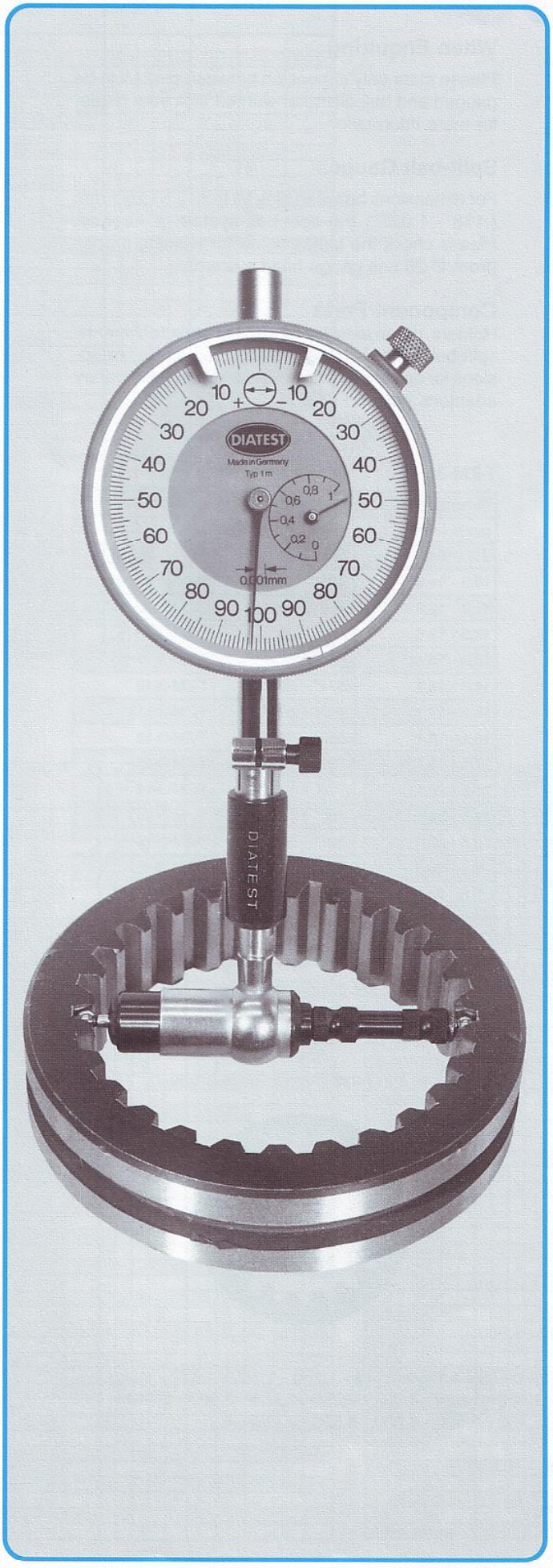


DIATEST

Internal Gear Gauges

ZM-2
ZM-3
ZM-6
ZM-7

TÜV CERT
DIN EN ISO 9001 : 2000
Reg.-Nr. 73 100 281

Range between balls:
3.5 to 333 mm
.138 to 13.11”

Check
PITCH DIAMETER

Detect
TAPER & OVALITY

in

INTERNAL GEARS
(involute spur or helical)

and

INTERNAL SPLINES
(involute or straight-sided)

with even or odd numbered teeth

Internal Gear Gauges

As versatile as Diatest bore gauges, Diatest internal gear gauges can be used in conjunction with regular Diatest accessories, such as the right angle attachment, the depth extensions, the comparator stands with floating holder and rotary adaptor, to meet your specific gauging requirements.

The Gauging Operation

Assemble compontent parts to suit and set gauge assembly to zero in a standard gear or certified production gear. Introduce the gauging assembly into the gear and rock in the vertical plane determine reversal point of indicator hand which shows amount of offset from size set.

When Enquiring

Please state only dimension between pins Mi to be gauged and ball diameter wanted. Ask your dealer for more information.

Split-ball Gauges

For dimensions between pins Mi from 3,5 - 26,1 mm (.138 - 1.027") the split-ball system is needed. Please check the tables below for suitable probes (from Ø 26 use gauge head system).

Component Parts

Holders, depth extensions, right angle attachments, split-ball probes, gauge heads, ball anvils, extensions for ball anvils, ball anvils for dial gauges, rotary adaptors, wooden Cases.

