

**[TVET-CNC-2]**

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# UNIMAT CNC

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# UNIMAT ML

## Warnungen

## Warning

## Avertissements

## Aviso

## 警告

## Предупреждение



### WARNUNGEN

Mit Unimat ML können verschiedene Maschinen zusammengestellt werden: Mit jeder dieser Maschinen kann man sich bei unsachgemäßer Handhabung ernsthaft verletzen. Die Maschinen sind mit scharfem Werkzeug ausgerüstet und können zum Teil schwere Schnittwunden verursachen. Eingespanntes Werkstück kann beim Arbeiten aus der Maschine fliegen. Immer wieder überprüfen, ob Werkzeug bzw. Werkstück fest eingespannt ist! Schutzbrille verwenden! Niemals in rotierendes Werkzeug greifen.

Niemals in rotierendes Werkstück (Drehselhölzer etc.) greifen! Aufpassen, dass weder offene Kleidung (Ärmel etc.), noch Haare in die Nähe von rotierendem Werkzeug oder Werkstück kommen. Der Antrieb erfolgt über einen 12 V Gleichstrom Motor! Nur unter direkter Aufsicht Erwachsener benutzen. Wie bei einem Arbeitsplatz, ist auf ein sauberes Umfeld zu achten. Erst nach abgeschlossener Montage, insbesondere der Motor-Getriebe-Abdeckung ist die Maschine mit der Stromversorgung zu verbinden.

Sollte ein Teil in dieser Packung fehlen oder defekt sein, so fordern Sie es bitte bei [info@thecooltool.com](mailto:info@thecooltool.com) kostenlos an. Bitte nicht die Packung einsenden. Nur Absender und Teile-Nr. (siehe Stückliste der Bauanleitung) angeben bzw. das Teil beschreiben oder skizzieren. Bei technischen Teilen, wie beispielsweise Motoren, bitten wir Sie, uns diese zur Reparatur bzw. aus Gründen der Qualitätssicherung einzusenden. Der Inhalt kann je nach Vertriebsland variieren. Konformitätserklärung: <http://www.thecooltool.com/rechtliches/>



### WARNING

With Unimat ML it is possible to assemble different types of machines. Each machine can cause severe injuries if handled improperly. The machines are supplied with sharp tools. Handle these with caution to avoid injury. The workpiece can fly out of the chuck when being machined. Always make sure that the tool and workpiece are each properly secured. Use protection goggles. Never touch the revolving workpiece with any part of your body. Keep hair and clothing well away

from moving parts. Propulsion is furnished by a 12 V direct-current motor. Children should only use the machines under very strict supervision by responsible adult. Keep workplace clean and tidy. Make sure the assembly of Unimat machine parts is done correctly (especially the coverage of motor and countershaft) before plugging in the transformer.

Should any part in this box be defective or missing, please send your request to [info@thecooltool.com](mailto:info@thecooltool.com) for a free replacement. Do not send the box. Just your name and address, the part number (see spare parts list of the assembly manual) or a small drawing. Please send us any technical parts such as motors, for repair and quality assurance reasons. The content may vary in different countries. Declaration of conformity: <http://www.thecooltool.com/en/legal/>



### AVERTISSEMENTS

Unimat ML permet de réaliser machines différentes: en cas d'utilisation non conforme, chacune de ces machines peut causer de graves blessures. Les machines sont équipées d'outils tranchants et peuvent dans certains cas provoquer des coupures graves. L'outil en place peut être projeté hors de la machine en cours de travail. Vérifiez toujours si l'outil et la pièce à usiner sont solidement serrés! Utilisez les lunettes protectrices! Ne touchez jamais l'outil en rotation! Ne touchez jamais une pièce en

rotation (bois de tournage...)! Veillez à tenir éloignés de l'outil ou de la pièce en rotation les vêtements lâches (manches ...) et les cheveux. Entraînement par un moteur 12 V courant continu. Ne laissez jamais travailler les enfants sans surveillance! La place d'utilisation doit rester propre! N'utilisez le transformateur qu'après l'assemblage complet, surtout des couvertures du moteur et de la broche de réduction!

S'il manquait une pièce dans cette boîte ou si un accessoire était défectueux, veuillez nous demander son remplacement ([info@thecooltool.com](mailto:info@thecooltool.com)). Ne retournez pas la boîte, mais indiquez le numéro de la pièce (voir liste des pièces détachées du mode d'emploi) ou décrivez ou dessinez-nous la pièce. En ce qui concerne les pièces techniques, par exemple moteurs, nous vous demandons, pour des raisons de garantie de qualité, de nous les envoyer pour réparation. Le contenu peut varier en différent pays. Déclaration de conformité: <http://www.thecooltool.com/en/legal/>



### AVISO

Con Unimat ML se pueden construir diferentes máquinas: con cada una de estas máquinas corre peligro herirse al servirse de ellas inadecuadamente. Las máquinas están provistas de herramienta afilada que pueden a veces causar cortes graves. La herramienta fijada puede desprenderse de la máquina durante el trabajo. ¡Siempre conviene controlar si la herramienta y el material están fijados adecuadamente! ¡Utilizar las gafas protectoras! ¡Nunca tocar la herramienta rot-

atoria! ¡Nunca tocar el material que está rotando (madera para torner, ...)! ¡Prestar cuidado a que indumentaria (mangas, ...) o cabello suelto no se hallen demasiado cerca de la herramienta y del material! Propulsión mediante un motor 12 V corriente continua! ¡Niños no deben nunca trabajar con las máquinas sin guardia! Como todas las máquinas también Unimat debe ser limpiada y lubricada regularmente. ¡Primeramente ensamblar la máquina y al final conectar a la corriente!

En caso de faltar alguna pieza o de resultar defectuosa, rogamos efectuar el reclamo correspondiente a la dirección indicada sin costo alguno ([info@thecooltool.com](mailto:info@thecooltool.com)). Por favor no mande el paquete. Solamente describa o diagrame la parte e indique su dirección el número de la misma (vease la lista de piezas y las instrucciones de armado). Si fuese necesario efectuar una reparación, y por motivos del control de calidad, sírvale remitir al fabricante las piezas técnicas tales como los motores. El contenido puede variar dependiendo del país. Declaración de conformidad CE: <http://www.thecooltool.com/en/legal/>



### 警告

优耐美Unimat ML 可组成不同形式的机器, 每一种机器如使用不当或操作失误时, 可能引起严重伤害。锋利的刀具随同各机器供应, 小心使用操作, 避免受伤。机器加工时工件有可能从夹头上脱落, 因此务必确定工具及工件已牢靠地锁紧固定。操作时应戴安全护目镜! 绝不用身体任何部位碰触旋转中的工件!

勿使头发和衣服靠近运动中的零件! 动力由一个12V的直流马达提供。儿童使用机器时, 必须有负责的成年人在旁严格监督指导使用。保持工作场所整齐清洁, 在插上变压器前要确认优耐美机器的各零件组装正确(尤其是马达和主轴包含的范围)。

如果盒内零件有损坏或丢失, 请发送您的要求到下列地址索取免费备件 ([info@thecooltool.com](mailto:info@thecooltool.com))。不需要寄包装盒, 只需要你的名字和地址, 以及零件编号(见组装手册中的备用零件表)或画一个小的零件图。为了维修以及品质保证的原因, 请将技术零件, 如马达寄给我们。盒内内容物有可能依不同国家有所不同。EC符合性声明: <http://www.thecooltool.com/en/legal/>



### ПРЕДУПРЕЖДЕНИЕ

Комплект Unimat ML позволяет собрать различные варианты станков. Любой станок может причинить серьезные травмы, если используется ненадлежащим образом. СТАНКИ снабжены острыми инструментами. Обращайтесь с ними осторожно, чтобы избежать травм. Во время обработки заготовка может вылететь из станка. Всегда надежно закрепляйте инструмент и заготовку. Используйте защитные очки. Никогда не касайтесь вращающейся заготовки какой-либо частью тела. Держите волосы и одежду вдалеке. Если какая-нибудь деталь в этой коробке имеет дефект или отсутствует, пожалуйста, отправьте свой запрос [info@thecooltool.com](mailto:info@thecooltool.com) для бесплатной замены. Не посылайте весь комплект. Только Ваши имя, адрес и номер детали или фото. Пожалуйста, пришлите нам сложные узлы, как, например, двигатели, для изучения причин отказа и повышения качества в дальнейшем. Комплектация может отличаться для разных стран. Сертификат соответствия EC: <http://www.thecooltool.com/en/legal/>

от движущихся частей. Станки приводятся в движение двигателем постоянного тока 12 В. Дети должны использовать станки только под очень строгим наблюдением ответственного взрослого. Содержите рабочее место в чистоте и порядке. Перед включением убедитесь, что станок собран правильно (особенно кожух приводного ремня).

# UNIMAT CNC

## Technische Daten

## Technical data

## Caractéristiques techniques

## Informaciones técnicas

## 技术参数

## Технические данные

### Technische Daten

#### EINZELTEILE

##### Antriebseinheit ML

12 V Gleichstrom  
Leistungsaufnahme bis 2 A  
Leerlaufdrehzahl: 3.880 U/min  
Spindelnase: M12x1  
Bohrung: 8 mm  
2 gedichtete u. gefettete Kugellager

##### Querschlitzen U3CNC

Verstellweg: 50 mm  
Spindelsteigung: 1 (M6x1)

##### Längsschlitzen U9CNC

Verstellweg: 145 mm  
Spindel M8x2 P1 links

##### Drehtisch CNC

Spindelnase: M12x1  
Bohrung: 8 mm

##### Reitstock U6ML

M 12x1  
Pinolenhub: 30 mm

#### Netzteil

prim. 110 - 240 V, 50 - 60 Hz,  
sek. 14,4 V Gleichstrom, 2 A

#### EINZELMASCHINEN

##### Drehbank CNC

Spitzenhöhe 50 mm  
Spitzenweite 80 mm

##### 3-Achsen Horizontalfräse CNC

Arbeitsbereich:  
x=145, y=50, z=50 mm

##### 3-Achsen Vertikalfräse CNC

Arbeitsbereich:  
x=145, y=50, z=50 mm

##### 4-Achsen Vertikalfräse CNC

Arbeitsbereich:  
x=145, y=50, z=50 mm



#### INDIVIDUAL PARTS

##### Drive unit ML

12 V direct current  
Power input up to 2 A  
Nom. rpm.: 3,880 rpm  
Spindlenose: M12x1  
Hole through spindle: 8 mm  
2 ballbearings

##### Cross slide U3CNC

Travel: 50 mm  
screw pitch: 1 (M6x1)

##### Longitudinal slide U9CNC

Travel: 145 mm  
Screw: M8x2 P1 LH

##### Rotary table CNC

Spindlenose: M12x1  
Hole through spindle: 8 mm

##### Tailstock U6ML

M12x1  
Travel of tailstock sleeve: 30 mm

#### Adaptor

prim. 110 - 240 V, 50 - 60 Hz,  
sek. 14.4 V direct current, 2A,

#### MACHINES

##### Lathe CNC

Centre height 50 mm  
Distance between centres 80 mm

##### 3-axis Horizontal milling machine CNC

work area:  
x=145, y=50, z=50 mm

##### 3-axis vertical milling machine CNC

work area:  
x=145, y=50, z=50 mm

##### 4-axis vertical milling machine CNC

work area:  
x=145, y=50, z=50 mm

### Caractéristiques techniques

#### PIÈCES INDIVIDUELLES

##### Broche de réduction U2ML

12 V courant continu  
Puissance absorbée jusqu'à 2 A  
Vitesse à vide: 3.880 t/min  
Nez de la broche: M12x1  
Alésage: 8 mm  
2 roulements à billes étanches et lubrifiés

##### Transversal U3CNC

Course de réglage: 50 mm  
filet: 1 (M6x1)

##### Longitudinal U9CNC

Course de réglage: 145 mm  
filet: M8x2 P1 LH

##### Drehtisch CNC

Nez de la broche: M12x1  
Alésage: 8 mm

##### Poupée mobile U6ML

M12x1

Course de fourreau: 30 mm

#### Transformateur

prim. 110 - 240 V, 50 - 60 Hz,  
sec. 14,4 V, 2A

#### MACHINES INDIVIDUELLES

##### Tour CNC

Hauteur de pointes 50 mm  
Entre-pointes 80 mm

##### Fraisuse horizontale CNC

de travail:  
x=145, y=50, z=50 mm

##### Fraisuse verticale CNC

de travail:  
x=145, y=50, z=50 mm

### Caractéristiques techniques



#### PIEZAS SUELTAS

##### Cabezal U2ML

12 V Corriente continua  
Energía absorbida hasta 2 A  
Revoluciones: 3.880 rpm  
Saliente: M12x1  
Paso de la barra: 8 mm  
dientes, 2 baleros sellados y engrasados

##### Carro transversal U3CNC

Recorrido de desplazamiento: 50 mm  
screw: 1 (M6x1)

##### Carro longitudinal U9CNC

Recorrido de desplazamiento: 145 mm  
screw: M8x2 P1 LH

##### Drehtisch CNC

Saliente: M12x1  
Paso de la barra: 8 mm

##### Contrapunta U6ML

M12x1

Carrera de pinol: 30 mm

#### Transformador

prim. 110 - 240 V, 50 - 60 Hz,  
seg. 14,4 V corriente continua, 2 A

#### MAQUINAS SUELTAS

##### Banco del torno

Altura de puntos 50 mm  
Distancia entre puntos 80 mm

##### fresadora horizontal

Distancia: x=145, y=50, z=50 mm

##### fresadora vertical

Distancia: x=145, y=50, z=50 mm

### Caractéristiques techniques

### informaciones técnicas



#### 个别零件

##### 全金属主轴 U2 ML

12V 直流电  
输入电流最大 2A  
额定转速: 3,880 转/分钟  
主轴螺纹: M12x1  
主轴孔径: 8 mm  
2 个滚珠轴承

##### 全金属小滑块 U3 CNC

行程: 50 mm  
螺距: 1 (M6x1)

##### 全金属长滑块 U9 CNC

行程: 145 mm  
螺距: M8x2 P1 LH

##### Drehtisch CNC

主轴螺纹: M12x1  
主轴孔径: 8 mm

##### 尾座 U6 ML

尾座螺纹: M12x1  
尾座行程: 30 mm

#### 变压器

输入电压 110-240V AC, 50-60Hz  
输出电压 14,4V 直流电, 输出电流 2A

#### 机器

##### 车床:

中心高 50 mm  
中心距 80 mm

##### 卧式铣床:

工作范围: x=145, y=50, z=50 mm

##### 立式铣床:

工作范围: x=145, y=50, z=50 mm

### 技术参数



#### ОТДЕЛЬНЫЕ УЗЛЫ

##### Шпиндель (передняя бабка) U2ML

12 В, постоянный ток  
Потребляемый ток до 2 А  
Скорость вращения: 3 880 об/мин.  
Присоединительная резьба: M12x1  
Внутренний диаметр: 8 мм  
2 шарикоподшипника

##### Салазки U3CNC (поперечный суппорт)

Перемещение: 50 мм  
Винт подачи M6x1

##### Салазки U9CNC (продольный суппорт)

Перемещение: 145 мм  
Винт подачи M8x2 P1 LH

##### Drehtisch CNC

Присоединительная резьба: M12x1  
Внутренний диаметр: 8 мм

##### Задняя бабка U6ML

Присоединительная резьба: M12x1  
Перемещение пиноли: 30 мм

#### Трансформатор

Первичное напряжение: 110-240В,  
50-60 Гц, Вторичное напряжение:  
14,4В, постоянный ток 2А

#### СТАНКИ

##### Токарный станок

Высота центров 50 мм  
Расстояние между центрами 80 мм

##### Горизонтальный фрезерный станок

Рабочее поле: x=145, y=50, z=50 mm

##### Вертикальный фрезерный станок

Рабочее поле: x=145, y=50, z=50 mm

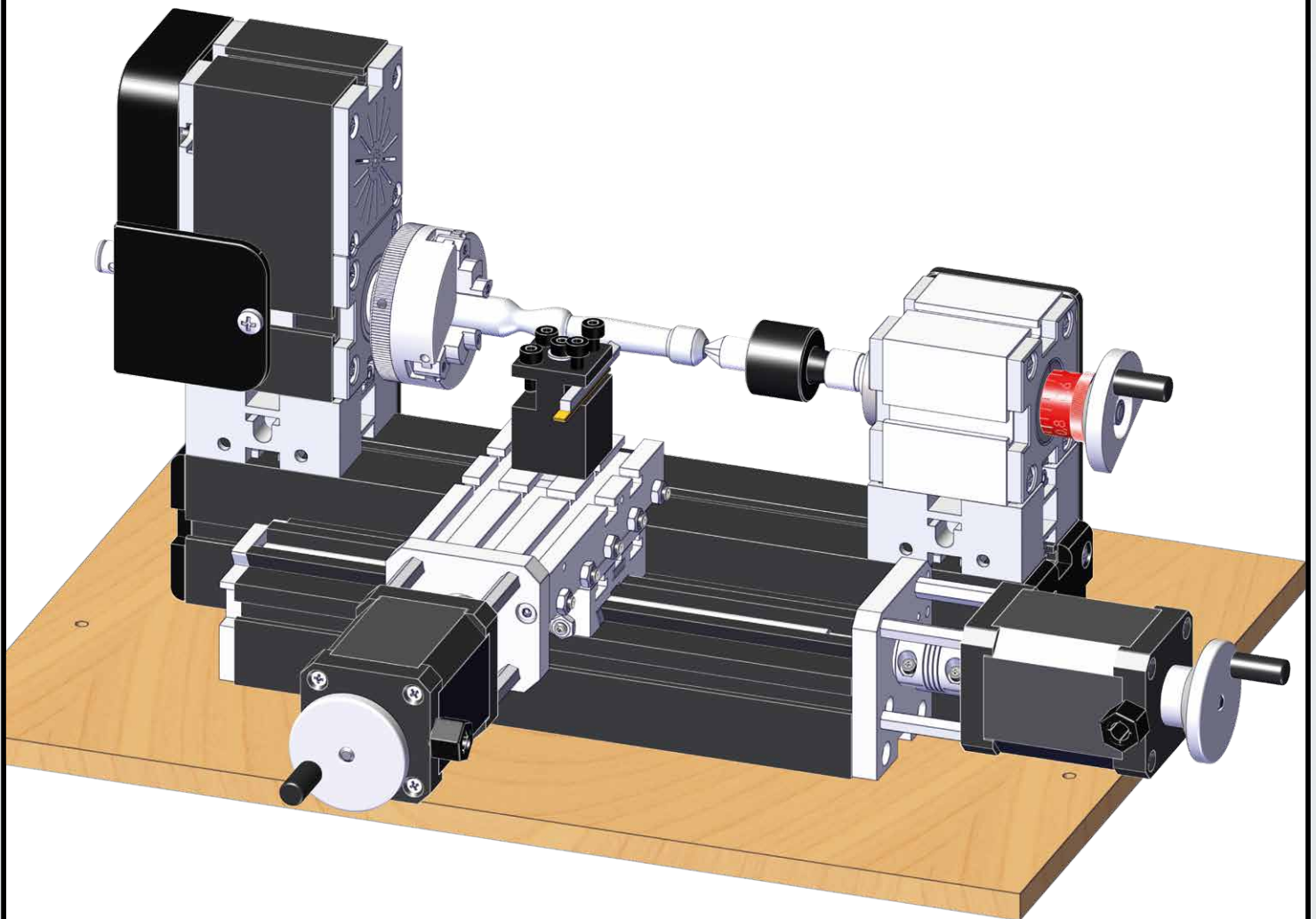
### Технические данные

# UNIMAT CNC

Drehmaschine  
Metal lathe  
Tour

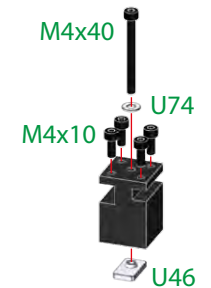
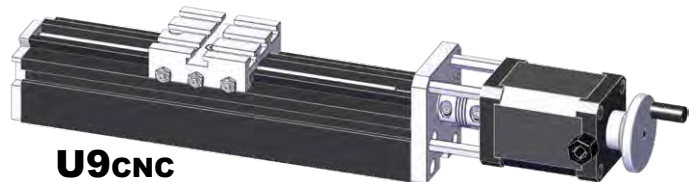
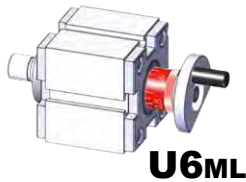
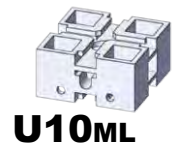
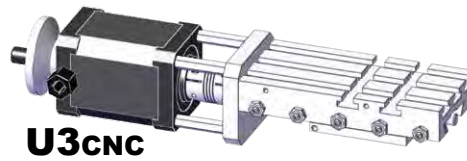
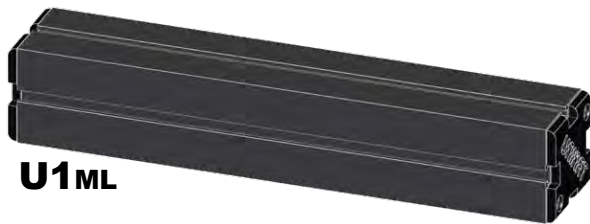
Torno de metal  
车床  
Токарный станок

**UNI-DREH**



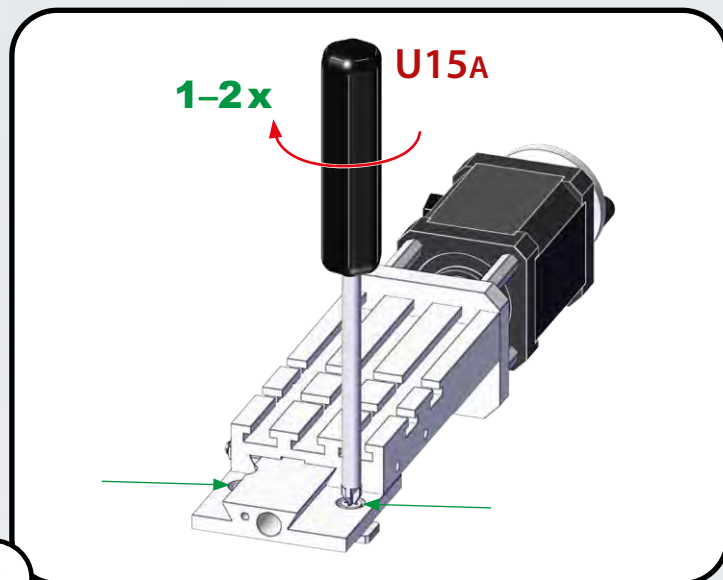
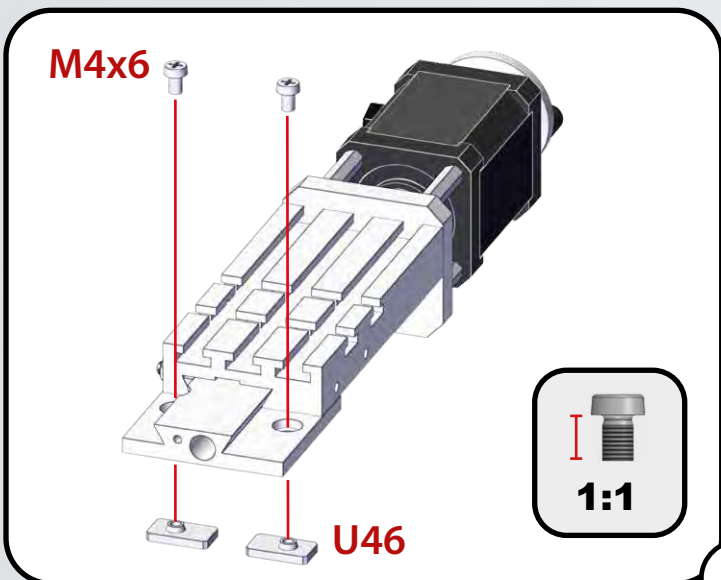
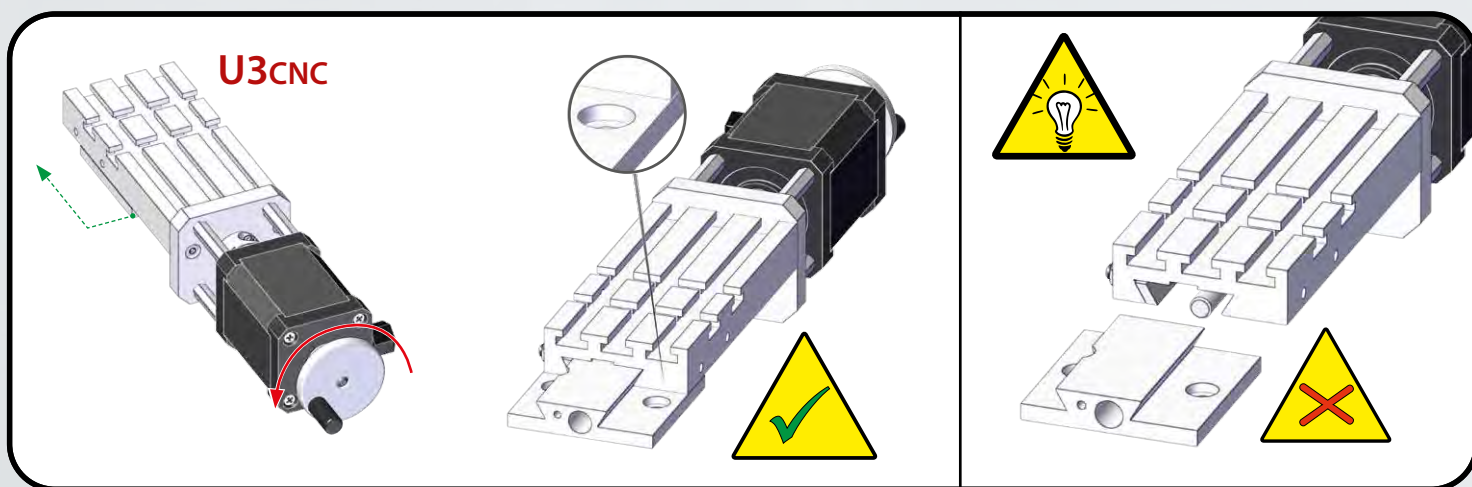
		DE	EN	FR	ES	中国 (ZH)	RU	
U1ML	1	Maschinenbett, lang	Machine bed, long	Banc, grand	Bancada grande	长机座	Станина длинная	A1A 020 000 SW
U3CNC	1	CNC Querschlitzen	CNC Cross slide	CNC Chariot, petit	CNC Carro, pequeño	CNC 全金属小滑块	CNC Салазки поперечные	164 060 CNC
U4MLEDU	1	Antriebseinheit ML	Drive unit ML	EDU-Moteur	EDU-Motor	EDU-马达	EDU-Двигатель	164 420
U6ML	1	Reitstock	Tailstock	Poupée mobile	Contrapunta	全金属尾座	Бабка задняя	A1M 040 000
U9CNC	1	CNC Längsschlitten	CNC Longitudinal slide	CNC Chariot, grand	CNC Carro, grande	全金属长滑块	Салазки продольные	164 480 CNC
U10ML	2	Zwischenstück	Intermediate piece	Pièce intermédiaire	Pieza intermedia	全金属中介块	Проставка	A1M 000 100
U12ML	1	Spannzange 5 mm	Collet 5 mm	Pince 5 mm	Pinza 5 mm	金属夹头 5 mm	Цанги 5 mm	162 460 50
U13ML	1	Dreibackenfutter	Three-jaw chuck	Mandrin à trois mors	Mandril de tres mordazas	3爪夹头	Патрон 3-кулачковый	162 430 MH
U15A	1	Schraubendreher #2	Screwdriver #2	Tourne-vis #2	Destornillador #2	螺丝刀#2	Отвертка Philips № 2	ZWZ 980 030
U15B	1	Inbusschraubendreher	Screwdriver allen key 2,5mm	Tourne-vis hexagonale 2,5mm	Destornillador allen 2,5mm	内六角扳手2.5 mm	Отвертка 6-гранная 2,5 mm	ZWZ 980 075
U48ML	1	Spannzangenhalter	Collet holder	Porte-pinces	Porta-pinza	固定铜帽	Гайка зажимная для цанг	A1A 000 073
U51	1	Inbusschlüssel 2 mm	Allen key 2 mm	Clé hexagonale 2 mm	Llave allen 2 mm	内六角扳手2 mm	Ключ 6-гранный 2 mm	ZWZ 110 200
U52	2	Stift	Rod	Cheville	Perno	锁杆	Вороток	ZST 110 345
U54RO	1	Präzisions Rollkörner	Precision live center	Contre-pointe tournante précision	Contra punto giratorio precisión	精密活顶尖	Центр вращающийся	164 450 MH
U66	6	Verbindungselement	Connection piece	Pièce de connexion	Elemento de conexión	连接件	Сухарь соединительный	A1A 00 ZINSK
U67	2	Fixierplatte groß	Stabilizing plates	Plaques de fixation	Platos de fijación	固定片	Пластина стабилизирующая	A1Z 470 010
U71	1	Gabelschlüssel 7 / 14 mm	Fork wrench 7 / 14 mm	Clé de fourche 7 / 14 mm	llave de furca 7 / 14 mm	扳手 7 / 14 mm	Ключ гаечный 7 / 14 mm	ZWZ 400 700
U75	1	Inbusschlüssel 3,0 mm	Allen key 3,0 mm	Clé hexagonale 3,0 mm	Llave allen 3,0 mm	内六角扳手3 mm	Ключ 6-гранный 3,0 mm	ZWZ 110 300
M4	1	Mehrfachstahlhalter	2 position tool post	Porte outil 2 position	Fijación para herramienta torno	两段刀座	Резцедержатель двухместный	A1M 000 091
	1	Grundplatte CNC	Mounting plate CNC	Plaque de montage CNC	Plancha basico CNC	固定底板 CNC	Монтажная пластина CNC	164 402

nicht im Maßstab | not in scale | pas à l'échelle | no es a escala | 不按比例 | не в масштабе

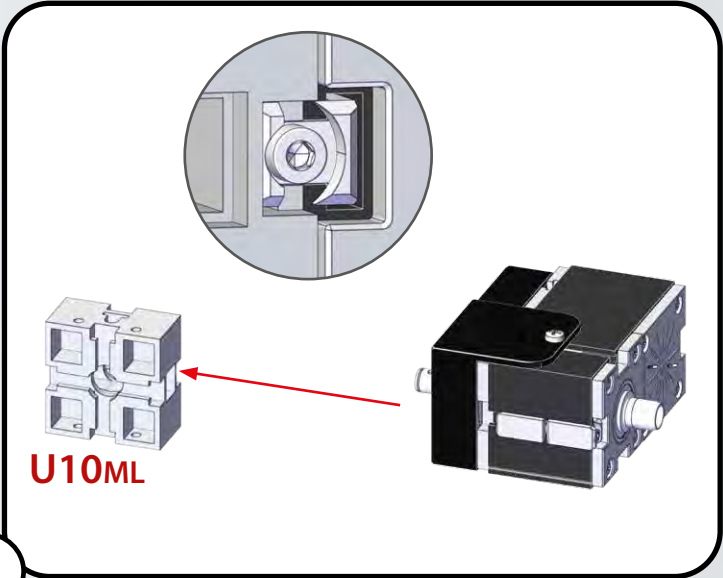
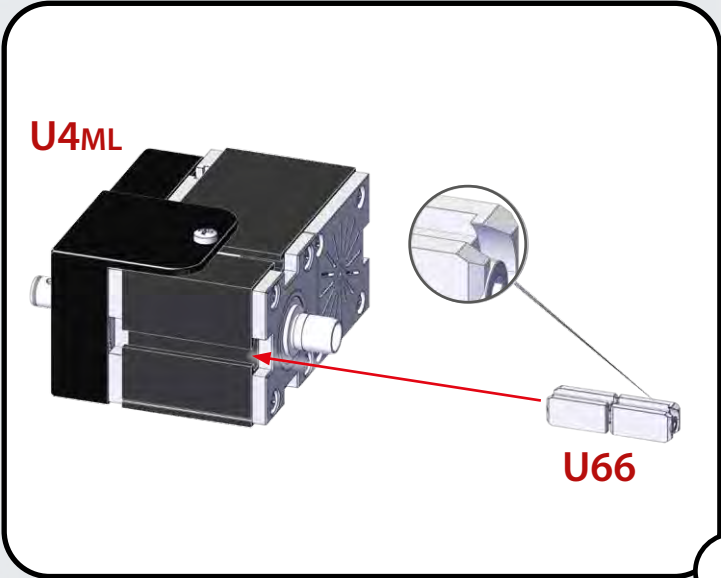
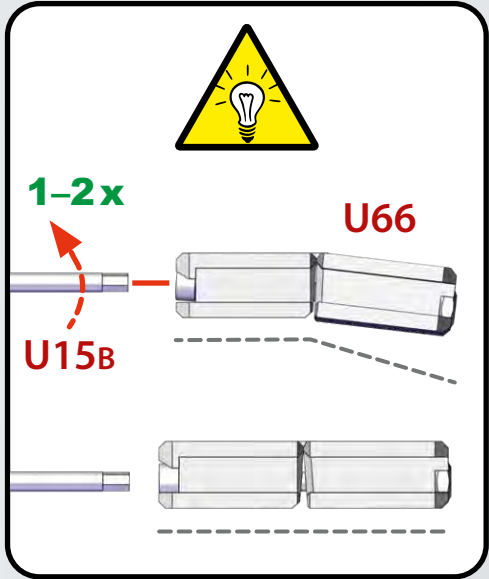
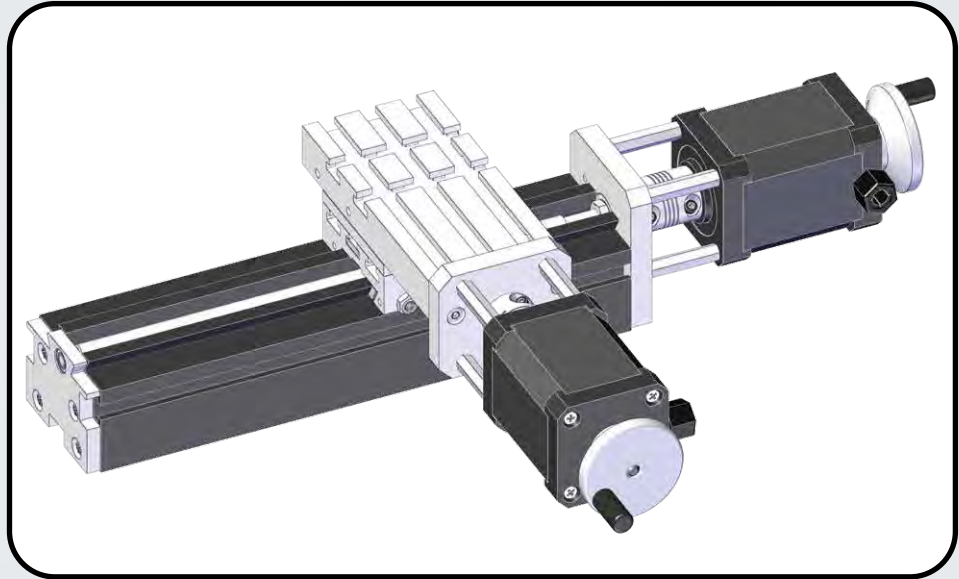
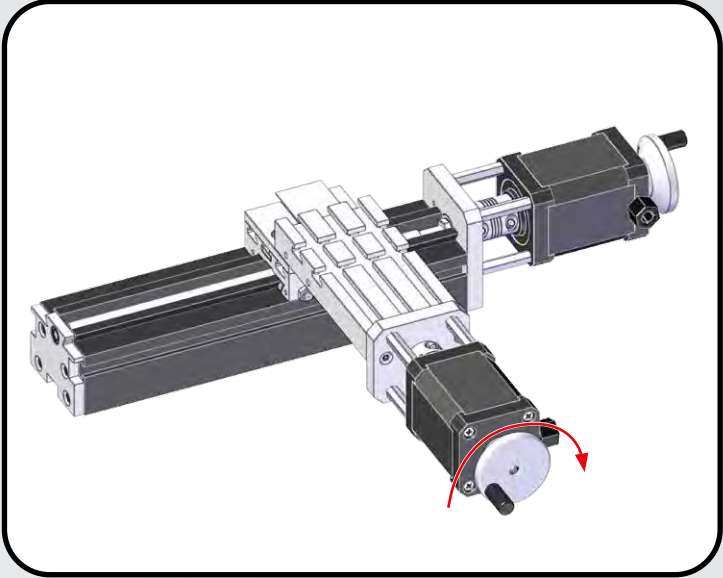
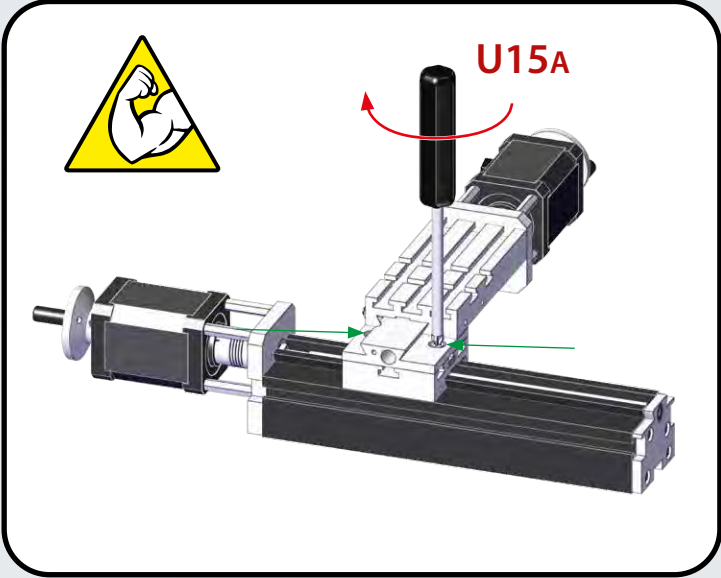
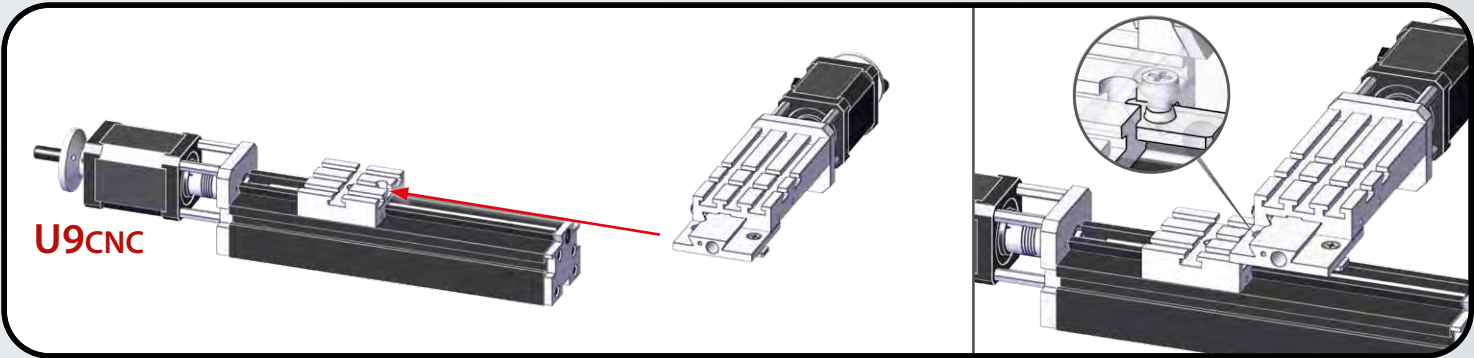


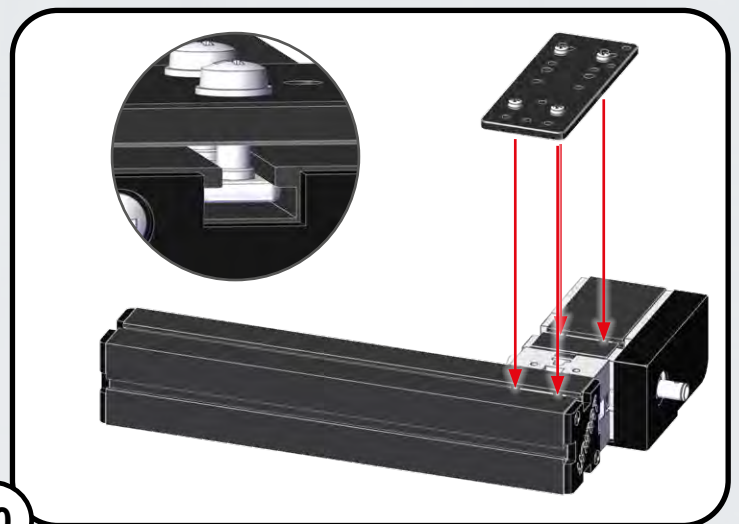
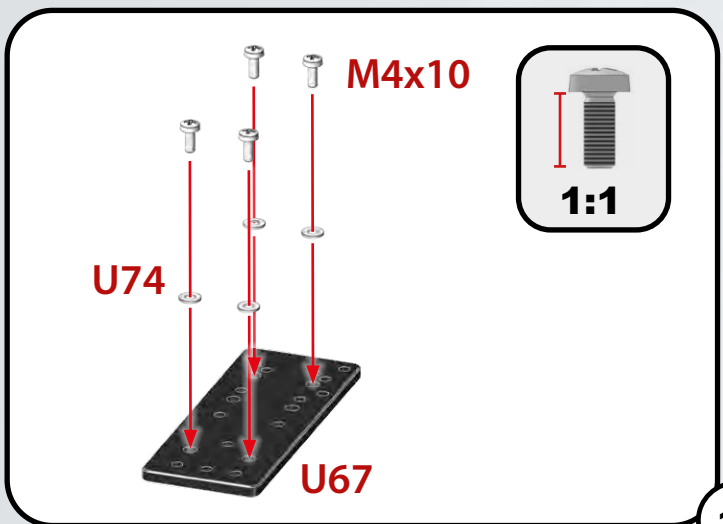
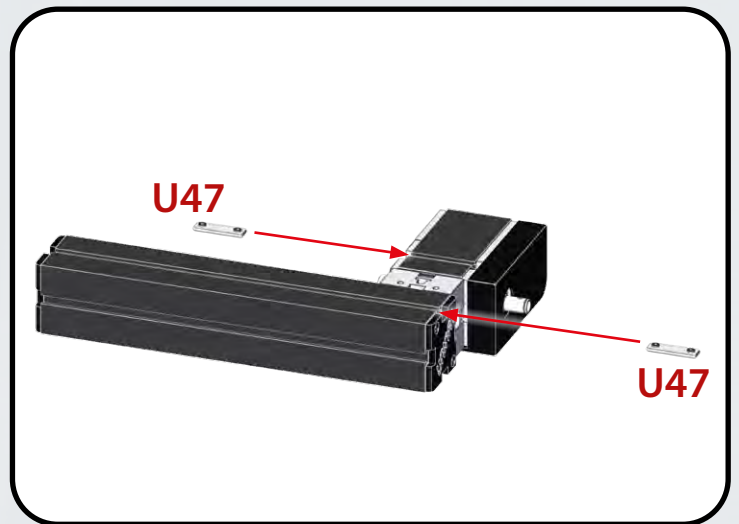
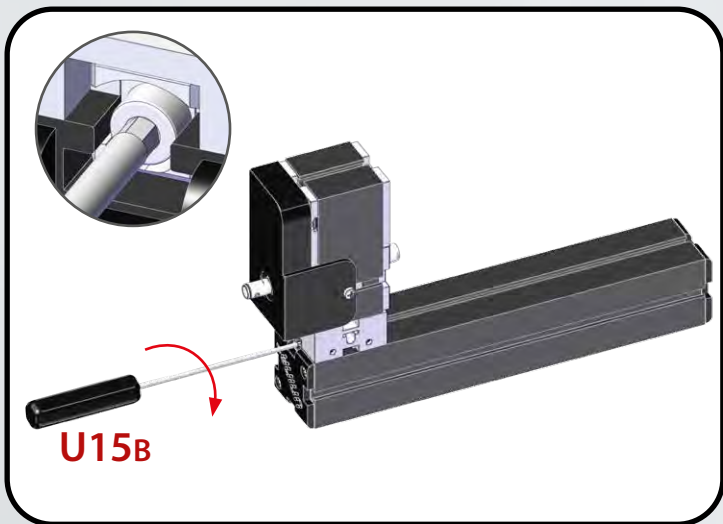
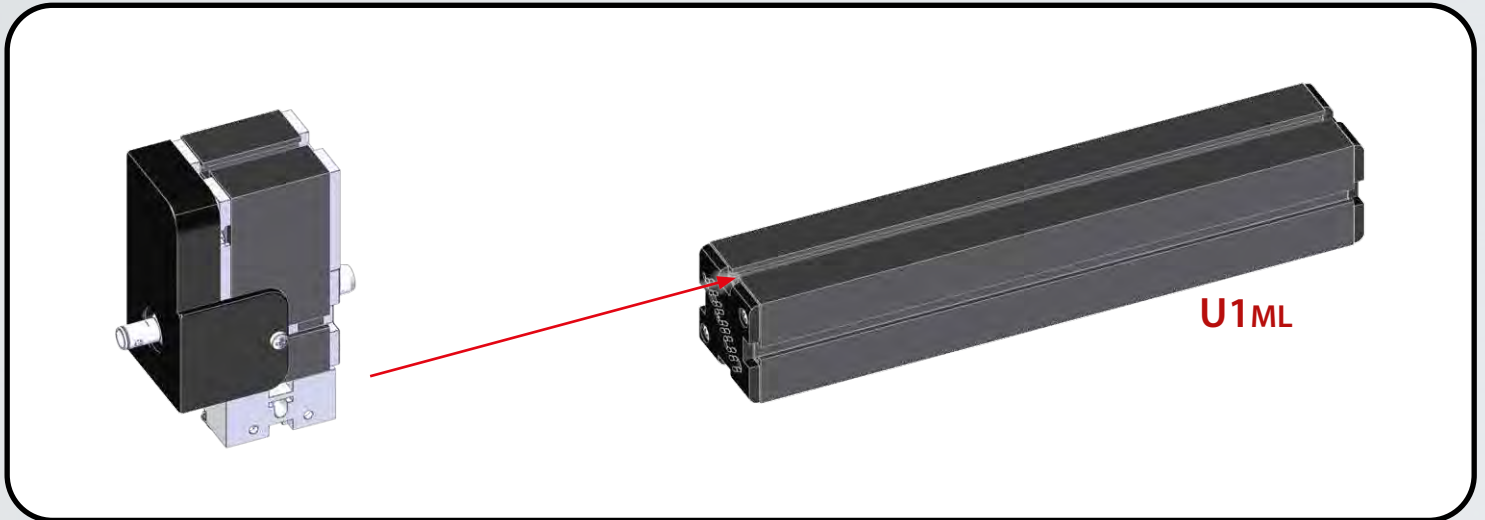
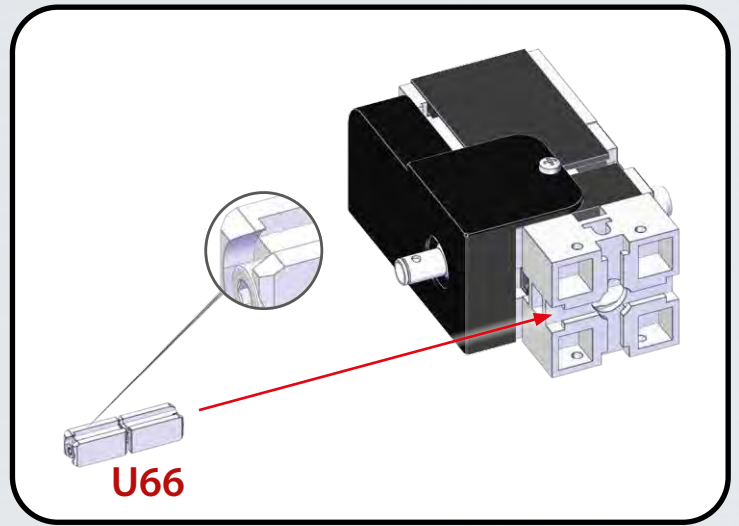
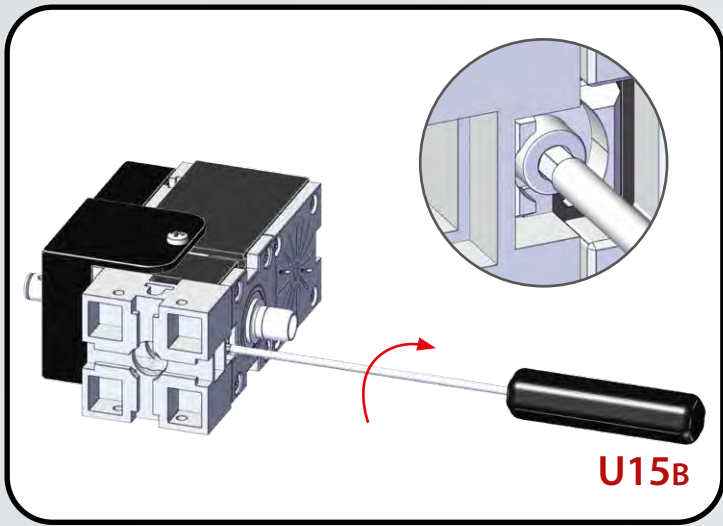
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U31	8	Schraube M4x10	Screw M4x10	Vis M4x10	Tornillo M4x10	螺钉M4x10	Винт M4x10	ZSR M40 410
U37	4	Schraube M4x8	Screw M4x8	Vis M4x8	Tornillo M4x8	螺钉M4x8	Винт M4x8	ZSR M40 408
U38	2	Schraube M4x6	Screw M4x6	Vis M4x6	Tornillo M4x6	螺钉M4x6	Винт M4x6	ZSR M40 406
U40	2	Drehstahlunterlage 0,1 mm	Small part 0.1 mm	Plaquette 0,1 mm	Plaquita 0,1 mm	压条0.1 mm	Прокладка 0,1 мм	A1A 000 170
U41	2	Drehstahlunterlage 0,4 mm	Small part 0.4 mm	Plaquette 0,4 mm	Plaquita 0,4 mm	压条0.4 mm	Прокладка 0,4 мм	A1A 000 190
U42	2	Drehstahlunterlage 1,0 mm	Small part 1.0 mm	Plaquette 1,0 mm	Plaquita 1,0 mm	压条1.0 mm	Прокладка 1,0 мм	A1A 000 180
U46	7	Nutstein	Slot nut	Boulon en «T»	Pernos "T"	单孔螺母	Гайка пазовая	A1A 060 040
U47	3	Klemmplatte	Camping plate	Élément en «T»	Elemento "T"	双孔螺母	Гайка пазовая двойная	A1A 010 020
U53	1	Außendrehstahl	Tool for outs. turning	Outil à tourner	Herramienta para tor. exter.	外车刀	Резец токарный	A1A 000 080
U54	1	Körnerspitze	Center	Pointe	Punto	中心锥	Центр	A1A 000 130
U74	8	Beilagscheibe	Plain washer	Rondelle	Arandela	垫片	Шайба	ZSB 250 430
	4	Gummipuffer	Elastic buffer	Butoir élastique	Amortiguador elástico	弹性缓冲	Эластичный буфер	166 EP
ohne Abbildung   without picture   sans figure   sin ilustración   无图   без рисунка								
	1	Netzteil 14,4V	14.4V adaptor	14,4V Transformateur	14,4V Transformador	变压器 14.4 V	Трансформатор 14,4 В	161 31x

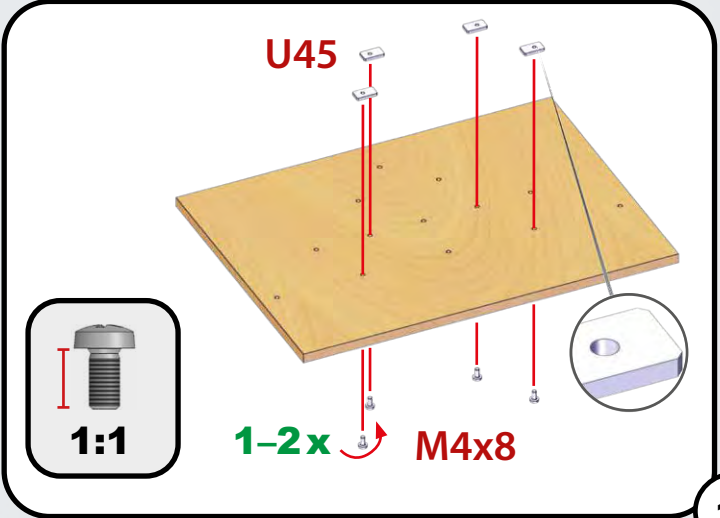
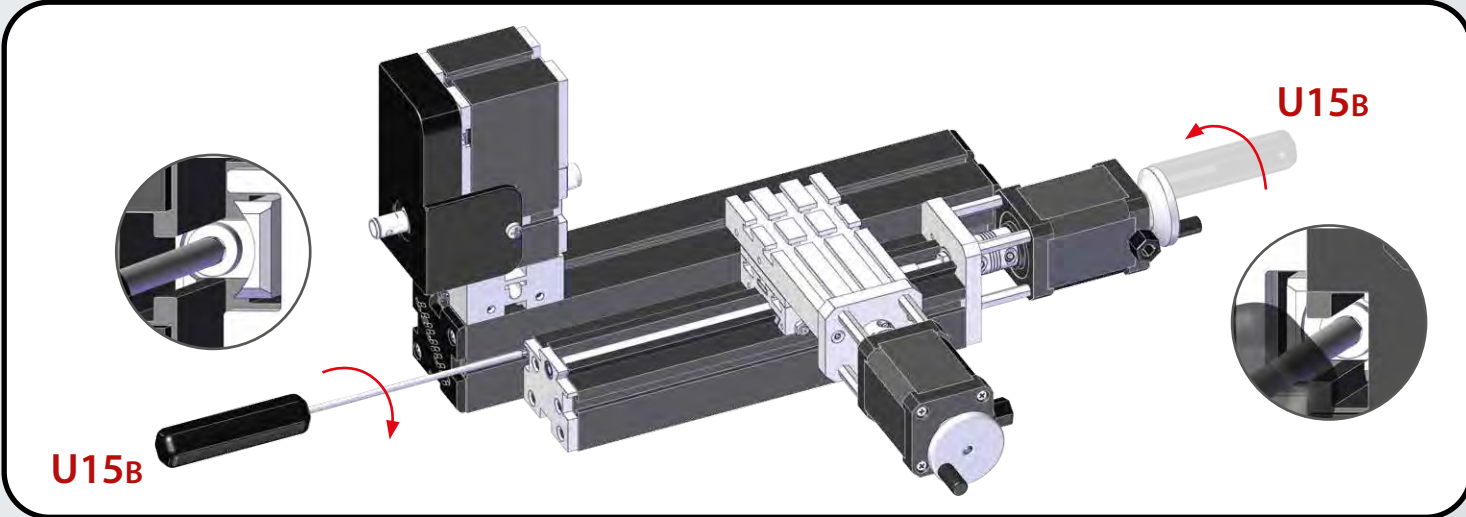
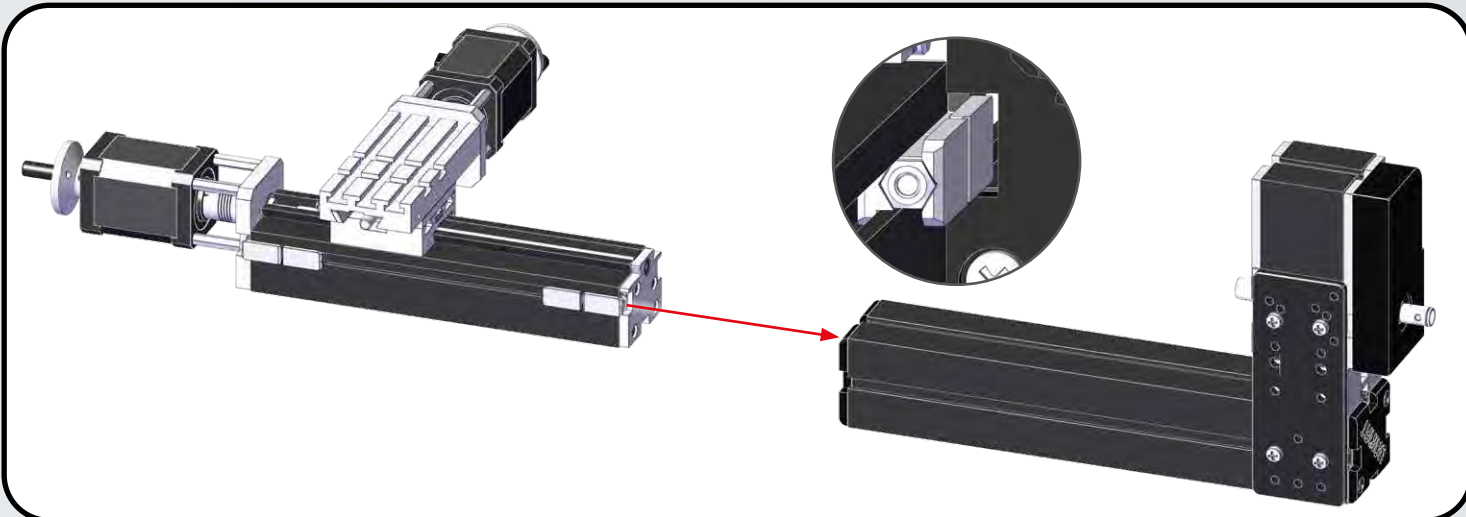
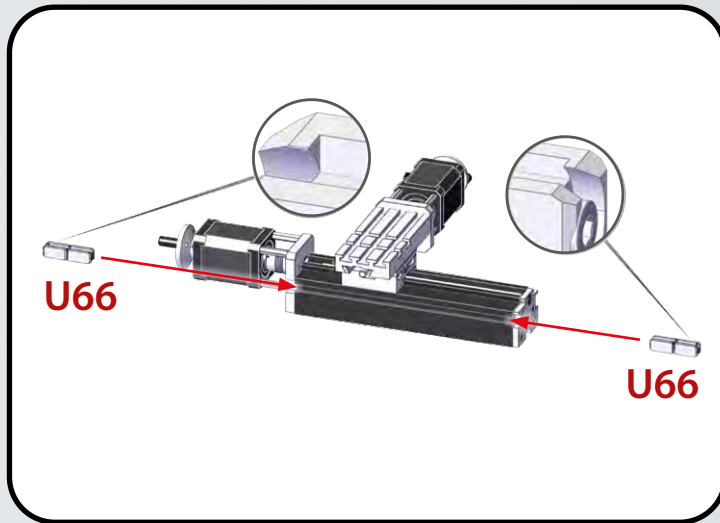
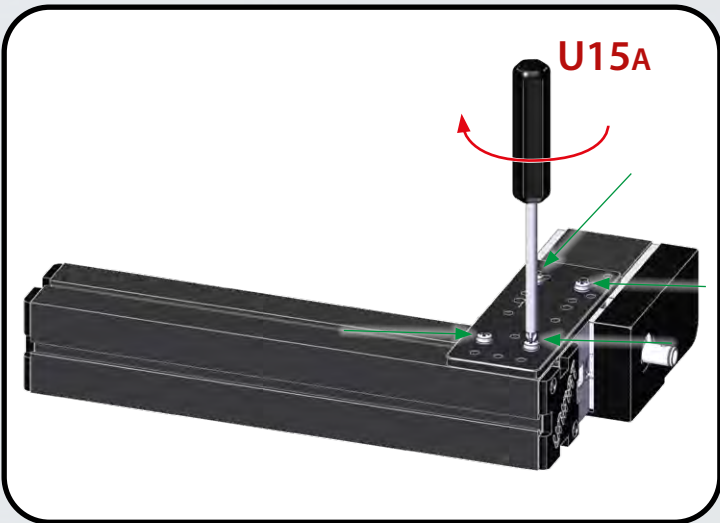
nicht im Maßstab | not in scale | pas à l'échelle | no es a escala | 不按比例 | не в масштабе

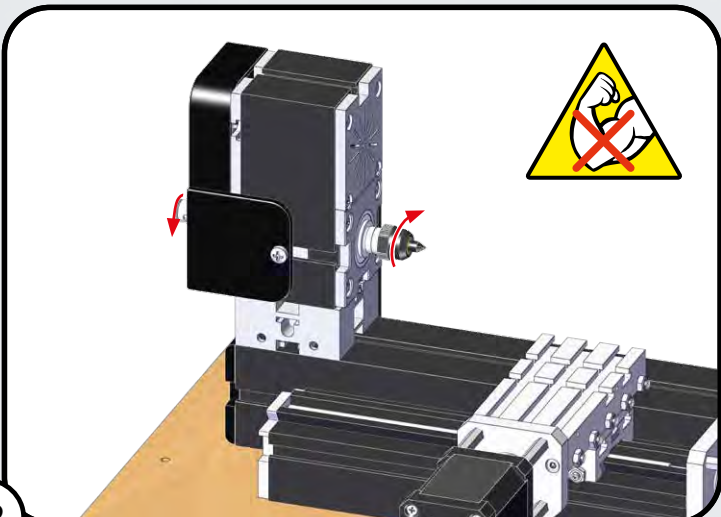
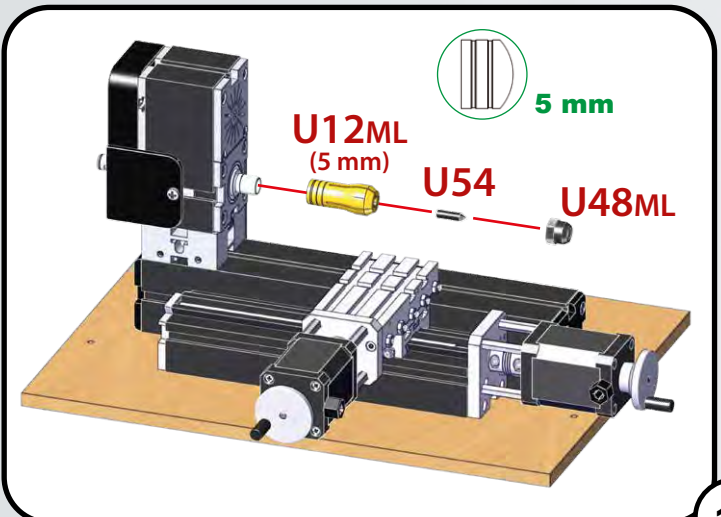
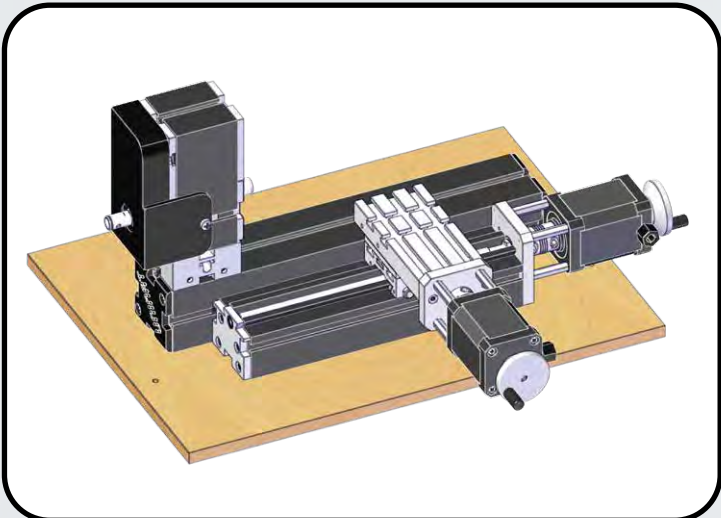
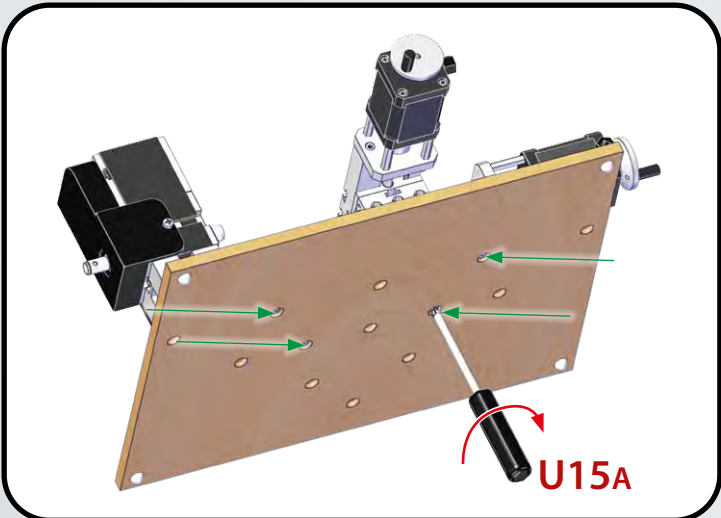
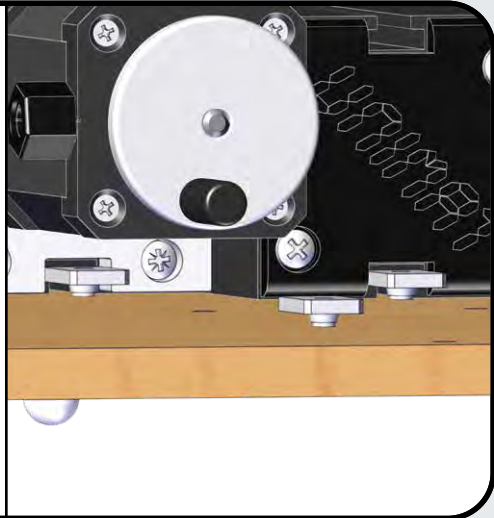
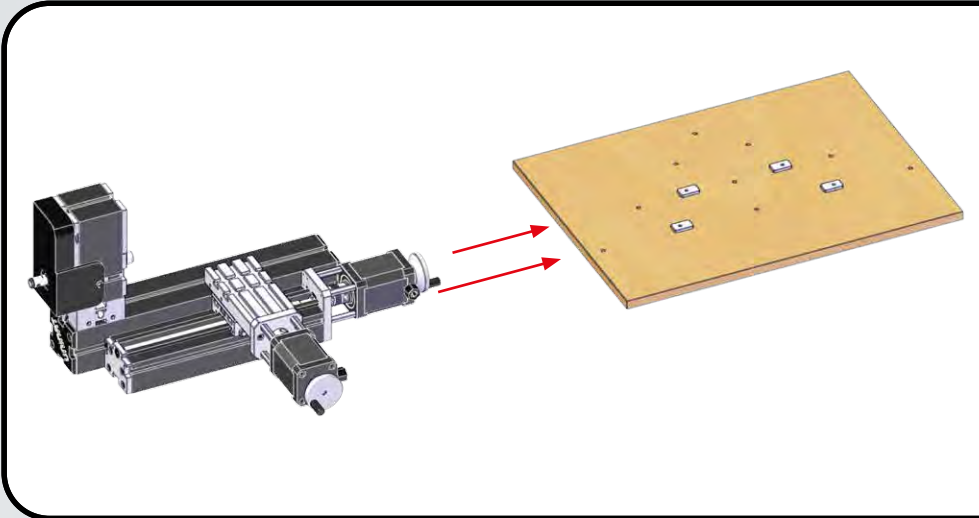
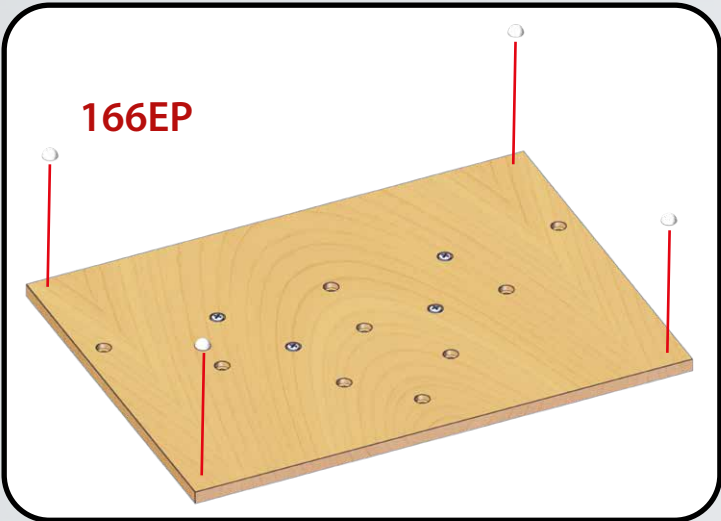


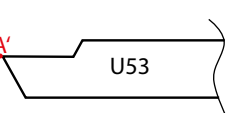
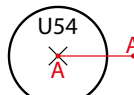
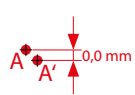
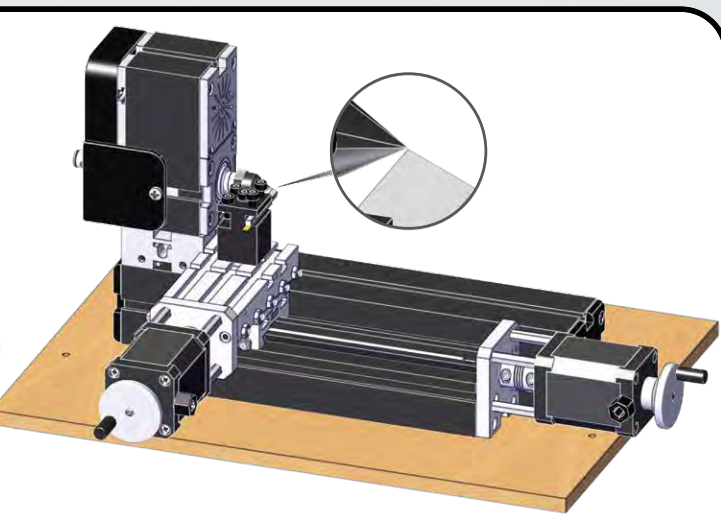
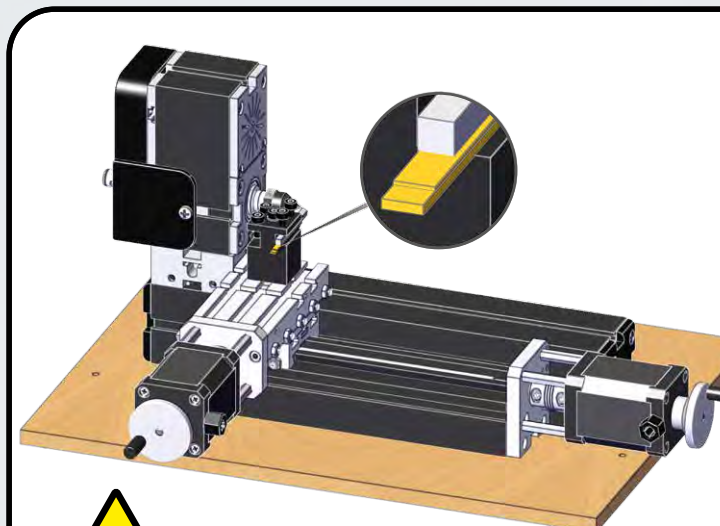
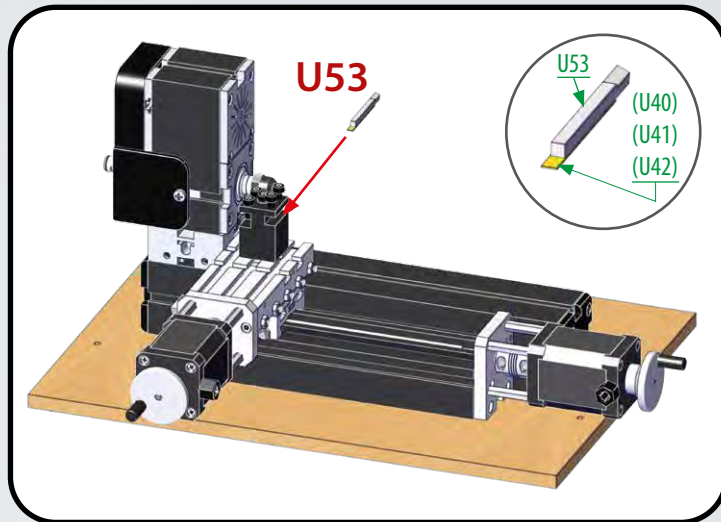
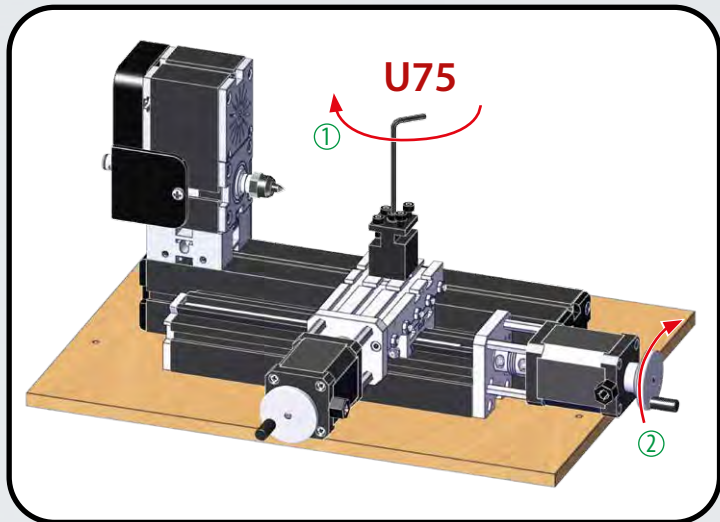
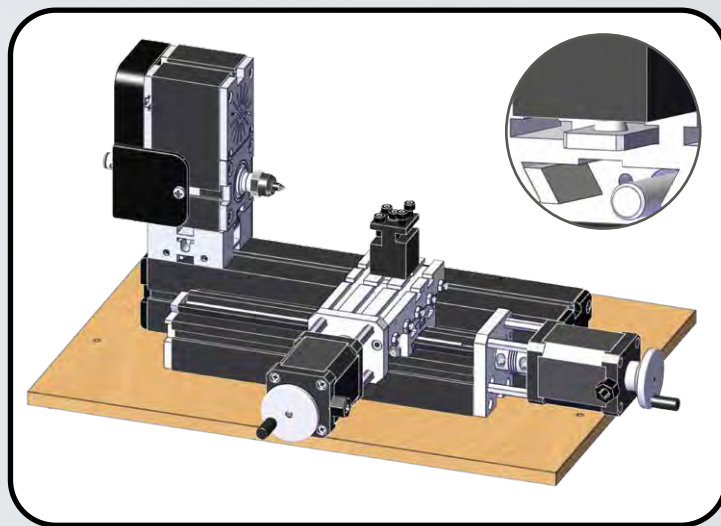
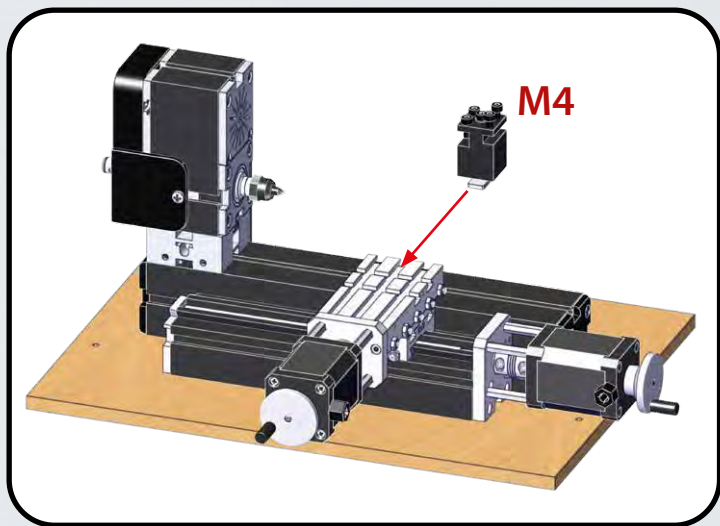




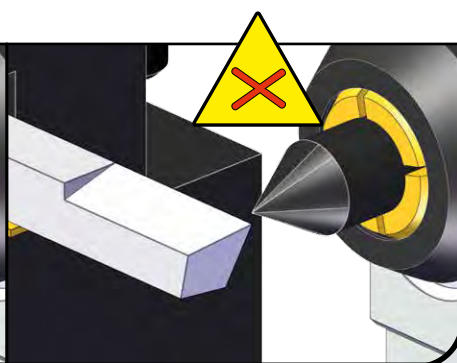
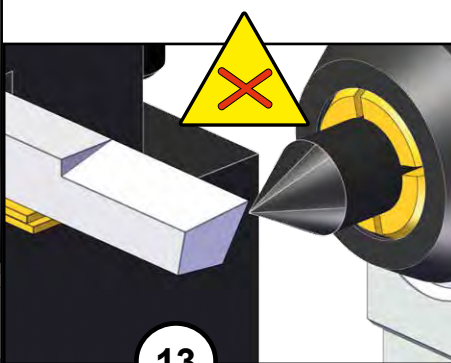
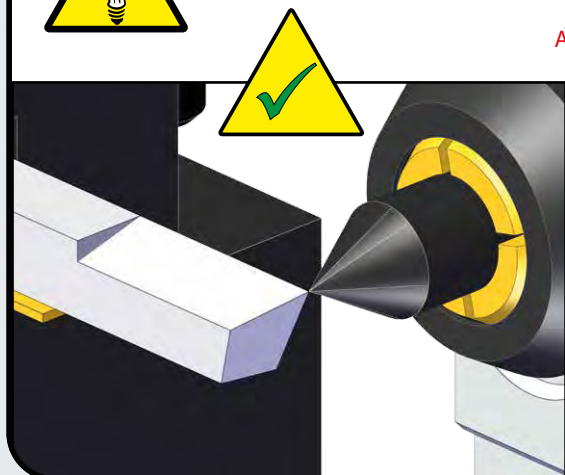


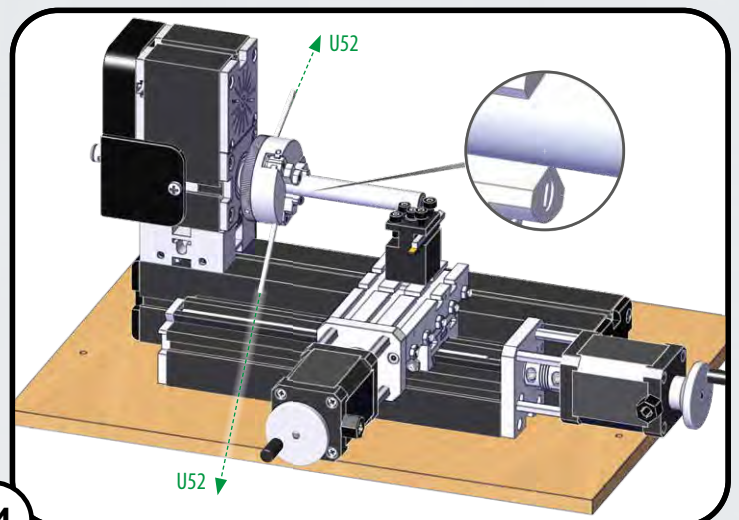
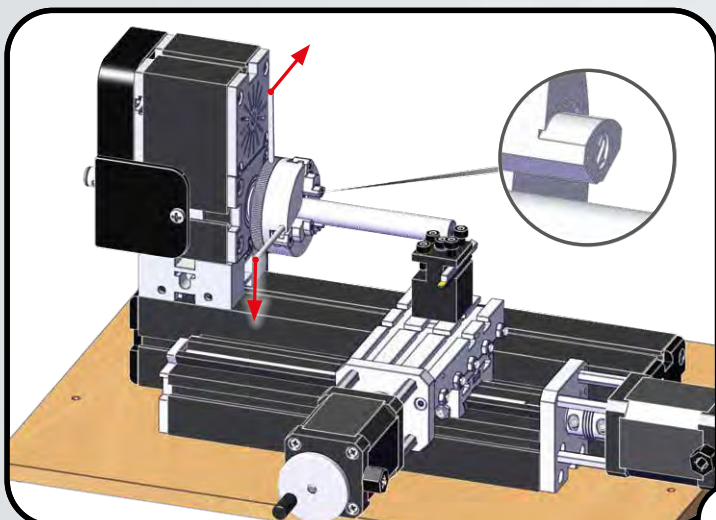
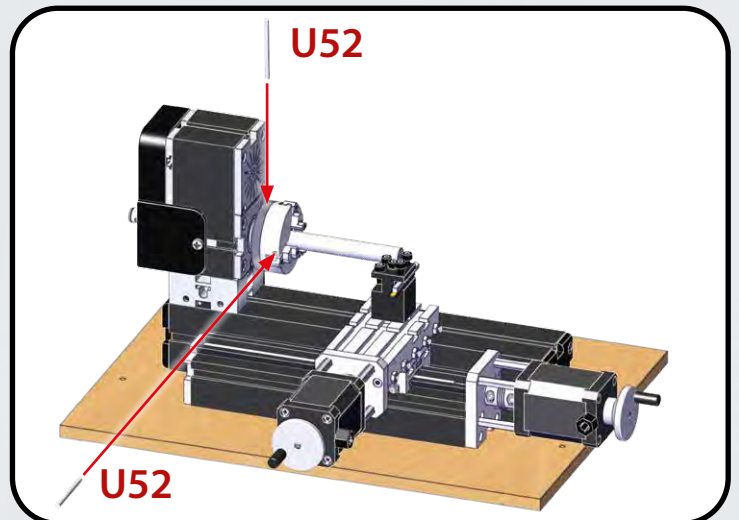
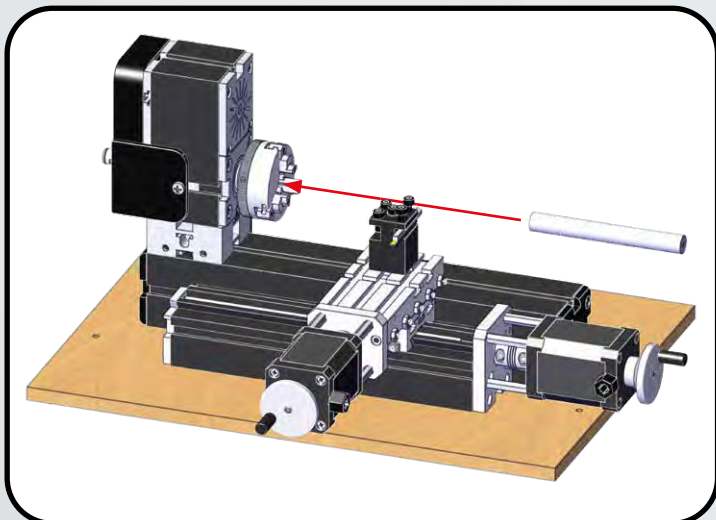
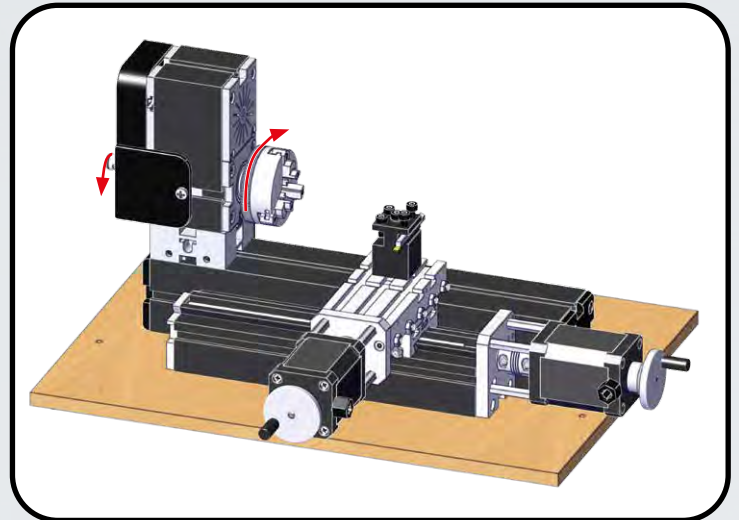
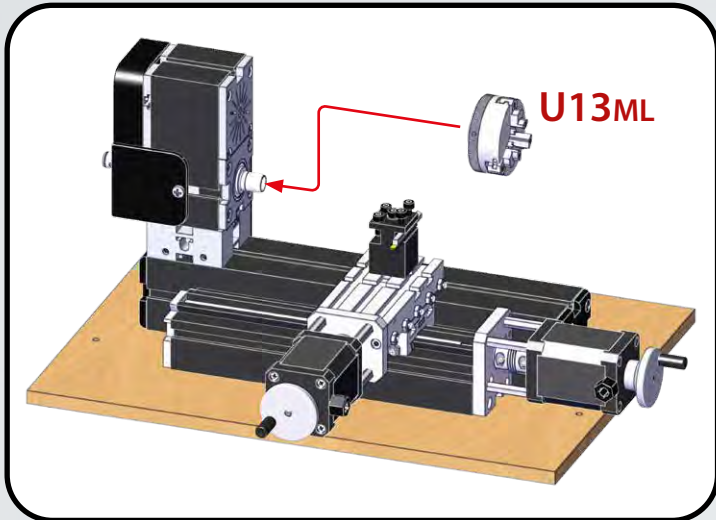
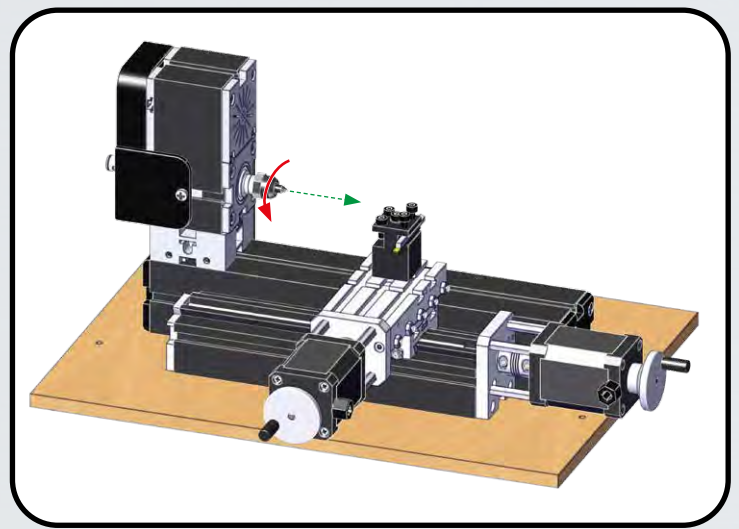
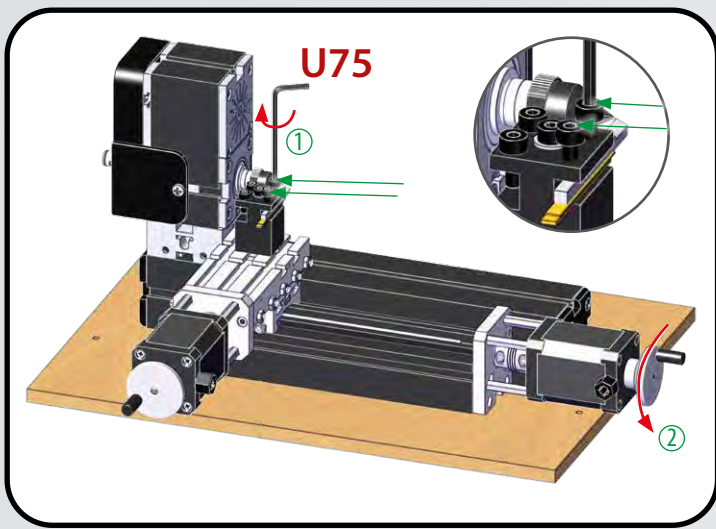




