

UK

WAVE SPRING WASHERS - COMPRESSION TYPE

Compression type wave washers are normally used in thrust loading applications for medium deflections. These washers have a higher free height and load than precision wave washers (as above). During initial installation the compression washers will take a slight set. Subsequent set after initial is minimal.

MATERIAL

AISI 1070 Carbon steel

FINISH

Washers carried in stock are in plain finish suitable for various types of finishes: either electroplated or mechanically plated, a process which reduces the possibility of hydrogen embrittlement.

KEY TO DIMENSIONS

- Db = Ball bearing Diameter
- *Do = Outside Diameter
- *Di = Inside Diameter
- t = Thickness
- Lo = Free Height (ref only)
- L₁ = Loaded height
- R = N/mm
- Pf = Load at flat (approx)
- Wx = Number of waves

*Blank size before forming

F

RONDELLES ONDULEES – TYPE COMPRESSION

Ce type de rondelles ondulées est habituellement utilisé pour des applications de charges axiales à déflexions moyennes. Ces rondelles ont une hauteur libre et une charge plus élevées que pour les rondelles ondulées de précision. Pendant l'installation initiale, les rondelles perdent légèrement de la hauteur. Par la suite, la perte est minimale.

MATERIAU

Acier au Carbone – AISI 1070

FINITION

Les rondelles tenues en stock ont une finition brute mais des traitements de surface sont possibles : placage électrolytique ou mécanique pour prévenir les risques de fragilisation par hydrogène.

INDEX DES MESURES

- Db = Diamètre du roulement à billes
- *Do = Diamètre extérieur
- *Di = Diamètre intérieur
- t = Epaisseur
- Lo = Hauteur libre (pour référence)
- L₁ = Hauteur en charge
- R = N/mm
- Pf = Charge à plat (approx.)
- Wx = Nombre d'ondulations

*Dimensions avant mise en forme

E

ARANDELAS ONDULADAS DE COMPRESIÓN

Los arandelas onduladas de compresión se utilizan habitualmente en aplicaciones con fuerzas axiales en deflexiones medias. Estas arandelas proporcionan una altura libre y una fuerza mayores que las arandelas onduladas normales (ver sección). Durante la instalación inicial, las arandelas de compresión sufrán una pequeña pérdida de altura. Posteriormente a este montaje inicial, la pérdida de altura es mínima.

MATERIAL

Acero al carbono según AISI 1070

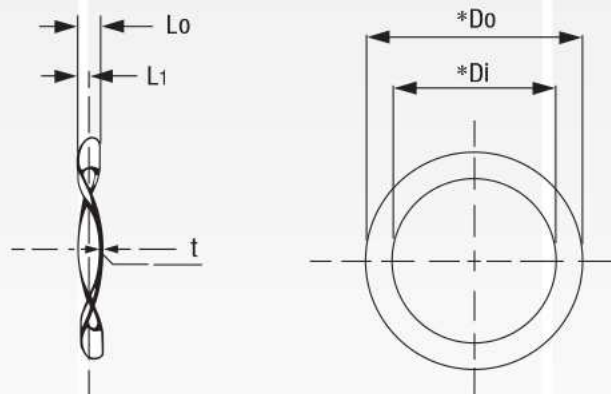
ACABADO

Las arandelas disponibles en stock pueden suministrarse con acabado electromecánico o mecánico bajo pedido, un proceso que reduce la posibilidad de fisuras por hidrógeno.

CLAVES DE CARACTERÍSTICAS

- Db = Diámetro del rodamiento a bolas
- *Do = Diámetro externo
- *Di = Diámetro interno
- t = Espesor
- Lo = Altura libre (referencia sólo)
- R = N/mm
- L₁ = Altura cargada
- Pf = Carga a deflexión (aprox.)
- Wx = Número de olas

*Dimensiones antes de carga



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D

GEWELLTE DRUCKFEDERSCHEIBEN

Gewellte Druckfederscheiben werden normalerweise bei Anwendungen mit Längskräfte für mittel Federwegen verwendet. Sie bieten eine grossere unbelastete Länge und Kraft als gewöhnliche gewellte Federscheiben an (siehe oben). Am Anfang werden die Druckfederscheiben leicht gesetzt. Danach, die Setzung bleibt minimal.

