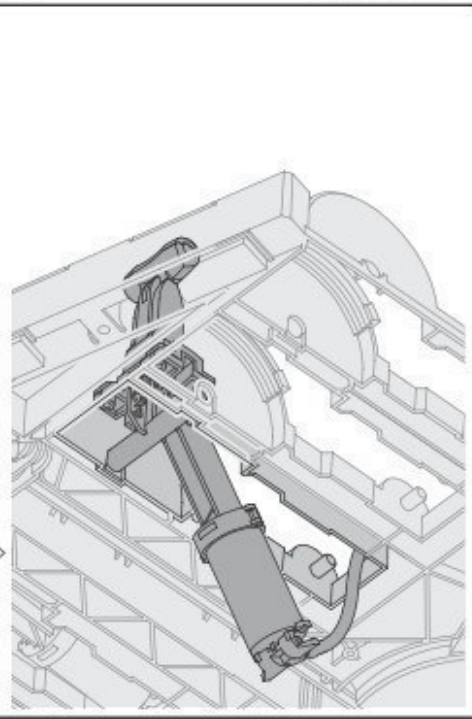
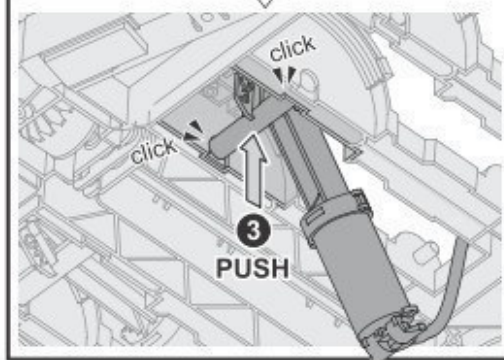
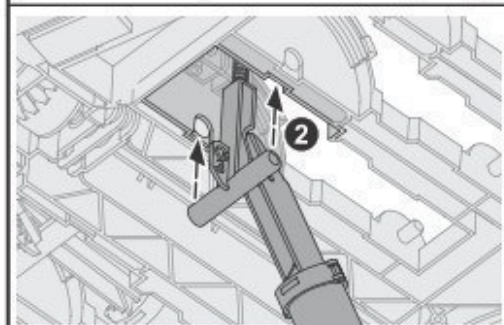
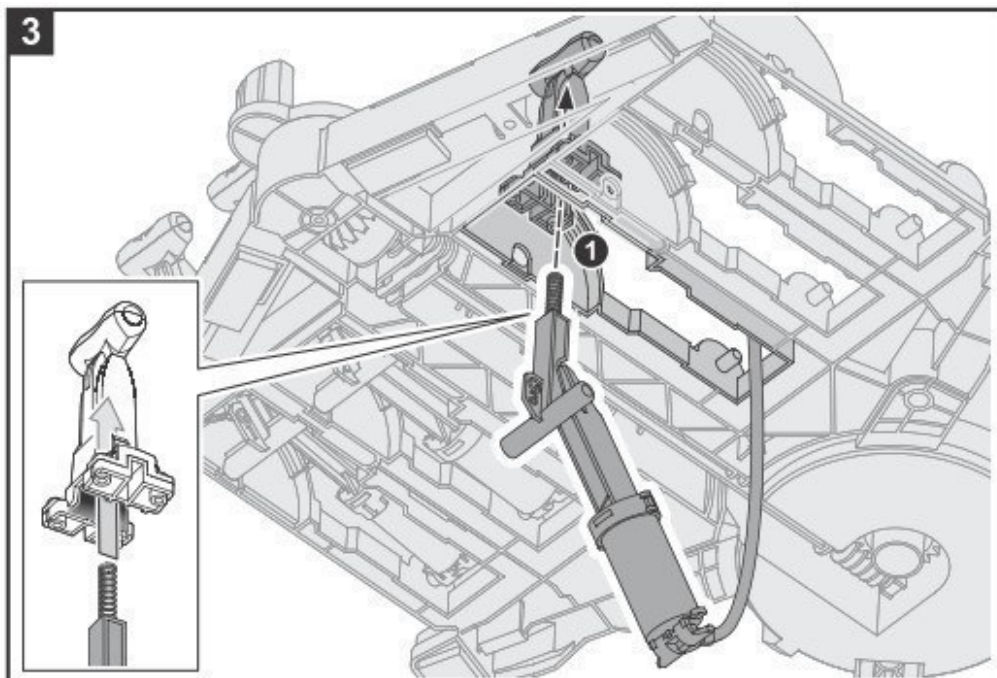


Unidade 3: Cilindro H3

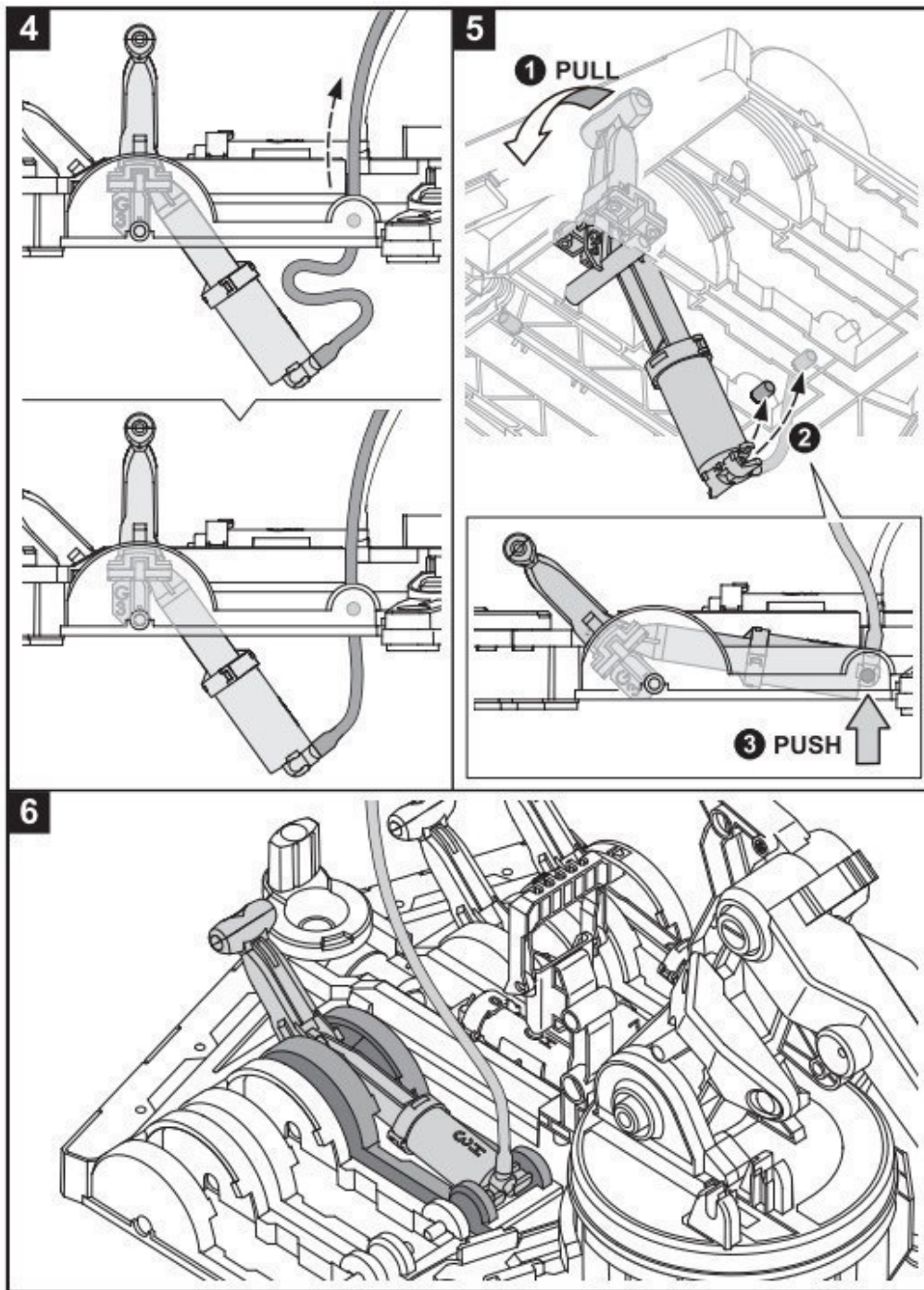
Controlador de Alavanca 2

Certificar-se de que a direção é a correta.

Vista frontal



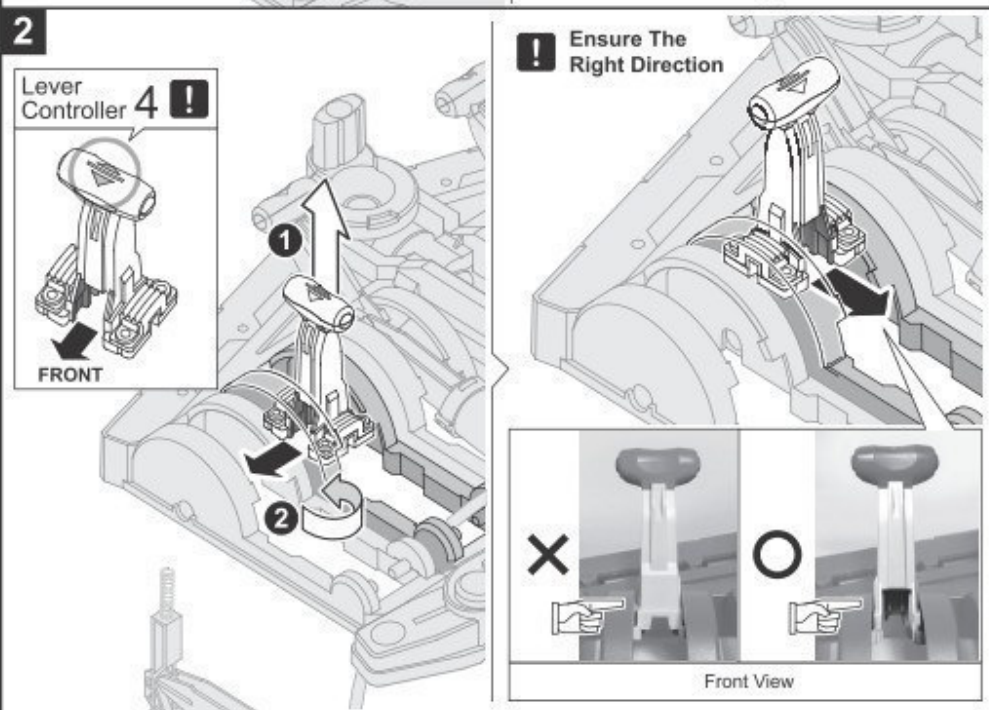
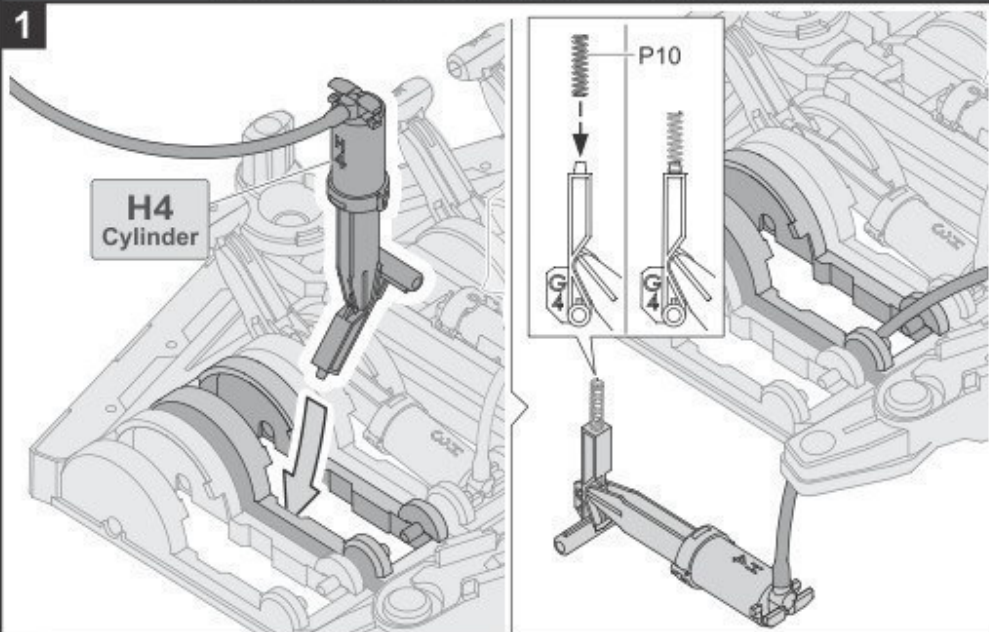
"PUSH"



"PULL"

"PUSH"

Unit 4: H4 Cylinder & Lever Controller 4

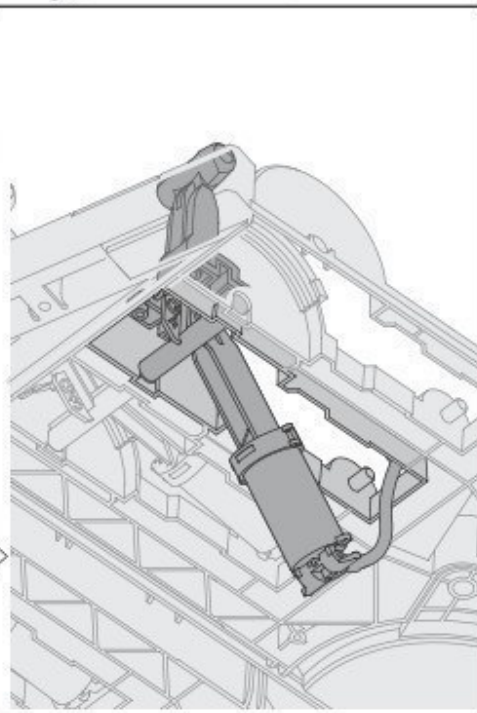
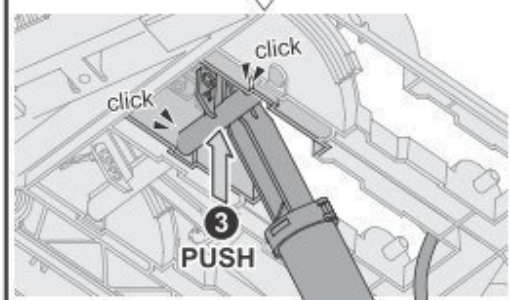
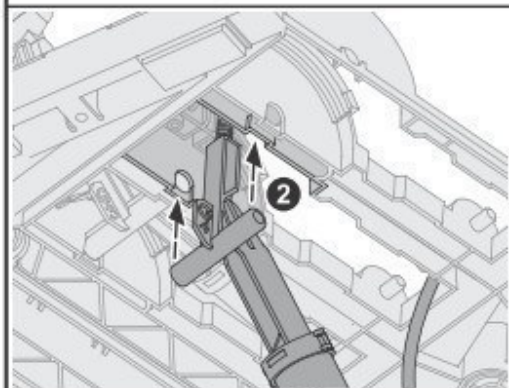
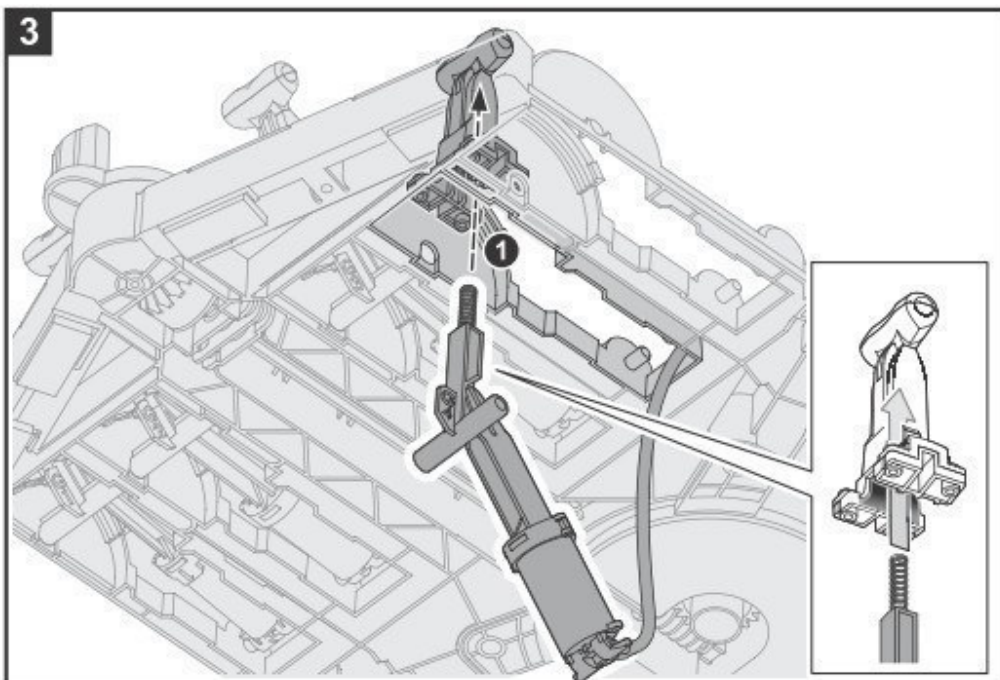


