



# EQUIPMENT MANUAL

6(&7.21 , 3523(57< 0\$1\$\*(0(17  
\$1' \$&&2817\$%,/,7<

\$ 6XEMHFW \_\_\_\_\_

% 3XUSRVH \_\_\_\_\_

& (TXLSPHQW 'HILQLWLRQV \_\_\_\_\_  
\*HQHUDO (TXLSPHQW 'HILQLWLRQ

7DJ 1XPEHU  
'HVFULSWLRQ  
0DQXIDFWXUHU  
0RGHO 1XPEHU  
6HULDO 1XPEHU  
(TXLSPHQW /RFDWLRQ  
&RVW  
6SHHGWSH

\$VVHW 0DQDJHPPHQW

' 5HVSQVLELOLWLHV \_\_\_\_\_  
(TXLSPHQW \$FFRXQWLQJ  
0DQDJHPPHQW &HQWHUV  
'HSDUWPHQW RI (QYLURQPHQWDO +HDOWK DQG  
6DIHW\  
\$QQXDO 5HSRUWLQJ WR '2' DQG 1\$6\$  
&DSLWDO (TXLSPHQW 3XUFKDVH \$SSURYDO  
\$FTXLVLWLRQ RI \*RYHUQPHQW 3URSHU\  
(TXLSPHQW 6FUHHQLQJ & 2WKHU (TXLSPHQW 8SGDWH 3URFH  
6SRQVRUHG 3URMHFW \$FFRXQWLQJ 'RFXPHQDWLRQ RI 5HWLUHG (T

( 5HWLUHPPHQW RI ,!TM` #3U9€<% ,QIRUPDWLRQ (QWHUHG DQG 6WRUHG EQSW  
\$VVHW 0DQDJHPPHQW

6(&7.21 ... + \$33(1', &(6

6(&7.21 ,, '\$7\$ &2//(&7,21 \$1'\$ (TXLSPHQW &KDQJH RI 6WDWXV IRU  
6<67(0 83'\$7( % 3K\VLFDQ ,QYHQWRU\ 6FKHG XOH

\$ 'DWD &ROOHFWLRQ \_\_\_\_\_  
\$VVHW 0DQDJHPPHQW

& (TXLSPHQW %XLOGLQJb"LS •i'2ooRE



&DSLWDO (TXLSPHQW 6WDQGDUG 3URFHGXUH

% 3XUSR VH

7R RXWOLQH WKH SIBQ UFLMHFRDYHG LSURVLSVLSURQ DWHDFRFXILOLDWLRQ DQG  
WUDQVDFWLRQV IRU WDSLQV R DGHU XLSPHQW WIKWKHJTGWH DO 5HJXODV  
DJHQFLHV RWKHU VSRQVRUH G JXLGHOLQHJW WLRQXUDQFH DQG DQG

& (TXLSPHQW 'HILQLWLRQV

\*HQHUDO (TXLSPHQW 'HILQLWLRQ

1RQ H[SHQGDEOH WDJJLEOH SHUVRQDQD ISUW S H W \ ZLQKODG LQFJT XLV  
RU PRUH SHU XQLW DQG D XVHDOU QLVHFRQ VILGHUWHGJ FVSDQ DQ  
KHUHLQ DIWHU FDOOQG LVTXLSHQW WRRI WKKHLSURFHGXUH 7KLV  
GHILQLWLRQ LV GHWDLOHG LQ WKHQOLYHUVLW\TV LQGLUHFV FRVW

6SHFLDO 3XUSR VH (TXLSPHQW

(TXLSPHQW XVHG RQPHILQF DQVNDUH QWHFKQLRDUORVFKWLYLWLHV

\*HQHUDO 3XUSR VH (TXLSPHQW

(TXLSPHQW WKH XQRWRDZKLVKGRQGLWROUHWFLDQFKLIEFRU RWKHU  
DFWLYLWLHV ([DPSOHV RI JHQHUDO SXUTSRVSHHQWLSQBQWULQFVXXQB  
FRQGLWLRQLQJ HTXLSHQW UHSURGXFWRUHQDQFBULQGDQXWTRLS  
SURFHVVQLQJ HTXLSHQW

