. ' & TFSJFT TXBTI QMBUF BYJB
NPUPS JT B LJOE PG æYFE EJTQM

5FDIOJDBM %BUB

5ZQF JOUSPEVDUJPO

. ’		"	"	.	"	-	¸	/	/
									Œe@ ' *

1SPEVDU TFSJFT

	1SPEVDU TFSJFT									$
	4XBTI QMBUF 5ZQF "YJBM 1JTUPO ’JYFE %JTQMBDFNFOU .PUPSæ’MBOHF UZQF NPUPS	Œ	Œ	Œ	Œ	Œ	Œ	Œ	. ’	
	4XBTI QMBUF 5ZQF "YJBM 1JTUPO ’JYFE %JTQMBDFNFOU .PUPSæ1MVH JO NPUPS	Œ	Œ	Œ					. ’&	

4J[F

	4J[F								

4QFDJæ(DBUJPOT BOE QPTJUJPOT PG UIF JOMFU BOE PVUMFU

5ZQF JOUSPEVDUJPO

5ISFBE DPOOFDUJPO UZQF FYDFQU JOMFU BOE UISFBE UZQF PG

	1PSU UZQFaw. '										$PEF
	6/$ QPSU *40			Œ		Œ		Œ	Œ	Œ	Œ "
	.FUSJD QPSU *40						Œ		Œ	Œ	Œ .

5ISFBE UZQF PG 'MBOHF 1PSU

*OQVU 4IBGU

5ZQF JOUSPEVDUJPO

.PVOUJOH ÇæBOHF

	.PVOUJOH ÇæBOHFæw . '									$P
	4"& +				Œ		Œ	Œ	Œ	-
	4"& +									Œ -
	4"& +		Œ							-
	4QFDJBM)PMFæw æ			Œ						-
	.PVOUJOH ÇæBOHF . '&									$P
	4QFDJBM)PMFæw æ			Œ			Œ			-
	4QFDJBM)PMFæw æ				Œ					-

'MVTIJOH æ)PXæw - NJOæx

	4UBOEBSE WFSTJPO	
	4QFDJBM WFSTJPO	8JUI ÇæVTI WBMWFæw 0OMZ . ' n . '& n . ' n . ' n . ' n . ' æ

WFVTIJOH ÇæPX		$PEF	'MVTIJOH ÇæPX	$PEF
"			(	0QFOJOH QSFTTVSF CBS EJæFSFOUJBM QSFTTVSF þ1 CBS
#			)	
$			*	
%			+	
&			,	
'				

4QFFE TFOTPS

	8JUIPVU TQFFE TFOTPS
	8JUI TQFFE TFOTPS TVQQMZ WPMUBHF _ 7%$
	8JUI TQFFE TFOTPS TVQQMZ WPMUBHF _ 7%$
	*OTUBMMBUJPO PG SFTFSWFE TQFFE TFOTPS

/PUF öF ö POMZ UIF . '& JT BWBJMBCMF

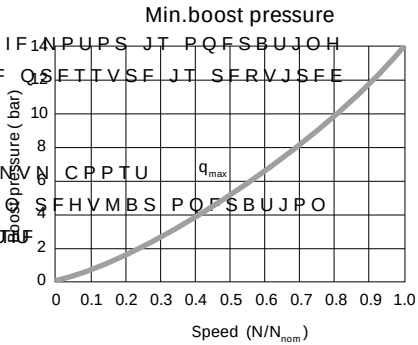
1MFBTF SFGFS UP QBHF GPS TQFDJæD QBSBNFUFST PG U

3FNBSLöŒ "WBJMBCMFö< ç 0O SFRVFTU

.JO CPPTU QSFTTVSF

5P QSFWFOU DBWJUBUJPO XIFO UIF NPUPS JT PQFSBUJOH JO B QVNQJOH NPEF B QPTJUJWF QSFTTVSF JT SFRVJSFE BU UIF TVDUJPO QPSU

5IF æHVSF BCPWF TIPXT UIF NJOJNVN CPPTU QSFTTVSF SFRVJSFNFOU CBTFE PO SFHVMBS POFSBUJPO *O DBTF PG B SBQJE DIBOHF PG TQFFE QSFTTVSF NVTU CF BQQMJFE



