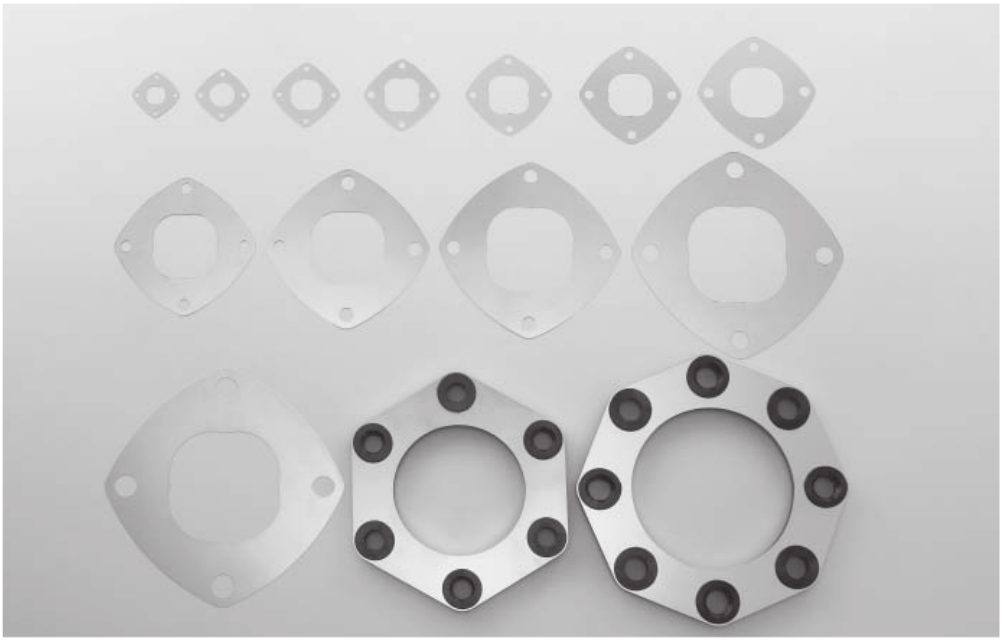
NEF & NEH Series ECHT-FLEX® Couplings

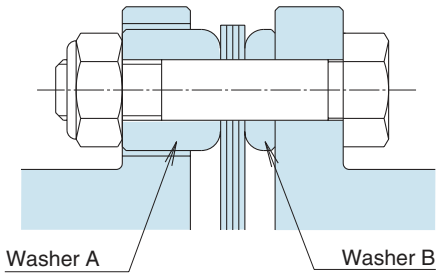
The design of Tsubaki's ECHT-FLEX Couplings has been optimized using the FEM Analysis to ensure reliable torque transmission and absorption of misalignment. In addition to these basic features, the couplings also ensure high-precision positioning of servomotor drives and eliminate the need for lubrication, providing the clean operation environment.

Wide-ranging Lineup

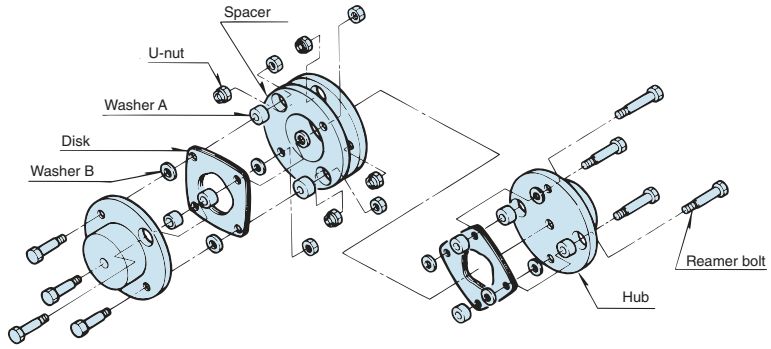


Structure

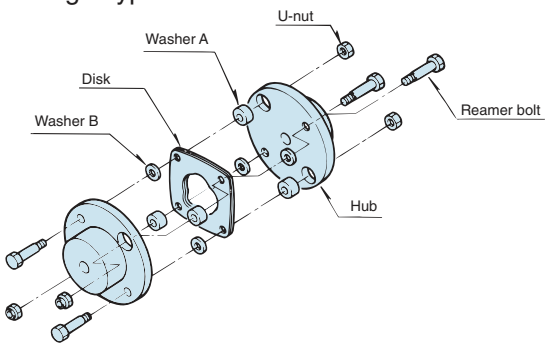
NEF Series



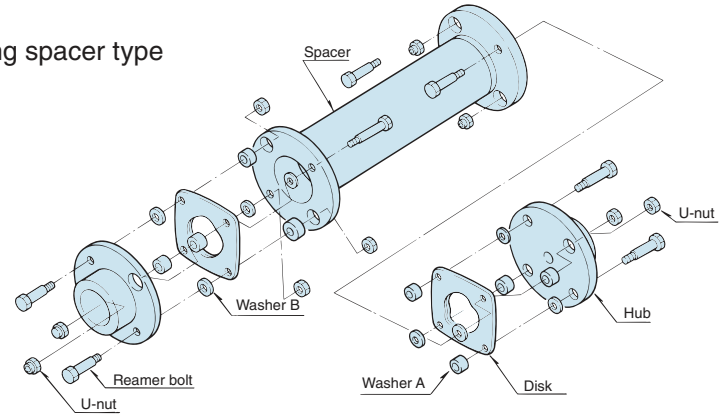
Spacer type



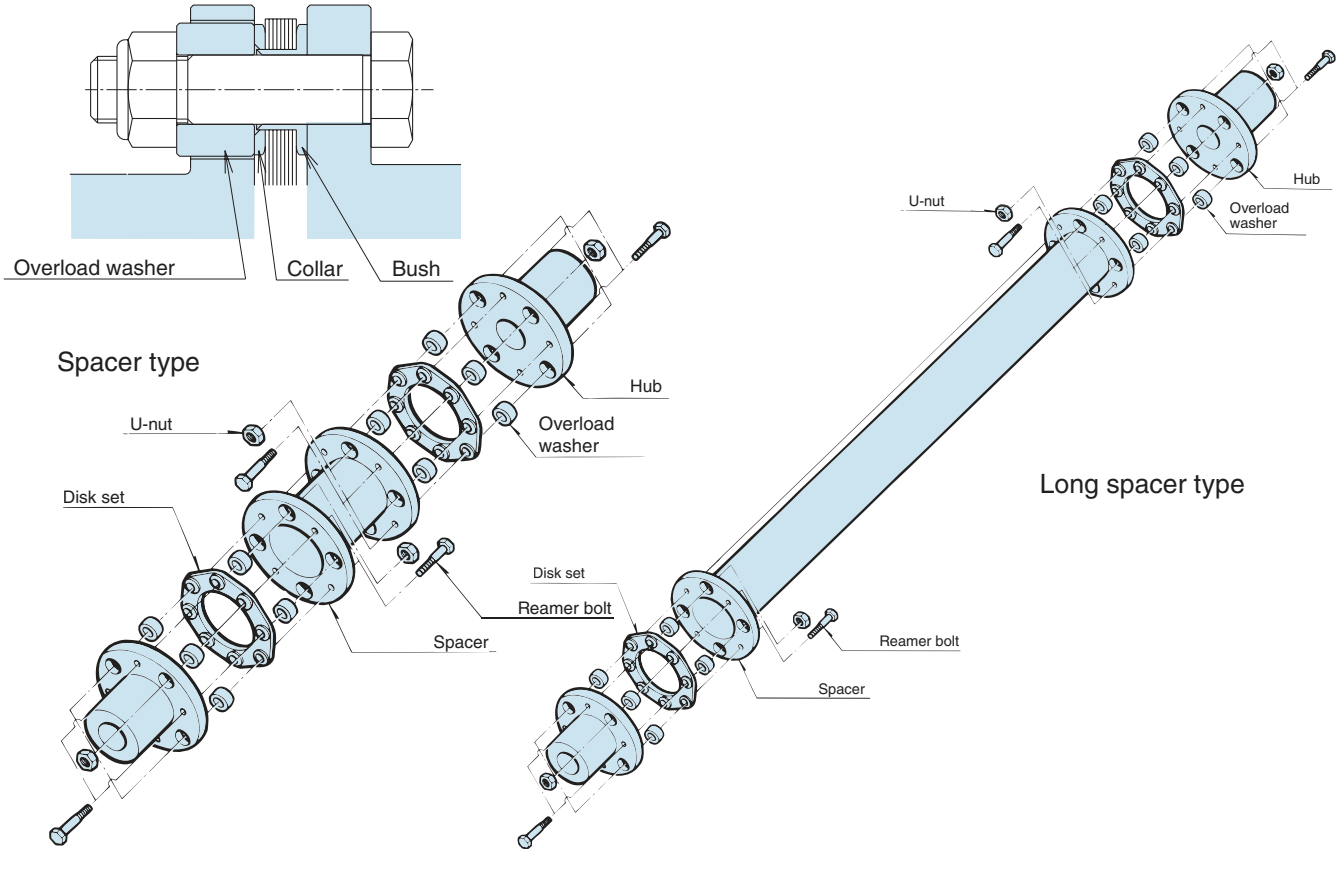
Single type



Long spacer type



NEH Series

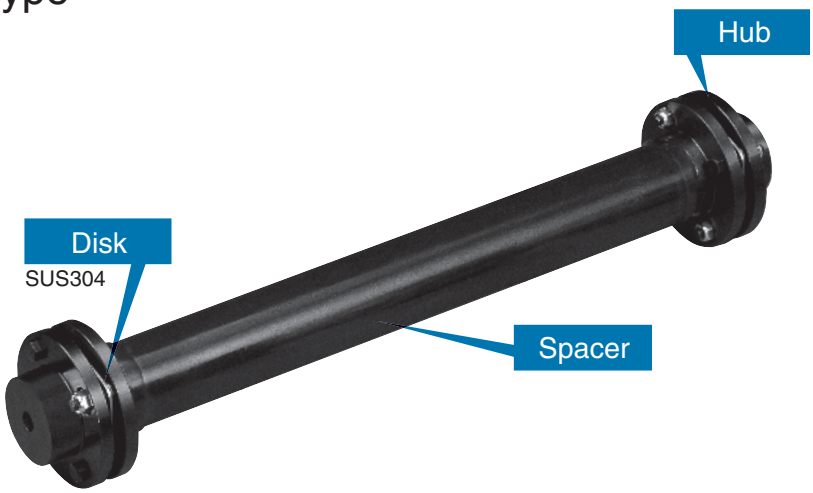


Materials and Surface Processing

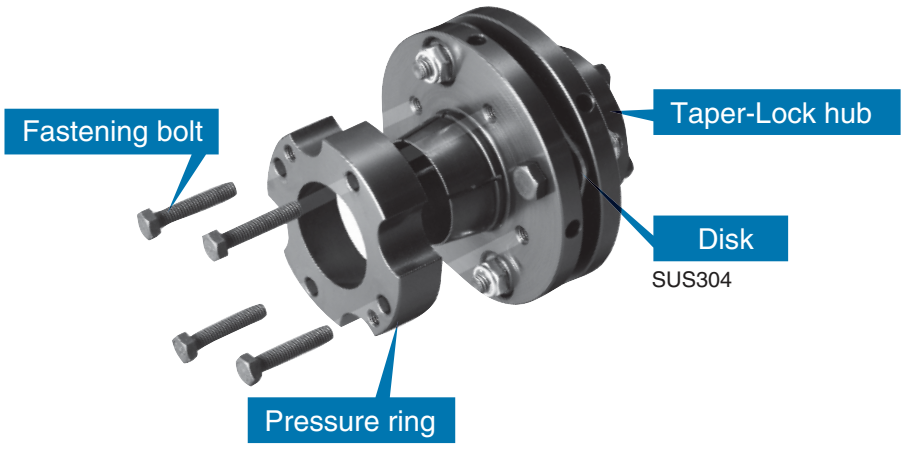
Spacer type

A 100% stainless steel type is also available.
See page 26.

Long spacer type



Taper-Lock type



Environmentally Resistant Types

Stainless steel NEF Series models

Features

Rust-resistant, clean operation

All parts are made of stainless steel, providing outstanding corrosion resistance.

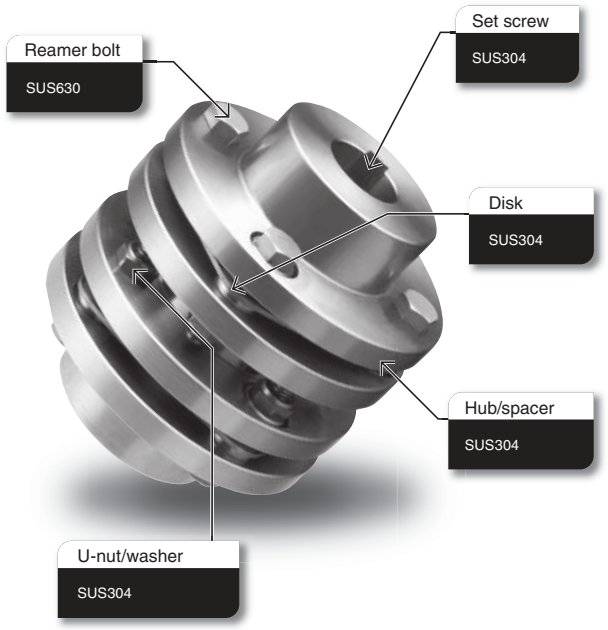
Low-dust, clean operation

Torque is transmitted by frictional force, eliminating sliding between parts and dust generated by wear.

Applications

- Rustproofing in clean rooms.
- In direct contact with water, such as in food processing machinery.
- In highly corrosive atmospheres such as water treatment facilities.

* The NEF series can be used in a vacuum. Contact a Tsubaki representative for specifications.



Electroless nickel-plated NEF Series models

Features

Outstanding cost performance

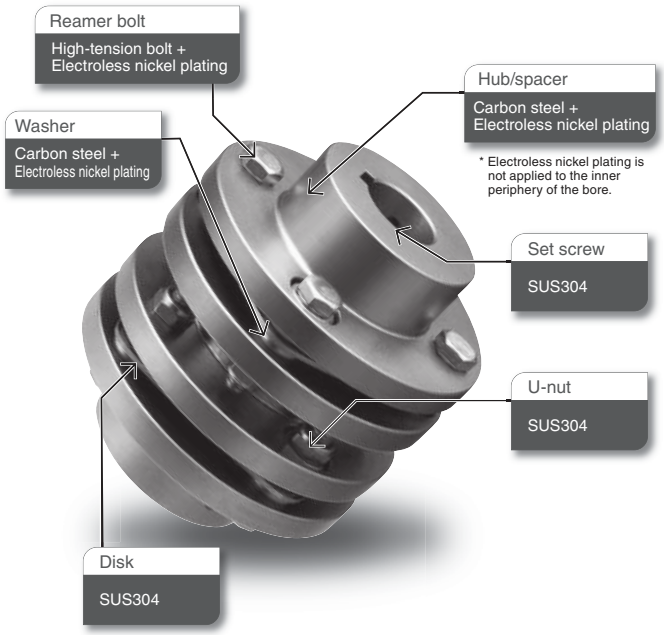
Provide better cost performance than stainless steel models, enabling use in a wide range of applications.

Fine appearance

Coated with a peel-resistant film of uniform thickness, providing an fine appearance.

Applications

- Simple rustproofing in clean rooms.
- Relatively low air cleanliness classes.
- Flat panel display transport/elevator equipment.
- Light rustproofing such as in high-humidity environments.



CFRP spacer NEF Series models

Features

Lightweight and highly corrosion-resistant

Model Number

NEF Series

NEF 700 W M - N H 70 E D2 X K H 120 J D2 - J1000

Series

NEF

Size

Size (Allowable torque [N·m])
02 (19.6)
04 (39.2)
10 (98)
18 (176)
25 (245)
45 (441)
80 (784)
130 (1270)
210 (2060)
340 (3330)
540 (5290)
700 (6860)

Shape

S: Single type

W: Spacer type

Surface processing

No code: Standard type

M: Electroless nickel-plated type

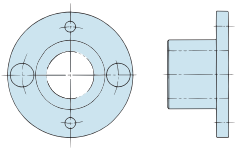
Y: Stainless steel type

Key coupling

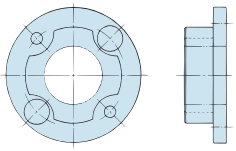
Hub type

K

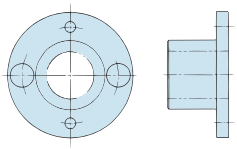
N: Standard hub



K: Enlarged hub



L: Extended hub



Bore tolerance

H

F	··· F7
G	··· G7
H	··· H7
J	··· JS7
P	··· P7
M	··· M7
N	··· N7
K	··· K7
R	··· R7

Friction clamping/Taper shaft bore

Taper-Lock type

Model No.	Bore diameter range
NEF04	φ10 to φ22
NEF10	φ14 to φ35
NEF18	φ15 to φ38
NEF25	φ24 to φ50

Hub code: Hxx
(xx: Bore diameter)

Clamp type

Model No.	Bore diameter range
NEF02	φ10 to φ25
NEF04	φ12 to φ25
NEF10	φ15 to φ35
NEF18	φ14 to φ35
NEF25	φ25 to φ42
NEF45	φ30 to φ55

Hub code: □ xx
(□ : Hub type
xx: Bore diameter)

End shapes can be flexibly customized to your needs, such as

Notes: 1. Place the pilot bore (symbol R) first.
2. Place the smaller bore diameter first.
3. If the shaft bore diameters are the same for different hubs, the hubs should be described in alphabetical order.

Bore diameter

120

Model No.	Keyway bore machining range [mm]	
	N: Standard hub L: Extended hub	K: Enlarged hub
NEF02	φ9 to φ20	φ21 to φ25
NEF04	φ9 to φ23	φ24 to φ29
NEF10	φ11 to φ32	φ33 to φ40
NEF18	φ14 to φ35	φ36 to φ42
NEF25	φ16 to φ42	φ43 to φ48
NEF45	φ16 to φ50	φ51 to φ60
NEF80	φ17 to φ60	φ61 to φ70
NEF130	φ28 to φ74	φ75 to φ80
NEF210	φ28 to φ83	φ84 to φ90
NEF340	φ46 to φ95	φ96 to φ110
NEF540	φ52 to φ109	φ110 to φ120
NEF700	φ52 to φ118	φ119 to φ130

See page 32 for stock products.

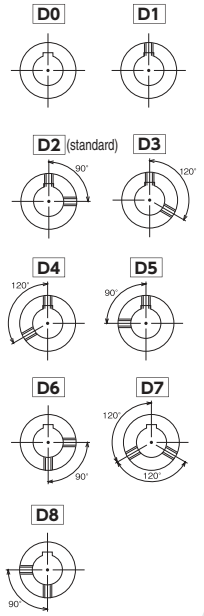
Keyway tolerance

J

- J … New JIS Js9 (standard)
- P … New JIS P9
- F … Old JIS F7
- E … Old JIS E9

Set screw position

D2



Standing type

When using a long spacer type in the vertical drive, add "V" after the set screw position symbol for the side that will be used as the ground (bottom) side.

Inter-flange distance

Indication is only necessary when using a long or single-plate spacer type.

JSxxx:
Standard-dimension long spacer type

Jxxx:
Welded long spacer type
(Custom product)
Available in preferred size up to 6,000 mm.

JTxxx:
Single-plate spacer type
(for shorter overall length than standard spacer type)

See pages 39 to 42 for details on each type.

POWER-LOCK type

Model No.	Bore diameter range
NEF04	φ10 to φ22
NEF10	φ14 to φ35
NEF18	φ15 to φ38
NEF25	φ18 to φ42

Hub code: □ xxP2
(□ : Hub type
xx: Bore diameter
Number: Quantity)

Tapered bore machining

Model No.	Hub code:
NEF04	N11T
	N16T
	L16T
NEF10	N16T
	L16T

See page 36 for more information on hub codes.

Pilot bore models

NR: Standard hub with pilot bore

KR: Enlarged hub with pilot bore

LR: Extended hub with pilot bore

one end having key coupling and other end friction clamping.

Model Number

NEH Series

NEH 14 W - N H 100 J D2 X A H 120 J D2 - J1000

Series

NEH

Size

Size (Allowable torque [N·m])
09 (8820)
14 (13700)
20 (19600)
30 (29400)
41 (40200)
55 (40200)
70 (68600)
90 (88200)
110 (108000)
135 (132000)
150 (147000)
180 (176000)

Shape

W: Spacer type

U: Unit spacer type

Key coupling

Hub type

N

N: Standard hub

A: Adapter hub

U: Unit hub

Bore tolerance

H

F ··· F7
G ··· G7
H ··· H7
J ··· JS7
P ··· P7
M ··· M7
N ··· N7
K ··· K7
R ··· R7

Special Types

Replacement type for gear couplings (Page 54)

Available sizes: NEF45G - NEF700G
NEH09G - NEH41G

NEF45 G - GR X G H 40 J D2

G type

Hubs for G type
GR: Pilot bore models

Bore diameter

120

Model No.	Bore machining range [mm] Size in parentheses is when using with an adapter hub
NEH09	φ72 to φ111(φ158)
NEH14	φ72 to φ111(φ158)
NEH20	φ77 to φ133(φ182)
NEH30	φ77 to φ152(φ206)
NEH41	φ122 to φ165(φ224)
NEH55	φ132 to φ187
NEH70	φ112 to φ205
NEH90	φ122 to φ231
NEH110	φ192 to φ254
NEH135	φ142 to φ263
NEH150	φ152 to φ275
NEH180	φ162 to φ289

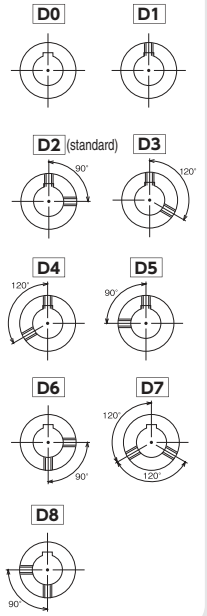
Keyway tolerance

J

- J ... New JIS Js9 (standard)
- P ... New JIS P9
- F ... Old JIS F7
- E ... Old JIS E9

Set screw position

D2



Standing type

When using a long spacer type in the vertical drive, add "V" after the set screw position symbol for the side that will be used as the ground (bottom) side.