WERKSTOFFE

Kohlenstoffstahl nach AISI1070

OBERFLÄCHE

Gewöhnlich Oberfläche ist Standard. Als Sonderbestellung, könnten die Federscheiben mechanisch oder elektromechanisch beschichtet werden, wobei, die Wasserstoffversprödung erheblich reduziert wird.

KENNZEICHEN DER ABMESSUNGEN

Db = Kugellager-Durchmesser
 *Do = Äußerer Durchmesser
 *Di = Innerer Durchmesser
 t = Materialdicke
 Lo = Unbelastete Länge (approx.)
 R = N/mm
 L₁ = Belastete Länge
 Pf = Federkraft bei Federlänge (approx.)
 Wx = Anzahl der Wellen

* Durchmesser vor Biegung

I

RONDELLE ONDULATE – ANELLI DI COMPENSAZIONE

Questo tipo di rondella ondulata è normalmente utilizzata in applicazioni dove il carico viene applicato ad una media deflessione. Hanno un'altezza libera ed un carico maggiore rispetto alle normali rondelle ondulate. Durante i primi cicli queste rondelle si assestano leggermente, successivamente l'assestamento sarà minimo.

MATERIALE

AISI 1070 Acciaio al carbonio

FINITURA

Le rondelle disponibili a magazzino sono grezze. Sono fornibili con varie finiture su richiesta.

LEGENDA

Db = Diametro del cuscinetto a sfera
 *Do = Diametro esterno
 *Di = Diametro interno
 t = Spessore
 Lo = Altezza libera (solo riferimento)
 R = N/mm
 L₁ = Altezza in carico
 Pf = Carico a pacco (approssimativo)
 Wx = Numero di onde

*molla a riposo

P

ANILHAS ONDULADAS DO TIPO COMPRESSÃO

As Anilhas de ondulas de compressão são para aplicações de deflexão média. Essa anilhas tem uma altura livre e carga maiores das anilhas de precisão. Durante a instalação inicial, as anilhas terão um ajuste mais apertado, depois da instalação, terá um mínimo de diferença.

MATERIAL

AISI 1070 Aço Carbono.

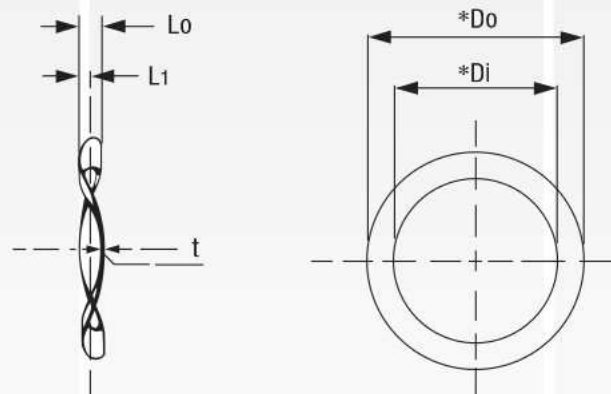
ACABAMENTO

As anilhas em estoque tem acabamento pleno: podem ser folhados eletricamente ou mecanicamente, este processo diminuem a possibilidade de fragilização.

LEGENDA

Db = Diâmetro do Rolamento
 *Do = Diâmetro Externo
 *Di = Diâmetro Interno
 t = Espessura
 Lo = Altura livre (só para efeitos de referência)
 R = N/mm
 L₁ = Carga de trabalho
 Pf = Carga máxima (approx)
 Wx = Numero de ondas

*Espaço vazio antes da dobra



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 Rondelle Ondulate Anelli Di Compensazione Rpdelle O
 Anilhas Onduladas Do Tipo Compressão Anilhas Ondula