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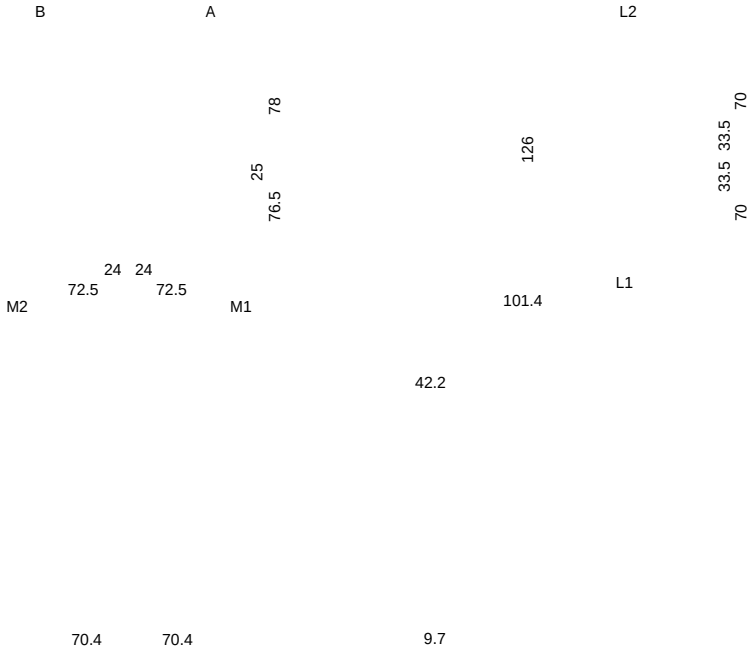
. ' *OTUBMMBUJPO TJ[F



*OMFU	QPSU 0	VUMFU QPSU	3PUBUJPO EJSFDUJPO
"	#	$MPDLXJTF	
#	"	"OUJ DMPDLXJTF	

/PUF 5IF SPUBUJPO EJSFDUJPO JT MPPLFE GSPN UIF TIBGU FOE

*OTUBMMBUJPO TJ[F

v%SBJO QPSU QSFTTVSF NFBTVSJOH QPSU JOMFU QP

1BSBMMFM QJQJOH UISFBE UZQF $PEF (

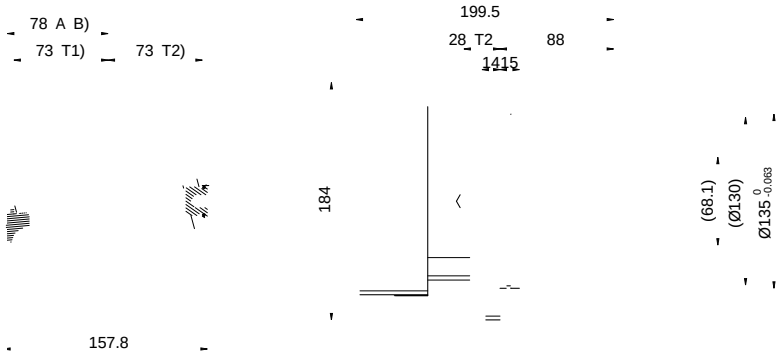
	4ZNCPM	1PSU TJ[F BOE EFTDSJQUJPO
B C	*OMFU BOE PVUMFU QPSU	(
5	%SBJO QPSU	(

"/4* UISFBE UZQF $PEF "

