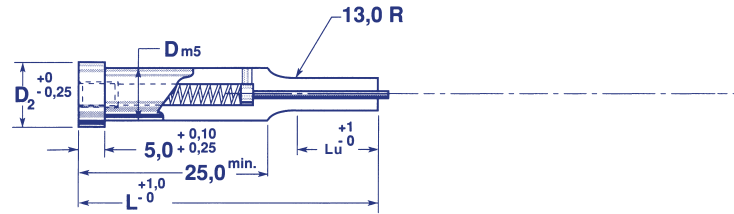


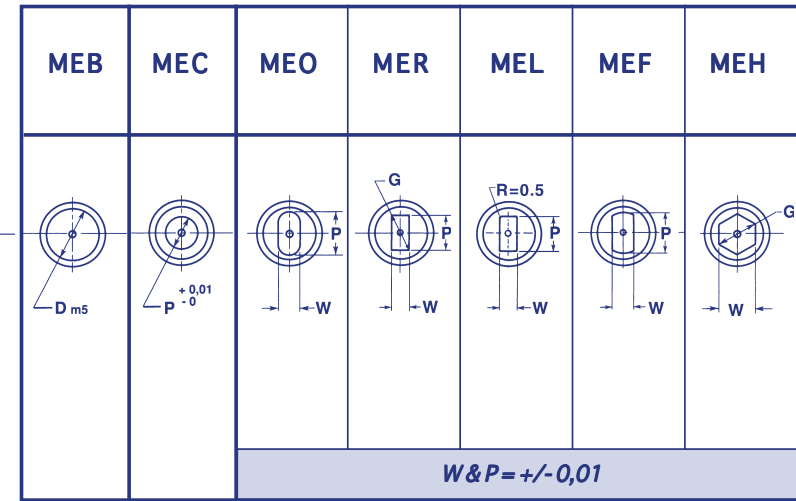
METRIC EJECTOR

ME punch



Mat.: M2 - RC: 60-62
A2 - "
PS (available) - RC: 63-65

D	D ₂	Lu				L						
		7	13	19	25	50	56	63	71	80	90	100
5,0	8,0	X	X			X	X	X	X	X	X	
6,0	9,0	X	X			X	X	X	X	X	X	X
8,0	11,0	X	X			X	X	X	X	X	X	X
10,0	13,0		X	X	X	X	X	X	X	X	X	X
13,0	16,0		X	X	X	X	X	X	X	X	X	X
16,0	19,0		X	X	X	X	X	X	X	X	X	X
20,0	23,0		X	X	X	X	X	X	X	X	X	X
25,0	28,0		X	X	X		X	X	X	X	X	X
32,0	35,0		X	X	X		X	X	X	X	X	X



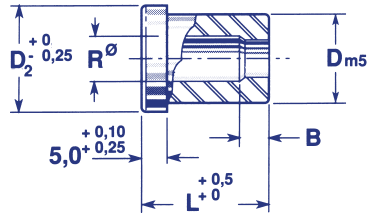
MEB	MEC	MEO	MER	MEL	MEF	MEH		
D	P	MIN W	MAX P	MIN W	MAX G	MIN W	MAX G	D
5,0	2,0-4,99	2,0	4,99	2,0	4,99	2,0	4,99	5,0
6,0	2,5-5,99	2,0	5,99	2,0	5,99	2,0	5,99	6,0
8,0	3,0-7,99	2,0	7,99	2,0	7,99	2,0	7,99	8,0
10,0	4,0-9,99	3,5	9,99	3,5	9,99	3,5	9,99	10,0
13,0	5,0-12,99	4,5	12,99	4,5	12,99	4,5	12,99	13,0
16,0	8,0-15,99	6,0	15,99	6,0	15,99	6,0	15,99	16,0
20,0	12,0-19,99	8,0	19,99	8,0	19,99	8,0	19,99	20,0
25,0	16,5-24,99	10,0	24,99	10,0	24,99	10,0	24,99	25,0
32,0	20,0-31,99	10,0	31,99	10,0	31,99	10,0	31,99	32,0

When ordering specify: Pour commander:
Bestellbeispiel: Especificue Cuando Ordene:

Qty.: Mat. Cat. No. D L P Lu
24 M2 MEC 20 x 80 x 16,2 Lu19

METRIC HEAD-TYPE

MH
die



Mat.: M2
A2

RC: 60-62

D	D ₂	R,max	B	L					
				16	20	25	30	32	35
5,0	8,0	2,8	2,0	X	X	X			
6,0	9,0	3,5	3,0	X	X	X			
8,0	11,0	4,0	4,0	X	X	X	X	X	
10,0	13,0	5,8	4,0	X	X	X	X	X	
13,0	16,0	8,0	5,0		X	X	X	X	
16,0	19,0	9,5	5,0		X	X	X	X	X
20,0	23,0	12,0	8,0		X	X	X	X	X
25,0	28,0	17,3	8,0		X	X	X	X	X
32,0	35,0	20,7	8,0		X	X	X	X	X
40,0	43,0	27,7	8,0		X	X	X	X	X
50,0	53,0	37,0	8,0		X	X	X	X	X

	MHC	MHO	MHR	MHF	MHH					
						<i>W & P = +/- 0,01</i>				
	MHC	MHO	MHR	MHF	MHH					D
	P	MIN W	MAX P	MIN P,W	MAX G	MIN W	MAX P	MIN W	MAX G	
	1,0-2,4									5,0
	1,6-3,0									6,0
	2,0-3,5									8,0
	3,0-5,0	1,5	5,0	1,5	5,0	1,5	5,0	1,5	5,0	10,0
	4,0-7,2	2,0	7,2	2,0	7,2	2,0	7,2	2,0	7,2	13,0
	6,0-8,8	4,0	8,8	4,0	8,8	4,0	8,8	4,0	8,8	16,0
	7,5-11,3	6,0	11,3	6,0	11,3	6,0	11,3	6,0	11,3	20,0
	11,0-16,6	8,0	16,6	8,0	16,6	8,0	16,6	8,0	16,6	25,0
	15,0-20,0	9,0	20,0	9,0	20,0	9,0	20,0	9,0	20,0	32,0
	18,0-27,0	10,0	27,0	10,0	27,0	10,0	27,0	10,0	27,0	40,0
	26,0-36,0									50,0

