VULKAN
COUPLINGS

RATO R / RATO R+

DATOS TÉCNICOS TECHNICAL DATA

ESCANEAR

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09/2021

Aparece un símbolo de mano en las páginas que difieren de la versión anterior del catálogo.
The hand symbol appears on pages which differ from the previous catalogue version.

ÍNDICE CONTENTS

RATO R / RATO R+

CARACTERÍSTICAS CHARACTERISTICS

PAR TORQUE
12,5 kNm – 530,0 kNm

ÁREAS DE APLICACIÓN

Motores de montaje flexible y rígido.
Como complemento a los acoplamientos completos RATO S y RATO S+, los acoplamientos altamente flexibles RATO R y RATO R+ han sido especialmente diseñados para su uso en instalaciones que requieren un alto nivel de flexibilidad torsional y capacidad de desalineación. Entre las características inherentes al diseño se incluyen una gran capacidad de carga dinámica y unas buenas propiedades dinámicas de giro debido a las bajas inercias rotacionales. El área de aplicación se encuentra principalmente en sistemas principales/PTO de alta velocidad accionados por un motor diésel o eléctrico. En el rango de par bajo a medio, donde se puede proceder a la manipulación e instalación de un elemento completo, los acoplamientos RATO R y RATO R+ es una alternativa adicional. Con la introducción de la gama ACOTEC, tamaños más pequeños con mayor densidad de potencia proporcionan una buena relación precio/rendimiento.

AREAS OF APPLICATION

Flexibly mounted engines, rigidly mounted engines.
Complementary to the all-round couplings RATO S and RATO S+ the highly flexible couplings RATO R and RATO R+ has been specially designed for use in installations requiring a high level of torsional flexibility and misalignment capacity. Inherent features of the design include the high dynamic load capacity and good rotational dynamic properties due to the low rotating inertias. The area of application is primarily in high-speed main/PTO systems driven by a Diesel engine or electric motor. In the low to middle torque range where the handling and installation of a complete element is practicable the couplings RATO R and RATO R+ are an additional alternative. With the introduction of the ACOTEC range, smaller sizes with higher power density provide good price/performance ratio.

VENTAJAS DEL PRODUCTO

- Varios diseños de elementos y rigideces torsionales aseguran una excelente coordinación de la vibración torsional y, por tanto, la disponibilidad del sistema de accionamiento
- Con reducidas masas en rotación, está optimizado par la tendencia hacia motores de altas prestaciones y alta velocidad
- Máxima flexibilidad al proporcionar una solución teniendo en cuenta que puede integrarse fácilmente en distintos sistemas
- Los suaves diafragmas circulares proporcionan una protección eficaz para el rodamiento del eje con desacoplamiento por vibración axial
- Excelentes características de amortiguamiento del ruido al evitar el contacto metálico directo

PRODUCT BENEFITS

- Various torsional rigidities and element designs ensure excellent coordination of the torsional vibration and therefore availability of the drive system
- With low rotating masses, it is optimised for the trend towards high-performance and high-speed engines
- Maximum flexibility in providing a solution considering that it can be easily integrated in different systems
- Soft circular diaphragms provide effective protection for the shaft bearing with axial vibration decoupling
- Excellent noise damping characteristics by avoiding direct metallic contact

RATO R / RATO R+

RESUMEN DE LA SERIE SUMMARY OF SERIES

SERIE **2200**

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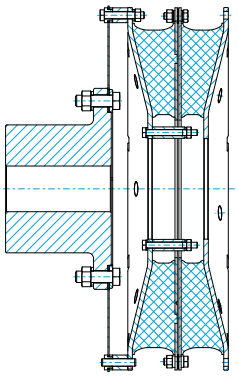
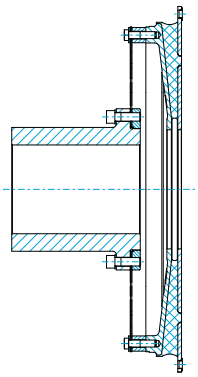


Para conectar un volante y un eje. **For connecting a flywheel with a shaft.**

Grupo de montaje Dimension Group	G 1920 – G 5H20
Par nominal Nominal Torque	12,50 kNm – 530,00 kNm

SERIE **2200**

Página Page 12



Para conectar un volante y un eje. **For connecting a flywheel with a shaft.**

Grupo de montaje Dimension Group	G 4EP0 – G 5HP0
Par nominal Nominal Torque	190,00 kNm – 530,00 kNm

SERIE **2201**

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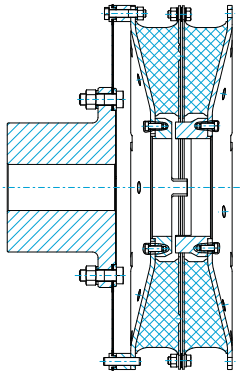

Para conectar un volante y un eje.
Con dispositivo de límite de torsión.

For connecting a flywheel with a shaft.
With torsional limit device.

Grupo de montaje Dimension Group	G 1920 – G 4720
Par nominal Nominal Torque	12,50 kNm – 270,00 kNm

SERIE **2400**

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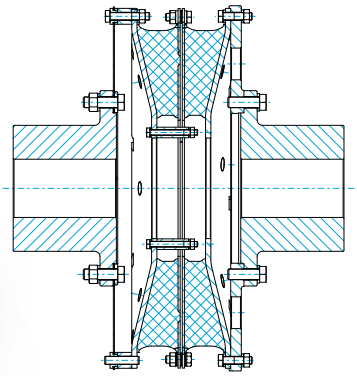

Para la conexión de dos ejes.

For the connection of two shafts.

Grupo de montaje Dimension Group	G 1920 – G 4720
Par nominal Nominal Torque	12,50 kNm – 270,00 kNm

RATO R / RATO R+

DATOS DE RENDIMIENTO PERFORMANCE DATA

Tipo de acoplamiento Type of Coupling		T_{KN}	T_{Kmax1}	T_{Kmax2}	ΔT_{Kmax}	T_{KW}	P_{KV30}	n_{Kmax} [1)]	ΔK_a	ΔK_r [1)]	ΔK_w	$C_{ax1.0}$	C_{rdyn} [2)]	C_{Tdyn} [2)]	ψ [2)]
		[kNm]	[kNm]	[kNm]	[kNm]	[kNm]	[kW]	[1/min]	[mm]	[mm]	[°]	[kN/mm]	[kN/mm]	[kNm/rad]	[–]
Tamaño Size	Grupo de montaje Dimension Group	Par nominal Nominal Torque	Par máx.$_1$ Max. Torque$_1$	Par máx.$_2$ Max. Torque$_2$	Rango de par Torque Range	Par vibratorio Vibratory Torque	Pérdida de potencia Power Loss	Velocidad de rotación Rotational Speed	Desplazamiento axial del acoplamiento Axial Coupling Displacement	Desplazamiento radial del acoplamiento Radial Coupling Displacement	Desplazamiento angular del acoplamiento Angular Coupling Displacement	Rigidez axial 1,0 mm Axial Stiffness 1,0 mm	Rigidez radial din. Dyn. Radial Stiffness	Rigidez torsional dinámica Dynamic Torsional Stiffness	Amortiguamiento relativo Relative Damping
G 192Z	G1920	12,5	16,0	56,5	19,0	3,8	1,020	2.750	4,0	10,8	0,5	0,7	1,3	40	0,90
G 192W	G1920	12,5	18,0	56,5	21,5	3,8	1,020	2.750	4,0	8,6	0,5	0,7	1,6	50	1,13
G 192T	G1920	16,0	21,5	72,0	25,5	4,8	1,020	2.750	4,0	7,4	0,5	0,7	2,2	70	1,13
G 212Z	G2120	16,0	20,0	72,0	24,0	4,8	1,120	2.525	5,0	11,4	0,5	1,9	1,4	51	0,90
G 212W	G2120	16,0	22,0	72,0	26,5	4,8	1,120	2.525	5,0	9,0	0,5	1,9	1,8	64	1,13
G 212T	G2120	20,0	26,5	90,0	32,0	6,0	1,120	2.525	5,0	7,6	0,5	1,9	2,5	88	1,13
G 241Z	G2410	25,0	31,1	112,5	37,4	7,8	0,880	2.125	6,0	5,4	0,5	1,1	5,8	337	0,90
G 241W	G2410	25,0	35,0	112,5	42,0	7,8	0,880	2.125	6,0	4,3	0,5	1,1	7,2	418	1,13
G 241T	G2410	31,5	41,9	142,0	50,3	7,8	0,880	2.125	6,0	3,6	0,5	1,1	10,2	594	1,13
G 241Y	G2410	35,6	45,0	142,0	54,0	7,8	0,880	2.125	6,0	3,0	0,5	1,1	15,0	730	1,13
G 2D1S	G2D10	26,5	39,8	119,3	53,0	6,6	0,600	2.350	5,5	5,9	0,5	1,5	3,6	144	0,75
G 2D1M	G2D10	28,5	42,8	128,3	57,0	7,1	0,600	2.350	5,5	4,5	0,5	1,5	5,0	204	0,90
G 2D1H	G2D10	31,5	47,3	141,8	63,0	7,9	0,600	2.350	5,5	3,6	0,5	1,5	6,4	261	1,13
G 2D2S	G2D20	26,5	39,8	119,3	53,0	6,6	1,200	2.350	5,5	11,8	0,5	1,5	1,8	72	0,75
G 2D2M	G2D20	28,5	42,8	128,3	57,0	7,1	1,200	2.350	5,5	9,0	0,5	1,5	2,5	102	0,90
G 2D2H	G2D20	31,5	47,3	141,8	63,0	7,9	1,200	2.350	5,5	7,2	0,5	1,5	3,2	131	1,13
G 2F1S	G2F10	34,0	51,0	153,0	68,0	8,5	0,650	2.125	6,0	6,3	0,5	1,1	3,8	176	0,75
G 2F1M	G2F10	36,0	54,0	162,0	72,0	9,0	0,650	2.125	6,0	5,2	0,5	1,1	4,6	220	0,90
G 2F1H	G2F10	40,0	60,0	180,0	80,0	10,0	0,650	2.125	6,0	4,0	0,5	1,1	6,2	300	1,13
G 2F2S	G2F20	34,0	51,0	153,0	68,0	8,5	1,300	2.125	6,0	12,6	0,5	1,1	1,9	88	0,75
G 2F2M	G2F20	36,0	54,0	162,0	72,0	9,0	1,300	2.125	6,0	10,4	0,5	1,1	2,3	110	0,90
G 2F2H	G2F20	40,0	60,0	180,0	80,0	10,0	1,300	2.125	6,0	8,0	0,5	1,1	3,1	150	1,13
G 2G1S	G2G10	41,5	62,3	186,8	83,0	10,4	0,710	2.000	6,0	6,3	0,5	1,0	4,4	246	0,75
G 2G1M	G2G10	44,0	66,0	198,0	88,0	11,0	0,710	2.000	6,0	5,2	0,5	1,0	5,4	300	0,90
G 2G1H	G2G10	51,0	76,5	229,5	102,0	12,8	0,710	2.000	6,0	4,0	0,5	1,0	7,0	390	1,13
G 2G2S	G2G20	41,5	62,3	186,8	83,0	10,4	1,420	2.000	6,0	12,6	0,5	1,0	2,2	123	0,75
G 2G2M	G2G20	44,0	66,0	198,0	88,0	11,0	1,420	2.000	6,0	10,4	0,5	1,0	2,7	150	0,90
G 2G2H	G2G20	51,0	76,5	229,5	102,0	12,8	1,420	2.000	6,0	8,0	0,5	1,0	3,5	195	1,13
G 273W	G2730	31,5	47,5	142,0	57,0	9,5	2,670	2.250	6,0	13,2	0,5	1,0	2,2	126	1,13
G 293W	G2930	40,0	60,0	180,0	72,0	12,0	3,090	2.250	6,0	13,4	0,5	1,0	2,5	160	1,13

Remítase a la Explicación de datos técnicos

1) El estado de funcionamiento del sistema puede hacer necesario corregir los valores especificados.
2) Es posible una tolerancia de rigidez del material de +/-15%. El amortiguamiento relativo puede ser objeto de una tolerancia de -45% a +15%.

See Explanation of the Technical Data

1) The operating state of the system can make it necessary to correct the values given.
2) Material caused stiffness tolerance of +/-15% possible. The relative damping can be subject to a tolerance of -45% to +15%.

