VULKAN COUPLINGS

RATO S / RATO S+

DATOS TÉCNICOS TECHNICAL DATA

ESCANEAR

Utilice su smartphone con el software correspondiente para escanear el código QR.

Please use your smartphone with the relevant software, scan the QR-Code.

OBTENER INFORMACIÓN

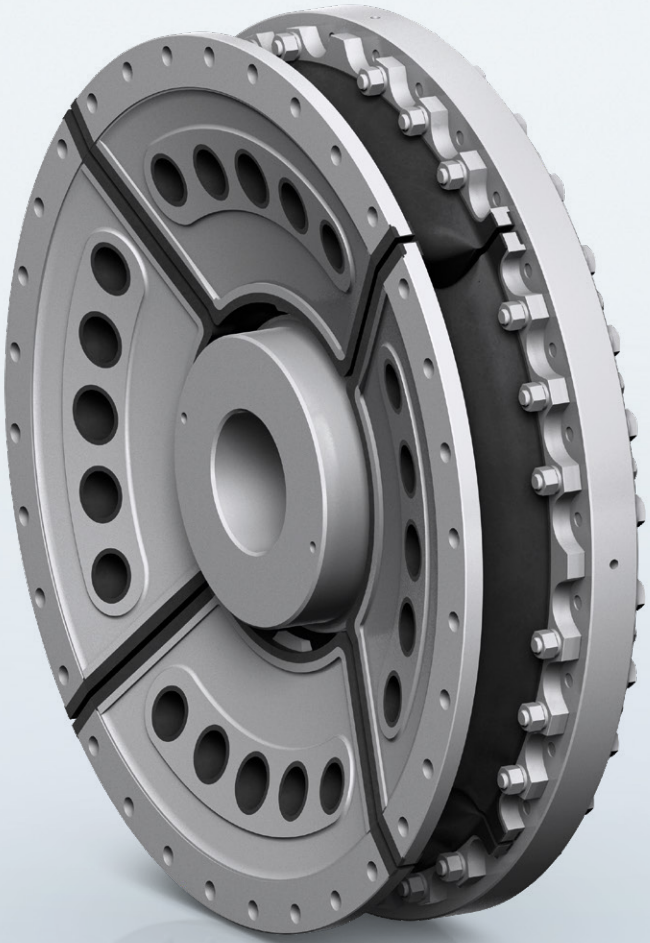
Obtendrá la información sobre si dispone de la última versió.

You will get the information whether you have got the latest version.

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 S / RATO S+

CARACTERÍSTICAS CHARACTERISTICS

PAR TORQUE
12,5 kNm – 800,0 kNm

ÁREAS DE APLICACIÓN

Motores de montaje flexible y rígido.
Los acoplamientos altamente flexibles RATO S y RATO S+ son acoplamientos de caucho torsionalmente flexibles que compensan los desplazamientos radial, axial y angular del eje de la maquinaria conectada. El par se transmite mediante elementos cargados en cortante. Los diferentes factores de rigidez torsional y amortiguación disponibles ofrecen la posibilidad de ajustar satisfactoriamente el comportamiento de vibración torsional del sistema de accionamiento. Las partes esenciales del acoplamiento son: el elemento flexible torsional, el paquete de membrana para absorber los desplazamientos axiales y angulares y las piezas de conexión con el accionamiento y la maquinaria impulsada.

VENTAJAS DEL PRODUCTO

- Instalación fácil y rápida del acoplamiento gracias al diseño segmentado con pesos reducidos de los segmentos individuales
- Los segmentos están dispuestos para la máxima carga térmica máxima y, por lo tanto, una larga vida útil del sistema
- Diseño compacto con cubo interno para ahorrar espacio y peso del accionamiento con vistas a reducir los costes del proyecto
- 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.
The highly-flexible RATO S and RATO S+ couplings are torsionally flexible rubber couplings that compensates radial, axial and angular shaft displacements of the connected machinery. The torque is transmitted by elements loaded in shear. The different torsional stiffnesses and damping factors available provide the possibility to satisfactorily tune the torsional vibration behaviour of the drive system. The essential parts of the coupling are: the torsional flexible element, the membrane package to absorb the axial and angular displacements and the connecting parts to the drive and driven machinery.

PRODUCT BENEFITS

- Easy and quick installation of the coupling thanks to the segmented design with reduced weights of the individual segments
- The segments are arranged for maximum thermal load and therefore long service life of the system
- Compact design with an internal hub for space-conserving and weight-saving drive dimensions in order to cut down on the project costs
- With the introduction of the ACOTEC range, smaller sizes with higher power density provide good price/performance ratio

RATO S / RATO S+

RESUMEN DE LA SERIE SUMMARY OF SERIES

SERIE **2100**

Página Page 12

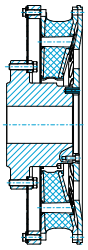
Para conectar un volante y un eje.
Con disposición de cubo interno, que garantiza el diseño compacto del acoplamiento.

For connecting a flywheel with a shaft.
With internal hub arrangement, that ensures a compact coupling design.

Grupo de montaje Dimension Group	G 2110 – G 6220
Par nominal Nominal Torque	12,50 kNm – 500,00 kNm

SERIE **2101**

Página Page 16



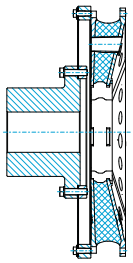
Para conectar un volante y un eje.
Con disposición de cubo interno, que garantiza el diseño compacto del acoplamiento.
Con dispositivo de límite de torsión.

For connecting a flywheel with a shaft.
With internal hub arrangement, that ensures a compact coupling design.
With torsional limit device.

Grupo de montaje Dimension Group	G 2110 – G 5820
Par nominal Nominal Torque	12,50 kNm – 450,00 kNm

SERIE **2200**

Página Page 20



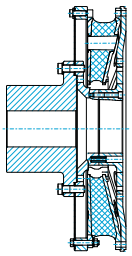
Para conectar un volante y un eje.

For connecting a flywheel with a shaft.

Grupo de montaje Dimension Group	G 2110 – G 6220
Par nominal Nominal Torque	12,50 kNm – 500,00 kNm

SERIE **2201**

Página Page 24



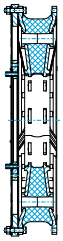
Para conectar un volante y un eje.
Con dispositivo de límite de torsión.

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

Grupo de montaje Dimension Group	G 2110 – G 5820
Par nominal Nominal Torque	12,50 kNm – 450,00 kNm

SERIE **2300**

Página Page 26



Para conectar un volante y una brida.

For connecting a flywheel with a flange.

Grupo de montaje Dimension Group	G 4610 – G 7310
Par nominal Nominal Torque	180,00 kNm – 800,00 kNm

RATO S / RATO S+

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 211Z	G2110	12,5	19,0	56,5	23,0	4,0	0,56	2.100	5,0	5,9	0,5	1,9	3,10	115	0,90
G 211W	G2110	14,0	21,5	63,0	25,5	4,0	0,56	2.100	5,0	4,7	0,5	1,9	3,90	140	1,13
G 211Q	G2110	16,0	25,0	72,0	29,5	4,0	0,56	2.100	5,0	4,2	0,5	1,9	4,80	175	1,13
G 212Z	G2120	12,5	19,0	56,5	23,0	4,0	1,12	1.840	5,0	12,6	0,5	1,9	1,55	58	0,90
G 212W	G2120	14,0	21,5	63,0	25,5	4,0	1,12	1.840	5,0	10,0	0,5	1,9	1,95	70	1,13
G 212Q	G2120	16,0	25,0	72,0	29,5	4,0	1,12	1.840	5,0	9,0	0,5	1,9	2,40	88	1,13
G 231Z	G2310	16,0	24,0	72,0	28,5	5,0	0,60	2.050	5,5	5,9	0,5	1,5	3,40	145	0,90
G 231W	G2310	18,0	27,0	81,0	32,0	5,0	0,60	2.050	5,5	4,7	0,5	1,5	4,30	180	1,13
G 231Q	G2310	20,0	31,0	90,0	37,0	5,0	0,60	2.050	5,5	4,2	0,5	1,5	5,40	220	1,13
G 232Z	G2320	16,0	24,0	72,0	28,5	5,0	1,20	1.600	5,5	13,4	0,5	1,5	1,70	73	0,90
G 232W	G2320	18,0	27,0	81,0	32,0	5,0	1,20	1.600	5,5	10,6	0,5	1,5	2,15	90	1,13
G 232Q	G2320	20,0	31,0	90,0	37,0	5,0	1,20	1.600	5,5	9,4	0,5	1,5	2,70	110	1,13
G 251Z	G2510	18,0	30,0	81,0	35,5	6,3	0,65	1.800	6,0	6,6	0,5	1,1	3,40	180	0,90
G 251W	G2510	22,4	33,5	101,0	40,0	6,3	0,65	1.800	6,0	5,2	0,5	1,1	4,30	225	1,13
G 251Q	G2510	25,0	38,5	112,5	46,5	6,3	0,65	1.800	6,0	4,6	0,5	1,1	5,40	275	1,13
G 252Z	G2520	18,0	30,0	81,0	35,5	6,3	1,30	1.500	6,0	14,4	0,5	1,1	1,70	90	0,90
G 252W	G2520	22,4	33,5	101,0	40,0	6,3	1,30	1.500	6,0	11,4	0,5	1,1	2,15	113	1,13
G 252Q	G2520	25,0	38,5	112,5	46,5	6,3	1,30	1.500	6,0	10,2	0,5	1,1	2,70	138	1,13
G 271Z	G2710	25,0	34,0	112,5	41,0	7,9	0,78	1.700	6,0	7,1	0,5	1,0	3,70	225	0,90
G 271W	G2710	28,0	38,5	126,0	46,0	7,9	0,78	1.700	6,0	5,6	0,5	1,0	4,70	280	1,13
G 271Q	G2710	31,5	44,5	142,0	53,5	7,9	0,78	1.700	6,0	5,0	0,5	1,0	5,90	345	1,13
G 272Z	G2720	25,0	34,0	112,5	41,0	7,9	1,56	1.380	6,0	15,6	0,5	1,0	1,90	113	0,90
G 272W	G2720	28,0	38,5	126,0	46,0	7,9	1,56	1.380	6,0	12,4	0,5	1,0	2,40	140	1,13
G 272Q	G2720	31,5	44,5	142,0	53,5	7,9	1,56	1.380	6,0	11,0	0,5	1,0	3,00	173	1,13
G 291Z	G2910	31,5	43,5	142,0	52,0	10,0	0,99	1.600	6,0	7,7	0,5	1,0	4,30	285	0,90
G 291W	G2910	35,5	49,0	160,0	58,5	10,0	0,99	1.600	6,0	6,1	0,5	1,0	5,40	355	1,13
G 291Q	G2910	40,0	56,5	180,0	68,0	10,0	0,99	1.600	6,0	5,5	0,5	1,0	6,70	440	1,13
G 292Z	G2920	31,5	43,5	142,0	52,0	10,0	1,98	1.310	6,0	17,0	0,5	1,0	2,15	143	0,90
G 292W	G2920	35,5	49,0	160,0	58,5	10,0	1,98	1.310	6,0	13,4	0,5	1,0	2,70	178	1,13
G 292Q	G2920	40,0	56,5	180,0	68,0	10,0	1,98	1.310	6,0	12,0	0,5	1,0	3,35	220	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 +0%.

