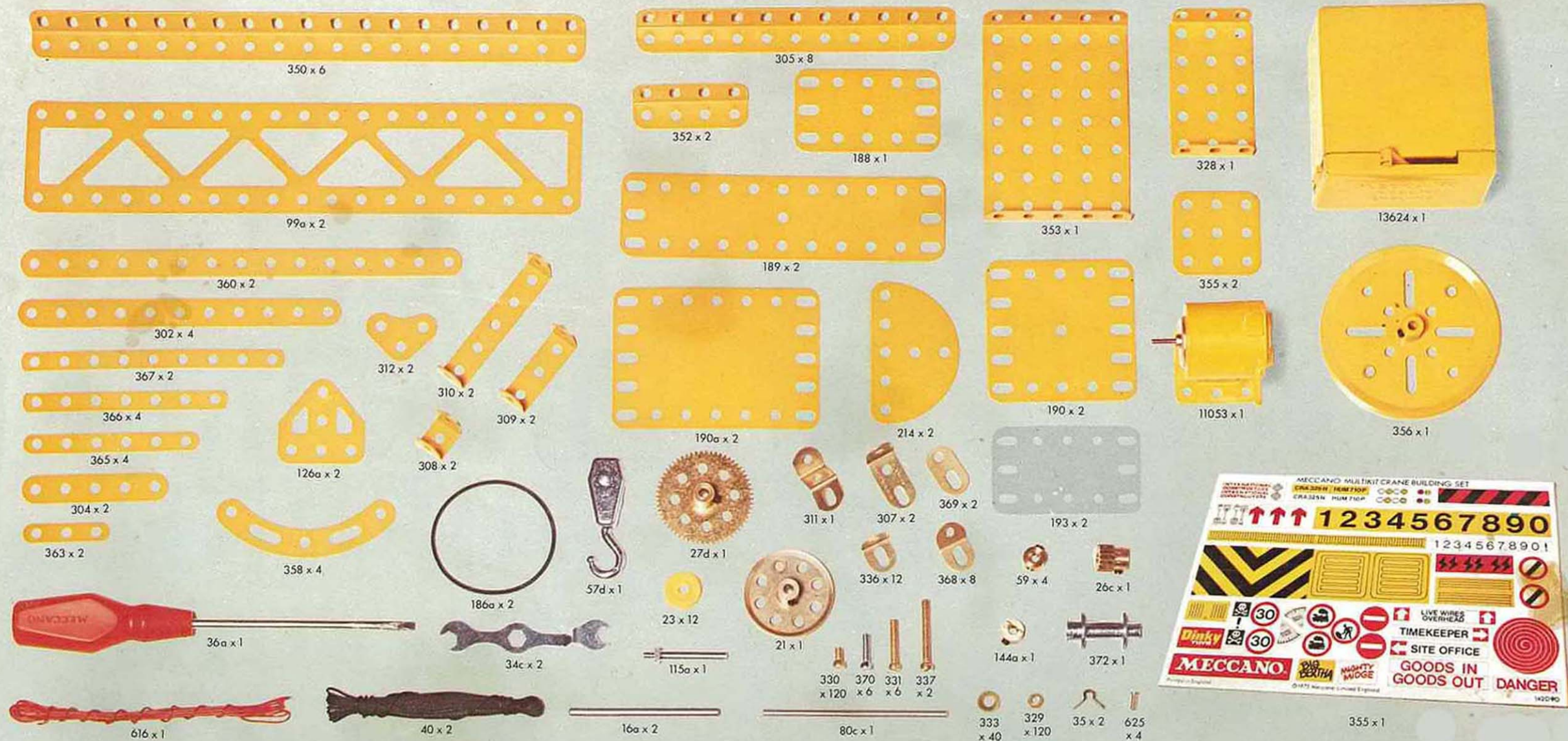


**MECCANO<sup>®</sup>  
MULTIKIT<sup>™</sup>**

**CRANE  
BUILDING  
SET**

BOOK OF MODELS





# Your Electric Motor

**GB**

The Meccano Multikit Crane Building Set includes a 1½–4½ volt DC electric motor (A), a battery box (B), two coils of connecting wire (C), and four 'plugs' (D).

All you need, to bring power to your models, are two HP2 batteries, or their equivalent.

This is how to connect up the motor:

1. Open the battery box by squeezing the sides of the box. This allows the lid to be removed.
2. Insert the batteries making sure they are the right way round. (The marking on the base of the box shows you how they should go in.) Refit lid.
3. Take the two lengths of wire and remove a short length of insulation at each end to leave about ½" of bare wire.
4. Insert a bared wire end into each of the four 'plugs' and bend the wire back over the 'plug'.
5. Insert one 'plug' and its wire into each of the holes on the end plate of the motor and the two 'plugs' at the other end of the wires into the holes on one side or the other of the battery box lid.
6. Switch 'on' at the battery box and at the motor, and

the motor will start. Moving either switch in the opposite direction will reverse the drive.

**F**

Le jeu de construction de la grue Multikit Meccano comprend un moteur électrique (A) en courant continu 1½–4½ volt, un boîtier de pile (B), deux bobines de fil électrique (C), et quatre "fiches" (D).

Pour électrifier vos modèles, il suffit de deux piles de HP2 ou l'équivalent.

Voilà ce qu'il faut faire pour brancher le moteur:

1. Ouvrir le boîtier de pile en appuyant sur les deux côtés de la boîte. Ceci permet d'enlever le couvercle.
2. Mettre en place les piles en faisant attention à ce qu'elles soient dans le bon sens. (Les marques qui se trouvent au fond du boîtier indiquent la position correcte.) Remettre le couvercle.
3. Prendre les deux longueurs de fil électrique et enlever un bout d'isolant de chaque côté pour laisser environ un centimètre de fil dénudé.

4. Introduire un bout de fil dénudé dans chacune des quatre "fiches" et le retourner sur la "fiche".
5. Introduire une "fiche" avec son fil dans chacun des trous prévus sur la plaque d'extrémité du moteur et les deux "fiches" accouplées à l'autre bout des fils dans les trous prévus d'un côté ou de l'autre du couvercle du boîtier de pile.
6. Mettre le commutateur sur "marche" du côté du boîtier de pile et du côté du moteur, et le moteur se mettra en marche. En tournant n'importe lequel des commutateurs dans l'autre sens, on change de sens de marche.

**N**

Meccano Multikit Crane byggesettet omfatter en elektrisk likestrøms-motor på 1½–4½ volt (A), en batterikasse (B), to spoler av forbindelsesledning (C) og fire "pluggere" (B).

Alt du trenger for å drive modellene dine er to HP2 batterier eller tilsvarende.

Slik kopler du motoren til:

1. Først åpner du batterikassen ved å trykke sammen sidene på kassen. Lokket kan nå tas av.
2. Legg batteriene i, pass på at de ligger riktig vei. (I bunnen av batterikassen kan du se inntegnet hvilken vei batteriene skal ligge.) Sett lokket på igjen.
3. Ta de to ledningene og skrap litt av isolasjonen av

hver ende slik at du får en ren ledning på ca. 10–12 mm.

4. Før en slik blank ledningsende inn i hver av de fire "pluggene" og bøy ledningen tilbake inn over "pluggen".
5. Før en "plugg" og dennes ledning inn i hver av hullene i endeplaten til motoren og de to tilkoblede "pluggene" i den andre enden av ledningene inn i hullene på den ene eller annen side av batterikassens lokk.
6. Slå strømmen på ved batterikassen og ved motoren og motoren vil nå starte. Hvis en av bryterne settes i motsatt stilling vil motoren rotere i motsatt retning.

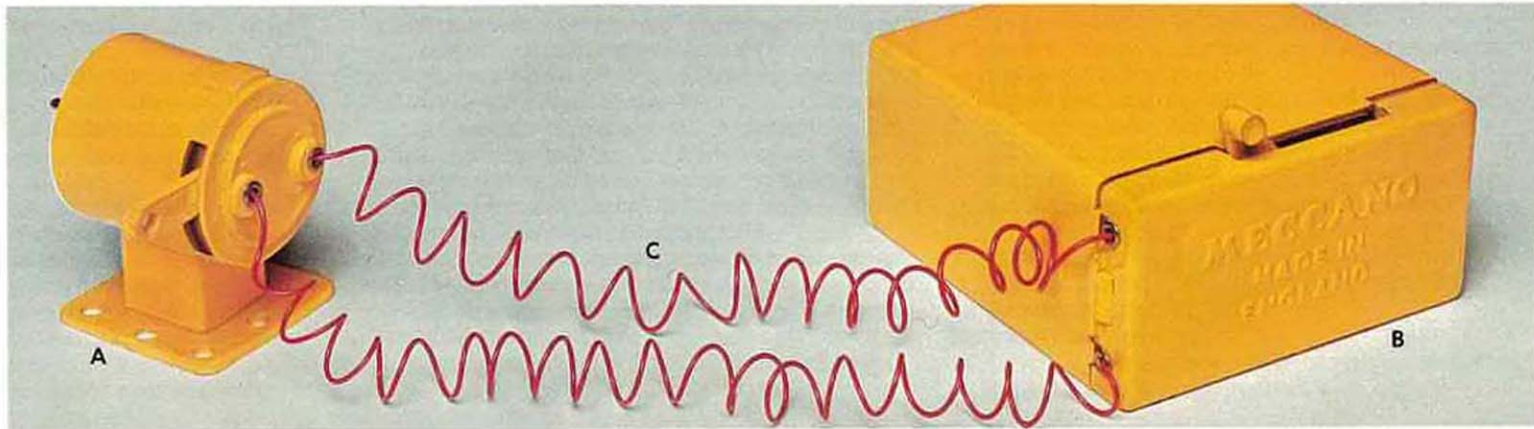
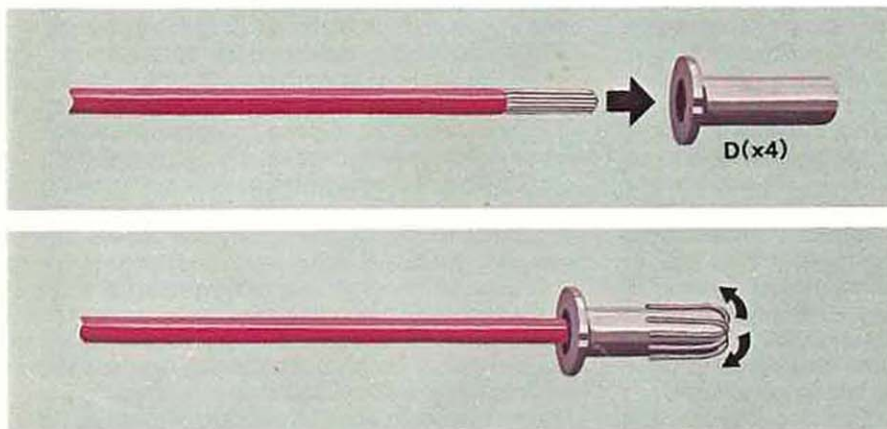
**D**

Der Meccano-Multiki-Crane-Bausatz enthält einen elektrischen Gleichstrommotor von 1,5–4,5 V (A), einen Batteriekasten (B), zwei Spiralen

Anschlußkabel (C) und vier 'Stecker' (D).

Du brauchst für Deine Modelle also nur noch zwei Batterien HP2 oder gleichwertige.

- Anschluß des Motors:
1. Den Batteriekasten öffnen, indem beide Seiten des Kastens gedrückt werden. Der Deckel läßt sich jetzt abnehmen.
  2. Die Batterien einsetzen und darauf achten, daß dies



in der richtigen Richtung erfolgt. (Auf dem Boden des Kastens ist angegeben, wie sie eingesetzt werden.) Deckel wieder aufsetzen.

- An den beiden Kabeln ein kleines Stück der Isolierung an jeder Seite entfernen und etwa 15 mm blanken Draht lassen.
- Ein blankes Drahtende in jeden der vier 'Stecker' stecken und den Draht über den 'Stecker' zurückbiegen.
- Einen 'Stecker' an seinem Draht in jedes der Löcher in der Endplatte des Motors stecken und die beiden verdrahteten 'Stecker' an der anderen Seite der Kabel in die Löcher an einer oder der anderen Seite des Batteriekastendeckels.
- Batteriekasten und Motor auf "Ein" schalten, so daß der Motor läuft. Wenn die Schalter in die andere Richtung gestellt werden, läuft der Antrieb rückwärts.

El motor se conecta del modo siguiente:

- Destapar la caja de pilas, lo que se hace apretando los costados de la misma.
- Instalar las pilas en el sentido correcto. (Según se indica en la base de la caja.) Reinstalar la tapa.
- Pelar los dos extremos de ambos cables, dejando unos 13 mm de alambre desnudo en cada punta.
- Introducir un extremo pelado en cada uno de los cuatro 'enchufes' y doblar el alambre sobre el 'enchufe'.
- Introducir un 'enchufe' y su alambre en cada uno de los dos agujeros que hay en la placa terminal del motor y los dos 'enchufes' del otro extremo de los cables en los agujeros incorporados a un lado u otro de la tapa de la caja de pilas.
- Accionar los interruptores de la caja de pilas y del motor, con lo cual éste se pondrá en marcha. Al pasar un interruptor u otro al lado contrario se invertirá la dirección de giro.

occorrono soltanto due pile HP2 o di tipo equivalente. Ecco come collegare il motorino:

- Aprire la scatola delle pile, premendo sui lati della scatola per togliere il coperchio.
- Inserire le pile, assicurandosi che vengano messe nella posizione giusta. (I contrassegni sul fondo della scatola indicano chiaramente come disporre le pile.) Rimettere il coperchio in posizione.
- Prendere i due tratti di filo, e 'pelare' un trattino dell'isolamento a ciascuna estremità, in modo da lasciare poco più di 1 cm. di filo nudo.
- Inserire un'estremità di filo nudo in ciascuna delle quattro spine, e piegare il filo indietro sulla spina.
- Inserire una spina e il suo filo in ciascuno dei fori della placca terminale del motorino, e le due spine all'altra estremità dei fili nei fori disposti sull'uno o sull'altro lato del coperchio della scatola delle pile.
- Azionare l'interruttore sulla scatola delle pile e sul motorino per avviare il motorino. Spostando l'uno o l'altro interruttore in direzione opposta, si invertirà il senso di marcia del motorino.

'stekkers' (D).

Het enige wat je nodig hebt om je modellen elektrisch te laten werken, zijn twee HP2 batterijen, of gelijksoortige batterijen.

De verbinding van de motor:

- Open de batterijdoos door het indrukken van de kanten van de doos. Hierdoor kan het deksel verwijderd worden.
- Zet de batterijen in, plaats ze in de juiste stand. (Het merkteken op de onderkant van de doos laat zien hoe ze erin moeten.) Breng het deksel terug.
- Neem de twee draden en verwijder een stukje isolatie aan beide einden, zodat ongeveer 1,5 cm onbedekte draad te zien is.
- Steek een onbedekt draadeinde in ieder van de vier 'stekkers' en buig de draad terug over de 'stekker'.
- Steek een 'stekker' met zijn draad in ieder gat op de eindplaat van de motor en de twee afgewerkte 'stekkers' aan het andere einde van de draden in de gaten aan de eene of andere kant van het deksel van de batterijdoos.
- Schakel 'aan' (on) op de batterijdoos en op de motor, en de motor begint te lopen. Door het verschuiven van een van de schakelaars in tegengestelde richting gaat de aandrijving in tegengestelde richting lopen.

E

El conjunto de modelación "Meccano Multikit Crane" comprende un electromotor de c.c. de 1,5-4,5 voltios (A), caja de pilas (B), dos rollos de alambre

de conexión (C) y cuatro 'enchufes' (D).

Todo lo que necesita para impulsar sus modelos son dos pilas HP2 u otro tipo equivalente.

I

La scatola di costruzioni Meccano Multikit Crane comprende un motorino elettrico a CC da 1,5-4,5 Volt (A), una scatola pile (B), due rotoli di filo di collegamento (C), e

quattro spine (D).

Per alimentare la corrente ai vostri modelli

NL

Het Meccano Multikit Kraanbouwset heeft een 1½-4½ volt gelijkstroom elektrische motor, (A), een batterijdoos (B), twee strengen verbindingdraad (C), en vier

## HOW TO USE MECCANO

Please read these instructions carefully before you start to build.

Even if you have never used Meccano before you'll soon find that, with just a little practice, you can design and build almost anything. And the only tools you need are a screwdriver and two spanners which are provided in every set. In case you haven't used these tools before, this is how they work.

The screwdriver is used to turn bolts by putting the

required. W x 2 means that you should use two washers, W x 3 means three washers, and so on.

**COMMENT UTILISER MECCANO.**  
Veuillez lire attentivement cette notice avant de commencer votre montage.

Même si vous n'avez jamais utilisé de Meccano avant, vous vous rendrez vite compte, qu'avec un peu d'expérience vous pourrez inventer et réaliser pratiquement






F

Le premier,  indique que les pièces en question doivent rester mobiles. Le deuxième,  signifie que ces pièces doivent aussi rester mobiles, mais rencontrer quand-même une certaine résistance qui les empêchent de bouger librement, de façon qu'elles restent dans la position où vous voulez les mettre. Le dernier symbole,  indique les points où il faut attacher le cordon.

Enfin, vous remarquerez également un certain nombre de W sur les photographies. Ils indiquent les endroits où il faudra placer une rondelle. W x 2 signifie

støtteplaten eller delen.

Mutre og skruer kan brukes på forskjellige måter etter behov. Disse "skruefestene" er blitt nummerert BF1, BF2 osv., slik at du kan kjenne dem igjen på fotografier. Hvor det er påkrevd med lange skruer vil du se at delnumrene angir de skruene du skal bruke.

Du vil også se disse tegnene   og  og Det første,  betyr at den delen det dreier seg om vil bevege seg fritt. Det andre tegnet,  viser at disse delene vil også bevege seg, men at der vil være en viss motstand slik at delene kan holde seg i en

blade into the bolt's slot and turning it. To tighten the bolt, you turn the screwdriver to the right; to undo the bolt you turn it the other way.

Nuts fit onto the ends of bolts. Use your fingers to get the nut onto the end of the bolt and then use the screwdriver to tighten the bolt. To make sure the bolt is really firm, hold the nut with the spanner while you tighten the bolt.

You will sometimes need certain standard joints called Basic Constructions. Numbered BC1, BC2, etc., the ones shown here will help you build your models more easily.




**BC1** This joins two strips together so that they can move. It's one kind of locknut. You push a bolt through the strips, thread one nut onto the bolt (but don't tighten it so much that the strips can't move), thread on the second nut and tighten it against the first, using the two spanners provided.




**BC2** This is another kind of locknut. Push the bolt through one of the strips and thread on the first nut. Then push the second strip over the end of the bolt and thread on the second nut. Tighten the nuts against both sides of the second strip so that the first strip moves freely on the bolt.

**BC4** This is a way of joining two strips together.

**BC15** This is a collar used to form a bearing or a support for an axle. The bolt must not obstruct the centre hole carrying the axle and the nut should be locked against the supporting plate or strip.

Nuts and bolts can be used in different ways for different jobs. These 'bolt fixtures' have been numbered BF1, BF2 etc., so that you can recognise them in the photographs. When longer bolts are required you will see that their sizes have been indicated.

You will also see these symbols   and .

The first, , indicates that the parts concerned will move freely. The second, , shows that these parts will also move, but that there will be some resistance to totally free movement, allowing the parts to stay in any position you want. The last symbol, , indicates the points where the cord should be tied.

Finally, you will see a number of 'W's' marked on the photographs. These show where washers are

n'importe quoi. Tout ce dont vous avez besoin, c'est d'un tournevis et de deux clés à écrous que vous trouverez dans chaque jeu. Si vous n'avez jamais utilisés ces outils auparavant, voici comment s'en servir:

Le tournevis sert à faire tourner les boulons: on place sa lame dans la fente du boulon et on tourne. Pour serrer le boulon, il faut tourner de gauche à droite; pour le desserrer, de droite à gauche.

Les écrous s'ajustent sur l'extrémité des boulons. Placez avec vos doigts l'écrou sur l'extrémité du boulon, et serrez le boulon avec le tournevis. Pour vous assurer que le boulon est vraiment bien serré, maintenez l'écrou avec la clé pendant que vous serrez le boulon.

Vous aurez parfois besoin de certains joints standards nommés éléments de base et numérotés BC1, BC2 etc. . . . Ceux qui sont présentés ici vous faciliteront le montage de vos modèles.




**BC1** Ceci permet de joindre deux pièces de façon qu'elles restent mobiles. C'est une sorte de contre-écrou. Glissez un boulon dans les pièces, vissez un écrou au boulon (mais sans serrer pour ne pas bloquer les pièces), visser le deuxième boulon et bloquez-le contre le premier en utilisant les deux clés fournies.

**BC2** C'est un autre type de contre-écrou. Glissez le boulon dans l'une des pièces et vissez sur le premier écrou. Puis glissez la deuxième pièce sur l'extrémité du boulon et vissez le deuxième écrou. Serrez les écrous des deux côtés de la seconde pièce de façon que la première puisse tourner autour du boulon.

**BC4** C'est une façon d'assembler deux pièces.

**BC15** Ceci est un collier qui sert de palier ou de support à un arbre. Le boulon ne doit bloquer le trou central qui supporte l'arbre, et l'écrou doit être serré contre la plaque ou pièce de support.

Il y a plusieurs façons de se servir des boulons et écrous selon le résultat que l'on veut obtenir. Ces divers "montages de boulons" ont été numérotés BF1, BF2 . . . de façon que vous puissiez les identifier facilement sur les photographies. Lorsque vous avez besoin de boulons plus longs, il faut vous reporter à leur numéro de pièce qui indique celui qui convient.

Vous remarquerez également les symboles , , et .

que vous devez mettre deux rondelles, W x 3 trois rondelles etc. . . .

## SLIK BYGGER DU MED MECCANO

Les nøye gjennom disse anvisningene før du begynner å bygge.

Selv om du aldri har brukt Meccano før så vil du snart oppdage at du kan konstruere og bygge nesten hva som helst, etter bare litt øvelse. Og alt du trenger av verktøy er

en skrutrekker og to skrunøkler som følger med hvert sett. I tilfelle av at du ikke har brukt slikt verktøy før, så skal vi fortelle deg hvordan det gjøres.

Skrutrekkeren brukes til å dreie skruene med ved at du setter bladet inn i sporet i skruhodet og så dreier den rundt. For å skru en skru inn dreier du skrutrekkeren med urviserne, skruen løsnes ved å dreie skrutrekkeren mot urviserne.

Mutrene settes på enden av skruene. Bruk først fingrene for å sette mutteren på, og så skrutrekkeren for å trekke skruen godt til. Det er lurt å holde mutteren med skrunøkkel samtidig som du trekker til skruen, da sitter det hele godt fast.

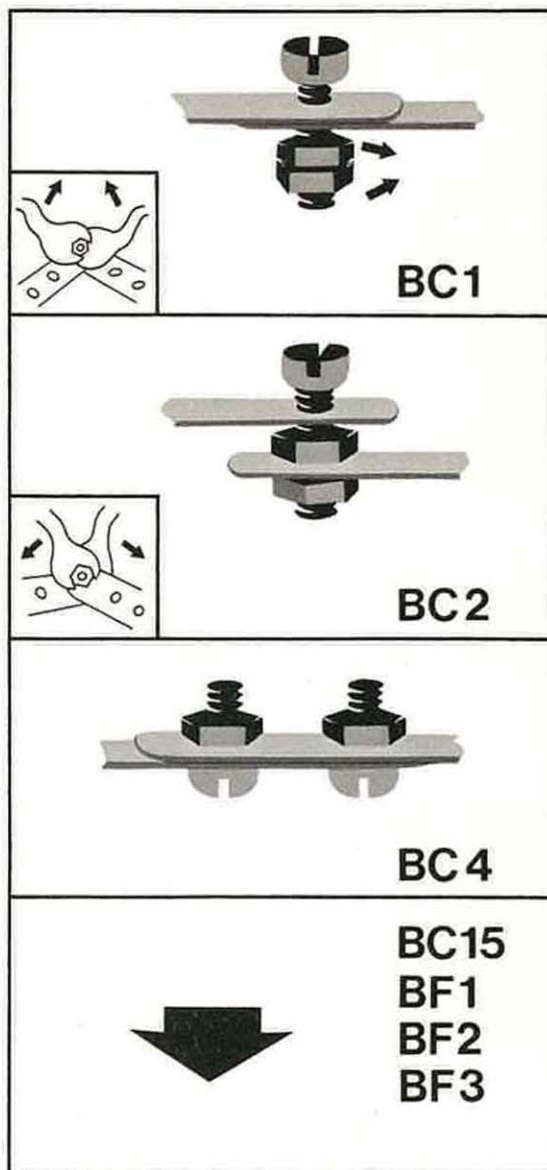
Av og til kan du trenge visse standarddeler som kalles Basic Constructions (grunnleggende deler). Disse er nummerert BC1, BC2 osv. De som er vist her gjør det lettere for deg å bygge modellene.


**BC1** Denne forbinder to deler slik at de kan bevege seg. Det er en slags låsemutter. Du skyver en skru gjennom delene, trer den ene mutteren inn på skruen (men trekk ikke så meget til at delene ikke kan bevege seg fritt), tre så den andre mutteren på og trekk denne til mot den første ved hjelp av de to skrunøkklene.

**BC2** Dette er en annen slags låsemutter. Skyv skruen gjennom en av delene og sett den første mutteren på skruen. Skyv så del nr. to inn over enden av skruen og sett den andre mutteren på. Trekk så mutrene til mot begge sider av denne siste delen slik at den første delen beveger seg fritt om skruen.

**BC4** Dette er en måte å skjote to deler sammen på.

**BC15** Dette er en krave som brukes til å danne et lager eller en støtte for en aksel. Skruen må ikke på noen måte stoppe til senterhullet som akselen løper gjennom, og mutteren må trekkes godt til mot



hvilken som helst stilling du ønsker. Det siste tegnet,  angir de punktene hvor tråden skal knyttes. Endelig vil du se en del "W" merket av på fotografiene. Disse viser hvor du trenger skiver (pakninger). W x 2 betyr at du må bruke to slike skiver, W x 3 betyr tre skiver osv.

**SO VERWENDET MAN MECCANO**  
**Bitte diese Anleitung vor Baubeginn sorgfältig lesen.**

**D** Selbst wenn Du Meccano noch nie benutzt hast, stellst Du schnell fest, daß man wenig Übung braucht. Du kannst fast alles konstruieren und bauen. Du brauchst nur einen Schraubenzieher und zwei Schraubenschlüssel die jedem Satz beiliegen. Wenn Du diese Werkzeuge noch nicht kennst, setzt Du sie wie folgt ein:

Mit dem Schraubenzieher zieht man Schrauben an, indem man die Spitze in den Schlitz der Schraube steckt und sie dreht. Beim Anziehen dreht man den Schraubenzieher nach rechts, zum Lösen nach links.

Die Muttern werden auf die Schrauben gedreht. Man dreht die Mutter mit der Hand auf die Schraube und benutzt dann den Schraubenzieher, um die Schraube anzuziehen. Damit die Schraube wirklich sicher sitzt, hält man die Mutter mit dem Schlüssel fest, während die Schraube angezogen wird.

Manchmal braucht man bestimmte Verbindungen, die man Grundkonstruktionen nennt. Diese tragen die Nummern BC1, BC2, usw. Die hier gezeigten helfen Dir, die Modelle leicht zusammenzustellen.

**BC1** Hierbei werden zwei Streifen zusammengefügt, so daß sie sich bewegen können, also eine Art Knebelgriff. Du steckst eine Schraube durch die Streifen und drehst eine Mutter auf die Schraube (aber nicht so stark anziehen, daß sich die Streifen nicht bewegen können). Dann drehst Du eine zweite Mutter und ziehst sie gegen die erste an, wozu Du die beiden beigegefügt Schraubenschlüssel verwendest.

**BC2** Hierbei handelt es sich um einen anderen Knebelgriff. Du steckst die Schraube durch einen der Streifen und drehst die erste Mutter auf. Dann setzt Du den zweiten Streifen auf das Ende der Schraube und drehst die zweite Mutter auf. Die Muttern werden

hacia la derecha para apretar el tornillo, o en el sentido contrario para aflojarlo. Las tuercas se instalan con los dedos en los extremos de los tornillos, y después se aprietan éstos con el destornillador; sujete la tuerca con la llave mientras se apriete el tornillo, para que éste quede bien firme.

A veces se necesitarán unas juntas estándar que se llaman Construcciones Básicas, numeradas BC1, BC2, etc. Las que figuran aquí le ayudarán a construir sus modelos más fácilmente.

**BC1** Esta pieza es una especie de contratuerca que permite unir dos tiras de manera que puedan moverse. A través de las tiras se introduce un tornillo y se le enrosca una tuerca (pero sin apretarla hasta tal punto que no puedan moverse las tiras); enrosque la segunda tuerca y apriétela contra la primera, empleando las dos llaves incluidas en el suministro.

**BC2** Esta es otra clase de contratuerca. Introduzca el tornillo por una de las tiras y enrósquele la primera tuerca. A continuación, introduzca la segunda tira sobre el extremo del tornillo y enrosque la segunda tuerca. Apriete las tuercas contra los dos lados de la segunda tira de modo que la primera pueda moverse libremente sobre el tornillo.

**BC4** Esta pieza se emplea para unir dos tiras. **BC15** Este es un collarín que se emplea para formar un cojinete o soporte para un eje. El tornillo no debe obstruir el agujero central en el que va introducido el eje, y la tuerca se debe apretar sólidamente contra la tira o placa de apoyo.

