remeha

0DQXDOH GL LQVWDOOD]LRQH

&DOGDLD GD SDUHWH D

4XLQWD $

*HQWLOH FOLHQWH

JUD]LH SHU DYHU DFTXLVWDWR TXHVWR DSSDUHFFKLR

/HJJD DWWHQWDPHQWH LO SUHVHQWH PDQXDOH SULPD GL XWLOL]]DUH LO SURGR

YH 3HU JDUDQWLUH XQ FRVWDQWH IXQ]LRQDPHQWR HIILFLHQWH H VLFXUR FRQV

GRWWR /D QRVWUD RUJDQL]]D]LRQH GL DVVLVWHQ]D H SRVW YHQGLWD SX´ IRUQ

&L DXJXULDPR SRVVD XVXIUXLUH SHU DQQL GL XQ IXQ]LRQDPHQWR SULYR GL LQF

,QGLFH

)XQ]LRQDPHQWR

8WLOL]]R GHO SDQQHOOR GL FRQWUROR

0DQXWHQ]LRQH

*HQHUDOLW¢

,QWHUYHQWL GL LVSH]LRQH H PDQXWHQ]LRQH VWDQGDUG

&RQWUROOR GHOOD SUHVVLRQH GHOO DFTXD

&RQWUROOR GHOOD TXDOLW¢ GHOO DFTXD

&RQWUROOR GHOOD FRUUHQWH GL LRQL]]D]LRQH

&RQWUROOR GHL FROOHJDPHQWL GHOO LQJUHVVR DULD VFDULFR IXP

&RQWUROOR GHOOD FRPEXVWLRQH

&RQWUROOR GHO SUHVVRVWDWR GLIIHUHQ]LDOH 36 SHU O DULD

&RQWUROOR GHOR VLIDWR DXWRPDWLFR

&RQWUROOR GHO EUXFLDWRUH H SXOL]LD GHOR VFDPELDWRUH SULF

3XOL]LD GHO FROOHWWRUH GHOOD FRQGHQVD

3XOL]LD GHO VLIRQH

5LVROX]LRQH GHL SUREOHPL

&RGLFL GL HUURUH

$YYHUWHQ]D

%ORFFR SURYYLVRULR

%ORFFR SHUPDQHQWH

6PDOWLPHQWR

5LPR]LRQH ULFLFODJJLR

$SSHQGLFH

,QIRUPD]LRQL VX (U3

6FKHGD SURGRWWR

6LFXUH]]D

,VWUX]LRQL JHQHUDOL SHU OD VLFXUH]]D

3HU O LQVWDOODWRUH

⚠ **3HULFROR**
,Q FDVR GL RGRUH GL JDV

1RQ XWLOL]]DUH ILDPPH OLEHUH
QRQ D]LRQDUH FRQWDWWL R LQV
FDPSDQHOO OXFL PRWRUL D
,QWHUURPSHUH O DOLPHQWD]LR
$SULUH OH ILQHVWUH
,QGLYLGXDUH OH HYHQWXDOL SH
LPPHGLDWDPHQWH
6H OD SHUGLWD ª D PRQWH GHO
DYYHUWLUH OD VRFLHW¢ GLVWU

⚠ **3HULFROR**
,Q FDVR GL HVDOD]LRQL GL IXPR

6SHJQHUH OD FDOGDLD
$SULUH OH ILQHVWUH
,QGLYLGXDUH OH HYHQWXDOL SH
LPPHGLDWDPHQWH

⚠ **$WWHQ]LRQH**
7HUPLQDWL JOL LQWHUYHQWL GL [
]LRQH FRQWUROODUH WXWWR O L
H DFFHUWDUVL FKH QRQ YL VLDQR

3HU O XWHQWH ILQDOH

⚠️ **3HULFRORO**
,Q FDVR GL RGRUH GL JDV

1RQ XWLOL]]DUH ILDPPH OLEHUH
QRQ D]LRQDUH FRQWDWWL R LQV
FDPSDQHOOL OXFL PRWRUL D
,QWHUURPSHUH O DOLPHQWD]LR
$SULUH OH ILQHVWUH
$EEDQGRQDUH L ORFDOL
&RQWDWWDUH XQ LQVWDOODWRU

⚠️ **3HULFRORO**
6H FL VRQR HVDOD]LRQL GL IXPR

6SHJQHUH OD FDOGDLD
$SULUH OH ILQHVWUH
$EEDQGRQDUH L ORFDOL
&RQWDWWDUH XQ LQVWDOODWRU

⚠️ **$YYHUWHQ]D**
1RQ WRFFDUH L WXEL GHL IXPL $
VWD]LRQL GHOOD FDOGDLD OD WH
IXPL SX´ VXSHUDUH L   r&

⚠️ **$YYHUWHQ]D**
1RQ WRFFDUH L UDGLDWRUL SHU S
OXQJDWL $ VHFRQGD GHOOH LPSR
GDLD OD WHPSHUDWXUD GHL UDG
  r&

⚠️ **$YYHUWHQ]D**
/ XVR GHOOD FDOGDLD H O LQVWD
XWHQWH ILQDOH GHYRQR OLPLWDU
VFULWWH LQ TXHVWR PDQXDOH 4X
]LRQH GHYH HVVHUH HIIHWWXDWD
UH LQVWDOODWRUH TXDOLILFDWR

⚠️ **$WWHQ]LRQH**
$YHU FXUD GL VRWWRSRUUH OD FD
]LRQH UHJRODUH 3HU OD PDQXWH
GDLD ULYROJHUVL D XQ LQVWDOO
SXODUH XQ FRQWUDWWR GL PDQXV

⚠️ **$WWHQ]LRQH**
8WLOL]]DUH HVFOXVLYDPHQWH ULF

ℹ️ **,PSRUWDQWH**
9HULILFDUH FRQ UHJRODULW¢ OD
SUHVVLRQH QHOO LPSLDQWR GL U

5DFFRPDQGD]LRQL

⚠ **3HULFROR**
/ DSSDUHFFKLR SX´ HVVHUH XWLOL
HW¢ SDUL R VXSHULRUH D RWWR D
FDSDFLW¢ ILVLFKH VHQVRULDOL F
YH GL FRPSHWHQ]D HG HVSHULHQ]
VRJJHWWH D VXSHUYLVLRQH R YHO
LVWUX]LRQL VXOO XVR VLFXUR GH
VFKL FRUUHODWL 1RQ ODVFLDUH
FRQ O DSSDUHFFKLR /H RSHUD]LR
QXWHQ]LRQH QRQ GHYRQR HVVHU
EDPELQL VHQ]D VXSHUYLVLRQH

⚠ **$YYHUWHQ]D**
/ LQVWDOOD]LRQH H OD PDQXWHQ]
GHYRQR HVVHUH HIIHWWXDWH GD
UL]]DWR LQ FRQIRUPLW¢ DOOH YL
SUHVFUL]LRQL QD]LRQDOL H ORFD

⚠ **$YYHUWHQ]D**
/ LQVWDOOD]LRQH H OD PDQXWHQ]
GHYRQR HVVHUH HIIHWWXDWH GD
ILFDWR LQ FRQIRUPLW¢ FRQ OH LQ
QHO PDQXDOH LQ GRWD]LRQH ,Q]
WUHEEH ULFRUUHUH LQ VLWXD]LRQ
QL

⚠ **$YYHUWHQ]D**
/D ULPR]LRQH H OR VPDOWLPHQWR
QR HVVHUH HVHJXLWL GD XQ LQVW
FRQIRUPLW¢ DOOH QRUPDWLYH OR

⚠ **$YYHUWHQ]D**
3HU HYLWDUH VLWXD]LRQL GL SHU
PHQWD]LRQH ª GDQQHJJLDWR OD Y
YH HVVHUH HVHJXLWD GDO SURGX
FHVVLRQDULR R GD XQ DOWUD SHU
GHOOH RSSRUWXQH FRPSHWHQ]H

⚠ **$YYHUWHQ]D**
4XDQGR VL LQWHUYLHQH VXOO F
VHPSUH O DOLPHQWD]LRQH HOHWW
QHWWR SULQFLSDOH GHO JDV

⚠ **$YYHUWHQ]D**
8QD YROWD WHUPLQDWL WDOL LQW
WXDOH SUHVHQ]D GL SHUGLWH QH

> ⚠️ **Pericolo**
> Per questioni di sicurezza si …
> …rire i rilevatori di fumo e di …
> in posizioni adeguate all'int…
> …tazione

> ⚠️ **Attenzione**
> - Accertarsi che la caldaia si…
>   …siasi momento
> - La caldaia deve essere insta…
>   protetto dal gelo
> - In caso di collegamento fisso…
>   …mentazione occorre sempre m…
>   …ruttore principale bipolare…
>   apertura dei contatti pari …
>   (EN
> - Svuotare la caldaia e l'impi…
>   …to centralizzato se l'abita…
>   …ta per un lungo periodo e in…
>   gelo
> - La protezione antigelo viene…
>   la caldaia non è in funzione …
> - La protezione della caldaia …
>   …mente la caldaia e non l'int…
> - Verificare regolarmente la p…
>   nell'impianto Se la pressio…
>   …riore a … bar rabboccare … on…
>   acqua consigliata compresa t…

> ℹ️ **Importante**
> Conservare questo documento…

> ℹ️ **Importante**
> Gli elementi del mantello po…
> unicamente per lavori di man…
> …zione Rimontare tutti i pann…
> …tati i lavori di manutenzion…

> ℹ️ **Importante**
> Le targhette di istruzione e …
> vono mai essere rimosse né co…
> …sultare leggibili per tutta …
> …daia Sostituire immediatame…
> istruzione e avvertimento ro…

> ℹ️ **Importante**
> Le modifiche alla caldaia rich…
> …ne scr…tte dal…

5HVSRQVDELOLW¢

5HVSRQVDELOLW¢ GHO SURG

, QRVWUL SURGRWWL VRQR IDEEULFD
VLWL GHOOH YDULH GLUHWWLYH DSSO
FRQVHJQDWL FRQ(C)HDLPSRF.XWL QL
UL 1HOO LQWHUHVVH GHOOD TXDOLW
PR FRQWLQXDPHQWH GL PLJOLRUXO
LO GLULWWR GL PRGLILFDUH OH VSHF
GRFXPHQWR

/D QRVWUD UHVSRQVDELOLW¢ LQ TXD
WU¢ HVVHU FKLDPDWD LQ FDXVD QH

- 0DQFDWR ULVSHWWR GHOOH LVWUX]
  SDUHFFKLR
- 0DQFDWD RVVHUYDQ]D GHOOH LVWUX
  UHFFKLR
- 0DQFDWD R LQVXIILFLHQWH PDQXWH
  FKLR

5HVSRQVDELOLW¢ GHOO LQV

/ LQVWDOODWRUH ª UHVSRQVDELOH G
SULPD PHVVD LQ IXQ]LRQH GHOO DSS
GHYH ULVSHWWDUH OH VHJXHQWL LVV

- /HJJHUH H VHJXLUH OH LVWUX]LRQL
  IRUQLWL FRQ O DSSDUHFFKLR
- ,QVWDOODUH O DSSDUHFFKLR LQ FR
  OHJJL YLJHQWL
- (IIHWWXDUH OD PHVVD LQ VHUYL]LR
  FRQWUROOL QHFHVVDUL
- 6SLHJDUH O LQVWDOOD]LRQH DOO X
- ,Q FDVR GL QHFHVVLW¢ GL PDQXWHQ
  WHQWH FLUFD O REEOLJR GL HVHJXL
  UHFFKLR H GL SUHVHUYDUH TXHV X
  IXQ]LRQDPHQWR FRUUHWWR
- &RQVHJQDUH DOO XWHQWH WXWWL L

5HVSRQVDELOLW¢ GHOO XWH

3HU JDUDQWLUH XQ IXQ]LRQDPHQWR
VSHWWDUH OH VHJXHQWL LVWUX]LRQ

- /HJJHUH H VHJXLUH OH LVWUX]LRQL
  IRUQLWL FRQ O DSSDUHFFKLR
- 5LYROJHUVL D SURIHVVLRQLVWL TXD
  VWDOOD]LRQH HG HVHJXLUH OD SUL
- &KLHGHUH DOO LQVWDOODWRUH GL
  GHOO LPSLDQWR

-)DU HVHJXLUH D XQ LQVWDOODWRUH
  ]LRQH H OH LVSH]LRQL QHFHVVDULH
- &RQVHUYDUH LO PDQXDOH GL LVWUX
  QL H YLFLQR DOO DSSDUHFFKLR

$ SURSRVLWR GL TXHVWR PDQXDOH

'RFXPHQWD]LRQH DJJLXQWLYD

Š GLVSRQLELOH OD VHJXHQWH GRFXPHQWD]LRQH
• 0DQXDOH G XVR H LQVWDOOD]LRQH SHU LO SDQQ
• 0DQXDOH SHU LO VHUYL]LR YHQGLWH

6LPEROL XWLOL]]DWL QHO PDQXDOH

,O SUHVHQWH PDQXDOH XWLOL]]D YDUL OLYHOOL
QH VX LVWUX]LRQL SDUWLFRODUL 4XHVWR DO ILQ
WHQWH SUHYHQLUH SUREOHPL H JDUDQWLUH LO
UHFFKLR

> ⚠ **3HULFRR**
> 5LVFKLR GL VLWXD]LRQL SHULFRORVH FKH SR
> VRQDOL JUDYL

> ⚡ **3HULFRR GL VFRVVD HOHWWULFD**
> 5LVFKLR GL VFRVVD HOHWWULFD

> ⚠ **$YYHUWHQ]D**
> 5LVFKLR GL VLWXD]LRQL SHULFRORVH FKH SR
> VRQDOL PLQRUL

> ⚠ **$WWHQ]LRQH**
> 5LVFKLR GL GDQQL PDWHULDOL

> ℹ **,PSRUWDQWH**
> 6HJQDOD XQ LQIRUPD]LRQH LPSRUWDQWH

> 📖 **9HGHUH**
> 5LIHULPHQWR DG DOWUL PDQXDOL R SDJLQH

$EEUHYLD]LRQL

3&8 6FKHGD HOHWWURQLFD SHU OD JHVWLRQH GH
3:0 3XOVH ZLGH PRGXODWLRQ
68 6FKHGD HOHWWURQLFD GL VLFXUH]]D

&DUDWWHULVWLFKH 7HFQLFKH

2PRORJD]LRQL

&HUWLILFD]LRQL

7DE &HUWLILFD]LRQL

1 GL LGHQWLILFD]LRQH &4(	3LRQH &&(
&ODVVH 12[	(1 !
7LSR GL FROOHJDPHQWR %HQWR	
	& & & & & &

&DWHJRULH GL XQLW¢

7DE &DWHJRULH GL XQLW¢

3DHVH	&DWHJRULD	7LSR GL JDV	3UHVVLRQH GL FROOHJDPH
$XVWULD	, , + % 3	* JDV + * * EXWDR SURSDQR	
%HOJLR	, (6 % % 3	* JDV (* * EXWDR SURSDQR	
6YL]]HUD	, , + % 3	* JDV + * * EXWDR SURSDQR	
6SDJQD	, , + % 3	* JDV + * * EXWDR SURSDQR	
8QJKHULD	, ,+6 % 3	* JDV + * JDV 6 * * EXWDR SURSDQR	
,WDOLD	, , + % 3	* JDV + * * EXWDR SURSDQR	
/XVVHPEXUJR	, ,+ 3	* JDV + * SURSDQR	
5RPDQLD	, ,+ 3	* JDV + * SURSDQR	
6HUELD	, + 3	* JDV + * SURSDQR	
7XUFKLD	, , + % 3	* JDV + * * EXWDR SURSDQR	