T-ZM-2

Dimension Mi		Order Code
range (mm)	range inch (")	
3,5 - 4,1	.138" - .161"	T-ZM-2-4,0-*
4,0 - 4,6	.158" - .181"	T-ZM-2-4,5-*
4,5 - 5,1	.177" - .200"	T-ZM-2-5,0-*
5,0 - 5,6	.197" - .220"	T-ZM-2-5,5-*
5,5 - 6,1	.217" - .240"	T-ZM-2-6,0-*
6,0 - 6,6	.236" - .259"	T-ZM-2-6,5-*
6,5 - 7,1	.256" - .279"	T-ZM-2-7,0-*
7,0 - 7,6	.276" - .299"	T-ZM-2-7,5-*
7,5 - 8,1	.295" - .318"	T-ZM-2-8,0-*
8,0 - 8,6	.315" - .338"	T-ZM-2-8,5-*
8,5 - 9,1	.335" - .358"	T-ZM-2-9,0-*
9,0 - 9,6	.345" - .377"	T-ZM-2-9,5-*

* add ball size – balls not interchangeable
Suitable needle: N-2-270 steel
NHM-2-270 carbide

Example T-ZM-2:
Dimension Mi = 5,75 mm
Ball Ø = 2,000 mm
T-ZM-2-6,0-2,000

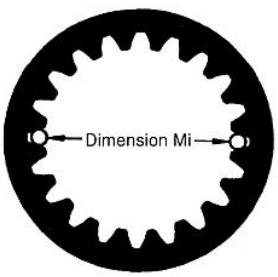
Example T-ZM-3:
Dimension Mi = 12,500 mm
Ball Ø = 2,000 mm
T-ZM-3-13
2 anvils KS-ZM-3-K-2,000

T-ZM-3

Dimension Mi		Order Code
range (mm)	range inch (")	
9,3 - 10,6	.366" - .417"	T-ZM-3-10-(K)
10,3 - 11,6	.405" - .456"	T-ZM-3-11-(K)
11,3 - 12,6	.445" - .496"	T-ZM-3-12-(K)
12,3 - 13,6	.484" - .535"	T-ZM-3-13-(K)
13,3 - 14,6	.524" - .574"	T-ZM-3-14-(K)
14,5 - 16,1	.571" - .633"	T-ZM-3-10
15,5 - 17,1	.610" - .673"	T-ZM-3-11
16,5 - 18,1	.650" - .712"	T-ZM-3-12
17,5 - 19,1	.689" - .751"	T-ZM-3-13
18,5 - 20,1	.728" - .791"	T-ZM-3-14
19,5 - 21,1	.768" - .830"	T-ZM-3-15
20,5 - 22,1	.807" - .870"	T-ZM-3-16
21,5 - 23,1	.846" - .909"	T-ZM-3-17
22,5 - 24,1	.886" - .948"	T-ZM-3-18
23,5 - 25,1	.925" - .988"	T-ZM-3-19
24,5 - 26,1	.965" - 1.027"	T-ZM-3-20

(K) short anvil KS-ZM-3-K-* (ball Ø)
Standard anvil KS-ZM-3-* (ball Ø)
Needle N-3-310 steel / NHM-3-310 carbide

Attention: You need 2 anvils each probe



Standard ball sizes metric, carbide:

Price group I Ø 1,000 - 2,000 - 3,000 - 3,500 - 4,000 - 5,000

II Ø 0,500 - 0,620 - 0,630 - 0,722 - 0,862 - 0,895 - 1,100 - 1,118 - 1,250 - 1,350 - 1,372 - 1,385 - 1,500 - 1,524 - 1,600 - 1,650 - 1,750 - 1,800 - 1,829 - 2,032 - 2,250 - 2,438 - 2,500 - 2,743 - 2,750 - 3,048 - 3,250 - 3,658 - 4,500 - 5,250 - 5,500 - 6,000 - 6,500 - 7,000

III Ø 7,500 - 8,000 - 8,500 - 9,000 - 9,500 - 10,000

Other ball sizs on request - Tolerance of Ø +/– 0,001 mm

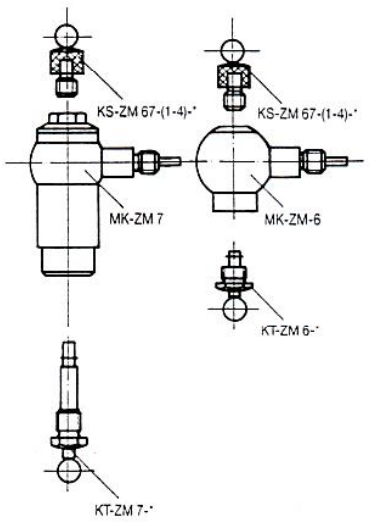
Ball anvils for dial indicators KS-MU-*
Special ball anvils and gauge slides on request.