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 +0%.

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 311Z	G3110	40,0	54,5	180,0	65,0	12,5	1,12	1.410	7,0	8,8	0,5	0,9	4,20	320	0,90
G 311W	G3110	45,0	61,0	202,5	73,5	12,5	1,12	1.410	7,0	7,0	0,5	0,9	5,30	405	1,13
G 311Q	G3110	50,0	70,5	225,0	85,0	12,5	1,12	1.410	7,0	6,2	0,5	0,9	6,60	500	1,13
G 312Z	G3120	40,0	54,5	180,0	65,0	12,5	2,24	1.250	7,0	18,6	0,5	0,9	2,10	160	0,90
G 312W	G3120	45,0	61,0	202,5	73,5	12,5	2,24	1.250	7,0	14,8	0,5	0,9	2,65	203	1,13
G 312Q	G3120	50,0	70,5	225,0	85,0	12,5	2,24	1.250	7,0	13,2	0,5	0,9	3,30	250	1,13
G 331Z	G3310	50,0	68,5	225,0	82,0	15,8	1,32	1.350	7,0	9,3	0,5	0,8	4,60	425	0,90
G 331W	G3310	56,0	77,0	252,0	92,5	15,8	1,32	1.350	7,0	7,5	0,5	0,8	5,70	505	1,13
G 331Q	G3310	63,0	89,0	283,5	107,0	15,8	1,32	1.350	7,0	6,6	0,5	0,8	7,20	640	1,13
G 332Z	G3320	50,0	68,5	225,0	82,0	15,8	2,64	1.210	7,0	19,8	0,5	0,8	2,30	213	0,90
G 332W	G3320	56,0	77,0	252,0	92,5	15,8	2,64	1.210	7,0	15,8	0,5	0,8	2,85	253	1,13
G 332Q	G3320	63,0	89,0	283,5	107,0	15,8	2,64	1.210	7,0	14,0	0,5	0,8	3,60	320	1,13
G 341Z	G3410	63,0	87,0	283,5	104,5	20,0	1,47	1.250	7,0	9,6	0,5	0,7	5,20	535	0,90
G 341W	G3410	71,0	97,5	319,5	117,0	20,0	1,47	1.250	7,0	7,7	0,5	0,7	6,50	640	1,13
G 341Q	G3410	80,0	113,0	360,0	135,5	20,0	1,47	1.250	7,0	6,9	0,5	0,7	8,10	800	1,13
G 342Z	G3420	63,0	87,0	283,5	104,5	20,0	2,94	1.250	7,0	19,2	0,5	0,7	2,60	268	0,90
G 342W	G3420	71,0	97,5	319,5	117,0	20,0	2,94	1.250	7,0	15,4	0,5	0,7	3,25	320	1,13
G 342Q	G3420	80,0	113,0	360,0	135,5	20,0	2,94	1.250	7,0	13,8	0,5	0,7	4,05	400	1,13
G 381W	G3810	100,0	123,0	450,0	148,0	25,0	1,48	690	9,0	13,8	0,5	1,6	3,70	600	1,13
G 381T	G3810	125,0	146,0	562,5	175,5	31,3	1,48	690	9,0	12,5	0,5	1,6	4,50	750	1,13
G 461W	G4610	180,0	222,0	810,0	266,0	50,0	2,67	800	12,0	8,6	0,5	1,8	14,60	3.200	1,13
G 461T	G4610	200,0	263,0	900,0	315,5	50,0	2,67	800	12,0	7,7	0,5	1,8	18,30	4.000	1,13
G 4J1S	G4J10	180,0	220,0	810,0	275,0	53,0	1,97	800	12,0	13,4	0,5	1,8	6,80	1.300	0,75
G 4J1M	G4J10	210,0	265,0	945,0	320,0	55,0	1,97	800	12,0	10,4	0,5	1,8	9,40	1.800	0,90
G 4J1H	G4J10	225,0	295,0	1.012,5	355,0	55,0	1,97	800	12,0	9,4	0,5	1,8	11,50	2.200	0,90
G 4J1X	G4J10	225,0	325,0	1.012,5	390,0	55,0	1,97	800	12,0	7,5	0,5	1,8	14,40	2.750	1,13
G 4J2S	G4J20	180,0	220,0	810,0	275,0	53,0	3,95	690	12,0	28,8	0,5	1,8	3,40	650	0,75
G 4J2M	G4J20	210,0	265,0	945,0	320,0	55,0	3,95	690	12,0	22,4	0,5	1,8	4,70	900	0,90
G 4J2H	G4J20	225,0	295,0	1.012,5	355,0	55,0	3,95	690	12,0	20,2	0,5	1,8	5,70	1.100	0,90
G 4J2X	G4J20	225,0	325,0	1.012,5	390,0	55,0	3,95	690	12,0	16,0	0,5	1,8	7,20	1.375	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 +0%.

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 +0%.

RATO S / RATO S+

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 491W	G4910	224,0	277,0	1.008,0	332,5	62,5	2,95	750	13,0	8,8	0,5	1,3	16,40	4.000	1,13
G 491T	G4910	250,0	329,0	1.125,0	394,5	62,5	2,95	750	13,0	7,9	0,5	1,3	20,50	5.000	1,13
G 5B1S	G5B10	230,0	285,0	1.035,0	345,0	65,0	2,04	750	13,0	12,9	0,5	1,3	8,10	1.800	0,75
G 5B1M	G5B10	250,0	330,0	1.125,0	400,0	70,0	2,04	750	13,0	10,5	0,5	1,3	10,10	2.250	0,90
G 5B1H	G5B10	280,0	370,0	1.260,0	440,0	70,0	2,04	750	13,0	9,5	0,5	1,3	12,40	2.750	0,90
G 5B1X	G5B10	290,0	410,0	1.305,0	485,0	70,0	2,04	750	13,0	7,6	0,5	1,3	15,30	3.400	1,13
G 5B2S	G5B20	230,0	285,0	1.035,0	345,0	65,0	4,08	690	13,0	27,0	0,5	1,3	4,00	900	0,75
G 5B2M	G5B20	250,0	330,0	1.125,0	400,0	70,0	4,08	690	13,0	22,0	0,5	1,3	5,00	1.125	0,90
G 5B2H	G5B20	280,0	370,0	1.260,0	440,0	70,0	4,08	690	13,0	19,8	0,5	1,3	6,20	1.375	0,90
G 5B2X	G5B20	290,0	410,0	1.305,0	485,0	70,0	4,08	690	13,0	16,0	0,5	1,3	7,60	1.700	1,13
G 531W	G5310	250,0	310,0	1.125,0	372,0	62,5	1,95	600	14,0	15,0	0,5	1,0	4,70	1.500	1,13
G 531T	G5310	315,0	367,5	1.417,5	441,0	78,8	1,95	600	14,0	13,7	0,5	1,0	5,70	1.890	1,13
G 541W	G5410	280,0	349,5	1.260,0	419,0	78,8	3,15	700	14,0	8,8	0,5	1,0	19,00	5.040	1,13
G 541T	G5410	315,0	414,5	1.417,5	497,0	78,8	3,15	700	14,0	7,8	0,5	1,0	23,80	6.300	1,13
G 5G1S	G5G10	290,0	360,0	1.305,0	435,0	80,0	2,29	700	14,0	13,5	0,5	1,0	8,90	2.300	0,75
G 5G1M	G5G10	310,0	415,0	1.395,0	500,0	85,0	2,29	700	14,0	11,1	0,5	1,0	10,80	2.800	0,90
G 5G1H	G5G10	345,0	465,0	1.552,5	555,0	85,0	2,29	700	14,0	10,0	0,5	1,0	13,40	3.465	0,90
G 5G1X	G5G10	360,0	510,0	1.620,0	615,0	85,0	2,29	700	14,0	8,0	0,5	1,0	16,60	4.300	1,13
G 5G2S	G5G20	290,0	360,0	1.305,0	435,0	80,0	4,59	690	14,0	27,2	0,5	1,0	4,40	1.150	0,75
G 5G2M	G5G20	310,0	415,0	1.395,0	500,0	85,0	4,59	690	14,0	22,4	0,5	1,0	5,40	1.400	0,90
G 5G2H	G5G20	345,0	465,0	1.552,5	555,0	85,0	4,59	690	14,0	20,2	0,5	1,0	6,70	1.732	0,90
G 5G2X	G5G20	360,0	510,0	1.620,0	615,0	85,0	4,59	690	14,0	16,2	0,5	1,0	8,30	2.150	1,13
G 572W	G5720	400,0	445,0	1.800,0	550,0	100,0	3,73	690	16,0	14,8	0,5	2,0	8,00	2.280	1,13
G 572T	G5720	400,0	500,0	1.800,0	600,0	100,0	3,73	690	16,0	13,2	0,5	2,0	10,00	2.850	1,13
G 572Y	G5720	420,0	570,0	1.890,0	700,0	105,0	3,73	690	16,0	11,6	0,5	2,0	13,00	3.565	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 +0%.

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 +0%.