Tipo de acoplamiento Type of Coupling		T_{KN}	T_{Kmax1}	T_{Kmax2}	ΔT_{Kmax}	T_{KW}	P_{KV30}	n_{Kmax} [1)]	ΔK_a	ΔK_r [1)]	ΔK_w	$C_{ax1.0}$	C_{rdyn} [2)]	C_{Tdyn} [2)]	ψ [2)]
		[kNm]	[kNm]	[kNm]	[kNm]	[kNm]	[kW]	[1/min]	[mm]	[mm]	[°]	[kN/mm]	[kN/mm]	[kNm/rad]	[–]
Tamaño Size	Grupo de montaje Dimension Group	Par nominal Nominal Torque	Par máx.$_1$ Max. Torque$_1$	Par máx.$_2$ Max. Torque$_2$	Rango de par Torque Range	Par vibratorio Vibratory Torque	Pérdida de potencia Power Loss	Velocidad de rotación Rotational Speed	Desplazamiento axial del acoplamiento Axial Coupling Displacement	Desplazamiento radial del acoplamiento Radial Coupling Displacement	Desplazamiento angular del acoplamiento Angular Coupling Displacement	Rigidez axial 1,0 mm Axial Stiffness 1,0 mm	Rigidez radial din. Dyn. Radial Stiffness	Rigidez torsional dinámica Dynamic Torsional Stiffness	Amortiguamiento relativo Relative Damping
G 3B1S	G3B10	66,5	99,8	299,3	133,0	16,6	0,800	1.675	7,0	7,0	0,5	0,9	4,8	360	0,75
G 3B1M	G3B10	70,0	105,0	315,0	140,0	17,5	0,800	1.675	7,0	5,4	0,5	0,9	6,6	504	0,90
G 3B1H	G3B10	80,0	120,0	360,0	160,0	20,0	0,800	1.675	7,0	4,2	0,5	0,9	8,8	658	1,13
G 3B2S	G3B20	66,5	99,8	299,3	133,0	16,6	1,600	1.675	7,0	14,0	0,5	0,9	2,4	180	0,75
G 3B2M	G3B20	70,0	105,0	315,0	140,0	17,5	1,600	1.675	7,0	10,8	0,5	0,9	3,3	252	0,90
G 3B2H	G3B20	80,0	120,0	360,0	160,0	20,0	1,600	1.675	7,0	8,4	0,5	0,9	4,4	329	1,13
G 3C1S	G3C10	83,0	124,5	373,5	166,0	20,8	0,830	1.100	5,5	9,1	0,5	0,8	5,2	450	0,65
G 3C1M	G3C10	90,0	135,0	405,0	180,0	22,5	0,830	1.100	5,5	6,7	0,5	0,8	7,2	640	0,85
G 3C1H	G3C10	100,0	150,0	450,0	200,0	25,0	0,830	1.100	5,5	5,5	0,5	0,8	9,2	810	1,00
G 3C2S	G3C20	83,0	124,5	373,5	166,0	20,8	1,660	1.100	5,5	18,2	0,5	0,8	2,6	225	0,65
G 3C2M	G3C20	90,0	135,0	405,0	180,0	22,5	1,660	1.100	5,5	13,4	0,5	0,8	3,6	320	0,85
G 3C2H	G3C20	100,0	150,0	450,0	200,0	25,0	1,660	1.100	5,5	11,0	0,5	0,8	4,6	405	1,00
G 333Z	G3330	63,0	81,0	283,5	97,0	18,9	3,600	1.725	7,0	20,2	0,5	0,9	2,1	202	0,90
G 333W	G3330	63,0	95,0	283,5	114,0	18,9	3,600	1.725	7,0	16,2	0,5	0,9	2,6	252	1,13
G 333T	G3330	80,0	114,0	360,0	137,0	24,0	3,600	1.725	7,0	13,8	0,5	0,9	3,6	352	1,13
G 3E1S	G3E10	100,0	150,0	450,0	200,0	25,0	1,120	1.545	7,0	7,1	0,5	0,7	8,2	860	0,65
G 3E1M	G3E10	110,0	165,0	495,0	220,0	27,5	1,120	1.545	7,0	5,2	0,5	0,7	11,4	1.200	0,85
G 3E1H	G3E10	125,0	187,5	562,5	250,0	31,3	1,120	1.545	7,0	4,5	0,5	0,7	13,0	1.350	1,00
G 3E1X	G3E10	125,0	187,5	562,5	250,0	31,3	1,120	1.545	7,0	3,8	0,5	0,7	16,2	1.700	1,10
G 3E2S	G3E20	100,0	150,0	450,0	200,0	25,0	2,240	1.545	7,0	14,2	0,5	0,7	4,1	430	0,65
G 3E2M	G3E20	110,0	165,0	495,0	220,0	27,5	2,240	1.545	7,0	10,4	0,5	0,7	5,7	600	0,85
G 3E2H	G3E20	125,0	187,5	562,5	250,0	31,3	2,240	1.545	7,0	9,0	0,5	0,7	6,5	675	1,00
G 3E2X	G3E20	125,0	187,5	562,5	250,0	31,3	2,240	1.545	7,0	7,6	0,5	0,7	8,1	850	1,10
G 381Z	G3810	100,0	158,0	450,0	190,0	30,0	1,200	1.130	6,5	7,8	0,5	1,0	7,2	1.200	0,90
G 381W	G3810	125,0	177,0	562,5	212,0	37,5	1,200	1.130	6,5	6,2	0,5	1,0	9,0	1.500	1,13
G 381T	G3810	160,0	206,0	720,0	247,0	48,0	1,200	1.130	6,5	5,5	0,5	1,0	11,5	1.920	1,13
G 381Y	G3810	180,0	220,0	810,0	360,0	48,0	1,200	1.130	6,5	4,5	0,5	1,0	17,2	2.400	1,13
G 382Z	G3820	100,0	158,0	450,0	190,0	30,0	2,400	1.130	6,5	15,6	0,5	1,0	3,6	600	0,90
G 382W	G3820	125,0	177,0	562,5	212,0	37,5	2,400	1.130	6,5	12,4	0,5	1,0	4,5	750	1,13
G 382T	G3820	160,0	206,0	720,0	247,0	48,0	2,400	1.130	6,5	10,8	0,5	1,0	5,8	960	1,13
G 382Y	G3820	180,0	220,0	810,0	360,0	48,0	2,400	1.130	6,5	9,0	0,5	1,0	8,6	1.200	1,13

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RATO R / RATO R+

DATOS DE RENDIMIENTO PERFORMANCE DATA

Tipo de acoplamiento Type of Coupling		T_{KN}	T_{Kmax1}	T_{Kmax2}	ΔT_{Kmax}	T_{KW}	P_{KV30}	n_{Kmax} [1)]	ΔK_a	ΔK_r [1)]	ΔK_w	$C_{ax1.0}$	C_{rdyn} [2)]	C_{Tdyn} [2)]	ψ [2)]
		[kNm]	[kNm]	[kNm]	[kNm]	[kNm]	[kW]	[1/min]	[mm]	[mm]	[°]	[kN/mm]	[kN/mm]	[kNm/rad]	[–]
Tamaño	Grupo de montaje	Par nominal	Par máx.$_1$	Par máx.$_2$	Rango de par	Par vibratorio	Pérdida de potencia	Velocidad de rotación	Desplazamiento axial del acoplamiento	Desplazamiento radial del acoplamiento	Desplazamiento angular del acoplamiento	Rigidez axial 1,0 mm	Rigidez radial din.	Rigidez torsional dinámica	Amortiguamiento relativo
Size	Dimension Group	Nominal Torque	Max. Torque$_1$	Max. Torque$_2$	Torque Range	Vibratory Torque	Power Loss	Rotational Speed	Axial Coupling Displacement	Radial Coupling Displacement	Angular Coupling Displacement	Axial Stiffness 1,0 mm	Dyn. Radial Stiffness	Dynamic Torsional Stiffness	Relative Damping
G 4A1S	G4A10	137,0	205,5	616,5	274,0	34,3	1,070	900	9,0	10,8	0,5	1,0	5,8	800	0,65
G 4A1M	G4A10	154,0	231,0	693,0	308,0	38,5	1,070	900	9,0	7,8	0,5	1,0	8,4	1.150	0,85
G 4A1H	G4A10	176,0	264,0	792,0	352,0	44,0	1,070	900	9,0	6,4	0,5	1,0	10,8	1.500	1,00
G 4A1X	G4A10	198,0	297,0	891,0	396,0	49,5	1,070	900	9,0	5,3	0,5	1,0	14,0	1.950	1,10
G 4A2S	G4A20	137,0	205,5	616,5	274,0	34,3	2,140	900	9,0	21,6	0,5	1,0	2,9	400	0,65
G 4A2M	G4A20	154,0	231,0	693,0	308,0	38,5	2,140	900	9,0	15,6	0,5	1,0	4,2	575	0,85
G 4A2H	G4A20	176,0	264,0	792,0	352,0	44,0	2,140	900	9,0	12,8	0,5	1,0	5,4	750	1,00
G 4A2X	G4A20	198,0	297,0	891,0	396,0	49,5	2,140	900	9,0	10,6	0,5	1,0	7,0	975	1,10
G 4E1S	G4E10	190,0	285,0	855,0	380,0	47,5	1,135	880	17,7	10,8	0,5	0,7	6,8	1.140	0,60
G 4E1M	G4E10	210,0	315,0	945,0	420,0	52,5	1,130	880	17,7	8,9	0,5	0,7	8,6	1.470	0,70
G 4E1H	G4E10	230,0	345,0	1.035,0	460,0	57,5	1,130	880	17,7	7,4	0,5	0,7	10,8	1.840	0,80
G 4E1X	G4E10	250,0	375,0	1.125,0	500,0	62,5	1,130	880	17,7	6,3	0,5	0,7	13,2	2.250	0,90
G 4E2S	G4E20	190,0	285,0	855,0	380,0	47,5	2,260	880	17,7	21,6	0,5	0,7	3,4	570	0,60
G 4E2M	G4E20	210,0	315,0	945,0	420,0	52,5	2,260	880	17,7	17,8	0,5	0,7	4,3	735	0,70
G 4E2H	G4E20	230,0	345,0	1.035,0	460,0	57,5	2,260	880	17,7	14,8	0,5	0,7	5,4	920	0,80
G 4E2X	G4E20	250,0	375,0	1.125,0	500,0	62,5	2,260	880	17,7	12,6	0,5	0,7	6,6	1.125	0,90
G 4EPS	G4EP0	190,0	285,0	855,0	380,0	66,5	2,260	880	8,4	6,4	0,4	5,8	28,6	4.750	0,80
G 4EPM	G4EP0	210,0	315,0	945,0	420,0	73,5	2,260	880	8,4	5,4	0,4	5,8	34,1	5.670	0,90
G 4EPH	G4EP0	230,0	345,0	1.035,0	460,0	80,5	2,260	880	8,4	4,8	0,4	5,8	40,1	6.670	1,00
G 4EPX	G4EP0	250,0	375,0	1.125,0	500,0	87,5	2,260	880	8,4	4,2	0,4	5,8	46,6	7.750	1,10
G 471Z	G4710	200,0	250,0	900,0	300,0	50,0	1,200	750	12,0	9,9	0,5	1,8	6,7	1.300	0,90
G 471W	G4710	224,0	280,0	1.010,0	335,0	64,0	1,200	750	12,0	7,3	0,5	1,8	9,8	1.900	1,13
G 471T	G4710	250,0	320,0	1.125,0	375,0	64,0	1,200	750	12,0	6,1	0,5	1,8	14,0	2.700	1,13
G 471Y	G4710	270,0	360,0	1.215,0	430,0	64,0	1,200	750	12,0	5,2	0,5	1,8	19,1	3.700	1,13
G 472Z	G4720	200,0	250,0	900,0	300,0	50,0	2,400	750	12,0	19,6	0,5	1,8	3,4	650	0,90
G 472W	G4720	224,0	280,0	1.010,0	335,0	64,0	2,400	750	12,0	14,6	0,5	1,8	4,9	950	1,13
G 472T	G4720	250,0	320,0	1.125,0	375,0	64,0	2,400	750	12,0	12,2	0,5	1,8	7,0	1.350	1,13
G 472Y	G4720	270,0	360,0	1.215,0	430,0	64,0	2,400	750	12,0	10,4	0,5	1,8	9,6	1.850	1,13

Remítase a la Explicación de datos técnicos

1) El estado de funcionamiento del sistema puede hacer necesario corregir los valores especificados.
2) Es posible una tolerancia de rigidez del material de +/-15%. El amortiguamiento relativo puede ser objeto de una tolerancia de -45% a +15%.

See Explanation of the Technical Data

1) The operating state of the system can make it necessary to correct the values given.
2) Material caused stiffness tolerance of +/-15% possible. The relative damping can be subject to a tolerance of -45% to +15%.

