AVTOMOBILLARNI YURISH QISMIDA G‘ILDIRAK VA SHINALAR VAZIFALARI O‘RGANISH

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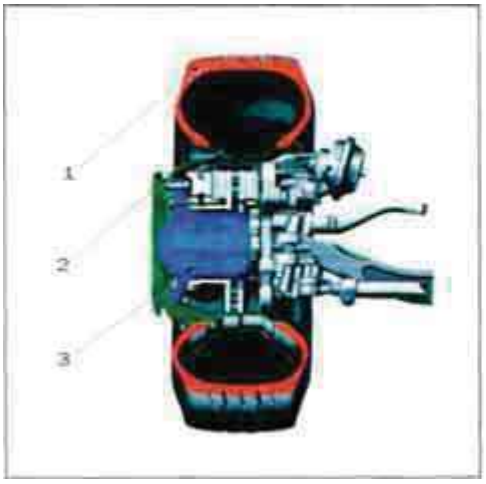
G‘ildiraklar avtomobil yurish qismining uzellaridan biridir [1]. Avtomobilning ilgarilama harakati yo‘l ustida amalga oshadi. G‘ildirakni harakatlantiruvchi burovchi moment yetakchi ko‘prikka transmissiya agregatlari orqali uzatiladi [2-3]. Burovchi moment biror qo‘shimcha uzel yordamida yo‘l sathi bilan muloqotda bo‘lgandagina hosil bo‘lgan aks-ta’sir kuchi yordamida avtomobil ilgarilama harakatlanishga majbur bo‘ladi [4-5].

G‘ildiraklar tuzilishi quyidagi rasmda keltirilgan:



1-rasm. **Avtomobil g‘ildiragining tuzilishi.**

2-rasm. **Disk**

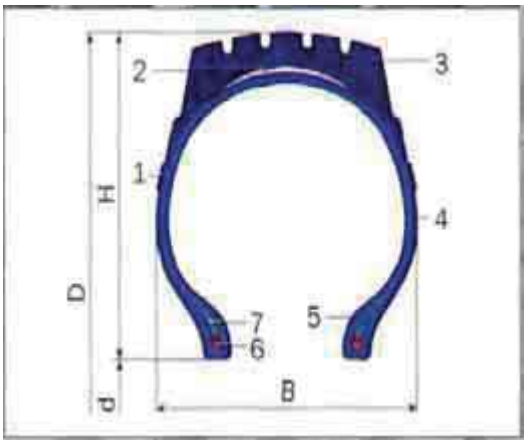
1-shina; 2-to‘g‘in; 3-stupitsa.

G‘ildirakning vazifasi avtomobilni yo‘l bilan bog‘lab uning harakatlanishini ta’minlash va shu bilan birga yo‘l notekisliklaridan uzatilayotgan turtkilarni biroz yumshatib kuzovga, kuzovdan tushayotgan tik yo‘nalishdagi yuklamalarni esa yo‘lga uzatishdir [6-7].

Shinalar vazifasi, profilining ko‘rinishi, o‘lchamlari, konstruksiyasi va germetikligini ta’minlash usuli bilan ham turlarga bo‘linadi [8-9].

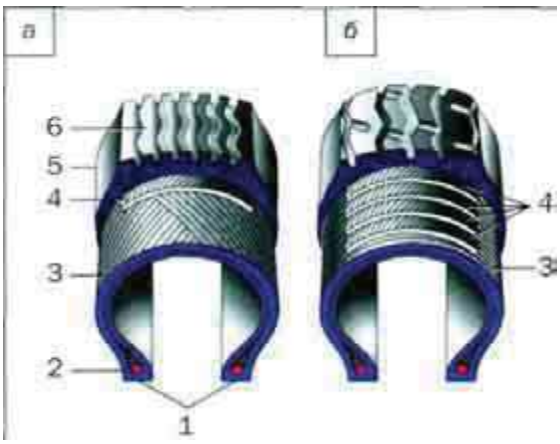
Yengil avtomobil shinalari hamma iqlim hududlarida, yengil avtomobil, kichik yuk ko‘taradigan yuk avtomobili, mikroavtobuslarda ishlatiladi [10-11]. Xuddi shu ekspluatatsiya sharoiti uchun shinalar yuk avtomobillari, ularning tirkamalari, yarim tirkamalari, avtobuslarda ishlatiladi [12-13].

Shina profilining ko‘rinishi bo‘yicha (1-rasm) ular oddiy profilli, keng profilli, past profilli, o‘ta past profilli, arkasimon, pnevmokatoklarga bo‘linadi [14-15].



3-rasm. **Shinaning qirqimi:**

V-shinaning eni; N-profilning balandligi; D-shinaning tashqi diametri; d-to‘g‘inining diametri.



