

control design

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Pneumatics & Hydraulics

August 2013

Market Intelligence Report

Pneumatics & Hydraulics

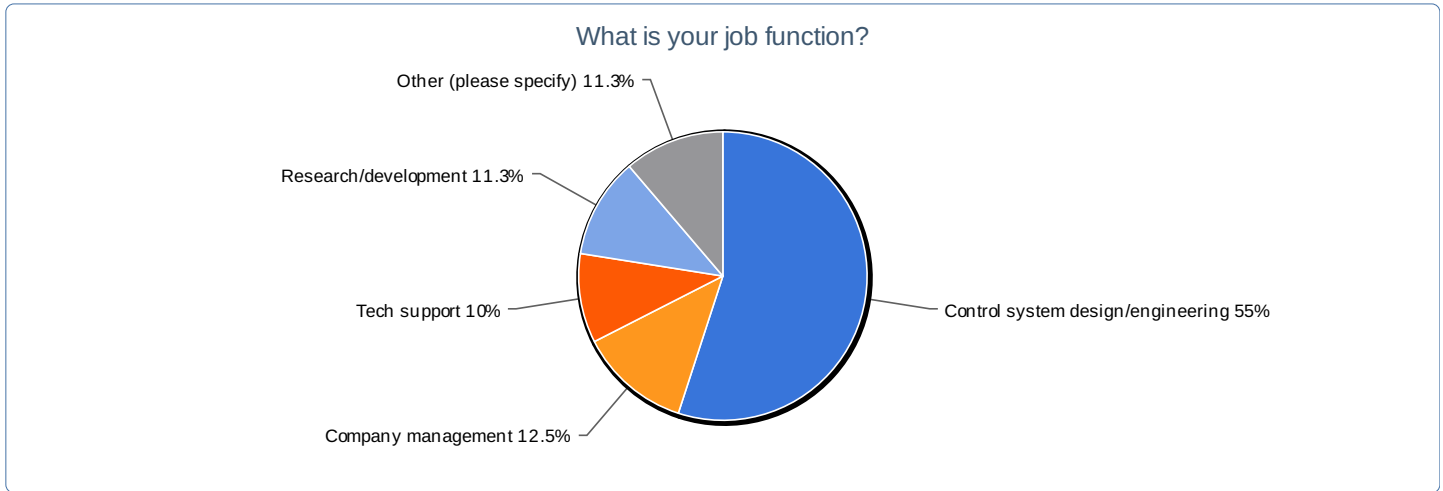
August 2013 Market Intelligence Report

Executive Summary

An electronic survey of *Control Design* readers was conducted in August 2013 in order to identify usage and application trends of **HMI & industrial PCs** among the industrial machine builders that comprise *Control Design's* readership. Detailed survey results are presented on the pages that follow, with key findings summarized below:

- Electric motors and actuators are the primary machine motion source used by Control Design readers (40%), with Complementary electric plus pneumatic power sources (21%), Complementary electric plus hydraulic power sources (11.5%), Hydraulic Motors/Actuators (9%), Pneumatic Motors/Actuators (9%) less widely used as a primary power source.
- "Power requirements for the price" was identified as the primary reason for using hydraulics (40%), followed by "customer requirements" (23%), and "wide power variation needs" (16%). By far, the biggest drawback of using hydraulic power systems was identified as "environmental issues/high maintenance issues."
- 43% of respondents use digitally controlled hydraulic pumps. 57% do not.
- 46% of respondents using pneumatics used them to power linear actuators, cylinders, etc. and not as a primary power. 21% used them for control applications while 27% used them for both control and power applications.
- "It's a simpler solution" was the main reason respondents used pneumatics (30%), followed by "Compressed air availability" (30%), "Customer requirements (14%), "we understand it best" (13%), and "Cost of conversion to electric/electronic not viable (8%)."
- 75% of respondents used digitally controlled pneumatics.
- Respondents reported the greatest drawbacks to using pneumatics High cost of air (32%), high maintenance (24%), lack of system diagnostics (23%), inflexible (13%), and insufficient vendor support (7%).

Pneumatics and hydraulics Market Report



What is your job function?

