

General Description of Urethane Spring

FOR HIGH LOAD

Optimum for pad pressure of press tools

Urethane spring USA and USX for press tools use polyester based cast urethane elastomer which is heat resistant. It is excellent in repeated compression. It also has high impact resilience, impact resistance, weather resistance and load resistance. It is the optimum product for pad pressure source of press tools.



Features

- Since material is hard and elastic, it is excellent in impact resistance and shows a strong performance as a spring.
- Since it is excellent in oil resistance, weather resistance and aging resistance, the service life is long.
- Additional cutting and grinding can be made with ease.
- Shape is a thick wall round pipe and is easy to handle.

Physical Properties

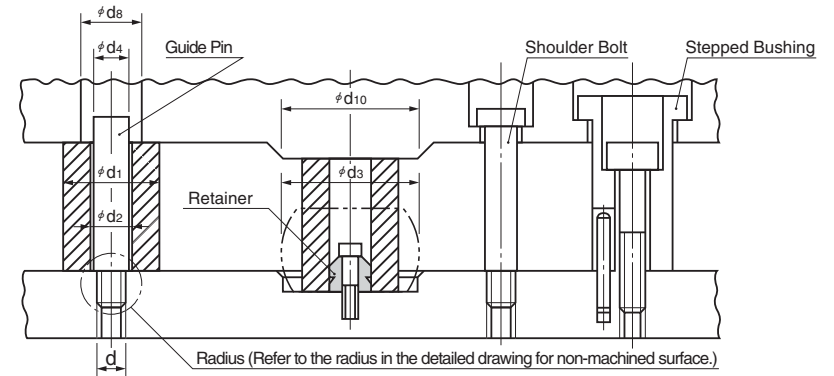
Item	Physical Property Values	
Material	Polyester Based	
Hardness	Shore A 90°	
	HRS 45°	
Color	Navy blue	
Tensile Strength	59MPa	
Modulus	100%	7.53MPa
	300%	15.2MPa
Elongation	510%	
Tensile Strength	109N/mm	
Impact Resilience	28%	

Application Range

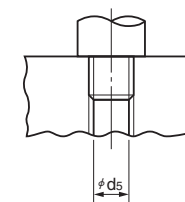
Item	Characteristic Value	
Deflection Rate Limit for Operation	25%	
SPM Limit for Operation	D < φ 90	60SPM
	D ≥ φ 90	40SPM
Ambient Temperature Limit for Operation	50°C	

Application Example

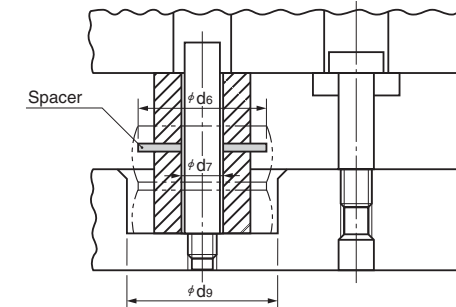
For operation with single stage spring



Detailed Drawing of Radius



For operation with double stage spring



Dimensional table (calculation table based on φd₁)

	Urethane Spring			Guide Pin		Spacer		Others		
	φd ₁	φd ₂	φd ₃	φd ₄	φd ₅	φd ₆	φd ₇	φd ₈	φd ₉	φd ₁₀
For φd ₁ = 40	40	14	49	13	M10	50	14	15	60	50
For φd ₁ = 80	80	22	95	20	M16	100	22	22	110	100

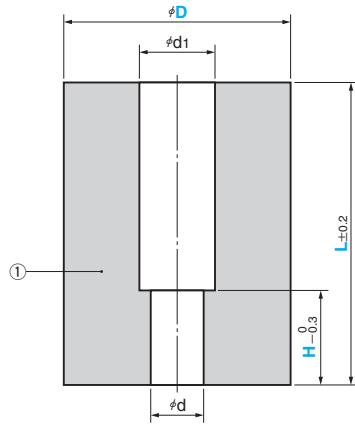
⚠ Use φ 18 guide pin for φ60, φ80, φ100 USX type (P.1701).

Urethane Spring

HIGH LOAD AND COUNTERBORE HOLE TYPE

CAD
FILE

USZL



USZLK (Type with Retainer)

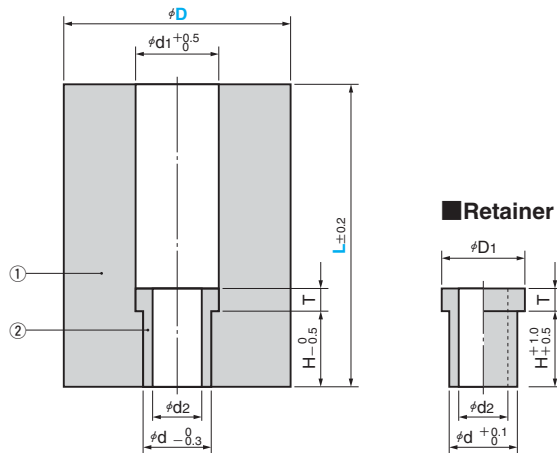


Table of Components

No.	Description	Qty	Material and Remark
①	Urethane Spring	1	Polyester based, Shore 90
②	Retainer	1	SS400

*L/D=2 or less is recommended.