	4ZNCPM	1PSU TJ[F BOE EFTDSJQUJPO
B C	*OMFU BOE PVUMFU QPSU	6/ #
. .	1SFTTVSF NFBTVSJOH QPSU	6/' #
5	%SBJO QPSU	6/' #

*OTUBMMBUJPO TJ[F

. '& *OTUBMMBUJPO TJ[F



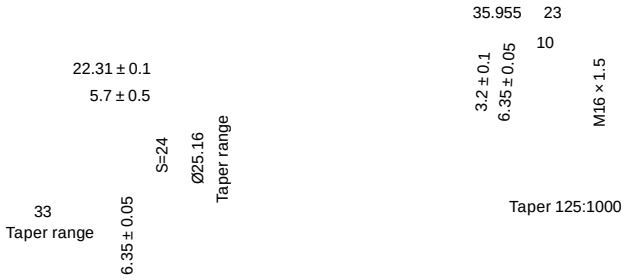
$POUSPM BOE 'MPX		0JM EJSFDUJPO		
		0JM QPSU "	0JM QPSU #	
3PUBUJPO EJSFDUJPO	$MPDLXJTF SPUVUJPO	0VU		*OMFU
	$PVOUFS DMPDLXJTF SPUVUJPO	*OMFU		0VU

*OTUBMMBUJPO TJ[F

v. '& 1PSU EFUBJMT

	1PSU OBNF	1PSU TJ[F BOE EFTDSJQUJPO
" #	*OMFU QPSU BOE	%FMJWFSZ QPSU 4"& + Ü.
5* 5	$BTF ESBJO	QPSU *40 6/' #

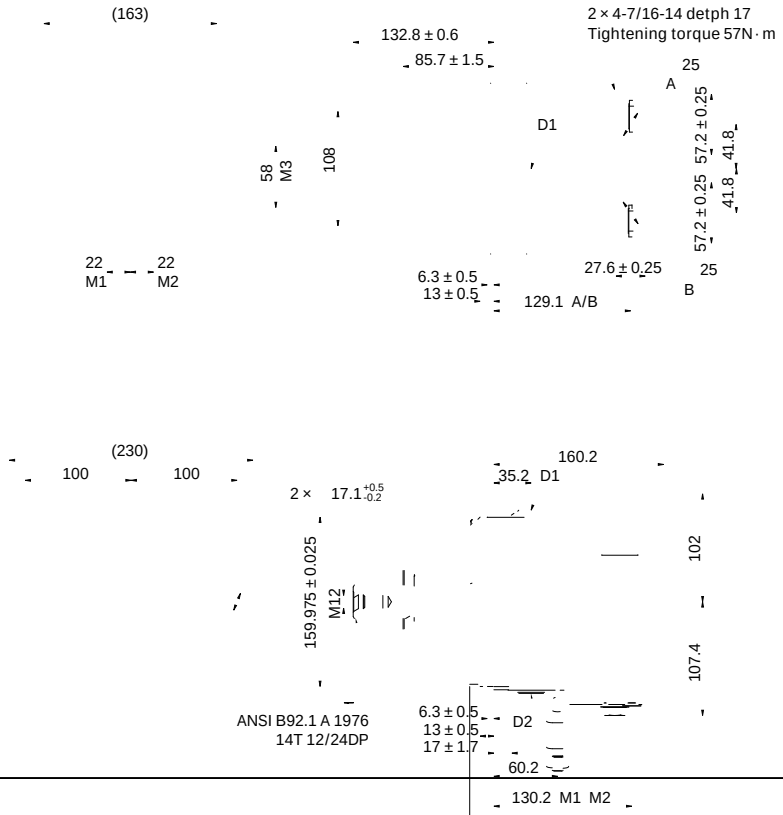
v . '& *OQVU TIBGU UZQF



ö³ %ö´ UZQF TIBGU

*OTUBMMBUJPO TJ[F

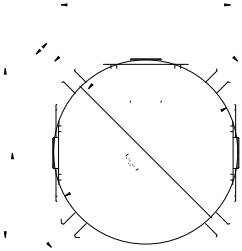
. '& *OTUBMMBUJPO TJ[F



$POUSPM BOE 'MPX		0JM EJSFDUJPO	
		0JM QPSU "	0JM QPSU #
3PUBUJPO EJSFDUJPO	$MPDLXJTF SPUVUJPO	0VU	*OMFU
	$PVOUFS DMPDLXJTF SPUVUJPO	*OMFU	0VU

*OTUBMMBUJPO TJ[F

. ' *OTUBMMBUJPO TJ[F



*OTUBMMBUJPO TJ[F

v%SBJO QPSU BOE HBVHF QPSU

1BSBMMFM QJQJOH UISFBE UZQF $PEF (

.FUSJD UISFBE UZQF $PEF .

