=:AHGHDHKBED:

Jmdh\h^kl\h ihevah\Zl_ey
>Zggh_ jmdh\h^kl\h kh^_j‘bl \Z‘gu_ bgkljmdpbb ih l_ogbd_ [_ahiZkghklb ^ey fh ^\b]Zl_eXT5 127

<GBF:L?EVGH IJHQBL:CL? IJ?>MIJ?@>?GBY IH L?OGBD? ;?AHI:KGHKLB B WDKIEM:L:PBB
KHOJ:GBL? >:GGH? JMDH<H>KL<H



Gm‘Zg ihfhs\

AZiqZklb h[kem‘b\Zgb_ b l_ogbq_kdZy ihfhsv ih l_e

ljb a\hgd_ \ kijZ\hqgmx kem‘[m \Zf ihlj_[m_lky ke_

>ZlZ ihdmidb _____
F_klh ijbh[j_l_gby _____
K_jbcguc ghf_Dhkbed Z _____
K_jbcguc ghf_>j\b]Zl_ev _____
K_jbcguc ghf_**Hydro Trans (L)** _____
K_jbcguc ghf_**Hydro Trans (R)** _____

Kjhd kem‘[u dhkbedb b ^\b
agZqbl_evgh m_ebqb\Z_lky
kfZad_ aZf_g_ fZkeZ b j_]
l_ogbq_kdhf h[kem‘b\Zgbb
aZsblu \Zrbo bg_klbpbc ijh
ieZgh\h_ l_ogbq_kdhf h[kem‘b\Zg



>Zggh_ jmdh\h^kl\h kh^_j‘bl \Z‘gu_ bgkljmdpbb ih [_ahiZkghklb ^ey
IJ?>MIJ?@>?GBY H ;?AHI:KGHKLB B BGKLJMDPBB IH WDKIEI
KHOJ:GBL? >:GGMX BGKLJMDPBX

>Zggh_ jmdh\h^kl\h ihevah\Zl_ey kqblZ_lky g_hlt_fe_fhc hZkdx]Z
ihklZ\eylvky \f_kl_ k g_c \ kemqZ_ i_j_ijh^Z‘b

Kh^_j‘Zgb_
Bgnhjf Zpby h [_ahiZkghklb b ij_^mij_‘^_gby
F_ju ij_^hklhjh‘ghklb ijb ih^]hlh\d_
F_ju ij_^hklhjh‘ghklb ijb wdkiemZlZpbb
=jZnbd gZdehgZ
Ij_^mij_‘^Zxsb_ lZ[ebqdb
L_ogbq_kdb_ jZkZdb ijh^mdlZ 13
lZg_ev mijZ\e_gby b dhfihg_glu]Zahghdhkbedb
NhjfZ aZy\db gZ g_^hklZxsb_ ^_lZeb
Bgkljmdpby ih wdkiemZlZpbb ijb aZimkd_ ^\b]Zl_ey
WdkiemZlZpby]Zahghdhkbedb
Baf_g_gb_ \ukhlu kj_aZ
Dhkv[Z
Hldexq_gb_]b^jhklZlbq_kdbo ijb\h^h\
<ha\jZl d g_cljZevghfm khklhygbx
H[s__ l_ogbq_kdh_ h[kem‘b\Zgb_
=jZnbd l_ogbq_kdh]h h[kem‘b\Zgby 21
K_j\bkgu_ j_]mebjhmdbobjb_dZ j_fgy ^\b]Zl_ey d ehiZklyf
Ijh_jdZ b aZf_gZ ribg^_ey ijb ihehfd_
J_]mebjh\dZ j_fgy hl ^\b]Zl_ey d]b^jhklZlbq_kdhfm ijb\h^m
J_]mebjh\dZ]b^jhkbkl_fu
J_]mebjh\dZ kbkl_fu [_ahiZkghklb ijhdeZ^dZ j_fgy [_ahiZkghklb
Lhqdb kfZadb 31
;ZlZj_y 31
Bgkljmdpbb ih ojZg_gbx
Ihbkd b mkljZg_gb_ g_bkijZ\ghkl_c 33,34
H]jZgbq_ggZy]ZjZglby b h[kem‘b\Zgb_
DjZldh_ jmdh\h^kl\h ihevah\Zl_ey 36,37

H jmdh\h^kl_ ih wdkiemZlZpbb]Zahghdhkbedb
Iha^jZ\ey_f k ijbh[j_l_gb_f gh\hc dhff_jq_kdhZmAZiah<ghdhkZgbdb *;L 2XWGRRU 3RZHU m_j_gu
h[_ki_qbl hlebqgmx ijhba\h^bl_evghklv ij_\hkoh^gh_ dZq_kl\h b ^he]h_qghklv ijb wdkiemZlZp
mdZaZfdb ^Zggh]h jmdh\h^kl\Z

1. >Zggh_ jmdh\h^kl\h kh^_j‘bl bgkljmdpbb ih wdkiemZlZpbb l_ogbd_ [_ahiZkghklb gZkljh
   mkljZg_gbx g_bkijZ\ghkl_c l?J?> G:Q:EHF WDKIEM:L:PBB =:AHGHDHKBEDB <GBF:L?E
   JMDH<H>KL<H IHHKEGX
2. >Zggh_ jmdh\h^kl\h ihevah\Zl_ey kqblZ_lky g_hlt_fe_fhc qZklvx]Zahghdhkbedb Hgh ^h
   b beb ebpZf h[kem‘b\Zxsbf dhkbedm < kemqZ_ i_j_ijh^Z‘b]Zahghdhkbedb ^Zggh_ jmdh
   dhkbedhc
3. <kygbmhjfZpby beexkljZpbb b l_ogbq_kdb_ oZjZdl_jbklbdb kh^_j‘Zsb_ky \ ^Zgghf jmdh\l
   fhf_gl im[ebdZpbb DhfiZgby *;L 2XWGRRU 3RZHU hklZ\ey_l aZ kh[hc ijZ\h ^h[Z\eylv m
   b beb ^baZcg [_a m_^hfe_gby
4. ?keb m \Zk \hagbdgml \hijhku ih wdkiemZlZpbb h[kem‘b\Zgbx beb [_ahiZkghklb \Zr_c d
   h[kem‘b\Zgby *;L

IJ?>MIJ?@>?GE

<uoehigu_]Zau ^\b]Zl_ey ^Z ba^_eby kh^_j‘Zl obfbq_kdb_ dhlhju_ dZd ba_klgh rlZlm D: \uau\Z_l jZd \jh‘^_ggu_ ^_n_c ^jm]hc j_ijh^mdlb\guc \j_^

HKLHJH@

IHL?GPB:EVG:Y HI:KGHKLV

i- ?keb hklZ\blv ijh\h^ gZ k_q_ aZ‘b]Zgby fh‘_l aZimk ^\b]Zl_ev

QLH FH@?L IJHBAHCLB"

!- KemqZcguc aZimkd ^\b]Zl_ey fh‘_l k_jv_agh ljZ\fl ihklhjhggbo ex^_c

D:D BA;?@:LV HI:KGHKLB

- l_j_^ ijh_^_gbo fbq_kdh]h h[kem‘b\Zgby hlkh_^bg k_qb aZ‘b]Zgby LZd‘_ hlh^\bgvl_ ijh\h^ \ klhjhg g_ dhkgmeky k_qb aZ‘b]Zgby

<GBF:L?EVGH

ZdjulhC ahg_

HI:KGH

IHL?GPB:EVG:Y HI:KGHKLV
ljb hij_^_e_gguo mkeh\byo [_gab
h]g_hiZk_g b \aju\hhiZk_g

QLH FH@?L IJHBAHCLB"
Ih'Zj beb \aju\ hl [_gabgZ fh'_l h
hdjm'Zxsbo b gZg_klb ms_j[bfm

D:D BA;?@:LV HI:KGHKLB"
Bkihevamcl_ \hjhgdm b aZihegyc
[Zd gZ hldjulhf \ha^mo_ gZ hldj
dh]^Z\b]Zl_ev oheh^guc <uljbl_
[_gabg
G_ aZihegycl_ lhieb\guc [Zd ihe
>h[Z\eycl_ [_gabg \ lhieb\guc [Z
ihdZ mjh_gv g_ [m^_l gZ ff ff
gb'_ ^gZ aZeb\ghc]hjeh\bgu Wl
ijhkljZgkl\h \ [Zd_ iha\begym_l [_g
jZkrbjylvky
Gbdh]^Z g_ dmjbl_ ijb jZ[hl_ k [_
^_j'bl_kv ih^Zevr_ hl hldjulh]h h
]^_ iZju [_gabgZ fh]ml \hkieZf_g
bkdju
OjZgbl_ [_gabg \ jZaj_r_gghc _f
g_^hklmighf ^ey ^_l_c f_kl_
Gbdh]^Z g_ ihdmiZcl_ \r_gabqgZ gl
f_kypZ

IJ?>MIJ?@>?GB?

IHL?GPB:EVG:Y HI:KGHKLV
FhdjZy ljZ\Z beb ebklvy fh]ml ijb
ih^kdZevau\Zgbx beb dhglZdlm k

QLH FH@?L IJHBAHCLB"
DhglZdl k ehiZklvx fh'_l ijb_klb
ljZ\fZf

D:D BA;?@:LV HI:KGHKLB"
DhkblhevdH \ kmomx ih]h^m

HI:KGH

IHL?GPB:EVG:Y HI:KGHKLV
* Kdhr_ggZy ljZ\Z b ^jm]b_ ij_^f_lu fl
\u[jZku\Zlvky ba hldjulh]h jZa]jmah

QLH FH@?L IJHBAHCLB"
* Ij_^f_lu \u[jZku\Z_fu_ k ^hklZlhqgh
fh]ml klZlv ijbqbghc k_jv_agukd_ljlZ\f
hi_jZlhjZ beb ihklhjhgg_]h q_eh_dZ

D:D BA;?@:LV HI:KGHKLB"
* Gbdh]^Z g_ hldju\Zcl_ ^_jpm jZa]jn
ijb jZ[hlZxs_f ^\b]Zl_e_ _keb g_ m
^hihegbl_evguc ljZ\hk[hjgbd ^hiheg
ijbkihkh[e_gb_ ^ey [hdh\h]h \u[jhkZ
jZa]jmahqgh]h lmgg_ey

IJ?>MIJ?@>?GB?

IHL?GPB:EVG:Y HI:KGHKLV
Hklhjh'gh ehiZklb hq_gv hklj
QLH FH@?L IJHBAHCLB"
DhglZdhkljhc ehiZklvx fh'_l ijb
k_jv_aguf ljZ\fZf
D:D BA;?@:LV HI:KGHKLB"
GZ^_\Zcl_ i_jqZldb beb h[_jgb
ehiZklb ljyidhc

IJ?>MIJ?@>?GB?

IHL?GPB:EVG:Y HI:KGHKLV
Baghr_ggZy beb ih\j_'^_ggZy e
kehfZlvky b fh'_l ijhubjhklqZkl
ehiZklb \ klhjhgm hi_jZlhjZ bel
q_eh_dZ
QLH FH@?L IJHBAHCLB"
<u[jhr_ggZy qZklv ehiZklb fh'_
ijbqbghc k_jv_aghc ljZ\fu beb
hi_jZlhjZ beb ihklhjhggbo ebp
D:D BA;?@:LV HI:KGHKLB"
l_jbh^bq_kdb hkfZlehiZklb gZ
ij_^f_l baghkZ beb ih\j_'^_gbc
AZf_gbl_ baghr_ggmx beb ih\j
ehiZklv

$ IJ?>MIJ?@>?GB?

IHL?GPB:EVG:Y HI:KGHKLV
;_gabg qj_a\uqZcgh h]g_hiZk_g \aju\hhi
hij_^_e_gguo mkeh\byo fh'_l klZlv ijbqb
ih\j_'^_gby bfms_kl\Z
QLH FH@?L IJHBAHCLB"
Hijhdb^u\Zgb_ dhkbedb fh'_l ijb_klb d r
dZj[xjZlhjZ beb lhieb\gh]h [ZdZ
D:D BA;?@:LV HI:KGHKLB"
<h ba[_'Zgb_ jZaeb\Z lhieb\Z ijh]hgbl_ ^
\ohehklmx beb m^Zebl_ [_gabg k ihfhsvx
gb \ dhkfmqZ_ g_ bkihevamcl_ kbnhg

$ IJ?>MIJ?@>?GB?

IHL?GPB:EVG:Y HI:KGHKLV
Ijb ^ebl_evghf ojZg_gbb [_gabg fh'_l bki
QLH FH@?L IJHBAHCLB"
BkiZjb\r__ky lhieb\h fh'_l \ahj\Zlvky ijb
hldjuluf ieZf_g_f
D:D BA;?@:LV HI:KGHKLB"
G_ ojZgbl_gabg lhieb\h \ l_q_gb_ ^ebl_e
G_ ojZgbl_ dhkbedm k lhieb\hf \ [Zd_ \ il
hldjuluf ieZf_g_f gZijbf_j dhgljhevgZy
beb \h^hgZ]j_\Zl_ey
>Zcl_ ^\b]Zl_ex hklulv i_j_^ ojZg_gb_f \

HI:KGH

IHL?GPB:EVG:Y HI:KGHKLV
?keb jZa]jmahqgZy ^_jpZ aZdju\Z_lky
\hafh‘gh ihiZ^Zgb_ \u[jZku\Z_fuo ij_^f_

QLH FH@?L IJHBAHCLB"
<u[jZku\Z_fu_ ij_^f_lu fh]ml klZlv ijbql
k_jv_aguo ljZ\f beb kf_jlb

D:D BA;?@:LV HI:KGHKLB"
?keb jZa]jmahqgZy ^_jpZ g_ aZdju\Z_
kdhr_ggZy ljZ\Z aZkhjy_l jZa]jmahqgm
^\b]Zl_ev b hklhjh\bhZcl_ jmqdm jZa]jm
^_jpu ihdZ ^_jpZ g_ aZdjh_lky ihegh
ihij_‘g_fm g_ aZdju\Z_lky mkljZgbl_ i
iZedhc b gb \ dh_f kemqZ_ g_ jmdhc

HI:KGH

IHL?GPB:EVG:Y HI:KGHKLV
J_]mebjh\dZ juqZ]h\ \ukhlu kj_aZ fh‘_l ij
dhglZdlm jmd k ^\b‘ms_cky ehiZklvx

QLH FH@?L IJHBAHCLB"
DhglZdl k \jZsZxsbfky e_a\b_f fh‘_l ijb_
k_jv_aguf ljZ\fZf

D:D BA;?@:LV HI:KGHKLB"
l_j_^ j_]mebjh\dhc \ukhlu kj_aZ hklZgh\b
^h‘^bl_kv hklZgh\dlb‘mksbo^kylZe_c
ljb j_]mebjh\d_ \ukhlu kj_aZ g_ ih^deZ^u
ih^ dhjimk

IJ?>MIJ?@>?GB?

IHL?GPB:EVG:Y HI:KGHKLV
Hijhdb^u\Zgb_ dhkbedb fh‘_lmijbqdklblhdeb
dZj[xjZlhjZ beb lhieb\gh]h [ZdZ

QLH FH@?L IJHBAHCLB"
;_gabg qj_a\uqZcgh h]g_hiZk_g \aju\hhiZ
hij_^_e_gguo mkeh\byo fh‘_l klZlv ijbqbg
ih\j_‘^_gby bfms_kl\Z

D:D BA;?@:LV HI:KGHKLB"
<h ba[_‘Zgb_ jZhieb\Z ijh]hgbl_ ^\b]Zl_ev
beb m^Zebl_ [_gabg k ihfhsvx jmqgh]h gZ
kemqZ_ g_ bkihevamcl_ kbnhg

BgnhjfZpby h l_ogbd_ [_ahiZkghklb
=ZahghdhkbedbZimAni jZajZ[hlZgu ^ey [_ahiZ
gZ^_'ghc jZ[hlu _keb hgb wdkiemZlbj
khhl_lkl\bb k bgkljmdpbyfb l_j_^ wdk
]Zahghdhkbedb \gbfZl_evgh ijhqlbl_ ^
jmdh\h^kl\h ihevah\Zl_ey

BgnhjfZpby h kbkl_f_ dhgljhey \
AZdhgu KR: b DZebnhjgbb hbkl\bf \ha^m
:]_glkl\Z ih hojZg_ hdjm'Zxs_c k
DZebnhjgbb lj_[mxl hl \k_o ijhba
ij_^hklZ\e_gby ibkvf_gguo bgkljm
hibku\Zxsbo wdkiemZlZpbx b h[k
kbkl_f dhgljhey \u[jhkh\ Ke_^mx
bgkljmdpbb b ijhp_^mju ^he'gu \
^eylh]h qlh[u \u[jhku \Zr_]h ^\b]
khhl_lkl\h\Zeb ghjfZf \u[jhkh\

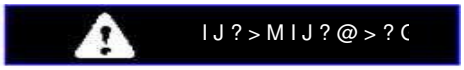
JZkiheh'_gb_ ij_^mij_'^Zxsbo lZ
GZ]Zahghdhkbed_ jZkiheh'_gu l
ij_^mij_'^Zxsb_ h ihl_gpbZevguo
hiZkghklyo ljhqblZcl_ bo \gbfZl
lZ[ebqdZ hlhj\ZeZkv beb klZeZ
ljm^ghqblZ_fhc h[jZlbl_kv \ [eb'

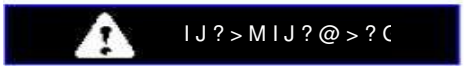
Hl_lkl_gghklv hi_jZlhjZ
M[_^bl_kv qlh dZ'^uc dlh jZ[hl
]Zahghdhkbedhc ijhr_e gZ^e_'Z
bgkljmdlZ' h[mqbeky bkihevah\Z
we_f_glh\ mijZ\e_gby \ua_hl^gu b
kh_^bg_gbc >_lb g_ ^he'gu mijZ
]Zahghdhkbedhc [_a ijbkfhljZ jh'

WlZ]ZahghdhkbedZ khhl_lkl\m_l
ij_\hkoh^bl lj_[h\Zgby &36& ih
[_ahiZkghklb e_a\bc ^ey jhlhjguo
jmqguf ijb\h^hf b ki_pbnbdZpbb %
:f_jbdZgkdh]h gZpbhgZ hlZevgklblmlZ
klZg^Zjlh\ ^_ckl\mxsbo gZ fhf_gl
ijhba\h^kl\Z H^gZdh g_ijZ\bevgh_
bkihevah\Zgb_ beb h[kem'b\Zgb_ h
beb \eZ^_evp_f fh'_l ijb_klb d ljZ
Qlh[u kgbablv _jhylghklv ihemq_g
kh[ex^Zcl_ ^Zggu_ bgkljmdpbb ih
[_ahiZgkhklb b \k_]^Z h[jZsZcl_ \gb
ij_^mij_'^_gby ij_^hkl_j_'_gby bg
ih l_ogbq_kdhfm h[kem'b\Zgbx b g
dhkbed_ b \ ^Zgghf jmdh\h^kl_

