



by UGEARS

Learn how it works

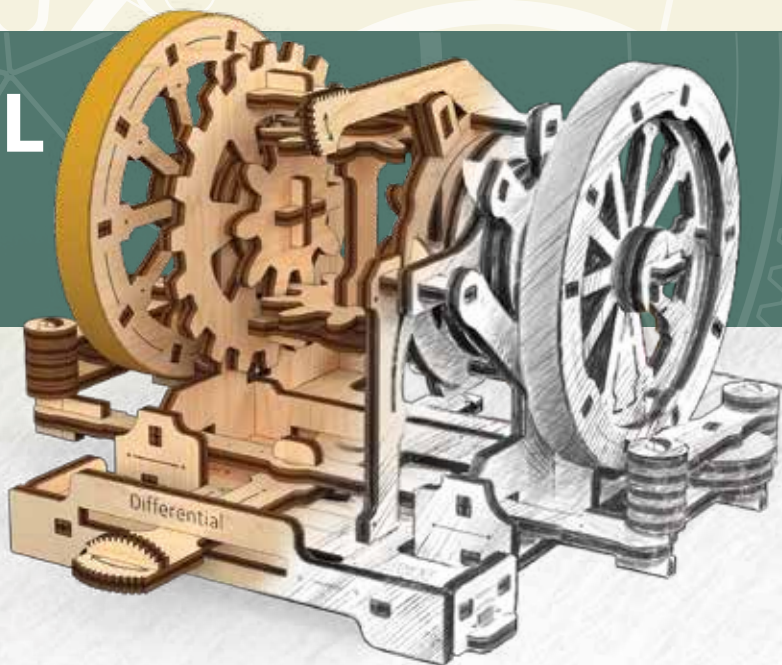
MECHANICAL MODEL/ 機械モデル

DIFFERENTIAL

ディファレンシャル

Assembly instructions

組み立て説明書



Find out MORE



NATURAL



NO GLUE
CONNECTION



SELF ASSEMBLY



MECHANICAL



EDUCATIONAL



ENG Unique AR-experience and real life usage

ENG Each of the mechanical models of the UGEARS STEM-lab series is an interactive study guide to a mechanism.

Assembling the COUNTER with your own hands you will get a full, in-depth understanding of the principles of how it works.

Extend your learning experience even further with the Ugears augmented reality application. Point your tablet or smartphone at a fully assembled STEM-lab model and the app will show you real life usage of the mechanism you've just built. You will see how the COUNTER is used in a production line; explore it at different angles, zoom in and out.



JPN ユニークなAR体験と実際の活用例

JPN 全てのUGEARS STEM-labシリーズは自分で組み立て、その動きを自分の目で確かめ、機械の原理が学べるガイドの役割をします。自分の手でディファレンシャルを組み立てることで、その原理を深く理解できるようになります。ARアプリを使うことで、学習の幅をより広げられます。完成したSTEM-labモデルをタブレットやスマホのアプリをかざして見ると、たった今組み立てたモデルの実際の活用例が表示されます。ディファレンシャルが生産ラインでどう使われるのか様々な角度から見たり、拡大・縮小して見ることが出来ます。

1 ENG Scan QR to download App

JPN QRコードをスキャンしアプリをダウンロードしてください。



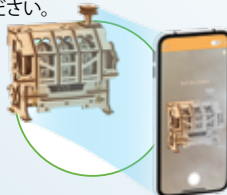
2 ENG Open the application

JPN アプリを開いてください。



3 ENG Point and align the image on the screen with the model

JPN 完成したモデルが画面に表示されるようにしてください。



4 ENG Interact in AR

JPN ARでお楽しみください。



ENG Enjoy our unlimited support! Should you have any questions about assembly, we are always here for you to suggest the best solution and provide the help you might need. Our 24/7 customer support service will accept and process your request promptly and professionally.

To get in touch with Ugears customer support service, use any of two easy and convenient ways:

1. Scan the QR-code.

Scan QR-code to go to the Web-page. Your model will be registered automatically. Enjoy unlimited service support of the model. Order details, get help with assembly, leave your feedback and comments, share your ideas and experience.

2. E-mail us!

If you couldn't scan the QR-code or enter the customer support system, please, contact Ugears Engineering Customer Support via E-mail: customerservice@ugearsmodels.com



JPN 組立てやアプリの使い方に関してのご質問等ございましたら、いつでもお気軽にお問い合わせください。


お問合せはホームページ、もしくはE-mailにてお受付しております。

1. ホームページ <https://ugearsmodels.jp>

2. E-mail : info@jabez.jp




ENG Spare parts

Your set will have spare parts marked with  on the boards and in the instruction manual. In case the detail you need has now spare option or you need an extra spare part, you can also request it using contacts offered above.



JPN 予備/パーツ

製品には板と取扱説明書に  と表示されている予備/パーツが含まれています。万が一こちらの予備/パーツが足りない場合は上記のお問合せ先までご連絡ください。

ENG Assembly instructions: Remove model parts from the hanger board as illustrated below. Careful not to break parts. If a part does not remove easily, carefully cut it out with a knife. This model is intended for self-assembly without glue. All moving parts can also be waxed during assembly to reduce friction when operating the model.

JPN 組立説明書: パーツを図のように板から取り外してください。取り外す際はパーツが割れないようにご注意ください。パーツがうまく取れない場合は、切れ目をカッターで切ってから取り外してください。動く全てのパーツはロウをこすり付けると摩擦が減り、よりスムーズに動きます。

ENG Warning! JPN 注意!



ENG Do not use lit candle. Do not assemble near open fires or naked flames. **JPN** ロウは火を付けて使用しないでください。火気のあるところでは組み立てないでください。

ENG Symbols. JPN マーク



ENG Pay attention. Check position of the part. **JPN** パーツの位置や方向に十分に注意してください。



ENG Check the mechanism for smoothness and accuracy of movement. Operate the mechanism so the parts would seat-in.

JPN スムーズで正確に動いているかご確認ください。動作確認をして、パーツが組み合っているかを確認



ENG Check size. **JPN** サイズをご確認ください。



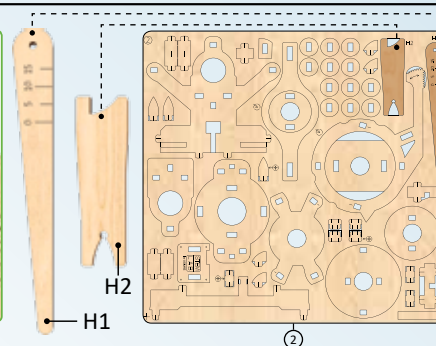
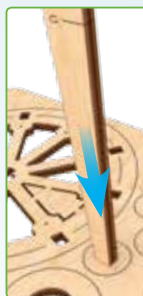
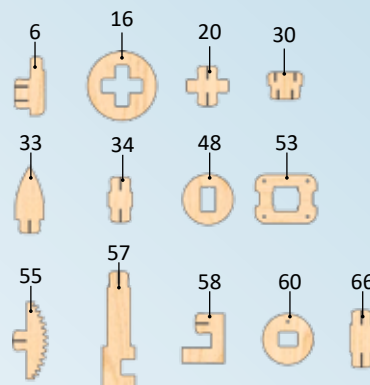
ENG Cut (rubber-band, thread, etc). **JPN** カットしてください。(輪ゴム、糸など)



ENG Wax the part with a regular candle (rub with a candle). **JPN** パーツにロウをこすり付けてください。



ENG Specified details come with spare duplicates. **JPN** このパーツは予備があります。



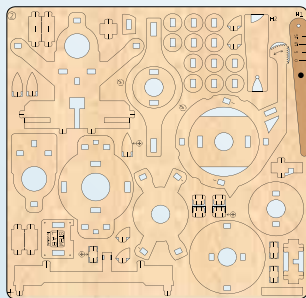
ENG This is not a structural component; it is a tool for measurement and assembly.

JPN これはパーツではなく、組み立てやサイズ測定のためのツールです。

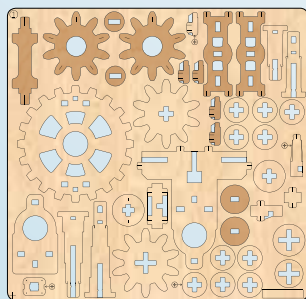
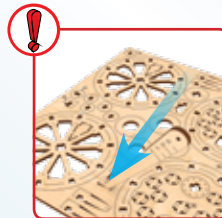
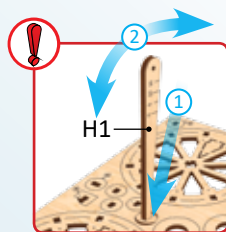
Mechanical models

ENG It's easier to pull out some parts with the «helper (H)».

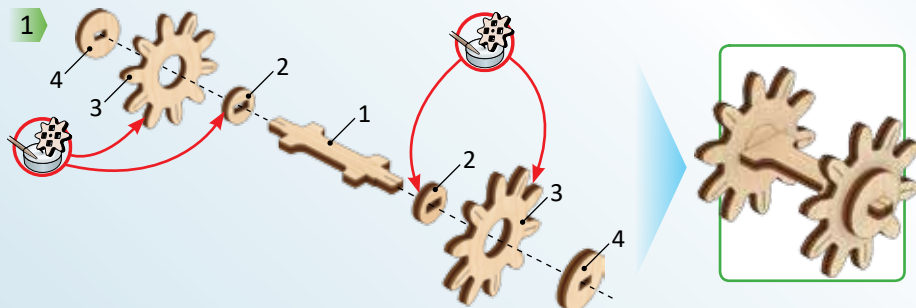
JPN 板にHと表示されている道具を使うと簡単に取り外しできます。



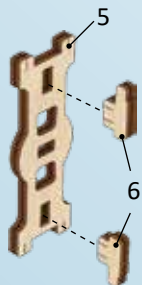
②



①



2



x2



3



A



4



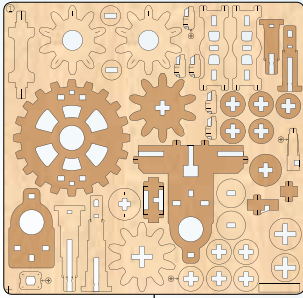
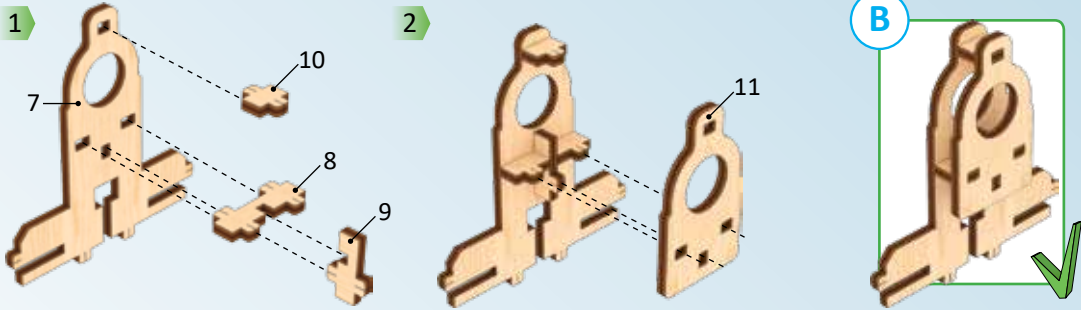
ENG Wax the part with a regular candle (rub with a candle).