'LUHWWLYH

2OWUH DOOH GLUHWWLYH H DL UHTXLVLWL GL OH
OLQHH JXLGD VXSSOHPHQWDUL SUHVHQWL QHO PL

(YHQWXDOL VXSSOHPHQWL R VXFFHVVLYH QRUPDW
WR GHOO LQVWDOOD]LRQH VRQR GD LQWHQGHUVL
QHH JXLGD GHILQLWH QHO SUHVHQWH PDQXDOH

7HVW GL IDEEULFD

3ULPD GL ODVFLDUH O DJLHQGD RJQL FDOGDLD ª
QH VRWWRSRVWD D WHVW SHU YHULILFDUH L VHJ

- 6LFXUH]]D HOHWWULFD
- 5HJROD]LRQH GL
- 7HQXWD LGUDXOLFD
- 7HQXWD JDV
- ,PSRVWD]LRQH GHL SDUDPHWUL

'DWL WHFQLFL

7DE   *HQHUDOLW¢

4XLQWD $FH			
3RWHQ]D QRPLQDOH 3Q SHU LO IXQ]LRQDPHQWR]DWR r& r&	HQQ GHO	NLVFDOGDPHQWR FHQWUD
3RWHQ]D QRPLQDOH 3Q SHU LO IXQ]LRQDPHQWR]DWR r& r&	HQQ GHO	NLVFDOGDPHQWR FHQWUD
3RUWDWD QRPLQDOH 4Q SHU LO IXQ]LRQDPHQWRWR +L * JDV +	HO PHQWR GH	NLVFDOGDPHQWR FHQWU
3RUWDWD QRPLQDOH 4Q SHU LO IXQ]LRQDPHQWRWR +L * JDV /	HO PHQWR GH	NLVFDOGDPHQWR FHQWU
3RUWDWD QRPLQDOH 4Q SHU LO IXQ]LRQDPHQWRWR +L * SURSDQR	HO PHQWR GH	NLVFDOGDPHQWR FHQWU
3RUWDWD QRPLQDOH 4Q SHU LO IXQ]LRQDPHQWRWR +V * JDV +	HO PHQWR GH	NLVFDOGDPHQWR FHQWU
3RUWDWD QRPLQDOH 4Q SHU LO IXQ]LRQDPHQWRWR +V * JDV /	HO PHQWR GH	NLVFDOGDPHQWR FHQWU
3RUWDWD QRPLQDOH 4Q SHU LO IXQ]LRQDPHQWRWR +V * SURSDQR	HO PHQWR GH	NLVFDOGDPHQWR FHQWU
(IILFLHQ]D ULVFDOGDPHQWR FHQWUDOL]]DWR D SLHQR FDULFR +L r& &((		
(IILFLHQ]D ULVFDOGDPHQWR FHQWUDOL]]DWR D SLHQR FDULFR +L r& (1		
(IILFLHQ]D WHUPLFD GHOO LPSLDQWR FHQWUDOL]]DWR D EDVVR FDULFR +L WHUDWXUD GL ULWRUQR r&		
(IILFLHQ]D WHUPLFD GHOO LPSLDQWR FHQWUDOL]]DWR D FDULFR SDU]LDOH &((WHPSHUDWXUD GL ULWRUQR r&		
,PSRVWD]LRQH GHL IDEEULFD		

7DE 'DWL VX JDV H IXPL

4XLQWD $FH			
3UHVVLRQH GL DOLPHQWD]LRQH JDV * JDV	PÂLQ	PD[	PEDU
3UHVVLRQH GL DOLPHQWD]LRQH JDV * JDV /	PLQ	PD[	PEDU
3UHVVLRQH GL DOLPHQWD]LRQH JDV * SURSDQR	PD[	PD[	PEDU
&RQVXPR JDV * + JDV	PLQ	PD[	P K
&RQVXPR JDV * JDV /	PLQ	PD[	P K
&RQVXPR JDV * SURSDQR	PLQ	PD[	P K
HPLVVLRQL DQQXDOL GL 12[2		PJ N:K
3RUWDWD PDVVLFD JDV FRPEXVWL	PLQ	PD[	NJ K J V
7HPSHUDWXUD GHL JDV FRPEXVWL	PLQ	PD[	r&

4XLQWD $FH			
3UHYDOHQ]D UHVLGXD DO YHQWLODWRUH		3D	
&RQVXPR JDV EDVDWR VX XQ YDORUH GL ULVFDOGDPHQWR LQIHULRUH LQ FRQGL]LRQL * 0- P			

7DE   'DWL FLUFXLWR GL ULVFDOGDPHQWR FHQWUDOL]]DWR

4XLQWD $FH			
&RQWHQXWR DFTXD		O	
3UHVVLRQH GHOO DFTXD QRPLQDOH	PLQ	EDU	
3UHVVLRQH GHOO DFTXD QRPLQDOH 306	PD[	EDU	
7HPSHUDWXUD GHOO DFTXD	PD[	r&	
7HPSHUDWXUD GL HVHUFL]LR	PD[	r&	
3HUGLWD GL SUHVVLRQH GHO FLUFXLWR VHFRQGDULR		ÂEDU.	

7DE   'DWL HOHWWULFL

4XLQWD $FH			
7HQVLRQH GL DOLPHQWD]LRQH		9&$	
&RQVXPR HQHUJHWLFR ¦ SLHQR FDULFR	PD[	:	
&RQVXPR HQHUJHWLFR ¦ EDVVR FDULFR	PLQ	:	
&RQVXPR HQHUJHWLFR VWDQGE\	PLQ	:	
*UDGR GL SURWH]LRQH HOHWWULFD		,3	,3; %
)XVLELOL	SULQFLSDOL 3&8	$	

7DE $OWUL GDWL

4XLQWD $FH			
3HVR WRWDOH D YXRWR		NJ	
3HVR PLQLPR GL PRQWDJJLR VHQ]D SDQQHOOR DQWHULRUH		NJ	
/LYHOOR PHGLR GL SUHVVLRQH DFXVWLFD D XQ PHWUR GDOOD FDOGDLD		G%$	

7DE   3DUDPHWUL WHFQLFL

4XLQWD $FH			
&DOGDLD D FRQGHQVD]LRQH			6®
&DOGDLD D EDVVD WHPSHUDWXUD			1R
&DOGDLD %			1R
$SSDUHFFKLR GL FRJHQHUD]LRQH SHU LO ULVFDOGDPHQWR G DPELHQWH			1R
$SSDUHFFKLR GL ULVFDOGDPHQWR PLVWR			1R
3RWHQ]D WHUPLFD QRPLQDOH	*3QRPLQDOH*	N:	
3RWHQ]D WHUPLFD XWLOH LQ FDVR GL IXQ]LRQDPHQWR SRWHQ]D WHUPLFD QRPLQDOH	N:DG DOWD WHPSHUDWXU		
3RWHQ]D WHUPLFD XWLOH DO GHOOD SRWHQ]D WHUPLFD QRPLQDOH H UHJLPH D EDVVD WHPSHUDWXUD	N:		
(IILFLHQ]D HQHUJHWLFD VWDJLRQDOH GHO ULVFDOGDPHQWR G DPELHQWH	ï	%	

| 4XLQWD $FH			
5HQGLPHQWR XWLOH D SRWHQ]D WHUPLFD QRPLQDOH H UHJLPH DG DOWD WHPSUDWXUD			
5HQGLPHQWR XWLOH DO GHOOD SRWHQ]D WHUPLFD QRPLQDOH H UHJLPH D EDVVD WHPSHUDWXUD			
&RQVXPR DXVLOLDULR GL HOHWWULFLW¢			
3LHQR FDULFR	*HOPD[*	N:	
&DULFR SDU]LDOH	*HOPLQ*	N:	
0RGR VWDQGE\	*3₆%*	N:	
$OWUL HOHPHQWL			
'LVSHUVLRQH WHUPLFD LQ VWDQGE\	*3ₛₜᵦ*	N:	
&RQVXPR HQHUJHWLFR GHO EUXFLDWRUH GL DFFHQVLRQH	*3ₗᵧₙ*	RQ	
&RQVXPR HQHUJHWLFR DQQXR	*4₊(*	N:K *-	
/LYHOOR GL SRWHQ]D VRQRUD LQ DPELHQWH LQWHUQR	*Wₛ*	G%	
(PLVVLRQL GL RVVLGL GL D]RWR	12ₓ	PJ N:K	
3HU EDVVD WHPSHUDWXUD VL LQWHQGRQR r& SHU OH FDOGDLH D FRQGHQVD]LRQH VR GHO ULVFDOGDWRUH SHU DOWUH DSSDUHFFKLDWXUH GL ULVFDOGDPHQWR 3HU IXQ]LRQDPHQWR DG DOWD WHPSHUDWXUD VL LQWHQGRQR XQD WHPSHUDWXUD GL U PDQGDWD GL r& DOO XVFLWD GHOOD FDOGDLD			

9HGHUH
3HU L GHWWDJOL GL FRQWDWWR YHGL TXDUW

'LPHQVLRQL H FROOHJDPHQWL

)LJ ' 'LPHQVLRQL

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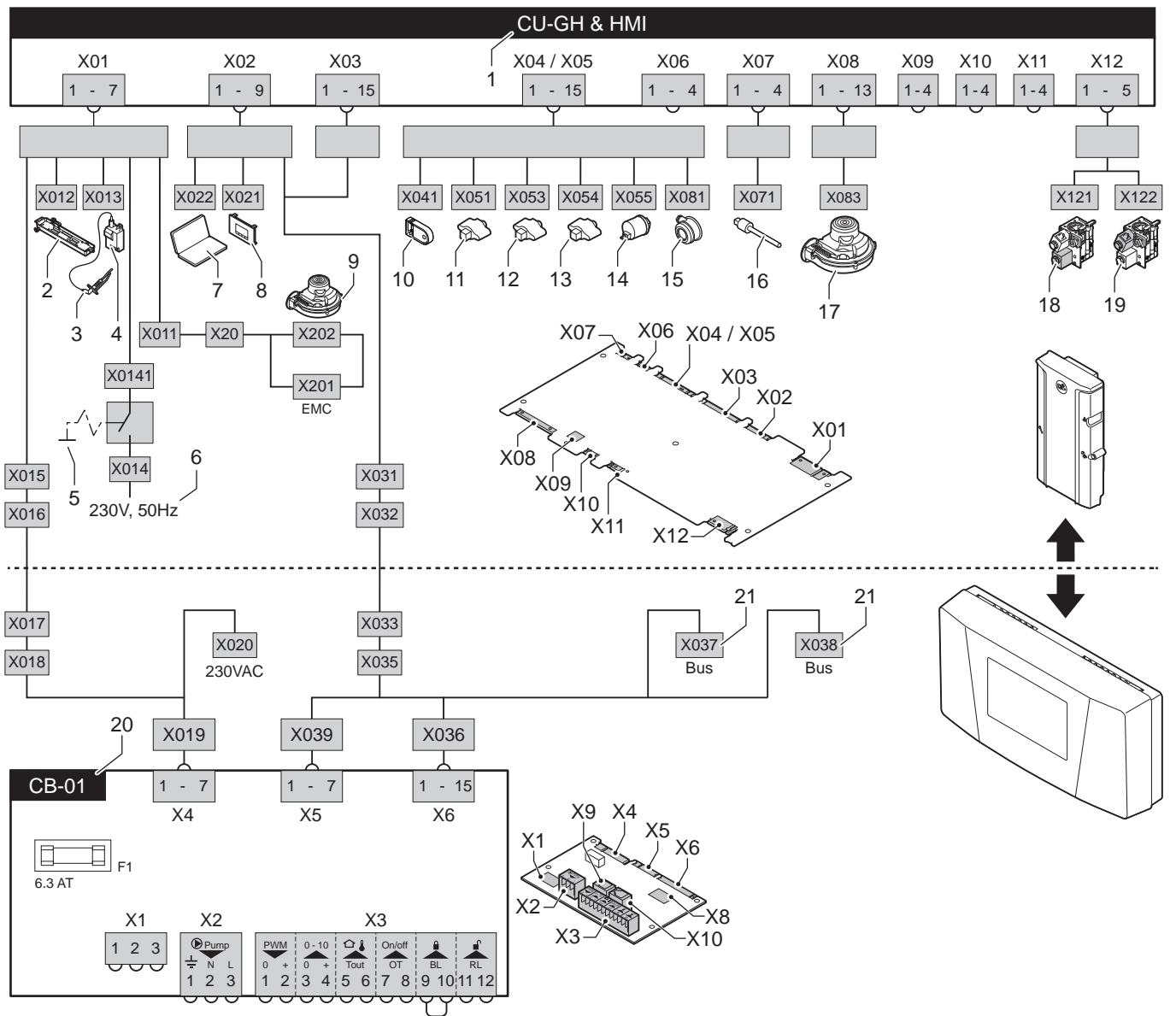
602

226

600

1045

GAS/
GAZ

110

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300

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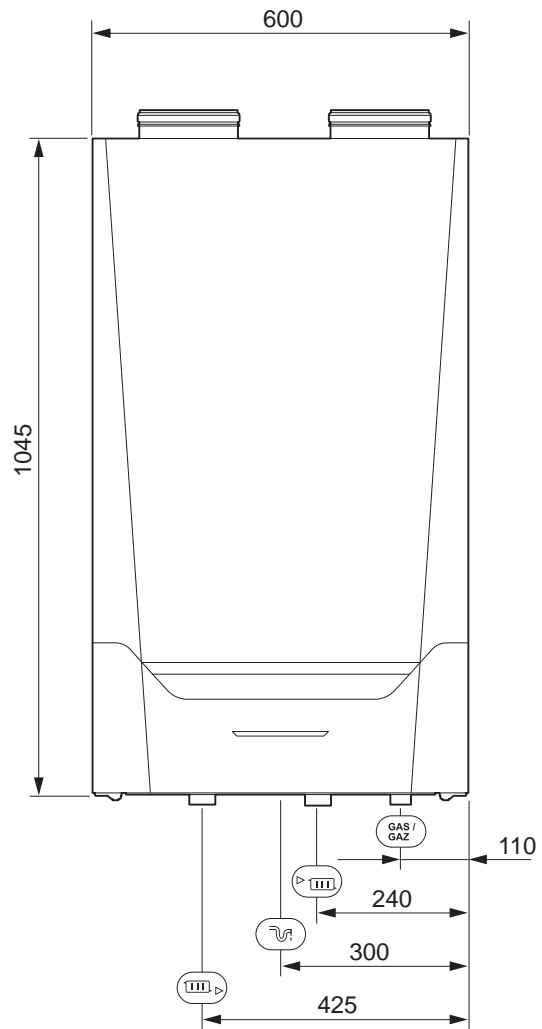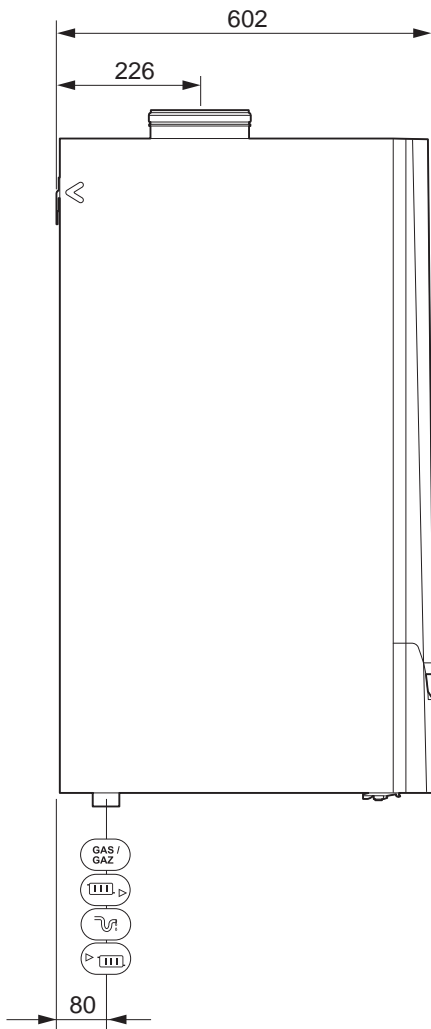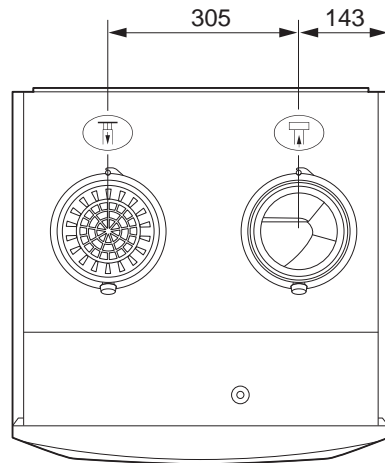
AD-0000100-01