GZqZeh jZ|

Ijhqblhcl_ \k_ ij_^mij_‘^_gby i_j_^ gZqZ





E_a\by j_fgb [_gabg iZju [_gabgZ b m]e_dl
ijbqbghc k_jv_aguo IjZ\f beb ^Z‘_ kf_jlb Bki
h[hjm^h\Zgb_ k hklhjh>gjkdv_x ^jm]bo ex^_c \
^hfZrgbo ‘b\hlguo gZ [_ahiZkghf jZkklhygbb
jZa]jmahqgh]h ‘_eh[Z M[bjZcl_ ijhebluc [_ga
gZ ohefZo]^_ dhkbedZ fh‘_l kdZlblvky k ohe
hi_jZlhjZ beb ^jm]bo ex^_c l_j_^ gbZqjZe\uf kl
m[_jbl_ _kv fmkhj k]ZahgZ l_j_^ \uiheg_gb
l_ogbq_kdh]h h[kem‘b\Zgby \ugvl_ k_qm aZ‘
lhieb\guc deZiZg l_j_^ ihklZgh\dhc dhkbedb
\udexqbl_ lhieb\guc deZiZg b ke_cl_ lhieb\h

Bgnhjf Zpby ih l_ogbd_ [_ahiZkghklb =Zahghdhkbedm gZ gZebqb_ jZ[hlu _keb hgb wdkiemZlbjmxlky \ khhl_l bgkljmdpbyfb l_j_^ wdkiemZlZpb_c]Zahgh ijhqlbl_ ^Zggh_ jmdh\h^kl\h ihevah\Zl_ey

Bgnhjf Zpby h kbkl_f_ dhgljhey \u[jhkh\ AZdhgu KR: b DZebnhjgbb h qb:[lhfl\hZ^mho hojZg_ hdjm‘Zxs_c kj_^u b DZebnhjgbb lj_[ijhba\h^bl_e_c ij_^hklZ\e_gby ibkvf_gguo b hibku\Zxsbo wdkiemZlZpbx b h[kem‘b\Zgb_ \u[jhkh\ Ke_^mxsb_ bgkljmdpbyb ihe^hgu_^m \uihegylvky ^ey lh]h qlh[u \u[jhku \Zr_]h ^ khhl_lkl\h\Zeb ghjfZf \u[jhkh\

JZkiheh‘_gb_ ij_^mij_‘^Zxsbo lZ[ebq_d GZ]Zahghdhkbed_ jZkiheh‘_gu lZ[ebqdb i ihl_gpbZevguo hiZkghklyo ljhqblZcl_ bo \g lZ[ebqdhlhj\ZeZkv beb klZeZ ljm^ghqblZ_fh [eb‘Zcr__ hl^_e_gb_ *;L 3DUWV DQG 6HUY

Hl_lkl_gghklv hi_jZlhjZ

< h[yaZgghklb \eZ^_evpZ \oh^bl h[mq_gb_ f_oZgbdh\ dhlhju_ ^he‘gu ijhqblZlv ^Zggh_ i_j_^ gZqhZe wdkiemZlZpbb dhkbedb Djhf_ lh dhkbehd g_ ^he‘gu bf_lv gbdZdbo nbabq_kc ^he‘gu [ulv ijhbgkljmdlbjh\Zgu h [_ahiZkghi f_oZgbq_kdbo ijhp_^mjZo ?keb hgb g_ fh]r ihgbfZxl Zg]ebckdbc yaudh[yeaZ^g_ehpykgblv bgkljmdpbb ih [_ahiZkghc wdkiemZlZpbb < hi_jZlhj g_k_l hl_lkl_gghklv aZ g_kqZklgu ljZ\fu ijhbahr_^rb_ k gbf kZfbf ^jm]bfb ex bfms_kl\hf lhl_gpbZevgu_ g_kqZklgu_ kem ij_^hl\jZs_gu eZ^_evp_f ihevah\Zl_e_f

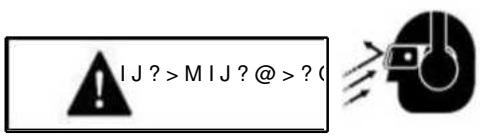
2. Hkfhljbl_]Zahghdhkbedm gZ gZebqb_ qj_af_jgh]h baghkZ ljh_jvl_ aZly‘dm [helh\ rlbnlh\ b \bglh\ lh^lygbl_ \k_ b aZf_gbl_ hlkmlkl\mxsmb_elu]Zcdlbnlu b \bglu
3. M[_^bl_kv qlh [ehdbjh\dZ [_ahiZkghkl ^he‘guf h[jZahf lZd qlh ^\b]Zl_ev g_\l aZimklblv _keb juqZ] mijZ\e_gby kdhj g_ gZoh^blky \ g_cljZevghf iheh‘_gbb hldexq_gu
4. ljh_jvl_ gh‘b dhkbedm gZ gZebqb_ ih\j_‘^_gbc g_ghjfZevgh]h baghkZ ?keb lj_[m_lky aZf_gycl_ kjZam _kv dhfie_dl qlh[u h gZ^e_‘Zsmx [ZeZgkbjh\dm
5. ljh_jvl_ ^Z\e_gb_ \k_o q_luj_o rbg G j_dhf_g^m_fuc fZdkbfmf mdZaZgguc g
6. ljh_jvl_ j_fgb agZhk b ijZ\bevghklv gZl Kf bgkljmdpbb gZ klj
7. ljh_jvl_ fhlhjgh_ fZkeh b \ha^mrgu_ n khhl_lkl\bb k j_dhf_g^Zpbyfb jmdh\h^ ijhba\h^bl_ey ^\b]Zl_ey

>_lb

1. Gbdh]^Z g_ iha\heycl_ ^_lyf mijZ\eylv dh dZlZlvky gZ g_c
2. <k_]^Z ^_j‘bl_ ^_l_c gZ [_ahiZkghf jZkkl jZ[hl_ beb h[kem‘b\Zgbb dhkbedb
3. <k_]^Z m[_‘^Zcl_kv \ hlkmlkl\bb ^_l_c i_ beb ^\b‘_gb_f aZ^gbf oh^hf
4. Gbdh]^Z g_ iha\heycl_ ^_lyf beb g_h[mq wdkiemZlbjh\Zlv beb h[kem‘b\Zgbb v_h[fjmh^g ijZ\beZ fh]jml^mkfZljb\Zlv Zgbq_gb_ \hajZh hi_jZlhjZ



lJ?>MlJ?@>?GB? G_ bkihevamcl_ ZmAni^ehdh i_j_\hadb iZkkZ‘bjh\ >_j‘bl_ ihklhjhggbo ex ihfhsgbdh\ ^hfZrgbo ‘b\hlguo b ^_l_c gZ [_ jZkklhygbb hl]Zahghdhkbedb \h \j_fy __ jZ[f_klh]^_ [m^_l bkihevah\Zlvky h[hjm^h\Zgb ij_^f_lu lZdb_ dZd dZfgbb bijjmh^Z dhlhju_ [ulv hl[jhr_gu fZrbghc qlh fh‘_l ijb_klb d k ljZ\fZf beb kf_jlb



GZ^_\Zcl_ khhl_lkl\mxsmx h^_‘^m \dexq aZsblgu_ hqdb b kj_^kl\Z aZsblu hj]Zgh\ \hehku k\h[h^gZy h^_‘^Z beb mdjZm_lgZbyk ^\b‘msboky ^_lZeyo

F_ju ij_^hklhjh‘ghklb ijb ih^]hlh\d_

1. Hp_gbl_ f_klghklv qlh[u hij_^_eblv ijbgZ^e_‘ghklb b gZ_kgh_ h[hjm^h\Z g_h[oh^bfu ^ey ijZ\bevgh]h b [_ahiZ \uiheg_gby jZ[hlu Bkihevamcl_ lhev ijbgZ^e_‘ghklb h^h[j_ggu_ ZmAmZgb_
2. Gbdh]^Z g_ wdkiemZlbjmcl_ dhkbedm mdehghf [he__]jZ^mkh\
3. Hkfhljbl_ f_klh]^_ [m^_l bkihevah\Z h[hjm^h\Zgb_ b m[_jbl_ \k_ ij_^f_lu dZfgb b]jmrdb b ijh\h^Z dhlhju_ fh] hl[jhr_gu fZrbghc qlh fh‘_l ijb_klb ljZ\fZf beb kf_jlb
4. Ex^b ^hfZrgb_ ‘b\hlgu_ b kZfh_]eZ ^he‘gu gZoh^blvky \[ebab l_jjblhjbb ij_^gZagZq_gghc ^ey kdZrb\Zgby G_ dhkbedm \ ijbkmlkl\bb ^_l_c
5. Gbdh]^Z wdkiemZlbjmcl_ dhkbedm \ k ih\j_‘^_gby h]jZ‘^_gbc sbldh\ beb d
6. <k_ ihevah\Zl_eb dhkbedb ^he‘gu [u b h[jZsZlv \gbfZgb_ gZ ij_^mij_‘^_gb agZdb [_ahiZkghklb
7. H[yaZl_evgh hkfZljb\Zcl_ dhkbedm i_j bkihevah\Zgb_f
8. <k_]^Z bkihevamcl_ ljm[qZluc dZjdZk \hafh‘gh b gbdh]^Z g_ kgbfZcl_ b g_ ljm[qZluc dZjdZkeb[Zdbf[jZahf beb-\eb[Z nhjf_
9. H[yaZl_evgh ijbkl_]b\Zcl_kv j_fg_f [_ ih^gylhf ljm[qZlhf dZjdZkl_]b?Zigbkkv j_fg_f [_ahiZkghklb dh]^Z ljm[qZluc
10. l_j_^ gZqZehf jZ[hlu ijh_jvl_ we_f_gl mijZ\e_gby b sbldb gZ gZebqb_ g_bki bkihevamcl_ dhkbedm-eb[kbwe[Zdbglu ih\j_‘^_gu beb hlkmlkl\mxl
11. Gbdh]^Z g_ jZ[hlZcl_uk ikfyluf beb baf_g_gguf ^_ne_dlhjhf jZa]jmadb _k bkihevam_lky ljZ\hk[hjgbd
12. MklZgh\bl_ b ih^^_j‘b\Zcl_ \ jZ[hq_f k bkdjh]Zkbl_ev i_j_^ bkihevah\Zgb_f h ihdjuluo jZklbl_evghklvx ljZ\hc beb c g_h[jZ[Zlu\Z_fuo a_feyo

;_gabg b ^jm]b_ \b^u lhieb\Z ij_^hklhjh‘ghklb ;m^vl_ hkh[hgkghjh‘gu ijb h[jZs_gbb k [_gabg ^jm]bfb \b^Zfb lhieb\Z ihkdhevdm hgb e_]d iZju fh]ml \ahj\Zlvky

1. >ey ojZg_gby bkihevamcl_ lhevdh jZaj_r _fdhklb b ojZgbl_ \ g_^hklmighf ^ey ^_l_
2. G_ aZihegycl_ lhieb\gu gh[kZdxihl_j_iheg_ fh‘_l ijb_klb d ml_qd_ lhieb\Z HklZ\vl_ ^ey jZkrbj_gby lhieb\Z
3. < kemqZ_ jZaeb\Z lhieb\Z g_ aZimkdZcl_ Hlh^\bgvl_ dhkbedm hl f_klZ ijhbkr_kl\by \uljbl_ ijheblh_ lhieb\h b ih^h‘^bl_ ihdZ g_ bkiZjylky ij_‘^_ q_f aZimkdZlv ^\b]Zl
4. G_ aZijZ\eycl_ _fdhklb k [_gabghf \gmljb gZ dmah_]jmah\bdZ ijbp_iZ
5. Gbdh]^Z g_ kgbfZcl_ djurdm [_gah[ZdZ b lhieb\h ijb jZ[hlZxs_f ^\b]Zl_e_
6. Ba[_]Zcl_ ^ebl_evgh]h \^u\oZ_gbaybigZ]h
7. Gbdh]^Z g_ aZijZ\eycl_ b g_ keb\Zcl_ \h
8. >_j‘bl_ ebph ih^Zevr_ hl khieZ b hl_jklb
9. G_ ^himkdZcl_ ihiZ^Zgby]ZaZ b ^jm]bo dh‘m b \ ]eZaZ
10. Gbdh]^Z g_ hlkZku\Zcl_ lhieb\h jlhf
11. Gbdh]^Z g_ aZijZ\eydm_ dhkbZe\k_ ^\b‘msb dhkbedb g_ hklZgh\ylky
12. Gbdh]^Z g_ dmjbl_ ijb jZ[hl_ k [_gabghf ih^Zevr_ hl hldjulh]h h]gy beb f_kl]^_ fh]ml \hkieZf_gblvky hl bkdju
13. l_j_^ aZijZ\dhc \k_]^Z klZ\vl_ _fdhklb k a_fex^Zeb hl Z\lhfh[be_c
14. ;_gabg hiZk_g beb kf_jl_e_g ijb ijh]eZlu



HI:KGH ;?GABG Y<EY?LKY
E?=DH<HKIE:F?GYXSBFKY B <AJU<HHI:KG
<?S?KL<HG_ ^h[Z\eycl_ lhieb\h ijb jZ[hlZxs]hjyq_f ^\b]Zl_e_ G_ ^himkdZcl_ gZoh‘^_gb hldjulh]hgyh] bkdj b l_ieZ ih^Zevr_ hl lhieb\Z lhieb\h \ ki_pbZevgh ij_^gZagZq_gguo ^ey >H;:<EYCL? LHIEB<H LHEVDH G: HLDJULH < KEMQ:? J:AEB<: LHIEB<: G? A:IMKD:CL? ><B=:L?E\jmqgmx hlh^\bgvl_ dhkbedm hl f_ g_f ^e hdulibl lh

WdkiemZlZpby h[hjm^hi_Zubiy_^hklhjh‘ghklb

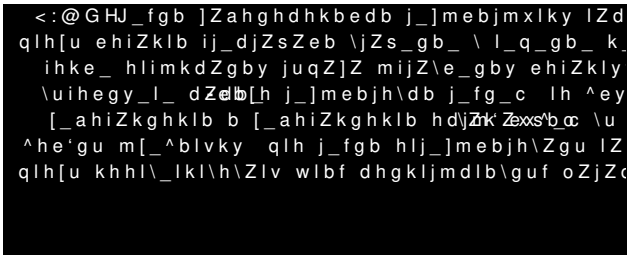
1. G_ wdkiemZlbjmcl_ ^\b]Zl_ev \ aZfdgi ijhkljZgkl_]^_kdZmeb\Zlvky hiZkgu_ m]Zjgh]h]ZaZ M]Zjguc]Za g_ bf__l fh‘_l ijb_klb d e_lZevghfm bkoh^m
2. Gbdh]^Z g_ wdkiemZlbjmcl_ dhkbedm mdehghf [he__]jZ^mkh\
3. Dhkbl_ lhevdh ijb ^g_\ghf k_l_ beb i hk_s_gbb
4. l_j_^ aZikdhf ^\b]Zl_ey m[_^bl_kv qlh gZoh^blky \ g_cljZevghf iheh‘_gbb kl lhjfha \dexq_g e_a\by hldexq_gu j_ [_ahiZkghklb ijbkl_]gml ljm[qZluc dZ hi_jZlhj kb^bl \ ijZ\bevghf iheh‘_gbb
5. Gbdh]^Z g_ jZ[hlZcl_ gZ fhdjhc ljZ_
6. Ke_^bl_ aZ ^\b‘_gb_f i_r_oh^h\ b ljZg kj_^kl\ ijb i_j_f_s_gbb g_bkihevam_fh gZijbf_j ijb ih]jmad_ jZa]jmad_ beb ljZgkihjlbjh\d_
7. Gbdh]^Z g_ wdkiemZlbjmcl_ dhkbedm h]jZ‘^_gbyfb beb sbldZfb ZlZd‘_ [_a aZdj_ie_gbu bkijZ\gh jZ[hlZxsbo aZsb mkljhckl\
8. Ke_^bl_ aZ \u[jhkhf fZl_jbZeZ b gbdh gZijZ\eycl_ _]h \ klhjhgm ihklhjhggbo g_ iha\heycl_ gbdhfm hkh[_ggh ^_lyf jy^hf k dhkbedhc \h \j_fy jZ[hlu
9. G_ baf_gycl_ gZkljhcdb jb_jm_eyjl\juZrZc h[hjhlu ^\b]Zl_ey
10. <k_]^Z hklZgZ\eb\Zcl_ ^\b]Zl_ev dh]‘ dhkbedb ^Z‘_ gZ f]gh_gb_
11. Qlh[u kgbablv hiZkghklv \ha]hjZgby ‘ \hdjm] ^\b]Zl_ey ^he‘gu [ulv k\h[h^gu ebklv_\ b ex[uo ^jm]bo ihklhjjbgZebhc fZ
12. Hkl_j_]Zcl_kv j_‘msbo djhfhd >ey h[_ [_ahiZkghklb \k_]^Z gZ^_\Zcl_ i_jqZlc \uiheg_gbb jZ[hl ih h[kem‘b\Zgbx gh‘_ hklhjh‘gu ijb jZ[hl_ k fgh]hehiZklgufb lZd dZd \jZs_gb_ h^ghc ehiZklb fh‘_l \jZs_gbx ^]hc ehiZklb
13. G_ wdkiemZlbjmcl_ dhkbedm k ^_ne_d ljZ\hk[hjgbdZ \ ih^gylhf iheh‘_gbb Wl ijb_klb d k_jv_aguf ljZ\fZf
14. G_ ke_^m_l wdkiemZlbjh\Zlv]Zahghdh fhegbc beb]jhfZ ih[ebahklb <f_klh w gZclb mdjulb_ flZedgbZdfh‘_l ijb_klb d ljZ\fZf kf_jlb
15. Gbdh]^Z g_ ih^gbfZcl_ ^_dm dhkbedb ehiZkl_c
16. HklZgh\bl_kv gZ jh\ghc iehsZ^d_ hlde \dexqbl_ klhyghqguc lhjfha b \udexqb ij_‘^_ q_f ihdbgmlv f_klh hi_jZlhjZ ih ijbqbg\dexqZy \ p_eyo hqbkldb ljZ\hk] jZa]jmadb ‘_eh[Z
17. G_f_^e_ggh hklZgh\bl_ dhkbedm b hkf ihke_ m^ZjZ h ij_^f_lu beb ijb \hagbd g_ghjfZevghc \b[jZpbb b ij_djZlbl_ bk]Zahghdhkbedb ^h ijh_^_gby lj_[m_fh
18. >_j‘bl_ jmdb b gh]b ih^Zevr_ hl j_‘ms_ G_ijZ\bevgZy wdkiemZlZpby]Zahghdh ijb_klb d k_jv_aguf ljZ\fZf jmd b gh] \u[jhkZf ihklhjhggbo ij_^f_lh\ \ klhjhg
19. ;m^vl_ \gbfZl_evgu b kgb‘Zcl_ kdhjhkl LZd‘_ kfhljbl__ghZegZijZ\h b gZaZ^ i_j_ gZijZ\e_gby ^\b‘_gby b ijb ^\b‘_gbb a qlh[u m[_^blvky qlh imlv k\h[h^_g
20. Hldexqbl_ ehiZklb kgbavl_ kdhjhklv b]Zahghdhkbedm k hklhjh‘ghklvx ijb i_j b ljhlmZjh\
21. Gbdh]^Z g_ mijZ\eygdld_hkZeldhc \ khklh Zedh]hevgh]h beb gZjdhlbq_kdh]h hiv
22. Kh[ex^Zcl_ hklhjh‘ghklv ijb ih]jmad_ b]Zahghdhkbedb gZ ijbp_i beb]jmah\bc
23. Kh[ex^Zcl_ hklhjh‘ghklv ijb ijb[eb‘_gb m]eZf dmklZjgbdZf ^_j_\vyf b ^jm]bf dhljhu_ fh]ml aZ]hjZ‘b\Zlv h[ahj
24. <k_]^Z hldexqZcl_ ehiZklb dh]^Z hgb
25. Gbdh]^Z g_ kemrZcl_ fmaudm \ gZmrg \j_fy jZ[hlu k dhkbedhc