JPN パーツにロウをこすり付けてください。

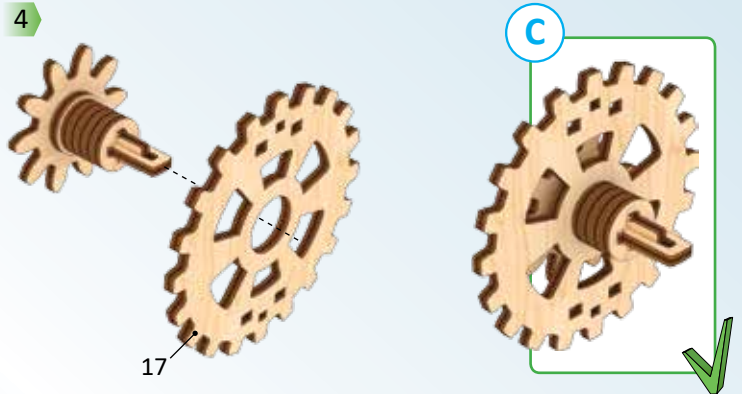
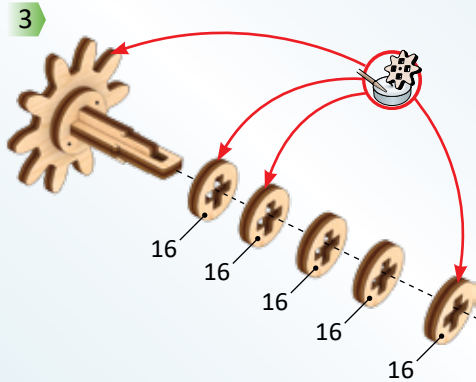
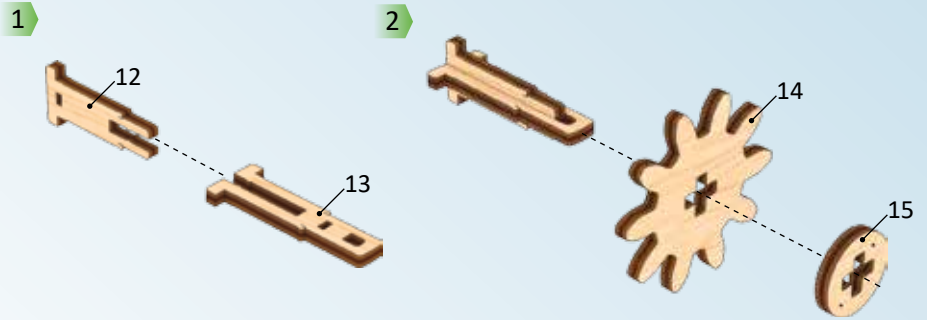


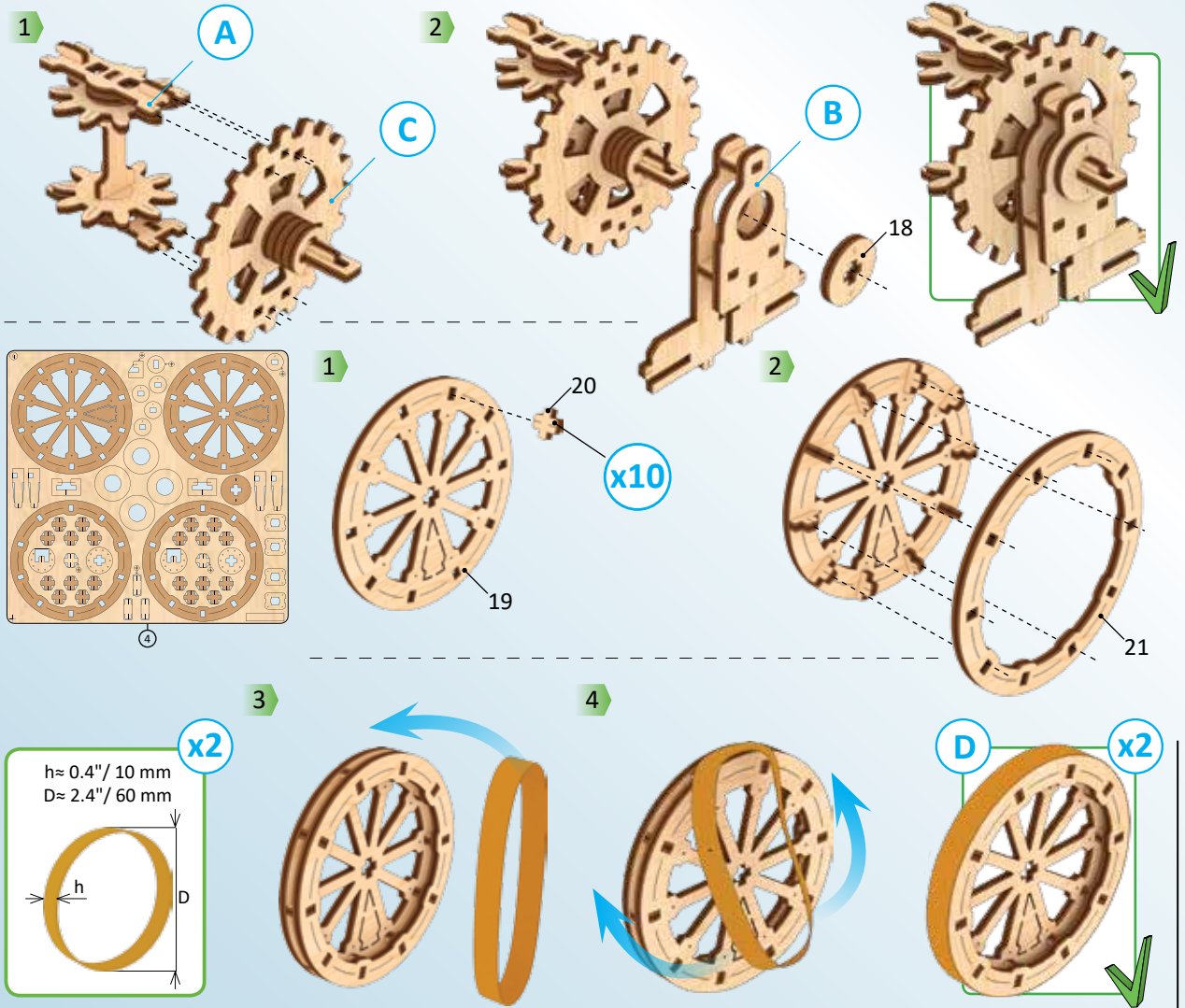
ENG Pay attention. Check position of the part.

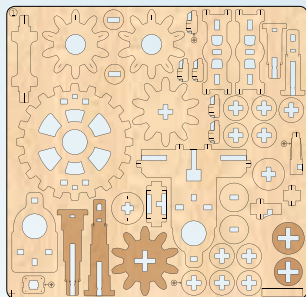
JPN パーツの位置や方向に十分に注意してください。



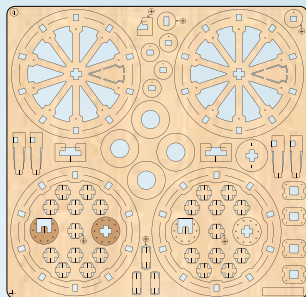
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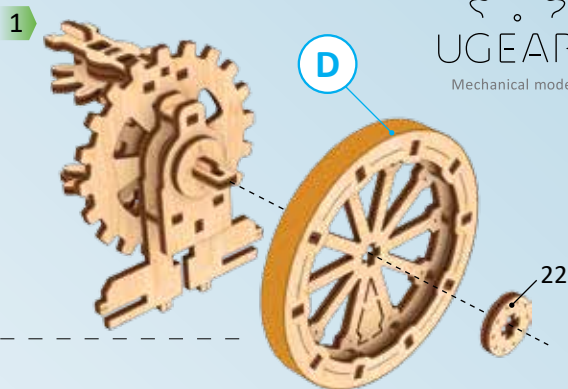




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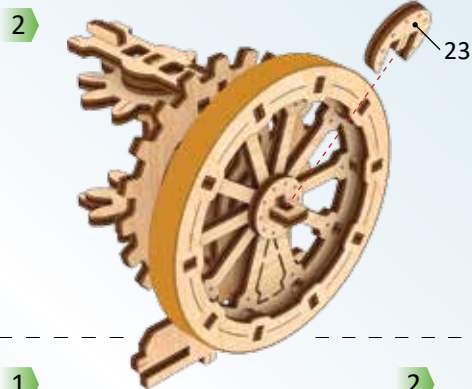
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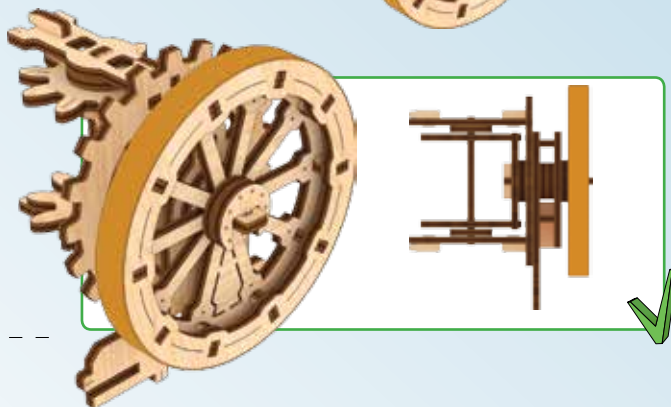
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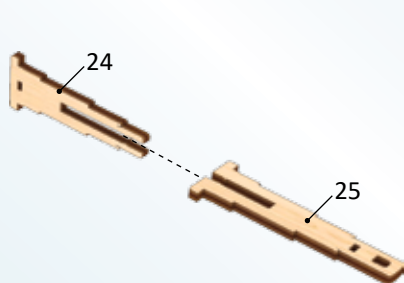
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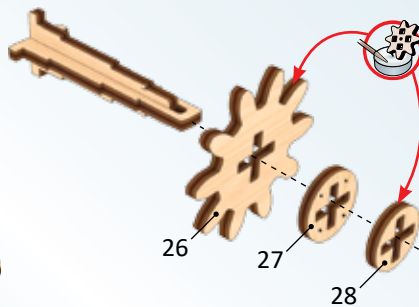
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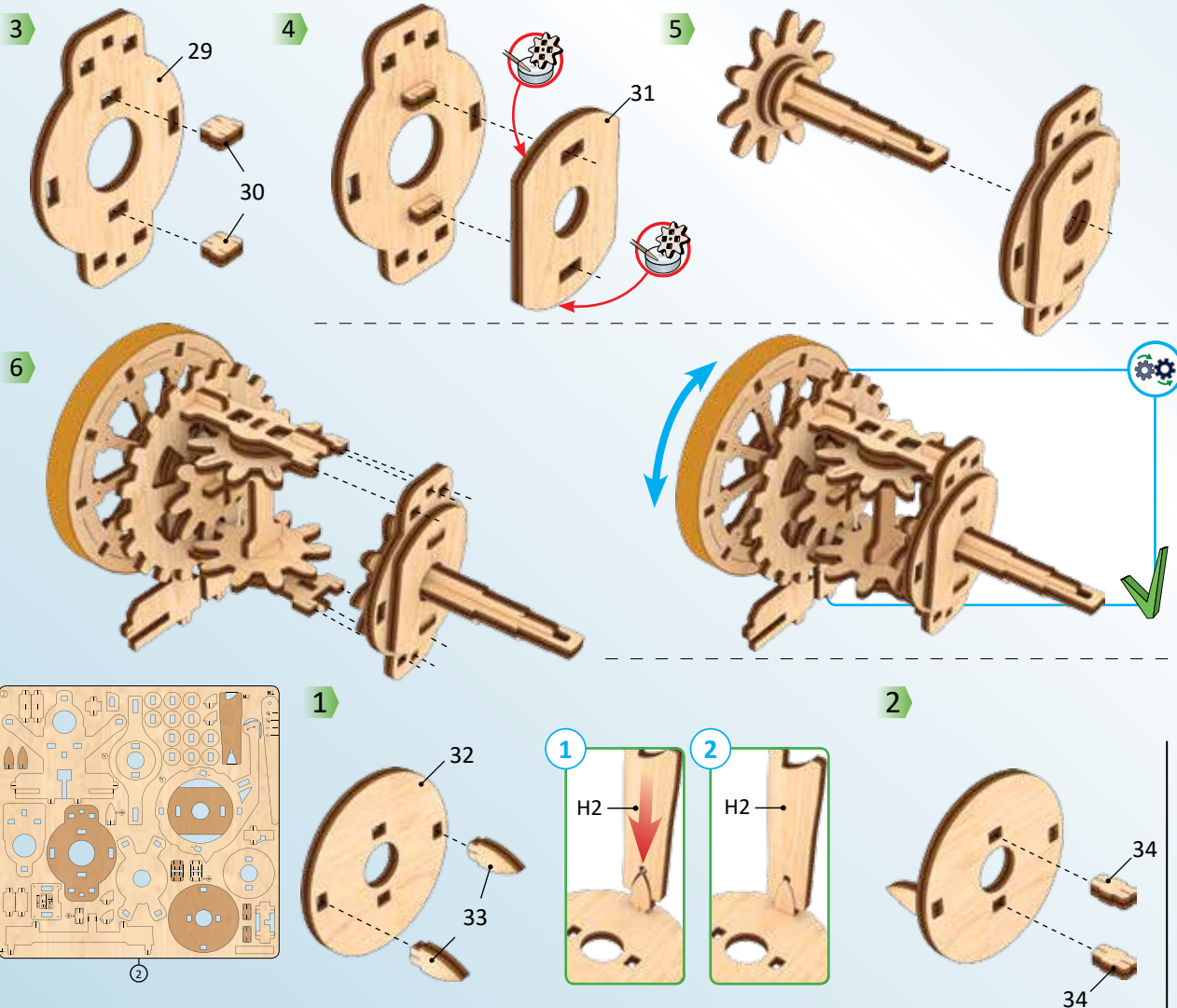