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 581Z	G5810	315,0	435,0	1.417,5	521,5	100,0	2,20	650	15,0	12,6	0,5	1,7	8,80	2.835	0,90
G 581W	G5810	380,0	565,0	1.710,0	678,0	100,0	2,20	650	15,0	8,9	0,5	1,7	13,80	4.400	1,13
G 581Y	G5810	450,0	576,0	2.025,0	690,0	100,0	2,20	650	15,0	8,0	0,5	1,7	17,20	5.500	1,13
G 582Z	G5820	315,0	435,0	1.417,5	521,5	100,0	4,40	650	15,0	25,2	0,5	1,7	4,40	1.418	0,90
G 582W	G5820	380,0	565,0	1.710,0	678,0	100,0	4,40	650	15,0	17,8	0,5	1,7	6,90	2.200	1,13
G 582Y	G5820	450,0	576,0	2.025,0	690,0	100,0	4,40	650	15,0	16,0	0,5	1,7	8,60	2.750	1,13
G 601Z	G6010	315,0	424,0	1.417,5	508,5	100,0	2,48	650	15,0	9,9	–	–	16,00	5.100	0,90
G 601W	G6010	355,0	479,0	1.597,5	575,0	100,0	2,48	650	15,0	7,9	–	–	20,00	6.400	1,13
G 601T	G6010	400,0	568,0	1.800,0	682,0	100,0	2,48	650	15,0	7,0	–	–	25,00	8.000	1,13
G 621Z	G6210	355,0	470,0	1.597,5	564,0	90,0	2,32	600	15,0	13,5	0,5	1,7	8,70	3.600	0,90
G 621W	G6210	400,0	531,5	1.800,0	637,5	100,0	2,32	600	15,0	11,5	0,5	1,7	9,60	4.000	1,13
G 621T	G6210	500,0	640,0	2.250,0	756,5	125,0	2,32	600	15,0	10,3	0,5	1,7	12,00	5.000	1,13
G 622Z	G6220	355,0	470,0	1.597,5	564,0	90,0	4,64	600	15,0	27,0	0,5	1,7	4,35	1.800	0,90
G 622W	G6220	400,0	531,5	1.800,0	637,5	100,0	4,64	600	15,0	23,0	0,5	1,7	4,80	2.000	1,13
G 622T	G6220	500,0	640,0	2.250,0	756,5	125,0	4,64	600	15,0	20,6	0,5	1,7	6,00	2.500	1,13
G 651Z	G6510	400,0	530,5	1.800,0	637,0	125,0	2,76	610	17,0	10,3	–	–	17,60	6.400	0,90
G 651W	G6510	450,0	600,0	2.025,0	719,5	125,0	2,76	610	17,0	8,2	–	–	22,00	8.000	1,13
G 651T	G6510	500,0	711,5	2.250,0	853,5	125,0	2,76	610	17,0	7,3	–	–	27,50	10.000	1,13
G 681W	G6810	500,0	669,5	2.250,0	803,5	125,0	2,52	550	18,0	12,2	–	–	10,00	5.000	1,13
G 681T	G6810	630,0	794,0	2.835,0	953,0	157,0	2,52	550	18,0	10,9	–	–	12,50	6.300	1,13
G 701Z	G7010	500,0	668,0	2.250,0	801,5	157,0	3,04	550	18,0	11,1	–	–	18,40	8.000	0,90
G 701W	G7010	560,0	755,0	2.520,0	906,0	157,0	3,04	550	18,0	8,8	–	–	23,00	10.080	1,13
G 701T	G7010	630,0	895,5	2.835,0	1.074,5	157,0	3,04	550	18,0	7,9	–	–	28,80	12.600	1,13
G 731W	G7310	630,0	851,0	2.835,0	1.021,5	157,0	2,68	500	18,0	12,6	–	–	11,00	6.300	1,13
G 731T	G7310	800,0	1.008,5	3.600,0	1.210,0	200,0	2,68	500	18,0	10,5	–	–	16,00	8.000	1,13

Remítase a la Explicación de datos técnicos

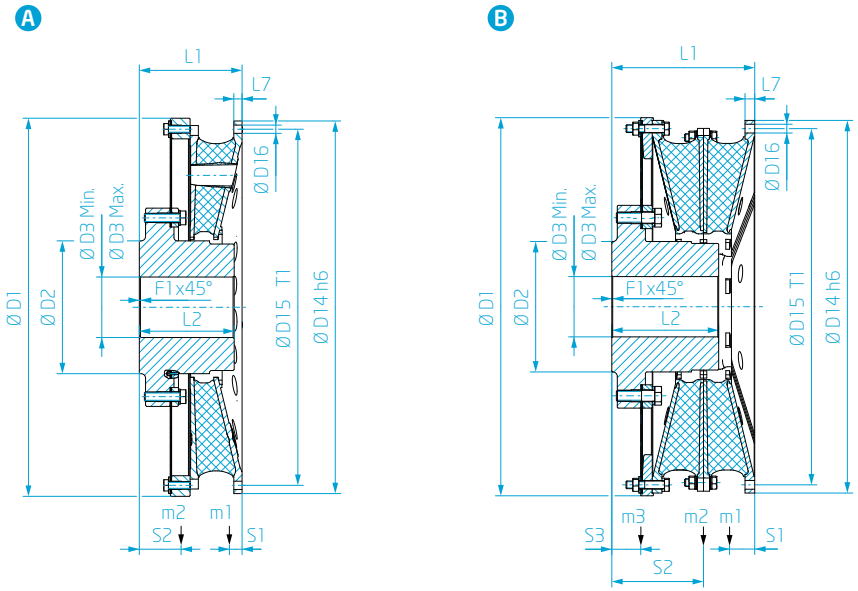
1) El estado de funcionamiento del sistema puede hacer necesario corregir los valores especificados.
2) Es posible una tolerancia de rigidez del material de +/-15%. El amortiguamiento relativo puede ser objeto de una tolerancia de -45% a +0%.

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 +0%.

RATO S / RATO S+ SERIE 2100

DATOS GEOMÉTRICOS GEOMETRIC DATA



Grupo de montaje Dimension Group		Dimensiones Dimension											
		D_1	D_2	D_3		D_{14}	D_{15}	T_1	D_{16}	L_1	L_2	L_7	F_1
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[-] Pasos / holes	[mm]	[mm]	[mm]	[mm]	[mm]
A	G 2110	645,0	224,0	80,0	160,0	635,0	608,0	32	14,0	183,8	160,0	15,4	1,6
B	G 2120	645,0	224,0	80,0	160,0	635,0	608,0	32	14,0	246,8	185,0	15,4	1,6
A	G 2310	690,0	238,0	110,0	170,0	680,0	650,0	32	16,0	192,8	170,0	17,7	1,6
B	G 2320	690,0	238,0	110,0	170,0	680,0	650,0	32	16,0	260,8	195,0	17,7	1,6
A	G 2510	740,0	259,0	110,0	185,0	730,0	700,0	32	16,0	224,9	200,0	19,0	2,0
B	G 2520	740,0	259,0	110,0	185,0	730,0	700,0	32	16,0	299,7	225,0	19,0	2,0
A	G 2710	800,0	280,0	100,0	200,0	790,0	755,0	32	17,5	233,7	205,0	17,0	2,0
B	G 2720	800,0	280,0	100,0	200,0	790,0	755,0	32	17,5	314,0	235,0	17,0	2,0
A	G 2910	870,0	308,0	110,0	220,0	860,0	820,0	32	20,0	243,0	215,0	19,0	2,0
B	G 2920	870,0	308,0	110,0	220,0	860,0	820,0	32	20,0	332,3	250,0	19,0	2,0
A	G 3110	935,0	329,0	115,0	235,0	920,0	880,0	32	20,0	266,1	245,0	22,0	3,0
B	G 3120	935,0	329,0	115,0	235,0	920,0	880,0	32	20,0	370,5	285,0	22,0	3,0
A	G 3310	1.010,0	357,0	150,0	255,0	995,0	950,0	32	22,0	278,6	255,0	22,0	3,0
B	G 3320	1.010,0	357,0	150,0	255,0	995,0	950,0	32	22,0	388,3	300,0	22,0	3,0
A	G 3410	1.085,0	385,0	160,0	275,0	1.070,0	1.025,0	32	24,0	287,6	265,0	24,0	3,0
B	G 3420	1.085,0	385,0	160,0	275,0	1.070,0	1.025,0	32	24,0	407,9	310,0	24,0	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	J_2	J_3	m_1	m_2	m_3	S_1	S_2	S_3
	[kgm²]	[kgm²]	[kgm²]	[kg]	[kg]	[kg]	[mm]	[mm]	[mm]
	1,5	4,4	–	23,8	115,5	–	24,0	71,0	–
	1,5	2,1	4,4	23,8	36,1	124,2	24,0	159,0	75,0
	2,1	6,0	–	30,0	132,0	–	24,0	76,0	–
	2,1	3,1	6,1	30,0	47,0	142,0	24,0	167,0	78,0
	3,1	8,6	–	39,0	178,0	–	26,0	94,0	–
	3,1	4,5	8,9	39,0	61,0	190,0	26,0	196,0	96,0
	4,2	13,4	–	46,0	233,0	–	27,0	93,0	–
	4,2	7,2	12,9	46,0	80,0	245,0	27,0	204,0	96,0
	6,5	19,6	–	59,0	288,0	–	29,0	97,0	–
	6,4	10,9	20,8	59,0	102,0	314,0	29,0	214,0	103,0
	9,5	26,8	–	75,0	358,0	–	31,0	107,0	–
	9,5	15,5	28,2	75,0	128,0	392,0	31,0	239,0	114,0
	13,5	38,8	–	92,0	427,0	–	34,0	112,0	–
	13,5	22,4	40,5	92,0	158,0	466,0	34,0	248,0	119,0
	19,3	55,2	–	113,0	521,0	–	37,0	113,0	–
	19,3	34,1	57,2	113,0	203,0	566,0	37,0	259,0	121,0

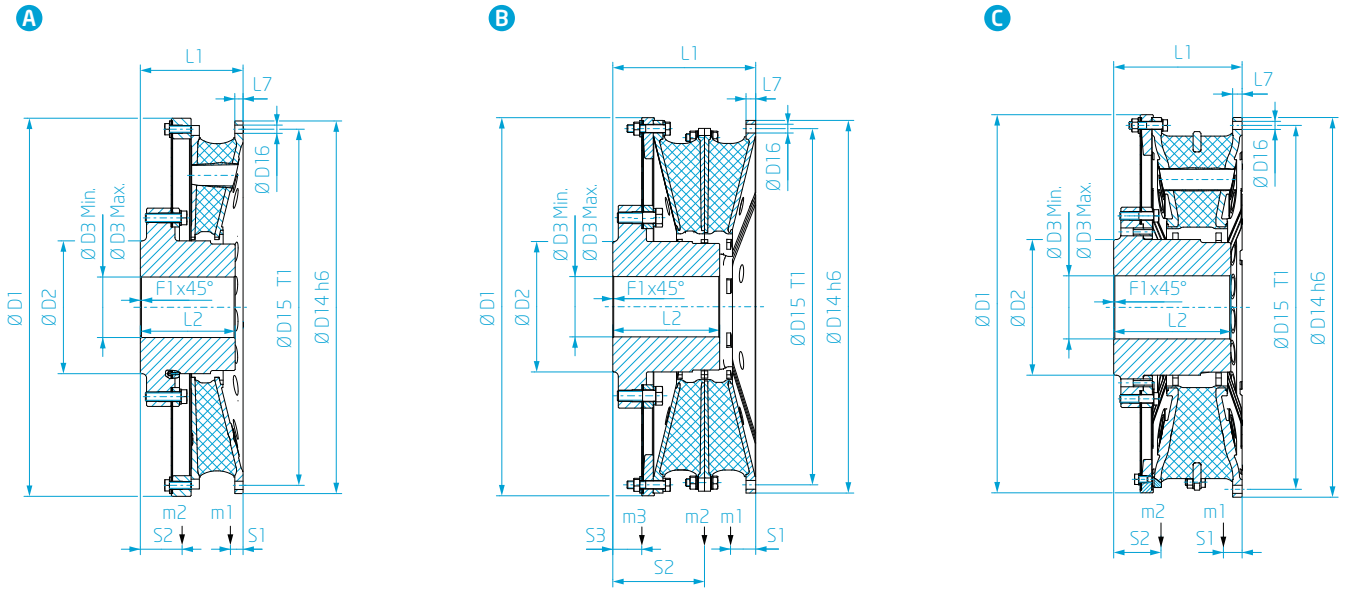
Notas
Notes

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).