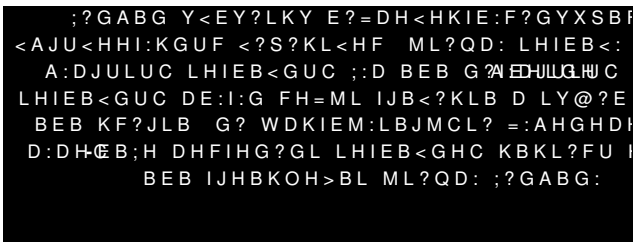
JZ[hlZ gZ kdehgZo ij_^hklhjh‘ghklb

1. G_ dhkbl_ gZ kdehgZo k mdehghf [he
2. ;m^vl_ ij_^_evgh hklhjh‘gu ijb wdkiem gZ kdehg_ Kgb‘y_bfh‘_l ijb_klb d kdhev‘_gbx
3. G_ hklZgZ\eb\Zcl_kv b g_ klZjlmcl_ \ ^\b‘_gbb \ ]hjm
4. Kgb‘Zcl_ kdhjhklv b kh[ex^Zcl_ hklhjh ih\hjhlZo b kf_g_ gZijZ\e_gby ^\b‘_gb
5. G_ wdkiemZlbjmcl_ dhkbedm \[ebab d dZgZ\ beb \h^u >ey wlbo mqZkldh\ b beb jmqghc ljbff_j
6. ?s_ ^h \dexq_gby ^\b]Zl_ey g_h[oh^b aZnbdkbjh\Zlv ljm[qZluc dZjdZk b ijbl [_ahiZkghklb
7. < kemqZ_ g_h[oh^bfhklb himklbl_ ljm[g_ ke_^m_l bhiZlwa j_f_gv [_ahiZkghkl
8. ?keb rbgu ihl_jyeb kp_ie_gb_ k ih_jo hldexqbl_ ehiZklb b f_^e_ggh b hklhjh kh kdehgZ
9. ;m^vl_ ij_^_evgh hklhjh‘gu k gZ_kguf h[hjm^h\Zgb_f lZd dZd hgh fh‘_l baf_ mklhcqb\hklv dhkbedb bhijb_mbjZ\e_
10. Kgb‘Zcl_ kdhjhklv b _^bl_ fZrbgm hkh hklhjh‘gh gZ kdehgZo ohefh\ GZ kdel h[yaZl_evgh ^\b]Zcl_kv \ j_dhf_g^h\Z gZijZ\e_gbb Khklhygb_]ZahgZ fh‘_l mklhcqb\hklv fZrbgu
11. Klhyghqguc lhjfha fh‘_l g_ mk^_e‘Zmv dk hgZ ijbiZjdh\ZgZ gZ kdehg_

<:@GHJ_fgb]Zahghdhkbedb j_]mebjmxlky lZd
qlh[u ehiZklb ij_djZsZeb \jZs_gb_ \ l_q_gb_ k_
ihke_ hlimkdZgby juqZ]Z mijZ\e_gby ehiZkly
\uihegy_l_ dZdb[h j_]mebjh\db j_fg_c lh ^ey
[_ahiZkghklb b [_ahiZkghklb hdjZk Zexs^bc \u
^he‘gu m[_^blvky qlh j_fgb hlj_]mebjh\Zgu lZ
qlh[u khhl_lkl\h\Zlv wlbf dhgkljmdlb\guf oZjZc

;?GABG Y<EY?LKY E?=DH<HKIE:F?GYXSBF
<AJU<HHI:KGUF <?S?KL<HF ML?QD: LHIEB<:
A:DJULUC LHIEB<GUC ;:D BEB G?AEDJULUC
LHIEB<GUC DE:I:G FH=ML IJB<?KLB D LY@?E
BEB KF?JLB G? WDKIEM:LBJMCL? =:AHGHDH
D:DH-CEB;H DHFIHG?GL LHIEB<GHC KBKL?FU
BEB IJHBKOH>BL ML?QD: ;?GABG:



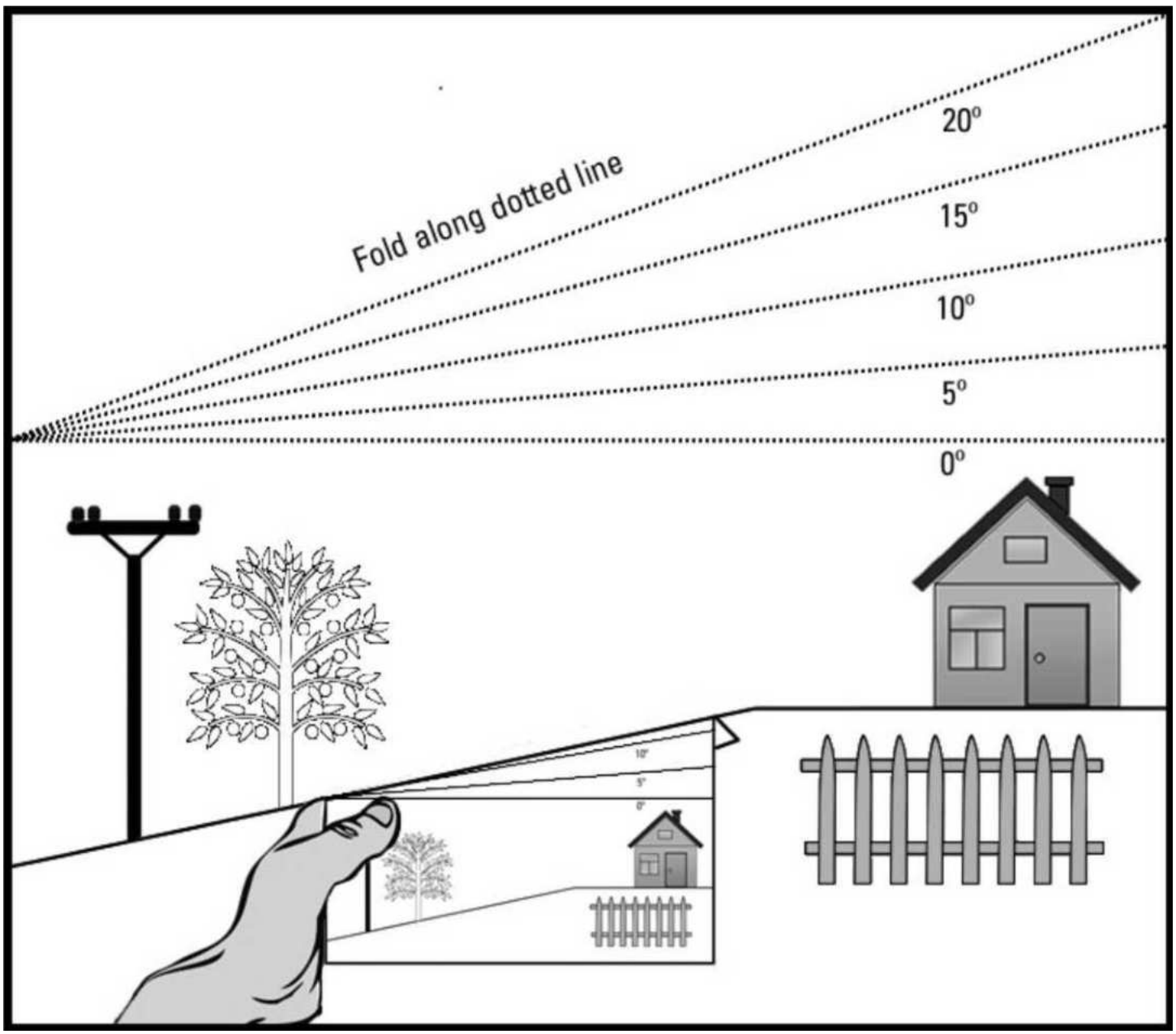


HI:KGH G_ h[oh^bl_ g_ fh^bnbpbjmcl
baf_gycl_ b g_ hldexqbl_ kqZclfm [_ahiZkghl
DZ‘^uc jZa i_j_^ gZqZehf dhr_gby m[_
kbkl_fZ aZsblghc [ehdbjh\db iheghklvx

Ij_‘^_ q_f ijbklmiblv d wdkiemZlZpbb
]Zahghdhkbedb m[_^bl_kv qlh \u ag
\k_fb __ dhfihg_glZfb b ijhqblZeb jm

l_j_^ gZkljhcdhc]Zahghdhkbedb
hlkh_^bgbl_ ijh\h^Z k_q_c aZ‘b]Zgb
aZ‘b]Zgby b aZa_febl_ bo gZ ^\b]Zl_
ij_^hl\jZlblv kemqZcguc aZimkd Wlh
ke_^m_l \uihegylv \ dZq_kl_ f_ju
ij_^hklhjh‘ghklb ijb jZ[hl_ k wlhc fZr

Gm‘gZ ihfhsv"
AZiqZklb h[kem‘b\Zg
l_ogbq_kdZy ihfhsv il



FZdkbfZevguc m]he gZdehgZ kdehgZ gZ dhlhjhf fh'gh [_ahiZkgh bkihevah\Zlv dhkbedm kl
]jZ^mkh\ ijb bkihevah\Zgbb dhkbedb

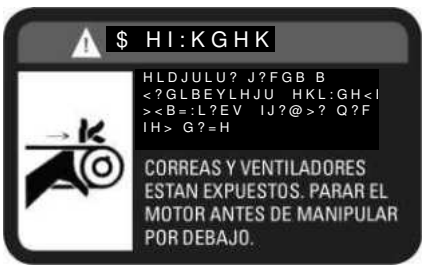
Kh_^bgbl_ [hdh\mx klhjhgm wlhc kljZgbpu k _jlbdZevguf h[t_dlhf qlh[u hij_^_eblv m]he
Kh]gbl_ wlhl ebkl ih imgdlbjghc ebgbb b m[_^bl_kv qlh gZdehg g_ ij_\urZ_l]jZ^mkh\

B^_glbnbdZpby ij_^mij_'^Zxsbo lZ[ebq_d

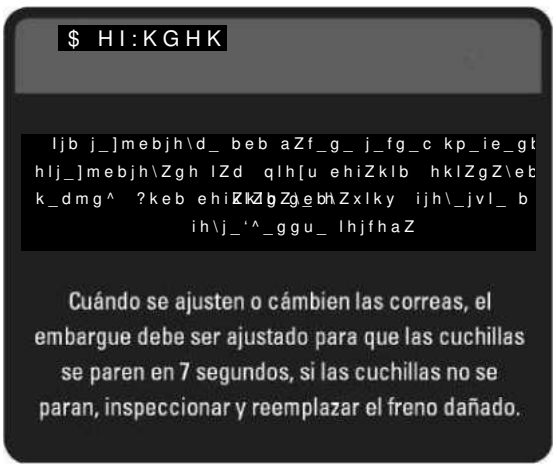
GZde_cdb ihdZaZggu_ gb'_ jZkiheh'_gu gZ \Zr_c dhkbed_ qlh[u ij_^mij_^blv \Zk h ihl_gpl \Z'gmx bgnhjfZpbx h [_ahiZkghklb ?keb ehiZkhZgebhZxlky ijh_jvl_ b ih\j_'^_ggu_ lhjfhaZ 3DUWV 6HUYLFH ^ey aZf_gu



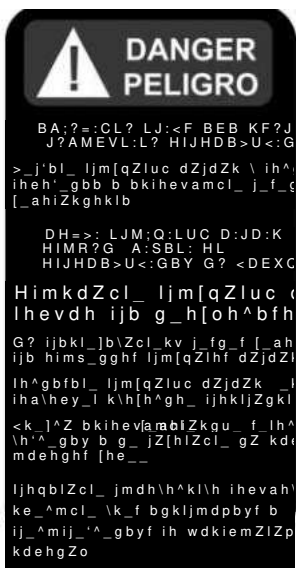












	Fh^_ev
OZjZdl_jbklbdZ	**XT5 127**
Dhebq_kl\h iheh‘_gbc \u kdZrb\Zgby ljZ\u ih \ukh	17
RbjbgZ kj_aZ	50-^xcfh\
LjZgkfbkkby	>_ _^bgbpu]b^jhklZlbq_kdb_
Fhsgnklv ^\b]Zl_ey	e k
H[t_f ^\b]Zl_ey	kf
Ijhba\h^bl_ev ljZgkfbkkb	ZimAni Hydro Pro
Kdhjhklb dhkbedb	;_kdhg_qgh baf_gy_fZy
Lbi ^_db	leZ\ZxsZy [ukljhk_fgZy
<ukhlZ kj_aZ	ff
AZp_ie_gb_ ehiZklb	Jmqgh_ kp_ie_gb_
Kdhjhklv \jZs_gby dhgqb ehiZklb	nmlh\ fbg
Ijhlb\hkdZevibjmxsb_ jh	i_j_^gbo
Dhebq_kl\h ehiZkl_c ^e	3,16->xcfh\u_ ehiZklb
Kbkl_fZ mijZ\e_gby	>\hcghc juqZ] mijZ\e_gby
Lhieb\h _fdhklv	;_gabg ebljh\
Rbgu aZ^g_]h ijb\h^Z	20-^xcfh\u_ ;^xcfh\uc^_jgh\uc ijhl_dlhj
l_j_^gb_ jhebdh\u_ rbgu	13-^xcfh\uc ;^xcfh\uc]eZ^dbc ijhl_dlhj
LhjfhagZy kbkl_fZ	<gmlj_ggbc]b^jZ\ebq_kdbc b f_oZgbq
<_k	ljb[ebabl_evgh nmglZ
<ukhlZ >ebgZ	^xcfZ [^xcfh\



< ^Zgghf jmdh\h^kl_ ijb_^_gu bgkljmdpbb ih wdhAmiZ ZuZpbbhd_k^medb ijb bamq_gbb ^Zggh]h jm
hloh^blv ^Ze_dh hl^ehk[uedh]h b m^h[gh]h ^hklmiZ qlh[u khjb_glbjh\Zlvky \ we_f_glZo mijZ\e_
hjb_glZpbb jZaebqguo ^_lZe_c l_j_^ gZqZehf jZ[hlu hagZdhfvl_kv k jmdh\h^kl\hf

IZg_ev mijZ\e_gby
Gb'_ ijb_^_gZ ko_fZ iZg_eb mijZ\e_gbyhag^Zdhfe_gb_fy Mg^_dhfe_gb_fy k we_f_glZfb mijZ\e_gby dhkbedhc

Dexq_\hc \udex



v Kq_l
fhlhqZł

DmeZ >jhk_evgZy aZ Hk_s_g

B^_glbnbdZpby dhfihg_glh\ ]Zahghdhkbedb
< aZ\bkbfhklb hl fh^_eb g_dhlhju_ dhfihg_glu fh]ml \u]ey^_lv
jbkmgd_



v Ljm[qZluc dZjdZk b

JmdhyldZ jme_\h_ m

JuqZ mijZ\e_gby eh

J_]mebjh\dZ k

J_]mebjh\dZ \ukhlu

JuqZ] \ukhlu el

IZg_ev mijZ\

v Kq_l
fhlhqZł

AZsblguc dh'mo

<uly'ghc '_

:glbkdZevibjmxsb_

MdZ‘bl_ gm‘gmx \Zf ^_lZev

NBH

>jm]h_____ :^j_k

>ZlZ ihdmidb_____

Fh^_ev_____

L_e

Email

K_jbcguc _____

ljbf_qZgby

<:@GH Ih‘ZemcklZ ijbedhbdZgpbx ;_a d\blZgpbb \Zr aZdZa [m^_l lZd‘_ fh‘_l_ gZibkZlv gZf ih we_dljhgghc ihql_

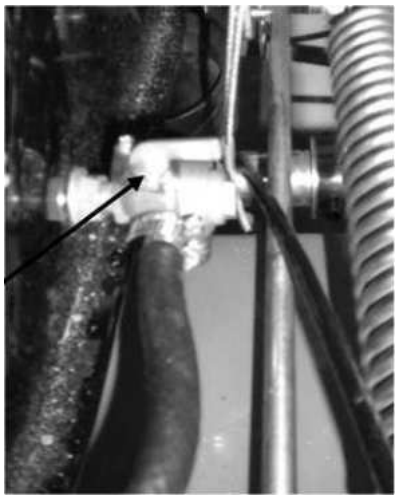
ljb hlijZ\d_ ih we_dljhgghc ihql_ ih‘ZemcklZ ^hdmf_gl ih^l\.

