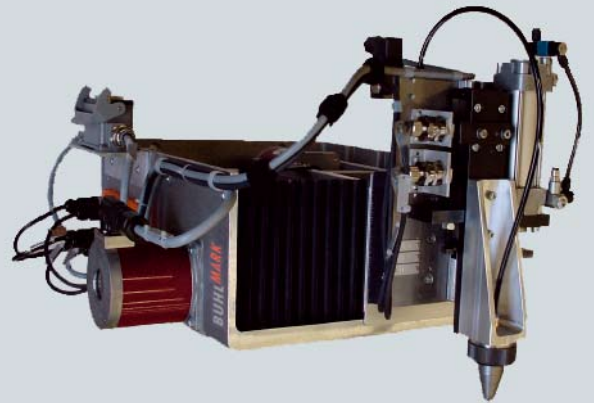


BuhlMark.  
Complete  
component  
retracing.

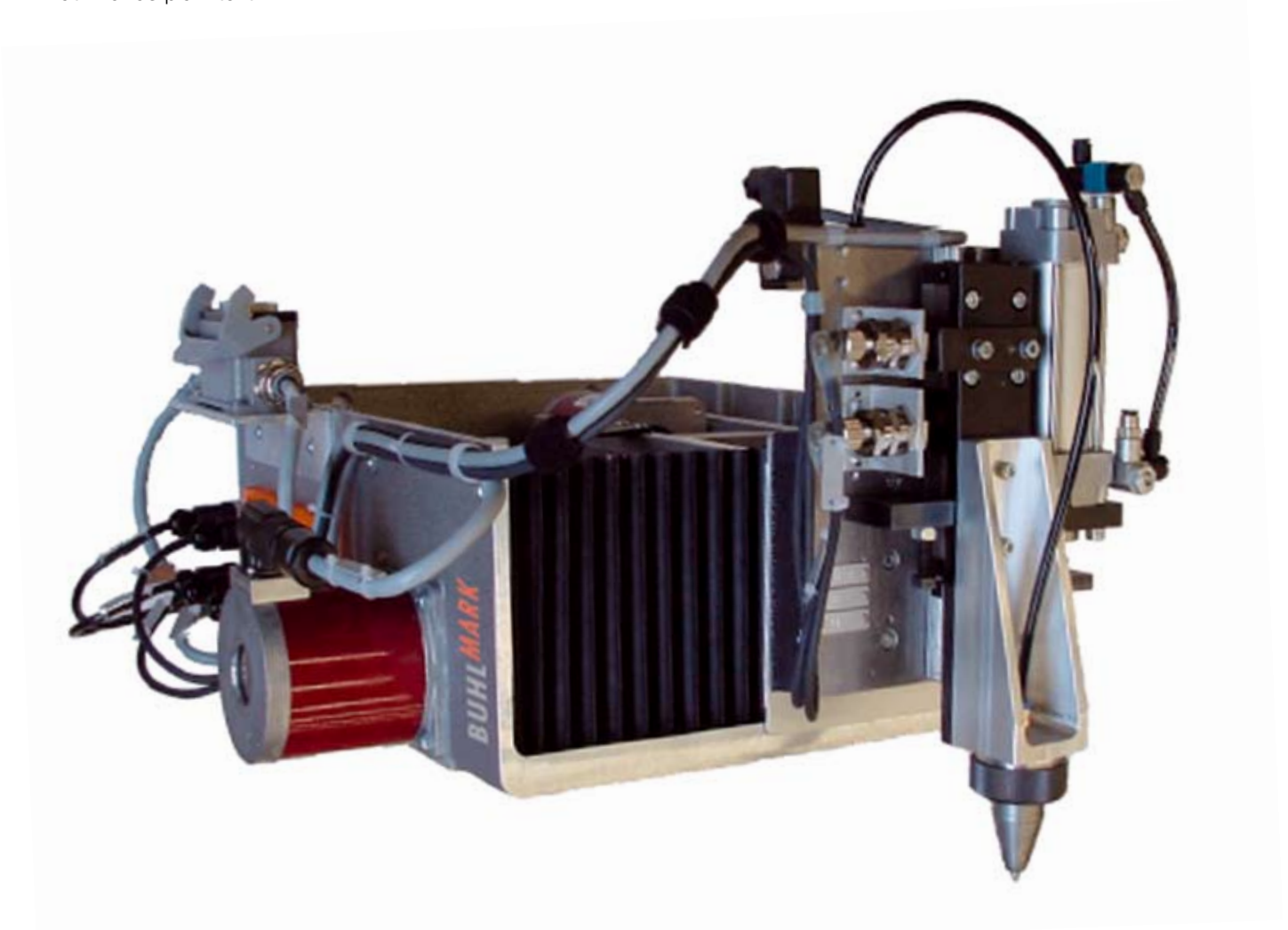


# BuhlMark.

## Complete component retracing.

Product liability is increasingly forcing automobile manufacturers to provide complete documentation of individual components. Thus, vendors must be able to supply information such as production date, work shift, cycle number, metal batch, etc. of the cast components they supply.

