

Flexible Couplings and Hub-shaft Connections

# COUPLINGS



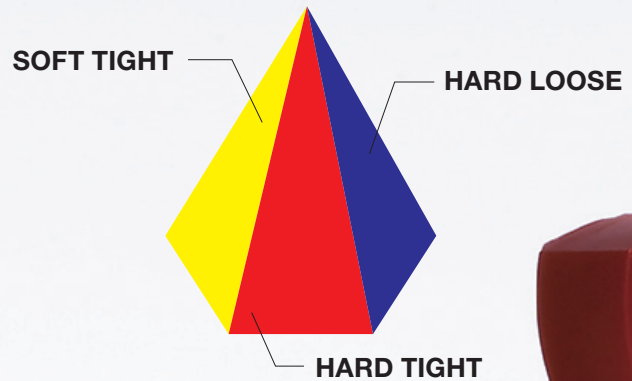
# Jaw Couplings With A Simplified Structure Tucking A Buffer Material Between Two Hubs

STAR FLEX, the flexible couplings, are derived as the result of mikipulley's technology developed by long years of experiences and support by the advance CAE system.

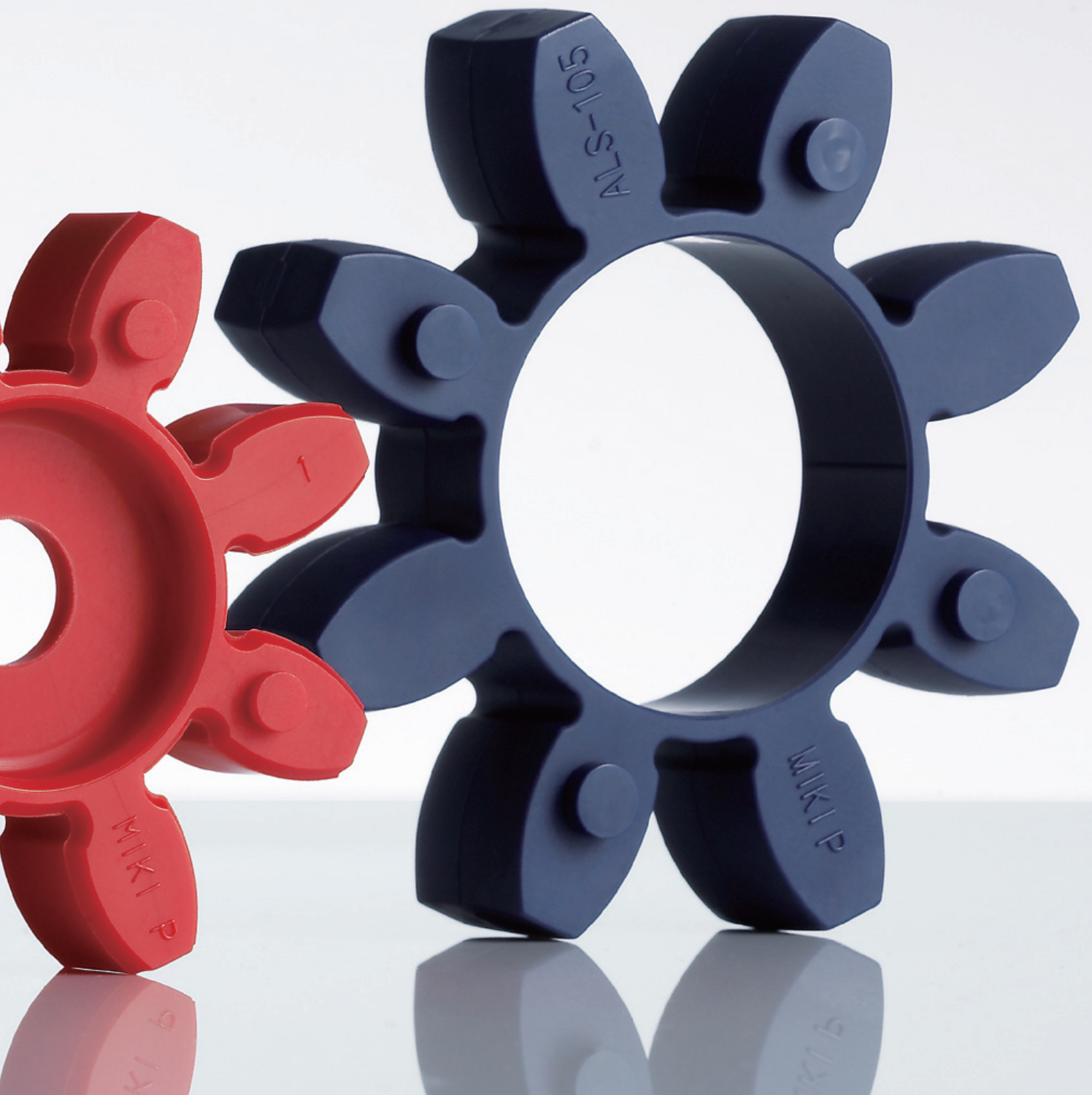
For the element as a buffer material, three types of couplings are provided with two different hardness and two different fitting designs.

High transmission torque compared to our conventional couplings has been achieved. An optimal shaft linkage is thus provided by selecting the couplings according to the responsiveness and the amount of misalignment.

Features of Buffer Material



STARFLEX



# Jaw Couplings with a Simplified Structure

Power is transferred by the polyurethane elastomer with the elastic force of rubber, which has superior vibration and shock absorbability. High torque transmission that is more than double that of conventional mikipulley's jaw couplings is achieved by pursuing the optimal shape.

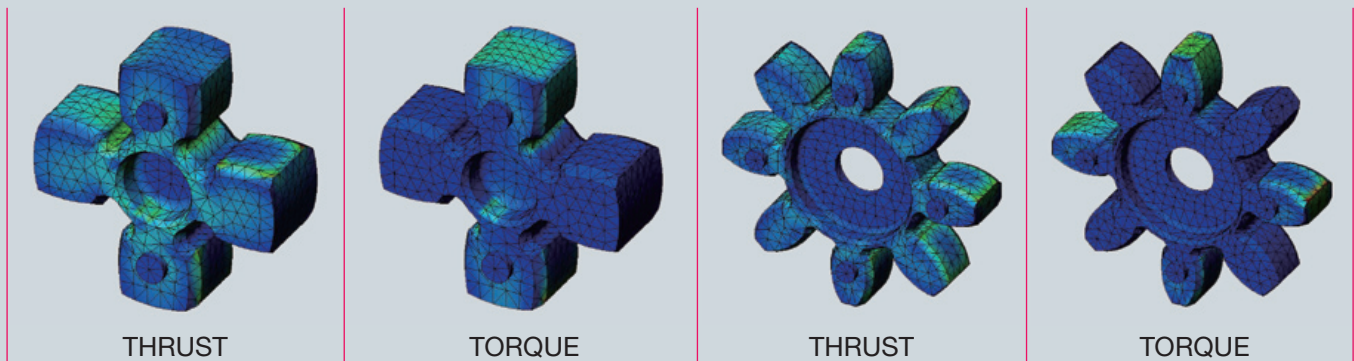
Although it is a high transmission torque, misalignment reaction force has been significantly reduced by undercuts of the inner diameter side.

While use with no backlash is available by a design allowing preliminary compression (ALS-R · ALS-Y), the couplings can be used for the target shaft or bearing with damage-free.

Also, the couplings are compliant with the EU Restriction of Hazardous Substances Directive, "RoHS Directive," that prohibits six hazardous materials such as mercury, lead, and others.

## Optimal design by 3D-CAD and FEM analysis

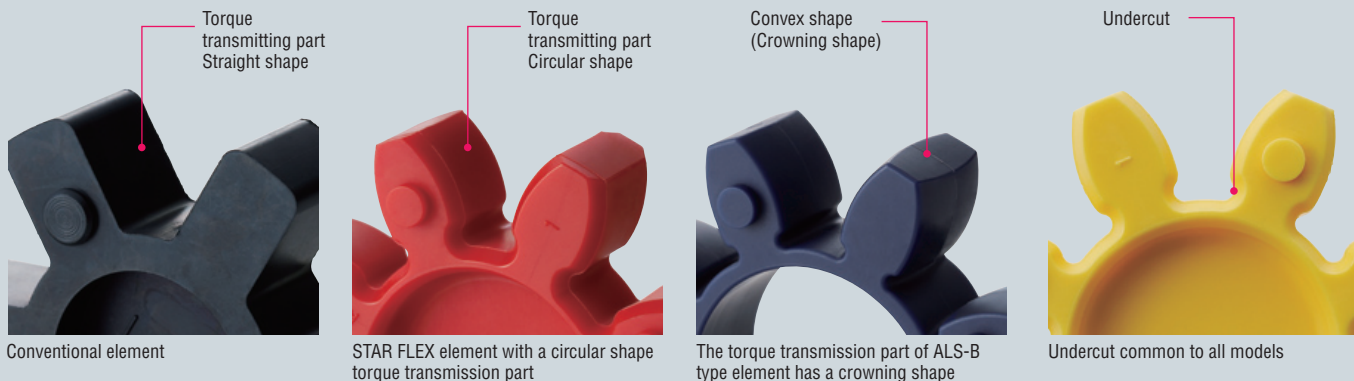
The advanced CAE system is utilized in the starting stage of design. Models are designed by using 3D-CAD. Shapes and strength design are optimized by using the advanced finite element method (FEM) analysis software.



## With optimally designed element shapes, higher torque transmission and reduced misalignment reaction force are realized.