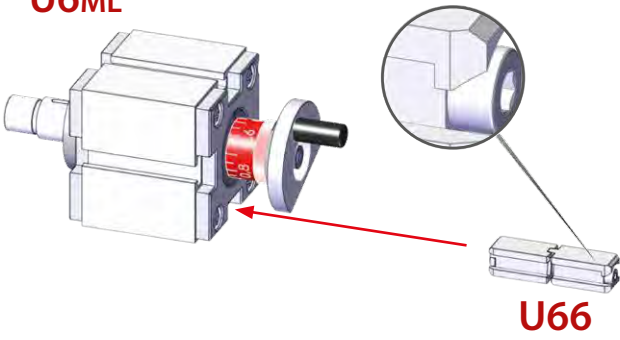


- 0,1 mm ——— U40
- 0,4 mm ——— U41
- 1,0 mm ——— U42

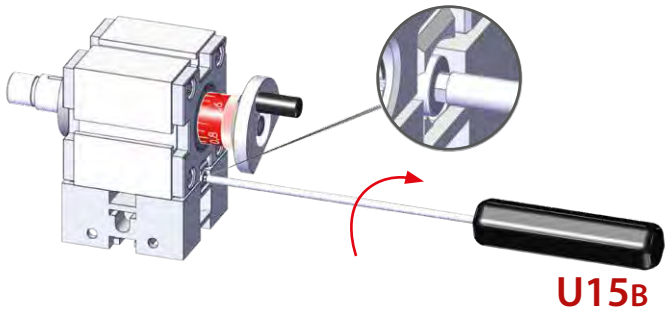
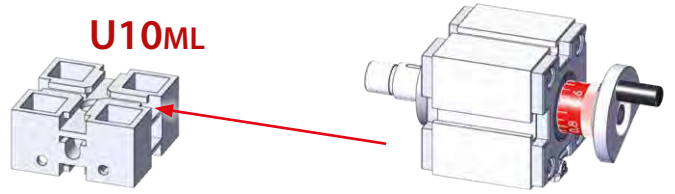




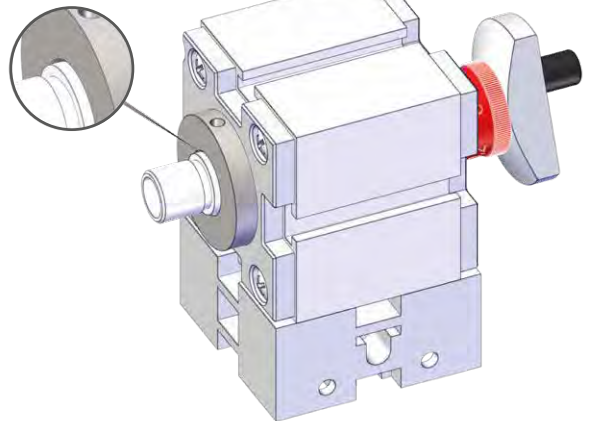
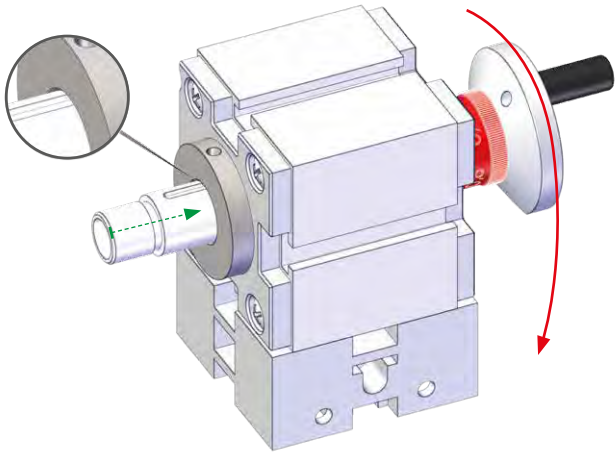
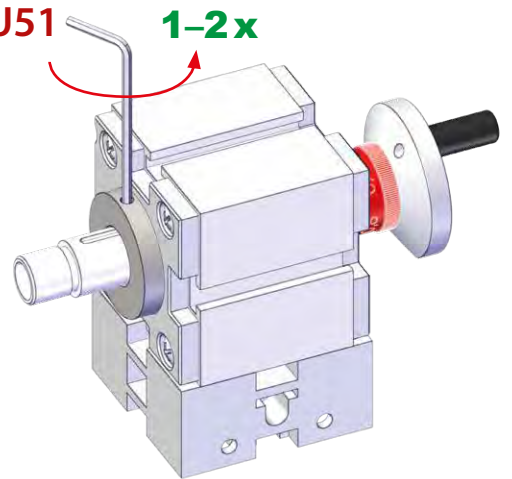
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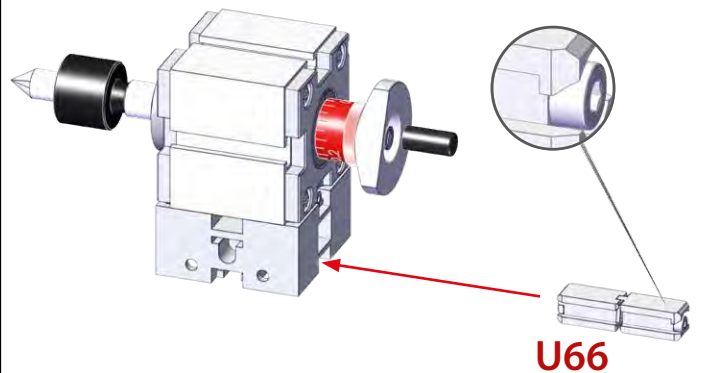
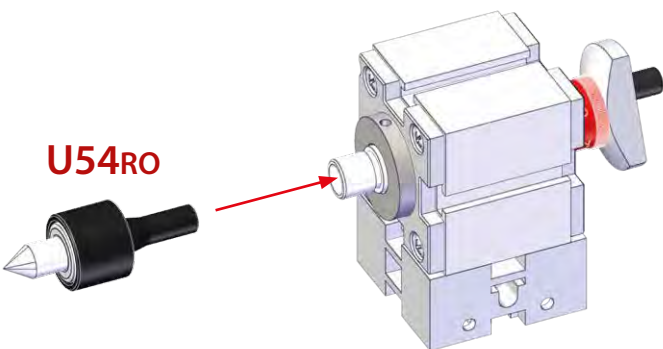
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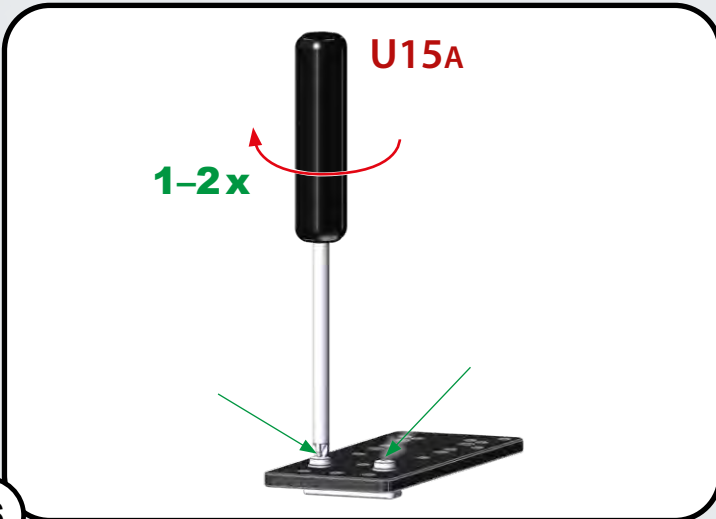
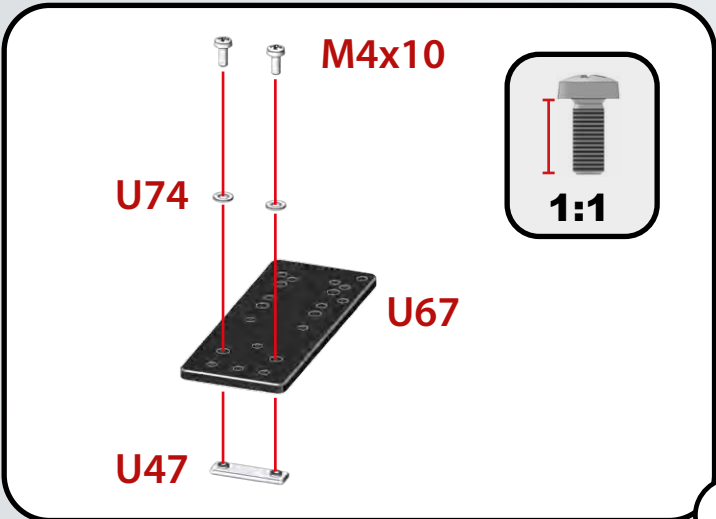
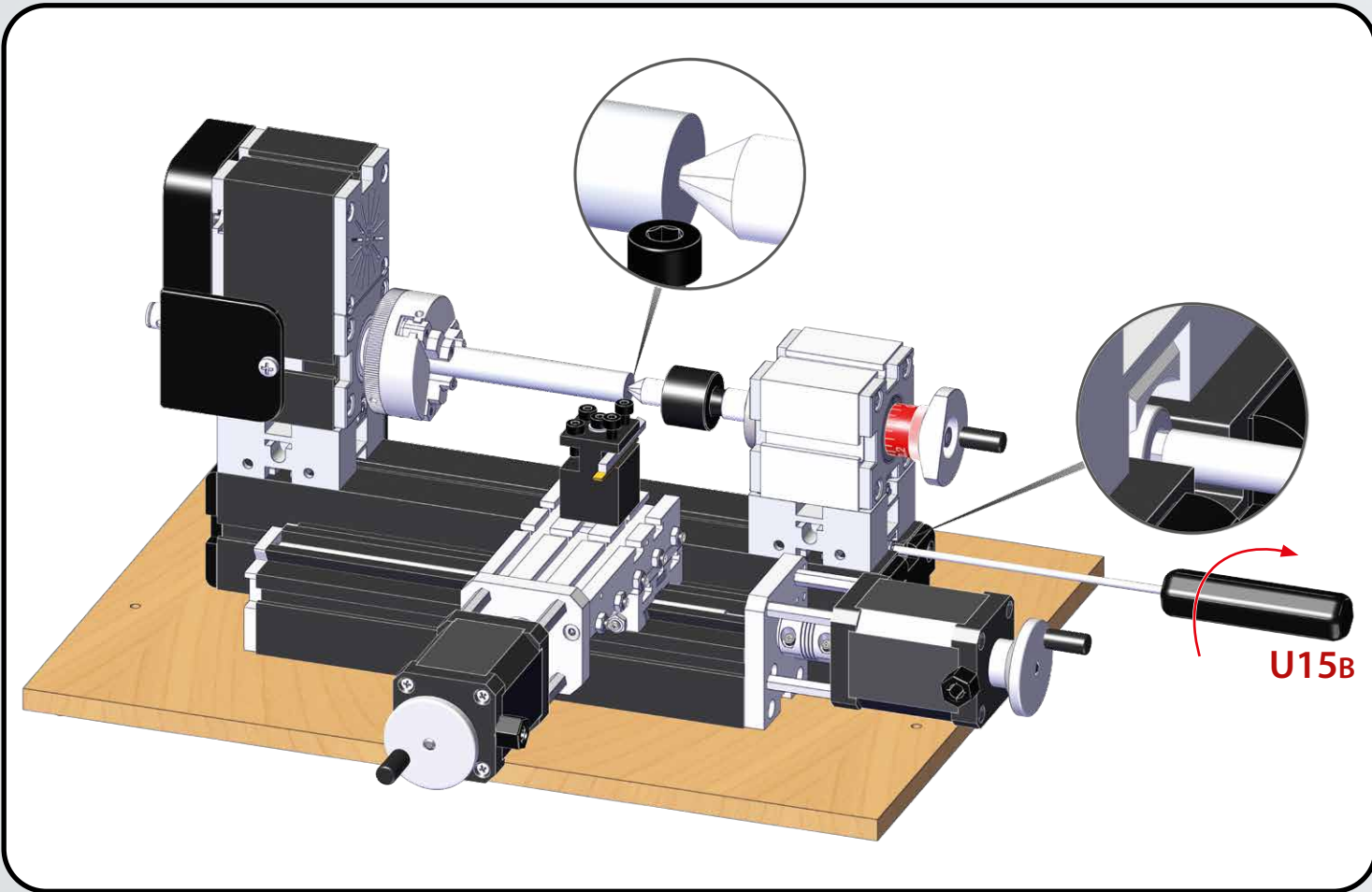
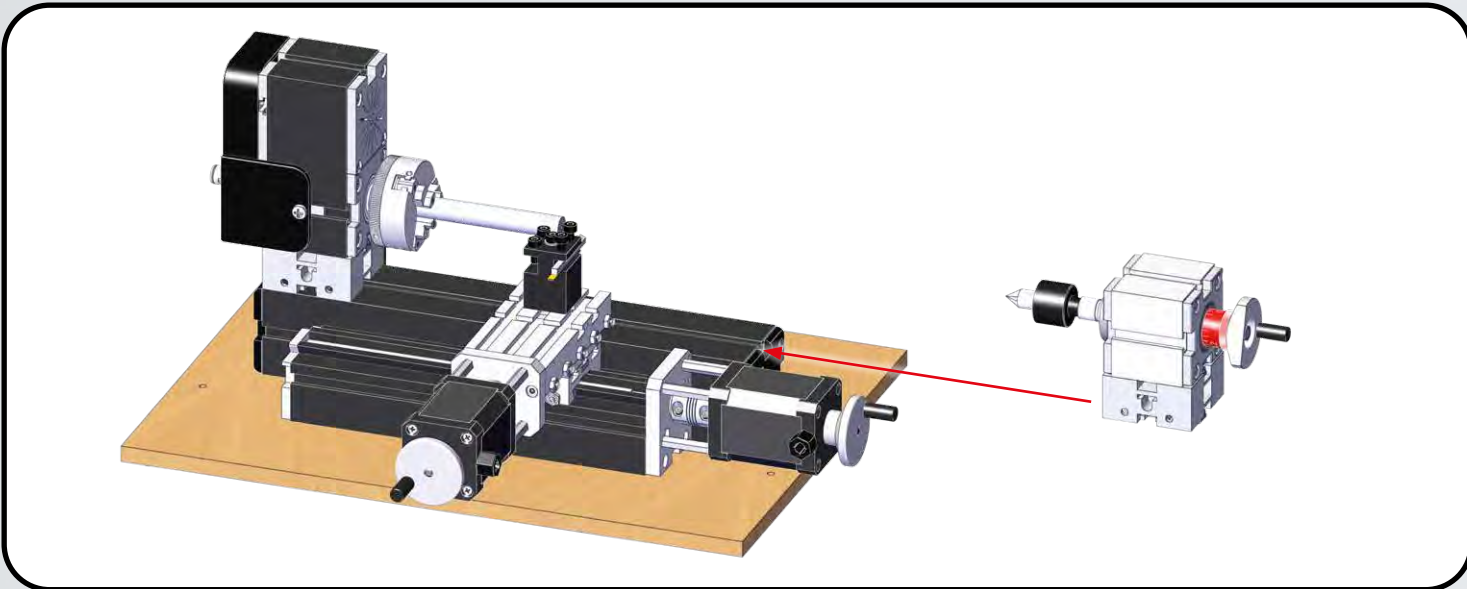


U51 1-2x

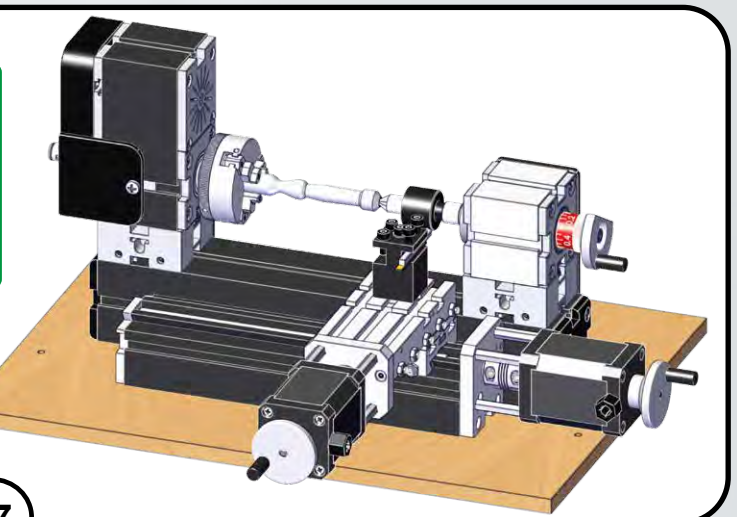
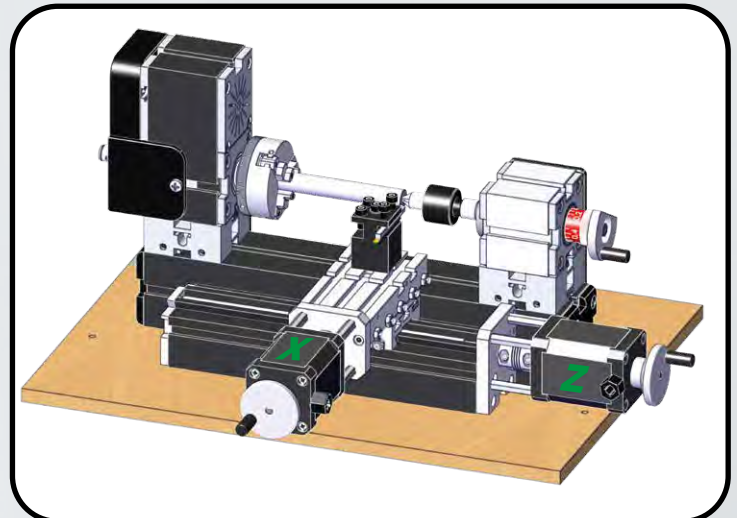
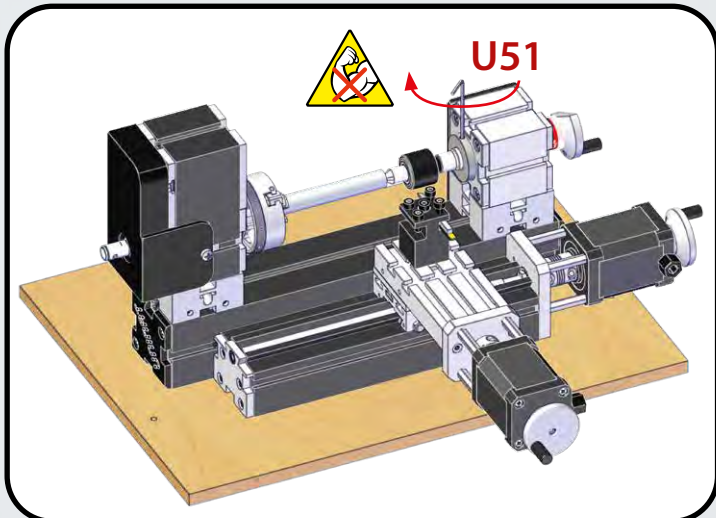
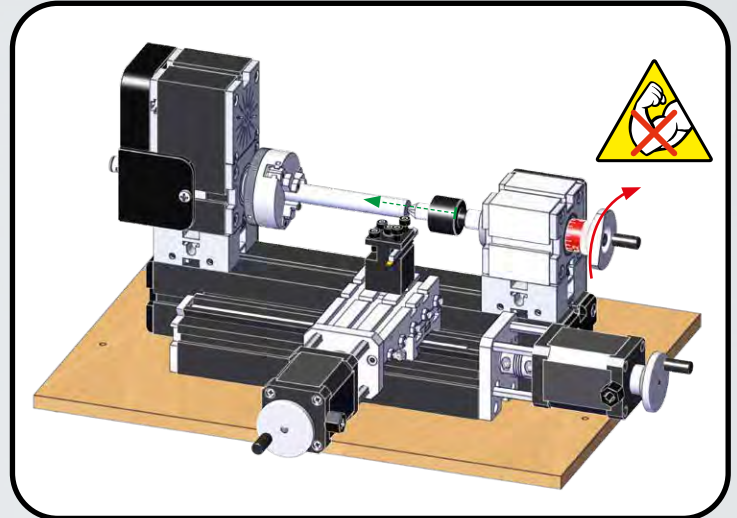
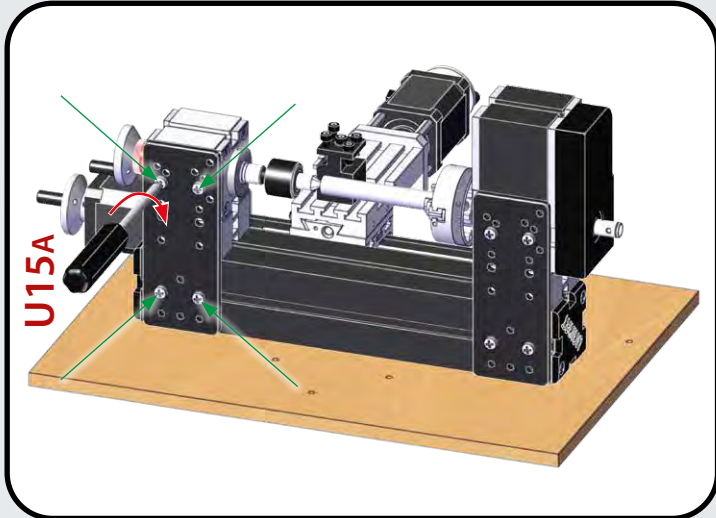
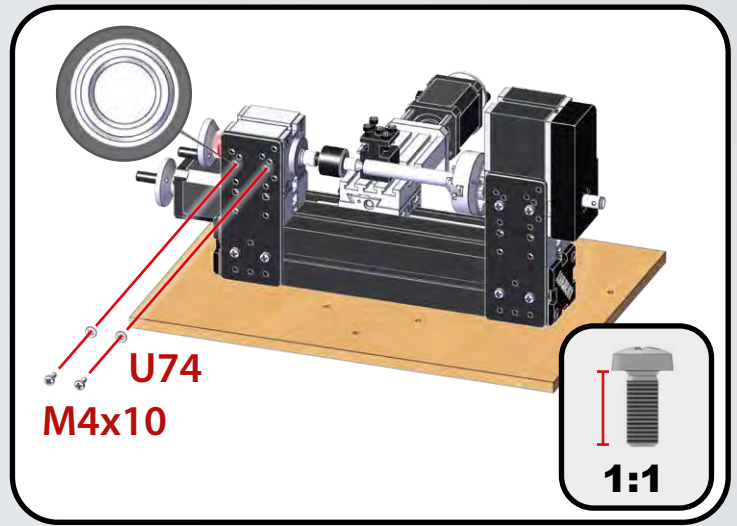
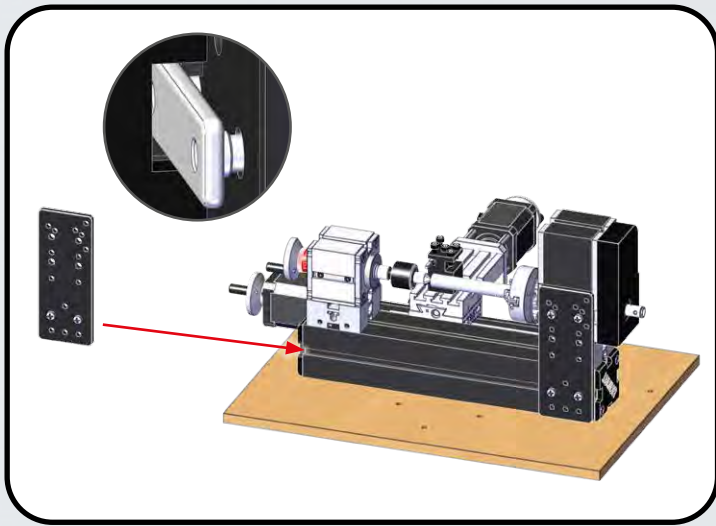


U54RO









UNI-DREH Projekt - 1

UNI-DREH project - 1

UNI-DREH projet - 1

UNI-DREH proyecto - 1

UNI-DREH 项目 - 1

UNI-DREH проект - 1

**Inhalt • contents • contenu • contenido • 内容 • содержание:**

**1) Rohmaterial • Matière première • materia prima • 原料 • Сырье:**

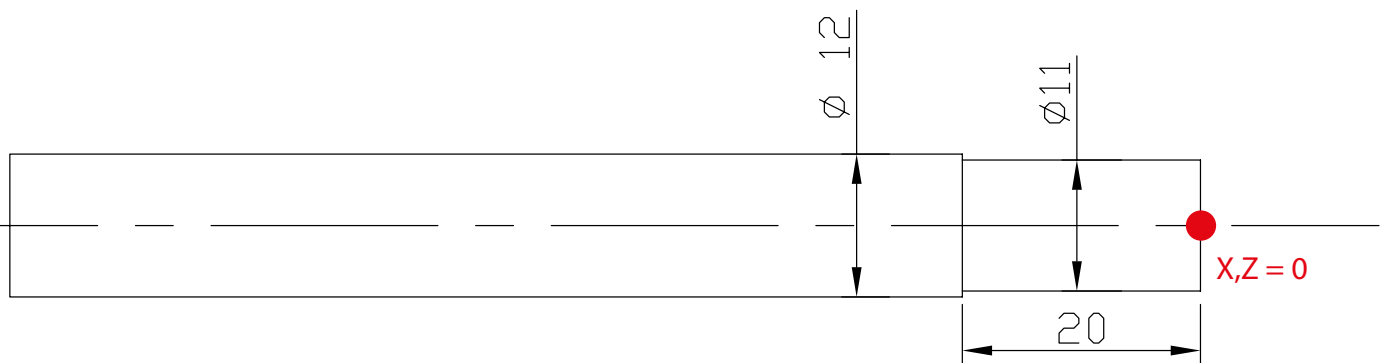
Aluminium • aluminum • aluminium • aluminio • 铝 • алюминий ---- Ø 12 x 100 mm

**2) Technische Zeichnung • technical drawing • dessin technique • dibujo técnico •**

技术图纸 • Технический чертеж

**3) Lösungsvorschlag • proposed solution • solution proposée • solución propuesta •**

建议的解决方案 • Предложенное решение



**Projekt • project • projet • proyecto • 项目 • Проект**

Außendrehstahl • tool for outside turning • outil à tourner extérieur • herramienta para torneado exterior • 外车刀 • Резец токарный (U53 / A1A 000 080)

$F_{max}$ : 80 mm/min

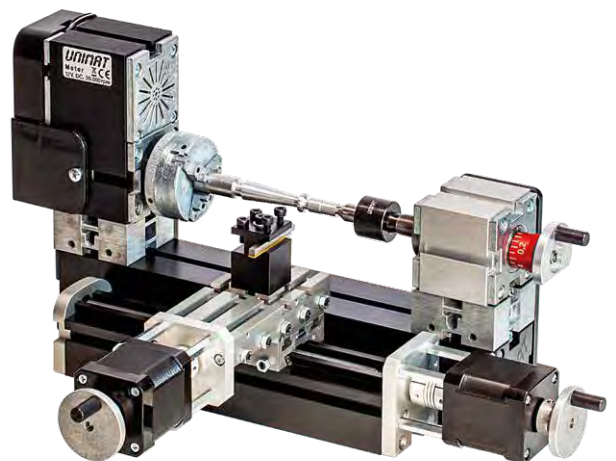
Maximale Schnitttiefe • maximum depth of cut • profondeur de coupe maximale • profundidad máxima de corte • 最大切削深度 • максимальная глубина резания: 0,2 mm

**A**

g21  
g7 (activates diameter mode)  
g0 x20  
g0 z1  
g0 x11.8  
g1 z-20 f50  
g0 z1  
g0 x11.6  
g1 z-20  
g0 z1  
g0 x11.4  
g1 z-20  
g0 z1  
g0 x11.2  
g1 z-20  
g0 z1  
g0 x11  
g1 z-20  
g0 x11.4  
g0 x20 z1  
m02

**B**

g21  
g8 (activates radius mode)  
g0 x10  
g0 z1  
g0 x5.9  
g1 z-20 f50  
g0 z1  
g0 x5.8  
g1 z-20  
g0 z1  
g0 x5.7  
g1 z-20  
g0 z1  
g0 x5.6  
g1 z-20  
g0 z1  
g0 x5.5  
g1 z-20  
g1 x5.7  
g0 x10 z1  
m02



UNI-DREH

UNI-DREH Projekt - 2

UNI-DREH project - 2

UNI-DREH projet - 2

UNI-DREH proyecto - 2

UNI-DREH 项目 - 2

UNI-DREH проект - 2

**Inhalt • contents • contenu • contenido • 内容 • содержание:**

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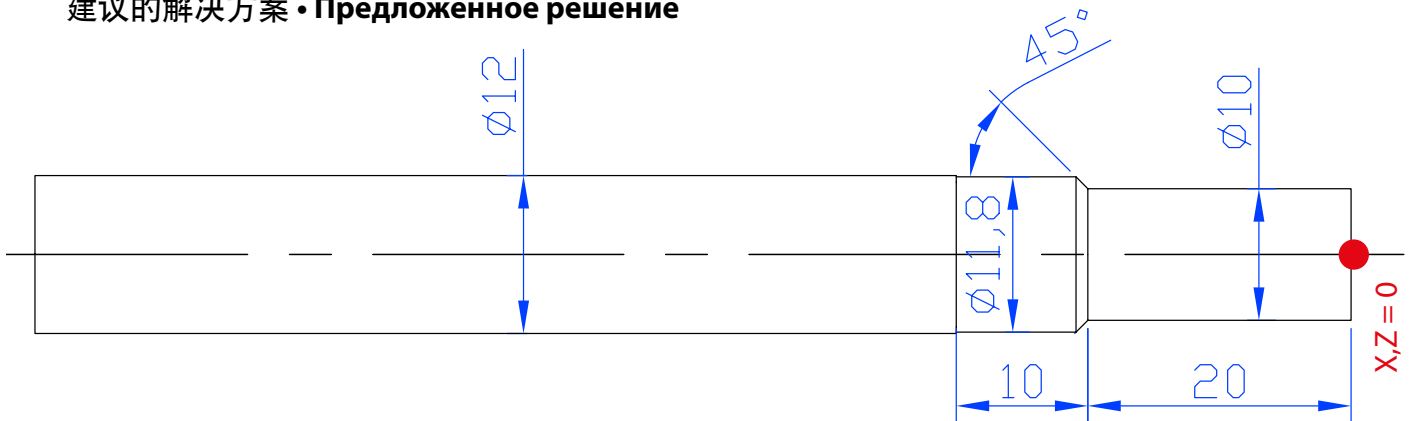
Aluminium • aluminum • aluminium • aluminio • 铝 • алюминий ---- Ø 12 x 100 mm

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Außendrehstahl • tool for outside turning • outil à tourner extérieur • herramienta para torneado exterior • 外车刀 • Резец токарный (U53 / A1A 000 080)

F<sub>max.</sub>: 80 mm/min

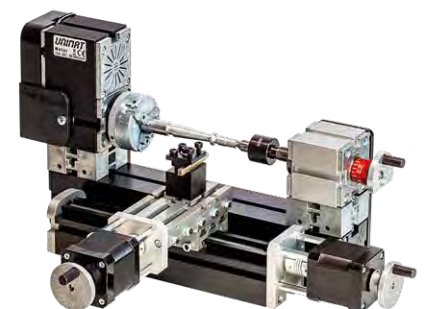
Maximale Schnitttiefe • maximum depth of cut • profondeur de coupe maximale • profundidad máxima de corte • 最大切削深度 • максимальная глубина резания: 0,2 mm

**A**

g21	g1 z-20	g0 z-18
g7 (activates diameter mode)	g1 x12 z-21	g0 x11.8
g0 x20	g0 z1	g1 z-30
g0 z1	g0 x10.8	g0 x12
g0 x11.8	g1 z-20	g0 x20 z2
g1 z-20 f50	g1 x12 z-21	m02
g1 x12 z-21	g0 z1	
g0 z1	g0 x10.6	
g0 x11.6	g1 z-20	
g1 z-20	g1 x12 z-21	
g1 x12 z-21	g0 z1	
g0 z1	g0 x10.4	
g0 x11.4	g1 z-20	
g1 z-20	g1 x12 z-21	
g1 x12 z-21	g0 z1	
g0 z1	g0 x10.2	
g0 x11.2	g1 z-20	
g1 z-20	g1 x12 z-21	
g1 x12 z-21	g0 z1	
G0 z1	g0 x10	
g0 x11	g1 z-20	
	g1 x12 z-21	

**B**

g21	g0 x5.5	g1 z-20
g8 (activates radius mode)	g1 z-20	g1 x6 z-21
g0 x10	g1 x6 z-21	g0 z-18
g0 z1	g0 z1	g0 x5.9
g0 x5.9	g0 x5.4	g1 z-30
g1 z-20 f50	g1 z-20	g0 x6
g1 x6 z-21	g1 x6 z-21	g0 x10 z2
g0 z1	g0 z1	m02
g0 x5.8	g0 x5.3	
g1 z-20	g1 z-20	
g1 x6 z-21	g1 x6 z-21	
g0 z1	g0 z1	
g0 x5.7	g0 x5.2	
g1 z-20	g1 z-20	
g1 x6 z-21	g1 x6 z-21	
g0 z1	g0 z1	
g0 x5.6	g0 x5.1	
g1 z-20	g1 z-20	
g1 x6 z-21	g1 x6 z-21	
g0 z1	g0 z1	
g0 x5	g0 x5	



UNI-DREH

**Inhalt • contents • contenu • contenido • 内容 • содержание:**

**1) Rohmaterial • Matière première • materia prima • 原料 • Сырье:**

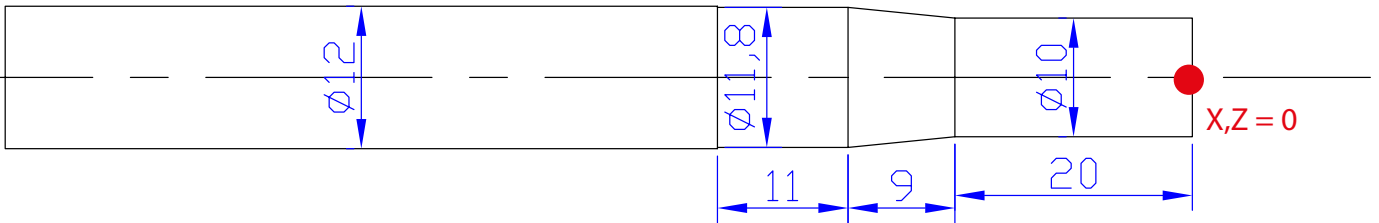
Aluminium • aluminum • aluminium • aluminio • 铝 • алюминий ---- Ø 12 x 100 mm

**2) Technische Zeichnung • technical drawing • dessin technique • dibujo técnico •**

技术图纸 • Технический чертеж

**3) Lösungsvorschlag • proposed solution • solution proposée • solución propuesta •**

建议的解决方案 • Предложенное решение



**Projekt • project • projet • proyecto • 项目 • Проект**

Außendrehstahl • tool for outside turning • outil à tourner extérieur • herramienta para torneado exterior • 外车刀 • Резец токарный (U53 / A1A 000 080)

$F_{max}$ : 80 mm/min

Maximale Schnitttiefe • maximum depth of cut • profondeur de coupe maximale • profundidad máxima de corte • 最大切削深度 • максимальная глубина резания: 0,2 mm

**A**

g21  
g7 (activates diameter mode)  
g0 x30  
g0 z1  
g0 x11.8  
g1 z-20 f25  
g1 x12 z-30  
g0 z1  
g0 x11.6  
g1 z-20  
g1 x12 z-30  
g0 z1  
g0 x11.4  
g1 z-20  
g1 x12 z-30  
g0 z1  
g0 x11.2  
g1 z-20  
g1 x12 z-30  
g0 z1  
g0 x11  
g1 z-20

g1 z-20  
g1 x12 z-30  
g0 z1  
g0 x10.8  
g1 z-20  
g1 x12 z-30  
g0 z1  
g0 x10.6  
g1 z-20  
g1 x12 z-30  
g0 z1  
g0 x10.4  
g1 z-20  
g1 x12 z-30  
g0 z1  
g0 x10.2  
g1 z-20  
g1 x12 z-30  
g0 z1  
g0 x10  
g1 z-20  
g1 x12 z-30

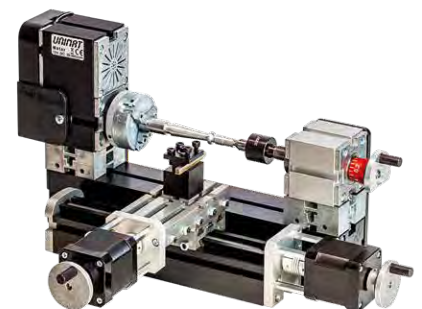
g0 z-29  
g0 x11.8  
g1 z-40  
g0 x30  
g0 z1  
m02

**B**

g21  
g8 (activates radius mode)  
g0 x15  
g0 z1  
g0 x5.9  
g1 z-20 f25  
g1 x6 z-30  
g0 z1  
g0 x5.8  
g1 z-20  
g1 x6 z-30  
g0 z1  
g0 x5.7  
g1 z-20  
g1 x6 z-30  
g0 z1  
g0 x5.6  
g1 z-20  
g1 x6 z-30  
g0 z1  
g0 x5.5

g1 z-20  
g1 x6 z-30  
g0 z1  
g0 x5.4  
g1 z-20  
g1 x6 z-30  
g0 z1  
g0 x5.3  
g1 z-20  
g1 x6 z-30  
g0 z1  
g0 x5.2  
g1 z-20  
g1 x6 z-30  
g0 z1  
g0 x5.1  
g1 z-20  
g1 x6 z-30  
g0 z1  
g0 x5  
g1 z-20  
g1 x6 z-30

g0 z-29  
g0 x5.9  
g1 z-40  
g1 x6.5  
g0 x15  
g0 z1  
m02



UNI-DREH

UNI-DREH Projekt - 4

UNI-DREH project - 4

UNI-DREH projet - 4

UNI-DREH proyecto - 4

UNI-DREH 项目 - 4

UNI-DREH проект - 4

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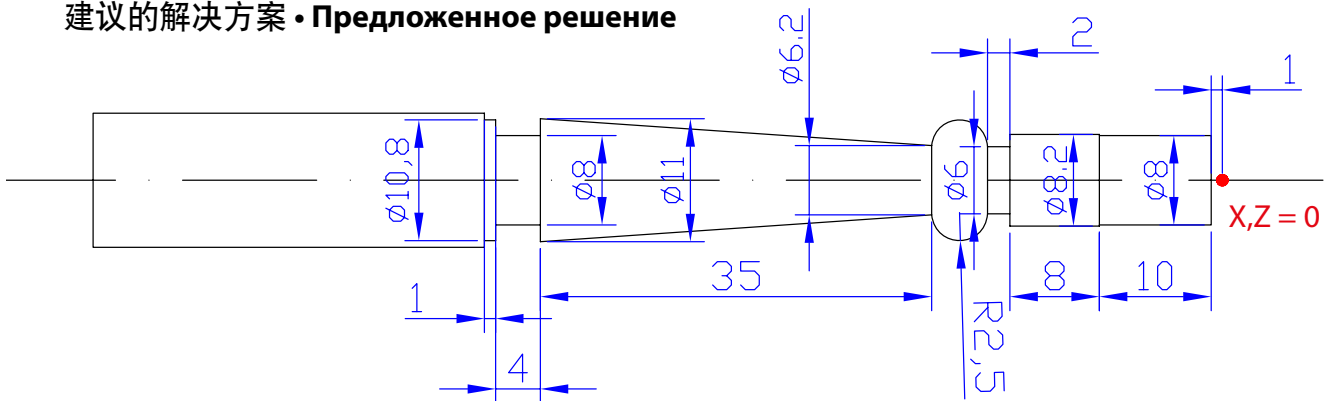
Aluminium • aluminum • aluminium • aluminio • 铝 • алюминий ---- Ø 12 x 100 mm

**2) Technische Zeichnung • technical drawing • dessin technique • dibujo técnico •**

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**Projekt • project • projet • proyecto • 项目 • Проект**

Außendrehstahl • tool for outside turning • outil à tourner extérieur • herramienta para torneado exterior • 外车刀 • Резец токарный (162 231 B)

F<sub>max.</sub>: 50 mm/min

Maximale Schnitttiefe • maximum depth of cut • profondeur de coupe maximale • profundidad máxima de corte • 最大切削深度 • максимальная глубина резания: 0,2 mm



g21	g0 x11.6	g1 x11 z-60 f50	g0 x9	g0 x11	g0 x11.6	g1 x6.6 f5
g7	g1 z-20 f50	g1 x9.8 f5	g1 z-20 f50	g1 x8.4 z-25 f25	g0 z-20	g1 x11 z-60 f50
g0 x16 z0	g0 x10.8	g1 z-64 f50	g0 x11	g0 x11.6	g0 x8.2	g1 x6.2 z-25 f25
g0 x11.8	g1 x10.4 f5	g1 x9.6 f5	g0 z-25	g0 z-20	g1 x7.8 f5	g0 x11.6
g1 z-65 f50	g1 z0 f50	g1 z-60 f50	g0 x9.6	g0 x9	g1 z-18 f50	g0 z-20
g1 x11.8 f5	g0 x10.2	g0 x11	g1 x9 f5	g1 x8.4 f5	g0 x9	g1 x6.2 f5
g1 z0 f50	g1 z-20	g1 x8.6 z-25 f25	g1 x11 z-60 f50	g1 z0 f50	g1 z-10 f50	g1 z-18 f50
g0 x11.4	g0 x11	g0 x11.6	g0 x9.6	g0 x8.2	g1 x7.8 f5	g1 x6 f5
g1 z-65	g0 z-25	g0 z-20	g1 x9 f5	g1 z-20	g1 z0 f50	g1 z-20 f50
g1 x11.2 f5	g0 x10.6	g0 x10	g1 z-64 f50	g0 x11.6	g0 x7.4	g0 x10
g1 z0 f50	g1 x10.2 f5	g1 x9.6 f5	g1 x8.8 f5	g0 z-25	g1 z-10 f50	g18
g0 x11	g1 x11 z-60 f50	g1 z0 f50	g1 z-60 f50	g0 x8.6	g0 x9	g3 x10 r2.5 z-25 f2.5
g1 z-65	g0 x10.6	g0 x8.4	g0 x11	g1 x8.2 f5	g1 z-18 f50	g1 x9 f5
g1 x10.8 f5	g1 x10.2 f5	g1 z-20	g1 x8.8 z-25 f25	g1 x11 z-60 f50	g0 x8.2	g2 x9 r2.5 z-20 f2.5
g1 z0 f50	g1 z-64 f50	g0 x11.6	g0 x11.6	g1 x8.2 f5	g1 x7.4 f5	g1 x8 f5
g0 x10.6	g1 x10 f5	g0 z-25	g0 z-20	g1 z-64 f50	g1 z-20 f50	g3 x8 r2.5 z-25 f2.5
g1 z-20	g1 z-60 f50	g0 x9.8	g0 x9.4	g0 x11.8	g0 x11.6	g1 x7 f5
g0 x11.6	g0 x11	g1 x9.4 f5	g1 x8.8 f5	g0 z0	g0 z-25	g2 x7 r2.5 z-20 f2.5
g0 z-25	g1 x10 z-25 f25	g1 x11 z-60 f50	g1 z0 f50	g0 x8	g0 x8.2	g1 x6 f5
g0 x11	g0 x11.6	g1 x9.4 f5	g0 x8.6	g1 z-20 f50	g1 x7.4 f5	g3 x6 r2.5 z-25 f2.5
g1 x10.6 f10	g0 z-20	g1 z-64 f50	g1 z-20	g0 x11.6	g1 x11 z-60 f50	G1 x11 z-60 f50
g1 x11 z-60 f50	g0 x10.2	g1 x9.2 f5	g0 x11.6	g0 z-25	g1 x7 z-25 f25	g0 x12
g1 x10.6 f5	g1 x10 f5	g1 z-60 f50	g0 z-25	g0 x8.2	g0 x11.6	g0 z0
g1 z-64 f50	g1 z0 f50	g0 x11	g0 x9	g1 x8 f5	g0 z-20	m02
g1 x10.2 f5	g0 x9.8	g1 x9.2 z-25 f25	g1 x8.6 f5	g1 x11 z-60 f50	g1 x7 f5	
g1 z-60 f50	g1 z-20	g0 x11.6	g1 x11 z-60 f50	g1 x8 f5	g1 z-18 f50	
g0 x11	g0 x11.6	g0 z-20	g1 x8.6 f5	g1 z-64 f50	g1 x6.6 f5	
g1 x10.2 z-25 f25	g0 z-25	g0 x9.6	g1 z-64 f50	g0 x11	g1 z-20 f50	
	g0 x10.2	g1 x9.2 f5	g1 x8.4 f5	g0 z-60	g0 x11.6	
	g1 x9.8 f5	g1 z0 f50	g1 z0 f50	g1 x7.8 z-25 f25	g0 z-25	



UNI-DREH

# UNIMAT CNC

**3 Achsen Vertikalfräse**

**3 axis vertical milling machine**

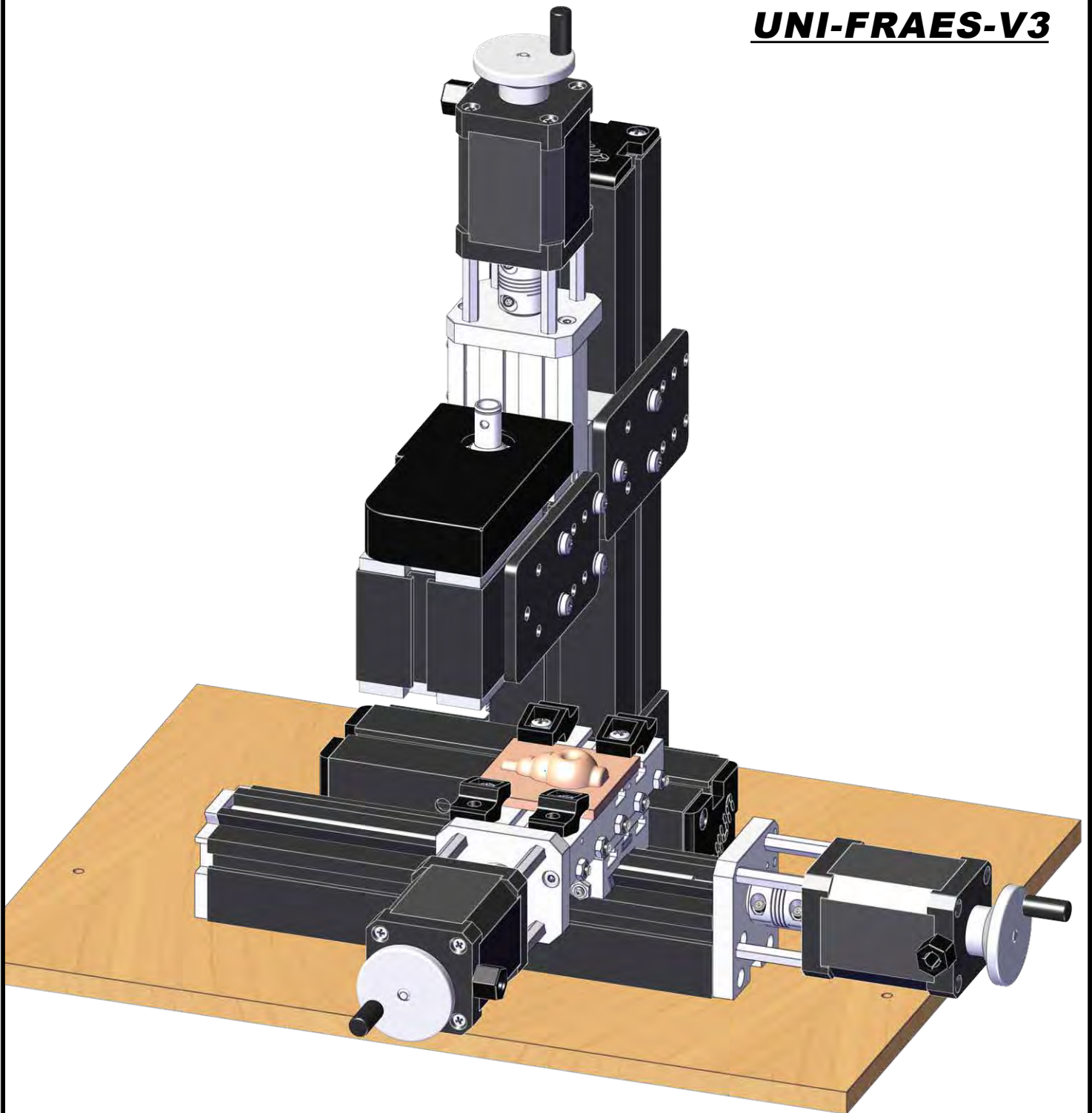
**3 axes Fraiseuse verticale**

**3 ejes Fresadora vertical**

**3 轴 立式 铣床**

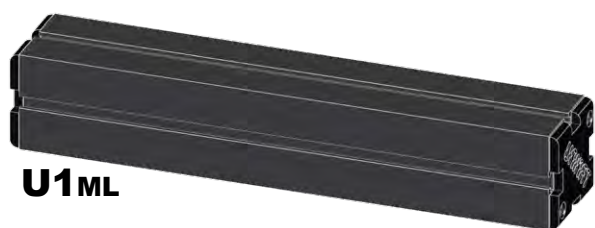
**Зоси Вертикальний фрезерний станок**

**UNI-FRAES-V3**

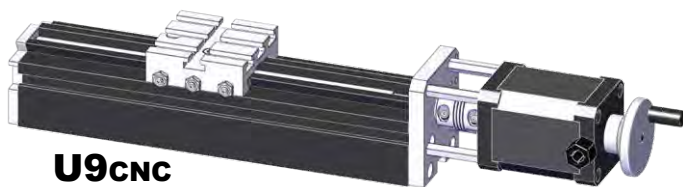


		DE	EN	FR	ES	中国 (ZH)	RU	
U1ML	1	Maschinenbett, lang	Machine bed, long	Banc, grand	Bancada grande	长机座	Станина длинная	A1A 020 000 SW
U3CNC	2	CNC Querschlitten	CNC Cross slide	CNC Chariot, petit	CNC Carro, pequeño	CNC 全金属小滑块	CNC Салазки поперечные	164 060 CNC
U4MLEDU	1	Antriebseinheit ML	Drive unit ML	EDU-Moteur	EDU-Motor	EDU-马达	EDU-Двигатель	164 420
U7ML	1	Maschinenbett, kurz	Machine bed, short	Banc, petit	Bancada pequeña	全金属短机座	Станина короткая	A1A 010 000SW
U9CNC	1	CNC Längsschlitten	CNC Longitudinal slide	CNC Chariot, grand	CNC Carro, grande	全金属长滑块	Салазки продольные	164 480 CNC
U10ML	1	Zwischenstück	Intermediate piece	Pièce intermédiaire	Pieza intermedia	全金属中介块	Проставка	A1M 000 100
U12ML	1	Spannzange 1/8"	Collet 1/8"	Pince 1/8"	Pinza 1/8"	金属夹头 1/8"	Цанги 1/8"	162 460 31/8
U15A	1	Schraubendreher #2	Screwdriver #2	Tourne-vis #2	Destornillador #2	螺丝刀2#	Отвертка Philips № 2	ZWZ 980 030
U15B	1	Inbussschraubendreher	Screwdriver allen key 2.5mm	Tourne-vis hexagonale 2,5mm	Destornillador allen 2,5mm	内六角扳手2.5 mm	Отвертка 6-гранная 2,5 мм	ZWZ 980 075
U48ML	1	Spannzangenhalter	Collet holder	Porte-pinces	Porta-pinza	固定铜帽	Гайка зажимная для цанг	A1A 000 073
U49	4	Spannklaue	Clamping jaw	Mors de serrage	Brida de sujeción	夹板	Прихват Прихват	A1A 000 090
U66	4	Verbindungselement	Connection piece	Pièce de connexion	Elemento de conexión	连接件	Сухарь соединительный	A1A 00 ZINSK
U71	1	Gabelschlüssel 7 / 14 mm	Fork wrench 7 / 14 mm	Clé de fourche 7 / 14 mm	llave de furka 7 / 14 mm	扳手 7 / 14 mm	Ключ гаечный 7 / 14 мм	ZWZ 400 700
U79	3	Fixierplatte klein	Stabilizing plates small	Plaques de fixation petits	Platos de fijación pequeños	小固定片	Пластина стабилизирующая малая	A1Z 470 000
U80	2	Befestigungswinkel	Stabilizing angle	Angle de fixation	Esquadra de fijación	直角固定座	Угольник стабилизирующий	A1Z 480 000
	1	Grundplatte CNC	Mounting plate CNC	Plaque de montage CNC	Plancha basico CNC	固定底板 CNC	Монтажная пластина CNC	164 402

nicht im Maßstab | not in scale | pas à l'échelle | no es a escala | 不按比例 | не в масштабе



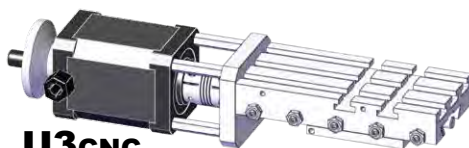
**U1ML**



**U9CNC**



**U4MLEDU**



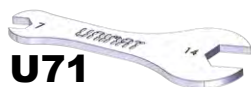
**U3CNC**



**U7ML**



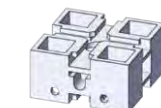
**U12ML**  
(1/8")



**U71**



**U48ML**



**U10ML**



**U79**



**U80**



**U66**



**U49**



**U15A**



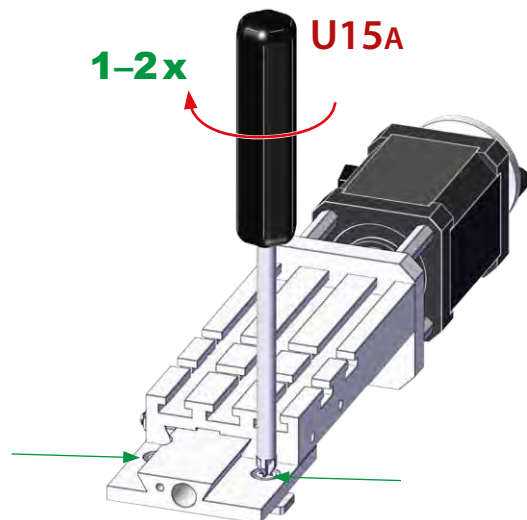
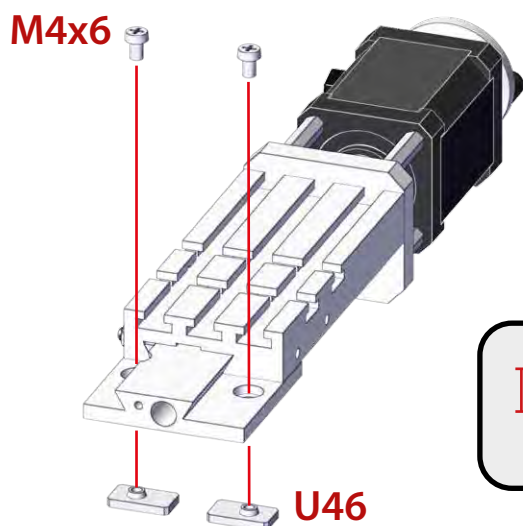
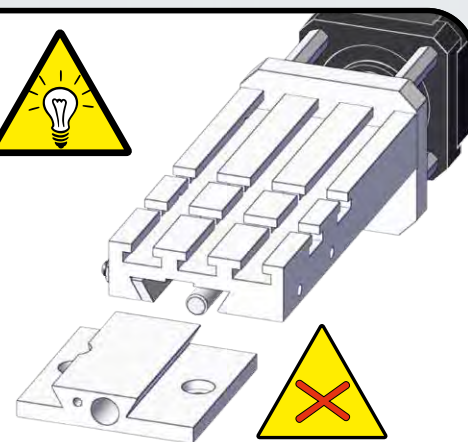
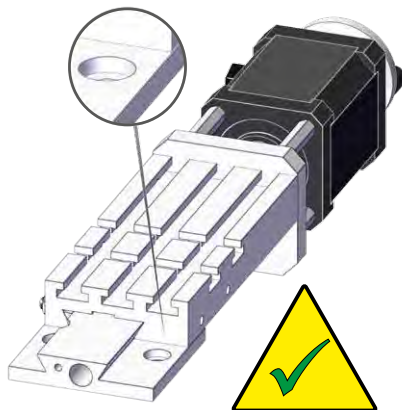
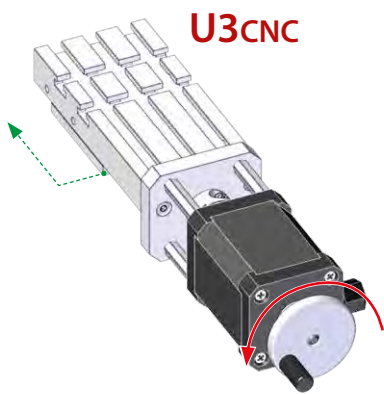
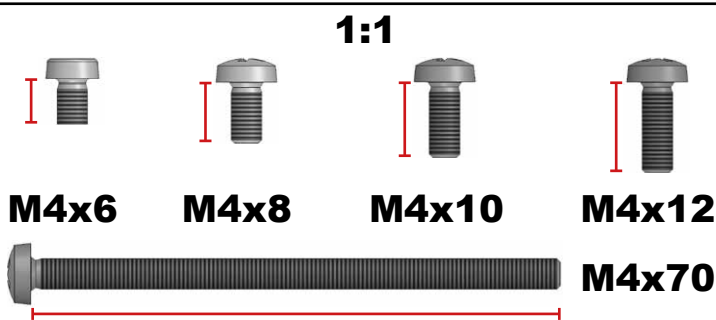
**U15B**



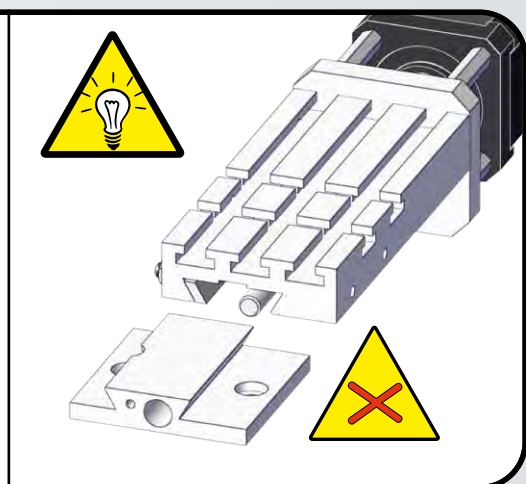
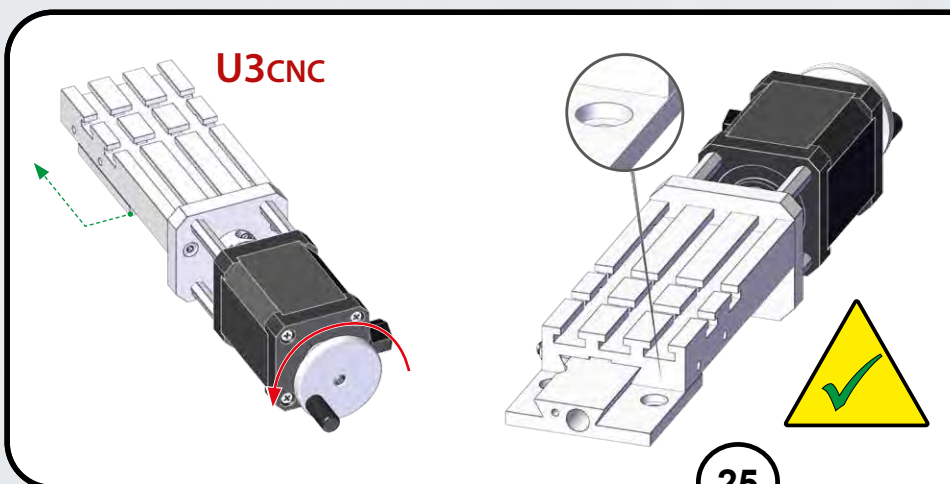
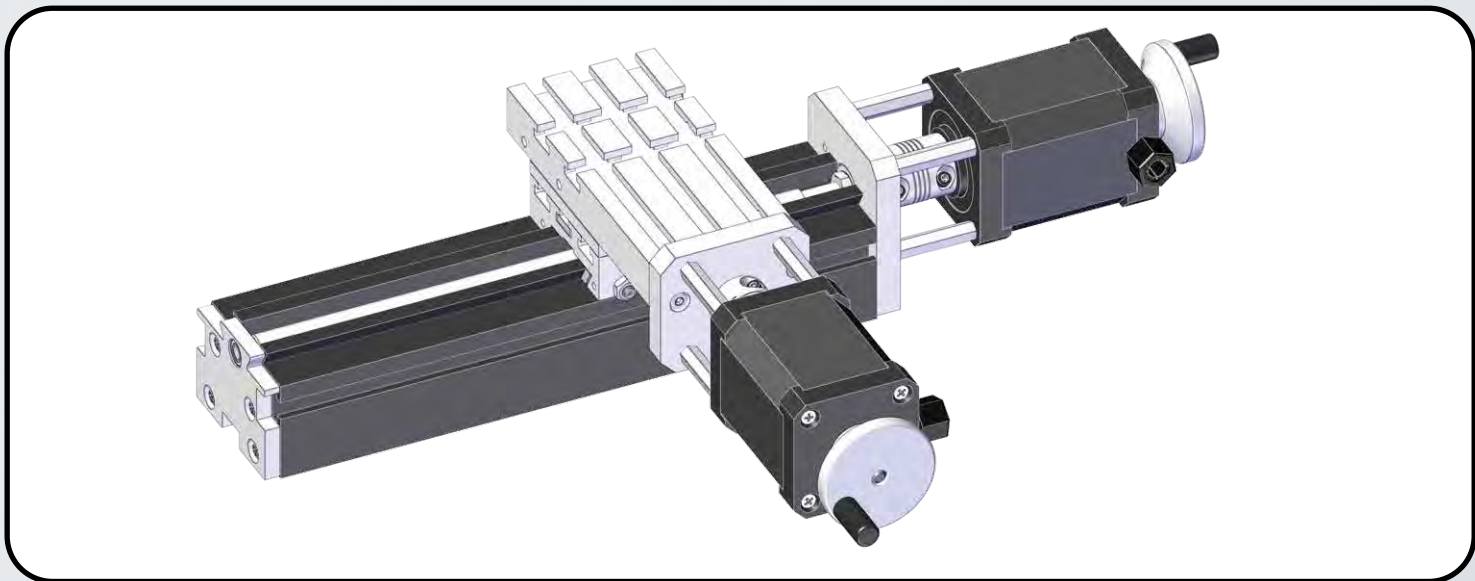
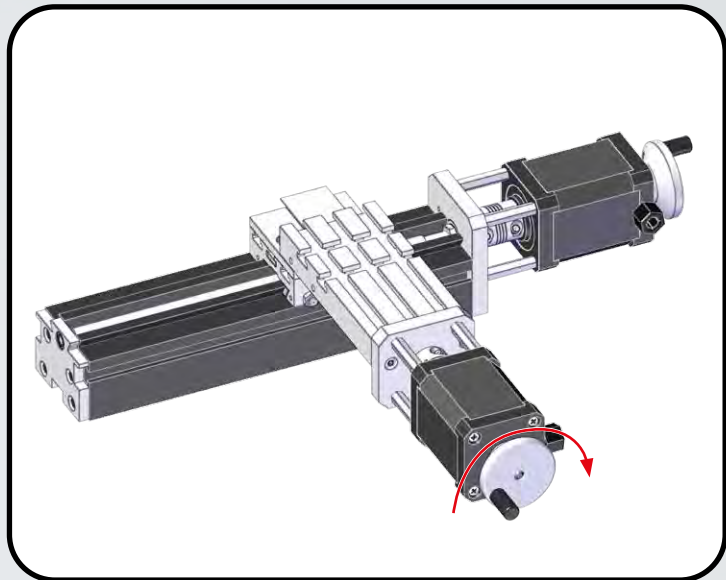
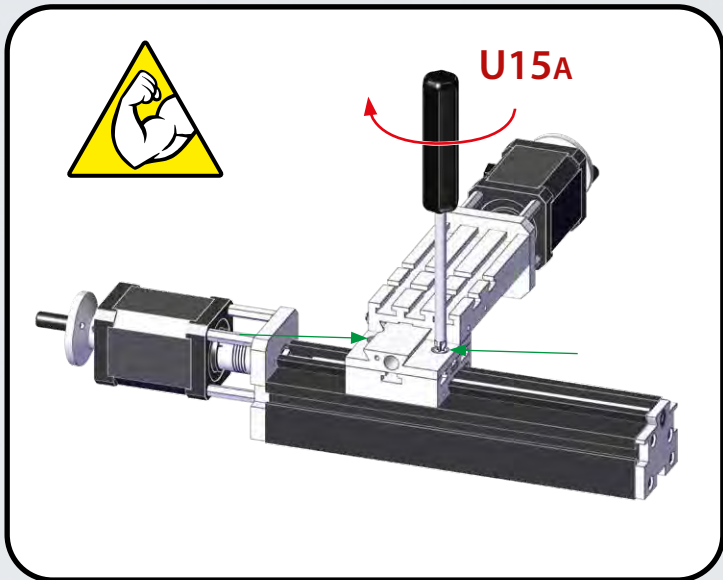
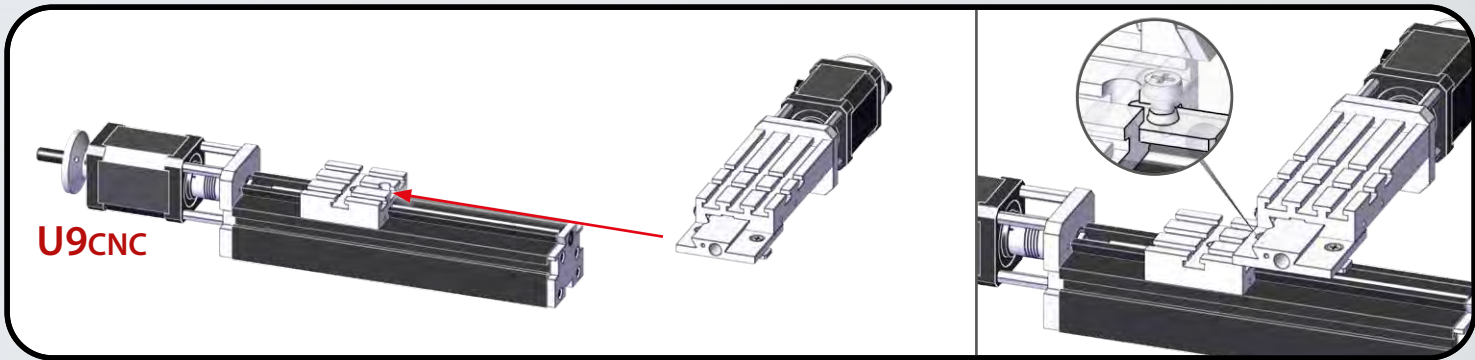
**164402**

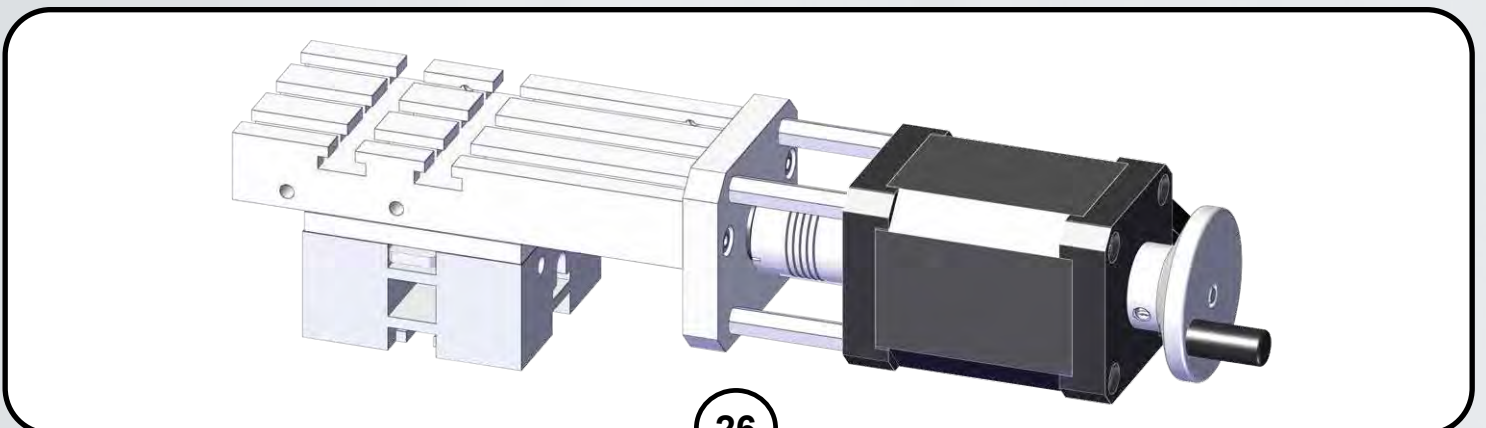
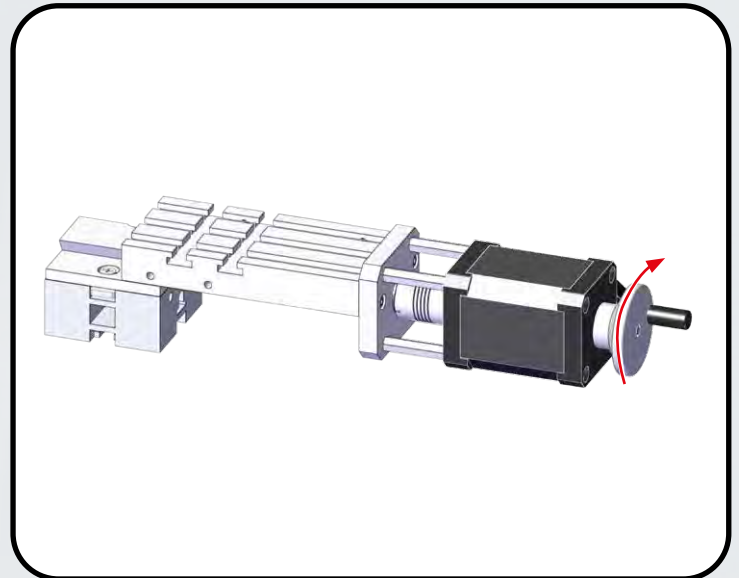
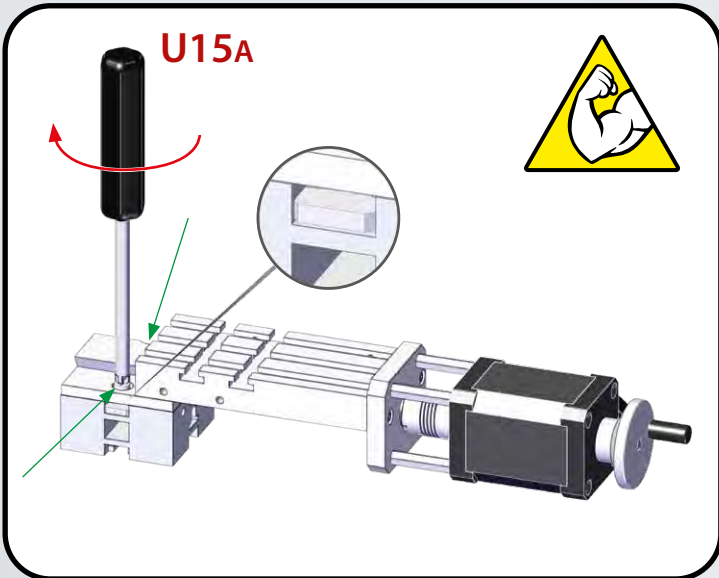
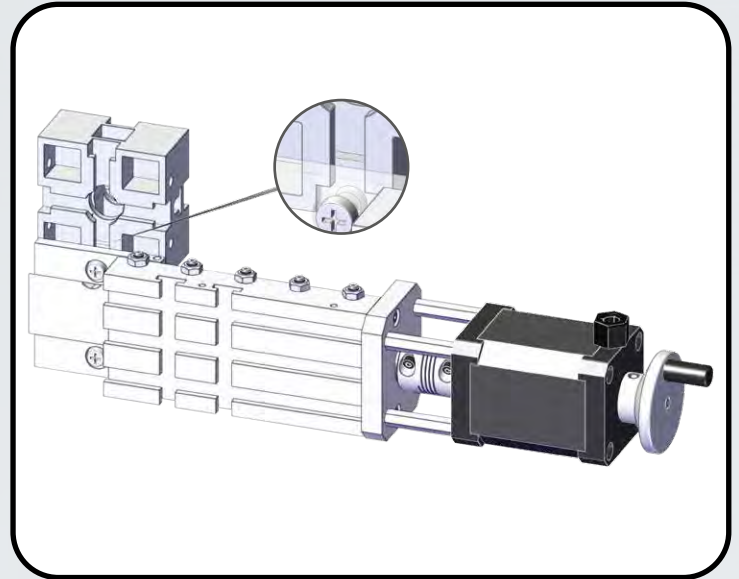
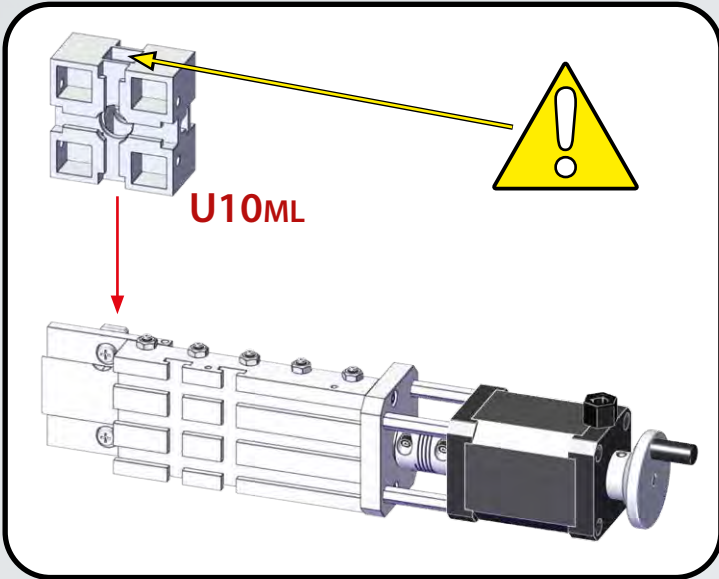
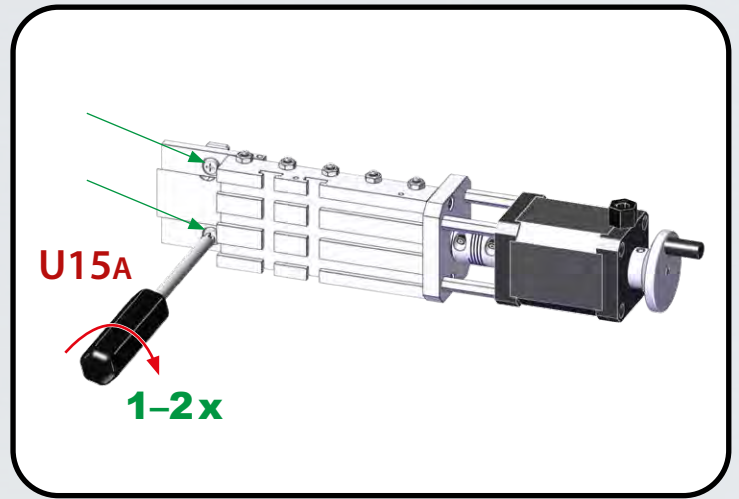
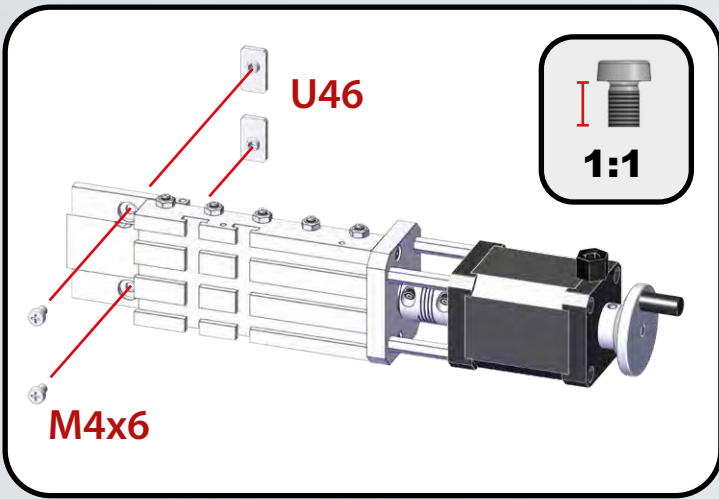
		DE	EN	FR	ES	中国 (ZH)	RU	
U31	8	Schraube M4x10	Screw M4x10	Vis M4x10	Tornillo M4x10	螺钉M4x10	Винт M4x10	ZSR M40 410
U37	12	Schraube M4x8	Screw M4x8	Vis M4x8	Tornillo M4x8	螺钉M4x8	Винт M4x8	ZSR M40 408
U38	6	Schraube M4x6	Screw M4x6	Vis M4x6	Tornillo M4x6	螺钉M4x6	Винт M4x6	ZSR M40 406
U43S	1	Sicherungsmutter M4	Locking nut M4	Ecrou sécurité M4	Tuerca M4 seguridad	防松螺母M4	Гайка M4 самоконтрящаяся	ZMU 340 120
U46	8	Nutstein	Slot nut	Boulon en «T»	Pernos "T"	单孔螺母	Гайка пазовая	A1A 060 040
U47	8	Klemmplatte	Camping plate	Élément en «T»	Elemento "T"	双孔螺母	Гайка пазовая двойная	A1A 010 020
U50	1	Schraube M4x70	Screw M4x70	Vis M4x70	Tornillo M4x70	螺钉M4x70	Винт M4x70	ZSR M40 470
U52	2	Stift	Rod	Cheville	Perno	锁杆	Вороток	ZST 110 345
U56CNC	1	1,6 mm Fräser	1.6 mm Milling head	1,6 mm Fraise	1,6 mm Fresa	铣刀头 1.6 mm	Фреза концевая 1,6 mm	F2470 1.60
U69	4	Schraube M4x12	Screw M4x12	Vis M4x12	Tornillo M4x12	螺钉M4x12	Винт M4x12	ZSR M40 412
U74	18	Beilagscheibe	Plain washer	Rondelle	Arandela	垫片	Шайба	ZSB 250 430
	4	Gummipuffer	Elastic buffer	Butoir élastique	Amortiguador elástico	弹性缓冲	Эластичный буфер	166 EP
ohne Abbildung   without picture   sans figure   sin ilustración   无图   без рисунка								
	1	Netzteil 14,4V	14.4V adaptor	14,4V Transformateur	14,4V Transformador	变压器 14.4 V	Трансформатор 14,4 В	161 31x

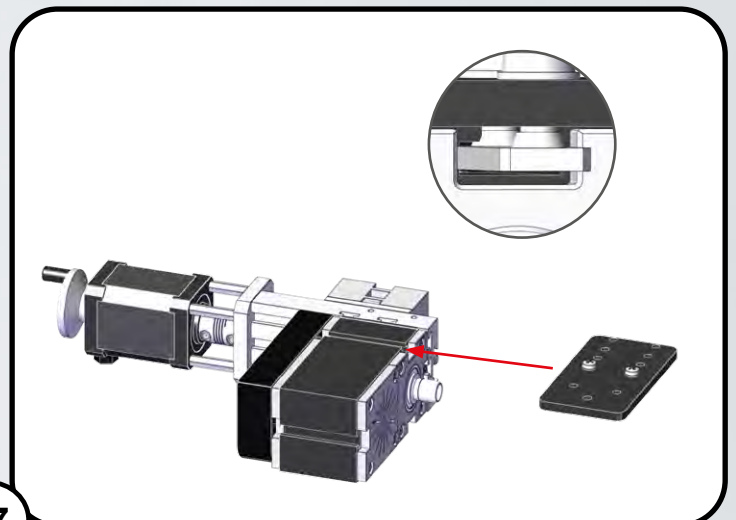
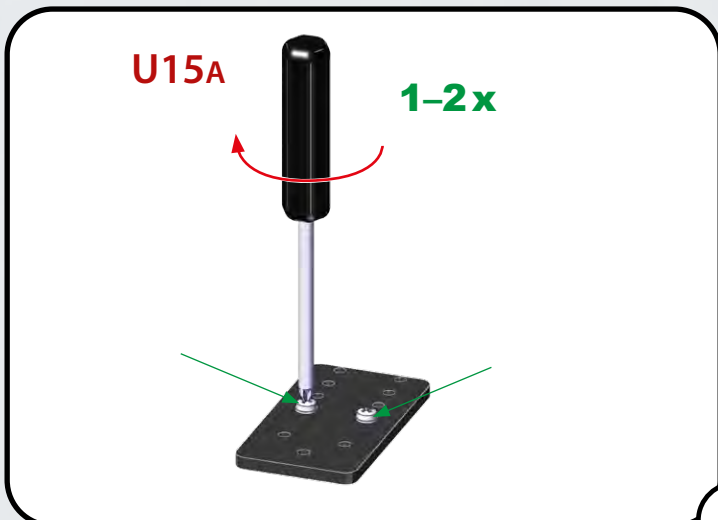
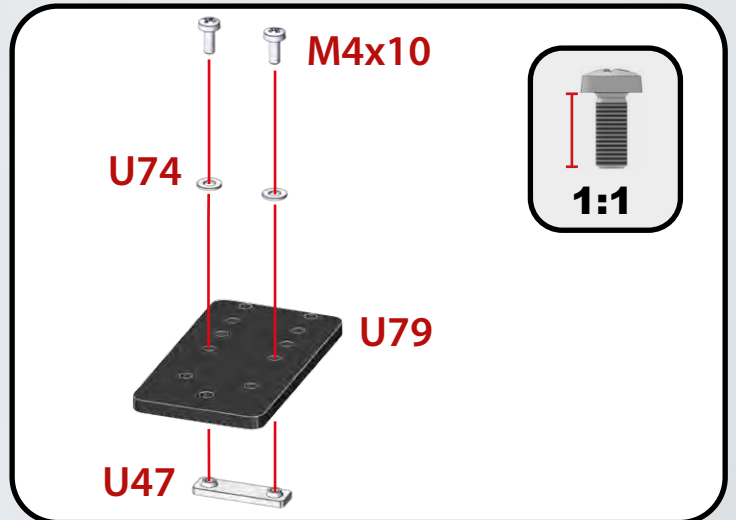
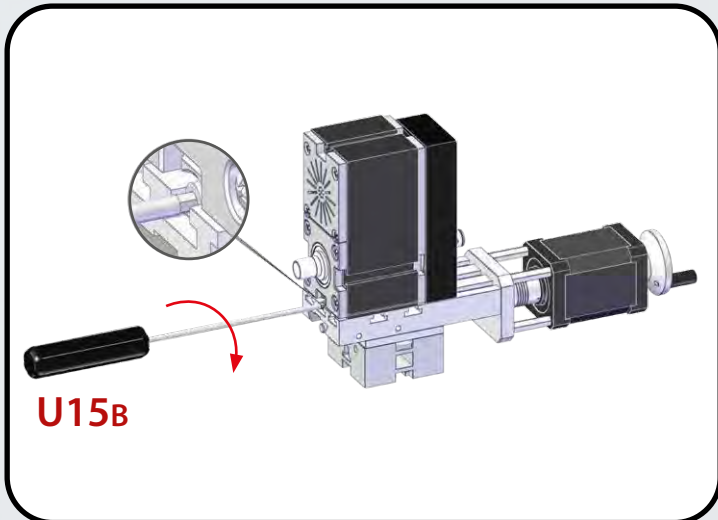
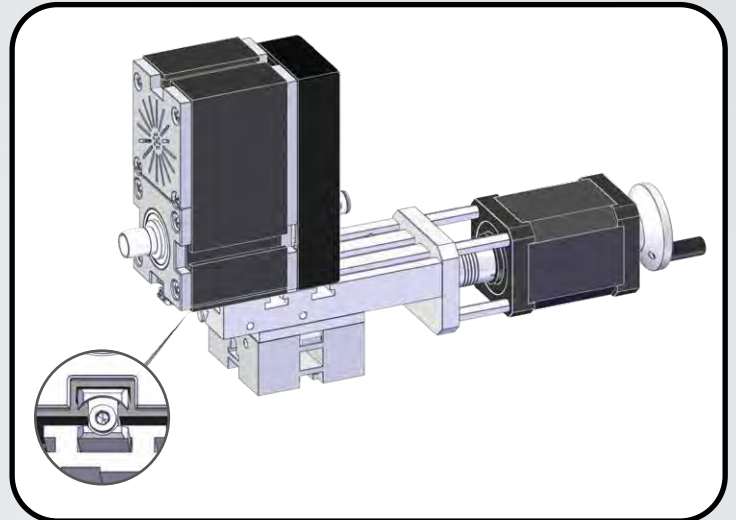
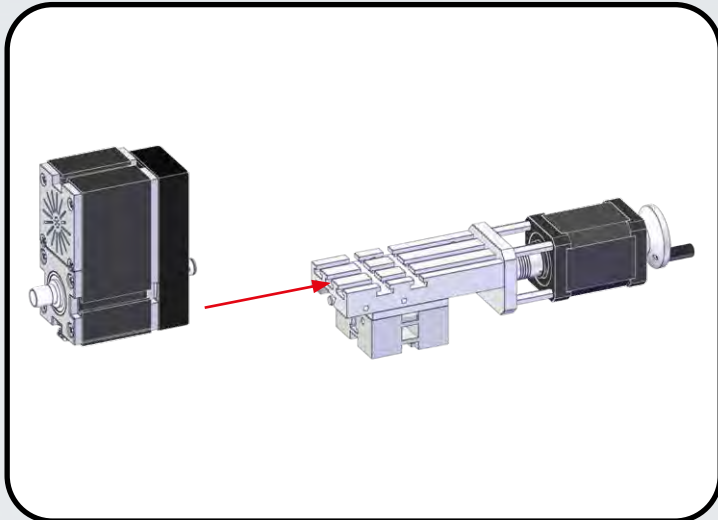
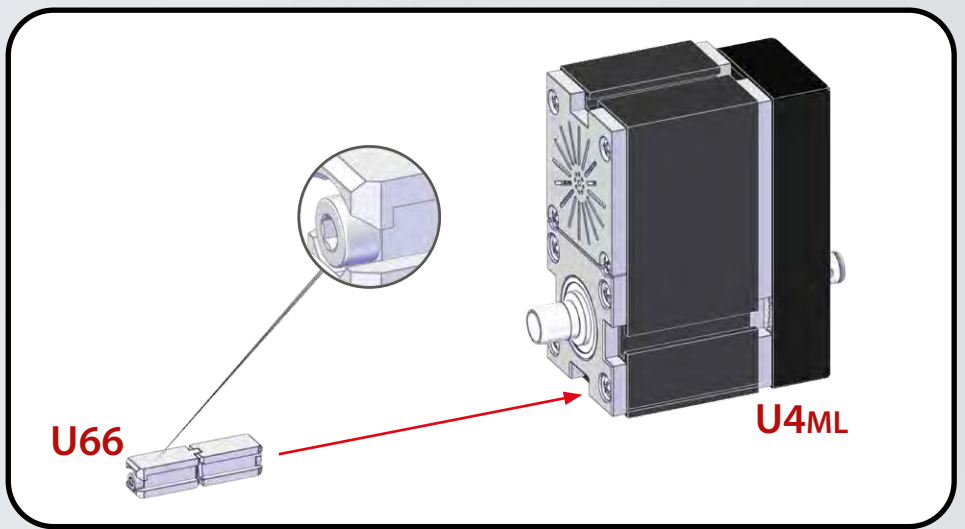
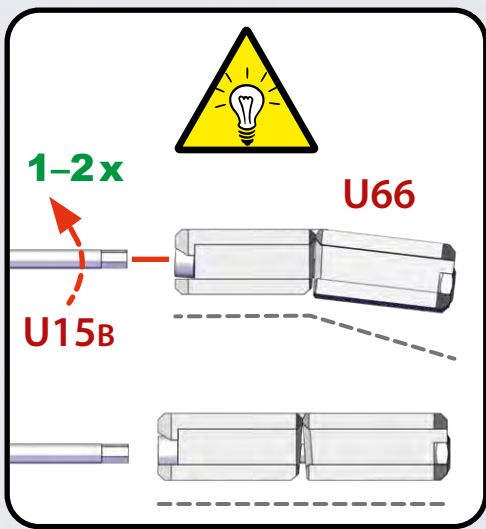
nicht im Maßstab | not in scale | pas à l'échelle | no es a escala | 不按比例 | не в масштабе

