MIKI PULLEY

Miki Pulley Starflex Coupling
ALS – Y / R / B Model
Operation Manual

Please read this Instruction Manual carefully before using the Miki Pulley Starflex Coupling.

Forward this manual to the end-user for safe operation of coupling.

mikipulley

1. Safety Precautions

Read the operation manual and technical documents carefully before using this product. Failure to comply with these instructions could result in serious injury or damage to equipment.

Safety precautions, in this manual, are labeled as "DANGER" or "CAUTION."

DANGER:	Fields with this label may pose an imminent danger that could lead to serious or even fatal injury, or other major incidents.
CAUTION:	Fields with this label may cause personal injury or property damage if the caution is not observed.

Before using this product in a device or machine where failure or malfunction can lead to a direct threat to life or health (for example: nuclear power equipment, aerospace equipment, medical devices, transportation devices, and safety devices) prior consideration must be given from Miki Pulley. Contact our authorized sales representative.

This document must be given to the end user and should be kept for future reference. This manual's contents must always be observed to protect the user and others from danger, and preventing property damage when using this product.

1-1 Precautions against mechanical hazards

DANGER:	Use safety shields or guards.

Use safety guards

Contacting a moving part will cause injury. Use safety shields or guards to prevent hazards. Provide a safety mechanism that halts the operation immediately when a safety shield or guard is open.

DANGER:	Never use the product in a hazardous atmosphere that can cause ignition or explosion.

Danger of ignition

Never use the product in an atmosphere of oil or flammable gas that can cause ignition or explosion.

DANGER:	Provide a safety mechanism.

Mandatory

In the event of a product breakdown, the driven part can be completely separated from the driving part. To prevent hazards, a safety mechanism should be in place.

1-2 Precautions for safe assembly

DANGER :	Be sure to tighten all bolts and screws.

Mandatory

Improperly tightened bolts or screws can lead to product damage or impaired product performance. Tighten the bolts and screws to our specified tightening torque.

DANGER :	Never turn on the machine during installation. Lock Out –Tag Out.

Prohibited

When installing the product, make sure that the main power of the machine is turned off and can not be accidently turned on. If the driving part moves unexpectedly, personal injury could result.

CAUTION :	Do not exceed maximum permissible misalignment.

Mandatory

Attach the product to a machine within our specified "maximum permissible misalignment." Failure to comply may cause injury, breakdown or machine damage.

CAUTION :	Use Miki Pulley specified bolts and screws only.

Prohibited

Use Miki Pulley specified bolts and screws only. Failure to comply may cause injury, breakdown or machine damage.

1-3 Precautions for safe operation

DANGER :	Do not exceed maximum RPM of unit.

Prohibited

Operating the product above the maximum speed can lead to product failure, damage or an adverse influence on the machine. Observe the maximum speed.

DANGER :	Never touch the product while in operation.

Never touch

Since the product contains rotating parts, touching the operating product will cause injury. Never touch the product while in operation.

CAUTION:	Never use the product above the permissible torque.

Prohibited

Operating the product above the permissible torque can lead to product failure, damage or an adverse influence on the machine. Never use the product above the permissible torque.

CAUTION:	If abnormal noises or vibrations occur, shut down the product immediately. Lock Out -Tag Out Machine.

Mandatory

Unusual noises or vibrations may be a sign of abnormalities in the machine or product. Problems left unsolved can damage the machine. Stop the operation immediately and check the machine and product.

CAUTION:	Never use the product in an environment that may have an adverse affect on the product.

Prohibited

Use the product in a controlled environment. Do not expose to chemical sprays, strong corrosives, extreme high or low temperatures. Failure to comply may cause injury, breakdown or machine damage.

CAUTION:	Never use the product with joint slippage. Fasten to shaft according to specified tightening torques.

Prohibited

Slippage at the joint can generate heat during operation, damaging the product and an adverse affect on the machine. Never use the product with joint slippage. Failure to comply may cause injury, breakdown or machine damage.

1-4 Precautions for safe maintenance and service

DANGER:	Lock Out - Tag Out before beginning maintenance on machine.

Prohibited

Before starting any maintenance or service, be sure to turn off the main power to the machine. Lock out -Tag Out machine to prevent accidents. Failure to comply may cause injury.

CAUTION:	Never disassemble the product.

Never disassemble

Do not attempt to disassemble the product shipped as a complete assembly. Unauthorized disassembly work can cause injury or damage the product.

1-5 Precautions for safe disposal

DANGER:	Keep away from infants and children.