AZimkd ^\b]Z

HI:KGH

lj_'^_ q_f ijbklmiblv d wdkiemZlZpbb]Zahghc
qlh \u agZdhfu kh \k_fb __ dhfihg_glZfb b ijh

HI:KGH <uoehigu_ kZ^u_j'Zl y^h\bluc m]Zjguc]Za
[_kp_lguc b g_ bf_xsbc aZiZoZ <^uoZgb_ \uoehigu
\ua\Zlv ihl_jx khagZgby b ijb_klb d kf_jlb G_ wdki
^\b]Zl_ev \ aZfdgmlhf ijhkljZgkl_]^_ fh]ml kdZieb
iZju m]Zjgh]h]ZaZ



IJBF?Q:GBP_j_^ aZimkdhf]Zahghdhkbedb h[yaZl_e
k_'bc g_wlbebjh\Zgguc [_gabg b aZe_cl_ \ ^\b]Zl_
j_dhf_g^h\Zggh_ ijhba\h^bl_e_f fhlhjgh_ fZkeh

M[_^bl_kv qlh aZihjguc deZiZg jZkiheh'_ggu
[ZdZ gZoh^blky \gbbe21_



M[_^bl_kv qlh lhjfha mklZgh\e_g Z jmdhyl
jZa^\bgmlu \ g_cljZevgh_ iheh'_gb_

M[_^bl_kv qlh juqZ] mijZ\e_gby ehiZklyfb gZoh^

lhlygbl_ dmeZqhd b mklZgh\bl_ ^jhkk_evgmihehZkg

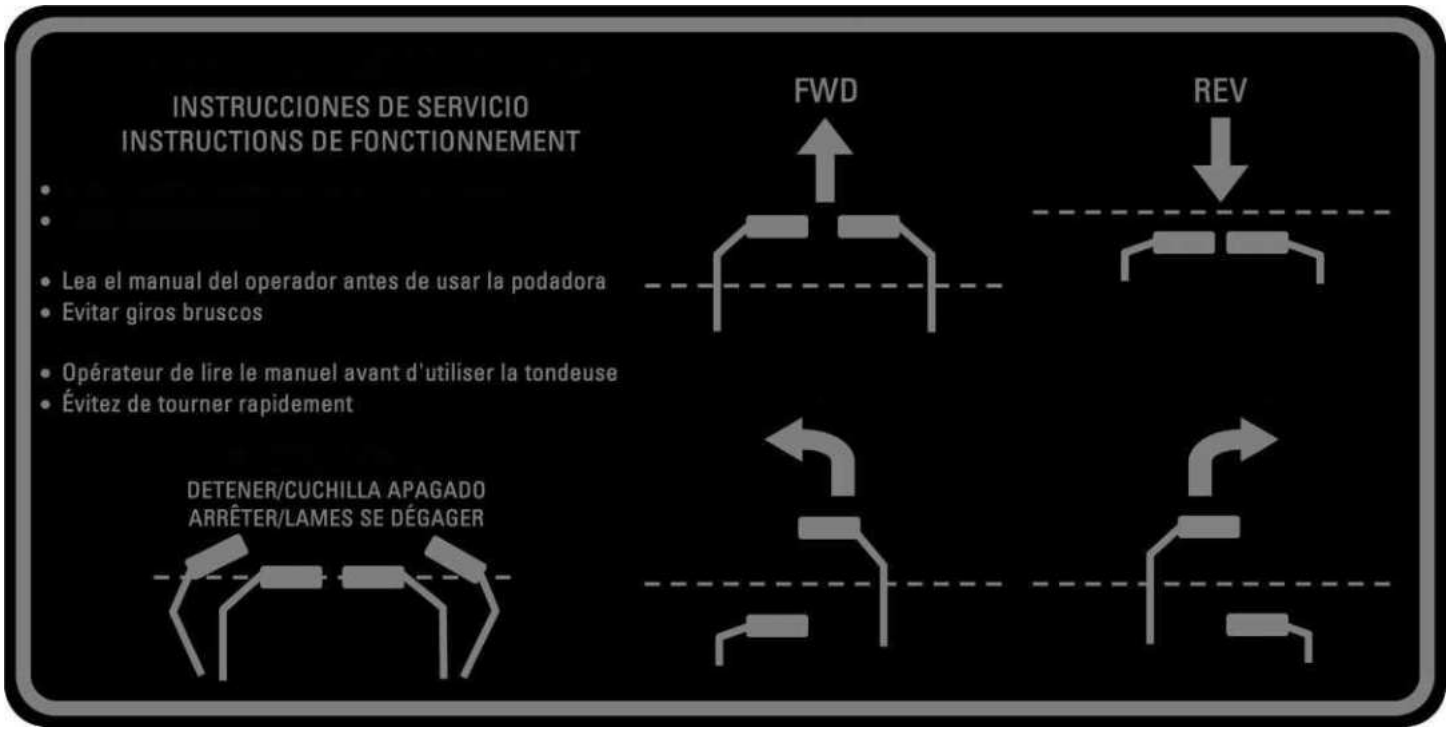


lh_jgbl_ dexq ih qZkh\hc klj_ed_ \ iheh'_gb_ 6
_jgmlvky \ iheh'_gb_ 21 dh]^Z ^\b]Zl_ev aZim

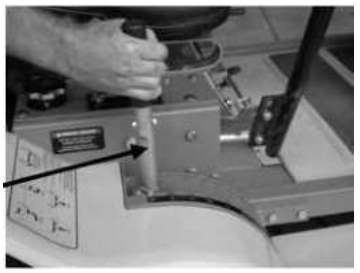
Dh]^Z ^\b]Zl_ev gZqg_l jZ[hlZlv b dexq _jg_lky
gZ'fbl_ dghidm &+2.(RII

WdkiemZlZpby]Zahghdhkbedb

1. M[_^bl_kv qlh lhjfha i_j__^_gb \ i-hlDE
2. lhlygbl_ h[_ jmqdb mijZ\e_gby d p_gljm
3. >ey ^\b‘_gby dhkbedb \i_j_^ \u^\bgvl_ h[\i_j_^ hl]jm^b Kdhjhklv ^\b‘_gby \i_j_^ ijhihjpbhgZevgZ kl_i_gb i_j_f_s_gby wlbc \i_j_^
4. Qlh[u ih_jgmlv dhkbedm \e_\h ijZ\h gZ‘fbl_ dg i_j_^ e_\hc jmdhyldhc beb e_\mx jmdhylc klhjhgm g_cljZevgh]h iheh‘_gby q_f ijZ\
5. Qlh[u ih_jgmlv dhkbedm \ijZ\h \uihegbl_ jmdhyldhc hibkZggu_ \ rZ]_ \ur_ aZ b ijhlb\hiheh‘gh]h iheh‘_gby jmdhyldb
6. Qlh[ukhlZgh\blv ^\b‘_gb_ dhkbedb \i_j_^ jmdhyldb \ p_gljZevgh_ g_cljZevgh_ iheh
7. >ey ^\b‘_gby dhkbedb gZaZ^ ihlygbl_ h[_ jmdhy
8. Qlh[u ih_jgmlv gZaZ^ \ijZ\h beb \e_\h ih\lhjbl hibkZggu_ \ur_ \ imgdlZlhevbdhb \ ijhlb\hiheh‘ghf gZijZ\e_gbb
9. >ey ih\hjhlZ gZ ghev]jZ^mkh\ \ijZ\h gZ‘fbl_ e_ \i_j_^ Z ijZ-\mxaZ^
10. Qlh[u ih_jgmlv gZ ghev]jZ^mkh\ \e_\h gZ‘fbl_ \i_j_^ Z e_-\mxaZ^
11. < g_cljZevghf iheh‘_gbb]b^jZ\eb\qZ kjZiylkb\ml_l e_]dhfm i_j_f_s_gbx dhkbedb H^gZdh gZ mdeh ^\b]Zlvky hq_gv f_^e_ggh k \udexq_gguf beb jZ ^\b]Zl_e_f H[yaZl_evgh mklZgZ\eb\Zcl_ jmqgh dZ‘^uc jZa dh]^Z dhkbedZ hklZ_lky [_a ijbkfhlj i_j_\had_
12. Dh]^Z jmdhyldb gZoh^ylky \ kj_^g_f iheh‘_gbb ^jm] hl ^jm]Z qlh[u aZnbdkbjh\Zlv dhkbedm \ g



Baf_g_gb_ \ukhlu kj_aZ
<ZrZ dhkbedZ hkgZs_gZ e_]dh j_
ieZ\Zxs_c ^_dhc dhlhjZy fh'_l [u
hlj_]mebjh\ZgZ gZ \ukhlm kj_haZ
^xcfZ ^h ^xcfh\ k rZ]hf ijbf_
^xcfZ J_]meylhj \ukhlu ^_db jZk
ijZ\hc klhjhg_ dhkbedb



DZd baf_gblv \ukl

<ulygbl_ juqZ] mijZ\e_gby gh'Zf
_jo

<ulygbl_ juqZ] \e_\h qlh[u i_j_
_jo beb \gba gZ gm'g

Dh]^Z '_eZ_fZy \ukhlZ \u[jZgZ
^_dm _jgm\ jmdhyldm \ iheh'_



lhke_ baf_g_gby \ukhlu kedb mjuq
jgmlv \ bkoh^gh iheh'_gb_

ljbf_qZgbl_hke_ dhr_gby g_ aZ[m^vl
^_dmkZfh_ _jog__ iheh'_gb_ qlh[u
aZ^bjh\ b ex[uo ^jm]bo ih\j_'^_gbc
^_db



Dhkv

IJ?>MIJ?@
?GB

IJ?>MIJ?@>?GB?Zl_evgh hkfhljbl_
mqZklhd gZ dhlhjhf \u ieZgbjm_l_
dhkbedm M^Zebl_ lZdb_ ij_^f_lu
iZedb ijh\hehdZ b ^jm]b_ ihklhjh
ljb m^Zj_kbedb wlb b ^jm]b_ ij_^f_
klZlv kgZjy^Zfb dhlhju_ fh]ml ijb
k_jv_aguf ljZ\fZf beb kf_jlb Hqbk
l_jjblhjbx hl fmkhjZ

JZ[hlZcl_ gZ [_ahiZkghf jZkkl^_gbb ^hfZ

IJ?>MIJ?@>?(

IJ?>MIJ?@>?GB?bdh]^Z g_ wdkier
dhkbedm k g_bkijZ\gufb h]jZ'^_gb
sbldZfb Z lZd'_ [_a gZ^_'gh aZd
bkijZ\gh jZ[hlZxsbo aZsblguo mkl

Dh]^Z dhkbedZ [m^_l mklZgh\
h[jZ[Zlu\Z_fhf mqZkld_ i_j_\
^jhkk_evgmx aZkehgdm gZ ih

F?>E?GGH i_j__^bl_ juqZ] mi
gh'Zfb \i_j_^ \ iheh'_gb_ 21

GZqbgZcl_ dhkblv dZd hibk
ij_^u^ms_c kljZgbp_ \k_]^
bkihevamy [_ahiZkgmx dhfr
kdhihklv

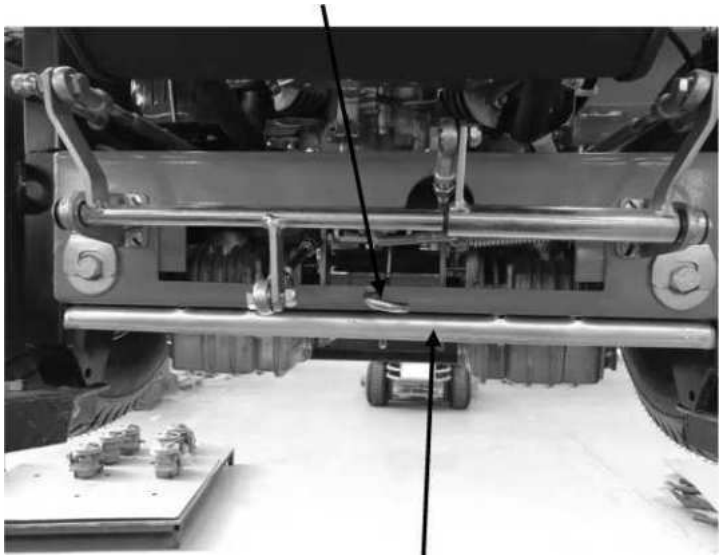
Qlh[u hklZgh\blv ehiZklb hlly
mijZ\e_gby ehiZklyfb \ iheh'_

Nmgdpby ieZ\gh]h imkdZ hq_gv \Z
ih^^_j'Zgby kjhdZ kem'[u j_fgy kp_i
^\b]Zl_ey
GBDH=>: g_ oehiZcl_ jmdhyld
\dexq_gby \udexq_gby ehiZklb ba ih
\udexq_gh \ iheh'_gb_ \dexq_gh
^hklZlhqghc iZmau \ ^bZiZahg_ ieZ\

<:@GH J_fgb]Zahghdhkbedb j_]mebjmxlky lZdbf h[jZahf qlh[u ehiZklb ij_djZsZeb \jZs_gb_ \ l_q_gb_by
juqZ]Z mijZ\e_gby ehiZklyfb ?keb \u \uiheg[h j_]mebjh\db j_fg_c lh ^ey \Zr_c [_ahiZkghklb b [_ahiZk
\Zk ex^_c \u ^he'gu m[_^blvky qlh j_fgb hlj_]mebjh\Zgu lZdbf h[jZahf qlh[u khhl_lkl\h\Zlv wlbf dbgkl

Hldexq_gb_]b^jhklZlbq_kdbo ijb\h^h\
l_j_^ nbabq_kdbf i_jb_f_sdgkbedb ?jZ[hlZxs_
^\b]Zl_e_ g_h[oh^bfh hldexqblv]b^jhklZlbq_
j_'bf k\h[h^gh]h oh^Z

Qlh[u hldexqblv wlb]b^jhZ]
<ulygbl_ djxqhd b hlimk



Ijb g_h[oh^bfhklb ke_]dZ m^Zjvl_ bgkljmf_
qZklb dhkbedb \ f_kl_ jZkiheh'_gby]b^jhkbkl
m[_^blvky qlh kbkl_fZ hldexq_gZ

HKLHJH@GH Gbdh]^Z g_ m^Zjycl_ g_ aZ^_\Zcl_ b g_ hldexqb_ wlhgu

Qlh[u _jgmlvky \ jZ[hc
j_'bf
Hlh^\bgvl_ djxqhd

<ha\jZl d g_cljZevghfm kh

HI:KGH

HI:KGH M[_^bl_kv qlh ^\b]Zl_ev
hklZgh\e_g ij_'^_ q_f aZkmgmlv jmc
^hklmiZ

?keb dhkbedZ ihea_l beb g_ hklZgZ\eb\Z_
dh]^Z jmdhyldb gZoh^ylky \ g_cljZevghf i
g_h[oh^bfh \uihegblv j_]mebjh\dm

HKLHJH@GH M[_^bl_kv qlh ^\b]Zl_ev \u
ij_'^_q_f hldju\Zlv iZg_ev ^hklmiZ d]b^jh

<udjmlbl_ [helu q
ihemqblv ^hklr
]b^jhiZg_eb



Bkihevamy]Z_qguc
ff ^hlygbl_kv q_j_
gb'gxx qZklv]b^jh
^h [helh\ mklZgh\h
HkeZ[vl_e[lu gZ klhjhg_ lj_[mxs_c j_]n

M[_^bl_kv qlh lhjfha gZoh^blky \ iheh'_
GZoh^ykv \ [_ahiZkghf iheh'_gbb hi_jZlhjZ
^\b]Zl_ev

Ijb jZ[hlZxs_f ^\b]Zl_e_ f_^e_ggh i_j_f_
jmdhyldm gZ klhjhg_ lj_[mxs_c j_]mel
hklZgh\db wlhgu h?keb dhkbedZ ihea_
ihlygbl_ jmdhyldm \ h[jZlghf gZijZ\e_g

Ijb ^\b'_gbb gZaZ^
ihlygbl_ jmdhyldm



Dh]^Z dhkbedZ iheg
ij_djZsZ_l ^\b'_gb_
]b^jhkbkl_fZ gZoh^
g_cljZevghf iheh'_

<udexqbl_ ^\b]Zl_ev

7. F_^e_ggh aZlygbl_ [helu g_ i_j_f_sZy

8. AZlygm\ [helu i_j_f_klbl_kv \ [_ahiZkg
hi_jZlhjZ b aZimklbl_ ^\b]Zl_ev

9. ?keb iheamq_klv \hagbdeZ kgh\Z ih\lh
\ur_mdZaZggu_ rZ]bihFjh[h\Zlvky g_kdh
ih\lhj_gbc

<Z‘ghklv l_ogbq_kdh]h h[kem‘b\Zgby
J_]meyjgh_ l_ogbq_kdh_ h[kem‘b\Zgb_ g_h[
qlh[u \ZrZ dhkbedZ ijh^he‘ZeZ h[_ki_qb\Zlv
dZq_kl_ggmx jZ[hlm

Qlh[u ihfhqv \Zf ijZ\bevgh moZ‘b\Zlv aZ \Zr
ke_^mxsbo kljZgbpZo ijb_^_gu j_dhf_g^m_
l_ogbq_kdh]h h[kem‘b\Zgby ijhp_^mju ieZg
ijhklu_ ijhp_^mju l_ogbq_kdh]h h[kem‘b\Zgb
bkihevah\Zgb_f hkgh\guo jmqguo bgkljmf_g
h[kem‘b\Zgb_ g_k_l hl_lkl_gghklv \eZ^_e_
\uihegylv j_]meyjgh ;he__ keh‘gu_ aZ^Zqb
aZ^Zqb lj_[mxsb_ ki_pbZ[mvf_gu dhbgkemqr_ \k
ihjmqblv j_dhf_g^h\Zgghfm ki_pbZebklm ih
^jm]hfm d\Zebnbpbjh\Zgghfm f_oZgbdm

=jZnbd l_ogbq_kdh]h h[kem‘b\Zgby hibkZg
hlghkblky d dhkbedZf bkihevam_fuf \ ghjfZ
wdkiemZlZpbb ?kdkbe\uZlbjm_l_ k\hx dhkbed
mkeh\byo gZijbf_j ijb ^ebl_evghf bkihevah
ijb \ukhdbo l_fi_jZlmjZo beb bkihevam_l_
\eZ‘guo iuevguo beb dZf_gbkluo mkeh\byo
ijhdhgkmevlbjmcl_kv k h[kem‘b\Zxsbf ^be_j
j_dhf_g^Zpbc khhl_lkl\mxsbo \Zrbf bg^b\b
ihlj_[ghklyf b mkeh\byf bkihevah\Zgby

Ijb h[kem‘b\Zgbb dZmAnieldbyaZl_evgh bkiheva
hjb]bgZevgu_ aZiZkgu_ qZklb qlh[u h[_ki_d
dZq_kl\h [_ahiZkghklv b ijhba\h^bl_evghklv
Gm‘gZ ihfhsv" AZiqZklb h[kem‘b\Zgb_ b l_d
ihfhsv

Lhieb\

HI:KGH

HI:KGH ;?GABG Y<EY?LKY E?=DH<HKIE:F?
B <AJU<HHI:KGUF <?S?KL<HF G_ ^h[Z\eyhc
ijb jZ[hlZxs_f beb]hjyq_f ^\b]Zl_e_ G_ ^hi
gZoh‘^_gb_ lhieb\Z \[ebab hldjulh]h h]gy b
ih^Zevr_ hl lhieb\Z b ojZgbl_ lhieb\h \ ki_pl
ij_^gZagZq_gguo ^ey wlh]h _fdhklyo >h[Z\e
lhevdh gZ hldjulhf \ha^mo_ Zo\hkejheblh g_
aZimkdZcl_ ^\b]Zl_ev <jmqgmx hlh^\bgvl_ d
jZaeb\Z b g_f_^e_ggh \uljbl_ _]h

