LIONEL CONSTRUCTION KIT CHART

ACTUAL SIZE REPRODUCTION OF ALL PARTS CONTAINED IN LIONEL CONSTRUCTION KITS

TUBES

A1 A2 A3 A4 A5 A6

B4 B3 B10 A10

TUBE GUSSETS

D1 D2 D3 SQUARE D4 D10 D11

E1 CONNECTING CLIP

E3 PLAIN CLIP

D 25

AXLE SPRING GUSSET

SPRINGS

D 23 D 24

STRIP GUSSETS

D20 D21 D22

PLATES

C10 C11 C20 C21

STRIPS

C13 C14 C15

When, because of a heavy load, greater friction is required on the Pulley, you can prevent slipping by (1) wrapping a rubber band around the Pulley, or (2) by rubbing resin on the string.

AXLES

H2 H3 H4 H5 H6 H7 H8

G 10 PULLEY

G3 TIRE

G1 WHEEL

M1 SET SCREW

G2 HUB

H 10 SLEEVE

H 11 COUPLING

N1 PLATFORM

ATTACHING FITTING N2

I 3 HANDCRANK

L1 HOOK

K1 CRANK SHAFT

T1 SCREW DRIVER

T2 LOCATING PIN

Since the Locating Pin T2 is made of smooth-surfaced metal, you will find it easier to use if you place about five rubber grommets on the end, to act as a handle.

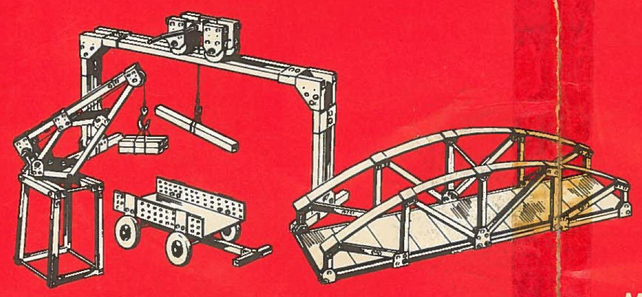
STRING

This shows the quickest and simplest way to remove rivets and rubber grommets from assembled models. First, press Locating Pin firmly against rivet and behind grommet and push forward. Next, remove rivet after it has become displaced from holes. Note that rubber grommet will have seated itself on Locating Pin, as shown, from which it can be easily taken off.

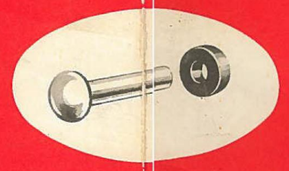
F10 GROMMET

F1 RIVET

Keep This Chart Handy for Ready Reference. You Will Find It a Constant Aid in Making Construction Kit Models

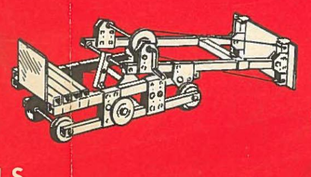


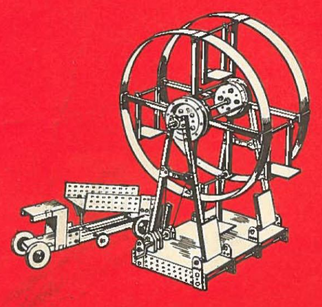
Illustrated above, in full life-size, are all the parts packed with Lionel Construction Kits. This chart is designed to aid you in familiarizing yourself with the appearance of the parts and the names by which they are called. All building diagrams in the Construction Kit manual refer to these parts by number. Therefore, when directions ask for an A10, a B3 and a C21, for example, you will know — by referring to this chart — that these parts are, respectively, an Open End Tube, an Inner Tube and a Plate of the size shown on the chart. KEEP THIS CHART BEFORE YOU AT ALL TIMES when building. You will find it extremely helpful.



NO NUTS OR BOLTS!
THE MODERN WAY TO BUILD.

On the reverse side of this chart you will find easy-to-follow Sub-Assembly diagrams which should be studied carefully before you begin making any models. Each of the basic building techniques is illustrated in detail. The diagrams will show you the many combinations which can be obtained from different parts, in order to meet all requirements of the builder. Since every Construction Kit model employs several of these Sub-Assemblies, you will need the chart for constant reference.

