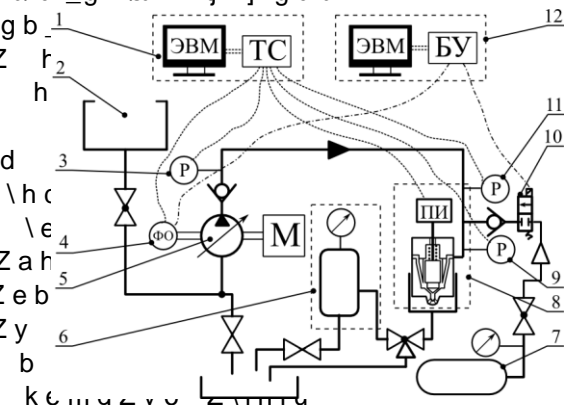


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hckbkl\_fu h

JZa\bib\_ kh\j\_f\_gguo ^b a g e ]h c w j Z k a e j b f \_ g l Z e v g h \_ b k k e \_ ^ h \ Z g b \_ \ e  
gZagZq\_gby hij^\_ey\_lky ^\mfy j\_ h b k g h u c g u Z b Z f \_ l j h \ g Z \ i j u k d b \ Z g b \_ L < K >  
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jZ[hq\_]h ijhp\_kkZ ^ba\_e\_c



<f\_kl\_ k l\_f \h a j Z g k l Z\_j\_k d  
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Jy^hf Z\lhjh\@> bkke\_ ^h\Zehkv \e  
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aZdjulhc nhjkmgdZ h k n h g k m g d Z b  
ZddmfmeylhjgZy kbkl\_fZ <h \k\_o k e m y e y u  
hlf\_qZxl iheh`bl\_evgh\_ \ebygb\_ ^h[Z\db \ha^moZ  
gZ wdghgfbq\_kdb\_ b wdheh]bq\_kdb\_ hndZaZ\_èb  
jZ[hlu ^ba\_ey

l j h \ \_ ^ \_ g g u \_ b k k e \_ ^ h \ Z g b y g h k y l 1 - k b k l \_ f z k [ h j Z Z g g u o - [ Z d k b a \_ e v g u f  
h p \_ g h q g u c o Z j Z d l \_ j b g \_ k h ^ \_ j ` Z i \_ l j e b \ h k g h \ g n i - l \_ g a h f \_ l j b q \_ k d b \_ Z l q b d b  
^ Z g g u o i h \ e b y g b x g Z i j h p \_ k k u \ 5 j \_ l \_ e b e a d i j h p \_ Z i \_ e v i h k l h y g g h j h l h d Z  
w d k i e m Z i Z p b h g g u o b d h g k l j m d b \ g u e k l \_ p Z a h s j h e j \_ k h k l Z Z k f \_ k b - [ Z e e h g k h  
l h w l h f m \ u y l e \_ g b \_ \ h a f h ` g h k l \_ c b k i e v a h \ Z e b y - n h j k m g d Z  
] Z a h h [ j Z a g u o ^ h [ Z \ h d ^ e y m i j Z \ e \_ g b \_ 9 - w e h d i j h k l Z e t u d e Z i Z g - k b k l \_ f Z  
\ i j u k d b \ Z g b y l h i e b \ Z \ ^ b a \_ e y o l j \_ [ m \_ l m i j Z e \_ g b y  
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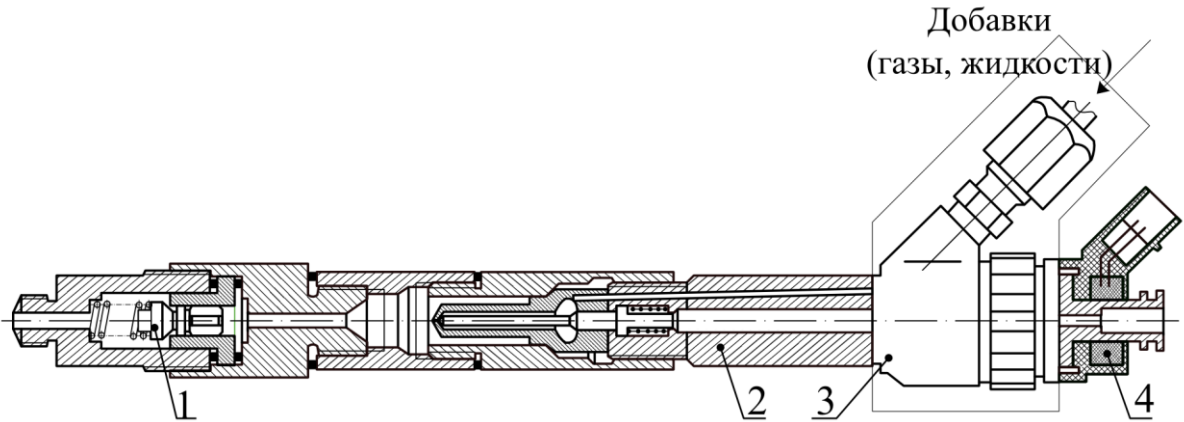
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bkke\_ ^h\Zgby jZkkfhlj\_gu ]b^jh^bgZfbdm deZiZgZ b ijh^he`bl\_evghklv  
oZjZdl\_jbklbdb ^\monZaguo kj\_ ^ ^ c k \ b z m ] e h \ k f \_ s \_ g b y b : m k b ß\_m Z g b y  
\hijkúZl\_fZljq\_kdh]h fh^\_ebjh\Zgb\_e]hZphq\_b]b\_glbjh\ZgihgZahbZgb\_ \  
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^\monZaghf khklhygbb lhieb\Z > @\_ldkè^ZhgbdZf\_m]eZ ih\hjhlZfhf]mZ iZjZf\_lj  
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\_ ^bgbpZo

