



FLEX CRAFT

Basic Assembly & Technical Info

**ONE TOOL
ENDLESS POSSIBILITIES**

**FAST
FRIENDLY
FLEXIBLE**



**BASIC TECH TIPS
HEAVY DUTY TUGGER HITCH
TROLLEY / TOOL BALANCER
TOY BOX
DRAWER SLIDES
ERGONOMIC LIFT OPTIONS
TUBE LOAD CAPACITY**



**THE SHOW KIT WILL BUILD
ANY ONE OF THESE AND MORE!**

BASIC TECH TIPS

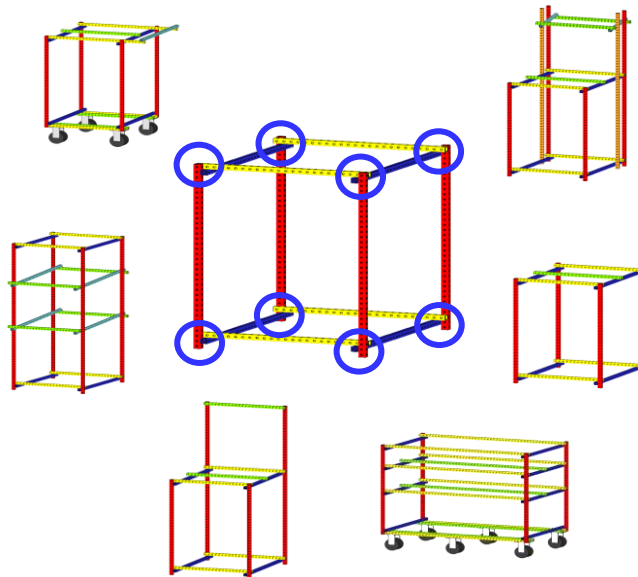
Direct Bolt Joint*

Also known as a 3-point Registration is the most robust joint for constructing the frame of your project. This automatically squares your framework when the bolts are fully tightened.



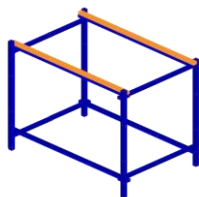
Law of cubing

For the strongest possible construction, use the direct bolt method on as many corners as possible. At a minimum use the direct bolt joint on all outside corners and then fill to fit your needs.

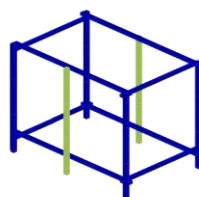


Adding strength

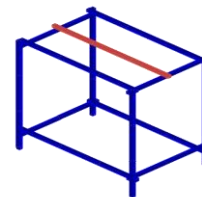
Add either (or both) additional vertical or horizontal tube supports for additional strength. Double tubes by bolting 2 tubes together either horizontally or vertically redistribute the load weight from 2 tubes to 4 tubes. Another option can include incorporating 1x2 tubing where extra support is needed.



Double Tube Support Example



Vertical Tube Support Example

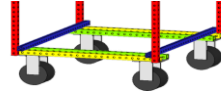


Horizontal Tube Support Example

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STARTING ASSEMBLY

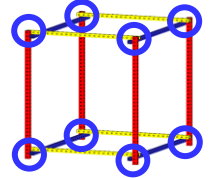
➤ Know your max weight capacities.



➤ Determine if your build will have casters or not.

➤ Using the direct bolt method, loosely bolt together the outer corners.

- If just bolting two tubes together fasten with a 2-1/2" bolt.
- If bolting a tube to a caster fasten with a 1-3/4" bolt.
- If bolting through two tubes and a caster fasten with a 2-3/4" bolt.
- Use standard 5/16 nylon lock nuts with hex bolts.



➤ Fill with customization needs i.e., shelving, drawers, conveyors, surfaces, etc.

➤ Once the build is loosely assembled, begin tightening bolts. Starting with the corners and outer base.

CASTER ASSEMBLY

Expandable Caster

Turn the top jam nut and snug on the rubber spacer. Place caster into a tube. If loose in the tube, tighten the jam nut until the rubber touches the tube sides. When inserted, twist the large lock ring until the rubber locks in the tube. See fig. 1

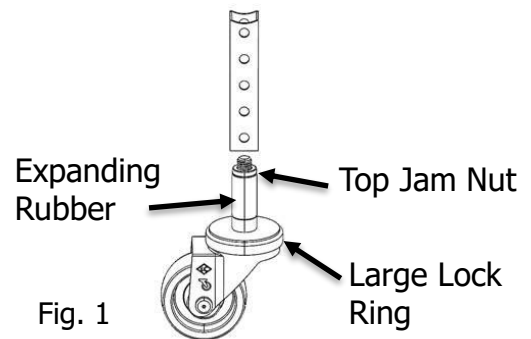


Fig. 1

Plate Caster

When designing the cart, ensure the vertical tube is on the outside corner. Orientate the tubes as shown. Use 2-3/4 bolts through 2 tubes and 1-3/4 bolts through 1 tube. Bolt threads must be down and a nylon lock nut is recommended. See fig. 2

