

# HOW TO SELECT AN ELECTRONIC CONTROLS INTEGRATOR



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You've made the decision to update your mobile machine with electronic controls. You've now done your homework, by listing out all of your machine functions, I/O, etc. as previously discussed. Now, it's time to sit down with a qualified system integrator and figure out the specifics.

**But, what exactly is a “qualified system integrator?” Here are some key questions to ask as you interview your potential electronic controls integrator and their team of engineers, programmers, and designers.** The word “team” is important because a team of specialists will give you a better end result.

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**1. Don't overlook the hydraulics.** Do they understand the basic mechanical and hydraulic functions of your machine and have the technical expertise to design the hydraulic system for optimal performance and efficiency? Could the machine plumbing and assembly be simplified with custom manifolds? Can they custom design these so that they integrate into your machine?

**2. Consider your control options.** Will they evaluate the potential for proportional controls to help make the machine more productive, smoother, and easier to operate?

**3. Evaluate their coding experience.** Can they write a control system program that will make your machine operate the way you intend? How proficient are they and how much experience do they have? Have they done similar machines?

**4. How good are their display graphics?** Graphics are critical to a machine's ease of use. Can they provide previous design examples to prove they can give you what you need? Do their designers have an eye for intuitive controls and displays?

**5. Startup and testing support.** Will a programmer be on-site for prototype startup and testing? Testing usually reveals the need for tuning and adjustments. Can they give you references that verify their capabilities?

**6. Do they use Open Source vs Closed Source software?** Who owns the software and the ability to make modifications? Will you have to buy a license for everyone who works with the system? Will they help your technicians set up laptops so that you can easily connect to the system?



**7. Do they use custom wiring harnesses?** Will they design and provide a wiring harness to make system installation quicker, easier, and more reliable? This is an often overlooked part of the system design. Simply wiring up the system with crimp-on spade connectors will guarantee that you have warranty problems down the road and lots of lost time on the production line.

**8. Don't forget documentation.** Will the integrator provide complete documentation of the program, wiring, component layout, etc. for your records?

**9. Can they handle the job?** Each project is unique and requires a certain level of attention and focus. Does the integrator have adequate resources to support you when you need it? Are they responsive? How far away are they located? Do they have a qualified field engineer who can be quickly dispatched?

**10. Hydraulic and controls prototyping.** Can the integrator take your machine prototype to their facility and upfit the entire hydraulics and controls package? Can they tune it and sort it?

## AFTER THE INTERVIEW

**Once you've interviewed your integrator and are convinced that you have chosen the one best suited to your needs, ask for a proposal.** At this point, the integrator should have all that they need to create you a detailed, written scope of work that will tell you exactly what they will be responsible for, approximately how long the work will take, and how much that work will cost.

Without detailed planning, customers often adjust the scope of work after the project has begun. This will extend the time to completion while incurring additional fees for hardware and extra programming. The better job you do up front, the less likely you are to have "project scope creep".

Cross Company can be your electronic controls integrator. [Let's talk.](#)