Unidade 4: Cilindro H4 & Controlador de Alavanca 4

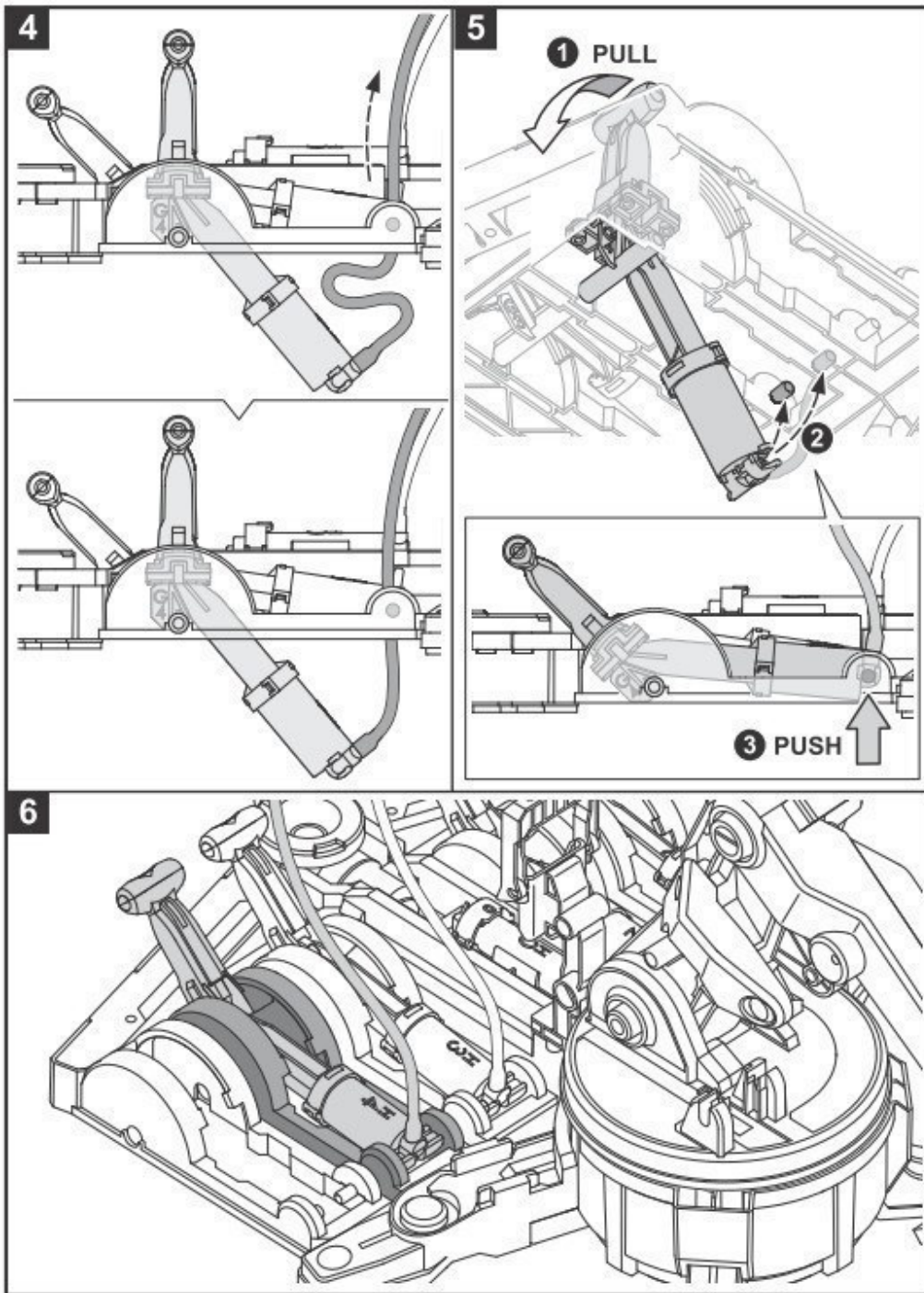
Controlador de Alavanca 2

Certificar-se de que a direção é a correta.

Vista frontal



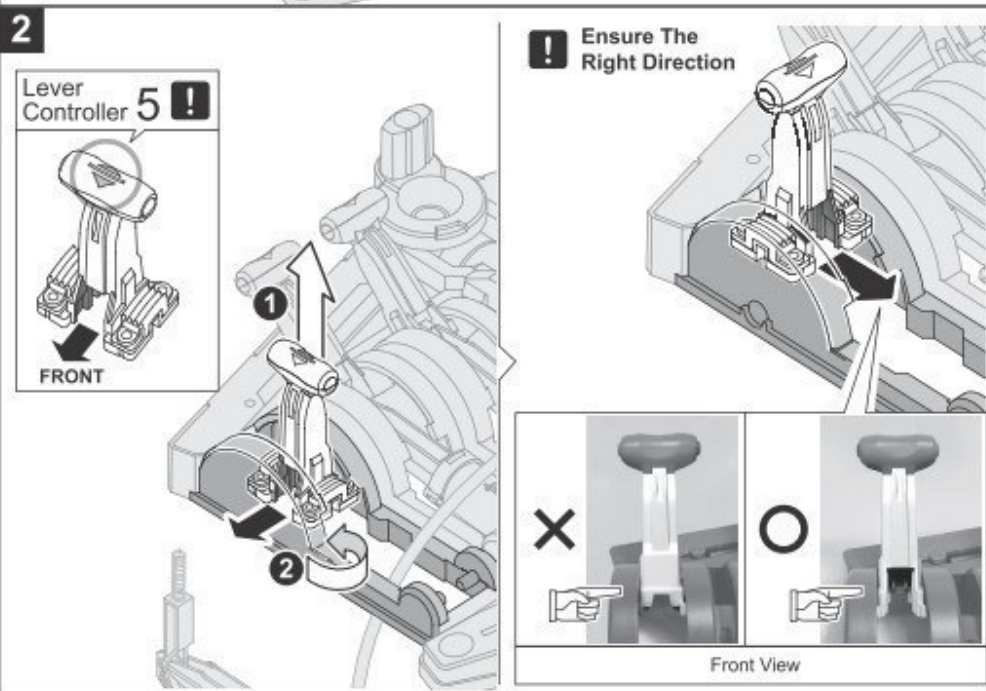
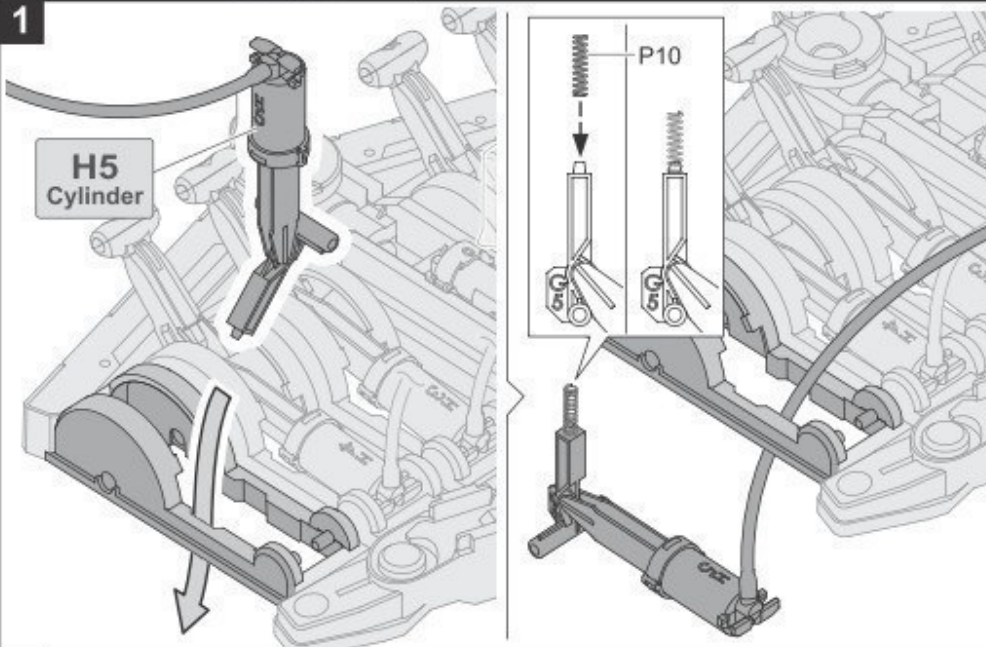
"PUSH"



"PULL"

"PUSH"