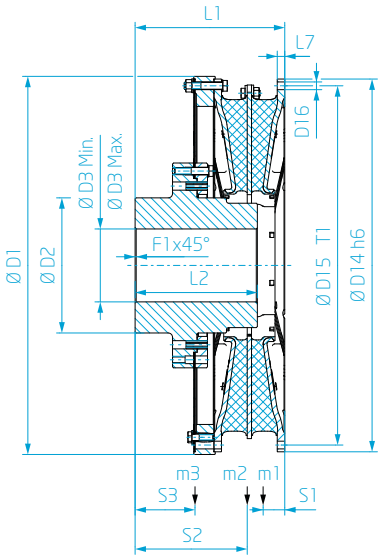
RATO S / RATO S+ SERIE 2100

DATOS GEOMÉTRICOS GEOMETRIC DATA

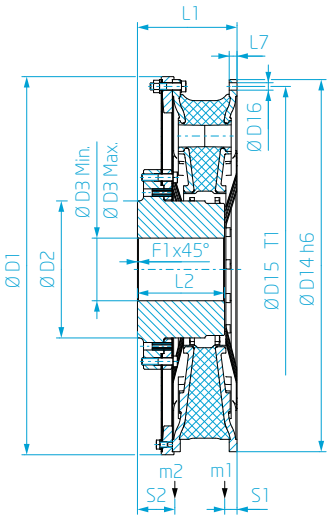


Grupo de montaje Dimension Group		Dimensiones Dimension											
		D_1	D_2	D_3		D_{14}	D_{15}	T_1	D_{16}	L_1	L_2	L_7	F_1
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[-] Pasos / holes	[mm]	[mm]	[mm]	[mm]	[mm]
A	G 3610	1.175,0	413,0	170,0	295,0	1.160,0	1.110,0	32	26,0	340,5	315,0	26,0	4,0
C	G 3810	1.255,0	448,0	200,0	320,0	1.240,0	1.190,0	32	26,0	430,0	385,0	32,0	4,0
A	G 4J10	1.480,0	518,0	230,0	370,0	1.460,0	1.395,0	32	33,0	441,7	410,0	33,0	5,0
B	G 4J20	1.480,0	518,0	230,0	370,0	1.460,0	1.395,0	32	33,0	621,9	480,0	33,0	5,0
A	G 5B10	1.585,0	560,0	250,0	400,0	1.565,0	1.500,0	32	33,0	439,6	400,0	32,0	5,0
B	G 5B20	1.585,0	560,0	250,0	400,0	1.565,0	1.500,0	32	33,0	655,0	500,0	32,0	5,0
C	G 5310	1.710,0	602,0	280,0	430,0	1.685,0	1.615,0	32	36,0	570,0	520,0	42,0	5,0
A	G 5G10	1.710,0	602,0	280,0	430,0	1.685,0	1.615,0	32	36,0	472,9	425,0	35,0	5,0
B	G 5G20	1.710,0	602,0	280,0	430,0	1.685,0	1.615,0	32	36,0	688,6	520,0	35,0	5,0
D	G 5720	1.763,0	630,0	340,0	450,0	1.738,0	1.675,0	32	36,0	697,8	570,0	35,0	5,0
A	G 5810	1.815,0	655,0	300,0	470,0	1.790,0	1.726,0	32	34,0	449,7	410,0	35,0	5,0
B	G 5820	1.815,0	655,0	300,0	470,0	1.790,0	1.726,0	32	34,0	693,0	570,0	35,0	5,0
E	G 6210	1.970,0	700,0	320,0	500,0	1.940,0	1.870,0	32	38,0	508,8	445,0	40,0	5,0
F	G 6220	1.970,0	700,0	320,0	500,0	1.940,0	1.870,0	32	38,0	843,8	625,0	40,0	5,0

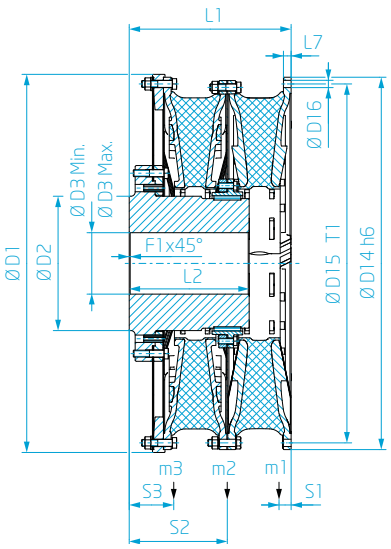
D



E



F



	Momentos de inercia de masa Mass moments of inertia			Masa Mass			Distancia al centro de gravedad Distance to center of gravity		
	J_1	J_2	J_3	m_1	m_2	m_3	S_1	S_2	S_3
	[kgm²]	[kgm²]	[kgm²]	[kg]	[kg]	[kg]	[mm]	[mm]	[mm]
	28,7	75,4	–	143,0	651,0	–	40,0	140,0	–
	63,0	141,0	–	274,0	990,0	–	59,0	160,0	–
	96,6	277,0	–	306,0	1.392,0	–	56,0	174,0	–
	96,6	164,8	293,0	306,0	536,0	1.540,0	56,0	392,0	183,0
	132,8	330,3	–	371,0	1.463,0	–	61,0	175,0	–
	130,4	233,5	384,6	359,0	650,0	1.763,0	60,0	411,0	198,0
	286,8	638,0	–	677,0	2.357,0	–	83,0	210,0	–
	190,4	484,0	–	457,0	1.836,0	–	65,0	189,0	–
	190,4	332,8	540,4	457,0	810,0	2.133,0	65,0	429,0	202,0
	206,0	194,2	742,0	463,0	462,0	2.501,0	49,0	533,0	307,0
	214,0	771,0	–	475,0	2.370,0	–	63,0	174,0	–
	214,0	436,0	900,0	475,0	938,0	2.915,0	63,0	449,0	214,0
	403,0	1.157,0	–	738,0	2.978,0	–	63,0	184,0	–
	403,0	946,0	1.183,0	738,0	1.807,0	3.361,0	63,0	511,0	224,0

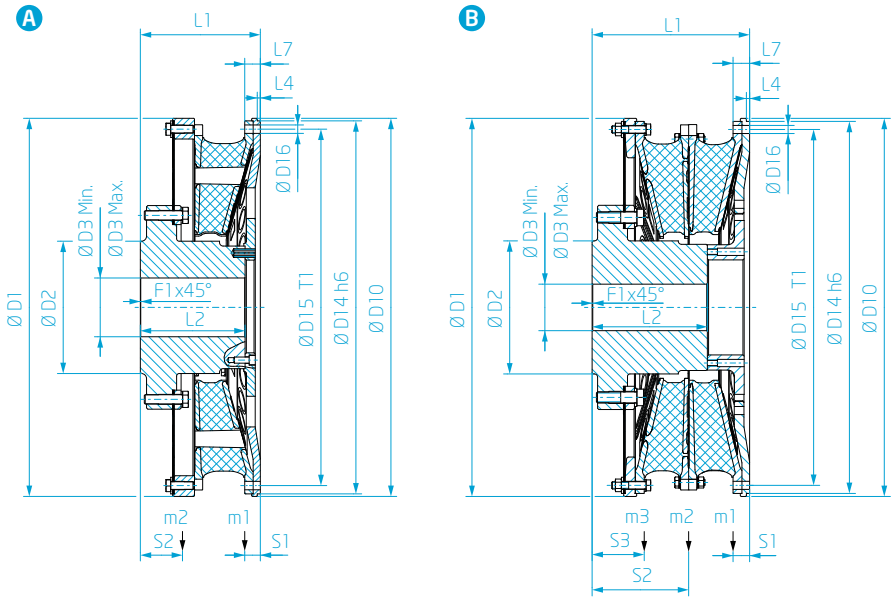
Notas
Notes

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 S / RATO S+ SERIE 2101

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	F_1
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[mm]	[-] Pasos / holes	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
A	G 2110	645,0	224,0	80,0	160,0	645,0	635,0	608,0	32	14,0	197,0	160,0	6,0	29,0	1,6
B	G 2120	645,0	224,0	80,0	160,0	645,0	635,0	608,0	32	14,0	260,0	185,0	6,0	29,0	1,6
A	G 2310	690,0	238,0	110,0	170,0	690,0	680,0	650,0	32	16,0	207,0	170,0	6,0	32,0	1,6
B	G 2320	690,0	238,0	110,0	170,0	690,0	680,0	650,0	32	16,0	275,0	195,0	6,0	32,0	1,6
A	G 2510	740,0	259,0	110,0	185,0	740,0	730,0	700,0	32	16,0	240,0	200,0	6,0	34,0	2,0
B	G 2520	740,0	259,0	110,0	185,0	740,0	730,0	700,0	32	16,0	315,2	225,0	6,0	34,0	2,0
A	G 2710	800,0	280,0	100,0	200,0	800,0	790,0	755,0	32	17,5	250,0	205,0	6,0	33,0	2,0
B	G 2720	800,0	280,0	100,0	200,0	800,0	790,0	755,0	32	17,5	330,0	235,0	6,0	33,0	2,0
A	G 2910	870,0	308,0	110,0	220,0	870,0	860,0	820,0	32	20,0	260,0	215,0	6,0	36,0	2,0
B	G 2920	870,0	308,0	110,0	220,0	870,0	860,0	820,0	32	20,0	349,6	250,0	6,0	36,0	2,0
A	G 3110	935,0	329,0	115,0	235,0	935,0	920,0	880,0	32	20,0	285,0	245,0	8,0	41,0	3,0
B	G 3120	935,0	329,0	115,0	235,0	935,0	920,0	880,0	32	20,0	389,5	285,0	8,0	41,0	3,0
A	G 3310	1.010,0	357,0	150,0	255,0	1.010,0	995,0	950,0	32	22,0	300,0	255,0	8,0	43,0	3,0
B	G 3320	1.010,0	357,0	150,0	255,0	1.010,0	995,0	950,0	32	22,0	409,6	300,0	8,0	43,0	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]	m_1 [kg]	m_2 [kg]	m_3 [kg]	S_1 [mm]	S_2 [mm]	S_3 [mm]
	3,2	4,1	–	50,0	120,0	–	25,0	69,0	–
	3,2	2,1	3,8	50,0	37,0	130,0	25,0	159,0	85,0
	4,6	5,5	–	62,0	140,0	–	26,0	76,0	–
	4,6	3,1	5,3	62,0	47,0	155,0	26,0	168,0	89,0
	6,5	8,1	–	76,0	185,0	–	28,0	93,0	–
	6,5	4,5	7,9	76,0	61,0	205,0	28,0	197,0	108,0
	8,7	12,8	–	87,0	239,0	–	29,0	91,0	–
	8,7	7,2	10,7	87,0	80,0	246,0	29,0	204,0	109,0
	14,0	18,0	–	116,0	294,0	–	32,0	95,0	–
	14,0	10,9	18,0	116,0	102,0	319,0	32,0	214,0	113,0
	19,0	25,0	–	143,0	362,0	–	35,0	107,0	–
	19,0	15,5	29,0	140,0	128,0	423,0	33,0	239,0	132,0
	30,0	36,0	–	183,0	442,0	–	37,0	112,0	–
	30,0	22,4	35,0	183,0	158,0	493,0	37,0	249,0	137,0

