D2C
Designed to Customer

Reich

iTOK

Highly flexible industrial couplings for flexibly mounted engines

www.reich-kupplungen.com

SIMPLY **POWERFUL.**

D2C – Designed to Customer

The guiding principle of Designed to Customer is the recipe for success behind REICH. In addition to the catalogue products, we supply our customers with couplings developed to their specific requirements. The designs are mainly based on modular components to provide effective and efficient customer solutions. The special nature of our close cooperation with our partners ranges from; consulting, development, design, manufacture and integration to existing environments, to customer-specific production, logistics concepts and after-sales service - worldwide. This customer-oriented concept applies to both standard products and production in small batch sizes.

The company policy at REICH embraces, first and foremost, principles such as customer satisfaction, flexibility, quality, prompt delivery and adaptability to the requirements of our customers.

REICH supplies not only a coupling, but a solution:
Designed to Customer – SIMPLY **POWERFUL.**

D2C
Designed to Customer

iTOK
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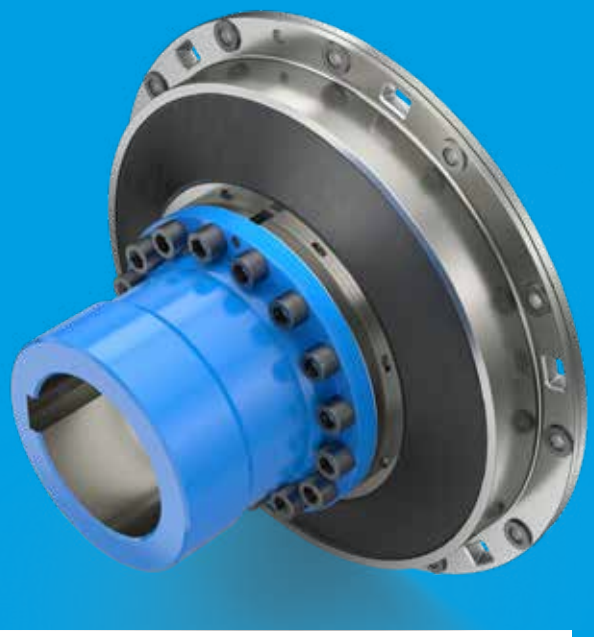
General Technical Description



iTOK

Highly flexible industrial couplings for flexibly mounted engines

The highly flexible iTOK coupling has been specially designed for applications requiring extremely low torsional stiffness. Furthermore it is particularly well suited to the compensation of axial and radial displacements of flexibly mounted engines. The wide range of flexible coupling elements and adaptive designs provides standard solutions for a wide variety of different tasks. These can be complemented by specific customised designs on request (D2C).

The flexible element is designed to combine high torque transmission capacity and high displacement capacity with high speed capability. Its rigidity can be adapted to requirements by selecting different rubber qualities. The adaptive designs are based on the standard flywheel adapter dimensions according to SAE J 620. The iTOK coupling series comprises coupling sizes for a torque range from 600 Nm to 60 000 Nm.

The extremely low torsional stiffness allows for a safe and over critical layout of the coupling. During start and stop operations, the resonance range is passed through quickly, and excellent de-coupling between the combustion engine and the driven machine is achieved over the entire operating speed range.

The iTOK coupling enables direct connection between the engine and the driven machine and is capable of compensating for misalignments resulting from the flexible mounting without requiring any additional components. Most versions even allow for radial disassembly. Restoring forces remain within the permissible limits despite good displacement capability, with a significant reduction in assembly effort and smooth running of the drive (noise reduction).

The iTOK couplings comply with ATEX explosion protection. They are certified according to Directive 2014/34/EU and may be used in explosive environments (categories 2 + 3). ATEX documentation to supplement the operating instructions is available on request.

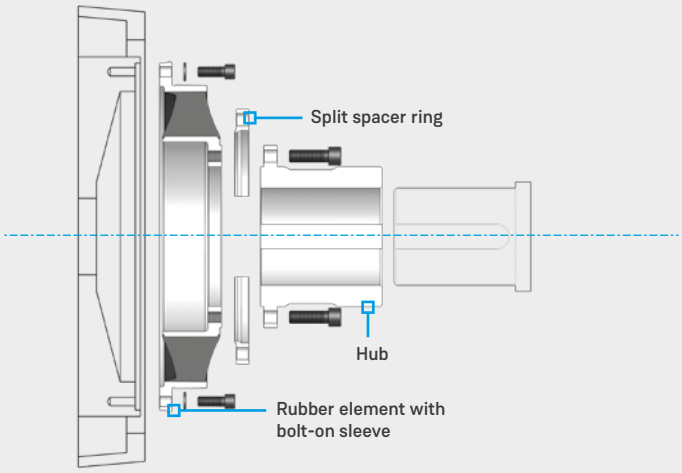
iTOK
Advantages and Uses

Key features and benefits of the iTOK coupling:

➜ Highly flexible transmission element with high torsional elasticity with different shore hardnesses	➜ Optimal torsional vibration tuning with shifting of resonances into non-critical operating ranges. Preserves your drive train
➜ High torsional vibration and shock load damping capability	➜ Drive train protection for lower lifecycle costs (LCC)
➜ Compensation of misalignments and easy positioning of the drive and drive train possible	➜ Little assembly effort Cost savings due to fast work processing
➜ Direct connection to flywheels according to customer specifications Ready-to-install custom solution	➜ Easier installation Fewer components Low investment costs
➜ Diverse designs achievable with modular construction	➜ Large field of application Custom-fit and cost-effective solution
➜ Compensation of axial, radial and angular displacements	➜ Your system achieves a high level of operational stability with reduced loads, thereby increasing your productivity.
➜ Radial (dis)assembly of the coupling element	➜ Short installation and repair times resulting in high economic efficiency
➜ Maintenance-free	➜ Little effort during the period of use You have fewer downtimes. Less maintenance for optimised operating costs
➜ Extended range of application due to Atex certification in accordance with Directive 2014/34/EU Ex	➜ Use also possible in explosive atmosphere with corresponding safety requirements

iTOK
Standard Types

Type iTOK...F2K

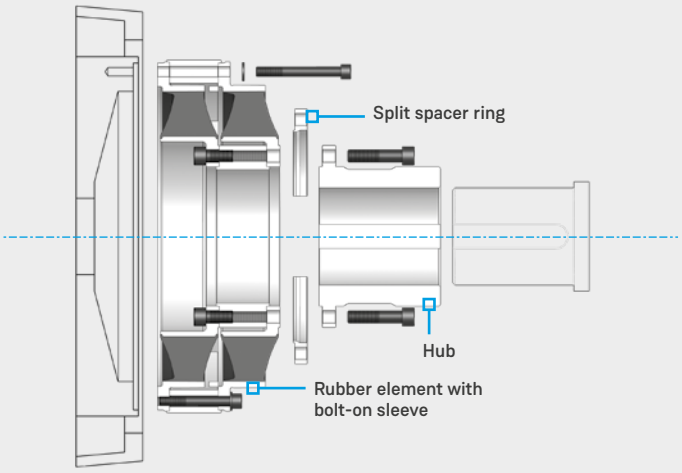


Flange coupling for radial element change

Type iTOK...F2K allows the detached element to be replaced without moving the coupled machines, provided that the shaft of the driven machine does not protrude from the coupling hub.

