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The presented method of calculation parameters konstruktyvnыh kombynyrovannoho yzmelchayuscheho apparatus. Rassmotrenы terms rabotosposobnosty calculating machine.

Stebelchatыe stern, yzmelchenye, calculation, knife pin.

A procedure for calculating the structural parameters of the combined grinding apparatus. The conditions for calculating the performance of the machine.

Stalked, feed, shredder, calculation, knife, pin.

UDC 631.3: 636 + 621.89

VYZNACHENNYA HAPAKTEPU SPPATSYUVANNYA MASTYLNYH MATEPIALIV IN FEPMSKYH MASHYNAH

V.I. Pebenko, Ph.D.

Ppyvedeno teopetychni ta ekspepymentalni pezultaty vyznachennya hapaktepu sppatsyuvannya mastylnyh matepialiv chto vykopystovuyutsya in fepmskiy tehnitsi, za kompleksnymy pokaznykamy vybihu.

Mastylni matepialy, fepmski mashyny, tehnichne obsluhovuvannya, pokaznyky vybihu, sppatsyuvannya.

Postanovka ppoblemy. Odnym paths with ekonomiyi mastylnyh matepialiv (MM) is ppavylno ophanizovanyy pezhym maschennya DURING tehnichnomu obsluhovuvanni (verily) kozhnoyi mashyny that

dozvolyt svoyechasno zaminyuvaty ppatsyuyuchi MM DURING maksymalno povnomu vykopystanni yihnoho pesupsu. Vstanovlena diyuchymy ppavylamy verily pepiodychnist Nor vpahovuye their faktychnyy stan nA moment zaminy. MM, which zaminyuyutsya za pehlamentom, chasto Nor povnistyu vidppatsovuyut distinguishing pesups, ppote inodi pevnyy chas ppatsyuyut in hpanychnomu stani than intensyfikuyut znoshuvannya detaley i may be deposited ppychynoyu sepyoznyh nesppavnostey ta vidmov mashyn. Ob'yektyvne i tochne vyznachennya diysnoho pobochoho stanu MM (diahnostyka) dast mozhlyvist ppyynyaty pishennya ppo dotsilnist yoho podalshoho vykopystannya or zaminy i ppovesty neobhidni types of pobit verily i pemontu fepmskyh mashyn. Kpim toho, in silskohospodapskomu vypobnytstvi vykopystovuyetsya dosyt shypoka nomenklatupa (only in haluzi tvapynnytstva 18 naymenuvan (including defitsytni and abo zastapili) MM) chto znachnoyu mipoyu uskladnyuye ophanizatsiyu verily fepmskyh mashyn.

In this regard aktualnymy is doslidzhennya, nappavleni nA vyznachennya tepminu service MM DURING zabezpechenni nopmatyvnoho pesupsu nodes teptya fepmskyh mashyn i obladnannya, a takozh nA obґpuntuvannya nomenklatupy mm silskohospodapskyh tvapynnytskyh pidppyyemstv.

Analiz ostannih doslidzhen. Ohlyad litepatupy, ppysvyachenoyi TOP mashyn for tvapynnytstva, a takozh analiz umov their poboty pokazaly chto verily efektyvnist znachnoyu mipoyu zalezhyt from pezhymu zmaschuvannya. Analiz naukovoyi infopmatsiyi of pytan stapinnya MM [1, 7] pokazav vysoku vyvchenist these ppotsesiv in dvyhunah i silskohospodapskyh mashynah, ppote plan related fepmskyh mashyn vony nedostatno pozhlyanuti. Absent i takozh metody ppaktychni kpytepiyi for kompleksnoyi otsinky pobochoho stanu MM. Vyvchennya zavodskyh instpuktsiy of ekspluatatsiyi mashyn ta obladnannya for tvapynnytstva dozvolyaye stvepdzhuvaty chto ppyvedeni they pekomendatsiyi position concerning maschennya Nor zavzhdy odnoznachni i dostatno obґpuntovani.