Unit 5: H5 Cylinder & Lever Controller 5

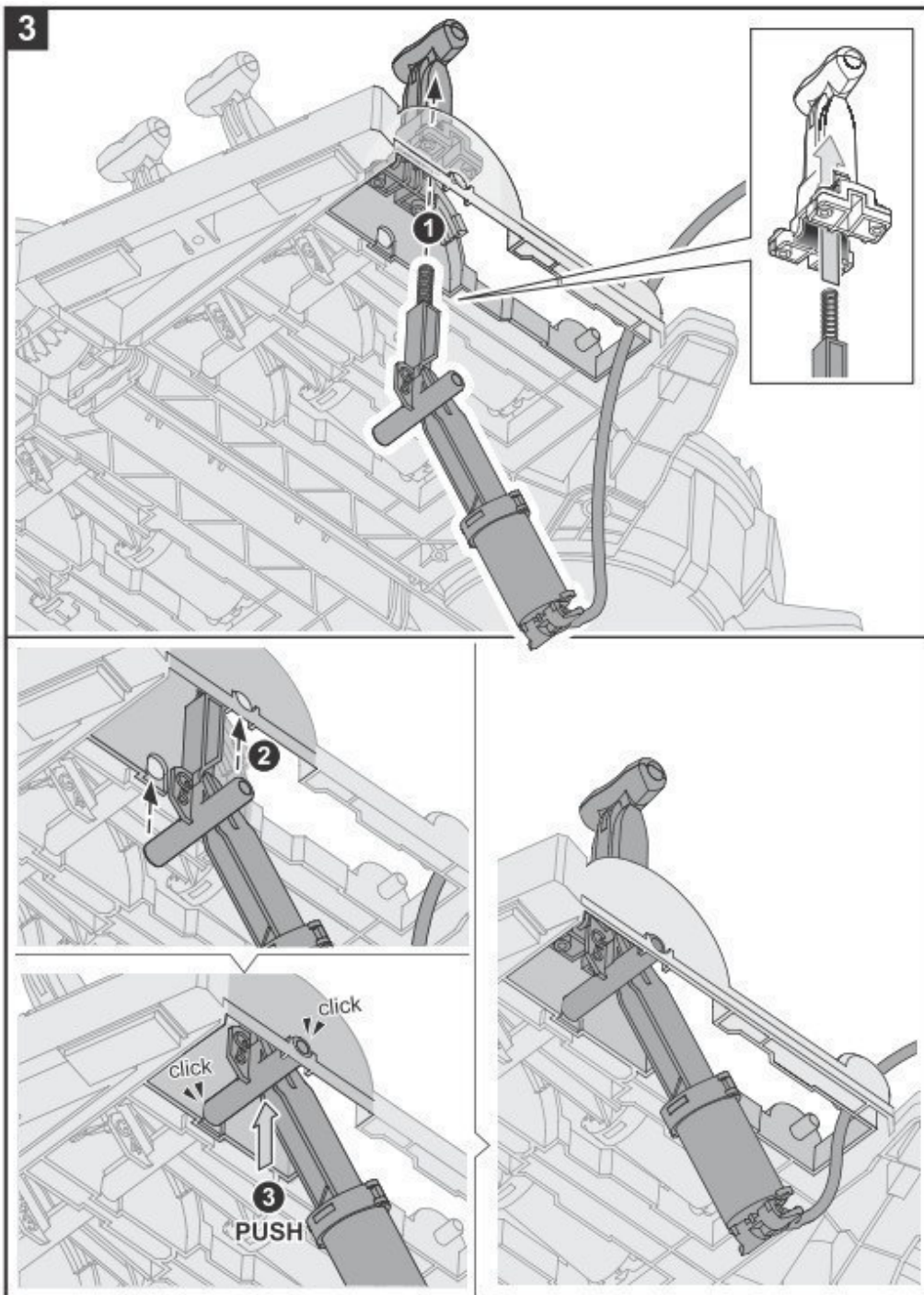


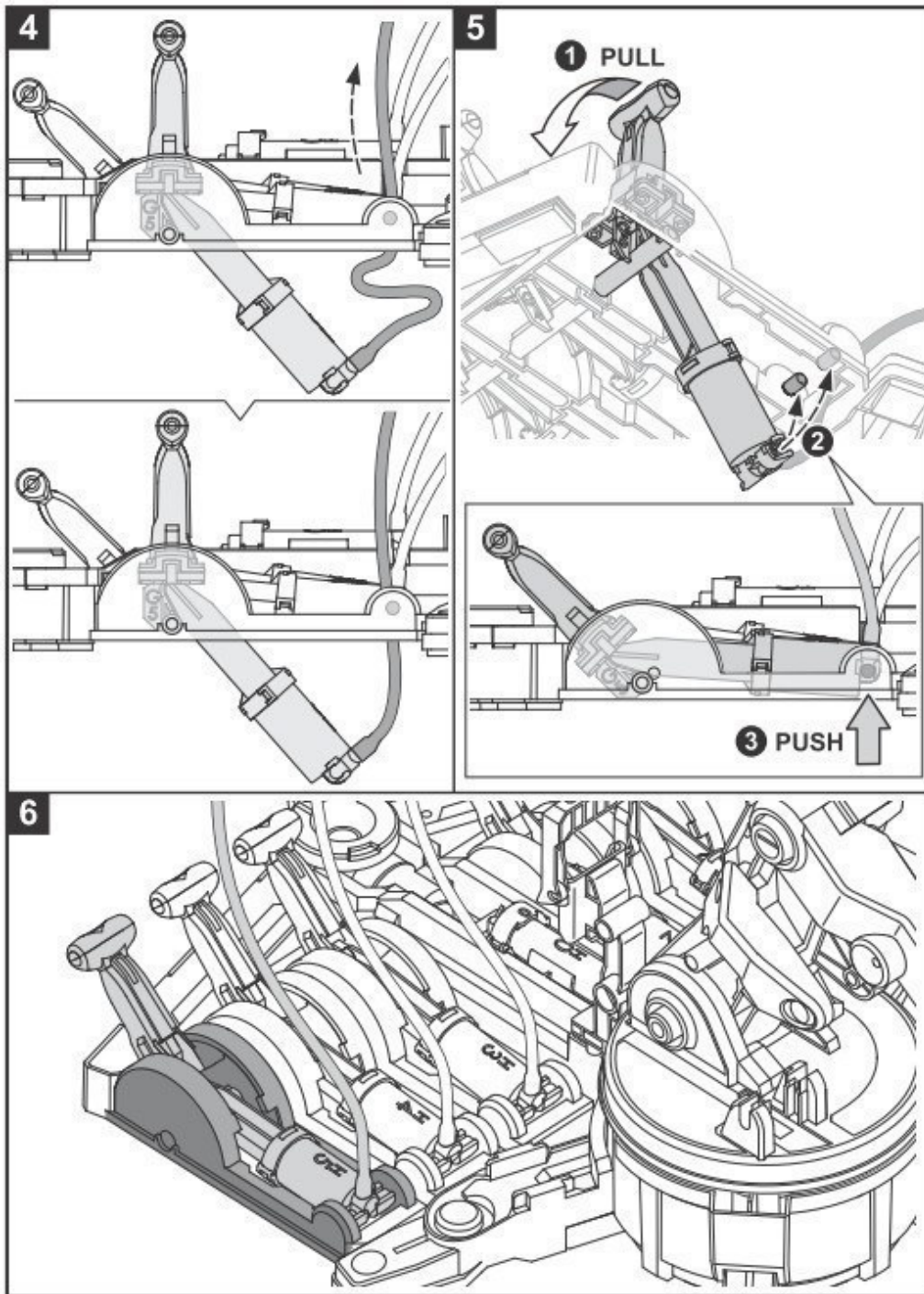
Unidade 5: Cilindro H5 & Controlador de Alavanca 5

Controlador de Alavanca 5

Certificar-se de que a direção é a correta.

Vista frontal

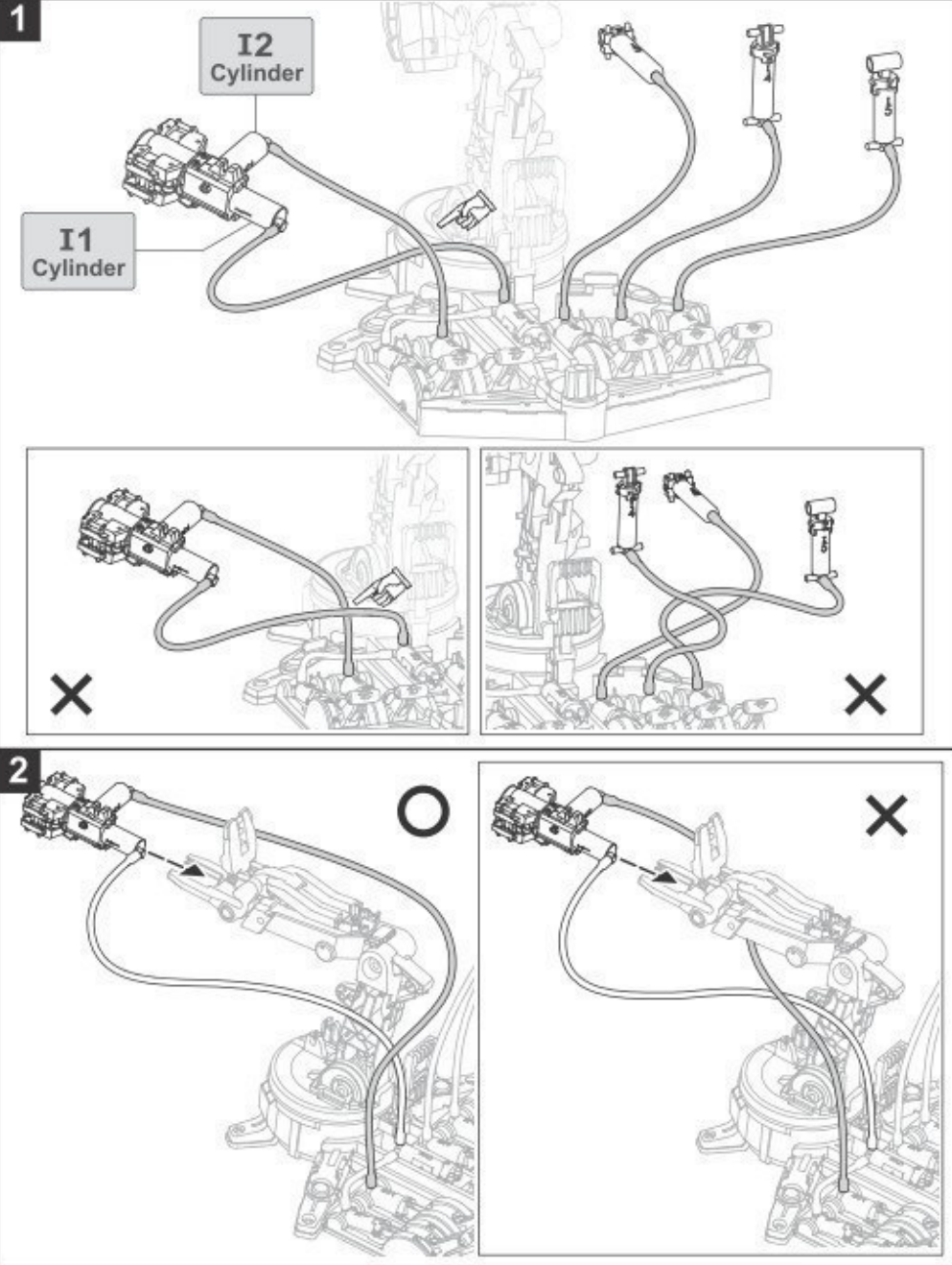




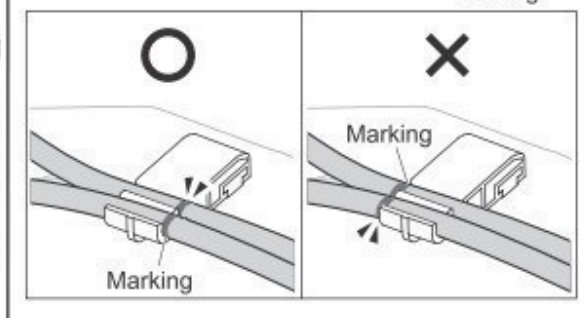
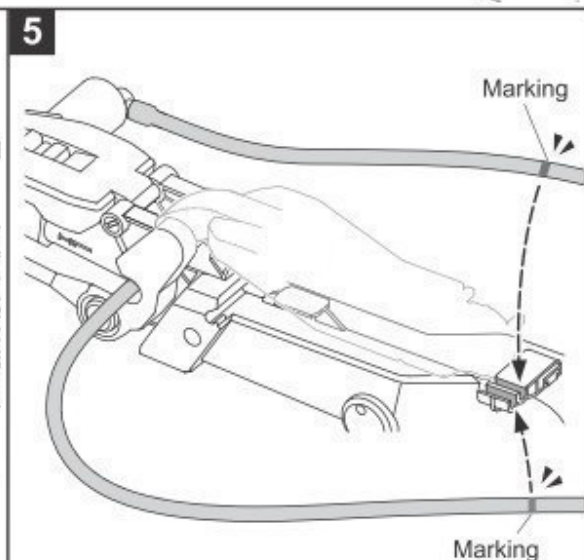
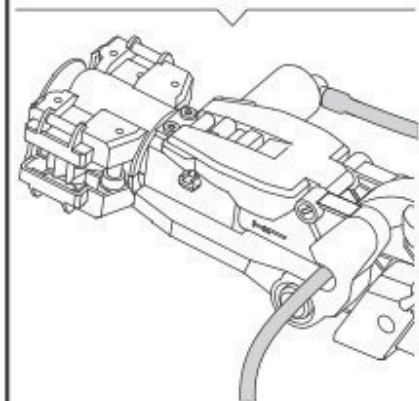
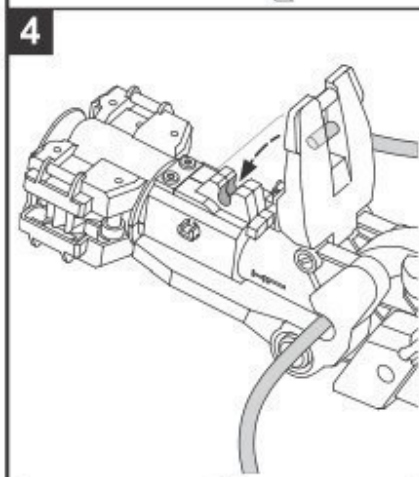
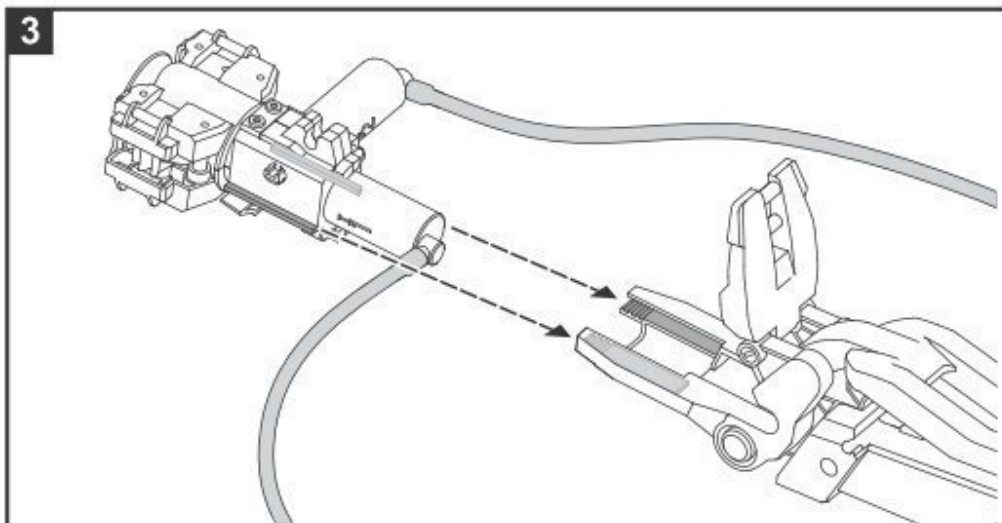
"PULL"

"PUSH"

Robot Arm Module Assembly



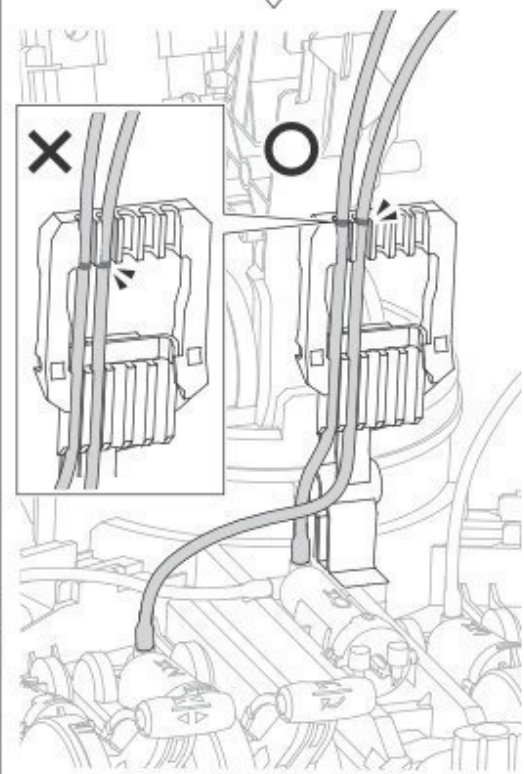
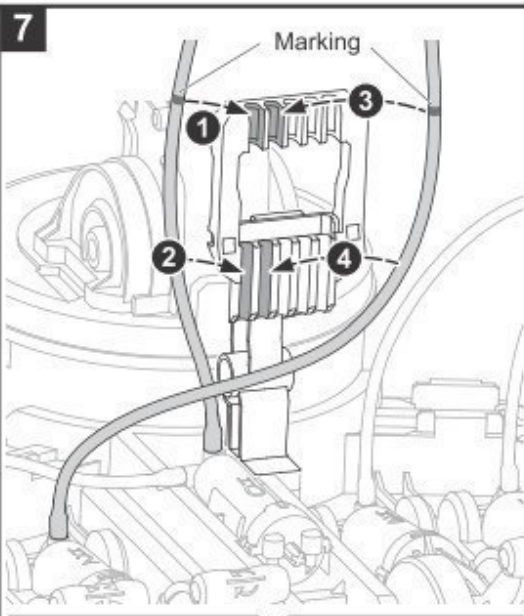
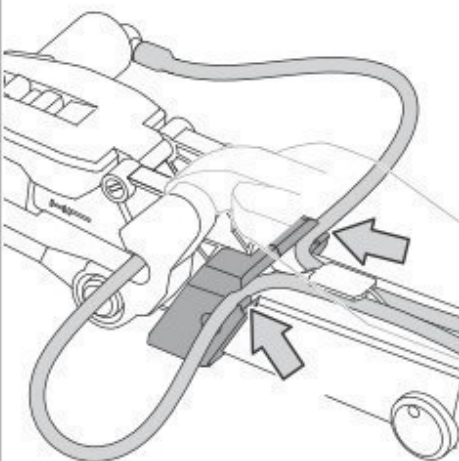
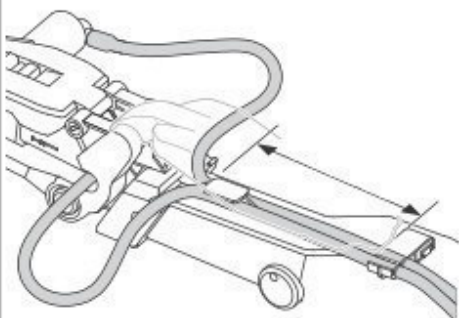
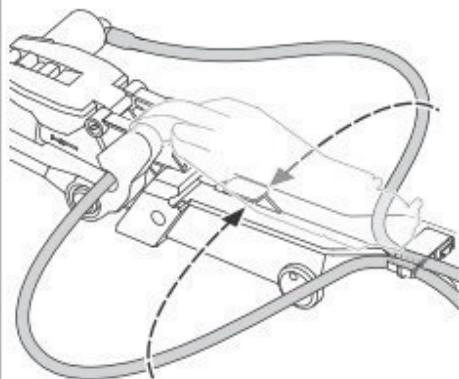
Montagem do Módulo do Braço Robótico



