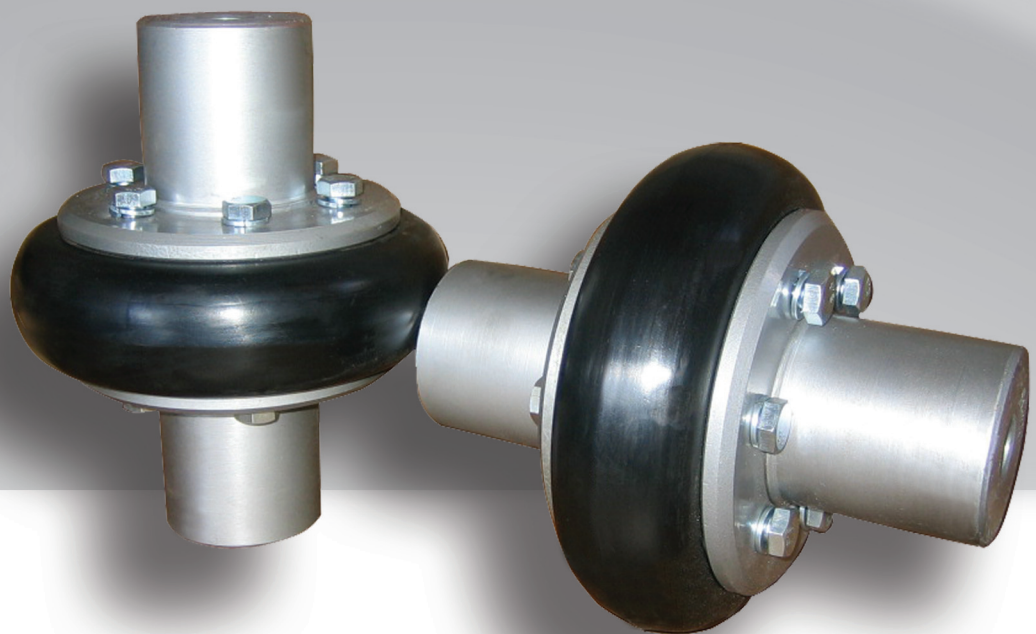


PS
PERIFLEKS SPOJNICE
PERIFLEX COUPLINGS



VAŽNA UPUTSTVA

Naše perifleks spojnice odlikuje jednostavnost i funkcionalnost. Njihova inventivna konstrukcija dozvoljava laku mogućnost ugradnje. Kako bi rokovi isporuke bili što kraći, preporučujemo izbor standardnih izvođenja. Spojnice isporučujemo sa rupom bušenom na predmeru ili prema zahtevu kupca na konačnu meru tolerancije H7 sa žlebovima tolerancije J9. Izbor veličine spojnice ne zavisi samo od snage i broja obrtaja, već i od drugih faktora. Iz tog razloga preporučujemo da izbor spojnice kupac prepusti nama. Neophodno je voditi računa da u radu ne dolazi do prekoračenja maksimalnih dozvoljenih odstupanja :

- Ugaono pomeranje oslonca ležaja max 2°
- Radijalno pomeranje oslonca ležaja max 2 mm
- Aksijalno pomeranje oslonca ležaja max 8 mm

Napred navedene veličine smanjuju se smanjenjem veličine spojnice, kao i povećanjem broja obrtaja. Spojnice moraju biti zaštićene od visokih temperatura (80°C), od sredstava za podmazivanje i sl. Gumeni obruč na spojnici treba čistiti samo toplom vodom i krpom. Spojnice moraju biti obavezno zaštićene po HTZ propisima.