\*RYHUQPHQW ODWHULDO

3URSHUW\ ZKLFK PDQGHLOQRRLS DUDWDHFRVWRHDCQHQHQHLUHG XQGHU  
RU WKDW PD\ EH FSHUXRHEDLQFRHDFRQWUDEXW LW LQRW OLPLWHQ  
SURFHVVHG PDWHURQHQWUWVFRSROW DQG VRSRQVW... HPU



# EQUIPMENT MANUAL

D \*RYHUQPHQW )XUQLVKHG 3URSHUW\ \*)3

3URSHUW\ LQ WKH SDFVXHU V HGR GLR JH FRUQ PHQ WW KHQ GRYXEVHTXHQ  
GHOLYHUHG RDRGM KDYUZZLWOB B QH YMR UHW W WZ LWOKH WKH \*RYHUQPH

E &RQWUDFWRU \$FTXLUHG 3URSHUW\ &\$3

3URSHUW\ SURFXUHGR R UGRHCKE HUV K V H H E R S W U D F W P D Q F R I U R W D F R Q  
WLWOH WR ZKLFK LV YHVWHG LQ WKH \*RYHUQPHQW

F6XEFRQWUDEW B U 3 R T X I U W \ 6 \$ 3

)RU WKH SXUSRVH RW W K Q X D O R S S O P R D Q W S U Z K L F K L V S U R F X  
RU RWKHUZZLVH SURYLGHG WR W p 0

' 5HVSQRQVLELOLWLHV



# EQUIPMENT MANUAL

DQG SURYLGHGRDQDQXDDOLGDWLRQ BIEQSDQWDDOHSXUSRMQW 120% &  
 \$WWDFKPHQW 1 IBUPVFWDEBVDXQV JRYHUHQPHQJWWKHSRSHUW\ 7L  
 3DUW IRUPHUO\ 20% &LVWDEODUVKHPHQGLVWQGLWLSRQH/V ELOLWL  
 IRU LPSOHPHQWLQJ DQG PRQLWRULQJVKHVH IHGHUDO DXGLW UHTX

DDQDJHPHQW &HQWHUV

'HDQV 'HSDUWPHQW SOKDLQVH3WILQ BWHRUQDVHBI,HUDQGG \$IGHULQLVWUDW  
 UHVSQRVLEOH IRQ DVKVLWDDUQJQ(\$ LGRQWELWQJ SDQGLFDO LQYHQWR  
 HTXLSPHQW UHSRUWLVWDDDDHVLRSQDQD BSRQVLDLVWUQJ\ DQG DOO  
 HTXLSPHQW /LVWHGSEHORZHTXHSWKE WWDVQVDFW IERQVHSRUWHG IR  
 )HGHUDO DQG QRQ IHGHUDO IXQGV

D )DEULFDWHG (TXLSPHQW

,W LV WKH UHVSQRVLEO LSGPRQ WWDVDFGRIBLFXQD QVRQWR ILOO RX  
 1RWLILFDWLRQ RI )DEULFDWHG (TXLSEHQWDMRUPQESURWHH FWW DUKW  
 FRPSOHWHG IRUP DVQGHQVH VSRSHFV ZLDOQEQHPDHVW L7GHG, RU D  
 ZRUNLQJ RQ DVKHEWVORNDHFKLVPSXVAVXVGHGKWDDVQXPEHU RQ DOO  
 UHTXLVLWLRQV SQRKEMM RSUBUG QGDPQDXDOLRQXUDDO HQWU  
 ZHOO DV \$FFRXQWVWBDVDEH VZKDVHQVWEPDIWQWRV\$H XORMHFW  
 DQG WKH HTXLSPHQWLEH \$KW WQDVJ WVKPHID \$ULLDQWQGLWHP JD  
 SHUWLQHQW LQIRERDWWLRQWIDQGHQWKLJH SURMHFW ZLOO