d	d ₁	Applicable Bolt	Catalog No.	D	L Increments of 1 mm	H Increments of 1 mm
9	14	M8	USZL	30	20 ~ 100	5 ≤ H < L
				40		
11	18	M10		50	25 ~ 150	
				60		
14	20	M12	70	25 ~ 200		
			80			
			90			
				100		

d	d ₁	d ₂	D ₁	T	H	Applicable Bolt	Catalog No.	D	L Increments of 1 mm
15	20	11	19.5	5	12	M10	USZLK	40	30 ~ 150
								50	
								60	35 ~ 150
18	22	13	22	6	20	M12		70	35 ~ 200
								80	
								90	
								100	



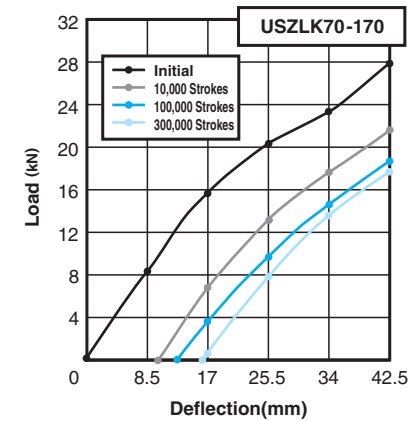
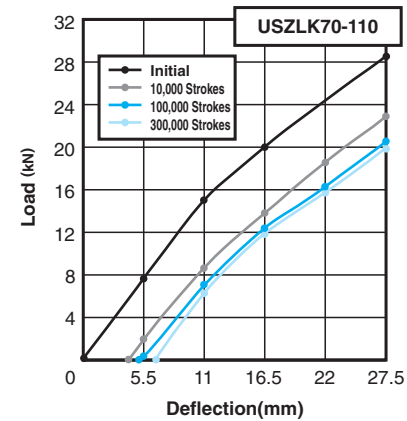
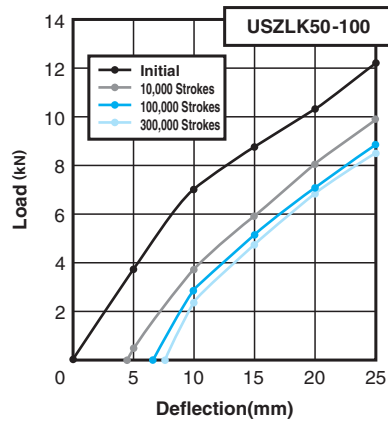
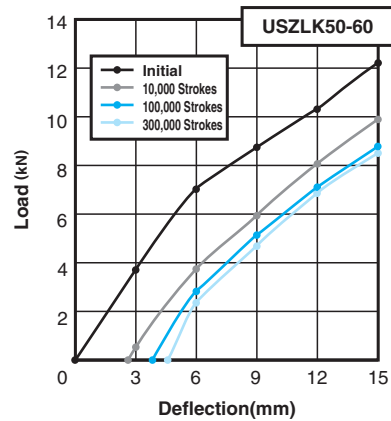
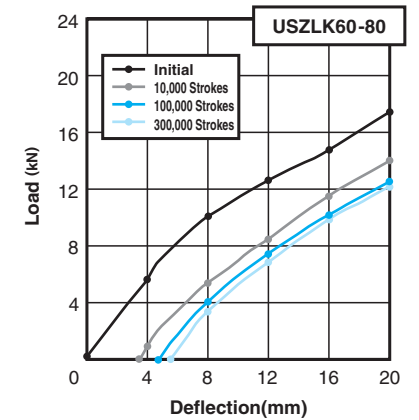
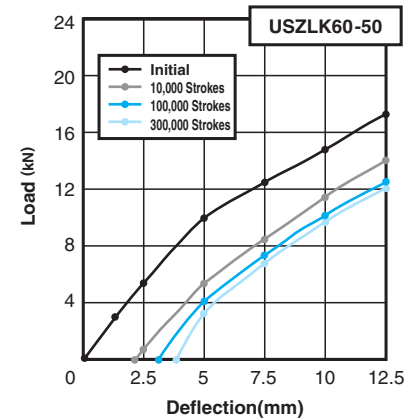
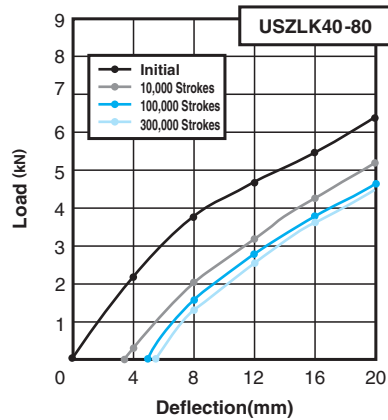
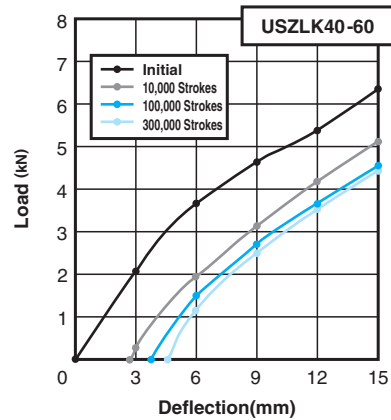
Order

Catalog No.	D	L	H
USZL	50	65	20
USZLK	70	85	

Urethane Spring

LOAD - DEFLECTION DIAGRAMS

■ USZLK Load - Deflection Diagram



Urethane Spring

LOAD - DEFLECTION DIAGRAMS

■ USZLK Load - Deflection Diagram