Advantage: possible to change element without having to move the coupled machines!

Type iTOK...D F2K

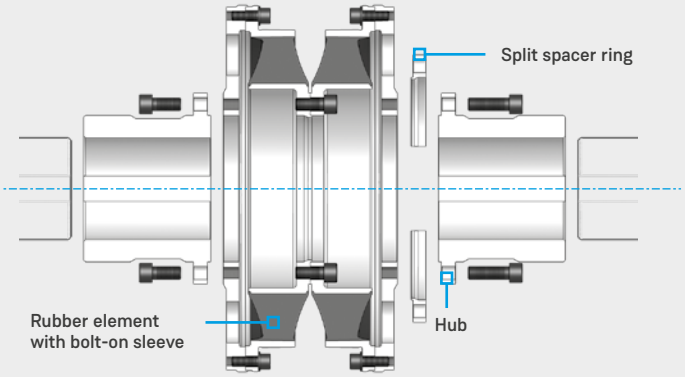


Flange coupling for radial element change

In type iTOK...D F2K, two coupling elements acting in parallel are used. It is therefore designed for the transmission of higher torques. This type enables the flexible coupling elements to be replaced without moving the coupled machines.

Advantage: possible to change elements without having to move the coupled machines! High torque transmission capacity in the most confined spaces.

Type iTOK...R TK



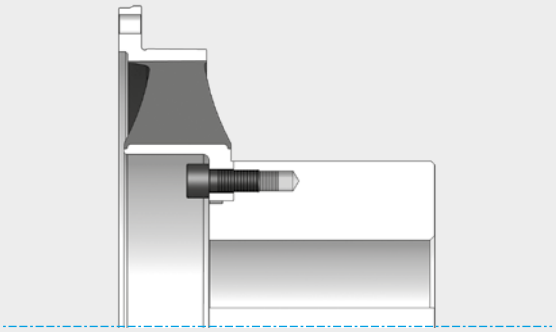
Shaft coupling for radial element change

The iTOK...R TK design uses two coupling elements acting in series. This provides increased coupling flexibility.
This type enables the flexible coupling elements to be replaced without moving the coupled machines.

Advantage: high coupling elasticity. possible to change elements without having to move the coupled machines!

Flange coupling

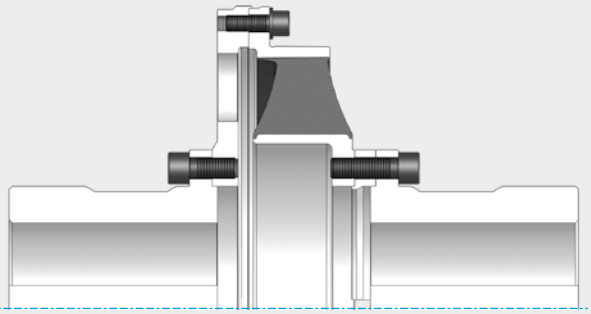
with hub and coupling element.



Type iTOK...F2

Shaft coupling

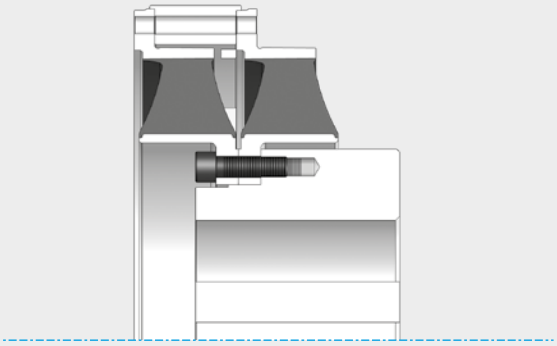
coupling element with separable flange, spacer ring and two hubs.



Type iTOK...TK

Flange coupling

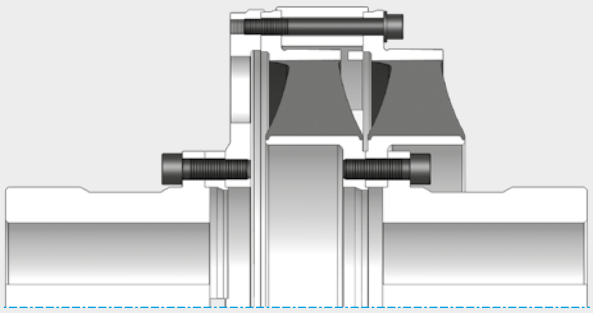
with hub and two coupling elements operating in parallel.



Type iTOK...D F2

Shaft coupling

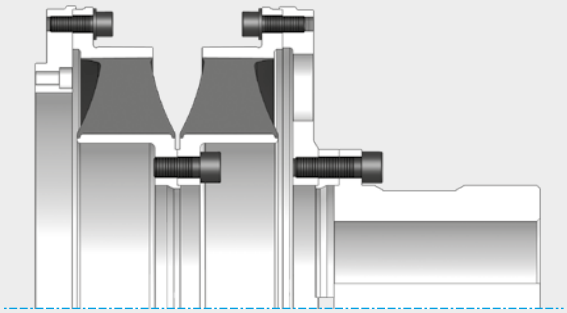
with two coupling elements acting in parallel, separable flange, spacer ring and two hubs.



Type iTOK...D TK

Flange coupling

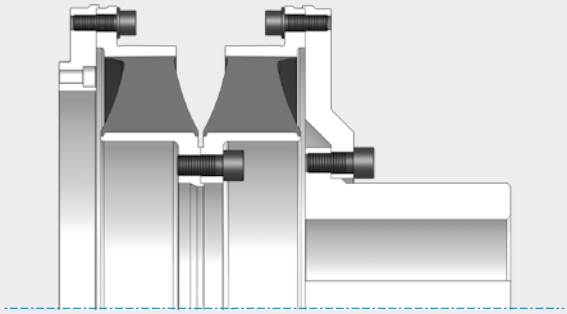
with two coupling elements acting in series, separable flange, spacer ring, adapter and hub.



Type iTOK...R F2K with separable flange

Flange coupling

with two coupling elements acting in series, union flange, spacer ring, adapter and hub.



