Subject: linn, Direct Drive, homebuilds
Posted by Manualblock on Sun, 25 Apr 2004 21:25:49 GMT
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Any Linn owners on board? I have owned mine for about 12 years, I decided it was getting old and bought an Aries used with the 10 inch arm. Sold the Aries and went back to the Linn, slow, fat bloated bass and all. Something about them. Any opinions on Direct dr. vs. belt? I know lots who think DD is verboten but I have heard some older Denons that sounded pretty good, the ones with the S-shaped arm. Also I am thinking about rebuilding my old Fidelity Research cart. MC 202. Anyone ever had an old MC done? My humble opinion the VPI jr. is best value in TT since you can upgrade so cheaply. They sound nice and full without that chintzy two dimensional sound lots of lower priced tables seem to exhibit. Weisfeld will sell the bearing and platter so nothing to stop you from building a platform and using an old TT motor. Stream of concious to avoid working today.

Subject: Re: linn, Direct Drive, homebuilds
Posted by Wayne Parham on Mon, 26 Apr 2004 00:44:13 GMT
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I like direct drive. To be very honest, I think that popularity of belt drive on high-end turntables is more due to parts availability than anything else. Direct drive is a superior method, if you asked me. Make the platter massive to help mechanically regulate speed and voila, simple and pure.But high-end turntables are by their very nature, hand crafted and built using job-shop techniques. The companies that build them probably find parts for belt-drives more in line with what they're trying to do, in the quantities they plan to do them in.I have both a nice direct drive and a nice belt drive turntable. They are both fine units. The belt drive turntable cost about twice what the direct drive did, about $900.00. That is still sort of entry level for the belt-drive tables. It's a great table, don't get me wrong. I'd recommend it to anyone, and I got it from Triode & Co's David Cope, who's a sponsor here and a really nice fellow.All I'm saying is that to me it's like having pushrods in an engine. I've got a really cherry Olds Cutlass with pushrods. It has a roller cam, B&M tranny and a nine inch Ford rear end. All the good stuff, it eats exoticars for lunch without even trying. But the overhead cam technology is better and simpler. That's what I think of direct drive for turntables too.You can make either one very good, and even great. If I was going to pick a favorite platter drive system, it would be direct drive. I'd also pick overhead cams as superior to pushrods and rocker arms. Ironically, my hotrod car has pushrods and my best turntable has a belt. Now that I think about it, I'm also ruinning horns, which are the oldest loudspeaker technology going. I guess that means I'm old school.

Subject: Re: linn, Direct Drive, homebuilds
Posted by Manualblock on Mon, 26 Apr 2004 11:19:13 GMT
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As an engineer by trade how do you reconcile the concept of constantly changing speed that any direct drive motor implies? Playing devils advocate I would suggest that that would be anethema to reacting to the microchanges in stylus movement pressed on the record? As I said I like the sound of some of the DD's I have heard but they do seem to have a sound that is different from belt. Nice to have the convienence of auto return though, my Technics gets a lot of playtime due to that function! Nothing like dozing off only to fly up off the couch to catch the toneearm as it gyrates loudly across the label!

Subject: Re: linn, Direct Drive, homebuilds
Posted by DRCope on Mon, 26 Apr 2004 13:01:16 GMT
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Very good point. Even if you eliminate the suspension/lack thereof and drive mode (w/ or w/o bel)t, DC motors sound quite different from AC synchronous motors in the same table. The hunt and seek of a DC servo motor does wreak havoc on the music coming off the table, IMHO. Various designs have thrown gobs of platter mass at the problem of speed constancy, but that introduces the problem of energy storage and later release (mechanical capacitance, if you will), which smears and obliterates detail and timing.Even staying within a particular design brief, interesting things can happen. This past CES Audio Note started the show with the long-standing TT Three Ref, a three motor suspended belt drive table with external power supply, until the prototype of their new redesign arrived, (also 3 motor, external supply, suspension, new chassis and who knows what else.) Swapping the same arm/cart combo from table to table in an otherwised untouched system, my reaction to a Nirvana LP reversed 180 degrees from before (old table): "Jeez, I'm really not in the mood for this now!" to after (new table): Jumpin' around the room playing air guitar! (Anyone who knows me realizes how unlikley the latter response is!) I have no explanation, but the latter combo simply set my head on fire and insisted that I "get with it!"Nota Bene: Clearly, these days I have a commericial axe to grind in this area, but I gathered my initial impressions and reached all these conclusions a long, long time ago, and have found nothing to cause me to change my mind yet.