Las tuercas y tornillos se pueden utilizar en distintos modos para distintas operaciones. A estos 'dispositivos de sujeción' se les han dado los números BF1, BF2, etc., para que puedan identificarse en las fotografías. Si se necesitan tornillos más largos, basta consultar los números de pieza para determinar el tipo correcto a emplear.




También se verán los símbolos ,  y . El primero, , indica que las piezas a que se refiere podrán moverse libremente. El segundo, , indica que estas piezas también se moverán, pero con cierta restricción del movimiento libre, lo que permite que las piezas permanezcan en el lugar que se desee. El último símbolo, , indica los puntos en que debe

striscia sull'estremità del bullone e avvitare il secondo dado. Serrare i dadi contro entrambi i lati della seconda striscia, in maniera che la prima striscia si muova liberamente sul bullone.

**BC4** Questo è un metodo per unire insieme due strisce.

**BC15** Questo è un collarino usato per formare un cuscinetto o supporto per un asse. Il bullone non dovrà ostruire il foro centrale di supporto dell'asse, ed il dado dovrà essere bloccato contro la piastra o striscia di supporto.

I dadi ed i bulloni possono venire usati in varie maniere per diverse funzioni. Questi 'fissaggi a bullone' sono stati numerati BF1, BF2, ecc., in maniera da poterli identificare facilmente nelle fotografie. Quando occorre usare dei bulloni più lunghi, potrete individuare il loro numero di pezzo per usare il bullone adatto.


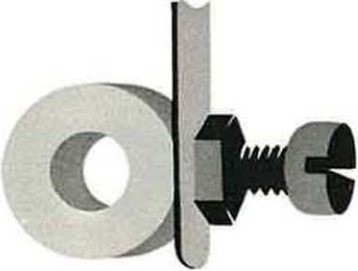
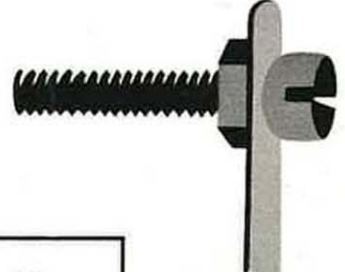
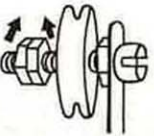
Noterete anche questi simboli: ,  e . Il primo, , significa che le parti indicate si muovono liberamente. Il secondo, , indica che anche queste parti si muovono, ma che vi sarà una certa resistenza contro il movimento completamente libero, consentendo in tal modo che le parti stesse rimangano in una qualsiasi posizione desiderata. L'ultimo simbolo, , indica i punti in cui si dovrà legare il cordoncino.

Infine, sulle fotografie vedrete marcata una serie di 'W'. Questi contrassegni indicano dove occorre montare delle rondelle. Il segno W x 2 significa che si devono usare due rondelle, W x 3 significa tre rondelle, e così via.

**HOE GEBRUIK JE MECCANO**  
**Deze instructies zorgvuldig lezen voordat je begint te bouwen.**

**NL** Zelfs al is Meccano je volkomen onbekend, met een klein beetje oefenen zul je zien dat je al gauw alles zelf kunt bouwen en ontwerpen. En de enige gereedschappen die je nodig hebt zijn een schroevendraaier en twee moersleutels, die je in ieder set zult vinden. Als je deze gereedschappen nog nooit gebruikt hebt, ga je als volgt te werk.

De schroevendraaier wordt gebruikt voor het aandraaien van schroeven. Je steekt de scherpe kant in de gleuf van de schroef en dan draai je. Om een schroef




	<p>BC1 BC2 BC4</p>
	<p>BC15</p>
	<p>BF1</p>
	

an beiden Seiten des zweiten Streifens festgezogen, so daß sich der erste Streifen frei um die Schraube bewegen kann.

**BC4** Hierbei handelt es sich um eine Verbindung von zwei Streifen.

**BC15** Hierbei handelt es sich um eine Manschette, die ein Lager oder eine Auflage für eine Achse bildet. Die Schraube darf das Mittelloch, das die Achse aufnimmt, nicht behindern, und die Mutter ist fest am Halteblech oder Streifen anzuziehen.

Schrauben und Muttern können für verschiedene Arbeiten verschieden eingesetzt werden. Diese "Verschraubungen" wurden mit BF1, BF2, usw. bezeichnet, so daß Du sie auf den Fotos erkennen kannst. Wenn längere Schrauben erforderlich sind, werden die Teilenummern angegeben, so daß Du genau weißt, welches zu benutzen ist.

Du findest ferner die Symbole , , und .

Das erste Symbol, , gibt an, daß sich die entsprechenden Teile frei bewegen. Das zweite, , gibt an, daß sich diese Teile ebenfalls bewegen, daß jedoch ein gewisser Widerstand bei der völlig freien Bewegung besteht, so daß die Teile in der Position bleiben, die Du wünschst. Das letzte Symbol, , gibt die Stellen an, wo die Kordel anzuknüpfen ist.

Schließlich siehst Du auf den Fotos mehrere "W". Diese bedeuten, daß Unterlegscheiben erforderlich sind. W x 2 bedeutet, daß Du zwei Unterlegscheiben benutzen mußt, W x 3 bedeutet 3 Unterlegscheiben usw.

## MODO DE EMPLEAR EL MECCANO.

**Lea detenidamente estas instrucciones antes de empezar a modelar.**

**E** Aunque jamás haya utilizado un Meccano, pronto encontrará que, con un poco de práctica, sabrá idear y realizar toda clase de modelos, necesitando como únicas herramientas un destornillador y dos llaves, que se suministran con cada conjunto. Por si nunca ha empleado estas herramientas, le damos las siguientes indicaciones.

Con el destornillador se aprietan o se aflojan los tornillos. Introduzca la punta del destornillador en la ranura que hay en la cabeza del tornillo, y torcerlo,

atarse la cuerda.

Por último, observará que en varias partes de las fotografías aparece la letra 'W'. Esta indica los puntos en que se necesitan arandelas. W x 2 significa que se deben emplear dos arandelas, W x 3 significa tres arandelas, etc.

## ISTRUZIONI PER L'USO DEL MECCANO

**Leggere attentamente queste istruzioni prima di iniziare le costruzioni.**

**I** Anche se non avete mai usato il Meccano prima d'ora, scoprirete che, con un po' di pratica, potrete progettare e costruire quasi ogni cosa. Ed i soli attrezzi che vi occorrono sono un cacciavite e due chiavi, che vengono forniti con ogni scatola. Se per caso non avete mai usato questi attrezzi, ecco alcuni consigli su come impiegarli.

Il cacciavite si usa per avvitare i bulloni, inserendo la lama nella scanalatura del bullone e ruotandola. Per stringere il bullone, girare il cacciavite verso destra; per allentare il bullone, girare il cacciavite in senso inverso.

I dadi vengono montati sull'estremità dei bulloni. Inserire con le dita il dado sull'estremità del bullone, e quindi usare il cacciavite per stringere il bullone. Per assicurarsi che il bullone sia effettivamente saldo, trattenere il dado con la chiave mentre si serra il bullone.

A volte vi potranno occorrere dei giunti o connessioni di tipo standard, chiamati 'Costruzioni di base' e numerati BC1, BC2, ecc. I giunti qui illustrati vi aiuteranno a costruire i vostri modelli con maggior facilità.

**BC1** Con questo giunto si uniscono due strisce in modo da consentirne il movimento. È un tipo di giunto a controdado. Si inserisce un bullone attraverso le strisce, si avvita un dado sul bullone (ma senza stringerlo eccessivamente, per non impedire il movimento delle strisce), si avvita il secondo dado e lo si serra control il primo, usando le due chiavi fornite con la scatola.

**BC2** Anche questo è un giunto a controdado. Inserire il bullone attraverso una delle strisce, e avvitare il primo dado. Inserire quindi la seconda

aan te draaien draai je de schroevendraaier naar rechts, om de schroef los te draaien, draai je naar links.

Moeren passen op de einden van de bouten. Met je vingers plaats je de moer op het einde van de bout en dan gebruik je de schroevendraaier om de bout aan te draaien. Om er zeker van te zijn dat de bout stevig vast zit, houd je de moer met de moersleutel vast, terwijl je de bout aandraait.

Soms heb je bepaalde standaard verbindingstukken nodig. Ze heten 'Basic Constructions'. Ze zijn genummerd BC1, BC2, enz. Met de hier geïllustreerde exemplaren is het gemakkelijk je modellen te bouwen.

**BC1** Dit verbindt twee strips aan elkaar zodat ze kunnen bewegen. Het is een soort borgmoer. Je duwt een bout door de strips, zet een moer op de bout (maar niet te vast aandraaien zodat de strips niet kunnen bewegen), zet een tweede moer op en draai deze vast tegen de eerste aan, gebruik de twee verstrekte moersleutels.


**BC2** Dit is een ander soort borgmoer. Duw de bout door een van de strips en zet de eerste moer op. Duw dan de tweede strip over het einde van de bout en zet de tweede moer op. De moeren aan beide kanten van de tweede strip aandraaien zodat de eerste strip zich vrij op de bout kan bewegen.

**BC4** Dit is een manier om twee strips aan elkaar te verbinden.

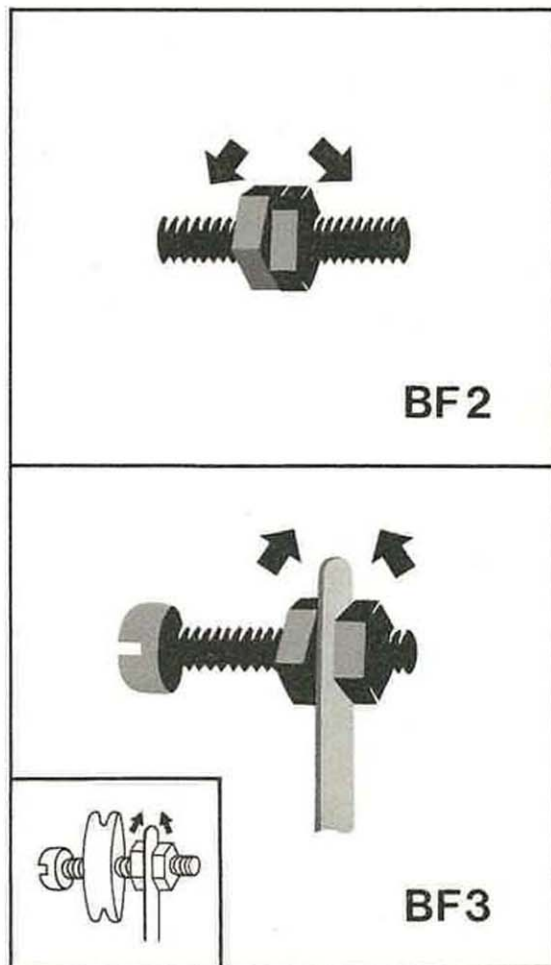
**BC15** Dit is een kraag voor het vormen van een lager of ondersteuning voor een as. De bout mag niet het middengat versperren waar de as doorheen loopt en de moer moet tegen de steunplaat of strip vastgedraaid worden.

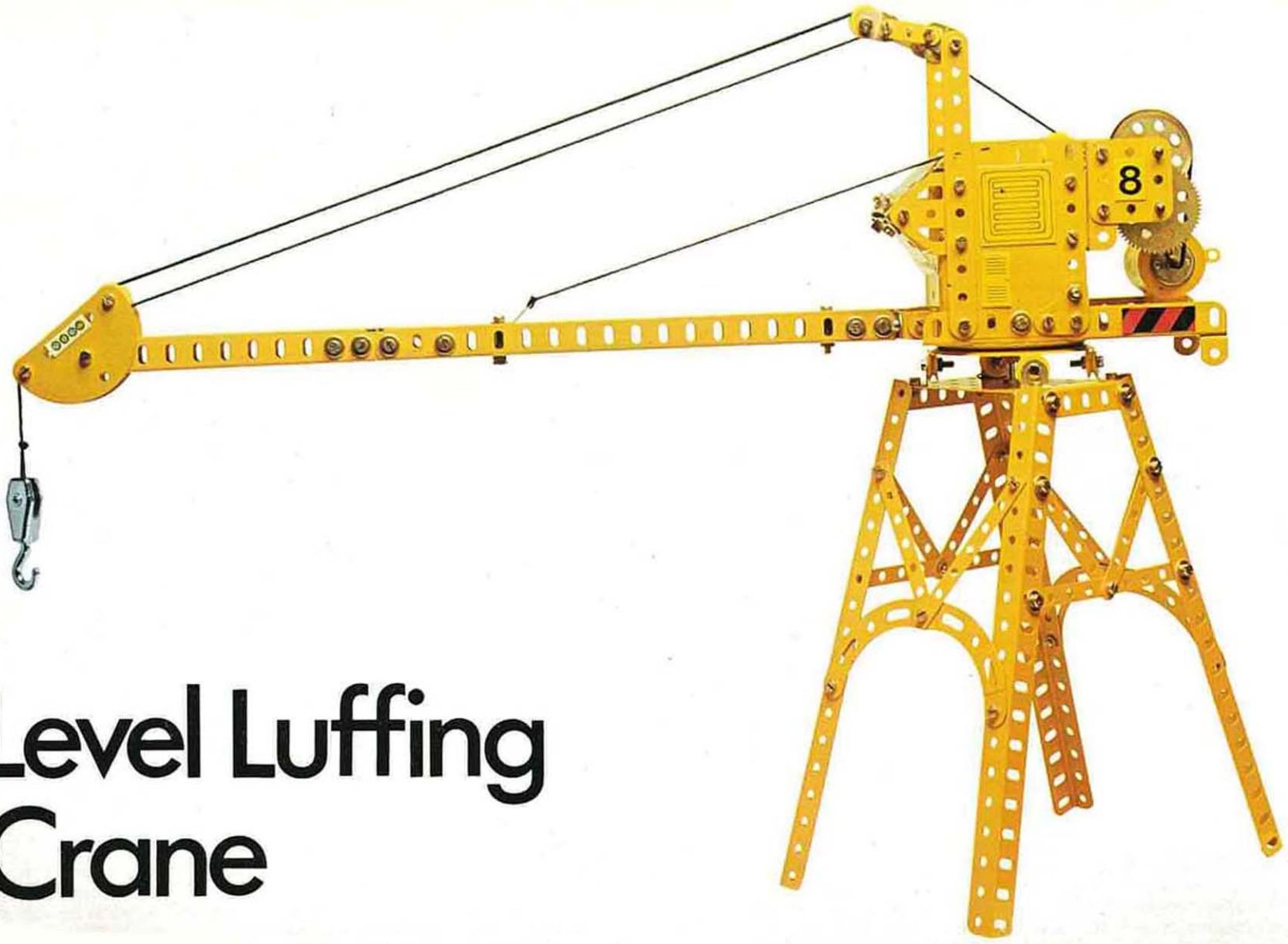
Moeren en bouten kunnen op diverse manieren voor verschillende werkjes gebruikt worden. Deze 'boutonderdelen' zijn genummerd BF1, BF2, enz., zodat je ze in de foto's kunt herkennen. Als er langere bouten nodig zijn, kun je hun onderdeelnummers zien die aangeven welke je moet gebruiken.

Je zult ook de symbolen , , en  zien. De eerste  duidt aan dat de betreffende delen vrij bewegen. De tweede  toont aan dat deze delen wel bewegen, maar dat er enige weerstand is tegen een volkomen vrije beweging, waardoor de delen in iedere willekeurige stand blijven die je wenst. Het

laatste symbool  geeft aan de diverse punten waar het koord geknoopt moet worden.

En tenslotte zie je ook nog een aantal 'W'en op de foto's. Deze duiden aan waar onderlegplaatjes nodig zijn. W x 2 betekent dat je twee onderlegplaatjes moet gebruiken, W x 3 betekent drie onderlegplaatjes, enz.

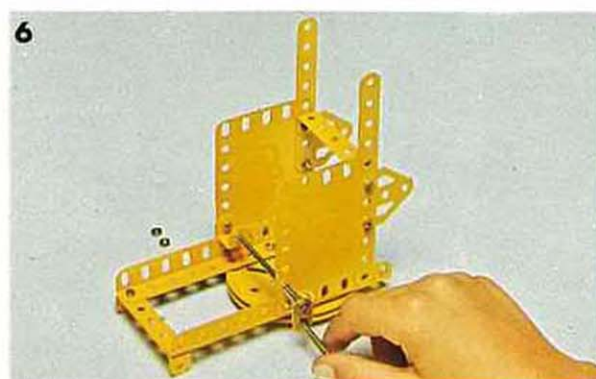
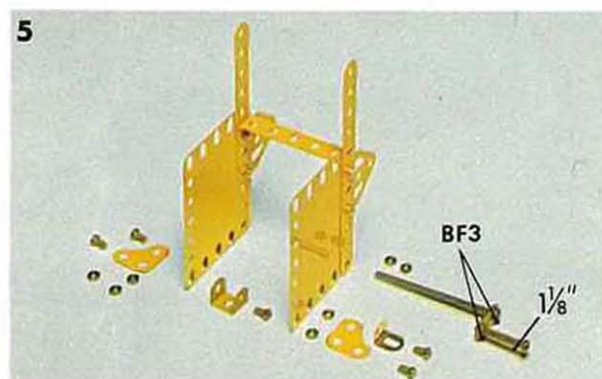
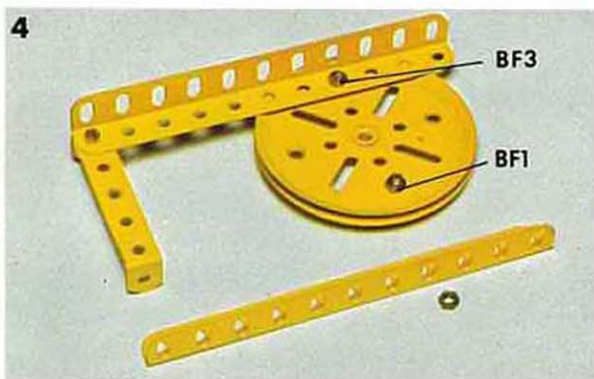
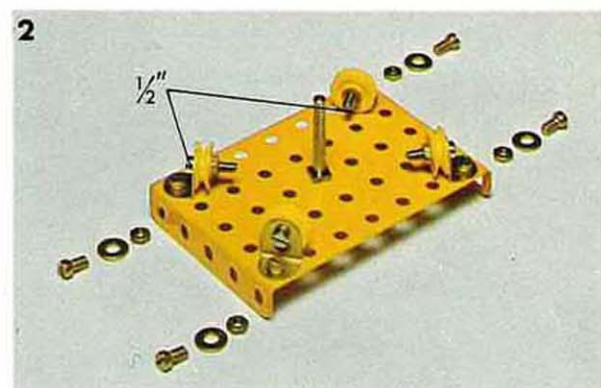
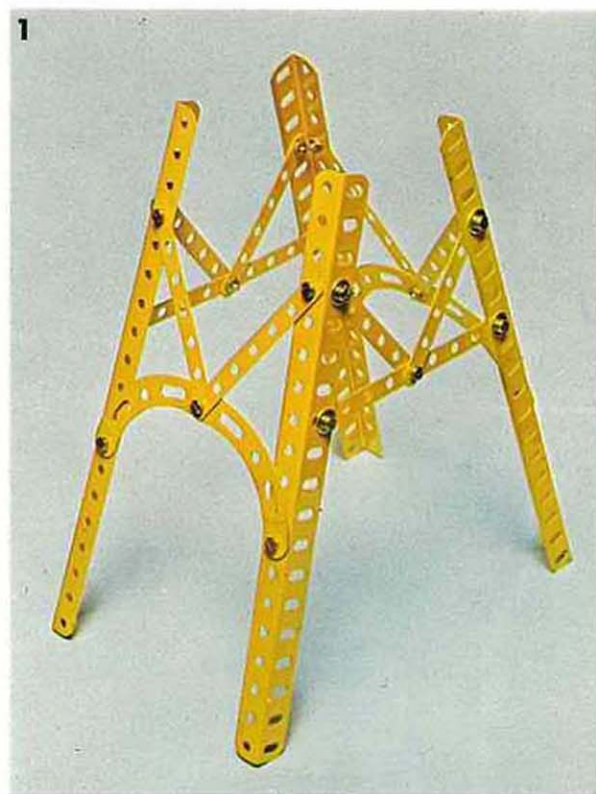
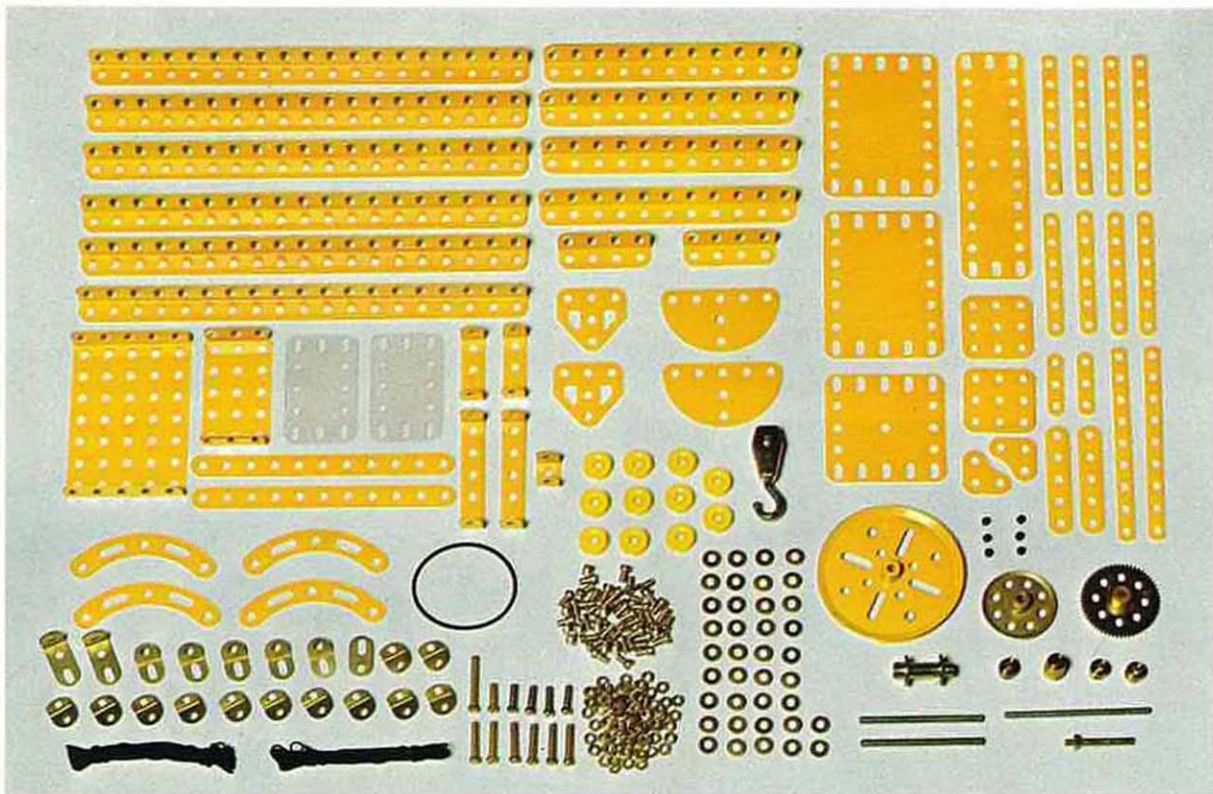


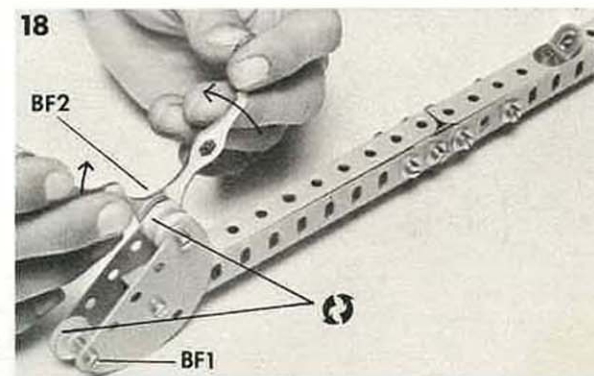
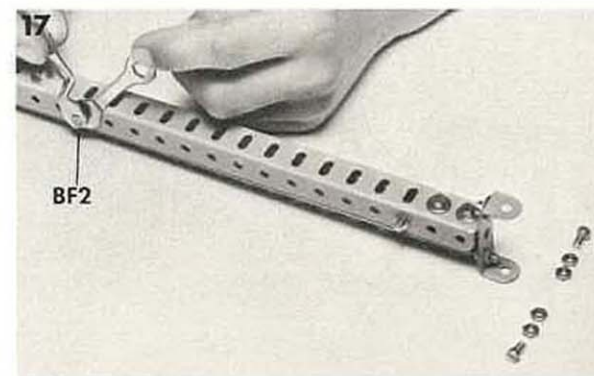
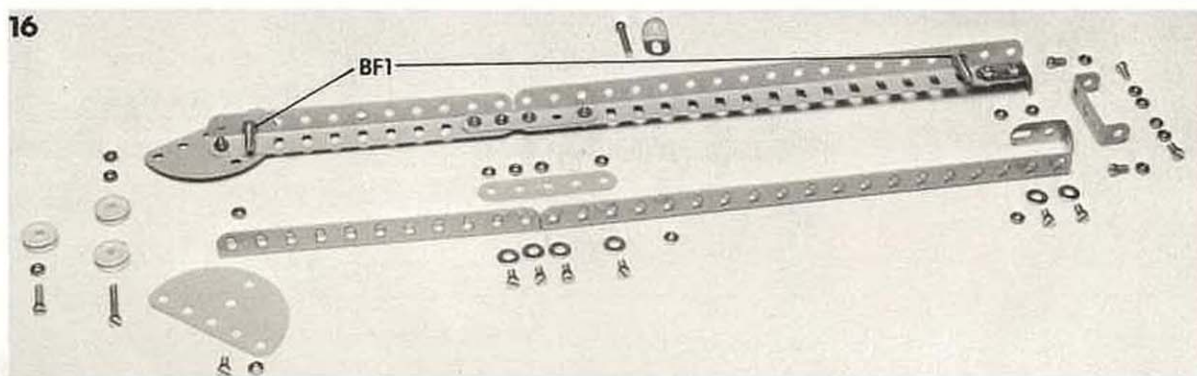
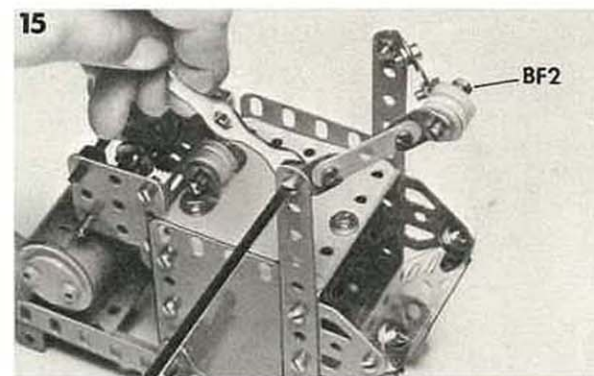
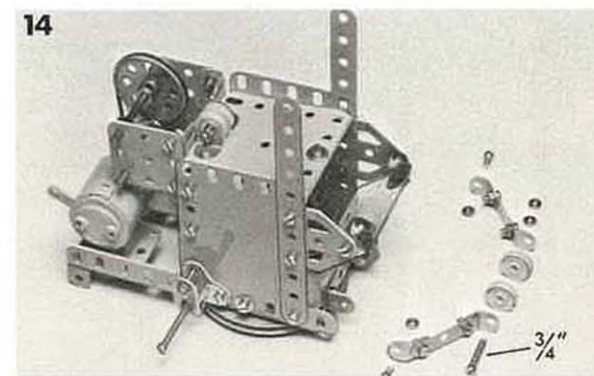
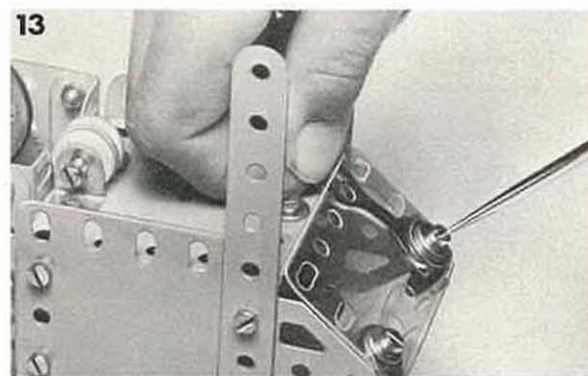
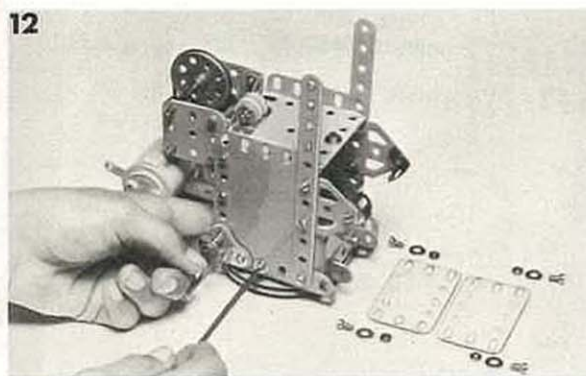
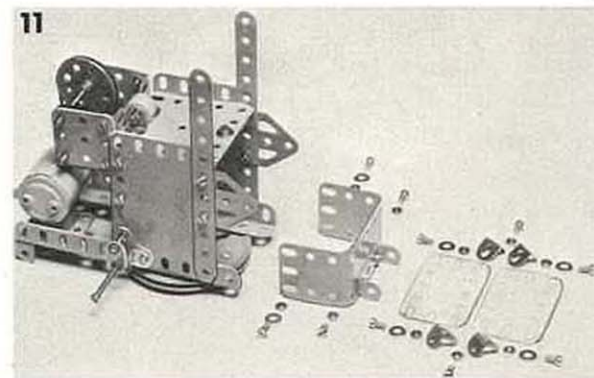
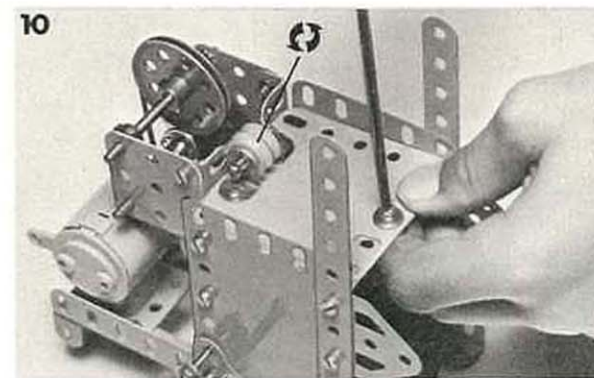
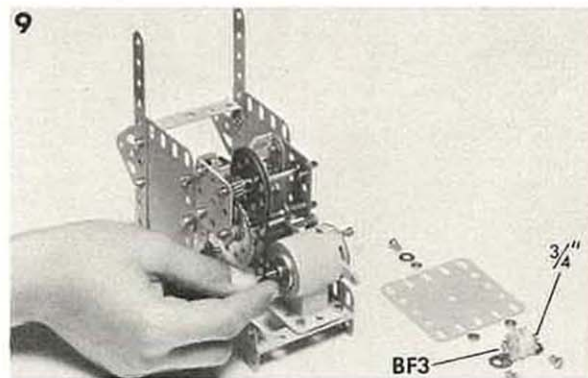
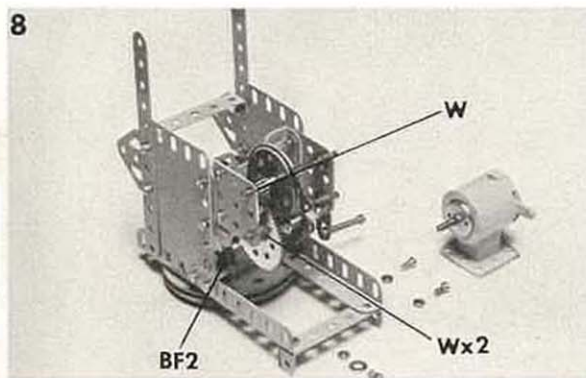


