Details of technical leaflets/write-up on various pieces of equipment.

(1) Insulator Designs: The insulators are provided in one, two, three, or four insulator designs per location and spaced to provide both short circuit bracing and required conductor support. Daqo Group is specially designed insulator assembly accomplishes the required loads without being rigidly fastened or welded to the conductor (except the single insulator design). This feature allows the entire insulator assembly to be removed and reinstalled in a one-piece assembly and allows unlimited conductor movement due to thermal expansion without placing lateral stress on the insulator. The number of support insulators is determined by size and weight of the conductor and the rated short circuit value of the bus system.

(2) Elbows: Daqo Group can supply elbows designed at any angle of offset. All elbows are CNC plasma cut from flat plates, rolled and welded together to form a mitered joint. All elbows are factory welded to a longer section of bus to complete a shipping section. This feature reduces the amount of on-site weld time. Elbows are designed to accommodate the placement of insulators and custom layout designs.
(3) Tee-taps: Daqo Group can supply tee taps at any location and with any rating required. The design and construction are typical to elbows. Also all tee taps are fully factory assembled to reduce on-site weld time. Tee taps have various designs based on interfacing equipment, we will design tap bus configuration to match main bus phase centers and the interfacing equipment phase centers.

(4) The splice joint assembly contains all fittings necessary for the installer to join two bus sections. Included in the assembly are two split enclosure splice covers with backing strips factory welded, and pre-fitted conductor backing rings for extruded tube size conductors or two-piece splice sleeves for rolled conductors. All components are factory weld prepared for field welding.

(5) Typical vibration/earthquake/expansion joint, conductor/enclosure: This type can be used for numerous
applications. Its main functions are to provide a flexible joint, when the bus system is to be installed in a seismic region that is rated above Zone 2 per Uniform Building Code, and it can be used alone as a thermal expansion joint in a seismic area or, depending on the bus system routing, the joint can be used as a combination of earthquake and expansion at the same location. Each joint of this type contains factory-welded conductor studs for bolting the supplied flexible connectors. The enclosure joint is made up of a bellows assembly, which attaches to factory-welded bellows collars, and an enclosure jumper assembly which consists of factory-welded studs for supplied flexible enclosure connections. This type splice joint may also be used as a removable joint when certain sections, typically in generator or transformer areas, are required to be removable without cutting or welding of the enclosure and conductor to allow for equipment removal or servicing.

(6) Splice joint, expansion, conductor/enclosure: This type joint is used only for thermal expansion of the conductor and enclosure. The joint assembly consists of a fully factory-welded enclosure expansion ring and a factory-assembled laminated flexible connector joint for the conductor. The conductor expansion assembly is welded in place typically at a section split which is offset from the enclosure expansion ring. The expansion ring is factory located and welded within a bus section. A laminated flex assembly is provided to compensate for thermal expansion of the conductor. The location will be selected at the time manufacturing drawings are prepared. The conductor joint is factory assembled for field welding to the weld prepared conductor ends. Daqo Group, as a standard practice, does not factory weld the flex joint to one conductor end due to the possibility of damage during installation.

(7) Splice Joint, removable, conductor/enclosure: This type joint can be placed at any location along the bus routing for a bus section to be removed without cutting and re-welding the bus conductor and...
enclosure. The removable joint is used typically in areas where periodic access to other equipment is required. The removable section is typical in design to the vibration/earthquake/expansion joint, 2H. The change made to the removable section is the enclosure jumpers are typically rigid bar.

(8) Typical generator termination: Because the transition requirement from the generator bushing terminations to the isolated phase bus connection varies by generator manufacturer and whether the machine type is combustion or steam turbine driven. The generator manufacturer determines the isolated phase bus starting point. Dago Goup designs the terminal interface and line/neutral compartments to suit your specific application. Fiberglass or aluminum barriers are provided to separate phases internally. Ground pads are provided on the end of the enclosure. If the generator manufacturer supplies the terminal compartment, Daqo Group will supply all necessary components to complete the generator/bus duct interface.

(9) Typical Bus End Seal Assembly: This type seal assembly is used at any terminal point where it is desired to restrict the exchange of air between equipment. The bus end seal also provide a positive seal for pressurized or farced-air cooled bus systems and a seal for hydrogen leakage.

(10) Typical Wall/Floor Seal Assembly: This type seal assembly is used to seal any bus duct penetration through a wall or floor that is non-fire rated. The seal assembly incorporates all components of the bus end seal assembly, 5A, to seal the interior of the duct. A two-piece (split horizontally across phase), three-phase,
aluminum wall/floor plate seals the wall/floor opening. All required fasteners and gasketing materials are supplied. The design of the seal assembly, by utilizing an insulating flexible bellows, allows the enclosure to pass through the wall/floor penetration ungrounded to provide a continuous current path in the enclosure. The bellows also allow for misalignment through the wall penetration.

(11) Seal assembly, fire-stop, three-hour rated, three phase: This type seal assembly is used when there is a requirement for fire protection. The fire-stop design and components are typical to the Wall/Floor seal assembly except a Dow Corning material. The wall plate is designed to mount directly to building steel framing or concrete wall, therefore the fire-stop is not supplied with a wall frame. Daqo Group can supply the fire-stop with or without the internal fire seal components depending on your specific requirements. The fire-stop plate-to-seal wall opening would be supplied in either case.

(12) Steel support structures: Daqo Group can design and manufacture bus duct support structures to meet any code requirement or application. We has many “standard” support structures in the single-column, two-column, three-column, four-column, knee brace trapeze, and bridge-type designs. Support placement is generally required at 20' to 30' intervals. All support materials are ASTM A-36 and all fasteners are per
ASTM A-325 and hot dipped galvanized. Anchor bolts are assumed "by others" unless otherwise specified.

I) Duct support, two columns, three-phase: This type support is the most widely used for outdoor duct support applications. This support is supplied with two main supporting columns which are connected to a single horizontal cross member.

II) Duct support, four columns, three-phase: This type support is designed to support a three-phase duct at a horizontal elbow. The support provides full support under the entire elbow area. Design is typical to the two-column supports.

III) Duct support, knee brace, three-phase: This support is designed to support the duct from an existing wall or other structure. The support is generally used around main set-up transformer areas, mounted to a firewall, where support foundation areas are limited.

IV) Duct support, trapeze, three-phase: This support is designed to support the duct from overhead. The design is simply an inverted two-column support which is anchored or welded to existing building steel or concrete structures. This support is for indoor use where wind loading is not a factor.

V) Duct support, three columns, three-phase: This type support is typical in design to the four-column support and is typically used in elbow areas.

VI) The saddle assembly is designed to fasten the IPB to the steel support structure and keep this entire bus system isolated from the steel and ground. This lower cost assembly contains a set of two aluminum support brackets which are field welded to the bus enclosure once the duct is in its proper location. A set of two 5kv insulators are supplied that connect the support brackets to the steel support structure. All associated stainless steel fastening hardware is provided to complete the assembly.
(13) Cubicles, P.T./Surge Protection: Daqo Group standard, free-standing, single-phase cubicle can be fitted with many different types of components to meet your specification. The standard cubicle includes: 3 draw out, keyed lock type potential transformer drawers, 3 indoor type potential transformers with fuses, one lightning arrester, one surge capacitor, one current limiting resistor, IPB connection and primary bus bar, all P.T., S.C., and L.A. primary, secondary, and grounding wiring factory installed and continuous ground bus system. All bus bar and wiring are copper with silver-plated contact surfaces. The rear compartment has bolted removable covers for access to the cabinet interior.