HO-033 Crossed-frame collapsible cloth hamper

Collect small dry household cloths in a removable bag and fold the empty frame for storage after unclipping the bag.

Original bounded component build. Dimensions describe this example, not an approved structural, occupied-building or universal fit design.

US inches/feet control; metric figures are references. No physical build, load certification or animal trial performed.

Before cutting

Read the whole assembly and inspect its receiving space before cutting. Measure actual sheet thickness; nominal lumber labels do not control these joints.

Set aside straight, clean stock and allow it to acclimate. Keep fingers clear of blades, clamp work and use tool-appropriate eye/hearing protection.

Dry-fit moving pieces before final fastening; stop if a proposed dimensional substitution changes clearances. Purchased hardware dimensions and hole patterns below must match the actual item.

Materials and actual cuts

Part	Qty	Actual size	Material and special cut
A First crossed-frame leg	2	30 x 1 1/2 x 3/4 in 762.00 x 38.10 x 19.05 mm	W: untreated sound wood/plywood. Local YZ retained profile: (0, 1 1/8), (1 1/2, 0), (1 1/2, 28 7/8), (0, 30) in. Bore 13/32 in at(y, z)=(3/4, 15) in.
B Opposed crossed-frame leg	2	30 x 1 1/2 x 3/4 in 762.00 x 38.10 x 19.05 mm	W: untreated sound wood/plywood. Local YZ retained profile: (0, 0), (1 1/2, 1 1/8), (1 1/2, 30), (0, 28 7/8) in. Same centered 13/32 in pivot bore.
C Bag-mouth top rail	2	18 x 1 1/2 x 3/4 in 457.20 x 38.10 x 19.05 mm	W: untreated sound wood/plywood. The central 1 1/2 in of each 1 7/8 in horizontal leg-end face bears against the rail. Each leg end projects 3/16 in beyond both rail edges. This partial bearing has no rated load; keep the specified screw paths.
D Frame pivot pin	2	3 x 3/8 x 3/8 in 76.20 x 9.53 x 9.53 mm	Straight 3/8 in round hardwood dowel 1/8 in cross bores 1/4 in from each end.
E Pivot retaining cross pin	4	3/4 x 1/8 x 1/8 in 19.05 x 3.17 x 3.17 mm	Straight 1/8 in round hardwood dowel Square ends; remove all splinters and burrs.
F Pivot running washer	2	3/4 x 3/4 x 1/16 in 19.05 x 19.05 x 1.59 mm	Nylon sheet, actual 1/16 in 3/4 in diameter, 13/32 in bore.
G Opening-limit webbing	2	18.825 x 1 x 1/16 in 478.15 x 25.40 x 1.59 mm	Polyester webbing, actual 1/16 in at clamped ends Actual 18.825 in length(478.155 mm). Each end lies beneath an entire 1 1/2 in rail width; free span 15.825 in. Do not round this to a different opening angle.
H Webbing clamp cleat	4	1 x 1 1/2 x 1/4 in 25.40 x 38.10 x 6.35 mm	W: untreated sound wood/plywood. Square ends; remove all splinters and burrs.
I Cloth front and rear	2	24 x 18 x 1/32 in 609.60 x 457.20 x 0.79 mm	Washable woven cloth, approximately 1/32 in Panel height 24 in, width 18 in. Side/bottom seam allowance 1/2 in; top double hem totals 1 1/2 in.
J Cloth side panel	2	24 x 18.325 x 1/32 in 609.60 x 465.45 x 0.79 mm	Same woven cloth as I Panel height 24 in, width 18.325 in(465.455 mm). Half-inch seams yield 17.325 in finished depth.
K Cloth bag bottom	1	18.325 x 18 x 1/32 in 465.45 x 457.20 x 0.79 mm	Same woven cloth as I Cut 18.325 x 18 in; 1/2 in seams all around yield 17.325 x 17 in finished bottom.