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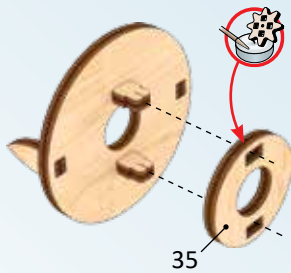
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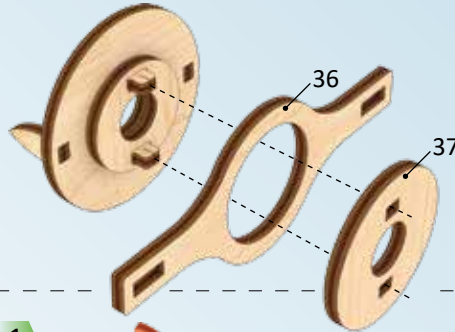




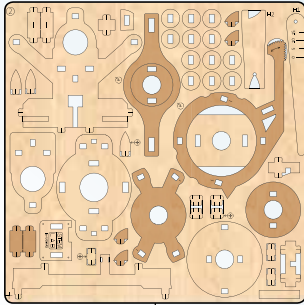
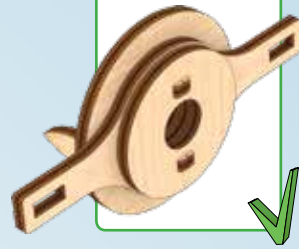
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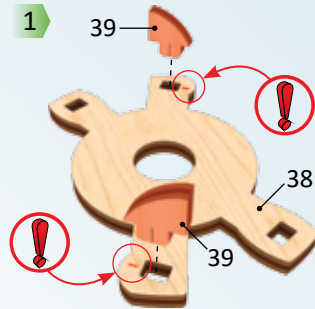


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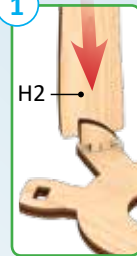


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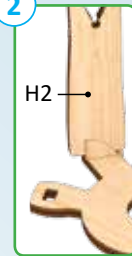
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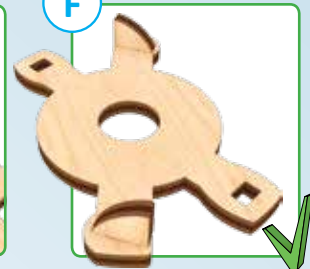
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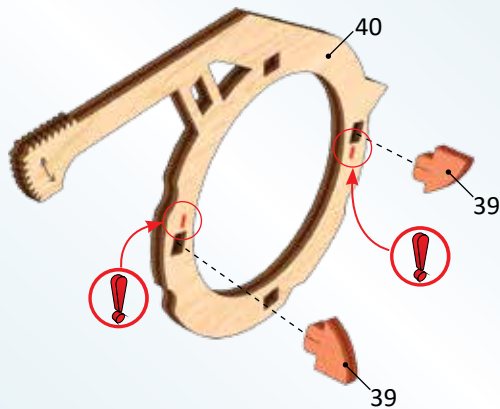
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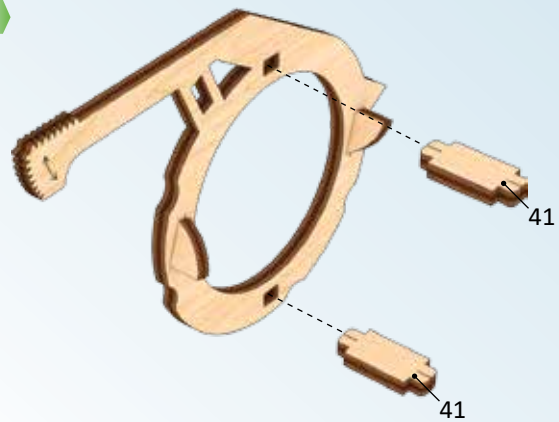
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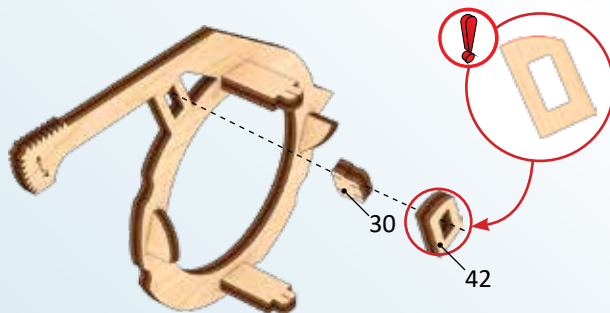
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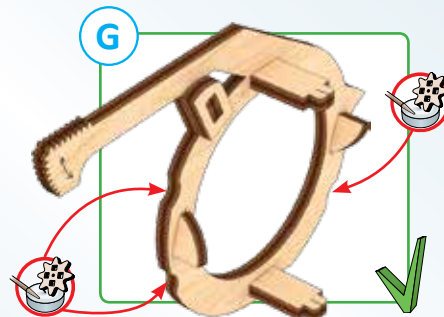
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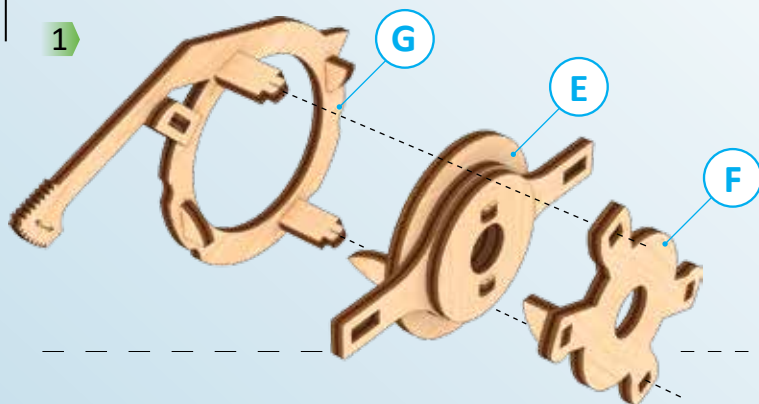
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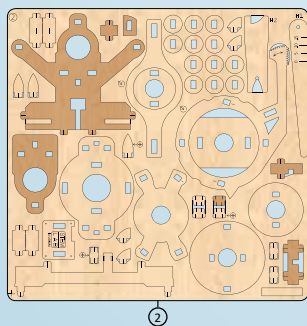
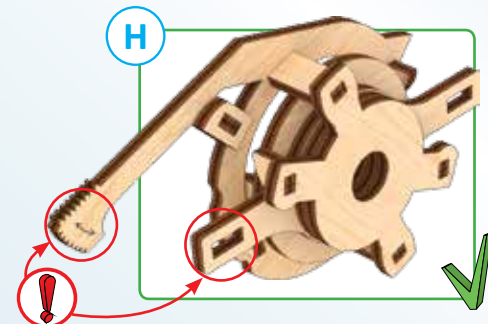
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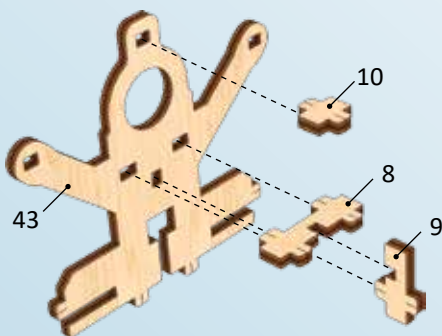
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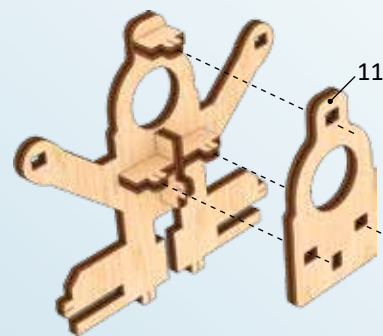
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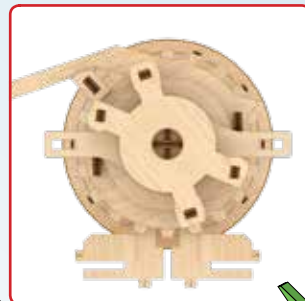
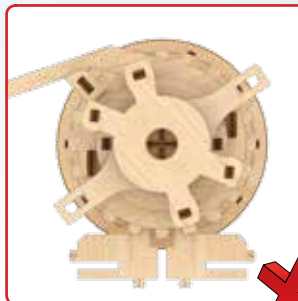
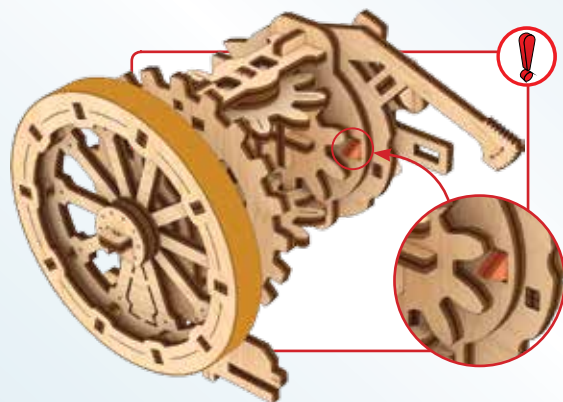
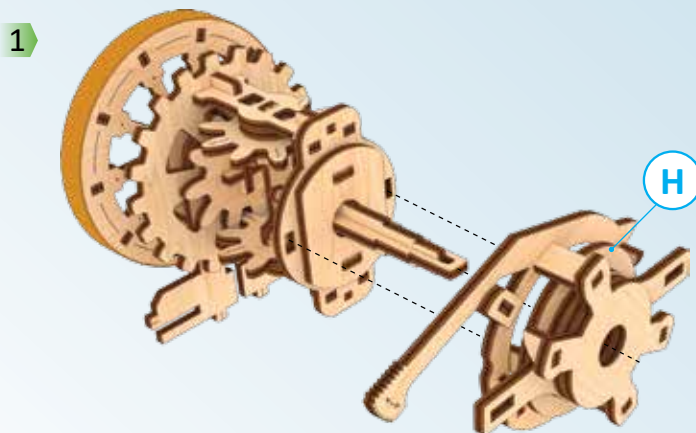
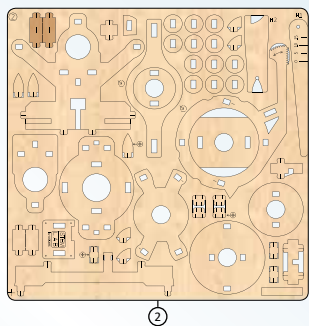
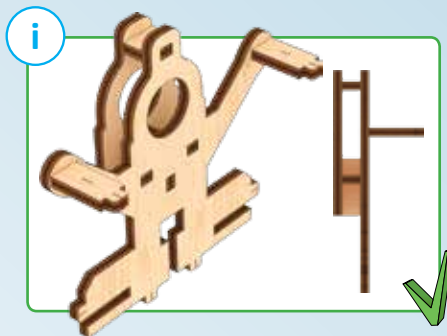
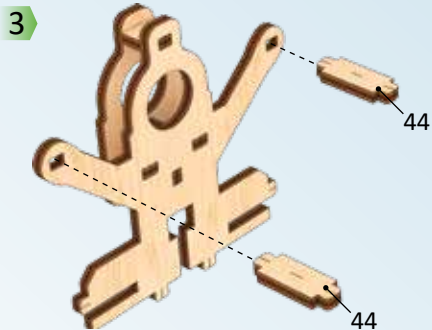


