PO-035 Bolted washable dry-feed trough

Present balanced dry feed in an open, removable HDPE trough on a broad timber base; no gravity-flow or flock-capacity promise.

Controlling dimensions: US inches and feet. Metric equivalents are references. Original editorial design; no physical build, animal trial or load certification is claimed.

Before marking and cutting

Read every step and identify the installed orientation. Make the component off-site with birds excluded.

Measure the actual receiving space, chosen commercial accessories and access route. Stop if the example does not fit; changing only one member can invalidate the assembly.

Reject split, warped, moldy or chemically contaminated stock. Keep exposed mesh cut ends and all sharp fasteners inaccessible to birds.

The drawing dimensions control; illustrations are not full-size templates. Allow a saw kerf between parts when laying out stock.

Use limits

No person may stand or sit on this component. No tested load rating is claimed.

A site-specific safe location and supervision are required; remove it if birds become trapped, peck damaged material, or cannot use their normal feed, water, shelter and escape routes.

Materials and finished cuts

Part	Qty	Size to cut	Material and detail
A Trough floor	1	30 × 6 × 1/4 in 762 × 152.4 × 6.35 mm	Virgin food/feed-contact HDPE sheet, actual 1/4 in. Square ends; remove splinters.
B Long wall	2	30 × 3 × 1/4 in 762 × 76.2 × 6.35 mm	Same specified HDPE sheet. Square ends; remove splinters.
C Between-wall end	2	5 1/2 × 3 × 1/4 in 139.7 × 76.2 × 6.35 mm	Same specified HDPE sheet. Square ends; remove splinters.
D Support runner	2	30 × 1 1/2 × 1 1/2 in 762 × 38.1 × 38.1 mm	Untreated sound straight softwood. Square ends; remove splinters.
E End cross foot	2	12 × 1 1/2 × 3/4 in 304.8 × 38.1 × 19.05 mm	Untreated sound straight softwood. Square ends; remove splinters.

Hardware and consumables

14 × Stainless 1 × 1 in two-hole 90-degree angle. Eight wall-corner and six wall-to-floor angles, one hole per leg

28 × #6-32 × 3/4 in stainless smooth-head machine screw. One per angle hole; use washers and acorn nuts with verified engagement

28 × #6-32 washer and locking nut and smooth end cap set. No thread end in the feed space

4 × 0.138 in diameter × 2 1/4 in corrosion-resistant through-bolt 2 1/4 in (57.15 mm). Floor to support runners; #6-32 equivalent diameter, smooth heads inside. Use two suitable washers and a locking nut per bolt unless specified; cap or trim exposed threads after verifying full nut engagement.

8 × #8 corrosion-resistant exterior wood screw 1 3/4 in (44.45 mm). Cross feet to runners. Use compatible coatings/metals and the maker's pilot-hole guidance; do not substitute drywall screws.

Tools

Tape measure, square and pencil; Saw appropriate to material and work supports; Drill/driver, countersink and pilot bits selected for the screws; Clamps, sanding block and eye/hearing protection; dust control appropriate to the material

Primary context and design record

Context references; not design endorsements or certifications.

S2 · Build a Clean Routine · USDA APHIS Defend the Flock

S5 · Farmbytes: DIY poultry feeder · University of Minnesota Extension

S6 · Backyard Flock Production · Oklahoma State University Extension

Assembly and first checks

The large drawing plates follow the instructions in this same PDF. Read the cut list and match part IDs before cutting. Print with automatic page orientation; use written dimensions rather than measuring the printed drawing.

01 Confirm the actual adult birds can reach a trough rim about 5 1/2 in (139.7 mm) above the floor with this base. It is not a chick feeder or a complete ration design.

02 Cut A 30 × 6 in, B 30 × 3 in and C 5 1/2 × 3 in from actual 1/4 in food/feed-contact HDPE. Deburr all edges without heating the plastic.

03 Stand B on A at its long outer edges, then fit C between B at the ends. Clear inside footprint is 29 1/2 × 5 1/2 in.

04 Clamp the dry assembly square. Fit small 1 × 1 in stainless 90-degree angles at the four inside corners, two per corner at different heights; all inside hardware must be smooth and accessible for washing.