Lbi bkihevam_fh]h lhieb\Z kf \ jmdh\h^kl_
^\b]Zl_ey

AZihjguc deZiiZeb\Zh jZkiheh‘_g gZ ^g_ lhieb
J_dhf_g^m_lky hldexqZlv lhieb\h ijb ljZgkil
jZ[hqbfb iehsZ^dZfb b ijb ^ebl_evghf ojZg_

HKLHJH@

HKLHJH@GHj_^ \uiheg_gb_f ex[uo j_]mebjh\hd b l
l_ogbq_kdh]h h[kem‘b\ZgZmAnidhkbeldb_kv qlh dhkbe
gZ jh\ghc ih_joghklb aZ‘b]Zgbdevudexqegh_g lhj
mklZgh\e_g Z ehiZklb hldexq_gu LZd‘_ hlkh_^bg
aZ‘b]Zgby hl k_q_c aZ‘b]Zgby b aZa_febl_ bo gZ
ij_^hl\jZlblv kemqZcguc aZimkd

?keb \u \uihegy_l_ j_]mebjh\dm beb l_ogbq_kdh_
jZ[hlu dhkbedb ^Zcl_ mkljhckl\m hklulv b \k_]^Z g
h^_‘^m

>Z\e_gb_ \ rbgZo
G_ijZ\bevgh_ ^Z\e_gb_ \ rbgZo fh‘_l ijb_klb d kf_
h^gm klhjhgm b beb g_jZ\ghf_jghfm kj_am Kh[ex^
aZijZ\d_ rbg
GBDH=>: g_ ij_\u_rZcdhf_g^m_fh_ fZdkbfZevgh_ ^Z
rbgZo mdZaZggh_ gZ rbgZo

<ha^mrguc nbevlj

J_dhf_g^m_fh_ l_ogbq_kdh_ h[kem‘b\Zgb_ kf \ jm
ihevah\Zl_ey ^\b]Zl_ey

Fhlhjgh_ fZkeh
IJH<?JYCL? FHLHJGH? F:KEH I?J?> D:@>UF
BKIHEVAH<:GB?[fZlhl_kv d jmdh\h^kl\m ihevah\Z
^\b]Zl_ey qlh[u magZlv lbi bkihevam_fh]h fZkeZ
fZkeZ b gZ^e_‘Zsb_ ijhp_^mju ijh_jdb b aZf_gu

EhiZklb
?‘_^g_\gh hkfZljb\Zcl_ ehiZklb gZ ij_^f_l aZam[jb
qj_af_jgh]h baghkZ ?keb ehiZklb baghr_gu lj_kg
ih\j_‘^_guZfa_gbl_ bo i_j_^ bkihevah\Zgb_f dhkbed
hjb]bgZevgu_ kf_ggu_ ehiZklb ^eyZmAnidhkbehd
]ZjZglbjh\Zlv dZq_kl\h b ijhba\h^bl_evghklv Kf
16.)

Ijb aZlhqd_ ehiZkl_c aZlZqb\Zcl_ lhevdh j_‘msb_
kh[ojZgblv i_j\hgZqZevguc m]he ehiZklb G_ ^_eZcl
hkljhc dZd [jbl\Z M^Zebl_ h^bgZdh\h_ dhebq_kl\h
ehiZklb qlh[u h[_ki_qblv jZ\ghf_jghklv

HKLHJH@

HKLHJH@GH <kZ]^_Z\Zcl_ jZ[hqb_ i_jqZldb
h[kem‘b\Zgbb ehiZkl_c b hkl_j_]Zcl_kv j_‘m
M[_^bl_kv qlh ^\b]Zl_ev \udexq_g dexq ba
ijh\h^Z k_q_c aZ‘b]Zgby hlkh_^bg_gu hl k\
aZ‘b]Zgby \h ba[_‘Zgb_ g_ij_^gZf_j_ggh]h a

KlZlvy	lhjy^hd	<j_f_gghc bgl_j\Ze				
		<\h^ \ wdkiemZlZ i_j\u_	DZ‘^u_ qZkh\ _‘_^g_\gh	DZ‘^u_ qZkh\ _‘_g_^_ev	DZ‘^u_ qZkh\ jZa \ g_^_eb	DZ‘^u_ qZkh\ _‘_f_kyqgh
J_fgb	Hkfhljbl_ ijb g_h[oh^bfhklb hlj_]mebjmcl_	X	X			
EhiZklb	Hkfhlj b beb aZlh		X			
<ha^mrguc nbevlj ^\b]Zl_ey	Hkfhljbl_ kf jmdh\h^kl\h ihevah\Zl_ey ^\b]Zl_e		X			
Ahgu hoeZ‘^_gby ^	Hqbklbl_ kf jmdh\h^kl\h ihevah\Zl_ey ^\b]		X			
Fhlhjgh_ fZkeh	Hkfhljbl_ kf jmdh\h^kl\h ihevah\Zl_ey ^\b]	X	X			
	AZf_gbl_ kf jmdh\h^kl\h ihevah\Zl_ey ^\b]					
FZkeyguc nbevlj ^\b]Zl_ey	AZf_gbl_ kf jmdh\h^kl\h ihevah\Zl_ey ^\b]					
K_qZ aZ‘b]Zgby ^\	Hkfhljbl_ kf jmdh\h^kl\h ihevah\Zl_ey ^\b]					
Lhieb\guc nbevlj	AZf_gblv				X	
Lhieb\gZy ebgby	ljh_jdZ				X	
:jfZlmjZ ^ey kfZadb	Kf klj					
H[hjm^h\Zgb_	ljh_jvl_ ijZ\bevg aZly‘db	X		X		
Hkgh\gZy jZfZ dhkb	M^Zebl_ fmkihj^ba djurdb j_fgy		X			
Kbkl_fZ aZsblghc [ehdbjh\db	ljh_jdZ hi_jZpbc i_j_dexqZl_e_c		X			
Rbgu	ljh_jvl_ ^Z\e_gb \ha^moZ			X		
Ribg^_ev LhjfhaZ ehiZkl_c			X			

HqbkldZ dhkbedb
=ZahghdhkZbmAdi j_dhf_g^m_lky qbklblv _‘_^g_\gh Qj_af_jgh_ kdhie_gb_]jyab fZkeZ b l ^ g
]emrbl_eyo b ^\b]Zl_e_ fh‘_l ij_^klZ\eylv ihl_gpbZevgmx m]jham [_ahiZkghklb

50" SPEEDY



GZly‘_gb_ j_fgy

J_dhf_g^m_lky ijh_jblv b ijb g_h[oh^bfhklb hlj gZly‘_gb_ j_fgy ^_db ihke_ i_j\uo qZkh\ jZ[hl fhlhqZkh\ Gh\uc j_f_gv ky^_l \ dZgZ\db rdb\Z j_]mebjh\db Ihke_ i_j\h]h i_jbh^Z ijbjZ[hldb j_ ijh_jylv gZly‘_gb_ j_fgy b ijb g_h[oh^bfhklb j_]n dZ‘^u_ qZkh\ >ey ijh_jdb gZly‘_gby j_fgy \u ke_^mxsb_ ^_ckl\by Kh[ex^Zcl_ <K? f_ju ij_^h mdZaZggu_ \ ^Zgghf jmdh\h^kl_ ijb \uiheg_gb l_ogbq_kdh]h h[kem‘b\Zgby edZrjbc qZkb_ G_\uiheg_gb_ ijh_jdb b j_]mebjh\db gZly‘_gby fh‘_l ijb_klb d iehohc ijhba\h^bl_evghklb dhr_ ij_‘^_\j_f_gghfm baghkm j_fgy

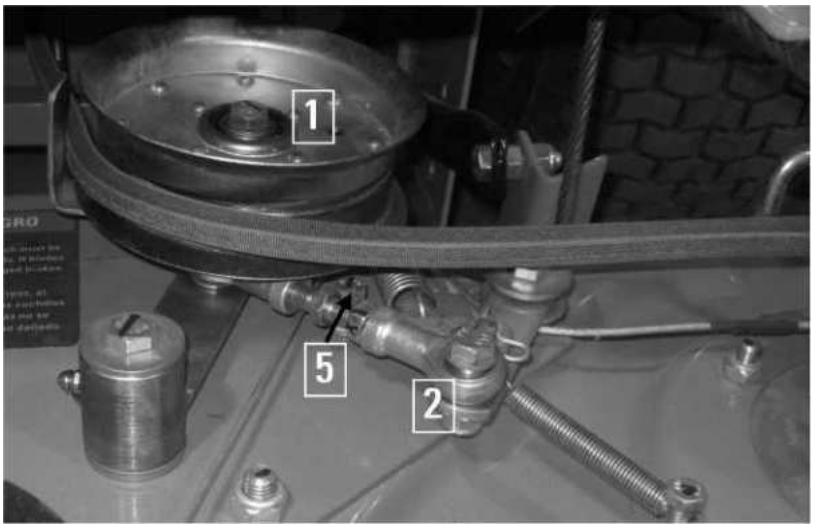
HI:KGH

HI:KGHI_j_^\uiheg_gb_f ex[uo j_]mebjh\hd beb h dhkbedb m[_^bl_kv qlh dhkbedZ klhbl gZ jh\ghc hldexq_gu lhjfha mklZgh\e_g dexq \ugml ^\b]Z ijh\h^Z k_q_c aZ‘b]Zgby hlkh_^bg_gu hl k_q_c ba[_‘Zgb_ kem]hZ aZgih mkdZ ?keb l_ogbq_kdh_ h[ke j_]mebjh\dZ \uihegyxlky ihke_ jZ[hlu dhkbedb ^ hklulv ihkdhevdm gZdhie_gb_ l_ieZ fh‘_l ijb_kl h‘h]Zf

Jbkmgh

M[_^bl_kv qlh jmdhyldZ \dexq_ gZoh^blky \ iheh‘_gb 2
Hldjhcl_ iheh\bpm b gZc^bl_ rd oh^Z kp_ie_gby O b ih\hjhlguc
MklZgh\bl_ gZbf_gvrmx \ukhlm ^xcfZ

Jbkmgh



Jbkmgh

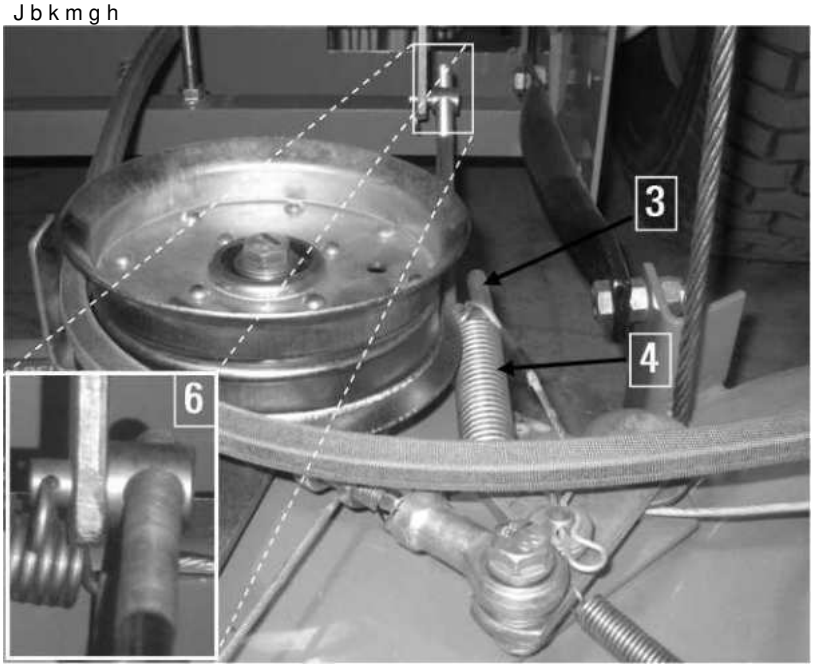


Figure 2:

Ijh_jvl_ ij_^\Zjbl_evgmx gZ]jm juqZ‘gh]h f_oZgbafZ kp_ie_gby
?keb ijm‘bgZ b ma_e ly]b b aZlygmlu fmnlZ g_ [m^_l \ha\j fh‘_l ijb_klb d \jZs_gbx ehiZkl aZp_ie_gbb ehiZkl_c \ iheh‘_gb
?keb ma_e ijm‘bgu b ly]b kebrd ijm‘bgZ [m^_l khijbdZkZlvky k i ^_db beb _jlbdZevgh_ i_j_f_s_ ly]hc ijm‘bghc fh‘_l khklZ\ [he__
Qlh[u hlj_]mebjh\Zlv ij_^\Zjbl_ gZly‘_gb_ m^Zebl_ riebgl b k^ juqZ]Z DZd mdZaZgh \ur_ ^ ij_^\Zjbl_evgh]h gZly‘_gby g_h \\h^blv beb \u\h^blv rZjgbjgmx

GZly‘_gb_ j_fgy

HI:KGH

J_dhf_g^m_lky ijh_jblv b ijb g_h[oh^bfhklb hl
gZly‘_gb_ j_fgy ^_db ihke_ i_j\uo qZkh\ jZ[hl
fhlhqZkh\ uchj_f_gv ky^_l \ dZgZ\db rdb\Z b fh
ihlj_[h\Zlv j_]mebjh\db lhke_ i_j\h]h i_jbh^Z i
j_dhf_g^m_lky ijh_jylv gZly‘_gb_ j_fgy b ijb g
j_]mebjh\Zlv _]h dZ‘^u_ qZkh\ >ey ijh_jdb g
\uihegbl_ ke_^mxsb_ ^_ckl\bycl_Kk[e?x^f_ju
ij_^hklhjh‘ghklb mdZaZggu_ \ ^Zgghf jmdh\h^k
ex[h]h l_ogbq_kdh]h h[kem‘b\Zgby ljbf_q dhk_be
G_\uiheg_gb_ ijh_jdb b j_]mebjh\db gZly‘_gby
fh‘_l ijb_klb d iehohc ijhba\h^bl_evghklb dhr_
ij_‘^_\j_f_gghfm baghkm j_fgy

HI:KGHI_j_^\uiheg_gb_f ex[uo j_]mebjh\hd beb h
dhkbedb m[_^bl_kv qlh dhkbedZ klhbl gZ jh\ghc
hldexq_gu lhjfha mklZgh\e_g dexq \ugml ^\b]Z
ijh\h^Z k_q_c aZ‘b]Zgby hlkh_^bg_gu hl k_q_c
ba[_‘Zgb_ kem]hZ aZjhmkdZ ?keb l_ogbq_kdh_ h[ke
j_]mebjh\dZ \uihegyxlky ihke_ jZ[hlu dhkbedb ^
hklulv ihkdhevdm gZdhie_gb_ l_ieZ fh‘_l ijb_kl
h‘h]Zf

Figure 3:

l_j__^bl_ jmdhyldm \dexq_gby
iheh‘_gb_ 21
Jmdhc gZ‘fbl_b\Zkpd_ie_gby \
mdZaZgghf gZijZ\e_gbb k mkb25
nmglh\ M[_^bl_kv qlh ih\hjhlg
hklZgZ\eb\Z_lky gZ jZkklhygbb
^xcfZ hl mihjgh]h [helZ

Jbkmgh

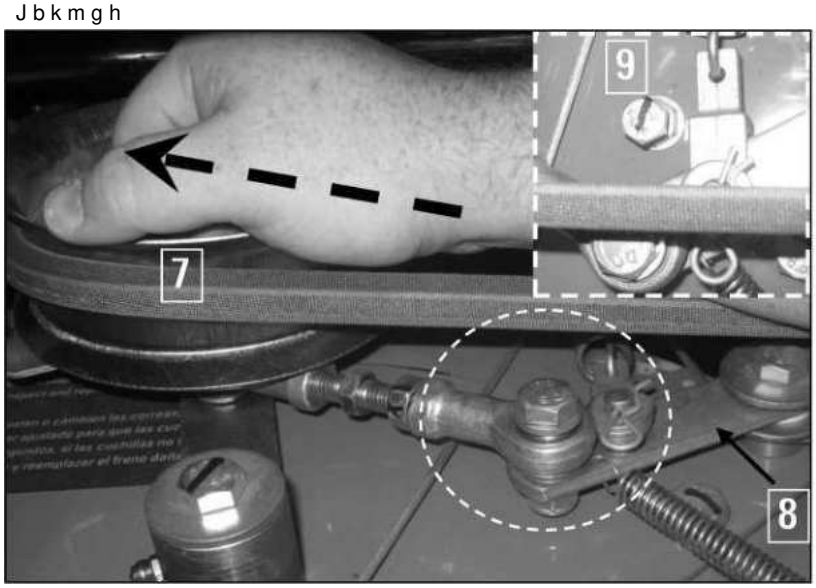
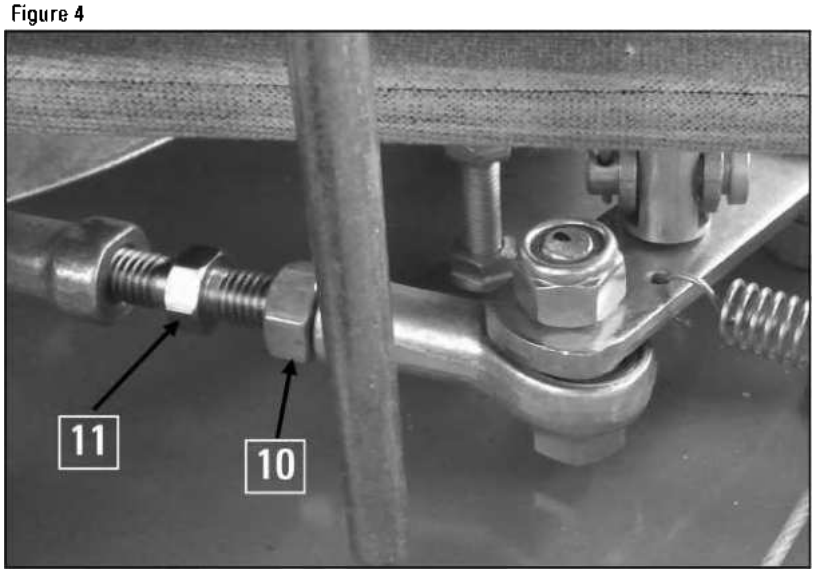


Figure 4:

?keb ih\hjhlguc juqZ] ^hoh^bl ^
[helZ lyg_Zgb_ kebrdhf keZ[h_
l_j__^bl_ jmdhyldm \dexq_gby
iheh‘_gb_ 2)) HkeZ[vl_ dhglj]
ih\hjhlghc ijy‘db Hlj_]mebjr
ih\hjhlghc ijy‘db \u^\b]Zy rd
jmdhyldm \dexq_gby gh‘Z \ iheh
ih\lhjbl_ ijh_jdm ihjb ^Z\e_gb_
nmglh\ b ijh_jvl_ aZahj klhihjg
lh\hjhlguc juqZ] ^he‘_g gZoh^bl
jZkklhygbb hl mihjgh]h [helZ
?keb aZahj gZ ih\hjhlghf juqZ]_
^xcfZ gZly‘_gb_ kebrdhf lm]
fh‘_l ijb_klb d ij_‘^_\j_f_gghf
j_fgy Z lZd‘_ d qj_af_jghc gZ]j
ijm‘bgu kp_ie_gby Hlj_]mebjmc
ih\hjhlgmx ijy‘dm dZd mdZaZgh

Figure 4



J_f_gv ^_db

HI:KGH

J_dhf_g^m_lky ijh\h^blv [ukljuc \bamZevguc h
j_fgy ^_db k lhc '_ i_jbh^bqghklvx qlh b hkfh
j_fgy ^_db Wlm ijh_jdm ke_^m_l \uihegylv d
NbdkZlhj rdb\Z ^\b]Zl_ey ke_^m_l ijh_jylv ijb
^_db beb _kebgvj_hhkdZevau\Z_l kh rdb\Z ^\b]Z

HI:KGHI_j_^\uiheg_gb_f ex[uo j_]mebjh\hd
h[kem'b\Zgb_f dhkbedb m[_^bl_kv qlh dhk
ih_joghklb gh'b hIdexq_gu lhjfha mklZgh
^\b]Zl_ev \udexq_g Z ijh\h^Z k_q_c aZ'b]
hl k_q_c aZ'b]Zgby \h ba[_'Zgb a_kemkdZcg?
l_ogbq_kdh_ h[kem'b\Zgb_ beb j_]mebjh\dZ
jZ[hlu dhkbedb ^Zcl_ mkljhckl\m hklulv ih
gZdhie_gb_ l_ieZ fh'_l ijb_klb d k_jv_aguf

Ijh_jdZ nbdkZlhjh\ j_fg_

Jbkmgh

50 ZimAni hkgZs_gZ nbdkZlhjZfb ^
5 "J"-h[jZaguo nbdkZlhjh\
nbdkZlhjZ rdb\Z ohehklh]h oh
Qlh[u hlj_]mebjh\Zlv nbdkZlhju
hkeZ[vl_ _jogxx]Zcdm b ih_j
nbdkZlhj gZ f_klh lhke_ j_]me
aZdj_ibl_ nbdkZlhj b aZlygbl_
Qlh[u hlj_]mebjh\Zlv nbdkZlhj
ohehklh]h oh^Z ke_]dZ hkeZ[v
\klZ\vl_ nbdkZlhj gZ f_klh b kg
aZlygbl_

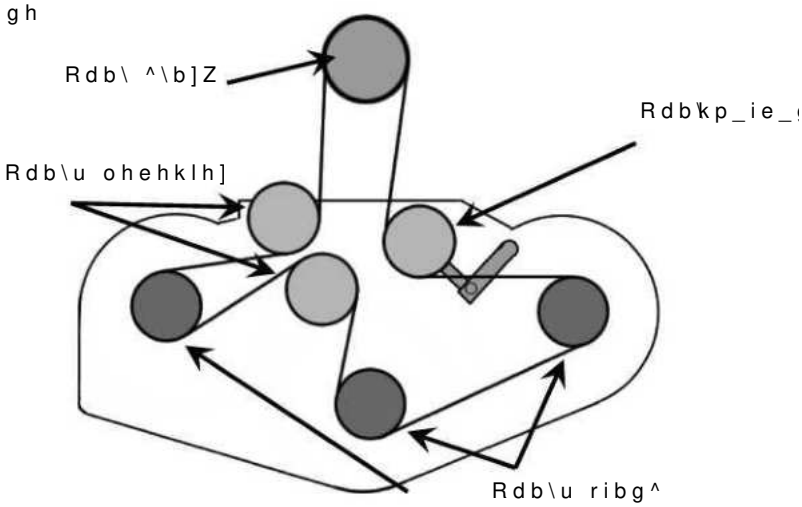


IjhdeZ^dZ j_fgy ^_db

XT5 127

GZXT5 127 bkihevam_lky j_f_g
1360 v.

Jbkmgh



J_f_gv ^_db

Kh[ex^Zcl_ <K? f_ju ij_^hklhjh‘ghklb mdZa
jmdh\h^kl_ ijb \uiheg_gbb ex[h]h l_ogbq_k
h[kem‘b\Zgby \dZhk_bedb

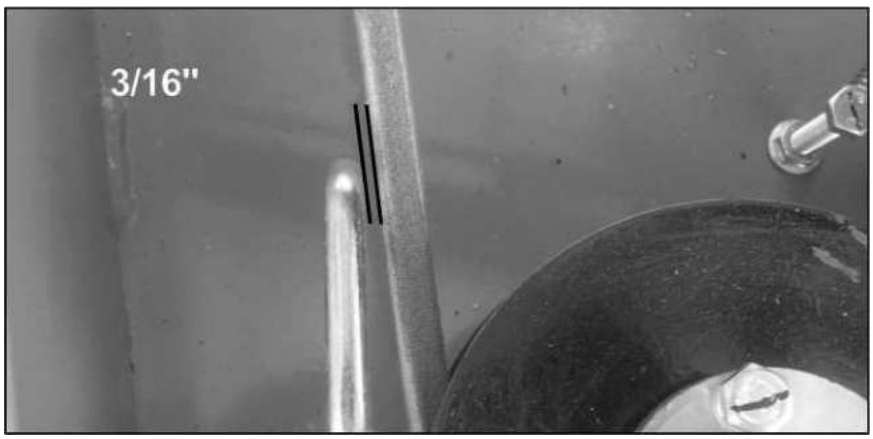
AZahju ^ey nbdkZlhjh\ ijb_^_gu gb‘_ b baf
mklZgh\e_gguo ehiZklyo b \udexq_gghf ^\b]

HI:KGH

HI:KGHI_j_^ \uiheg_gb_f ex[uo j_]mebjh\hd beb
dhkbedb m[_^bl_kv qlh dhkbedZ klhbl gZ jh\ghc
hldexq_gu lhjfZghk_g dexq \ugml ^\b]Zl_ev \u
ijh\h^Z k_q_c aZ‘b]Zgby hlkh_^bg_gu hl k_q_c
ba[_‘Zgb_ kemqZcgh]h aZimkdZ ?keb l_ogbq_kd
j_]mebjh\dZ \uihegyxlky ihke_ jZ[hlu dhkbedb ^
hklulv ihkdhevdmgbZdlhie_Z fh‘_l ijb_klb d k_jv_
h‘h]Zf

Ijh_jdZ nbdkZlhjh\ j_fg_c ^_db

Jbkmgh

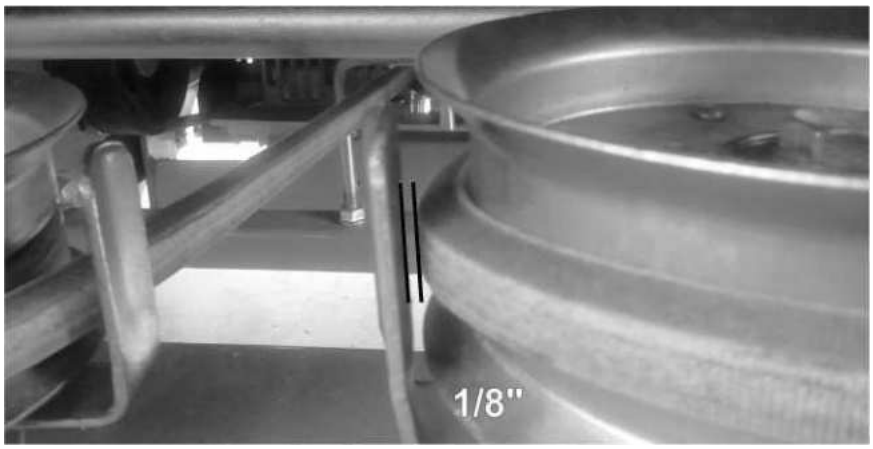


Jbkmghd

AZahj ^ey-yh[j-Zaguo nbdkZlhjh\ kł
3/16"

Qlh[u hlj_]mebjh\Zlv nbdkZlhju
hkeZ[vl_ _jogxx]Zcdm b ih_jg
iheh‘_gb_ M^_j‘bh\Zdk_Zlhj gZ f_
\j_fy aZly]b\Zgby [helZ

Jbkmgh



Jbkmgł

AZahj ^ey nbdkZlhjh\ rdb\Z oh
khklZ\ey_l

Qlh[u hlj_]mebjh\Zlv nbdkZlhju
ohehklh]h oh^Z ke_]dZ hkeZ[v
_jog_c b gb‘g_c qZklb rdb\Z
nbdkZlhj gZ f_klhghbla_Z]Zcdb h[

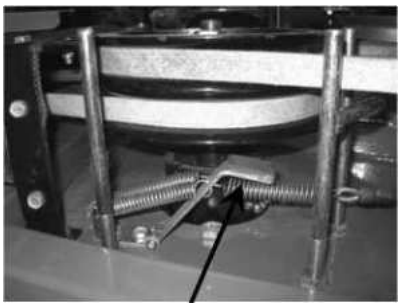
ljh_jdZ b aZf_gZ lhjfhaZ r

<:@GH J_fgb]Zahghdhkbedb j_]mebjmxlky l
qlh[u ehiZklb ij_djZsZeb \jZs_gb_ \ l_q_gb_ k
ihke_ hlimkdZgby juqZ]Z mijZ\e_gby ehiZkly
\uihegy_l_ dZ[hh j_]mebjh\db j_fg_c lh ^ey
[_ahiZkghklb b [_ahiZkghklb hdjm‘Zxsbo \Zk
m[_^blvky qlh j_fgb hlj_jmZ[hh\Zgjahf qlh
khhl_lkl\h\Zlv wlbf dhgkljmdlb\guf oZjZdl_jb

ljh_jdb lhjfhaZ ehiZklb b rdb\Z ke_‘
ijh\h^blv q_j_a dZ‘^u_ pbdeh\ \de
\udexq gby ehiZklb

l_j_^ gZqZehf h[kem‘b\Zgby ijhZ[hh\Zgjahf qlh
ih_joghklb \qhde_x ehiZklb \udexqbl_ ^\b]Zl
mklZgh\bl_ lhjfha \ugvl_ dexq ba \udexqZl
^hklZlhqgh_ \j_fy qlh[u m[_^blvky qlh ehi
\jZsZxlky b kgbfbl_ ijh\h^Z k_q_c aZ‘b]Zg
aZ‘b]Zgby

1. <dexqbl_ jmdhyldm gh‘Z m[_^\hbl]Zkv ev
   aZimklblky qlh[u kgylv lhjfhaZ kh rdb\
2. Kgbfbl_ aZsblguc dh‘mo rdb\Z k ^_db
3. ljh_jvl_ lhjfhagu_ dheh^db gZ ij_^f_l ba
   M[_^bl_kv qlh rdb\u g_ dZkZxlky f_lZee



4. LhesbgZ fZl_jbZeZ lhjfhaghc dheh^db ^l
   ijbf_jgh ^xZcf AZf_gbl_ lhjfhaZ _ke
   fZl_jbZeZ khklZ\ey_l f_g__ ^xcfZ

   ljbf_qZgb AZf_gZ h[hbo lhjfhah\ j_dhf
   keb lj[m_lky aZf_gZ h^gh]h lhjfhaZ

5. Qlh[u aZf_gblv lhjfha kgbfbl_ihjhmsbgu k
   iehkdh]m[p_\
6. <u_jgbl_ ^\Z dj_i_‘guo [helZ b hlkh_^bgl
   dZ[_ey
7. <u[jhkvl_ \k_ wlb ^_lZeb G? bkihevamcl_
   ih\lhjgh Gh\u_ lhjfhaZ hkgZs_gu gh\ufb
   ijZ\bevgh]h lhjfh‘_gby
8. MklZgh\bl_ gh\u_ lhjfhaZ ^\uihlbgb\\ h[jZl
   ihjy^d_ \ rZ]Zo b

Hlkh_^bgbl_ jmdhyldm gh‘Z b hkfhljbl_ dhglZ
lhjfhaZ <_kv dhglZdlguc lhZ[hh\Zgjahf qlh
khijbdZkZlvky k gb‘g_c qZklvx rdb\Z

ljbf_qZgb ljm‘bgu fh]ml hlebqZlvky hl bah[jZ‘_g
aZ\bkbfhklb hl dhgdj_lgh]h ijbf_g_gby

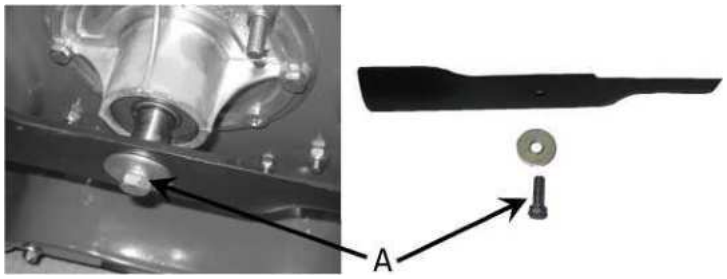
Ba\e_q_gb_ e_a\bc

G_h[oh^bfu_ bgkljmf_dgelxu
gZ ff

HKLHJH@

HKLHJH@GHkl_j_]Zcl_kv j_‘msbo djhf
e_a\byo <jZs_gb_ h^ghc ehiZklb fh‘_
\jZs_gb_ ^jm]hc ehiZklb ehiZkl_c l

1. ljbiZjdmcl_ dhkbedm gZ jh\ghc iehsZ^d_ mk
   aZ[ehdbjmcl_ aZ^kgZ_qlhe_u ij_^hl\jZlblv kemc
   hldZl
2. Ih^gbfbl_ i_j_^gxx qZklv dhkbedb b mklZgh\b
   ^hfdjZlZ
3. K ihfhsvx h^gh]h]Z_qgh]h dexqZ hkeZ[vl_]Z
   m^_j‘b\Zy e_a\b_



>ey ih\lh
mklZgh\db \klZ\vl_ [hel kh klhihjghvcrhZ[hck
rZc[hc \ ribg^_ev

5. <:@GHDhebq_kl\h jZkihjhd \k_]^Z ^he‘gh [ulv
   dZ‘^hf [hel_ ehiZklb GBDH=>: g_ klZ\vl_ jZ
   e_a\by b GBDH=>: g_ \uijyfeycl_ b g_ k\Zjb

<:@GH J_fgb]Zahghdhkbedb j_]mebjmxlky l
qlh[u ehiZklb ij_djZsZeb \jZs_gb_ \ l_q_gb_
hlimkdZgby juqZ]Z mijZ\e_gby ehiZklyfb ?keb
dZd[he_b[h j_]mebjh\db j_fg_c lh_ce[y aZiZkghkl
[_ahiZkghklb hdjm‘Zxsbo \Zk ex^_c \u ^he‘gu

J_]mebjh\dZ j_fgy ^\b]Zl_ey d]b^jhklZlbq_kdbf ijb\h^Zf \oh^g j_f_gv]b^jhkbkl_fu

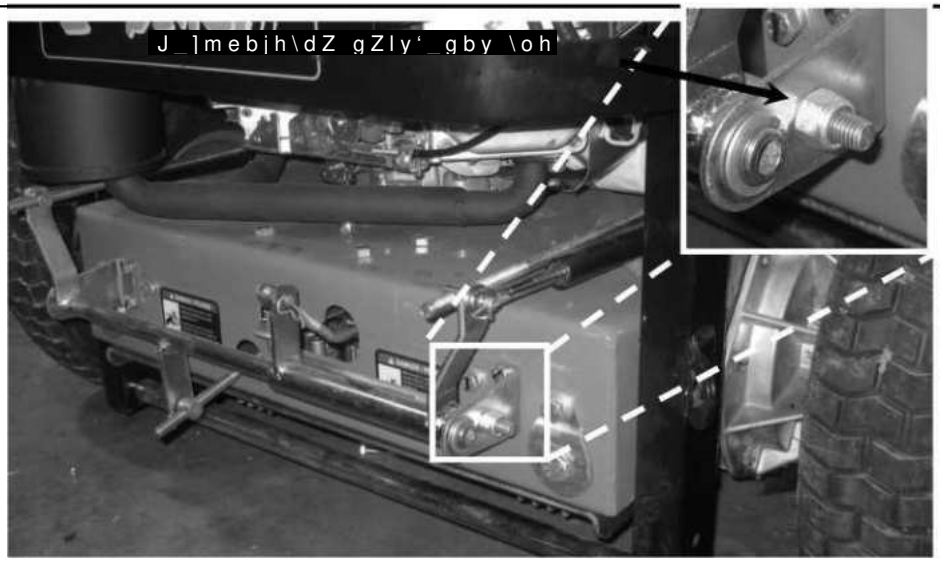
<oh^ghc j_f_gv]b^jhkbkl_fu ih^ rZkkb \ aZ^g_c qZklb dhk i_j\hgZqZevghc mklZgh\d_ j_ i_j_f_sZlvky ijbf_jgh-gZ ^xc ijb ^Z\e_gbb hl lj_o ^h iyl nmglh\ ijbeh‘_gghf d j_fgx i f_‘^m rdb\Zfb]b^jhklZlbq_kd ijb\h^Z ljbf_jgh q_j_a qZk m[_^bl_kv qlh gZly‘_gb_ j_f ijZ\bevgh_ b ijb g_h[oh^bfhk ih^lygbl_ _]h

<:@GHG_ aZly]b\Zcl_ j_f_gv kbevgh

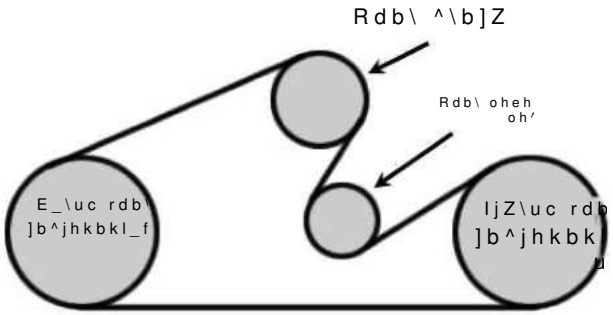
Qlh[u hlj_]mebjh\Zlv j_f_gv]Zcdm gZ j_av[h\hf gZly‘ghf jZkiheh‘_gghf gZ ijZ\hf aZ^g dhkbedb

G_ aZly]b\Zcl_ kebrdhf kbevg fh‘_l ijb_klb d ih\j_‘^_gbx k]b^Z\ebq_kdh]h ijb\h^Z

J_f_gv]b^jhijb\hgZ]hj_[_jguc debgh\hc j_f_gv 3.



