


Red Hill IOM: CES/39 / dt 2001-12-20 2001-12-22

FOR REFERENCE ONLY

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KES		O-RING	D (PARTS) 07000 (1994)
		Parts classification code	7 0 A 1

Division code	0	1	4	5	7
Materials	NBR-1A	NBR-1B	NBR-1D	NBR-1E	VMQ-1C
Hardness	JIS HS70±5	JIS HS88±5	JIS HS70±5	JIS HS82±5	JIS HS68±5
Material dis-criminating color	Black (°)	Two points in blue	One point in red	Two points in red	Brown (°)
Operating temp. range (°C)	-30 to +100		-55 to +100	-55 to +80	-55 to +180
Filling solution (°)	Mineral oil · water		Mineral oil · water	Mineral oil	Mineral oil
Applicable pressure MPa (kg/cm <sup>2</sup> )	10.3 {105} and below	13.7 {140} and above	10.3 {105} and below	13.7 {140} and above	2.94 {30} and below
Other working conditions	For fixed use · motive use		O-ring of division code 0 for severe cold district	O-ring of division code 1 for severe cold district	For fixed use. However, O-ring shall not be used to gear oil containing the extreme pressure additive, the oil low in viscosity (light oil, gasoline, etc.), or in cooling system. Also, as the mechanical property is poor, this O-ring should not be applied to motive use.

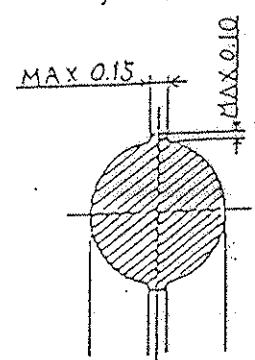
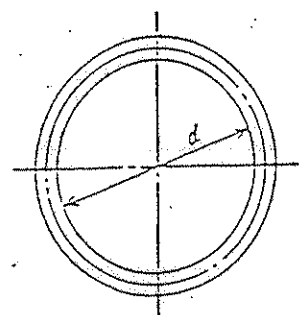
Division code	A	B	C	D	E	F	G
Materials	HNBR-1A	HNBR-1B	ACM-1A	ACM-1B	FKM-1D	FKM-1E	EPDM-1A
Hardness	JIS HS70±5	JIS HS90±5	JIS HS70±5	JIS HS87±5	JIS HS72±5	JIS HS90±5	JIS HS70±5
Material dis-criminating color	One point in pink	Two points in pink	One point in brown	Two points in brown	One point in green	Two points in green	One point in yellow
Operating temp. range (°C)	-30 to +140	-30 to +110	-20 to +120		-25 to +200	-20 to +160	-50 to +140
Filling solution (°)	Mineral oil and water		Mineral oil		Mineral oil		Water
Applicable pressure MPa (kg/cm <sup>2</sup> )	10.3 {105} and below	13.7 {140} and above	10.3 {105} and below	13.7 {140} and above	10.3 {105} and below	13.7 {140} and above	10.3 {105} and below
Other working conditions	For fixed use · motive use	For fixed use	For fixed use · motive use	For fixed use	For fixed use · motive use	For fixed use and in the case where physical strength is required. This shall not be applied to motive use.	This shall not be applied to mineral oil for fixed type and cooling system.

Notes (°) Temperature of heat-proof life equivalent to 1000 hours of dry heating is indicated for upper limit of operating temperature range, as standard of selection. Further, as to heat-proof life, refer to KES 07. 620. 1 (Nitrile rubber hydride), 07. 621. 1 (Nitrile rubber), 07. 626. 6 (Acrylic rubber), 07. 627. 1 (Silicon rubber), 07. 628. 1 (Fluoro rubber).

(°) For the details of filling solution, refer to KES 07. 601 (Selection of rubber material).

(°) Color of rubber material is expressed. Paint mark for discrimination is no need.

Remarks—Division code-1, 5, B, D or F shall be applied to fixed use with intermediate set pressure between 10.3 MPa {105 kg/cm<sup>2</sup>} and 13.7 MPa {140 kg/cm<sup>2</sup>}.



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Nominal size		W		d			Dimension code
I. D.	O. D.	Basic size	Deviation	Basic size	Deviation		
					Division code 0-1-4-5	Division code 7-A to F	
6	9	1.78	±0.07	3.07	±0.12	±0.24	1105 (°)
3	6	1.9		2.8			1003 (1103)
4	7			3.3			1004 (1104)
5	8			4.8			1005
6	9			5.8			1006
7	10			6.8			1007
8	11			7.8			1008
9	12			8.8			1009
10	14			2.4			9.8
11	15		10.8		2011		
12	16	11.8	2012				
14	18	13.8	2014				
15	19	14.8	2015				
16	20	15.8	2016				
18	22	17.8	2018				
20	24	19.8	2020				
21	25	20.8	2021				
22	26	3.5 ±0.1	21.7	±0.25	±0.50	3022	
25	31		24.7			3025	
23	28		27.7			3028	
30	36		29.7			3030	
32	38		31.7			3032	
35	41		34.7			3035	
33	44		37.7			3033	
40	48		39.7			3040	
42	50		41.7			3042	
45	51	44.7	3045				
48	54	47.7	3043				
50	55	49.7	3050				
55	60	3.1	54.4			☆2055	