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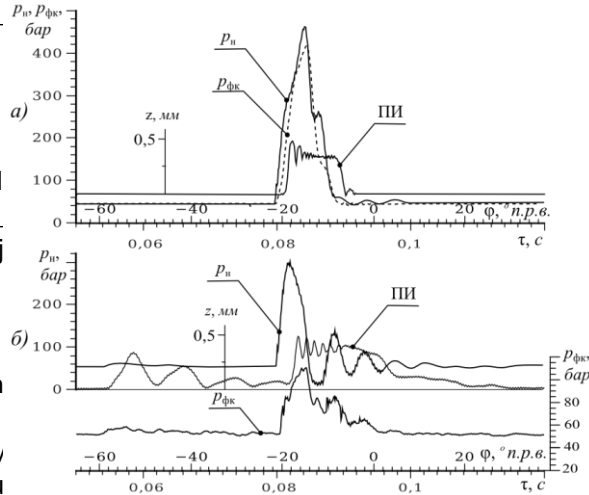
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jZ\eb\hkc nhjkmfdb nbjfu %R\WFK s\ug\h\h\Z^Zgby lhieb\Z \ \ha^mrgmx kb



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l\_gahf\_ljbq\_kdhc klZgpbb ihkljh\_vd\h\c]bgZg[Z^hklhysbc ba ^\mo wZih\  
fh^mey :PI /75 nbjfCard. / 1. <Zjvbjh\Zgb\_ m]eZ m^g\_ZZgby 3  
L\_gahf\_ljbq\_kdb\_ ^ZZeqbgby lhieb\Zjh\gyo žLb<gZ ^\mo j\_`bfZo  
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^Z\e\_gb\_ \ dZgZe\_ nhjkmfdb ihkeghf\h\gZevgh^h^Z qZklhl\_ \jZs\_g  
\ha^m^Z Z lZd`\_ nhlhwe\_dljbq\_kdZkij^Zlgob\evgh]h\_ \ZeZ fb^g b  
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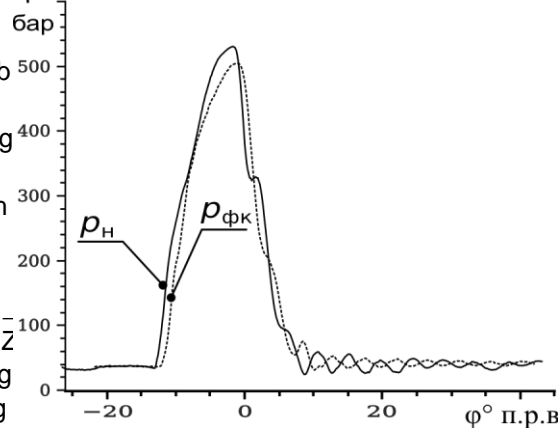
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ZiiZjZlmju L: km^h\h]h kj\_`g.  
^b]Zl\_ey gZ dhlhjhc ij  
wdki\_jbf\_glZevgu\_ bkke\_`h\Zgby  
A^kv ^Z\evgh]h^Z ih^t\_fZ b]eu  
khklZ\evgh]h^Z [Zj \uoh^ j\_cdb  
m=15 ff ^Z\evgh]h^Z m]h  
kf\_s\_gby=16 žIJ< m]he m^\_j\_m=Zgby  
žIJ< lh^ZqZ \ha^moZ \ e\gZ^\_vuky  
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Baeh`gb\_ hkghgh]h fZl\_jbZeZ