&ROOHJDPHQWR GHOOR VFDULFR GL &ROG SHJDPHQWR GL ULWRUQR ULVFDO
&ROOHJDPHQWR GHOO LQJUHVVR DULD PDVFKLR GD ~ GL SROOLFH
&ROOHJDPHQWR VLIRQH GAS/ &ROOHJDPHQWR JDV ILOHWWDWXUD
GAZ
&ROOHJDPHQWR GL PDQGDWD ULVFDOGDPHQWR ILOHWWDWXUD
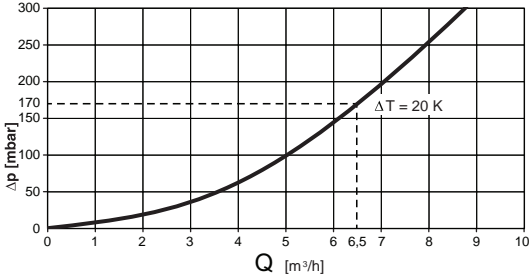PDVFKLR GD ~ GL SROOLFH

Y

6FKHPD HOHWWULFR

6FKHPD HOHWWULFR

CU-GH & HMI

X01	X02	X03	X04 / X05	X06	X07	X08	X09	X10	X11	X12
1 - 7	1 - 9	1 - 15	1 - 15	1 - 4	1 - 4	1 - 13	1 - 4	1 - 4	1 - 4	1 - 5

X012 X013 X022 X021 X041 X051 X053 X054 X055 X081 X071 X083 X121 X122

2 3 4 7 8 9 10 11 12 13 14 15 16 17 18 19

X011 X20 X202
X0141 X201
EMC

X015 X031
X016
X014 6
5 230V, 50Hz X032

X07 X06 X04 / X05
X03
X02
X08 X01
X09
X10
X11
X12

X017 X033 X037 X038
X018 X020 X035 Bus Bus
230VAC

20 X019 X039 X036
CB-01 1 - 7 1 - 7 1 - 15
X4 X5 X6

X9 X4
X1 X5 X6
F1 X2
6.3 AT X3 X8
X10

X1	X2	X3					
	⊙ Pump	PWM	0 - 10	⌂ 🌡 Tout	On/off	🔒 BL	🔓 RL
1 2 3	⏚ N L	0 +	0 +		OT		
	1 2 3	1 2	3 4	5 6	7 8	9 10	11 12

AD-0000669-05

3DQQHOOR GL FRQWUROOR &8 *+
,OOXPLQD]LRQH
3LJRQH GL DFFHQVLRQH
7UDVIRUPDWRUH GL DFFHQVLRQH
,QWHUUXWWRUH 2Q 2II
$OLPHQWD]LRQH
&RQQHWWRUH GL VHUYL]LR FROOHJDPHQWR 3&
3DQQHOOR GL FRQWUROOR
$OLPHQWD]LRQH YHQWLODWRUH
3DUDPHWUR VWRFFDJJLR
6RQGD GL PDQGDWD

6RQGD VFDPELDWRUH SULPDULR
6HQVRUH GL ULWRUQR
6HQVRUH GL SUHVVLRQH LGUDXOLFD
3UHVVRVWDWR GLIIHUHQ]LDOH HOOR
6RQGD JDV FRPEXVWL
&RPDQGR GHO YHQWLODWRUH
9DOYROD JDV
3&% VWDQGDUG
&ROOHJDPHQWL / EXV SHU VFKHGH HO
YH

'HVFUL]LRQH GHO SURGRWWR

3ULQFLSLR GL IXQ]LRQDPHQWR

3RPSD GL FLUFROD]LRQH

)LJ 5HVLVWHQ]D DFTXD

Â3 5HVLVWHQ]D GHOOD FDOGDLD PEDU
4 3RUWDWD P/K

/D FDOGDLD ª IRUQLWD VHQ]D SRPSD 4XDQGR VL
FRQWR GHOOD UHVLVWHQ]D GHOOD FDOGDLD H GH
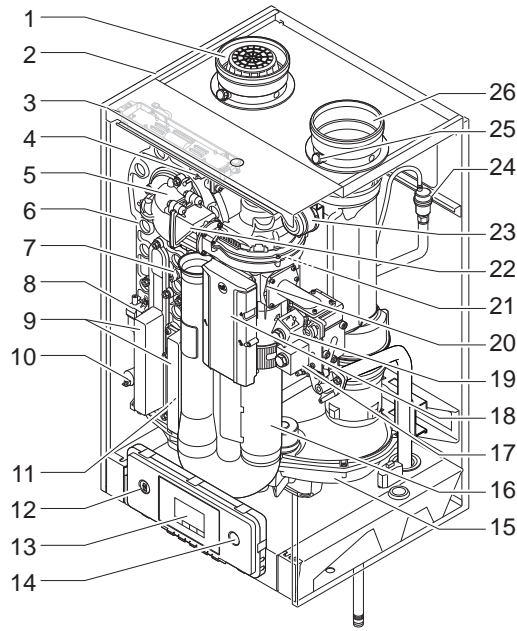
9HGHUH
'DWL WHFQLFL SDJLQD

⚠ **$WWHQ]LRQH**
/D SRWHQ]D PDVVLPD DVVRUELWD SX´ HVVHUH
XQ UHO.ª DXVLOLDULR SHU XQD SRPSD GL SRW

&RPSRQHQWL SULQFLSDOL

)LJ &RPSRQHQWL SULQFLSDOL

,QJUHVVR DULD
,QYROXFUR FDPHUD VWDJQD
/XFH LQWHUQD
6RQGD GL PDQGDWD
$GDWWDWRUH
6FDPELDWRUH SULPDULR
6HQVRUH GL WHPSHUDWXUD SHU OR VFDPELD
7UDVIRUPDWRUH GL DFFHQVLRQH
3RUWHOOR GL LVSH]LRQH SHU OR VFDPELDWRU
6HQVRUH GL SUHVVLRQH DFTXD
6HQVRUH GL ULWRUQR
3XQWR GL FROOHJDPHQWR 3& SRUWDWLOH
3DQQHOOR GL FRQWUROOR
,QWHUUXWWRUH 2Q 2II
&ROOHWWRUH GL UDFFROWD SHU OD FRQGHQ
6LOHQ]LDWRUH GL DVSLUD]LRQH
3UHVD GL SUHVVLRQH GHO JDV
3DQQHOOR GL FRQWUROOR &8 *+
$VVLHPH YDOYROD JDV
9HQWXUL
9HQWLODWRUH
9DOYROD GL QRQ ULWRUQR
3UHVVRVWDWR GLIIHUHQ]LDOH GHOO DULD
6ILDWR GHOO DULD DXWRPDWLFR
3UHVD DQDOLVL IXPL
8VFLWD IXPL

3ULPD GHOO LQVWDOOD]LRQH
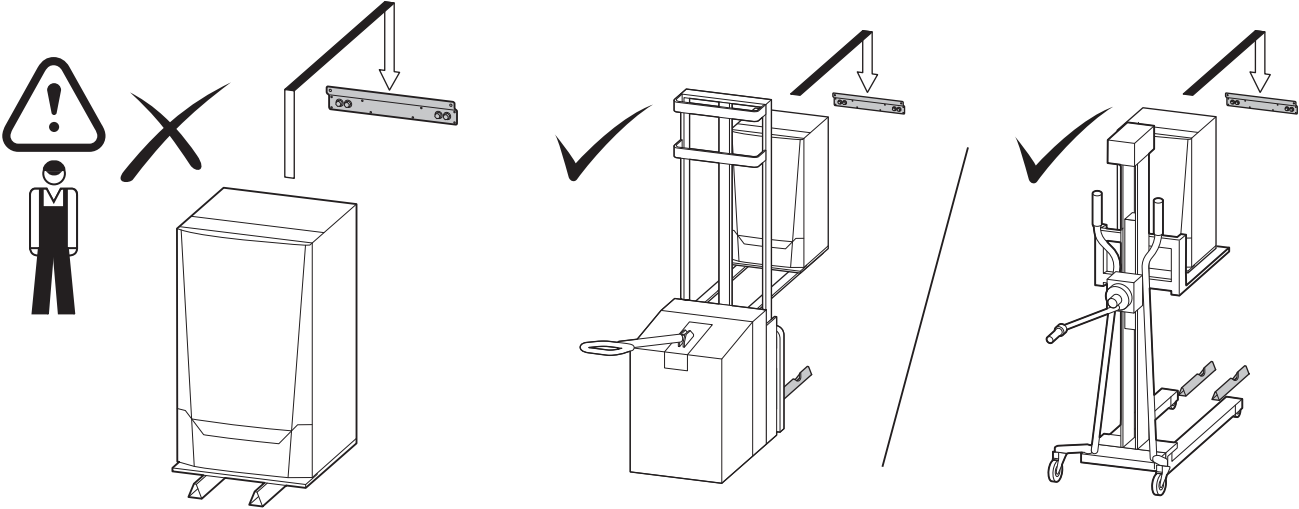
1RUPH VXOO LQVWDOODJLRQH

> ℹ️ **,PSRUWDQWH**
> / LQVWDOODJLRQH H OD PDQXWHQJLRQH GHOO
> IHWWXDWH GD XQ LQVWDOODWRUH DXWRUL]]D
> OHJJL QRUPH H SUHVFUL]LRQL QD]LRQDOL H

5HTXLVLWL GL LQVWDOODJLRQH

,VWUX]LRQL SHU LO VROOHYDPHQWR

,O SHVR GHOOD FDOGDLD VXSHUD LO SHVR GL VRO
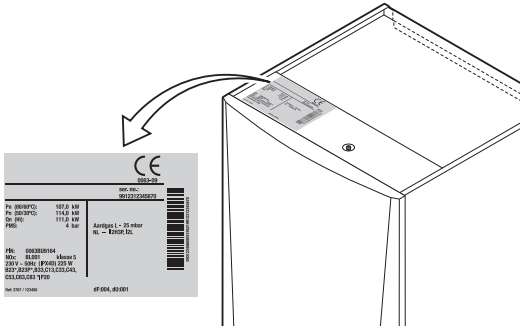VRQD 6L FRQVLJOLD O XWLOL]]R GL XQ DXVLOLR

)LJ $XVLOL GL VROOHYDPHQWR

AD-0000138-03

6FHOWD GHO ORFDOH

7DUJKHWWD LGHQWLILFDWLYD

)LJ 3RVL]LRQH GHOOD WDUJKHWWD LGHQWLILFDWL
YD

/D WDUJKHWWD LGHQWLILFD]LRQH VLWXDW
VRQR ULSRUWDWL LO QXPHUR GL VHULH H LPSRUW
HVHPSLR LO PRGHOOR H OD FDWHJRULD GHOO XQ
]LRQL GL IDEEULFD &1 H &1 VRQR ULSRUWDWL

AD-0000103-01

8ELFD]LRQH GHOOD FDOGDLD

)LJ $UHD GL LQVWDOOD]LRQH

30
600
30

min. 500

1045

min. 300

600

min. 1000

min. 1000

AD-0000104-03

• 8WLOL]]DUH OH OLQHH JXLGD H OR VSD]LR GL LQ
VH SHU GHWHUPLQDUH OD SRVL]LRQH FRUUHWWD
3HU VWDELOLUH LO SXQWR GL LQVWDOOD]LRQH
QH FRQVHQWLD GHOOH DSHUWXUH GL XVFLWD

• 9HULILFDUH FKH FL VLD VSD]LR VXIILFLHQWH DW
DFFHVVR H XQD VHPSOLFH PDQXWHQ]LRQH
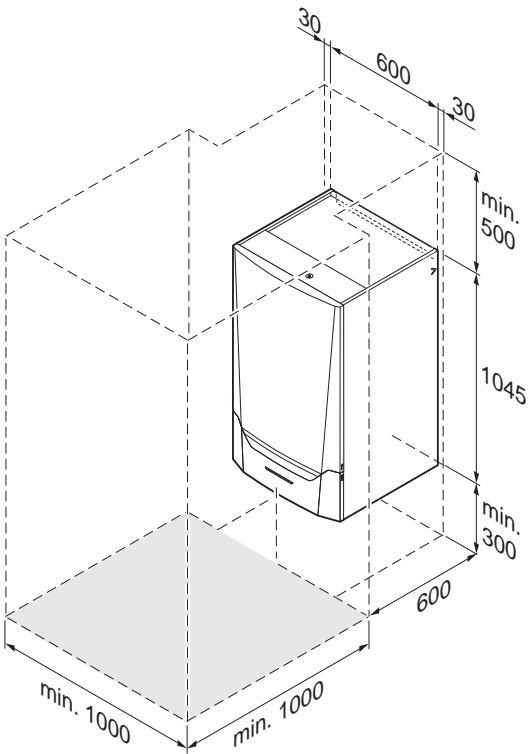
⚠ **3HULFROR**
Š YLHWDWR FRQVHUYDUH DQFKH WHPSRUDQH
]H FRPEXVWLELOL DOO LQWHUQR GHOOD FDOO
GDLD VWHVVD

⚠ **$WWHQ]LRQH**
• 0RQWDUH OD FDOGDLD VX XQD SDUHWH VROL
PXUDWXUD LQ PH]]R PDWWRQL GL VLOLFDWR
FRVWUXLUH XQD VWUXWWXUD ULQIRU]DWD
• /D FDOGDLD GHYH HVVHUH LQVWDOODWD LQ
• ,O FROOHJDPHQWR HOHWWULFR GHOOD FDO
PHVVD D WHUUD
• ,Q SURVVLPLW¢ GHOOD FDOGDLD GHYH HVVH
PHQWR DOOR VFDULFR DWWUDYHUVR FXL IDU
• 3HU JOL LQWHUYHQWL GL PDQXWHQ]LRQH RU
PLQLPR VSHFLILFDWR 3HU JOL LQWHUYHQWL
WHQ]LRQH HVVHD RFFRUUH SUHYHGHUH XQ
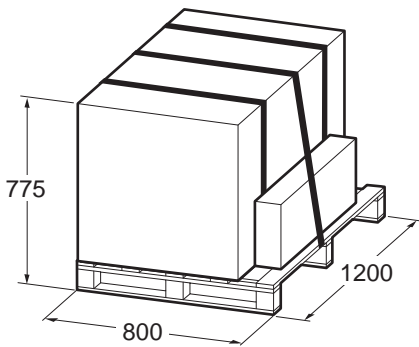P [P GL IURQWH DOOD FDOGDLD