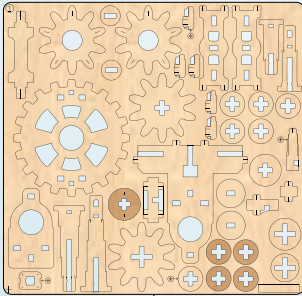
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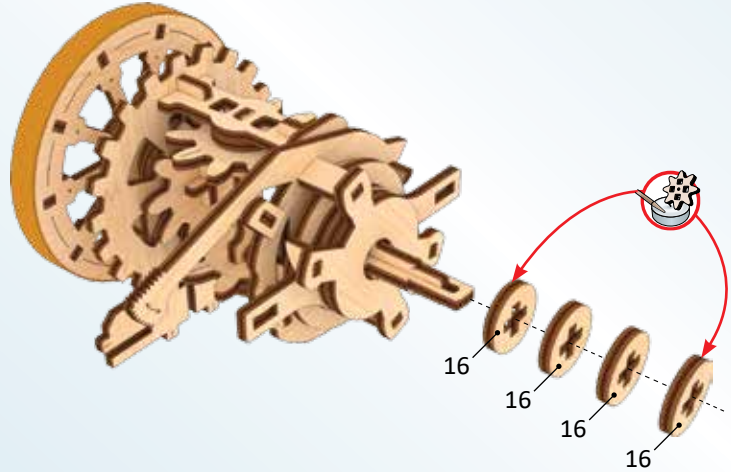
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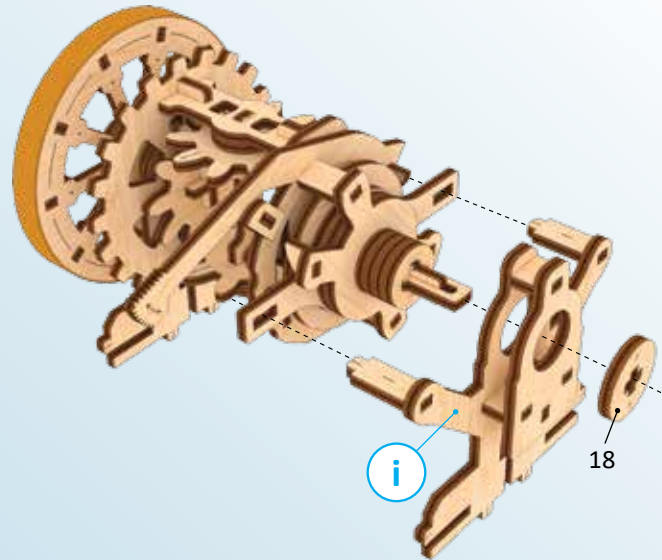
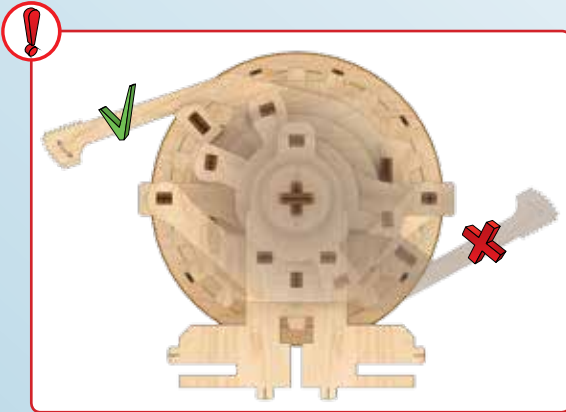


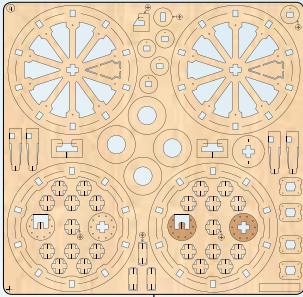


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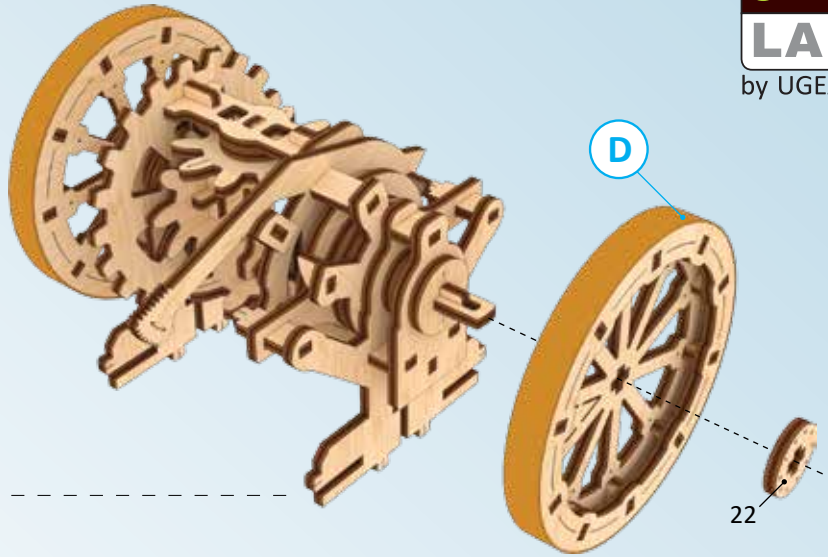


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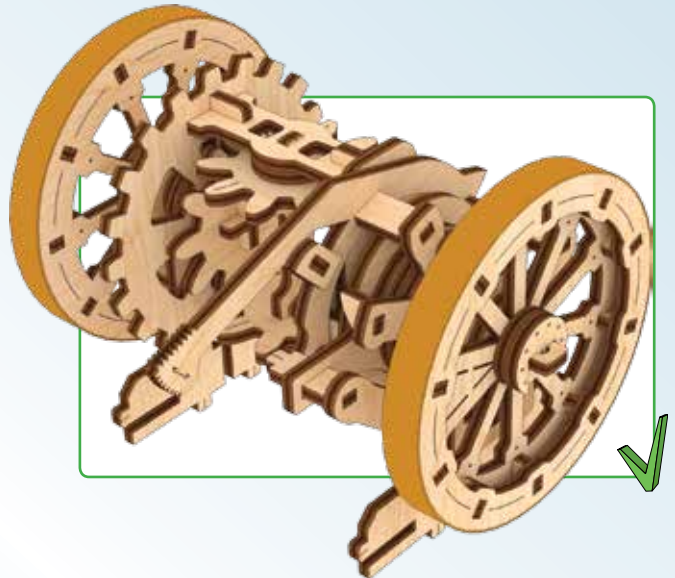
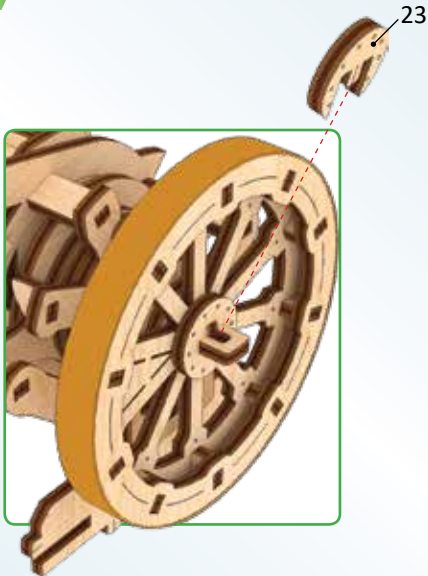


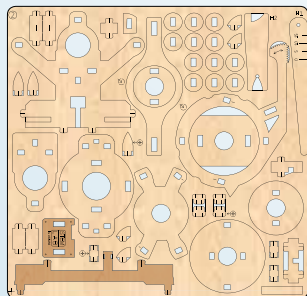


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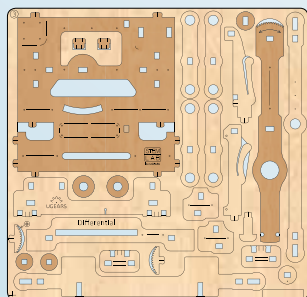
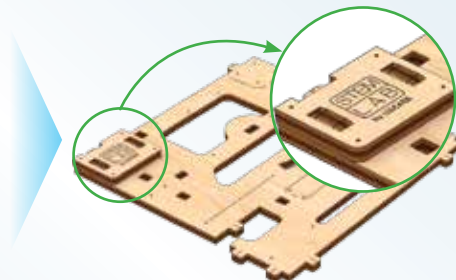
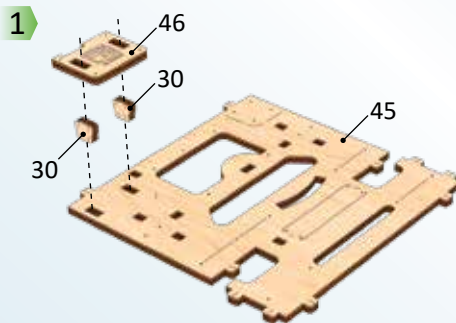


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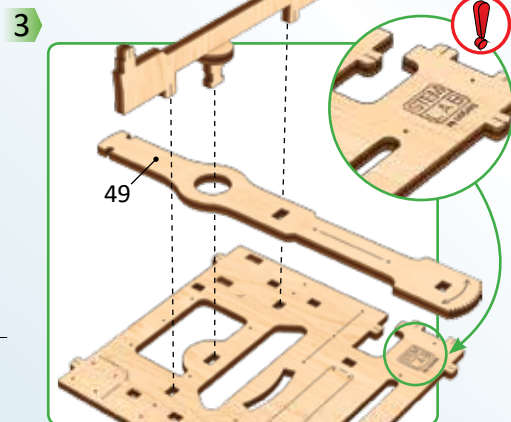
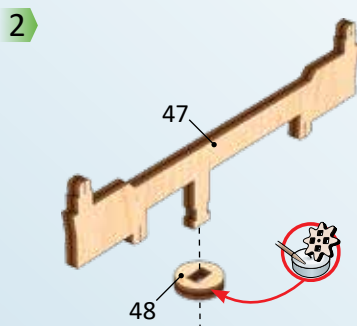