High torque transmission that is more than double that of mikipulley's conventional jaw couplings with respect to the outside diameter is achieved by modifying the shape of the torque transmitting part and rigorously selecting materials. Moreover, ALS-B type with uncompressed loose fit shape can increase the permissible misalignment by modifying the torque transmission part to crowning shape.

In addition, no backlash couplings that are easy on the target shafts are realized by placing undercuts to the inner diameter side to reduce the misalignment reduction force.



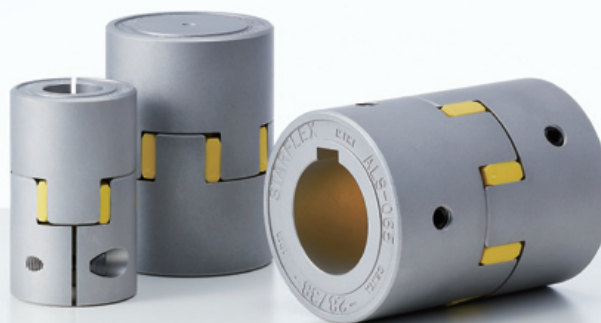
## RED (HARD TIGHT)

- Element hardness: 97 JIS A
- Preliminary compressed tight fit shape
- No hazardous substances used, RoHS Directive compliant
- High torque
- Simplified servo
- For stepping motor
- For general purpose motor



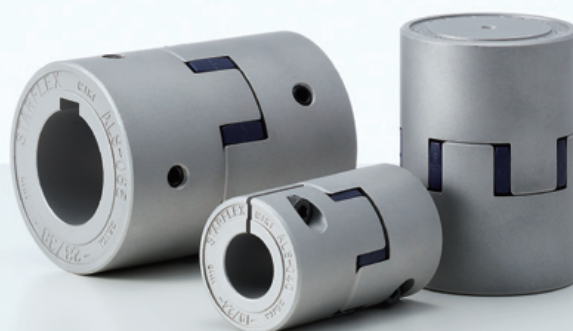
## YELLOW (SOFT TIGHT)

- Element hardness: 90 JIS A
- Preliminary compressed tight fit shape
- No hazardous substances used, RoHS Directive compliant
- Simplified servo
- For stepping motor
- For general purpose motor

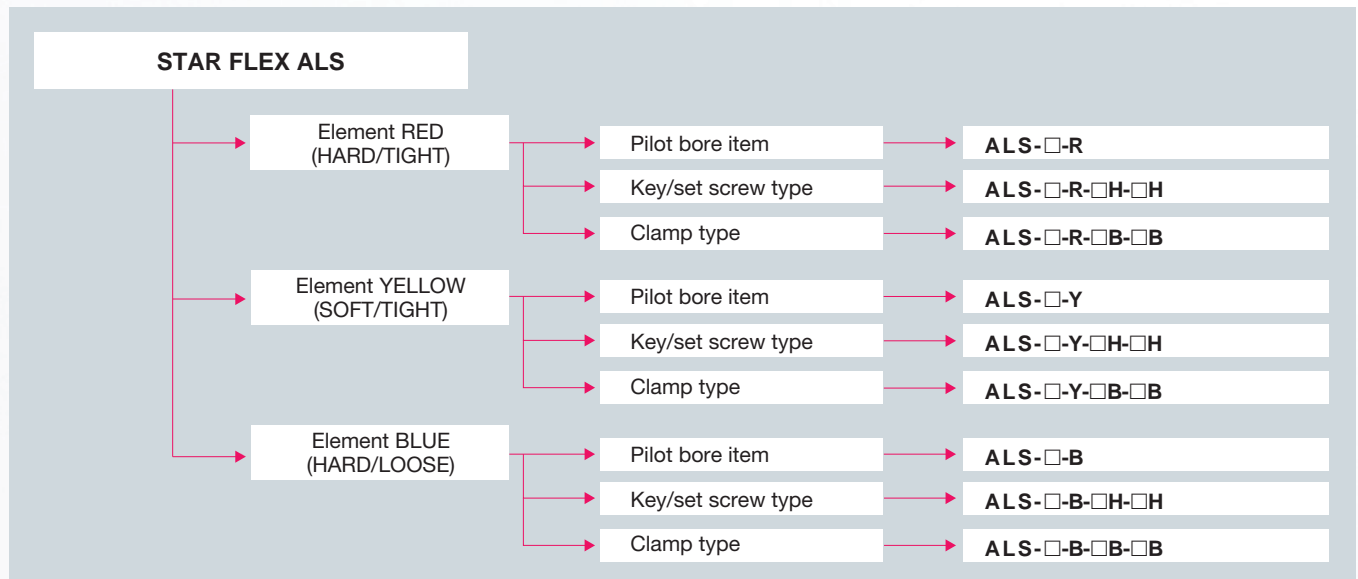


## BLUE (HARD LOOSE)

- Element hardness: 97 JIS A
- Uncompressed loose fit shape
- No hazardous substances used, RoHS Directive compliant
- High torque, high flexibility
- For general purpose motor

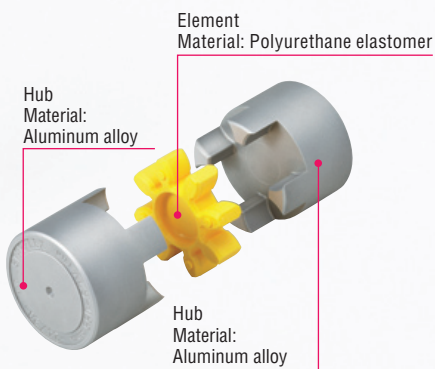


# ALS MODEL

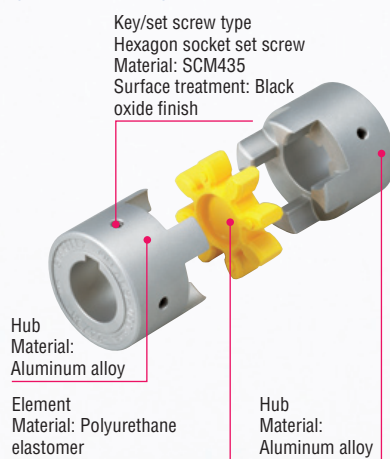


## Structure and Material

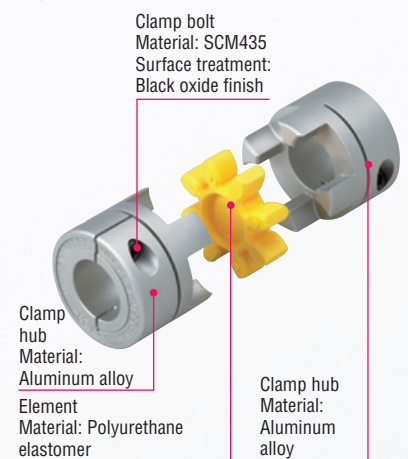
### Pilot bore item



### Key/set screw type



### Clamp type



STAR FLEX  
ALS



STAR FLEX  
ALS

ALS MODEL

**ALS-R TYPE**

# Key/Set Screw Type



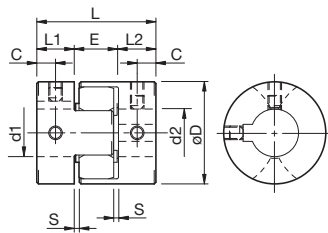
## Specification

Model	Torque		Max. permissible misalignment			Max. rotation speed [min <sup>-1</sup> ]	Torsional stiffness [N-m/rad]	Radial displacement [N/mm]	Moment of inertia [kg-m <sup>2</sup> ]	Mass [kg]	Standard bore processed item price	Pilot bore item price
	Normal [N-m]	Max. [N-m]	Parallel offset [mm]	Angular misalignment [°]	Axial displacement [mm]							
ALS-014-R	2	4	0.10	1	0 to + 0.6	34100	21	380	1.91 x 10 <sup>-7</sup>	0.007	-	-
ALS-020-R	5	10	0.10	1	0 to + 0.8	23800	43	400	1.08 x 10 <sup>-6</sup>	0.018	-	-
ALS-030-R	12.5	25	0.10	1	0 to + 1.0	15900	136	650	6.25 x 10 <sup>-6</sup>	0.047	-	-
ALS-040-R	17	34	0.10	1	0 to + 1.2	11900	1550	1700	3.87 x 10 <sup>-5</sup>	0.15	-	-
ALS-055-R	60	120	0.10	1	0 to + 1.4	8700	2000	1350	1.66 x 10 <sup>-4</sup>	0.35	-	-
ALS-065-R	160	320	0.10	1	0 to + 1.5	7400	3100	1400	3.57 x 10 <sup>-4</sup>	0.51	-	-
ALS-080-R	325	650	0.10	1	0 to + 1.8	6000	6000	1710	1.06 x 10 <sup>-3</sup>	1.01	-	-
ALS-095-R	450	900	0.10	1	-0.5 to + 2.0	5000	10000	4200	2.24 x 10 <sup>-3</sup>	1.50	-	-
ALS-105-R	525	1050	0.15	1	-0.9 to + 2.0	4500	12000	5000	3.72 x 10 <sup>-3</sup>	2.05	-	-

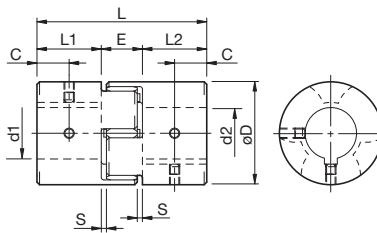
\* The spring constant values are measured at 20°C.  
 \* The indicated values in the moment of inertia and mass are measured with the maximum bore diameter.  
 \* Dynamic balance is not considered for the maximum rotation speed.  
 \* Negative axial displacements of ALS-014 to 080-R are not allowed.