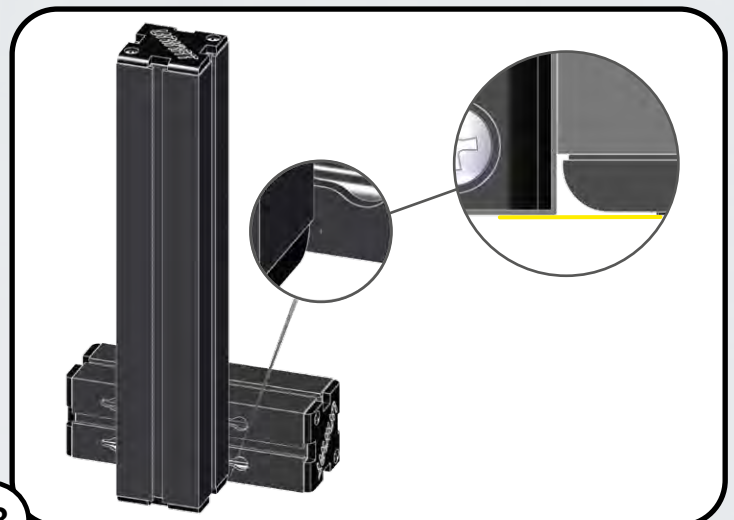
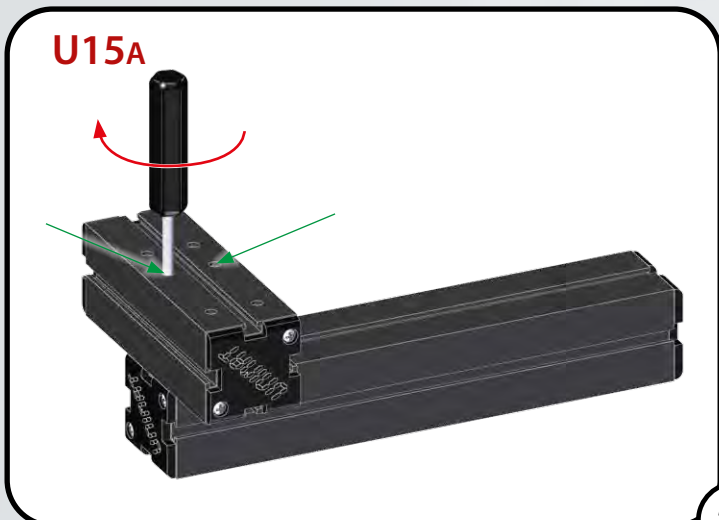
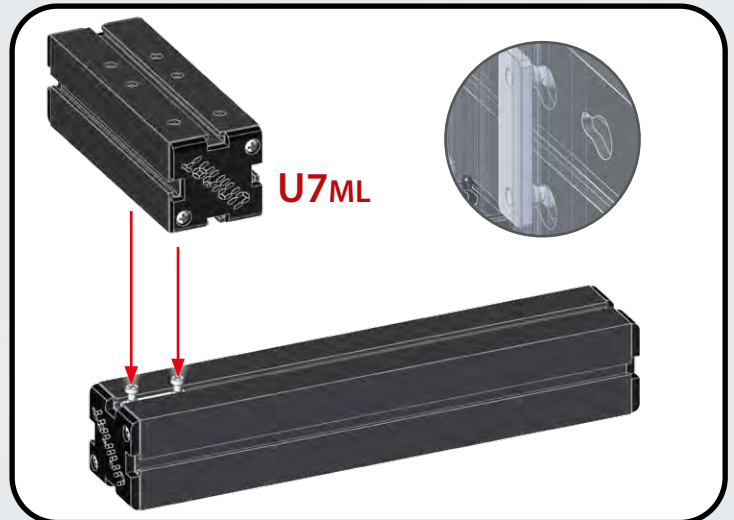
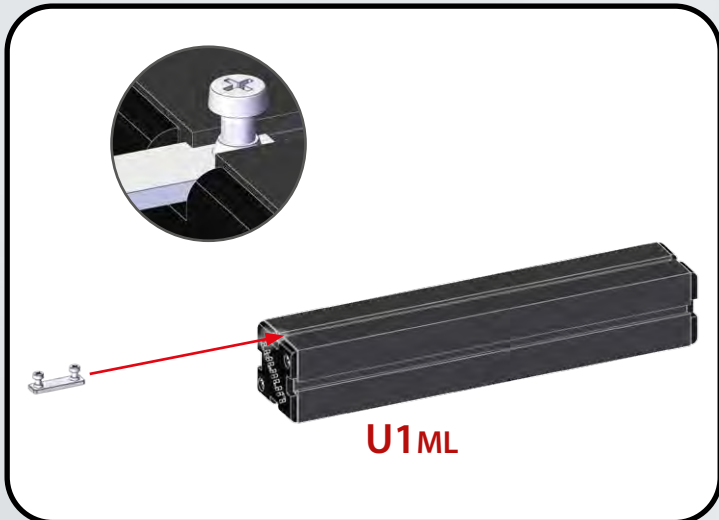
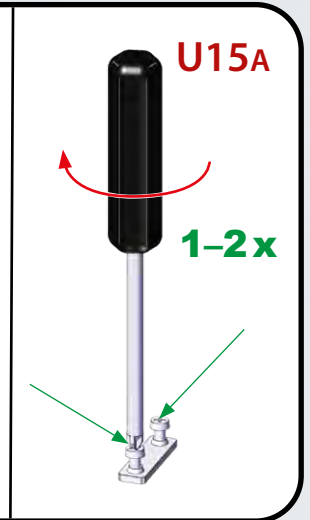
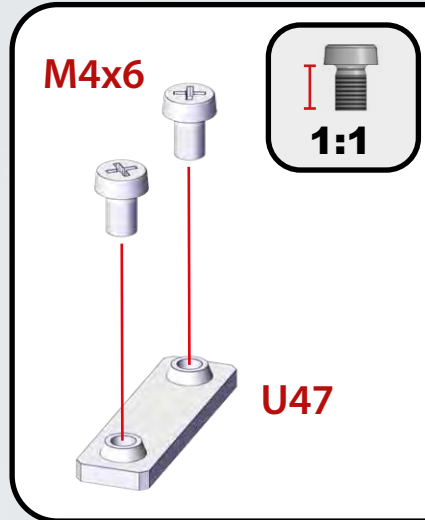
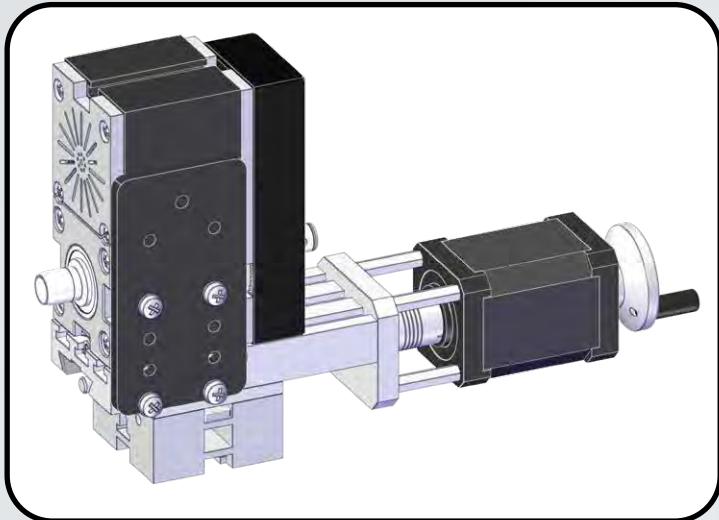
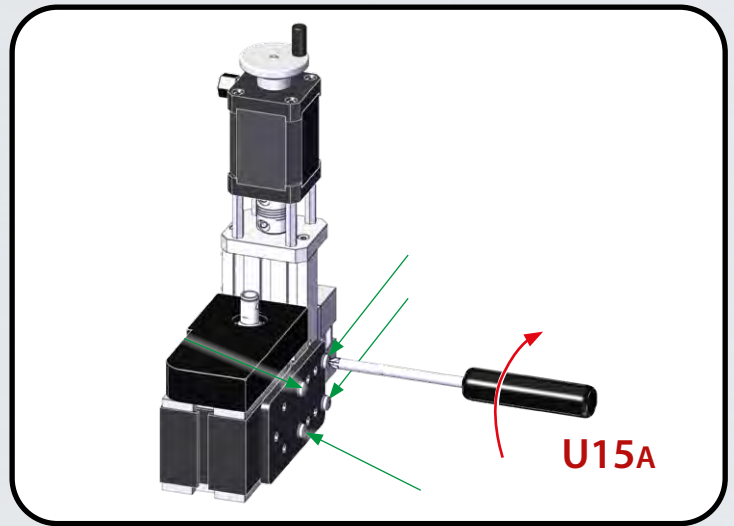
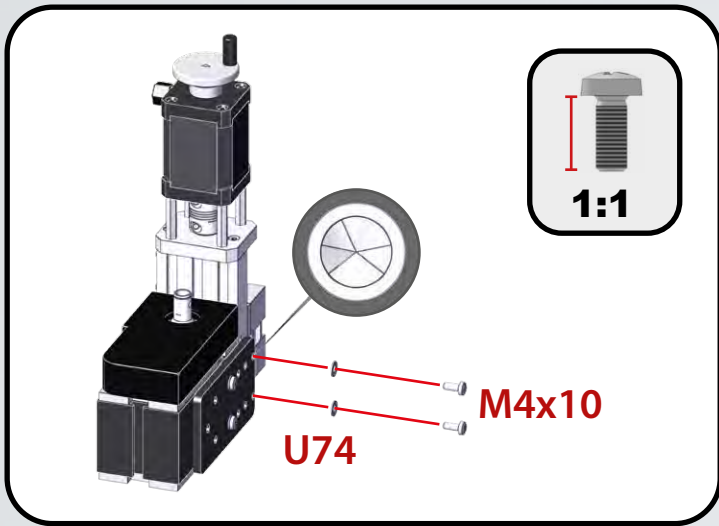


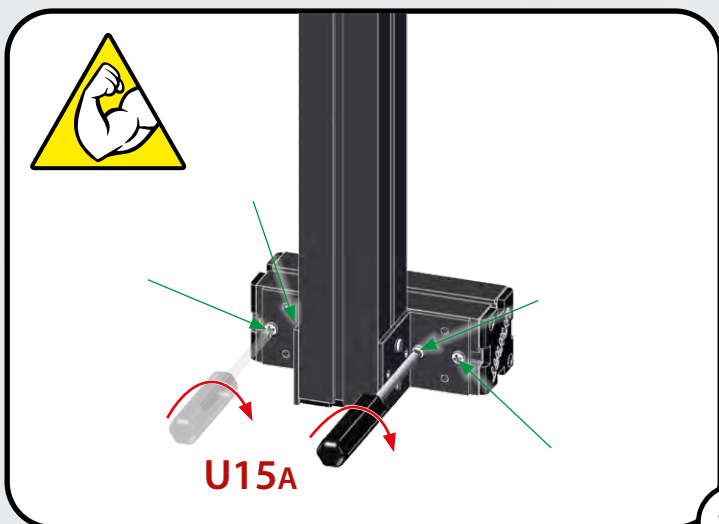
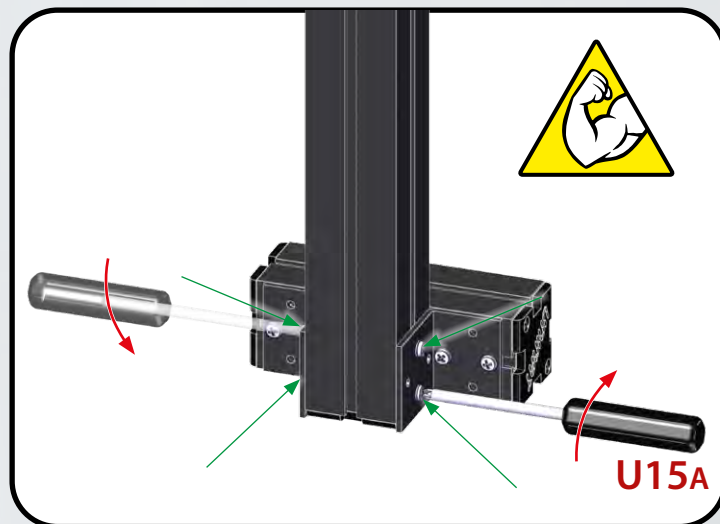
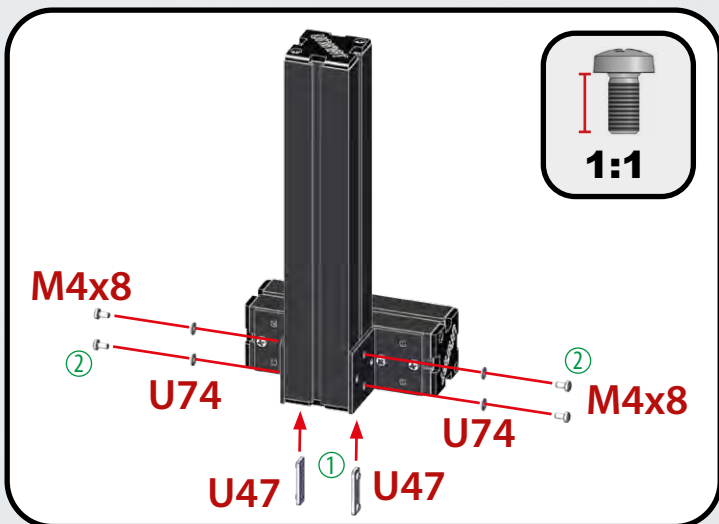
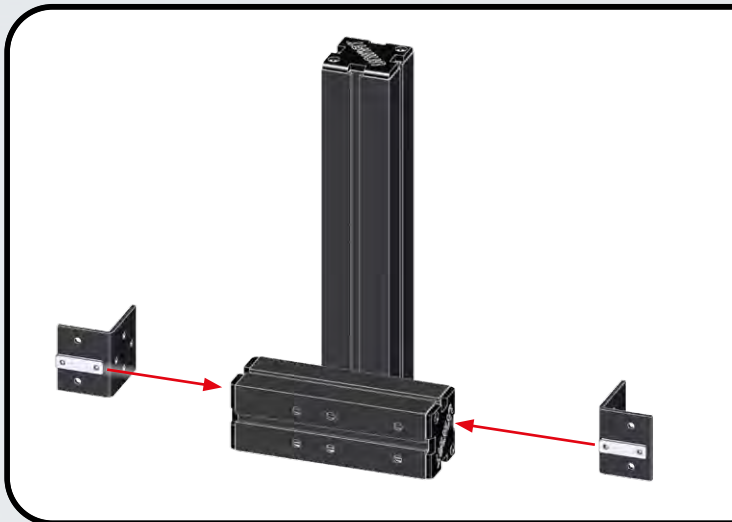
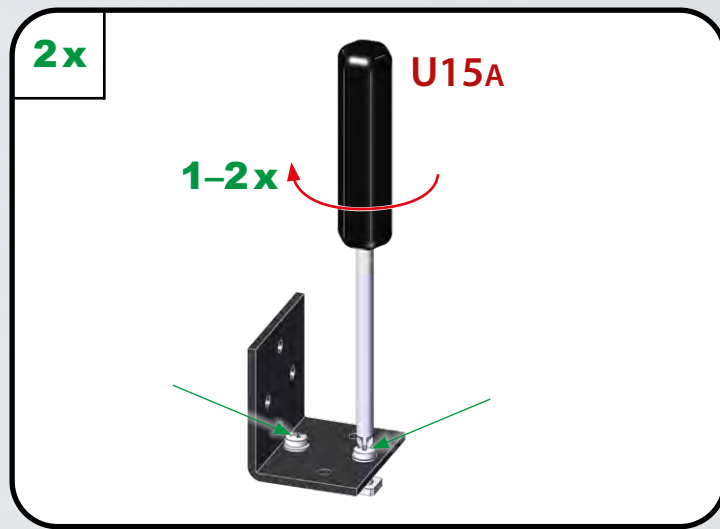
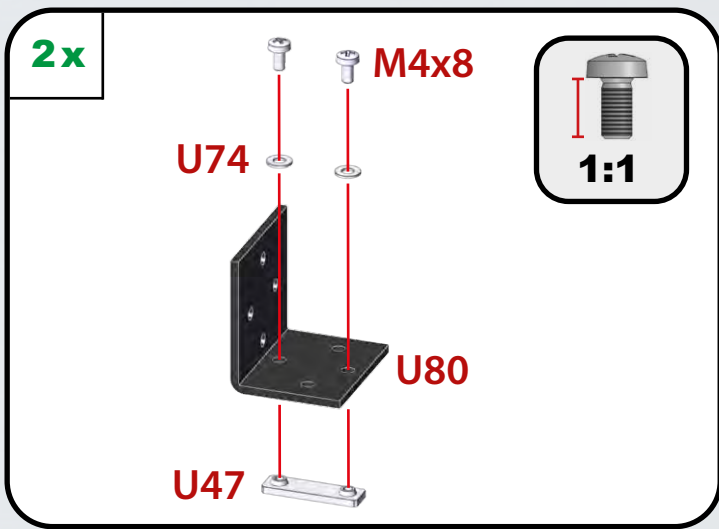


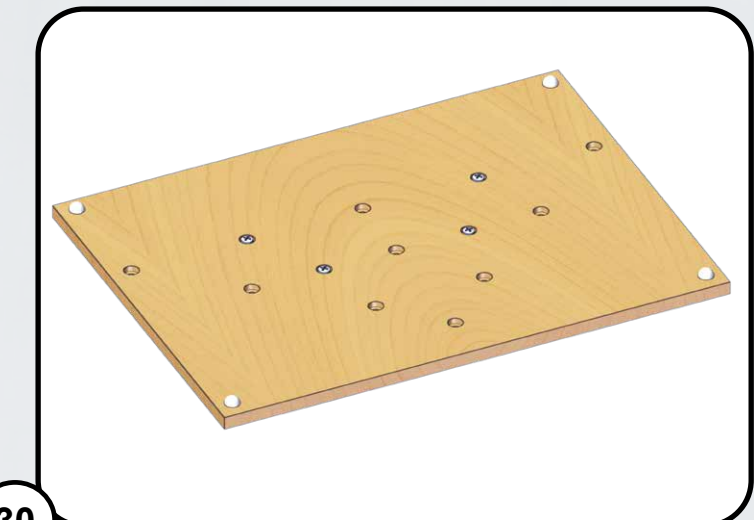
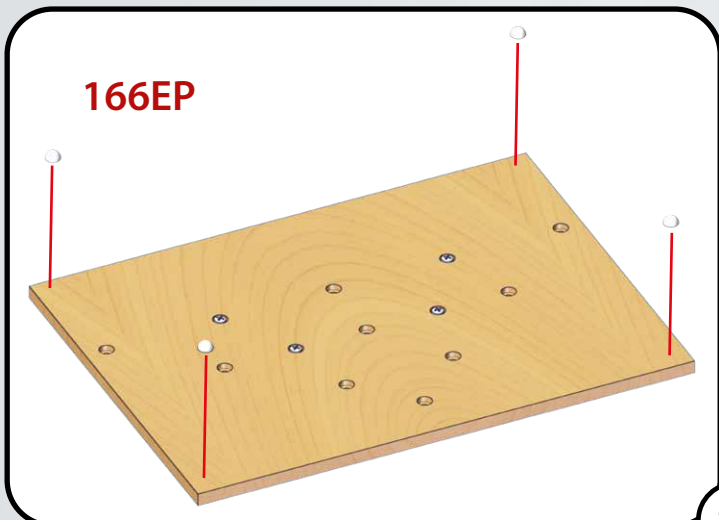
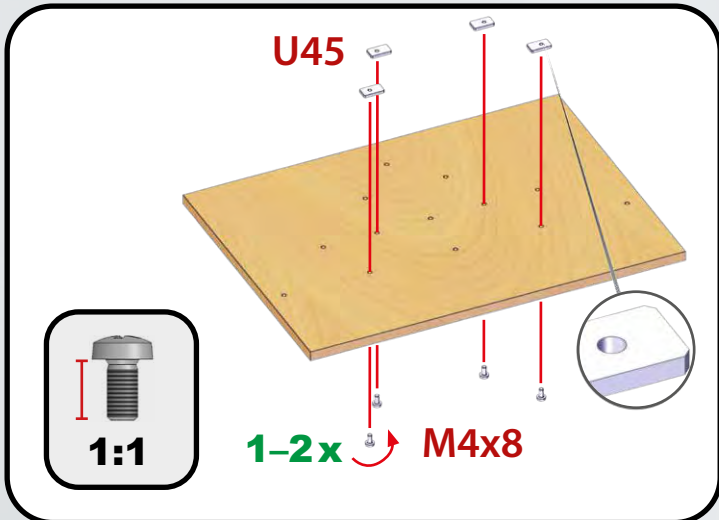
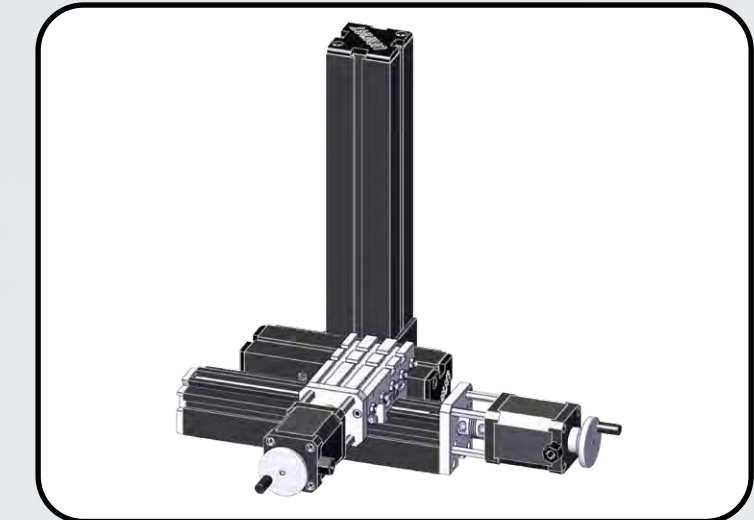
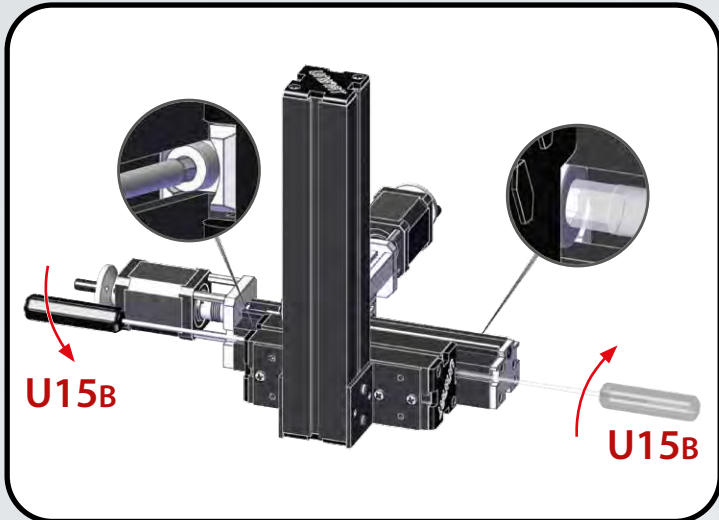
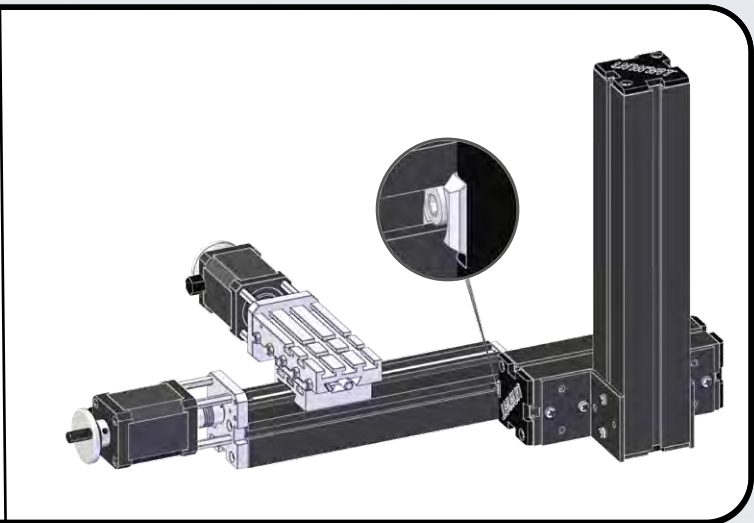
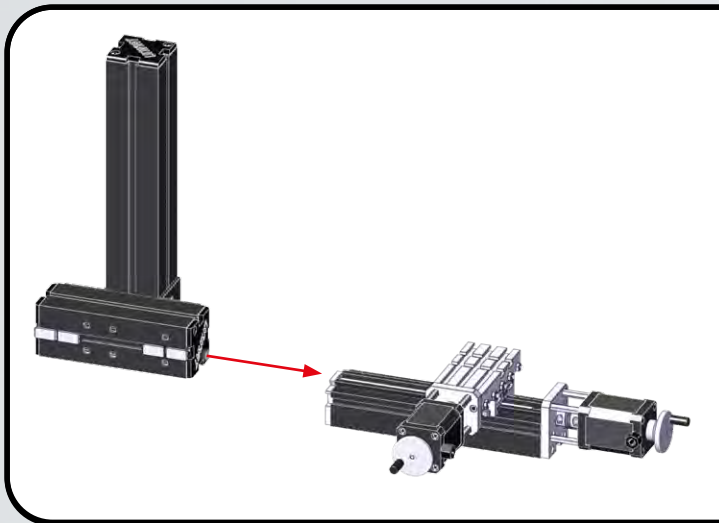


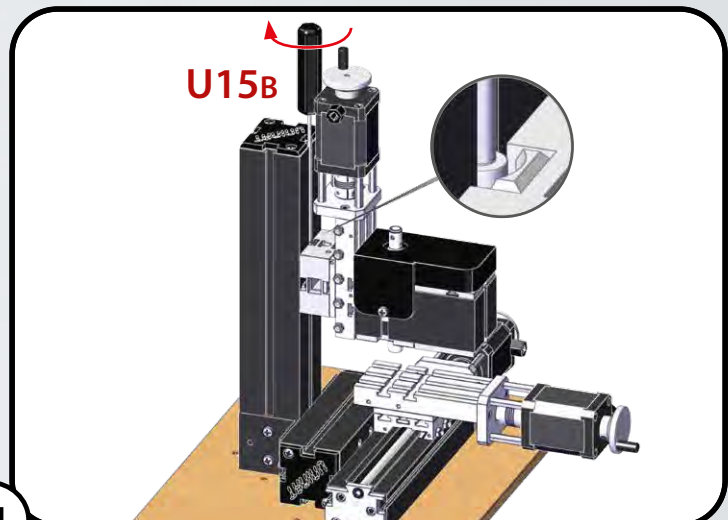
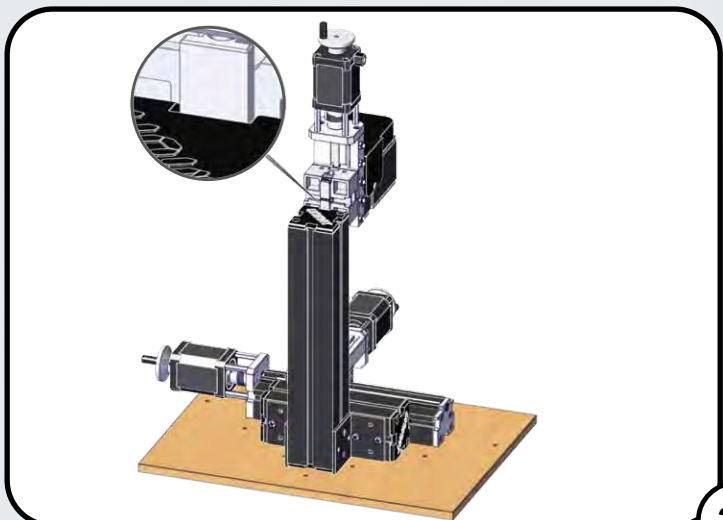
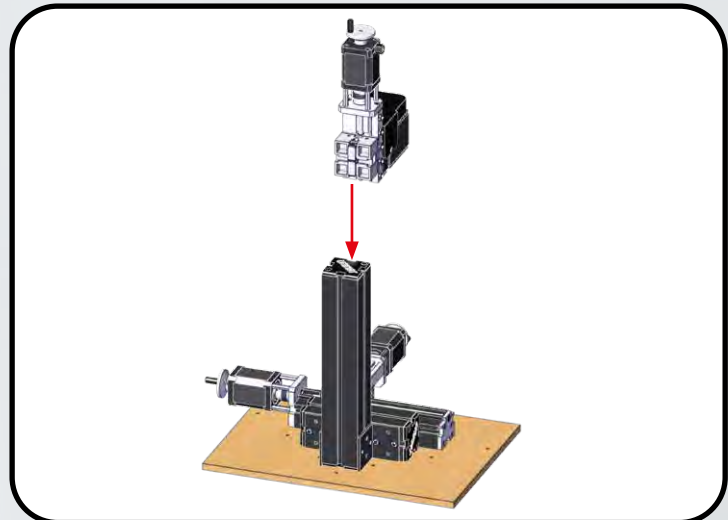
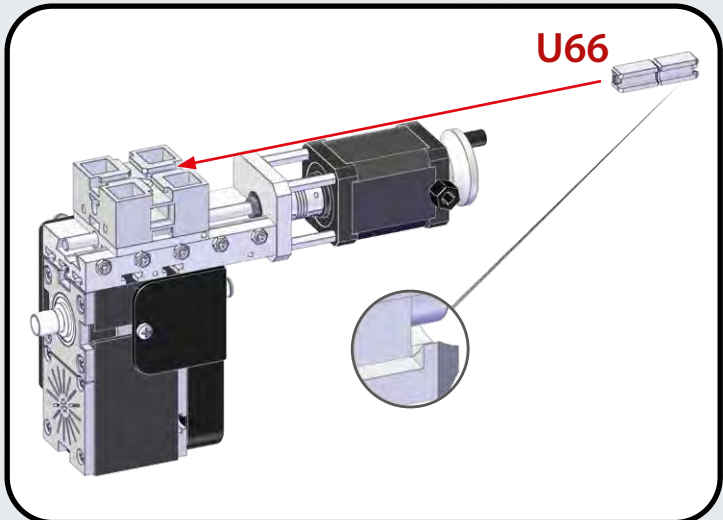
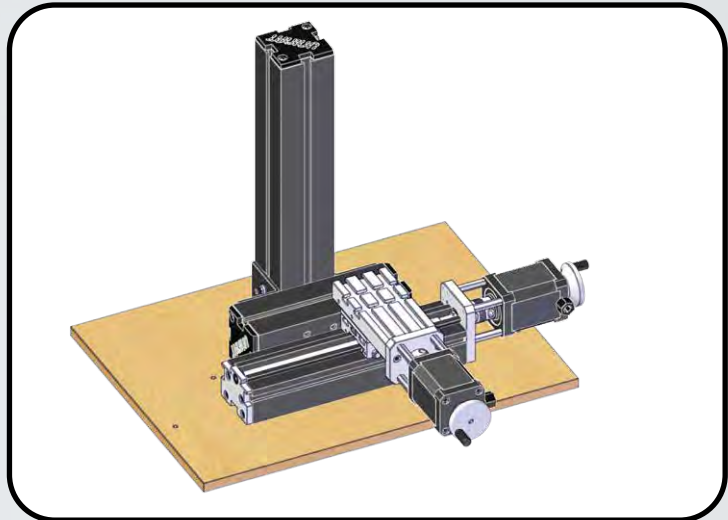
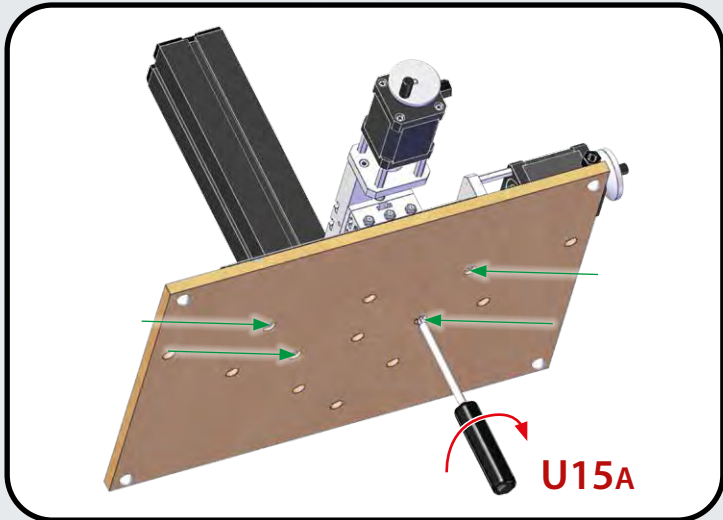
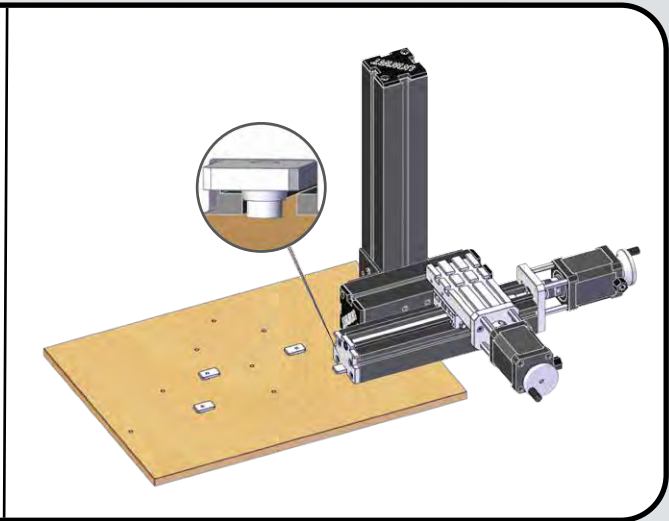
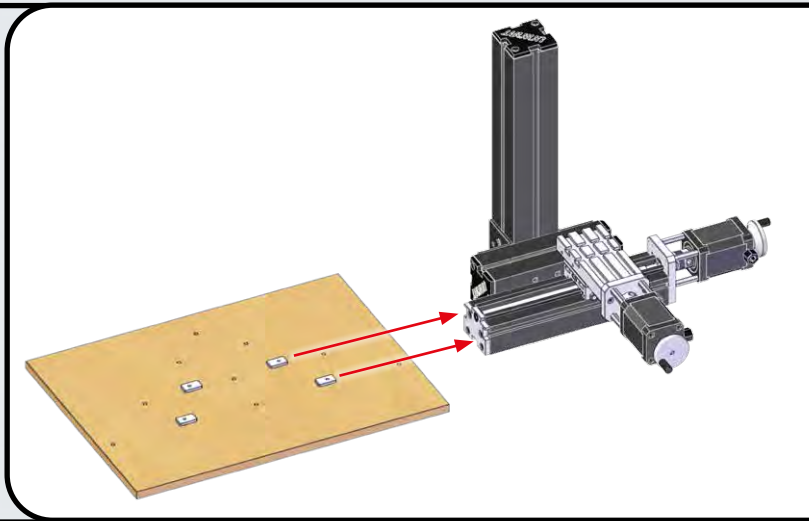




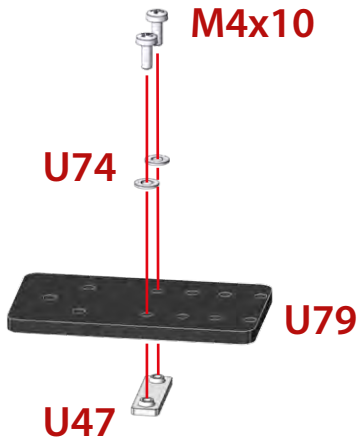




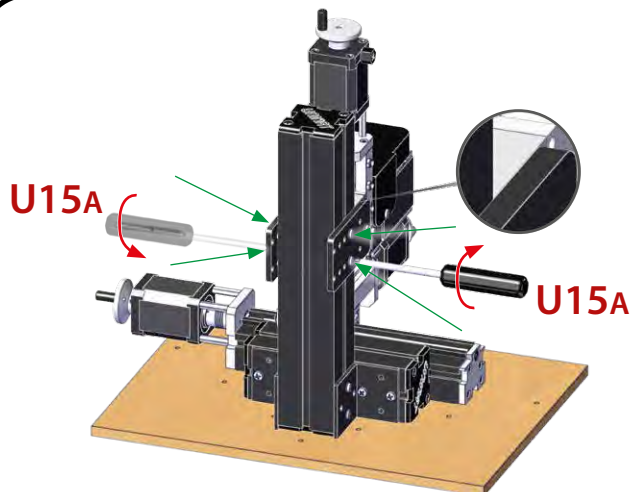
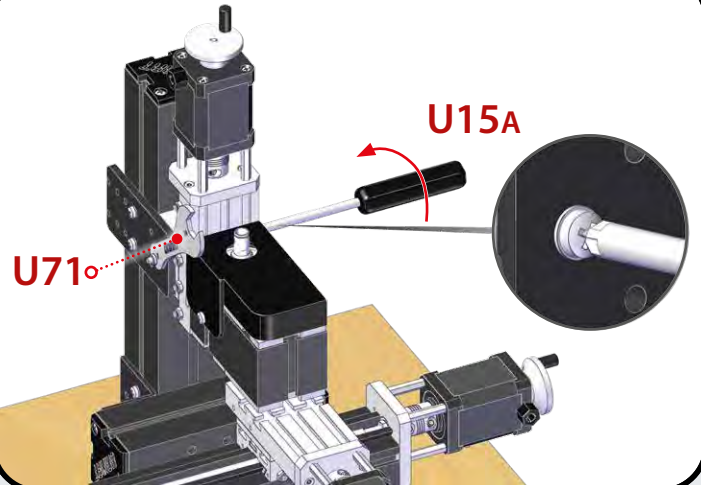
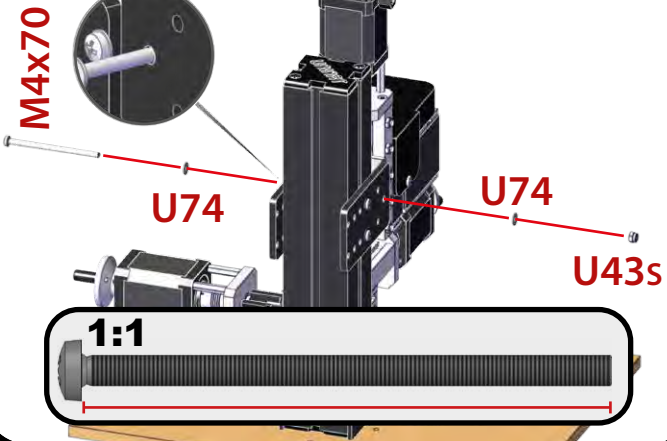
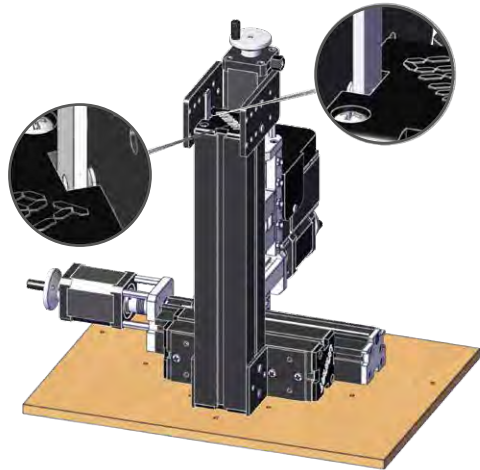
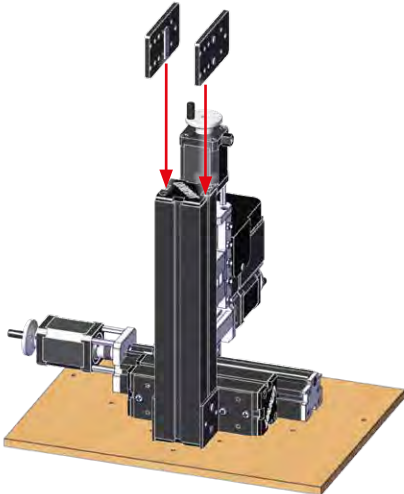
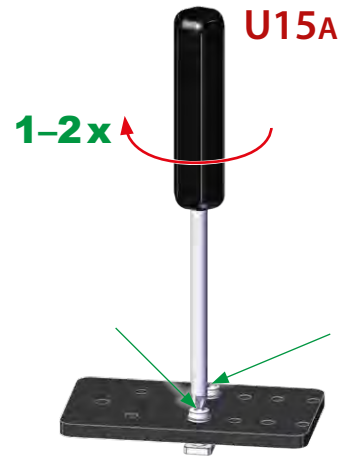




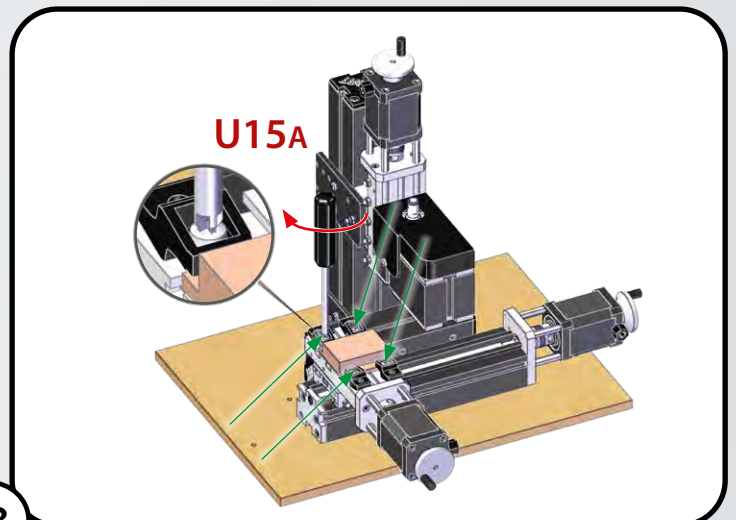
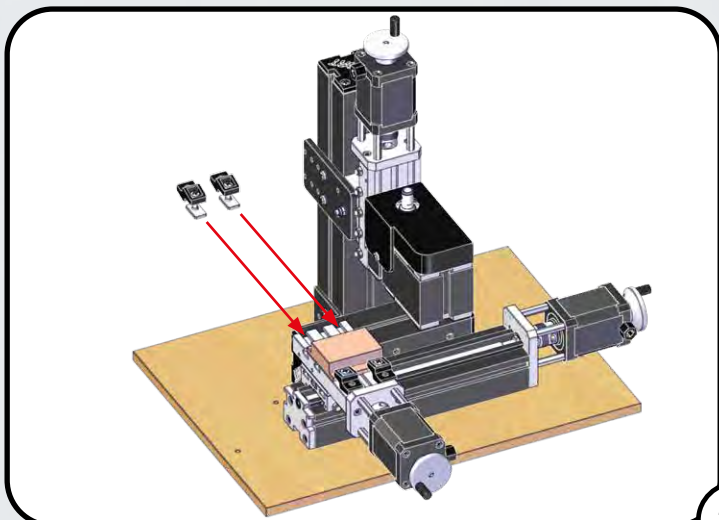
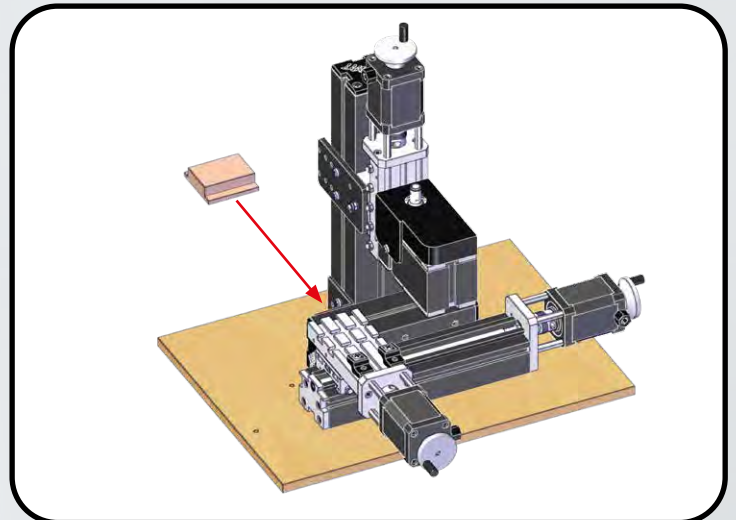
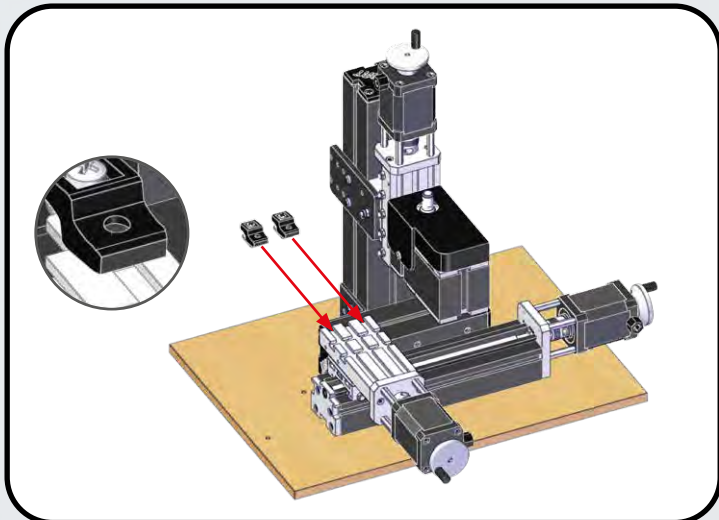
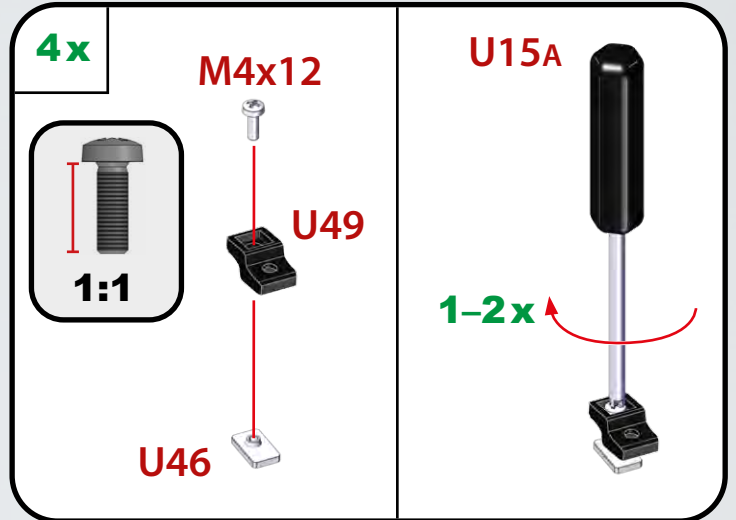
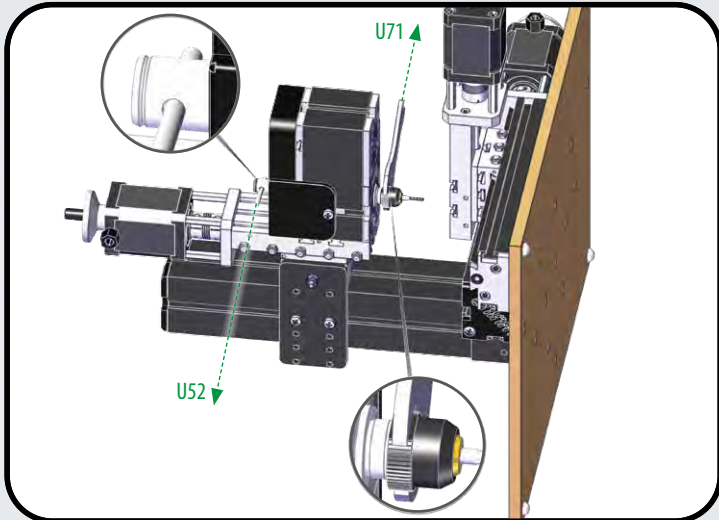
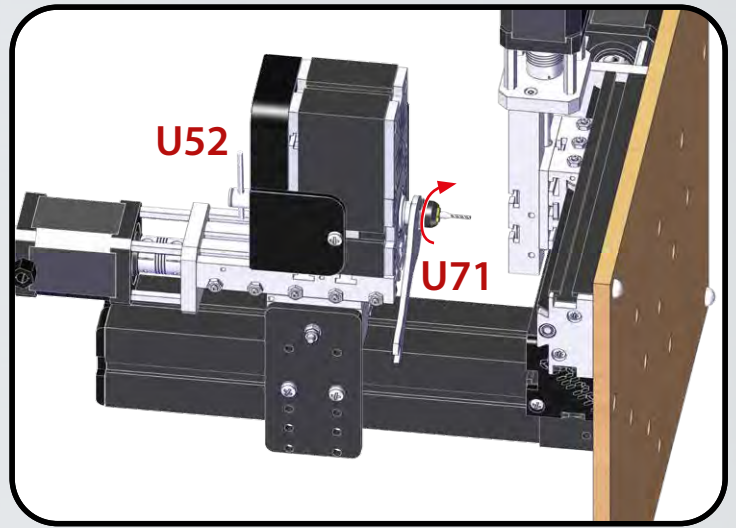
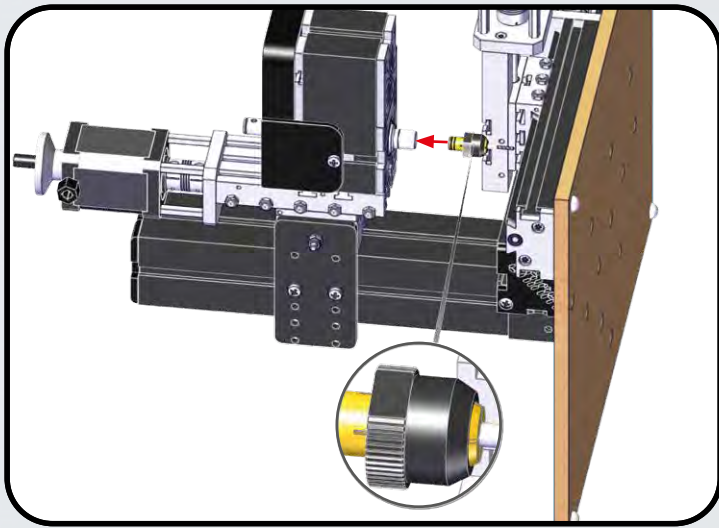
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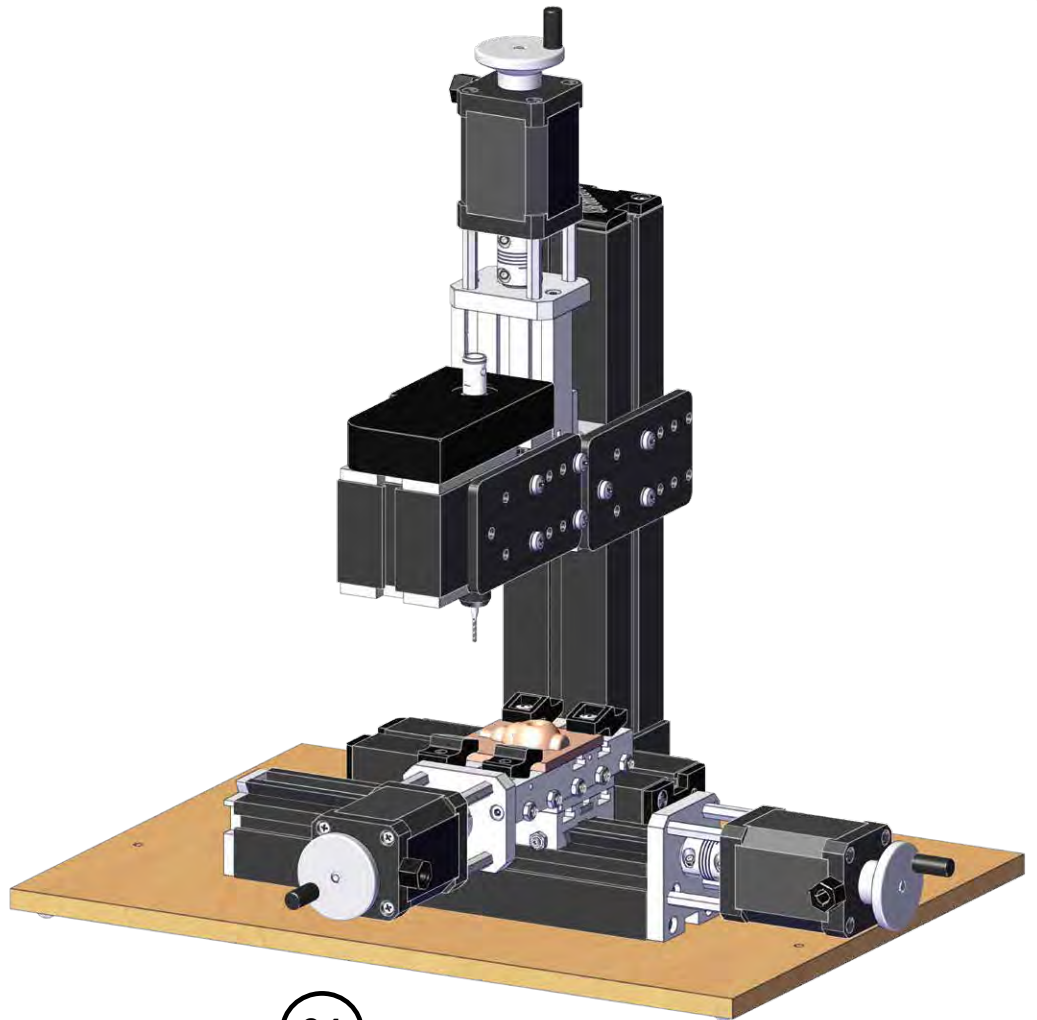
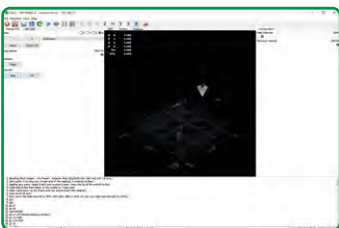
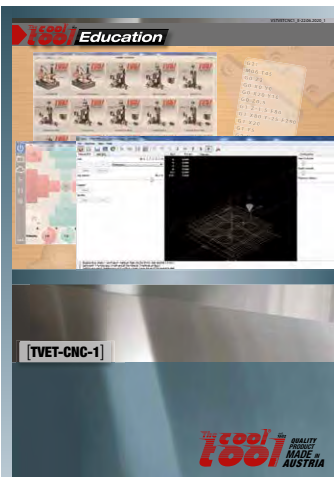
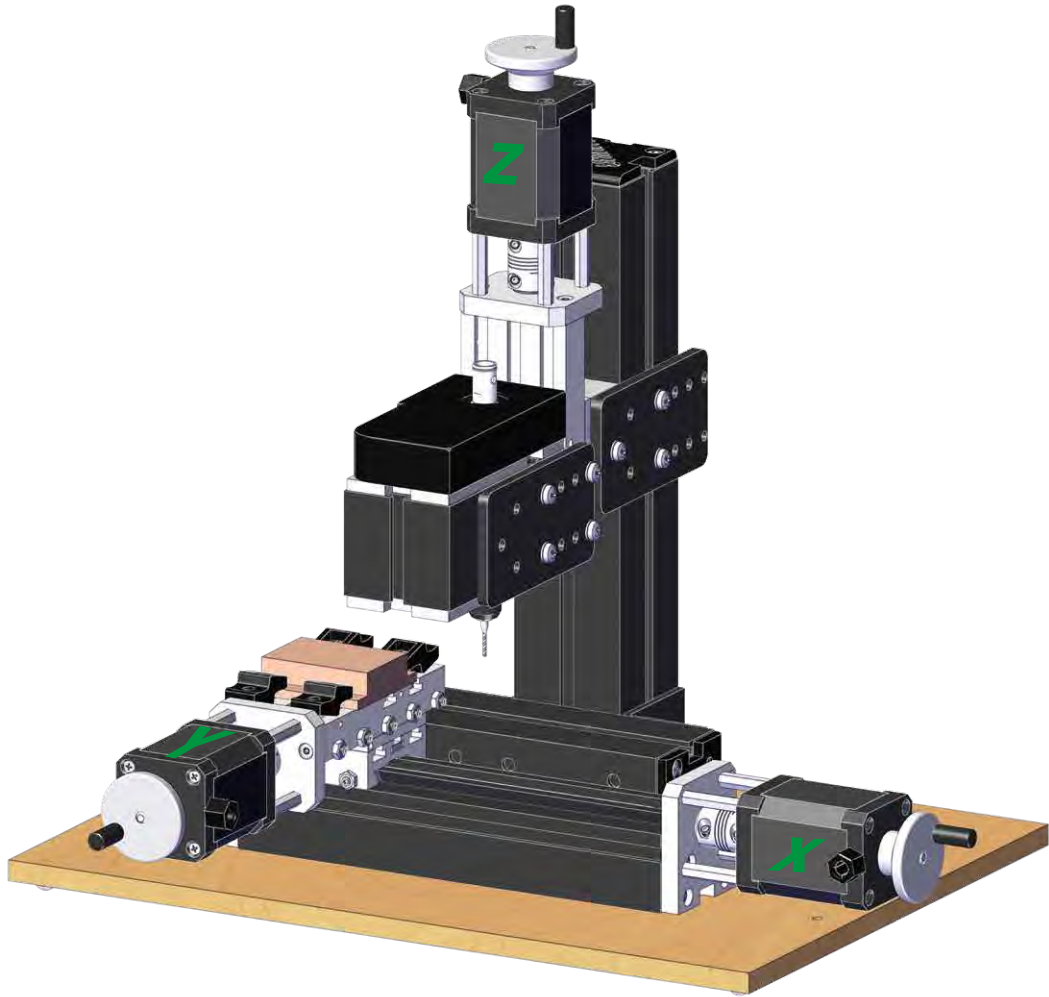


2x









**UNI-FRAES-V3 Projekt - 1**

**UNI-FRAES-V3 project - 1**

**UNI-FRAES-V3 projet - 1**

**UNI-FRAES-V3 proyecto - 1**

**UNI-FRAES-V3 项目 - 1**

**UNI-FRAES-V3 проект - 1**

**Inhalt • contents • contenu • contenido • 内容 • содержание:**

**1) Rohmaterial • Matière première • materia prima • 原料 • Сырье:**

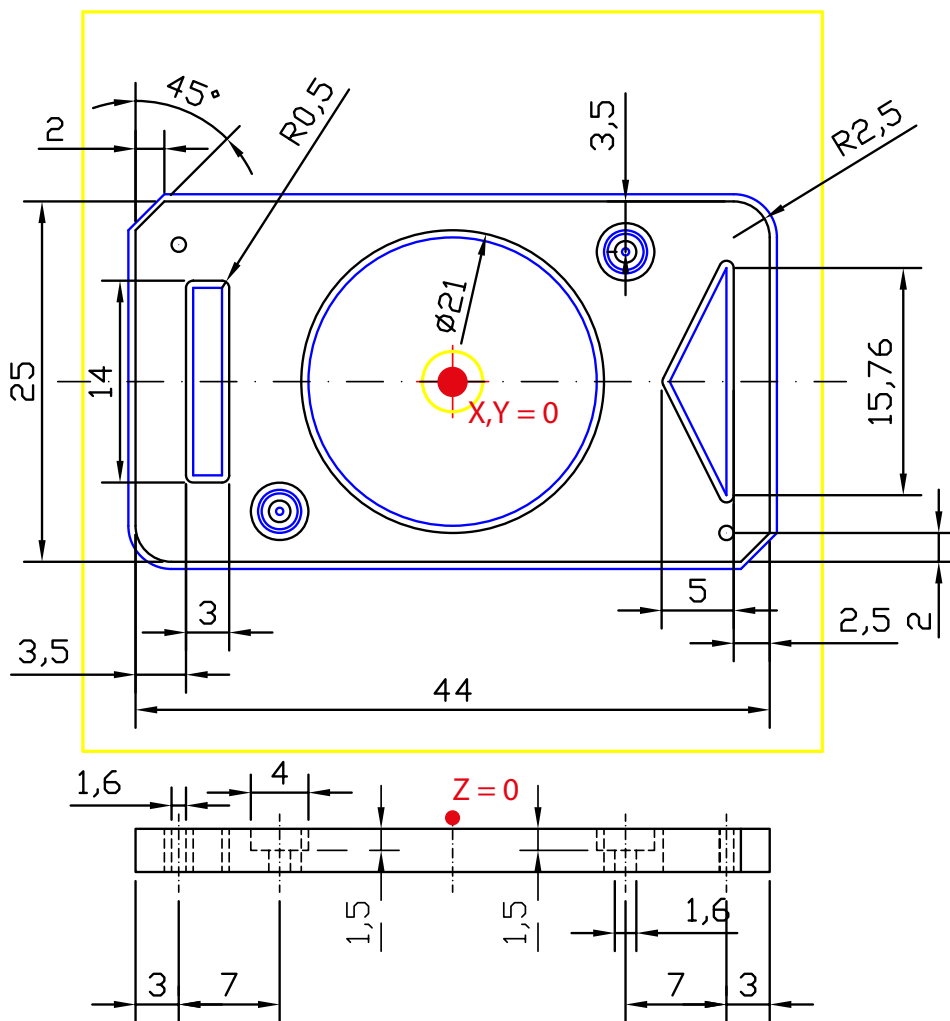
Acrylglasplatte • acrylic sheet • feuille acrylique •  
hoja acrílica • 亚克力板 • Акриловый лист ---- 50x50x3 mm

**2) Technische Zeichnung • technical drawing • dessin technique • dibujo técnico •**

技术图纸 • Технический чертеж

**3) Lösungsvorschlag • proposed solution • solution proposée • solución propuesta •**

建议的解决方案 • Предложенное решение



**Rohmaterial • Matière première • materia prima • 原料 • Сырье**

**Werkstück • workpiece • pièce • pieza de trabajo • 工件 • заготовка**

**Werkzeugbahn • tool path • trajectoire d'outil • trayectoria de la herramienta • 刀具路径 • путь инструмента**

**Projekt • project • projet • proyecto • 项目 • Проект**

Schaftfräser • end mill • fraise en bout • molino de extremo • 立铣刀 • Фреза концевая:  $\varnothing 1,6$  mm

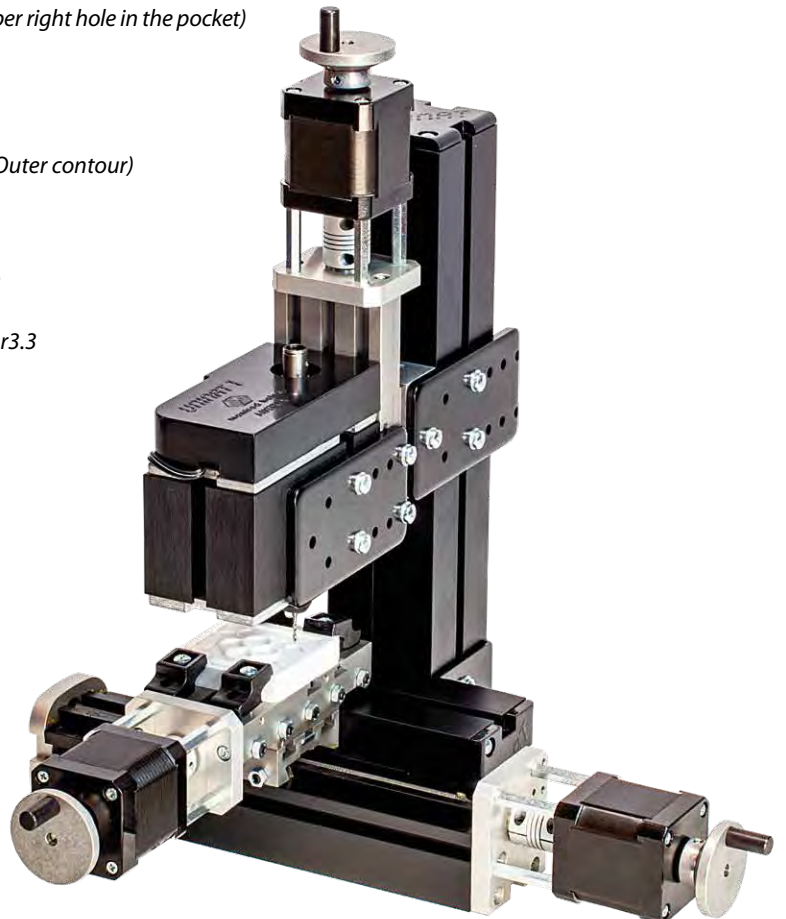
$F_{max.}$ : 100 mm/min

Maximale Schnitttiefe • maximum depth of cut • profondeur de coupe maximale • profundidad máxima de corte • 最大切削深度 • максимальная глубина резания: 1,5 mm

g21  
 g0 z10  
 g0 x-19 y10.5 (left opere hole)  
 g0 z1  
 g1 z-1 f50  
 g0 z1  
 g0 z-1  
 g1 z-2 f50  
 g0 z1  
 g0 z-2  
 g1 z-3.6 f40  
 g0 z10  
 g0 x-17.7 y6.2 (left box)  
 g0 z1  
 g1 z-1.2 f50  
 g1 y-6.2 f100  
 g1 x-16.3  
 g1 y6.2  
 g1 x-17.7  
 g1 z-2.4 f50  
 g1 y-6.2 f100  
 g1 x-16.3  
 g1 y6.2  
 g1 x-17.7  
 g1 z-3.6 f50  
 g1 y-6.2 f100  
 g1 x-16.3  
 g1 y6.2  
 g1 x-17.7  
 g0 z10  
 g0 x-12 y-9 (lower left pocket)  
 g0 z1  
 g1 z-1.5 f50  
 g1 x-10.8 f80  
 g2 x-10.8 y-9 i-1.2 j0  
 g1 x-11.25  
 g2 x-11.25 y-9 i-0.75 j0  
 g1 x-12 y-9  
 g1 z-2.5 f50 (lower left hole in the pocket)  
 g0 z2  
 g0 z-2  
 g1 z-3.6 f50  
 g0 z10  
 g0 x19 y-10.5 (lower right hole)

g0 z1  
 g1 z-1 f50  
 g0 z1  
 g0 z-1  
 g1 z-2 f50  
 g0 z1  
 g0 z-2  
 g1 z-3.6 f40  
 g0 z10  
 g0 x15.3 y0 (left triangle)  
 g0 z1  
 g1 z-1.2 f50  
 g1 x18.7 y-7.08 f100  
 g1 y7.08  
 g1 x15.3 y0  
 g1 z-2.4 f50  
 g1 x18.7 y-7.08 f100  
 g1 y7.08  
 g1 x15.3 y0  
 g1 z-3.6 f50  
 g1 x18.7 y-7.08 f100  
 g1 y7.08  
 g1 x15.3 y0  
 g0 z10  
 g0 x12 y9 (right opere pocket)  
 g0 z1  
 g1 z-1.5 f50  
 g1 x13.2 f80  
 g2 x13.2 y9 i-1.2 j0  
 g1 x12.85  
 g2 x12.85 y9 i-0.75 j0  
 g1 x12 y9  
 g1 z-2.5 f50 (upper right hole in the pocket)  
 g0 z2  
 g0 z-2  
 g1 z-3.6 f50  
 g0 z10  
 g0 x19.5 y13.3 (Outer contour)  
 g0 z1  
 g1 z-1.2 f50  
 g1 x-20.33 f100  
 g1 x-22.8 y10.83  
 g1 y-10  
 g3 x-19.5 y-13.3 r3.3  
 g1 x20.33

g1 x22.8 y-10.83  
 g1 y10  
 g3 x19.5 y13.3 r3.3  
 g1 z-2.4 f50  
 g1 x-20.33 f100  
 g1 x-22.8 y10.83  
 g1 y-10  
 g3 x-19.5 y-13.3 r3.3  
 g1 x20.33  
 g1 x22.8 y-10.83  
 g1 y10  
 g3 x19.5 y13.3 r3.3  
 g1 z-3.6 f50  
 g1 x-20.33 f100  
 g1 x-22.8 y10.83  
 g1 y-10  
 g3 x-19.5 y-13.3 r3.3  
 g1 x20.33  
 g1 x22.8 y-10.83  
 g1 y10  
 g3 x19.5 y13.3 r3.3  
 g0 z10  
 g0 x9.7 y0  
 g0 z1  
 g1 z-1.2 f50  
 g2 x9.7 y0 i-9.7 j0 f100  
 g1 z-2.4 f50  
 g3 x9.7 y0 i-9.7 j0 f100  
 g1 z-3.6 f50  
 g2 x9.7 y0 i-9.7 j0 f10  
 m02



UNI-FRAES-V3

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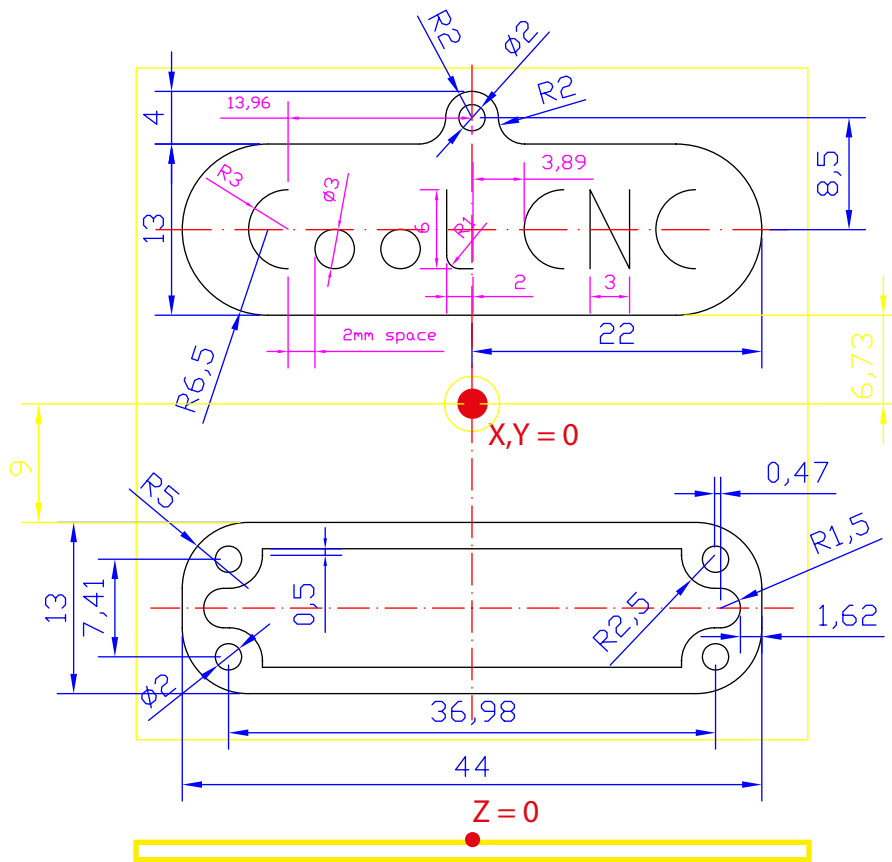
Acrylglasplatte • acrylic sheet • feuille acrylique •  
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Schaftfräser • end mill • fraise en bout • molino de extremo •

立铣刀 • Фреза концевая:  $\varnothing_{\max}$  1,0 mm

$F_{\max}$ : 100 mm/min

Maximale Schnitttiefe • maximum depth of cut •

profondeur de coupe maximale • profundidad

máxima de corte • 最大切削深度 •

максимальная глубина резания: 1,2 mm

**Tool database:**

Tool	POC	Z	DIAM	COMMENT
1	1	0.511	0.125	1/8 end mill
2	2	0.1	0.0625	1/16 end mill
3	3	1.273	0.201	#7 tap drill
30	30	4	0.5	end mill 0.5 mm
35	35	5	0.6	end mill 0.6 mm
40	40	6	0.8	end mill 0.8 mm
45	45	8	1.0	end mill 1.0 mm
50	50	9	1.2	end mill 1.2 mm
55	55	10	1.6	end mill 1.6 mm
60	60	10	2.0	end mill 2.0 mm
65	65	10	3.0	end mill 3.0 mm



g21  
g0 z30  
g0 x0 y0  
m06 t6  
(Start des „CoolCNC“ Anhängers)  
g0 y21.73 z2  
m03  
(Montagebohrung)  
g42 (Werkzeugkorrektur rechts)  
g0 y22.73  
g0 z0.3  
g1 z-1.2 f30  
g2 x0 y20.73 i0 j-1 f100  
g2 x0 y22.73 i0 j1  
g1 z-2.2 f30  
g2 x0 y20.73 i0 j-1 f100  
g2 x0 y22.73 i0 j1  
g1 z-3.6 f30  
g2 x0 y20.73 i0 j-1 f100  
g2 x0 y22.73 i0 j1  
g0 z2  
g40 (Werkzeugkorrektur aus) („CoolCNC“ Schrift)  
g0 x-13.96 y16.23  
g0 z0.5  
g1 z-1.2 f30  
g91 (Relativkoordinaten ein)  
g3 x0 y-6 i0 j-3 f80  
g1 z-1.2 f30  
g2 x0 y6 i0 j3 f80  
g1 z-1.2 f30  
g3 x0 y-6 i0 j-3 f80  
g0 z5.6  
g0 x2 y1.5  
g0 z-1.7  
g1 z-1.5 f30  
g2 x3 y0 i1.5 j0 f80  
g2 x-3 y0 i-1.5 j0  
g1 z-1.2 f30  
g2 x3 y0 i1.5 j0 f80  
g2 x-3 y0 i-1.5 j0  
g1 z-1.2 f30  
g2 x3 y0 i1.5 j0 f80  
g2 x-3 y0 i-1.5 j0  
g0 z5.6  
g0 x5  
g0 z-1.7  
g1 z-1.5 f30  
g2 x3 y0 i1.5 j0 f80  
g2 x-3 y0 i-1.5 j0  
g1 z-1.2 f30  
g2 x3 y0 i1.5 j0 f80  
g2 x-3 y0 i-1.5 j0  
g0 z5.6  
g0 x5 y4.5  
g0 z-1.7  
g1 z-1.5  
g1 y-5 f80  
g3 x1 y-1 r1  
g1 x1

g1 z-1.2 f30  
g1 x-1 f80  
g2 x-1 y1 r1  
g1 y5  
g1 z-1.2 f30  
g1 y-5 f80  
g3 x1 y-1 r1  
g1 x1  
g0 z5.6  
g0 x6.89 y6  
g0 z-1.7  
g1 z-1.5 f30  
g3 x0 y-6 i0 j-3 f80  
g1 z-1.2 f30  
g2 x0 y6 i0 j3 f80  
g1 z-1.2 f30  
g3 x0 y-6 i0 j-3 f80  
g0 z5.6  
g0 x2  
g0 z-1.7  
g1 z-1.5 f30  
g1 y6 f80  
g1 x3 y-6  
g1 y6  
g1 z-1.2 f30  
g1 y-6 f80  
g1 x-3 y6  
g1 y-6  
g1 z-1.2 f30  
g1 y6  
g1 x3 y-6  
g1 y6  
g0 z5.6  
g0 x5  
g0 z-1.7  
g1 z-1.5 f30  
g3 x0 y-6 i0 j-3 f80  
g1 z-1.2 f30  
g2 x0 y6 i0 j3 f80  
g1 z-1.2 f30  
g3 x0 y-6 i0 j-3 f80  
g0 z2  
(Außenkontur)  
g0 x24 y11.23  
g42 (Werkzeugkorrektur rechts)  
g0 x22 y13.25  
g0 z0.3  
g91 (Relativkoordinaten ein)  
g1 z-1.5 f30  
g3 x-6.5 y6.5 i-6.5 j0 f80  
g1 x-11.5  
g2 x-2 y2 i0 j2  
g3 x-2 y2 i-2 j0  
g3 x-2 y-2 i0 j-2  
g2 x-2 y-2 i-2 j0  
g1 x-11.5  
g3 x-6.5 y-6.5 i0 j-6.5  
g3 x6.5 y-6.5 i6.5 j0  
g1 x31  
g3 x6.5 y6.5 i0 j6.5  
g1 z-1.2 f30  
g3 x-6.5 y6.5 r6.5 f80  
g1 x-11.5  
g2 x-2 y2 r2  
g3 x-2 y2 r2  
g3 x-2 y-2 r2  
g2 x-2 y-2 r2

g1 x-11.5  
g3 x-6.5 y-6.5 r6.5  
g3 x6.5 y-6.5 r6.5  
g1 x31  
g3 x6.5 y6.5 r6.5  
g1 z-1.2 f30  
g3 x-6.5 y6.5 i-6.5 j0 f80  
g1 x-11.5  
g2 x-2 y2 i0 j2  
g3 x-2 y2 i-2 j0  
g3 x-2 y-2 i0 j-2  
g2 x-2 y-2 i-2 j0  
g1 x-11.5  
g3 x-6.5 y-6.5 i0 j-6.5  
g3 x6.5 y-6.5 i6.5 j0  
g1 x31  
g3 x6.5 y6.5 i0 j6.5  
g90 (Absolutkoordinaten ein)  
g0 z10  
g40 (Werkzeugkorrektur aus)  
m05  
(Start Dichtungsmodell)  
g0 x-18.49 y-11.445  
m03  
(Bohrung)  
g41 (Werkzeugkorrektur links)  
g91 (Relativkoordinaten ein)  
g0 x-1 z-9.7  
g1 z-1.5 f30  
g3 x2 y0 i1 j0 f80  
g3 x-2 y0 i-1 j0  
g1 z-1.2 f30  
g3 x2 y0 i1 j0 f80  
g3 x-2 y0 i-1 j0  
g1 z-1.2 f30  
g3 x2 y0 i1 j0 f80  
g3 x-2 y0 i-1 j0  
g0 z5.6  
g40 (Werkzeugkorrektur aus)  
g0 x1 y-7.41  
g42 (Werkzeugkorrektur rechts)  
g0 x-1 z-1.7  
g1 z-1.5 f30  
g2 x2 y0 i1 j0 f80  
g2 x-2 y0 i-1 j0  
g1 z-1.2 f30  
g2 x2 y0 i1 j0 f80  
g2 x-2 y0 i-1 j0  
g1 z-1.2 f30  
g2 x2 y0 i1 j0 f80  
g2 x-2 y0 i-1 j0  
g0 z5.6  
g40 (Werkzeugkorrektur aus)  
g0 x37.98  
g41 (Werkzeugkorrektur links)  
g91 (Relativkoordinaten ein)  
g0 x-1 z-1.7  
g1 z-1.5 f30  
g3 x2 y0 i1 j0 f80  
g3 x-2 y0 i-1 j0  
g1 z-1.2 f30  
g3 x2 y0 i1 j0 f80  
g3 x-2 y0 i-1 j0  
g1 z-1.2 f30  
g3 x2 y0 i1 j0 f80  
g3 x-2 y0 i-1 j0  
g1 z-1.2 f30  
g3 x2 y0 i1 j0 f80  
g3 x-2 y0 i-1 j0  
g1 z-1.2 f30  
g3 x2 y0 i1 j0 f80  
g3 x-2 y0 i-1 j0

g0 z5.6  
g40 (Werkzeugkorrektur aus)  
g0 x1 y7.41  
g42 (Werkzeugkorrektur rechts)  
g0 x-1 z-1.7  
g1 z-1.5 f30  
g2 x2 y0 i1 j0 f80  
g2 x-2 y0 i-1 j0  
g1 z-1.2 f30  
g2 x2 y0 i1 j0 f80  
g2 x-2 y0 i-1 j0  
g1 z-1.2 f30  
g2 x2 y0 i1 j0 f80  
g2 x-2 y0 i-1 j0  
g0 z5.6  
g40 (Werkzeugkorrektur aus)  
g90 (Absolutkoordinaten ein)  
(Innere Kontur)  
g0 x18.49 y-15.5  
g41 (Werkzeugkorrektur links)  
g0 x20.38 z0.3  
g1 z-1.2 f30  
g91 (Relativkoordinaten ein)  
g3 x-1.5 y1.5 r1.5 f80  
g1 x-0.47  
g2 x-2.5 y2.5 r2.5  
g1 y0.5  
g1 x-32  
g1 y-0.5  
g2 x-2.5 y-2.5 r2.5  
g1 x-0.47  
g3 x-1.5 y-1.5 r1.5  
g3 x1.5 y-1.5 r1.5  
g1 x0.47  
g2 x2.5 y-2.5 r2.5  
g1 y-0.5  
g1 x32  
g1 y0.5  
g2 x2.5 y2.5 r2.5  
g1 x0.47  
g3 x1.5 y1.5 r1.5  
g1 z-1.2 f30  
g3 x-1.5 y1.5 r1.5 f80  
g1 x-0.47  
g2 x-2.5 y2.5 r2.5  
g1 y0.5  
g1 x-32  
g1 y-0.5  
g2 x-2.5 y-2.5 r2.5  
g1 x-0.47  
g3 x-1.5 y-1.5 r1.5  
g3 x1.5 y-1.5 r1.5  
g1 x0.47  
g2 x-2.5 y2.5 r2.5  
g1 y0.5  
g1 x-32  
g1 y-0.5  
g2 x2.5 y2.5 r2.5  
g1 x0.47  
g3 x1.5 y1.5 r1.5  
g1 z-1.2 f30  
g3 x-1.5 y1.5 r1.5 f80  
g1 x-0.47  
g2 x-2.5 y2.5 r2.5  
g1 y0.5  
g1 x-32  
g1 y-0.5

g2 x-2.5 y-2.5 r2.5  
g1 x-0.47  
g3 x-1.5 y-1.5 r1.5  
g3 x1.5 y-1.5 r1.5  
g1 x0.47  
g2 x2.5 y-2.5 r2.5  
g1 y-0.5  
g1 x32  
g1 y0.5  
g2 x2.5 y2.5 r2.5  
g1 x0.47  
g3 x1.5 y-1.5 r1.5  
g0 z5.6  
g40 (Werkzeugkorrektur aus)  
g90 (Absolutkoordinaten ein)  
(Äußere Kontur)  
g0 x24 y-17.5  
g42 (Werkzeugkorrektur rechts)  
g0 x22 y-15.5 z0.3  
g1 z-1.2 f30  
g91  
g1 y1.5 f80  
g3 x-5 y5 r5  
g1 x-34  
g3 x-5 y-5 r5  
g1 y-3  
g3 x5 y-5 r5  
g1 x34  
g3 x5 y5 r5  
g1 y1.5  
g1 z-1.2 f30  
g1 y1.5 f80  
g3 x-5 y5 r5  
g1 x-34  
g3 x-5 y-5 r5  
g1 y-3  
g3 x5 y-5 r5  
g1 x34  
g3 x5 y5 r5  
g1 y1.5  
g1 z-1.2 f30  
g1 y1.5 f80  
g3 x-5 y5 r5  
g1 x-34  
g3 x-5 y-5 r5  
g1 y-3  
g3 x5 y-5 r5  
g1 x34  
g3 x5 y5 r5  
g1 y1.5  
g0 z26  
g40 (Werkzeugkorrektur aus)  
g90  
m05  
g0 x-50 y25  
m02