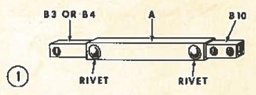




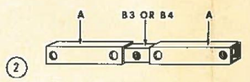
MADE BY THE MAKERS OF THE FAMOUS LIONEL ELECTRIC TRAINS

CHART OF SUB-ASSEMBLY DIAGRAMS KEYED TO MODEL INSTRUCTIONS

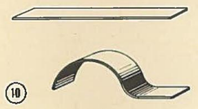
The Sub-Assemblies illustrated here show basic building techniques which you will employ in making Lionel Construction Kit models. Practice putting these Sub-Assemblies together until you are thoroughly familiar with the various methods of joining such parts as Tubes, Gussets, Strips and Plates.



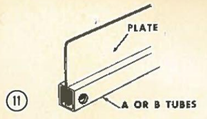
INNER AND OUTER TUBES



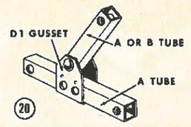
COMBINATION PROVIDING FOR LOCATION OF HOLE IN MIDDLE OF A MEMBER



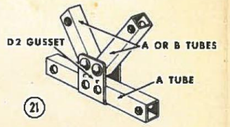
HOW A PLATE MAY BE BENT TO FORM A FENDER



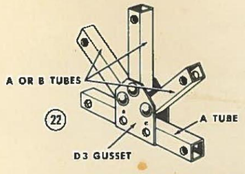
HOW PLATE CAN BE LOCATED IN SLOT OF A TUBE



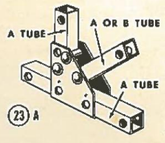
2 TUBES CONNECTED WITH A D1 GUSSET



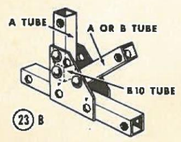
3 TUBES CONNECTED WITH A D2 GUSSET



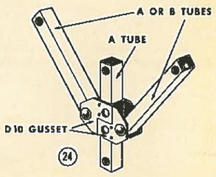
4 TUBES CONNECTED WITH A D3 GUSSET



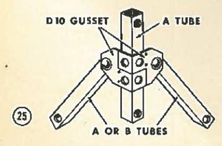
3 TUBES CONNECTED WITH A D4 SQUARE.



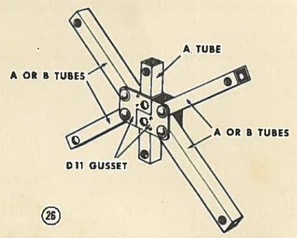
3 TUBES CONNECTED WITH A D4 SQUARE.



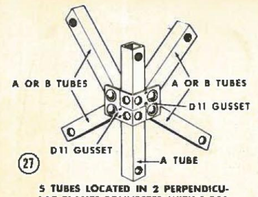
3 TUBES LOCATED IN THE SAME PLANE CONNECTED WITH 2 D10 GUSSETS



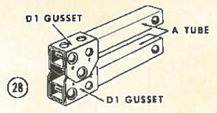
3 TUBES LOCATED IN 2 PERPENDICULAR PLANES CONNECTED WITH 2 D10 GUSSETS



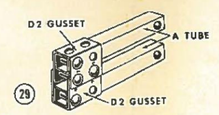
5 TUBES LOCATED IN THE SAME PLANE, CONNECTED WITH 2 D11 GUSSETS



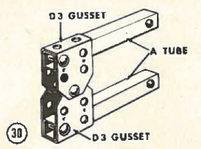
5 TUBES LOCATED IN 2 PERPENDICULAR PLANES CONNECTED WITH 2 D11 GUSSETS



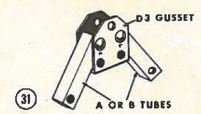
2 PARALLEL TUBES CONNECTED WITH 2 D1 GUSSETS



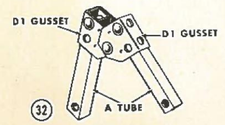
2 PARALLEL TUBES CONNECTED WITH 2 D2 GUSSETS



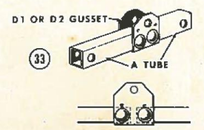
2 PARALLEL TUBES CONNECTED WITH 2 D3 GUSSETS



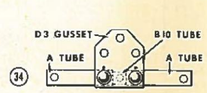
RIGID ANGLE OBTAINED WITH A D3 GUSSET



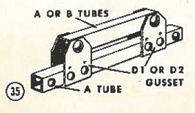
ANGLE OBTAINED WITH 2 D1 GUSSETS



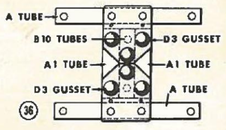
2 A TUBES CONNECTED WITH A D1 GUSSET. (FREE INTERVAL BETWEEN THE TUBES)