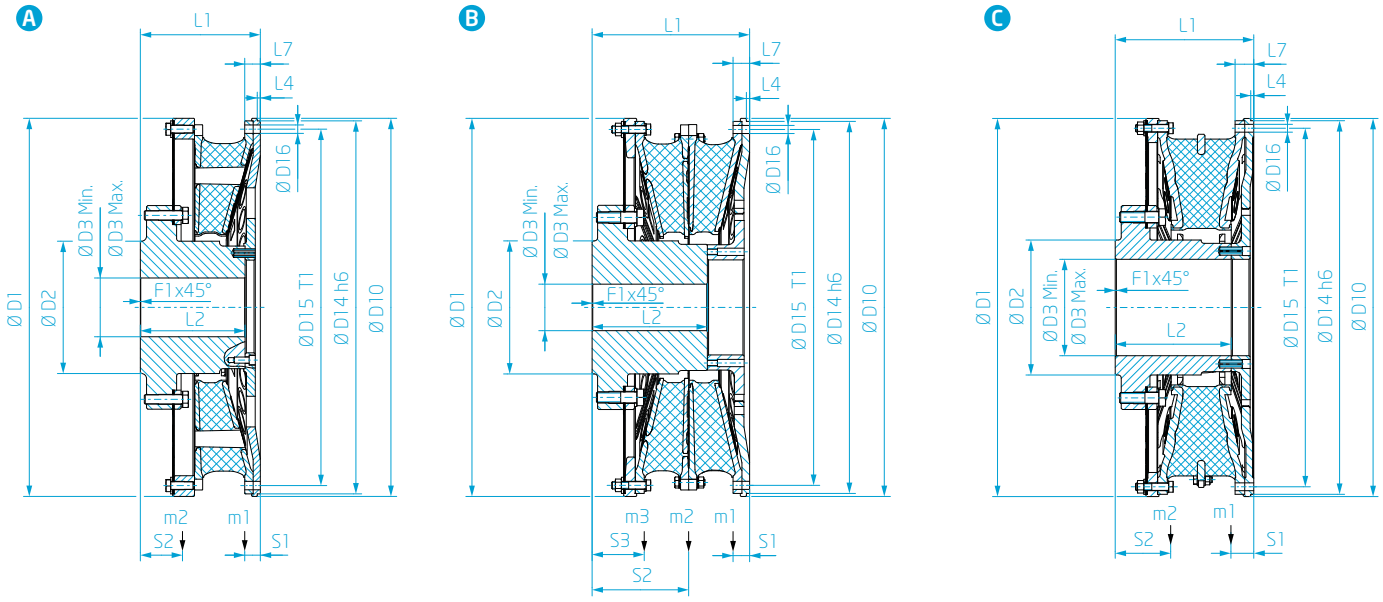
Notas
Notes

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 S / RATO S+ SERIE 2101

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	F_1
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[mm]	[-] Pasos / holes	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
A	G 3410	1.085,0	385,0	160,0	275,0	1.085,0	1.070,0	1.025,0	32	24,0	310,0	265,0	8,0	46,0	3,0
B	G 3420	1.085,0	385,0	160,0	275,0	1.085,0	1.070,0	1.025,0	32	24,0	430,0	310,0	8,0	46,0	3,0
C	G 3810	1.255,0	448,0	200,0	320,0	1.255,0	1.240,0	1.190,0	32	26,0	460,0	385,0	10,0	62,0	4,0
A	G 4J10	1.480,0	518,0	230,0	370,0	1.480,0	1.460,0	1.395,0	32	33,0	469,7	410,0	12,0	61,0	5,0
B	G 4J20	1.480,0	518,0	230,0	370,0	1.480,0	1.460,0	1.395,0	32	33,0	649,7	480,0	12,0	61,0	5,0
A	G 5B10	1.585,0	560,0	250,0	400,0	1.585,0	1.565,0	1.500,0	32	33,0	470,0	400,0	12,0	62,0	5,0
B	G 5B20	1.585,0	560,0	250,0	400,0	1.585,0	1.565,0	1.500,0	32	33,0	685,2	500,0	12,0	62,0	5,0
C	G 5310	1.710,0	602,0	215,0	430,0	1.710,0	1.685,0	1.615,0	32	36,0	590,0	520,0	12,0	84,0	5,0
A	G 5G10	1.710,0	602,0	280,0	430,0	1.710,0	1.685,0	1.615,0	32	36,0	505,0	435,0	12,0	67,0	5,0
B	G 5G20	1.710,0	602,0	280,0	430,0	1.710,0	1.685,0	1.615,0	32	36,0	720,6	520,0	12,0	67,0	5,0
A	G 5810	1.815,0	655,0	300,0	470,0	1.815,0	1.940,0	1.870,0	32	36,0	509,0	410,0	–	60,0	5,0
B	G 5820	1.815,0	655,0	300,0	470,0	1.815,0	1.940,0	1.870,0	32	36,0	753,0	570,0	–	60,0	5,0

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]	m_1 [kg]	m_2 [kg]	m_3 [kg]	S_1 [mm]	S_2 [mm]	S_3 [mm]
44,0	51,0	–	223,0	529,0	–	39,0	135,0	–
44,0	34,1	51,0	223,0	203,0	601,0	39,0	259,0	142,0
96,0	127,0	–	414,0	1.008,0	–	58,0	117,0	–
183,6	285,6	–	546,0	1.488,0	–	59,0	189,0	–
183,8	166,6	267,9	547,0	543,0	1.578,0	59,0	391,0	217,0
262,0	316,0	–	658,0	1.508,0	–	61,0	171,0	–
262,0	226,5	339,0	658,0	641,0	1.921,0	61,0	411,0	235,0
452,0	532,0	–	1.037,0	2.401,0	–	82,0	210,0	–
365,3	506,0	–	807,0	1.998,0	–	64,0	209,0	–
374,0	332,8	491,0	829,0	810,0	2.384,0	64,0	429,0	241,0
641,0	636,0	–	1.146,0	2.354,0	–	53,0	154,0	–
641,0	435,8	669,0	1.146,0	938,0	2.770,0	53,0	450,0	206,0