Subject: Re: linn, Direct Drive, homebuilds
Posted by Wayne Parham on Mon, 26 Apr 2004 20:17:27 GMT
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Direct drive doesn't require using a servomotor for speed regulation. There doesn't necessarily even have to be a feedback loop, although I don't see that as being bad.I like some technologies just because I think they are simple and elegant. I like Wankel engines. For piston engines, I like overhead cams. And I like the idea of direct drive for turntables.Didn't stop me from using a turntable with a belt in my best sound system or a piston engine with pushrods in my hotrod car though. Sometimes the best stuff is old school. I'm even running a carburetor and points.I guess

its like the solid-state verses tube thing. Some would say that tubes are obsolete and pay them no attention. Others would have nothing but a tube amp. I think you can make really good equipment using a variety of technologies.Sometimes the best stuff is lower tech but hand-crafted to perfection.

Subject: Re: linn, Direct Drive, homebuilds
Posted by Manualblock on Mon, 26 Apr 2004 21:43:53 GMT
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Wankel engines! That was the first RX7 am I correct? I remmember thinking what a bargain at 7000.00$ when they first came out. Anyway there must be some sort of speed adjustment available on any flywheel driven device in order to keep constant speed,no? Thats why they need the feedback loop I thought. Help us out here. As far as antiquated technology I still ride my 1964 Norton Atlas every summer. I have an engineer buddy who thinks i am a lunatic for messing with tubes. He claims tube amps make great boat anchors. It's all good!

Subject: Re: linn, Direct Drive, homebuilds
Posted by Wayne Parham on Tue, 27 Apr 2004 03:44:20 GMT
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For speed control on a motor with a flywheel, you're right - It isn't really a complicated system but you can use some form of feedback to stabilize motor control. This feedback can be analog or digital, and of course, can be in one of many different forms of different qualities. But you can also run the motor open loop, which just means it spins as fast as the torque and load balance out to be. The motor can be AC, DC or stepper. For that matter, I suppose the motor could be something else altogether. Steam powered turntables, anyone?About the Wankel engine, actually, it has a lot of history prior to Mazda picking it up. But after they started working on it, their first production model was the R100, followed by the RX-2, their first model to hit the USA. I had three of those. Mazda then made an RX-3, which was sporty but had leaf springs in back and an RX-4 that was larger and had (a whopping) 80 cubic inch 13B engine as opposed to the 70 cubic inch 12A in the RX-2 and RX-3. Then, in the mid-late 70's, Mazda brought out the RX-7, first with a 12A and then the early eighties version had a 13B. They ran some of 'em with turbochargers. This thing was quite a performer, especially for the cost.I had a stock RX-2 in the late seventies and later made a hotrod RX-2 in the early eighties. I used a Holley 450 CFM caburetor, headers and porting. The RX-2 was prone to understeer, so you machined shock mount plates to pull the front shock towers back for positive caster and you want to give the front wheels some negative camber too. Used a GM pressure plate and clutch to handle the power. Left the stock 3.90 rear-end gears and 4-speed transmission; They were pretty tough units and the gears were right. Old seventies Mazda trucks also had Wankels and they had 4.11 gears, so you could swap them for a little more gear if you wanted them. But with 7000 peak power and 3.90 gears, your top end was around 140MPH and that was just about right for a car shaped like