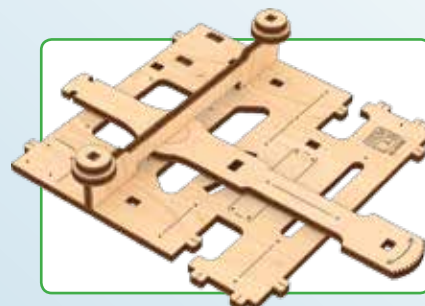
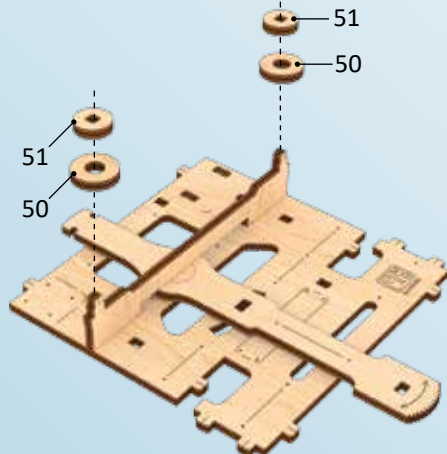
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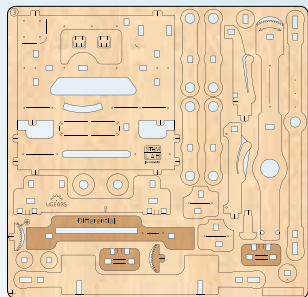


③



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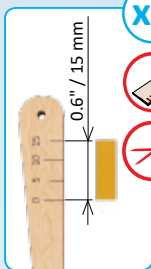
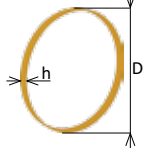




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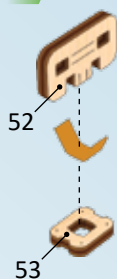
$h \approx 0.2" / 5 \text{ mm}$
 $D \approx 2.4" / 60 \text{ mm}$



x2



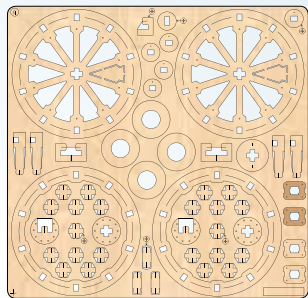
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x2

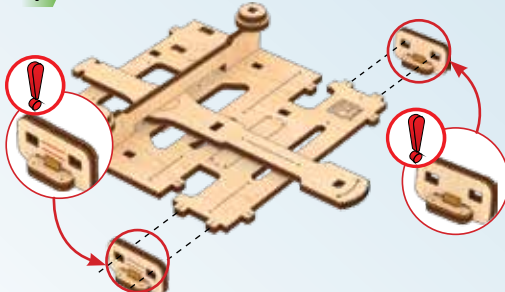


UGEARS
Mechanical models

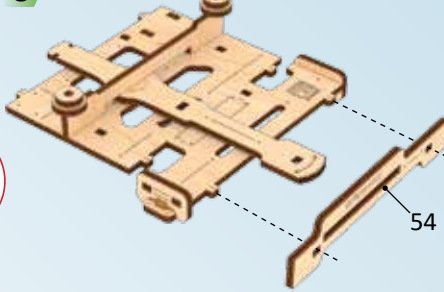


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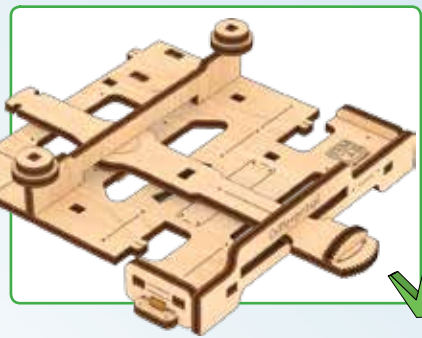
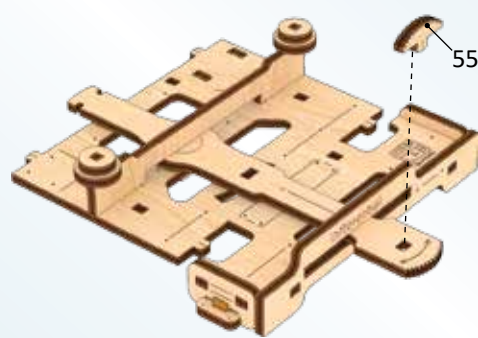
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8



9



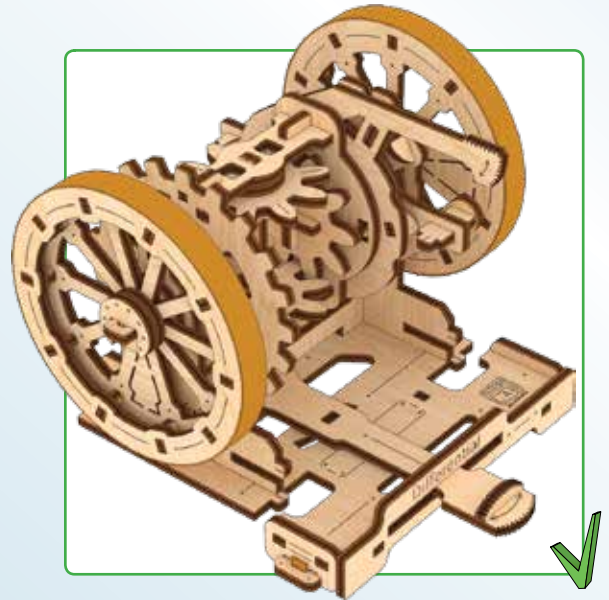
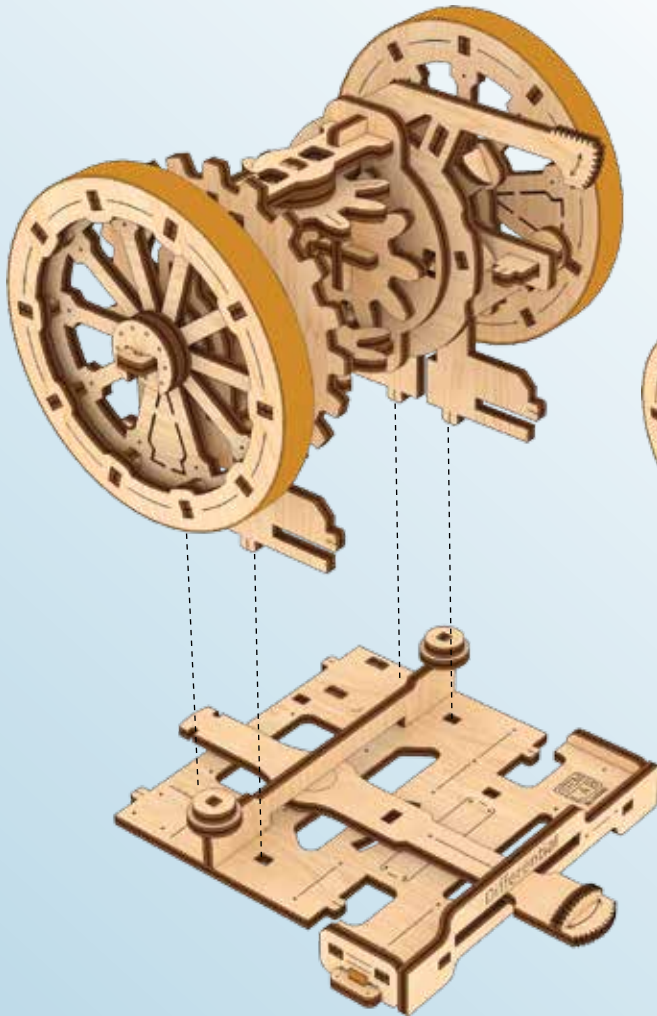
ENG Check size.
JPN サイズをご確認ください。



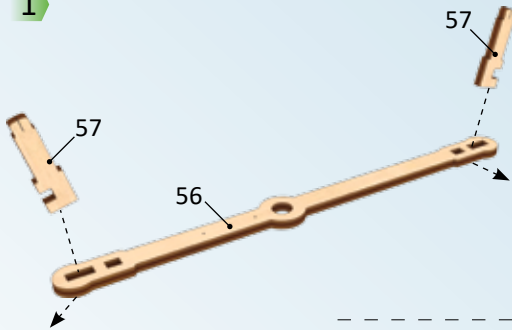
ENG Cut (rubber-band, thread, etc).
JPN カットしてください。(輪ゴム、糸など)

15

1



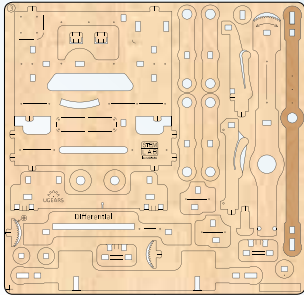
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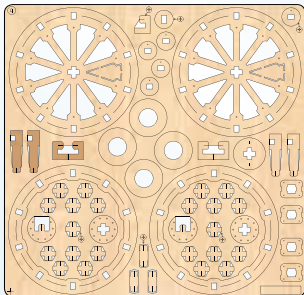
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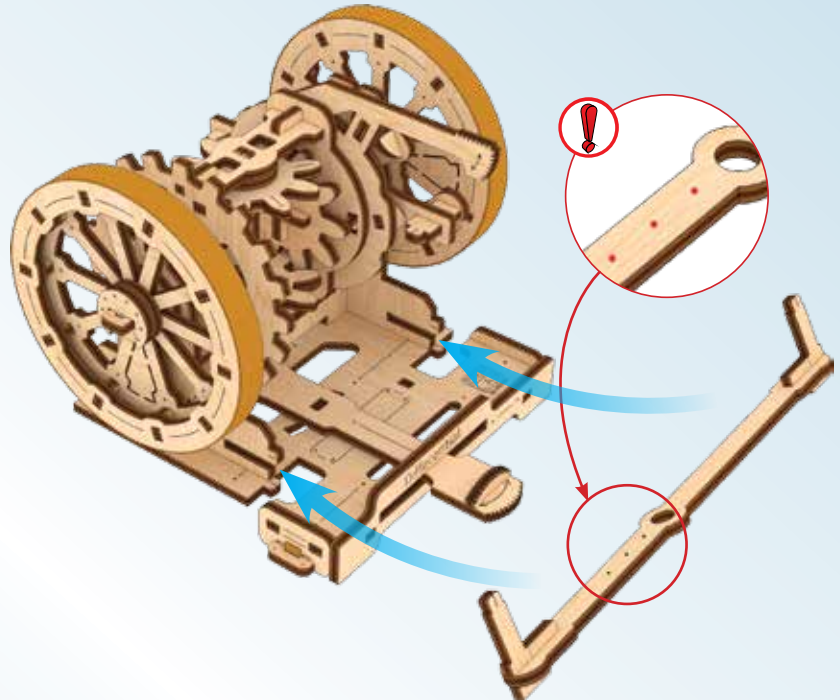
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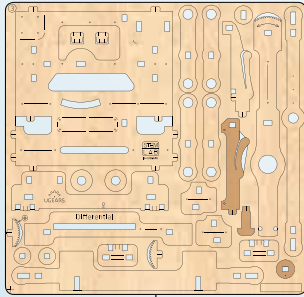