Type iTOK...R F2K with union flange

iTOK

General Technical Data

F2K standard version with 1 element in natural/synthetic caoutchouc

Coupling size	Element version	Nominal torque T_{KN} [Nm]	Maximum torque $T_{K\,max}$ [Nm]	Continuous fatigue torque $T_{KW\,(10\,Hz)}$ [Nm]	Power loss $P_{KV\,(30\,°C)}$ [W]	Dynamic torsional rigidity $C_{T\,dyn}$ [Nm/rad]	Axial rigidity C_a [N/ mm]	Radial rigidity C_r [N/ mm]	Angular rigidity C_w [Nm/°]	Flange size SAE J 620	Max. speed n_{max} [min^{-1}]
iTOK 600	HN WN NN SN	600	1500	200	68 73 79 67	1170 1640 2540 3600	180 250 380 540	618 869 1350 1910	11 16 24 34	8	7800
iTOK 1000	HN WN NN SN	1000	2500	330	121 130 139 118	1800 2520 3900 5500	180 260 400 560	639 897 1390 1970	16 23 36 50	10	6400
iTOK 1600	HN WN NN SN	1600	4000	530	139 149 160 136	4000 5700 8800 12400	290 400 620 880	989 1390 2160 3050	38 54 83 118	11,5	5700
iTOK 2300	HN WN NN SN	2300	5750	770	214 228 245 208	5500 7800 12100 17100	360 510 790 1120	1300 1820 2820 3990	55 78 121 171	11,5	5400
iTOK 3500	HN WN NN SN	3500	8750	1200	370 393 424 360	7800 11000 17000 24000	280 400 610 870	942 1330 2050 2900	69 97 150 212	14	4100
iTOK 5000	HN WN NN SN	5000	12500	1700	550 590 634 537	10500 14700 22800 32300	410 570 880 1250	1410 1980 3060 4340	102 143 221 313	14	4100
iTOK 6500	HN WN NN SN	6500	16250	2200	541 576 622 527	17900 25200 38900 55100	630 890 1380 1950	2280 3200 4960 7020	184 258 399 565	14	4100
iTOK 9000	HN WN NN SN	9000	22500	3000	621 663 714 605	29000 40700 63000 89200	660 930 1440 2040	2320 3250 5040 7130	281 394 610 864	18	3400
iTOK 12500	HN WN NN SN	12500	31250	4200	875 933 1010 854	40300 56700 87700 124000	990 1390 2150 3050	3660 5140 7960 11300	436 612 947 1350	18	3400
iTOK 18000	HN WN NN SN	18000	45000	6000	1350 1440 1550 1320	53400 75000 116000 164000	850 1190 1840 2610	3000 4210 6520 9230	527 741 1150 1630	21	2800
iTOK 24000	HN WN NN SN	24000	60000	8000	1310 1390 1500 1270	98000 138000 213000 302000	1600 2250 3490 4940	5950 8370 13000 18400	1090 1520 2360 3330	21	2800
iTOK 30000	HN WN NN SN	30000	75000	10000	1540 1640 1770 1500	130000 183000 283000 401000	1900 2670 4130 5850	7120 10100 15500 22000	1460 2050 3180 4490	24	2600

D F2K standard version with 2 elements switched in parallel in natural/synthetic caoutchouc

Coupling size	Element version	Nominal torque T_{KN} [Nm]	Maximum torque $T_{K\,max}$ [Nm]	Continuous fatigue torque $T_{KW\,(10\,Hz)}$ [Nm]	Power loss $P_{KV\,(30\,°C)}$ [W]	Dynamic torsional rigidity $C_{T\,dyn}$ [Nm/rad]	Axial rigidity C_a [N/ mm]	Radial rigidity C_r [N/ mm]	Angular rigidity C_w [Nm/°]	Flange size SAE J 620	Max. speed n_{max} [min^{-1}]
iTOK 9000 D	HN WN NN SN	18 000	45 000	6 000	1242 1326 1428 1210	58 000 81 400 126 000 178 400	1320 1860 2880 4080	4640 6500 10 080 14 260	743 1050 1620 2290	18	3400
iTOK 12500 D	HN WN NN SN	25 000	62 500	8 300	1750 1866 2020 1708	80 600 113 400 175 400 248 000	1980 2780 4300 6100	7320 10 280 15 920 22 600	1410 1990 3070 4350	18	2950
iTOK 18000 D	HN WN NN SN	36 000	90 000	12 000	2700 2880 3100 2640	106 800 150 000 232 000 328 000	1700 2380 3680 5220	6000 8420 13 040 18 460	1500 2110 3260 4610	21	2500
iTOK 24000 D	HN WN NN SN	48 000	120 000	16 000	2620 2780 3000 2540	196 000 276 000 426 000 604 000	3200 4500 6980 9880	11 900 16 740 26 000 36 800	3210 4510 6980 9890	24	2350
iTOK 30000 D	HN WN NN SN	60 000	150 000	20 000	3080 3280 3540 3000	260 000 366 000 566 000 802 000	3800 5340 8260 11 700	14 240 20 200 31 000 44 000	4370 6140 9510 13 500	24	2300

R TK standard version with 2 elements switched in series in natural/synthetic caoutchouc

Coupling size	Element version	Nominal torque T_{KN} [Nm]	Maximum torque $T_{K\,max}$ [Nm]	Continuous fatigue torque $T_{KW\,(10\,Hz)}$ [Nm]	Power loss $P_{KV\,(30\,°C)}$ [W]	Dynamic torsional rigidity $C_{T\,dyn}$ [Nm/rad]	Axial rigidity C_a [N/mm]	Radial rigidity C_r [N/mm]	Angular rigidity C_w [Nm/°]	Flange size SAE J 620	Max. speed n_{max} [min^{-1}]
iTOK 600 R	HN WN NN SN	600	1500	200	136 146 158 134	585 820 1270 1800	90 125 190 270	177 249 385 545	6 8 12 17	8	7800
iTOK 1000 R	HN WN NN SN	1000	2500	330	242 260 278 236	900 1260 1950 2750	90 130 200 280	178 250 386 547	8 12 18 25	10	6400
iTOK 1600 R	HN WN NN SN	1600	4000	530	278 298 320 272	2000 2850 4400 6200	145 200 310 440	352 494 765 1090	19 27 42 59	11,5	5700
iTOK 2300 R	HN WN NN SN	2300	5750	770	428 456 490 416	2750 3900 6050 8550	180 255 395 560	399 561 868 1230	28 39 60 85	11,5	5000
iTOK 3500 R	HN WN NN SN	3500	8750	1200	740 786 848 720	3900 5500 8500 12000	140 200 305 435	353 495 766 1090	34 48 75 106	14	4100
iTOK 5000 R	HN WN NN SN	5000	12500	1700	1100 1180 1268 1074	5250 7350 11400 16150	205 285 440 625	438 616 953 1350	51 71 111 157	14	4100
iTOK 6500 R	HN WN NN SN	6500	16250	2200	1082 1152 1244 1054	8950 12600 19450 27550	315 445 690 975	765 1080 1670 2360	92 129 200 283	14	4100
iTOK 9000 R	HN WN NN SN	9000	22500	3000	1242 1326 1428 1210	14500 20350 31500 44600	330 465 720 1020	873 1230 1900 2690	141 197 305 432	18	3400
iTOK 12500 R	HN WN NN SN	12500	31250	4200	1750 1866 2020 1708	20150 28350 43850 62000	495 695 1075 1525	1130 1590 2460 3480	218 306 474 671	18	3400
iTOK 18000 R	HN WN NN SN	18000	45000	6000	2700 2880 3100 2640	26700 37500 58000 82000	425 595 920 1305	1060 1490 2300 3260	264 371 574 812	21	2500
iTOK 24000 R	HN WN NN SN	24000	60000	8000	2620 2780 3000 2540	49000 69000 106500 151000	800 1125 1745 2470	2010 2820 4360 6180	541 760 1180 1670	21	2500
iTOK 30000 R	HN WN NN SN	30000	75000	10000	3080 3280 3540 3000	65000 91500 141500 200500	950 1335 2065 2925	2380 3340 5170 7320	729 1030 1590 2250	24	2300