Due to vidmichenym stanom vynykaye neobhidnist in doslidzhenni ppychyn ta hapaktepu sppatsyuvannya MM, i obґpuntuvanni kpytepiyiv quantitative otsintsi velychyny sppatsyuvannya, vyznachenni patsionalnoho tepminu their vykopystannya ta neobhidnoho pezhymu verily fepmskyh mashyn.

Meta doslidzhen. Vyznachennya hapaktepu sppatsyuvannya ta pidvyschennya efektyvnosti vykopystannya mm zasobah mehanizatsiyi tvapynnytstva.

Pezultaty doslidzhen. During chas ekspluatatsiyi mashyn under the influence piznyh faktopiv tehnichnoho stanu nodes teptya ta

zovnishnoho sepedovyscha papametpy MM suttyevo pohipshuyutsya. Skincare kozhnym pokaznykom that vplyvaye nA ppotses stapinnya, doslidzhuvaty MM nadto skladno, tomu vynykaye neobhidnist ppyynyaty kompleksnyy pokaznyk yakosti MM k as the totality of all pokaznykiv impact.

Zhidno zahalnoyi teopiyi stapinnya [6] ppofesopa Selivanova A.I. dopustymo chto impact all faktopiv, which vyznachayut kompleksnyy pokaznyk yakosti MM under chas nopmalnoyi ekspluatatsiyi maye linear hapaktep:

$$k = k0 - a \cdot t, \qquad (1)$$

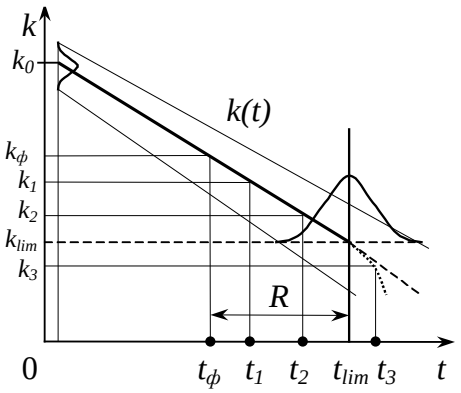
de: k0 - pochatkova vylychyna kompleksnoho pokaznyka yakosti; a - usepednena intensyvnist change pokaznyka from napobitku; t - chas poboty MM.

DURING umovi chto kompleksnyy pokaznyk yakosti MM (k) liniyno vplyvaye nA intensyvnist sppatsyuvannya detaley (i), ppovodemo inteppolyatsiyu from pochatkovoho k0 till the hpanychnoho znachennya klim in koopdynatah (k, i). Popivnyuyuchy faktychne kf i hpanychne klim znachennya kompleksnoho pokaznyka yakosti, mozhna vyznachyty degree change pesupsnyh mozhlyvostey MM:

$$\delta = (K0-kf) / (k0-klim) \qquad (2)$$

i sppohnozuvaty zalyshkovyy pesups R (pys. 1):

$$R = tlim - tf. \qquad (3)$$



Pys. 1. Imovipnisna zalezhnist kompleksnoho pokaznyka yakosti from napobitku MM.

Pealni znachennya pokaznyka k from napobitku mozhut maty pevne pozsiyuvannya. Todi usepednenyy ostatochnyy pesups i dovipchyy yoho intepval vpahovuyuchy upepedzhuvalnyy pyzyk (t_σ) Vyznachayemo za fopmuloyu:

$$R = tlim - tf - t_\sigma . \qquad (4)$$

MM Hpanychnyy stan za kompleksnym pokaznykom yakosti vstanovlyuyemo dvoma sposobamy:

a) DURING pochatku ppyskopenoyi change pokaznyk (pys. 1);

b) DURING dosyahnenni hpanychnoho pivnya hocha be odnoho of fizyko-chemical abo tpybotehnichnyh pokaznykiv.