Tipo de acoplamiento Type of Coupling		T_{KN}	T_{Kmax1}	T_{Kmax2}	ΔT_{Kmax}	T_{KW}	P_{KV30}	n_{Kmax} [1)]	ΔK_a	ΔK_r [1)]	ΔK_w	$C_{ax1.0}$	C_{rdyn} [2)]	C_{Tdyn} [2)]	ψ [2)]
		[kNm]	[kNm]	[kNm]	[kNm]	[kNm]	[kW]	[1/min]	[mm]	[mm]	[°]	[kN/mm]	[kN/mm]	[kNm/rad]	[–]
Tamaño	Grupo de montaje	Par nominal	Par máx.$_1$	Par máx.$_2$	Rango de par	Par vibratorio	Pérdida de potencia	Velocidad de rotación	Desplazamiento axial del acoplamiento	Desplazamiento radial del acoplamiento	Desplazamiento angular del acoplamiento	Rigidez axial 1,0 mm	Rigidez radial din.	Rigidez torsional dinámica	Amortiguamiento relativo
Size	Dimension Group	Nominal Torque	Max. Torque$_1$	Max. Torque$_2$	Torque Range	Vibratory Torque	Power Loss	Rotational Speed	Axial Coupling Displacement	Radial Coupling Displacement	Angular Coupling Displacement	Axial Stiffness 1,0 mm	Dyn. Radial Stiffness	Dynamic Torsional Stiffness	Relative Damping
G 5B1S	G5B10	290,0	435,0	1.305,0	580,0	72,5	1,390	710	20,8	12,6	0,5	0,7	7,6	1.740	0,60
G 5B1M	G5B10	320,0	480,0	1.440,0	640,0	80,0	1,390	710	20,8	10,3	0,5	0,7	9,8	2.240	0,70
G 5B1H	G5B10	350,0	525,0	1.575,0	700,0	87,5	1,390	710	20,8	8,5	0,5	0,7	12,6	2.800	0,80
G 5B1X	G5B10	380,0	570,0	1.710,0	760,0	95,0	1,390	710	20,8	7,3	0,5	0,7	15,0	3.420	0,90
G 5B2S	G5B20	290,0	435,0	1.305,0	580,0	72,5	2,780	710	20,8	25,2	0,5	0,7	3,8	870	0,60
G 5B2M	G5B20	320,0	480,0	1.440,0	640,0	80,0	2,780	710	20,8	20,6	0,5	0,7	4,9	1.120	0,70
G 5B2H	G5B20	350,0	525,0	1.575,0	700,0	87,5	2,780	710	20,8	17,0	0,5	0,7	6,3	1.400	0,80
G 5B2X	G5B20	380,0	570,0	1.710,0	760,0	95,0	2,780	710	20,8	14,6	0,5	0,7	7,5	1.710	0,90
G 5BPS	G5BP0	290,0	435,0	1.305,0	580,0	101,5	2,720	710	9,7	7,4	0,4	6,5	32,4	7.250	0,80
G 5BPM	G5BP0	320,0	480,0	1.440,0	640,0	112,0	2,720	710	9,7	6,4	0,4	6,5	38,6	8.640	0,90
G 5BPH	G5BP0	350,0	525,0	1.575,0	700,0	122,5	2,720	710	9,7	5,6	0,4	6,5	45,4	10.150	1,00
G 5BPX	G5BP0	380,0	570,0	1.710,0	760,0	133,0	2,720	710	9,7	4,8	0,4	6,5	52,7	11.780	1,10
G 5H1S	G5H10	400,0	600,0	1.800,0	800,0	100,0	1,510	710	23,3	12,3	0,5	1,8	8,6	2.400	0,60
G 5H1M	G5H10	440,0	660,0	1.980,0	880,0	110,0	1,510	710	23,3	10,1	0,5	1,8	11,0	3.080	0,70
G 5H1H	G5H10	480,0	720,0	2.160,0	960,0	120,0	1,510	710	23,3	8,5	0,5	1,8	13,6	3.840	0,80
G 5H1X	G5H10	530,0	795,0	2.385,0	1.060,0	132,5	1,510	710	23,3	7,1	0,5	1,8	17,0	4.770	0,90
G 5H2S	G5H20	400,0	600,0	1.800,0	800,0	100,0	3,020	710	23,3	24,6	0,5	1,8	4,3	1.200	0,60
G 5H2M	G5H20	440,0	660,0	1.980,0	880,0	110,0	3,020	710	23,3	20,2	0,5	1,8	5,5	1.540	0,70
G 5H2H	G5H20	480,0	720,0	2.160,0	960,0	120,0	3,020	710	23,3	17,0	0,5	1,8	6,8	1.920	0,80
G 5H2X	G5H20	530,0	795,0	2.385,0	1.060,0	132,5	3,020	710	23,3	14,2	0,5	1,8	8,5	2.385	0,90
G 5HPS	G5HP0	400,0	600,0	1.800,0	800,0	140,0	2,950	710	10,7	7,2	0,4	7,7	36,6	10.000	0,80
G 5HPM	G5HP0	440,0	660,0	1.980,0	880,0	154,0	2,950	710	10,7	6,2	0,4	7,7	43,4	11.880	0,90
G 5HPH	G5HP0	480,0	720,0	2.160,0	960,0	168,0	2,950	710	10,7	5,4	0,4	7,7	50,9	13.920	1,00
G 5HPX	G5HP0	530,0	795,0	2.385,0	1.060,0	185,5	2,950	710	10,7	4,8	0,4	7,7	60,1	16.430	1,10

Remítase a la Explicación de datos técnicos

1) El estado de funcionamiento del sistema puede hacer necesario corregir los valores especificados.
2) Es posible una tolerancia de rigidez del material de +/-15%. El amortiguamiento relativo puede ser objeto de una tolerancia de -45% a +15%.

See Explanation of the Technical Data

1) The operating state of the system can make it necessary to correct the values given.
2) Material caused stiffness tolerance of +/-15% possible. The relative damping can be subject to a tolerance of -45% to +15%.

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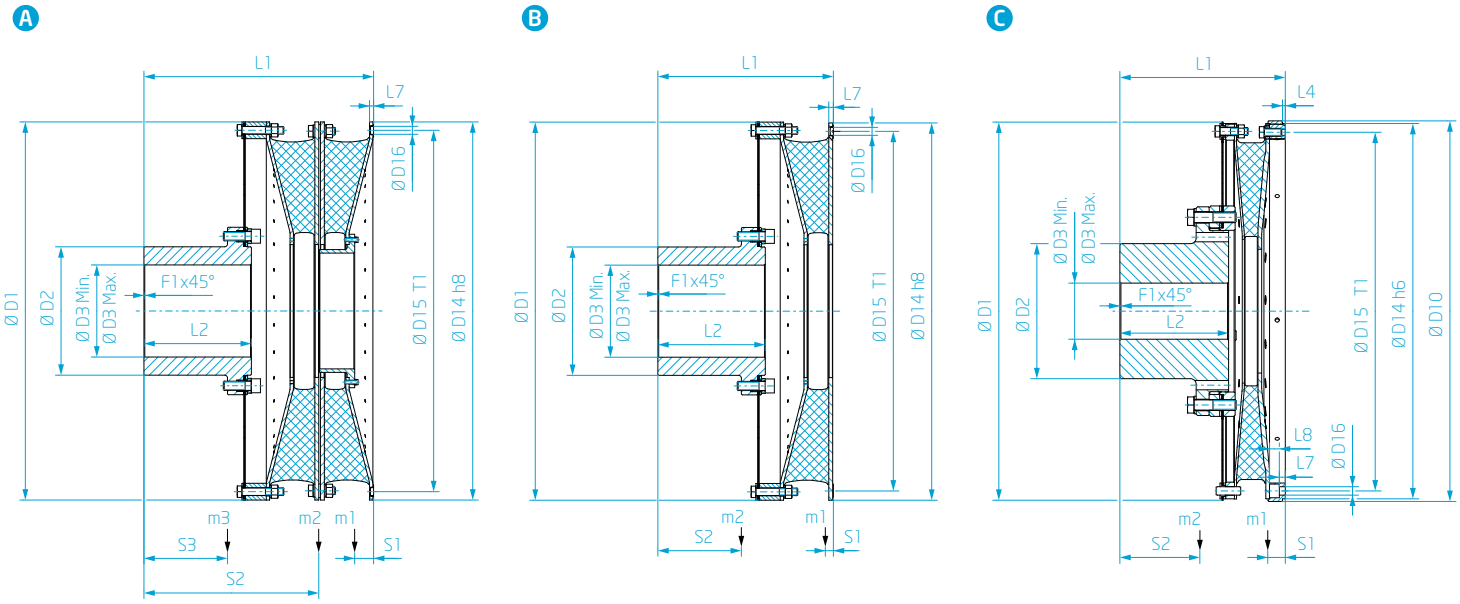
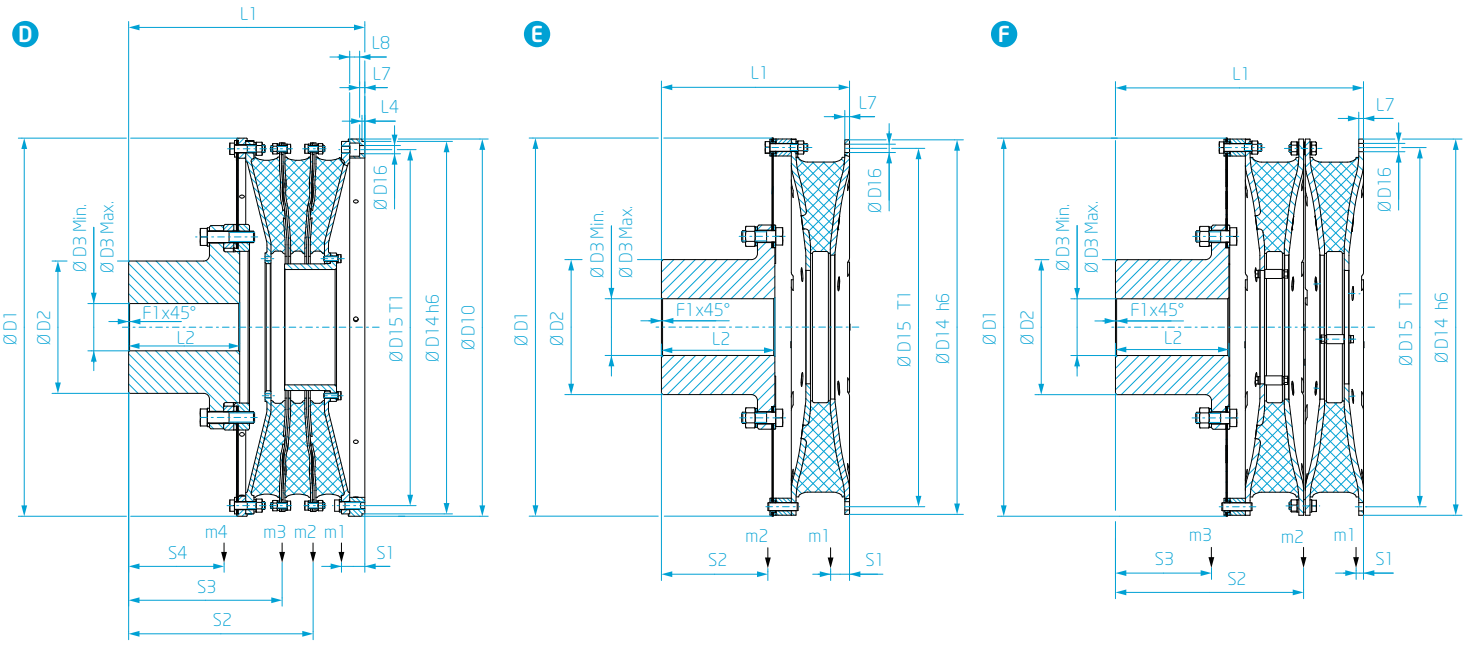
DATOS GEOMÉTRICOS GEOMETRIC DATA