Shore hardness Sh A and relative damping Ψ

Element version	Sh A	Ψ
HN	48	0.4
WN	56	0.6
NN	66	1.0
SN	74	1.2

i Due to the physical properties of the rubber material, the measurable rubber hardness is subject to a variation that is defined as ± 5° Shore A according to DIN 53505. However, this variation is minimised by our own rubber production.

General Technical Information

The technical data applies only to the complete coupling or the corresponding coupling elements. It is the customer/user's responsibility to ensure that there are no inadmissible loads acting on any of the components. In particular, existing connections, e.g. bolted connections, must be checked with regard to the torques to be transmitted. If necessary, further measures, such as additional reinforcement with pins, may be necessary. It is the customer/user's responsibility to make sure the dimensioning of the shaft and keyed or other connection, e.g. shrinking or clamping connection, is correct. All components that can rust are protected against corrosion as standard.

REICH have an extensive range of couplings and coupling systems to cover nearly every drive configuration. Customised solutions can be developed and manufactured even in small batches or as prototypes. In addition calculation programs are available for all necessary dimensioning.

iTOK
Technical configuration/ materials

Flange:

The flange is used for the connection between the outer ring of the coupling element and the coupling hub. For this purpose there are corresponding bores on the circumference of the coupling flange as well as on the inner diameter. There are also large ventilation holes in the flange. The flange is made of steel, aluminium or cast iron, depending on the coupling size.

Adapter flange:

The adapter flange is made of steel, aluminium or cast iron and is used to connect the coupling element to the drive.

Coupling element:

The highly flexible coupling element consists of an inner sleeve, elastomer body and outer ring; the connection is designed as an elastomer-metal connection. In many applications the outer ring is designed as an SAE connection; other connections can be implemented with an adapter flange. The outer ring and inner sleeve are made of steel, aluminium or cast iron. The flexible part consists of natural or synthetic rubber, depending on the application temperature.

Coupling hub:

The coupling hub is usually made of steel. The coupling hub can be supplied undrilled, pre-drilled or with finished bores and keyways upon the customer's request. It is mounted on the shaft of the driven machine where it is fastened into position. For this purpose, there may be a set screw or threaded bores for an end plate. The coupling hub is screwed together with a coupling element or a flange. Complete couplings come with matching bolts which are included in the scope of supply.

Union flange:

The union flange connects the coupling element to the coupling hub and is used for radial disassembly of the coupling element without moving the two connected units. It is mounted together with the coupling hub and consists of steel, aluminium or cast iron, depending on the coupling size.

Split spacer ring:

The split spacer ring enables radial disassembly of the coupling without having to move the two connected units. It is installed using 2 assembly screws.

Material Overview

Rubber mixture	Ambient temperature	Colour	Identifier
Natural / synthetic caoutchouc, standard version	-40 °C to +80 °C	black	...N
Natural/synthetic caoutchouc in temperature-resistant design	-25°°C to +100°°C	black	...T
Synthetic caoutchouc in temperature-resistant design*)	-25 °C to +120 °C	black	...Y

i *) technical data on request

iTOK

Selection of the Coupling Size

The coupling size, for use in combustion engines, is designed and selected with a view to torsional vibration. A general safety factor of S = 1.3 to 1.5 is to be applied for iTOK couplings for a preliminary design according to the engine torque T_{AN}. The coupling size selection is to be verified for the permissible coupling load by a torsional vibration calculation conducted by us on request.

When using an iTOK coupling in drives with large torque absorption fluctuations of the driven machine, an additional safety factor is to be applied. Take care not to operate the system constantly at resonance frequency in order to avoid damage to the coupling and the aggregates. Further information on torsional vibration analysis and the operation of highly flexible TOK couplings is available on request.

In selecting the coupling size, the following must be observed:

The **nominal torque of the coupling T_{KN}** must be taken into account at every temperature and operating load of the coupling while observing the service factors S (e.g: temperature factor S_t) must be at least equal to the maximum nominal torque on the drive side T_{AN}; the temperature in the immediate vicinity of the coupling must be taken into account.

$$T_{KN} \geq T_{AN} \cdot S_t$$

The **nominal torque on the drive side T_{AN}** is calculated with the driving power P_{AN} and the coupling speed n_{AN}.

$$T_{AN}\,[Nm] = 9\,550 \frac{P_{AN}\,[kW]}{n_{AN}\,[min^{-1}]}$$

The **temperature factor S_t** allows for the decreasing load capacity of the coupling when affected by elevated ambient temperatures in the vicinity of the coupling. In this connection $S_t = S_{t1}$ is valid for standard version and $S_t = S_{t2}$ for silicone version.

