

Step-Lap Mitred Cores

Whether you are an existing user of stacked cores with step-lap joints, or are considering adopting step-lap to take advantage of the significant reduction in no-load loss, noise level, and magnetizing current which is possible, Cogent Power can help, with its flexible stacked core cutting capability, utilizing quality, and in-house slit steel up to 1 metre wide.

Fully assembled cores can be provided, in their final clamps, and experienced support staff, from the transformer industry, are on hand to make sure that your needs are addressed.

STEP-LAP (MITRED) CORE JOINTS - GENERAL

“Step-Lap” core joints reduce the local saturation effects in the joint region, resulting in significant performance improvements (reduced watts, noise, VA). Thus, the lowest possible core loss can be achieved from a particular steel grade in a flat stack core, with a given geometry. This is particularly important in today’s energy conscious world, and one of the reasons that step-lap cores are now an industry standard.

AVAILABLE CORE CONFIGURATIONS (CUT STYLES)

Number of limbs

Most commonly 3-LIMB (3-phase) and 2-LIMB (1-phase), with symmetrical yokes, but more specialized designs, such as 3-LIMB SHELL TYPE, or 4 or 5-LIMB can also be supplied.

Core section (legs)

Most commonly, RECTANGULAR, CIRCULAR, and SEMI-ELLIPTICAL vertical limbs.

Yokes

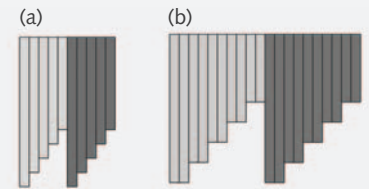
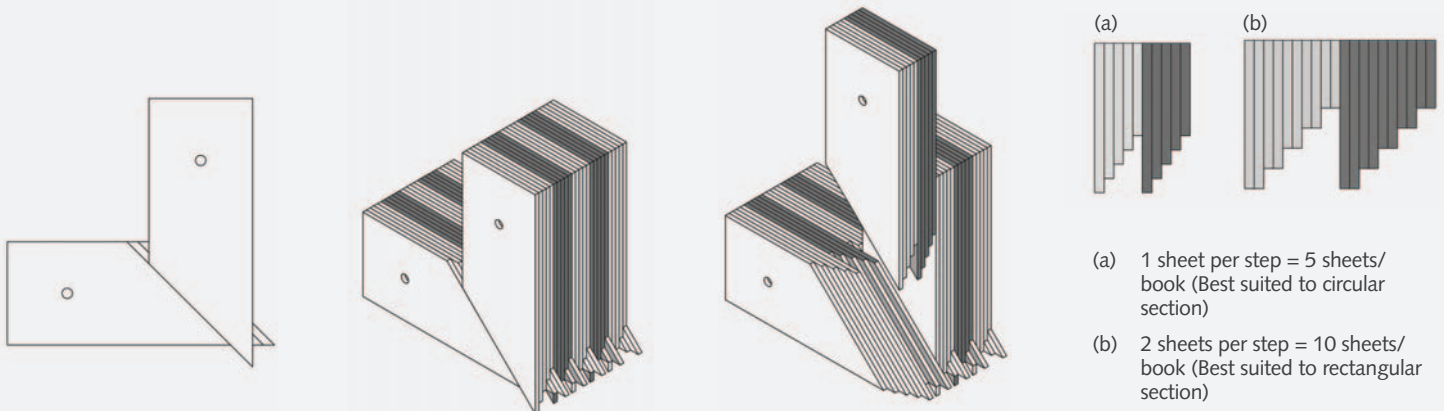
1-PIECE or SPLIT, depending on configuration and sheet length. OFF-SET to reduce weight and/or provide mechanical support.

Special features

ALIGNMENT HOLES can be “in-line” on off-set yokes.
2 DIFFERENT DIAMETER holes can be punched in the sheets (with some restrictions).

Don't see what you want on the list above? Just ask and we will do our best to accommodate you.

Example: 5 steps per book (options)

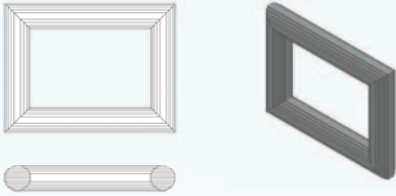


- (a) 1 sheet per step = 5 sheets/ book (Best suited to circular section)
- (b) 2 sheets per step = 10 sheets/ book (Best suited to rectangular section)

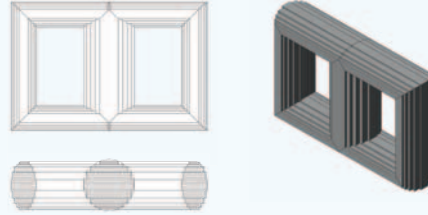
Note: One complete set of sheets is referred to as a “book”.

TYPICAL ARRANGEMENTS

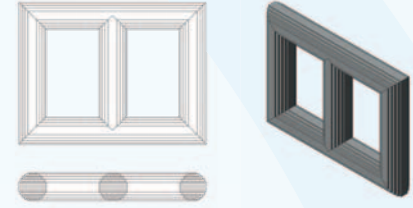
2-Limb (1-phase)



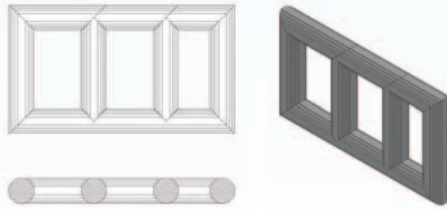
3-Limb (1-phase)



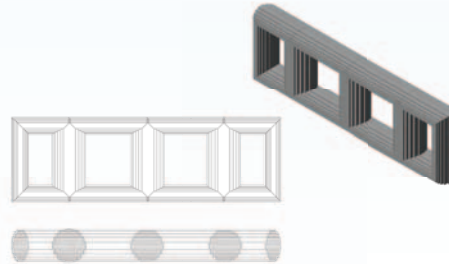
3-Limb (3-phase)



4-Limb (3-phase)



5-Limb (reduced yokes) (reduced outer limbs & yokes) (3-phase)



Step-Lap, Stacked Core Optional Features



- 1) Hole punching (multiple, up to 2 diameters)
- 2) Longitudinal Slotting
- 3) Tip-cutting (de-nibbing)

ADVANTAGES OF BUYING CUT AND/OR ASSEMBLED CORES FROM COGENT POWER INC.

- Experienced staff from transformer industry, on hand for technical discussion
- Quality product backed by a ISO 9001 certified, client centric solution provider
- Selection of all steel grades (including Hi-B). You design to a performance criteria, not necessarily the steels you have access to in-house
- In house slitting to the highest standards (suitable for large power transformers) – better performance

- Fast turn-around of assembled cores to the North American market space – flexible and fast
- Increased product throughput without adding additional resources
- No scrap. You pay for only the steel you need, avoiding surplus/redundant coils, and associated additional costs.
- Reduced steel coil inventory. You avoid holding and managing steel stock coils at your facility and therefore, frees up valuable floor space
- Re-assign manufacturing and engineering resources to other areas of your business (i.e. improved utilization)
- Different insulation systems available – liquid and dry type

SHIPPING OPTIONS

Multi Step-Lap cores can be shipped as:

- (1) Assembled logs
- (2) Assembled “E” with top yoke as separate log
- (3) Fully assembled core, including top yoke

If option (2) or (3) is selected, it is imperative that the final clamps and insulation are used to complete the assembly, so that it arrives at its final destination, ready for use. Cogent can supply all the components necessary to do this to your specification and design, including steel clamps, hardware and insulation kits.