STOCK WAVE SPRING WASHERS – COMPRESSION TYPE								
Part Number	Db (mm)	Do (mm)	Di (mm)	t (mm)	Lo (mm)	R (N/mm)	Pf (N)	Wx
W0386-008	10	9.8	6.2	0.20	1.2	23.9	23.9	3
W0472-008	13	12.0	7.2	0.20	1.4	127.5	196.1	3
W0622-006	16	15.8	10.5	0.15	1.4	127.5	166.7	3
W0622-012	16	15.8	10.5	0.30	1.5	230.5	343.2	3
W0669-012	18	17.0	12.0	0.30	1.5	117.7	156.9	3
W0740-008	19	18.8	13.2	0.20	1.6	63.7	245.2	3
W0740-012	19	18.8	11.4	0.30	1.6	294.2	490.3	3
W0858-008	22	21.8	15.8	0.20	2.5	29.4	392.3	3
W0858-008A	22	21.8	15.8	0.20	1.6	44.1	112.8	3
W0858-010	22	21.8	15.8	0.25	3.0	29.4	147.1	3
W0858-012	22	21.8	14.0	0.30	1.6	147.1	343.2	3
W0858-012A	22	21.8	15.8	0.30	2.35	39.2	392.3	3
W0937-008	24	23.8	17.5	0.20	1.7	34.3	117.7	3
W0937-012	24	23.8	17.5	0.30	1.7	98.1	181.4	3
W1016-012	26	25.8	19.3	0.30	1.7	78.5	176.5	3
W1016-020	26	25.8	19.3	0.50	1.7	294.2	451.1	3
W1094-012	28	27.8	21.0	0.30	1.7	53.9	107.9	3
W1094-012F	28	27.8	20.0	0.30	3.0	53.9	176.5	3
W1094-020	28	27.8	21.0	0.50	1.7	294.2	539.4	3
W1169-008	30	29.7	22.5	0.20	1.7	16.7	39.2	3
W1169-012	30	29.7	22.5	0.30	1.8	53.9	127.5	3
W1169-016	30	29.7	22.5	0.40	1.6	191.2	259.9	3
W1169-020	30	29.7	22.5	0.50	2.0	230.5	559.0	3
W1220-012	32	31	26.5	0.30	2.7	24.5	147.1	3
W1220-016	32	31.0	26.5	0.40	2.0	49.0	205.9	3
W1248-014	32	31.7	24.5	0.35	2.2	53.9	255.0	3
W1248-016	32	31.7	26.5	0.40	2.0	44.1	166.7	3
W1248-020	32	31.7	26.5	0.50	2.4	98.1	382.5	3
W1252-012	32	31.8	23.0	0.30	3.5	53.9	215.7	3
W1358-016	35	34.5	28.0	0.40	3.0	58.8	539.4	3
W1358-016F	35	34.5	28.3	0.40	4.0	44.1	441.3	3
W1358-020	35	34.5	24.5	0.50	2.5	588.4	1176.8	4
W1358-020B	35	34.5	28.0	0.50	3.0	103.0	539.4	3
W1374-012	35	34.9	25.0	0.30	2.0	166.7	382.5	4
W1437-012	37	36.5	30.2	0.30	2.5	53.9	147.1	4
W1437-020	37	36.5	30.2	0.50	2.5	147.1	490.3	4
W1539-016	40	39.1	33.0	0.40	2.7	107.9	343.2	4
W1539-020	40	39.1	33.0	0.50	3.0	156.9	637.4	4
W1539-020A	40	39.1	33.0	0.50	4.0	186.3	666.9	4
W1567-012	40	39.8	33.3	0.30	3.0	44.1	225.6	4
W1567-016	40	39.8	30.0	0.40	5.0	49.0	431.5	3
W1575-020	42	40.0	30.0	0.50	3.0	205.9	676.7	4
W1614-014	42	41.0	34.5	0.35	3.0	58.8	255.0	4
W1772-020F	47	45.0	37.0	0.50	3.0	250.1	706.1	5
W1772-020	47	45	37	0.50	3.0	147.1	637.4	4
W1831-016	47	46.5	40.0	0.40	3.0	68.6	333.4	4
W1831-020	47	46.5	40	0.50	3.0	137.3	539.4	4
W1846-020	47	46.9	37.0	0.50	2.0	235.4	843.4	4
W2008-016	52	51	42	0.40	3.5	132.4	701.2	4
W2008-016H	52	51	44	0.40	3.5	53.9	343.2	4
W2008-020	52	51	42	0.50	3.5	210.8	1274.9	5
W2039-016G	52	51.8	41	0.40	4.0	98.1	637.4	4
W2039-016	52	51.8	41	0.40	2.0	83.4	181.4	4
W2039-020E	52	51.8	41	0.50	3.5	323.6	931.6	5
W2039-020	52	51.8	41	0.50	2.0	127.5	225.6	4
W2157-020	55	54.8	46.9	0.50	2.0	49.0	323.6	4
W2157-020A	55	54.8	46.9	0.50	3.5	68.6	353.0	4
W2244-020	58	57	48	0.50	3.5	156.9	490.3	4
W2402-016	62	61	51	0.40	3.5	127.5	372.7	4
W2402-020	62	61	51	0.50	3.5	313.8	931.6	5
W2402-020A	62	61	51	0.50	4.0	98.1	559.0	4
W2402-024	62	61	51	0.60	3.5	313.8	1274.9	5
W2437-020	62	61.9	50	0.50	4.0	137.3	1127.8	4
W2476-016	62	62.9	54.2	0.40	3.7	58.8	343.2	4
W2657-024	68	67.5	55	0.60	4.0	147.1	657.0	4
W2795-016	72	71	61	0.40	3.5	83.4	323.6	5
W2795-020A	72	71	61	0.50	4.0	58.8	367.7	4
W2795-020	72	71	61	0.50	3.5	122.6	559.0	5
W2795-031	72	71	61	0.80	4.0	509.9	1716.2	5
W2827-024	72	71.8	58	0.60	4.0	166.7	686.5	4
W2945-024	75	74.8	66	0.60	4.0	73.5	343.2	4