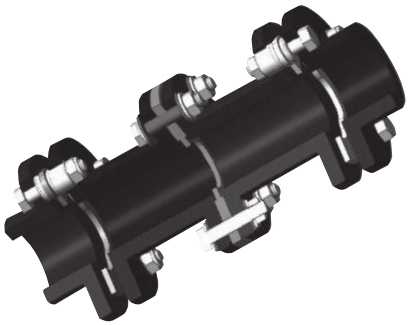
Distance between hub faces

Only for a long spacer type.

Jxxx:
Welded long spacer type
(Made-to-order)
NEH09 to NEH41
: Max. 6,000 mm
NEH55 to NEH180
: Max. 4,000 mm

Contact Tsubaki for information when other than keyway connection.

Electrically insulated type (Page 55)
Available sizes: NEF80W to NEF700W
NEH09W to NEH30W



NEF80W-NH50JD2 X NH60ED3- JE 225

Electrically insulated spacer

Bore Machining Service

Bore machining available in 1 mm increments in addition to expanded variations of bore tolerances, keyway tolerances, and set screw positions.
The following combinations all have the same price.

Keyway Connection

Standard bore combination

NEF700 W - N H 70 E D2 X K H 120 J D2

Hub shape

- N … Standard hub
- K … Enlarged hub
- L … Extended hub

Bore diameter

Bore diameters are in integer multiples of 1 mm.
See below.

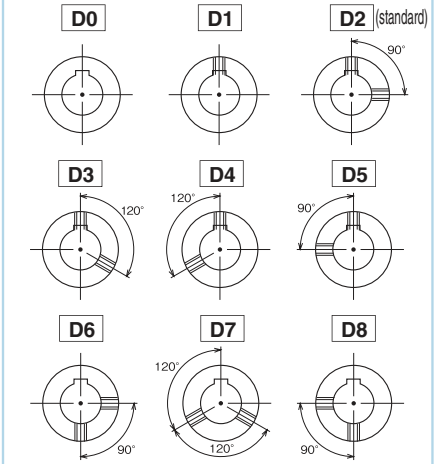
Bore tolerance

- F … F7
- G … G7
- H … H7
- J … JS7
- P … P7
- M … M7
- K … K7
- N … N7
- R … R7

Keyway tolerance

- J … New JIS Js9(standard)
- P … New JIS P9
- F … Old JIS F7
- E … Old JIS E9

Set screw position



Enlarged hubs support only D0, D1, D2, D5, D6, and D8 due to the hub shape.

Other coupling bore

Model No.	Coupling method	Bore diameter [mm]												
		10	11	12	14	15	16	17	18	19	20	22	24	25
NEF02	Clamp	N10C		N12C	N14C	N15C	N16C	N17C	N18C	K19C	K20C	K22C	K24C	K25C
NEF04	Clamp			N12C	N14C	N15C	N16C	N17C	N18C	K19C	K20C	K22C	K24C	K25C
	Power-Lock	K10P2		K12P2	K14P2	K15P2	K16P2	K17P2	K18P2	K19P2	K20P2	K22P2		
	Taper-Lock	H10	H11	H12	H14	H15	H16	H17	H18	H19	H20	H22		
NEF10	Clamp					N15C			N18C	N19C	N20C	N22C	B24C	B25C
	Power-Lock			B12P2	B14P2	B15P2	B16P2	B17P2	B18P2	B19P2	B20P2	B22P2	B24P2	B25P2
	Taper-Lock				H14	H15	H16	H17	H18	H19	H20	H22	H24	H25
NEF18	Clamp									N19C	N20C	N22C	N24C	N25C
	Power-Lock				B14P2	B15P2	B16P2	B17P2	B18P2	B19P2	B20P2	B22P2	B24P2	B25P2
	Taper-Lock					H15	H16	H17	H18	H19	H20	H22	H24	H25
NEF25	Clamp													N25C
	Power-Lock								B18P2	B19P2	B20P2	B22P2	B24P2	B25P2
	Taper-Lock												H24	H25

Model No.	Coupling method	Bore diameter [mm]												
		30	32	33	35	36	38	40	42	43	45	46	48	50
NEF45	Clamp	N30C	N32C		N35C			N40C	N42C		K45C			K50C

Stock Products

Model No.	Keyway bore machining range [mm]		
	Standard hub：NH□□JD2	Extended hub：LH□□JD2	Enlarged hub：KH□□JD2
NEF02	12,14,15,16,19,20	—	25
NEF04	10,11,12,14,15,16,17,18,19,20,22	—	24,25,28
NEF10	12,14,15,16,17,18,19,20,22,24,25,28,30,32	15,19,24,25	35
NEF18	14,15,16,17,18,19,20,22,24,25,28,30,32,35	25,32	38
NEF25	17,18,19,20,22,24,25,28,30,32,35,38,40,42	35,38	45,48
NEF45	25,28,30,32,35,38,40,42,45,48,50	40	—
NEF80	30,32,35,38,40,42,45,48,50,55,60	40	—
NEF130	35,38,40,42,45,48,50,55,60,65,70	—	—

* See four-day and five-day delivery for combinations other than those listed above.

Short delivery Products

Model No.	Keyway bore machining range [mm]	
	N：Standard hub L：Extended hub	K：Enlarged hub
NEF02	φ9 to φ20	φ21 to φ25
NEF04	φ9 to φ23	φ24 to φ29
NEF10	φ11 to φ32	φ33 to φ40
NEF18	φ14 to φ35	φ36 to φ42
NEF25	φ16 to φ42	φ43 to φ48
NEF45	φ16 to φ50	φ51 to φ60
NEF80	φ17 to φ60	φ61 to φ70
NEF130	φ28 to φ74	φ75 to φ80
NEF210	φ28 to φ83	φ84 to φ90

Model No.	Keyway bore machining range [mm]	
	N：Standard hub L：Extended hub	K：Enlarged hub
NEF340	φ46 to φ95	φ96 to φ110
NEF540	φ52 to φ109	φ110 to φ120
NEF700	φ52 to φ118	φ119 to φ130

* Electroless nickel-plated type Fit Bore® couplings are supported up to standard hub NEF45.
* Enlarged hubs support only D0, D1, D2, D5, D6, and D8.

	Bore diameter [mm]														
	28	29	30	32	33	35	36	38	40	42	43	45	46	48	50
	B28C		B30C	B32C		B35C									
	B28P2		B30P2	B32P2		B35P2									
	H28		H30	H32		H35									
	B28C		B30C	B32C		B35C									
	B28P2		B30P2	B32P2		B35P2									
	H28		H30	H32		H35		H38							
	N28C		N30C	B32C		B35C		B38C	B40C	B42C					
	B28P2		B30P2	B32P2		B35P2	B36P2	B38P2	B40P2	B42P2					
	H28		H30	H32		H35		H38	H40	H42		H45		H48	H50

	Bore diameter [mm]				
	52	55	56	57	60
		K55C			

Transmission Capacity

NEF single type

NEF spacer type

NEH spacer type

NEF single type

Model No.	Allowable torque [N·m{kgf·m}]	Maximum rotation speed [min^{-1}]	Torsional stiffness [N·m/rad]	Shaft-direction spring constant [N/mm]	Allowable misalignment	
					Angular misalignment [deg]	End play [mm]
NEF02S	19.6{ 2}	20000	1.96×10^4	68.6	1	± 0.8
NEF04S	39.2{ 4}	20000	2.45×10^4	40.2	1	± 0.8
NEF10S	98 { 10}	20000	8.82×10^4	58.8	1	± 1.0
NEF18S	176 { 18}	18000	15.7×10^4	127	1	± 1.2
NEF25S	245 { 25}	15000	25.5×10^4	157	1	± 1.4
NEF45S	441 { 45}	13000	44.1×10^4	219	1	± 1.6
NEF80S	784 { 80}	12000	78.4×10^4	307	1	± 1.8
NEF130S	1270 {130}	10000	14.7×10^5	355	1	± 2.5
NEF210S	2060 {210}	8000	22.5×10^5	441	1	± 2.7
NEF340S	3330 {340}	7500	32.3×10^5	470	1	± 3.3
NEF540S	5290 {540}	3400	43.1×10^5	549	1	± 3.8
NEF700S	6860 {700}	3100	58.8×10^5	588	1	± 4.0

NEF spacer type

Model No.	Allowable torque [N·m{kgf·m}]	Maximum rotation speed [min^{-1}]	Torsional stiffness [N·m/rad]	Shaft-direction spring constant [N/mm]	Allowable misalignment		
					Angular misalignment [deg]	Parallel misalignment [mm]	End play [mm]
NEF02W	19.6{ 2}	20000	1.00×10^4	34.3	2	0.3	± 1.6
NEF04W	39.2{ 4}	20000	1.18×10^4	20.6	2	0.5	± 1.6
NEF10W	98 { 10}	20000	3.92×10^4	29.4	2	0.55	± 2.0
NEF18W	176 { 18}	18000	7.84×10^4	63.7	2	0.6	± 2.4
NEF25W	245 { 25}	15000	12.7×10^4	78.4	2	0.7	± 2.8
NEF45W	441 { 45}	13000	21.6×10^4	109	2	0.8	± 3.2
NEF80W	784 { 80}	12000	39.2×10^4	153	2	0.9	± 3.6
NEF130W	1270 {130}	10000	73.5×10^4	177	2	1.0	± 5.0
NEF210W	2060 {210}	8000	11.3×10^5	225	2	1.2	± 5.4
NEF340W	3330 {340}	7500	16.2×10^5	235	2	1.3	± 6.6
NEF540W	5290 {540}	3400	21.4×10^5	274	2	1.4	± 7.6
NEF700W	6860 {700}	3100	29.1×10^5	294	2	1.8	± 8.0

NEH spacer type

Model No.	Allowable torque [N·m{kgf·m}]	Maximum rotation speed [min^{-1}]	Torsional stiffness [N·m/rad]	Shaft-direction spring constant [N/mm]	Allowable misalignment		
					Angular misalignment [deg]	Parallel misalignment [mm]	End play [mm]
NEH09W	8820{ 900}	5000	51.9×10^5	627	1.4	1.6	± 3.2
NEH14W	13700{ 1400}	4700	84.3×10^5	1380	1	1.1	± 2.1
NEH20W	19600{ 2000}	4300	12.7×10^6	1370	1	1.3	± 2.4
NEH30W	29400{ 3000}	3900	20.6×10^6	1700	1	1.4	± 2.8
NEH41W	40200{ 4100}	3700	25.5×10^6	1880	1	1.7	± 2.8
NEH55W	53900{ 5500}	3600	35.3×10^6	2087	1	2.0	± 3.6
NEH70W	68600{ 7000}	3400	44.7×10^6	1920	1	2.2	± 3.8
NEH90W	88200{ 9000}	3100	58.2×10^6	2078	1	2.2	± 4.3
NEH110W	108000{11000}	2900	73.8×10^6	2038	1	2.2	± 4.8
NEH135W	132000{13500}	2700	94.6×10^6	2254	1	2.4	± 5.0
NEH150W	147000{15000}	2500	10.0×10^7	2450	1	2.6	± 5.6
NEH180W	176000{18000}	2400	12.2×10^9	2666	1	2.8	± 5.7

Notes 1. The maximum rotation speed is determined by the coupling's transmission capacity. Balance adjustment has not been performed. Contact Tsubaki if you need to perform balance adjustment for high-speed use.
2. The allowable misalignment values shown are the values applicable when the other two misalignment values are each 0.

NEF long spacer type

Model No.	Allowable torque [N·m]	Maximum rotation speed [min⁻¹]	Torsional stiffness specifications			E [mm]	Shaft-direction spring constant [N/mm]	Allowable misalignment		
			J_1	K_1	K_2			Angular misalignment θ [deg]	Parallel misalignment [mm]	End play [mm]
NEF04W	39.2	See the table on page 40.	63	0.0949	32.0	6.1	20.6	2	$(J-E) \times \tan\frac{1}{2}\theta$	± 1.6
NEF10W	98		64	0.0857	22.2	6.6	29.4	2		± 2.0
NEF18W	176		74	0.1152	22.5	8.3	63.7	2		± 2.4
NEF25W	245		89.4	0.0856	19.2	11.2	78.4	2		± 2.8
NEF45W	441		105.6	0.0656	20.0	11.7	109	2		± 3.2
NEF80W	784		119	0.0579	20.0	11.7	153	2		± 3.6
NEF130W	1270		148	0.0436	17.3	16.8	177	2		± 5.0
NEF210W	2060		161	0.0413	18.3	17	225	2		± 5.4
NEF340W	3330		195.6	0.0434	20.6	21.6	235	2		± 6.6
NEF540W	5290		225.6	0.0276	49.5	23.9	274	2		± 7.6
NEF700W	6860		257.6	0.0286	47.1	27.2	294	2		± 8.0

NEH long spacer type

Model No.	Allowable torque [N·m]	Maximum rotation speed [min⁻¹]	Torsional stiffness specifications			E [mm]	Shaft-direction spring constant [N/mm]	Allowable misalignment		
			J_1	K_1	K_2			Angular misalignment θ [deg]	Parallel misalignment [mm]	End play [mm]
NEH09W	8820	See the table on page 40.	258	0.0360	17.0	19	627	1.4	$(J-E) \times \tan\frac{1}{2}\theta$	± 3.2
NEH14W	13700		292	0.0560	16.3	19	1380	1		± 2.1
NEH20W	19600		330	0.0374	15.4	19	1370	1		± 2.4
NEH30W	29400		373	0.0374	14.3	21.5	1700	1		± 2.8
NEH41W	40200		390	0.0354	15.8	24	1880	1		± 2.8

J and *E* in the tables indicate the part dimensions in the diagram below.

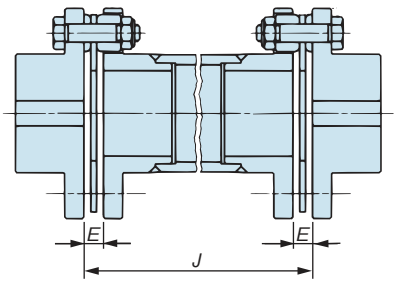
Formula for calculating long spacer type torsional stiffness

Formula: $\dfrac{T \times 10^4}{(J - J_1) \times K_1 + K_2}$ [N·m/rad]

J : *J* dimension (distance between hub faces) in external diagram [mm]

T : Transmission capacity allowable torque [N·m]

The constants in the tables above are used for J_1, K_1 and K_2.



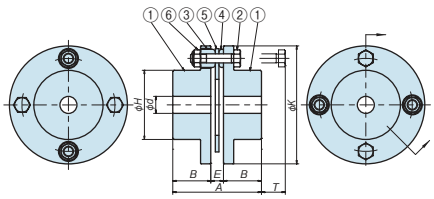
Notes 1. The maximum rotation speed is determined by the coupling's transmission capacity. Balance adjustment has not been performed. Contact Tsubaki if you need to perform balance adjustment for high-speed use.
2. The allowable misalignment values shown are the values applicable when the other two misalignment values are each 0.

NEF single type

Transmission capacity/Dimensions

Standard hub × Standard hub

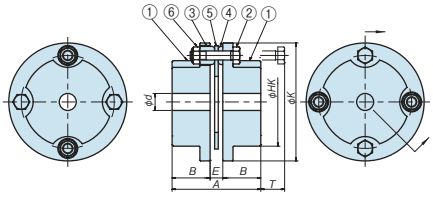
NEF □□ S - N □□ X N □□



(1) Standard hubs (2) Reamer bolt
(3) Washer (A)
(4) Washer (B) (5) Disk (6) U-nut

Enlarged hub × Enlarged hub

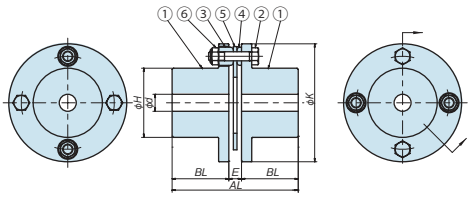
NEF □□ S - K □□ X K □□



(1) Enlarged hubs (2) Reamer bolt
(3) Washer (A)
(4) Washer (B) (5) Disk (6) U-nut

Extended hub × Extended hub

NEF □□ S - L □□ X L □□



(1) Extended hubs (2) Reamer bolt
(3) Washer (A)
(4) Washer (B) (5) Disk (6) U-nut

Unit : [mm]

Model No.	Allowable torque [N·m{kgf·m}]	Maximum rotation speed [min^{-1}]	Pilot bore diameter *d*	Keyway bore diameter range N:Standard hubs L :Extended hub	Keyway bore diameter range K:Enlarged hub	Torsional stiffness [N·m/rad]	Shaft-direction spring constant [N/mm]	Allowable misalignment Angular misalignment [deg]	Allowable misalignment End play [mm]
NEF02S	19.6{ 2}	20000	8	φ 9 to 20	φ 21 to 25	1.96×10^4	68.6	1	± 0.8
NEF04S	39.2{ 4}	20000	8	φ 9 to 23	φ 24 to 29	2.45×10^4	40.2	1	± 0.8
NEF10S	98 { 10}	20000	10	φ 11 to 32	φ 33 to 40	8.82×10^4	58.8	1	± 1.0
NEF18S	176 { 18}	18000	12	φ 14 to 35	φ 36 to 42	15.7 ×10^4	127	1	± 1.2
NEF25S	245 { 25}	15000	15	φ 16 to 42	φ 43 to 48	25.5 ×10^4	157	1	± 1.4
NEF45S	441 { 45}	13000	15	φ 16 to 50	φ 51 to 60	44.1 ×10^4	219	1	± 1.6
NEF80S	784 { 80}	12000	15	φ 17 to 60	φ 61 to 70	78.4 ×10^4	307	1	± 1.8
NEF130S	1270 {130}	10000	25	φ 28 to 74	φ 75 to 80	14.7 ×10^5	355	1	± 2.5
NEF210S	2060 {210}	8000	25	φ 28 to 83	φ 84 to 90	22.5 ×10^5	441	1	± 2.7
NEF340S	3330 {340}	7500	45	φ 46 to 95	φ 96 to 110	32.3 ×10^5	470	1	± 3.3
NEF540S	5290 {540}	3400	50	φ 52 to 109	φ 110 to 120	43.1 ×10^5	549	1	± 3.8
NEF700S	6860 {700}	3100	50	φ 52 to 118	φ 119 to 130	58.8 ×10^5	588	1	± 4.0

Model No.	*A*	*AL* Extended hub	*B*	*BL* Extended hub	*E*	φ *H*	φ *HK* Enlarged hub	φ *K*	*T*	Weight [kg]	Moment of inertia [kg·m^2]
NEF02S	44.9	—	20	—	4.9	32	45	57	11	0.33	1.23×10^{-4}
NEF04S	56.9	86.1	25.4	40	6.1	34	50	67.5	15.5	0.6	2 ×10^{-4}
NEF10S	57.4	86.6	25.4	40	6.6	46	66	81	16	0.8	6 ×10^{-4}
NEF18S	65.7	98.3	28.7	45	8.3	51	66	93	23	1.3	13 ×10^{-4}
NEF25S	78.2	111.2	33.5	50	11.2	61	78	104	21	1.8	22 ×10^{-4}
NEF45S	93.9	131.7	41.1	60	11.7	71	92	126	23	3.2	56 ×10^{-4}
NEF80S	107.3	151.7	47.8	70	11.7	84	104	143	29.5	4.9	110 ×10^{-4}
NEF130S	131.2	186.8	57.2	85	16.8	106	129	168	20	7.8	270 ×10^{-4}
NEF210S	144	257	63.5	120	17	118	147	194	32.5	11.7	520 ×10^{-4}
NEF340S	174	301.6	76.2	140	21.6	137	166	214	19.5	16.4	880 ×10^{-4}
NEF540S	201.7	303.9	88.9	140	23.9	156	191	246	24.5	25.1	1750 ×10^{-4}
NEF700S	230.4	327.2	101.6	150	27.2	169	209	276	40	37	3250 ×10^{-4}

Note: 1. See page 36 for the enlarged hub/extended hub dimensions. For long hubs, the overall length will be extended for as much as dimension B is lengthened.
2. All sizes are stock products.
3. The maximum rotation speed is determined by the coupling's transmission capacity. Balance adjustment has not been performed. Contact Tsubaki if you need to perform balance adjustment for high-speed use.
4. Weight and moment of inertia values apply to standard hubs with maximum bore diameters (keyways). For enlarged hubs/extended hubs, add the values on page 36.
5. End play value is based on zero angular misalignment.
6. Check the key contact pressure in line with your operation conditions by referring to page 36. Hubs are made of S45C.