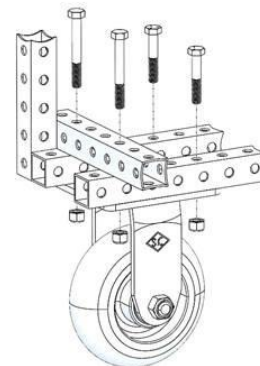


Fig. 2

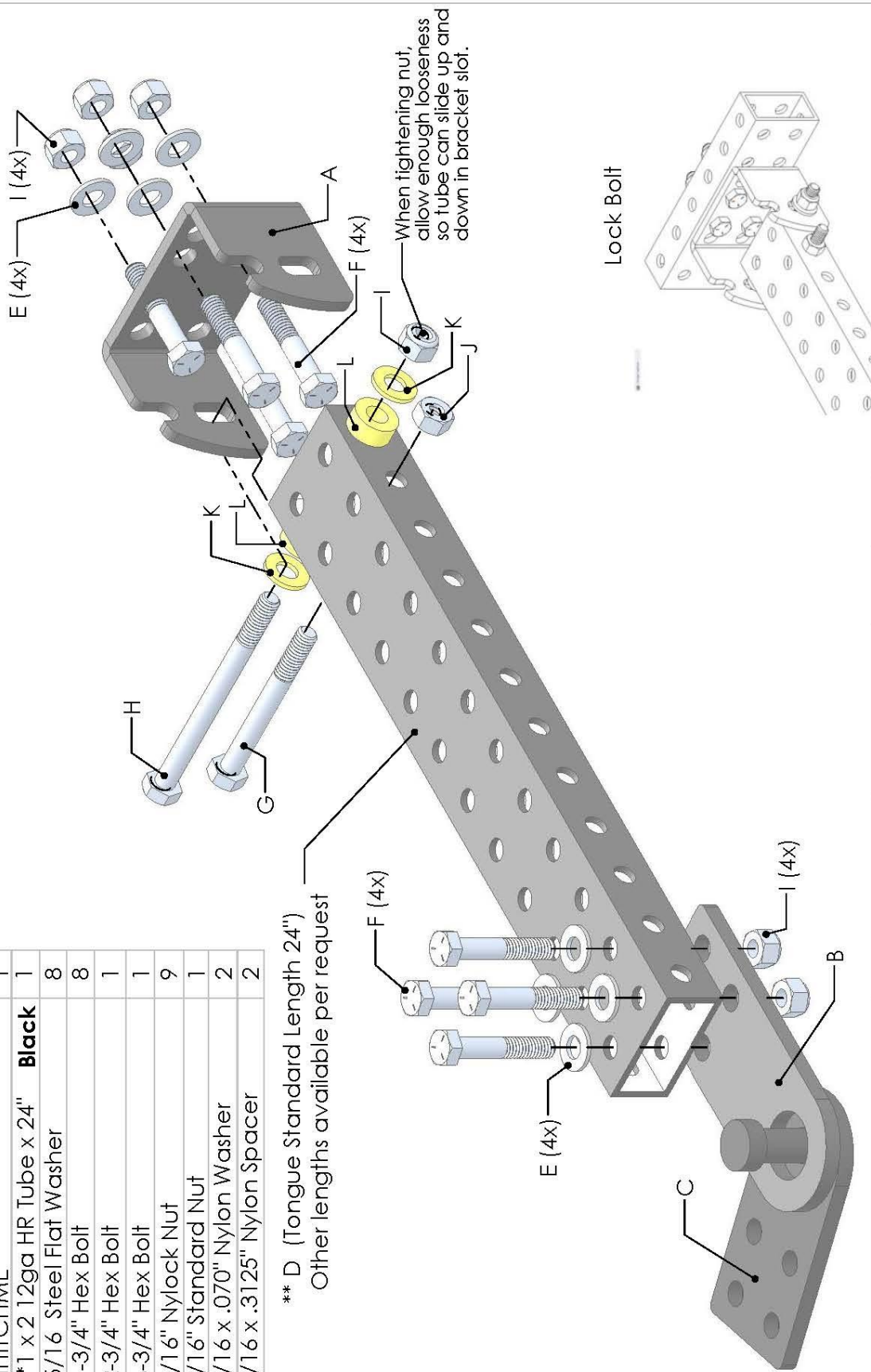
HEAVY DUTY TUGGER HITCH

Rev	Description	Date	Approval
A	Initial Release	6/17/2020	JF

Max Tow Shear Capacity = 2000lbs
Side Load Capacity = 100lbs

ID	HD Hitch Kit BOM	QTY
A	Heavy Hitch Bracket	1
B	HHITCHF .75 - EXT	1
C	HHITCHME	1
D	**1 x 2 1/2ga HR Tube x 24" Black	1
E	5/16 Steel Flat Washer	8
F	1-3/4" Hex Bolt	8
G	2-3/4" Hex Bolt	1
H	3-3/4" Hex Bolt	1
I	5/16" Nylock Nut	9
J	5/16" Standard Nut	1
K	5/16 x .070" Nylon Washer	2
L	5/16 x .3125" Nylon Spacer	2