## Dimensions

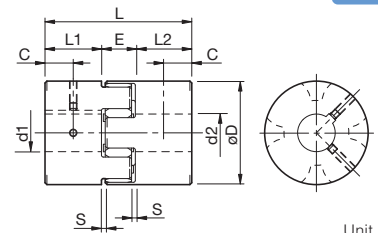
■ALS-014 to 030



■ALS-040



■ALS-055 to 105



Unit [mm]

Model	d1-d2			D	L	L1-L2	E	S	C	CAD file No.
	Pilot bore	Min.	Max.							
ALS-014-R	3	3	6.5	14	22	7	8	1	3.5	ALS-HH1
ALS-020-R	4	4	9.6	20	30	10	10	1	5	ALS-HH2
ALS-030-R	5	6	14	30	35	11	13	1.5	5.5	ALS-HH3
ALS-040-R	5	8	22	40	66	25	16	2	12.5	ALS-HH4
ALS-055-R	5	10	28	55	78	30	18	2	15	ALS-HH5
ALS-065-R	5	14	38	65	90	35	20	2.5	17.5	ALS-HH6
ALS-080-R	10	19	45	80	114	45	24	3	22.5	ALS-HH7
ALS-095-R	8	19	55	95	126	50	26	3	25	-
ALS-105-R	10	19	60	105	140	56	28	3.5	28	-

\* Pilot bore indicates center processing.

## Standard bore diameter

Model	Standard bore diameter d1-d2 [mm]																													
	3	4	5	6	6.35	8	9	9.525	10	11	12	14	15	16	18	19	20	24	25	28	30	32	35	38	40	42	45	50	55	60
ALS-014-R	●	●	●	●	●																									
ALS-020-R			●	●	●	●	●	●																						
ALS-030-R						●	●	●	●																					
ALS-040-R										●	●	●																		
ALS-055-R													●	●	●	●	●	●	●											
ALS-065-R																	●	●	●	●	●	●	●							
ALS-080-R																				●	●	●	●	●	●	●	●	●	●	●
ALS-095-R																									●	●	●	●	●	●
ALS-105-R																									●	●	●	●	●	●

\* The bore diameters with ● are supported as standard bore diameters.  
 \* Processing with the no key slot is available for ø11 or smaller, and processing for the former JIS, new JIS, and new standard motor is available for ø12 or larger.  
 \* New JIS and processing compatible to new standard motor are set as the only standards for the bore diameters of ALS-095 and 105.

### Ordering Information

**ALS - 055 - R - 24N - 28H**

Size: 055  
 Element type: R  
 Bore dia.: d1-d2  
 Blank: Pilot bore item  
 Bore specification: 24N  
 Blank: Previous edition  
 JIS (Class 2) compliant  
 H: New JIS compliant  
 N: New standard motor compatible



ALS-R TYPE

# Clamp Type



## Specification

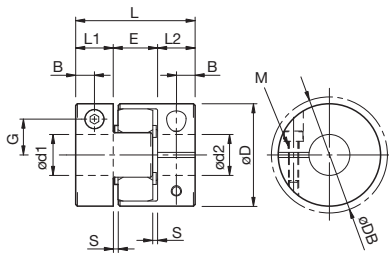
Model	Torque		Max. permissible misalignment			Max. rotation speed [min <sup>-1</sup> ]	Torsional stiffness [N-m/rad]	Radial displacement [N/mm]	Moment of inertia [kg-m <sup>2</sup> ]	Mass [kg]	Price
	Normal [N-m]	Max. [N-m]	Parallel offset [mm]	Angular misalignment [°]	Axial displacement [mm]						
ALS-014-R	2	4	0.10	1	0 to +0.6	10000	21	380	1.98 x 10 <sup>-7</sup>	0.007	-
ALS-020-R	5	10	0.10	1	0 to +0.8	10000	43	400	1.09 x 10 <sup>-6</sup>	0.019	-
ALS-030-R	12.5	25	0.10	1	0 to +1.0	10000	136	650	6.19 x 10 <sup>-6</sup>	0.045	-
ALS-040-R	17	34	0.10	1	0 to +1.2	10000	1550	1700	4.01 x 10 <sup>-5</sup>	0.16	-
ALS-055-R	60	120	0.10	1	0 to +1.4	7000	2000	1350	1.63 x 10 <sup>-4</sup>	0.34	-
ALS-065-R	160	320	0.10	1	0 to +1.5	5900	3100	1400	3.69 x 10 <sup>-4</sup>	0.54	-
ALS-080-R	325	650	0.10	1	0 to +1.8	4800	6000	1710	1.04 x 10 <sup>-3</sup>	1.00	-

\* The torsional stiffness values are measured at 20°C.  
 \* The indicated values in the moment of inertia and mass are measured with the maximum bore diameter.  
 \* Dynamic balance is not considered for the maximum rotation speed.

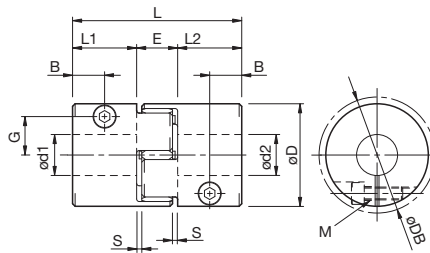
## Dimensions



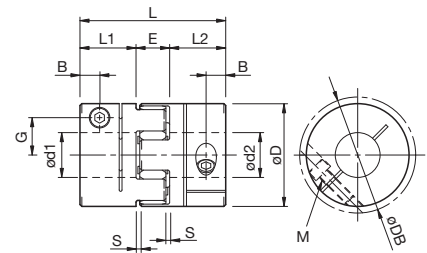
### ALS-014 to 030



### ALS-040



### ALS-055 to 080



Unit [mm]

Model	d1-d2		D	DB	L	L1-L2	E	S	B	G	M	Tightening Torque [N-m]	CAD file No.
	Min.	Max.											
ALS-014-R	3	6	14	16.1	22	7	8	1	3.5	4.8	M2	0.4	ALS-BB1
ALS-020-R	4	8	20	20	30	10	10	1	5	6.5	M2.5	1	ALS-BB2
ALS-030-R	6	14	30	30	35	11	13	1.5	5.5	10.5	M3	1.5	ALS-BB3
ALS-040-R	8	20	40	43.2	66	25	16	2	12.5	15	M5	7	ALS-BB4
ALS-055-R	10	28	55	55	78	30	18	2	10.5	20	M6	14	ALS-BB5
ALS-065-R	14	35	65	69.8	90	35	20	2.5	11.5	24.5	M8	30	ALS-BB6
ALS-080-R	19	45	80	80	114	45	24	3	11.5	30	M8	30	ALS-BB7

## Standard bore diameter and permissible transmission torque

Model	Standard bore diameter d1-d2 [mm] and permissible transmission torque [N-m]																							
	3	4	5	6	6.35	7	8	10	11	12	14	15	16	18	19	20	22	24	25	28	30	35	42	
ALS-014-R	0.31	0.42	0.54	0.65																				
ALS-020-R		1.2	1.6	2.1	2.2	2.6	3.0																	
ALS-030-R				2.0	2.2		3.4	4.7	5.4	6.0	7.4													
ALS-040-R							8	16		23	31	34	34		34									
ALS-055-R												38	41	48	51	54	61	67	71	80				
ALS-065-R																61	68	75	79	89	96	114		
ALS-080-R																				108	121	151	194	

\* The bore diameters with a value are supported as standard bore diameters.  
 \* The permissible transmission torque of the shaft diameter with a value is limited by the holding power at the shaft locking mechanism. The value indicates the permissible transmission torque [N-m].  
 \* The dimensional tolerance of the target shaft is h7. However, for a shaft diameter of 35, the tolerance is  $^{+0.010}_{-0.025}$ .  
 \* The range of bore diameters that can be supported is from the minimum diameter to the maximum diameter in the table. For bore diameters other than above, contact us for separate arrangement.

### Ordering Information

**ALS - 055 - R - 24B - 28B**

Size  
 Element type  
 R: Hardness 97 JIS A tight fit  
 Bore diameter: d1-d2  
 Bore specification  
 B: Clamp type

The latest CAD data can be downloaded from our website. <http://www.mikipulley.co.jp/>



The CAD mark indicates that CAD data is available by CD-ROM. The CAD file No. represents the file name in the CD-ROM.

**ALS-Y TYPE**

# Key/Set Screw Type



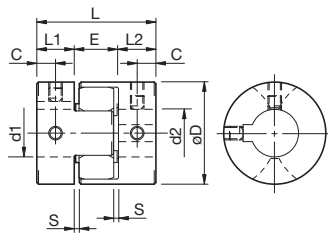
## Specification

Model	Torque		Max. permissible misalignment			Max. rotation speed [min <sup>-1</sup> ]	Torsional stiffness [N·m/rad]	Radial displacement [N/mm]	Moment of inertia [kg·m <sup>2</sup> ]	Mass [kg]	Standard bore processed item price	Pilot bore item price
	Normal [N·m]	Max. [N·m]	Parallel offset [mm]	Angular misalignment [°]	Axial displacement [mm]							
ALS-014-Y	1.2	2.4	0.10	1	0 to +0.6	34100	12	200	1.91 x 10 <sup>-7</sup>	0.007	-	-
ALS-020-Y	3	6	0.15	1	0 to +0.8	23800	24	210	1.08 x 10 <sup>-6</sup>	0.018	-	-
ALS-030-Y	7.5	15	0.15	1	0 to +1.0	15900	73	330	6.25 x 10 <sup>-6</sup>	0.047	-	-
ALS-040-Y	10	20	0.10	1	0 to +1.2	11900	760	940	3.87 x 10 <sup>-5</sup>	0.15	-	-
ALS-055-Y	35	70	0.15	1	0 to +1.4	8700	1400	1160	1.66 x 10 <sup>-4</sup>	0.35	-	-
ALS-065-Y	95	190	0.15	1	0 to +1.5	7400	2100	1200	3.57 x 10 <sup>-4</sup>	0.51	-	-
ALS-080-Y	190	380	0.15	1	0 to +1.8	6000	4000	1430	1.06 x 10 <sup>-3</sup>	1.01	-	-
ALS-095-Y	265	530	0.15	1	-0.5 to +2.0	5000	6000	2400	2.24 x 10 <sup>-3</sup>	1.50	-	-
ALS-105-Y	310	620	0.20	1	-0.9 to +2.0	4500	7000	4000	3.72 x 10 <sup>-3</sup>	2.05	-	-

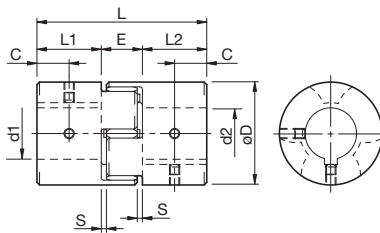
\* The spring constant values are measured at 20°C.  
 \* The indicated values in the moment of inertia and mass are measured with the maximum bore diameter.  
 \* Dynamic balance is not considered for the maximum rotation speed.  
 \* Negative axial displacements of ALS-014 to 080-Y are not allowed.