STOCK WAVE SPRING WASHERS – COMPRESSION TYPE

Part Number	Db (mm)	Do (mm)	Di (mm)	t (mm)	Lo (mm)	R (N/mm)	Pf (N)	Wx
W3110-020	80	79	71	0.50	3.5	68.6	255.0	5
W3110-024	80	79	71	0.60	3.5	264.8	863.0	6
W3110-031	80	79	71	0.80	4.0	509.9	1716.2	6
W3142-028	80	79.8	64	0.70	4.0	255.0	980.7	4
W3307-020	85	84	74	0.50	3.6	73.5	323.6	5
W3307-024	85	84	74	0.60	3.5	279.5	1078.7	6
W3504-020	90	89	79	0.50	3.5	156.9	539.4	6
W3504-024	90	89	79	0.60	3.5	245.2	764.9	6
W3535-031	90	89.8	72	0.80	4.0	333.4	1323.9	4
W3898-020	100	99	89	0.50	4.0	98.1	451.1	6
W3898-024	100	99	89	0.60	3.5	196.1	647.2	6
W3929-035	100	99.8	82	0.90	4.0	343.2	1078.7	4
W4291-020	110	109	99	0.50	4.5	147.1	637.4	7
W4291-024	110	109	99	0.60	4.5	230.5	1147.4	7
W4291-028	110	109	99	0.70	4.5	323.6	1667.1	7
W4291-039	110	109	90	1.00	4.0	220.6	1225.8	4
W4685-031	120	119	104	0.80	4.0	480.5	1716.2	6
W4921-031	125	125	109	0.80	4.0	441.3	1471.0	6
W5079-031	130	129	110	0.80	4.0	441.3	1471.0	6
W5472-035	140	139	121	0.90	4.0	421.7	1569.1	6
W5866-035	150	149	126	0.90	4.0	490.3	1471.0	6
W6260-039	160	159	137	1.00	4.0	402.1	1618.1	6
W6654-039	170	169	147	1.00	4.0	568.8	1716.2	6