# EQUIPMENT MANUAL

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# EQUIPMENT MANUAL

## \$FTXLVLWLRQ RI \*RYHUQPHQW 3URSHUW\

7KH 3, VKDOO EH UHODVLRQV LILHQFH QRU SRVSHUWLRIQQ RULFRQWURO LQ D  
ZLWK WKH WHUPV IRDQWKH7KRQWLQDFRQGLIHSURSHUW\VSXFK FRQWUDFW  
PD\ EH LQ WKH SRVVHVVLRQ XEPRQW DURPRZK LFRQFHQWUSURSHUW\  
PD\ EH IXUQLVKHG RU DFTXLUHG DUH DV IROORZV

,)URP \$JHQFLHV RI ++6'2'(2'1\$6\$ RU 2WKHU &RQWUDFWRUV

\*RYHUQPHQW SURSHUW\ PD\ EH VKLSSHQJ WRWKH SVDOLODIDLWLRQVURUP  
\*RYHUQPHQW FRQWUDFWRUV 7KH 3, LXSURSHUWVSRIOVLEOH RRUWKHFKUS  
FXVWRG\ RU FRQWURO 7KH VSRQVRWK RORRQVIXDQVWRFRIDBOLYDWH  
UHIOHFW WKH WUDQVDFWLRQ

.,'LUHFW 3XUFKDVH E\ WKH &RQWUDFWRU

'LUHFW SXUFKDVHV E\ WKH 3, XVLQJ VSRQWR D HGRQK RORRQVSRQV  
WKDW WKH LWHPVWKUH VSRQWRFRLEHGH SWRJRURQD DQGQDFH WVDU\ 2ZQU  
ULJKWV LQ VXFK SURSHUWVGV EDORRHEVSRUWGLSHQRWDRSU RYLVLQRV L  
SDVVDJH RI WLWOH

## (TXLSPHQW 6FUHHQLQJ

3UH DFTXLVLWLRQEHFRQGLIHWZLDDPSXVI\ZOGNHWRULGXHQWDQWLDQ  
HTXLSPHQW IRU SXUFKDVHWRU XVFQRJWUDFWWVQSSRUWHG ZLW  
IXQGV ,I LW DSSHDVPHQSLHFRORNHORRULWLXELVDDQWKR DSSURSULDWH  
SHUVRQQHO ZLOOEHFRQVWQFHWHGHVDBDHDDELHOLWVIRUJMG XVH LV Q  
RU WKH VFUHHQLQJWRURGHQWULH IDLDQV RUPVXQVWHTXVLSHQW WKH S  
UHTXLVLWLRQ ZLOOHEBSSSRULHGV EKVXUWKRULVWVDRQZLOOEH SURF  
SXUFKDVH

(DFK PDQDJHPPHQW FHQWHU KDV HVWDEOLKQMB \$GFSRQWEDOLLWHI  
VFUHHQLQJ VXFK SXUFKDVHV

## 6SRQVRUHG 3URMHEW \$FFRXQWLQJ 63\$

D \*UDQWV \$GPLQLVWUDWLRQ

63\$ VHWV XS QHZ JUDQWV ZLWKLQ WKH\$'8QLYHUVLVDOVIRV VWDQWV  
FRQWUDFW IRU WKH JUDQW DQG GHWHUPEHQZVHWHWU RZQK UWKH  
DJHQF\ RU LV WUDQVIHUHG WR WKHWRQVYDWWVWHFRQVWQVLRQ  
63\$ XVHV D ILHOG FDOOHG <sup>3</sup>(TXLSPHQW TXLVSQHQWR 7KKRZRZHQHU  
DUH

- ± 8QLYHUVLV\ RZQH
- ± 2ZQH E\ WKH 6SRQVRU
- ± 2ZQHUVKLS LV FRQGLWLRQDO VHH FRQWUDFW
- ± \*RYHUQPHQW RZQH

:KHQ ILQDO GLVSRVLWLRQ RI WKH JUBQW RORRQVDRZQHWRUWKHSDRE  
IURP JRYHUQPHQW RZQHWRQHQ63\$ULVUHLQSRQVLEOH\$RIWKHIL  
GLVSRVLWLRQ RKRHUIHQVDRQVWKHWHDXWSPHQW IURP