** D (Tongue Standard Length 24")
Other lengths available per request



NAME	DATE	TOLERANCE
JF	1/20/2020	Unless Otherwise Specified
EA	6/17/2020	X..... ± .060 in
See BOM		XX..... ± .030 in
A		XXX..... ± .010 in
		Angular..... ± 1°

DO NOT SCALE DRAWING

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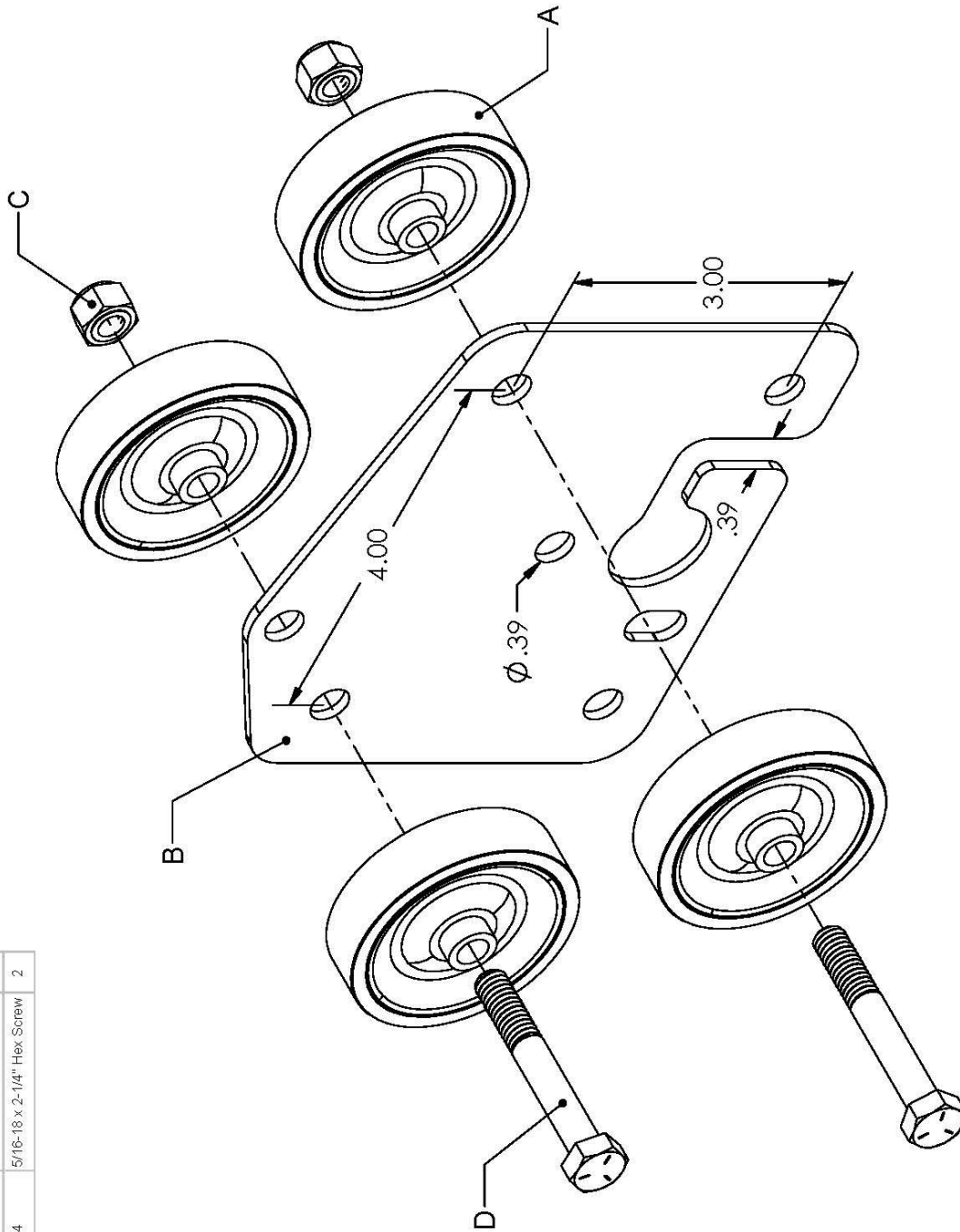
FLEX-CRAFT

FILE	TITLE
Heavy Duty Tugger Hitch Kit	Heavy Duty Tugger Hitch Kit
DESCRIPTION:	Assembly Instruction
DRAWING NO:	PART NUMBER:
INST0007	INST0007

TROLLEY / TOOL BALANCER

Skate Wheel Capacity 60lbs Each

ID	Part Number	DESCRIPTION	QTY
A	SKATE60	2" Skate Wheel	4
B	50182010	Tool Balancer Plate	1
C	Fasteners 5/16X182N	5/16 NC Nyloc Nut	2
D	Fasteners 5/16X18X2/14	5/16-18 x 2-1/4" Hex Screw	2