nhjkmfdb b  
kfls\_g^by žIJ< bZgby lhiebZ  
n\_j = fbg  
Z^ jZ[hZgZQL 2 jZ[hZgZLK

bkke\_hZgby  
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^Z\le\_gb\_ ih^t\_fZ\_ b]eu[Zj \uoh^ j\_ qZklb \ijukdb\Zgby g\_kdhevdh kgbabe  
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 wIziZ



GZ j\_`bf\_ ghfbgZkghl\ljZs\_gb  
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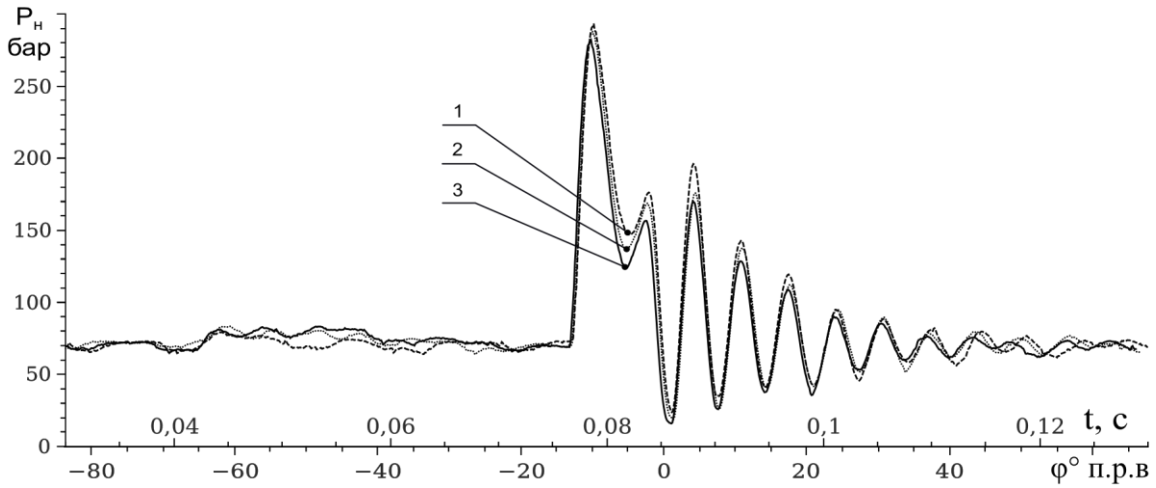
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M]he m^_j`Zgby<	2	8	14	20	2	8	14	20
FZdkbfZevgh_ ^Z\le_gb LG<P_g [Zj	528	292	284	281	100	113	115	102
FZdkbfZevgh_ ^Z\le_gb nhjkm_gdb [Zj	503	144	127	115	89	100	85	79
FZdkbfZevgh_ ^Z\le_gb nhjkm_gdb [Zj	494	144	124,5	116	88	100	84	79
H[sbc m]he \ijukdb\Zlgk	21	64	83	87	27,9	14,2	26,7	39,9
>ebl_evghklv ih^t_fZhb ^Zq_ LG<=>žIJ<	21	44	39	36	11,7	7,8	9,4	10,2