# EQUIPMENT MANUAL

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E 6XEFRQWUDFWRU &RQWURO

7KH 6SRQVRUHG 3URQUDBY\$\$FLRQW\$RQWLEWHRJRDQGJHFXWLQJ  
VXEFRQWUDFW DJUHHPHQWV 63\$ HQV

( 5HWLUHPHQW RI (TXLSPHQW





# EQUIPMENT MANUAL

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5HWLUHPHQW

8VH WKLV FDWHJRU\ IRU WKH IROOR



# EQUIPMENT MANUAL

\$ 'DWD & ROOHFWLRQ

\$VVHW 0DQDJPHQW

'DWD WR EH LQWHVUFRVHGHEWWR \$0 \$FYRDX QXVF&DVHE QHGHUV DQG LQY  
EDFN XS GREXPHQWDMYLZKH6KEZL(\$O P QNHV D Q UFKDOHWLRQV DV QHFH  
2FFDVLRQDOO\ WKHI HDV QHZE DLWKPH Q Q \$R VZLLEO Q RAVDE QWK M 3D\DEOH  
LQWHJUDWLRQ , Q QRLPHO FEDVFN X \$ IGR EXP ER WDWLRQHG E\

% , QIRUPDWLRQ (QWHUHG DQG 6WRUHG LQ \$VVHW 0DQDJPHQW



# EQUIPMENT MANUAL

## 0DQXIDEWXUHU

\$ WKLWU\ FKDUDFWKHU RDQGDW\XW HQRJUZ RBGSU RCKXFHTGLSPHQW RI WK 7KH YHQGRU ZKR VRWGWKRW KHT XQS FHCQWHLW\ DZ WOKH EFD QXIDFWXUHU RQ WKH VDPH

## 0RGHO 1XPEHU

\$ WKLWU\ FKDUDFWKHU RDQGDW\XW HQRJVR BRWCKIO HTXPLESPHQW 0RGHO QX DSSHU RQ WKH LQVRLRHWG IRWVSYBQW\ WGFQ RWK DSSHU WKHUH WKH\ REWDLQH ZKHQ WKH BTKU SPXILQJL W RFDQSLRFFWHLQJ RWKH 3K\VLFDQ ,QY 3OHVH QRWH WKDEVD HV RIR GPHQ W XUFCHLS KVV WFKDORQ HD SSKDW V RQ WKH H DQG LV LGHQWLIH LHGY BQ WIRQJ SURFHVV

## 6HUIDO 1XPEHU

\$ WZHQW\ FKDUDFWKHU FLDHGX DFLWXLLOU VRVHW KBIOS QXPE RI HTXLSPHQW QXPEHUV VRPHWLPHVL BSS HEDUW RQK HQ DQ H GX ZKBQOW RHE WDXLSPHQW LV WKHQ HQWHUG LQWR \$0

## (TXLSPHQW /RFDWLRQ

\$ XQLTXH WHQ FKWU DFMSHU VHQG/ WKKWKFRPELQGWQRQ RILJLW DQG UR QXPEHUV )RU H[DPSOH LI DQ HTXLSPHQW WRIRPH ZDRIOWKWHGL BPHGLFC 5HVHDFK %XLOGLQJ WKH (TXLSPHQWZRF&WLRQ ZRKBGHDSSPHUDVDIU DVLJQHG E\ WKH 8\$GPHQLVWVUSRFXLQGQVWF RGHVQVELQFOXGHG LQ VSSHQGL &

## &RVW

\$ ILHOG LQGLFDW6QJXWUHGRVVRUQWLS SHLQWH RKHDFWXDO DPRXQW SFRV UHFRUGHG 7KH XHDKRQNEW XVHUSPHQRVQDWHG HTXLSPHQW WKH 8QLYHUVLW\ VQHLQVH GRWM WKKDWHBHGCHGERXGSMHSH 6SHHGWS XVHG WR SXUFKDVH DQ LWHP WKH WRXVGD EFRVVRD LQCHG TEXLWPHQWJLW RI FRVW IRU DOHQWZVURQLVQ LQJ XQGHPEWUKH RBRHMDPSOHV RI FRVW