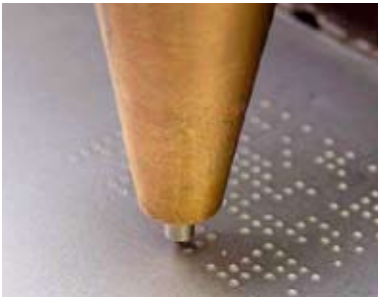
BuhlMark records these data by needle dotting or scribing and enables reliable retracing of components by data matrix or as plain text.



- BuhlMark is proven, rugged, and foundry enabled
- BuhlMark is partially integrated in the dat@net control system of the die casting machine and is based on the same operating philosophy
- BuhlMark can be equipped with different marking functions
- BuhlMark allows any marking text according to the customer's requirements
- BuhlMark has a completely protected embossing unit (cast housing, sheet metal guard, bellows)
- BuhlMark has a low air and power consumption
- BuhlMark hardly requires any maintenance
- BuhlMark allows unambiguous, complete component retracing

# BuhlMark.

Available in 4 variants and 3 marking modes.



**Marking unit 315 for scribing of plain text**

**Marking unit 315 for scribing of plain text and dotting of data matrix**

**Marking unit 315 for dotting of plain text**

**Marking unit 315 for dotting of plain text and dotting of data matrix**



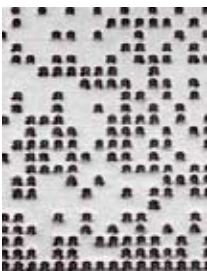
## **Scribing**

Highly suitable for use on almost any plastically formable materials.  
Very low-noise marking process with visually attractive text appearance.  
Also suited to slightly curved surfaces.  
Low force applied to the work.



## **Dot embossing**

Highly suitable for use on almost any plastically formable materials.  
Discrete dots, often in conjunction with data matrix coding.  
Especially suited for deep marking. Low force applied to the work.



## **Data matrix**

Camera-readable 2D code (ECC 200) – same tool as for dotted text.  
Process-reliable code that may still be readable even after hardening, abrasive blasting, or application of thin coatings.  
Can be applied on almost any plastically formable materials.

# BuhlMark. Marking times.

## Marking times for scribing and dot embossing

Font set A: DIN 1451 or OCR-A – scribing

Font set B: HS (fast writing = slightly angular characters) – scribing

Font set C: 7 x 5 (dot matrix) – dot embossing only

Font height	FH 1.8 mm			FH 2 mm			FH 2.5 mm			FH 3 mm			FH 4 mm			FH 5 mm			FH 6 mm			FH 7 mm			FH 10 mm					
Character set	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1 character	1.1	1.1	1.5	1.1	1.1	1.5	1.2	1.1	1.6	1.3	1.2	1.7	1.4	1.2	1.8	1.4	1.2	1.8	1.5	1.3	1.9	1.6	1.3	2.0	1.8	1.4	2.2	1.8	1.4	2.2
2 characters	1.5	1.4	2.1	1.5	1.4	2.2	1.6	1.5	2.3	1.9	1.7	2.5	2.0	1.8	2.6	2.1	1.9	2.7	2.2	2.0	2.9	2.3	2.1	3.0	2.7	2.4	3.4	2.7	2.4	3.4
3 characters	1.9	1.7	2.9	2.0	1.8	3.0	2.2	2.0	3.3	2.5	2.3	3.4	2.7	2.5	3.6	2.9	2.7	3.8	3.1	2.9	4.0	3.3	3.1	4.1	3.9	3.7	4.7	3.9	3.7	4.7
5 characters	2.6	2.4	4.2	2.8	2.5	4.4	3.1	2.8	4.6	3.4	3.1	5.0	3.7	3.3	5.2	3.9	3.5	5.5	4.2	3.8	5.7	4.5	4.0	6.0	5.3	4.7	6.8	5.3	4.7	6.8
10 characters	4.6	4.0	7.5	4.9	4.2	7.8	5.6	4.8	8.4	6.2	5.3	9.0	6.7	5.7	9.5	7.3	6.2	10.0	7.8	6.6	10.5	8.4	7.1	11.0	10.0	8.4	12.5	10.0	8.4	12.5
10 char. 2 lines	4.9	4.2	7.8	5.1	4.4	8.0	5.8	5.1	8.7	6.5	5.7	9.3	7.0	6.1	9.8	7.5	6.7	10.3	8.1	7.2	10.8	8.6	7.7	11.3	10.3	9.3	12.9	10.3	9.3	12.9
15 char. 1 line	6.2	5.3	10.1	6.5	5.6	10.6	7.4	6.4	11.4	8.2	7.2	12.2	8.8	7.8	12.9	9.5	8.4	13.6	10.2	9.1	14.3	10.9	9.7	15.0	12.9	11.7	17.1	12.9	11.7	17.1
15 char. 2 lines	6.4	5.6	10.5	6.7	5.9	10.9	7.7	6.8	11.8	8.6	7.6	12.7	9.3	8.2	13.4	10.0	8.9	14.1	10.8	9.6	14.9	11.5	10.3	15.6	13.8	12.3	17.9	13.8	12.3	17.9
20 char. 2 lines	8.1	7.1	13.5	8.5	7.5	14.2	9.7	8.5	15.3	10.7	9.6	16.5	11.5	10.3	17.4	12.4	11.2	18.4	13.3	12.0	19.4	14.2	12.9	20.4	16.9	15.4	23.5	16.9	15.4	23.5
30 char. 2 lines	12.1	10.4	20.2	12.7	11.0	21.2	14.5	12.6	22.9	16.3	14.2	24.5	17.5	15.3	25.9	18.9	16.6	27.3	20.4	17.9	28.8	21.8	19.2	30.2	26.1	23.1	34.6	26.1	23.1	34.6
30 char. 3 lines	12.2	10.6	20.5	12.9	11.3	21.5	14.8	12.9	23.1	16.6	14.5	24.8	17.9	15.7	26.1	19.4	17.0	27.6	20.9	18.3	29.0	22.4	19.6	30.5	27.0	23.6	34.8	27.0	23.6	34.8
50 char. 5 lines	20.6	17.6	34.2	21.8	18.6	35.8	25.0	21.5	38.8	28.2	24.2	41.6	30.4	26.2	43.9	33.0	28.4	46.4	35.6	30.7	48.9	38.2	33.0	51.5	46.0	39.8	59.0	46.0	39.8	59.0