MONTAŽA

1. Vijcima (4) labavo spojiti glavčine (1) i pritezajuće prstenove (2) i navući na krajeve vratila.
2. Privući pogonsku mašinu sa glavčinom do mere "O" naznačene u tabeli.
3. Centrirati vratilo spojnice prema glavčini spojnice. Odstojanje "O" mora biti jednako na celom obimu glavčine. U standardnim slučajevima dovoljno je centrirati običnim alatom, jer spojnica podnosi sitna odstupanja pri montaži. Pri velikim brzinama preporučuje se preciznije centriranje pomoću šablona. Velika odstupanja krajeva vratila izaziva zagrevanje i skraćuje vek trajanja.
4. Presečene gumene obruče (3) navući preko glavčina spojnice. U zavisnosti od veličine spojnice poprečni zazor mora biti od 2 do 10 mm. Gumeni obruč mora da naleže u svom sedištu. Kod većih spojnica gumene obruče treba pre zatezanje pritezajućih prstenova stisnuti pomoću objumice.
5. Pritezajuće prstenove zatezati tako da se uvek zatežu dva diametralno suprotna vijka vodeći računa o momentu pritezanja (vidi tabelu), pri čemu uklještena debljina obruča iznosi 2/3 neuklještena debljine.

ZAMENA GUMENIH OBRUČA

1. Vijke pritezajućih prstenova olabaviti toliko da profil obruča leži slobodno.
2. Skinuti gumeni obruč spojnice.
3. Navući novi gumeni obruč.
4. Vijke stegnute kako je gore navedeno.

Prilikom poručivanja rezervnih gumenih obruča, navesti oznaku veličine istih.

IMPORTANT INSTRUCTIONS

Our periflex couplings are characterized by simplicity and functionality. Their inventive design allows easy installation. In order delivery times to be as short as possible, we recommend a standard performance. According to the customer request, we deliver couplings with the shaft hole drilled to a standard or to the final measure tolerated. Selection of type of coupling depends not only on the power and speed, but also on other factors. From this reason we recommend that the selection of coupling, customer leaves to us. Make sure that while working does not come to exceeding the maximum permissible deviation:

- angular displacement of the bearing max 2°
- radial displacement of the bearing max 2 mm
- axial displacement of the bearing max 8 mm

Above specified sizes are reduced by reducing the size of couplings, as well as increasing the speed. Couplings must be protected from high temperature (80 ° C), of a lubricant etc. A rubber ring at the coupling should be cleaned only with warm water and cloth. The couplings must be protected by the mandatory Safety regulations.

INSTALLATION

1. Bolts (4) loosely connect the hub (1) and clamping rings (2) and onto the shaft ends.
2. Attract drive machine with the hub to the point "O" indicated in the table.
3. Center the shaft coupling to the coupling hub. The distance "O" must be equal in the whole volume of the hub. Normally it is sufficient to center with the common tools since coupling submits small deviations in assembly. At high speeds recommended by a precise centering by pattern. Large deviations of the shaft ends causes warming and shortens life.
4. Cutted rubber rings (3) slipped over the coupling hub. Depending on the size of the coupling, transverse gap must be from 2 to 10 mm. A rubber ring must be seated in its seat.
5. Clamping ring tighten so that always two diametrically opposed bolt tightent taking account of the tightening moment (see table), wherein the fixed thickness of the ring is 2/3 of non-fixed thickness.

REPLACEMENT OF RUBBER RING

1. Tighten the clamping rings slack so that the profile of the ring lies ahead.
2. Remove the rubber ring of coupling.
3. Place the new rubber ring.
4. Tighten the bolts as indicated above.

When ordering spare rubber rings, please provide the type of it.

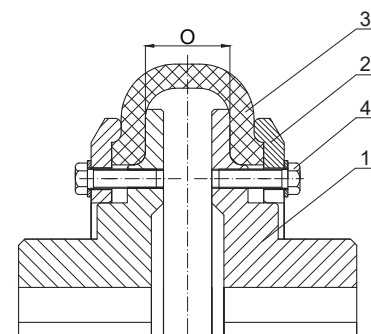


Tabela 1

Velichina Type	01	03	06	10	14	18	22	25	26	28	30	32
0	18	18	18	38	38	44	42	46	50	70	120	150
Momenat za pritezanje vijaka u (kpm) da Nm The moment for tightening the bolts	0,15	0,4	0,6	1,5	2,5	1,6	3,5	5,5	6	11	20	24