2 A TUBES CONNECTED WITH A B10 TUBE, AND TIED TO A D3 GUSSET

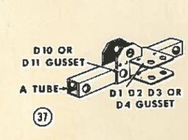


2 PARALLEL TUBES CONNECTED WITH 2 D1 OR D2 GUSSETS

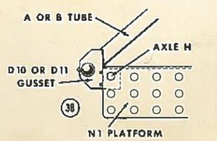


RIGID FASTENING OF 2 PARALLEL TUBES BY MEANS OF — 2 D3 GUSSETS 2 A1 TUBES 1 B10 TUBE

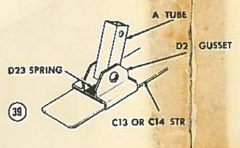
3 TUBES CONNECTED WITH A D4 SQUARE.



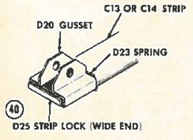
COMBINATION OF D10 OR D11 GUSSET WITH D1, D2, D3 OR D4 GUSSETS



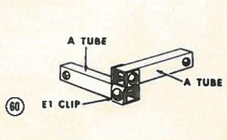
FASTENING A D10 OR D11 GUSSET TO PLATFORM N1



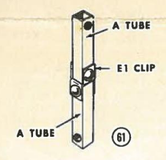
METHOD OF ATTACHING AN A TUBE TO C13 OR C14 STRIP USING D20, D21, OR D22 GUSSET



FASTENING D20 OR D21 GUSSET TO C13 OR C14 STRIPS WITH STRIP LOCK D25

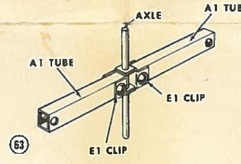


FASTENING 2 PERPENDICULAR A TUBES WITH AN E1 CLIP

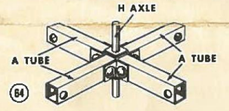


2 A TUBES IN LINE CONNECTED WITH AN E1 CLIP

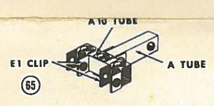
COMBINATION OF AN E1 CLIP WITH A D1 GUSSET



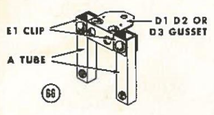
COMBINATION OF 2 E1 CLIPS WITH 2 A TUBES



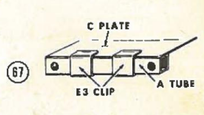
COMBINATION OF 4 E1 CLIPS AND 4 A TUBES



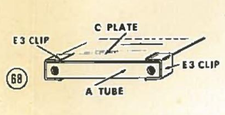
COMBINATION OF 3 E1 CLIPS, 1 A TUBE, AND 1 A10 TUBE



COMBINATION OF 2 E1 CLIPS WITH 1 D1, D2, OR D3 GUSSETS



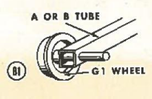
METHOD OF FASTENING PLATE C TO AN A TUBE WITH E3 CLIPS



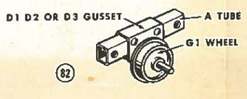
ALTERNATE WAY OF FASTENING THE PLATES C WITH THE A TUBES

ATTACHING 2 E1 CLIPS AT RIGHT ANGLES

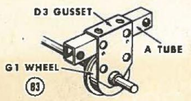
AFFIXING G1 WHEEL TO AXLE



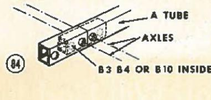
METHOD OF FIXING AXLE THROUGH THE HOLES OF AN A OR B TUBE



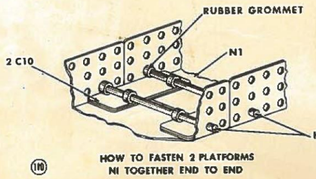
AXLE FIXED THROUGH THE HOLES OF A GUSSET



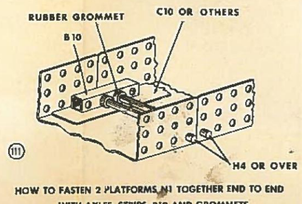
SHOWING HOW WHEEL IS PLACED INSIDE A D3 GUSSET