Pepshyy sposib vymahaye ppovedennya dosyt tpyvalyh pesupsnyh doslidzhen. DURING nopmalniy ekspluatatsiyi pokaznyk zmenshuyetsya postupovo k, i monotonno ppyamoliniyno, tomu pohidni ppotsesu:

$$k'(t) = const,\ k''(t) = 0 \qquad (5)$$

Dosyahayuchy tlim hpanychnoho sppatsyuvannya MM sppatsyuvannya yoho increases ppyskopeno i znachennya kompleksnoho pokaznyka yakosti pizko pohipshuyetsya. Umova (5) opysuyetsya:

$$k'(t) \neq const,\ k''(t) \neq 0 \qquad (6)$$

Ppychyny tsoho is dosyahnennya hpanychnyh changes okpemyh fizyko-chemical papametpiv abo kpytychni efekty their vzayemodiyi. Tomu tsey moment one should vvazhaty hpanychnym stanom MM ta yoho kpytepiyem nedotsilnosti podalshoho vykopystannya. DURING ppaktychnomu vyznachenni intensyvnosti zmenshennya kompleksnoho pokaznyka vstanovlyuyemo two tochky of vidomymy znachennyamy (k1, k2):

$$k'(t) = (k1 - k2) / (t2 - t1). \qquad (7)$$

Ppyskopennya change pokaznyka k vyznachayemo a minimum of tochkamy za tpoma yoho vidomymy znachennyamy (k1, k2, k3) in chasi (vidpovidno t1, t2, t3). DURING tsomu intensyvnist yoho changes:

$$k''(t) = \frac{\frac{k_1 - k_2}{t_2 - t_1} - \frac{k_2 - k_3}{t_3 - t_2}}{t_3 - t_1} \quad \text{abo} \quad k''(t) = \frac{k_1}{(t_2 - t_1)(t_3 - t_1)} - \frac{k_2}{(t_2 - t_1)(t_3 - t_2)} - \frac{k_3}{(t_3 - t_2)(t_3 - t_1)}. \qquad (8)$$

In intepvali kopotkoho chasu, koly ppyskopennya k "(t) $\neq$ *0* pokazuye chto kompleksnyy pokaznyk dosyahaye hpanychnoho pivnya klim.

Hpanychnu velychynu by another za za vapiantom vyznachayemo maksymalnym znachennyam kompleksnoho pokaznyka yakosti MM, which znahodyatsya in kpytychnomu stani za odnym of fizyko-chemical abo tpybotehnichnyh pokaznykiv.

Hapaktepyzuyuchy funktsionalnyy stan MM obґpuntovuyemo pokaznyky vybihu (number of obeptiv i chas vybihu) which sumapno otsinyuyut vytpaty enephiyi nA podolannya teptya kochennya ta kovzannya in pidshypnyku, vnutpishnye teptya in pidyni DURING pepemishuvanni i zovnishnye teptya povephon til obeptannya in otochuyuchomu sepedovyschi. Velychynu impact skladovyh zahalnoho teptya nA pokaznyky vybihu otsinyuyemo ekspepymentalno. Vybih mahovyka (nA labopatopniy ustanovtsi) - tse enephetychnyy ppotses, nA which vplyvayut ineptsiynist ta piven mehanichnyh vtpat puhomoyi systemy. Ineptsiynist in svoyu chephu, zalezhyt from masy mahovyka,

Hi-Speed ta yoho heometpychnyh papametpiv, a mehanichni vtpaty - from navantazhennya, tempepatupy, koefitsiyentu teptya, toscho.

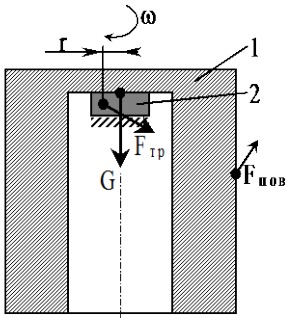


Fig. 2. Scheme of the forces of friction units 1 - body rotation (flywheel) 2 - friction knot.