Model Number

NEF18 S - N H 30 E D2 X K H 40 J D2

Single type	Hub type	Bore tolerance	Bore diameter	Keyway tolerance	Set screw position

See page 27 for details.

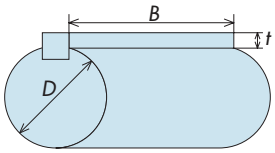
Increases in weight/moment of inertia per single enlarged hub/extended hub

Model No.	Enlarged hub		Extended hub	
	Weight [kg]	Moment of inertia [kg·m²]	Weight [kg]	Moment of inertia [kg·m²]
NEF02S	0.027	0.18×10^{-4}	—	—
NEF04S	0.046	0.34×10^{-4}	0.056	0.12×10^{-4}
NEF10S	0.15	1.3×10^{-4}	0.20	0.77×10^{-4}
NEF18S	0.042	1.1×10^{-4}	0.14	0.67×10^{-4}
NEF25S	0.13	3.0×10^{-4}	0.20	1.3×10^{-4}
NEF45S	0.14	5.8×10^{-4}	0.30	2.8×10^{-4}
NEF80S	0.16	11×10^{-4}	0.47	6.4×10^{-4}
NEF130S	0.67	36×10^{-4}	0.99	20×10^{-4}
NEF210S	1.03	73×10^{-4}	2.45	64×10^{-4}
NEF340S	0.9	118×10^{-4}	3.85	132×10^{-4}
NEF540S	2.31	273×10^{-4}	3.91	178×10^{-4}
NEF700S	2.91	431×10^{-4}	4.41	236×10^{-4}

Notes 1. See the table below for the enlarged hub/extended hub dimensions.
2. See page 32 for product stock information.
3. Weight and moment of inertia values apply to standard hubs with maximum bore diameters.
For enlarged hubs/extended hubs, add the values in the table above.
4. Check the key contact pressure in line with your operation conditions.
Hubs are made of S45C.

● Reference: Key contact pressure calculation

$$P = \frac{2000 \times T}{D \times t \times B} \ [N/mm^2]$$



T = Operation torque [N·m]
D = Bore diameter [mm]
t = Key height [mm]
B = Effective key length [mm]

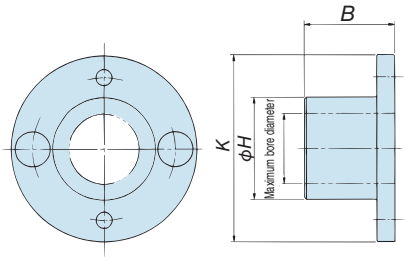
NEF Series hub dimensions

Enlarged hubs If the transmission capacity has sufficient leeway but the shaft diameter exceeds the maximum bore diameter of a standard hub, there is no need to use a larger size model if you use an enlarged hub with a larger boss diameter (*ØH*).

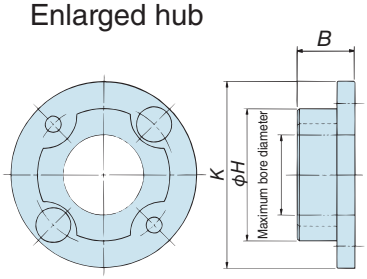
Extended hubs If the key contact pressure is too high when using standard hubs, it can be lowered by using extended hubs with an extended hub length (*B*).

Square hubs A type used by combining an EL Series Power-Lock with a pressure flange set. Taps for pressure bolts are provided.

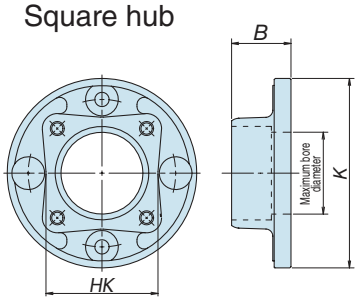
Standard hub/extended hub



Enlarged hub



Square hub



Unit: [mm]

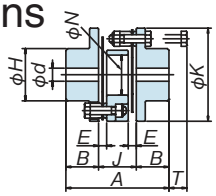
Model No.	ϕ K	B			ϕ H		HK	Pilot bore d
		Standard hubs Enlarged hubs	Extended hubs	Square hubs	Standard hubs Extended hubs	Enlarged hubs	Square hubs	
NEF02	57	20	–	–	32	45	–	8
NEF04	67.5	25.4	40	–	34	50	–	8
NEF10	81	25.4	40	25.4	46	66	47	10
NEF18	93	28.7	45	28.7	51	66	49	12
NEF25	104	33.5	50	33.5	61	78	60	15
NEF45	126	41.1	60	–	71	92	–	15
NEF80	143	47.8	70	–	84	104	–	15
NEF130	168	57.2	85	–	106	129	–	25
NEF210	194	63.5	120	–	118	147	–	25
NEF340	214	76.2	140	–	137	166	–	45
NEF540	246	88.9	140	–	156	191	–	50
NEF700	276	101.6	150	–	169	209	–	50

Note: See the page containing the coupling method description for the bore diameter range.

NEF spacer type

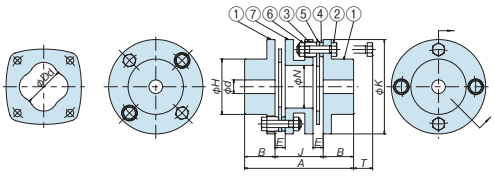
Transmission capacity/Dimensions

NEF02W - N □□ X N □□



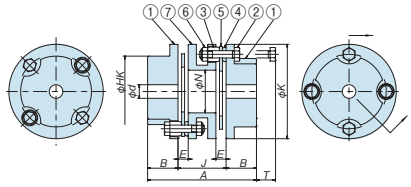
Note: The spacer shape is different from the shape for other sizes. Standard hubs and enlarged hubs are kept in stock. Inquire for information on extended hubs.

Standard hub × Standard hub
NEF □□ W - N □□ X N □□



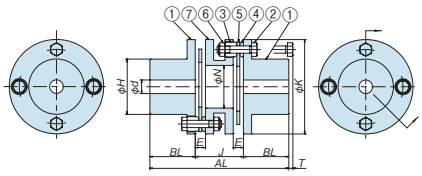
(1) Standard hubs (2) Reamer bolt (3) Washer (A)
(4) Washer (B) (5) Disk (6) U-nut (7) Spacer

Enlarged hub × Enlarged hub
NEF □□ W - K □□ X K □□



(1) Enlarged hubs (2) Reamer bolt (3) Washer (A)
(4) Washer (B) (5) Disk (6) U-nut (7) Spacer

Extended hub × Extended hub
NEF □□ W - L □□ X L □□



(1) Extended hubs (2) Reamer bolt (3) Washer (A)
(4) Washer (B) (5) Disk (6) U-nut (7) Spacer

Unit : [mm]

Model No.	Allowable torque [N·m{kgf·m}]	Maximum rotation speed [min⁻¹]	Pilot bore diameter d	Keyway bore diameter range N:Standard hubs L:Extended hub	Keyway bore diameter range K:Enlarged hub	Torsional stiffness [N·m/rad]	Shaft-direction spring constant [N/mm]	Allowable misalignment Angular misalignment [deg]	Allowable misalignment End play [mm]	Allowable misalignment Parallel misalignment [mm]
NEF02W	19.6{ 2}	20000	8	φ 9 to 20	φ 21 to 25	1.00×10⁴	34.3	2	± 1.6	0.3
NEF04W	39.2{ 4}	20000	8	φ 9 to 23	φ 24 to 29	1.18×10⁴	20.6	2	± 1.6	0.5
NEF10W	98 { 10}	20000	10	φ 11 to 32	φ 33 to 40	3.92×10⁴	29.4	2	± 2.0	0.55
NEF18W	176 { 18}	18000	12	φ 14 to 35	φ 36 to 42	7.84×10⁴	63.7	2	± 2.4	0.6
NEF25W	245 { 25}	15000	15	φ 16 to 42	φ 43 to 48	12.7 ×10⁴	78.4	2	± 2.8	0.7
NEF45W	441 { 45}	13000	15	φ 16 to 50	φ 51 to 60	21.6 ×10⁴	109	2	± 3.2	0.8
NEF80W	784 { 80}	12000	15	φ 17 to 60	φ 61 to 70	39.2 ×10⁴	153	2	± 3.6	0.9
NEF130W	1270 {130}	10000	25	φ 28 to 74	φ 75 to 80	73.5 ×10⁴	177	2	± 5.0	1
NEF210W	2060 {210}	8000	25	φ 28 to 83	φ 84 to 90	11.3 ×10⁵	225	2	± 5.4	1.2
NEF340W	3330 {340}	7500	45	φ 46 to 95	φ 96 to 110	16.2 ×10⁵	235	2	± 6.6	1.3
NEF540W	5290 {540}	3400	50	φ 52 to 109	φ 110 to 120	21.4 ×10⁵	274	2	± 7.6	1.4
NEF700W	6860 {700}	3100	50	φ 52 to 118	φ 119 to 130	29.1 ×10⁵	294	2	± 8.0	1.8

Model No.	A	AL Extended hub	B	BL Extended hub	E	φ H	φ HK Enlarged hub	J	φ K	T	φ N	φ Dd	Weight [kg]	Moment of inertia [kg·m²]
NEF02W	63	—	20	—	4.9	32	45	23	57	11	24	21	0.45	1.66×10⁻⁴
NEF04W	86.8	116	25.4	40	6.1	34	50	36	67.5	15.5	25	29	0.95	5.3 ×10⁻⁴
NEF10W	89.8	119	25.4	40	6.6	46	66	39	81	16	37	37	1.4	12 ×10⁻⁴
NEF18W	104.4	137	28.7	45	8.3	51	66	47	93	23	38	39	2.3	25 ×10⁻⁴
NEF25W	120	153	33.5	50	11.2	61	78	53	104	21	47	45	3	41 ×10⁻⁴
NEF45W	144.2	182	41.1	60	11.7	71	92	62	126	23	58	51	5.4	110 ×10⁻⁴
NEF80W	164.6	209	47.8	70	11.7	84	104	69	143	29.5	71	61	8.2	200 ×10⁻⁴
NEF130W	192.4	248	57.2	85	16.8	106	129	78	168	20	92	73	12.2	447 ×10⁻⁴
NEF210W	216	329	63.5	120	17	118	147	89	194	32.5	103	84	18.9	931 ×10⁻⁴
NEF340W	249.4	377	76.2	140	21.6	137	166	97	214	19.5	118	97	25.1	1478 ×10⁻⁴
NEF540W	286.8	389	88.9	140	23.9	156	191	109	246	24.5	135	110	38.6	3014 ×10⁻⁴
NEF700W	337.2	434	101.6	150	27.2	169	209	134	276	40	146	120	60	5972 ×10⁻⁴

Notes 1. See page 36 for the enlarged hub/extended hub dimensions.
2. The maximum rotation speed is determined by the coupling's transmission capacity. Balance adjustment has not been performed. Contact Tsubaki if you need to perform balance adjustment for high-speed use.
3. Weight and moment of inertia values apply to standard hubs with maximum bore diameters. For enlarged hubs/extended hubs, add the values on page 36.
4. Spacers can also be manufactured in nonstandard lengths. See the long spacer information on page 39.

Model Number

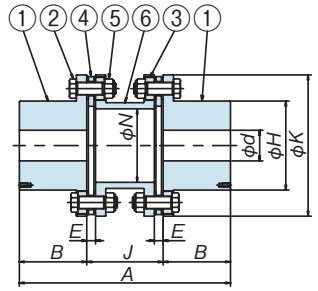
NEF700 W - N H 70 E D2 X K H 120 J D2

Spacer type | Hub type | Bore tolerance | Bore diameter | Keyway tolerance | Set screw position

See page 27 for details.

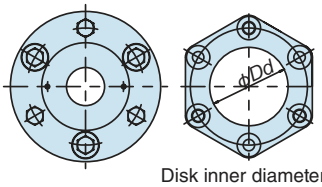
NEH large spacer type

Transmission capacity/Dimensions



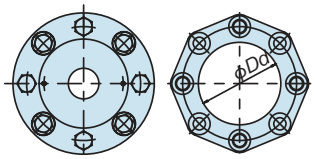
(1) Hubs
(2) Reamer bolt
(3) Overload washer
(4) Disk set
(5) U-nut
(6) Spacer

Six bolts (NEH09)



Disk inner diameter

Eight bolts (NEH14 to NEH180)



Disk inner diameter

Unit : [mm]

Model No.	Allowable torque [N·m{kgf·m}]	Maximum rotation speed [min^{-1}]	Pilot bore diameter d	Keyway bore diameter range [φ]	Torsional stiffness [N·m/rad{kgf·m/rad}]	Shaft-direction spring constant [N/mm{kgf/mm}]	Allowable misalignment		
							Angular misalignment [deg]	End play [mm]	Parallel misalignment [mm]
NEH09W	8820{ 900}	5000	70	111	51.9×10^5{ 5.3×10^5}	627{ 64}	1.4	± 3.2	1.6
NEH14W	13700{ 1400}	4700	70	111	84.3×10^5{ 8.6×10^5}	1380{141}	1	± 2.1	1.1
NEH20W	19600{ 2000}	4300	75	133	12.7×10^6{ 1.3×10^6}	1370{140}	1	± 2.4	1.3
NEH30W	29400{ 3000}	3900	75	152	20.6×10^6{ 2.1×10^6}	1700{183}	1	± 2.8	1.4
NEH41W	40200{ 4100}	3700	120	165	25.5×10^6{ 2.6×10^6}	1880{192}	1	± 2.8	1.7
NEH55W	53900{ 5500}	3600	130	187	35.3×10^6{ 3.6×10^6}	2087{213}	1	± 3.6	2.0
NEH70W	68600{ 7000}	3400	110	205	44.7×10^6{ 4.6×10^6}	1920{196}	1	± 3.8	2.1
NEH90W	88200{ 9000}	3100	120	231	58.2×10^6{ 5.9×10^6}	2078{212}	1	± 4.3	2.2
NEH110W	108000{11000}	2900	190	254	73.8×10^6{ 7.5×10^6}	2038{208}	1	± 4.8	2.2
NEH135W	132000{13500}	2700	140	263	94.6×10^6{ 9.7×10^6}	2254{230}	1	± 5.0	2.4
NEH150W	147000{15000}	2500	150	275	10.0×10^7{10.2×10^6}	2450{250}	1	± 5.6	2.6
NEH180W	176000{18000}	2400	160	289	12.2×10^9{12.4×10^6}	2666{272}	1	± 5.7	2.8

Model No.	A	B	E	φ H	J	φ K	φ Dd	φ N	Weight [kg]	Moment of inertia [kg·m^2]
NEH09W	375	110	19.0	161	155	276	144	138	55	5000
NEH14W	409	127	19.0	161	155	276	155	132	61	5500
NEH20W	463	146	19.0	193	171	308	178	160	85	10300
NEH30W	517	165	21.5	218	187	346	201	180	125	18500
NEH41W	566	171	24.0	240	224	375	218	198	172	29300
NEH55W	720	225	29.5	272	270	445	252	228	293	64800
NEH70W	768	247	31.3	297	274	470	275	249	344	90800
NEH90W	843	278	32.0	334	287	511	304	280	456	144000
NEH110W	902	305	32.5	364	292	556	343	296	575	215000
NEH135W	945	317	34.0	382	311	587	350	312	696	290000
NEH150W	1005	331	34.5	399	343	629	368	325	826	390000
NEH180W	1050	347	35.5	419	356	654	380	340	954	506000

Notes 1. All sizes are made-to-order products.
2. The maximum rotation speed is determined by the coupling's transmission capacity. Balance adjustment has not been performed. Contact Tsubaki if you need to perform balance adjustment for high-speed use.
3. Weight and moment of inertia values apply to maximum bore diameters (keyway).
4. Spacers can also be manufactured in nonstandard lengths. See the long spacer information on page 39.
5. End play value is based on zero angular misalignment.
6. Check the key contact pressure in line with your operation conditions by referring to page 36. Hubs are made of S45C.

Model Number

NEH14 W - N H 100 J D2 X A H 120 J D2

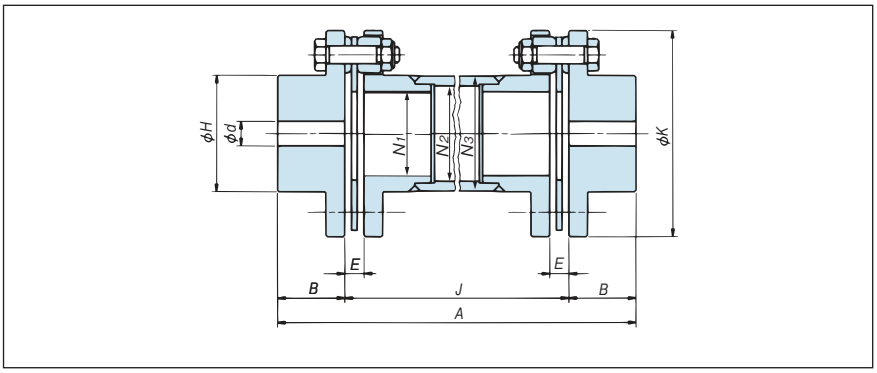
Spacer type | Hub type | Bore tolerance | Bore diameter | Keyway tolerance | Set screw position

See page 29 for details.

Long spacer type

Transmission capacity/Dimensions

This type can be used with a floating shaft when the distance between shafts is large.
It tolerates significant parallel misalignment depending on the distance.
Suitable for line shaft drive with miter gear boxes.



Unit : [mm]

Model No.	Allowable torque [N·m{kgf·m}]	Pilot bore diameter d	Maximum rotation speed	B	Dd	E	ϕ H	ϕ K	N_1	N_2	N_3	A	J	Allowable misalignment		
														Angular misalignment [deg]	End play [mm]	Parallel misalignment [mm]
NEF04W	39.2{ 4}	8	23	25.4	29	6.1	34	67.5	17	27	32	2B+J	Desired length (Max6000)	2	± 1.6	(J − E) × sin½θ
NEF10W	98 { 10}	10	32	25.4	37	6.6	46	81	26	36	42			2	± 2.0	
NEF18W	176 { 18}	12	35	28.7	39	8.3	51	93	30	40	46			2	± 2.4	
NEF25W	245 { 25}	15	42	33.5	45	11.2	61	104	38	50	56			2	± 2.8	
NEF45W	441 { 45}	15	50	41.1	51	11.7	71	126	48	60	68			2	± 3.2	
NEF80W	784 { 80}	15	60	47.8	61	11.7	84	143	60	70	80			2	± 3.6	
NEF130W	1270 { 130}	25	74	57.2	73	16.8	106	168	76	92	102			2	± 5.0	
NEF210W	2060 { 210}	25	83	63.5	84	17	118	194	88	103	115			2	± 5.4	
NEF340W	3330 { 340}	45	95	76.2	97	21.6	137	214	106	120	132			2	± 6.6	
NEF540W	5290 { 540}	50	109	88.9	110	23.9	156	246	125	134	154			2	± 7.6	
NEF700W	6860 { 700}	50	118	101.6	120	27.2	169	276	136	145.2	165.2			2	± 8.0	
NEH09W	8820 { 900}	70	111	110	144	19	161	276	127	135	159			1.4	± 3.2	
NEH14W	13700 { 1400}	70	111	127	155	19	161	276	127	135	159			1	± 2.1	
NEH20W	19600 { 2000}	75	133	146	178	19	193	308	150	160.7	190.7			1	± 2.4	
NEH30W	29400 { 3000}	75	152	165	201	21.5	218	346	175	186.3	216.3			1	± 2.8	
NEH41W	40200 { 4100}	120	165	171	218	24	240	375	187	196	232			1	± 2.8	
NEH55W	53900 { 5500}	130	187	225	252	29.5	272	445	207	227.4	267.4		Desired length (Max4000)	1	± 3.6	
NEH70W	68600 { 7000}	110	205	247	275	31.3	297	470	209	230	280			1	± 3.8	
NEH90W	88200 { 9000}	120	231	278	304	32	334	511	247	273.9	323.9			1	± 4.3	
NEH110W	108000 {11000}	190	254	305	343	32.5	364	556	277	305.6	355.6			1	± 4.8	
NEH135W	132000 {13500}	140	263	317	350	34	382	587	304	331	381			1	± 5.0	
NEH150W	147000 {15000}	150	275	331	368	34.5	399	629	304	331	381			1	± 5.6	
NEH180W	176000 {18000}	160	289	347	380	35.5	419	654	319	344.6	406.4			1	± 5.7	

Notes 1. All sizes are made-to-order products.
2. Specify the *J* dimension when ordering.
3. Balance adjustment may be needed for high-speed use or a particularly long *J* dimension. A hazard speed check is also required. See the long spacer type rotation limit table on page 40.
4. Check the key contact pressure in line with your operation conditions by referring to page 36. Hubs are made of S45C.

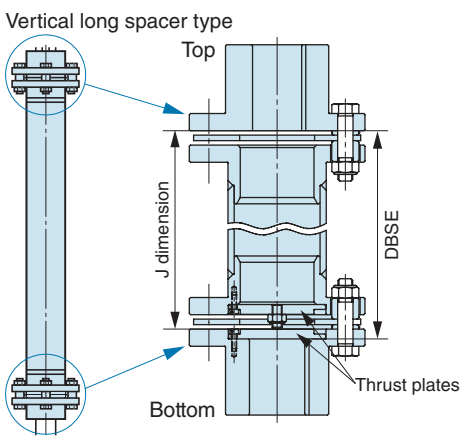
Vertical long spacer type

For upright use, a thrust plate is needed on the bottom side as shown in the figure on the right if the distance between shaft ends of each size is longer than the J dimensions or DBSE shown in the table below.