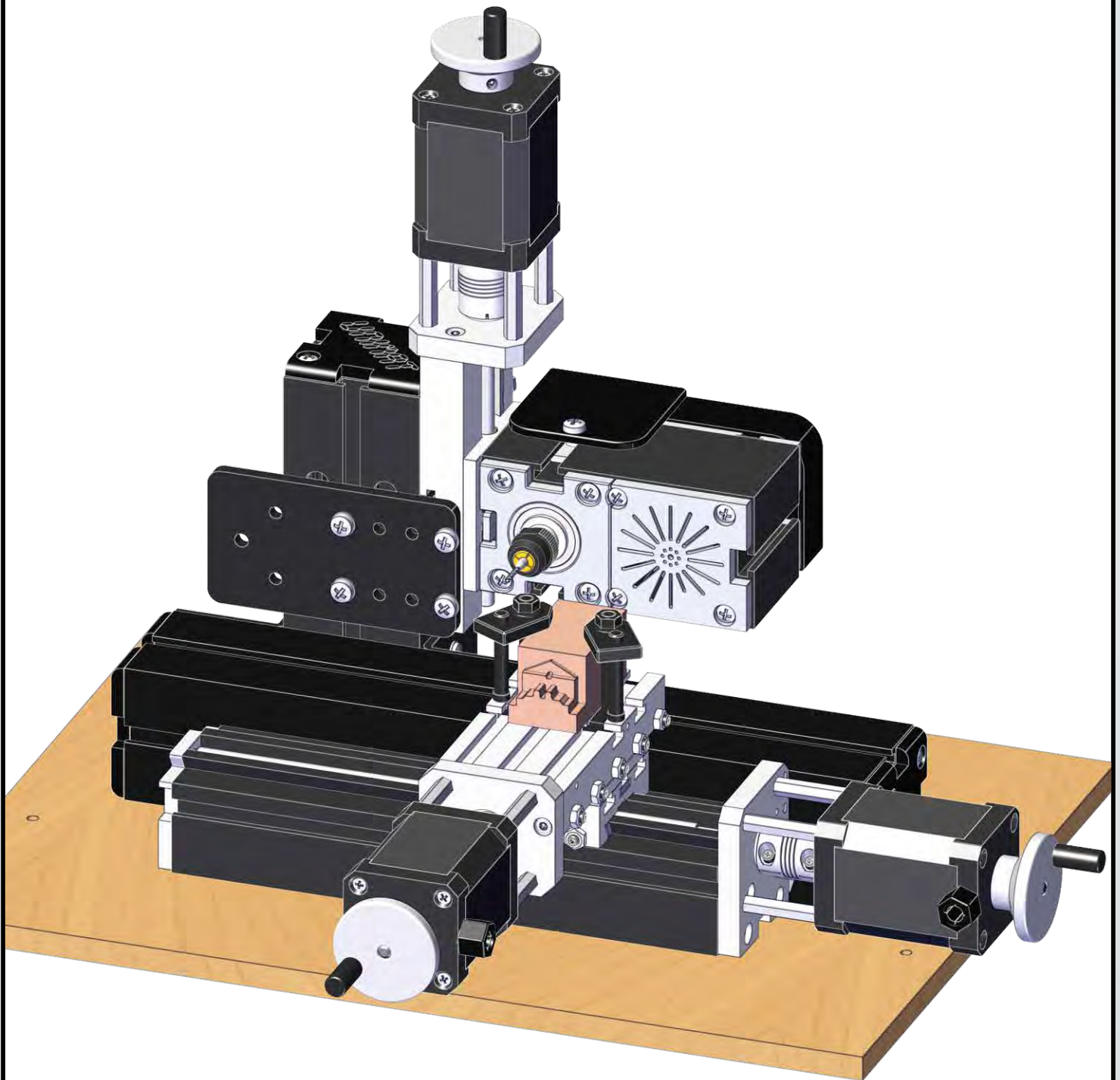


UNI-FRAES-V3

# UNIMAT CNC

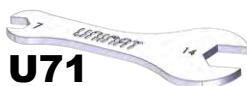
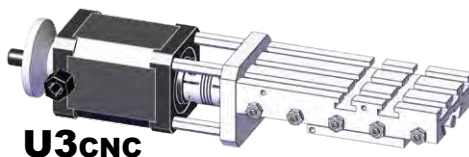
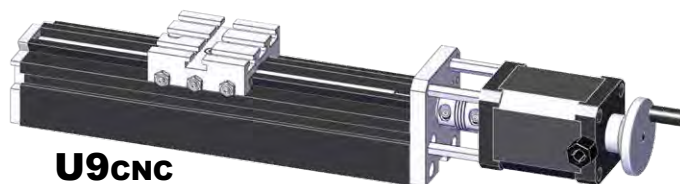
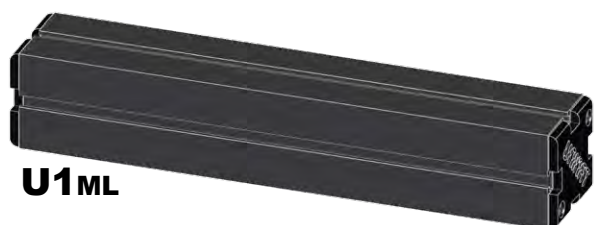
**3 Achsen Horizontalfräse**  
**3 axis horizontal milling machine**  
**3 axes Fraiseuse verticale**

**UNI-FRAES-H3**



		DE	EN	FR	ES	中国 (ZH)	RU	
U1ML	1	Maschinenbett, lang	Machine bed, long	Banc, grand	Bancada grande	长机座	Станина длинная	A1A 020 000 SW
U3CNC	2	CNC Querschlitzen	CNC Cross slide	CNC Chariot, petit	CNC Carro, pequeño	CNC 全金属小滑块	CNC Салазки поперечные	164 060 CNC
U4MLEDU	1	Antriebseinheit ML	Drive unit ML	EDU-Moteur	EDU-Motor	EDU-马达	EDU-Двигатель	164 420
U7ML	1	Maschinenbett, kurz	Machine bed, short	Banc, petit	Bancada pequeña	全金属短机座	Станина короткая	A1A 010 000SW
U9CNC	1	CNC Längsschlitzen	CNC Longitudinal slide	CNC Chariot, grand	CNC Carro, grande	全金属长滑块	Салазки продольные	164 480 CNC
U12ML	1	Spannzange 1/8"	Collet 1/8"	Pince 1/8"	Pinza 1/8"	金属夹头 1/8"	Цанги 1/8"	162 460 31/8
U15A	1	Schraubendreher #2	Screwdriver #2	Tourne-vis #2	Destornillador #2	螺丝刀2#	Отвертка Philips № 2	ZWZ 980 030
U15B	1	Inbusschraubendreher	Screwdriver allen key 2,5mm	Tourne-vis hexagonale 2,5mm	Destornillador allen 2,5mm	内六角扳手2.5 mm	Отвертка 6-гранная 2,5 мм	ZWZ 980 075
U48ML	1	Spannzangenhalter	Collet holder	Porte-pinces	Porta-pinza	固定铜帽	Гайка зажимная для цанг	A1A 000 073
U49ML	2	Spannklaue ML	Clamping jaw ML	Mors de serrage ML	Brida de sujeción ML	夹板 ML	Прихват Прихват ML	A1A 000 090
U65	1	Inbusschlüssel 2,5 mm	Allen key 2,5 mm	Clé hexagonale 2,5 mm	Llave allen 2,5 mm	内六角扳手2.5 mm	Ключ 6-гранный 2,5 мм	ZWZ 110 200
U66	3	Verbindungselement	Connection piece	Pièce de connexion	Elemento de conexión	连接件	Сухарь соединительный	A1A 00 ZINSK
U71	1	Gabelschlüssel 7 / 14 mm	Fork wrench 7 / 14 mm	Clé de fourche 7 / 14 mm	llave de furca 7 / 14 mm	扳手 7 / 14 mm	Ключ гаечный 7 / 14 мм	ZWZ 400 700
U79	1	Fixierplatte klein	Stabilizing plates small	Plaques de fixation petits	Platos de fijación pequeños	小固定片	Пластина стабилизирующая малая	A1Z 470 000
U80	2	Befestigungswinkel	Stabilizing angle	Angle de fixation	Escuadra de fijación	直角固定座	Угольник стабилизирующий	A1Z 480 000
	1	Grundplatte CNC	Mounting plate CNC	Plaque de montage CNC	Plancha basico CNC	固定底板 CNC	Монтажная пластина CNC	164 402

nicht im Maßstab | not in scale | pas à l'échelle | no es a escala | 不按比例 | не в масштабе





		DE	EN	FR	ES	中国 (ZH)	RU	
U31	4	Schraube M4x10	Screw M4x10	Vis M4x10	Tornillo M4x10	螺钉M4x10	Винт M4x10	ZSR M40 410
U37	12	Schraube M4x8	Screw M4x8	Vis M4x8	Tornillo M4x8	螺钉M4x8	Винт M4x8	ZSR M40 408
U38	6	Schraube M4x6	Screw M4x6	Vis M4x6	Tornillo M4x6	螺钉M4x6	Винт M4x6	ZSR M40 406
U46	8	Nutstein	Slot nut	Boulon «T»	Pernos "T"	单孔螺母	Гайка пазовая	A1A 060 040
U47	6	Klemmplatte	Camping plate	Élément en «T»	Elemento "T"	双孔螺母	Гайка пазовая двойная	A1A 010 020
U52	2	Stift	Rod	Cheville	Perno	锁杆	Вороток	ZST 110 345
U56CNC	1	1,6 mm Fräser	1,6 mm Milling head	1,6 mm Fraise	1,6 mm Fresa	铣刀头 1.6 mm	Фреза концевая 1,6 mm	F2470 1.60
U74	12	Beilagscheibe	Plain washer	Rondelle	Arandela	垫片	Шайба	ZSB 250 430
	4	Gummipuffer	Elastic buffer	Butoir élastique	Amortiguador elástico	弹性缓冲	Эластичный буфер	166 EP
ohne Abbildung   without picture   sans figure   sin ilustración   无图   без рисунка								
	1	Netzteil 14,4V	14.4V adaptor	14,4V Transformateur	14,4V Transformador	变压器 14.4 V	Трансформатор 14,4 В	161 31x

nicht im Maßstab | not in scale | pas à l'échelle | no es a escala | 不按比例 | не в масштабе



**U56CNC**



**U47**



**U74**



**U52**



**U46**



**166EP**



**M4x6**

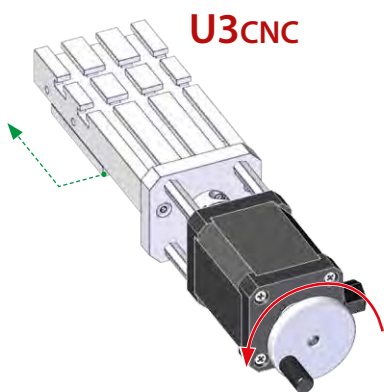
**1:1**



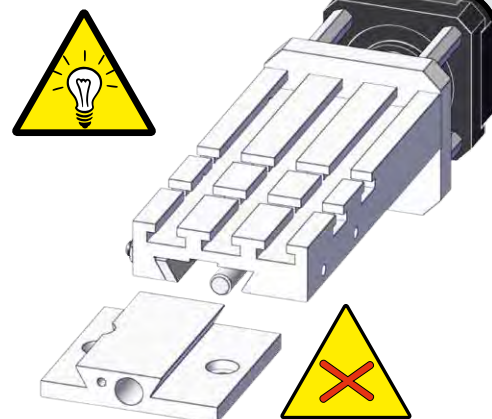
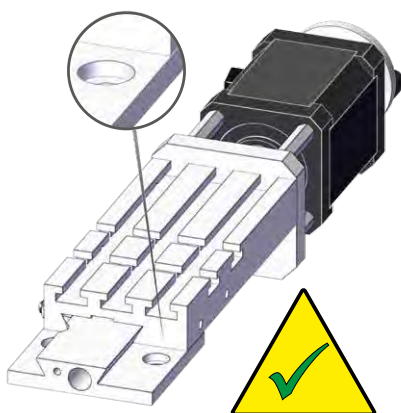
**M4x8**



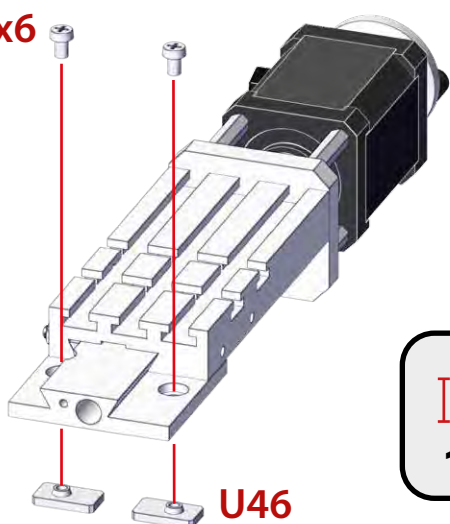
**M4x10**



**U3CNC**



**M4x6**



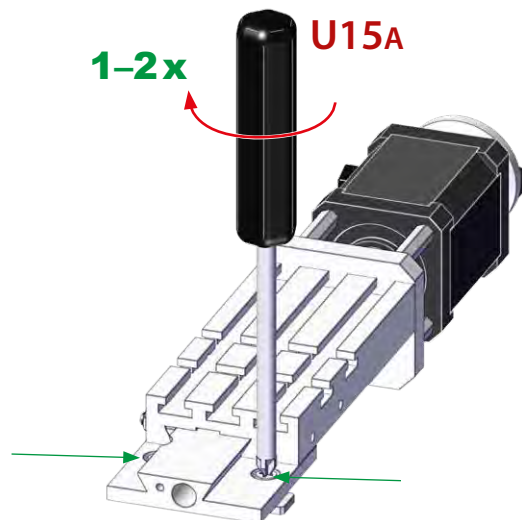
**U46**

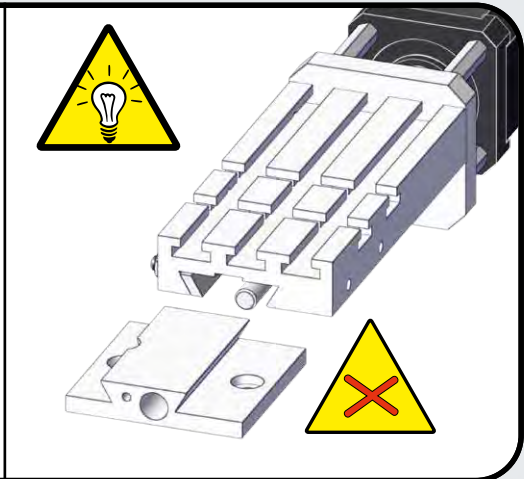
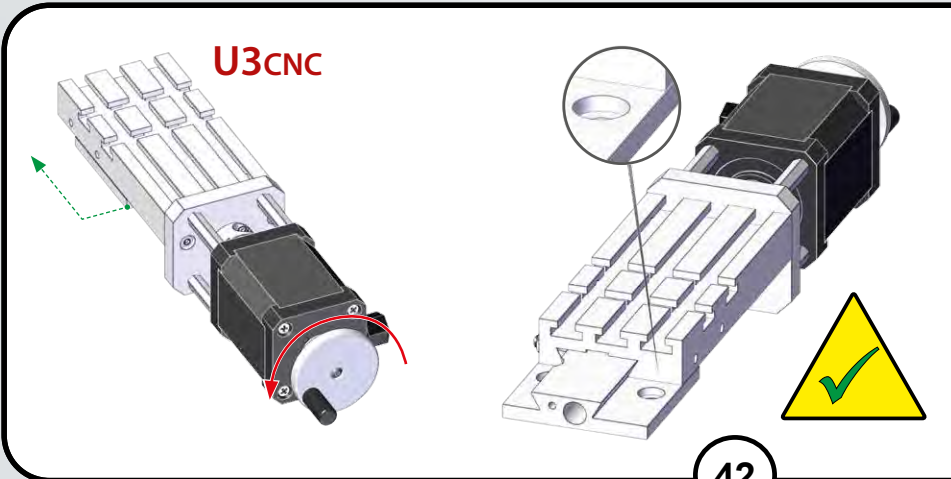
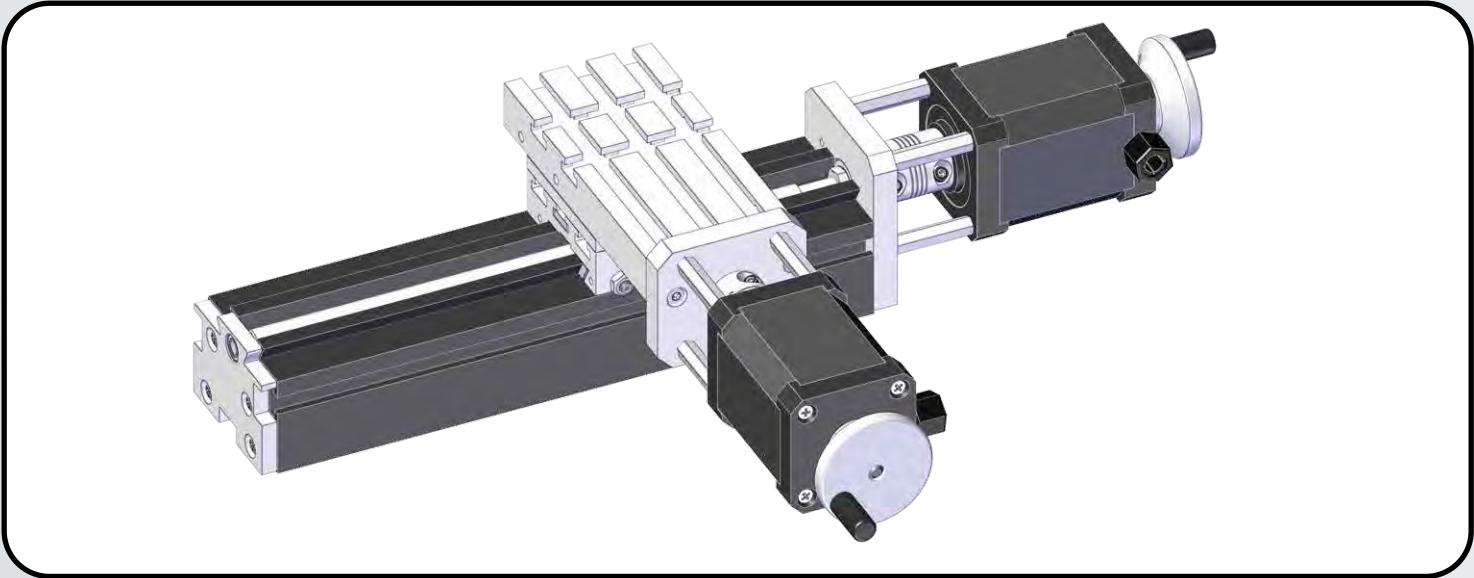
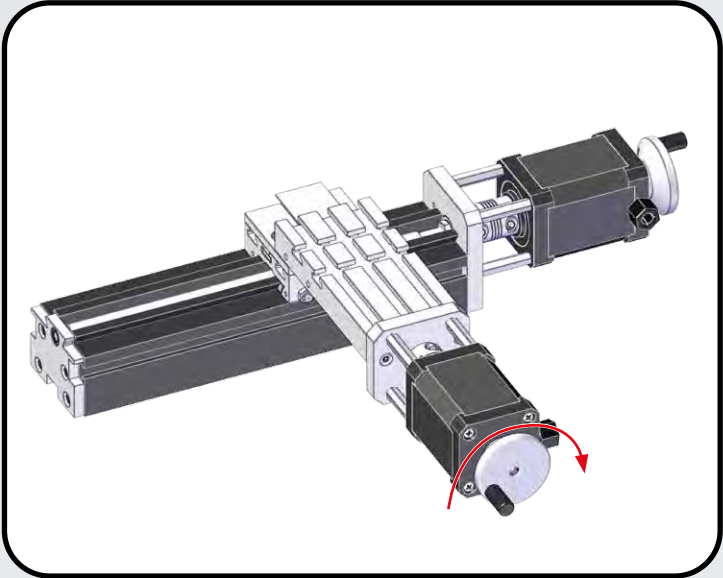
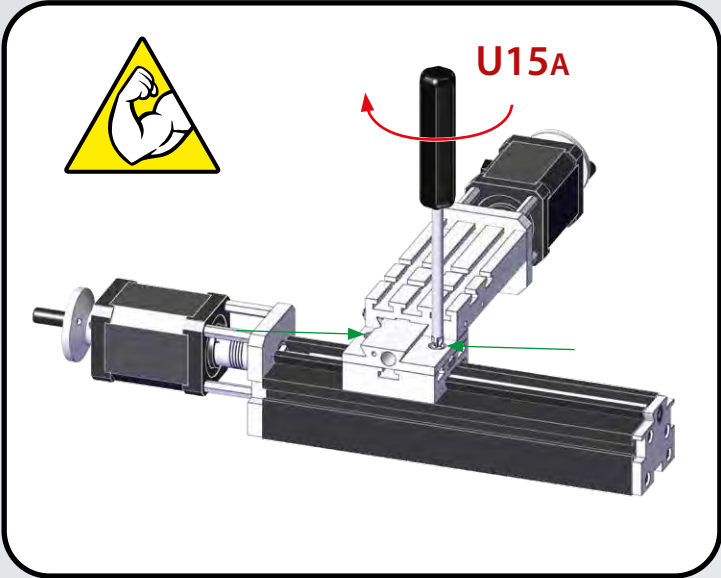
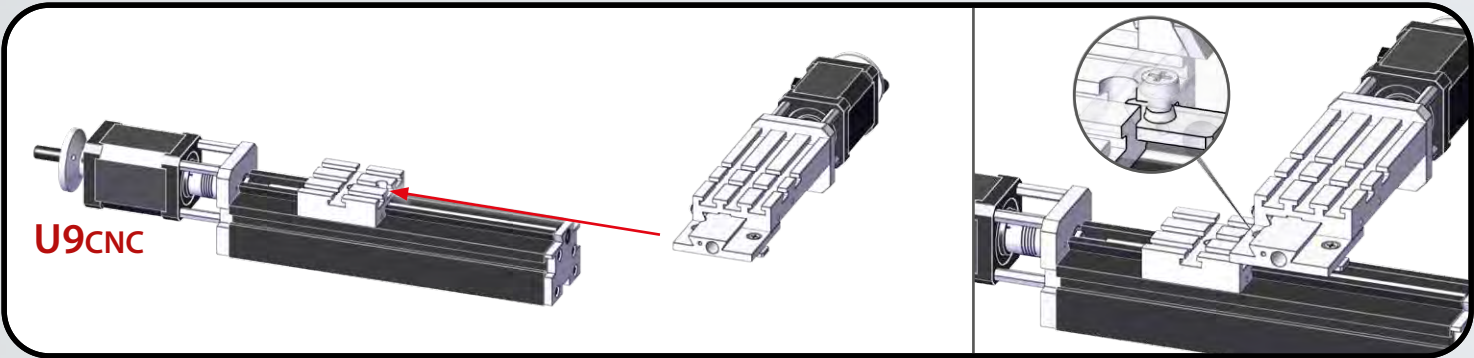


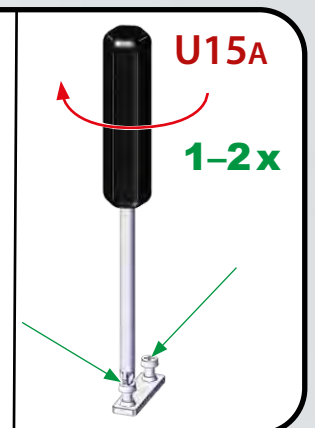
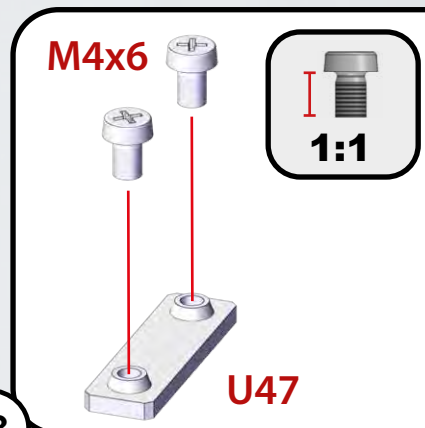
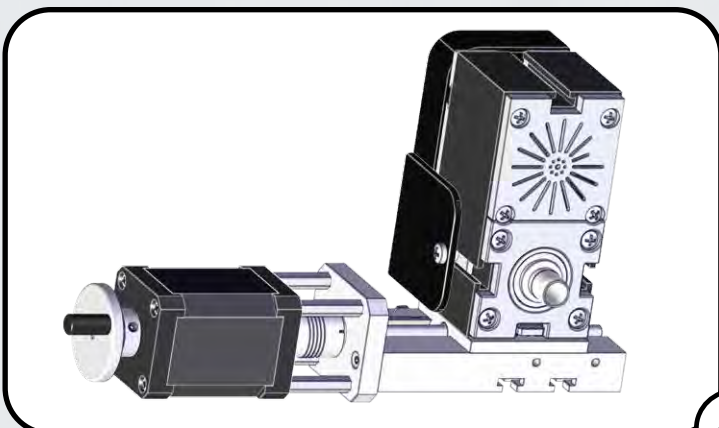
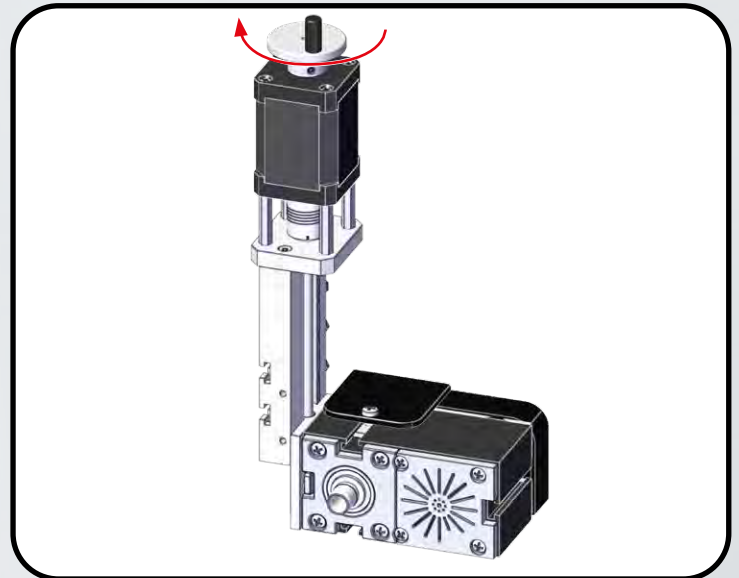
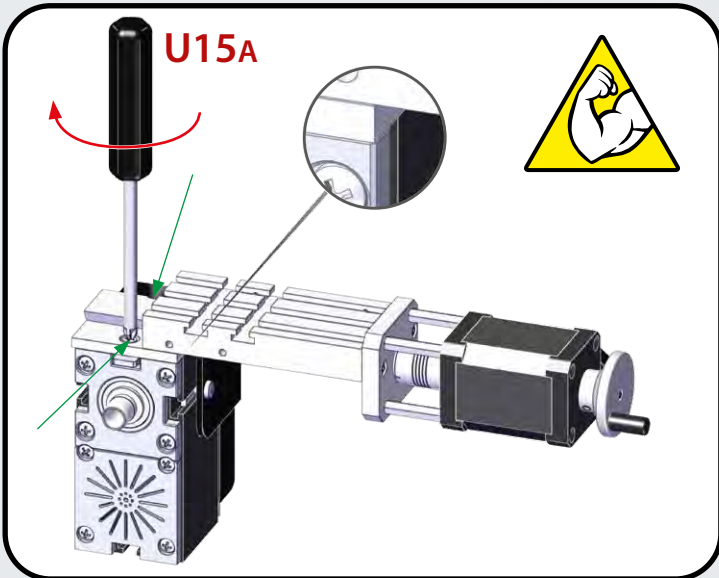
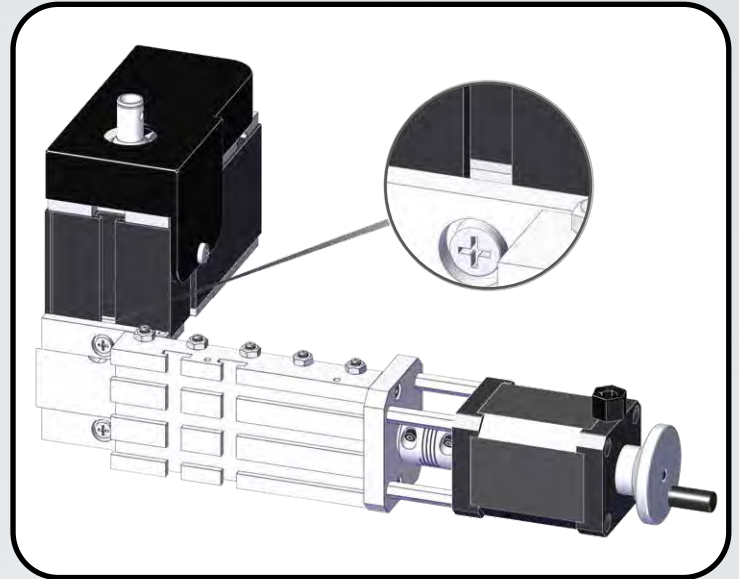
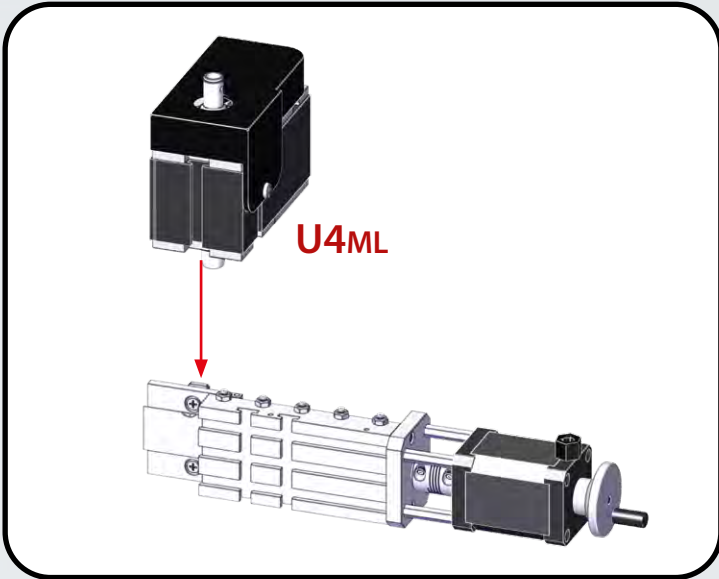
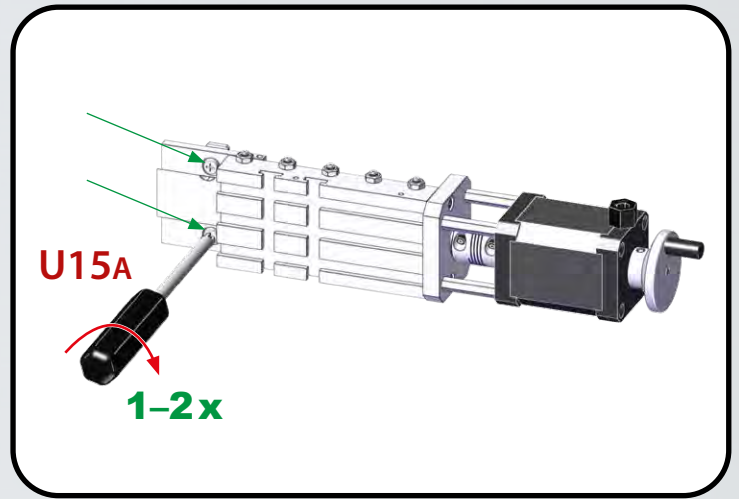
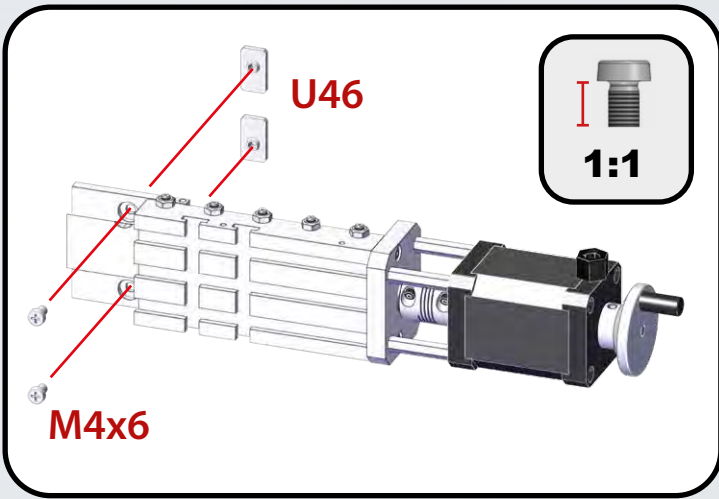
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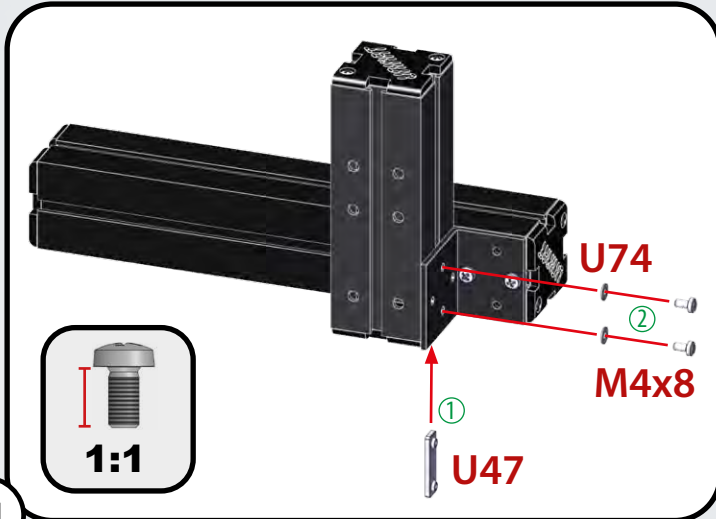
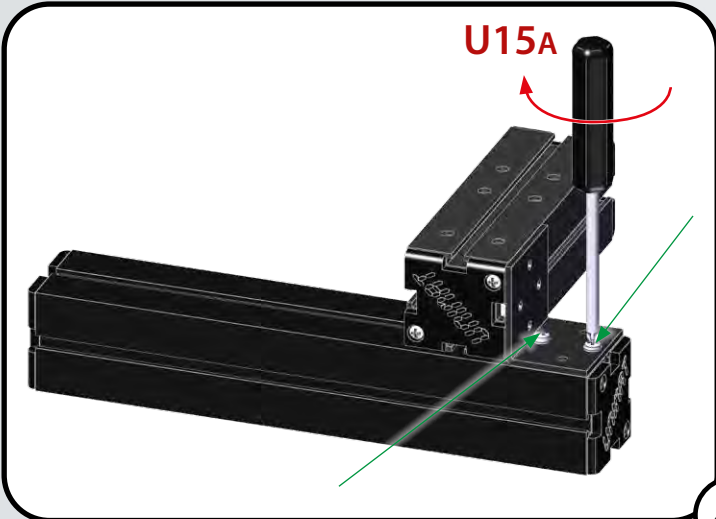
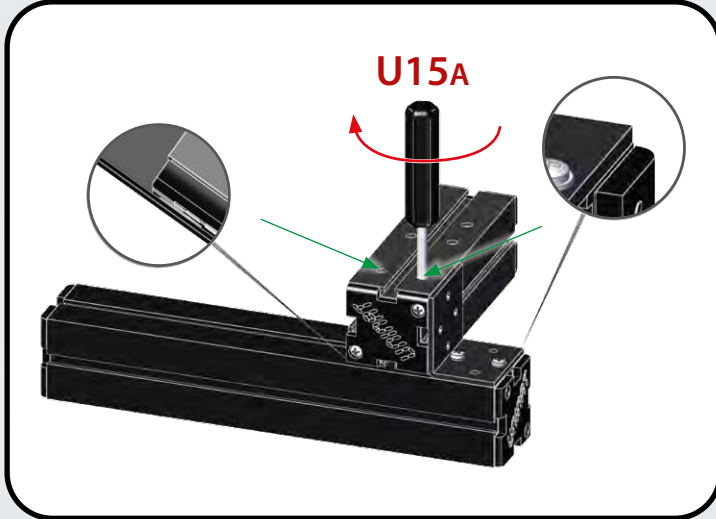
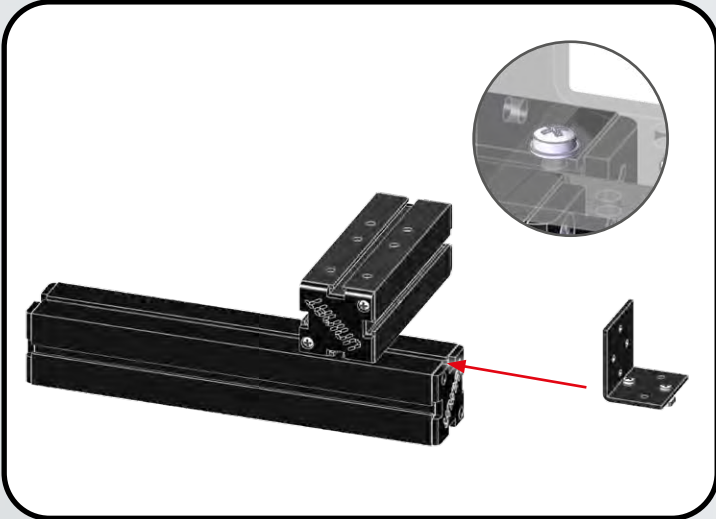
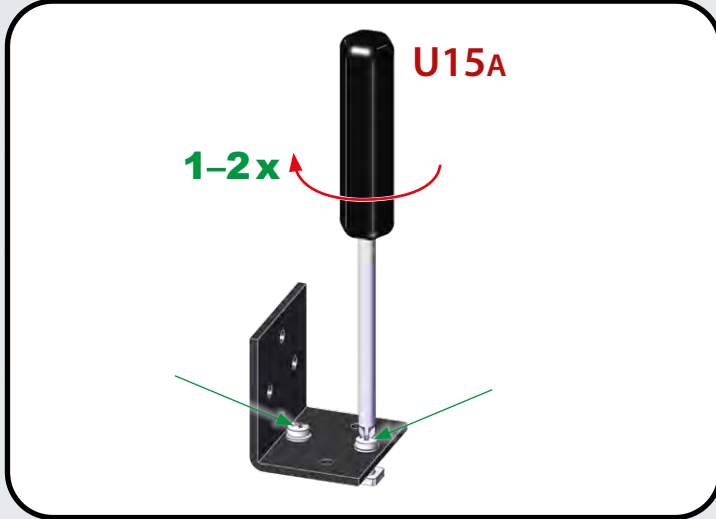
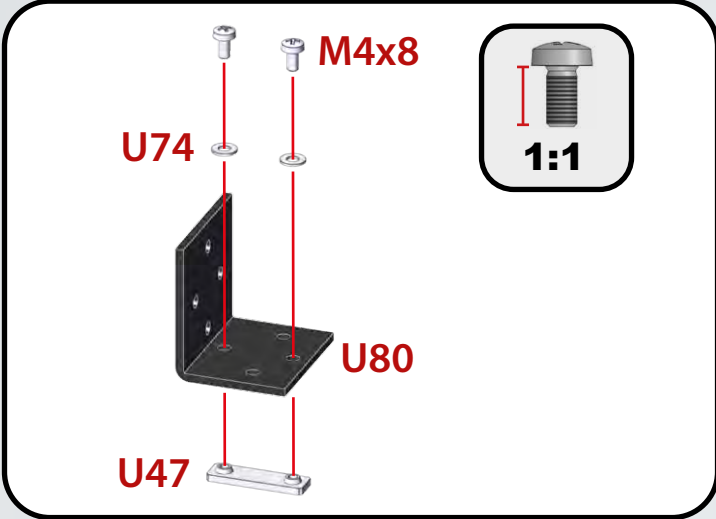
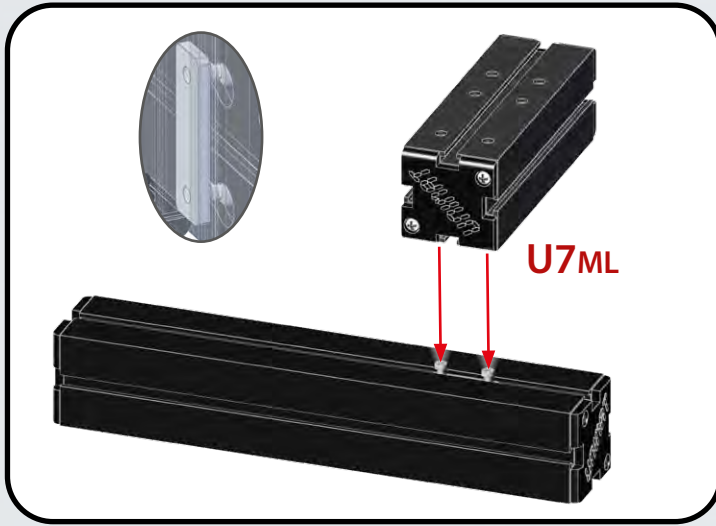
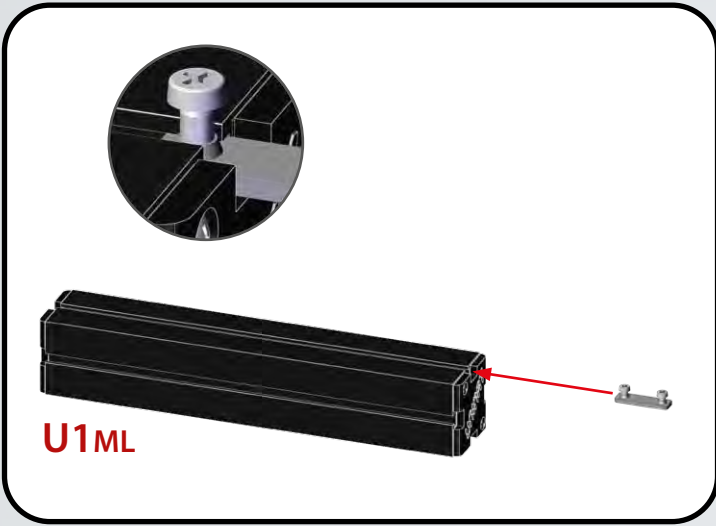
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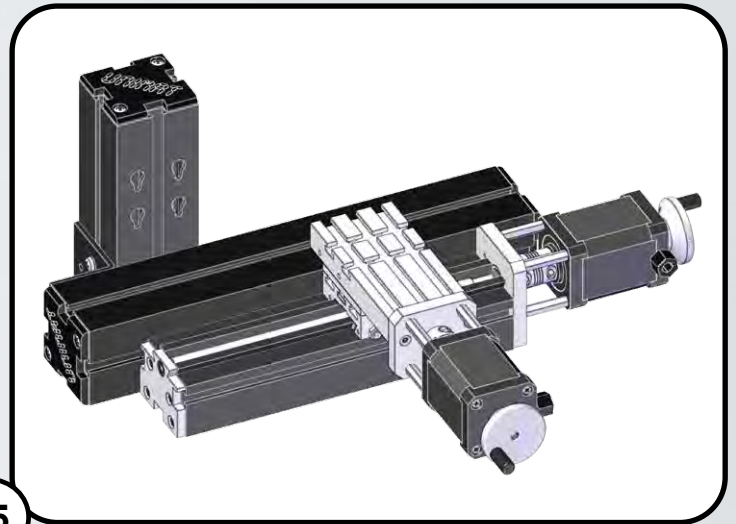
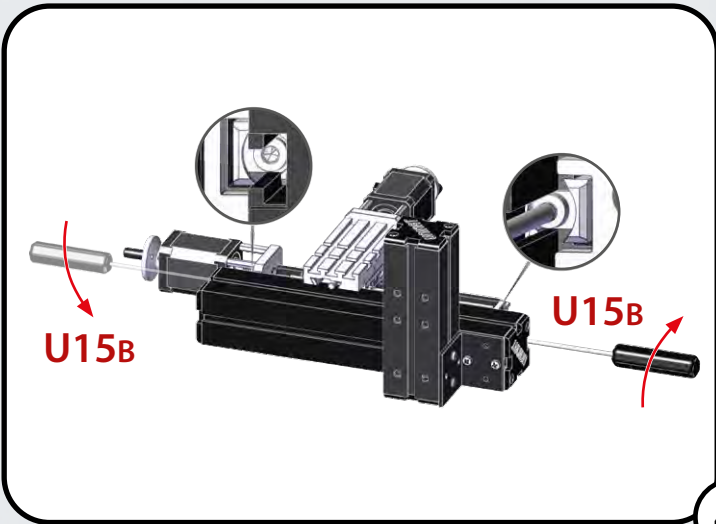
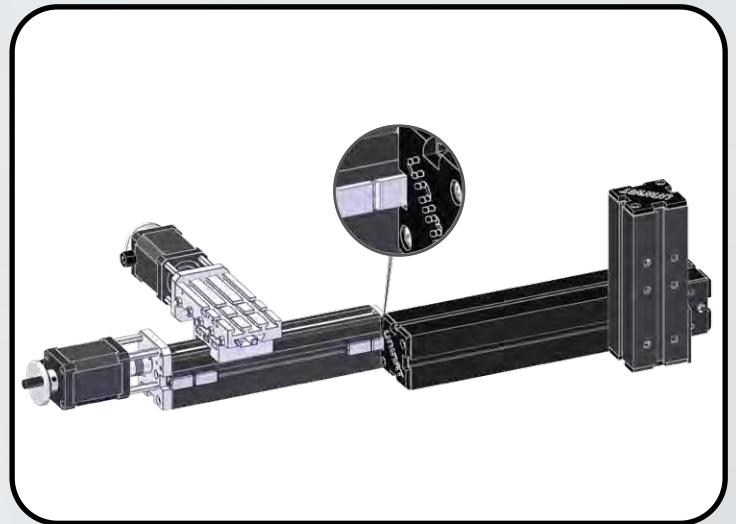
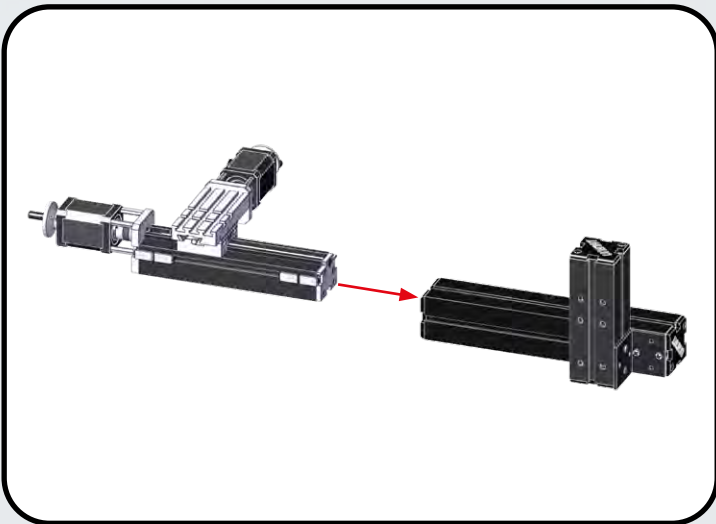
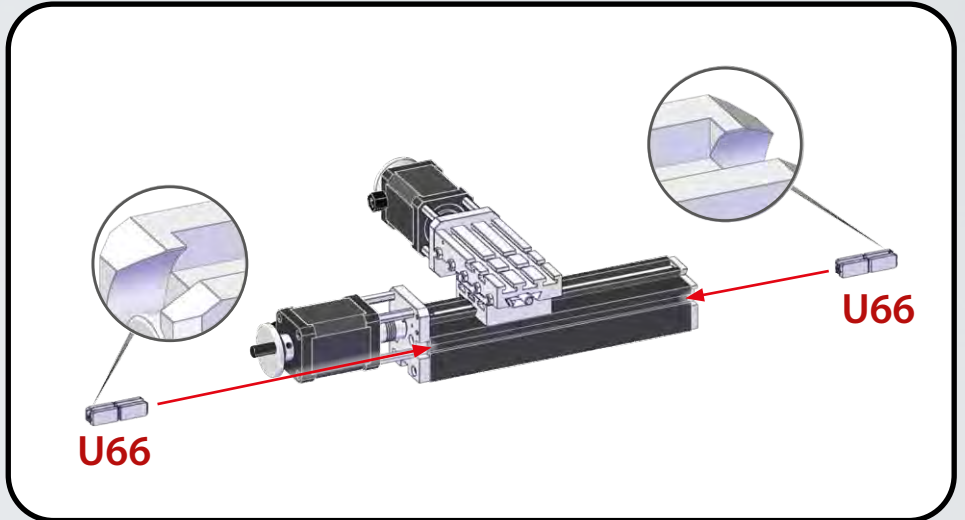
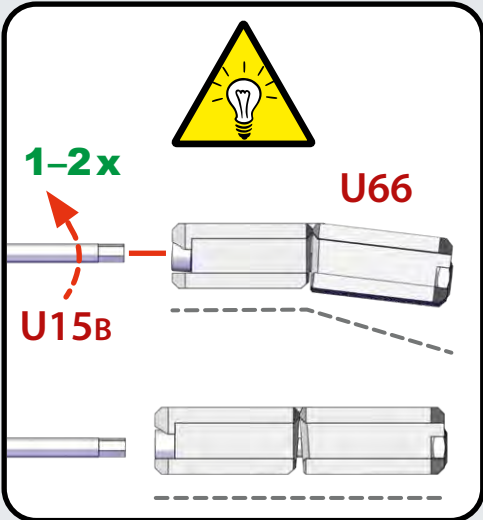
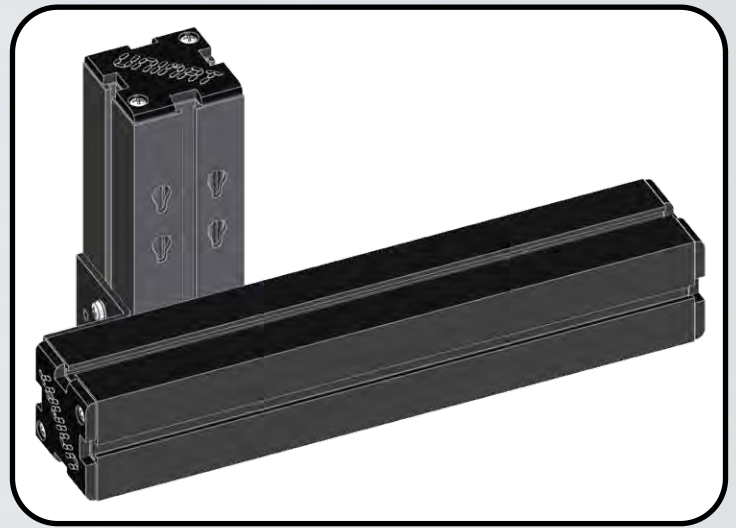
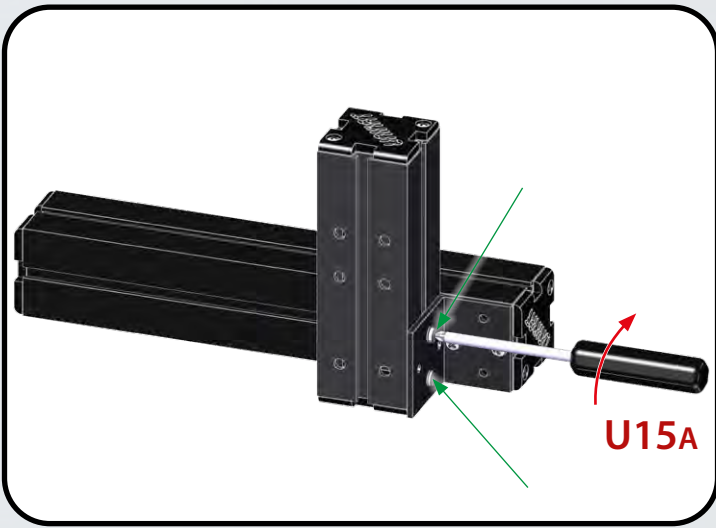
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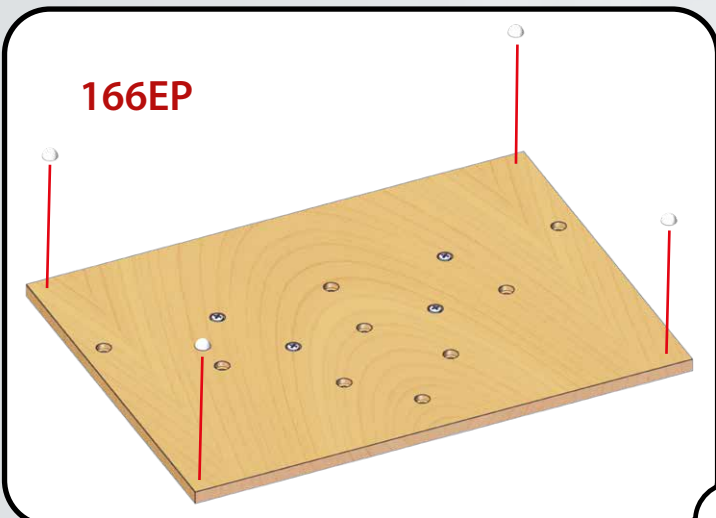
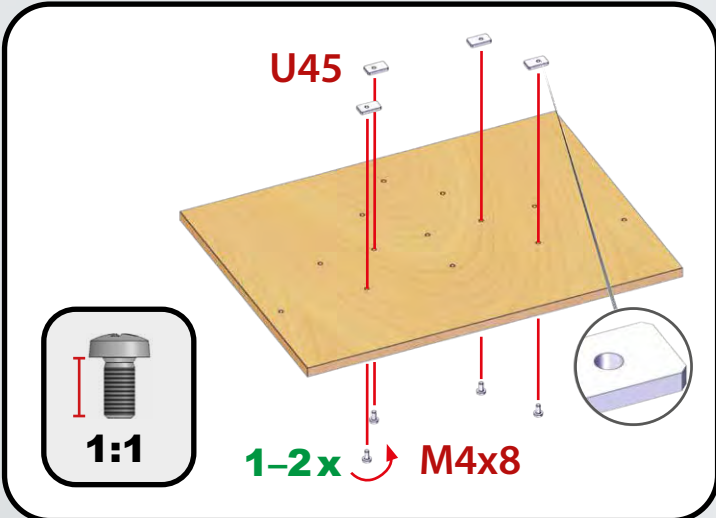
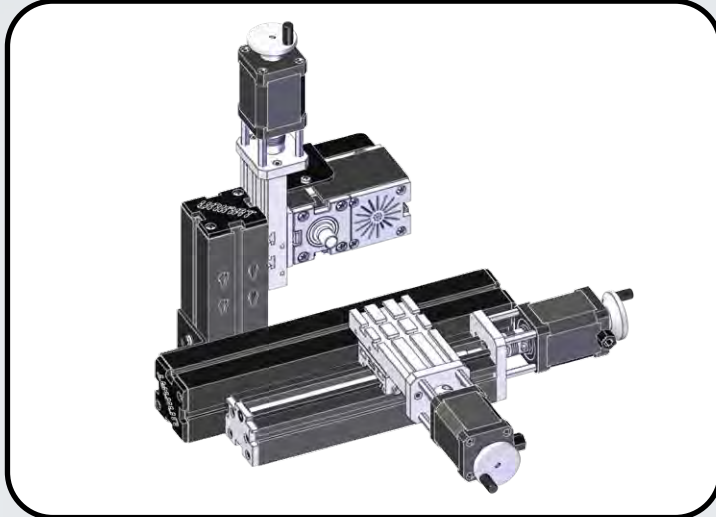
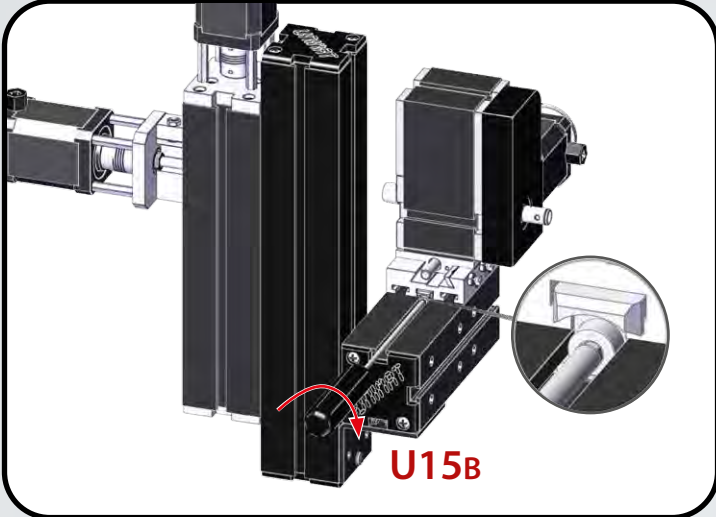
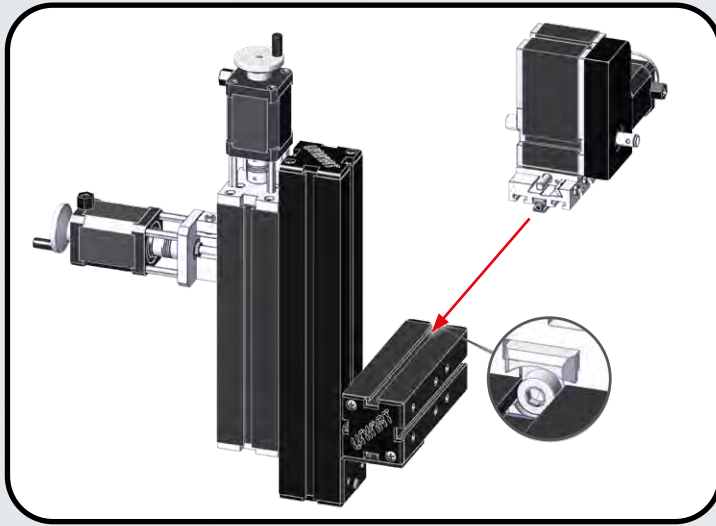
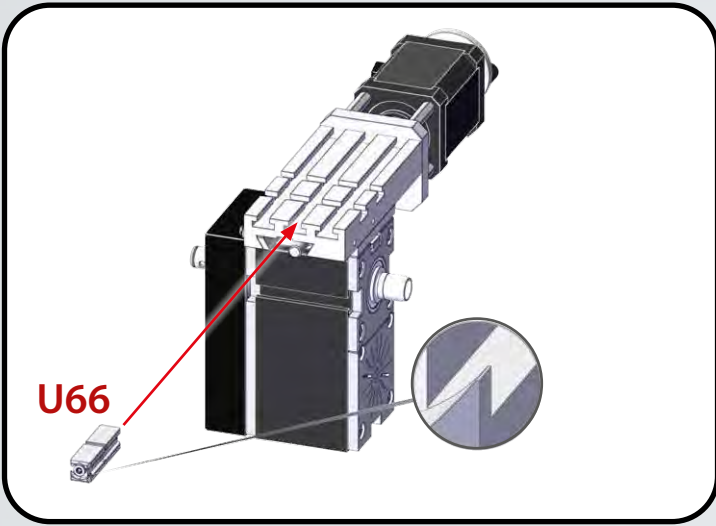


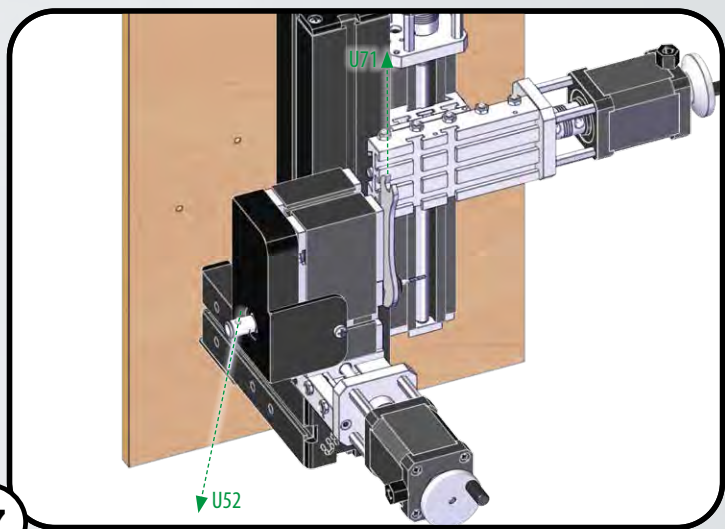
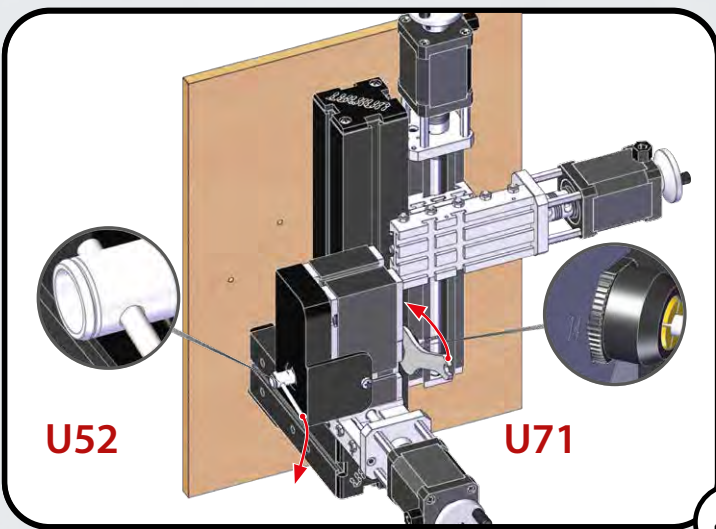
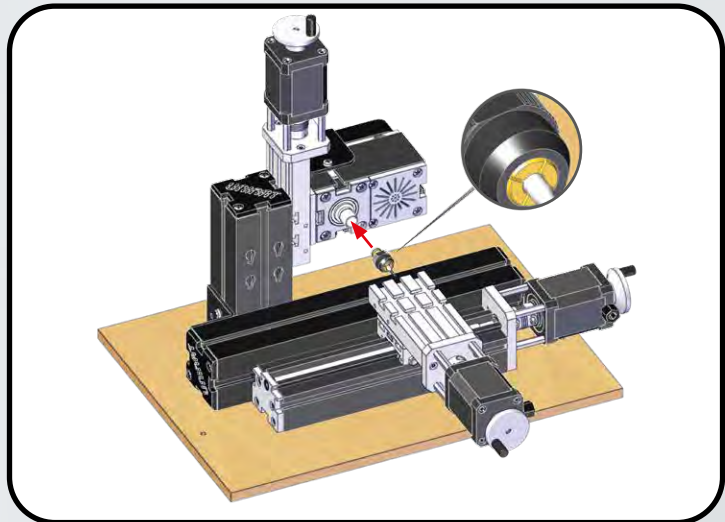
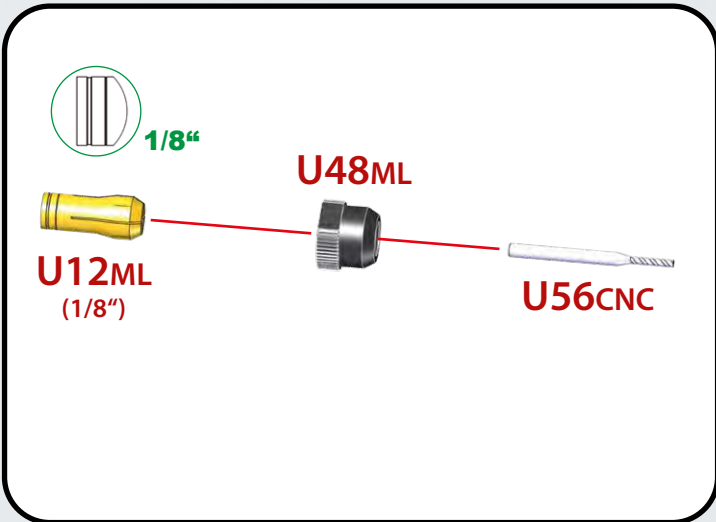
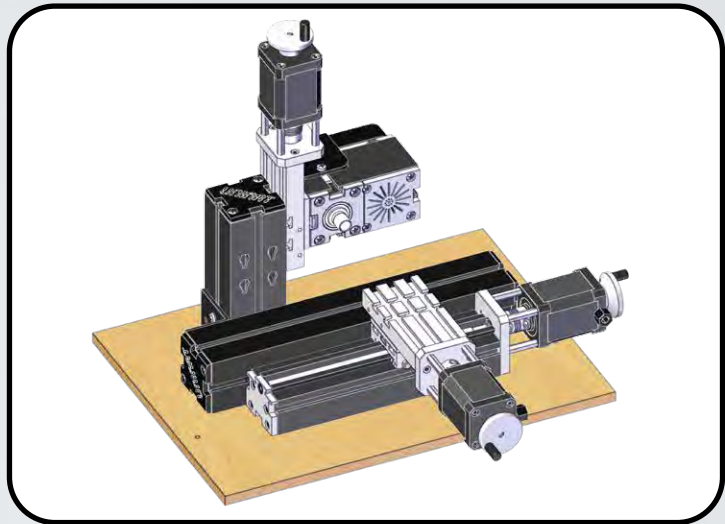
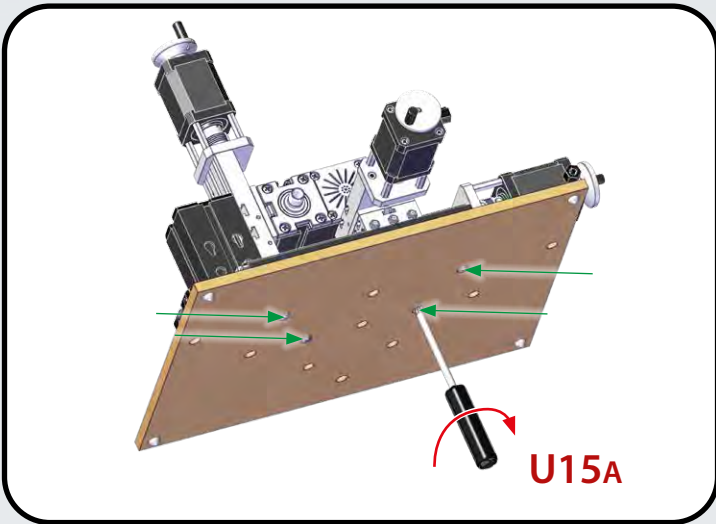
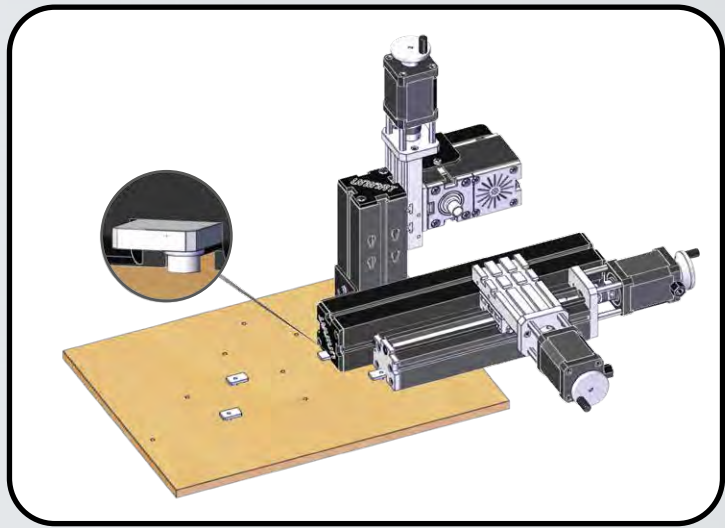
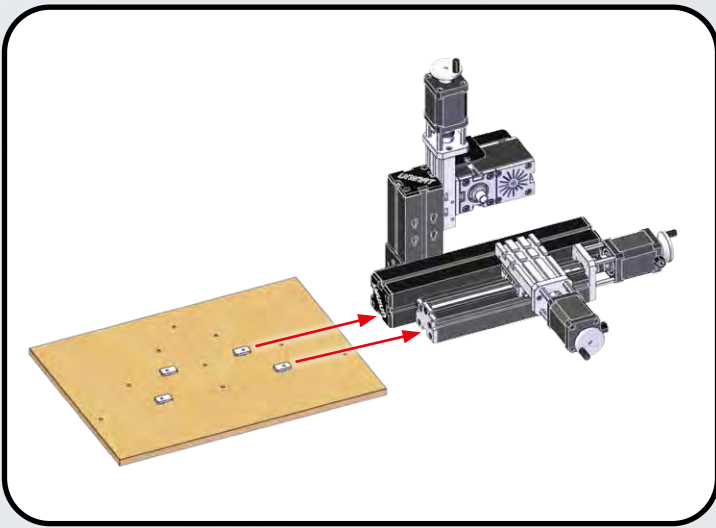


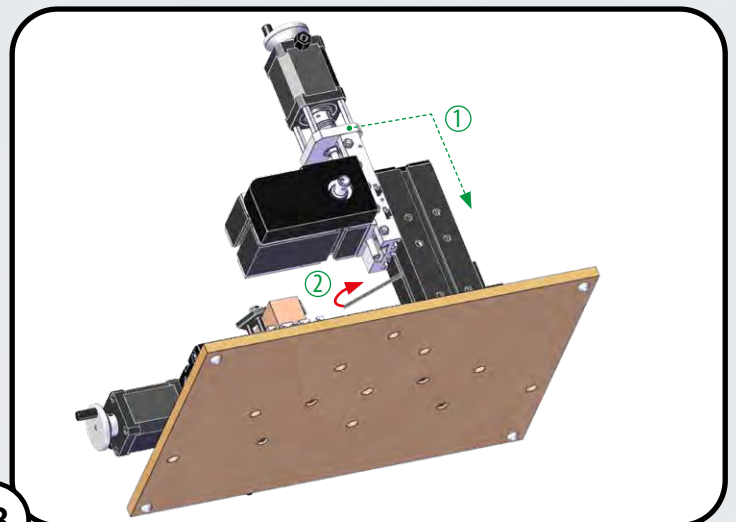
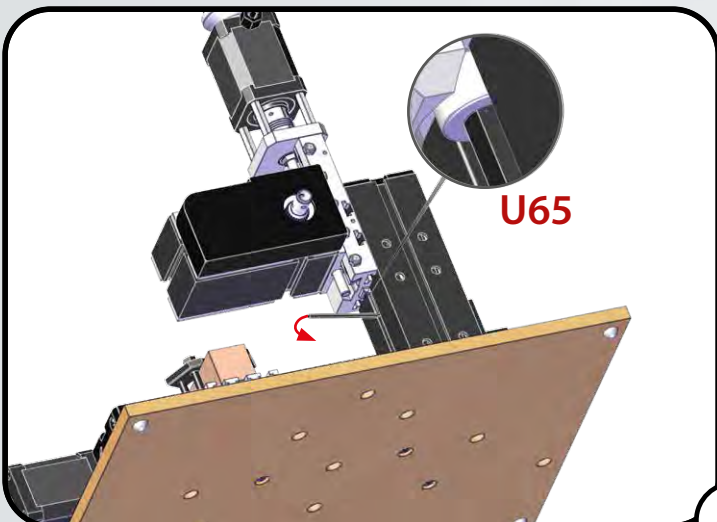
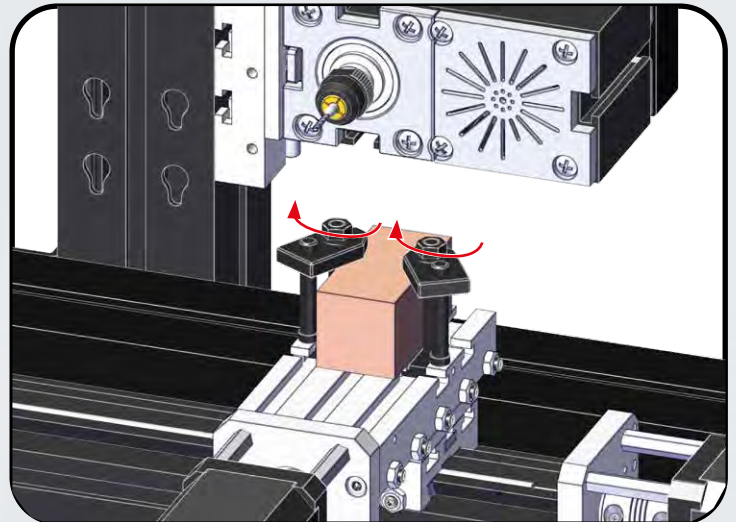
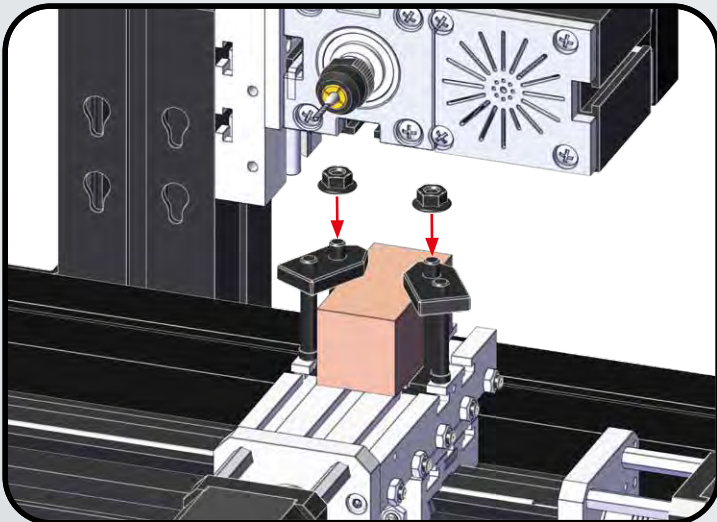
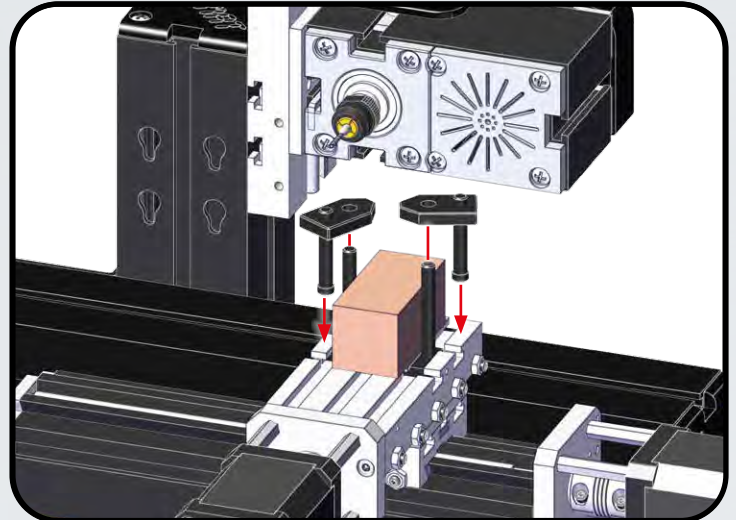
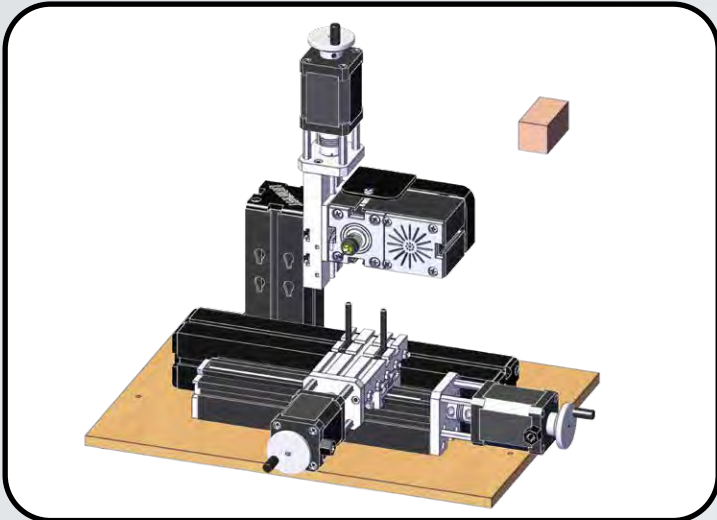
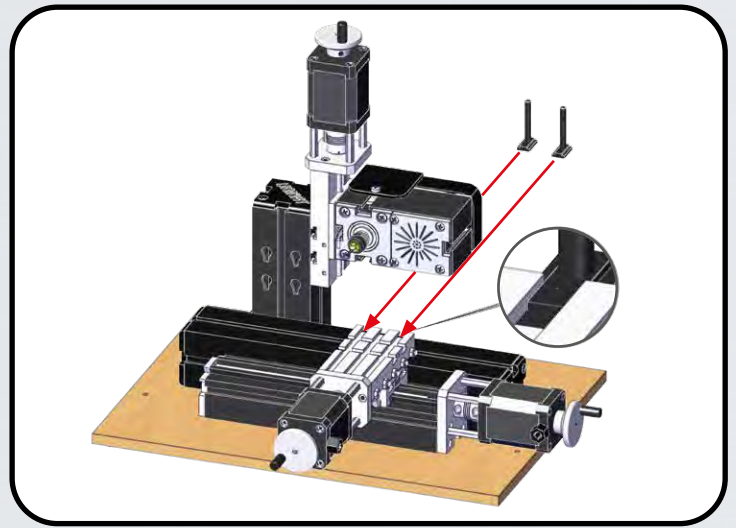
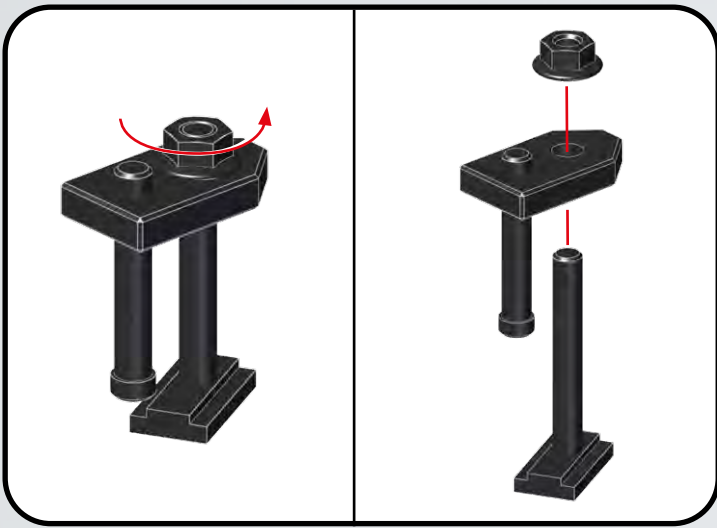




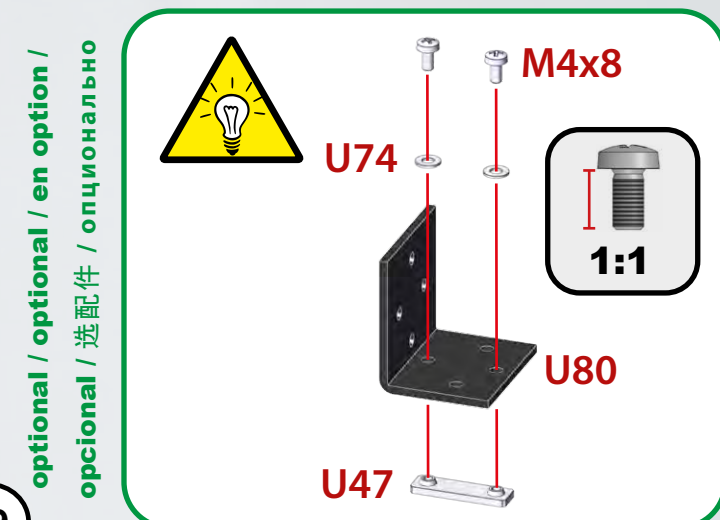
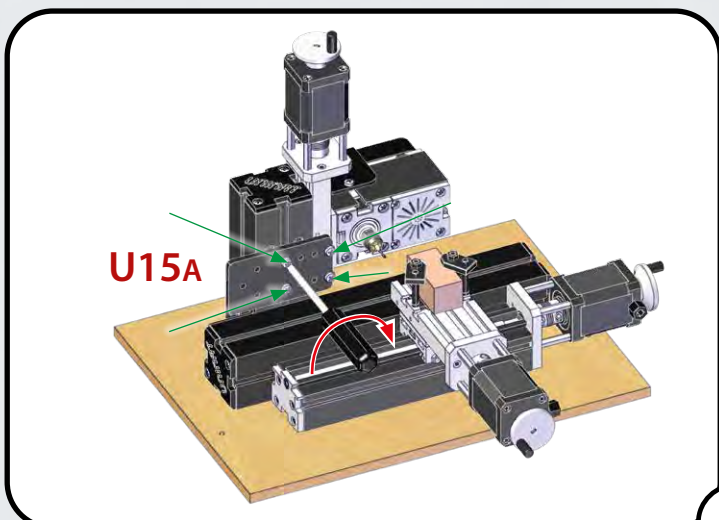
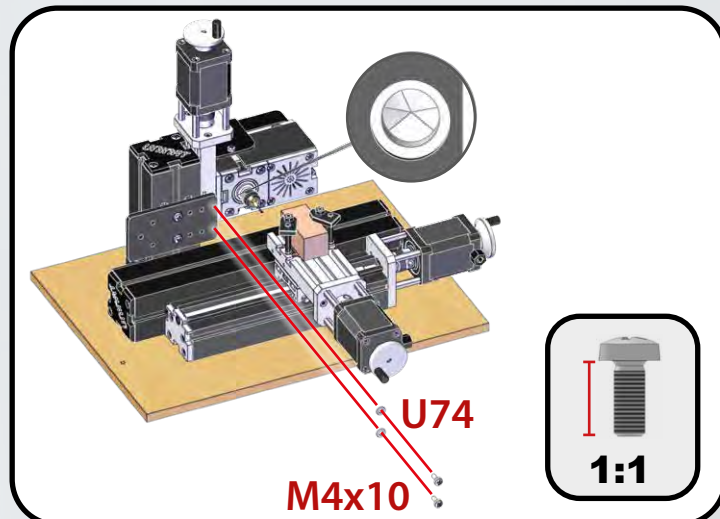
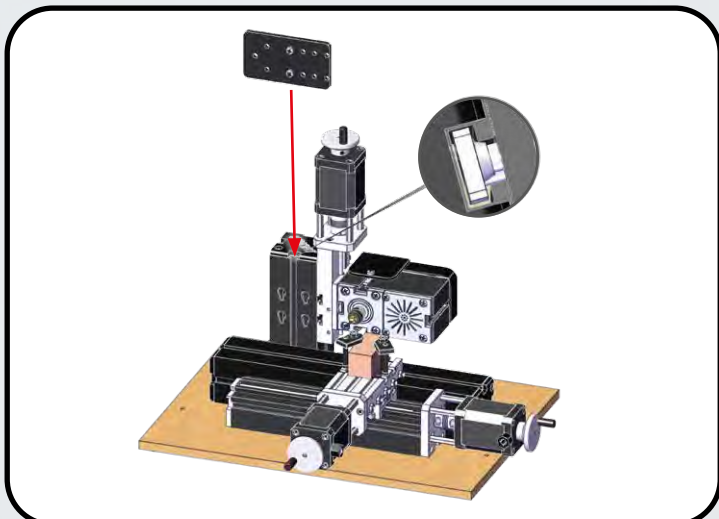
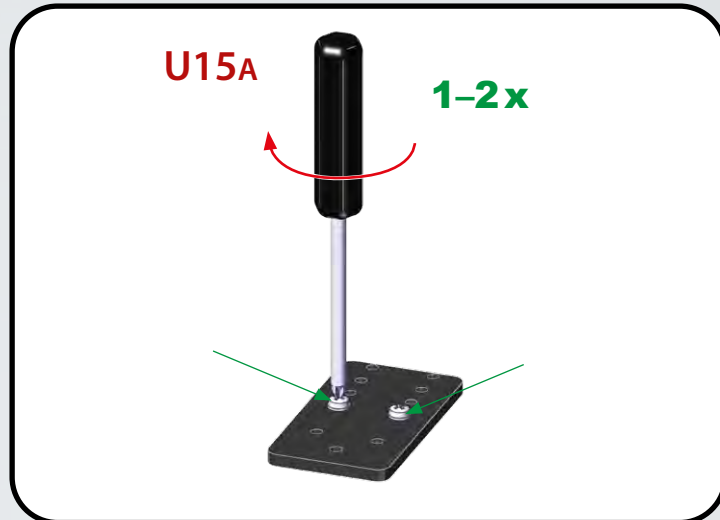
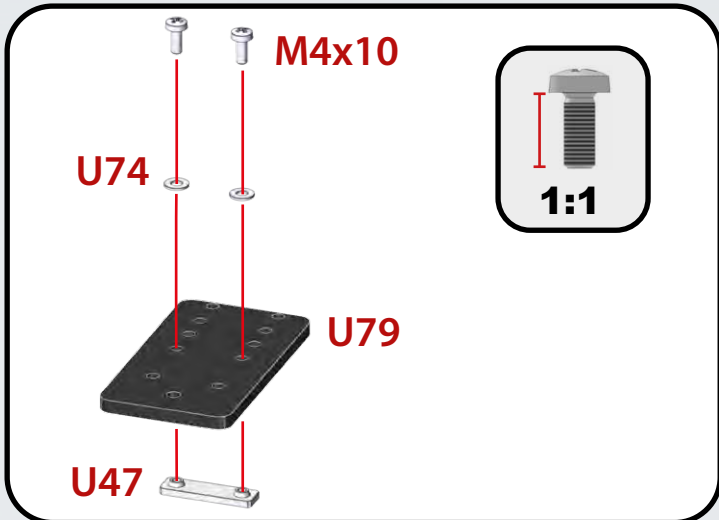
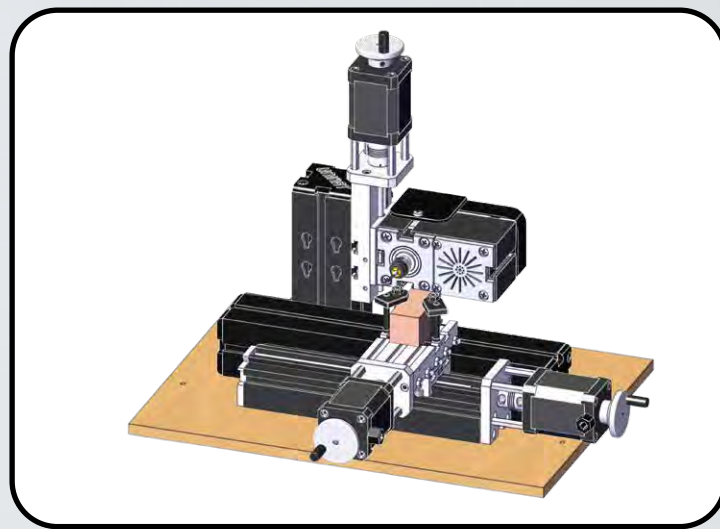
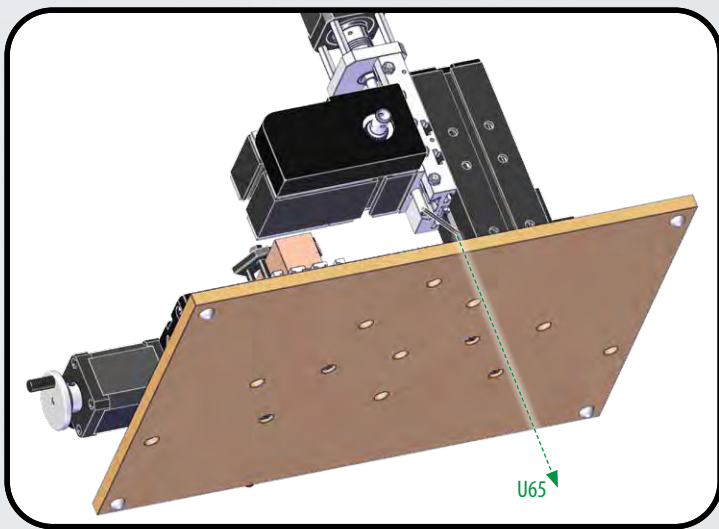