CAUTION:	To protect the environment, recycle where available.

2. Product Information

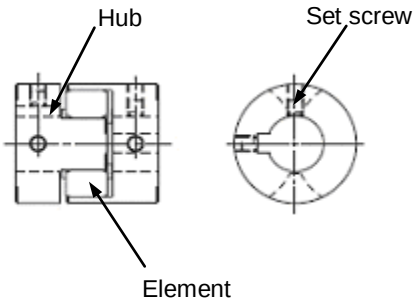
2-1 Unpacking the product

Carefully inspect the coupling upon receipt for damages during transit.

If there are any problems please contact the company where you purchased the product.

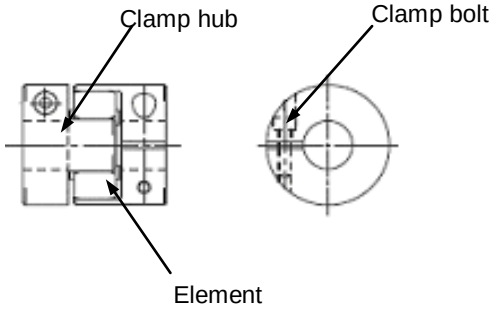
2-2 Structure

Key/set screw style hubs



[Figure 1]

Clamp style hubs



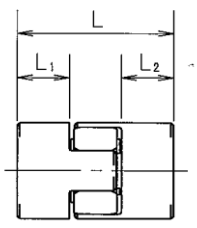
[Figure 2]

2-3 Dimensions

Table 1

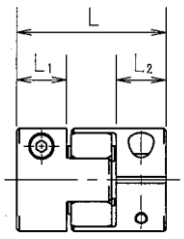
Model	ALS-014	ALS-020	ALS-030	ALS-040	ALS-055	ALS-065	ALS-080	ALS-095	ALS-105
L [mm]	22	30	35	66	78	90	114	126	140
L_1,L_2 [mm]	7	10	11	25	30	35	45	50	56

Key/set screw style



[Figure 3]

Clamp style



[Figure 4]

3. Installation Procedures

3-1 Handling Precautions

■ In transporting, handle the product carefully to avoid damaging the product.

■ Never handle the product in a way that excessive force is applied to the parts.

3-2 Operating environment

■ Do not use the product in a hot, humid, or dusty environments.

■ Do not use the product beyond the specified operating ambient temperature range. (-30℃ to +80℃)

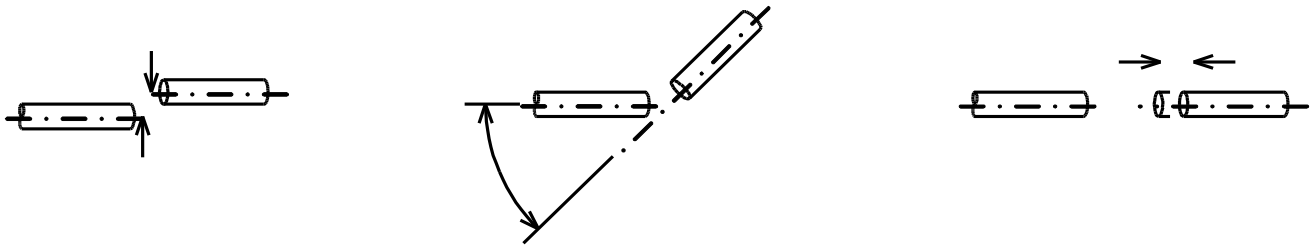
■ Do not use the product where it is exposed to corrosive gas, oil, or chemicals.

■ Do not use the product outdoors. The product is not corrosion resistant.

■ Do not use the product in highly dynamic applications such as high speed reversing.

3-3 Installation procedures

Parallel **Angular** **Axial**



[Figure 5]

Key/set screw style

■ Before installing, make sure the main power switch to the equipment is in the off position to avoid operating the motor by mistake and to ensure safety. Lock out – Tag Out procedures should be followed.

■ Remove the dust, dirt, and oil accumulated on the target shaft and coupling bores.

■ Install hub on shaft so that engagement is equal to dimensions L_1 and L_2 shown in Section 2-3, Table 1 and figures 3 and 4.