### Note:

With servomotorized drive, calculate as follows: Small font sizes somewhat more than half the marking time. With font sizes of 3 mm and larger, exactly half the time.

With font sizes of 5 mm and larger, even somewhat less than half the time. (Values with servomotorized drive are approximate and can be used from a minimum number of 5 characters.)

## Marking time for data matrix code ECC 200 (approximate)

Embossing: bidirectional = forward and backward embossing

### Square codes

Code size in mm	4 x 4 mm	5 x 5 mm	6 x 6 mm	8 x 8 mm	9 x 9 mm	10 x 10 mm	12 x 12 mm	15 x 15 mm	20 x 20 mm
Emb. mode	Bi	Bi	Bi	Bi	Bi	Bi	Bi	Bi	Bi
10 x 10 dots	4.0	4.0	4.1	4.3	4.3	4.4	4.7		
12 x 12 dots	5.5	5.5	5.6	5.8	5.9	6.0	6.2	6.5	
14 x 14 dots	6.9	7.0	7.1	7.3	7.4	7.4	7.7	8.0	8.4
16 x 16 dots	9.2	9.3	9.5	9.6	9.8	9.9	10.0	10.4	10.7
18 x 18 dots		12.0	12.1	12.3	12.4	12.5	12.8	13.1	13.6
20 x 20 dots			15.3	15.4	15.5	15.6	15.7	16.0	16.4
22 x 22 dots				17.2	17.5	17.7	17.9	18.2	18.5