6SHHGW\SH

\$ QLQH FKDUDFWHU ILHOG WKDW SRSXODWHH VRSURHQVSRIFLPHGI &KHDQW  
)RU H[DPSON WKH 3HRWH&WDVSDQW PDXXGRIBDVGFDQON SRSXODWHG E  
6SHHGW\SH YDOXH WKDW LV HQWHUHG

\$FTXLVLWLRQ 3ODFHPHQW 'DWH

7KHHV WZR ILHOG GDWBUKDW WW WKHLWRIRVZDYLSEDFHG ZIQHQ GHSUHFLD

3XUEKDVH 2UGHU 1XPEHU

\$ WHQ FKDUDFWHU XUHFOVHLZWGQU VMEHRUI IRTXDSHQW 7KLV LQIRUP  
RQO\ EH DYDLODEOH LI WKH LWHP ZDW BQDEGM RV \$UFEJZDWRH \$FCVH  
SURFHVV \$OO HTXLSPHQW LWHPV PDQXDFKDG B HZG VFRU \$QXPREHQR VLV  
LQIRUPDWLRQ LV DYDLODEOH RXWVLGH RI \$0

'HSDUWPHQW

\$ VL[ GLJLW QXPEHU WKDW LQGLFDWHUWDCG WFKR RGH B D UPWQDQW PII QW  
UHVSRQVLEOH IRU WKHLHDELSPHDQSWHKNLWGMDDYHHGWKRP WKH 6SHHGW\  
WKH HTXLSPHQW SXWFKDUHDFWKHUI LGWQDQIDJHPMQWR RQVHU ORFDWLF  
FKDUDFWHUWLGHHQXLFVLRSDRBMWKEVRXJKELODWW DUH DVVLJQHG E\ WKH  
PDQDJHPHQW FHOVWUHW WVRGDHGDWQHWWHG \$QRWKH &RQWUROOHU  
VFKRROV DUH GHILQHG E\ WKH IROORZLQJ ILUVW QXPEHU

- ± \$UWV 6FLHQFHV
- ± 8QLYHUVLW\ \*HQHUDO
- ± (QJLQHHLQJ
- ± 06\$66
- ± /DZ 6FKRRO
- ± 6FKRRO RI OHGLFLQH
- ± :HDWKHUKHDG 6FKRRO RI %XVLQHVV
- ± 'HQWLWU\
- ± 1XUVLQJ

6SRQVRU 1DPH

\$ ILHOG LQGLFDWLVKHWDKHQDPMSRQWRRU IZKJLFDKSHTRMLSPWQW LV FKDUJH  
VSRQVRUHG SURJUDSPVHWHQWV LKOHKDR SRQPEHU LQ WKH 3HRSOH6RIV  
PRGXOH )RU QHGGVSRQVRUPVRWQHDSRGGMRDWQW GHSDUWPHQW QDP  
QDPH RI WKH HQGRZPHQW BSHHQVRSIPV NRU LV NHSW EODQ

\$ZDUG 1XPEHU

\$ ILHOG WKDW LQGLFDWHV WKH QXPEHU BUWKFH DZDUG/SRYHQHEWDVRR  
ZKLFK HTXLSPHQW LV FSDUJH & \$UWHUQ25HVRU DHEODQN ILHOG DUH  
YDOXHV WKDW DUH XVHG IRU HTXLSPHQWXSXGFKDVHG ZLWK 8QLYHUVL

3. 1DPH

\$ ILHOG LQGLFDWLVHQA ZKRVSRQVLEOPDMRR ZKLFKSHRMLSPHQW LV FKDUJH

(TXLSPHQW &XVWRGLDQ

\$ ILHOG LQGLFDWLVLEQKRIRV WKMSRTOXWSPGDWRSEUDWDRQDO EDVLV 7  
RIWHQ XVHGWRHGRQBVU\ FRQWDFW IREHWKGHVWTKSPH,QVXEKHPV D /DE  
RU )DFLOLWLHV ODQDJHU



