

A BUYER'S GUIDE

Twelve questions that cost other companies a fortune

For anyone buying a machine for welding plastics or a line for blister packaging. Each question comes with what a good answer sounds like and when to prick up your ears. Twenty minutes of reading.

The hour on the phone that produced this guide

Some time ago a process engineer from an injection moulding plant called me.

They were making a plastic housing in two halves. There is electronics inside, so the joint has to be tight. The mould was finished, tried out, and the parts coming off it were exactly as drawn. On the drawing the two halves met flat face on flat face.

That is the sentence he was calling about, only he did not know it yet. For two parts to be ultrasonically welded tight, one of them needs an energy director. A triangular ridge around the perimeter, three or four tenths of a millimetre high, which melts first and carries the melt into the joint. Without it two flat faces will still join, but they will not be tight.

An energy director is drawn into the mould. It cannot be drawn into a finished one.

There were two months left before the start of production. Everything I could offer meant either cutting into the mould or a different technology and a longer cycle. Both cost money and weeks he did not have. It was one of the most uncomfortable hours I have spent on the phone in twenty years. Not because of him, he was decent and to the point, but because everything I was telling him could have been said six months earlier and would have cost nothing.

He did not ask because nobody had told him he should. And that is my fault, not his. We have been selling these machines for twenty years and we never put that list of questions into anybody's hands.

For twenty years I have sat opposite buyers and process engineers, and within five minutes I can tell whether the person knows what they are getting into. Not by whether they understand welding plastics. Usually they do not, and they do not need to, that is what I am there for. I can tell by the questions they ask.

I have written down the twelve that would make me prick up my ears if I were sitting on your side of the table. The first four are about the machine, the next two about your part, two about what comes after the warranty, and the last four about the delivery and the money. Ask us them too. If we answer any of them vaguely, you have every right to ask again.

Twelve questions on one page

The question that process engineer failed to ask is not among the twelve below. It is in the appendix at the end, because it comes up before a machine is chosen at all. If you are still drawing the part, skip straight there.

If you read nothing else, tear out at least this page. On the right is what the same question cost the companies that did not ask it.

	QUESTION	THE COST OF SILENCE
01	What control system and what components are inside?	11 days waiting for a control board from the manufacturer
02	How many machines of this design are in service?	a year of sorting out an untested design
03	Can the machine be used for another part and another tool?	a whole second machine instead of a second head
04	What does the second and third tool cost?	three times the price of the second tool
05	What happens if the part fails sampling?	repairing the mould with the series already running
06	Where can I go and see the machine running?	six months before the same thing is worked out at home
07	Where do I buy spare parts and how soon do I have them?	a month of downtime instead of one shift
08	What is the service response time and who answers the phone?	three days with the line standing
09	What is the power draw, the air consumption and the footprint?	a compressor nobody had allowed for
10	Who accepts the machine at the manufacturer before it is loaded?	2 months of arguing about damage in transit
11	Who pays for transport, insurance, installation and training?	EUR 15,000 to 20,000 outside the machine price
12	What is not in the price?	the air supply and the electrical connection at your own cost

The control cabinet nobody looks into

Ask it like this: **What control system and what components are inside?**

When I open the control cabinet of a European machine, I see almost the same thing every time. Contactors of brands you have in your own plant. Valves you have on your moulding machines. Control from one of the three manufacturers who between them rule Europe.

I will say it straight, even though it does me no favours. The difference in price between two European machines almost never lies inside the control cabinet.

It lies in the construction of the frame, in the precision of the tool, in how accurately the machine is sized for your part, and in how many of that design the manufacturer has already built. The buyer looks for it in the components, because components are what they understand.

The best question I ever heard on this was not "what is inside". It was: I will take the wiring diagram home and show it to my electrician, will you send it to me?

That man told me two things at once. That somebody who understands it would be checking. And that if I started wriggling, he would notice.

I sent him the diagram the same day. If anybody refused to send me one, I would ask why.

A GOOD ANSWER SOUNDS LIKE

The supplier names brands you already know and says why those. You get the wiring diagram as part of the documentation.

PRICK UP YOUR EARS WHEN

You hear that it is their know-how. On the control system of a machine meant to serve you for ten years, that is not know-how, it is dependency.