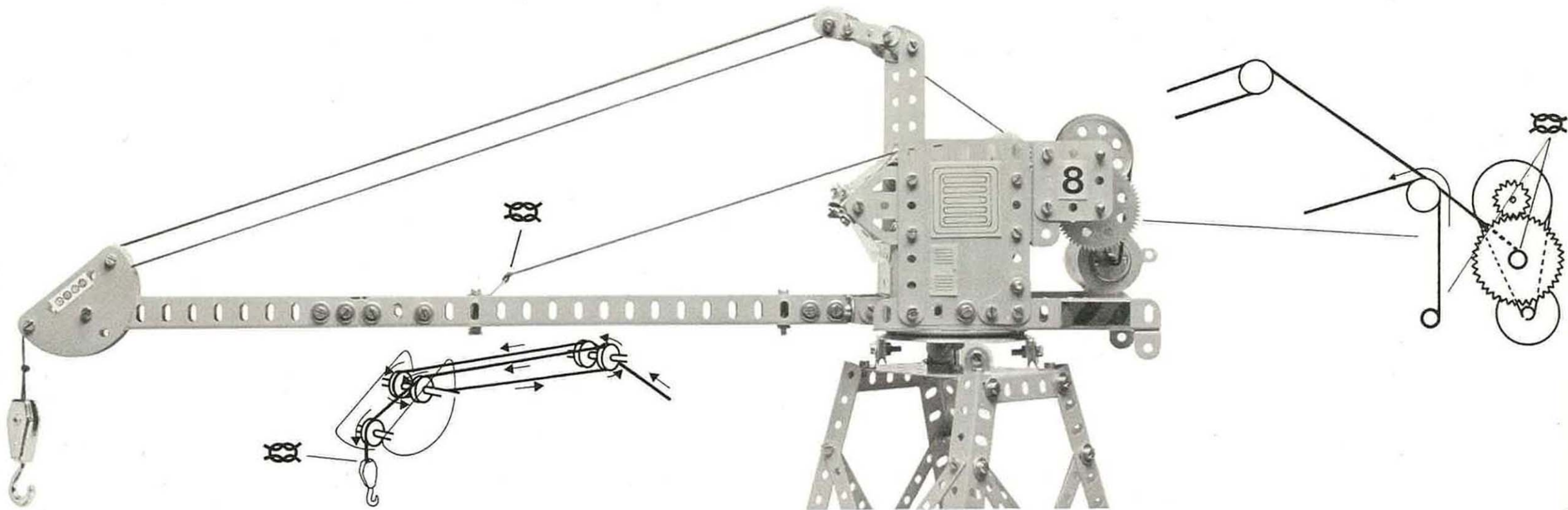
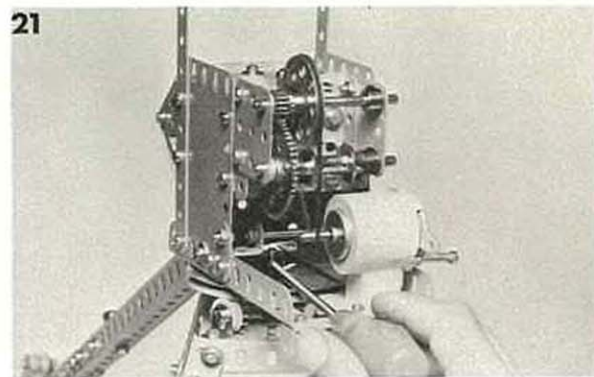
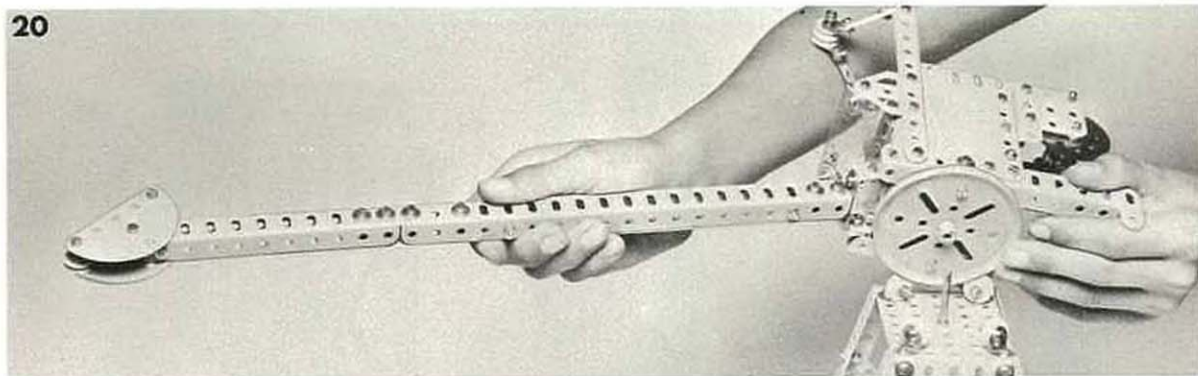
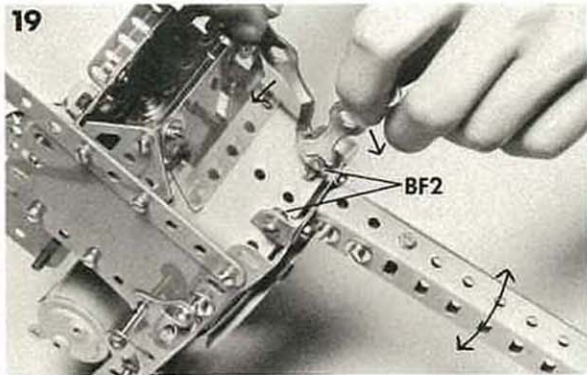
**Level Luffing  
Crane**





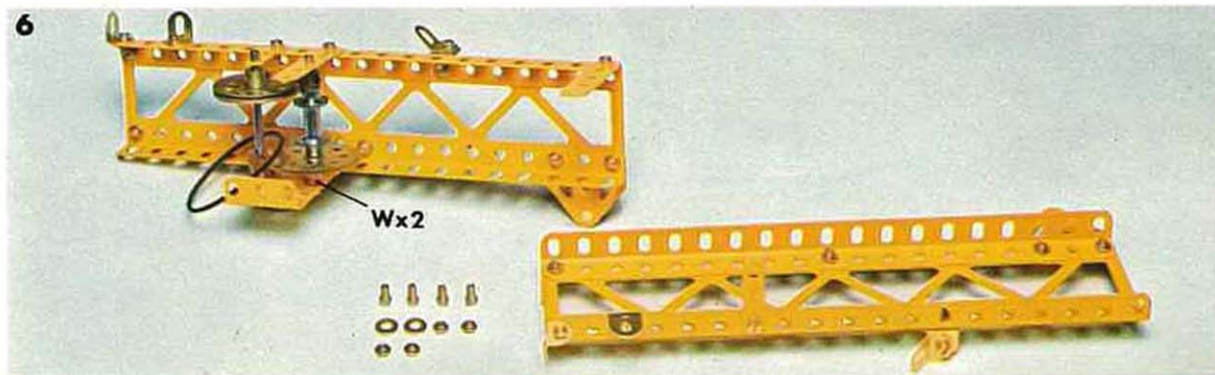
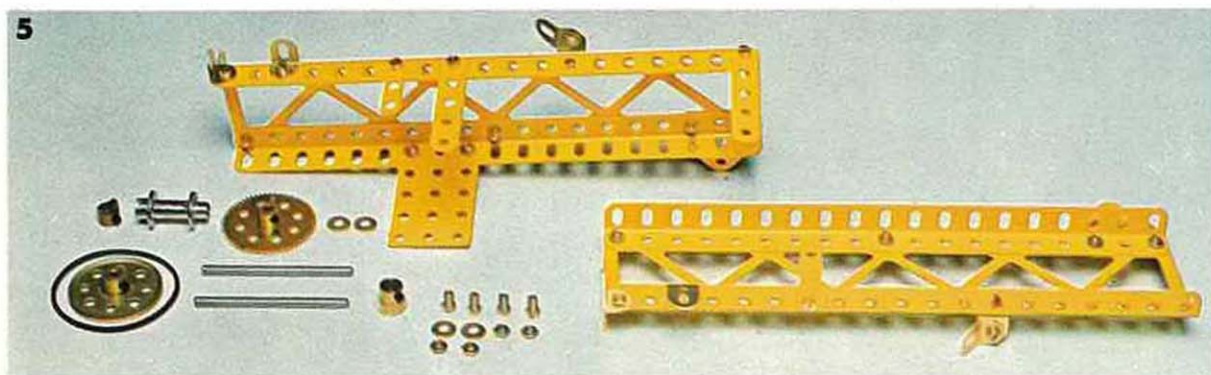
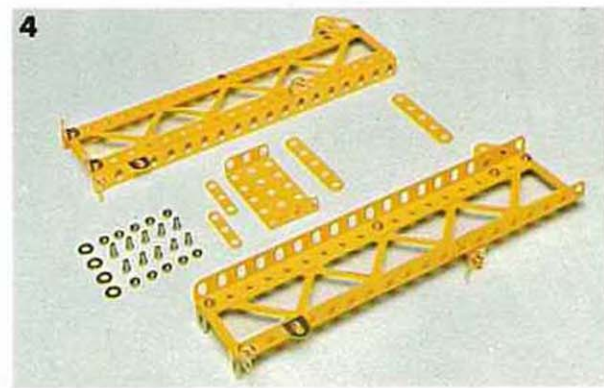
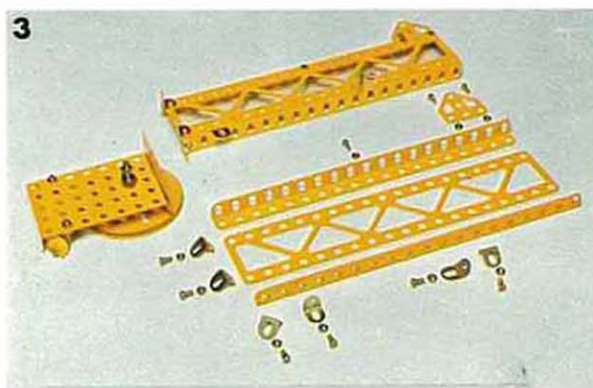
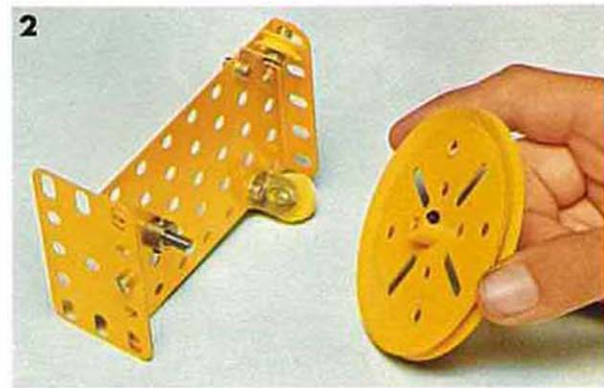
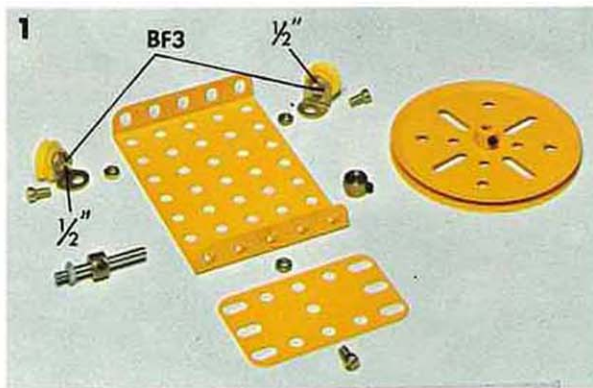
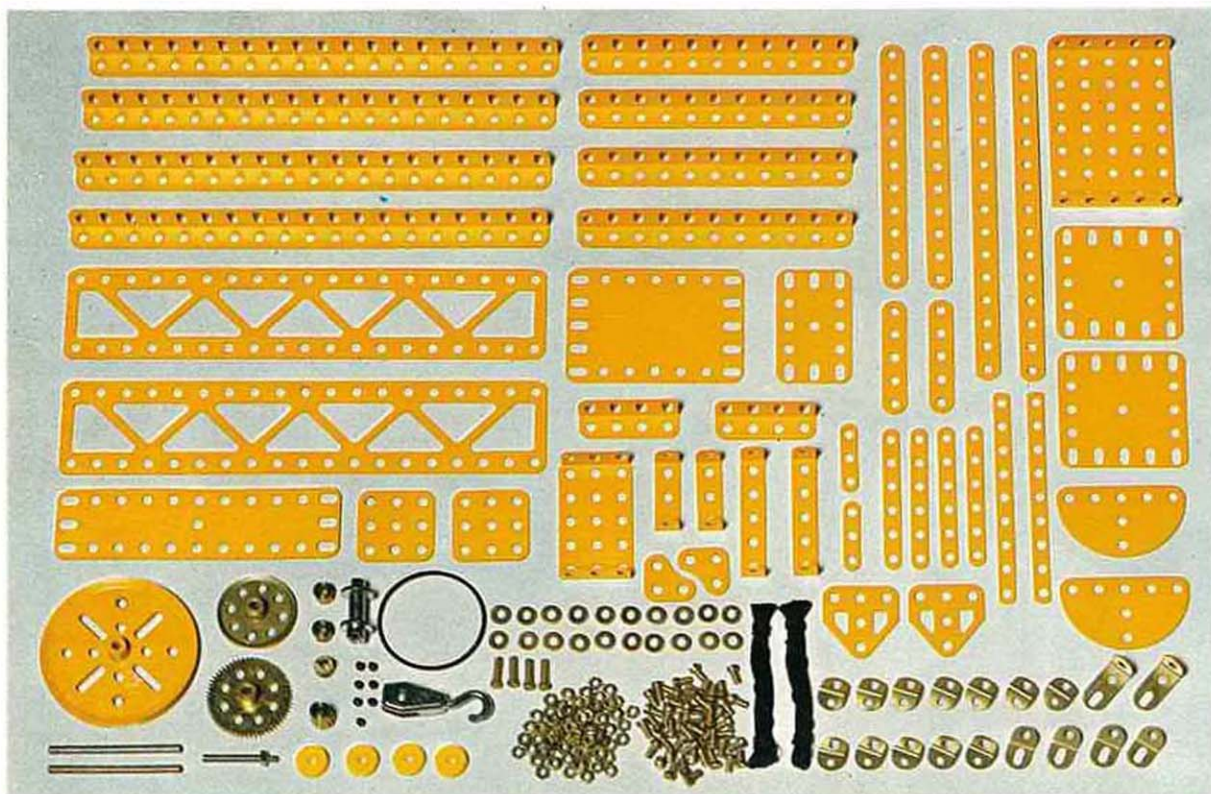


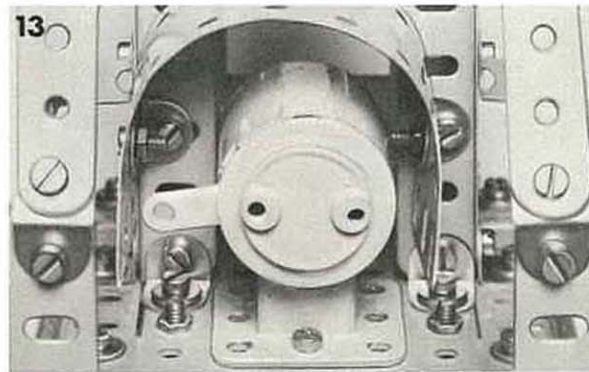
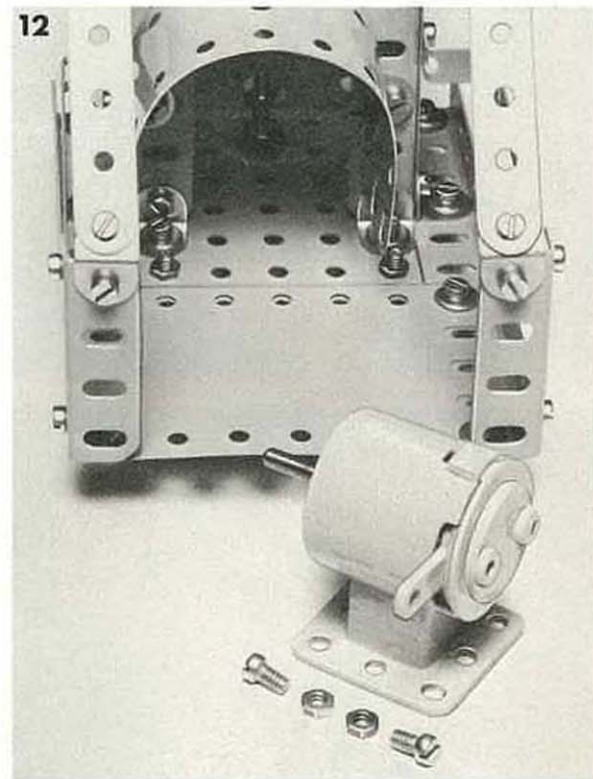
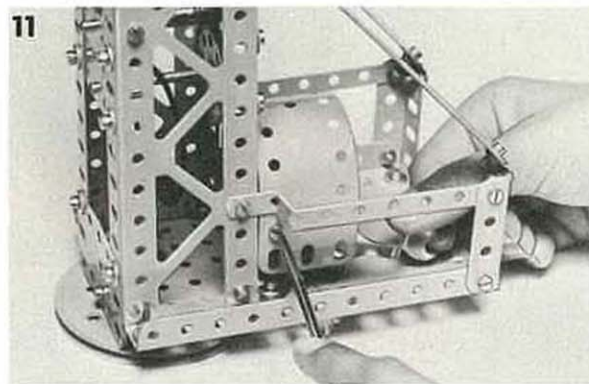
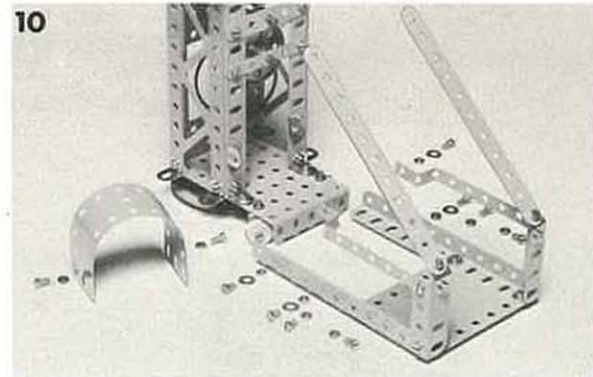
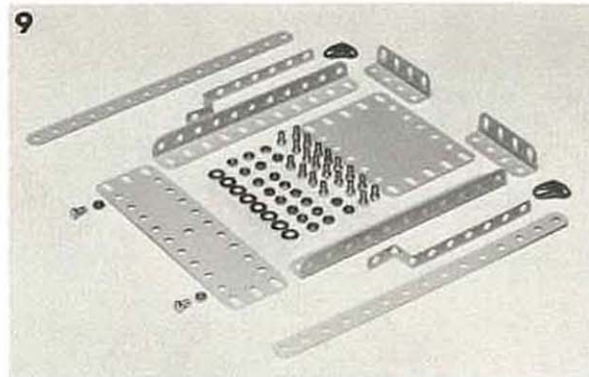
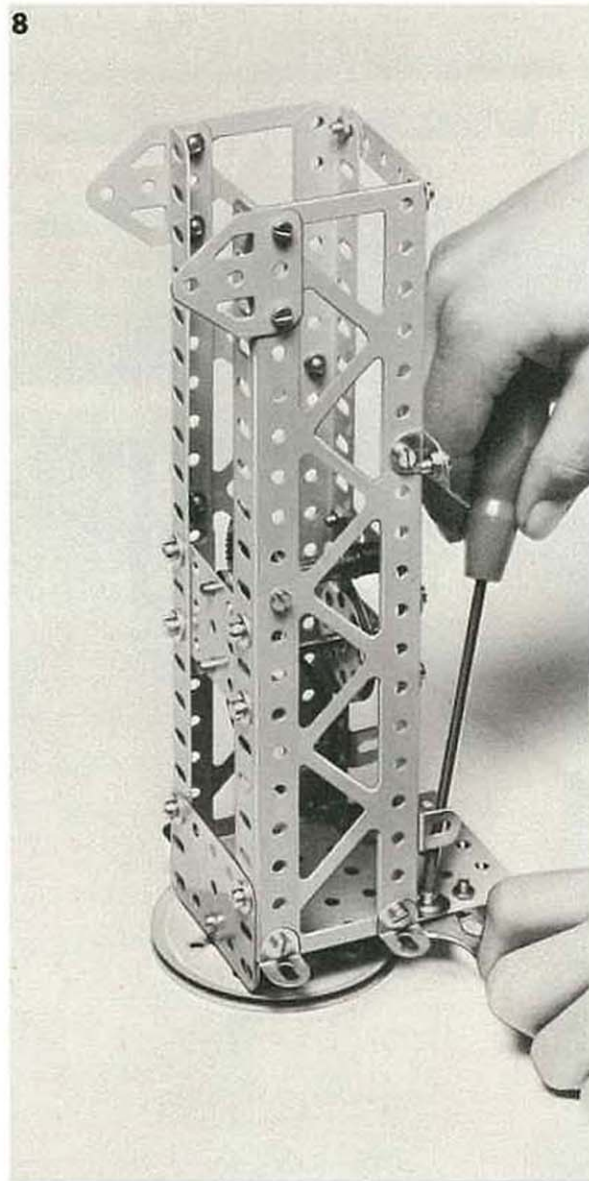
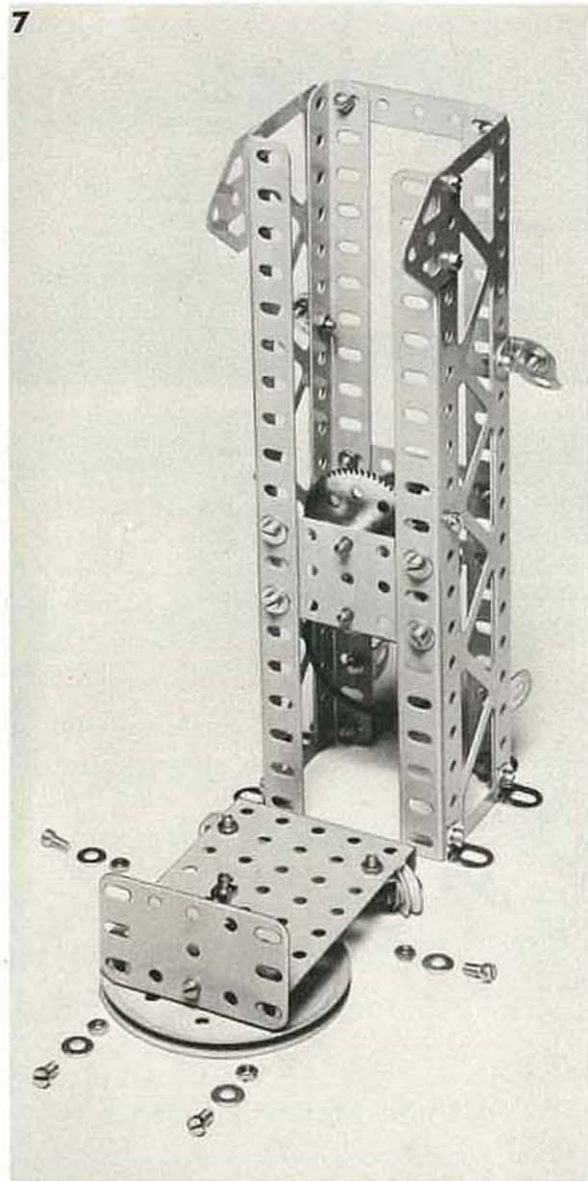


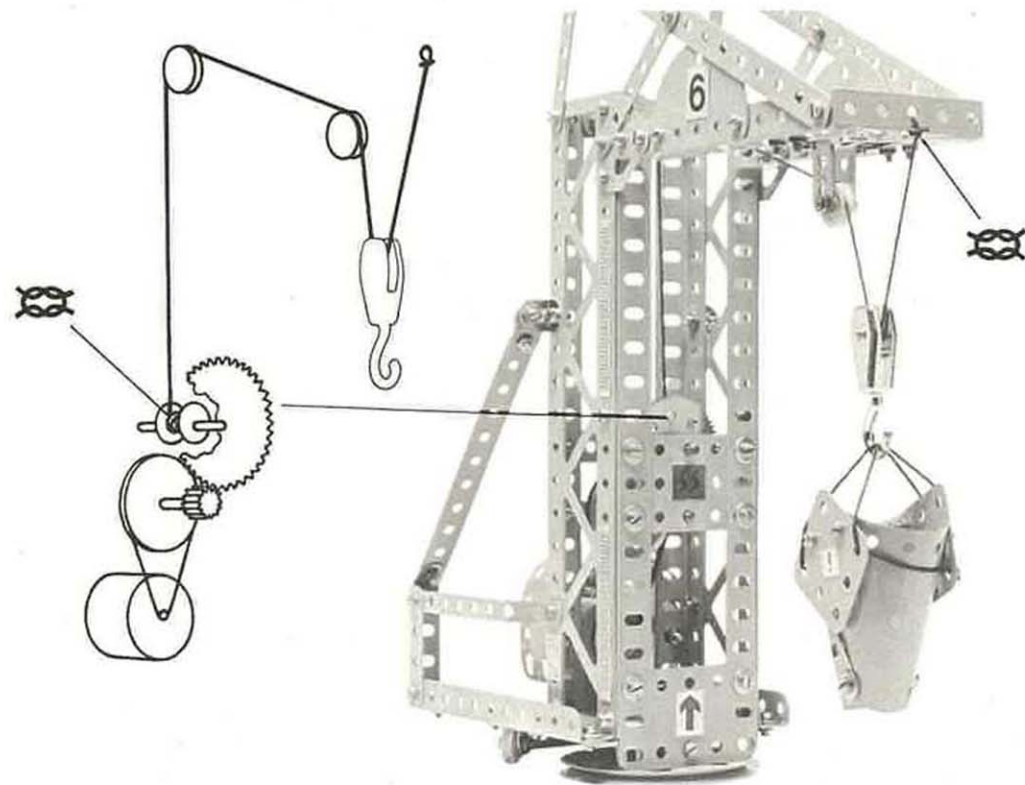
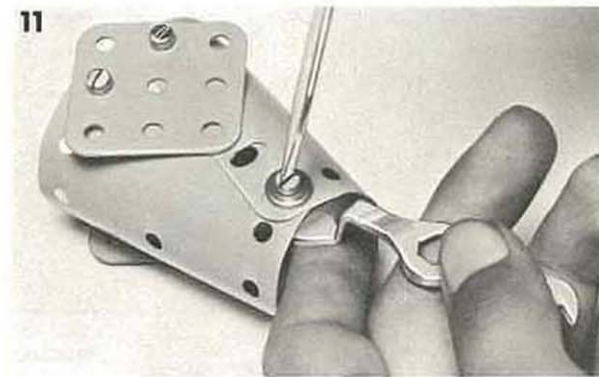
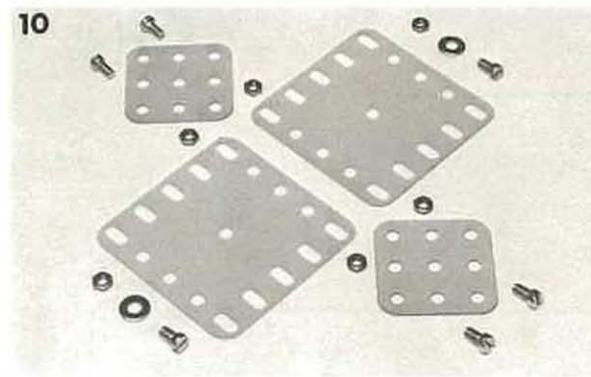
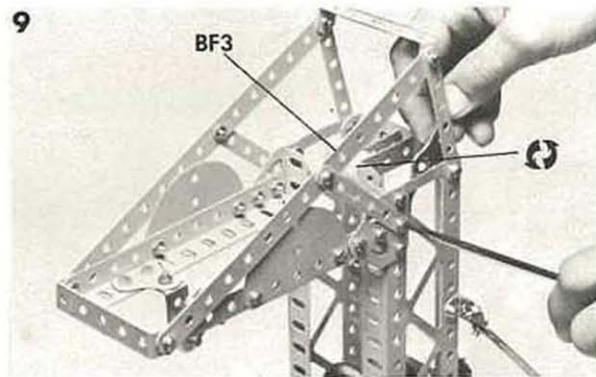
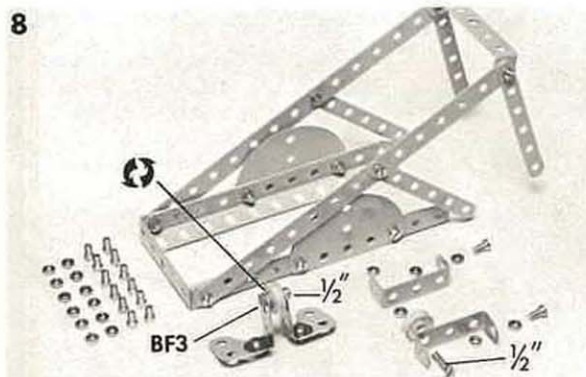