Grupo de montaje Dimension Group		Dimensiones Dimension													
		D_1	D_2	D_3		D_{10}	D_{14}	D_{15}	T_1	D_{16}	L_1	L_2	L_4	L_7	L_8	F_1
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[mm]	[-] Pasos / holes	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
A	G 1920	595,0	210,0	70,0	150,0	–	585,0	558,0	32	13,5	347,0	175,0	–	12,5	–	1,6
A	G 2120	640,0	224,0	80,0	160,0	–	635,0	608,0	32	13,5	390,0	185,0	–	8,0	–	1,6
B	G 2D10	685,0	238,0	110,0	170,0	–	680,0	650,0	32	15,5	315,5	195,0	–	10,0	–	1,6
A	G 2D20	685,0	238,0	110,0	170,0	–	680,0	650,0	32	15,5	411,0	195,0	–	10,0	–	1,6
C	G 2410	735,0	259,0	110,0	185,0	740,0	730,0	700,0	32	17,5	324,7	225,0	6,0	17,0	23,0	2,0
B	G 2F10	735,0	259,0	110,0	185,0	–	730,0	700,0	32	15,5	357,9	225,0	–	10,0	–	2,0
A	G 2F20	735,0	259,0	110,0	185,0	–	730,0	700,0	32	15,5	463,0	225,0	–	10,0	–	2,0
B	G 2G10	793,0	280,0	100,0	200,0	–	790,0	755,0	32	17,5	376,0	235,0	–	10,0	–	2,0
A	G 2G20	793,0	280,0	100,0	200,0	–	790,0	755,0	32	17,5	488,0	235,0	–	10,0	–	2,0
D	G 2730	800,0	280,0	100,0	200,0	800,0	790,0	755,0	32	17,5	500,0	235,0	6,0	11,0	21,0	2,0
D	G 2930	870,0	308,0	110,0	220,0	870,0	860,0	820,0	32	20,0	535,0	250,0	6,0	12,0	23,0	2,0
B	G 3B10	925,0	329,0	115,0	235,0	–	920,0	880,0	32	20,0	452,2	285,0	–	12,0	–	3,0
A	G 3B20	925,0	329,0	115,0	235,0	–	920,0	880,0	32	20,0	586,0	285,0	–	12,0	–	3,0
E	G 3C10	1.000,0	357,0	150,0	255,0	–	995,0	950,0	32	22,0	497,5	300,0	–	12,5	–	3,0
F	G 3C20	1.000,0	357,0	150,0	255,0	–	995,0	950,0	32	22,0	656,0	300,0	–	12,5	–	3,0



	Momentos de inercia de masa Mass moments of inertia				Masa Mass				Distancia al centro de gravedad Distance to center of gravity			
	J_1 [kgm²]	J_2 [kgm²]	J_3 [kgm²]	J_4 [kgm²]	m_1 [kg]	m_2 [kg]	m_3 [kg]	m_4 [kg]	S_1 [mm]	S_2 [mm]	S_3 [mm]	S_4 [mm]
	1,0	1,3	2,6	–	23,7	26,0	97,3	–	27,0	266,0	139,0	–
	1,3	1,8	3,0	–	24,0	32,0	106,0	–	23,0	302,0	152,0	–
	2,0	3,3	–	–	33,3	105,1	–	–	24,5	149,0	–	–
	2,0	2,5	4,4	–	33,3	37,7	123,0	–	24,5	317,0	166,0	–
	2,1	5,4	–	–	30,0	147,0	–	–	13,0	172,0	–	–
	2,8	4,9	–	–	39,8	142,0	–	–	26,0	168,0	–	–
	2,8	3,4	6,2	–	39,8	46,0	162,1	–	26,0	360,0	185,0	–
	3,9	7,2	–	–	47,4	182,2	–	–	28,0	174,0	–	–
	3,9	4,8	9,1	–	47,4	55,2	206,6	–	28,0	378,0	191,0	–
	7,6	4,0	4,0	9,6	78,0	44,0	44,0	217,0	52,0	114,0	330,0	174,0
	11,7	6,0	6,0	14,9	103,0	55,0	55,0	283,0	57,0	123,0	352,0	185,0
	8,5	15,5	–	–	77,0	295,0	–	–	34,0	209,0	–	–
	8,5	10,6	19,5	–	77,0	91,0	332,0	–	34,0	454,0	228,0	–
	12,9	29,1	–	–	96,0	403,0	–	–	30,0	243,0	–	–
	12,9	28,3	29,1	–	100,0	203,0	404,0	–	31,0	500,0	243,0	–

Notas
Notes

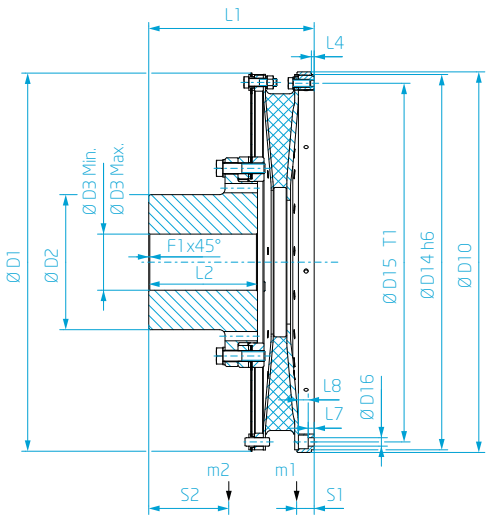
Todas las masas, puntos focales y momentos de inercia de masa se refieren al diámetro de cubo mínimo (Ø D3 min).

All masses, focal points and mass moments of inertia refer to min. hub bore (Ø D3 min).

RATO R / RATO R+ SERIE 2200

DATOS GEOMÉTRICOS GEOMETRIC DATA

C



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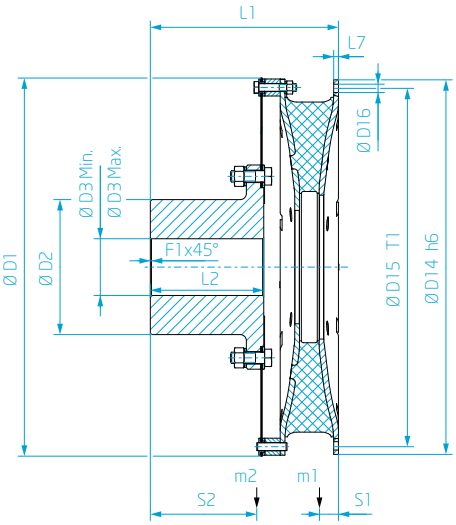

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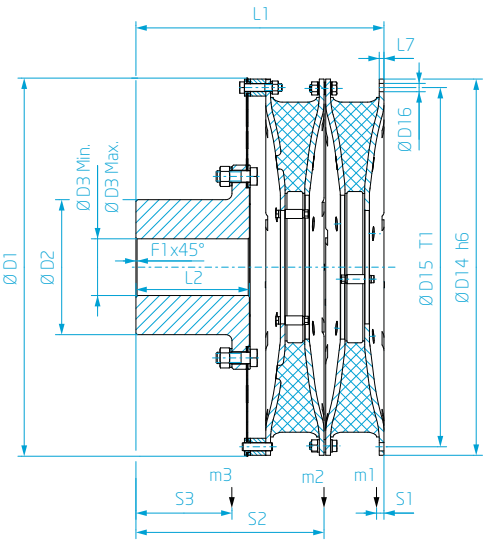
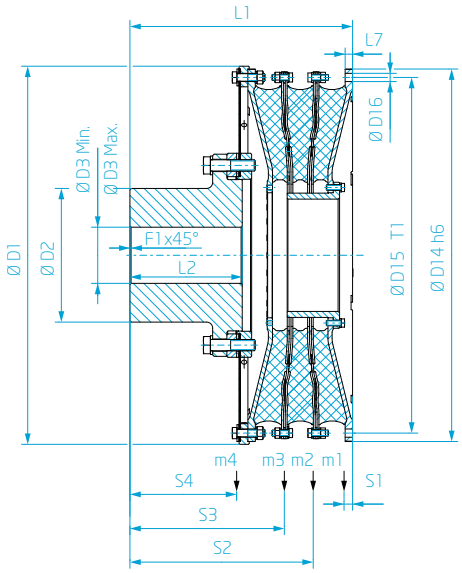


Grupo de montaje Dimension Group		Dimensiones Dimension													
		D_1	D_2	D_3		D_{10}	D_{14}	D_{15}	T_1	D_{16}	L_1	L_2	L_4	L_7	L_8	F_1
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[mm]	[-] Pasos / holes	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
G	G 3330	1.010,0	357,0	150,0	255,0	–	995,0	950,0	32	22,0	594,8	300,0	–	19,8	–	3,0
C	G 3E10	1.085,0	385,0	160,0	275,0	1.085,0	1.070,0	1.025,0	32	24,0	471,7	310,0	8,0	17,0	28,0	3,0
F	G 3E20	1.085,0	385,0	160,0	275,0	1.085,0	1.070,0	1.025,0	32	24,0	574,7	310,0	8,0	17,0	28,0	3,0
E	G 3810	1.250,0	448,0	200,0	320,0	–	1.240,0	1.190,0	32	26,0	580,0	385,0	–	12,5	–	4,0
F	G 3820	1.250,0	448,0	200,0	320,0	–	1.240,0	1.190,0	32	26,0	729,5	385,0	–	12,5	–	4,0
E	G 4A10	1.250,0	448,0	200,0	320,0	–	1.240,0	1.190,0	32	26,0	626,0	385,0	–	14,0	–	4,0
F	G 4A20	1.250,0	448,0	200,0	320,0	–	1.240,0	1.190,0	32	26,0	821,5	385,0	–	14,0	–	4,0

G



Momentos de inercia de masa Mass moments of inertia				Masa Mass				Distancia al centro de gravedad Distance to center of gravity			
J_1 [kgm²]	J_2 [kgm²]	J_3 [kgm²]	J_4 [kgm²]	m_1 [kg]	m_2 [kg]	m_3 [kg]	m_4 [kg]	S_1 [mm]	S_2 [mm]	S_3 [mm]	S_4 [mm]
13,0	13,0	13,0	33,0	109,0	91,0	91,0	440,0	44,0	493,0	417,0	236,0
29,2	41,7	–	–	150,5	502,6	–	–	50,0	230,0	–	–
29,2	21,3	48,1	–	150,5	126,8	562,5	–	50,0	428,0	243,0	–
30,4	75,0	–	–	145,3	728,0	–	–	29,0	297,0	–	–
31,0	67,2	76,0	–	152,0	311,0	730,0	–	29,0	582,0	297,0	–
35,0	80,0	–	–	172,0	743,0	–	–	37,0	302,0	–	–
35,0	76,0	80,0	–	172,0	350,0	749,0	–	37,0	628,0	303,0	–

Notas
Notes

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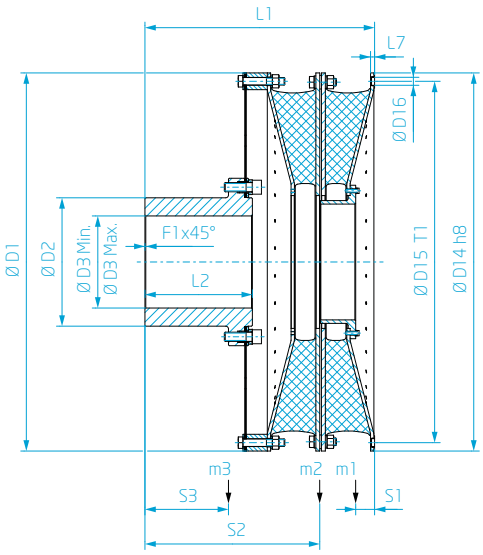
RATO R / RATO R+ SERIE 2200

DATOS GEOMÉTRICOS GEOMETRIC DATA

A



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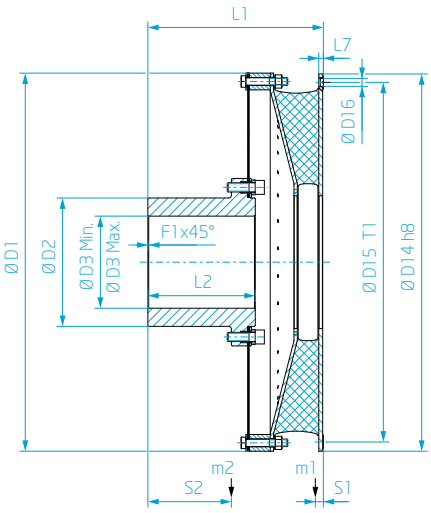

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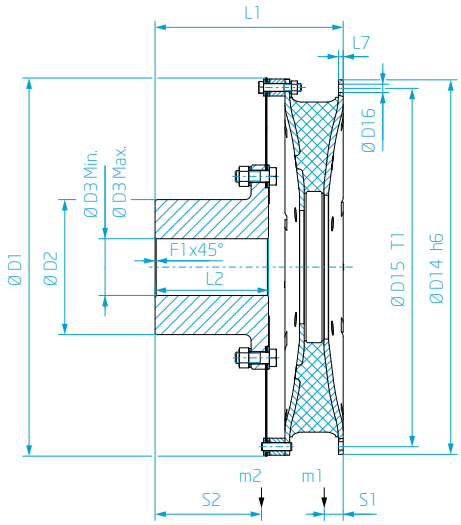
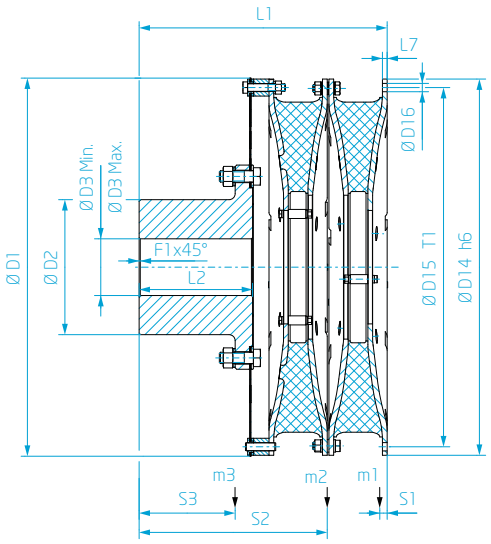


