

Re: High speed induction motor update

induction
motor to go
at higher
speed and
lower
voltage
driven from
a dspic
based 3ph
pwm setup.

well I got
some of that
magnetic
paper wich
goes black
in the
presence of
a
magnetic
field,
I put a
circle of it
in the center
of the stator
but was
very
little to see,
it apears the
paper only
goes black
if the
megnetic
field goes
perpendiculary
through the
paper,
wich it
doesnt with
it aranged
this way.

but anyway
I had a realy
extra strong
cup of
coffee and
traced
how id
conected
the 4

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windings to
the 3phase
(there were
16 slots
wich made
it awkward)
and realised
id got one
phase
backwards.

changing
that it now
runs at a
whoping
20krpm.
it realy
starts to
sing,
and its not
realy
balanced
well enough
as it only
made for
1500rpm.

it was only
an
experiment,
I only put a
few turns of
wire loosly
through the
slots,
I also need
to bore the
rotor out so
it can sit in
the middle
of
a 1M long
12mm dia
shaft.
I think I
might need
to trim the
cooling
vanes on the
rotor too.
however I

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really need a
motor 2"x2"
this one is a
bit to big to
fit in easily
at 70x70,
its from an
old 8"
floppy drive
to drive the
main
spindle.
ive been
looking
around at all
sorts of
junk,
but nothing
just the
right size
yet.

my usual
stockists
only seem
to have
larger
motors.

Colin =^.^=

Modern chem lab
centrifuges and
turbomolecular vacuum
pumps use
magnetic suspension
bearings and ac drive. They
measure
rotational speeds in
kilohertz.

The electronics and software will go to over
100krpm,
its hard to get the moving parts, bearings etc,
to run smoothly enough even at 10krpm.

just getting the shaft straight is taking ages.

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Hardly, dental drills and similar have done and do 100,000 rpm for decades routinely.

Air powered, air bearing PCB drills run up there, too.

yes but they dont have a 12mm dia 1M long shaft.

Yikes! That will wobble itself to death at that speed. The fan shaft on the JSF has similar issues; it transmits 32,000 hp to the forward lift fan.

John

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