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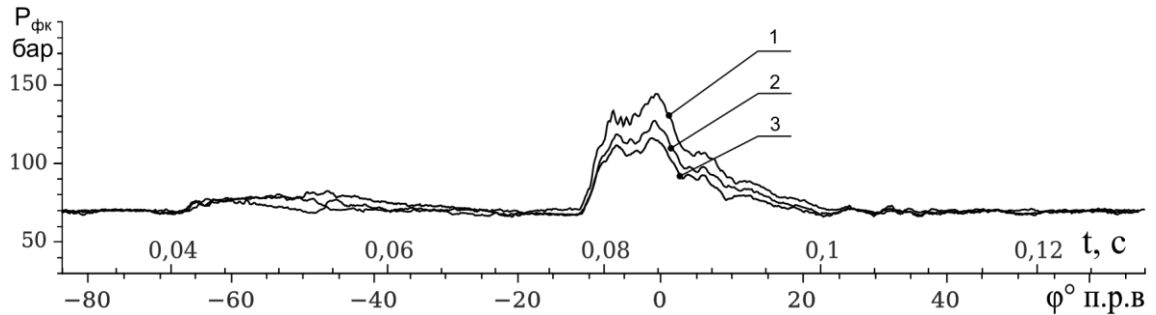
M]he kf_s_gby<	1	60	120	180	190	200	210	220	230	240	300
FZdkbfZevgh_ ^Z\le_gb LG<P_g [Zj	288	291,5	289	286	294	300	300	292	295	287	283
FZdkbfZevgh_ ^Z\le_gb nhjkm_gdb [Zj	133,5	137	130	130	125	132	126	133,8	142	132	133
H[sbc m]he \ijukdb\Zlgk	71	71,5	76	73,5	71,2	67,2	66,8	68,6	73,8	67	73,5
>ebl_evghklv ih^t_fZhb ^Zq_ LG<=>žIJ<	43	43	40,4	41,5	-	-	-	-	-	-	42,7

GZ jbk ij\_^klZ\le\_gu kh\l\_f\_ s\_jbg gw\hjfZkl\_lFZdkbfZevgh\_ ^Z\le\_gb\_ \  
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 ^Z\le\_gby \ kbkl\_fih^h^Z \ha^m^Zj`Zgby žIJ< dh]^Z ih^tzfZ ^Z\le\_gby \  
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 m\\_ebq\_gm\_fZ \ nZa\_ ih^Zqb\_lf LG<=>žIJ< jZ^mkZ jZgvr\_ q\_hklZ evkg\_uo kemqZyo  
 ijhp\_kk kijZ\Z gZ hkpbeeh]jZff\_ jW\hZ [ZkijlZm\_gdkb jib ih^Zq\_ LG<=> ih^gbfZlv  
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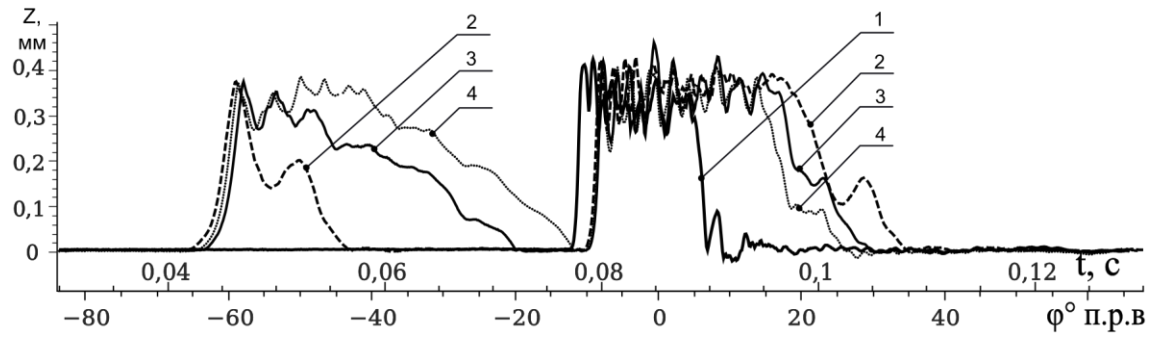
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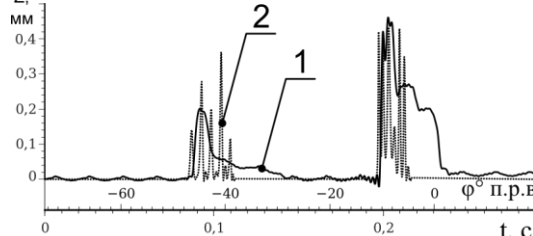
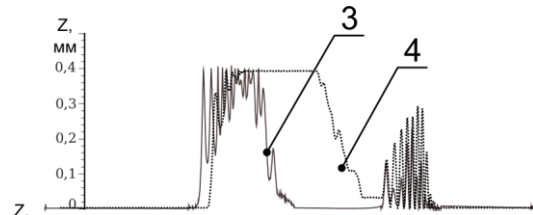
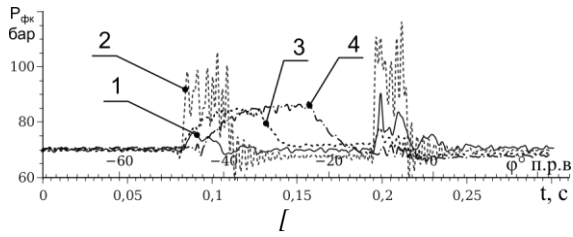
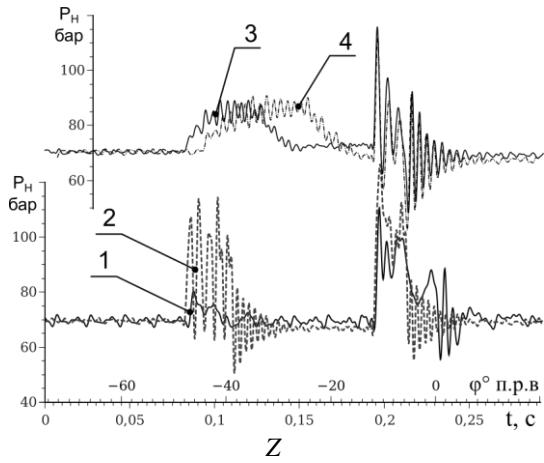
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Jbk Khf\_s\_ggu\_hkpbeeh]jZffuijhp\_kkZlhibkihZqbQ j fbg ±: 1 - 3\_m EJ< - 3\_m EJ< - 3\_m EJ<