THE COST OF NOT ASKING

11 days waiting for a control board from the manufacturer

You do not want a novelty, you want a proven machine

Ask it like this: **How many machines of this design are in service?**

Nobody buying once in ten years wants to be the guinea pig. It is a healthy instinct and you should listen to it.

The number of units of a given design already built is the only measurable proof that the machine has been through production and not just through the test room. A brochure tells you what the machine can do. The number built tells you what it has already survived.

With the European manufacturers I work with, those numbers run in the tens to hundreds. It is no secret and nobody is ashamed of them.

One thing to be fair about, though. Your machine will always be a little different, because the tool is made for your part. The question is therefore not how many machines identical to yours are in service. It is how many units of that design, that frame and that control system the manufacturer has already built.

When I hear that every machine is unique, I know what it means. It means the design is unique too, and that is exactly what you do not want.

And one more thing, which is new. Ask straight away who actually builds the machine and where. A local website, local phone numbers and a local name in the footer are today perfectly normal for an importer who has never seen the machine. I am not saying a machine from outside Europe is a bad machine. I am saying it is a different decision and you should make it knowingly. Ask how many are already standing in this country, and ask for one address where you can go and see one.

A GOOD ANSWER SOUNDS LIKE

A number and the sectors those machines work in, plus the name of the manufacturer and the country where the machine is built.

PRICK UP YOUR EARS WHEN

An evasive answer about every machine being unique. What tends to be unique is the tool, not the design.

THE COST OF NOT ASKING

a year of sorting out an untested design

You are buying for ten years a product that will last three

Ask it like this: **Can the machine be used for another part and another tool?**

The machine will stay with you for ten years. The product you are buying it for will change in three to five. It is an asymmetry I see in this field over and over.

It means the machine you buy will spend most of its life doing something other than what you bought it for.

When somebody asks me whether the machine can be used for another part, I say yes. Everybody says yes, because it is true. What comes after that is the interesting part.

A good answer is a boring list. The tool changes. On a bigger change of size, so does the horn. A new fixture is made. The program is reset and it takes half a day. A boring list can be taken to a meeting and defended.

And one thing almost nobody asks about, although they should. Can the machine be extended later? Room can often be left in the frame that costs a few thousand euros today, and in two years a second head goes into it. Without that space, in two years you buy a whole second machine.

Ask about it even if you need no second head today.

A GOOD ANSWER SOUNDS LIKE

Yes, with a tool change, and with a list of what has to be reset and how long it takes.

PRICK UP YOUR EARS WHEN

Yes, with no detail. Ask whether only the tool changes, or the horn, the fixture and the program as well.

THE COST OF NOT ASKING

a whole second machine instead of a second head

The best moment for this question is before signing

Ask it like this: **What does the second and third tool cost?**

You can negotiate only until the moment you have two quotes on the table. After that you cannot, and it makes no difference how good a negotiator you are.

The price of the second tool is exactly the item that negotiates worst after signing. It is not in the original quote, it comes up in two years, and at that point you have nowhere to go, because the machine is already standing in your plant.

Let me tell you how it usually is on products of a similar shape. The outer dimension of the pack or the part follows from the machine and stays the same. What changes is the inner shape. The second tool is therefore rarely a second full price, it is a fraction.

That fraction is written nowhere until you ask for it.

If a supplier tells you they will work it out from the drawing, that can be honest. But they should be able to give you the order of magnitude straight away, because they have made dozens of such tools.

I put a line for the second tool into my quotes myself, even when nobody asks for it. It saves an awkward phone call later.

A GOOD ANSWER SOUNDS LIKE

A specific figure or a percentage of the machine price, with a note that it applies to a part of a similar size.

PRICK UP YOUR EARS WHEN

We will work it out from the drawing. Sometimes that is honest, but the order of magnitude should come straight away.

THE COST OF NOT ASKING

three times the price of the second tool

The question that separates a supplier from a salesman

Ask it like this: **What happens if the part fails sampling?**

The machine welds. Every machine does that and nobody will thank you for it.

What you actually need is something else. You need your part, made from your material, to pass at your customer. And that is where it shows who stands behind it.

So ask what happens if the samples fail. And watch how quickly the conversation slows down.