the RX-2.I loved that car. It's kinda funny, 'cause back then everyone was into muscle cars. They were starting to fade because gas had become expensive but the rice-rocket craze was nowhere in sight. If you thought of Japanese cars, you thought of slow and cheap. Honda's were for gas mileage and viewed as being like Volkswagen bugs, but much less popular. No one would have dreamed that Honda would be cool, and certainly you didn't think of them as winning races with either cars or bikes. Honestly, these Japanese companies were doing some excellent engineering work and making real advances. But we didn't know that back then, and Japanese wasn't cool. So my little RX-2 was a definite sleeper.Now it's just the opposite. Everyone is running a rice-rocket these days, and an RX-2 would be the coolest thing on the road. Car enthusiasts and weekend-warriors would see them as old-school with modern style. And no matter what other folks thought of it, the car is just plain fun to drive, and interesting to see. Too bad they're so hard to find these days. In the 70's and 80's, they were everywhere and could be purchased used, reasonably priced and in good shape. Back then, you could find them everywhere, but they seemed to vanish in 1990 or so. It's like a Mazda car "rapture." Look around in 1985 and you'd see a bunch of 'em, look again in 1995 and they're nowhere to be seen. Poof - They've gone.Speaking of that, and while I'm rambling, here's some more trivial trivia. Ahura-Mazda is the name of God in the Zoroastrian religion, which most scholars believe was the faith of the three-wise men who brought gold, frankincense and myrrh to the baby Jesus. So quite literally, the Japanese named their company "God," using the old Persian name from the Zoroastrians. There are still approximately 100,000 practicing Zoroastrians, sometimes called Arians, Parsis or Avestans, and they live mostly in Bombay. Nice folks, their religion is monotheistic and very much like the Jewish/Christian/Moslem family of faiths. Interestingly enough, it started nearby, in Iraq. Seems like all the religious stuff happens there. Maybe it's something in the water?Did I get way off-topic or what? Moderator!!!Anyway, back to the disappearing RX-2's which I suppose are also off-topic, but not quite as far. I'd love to have one again, 'cause they're cool little cars and they would be really interesting and popular today. But I guess I'm a contrarian because I'm now running the big block V8's that were so popular a few decades back.Maybe we can use a Wankel powered turntable?

Subject: Re: linn, Direct Drive, homebuilds
Posted by Manualblock on Tue, 27 Apr 2004 18:49:50 GMT
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Any chance you had phase issues there? Check the phono jack wiring maybe, just guessing.

Subject: Re: linn, Direct Drive, homebuilds
Posted by DRCope on Wed, 28 Apr 2004 12:22:12 GMT
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Nope, none of the differences are due to phase issues. This is something I've heard consistently on all kinds of tables in all kinds of systems over the last 25+ years.

Subject: Re: linn, Direct Drive, homebuilds
Posted by Manualblock on Wed, 28 Apr 2004 23:26:10 GMT
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Learned to approach the turntable as a musical instrument instead of a piece of equipment, as a practicing drummer two snare drums exactly the same with same heads,snares and very accurate tuning tension meter and they sound different in a way consistent with what you describe in your turntable story. Heard the same from all the musicians and I play a little guitar and of course there also. I find it easier to accept these anamolies by thinking in musical rather than mechanical terms which probably explains why I still enjoy the Linn even with all of it's warts. I can hear greater resolution and more accurate pitch; wider frequency response and tighter bass in many of the newer designs but I don't necessarily find it more enjoyable. How's that for a can of worms?

Subject: Re: linn, Direct Drive, homebuilds
Posted by Manualblock on Thu, 29 Apr 2004 11:14:00 GMT
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Thanks for the clarification. The old cities mentioned in the bible existed on the trade routes between Egypt and Indian sub-continent, all these religons sprouted from the Mahayana Buddists influence on the native tribes. But I don't think they drove Mazda's! One question If you ran the turntable motor straight out how would you adjust for variations caused by heavy groove modulation? Or variations in line voltage. Or cogging in the bearing.

Subject: Re: linn, Direct Drive, homebuilds
Posted by Wayne Parham on Thu, 29 Apr 2004 22:49:07 GMT
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If the motor is run "straight out", if you mean open loop, there is no automatic speed adjustment. Regulation can be done passively, like with flywheel (platter) weight and maybe a knob that allowed the user to modify voltage if a DC motor or something like that. But open loop means there is no automatic speed correction.