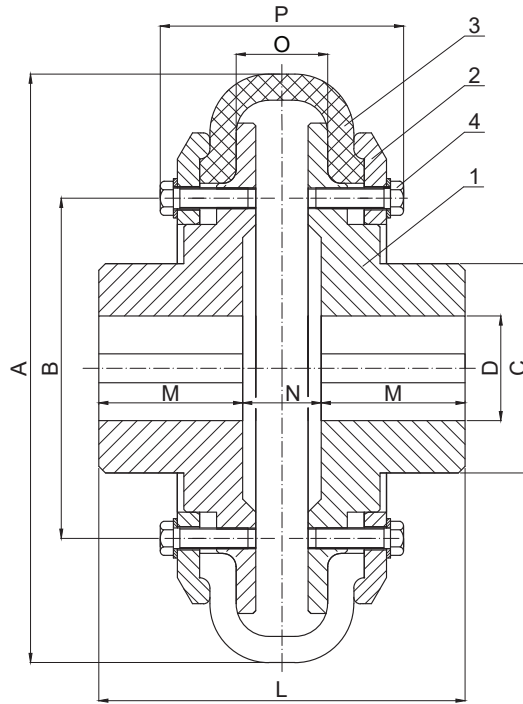
Table 1

Tabela 2

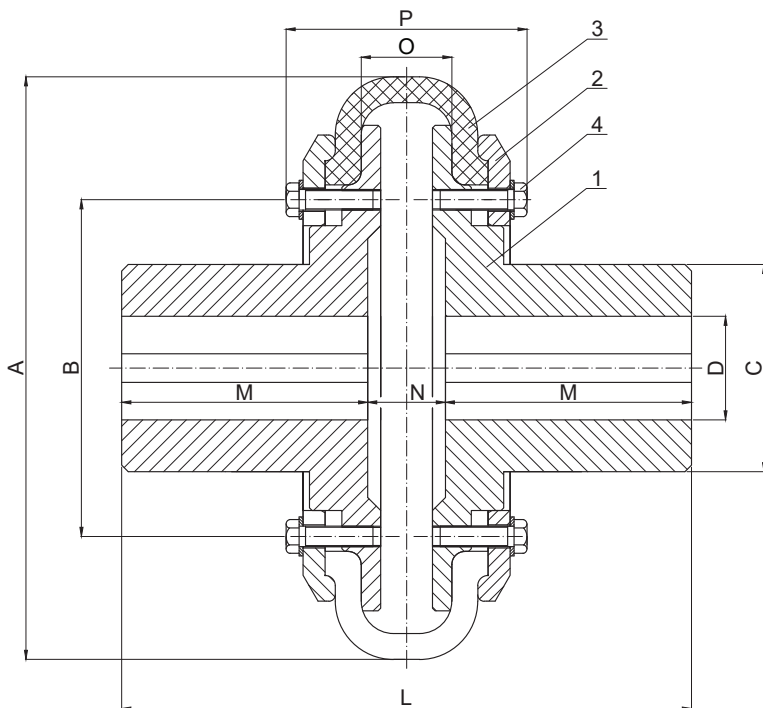
Table 2

Veličina spojnice Type of coupling	01-1 01-4 01-5	03-1 03-4 03-5	06-1 06-4 06-5	10-1 10-4 10-5	14-1 14-4 14-5	18-1 18-4 18-5	22-1 22-4 22-5	25-1 25-4 25-5	26-1 26-4 26-5	28-1 28-4 28-5	30-1 30-4 30-5	32-1 32-4 32-5	
Momenat pri trajnom opterećenju T_{KN} (Nm) Moment in continuous load	5	10	30	70	150	300	600	1200	2400	4000	7000	10000	
Najveći momenat pri kratkotrajnom opterećenju (Nm) The greatest moment in the short-term load	13	30	80	200	450	900	1750	3500	7000	12000	20000	34000	
A	86	104	136	178	210	263	310	370	402	450	550	700	
B	42	50	65	85	110	140	180	235	260	260	280	360	
C	30	34	48	65	80	95	125	150	160	160	183	270	
D pred buš./predrilled	10	12	15	20	25	30	38	38	38	55	70	100	
max	18	22	32	38	50	60	80	90	100	110	130	180	
N	12	10	18	34	32	40	50	45	54	60	100	130	
O	18	18	18	38	38	44	42	46	50	70	120	150	
P	50	57	64	89	98	123	139	151	153	190	280	365	
Momenat inercije J (kg m ²) Moment of inertia J (kg m ²)	-	-	0,0025	0,0125	0,033	0,1	0,225	0,6	0,85	1,43	3,35	11	
Maks. ugao uvijanja gume (°) Max angle twist of rubber (°)	5	6	6	5	8,5	6,5	6,3	5,2	5,5	9	10,8	11,8	