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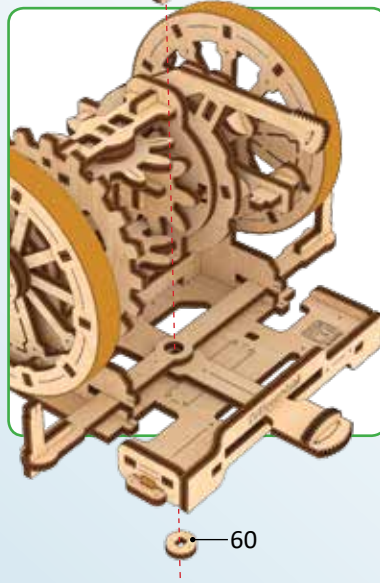
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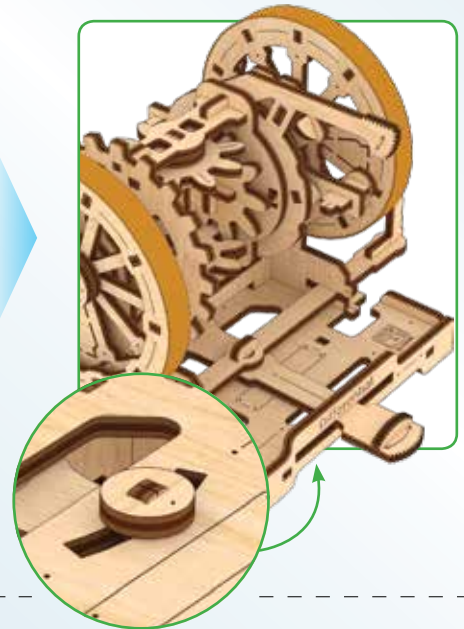


③

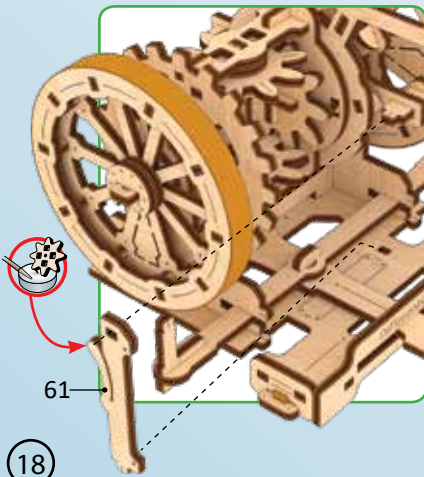
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60



5

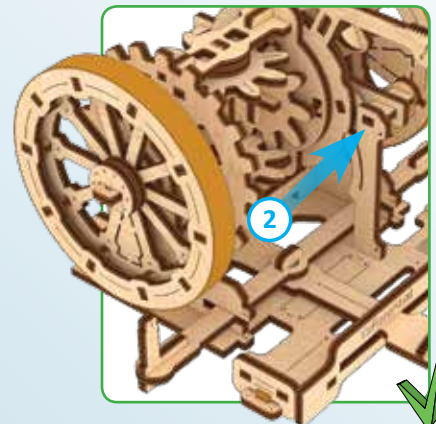


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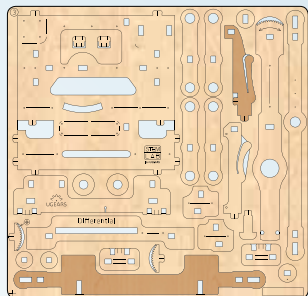
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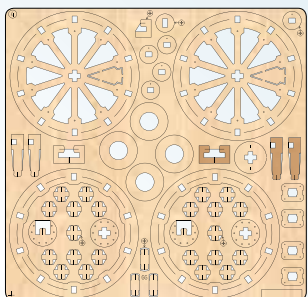
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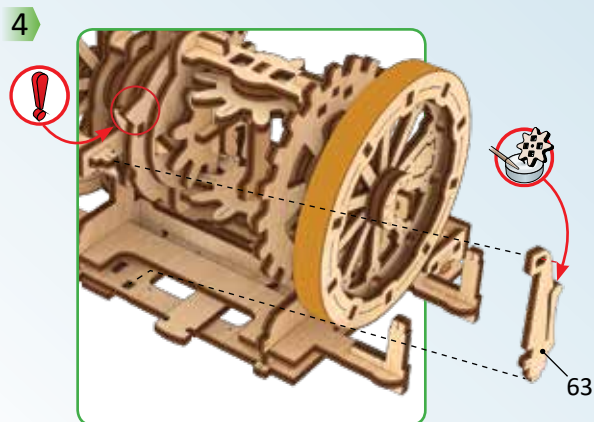
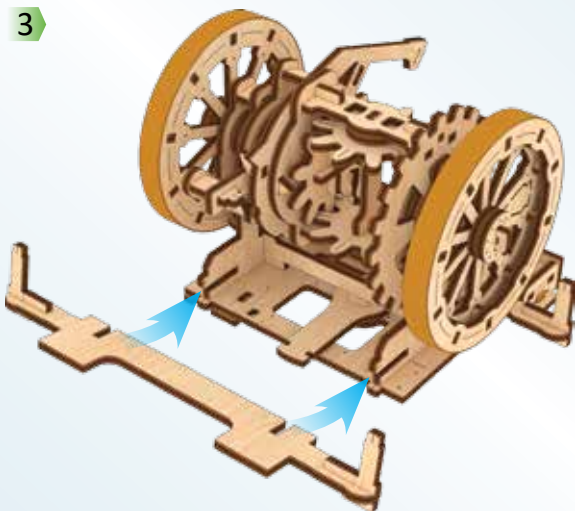
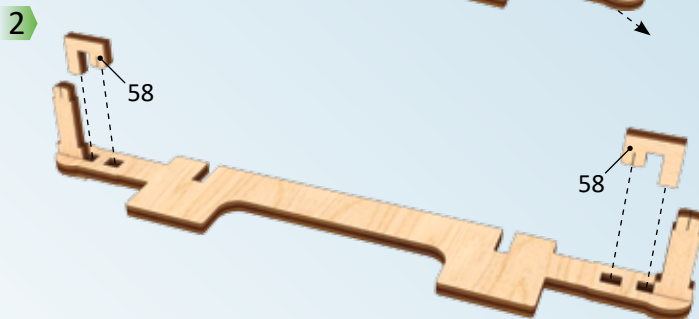
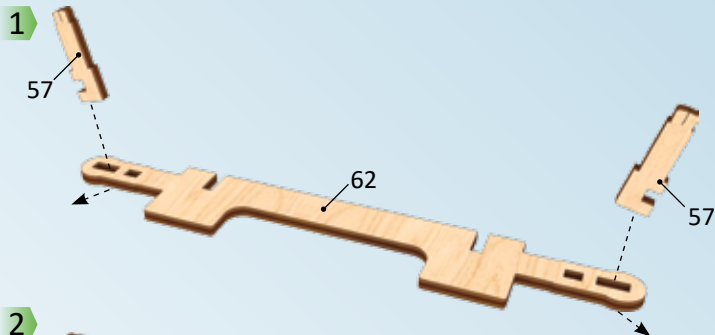
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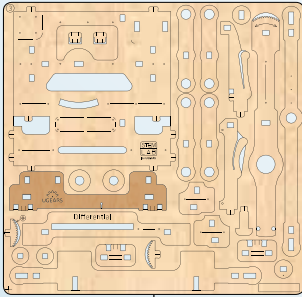


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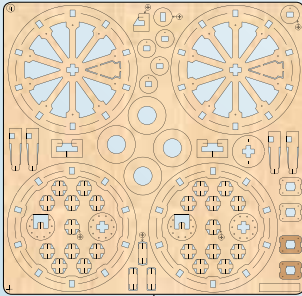


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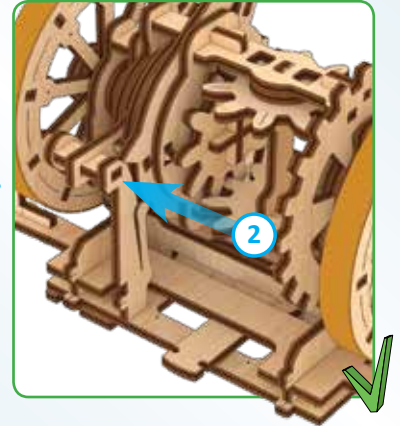
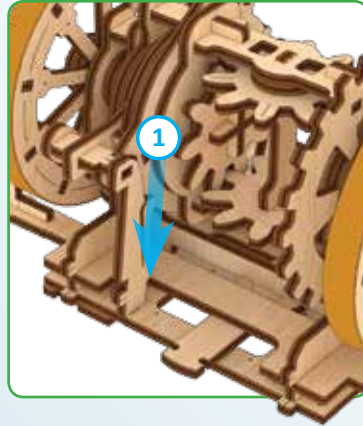


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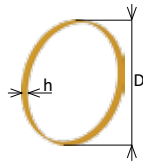
④

5

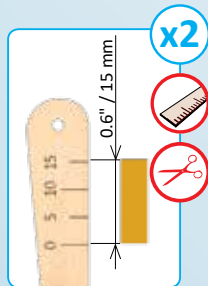
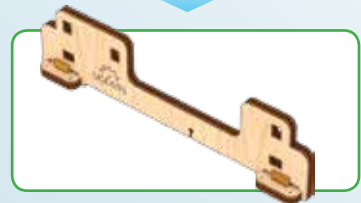
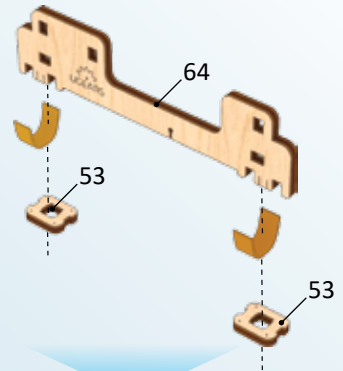


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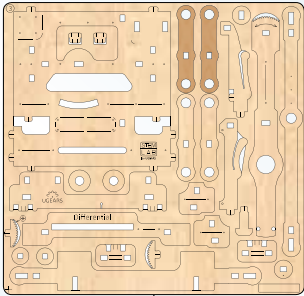
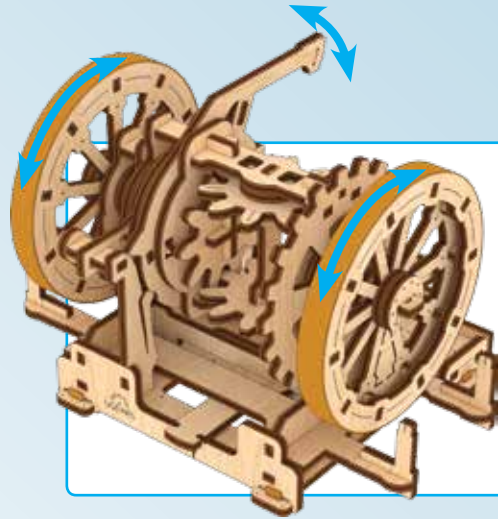
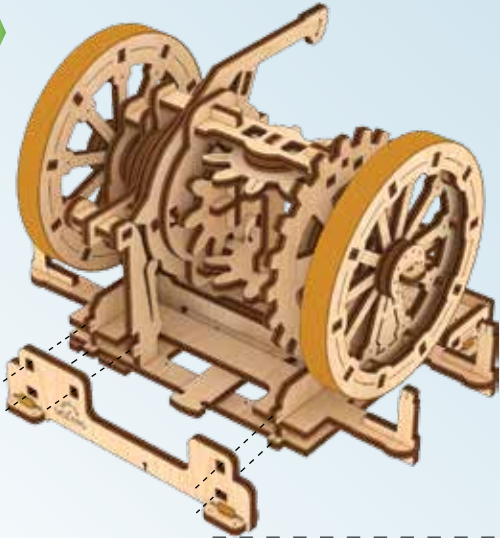
$h \approx 0.2'' / 5 \text{ mm}$
 $D \approx 2.4'' / 60 \text{ mm}$