TITLE:

Tool Balancer Kit Instructions

Date:

2/18/2020

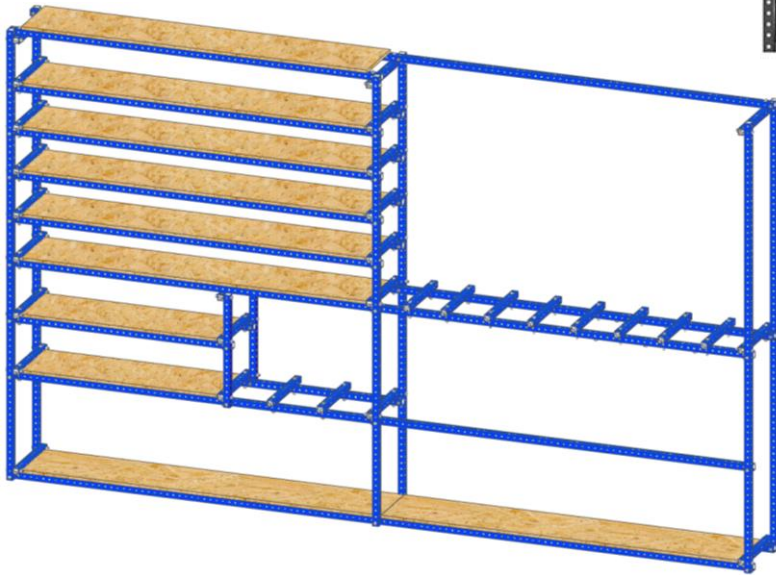
PART NUMBER:

INST0008

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TOY BOX

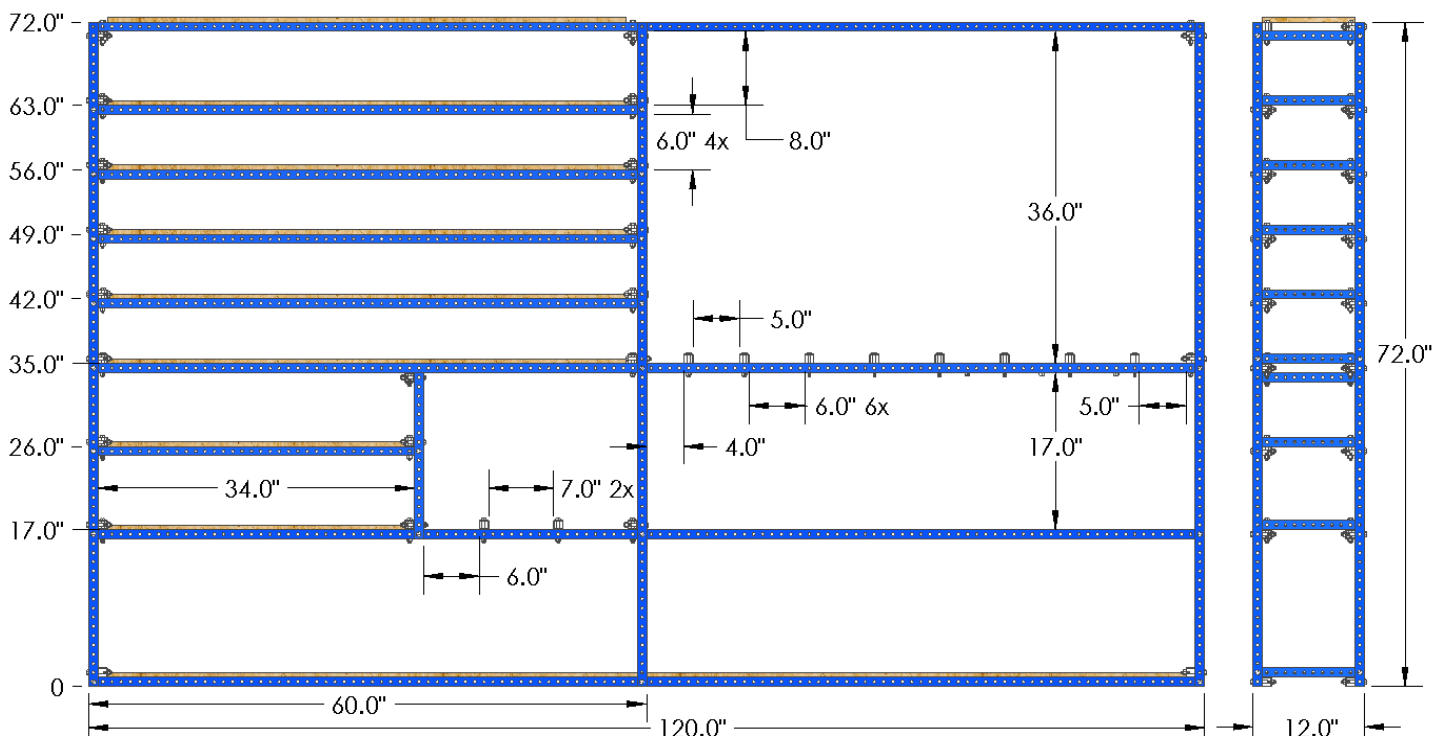
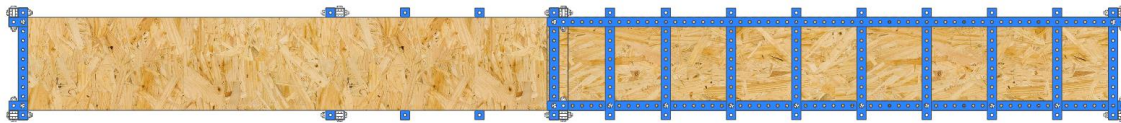