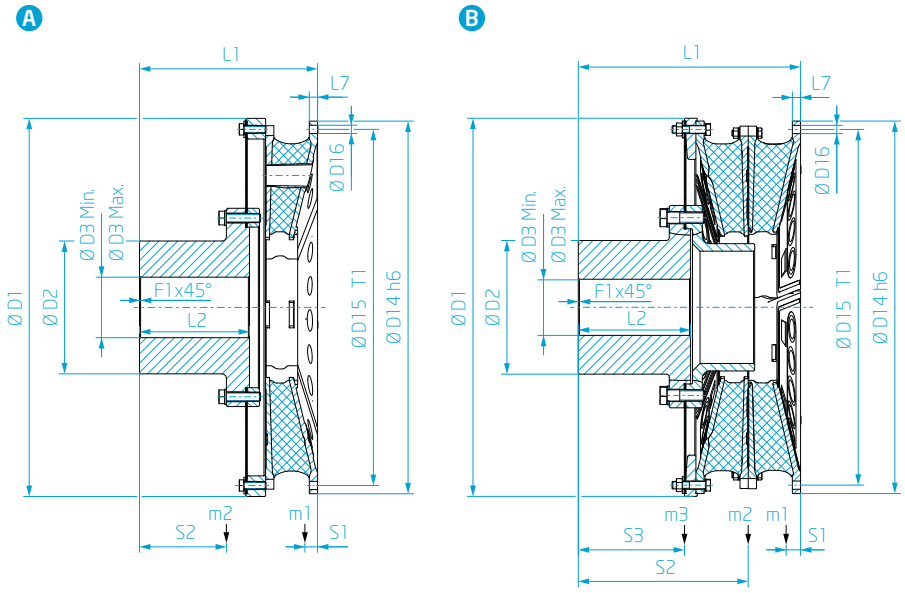
Notas
Notes

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 S / RATO S+ SERIE 2200

DATOS GEOMÉTRICOS GEOMETRIC DATA



Grupo de montaje Dimension Group		Dimensiones Dimension											
		D_1	D_2	D_3		D_{14}	D_{15}	T_1	D_{16}	L_1	L_2	L_7	F_1
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[-] Pasos / holes	[mm]	[mm]	[mm]	[mm]	[mm]
A	G 2110	645,0	224,0	80,0	160,0	635,0	608,0	32	14,0	307,8	185,0	15,4	1,6
B	G 2120	645,0	224,0	80,0	160,0	635,0	608,0	32	14,0	368,5	185,0	15,4	1,6
A	G 2310	690,0	238,0	110,0	170,0	680,0	650,0	32	16,0	323,3	195,0	17,7	1,6
B	G 2320	690,0	238,0	110,0	170,0	680,0	650,0	32	16,0	390,5	195,0	17,7	1,6
A	G 2510	740,0	259,0	110,0	185,0	730,0	700,0	32	16,0	364,9	225,0	19,0	2,0
B	G 2520	740,0	259,0	110,0	185,0	730,0	700,0	32	16,0	439,0	225,0	19,0	2,0
A	G 2710	800,0	280,0	100,0	200,0	790,0	755,0	32	17,5	386,8	235,0	17,0	2,0
B	G 2720	800,0	280,0	100,0	200,0	790,0	755,0	32	17,5	465,0	235,0	17,0	2,0
A	G 2910	870,0	308,0	110,0	220,0	860,0	820,0	32	20,0	410,1	250,0	19,0	2,0
B	G 2920	870,0	308,0	110,0	220,0	860,0	820,0	32	20,0	498,4	250,0	19,0	2,0
A	G 3110	935,0	329,0	115,0	235,0	920,0	880,0	32	20,0	458,7	285,0	22,0	3,0
B	G 3120	935,0	329,0	115,0	235,0	920,0	880,0	32	20,0	561,0	285,0	22,0	3,0
A	G 3310	1.010,0	357,0	150,0	255,0	995,0	950,0	32	22,0	486,7	300,0	22,0	3,0
B	G 3320	1.010,0	357,0	150,0	255,0	995,0	950,0	32	22,0	593,8	300,0	22,0	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]	m_1 [kg]	m_2 [kg]	m_3 [kg]	S_1 [mm]	S_2 [mm]	S_3 [mm]
	1,5	4,4	–	23,8	122,4	–	24,0	153,0	–
	1,5	2,1	4,4	23,8	36,1	131,6	24,0	280,0	155,0
	2,1	6,0	–	30,0	138,0	–	24,0	164,0	–
	2,1	3,1	6,1	30,0	47,0	150,0	24,0	297,0	166,0
	3,1	8,7	–	39,0	185,0	–	26,0	184,0	–
	3,1	4,5	9,1	39,0	61,0	208,0	26,0	336,0	188,0
	4,2	13,5	–	46,0	245,0	–	27,0	194,0	–
	4,2	7,2	13,2	46,0	80,0	259,0	27,0	355,0	195,0
	6,4	19,9	–	59,0	308,0	–	29,0	205,0	–
	6,4	10,9	20,3	59,0	102,0	333,0	29,0	380,0	209,0
	9,5	27,1	–	75,0	382,0	–	31,0	229,0	–
	9,5	15,5	28,8	75,0	128,0	418,0	31,0	429,0	234,0
	15,0	36,0	–	97,0	447,0	–	35,0	225,0	–
	13,5	22,4	41,4	92,0	158,0	500,0	34,0	454,0	251,0

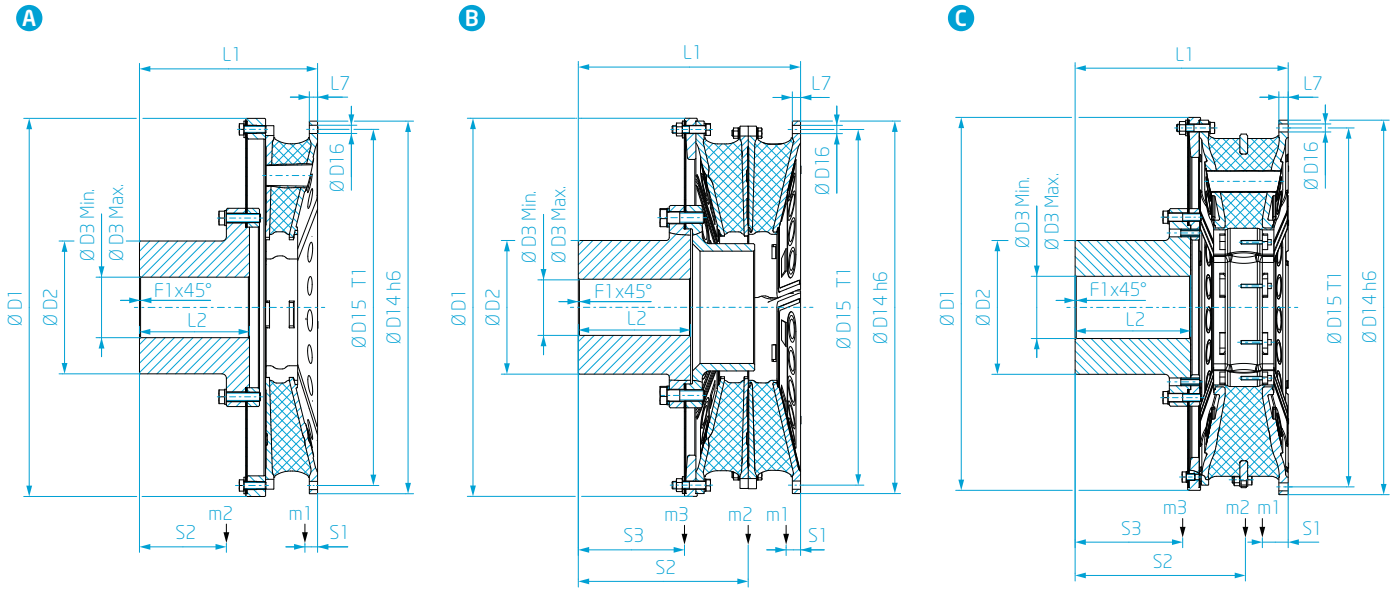
Notas
Notes

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).

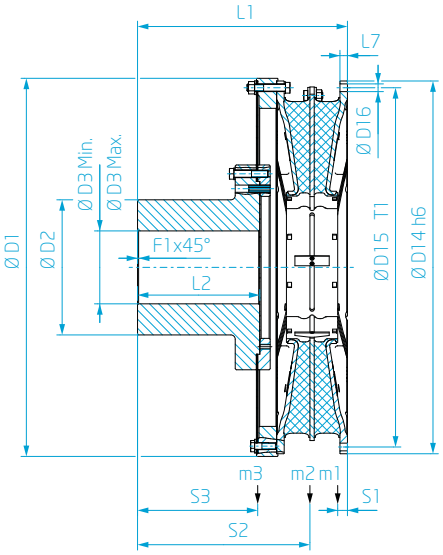
RATO S / RATO S+ SERIE 2200

DATOS GEOMÉTRICOS GEOMETRIC DATA

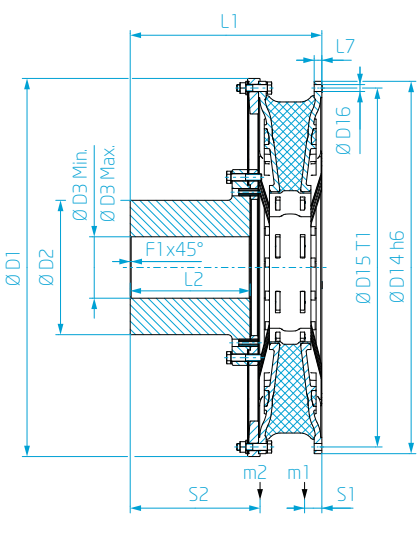


Grupo de montaje Dimension Group		Dimensiones Dimension											
		D_1	D_2	D_3		D_{14}	D_{15}	T_1	D_{16}	L_1	L_2	L_7	F_1
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[-] Pasos / holes	[mm]	[mm]	[mm]	[mm]	[mm]
A	G 3410	1.085,0	385,0	160,0	275,0	1.070,0	1.025,0	32	24,0	507,7	310,0	24,0	3,0
B	G 3420	1.085,0	385,0	160,0	275,0	1.070,0	1.025,0	32	24,0	624,4	310,0	24,0	3,0
C	G 3810	1.255,0	448,0	200,0	320,0	1.240,0	1.190,0	32	26,0	699,6	385,0	32,0	4,0
A	G 4J10	1.480,0	518,0	230,0	370,0	1.460,0	1.395,0	32	33,0	779,7	480,0	33,0	5,0
B	G 4J20	1.480,0	518,0	230,0	370,0	1.460,0	1.395,0	32	33,0	958,2	480,0	33,0	5,0
A	G 5B10	1.585,0	560,0	250,0	400,0	1.565,0	1.500,0	32	33,0	808,8	500,0	32,0	5,0
B	G 5B20	1.585,0	560,0	250,0	400,0	1.565,0	1.500,0	32	33,0	1.013,0	500,0	32,0	5,0
C	G 5310	1.710,0	602,0	280,0	430,0	1.685,0	1.615,0	32	36,0	958,8	520,0	42,0	5,0
A	G 5G10	1.710,0	602,0	280,0	430,0	1.685,0	1.615,0	32	36,0	847,8	520,0	35,0	5,0
B	G 5G20	1.710,0	602,0	280,0	430,0	1.685,0	1.615,0	32	36,0	1.063,4	520,0	35,0	5,0
D	G 5720	1.763,0	630,0	340,0	450,0	1.738,0	1.675,0	32	36,0	978,8	570,0	35,0	5,0
A	G 5810	1.815,0	655,0	300,0	470,0	1.790,0	1.726,0	32	34,0	893,6	570,0	35,0	5,0
B	G 5820	1.815,0	655,0	300,0	470,0	1.790,0	1.726,0	32	34,0	1.136,8	570,0	35,0	5,0
E	G 6210	1.970,0	700,0	250,0	500,0	1.940,0	1.870,0	32	36,0	998,8	625,0	40,0	5,0
F	G 6220	1.970,0	700,0	250,0	500,0	1.940,0	1.870,0	32	36,0	1.333,8	625,0	40,0	5,0

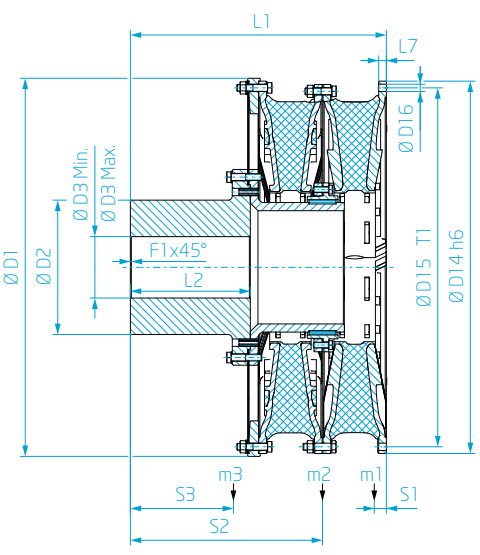
D



E



F



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]	m_1 [kg]	m_2 [kg]	m_3 [kg]	S_1 [mm]	S_2 [mm]	S_3 [mm]
19,3	55,4	–	113,0	547,0	–	37,0	255,0	–
19,3	34,1	58,4	113,0	203,0	607,0	37,0	475,0	262,0
63,0	143,0	–	276,0	1.006,0	–	59,0	330,0	–
97,8	283,4	–	311,0	1.508,0	–	57,0	391,0	–
97,8	166,6	301,0	311,0	543,0	1.670,0	57,0	728,0	400,0
132,8	343,2	–	371,0	1.671,0	–	61,0	402,0	–
130,4	233,5	392,4	359,0	650,0	1.889,0	60,0	769,0	419,0
286,8	640,0	–	677,0	2.377,0	–	83,0	453,0	–
190,4	504,5	–	457,0	2.056,0	–	65,0	422,0	–
190,4	332,8	551,0	457,0	810,0	2.282,0	65,0	804,0	438,0
206,0	194,5	745,0	463,0	466,0	2.549,0	49,0	814,0	483,0
214,0	793,0	–	474,0	2.713,0	–	63,0	466,0	–
214,0	436,0	910,0	475,0	938,0	3.060,0	63,0	893,0	495,0
397,0	1.049,0	–	728,0	3.255,0	–	63,0	504,0	–
397,0	927,0	1.480,0	728,0	1.792,0	4.309,0	63,0	982,0	570,0