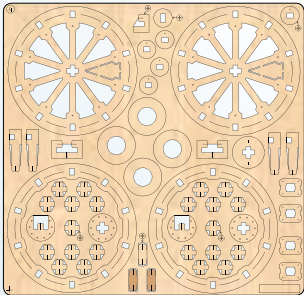
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3

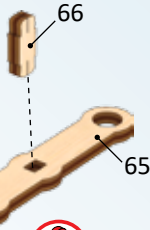


3



4

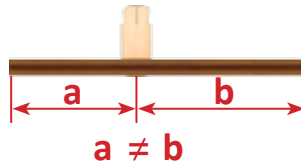
1



J

x2

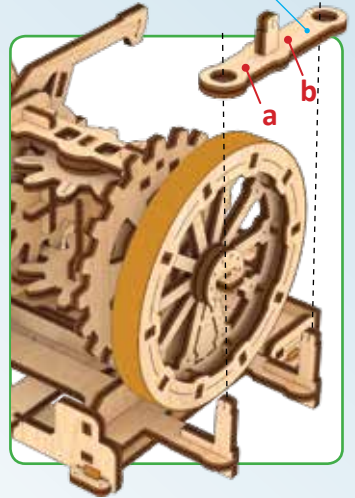
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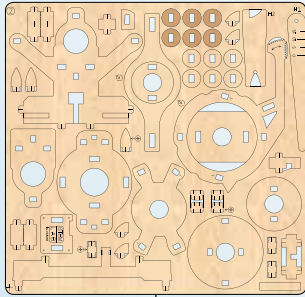


J

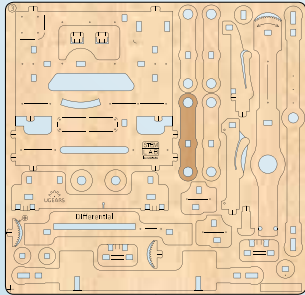
a

b

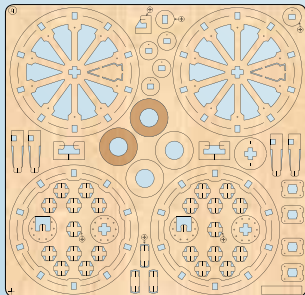




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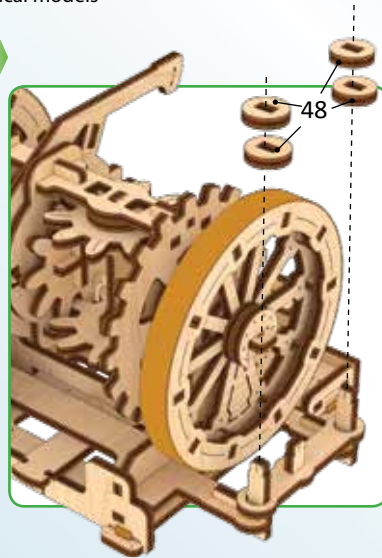


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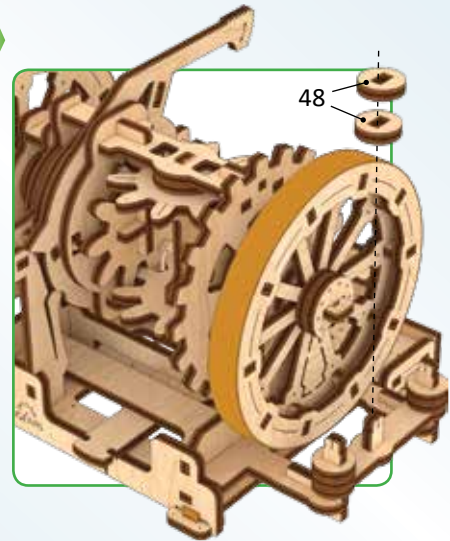


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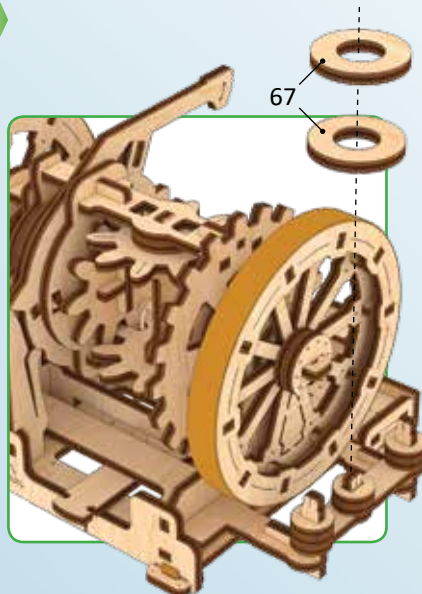
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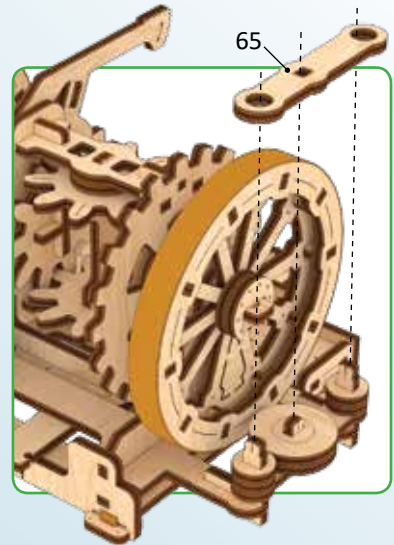
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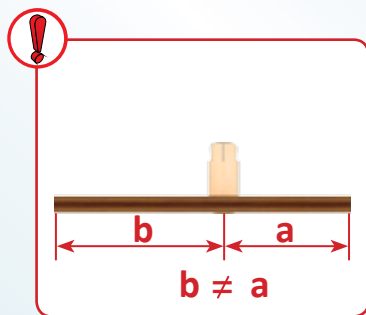
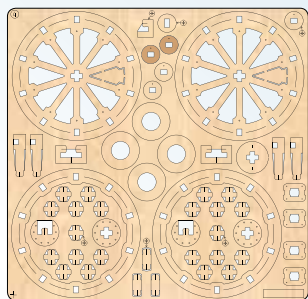
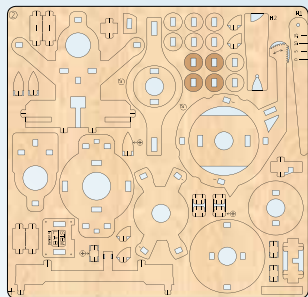


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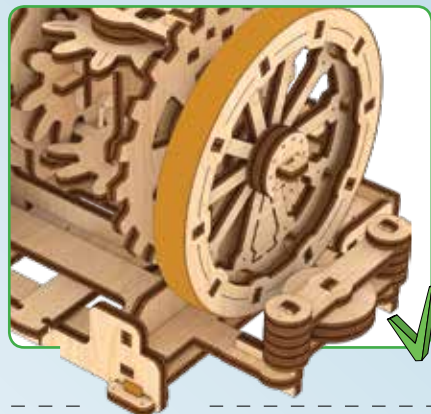
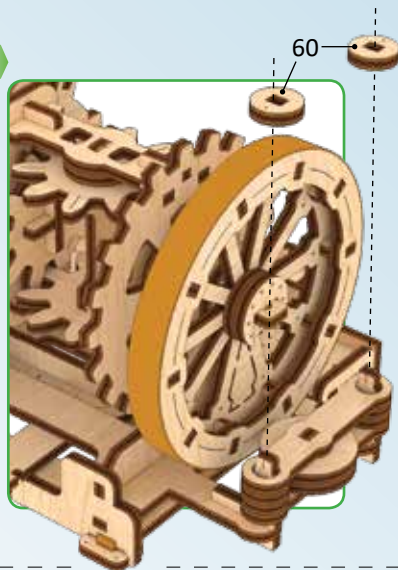


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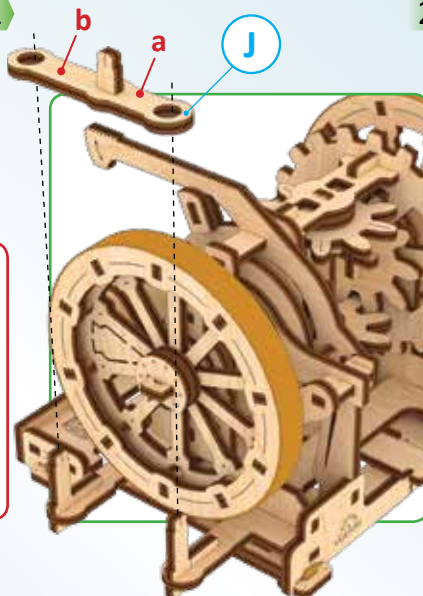




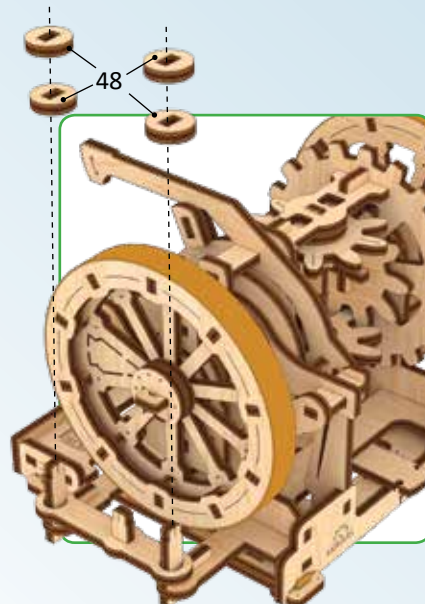
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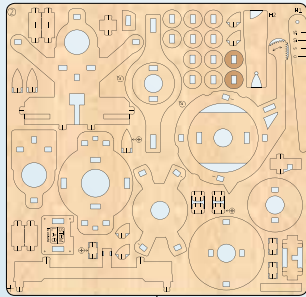


1

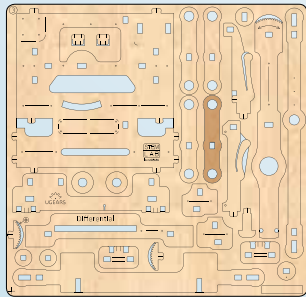


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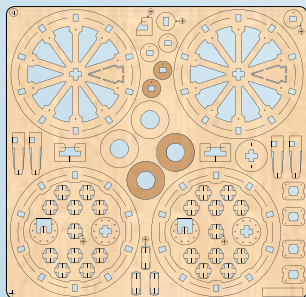




②

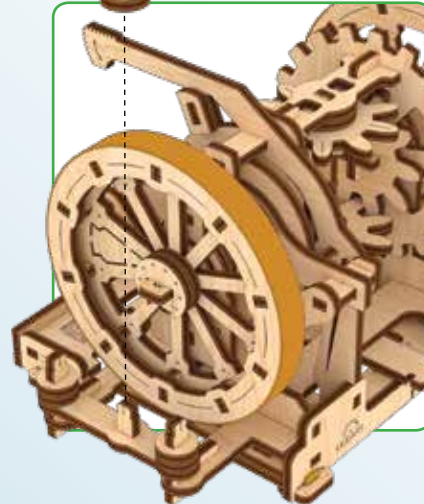
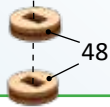