## Dimensions

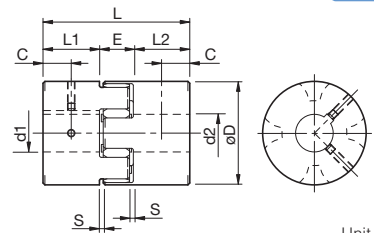
■ALS-014 to 030



■ALS-040



■ALS-055 to 105



Unit [mm]

Model	d1-d2			D	L	L1-L2	E	S	C	CAD file No.
	Pilot bore	Min.	Max.							
ALS-014-Y	3	3	6.5	14	22	7	8	1	3.5	ALS-HH1
ALS-020-Y	4	4	9.6	20	30	10	10	1	5	ALS-HH2
ALS-030-Y	5	6	14	30	35	11	13	1.5	5.5	ALS-HH3
ALS-040-Y	5	8	22	40	66	25	16	2	12.5	ALS-HH4
ALS-055-Y	5	10	28	55	78	30	18	2	15	ALS-HH5
ALS-065-Y	5	14	38	65	90	35	20	2.5	17.5	ALS-HH6
ALS-080-Y	10	19	45	80	114	45	24	3	22.5	ALS-HH7
ALS-095-Y	8	19	55	95	126	50	26	3	25	-
ALS-105-Y	10	19	60	105	140	56	28	3.5	28	-

\* Pilot bore indicates center processing.

## Standard bore diameter

Model	Standard bore diameter d1-d2 [mm]																													
	3	4	5	6	6.35	8	9	9.525	10	11	12	14	15	16	18	19	20	24	25	28	30	32	35	38	40	42	45	50	55	60
ALS-014-Y	●	●	●	●	●																									
ALS-020-Y			●	●	●	●	●	●																						
ALS-030-Y						●	●	●	●	●	●	●																		
ALS-040-Y										●	●	●	●	●	●	●	●													
ALS-055-Y													●	●	●	●	●	●	●	●										
ALS-065-Y																	●	●	●	●	●	●	●							
ALS-080-Y																					●	●	●	●	●	●	●	●	●	●
ALS-095-Y																									●	●	●	●	●	●
ALS-105-Y																									●	●	●	●	●	●

\* The bore diameters with ● are supported as standard bore diameters.  
 \* Processing with no key slot is available for ø11 or smaller, and processing for the former JIS, new JIS, and new standard motor is available for ø12 or larger.  
 \* New JIS and processing compatible to new standard motor are set as the only standards for the bore diameters of ALS-095 and 105.

### Ordering Information

**ALS - 055 - Y - 24N - 28H**

Size: 055  
 Element type: Y: Hardness 97 JIS A tight fit  
 Bore dia.: d1-d2  
 Blank: Pilot bore item  
 Bore specification: H: New JIS compliant, N: New standard motor compatible  
 Blank: Previous edition  
 JIS (Class 2) compliant

ALS-Y TYPE

# Clamp Type



## Specification

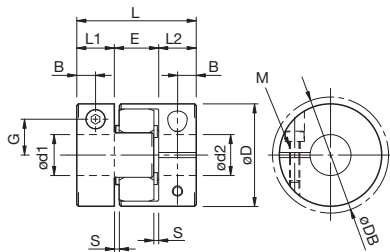
Model	Torque		Max. permissible misalignment			Max. rotation speed [min <sup>-1</sup> ]	Torsional stiffness [N-m/rad]	Radial displacement [N/mm]	Moment of inertia [kg-m <sup>2</sup> ]	Mass [kg]	Price
	Normal [N-m]	Max. [N-m]	Parallel offset [mm]	Angular misalignment [°]	Axial displacement [mm]						
ALS-014-Y	1.2	2.4	0.10	1	0 to + 0.6	10000	12	200	1.98 x 10 <sup>-7</sup>	0.007	-
ALS-020-Y	3	6	0.15	1	0 to + 0.8	10000	24	210	1.09 x 10 <sup>-6</sup>	0.019	-
ALS-030-Y	7.5	15	0.15	1	0 to + 1.0	10000	73	330	6.19 x 10 <sup>-6</sup>	0.045	-
ALS-040-Y	10	20	0.10	1	0 to + 1.2	10000	760	940	4.01 x 10 <sup>-5</sup>	0.16	-
ALS-055-Y	35	70	0.15	1	0 to + 1.4	7000	1400	1160	1.63 x 10 <sup>-4</sup>	0.34	-
ALS-065-Y	95	190	0.15	1	0 to + 1.5	5900	2100	1200	3.69 x 10 <sup>-4</sup>	0.54	-
ALS-080-Y	190	380	0.15	1	0 to + 1.8	4800	4000	1430	1.04 x 10 <sup>-3</sup>	1.00	-

\* The torsional stiffness values are measured at 20°C.  
 \* The indicated values in the moment of inertia and mass are measured with the maximum bore diameter.  
 \* Dynamic balance is not considered for the maximum rotation speed.

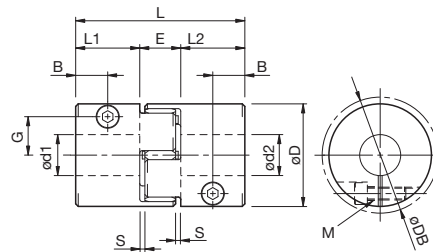
## Dimensions



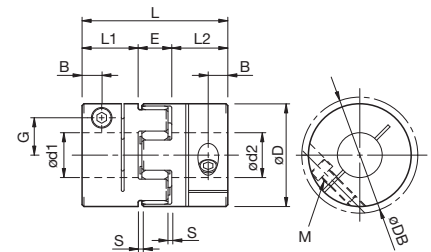
### ALS-014 to 030



### ALS-040



### ALS-055 to 080



Unit [mm]

Model	d1-d2		D	DB	L	L1-L2	E	S	B	G	M	Tightening Torque [N-m]	CAD file No.
	Min.	Max.											
ALS-014-Y	3	6	14	16.1	22	7	8	1	3.5	4.8	M2	0.4	ALS-BB1
ALS-020-Y	4	8	20	20	30	10	10	1	5	6.5	M2.5	1	ALS-BB2
ALS-030-Y	6	14	30	30	35	11	13	1.5	5.5	10.5	M3	1.5	ALS-BB3
ALS-040-Y	8	20	40	43.2	66	25	16	2	12.5	15	M5	7	ALS-BB4
ALS-055-Y	10	28	55	55	78	30	18	2	10.5	20	M6	14	ALS-BB5
ALS-065-Y	14	35	65	69.8	90	35	20	2.5	11.5	24.5	M8	30	ALS-BB6
ALS-080-Y	19	45	80	80	114	45	24	3	11.5	30	M8	30	ALS-BB7

## Standard bore diameter and permissible transmission torque

Model	Standard bore diameter d1-d2 [mm] and permissible transmission torque [N-m]																							
	3	4	5	6	6.35	7	8	10	11	12	14	15	16	18	19	20	22	24	25	28	30	35	42	
ALS-014-Y	0.31	0.42	0.54	0.65																				
ALS-020-Y		1.2	1.6	2.1	2.2	2.6	3.0																	
ALS-030-Y				2.0	2.2		3.4	4.7	5.4	6.0	7.4													
ALS-040-Y							8	16		20	20													
ALS-055-Y												38	41	48	51	54	61	67	70	70				
ALS-065-Y																61	68	75	79	89	96	114		
ALS-080-Y																				108	121	151	194	

\* The bore diameters with a value are supported as standard bore diameters.  
 \* The permissible transmission torque of the shaft diameter with a value is limited by the holding power at the shaft locking mechanism.  
 \* The value indicates the permissible transmission torque [N-m].  
 \* The dimensional tolerance of the target shaft is h7. However, for a shaft diameter of 35, the tolerance is  $^{+0.010}_{-0.025}$ .  
 \* The range of bore diameters that can be supported is from the minimum diameter to the maximum diameter in the table.  
 For bore diameters other than above, contact us for separate arrangement.