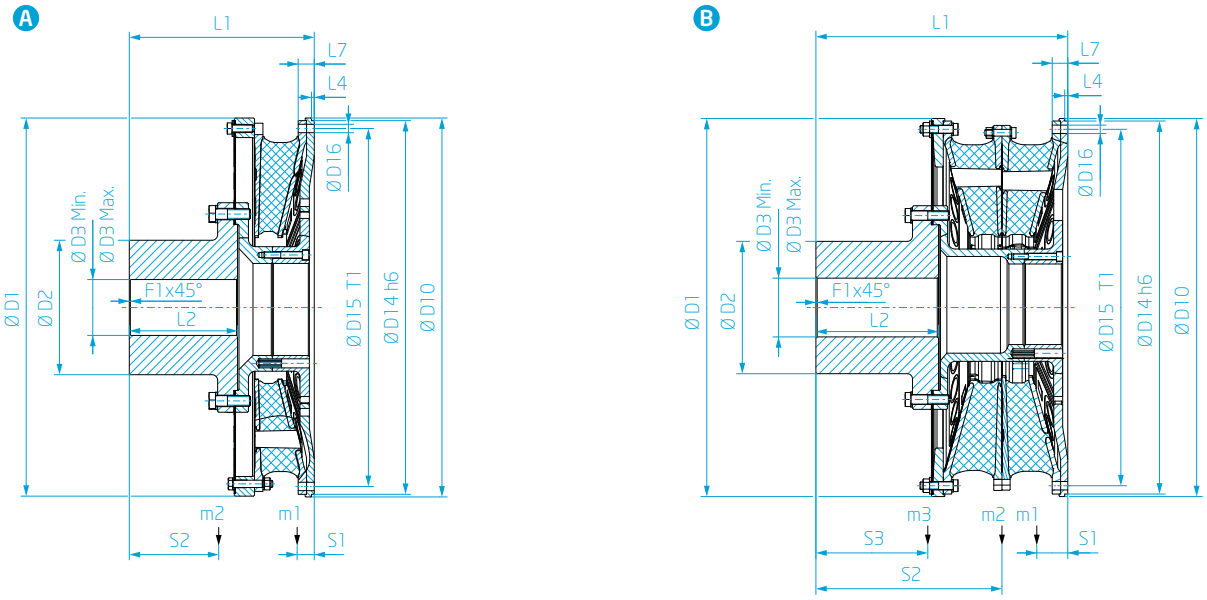
Notas
Notes

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).

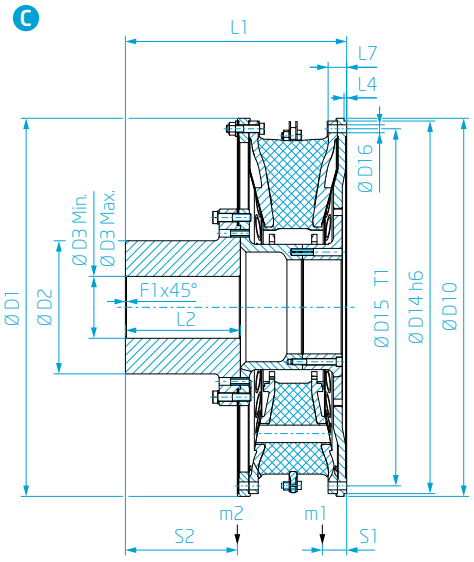
RATO S / RATO S+ SERIE 2201

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	F_1
		[mm]	[mm]	[mm] Min.	[mm] Máx. / Max.	[mm]	[mm]	[mm]	[-] Pasos / holes	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
A	G 2110	645,0	224,0	80,0	160,0	645,0	635,0	608,0	32	14,0	321,0	185,0	6,0	29,0	1,6
A	G 2310	690,0	238,0	110,0	170,0	690,0	680,0	650,0	32	16,0	337,5	195,0	6,0	32,0	2,0
A	G 2510	740,0	259,0	110,0	185,0	740,0	730,0	700,0	32	16,0	380,1	225,0	6,0	34,0	2,0
A	G 2710	800,0	280,0	100,0	200,0	800,0	790,0	755,0	32	17,5	403,0	235,0	6,0	33,0	2,0
A	G 2910	870,0	308,0	110,0	220,0	870,0	860,0	820,0	32	20,0	427,0	250,0	6,0	36,0	2,0
A	G 3110	935,0	329,0	115,0	235,0	935,0	920,0	880,0	32	20,0	478,0	285,0	8,0	41,0	3,0
A	G 3310	1.010,0	357,0	150,0	255,0	1.010,0	995,0	950,0	32	22,0	507,7	300,0	8,0	43,0	3,0
A	G 3410	1.085,0	385,0	160,0	275,0	1.085,0	1.070,0	1.025,0	32	24,0	530,0	310,0	8,0	46,0	3,0
C	G 3810	1.255,0	448,0	200,0	320,0	1.255,0	1.240,0	1.190,0	32	26,0	729,6	385,0	10,0	62,0	4,0
A	G 4J10	1.480,0	518,0	230,0	370,0	1.480,0	1.460,0	1.395,0	32	33,0	808,0	480,0	12,0	61,0	5,0
B	G 4J20	1.480,0	518,0	230,0	370,0	1.480,0	1.460,0	1.395,0	32	33,0	986,0	480,0	12,0	61,0	5,0
A	G 5B10	1.585,0	560,0	250,0	400,0	1.585,0	1.565,0	1.500,0	32	33,0	839,0	500,0	12,0	62,0	5,0
B	G 5B20	1.585,0	560,0	250,0	400,0	1.585,0	1.565,0	1.500,0	32	33,0	1.043,0	500,0	12,0	62,0	5,0
C	G 5310	1.710,0	602,0	280,0	430,0	1.710,0	1.685,0	1.615,0	32	36,0	1.000,8	520,0	12,0	84,0	5,0
A	G 5G10	1.710,0	602,0	280,0	430,0	1.710,0	1.685,0	1.615,0	32	36,0	880,0	520,0	12,0	67,0	5,0
B	G 5G20	1.710,0	602,0	280,0	430,0	1.710,0	1.685,0	1.615,0	32	36,0	1.095,5	520,0	12,0	67,0	5,0
A	G 5810	1.815,0	655,0	300,0	470,0	1.940,0	1.940,0	1.870,0	32	36,0	954,0	570,0	–	60,0	5,0
B	G 5820	1.815,0	655,0	300,0	470,0	1.940,0	1.940,0	1.870,0	32	36,0	1.197,0	570,0	–	60,0	5,0

C



Momentos de inercia de masa Mass moments of inertia			Masa Mass			Distancia al centro de gravedad Distance to center of gravity		
J_1	J_2	J_3	m_1	m_2	m_3	S_1	S_2	S_3
[kgm²]	[kgm²]	[kgm²]	[kg]	[kg]	[kg]	[mm]	[mm]	[mm]
3,2	4,3	–	50,0	140,0	–	25,0	159,0	–
4,6	5,7	–	62,0	163,0	–	26,0	167,0	–
6,2	8,9	–	78,0	205,0	–	28,0	193,0	–
8,7	13,0	–	87,0	276,0	–	29,0	200,0	–
12,8	20,9	–	109,4	354,7	–	31,0	223,0	–
20,0	27,0	–	143,0	430,0	–	35,0	241,0	–
28,0	42,0	–	174,0	531,0	–	36,0	270,0	–
39,0	59,0	–	213,0	644,0	–	38,0	280,0	–
96,0	135,0	–	414,0	1.157,0	–	58,0	346,0	–
191,0	282,0	–	548,0	1.744,0	–	56,0	401,0	–
184,5	166,6	314,6	547,0	543,0	1.858,0	57,0	728,0	447,0
262,0	344,0	–	658,0	1.984,0	–	61,0	420,0	–
256,0	226,5	414,0	663,0	641,0	2.146,0	60,0	769,0	474,0
452,0	291,0	–	1.037,0	2.626,0	–	67,0	414,0	–
374,0	497,0	–	829,0	2.453,0	–	64,0	440,0	–
374,0	332,8	500,0	829,0	810,0	2.547,0	64,0	804,0	474,0
641,0	673,0	–	1.146,0	2.928,0	–	53,0	439,0	–
641,0	435,8	689,0	1.146,0	938,0	3.014,0	53,0	894,0	474,0