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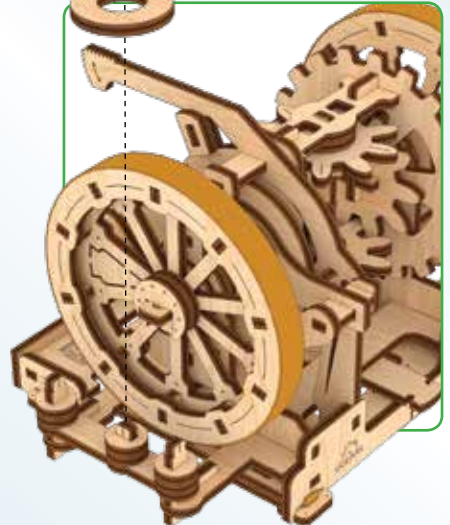
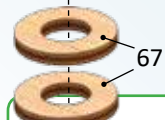


④

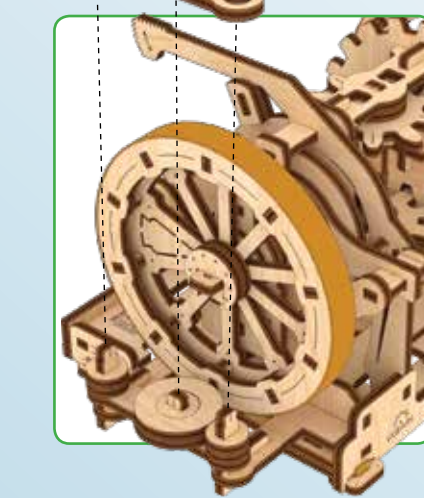
3



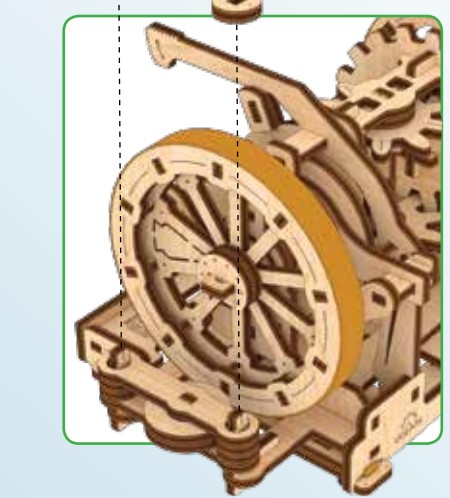
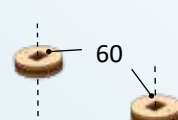
4



5

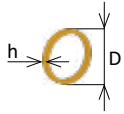


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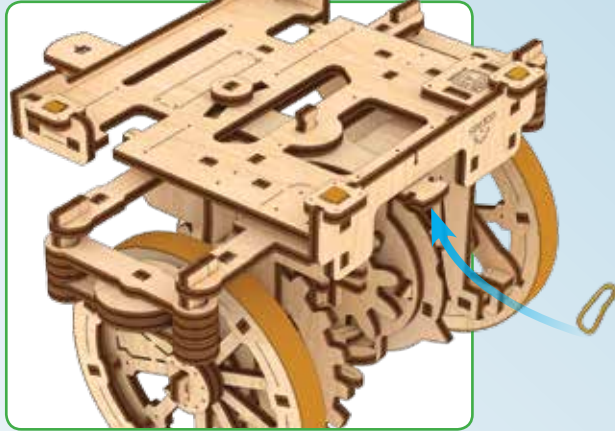


1

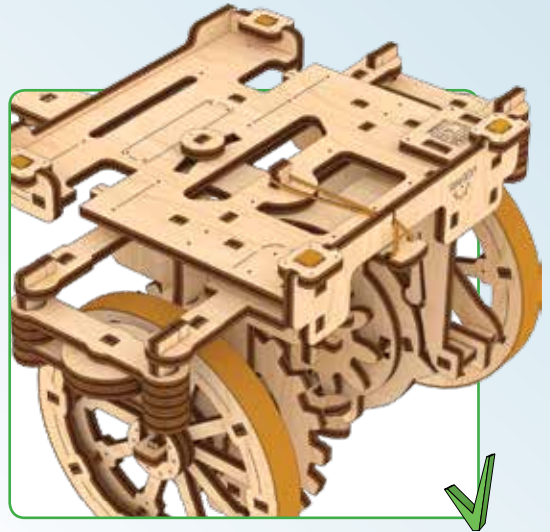
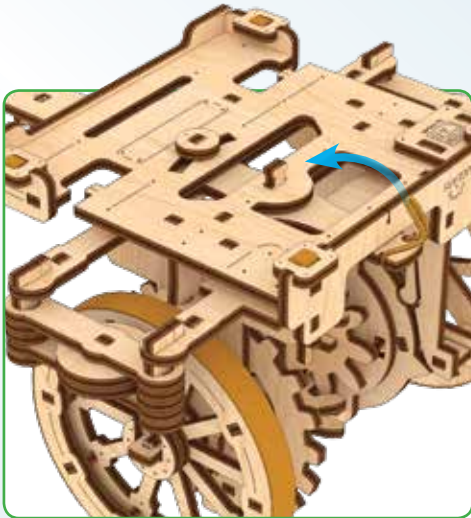
$h \approx 0.06'' / 1,5 \text{ mm}$
 $D \approx 0.7'' / 12 \text{ mm}$

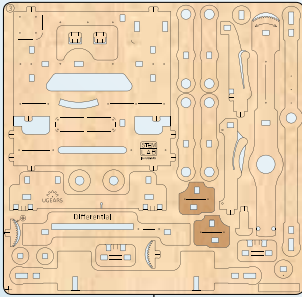


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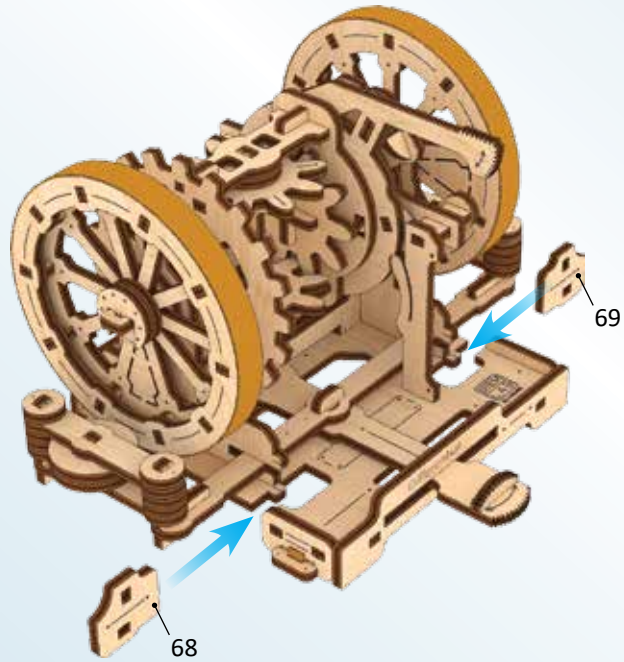
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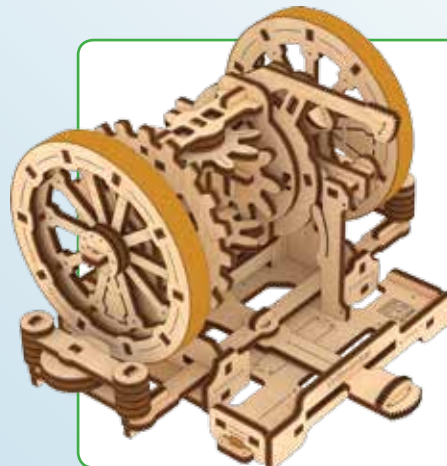


③

1



2

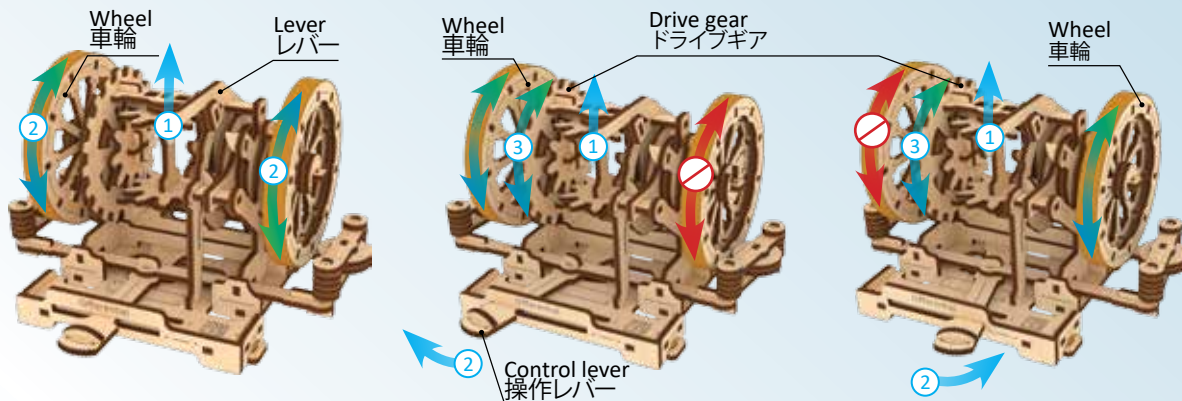


● ENG The Differential unlocked / JPN ディファレンシャルのアンロック

ENG The Differential unlocked (lever in position – up). Set both wheels in motion by rotation of the drive gear or a wheel. The Control lever regulates the smooth locking of the left(L) and right(R) wheels independently by turning left or right respectively.

JPN ディファレンシャルのアンロック (レバーが上部に位置)

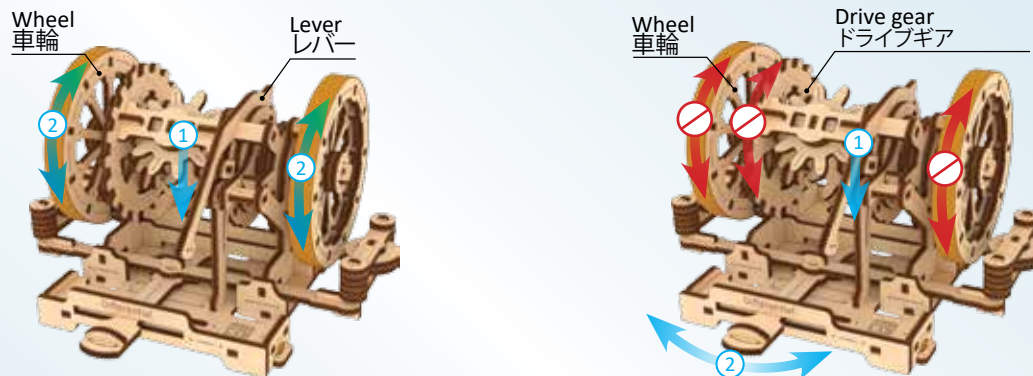
JPN ドライブギアや車輪を回転させて両端の車輪が動くようにセットしてください。操作レバーを左右に動かすことで両車輪をそれぞれ固定させます。



● ENG The Differential locked / JPN ディファレンシャルのロック

ENG In the “down” position of the lever, both wheels are linked in a rigid coupling and can either rotate together (propelled by the drive gear or a wheel) or lock simultaneously.

JPN レバーを下に下げると両方の車輪が固くリンクされ、同時に回転させるか固定することができます。



ENG Thanks for following along on this journey with us.
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