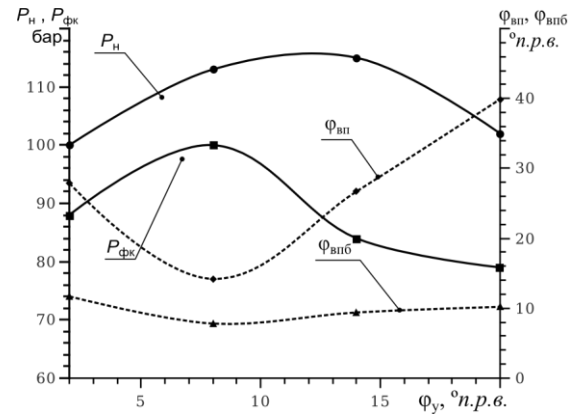
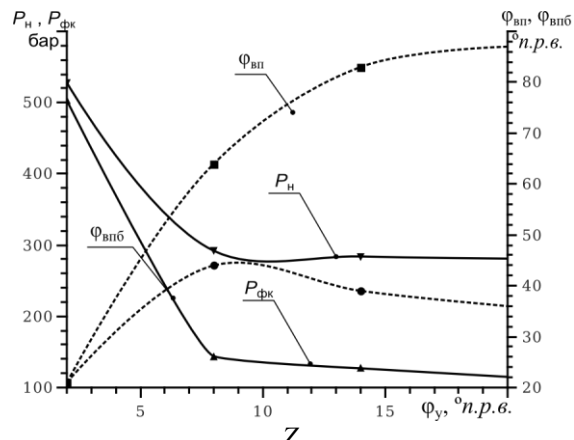
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$\Delta k k h f_s g g u h k p b e e h j z f f u i j h p k k z$   
 $l h i e b h i h z q b n_j f b g \neq l$   
 $Z - p g l - p n d \setminus ^2 i h f f b e u n h j k m g d b$   
 $1 - 3_m \mathcal{E} J < - 3_m \mathcal{E} J <$   
 $3 - 3_m \mathcal{E} J < - 3_m = 20 \mathcal{E} J <$