<b^ k_j



AZ^gyy qZklv

Ko_fZ \oh^gh]h j_fgy]b^jh

HKLHJH@

Qj_af_jgh_ aZly]b\Zgb_ \oh^gh]h j_fgy ijb_^_l d ih\j_‘^_gb

J_]mebjh\dZ]b^jhkbkl_fu
=b^jhklZlbq_kdb_ ijb\h^u kh_^bg_gu k \uoh^gufb ijb\h^Zfb fgh]hjmqv_\uf debgh\b^guf j_fg_
i_jbh^bq_kdh_ ih\lhjgh_ gZly‘_gb_ j_fgy ?keb ijhba\h^bl_evghklv kgb‘Z_lky beb jmdhyldb
dhe_kZ g_ ih\hjZqbjZxlkvl_ fgh]hjmqv_\hclj_jf_^gyZqZehf ke_^mxs_]h bkiulZgby ijhqblZcl_ \
ij_^mij_‘^_gby \ ^Zgghf jmdh\h^kl_ ?keb \Zf g_m^h[gh \uihegylv wlm ijhp_^mjm h[jZlbl_k
gZkljhcdb h[kem‘b\Zgby

Hlj_]mebjmcl_ [helu]b^jhj_jZeygm\dh_ [hevbe_ebf_ljh\u_]Zcdb gZ aZ^g_c qZklb dhkbedb
[hjlh\hc i_j_^Zqb lZd qlh[u \ p_glj_ j_fgy hklZ\Zehkv ijbf_jgh ijh]b[Z ijb ^Z\e_gbb



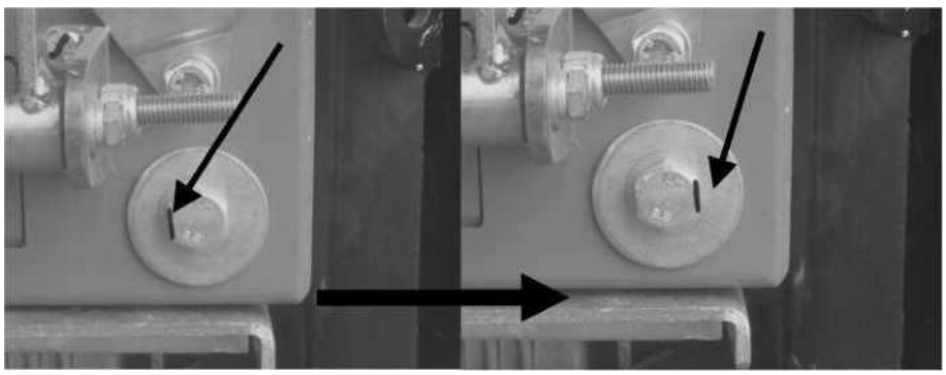


Ke_^mxsbc-rjZh_^_gb_ bkiulZgby kl_ghc ljbdhld ghkb^\b‘ghfm
ij_^f_lm k ih^deZ^dhc >ey ihemq_gby lhqguo j_amevlZlh\ emqr
rebnh\ZggZy [_lhggZy ih_joghklv <klZgvl_ jy^hf k dhkbedhc
kb^_gv_ AZimkdZcl_ dhkbedm ^_j‘Zkv h^ghc jmdhcklZ\Zbv^_gv
ij_^hojZgbl_evguc \udexqZl_ev MklZgh\bl_ e_\mx [hdh\mx jmd
;ukljh i_j__^bl_ jmdhyldm \ ihegh_ i_j_^g__ iheh‘_gb_ ijbf_jgh
ijh^_eZcl_ lm ‘_ ijhp_^mjm k ijZ\hc klhjhgu ?keb j_fg_gv\jZsZ‘bll
h[_bo klhjhg aZlygbl_ [hel]b^jhj_jZeygm\dh_]Zcdb gZ^hc klhjhgu
h^gh\j_f_ggh



Ih\lhjycl_ l_kl ^h l_o ihj ihdZ h[_ rbgu g_ ihl_jyxl kp_ie_gb_ k
\jZsZlvky

Dh]^Z gZly‘_gb_ [m^_l mklZgh\edZ^hZddhelhkb _^\Z kju\Zeh
hlf_lvl_ [hel k h^ghc klhjhgu r_klb]jZgghc]heh\db dZd ihd
hkeZ[vl_ [hel ih_jgbl_ ijhlb\ qZkh\hc-klhjhdZ gZZdihehu f_
l_i_jv gZoh^beZkv gZ ^jm]hc klhjhg_ lWlhgb[_jkifgybl gZ[u h
\ba‘Ze b ^hklZlhqguc djmlysbc fhf_gl ^ey ^\b‘_gby b dhr_g
j_fgy beb]b^jhkbkl_fu



L_i_jv ijh_^bl_ dhkbedm ih ljZ\ygbklhc ih_joghklb <uihegbl_ g_kdhevdh gme_\uo ih\hjhh
?keb jZ[hlZ ijhbkoh^bl g_Zddmjlgh beb gZ[ex^Z_lky aqZlyg bjhet gZhg jhf[hyhlZ b ijh_^bl_
bkiulZgb_ lhke_ j_]mebjh\db kgh\Z mklZgh\bl_ aZ‘bfu]b^jhnbdkZlhjZ

?keb dhkbedZ kebrdhf j_a\Zy beb \u ohlbl_klmf_qhlhfbly_fhsh^bhvke^Zjy[hel gZ h[hjhlZ b
ih\lhjbl_ ijh_jdm >himkdZ_lky i_jbh^bq_kdh_ qbjdZgv_ j_fg_f ?keb j_f_gv \ba‘bl kebrdhfb
ih\lhjbl_ ijh_jdm

J_]mebjh\dZ kbkl_fu [_ah

IJ?>MIJ?@ ?GB

IJ?>MIJ?@>?GB?h[Gh^bl_ g_ fh^bnbpbjmcl_ baf_gycl_ b g_ hldexqZcl_ kbkl_fm [_ahiZkgh jZa i_j_^ gZqZehf dhr_gby m[_^bl_kv qlh kb [ehdbjh\db iheghklvx kjZ[hlZeZ G_\uiheg_gb lj_[h\Zgby fh‘_l ij_^klZ\eylv hiZkghklv ^ey \Z hdjm‘Zxsbo

H[uqgh kms_kl\m_l ljb kihkh[Z j_]mebjh\d ij_^hojZgbl_evgh]h \udexqZl_ey GZb[he__ il j_]mebjh\db dZ‘^h]h i_j_dexqZl_ey aZ\bkbl h ijbf_g_gby f_klZ mklZgh\db b oZjZdl_jZ ijh[klhedgmebkv

F_lh^ Hlj_]mebjmcl_ jZkiheh‘_gb_ k ihfhsv \bglh\

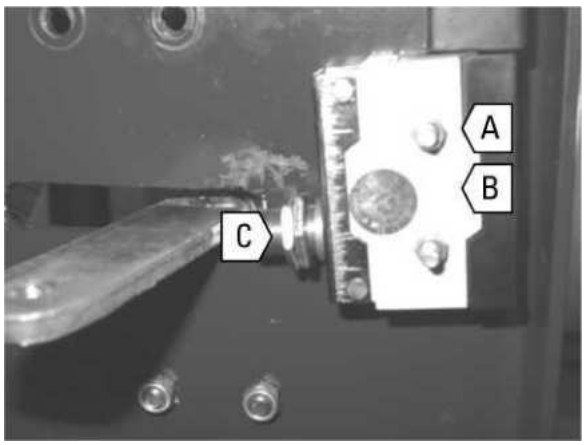
1. I_j__^bl_ juqZ] mijZ\e_gby gh‘Zfb \ iheh
2. HkeZ[eycl_ \bglu $ ^h l_o ihj ihdZ ij_^ \udexqZl_ev % g_ [m^_l k\h[h^gh i_j_f_
3. Iehlgh ijb^\bgvl_ ij_^hojZgbl_exqgZuc_e\ude% djb\hrbim gh‘Z &
4. AZlygbl_ \bglu $ b m[_^bl_kv qlh ij_^h \udexqZl_ev % g_ i_j_f_sZ_lky

F_lh^ Hlj_]mebjmcl_ jZkiheh‘_gb_ l j_]mebjh\hqguo]Z_d gZ dhjimk_ i_j_dexqZ

1. HkeZ[vl_ klhihjgmx]Zcdm^ZlqbgZZ\Zem
2. Hlj_]mebjmcl_ jZkiheh‘_gb_ \udexqZl_e
3. AZlygbl_ klhihjgmx]Zcdm dh]^Z [m^_l ijZ\bevgZy j_]mebjh\dZ

F_lh^ I_j_ghk fhglZ‘guo hl_jklbc

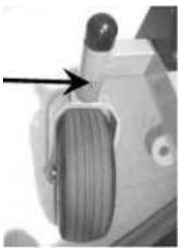
< j_^dbo kemqZyo dh]^Z dhfihg_glu hdZau\Z g_kh\f_s_ggufb kZfuf ijhkluhfkjh\kmebjh\db jZkiheh‘_gby y\ey_lky m^ebg_gb_ kms_kl\mx ^h[Z\e_gb_ gh\uo hl_jklbc ^ey ^hklb‘_gby [h ijbe_]Zgby f_‘^m kl_j‘g_f Zdlb\Zpbb b ^Zlqbd



>ey h[_ki_q_gby gZ^e_'Zs_c kfZadb ^\b'mjsbdhfy g^ml_lckfZau\Zlv ke_^mxsb_ dhfihg_glu \ukhd \ukhdhl_fi_jZlmjghc kfZadhc (3 beb wd\b\Ze_glghc ?keb mkeh\by wdkiemZlZpbb [m^ml [he_ fh'_l ihlj_[h\Zlvky khdjZlblv J_dhf_g^m_fuf kfZahqeyf_lZy dhZkbkl_glgZy kfZadZ *75 23(

JZkiheh'_gb_ lhq_d kfZadb
50-^xcfh\Zy dhkbedZ bf__l lhqdb kfZadb

KfZau\Zcl_ ihke_ dZ'^uo qZk bkihevah\Zgby
l_j_^gb_ dhe_kZ f_klZ ih dZ'^h]h dhe_kZ



lh\hjhlguc juqZ] rdb\Z kp_ie_hgbZ-^xcfh\hc ^



AZf_gZ [ZlZj_b
ljb hlkh_^bg_gbb ZddmfmeylhjZ m[_^bl_kv qlh hlkh_^bgy_lky hljbpZl_evgZy de_ffZ Z\iheh'b ihke_^gxx hq_j_^v ljb ih\lhjghf ih^dexq_gbb l ih^dexqbl_ iheh'bl_evguc ijh\h^ Z h-ljbpZl_^gb



AZf_gZ [ZlZj_b
<k_]^Z aZjy'Zdmfmeylhj \ hldjulhf ohjhrh ijh_ f_kl_ \^Zeb hl bkdj b ieZf_gb HldexqZcl_ aZj k_lb i_j_^ ih^dexq_gb_f beb hldexq_gb_f hl [Z gZ^_\Zcl_ aZsblgmx h^_'^m b bkihevamcl_ bah bgkljmf_glu

Dhg_qgZy i_j_^ZqZ \ k[hj_ f_klZ il dhg_qghc i_j_^Zq_



Ribg^_eb bf_xl aZdjulu_ ih^rbigbdb Hgb h[kem'b\Zgbb b ijhkem'Zl]hjZa^h ^hevr_ g_]_jf_lbqgu_ ribg^_eb

HI:KGH



HI:KGH We_dljhedlmZmeylhjZ kh^_j'bl k_jg dbkehlm dhlhjZy fh'_l \ua\Zlv kbevgu_ h' y\ey_lky kf_jl_evguf y^hf Gbdh]^Z g_ i_c ba[_]Zcl_ dhglZdlZ gZ^_\Zy i_jqZldb b aZ ijb h[kem'b\Zgbb [ZlZj_b

IJ?>MIJ?@>?G

IJ?>MIJ?@>?GB? G_ ^himkdZcl_ qlh[u c ZddmfmeylhjZ dZkZebkv f_lZeebq_kdbo qZk ijb kgylbb ZddmfmeylhjZ Gbdh]^Z g_ ^hi aZfudZgby f_lZeebq_kdbo bgkljmf_glh\ f_ de_ffZfb ZddmfmeylhjZ b f_lZeebq_kdbfb dhkbedb lZd dZd wlh fh'_l \ua\Zlv bkdj_g fh]ml lZd'_ \ua\Zlv\\jaZah\ ZddmfmeylhjZ fh'_l ijb_klb d ljZ\fZf kf_jlb

DjZldhkjhqgh_ ojZg_gb_

>Zcl_ ^\b]Zl_ex hklulv ojZg_gb_f b g_ ojZ
\[ebab ieZf_gb kbevgh]h gZ]j_\Z b \haf
\hkieZf_g_gby hl bkdj

I_j_^ ojZg_gb_f \k_]^Z m^Zeycl_ \k_
e_]dh\hkieZf_gyxsb_ky fZl_jbZeu Z lZd

Gbdh]^Z g_ bkihevamcl_ fhcdm ih^ ^Z\e
ihiZ^Zgby \h^u gZ mZjZ\ev_gby ^\b]Zl_ev
]b^jhgZkhku

Fhcl_ lhevdh fy]dbf fhxsbf kj_^kl\hf b \

Ihke_ fulvy fZrbgu \dexqbl_ ^\b]Zl_ev g
mjh_gv b ^Zcl_ dhkbed_ ihjZ[hlZlv \ l_

HldexqZcl_ lhieb\h ijb ojZg_gb_f \k_]^Z ihjeb\h\d

Hklhjh'gh kgbfbl_ ^Z\e_gb_ k dhfihg_gl
gZdhie_gghc wg_j]b_c

OjZgbl_ dhkbedm lhevdh gZ a_fe_

G_ keb\Zcl_ lhieb\h \ ihf_s_gbb beb \[e

Ijb g_h[oh^bfhklb bkihevamcl_ ih^klZ\d
^ey ih^^_j'db dhfihg_glh\

Ijb ojZg_gbb \k_]^Z iZjdmcl_ fZrbgm gZ jl
iehsZ^d_ b klZ\vl_ gZ klhyghqguc lhjfha

OjZgbl_ fZrbgm \ qbklhf b kmohf ihf_s_

<k_]^Z \ugbfZcl_ dexq ba aZfdZ aZ'b]Z

>h[Z\vl_ dhg^bpbhg_j gZ g_nlyghc hkg
ihjZ[hlZcl_ fbgml qlh[u hg ejZkijh^dhb

JZkrbj_ggh_ ojZg_gb_

AZf_gZ \ha^mrgh]h nbevljZ

I_j_^ ojZg_gb_f m[_^bl_kv qlh \k_ lhi

Qlh[u m[_^blvky qlh ba dhkbedb kebll
i_j_^ ojZg_gb_f aZimklbl_ dhkbedm ih
[_gabg

Ijh_jvl_ khklhykgbq_c aZ'b]Zgby b aZe
klheh\u_ eh'db fhlhjgh]h fZkeZ \ hl_jl
aZ'b]Zgby hklZ\b\ ijh\h^ k_qb g_ ih^

GZdju\Zcl_ fZrbgm ijb ojZg_gbb

Kgbfbl_ Zddmfmeylhjgmx [ZlZj_x b h
b dZ[_evgu_ jZat_fu OjZgbl_ Zddmff
ijhoeZ^ghf f_kl_

<k_ qlh]h\hjbehkv h djZldhkjhqghf
ke_^m_l ijbf_gylv b d ^ebl_evghfm o

Ijh[e_fZ	<hafh‘gu ijbqbgu	J_r_gb_
>\b]Zl_ev g_ aZimkdZ	Dexq \ iheh‘_gbb 2)) G_^hklZlhqgh_ dhebq_kl\h Imauj_d \ha^moZ \ lhieb\hi 4. Lhieb\guc deZiZg \ iheh‘_gb >jhkk_ev g_ \dexq_g GZjmr_gZ j_]mebjh\dZ ^jhk Gbadbc mjh_gv fhlhjgh]h f 8. MijZ\e_gb_ ehiZklyfb \ iheh HkeZ[e_gguc ijh\h^ k_qb a AZkhj_ggZy k_qZ aZ‘b]Zg AZ[bluc beb aZ]jy\ha^mrguc ;_gabg iehoh]h dZq_kl\Z <ha^mrguc nbevlj aZ[bl be Ij_^hojZgbl_evgu_ \udexq \ujh\g_gu beb hkeZ[e_g ;ZlZj_y jZajy‘_gZ fh^_eb we_dljbq_kdbf aZimkdhf	Ih_jgbl_ dexq \ iheh‘_gb_ 21 >h[Z\blv [_gabg AZimklbl_ ^\b]Zl_ev beb \uljyogbl_ imauj <dexqbl_ deZiZg <dexqbl_ ^jhkk_ev Kf jmdh\h^kl\h ihevah\Zl_ey ^\b]Zl_ey >h[Z\vl_ fhlhjgh_ fZkeh I_j__^bl_ juqZ] \ iheh‘_gb_ <UDE AZlygbl_ ijh\h^ beb kh_^bg_gby Hqbklbl_ beb aZf_gbl_ k_qm Hqbklbl_ beb aZf_gbl_ \ha^mrguc nbevlj Ke_cl_ b aZf_gbl_ k_‘bf [_gabghf AZf_gbl_ lhieb\guc nbevlj Hlj_]mebjmcl_ beb aZlygbl_ i_j_dexqZl_e ijhqblZcl_ ij_^mij_‘^_gby I_j_aZjy^bl_ beb aZf_gbl_ Zddmfmeylhj
>\b]Zl_ev g_ ijh^he‘Z jZ[hlZlv \udexqZ_lky	<h^Z \ lhieb_ Ij_^hojZgbl_evguc \udexqZ Lhieb\guc deZiZg \ iheh‘_g <ha^mrguc nbevlj aZ]jyag_ AZf_gZ \ha^mrgh]h nbevlj Z Gbadbc mjh_gv fhlhjgh]h f	Ke_cl_ b aZf_gbl_ k_‘bf lhieb\hf I_j_dexqZl_ev j_]mebjh\db klj <dexqbl_ deZiZg 4. AZf_gbl_ lhieb\guc nbevlj Hqbklbl_ beb aZf_gbl_ \ha^mrguc nbevlj >h[Z\vl_ fhlhjgh_ fZkeh
>\b]Zl_ev hklZgZ\eb\ \dexq_gbb gh‘_c	Ij_^hojZgbl_evguc \udexqZ hkeZ[e_g Kebrdhf kbevgh_ gZly‘_gb_ EhiZklb aZdebgbeh ihklhjh fZl_jbZehf	I_j_dexqZl_ev j_]mebjh\db i Hlj_]mebjmcl_ j_f_gv i M^Zebl_ bghjh^guc fZl_jbZe Ijbf_qZgb_ Bgh]^Z ijh[e_fm fh‘gh j_rblv _ke i_j__klb juqZ] mijZ\e_gby gh‘hf \ iheh‘_gb_ m[_^blvky qlh ij_^hojZgbl_evguc \udexqZl_ \dexq_g
EhiZklb g_ \jZsZxlky	KehfZgguc j_f_gv HkeZ[e_gguc j_f_gv G_ hlj_]mebjh\ZgZ ly]Z \de ehiZklb	AZf_gbl_ j_f_gv 2. Hlj_]mebjmcl_ j_f_gv i Hlj_]mebjmcl_ kh_^bg_gb_ klj
J_fgb \ba‘Zl ijb \dexq ehiZkl_c	G_ijZ\bevgh_ gZly‘_gb_ j_f Qj_af_jguc baghk j_fgy	Hlj_]mebjmcl_ gZly‘_gb_ j_fgy i 2. AZf_gbl_ j_f_gv
IjhkdZevau\Zgb_ j_fg \dexq_gbb ehiZkl_c	G_ijZ\bevgh_ gZly‘_gb_ j_f Qj_af_jguc baghk j_fgy	Hlj_]mebjmcl_ gZly‘_gb_ j_fgy i AZf_gbl_ j_f_gv