When ordering specify: Pour commander:
Bestellbeispiel: Especificue Cuando Ordene:

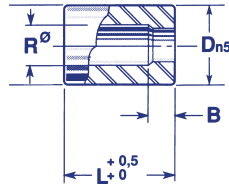
Qty.: Mat. Cat. No. D L W P
6 A2 MHR 20 x 25 x 6,0 x 7,0 SF135° *

METRIC DIE




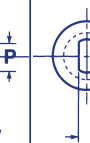
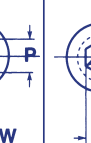
MD die

Mat.: M2
A2

RC: 60-62



D	R,max	B	L						
			16	20	25	30	32	35	
5,0	2,8	2,0	X	X	X				
6,0	3,5	3,0	X	X	X				
8,0	4,0	4,0	X	X	X	X	X		
10,0	5,8	4,0	X	X	X	X	X		
13,0	8,0	5,0		X	X	X	X		
16,0	9,5	5,0		X	X	X	X	X	
20,0	12,0	8,0		X	X	X	X	X	
25,0	17,3	8,0		X	X	X	X	X	
32,0	20,7	8,0		X	X	X	X	X	
40,0	27,7	8,0		X	X	X	X	X	
50,0	37,0	8,0		X	X	X	X	X	

MDC	MDO	MDR	MDF	MDH					
									
<i>W & P = +/- 0,01</i>									
MDC	MDO	MDR	MDF	MDH					
P	MIN W	MAX P	MIN P,W	MAX G	MIN W	MAX P	MIN W	MAX G	D
1,0-2,4									5,0
1,6-3,0									6,0
2,0-3,5									8,0
3,0-5,0	1,5	5,0	1,5	5,0	1,5	5,0	1,5	5,0	10,0
4,0-7,2	2,0	7,2	2,0	7,2	2,0	7,2	2,0	7,2	13,0
6,0-8,8	4,0	8,8	4,0	8,8	4,0	8,8	4,0	8,8	16,0
7,5-11,3	6,0	11,3	6,0	11,3	6,0	11,3	6,0	11,3	20,0
11,0-16,6	8,0	16,6	8,0	16,6	8,0	16,6	8,0	16,6	25,0
15,0-20,0	9,0	20,0	9,0	20,0	9,0	20,0	9,0	20,0	32,0
18,0-27,0	10,0	27,0	10,0	27,0	10,0	27,0	10,0	27,0	40,0
26,0-36,0									50,0

When ordering specify: Pour commander:
 Bestellbeispiel: Especificque Cuando Ordene:

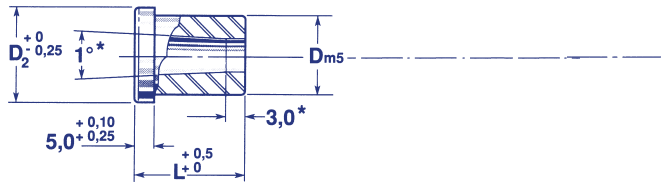
Qty.: Mat. Cat. No. D L W P
 6 A2 MDR 20 x 25 x 6,0 x 7,0 SF4 @ 135° *

METRIC FLEXIBLE HEAD-TYPE

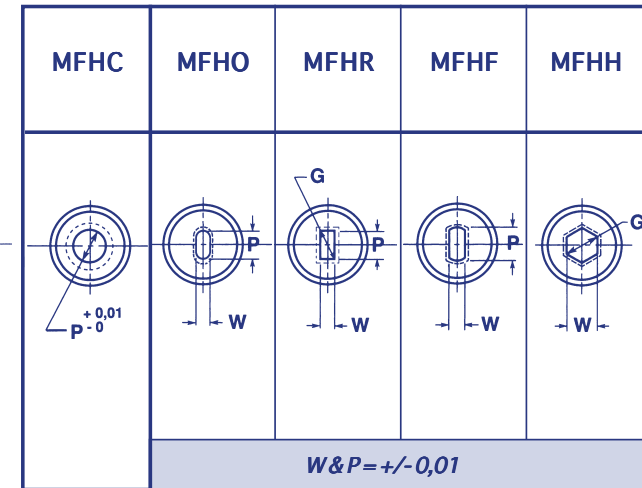
MFH die

Mat.: M2
A2

RC: 60-62



D	D ₂	L					
		20	25	30	32	35	
6,0	9,0	X	X				
8,0	11,0	X	X	X	X		
10,0	13,0	X	X	X	X	X	
13,0	16,0	X	X	X	X	X	
16,0	19,0	X	X	X	X	X	
20,0	23,0	X	X	X	X	X	
25,0	28,0	X	X	X	X	X	
32,0	35,0	X	X	X	X	X	
40,0	43,0	X	X	X	X	X	



W & P = +/- 0,01

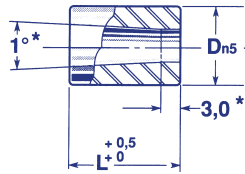
	MFHC	MFHO		MFHR		MFHF		MFHH		
	P	MIN W	MAX P	MIN P,W	MAX G	MIN W	MAX P	MIN W	MAX G	D
	1,6-3,9	1,6	3,9	1,6	3,9	1,6	3,9	1,6	3,9	6,0
	2,4-5,4	1,6	5,4	1,6	5,4	1,6	5,4	1,6	5,4	8,0
	3,2-6,8	2,0	6,8	2,0	6,8	2,0	6,8	2,0	6,8	10,0
	5,4-8,8	2,0	8,8	2,0	8,8	2,0	8,8	2,0	8,8	13,0
	7,4-10,8	3,0	10,8	3,0	10,8	3,0	10,8	3,0	10,8	16,0
	9,4-13,6	3,0	13,6	3,0	13,6	3,0	13,6	3,0	13,6	20,0
	12,0-17,0	4,0	17,0	4,0	17,0	4,0	17,0	4,0	17,0	25,0
	16,0-22,0	4,0	22,0	4,0	22,0	4,0	22,0	4,0	22,0	32,0
	18,0-27,0	4,0	27,0	4,0	27,0	4,0	27,0	4,0	27,0	40,0