■Be sure to use a torque wrench to tighten the set screws. Tighten to the set screw tightening torque indicated below:

Tightening torque for set screws

Table 2

Set Screw Size	M3	M4	M5	M6	M8	M10
Tightening torque［Nm］	0.7	1.7	3.6	6.0	14.5	28.0

- Property Class 12.9
- Black anodized

■To achieve maximum performance; align the shafts according to tables for set screw and clamp style hubs. The misalignments shown are maximum values. Closer alignment at the time of initial installation is recommended to maximize coupling life.

■Check the alignment at two points about 90 degrees away by applying a straight edge to the outer diameter of the main body. The life of the element is significantly affected by the centering accuracy.

Standard specifications for Key/set screw style hubs **Table 3**

Model (Yellow)	Torque		Maximum Speed [min^{-1}]	Misalignment			Weight [kg]
	Nominal [Nm]	Maximum [Nm]		Parallel [mm]	Angular [°]	Axial [mm]	
ALS-014-Y	1.2	2.4	34100	0.10	1	+0.6 0	0.007
ALS-020-Y	3	6	23800	0.15	1	+0.8 0	0.018
ALS-030-Y	7.5	15	15900	0.15	1	+1.0 0	0.047
ALS-040-Y	10	20	11900	0.10	1	+1.2 0	0.15
ALS-055-Y	35	70	8700	0.15	1	+1.4 0	0.35
ALS-065-Y	95	190	7400	0.15	1	+1.5 0	0.51
ALS-080-Y	190	325	6000	0.15	1	+1.8 0	1.01
ALS-095-Y	265	530	5000	0.15	1	+2.0 -0.5	1.5
ALS-105-Y	310	620	4500	0.20	1	+2.0 -0.9	2.1

Table 4

Model (Red)	Torque		Maximum Speed [min^{-1}]	Misalignment			Weight [kg]
	Nominal [Nm]	Maximum [Nm]		Parallel [mm]	Angular [°]	Axial [mm]	
ALS-014-R	2	4	34100	0.10	1	+0.6 0	0.007
ALS-020-R	5	10	23800	0.10	1	+0.8 0	0.018
ALS-030-R	12.5	25	15900	0.10	1	+1.0 0	0.047
ALS-040-R	17	34	11900	0.10	1	+1.2 0	0.15
ALS-055-R	60	120	8700	0.10	1	+1.4 0	0.35
ALS-065-R	160	320	7400	0.10	1	+1.5 0	0.51
ALS-080-R	325	650	6000	0.10	1	+1.8 0	1.01
ALS-095-R	450	900	5000	0.10	1	+2.0 -0.5	1.5
ALS-105-R	525	1050	4500	0.15	1	+2.0 -0.9	2.1

Table 5

Model (Blue)	Torque		Maximum Speed [min^{-1}]	Misalignment			Weight [kg]
	Nominal [Nm]	Maximum [Nm]		Parallel [mm]	Angular [°]	Axial [mm]	
ALS-030-B	12.5	25	15900	0.17	1	+1.0 -0.2	0.047
ALS-040-B	17	34	11900	0.20	1	+1.0 -0.5	0.15
ALS-055-B	60	120	8700	0.22	1	+1.4 -0.2	0.35
ALS-065-B	160	320	7400	0.25	1	+1.5 -0.6	0.51
ALS-080-B	325	650	6000	0.28	1	+1.8 -0.9	1.01
ALS-095-B	450	900	5000	0.32	1	+2.0 -0.5	1.5
ALS-105-B	525	1050	4500	0.36	1	+2.0 -0.09	2.1

- Weights are at maximum bore diameter
- Coupling specifications subject to change without notice

3.4 Installation procedures Clamp style hubs

■ The recommended dimensional tolerance of the target shaft is h7. (However, for a shaft diameter of φ35mm, the tolerance is $^{+0.010}_{-0.025}$.)

■ Do not tighten the clamp bolt before inserting the shaft.

■ Wipe the rust, dust, oil and grease off the attachment shaft. Do not use clamp bolt with any oil or grease. Molybdenum disulfide or extreme-pressure additives must be completely removed; as such additives dramatically change the coefficient of friction.

■ Use only Miki Pulley clamp bolts.

■ After mounting the coupling, be sure to attach the safety shields or guards. Touching the coupling while it is operating may result in an injury.