The right procedure is boring and predictable. Samples are made before signing and from your material, not from a universal test piece. Strength in newtons and tightness at a given pressure go into the contract. And so does what happens if they are not met.

Let me tell you the uncomfortable half as well. Sometimes it turns out the problem is not in the machine but in the moulding. The material has a different filler content than expected, or parts from different cavities of the mould behave differently. That is not the machine supplier's fault.

There should be a sentence about that in the contract too. Because even then you have to know who does what.

A GOOD ANSWER SOUNDS LIKE

Samples before signing from your material, the parameters of the joint clearly written into the contract, and a procedure for what happens if they are not met.

PRICK UP YOUR EARS WHEN

Sampling only after the machine is delivered. By then you have paid and you have no negotiating position at all.

THE COST OF NOT ASKING

repairing the mould with the series already running

The day that saves six months

Ask it like this: **Where can I go and see the machine running?**

Of all twelve questions this is the only one I will insist on. Go and see the machine.

I take customers to plants where the same machines are working, and the same thing happens every time. In two hours they learn things I would never tell them, because they would never occur to me.

That the tool changes in twenty minutes, not an hour. That after six months the operator made her own marks on the fixture, because loading was awkward at first. That the machine needs more space around it than the footprint suggested.

And above all, there you can ask the question you cannot ask me. Would you buy it again?

I know that one day and three hundred kilometres are hard to find in a busy company. But on a decision worth a hundred thousand euros it is the cheapest insurance I know.

If somebody tells you they have nowhere to take you, that does not necessarily make them a bad supplier. But ask them a second time why not.

A GOOD ANSWER SOUNDS LIKE

An offer of a specific plant you can drive to, ideally with a part similar to yours.

PRICK UP YOUR EARS WHEN

We have nowhere, and no alternative either. If a customer visit is ruled out by confidentiality, a visit to the manufacturer or a video call from the machine should still be possible.

THE COST OF NOT ASKING

six months before the same thing is worked out at home

Nobody wants spare parts from one place only

Ask it like this: **Where do I buy spare parts and how soon do I have them?**

I can spot a well-prepared company by the fact that the maintenance technician is sitting in on the meeting.

The buyer asks about the price and the process engineer about cycle time. The maintenance technician asks one thing only: where am I going to get this when it breaks.

It is the most practical question of the twelve and the hardest one to lie about, because the answer can be checked in half an hour. Ask for the spare parts list with catalogue numbers and try to find them at a local wholesaler.

On the machines I supply you will find most of them that way. Relays, contactors, valves, switches, limit switches. They are not our parts, they are parts everybody in Europe has.

A few items always stay special. On ultrasonics it is the horn and the converter, on a laser the source. Those really are bought from the manufacturer and it is right to ask straight away what they cost and how long delivery takes.

If somebody tells you there are no special parts at all, either it is a very simple machine, or they are not being straight with you.

A GOOD ANSWER SOUNDS LIKE

A parts list with ordinary catalogue numbers, and a sentence saying they can be bought outside the machine supplier as well.

PRICK UP YOUR EARS WHEN

Special parts made only for that one manufacturer and available nowhere else. Ask straight away about the price and the lead time.

THE COST OF NOT ASKING

a month of downtime instead of one shift

Half past four on a Friday

Ask it like this: **What is the service response time and who answers the phone?**

A response time within 48 hours is a sentence I read in quotes so often that it has lost its meaning.

Response can mean that somebody calls you. It can mean that somebody arrives. In the great majority of contracts it means the first, except nobody writes that down.

So please ask specifically. Who picks up the phone, what is their name, and what happens in the first hour.

Let me tell you how it works with us, so you have something to compare against. I pick it up. I ask for the fault message and for a photo of the display. From that moment nine faults out of ten are solved on the phone with your own maintenance technician, because it is a valve, a limit switch, or a setting that has drifted.

When it cannot be solved on the phone, an engineer travels. But only once we know which part to bring, because an engineer without the right part is just a more expensive phone call.

Incidentally, try it. Call that number on a Friday afternoon before you buy anything. You will learn more than from a whole chapter about service.

A GOOD ANSWER SOUNDS LIKE

A name, a phone number and a sentence about what happens in the first hour. Most faults can be solved on the phone with your own maintenance man.