Warning: Toy Box **MUST BE FASTENED to a stable stationary vertical wall to avoid tip hazard. Lag Screws Supplied.**

Use Clinch Head Bolt where a flush surface is needed.
i.e., Back of unit mounted to a wall, Label Holders with plywood overlap.

OSB Sheathing may be placed in position without mounting. Bolts connecting frame will naturally hold shelves in place.

1 1/2" Roundhead to be used on Label Holders not covered by OSB Sheathing.



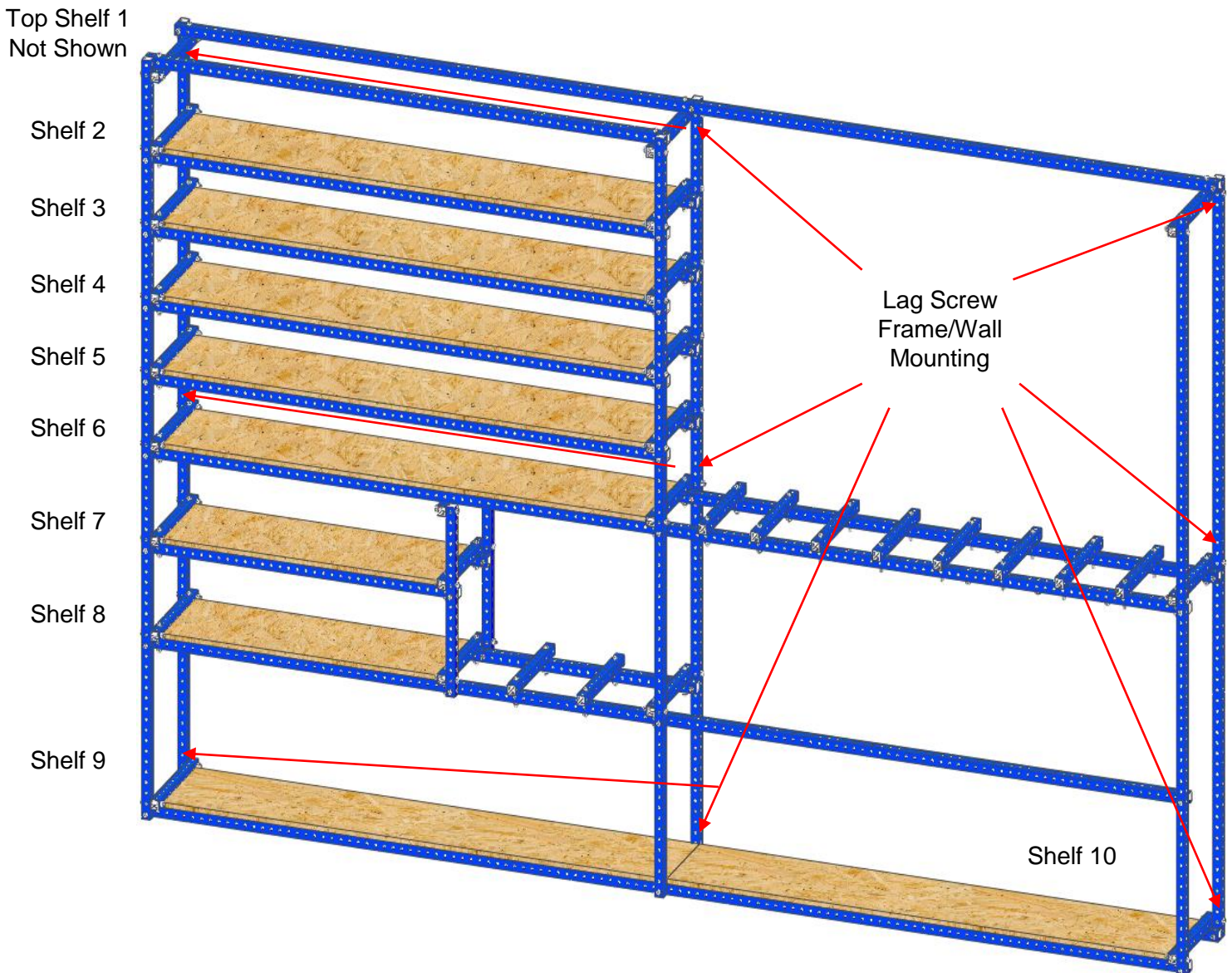
TOY BOX

Bill Of Materials		
Qty	Part Number	Notes
Framing		
32	12" Tube	Short Cross Tubes
2	18" Tube	Short Vertical Shelve 6-8
2	36" Tube	Shelf 7
10	60" Tube	Front Shelf 1, 2-5 Rear 8
6	72" Tube	Vertical Tubes Shelve 1-9
6	120" Tube	Hor-Top, Middle and Bottom
Fasteners		
94	1.5" Clinch Bolt	Label mounting
20	1.5" Round Bolt	Label mounting
130	2 1/2" Hex Bolts	Tube 3Pt Connection
24	2.5" Round Bolt	Use on 12" Tube dividers
23	2 1/2" Clinch Bolt	For use on frame wall side
117	Lock Washer	Use with clinch bolt
117	Hex Nut	Use with clinch bolt
154	LockNut	Frame nuts

Qty	Part Number	Notes
Finishing		
6	OSB Sheathing	56"x 10"x 7/16" Shelf 1-6