"/4* UISFBE UZQF $PEF "

v1PSU EFUBJMT

$POUSPM BOE 'MPX		0JM EJSFDUJPO		
		0JM QPSU "	0JM QPSU #	
3PUBUJPO EJSFDUJPO	$MPDLXJTF SPUVUJPO	0VU		*OMFU
	$PVOUFS DMPDLXJTF SPUVUJPO		*OMFU	0VU

*OTUBMMBUJPO TJ[F

v. '& 1PSU EFUBJMT

	1PSU OBNF	1PSU TJ[F BOE	EFTDSJQUJPO
" #	*OMFU QPSU BOE	%FMJWFSZ QPSU	4"& + Ü.
5* 5	$BTF ESBJO QPSU	*40	6/' #

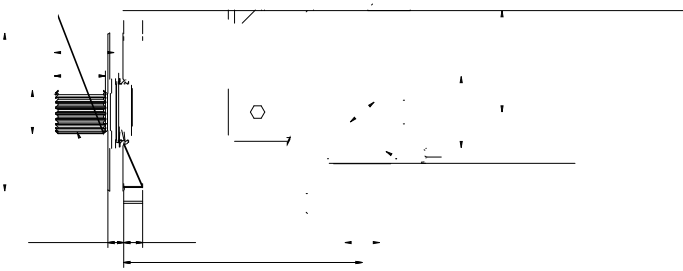
v . '& *OQVU TIBGU UZQF

ö³ %ő´ UZQF TIBGU

[redacted]

*OTUBMMBUJPO TJ[F

. ' *OTUBMMBUJPO TJ[F

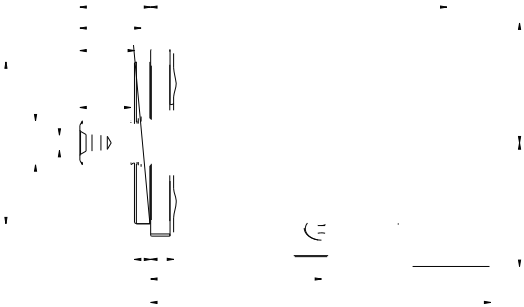


*OTUBMMBUJPO TJ[F

v%SBJO QPSU BOE HBVHF QPSU

*OTUBMMBUJPO TJ[F

. ' *OTUBMMBUJPO TJ[F XPSLJOH QPSUT " BOE # BU C



*OMFU QPSU	0VUMFU QPSU	3PUBUJPO EJSFDUJPO
"	#	$MPDLXJTF
#	"	"OUJ DMPDLXJTF

/PUF 5IF SPUBUJPO EJSFDUJPO JT MPPLFE GSPN UIF TIBGU FOE

*OTUBMMBUJPO TJ[F

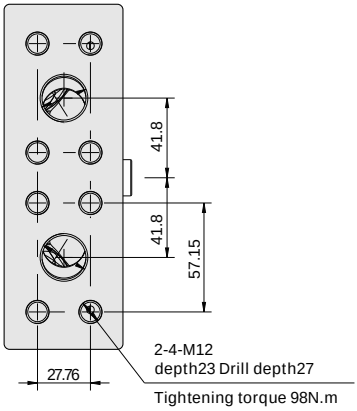
v%SBJO QPSU BOE HBVHF QPSU

N_r_llel piping thre_d twpe&Aode 8 E'

Metri a thre_d twpe&Aode 8 M'

?NQ6 thre_d twpe&Aode 8 ?'

´Nort det_il q



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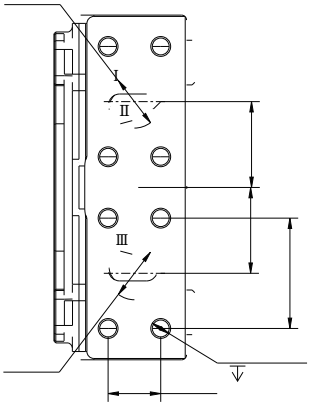
"/4* UISFBE UZQF $PEF "