Hardware and tools

8 x #8 x 1 1/2 in wood screw. Two through each rail into each leg end

8 x #6 x 3/4 in wood screw. Two per webbing cleat

4 x Smooth-jawed 2 in spring cloth clamp. Removable bag-hem attachment; no load capacity inferred

1 x Suitable sewing thread. Fabric-compatible thread and seams; no lifting-container certification

Tape, square, pencil; clamped saw setup appropriate to the material; drill/driver and depth stop; countersink for wood fasteners; files/sanding block; clamps. Specific additional tools are noted in the steps. Fabric shears, seam gauge, fabric-compatible needle/thread and an ordinary sewing machine or suitable hand-sewing method are also required.

Measured assembly reference

Coordinates refer to the illustrated pose: x left/right, y front/rear, z up. Positions are inches from the front-left underside datum. A negative position projects beyond that datum. The size vector gives the part orientation before any stated rotation; it is not a substitute for its cut profile.

Part / instance	Origin x, y, z	Size dx, dy, dz / rotation
A / 1	1/2, 16.4, -0.9 in 12.70, 416.56, -22.86 mm	3/4 x 1 1/2 x 30 in Rotation x/y/z: 36.8699, 0.0000, 0.0000 deg
A / 2	16 3/4, 16.4, -0.9 in 425.45, 416.56, -22.86 mm	3/4 x 1 1/2 x 30 in Rotation x/y/z: 36.8699, 0.0000, 0.0000 deg
B / 1	1 5/16, -1.6, 0 in 33.34, -40.64, 0.00 mm	3/4 x 1 1/2 x 30 in Rotation x/y/z: -36.8699, 0.0000, 0.0000 deg
B / 2	15 15/16, -1.6, 0 in 404.81, -40.64, 0.00 mm	3/4 x 1 1/2 x 30 in Rotation x/y/z: -36.8699, 0.0000, 0.0000 deg
C / 1	0, -1.4125, 23.1 in 0.00, -35.88, 586.74 mm	18 x 1 1/2 x 3/4 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
C / 2	0, 15.9125, 23.1 in 0.00, 404.18, 586.74 mm	18 x 1 1/2 x 3/4 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
D / 1	0, 7 13/16, 11.3625 in 0.00, 198.44, 288.61 mm	3 x 3/8 x 3/8 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
D / 2	15, 7 13/16, 11.3625 in 381.00, 198.44, 288.61 mm	3 x 3/8 x 3/8 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
E / 1	3/16, 7 5/8, 11.4875 in 4.76, 193.67, 291.78 mm	1/8 x 3/4 x 1/8 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
E / 2	2 11/16, 7 5/8, 11.4875 in 68.26, 193.67, 291.78 mm	1/8 x 3/4 x 1/8 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
E / 3	15 3/16, 7 5/8, 11.4875 in 385.76, 193.67, 291.78 mm	1/8 x 3/4 x 1/8 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
E / 4	17 11/16, 7 5/8, 11.4875 in 449.26, 193.67, 291.78 mm	1/8 x 3/4 x 1/8 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
F / 1	1 1/4, 7 5/8, 11.175 in 31.75, 193.67, 283.85 mm	1/16 x 3/4 x 3/4 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
F / 2	16 11/16, 7 5/8, 11.175 in 423.86, 193.67, 283.85 mm	1/16 x 3/4 x 3/4 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
G / 1	3, -1.4125, 23.0375 in 76.20, -35.88, 585.15 mm	1 x 18.825 x 1/16 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
H / 1	3, -1.4125, 22.7875 in 76.20, -35.88, 578.80 mm	1 x 1 1/2 x 1/4 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
H / 2	3, 15.9125, 22.7875 in 76.20, 404.18, 578.80 mm	1 x 1 1/2 x 1/4 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
G / 2	14, -1.4125, 23.0375 in 355.60, -35.88, 585.15 mm	1 x 18.825 x 1/16 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
H / 3	14, -1.4125, 22.7875 in 355.60, -35.88, 578.80 mm	1 x 1 1/2 x 1/4 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
H / 4	14, 15.9125, 22.7875 in 355.60, 404.18, 578.80 mm	1 x 1 1/2 x 1/4 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg

Part / instance	Origin x, y, z	Size dx, dy, dz / rotation
I / 1	1/2, -0.6625, 1.85 in 12.70, -16.83, 46.99 mm	17 x 1/32 x 22 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
I / 2	1/2, 16.6625, 1.85 in 12.70, 423.23, 46.99 mm	17 x 1/32 x 22 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
J / 1	1/2, -0.6625, 1.85 in 12.70, -16.83, 46.99 mm	1/32 x 17.325 x 22 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
J / 2	17 1/2, -0.6625, 1.85 in 444.50, -16.83, 46.99 mm	1/32 x 17.325 x 22 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg
K / 1	1/2, -0.6625, 1.85 in 12.70, -16.83, 46.99 mm	17 x 17.325 x 1/32 in Rotation x/y/z: 0.0000, 0.0000, 0.0000 deg

Numbered assembly

01. Build the frame and its own removable sewn bag as ONE project. Use only light dry cloths; it is not seating, a step, a child crib or a rated lifting bag. Keep hands out of both X crossings while moving it.

02. Cut A and B two each 30 x 1 1/2 x 3/4 in from straight-grained hardwood. Mark local y across the 1 1/2 in width and z along 30 in length. Keep the mirrored end profiles distinct, not four identical square-ended legs.

03. Cut A ends to the four profile points(0, 1 1/8), (1 1/2, 0), (1 1/2, 28 7/8), (0, 30) in. Cut B to(0, 0), (1 1/2, 1 1/8), (1 1/2, 30), (0, 28 7/8) in. These miters put both ends horizontal in the stated open pose.

04. Register all four pivot locations at local(y, z)=(3/4, 15) in and bore 13/32 in across the 3/4 in thickness. Clamp a backing board and keep the holes perpendicular; do not enlarge a misaligned pair to conceal drift.

05. Cut D two 3 in x 3/8 in dowels, E four 3/4 in x 1/8 in cross pins, and F two 3/4 in-diameter x 1/16 in washers with 13/32 in bores. Cross-drill D 1/8 in at 1/4 in from each end.

06. Assemble the left pair A at x 1/2-1 1/4 in, F at 1 1/4-1 5/16 in and B at 1 5/16-2 1/16 in. Assemble the right pair B at 15 15/16-16 11/16 in, F at 16 11/16-16 3/4 in and A at 16 3/4-17 1/2 in. D spans x 0-3 and 15-18 in.

07. Install E in all four cross bores, leaving the joints free. Open each A/B pair to the same 3: 4: 5 slope: leg length direction rises 4 in for every 3 in horizontal travel. Pivot centers become y 8 in, z 11.55 in; both feet sit flat at z 0.

08. Cut C two 18 x 1 1/2 x 3/4 in mouth rails. Fit the front rail at y-1.4125-0.0875 in, rear at 15.9125-17.4125 in, undersides z 23.1 in. Both rails span x 0-18 in; their upper faces finish z 23.85 in.

09. Use the actual CENTRAL PARTIAL bearing: each horizontal leg end is 1 7/8 in deep; its centered C rail covers 1 1/2 in, leaving 3/16 in of end face uncovered on each side. Do not describe this as full bearing or infer a capacity. Pilot two vertical #8 x 1 1/2 in screws through C into each leg, eight total. Use each leg thickness center x, with y=-3/4 and -1/4 in on the front C; y=16 1/4 and 16 3/4 in on the rear C. Screws cross 3/4 in C and enter the inclined leg 3/4 in. The drawing shows their complete paths in retained wood. Seat flush without crushing the narrow end face.

10. Cut G two 18.825 x 1 in webbing strips at the stated clamp thickness. Lay them under the rails at x 3-4 and 14-15 in, y-1.4125-17.4125 in. Each rail covers 1 1/2 in of strip end; the free middle span is 15.825 in.

11. Cut H four 1 x 1 1/2 x 1/4 in cleats. Clamp each G end beneath its rail with two #6 x 3/4 in screws through H and G into C. Quarter-inch cleat plus 1/16 in webbing leaves 7/16 in wood engagement. The strips become taut together at the shown open pose.