### Ordering Information

**ALS - 055 - Y - 24B - 28B**

Size

Element type

Y: Hardness 97 JIS A tight fit

Bore diameter: d1-d2

Bore specification

B: Clamp type



**ALS-B TYPE**

# Key/Set Screw Type



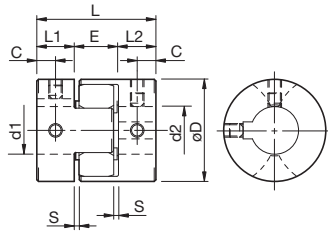
## Specification

Model	Torque		Max. permissible misalignment			Max. rotation speed [min <sup>-1</sup> ]	Torsional stiffness [N-m/rad]	Radial displacement [N/mm]	Moment of inertia [kg-m <sup>2</sup> ]	Mass [kg]	Standard bore processed item price	Pilot bore item price
	Normal [N-m]	Max. [N-m]	Parallel offset [mm]	Angular misalignment [°]	Axial displacement [mm]							
ALS-030-B	12.5	25	0.17	1	-0.2 to + 1.0	15900	90	460	6.25 x 10 <sup>-6</sup>	0.047	-	-
ALS-040-B	17	34	0.20	1	-0.5 to + 1.0	11900	400	640	3.87 x 10 <sup>-5</sup>	0.15	-	-
ALS-055-B	60	120	0.22	1	-0.2 to + 1.4	8700	1150	400	1.66 x 10 <sup>-4</sup>	0.35	-	-
ALS-065-B	160	320	0.25	1	-0.6 to + 1.5	7400	2000	800	3.57 x 10 <sup>-4</sup>	0.51	-	-
ALS-080-B	325	650	0.28	1	-0.9 to + 1.8	6000	4550	600	1.06 x 10 <sup>-3</sup>	1.01	-	-
ALS-095-B	450	900	0.32	1	-0.5 to + 2.0	5000	12000	800	2.24 x 10 <sup>-3</sup>	1.50	-	-
ALS-105-B	525	1050	0.36	1	-0.9 to + 2.0	4500	15000	2000	3.72 x 10 <sup>-3</sup>	2.05	-	-

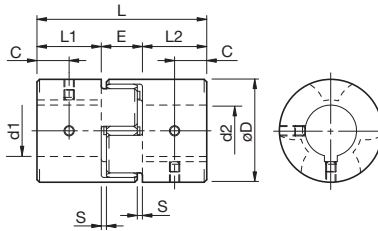
\* The spring constant values are measured at 20°C.  
 \* The indicated values in the moment of inertia and mass are measured with the maximum bore diameter.  
 \* Dynamic balance is not considered for the maximum rotation speed.

## Dimensions

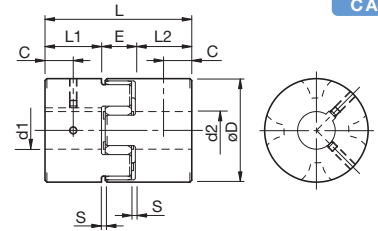
■ALS-014 to 030



■ALS-040



■ALS-055 to 105



Unit [mm]

Model	d1-d2			D	L	L1-L2	E	S	C	CAD file No.
	Pilot bore	Min.	Max.							
ALS-030-B	5	6	14	30	35	11	13	1.5	5.5	ALS-HH3
ALS-040-B	5	8	22	40	66	25	16	2	12.5	ALS-HH4
ALS-055-B	5	10	28	55	78	30	18	2	15	ALS-HH5
ALS-065-B	5	14	38	65	90	35	20	2.5	17.5	ALS-HH6
ALS-080-B	10	19	45	80	114	45	24	3	22.5	ALS-HH7
ALS-095-B	8	19	55	95	126	50	26	3	25	-
ALS-105-B	10	19	60	105	140	56	28	3.5	28	-

\* Pilot bore indicates center processing.

## Standard bore diameter

Model	Standard bore diameter d1-d2 [mm]																									
	8	9	9.525	10	11	12	14	15	16	18	19	20	24	25	28	30	32	35	38	40	42	45	50	55	60	
ALS-030-B	●	●		●	●	●	●																			
ALS-040-B					●	●	●		●	●	●	●														
ALS-055-B								●	●	●	●	●	●	●	●											
ALS-065-B												●	●	●	●	●										
ALS-080-B																●	●	●								
ALS-095-B																			●	●	●	●	●	●	●	
ALS-105-B																			●	●	●	●	●	●	●	●

\* The bore diameters with ● are supported as standard bore diameters.  
 \* Processing with no key slot is available for ø11 or smaller, and processing for the former JIS, new JIS, and new standard motor is available for ø12 or larger.  
 \* New JIS and processing compatible to new standard motor are set as the only standards for the bore diameters of ALS-095 and 105.

## Ordering Information

**ALS - 055 - B - 24N - 28H**

Size: 055  
 Element type: B: Hardness 90 JIS A loose fit  
 Bore dia.: d1-d2  
 Blank: Pilot bore item  
 Bore specification: Blank: Previous edition JIS (Class 2) compliant  
 H: New JIS compliant  
 N: New standard motor compatible

ALS-B TYPE

# Clamp Type



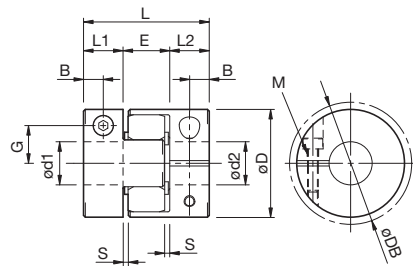
## Specification

Model	Torque		Max. permissible misalignment			Max. rotation speed [min <sup>-1</sup> ]	Torsional stiffness [N-m/rad]	Radial displacement [N/mm]	Moment of inertia [kg-m <sup>2</sup> ]	Mass [kg]	Price
	Normal [N-m]	Max. [N-m]	Parallel offset [mm]	Angular misalignment [°]	Axial displacement [mm]						
ALS-030-B	12.5	25	0.17	1	-0.2 to + 1.0	10000	90	460	6.07 x 10 <sup>-6</sup>	0.043	-
ALS-040-B	17	34	0.20	1	-0.5 to + 1.0	10000	400	640	4.00 x 10 <sup>-5</sup>	0.16	-
ALS-055-B	60	120	0.22	1	-0.2 to + 1.4	7000	1150	400	1.63 x 10 <sup>-4</sup>	0.34	-
ALS-065-B	160	320	0.25	1	-0.6 to + 1.5	5900	2000	800	3.69 x 10 <sup>-4</sup>	0.54	-
ALS-080-B	325	650	0.28	1	-0.9 to + 1.8	4800	4550	600	1.04 x 10 <sup>-3</sup>	1.00	-

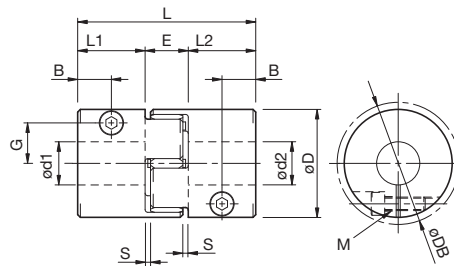
\* The torsional stiffness values are measured at 20°C.  
 \* The indicated values in the moment of inertia and mass are measured with the maximum bore diameter.  
 \* Dynamic balance is not considered for the maximum rotation speed.

## Dimensions

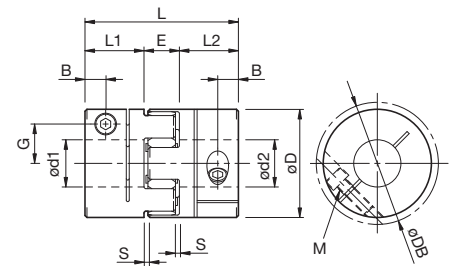
### ALS-014 to 030



### ALS-040



### ALS-055 to 080



Unit [mm]

Model	d1-d2		D	DB	L	L1-L2	E	S	B	G	M	Tightening Torque [N-m]	CAD file No.
	Min.	Max.											
ALS-030-B	6	14	30	30	35	11	13	1.5	5.5	10.5	M3	1.5	ALS-BB3
ALS-040-B	8	20	40	43.2	66	25	16	2	12.5	15	M5	7	ALS-BB4
ALS-055-B	10	28	55	55	78	30	18	2	10.5	20	M6	14	ALS-BB5
ALS-065-B	14	35	65	69.8	90	35	20	2.5	11.5	24.5	M8	30	ALS-BB6
ALS-080-B	19	45	80	80	114	45	24	3	11.5	30	M8	30	ALS-BB7

## Standard bore diameter and permissible transmission torque

Model	Standard bore diameter d1-d2 [mm] and permissible transmission torque [N-m]																		
	6	6.35	8	10	11	12	14	15	16	18	19	20	22	24	25	28	30	35	42
ALS-030-B	2.0	2.2	3.4	4.7	5.4	6.0	7.4												
ALS-040-B			8	16		23	31	34	34		34								
ALS-055-B								38	41	48	51	54	61	67	71	80			
ALS-065-B												61	68	75	79	89	96	114	
ALS-080-B																108	121	151	194

\* The bore diameters with a value are supported as standard bore diameters.  
 \* The permissible transmission torque of the shaft diameter with a value is limited by the holding power at the shaft locking mechanism. The value indicates the permissible transmission torque [N-m].  
 \* The dimensional tolerance of the target shaft is h7. However, for a shaft diameter of 35, the tolerance is <sup>+0.010</sup>/<sub>-0.005</sub>.  
 \* The range of bore diameters that can be supported is from the minimum diameter to the maximum diameter in the table. For bore diameters other than above, contact us for separate arrangement.