Model No.	J dimension	DBSE
NEF04W	319	324
NEF10W	408	413
NEF18W	1171	1176
NEF25W	1429	1434
NEF45W	1386	1393
NEF80W	1505	1513

Model No.	J dimension	DBSE
NEF130W	1910	1918
NEF210W	1924	1934
NEF340W	2143	2153
NEF540W	1542	1552
NEF700W	1463	1473

Model No.	J dimension	DBSE
NEH09W	1153	1163
NEH14W	1767	1777
NEH20W	1276	1286
NEH30W	1742	1752
NEH41W	1355	1365



Notes 1. The distance between shaft ends will be longer than the J dimension when a thrust plate is installed. Indicate the distance between shaft ends when requesting a quote.
2. Consider using a end plate to prevent the top-side hub from falling. Contact us for more information.

Formula for calculating long spacer type torsional stiffness

Use the following formula to calculate the long spacer type torsional stiffness.

$$\frac{T \times 10^4}{(J - J_1) \cdot K_1 + K_2}$$ N·m/rad {kgf·m/rad}

Model No.	J_1	K_1	K_2
NEF04W	63	0.0949	32
NEF10W	64	0.0857	22.2
NEF18W	74	0.1152	22.5
NEF25W	89.4	0.0856	19.2
NEF45W	105.6	0.0656	20
NEF80W	119	0.0579	20
NEF130W	148	0.0436	17.3
NEF210W	161	0.0413	18.3
NEF340W	195.6	0.0434	20.6
NEF540W	225.6	0.0276	49.5
NEF700W	257.6	0.0286	47.1
NEH09W	258	0.036	17
NEH14W	292	0.056	16.3
NEH20W	330	0.0374	15.4
NEH30W	373	0.0374	14.3
NEH41W	390	0.0354	15.8

J : *J* dimension (distance between hub faces) in external diagram [mm]
T : Transmission capacity allowable torque [N·m{kgf·m}]
The constants in the tables above are used for J_1, K_1 and K_2.

Approximate weight and moment of inertia of long spacer type (GD^2 formula)

Model No.	Weight specifications W_1	W_2	J_1	Moment of inertia (GD^2) specifications G_1	d_1	G_2	d_2
NEF04W	0.02	1.2	6.3	23	8.8	6	2.19
NEF10W	0.03	1.5	6.4	48	15.3	12	3.83
NEF18W	0.03	2.7	7.4	105	18.6	26	4.65
NEF25W	0.04	3.5	8.9	173	28.2	43	7.05
NEF45W	0.06	6.3	10.6	459	41.1	115	10.28
NEF80W	0.09	9.6	11.9	936	56.5	234	14.13
NEF130W	0.12	15.4	14.8	1948	94.3	487	23.59
NEF210W	0.16	22.5	16.1	4006	119.2	1001	29.79
NEF340W	0.19	29.9	19.6	6475	159.1	1619	39.78
NEF540W	0.36	46.1	22.6	13185	208.4	3246	52.09
NEF700W	0.38	69.5	25.8	25423	241.9	6356	60.47
NEH09W	0.44	64.1	25.8	22311	217.5	5578	54.38
NEH14W	0.44	72.4	29.2	25117	217.5	6279	54.38
NEH20W	0.65	110.7	33	49157	311.0	12289	77.74
NEH30W	0.75	150.9	37.3	85693	407.5	21423	101.87
NEH41W	0.95	197.9	39	132760	461.2	33190	115.3

The weight of a long spacer type is calculated using the following formula (when using the maximum bore diameter):

Unit: kg

$$\text{Weight} = W_1 (J\text{-}J_1) + W_2$$

J: *J* dimension (distance between hub faces): mm
The constants in the tables above are used for J_1, W_1, W_2, d_1, d_2, G_1, and G_2.

GD^2 and the moment of inertia are calculated using the following formula (when using the maximum bore diameter):

$$GD^2 = W_1 x\ d_1\ (J\text{-}J_1) + G_1$$

Unit: kgf · cm^2

$$\text{Moment of inertia} = W_1 x\ d_2\ (J\text{-}J_1) + G_2$$

Unit: kg · cm^2

* This formula is used when the *J* dimension exceeds J_1 (Unit: cm).

Long spacer type rotation limit

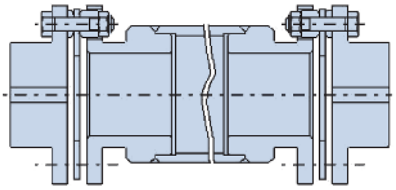
When long spacer types are used at high speeds, the rotation speed needs to be checked to avoid the resonance point.
When selecting long spacer types, check each model number's *J* dimension and whether its rotation speed is within the limit.
If the operating rotation speed exceeds the value shown below, a higher model number must be selected.

Long spacer length (J dimension) limits

Model No.	Operating rotation speed [min^{-1}] 3600	2000	1800	1500	1200	1000	900	750	720	600	500	400	300	200	150
NEF04W	980	1310	1380	1510	1680	1840	1940	2130	2170	2380	2610	2910	3360	4120	4750
NEF10W	1120	1500	1580	1730	1940	2120	2230	2450	2500	2730	2990	3350	3860	4730	5460
NEF18W	1180	1580	1660	1820	2040	2230	2350	2570	2620	2870	3150	3520	4060	4970	5740
NEF25W	1310	1760	1850	2030	2260	2480	2610	2860	2920	3190	3500	3910	4510	5520	
NEF45W	1440	1930	2030	2230	2490	2720	2870	3140	3210	3510	3840	4290	4960		
NEF80W	1560	2090	2200	2410	2690	2950	3100	3400	3470	3800	4160	4650	5360		
NEF130W	1780	3280	2510	2750	3070	3360	3540	3870	3950	4330	4740	5290			
NEF210W	1890	2520	2660	2910	3250	3560	3750	4100	4190	4580	5020	5610			
NEF340W	2024	2720	2870	3130	3500	3830	4040	4420	4510	4930	5400				
NEF540W	2180	2910	3070	3360	3750	4100	4320	4730	4820	5280	5780				
NEF700W	2270	3030	3190	3490	3890	4260	4490	4910	5010	5490					
NEH09W	2190	2930	3090	3380	3780	4130	4360	4770	4870	5330	5830				
NEH14W	2190	2930	3090	3380	3780	4130	4360	4770	4870	5330	5830				
NEH20W	2400	3200	3380	3690	4130	4520	4760	5210	5320	5820					
NEH30W	2570	3430	3610	3960	4420	4840	5100	5580	5690						
NEH41W	2650	3540	3730	4080	4560	4990	5260	5760	5870						

Long spacer high-speed type

A larger coupling size can be selected as a way to avoid a dangerous RPM range. When use of a larger size is not possible, the same effect can be achieved by increasing the spacer weight. Please contact us.



Model Number

NEF25 W - N H 35 J D2 V X N H 40 J D2 - J 1000

Indicates bore diameter at ground (bottom) side in vertical long spacer type.

Long spacer

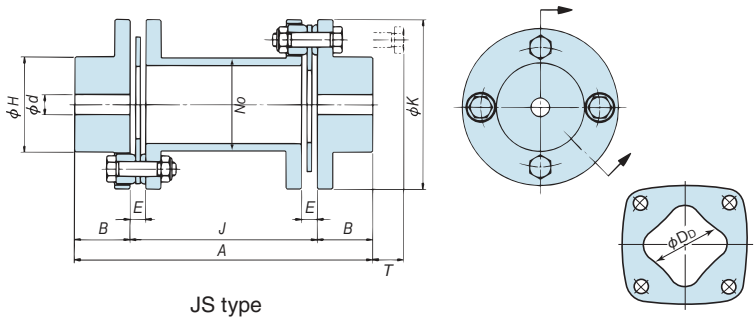
Inter-flange distance

Standard-dimension long spacer type

Dimensions

Long spacer products of specific dimensions are standardized.

This type is an equally balanced model equivalent to G6.3: 1800 min^{-1}.



JS type

Unit : [mm]

Model No.	Type	Long spacer	Pilot bore diameter d	A	B	ϕ D_D	E	ϕ H	ϕ K	N_0	T
NEF10W	**JS**	**100,140**	10	2B+J	25.4	37	6.6	46	81	46	16
NEF18W	**JS**	**100,140**	12		28.7	39	8.3	51	93	48	23
NEF25W	**JS**	**100,127,140**	15		33.5	45	11.2	61	104	58	21
NEF45W	**JS**	**100**,127,140, 180,200,250	15		41.1	51	11.7	71	126	69	23
NEF80W	**JS**	127,140,180, 200,250	15		47.8	61	11.7	84	143	81	29.5
NEF130W	**JS**	127,140,180, 200,250	25		57.2	73	16.8	106	168	102	20
NEF210W	**JS**	140,180,200	25		63.5	84	17	118	194	114	32.5
NEF340W	**JS**	180,200	45		76.2	97	21.6	137	214	132	19.5

Notes 1. See the page containing the coupling method description for the bore diameter range.

2. Bold J dimensions are for stock products, and non-bold dimensions are for made-to-order products.

Using standard-size long spacers

The methods below can be used when standard-size long spacer products cannot be made to fit the equipment.

(1) When desired long spacer length is slightly longer than stock products

⇩

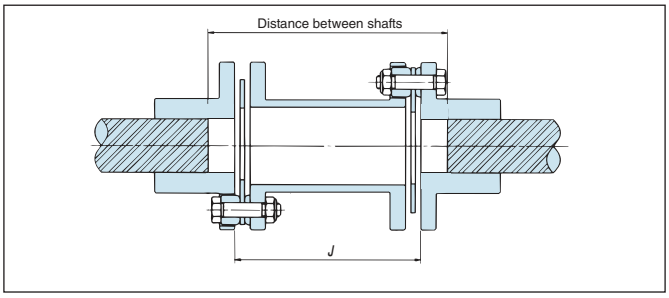
Use extended hubs for both hubs.

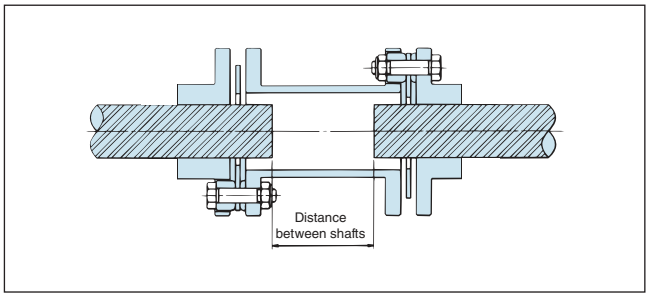
(2) Slightly shorter

⇩

Have both shafts project out from hubs.

Depending on the shaft diameter, there may be interference with the disks or spacers, so check the dimensions.



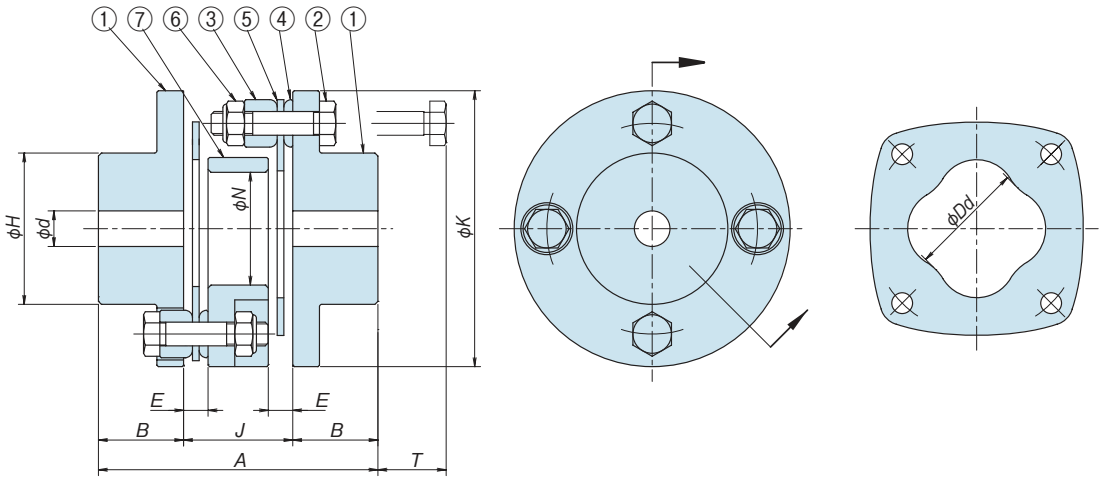


Single-plate spacers

Dimensions

A spacer type with a shorter distance between hub faces (J dimension), suitable for use when the distance between shaft ends is short or when a short overall length is required.

(1) Hubs
(2) Reamer bolt
(3) Washer (A)
(4) Washer (B)
(5) Disk
(6) U-nut
(7) Single-plate spacer



Unit : [mm]

Model No.	Pilot bore diameter d	A	B	E	ϕ H	J	ϕ K	ϕ Dd	ϕ N	T	Weight [kg]	Moment of inertia [kg·m²]
NEF04W	8	79	25.4	6.1	34	28.2	67.5	29	25	15.5	0.82	4.7×10^{-4}
NEF10W	10	79.6	25.4	6.6	46	28.8	81	37	36	16	1.18	1.0×10^{-4}
NEF18W	12	94.3	28.7	8.3	51	36.9	93	39	38	23	1.93	22×10^{-4}
NEF25W	15	107.2	33.5	11.2	61	40.2	104	45	43	21	2.56	35×10^{-4}
NEF45W	15	128.5	41.1	11.7	71	46.3	126	51	54	23	4.55	91×10^{-4}
NEF80W	15	148.9	47.8	11.7	84	53.3	143	61	65	29.5	7.00	188×10^{-4}
NEF130W	25	174	57.2	16.8	106	59.6	168	73	76	20	10.67	381×10^{-4}
NEF210W	25	197.5	63.5	17	118	70.5	194	84	90	32.5	16.9	825×10^{-4}
NEF340W	45	228.8	76.2	21.6	137	76.4	214	97	90	19.5	22.29	1272×10^{-4}
NEF540W	50	265.8	88.9	23.9	156	88	246	110	100	24.5	34.75	2641×10^{-4}
NEF700W	50	309.2	101.6	27.2	169	106	276	120	110	40	54.24	5174×10^{-4}

Notes 1. See the page containing the coupling method description for the bore diameter range.
2. Weight and moment of inertia values apply to standard hubs with maximum bore diameters (keyways).

Model Number

NEF25 W - N H 35 J D2 X N H 40 E D2 - JT 40.2

JT : Single-plate spacer
JS : Standard-size long spacer

Inter-flange distance

Coupling Methods

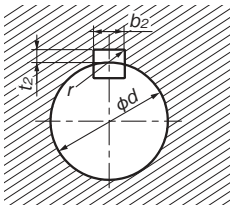
List of standard bore diameters

Hubs machined with new JIS normal type bores are available.
See page 31 for details.

Model No.	Hub type	Keyway	Bore diameter [mm]
NEF02	Standard hub	New JIS normal type	12,14,15,16,19,20
	Enlarged hub		25
NEF04	Standard hub		10,11,12,14,15,16,17,18,19,20,22
	Enlarged hub		24,25,28
	Extended hub		15,19,24,25
NEF10	Standard hub		12,14,15,16,17,18,19,20,22,24,25,28,30,32
	Enlarged hub		35
	Extended hub		15,19,24,25
NEF18	Standard hub		14,15,16,17,18,19,20,22,24,25,28,30,32,35
	Enlarged hub		38
	Extended hub		25,32
NEF25	Standard hub		17,18,19,20,22,24,25,28,30,32,33,35,38,40
	Enlarged hub		45,48
	Extended hub		35,38
NEF45	Standard hub		25,28,30,32,35,38,40,42,45,48,50
	Enlarged hub		Bore machining service available
	Extended hub		40
NEF80	Standard hub		30,32,35,38,40,42,45,48,50,55,60
	Enlarged hub		Bore machining service available
	Extended hub		40
NEF130	Standard hub		35,38,40,42,45,48,50,55,60,65,70
	Enlarged hub		Bore machining service available
	Extended hub		Bore machining service available

NEF210 to NEF700 sizes are supported with the bore machining service for all bore diameters.

Bore diameter keyway dimensions



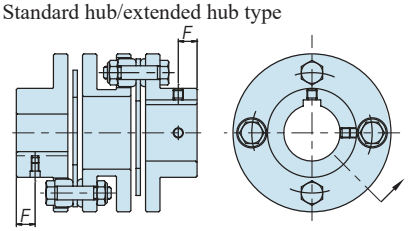
Key	d	b_2(Js9)	t_2	t_2 tolerance	r
3×3	8 < d ≤ 10	3 ±0.012	1.4	$^{+0.1}_{0}$	0.1
4×4	10 < d ≤ 12	4 ±0.015	1.8	$^{+0.1}_{0}$	0.1
5×5	12 < d ≤ 17	5 ±0.015	2.3	$^{+0.1}_{0}$	0.2
6×6	17 < d ≤ 22	6 ±0.015	2.8	$^{+0.1}_{0}$	0.2
8×7	22 < d ≤ 30	8 ±0.018	3.3	$^{+0.2}_{0}$	0.2
10×8	30 < d ≤ 38	10 ±0.018	3.3	$^{+0.2}_{0}$	0.3
12×8	38 < d ≤ 44	12 ±0.021	3.3	$^{+0.2}_{0}$	0.3
14×9	44 < d ≤ 50	14 ±0.021	3.8	$^{+0.2}_{0}$	0.3
16×10	50 < d ≤ 58	16 ±0.021	4.3	$^{+0.2}_{0}$	0.3
18×11	58 < d ≤ 65	18 ±0.021	4.4	$^{+0.2}_{0}$	0.3
20×12	65 < d ≤ 75	20 ±0.026	4.9	$^{+0.2}_{0}$	0.5
22×14	75 < d ≤ 85	22 ±0.026	5.4	$^{+0.2}_{0}$	0.5
25×14	85 < d ≤ 95	25 ±0.026	5.4	$^{+0.2}_{0}$	0.5
28×16	95 < d ≤ 110	28 ±0.026	6.4	$^{+0.2}_{0}$	0.5
32×18	110 < d ≤ 130	32 ±0.031	7.4	$^{+0.2}_{0}$	0.5
36×20	130 < d ≤ 150	36 ±0.031	8.4	$^{+0.3}_{0}$	0.8
40×22	150 < d ≤ 170	40 ±0.031	9.4	$^{+0.3}_{0}$	0.8
45×25	170 < d ≤ 200	45 ±0.031	10.4	$^{+0.3}_{0}$	0.8
50×28	200 < d ≤ 230	50 ±0.031	11.4	$^{+0.3}_{0}$	0.8
56×32	230 < d ≤ 260	56 ±0.037	12.4	$^{+0.3}_{0}$	1.4
63×32	260 < d ≤ 290	63 ±0.037	12.4	$^{+0.3}_{0}$	1.4

Bore chamfer dimension

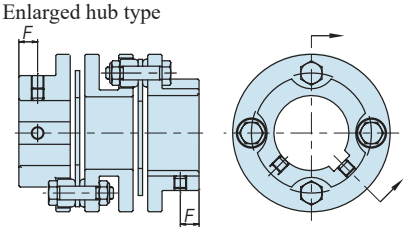
Bore diameter	Chamfer dimension
Up to 25 mm	C0.5
Up to 50 mm	C1
51 mm or more	C1.5

Set screw position and size

Standard hub/extended hub type



Enlarged hub type



Model No.	F dimension [mm]		Bore diameter [mm]																						
	Standard hub · Enlarged hub	Extended hub	9 to 21	22	23 to 29	30	31	32	33 to 35	36 to 38	39 to 40	41 to 42	43 to 48	49 to 50	51 to 53	54 to 57	58 to 60	61 to 70	71 to 73	74	75	76 to 80	81	82 to 83	84 to 90
NEF02	5	–	M4	M4	M4																				
NEF04	8	15	M4	M4	M4																				
NEF10	8	15	M4	M6	M6	M4	M4	M4	M6	M6	M6														
NEF18	10	15	M4	M6	M6	M6	M6	M4	M4	M6	M6	M6													
NEF25	12	20	M5	M5	M6	M6	M8	M8	M8	M8	M6	M5	M8												
NEF45	15	20	M5	M5	M6	M6	M8	M8	M8	M8	M8	M8	M8	M6	M10	M10	M10								
NEF80	18	25	M6	M6	M6	M6	M8	M8	M8	M8	M8	M10	M10	M10	M10	M8	M6	M10							
NEF130	20	30			M8	M8	M8	M8	M8	M8	M8	M10	M10	M10	M12	M12	M12	M12	M10	M8	M12	M12			
NEF210	20	50			M10	M10	M10	M10	M10	M10	M10	M10	M10	M10	M12	M12	M12	M16	M16	M16	M16	M12	M10	M8	M16

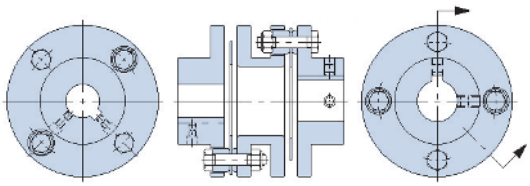
Model No.	F dimension [mm]		Bore diameter [mm]																				
	Standard hub · Enlarged hub	Extended hub	43 to 48	49 to 50	51 to 53	54 to 57	58 to 60	61 to 70	71 to 73	74	75	76 to 80	81	82 to 83	84 to 90	91 to 95	96 to 100	101 to 109	110	111 to 116	117 to 118	119 to 120	121 to 130
NEF340	25	60	M12	M12	M12	M12	M12	M16	M16	M16	M16	M16	M16	M16	M16	M12	M16	M16	M16				
NEF540	30	60			M12	M12	M12	M16	M16	M16	M16	M16	M20	M20	M20	M20	M20	M16	M20	M20	M20	M20	
NEF700	35	60			M16	M16	M16	M16	M16	M16	M16	M16	M20	M20	M20	M20	M20	M20	M20	M16	M12	M20	M20

* Contact Tsubaki to align the keyway position of the right and left hubs.