Grupo de montaje / Dimension Group		Dimensiones / Dimension													
		D_1	D_2	D_3		D_{10}	D_{14}	D_{15}	T_1	D_{16}	L_1	L_2	L_4	L_7	L_8	F_1
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[mm]	[-] Pasos / holes	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
B	G 4E10	1.355,0	460,0	300,0	330,0	–	1.355,0	1.295,0	32	28,6	629,0	385,0	–	16,5	–	2,0
A	G 4E20	1.355,0	460,0	300,0	330,0	–	1.355,0	1.295,0	32	28,6	823,0	385,0	–	14,5	–	2,0
H	G 4EP0	1.204,0	460,0	300,0	330,0	–	1.355,0	1.295,0	32	28,6	578,8	385,0	–	16,5	–	2,0
E	G 4710	1.465,0	518,0	230,0	370,0	–	1.460,0	1.395,0	32	33,0	736,6	480,0	–	14,0	–	4,0
F	G 4720	1.465,0	518,0	230,0	370,0	–	1.460,0	1.395,0	32	33,0	953,6	480,0	–	14,0	–	4,0
B	G 5B10	1.565,0	530,0	360,0	380,0	–	1.565,0	1.500,0	32	31,6	813,5	550,0	–	18,5	–	2,0
A	G 5B20	1.565,0	530,0	360,0	380,0	–	1.565,0	1.500,0	32	31,6	1.034,0	550,0	–	16,5	–	2,0
H	G 5BP0	1.390,0	530,0	360,0	380,0	–	1.565,0	1.500,0	32	31,6	756,0	550,0	–	18,5	–	2,0
B	G 5H10	1.745,0	588,0	360,0	425,0	–	1.738,0	1.675,0	32	34,6	851,5	570,0	–	19,5	–	3,0
A	G 5H20	1.745,0	588,0	360,0	425,0	–	1.738,0	1.675,0	32	34,6	1.092,0	570,0	–	19,5	–	3,0
H	G 5HP0	1.543,0	588,0	360,0	425,0	–	1.738,0	1.675,0	32	34,6	796,0	570,0	–	19,5	–	3,0

F



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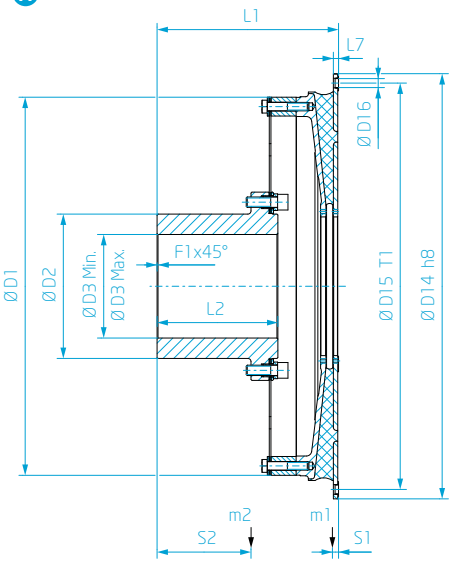


	Momentos de inercia de masa Mass moments of inertia				Masa Mass				Distancia al centro de gravedad Distance to center of gravity			
	J_1 [kgm²]	J_2 [kgm²]	J_3 [kgm²]	J_4 [kgm²]	m_1 [kg]	m_2 [kg]	m_3 [kg]	m_4 [kg]	S_1 [mm]	S_2 [mm]	S_3 [mm]	S_4 [mm]
	50,0	109,0	–	–	201,0	682,0	–	–	22,0	328,0	–	–
	47,0	112,0	109,0	–	211,0	429,0	682,0	–	62,0	630,0	328,0	–
	41,0	106,0	–	–	163,0	701,0	–	–	12,0	336,0	–	–
	69,5	170,0	–	–	246,0	1.196,0	–	–	40,0	364,0	–	–
	69,8	156,0	171,0	–	251,0	513,0	1.210,0	–	41,0	742,0	367,0	–
	102,0	210,0	–	–	303,0	1.077,0	–	–	25,0	442,0	–	–
	96,0	225,0	210,0	–	321,0	645,0	1.077,0	–	70,0	816,0	442,0	–
	83,0	207,0	–	–	248,0	1.109,0	–	–	14,0	451,0	–	–
	161,0	353,0	–	–	391,0	1.544,0	–	–	28,0	448,0	–	–
	166,0	355,0	353,0	–	442,0	827,0	1.544,0	–	78,0	851,0	448,0	–
	128,0	351,0	–	–	312,0	1.599,0	–	–	15,0	459,0	–	–

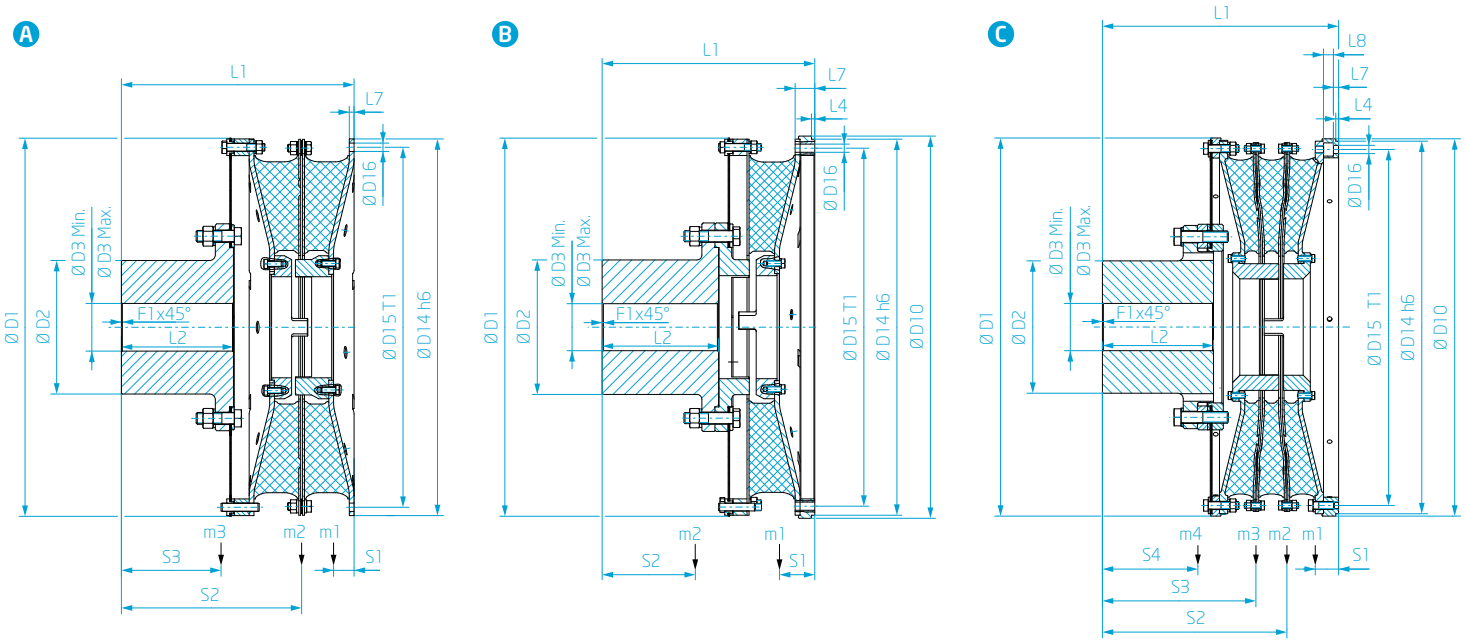
Notas
Notes

Todas las masas, puntos focales y momentos de inercia de masa se refieren al diámetro de cubo mínimo (Ø D3 min).

All masses, focal points and mass moments of inertia refer to min. hub bore (Ø D3 min).

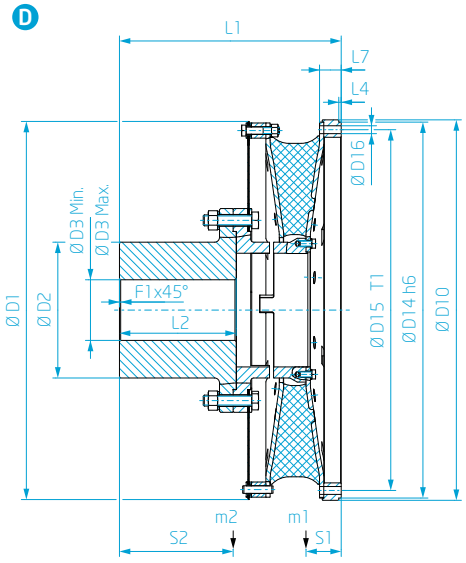
RATO R / RATO R+ SERIE 2201

DATOS GEOMÉTRICOS GEOMETRIC DATA



Grupo de montaje Dimension Group		Dimensiones Dimension														
		D_1	D_2	D_3		D_{10}	D_{14}	D_{15}	T_1	D_{16}	L_1	L_2	L_4	L_7	L_8	F_1
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[mm]	[-] Pasos / holes	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
A	G 1920	595,0	210,0	70,0	150,0	–	585,0	558,0	32	13,5	347,0	175,0	–	12,5	–	1,6
A	G 2120	640,0	224,0	80,0	160,0	–	635,0	608,0	32	13,5	390,0	185,0	–	8,0	–	1,6
B	G 2D10	685,0	238,0	110,0	170,0	690,0	680,0	650,0	32	15,5	337,5	195,0	6,0	37,0	–	1,6
A	G 2D20	685,0	238,0	110,0	170,0	–	680,0	650,0	32	15,5	411,0	195,0	–	10,0	–	1,6
B	G 2F10	735,0	259,0	110,0	185,0	740,0	730,0	700,0	32	15,5	406,9	225,0	6,0	37,0	–	2,0
A	G 2F20	735,0	259,0	110,0	185,0	–	730,0	700,0	32	15,5	463,0	225,0	–	10,0	–	2,0
B	G 2G10	793,0	280,0	100,0	200,0	800,0	790,0	755,0	32	17,5	438,0	235,0	6,0	42,0	–	2,0
A	G 2G20	793,0	280,0	100,0	200,0	–	790,0	755,0	32	17,5	488,0	235,0	–	10,0	–	2,0
C	G 2730	800,0	280,0	100,0	200,0	800,0	790,0	755,0	32	17,5	500,0	235,0	6,0	11,0	21,0	2,0
C	G 2930	870,0	308,0	110,0	220,0	870,0	860,0	820,0	32	20,0	535,0	250,0	6,0	12,0	23,0	2,0
B	G 3B10	925,0	329,0	115,0	235,0	935,0	920,0	880,0	32	20,0	520,2	285,0	8,0	48,0	–	3,0
A	G 3B20	925,0	329,0	115,0	235,0	–	920,0	880,0	32	20,0	586,0	285,0	–	12,0	–	3,0
D	G 3C10	1.000,0	357,0	150,0	255,0	1.010,0	995,0	950,0	32	22,0	563,5	300,0	8,0	46,5	–	3,0
E	G 3C20	1.000,0	357,0	150,0	255,0	–	995,0	950,0	32	22,0	656,0	300,0	–	12,5	–	3,0

D



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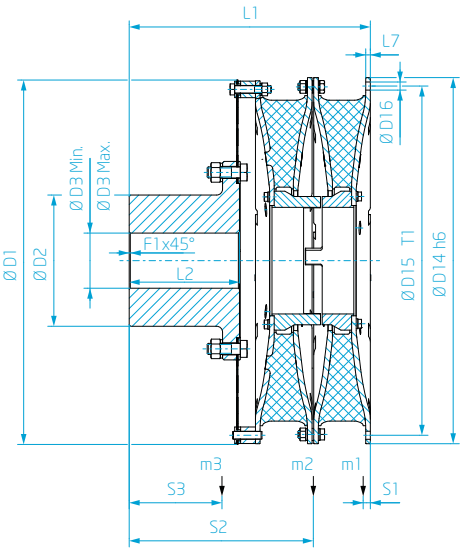

	Momentos de inercia de masa Mass moments of inertia				Masa Mass				Distancia al centro de gravedad Distance to center of gravity			
	J_1 [kgm²]	J_2 [kgm²]	J_3 [kgm²]	J_4 [kgm²]	m_1 [kg]	m_2 [kg]	m_3 [kg]	m_4 [kg]	S_1 [mm]	S_2 [mm]	S_3 [mm]	S_4 [mm]
	1,0	1,3	2,6	–	24,6	26,0	102,5	–	26,0	266,0	143,0	–
	1,4	1,8	3,0	–	30,0	32,0	111,0	–	29,0	302,0	157,0	–
	4,6	5,7	–	–	62,0	163,0	–	–	26,0	167,0	–	–
	2,1	2,5	4,4	–	39,6	37,7	128,8	–	30,0	317,0	172,0	–
	4,7	5,4	–	–	63,8	162,7	–	–	23,3	184,7	–	–
	2,9	3,4	6,3	–	49,0	46,0	170,0	–	34,0	360,0	191,0	–
	7,2	7,9	–	–	80,7	209,2	–	–	55,0	191,0	–	–
	4,1	4,8	9,3	–	60,0	55,2	216,0	–	38,0	378,0	197,0	–
	7,6	4,0	4,0	9,8	80,0	44,0	44,0	229,0	50,0	114,0	330,0	177,0
	11,7	6,0	6,0	15,2	108,0	55,0	55,0	300,0	55,0	123,0	352,0	188,0
	15,6	17,0	–	–	129,0	335,0	–	–	64,0	228,0	–	–
	9,0	10,6	19,9	–	95,2	91,0	348,5	–	43,0	454,0	236,0	–
	22,5	31,0	–	–	166,0	441,0	–	–	63,0	260,0	–	–
	13,8	28,1	30,0	–	128,0	202,0	432,0	–	43,0	500,0	255,0	–

Notas
Notes

Todas las masas, puntos focales y momentos de inercia de masa se refieren al diámetro de cubo mínimo (Ø D3 min).