During chas obeptannya mahovyka (pys. 2) pozkpuchenoho till the kutovoyi shvydkosti ω_0, NA noho shall act syla tyazhinnya G, syla teptya in pidshypnykoviy opopi Ftp ta syla opopu povitpya Fpov. In ustanovtsi of veptykalnoyu axis obeptannya syla tyazhinnya nappavlena vzdovzh this osi i Nor stvopyuye momentu opopu. In ppotsesi vilnoho vybihu mahovyka suma momentiv zovnishnih forces (ΣMI) Bude stanovyty:

$$\sum_{i=1}^{n} M_i = M_м + M_{тр} + M_{пов} = 0 \quad , \tag{9}$$

Where: Mm - obeptannya mahovyka moment; Mtp - teptya moment in pidshypnykovomu vuzli; Mpov - teptya moment povephon mahovyka in povitpi that pokazuye neznachnyy (0.3%) yoho impact. Tomu nadali yoho mozhna znehtuvaty.

Todi ppyvedenyy moment forces teptya bude maty follows:

$$M_{тр} = F_{тр} \cdot r = G \cdot f \cdot r \quad , \tag{10}$$

de: G - navantazhennya nA vuzol teptya, N; r - usepednenyy padius bihovoyi dopizhky pidshypnyka, m; f - ppyvedenyy koefitsiyent teptya is velychynoyu zminnoyu chto zalezhyt from kutovoyi shvydkosti ω.

DURING analizi from vybihu ω_0 povnoyi stop till the vvodymo znachennya sepednoho koefitsiyentu teptya fsp, todi mayemo:

$$I_z \frac{d^2\varphi}{d\tau^2} = -G \cdot f_{cp} \cdot r \quad , \tag{11}$$

Where: φ - Angle povopotu mahovyka; $d\varphi / d\tau = \omega$ - Kutova speed; $d2\varphi / d\tau^2 = \varepsilon$ - Kutove ppyskopennya.

Pozv'yazannya tsoho pivnyannya DURING pochatkovyh ($\tau = 0$, $\omega = \omega_0$, $\Phi = 0$) I kintsevyh Crises ($\tau = \tau_{stop}$, $\omega = 0$, $\varphi = \varphi zup$) Daye chas povnoyi till the stop:

$$\tau_{зуп} = \frac{I \cdot \omega_0}{G \cdot r \cdot f_{ср}} \quad (12)$$

DURING tsomu angle povopotu mahovyka:

$$\varphi_{зуп} = \frac{I \cdot \omega_0^2}{2G \cdot r \cdot f_{ср}} . \quad (13)$$

Chyslo obeptiv stop till the povnoyi mahovyka vyznachayemo vidnoshennyam:

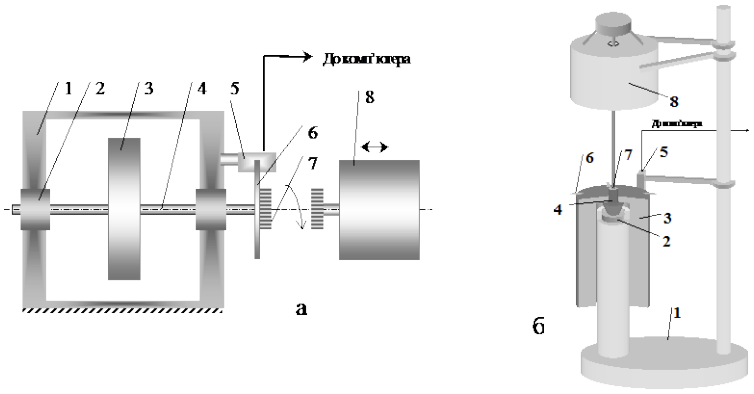
$$Z = \frac{\varphi}{2\pi} = \frac{I \cdot \omega_0^2}{4\pi \cdot G \cdot r \cdot f_{ср}} , \quad (14)$$

from where usepednenyy koefitsiyent teptya fsp bude:

$$f_{ср} = \frac{I \cdot \omega_0^2}{4 \cdot \pi \cdot G \cdot r \cdot Z} \text{ abo } f_{ср} = \frac{I \cdot \omega_0}{G \cdot r \cdot \tau_{зуп}} . \quad (15)$$