Value	Percent %
Control system design/engineering	55.0%
Company management	12.5%
Tech support	10.0%
Research/development	11.3%
Other (please specify)	11.3%

Open-Text Response Breakdown for "Other (please specify)"

Advanced Technology Manager
All of the above
CONSULTANT
HVAC
Plant manager/engineer
Sales engineering
lab
reliability engineer

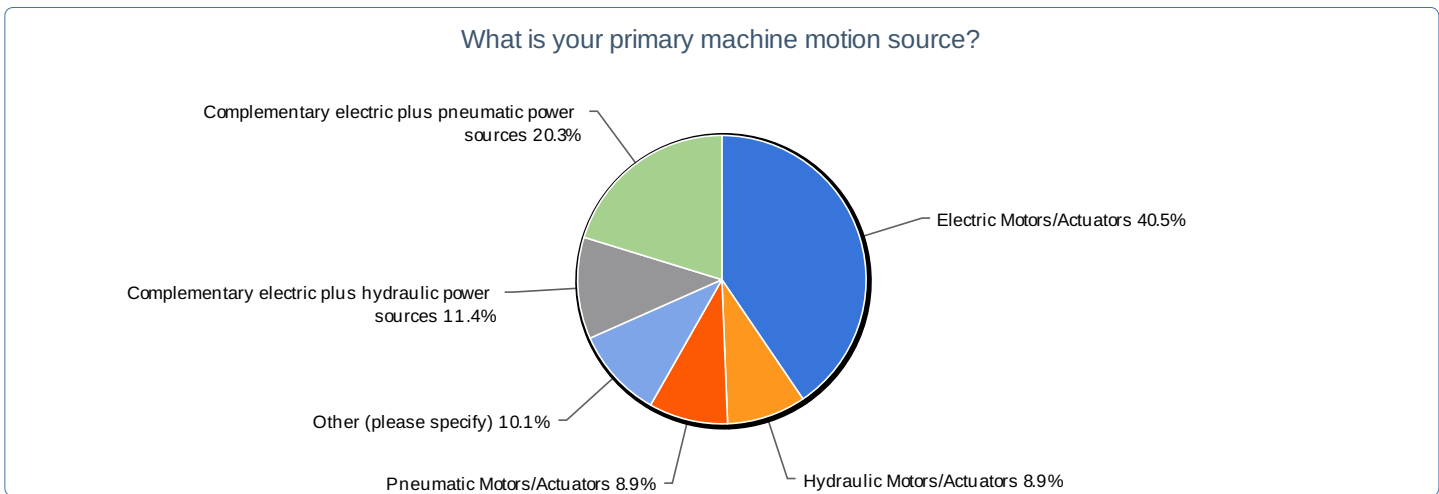
What is your machine builder industry?

	Assembly	One-off Custom	Electronics Packaging	Electronics Pick and Place	Machining Centers	Semiconductor Tools	Paper Industry	Printing and Converting	Rolling Mills	Metalworking	Woodworking	Material Handling/Transfer System
What is your machine builder industry?	6.3%	15.0%	1.3%	2.5%	2.5%	1.3%	0.0%	0.0%	2.5%	10.0%	1.3%	3.8%

Open-Text Response Breakdown for "Other (please specify)"

	Count
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Coating/Lamination	1
Consumer Products	1
Consumer product manufacture	1
Filtration	1
Hydraulic power units/Valve panels	1
OEM METAL PRESS/TUBE FORMING	1
OIL AND GAS	1
OIL&GAS	1
Plastics	1
TAPE	1
User - In house assembly/press equipment	1
construction	1
environmental remediation	1
industry automatic	1
maintenance and reliability	1
metal treatment	1
metals and mining	1



What is your primary machine motion source?

Value	Percent %
Electric Motors/Actuators	40.5%
Hydraulic Motors/Actuators	8.9%
Pneumatic Motors/Actuators	8.9%
Other (please specify)	10.1%
Complementary electric plus hydraulic power sources	11.4%
Complementary electric plus pneumatic power sources	20.3%

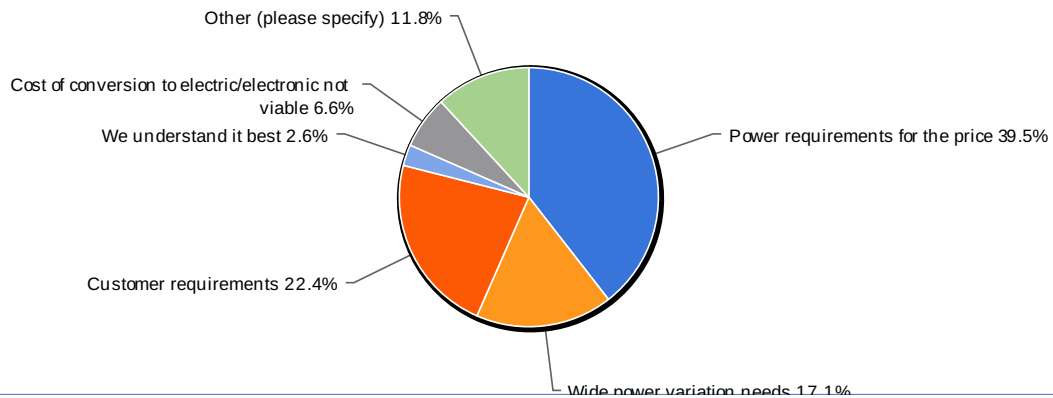
Open-Text Response Breakdown for "Other (please specify)"
ALL OF THE ABOVE
All of above
Both Electric & Pnuematic
Complementary Electric plus hydraulic/pneumatic
Servo Motors

Servos and smc, numatics or festo

all of the above

hydraulic, electric, and pneumatic

What is your primary reason for choosing hydraulics as all or part of your solution?