2	OSB Sheathing	58"x 10"x 7/16" Shelf 9-10
2	OSB Sheathing	32"x 10"x 7/16" Shelf 7-8
5	4' Label Holder	Cut to 3" Long
9	Lag Screws	Wall Mounting
9	Fender Washer	Use with Lag
36	Bins	11x5-1/2x5
6	Bins	11x11x5



Fig. 1
OSB Sheathing for shelves may be placed in position without mounting. Bolts connecting frame will naturally hold in place

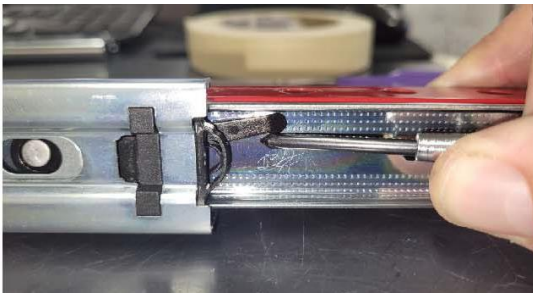


DRAWER SLIDES

Part Number	Description	QTY
Drawerslide	12", 18" or 24" Long	2
Hardware Pack	Size 10 x 1-1/2" Pan Bolt	8
	Size 10 Nyloc Nut	8
	Size 10 Washer	8

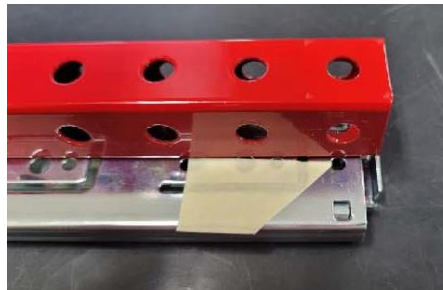


Pull slide assembly apart, lifting the safety lever.



Disclaimer: The drawer slides have multiple holes for endless mounting options due to tubular design variations. **Max Capacity is 100lbs.** For any questions contact Flex Craft at 507-858-0148

Recommended mount mark, rear side of fixed rail; front side of fixed rail.



Outside Fixed rail. This rail should be installed onto a tube that will be part of the drawer and fixed to the frame.



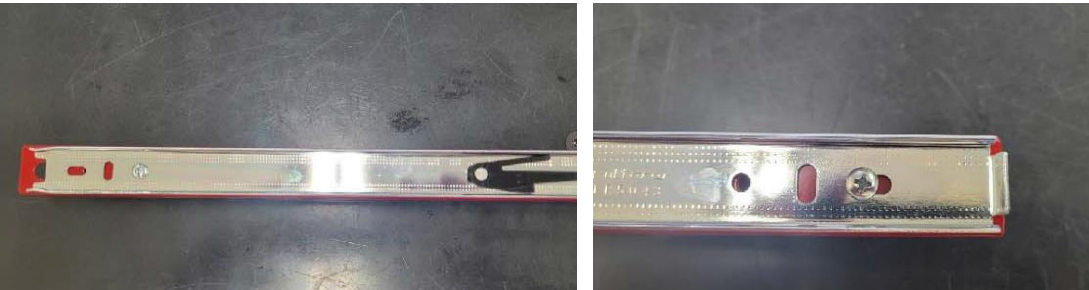
Inside Slide rail. This rail should be installed onto the tube that will side the drawer out.

