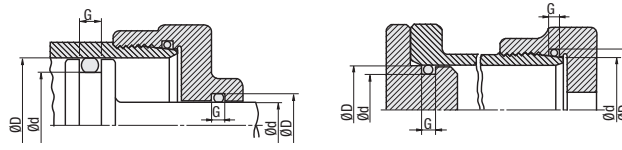


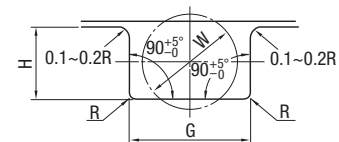
Type	Material	Hardness (JIS Hs)	Color	Operating Temp. Range	JIS Symbol	Applications	Features
NPA	Nitrile Rubber	70±5	Black	-30~100°C	Class 1 A	Mineral Oil Resistant	Most representative material with superior oil / abrasion resistance and heat stability.
NPB	Nitrile Rubber	90±5	Black	-25~100°C	Class 1 B		
NPSW	Silicon Rubber	50±5	Milky White	-50~200°C	—	Heat Resistant	Having excellent high and low temperature resistances, this material has the widest range of operating temperatures among synthetic rubbers. It is suitable for food-related applications.
NPSK	Silicon Rubber	70±5	Scarlet Red	-50~200°C	Class 4 D	Heat Resistant	
NPF	Fluoro Rubber	70±5	Black	-15~200°C	Class 4 D		Best in oil / chemical resistance and heat stability as synthetic rubber. Suitable for a wide range of applications.
NPFH	Fluoro Rubber	90±5	Black	-15~200°C	—	Heat Resistant	
NPEG	Ethylene Propylene Rubber	70±5	Black	-45~130°C	—	For Weather Resistant Items	Excellent material in weather resistance, ozone resistance and electrical characteristics.
NPBR	Fluororesin	—	White	Subject to O-Ring	—	For High Voltage Use	Used when the pressure resistance of O-ring is insufficient.

Detailed Fitting Sizes

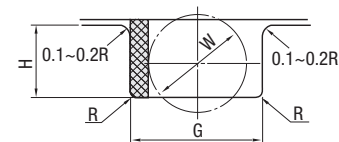
Type	No.	G Dimension (Tolerance ^{0.25})			H Dim. H±0.05	R Dim. Max. Value
		No Back-Up Ring	Back-Up Ring on One Side	Back-Up Rings on Both Sides		
NPA	3-10	2.5	3.9	5.4	1.4	0.4
NPSW	10A-22	3.2	4.4	6.0	1.8	0.4
NPF	22A-50	4.7	6.0	7.8	2.7	0.8
NPEG	50A-80	7.5	9.0	11.5	4.6	0.9



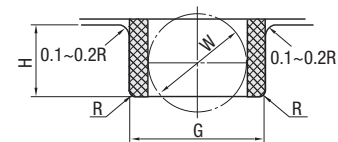
No Back-Up Ring



Back-Up Ring on One Side



Back-Up Rings on Both Sides



JIS B 2407 Back-Up Rings (For the P Series – Bias Cut)

Part Number	No.	Nominal No. of Applicable O-Rings	W	d	D	T
NPBR Fluororesin, White	15	P15	+0.03 -0.05	15	0 -0.15	1.25
	16	P16		16		
	18	P18		18		
	20	P20		20		
	21	P21		21		
	22	P22		22		
	22A	P22A		22		
	24	P24		24		
	25	P25		25		
	26	P26		26		
	28	P28	+0.20 0	28	0 -0.20	
	30	P30		30		
	32	P32		32		
	34	P34		34		
	38	P38		38		
	40	P40		40		
	42	P42		42		
	48	P48		48		
	50	P50		50		

JIS B 2401 P Series (For Mounting, Dynamic)

Part Number	JIS Nominal Number	W	Inner Diameter				Matching Material				
			do	NPA / NPB Tolerance	NPSK / NPSW / NPEG Tolerance	NPF / NPFH Tolerance	d	Tolerance	D	Tolerance	
NPA Nitrile Rubber, Black	3	P3	1.9±0.08	2.8	±0.14	±0.21	±0.16	3	0 -0.05	6	+0.05 0
	4	P4		3.8							
	5	P5		4.8							
	6	P6		5.8							
	7	P7		6.8							
	8	P8		7.8							
	9	P9		8.8							
	10	P10		9.8							
	10A	P10A		9.8							
	11	P11		10.8							
NPB Nitrile Rubber, Black	11.2	P11.2	2.4±0.09	11.0	±0.18	±0.27	±0.21	11.2	0 -0.06	14	+0.06 0
	12	P12		11.8							
	12.5	P12.5		12.3							
	14	P14		13.8							
	15	P15		14.8							
	16	P16		15.8							
	18	P18		17.8							
	20	P20		19.8							
	21	P21		20.8							
	22	P22		21.8							
NPSW Silicon Rubber, Milky White	22A	P22A	3.5±0.1	21.7	±0.24	±0.36	±0.28	22	0 -0.08	28	+0.08 0
	22.4	P22.4		22.1							
	24	P24		23.7							
	25	P25		24.7							
	25.5	P25.5		25.2							
	26	P26		25.7							
	28	P28		27.7							
	29	P29		28.7							
	29.5	P29.5		29.2							
	30	P30		29.7							
NPSK Silicon Rubber, Scarlet Red	31	P31	5.7±0.13	30.7	±0.30	±0.45	±0.36	31	0 -0.10	37	+0.10 0
	31.5	P31.5		31.2							
	32	P32		31.7							
	34	P34		33.7							
	35	P35		34.7							
	35.5	P35.5		35.2							
	36	P36		35.7							
	38	P38		37.7							
	39	P39		38.7							
	40	P40		39.7							
NPF Fluoro Rubber, Black	41	P41		40.7	±0.38	±0.57	±0.45	41		47	
	42	P42		41.7							
	44	P44		43.7							
	45	P45		44.7							
	46	P46		45.7							
	48	P48		47.7							
	50	P50		49.7							
	50A	P50A		49.7							
	52	P52		51.6							
	NPFH Fluoro Rubber, Black	53		P53							
55		P55	54.6								
56		P56	55.6								
58		P58	57.6								
60		P60	59.6								
62		P62	61.6								
63		P63	62.6								
65		P65	64.6								
67		P67	66.6								
NPEG Ethylene Propylene Rubber, Black		70	P70		69.6	±0.61	±0.91	±0.73	70		77
	71	P71	70.6								
	75	P75	74.6								
	80	P80	79.6								