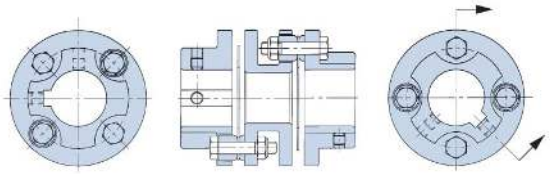
Keyway positions

NEF spacer type

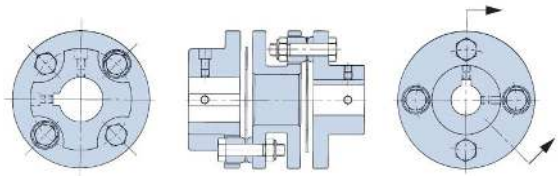
Spacer type (Standard hub x Standard hub) NEF □□ W-N □□ ×N □□



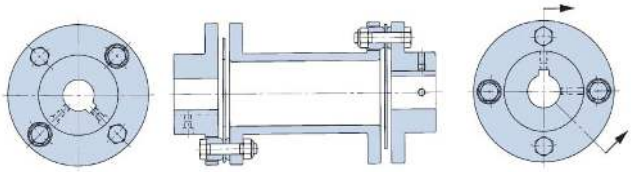
Spacer type (Enlarged hub x Enlarged hub) NEF □□ W-K □□ ×K □□



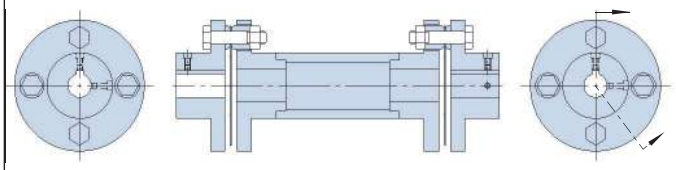
Spacer type (Enlarged hub x Standard hub) NEF □□ W-K □□ ×N □□



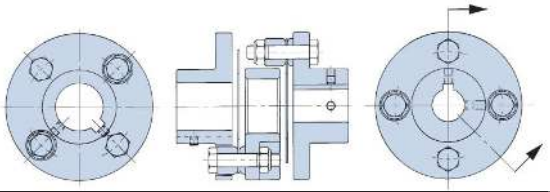
Standard-dimension long spacer type NEF □□ -W-N □□ ×N □□ -JS □□□



Long spacer type NEF □□ -W-N □□ ×N □□ -J □□□

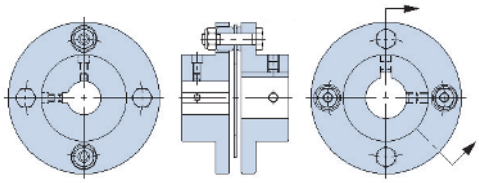


Single-plate spacer type NEF □□ -W-N □□ ×N □□ -JT □□□

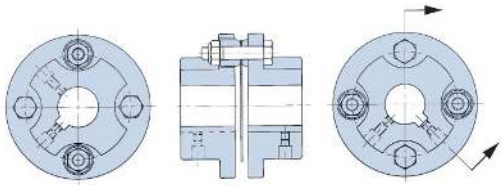


NEF single type

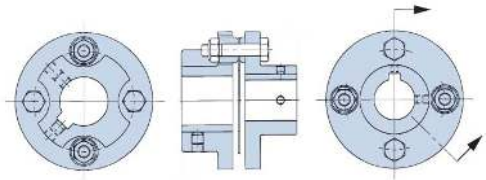
Single type (Standard hub x Standard hub) NEF □□ S-N □□ ×N □□



Single type (Enlarged hub x Enlarged hub) NEF □□ S-K □□ ×K □□

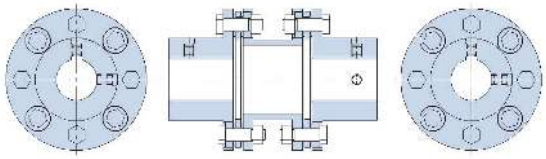


Single type (Enlarged hub x Standard hub) NEF □□ S-K □□ ×N □□



NEH spacer type

Spacer type NEH □□ W-N □□ ×N □□

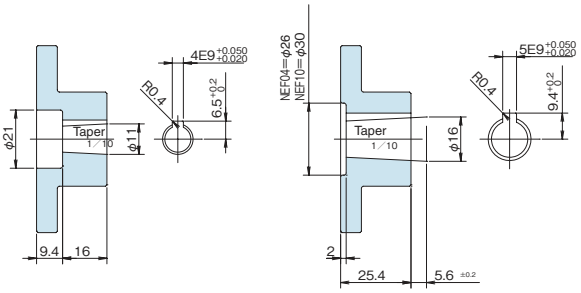


[Keyway position alignment]

When bore machining is done by Tsubaki, the keyway directions of the right and left hubs are not in alignment in some types.
If you require precise keyway phase alignment, specify a type with keyway position alignment when ordering.

Products with bores machined for servomotor tapered shafts

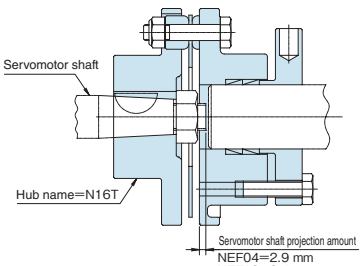
Hubs with bores machined for 11 and 16 mm diameter servomotor shafts are available.



NEF04 Hub name = N11T (made-to-order product) NEF04 Hub name=N16T
NEF10 Hub name=N16T

NEF04 Hub name=L16T
NEF10 Hub name=L16T

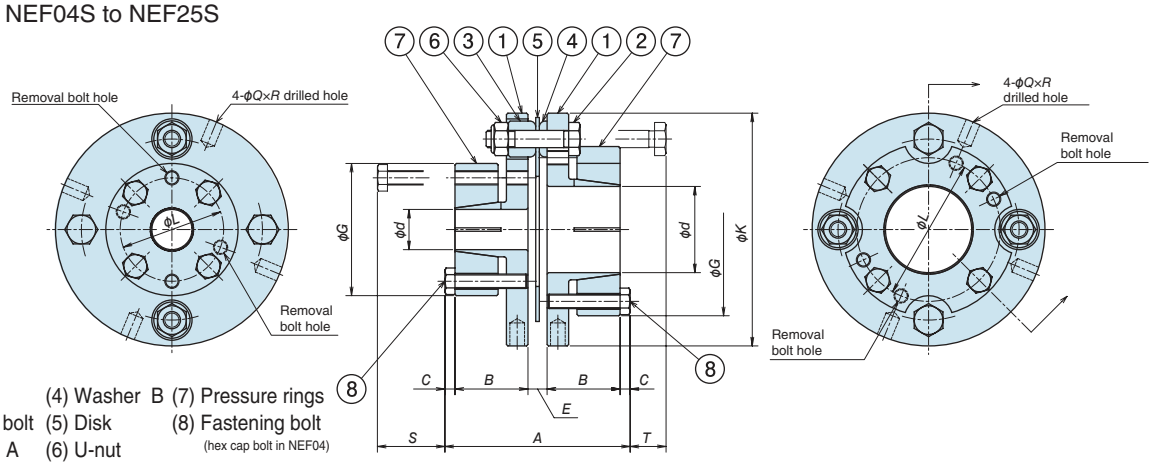
<Mounting example>



NEF Taper-Lock type

Transmission capacity/Dimensions

Single type NEF04S to NEF25S



(1) Hubs (4) Washer B (7) Pressure rings
(2) Reamer bolt (5) Disk (8) Fastening bolt (hex cap bolt in NEF04)
(3) Washer A (6) U-nut

Unit : [mm]

Model No.	Allowable torque N·m {kgf·m}	Maximum rotation speed min^{-1}	Minimum bore diameter	Maximum bore diameter	Torsional stiffness N·m/rad {kgf·m/rad}	Shaft-direction spring constan N/mm {kgf/mm}	Allowable misalignment			Weight kg	Moment of inertia $kg·m^2$
							Angular misalignment deg	Parallel misalignment deg	End play mm		
NEF04S	39.2 {4}	20000	10	22	2.45×10^4 $\{0.25\times10^4\}$	40.2 {4.1}	1	–	±0.8	0.6	2.94×10^{-4}
NEF10S	98 {10}	20000	14	35	8.8×10^4 $\{0.9\times10^4\}$	58.8 {6.0}	1	–	±0.8	0.9	7.30×10^{-4}
NEF18S	176 {18}	18000	15	38	15.7×10^4 $\{1.6\times10^4\}$	127 {13}	1	–	±3.8	1.3	14.2×10^{-4}
NEF25S	245 {25}	18000	24	50	25.5×10^4 $\{2.6\times10^4\}$	157 {16}	1	–	±4.0	1.7	23.5×10^{-4}

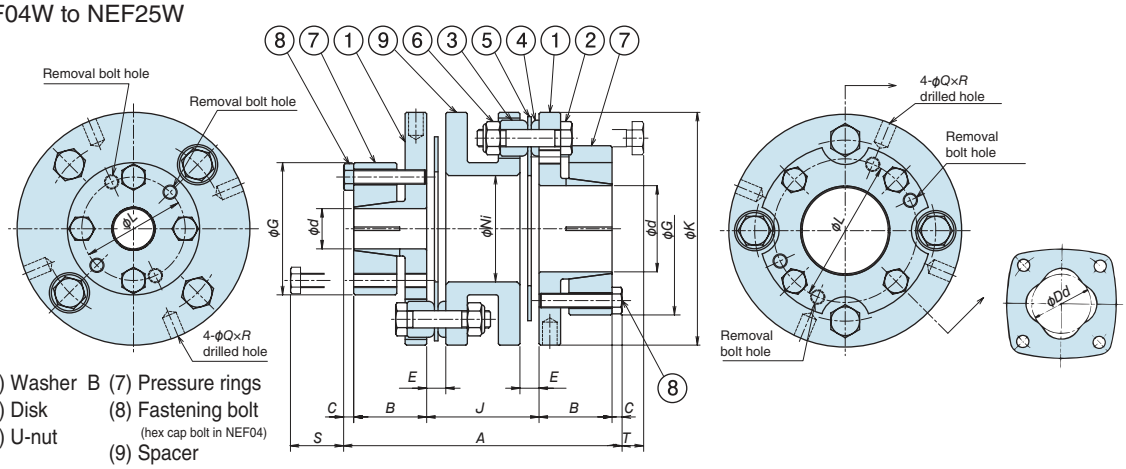
Model No.	A	B	φK	E	C	φG	φL	φDd	φQ	R	S	T
NEF04S	58.1	22	67.5	6.1	4	42	34	29	5.1	8	21	15.4
NEF10S	64.4	25.4	81	6.6	3.5	46	36	37	5.1	8	26	12.5
						53	43					
						60	50					
NEF18S	70.3	27	93	8.3	4	49	37	39	6.2	10	26	20.7
						58	46					
						66	54					
NEF25S	80.2	30.5	104	11.2	4	60	48	45	6.2	10	31	20
						70	56					
						78	66					

Notes 1. The maximum rotation speed does not take dynamic balance into consideration.
2. The weight and moment of inertia are the values at maximum bore diameter.
3. Each allowable misalignment is based on the assumption that both of the other two misalignment values are 0 (zero).
4. The standard bore diameters are shown below.
5. The recommended tolerance for mounted shafts is h7. Shaft diameters of 35 mm also support servomotor shafts with a tolerance of ($^{+0.010}_{0}$).
6. Other shaft coupling types (keyway/clamp) can be used in combination.

Standard bore diameters

Model No.	Fastening bolt size	Bolt tightening torque N·m{kgf·m}	Standard bore diameter [mm]																						
			10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50
NEF04	M4	3.0{0.3}	●	●	●	●	●	●	●	●	●	●	●												
NEF10	M5	4.9{0.5}				●	●	●	●	●	●	●	●	●	●	●	●	●	●						
NEF18	M6	9.8{1.0}					●	●	●	●	●	●	●	●	●	●	●	●	●	●					
NEF25	M6	9.8{1.0}												●	●	●	●	●	●	●	●	●	●	●	●

Spacer type NEF04W to NEF25W



(1) Hubs (4) Washer B (7) Pressure rings
(2) Reamer bolt (5) Disk (8) Fastening bolt (hex cap bolt in NEF04)
(3) Washer A (6) U-nut (9) Spacer

Unit : [mm]

Model No.	Allowable torque N·m {kgf·m}	Maximum rotation speed min⁻¹	Minimum bore diameter	Maximum bore diameter	Torsional stiffness N·m/rad {kgf·m/rad}	Shaft-direction spring constan N/mm {kgf/mm}	Allowable misalignment			Weight kg	Moment of inertia kg·m²
							Angular misalignment deg	Parallel misalignment deg	End play mm		
NEF04W	39.2 {4}	20000	10	22	1.18×10^4 $\{0.12\times10^4\}$	20.6 {2.1}	2	0.5	± 1.6	1.0	5.36×10^{-4}
NEF10W	98 {10}	20000	14	35	3.92×10^4 $\{0.4\times10^4\}$	29.4 {3.0}	2	0.55	± 2.0	1.5	12.8×10^{-4}
NEF18W	176 {18}	18000	15	38	7.84×10^4 $\{0.8\times10^4\}$	63.7 {6.5}	2	0.6	± 2.4	2.3	26.0×10^{-4}
NEF25W	245 {25}	18000	24	50	12.7×10^4 $\{1.3\times10^4\}$	78.4 {8.0}	2	0.7	± 2.8	2.9	42.4×10^{-4}

Model No.	A	B	φ K	E	C	φ G	φ L	φ Ni	φ Dd	φ Q	R	J	S	T
NEF04W	88	22	67.5	6.1	4	42	34	25	29	5.1	8	36	21	15.4
NEF10W	96.8	25.4	81	6.6	3.5	46	36	37	37	5.1	8	39	26	12.5
						53	43							
						60	50							
NEF18W	109	27	93	8.3	4	49	37	38	39	6.2	10	47	26	20.7
						58	46							
						66	54							
NEF25W	122	30.5	104	11.2	4	60	48	47	45	6.2	10	53	31	20
						70	56							
						78	66							

Notes 1. The maximum rotation speed does not take dynamic balance into consideration.
2. The weight and moment of inertia are the values at maximum bore diameter.
3. Each allowable misalignment is based on the assumption that both of the other two misalignment values are 0 (zero).
4. The standard bore diameters are listed in the last table on the previous page.
5. The recommended tolerance for mounted shafts is h7. Shaft diameters of 35 mm also support servomotor shafts with a tolerance of ($^{+0.010}_{0}$).
6. Other shaft coupling types (keyway/clamp) can be used in combination.

Model Number

NEF18 S - H 20 X H 35

- NEF18: Size
- S: Type
  - S : Single type
  - W : Spacer type
- H: Taper-Lock coupling
- 20 X H 35: Bore diameter

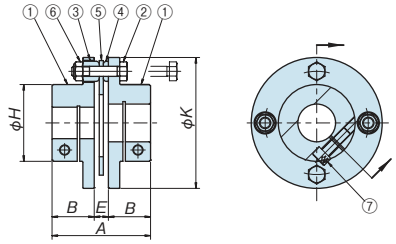
NEF clamp type

A single bolt is used on each half hub for friction clamping.
Compared with the Power-Lock type (see page 49), which also uses friction clamping, this type is shorter in the shaft direction and saves space.
The spacer types absorb all forms of misalignment, but the single type cannot absorb parallel misalignments.

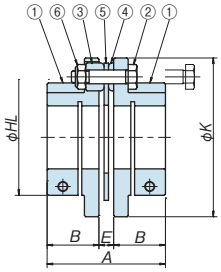
Transmission capacity/Dimensions

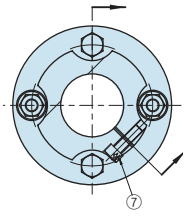
Single type

NEF 02S, 04S, 10S, 18S, 25S and 45S standard hubs

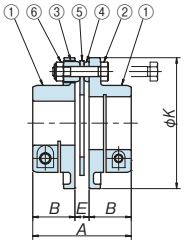


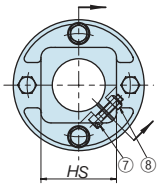
NEF 02S, 04S and 45S enlarged hubs





NEF 10S, 18S and 25S square hubs





(1) Hubs (2) Reamer bolt (3) Washer (A) (4) Washer (B) (5) Disk (6) U-nut (7) Spacer

Model No.	Allowable torque N·m {kgf·m}	Maximum rotation speed min^{-1}	Bore diameter range	Torsional stiffness N·m/rad {kgf·m/rad}	Shaft-direction spring constan N/mm {kgf/mm}	Allowable misalignment		Weight kg	Moment of inertia $kg·cm^2$
						Angular misalignment deg	End play mm		
NEF02S	19.6 { 2}	20000	8 to 25	$1.96×10^4$ $\{0.2 ×10^4\}$	68.6 { 7.0}	1	±0.8	0.33 (0.39)	1.23 (1.56)
NEF04S	39.2 { 4}	20000	10 to 25	$2.45×10^4$ $\{0.25×10^4\}$	40.2 { 4.1}	1	±0.8	0.78 (0.79)	2.78 (3.23)
NEF10S	98 {10}	20000	12 to 35	$8.82×10^4$ $\{0.9 ×10^4\}$	58.8 { 6 }	1	±1.0	0.92 (0.80)	6.43 (5.85)
NEF18S	176 {18}	18000	14 to 35	$15.7 ×10^4$ $\{1.6 ×10^4\}$	127 {13 }	1	±1.2	1.45 (1.24)	13.5 (12.2)
NEF25S	245 {25}	15000	25 to 42	$25.5 ×10^4$ $\{2.6 ×10^4\}$	157 {16 }	1	±1.4	2.1 (1.8)	23 (20.9)
NEF45S	441 {45}	13000	25 to 55	$44.1 ×10^4$ $\{4.5 ×10^4\}$	219 {22.3}	1	±1.6	4.6 (4.7)	57.5 (65.8)

Model No.	A	B	E	ϕ H	ϕ HL	HS	ϕ K	U	T
NEF02S	44.9	20	4.9	32	45	–	57	–	11
NEF04S	56.9	25.4	6.1	34	50	–	67.5	–	15.5
NEF10S	57.4	25.4	6.6	46	–	47	81	66	16
NEF18S	67.7	28.7	8.3	51	–	49	93	68	23
NEF25S	78.2	33.5	11.2	61	–	60	104	78.3	19
NEF45S	93.9	41.1	11.7	71	92	–	126	–	23

Notes 1. The maximum rotation speed is determined by the coupling's transmission capacity. Balance adjustment has not been performed.
2. Weight and moment of inertia values apply to standard hubs with maximum bore diameters. Figures in angle brackets ( ) are values for enlarged hubs (for NEF 02, 04 and 45) or square hubs (for NEF 10, 18 and 25).
3. End play value is based on zero angular misalignment.
4. The square hub model uses a U-nut to prevent the clamping bolts from loosening. Others use Nylok bolts.
5. See the table below for the transmission torque of the clamp element. Contact Tsubaki for bore diameters that are not listed.
6. Contact Tsubaki for mounting on a hollow shaft.
7. The torsional stiffness listed above is only for the disks.