Nominal size		W		d		Unit: mm			
I. D.	O. D.	Basic size	Deviation	Basic size	Deviation		Dimension code		
					Division code 0-1-4-5	Division code 7-A to F			
60	65	3.1	±0.1	59.4	±0.25	±0.50	☆ 2060		
65	70			64.4			☆ 2065		
70	75			69.4			☆ 2070		
75	80			74.4	±0.4	±0.8	☆ 2075		
80	85			79.4			☆ 2080		
85	90			84.4			☆ 2085		
90	95			89.4			☆ 2090		
95	100			94.4			☆ 2095		
100	105			99.4			☆ 2100		
105	110			104.4			☆ 2105		
110	115			109.4			☆ 2110		
115	120			114.4			☆ 2115		
120	125			119.4			☆ 2120		
125	130			124.4			☆ 2125		
130	135			129.4			±0.6	±1.2	☆ 2130
135	140			134.4					☆ 2135
140	145	139.4	☆ 2140						
145	150	144.4	☆ 2145						
55	60	5.7	±0.15	54.6	±0.25	±0.50	※ 5055		
60	65			59.6			※ 5060		
65	70			64.6			※ 5065		
70	75			69.6			※ 5070		
75	80			74.6	±0.4	±0.8	※ 5075		
80	90			79.6			※ 5080		
85	95			84.6			※ 5085		
90	100			89.6			※ 5090		
95	105			94.6			※ 5095		
100	110			99.6			※ 5100		
105	115			104.6			※ 5105		
110	120			109.6			※ 5110		
115	125			114.6			※ 5115		

Notes (°) This code shall be used for only tire valve. Dimension codes with a mark of ☆ and of ※ shall be used only for fixed type and for moving type, respectively.

(Continued)

Established: December 7, 1954

KOMATSU

Revised: March 24, 1994

21-376-KS

D 07000

(1994)

(Continuation)

Nominal size				W		d		Unit: mm
I. D.	O. D.	Basic size	Deviation	Basic size	Deviation	Deviation	Deviation	
220	292			279.1			±0.020	
225	297			284.1			±0.025	
230	302	6.9	±0.15	289.1	±0.75		±0.030	
235	307			294.1			±0.035	
240	312			299.1			±0.040	

Notes (1) Applied to division code 1 only.  
Dimension codes with a mark of \* shall be used only for moving type.



D 07000

(1994)

10. O-rings of division codes in Table 2, which existed prior to revision of July 27, 1992, shall not be applied for new design.

Further, O-rings for new design and for supply shall conform to Table 2.

Table 2

O-rings not applicable to new design	Division code	(2)	(3)	(6)
	Materials	FR-1B	FR-1A	SR-1
	Hardness	JIS HS90 $\pm$ 5	JIS HS70 $\pm$ 5	JIS HS70 $\pm$ 5
	Material discriminating color	Two points in green	One point in green	Color of orange
O-rings for new design and for supply	Division code	F	E	7
	Materials	FKM-1E	FKM-1D	VMQ-1C

Reference standard These standards are extracted from JIS B 2401 (O-ring) except quality of material and performance. Also, O-rings of large dimensions have been specified.

Reference Parts in Reference table before revision of March 16, 1970 shall not be available for new designs.

Reference table

Unit: mm

Nominal size		W		d			Dimension code
I. D.	O. D.	Basic size	Deviation	Basic size	Deviation		
					Division code 0-1-4-5	Division code 2-3-6-7	
8	12	2.4	$\pm 0.07$	7.8	$\pm 0.12$	$\pm 0.36$	2008
20	26	3.5	$\pm 0.1$	19.7	$\pm 0.15$	$\pm 0.45$	3020
52	58			51.6	$\pm 0.25$	$\pm 0.75$	3052
58	64			57.6			3058
62	68			61.6			3062
65	71			64.6			3065
82	88			81.6	$\pm 0.4$	$\pm 1.2$	3082
85	91			84.6			3085
92	98			91.6			3092
98	104			97.6			3098
110	116			109.6	$\pm 0.6$	$\pm 1.8$	3110
120	126			119.6			3120
125	131			124.6			3125
130	136			129.6			3130
145	151			144.6			3145
42	52	5.7	$\pm 0.15$	41.6	$\pm 0.25$	$\pm 0.75$	5042
48	58			47.6			5048
53	63			57.6			5058
68	78			67.6			5068

Established:  
December 7, 1954

**KOMATSU**

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