All masses, focal points and mass moments of inertia refer to min. hub bore (Ø D3 min).

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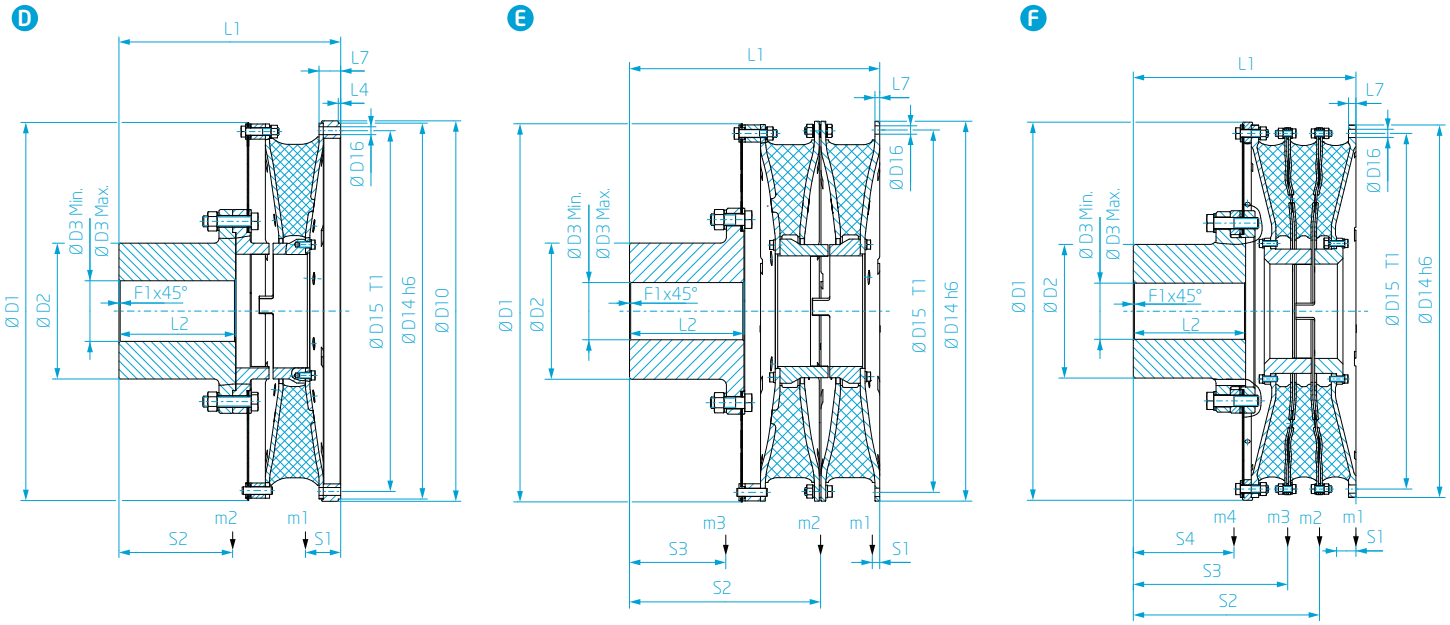
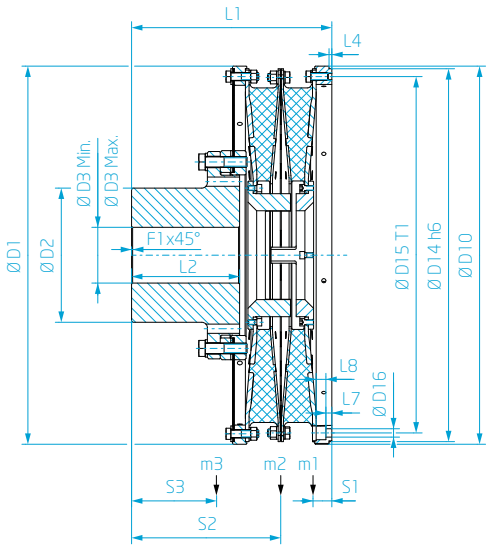
DATOS GEOMÉTRICOS GEOMETRIC DATA



Grupo de montaje Dimension Group		Dimensiones Dimension													
		D_1	D_2	D_3		D_{10}	D_{14}	D_{15}	T_1	D_{16}	L_1	L_2	L_4	L_7	L_8	F_1
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[mm]	[-] Pasos / holes	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
F	G 3330	1.010,0	357,0	150,0	255,0	–	995,0	950,0	32	22,0	594,8	300,0	–	19,8	–	3,0
	G 3E10	bajo pedido / on request														
G	G 3E20	1.085,0	385,0	160,0	275,0	1.085,0	1.070,0	1.025,0	32	24,0	574,7	310,0	8,0	17,0	28,0	3,0
D	G 3810	1.250,0	448,0	200,0	320,0	1.255,0	1.240,0	1.190,0	32	26,0	660,0	385,0	8,0	47,5	–	4,0
E	G 3820	1.250,0	448,0	200,0	320,0	1.255,0	1.240,0	1.190,0	32	26,0	764,5	385,0	8,0	12,5	–	4,0
D	G 4A10	1.250,0	448,0	200,0	320,0	1.255,0	1.240,0	1.190,0	32	26,0	732,0	385,0	8,0	72,0	–	4,0
E	G 4A20	1.250,0	448,0	200,0	320,0	–	1.240,0	1.190,0	32	26,0	821,5	385,0	–	14,0	–	4,0
D	G 4710	1.465,0	518,0	230,0	370,0	1.480,0	1.460,0	1.395,0	32	33,0	831,6	480,0	12,0	49,0	–	4,0
E	G 4720	1.465,0	518,0	230,0	370,0	–	1.460,0	1.395,0	32	33,0	954,0	480,0	–	14,0	–	4,0

G



Momentos de inercia de masa Mass moments of inertia				Masa Mass				Distancia al centro de gravedad Distance to center of gravity			
J_1 [kgm²]	J_2 [kgm²]	J_3 [kgm²]	J_4 [kgm²]	m_1 [kg]	m_2 [kg]	m_3 [kg]	m_4 [kg]	S_1 [mm]	S_2 [mm]	S_3 [mm]	S_4 [mm]
13,0	13,0	13,0	33,0	114,0	91,0	91,0	468,0	41,0	493,0	417,0	244,0
bajo pedido / on request											
29,9	21,3	48,2	–	175,0	127,0	567,0	–	54,0	428,0	244,0	–
52,0	82,0	–	–	243,0	810,0	–	–	62,0	321,0	–	–
32,7	68,1	77,9	–	191,0	312,0	770,0	–	40,0	582,0	308,0	–
69,0	87,0	–	–	308,0	839,0	–	–	86,0	329,0	–	–
37,6	76,6	82,2	–	222,0	351,0	799,0	–	53,0	628,0	318,0	–
126,0	198,0	–	–	446,0	1.423,0	–	–	74,0	404,0	–	–
75,0	156,0	176,0	–	325,0	513,0	1.284,0	–	59,0	742,0	383,0	–

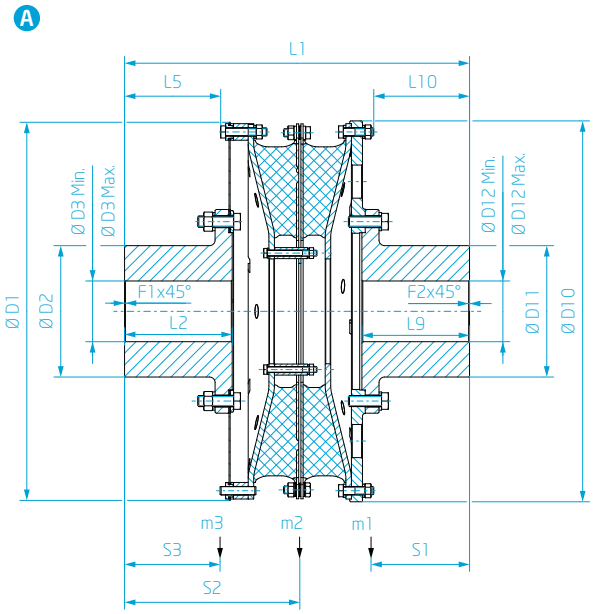
Notas
Notes

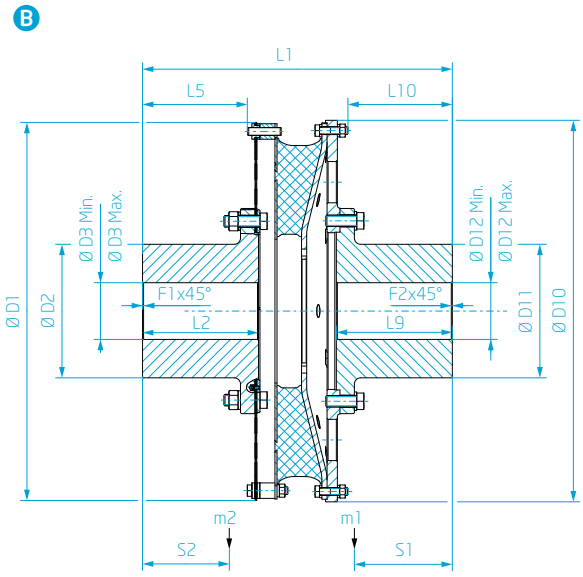
Todas las masas, puntos focales y momentos de inercia de masa se refieren al diámetro de cubo mínimo (Ø D3 min).

All masses, focal points and mass moments of inertia refer to min. hub bore (Ø D3 min).

RATO R / RATO R+ SERIE 2400

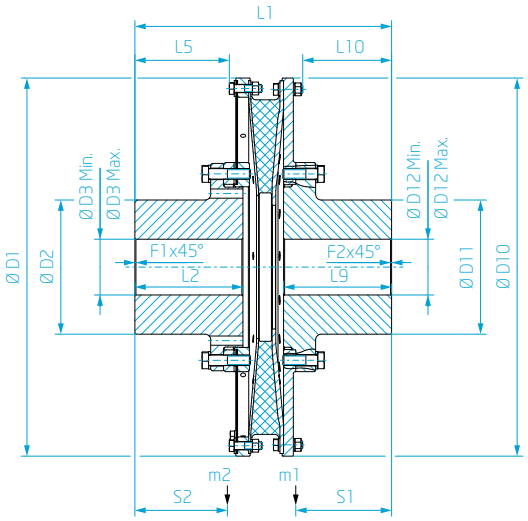
DATOS GEOMÉTRICOS GEOMETRIC DATA





Grupo de montaje Dimension Group		Dimensiones Dimension														
		D_1	D_2	D_3		D_{10}	D_{11}	D_{12}		L_1	L_2	L_5	L_9	L_{10}	F_1	F_2
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
A	G 1920	595,0	210,0	70,0	150,0	595,0	210,0	70,0	150,0	522,0	175,0	151,3	175,0	137,0	1,6	1,6
A	G 2120	640,0	224,0	80,0	160,0	645,0	224,0	80,0	160,0	594,0	185,0	165,5	185,0	166,5	1,6	1,6
B	G 2D10	685,0	238,0	110,0	170,0	690,0	238,0	110,0	170,0	529,5	195,0	174,2	195,0	173,5	1,6	1,6
A	G 2D20	685,0	238,0	110,0	170,0	690,0	238,0	110,0	170,0	625,0	195,0	174,2	195,0	173,5	1,6	1,6
C	G 2410	735,0	259,0	110,0	185,0	750,0	259,0	110,0	185,0	567,9	225,0	203,2	225,0	200,5	2,0	2,0
B	G 2F10	735,0	259,0	110,0	185,0	740,0	259,0	110,0	185,0	600,9	225,0	203,2	225,0	202,5	2,0	2,0
A	G 2F20	735,0	259,0	110,0	185,0	740,0	259,0	110,0	185,0	706,0	225,0	203,2	225,0	202,5	2,0	2,0
B	G 2G10	793,0	280,0	100,0	200,0	800,0	280,0	100,0	200,0	633,0	235,0	211,0	235,0	211,5	2,0	2,0
A	G 2G20	793,0	280,0	100,0	200,0	800,0	280,0	100,0	200,0	745,0	235,0	211,0	235,0	211,5	2,0	2,0
D	G 2930	870,0	308,0	110,0	220,0	870,0	308,0	110,0	220,0	750,0	250,0	224,0	250,0	209,0	2,0	2,0
B	G 3B10	925,0	329,0	115,0	235,0	935,0	329,0	115,0	235,0	758,2	285,0	256,5	285,0	252,5	3,0	3,0
A	G 3B20	925,0	329,0	115,0	235,0	935,0	329,0	115,0	235,0	892,0	285,0	256,5	285,0	252,5	3,0	3,0