Dimension Mi metric	MK-ZM-6 KS-ZM-67-(?)-*					Ref. extension ZS-		
26,0 - 29,0	1							
28,5 - 31,5		2						
31,0 - 34,0			3					
33,5 - 36,5				4				
36,0 - 39,0	1					A		
38,5 - 41,5		2				A		
41,0 - 44,0			3			A		
43,5 - 46,5				4		A		
46,0 - 49,0	1						B	
47,0 - 60,0					0			
48,5 - 51,5		2					B	
51,0 - 54,0			3				B	
53,5 - 56,5				4			B	
56,0 - 59,0	1					A	B	
57,0 - 70,0					0	A		
58,5 - 61,5		2				A	B	
61,0 - 64,0			3			A	B	
63,5 - 66,5				4		A	B	
66,0 - 69,0	1							C
67,0 - 80,0					0		B	
68,5 - 71,5		2						C
71,0 - 74,0			3					C
73,5 - 76,5				4				C
76,0 - 79,0	1					A		C
77,0 - 90,0					0	A	B	
78,5 - 81,5		2				A		C
81,0 - 84,0			3			A		C
83,5 - 86,5				4		A		C
86,0 - 89,0	1						B	C
87,0 - 100,0					0			C
88,5 - 91,5		2					B	C
91,0 - 94,0			3				B	C
93,5 - 96,5				4			B	C
96,0 - 99,0	1					A	B	C
97,0 - 110,0					0	A		C
98,5 - 101,5		2				A	B	C
101,0 - 104,0			3			A	B	C
103,5 - 106,5				4		A	B	C
107,0 - 120,0					0		B	C
117,0 - 130,0					0	A	B	C

Examples:
Customer's specification: Ball size Mi, ball-Ø

1. Mi = 48 mm, ball-Ø = 6.000 mm
   For Mi = 46.0 – 49.0 mm you require:
   - Gauge Head MK-ZM-6
   - Ball Plunger KT-ZM-6-6.000 (ball-Ø)
   - Ball Anvil KS-ZM-67-1-6.000 (ball-Ø)
   - Reference extension ZS-B

2. Mi = 192 mm, ball-Ø = 9.000 mm
   For Mi = 191.0 – 194.0 mm you require:
   - Gauge Head MK-ZM-7
   - Ball Plunger KT-ZM-7-9.000 (ball-Ø)
   - Ball Anvil KS-ZM-67-2-9.000 (ball-Ø)
   - Reference extension ZS-C and ZS-E-ZM-7