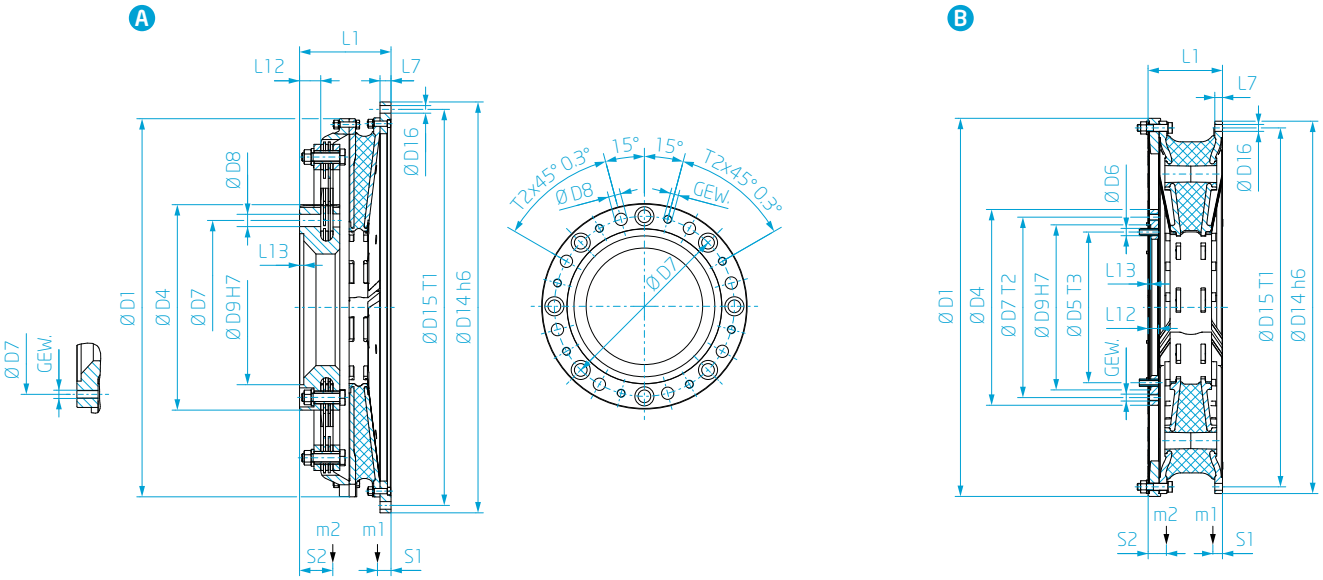
Notas
Notes

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 S / RATO S+ SERIE 2300

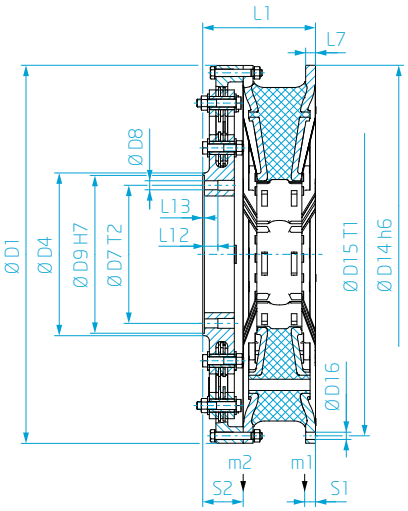
DATOS GEOMÉTRICOS GEOMETRIC DATA



Grupo de montaje / Dimension Group — Dimensiones / Dimension

		D_1 [mm]	D_4 [mm]	D_5 [mm]	T_3 [-] Pasos / holes	D_6 [mm]	D_7 [mm]	T_2 [-] Pasos / holes	GEW. [mm]	D_8 [mm]	D_9 [mm]	D_{14} [mm]	D_{15} [mm]	T_1 [-] Pasos / holes	D_{16} [mm]
A	G 4610	1.480,0	770,0	–	–	–	675,0	8	M30	48,0	580,0	1.460,0	1.395,0	32	33,0
A	G 4910	1.585,0	830,0	–	–	–	725,0	8	M33	48,0	620,0	1.565,0	1.500,0	32	33,0
A	G 5410	1.710,0	895,0	–	–	–	785,0	8	M36	53,0	675,0	1.685,0	1.615,0	32	36,0
A	G 6010	1.790,0	970,0	–	–	–	850,0	8	M39	58,0	730,0	1.940,0	1.870,0	32	36,0
B	G 6210	1.970,0	1.020,0	785,0	24	38,0	940,0	24	M36	–	860,0	1.940,0	1.870,0	32	36,0
A	G 6510	1.930,0	1.045,0	–	–	–	915,0	8	M42	63,0	785,0	2.100,0	2.020,0	32	39,0
B	G 6810	2.115,0	1.150,0	880,0	24	38,3	1.060,0	24	M36	–	970,0	2.085,0	2.010,0	32	38,0
A	G 7010	2.070,0	1.130,0	–	–	–	990,0	8	M45	68,0	850,0	2.250,0	2.165,0	32	42,0
C	G 7310	2.300,0	960,0	–	–	–	840,0	48	–	55,0	960,0	2.300,0	2.210,0	48	42,0

C



Dimensiones Dimension				Momentos de inercia de masa Mass moments of inertia		Masa Mass		Distancia al centro de gravedad Distance to center of gravity	
L_1 [mm]	L_7 [mm]	L_{12} [mm]	L_{13} [mm]	J_1 [kgm²]	J_2 [kgm²]	m_1 [kg]	m_2 [kg]	S_1 [mm]	S_2 [mm]
350,0	12,0	110,0	20,0	100,0	228,0	288,0	932,0	47,0	130,0
373,5	12,0	110,0	20,0	136,0	327,0	343,0	1.154,0	51,0	138,0
395,5	12,0	110,0	20,0	197,0	465,0	425,0	1.415,0	54,0	145,0
431,9	52,0	100,0	20,0	422,0	660,0	690,0	1.706,0	63,0	153,0
387,8	40,0	54,6	7,2	396,8	881,0	727,5	1.463,5	63,0	74,0
462,9	60,0	110,0	20,0	630,0	924,0	866,0	2.060,0	69,0	161,0
457,8	40,0	60,5	7,2	523,2	1.284,9	840,0	1.828,0	76,0	93,0
486,0	58,5	110,0	20,0	803,0	1.314,0	970,0	2.538,0	72,0	169,0
686,0	60,0	80,0	10,0	2.454,3	5.128,3	3.415,0	6.814,0	118,0	248,0

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 S / RATO S+

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 S

Hemos decodificado aquí el código de producto de un RATO S **(G 381T)**, Tamaño 38, 1 fila, Rigidez del elemento T, Serie 2100.

DATOS DE RENDIMIENTO PERFORMANCE

Tipo de acoplamiento Type of Coupling		T_{KN}	T_{Kmax1}	$T_{}$
		[kNm]	[kNm]	[k
Tamaño Size	Grupo de montaje Dimension Group	Par nominal Nominal Torque	Par máx.$_1$ Max. Torque$_1$	
G 381T	G3810	125,0	146,0	5

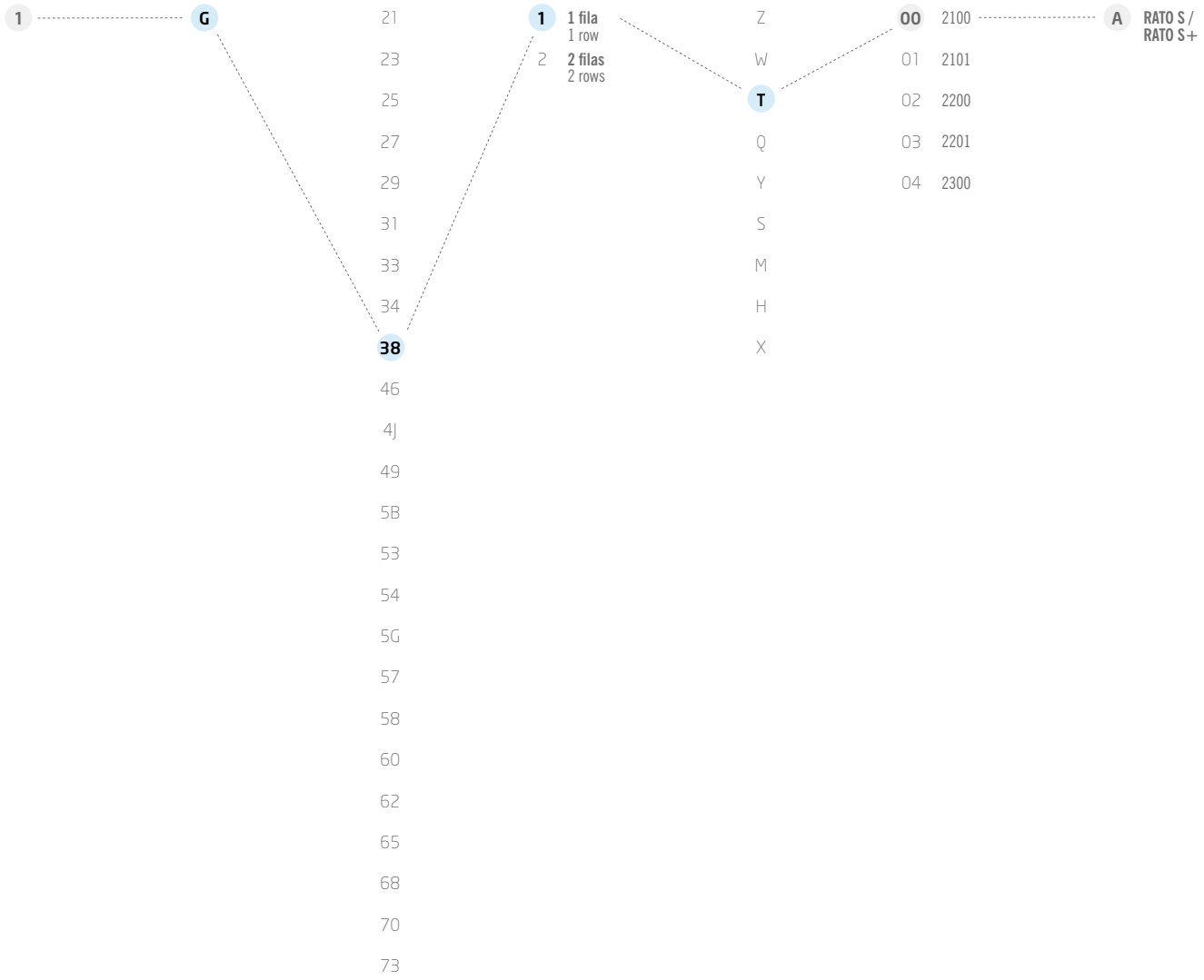
Extracto de Datos de rendimiento. Para más información, consulte la página 08 ff.

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

PRODUCT CODE EXAMPLE RATO S

We have decoded here the product code of a RATO S **(G 381T)**, Size 38, 1 row, Element stiffness T, Series 2100.

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**	**38**	**1**	**T**	00	A



SERVICIO-SERVICE

PARA MÁS INFORMACIÓN, POR FAVOR, VISITE NUESTRA WEB WWW.VULKAN.COM
FOR FURTHER INFORMATION, PLEASE REFER TO OUR WEBSITE WWW.VULKAN.COM

RATO S / RATO S+
www.vulkan.com/es-es/couplings/productos/acoplamientos-altamente-flexibles/rato-s-s+

RATO S / RATO S+
www.vulkan.com/en-us/couplings/products/highly-flexible-couplings/rato-s-s+

CATÁLOGOS Y FOLLETOS
www.vulkan.com/es-es/couplings/descargas

CATALOGUES & BROCHURES
www.vulkan.com/en-us/couplings/downloads-videos

PORTAL DE INGENIERÍA VULKAN
www.vulkan.com/es-es/couplings/servicios/portal-de-ingeniería-vulkan

VULKAN ENGINEERING PORTAL
www.vulkan.com/en-us/couplings/service/vulkan-engineering-portal

SELECTOR DE PRODUCTOS
www.vulkan.com/es-es/couplings/servicios/selección-de-productos

PRODUCT SELECTOR
www.vulkan.com/en-us/couplings/service/product-selector

DISTRIBUIDORES AUTORIZADOS
www.vulkan.com/es-es/couplings/contacto

AUTHORISED DISTRIBUTORS
www.vulkan.com/en-us/couplings/contact

VÍDEOS
www.vulkan.com/es-es/couplings/descargas/videos

VIDEOS
www.vulkan.com/en-us/couplings/downloads-videos/videos

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