DRAWER SLIDES

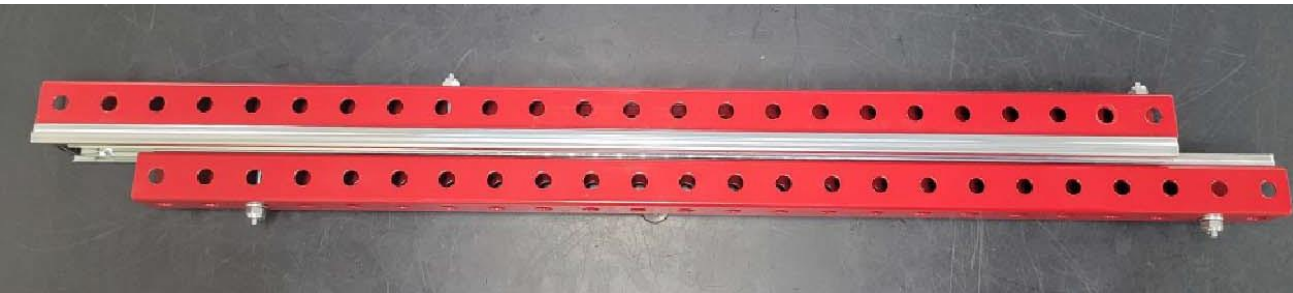
Place bolt through fixed rail hole (rear).
Place bolt through fixed rail track opening (front).
Attach washer and lock nut.



Fasten bolt in rear slide rail.
Fasten bolt in front slide rail.



When fixed rail is installed on the structure,
combine the assembly back together.



Part Number	Description	QTY
Drawerslide	12", 18" or 24" Long	2
Hardware Pack	Size 10 x 1-1/2" Pan Bolt	8
	Size 10 Nyloc Nut	8
	Size 10 Washer	8

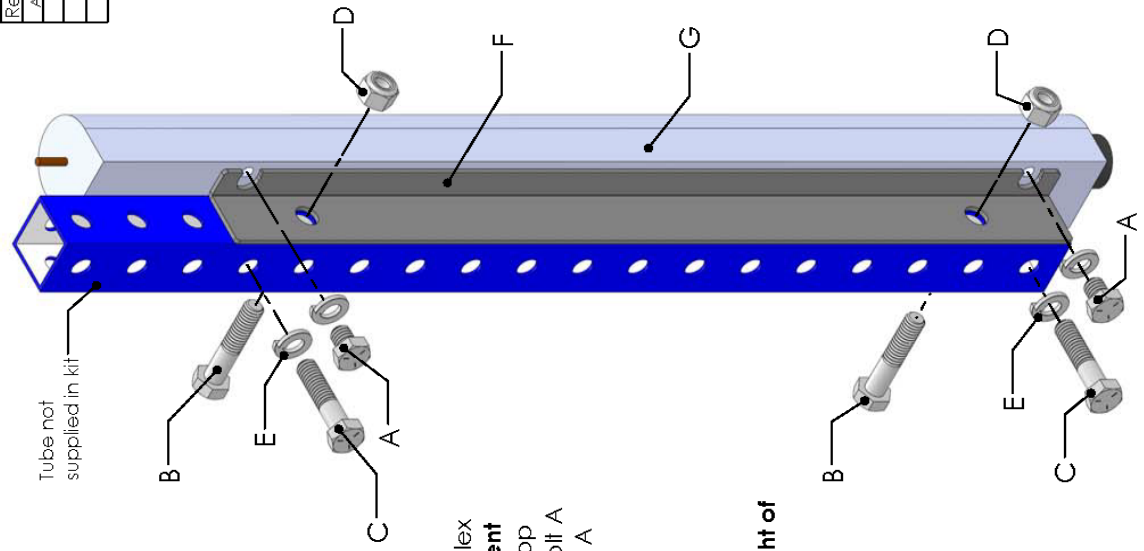
Disclaimer: The drawer slides have multiple holes for endless mounting options due to tubular design variations. **Max Capacity is 100lbs.** For any questions contact Flex Craft at 507-858-0148

ERGONOMIC LIFT OPTIONS

Revision History		
Rev	Description	Date
A	Released	2/15/2023

ID	Leg Lift Bracket Kit	Qty
A	5/16-18 x 3/8 Hex Bolt	8
B	5/16-18 x 1-1/2 Hex Bolt	8
C	5/16-18 x 1-3/8 Hex Bolt	16
D	5/16 Nylok Nut	8
E	5/16 Split Washer	16
F	Lift Mount Bracket	4
G	Leg Lift Unit (4 Legs)	1

Tube not supplied in kit



Assembly:

Verify parts shown. Connect leg lift G as shown to a vertical Flex Craft tube. **Use lock washer E in front of bolt A and C to prevent damaging internal hydraulic bladder.** Finger tighten bolt C, top and bottom. Then place bracket as shown. Finger tighten bolt A top and bottom. Last connect bolt B and nut D. Tighten bolts A and C fill lockwashers are bottomed. **MAX applied torque on bolts A and C, not to exceed 30 inch-lbs.** Housing of G is Aluminum. Tighten B and D last. Mount all 4 leg lifts prior to energizing.