# Foundry Crane





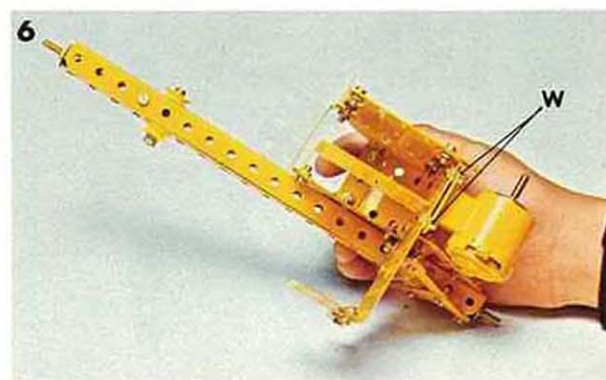
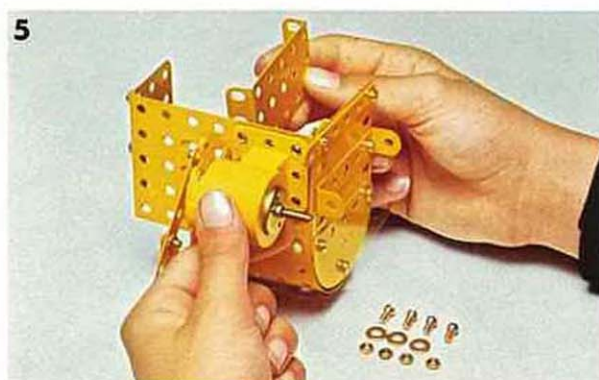
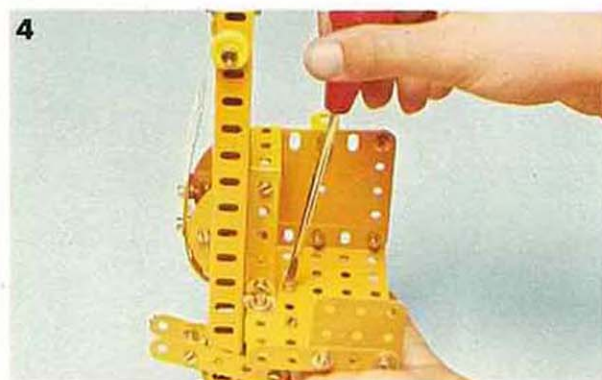
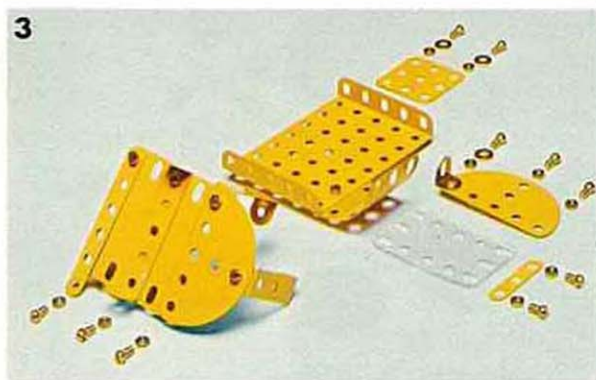
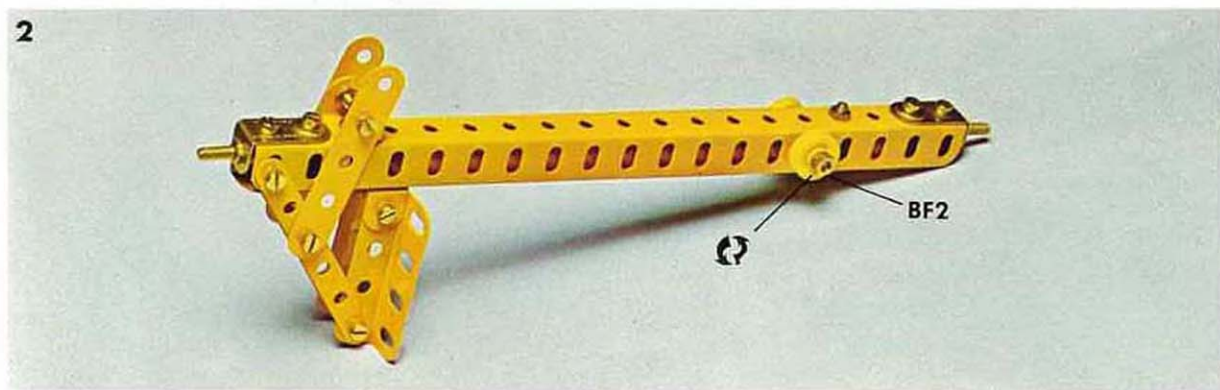
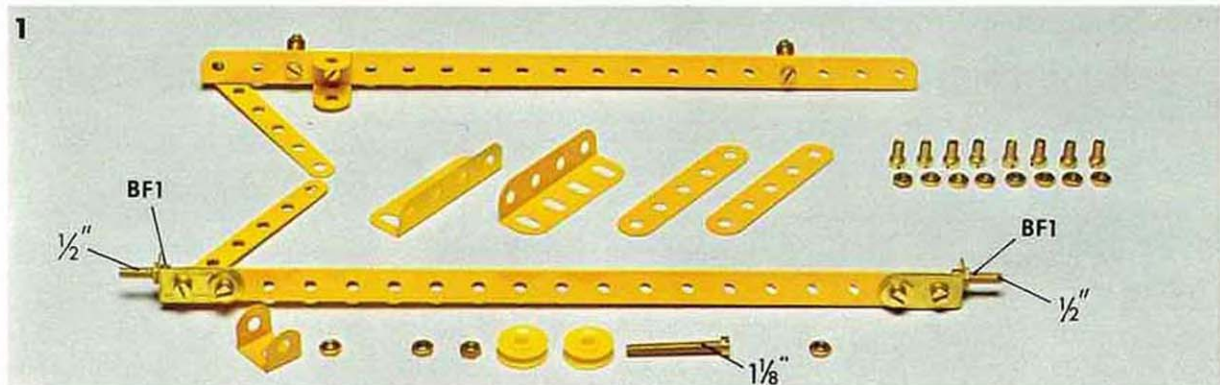
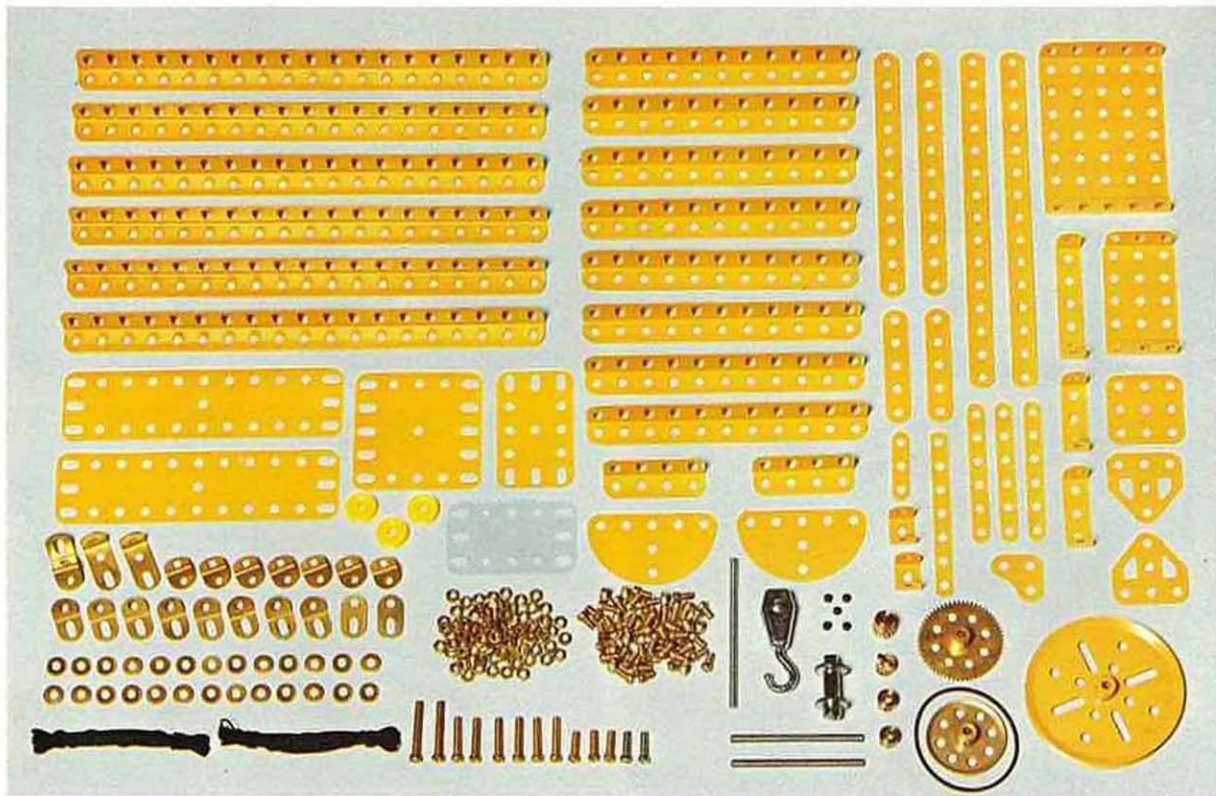


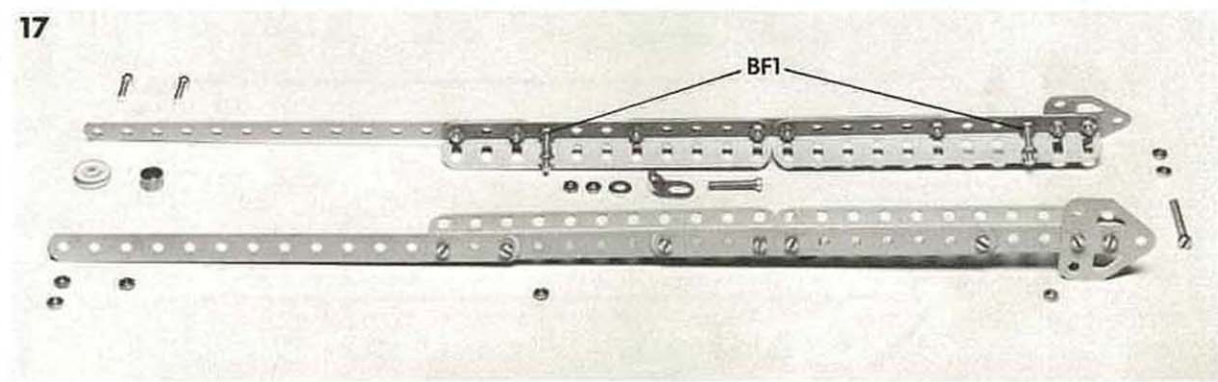
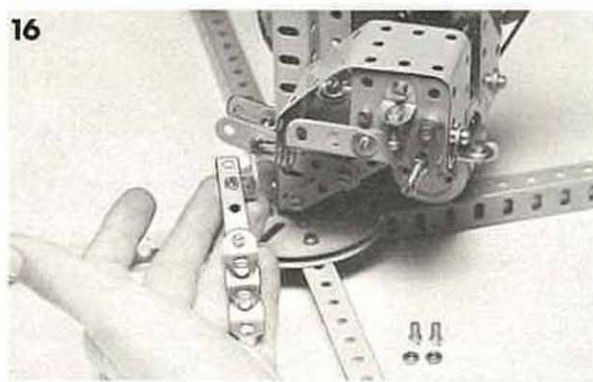
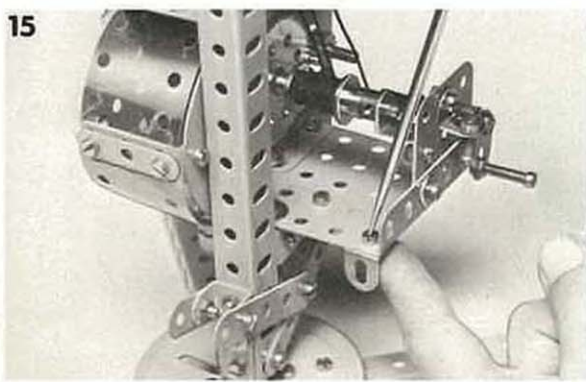
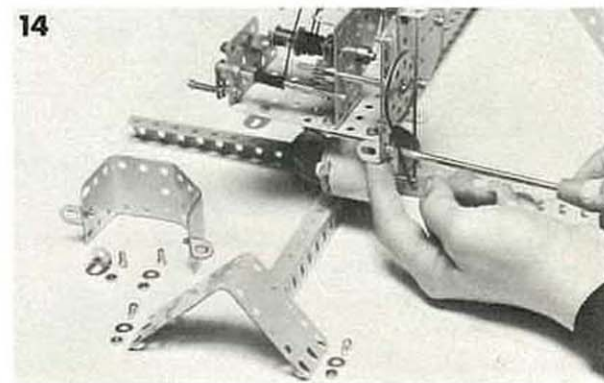
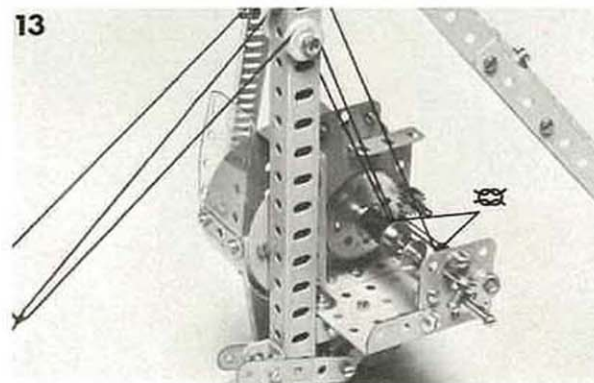
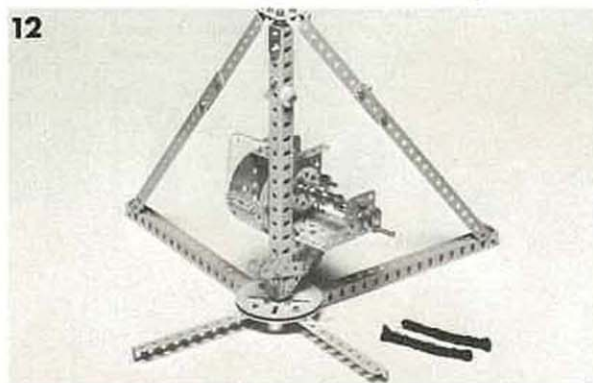
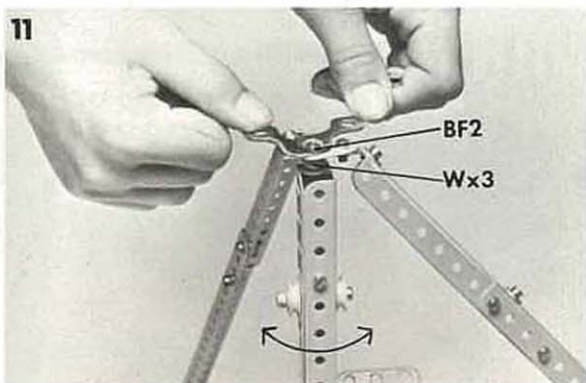
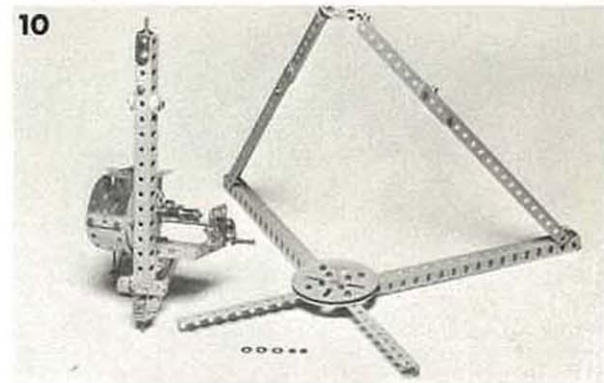
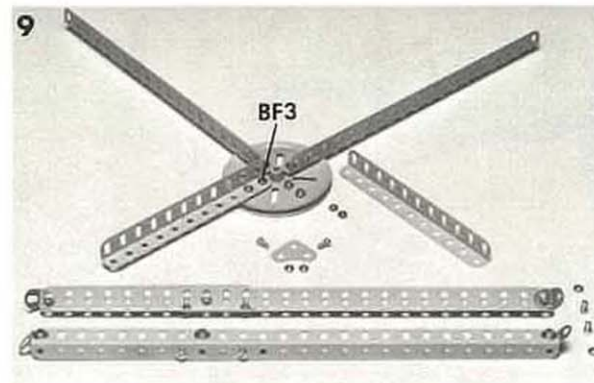
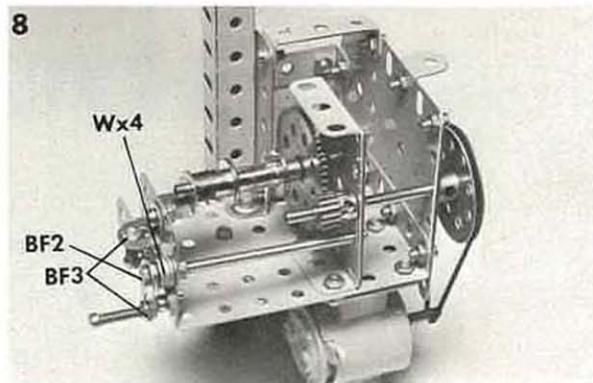


# Breakers Yard Crane

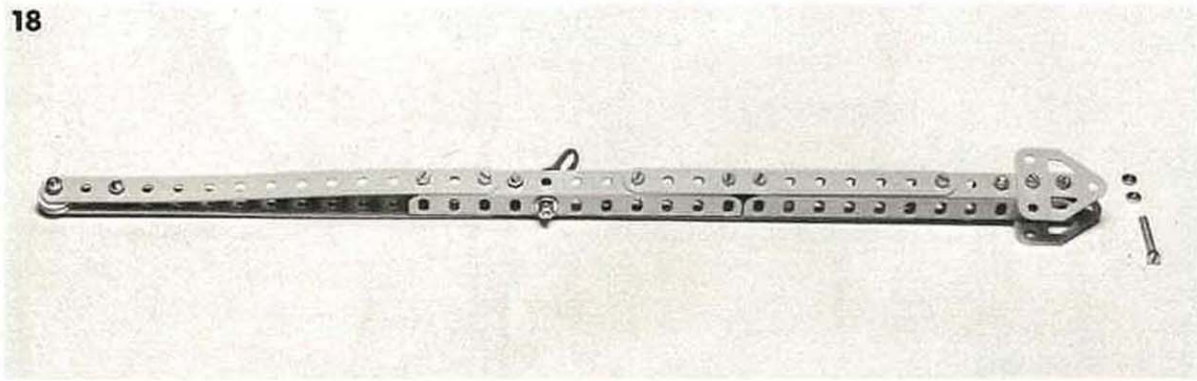




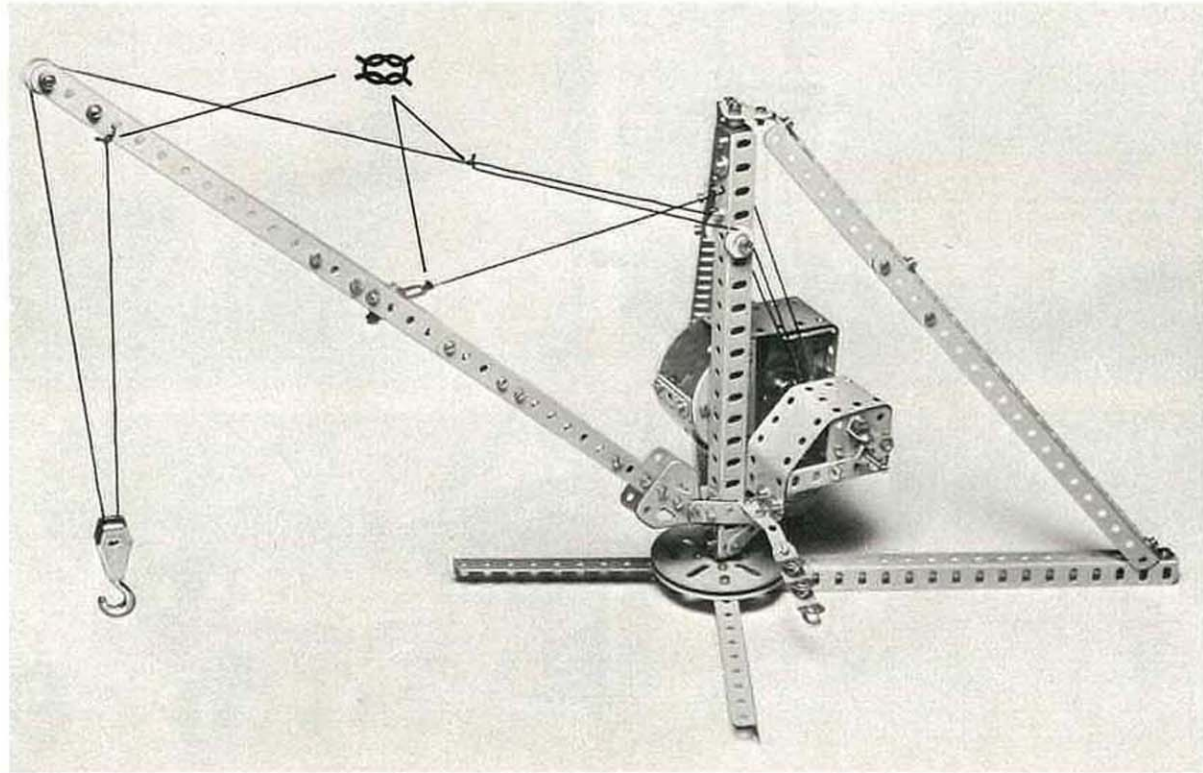
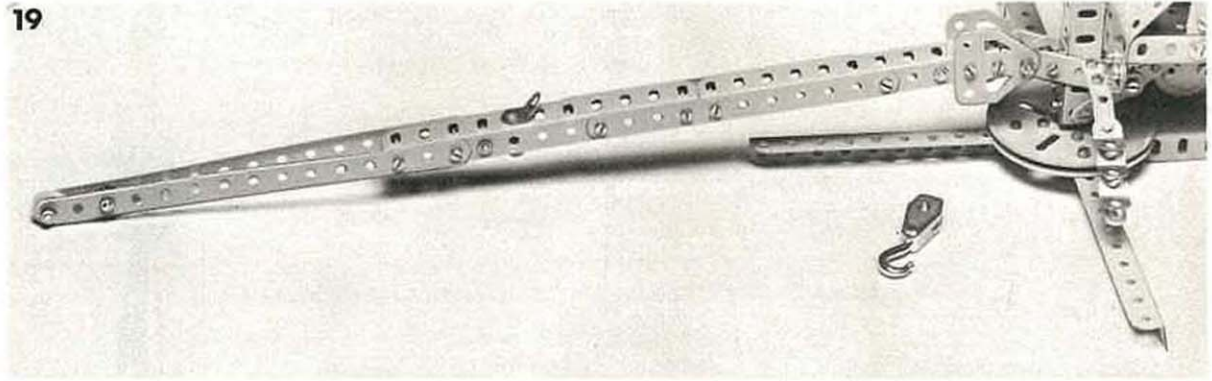