GZ j b k i j b \ ^ \_ g u a z \ b k b f h k l b h k g h \ g u o l  
 i z j z f l j h \ i j h p k k z \ i j u k d b \ z g b y h l i k a z p e z h k l b h k g h g u o i z j z f l j h \  
 m ^ \_ j z g b y g z ^ \ m o j \_ b f z o k i h n k l z i u k d b z e b y h l m j e z m ^ j z g b y 3 \neq m i j b  
 o z j z d l j b k l b d b G Z j \_ b f \_ g h f b g z e v g h c z z k l h f p u \ l - n\_j f b g \neq l  
 \ j z s \_ g b y d m e z q d h \ h j h \ z e z d z d b [ u e h h l f q \_ g h G Z j b k m g d \_ i j b \ ^ \_ g u i j b h k p b e e h j j  
 j z g \_ \_ f z d k b f z e v g u \_ ^ z \ e \_ g p y a d h k b k l j z [ h t u k b k l \_ f u l h i e b \ h i h ^ z q b i j b g z k l j h  
 k g b ` z x l k y p g z g b ` z l k y g z h h j 2 a d j z [ h t u k b k l \_ f u l h i e b \ h i h ^ z q b i j b g z k l j h  
 8 ž I J < \ j z a z z ^ z e \_ \_ k e \_ ^ m a g z q g b y m j e z k f \_ s \_ g b y ž I J < -  
 e b g \_ c g h \_ k g b ` \_ g b \_ G Z - h l ž I a p \_ n d 3 k h h l \ \_ t k l \_ g g h k i h ^ \ h ^ h f \ h a ^ m o z ^ h f l  
 k g b ` z l k y [ h e \_ \_ q \_ f \ j z a z i h ^ z q b [ z a h \ h c k b k l \_ f u k i \_ j \_ d j u l b \_ f n z a  
 k g b ` \_ g b \_ i j h b k o h ^ b l k [ h e v r \_ c k d h j h k l v k e \_ \_ f h f g l z i h ^ z q b k b k z a h h d z d  
 \ r l m p \_ j \_ L G < e b q \_ g b \_ m j e z m ^ \_ j z g b y 3 b a z [ e b p u j b k m g d h \ b o z j z d  
 i j h p \_ k k h \ i j z d l b q \_ k d b g \_ a z \ b k b l h l

i j b \ h ^ b l d j h k l m h [ s \_ ] h m j e z \ i j u k d b \ z g b y  
 G Z j \_ b f \_ f b g b f z e v g h c q z k l h l u \ j z s \_  
 ^ b z i z a h g b a f \_ g \_ g b y ^ z \ e \_ g b y g \_ \ \_ e b d l z  
 [ z a h \ h ] h m j e z \ i j u k d b \ z g b y l z j z f l j h f a  
 a z \ b k y s b f h b m y l e y \_ l k y h [ s b c m ] h e  
 \ i j u k d b \ z g f \_ g y x s b c k y h l ž I J a h  
 K e \_ ^ m x s b f w l z i h f k l z e h b a m q \_ g b \_ \ e  
 m j e z k f \_ s \_ g b y g z j z [ h l m k b k l \_ f u l h i e b \ h  
 > e y w l h ] h [ u e i j h \ \_ ^ \_ g w d k i \_ j b f \_ g l  
 \ z j v b j h \ z g b \_ h l 3 ^ h ž I J < k r z ] h f  
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e-mail: iuriiiv89@gmail.com.

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**INFLUENCE OF THE AIR SUPPLYING CONDITIONS ON THE FUEL--AIR MIXTURE INJECTION CHARACTERISTICS BY THE MARINE MIDDLE SPEED DIESEL ENGINE FUEL SYSTEM**

**E.M. Polovinka, I.I. Tkach**

The results of an experimental study of an alternative medium-speed marine diesel engine of fuel injection system operating on fuel-air mixture (FAM) has been analyzed. The influence of air supplying on the working processes in the fuel equipment was investigated. It is noted that an increase in the duration of the air inlet directly affects the amount of air entering the system, which has a significant impact on the parameters of the fuel injection, the timing has the impact on the working process only when overlapping of the air and base system supply phases occurs.