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Inspect rectangular duct transverse flange assembly QA

Inspect rectangular duct transverse flange assembly before installation with an interactive checklist that’s commentable and can export as PDF/Excel for fast, verifiable QA sign-off.

Project:	
Date:	
Filled by:	

Documentation & Identification	
1	Verify approved submittals for the specified transverse flange system against drawings; record document numbers and approval stamps; photograph data plates/labels for traceability.
2	Confirm each duct section ID matches the schedule and tag; annotate the checklist with location/zone; capture a clear photo of the physical tag.
3	Record batch/heat numbers for flange profiles and corner pieces from packaging; photograph labels; store numbers in the log for material traceability.
4	Check calibration dates for tape, caliper, straightedge, feeler gauges, and torque wrench; accept only in■date tools; attach calibration certificates as files.

Flange Profiles	
5	Confirm flange profile type and material match the approved cut sheet (e.g., TDC/TDF or angle frame); acceptance: exact model/material; photograph profile end.
6	Measure flange leg and face dimensions with a caliper; tolerance: within ±1.0 mm of specification; record three readings per side and attach photos.
7	Check straightness along each flange edge using a 1 m straightedge and feeler gauges; acceptance: gap ≤2 mm per 1 m; photograph gauge at largest gap.
8	Verify flange face flatness across the frame using cross-edge straightedge; acceptance: local flatness deviation ≤1 mm; log max deviation and photo evidence.
9	Inspect cut edges for burrs and sharpness; acceptance: no burrs >0.5 mm; perform glove sweep test; photograph any reworked edges.

Corner Pieces	
10	Confirm corner pieces match the flange system and material grade; check part numbers/stamps; acceptance: full compatibility; attach photo of markings.
11	Check each corner is fully seated and flush with flange lips; acceptance: visible gap at seams ≤1 mm; verify with 1 mm feeler; capture corner close-ups.
12	Verify mechanical retention (clinches/rivets/bolts) per specification; acceptance: required quantity present and tight; record counts per corner with photos.
13	Measure frame squareness by comparing diagonal lengths of the flange rectangle; acceptance: Δdiagonals ≤3 mm up to 1 200 mm side, ≤5 mm above; record values.

Fasteners & Hardware	
14	Confirm fastener type/size/coating per specification (e.g., M6/M8, stainless/zinc); verify packaging labels; record lot numbers; photograph unopened boxes.
15	Inspect threads and heads for damage or contamination; acceptance: no cross-threading, rust, or bent shanks; perform nut run by hand; attach defect photos.
16	Check presence and orientation of washers/lock devices where required; acceptance: complete set per bolt; document counts and photograph sample assemblies.
17	Verify torque on a sample test rig (not production joint): M6 = 6–10 N·m, M8 = 16–20 N·m; use calibrated torque wrench; record achieved values.

Joint Fit-Up & Geometry	
18	Dry-fit two mating duct sections on level supports; acceptance: uniform flange contact with overall gap ≤2 mm; no forced prying; photograph full perimeter.
19	Check hole alignment at four corners using a gauge pin or bolt; acceptance: misalignment ≤1 mm; record locations and attach close-up photos.
20	Measure panel step across the joint with a straightedge; acceptance: step ≤2 mm; log measurements on all sides; capture photos with ruler reference.
21	Inspect gasket groove or flange sealing face only for cleanliness and damage (no gasket work); acceptance: free of dents, oil, and debris; photograph condition.
22	Verify flange plane alignment using a level and cross-corner check; acceptance: out-of-plane offset ≤1.5 mm between mating faces; record readings.

Handling, Storage & Readiness	
23	Confirm storage is dry, clean, and elevated ≥100 mm off ground; acceptance: no standing water or floor contact; photograph storage setup.
24	Check stacks use spacers at ≤1.0 m centers; acceptance: no flange bending or distortion; document stack height and spacer spacing with photos.
25	Verify lifting uses soft slings away from flange edges; acceptance: no deformation or denting after lift; capture before/after photos.
26	Label assembly as “Ready for Install – No Gasket” with date/initials; affix QR code to link the report; upload final photos.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Inspect rectangular duct transverse flange assembly before installation is the critical QA step that verifies flange profiles, corner pieces, fasteners, and joint fit-up before ducts leave the shop or staging area. This focused rectangular duct flange inspection—sometimes called a transverse duct connector check—confirms profile selection, corner-piece engagement, and hardware readiness, and validates joint geometry by a clean dry-fit. It deliberately excludes gasket sealing or sealant application, which are addressed during final assembly per approved project specifications and authority requirements. By confirming profile dimensions, straightness, squareness, hole alignment, and hardware torque values in millimetres and newton-metres, teams reduce rework, prevent leaks arising from distorted frames, and speed field installation. The outcome is a documented, traceable, ready-to-install duct section with verified flange integrity and consistent fit-up. Use this interactive checklist to tick items, capture calibrated measurements, attach photos, leave comments for punch-list tracking, and export results to PDF/Excel with an embedded QR code for authentication.	1. Preparation: Gather approved submittals, drawings, and specs; set a level inspection area with sawhorses; ready calibrated tape, caliper, straightedge, feeler gauges, and torque wrench; confirm safe lighting and housekeeping. 2. Open the checklist on a tablet or laptop and select the duct batch/IDs to create a new inspection record linked to those components. 3. Start interactive mode: tick items as you inspect; enter measurements in SI units; attach close-up photos showing tools and readings for each criterion. 4. Use comments to flag nonconformances, tag responsible parties, and set due dates; upload corrective-action photos before resolving each comment. 5. Perform a controlled dry-fit of two mating sections on supports; document fit-up gaps, hole alignment, and panel step; remove sections after measurement. 6. Review completion status; ensure all mandatory evidence is attached; add notes stating that gasket sealing will occur during final assembly. 7. Export the report as PDF/Excel with embedded QR code; distribute to fabrication, installation, and QA leads for pre-install approval. 8. Sign-Off: Capture digital signatures from inspector, supervisor, and client representative; affix the QR label to the duct; archive the record in the project system.