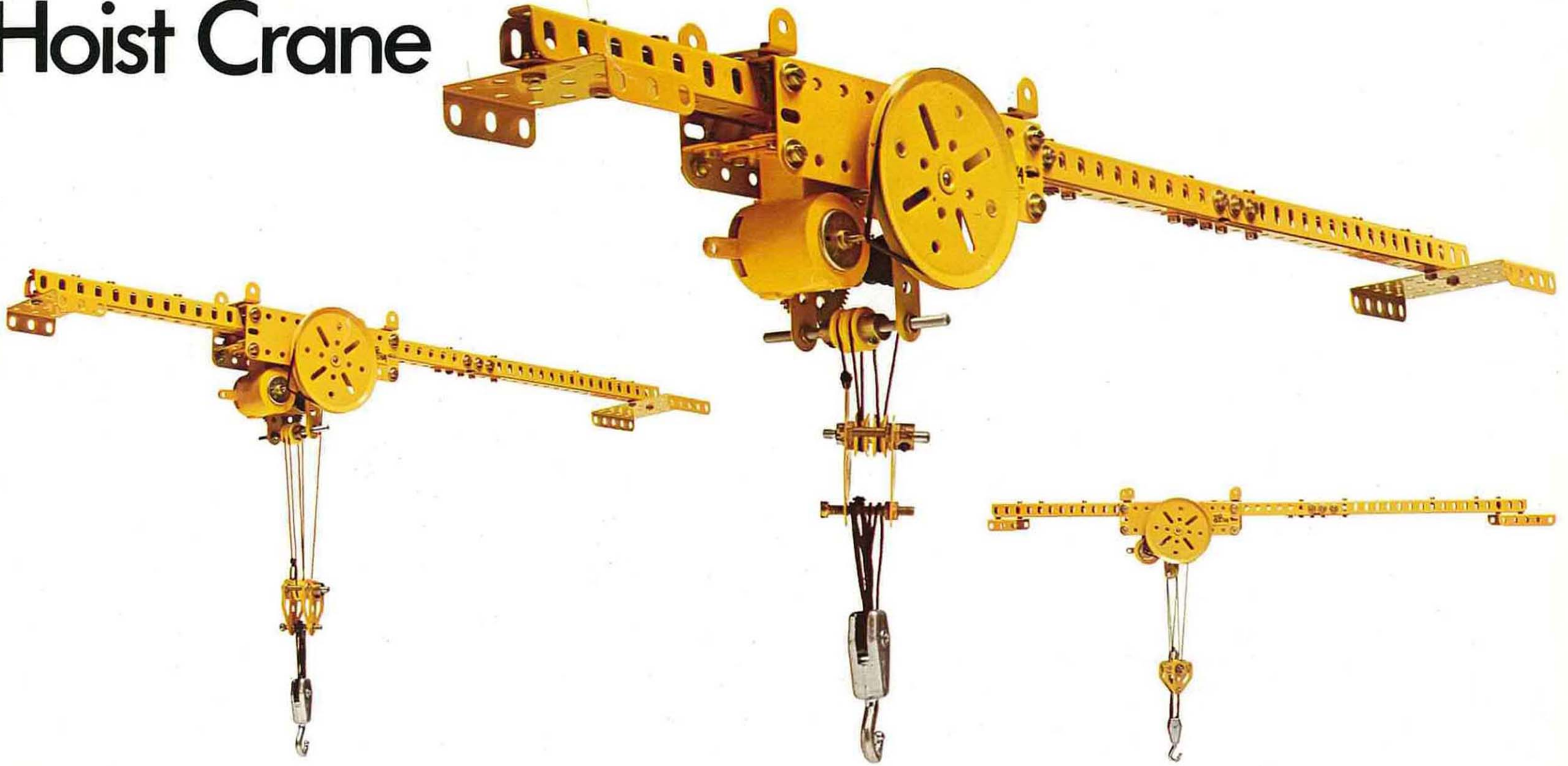
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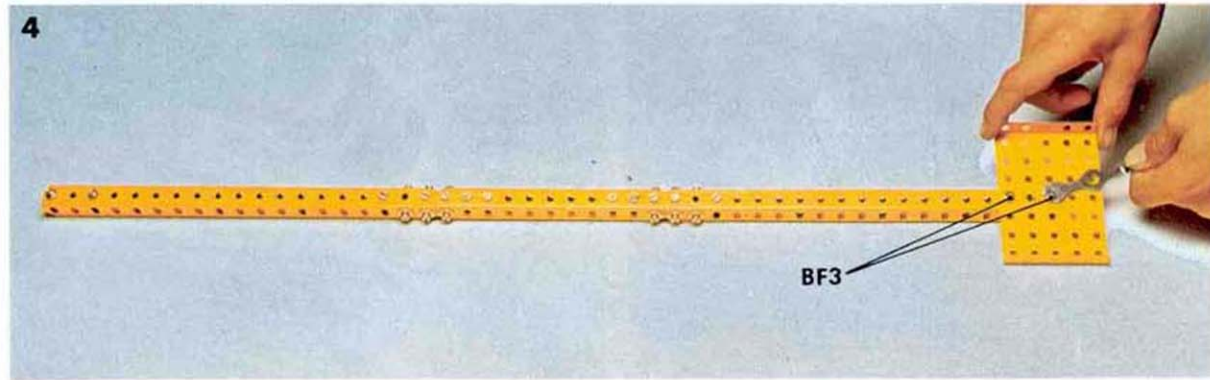
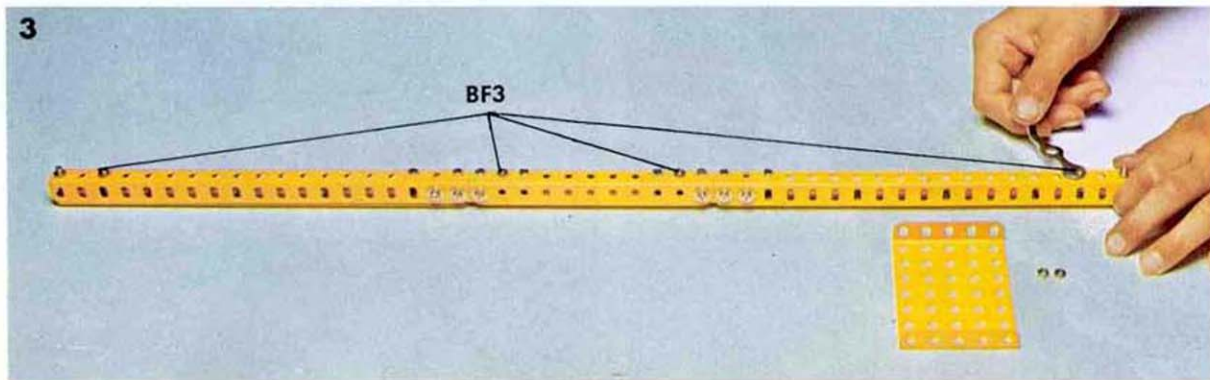
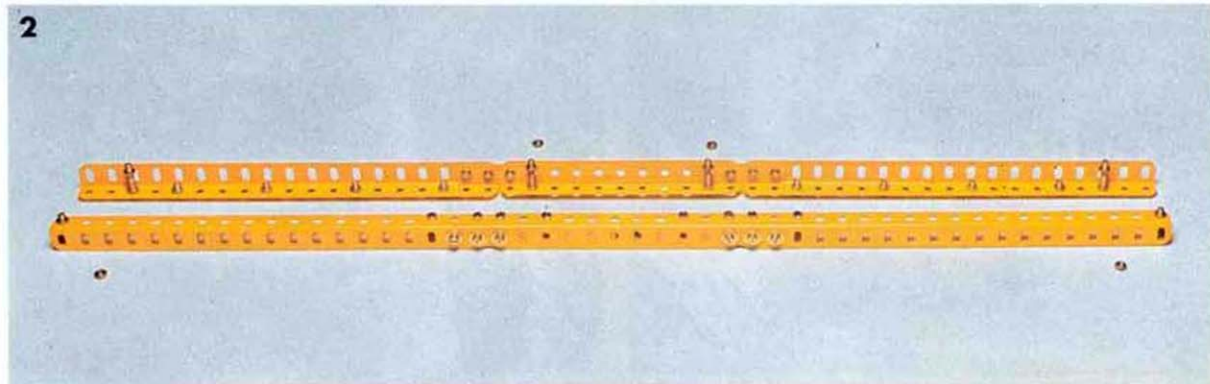
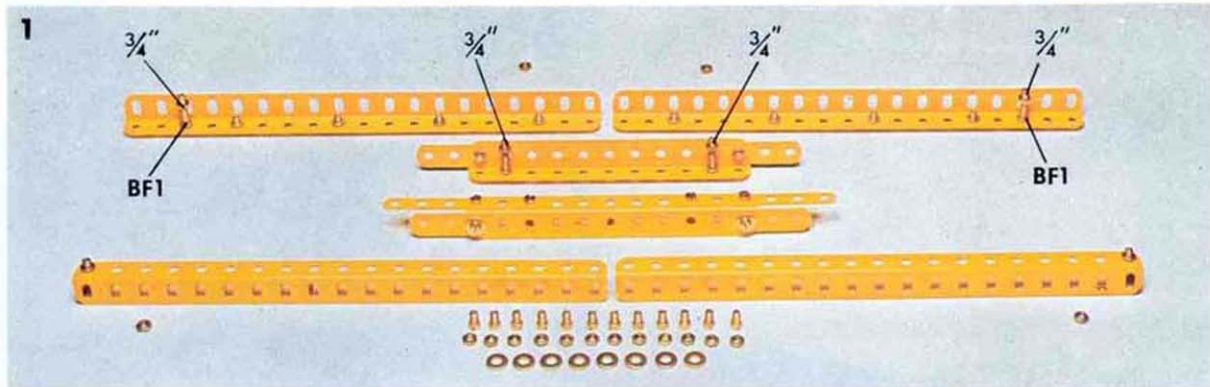
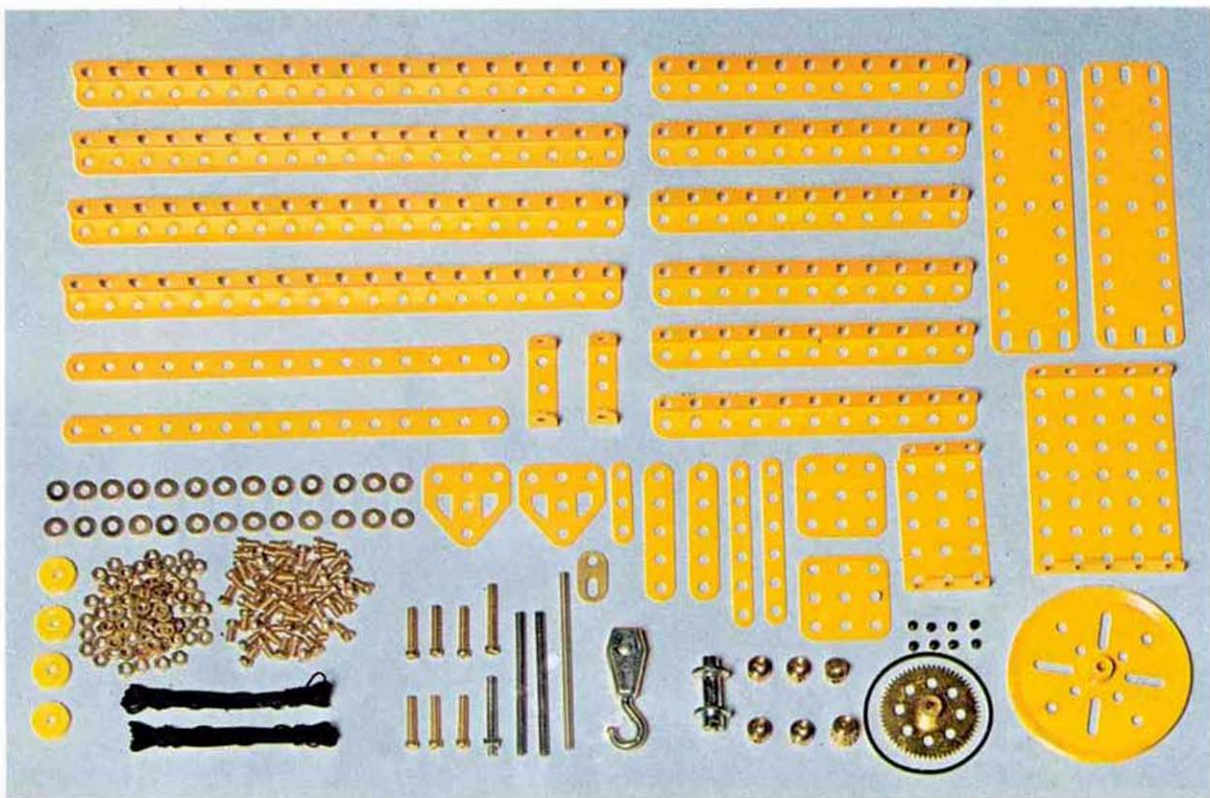


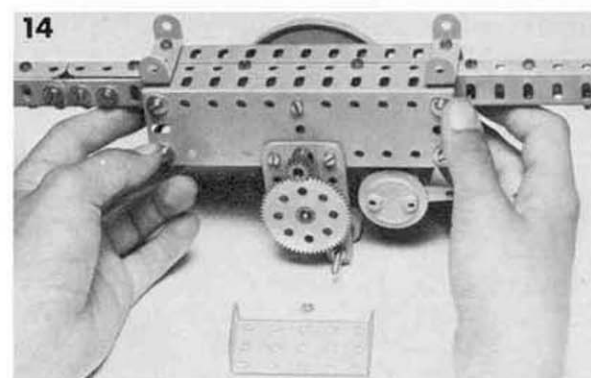
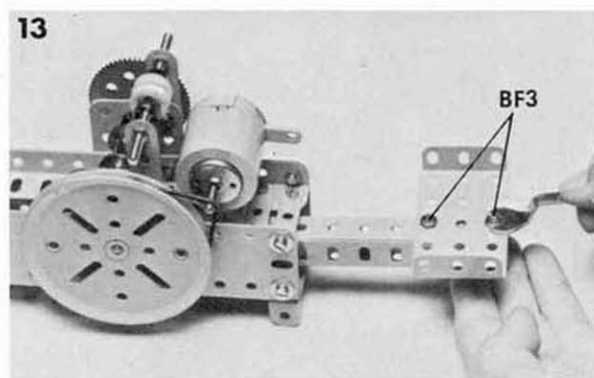
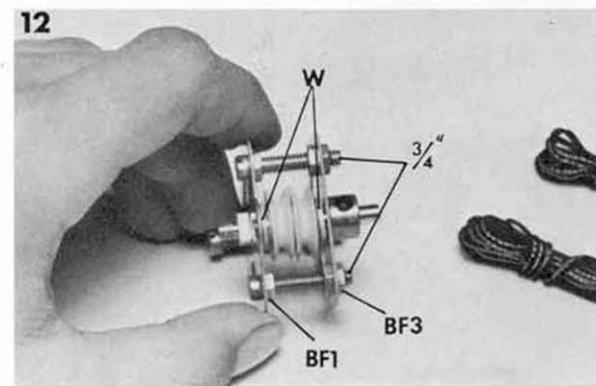
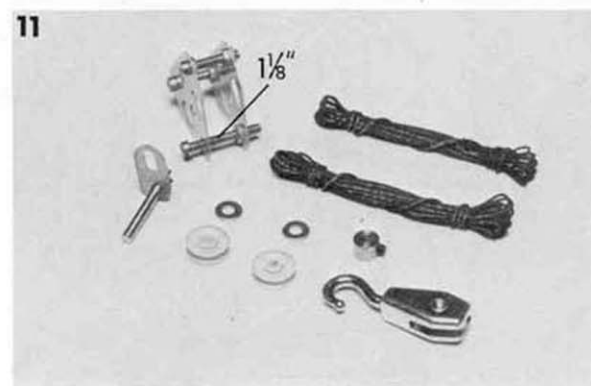
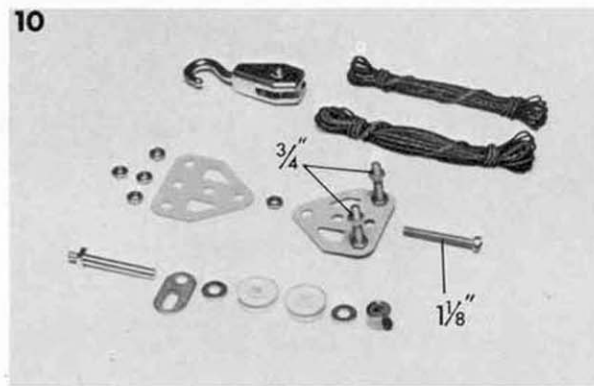
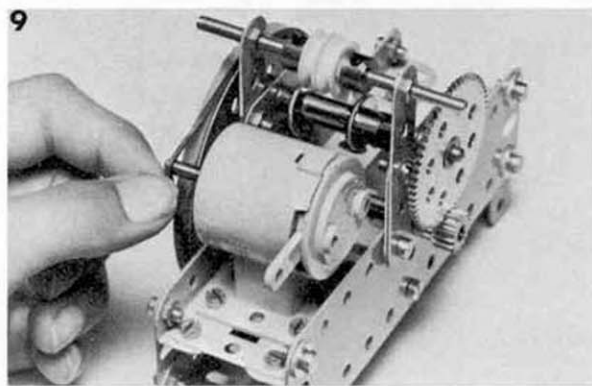
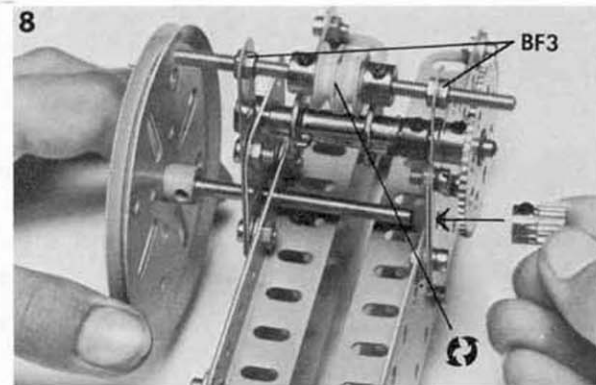
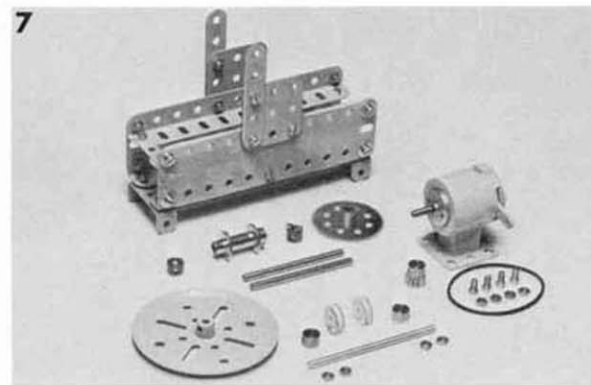
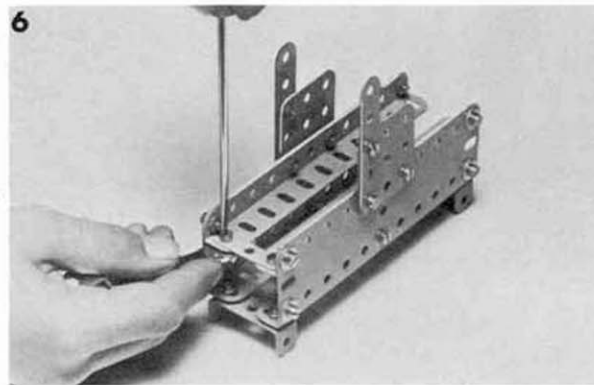
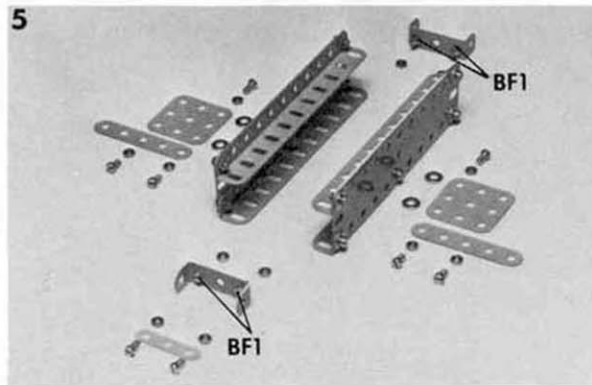
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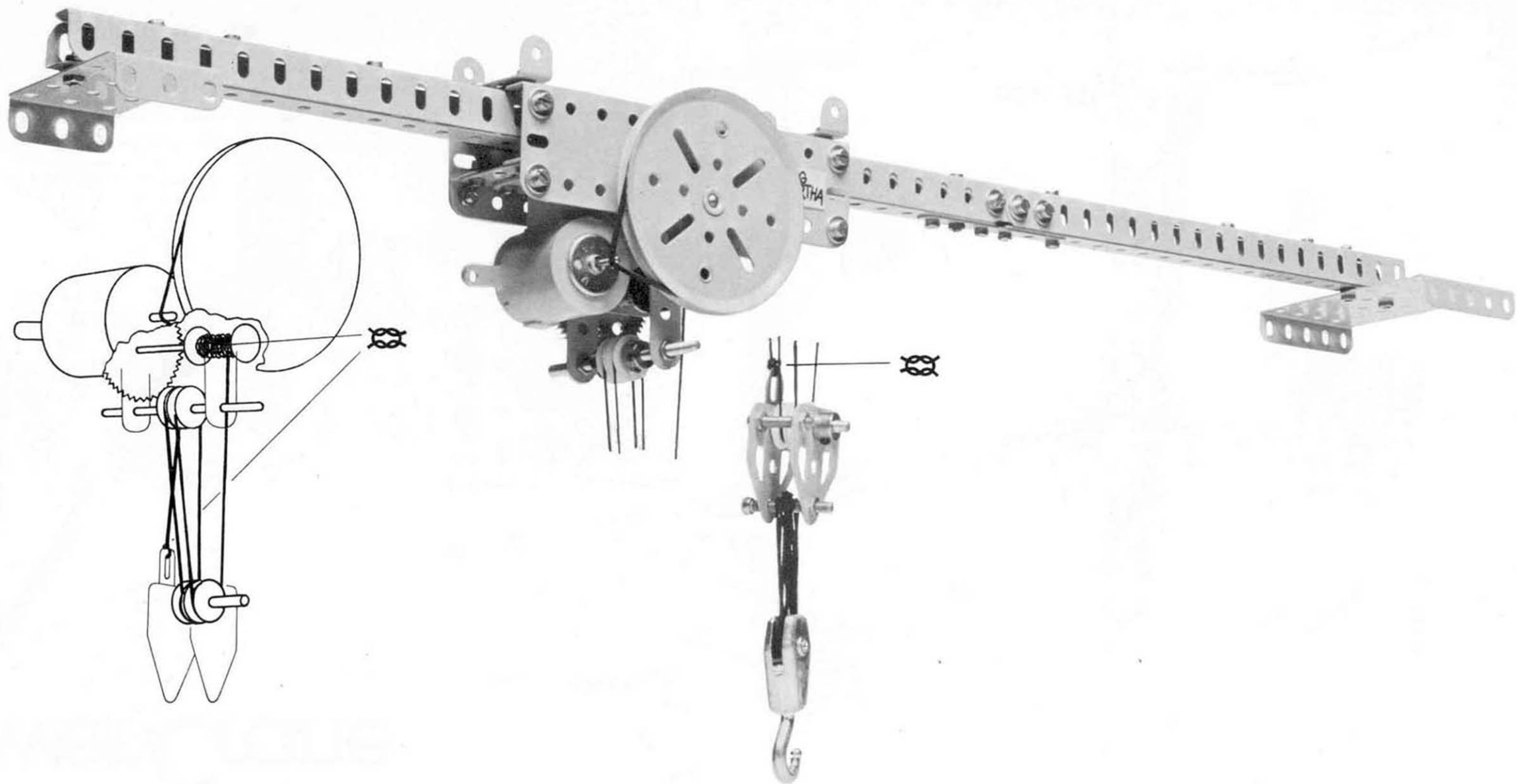


# Hoist Crane





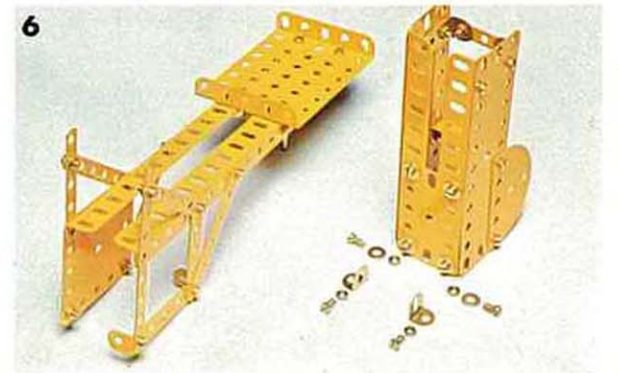
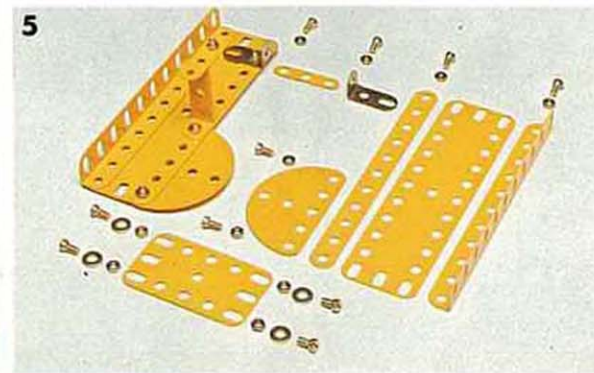
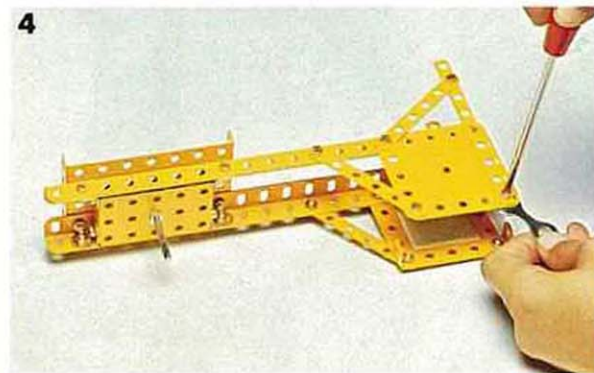
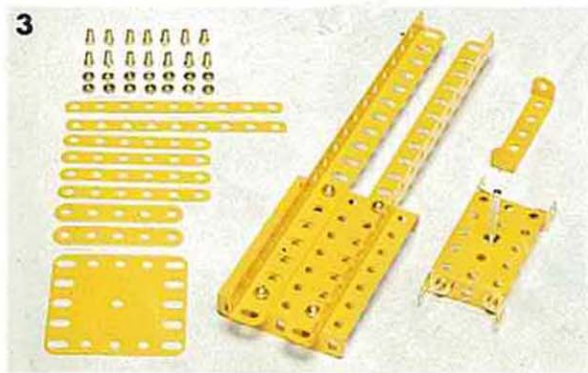
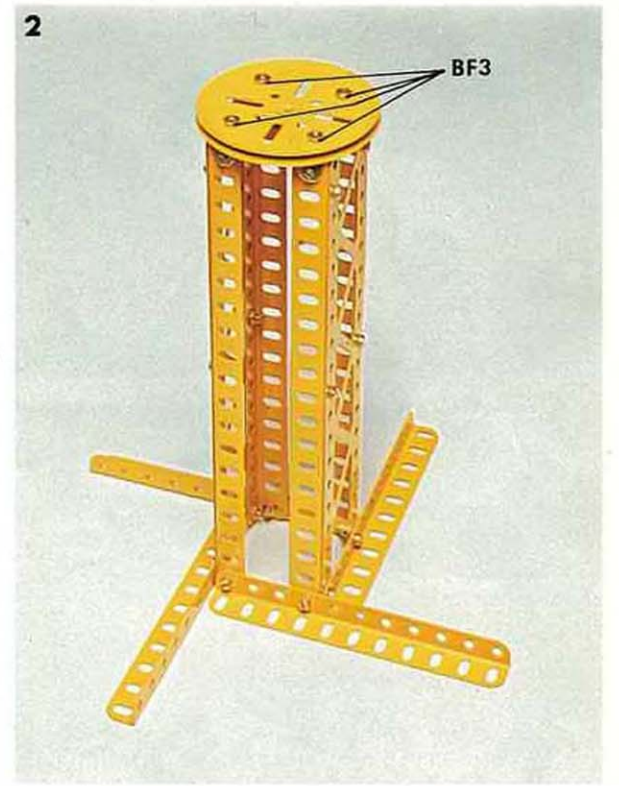
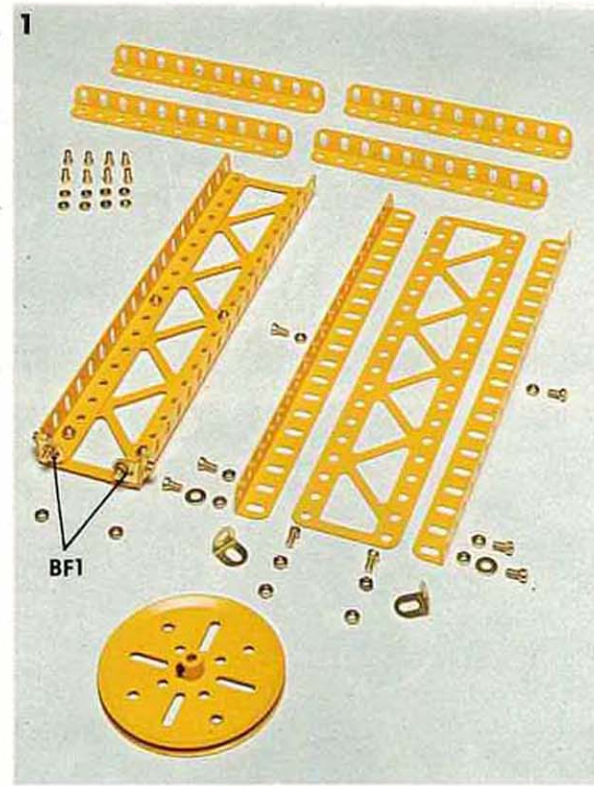
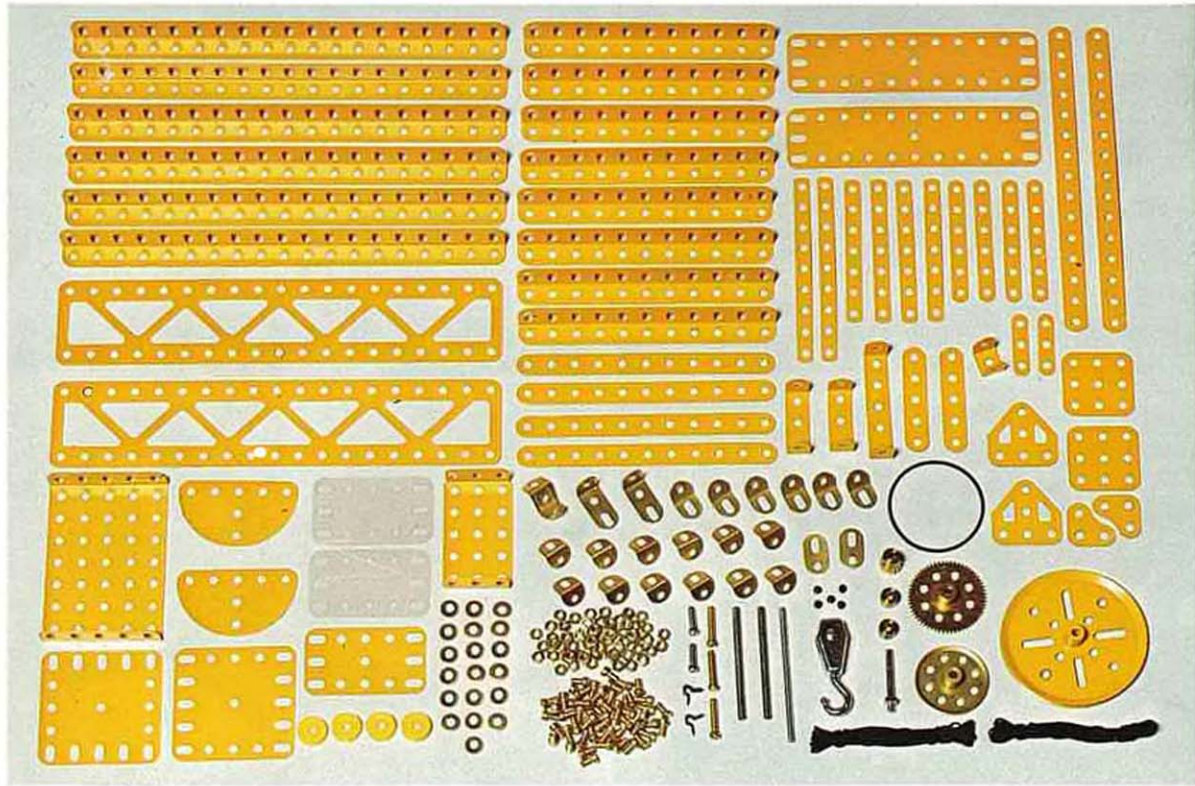