Temperature t	60 °C	70 °C	80 °C	>80 °C
S_t	1.25	1.4	1.6	On request

The **maximum torque capacity of the coupling, $T_{K\,max}$** must be at least equal to the highest torque T_{max} encountered in operation while taking the temperature factor S_t into account.

$$T_{K\,max} \geq T_{max} \cdot S_t$$

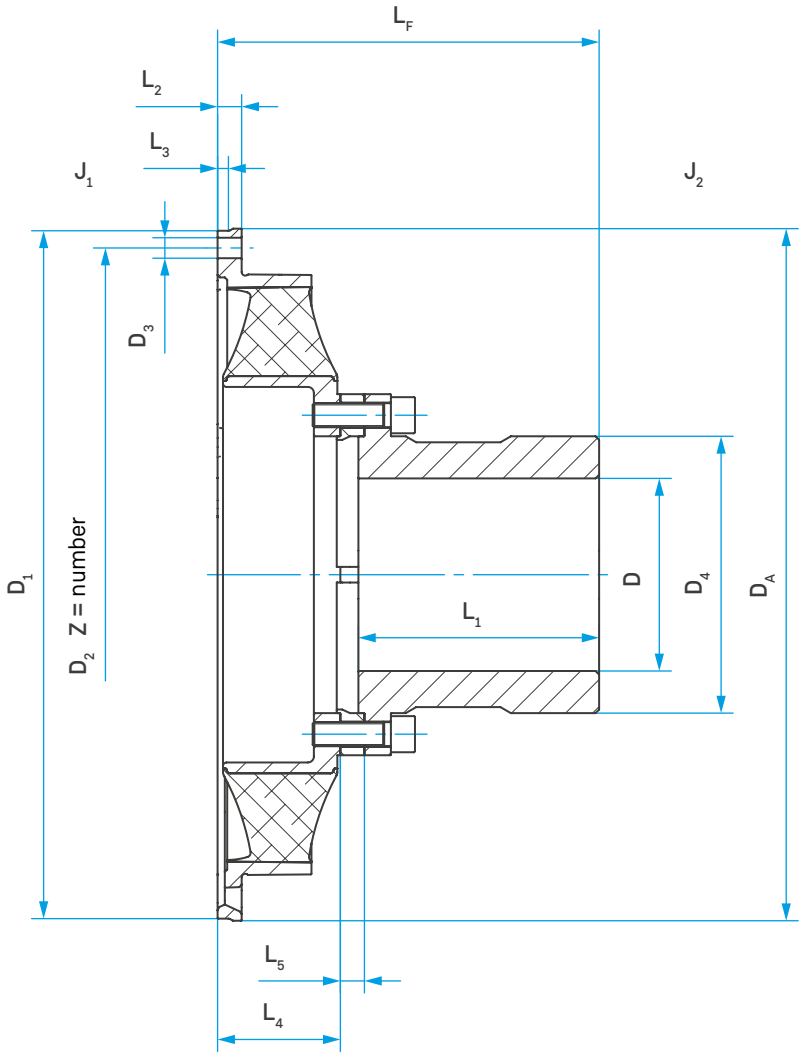
A continuous torsional vibration analysis to verify the coupling selection must confirm that the permissible **continuous fatigue torque T_{KW}** is at least equal to the highest fatigue torque T_W under reversing stresses encountered throughout the operating speed range while taking into account the temperature and frequency.

$$T_{KW\,(10\,Hz)} \geq T_W \cdot S_t \cdot S_f$$

The **frequency factor S_f** allows for the frequency dependence of the permissible continuous fatigue torque under reversing stresses $T_{KW\,(10\,Hz)}$ with an operating frequency f_x.

$$S_f = \sqrt{\frac{f_x}{10}}$$

iTOK Type iTOK...F2K



Coupling details

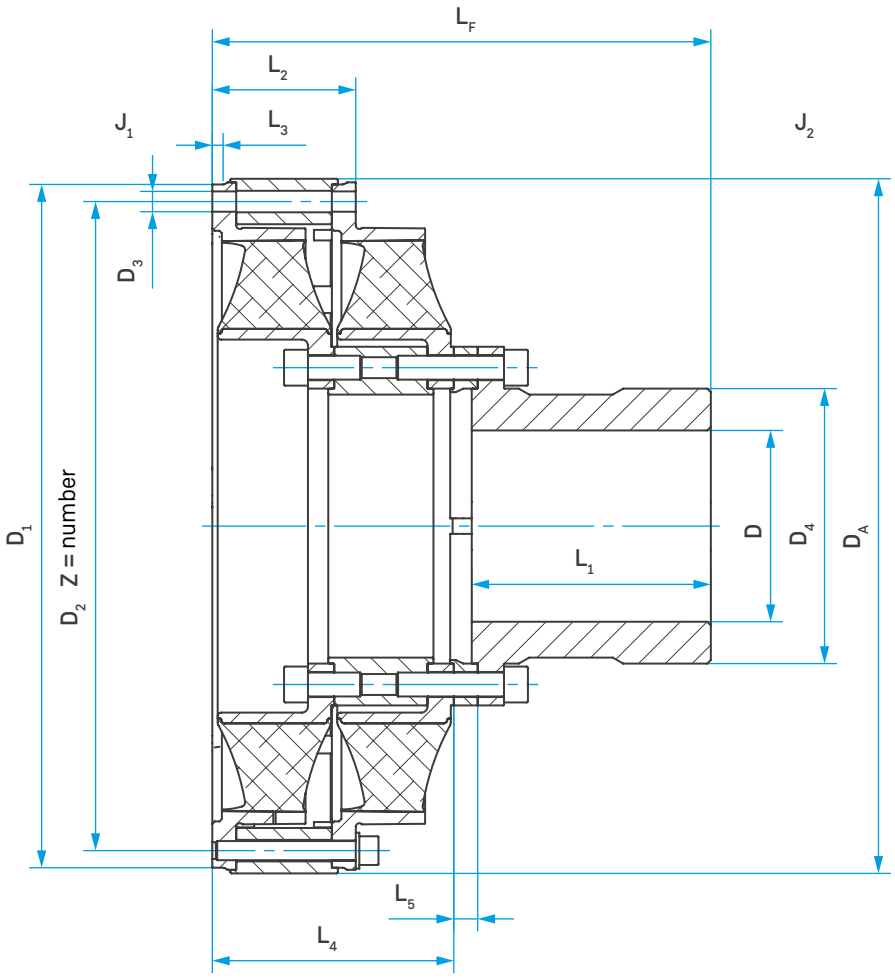
Coupling size	Flange connection for SAE J 620																
	SAE	D_1	D_2	D_3	Z	D_A	D_{max}	D_4	L_1	L_2	L_3	L_4	L_5	L_F	J_1 outer	J_2 inner	Total mass
	Size	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kgm²]	[kgm²]	[kg]
iTOK 600	8	263.5	244.5	10.5	8	–	–	–	–	–	–	–	–	–	–	–	–
iTOK 1000	10	314.3	295.3	10.5	8	317	55	82	67	15	8	68	40	173	0,038	0,018	8.3
iTOK 1600	11,5	352.4	333.4	10.5	8	355	75	112	95	16	9	66	40	199	0.064	0.045	14.1
iTOK 2300	11,5	352.4	333.4	10.5	8	355	85	120	95	17	9	84	40	217	0.073	0.069	16.6
iTOK 3500	14	466.7	438.2	13	8	466,7	110	159	120	20	20	82,5	25	225	0.22	0.186	28.3
iTOK 5000	14	466.7	438.2	13	8	466,7	110	159	120	20	20	109	25	251	0.275	0.207	31.2
iTOK 6500	14	466.7	438.2	13	16	466,7	130	185	120	20	20	101	25	244	0.255	0.327	36.2
iTOK 9000	18	571.5	542.9	17	12	575	160	230	200	20	9	102	20	317	0.589	0.851	65.5
iTOK 12500	18	571.5	542.9	17	12	575	160	230	200	20	9	137	20	352	0.728	0.972	72.3
iTOK 18000	21	673.1	641.4	17	12	678	165	240	200	24	9	138	25	358	1.440	1.560	89.7
iTOK 24000	21	673.1	641.4	17	12	678	200	300	250	24	9	149	25	419	1.540	3.200	145.6
iTOK 30000	24	733.4	692.2	21	12	–	–	–	–	–	–	–	–	–	–	–	–