12. Fold the EMPTY frame slowly by bringing the rails together. The rigid mouth rails tilt with their leg pairs; stop before they contact and never force fully parallel legs. Webbing goes slack rather than stretching. Reopen until both strips straighten; stop if one rail racks, one foot rocks or a cross pin moves. The strips limit opening but provide no rated load or anti-collapse device.

13. Cut I two 24 x 18 in cloth panels, J two 24 x 18.325 in panels and K one 18.325 x 18 in bottom. Keep height 24 in on all four walls. Mark 1/2 in side/bottom seams and a 1 1/2 in top hem zone before sewing.

14. With right sides together, sew I/J/I/J into a continuous rectangular wall using 1/2 in side allowances. Finish raw edges by the fabric-appropriate method. Alternating cut widths 18 and 18.325 in yield finished 17 x 17.325 in mouth dimensions.

15. Pin K to the four wall bottoms, right sides together, matching all corners. Sew 1/2 in around the bottom and turn right-side out. Inspect every corner for an unsewn gap; this is not a certified load-bearing textile container.

16. At the open top turn 1/2 in inward, then another 1 in, using the marked 1 1/2 in hem zone. Stitch around the hem. Finished wall height is 24-1/2-1 1/2=22 in; finished bag bottom is 17 x 17.325 in.

17. Clip the four hem corners to the mouth rails with four smooth-jawed 2 in spring cloth clamps, clear of webbing and pivot paths. Keep the hem outside the webbing cleats and lead the soft bag walls inward below them without pinching. Top reference height is about 23.85 in and bag bottom about 1.85 in above the floor; adjust only the removable clips to avoid dragging.

18. Trial with one small dry cloth. Do not carry a loaded frame or pull it by its bag. Remove all contents and unclip the bag before folding; wash the textile by its actual care instructions, then dry fully before clipping it back.

Acceptance and intermediate checks

Both mirrored end profiles and pivot centers match the measured 3: 4: 5 open pose.

Each C bears on the central 1 1/2 in of both corresponding 1 7/8 in leg-end flats; 3/16 in of each flat remains outside both rail edges. Both opening straps become taut together.

Frame pivots freely without clamped washers; all four cross pins remain outboard of wood.

The sewn bag is 17 x 17.325 x 22 in finished and stays above the floor; it is removed before folding.

Use and maintenance

Dry cloth collection only; no seating, climbing, carrying a load or unattended child access.

Remove the bag before folding and keep fingers away from both X crossings. Webbing limits opening but is not a personnel-rated restraint.

Inspect the actual joints, moving interfaces and fasteners before each use. Stop at splitting, binding, loose retention or an exposed sharp edge. Brush debris from separated contact faces and follow the actual material/finish supplier cleaning instructions. Dry fully before reassembly; do not conceal damage with coating. Repeat the empty functional check after humidity or fit changes. Replace damaged parts rather than forcing the mechanism. No physical build, load, impact, safety or service-life performance is certified.

Measured interface notes

Decimal inches preserve the exact 3: 4: 5 layout: 18.825 in strap=478.155 mm; 17.325 in bag depth=440.055 mm; 23.1 in rail underside=586.74 mm.

Cloth scene faces are flexible assembled envelopes. The five flat cut panels and their seam allowances are explicitly specified here and in the drawings.

Nominal covered fraction of each horizontal end flat is 1.5/1.875=0.8 (80%). This is geometry, not an 80% load rating or strength comparison. No strap, rail, bag or opening dimension has changed.

At the deepest front screw section z=22.35 in, A extends y=-1.0375..0.8375 in; front axes y=-0.75, -0.25 remain in wood. At the deepest rear screw section B extends y=15.1625..17.0375 in; rear axes y=16.25, 16.75 remain in wood.