Bolt size	M4	M5	M6	M8
Tightening torque [N·m]	4.02	8.33	13.7	34.3

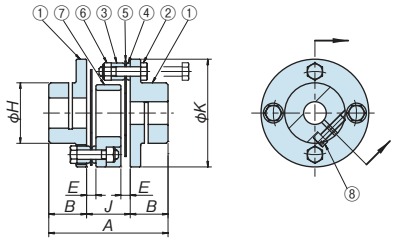
Standard bore diameters and transmitted torques

Model No.		Bore diameter																								
		10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	52	55
NEF02	Bolt size	M4	M4	M4	M4	M4	M4	M4	M4	M4	M4	M4	M4	M4												
	Transmitted torque [N·m]	18.6 ○	19.6	19.6 ○	19.6 ○	19.6 ○	19.6 –	19.6 ○	19.6 ○	19.6 ●	19.6 ●	19.6 ●	19.6 ●	19.6 ●												
NEF04	Bolt size			M4	M4	M4	M4	M4	M4	M4	M4	M4	M4	M4												
	Transmitted torque [N·m]			17.6 ○	30.1 ○	34.3 ○	37.2 ○	39.2 ○	39.2 –	39.2 ●	39.2 ●	39.2 ●	39.2 ●	39.2 ●												
NEF10	Bolt size					M6	M6	M6	M6	M6	M6	M6	M6	M6	M6	M6	M6	M5								
	Transmitted torque [N·m]					95 ○	98	98	98 ○	98 –	98 ○	98 ○	98 □	98 □	98 □	98 □	98 –	98 □								
NEF18	Bolt size					M6	M6	M6	M6	M6	M6	M6	M6	M6	M6	M6	M6	M6								
	Transmitted torque [N·m]					68	83	90	100	109 ○	113 –	126 ○	136 ○	143 ○	176 □	176 □	176 □	176 □								
NEF25	Bolt size													M8	M8	M8	M8	M8	M6	M6	M6					
	Transmitted torque [N·m]													245 ○	245 –	245 ○	245 □	245 □	230 □	239 □	245 □					
NEF45	Bolt size															M8	M8	M8	M8	M8	M8	M8	M8	M8	M8	M8
	Transmitted torque [N·m]															363 ○	372 –	393 ○	416 ○	429 ○	440 ○	441 ●	441 –	441 ●	441 –	441 ●

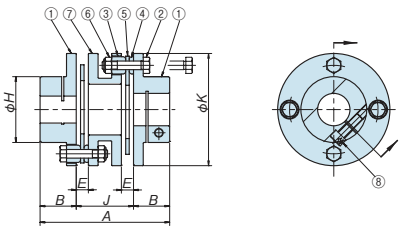
Notes 1. The white circles in the table indicate standard hubs. The black circles indicate enlarged hubs. The white squares indicate square hubs.
2. The recommended shaft tolerance for clamp hubs is h7.
3. The recommended bore tolerance for 35-mm diameter shafts is ($^{+0.010}_{0}$) or ($^{+0.010}_{-0.015}$).

Spacer type

NEF 02W standard hubs



NEF 04W, 10W, 18W, 25W and 45W standard hubs



(1) Hubs
(2) Reamer bolt
(3) Washer (A)
(4) Washer (B)
(5) Disk
(6) U-nut
(7) Spacer

Model No.	Allowable torque N·m {kgf·m}	Maximum rotation speed min^{-1}	Bore diameter range	Torsional stiffness N·m/rad {kgf·m/rad}	Shaft-direction spring constan N/mm {kgf/mm}	Allowable misalignment			Weight kg	Moment of inertia $kg·cm^2$
						Angular misalignment deg	Parallel misalignment deg	End play mm		
NEF02W	19.6 { 2}	20000	8 to 25	$1.00×10^4$ $\{0.10×10^4\}$	34.3 { 3.5}	2	0.3	±1.6	0.45 (0.46)	1.68 (1.90)
NEF04W	39.2 { 4}	20000	10 to 25	$1.18×10^4$ $\{0.12×10^4\}$	20.6 { 2.1}	2	0.5	±1.6	1.28 (1.29)	5.2 (5.7)
NEF10W	98 {10}	20000	12 to 35	$3.92×10^4$ $\{0.4 ×10^4\}$	29.4 { 3 }	2	0.55	±2.0	1.52 (1.35)	11.7 (11.0)
NEF18W	176 {18}	18000	14 to 35	$7.84×10^4$ $\{0.8 ×10^4\}$	63.7 { 6.5}	2	0.6	±2.4	2.45 (2.24)	24.9 (23.6)
NEF25W	245 {25}	15000	25 to 42	$12.7 ×10^4$ $\{1.3 ×10^4\}$	78.4 { 8 }	2	0.7	±2.8	3.3 (3.0)	40.8 (38.5)
NEF45W	441 {45}	13000	25 to 55	$21.6 ×10^4$ $\{2.2 ×10^4\}$	109 {11.1}	2	0.8	±3.2	6.9 (7.0)	95.8 (104)

Model No.	*A*	*B*	*E*	*ϕ H*	*HL*	*HS*	*ϕ K*	*U*	*T*
NEF02W	63.0	20	4.9	32	45	–	57	–	11
NEF04W	86.8	25.4	6.1	34	50	–	67.5	–	15.5
NEF10W	89.8	25.4	6.6	46	–	47	81	66	16
NEF18W	104.4	28.7	8.3	51	–	49	93	68	23
NEF25W	120	33.5	11.2	61	–	60	104	78.3	19
NEF45W	144.2	41.1	11.7	71	92	–	126	–	23

Notes 1. The maximum rotation speed is determined by the coupling's transmission capacity. Balance adjustment has not been performed.
2. Weight and moment of inertia values apply to standard hubs with maximum bore diameters. Figures in angle brackets ( ) are values for enlarged hubs (for NEF 02, 04 and 45) or square hubs (for NEF 10, 18 and 25).
3. End play value is based on zero angular misalignment.
4. The square hub model uses a U-nut to prevent the clamping bolts from loosening. Others use Nylok bolts.
5. See the table below for the transmission torque of the clamp element. Contact Tsubaki for bore diameters that are not listed.
6. Contact Tsubaki for mounting on a hollow shaft.
7. The torsional stiffness listed above is only for the disks.

Model Number

NEF18 W - N 25 C X B 30 C

- Size
- Type
  - S : Single type
  - W : Spacer type
- Hub type
  - N : Standard hub
  - K : Enlarged hub
  - L : Extended hub
  - B : Square hub
  - * see page 36
- Bore diameter (Pilot bore: R)
- Shaft coupling method
  - C : Clamp
  - P2 : Power-Locks (see page 49)
  - * Number indicates the quantity of Power-Locks.
  - T : Tapered bore machining (see page 44)

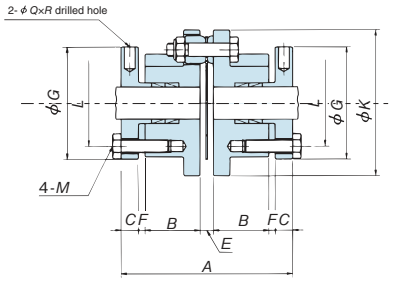
Notes 1. Place the smaller bore diameter in front.
2. Place the pilot bore (symbol R) in front.

NEF POWER-LOCK® type

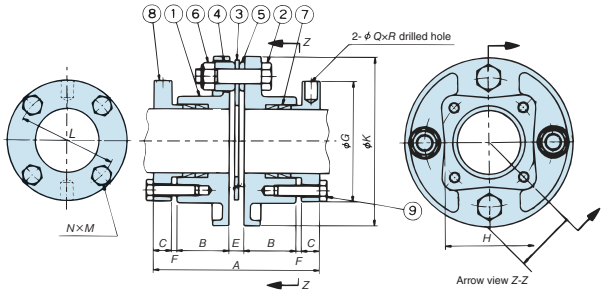
This bored series features a POWER-LOCK for friction clamping on both sides, combining pressure flange sets.
Ideal for servomotor applications.
Machined bore products are kept in stock.
The spacer types absorb all forms of misalignment, but the single type cannot absorb parallel misalignments.

Single type

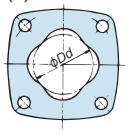
NEF04S



NEF10S, NEF18S, NEF25S



(1) Square hub (enlarged hub in NEF04S)
(2) Reamer bolt
(3) Disk
(4) Washer (A)
(5) Washer (B)
(6) U-nut
(7) POWER-LOCK
(8) Pressure flange
(9) Pressure bolt



Unit : [mm]

Model No.	Allowable torque N·m {kgf·m}	Maximum rotation speed min^{-1}	Standard-stock bore diameter notes:1	Maximum bore diameter notes:2	Torsional stiffness N·m/rad {kgf·m/rad}	Shaft-direction spring constan N/mm {kgf/mm}	Allowable misalignment		Weight kg	Moment of inertia $kg·m^2$
							Angular misalignment deg	End play mm		
NEF04S	39.2 {4}	20000	10 to 22	22	$2.45×10^4$ $\{0.25×10^4\}$	40.2 {4.1}	1	± 0.8	0.9	3.0
NEF10S	98 {10}	20000	14 to 35	35	$8.8×10^4$ $\{0.9×10^4\}$	58.8 {6.0}	1	± 1.0	1.2	8.25
NEF18S	176 {18}	18000	14 to 35	38	$15.7×10^4$ $\{1.6×10^4\}$	127 {13}	1	± 1.2	1.7	14.8
NEF25S	245 {25}	18000	18 to 42	50	$25.5×10^4$ $\{2.6×10^4\}$	157 {16}	1	± 1.4	2.7	28.8

Model No.	A	B	C	ϕ Dd	F	E	ϕ G	H	ϕ K	L	M	N	Q	R	U
NEF04S	78.9	25.4	8	29	3	6.1	52	–	67.5	40	M6 × 22 ℓ	4	5	10	–
NEF10S	83.4	25.4	10	37	3	6.6	66	47	81	54	M6 × 22 ℓ	4	7	10	66
NEF18S	91.7	28.7	10	39	3	8.3	66	49	93	54	M6 × 22 ℓ	4	7	10	68
NEF25S	108.2	33.5	12	45	3	11.2	78	60	104	64	M8 × 28 ℓ	4	8	13	78.3

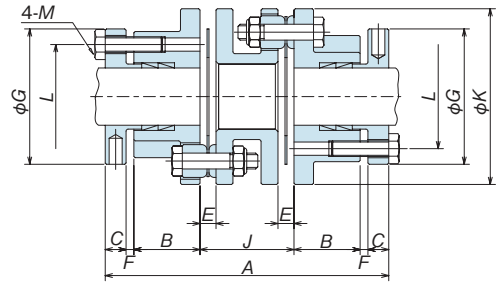
Notes 1. Standard-inventory bore diameter products have bores machined with two rows of Power-Locks for both hubs and pressure flanges, and are kept in stock.
The Power-Lock bore diameters in the table below can be selected.
2. The maximum shaft bore diameter includes a margin for a Power-Lock.
3. The maximum rotation speed is determined by the coupling's transmission capacity. Balance adjustment has not been performed.
4. Weight and moment of inertia values apply to maximum bore diameters.
5. End play value is based on zero angular misalignment.
6. NEF45 and larger Power-Lock models can be manufactured. Please request drawings and specifications.
7. Strength must be checked when mounting the product on a hollow shaft. Please inquire with Tsubaki for information.

POWER-LOCK bore diameters

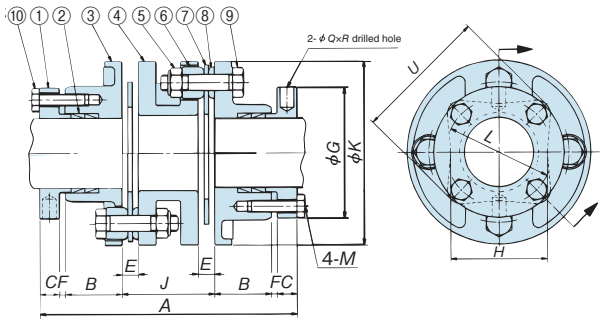
Model No.	Hub type	Standard bore diameter (mm)																			
		10	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	36	38	40	42
NEF04	Enlarged hub	●	●	●	●	●	●	●	●	●	●										
NEF10	Square hub		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
NEF18	Square hub			●	●	●	●	●	●	●	●	●	●	●	●	●	●				
NEF25	Square hub							●	●	●	●	●	●	●	●	●	●	●	●	●	●

Spacer type

NEF04W



NEF10W, NEF18W, NEF25W



(1) Pressure flange
(2) POWER-LOCK
(3) Square hub
(enlarged hub in NEF04W)
(4) Spacer
(5) U-nut
(6) Washer (A)
(7) Disk
(8) Washer (B)
(9) Reamer bolt
(10) Pressure bolt

Unit : [mm]

Model No.	Allowable torque N·m {kgf·m}	Maximum rotation speed min^{-1}	Pilot bore	Standard-stock bore diameter notes1	Maximum bore diameter notes2	Torsional stiffness N·m/rad {kgf·m/rad}	Shaft-direction spring constan N/mm {kgf/mm}	Allowable misalignment			Weight kg	Moment of inertia kg·m^2
								Angular misalignment deg	Parallel misalignment deg	End play mm		
NEF04W	39.2 {4}	20000	8	10 to 22	22	1.18×10^4 {0.12×10^4}	20.6 {2.1}	0.5	2	± 1.6	1.4	7.1
NEF10W	98 {10}	20000	10	14 to 35	35	3.92×10^4 {0.4 ×10^4}	29.4 {3 }	0.55	2	± 2.0	1.9	14
NEF18W	176 {18}	18000	12	14 to 35	38	7.84×10^4 {0.8 ×10^4}	63.7 {6.5}	0.6	2	± 2.4	2.7	27
NEF25W	245 {25}	18000	15	18 to 42	50	12.7 ×10^4 {1.3 ×10^4}	78.4 {8 }	0.7	2	± 2.8	3.9	47

Model No.	A	B	C	φ Dd	F	E	φ G	H	φ K	L	M	N	Q	R	U
NEF04W	108.8	25.4	8	29	3	6.1	52	–	67.5	40	M6 × 22 ℓ	4	4	7	–
NEF10W	115.8	25.4	10	37	3	6.6	66	47	81	54	M6 × 22 ℓ	4	7	10	66
NEF18W	130.4	28.7	10	39	3	8.3	66	49	93	54	M6 × 22 ℓ	4	7	10	68
NEF25W	150	33.5	12	45	3	11.2	78	60	104	64	M8 × 28 ℓ	4	8	13	78.3

Notes 1. Standard bore diameter products have two rows of Power-Locks.
The Power-Lock bore diameters in the table below can be selected.
2. The maximum shaft bore diameter includes a margin for a Power-Lock.
3. The maximum rotation speed is determined by the coupling's transmission capacity. Balance adjustment has not been performed.
4. Weight and moment of inertia values apply to maximum bore diameters.
5. End play value is based on zero angular misalignment.
6. NEF45 and larger Power-Lock models can be manufactured. Please request drawings and specifications.
7. Dimension *Dd* in the table of dimensions is the internal diameter of the disk.
8. Strength must be checked when mounting the product on a hollow shaft. Please inquire with Tsubaki for information.

Model Number

NEF18 S - B 30 P2 X B 35 P2

Size

Type
S : Single type
W : Spacer type

Hub type
N : Standard hub
K : Enlarged hub
L : Extended hub
B : Square hub
* see page 36

Bore diameter

Shaft coupling method
C : Clamp (see page 47)
P2 : Power-Locks
* Number indicates the quantity of Power-Locks.
T : Tapered bore machining (see page 44)

Notes 1. Place the smaller bore diameter in front.

NEF POWER-LOCK® type

POWER-LOCK transmitted torque

The table below shows the transmitted torque when using a Power-Lock (EL Series).
When using three Power-Lock rows, multiply the transmitted torque value for one row by 1.85.
The pressure bolt tightening torque for one row is the same as for multiple rows.
The values below are the values applicable for Power-Lock inner ring pressurization. Contact Tsubaki for the values when using outer ring pressurization.

Bore diameter	Pressure bolt tightening torque [N·m]								Power-Lock transmitted torque [N·m] Top: When using one POWER-LOCK row (EL Series) Bottom: When using two POWER-LOCK rows (EL Series)							
	NEF04	NEF10	NEF18	NEF25	NEF45	NEF80	NEF130	NEF210	NEF04	NEF10	NEF18	NEF25	NEF45	NEF80	NEF130	NEF210
	M6	M6	M6	M8	M8	M10	M10	M12								
10	4.41								10.8 16.7							
12	4.70								15.7 24.5							
13	4.8								17.6 27.3							
14	7.74	7.74	7.74						30.4 47.1	30.4 47.1	30.4 47.1					
15	8.72	8.72	8.72						34.3 53.2	35.3 54.7	35.3 54.7					
16	9.02	9.02	9.02						39.2 60.8	40.2 62.3	40.2 62.3					
17	9.21	9.21	9.21						45.1 69.9	45.1 69.9	45.1 69.9					
18	9.51	9.51	9.51	12.9	12.9				50 77.5	51 79.1	51 79.1	51 79.1	50 77.5			
19	10.9	10.9	10.9	14.8	14.8				55.9 86.6	56.8 88.0	56.8 88.0	56.8 88.0	55.9 86.6			
20	11.1	11.1	11.1	15.1	15.1	18.7	18.7		61.7 95.6	62.7 97.2	62.7 97.2	62.7 97.2	61.7 95.6	62.7 97.2		
22	9.7	11.1	11.1	15.1	15.1	18.6	18.6		63.7 98.7	75.5 117	75.5 117	75.5 117	75.5 117	75.5 117		
24		11.7	11.7	15.9	15.9	19.7	19.7			90.2 140	90.2 140	90.2 140	90.2 140	90.2 140		
25		12.4	12.4	17	17	21	21			98 152	98 152	98 152	97 150	98 152		
28		12.9	12.9	17.6	17.6	21.8	21.8			123 191	123 191	123 191	123 191	123 191	123 191	
30		13	13.7	19.1	19.1	23.6	23.6			129 200	137 212	141 219	140 217	141 219	141 219	
32		12.2	13.7	19.6	19.6	24.7	24.7			128 198	148 229	161 250	160 248	161 250	161 250	
35		10.5	12.4	24.9	24.9	30.8	30.8	36.5		109 169	136 211	218 338	217 336	217 336	217 336	217 336
36				26	26	32.2	32.2	38.2				230 357	230 357	230 357	230 357	230 357
38				25.9	27	33.4	33.4	39.7				244 378	256 397	256 397	256 397	256 397
40				27.9	28.8	36	36	46.5				269 417	279 432	282 437	284 440	312 484
42				24.9	31.3	38.6	38	49.5				236 366	316 490	314 487	308 477	344 533
45					34.3	42.4	40.6	54.5					327 507	326 505	307 476	363 563
48					34.3	45.6	42.7	57					356 552	392 608	359 556	419 649
50					34.3	48.1	44.2	58.8					376 583	441 684	396 614	459 711
55					25.6	55	48.1	63.3					285 441	589 913	499 773	566 877
56						59	49.9	65.2						607 941	487 755	552 856
60						62.6	53.6	69.2						714 1107	586 908	652 1011
63							56.7	72.4							669 1040	734 1140
65							58.8	74.7							729 1130	791 1230
70							67.1	82.4							879 1360	917 1420
75							67.6	89.6							924 1430	1060 1640
80								104								1240 1920
85								116								1550 2400

Combining couplings with other POWER-LOCK Series

Couplings can also be combined with non-EL Series POWER-LOCK.
The shaft diameters supported when combining couplings with KE Series, AS Series and TF Series power locks are shown below.
Contact Tsubaki for dimensions and other information.
The hubs are standard hubs.