When ordering specify: Pour commander:
Bestellbeispiel: Especificue Cuando Ordene:

Qty.: Mat. Cat. No. D L W
16 A2 MFHH 13 x 32 x 5,0 SF 45°*

METRIC FLEXIBLE DIE



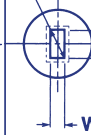

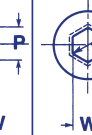
MFD die



Mat.: M2
A2

RC: 60-62

D	L				
	20	25	30	32	35
6,0	X	X			
8,0	X	X	X	X	
10,0	X	X	X	X	X
13,0	X	X	X	X	X
16,0	X	X	X	X	X
20,0	X	X	X	X	X
25,0	X	X	X	X	X
32,0	X	X	X	X	X
40,0	X	X	X	X	X

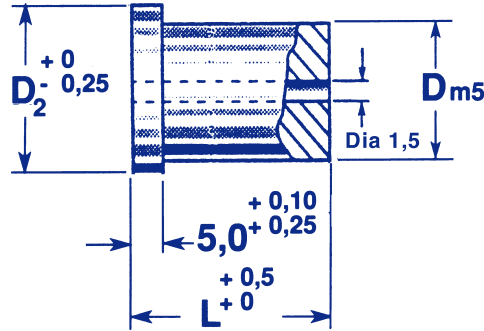
	MFDC	MFDO	MFDR	MFDF	MFDH				
									
	<i>W & P = +/- 0,01</i>								
	MFDC	MFDO	MFDR	MFDF	MFDH				
P	MIN W	MAX P	MIN P, W	MAX G	MIN W	MAX P	MIN W	MAX G	D
1,6-3,9	1,6	3,9	1,6	3,9	1,6	3,9	1,6	3,9	6,0
2,4-5,4	1,6	5,4	1,6	5,4	1,6	5,4	1,6	5,4	8,0
3,2-6,8	2,0	6,8	2,0	6,8	2,0	6,8	2,0	6,8	10,0
5,4-8,8	2,0	8,8	2,0	8,8	2,0	8,8	2,0	8,8	13,0
7,4-10,8	3,0	10,8	3,0	10,8	3,0	10,8	3,0	10,8	16,0
9,4-13,6	3,0	13,6	3,0	13,6	3,0	13,6	3,0	13,6	20,0
12,0-17,0	4,0	17,0	4,0	17,0	4,0	17,0	4,0	17,0	25,0
16,0-22,0	4,0	22,0	4,0	22,0	4,0	22,0	4,0	22,0	32,0
18,0-27,0	4,0	27,0	4,0	27,0	4,0	27,0	4,0	27,0	40,0

MFHW

die

Mat.: M2
A2

RC: 60-62



		L					
D	D ₂	16	20	25	30	32	35
5,0	8,0	X	X	X			
6,0	9,0	X	X	X			
8,0	11,0	X	X	X	X	X	
10,0	13,0	X	X	X	X	X	
13,0	16,0		X	X	X	X	
16,0	19,0		X	X	X	X	X
20,0	23,0		X	X	X	X	X
25,0	28,0		X	X	X	X	X
32,0	35,0		X	X	X	X	X
40,0	43,0		X	X	X	X	X
50,0	53,0		X	X	X	X	X

When ordering specify:
Bestellbeispiel:

Pour commander:
Especifique Cuando Ordene:

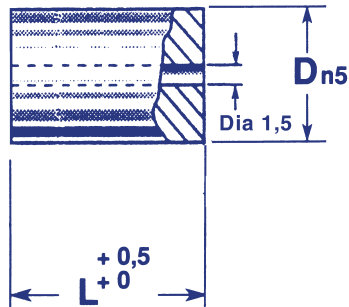
Qty.: 6 Mat. A2 Cat. No. MFHW D 16 x L 25 SF

MFDW
die

Mat.: M2

A2

RC: 60-62



	L					
D	16	20	25	30	32	35
5,0	X	X	X			
6,0	X	X	X			
8,0	X	X	X	X	X	
10,0	X	X	X	X	X	
13,0		X	X	X	X	
16,0		X	X	X	X	X
20,0		X	X	X	X	X
25,0		X	X	X	X	X
32,0		X	X	X	X	X
40,0		X	X	X	X	X
50,0		X	X	X	X	X

When ordering specify:

Bestellbeispiel:

Pour commander:

Especifique Cuando Ordene:

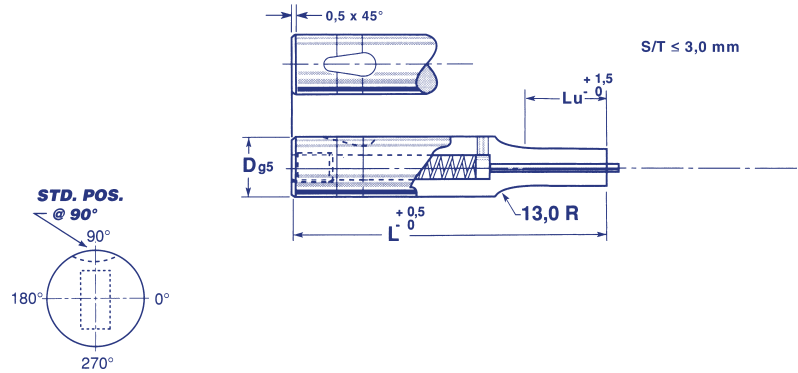
Qty.:	Mat.	Cat. No.	D	L
6	A2	MFDW	16 x	25 SF

METRIC BALL-LOCK LIGHT-DUTY EJECTOR

MBLE punch

Mat.: M2
A2

RC: 60-62



D	Lu - please specify			L						
	Std.	Alternate		50	56	63	71	80	90	100
6,0	13*			X	X	X	X	X	X	X
10,0	19*	13*		X	X	X	X	X	X	X
13,0	19	13		X	X	X	X	X	X	X
16,0	19	13	25			X	X	X	X	X
20,0	19	13	25			X	X	X	X	X
25,0	19	13	25			X	X	X	X	X
32,0	19	13	25				X	X	X	X
38,0	25	19	30					X	X	X