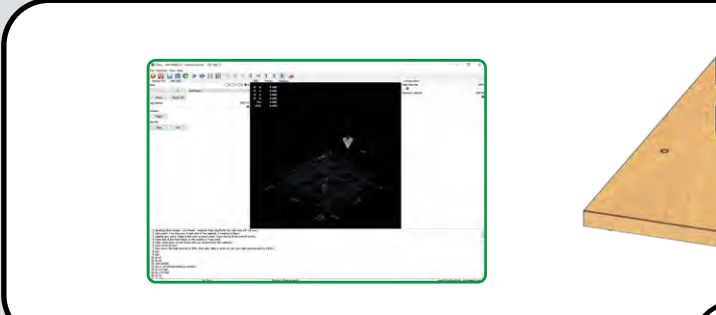
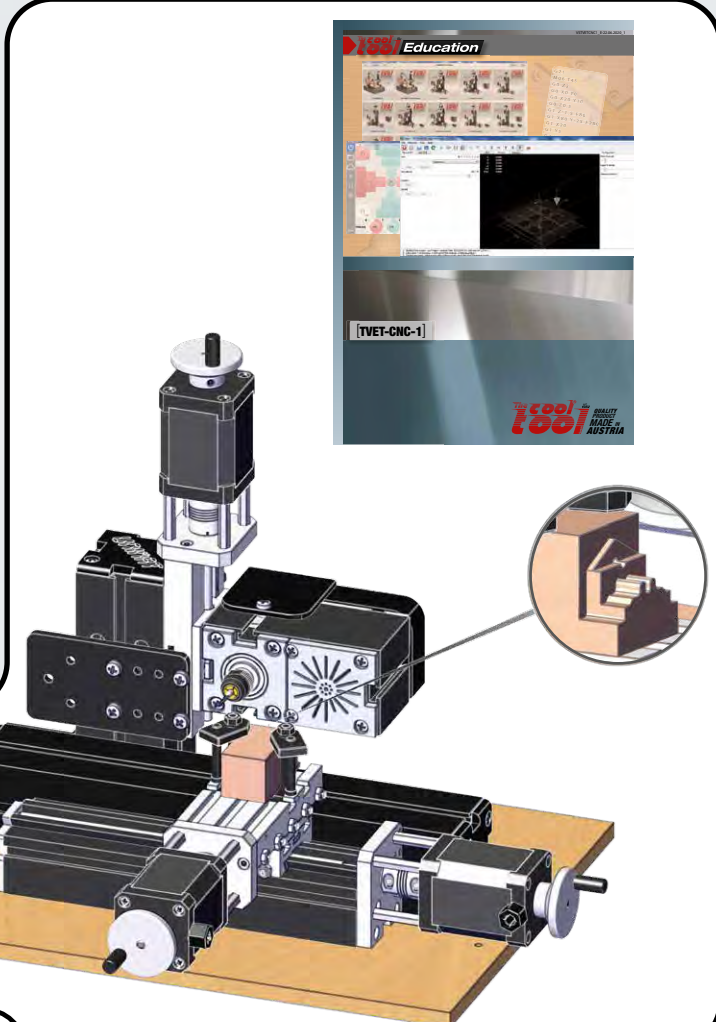
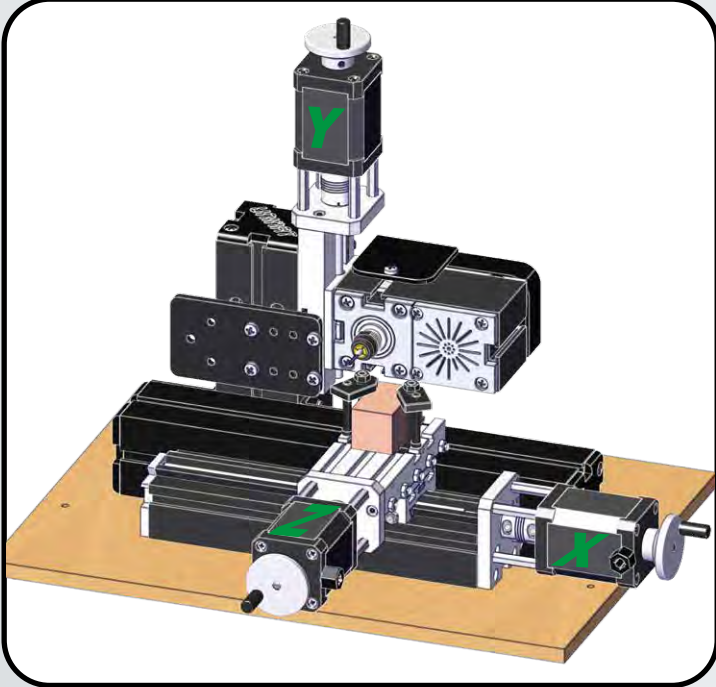
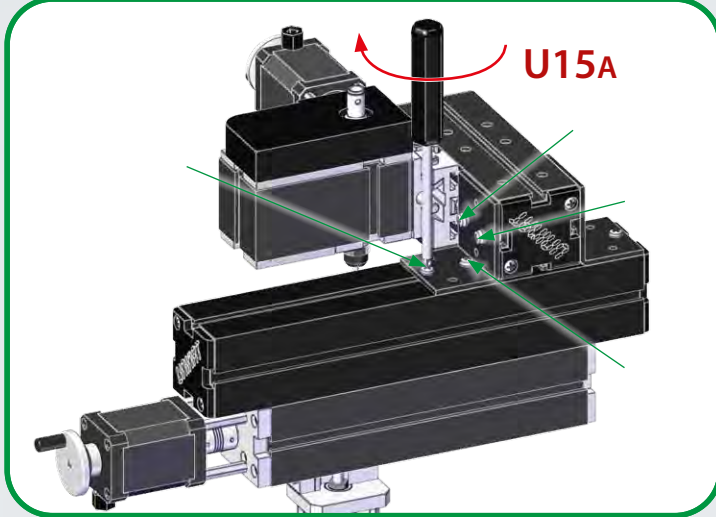
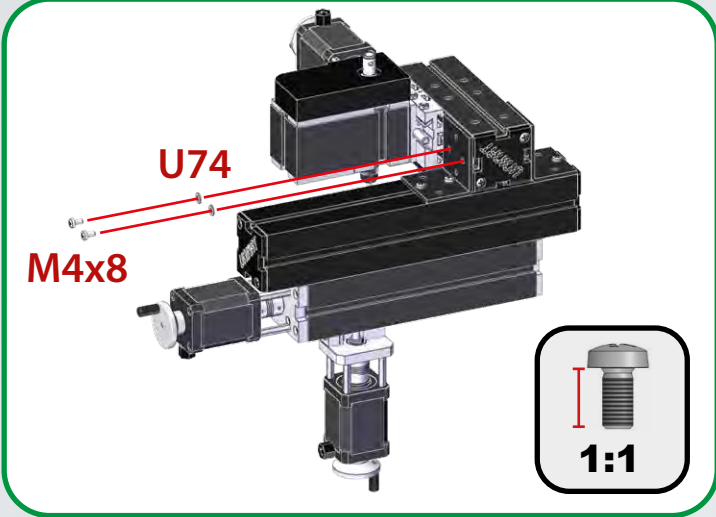
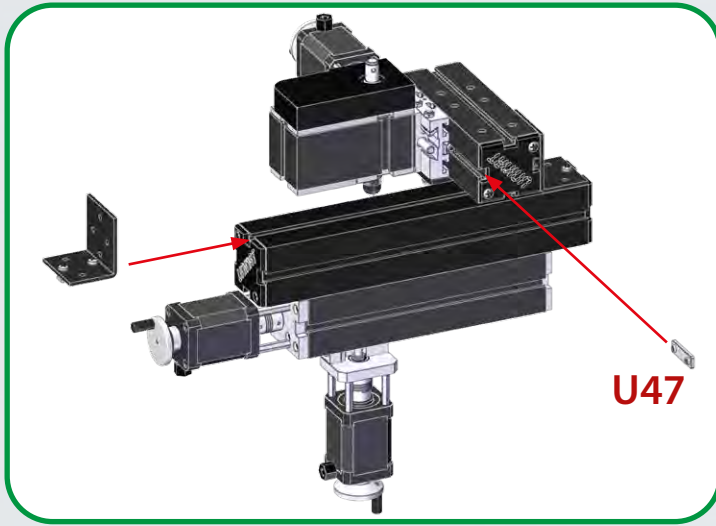
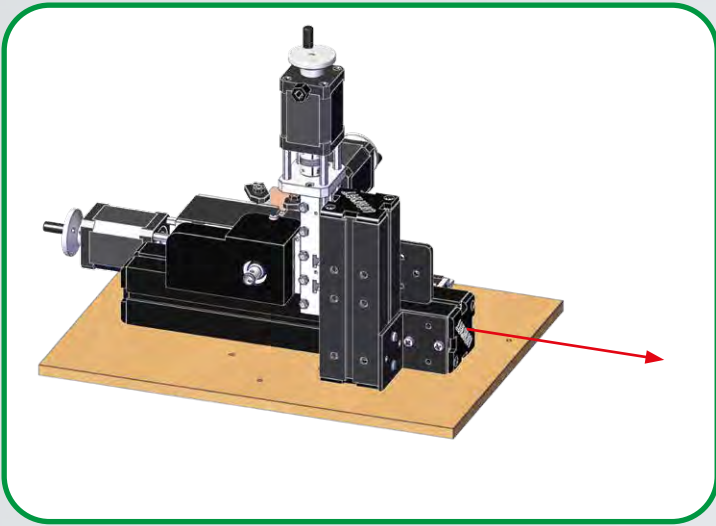












**UNI-FRAES-H3 Projekt - 1**

**UNI-FRAES-H3 project - 1**

**UNI-FRAES-H3 projet - 1**

**UNI-FRAES-H3 proyecto - 1**

**UNI-FRAES-H3 项目 - 1**

**UNI-FRAES-H3 проект - 1**

**Inhalt • contents • contenu • contenido • 内容 • содержание:**

**1) Rohmaterial • Matière première • materia prima • 原料 • Сырье:**

Corianplatte • corian sheet • feuille corian •

hoja corian • 可丽耐拼盘 • Кориан лист ---- ~50x50x12 mm

**2) Technische Zeichnung • technical drawing • dessin technique • dibujo técnico •**

技术图纸 • Технический чертеж

**3) Lösungsvorschlag • proposed solution • solution proposée • solución propuesta •**

建议的解决方案 • Предложенное решение

**Projekt • project • projet • proyecto • 项目 • Проект**

Schaftfräser • end mill • fraise en bout • molino de extremo •

立铣刀 • Фреза концевая:  $\varnothing_{\max}$  1,6 mm

Gravurtiefe • Engraving depth • profondeur de

gravure • profundidad de grabado •

雕刻深度 • Глубина гравировки: 1,0 mm

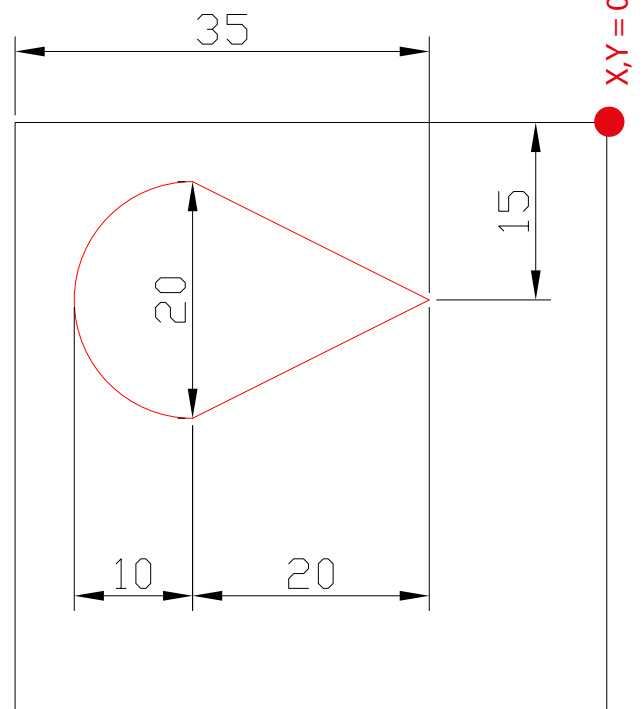
$F_{\max.}$ : 200 mm/min

Maximale Schnitttiefe • maximum depth of cut •

profondeur de coupe maximale • profundidad

máxima de corte • 最大切削深度 •

максимальная глубина резания: 1,0 mm



**A**

g21

g0 z2

g0 x0 y0

g0 x-15 y-15

g0 z0.5

g1 z1 f50

g1 x-35 y-5 f180

g13 x-35 y-25 i0 j-10

g1 x-15 y-15

g0 z5

g0 x0 y0

m02



UNI-FRAES-H3

# UNIMAT CNC

4 Achsen Vertikalfräse

4 axis vertical milling machine

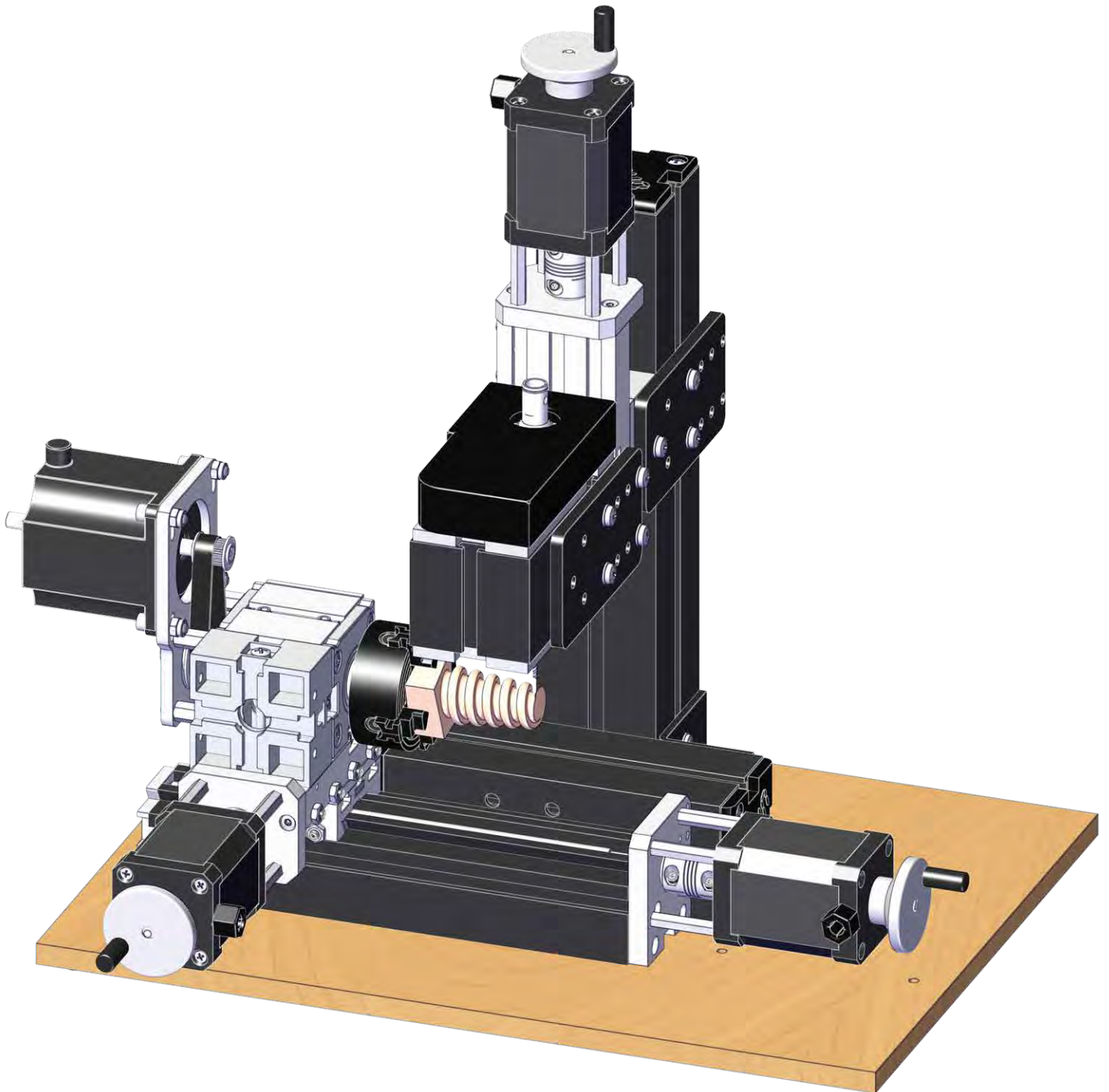
4 axes Fraiseuse verticale

4 ejes Fresadora vertical

4 轴 立式 铣床

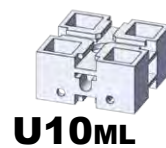
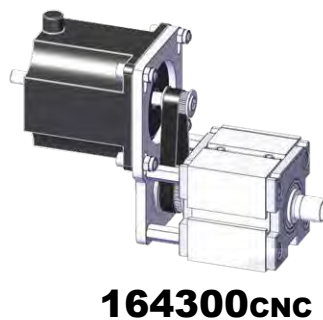
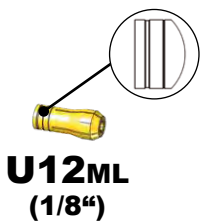
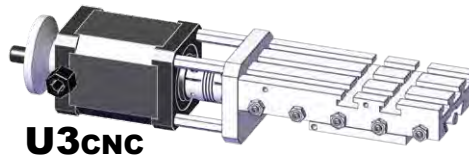
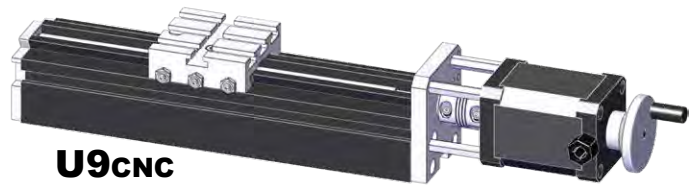
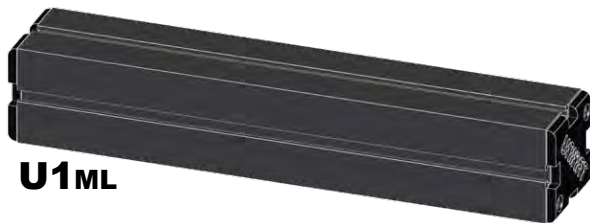
4оси Вертикальный фрезерный станок

## UNI-FRAES-4



		DE	EN	FR	ES	中国 (ZH)	RU	
U1ML	1	Maschinenbett, lang	Machine bed, long	Banc, grand	Bancada grande	长机座	Станина длинная	A1A 020 000 SW
U3CNC	2	CNC Querschlitzen	CNC Cross slide	CNC Chariot, petit	CNC Carro, pequeño	CNC 全金属小滑块	CNC Салазки поперечные	164 060 CNC
U4MLEDU	1	Antriebseinheit ML	Drive unit ML	EDU-Moteur	EDU-Motor	EDU-马达	EDU-Двигатель	164 420
U7ML	1	Maschinenbett, kurz	Machine bed, short	Banc, petit	Bancada pequeña	全金属短机座	Станина короткая	A1A 010 000SW
U9CNC	1	CNC Längsschlitten	CNC Longitudinal slide	CNC Chariot, grand	CNC Carro, grande	全金属长滑块	Салазки продольные	164 480 CNC
U10ML	2	Zwischenstück	Intermediate piece	Pièce intermédiaire	Pieza intermedia	全金属中介块	Проставка	A1M 000 100
U12ML	1	Spannzange 1/8"	Collet 1/8"	Pince 1/8"	Pinza 1/8"	金属夹头 1/8"	Цанги 1/8"	162 460 31/8
U15A	1	Schraubendreher #2	Screwdriver #2	Tourne-vis #2	Destornillador #2	螺丝刀2#	Отвертка Philips № 2	ZWZ 980 030
U15B	1	Inbusschraubendreher	Screwdriver allen key 2,5mm	Tourne-vis hexagonale 2,5mm	Destornillador allen 2,5mm	内六角扳手2.5 mm	Отвертка 6-гранная 2,5 мм	ZWZ 980 075
U48ML	1	Spannzangenhalter	Collet holder	Porte-pinces	Porta-pinza	固定铜帽	Гайка зажимная для цанг	A1A 000 073
U66	4	Verbindungselement	Connection piece	Pièce de connexion	Elemento de conexión	连接件	Сухарь соединительный	A1A 00 ZINSK
U71	1	Gabelschlüssel 7 / 14 mm	Fork wrench 7 / 14 mm	Clé de fourche 7 / 14 mm	llave de furca 7 / 14 mm	扳手 7 / 14 mm	Ключ гаечный 7 / 14 мм	ZWZ 400 700
U79	3	Fixierplatte klein	Stabilizing plates small	Plaques de fixation petits	Platos de fijación pequeños	小固定片	Пластина стабилизирующая малая	A1Z 470 000
U80	2	Befestigungswinkel	Stabilizing angle	Angle de fixation	Escuadra de fijación	直角固定座	Угольник стабилизирующий	A1Z 480 000
	1	Drehtisch CNC	Rotary table CNC	Table rotative CNC	Mesa giratoria CNC	转盘 CNC	Поворотный стол CNC	164 300 CNC
	1	Vierbackenfutter	Four-jaw chuck	Mandrin à quatre mors	Mandril de cuatro mordazas	4爪夹头	Патрон 4-кулачковый	162 050
	1	Grundplatte CNC	Mounting plate CNC	Plaque de montage CNC	Plancha basico CNC	固定底板 CNC	Монтажная пластина CNC	164 402

nicht im Maßstab | not in scale | pas à l'échelle | no es a escala | 不按比例 | не в масштабе



		DE	EN	FR	ES	中国 (ZH)	RU	
U31	8	Schraube M4x10	Screw M4x10	Vis M4x10	Tornillo M4x10	螺钉M4x10	Винт M4x10	ZSR M40 410
U33	1	Schraube M4x50	Screw M4x50	Vis M4x50	Tornillo M4x50	螺钉M4x50	Винт M4x50	ZSR M40 450
U37	12	Schraube M4x8	Screw M4x8	Vis M4x8	Tornillo M4x8	螺钉M4x8	Винт M4x8	ZSR M40 408
U38	6	Schraube M4x6	Screw M4x6	Vis M4x6	Tornillo M4x6	螺钉M4x6	Винт M4x6	ZSR M40 406
U43S	1	Sicherungsmutter M4	Locking nut M4	Ecrou sécurité M4	Tuerca M4 seguridad	防松螺母M4	Гайка M4 самоконтрящаяся	ZMU 340 120
U45	1	Zwischenblech	Intermediate plate	Tôle intermédiaire	Lata intermedia			A1A 000 160
U46	9	Nutstein	Slot nut	Boulon en «T»	Pernos "T"	单孔螺母	Гайка пазовая	A1A 060 040
U47	8	Klemmplatte	Camping plate	Élément en «T»	Elemento "T"	双孔螺母	Гайка пазовая двойная	A1A 010 020
U50	1	Schraube M4x70	Screw M4x70	Vis M4x70	Tornillo M4x70	螺钉M4x70	Винт M4x70	ZSR M40 470
U52	2	Stift	Rod	Cheville	Perno	锁杆	Вороток	ZST 110 345
U56CNC	1	1,6 mm Fräser	1,6 mm Milling head	1,6 mm Fraise	1,6 mm Fresa	铣刀头 1.6 mm	Фреза концевая 1,6 mm	F2470 1.60
U74	18	Beilagscheibe	Plain washer	Rondelle	Arandela	垫片	Шайба	ZSB 250 430
	4	Gummipuffer	Eelastic buffer	Butoir élastique	Amortiguador elástico	弹性缓冲	Эластичный буфер	166 EP
ohne Abbildung   without picture   sans figure   sin ilustración   无图   без рисунка								
	1	Netzteil 14,4V	14.4V adaptor	14,4V Transformateur	14,4V Transformador	变压器 14.4 V	Трансформатор 14,4 В	161 31x

nicht im Maßstab | not in scale | pas à l'échelle | no es a escala | 不按比例 | не в масштабе



**U56CNC**



**U46**



**U45**



**U74**



**U52**



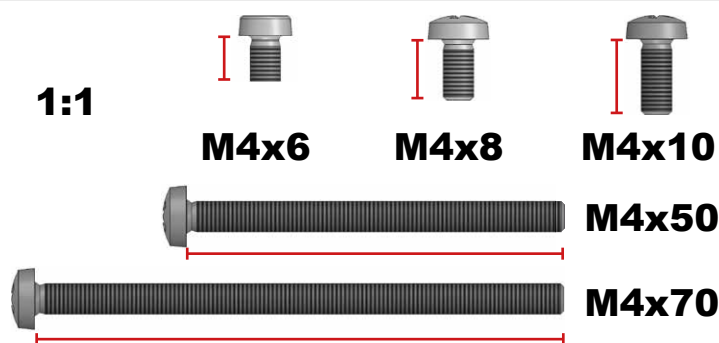
**U46**



**U43s**



**166EP**



1:1

**M4x6**

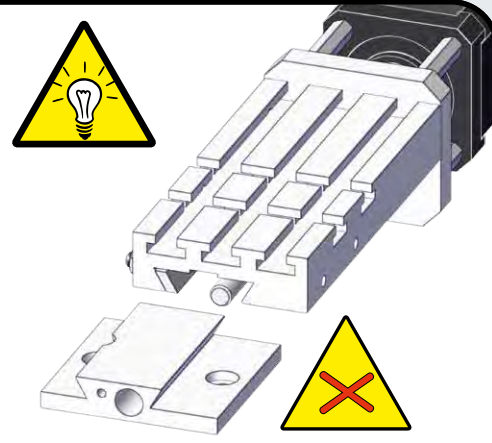
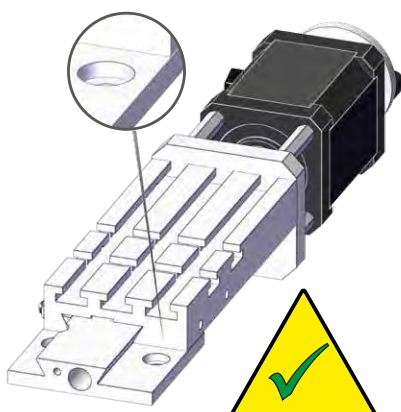
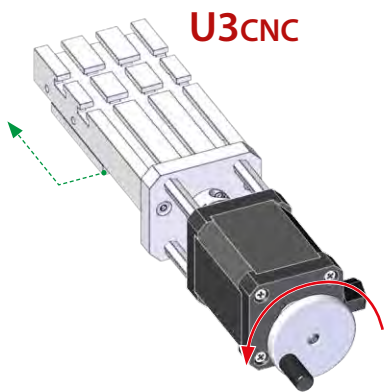
**M4x8**

**M4x10**

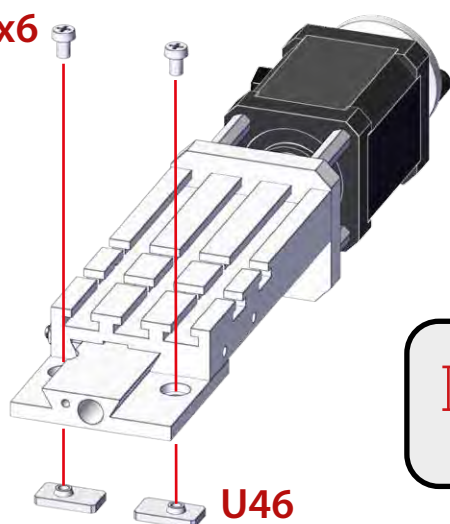
**M4x50**

**M4x70**

**U3CNC**



**M4x6**

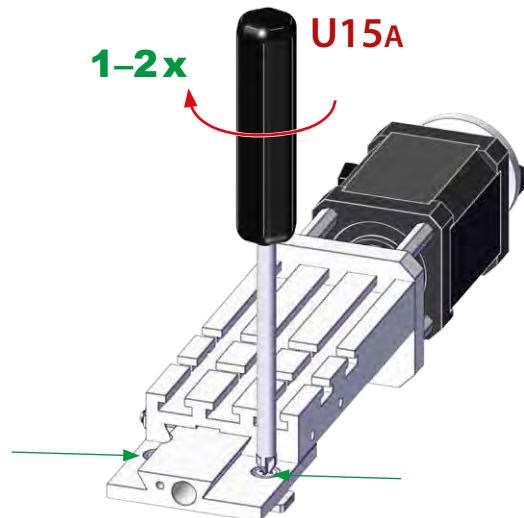


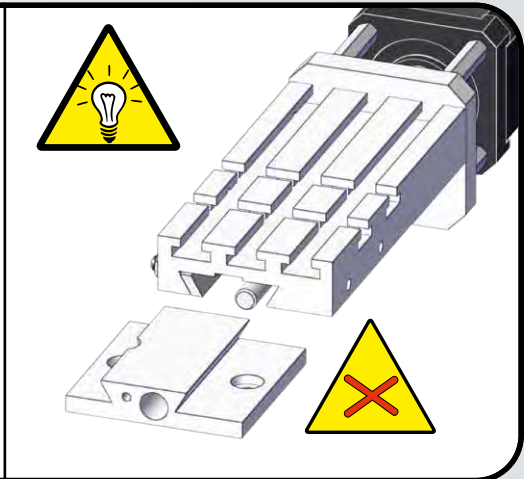
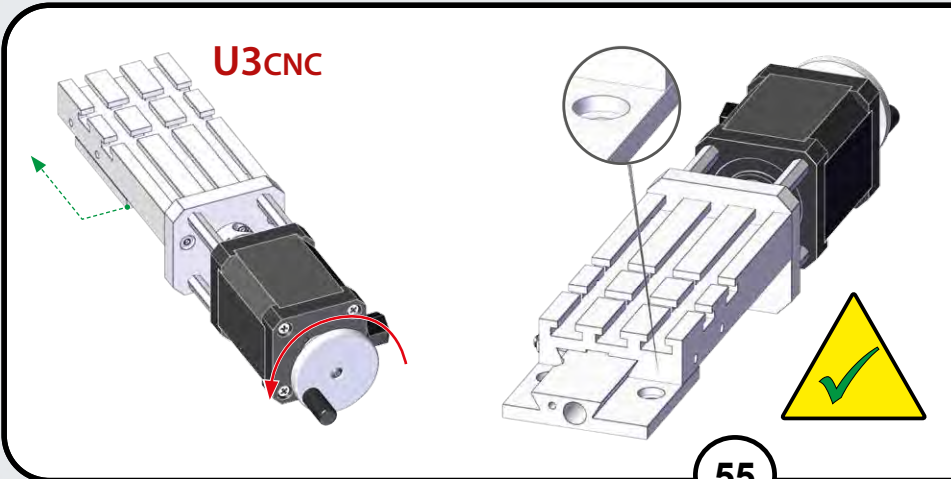
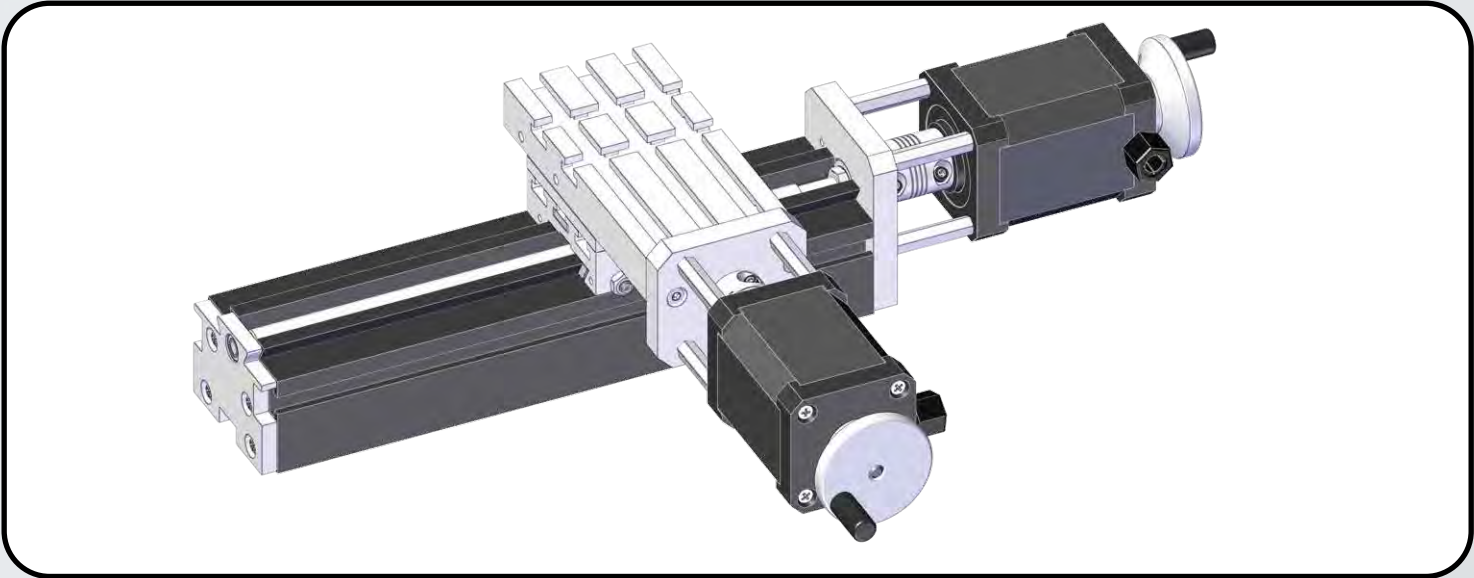
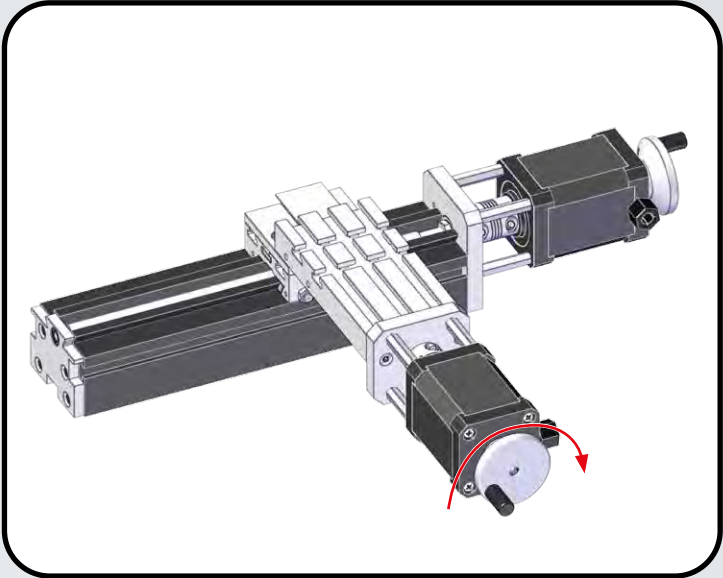
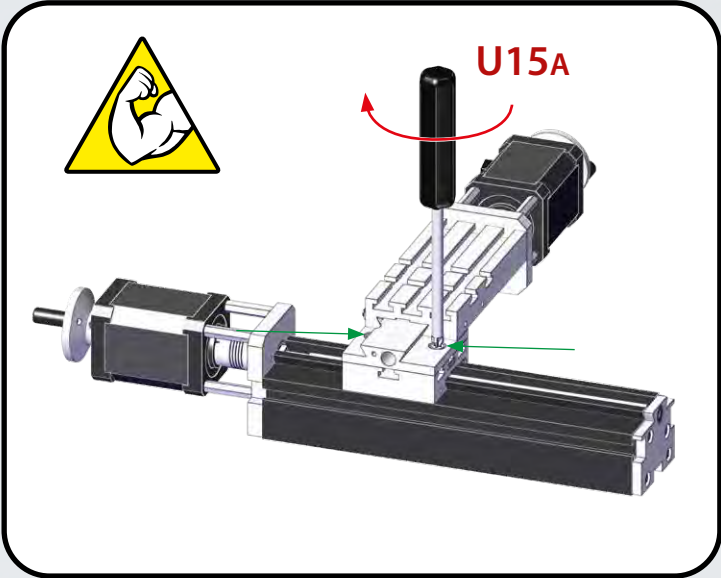
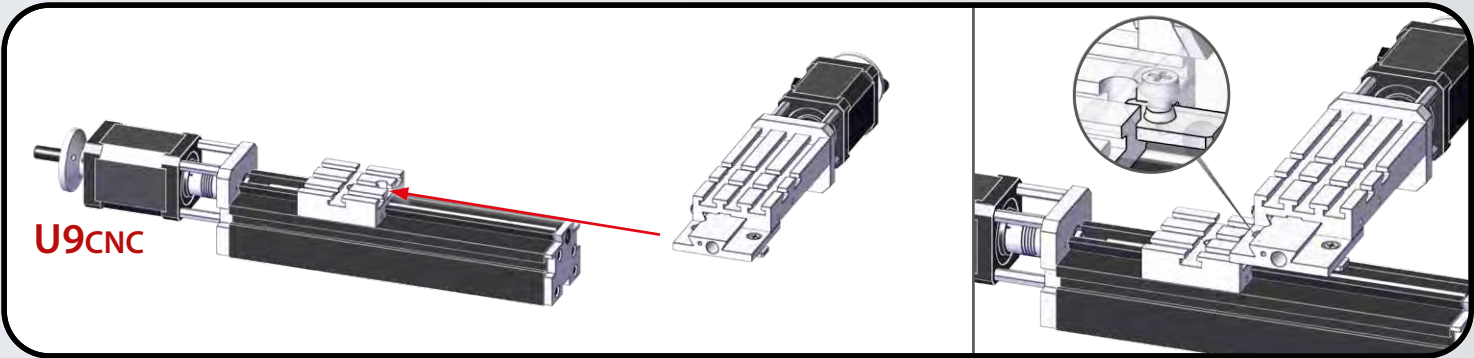
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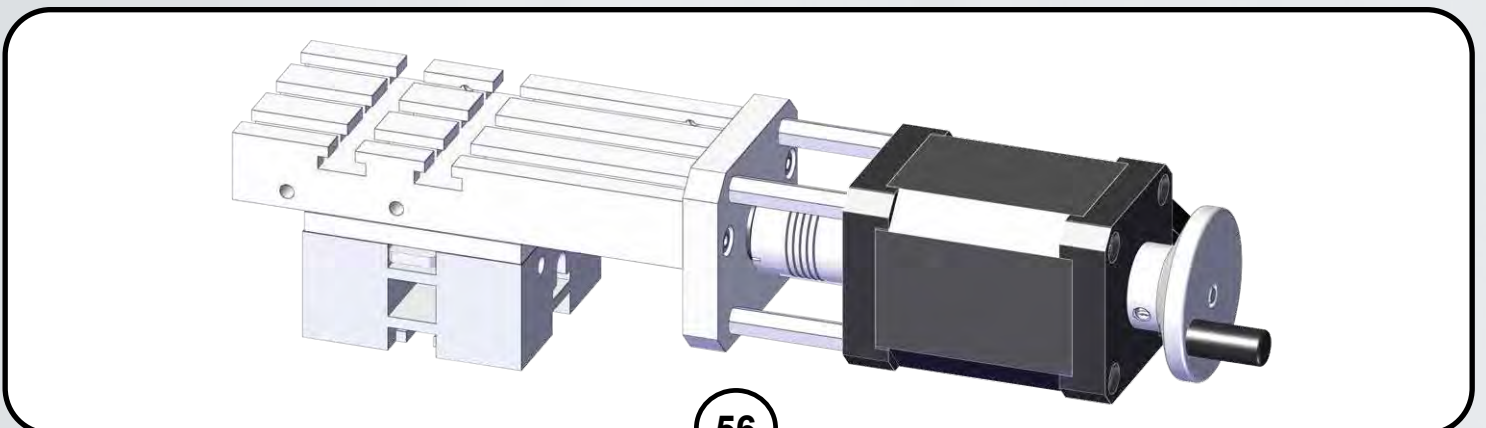
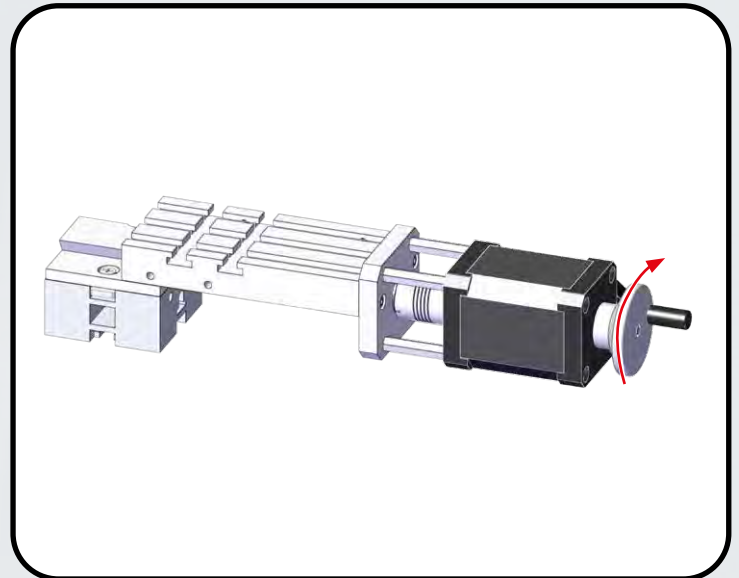
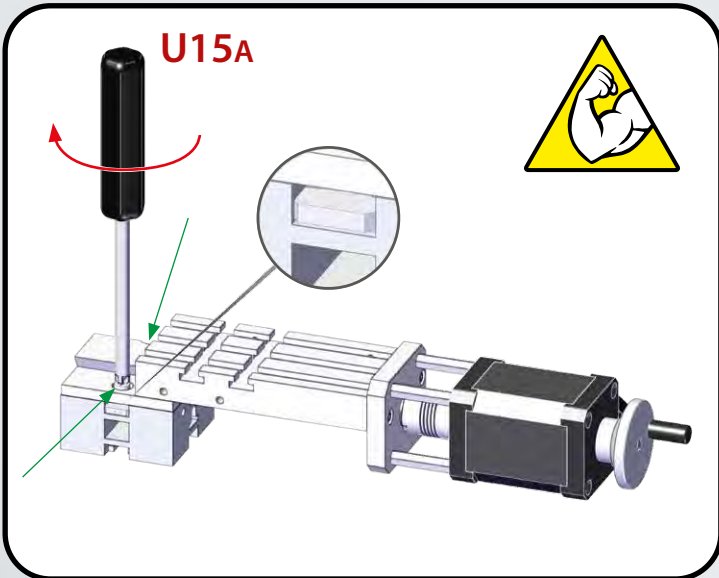
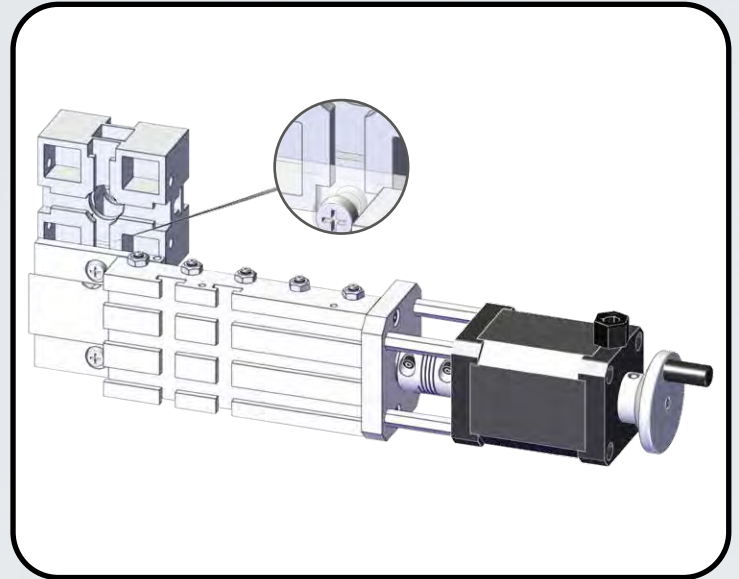
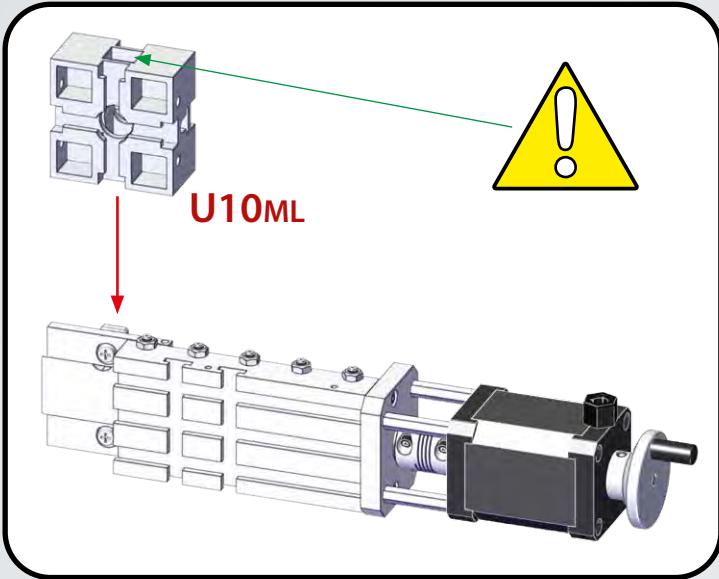
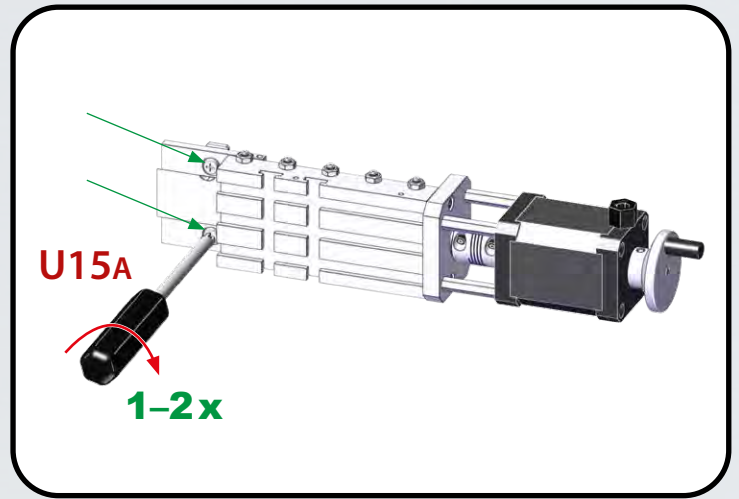
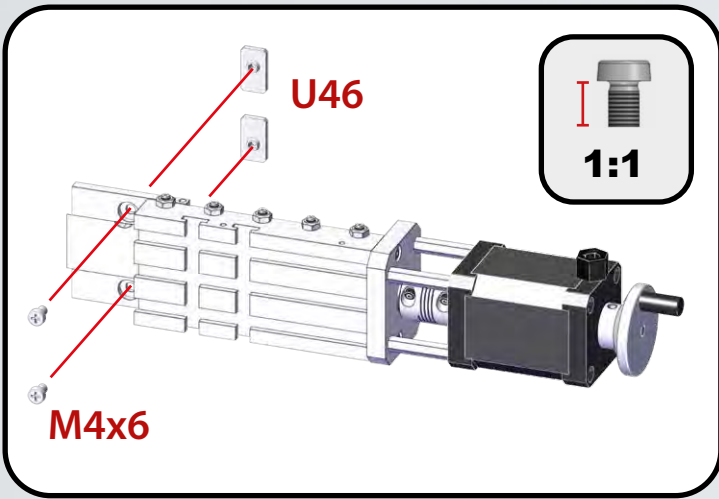
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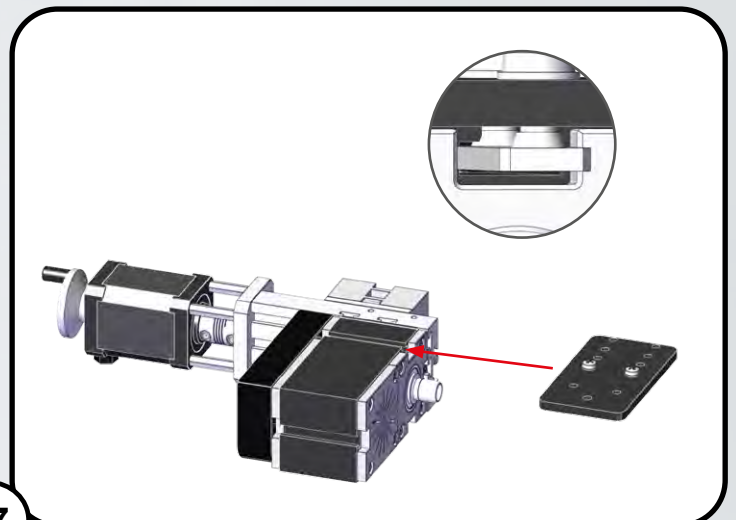
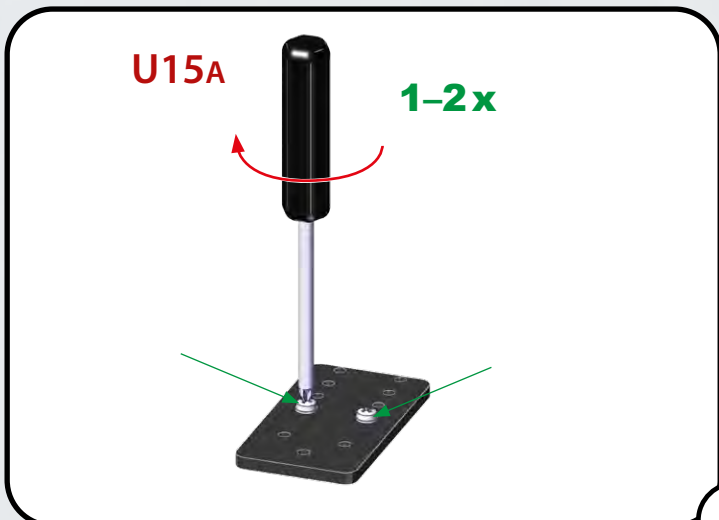
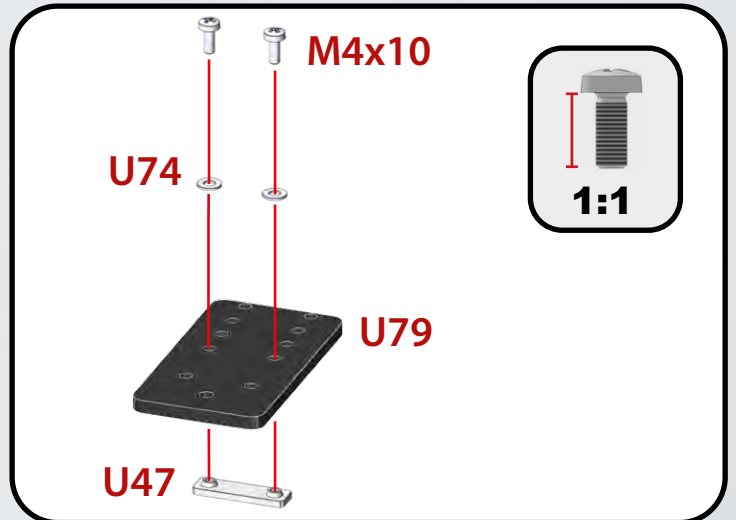
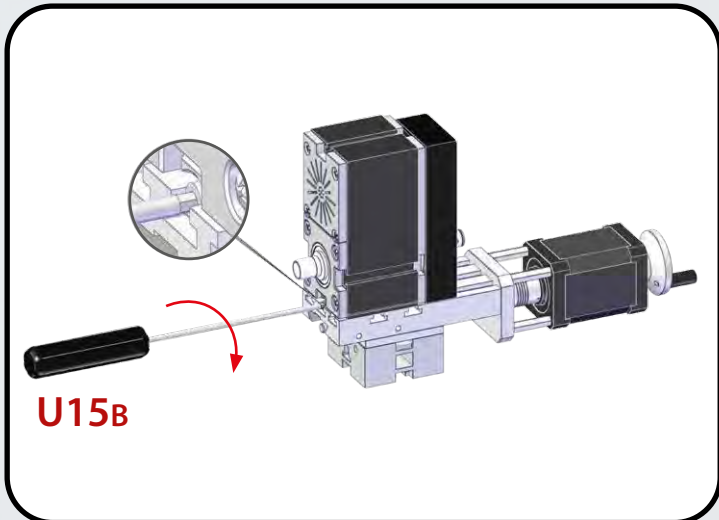
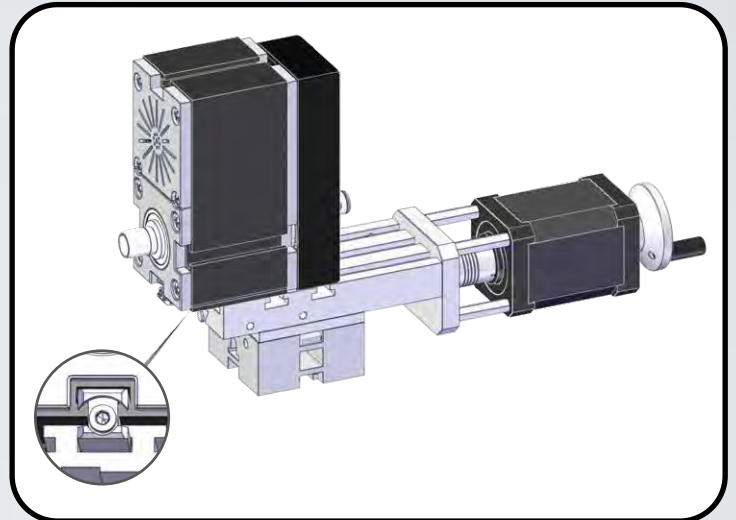
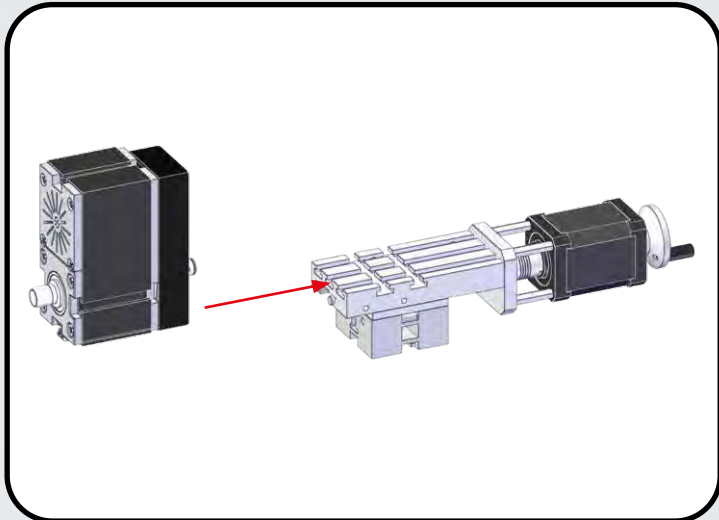
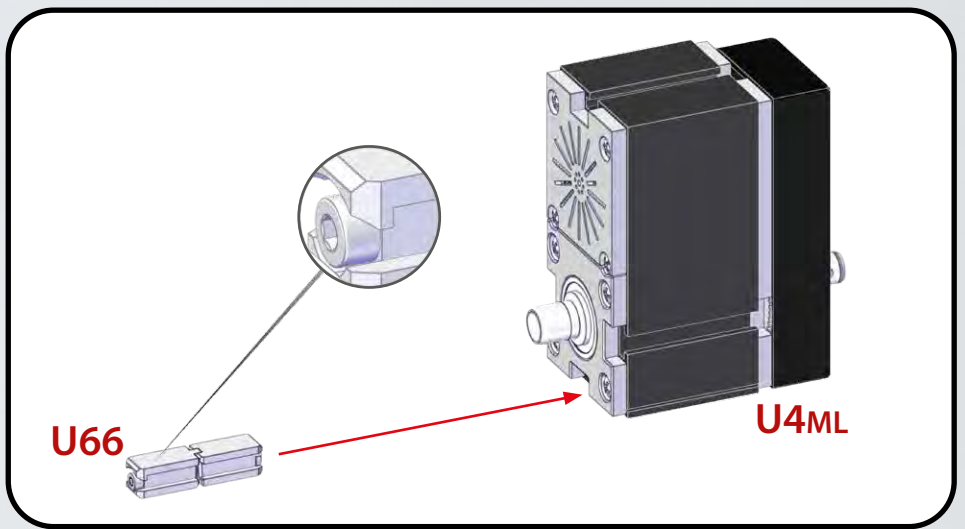
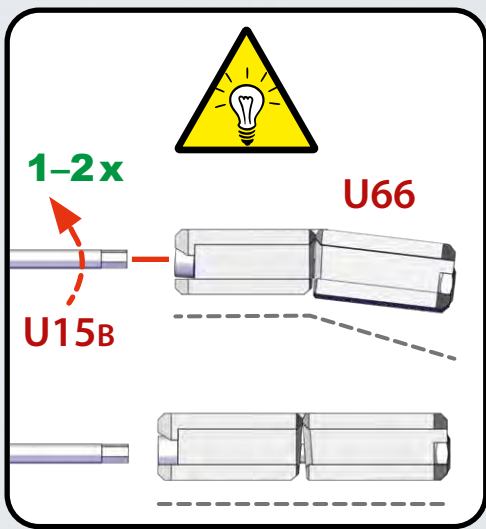
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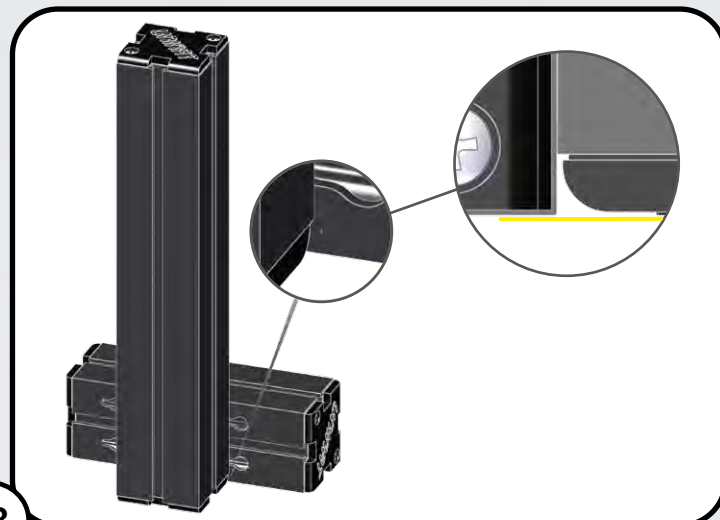
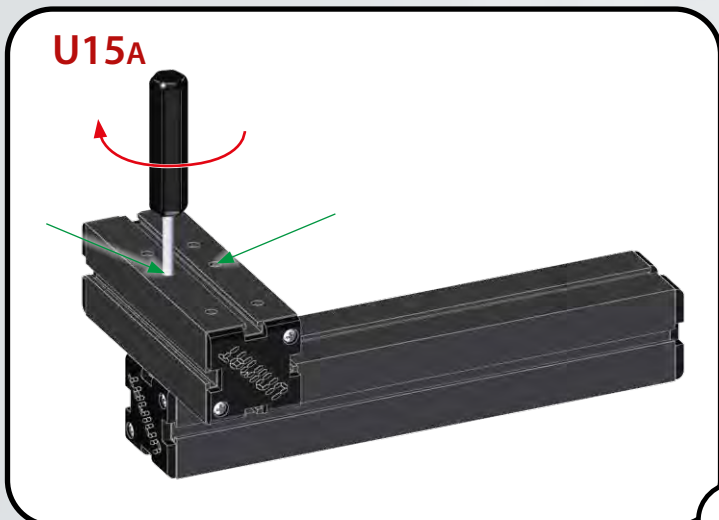
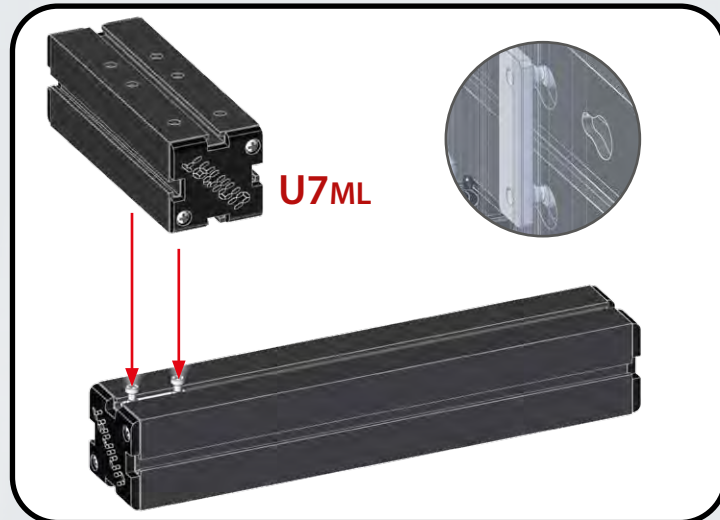
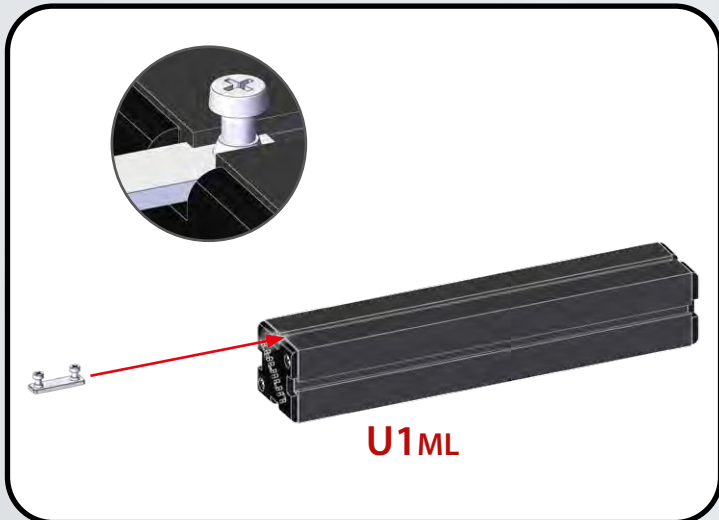
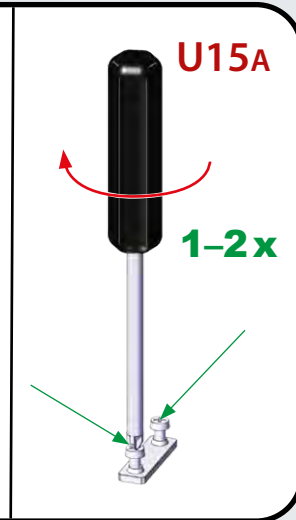
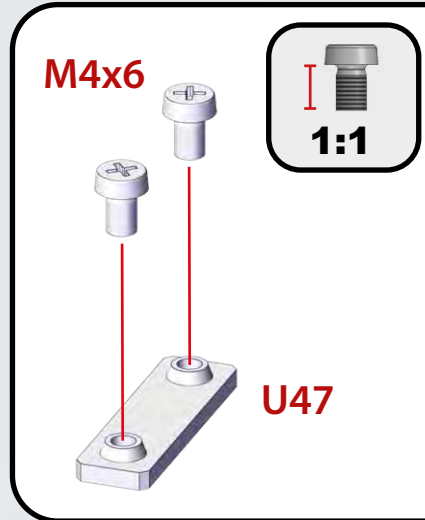
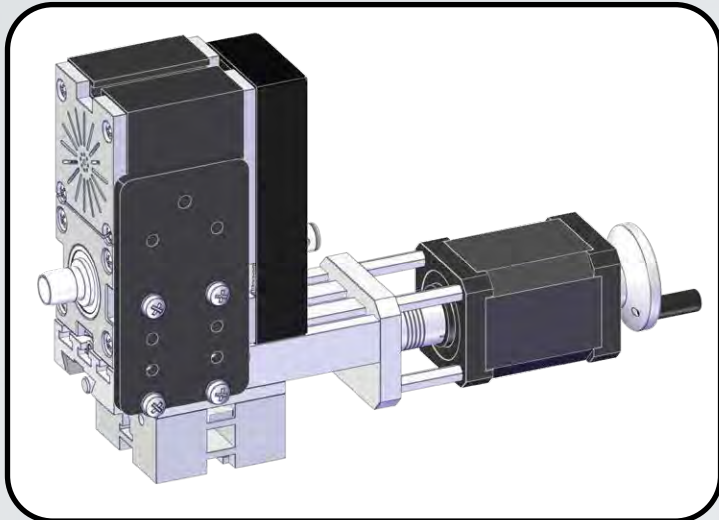
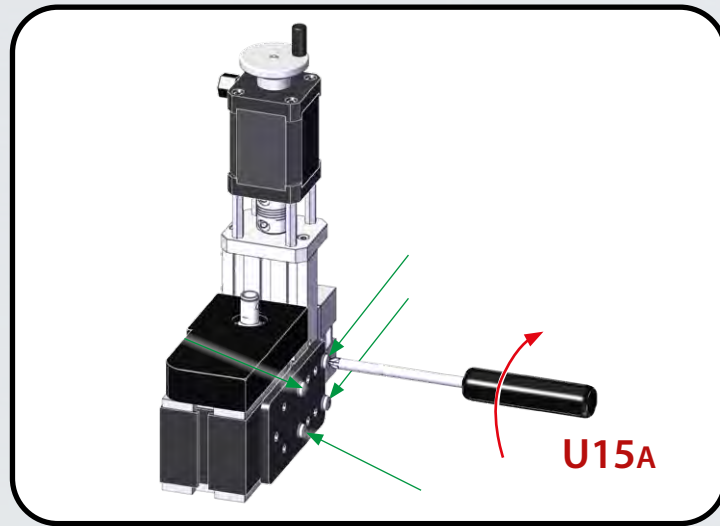
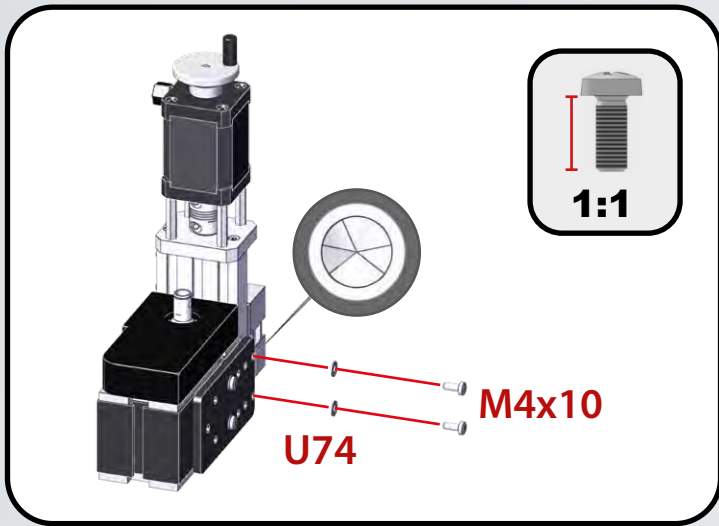


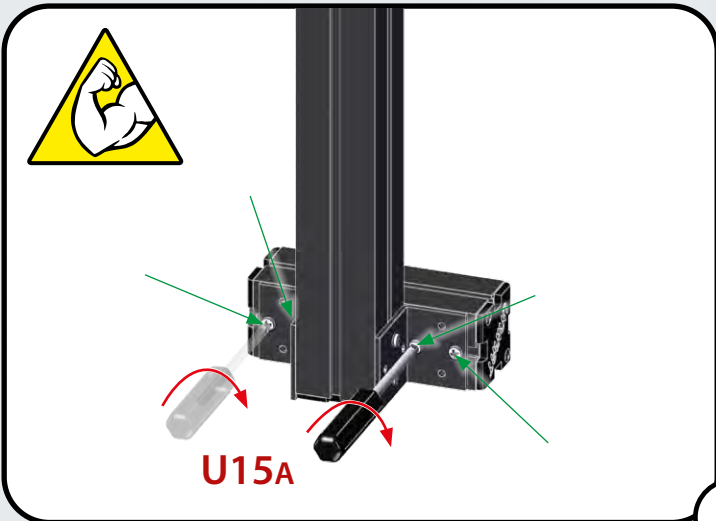
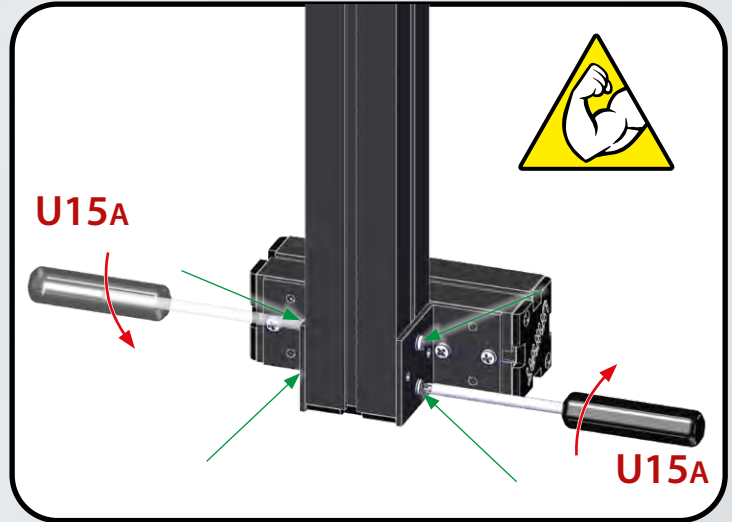
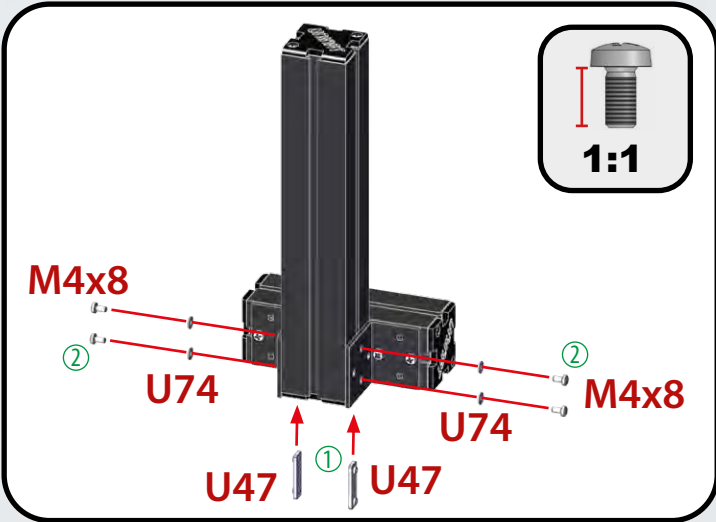
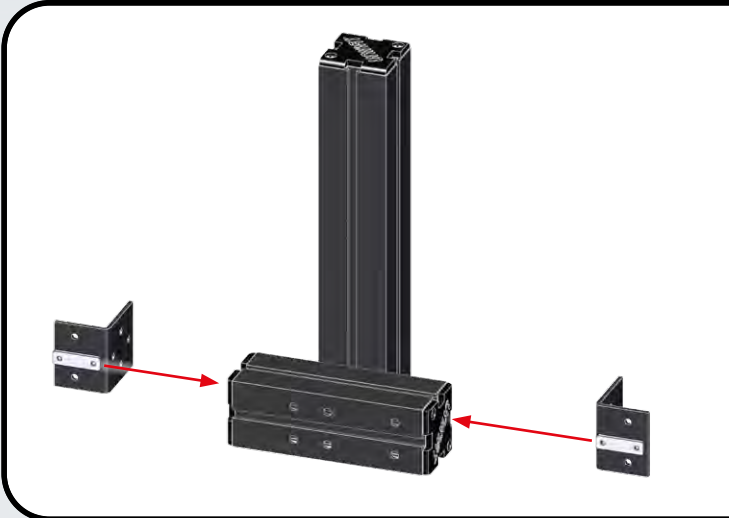
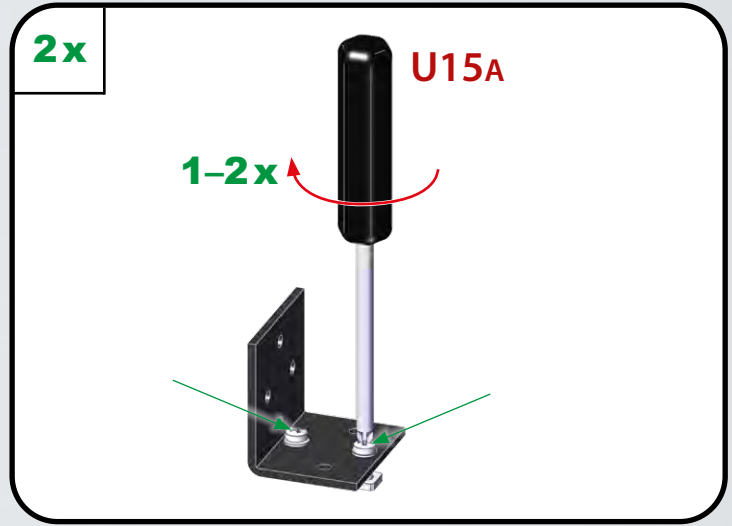
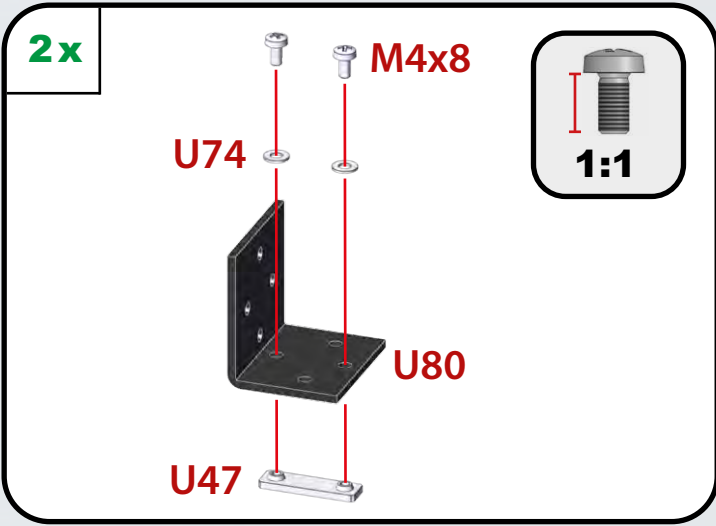


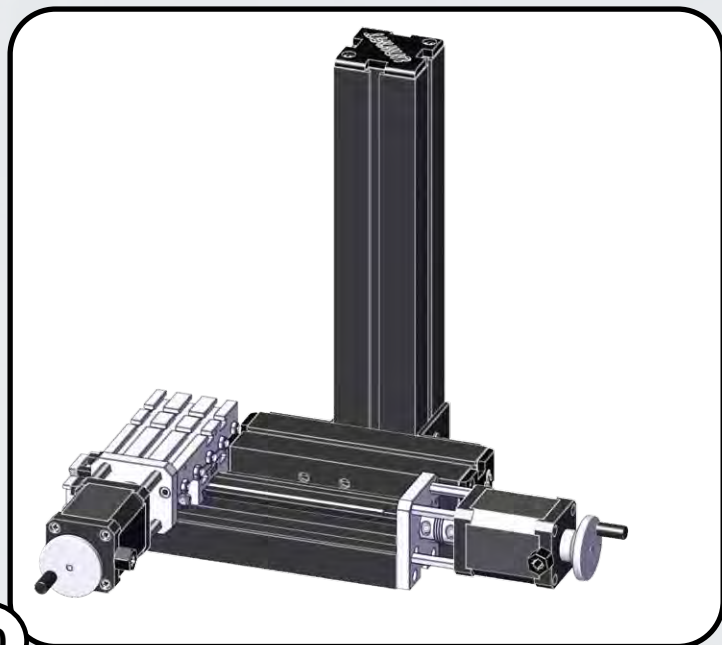
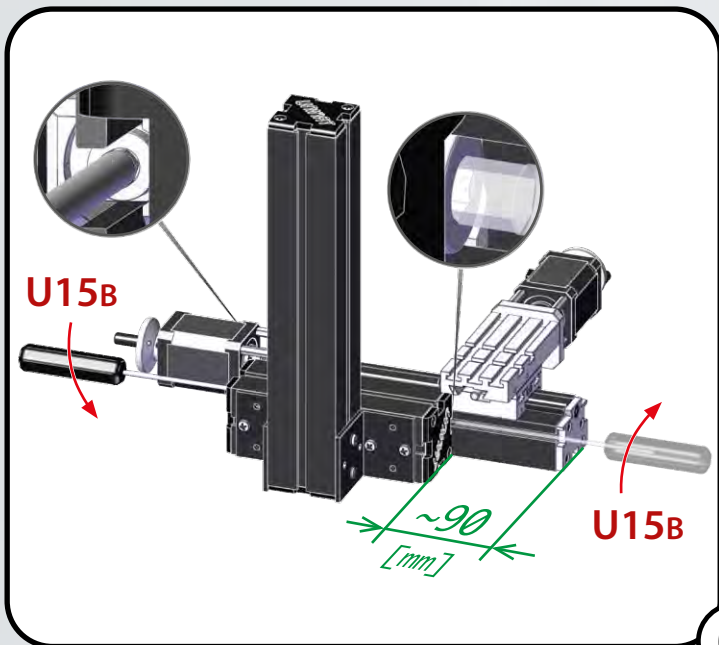
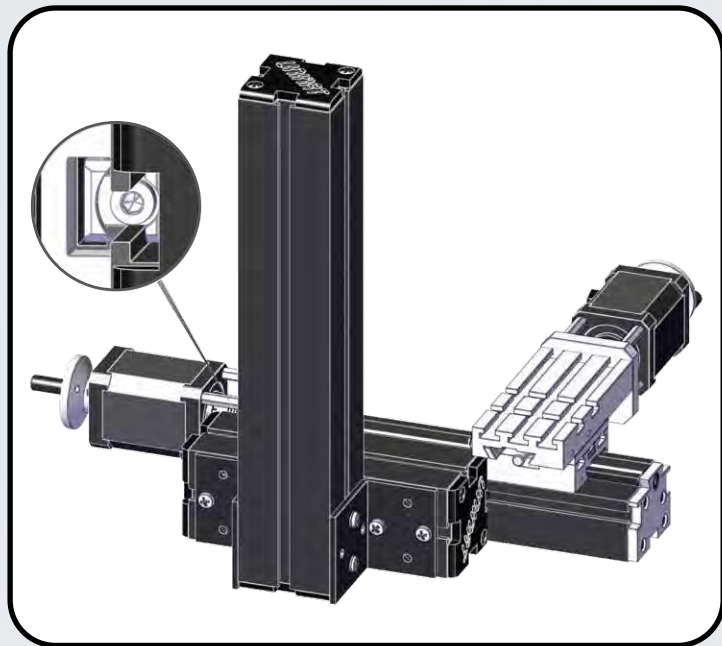
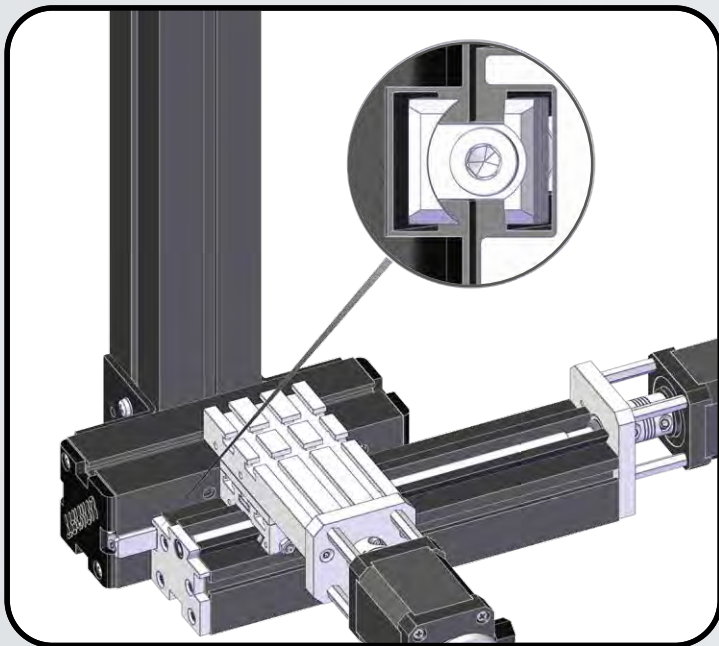
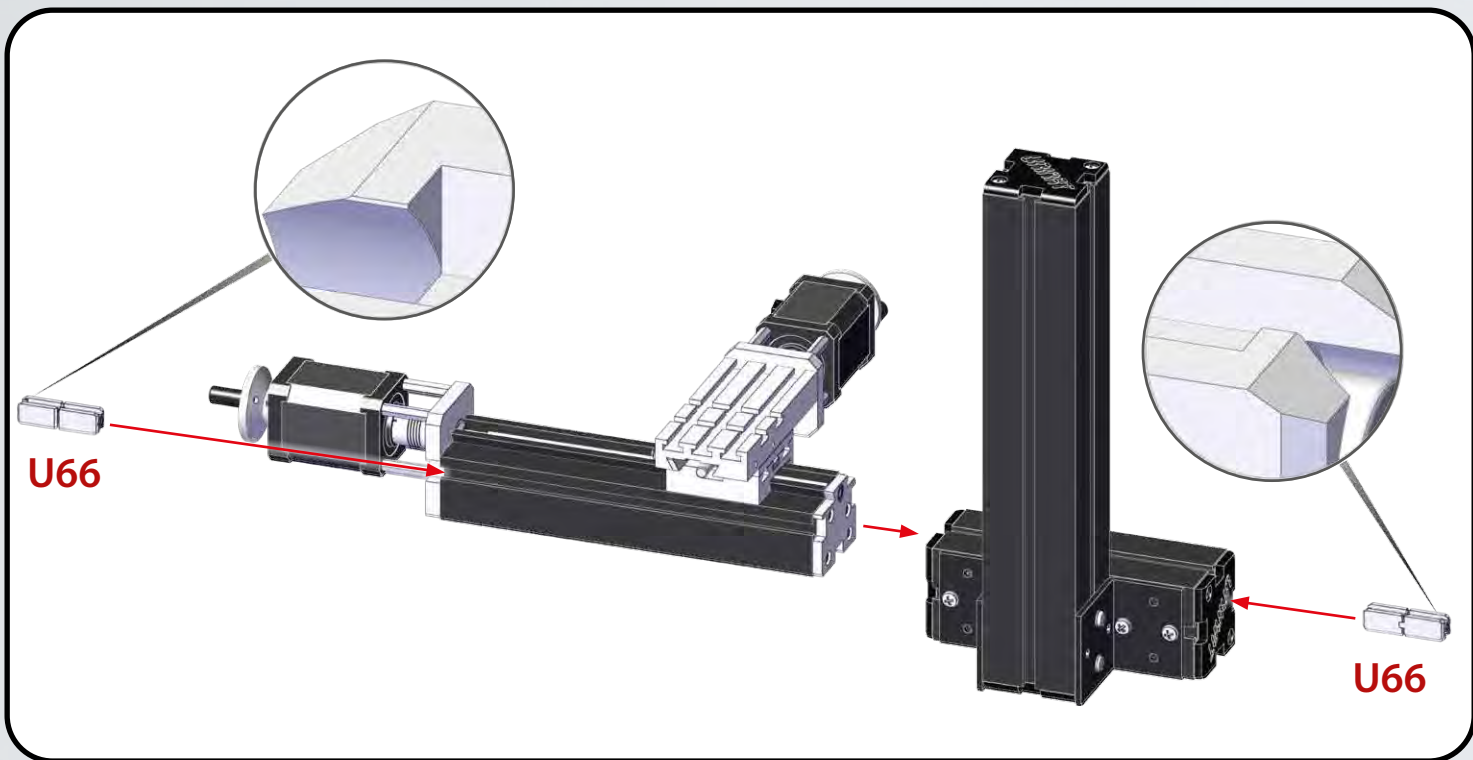


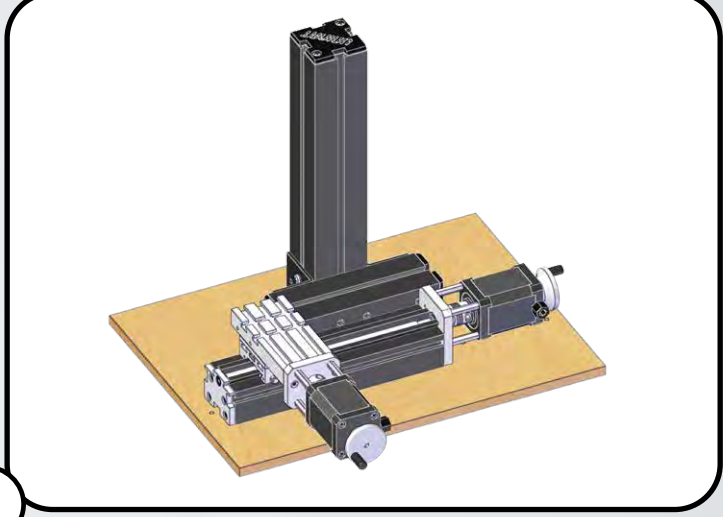
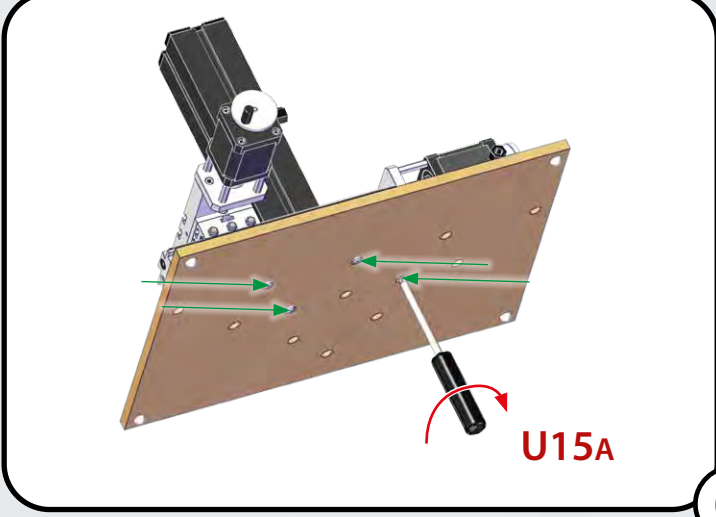
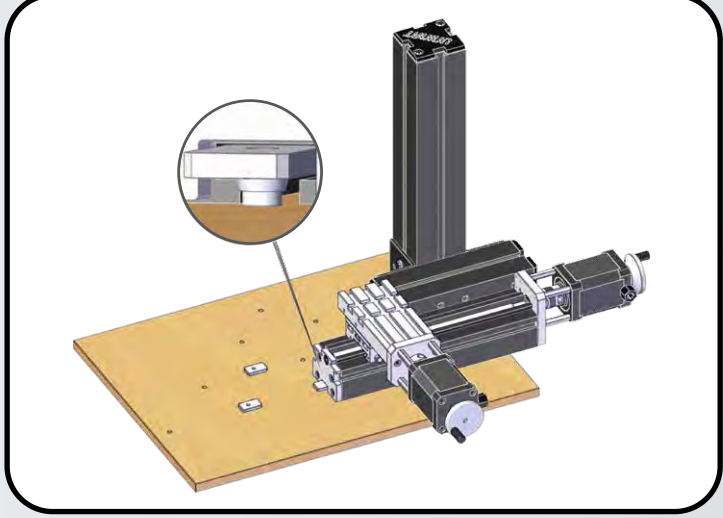
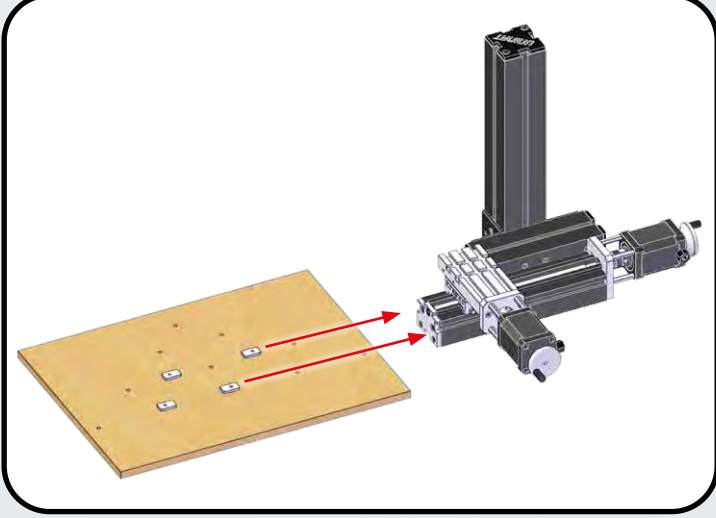
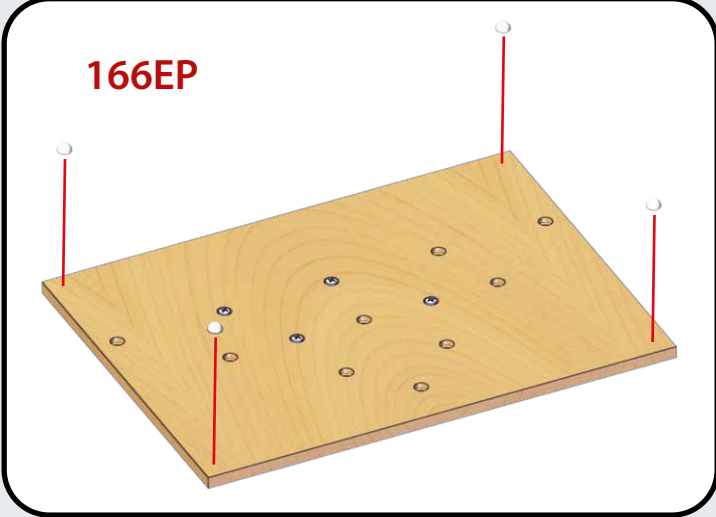
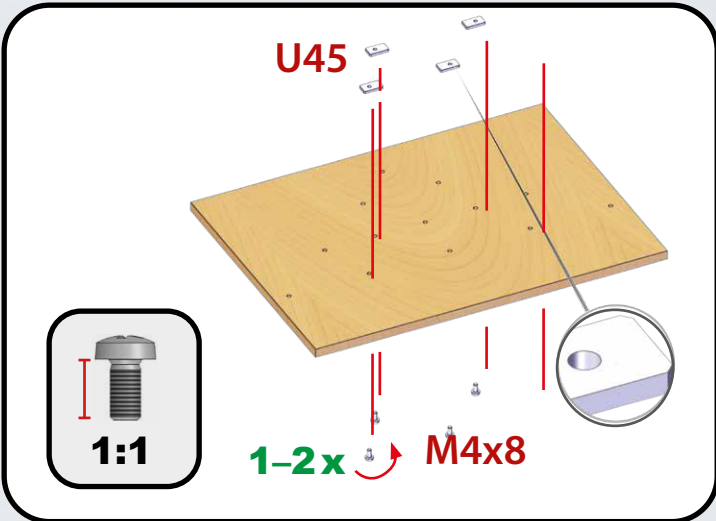