What is your primary reason for choosing hydraulics as all or part of your solution?

Value	Percent %
Power requirements for the price	39.5%
Wide power variation needs	17.1%
Customer requirements	22.4%
We understand it best	2.6%
Cost of conversion to electric/electronic not viable	6.6%
Other (please specify)	11.8%

Open-Text Response Breakdown for "Other (please specify)"

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Cleanliness & Operational Life

Do not use hydraulic

Typically do not use hydraulics.

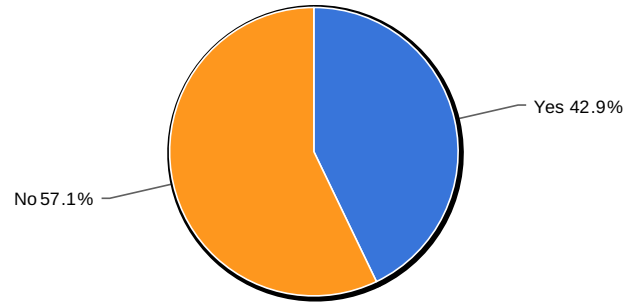
We don't use hydraulic in our equipment

do not use hydraulics

don't use much hydraulics

remoteness of sites

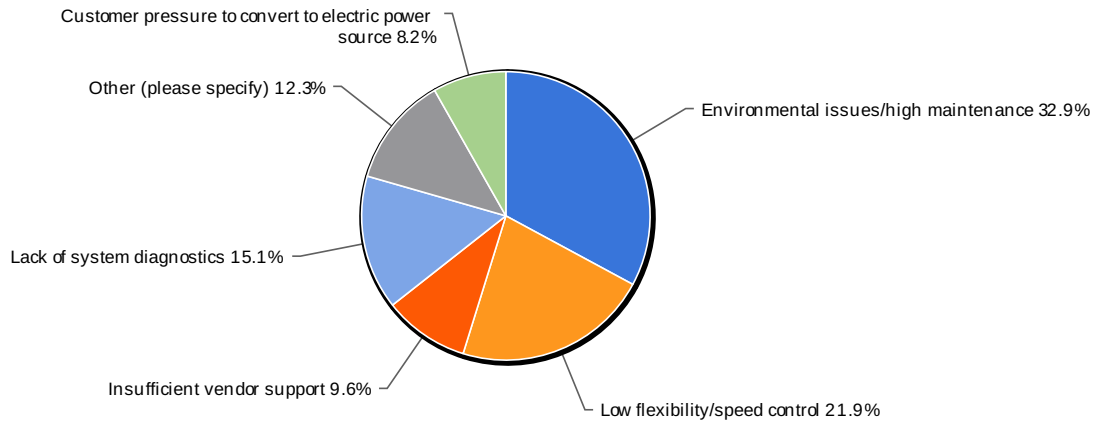
Are your hydraulic pumps electronically (digitally) controlled?



Are your hydraulic pumps electronically (digitally) controlled?

Value	Percent %
Yes	42.9%
No	57.1%

What is the biggest drawback to hydraulics in your applications?



What is the biggest drawback to hydraulics in your applications?

Value	Percent %
Environmental issues/high maintenance	32.9%
Low flexibility/speed control	21.9%
Insufficient vendor support	9.6%
Lack of system diagnostics	15.1%
Other (please specify)	12.3%
Customer pressure to convert to electric power source	8.2%

Open-Text Response Breakdown for "Other (please specify)"

- Do not use hydraulic
- Hydraulic power is not suitable in our application
- No drawbacks
- None
- Unnecessary.