⚠ **$WWHQ]LRQH**
,Q FDVR GL FROOHJDPHQWR ILVVR GHO FDYR
VHSUH PRQWDUH XQ LQWHUUXWWRUH SULQF
]D GL DSHUWXUD GHL FRQWDWWL SDUL R VXS

7UDVSRUWR

)LJ &ROOR FDOGDLD

775

1200
800

AD-0000136-02

/D FDOGDLD YLHQH IRUQLWD VX SDOOHW /D IRUQLW
FRQ OD FDOGDLD H XQR FRQ FRPSRQHQWL VLQJRO
6HQ]D O LPEDOODJJLR OD FDOGDLD SX´ SDVVDUH
GDUG

ℹ **,PSRUWDQWH**
$YYLFLQDUH VHPSUH LO SL» SRVVLELOH OD F
JLR SULPD GL ULPXRYHUH O LPEDOOR

'LVLPEDOODJJLR H SUHSDUD]LRQH LQL]LDOH
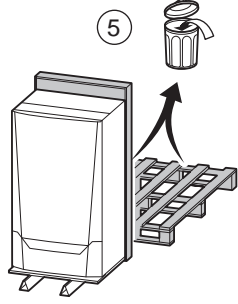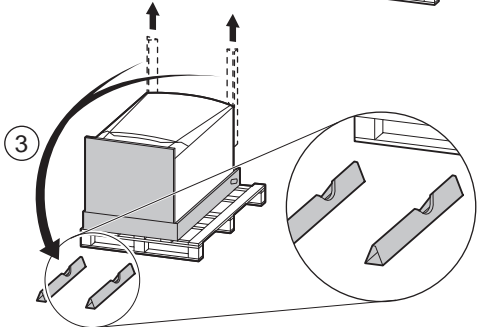
)LJ   'LVLPEDOODJJLR GHOOD FDOGDLD

7DJOLDUH OH IDVFHWWH GL LPEDOODJJLR H U
5LPXRYHUH OD VFDWROD GL LPEDOODJJLR
(VWUDUUH L VXSSRUWL GD SDYLPHQWR GDOO
DOOD EDVH GHOOD FDOGDLD
3RUUH OD FDOGDLD LQ SRVL]LRQH YHUWLFDOH
HVVHUH HVHJXLWD GD SHUVRQH
5LPXRYHUH LO SDOOHW H LO UHVWR GHOO LPE
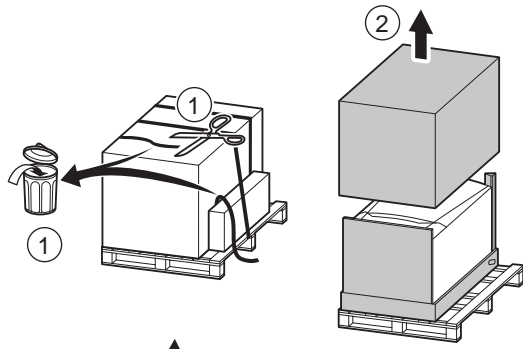
> **,PSRUWDQWH**
> /D FDOGDLD SX´ RUD HVVHUH VSRVWDWD FRQ
> WR

AD-0000137-02

Y

,QVWDOOD]LRQH

*HQHUDOLW¢

> ⚠ **$YYHUWHQ]D**
> / LQVWDOOD]LRQH GHOOD FDOGDLD GHYH HVV
> UH TXDOLILFDWR DL VHQVL GHL UHJURODPHQW

&ROOHJDPHQWL LGUDXOLFL

5LVFLDFTXR GHOO LPSLDQWR

3ULPD GL SRWHU FROOHJDUH XQD FDOGDLD 5& QX
VWHQWH RFFRUUH ODYDUH H VFLDFTXDUH TXHVW
SURIRQGLWR 7DOH RSHUD]LRQH ª DVVROXWDPHQ
WULEXLVFH D ULPXRYHUH L UHVLGXL GHULYDQWL
ULH GL VDOGDWXUD SURGRWWL GL ILVVDJJLR H F
VDEELD IDQJR H FRV® YLD

> ℹ **,PSRUWDQWH**
> 6FLDFTXDUH O LPSLDQWR 5& FRQ XQD TXDQWL
> ULRUH DO WULSOR GHO VXR YROXPH 6FLDFTX
> TXDQWLW¢ GL DFTXD SDUL R VXSHULRUH D

&ROOHJDPHQWL LQJUHVVR DULD IXPL

/D FDOGDLD ª LGRQHD SHU LO FROOHJDPHQWR DL
FRQGR OH VHJXHQWL WLSRORJLH G LQVWDOOD]LR

> 📖 **3HU XOWHULRUL LQIRUPD]LRQL YHGHUH**
> &HUWLILFD]LRQL SDJLQD

&ODVVLILFD]LRQH
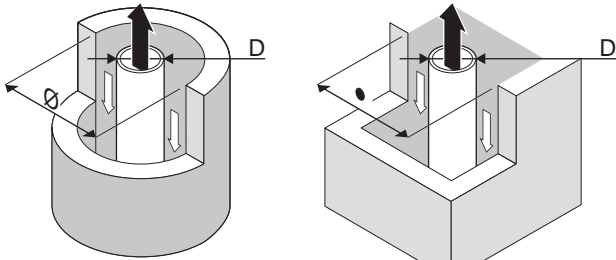
4XHVWD FODVVLILFD]LRQH ª GHVFULWWD LQ GHWW
FRⅭⅬⅬ

7DE 7LSL GL FROOHJDPHQWL GHL IXPL

7LSR	9HUVLRQH	'HVFUL]LRQH
% %3	$SHUWD	• 6HQ]D UHJLVWUR WDJOLDIXRFR • 6FDULFR IXPL GD VRSUD LO WHWWR • $ULD FRPEXUHQWH QHO ORFDOH GL LQVWDOOD]LRQH
%	$SHUWD	• 6HQ]D UHJLVWUR WDJOLDIXRFR • 6FDULFR FRPXQH GHL IXPL GD VRSUD LO WHWWR GHSUHV • 6FDULFR GHL IXPL SXOLWR FRQ DULD DULD SURYHQLHQW FLDOH
&	&KLXVD	• 6FDULFR VX SDUHWH HVWHUQD • / DSHUWXUD G LQJUHVVR DULD ª QHOOD VWHVVD]RQD GL XQ SDVVDQWH FRPELQDWR VX SDUHWH HVWHUQD
&	&KLXVD	• 6FDULFR IXPL DWWUDYHUVR LO WHWWR • / DSHUWXUD G LQJUHVVR DULD ª QHOOD VWHVVD]RQD GL XQ SDVVDJJLR FRQFHQWULFR VX WHWWR
&	&KLXVD FDVFDWD	DWWR RQGRWWR GL LQJUHVVR DULD H GL VFDULFR GHL IXPL FR - &RQFHQWULFR SUHIHULELOPHQWH - 3DUDOOHOR VH FRQFHQWULFR QRQ ª SRVVLELOH • &DVFDWD LQ VRYUDSUHVVLRQH

Tipo	Versione	Descrizione
C	Chiusa	• Unità chiusa • Condotto di ingresso aria separato • Condotto di scarico dei fumi separato • Scarico in diverse zone di pressione
C	Chiusa	• Questo tipo di unità è fornito dal costruttore s...
C	Chiusa	• L'apparecchio può essere collegato a un sistema n... comune e ingresso aria individuale
C	Chiusa	• Condotto di ingresso aria e di scarico dei fumi n... - Concentrico - Ingresso aria dal condotto esistente - Scarico fumi attraverso il tetto - L'apertura d'ingresso aria è nella stessa zona d...
Anche categoria di pressione P *EN ... mbar aspirazione tramite depressione* *Può verificarsi una depressione di ... mbar* *Vedere la tabella per le dimensioni minime del cavedio o del condotto*			

■ Dimensioni del condotto

Fig. Dimensioni minime del cavedio o condotto

Ø / D

AD-3000330-01

Tab. Dimensioni del condotto

Tipo	Versione	Diametro	Dimensioni minime del cavedio o condotto			
			Senza ingresso aria		Con ingresso aria	
			○ condotto	▢ condotto	○ condotto	▢ condotto
C	Rigida	mm	mm	x mm	mm	x mm
		mm	mm	x mm	mm	x mm
		mm	mm	x mm	mm	x mm
C	Flessibile	mm	mm	x mm	mm	x mm
		mm	mm	x mm	mm	x mm
		mm	mm	x mm	mm	x mm
C	Concentrica	a mm	mm	x mm		
		mm	mm	x mm		

Uscite

Devono essere adottati sistemi di fumi pa...
dei seguenti produttori

• Cox Geelen
• Muelink Grol
• Ubbink

> **i** **,PSRUWDQWH**
> 6H OH QRUPH SUHVFULYRQR O LQVWDOOD]LRQ
> FR XWLOL]]DUH XQD LGRQHD LQ DFFLDLR LQ

6RQR LQROWUH GLVSRQLELOL NLW GL SDVVDQWL
SHU FLDVFXQD FDOGDLD

> **i** **1RWD**
> &RQWDWWDWHFL SHU XOWHULRUL LQIRUPD]LR

0DWHULDOH

> ⚠ **$YYHUWHQ]D**
> • , PHWRGL GL DFFRSSLDPHQWR H FROOHJDPH
>   EDVH DO SURGXWWRUH 1RQ ª FRQVHQWLWR
>   QH PHWRGL GL DFFRSSLDPHQWR H FROOHJDP
>   SURGXWWRUL
> • , PDWHULDOL XWLOL]]DWL GHYRQR HVVHUH
>   VWDQGDUG YLJHQWL

7DE 0DWHULDOL GHOOH WXED]LRQL GL XVFLWD

3URJHWWR	0DWHULDOH
0RQRSDUHWH ULJLGD	• $OOXPLQLR GL DOWR VSHV • 3ODVWLFD 7 • $FFLDLR LQRVVLGDELOH
)OHVVLELOH	• 3ODVWLFD 7 • $FFLDLR LQRVVLGDELOH
/D WHQXWD GHYH HVVHUH FRQIRUPH DOOD FODVVH &RQ PDUFDWXD &(	

7DE 0DWHULDOL GHO WXER GL LQJUHVVR GHOO

| 9HUVLRQH	0DWHULDOH
0RQRSDUHWH ULJLGD	• $OOXPLQLR • 3ODVWLFD • $FFLDLR LQRVVLGDELOH
)OHVVLELOH	• $OOXPLQLR • 3ODVWLFD • $FFLDLR LQRVVLGDELOH

/XQJKH]]H GHL WXEL DULD H IXPL

ℹ ,PSRUWDQWH

- 4XDQGR VL XWLOL]]DQR GHL UDFFRUGL D JR
  PD GHOOD FDQQD IXPDULD / GHYH HVVHUH
  WDEHOOD GL ULGX]LRQH

- /D FDOGDLD ª DGDWWD DQFKH SHU FDQQH IX
  GLDPHWUR GLYHUVR GD TXHOOL LQGLFDWL QH
  XOWHULRUL LQIRUPD]LRQL

■ 9HUVLRQH SHU ORFDOL %/%HQWLODWL %

)LJ 9HUVLRQH SHU ORFDOL YHQWLODWL
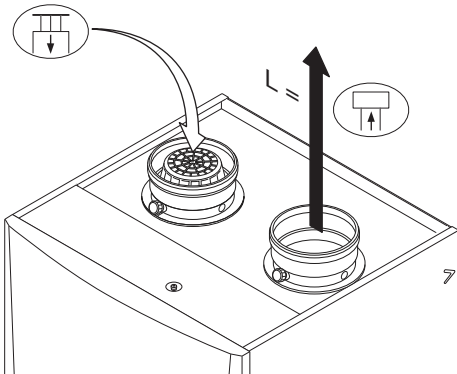
AD-0000112-01

⊞ &ROOHJDPHQWR GHOO XVFLWD IXPL
⊞ &ROOHJDPHQWR GHOO LQJUHVVR DULD

1HO FDVR GL XQD YHUVLRQH FRQ YHQWLOD]LRQH
DULD ULPDQH DSHUWD YLHQH FROOHJDWD VROR
PRGR OD FDOGDLD ULFHYH OD QHFHVVDULD DULD
UHD GL LQVWDOOD]LRQH 8WLOL]]DUH GHJOL DGD
JUHVVR DULD FRQ GLDPHWUR GLYHUVR GD PP

⚠ $WWHQ]LRQH

- / DSHUWXUD GL LQJUHVVR DULD GHYH UHVW
- / DUHD GL LQVWDOOD]LRQH GHYH HVVHUH GL
  DSHUWXUH GL LQJUHVVR DULD 4XHVWH DSH
  RVWUXLWH R FKLXVH
- 6H OD FDOGDLD IXQ]LRQD LQ XQ DPELHQWH
  GL FRVWUX]LRQH XWLOL]]DUH DOO RFFRUU
  WUDWD

7DE /XQJKH]]D PDVVLPD GHOOD FDQQD IXPDULD

'LDPHWUR	PP	PP	PP	PP	PP
4XLQWD $FH	P	P	P	P	P
0DQWHQHQGR OD OXQJKH]]D PDVVLPD GHL FRQGRWW ELOH DSSOLFDUH JRPLWL VXSSOHPHQWDUL YROWH					

■ 9HUVLRQH VLJ&O/&DWD&&

)LJ 9HUVLRQH VLJLOODWD
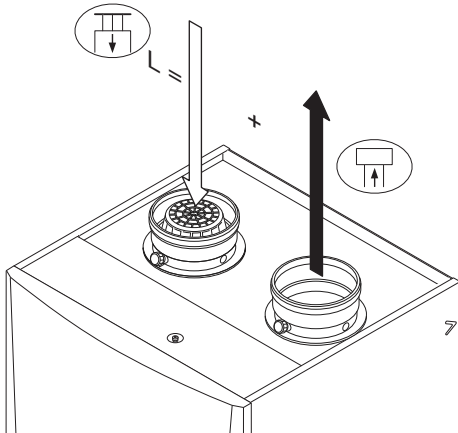
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⊞ &ROOHJDPHQWR GHOO XVFLWD IXPL
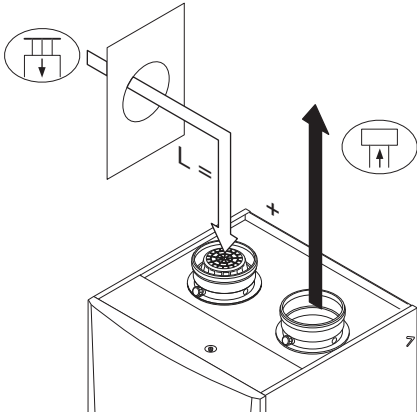⊞ &ROOHJDPHQWR GHOO LQJUHVVR DULD

1HO FDVR GHOOD YHUVLRQH VLJLOODWD YHQJRQR
GL XVFLWD IXPL H GL LQJUHVVR DULD LQ SDUDOO
WXEL GL XVFLWD IXPL H GL LQJUHVVR DULD FRQ O