Maks. broj obrtaja u min (min ⁻¹) Max speed per min (min ⁻¹)	3000	3000	3000	3000	2500	2000	2000	1600	1600	1250	1000	800	
Red gradnje Serie 1	L M Masa / Mass	52 20 0,7	66 28 1,0	88 35 3,2	128 47 6,3	150 59 10,2	174 67 19,0	200 75 31,5	215 85 60	244 95 80	280 110 96	360 130 168	450 160 320
Red gradnje Serie 4	L M Masa / Mass	72 30 0,8	90 40 1,1	138 60 3,8	194 80 7,6	252 110 13,2	260 110 23	330 140 41	345 150 73	364 155 94	440 190 113	520 210 190	640 255 380
Red gradnje Serie 5	L M M1 Masa / Mass	62 20 30 0,75	78 28 40 1,05	113 35 60 3,5	161 47 80 6,95	201 59 110 11,7	217 67 110 21	265 75 140 36,25	280 85 150 66,5	304 95 155 84	360 110 190 104,5	440 130 210 179	545 160 255 368,5
Veličina obruča Size of ring	10-112	10-162	10-212	10-262	10-312	10-361	10-412	10-462	10-512	10-562	10-612	10-662	
Zlebovi za klinove prema SRPS M.C2.060 / Groove for the insert spring according to SRPS M.C2.060 Završna bušenja H7 prema SRPS M.A1.172 / Final drilling H7 according to SRPS M.A1.172 Zadržavamo pravo izmene dimenzija i konstrukcije. / We reserve the right to change dimensions and structures.													

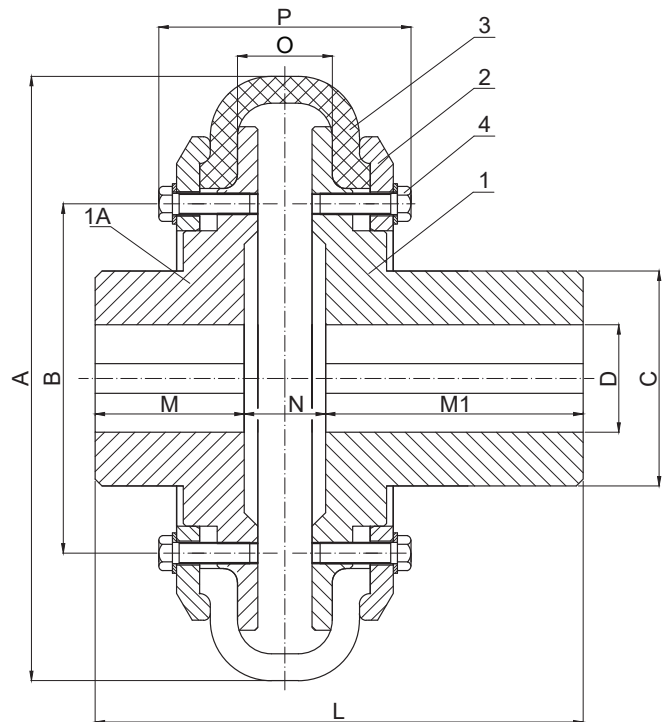
RED GRADNJE 1
SERIES 1



RED GRADNJE 4
SERIES 4



RED GRADNJE 5
SERIES 5



SMERNICE ZA IZBOR KOEFICIJENTA "k"