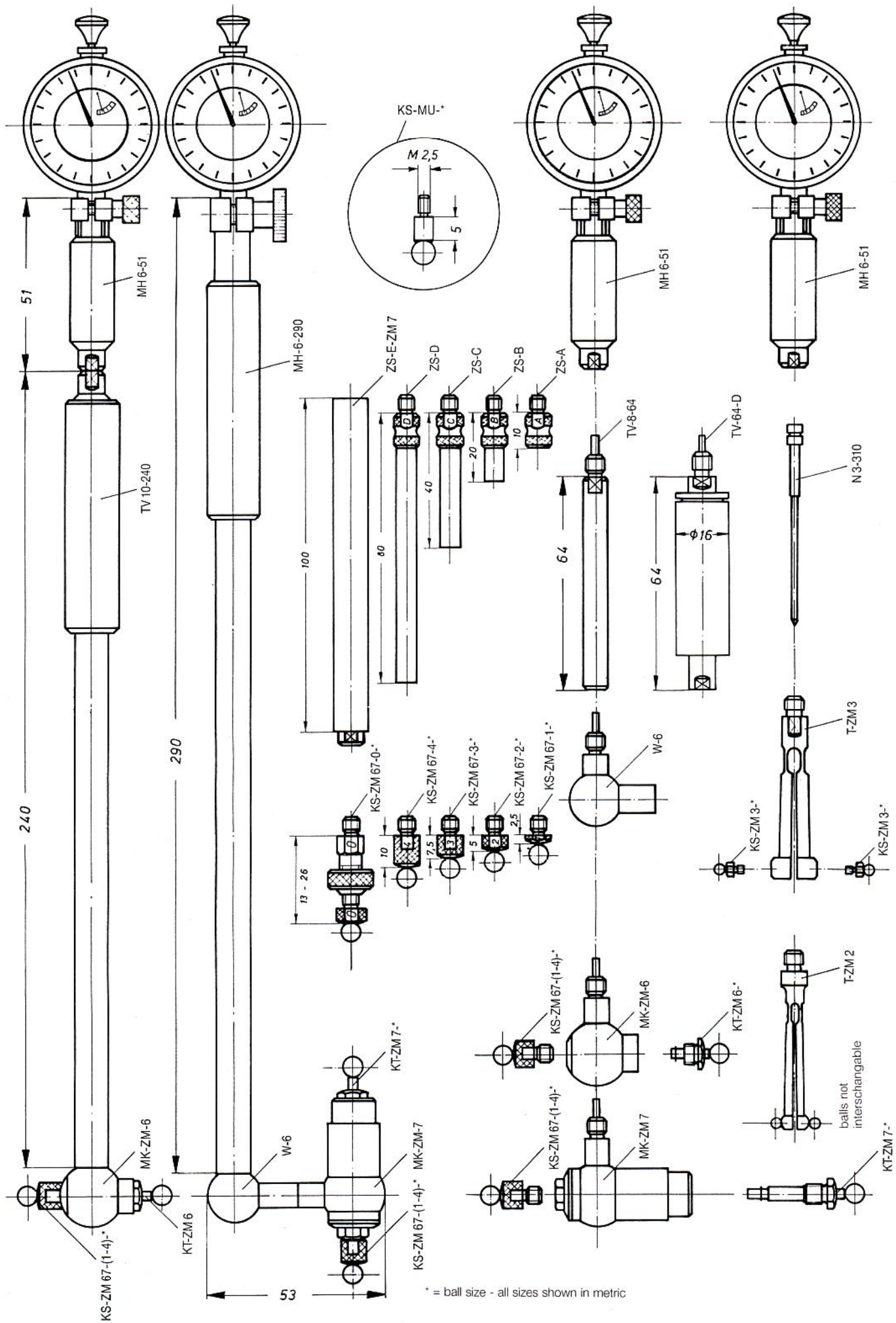
Dimension Mi metric	MK-ZM-7 KS-ZM-67-(?)-*					Ref. Extension ZS-*				
48,5 - 51,5	1									
51,0 - 54,0		2								
53,5 - 56,5			3							
56,0 - 59,0				4						
58,5 - 61,5	1					A				
61,0 - 64,0		2				A				
63,5 - 66,5			3			A				
66,0 - 69,0				4		A				
68,5 - 71,5	1						B			
70,0 - 83,0					0					
71,0 - 74,0		2					B			
73,5 - 76,5			3				B			
76,0 - 79,0				4			B			
78,5 - 81,5	1					A	B			
80,0 - 93,0					0	A				
81,0 - 84,0		2				A	B			
83,5 - 86,5			3			A	B			
86,0 - 89,0				4		A	B			
88,5 - 91,5	1							C		
90,0 - 103,0					0		B			
91,0 - 94,0		2						C		
93,5 - 96,5			3					C		
96,0 - 99,0				4				C		
98,5 - 101,5	1					A		C		
100,0 - 113,0					0	A	B			
101,0 - 104,0		2				A		C		
103,5 - 106,5			3			A		C		
106,0 - 109,0				4		A		C		
108,5 - 111,5	1						B	C		
110,0 - 123,0					0			C		
111,0 - 114,0		2					B	C		
113,5 - 116,5			3				B	C		
116,0 - 119,0				4			B	C		
118,5 - 121,5	1					A	B	C		
120,0 - 133,0					0	A		C		
121,0 - 124,0		2				A	B	C		
123,5 - 126,5			3			A	B	C		
126,0 - 129,0				4		A	B	C		
128,5 - 131,5	1								D	
130,0 - 143,0					0		B	C		
131,0 - 134,0		2							D	
133,5 - 136,5			3						D	
136,0 - 139,0				4					D	
138,5 - 141,5	1					A			D	
140,0 - 153,0					0	A	B	C		
141,0 - 144,0		2				A			D	
143,5 - 146,5			3			A			D	

