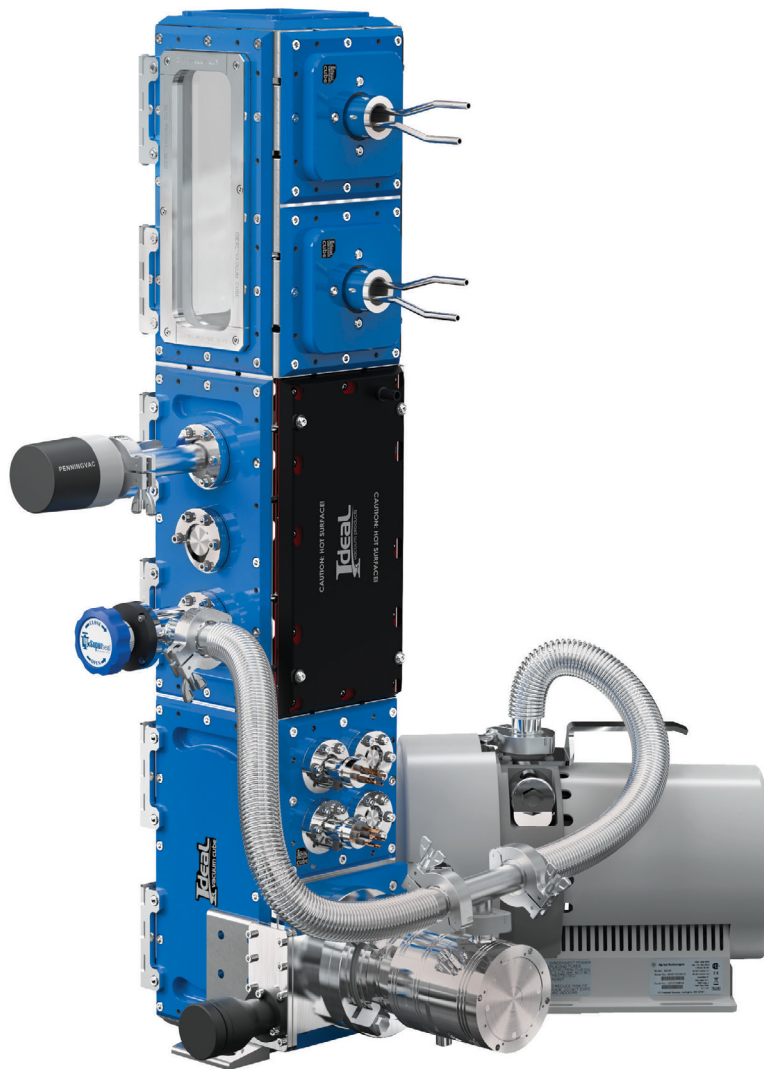


OUR PRODUCTS DEVELOP TOMORROW'S TECHNOLOGIES™

Cube Coupling Kit for all Ideal Vacuum Cubes™

USER MANUAL



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INTRODUCTION

This manual illustrates the general step-by-step procedure for joining two Cube frames using a Cube coupling kit, one of many accessories available for the Ideal Vacuum Cube modular high-vacuum chamber system.

The kit allows two Cube frames to be tightly joined face-to-face without any intermediate plumbing or fittings. Each kit consists of a Cube frame coupler with two O-rings, and several barrel type, coupling draw bolts. The frame coupler is sandwiched between the two Cube frames and acts just like a flange centering ring. The coupler makes the seal between the two Cube frames and uses the patented Ideal Vacuum Taper-Seal™ design. The draw bolts rigidly clamp the two Cube frames together.

Same sized Cube faces can be coupled. For example, a 6 x 6 x 6" Cube frame can be directly coupled to a 6 x 6 x 6" frame or a 6 x 12 x 12" frame, as long as they are coupled on the 6 x 6" side.

The number of chamber configurations possible with Cube coupling kits is virtually limitless. Long, odd-shaped, and multi-Cube chambers are easy to construct with these accessories.