ZA UTVRĐIVANJE FAKTORA SIGURNOSTI k RADNE MAŠINE SU PODELJENE U SLEDEĆE GRUPE

I Radne mašine sa ravnomernim uzimanjem snage:

- Generatori
- Transporteri trakasti
- Male dizalice do 6 uključivanja na sat
- Lake mašine za obradu drveta
- Laki ventilatori
- Male mašine alatke sa rotacionim glavnim kretanjem
- Male centrifugalne pumpe

II Radne mašine sa sa neravnomernim uzimanjem snage:

- Lake dizalice
- Generatori struje
- Dizalice do 120 uključivanja na sat
- Lančani transporteri
- Industrijske mostne pokretne dizalice
- Peskare
- Tekstilne mašine
- Transmisije
- Kašikasti transporteri
- Turbo duvaljke
- Srednje mašine alatke, sa rotacionim glavnim kretanjem
- Velika vitla
- Centrifugalne pumpe
- Valjkasti transporteri (rollgang) sa sopstvenim pogonom

III Radne mašine srednje do teške izvedbe

- Teške dizalice
- Rotacione peći
- Vitla / Winchs
- Doboši za hlađenje
- Mešalice
- Makaze
- Brusilice
- Mašine za pranje
- Prese za opeku
- Ventilatori
- Dizalice do 300 uključivanja na sat
- Mostni kranovi / Overhead cranes

IV Radne mašine teške izvedbe:

- Bagerska postrojenja
- Prese za briket
- Kalander za gume
- Jamni ventilator
- Rendisaljke za drvo (papirna industrija)
- Klipne pumpe
- Vibracioni uređaji (sita, transporteri itd.)
- Mlinovi za cement
- Postrojenja za dizanje sa preko 300 uključivanja na čas

V Radne mašine sa neravnomernim uzimanjem snage, teške izvedbe:

- Teški uređaji za bušenje (rudarstvo)
- Pilanski gateri
- Mokre prese
- Kalanderi za papir
- Aparati za namotavanje papira
- Valjaonički valjkasti transporteri sa grupnim pogonom (rollgang)
- Mali valjaonički uređaji za metale
- Centrifuge

Tabela 3

Pogonske mašine Driving machines	Grupe radnih mašina / Groups of working machines				
	I	II	III	IV	V
Elektromotor, parna turbina, prenosnik Electric motor, steam turbine, transmission	1	1,5	2	2,5	3
Motori SUS, parna mašina, vodena turbina SUS engines, steam turbine, water turbine	1,5	2	2,5	3	3,5

GUIDELINES FOR SELECTION OF COEFFICIENT k

TO DETERMINE THE SAFETY FACTOR k WORKING MACHINES ARE DIVIDED INTO THE FOLLOWING GROUPS

I Machines with uniform power take-off:

- Generators
- Belt conveyors
- Small cranes up to 6 activations per hour
- Light woodworking machines
- Light fans
- Small machine tools with rotary main motion
- Small centrifugal pumps

II Machines with uneven power take-off:

- Light cranes
- Power generators
- Cranes up to 120 activations per hour
- Chain conveyors
- Industrial overhead cranes
- Sandblasting machine
- Textile machines
- Transmissions
- Bucket conveyors
- Turbo blowers
- Medium machine tools, with rotary main motion
- Big winch
- Centrifugal pumps
- Roller conveyors (rollgang) with their own drive

III Machines of medium to heavy performance:

- Heavy cranes
- Rotary kilns
- Winchs
- Cooling drums
- Mixers
- Scissors
- Grinders
- Washing machines
- Brick presses
- Fans
- Cranes up to 300 activations per hour
- Overhead cranes

IV Machines of medium to heavy performance:

- Excavation facilities
- Bricket press
- Tires calender
- Pit (mining) fans
- Planers for wood (paper industry)
- Piston pumps
- Vibro machines
- Cement mills
- Lifting facilities up to 300 activations per hour

V Machines with uneven power take-off, heavy duty:

- Heavy equipment for drilling (mining)
- Sawmill cutters
- Wet press
- Paper press
- Paper winding machines
- Rolling roller conveyors with group drive (rollgang)
- Small rolling devices for metals
- Centrifuges

Table 3

IZBOR VELIČINE SPOJNICE

Obrtni moment, koji deluje na spojnicu pri stalnom radnom procesu, određuje se prema snazi pogonske mašine (elektromotor, parna turbina, motori SUS itd.), odnosno po obrtnom momentu na mestu ugradnje spojnice.