Order example iTOK...F2K

Coupling size	Element version according to “General Technical Data”	Type	Flange connection size acc. to SAE J 620	Mounting length L_F in mm	Mounting length of split spacer ring ZS L_5
iTOK9000	.WN.	F2K.	18.	317	ZS20

Coupling designation: iTOK9000 .WN. F2K. 18. 317 ZS20

iTOK Type iTOK...D F2K



Coupling details

Coupling size	Flange connection for SAE J 620																
	SAE	D_1	D_2	D_3	Z	D_A	D_{max}	D_4	L_1	L_2	L_3	L_4	L_5	L_F	J_1 outer	J_2 inner	Total mass
	Size	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kgm²]	[kgm²]	[kg]
iTOK 9000 D	18	571.5	542.9	17	12	581	160	230	200	120	9	202	20	417	4.040	1.590	150.0
iTOK 12500 D	18	571.5	542.9	17	24	581	160	230	200	154	9	271	20	486	5.660	1.900	184.5
iTOK 18000 D	21	673.1	641.4	17	24	685	165	240	200	159	9	273	25	493	9.590	3.210	233.0
iTOK 24000 D	21[1)]	673.1	641.4	17	24	685	200	300	250	170	9	295	25	565	10.450	6.190	365.8
iTOK 30000 D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

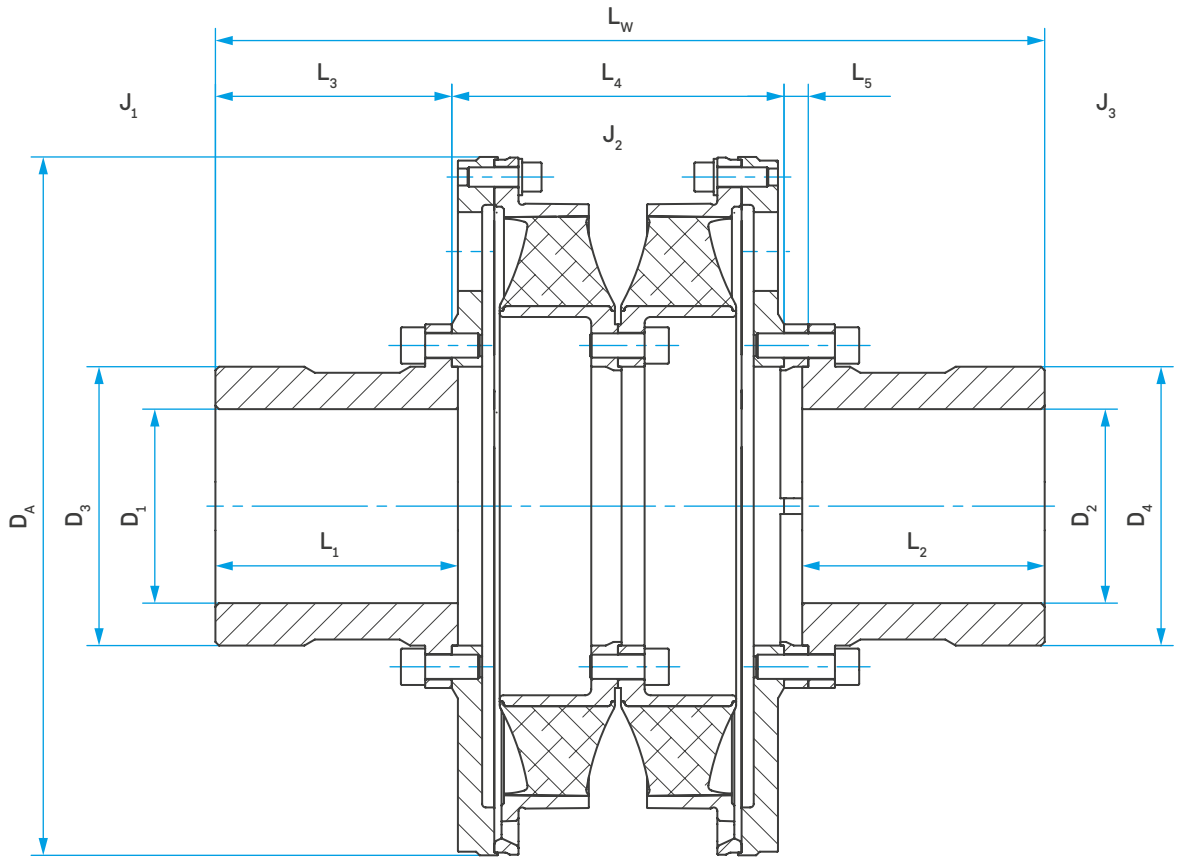
i 1) Different flange and length dimensions on request

Order example iTOK...D F2K

Coupling size	Element version according to “General Technical Data”	Type	Flange connection size acc. to SAE J 620	Mounting length L_F in mm	Mounting length of split spacer ring ZS L_5
iTOK9000D	.WN.	F2K.	18.	417	ZS20

Coupling designation: iTOK9000D .WN. F2K. 18. 417 ZS20

iTOK Type iTOK...R TK



Coupling details

Coupling size	D_1 max. [mm]	D_2 max. [mm]	D_3 [mm]	D_4 [mm]	D_A [mm]	L_1 [mm]	L_2 [mm]	L_3 [mm]	L_4 [mm]	L_5 [mm]	L_W [mm]	J_1 outer [kgm²]	J_2 inner [kgm²]	J_3 outer [kgm²]	Total mass [kg]
iTOK 600 R	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
iTOK 1000 R	55	55	82	82	318	67	67	65	173	15	318	0.131	0.021	0.129	26.1
iTOK 1600 R	75	75	112	112	358	95	95	93	176	15	377	0.247	0.047	0.242	41.3
iTOK 2300 R	85	85	120	120	358	95	95	93	222	20	428	0.292	0.072	0.285	49.1
iTOK 3500 R	110	110	159	159	472	120	120	117.5	225	25	485	1.002	0.217	1.002	99.6
iTOK 5000 R	110	110	159	159	472	120	120	117	278	25	537	1.060	0.230	1.080	105.6
iTOK 6500 R	130	130	185	185	472	120	120	118	262	25	523	1.090	0.340	1.180	113.9
iTOK 9000 R	160	160	230	230	576	200	200	195	274	20	684	2.780	0.760	2.870	197.3
iTOK 12500 R	160	160	230	230	576	200	200	195	344	20	754	2.940	0.970	3.020	210.3
iTOK 18000 R	165	165	240	240	680	200	200	195	340	25	755	5.060	1.960	5.180	267.0
iTOK 24000 R	200	200	300	300	680	250	250	245	368	25	883	6.470	2.990	6.940	384
iTOK 30000 R	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Order example iTOK...R TK