PRICK UP YOUR EARS WHEN

A response time within 48 hours with no explanation of what response means. A phone answered and an engineer on site are two different things.

THE COST OF NOT ASKING

three days with the line standing

The size of the machine is not the size of the space it needs

Ask it like this: **What is the power draw, the air consumption and the footprint?**

The quote gives the footprint of the machine. In the plant you need the footprint of the machine plus the space where the operator stands, plus the space the guards swing open into, plus the space the tool is carried through.

It tends to be a third more than what is in the brochure.

It gets forgotten regularly and found out late, because the plant is planned in the spring and the machine arrives in the autumn.

It is the same with the power draw and the air. You need the power in kilowatts because of the breaker and because of whether your existing distribution will take it. You need the air consumption in litres a minute because of the compressor, which usually has half the plant hanging off it already.

On machines with heating elements there is one more figure almost nobody asks about. The inrush current while heating up tends to be considerably higher than in normal running.

If a supplier tells you they will add the three figures later, that is a warning. It means they do not have them to hand, and a machine whose consumption the manufacturer does not know by heart has probably not been built many times.

A GOOD ANSWER SOUNDS LIKE

Specific figures in kW, in litres a minute and in millimetres, including the space for the operator and for the guards to open.

PRICK UP YOUR EARS WHEN

We will add it later. A footprint is hard to sort out once the machine is ordered and there is no room for it.

THE COST OF NOT ASKING

a compressor nobody had allowed for

The last moment when anything can still be changed

Ask it like this: **Who accepts the machine at the manufacturer before it is loaded?**

Between the manufacturer and your plant there are a thousand kilometres and the tarpaulin of a lorry. What happens on that journey is hard to prove afterwards.

Acceptance at the manufacturer is, from where I stand, the cheapest insurance in the whole job. The machine runs a series of pieces there, strength, tightness and cycle time are measured, and the result is a report with numbers in it.

I go to them and I take customers with me. I do it for two reasons and only one of them is for you.

The first: if something shows up only at your plant, a debate starts about whether it happened in transit. With a report that debate does not happen.

The second one is mine. When you stand at the acceptance, you see the machine before your own management does. If there is something you do not like, you say it at the factory and not in your own plant, where it is too late.

In twenty years I have seen a machine turned back at acceptance twice. Both times it was cheaper than dealing with it later.

A GOOD ANSWER SOUNDS LIKE

Acceptance at the manufacturer is part of the supply, you are invited to it, and it produces a report with measured values.

PRICK UP YOUR EARS WHEN

The machine is shipped straight to you and acceptance happens on site. It is then hard to prove when the defect arose.

THE COST OF NOT ASKING

2 months of arguing about damage in transit

Three letters that decide tens of thousands

Ask it like this: **Who pays for transport, insurance, installation and training?**

EXW. Three letters you can read straight past in a quote without noticing them.

They mean the machine is yours the moment it stands on the loading bay at the manufacturer. Transport, insurance and unloading are yours from then on.

There is nothing dishonest about it. It is a normal delivery term and plenty of companies genuinely prefer to arrange transport themselves. The only dishonest thing is comparing two quotes with different terms as if they were the same.

On a machine costing a hundred thousand euros this is not small change. Transport across half of Europe, insurance, a crane to unload, an engineer to connect it and training for the operators easily come to fifteen or twenty thousand euros together.

Here is what I suggest. Make yourself a table of six lines: transport, insurance, unloading, installation in the plant, connection, training. Send it to every supplier and ask them to fill in the numbers, even if they are zeros.

It takes two days, and from then on you are comparing one number instead of five.

A GOOD ANSWER SOUNDS LIKE

The quote has its own line for transport, for installation at your plant and for training, even if the number in it is zero.

PRICK UP YOUR EARS WHEN

A machine price with not a word about delivery terms. Ask about the delivery term and about who unloads the machine.

THE COST OF NOT ASKING

EUR 15,000 to 20,000 outside the machine price

The empty space under the last line

Ask it like this: **What is not in the price?**

It is the only one of the twelve questions nobody will ask on your behalf.

I am sitting opposite you with a number in the quote. That number is true. Except it is true about what is in the quote, not about what is not.

The best buyers I have dealt with all did the same thing. They turned the quote round, pointed at the empty space under the last line and asked: what else goes here?