7DE /XQJKH]]D PDVVLPD GHOOD FDQQD IXPDULD

'LDPHWUR	PP	PP	PP	PP	PP
4XLQWD $FH			P	P	P
0DQWHQHQGR OD OXQJKH]]D PDVVLPD GHOOD FDQQD FDUH JRPLWL VXSSOHPHQWDUL [| R [|					

■ &ROOHJDPHQWR LQ GLYHUVH &RQH GL SUHV

)LJ 'LYHUVH]RQH GL SUHVVLRQH

⊟ &ROOHJDPHQWR GHOO XVFLWD IXPL
⊟ &ROOHJDPHQWR GHOO LQJUHVVR DULD

/ LQJUHVVR GHOO DULD FRPEXUHQWH H OR VFDUL
VH]RQH GL SUHVVLRQH H FRQ VLVWHPL SDUJLDOP
]RQH FRVWLHUH ,O GLVOLYHOOR DOWH]]D PDVVLP
ULD FRPEXUHQWH H O XVFLWD GHL IXPL ª P

AD-0000114-01

7DE /XQJKH]]D PDVVLPD GHOOD FDQQD IXPDULD

'LDPHWUR	PP	PP	PP	PP	PP
4XLQWD $FH			P	P	P

0DWHQHQGR OD OXQJKH]]D PDVVLPD GHL FRQGRWW
FDUH JRPLWL VXSSOHPHQWDUL YROWH D]R YR

■ 7DEHOOD GHOOH ULGX]LRQL

7DE 5LGX]LRQH GHO WXER SHU RJQL HOHPHQWR XWLOL]]DWR SDUDOOHOR

'LDPHWUR	PP	PP	PP	PP	PP	PP	PP
&XUYD r	P	P	P	P	P		
&XUYD r	P	P	P	P	P		

7DE 5LGX]LRQH GHO WXER SHU RJQL HOHPHQWR XWLOL]]DWR FRDVVLDOH

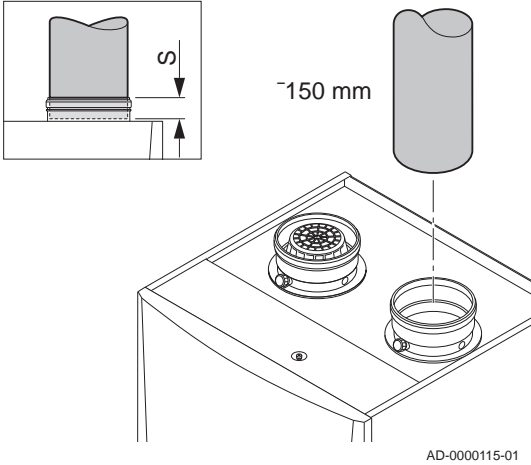| 'LDPHWUR	PP	PP	PP
&XUYD r	P	P	P
&XUYD r	P	P	P

/LQHH JXLGD DJJLXQWLYH

- 3HU LQVWDOODUH L PDWHULDOL GHOO XVFLWD I
  PHQWR DOOH LVWUX]LRQL GHO UHODWLYR SURJ
  H GHOO LQJUHVVR DULD QRQ YHQJRQR LQVWDOO
  HVHPSLR QRQ VRQR D WHQXWD R QRQ YHQJRQR
  VLWXD]LRQL SHULFRORVH H R OHVLRQL SHUVRQ
  FRPH PLQLPR OD WHQXWD GHL FRPSRQHQWL GHO
  DULD
- 1RQ ª FRQVHQWLWR FROOHJDUH GLUHWWDPHQWH
  UDL D FDXVD GHOOD FRQGHQVD
- 3XOLUH VHPSUH DFFXUDWDPHQWH L FRQGRWWL
  FLD H R XQ FROOHJDPHQWR LQJUHVVR DULD
- 'HYH SRWHU HVVHUH SRVVLELOH FRQWUROODUH
- 6H OD FRQGHQVD SURYHQLHQWH GD XQD VH]LRQ
  LQRVVLGDELOH SX¶ ULIOXLUH LQ XQD VH]LRQH L
  FRQGHQVD GHYH HVVHUH VFDULFDWD WUDPLWH
  JHUH OD VH]LRQH LQ DOOXPLQLR
- ,Q SUHVHQ]D GL WUDWWL SL» OXJKL GL WXER L
  UH LQL]LDOPHQWH SUHYHGHUH LQVLHPH D TXHO
  UHODWLYDPHQWH HOHYDWR GL SURGRWWL GL FR
  ULFR 3XOLUH FRQ UHJRODULW¢ LO VLIRQH GHOO
  QLW¢ XQ FROOHWWRUH DJJLXQWLYR GL UDFFROW
- $FFHUWDUVL FKH LO WXER GHOO XVFLWD IXPL G
  GLHQWH VXIILFLHQWH DOPHQR PP DO PHWU
  OHWWRUH H XQR VFDULFR GHOOD FRQGHQVD DG
  VFLWD GHOOD FDOGDLD , UDFFRUGL D JRPLWR

Y

...periori a o per garantire un gradiente s...
livello delle guarnizioni a labbro

> **ℹ️ Importante**
> Contattateci per ulteriori informazio...

Collegamento dell'uscita fumi

Fig. Collegamento dell'uscita fumi

S Profondità di inserimento ... mm

Montare il tubo di uscita dei gas combu...
Montare i successivi tubi di uscita fumi...
del produttore

> **⚠️ Attenzione**
> - I tubi devono essere a tenuta di fumi ...
> - Il tubo di uscita dei fumi deve essere ...
> - Collegare i tubi in modo che non sianc
>   ni
> - I tubi non devono poggiare sulla cald...
> - Montare le parti orizzontali inclinan...
>   una pendenza di ... mm al metro

AD-0000115-01

≥150 mm — S

Collegamento dell'ingresso aria

Fig. Collegamento dell'ingresso aria

S Profondità di inserimento ... mm

Montare il tubo di ingresso aria sull...
Montare i successivi tubi di ingresso a...
del produttore

> **⚠️ Attenzione**
> - I tubi devono essere a tenuta d'aria e...
> - Il tubo di ingresso aria deve essere s...
>   ture
> - Collegare i tubi in modo che non sianc
>   ni
> - I tubi non devono poggiare sulla cald...
> - Montare le parti orizzontali inclinan...
>   gresso aria

AD-0000116-01

≥150 mm — S

Collegamenti elettrici

Raccomandazioni

> **⚠️ Avvertenza**
> - I collegamenti elettrici devono semp...
>   mentazione staccata e solo da person...
> - La caldaia è completamente precablat...
>   collegamenti interni del pannello di...
> - Assicurarsi di creare un collegamento
>   l'elettricità

Stabilire i collegamenti elettrici in con...

- Le prescrizioni delle norme in vigore
- Le indicazioni degli schemi elettrici in g...
- Le raccomandazioni contenute in questo m...
- Separare i cavi sonda dai cavi di circuit...

0RQWDJJLR GHO SDQQHOOR GL FRQWUR

)LJ   3DQQHOOR GL FRQWUROOR

AD-0000628-02

D4XLQWDFFDGLD ª IRUQLWD FRQ XQ SDQQHOOR
SDQQHOOR GL FRQWUROOR ª PRQWDWR DOO LQWH
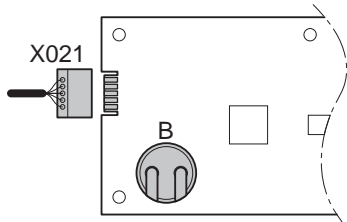O LQWHUQR GHOOD VFD,WRUOD FRQHL FRRUGHWWRWU
SLQ GHO FRQQHWWRUH   SLQ 9 GHO 3&%
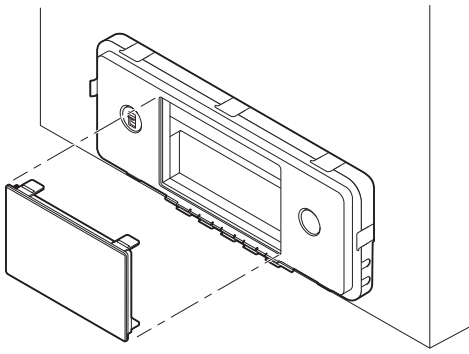
)LJ   6FKHGD HOHWWURQLFD


X021

B

AD-0001300-01

% %DWWHULD

,O 3&% ª DQFKH FRUUHGDWR GD XQD EDWWHULD G
6H OD GDWD H O RUD QRQ YHQJRQR YLVXDOL]]DW
WHQVLRQH GHOOD EDWWHULD

&ROOHJDPHQWR GHOOD VFDWROD GHL

)LJ $SHUWXUD GHOOD VFDWURODDVFDWURROGDHJLDFROOHJDPHQWL YLHQH IRUQLWD
PHQWL

FDYL GL FROOHJDPHQWR IRUQLWL SHU FROOHJDU
SDQQHOOR GL FRQWUROOR 3URFHGHUH FRPH VHJ

X033
①
②
X017
L = 0.4 m

③ 90¼
④
⑫
90¼

⑦a
⑦b
⑪

⑧
⑨

⑤ 90¼
⑥

⑩
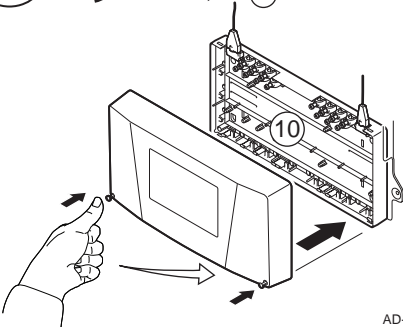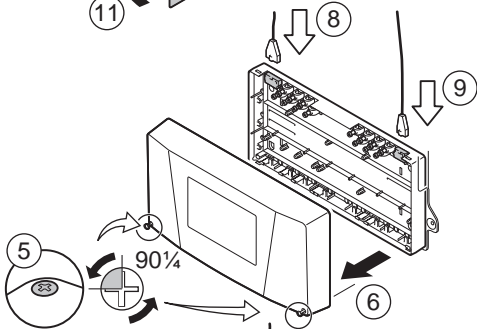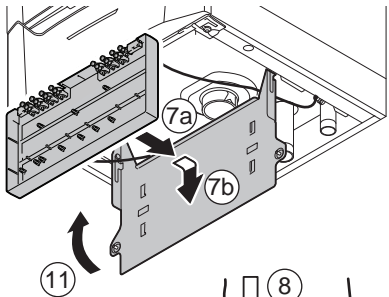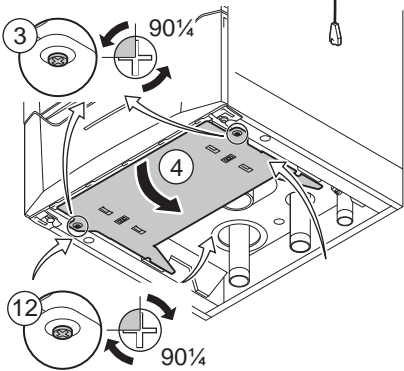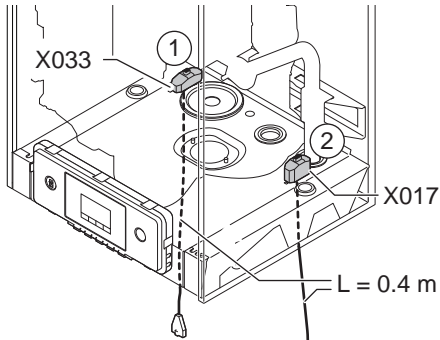
AD-0000117-03

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FDOGDLD
$OOHQWDUH OH YLWL GHO VXSSRUWR GHOOD
FDOGDLD GL XQ TXDUWR GL JLUR
6SLQJHUH OHJJHUPHQWH LQGLHWUR LO VXSSRU
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$SULUH LO FRSHUFKLR GHOOD VFDWURD GHL F
)DU VFRUUHUH H LQQHVWDUH LQ SRVL]LRQH O
UHODWLYR VXSSRUWR
&ROOHJDUH LO FDYR ;GLFRROHJQDQPHRQQWWRRUH O
OD GHL FROOHJDPHQWL
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OD GHL FROOHJDPHQWL
&ROOHJDUH RUD OH XQLW¢ GL FRQWUROOR HV
QHWWRUL 3URFHGHUH FRPH VHJXH
- 6WHQGHUH LO FDYR VRWWR OD JUDIID GL EO
- 3UHPHUH FRQ GHFLVLRQH OD JUDIID GL EORF
- &KLXGHUH OD VFDWURD GHL FROOHJDPHQWL
- 3UHPHUH OH YLWL DOO LQWHUQR GHOOD VF
6ROOHYDUH LO VXSSRUWR H SRVL]LRQDUOR ID
6HUUDUH OH YLWL GHO VXSSRUWR GHOOD VF
FDOGDLD GL XQ TXDUWR GL JLUR

ℹ ,PSRUWDQWH

/D VFDWURD GHL FROOHJDPHQWL SX´ DQFKH H
8WLOL]]DUH L IRUL GHOOH YLWL VXO UHWUR G
FDYL GL FROOHJDPHQWR IRUQLWL QRQ GHYRQ
FDYL GL SUROXQJD VSHFLDOL VRQR GLVSRQLE

Y

&DULFDPHQWR LPSLDQWR

7UDWWDPHQWR GHOO DFTXD

1HOOD PDJJLRU SDUWH GHL FDVL OD FDOGDLD H
WUDOL]]DWR SRVVRQR HVVHUH ULHPSLWL FRQ QR
VDU¢ QHFHVVDULR DOFXQ WUDWWDPHQWR GHOO D

> ⚠ **$YYHUWHQ]D**
> 1RQ DJJLXQJHUH SURGRWWL FKLPLFL DOO DFT
> FRQVXO O DHPDWKR]G HVHPSR DQWLJHOR DGGROF
> SURGRWWL SHU DXPHQWDUH R ULGXUUH LO S+
> 7DOL DJHQWL SRVVRQR FDXVDUH HUURUL GHO
> ELWRUH SULPDULR

> ℹ **,PSRUWDQWH**
> • ,O S+ GHOO DFTXD SUHVHQWH QHOO LPSLDQ
>   IUD H SHU O DFTXD QRQ WUDWWDWD H IU
>   WD
> • /D GXUH]]D PDVVLPD GHOO DFTXD SUHVHQWH
>   VHUH FRPSUHVD IUD H   rG+ D VHFRQG
>   PLFD JHQHUDWD
> • 8OWHULRUL LQIRUPD]LRQL VR 1RUPH VXOOD L
>   TXDOLW¢ GHOO DFTXD VHPSUH OH LVWUX]
>   GRFXPHQWR VRSUD FLWDWR

5LHPSLPHQWR GHO VLIRQH

,O VLIRQH ª IRUQLWR VHSDUDWDPHQWH GL VHULH
VFDULFR LQ SODVWLFD IOHVVLELOH H XQ IOHVVLE
VILDWR GHOO DULD DXWRPDWLFR 0RQWDUH LO V

)LJ   5LHPSLPHQWR GHO VLIRQH

5LHPSLUH LO VLIRQH GL DFTXD ILQR DO VHJQR
3UHPHUH FRQ GHFLVLRQH LO VL VR VRQ WR QHOOD S
FDOGDLD
⇨ / LQQHVWR GHO VLIRQH ª FRQIHUPDWR FRQ X
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&RQWUROODUH FKH LO VLIRQH VLD PRQWDWR
QHOOD FDOGDLD
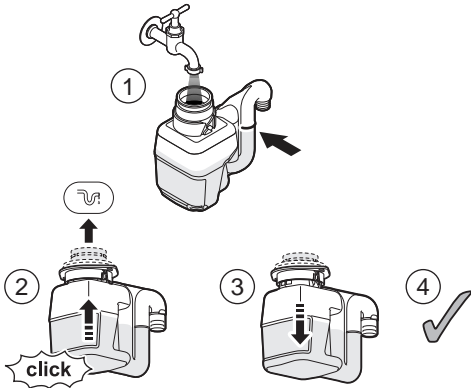
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> ,O VLIRQH GHYH HVVHUH VHPSUH ULHPSLWR D
> TXHVWR PRGR VL LPSHGLVFH O LQJUHVVR GHL