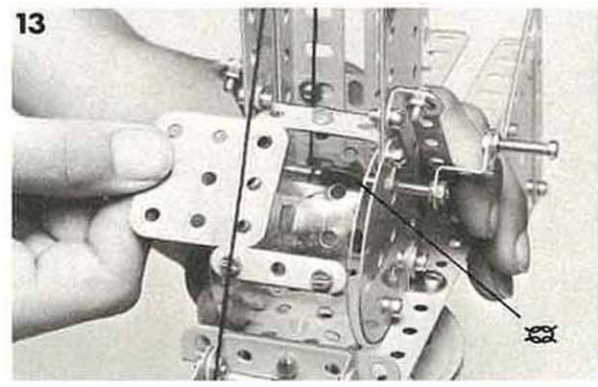
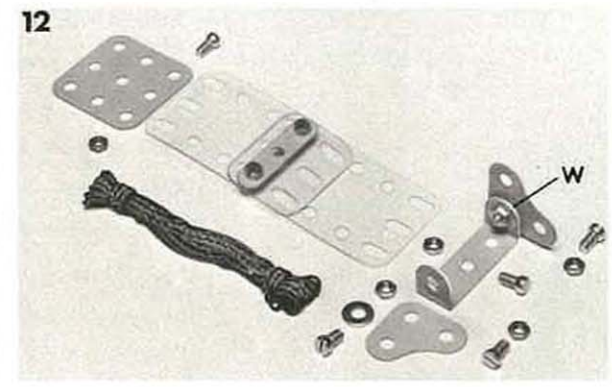
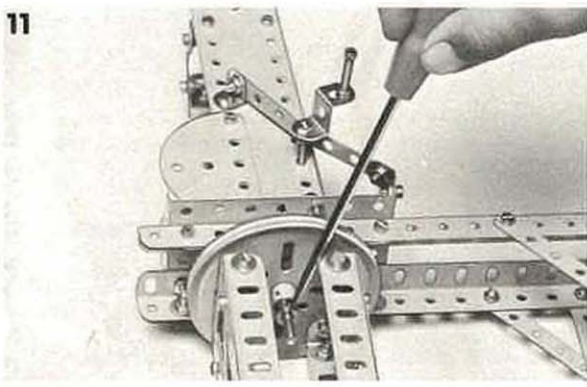
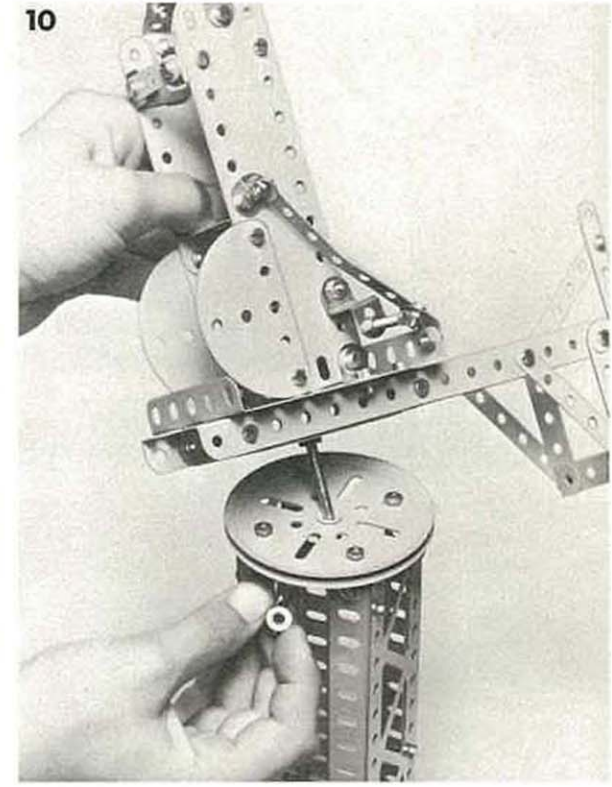
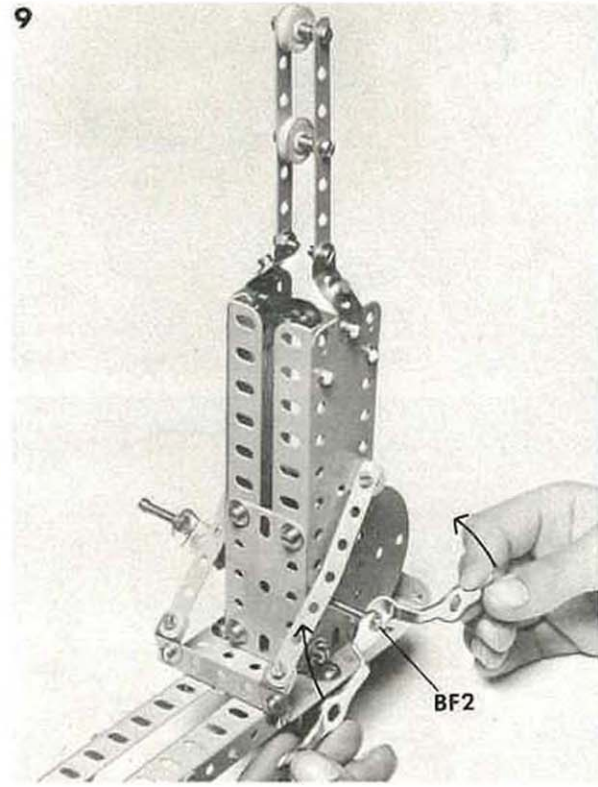
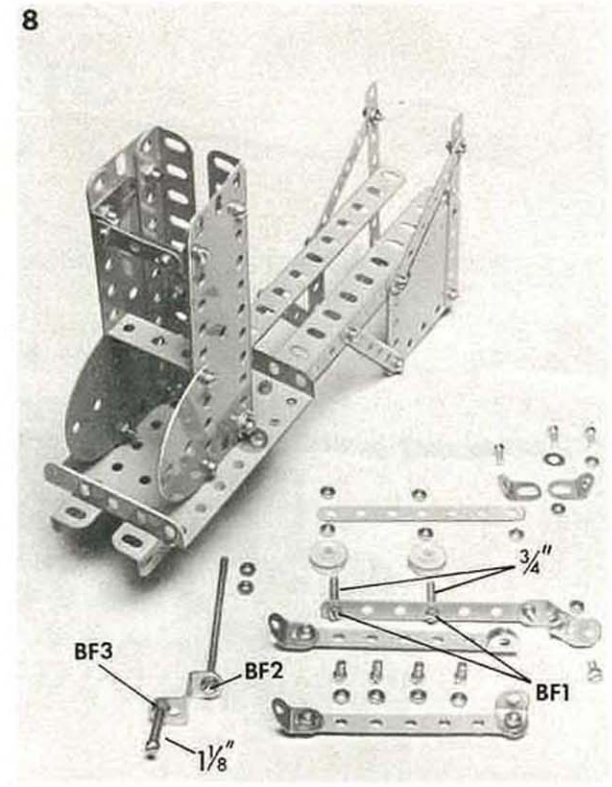
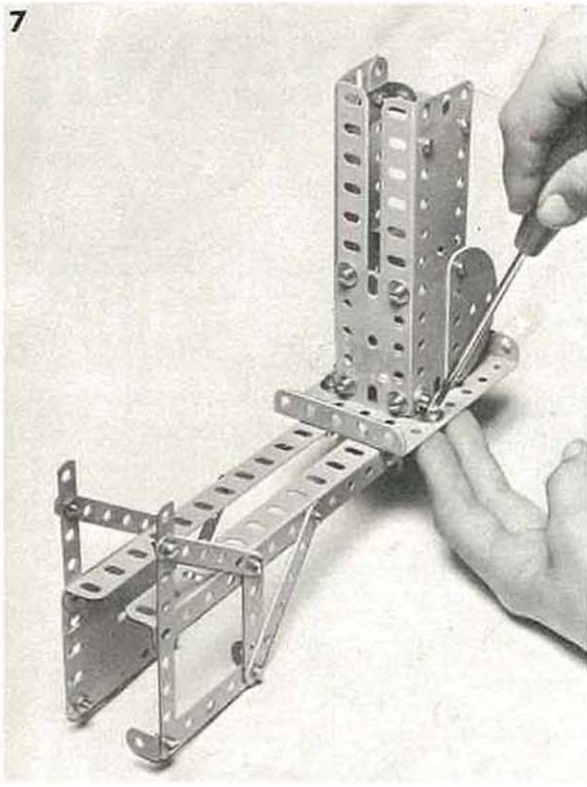


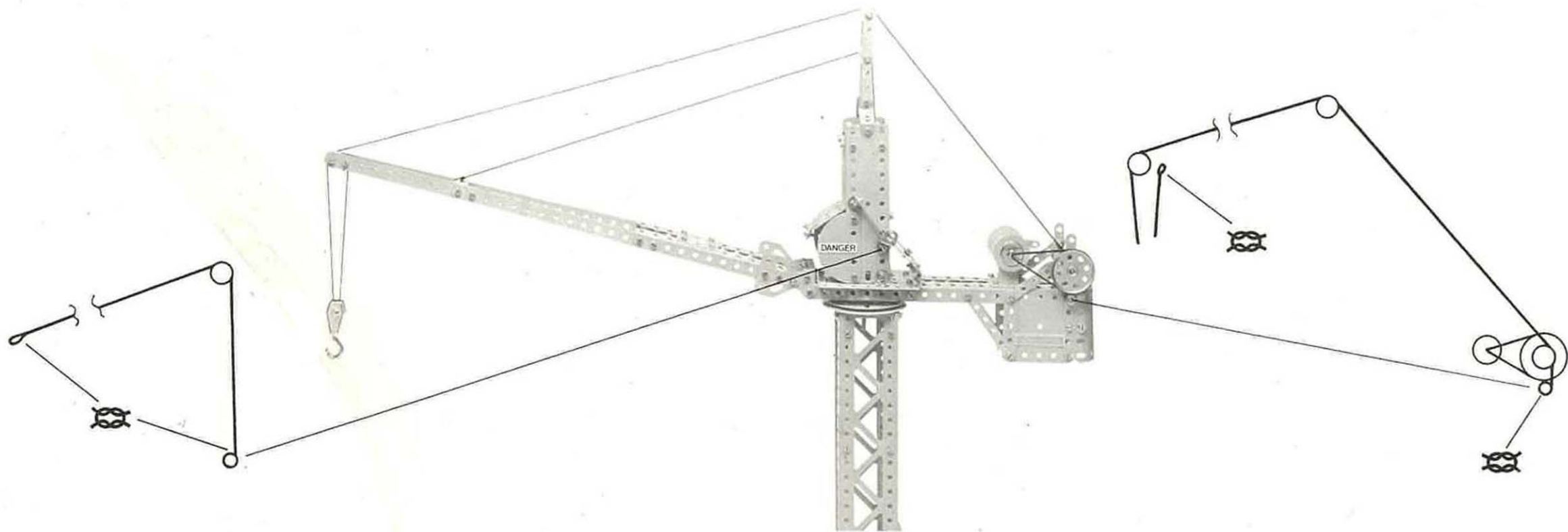
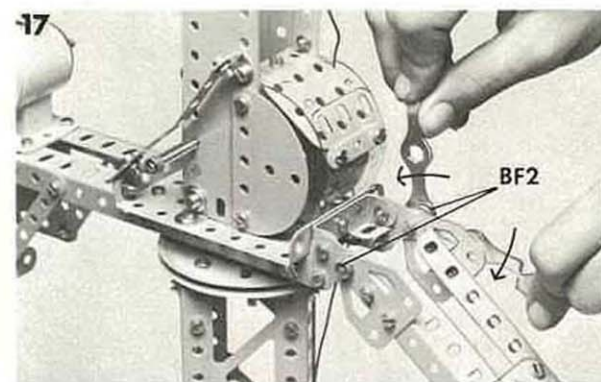
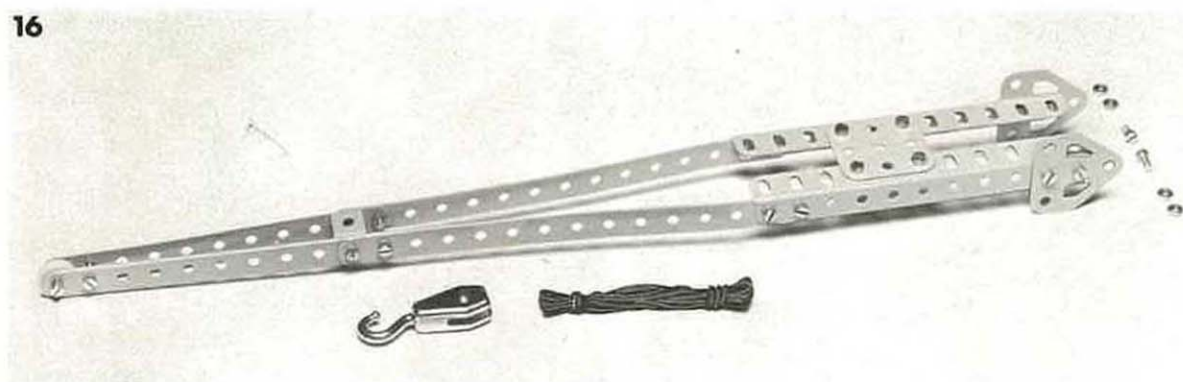
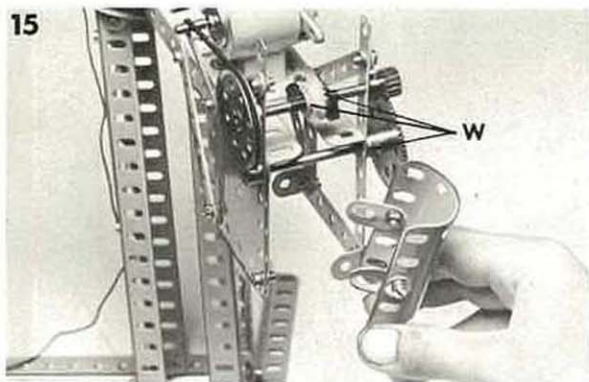
# Tower Crane





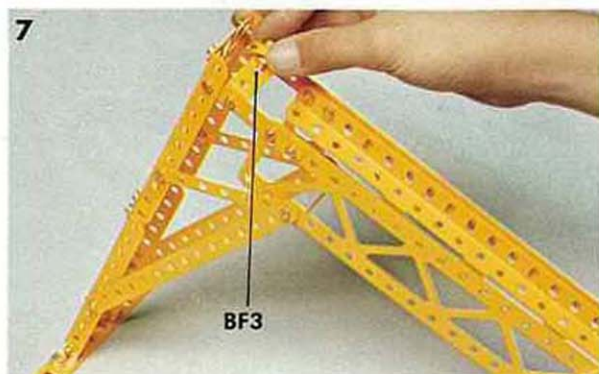
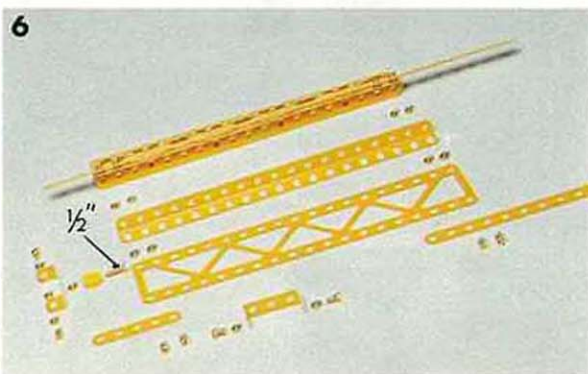
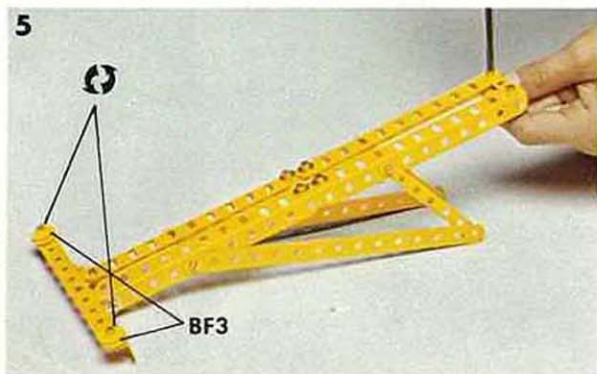
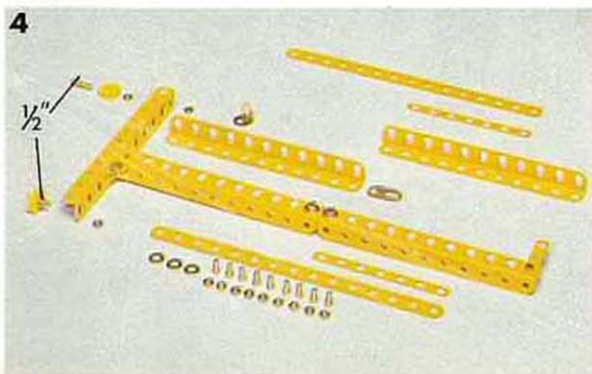
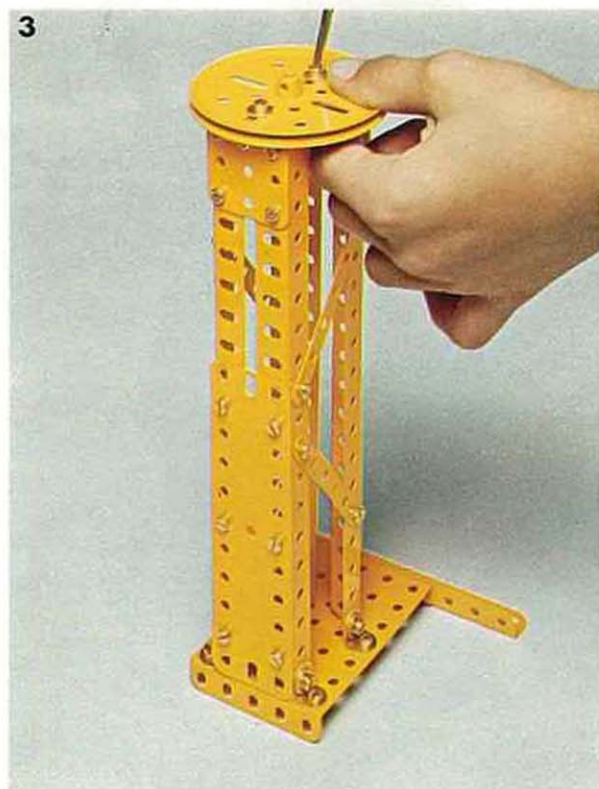
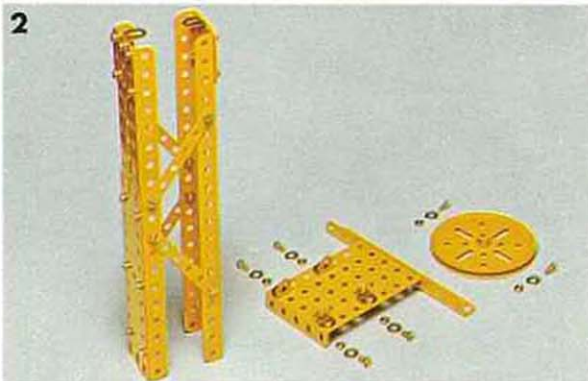
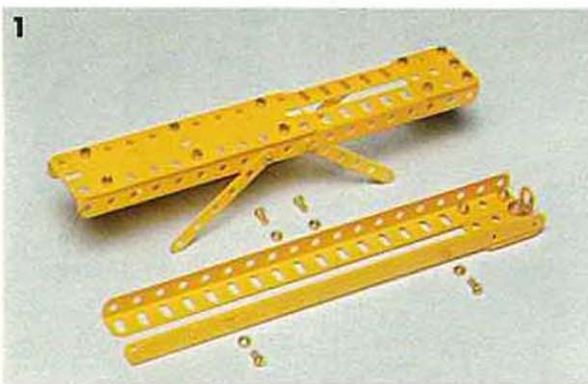
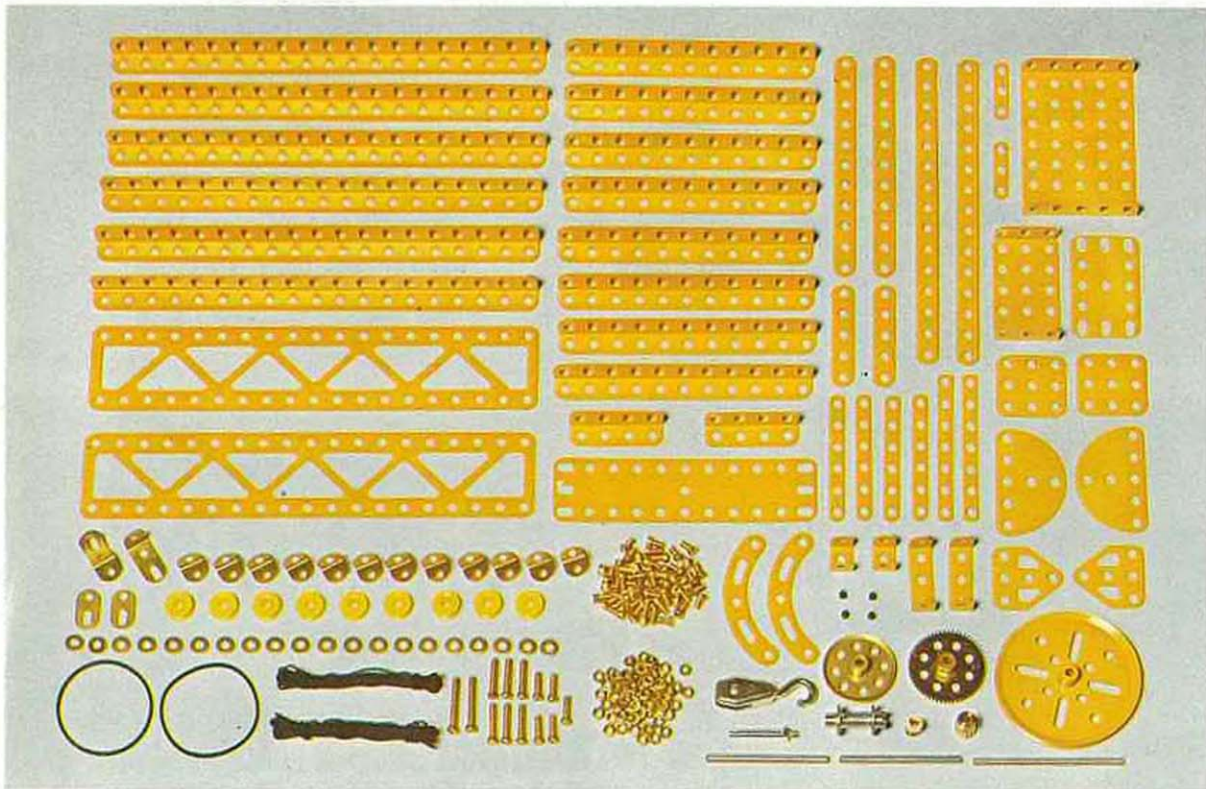


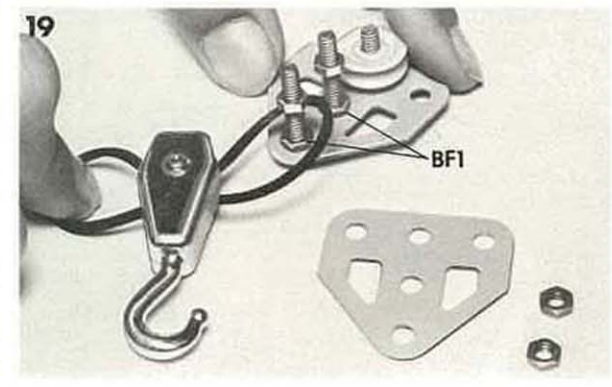
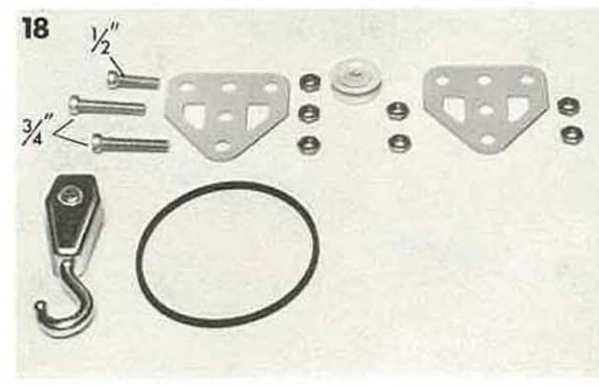
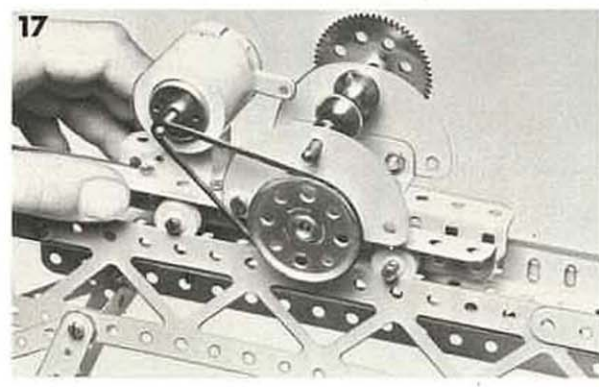
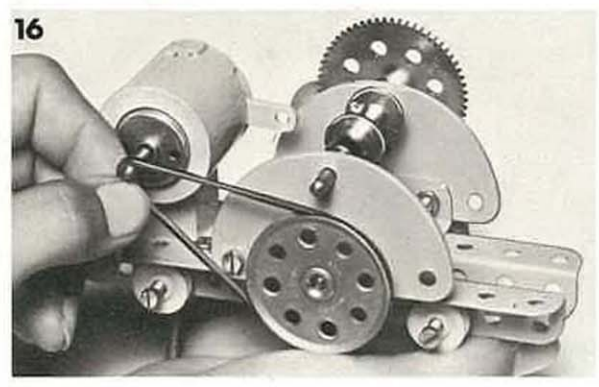
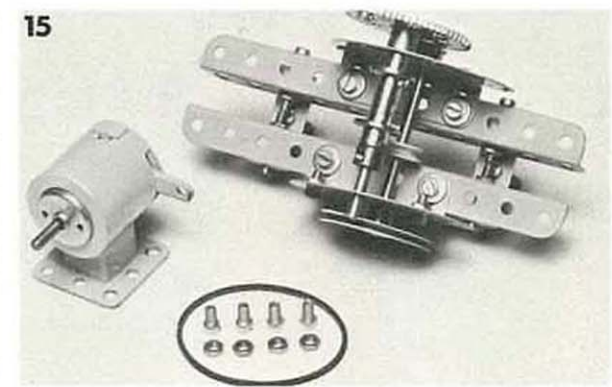
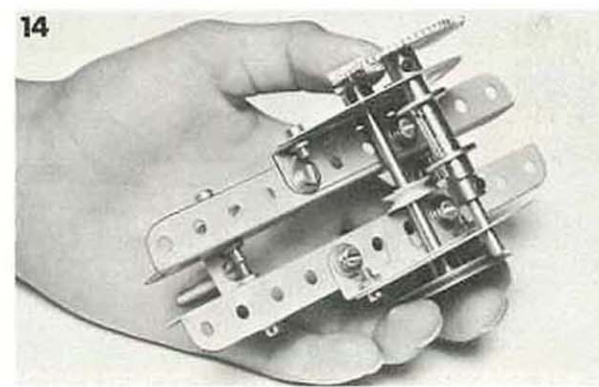
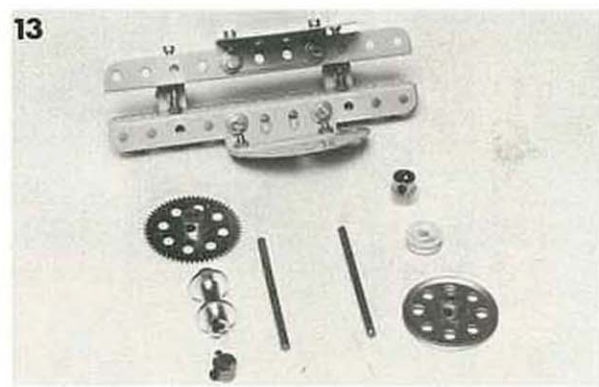
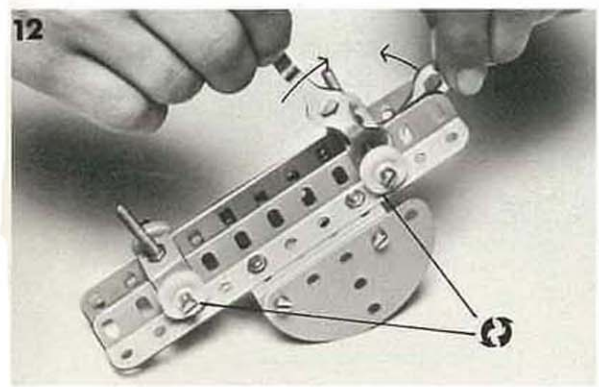
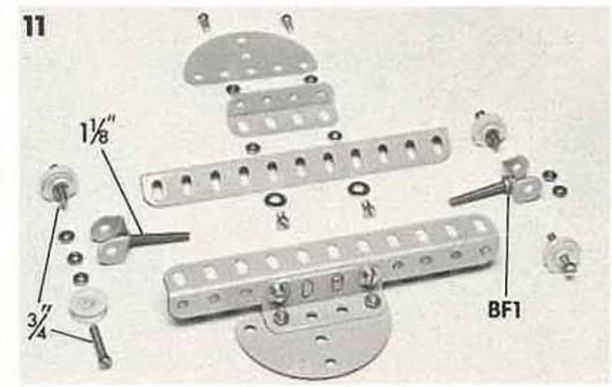
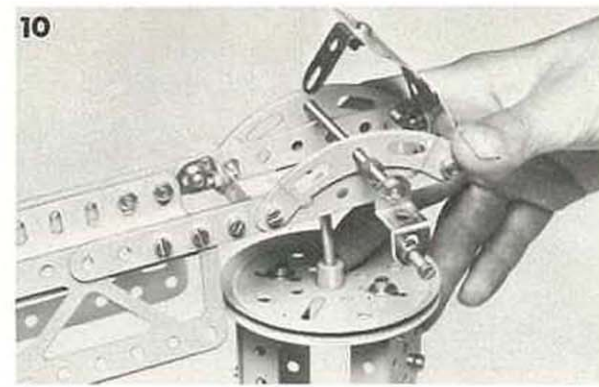
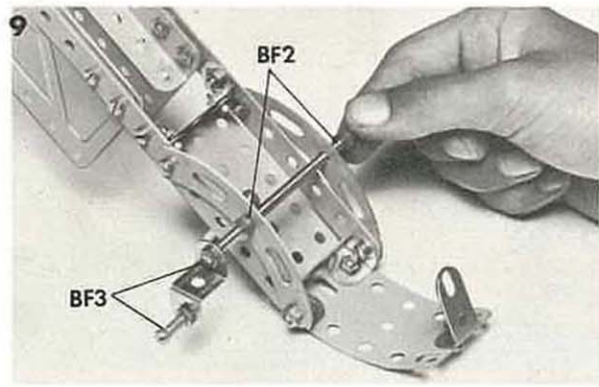
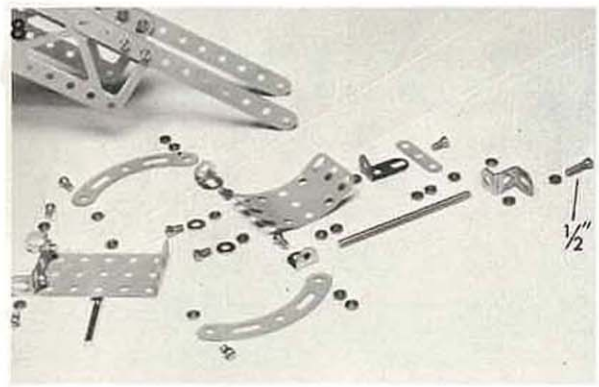