One of them said something I still remember. I do not trust numbers I understand. I trust numbers where I know what is not in them.

So here is mine, so you do not have to drag it out of me. Our quote does not normally include the compressed air supply to the machine, the electrical connection, extraction, floor work, and a new compressor if the existing one turns out not to be enough.

We do not supply those because your own electrician will do them better and cheaper than an engineer travelling in from abroad. But you have to allow for them, and that is why it is written here.

The most expensive item in a quote is almost always the one missing from it. That goes for our quote as much as for anybody else's.

A GOOD ANSWER SOUNDS LIKE

The supplier lists on their own what you are arranging: air supply, electrical connection, extraction and any building work.

PRICK UP YOUR EARS WHEN

You hear that everything is included. It is not. Something always stays with you, and the only question is whether you find out now or in May.

THE COST OF NOT ASKING

the air supply and the electrical connection at your own cost

And one last thing from this side of the table

I put all twelve questions here so that you would ask them of me as well.

It looks like a gesture, but it is not. There is something in it for me and it is fair to admit it. A customer who asks questions decides more slowly and then stays with the decision. A customer who does not ask decides quickly and calls me a year later to say something is missing.

And notice one more thing about that table at the front. Nothing in the right-hand column can be shown to anyone after a purchase that went well. Ask in time and it simply does not happen, and what did not happen does not get told around the company. The only purchases anyone sees are the ones that went badly, which is why we all learn from those, and expensively.

In twenty years I have worked out one thing. The best jobs never started with me convincing somebody. They started with somebody asking me something I then had to spend two hours finding the answer to.

So ask. I pick up the phone at half past four on a Friday as well.

Petr Bernard

Appendix 1: What to have ready before you send the enquiry out

Nine things every supplier will ask for. With them together you get quotes that can be compared with one another. Go through the third and fourth line before you have the mould made, because the shape of the joint is drawn into it and every later change costs money.

1. A drawing or a 3D model of the part, or a photo from your phone.
2. The material of both parts, including filler and recycled content.
3. What the joint has to do: tightness, strength in newtons, appearance.
4. How the joint is drawn, and whether the mould is already finished.
5. Annual volume in pieces and the number of shifts you want to run.
6. The date you need to be in production, not the date you want the machine.
7. Whether other sizes of the product exist or are being planned.
8. Free space in the plant: footprint, height and the nearest services.
9. Who will operate the machine and who will maintain it.

Appendix 2: What to have itemised in the price

Have every quote broken down into these items. A missing one is not free, it is paid for later.

1. The machine in the configuration under discussion.
2. The tool for the first part.
3. The tool for a second shape, if one is coming.
4. Transport and insurance.
5. Setting the machine up at your plant and connecting it.
6. Training the operators and the maintenance staff.
7. Documentation in Czech or English and the declaration of conformity.
8. A set of spare parts for the first year.
9. Acceptance at the manufacturer and acceptance at your plant.
10. The warranty, and what it does not cover.

Who will pick the machine for you

My name is **Petr Bernard** and I supply machines for welding plastics and lines for blister packaging to Czech and Slovak plants. I have been doing it for over twenty years and you deal with me from the first question to a service call eight years later.

I am not tied to any brand

I represent several European manufacturers. I pick the technology to suit your part, not to suit what I happen to have on offer. And if the dearer machine is the right one, I say so too.

You do not pay for capacity you will never use

I ask what will actually run on the machine before I ask what it should be able to do. More than once that has ended with a customer buying a smaller and cheaper machine than the one they came for.

I will also tell you a machine will not pay off

At a few thousand pieces a year a machine at EUR 40,000 will not pay for itself. In that case I point you elsewhere. Losing one order is cheaper than selling a machine that stands idle.

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Petr Bernard, TECHNOLOGY PRODUCT TRADE, Kubelíkova 70/1, 779 00 Olomouc, Czech Republic. Send a photo of the part, the material and a rough annual volume. Within 48 hours you know which technology will join it and what order of magnitude we are in.

The stories in this guide are written so that they cannot be traced to a particular company or a particular order. You are welcome to print the guide and pass it on to colleagues. Tables of weldability, joint design and a glossary for reading foreign quotes are on tp-t.cz under Tools, free and without registration.