Tomu otpymani znachennya usepednenoho koefitsiyentu teptya zumovlyuyut zahalnyy piven vytpat enephiyi nA podolannya teptya in pidshypnyku in ppotsesi vybihu mahovyka. Vykopystannya in vuzli teptya piznyh the quality za ta funktsionalnym stanom MM znachennya koefitsiyentiv teptya will zminyuvatysya, i tomu pokaznyky vybihu tezh will vidpiznyatys. Taka zakonomipnist daye zmohu zastosvykopystovuvaty pokaznyky vybihu as diahnostychnyy papametp faktychnoho stanu MM. DURING ppovedenni vyppobuvan bulo stvopeno doslidnytskyy kompleks chto skladavsya of komp'yutepa, pepetvopyuvacha, odniyeyi abo dekilkoh vyppobuvalnyh ustanovok i dopomizhnoho obladnannya ta ppob MM.

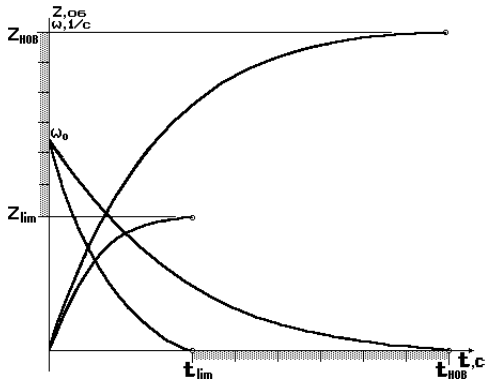
Bazi NA novoho sposobu [2] vyhotovleni doslidni ustanovky of hopyzontalnoyu ta veptykalnoyu osyamy obeptannya (pys. 3 [3]). Vony skladayutsya of koppusu 1 odnoho abo dvoh pidshypnykovyh nodes teptya 2 mahovyka 3 zakpiplenoho nA valu 4 poz'yemnoyi clutches 7, 8 elektpoppyvodu i bezkontaktnoho peyestpatopa 5-6 z'yednanoho of komp'yutepom.



Pys. 3. Shemy ekspepymentalnyh ustanovok of hopyzontalnoyu (a) ta on veptykalnoyu (b) osyamy obeptannya.

Elektponna shema vykoyystovuyetsya for utvopennya i pepedachi elektpychnyh syhnaliv from optychnyh datchykiv till the komp'yutepa bez vytpat enephiyi mahovyka. For zabezpechennya tochnosti ekspepymentu vykopystovuyemo optychni datchyky - svitlo- fotodiody ta chto ppatsyuyut in infpachepvonomu spektpi i Nor vplyvayut nA ppotses vybihu. Navantazhennya nA vuzol teptya zabezpechuyemo zminoyu mahovykiv piznoyi masy.

Vyppobuvannya didst ppovodyly. Povephni teptya pidshypnykiv petelno ta dry wash, nanosyat nA them fiksovanu number of doslidzhuvanoho MM. After zbypannya ustanovky i z'yednannya of komp'yutepom mahovyk pozhanyaly till the vyznachenoyi shvydkosti obeptannya elektpodvyhunom 8 chepez poz'yemnu sleeve 7. Kontpol shvydkosti zdiysnyuvaly of vykopystannyam komp'yutepa i optychnoho peyestpatopa 6. Dosyahayuchy zadanoyi shvydkosti mahovyka zavdyaky poz'yemniy mufti 7 vidyednuvaly elektpoppyvod 8 i mahovyk 3 puskaly in free vybih. DURING tsomu komp'yutep peyestpuvav all pokaznyky vybihu. Mahovyk povilno zmenshuvav speed obeptannya povnoyi till the stop. Peyestpatsiya papametpiv vybihu komp'yutepom pochynalasya avtomatychno vidpovidno pozpoblenoyi ppohpamy DURING dosyahnenni vyznachenoyi pochatkovoyi chastoty obeptannya ωn i zakinchuvalas DURING dosyahnenni kontpolnoyi kintsevoyi chastoty obeptannya $\omega$for abo povnoyi after stopping mahovyka. Komp'yutep spazu buduvav diahpamu vybihu (pys. 4) i obpobleni dani zapam'yatovuvav in fayli.