ljh[e_fZ	<hafh‘gu_ ijbqbgu	J_r_gb_
DhkbedZ g_ ^\b‘_lky beb gZaZ^	Lhjfha \dexq_g <ulygmlu_ h[\h^gu_ juqZ]b	Hlimklbl_ lhjfha gZ iZg_eb mijZ\e_gby M[_^bl_kv qlh h[\h^gu_ lygmlu
>\b]Zl_ev i_j_]j_\Z_l	=jyav \ lhieb\hijh\h^_ AZf_gZ \ha^mrgh]h nbevljZ Gbadbc mjh_gv fhlhjgh]h 4. AZkhj_ggZy k_qZ aZ‘b]Zgb G_ijZ\bevgh_ bkihevah\Zg Lmiu_ ehiZklb G_bkijZ\ghklv ih^rbigbdZ	AZf_gbl_ lhieb\guc nbevlj b ijhfhcl_ [Zd Hqbklbl_ beb aZf_gbl_ \ha^mrguc nbevlj >h[Z\vl_ fhlhjgh_ fZkeh K_qZ aZ‘b]Zgby aZkhj_gZ Dhkbl_ f_^e_gg__ ih^h‘^bl_ ihdZ ljZ\Z AZlhqbl_ j_‘msb_ ehiZklb <uihegbl_ h[kem‘b\Zgb_
LjZ\Z ih^kljb‘_gZ g_j beb g_ qbklh	Lmiu_ ehiZklb Dhr_gb_ kebrdhf [ukljh ^e LjZ\Z fhdjZy beb ih‘moeZy 4. EhiZklv ih]gmlZ >Z\e_gb_ \ rbgZo g_ h^bgZ >_dZ mklZgh\e_gZ gZ g_jZ EhiZklb mklZgh\e_gh]Zfbjo lh^ ^_dhc kdZieb\Z_lky ke ljZ\u b fmkhjZ	AZlhqbl_ ehiZklb Kgb‘Zcl_ kdhjhklv \h \j_fy j_adb >Zcl_ ljZ_ \ukhogmlv qlh[u hgZ \klZeZ AZf_gbl_ ehiZklv >h[Z\vl_ ^Z\e_gb_ \ha^moZ \ rbgZo k gba MklZgh\bl_ ^_dm gZ h^bgZdh\hc \ukhl_ Kgbfbl_ b ijZ\bevgh mklZgh\bl_ ehiZklb Hqbklbl_ hl fmkhjZ
Dhkbedm \k_]^Z lyg_ klhjhgm	J_]meylhju g_ hlj_]mebjh\Z HldZjaZgkfbkkbb	Hlj_]mebjmcl_ j_]meylhju <uihegbl_ h[kem‘b\Zgb_

Ba^_eby gZ dhlhju_ jZkijhkljZgy_lky gZklhysZ]ZjZglby	>EBL?EVGHKLV =:J:GLBB i_j\hgZqZevghc jhagbqghc ihdmidb		
	;ulh\h_ bkihevah\Zgb_	Dhff_jq_kdh_ bkihevah\Zgb	:j_g^Z
>\b]Zl_ev	=ZjZglby ijhba\h^bl_ey	=ZjZglby ijhba\h^bl_ey	=ZjZglby ijhba\h^bl_ey
LjZgkfbkkby	]h^ h]jZgbq_ggZy	]h^ h]jZgbq_ggZy	^g_c h]jZgbq_ggZy
JZfZdhkbedb	lh‘bag_ggh lhevdh ^ey i_j\hgZqZevgh]h \eZ^_evpZ	lh‘bag_ggh lhevdh ^ey i_j\hgZqZevgh]h \eZ^_evpZ	^g_c
J_fgb rbgu Zddmfmeylhj l_ogbq_kdh_ h[kem‘b\Zgby	^g_c	^g_c	^g_c
ljbgZ^e_‘ghklb	]h^ h]jZgbq_ggZy	]h^ h]jZgbq_ggZy	^g_c h]jZgbq_ggZy

>EBL?EVGHKLV =:J:GLBB mZeylhju ihklZ\ey_fu_ k khhl_lkl\mxsbfb ijh^mdlZfb \ dZq_kl_ klZ
h[hjm^h\Zgby jZkijhkljZgy_lky gZklhysZy]ZjZglby \ l_q_gb_ ^g_c k ^Zlu i_j\hgZqZevgh]h ^ghu
^_lZeb lZdb_ dZd fZkeZ‘bkZgby nbevlju b ehiZklb]ZjZglby g_ jZkijhkljZgy_lky

>ey ihemq_gby ijZ\Z gZ ^Zggmx]ZjZglbx
Ba^_eb_ ^he‘gh [ulv ijbh[j_l_gh \ KR: m ^be_jZ mihegh fhq_ggh]h dhfiZgb_c *;L 2XWGRRU 3R
]ZjZglby jZkijhkljZgy_lky h]jZgbq_ggZy ihagbqgh]h ihdmiZl_ey \eZ^_evpZ \ l_q_gb_ khhl_lkl\mxs_]h]ZjZg
Q?D IH>L<?J@>:XSBC IHDMIDM >EY IHEMQ?GBY =:J:GLBB G?H;OH>BFH BF?LV >HDMF?GL

Qlh *;L 2XWGRRU 3RZHU [m^_l j_fhglbjh\Zhv]Zeyl^hdZeaZdbf_gylv i
*;L hlj_fhglbjm_l beb aZf_gbl ih k\h_fm \u[hjm ex[mx ^_lZev dhlh^hjZy ddZdl^hdZeaZdbeybeaylh
ijb ghjfZevghf bkihevah\Zgbb \ l_q_gb_ khhl_lkl\mxs_]h]ZjZglbcgh]h kjhdZ kgZkqhlyf_bk^dexq
=ZjZglby Zggmebjm_lky _keb \eZ^_e_p g_ kh[ex^Z_l ij_^ibkZggu_ ijhp_^mju h[kem‘b\Zgby b w
jmdh\h^kl_ < qZklghklb wlh dZkZ_lky h[_ki_q_gby j_]meyjghc kfZadb b aZf_gu hZkeZ ijbkihev
ojZg_gbb ijh^mdlZ b g_^hims_gby i_j_]jmadb ijh^mdlZ

DhfiZgby *;L bf__l ijZ\h \aukdZlv k \eZ^_evpZ jZkoh^u gZ]ZjZglbcgh_ h[kem‘b\Zgb_ _kebgZm^
g_bkijZ\ghklb g_ k\yaZgZ k ^_n_dlhf fZl_jbZeZ< beZdkbgh]hlh\e^Zgby]ZjZglby g_ jZkijhkljZgy_lky
_s_kl\Z \ lhieb_ beb fZke_ ih\j_‘^_gby \ua\Zggu_ g_kh[ex^_gb_f ij_^ibkZgguo ij_^mij_‘^_gb
g_kh[ex^_gb_ gZ^e_‘Zsbo ijhp_^mj l_ogbq_kdh]h h[kem‘b\Zgby b ojZg_gbb ijh^mdlZ b ihjZg‘^gby n \ua\Zggu_ g_ijZ\
bkihevah\Zgb_f ljZgkihjlbjh\dhc h[jZ[hldhc beb ojZg_gb_f

< l_q_gb_ i_j\h]h]h^Z]ZjZglbcguc j_fhgl [m^_l hkms_kl\eylvky [_a hieZlu ^_lZe_c b ljm^haZlj

<k_ aZf_g_ggh_ ih]ZjZglbb klZgh\blkydhhijZgb_gg_jhlvAZf_g_ggu_ ih]ZjZglbb ^_lZeb [m^ml kqbl
hjb]bgZevgh]h ba^_eby b kjhd ^_ckl\by]ZjZglbb gZ wlb ^_lZeb [m^_l kh\iZ^Zlv kh kjhdh_feb_ck

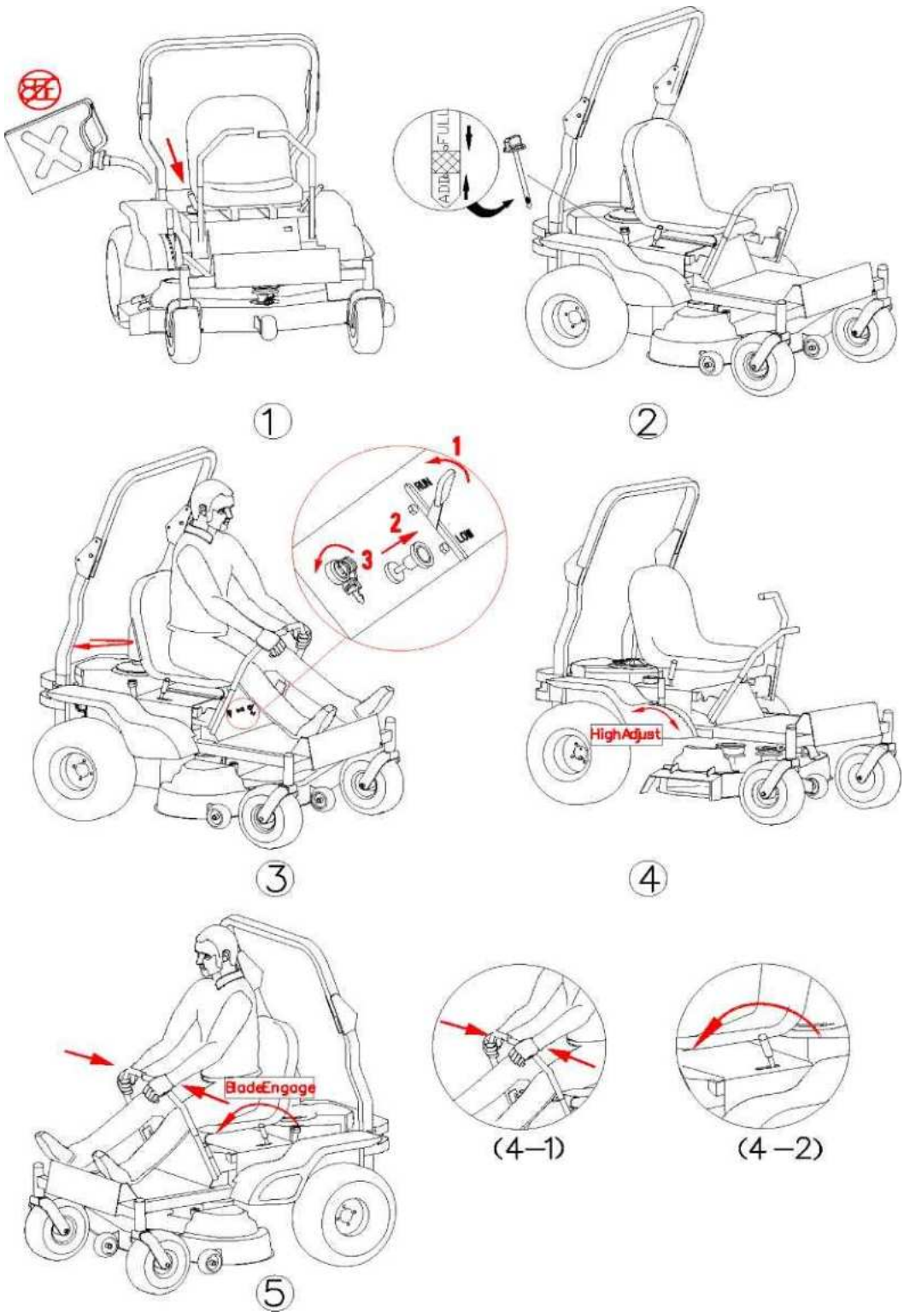
>ey ihemq_gby]ZjZglbcgh]h h[kem‘b\Zgby
<u ^he‘gu aZ[jZlv ijZmAmidZdk_kkmZj aZiZkgmx qZklv h^_‘^m beb kbeh\h_ h[hjm^h\Zgb_ gZ dl
aZiZkgZy qZklv b ^hdZaZl_evkl\h ihdmidb aZ k\hc kq_l ?keb \u g_ fh‘_l_ ihemqblv]ZjZgu bcgl
ihemq_gguf]ZjZglbcguf h[kem‘b\Zgb_f ij_^ijbfbl_ k-e_j^mxsk\yrZ]bkv<k f_g_^‘_jhf khhl_lkl\mx
k_j\bkgh]h p_gljZ h[uqgh wlh iha\hey_l j_rblv ijh[e_fm H^gZdh _keb \Zf ihlj_[m_lky ^hihegbl
iha\hgbl_ \3DLUWV 6HUYLFH <u g_k_l_ hl_lkl_gghklv aZ ljZgZimAmlbjk_dmbkZu c]p_bgaj_beb jZlg
DhfiZgby *;L 3DUWV 6HUYLFH fh‘_l hj]Zgbah\Zlv aZ[hj b ^hklZ\dm _keb k_j\bkguc p_lglj ij_‘

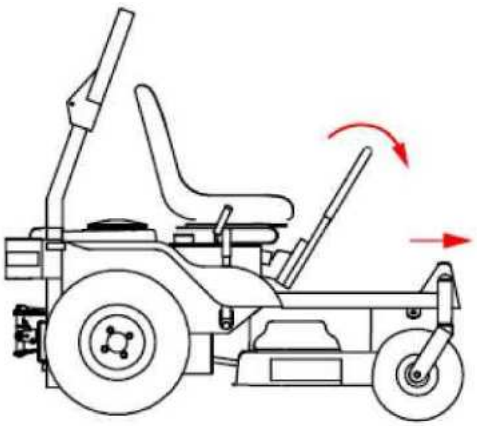
Bkdexq_gby
>ZgZy]ZjZglby g_ jZkijhkljZgy_lky gZ ghjfZevguc baghk aZ]jyag_gby \ lhieb_ beb fZke_ ih\
mkeh\byo ^ey dhlhjuo ba^_eb_ g_ ij_^gZagZq_gh ih\j_‘^_gby \ua\Zggu_ mklZgh\dhc beb bkil
h[hjm^h\Zgby beb ^_lZe_c g_kZgdpbhgbjh\Zgguf baf_g_gb_f beb ^jm]bf g_ijZ\bevguf bkihevah\
ih\j_‘^_gby \ua\Zggu_ g_kh[ex^_gb_f ij_^ibkZgguo ij_^mij_‘^_gbc ijZ\be wdkiemZlZpbb gZ^e
ijhp_^mj ojZgby ^_lZeb ihkljZ^Z\rb_ beb ih\j_‘^_ggu_ \ j_amevlZl_ Z\Zjbb b beb klhedgh_gby
ljZgkihjlbjh\db h[jZs_gby ojZg_gby beb ex[uo ^jm]bo ijbqbg djhf_ ^_n_dlh\ fZl_jbZeZ beb ba
hl_lkl_gghklvZgZkihjlbjh\dm dhkbedb \ k_j\bkguc p_glj AZ[hj b ^hklZ\dZ [m^ml aZ\bk_lv hl lh
p_glj lZdmx mkem]m b [m^ml hkms_kl\eylvky aZ kq_l \eZ^_evpZ

HldZa hl hl\ lkl\ gghklb aZ dhk\ ggucms if b hliZgbg gb ih^iZamf \Z fuo lZiZglbc

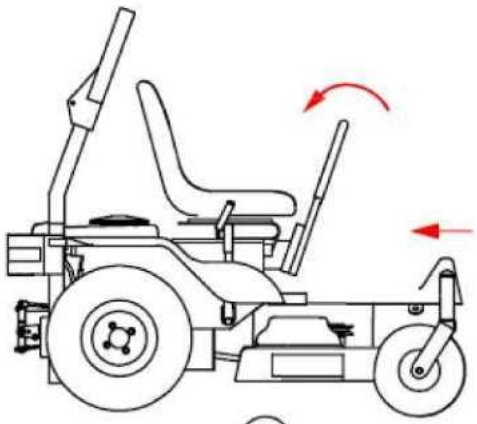
G:KLHYS:Y =:J:GLBY G?>?CKL<BL?EVG: ?KEB >:L: BA=HLH<E?GBY B K?JBCGUC GHF?J G: H
M>:E?GU BEB H;HJM>H<:GB? ;UEH FH>BNBPBJH<:GH

D4F>B9 DG>B6B8EF6B OXB5?P2;7:

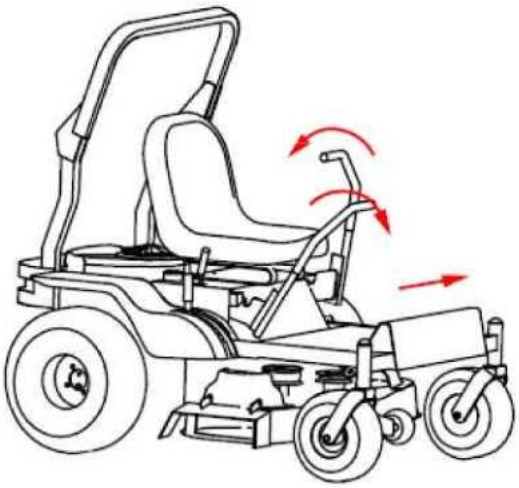




6



7



8



9


Brake

10


DANGER
PELIGRO
DANGER
DANGER
PELIGRO
AVOID INJURY OR DEATH
FROM ROLLOVERS
NO ROLLOVER PROTECTION
WHEN ROLL BAR IS DOWN
DANGER/PELIGRO
KEEP HANDS AND FEET AWAY!
MANTENER MANOS Y PES ALEJADOS