Dimension Mi metric	MK-ZM-7 KS-ZM-67-(?)-*					Ref. Extension ZS-*				
146,0 - 149,0				4		A			D	
148,5 - 151,5	1									E
150,0 - 163,0					0				D	
151,0 - 154,0		2								E
153,5 - 156,5			3							E
156,0 - 159,0				4						E
158,5 - 161,5	1					A				E
160,0 - 173,0					0	A			D	
161,0 - 164,0		2				A				E
163,5 - 166,5			3			A				E
166,0 - 169,0				4		A				E
168,5 - 171,5	1						B			E
170,0 - 183,0					0					E
171,0 - 174,0		2					B			E
173,5 - 176,5			3				B			E
176,0 - 179,0				4			B			E
178,5 - 181,5	1					A	B			E
180,0 - 193,0					0	A				E
181,0 - 184,0		2				A	B			E
183,5 - 186,5			3			A	B			E
186,0 - 189,0				4		A	B			E
188,5 - 191,5	1							C		E
190,0 - 203,0					0		B			E
191,0 - 194,0		2						C		E
193,5 - 196,5			3					C		E
196,0 - 199,0				4				C		E
198,5 - 201,5	1					A		C		E
200,0 - 213,0					0	A	B			E
201,0 - 204,0		2				A		C		E
203,5 - 206,5			3			A		C		E
206,0 - 209,0				4		A		C		E
208,5 - 211,5	1						B	C		E
210,0 - 223,0					0			C		E
211,0 - 214,0		2					B	C		E
213,5 - 216,5			3				B	C		E
216,0 - 219,0				4			B	C		E
218,5 - 221,5	1					A	B	C		E
220,0 - 233,0					0	A		C		E
221,0 - 224,0		2				A	B	C		E
223,5 - 226,5			3			A	B	C		E
226,0 - 229,0				4		A	B	C		E
228,5 - 231,5	1								D	E
230,0 - 243,0					0		B	C		E
231,0 - 234,0		2							D	E
233,5 - 236,5			3						D	E
236,0 - 239,0				4					D	E
238,5 - 241,5	1					A			D	E

metric	KS-ZM-67-(?)-*					ZS-*				
240,0 - 253,0					0	A	B	C		E
241,0 - 244,0		2				A			D	E
243,5 - 246,5			3			A			D	E
246,0 - 249,0				4		A			D	E
248,5 - 251,5	1						B		D	E
250,0 - 263,0					0				D	E
251,0 - 254,0		2					B		D	E
253,5 - 256,5			3				B		D	E
256,0259,0				4			B		D	E
258,5 - 261,5	1					A	B		D	E
260,0 - 273,0					0	A			D	E
261,0 - 264,0		2				A	B		D	E
263,5 - 266,5			3			A	B		D	E
266,0 - 269,0				4		A	B		D	E
268,5 - 271,5	1							C	D	E
270,0 - 283,0					0		B		D	E
271,0 - 274,0		2						C	D	E
273,5 - 276,5			3					C	D	E
276,0 - 279,0				4				C	D	E
278,5 - 281,5	1					A		C	D	E
280,0 - 293,0					0	A	B		D	E
281,0 - 284,0		2				A		C	D	E
283,5 - 286,5			3			A		C	D	E
286,0 - 289,0				4		A		C	D	E
288,5 - 291,5	1						B	C	D	E
290,0 - 303,0					0			C	D	E
291,0 - 294,0		2					B	C	D	E
293,5 - 296,5			3				B	C	D	E
296,0 - 299,0				4			B	C	D	E
298,5 - 301,5	1					A	B	C	D	E
300,0 - 313,0					0	A		C	D	E
301,0 - 304,0		2				A	B	C	D	E
303,5 - 306,5			3			A	B	C	D	E
306,0 - 309,0				4		A	B	C	D	E
310,0 - 323,0					0		B	C	D	E
320,0 - 333,0					0	A	B	C	D	E

For inch sizes please divide metric size by 25.4

DIATEST


KS-MU-*
M 2,5
5
MH 6-51
MH-6-290
TV 10-240
51
240
290
ZS-E-ZM 7
ZS-D
ZS-C
ZS-B
ZS-A
100
60
40
20
10
TV-8-64
TV-64-D
64
64
φ16
N 3-310
KS-ZM 67-0-*
KS-ZM 67-4-*
KS-ZM 67-3-*
KS-ZM 67-2-*
KS-ZM 67-1-*
13 - 26
10
7,5
5
2,5
W-6
T-ZM 3
KS-ZM 3-*
KS-ZM 3-*
KT-ZM 7-*
MK-ZM-6
W-6
MK-ZM-7
KS-ZM 67-(1-4)-*
KT-ZM 6
KS-ZM 67-(1-4)-*
53
KS-ZM 67-(1-4)-*
MK-ZM-6
KT-ZM 6-*
T-ZM 2
balls not
interschangable
KS-ZM 67-(1-4)-*
MK-ZM 7
KT-ZM 7-*
* = ball size - all sizes shown in metric