4-rasm. **Diognal va radial shinalarning konstruksiyasi:**

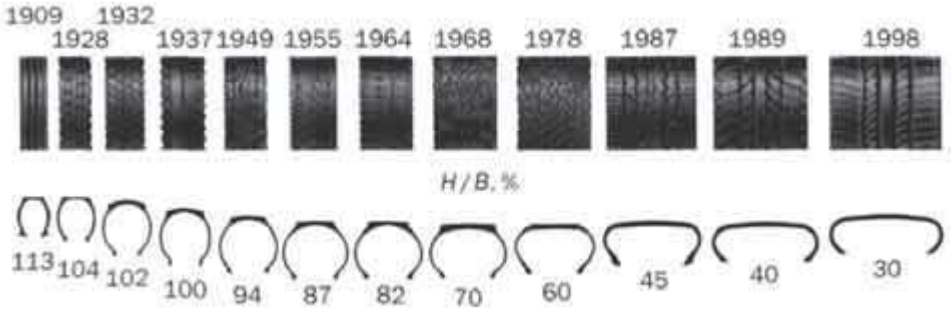
a) diagnal; b) radial.

Oddiy profilli shinalarda (3-rasm) uning balandligi N ning eni V ga nisbati 0,9 dan kattadir. Uning ko‘ndalang kesimi torpid shaklidadir va u kamerali yoki kamerasiz qilib ishlanishi mumkin [16-17]. Bu turdagi shinalar yaxshi yo‘llarda yurishga mo‘ljallangan hamma avtomobillarga o‘rnatiladi [18-19].

O‘z navbatida radial shinalar R va RS turlarga ajraladi.Diagonal shinalar (4 a-rasm)da kord iplari qatlami 2 ikkitadir va shina diagonali bo‘ylab joylashgan. Uning qolgan qismlarining tuzilishi radial (R) shinalar bilan bir xildir. Radial (R) shinalarda(4 b-rasm) kord iplari 2 radius bo‘ylab joylashgan, diagonal shinadan ikki marta kam. Uning uchun N / V —0,7- 0,85 va kamerali yoki kamerasiz qilib tayyorlanadi [20-21]. Radial shinalar diagonal turiga nisbatan kattaroq yuk ko‘tara olish qobiliyati, katta radial elastikligi, g‘ildirashga qarshiligining kamligi, nisbatan kamroq qizishi, chidamliligining 2 martagacha yuqoriligi bilan ajralib turadi [22-23]. Lekin radial shina tannarxining yuqoriligi, yon tomonga elastikligining yuqoriligi, notekis yo‘ldan yurilganda shovqin chiqarishi kabi kamchiliklarga ega.Radial (RS) turidagi shinaning tuzilishi xuddi R turidagiga o‘xshash bo‘lib, faqat protektorining

yechilish usuli bilan ajralib turadi. RS turidagi radial shinalar protektor halqalarining almashishi hisobiga ko‘p vaqtga chidaydi (150000 km gacha), lekin massasi kattaligi va halqalarning chiqib ketish xavfi borligi kabi kamchiliklarga ega [24].

Transport vositalarida sovuqqa chidamli shinalar ham ishlatilib, ular minus 45°S dan ham past haroratda ish qobiliyatini yo‘qotmaydi, yetarlicha mustahkam va elastik bo‘ladi. Shuning uchun g‘ildirakni kuzov bilan bog‘laydigan kuchlarni qabul etuvchi yo‘naltiruvchi richaglar zarur. Yo‘l notekisliklaridan, ta’sir etayotgan turtkilardan hosil bo‘layotgan tebranishlarni so‘ndirish ham kerak [25].



5-rasm. **Shinalar protektorlarining ko‘rinishi.**

«Tiko» avtomobilining g‘ildiragi shtampalanib tayyorlangan disk va to‘g‘indan iborat, qismlarga ajralmaydigan turiga mansub [26]. O‘lchamlari 4.00Vx 12. Shinasi radial turiga kirib, kamerasiz, o‘lchamlari 135R12S yoki 70R12S. Shinadagi bosim birinchisi uchun 0,18 MPa, ikkinchisiniki 0,19 MPa.

Shina rusumi	Salonda 3 kishi bo‘lganda, shina bosimi, MPa		Salonda 5 kishi bo‘lganda, shina bosimi, MPa	
	Orqa g‘ildirak	Old g‘ildirak	Orqa g‘ildirak	Orqa g‘ildirak
155SR13	0,18	0,16	0,19	0,24
175\70R13	0,18	0,16	0,19	0,24
185\60R14 N	0,21	0,19	0,22	0,24

«Neksiya» avtomobilining g‘ildiragi qismlarga ajralmaydigan, po‘latdan yasalgan 5,5 Jx13 yoki aluminiy qotishmasidan 5,5 Jx14 rusumlidir. Shinaning uch turdagisi ishlatiladi: 155SR13, 175\70R13, 185\60R14N. Uchala turdagi shina ham radialdir va kamerasiz. Shinaga to‘g‘ri kelgan yuklamaga qarab, uning bosimi har xil bo‘ladi.

«Damas» avtomobilining g‘ildiragi 4.00x12 rusumli bo‘lib, konstruksiyasi «Tiko» avtomobilining o‘zginasidir. Bu g‘ildirakka 155R12S-6PR rusumli shina kiygaziladi. Shina radial turidagi bo‘lib, kamerasizdir.

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