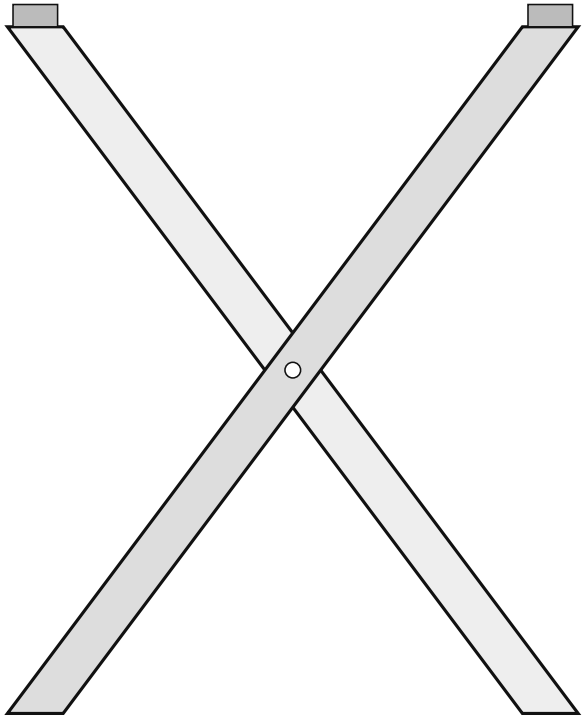
Primary context references

S4: Purdue University Extension, Wood drying: FNR-37. https://extension.purdue.edu/extmedia/FNR/FNR-37.html

S13: US Consumer Product Safety Commission, Window Covering Cords. https://www.cpsc.gov/gocordless

HO-033 | MATCHED OPEN X FRAME

Side elevation. Parts A/B have mirrored end miters; flat feet and top bearings occur only at the stated open pose.



Leg direction: 3 horizontal: 4 vertical.

Pivot(y, z)=(8, 11.55) in.

Rail underside: z 23.1 in.

Rail top: z 23.85 in.

Rail centers: y-0.6625 and 16.6625 in.

Two webbing strips 18.825 in long.

Free webbing span 15.825 in.

Bag finished height 22 in.

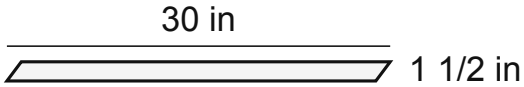
Fold empty with the bag removed. No rated load or anti-collapse claim; fingers stay out of crossings.

Original B/W vector drawing - dimensions control - unbuilt / untested

HO-033 | PART SIZES 1 OF 2

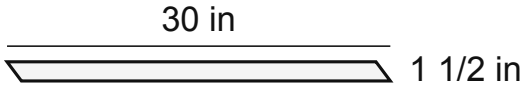
Actual dimensions; labels identify any stock blanks. Allow for saw kerfs between pieces.

A First crossed-frame leg x 2



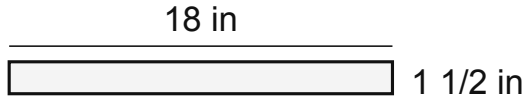
Face: 762.0 x 38.1 mm
Thickness: 3/4 in / 19.05 mm
Special cuts: see cut list and steps.

B Opposed crossed-frame leg x 2



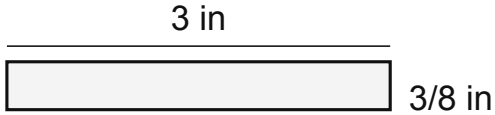
Face: 762.0 x 38.1 mm
Thickness: 3/4 in / 19.05 mm
Special cuts: see cut list and steps.

C Bag-mouth top rail x 2



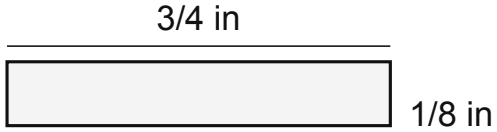
Face: 457.2 x 38.1 mm
Thickness: 3/4 in / 19.05 mm
Special cuts: see cut list and steps.

D Frame pivot pin x 2



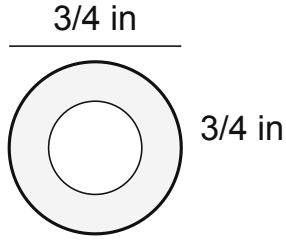
Face: 76.2 x 9.5 mm
Thickness: 3/8 in / 9.52 mm
Special cuts: see cut list and steps.

