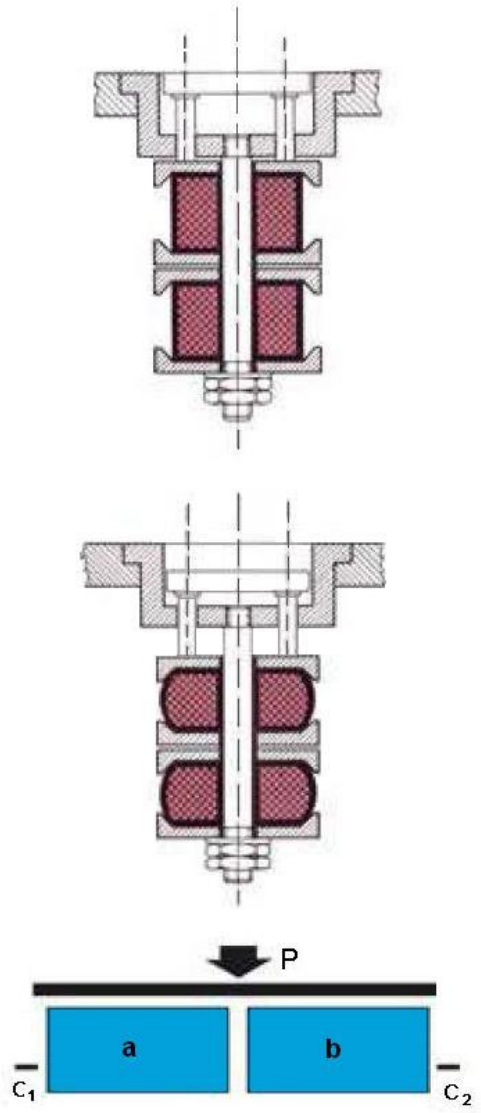


JUMPY BARS AND SPRINGS IN POLYURETHANE

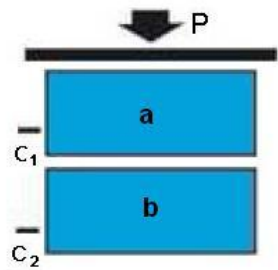
Available hardness		
82 ± 2 Sh°A	YELLOW	92 ± 2 Sh°A RED
		94 ± 2 Sh°A GREY

JUMPY SPRINGS		
External diameter (mm)	Height (mm)	Internal diameter (mm)
16	250	6.5
16	12	6.5
16	16	6.5
16	20	6.5
16	25	6.5
20	250	8.5
20	20	8.5
20	25	8.5
20	32	8.5
25	250	10.5
25	20	10.5
25	25	10.5
25	32	10.5
25	40	10.5
25	50	10.5
32	500	13.5
32	25	13.5
32	32	13.5
32	40	13.5
32	50	13.5
32	63	13.5
40	500	13.5
40	25	13.5
40	32	13.5
40	40	13.5
40	50	13.5
40	63	13.5
40	80	13.5

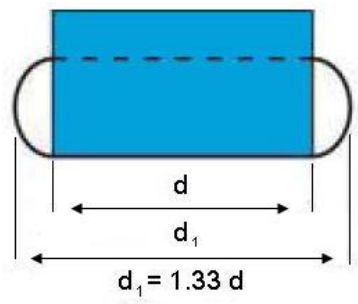
JUMPY SPRINGS		
External diameter (mm)	Height (mm)	Internal diameter (mm)
50	500	18
50	50	18
50	63	18
50	80	18
50	100	18
63	500	18
63	63	18
63	80	18
63	100	18
63	125	18
80	500	21
80	63	21
80	80	21
80	100	21
80	125	21
80	160	21
100	500	21
100	80	21
100	100	21
100	125	21
100	160	21
125	500	27
125	80	27
125	100	27
125	125	27
125	160	27



Total load $P = a + b$
 Total deformation $C = C_1 = C_2$



Total load $P = a = b$
 Total deformation $C = C_1 + C_2$



DIMENSIONAL TOLLERANCE:

Red springs 92 Sh°A and grey 95 Sh°A = +/- 0.5 mm

Yellow springs 82 Sh°A = +/- 1 mm

TECHNICAL FEATURES OF JUMPY SPRINGS IN POLYURETHANE

HARDNESS 82 Sh°A

ELASTIC ELEMENTS			JUMPY 82 Sh°A														
Ø spring (mm)	Max Load (kg)	Internal diam. (mm)	Spring height (mm)														
			12	16	20	25	32	40	50	63	80	100	125	160			
			Load (kg) per each mm of compression														
16	48	6.5	9	8	7	5.5											
20	100	8.5		18	14.3	11.5	9										
25	190	10.5			27	22	17.3	13	11								
32	250	13.5				29	22.7	18	14	11							
40	470	13.5					43	33	27	21	17						
50	900	18						64	51	41	32	26					
63	1280	18							73	58	46	36	29				
80	2100	21								95	75	60	48	37			
100	3800	21									136	109	87	68			
125	4800	27									171	137	110	86			
Maximum deformation allowed 30% (in mm)			3.6	4.8	6	7.5	9.5	12	15	19	24	30	37.5	48			

Jumpy 82 Sh°A

Hardness	80 ± 2 Sh°A
Glass transition temperature	- 25.0 °C
Tan δ 25°C	1.2 x 10 ⁻¹

ASTM D 412

Modulus 50%	4.0 N/mm ² (Mpa)
Modulus 100%	5.0 N/mm ² (Mpa)
Modulus 200%	8.5 N/mm ² (Mpa)
Modulus 300%	12.5 N/mm ² (Mpa)
Load to break	32.0 N/mm ² (Mpa)
Elongation	510%

ASTM D624

Tear resistance DIE B	50.0 KN/m
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DIN 53516

Resistance to abrasion	70 ± 5 mg
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HARDNESS 92 Sh°A														
ELASTIC ELEMENTS			JUMPY 92 Sh°A											
Ø spring (mm)	Max Load (kg)	Internal diam. (mm)	Spring height (mm)											
			12	16	20	25	32	40	50	63	80	100	125	160
			Load (kg) per each mm of compression											
16	110	6.5	30	23	18	15								
20	220	8.5		46	36	29	23							
25	330	10.5			55	44	34	27	22					
32	500	13.5				66	52	41	33	26				
40	980	13.5					103	81	65	51	41			
50	1750	18						145	116	92	73	58		
63	2830	18							188	149	118	94	75	
80	4250	21								223	177	141	113	
100	7050	21									293	235	188	
125	8520	27										355	284	
Maximum deformation allowed 30% (in mm)			3.6	4.8	6	7.5	9.5	12	15	19	24	30	37.5	48

Jumpy 92 Sh°A	
Hardness	92 ± 2 Sh°A
Glass transition temperature	- 20.0 °C
Tan δ 25°C	1.4 x 10 ⁻¹
ASTM D 412	
Modulus 50%	8.0 N/mm ² (Mpa)
Modulus 100%	10.0 N/mm ² (Mpa)
Modulus 200%	15.0 N/mm ² (Mpa)
Modulus 300%	21.0 N/mm ² (Mpa)
Load to break	40.0 N/mm ² (Mpa)
Elongation	500%
ASTM D624	
Tear resistance DIE B	90.0 KN/m
DIN 53516	
Resistance to abrasion	80 ± 5 mg

HARDNESS 94 Sh°A														
ELASTIC ELEMENTS			JUMPY 94 Sh°A											
Ø spring (mm)	Max Load (kg)	Internal diam. (mm)	Spring height (mm)											
			12	16	20	25	32	40	50	63	80	100	125	160
			Load (kg) per each mm of compression											
16	195	6.5	65	49	39	31								
20	280	8.5		70	56	45	35							
25	422	10.5			84	67	53	42	34					
32	756	13.5				121	94	76	60	48				
40	1200	13.5					150	120	96	76	60			
50	890	18						189	151	120	94	76		
63	3000	18							250	190	150	120	96	
80	5600	21								355	280	224	179	140
100	8400	21									420	336	269	210
125	12000	27										600	480	384
Maximum deformation allowed 30% (in mm)			3	4	5	6.3	8	10	12.5	15.6	20	25	31.3	40

Jumpy 94 Sh°A	
Hardness	95 ± 2 Sh°A
Glass transition temperature	- 28.0 °C
Tan δ 25°C	1.4 x 10 ⁻¹
ASTM D 412	
Modulus 50%	11.5 N/mm ² (Mpa)
Modulus 100%	13.5 N/mm ² (Mpa)
Modulus 200%	18.0 N/mm ² (Mpa)
Modulus 300%	25.5 N/mm ² (Mpa)
Load to break	51.0 N/mm ² (Mpa)
Elongation	500%
ASTM D624	
Tear resistance DIE B	109.0 KN/m
DIN 53516	
Resistance to abrasion	90 ± 10 mg