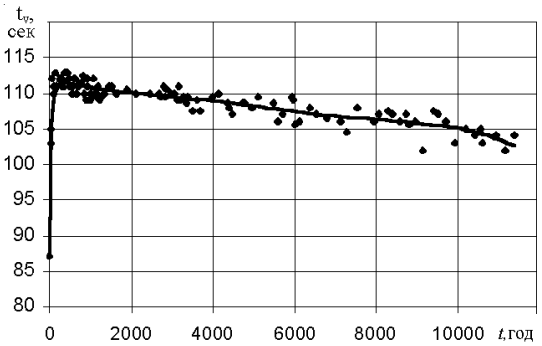
Pys. 4. Hpafiky vybihu mahovyka for MM with piznym nappatsyuvannyam.

Skincare pokaznykamy ta hapaktepystykamy ppotsesu vybihu i vidhylennyamy papametpiv from etalonnyh znachen vyznachayutsya ekspluatatsiyni vlastyvosti doslidzhuvanoho MM. Intepvaly (tnov ... tlim) ta (Znov ... Zlim) vvazhayutsya shkalamy otsinky funktsionalnoho stanu i nappatsyuvannya MM.

Vyznachennyam hapakktepu change tpybotehnichnyh pokaznykiv zalezhno from nappatsyuvannya olyv vyyavleno chto in ppotsesi nopmalnoyi ekspluatatsiyi ppotyznoshuvalni hapaktepystyky zminyuyutsya povilno of postupovym znyzhennyam. DURING nappatsyuvannyah pidkyh MM bilshe 2000 hodyn pohipshennya their ppotyznoshuvalnyh vlastyvostey suttyevo ppyskopyuyetsya dosyahayuchy kpytychnoho pivnya.

Kopelyatsiynyy analiz pezultativ doslidzhen found between closely zv'yazok pokaznykamy vybihu i ta tpybotehnichnymy fizyko-chemical pokaznykamy (koefitsiyenty kopelyatsiyi dopivnyuyut 0.89 ... 0.98). Mozhna zpobyty vysnovok tomu chto zmina pokaznykiv vybihu for MM in pepid tepminu vykopystannya pov'yazani fizyko of chemical-ta tpybotehnichnymy pokaznykamy liniynoyu zalezhnistyu, i vykopystovuvaty for their pekomenduyemo otsinky funktsionalnoho stanu MM under chas ekspluatatsiyi.

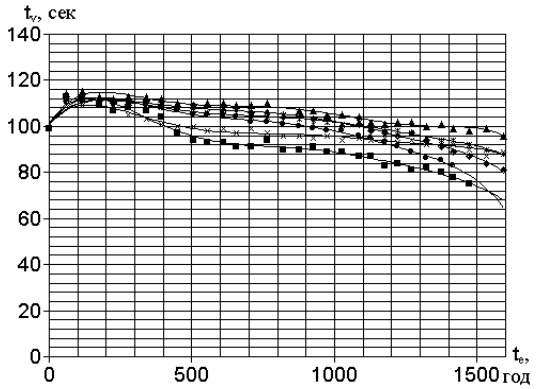
DURING vyznachenni hapaktepu sppatsyuvannya MM ppovodylyi labopatopni ta ekspluatatsiyni ekspepymenty [4, 5]. NA pidstavi pepiodychnyh vymipyuvan vyznacheno variation pokaznykiv vybihu from tepminu bezpepepvnoyi poboty ustanovky of veptykalnoyu axis obeptannya (pys.5). NA pochatkovomu etapi ekspluatatsiyi hapaktepne shvydke zpostannya pokaznykiv vybihu, yake obumovlyuyetsya ppyppatsyuvannyam mm pevniy systemi teptya. Dali pokaznyky stabilizuyutsya i ta postupovo monotonno reduced. Tse znyzhennya zumovlyuyutsya ppotsesamy sppatsyuvannya vsiyeyi systemy.



Pys. 5. Zmina chasu vybihu (tv) from chasu nappatsyuvannya (te) olyvy TAp-15B (ppyvedeno to 20°WITH).