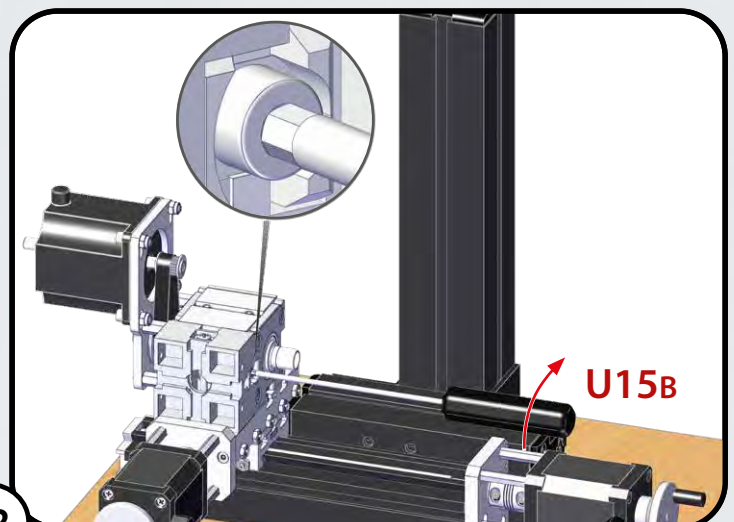
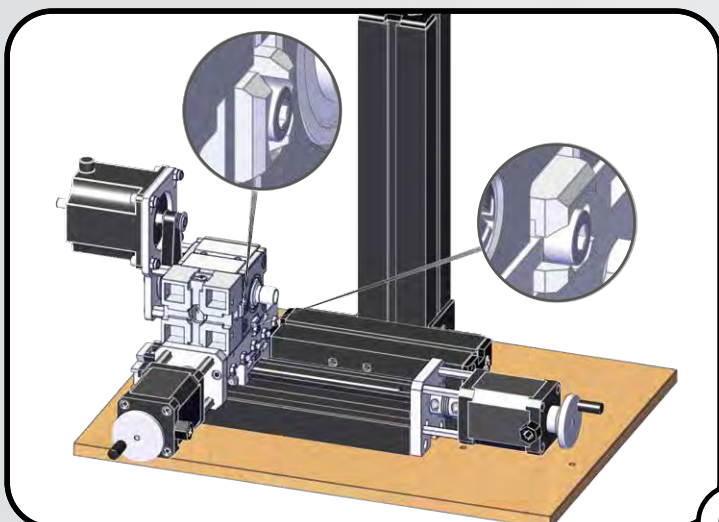
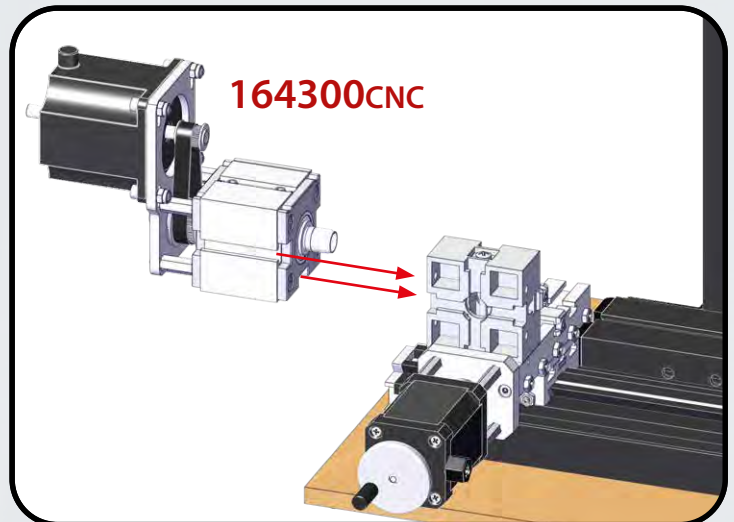
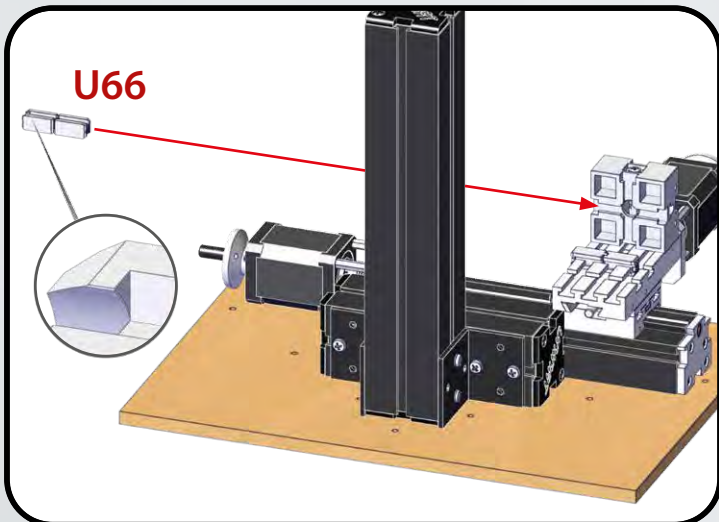
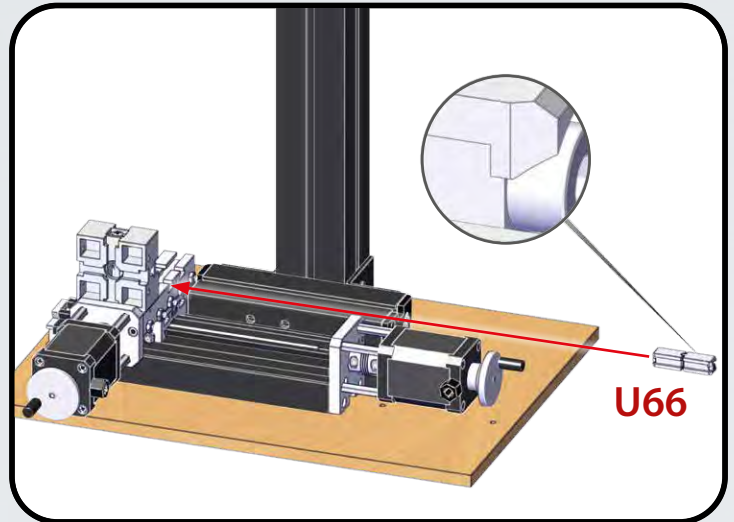
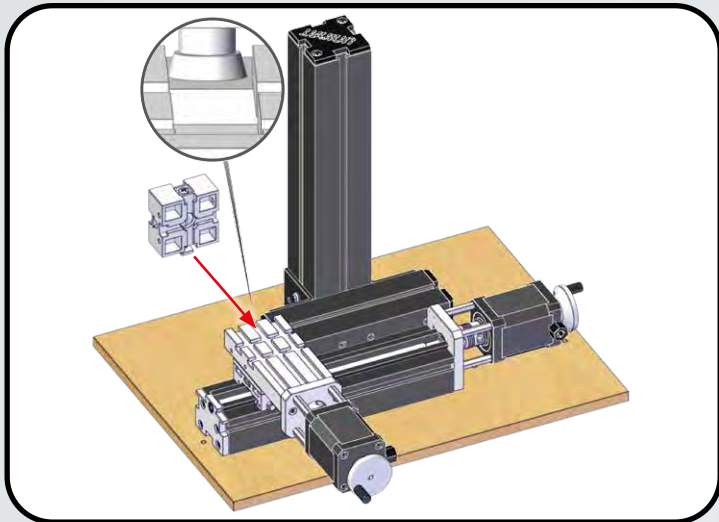
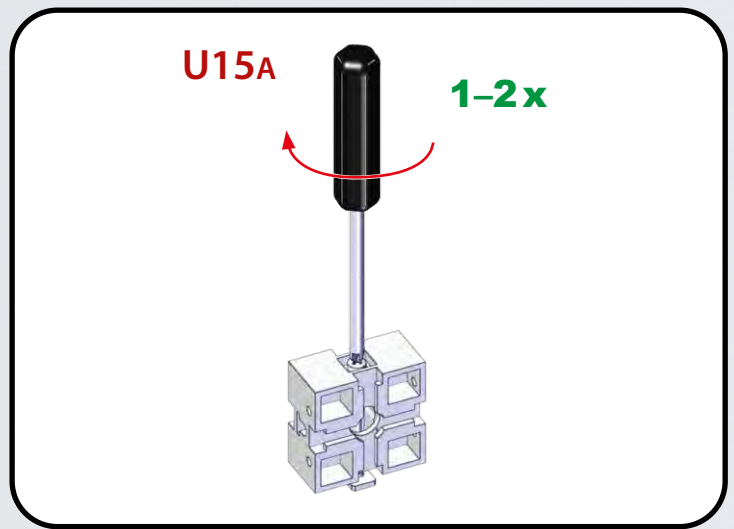
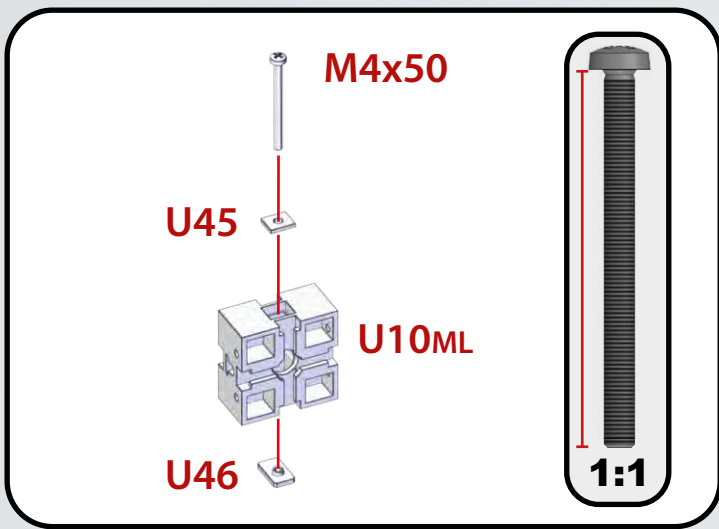


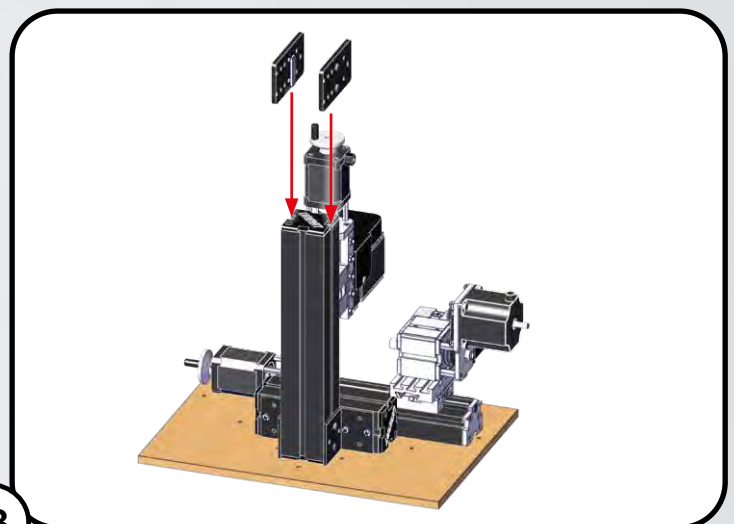
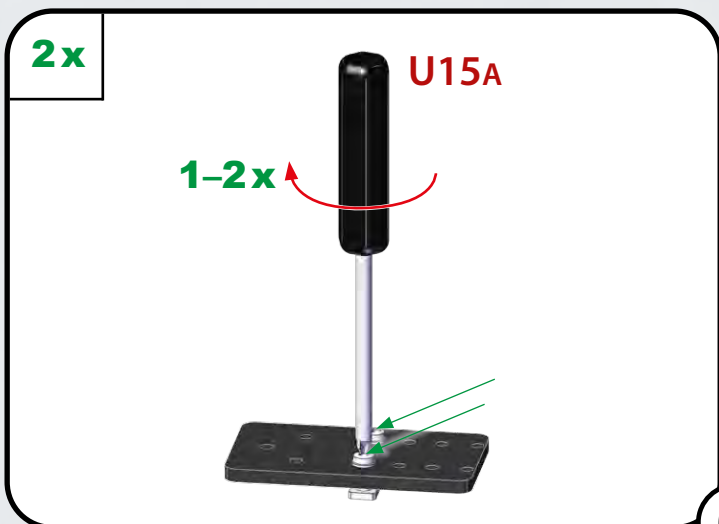
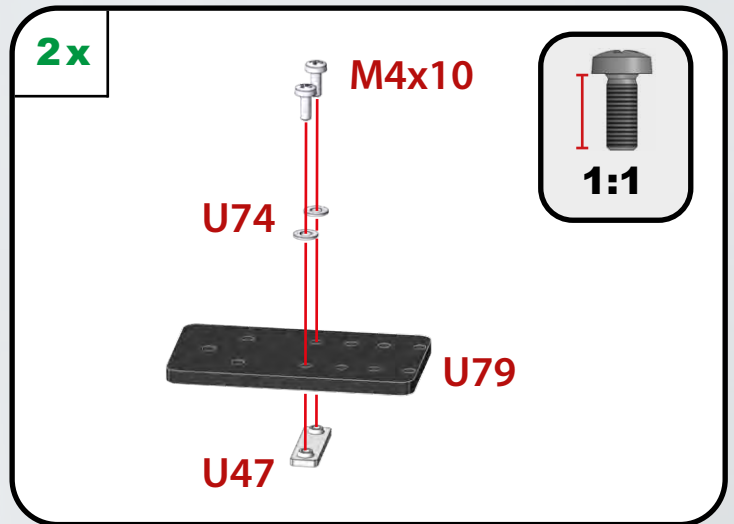
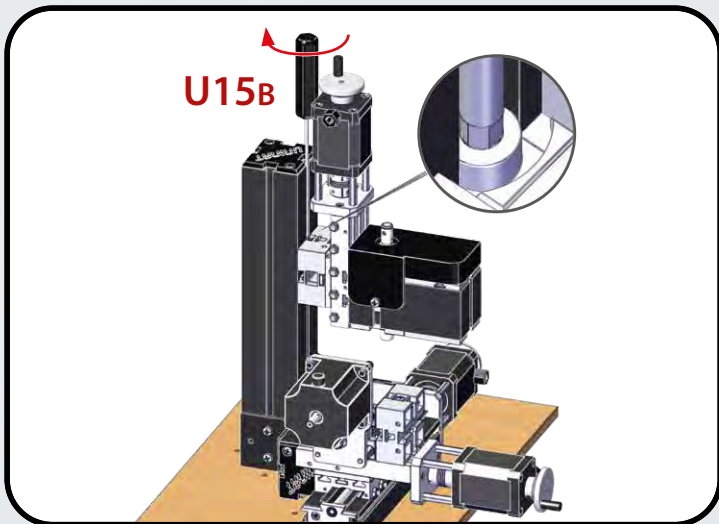
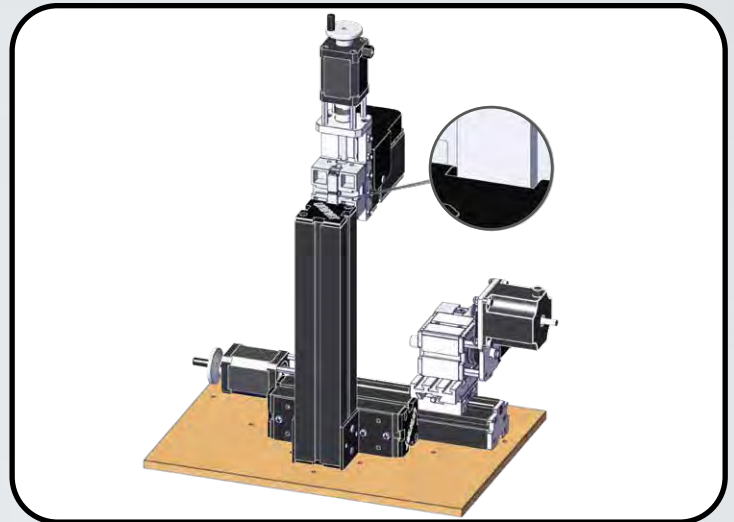
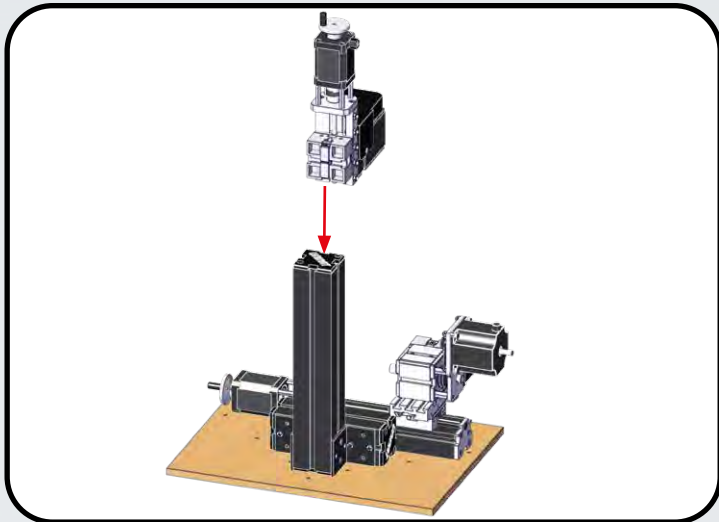
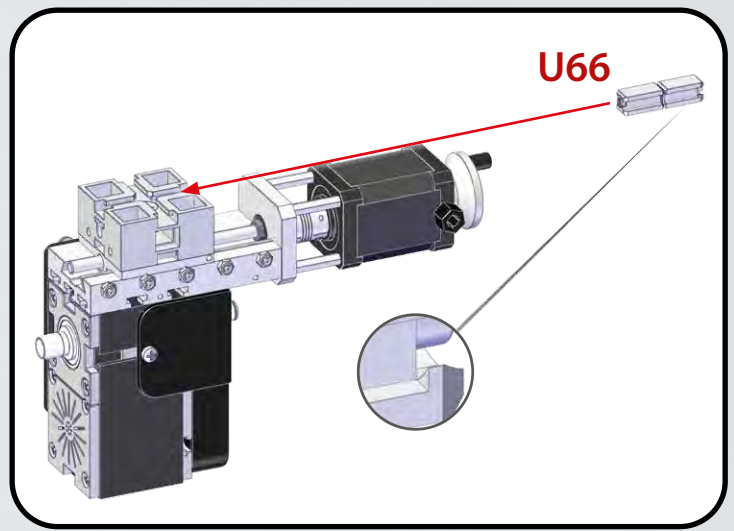
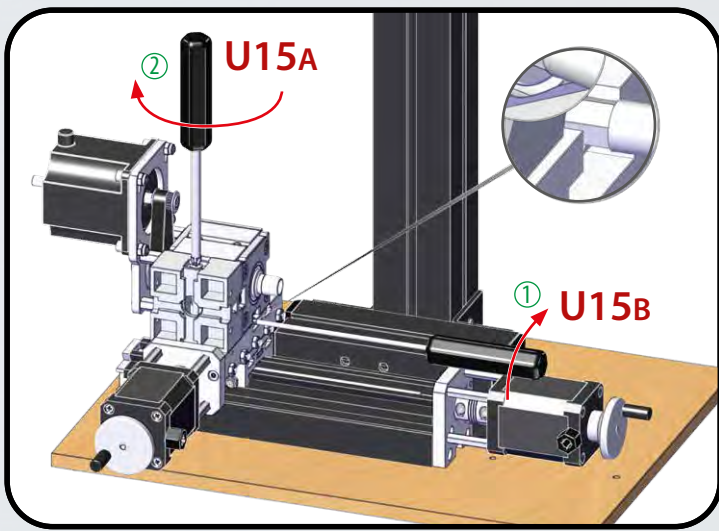


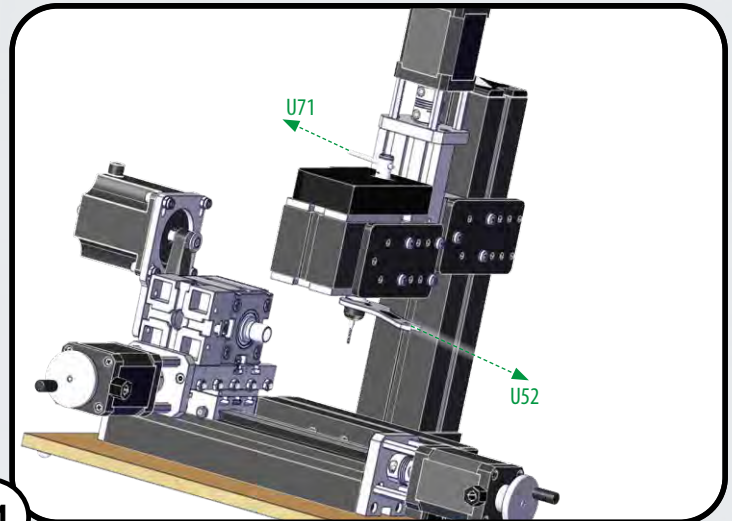
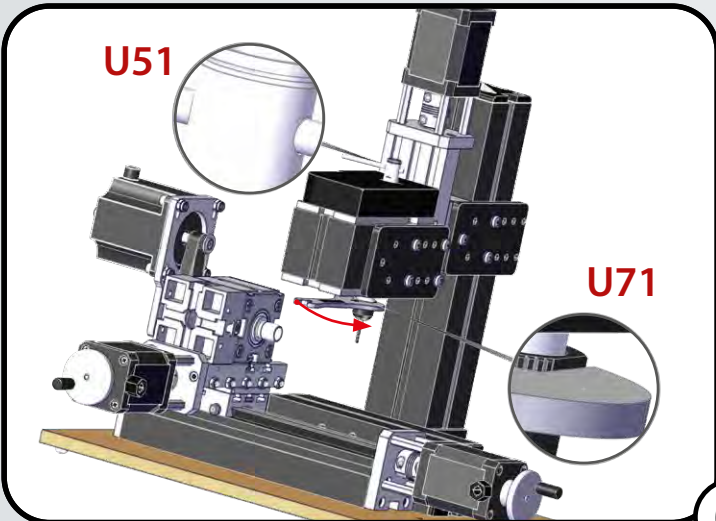
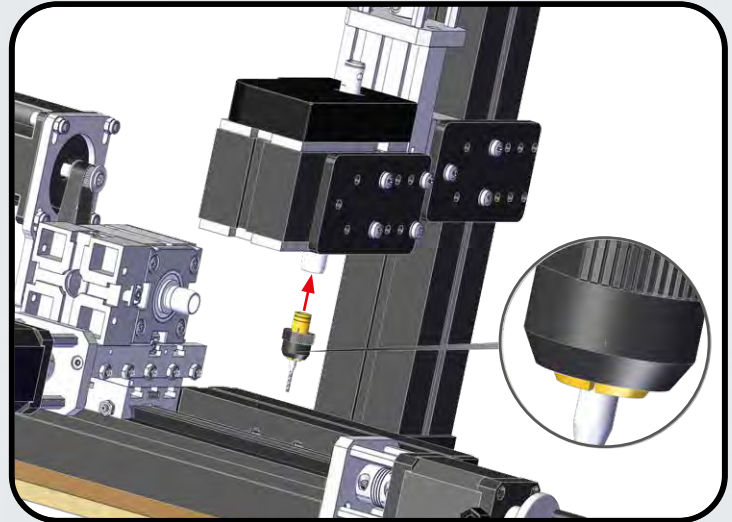
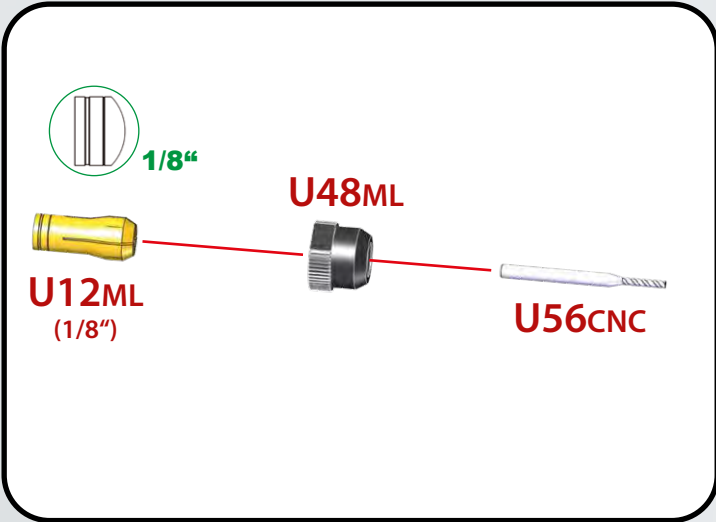
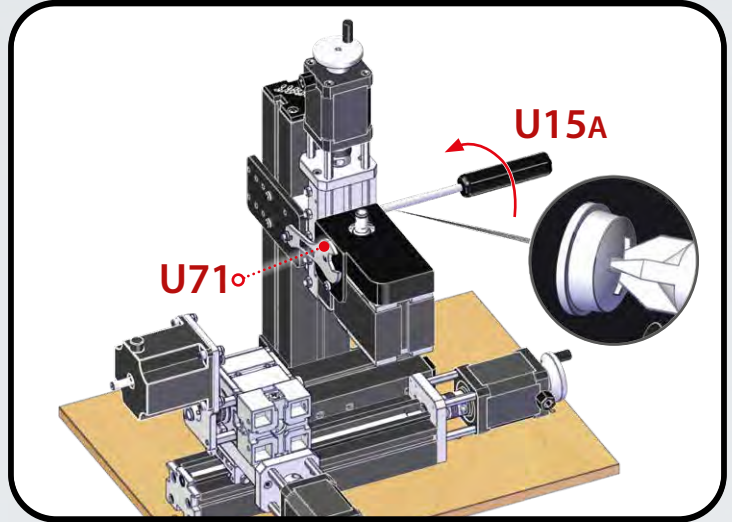
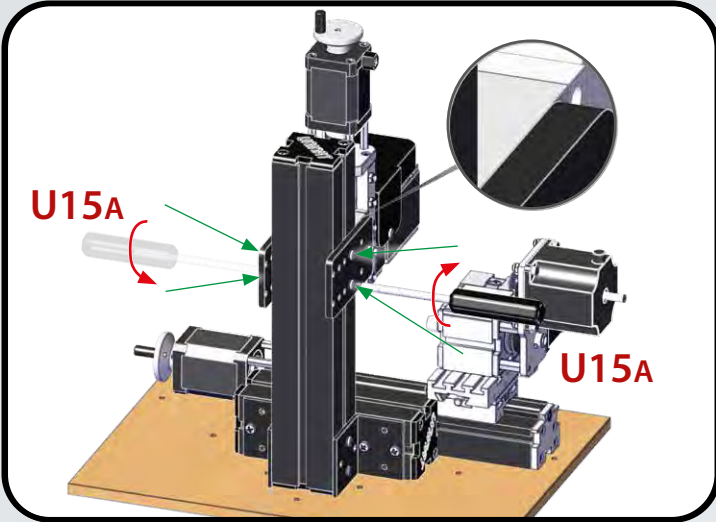
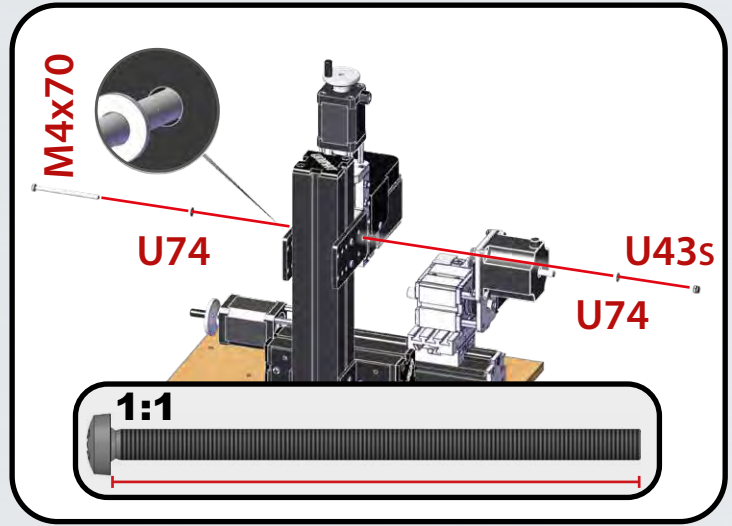
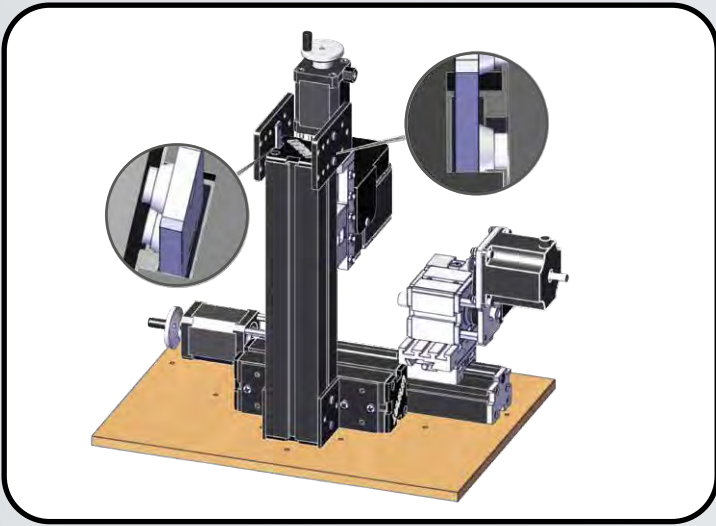




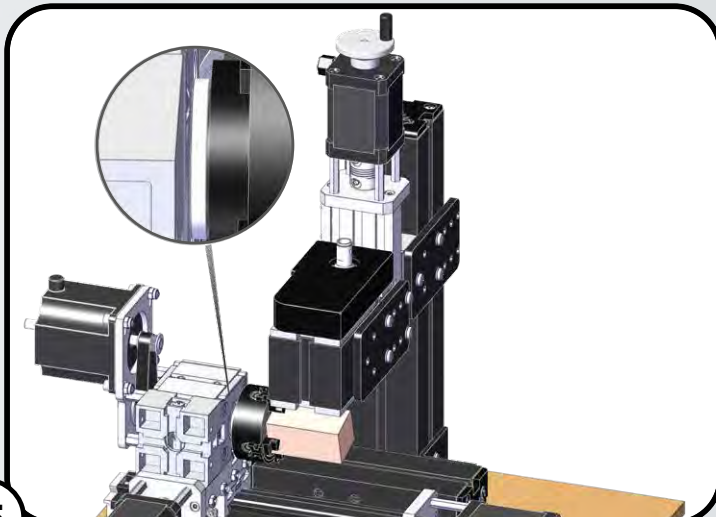
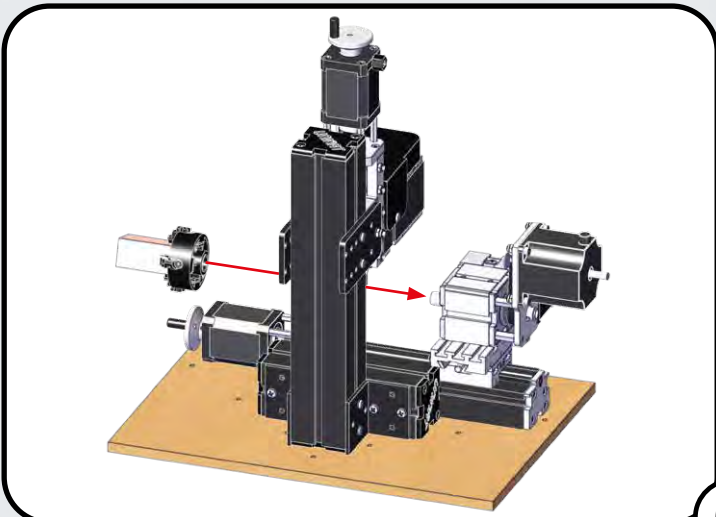
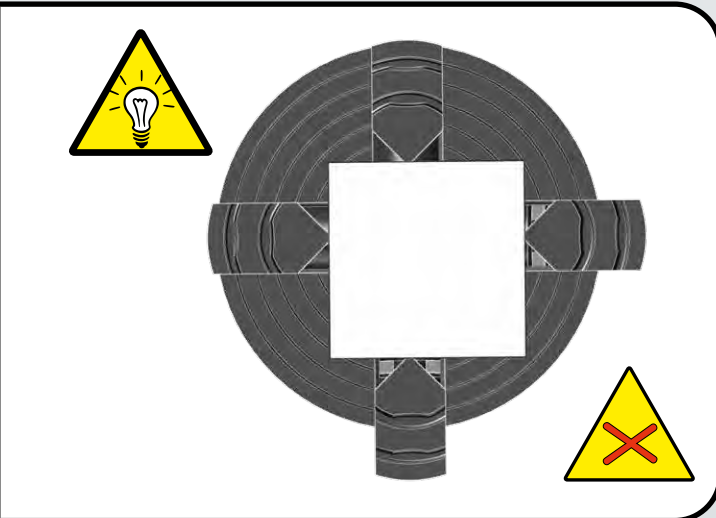
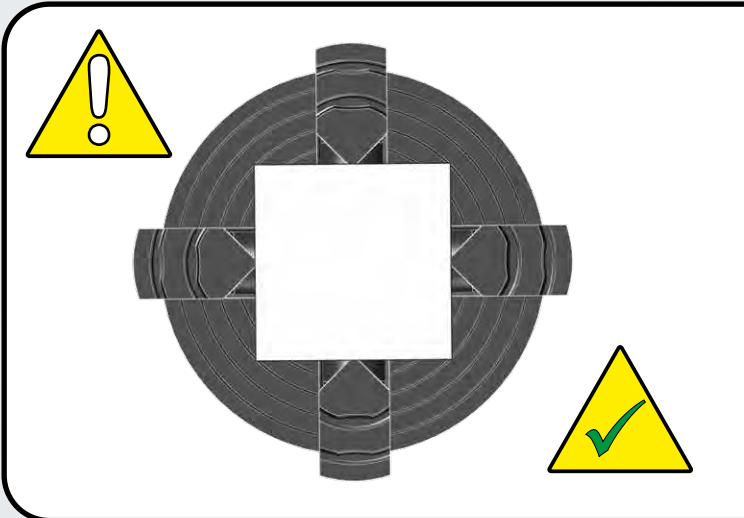
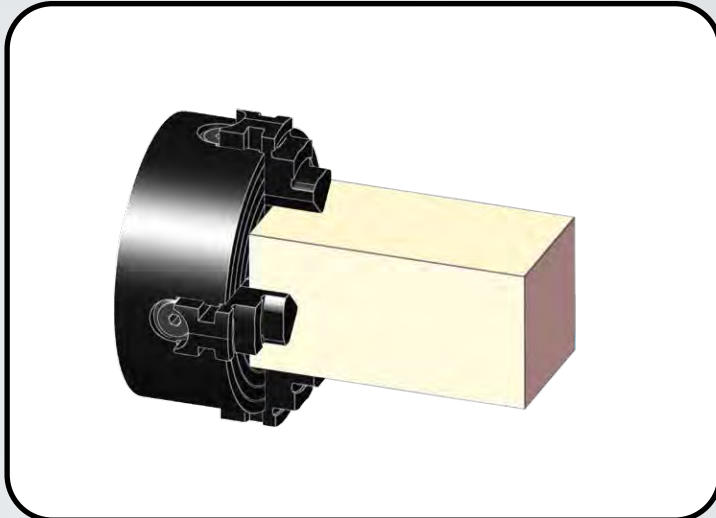
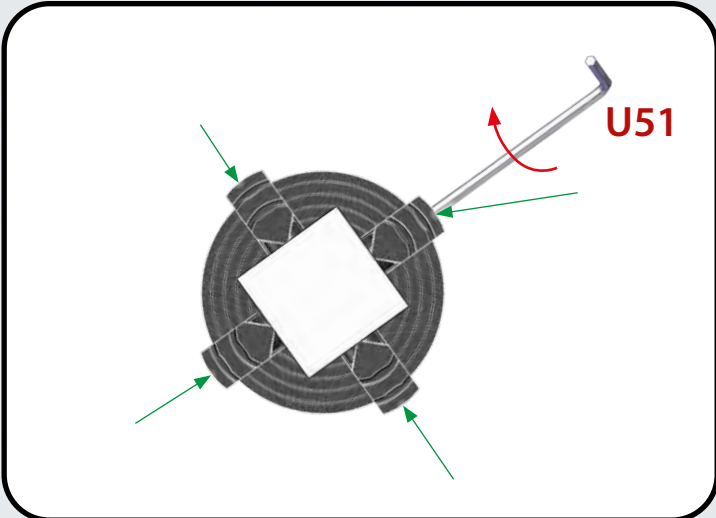
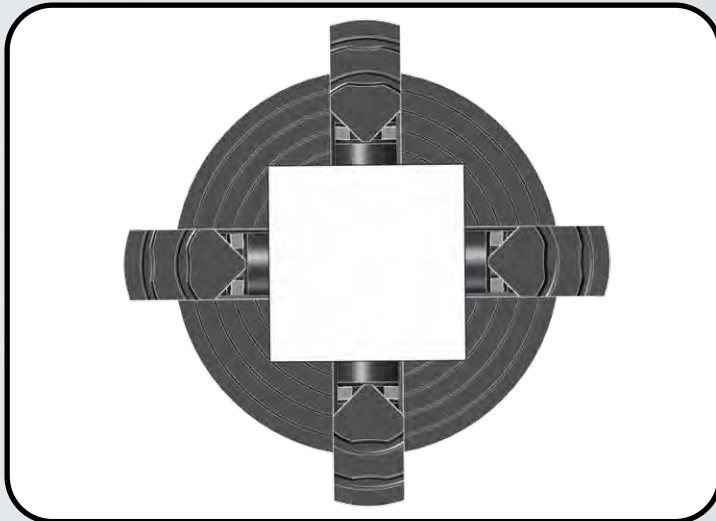
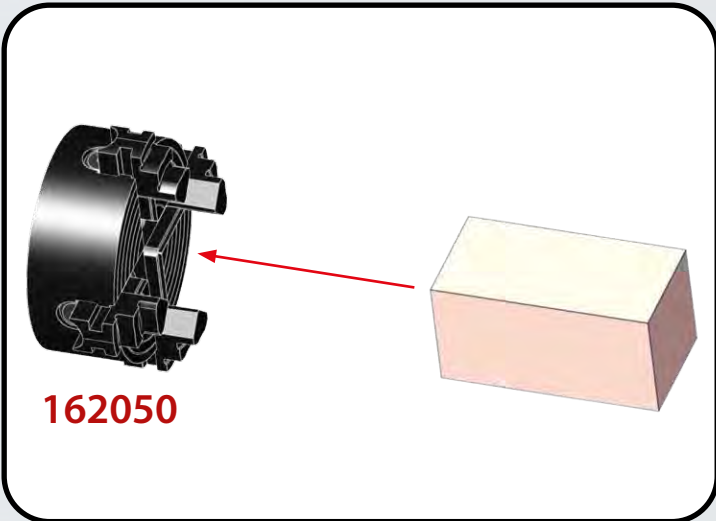


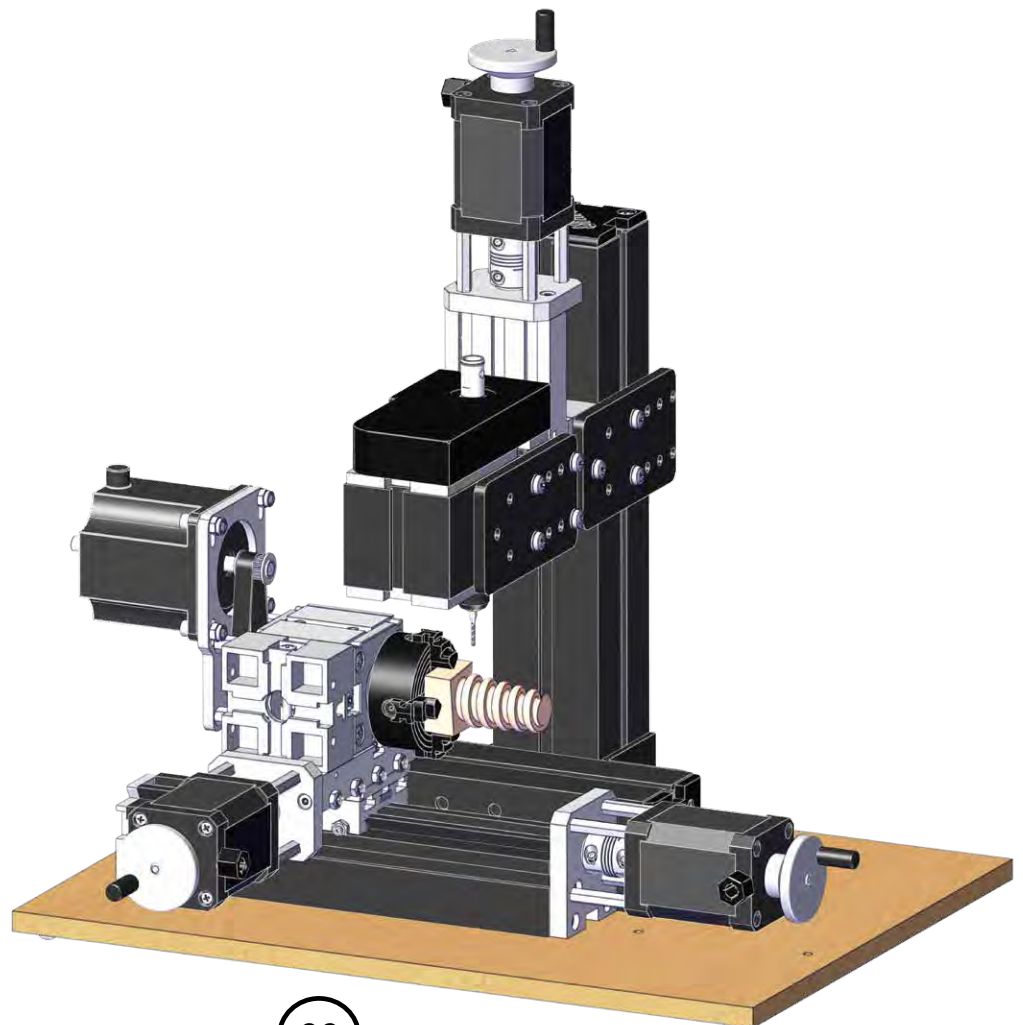
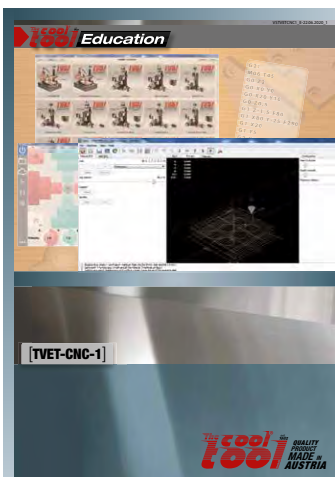
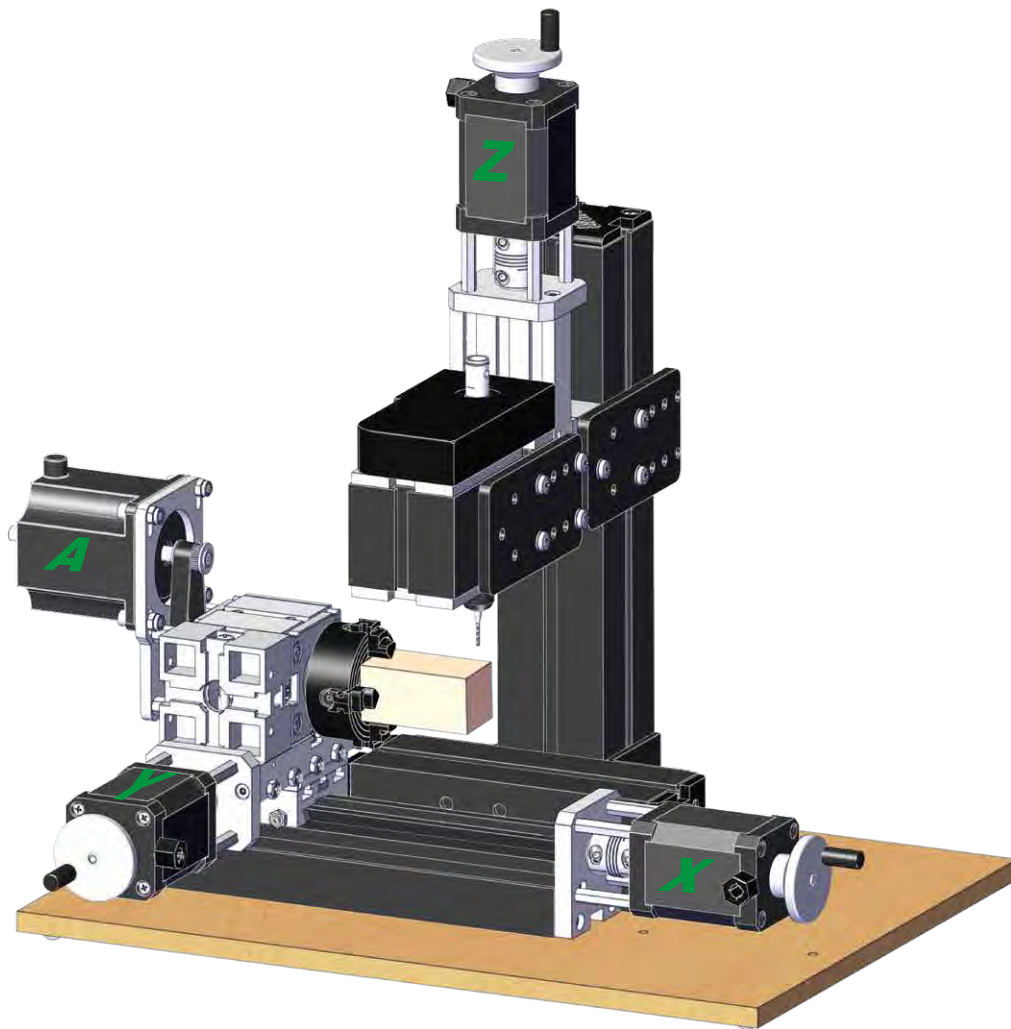












**UNI-FRAES-4 Projekt - 1**

**UNI-FRAES-4 project - 1**

**UNI-FRAES-4 projet - 1**

**UNI-FRAES-4 proyecto - 1**

**UNI-FRAES-4 项目 - 1**

**UNI-FRAES-4 проект - 1**

**Inhalt • contents • contenu • contenido • 内容 • содержание:**

**1) Rohmaterial • Matière première • materia prima • 原料 • Сырье:**

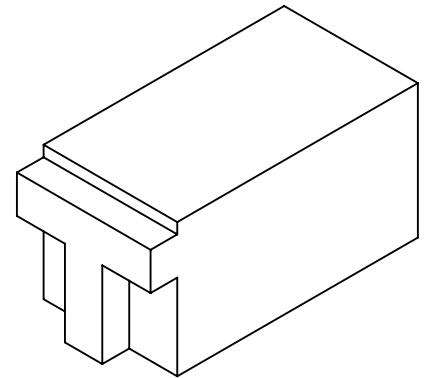
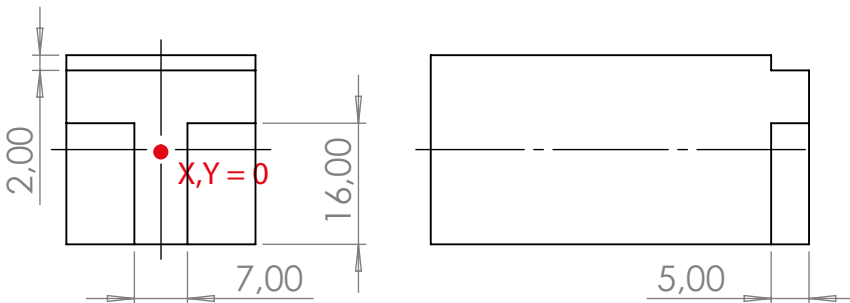
Frässhäum • milling foam • mousse de fraisage •  
espuma de molienda • 研磨泡沫 • фрезерная пена ---- 25x25x50 mm

**2) Technische Zeichnung • technical drawing • dessin technique • dibujo técnico •**

技术图纸 • Технический чертеж

**3) Lösungsvorschlag • proposed solution • solution proposée • solución propuesta •**

建议的解决方案 • Предложенное решение



**Projekt • project • projet • proyecto • 项目 • Проект**

Schaftfräser • end mill • fraise en bout • molino de extremo •

立铣刀 • Фреза концевая:  $\varnothing_{\max} 1,6 \text{ mm}$

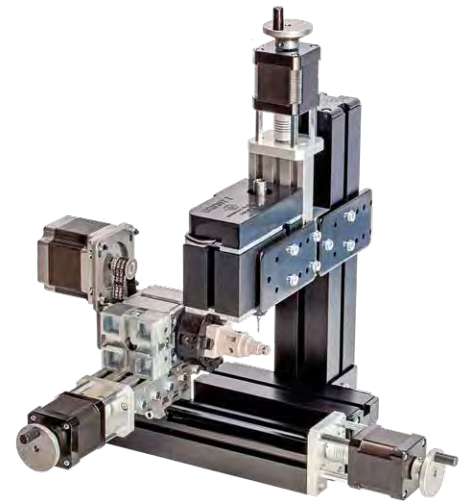
$F_{\max.}$ : 250 mm/min

Maximale Schnitttiefe • maximum depth of cut •

profondeur de coupe maximale • profundidad

máxima de corte • 最大切削深度 •

максимальная глубина резания: 1,0 mm



UNI-FRAES-4



<i>g21</i>	<i>g1 y-14.5</i>	<i>g1 x2</i>	<i>g1 x-3.2</i>	<i>g0 y-14.5</i>	<i>g1 y-14.5</i>	<i>g1 y0.7</i>
<i>g0 z15</i>	<i>g0 z15</i>	<i>g0 y-0.3</i>	<i>g1 y-14.5</i>	<i>g0 x-4.2</i>	<i>g0 x0.2</i>	<i>g1 x2</i>
<i>g0 a0</i>	<i>g0 x2</i>	<i>g1 x1.2</i>	<i>g0 x2.2</i>	<i>g1 z8 f50</i>	<i>g1 y-1.3</i>	<i>g0 y-0.3</i>
<i>g0 x-4.2 y14.5</i>	<i>g0 a90</i>	<i>g1 y-14.5</i>	<i>g1 y0.7</i>	<i>g1 y2.7 f150</i>	<i>g1 x2</i>	<i>g1 x1.2</i>
<i>g1 z10.5 f50</i>	<i>g0 x-4.2</i>	<i>g0 x0.2</i>	<i>g1 x2</i>	<i>g1 x2</i>	<i>g0 y-14.5</i>	<i>g1 y-14.5</i>
<i>g1 y-14.5 f250</i>	<i>g1 z8 f50</i>	<i>g1 y-1.3</i>	<i>g0 y-0.3</i>	<i>g0 y1.7</i>	<i>g0 x-4.2</i>	<i>g0 x0.2</i>
<i>g0 x-3.2</i>	<i>g1 y2.7 f150</i>	<i>g1 x2</i>	<i>g1 x1.2</i>	<i>g1 x-3.2</i>	<i>g1 z3.5 f50</i>	<i>g1 y-1.3</i>
<i>g1 y14.5</i>	<i>g1 x2</i>	<i>g0 y-14.5</i>	<i>g1 y-14.5</i>	<i>g1 y-14.5</i>	<i>g1 y2.7 f150</i>	<i>g1 x2</i>
<i>g0-2.2</i>	<i>g0 y1.7</i>	<i>g0 x-4.2</i>	<i>g0 x0.2</i>	<i>g0 x2.2</i>	<i>g1 x2</i>	<i>g0 z15</i>
<i>g1 y-14.5</i>	<i>g1 x-3.2</i>	<i>g1 z3.5 f50</i>	<i>g1 y-1.3</i>	<i>g1 y0.7</i>	<i>g0 y1.7</i>	<i>m02</i>
<i>g0 x-0.2</i>	<i>g1 y-14.5</i>	<i>g1 y2.7 f150</i>	<i>g1 x2</i>	<i>g1 x2</i>	<i>g1 x-3.2</i>	
<i>g1 y14.5</i>	<i>g0 x2.2</i>	<i>g1 z15</i>	<i>g0 z15</i>	<i>g0 y-0.3</i>	<i>g1 y-14.5</i>	
<i>g0 x0.6</i>	<i>g1 y0.7</i>	<i>g0 y1.7</i>	<i>g0 a270</i>	<i>g1 x1.2</i>	<i>g0 x2.2</i>	

# UNIMAT CNC

4 Achsen Vertikalfräse

4 axis vertical milling machine

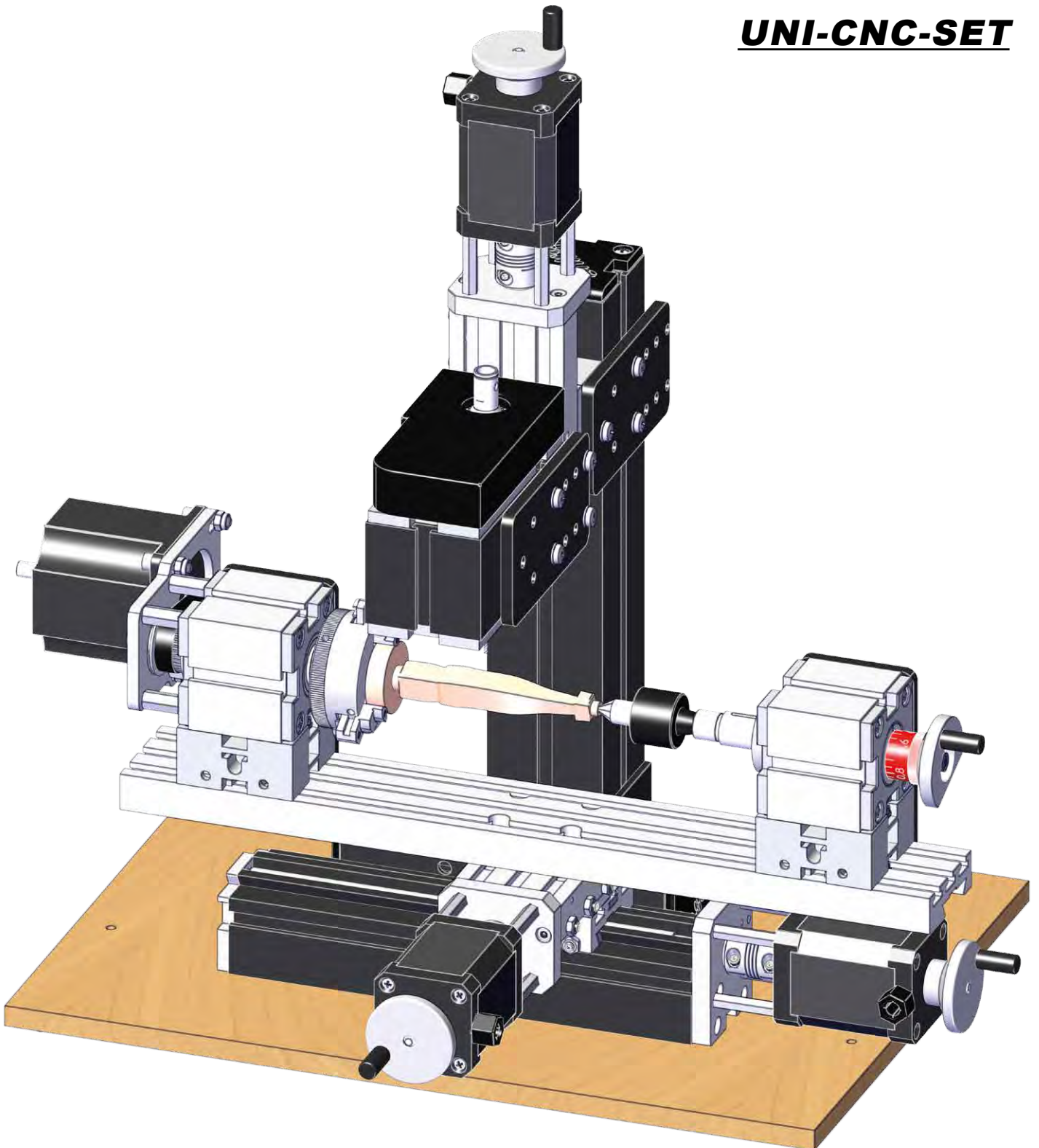
4 axes Fraiseuse verticale

4 ejes Fresadora vertical

4 轴 立式 铣床

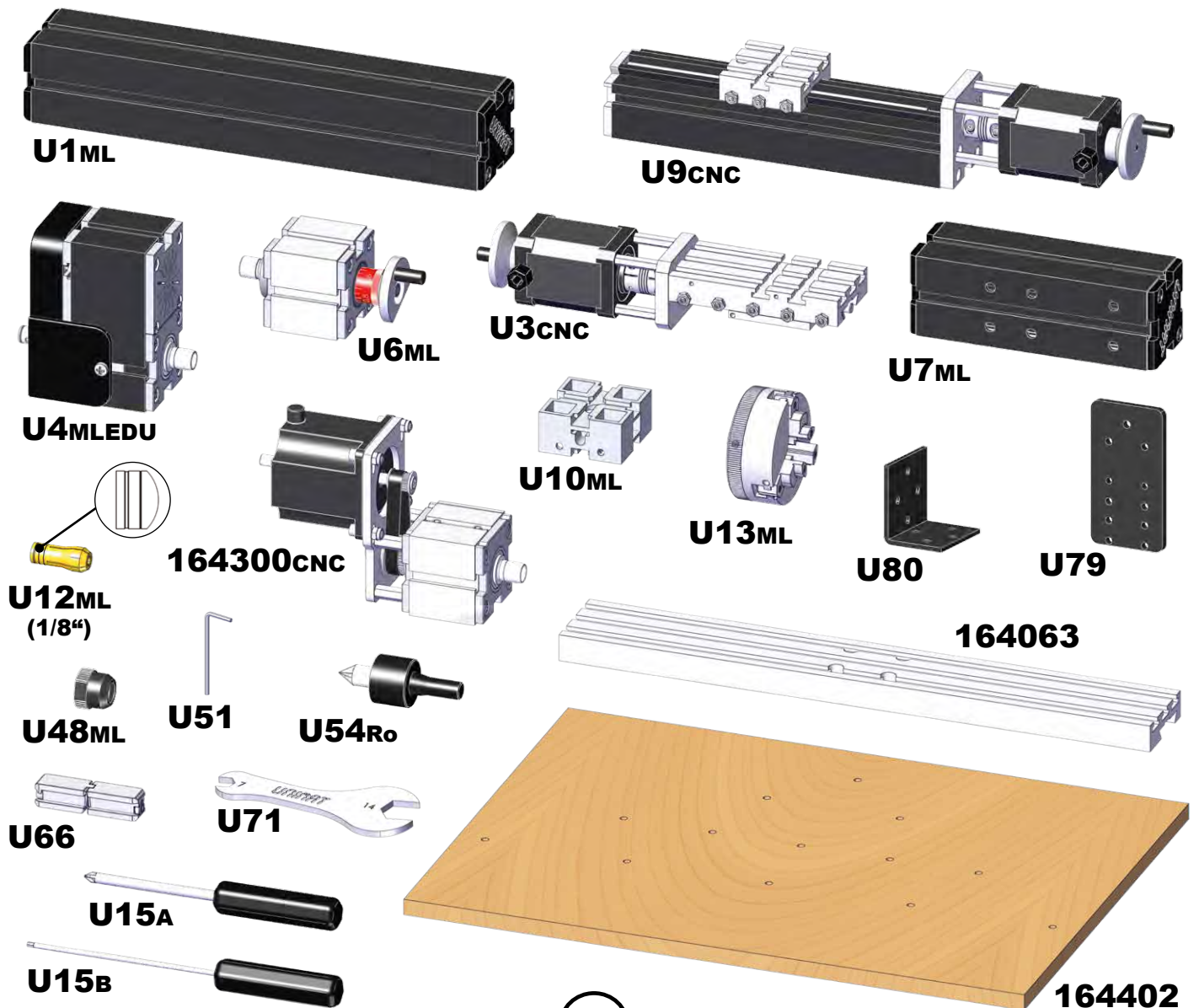
4оси Вертикальный фрезерный станок

## UNI-CNC-SET



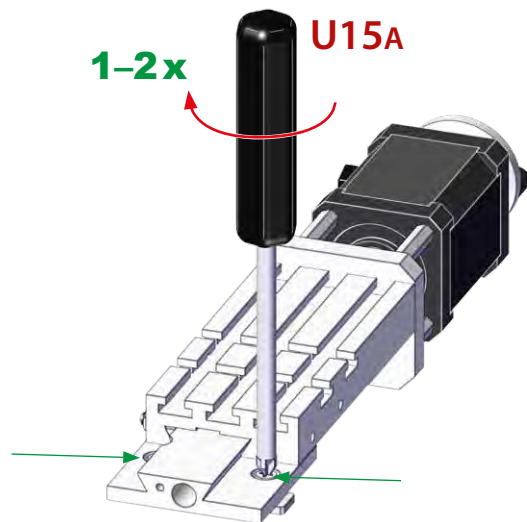
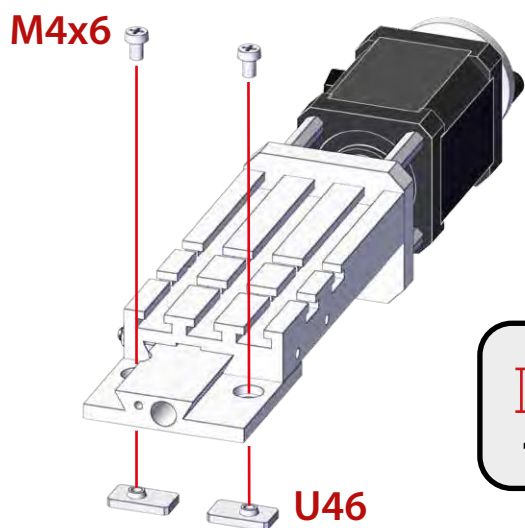
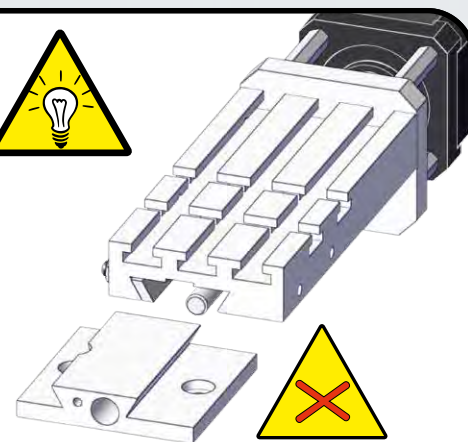
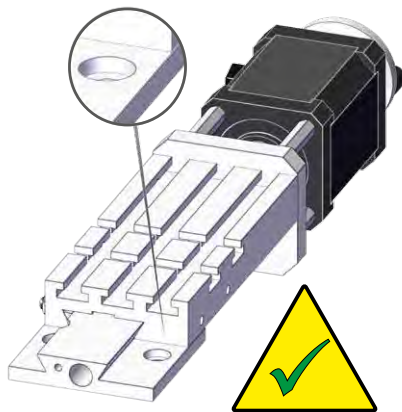
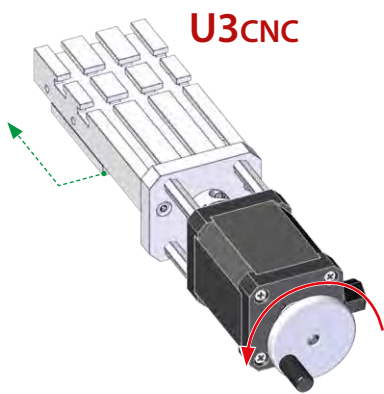
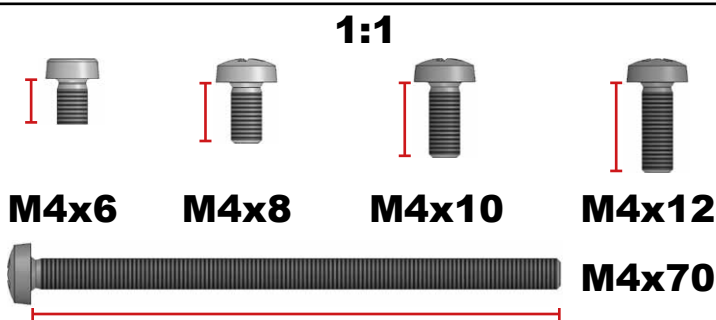
		DE	EN	FR	ES	中国 (ZH)	RU	
U1ML	1	Maschinenbett, lang	Machine bed, long	Banc, grand	Bancada grande	长机座	Станина длинная	A1A 020 000 SW
U3CNC	2	CNC Querschlitten	CNC Cross slide	CNC Chariot, petit	CNC Carro, pequeño	CNC 全金属小滑块	CNC Салазки поперечные	164 060 CNC
U4MLEDU	1	Antriebseinheit ML	Drive unit ML	EDU-Moteur	EDU-Motor	EDU-马达	EDU-Двигатель	164 420
U6ML	1	Reitstock	Tailstock	Poupée mobile	Contrapunta	全金属尾座	Бабка задняя	A1M 040 000
U7ML	1	Maschinenbett, kurz	Machine bed, short	Banc, petit	Bancada pequeña	全金属短机座	Станина короткая	A1A 010 000SW
U9CNC	1	CNC Längsschlitten	CNC Longitudinal slide	CNC Chariot, grand	CNC Carro, grande	全金属长滑块	Салазки продольные	164 480 CNC
U10ML	3	Zwischenstück	Intermediate piece	Pièce intermédiaire	Pieza intermedia	全金属中介块	Проставка	A1M 000 100
U12ML	1	Spannzange 1/8"	Collet 1/8"	Pince 1/8"	Pinza 1/8"	金属夹头 1/8"	Цанги 1/8"	162 460 31/8
U13ML	1	Dreibeckenfutter	Three-jaw chuck	Mandrin à trois mors	Mandril de tres mordazas	3爪夹头	Патрон 3-кулачковый	162 430 MH
U15A	1	Schraubendreher #2	Screwdriver #2	Tourne-vis #2	Destornillador #2	螺丝刀2#	Отвертка Philips № 2	ZWZ 980 030
U15B	1	Inbusschraubendreher	Screwdriver allen key 2.5mm	Toume-vis hexagonale 2,5mm	Destornillador allen 2,5mm	内六角扳手2.5 mm	Отвертка 6-гранная 2,5 мм	ZWZ 980 075
U48ML	1	Spannzangenhalter	Collet holder	Porte-pinces	Porta-pinza	固定铜帽	Гайка зажимная для цанг	A1A 000 073
U51	1	Inbusschlüssel 2 mm	Allen key 2 mm	Clé hexagonale 2 mm	Llave allen 2 mm	内六角扳手2 mm	Ключ 6-гранный 2 мм	ZWZ 110 200
U54RO	1	Präzisions Rollkörper	Precision live center	Contre-pointe tournante précision	Contra punto giratorio precisión	精密活顶尖	Центр вращающийся	164 450 MH
U66	8	Verbindungselement	Connection piece	Pièce de connexion	Elemento de conexión	连接件	Сухарь соединительный	A1A 00 ZINSK
U71	1	Gabelschlüssel 7 / 14 mm	Fork wrench 7 / 14 mm	Clé de fourche 7 / 14 mm	llave de furka 7 / 14 mm	扳手 7 / 14 mm	Ключ гаечный 7 / 14 мм	ZWZ 400 700
U79	5	Fixierplatte klein	Stabilizing plates small	Plaques de fixation petits	Platos de fijacion pequeños	小固定片	Пластина стабилизирующая малая	A1Z 470 000
U80	2	Befestigungswinkel	Stabilizing angle	Angle de fixation	Escuadra de fijacion	直角固定座	Угольник стабилизирующий	A1Z 480 000
	1	Drehtisch CNC	Rotary table CNC	Table rotative CNC	Mesa giratoria CNC	轮盘 CNC	Поворотный стол CNC	164 300 CNC
	1	Querplatte - Querschlitten	Cross plate - cross slide	Plaque transversale - Chariot, petit	Placa transversal - Carro, pequeño	横板 - 全金属小滑块	Поперечная пластина - Салазки поперечные	164 063
	1	Grundplatte CNC	Mounting plate CNC	Plaque de montage CNC	Plancha basico CNC	固定底板 CNC	Монтажная пластина CNC	164 402

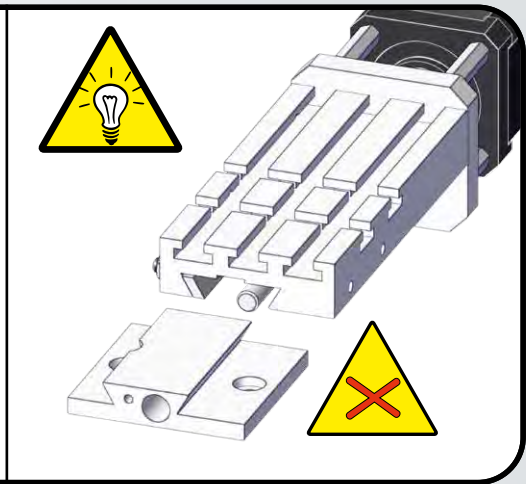
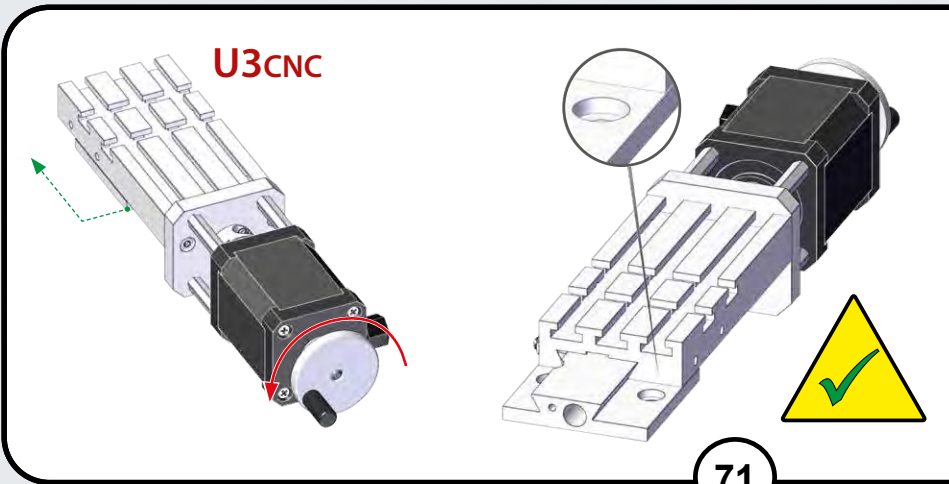
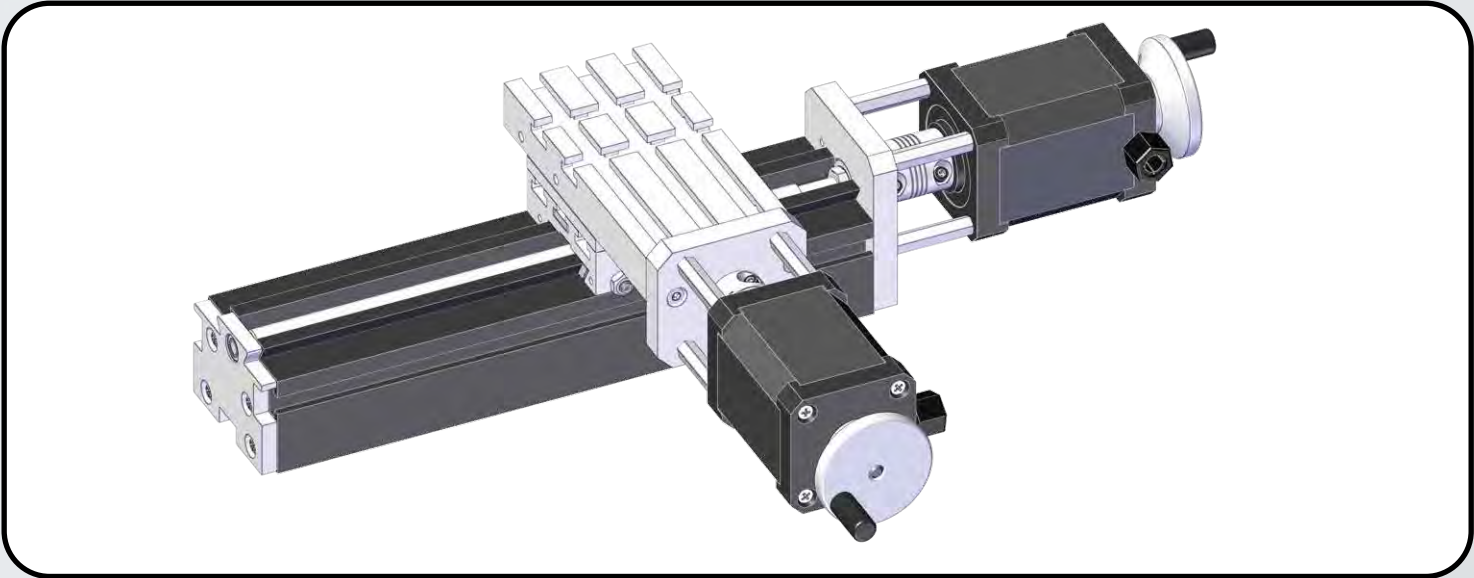
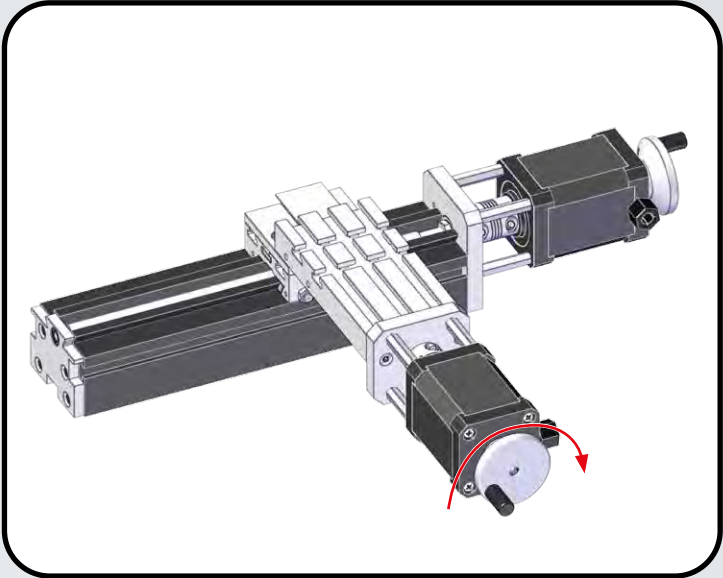
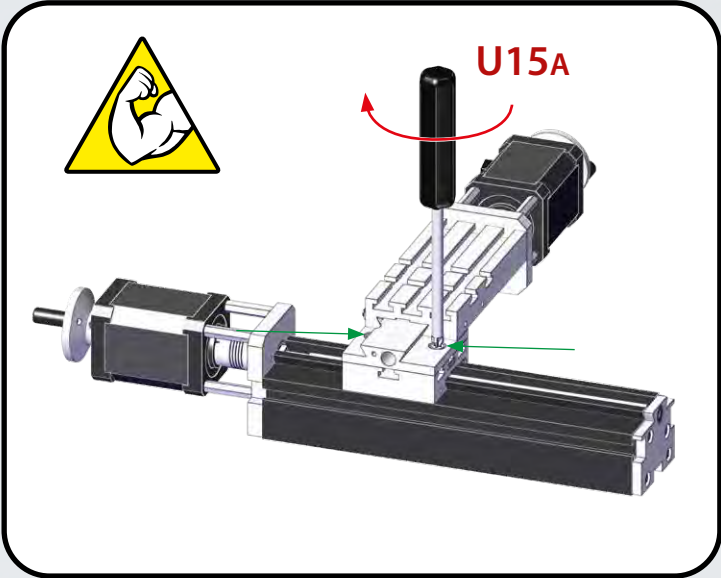
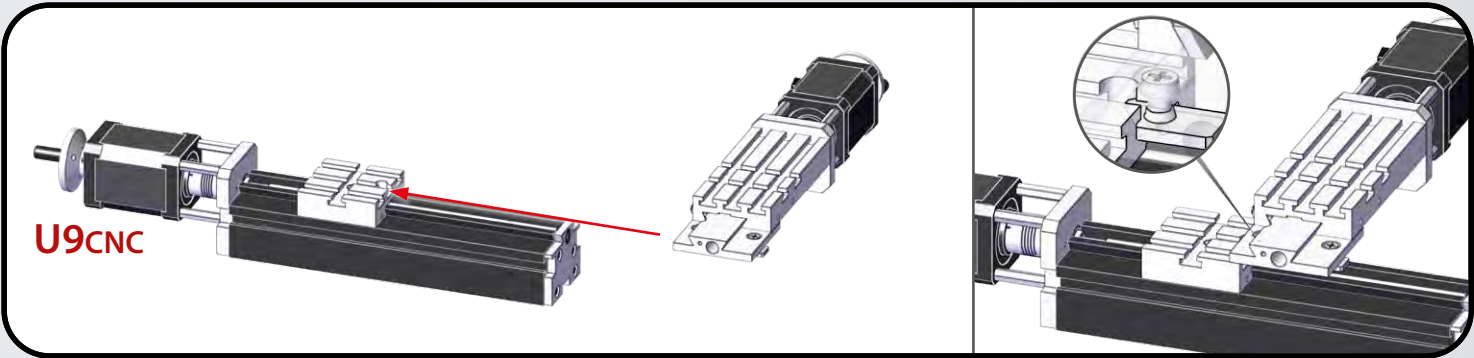
nicht im Maßstab | not in scale | pas à l'échelle | no es a escala | 不按比例 | не в масштабе

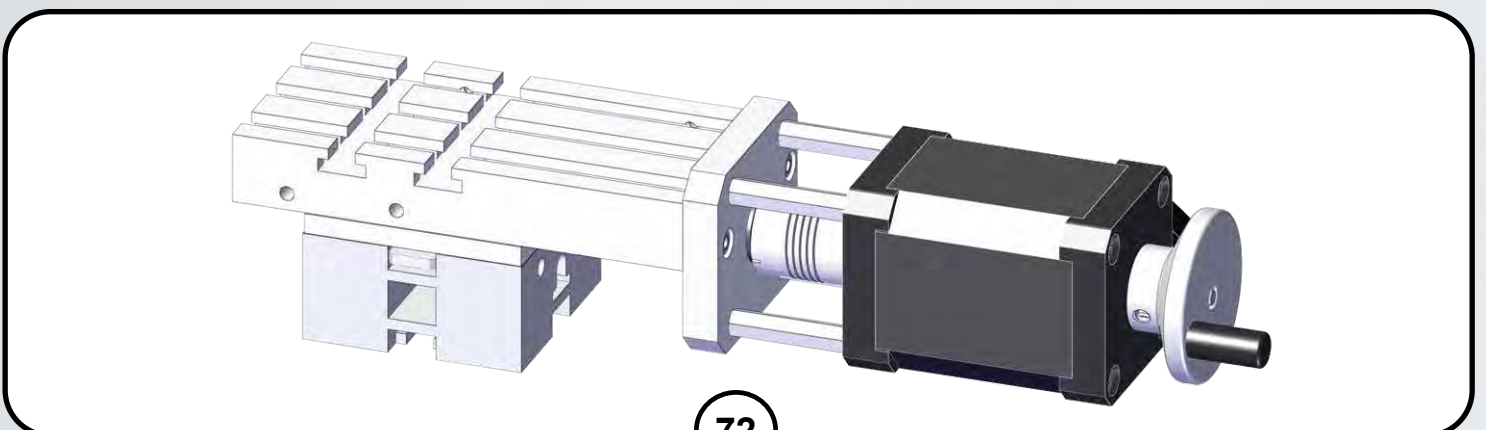
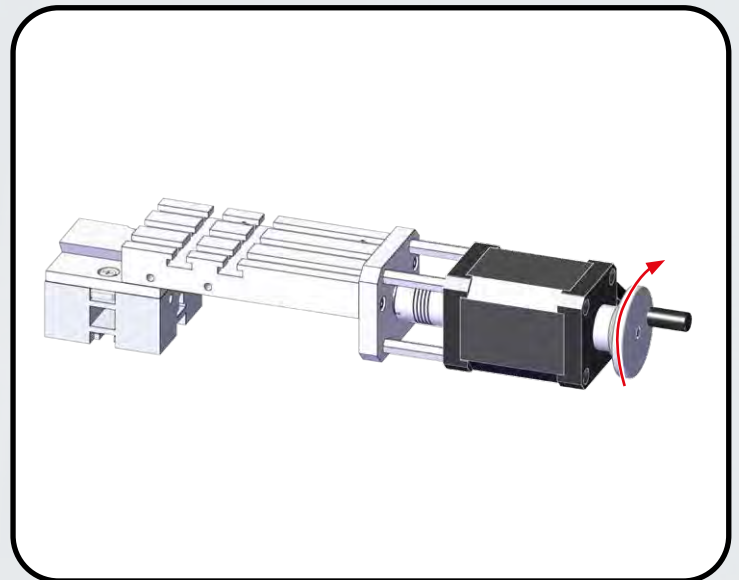
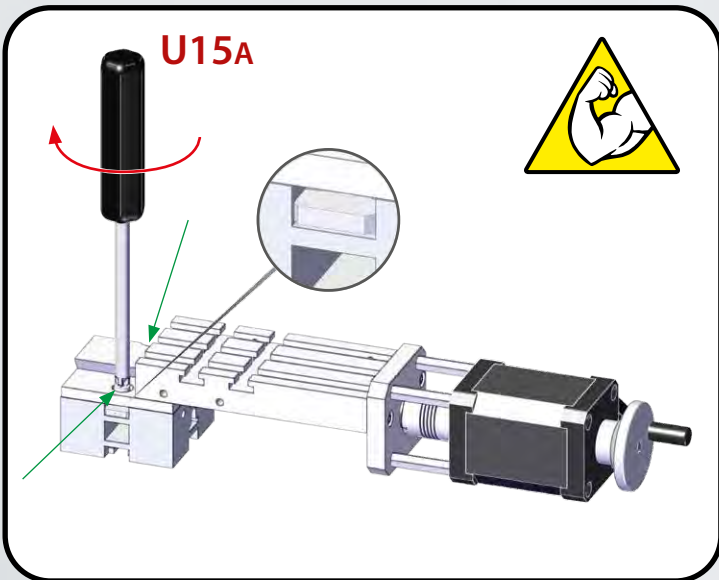
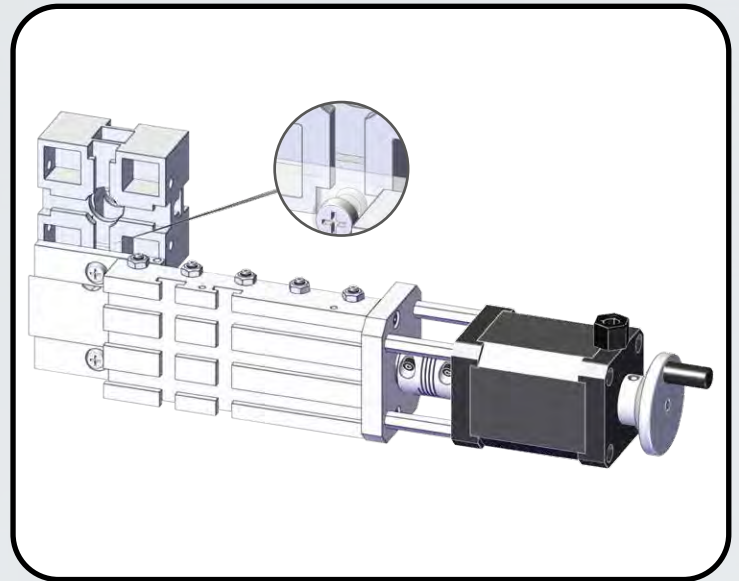
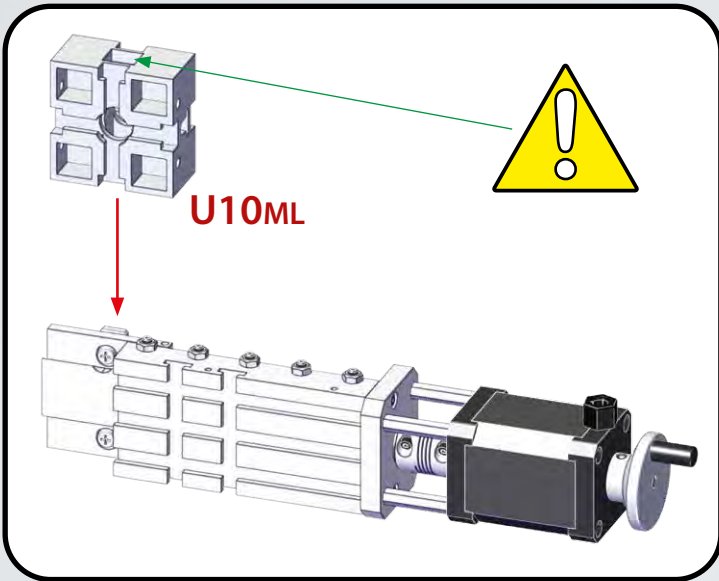
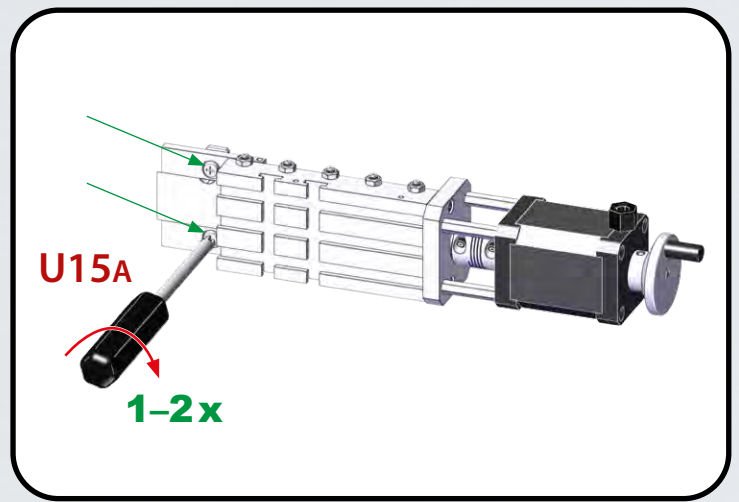
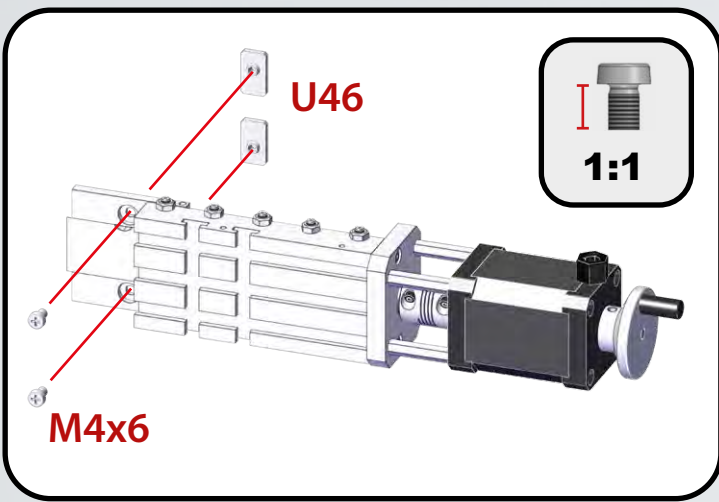