Marcação

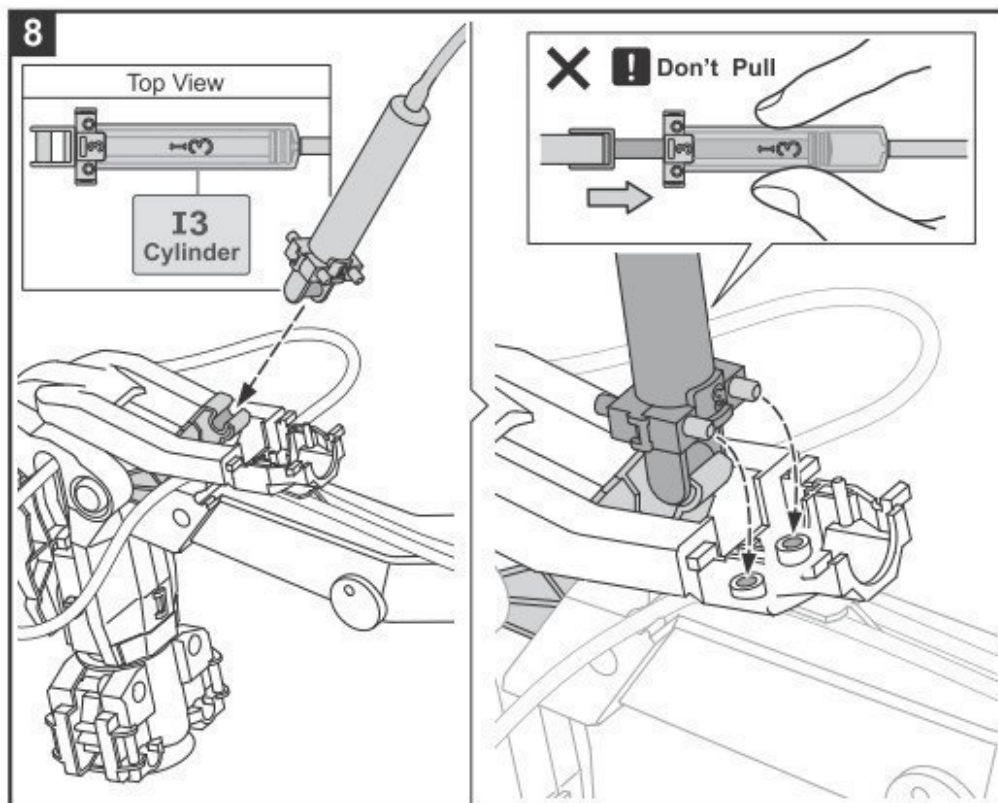
Marcação

6 Set the soft tube in the groove.



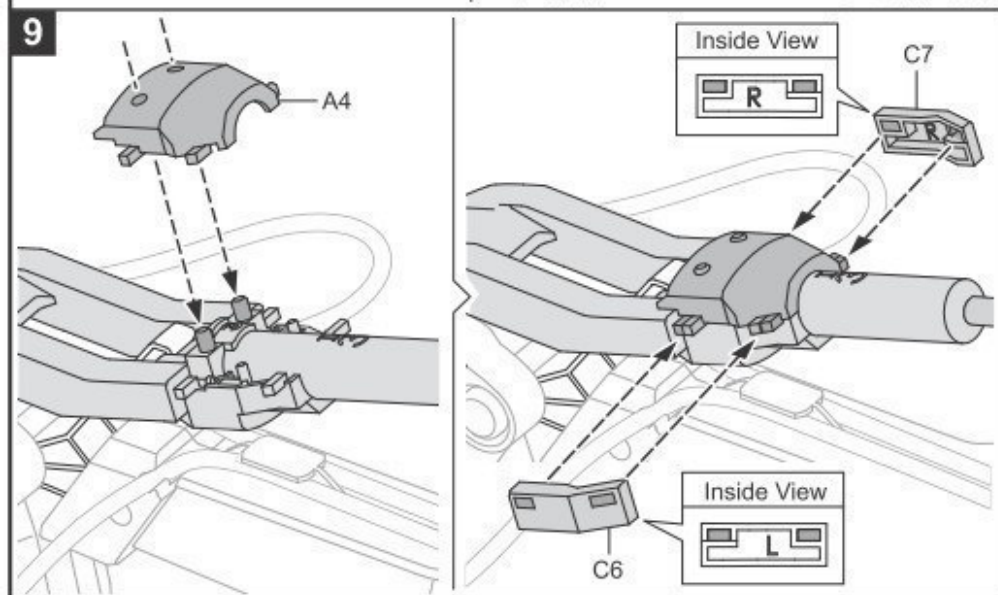
Ajuste o tubo macio na ranhura.

Marcação

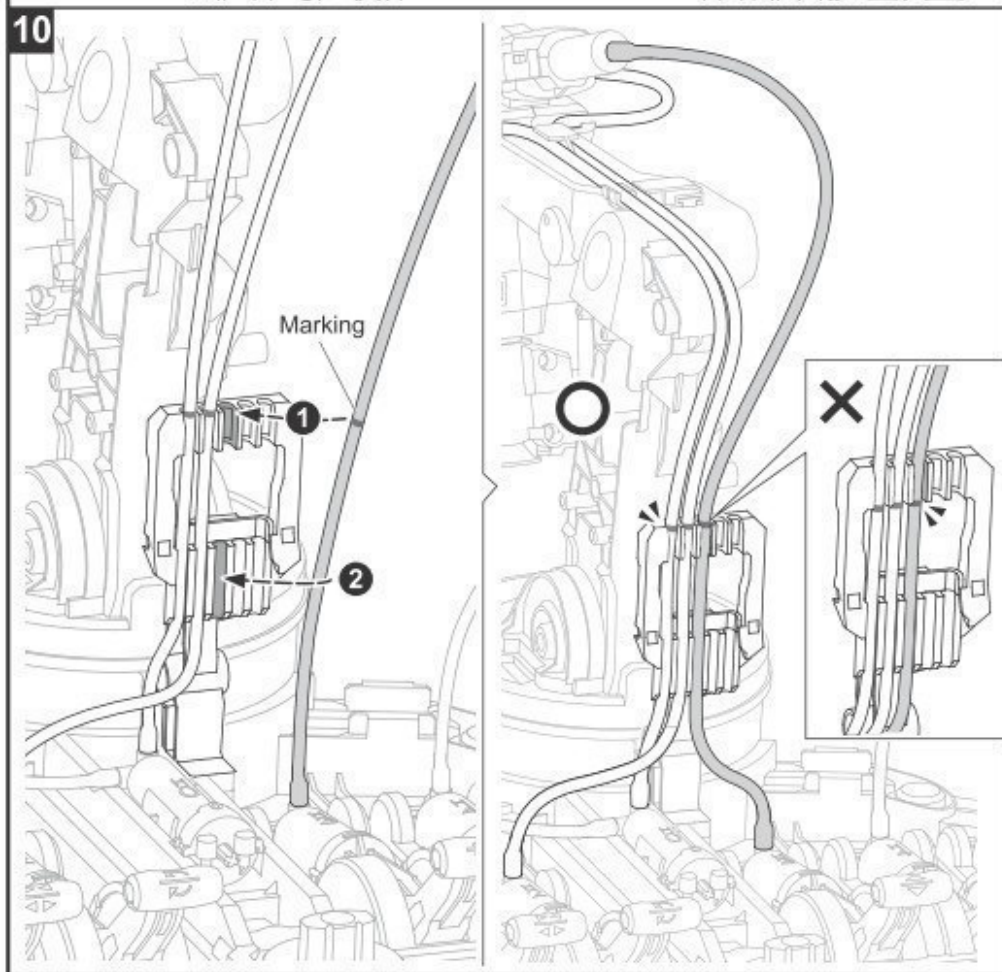
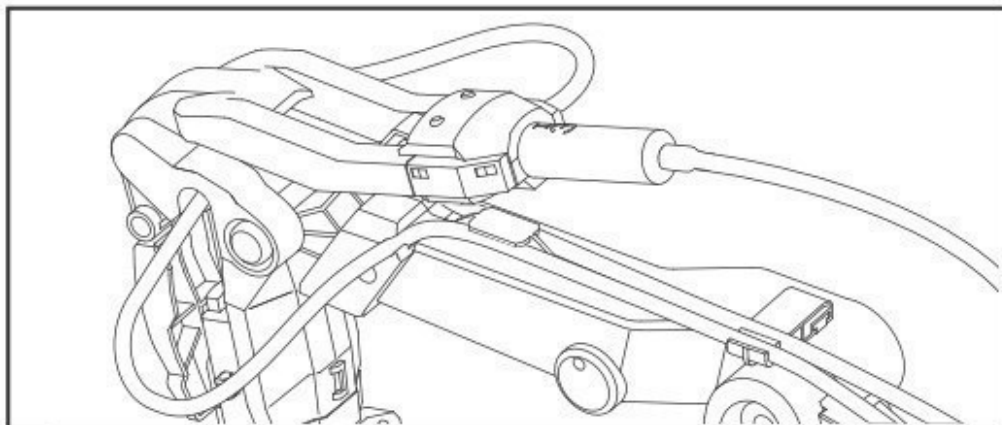


Vista de Cima

Não empurrar

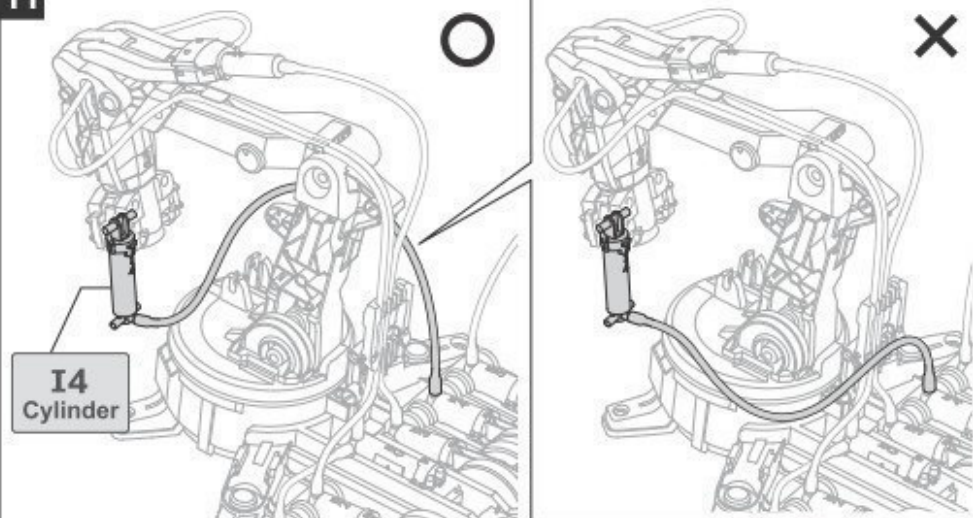


Vista interior



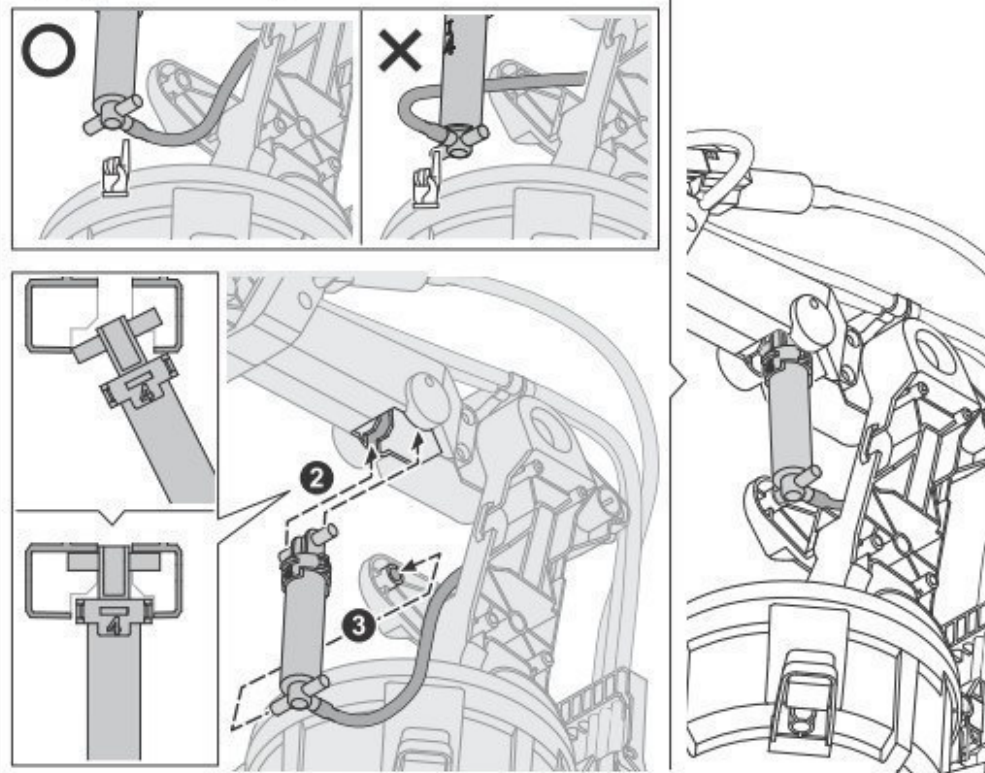
Marcação

11

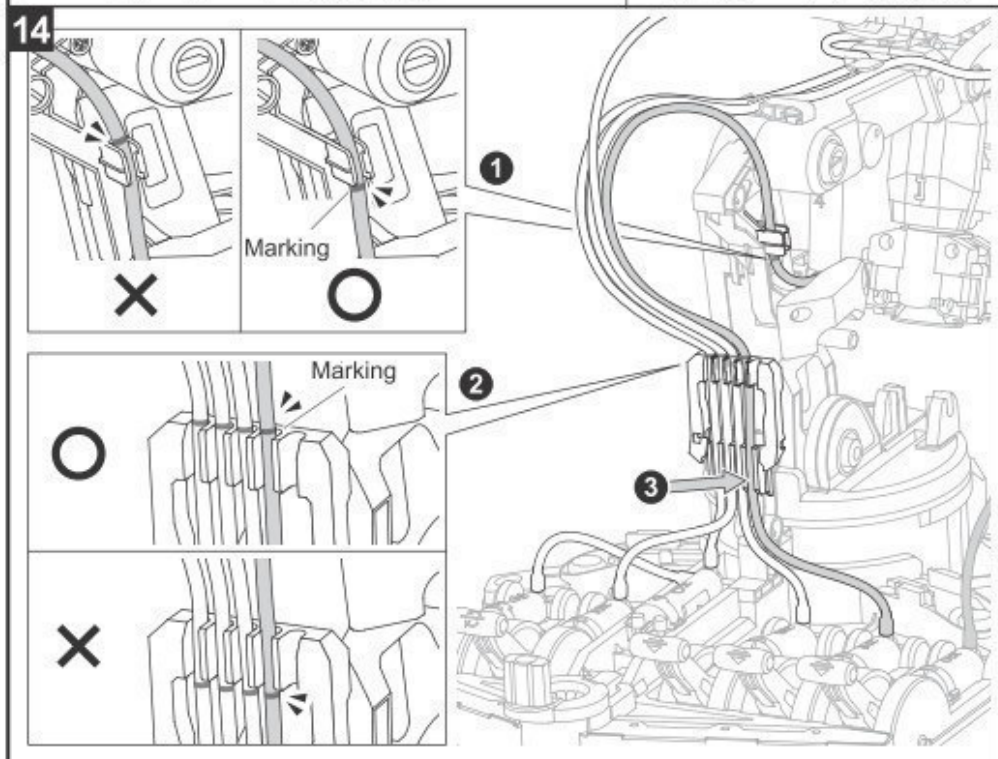
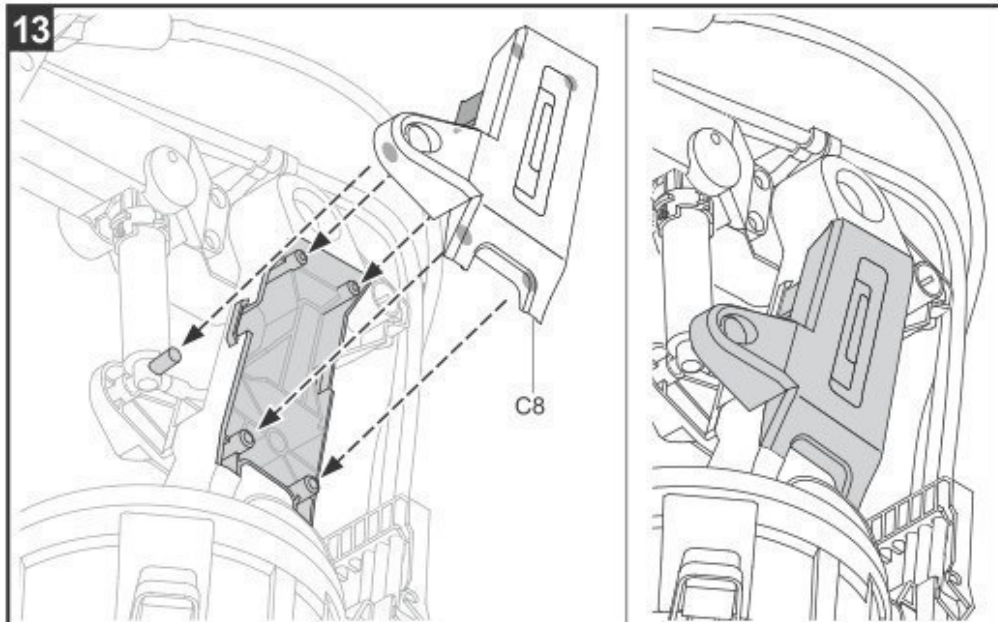


12

1 Ensure The Right Direction



Certificar-se de que a direção é a correta.