### Ordering Information

**ALS - 055 - B - 24B - 28B**

Size

Element type

B: Hardness 97 JIS A loose fit

Bore diameter: d1-d2

Bore specification

B: Clamp type



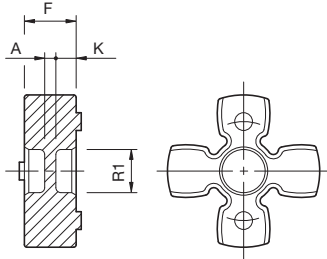
# Element



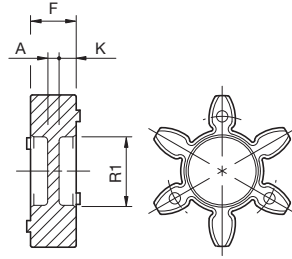
## ■ Dimensions

### ● ALS-R·Y

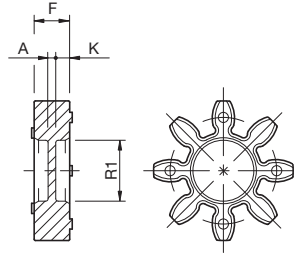
#### ■ ALS-014 to 030-R·Y



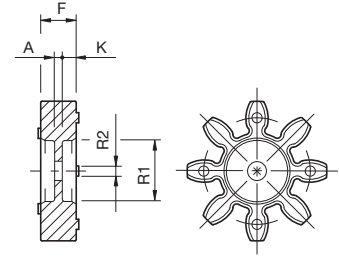
#### ■ ALS-040-R·Y



#### ■ ALS-055 to 065-R·Y



#### ■ ALS-080 to 105-R·Y



Unit [mm]

Model	F	R1	R2	K	A	Price	CAD file No.
ALS-014-□-EL	6.2	3.5	-	2.5	1.2	-	-
ALS-020-□-EL	8.2	6.2	-	3.4	1.4	-	-
ALS-030-□-EL	10.2	8.5	-	4	2.2	-	-
ALS-040-□-EL	12	18	-	4.5	3	-	-
ALS-055-□-EL	14	24	-	5.5	3	-	-
ALS-065-□-EL	15	30	-	5.5	4	-	-
ALS-080-□-EL	18	37	15	7	4	-	-
ALS-095-□-EL	20	43	20	8	4	-	-
ALS-105-□-EL	21	50	20	8.5	4	-	-

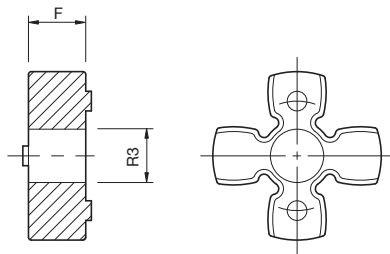
### Ordering Information

**ALS - 055 - R - EL**

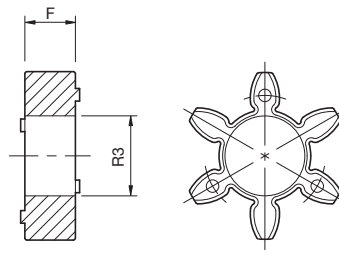
Size  
Element type  
R: Hardness 97 JIS A tight fit  
Y: Hardness 90 JIS A tight fit  
Element only

### ● ALS-B

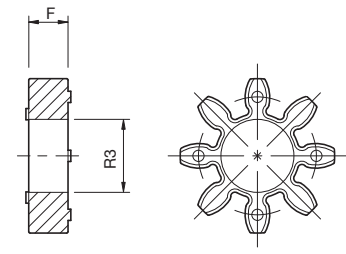
#### ■ ALS-030-B



#### ■ ALS-040-B



#### ■ ALS-055 to 105-B



Unit [mm]

Model	F	R3	Price	CAD file No.
ALS-030-B-EL	10.2	10.5	-	-
ALS-040-B-EL	12	18.5	-	-
ALS-055-B-EL	14	27.5	-	-
ALS-065-B-EL	15	32	-	-
ALS-080-B-EL	18	41	-	-
ALS-095-B-EL	20	47	-	-
ALS-105-B-EL	21	50	-	-

### Ordering Information

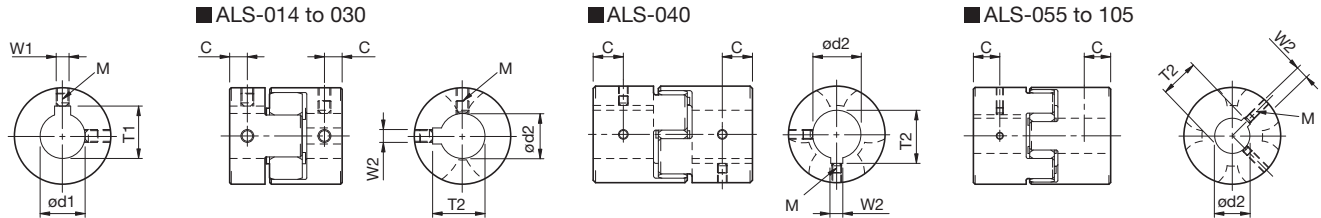
**ALS - 055 - B - EL**

Size  
Element type  
B: Hardness 97 JIS A loose fit  
Element only

# Bore Drilling Standard

## ■ Dimensions

- For any bore diameter other than the standard bore diameter, processing is available according to the standard shown in the table below.
- For any standard other than the table below, contact our distributor.



Unit [mm]

Previous edition JIS (Class 2) compliant					New JIS compliant					New standard motor compatible				
Nominal bore dia.	Bore diameter (d1-d2)	Key slot width (W1-W2)	Key slot height (T1-T2)	Set screw bore (M)	Nominal bore dia.	Bore diameter (d1-d2)	Key slot width (W1-W2)	Key slot height (T1-T2)	Set screw bore (M)	Nominal bore dia.	Bore diameter (d1-d2)	Key slot width (W1-W2)	Key slot height (T1-T2)	Set screw bore (M)
Tolerance	H7,H8	E9	+0.3	-	Tolerance	H7	H9	+0.3	-	Tolerance	G7,F7	H9	+0.3	-
3	3	-	-	1-M3	-	-	-	-	-	-	-	-	-	-
4	4	-	-	2-M3	-	-	-	-	-	-	-	-	-	-
5	5	-	-	2-M3	-	-	-	-	-	-	-	-	-	-
6	6	-	-	2-M4	-	-	-	-	-	-	-	-	-	-
6.35	6.35	-	-	2-M4	-	-	-	-	-	-	-	-	-	-
7	7	-	-	2-M4	-	-	-	-	-	-	-	-	-	-
8	8	-	-	2-M4	-	-	-	-	-	-	-	-	-	-
9	9	-	-	2-M4	-	-	-	-	-	-	-	-	-	-
9.525	9.525	-	-	2-M4	-	-	-	-	-	-	-	-	-	-
10	10	-	-	2-M4	-	-	-	-	-	-	-	-	-	-
11	11	-	-	2-M4	-	-	-	-	-	-	-	-	-	-
12	12	4	13.5	2-M4	12H	12	4	13.8	2-M4	-	-	-	-	-
14	14	5	16.0	2-M4	14H	14	5	16.3	2-M4	14N	14	5	16.3	2-M4
15	15	5	17.0	2-M4	15H	15	5	17.3	2-M4	-	-	-	-	-
16	16	5	18.0	2-M4	16H	16	5	18.3	2-M4	-	-	-	-	-
17	17	5	19.0	2-M4	17H	17	5	19.3	2-M4	-	-	-	-	-
18	18	5	20.0	2-M4	18H	18	6	20.8	2-M5	-	-	-	-	-
19	19	5	21.0	2-M4	19H	19	6	21.8	2-M5	19N	19	6	21.8	2-M5
20	20	5	22.0	2-M4	20H	20	6	22.8	2-M5	-	-	-	-	-
22	22	7	25.0	2-M6	22H	22	7	24.8	2-M5	-	-	-	-	-
24	24	7	27.0	2-M6	24H	24	8	27.3	2-M6	24N	24	8	27.3	2-M6
25	25	7	28.0	2-M6	25H	25	8	28.3	2-M6	-	-	-	-	-
28	28	7	31.0	2-M6	28H	28	8	31.3	2-M6	28N	28	8	31.3	2-M6
30	30	7	33.0	2-M6	30H	30	8	33.3	2-M6	-	-	-	-	-
32	32	10	35.5	2-M8	32H	32	10	35.3	2-M8	-	-	-	-	-
35	35	10	38.5	2-M8	35H	35	10	38.3	2-M8	-	-	-	-	-
38	38	10	41.5	2-M8	38H	38	10	41.3	2-M8	38N	38	10	41.3	2-M8
40	40	10	43.5	2-M8	40H	40	12	43.3	2-M8	-	-	-	-	-
42	42	12	45.5	2-M8	42H	42	12	45.3	2-M8	42N	42	12	45.3	2-M8
45	45	12	48.5	2-M8	45H	45	14	48.8	2-M10	-	-	-	-	-
48	48	12	51.5	2-M8	48H	48	14	51.8	2-M10	48N	48	14	51.8	2-M10
50	50	12	53.5	2-M8	50H	50	14	53.8	2-M10	-	-	-	-	-
55	55	15	60.0	2-M10	55H	55	16	59.3	2-M10	55N	55	16	59.3	2-M10
56	56	15	61.0	2-M10	56H	56	16	60.3	2-M10	-	-	-	-	-
60	60	15	65.0	2-M10	60H	60	18	64.4	2-M10	60N	60	18	64.4	2-M10

\* The bore diameters 10 or smaller have H8 class tolerance.  
 \* For ALS-014, the size of the set screw is M3.  
 \* The right and left positions of the set screw and key slot are not on the same plane.