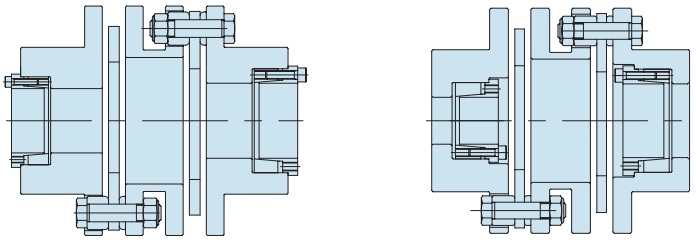
Unit : N·m{kgf·m}

Bore diameter	NEF45			NEF80		
	KE Series	AS Series	TF Series	KE Series	AS Series	TF Series
	Transmitted torque	Transmitted torque	Transmitted torque	Transmitted torque	Transmitted torque	Transmitted torque
16	101{10.3}			101{10.3}		
17	107{10.9}			107{10.9}		
18	113{11.6}		196{20}	113{11.6}		196{20}
19	120{12.2}	294{25}	206{21}	120{12.2}	294{25}	206{21}
20	206{21.0}	304{27}	216{22}	206{21.0}	304{27}	216{22}
22	226{23.1}	333{30}	245{25}	226{23.1}	333{30}	245{25}
24	329{33.6}	461{41}	265{27}	329{33.6}	461{41}	265{27}
25	343{35.0}	480{43}	274{28}	345{35.0}	480{43}	274{28}
28	432{44.2}	539{48}	461{47}	432{44.2}	539{48}	461{47}
30	515{52.6}	578{52}	500{51}	515{52.6}	578{52}	500{51}
32	549{56.1}	784{69}	529{54}	549{56.1}	784{69}	529{54}
35			774{79}	678{69.5}	862{76}	774{79}
38				921{94.3}	1029{91}	843{86}
40				969{99.3}	1088{96}	882{90}
42						931{95}

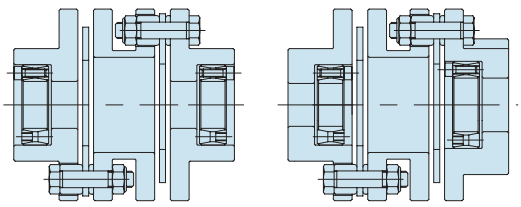
Bore diameter	NEF130			NEF210		
	KE Series	AS Series	TF Series	KE Series	AS Series	TF Series
	Transmitted torque	Transmitted torque	Transmitted torque	Transmitted torque	Transmitted torque	Transmitted torque
28	432{ 44.2}	539{ 48}	461{ 47}	432{ 44.2}	539{ 48}	461{ 47}
30	515{ 52.6}	578{ 52}	500{ 51}	515{ 52.6}	578{ 52}	500{ 51}
32	549{ 56.1}	784{ 69}	529{ 54}	549{ 56.1}	784{ 69}	529{ 54}
35	678{ 69.5}	862{ 76}	774{ 79}	678{ 69.5}	862{ 76}	774{ 79}
38	921{ 94.3}	1029{ 91}	843{ 86}	921{ 94.3}	1029{ 91}	843{ 86}
40	969{ 99.3}	1088{ 96}	882{ 90}	969{ 99.3}	1088{ 96}	882{ 90}
42	1010{104}	1720{152}	931{ 95}	1010{104}	1720{152}	931{ 95}
45	1090{112}	1840{163}	1850{189}	1090{112}	1840{163}	1850{189}
48	1390{143}	1960{173}	1970{201}	1390{143}	1960{173}	1970{201}
50	1700{174}	2050{181}	2060{210}	1700{174}	2050{181}	2060{210}
55			2550{260}	1860{191}	2750{244}	2550{260}
60			2770{283}	2180{223}	3000{266}	2770{283}
65						3010{307}

Bore diameter	NEF340			NEF540			NEF700		
	KE Series	AS Series	TF Series	KE Series	AS Series	TF Series	KE Series	AS Series	TF Series
	Transmitted torque	Transmitted torque	Transmitted torque	Transmitted torque	Transmitted torque	Transmitted torque	Transmitted torque	Transmitted torque	Transmitted torque
48	1390{143}	1960{173}	1970{201}						
50	1700{174}	2050{181}	2060{210}						
55	1860{191}	2750{244}	2550{260}	1860{191}	2750{244}	2550{260}	1860{191}	2750{244}	2550{260}
60	2180{223}	3000{266}	2770{283}	2180{208}	3000{266}	2770{283}	2180{223}	3000{266}	2770{283}
65	2360{242}	3550{315}	3010{307}	2360{242}	3550{315}	3010{307}	2360{242}	3550{315}	3010{307}
70			5150{525}	3750{377}	5490{490}	5150{525}	3750{377}	5490{490}	5150{525}
75			5490{560}	4030{404}	5880{530}	5490{560}	4030{404}	5880{530}	5490{560}
80			7840{800}	5010{503}	6270{560}	7840{800}	5010{503}	6270{560}	7840{800}
85			8330{850}			8330{850}	5320{534}	7350{650}	8330{850}
90						8820{900}		7740{690}	8820{900}

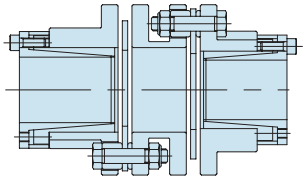
Example of coupling combined with KE Series POWER-LOCK



Example of coupling combined with AS Series POWER-LOCK



Example of coupling combined with TF Series POWER-LOCK



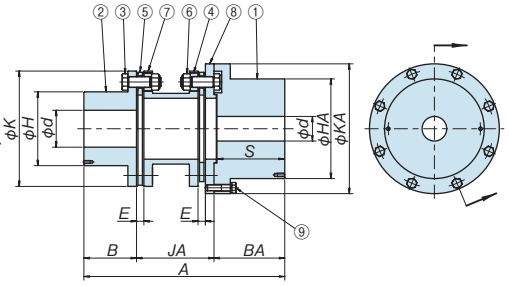
Special types

Adapter hub type (A hub type)/Unit spacer type (U type)

The adapter hubs of the NEH Series can have larger bore diameters than standard hubs. Unit spacers enabling spacer unit attachment and removal without disassembling the disk coupling unit are also available.

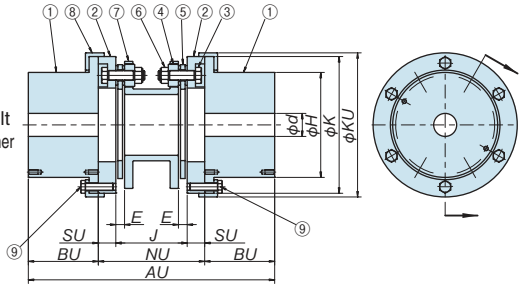
Adapter hub type (A hub type)

(1) Adapter hub
(2) Hub
(3) Reamer bolt
(4) Overload washer
(5) Disk set
(6) U-nut
(7) Spacer
(8) Pilot flange
(9) Hex bolt



Unit spacer type (U type)

(1) Hub-U
(2) Pilot flange
(3) Reamer bolt
(4) Overload washer
(5) Disk set
(6) U-nut
(7) Spacer
(8) Pilot ring
(9) Hex bolt



Transmission Capacity

Model No.	Allowable torque N·m{kgf·m}	Maximum rotation speed min^{-1}	Torsional stiffness N·m/rad	Shaft-direction spring constan N/mm	Allowable misalignment		
					Angular misalignment deg	Parallel misalignment mm	End play mm
NEH09	8820{ 900}	5000	51.9×10^5	627	1.4	1.6	± 3.2
NEH14	13700{1400}	4700	84.3×10^5	1380	1	1.1	± 2.1
NEH20	19600{2000}	4300	12.7×10^6	1370	1	1.3	± 2.4
NEH30	29400{3000}	3900	20.6×10^6	1790	1	1.4	± 2.8
NEH41	40200{4100}	3700	25.5×10^6	1880	1	1.7	± 2.8

Notes 1. The maximum rotation speed is determined by the coupling's transmission capacity. Balance adjustment has not been performed. Contact Tsubaki if you need to perform balance adjustment for high-speed use.
2. The allowable misalignment values shown are the values applicable when the other two misalignment values are each 0.

Dimensions

Adapter hub

Unit : [mm]

Model No.	Standard hub		Adapter hub		A	B	S	BA	E	ϕ H	ϕ HA Adapter	ϕ K	ϕ KA Adapter	JA	Weight [kg]	Moment of inertia [kg·m²]
	Pilot bore diameter d	Keyway maximum bore diameter	Pilot bore diameter d	Keyway maximum bore diameter												
NEH09W	70	111	50	158	435	110	145	152	19	161	228	276	297	180	81	0.85
NEH14W	70	111	55	158	452	127	145	150	19	161	228	276	297	180	88	0.93
NEH20W	75	133	65	182	491	146	143	151	19	193	264	308	334	202	120	1.68
NEH30W	75	152	75	206	577.5	165	192.5	200	21.5	218	300	346	374	220	177	3.05
NEH41W	120	165	80	224	653	171	220.5	230	24	240	324	375	422	261.5	248	5.05

Unit spacer

Unit : [mm]

Model No.	Pilot bore diameter d	Keyway maximum bore diameter	AU	BU	E	ϕ H Adapter	J	ϕ K Adapter	ϕ KU	NU	SU	Weight [kg]	Moment of inertia [kg·m²]
NEH09U	50	158	535	152	19	228	155	297	313	231	38	108	1.2
NEH14U	55	158	531	150	19	228	155	297	313	231	38	115	1.3
NEH20U	65	182	565	151	19	264	171	334	344	263	46	155	2.33
NEH30U	75	206	680	200	21.5	300	187	374	384	280	46.5	230	4.23
NEH41U	80	224	790	230	24	324	224	422	438	330	53	325	7.2

Model Number

NEH14 U - N H 100 J D2 X A H 120 J D2

Size

Type
W : Spacer type
U : Unit spacer type

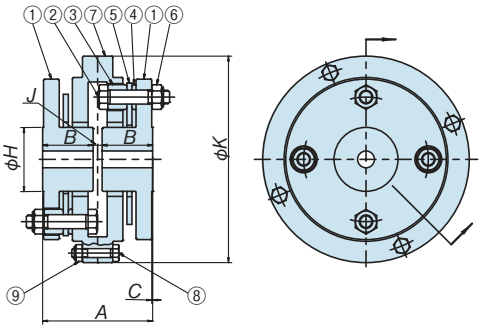
Hub type
N : Standard hub
A : Adapter hub
U : Unit hub

Replacement type for gear couplings

A type with a shorter distance between the hub faces (*J* dimension), and the same overall length and hub length as the gear coupling. Can be replaced as-is. Eliminates the cost and labor of gear coupling lubrication.

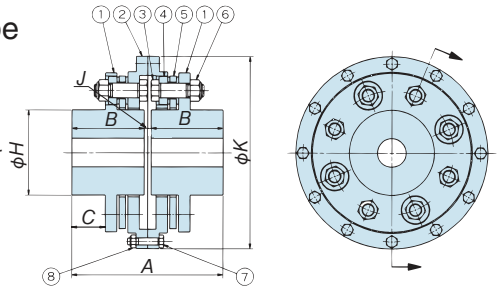
NEF-G type

(1) Hub-G
(2) Reamer bolt (A)
(3) Washer (A)
(4) Washer (B)
(5) Disk
(6) U-nut (A)
(7) Spacer flange
(8) Reamer bolt (B)
(9) U-nut (B)



NEH-G type

(1) Hub-G
(2) Spacer flange
(3) Reamer bolt (A)
(4) Overload washer
(5) Disk set
(6) U-nut (A)
(7) Reamer bolt (B)
(8) U-nut (B)



Transmission capacity/Dimensions

Unit : [mm]

Model No.	Allowable torque [N·m{kgf·m}]	Maximum rotation speed [min⁻¹]	Keyway maximum bore diameter	*A*	*B*	*C*	*ϕ H*	*J*	*ϕ K*	Corresponding gear coupling		
										JIS model No.	Maximum shaft diameter	Torque [N·m]
NEF45G	441{ 45}	5000	32	88	40	1.8	47	8	161	100	25	196
NEF80G	784{ 80}	5000	40	98	45	0.8	57	8	184	112	32	392
NEF130G	1270{ 130}	5000	48	108	50	0.7	69	8	207	125	40	784
NEF210G	2060{ 210}	5000	55	134	63	6.5	80	8	245	140	50	1230
NEF340G	3330{ 340}	5000	65	170	80	19.9	93	10	264	160	63	1760
NEF540G	5290{ 540}	3400	75	190	90	19.6	106	10	306	180	71	2450
NEF700G	6860{ 700}	3100	80	210	100	11.3	116	10	342	200	80	3480
NEH09G	8820{ 900}	3500	95	236	112	47	140	12	334	224	90	4900
NEH14G	13700{1400}	3500	105	262	125	57.5	147	12	334	250	100	6960
NEH20G	19600{2000}	3000	120	294	140	61.5	171	14	378	280	125	11000
NEH30G	29400{3000}	2800	136	334	160	77.5	197	14	416	315	140	15700
NEH41G	40200{4100}	2500	149	376	180	88.5	213	16	462	355	160	24500

Notes 1. All sizes are made-to-order products.
2. Request drawings when placing orders.

Model Number

NEF45 G - G R X G H 40 J D2

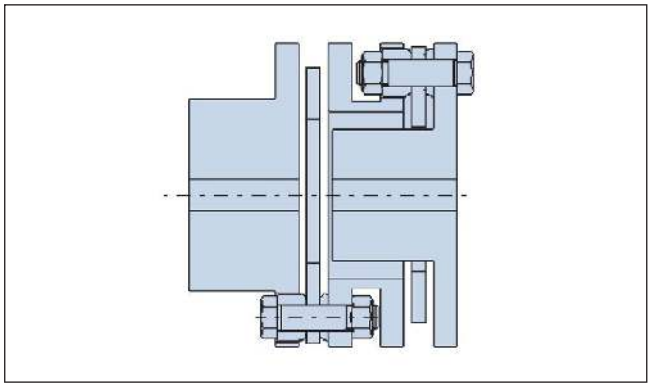
- NEF45 — Size
- G — Type : G : Type for use with gear couplings
- G — Hub type : G : Hubs for G type

Single Hub Insert Type/Double Hub Insert Type

These designs are suitable for making the overall length of the coupling shorter using a spacer type.

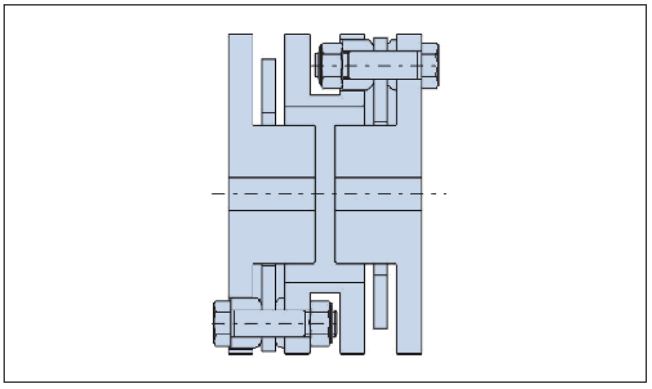
① Single hub insert type

The length in the shaft direction can be shortened by assembling one of the hubs inward.



② Double hub insert type

The length in the shaft direction can be further shortened by assembling both hubs inward.

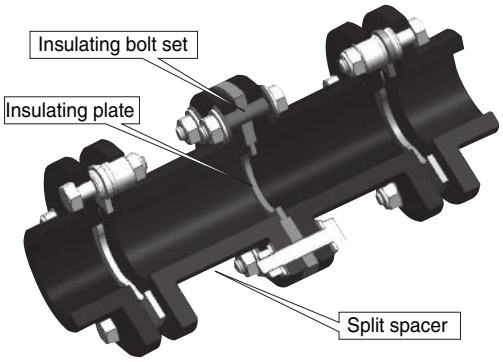


Special types

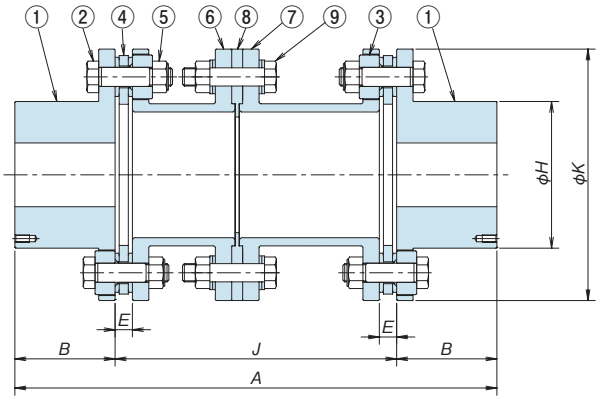
Electrically insulated type

Insulation resistance of 1 MΩ or more
Spacers on all products are subjected to withstand voltage/insulation testing (conforming to JIS C 8201-1).
Spacer length can be freely specified.

Structure



Transmission capacity/Dimensions



(1) Hubs
(2) Reamer bolt
(3) Washer
(4) Disk
(5) U-nut
(6) Insulation adapter A
(7) Insulation adapter B
(8) Insulating plate
(9) Insulating bolt

Unit : [mm]

Model No.	Allowable torque [N·m]	Maximum rotation speed [min^{-1}]	Pilot bore	Keyway maximum bore diameter	A	B	E	φ H	J	φ K	Weight [kg]	Moment of inertia [kg·m^2]
NEF80W	784{ 80}	6900	15	60	320.6	47.8	11.7	84	225	143	13	349
NEF130W	1270{ 130}	5700	25	74	346.4	57.2	16.8	106	232	168	18	668
NEF210W	2060{ 210}	5000	25	83	398	63.5	17	118	271	194	29	1427
NEF340W	3330{ 340}	4400	45	95	430.4	76.2	21.6	137	278	214	37	2213
NEF540W	5290{ 540}	3400	50	109	484.8	88.9	23.9	156	307	246	56	4497
NEF700W	6860{ 700}	3100	50	118	574.2	101.6	27.2	169	371	276	89	9000
NEH09W	8820{ 900}	3500	70	111	529	110	19	161	309	276	77	7370
NEH14W	13700{1400}	3300	70	111	578	127	19	161	324	276	88	8373
NEH20W	19600{2000}	3000	75	133	652	146	19	193	360	308	128	15790
NEH30W	29400{3000}	2700	75	152	714	165	21.5	218	384	346	177	27583

Notes 1. All sizes are made-to-order products.
2. Request delivery specifications when placing orders.
3. Inquire for information other model numbers.
4. The overall length *A* and *J* dimension values are the minimum values. Inquire if you require a shorter length than the minimum value shown.

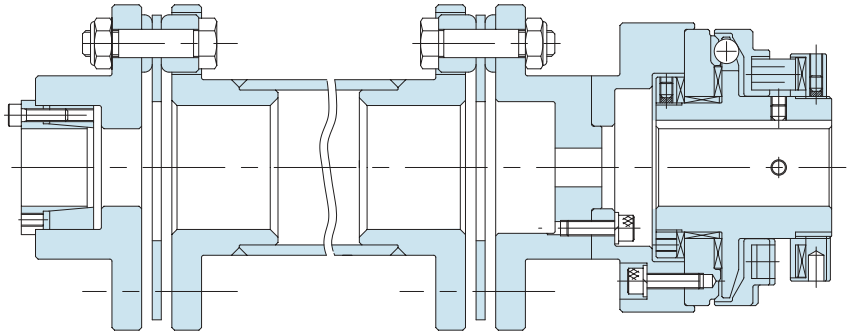
Model Number

NEF80 W - N H 50 J D2 X N H 60 E D3 - JE 225

- Size
- Type
  - W : Spacer type
- Hub type
  - N : Standard hub
  - K : Enlarged hub
  - L : Extended hub
- Bore diameter (Pilot bore: R)
- Shaft coupling method
  - J : Keyway: New JIS, normal type
  - E : Keyway: Old JIS, Type 2
- *J* dimension
- Electrically insulated spacer

Couplings with overload protectors

ECHT-FLEX Couplings with overload protectors.
Please inquire with Tsubaki for information.



Couplings with one-way clutches

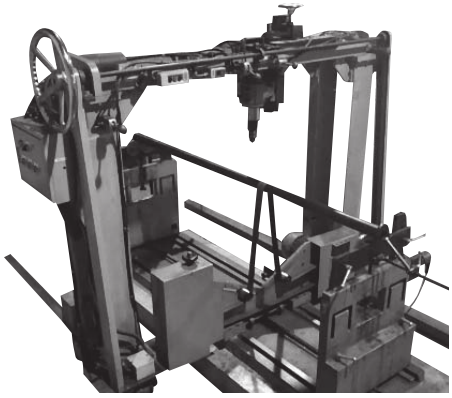
For more information, please refer Cam clutch catalog.

Composite spacer type

This is long spacer combined CFRP. It's lightweight and good corrosion resistance. Please inquire with Tsubaki for information.

Dynamic balance adjustment option

Dynamic balancer for long spacers



Upright dynamic balancer

Small size dynamic balancer

Product Selection

1. Correction torque calculation

1-1. When connected to servomotor or stepping motor

To determine the correction torque, multiply the maximum torque of the servomotor or stepping motor by the service factor (*SF*) corresponding to the type of load listed in the table below.

Service factor (SF) table

Load type	Uniform load	Moderately variable load	Highly variable load
Service factor (SF)	1.2	1.4	1.5

1-2. When connecting to general-purpose motor

To determine the correction torque, multiply the load torque calculated with the following formula by the service factor (SF) corresponding to the type of load listed in the table on the right.

$$T = \frac{60000 \times P}{2\pi \times n}$$

$$T' = T \times SF$$

T = Load torque [N・m]
P = Transmitted power [kW]
n = Rotation speed [min^{-1}]
T′ = Correction torque [N・m]

Service factor (SF) table

Load type	Motor type				
	General purpose motor, gas turbine		Engine		
	Small moment of inertia	Large moment of inertia	Four cylinders	Six cylinders	Eight cylinders
Uniform load	1.5 to 1.75	1.75 to 2.0	2.5 to 4.0	2.0 to 2.5	1.5 to 2.0
Moderately variable load	2.0 to 2.5	2.5 to 3.0	4.0 to 5.0	2.5 to 3.5	2.0 to 3.0
Highly variable load	3.0 to 4.5	4.5 to 6.0	4.5 to 5.5	3.0 to 4.0	2.5 to 3.5

* If shock loads will be applied, calculate the correction torque by multiplying the motor's maximum output torque by a shock factor of 1 to 2.5.

Note: When the coupling method is clamp or Power-Lock coupling, prevent startup torque or other torque being applied even instantaneously if it will exceed the bore's friction transmission torque (see pages 47, 51).

2. Shaft diameter

Check that the shafts to be mounted are within the coupling's range of mountable shaft diameters.
With the Power-Lock, check the Power-Lock size, quantity and transmission torque.
With the clamp type, make sure that the correction torque determined in Item (1) does not exceed the allowable transmission torque for the clamp.
Strength must be checked when mounting the product on a hollow shaft. Inquire for information.

3. Long spacer type rotation limit

When long spacer types are used at high speeds, the rotation speed needs to be checked to avoid the resonance point.
When selecting long spacer types, check each model number's *J* dimension and whether its rotation speed is within the limit.
If the operating rotation speed exceeds the value shown below, a higher model number must be selected.