Photos show the procedure for stacking two 6 x 6 x 6" Cubes. The procedure for joining larger Cubes is the same although there are more draw bolts.

Download and read the [IVP Cube Plate Installation Manual](#) for the proper techniques that help ensure leak-proof seals when installing Cube plates on to a frame.

NEEDED

Prepare a clean, flat surface, like a work table, on which to work.

Gloves	3/16" hex wrench
Safety glasses	Plastic pry tool (O-ring remover tool)
Two Cube frames	7/16" combination wrench
Cube coupler kit	Isopropyl alcohol (IPA)
	Lint free cloth

SAFETY



- **Read this manual and all associated manuals before installing or operating this equipment. Failure to follow the warnings and instructions may result in serious injury or equipment damage.**
- **Keep this manual in a safe location for future reference.**
- **This equipment should only be installed and operated by trained, qualified personnel, wearing appropriate protective equipment.**

CUBE COUPLING KITS AND PART NUMBERS:

For Frame Face Size	Part Number
6 x 6"	P106870
6 x 12"	P109030
9 x 9"	P1012249
12 x 12"	P1012248

PROCEDURE

STEP 1

Clean all parts with IPA and a lint free cloth before proceeding.

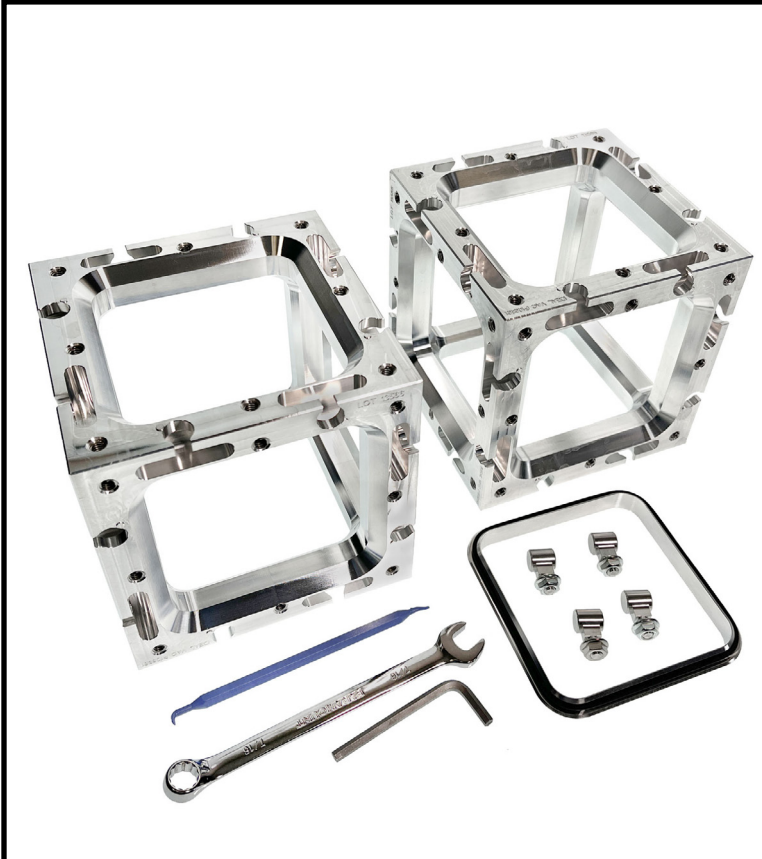
Note: It is easiest to join Cubes when they are stacked vertically.

If reconfiguring an existing set up, use a 3/16" hex wrench to remove all side and top plates of the lower Cube.

Remove all sides and the bottom of the upper Cube.

Note: Use a plastic tool ONLY to pry the plate away from the frame (if needed).