* Lu = 10 when P or W is below 2.20

When ordering specify: Pour commander:
 Bestellbeispiel: Especificue Cuando Ordene:

Qty.: Mat. Cat. No. D L W P Lu
 5 M2 MBLEO 16 x 71 x 8,0 x 12,0 Lu13

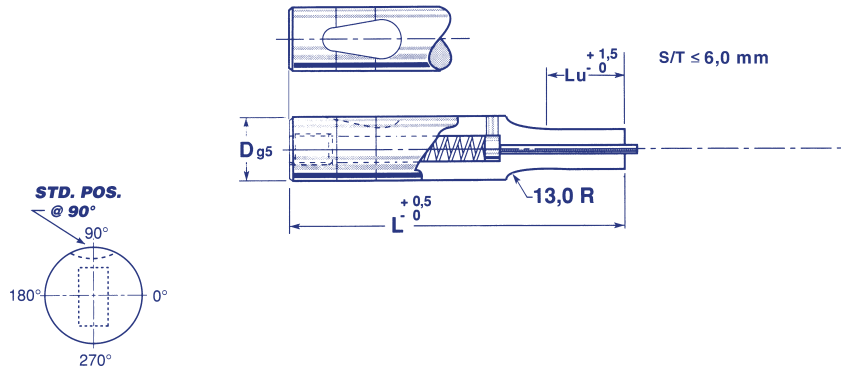
MBLEB	MBLEC	MBLEO	MBLER	MBLEL	MBLEF	MBLEH					
<i>W & P = +/- 0,01</i>											
MBLEB	MBLEC	MBLEO	MBLER	MBLEL	MBLEF	MBLEH					
D	P	MIN W	MAX P	MIN W	MAX G	MIN W	MAX G	MIN W	MAX P	MIN W	MAX G
6,0	1,6-5,9	1,6	5,9	1,6	5,9	1,6	5,9	1,6	5,9	1,6	5,9
10,0	1,6-9,9	1,6	9,9	1,6	9,9	1,6	9,9	1,6	9,9	1,6	9,9
13,0	5,0-12,9	4,5	12,9	4,5	12,9	4,5	12,9	4,5	12,9	4,5	12,9
16,0	8,0-15,9	6,0	15,9	6,0	15,9	6,0	15,9	6,0	15,9	6,0	15,9
20,0	12,0-19,9	8,0	19,9	8,0	19,9	8,0	19,9	8,0	19,9	8,0	19,9
25,0	16,0-24,9	10,0	24,9	10,0	24,9	10,0	24,9	10,0	24,9	10,0	24,9
32,0	24,0-31,9	12,5	31,9	12,5	31,9	12,5	31,9	12,5	31,9	12,5	31,9
38,0	30,0-37,9	14,0	37,9	14,0	37,9	14,0	37,9	14,0	37,9	14,0	37,9

METRIC BALL-LOCK HEAVY-DUTY EJECTOR

MBHE punch

Mat.: M2

RC: 60-62



D	Lu - please specify			L						
	Std.	Alternate		63	71	80	90	100	110	125
10,0	19*	13*		X	X	X	X	X		
13,0	19	13		X	X	X	X	X	X	X
16,0	19	13	25	X	X	X	X	X	X	X
20,0	19	13	25	X	X	X	X	X	X	X
25,0	19	13	25		X	X	X	X	X	X
32,0	19	13	25		X	X	X	X	X	X
40,0	25	19	30			X	X	X	X	X

* Lu = 10 when P or W is below 2.20

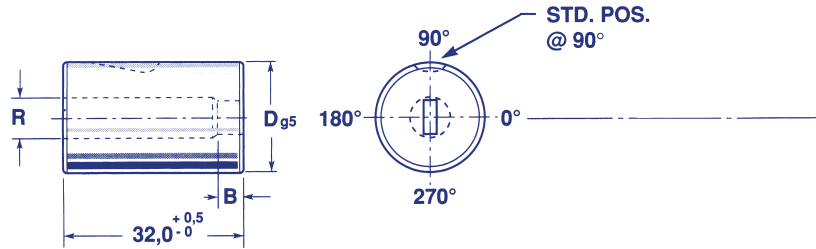
When ordering specify: Pour commander:
Bestellbeispiel: Especificue Cuando Ordene:

Qty.:	Mat.	Cat. No.	D	L	W	P	Lu
6	M2	MBHEF	10	x 90	x 5,2	x 8,3	Lu19

MBHEB	MBHEC	MBHEO	MBHER	MBHEL	MBHEF	MBHEH					
<i>W & P = +/- 0,01</i>											
MBHEB	MBHEC	MBHEO	MBHER	MBHEL	MBHEF	MBHEH					
D	P	MIN W	MAX P	MIN W	MAX G	MIN W	MAX G	MIN W	MAX P	MIN W	MAX G
10,0	2,5-9,9	1,6	9,9	1,6	9,9	1,6	9,9	1,6	9,9	1,6	9,9
13,0	5,0-12,9	4,5	12,9	4,5	12,9	4,5	12,9	4,5	12,9	4,5	12,9
16,0	8,0-15,9	6,0	15,9	6,0	15,9	6,0	15,9	6,0	15,9	6,0	15,9
20,0	12,0-19,9	8,0	19,9	8,0	19,9	8,0	19,9	8,0	19,9	8,0	19,9
25,0	16,0-24,9	10,0	24,9	10,0	24,9	10,0	24,9	10,0	24,9	10,0	24,9
32,0	24,0-31,9	12,5	31,9	12,5	31,9	12,5	31,9	12,5	31,9	12,5	31,9
40,0	30,0-39,9	14,0	39,9	14,0	39,9	14,0	39,9	14,0	39,9	14,0	39,9

**METRIC BALL-LOCK
LIGHT-DUTY DIE**

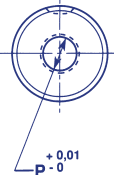
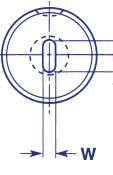
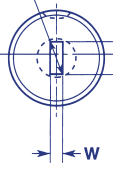
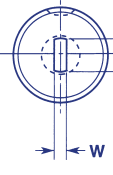