		DE	EN	FR	ES	中国 (ZH)	RU	
U31	8	Schraube M4x10	Screw M4x10	Vis M4x10	Tornillo M4x10	螺钉M4x10	Винт M4x10	ZSR M40 410
U37	12	Schraube M4x8	Screw M4x8	Vis M4x8	Tornillo M4x8	螺钉M4x8	Винт M4x8	ZSR M40 408
U38	6	Schraube M4x6	Screw M4x6	Vis M4x6	Tornillo M4x6	螺钉M4x6	Винт M4x6	ZSR M40 406
U43S	1	Sicherungsmutter M4	Locking nut M4	Ecrou sécurité M4	Tuerca M4 seguridad	防松螺母M4	Гайка M4 самоконтрящаяся	ZMU 340 120
U46	9	Nutstein	Slot nut	Boulon en «T»	Pernos "T"	单孔螺母	Гайка пазовая	A1A 060 040
U47	8	Klemmplatte	Camping plate	Élément en «T»	Elemento "T"	双孔螺母	Гайка пазовая двойная	A1A 010 020
U50	1	Schraube M4x70	Screw M4x70	Vis M4x70	Tornillo M4x70	螺钉M4x70	Винт M4x70	ZSR M40 470
U52	2	Stift	Rod	Cheville	Perno	锁杆	Вороток	ZST 110 345
U56CNC	1	1,6 mm Fräser	1.6 mm Milling head	1,6 mm Fraise	1,6 mm Fresa	铣刀头 1.6 mm	Фреза концевая 1,6 mm	F2470 1.60
U69	4	Schraube M4x12	Screw M4x12	Vis M4x12	Tornillo M4x12	螺钉M4x12	Винт M4x12	ZSR M40 412
U74	18	Beilagscheibe	Plain washer	Rondelle	Arandela	垫片	Шайба	ZSB 250 430
	4	Gummipuffer	Elastic buffer	Butoir élastique	Amortiguador elástico	弹性缓冲	Эластичный буфер	166 EP
ohne Abbildung   without picture   sans figure   sin ilustración 无图   без рисунка								
	1	Netzteil 14,4V	14.4V adaptor	14,4V Transformateur	14,4V Transformador	变压器 14.4 V	Трансформатор 14,4 В	161 31x

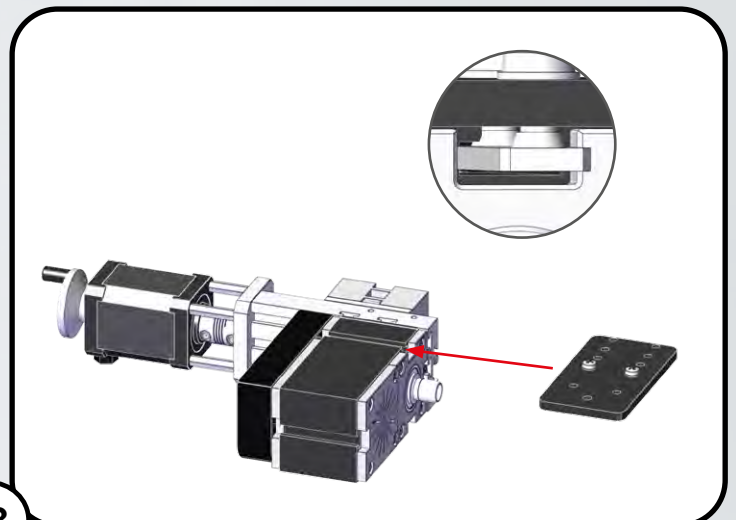
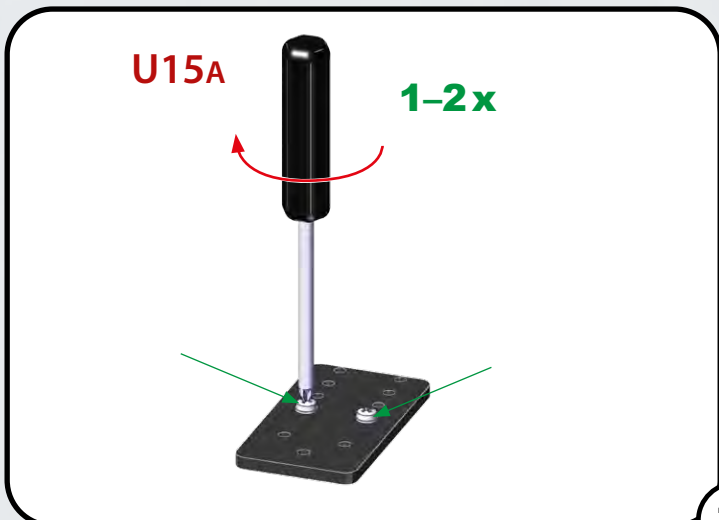
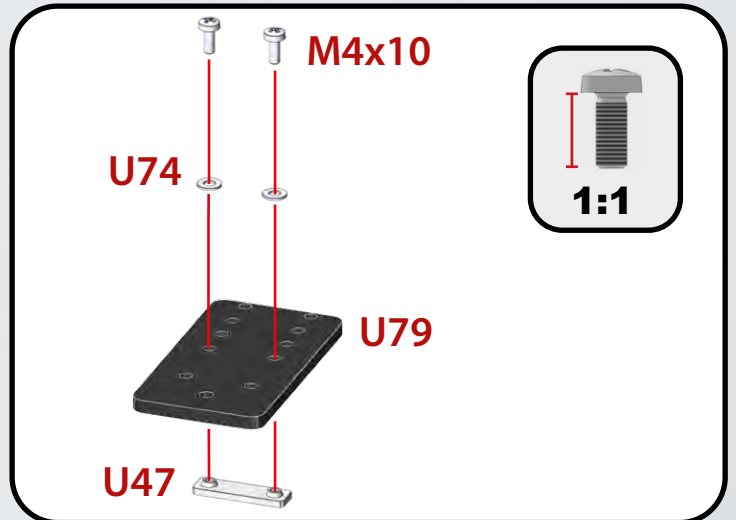
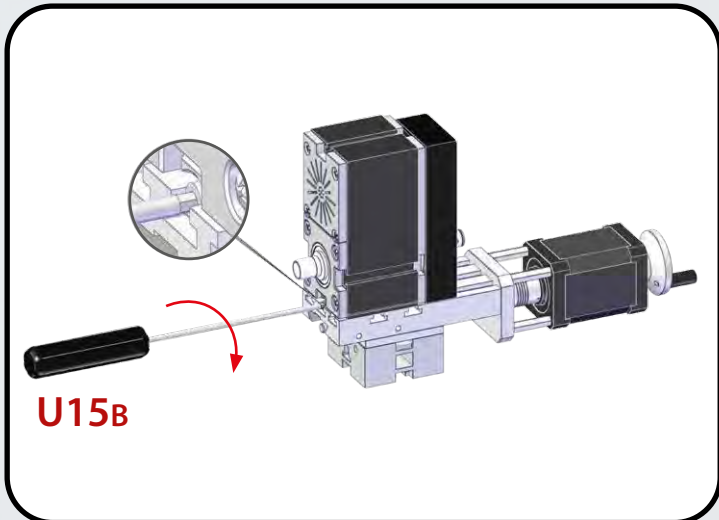
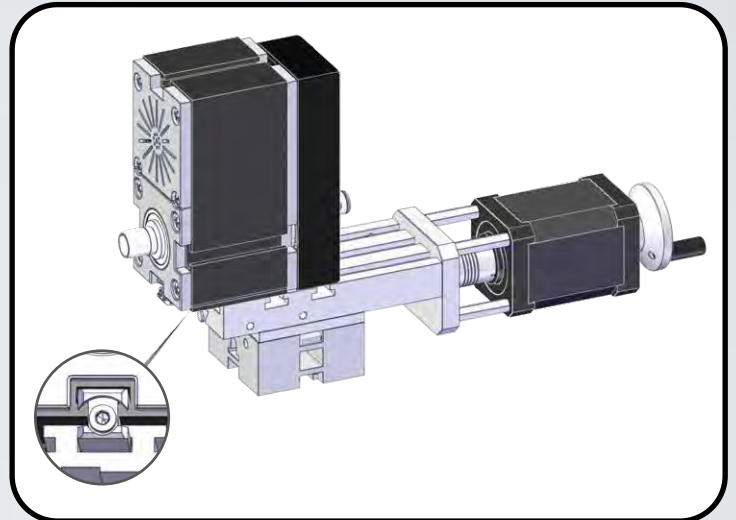
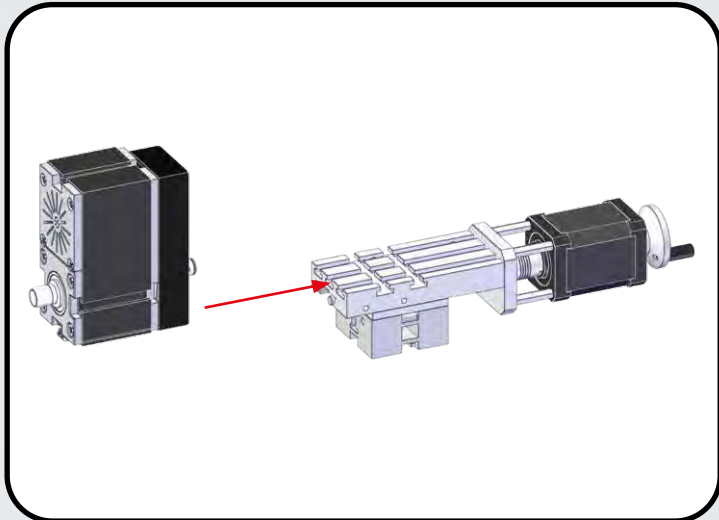
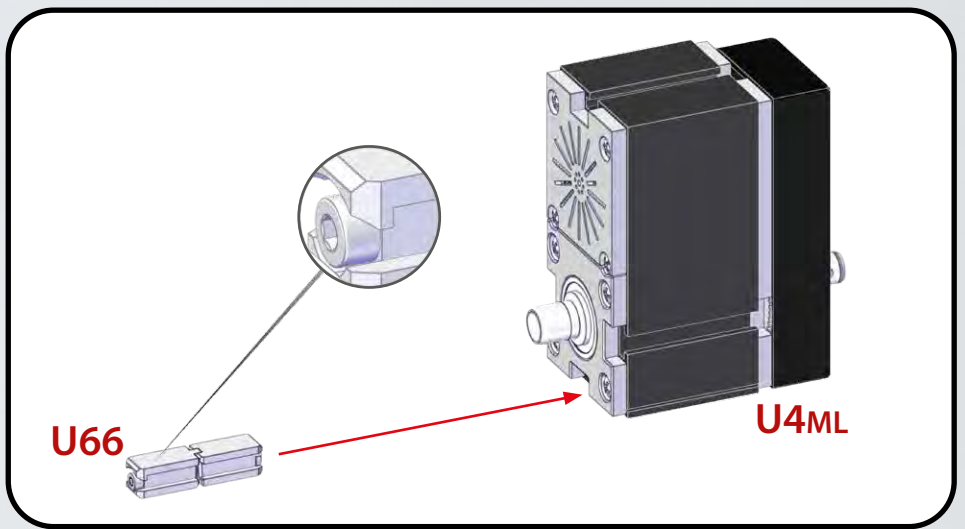
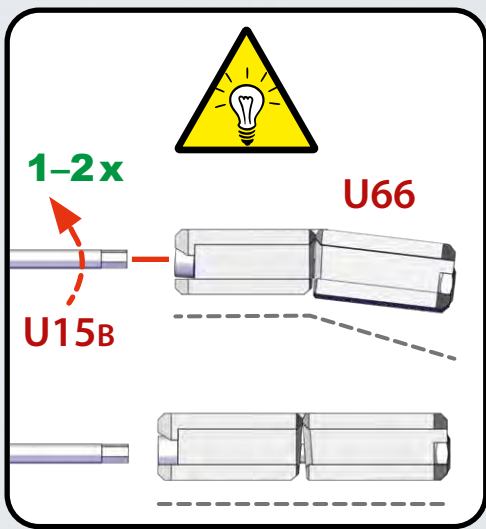
nicht im Maßstab | not in scale | pas à l'échelle | no es a escala | 不按比例 | не в масштабе

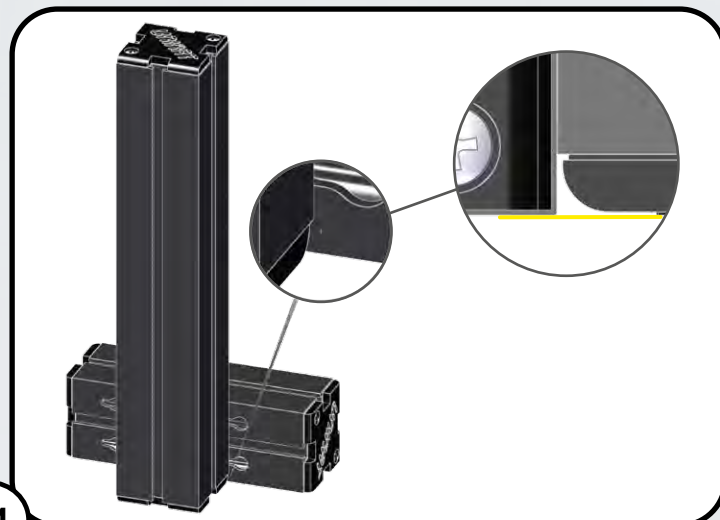
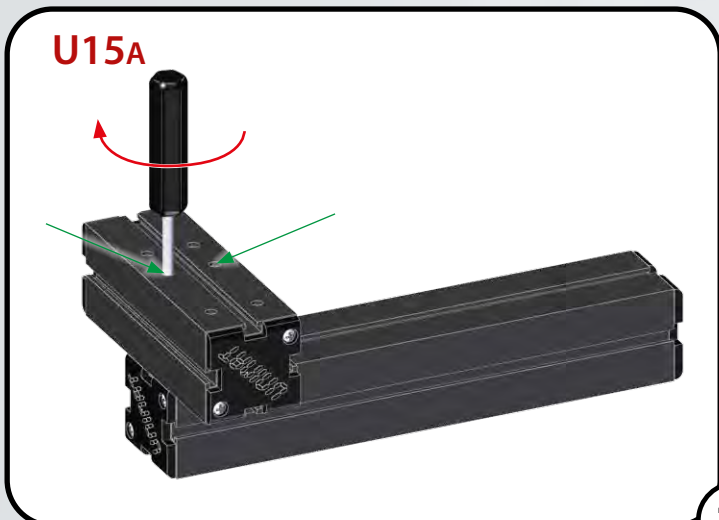
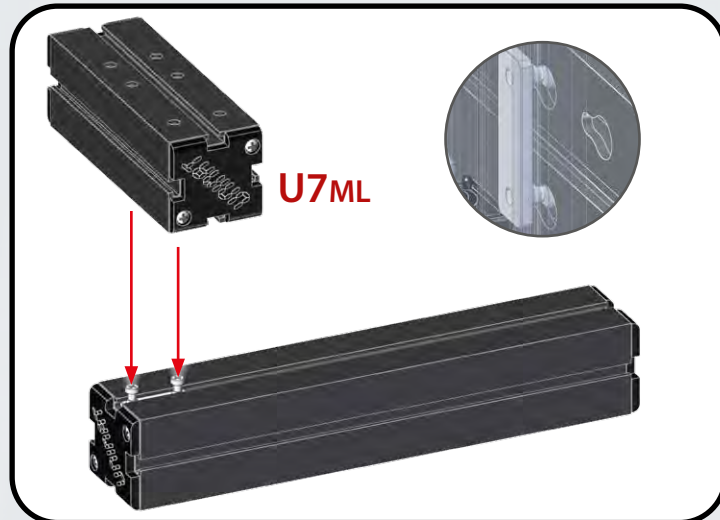
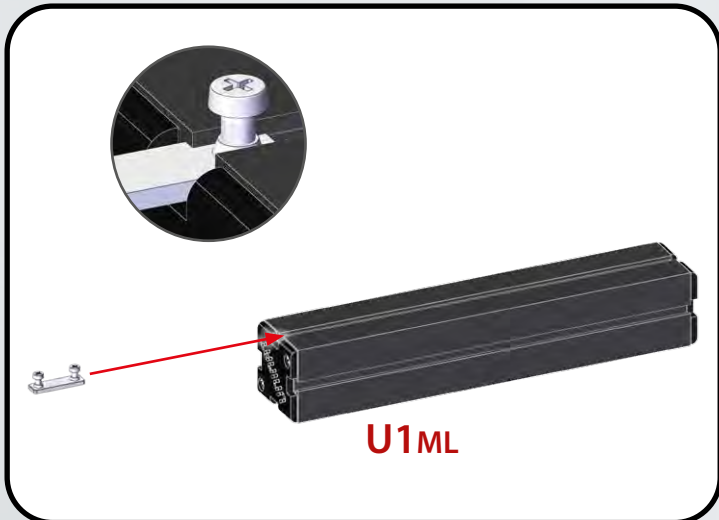
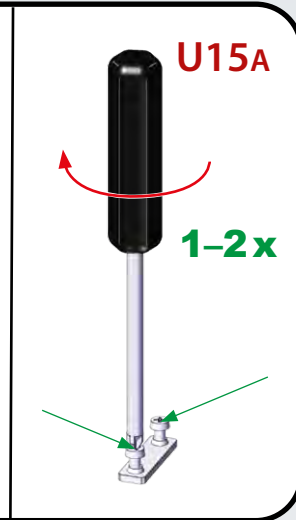
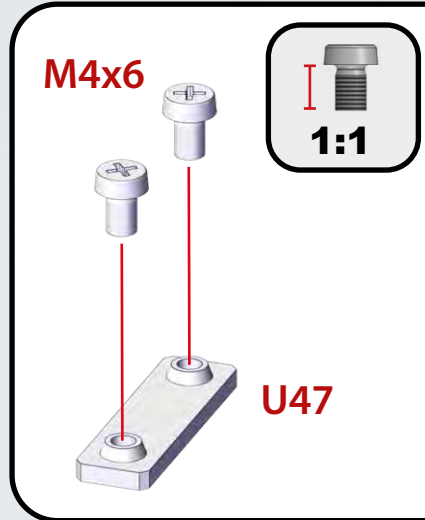
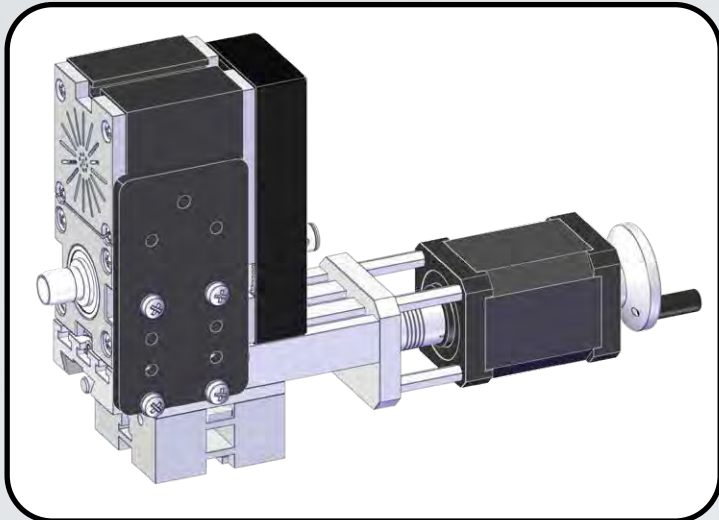
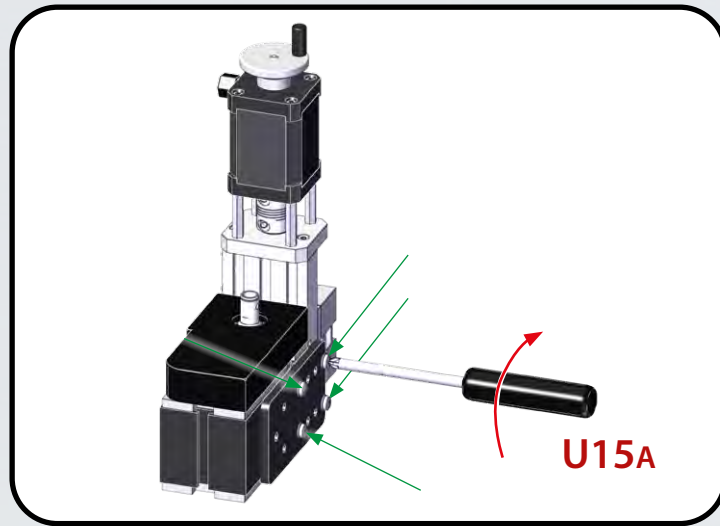
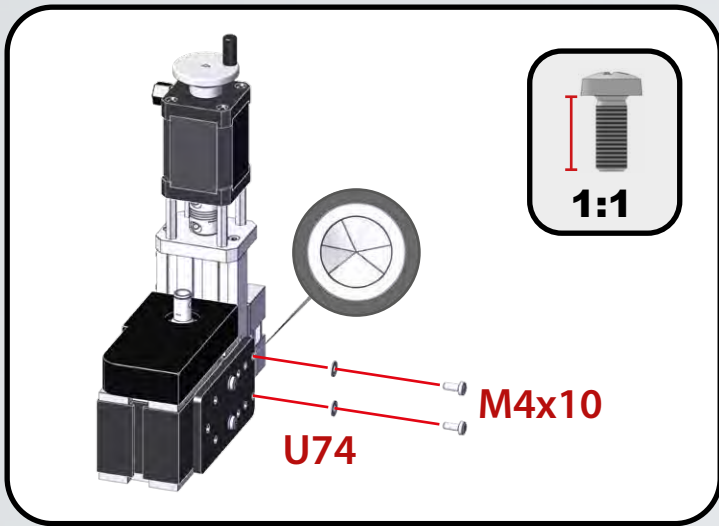


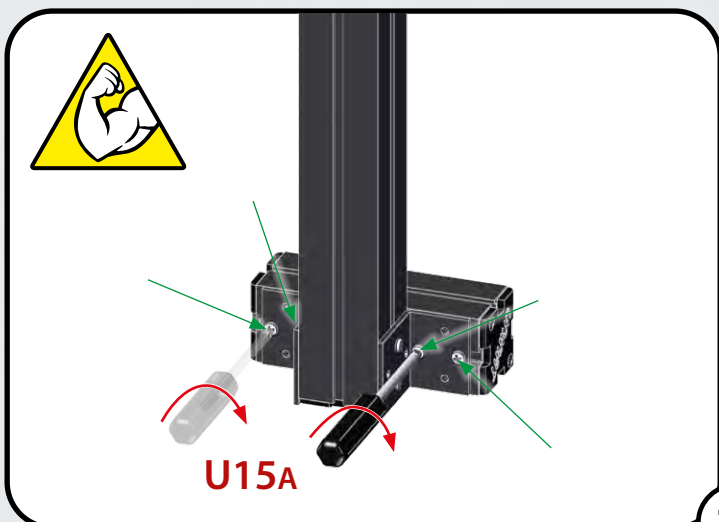
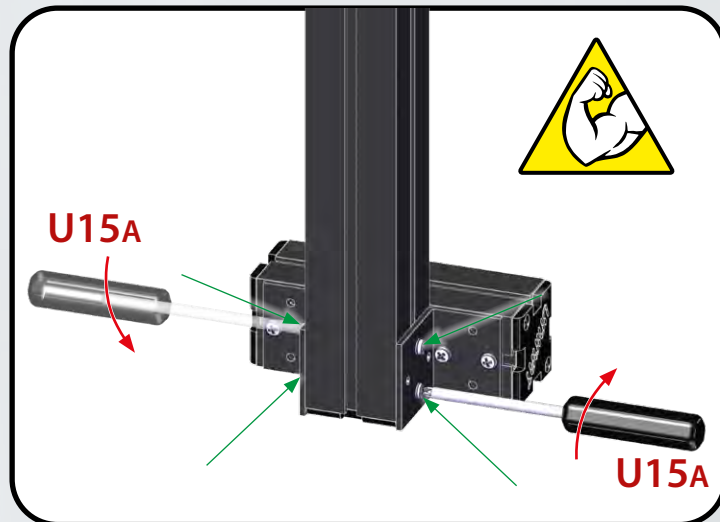
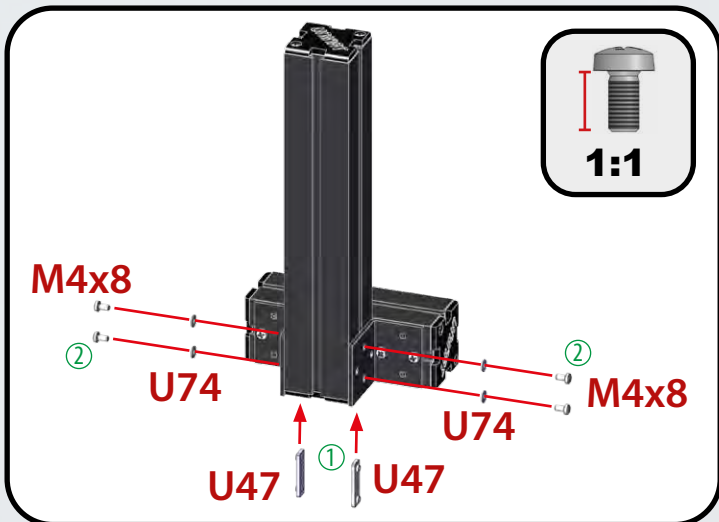
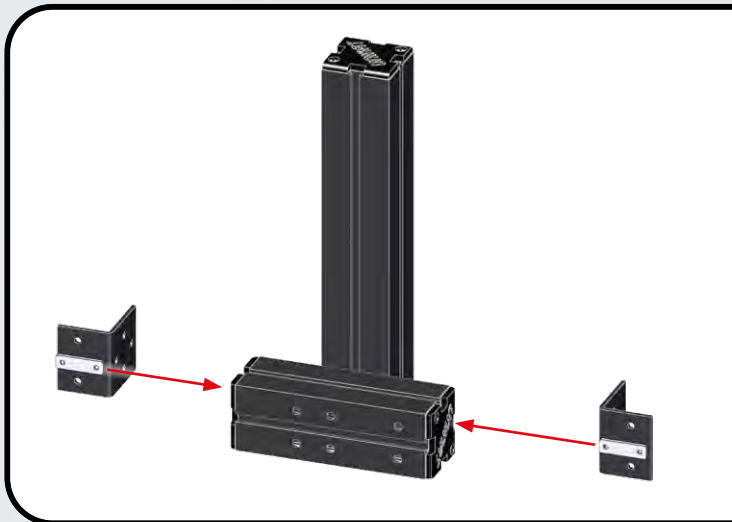
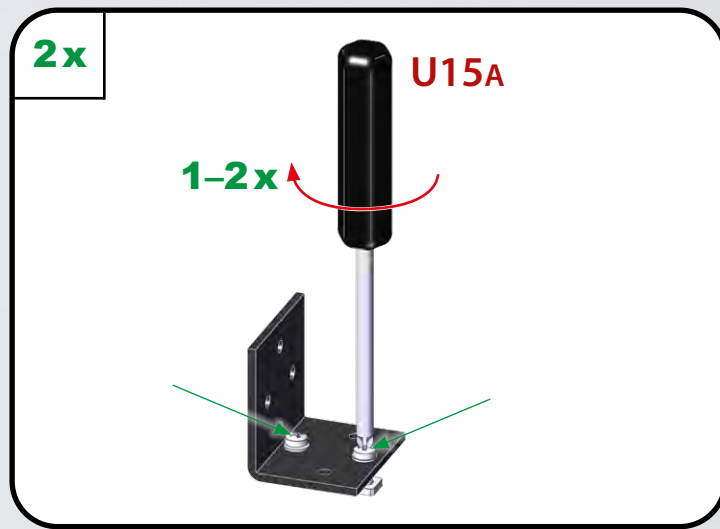
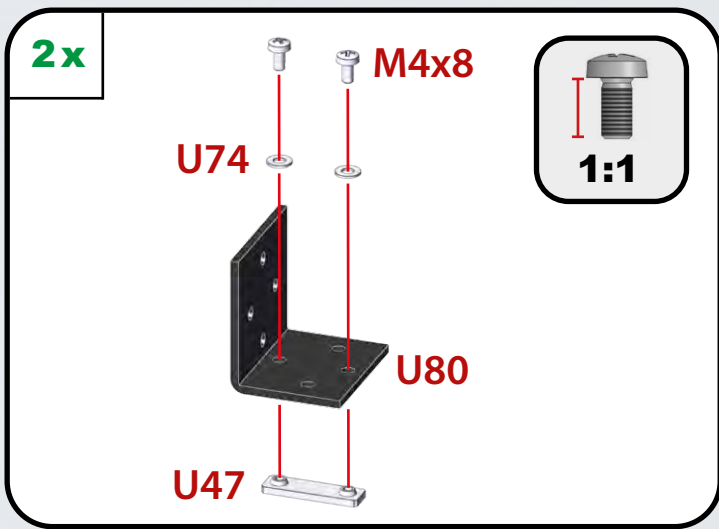


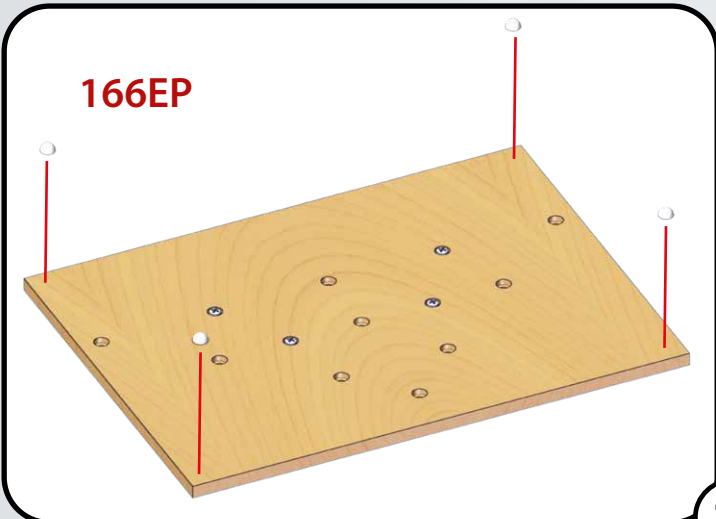
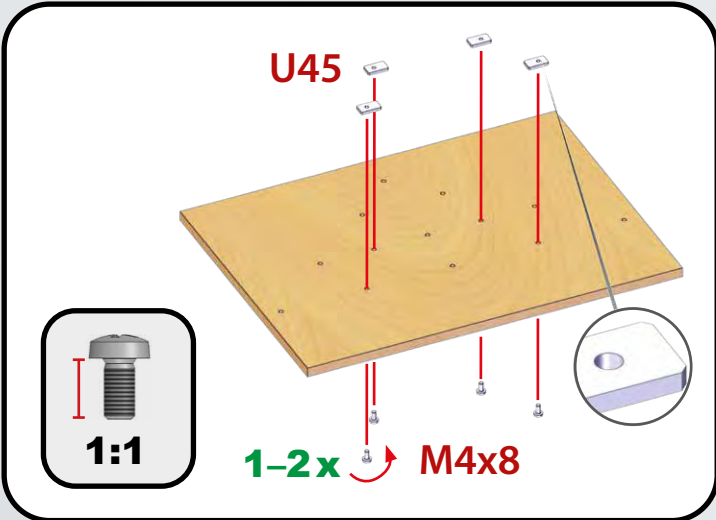
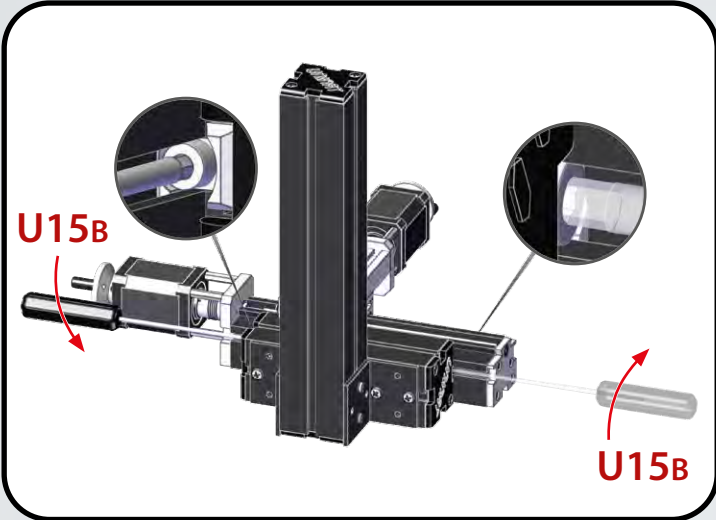
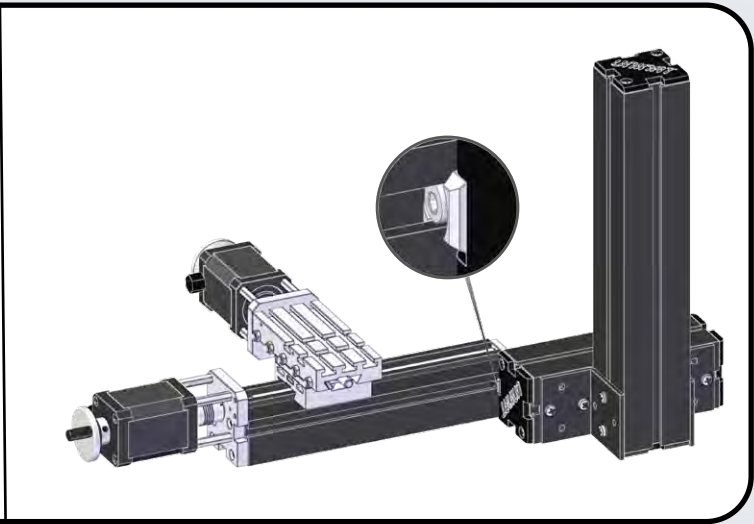
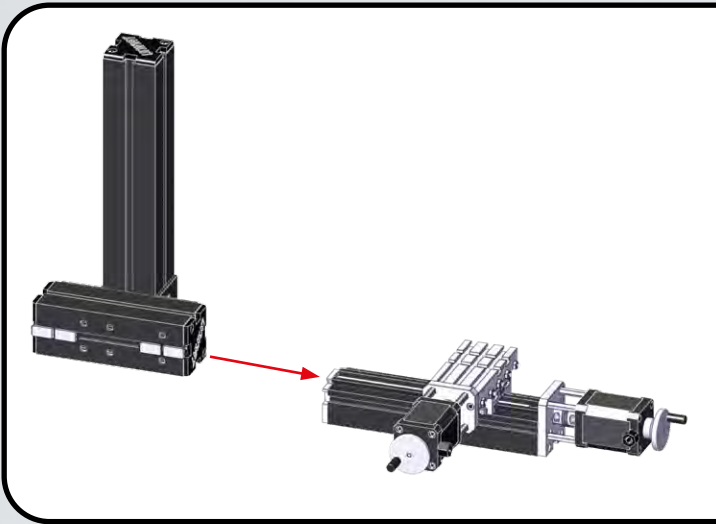


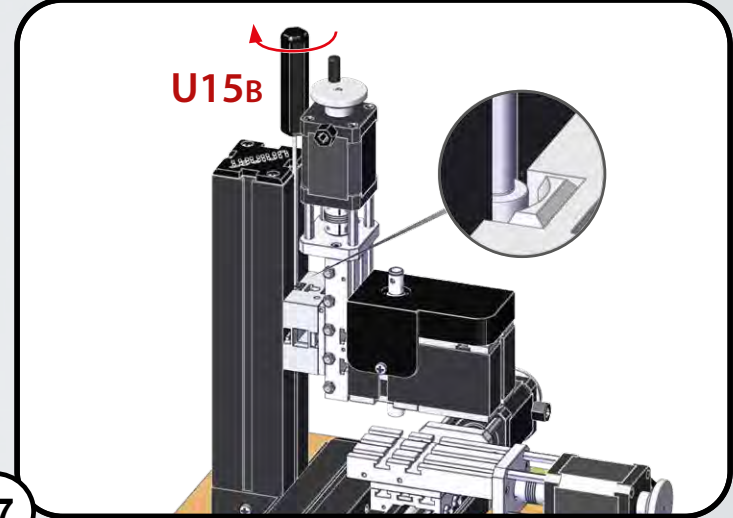
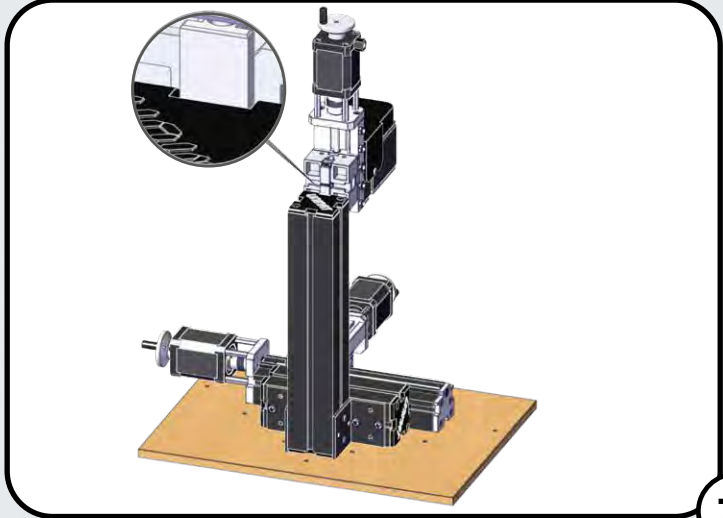
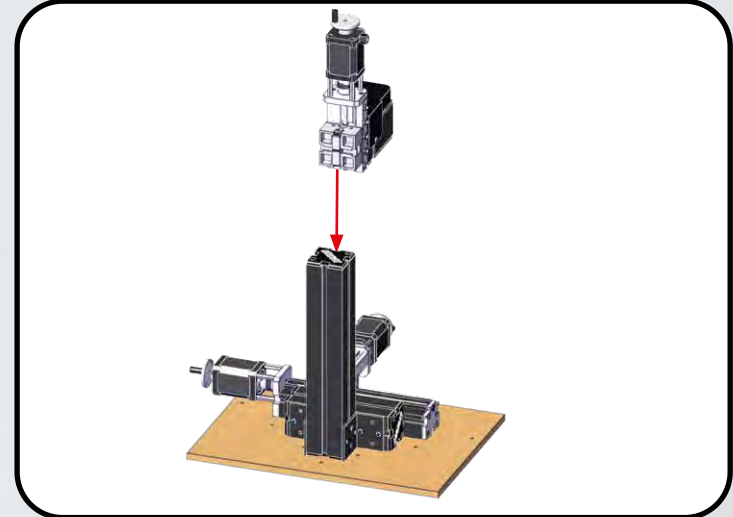
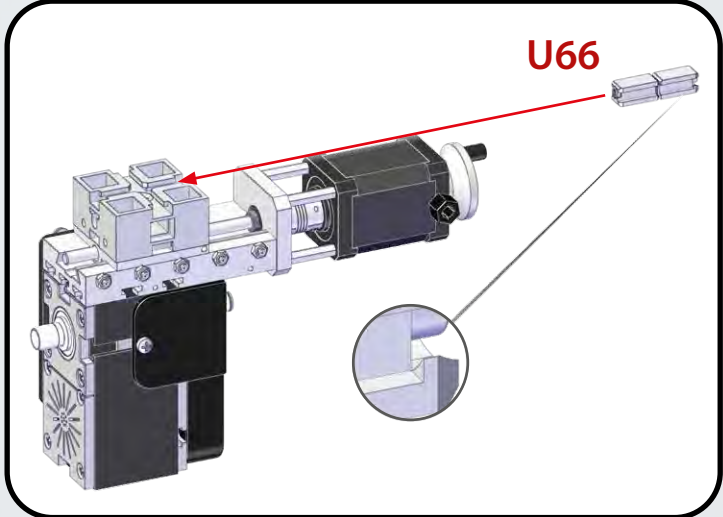
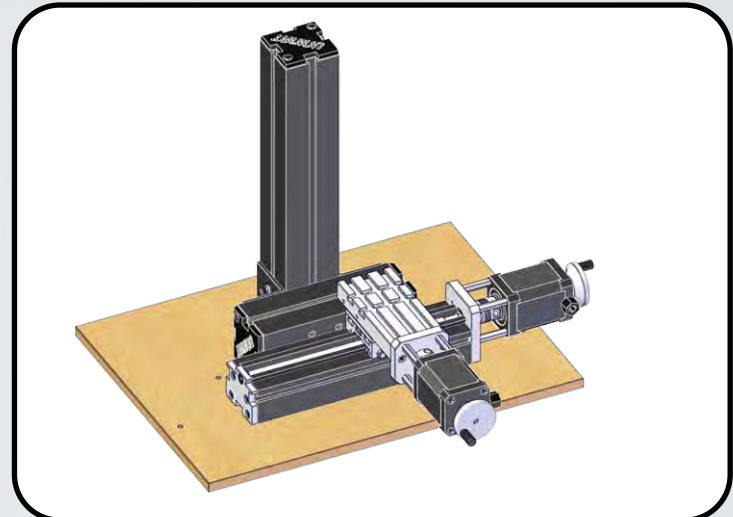
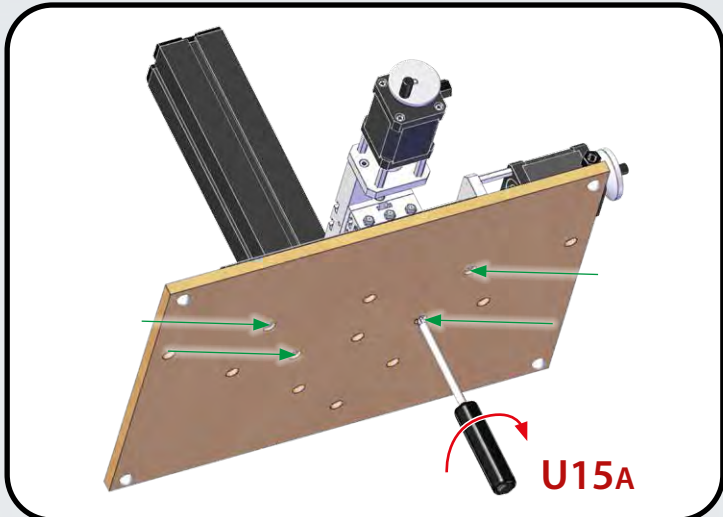
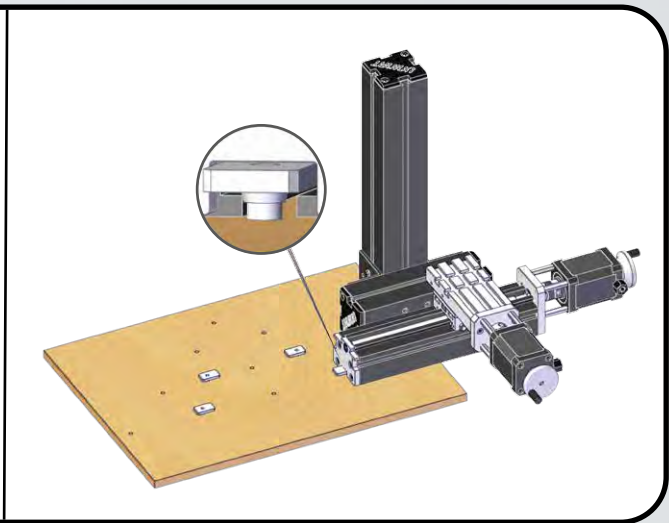
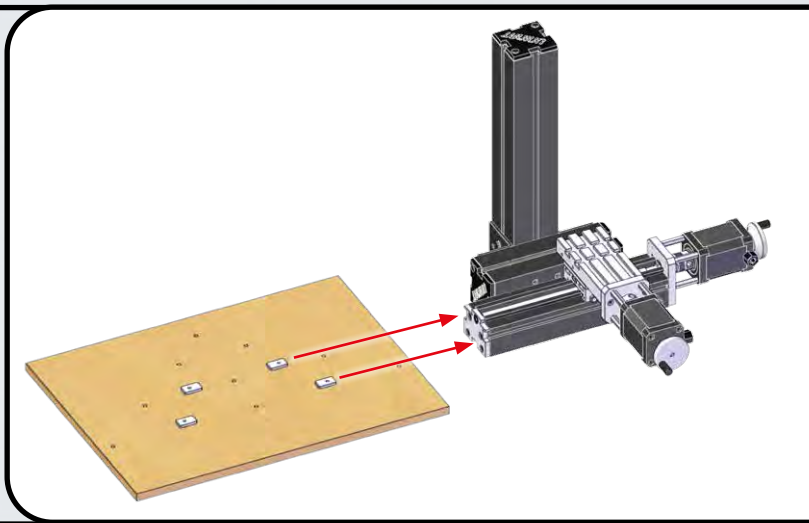


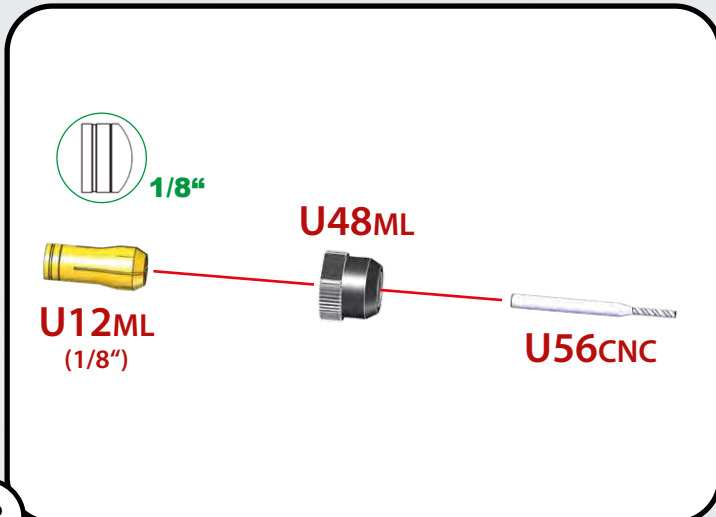
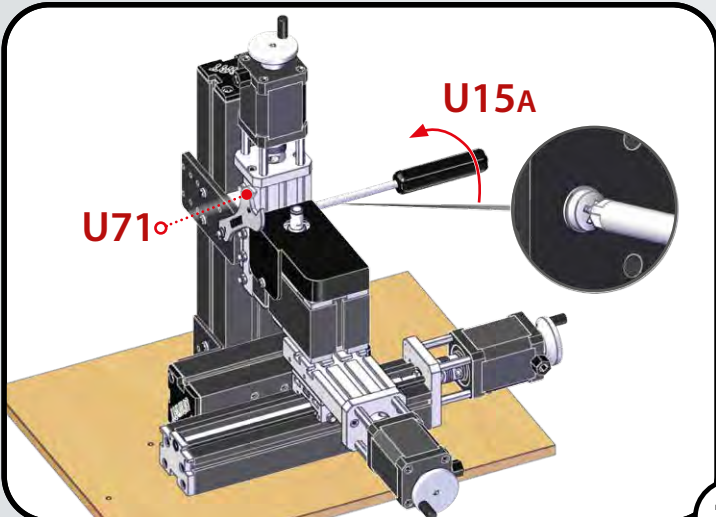
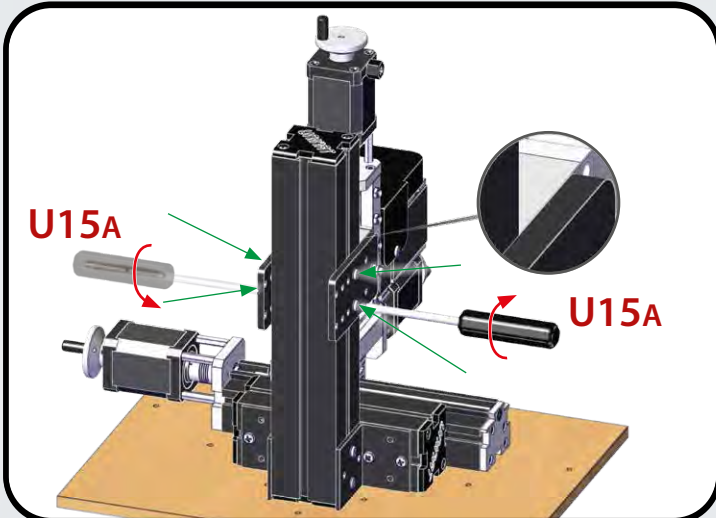
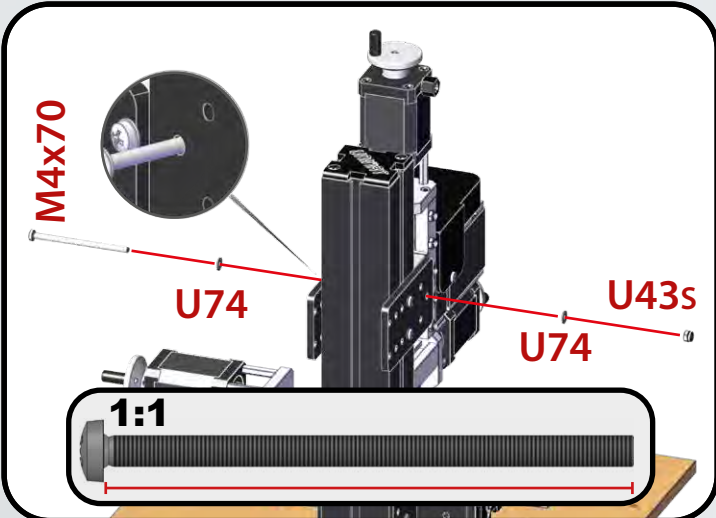
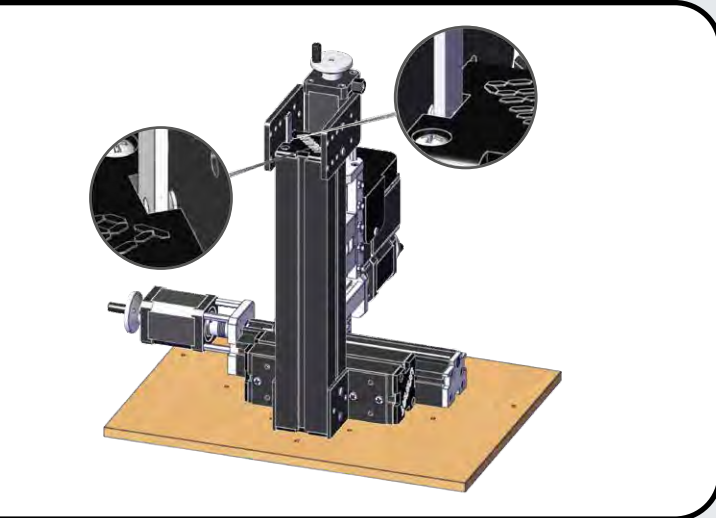
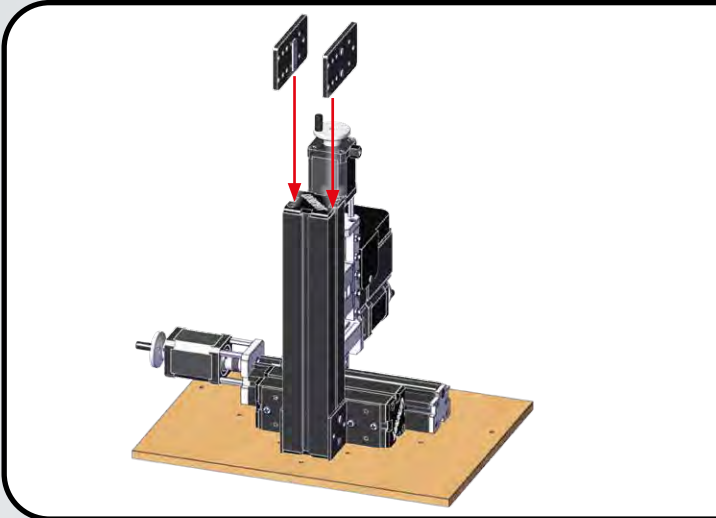
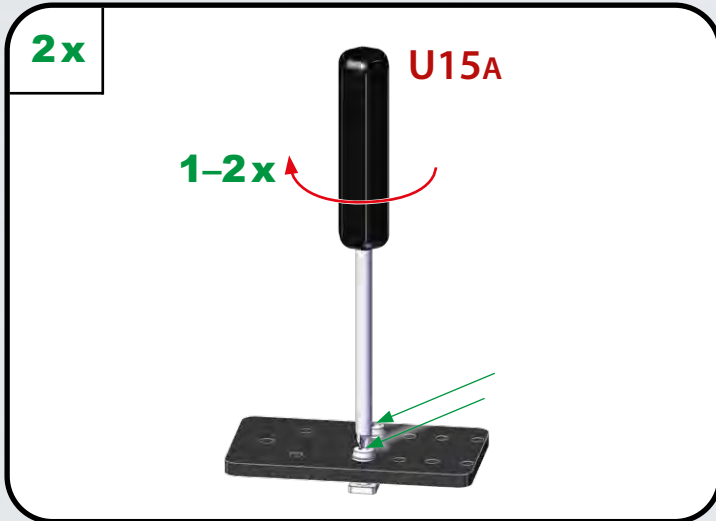
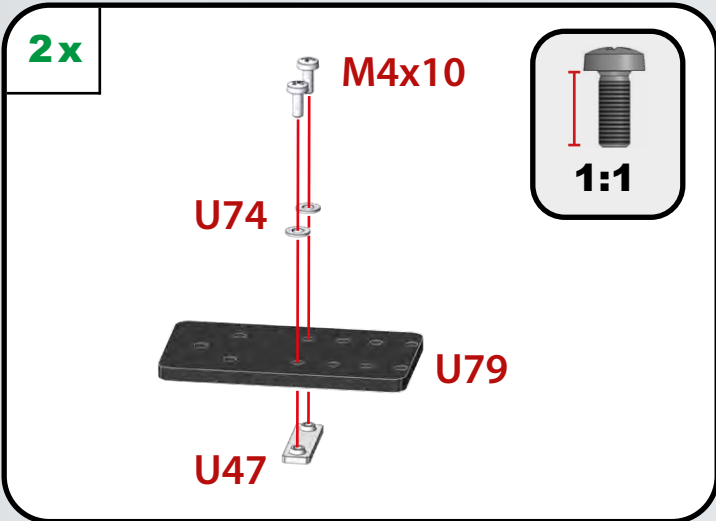


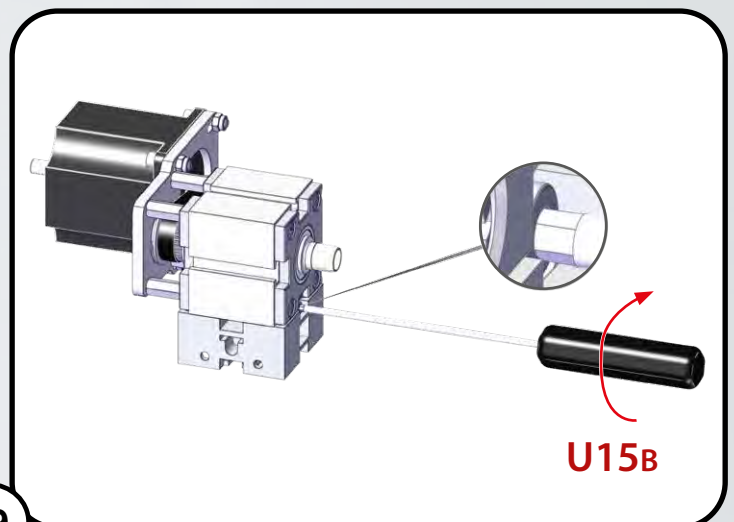
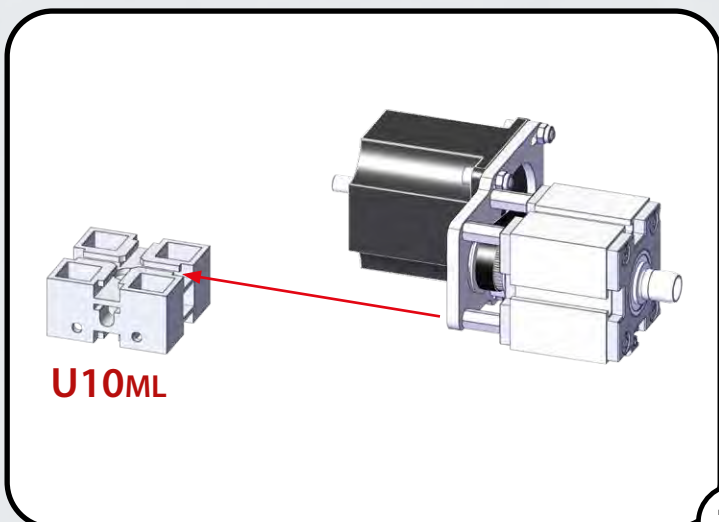
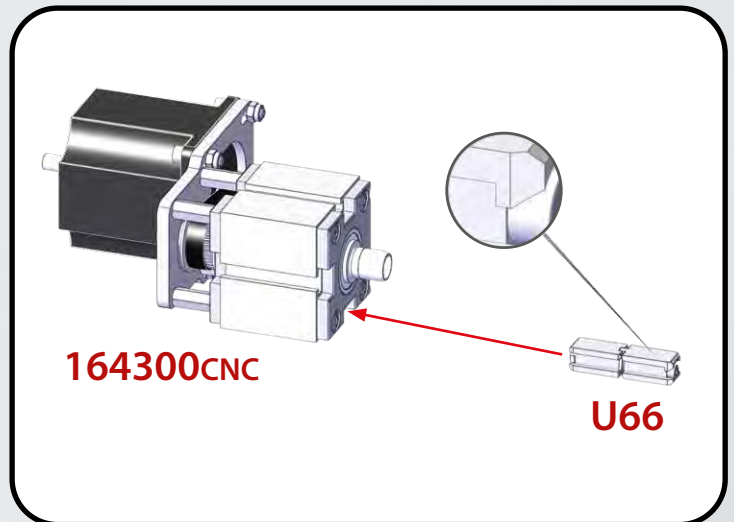
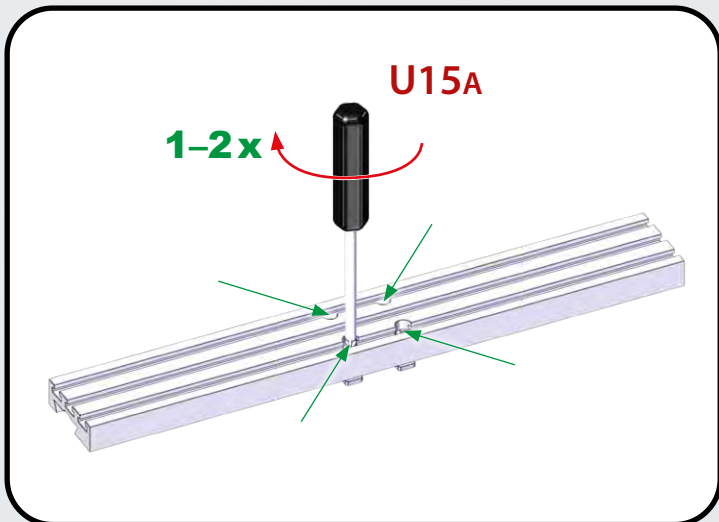
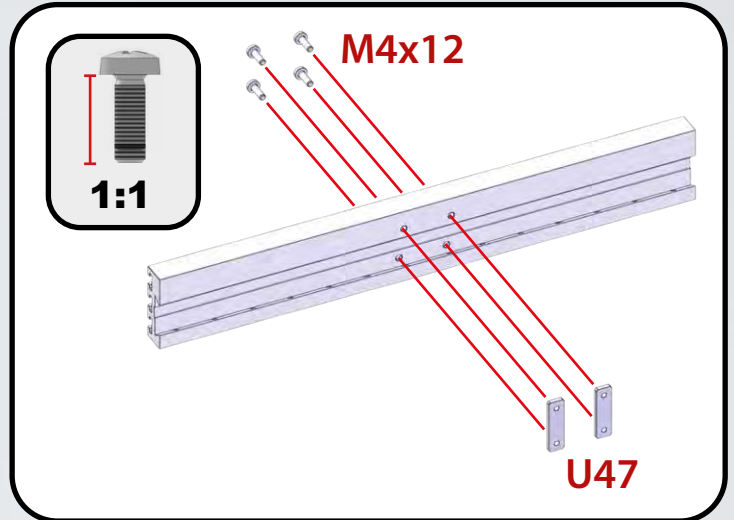
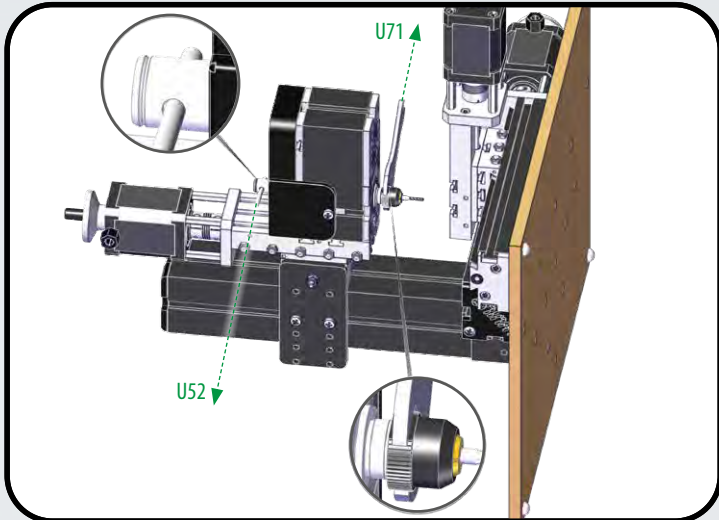
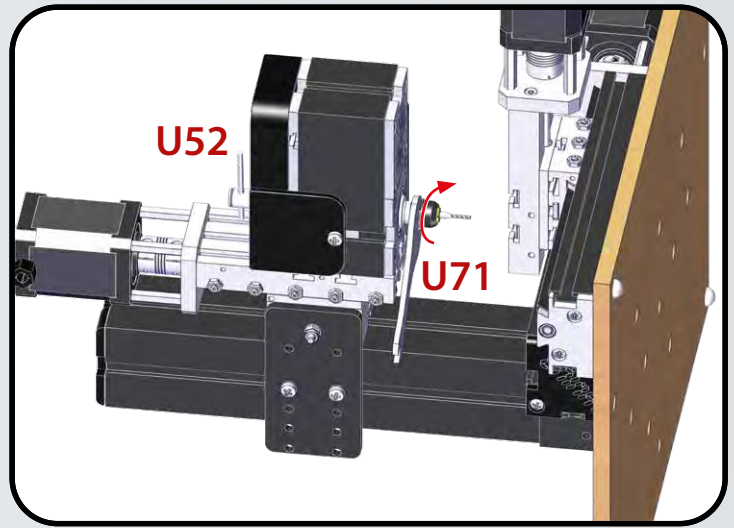
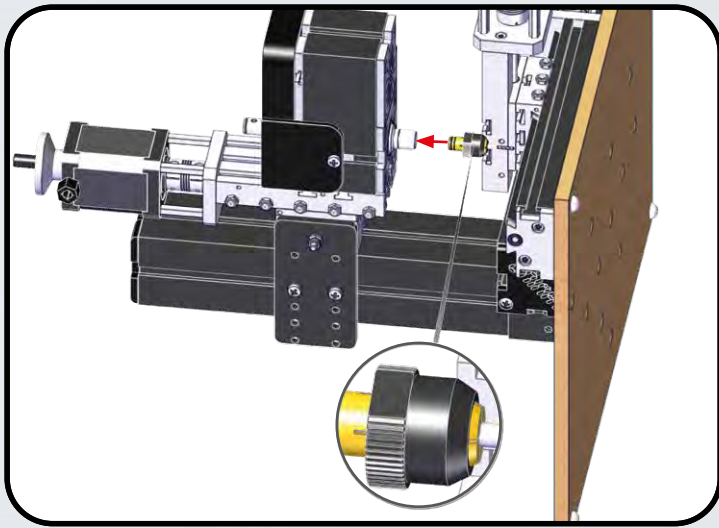


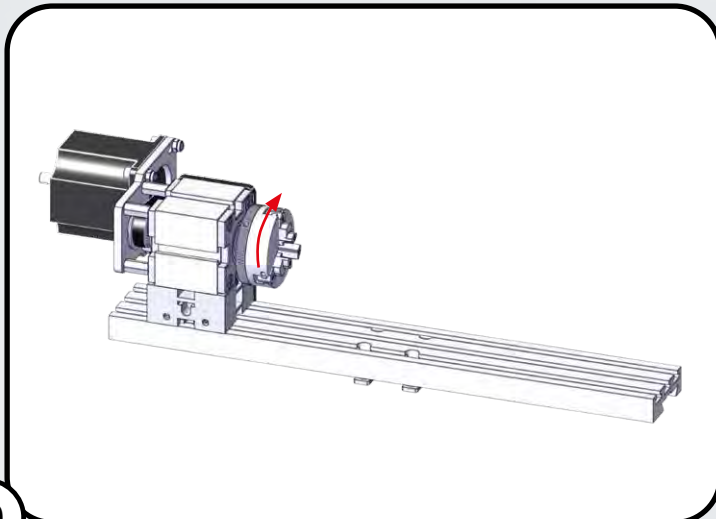
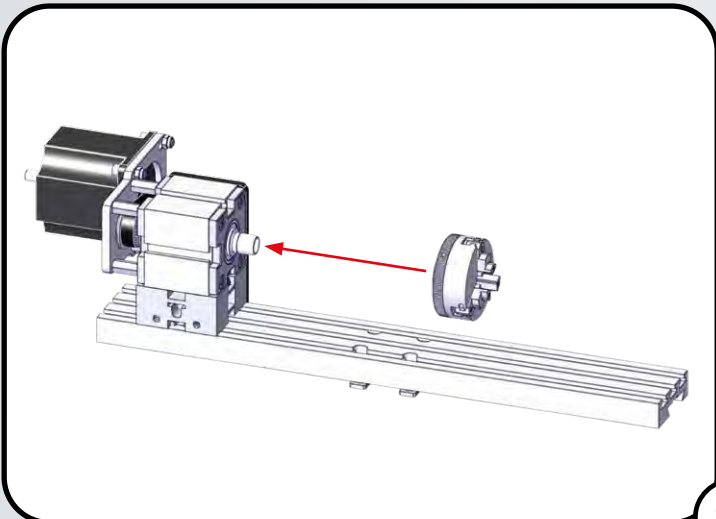
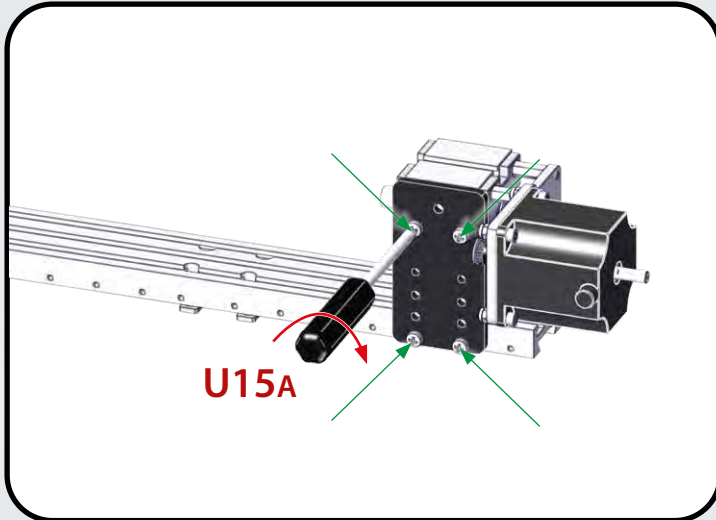
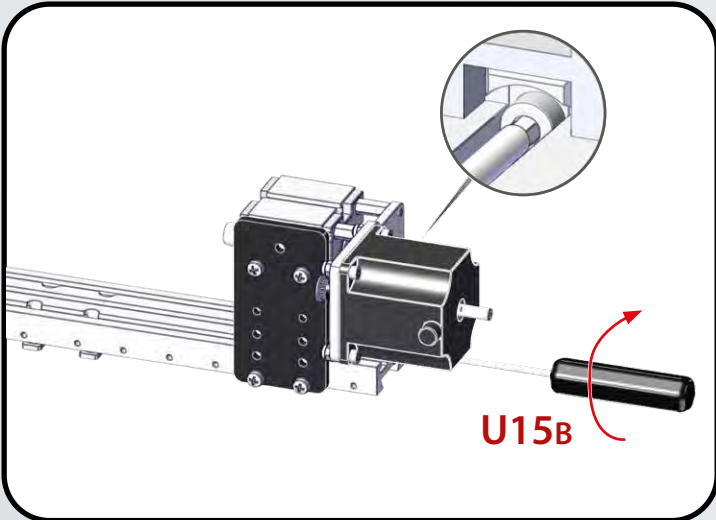
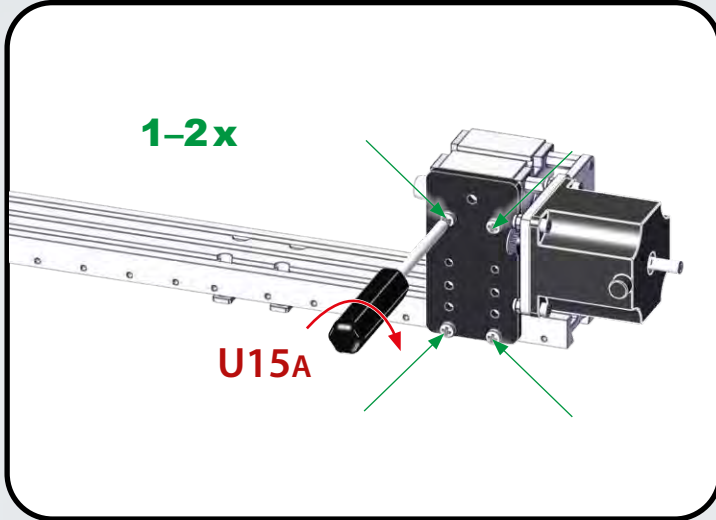
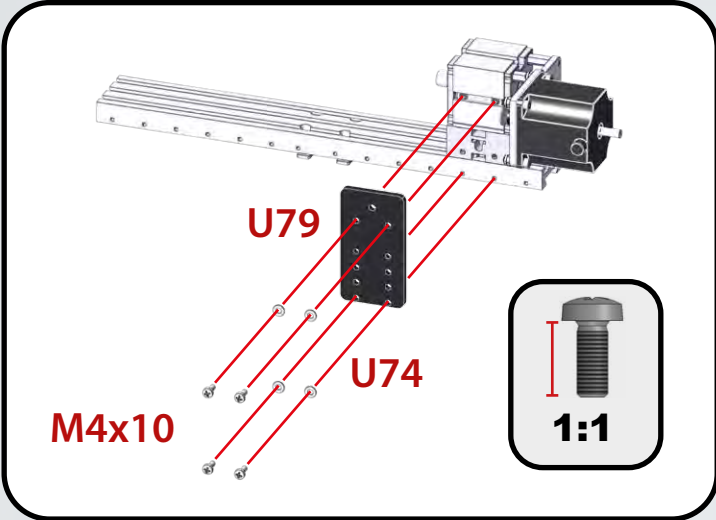
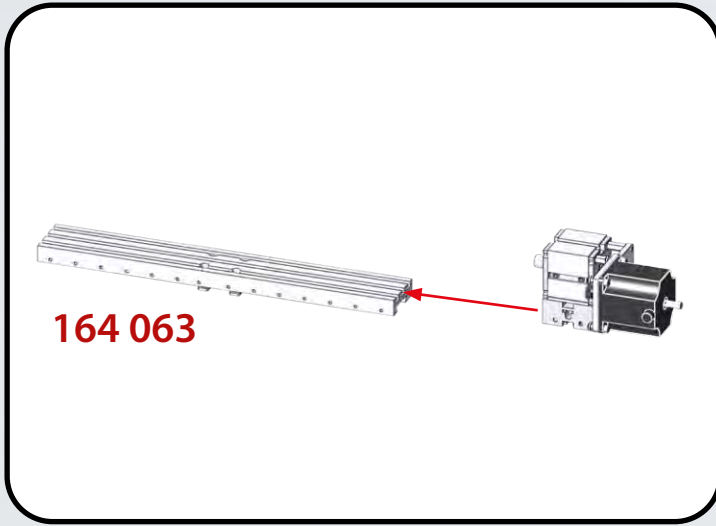
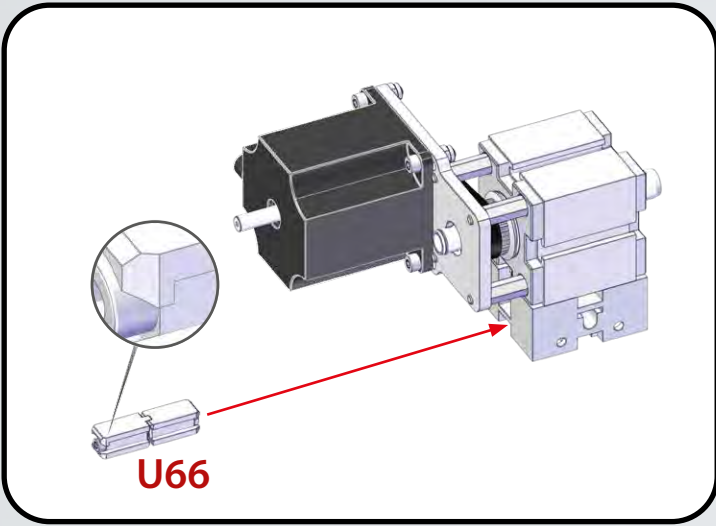






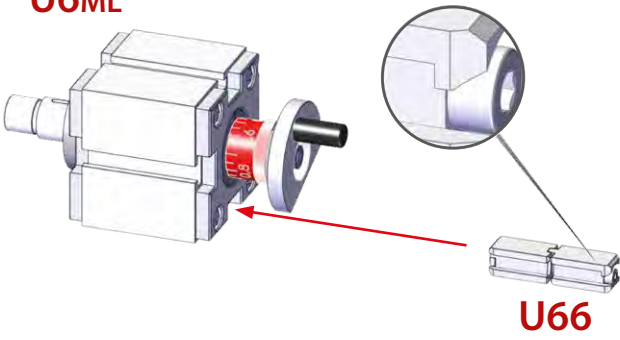




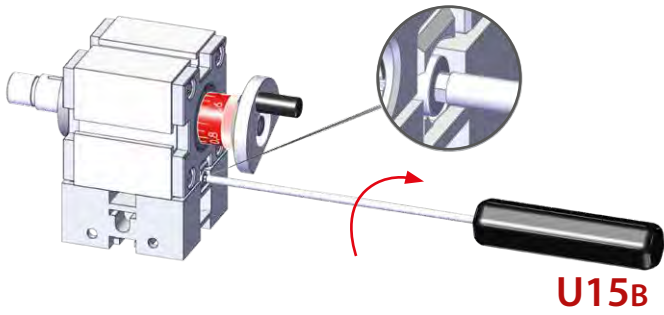
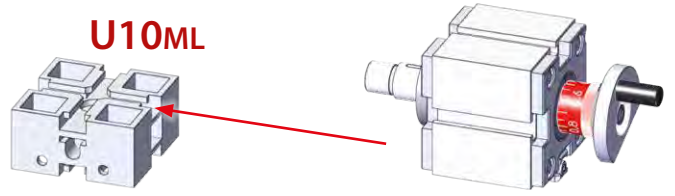




U6ML

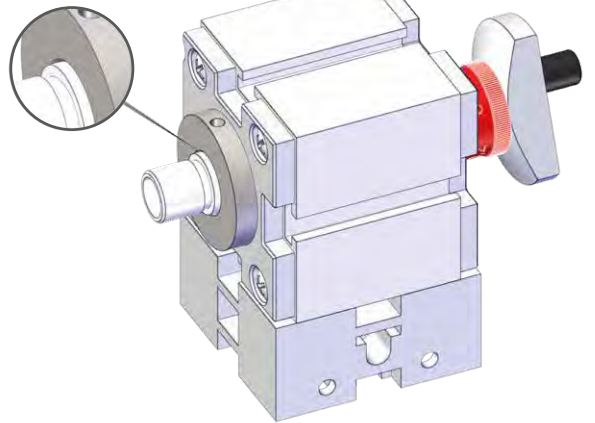
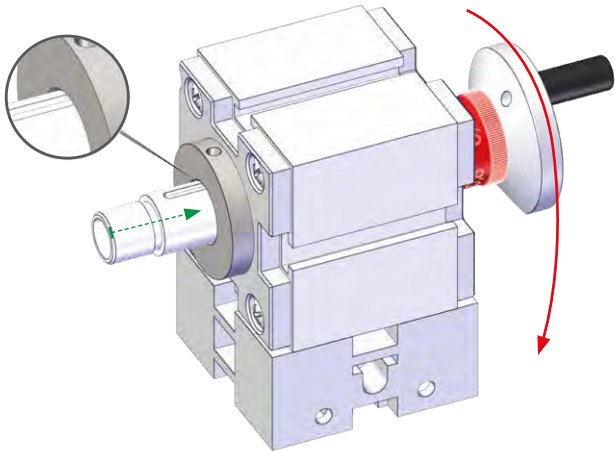
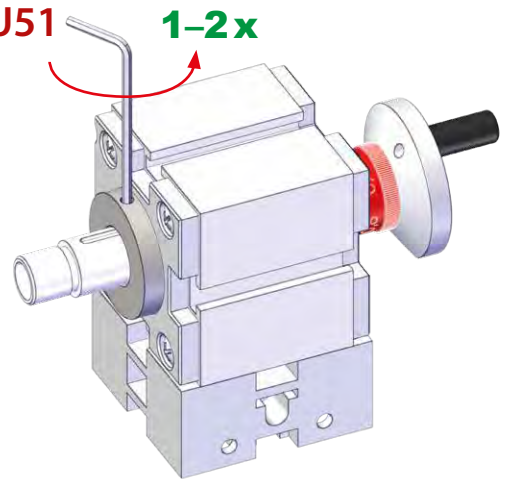


U10ML

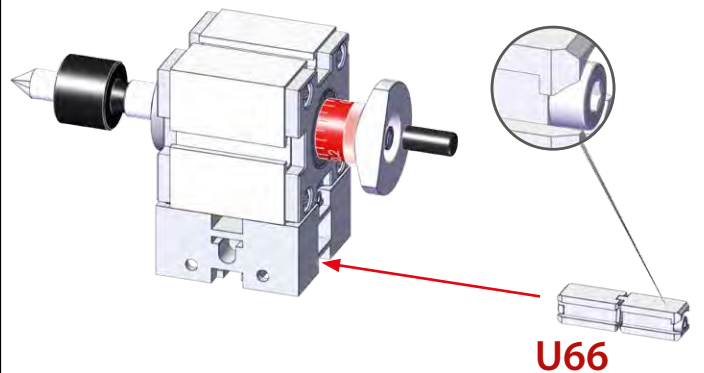
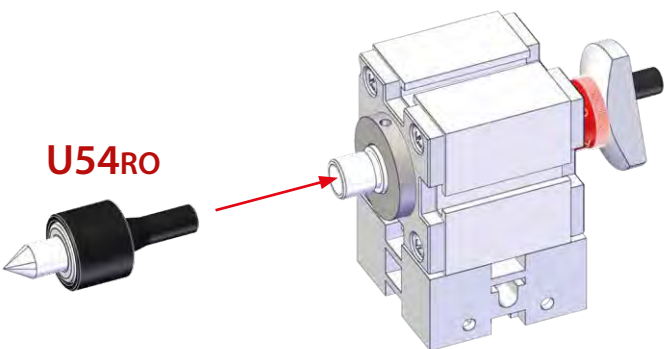


U15B

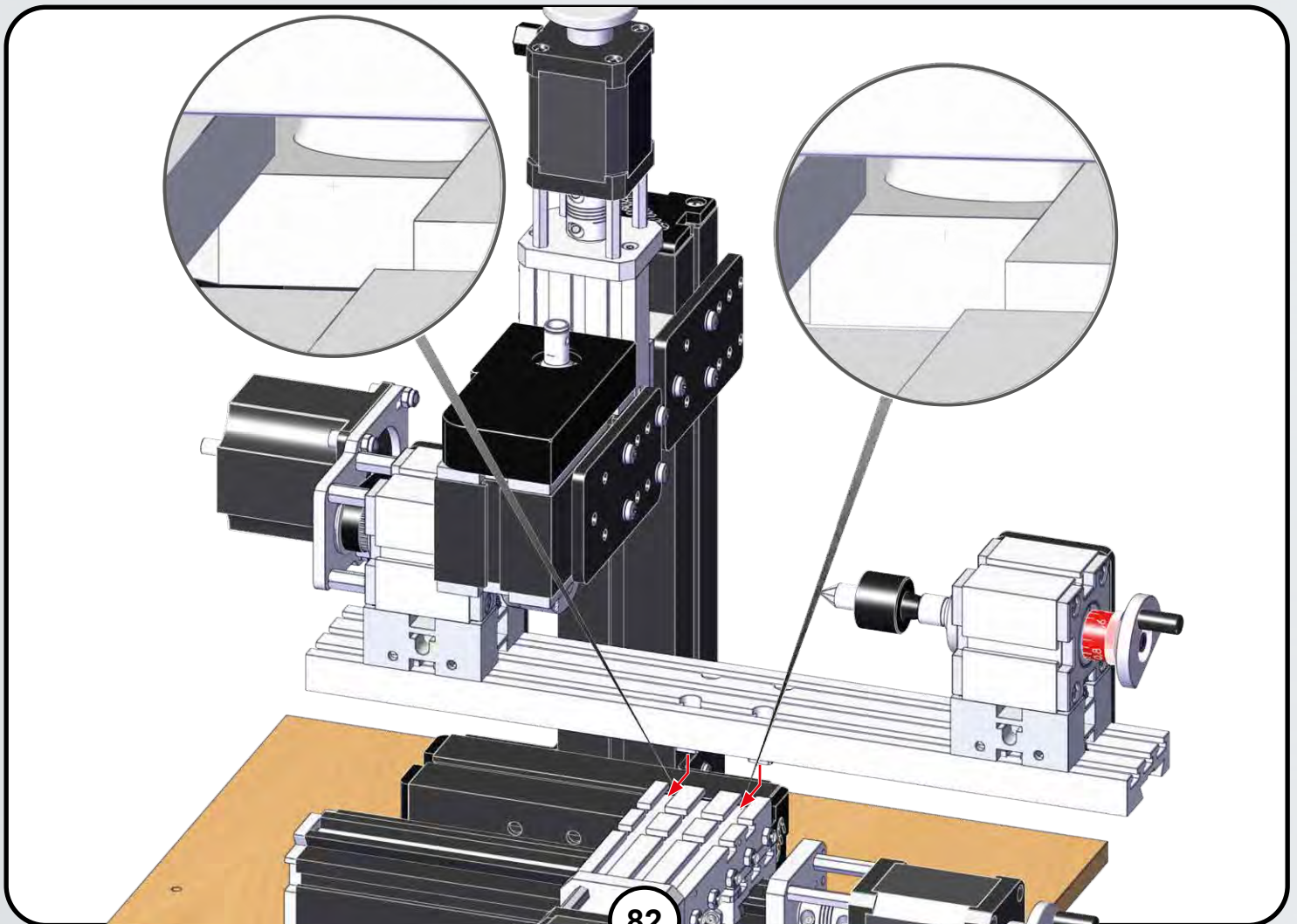
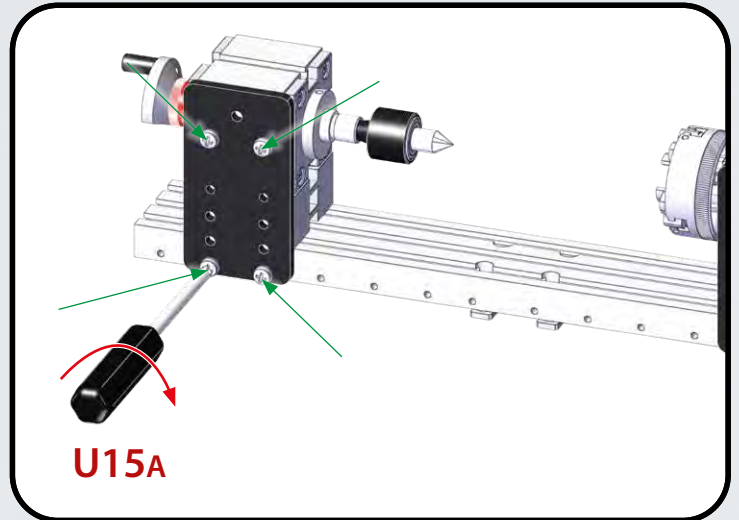
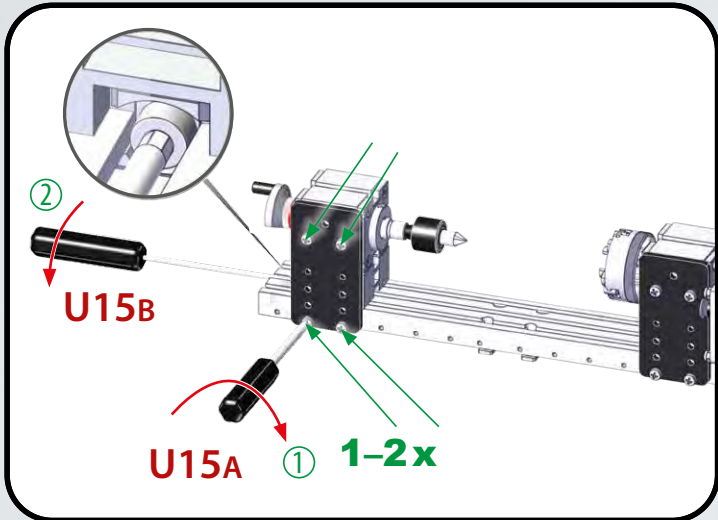
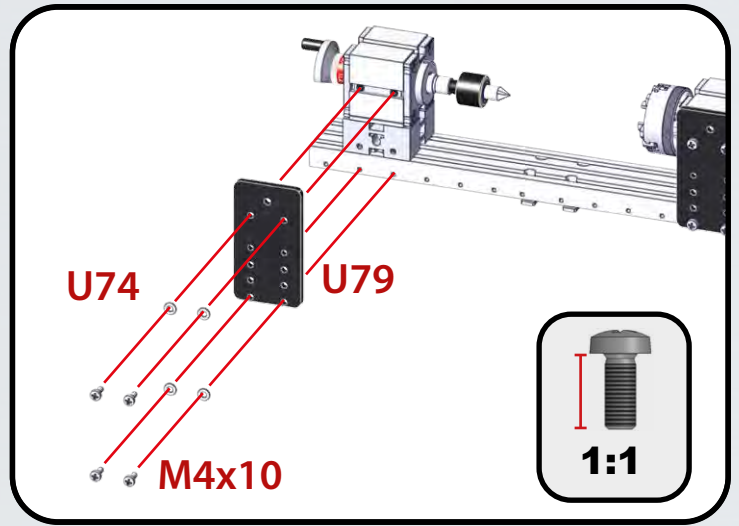
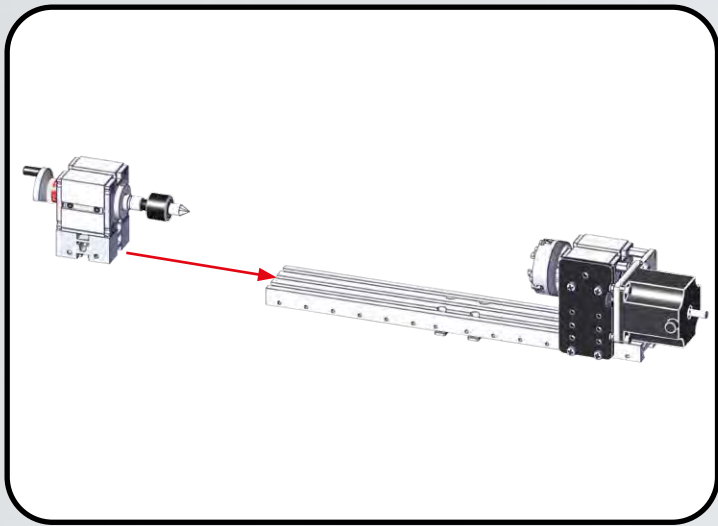
U51 1-2x