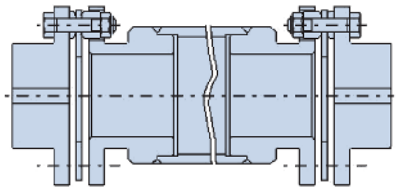
Long spacer length (*J* dimension) limits

Unit: [mm]

Model No.	Operating rotation speed [min^{-1}]														
	3600	2000	1800	1500	1200	1000	900	750	720	600	500	400	300	200	150
NEF04W	980	1310	1380	1510	1680	1840	1940	2130	2170	2380	2610	2910	3360	4120	4750
NEF10W	1120	1500	1580	1730	1940	2120	2230	2450	2500	2730	2990	3350	3860	4730	5460
NEF18W	1180	1580	1660	1820	2040	2230	2350	2570	2620	2870	3150	3520	4060	4970	5740
NEF25W	1310	1760	1850	2030	2260	2480	2610	2860	2920	3190	3500	3910	4510	5520	
NEF45W	1440	1930	2030	2230	2490	2720	2870	3140	3210	3510	3840	4290	4960		
NEF80W	1560	2090	2200	2410	2690	2950	3100	3400	3470	3800	4160	4650	5360		
NEF130W	1780	3280	2510	2750	3070	3360	3540	3870	3950	4330	4740	5290			
NEF210W	1890	2520	2660	2910	3250	3560	3750	4100	4190	4580	5020	5610			
NEF340W	2024	2720	2870	3130	3500	3830	4040	4420	4510	4930	5400				
NEF540W	2180	2910	3070	3360	3750	4100	4320	4730	4820	5280	5780				
NEF700W	2270	3030	3190	3490	3890	4260	4490	4910	5010	5490					
NEH09W	2190	2930	3090	3380	3780	4130	4360	4770	4870	5330	5830				
NEH14W	2190	2930	3090	3380	3780	4130	4360	4770	4870	5330	5830				
NEH20W	2400	3200	3380	3690	4130	4520	4760	5210	5320	5820					
NEH30W	2570	3430	3610	3960	4420	4840	5100	5580	5690						
NEH41W	2650	3540	3730	4080	4560	4990	5260	5760	5870						

● Long spacer high-speed type

A larger coupling size can be selected as a way to avoid a dangerous RPM range. When use of a larger size is not possible, the same effect can be achieved by increasing the spacer weight. Please contact us.



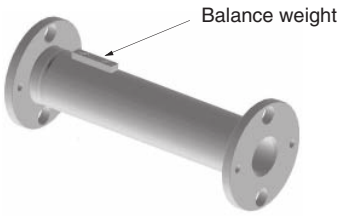
4. Cautions for servomotor drive

Depending on the natural frequency and electric control status of the system as a whole, a ball screw drive system using a servomotor may generate large vibration or abnormal sound caused by oscillation due to the characteristics of the servomotor.
In this case, adjust the torsional stiffness and moment of inertia of the overall drive system to increase the torsional natural frequency, or adjust the servo gain with the electric control tuning function of the servomotor.

5. ECHT-FLEX Couplings satisfying Items 1 to 4 above 3 should be chosen from the transmission capacity table on the page of the desired type.

Dynamic balance adjustment

Normally, because ECHT-FLEX couplings provide a well-balanced design, they need no particular balance adjustment. However, when the coupling is used at a high rotation speed, or when a long spacer is used, balance adjustment may be required.
In this case, inform us of your desired operating rotation speed, JIS balance rating, dimension "*J*", or spacer length so that we can perform your balance adjustment.
For dynamic balance adjustment, we use the following two methods:
1) Drilling the spacer flange end face, and 2) Mounting a balance weight to the spacer pipe periphery. (The spacer with a balance weight is shown below. The balance weight mounting position and quantity vary depending on operating conditions. Be careful not to interfere with the balance weight during rotation.)
When requesting a balance adjustment, specify either method 1) or 2) above.



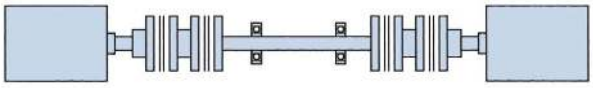
A spacer mounted with a balance weight

Notes for large distance between shaft ends

For large distance between shaft ends, Tsubaki offers a Long Spacer Type that can be used in a floating state without the need for an intermediate shaft bearing. We recommend this type of coupling if it fits your application needs.

Long spacer type

To avoid the 'skipping rope phenomenon' when your conditions require use of an intermediate shaft instead of a long spacer, use bearings to fasten intermediate shafts. The spacer type is the recommended disk coupling in this case.



Spacer type + fixed intermediate shaft + spacer type

If the distance between shafts is short and an intermediate shaft is used in a floating condition, be sure to use the Single-Type coupling.

Single type + floating intermediate shaft + single type

Never use the spacer type with additional floating shaft.

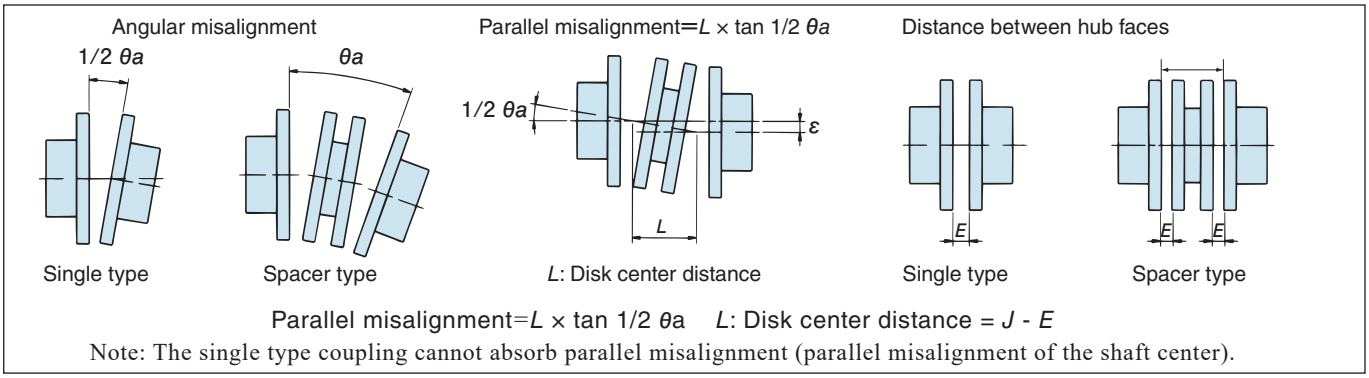
Spacer type + floating intermediate shaft + spacer type

Pay special attention to the above when replacing gear couplings or roller chain couplings with disk couplings.

Centering

① Single and spacer type couplings

The more accurate the initial centering of the coupling, the less stress it will experience during operation. Wear of the shaft bearing, depressions in the mounting surface, changes in conditions affected by temperature and vibration can reduce the life of the coupling and your equipment. Center accurately and conduct periodic adjustment according to the following procedure.



Parallel misalignment=$L \times \tan 1/2\ \theta a$ L: Disk center distance = $J - E$

Note: The single type coupling cannot absorb parallel misalignment (parallel misalignment of the shaft center).

The allowable angular misalignment, parallel misalignment, and error in the distance between the coupling's flange faces are all correlated to each other. Increasing one factor decreases the others, so the factors need to be considered together. Perform the initial centering adjustment carefully so that the following recommended value is not exceeded.

Table 1 Recommended centering value (Single type coupling)

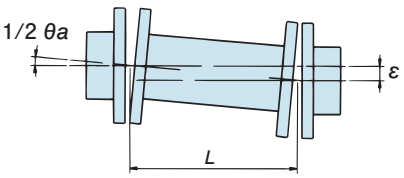
	Model No.	Angular misalignment 1/2 θ a [deg]	Angular misalignment Dial reading T.I.R. [mm]	Parallel misalignment ε [mm]	Hub face distance misalignment E [mm]
Single type	NEF 02S	0.25	0.25	* Errors cannot be absorbed.	4.9 ± 0.25
	NEF 04S	0.25	0.29		6.1 ± 0.25
	NEF 10S	0.25	0.35		6.6 ± 0.25
	NEF 18S	0.25	0.40		8.3 ± 0.25
	NEF 25S	0.25	0.45		11.2 ± 0.25
	NEF 45S	0.25	0.55		11.7 ± 0.25
	NEF 80S	0.25	0.62		11.7 ± 0.25
	NEF 130S	0.25	0.73		16.8 ± 0.25
	NEF 210S	0.25	0.84		17.0 ± 0.25
	NEF 340S	0.25	0.93		21.6 ± 0.25
	NEF 540S	0.25	1.07		23.9 ± 0.25
	NEF 700S	0.25	1.20		27.2 ± 0.25

*Note: The single type is structurally unable to absorb parallel misalignment, but should be adjusted to within 0.02 mm during centering.

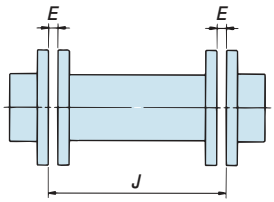
② Long spacer type

E : Distance between hub faces
J : Flange face distance

Parallel misalignment =$L \times \tan 1/2\ \theta a$



Flange-to-flange dimensions



L: Disk center distance = $J - E$

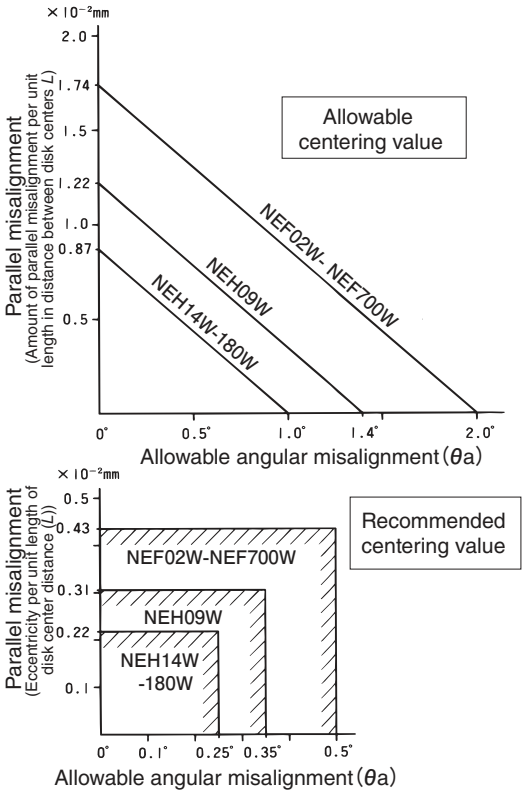
Table 2 Recommended centering value (Spacer type coupling)

	Model No.	Angular misalignment θ a [deg]	Angular misalignment Dial reading T.I.R. [mm]	Parallel misalignment ε [mm]	Hub face distance misalignment E [mm]
Spacer type	NEF 02W	0.5	0.50	0.075	4.9 ± 0.25
	NEF 04W	0.5	0.58	0.13	6.1 ± 0.25
	NEF 10W	0.5	0.71	0.14	6.6 ± 0.25
	NEF 18W	0.5	0.81	0.17	8.3 ± 0.25
	NEF 25W	0.5	0.91	0.18	11.2 ± 0.25
	NEF 45W	0.5	1.10	0.22	11.7 ± 0.25
	NEF 80W	0.5	1.25	0.25	11.7 ± 0.25
	NEF 130W	0.5	1.46	0.27	16.8 ± 0.25
	NEF 210W	0.5	1.69	0.31	17.0 ± 0.25
	NEF 340W	0.5	1.86	0.33	21.6 ± 0.25
	NEF 540W	0.5	2.14	0.37	23.9 ± 0.25
	NEF 700W	0.5	2.41	0.46	27.2 ± 0.25
	NEH 09W	0.35	1.68	0.30	19.0 ± 0.25
	NEH 14W	0.25	1.20	0.30	19.0 ± 0.25
	NEH 20W	0.25	1.34	0.33	19.0 ± 0.25
	NEH 30W	0.25	1.50	0.36	21.5 ± 0.25
	NEH 41W	0.25	1.64	0.43	24.0 ± 0.25
	NEH 55W	0.25	1.94	0.50	29.5 ± 0.25
	NEH 70W	0.25	2.05	0.51	31.3 ± 0.25
	NEH 90W	0.25	2.23	0.55	32.0 ± 0.25
	NEH110W	0.25	2.43	0.55	32.5 ± 0.25
	NEH135W	0.25	2.56	0.60	34.0 ± 0.25
	NEH150W	0.25	2.74	0.65	34.5 ± 0.25
	NEH180W	0.25	2.85	0.70	35.5 ± 0.25

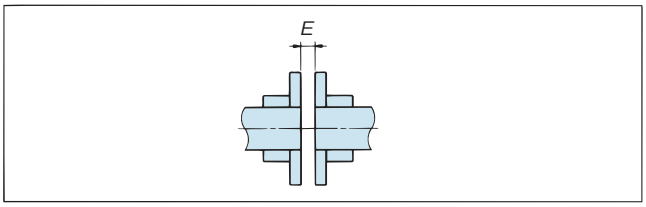
Table 3 Recommended centering value (Long spacer types)

Model No.	Angular misalignment θ a [deg]	Angular misalignment Dial reading T.I.R. [mm]	Parallel misalignment ε [mm]	Hub face distance misalignment E [mm]
NEF 04W	0.5	0.58	$L \times 0.43 \times 10^{-2}$	6.1±0.25
NEF 10W	0.5	0.71	$L \times 0.43 \times 10^{-2}$	6.6±0.25
NEF 18W	0.5	0.81	$L \times 0.43 \times 10^{-2}$	8.3±0.25
NEF 25W	0.5	0.91	$L \times 0.43 \times 10^{-2}$	11.2±0.25
NEF 45W	0.5	1.10	$L \times 0.43 \times 10^{-2}$	11.7±0.25
NEF 80W	0.5	1.25	$L \times 0.43 \times 10^{-2}$	11.7±0.25
NEF 130W	0.5	1.46	$L \times 0.43 \times 10^{-2}$	16.8±0.25
NEF 210W	0.5	1.69	$L \times 0.43 \times 10^{-2}$	17.0±0.25
NEF 340W	0.5	1.86	$L \times 0.43 \times 10^{-2}$	21.6±0.25
NEF 540W	0.5	2.14	$L \times 0.43 \times 10^{-2}$	23.9±0.25
NEF 700W	0.5	2.41	$L \times 0.43 \times 10^{-2}$	27.2±0.25
NEH 09W	0.35	1.68	$L \times 0.31 \times 10^{-2}$	19.0±0.25
NEH 14W	0.25	1.20	$L \times 0.22 \times 10^{-2}$	19.0±0.25
NEH 20W	0.25	1.34	$L \times 0.22 \times 10^{-2}$	19.0±0.25
NEH 30W	0.25	1.50	$L \times 0.22 \times 10^{-2}$	21.5±0.25
NEH 41W	0.25	1.64	$L \times 0.22 \times 10^{-2}$	24.0±0.25
NEH 55W	0.25	1.94	$L \times 0.22 \times 10^{-2}$	29.5±0.25
NEH 70W	0.25	2.05	$L \times 0.22 \times 10^{-2}$	31.3±0.25
NEH 90W	0.25	2.23	$L \times 0.22 \times 10^{-2}$	32.0±0.25
NEH 110W	0.25	2.43	$L \times 0.22 \times 10^{-2}$	32.5±0.25
NEH 135W	0.25	2.56	$L \times 0.22 \times 10^{-2}$	34.0±0.25
NEH 150W	0.25	2.74	$L \times 0.22 \times 10^{-2}$	34.5±0.25
NEH 180W	0.25	2.85	$L \times 0.22 \times 10^{-2}$	35.5±0.25

Relationship between parallel misalignment and angular misalignment for the spacer type coupling



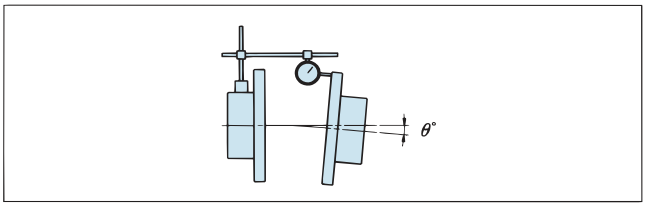
(1) Adjusting the hub-to-hub dimension "*E*"



For both the Spacer Type and Single Type couplings, measure dimension "*E*" at four places (at 90° angles), and adjust the hub position so that the average value of dimension "*E*" is within ±0.25 mm.

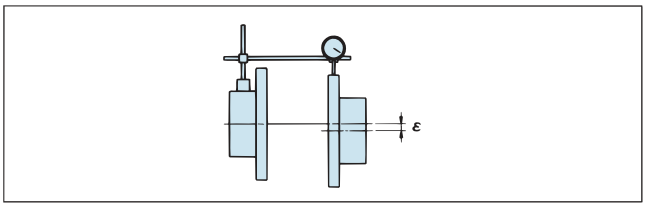
When a stepped shaft is used for both the drive and driven shafts, the margin for adjustment may be limited. In this case, give consideration in advance so that dimension "*E*" can be adjusted.

(2) Adjusting the angular misalignment (*θ*°)



a) With a dial gauge fixed to one of the hubs as shown above, rotate the hub to find the minimum indication on the dial gauge, and set that to "0".
b) Rotate the hub with the dial gauge 360°, and read the value for the angular misalignment.
c) Adjust the equipment by moving it with a shim so that the reading on the dial gauge comes within the recommended angular misalignment range specified in the table on page 59.

(3) Adjusting the parallel misalignment "*ε*" (mm)



a) With a dial gauge fixed to the hub flange as shown above, rotate the hub to find the minimum indication on the dial gauge, and set that to "0".
b) Rotate the hub with the attached dial gauge 360 degrees, and read the parallel misalignment value.
c) The reading on the dial gauge around the periphery of the hub flange may fluctuate markedly at the hub's drilled bore. This is because the flange is displaced toward the periphery while machining the drilled bore. When reading the dial gauge, disregard the values at such locations.
d) Adjust the equipment by moving it with a shim so that the reading on the dial gauge comes within twice the recommended parallel misalignment (ε) range specified in the table on page 59.
e) If the equipment is moved for the purpose of parallel misalignment adjustment, perform the angular misalignment adjustment procedure once again.

(4) Repeat the above adjustment procedures until all of the coupling's displacement values are acceptable.

(5) Tighten all the U-nuts to the torque specified on the next page. ECHT-FLEX Couplings transmit torque using the frictional force generated between the disk and washer by the U-nut's fastening force. Always use the U-nut tightening torque specified on the next page.

Handling

1. Reamer bolt tightening torques

ECHT-FLEX Couplings transmit power using the frictional force of the reamer bolts and U-nuts.
Tighten the reamer bolts and U-nuts securely with the specified torque.

Tightening torque

Model No.	Reamer bolt tightening torque [N·m]	Reamer bolt size
NEF02	4.90	M 5
NEF04	8.82	M 6
NEF10	8.82	M 6
NEF18	21.6	M 8
NEF25	21.6	M 8
NEF45	41.2	M10
NEF80	78.4	M12
NEF130	78.4	M12
NEF210	177	M16
NEF340	177	M16
NEF540	470	M20
NEF700	657	M24
NEH09	470	M20
NEH14	568	M22
NEH20	784	M24
NEH30	1170	M27
NEH41	1590	M30
NEH55	2250	M36
NEH70	2550	M36
NEH90	3230	M39
NEH110	3920	M42
NEH135	4900	M45
NEH150	5490	M48
NEH180	6860	M52

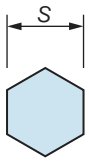
Type for use with gear couplings

Model No.	Reamer Bolt (A) tightening torque [N·m]	Size of reamer bolt (A)	Reamer bolt (B) tightening torque [N·m]	Size of reamer bolt (B)
NEF45G	41.2	M10	8.82	M 6
NEF80G	78.4	M12	21.6	M 8
NEF130G	78.4	M12	21.6	M 8
NEF210G	177	M16	41.2	M10
NEF340G	177	M16	41.2	M10
NEF540G	470	M20	78.4	M12
NEF700G	657	M24	78.4	M12
NEH09G	470	M20	78.4	M12
NEH14G	568	M22	78.4	M12
NEH20G	784	M24	177	M16
NEH30G	1170	M27	177	M16
NEH41G	1590	M30	470	M20

Distance between two reamer bolt faces

Unit : [mm]

Size	M5	M6	M8	M10	M12	M16	M20	M22	M24
S	8	10	13	17	19	24	30	32	36
Size	M27	M30	M36	M39	M42	M45	M48	M52	
S	41	46	55	60	65	70	75	80	



2. Tightening the reamer bolt

When tightening the reamer bolts, be careful not to apply an axial force to the coupling hub.

If an axial force is applied to the hub, the disk may warp and become fixed in that warped state. Tighten the reamer bolts securely with the torque specified in the table above.

- The U-nut is made of metal. It can be mounted and dismounted up to 20 times.
  If you will need to mount and dismount the U-nut more than 20 times, keep a spare U-nut on hand.
- There is no need to apply oil or grease to reamer bolts.

3. Removing the coupling

The Spacer Type coupling can be removed from the shaft without running the drive or driven equipment. This feature considerably simplifies centering adjustment when re-mounting the coupling.

<Removal procedure>

1. Loosen all reamer bolts and remove the disks and spacers. (Fig. 1)
2. Loosen the set bolt that fastens the hub, and then slide the hub off to remove it. (Fig. 2)
3. To re-mount the coupling, perform the above steps in reverse order. After both hubs are mounted to the shaft, it is recommended that you check the centering level to verify the mounting state.

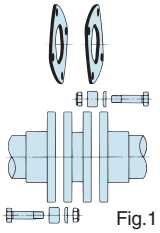


Fig.1

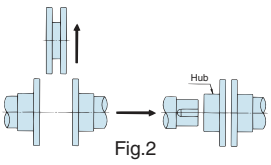


Fig.2

4. Inspection

After operating the equipment for one or two hours, check the angular misalignment and the parallel misalignment once again. At this time, re-tighten the bolts and nuts with the torque specified in the table above.

Once the equipment has been in operation for 6 months or one year, check the reamer bolts and U-nuts for looseness. It is recommended that you mark the reamer bolts and U-nuts at the time of installation so that you can check for looseness later on. Be sure to check for any abnormalities in other components as well.

Innovation in Motion

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