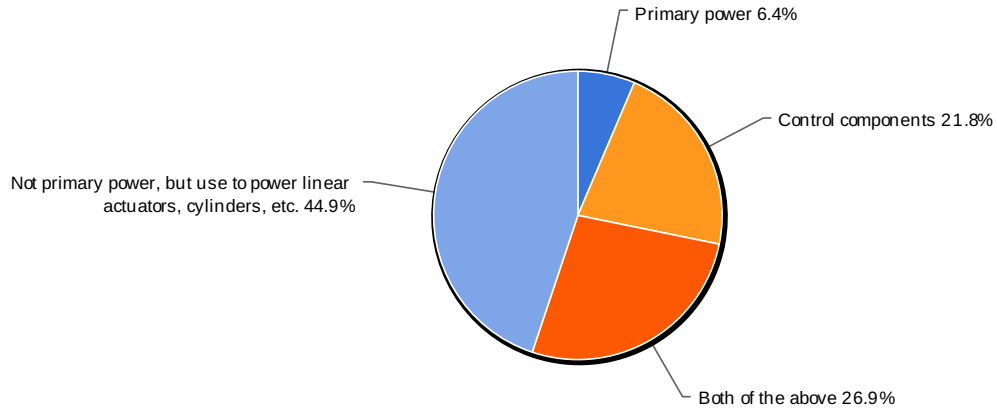
cost of total system

na

not safe for food products

having to provide the entire hydraulic system to the customer. My customers usually have pneumatic supplies in place.

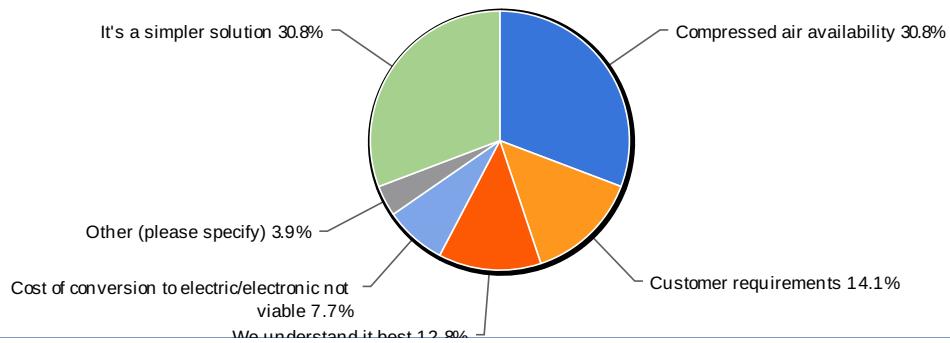
Do you use pneumatics for:



Do you use pneumatics for:

Value	Percent %
Primary power	6.4%
Control components	21.8%
Both of the above	26.9%
Not primary power, but use to power linear actuators, cylinders, etc.	44.9%

What is your primary reason for choosing pneumatics for all or part of your solution?



What is your primary reason for choosing pneumatics for all or part of your solution?

Value	Percent %
Compressed air availability	30.8%
Customer requirements	14.1%
We understand it best	12.8%
Cost of conversion to electric/electronic not viable	7.7%
Other (please specify)	3.9%
It's a simpler solution	30.8%

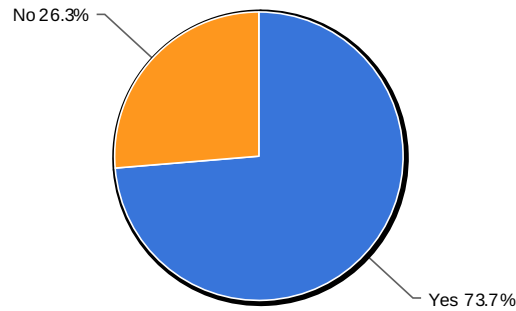
Open-Text Response Breakdown for "Other (please specify)"

Pneumatic is not suitable for our product applications

Reliability

lower cost if high accuracy not required

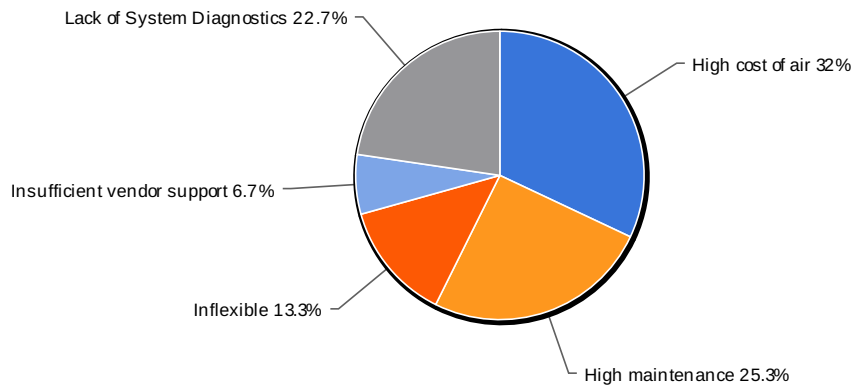
Are your machine pneumatics electronically (digitally) controlled?



Are your machine pneumatics electronically (digitally) controlled?

Value	Percent %
Yes	73.7%
No	26.3%

What is the biggest drawback to pneumatics in your applications?



What is the biggest drawback to pneumatics in your applications?

Value	Percent %
High cost of air	32.0%
High maintenance	25.3%
Inflexible	13.3%
Insufficient vendor support	6.7%
Lack of System Diagnostics	22.7%

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