C



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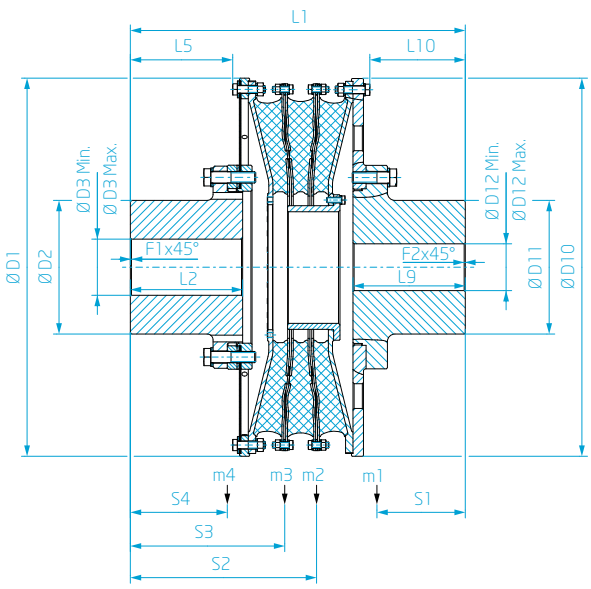


Momentos de inercia de masa Mass moments of inertia				Masa Mass				Distancia al centro de gravedad Distance to center of gravity			
J_1 [kgm²]	J_2 [kgm²]	J_3 [kgm²]	J_4 [kgm²]	m_1 [kg]	m_2 [kg]	m_3 [kg]	m_4 [kg]	S_1 [mm]	S_2 [mm]	S_3 [mm]	S_4 [mm]
3,5	1,3	2,6	–	119,0	26,0	97,5	–	141,0	266,0	139,0	–
4,5	1,8	3,0	–	133,0	32,0	106,0	–	160,0	302,0	152,0	–
6,6	3,3	–	–	154,4	105,1	–	–	172,0	149,0	–	–
6,6	2,5	4,4	–	154,4	37,7	123,0	–	172,0	317,0	166,0	–
8,5	5,3	–	–	185,0	147,0	–	–	183,0	172,0	–	–
8,9	4,9	–	–	194,0	142,0	–	–	190,0	168,0	–	–
8,9	3,4	6,2	–	194,0	46,0	162,1	–	190,0	360,0	185,0	–
13,6	7,2	–	–	254,2	182,2	–	–	199,5	174,0	–	–
13,6	4,8	9,1	–	254,2	55,2	206,6	–	199,5	378,0	191,0	–
20,3	6,0	6,0	14,9	347,0	55,0	55,0	283,0	201,0	338,0	352,0	185,0
27,6	15,5	–	–	395,0	295,0	–	–	236,0	209,0	–	–
27,6	10,6	19,5	–	395,0	91,0	332,0	–	236,0	454,0	228,0	–

Notas
Notes

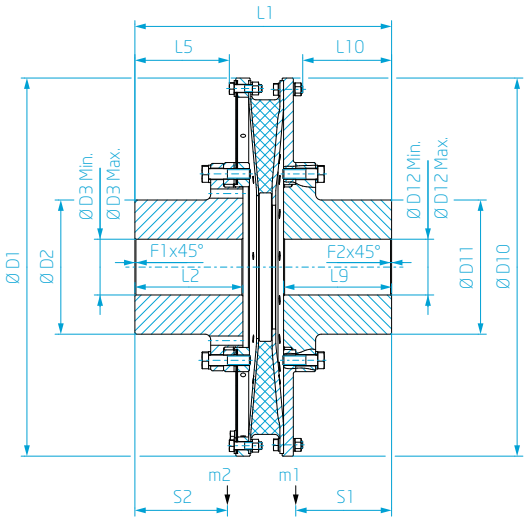
Todas las masas, puntos focales y momentos de inercia de masa se refieren al diámetro de cubo mínimo (Ø D3 min).

All masses, focal points and mass moments of inertia refer to min. hub bore (Ø D3 min).

RATO R / RATO R+ SERIE 2400

DATOS GEOMÉTRICOS GEOMETRIC DATA

C



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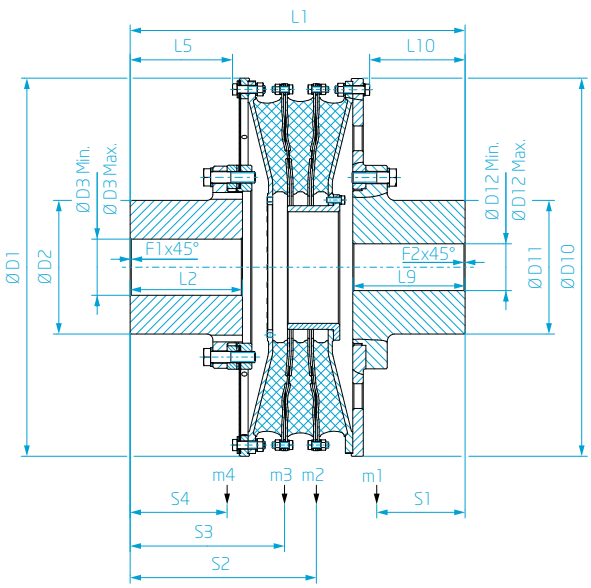
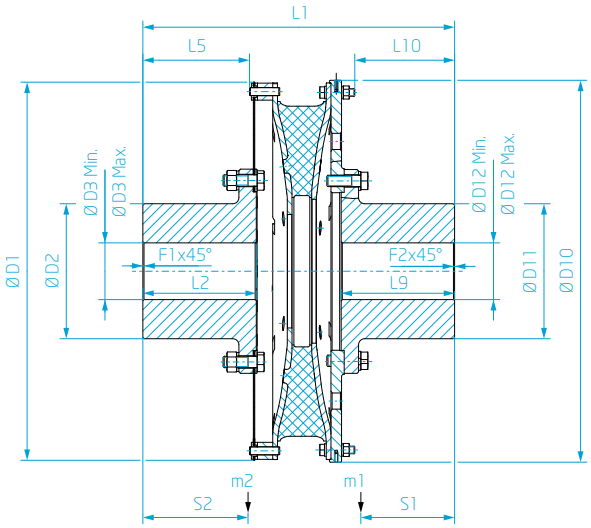


Grupo de montaje Dimension Group		Dimensiones Dimension													
		D_1	D_2	D_3		D_{10}	D_{11}	D_{12}		L_1	L_2	L_5	L_9	L_{10}	F_1	F_2
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
E	G 3C10	1.000,0	357,0	150,0	255,0	1.010,0	357,0	150,0	255,0	824,5	300,0	274,5	300,0	264,0	3,0	3,0
F	G 3C20	1.000,0	357,0	150,0	255,0	1.010,0	357,0	150,0	255,0	983,0	300,0	274,5	300,0	264,0	3,0	3,0
D	G 3330	1.010,0	357,0	150,0	255,0	1.010,0	357,0	150,0	255,0	894,8	300,0	273,5	300,0	255,0	3,0	3,0
C	G 3E10	1.085,0	385,0	160,0	275,0	1.085,0	385,0	160,0	275,0	736,7	310,0	271,0	310,0	255,0	3,0	3,0
G	G 3E20	1.085,0	385,0	160,0	275,0	1.085,0	385,0	160,0	275,0	839,7	310,0	271,0	310,0	255,0	3,0	3,0
E	G 3810	1.250,0	448,0	200,0	320,0	1.255,0	448,0	200,0	320,0	995,0	385,0	355,0	385,0	346,5	4,0	4,0
F	G 3820	1.250,0	448,0	200,0	320,0	1.255,0	448,0	200,0	320,0	1.144,5	385,0	355,0	385,0	346,5	4,0	4,0
E	G 4A10	1.250,0	448,0	200,0	320,0	1.255,0	448,0	200,0	320,0	1.041,0	385,0	355,0	385,0	348,5	4,0	4,0
F	G 4A20	1.250,0	448,0	200,0	320,0	1.255,0	448,0	200,0	320,0	1.236,5	385,0	355,0	385,0	348,5	4,0	4,0
E	G 4710	1.465,0	518,0	230,0	370,0	1.480,0	518,0	230,0	370,0	1.247,6	480,0	437,3	480,0	449,3	4,0	4,0
F	G 4720	1.465,0	518,0	230,0	370,0	1.480,0	518,0	230,0	370,0	1.464,6	480,0	437,3	480,0	431,0	4,0	4,0

E



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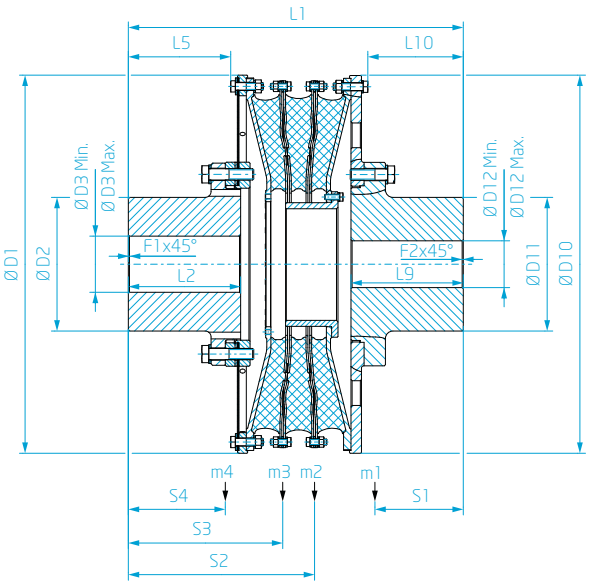


	Momentos de inercia de masa Mass moments of inertia				Masa Mass				Distancia al centro de gravedad Distance to center of gravity			
	J_1 [kgm²]	J_2 [kgm²]	J_3 [kgm²]	J_4 [kgm²]	m_1 [kg]	m_2 [kg]	m_3 [kg]	m_4 [kg]	S_1 [mm]	S_2 [mm]	S_3 [mm]	S_4 [mm]
	42,9	29,1	–	–	498,0	403,0	–	–	253,0	243,0	–	–
	43,2	28,3	29,1	–	503,0	203,0	404,0	–	255,0	500,0	243,0	–
	44,6	13,0	13,0	32,8	578,0	91,0	91,0	439,0	235,0	493,8	417,0	236,0
	57,5	41,8	–	–	606,0	504,0	–	–	239,0	230,0	–	–
	57,5	21,3	48,2	–	606,0	127,0	564,0	–	239,0	428,0	244,0	–
	114,0	75,0	–	–	893,0	728,0	–	–	313,0	297,0	–	–
	114,5	68,0	76,0	–	900,0	311,4	730,6	–	314,0	582,0	297,0	–
	118,6	80,0	–	–	918,5	743,0	–	–	318,0	302,0	–	–
	118,7	76,0	80,0	–	919,5	350,0	749,0	–	318,0	628,0	303,0	–
	260,0	170,0	–	–	1.488,0	1.196,0	–	–	388,0	364,0	–	–
	260,0	156,0	171,0	–	1.494,0	513,0	1.210,0	–	389,0	742,0	367,0	–

Notas
Notes

Todas las masas, puntos focales y momentos de inercia de masa se refieren al diámetro de cubo mínimo (Ø D3 min).

All masses, focal points and mass moments of inertia refer to min. hub bore (Ø D3 min).

RATO R / RATO R+

EXPLICACIONES DEL CÓDIGO DE PRODUCTO EXPLANATIONS OF THE PRODUCT CODE

Todos los acoplamientos VULKAN están identificados mediante un código de producto. Este código consta de varios parámetros y permite identificar claramente todos los productos.