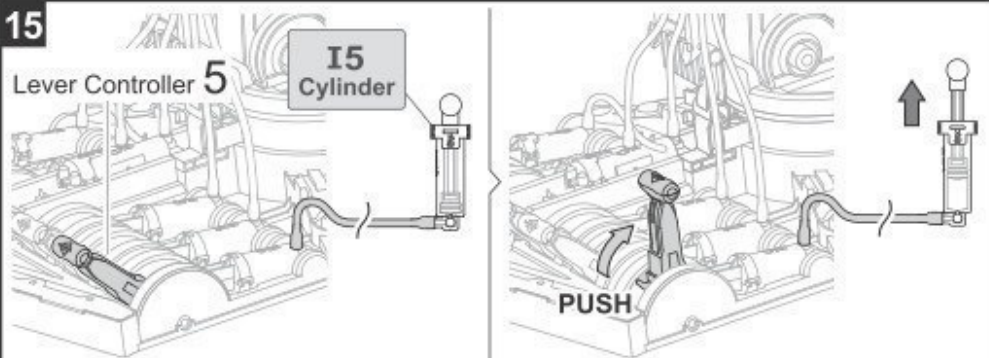


Marcação

15

Lever Controller 5

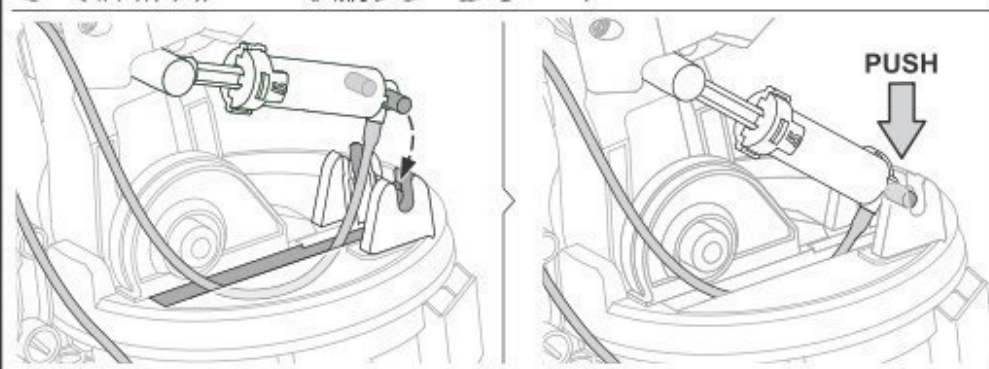
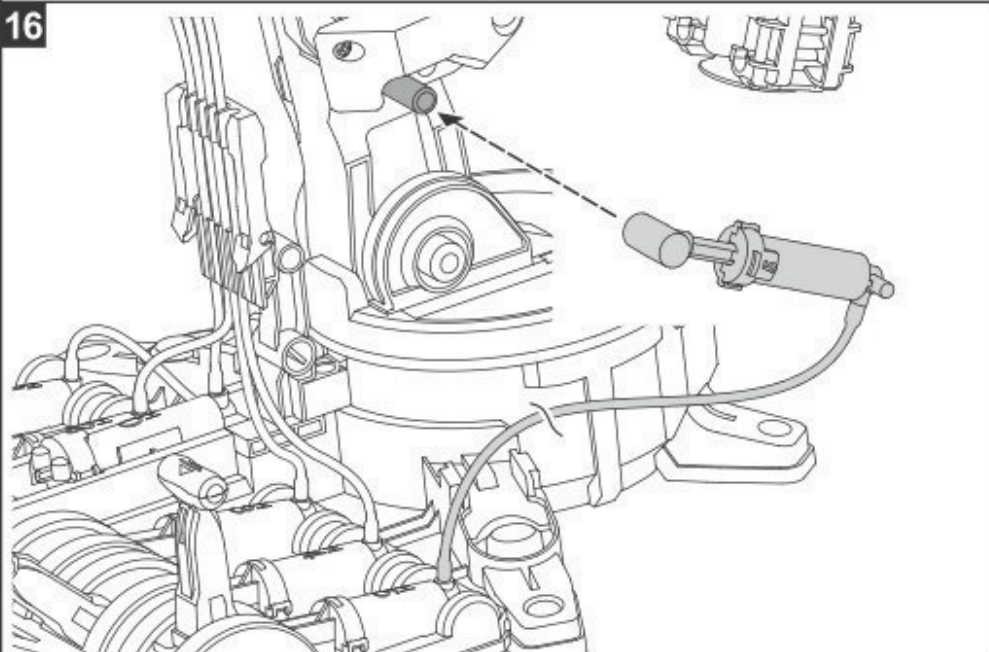
I5
Cylinder



Controlador de Alavanca 5

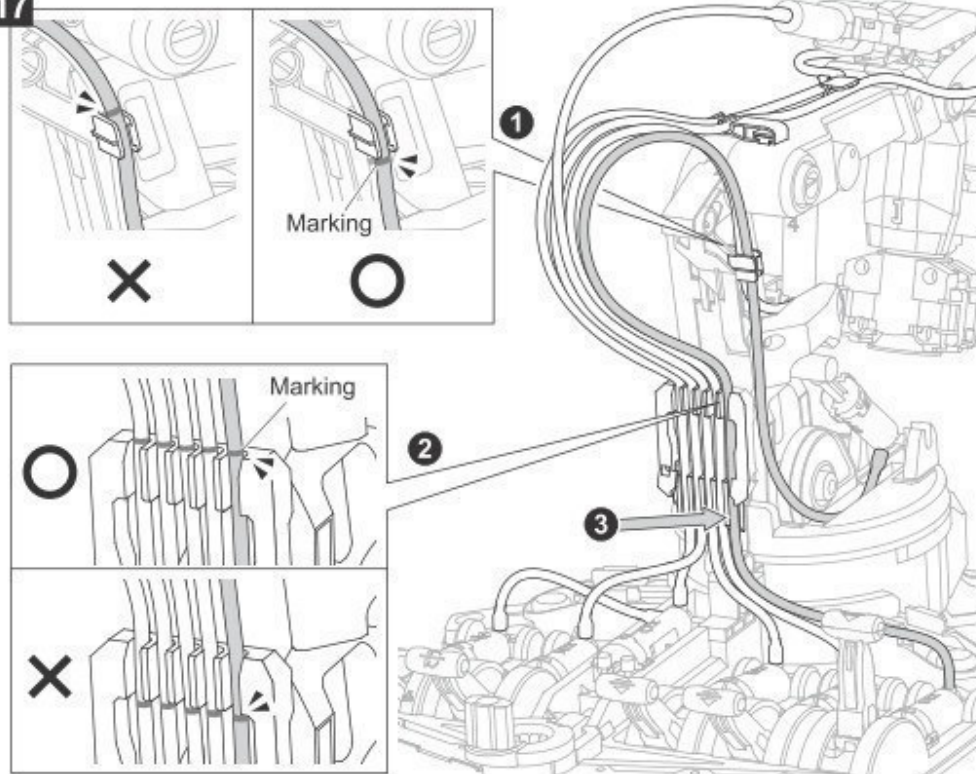
"PUSH"

16



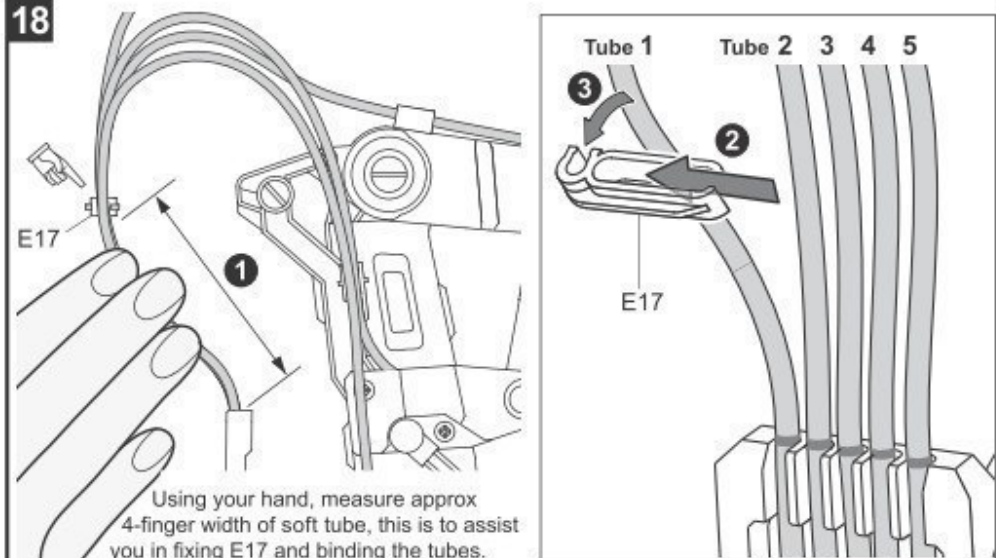
"PUSH"

17



Marcação

18

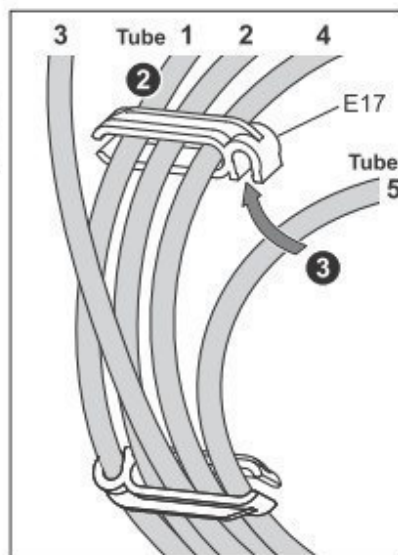
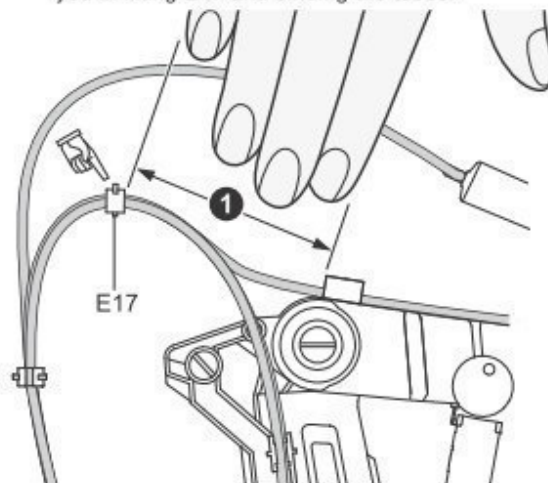


Tubo 1 - 2 - 3 - 4 - 5

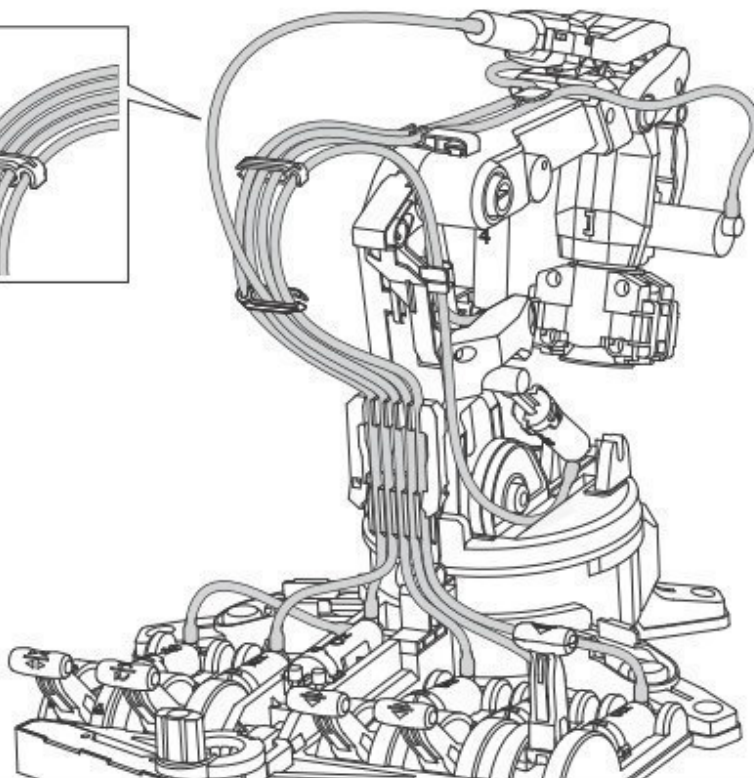
Usando a sua mão, meça aproximadamente 4 dedos de largura de tubo macio, isto para ajudar na fixação do E17 e na ligação dos tubos.

19

Using your hand, measure approx 4-finger width of soft tube, this is to assist you in fixing E17 and binding the tubes.