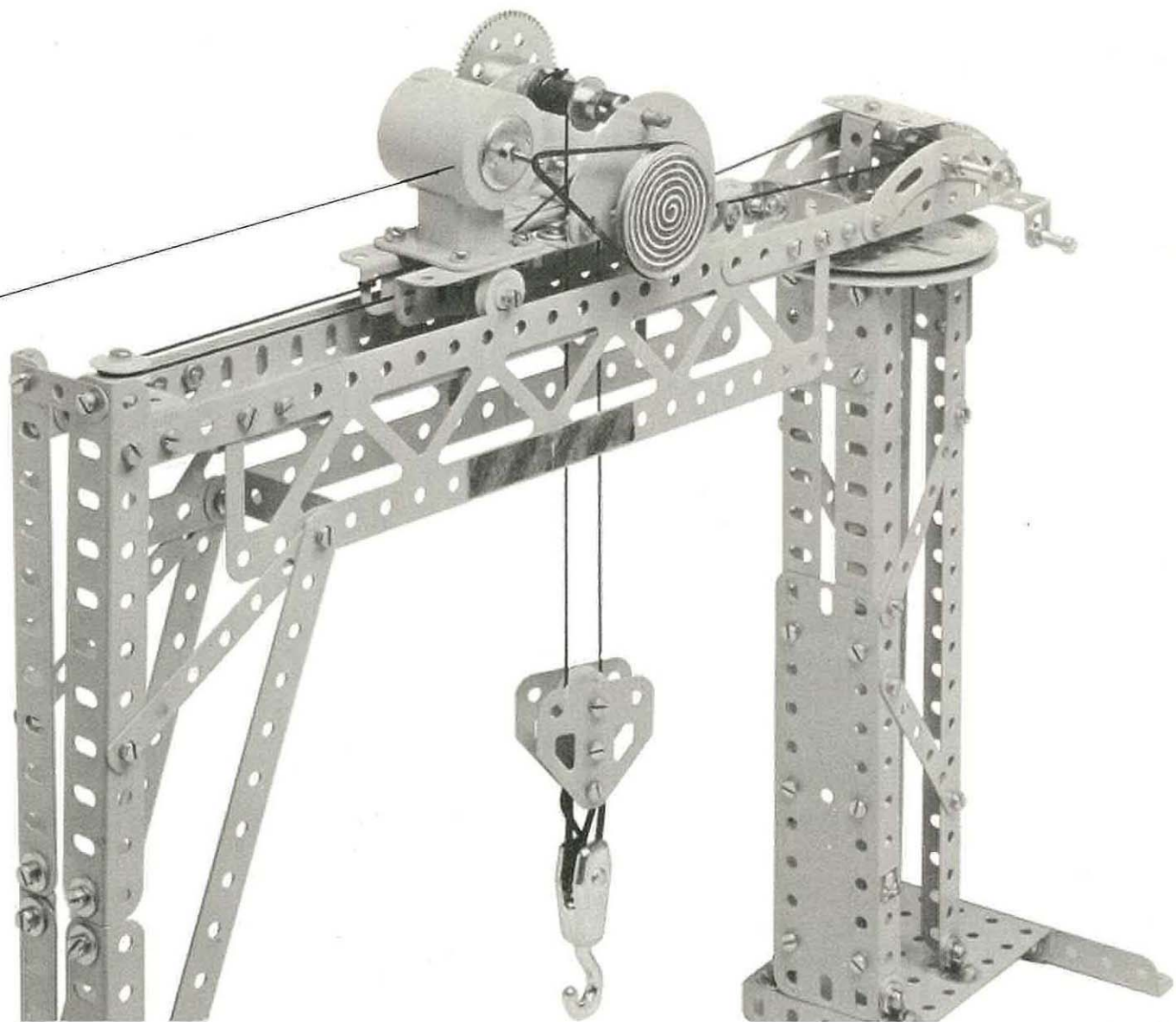
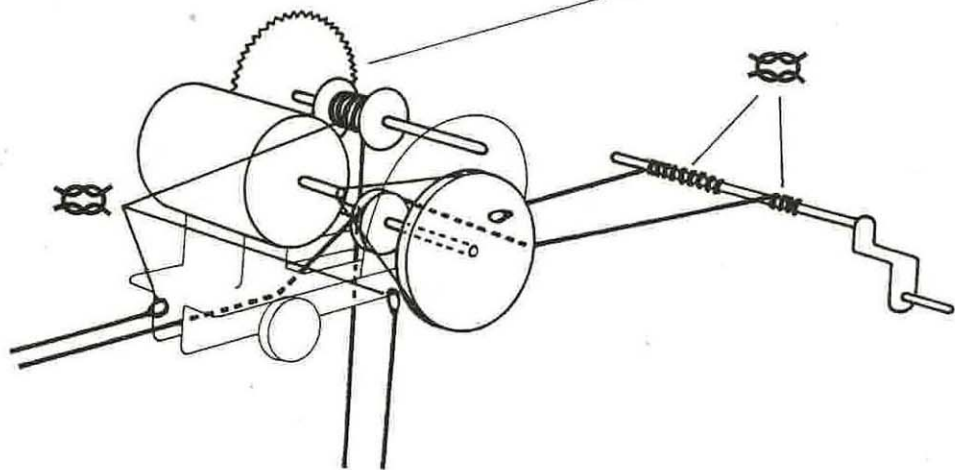
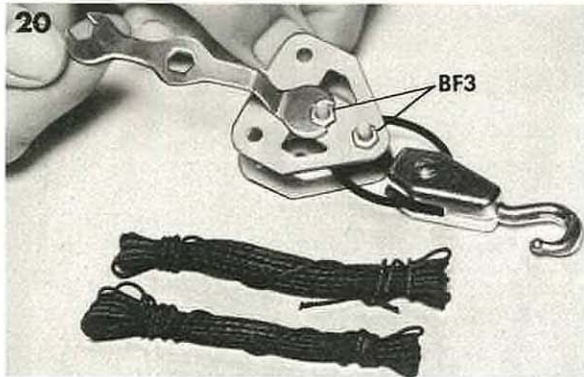


# Radial Crane





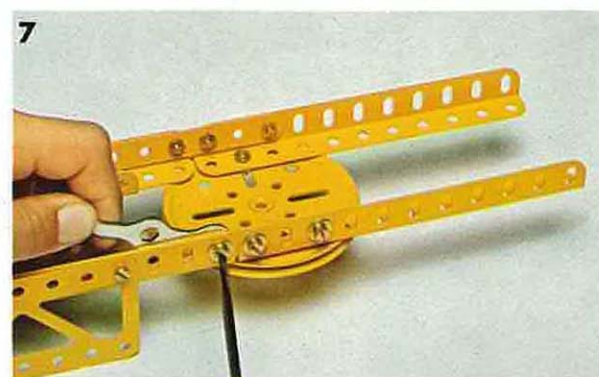
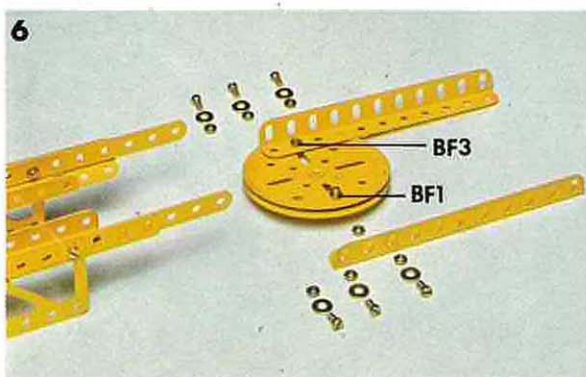
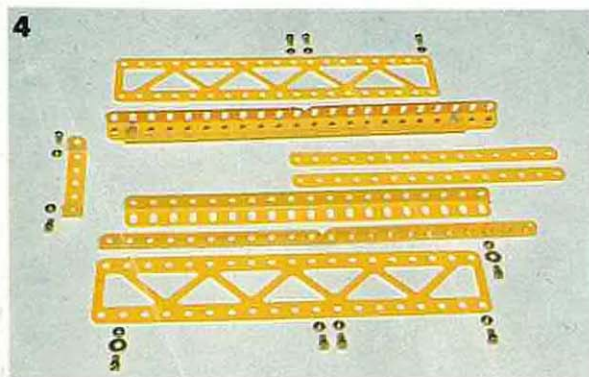
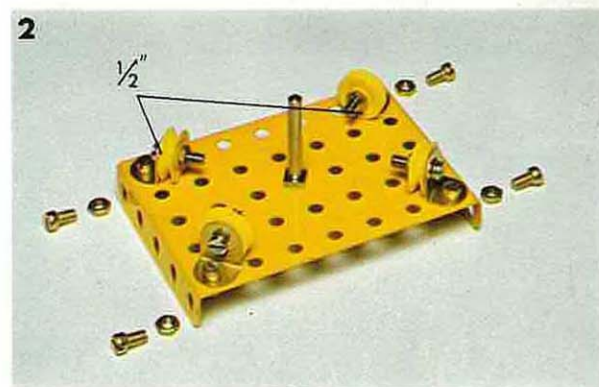
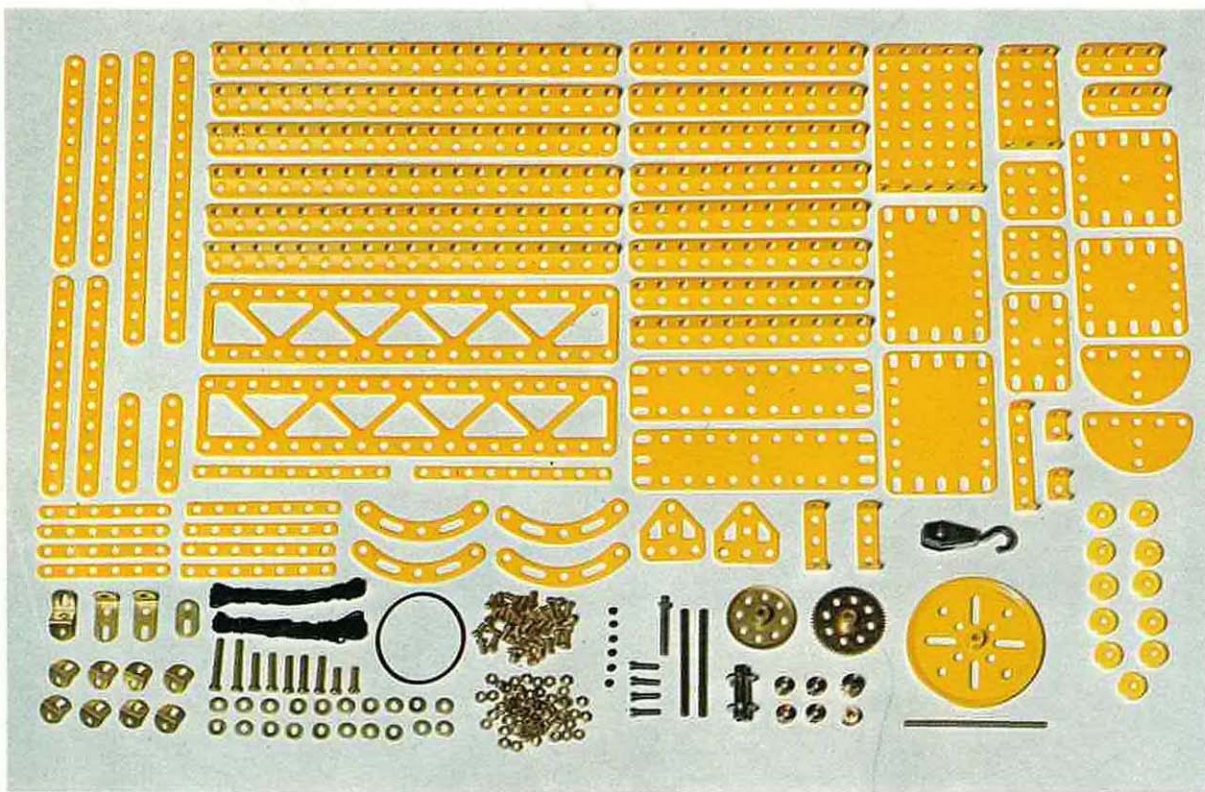


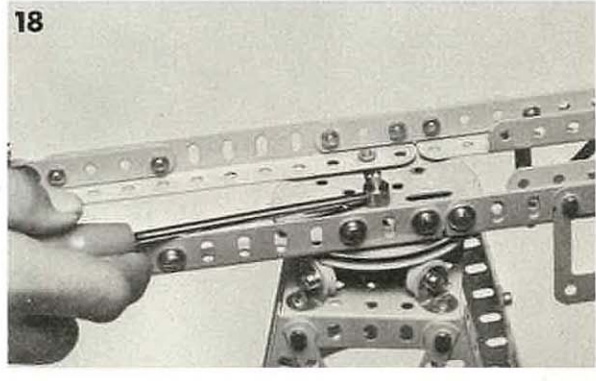
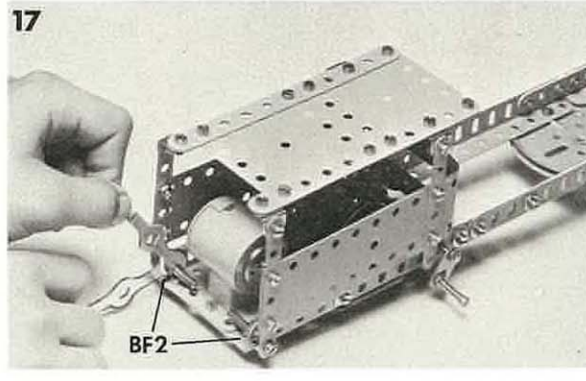
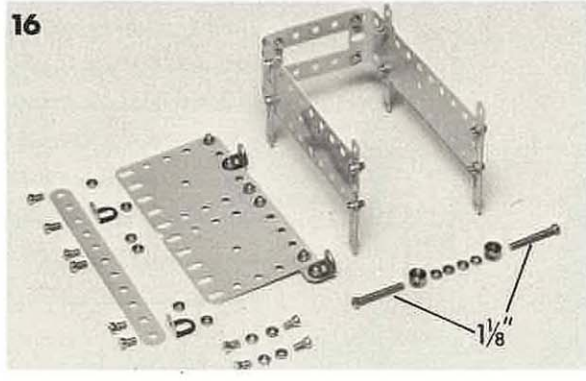
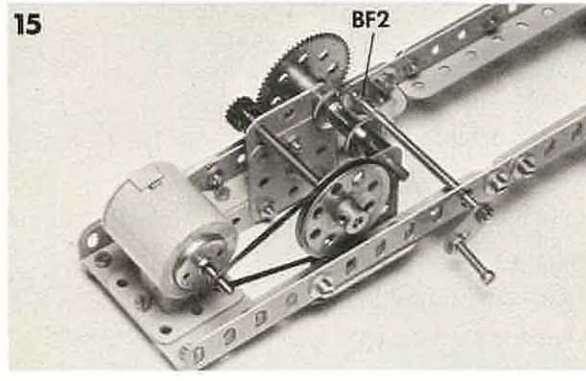
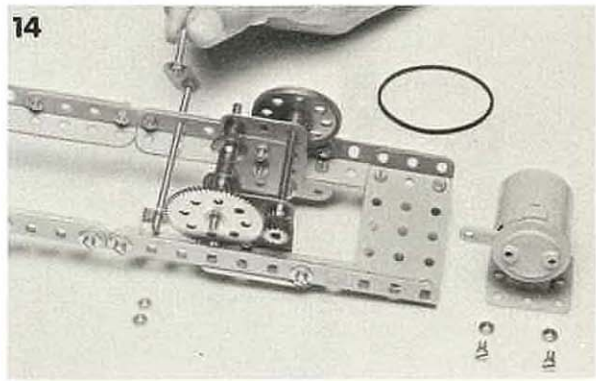
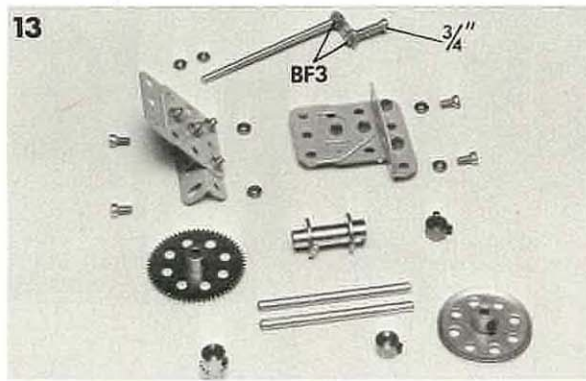
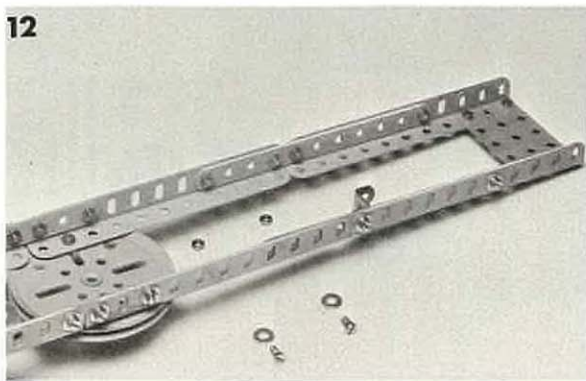
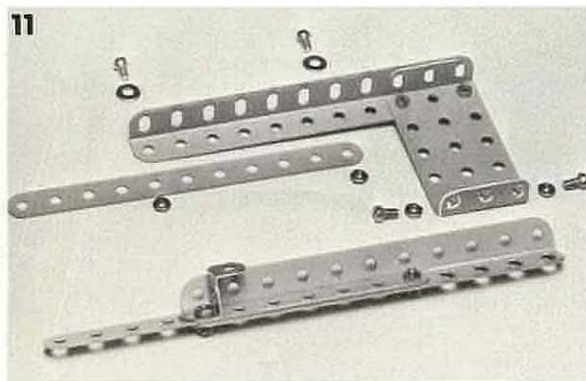
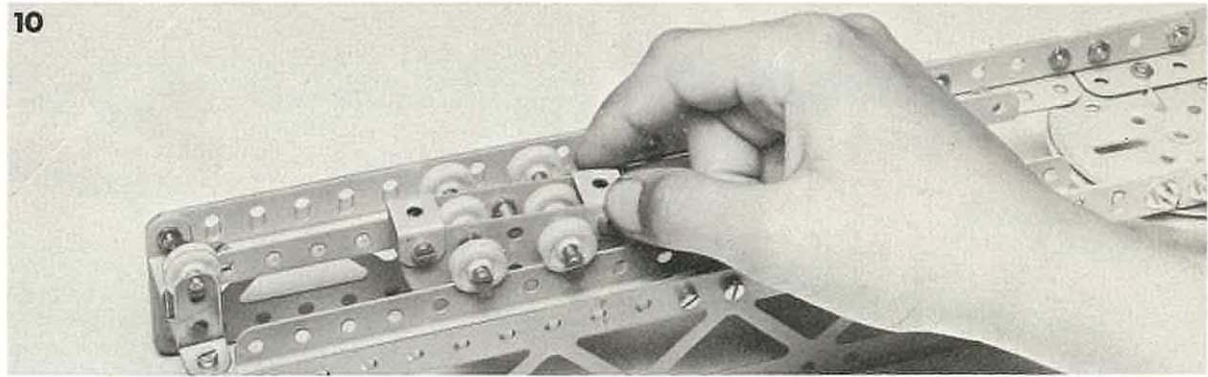
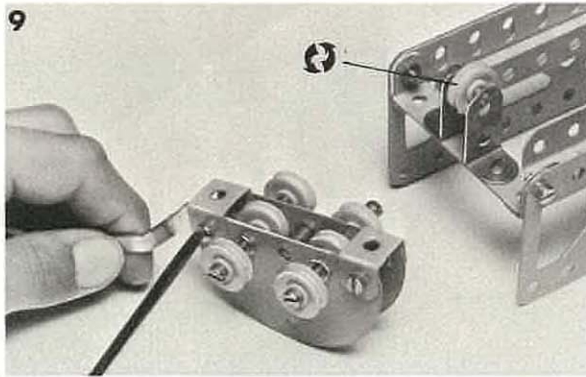
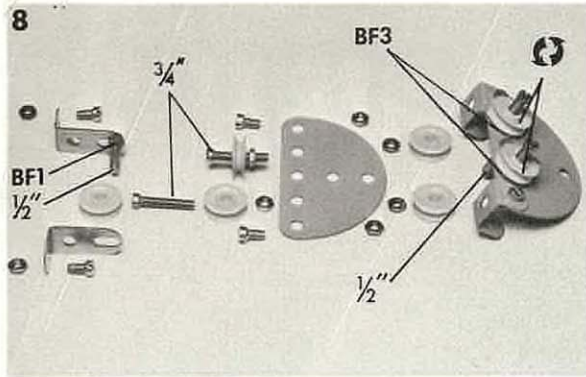


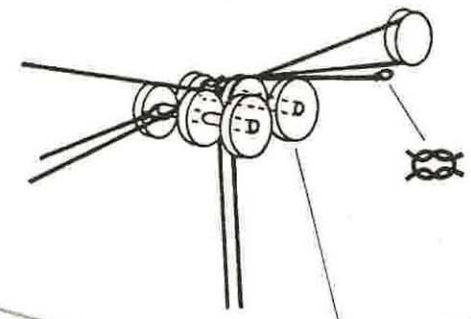
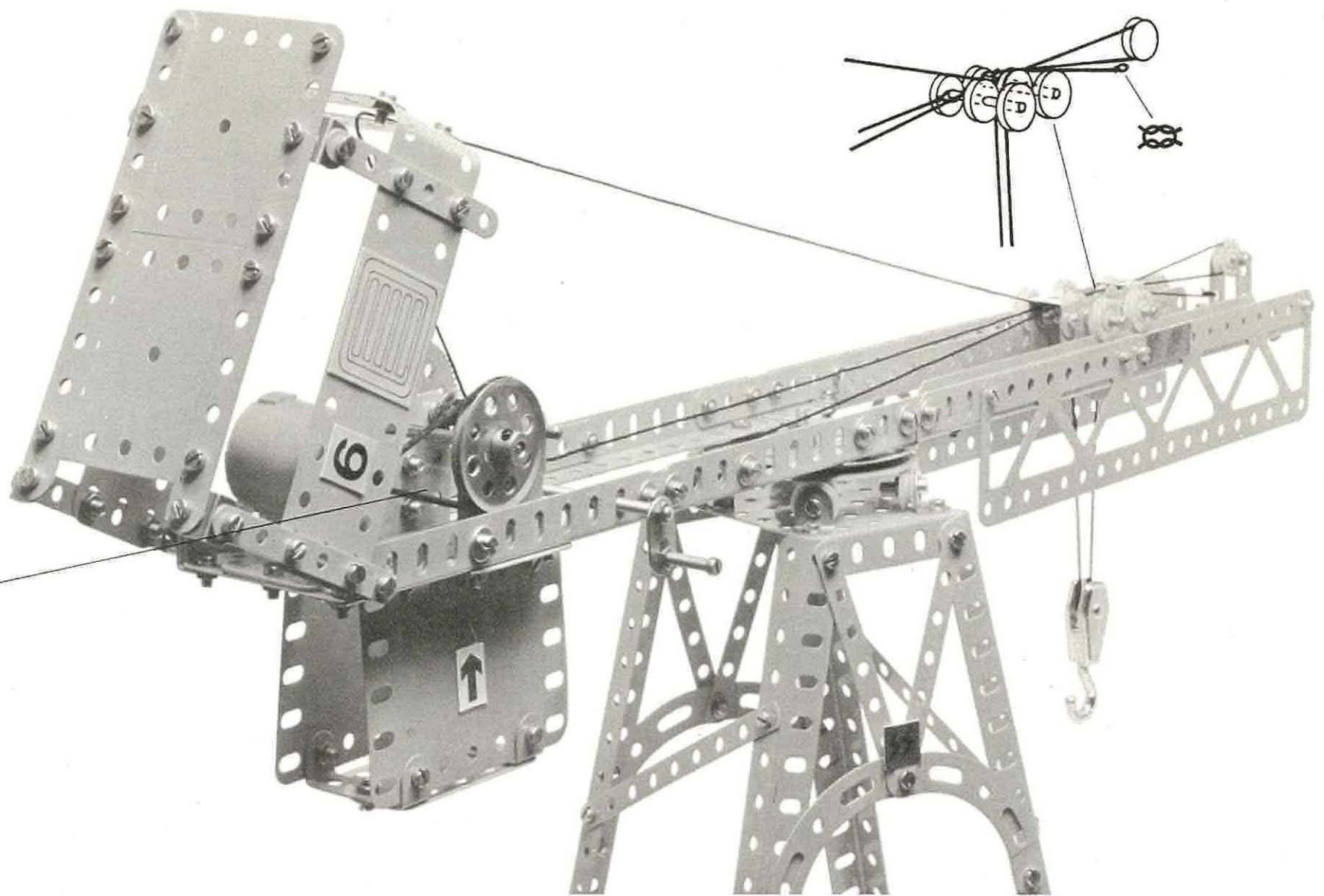
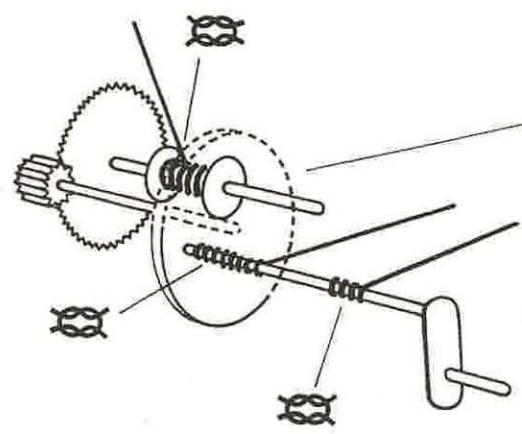
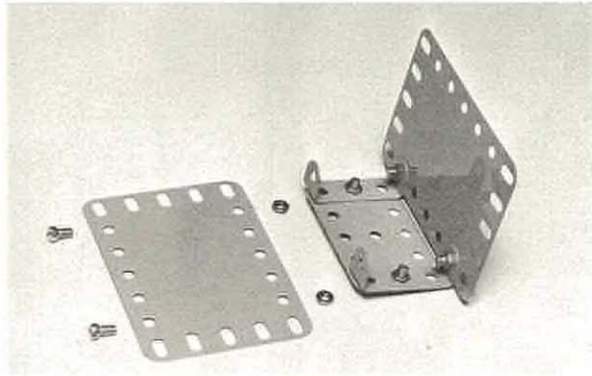
# Hammerhead Crane