# Design Check Items

## ■ Mounting (general)

- Before mounting, make sure the main power of the device is turned off so as to avoid operating the motor by mistake and to ensure safety.
- Remove the dust, dirt, and oil accumulated on the target shaft and coupling inner diameter part.
- To achieve maximum performance of the coupling, perform mounting within the range of the maximum permissible misalignment shown in the tables below. The misalignments in the tables below are the maximum values when they occur independently. Therefore, the permissible values in the case of combined errors are half or less.
- Check the centering at two points about 90 degrees away by applying a straight edge to the circumference of the main body. The life of the element is significantly affected by the centering accuracy. For centering of the left and right mounting shafts, centering location alignment is recommended.
- After mounting of this product, affix a safety cover. Touching this product during operation may cause injury.

### ■ Max. permissible misalignment

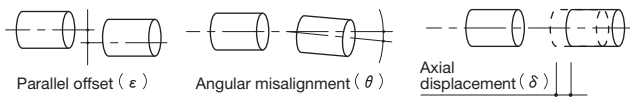


Table of max. permissible misalignments

Model	Parallel offset $\epsilon$ [mm]	Angular misalignment $\theta$ [°]	Axial displacement $\delta$ [mm]
ALS-014-R	0.10	1	0 to +0.6
ALS-020-R	0.10	1	0 to +0.8
ALS-030-R	0.10	1	0 to +1.0
ALS-040-R	0.10	1	0 to +1.2
ALS-055-R	0.10	1	0 to +1.4
ALS-065-R	0.10	1	0 to +1.5
ALS-080-R	0.10	1	0 to +1.8
ALS-095-R	0.10	1	-0.5 to +2.0
ALS-105-R	0.15	1	-0.9 to +2.0

Model	Parallel offset $\epsilon$ [mm]	Angular misalignment $\theta$ [°]	Axial displacement $\delta$ [mm]
ALS-014-Y	0.10	1	0 to +0.6
ALS-020-Y	0.15	1	0 to +0.8
ALS-030-Y	0.15	1	0 to +1.0
ALS-040-Y	0.10	1	0 to +1.2
ALS-055-Y	0.15	1	0 to +1.4
ALS-065-Y	0.15	1	0 to +1.5
ALS-080-Y	0.15	1	0 to +1.8
ALS-095-Y	0.15	1	-0.5 to +2.0
ALS-105-Y	0.20	1	-0.9 to +2.0

Model	Parallel offset $\epsilon$ [mm]	Angular misalignment $\theta$ [°]	Axial displacement $\delta$ [mm]
ALS-030-B	0.17	1	-0.2 to +1.0
ALS-040-B	0.20	1	-0.5 to +1.0
ALS-055-B	0.22	1	-0.2 to +1.4
ALS-065-B	0.25	1	-0.6 to +1.5
ALS-080-B	0.28	1	-0.9 to +1.8
ALS-095-B	0.32	1	-0.5 to +2.0
ALS-105-B	0.36	1	-0.9 to +2.0

## ■ Mounting (clamp type)

- The recommended dimensional tolerance of the target shaft is h7. (However, for a shaft diameter of 35, the tolerance is ( $\pm \begin{smallmatrix} 0.010 \\ 0.025 \end{smallmatrix}$ )).
- Do not tighten the clamp bolt before inserting the target shaft.
- Remove the dust, dirt, and oil accumulated on the target shaft and coupling inner diameter part. Especially, if molybdenum disulfide grease or extreme-pressure grease that greatly affect the friction coefficient are accumulated, completely remove them by degreasing, etc.
- To fix the hub to the shaft, mount it so that the entire length of the clamp hub is in contact with each of the target shafts.
- Tighten the clamp bolt using a calibrated torque wrench at the clamp bolt tightening torque value in the table below.
- Use the clamp bolt specified by Miki Pulley. Do not apply any liquid such as oil, grease, or screw fixing agent.

Tightening torque for set screws and clamp bolts

Size	Set screw [N·m]	Clamp bolt [N·m]
M2	-	0.4
M2.5	-	1.0
M3	0.7	1.5
M4	1.7	-
M5	3.6	7.0
M6	6.0	14.0
M8	14.5	30.0
M10	28.0	-

## ■ Mounting location and usage environment

- Use under direct sunlight may result in a shorter element life. Use an appropriate cover.
- It is water-resistant and oil-resistant. However, excessive water or oil should be avoided because they may cause deterioration.
- Avoid corrosive gases and chemicals.
- Avoid high temperature and high humidity. The recommended operating atmospheric temperature is -30°C to +80°C.



## ■ Selection

### ● Selection Procedure 1: General use

- (1) Calculate torque  $T_a$  applied to the coupling based on the motor output  $P$  and coupling operating rotation speed  $n$ .

$$T_a \text{ [N}\cdot\text{m]} = 9550 \times \frac{P \text{ [kW]}}{n \text{ [min}^{-1}\text{]}}$$

- (2) Calculate corrected torque  $T_d$  applied to the coupling after deciding the service factor  $K$  (1, 2, 3, 4).

$$T_d \text{ [N}\cdot\text{m]} = T_a \cdot K_1 \cdot K_2 \cdot K_3 \cdot K_4$$

K1: Operating coefficient by load character  
 K2: Corrected coefficient by operating hours  
 K3: Corrected coefficient by starting/braking frequency  
 K4: Corrected coefficient by ambient temperature

- (3) Select the size in order that the coupling permissible torque  $T_n$  becomes equal or greater or equal to the corrected torque  $T_d$ .

$$T_n \geq T_d$$

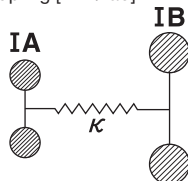
- (4) Select the size in order that the maximum torque of the coupling  $T_m$  becomes equal or greater or equal to the peak torque  $T_s$  generated by the motor or driven machine, or both. Maximum torque is defined as torque which can be temporarily applied. For 8-hour operating time per day, it is about 10 times.

$$T_m \geq T_s \times K_4$$

- (5) If the required shaft diameter is over the maximum bore diameter of the selected size, select a coupling suiting it.
- (6) When using with machines whose load torque fluctuates drastically on periodic basis, a study of torsional vibration is necessary in addition to the procedure mentioned above. Make sure that the frequency of torque fluctuation does not coincide with the eigenfrequency  $f_e$  of the shaft system. Generally, eigenfrequency  $f_e$  is calculated by approximating the shaft system as shown below.

$$f_e = \frac{60}{2\pi} \sqrt{\kappa \left( \frac{1}{I_A} + \frac{1}{I_B} \right)} \text{ [cpm]}$$

$\kappa$ : Dynamic torsional spring constant of coupling [N-m/rad]  
 $I_A$ : Inertial moment of driving side [kg-m<sup>2</sup>]  
 $I_B$ : Inertial moment of driven side [kg-m<sup>2</sup>]



### ● Selection Procedure 2: Use with no backlash

To use ALS-Y-R type with no backlash, a torque that is sufficiently low with respect to the normal torque of the coupling must be used. For this reason, selection must be made to satisfy the following conditions. (ALS-B type cannot be used with no backlash.)

- (1) Calculate torque  $T_a$  applied to the coupling based on the motor output  $P$  and coupling operating rotation speed  $n$ .

$$T_a \text{ [N}\cdot\text{m]} = 9550 \times \frac{P \text{ [kW]}}{n \text{ [min}^{-1}\text{]}}$$

- (2) Calculate corrected torque  $T_d$  applied to the coupling after deciding the service factor  $K$  (1, 2, 3, 4) defined according to the use and operation conditions.

$$T_d \text{ [N}\cdot\text{m]} = T_a \cdot K_1 \cdot K_2 \cdot K_3 \cdot K_4$$

K1: Operating coefficient by load character  
 K2: Corrected coefficient by operating hours  
 K3: Corrected coefficient by starting/braking frequency  
 K4: Corrected coefficient by ambient temperature  
 \* For use with no backlash,  $K_1 \geq 4$ .

- (3) Perform selection so that the peak torque  $T_s$  generated by the motor, driven machine, or both is less or equal to the normal torque of the coupling  $T_n$ .

$$T_n \geq T_s \times K_4$$

- (4) If the required shaft diameter exceeds the maximum bore diameter of the selected size, select the size of coupling respectively. When a clamp hub is used, torque transmission may be limited depending on the bore diameter. Therefore, make sure that the clamp hub holding power for the selected coupling size is equal or greater than peak torque  $T_s$  applied to the coupling.

Because of the structure of the coupling, no backlash occurs while preliminary compression is applied to the element. However, backlash may occur as it is used over time. When use with no backlash for a long period is considered, it is recommended that the service factor  $K_1$  be greater. If high precision control and positioning are required for a long period, our metal plate spring couplings "SERVO FLEX Series" are recommended.