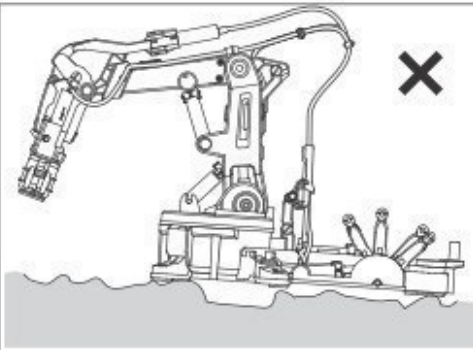
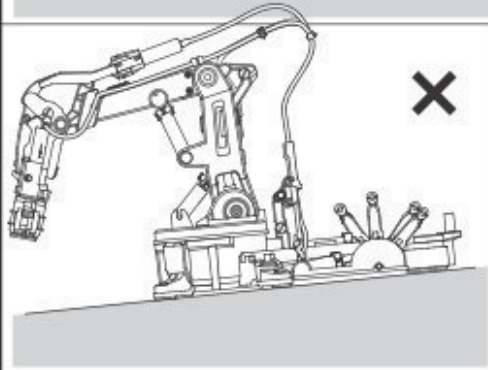
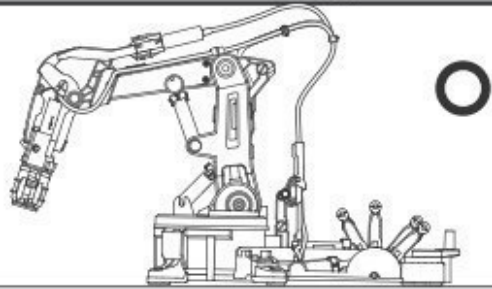
20



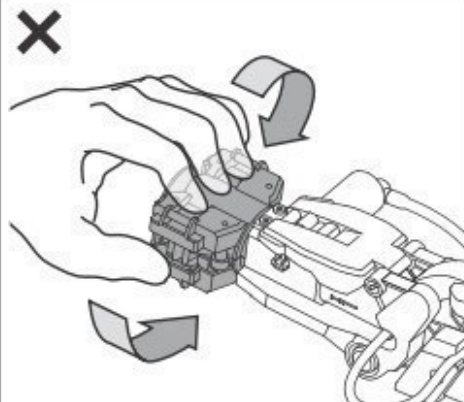
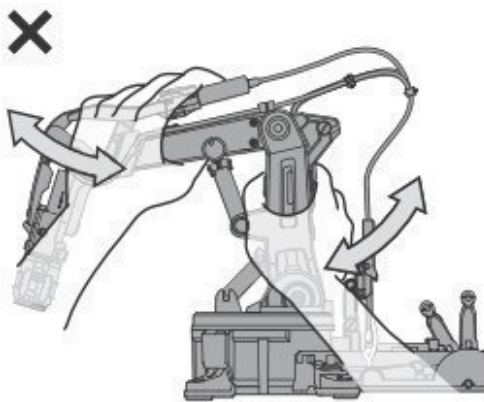
Usando a sua mão, meça aproximadamente 4 dedos de largura de tubo macio, isto para ajudar na fixação do E17 e na ligação dos tubos.

How To Play

Warning



Operate on a smooth and level surface.



Handle the arm with care and do not mistreat as shown above

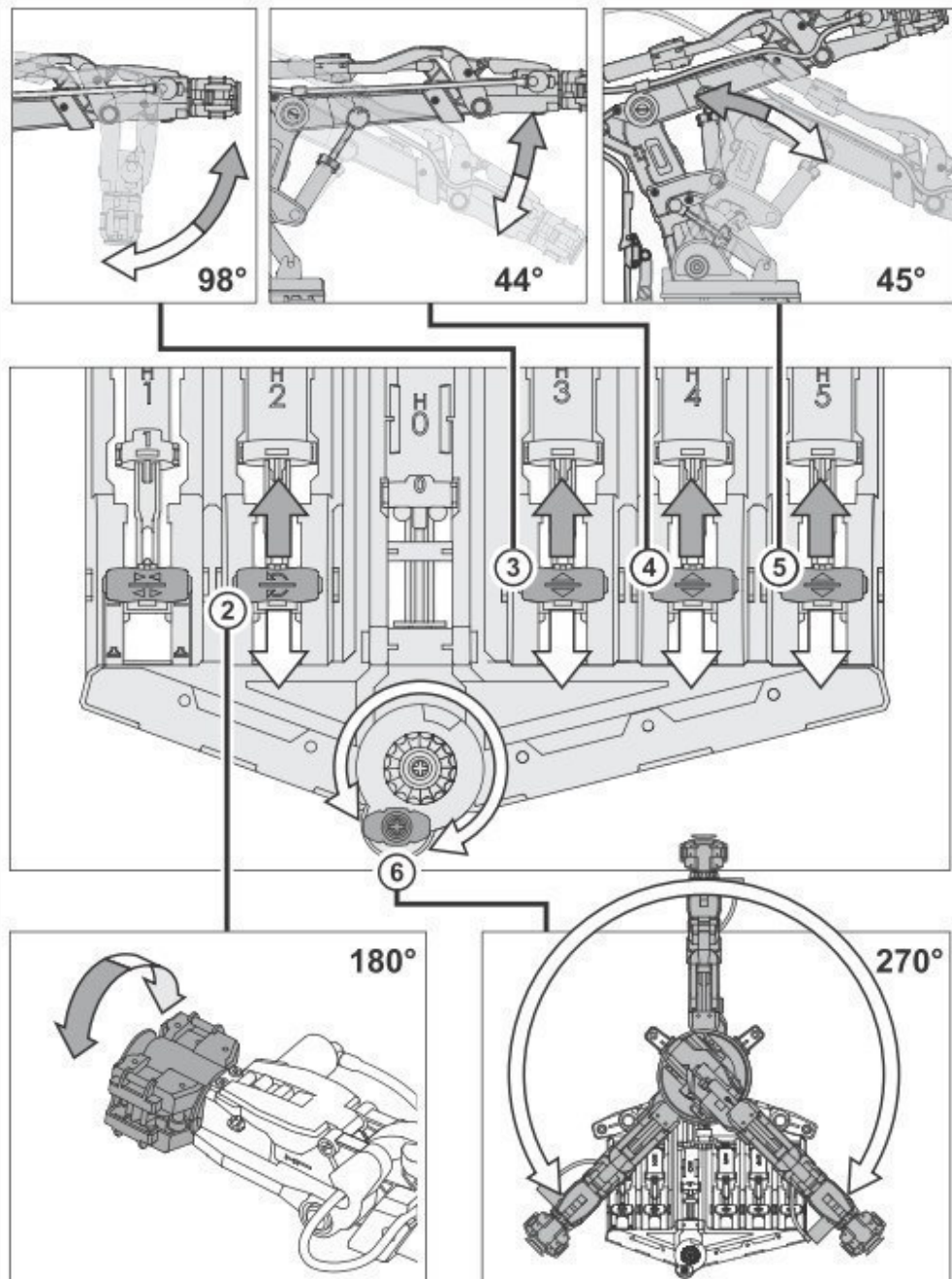
Como Jogar

Advertência

Escolha uma superfície macia e nivelada.

Manipule o braço com cuidado conforme indicado abaixo.

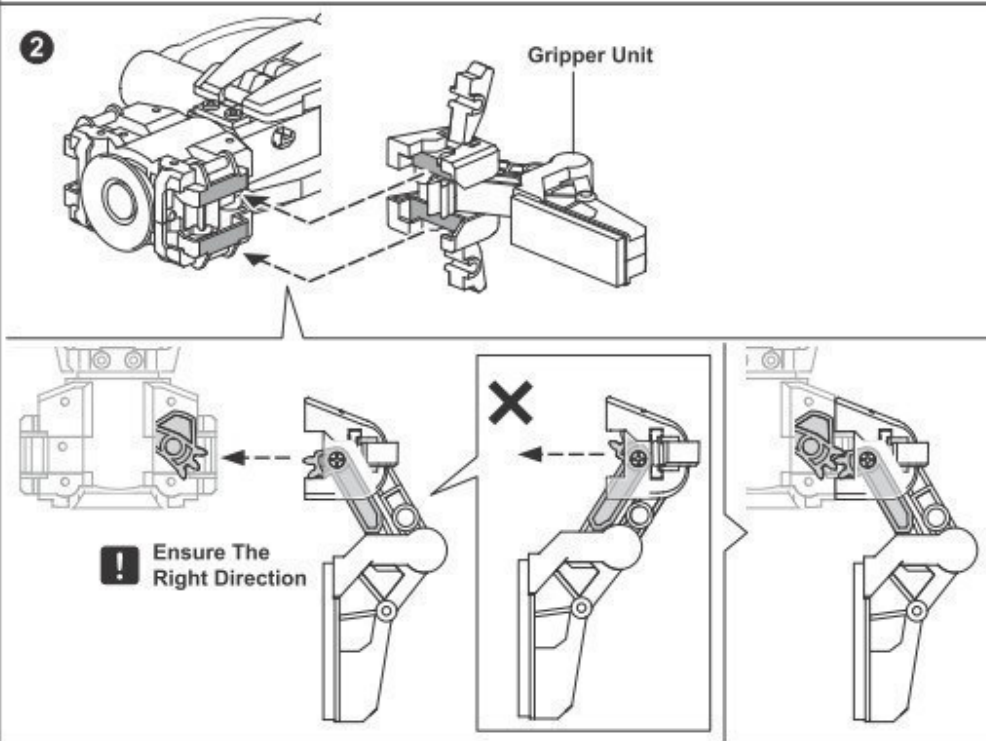
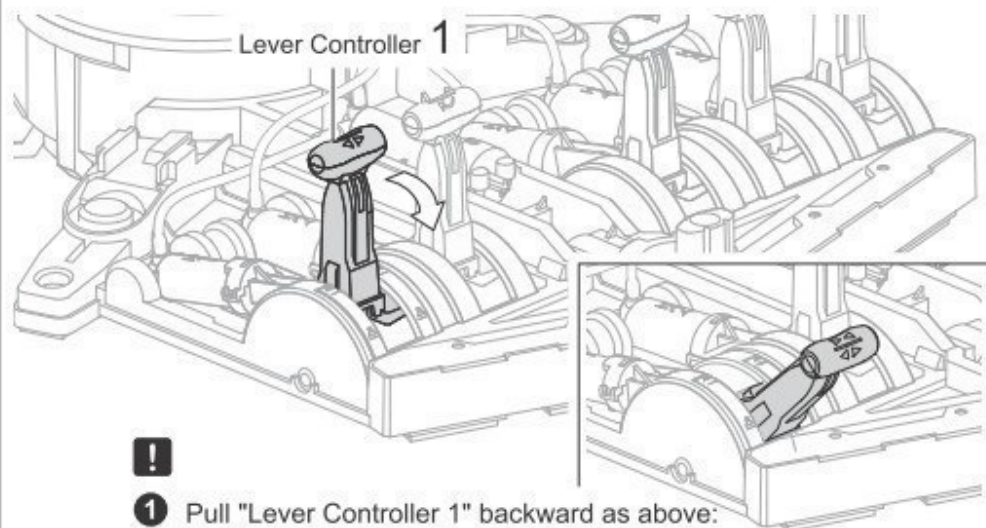
How To Play: 2~6 AXES



Como Jogar: 2-6 EIXOS

How To Play-Gripper Mode

1 Installation



Como Jogar - Modo Garra

Instalação

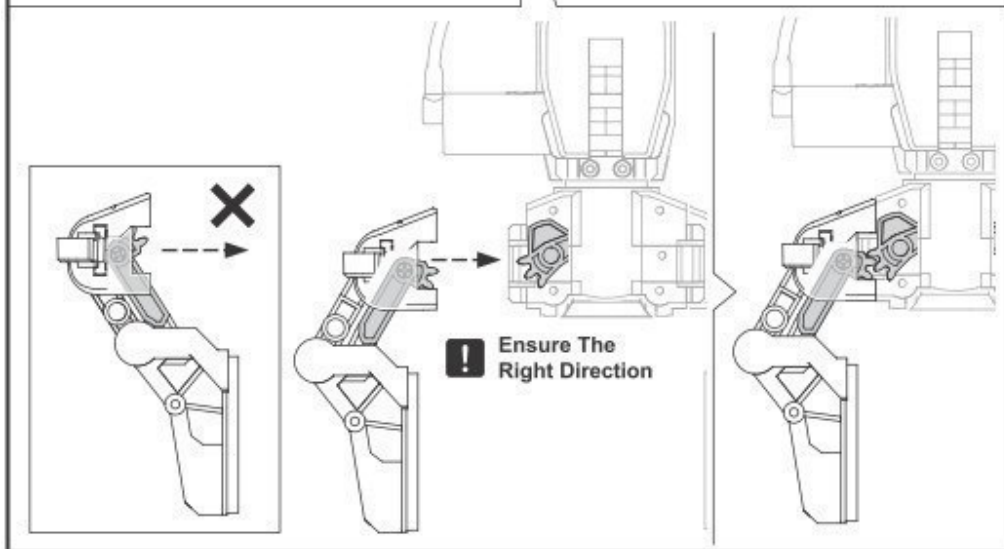
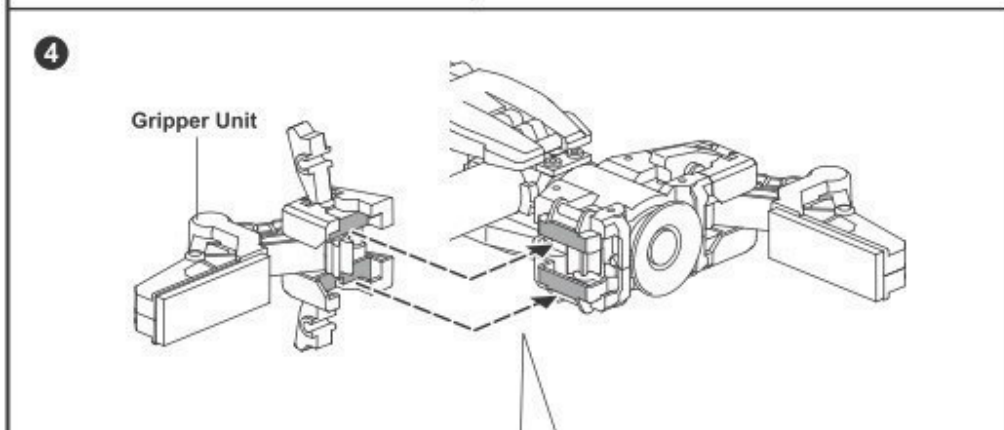
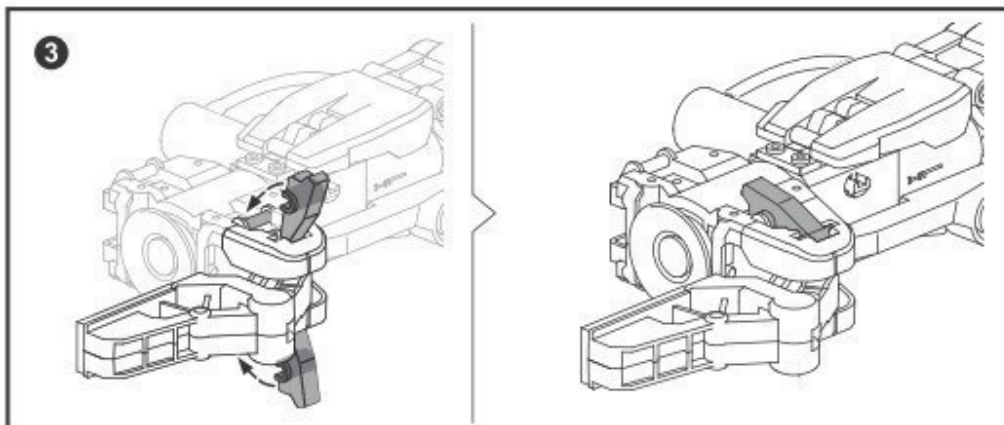
Controlador de Alavanca 1

1 **!**

Empurrar o Controlador de Alavanca 1 para trás, como acima.