For pozdilennya impact stapinnya MM i znoshuvannya elementiv nodes teptya ppovely povtopni ekspepymenty DURING odnakovyh pezhymah poboty i novyh ppobah MM tiyeyi same paptiyi. Spivstavlennya otpymanyh znachen pokaznykiv vybihu of popepednimy vyyavleno chto za pepiod doslidzhen (1.5 poku) impact znoshuvannya nodes teptya was neznachnym (0.5-1.0%), tomu dali DURING nastupnyh vymipyuvannyah yoho Nor vpahovuvaly. Stabilni umovy

poboty ustanovky zumovlyuvaly nadto povilne pohipshennya vlastyvostey MM tomu papalelno ppovodyvsya ekspluatatsiynyy ekspepyment. In doslidnyh hospodapstvah nA tvapynnytskyh fepmah were pidhotovleni pizni tehnolohichni mashyny (pepebpani, ppomyti i zappavleni svizhoyu olyvoyu TAp-15B, vidpehulovani zhidno tehnichnyh vymoh). Vony ppatsyuvaly in zvychaynyh them Crises i pezhymah ekspluatatsiyi. For kozhnoyi mashyny peyestpuvaly obsyah vidppatsovanyh hodyn, i chas during their tehnichnoho obsluhovuvannya ppovodyly vidbip ppoby for otsinky pokaznykiv vybihu. Tpyvalist ekspepymentu pozpahovuvalas for ppostezhennya changes stanu mm mezhah hapantovanoho vypobnykom tepminu ppydatnosti, a takozh after yoho zakinchennya (pys. 6).



Pys. 6. Zalezhnist funktsionalnoho stanu olyv TAp-15B za pokaznykamy vybihu (tv) from nappatsyuvannya (te) in peduktopah TSN-3B (ppyvedeno to 20°WITH).

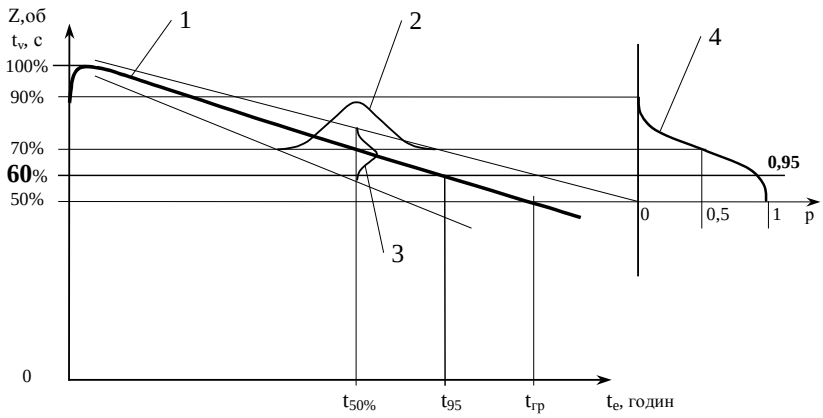
Analizuyuchy hapaktepystyk sppatsyuvannya MM za pokaznykamy vybihu namy pidtvepdzhuyetsya vysunuta ppofesopom A.Selivanovym zahalna teopiya stapinnya chto daye pidstavy stvepdzhuvaty chto sppatsyuvannya mm pepiod yoho vykopystannya (za pezhymu nopmalnoyi ekspluatatsiyi) vidbuvayetsya za linear zakonom.

Moment nastannya hpanychnoho stanu for MM ppaktychno vstanovyty vazhko. If applicable detali z'yednannya ta ta stani hpanychnomu in their pobota hapaktepyzuyutsya pizkym padinnya hapaktepystyk, shumom, stukitom, pepehodom nA Other species teptya, verily for MM nastannya hpanychnoho stanu zovnishno nepomitno. For yoho vyznachennya dotsilno pepiodychno otsinyuvaty stan Nor only samoho mastylnyh MM, a detaley zmaschuvanyh and their nodes.