■ Be sure to use a torque wrench to tighten the clamp bolts. Tighten to the clamp bolt tightening torque indicated in the table below:

Tightening torque for clamp bolts

Table 6

Model	ALS-014	ALS-020	ALS-030	ALS-040	ALS-055	ALS-065	ALS-080
Clamp bolt size	M2×6	M2. 5×8	M3×12	M5×16	M6×20	M8×25	M8×25
Tightening torque [Nm]	0.4	1.0	1.5	7.0	14.0	30.0	30.0

- Property Class 12.9
- Black anodized

Standard specifications for Clamp style hubs

Table 7

Model (Yellow)	Torque		Maximum Speed [min^{-1}]	Misalignment			Weight [kg]
	Nominal [Nm]	Maximum [Nm]		Parallel [mm]	Angular [°]	Axial [mm]	
ALS-014-Y	1.2	2.4	10000	0.10	1	$^{+0.6}_{0}$	0.007
ALS-020-Y	3	6	10000	0.15	1	$^{+0.8}_{0}$	0.019
ALS-030-Y	7.5	15	10000	0.15	1	$^{+1.0}_{0}$	0.045
ALS-040-Y	10	20	10000	0.10	1	$^{+1.2}_{0}$	0.16
ALS-055-Y	35	70	7000	0.15	1	$^{+1.4}_{0}$	0.34
ALS-065-Y	95	190	5900	0.15	1	$^{+1.5}_{0}$	0.54
ALS-080-Y	190	325	4800	0.15	1	$^{+1.8}_{0}$	1.00

Table 8

Model (Red)	Torque		Maximum Speed [min^{-1}]	Misalignment			Weight [kg]
	Nominal [Nm]	Maximum [Nm]		Parallel [mm]	Angular [°]	Axial [mm]	
ALS-014-R	2	4	10000	0.10	1	$^{+0.6}_{0}$	0.007
ALS-020-R	5	10	10000	0.10	1	$^{+0.8}_{0}$	0.019
ALS-030-R	12.5	25	10000	0.10	1	$^{+1.0}_{0}$	0.045
ALS-040-R	17	34	10000	0.10	1	$^{+1.2}_{0}$	0.16
ALS-055-R	60	120	7000	0.10	1	$^{+1.4}_{0}$	0.34
ALS-065-R	160	320	5900	0.10	1	$^{+1.5}_{0}$	0.54
ALS-080-R	325	650	4800	0.10	1	$^{+1.8}_{0}$	1.00

Table 9

Model (Blue)	Torque		Maximum Speed [min^{-1}]	Misalignment			Weight [kg]
	Nominal [Nm]	Maximum [Nm]		Parallel [mm]	Angular [°]	Axial [mm]	
ALS-030-B	12.5	25	10000	0.17	1	+1.0 -0.2	0.043
ALS-040-B	17	34	10000	0.20	1	+1.2 -0.5	0.16
ALS-055-B	60	120	7000	0.22	1	+1.4 -0.2	0.34
ALS-065-B	160	320	5900	0.25	1	+1.5 -0.6	0.54
ALS-080-B	325	650	4800	0.28	1	+1.8 -0.9	1.00

- Weights are at maximum bore diameter
- Coupling specifications subject to change without notice

■ Torque values are limited in bore diameter. Review torque values by check the alignment at two points about 90 degrees away by applying a straight edge to the outer diameter of the main body. The life of the element is significantly affected by the centering accuracy.

■ The specifications for special (non-catalog standard) models may differ from those given in the above table. Check the specifications on the delivery specification sheet.

Standard bore diameter and bore diameter by limited allowable torque (Clamp style) **Table 10**

Model	Standard bore diameter [mm] and bore diameter by limited allowable torque [Nm]																			
	3	4	5	6	6.35	7	8	10	11	12	14	15	16	18	19	20	22	24	25	28
ALS-014	0.31	0.42	0.54	0.65																
ALS-020		1.2	1.6	2.1	2.2	2.6	3.0													
ALS-030				2.0	2.2		3.4	4.7	5.4	6.0	7.4									
ALS-040							8	16		23	31	34	34		34					
ALS-055												38	41	48	51	54	61	67	71	80

Model	Standard bore diameter [mm] and bore diameter by limited allowable torque [Nm]																			
	14	15	16	18	19	20	22	24	25	28	30	35	38	40	42	45	48	50	55	60
ALS-065						61	68	75	79	89	96	114								
ALS-080										108	121	151			194					

■ The bore diameters with values are available as standard bore diameters.

■ The allowable torque for the coupling is limited because of the clamp screw strength and bore size limitations.

MIKI PULLEY

http://www.mikipulley.co.jp/

Contact by email

Please contact us using the inquiry form and be aware that support for inquiries received on Saturdays, Sundays, holidays, New Year's, and summer business holidays will be provided on the next business day.

Contact by phone

Japanese/English

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