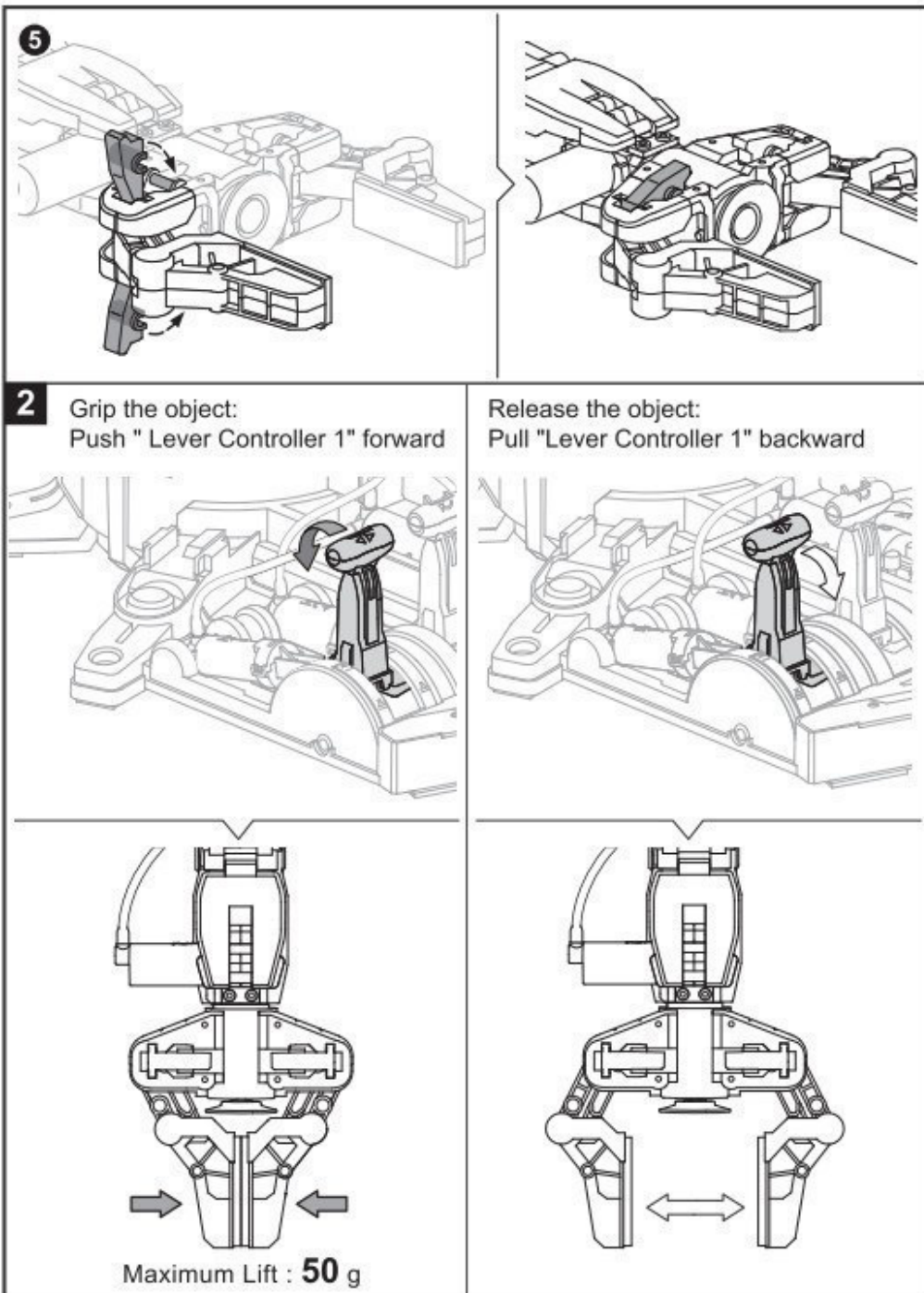
Garra

Certifique-se que a direção é a correta.



Garra

Certifique-se que a direção é a correta.



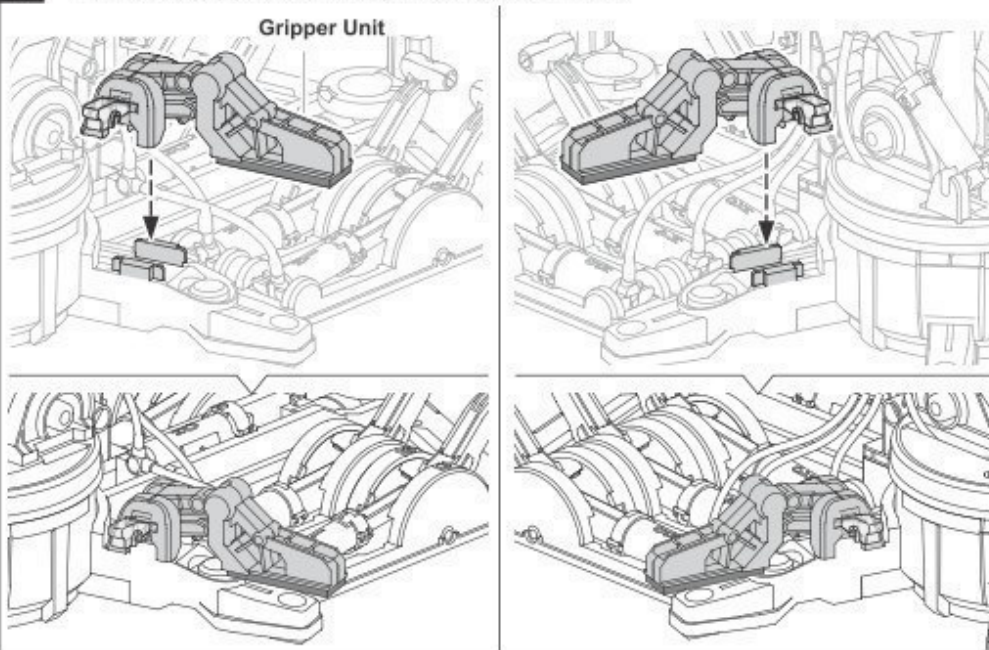
Agarrar o objeto: Empurrar o Controlador de Alavanca 1 para a frente.

Largar o objeto: Empurrar o Controlador de Alavanca 1 para trás.

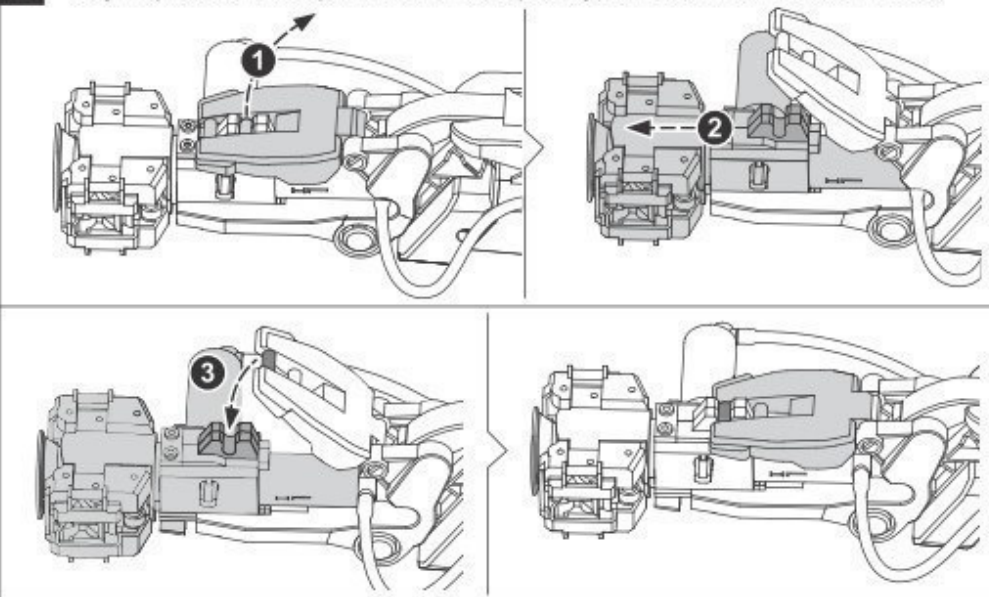
Carga máxima: 50 g

How To Play- Suction Mode

- 1** Release Gripper unit and put it aside as below



- 2** Very Important !! Step 2 must be completely fulfilled under Suction Mode.



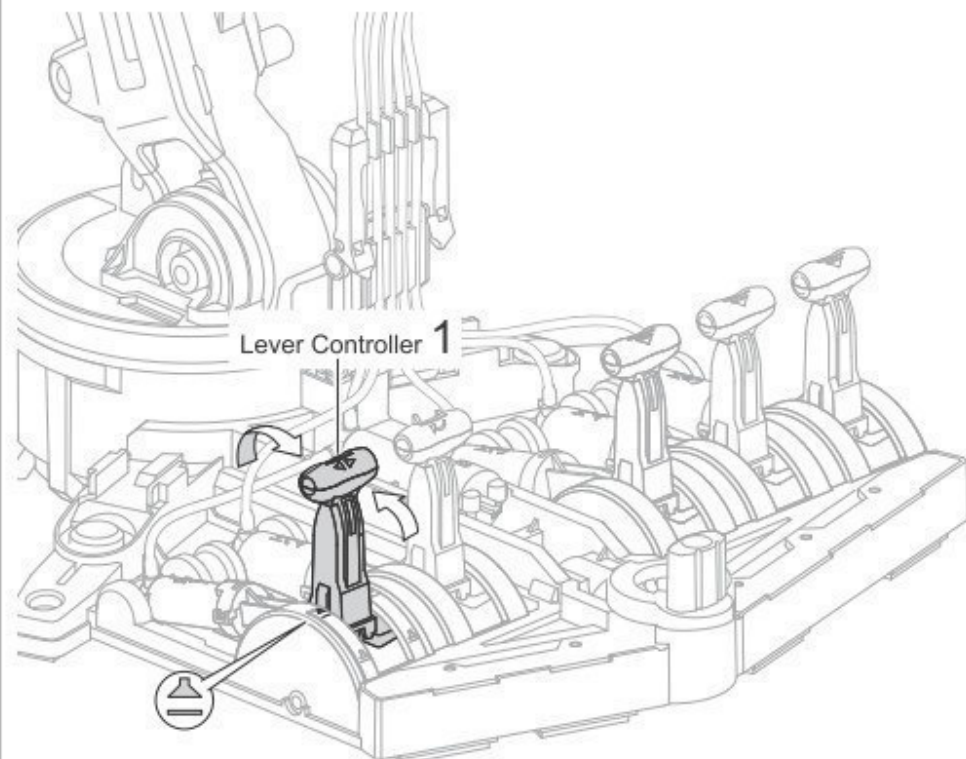
Como Jogar - Modo Sucção

Desmonte a Garra e coloque-a de lado conforme abaixo

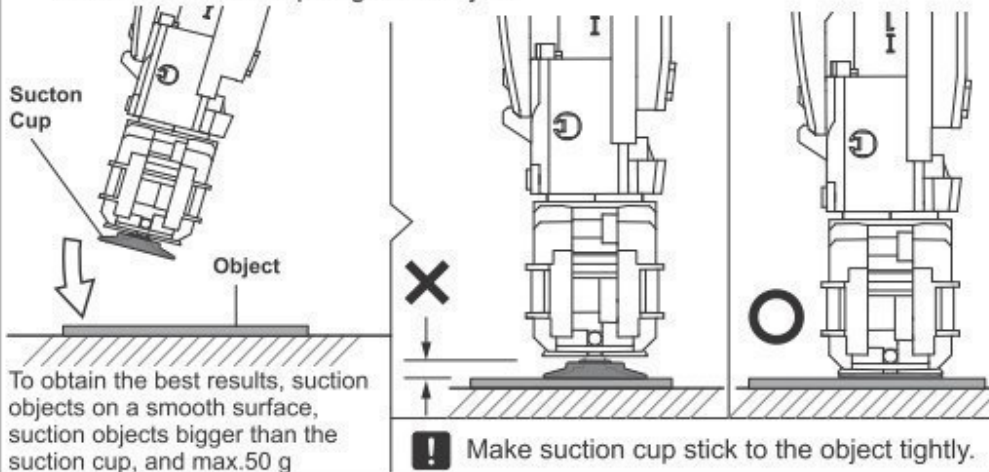
Garra

Muito Importante - O passo 2 tem de ser totalmente executado no Modo Sucção.

3 Set the "Lever Controller 1 " in the middle as below



4 Operate the lever Controllers 2-6 (refer to page. 77), and have suction cup target the object.



Coloque a Controlador de Alavanca na posição do meio, conforme abaixo.

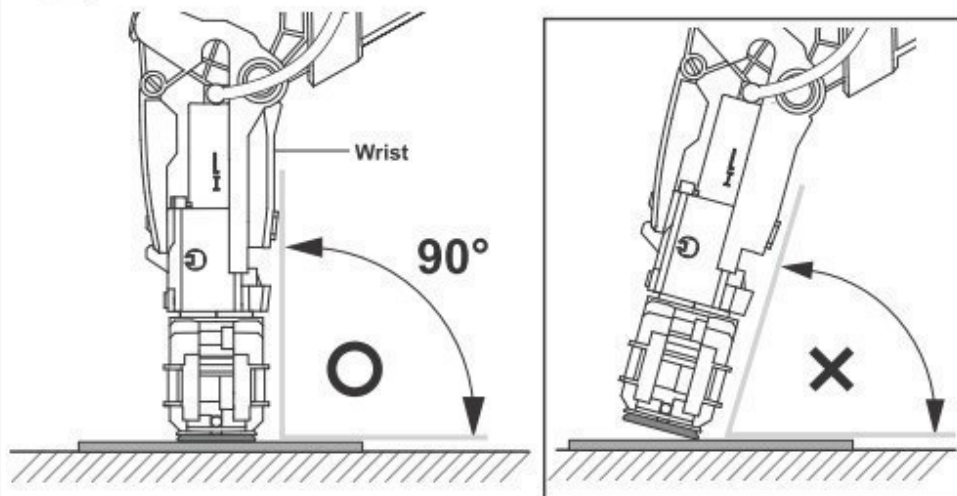
Utilize os Controladores de alavanca 2-6 (ver página 77), e dirija a ventosa na direção do objeto.