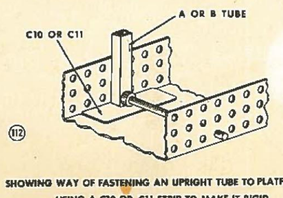
LAYOUT FOR TRACK. DO NOT USE RIVETS AND RUBBER GROMMETS — SUBSTITUTE AXLES



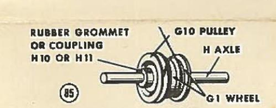
HOW TO FASTEN 2 PLATFORMS N1 TOGETHER END TO END



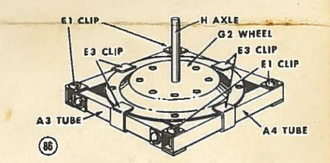
HOW TO FASTEN 2 PLATFORMS N1 TOGETHER END TO END WITH AXLES, STRIPS, B10 AND GROMMETS



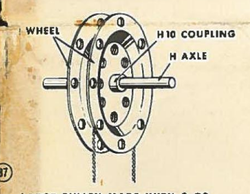
SHOWING WAY OF FASTENING AN UPRIGHT TUBE TO PLATFORM, USING A C10 OR C11 STRIP TO MAKE IT RIGID



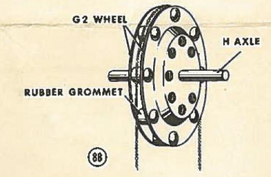
TIE STRING IN GROOVE OF PULLEY AND LOOP OVER WHEEL



A SWIVEL PLATFORM

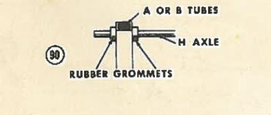


LARGE PULLEY MADE WITH 2 G2 WHEELS

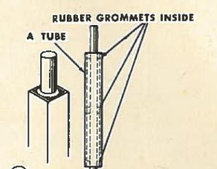


ANOTHER TYPE OF PULLEY MADE WITH 2 OPPOSITE G2 WHEELS

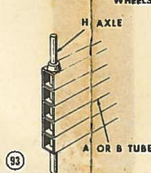
FORMING A DRUM BY MEANS OF 2 OPPOSITE WHEELS



HOW TO FASTEN AXLE WITH RUBBER GROMMETS

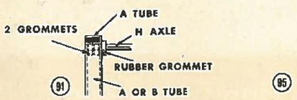


METHOD OF CENTERING AXLE H IN THE MIDDLE OF AN A TUBE

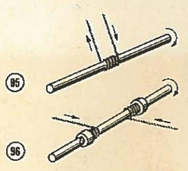


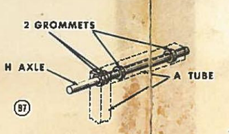
FORMING A FLAT SURFACE BY MEANS OF A OR B TUBES AND AN H AXLE

METHOD OF TYING A STRING ON HANDLE, CRANKSHAFT OR AXLE

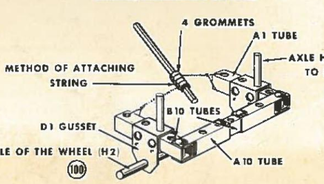


ANOTHER WAY OF FASTENING AXLE (WHEN TOO SHORT)

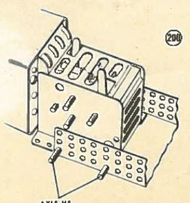




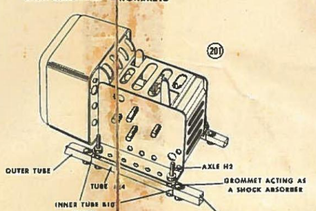
FASTENING 2 PERPENDICULAR TUBES WITH AXLE AND GROMMETS

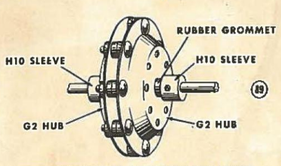


ASSEMBLY SHOWING MOVEMENT OF THE FRONT WHEELS ON CARS OR TRUCKS



Illustrating two methods of mounting Lionel electric motors for operation of models. Study the drawings above and select the method that best meets your requirements.





WHEN NECESSARY TO HAVE AXLE AND PULLEY ROTATING TOGETHER PUT PRESSURE AGAINST THE WALLS OF BOTH G2 HUBS BY THE H10, AS SHOWN ON THE ABOVE DRAWING.

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MADE BY THE MAKERS OF THE FAMOUS LIONEL ELECTRIC TRAINS

THE LIONEL CORPORATION, 15 EAST 26th STREET, NEW YORK 10, N. Y.