MBLD
die



Mat.: M2
A2

RC: 60-62

D	R,max	B	
13,0	5,8	4,0	
16,0	8,0	5,0	
20,0	12,0	5,0	
25,0	16,0	6,0	
32,0	20,0	6,0	
38,0	27,0	8,0	

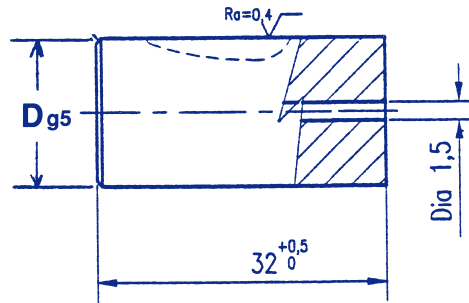
	MBLDC	MBLDO	MBLDR	MBLDF	MBLDH					
										
	<i>W & P = +/- 0,01</i>									
	MBLDC	MBLDO	MBLDR	MBLDF	MBLDH					
	P	MIN W	MAX P	MIN P,W	MAX G	MIN W	MAX P	MIN W	MAX G	D
	1,5-5,0	2,0	5,0	2,0	5,0	2,0	5,0	2,0	5,0	13,0
	3,0-7,2	2,5	7,2	2,5	7,2	2,5	7,2	2,5	7,2	16,0
	4,5-11,0	4,5	11,0	4,5	11,0	4,5	11,0	4,5	11,0	20,0
	8,0-15,0	5,0	15,0	5,0	15,0	5,0	15,0	5,0	15,0	25,0
	11,0-19,0	6,0	19,0	6,0	19,0	6,0	19,0	6,0	19,0	32,0
	16,0-26,0	8,0	26,0	8,0	26,0	8,0	26,0	8,0	26,0	38,0

When ordering specify: Pour commander:
Bestellbeispiel: Especificue Cuando Ordene:

Qty.: Mat. Cat. No. D W P
12 A2 MBLDO 25 x 5,5 x 10,5

**METRIC FLEXIBLE
BALL-LOCK
LIGHT-DUTY
DIE WIRE**

MFBLDW
die



Mat.: M2
A2

RC: 60-62

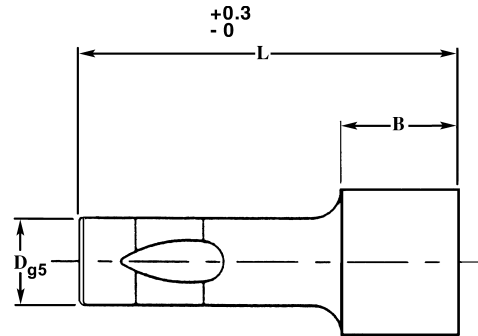
D	13,0	16,0	20,0	25,0	32,0	38,0
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When ordering specify:
Bestellbeispiel:

Pour commander:
Especifique Cuando Ordene:

Qty.: Mat. Cat. No. D
5 M2 MFBLDW 16

**METRIC
BALL LOCK
HEAVY DUTY
KNOB STYLE**



MBHK

WITH EJECTOR
SPECIFY **MBHEK**

LIGHT DUTY
SPECIFY **MBLK** or **MBLEK**

CIRCULAR		STANDARD SHAPES													
		OBLONG	RECTANGLE	LONG LIFE	FLATTED ROUND										
Std. Ball Seat															
P=+0.1 -0		TOLERANCE FOR P & W = +0.01 -0.01													
DIA. D	POINT LENGTH B	LENGTH	BHKC		BHKO		BHKR		BHKL		BHKF				
			MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX			
CODE	STD.	ALT.	80	90	100	P	P	W	P	W	G	W	G	W	P
13	19	30	X	X	X	13.10	32.00	5.00	32.00	5.00	32.00	5.00	32.00	5.00	32.00
16	19	30	X	X	X	16.10	38.00	6.50	38.00	6.50	38.00	6.50	38.00	6.50	38.00
20	19	30	X	X	X	20.10	40.00	8.00	40.00	8.00	40.00	8.00	40.00	8.00	40.00
25	19	30	X	X	X	25.10	44.00	10.00	44.00	10.00	44.00	10.00	44.00	10.00	44.00
32	19	30	X	X	X	32.10	50.00	11.50	50.00	11.50	50.00	11.50	50.00	11.50	50.00
* 40	19	30	X	X	X	40.10	56.00	14.00	56.00	14.00	56.00	14.00	56.00	14.00	56.00

* 40 mm available only as heavy duty.

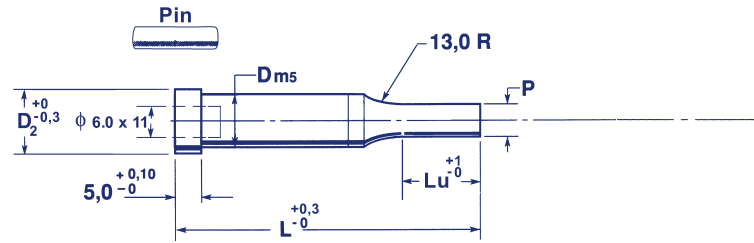
Alterations, including longer lengths, are available on request!