### Rectangular codes

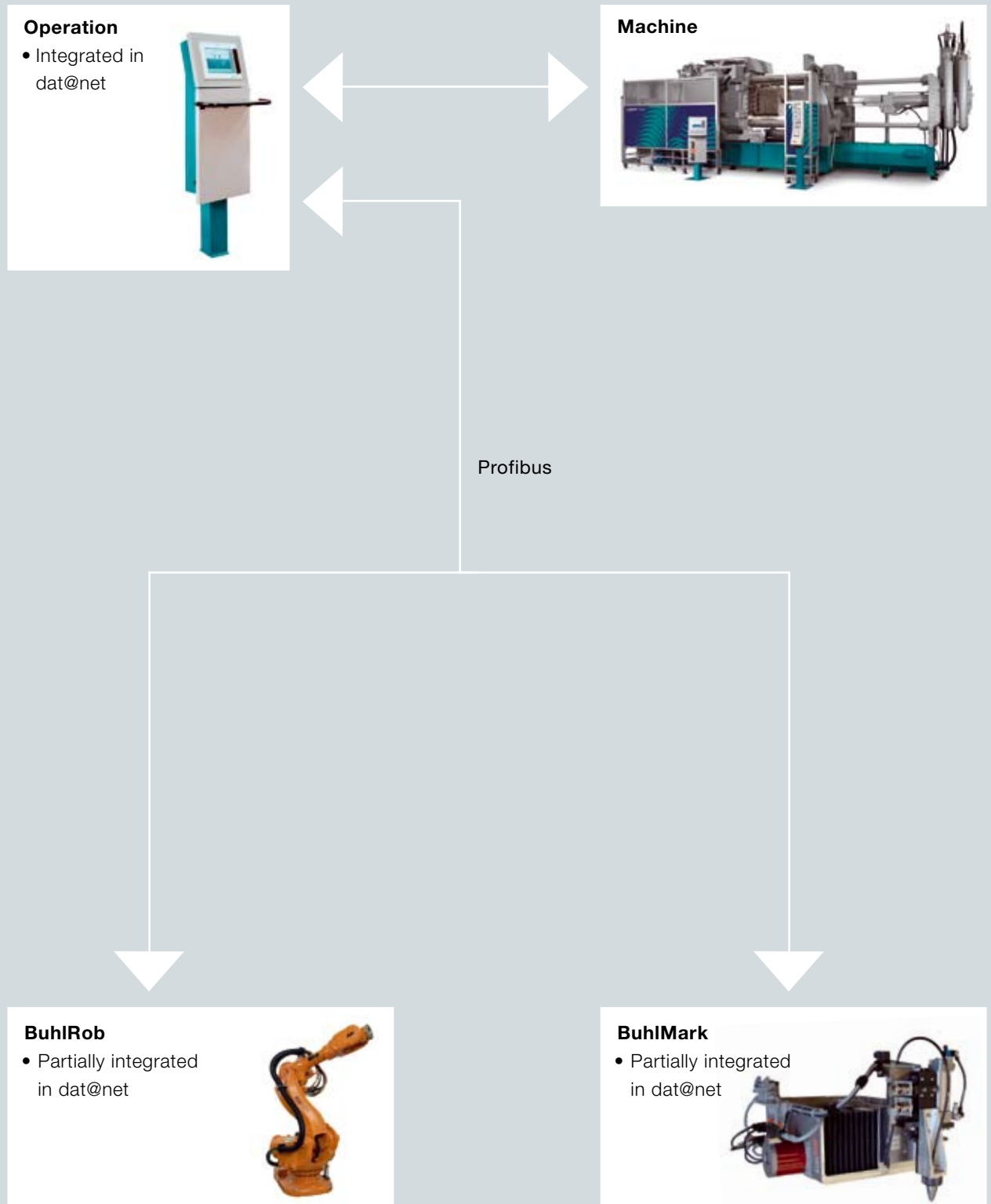
Embossing mode	Bi	Bi	Bi	Bi	Bi	Bi	Bi	Bi	Bi
Code size (H x W)	3 x 6.75 mm	3.5 x 7.88 mm	4 x 9 mm	4.5 x 10.1 mm	5 x 11.3 mm	5.5 x 12.4 mm	6 x 13.5 mm	7 x 15.8 mm	8 x 18 mm
8 x 18 dots	5.4	5.5	5.6	5.6	5.6	5.7	5.8	5.9	6.0
Code size (H x W)	3 x 12 mm	3.5 x 14 mm	4 x 16 mm	4.5 x 18 mm	5 x 20 mm	5.5 x 22 mm	6 x 24 mm	7 x 28 mm	8 x 32 mm
8 x 32 dots	9.3	9.4	9.5	9.5	9.5	9.5	9.6	9.7	9.9
Code size (H x W)	3 x 6.5 mm	3.5 x 7.6 mm	4 x 8.7 mm	4.5 x 9.75 mm	5 x 10.8 mm	5.5 x 11.9 mm	6 x 13 mm	7 x 15.2 mm	8 x 17.3 mm
12 x 26 dots	11.0	11.1	11.2	11.3	11.4	11.5	11.5	11.6	11.7
Code size (H x W)	3 x 9 mm	3.5 x 10.5 mm	4 x 12 mm	4.5 x 13.5 mm	5 x 15 mm	5.5 x 16.5 mm	6 x 18 mm	7 x 21 mm	8 x 24 mm
12 x 36 dots	15.2	15.3	15.4	15.5	15.6	15.6	15.6	15.6	15.7

### Note:

All times stated are pure marking times, exclusive of feed travel of the marking unit or marking head or of detour travel and lengthy travel to the marking point.

# BuhlMark.

A complete component marking system.



Bühler Druckguss AG  
CH-9240 Uzwil, Switzerland  
T +41 71 955 12 12  
F +41 71 955 25 88  
[die-casting.info@buhlergroup.com](mailto:die-casting.info@buhlergroup.com)  
[www.buhlergroup.com](http://www.buhlergroup.com)