05 Drill the actual angle holes through HDPE with a 5/32 in clearance bit for #6-32 bolts. Use short 3/4 in machine screws, broad washers and locking nuts and smooth end caps; avoid sharp thread ends.

06 Attach walls to the floor using six additional stainless angles: two per long wall at x = 10 and 20 in, one per end at the center. Use the same bolted fastening method; no adhesive or solvent weld is assumed.

07 Cut two D runners 30 in long from actual 1 1/2 in square stock and E cross feet 12 in long from actual 3/4 × 1 1/2 in stock.

08 Place D 6 in outside-to-outside. Fasten E beneath them at the two ends, centered front/rear so each projects 3 in beyond the trough. Use two 1 3/4 in wood screws at every E/D crossing, eight total.

09 Set the empty trough on D. Add four #6-32 × 2 1/4 in vertical retention bolts through floor and runners, two per runner at x = 6 and 24 in; use smooth heads inside and washers/locking nuts below.

10 Take the trough off once to confirm it is removable. Check each nut is captured and no loose washer can fall into feed; tighten only enough to seat HDPE without cracking it. Orient smooth bolt heads toward the feed space; keep nuts outside, trim only after full locking-nut engagement and fit secure smooth caps.

11 Place on a level sheltered floor and add a shallow amount of appropriate complete dry feed. Observe access, fouling and spillage; remove if the birds stand inside, cannot reach feed or damage a joint.

12 Empty and disassemble as needed for thorough cleaning and complete drying. It is not liquid-tight, rodent-proof, weatherproof or suitable for wet mash stored between feedings.

Acceptance and intermediate checks

HDPE walls stand on A; internal plan is 29 1/2 × 5 1/2 in and internal depth 3 in.

All angle bolts are short, smooth-ended and accessible; no adhesive joint is relied upon.

Cross feet create a 12 in spread; actual trough can be removed from its four retention bolts.

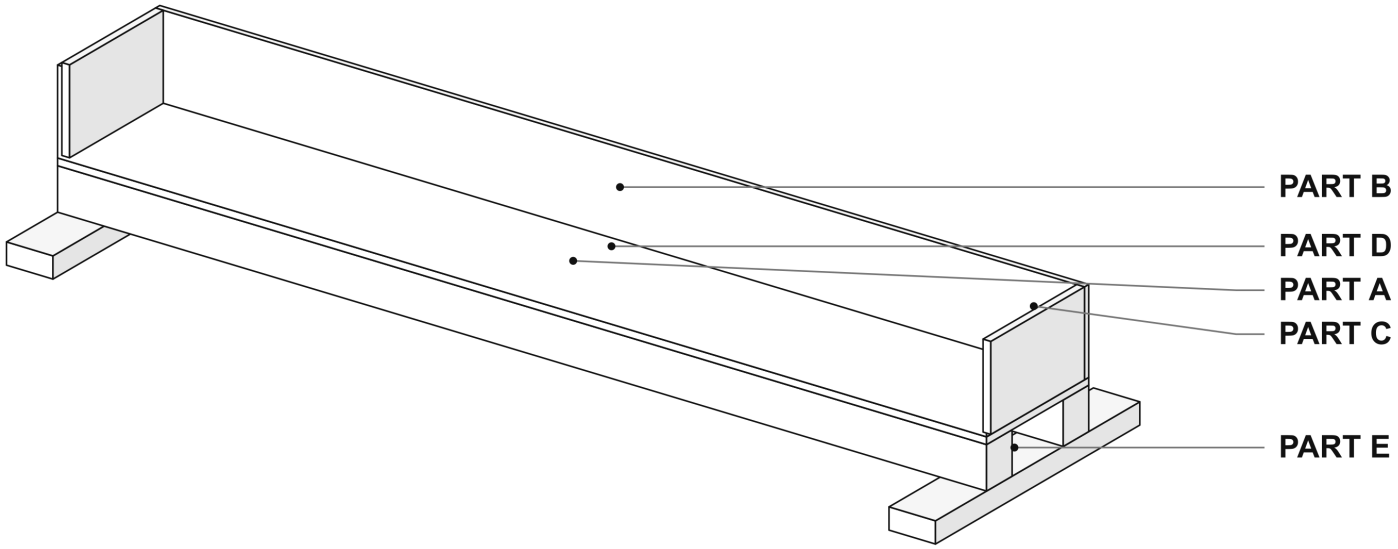
Observe actual adult-bird use, with no universal feeder-space, leakproof or payload claim.