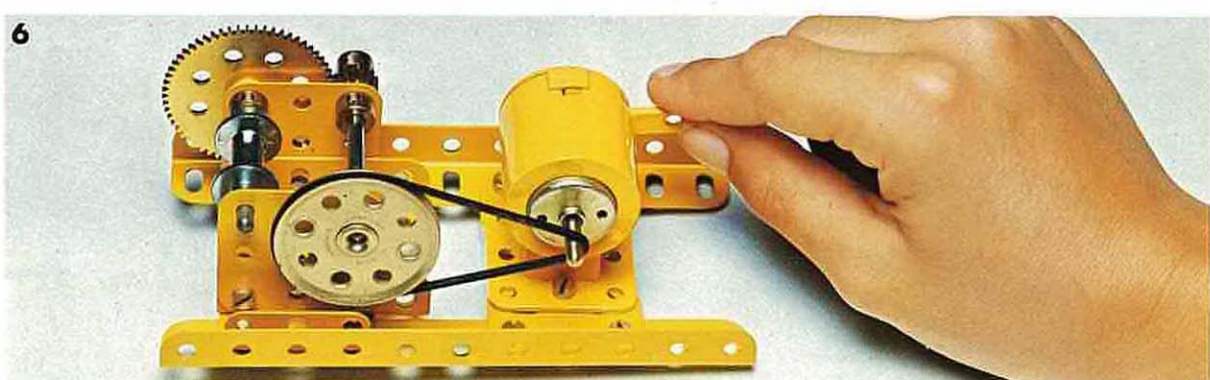
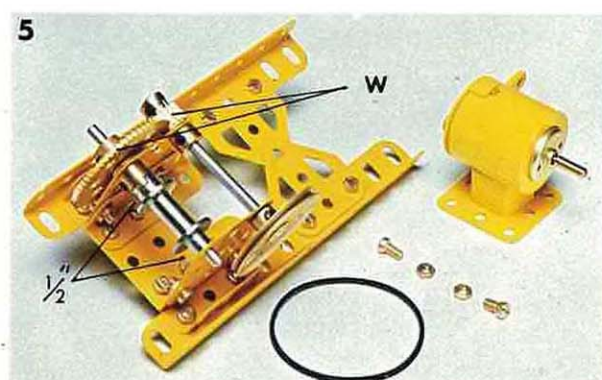
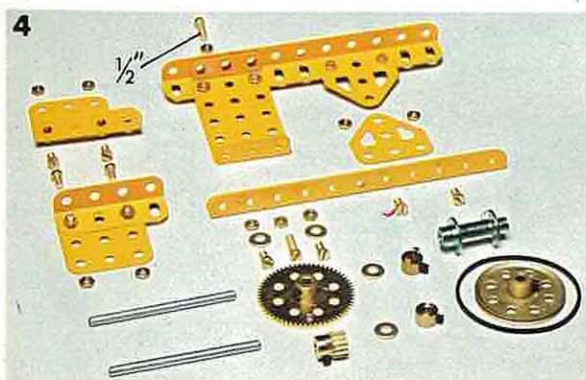
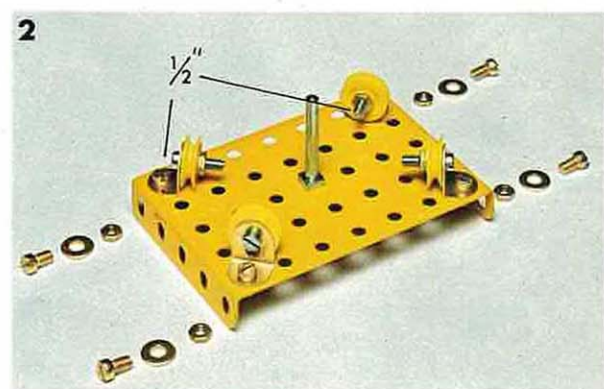


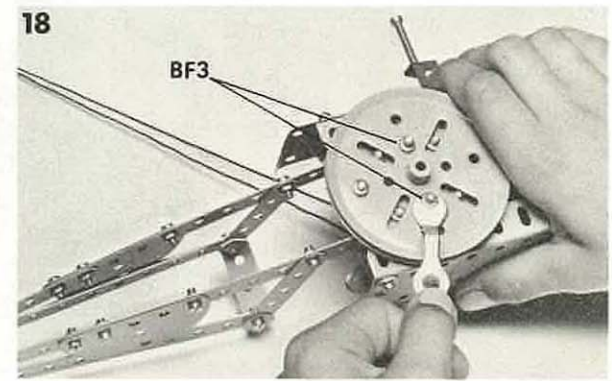
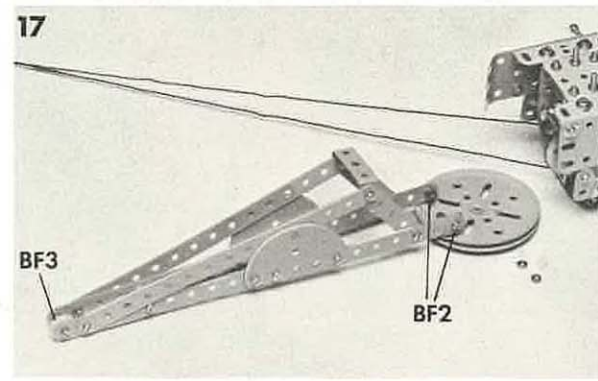
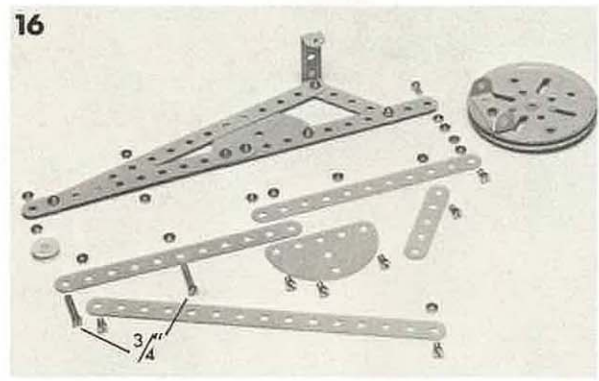
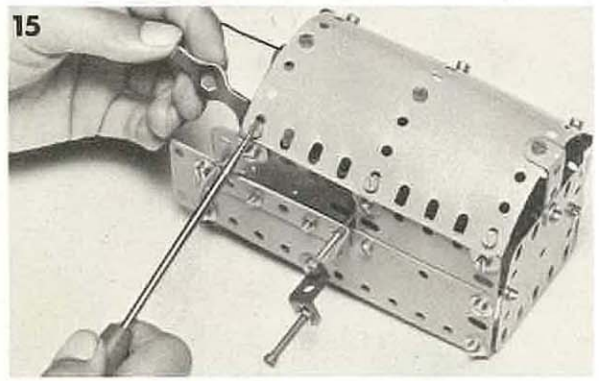
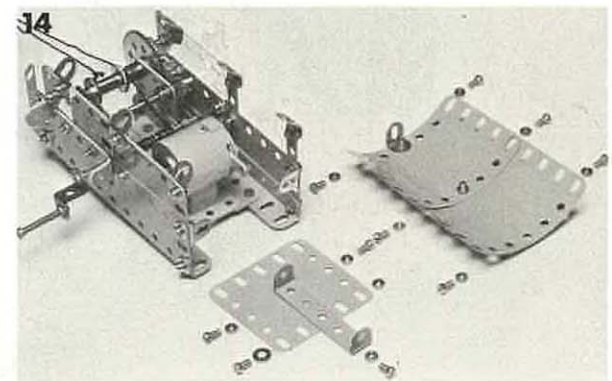
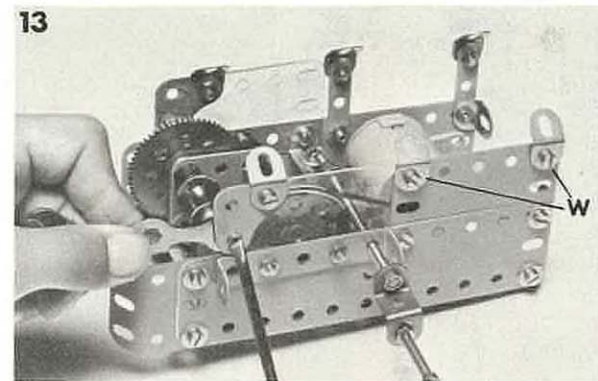
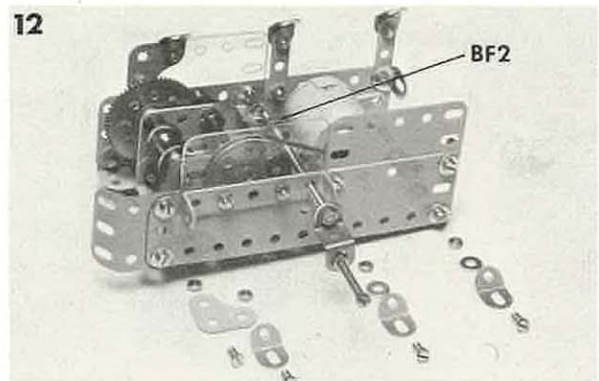
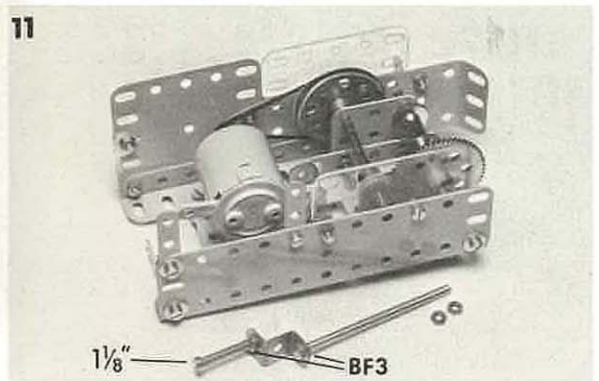
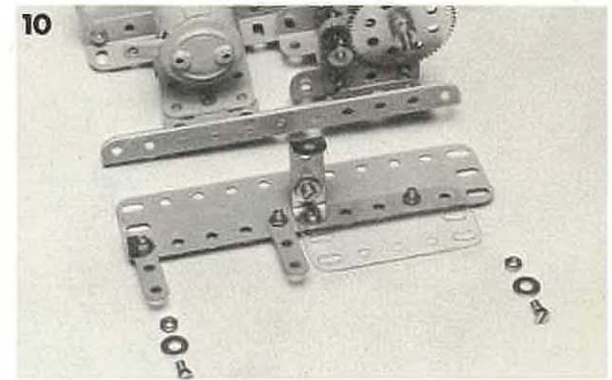
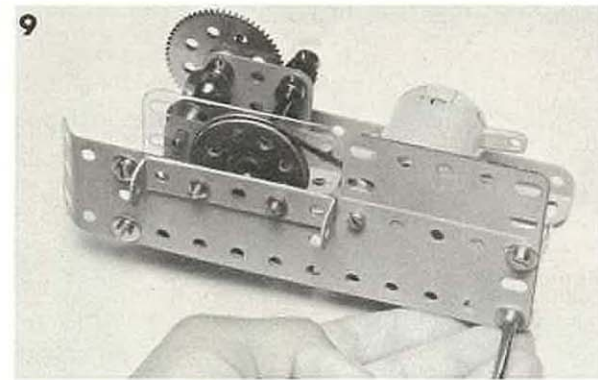
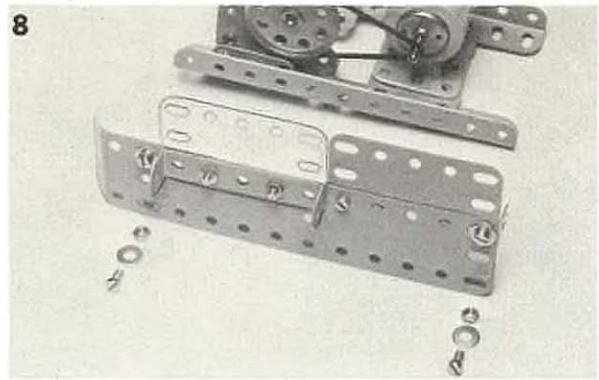
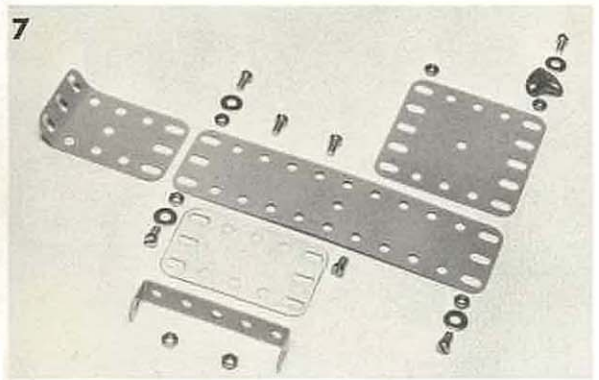




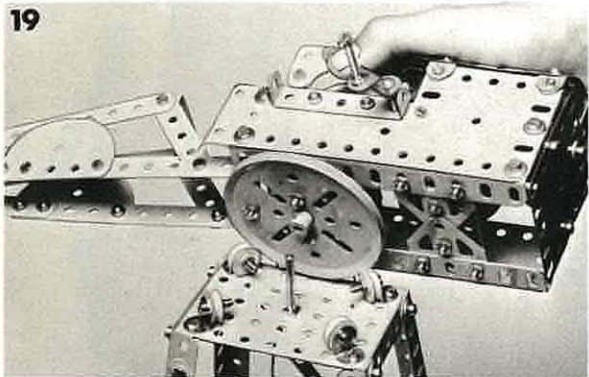
# Dockside Crane



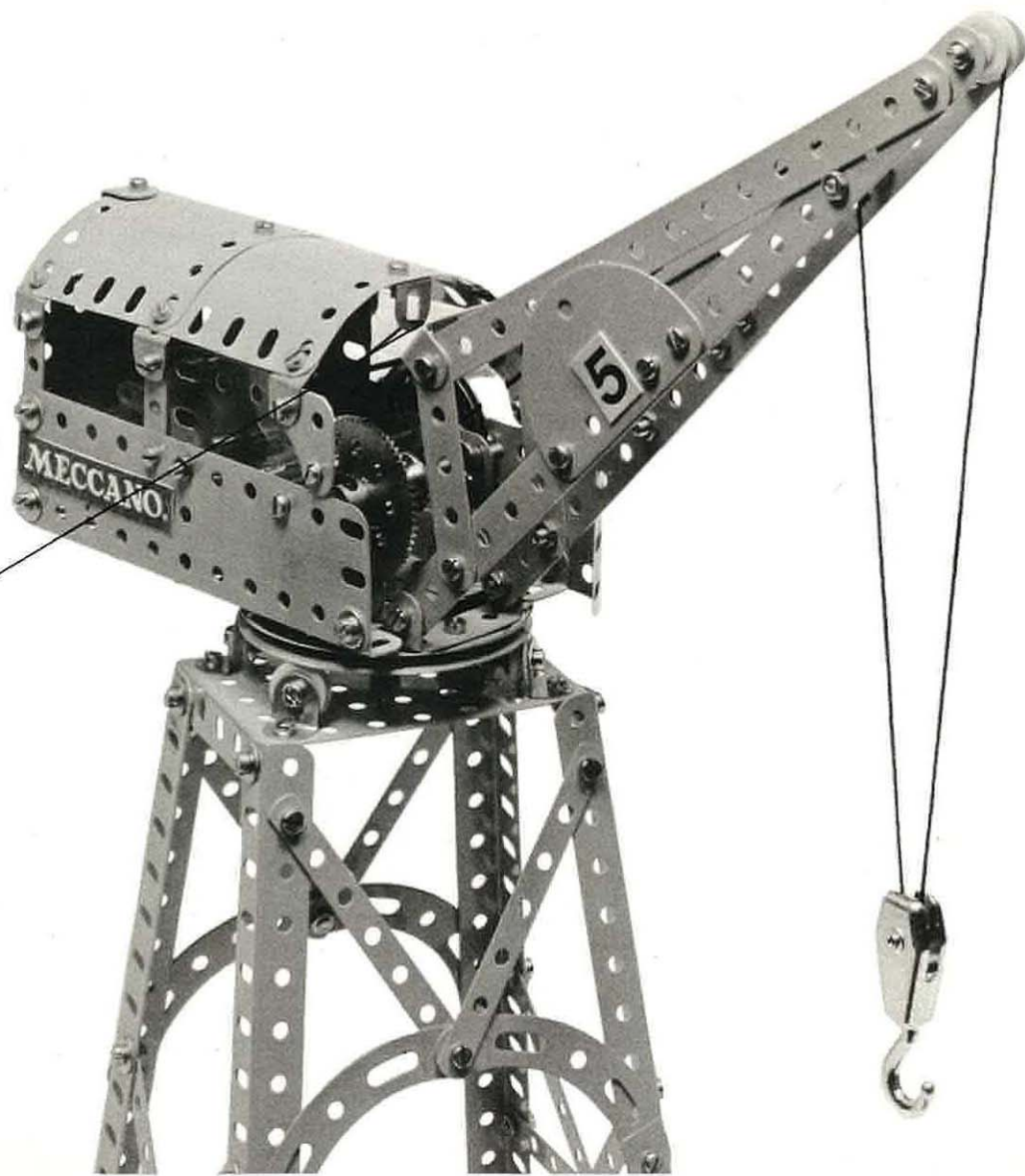
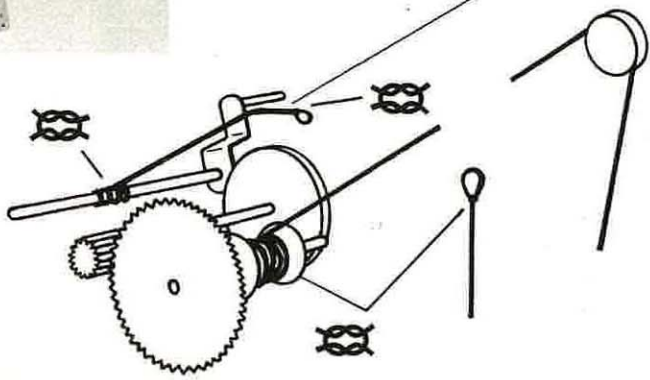
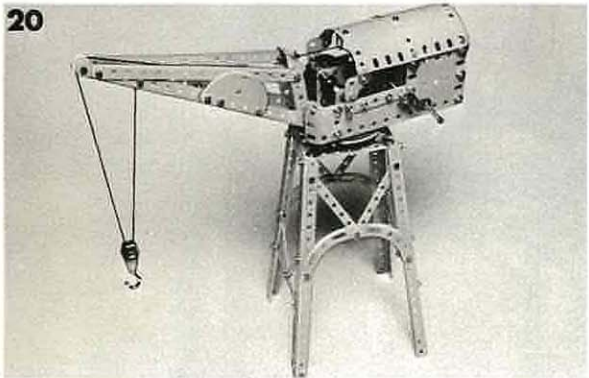




19



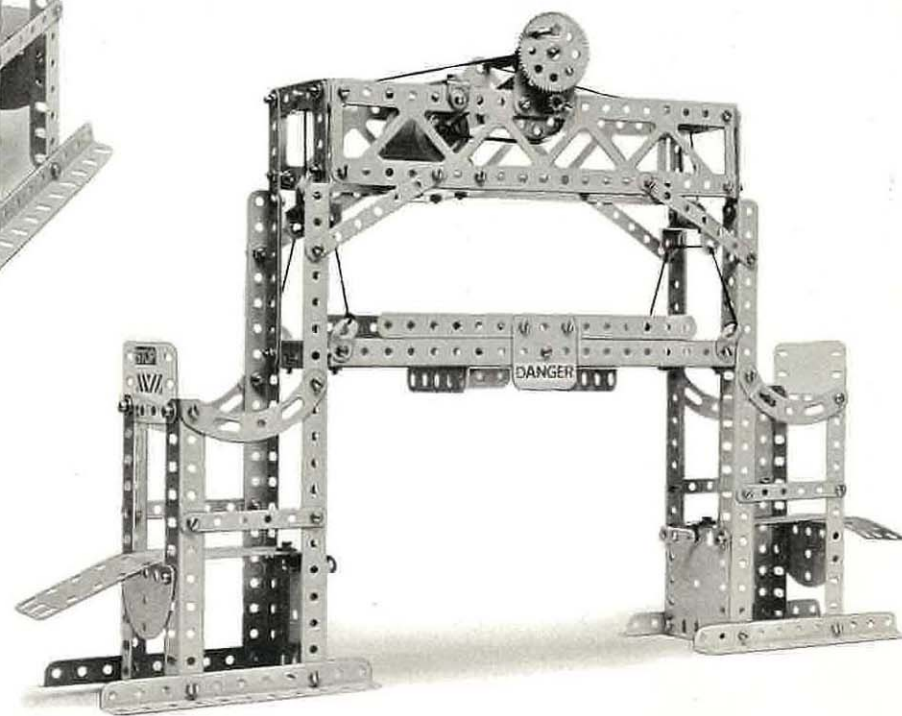
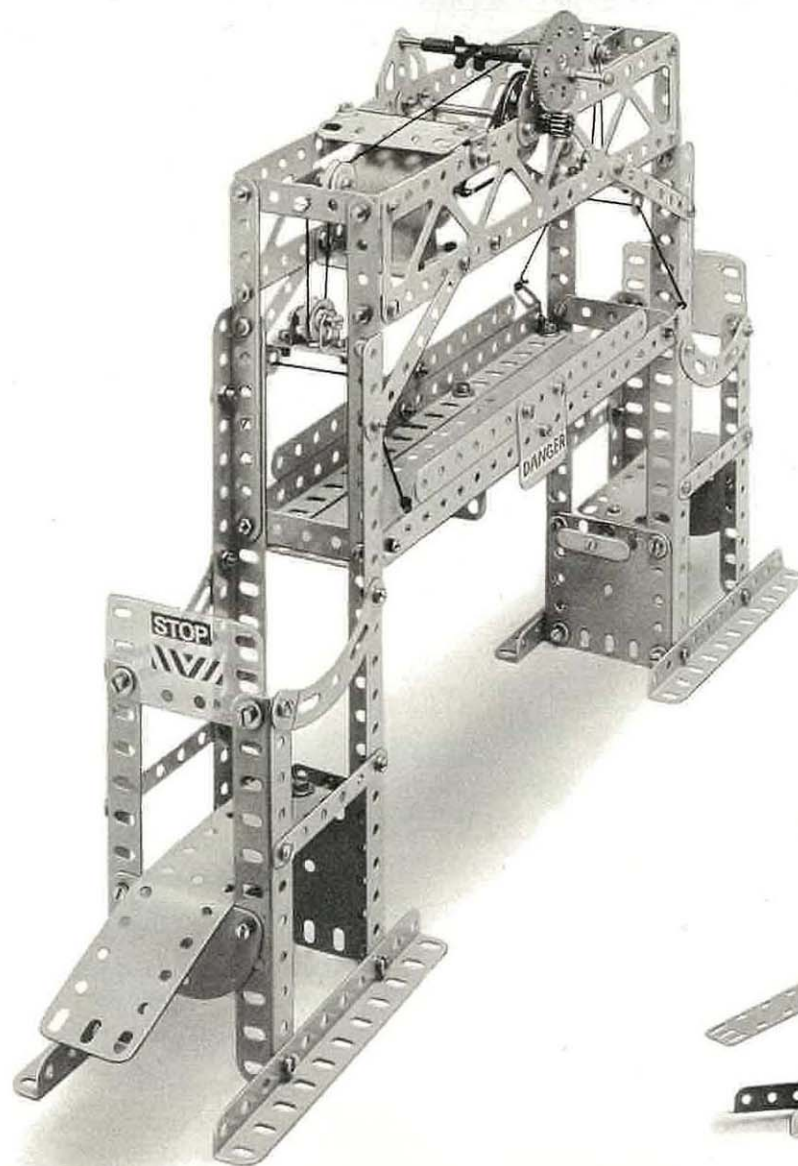
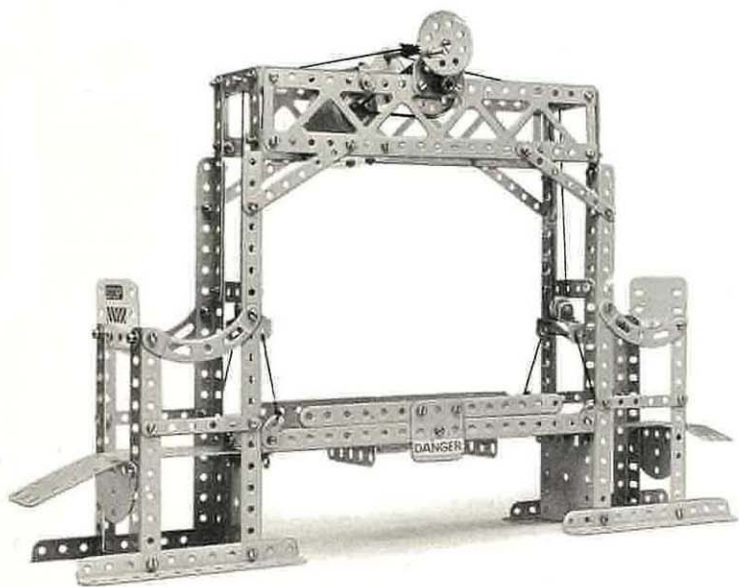
20



# Bridges







GB

The models you've been building with your Crane Multikit are just a part of the Meccano Multikit system.

The other four Multikit sets — Army and Combat, Highway and Super Highway — will let you build a lot more working models and develop a great many more ideas.

F

Les modèles que vous avez construits avec votre 'Multikit — Grue' ne représentent qu'une partie du système Meccano

Multikit.

Les quatre autres jeux de 'Multikit' — Armée et Combat, Routes et Grandes Routes — vous permettront de construire bien d'autres modèles pouvant fonctionner et de développer vos propres idées.

N

Modellene som du har bygget med Crane Multikit er bare en enkelt del av Meccano's Multikit system.

Med de andre fire Multikit-settene — Army og Combat, Highway og Super Highway — kan du bygge en lang rekke nye modeller som virker og utvile mange nye ideer.

D

Die Modelle, die du mit deinem Kran-Multikit gebaut hast, sind nur ein Teil des Meccano-Multikit-Systems.

Mit den anderen vier Multikit — Heer und Kampf, Straßen und Super-Straßen — kannst

du noch viel mehr Arbeitsmodelle bauen und unzählige neue Ideen verwirklichen.

E

Los modelos construídos con el Crane Multikit representan sólo una parte del sistema Meccano Multikit.

Con los otros cuatro Multikit — Ejército y Combate, Carreteras y Supercarreteras — se podrán construir muchos más modelos funcionales y desarrollar muchísimas más ideas.

I

I modelli che avete costruito con il Crane Multikit rappresentano puramente una parte del sistema Meccano Multikit.

Gli altri quattro Multikit — Army, Combat, Highway e Super Highway (Esercito, Combattimento, Autostrade e Superautostrade) — vi permettono di realizzare un numero più grande di modelli funzionanti oltre a fornirvi più idee.

NL

De modellen die U gebouwd heeft met Uw Crane Multikit vormen slechts een gedeelte van het Meccano Multikit systeem.

De andere vier Multikit — Leger en Gevecht, Grote Weg en Auto Strada — zullen U in staat stellen nog veel meer werkende modellen te bouwen en een groot aantal ideeën te ontwikkelen.

GB

All the parts in every Multikit can be used with Standard Meccano sets so there is almost no limit to what you can build.

Add one of the motors — either electric, clockwork or steam — and you can build a



Elektro-, einen Federspann oder einen Dampfmotor — hinzugefügt, kann man eine ganz neue Welt richtig arbeitender Gegenstände bauen.

Du und deine Phantasie können all das bewerkstelligen. Deiner Vielseitigkeit sind keine Schranken gesetzt.



whole new world of working things.  
All it needs is you and your imagination.  
Meccano is as versatile as you.

**F** Toutes les pièces de chacun des Multikit pouvant être utilisées avec les jeux de Meccano Standard il n'y a presque pas de limites à ce que vous pouvez construire. Ajoutez l'un des moteurs — soit électrique, mécanique ou à vapeur — et vous pourrez construire une quantité infinie de modèles pouvant fonctionner. Il ne vous reste qu'à faire preuve d'imagination et de versatilité.

**N** Alle delene i Multikit-settene kan benyttes sammen med Standard Meccano deler og det finnes nær sagt ingen grenser for hva du kan bygge. Har du en av motorene — enten elektrisk, fjærdrevet eller damp — kan du bygge en hel ny verden av modeller som virker. Det eneste som skal til er deg, din oppfinnsomhet og Meccano. Meccano er like allsidig som deg selv.

**D** Die Teile jedes Multikits können alle in Verbindung mit Standard-Meccanokästen verwendet werden, so daß du praktisch alles bauen kannst, was dir in den Sinn kommt. Wenn man einen der Motoren — einen

**E** Todas las piezas de los Multikits se pueden emplear con juegos de Meccano Standard de modo que el número de cosas que se pueden construir es casi ilimitado.

Añadiendo uno de los motores — ya sea eléctrico, de cuerda o de vapor, - se podrán contruir todo un nuevo mundo de modelos funcionales. Solo se necesita la persona que lo haga y su imaginación. Es tan variado como el usuario.

**I** Tutte le parti dei Multikit possono venir usate con i corredi Meccano Standard, per cui non esiste praticamente alcun limite ai modelli che si possono ricavare.

Utilizzando i motori — elettrici, a molla o a vapore — potrete comporre un'infinità di nuovi modelli funzionanti. Occorrono due sole cose: voi e la vostra immaginazione. E' altrettanto versatile quanto voi.

**NL** Alle delen in iedere Multikit kunnen tezamen met Standaard Meccano dozen gebruikt worden zodat wat men kan bouwen bijna onbegrensd is.

Voeg een van de motoren eraan toe — of wel electrisch, klokwerk of stoom — en men kan een geheel nieuwe wereld van werkende dingen bouwen. Uzelf en Uw verbeelding zijn de enige benodigdheden. Het is net zo veelzijdig als Uzelf bent.