# EQUIPMENT MANUAL

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& 2WKHU (TXLSPHQW 8SGDWH 3URFHGXUHV



# EQUIPMENT MANUAL

F (TXLSPHQW LV RQQW WHI R X Q W D Q G A L K O / F D Q W D F S V Z W K H 3, RU \$ G  
 D Q G K D Y H W K H P I L Q G W K H H T X L S P H Q W Q H T G X W S P W Q W Z L O O H L W  
 U R R P R Z Q H U V K L S O L I V W W K H G U H Q L \$ O D R Q U R V I C H R L F D E W W F D Q R S U Z L O O P D  
 D S S U R S U L D W H F K D Q J H V L Q \$ 0

G (TXLSPHQW LV RQQW WHI R X Q W D E X Q W K W U B V R R I U S G P I X Q D E O H W R  
 H T X L S P H Q W , Q W K L S G P D Q H V W W K D W B R U Q L I O H D H R I Q D X E O W D R X U F H V  
 W R O R F D W H W K H H T W L S D E Q R W D E Q H I R O X Q G L D Q H R X W K H Q Z I L X L S P H  
 & K D Q J H R I 6 W D W X V I R U P L Q R U G H U W R K D Y H W K H H T X L S P H Q W

3URFHGXUH 5HYLVLRQV

\$Q\ FKDQJHV WR WKELN G6XUDHQRSDXUG BIU FD & RQWUROOHU GH WKH

\$SSURYDO

7KLV 6WDQGDUQ & KRIFHHXUDSSURYHG

2Q ILOH LQ WKH &RQWUROOHU V 2IILFH  
 6LJQDWXUH DQG 7LWOH

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'DWH





# EQUIPMENT MANUAL

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# EQUIPMENT MANUAL

\$33529\$/6

1DPH

6LJQDWXUH

'HSDUWPHQW \$GPLQLVWUDWRU

6LJQDWXUH )LHOG

'HSDUWPHQW &KDLU

6LJQDWXUH )LHOG

'HDQ V 2IILFH 'HVLJQHH

6LJQDWXUH )LHOG

(QYLURQPHQWDO +HDOWK 6DIHW\

6LJQDWXUH )LHOG

2IILFH RI 5HVHDUFK \$GPLQLVWUDWLRQ

6LJQDWXUH )LHOG

1RW QHHGHG IRU 6HFWLRQ '

2QO\ QHHGHG IRU 6HFWLRQ \$ ZKHQ DSSOLFDEOH

7KLV VHFWLRQ ~~WHQG EH~~ FRPLSSOPHQW \$FFRXQWLQJ

3OHDVH H PDLO FRPSOHWHG IRUP WR



# EQUIPMENT MANUAL

\$SSHQGL[ % ± 3K\VLFD O ,QYHQWRU\ 6FKH

&DVH :HVWHUQ 5HVHUYH 8QLYHUVLW\	
&RQWUROOHU V 2IILFH	
3K\VLFD O ,QYHQWRU\ 6FKHG XOH	
	\$V IR
<HDU 2GG \HDUV	<HDU (YHQ <HDUV

-DQXDU\ 3DWKRO ã0 pp0KGB#HC... ~D...d†>ñ1F1 — F>ñF1 — F 1F1 4 q4~c k•S@— lcaF,| q4g AF,| q4



# EQUIPMENT MANUAL

\$SSHQGL[ & ± %XLOGGLQJ &RGH 5HIHUhQFH  
&RPPRQO\ 8VHVGLWQL%XLLOGGLQJ &RGH  
6RUWHG E\ %XLOGGLQJ 1RIPH

%XLQGLQPH

%QIG

%XLQGLQ



# EQUIPMENT MANUAL

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# EQUIPMENT MANUAL

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# EQUIPMENT MANUAL

&RPPRQO\ 8VHG %XLOGLQJ &RGH  
 6RUWHG E\ %XLOGLQJ &RGH  
 3DJH RI

%XLOGLQJ 1DP%OGJ 'HQWDO 6FKRRO	& %XLOGLQJ 1DP%OGJ *XHVW +RXVH	%XLOGLQJ 1DP%OGJ &
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