Cleaning and maintenance

Inspect before each use for splits, loose joints, protruding points and trapped debris. Remove accumulated litter or manure promptly. When cleaning is needed, move birds away, remove debris first, wash and use only a suitable label-directed product if disinfection is indicated; let the item dry before return. Recheck the fit after seasonal wood movement. Replace cracked panels, rusted fasteners or frayed liners instead of concealing damage. Sand accessible edges to a small smooth radius. Use a removable washable contact liner where specified. Any optional coating must be suitable for the intended animal-equipment use and fully cured according to its label before installation. Porous wood is not represented as a disinfectable food-contact surface.

PO-035 | ASSEMBLY GEOMETRY

Bolted washable dry-feed trough



Displayed schematic envelope (x × y × z):

30 in × 12 in × 5 1/2 in / 762.0 × 304.8 × 139.7 mm

Part letters refer to the cut list; standard hardware is specified in the assembly steps.

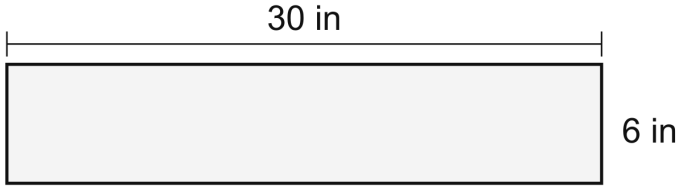
Original black/white vector schematic; dimensions control. Untested editorial draft.

x = left/right; y = front/rear; z = height. Purchased hardware is not falsely modeled as engineered parts.

PO-035 | DIMENSIONED PARTS 1 OF 2

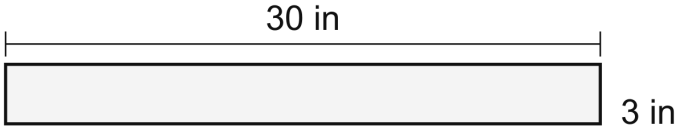
Finished sizes; allow for saw kerfs. Match part letters to the materials list.

A Trough floor ×1



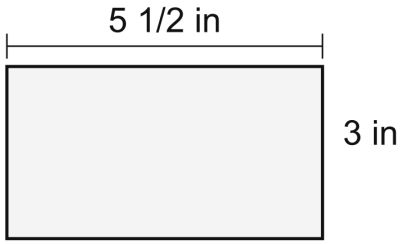
Metric face: 762.0 × 152.4 mm
Thickness: 1/4 in / 6.35 mm
Stock and special cuts: materials list.

B Long wall ×2



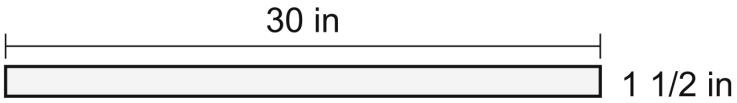
Metric face: 762.0 × 76.2 mm
Thickness: 1/4 in / 6.35 mm
Stock and special cuts: materials list.

C Between-wall end ×2



Metric face: 139.7 × 76.2 mm
Thickness: 1/4 in / 6.35 mm
Stock and special cuts: materials list.

D Support runner ×2



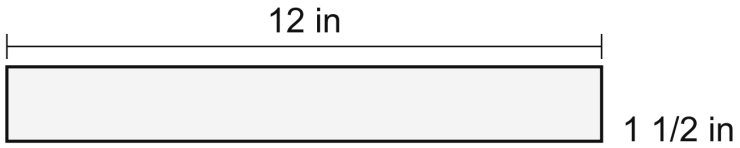
Metric face: 762.0 × 38.1 mm
Thickness: 1 1/2 in / 38.10 mm
Stock and special cuts: materials list.

Original B/W vector drawing • US inches control • unbuilt / untested

PO-035 | DIMENSIONED PARTS 2 OF 2

Finished sizes; allow for saw kerfs. Match part letters to the materials list.

E End cross foot ×2



Metric face: 304.8 × 38.1 mm
Thickness: 3/4 in / 19.05 mm
Stock and special cuts: materials list.

Original B/W vector drawing • US inches control • unbuilt / untested