E Pivot retaining cross pin x 4



Face: 19.0 x 3.2 mm
Thickness: 1/8 in / 3.17 mm
Special cuts: see cut list and steps.

F Pivot running washer x 2



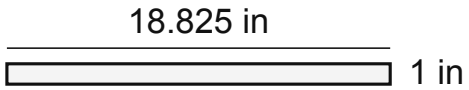
Face: 19.0 x 19.0 mm
Thickness: 1/16 in / 1.59 mm
Special cuts: see cut list and steps.

Original B/W vector drawing - dimensions control - unbuilt / untested

HO-033 | PART SIZES 2 OF 2

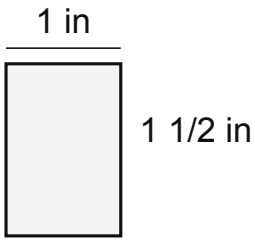
Actual dimensions; labels identify any stock blanks. Allow for saw kerfs between pieces.

G Opening-limit webbing x 2



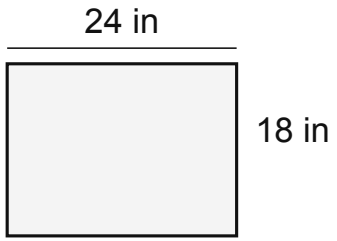
Face: 478.2 x 25.4 mm
Thickness: 1/16 in / 1.59 mm
Special cuts: see cut list and steps.

H Webbing clamp cleat x 4



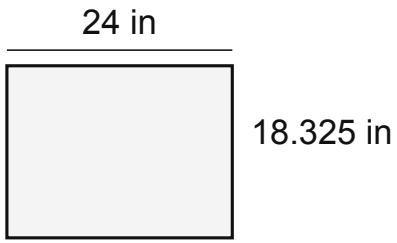
Face: 25.4 x 38.1 mm
Thickness: 1/4 in / 6.35 mm
Special cuts: see cut list and steps.

I Cloth front and rear x 2



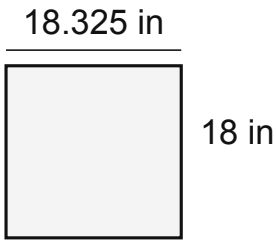
Face: 609.6 x 457.2 mm
Thickness: 1/32 in / 0.79 mm
Special cuts: see cut list and steps.

J Cloth side panel x 2



Face: 609.6 x 465.5 mm
Thickness: 1/32 in / 0.79 mm
Special cuts: see cut list and steps.

K Cloth bag bottom x 1

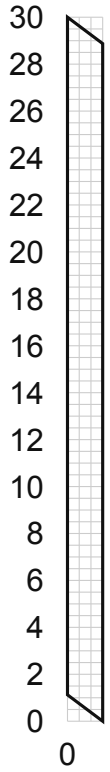


Face: 465.5 x 457.2 mm
Thickness: 1/32 in / 0.79 mm
Special cuts: see cut list and steps.

Original B/W vector drawing - dimensions control - unbuilt / untested

HO-033 | RETAINED PROFILE - PART A

Half-inch grid; numbered axes are inches. Transfer using dimensions, not print scale.



First crossed-frame leg

Plane: yz

Horizontal extent: 1 1/2 in

Vertical extent: 30 in

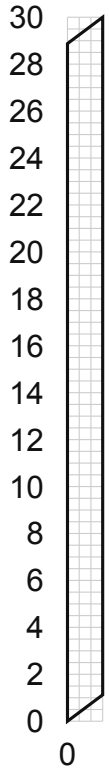
38.10 x 762.00 mm

Local YZ retained profile: (0, 1 1/8), (1 1/2, 0), (1 1/2, 28 7/8), (0, 30) in. Bore 13/32 in at(y, z)=(3/4, 15) in.

Original B/W vector drawing - dimensions control - unbuilt / untested

HO-033 | RETAINED PROFILE - PART B

Half-inch grid; numbered axes are inches. Transfer using dimensions, not print scale.