U više slučajeva pri radu mašine, spojnice se ne naprežu jednako. Tako pri puštanju u rad, kada je potrebno ubrzati mase u radnoj mašini, ili za vreme samog rada kada se pojavljuju dinamički udari, spojnica trpi veća opterećenja.

Da bi uzeli sve to u obzir, teoretski moment dobijen iz snage motora množimo sa koeficijentom sigurnosti „k“, koji je dobijen na bazi iskustva.

Iz snage elektromotora određuje se nominalni obrtni moment motora T_n .

$$T_n = \frac{9550 \cdot P}{n} \text{ [Nm]}$$

Gde je:

- P [kW] – snaga motora
- n [min⁻¹] – broj obrtaja motora

Računski obrtni moment koji jedna spojnica treba da prenese se računa:

$$T_R = T_n \cdot k \text{ [Nm]}$$

Gde je:

- k – koeficijent sigurnosti (tabela 3) i zavisi od pogonske i radne mašine.

Prilikom izbora spojnice mora biti zadovoljen uslov $T_{KN} \geq T_R$!

Primer 1

Centrifugalna pumpa pogonjena je elektromotorom

- snaga elektromotora P=110 [kW]
- Broj obrtaja n=2970 [min⁻¹]
- koeficijent sigurnosti k= 1,5 (tabela 2)

$$T_n = \frac{9550 \cdot P}{n} = \frac{9550 \cdot 110}{2970} = 353,7 \text{ [Nm]}$$

$$T_R = T_n \cdot k = 353,7 \cdot 1,5 = 530,5 \text{ [Nm]}$$

Usvaja se PERIFLEKS SPOJNICA 22-1 sledećih karakteristika

$$T_{KN} = 600 \text{ [Nm]}, T_{KMAX} = 1750 \text{ [Nm]}$$

CHOOSING THE SIZE OF THE COUPLING

The torque on the coupling during the continuous working process is determined according to the power of the drive machine (electric motor, steam turbine, internal combustion engines, etc.), that is, by the torque at the place of installation of the coupling.

In many cases during the operation of the machine, the couplings are not stressed equally. Thus, during start-up, when it is necessary to accelerate the masses in the working machine, or during the actual operation when dynamic shocks appear, the coupling suffers higher loads. To take all this into account, we multiply the theoretical torque obtained from the engine power with the safety coefficient "k", which is obtained based on experience.

The nominal motor torque T_n is determined from the power of the electric motor.

$$T_n = \frac{9550 \cdot P}{n} \text{ [Nm]}$$

Where:

- P [kW] – motor power
- n [r.p.m] – rounds per minute

The calculated torque that one coupling should transmit is calculated:

$$T_R = T_n \cdot k \text{ [Nm]}$$

Where:

- k – safety coefficient (table 3) and depends on the driving and working machine.

When choosing a coupling, the condition $T_{KN} \geq T_R$ must be satisfied!

Example 1

The centrifugal pump is driven by an electric motor

- electric motor power P=110 [kW]
- round per minut n=2970 [r.p.m]
- safety factor k= 1.5 (table 2)

$$T_n = \frac{9550 \cdot P}{n} = \frac{9550 \cdot 110}{2970} = 353,7 \text{ [Nm]}$$

$$T_R = T_n \cdot k = 353,7 \cdot 1,5 = 530,5 \text{ [Nm]}$$

PERIFLEX COUPLING 22-1 with the following characteristics is

$$\text{selected } T_{KN} = 600 \text{ [Nm]}, T_{KMAX} = 1750 \text{ [Nm]}$$

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