AD-0000231-02

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> ℹ **,PSRUWDQWH**
> 3HU SRWHU OHJJHUH OD SUHVVLRQH LGUDXOL
> QHFHVVDULR DFFHQGHUH OD FDOGDLD 6H OD
> WURSSR EDVVD OD FDOGDLD R OD UHODWLYD

5LHPSLUH O LPSLDQWR GL ULVFDOGDPHQWR F
WH SXOLWD

> ℹ **,PSRUWDQWH**
> /D SUHVVLRQH GHOO DFTXD UDFFRPDQGDWD ª

9HULILFDUH OD WHQXWD GHL FROOHJDPHQWL

0HVVD LQ VHUYL]LR

5HJROD]LRQL YDOYROD JDV

5HJROD]LRQH SHU XQ DOWUR WLSR GL

> ⚠ **$YYHUWHQ]D**
> /H RSHUD]LRQL VRWWRHOHQFDWH GHYRQR HV
> WHFQLFR TXDOLILFDWR

/ LPSRVWD]LRQH GL IDEEULFD GHOOD FDOGDLD SU
QDWXUDOH GHO JUXSSR * JDV +

3ULPD GL RSHUDUH FRQ XQ DOWUR WLSR GL JDV

)LJ ,QVWDOODUH LO GLDIUDPPD DRJWUDUH LO GLDIUDPPD QHOO YDOYROD JDV

AD-3000835-01

SHU * EXWDQR SURSSRQRSDQR

7DE 'LDIUDPPD JDV SHU * * EXWDQR SURS

'LDIUDPPD JDV SHU * * EXWDQRPSURSDQR	
4XLQWD $FH	

7DE 'LDIUDPPD JDV SHU * * EX6YDQRSURS

'LDIUDPPD JDV SHU * * EXWDQRPSURSDQR	
4XLQWD $FH	

7DE 'LDIUDPPD JDV * SURSDQR

'LDIUDPPD JDV * SURSDQR	º PP
4XLQWD $FH	
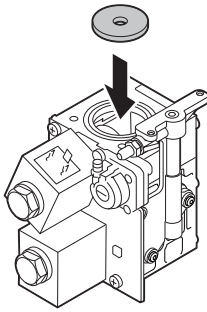
,PSRVWDUH OD YHORFLW¢ GHO YHQWLODWRUH
QHFHVVDULR / LPSRVWD]LRQH SX´HVVHUH P
SDUDPHWUR

7DE ,PSRVWD]LRQL GL IDEEULFD * + JDV

3DUDPHWUR XDUXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
'3	9HORFLW¢ PDVVLPD GHO YHQWLODWRUH LQ SURGX]LRQH $&6	
*3	9HORFLW¢ PDVVLPD YHQWLODWRUH LQ PRGDOLW¢ ULVFDOGDPHQWR	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ PRGDOLW¢ ULVFDOGDPHQWR &DOGD 6DQLWDULD	$FTX
*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR GHOO PDSSD PFFKLR	

7DE 5HJROD]LRQH SHU JDV WLSR *R JDV +

3DUDPHWUR XDUXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
'3	9HORFLW¢ PDVVLPD GHO YHQWLODWRUH LQ SURGX]LRQH $&6	
*3	9HORFLW¢ PDVVLPD YHQWLODWRUH LQ PRGDOLW¢ ULVFDOGDPHQWR	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ PRGDOLW¢ ULVFDOGDPHQWR &DOGD 6DQLWDULD	$FTX
*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR GHOO PDSSD PFFKLR	

7DE 5HJROD]LRQH SHU JDV WLSR *UD JDV +

3DUDPHWUR XDUXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
'3	9HORFLW¢ PDVVLPD GHO YHQWLODWRUH LQ SURGX]LRQH $&6	
*3	9HORFLW¢ PDVVLPD YHQWLODWRUH LQ PRGDOLW¢ ULVFDOGDPHQWR	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ PRGDOLW¢ ULVFDOGDPHQWR &DOGD 6DQLWDULD	$FTX
*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR GHOO PDSSD PFFKLR	

7DE 5HJROD]LRQH SHU JDV WLSR * JDV /

3DUDPHWUR XDUXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
'3	9HORFLW¢ PDVVLPD GHO YHQWLODWRUH LQ SURGX]LRQH $&6	
*3	9HORFLW¢ PDVVLPD YHQWLODWRUH LQ PRGDOLW¢ ULVFDOGDPHQWR	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ PRGDOLW¢ ULVFDOGDPHQWR &DOGD 6DQLWDULD	$FTX
*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR GHOO PDSSD PFFKLR	

7DE 5HJROD]LRQH SHU JDV WLSR * JDV 6

3DUDPHWUR XDUXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
'3	9HORFLW¢ PDVVLPD GHO YHQWLODWRUH LQ SURGX]LRQH $&6	
*3	9HORFLW¢ PDVVLPD YHQWLODWRUH LQ PRGDOLW¢ ULVFDOGDPHQWR	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ PRGDOLW¢ ULVFDOGDPHQWR &DOGD 6DQLWDULD	$FTX
*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR GHOO PDSSD PFFKLR	

7DE   5HJROD]LRQH SHU JDV WLSR *   JDV /Z

3DUDPHWUR	9LVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
'3	9HORFLW¢ PDVVLPD GHO YHQWLODWRUH LQ SURGX]LRQH $&6		
*3	9HORFLW¢ PDVVLPD YHQWLODWRUH LQ PRGDOLW¢ 5LVFDOGDPHQWR		
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*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR GHOO PDSSD DSSDUHFFKLR		

7DE   5HJROD]LRQH SHU JDV WLSR * *   EXWDQR SURSDQR

3DUDPHWUR	9LVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
'3	9HORFLW¢ PDVVLPD GHO YHQWLODWRUH LQ SURGX]LRQH $&6		
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*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR GHOO PDSSD DSSDUHFFKLR		

7DE   5HJROD]LRQH SHU JDV WLSR * 6*YL]]HXUWDQR SURSDQR

3DUDPHWUR	9LVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
'3	9HORFLW¢ PDVVLPD GHO YHQWLODWRUH LQ SURGX]LRQH $&6		
*3	9HORFLW¢ PDVVLPD YHQWLODWRUH LQ PRGDOLW¢ 5LVFDOGDPHQWR		
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ PRGDOLW¢ 55LVFDOGDPHQWR &DOGD 6DQLWDULD		$FT
*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR GHOO PDSSD DSSDUHFFKLR		

7DE   5HJROD]LRQH SHU JDV WLSR *   SURSDQR

,PSRVWD]LRQH QH	9LVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
'3	9HORFLW¢ PDVVLPD GHO YHQWLODWRUH LQ SURGX]LRQH $&6		
*3	9HORFLW¢ PDVVLPD YHQWLODWRUH LQ PRGDOLW¢ 5LVFDOGDPHQWR		
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ PRGDOLW¢ 55LVFDOGDPHQWR &DOGD 6DQLWDULD		$FT
*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR GHOO PDSSD DSSDUHFFKLR		

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU JDV WLSR *   + JDV

3DUDPHWUR	9LVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ PRGDOLW¢ 55LVFDOGDPHQWR &DOGD 6DQLWDULD		$FT

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU JDV WLSR *   + JDV

3DUDPHWUR	9LVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ PRGDOLW¢ 55LVFDOGDPHQWR &DOGD 6DQLWDULD		$FT
*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR GHOO PDSSD DSSDUHFFKLR		

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   %3HDOSHUL JDV WLSR *   JDV +

3DUDPHWUL YLVXDOL]]D]LRQH WHVWR		&DPSR GL UHJROD]LRQH	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRG5DSPLW¢55LPVFDOGDPHQWR PHQWR	$FTX

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   %3HDOSHUL JDV WLSR *   JDV +

3DUDPHWUL YLVXDOL]]D]LRQH WHVWR		&DPSR GL UHJROD]LRQH	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRG5DSPLW¢55LPVFDOGDPHQWR PHQWR	$FTX
*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR	GHO 6PDSSD SHFFKLR	

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   63YD]HHUUJDV WLSR *   JDV +

3DUDPHWUL YLVXDOL]]D]LRQH WHVWR		&DPSR GL UHJROD]LRQH	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRG5DSPLW¢55LPVFDOGDPHQWR PHQWR	$FTX

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   63YD]HHUUJDV WLSR *   JDV +

3DUDPHWUL YLVXDOL]]D]LRQH WHVWR		&DPSR GL UHJROD]LRQH	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRG5DSPLW¢55LPVFDOGDPHQWR PHQWR	$FTX
*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR	GHO 6PDSSD SHFFKLR	

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU JDV WLSR *   JDV /

3DUDPHWUL YLVXDOL]]D]LRQH WHVWR		&DPSR GL UHJROD]LRQH	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRG5DSPLW¢55LPVFDOGDPHQWR PHQWR	$FTX

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU JDV WLSR *   JDV /

3DUDPHWUL YLVXDOL]]D]LRQH WHVWR		&DPSR GL UHJROD]LRQH	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRG5DSPLW¢55LPVFDOGDPHQWR PHQWR	$FTX
*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR	GHO 6PDSSD SHFFKLR	

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU JDV WLSR *   JDV 6

3DUDPHWUL YLVXDOL]]D]LRQH WHVWR		&DPSR GL UHJROD]LRQH	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRG5DSPLW¢55LPVFDOGDPHQWR PHQWR	$FTX

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU JDV WLSR *   JDV 6

3DUDPHWUL YLVXDOL]]D]LRQH WHVWR		&DPSR GL UHJROD]LRQH	
*3	9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRG5DSPLW¢55LPVFDOGDPHQWR PHQWR	$FTX
*3	9HORFLW¢ YHQWLODWRUH DOO DYYLR	GHO 6PDSSD SHFFKLR	

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU JDV WLSR *   JDV /Z

3DUDPHWUR YLVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
*3 9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRGDOLW¢ 5LVFDOGDPHQWR	$FT[

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU JDV WLSR *   JDV /Z

3DUDPHWUR YLVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
*3 9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRGDOLW¢ 5LVFDOGDPHQWR	$FT[
*3 9HORFLW¢ YHQWLODWRUH DOO DYYLR	GHOO DSSDUHFFKLR	

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU JDV WLSR * *   EXWDQR

3DUDPHWUR YLVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
*3 9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRGDOLW¢ 5LVFDOGDPHQWR	$FT[

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU JDV WLSR * *   EXWDQR

3DUDPHWUR YLVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
*3 9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRGDOLW¢ 5LVFDOGDPHQWR	$FT[
*3 9HORFLW¢ YHQWLODWRUH DOO DYYLR	GHOO DSSDUHFFKLR	

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU 6YL]]HUD WLSR * *   EXWDQR

3DUDPHWUR YLVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
*3 9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRGDOLW¢ 5LVFDOGDPHQWR	$FT[

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU 6YL]]HUD WLSR * *   EXWDQR

3DUDPHWUR YLVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
*3 9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRGDOLW¢ 5LVFDOGDPHQWR	$FT[
*3 9HORFLW¢ YHQWLODWRUH DOO DYYLR	GHOO DSSDUHFFKLR	

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU JDV WLSR *   SURSDQR

3DUDPHWUR YLVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
*3 9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRGDOLW¢ 5LVFDOGDPHQWR	$FT[

7DE   5HJROD]LRQH VRYUDSSUHVVLRQH &/9 GL   3D SHU JDV WLSR *   SURSDQR

3DUDPHWUR YLVXDOL]]D]LRQH WHVWR	&DPSR GL UHJROD]LRQH	
*3 9HORFLW¢ PLQLPD YHQWLODWRUH LQ &DOGD 6DQLWDULD	PRGDOLW¢ 5LVFDOGDPHQWR	$FT[
*3 9HORFLW¢ YHQWLODWRUH DOO DYYLR	GHOO DSSDUHFFKLR	

9HULILFDUH OD UHJUROD]LRQH GHO UDSSRUWR

> 📖 **9HGHUH**
> 9HULILFD LPSRVWD]LRQH GHOOD FRPEXVWLRQ

9HULILFD LPSRVWD]LRQH GHOOD FRPEX
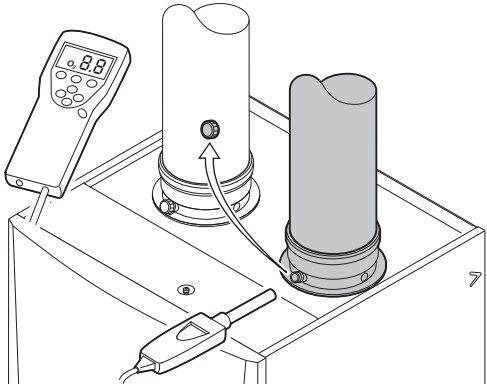
6YLWDUH LO WDSSR GDOOD SUHVD DQDOLVL IX
,QVHULUH OD VRQGD GHOO DQDOL]]DWRUH GH
QH

> ⚠️ **$YYHUWHQ]D**
> 'XUDQWH OD PLVXUD]LRQH VLJLOODUH FRPSO
> DOOD VRQGD

> ℹ️ **,PSRUWDQWH**
> / DQDOL]]DWRUH GHL IXPL GHYH DYHUH XQD S
> s   SH2U

0LVXUDUH OD SH2UFHQWXDOH GLQHL IXPL (VH
UD]LRQL D SLHQR FDULFR H D EDVVR FDULFR

> ℹ️ **,PSRUWDQWH**
> /H PLVXUD]LRQL GHYRQR HVVHUH HVHJXLWH V

)LJ   3UHVD DQDOLVL IXPL

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■ 9DORUL GL YHULILFD O LPSRVWD]LRQH

5HJRODUH OD FDOGDLD LQ PRGDOLWj D SLHQR

> 📖 **9HGHUH**
> 0DQXDOH SHU LO SDQQHOOR GL FRQWUROOR

0LVXUDUH OD SH2UFHQWXDOH GLQHL JDV FRPE
FRQ L YDORUL PLVXUDWR FRQ L YD
EHOOD

7DE   9DORUL GL YHULILFD O LPSRVWD]LRQH
**   *   JDV +**

9DORUL D SLHQR FDULFR SHU	* 2 JDV +
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD O LPSRVWD]LRQH
**   *   JDV %HOJLR**

9DORUL D SLHQR FDULFR SHU	* 2 JDV +
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD O LPSRVWD]LRQH
**   *   JDV 6YL]]HUD**

9DORUL D SLHQR FDULFR SHU	* 2 JDV +
4XLQWD $FH	

)LJ   3RVL]LRQH GHOOD YLWH GL UHJROD]LRQH

1
2
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+
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A

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9DORUL D SLHQR FDULFR SHU	* 2JDV +
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD2 LD P SRROWROD]EROLFROH S
        *   JDV /

9DORUL D SLHQR FDULFR SHU	* 2JDV /
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL ULIHULPH2Q WRS SOHQ R PHDWWULURRSI
        *   JDV 6