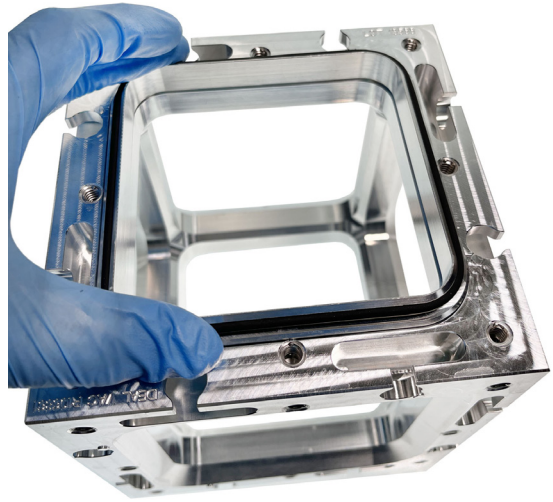
Put unneeded plates safely aside.



STEP 2

Place the Cube frame coupler in the top of the lower Cube, centered.

Wiggle it slightly to seat it in the Cube's taper.



STEP 3

Stack the upper Cube gently on to the lower cube. Center it.

There will be a small gap between the two Cubes.



STEP 4

Get the coupling draw bolts from the coupling kit.

Unscrew each of the nuts to the end of the thread. Do not remove the nut.



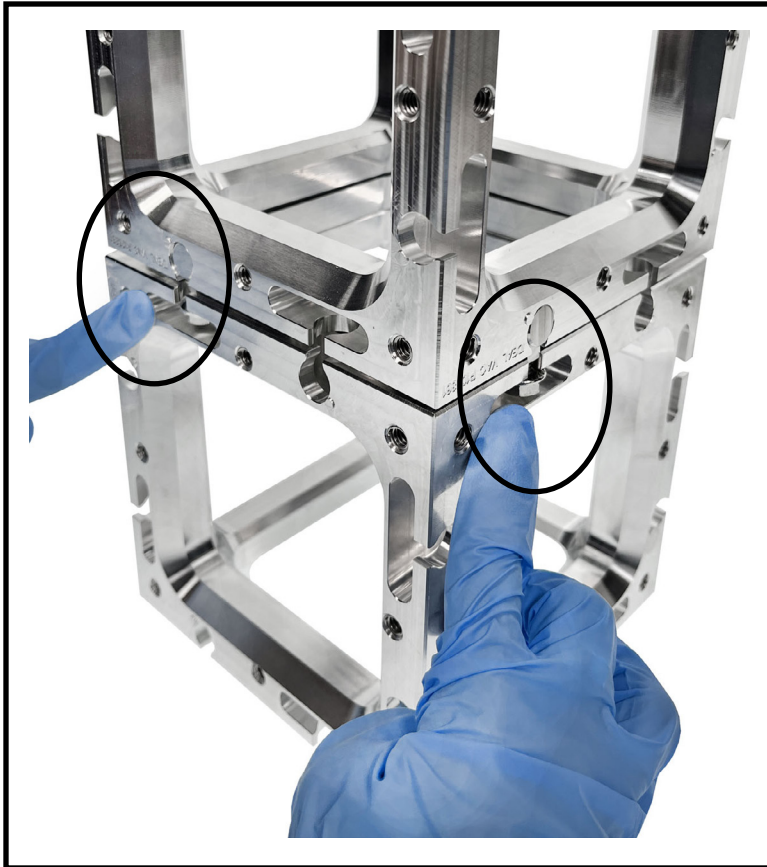
STEP 5

Insert the barrel of the draw bolt all the way into one of the round frame holes.

The nut will fit into the opposite frame's slot.

Note: The draw bolts may be inserted thread up or down.





STEP 6

Insert the remaining draw bolts in alternating holes around the frames.

The draw bolts should all be either barrel up or barrel down.



STEP 6

Use a 7/16" open end wrench in a "star" pattern to tighten the bolts until they are all snug.

Note: Over-tightening the bolts DOES NOT improve the seal.

The Cubes are now coupled and the face plates may be installed or reinstalled.

Note: To disassemble coupled Cube frames, loosen the draw bolts and use a plastic tool or long-nosed pliers to carefully remove them from the frames.



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