Ventosa
Objeto

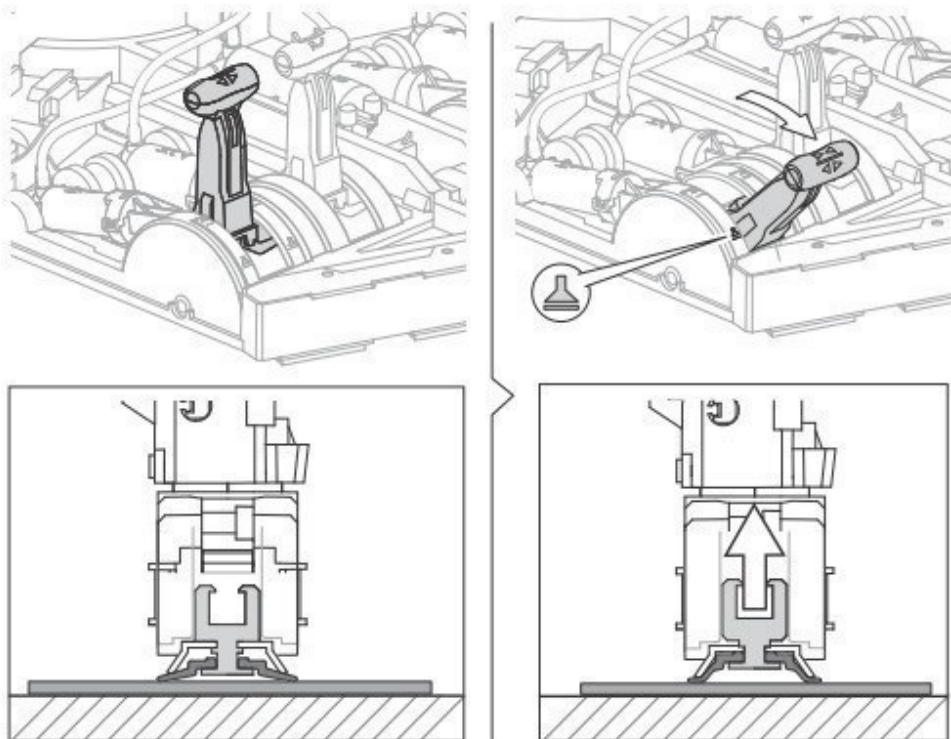
Para obter melhores resultados, coloque os objetos numa superfície macia, escolha objetos maiores do que a ventosa, e com no máx. 50g.

! Deixe que a ventosa agarre o objeto com firmeza.

! Direct the Wrist to the object straightly



5 Pull "Lever Controller 1" backward as below, and have the cup suck the object.

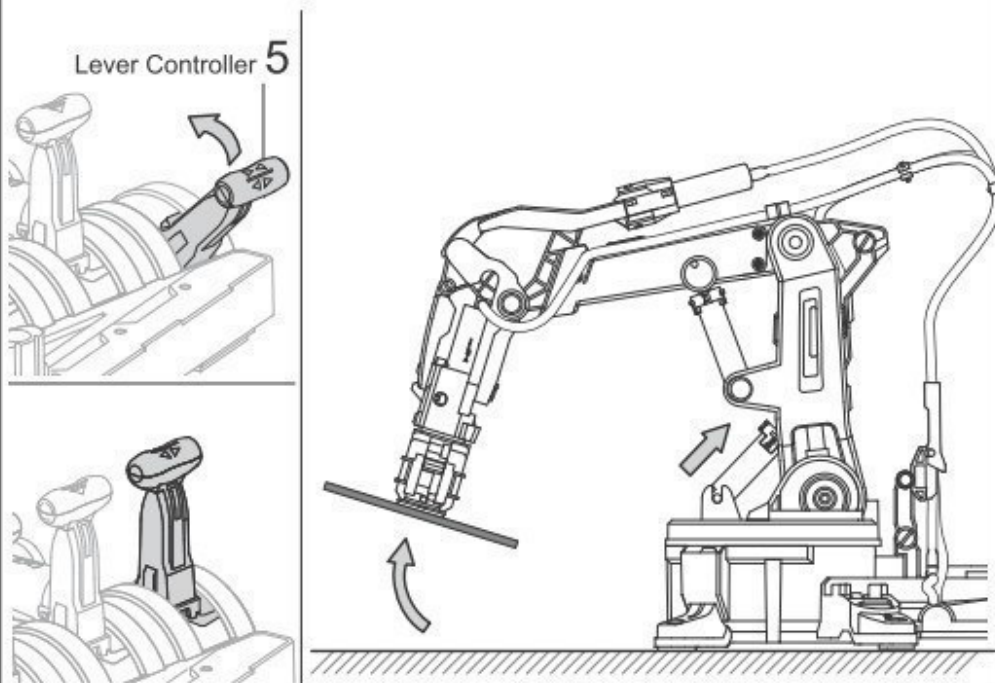


Direcione o pulso diretamente para o objeto.

Pulso

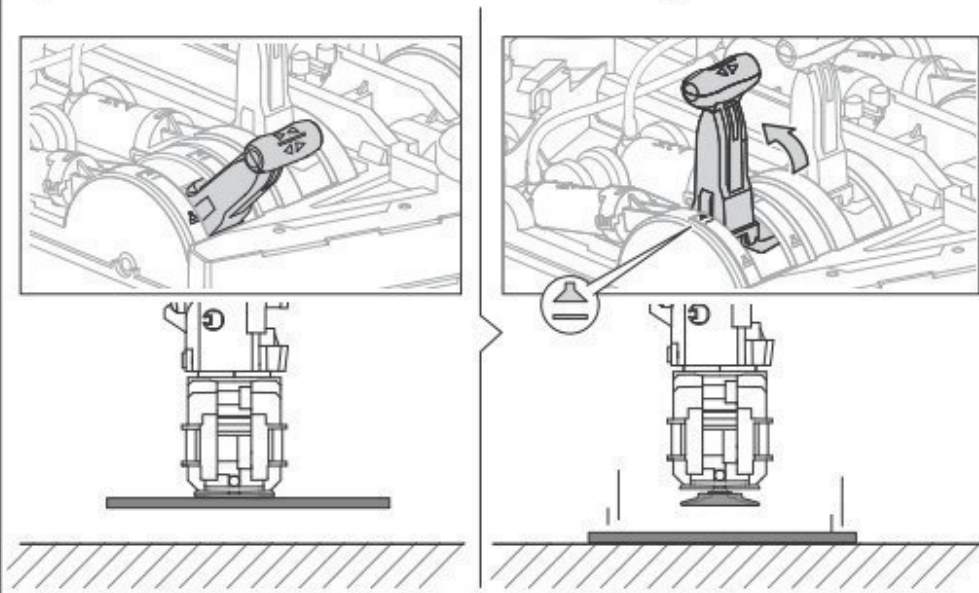
Puxe a Controlador de Alavanca 1 para trás, como abaixo e deixe a ventosa sugar o objeto.

6 Push "Lever Controller 5 " forward to lift the object.



Empurre a Controlador de Alavanca 5 para a frente para elevar o objeto.

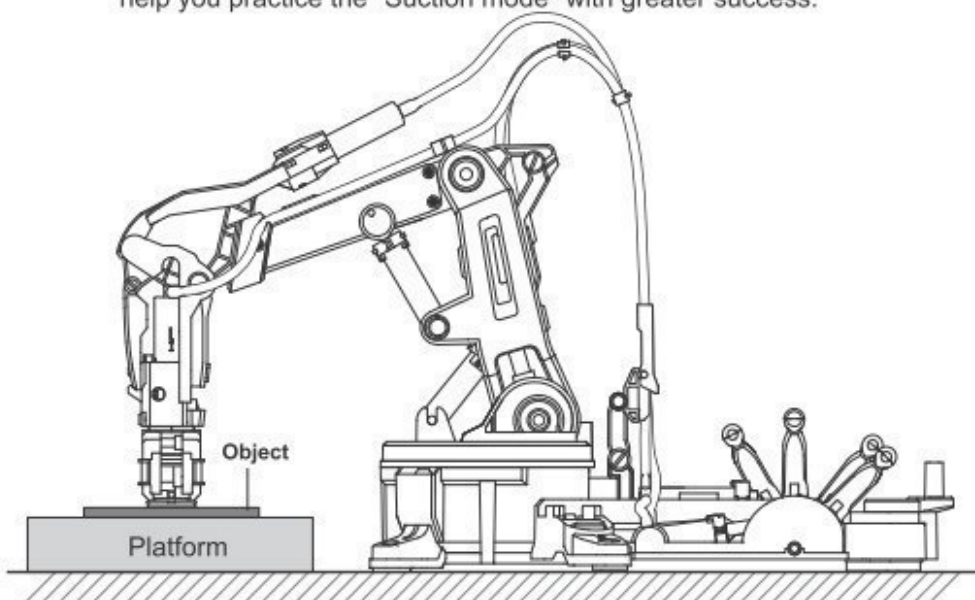
7 Set "Lever Controller 1" in the middle to release object.



Coloque a Controlador de Alavanca na posição do meio para largar o objeto.

8

Tip: Put the object under a slightly higher/and smoother platform, it may help you practice the "Suction mode" with greater success.

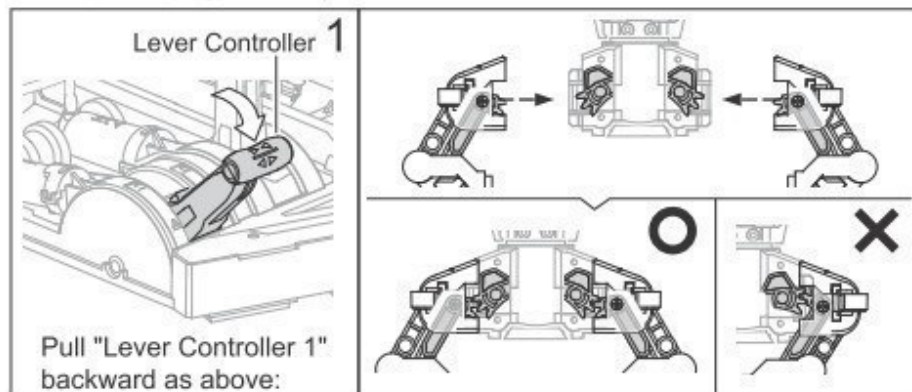


Sugestão: Coloque o objeto sob uma plataforma um pouco maior e mais suave, isto pode ajudá-lo a praticar o modo de sucção com maior sucesso.

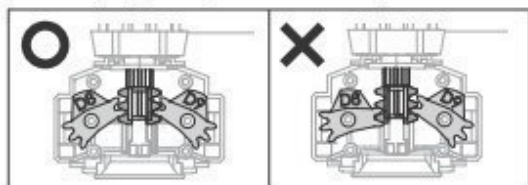
Trouble Shooting

- If gripper unit does not work (open or close) functionally, please check following steps.

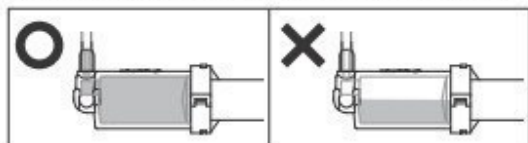
1. Check if gripper unit is installed in the correct position and direction (as below pics in pages 78,79)



2. Back to page 32, and check step 16 is correct.



3. Check if there is excess air inside the Cylinder H1, I1 and Tube 1. In the case, back to pages 42-45 to re-assemble."



- If suction cup cannot suck the objects under suction mode.

1. Back to pages 81~84, and check if all steps 2~6 are installed correctly.
2. Check if there are excess air inside the Cylinder H1, I1 and Tube 1. In the case, back to pages 42-45 to re-assemble.

Resolução de problemas

- Se a garra não funcionar corretamente (abrir ou fechar), verifique os seguintes passos.

1. Verifique se a garra foi instalada na posição e direção corretas (conforme as imagens da página 78,79)

Puxe a Controlador de Alavanca 1 para trás, como acima.

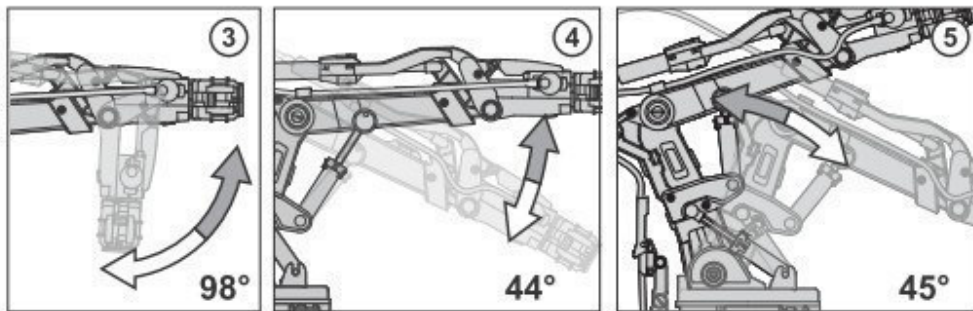
2. Consulte a página 32 e verifique se o passo 16 foi executado corretamente.

3. Verifique se existe excesso de ar no interior do Cilindro H1, I1 e Tubo 1. Se for o caso, consulte as páginas 42-45 para refazer a montagem.

- Se ventosa não conseguir sugar os objetos sob o modo de sucção.

1. Consulte as páginas 81-84, e verifique se os passos 2-6 foram executados corretamente.
2. Verifique se há excesso de ar no interior do cilindro H1, I1 e Tubo 1. Se for o caso, consulte as páginas 42-45 para refazer a montagem.

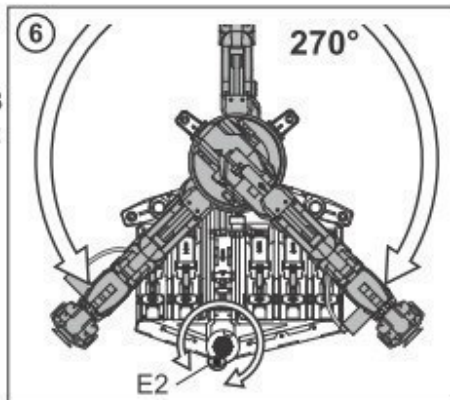
● If operation angle on the Axes 3/4/5 is unable to extend to the max.



1. Check if there is excess air inside the Cylinder H3/4/5, I3/4/5, and Tube 3/4/5, in that case, back to pages 37~40 to re-assemble.
2. Check if all tubes are routing and not twisting during assembly. In the case of twisted tubes.
 - (a) back to pages 66~75 "Robot Arm Module Assembly" to check if all markings on the tubes are installed in the right position.
 - (b) back to Pages 46~48 "Measuring & Marking" to check if all lengths of tubes are cut and marked correctly.

● Poor movement of the 6th Axe.

1. If 6th Axe doesnot move when rotating E2, back to Page 19, Step 13 and check if E10 is intalled in the right position.



2. Check if all tubes are routing and not twisting during assembly. In the case of twisted tubes,
 - (a) back to pages 66~75 "Robot Arm Module Assembly" to check if all markings on the tubes are installed in the right position.
 - (b) back to Pages 46~48 "Measuring & Marking" to check if all lengths of tubes are cut and marked correctly.

● Se o ângulo de funcionamento dos eixo 3/4/5 não consegue atingir o seu máximo

1. Verifique se existe excesso de ar no Cilindro H3/4/5, I3/4/5, e Tubo 3/4/5, e se for o caso, consulte as páginas 37-40 para refazer a montagem.
2. Verifique se todos os tubos estão a fazer o encaminhamento e não ficaram torcidos durante a montagem. No caso de existirem tubos torcidos:
 - (a) consulte as páginas 66-75 "Montagem do Módulo do Braço Robótico" para verificar se todas as marcações nos tubos estão estão feitas na posição correta.
 - (b) consulte as páginas 46-48 "Medição & Marcação" para verificar se o comprimentos dos tubos estão cortados e marcados corretamente.

● Movimento fraco do 6º eixo

1. Se o 6º eixo não se move durante a rotação E2, vá à página 19, passo 13 e verifique se E10 está instalado na posição correta.
2. Verifique se todos os tubos estão a fazer o encaminhamento e não ficaram torcidos durante a montagem. No caso de existirem tubos torcidos:
 - (a) consulte as páginas 66-75 "Montagem do Módulo do Braço Robótico" para verificar se todas as marcações nos tubos estão estão feitas na posição correta.
 - (b) consulte as páginas 46-48 "Medição & Marcação" para verificar se o comprimentos dos tubos estão cortados e marcados corretamente.