WHEN ORDERING SPECIFY:

QTY.	MAT.	TYPE	SHAPE	CODE	LENGTH	W	P	
5	M2	MBHEK	O	16	X	90	X	3120

METRIC CENTRE DOWEL

MC punch



Mat.: M2
A2

RC: 60-62

D	Dz	Lu	alt. Lu	L			
				71	80	90	100
10,0	13,0	19	25	X	X	X	X
13,0	16,0	19	25	X	X	X	X
16,0	19,0	19	25	X	X	X	X
20,0	23,0	19	25	X	X	X	X
25,0	28,0	19	25	X	X	X	X
32,0	35,0	25	30	X	X	X	X

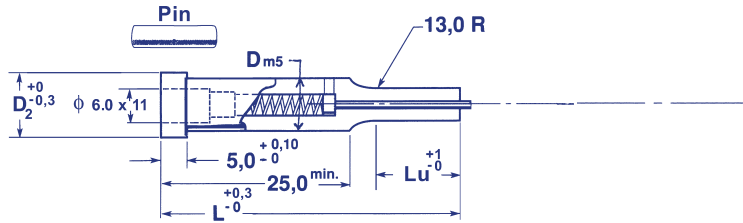
MCB	MCC	MCO	MCR	MCL	MCF	MCH	MCP			
<i>W & P = +/- 0,01</i>										
MCB	MCC	MCO	MCR	MCL	MCF	MCH	MCP			
D	P	MIN W	MAX P	MIN W	MAX G	MIN W	MAX P	MIN W	MAX G	P
10,0	4,0-9,99	3,5	9,99	3,5	9,99	3,5	9,99	3,5	9,99	3,9-9,99
13,0	5,0-12,99	4,5	12,99	4,5	12,99	4,5	12,99	4,5	12,99	4,9-12,99
16,0	8,0-15,99	6,0	15,99	6,0	15,99	6,0	15,99	6,0	15,99	7,9-15,99
20,0	12,0-19,99	8,0	19,99	8,0	19,99	8,0	19,99	8,0	19,99	11,9-19,99
25,0	16,5-24,99	10,0	24,99	10,0	24,99	10,0	24,99	10,0	24,99	15,0-24,99
32,0	20,0-31,99	10,0	31,99	10,0	31,99	10,0	31,99	10,0	31,99	19,9-31,99

When ordering specify: Pour commander:
Bestellbeispiel: Especificue Cuando Ordene:

Qty.: 6 Mat. M2 Cat. No. MCO D 13 x L 90 x W 6,0 x P 10,2 SF*

METRIC CENTRE DOWEL EJECTORS

MCE punch



Mat.: M2
A2

RC: 60-62

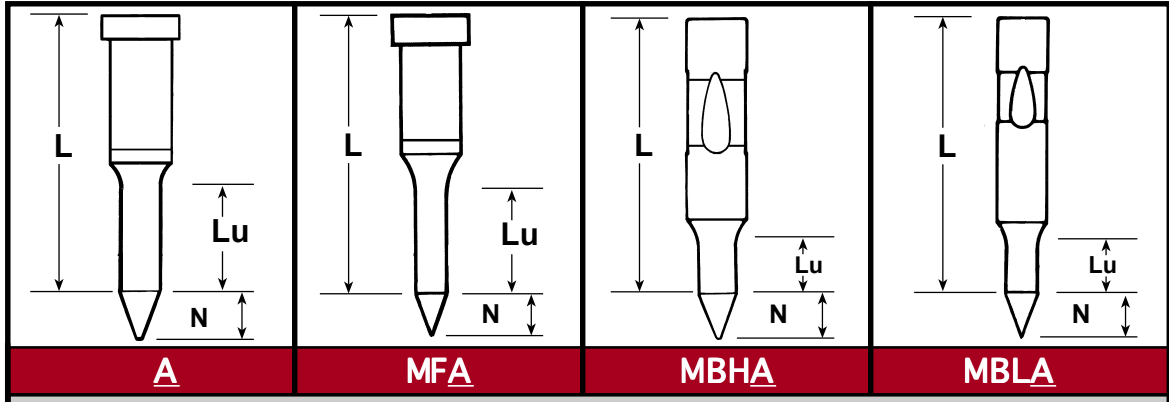
D	Dz	Lu	alt. Lu	L			
				71	80	90	100
10,0	13,0	19	25	X	X	X	X
13,0	16,0	19	25	X	X	X	X
16,0	19,0	19	25	X	X	X	X
20,0	23,0	19	25	X	X	X	X
25,0	28,0	19	25	X	X	X	X
32,0	35,0	25	30	X	X	X	X

	MCEB	MCEC	MCEO	MCER	MCEL	MCEF	MCEH					
	<i>W&P= +/- 0,01</i>											
	MCEB	MCEC	MCEO	MCER	MCEL	MCEF	MCEH					
	D	P	MIN W	MAX P	MIN W	MAX G	MIN W	MAX G	MIN W	MAX P	MIN W	MAX G
	10,0	4,0-9,99	3,5	9,99	3,5	9,99	3,5	9,99	3,5	9,99	3,5	9,99
	13,0	5,0-12,99	4,5	12,99	4,5	12,99	4,5	12,99	4,5	12,99	4,5	12,99
	16,0	8,0-15,99	6,0	15,99	6,0	15,99	6,0	15,99	6,0	15,99	6,0	15,99
	20,0	12,0-19,99	8,0	19,99	8,0	19,99	8,0	19,99	8,0	19,99	8,0	19,99
	25,0	16,5-24,99	10,0	24,99	10,0	24,99	10,0	24,99	10,0	24,99	10,0	24,99
	32,0	20,0-31,99	10,0	31,99	10,0	31,99	10,0	31,99	10,0	31,99	10,0	31,99

When ordering specify: Pour commander:
Bestellbeispiel: Especificue Cuando Ordene:

Qty.:	Mat.	Cat. No.	D	L	P	Lu
24	M2	MCEC	20	x 80	x 16,2	x Lu 25

PILOTOS DE CENTRAJE



Std. Lengths: 71, 80, 90, 100, 125, 140, 150

SHANK	N	Lu	P. RANGE	Lu	P. RANGE	Lu	P. RANGE	Lu	P. RANGE
10	8	7	5.90-9.98	13	5.90-9.98	19	5.90-9.98	19	5.90-9.98
13	10	13	9.90-12.98	13	9.90-12.98	19	9.90-12.98	19	9.90-12.98
16	15	13	12.90-15.98	13	12.90-15.98	25	12.90-15.98	25	12.90-15.98
20	20	13	15.90-19.98	13	15.90-19.98	25	15.90-19.98	25	15.90-19.98
25	25	25	19.90-24.98	13	19.90-24.98	25	19.90-24.98	25	19.90-24.98
32	30	25	24.90-31.98	13	24.90-31.98	25	24.90-31.98	25	24.90-31.98
38	35	25	31.90-37.98	13	31.90-37.98			30	31.90-37.98
40	40					30	31.90-39.98		
13	10			19	9.90-12.98				
16	15			19	12.90-15.98				
20	20			19	15.90-19.98				
25	25			19	19.90-24.98				
32	30			19	24.90-31.98				
38	35			19	31.90-37.98				
16	15			25	12.90-15.98				
20	20			25	15.90-19.98				
25	25			25	19.90-24.98				
32	30			25	24.90-31.98				
38	35			25	31.90-37.98				