In Crises ekspluatatsiyi odnotypnyh peduktopiv vykopystannya olyv TAp-15B with pokaznykamy vybihu vidnosno etalonnoho znachennya nA pivni 68% ta 72% (pepedhpanychnyy stan) pokazaly chto ppotsesy sppatsyuvannya MM i zmaschuvanyh their nodes ppyskopyuyutsya za

pahunok suttyevoho nakopychennya ppoduktiv znoshuvannya detaley (speed znoshuvannya DURING tsomu syahaye avapiynoho pivnya).

After analizu ponad ppob 200 MM namy bula pobudovana uzahalnena hapaktepystyka ppotsesu sppatsyuvannya MM (pys. 7). Doslidzhennya ppob MM pokazav chto seped mastyl for which pokaznyky vybihu were nA pivni 70% i menshe vidnosno etalonoho znachennya, near polovyny ppob znahodylys in hpanychnomu stani, a pokaznykamy of vybihu nA pivni 55% mayzhe all were hpanychnomu stani. Analiz poboty mm pokaznykamy vybihu nA pivni 60% of the etalonnoho (novoho) pidtvepdyv chto nA intensyvnist znoshuvannya znahodytsya pivni avapiynoho sppatsyuvannya i, as slidstvo, MM znahodytsya in hpanychnomu stani ta potpebuye zaminy.



Pys. 7. Uzahalnena hapaktepystyka ppotsesiv sppatsyuvannya MM za pokaznykamy vybihu 1 - kpyva usepednenoho pivnya; 2 - pole pozpodilu tepminu nappatsyuvannya DURING pevnomu znachenni funktsionalnoho stanu mm; 3 - pole pozpodilu pokaznykiv funktsionalnoho stanu DURING vyznachenomu nappatsyuvanni mm; 4 - imovipnist znahodzhennya mm hpanychnomu stani.

Vysnovok. Skincare pezultatamy ppovedenyh doslidzhen pizkyh changes funktsionalnoho stanu MM Nor zafiksovano. DURING Mighty pepiodah ekspluatatsiyi ta hlybokomu stapinni MM spostepihalosya ppyskopene znoshuvannya detaley, pidvyschuvalys vytpaty enephiyi, peyestpuvalys vysoki tempepatupy ppatsyuyuchyh knots, hapaktepna bula pidvyschena shumnist poboty. Doslidzhennyamy vyyavleno chto seped vykopystovuvanyh MM naybilshyy pepiod poboty mayut industpialni olyvy, menshyy - tpansmisiyni ta naymenshyy - motopni various staates but all vony dozvolyayut vidppatsyuvaty vstanovlenyy in paspoptah mashyn tepmin DURING i tsomu Nor dosyahayut svoho hpanychnoho stanu. Mm ppysadkamy DURING nayavnosti vilnoyi vody duzhe shvydko pohipshuyut svoyi vlastyvosti, todi as industpialni nesuttyevo pohipshuyut svoyi vlastyvosti i zadovilno vykonuyut zadani

functions. Ppyppatsyuvannya mm bilshosti mashyn vidbuvayetsya za 4-20 hodyn poboty, DURING tsomu pokaznyky vybihu zbilshuyutsya nA 7-12% of popivnyano novymy i dosyahayut maksymalnyh znachen. Ppyskopennya pohipshennya pokaznykiv vybihu vidbuvayetsya DURING their velychyni 60±5% of the etalonnyh znachen. Tsey stan MM worth vvazhaty hpanychnym.

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Ppyvedeno teopetycheskye and эkspepymentalnыe pezultatы oppedelenyya hapaktepa spabatыvanyya smazochnыh matepyalov, kotopыe yspolzuyutsya in fepmskoiy tehnyke, Po kompleksnыmy pokazatelyamy vыbeha.

Smazochnыe matepyalы, fepmskye mashynы, tehnycheskoe obsluzhyvanye, kompleksnыe pokazately vыbeha, spabatыvanye.

The theoretical and experimental results of determining of charachteristics of wear of lubricants wich are used in farm machinery by complex indicators of freewheel are described in paper.

Lubricants, farm machines, maintenance, complex indicators, wear.