All VULKAN Couplings products are identified by a product code. This code consists of several parameters and it enables the clear identification of all products.

EJEMPLO DE CÓDIGO DE PRODUCTO RATO R

Hemos decodificado aquí el código de producto de un RATO R **(G 241W)**, Tamaño 24, 1 fila, Rigidez del elemento W, Serie 2200.

DATOS DE RENDIMIENTO PERFORMANCE

Tipo de acoplamiento Type of Coupling		T_{KN}	T_{Kmax1}
		[kNm]	[kNm]
Tamaño Size	Grupo de montaje Dimension Group	Par nominal Nominal Torque	Par máx.$_1$ Max. Torque$_1$
G 241W	G2410	25,0	35,0

Extracto de Datos de rendimiento. Para más información, consulte la página 08 ff.

Excerpt from performance data. Complete data see page 08 ff.

PRODUCT CODE EXAMPLE RATO R

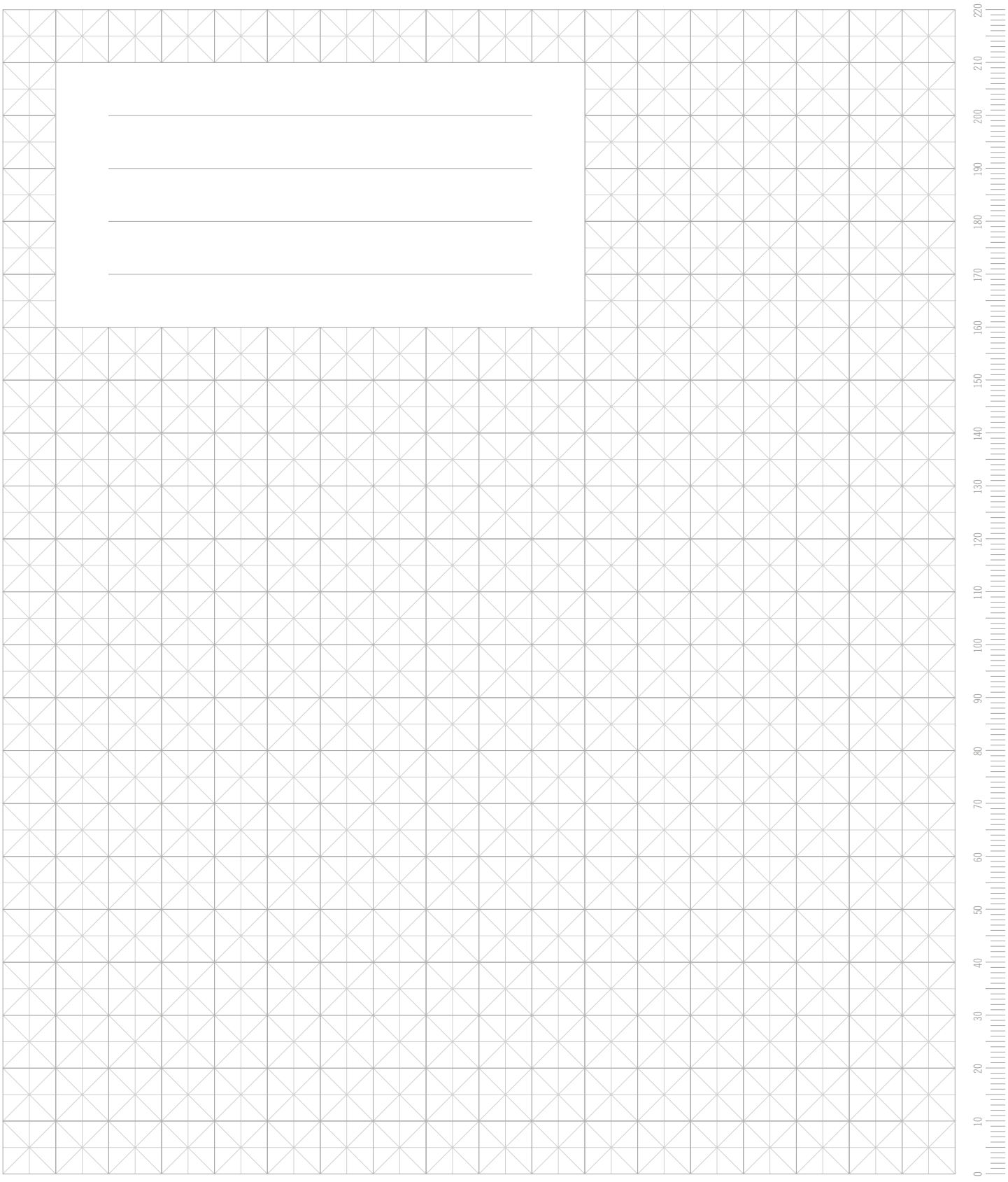
We have decoded here the product code of a RATO R **(G 241W)**, Size 24, 1 row, Element stiffness W, Series 2200.

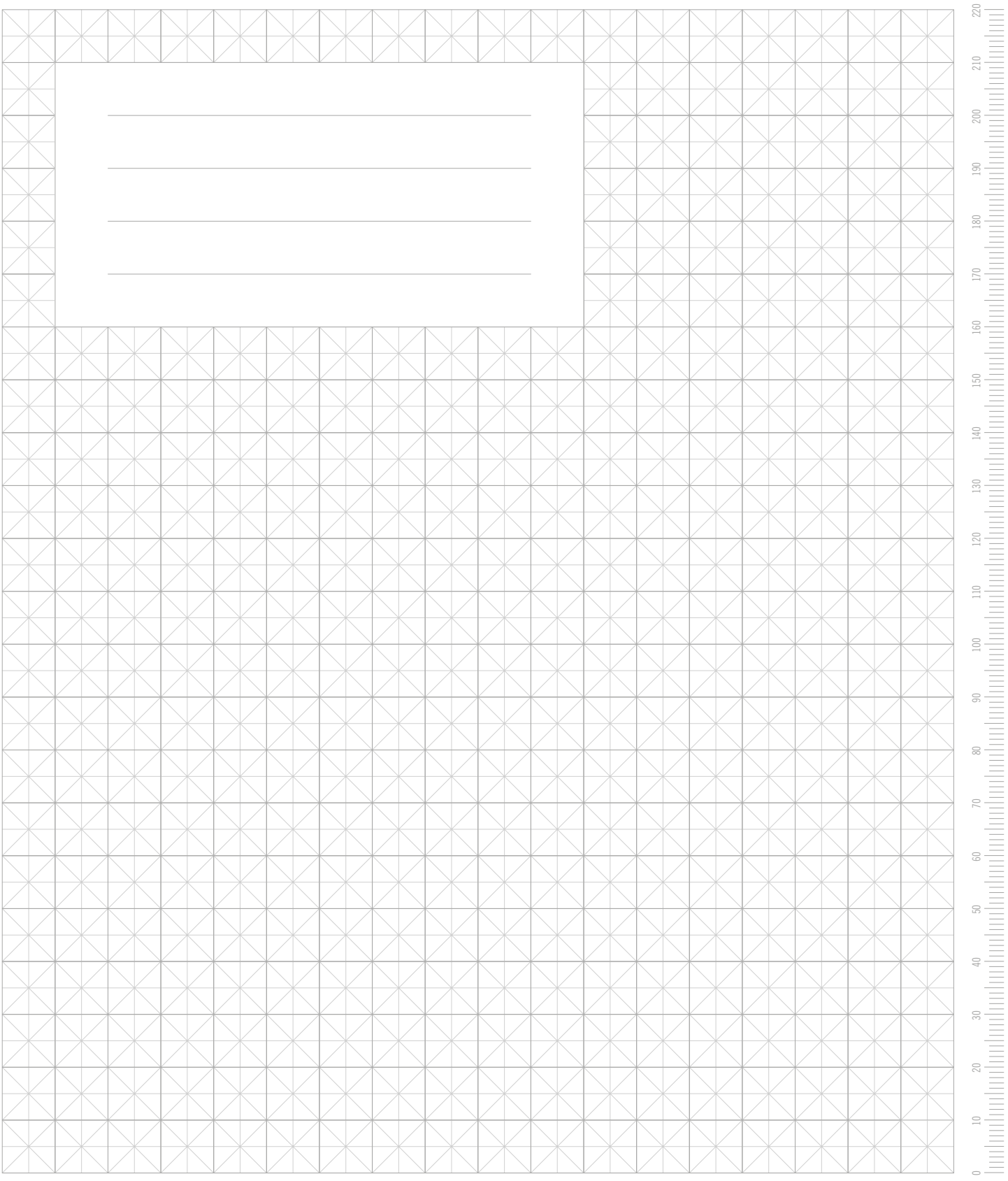
Acoplamiento completo Complete coupling	Familia del producto Product family	Código de tamaño Size code	Filas de elementos Element rows	Rigidez del elemento Element stiffness	Serie Series	Marca de identificación Key
1	**G**	**24**	**1**	**W**	02	R

1	G	19	1 **1 fila** 1 row	Z	02 2200	R **RATO R / RATO R+**
		21	2 **2 filas** 2 rows	W	03 2201	
		24	3 **3 filas** 3 rows	T		
		2D		Y		
		2F		S		
		2G		M		
		27		H		
		29		X		
		3B				
		3C				
		33				
		3E				
		38				
		4A				
		4E				
		47				
		5B				
		5H				

RATO R / RATO R+

AVISO NOTICE





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PARA MÁS INFORMACIÓN, POR FAVOR, VISITE NUESTRA WEB WWW.VULKAN.COM
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CLÁUSULA DE VALIDEZ

Los datos técnicos recogidos son válidos únicamente para áreas de aplicaciones definidas. Estas incluyen:

- Propulsión principal y accionamientos auxiliares en buques
- Grupos generadores en buques
- Accionamientos para la producción de energía estacionaria con motores diésel o de gas

Para otras aplicaciones distintas de las indicadas, póngase en contacto con su proveedor local de VULKAN para más información.

El presente catálogo sustituirá a todas las ediciones anteriores, cualquier versión impresa anterior dejará de tener validez. En función de los nuevos acontecimientos, VULKAN se reserva el derecho de modificar y cambiar los datos recogidos en este catálogo. Los nuevos datos solo serán aplicables en relación con los acoplamientos que se hayan pedido después de dicha modificación o cambio. Será responsabilidad del usuario garantizar que solo se utiliza el último número del catálogo. El último número correspondiente puede verse en el sitio web de VULKAN en www.vulkan.com.
Los datos contenidos en este catálogo se refieren a la norma técnica utilizada actualmente por VULKAN con condiciones definidas según las explicaciones. Será responsabilidad exclusiva y decisión del administrador del sistema que la línea de transmisión extraiga conclusiones sobre el comportamiento del sistema.

El análisis de vibraciones torsionales de VULKAN normalmente solo tiene en cuenta el sistema puro de masa mecánica elástico. En calidad de fabricante exclusivo de componentes, VULKAN no asume ninguna responsabilidad del análisis del sistema de vibración torsional (estacionario, transitoriamente). La exactitud del análisis depende de la exactitud de los datos utilizados y de los datos facilitados a VULKAN, respectivamente.

Quedan reservados los cambios debidos al progreso tecnológico. Para cualquier duda o consulta, póngase en contacto con VULKAN.
Estado: 09/2021

VALIDITY CLAUSE

The containing technical data is valid only for defined areas of applications. These includes:

- Main propulsion and auxiliary drives on ships
- Generator sets on ships
- Drives for stationary energy production with diesel or gas engines

For other than the named applications please contact your local VULKAN supplier for further consideration.

The present catalogue shall replace all previous editions, any previous printings shall no longer be valid. Based on new developments, VULKAN reserves the right to amend and change any details contained in this catalogue respectively. The new data shall only apply with respect to couplings that were ordered after said amendment or change. It shall be the responsibility of the user to ensure that only the latest catalogue issue will be used. The respective latest issue can be seen on the website of VULKAN on www.vulkan.com.

The data contained in this catalogue refer to the technical standard as presently used by VULKAN with defined conditions according to the explanations. It shall be the sole responsibility and decision of the system administrator for the drive line to draw conclusions about the system behaviour.

VULKAN torsional vibration analysis usually only consider the pure mechanical mass-elastic system. Being a component manufacturer exclusively, VULKAN assumes no system responsibility with the analysis of the torsional vibration system (stationary, transiently)! The accuracy of the analysis depends on the exactness of the used data and the data VULKAN is provided with, respectively.

Any changes due to the technological progress are reserved. For questions or queries please contact VULKAN.
Status: 09/2021

EDITORIAL:
VULKAN Couplings

CONCEPTO Y DISEÑO:
Hackforth Holding GmbH & Co. KG
VULKAN Marketing
Heerstraße 66, 44653 Herne / Alemania
E-mail: marketing@vulkan.com

ESTADO: 09/2021