WHEN ORDERING SPECIFY:

QTY.	TYPE	SHANK	LENGTH	P.	Lu
12	MBHA	20	X 110	X 17.53,	25

QUALIFIED SHAPES: FORMES SPECIALES
FORMEN: FORMAS ESPECIALES

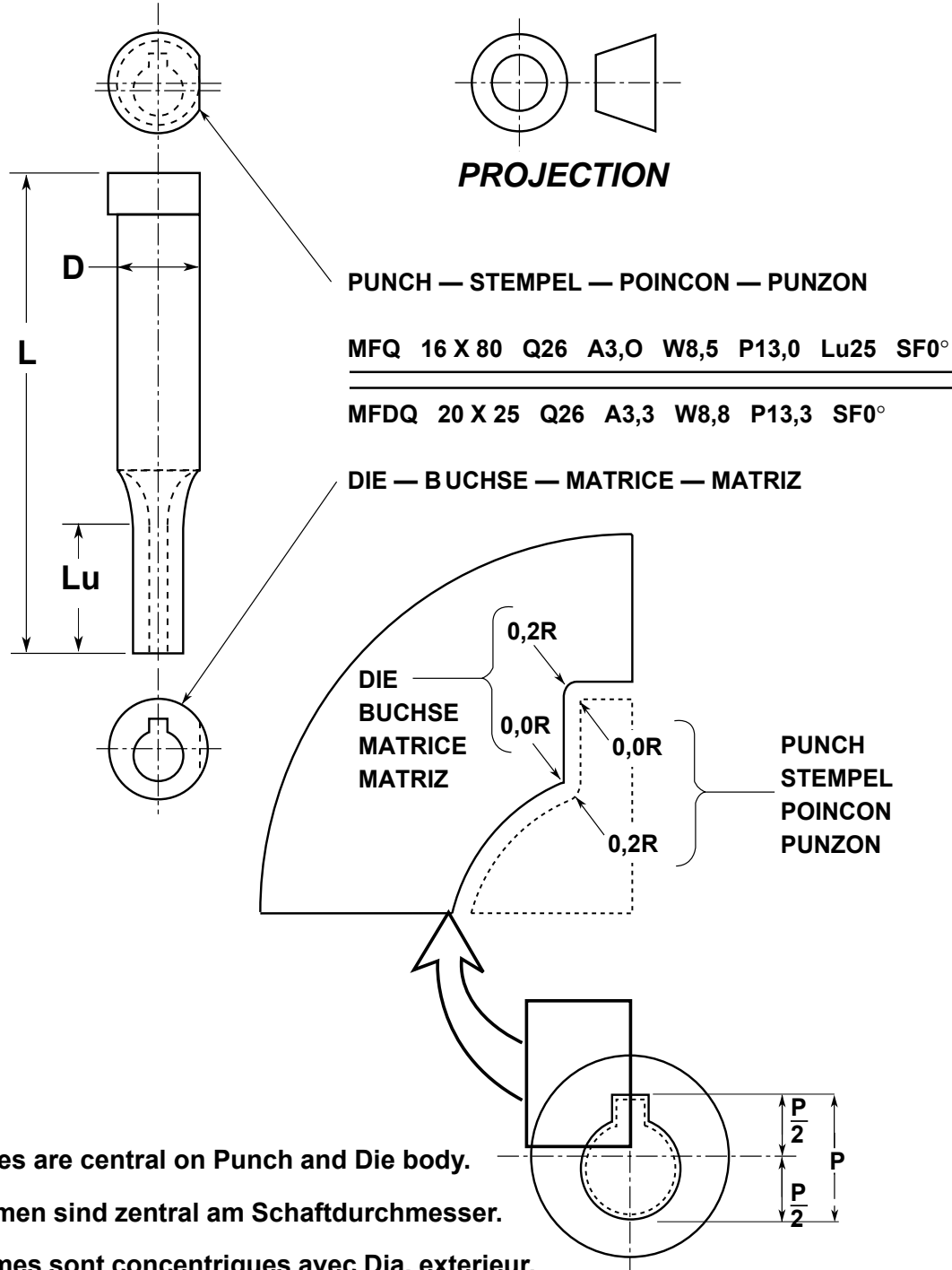
90°

180°	<p>Q1</p>	<p>Q2</p>	<p>Q3A</p>	<p>Q4</p>	<p>Q5</p>	<p>Q6</p>
	<p>Q7</p>	<p>Q8</p>	<p>Q9</p>	<p>Q10</p>	<p>Q11</p>	<p>Q12</p>
	<p>Q13</p>	<p>Q14</p>	<p>Q15</p>	<p>Q16</p>	<p>Q17</p>	<p>Q18</p>
	<p>Q19</p>	<p>Q20</p>	<p>Q21</p>	<p>Q22</p>	<p>Q23</p>	<p>Q24</p>
	<p>Q25</p>	<p>Q26</p>	<p>Q27</p>	<p>Q28</p>	<p>Q29</p>	<p>Q30</p>
	<p>Q31</p>	<p>Q32</p>	<p>Q33</p>	<p>Q34</p>	<p>Q35</p>	<p>Q36</p>
	<p>Q37</p>	<p>Q38</p>	<p>Q39</p>	<p>Q40</p>	<p>Q41</p>	<p>Q42</p>

270°

When ordering specify Punch or Die Type.
 Bei Bestellung, den Stempel oder Buchsen Typ angeben.
 Confirmer Sorte de Poincon ou de matrice.
 Especificue Punzon o Matriz Cuando ordene.

EXAMPLE — BEISPIEL — EXAMPLE — EJEMPLO



All shapes are central on Punch and Die body.

Alle Formen sind zentral am Schaftdurchmesser.

Les Formes sont concentriques avec Dia. exterieur.