Opposed crossed-frame leg

Plane: yz

Horizontal extent: 1 1/2 in

Vertical extent: 30 in

38.10 x 762.00 mm

Local YZ retained profile: (0, 0), (1 1/2, 1 1/8), (1 1/2, 30), (0, 28 7/8) in. Same centered 13/32 in pivot bore.

Original B/W vector drawing - dimensions control - unbuilt / untested

HO-033 | BAG DEVELOPMENT AND STRAP LIMITS

Five separately cut textile panels become ONE removable bag; dimensions control, not print scale.

I front/rear: two 24 high x 18 wide in. J sides: two 24 high x 18.325 wide in.

K bottom: 18.325 x 18 in. Each side/bottom seam allowance 1/2 in.

Four walls alternate I/J/I/J. Top double turn: 1/2 in, then 1 in, total 1 1/2 in.

Finished bag: 17 wide x 17.325 deep x 22 high in. No textile lifting or seam-strength rating.

G: two 18.825 x 1 x 1/16 in webbing strips, at x 3-4 and 14-15 in.

Rail footprints along y: -1.4125-0.0875 and 15.9125-17.4125 in.

Each strap end clamped for 1 1/2 in; free middle 15.825 in. H: 1 x 1 1/2 x 1/4 in.

Cleat screws #6 x 3/4 in: 1/4+1/16 in stack leaves 7/16 in engagement in 3/4 in C.

Use four removable smooth cloth clamps, not permanent screws through the bag. Unclip before folding.

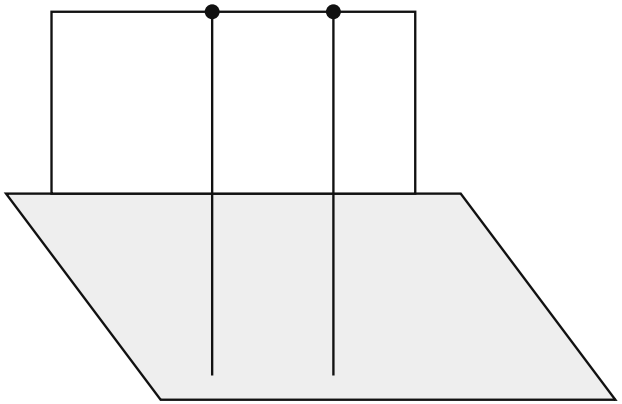
Original B/W vector drawing - dimensions control - unbuilt / untested

HO-033 | CENTRAL PARTIAL BEARING AND SCREWS

Two y-z sections through the leg thickness centers. Horizontal end flat is 1 7/8 in; rail is 1 1/2 in.

FRONT / A

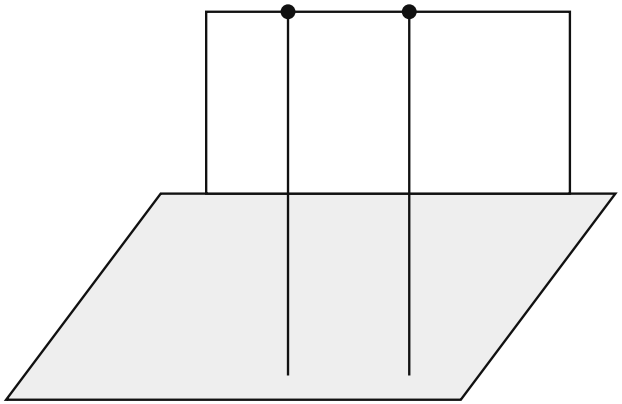
Rail covers central 1 1/2 in.
3/16 in uncovered at each edge.



Screw y = -3/4 in, -1/4 in
Cross 3/4 in C; embed 3/4 in in leg.

REAR / B

Rail covers central 1 1/2 in.
3/16 in uncovered at each edge.



Screw y = 16 1/4 in, 16 3/4 in
Cross 3/4 in C; embed 3/4 in in leg.

Partial bearing is intentional in this corrected packet; no load rating follows.
Webbing and cleats are at x=3-4 and 14-15 in, outside these leg-section slices.

Original B/W vector drawing - dimensions control - unbuilt / untested