Adjust feet on leg lift to ensure a leveled lift. **250lbs max weight of lift per leg and 35lbs minimum weight per leg for retracting.**

ID	Part #	Drive	Lift Class
G	ELLE12 - SUS	Electric	12"
G	ELLM12 - SUS	Manual	12"
G	ELLE6 - SUS	Electric	6"
G	ELLM6 - SUS	Manual	6"
F	LMB12-SUS		12"
F	LMB6-SUS		6"

TOLERANCE		NAME	DATE	TITLE
Unless Otherwise Specified		JF	2/15/2023	Leg Lift Bracket Assembly
X..... ± .060 in		EA	2/15/2023	Lift Mount Bracket Kit Assembly
XX..... ± .030 in		SEE BOM		DRAWING NO. PART NUMBER
XXX..... ± .010 in		A		INST0011
Angular..... ± 1°				

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ERGONOMIC LIFT OPTIONS

Manual and Electric Leg Lifts and Bracket



Economic Ergo Lift Bracket - Part# 50073010

Applications: Drawer Slides, Ergonomic Modifications, Telescoping.

1st - Fasten the EELB parts to the horizontal tubes where you want the lift.

2nd - Insert a vertical tube into brackets and pin or bolt at the desired height.

3rd - Remove pins or bolts and raise or lower the surface to the desired height.



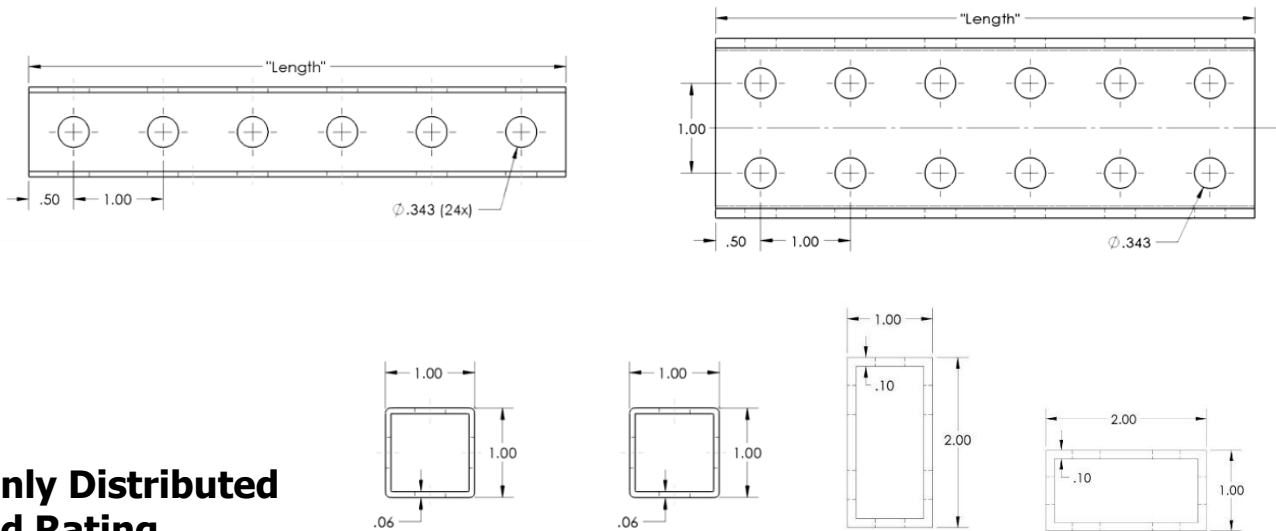
TUBE LOAD CAPACITY

Load Calculations

- **Technical specifications are for reference only and are subject to change.**
- **Not intended for human support.**
- Always remember, your strongest joint is the Direct Bolt.
- 1"x1" 16ga mechanical steel tube weighs 0.7 lbs. per foot.
- 1"x1" 16ga Aluminum tube weighs 0.2 lbs. per foot.
- 1"x2" 12ga mechanical steel tube weighs 1.81 lbs. per foot.
- 1" x 2" tube works as a stand-alone framing system and integrates and enhances the 1" x 1" system.
- Single point load is 1/2 the strength of an evenly distributed load.
- Bolts used are 5/16 – 18 UNC

Calculating Load Capacity example

- An Evenly Distributed Load placed on 2 – 36" steel tubes would start to yield/deflect around 608 lbs. (2 tubes x 304 lbs.).



Evenly Distributed Load Rating

Length Between Uprights	Steel	Aluminum	1" x 2" Tall	1" x 2" Wide
12"	970 lbs.	648 lbs.	8,250 lbs.	2,648 lbs.
24"	480 lbs.	319 lbs.	4,082 lbs.	1,310 lbs.
36"	304 lbs.	204 lbs.	2,586 lbs.	830 lbs.
48"	242 lbs.	161 lbs.	2,058 lbs.	661 lbs.
60"	194 lbs.	130 lbs.	1,650 lbs.	530 lbs.
72"	148 lbs.	105 lbs.	1,259 lbs.	404 lbs.
84"	138 lbs.	91 lbs.	1,174 lbs.	377 lbs.
96"	122 lbs.	81 lbs.	1,038 lbs.	333 lbs.
108"	104 lbs.	69 lbs.	930 lbs.	295 lbs.
120"	96 lbs.	50 lbs.	826 lbs.	264 lbs.

The Above Load Rating is based on the Direct Bolt joint, not Bracketed Joints.