Todas las Formas son centrales sobre Punzon y el Cuerpo de Matriz.

LOCATING METHODS:
VERDREHSICHERUNG:
METHODES DES LOCALISATION:
POSICIONAMIENTO:

STANDARD POSITIONS:
NORMALAUSFUEHRUNG:
LOCALISATIONS NORMAL:
POSICIONES NORMALES:

SF	DF	DS
<p>Z = 6,0 Std.</p>		
<p>SPECIAL LOCATIONS: ABWEICHENDE AUSFUEHRUNG: LOCALISATIONS SPECIALE: LOCALIZACIONES ESPECIALES:</p>	<p>PUNCH POINCON STEMPEL PUNZONE</p>	<p>DIE MATRICE BUCHSE MATRIZ</p>

ISO Tolerances

DIN ISO 286 part 2 (extract)

Outside diameters (shafts): Dimensions in $\mu\text{m} = 0.001\text{mm}$

Range in mm	Tolerance Class																			
	f6	f7	g5	g6	h3	h4	h5	h6	h8	h9	j6	js6	js9	js14	js15	k6	m5	m6	n5	n6
from 0 to 3	-6	-6	-2	-2	0	0	0	0	0	0	+4	+3	+125	+125	+200	+6	+6	+8	+8	+10
	-12	-16	-6	-8	-2	-3	-4	-6	-14	-25	-2	-3	-125	-125	-200	0	+2	+2	+4	+4
over 3 to 6	-10	-10	-4	-4	0	0	0	0	0	0	+6	+4	+15	+150	+240	+9	+9	+12	+13	+16
	-18	-22	-9	-12	-25	-4	-5	-8	-18	-30	-2	-4	-15	-150	-240	+1	+4	+4	+8	+8
over 6 to 10	-13	-13	-5	-5	0	0	0	0	0	0	+7	+4.5	+18	+180	+290	+10	+12	+15	+16	+19
	-22	-28	-11	-14	-25	-4	-6	-9	-22	-36	-2	-4.5	-18	-180	-290	+1	+6	+6	+10	+10
over 10 to 18	-16	-16	-6	-6	0	0	0	0	0	0	+8	+5.5	+21.5	+215	+350	+12	+15	+18	+20	+23
	-27	-34	-14	-17	-3	-5	-8	-11	-27	-43	-3	-5.5	-21.5	-215	-350	+1	+7	+7	+12	+12
over 18 to 30	-20	-20	-7	-7	0	0	0	0	0	0	+9	+6.5	+26	+260	+420	+15	+17	+21	+24	+28
	-33	-41	-16	-20	-4	-6	-9	-13	-33	-52	-4	-6.5	-26	-260	-420	+1	+8	+8	+15	+15
over 30 to 50	-25	-25	-9	-9	0	0	0	0	0	0	+11	+8	+31	+310	+500	+18	+20	+25	+28	+33
	-41	-50	-20	-25	-4	-7	-11	-16	-39	-62	-8	-5	-31	-310	-500	+2	+9	+9	+17	+17
over 50 to 80	-30	-30	-10	-10	0	0	0	0	0	0	+12	+9.5	+37	+370	+600	+21	+24	+30	+33	+39
	-49	-60	-23	-29	-5	-8	-13	-19	-46	-74	-7	-9.5	-37	-370	-600	+2	+11	+11	+20	+20
over 80 to 125	-36	-36	-12	-12	0	0	0	0	0	0	+13	+11	+43.5	+435	+700	+25	+28	+35	+38	+45
	-58	-71	-27	-34	-6	-10	-15	-22	-54	-87	-9	-11	-43.5	-435	-700	+3	+13	+13	+23	+23

Inside diameters (bores): Dimensions in $\mu\text{m} = 0.001\text{mm}$

Range in mm	Tolerance Class																	
	H8	F7	G7	H5	H6	H7	H8	H9	H10	H11	J	JS	K6	K7	M6	M7	P9	P7
from 0 to 3	+28	+16	+12	+4	+6	+10	+14	+25	+40	+60	+4	+2	0	0	-2	-2	-6	-6
	+14	+5	+2	0	0	0	0	0	0	0	-5	-2	-6	-10	-8	-12	-12	-16
over 3 to 6	+38	+22	+16	+5	+8	+12	+18	+30	+48	+75	+6	+2.5	+2	+3	-1	0	-9	-8
	+20	+10	+4	0	0	0	0	0	0	0	-6	-2.5	-6	-9	-9	-12	-17	-20
over 6 to 10	+47	+28	+20	+6	+9	+15	+22	+35	+58	+90	+8	+3	+2	+5	-3	0	-12	-9
	+25	+13	+5	0	0	0	0	0	0	0	-7	-3	-7	-10	-12	-15	-21	-24
over 10 to 18	+59	+34	+24	+8	+11	+18	+27	+43	+70	+110	+10	+4	+2	+6	-4	0	-15	-11
	+32	+16	+8	0	0	0	0	0	0	0	-8	-4	-9	-12	-15	-18	-26	-29
over 18 to 30	+73	+41	+28	+9	+13	+21	+33	+52	+84	+130	+12	+4.5	+2	+6	-4	0	-18	-14
	+40	+20	+7	0	0	0	0	0	0	0	-9	-4.5	-11	-15	-17	-21	-31	-35
over 30 to 50	+89	+50	+34	+11	+16	+25	+39	+62	+100	+160	+14	+5.5	+3	+7	-4	0	-21	-17
	+50	+25	+9	0	0	0	0	0	0	0	-11	-5.5	-13	-18	-20	-25	-37	-42
over 50 to 80	+106	+50	+40	+13	+19	+30	+46	+74	+120	+190	+18	+6.5	+4	+9	-5	0	-26	-21
	+60	+30	+10	0	0	0	0	0	0	0	-12	-6.5	-15	-21	-24	-30	-45	-51
over 80 to 125	+125	+71	+47	+15	+22	+35	+54	+87	+140	+220	+22	+7.5	+4	+10	-6	0	-30	-24
	+72	+36	+12	0	0	0	0	0	0	0	-13	-7.5	-18	-25	-28	-35	-52	-59