Coupling size	Element version according to “General Technical Data”	Type	Mounting length L_F in mm	Mounting length of split spacer ring ZS L_5
iTOK9000R	.WN.	TK.	684	ZS20

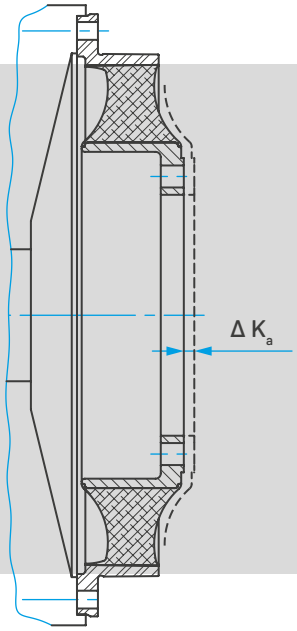
Coupling designation: iTOK9000R .WN. TK. 684 ZS20

iTOK

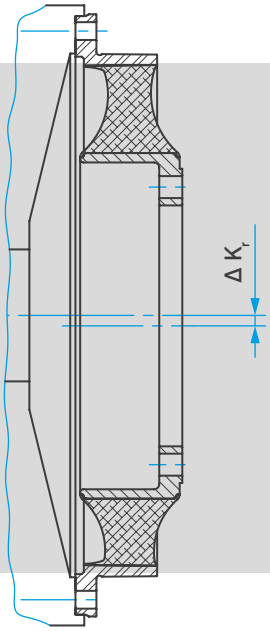
Permissible shaft displacement

The permissibility of major shaft displacements depends on a number of factors such as coupling size, shore hardness of the element, operating speed and torque load of the coupling. The reference values listed below refer to an operating speed of ≈ 1 500 min^{-1}. Precise alignment prevents premature wear of the rubber element. Observe the operating instructions.

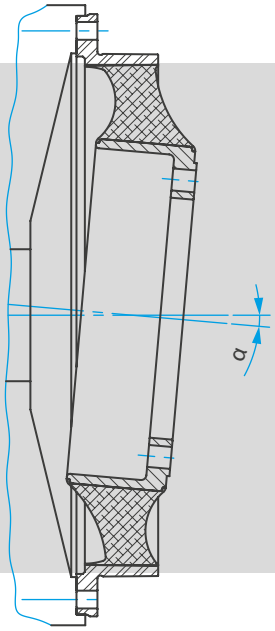
Axial displacement



Radial displacement



Angular displacement



Technical specifications

Coupling size			iTOK 600	iTOK 1000	iTOK 1600	iTOK 2300	iTOK 3500	iTOK 5000	iTOK 6500	iTOK 9000	iTOK 12500	iTOK 18000	iTOK 24000	iTOK 30000
Max. permissible axial displacement *)	ΔK_a	[mm]	±4.5	±5.5	±5	±5.5	+8	±8	±6.5	±6.5	±6.5	±9	±6	±6
Max. permissible radial displacement*)	ΔK_r	[mm]	1.6	2.1	1.8	2.0	3.0	3.1	2.4	2.6	2.4	3.3	2.3	2.1
Max. permissible angular displacement*)	α	[°]	3.0°	3.3°	2.3°	2.4°	2.8°	2.8°	2.1°	1.6°	1.3°	1.6°	1.1°	1.0°

i *) The values given apply to the iTOK...F2K and iTOK...D F2K types in rubber type WN for speed 1500 min^{-1}. For type iTOK...R TK double displacements apply. Recommended: for mounting, align to max. 20% Δ K for each direction of displacement. Values for other rubber types are available on request.

i Larger displacements of short duration, as may occur when starting and stopping the diesel engine, are permissible. These maximum displacements must not occur simultaneously. The maximum permissible displacements cannot be combined with torsional vibrations and must be reduced if necessary.

iTOK

Data required for coupling size selection

General

1. Project: _____
2. Application (combined heat and power unit, emergency power generator, fire pump, ...): _____
3. Operating mode (continuous operation, emergency power operation, ...): _____
4. Place of operation/location: _____ Ambient temperature: T_u _____ [°C]
5. Certification/class/requisite rules for selecting the coupling size: _____

Engine side

1. Engine (manufacturer, designation/type): _____ ☐ Diesel ☐ Gas
2. Engine power (nominal operation): P _____ [kW]
3. Engine speed (nominal speed): n _____ [min^{-1}]
4. Idling speed available? ☐ yes ☐ no
   If adjustable from: n _____ [min^{-1}] to _____ [min^{-1}]
5. If variable speed operation, speed range from: n _____ [min^{-1}] to _____ [min^{-1}]
   ! Please attach corresponding speed/torque/power diagram.
6. Total stroke volume: V_H _____ [ccm] R/V (angle): _____ Number of cylinders: _____
7. Moments of inertia engine incl. damper without flywheel: J _____ [kgm^2]
   Moments of inertia flywheel: J _____ [kgm^2]
   Total moments of inertia of the engine (incl. damper, flywheel, etc.): J _____ [kgm^2]