### ● Service Factor

#### Operating coefficient by load character: K1

Load character			
Constant	Fluctuations: Slight	Fluctuations: Medium	Fluctuations: Large
1.0	1.25	1.75	2.25

#### Operating coefficient by operating hours: K2

Hours/per day	to 8	to 16	to 24
K2	1.0	1.12	1.25

#### Corrected coefficient by starting/braking frequency: K3

Times/per hour	to 10	to 30	to 60	to 120	to 240	Over 240
K3	1.0	1.1	1.3	1.5	2.0	2.5≤

#### Corrected coefficient by ambient temperature: K4

Temp. [°C]	-30 to +30	to +40	to +60	to +80
K4	1.0	1.2	1.4	1.8



# Design Check Items

■ Table of general purpose motor specification and simplified selection

Motor		50Hz: 3000min <sup>-1</sup> /60Hz: 3600min <sup>-1</sup>				50Hz: 1500min <sup>-1</sup> /60Hz: 1800min <sup>-1</sup>				50Hz: 1000min <sup>-1</sup> /60Hz: 1200min <sup>-1</sup>			
		Bipolar motor		STAR FLEX		Quadrupolar motor		STAR FLEX		Sextupolar motor		STAR FLEX	
Output [kW]	Frequency [Hz]	Shaft dia. [mm]	Torque [N·m]	Model	Nominal bore dia.	Shaft dia. [mm]	Torque [N·m]	Model	Nominal bore dia.	Shaft dia. [mm]	Torque [N·m]	Model	Nominal bore dia.
0.1	50	–	–	–	–	11	0.7	ALS-030	11	–	–	–	–
	60	–	–	–	–	11	0.5	ALS-030	11	–	–	–	–
0.2	50	11	0.7	ALS-030	11	11	1.3	ALS-030	11	–	–	–	–
	60	11	0.5	ALS-030	11	11	1.1	ALS-030	11	–	–	–	–
0.4	50	14	1.3	ALS-030	14N	14	2.6	ALS-030	14N	19	3.9	ALS-040	19N
	60	14	1.1	ALS-030	14N	14	2.2	ALS-030	14N	19	3.2	ALS-040	19N
0.75	50	19	2.4	ALS-040	19N	19	4.9	ALS-040	19N	24	7.3	ALS-055	24N
	60	19	2	ALS-040	19N	19	4.1	ALS-040	19N	24	6.1	ALS-055	24N
1.5	50	24	4.9	ALS-055	24N	24	9.7	ALS-055	24N	28	15	ALS-055	28N
	60	24	4.1	ALS-055	24N	24	8.1	ALS-055	24N	28	12	ALS-055	28N
2.2	50	24	7.1	ALS-055	24N	28	14	ALS-055	28N	28	21	ALS-065	28N
	60	24	6	ALS-055	24N	28	12	ALS-055	28N	28	18	ALS-065	28N
3.7	50	28	12	ALS-055	28N	28	24	ALS-065	28N	38	36	ALS-065	38N
	60	28	10	ALS-055	28N	28	20	ALS-065	28N	38	30	ALS-065	38N
5.5	50	38	18	ALS-065	38N	38	36	ALS-065	38N	38	54	ALS-080	38N
	60	38	15	ALS-065	38N	38	30	ALS-065	38N	38	45	ALS-065	38N
7.5	50	38	24	ALS-065	38N	38	49	ALS-065	38N	42	72	ALS-080	42N
	60	38	20	ALS-065	38N	38	41	ALS-065	38N	42	60	ALS-080	42N
11	50	42	36	ALS-080	42N	42	71	ALS-080	42N	42	108	ALS-080-R	42N
	60	42	30	ALS-080	42N	42	59	ALS-080	42N	42	90	ALS-080	42N
15	50	42	49	ALS-080	42N	42	97	ALS-080	42N	48	149	ALS-095-R	48N
	60	42	41	ALS-080	42N	42	81	ALS-080	42N	48	124	ALS-095	48N
18.5	50	42	65	ALS-080	42N	48	120	ALS-095	48N	55	183	ALS-095-R	55N
	60	42	50	ALS-080	42N	48	100	ALS-095	48N	55	152	ALS-095-R	55N
22	50	48	71	ALS-095	48N	48	143	ALS-095-R	48N	55	218	ALS-095-R	55N
	60	48	59	ALS-095	48N	48	119	ALS-095	48N	55	182	ALS-095-R	55N
30	50	55	97	ALS-095	55N	55	195	ALS-095-R	55N	60	296	–	60N
	60	55	81	ALS-095	55N	55	162	ALS-095-R	55N	60	247	ALS-105-R	60N
37	50	55	120	ALS-095	55N	60	240	ALS-105-R	60N	–	–	–	–
	60	55	100	ALS-095	55N	60	200	ALS-105-R	60N	–	–	–	–
45	50	55	146	ALS-105	55N	60	292	–	60N	–	–	–	–
	60	55	122	ALS-095	55N	60	243	ALS-105-R	60N	–	–	–	–

\* The table above shows the applicable sizes for the key/set screw type when typically used for a general purpose motor driving unit. It is not a selection for the no backlash specification.

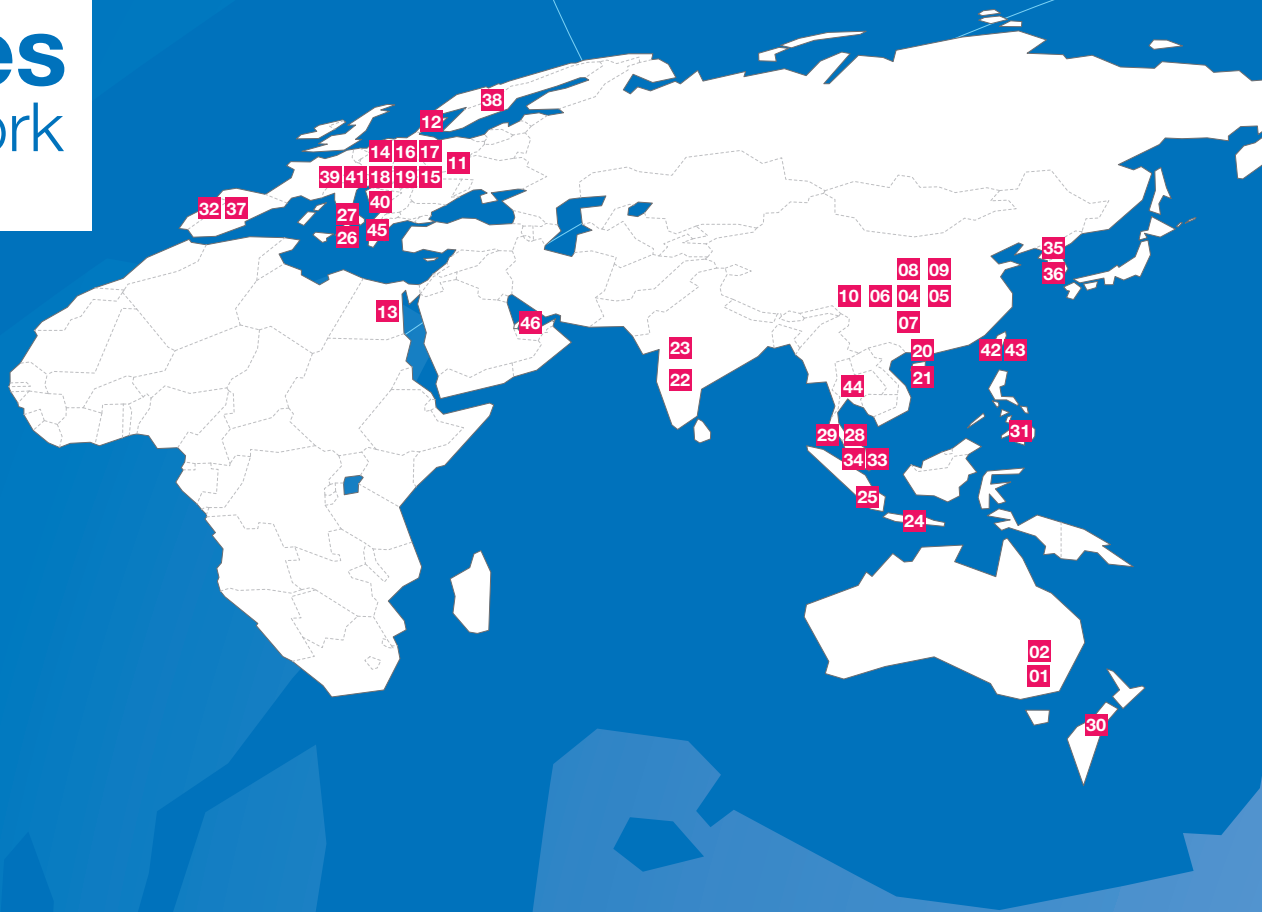
\* The motor revolution and output torque are calculated values (reference values).

## ■ Table of servo motor specification and simplified selection

Servo motor specification					Compatible coupling specification	
Rated output [kW]	Rated rotation speed [min <sup>-1</sup> ]	Rated torque [N·m]	Max. Torque [N·m]	Shaft dia. [mm]	Model ALS-□-R	Max. bore dia. [mm]
0.05	3000	0.16	0.48	8	ALS-020-R	8
0.1	3000	0.32	0.95	8	ALS-020-R	8
0.2	3000	0.64	1.9	14	ALS-030-R	14
0.4	3000	1.30	3.8	14	ALS-030-R	14
0.5	2000	2.39	7.16	24	ALS-055-R	28
0.5	3000	1.59	4.77	24	ALS-055-R	28
0.75	2000	3.58	10.7	22	ALS-055-R	28
0.75	3000	2.40	7.2	19	ALS-040-R	20
0.85	1000	8.12	24.4	24	ALS-055-R	28
1	2000	4.78	14.4	24	ALS-055-R	28
1	3000	3.18	9.55	24	ALS-055-R	28
1.2	1000	11.50	34.4	35	ALS-065-R	35
1.5	2000	7.16	21.6	28	ALS-055-R	28
1.5	3000	4.78	14.3	24	ALS-055-R	28
2	2000	9.55	28.5	35	ALS-065-R	35
2	3000	6.37	15.9	24	ALS-055-R	28
3	1000	28.60	85.9	35	ALS-065-R	35
3.5	2000	16.70	50.1	35	ALS-065-R	35
3.5	3000	11.10	27.9	28	ALS-055-R	28
5	2000	23.90	71.6	35	ALS-065-R	35
5	3000	15.90	39.7	28	ALS-055-R	28
7	2000	33.40	100	35	ALS-065-R	35

\* The table above shows simplified settings depending on the clamp type based on the supported servo motor shaft diameter and permissible torque transmission of the coupling. Use with no backlash is not guaranteed.

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