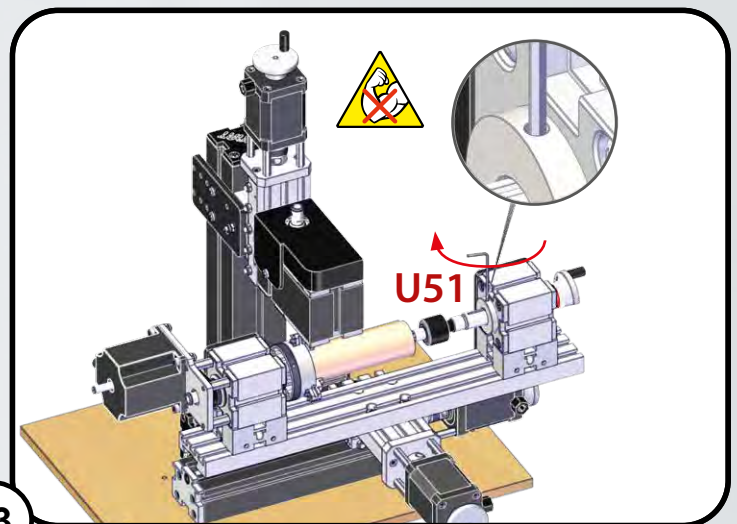
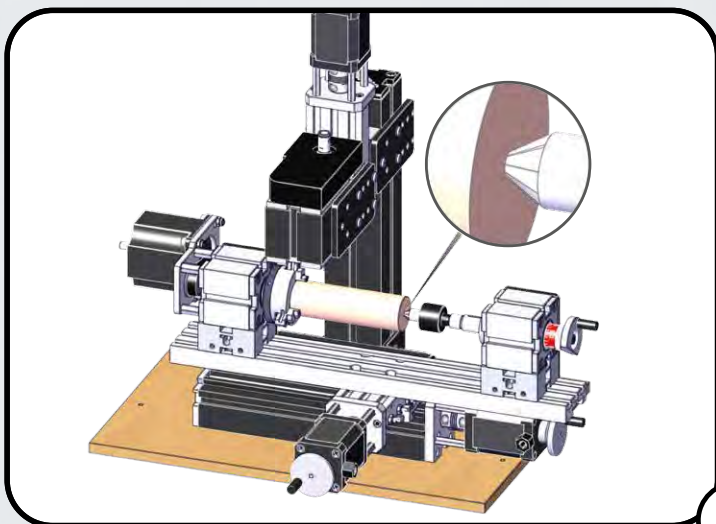
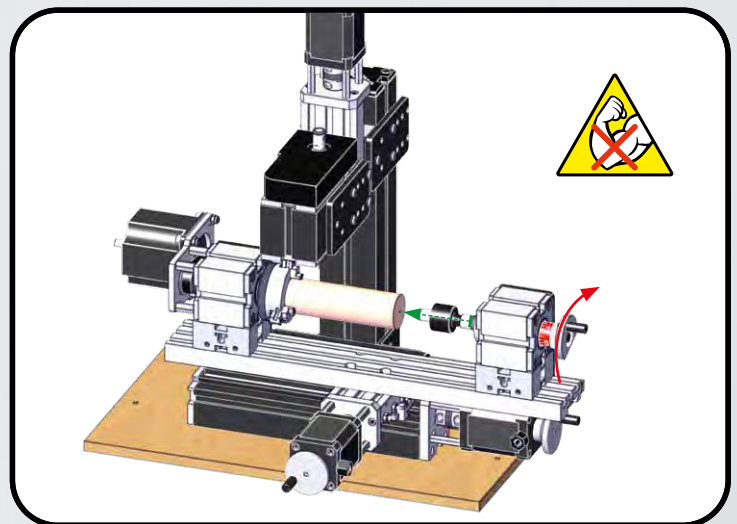
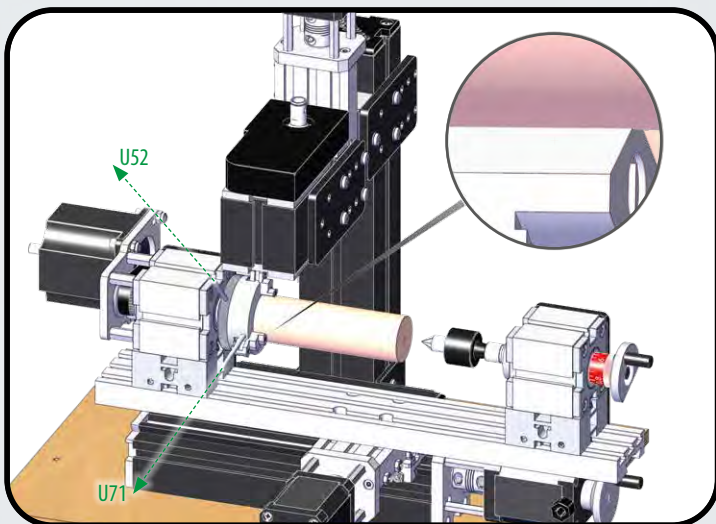
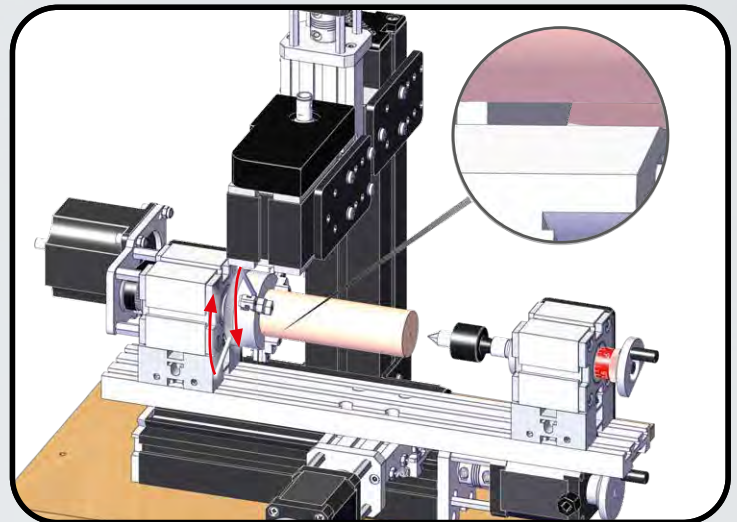
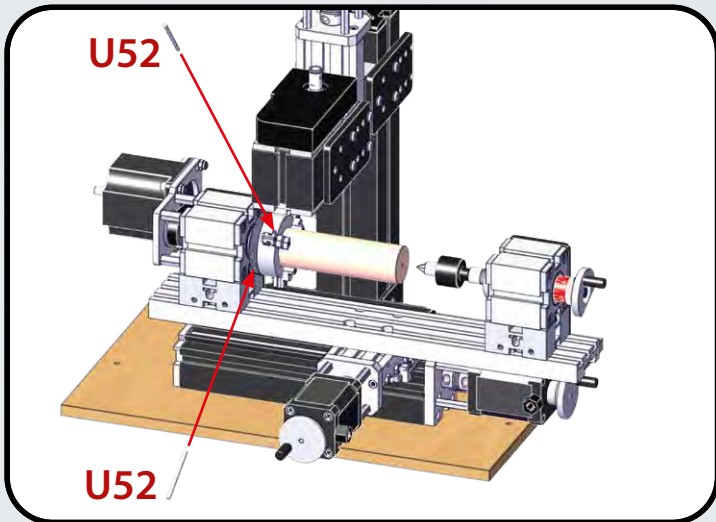
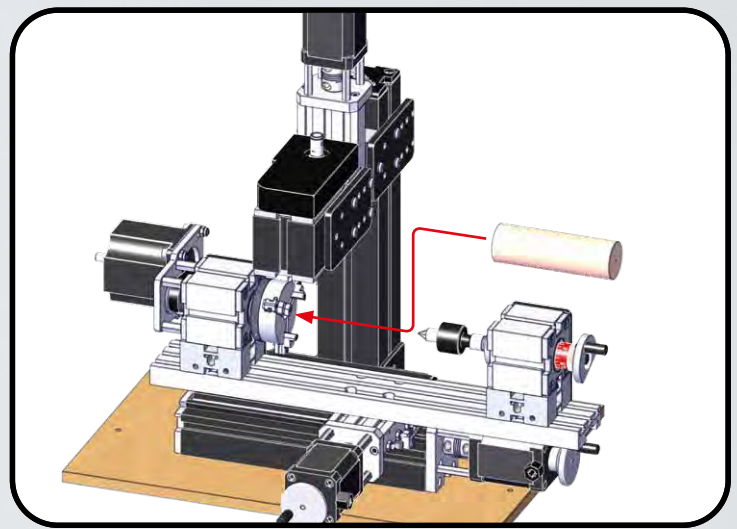
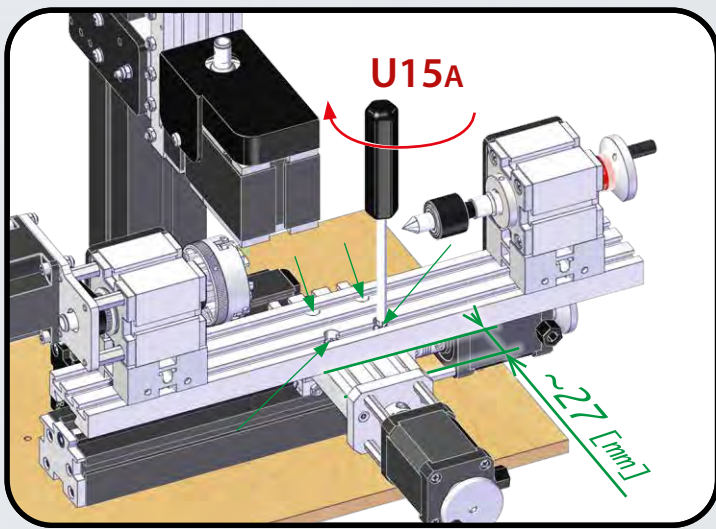


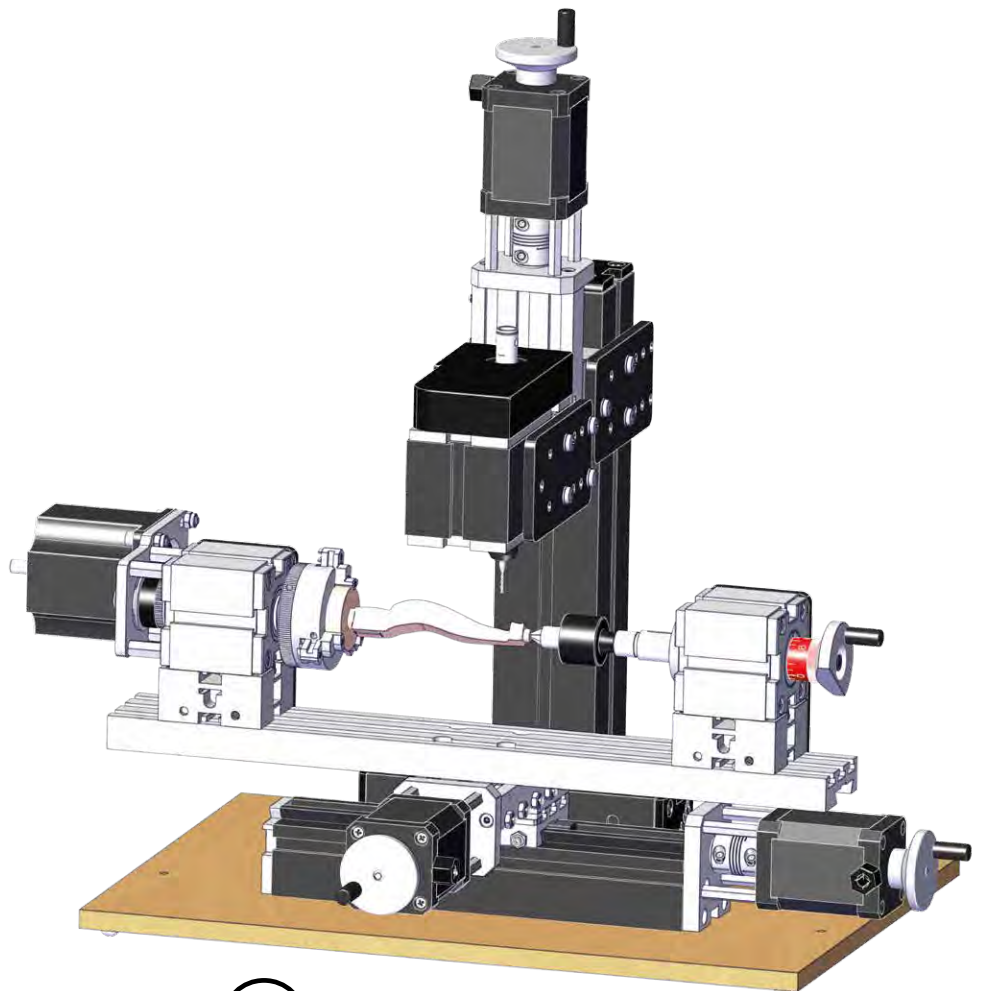
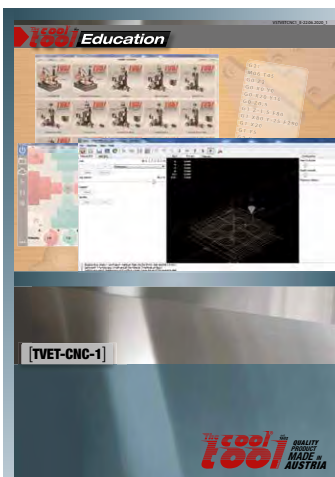
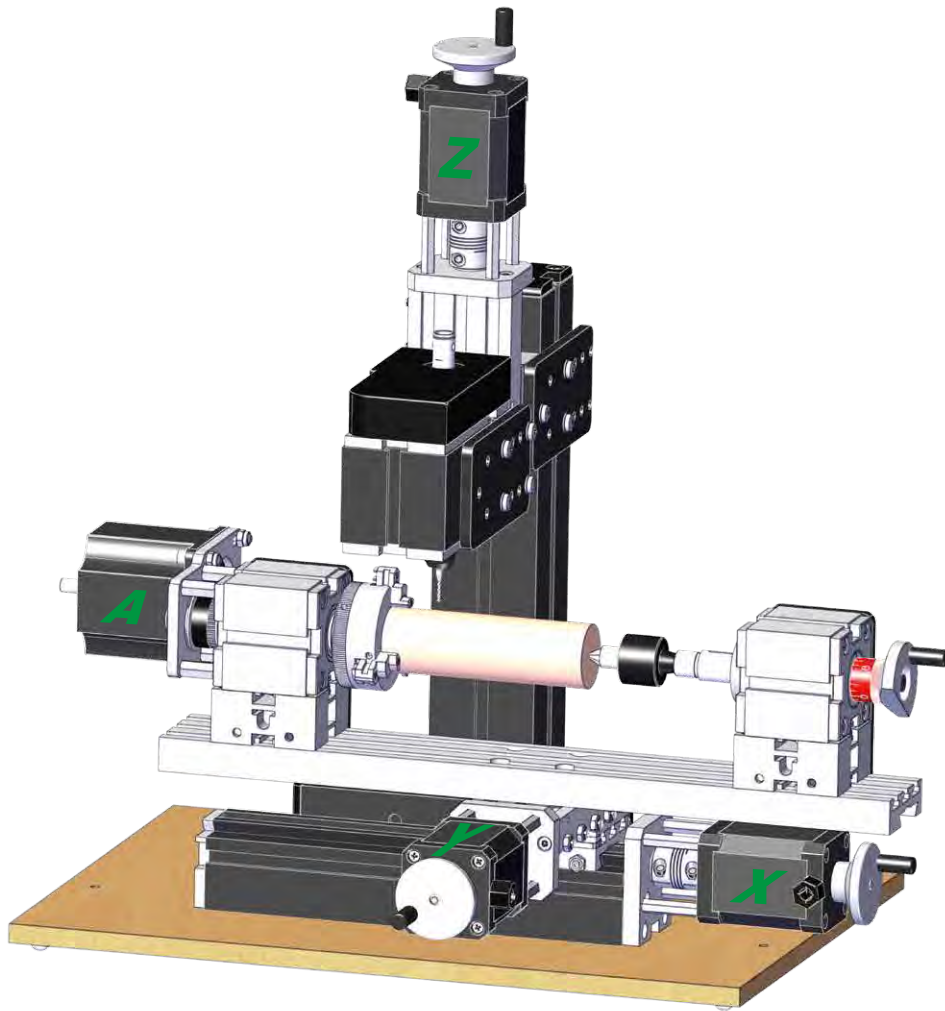
U54RO



U66







**UNI-CNC-SET Projekt - 1**

**UNI-CNC-SET project - 1**

**UNI-CNC-SET projet - 1**

**UNI-CNC-SET proyecto - 1**

**UNI-CNC-SET 项目 - 1**

**UNI-CNC-SET проект - 1**

**Inhalt • contents • contenu • contenido • 内容 • содержание:**

**1) Rohmaterial • Matière première • materia prima • 原料 • Сырье:**

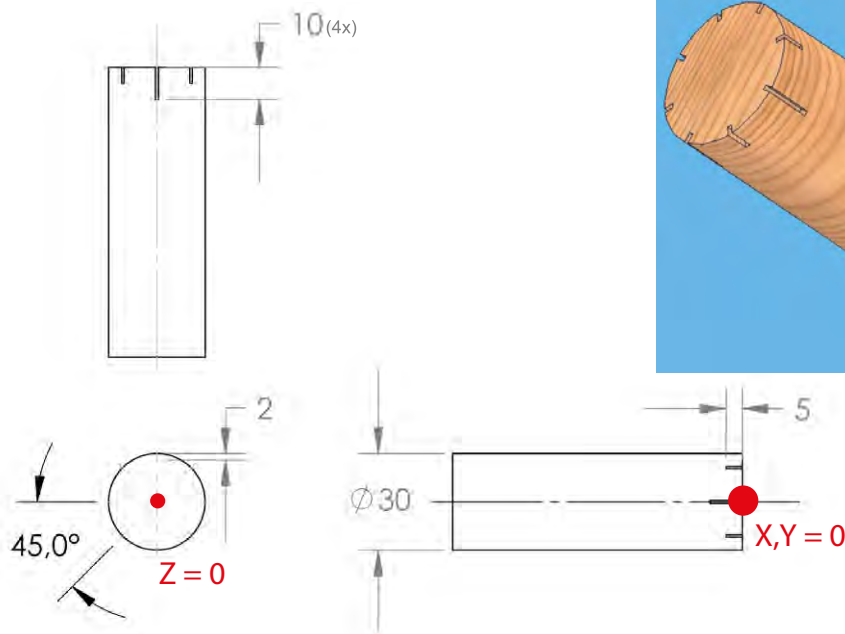
Buche • beech • hêtre • haya • 山毛榉 • бук ---- Ø 30 x 90 mm

**2) Technische Zeichnung • technical drawing • dessin technique • dibujo técnico •**

技术图纸 • Технический чертеж

**3) Lösungsvorschlag • proposed solution • solution proposée • solución propuesta •**

建议的解决方案 • Предложенное решение



**Projekt • project • projet • proyecto • 项目 • Проект**

Schaftfräser • end mill • fraise en bout • molino de extremo •

立铣刀 • Фреза концевая:  $\varnothing_{\max}$  1,6 mm

$F_{\max}$ : 150 mm/min

Maximale Schnitttiefe • maximum depth of cut •

profondeur de coupe maximale • profundidad

máxima de corte • 最大切削深度 •

максимальная глубина резания: 2,0 mm

**A**

g21

g0 z20

g0 x2 y0 a0

g0 z13

g1 x-10 f70

g0 x2

g0 a45

g1 x-5

g0 x2

g0 a90

g1 x-10

g0 x2

g0 a135

g1 x-5

g0 x2

g0 a180

g1 x-10

g0 x2

g0 a225

g1 x-5

g0 x2

g0 a270

g1 x-10

g0 x2

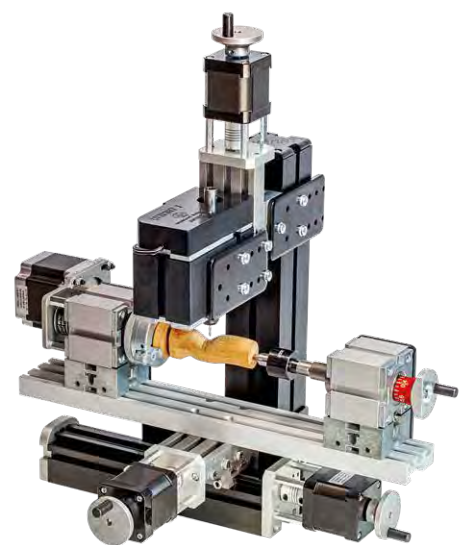
g0 a315

g1 x-5

g0 x2

g0 a0 z20

m02

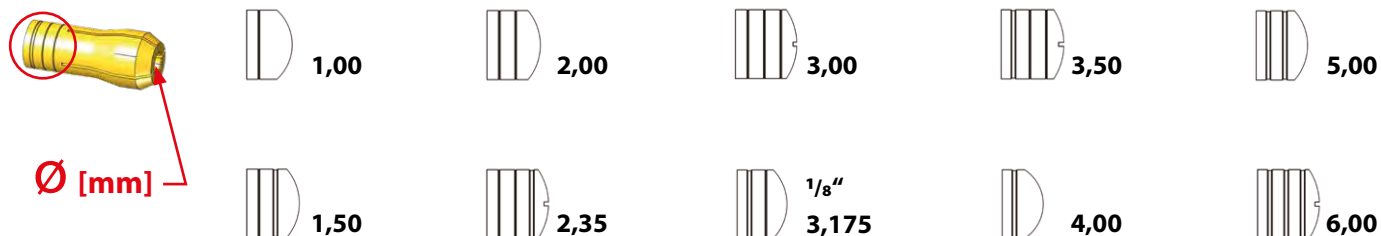


UNI-CNC-SET

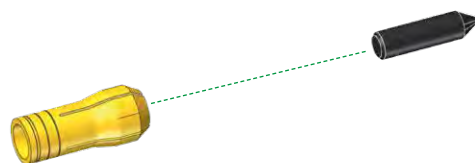
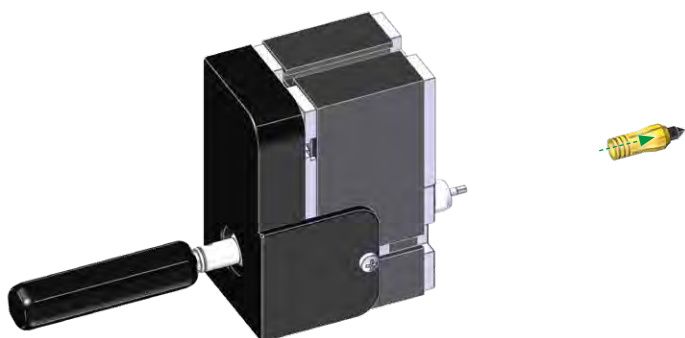
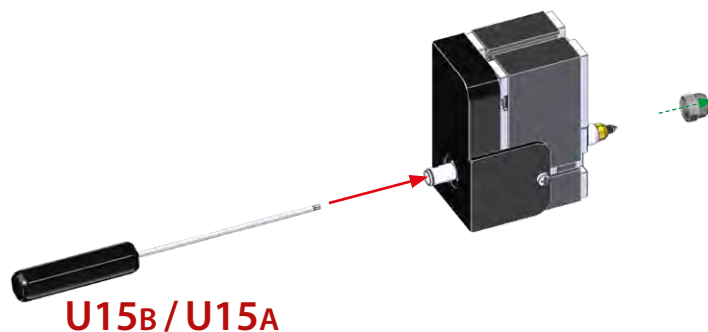
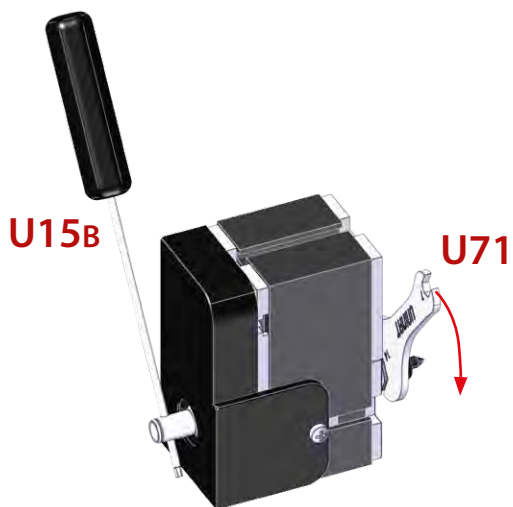
**TIPPS UND TRICKS**  
**TIPS AND HINTS**  
**TRUCS ET ASTUCES**

**CONSEJOS Y TRUCOS**  
**技巧和窍门**  
**секреты и уловки**

**U12ML: Ø-Code • Ø-code • Ø-Code • Ø-Código • 代码-Ø • Код-Ø**



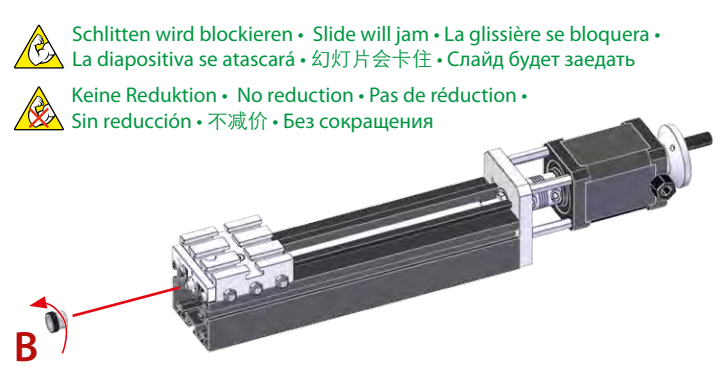
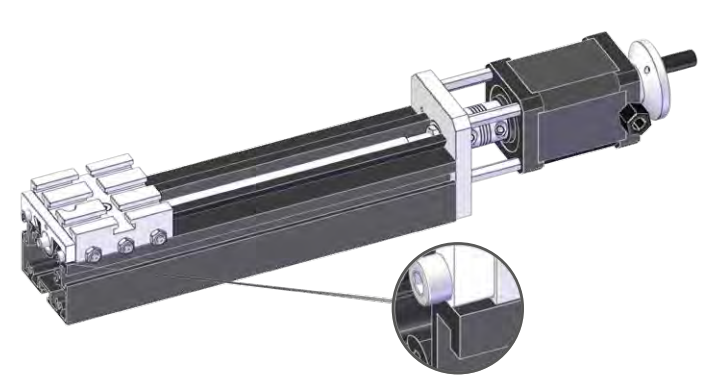
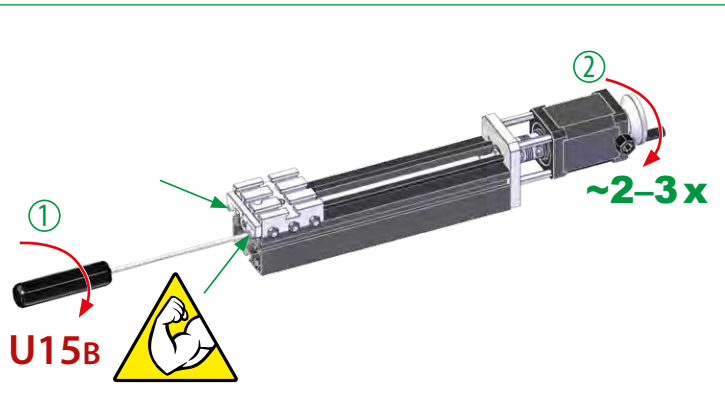
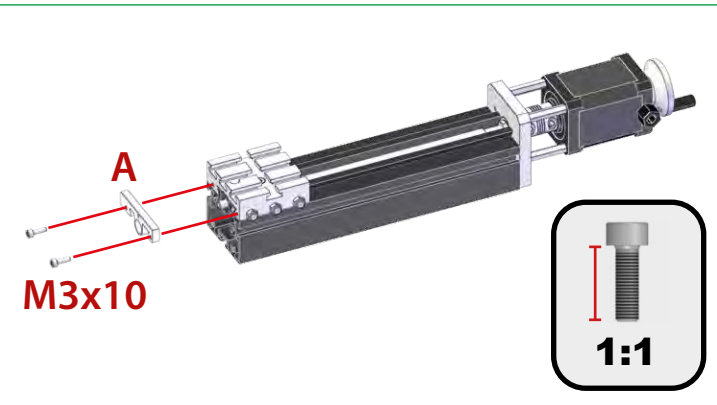
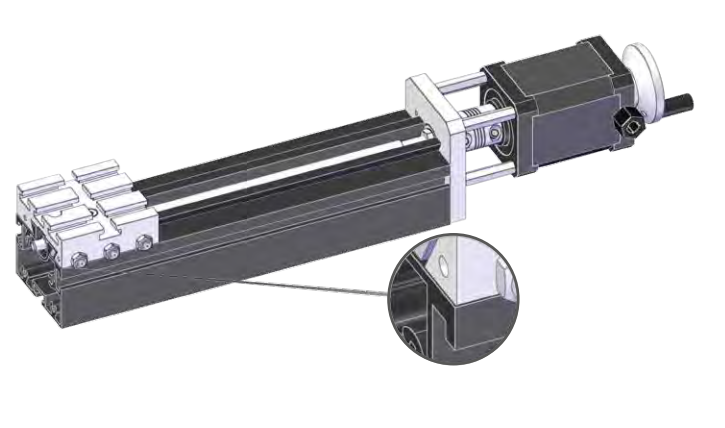
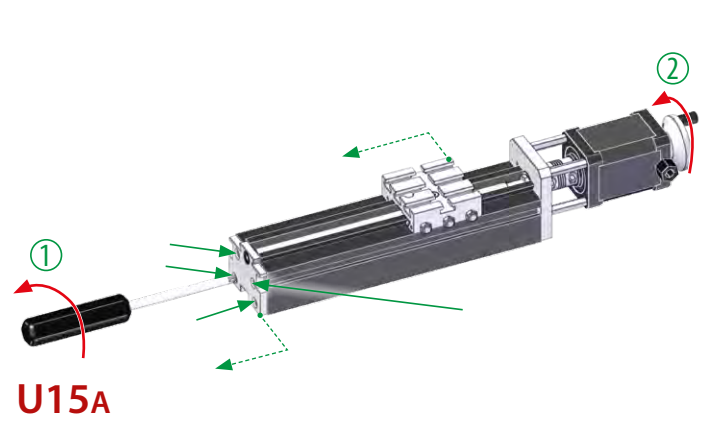
**Spannzange entfernen • Remove the collet • Retirer la pince •  
 Retire el collar • 取下夹头 • СНИМИТЕ ЦАНГУ**



# 164 480 CNC

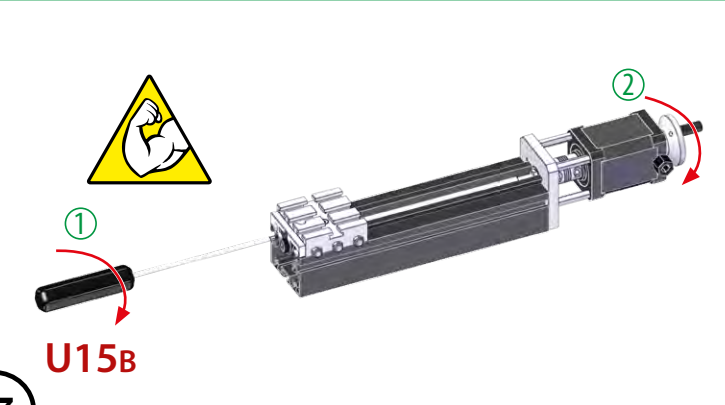
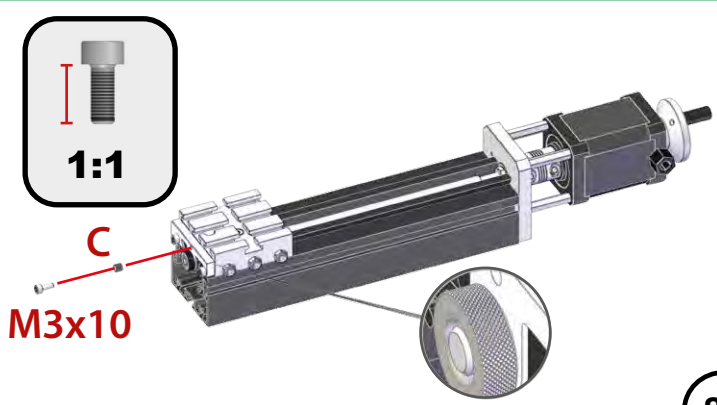
## Umkehrspiel einstellen • Backlash adjustment • Réglage du jeu • Ajuste de holgura • 间隙调整 • Регулировка люфта

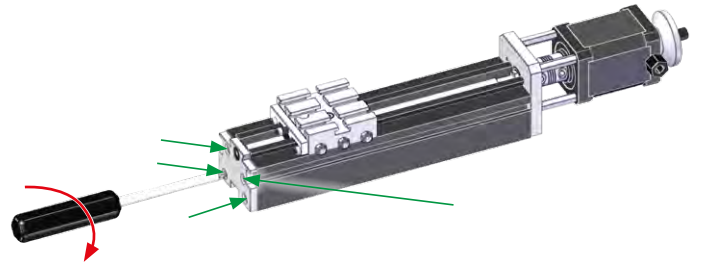
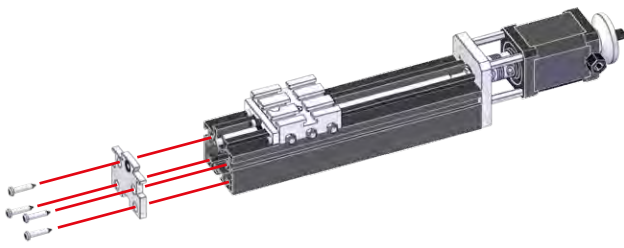
		DE	EN	FR	ES	中国 (ZH)	RU	
A	1	Aufnahme für A1M050024/026CNC	Guide for A1M050024/26CNC	Guider pour A1M050024/26CNC	Guía para A1M050024/26CNC	指南 A1M050024/26CNC	руководство для A1M050024/26CNC	A1M 050 028 CNC
B	1	Justiermutter 164480CNC	Backlash nut 164480CNC	Écrou de jeu 164480CNC	Tuerca de juego 164480CNC	齿隙螺母 164480CNC	Люфтовая гайка 164480CNC	A1M 050 024 CNC
C	1	Fixierung für A1M050024CNC	Fixation for A1M050024CNC	Fixation pour A1M050024CNC	Fijación para A1M050024CNC	的固定装置	Фиксация для A1M050024CNC	A1M 050 026 CNC
	1	Inbusschraube M3x8	Allen key screw M3x8	Vis à clé Allen M3x8	tornillo de llave allen M3x8	内六角螺丝 M3x8	Винт M3x8	ZSR M308 ISKT
	2	Inbusschraube M3x10	Allen key screw M3x10	Vis à clé Allen M3x10	tornillo de llave allen M3x10	内六角螺丝 M3x10	Винт M3x10	ZSR M310 ISKT



⚠ Schlitten wird blockieren • Slide will jam • La glissière se bloquera •  
La diapositiva se atascará • 幻灯片会卡住 • Слайд будет заедать

⚠ Keine Reduktion • No reduction • Pas de réduction •  
Sin reducción • 不減价 • Без сокращения

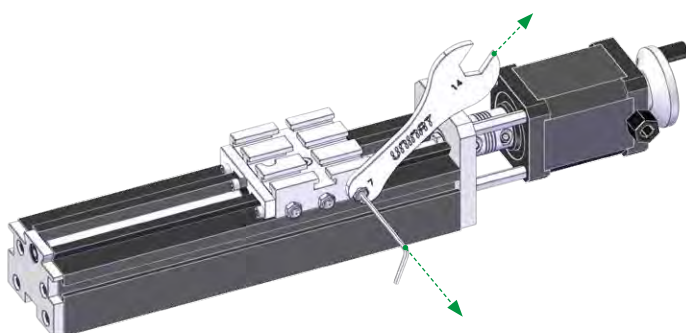
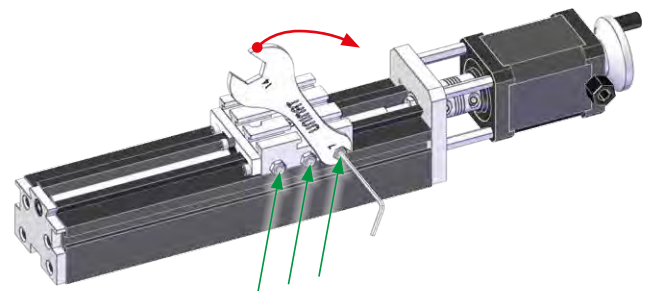
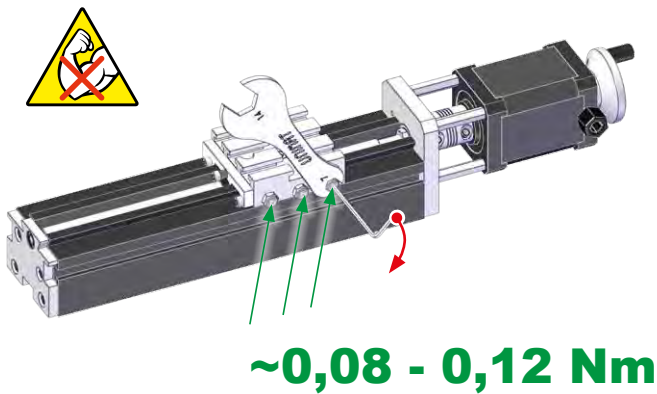
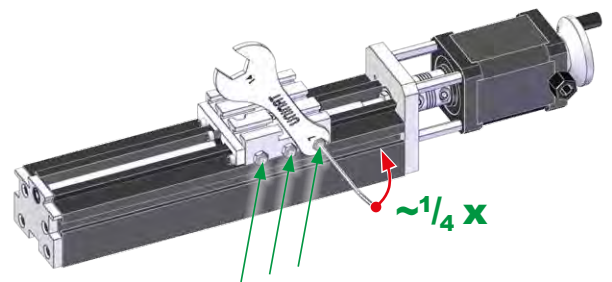
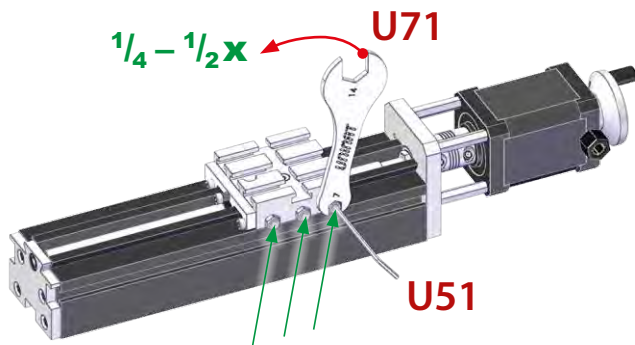




U15B

## 164 480 CNC

Schlitten einstellen • Slide adjustment • Glissière de réglage •  
Ajuste deslizante • 滑块调整 • Регулировка слайда



Die Schlitten regelmäßig warten und reinigen: mit einer kleinen Bürste Späne und anderes entfernen und nachfetten.  
Maintain the slides at regular intervals: clean with a brush and lubricate the gliding surface.

Nettoyez les chariots périodiquement: avec petit pinceau.

Mantener y limpiar periódicamente todos los carros con un cepillo pequeño.

保持滑块正常的活动范围: 用刷子清洁, 在燕尾槽表面加润滑油。

Регулярно чистите салазки жесткой кистью и смазывайте трущиеся поверхности.

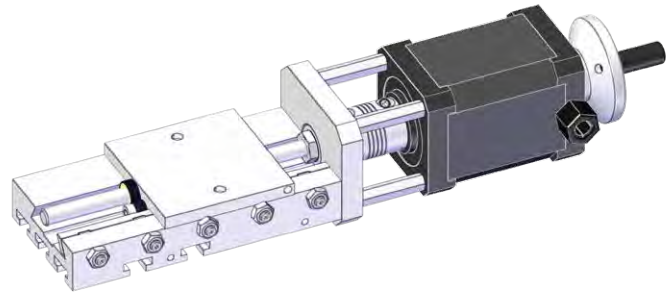
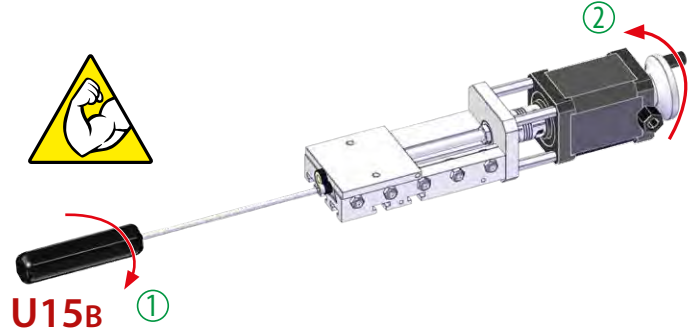
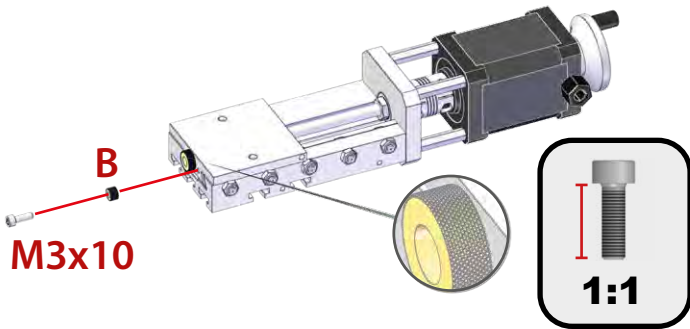
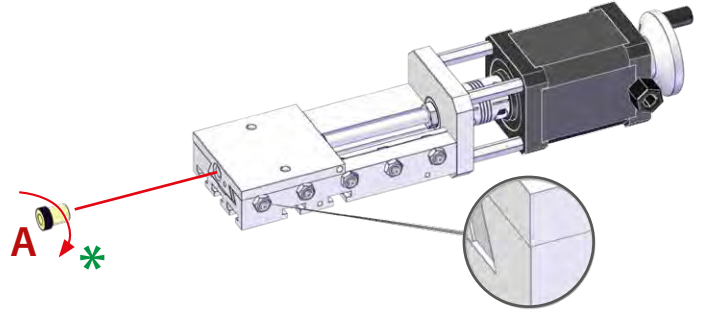
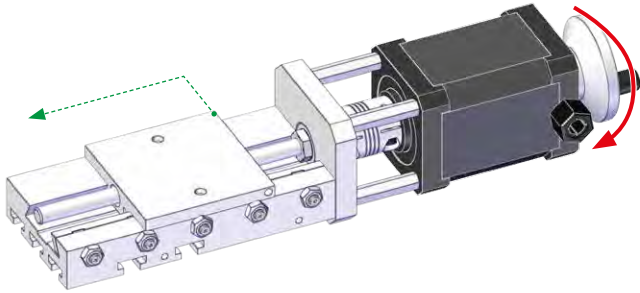


optional / optional / en option / opcional / 选配件 / опционально

## 164 060 CNC (164 068 CNC)

Umkehrspiel einstellen • Backlash adjustment • Réglage du jeu •  
Ajuste de holgura • 间隙调整 • Регулировка люфта

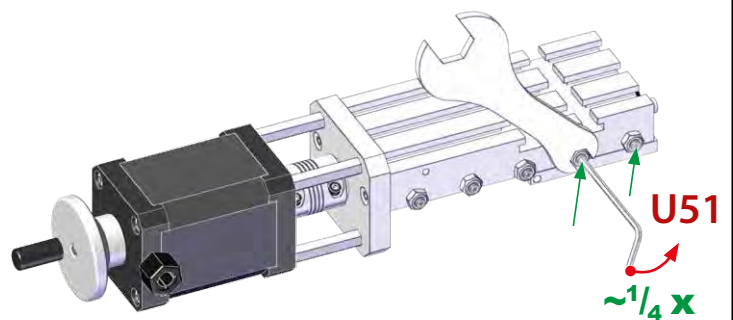
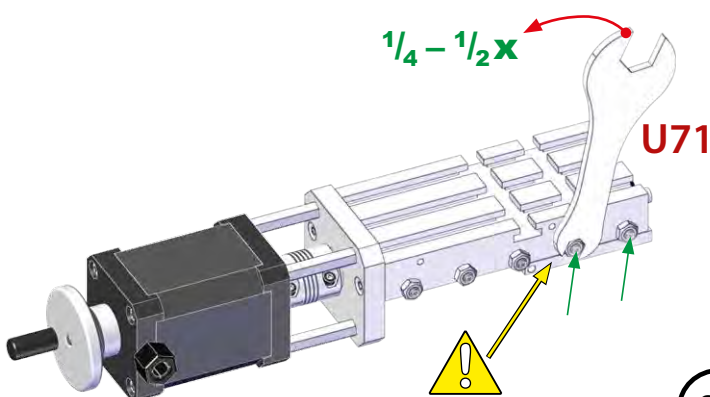
	DE	EN	FR	ES	中国 (ZH)	RU	
A	1 Justiermutter 164060CNC	Backlash nut 164060CNC	Écrou de jeu 164060CNC	Tuerca de juego 164060CNC	齿隙螺母 164060CNC	Люфтовая гайка 164060CNC	A1M 060 024 CNC
B	1 Fixierung für A1M060024CNC	Fixation for A1M060024CNC	Fixation pour A1M060024CNC	Fijación para A1M060024CNC	的固定装置	Фиксация для A1M060024CNC	A1M 060 026 CNC
1	Inbusschraube M3x10	Allen key screw M3x10	Vis à clé Allen M3x10	Tornillo de llave allen M3x10	内六角螺丝 M3x10	Винт M3x10	ZSR M310 ISKT

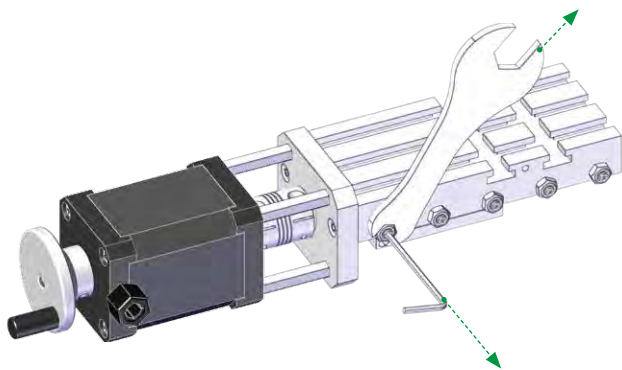
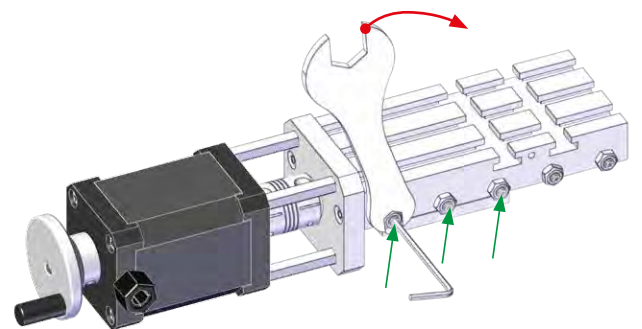
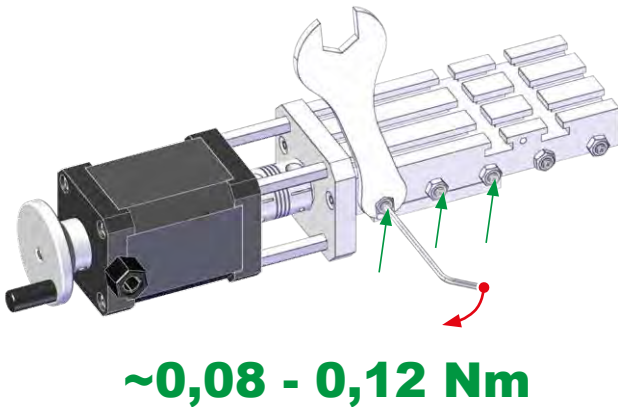
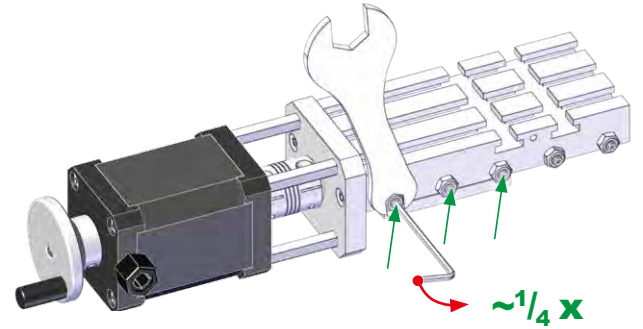
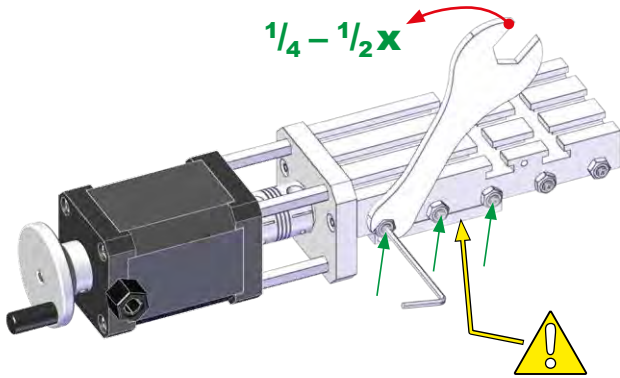
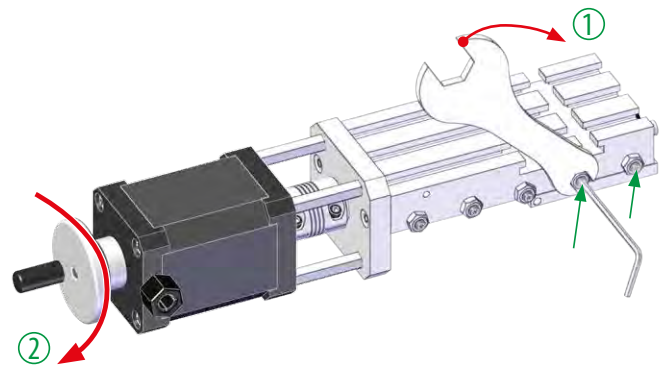
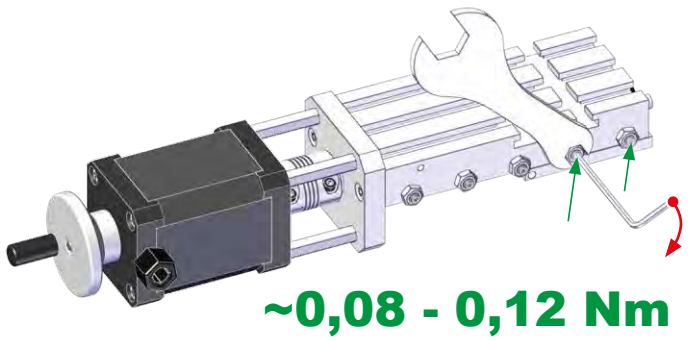


- \* Schlitten wird blockieren • Slide will jam • La glissière se bloquera • La diapositiva se atascará • 幻灯片会卡住 • Слайд будет заедать
- Keine Reduktion • No reduction • Pas de réduction • Sin reducción • 不减价 • Без сокращения

## 164 480 CNC

Schlitten einstellen • Slide adjustment • Glissière de réglage •  
Ajuste deslizante • 滑块调整 • Регулировка слайда





Die Schlitten regelmäßig warten und reinigen: mit einer kleinen Bürste Späne und anderes entfernen und nachfetten.

Maintain the slides at regular intervals: clean with a brush and lubricate the gliding surface.

Nettoyez les chariots périodiquement: avec petit pinceau.

Mantener y limpiar periódicamente todos los carros con un cepillo pequeño.

保持滑块正常的活动范围: 用刷子清洁, 在燕尾槽表面加润滑油。

Регулярно чистите салазки жесткой кистью и смазывайте трущиеся поверхности.

**Spannmittel • Clamping devices • Dispositifs de serrage •  
Dispositivos de sujeción • 夹紧装置 • зажимные устройства**

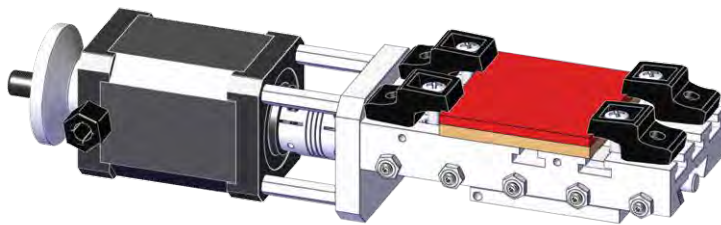


**164 090**

**optional / optional /  
en option / opcional /  
选配件 / опционально**

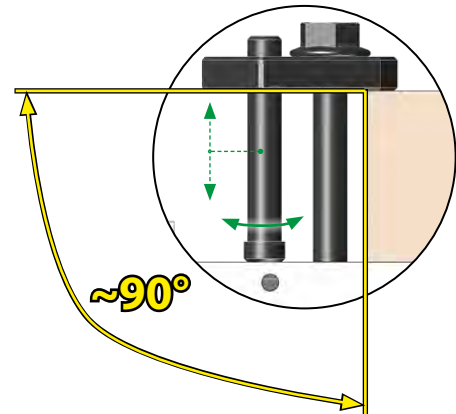
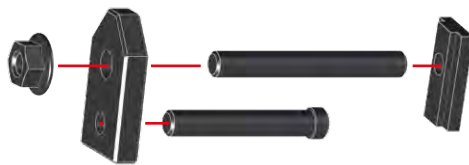
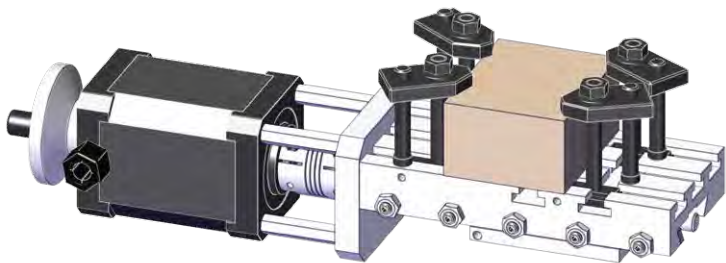
# U49 - A1A 000 090

Spannklaue • Clamping jaw • Mors de serrage •  
Brida de sujeción • 夹板 • Прихват Прихват

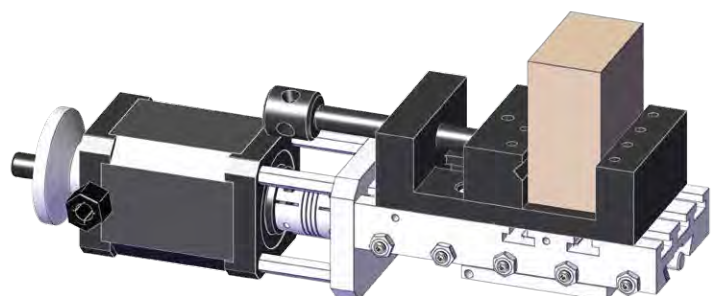
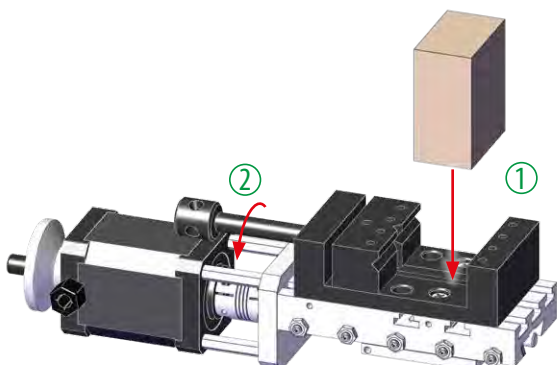
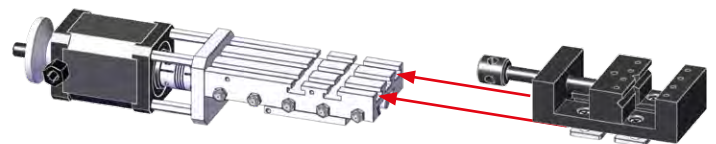
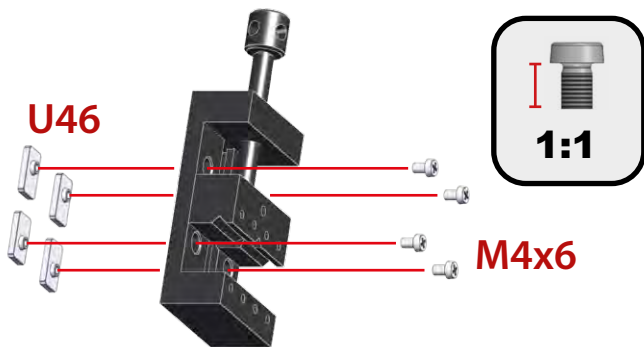


# U49ML - 164 080

Spannklaue ML • Clamping jaw ML • Mors de serrage ML •  
Brida de sujeción ML • 夹板 ML • Прихват Прихват ML

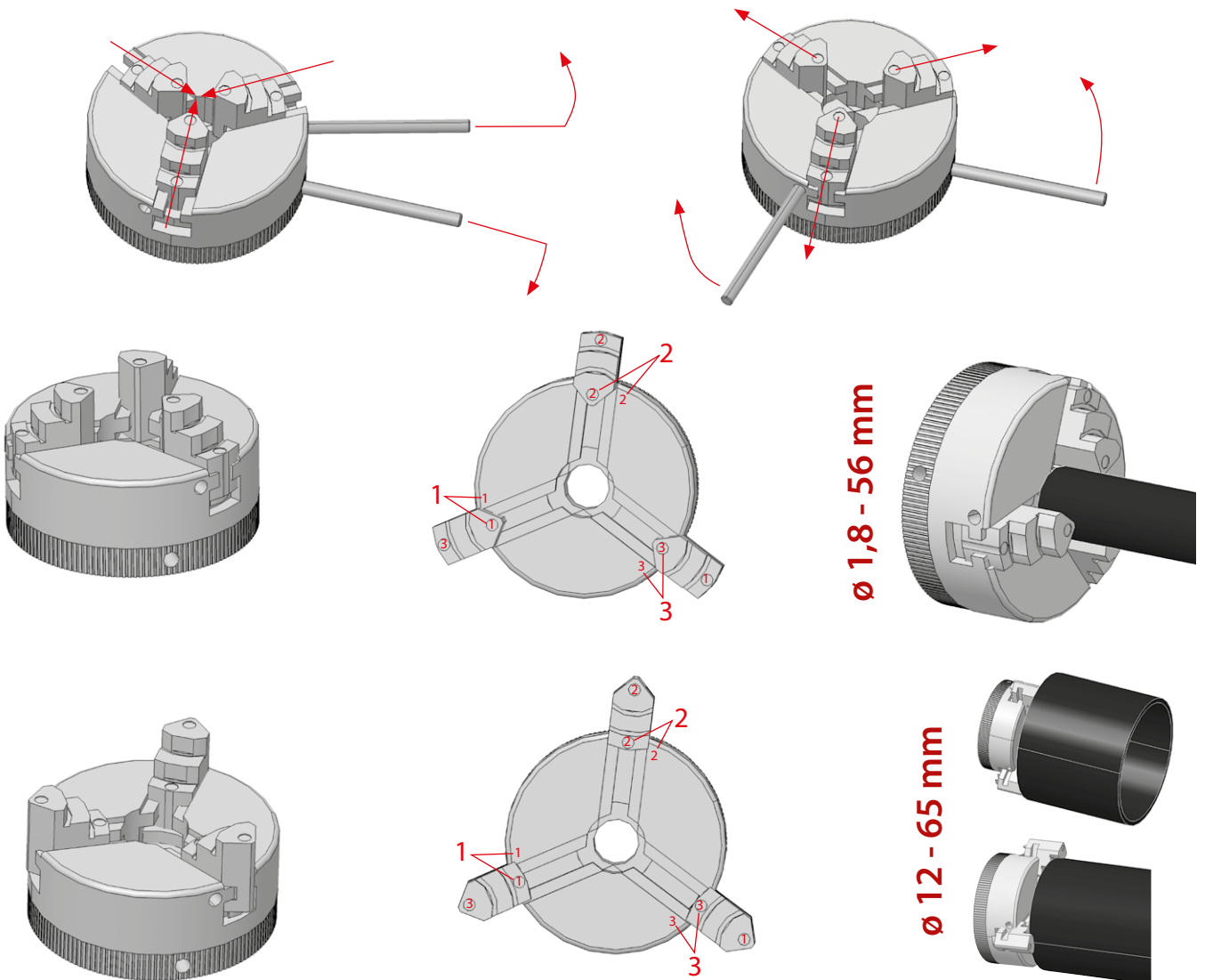


# 164 090 Frässhraubstock aus Stahl • Milling vise (steel) • Étau métallique • Mordaza metálica • 选配零件虎钳 (钢制) • стальные тиски



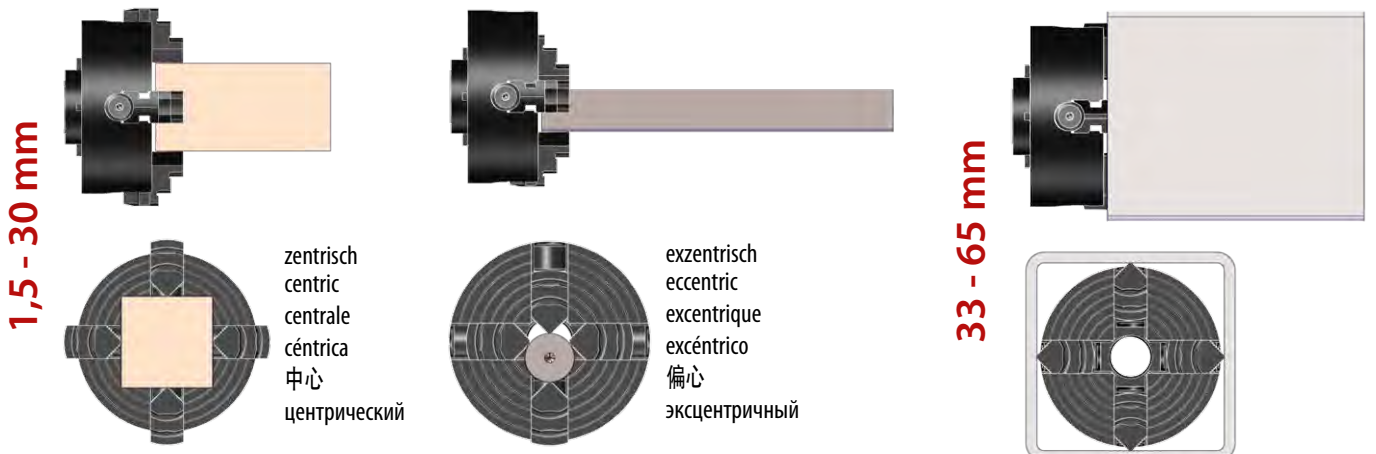
# A1A 071 000

**Dreibackenfutter • Three-jaw chuck • Mandrin à trois mors •  
Mandril de tres mordazas • 3爪卡盤 • Патрон 3-кулачковый**



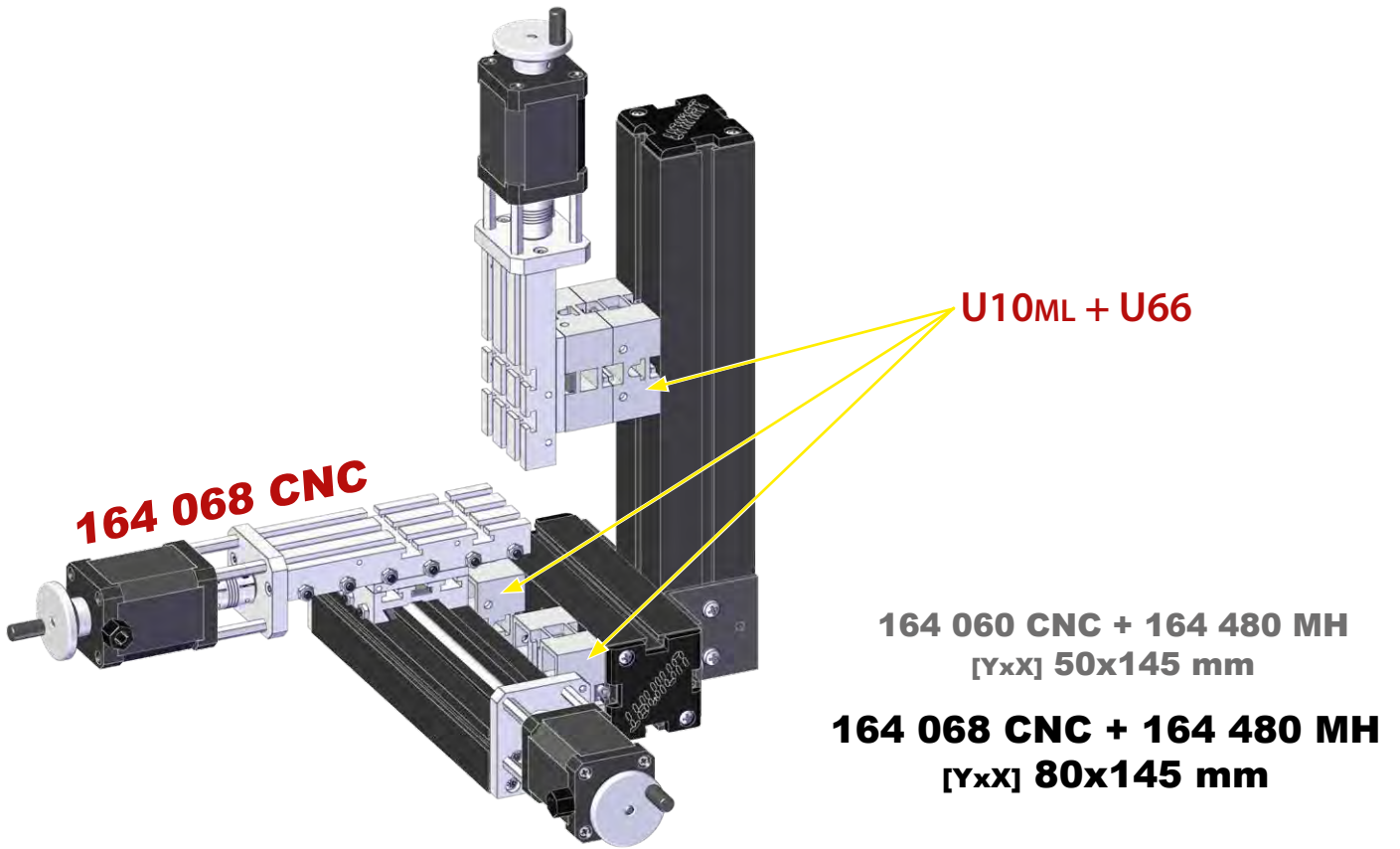
# 162 050

**Vierbackenfutter • Four-jaw chuck • Mandrin à quatre mors •  
Mandril de cuatro mordazas • 4爪卡盤 • Патрон 4-кулачковый**



optional / optional / en option / opcional / 选配件 / опционально

**Vergrößerter Arbeitsbereich • Increased workspace • Espace de travail accru •  
Mayor espacio de trabajo • 增加工作空间 • Увеличенное рабочее пространство**



**SET STÜCKLISTEN**  
**SET PART LISTS**  
**SET LISTES DE PIÈCES**

**SET LISTAS DE PIEZAS**  
**SET 零件清单**  
**SET списки деталей**

<b>Drehbank / lathe</b>			<b>art.no.: UNI-DREH</b>	
U1ML	1	Maschinenbett, lang	Machine bed, long	A1A 020 000 SW
U3CNC	1	Querschlitzen CNC	CNC Cross slide	164 060 CNC
U4MLEDU	1	Antriebseinheit ML	Drive unit ML	164 420
U6ML	1	Reitstock	Tailstock	A1M 040 000
U9CNC	1	Längsschlitzen CNC 200mm	CNC Longitudinal slide 200 mm	164 480 CNC
U10ML	2	Zwischenstück	Intermediate piece	A1M 000 100
U12ML	1	Messingspannzange 5 mm	Collet 5 mm	162 460 50
U13ML	1	Dreibackenfutter	Three-jaw chuck	162 430 MH
U15A	1	Schraubendreher PH2	Screwdriver #2	ZWZ 980 030
U15B	1	Inbusschraubendreher	Screwdriver allen key 2.5mm	ZWZ 980 075
U31	14	Schraube M4x10	Screw M4x10	ZSR M40 410
U33	2	Schraube M4x50	Screw M4x50	ZSR M40 450
U36	6	Schraube M4x16	Screw M4x16	ZSR M40 416
U37	10	Schraube M4x8	Screw M4x8	ZSR M40 408
U38	9	Schraube M4x6	Screw M4x6	ZSR M40 406
U40	2	Drehstahlunterlage 0,1 mm	Small part 0.1 mm	A1A 000 170
U41	2	Drehstahlunterlage 0,4 mm	Small part 0.4 mm	A1A 000 190
U42	2	Drehstahlunterlage 1,0 mm	Small part 1.0 mm	A1A 0001 80
U45	1	Zwischenblech	Intermediate plate	A1A 000 160
U46	12	Nutenstein	Slot nut	A1A 060 040
U47	5	Klemmplatte	Camping plate	A1A 010 020
U48ML	1	Spannzangenhalter	Collet holder	A1A 000 073
U49	6	Spannklaue	Clamping jaw	A1A 000 090
U50	2	Schraube M4x70	Screw M4x70	ZSR M40 470
U51	1	Inbusschlüssel 2 mm	Allen key 2 mm	ZWZ 110 200
U52	2	Stift	Rod	ZST 110 345
U53	1	Außendrehstahl	Tool for outs. turning	A1A 000 080
U54	1	Körnerspitze	Center	A1A 0001 30
U54PRO	1	Präzisions Rollkörper	Precision live center	164 450
U65	1	Inbusschlüssel 2,5 mm	Allen key 2.5 mm	ZWZ 110 250
U66	9	Verbindungselement	Connection piece	A1A 000 ZIN SK
U67	2	Fixierplatte groß	Stabilizing plates	A1Z 470 010
U69	8	Schraube M4x12	Screw M4x12	ZSR M40 412
U70	2	Schraube M4x40	Screw M4x40	ZSR M44 01S KT
U61	1	Gabelschlüssel 7/14 mm	Fork wrench 7 / 14 mm	ZWZ 400 700
U74	14	Beilagscheibe	Plain washer	ZSB 250 430
	1	Mehrfachstahlhalter	2 position tool post	A1M 000 091 MTG
	1	Inbusschlüssel 3 mm	Allen key 3 mm	ZWZ 110 300
	1	Netzteil 14,4V	14.4 V adaptor	161 316
	1	Grundplatte CNC	Mounting plate CNC	163 402
	4	Gummipuffer	Elastic buffer	166 EP
	1	Aluminium ø12x100 mm	Aluminium ø12x100 mm	166 ALU
	1	Aufklebeschrift Unimat 1	Sticker Unimat1	A1A 000 141

**3-Achsen Fräse / 3-axis mill****art.no.: UNI-FREAS3**

U1ML	1	Maschinenbett, lang	Machine bed, long	A1A 020 000 SW
U3CNC	2	Querschlitzen CNC	CNC Cross slide	164 060 CNC
U4MLEDU	1	Antriebseinheit ML	Drive unit ML	164 420
U7ML	1	Maschinenbett, kurz	Machine bed, short	A1A 010 000 SW
U9CNC	1	Längsschlitzen CNC 200mm	CNC Longitudinal slide 200 mm	164 480 CNC
U10ML	1	Zwischenstück	Intermediate piece	A1M 000 100
U12ML	1	Messingspannzange 1/8" (3,175 mm)	Collet 1/8"	162 460 31/8
U15A	1	Schraubendreher PH2	Screwdriver #2	ZWZ 980 030
U15B	1	Inbusschraubendreher	Screwdriver allen key 2.5mm	ZWZ 980 075
U31	14	Schraube M4x10	Screw M4x10	ZSR M40 410
U33	2	Schraube M4x50	Screw M4x50	ZSR M40 450
U36	6	Schraube M4x16	Screw M4x16	ZSR M40 416
U37	18	Schraube M4x8	Screw M4x8	ZSR M40 408
U38	13	Schraube M4x6	Screw M4x6	ZSR M40 406
U43S	1	Sicherungsmutter M4	Locking nut M4	ZMU 340 120
U45	1	Zwischenblech	Intermediate plate	A1A 000 160
U46	17	Nutenstein	Slot nut	A1A 060 040
U47	10	Klemmplatte	Camping plate	A1A 010 020
U48ML	1	Spannzangenhalter	Collet holder	A1A 000 073
U49	10	Spannklaue	Clamping jaw	A1A 000 090
U50	3	Schraube M4x70	Screw M4x70	ZSR M40 470
U51	1	Inbusschlüssel 2 mm	Allen key 2 mm	ZWZ 110 200
U52	1	Stift	Rod	ZST 110 345
U56CNC	1	Fräser 1,6 mm	1.6 mm Milling head	F24 701 ,60
U65	1	Inbusschlüssel 2,5 mm	Allen key 2.5 mm	ZWZ 110 250
U66	7	Verbindungselement	Connection piece	A1A 000 ZIN SK
U69	12	Schraube M4x12	Screw M4x12	ZSR M40 412
U70	1	Schraube M4x40	Screw M4x40	ZSR M44 01S KT
U61	1	Gabelschlüssel 7/14 mm	Fork wrench 7 / 14 mm	ZWZ 400 700
U74	23	Beilagscheibe	Plain washer	ZSB 250 430
U79	3	Fixierplatte, klein	Stabilizing plates small	A1Z 470 000
U80	2	Befestigungswinkel	Stabilizing angle	A1Z 480 000
	1	Frässhraubstock aus Stahl	Milling vise (steel)	164 090
	1	Spannpratzenset ML	Clamping jaw set ML	164 490
	1	Netzteil 14,4V	14.4 V adaptor	161 316
	1	Grundplatte CNC	Mounting plate CNC	163 402
	4	Gummipuffer	Elastic buffer	166 EP
	2	Acryl 50x50x3 mm	Acrylic 50x50x3 mm	166 PLE X
	1	Kunststein (Corian) ~50x50x12 mm	Artificial stone (Corian) ~50x50x12 mm	166 Kerr 1
	2	Aufklebeschrift Unimat 1	Sticker Unimat1	A1A 000 141

U1ML	1	Maschinenbett, lang	Machine bed, long	A1A 020 000 SW
U3CNC	2	Querschlitten CNC	CNC Cross slide	164 060 CNC
U4MLEDU	1	Antriebseinheit ML	Drive unit ML	164 420
U7ML	1	Maschinenbett, kurz	Machine bed, short	A1A 010 000 SW
U9CNC	1	Längsschlitten CNC 200mm	CNC Longitudinal slide 200 mm	164 480 CNC
U10ML	2	Zwischenstück	Intermediate piece	A1M 000 100
U12ML	1	Messingspannzange 1/8" (3,175 mm)	Collet 1/8"	162 460 31/8
U15A	1	Schraubendreher PH2	Screwdriver #2	ZWZ 980 030
U15B	1	Inbusschraubendreher	Screwdriver allen key 2.5mm	ZWZ 980 075
U31	14	Schraube M4x10	Screw M4x10	ZSR M40 410
U33	3	Schraube M4x50	Screw M4x50	ZSR M40 450
U36	6	Schraube M4x16	Screw M4x16	ZSR M40 416
U37	18	Schraube M4x8	Screw M4x8	ZSR M40 408
U38	13	Schraube M4x6	Screw M4x6	ZSR M40 406
U43S	1	Sicherungsmutter M4	Locking nut M4	ZMU 340 120
U45	2	Zwischenblech	Intermediate plate	A1A 000 160
U46	14	Nutenstein	Slot nut	A1A 060 040
U47	10	Klemmplatte	Camping plate	A1A 010 020
U48ML	1	Spannzangenhalter	Collet holder	A1A 000 073
U49	6	Spannklaue	Clamping jaw	A1A 000 090
U50	3	Schraube M4x70	Screw M4x70	ZSR M40 470
U51	1	Inbusschlüssel 2 mm	Allen key 2 mm	ZWZ 110 200
U52	1	Stift	Rod	ZST 110 345
U56CNC	1	Fräser 1,6 mm	1.6 mm Milling head	F24 701 ,60
U65	1	Inbusschlüssel 2,5 mm	Allen key 2.5 mm	ZWZ 110 250
U66	9	Verbindungselement	Connection piece	A1A 000 ZIN SK
U69	8	Schraube M4x12	Screw M4x12	ZSR M40 412
U70	1	Schraube M4x40	Screw M4x40	ZSR M44 01S KT
U61	1	Gabelschlüssel 7/14 mm	Fork wrench 7 / 14 mm	ZWZ 400 700
U74	23	Beilagscheibe	Plain washer	ZSB 250 430
U79	3	Fixierplatte, klein	Stabilizing plates small	A1Z 470 000
U80	2	Befestigungswinkel	Stabilizing angle	A1Z 480 000
	1	CNC Drehtisch	CNC Rotary table	164 300 CNC
	1	4-Backenfutter	Four-jaw-chuck	162 050 MH
	1	Spannpratzenset ML	Clamping jaw set ML	164 490
	1	Netzteil 14,4V	14.4 V adaptor	161 316
	1	Grundplatte CNC	Mounting plate CNC	163 402
	4	Gummipuffer	Eelastic buffer	166 EP
	1	Frässhäum ~25x25x50 mm	Milling foam ~25x25x50 mm	166 Foa M1
	2	Acryl 50x50x3 mm	Acrylic 50x50x3 mm	166 PLE X
	1	Kunststein (Corian) ~50x50x12 mm	Artificial stone (Corian) ~50x50x12 mm	166 Kerr 1
	2	Aufklebeschrift Unimat 1	Sticker Unimat1	A1A 000 141



**1/2 4-Achsen Dreh- Fräsepaket / 4-axis turn- mill package art.no.: UNI-CNC-SET**

U1ML	1	Maschinenbett, lang	Machine bed, long	A1A 020 000 SW
U3CNC	2	Querschlitzen CNC	CNC Cross slide	164 060 CNC
U4MLEDU	1	Antriebseinheit ML	Drive unit ML	164 420
U6ML	1	Reitstock	Tailstock	A1M 040 000
U7ML	1	Maschinenbett, kurz	Machine bed, short	A1A 010 000 SW
U9CNC	1	Längsschlitzen CNC 200mm	CNC Longitudinal slide 200 mm	164 480 CNC
U10ML	3	Zwischenstück	Intermediate piece	A1M 000 100
U12ML	1	Messingspannzange 1/8" (3,175 mm)	Collet 1/8"	162 460 31/8
U12ML	1	Messingspannzange 5 mm	Collet 5 mm	162 460 05
U13ML	1	Dreibackenfutter	Three-jaw chuck	162 430 MH
U15A	1	Schraubendreher PH2	Screwdriver #2	ZWZ 980 030
U15B	1	Inbusschraubendreher	Screwdriver allen key 2.5mm	ZWZ 980 075
U31	24	Schraube M4x10	Screw M4x10	ZSR M40 410
U33	3	Schraube M4x50	Screw M4x50	ZSR M40 450
U36	6	Schraube M4x16	Screw M4x16	ZSR M40 416
U37	18	Schraube M4x8	Screw M4x8	ZSR M40 408
U38	13	Schraube M4x6	Screw M4x6	ZSR M40 406
U40	2	Drehstahlunterlage 0,1 mm	Small part 0.1 mm	A1A000170
U41	2	Drehstahlunterlage 0,4 mm	Small part 0.4 mm	A1A000190
U42	2	Drehstahlunterlage 1,0 mm	Small part 1.0 mm	A1A000180
U43S	1	Sicherungsmutter M4	Locking nut M4	ZMU 340 120
U45	2	Zwischenblech	Intermediate plate	A1A 000 160
U46	17	Nutenstein	Slot nut	A1A 060 040
U47	12	Klemmplatte	Camping plate	A1A 010 020
U48ML	1	Spannzangenhalter	Collet holder	A1A 000 073
U49	10	Spannklaue	Clamping jaw	A1A 000 090
U50	3	Schraube M4x70	Screw M4x70	ZSR M40 470
U51	1	Inbusschlüssel 2 mm	Allen key 2 mm	ZWZ 110 200
U52	2	Stift	Rod	ZST 110 345
U53	1	Außendrehstahl	Tool for outs. turning	A1A 000 080
U54	1	Körnerspitze	Center	A1A 000 130
U54PRO	1	Präzisions Rollkörner	Precision live center	164 450
U56CNC	1	Fräser 1,6 mm	1.6 mm Milling head	F24 701 ,60
U65	1	Inbusschlüssel 2,5 mm	Allen key 2.5 mm	ZWZ 110 250
U66	12	Verbindungselement	Connection piece	A1A 000 ZIN SK
U67	2	Fixierplatte	Stabilizing plates	A1Z 470 010
U69	12	Schraube M4x12	Screw M4x12	ZSR M40 412
U70	2	Schraube M4x40	Screw M4x40	ZSR M44 01S KT
U61	1	Gabelschlüssel 7/14 mm	Fork wrench 7 / 14 mm	ZWZ 400 700
U74	31	Beilagscheibe	Plain washer	ZSB 250 430
U79	5	Fixierplatte, klein	Stabilizing plates small	A1Z 470 000
U80	2	Befestigungswinkel	Stabilizing angle	A1Z 480 000
	1	CNC Drehtisch	CNC Rotary table	164 300 CNC
	1	Mehrfachstahlhalter	2 position tool post	A1M 000 091 MTG
	1	Inbusschlüssel 3 mm	Allen key 3 mm	ZWZ 110 300
	1	4-Backenfutter	Four-jaw-chuck	162 050 MH
	1	Spannpratzenset ML	Clamping jaw set ML	164 490
	1	Querplatte Querschlitzen	Cross plate - cross slide	164 063

**2/2 4-Achsen Dreh- Fräsepaket / 4-axis turn- mill package art.no.: UNI-CNC-SET**

	1	Netzteil 14,4V	14.4 V adaptor	161 316
	1	Grundplatte CNC	Mounting plate CNC	163 402
	4	Gummipuffer	Elastic buffer	166 EP
	1	Aluminium ø12x100 mm	Aluminium ø12x100 mm	166 ALU
	1	Frässchaum ~25x25x50 mm	Milling foam ~25x25x50 mm	166 Foa M1
	2	Acryl 50x50x3 mm	Acrylic 50x50x3 mm	166 PLE X
	1	Kunststein (Corian) ~50x50x12 mm	Artificial stone (Corian) ~50x50x12 mm	166 Kerr 1
	2	Aufklebeschrift Unimat 1	Sticker Unimat1	A1A 000 141





**164 425 CNC**  
Notaus/Relais-Box CNC  
E-stop/Relay module CNC



**164 420 CNC**  
Unimat CNC Fräs - und Gravierspindel  
Unimat CNC Milling and Engraving Spindle



**F900 1010**  
Fräsersatz 1/8" Schaft 10 Stk  
End mill set 1/8" shank 10 pcs



**164 090**  
Frässhraubstock aus Werkzeugstahl  
Milling - Vice made of tool steel



**166 ALU S**  
Automatenaluminium ø12x100 mm  
Aluminium ø12x100 mm, center drilled



**166 COR S**  
Corian (Kunststein) 50x50x12 mm  
Corian (artificial stone) 50x50x12 mm



**166 FOAM S**  
Spezial-Frässschaum ~25x25x50 mm  
Special milling foam ~25x25x50 mm



**166 PLEX S**  
Spezial-Acryl färbig 50x50x3 mm  
Special colored Acrylic 50x50x3 mm

nicht im Maßstab | not in scale | pas à l'échelle | no es a escala | 不按比例 | не в масштабе

## The cool tool GmbH

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