9DORUL D SLHQR FDULFR SHU	* 2 JDV 6
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULI2FD LSPHRRWWDJURQR SHU
        JDV /Z

9DORUL D SLHQR FDULFR SHU	* 2JDV /Z
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD2 LD P SRROWROD]EROLFROH S
        *   *   EXWDQR SURSDQR

9DORUL D SLHQR FDULFR SHU	* 2* EXWDQR QR
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD2 LD P SRROWROD]EROLFROH S
        *   *   EXWDQR SURYRL$SHQUROD

9DORUL D SLHQR FDULFR SHU	* 2* EXWDQR QR
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD2 LD P SRROWROD]EROLFROH S
        *   SURSDQR

9DORUL D SLHQR FDULFR SHU	* 2SURSDQR
4XLQWD $FH	
9DORUH QRPLQDOH	

6H LO YDORUH PLVXUDWR QRQ ULHQWUD IUD T
UHJJHUH LO UDSSRUWR JDV DULD
6HUYHQGRVL GHOOD $LWHPS\V WUDHU ROVDX[ORYDORU
OH OD SHUF2HSWLDLHWGLLSR GL JDV LQ XVR 7D
GHYH VHPSUH HVVHUH FRPSUHVD IUD LO OLPL
H TXHOOR PLQLPR

■ **9DORUL GL YHULILFD2LP SDODWWR R]FRQH FSRH**
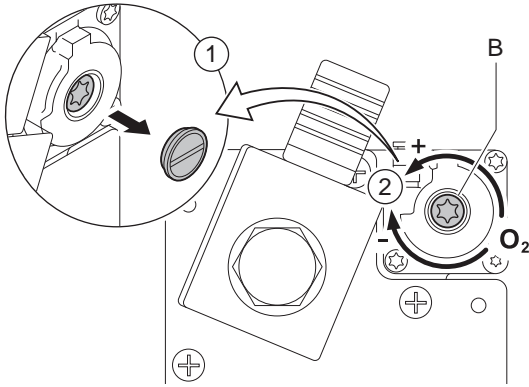
,PSRVWDUH OD FDOGDLD VXO FDULFR SDU]LDO

📖 **9HGHUH**
0DQXDOH SHU LO SDQQHOOR GL FRQWUROO

0LVXUDUH OD SH2UFHQWXDOHWGHLQHL JDV FRPE
URJRORRJLQWOHH %LO YDORUH PLVXUDWR FRQ L YL
EHOOD

)LJ   3RVL]LRQH GHOOD YLWH GL U URJRORRJLQWOHH

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7DE   9DORUL GL YHULILFD2LP SDODWWR R]FRQH FSRH8
*   JDV +

9DORUL D EDVVR FDULFR SHU	* 2JDV +
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD2LP SDODWWR R]FRQH FSRH8
*   JDV %HOJLR

9DORUL D FDULFR SDU]LDOH SHU2* JDV +	
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD2LP SDODWWR R]FRQH FSRH8
*   JDV 6YL]]HUD

9DORUL D FDULFR SDU]LDOH SHU2* JDV +	
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD2LP SDODWWR R]FRQH FSRH8
*   JDV /

9DORUL D FDULFR SDU]LDOH SHU2* JDV /	
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD2LP SDODWWR R]FRQH FSRH8
*   JDV 6

9DORUL D FDULFR SDU]LDOH SHU2* JDV 6	
4XLQWD $FH	

9DORUL D FDULFR SDU]LDOH SHU2*	JDV 6
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD2LP SERODWWVR]LFRQOLHFSRH8
  *   JDV /Z

9DORUL D EDVVR FDULFR SHU	* 2 JDV /Z
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD2LP SERODWWVR]LFRQOLHFSRH8
  * *   EXWDQR SURSDQR

9DORUL D EDVVR FDULFR SHU SURSDQR	* 2* EXWDQR
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD2LP SERODWWVR]LFRQOLHFSRH8
  * *   EXWDQR SURSLS$JHQOLRD

9DORUL D EDVVR FDULFR SHU SURSDQR	* 2* EXWDQR
4XLQWD $FH	
9DORUH QRPLQDOH	

7DE   9DORUL GL YHULILFD2LP SERODWWVR]LFRQOLHFSRH8
  *   SURSDQR

9DORUL D EDVVR FDULFR SHU	* 2 SURSDQR
4XLQWD $FH	
9DORUH QRPLQDOH	

⚠ **$WWHQ]LRQH**
, YDORULDEDVVR ULGRWWR GHYRQR HVVHUH VX
SLHQR FDULFR

6H LO YDORUH PLVXUDWR QRQ ULHQWUD IUD T
UHJJHUH LO UDSSRUWR JDV DULD
6HUYHQGRVL GHOOD %LWPSH6 LVWUDHJUROVDX]LQRYODOHR U
OH OD SHUF2HOSWWXXDDLOHWGLLSR GL JDV LQ XVR 4X
VHPSUH FRQWHQXWR IUD LO OLPLWH GL LPSRV

)XQ]LRQDPHQWR

8WLOL]]R GHO SDQQHOOR GL FRQWUROOR

,O PRQLWRU GHO SDQQHOOR GL FRQWUROOR IRUG
QDPHQWR GHOOD FDOGDLD H DJOL HYHQWXDOL HU
VXDOL]]DUH XQ PHVVDJJLR SHU OD PDQXWHQ]LRQ

,O PDQXDOH GHO SDQQHOOR GL FRQWUROOR IRUG
GHO SDQQHOOR VWHVVR DOOD PRGLILFD H DO UL
FDWR GHL FRGLFL GL HUURUH QRQFK« VX FRPH VY

9HGHUH
0DQXDOH SHU LO SDQQHOOR GL FRQWUROOR

0DQXWHQ]LRQH

*HQHUDOLW¢

/D FDOGDLD QRQ QHFHVVLWD GL XQD PDQXWHQ]LR
HVVHUH LVSH]LRQDWD H PDQXWHQXWD SHULRGLF
PRPHQWR PLJOLRUH SHU OD PDQXWHQ]LRQH OD F
GL ULFKLHVWD PDQXWHQ]LRQH DXWRPDWLFR ,O S
WHPSLVWLFKH GL YLVXDOL]]D]LRQH GL TXHVWR PL
VHFRQGR GHOO XWLOL]]R GHOOD FDOGDLD LO SU
YLHQ YLVXDOL]]DWR DO SL» WDUGL GRSR DQQL

> ⚠ **$WWHQ]LRQH**
>
> • /H RSHUD]LRQL GL PDQXWHQ]LRQH GHYRQR H
>   LQVWDOODWRUH TXDOLILFDWR
> • 'XUDQWH JOL LQWHUYHQWL GL LVSH]LRQH R
>   VHPSUH WXWWH OH JXDUQL]LRQL GHL SH]]L
> • 6RVWLWXLUH L FRPSRQHQWL GLIHWWRVL R X

,QWHUYHQWL GL LVSH]LRQH H PDQXWHQ]LRQH VWDQGDUG

> ⚠ **$YYHUWHQ]D**
> ,QGRVVDUH VHPSUH RFFKLDOL GL SURWH]LRQ
> YHUH GXUDQWH OH RSHUD]LRQL GL SXOL]LD

3HU O DVVLVWHQ]D HVHJXLUH VHPSUH L VHJXHQ
QXWHQ]LRQH VWDQGDUG

> ⚠ **$WWHQ]LRQH**
>
> • 9HULILFDUH VH WXWWH OH JXDUQL]LRQL VRQ
>   PHQWH OD WHQXWD DO JDV ª JDUDQWLWD G
>   PHQWR DOO LQWHUQR GHOO DSSRVLWD VFDO
> • 'XUDQWH OH RSHUD]LRQL GL LVSH]LRQH H P
>   VHPSUH FKH O DFTXD JRFFH VSUX]]L HQWU
>   SRQHQWL HOHWWULFL

&RQWUROOR GHOOD SUHVVLRQH GHOO

&RQWUROODUH OD SUHVVLRQH GHOO DFTXD

> ℹ **,PSRUWDQWH**
> /D SUHVVLRQH GHOO DFTXD ª LQGLFDWD VXO
> WUROOR

⇨ /D SUHVVLRQH GHOO DFTXD GHYH HVVHUH DO
6H LQIHULRUH D   EDU UDEERFFDUH O LPSLD
OL]]DWR

&RQWUROOR GHOOD TXDOLW¢ GHOO DF

5LHPSLUH XQD ERWWLJOLD SXOLWD FRQ O DFT
FDOGDLD WUDPLWH LO UXELQHWWR GL ULHPSL
&RQWUROODUH OD TXDOLW¢ GL TXHVWR FDPSL
LQ ODERUDWRULR

> 📖 **9HGHUH**
> 8OWHULRUL LQIRUPD]LRQL VRQWUX]LRQL SHU
> TXDOLW¢ GHOO DFTXDQXDOH ID SDUWH GHOO
> PHQWL IRUQLWL FRQ OD FDOGDLD 5LVSHWWD
> WH QHO GRFXPHQWR VRSUD FLWDWR

&RQWUROOR GHOOD FRUUHQWH GL LRQ

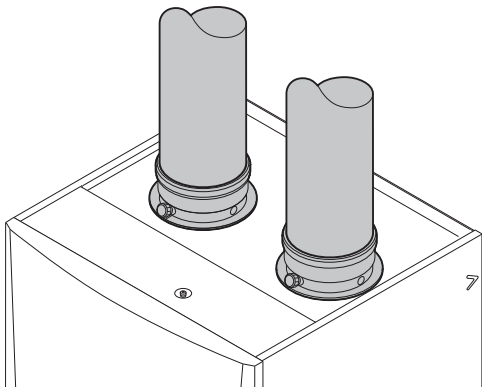&RQWUROODUH OD FRUUHQWH GL LRQL]]D]LRQ
]LDOH

📖 **9HGHUH**
0DQXDOH SHU LO SDQQHOOR GL FRQWUROOR

⇨ ,O YDORUH ª VWDELOH GRSR PLQXWR
6H LO YDORUH ª LQIHULRUH D w$ SXOLUH R
VLRQH LRQL]]D]LRQH

&RQWUROOR GHL FROOHJDPHQWL GHOO

)LJ &RQWUROOR GHL FROOHJDPHQWL GHOO LQ
JUHVVR DULD VFDULFR IXPL

&RQWUROODUH OH FRQGL]LRQL H OD WHQXWD
DULD H GHOOR VFDULFR GHL IXPL

AD-0000125-01

&RQWUROOR GHOOD FRPEXVWLRQH

,O FRQWUROOR GHOOD FRPEXVWLRQH DYYLHQH PL ovlHG QH PL
FRQGRWWR GL XVFLWD IXPL

📖 **3HU XOWHULRUL LQIRUPD]LRQL YHGHUH**
9HULILFD LPSRVWD]LRQH GHOOD FRPEXVWLRQ

&RQWUROOR GHO SUHVVRVWDWR GLIIHU

■ &RQWUROOR GHO SUHVVRVWDWR GLIIHUHQ]

),J   &RQWURROODUH LO SUHVVRVWDWR GLIIHUHQ-
]LDOH ODWR

P₂ (-)
P₁ (+)

AIR
SLOW

X mbar

5,5 ...6,5 mbar

AD-0000135-03
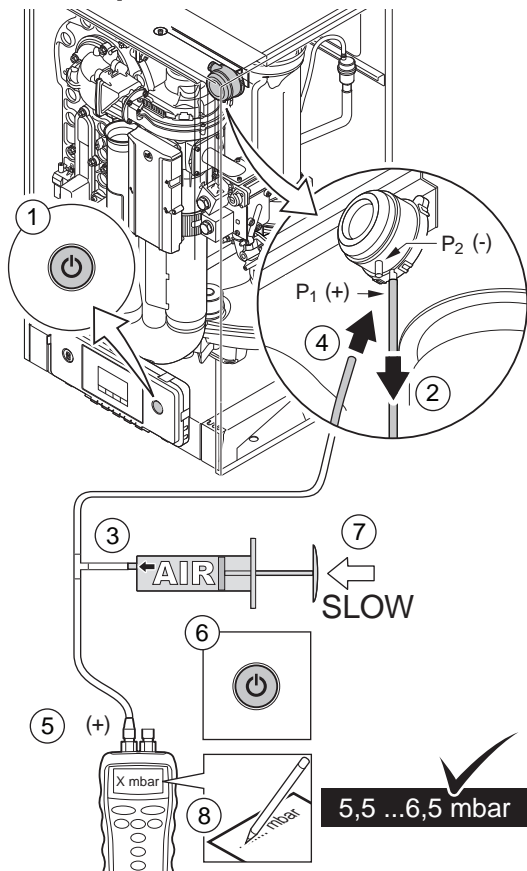
6SHJQHUH OD FDOGDLD
6FROOHJDUH LO IOHVVLELOH GL SULHVD R WXWR
UHQ]LDOH SHU DULD
3UHQGHUH XQD JUDQGH VLULQJD LQ SODVWLF
UDFFRUGR D 7 FRQ XQ IOHVVLELOH FROOHJDW
&ROOHJDUH LO ODWR GHO SUHVVRVWDWR GL
W¢ GHO UDFFRUGR D 7 FRQ XQ IOHVVLELOH
&ROOHJDUH LO ODWR GL XQ PDQRPHWUR DOO
7
$FFHQGHUH OD FDOGDLD
,QVHULUH OD VLULQJD R LO PDQWLFH PROWR
GDLD LQ PRGDOLW¢ GL JXDVWR
$ TXHVWR SXQWR SUHQGHUH QRWD GHOOD SU
WUR 8QD SUHVVLRQH FRPSUHVD WUD   H
SUHVVLRQH PLQRUH R PDJJLRUH LQGLFD OD S
SUHVVRVWDWR GLIIHUHQ]LDOH SHU O DULD
'RSR DYHU SUHVR OH PLVXUH VWDFFDUH LO I
FRUGR D 7 ODWR   H ULFROOHJDUH LO IOHVVL

(OLPLQDUH RJQL WUDFFLD GL VSRUFL]LD GD W
IOHVVLELOL H GDO SUHVVRVWDWR GLIIHUHQ]L
&RQWURROODUH OH FRQGL]LRQL H OD WHQXWD
IHUHQ]LDOH SHU DULD 6H QHFHVVDULR VRV