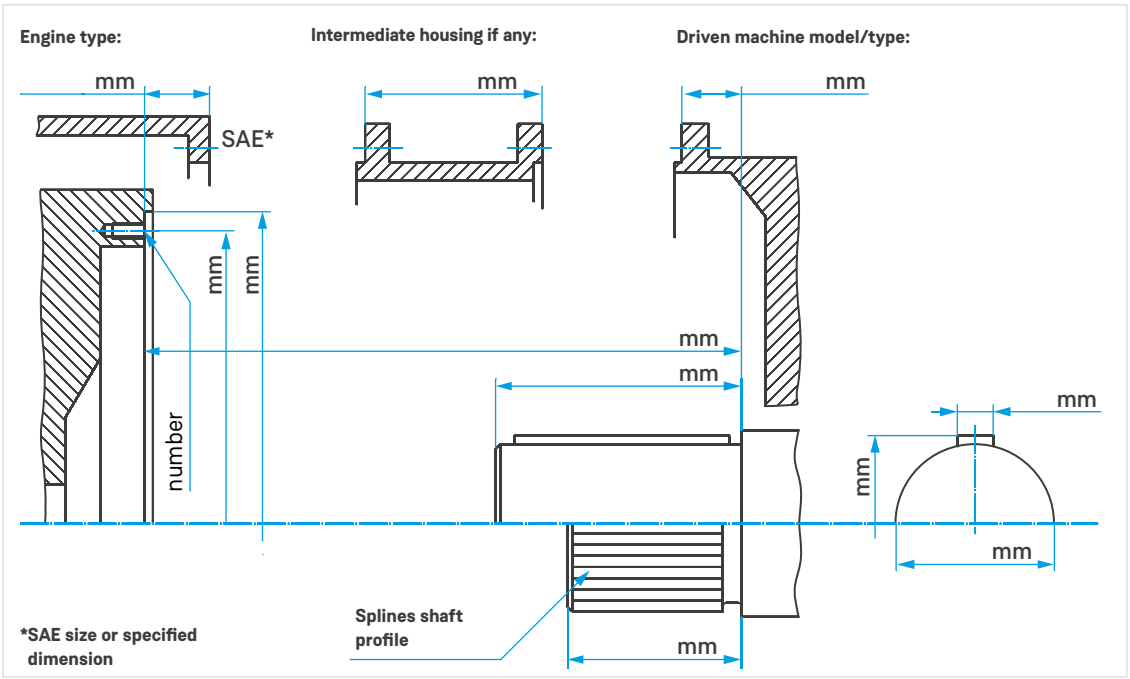
Output side

1. Type (generator, pump transfer case, pump, compressor, ...): _____
2. Type (manufacturer, designation): _____
3. Moments of inertia: J _____ [kgm^2]
4. Connection dimensions (D x L, toothed shaft (standard), flange, ...): _____

Anticipated shaft displacement			
axial	Ka	[mm]	
radial	Kr	[mm]	
angular	Kw	[°]	

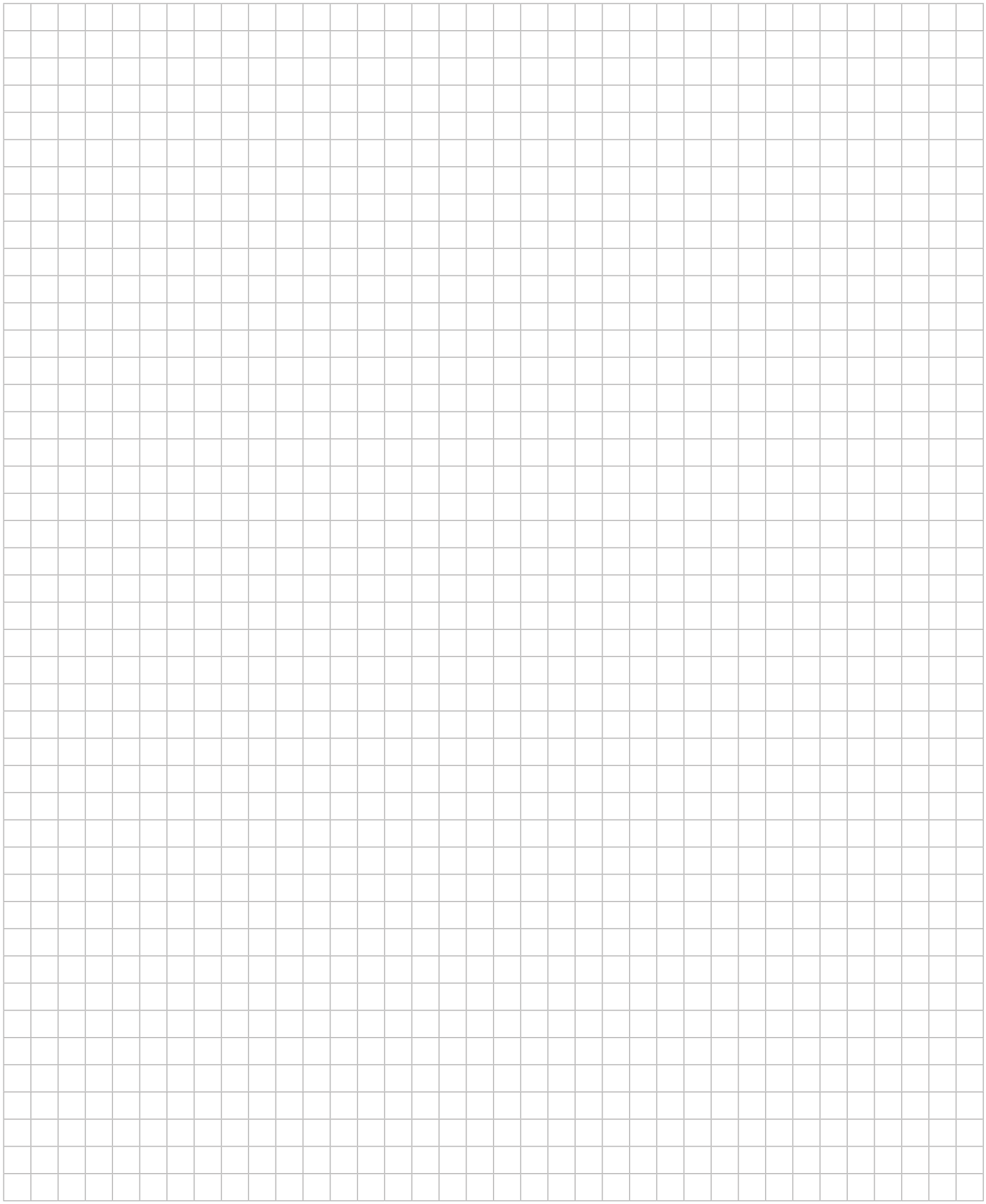
! For branched systems: System sketch with details of the individual inertias (with details of the reference speed) and transmission ratios.

If the prime mover is to be flange-mounted to the engine with an intermediate housing, we require the following to determine an optimum mounting position; specified details and dimensions as in the following sketch:



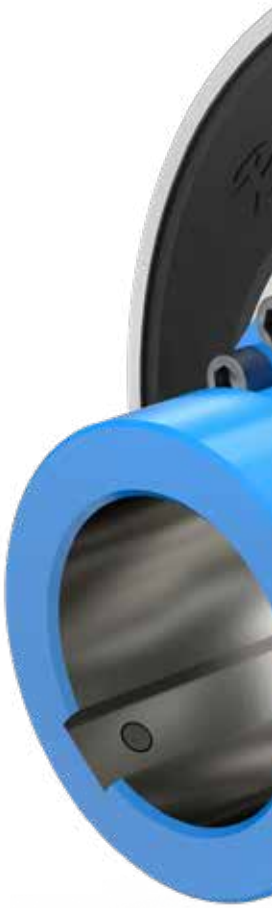
iTOK

Notes



iTOK

SIMPLY **POWERFUL.**



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