

## Decisions... Decisions

### Helping Your Customers Decide whether to Keep the DC Drive or Replace with an AC Drive

by John N. McMurray, Sales Engineer

Some of our customers ask us about the wisdom of simply replacing DC drives and motors with an AC Vector Inverter system. We believe that, if the DC motor is still in good condition and can be well-maintained, it is usually more cost-effective to replace only the DC drive. If and when the DC motor becomes unserviceable, then look at putting in a new AC motor and inverter drive. Carotron offers several of the most respected, best-performing AC Drive lines, and we understand the important issues that must be addressed when changing from a DC to an AC system.



**1 – A new DC Drive Chassis** can usually be installed into the envelope left by removal of the old drive. Modern assembly techniques and the economy of space allowed by digital technology provide a drive that is typically smaller than the original. Existing components, such as fuses and armature contactors, can often be re-used. In contrast, replacing a [DC Drive](#) with an AC Drive may necessitate replacement of the complete control cabinet, because the internal support components differ significantly.

**2 – Motor wiring must be changed.** DC Motors use two large conductors for the armature and two smaller leads for the field and are not too sensitive to length. If a tach is included, there are two additional small signal wires run in a separate conduit. The AC motor requires three medium-sized power conductors, and, depending on the run, these may need to be of the expensive, shielded design. AC Line reactors on the supply side increase noise immunity, and load reactors are needed to reduce harmonics on long motor leads. If feedback is used, the required encoder typically has three shielded pairs. Both power feed and encoder wiring must be replaced.

**3 – Time and other resources must be allocated** for the removal of the DC Motor and the installation of the new AC Motor. If the frame size is different, an adapter plate must be included in the equipment cost. If the plant does not have in-house capability, an alignment service needs to be contracted. Overall downtime can be several days with an AC conversion compared to just hours with DC.

So, before you decide which route is better for your particular application, carefully consider each option. We welcome the opportunity to be involved.



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Carotron offers trained field service engineers and technicians who are able to install a new [Elite Pro DC Drive](#) on-site at your customer's plant, often within 24-48 hours of the time we get the call.

If your old drives are causing significant downtime resulting in reduced quality and production, then **call Carotron today at: 1-888-286-8614**