■ &RQWUROOR GHO SUHVVRVWDWR GLIIHUHQ
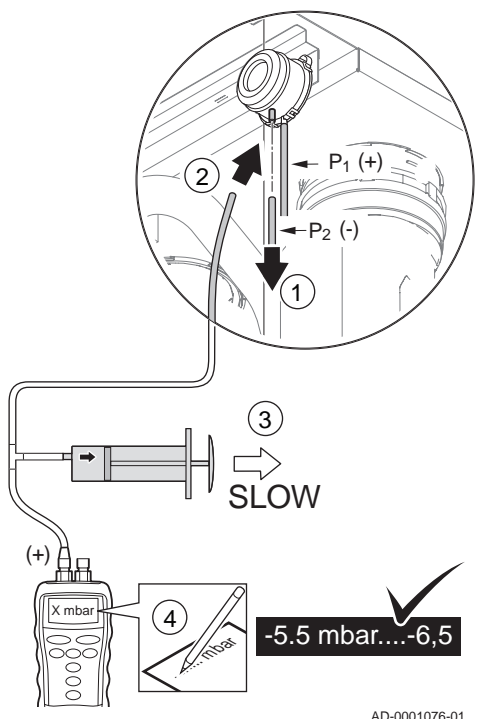
),J   /DWR   GHO SUHVVRVWDWR GLIIHUHQ]LDOH FROOHJDDDH LO WXER IOHVVLELOH FRQWR GL
SHU O DULD   SUHVVRVWDWR GLIIHUHQ]LDOH SHU DULD
                                            &ROOHJDUH LO ODWR ¦ GHO SUHVVRVWDWR GL
                        UDFFRUGR D 7 PHGLDQWH XQ WXER IOHVVLELO
                                            (VWUDUUH OD VLULQJD H QRQ UHLQVHULUOD S
P₁ (+)   OLW¢ JXDVWR
P₂ (-) $ TXHVWR SXQWR SUHQGHUH QRWD GHOOD SU
                                            WUR
SLOW   ⇨ 8QD SUHVVLRQH FRPSUHVD IUD   H   PE
                                               UH GHOOD SUHVVLRQH PLQRUH R PDJJLRUH L
X mbar   QRPDOLD GHO SUHVVRVWDWR GLIIHUHQ]LDOH
                                            'RSR DYHU SUHVR OH PLVXUH VWDFFDUH LO W
-5.5 mbar....-6,5   UDFFRUGR D 7 ODWR ¦ H ULFROOHJDUH LO WXE
                                            WHPHQWH ULPRVVR
AD-0001076-01   (OLPLQDUH RJQL WUDFFLD GL VSRUFL]LD GD W
                                            IHVVLELOL H GDO SUHVVRVWDWR GLIIHUHQ]L
                                            &RQWUROODUH OH FRQGL]LRQL H OD WHQXWD
                                            IHUHQ]LDOH SHU DULD
                                             ⇨ 6H QHFHVVDULR VRVWLWXLUH L IOHVVLELOL

Y

&RQWUROOR GHOO VLIDWR DXWRPDWL

)LJ   &RQWUROOR GHOO VLIDWR DXWRPDWLFR

&RQWUROODUH LO WXER IOHVVLELOH VXOOD V
6H VL QRWD OD SUHVHQ]D GL DFTXD DOO LQWH
WR VLJQLILFD FKH F ª XQD SHUGLWD GDOOR V
6H VL ULOHYD XQD SHUGLWD VRVWLWXLUH OR

AD-0000127-01

)LJ   &RQWUROOR GHOO VLIDWR DXWRPDWLFR

&RQWUROODUH LO WXER IOHVVLELOH VXOOD V
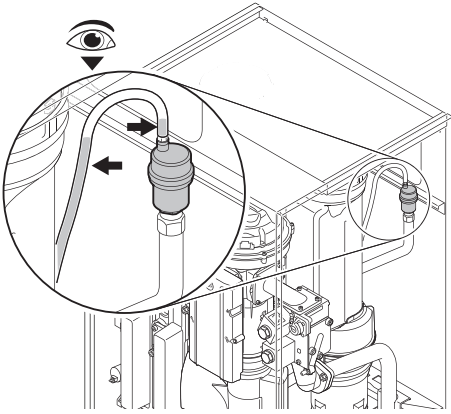
&RQWUROOR GHO EUXFLDWRUH H SXOL]
PDULR

)LJ   &RQWUROOR GHO EUXFLDWRUH

6FROOHJDUH OD VSLQD GHOO HOHWWURGR GL
VIRUPDWRUH GL DFFHQVLRQH

$OOHQWDUH OH   YLWL GHOO HOHWWURGR GL
5LPXRYHUH O HOHWWURGR GL DFFHQVLRQH LR
SULPDULR
$OOHQWDUH L   EXOORQL GDOO DGDWWDWRUH
ULWRUQR FRSSLD GL VHUUDJJLR   1P
$OOHQWDUH L   GDGL GDOO DGDWWDWRUH VXO
GL VHUUDJJLR   1P
5LPXRYHUH FRQ FDXWHOD O DGDWWDWRUH FR
SULPDULR
5LPXRYHUH L   EXOORQL GDO EUXFLDWRUH VX
FLDWRUH
$OOHQWDUH L GDGL VXL SRUWHOOL GL LVSH]L
⇨ 5LPXRYHUH L SRUWHOOL GL LVSH]LRQH SHU L
  SULPDULR
8VDUH XQ DVSLUDSROYHUH SHU SXOLUH OD SD
WRUH SULPDULR FDPHUD GL FRPEXVWLRQH
9HULILFDUH DG HVHPSLR FRQ O DXVLOLR GL X
FRQWDPLQD]LRQH YLVLELOH UHVLGXD 6H SUH
3XOLUH OD VH]LRQH LQIHULRUH GHOOR VFDPE
VSHFLDOH ODPD GL SXOL]LD   DFFHVVRULR
,O EUXFLDWRUH QRQ QHFHVVLWD LQ JHQHUH G
DXWRSXOHQWH
- 6H QHFHVVDULR SXOLUH FRQ FXUD LO EUXFL
  SUHVVD
- 9HULILFDUH FKH LO FRSHUFKLR GHO EUXFLDW
  FULQDWXUH H R GDQQL ,Q FDVR FRQWUDULR
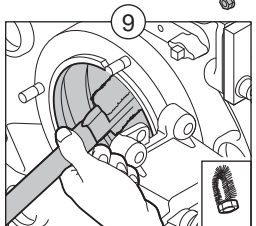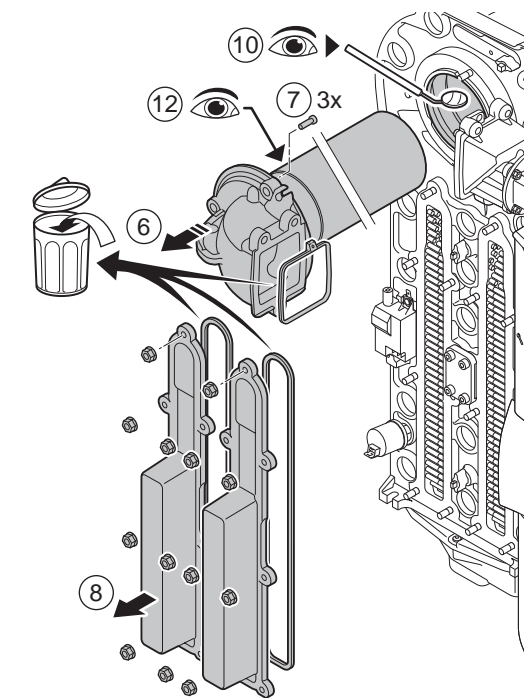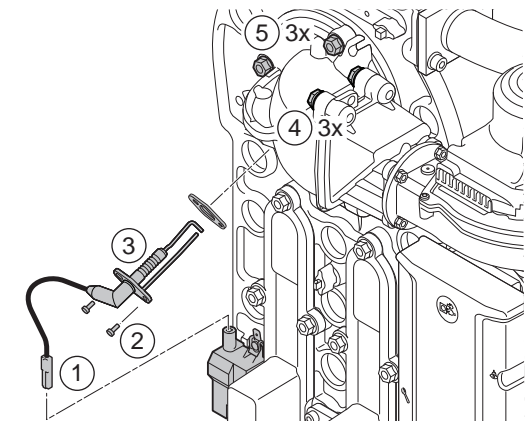5LDVVHPEODUH O XQLW¢ QHOO RUGLQH LQYHU
$SULUH O DOLPHQWD]LRQH GHO JDV H ULSULV
GHOOD FDOGDLD

AD-0000128-02

Y

3XOL]LD GHO FROOHWWRUH GHOOD FRQ
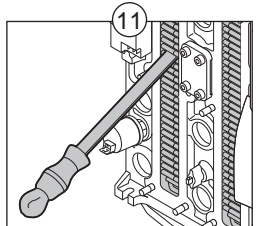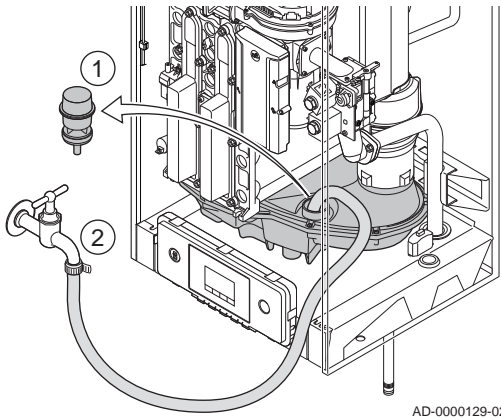
AD-0000129-02

5LPXRYHUH LO FDSSXFFLR GL WHQXWD GDO FR
GHQVD
5LVFLDFTXDUH LO FROOHWWRUH GL FRQGHQVD
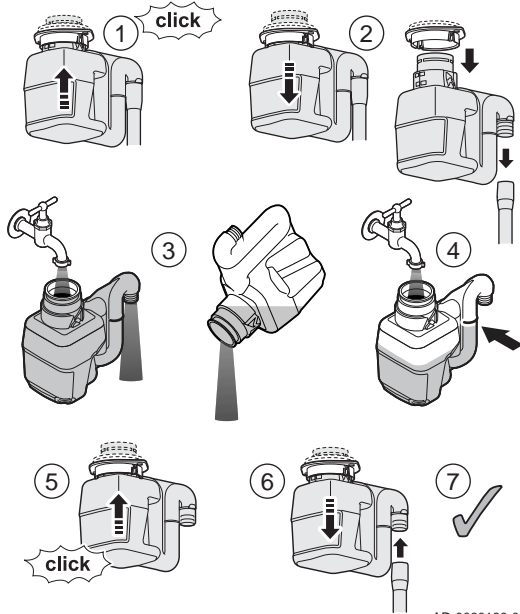G DFTXD SL» DPSLR SRVVLELOH

> ⚠ **$YYHUWHQ]D**
> 'XUDQWH LO ULVFLDFTXR HYLWDUH FKH O DF
> QHO SDQQHOOR GL FRQWUROOR

5LSRVL]LRQDUH LO WDSSR VXO FROOHWWRUH
6FROOHJDUH LO WXER GL VLOLFRQH GHOO LQW
VLRQH GHOOD DULD GDO UDFFRUGR QHO FROOH
3XOLUH O DSHUWXUD GHO UDFFRUGR PLQX]LRV
GR XQ RJJHWWR DO VXR LQWHUQR
5LFROOHJDUH LO WXER GL VLOLFRQH

3XOL]LD GHO VLIRQH

click

click

AD-0000130-02

6SLQJHUH LO VLIRQH YHUVR O DOWR
⇨ LO ULODVFLR GHO VLIRQH ª FRQIHUPDWR FRQ
7LUDUH FRQ FDXWHOD LO VLIRQH YHUVR LO E
3XOLUH LO VLIRQH FRQ DFTXD
5LHPSLUH LO VLIRQH GL DFTXD ILQR DO VHJQR
3UHPHUH FRQ GHFLVLRQH LO VLIRQH QHOOD SOD
FDOGDLD
⇨ / LQQHVWR GHO VLIRQH ª FRQIHUPDWR FRQ X
7LUDUH FRQ FDXWHOD LO VLIRQH YHUVR LO E
&RQWUROODUH FKH LO VLIRQH VLD PRQWDWR
QHOOD FDOGDLD

> ⚠ **3HULFROR**
> ,O VLIRQH GHYH HVVHUH WDVVDWLYDPHQWH U
> PRGR VL LPSHGLVFH O LQJUHVVR GHL IXPL QH

5LVROX]LRQH GHL SUREOHPL

&RGLFL GL HUURUH

/D FDOGDLD ª GRWDWD GL XQ SDQQHOOR GL FRQW
FXRUH GHO VLVWHPD GL FRQWUROOR ªFKH PRQLWRUD
PDQGD H SURWHJJH OD FDOGDLD ,Q FDVR GL HUU
YR FRGLFH

,O VLJQLILFDWR GHL FRGLFL GL HUURUH ª GHVFUL

9HGHUH
0DQXDOH SHU LO VHUYL]LR YHQGLWH FDOGDL

,PSRUWDQWH
3UHQGHUH QRWD GHO FRGLFH GL HUURUH YLV
ª QHFHVVDULR SHU LQGLYLGXDUH OD FDXVD G
GR H FRUUHWWH H SHU ULPHHGHUH DVVLVWHQ

$YYHUWHQ]D

8Q DYYLVR DSSDUH VXOOR VFKHUPR LQ FDVR GL D
PRVWUD XQ FRGLFH GL DYYLVR

1RWD
/D FDOGDLD FRQWLQXD D IXQ]LRQDUH PD OD I
VR GHYH HVVHUH HVDPLQDWD 8Q VHJQDOH GL
FRQVHJXHQ]D GL XQ EORFFR FDOGDLD

%ORFFR SURYYLVRULR

,O EORFFR FRPSDUH FRPH ULVXOWDWR GL XQ JXD
VWUD XQ FRGLFH GL EORFFR

,PSRUWDQWH
/ DSSDUHFFKLR WRUQD DXWRPDWLFDPHQWH L
QH ULVROWD OD FDXVD GHO EORFFR ,O EORFF
EORFFDWD

%ORFFR SHUPDQHQWH

,O EORFFR FRPSDUH FRPH ULVXOWDWR GL XQ JXD
VWUD XQ FRGLFH GL EORFFR

,PSRUWDQWH
/D FDOGDLD WRUQD DXWRPDWLFDPHQWH LQ IX
ULVROWD OD FDXVD GHO EORFFR

6PDOWLPHQWR

5LPR]LRQH ULFLFODJJLR

> **i** **,PSRUWDQWH**
> /D ULPR]LRQH H OR VPDOWLPHQWR GHOOD FD
> WXDWL GD SHUVRQDOH TXDOLILFDWR LQ FRQI
> OLYHOOR ORFDOH H QD]LRQDOH

3HU ULPXRYHUH OD FDOGDLD SURFHGHUH FRPH V

'LVDWWLYDUH LO FROOHJDPHQWR HOHWWULFR
,QWHUURPSHUH O DOLPHQWD]LRQH GHO JDV
,QWHUURPSHUH O DOLPHQWD]LRQH GHO JDV
6FDULFDUH O LPSLDQWR
5LPXRYHUH LO VLIRQH
5LPXRYHUH L WXEL GL LQJUHVVR DULD XVFLV
6FROOHJDUH WXWWL L WXEL GHOOD FDOGDLD
5LPXRYHUH OD FDOGDLD

$SSHQGLFH

,QIRUPD]LRQL VX (U3

6FKHGD SURGRWWR

7DE 6FKHGD SURGRWWR

5HPHKDXLQWD $FH		
&ODVVH GL HIILFLHQ]D HQHUJHWLFD VWDJLRQDOH GHO ULVFDOGDPHQWR G¬DPEL		
3RWHQ]D WHUPLFD QRPLQDOH R 3VXS	N:	
(IILFLHQ]D HQHUJHWLFD VWDJLRQDOH GHO ULVFDOGDPHQWR G DPELHQWH		
&RQVXPR HQHUJHWLFR DQQXR	*-	
/LYHOOR GL SRWHQ]D VRQRUD LQWHUQR	G%	

9HGHUH
3HU SUHFDX]LRQL VSHFLILFKH LQ UHOD]LRQH
JLR LQVWDOOD]LRQH VLFXUH XPHQ XW HSOJLRQQH

k &RS\ULJKW

/H LQIRUPD]LRQL WHFQLFKH H WHFQRORJLFKH FRQWHQXWH QHOOH SUHVHQWL LV
WXDOPHQWH IRUQLWL ULPDQJRQR GL QRVWUD SURSULHW¢ H QRQ SRVVRQR HVVI
D PRGLILFKH

remeha

CE

PART OF BDR THERMEA